COMPREHENSIVE EVERGLADES RESTORATION PLAN, CENTRAL EVERGLADES PLANNING PROJECT, INTEGRATED PROJECT IMPLEMENTATION REPORT AND ENVIRONMENTAL IMPACT STATEMENT: FINAL JULY 2014, REVISED DECEMBER 2014

COMMUNICATION

FROM

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

TRANSMITTING

THE FINAL COMPREHENSIVE EVERGLADES RESTORATION PLAN INTEGRATED PROJECT IMPLEMENTATION REPORT AND ENVIRONMENTAL IMPACT STATEMENT, PURSUANT TO THE WATER RESOURCES DEVELOPMENT ACT OF 2000, SEC. 601

PART 2 OF 6



OCTOBER 6, 2015.—Referred to the Committee on Transportation and Infrastructure and ordered to be printed

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RESTORING THE HEART OF THE EVERGLADES

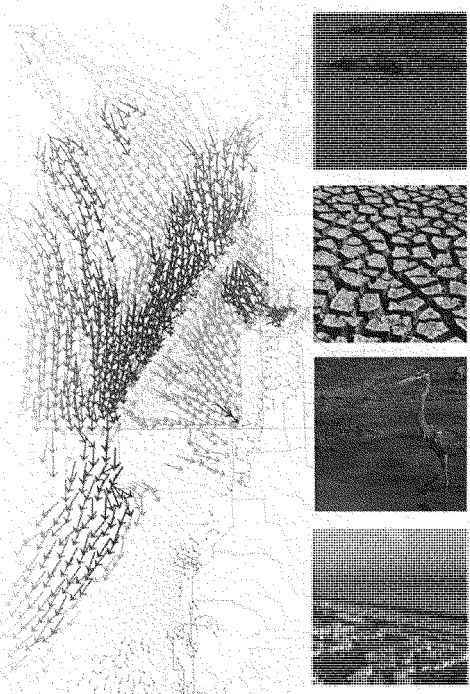


CENTRAL EVERGLADES PLANNING PROJECT

COMPREHENSIVE EVERGLADES RESTORATION PLAN

CENTRAL EVERGLADES PLANNING PROJECT

FINAL INTEGRATED PROJECT IMPLEMENTATION REPORT AND ENVIRONMENTAL IMPACT STATEMENT



July 2014
Revised December 2014

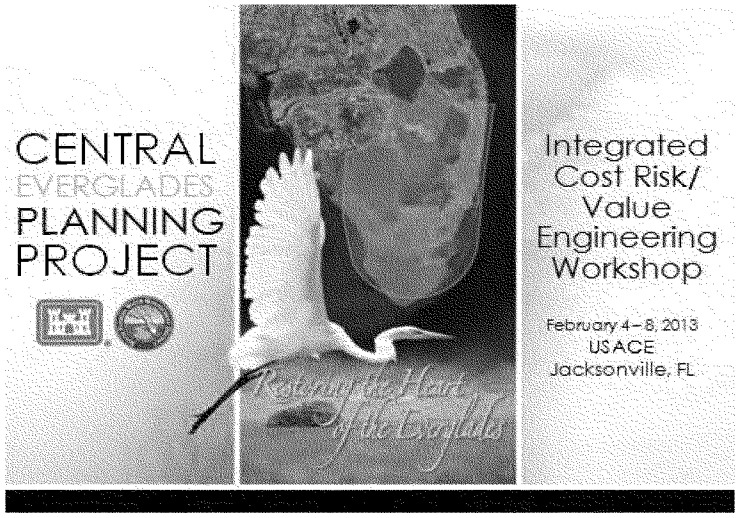
Appendix A - Annex B, C and D

Cover insets (left to right):

Landscapes: Lake Okeechobee, Water Conservation Area 3, Everglades National Park, Florida Bay; **Map:** Depicts Average Annual Overland Flow across the period of record (1965-2005) for existing conditions, as modeled by the CEPP regional hydrologic model (the coloration of the arrows represents the relative volume of flow, while the direction of the arrows represents the movement of flow across the landscape); **Small Landscapes:** Ponding, soil oxidation (peat reduction), dry area of Everglades National Park, juxtaposition of urban development.

ANNEX B-1. VALUE ENGINEERING REPORT

U.S. ARMY CORPS OF ENGINEERS
JACKSONVILLE DISTRICT



370939 CENTRAL EVERGLADES PLANNING PROJECT
FEASIBILITY PHASE

VALUE ENGINEERING STUDY REPORT

February 2013
(Updated January 2014)

DOD SERVICE: USACE **VALUE ENGINEERING OFFICER:** Jimmy Matthews, PE, CVS
CONTROL NO: CESAJ-VE-2013-001C

VALUE ENGINEERING STUDY INFORMATION

VALUE ENGINEERING FIRM: U. S. Army Corps of Engineers
Jacksonville District
701 San Marco Blvd
Jacksonville, FL 32232-0019
(904) 232-1903

VALUE ENGINEERING WORKSHOP CONDUCTED: 4-8 February 2013

VALUE ENGINEERING STUDY TEAM LEADERS: Frank Vicidomina, PE, CVS and Jimmy Matthews, PE, CVS

VALUE ENGINEERING STUDY TEAM MEMBERS: Team member names and contact information are listed in Appendix B.

POINTS OF CONTACT

Kim Vitek, Project Manager, CESAJ-PM-EO, (904) 232-2583

Murika Davis, Engineering Technical Lead, CESAJ-PD-C, (904) 232-1604

Jimmy Matthews, PE, CVS, Value Engineering Officer, CESAJ-EN-Q, (904) 232-2087

STUDY RESULTS:

Evidence of Unfettered Creativity: 68 Ideas were generated during the workshop.

Study Recommendations: 24 Recommendations were developed for consideration.

Note: The February 2013 Report was update in January 2014 to reflect subsequent coordination for Recommendation Y-5.

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INTRODUCTION

This report contains the results of the Value Engineering (VE) portion of a combined Cost and Schedule Risk Analysis (CSRA) and VE Workshop that was performed February 4 – 8, 2013 at the USACE Jacksonville District Office (see **Appendix A** – Value Engineering Job Plan and Workshop Agenda). The objective of this workshop was to incorporate VE analysis into the development of project measures and solution alternatives with focus on project functions and selected issues identified as part of the CSRA. This effort resulted in recommendations that can improve project performance, implementation and/or avoid initial or future costs.

At the time of this VE study the project was in Feasibility Phase evaluation with current identification of a Tentatively Selected Plan (TSP). VE recommendations address further planning project features and aspects as well as items that should be considered in future project design.

The CSRA/VE Team was comprised of cost engineers from the Walla Walla District and members of the Project Delivery Team (PDT) that included staff of local sponsors, state and local agencies. 'Net-Meeting' and teleconference means were employed to execute the workshop. A roster of workshop participants can be found in **Appendix B**.

As part of the CSRA cost and schedule risks were identified and classified as low, moderate or high risk/consequence potential. A summary list of moderate and high risk items are shown in **Appendix C**. VE workshop activity included particular focus on developing possible measures that may reduce probability and/or consequence of these items.

The VE process also identified and addressed project and project feature functions and developed a number of recommendations that may accomplish such functions with either improved performance and/or cost-effectiveness. Project functions are shown for each feature area (reference project description below) as **Appendix D**.

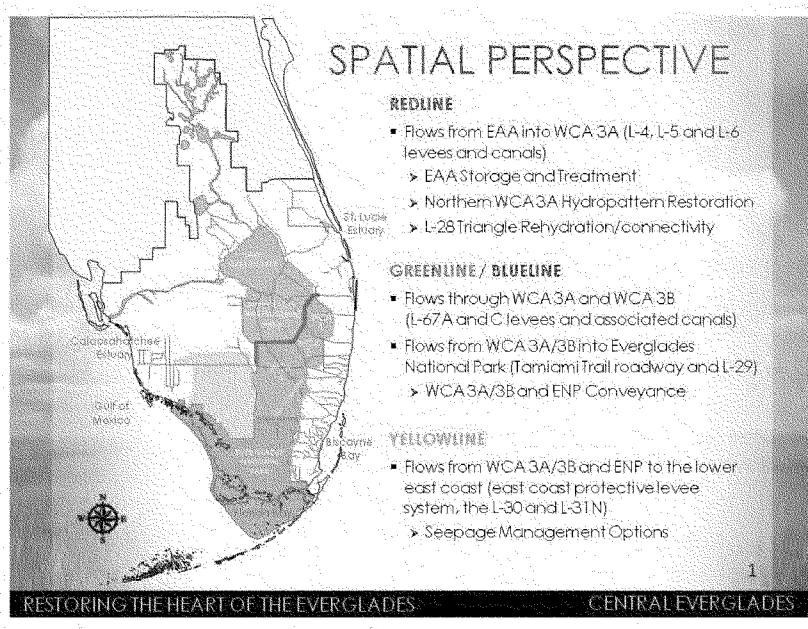
The VE process included 'brainstorming' sessions to produce ideas to mitigate risk, improve the project and reduce cost. These 'raw' ideas were screened and selected for further development or designated as either already being considered in the project or not feasible. **Appendix E** lists all ideas per project area (Speculation Lists) categorized by their disposition (developed or not developed).

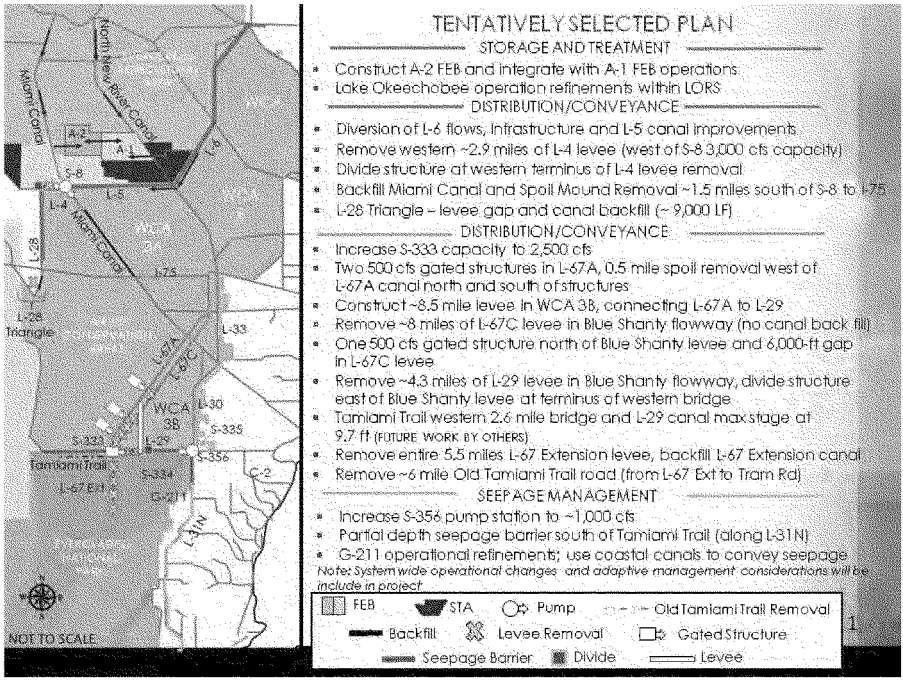
PROJECT DESCRIPTION

The Central Everglades Planning Project (CEPP) encompasses the Northern Estuaries (St. Lucie River and Indian River Lagoon and the Caloosahatchee River and Estuary), Lake Okeechobee, a portion of the Everglades Agricultural Area, the Water Conservation Areas; Everglades National Park, the Southern Estuaries (Florida Bay and Biscayne Bay), and the Lower East Coast (see below Spatial Perspective map). The purpose of the CEPP is to improve the quantity, quality, timing and distribution of water flows to the central Everglades.

The project study area has been divided into reaches as follows: North of Redline, South of Redline, Greenline / Blueline and Yellowline. As indicated above, the planning process has recently completed identification of a TSP (see Tentatively Selected Plan map below) . Project features include, but are not

limited to, storage and treatment retention basins, canal modifications (plugging and re-routing), removal of existing levees, new levees, flow control structure, pump stations and seepage barriers. Preliminary project cost is estimated at $1.3 billion. Additional TSP feature information is included as **Appendix F**.




TENTATIVELY SELECTED PLAN
STORAGE AND TREATMENT
Construct A-2 FEB and integrate with A-1 FEB operations
Lake Okeechobee operation refinements within LORS
DISTRIBUTION/CONVEYANCE
Diversion of L-6 flows, infrastructure and L-5 canal improvements
Remove western ~2.9 miles of L-4 levee (west of S-8 3,000 cfs capacity)
Divide structure at western terminus of L-4 levee removal
Backfill Miami Canal and Spoil Mound Removal ~1.5 miles south of S-8 to I-75
L-28 Triangle – levee gap and canal backfill (~ 9,000 LF)
DISTRIBUTION/CONVEYANCE
Increase S-333 capacity to 2,500 cfs
Two 500 cfs gated structures in L-67A, 0.5 mile spoil removal west of L-67A canal north and south of structures
Construct ~8.5 mile levee in WCA 3B, connecting L-67A to L-29
Remove ~8 miles of L-67C levee in Blue Shanty flowway (no canal back fill)
One 500 cfs gated structure north of Blue Shanty levee and 6,000-ft gap in L-67C levee
Remove ~4.3 miles of L-29 levee in Blue Shanty flowway, divide structure east of Blue Shanty levee at terminus of western bridge
Tamiami Trail western 2.6 mile bridge and L-29 canal max stage at 9.7 ft (FUTURE WORK BY OTHERS)
Remove entire 5.5 miles L-67 Extension levee, backfill L-67 Extension canal
Remove ~6 mile Old Tamiami Trail road (from L-67 Ext to Tram Rd)
SEEPAGE MANAGEMENT
Increase S-356 pump station to ~1,000 cfs
Partial depth seepage barrier south of Tamiami Trail (along L-31N)
G-211 operational refinements; use coastal canals to convey seepage
Note: System wide operational changes and adaptive management considerations will be include in project
FEB
STA
Pump
Old Tamiami Trail Removal
Backfill
Levee Removal
Gated Structure
Seepage Barrier
Divide
Levee
NOT TO SCALE
North New River Canal
Miami Canal
L-4
L-5
L-6
L-28 Triangle
L-67A
L-67C
L-30
L-29
S-333
S-335
S-356
S-334
G-211
L-31N
C-2
Tamiami Trail
L-67 Ext
WCA 3B
WCA 2A
WCA 1

SUMMARY OF RECOMMENDATIONS

Results of the workshop include recommendations that can reduce cost or schedule risk, improve performance and/or reduce project life-cycle cost. Recommendations address current report development, future project design or adaptive management activities. Items are grouped per the above four reach designations plus an additional category that pertains to the overall project.

The below list of VE Recommendations are further developed in the following section of this report and are summarized per project area as described in the above project information sections. The following also contains the disposition as decided in the VE Workshop Out Brief.

North of Redline

NR-1. Add outflow gravity structure on SE corner of A-2 - *Address recommendation in project design phase.*

NR-2. Add in-line structure for North New River Canal - *Address recommendation in both current plan development and project design phase.*

NR-3. Increase DS-8 gate capacity from 1,500 to 3,750 cfs to maintain existing drainage flowrate and water elevation - *Address recommendation in current plan development.*

South of Redline

SR-1. Add AM strategy for G-336G (L6 Diversion) - *Address recommendation in both current plan development and development of the adaptive management activities.*

SR-2. Increase S-8 existing pump station horsepower and/or add supplemental exterior type pump unit(s) in lieu of constructing a new pump station - *Address recommendation in project design phase.*

SR-3. Add new pump station (S-8) - *Address recommendation in project design phase.*

SR-4. Integrate and optimize S-8 and G-404 system - *Address recommendation in both current plan development and project design phase.*

SR-5. Re-visit USFWS/FWC Draft Ecological Guidelines for Water Management in WCA-2A – *Address recommendation in development of adaptive management activities.*

Greenline and Blueline

GB-1. Consider partial removal of the remaining length of the L-67 Extension Levee and/or system; also consider only partial removal of Old Tamiami Trail - *Address recommendation in development of adaptive management activities.*

GB-2. Consider extending S-355B collector canal - *Address recommendation in both current plan development and development of the adaptive management activities*

GB-3. Modify the ag canals in flowway - *Address recommendation in both current plan development and development of the adaptive management activities*

GB-4. Use vegetation management to reduce vegetative resistance to water flow downstream of L-67A new structures S-345D & G - *Address recommendation in development of the adaptive management activities*

GB-5. Retrofit DPM structure (S-152 800 cfs 10 - 60" HDPE barrels); Use DPM structure for interim period - *Address recommendation in both project design phase and development of the adaptive management activities*

GB-6. Re-visit L-29 gated divide structure to determine actual flow need and gate flow size - *Address recommendation in both current plan development and development of the adaptive management activities*

GB-7. Optimize operations at most northern structure into WCA 3B (consider for other control structures) - *Address recommendation in development of the adaptive management activities*

Yellowline

Y-1. Determine new S-356 pump station capacity based on functional risk; do not design for both full contingency and unit redundancy - *Address recommendation in both current plan development and project design phase.*

Y-2. For S-356, eliminate redundant pump but incorporate possible future expansion - *Address recommendation in project design phase.*

Y-3. Defer construction of new S-356 pump station until adjacent seepage wall is constructed and system tested; further utilize existing S-356 temporary pump station - *Address recommendation in current plan development, project design phase and in development of the adaptive management activities.*

Y-4. Phase implementation of seepage control features; use AM to determine path - *Address recommendation in development of the adaptive management activities.*

Y-5. Change the location L31N Seepage Management Pilot Project (SMPP) to the location which was the original location contained in the authorized decision document; use CEPP to increase the 902 Limit for

L31N SMPP and install the L31N SMPP to remove project uncertainties – *Not adopted. The PDT response changed from Address recommendation in current plan development in February 2013 Report to Not adopted in January 2014 to reflect subsequent report coordination. The L31 N SMPP was the pilot component of the original CERP L31N Improvements for Seepage Management. The CEPP PDT has decided to use the monitoring and results of a nearby constructed non-federal seepage project that was installed as described in main PIR sections 2.5.12 and 6.10.2.1 to address project uncertainties for CEPP.*

Y-6. Investigate alternative seepage barrier cutoff wall means (such as vinyl sheet pile) - *Address recommendation in project design phase.*

General Topic Considerations

GC-1. Create environmental friendly conveyance channels where opportunity exits - *Address recommendation in both current plan development and project design phase.*

GC-2. Coordinate vegetation management to achieve multiple objectives - *Address recommendation in development of adaptive management activities.*

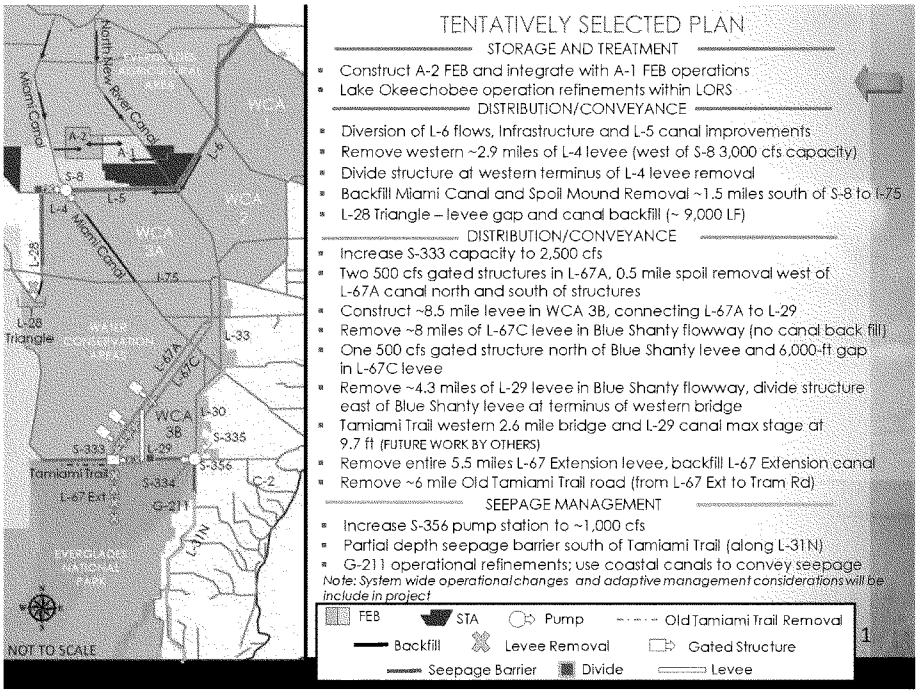
GC-3. Optimize pump station design - *Address recommendation in project design phase.*

VALUE ENGINEERING RECOMMENDATIONS

(The following recommendations were developed in a very short period of time and are intended to present conceptual measures for consideration. Further evaluation and design is required to substantiate each recommendation and provide rationale for its implementation or rejection. Also, a number of recommendations may 'conflict' with others. That is to say that one idea cannot be implemented with the other.

No decision as to preference was made by the VE Team and all options are presented for further consideration by the PDT. However, as part of the out-briefing meeting the PDT established a preliminary disposition for each recommendation. Items are noted as to what phase of project development that it will be further evaluated – Current Report Development, Project Preconstruction Engineering and Design Phase or Adaptive Management Activities for the Report or RECOVER.)

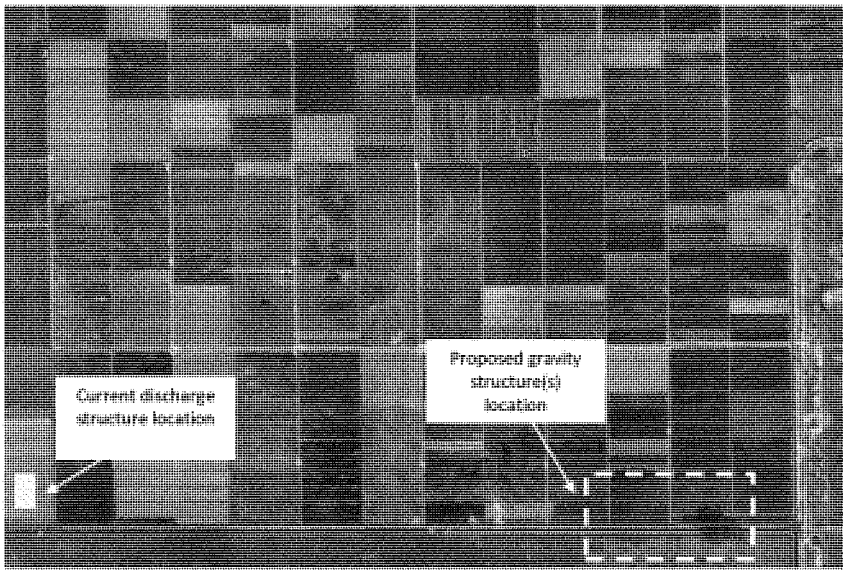
NORTH OF REDLINE



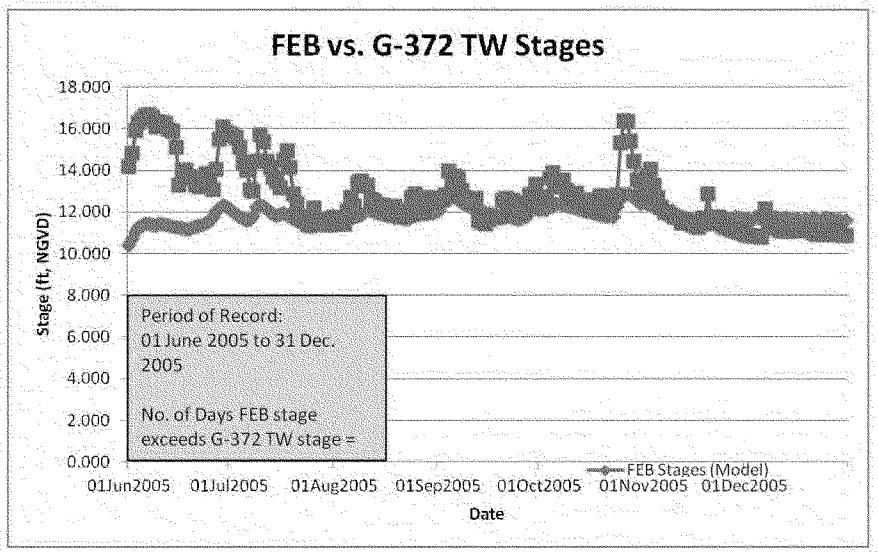
NR-1 Add outflow gravity structure on SE corner of A-2 - The currently proposed design of the A-2 FEB has one outflow structure, DS-7, located on the western perimeter discharging via an outflow canal to the headwaters of G-372. G-372 will be responsible for providing the lift to convey the discharges through the STA 3/4 Supply Canal toward the STA 3/4 inflow structures. A recommendation was made to place gravity outflow structures along the southeast corner of A-2 (see map below). This would be possible as long as the stages in STA 3/4 Supply Canal were low enough for water to pass from the FEB (max stage of 13.0 NGVD – natural grade at 9.0 NGVD with 4 ft depth). The STA 3/4 Supply Canal design stages for HW (G-372 TW) and TW (STA 3/4 Inflow structures HW) are 17.0 NGVD and 15.0 NGVD, respectively.

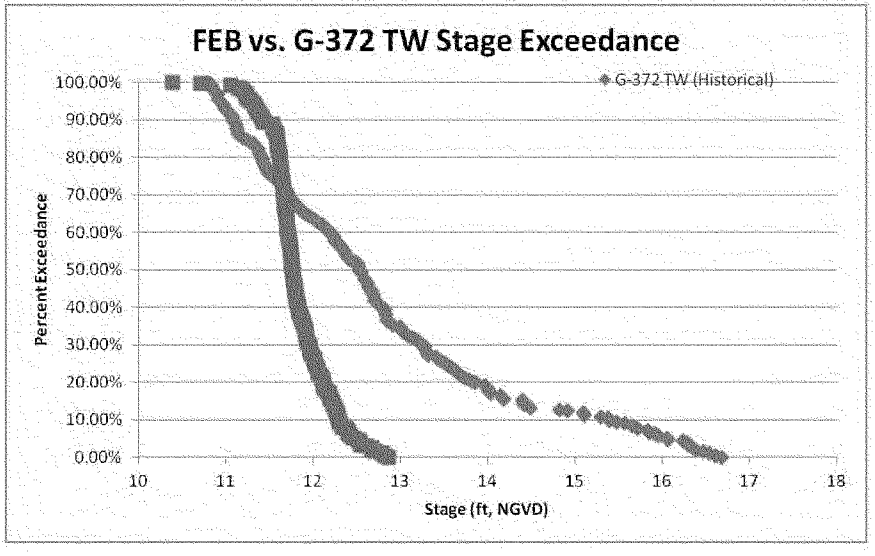
Using the same period of record (01-June-05 to 31-Dec-05) to compare historical G-372 TW stages and modeled FEB stages, data shows that FEB stages exceed G-372 TW stages on average 0.42 ft for a total of 68 days out of 214 days (31.78%). If the proposal is adopted, structures would most likely be culverts with flap gates (reference below graphs).

Preliminary disposition: *Address recommendation in project design phase.*



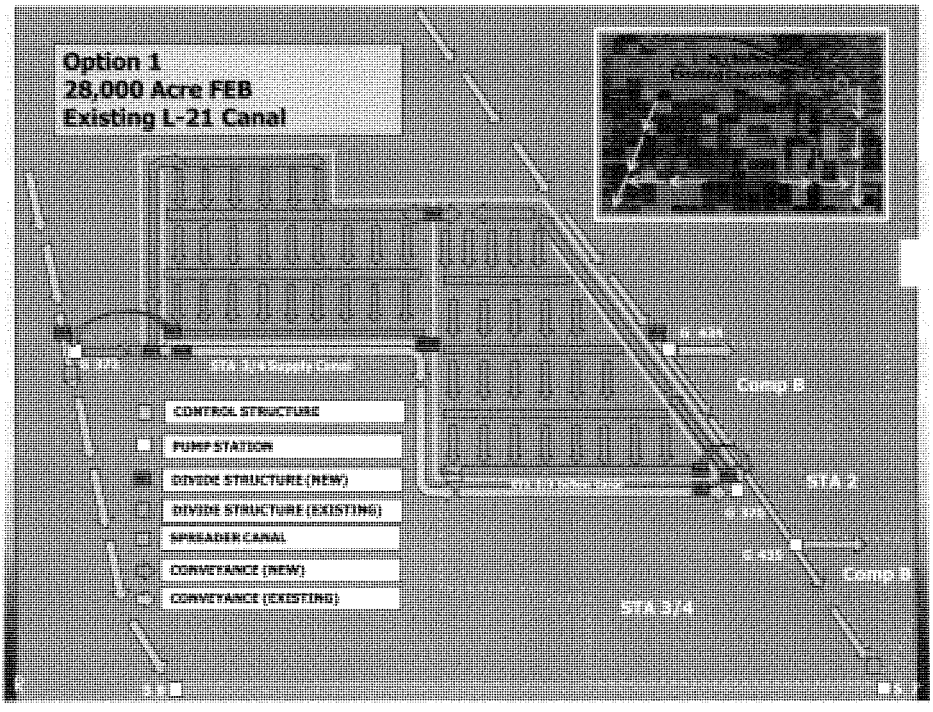
A-2 FEB Location Map


FEB vs. G-372 TW Stages
18.000
16.000
14.000
12.000
10.000
8.000
6.000
4.000
2.000
0.000
Stage (ft, NGVD)
Period of Record:
01 June 2005 to 31 Dec. 2005
No. of Days FEB stage exceeds G-372 TW stage =
FEB Stages (Model)
01Jun2005 01Jul2005 01Aug2005 01Sep2005 01Oct2005 01Nov2005 01Dec2005
Date


FEB vs. G-372 TW Stage Exceedance
G-372 TW (Historical)
100.00%
90.00%
80.00%
70.00%
60.00%
50.00%
40.00%
30.00%
20.00%
10.00%
0.00%
Percent Exceedance
10 11 12 13 14 15 16 17 18
Stage (ft, NGVD)

NR-2 Add in-line structure for North New River Canal - The structure in the North New River Canal is an in-line structure that would be located just north of Compartment B, upstream of Pump Station G-434. (See DS-1 in Figure below.) It would allow water from the A1 and A2 FEB's to be discharged into the North New River Canal without mixing with untreated water. At that point, treated water could either be pumped into Compartment B or STA 3/4 for further treatment. Initial modeling results indicate that DS-1 may not be needed for A1 to function, but further modeling and design of the A-1/A-2 FEB combination may indicate that DS-1 is needed.

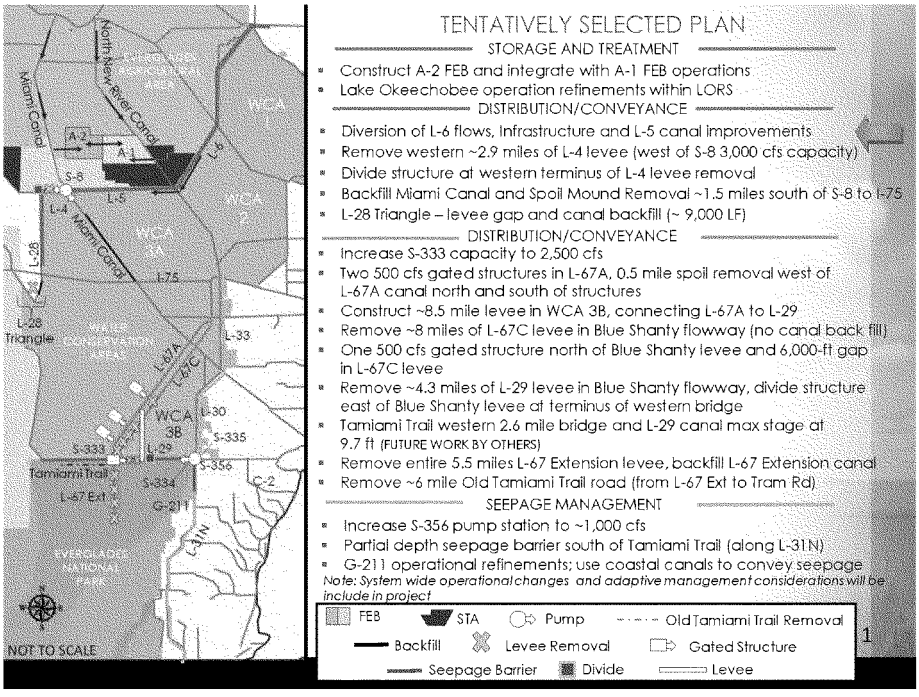
Preliminary disposition: *Address recommendation in both current plan development and project design phase.*



NR-3 Increase* DS-8 *gate capacity from 1,500 to 3,750 cfs to maintain existing drainage flowrate and water elevation – The current design of proposed flow control gated structure DS-8 should be increased to accommodate stormwater flow and designed such that no water level increase is experienced in the drainage area.

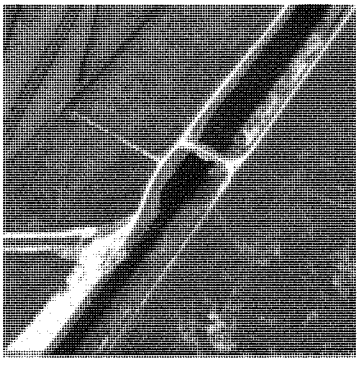
Preliminary disposition: *Address recommendation in current plan development.*

SOUTH OF REDLINE

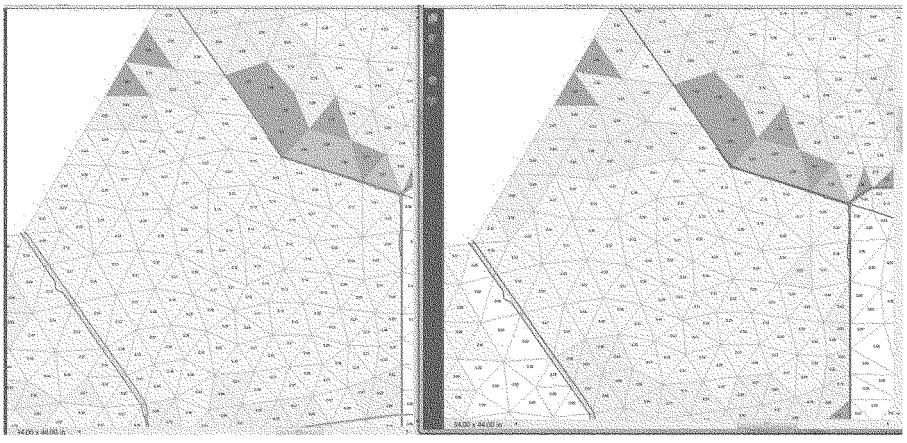


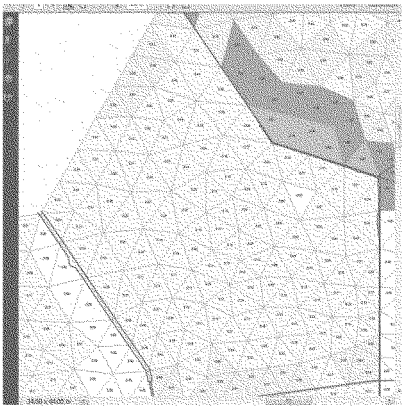
SR-1 Add AM strategy for G-336G (L6 Diversion) - As part of the CEPP TSP, L-6 diversions of STA treated water that normally would go to WCA 2A would be routed to the L-5/L-4 canals for distribution in WCA 3A. This results in unintended consequences to lowering WCA 2A (see ponding figure in dry season below) and can result in risk of dryouts and fires beyond what it currently experiences. G-336G (see pictures below) is a structure along the L-6 levee in between the EAA and WCA 2A that could potentially be used or retrofitted to help add water during dry periods to avoid drying out of WCA 2A beyond the existing conditions. The structure needs to be examined to determine whether it is controllable to move water northeast or and southwest over a variety of conditions in the canal.

Preliminary disposition: *Address recommendation in both current plan development and development of the Adaptive Management Plan.*



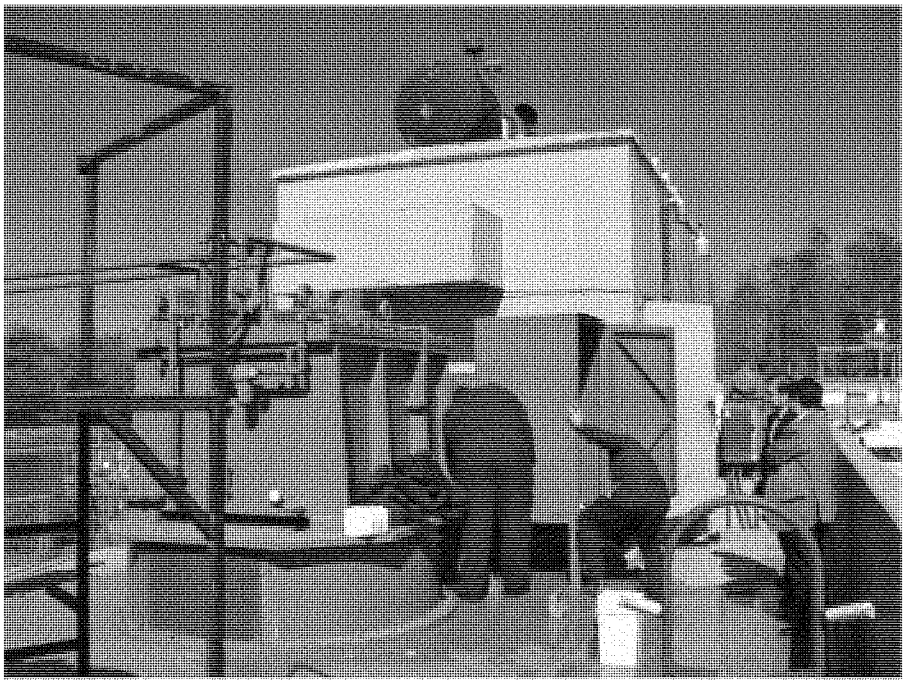






SR-2 Increase S-8 existing pump station horsepower and/or add supplemental exterior type pump unit(s) in lieu of constructing a new pump station – Discharge water elevations will be increased by the project. Such added head may significantly diminish (or even completely negate) existing pumping capacity from S-8. Full capacity must be maintained therefore some form of upgrade is necessary. In lieu of installing a completely new pump station, increasing pump drive horsepower with or without a supplemental exterior type pump should be considered. Added power may be all that is needed to maintain flowrate at increased head conditions. If added power still falls short, but keeps the existing pumps operating but at a lesser capacity, a supplemental pump 'pod' unit can be added to make up the difference. Added overhead structure should be minimized and an 'exterior' type of pod unit could be installed (reference **Recommendation GC-3** and see below photo of such type of pod units from East Ascension Parish, Louisiana.

Preliminary disposition: *Address recommendation in project design phase.*



SR-3 Add new pump station (S-8) - This idea is to either demolish and replace S-8 or add a new pump station in the area. The Engineering team discussed the S-8 Structure. The pump station is 4080 cfs with four 1020 cfs pumps. The structure is not deteriorating and should not be replaced. The pumps would be replaced per the maintenance schedule. Since a definite 3,000 cfs is not needed to go to the west, the water can be routed through a small canal that would connect Miami Canal to L-5 canal. Two gated structures can be placed one in the Miami Canal and one in the new connector canal to either route flow to the south or west.

Preliminary disposition: *Address recommendation in project design phase.*

SR-4 Integrate and optimize S-8 and G-404 system - S-8 can only pump a minimum of 1020 cfs, if lower flows are desired G-404 can be utilized for flows up to 600 CFS. This would allow for the most flexible system. No preliminary design compromises the G-404 structure or operations.

Preliminary disposition: *Address recommendation in both current plan development and project design phase.*

SR-5 Re-visit USFWS/FWC Draft Ecological Guidelines for Water Management in WCA-2A -

Purpose: To provide ecological targets and draft stage hydrograph (Figure 1) that more closely resembles an environmentally preferred *water management strategy for WCA-2A* (not intended to change the 2A regulation schedule).

1. Dry Season Low Recommended Depth Range (~June 1st): **0.0 – 0.5-ft**
2. Wet Season High Depth (~Oct 1st): Approximately **2.0 – 2.25-ft**
3. January 1 target depth range: **~1.8-ft**
4. Recession Rate Guidelines (January 1- June 1): **0.05 ft/wk** (snail kite preferred) **– 0.07 ft/wk** (wood stork and state listed wading birds).
5. Ascension Rate Guidelines (June 1 – Oct 1) Maximum of **0.25 ft/week** and approximately **0.05 ft/wk** minimum. Preferred **0.05-0.15-ft**.

Assumption: Ground surface elevation of 10.75-ft NGVD (EDEN Wet Prairie Site 17). Ultimately, WCA-2A will need to join the periodic scientist calls for real-time water management with ecological recommendations for recession rates, ascension rates, and core foraging depths.

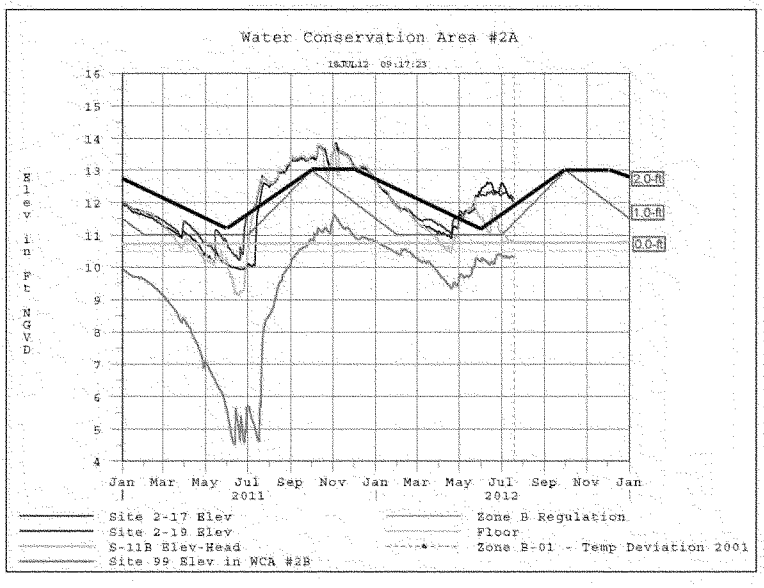
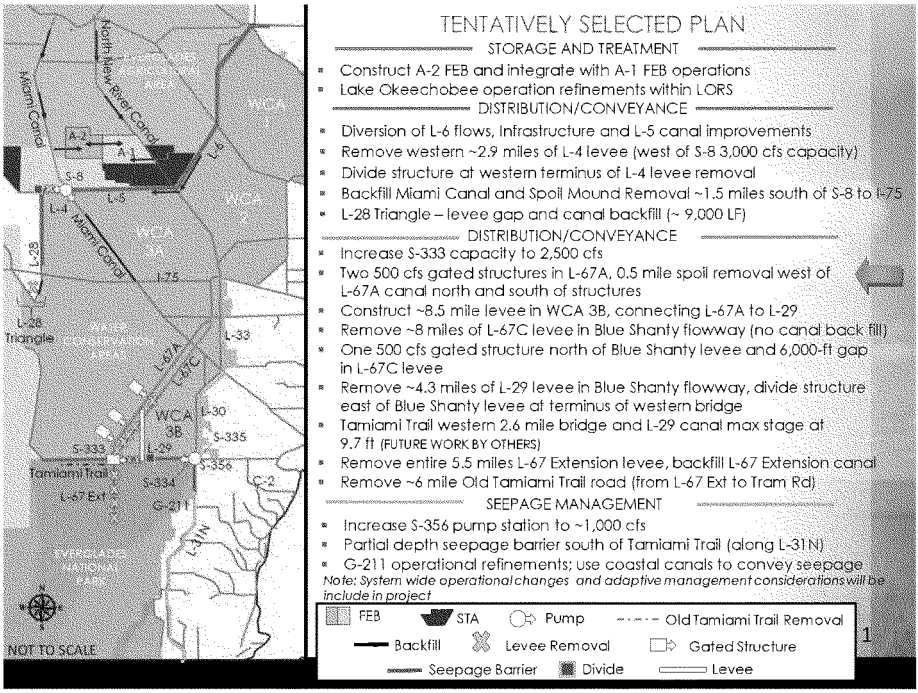


Figure1. Draft targets above represented as black line on existing 2A stage hydrograph (stage in NGVD on y-axis, water depth on x-axis).

Preliminary disposition: *Address recommendation in development of Adaptive Management Plan.*

GREENLINE AND BLUELINE

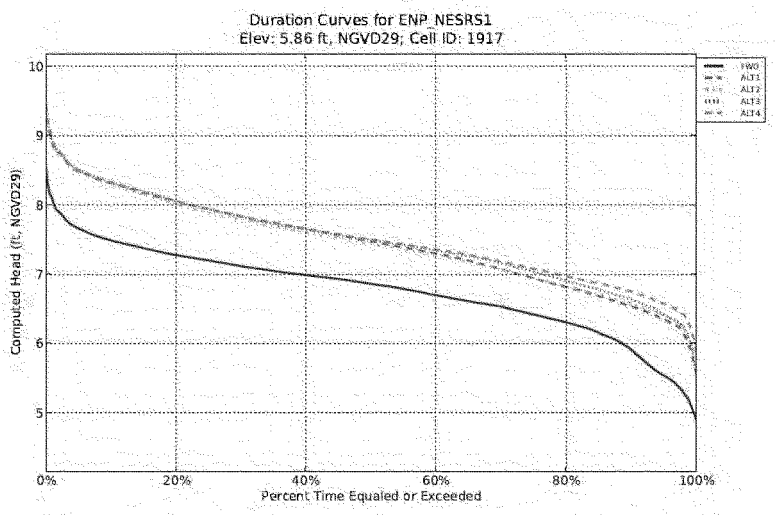


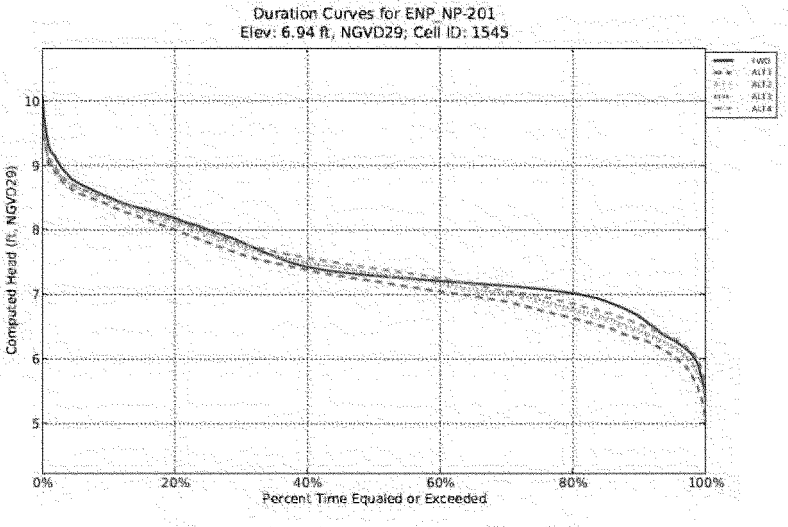
GB-1. Consider partial removal of the remaining length of the L-67 Extension Levee and/or canal system; also consider only partial removal of Old Tamiami Trail - The frequency and duration of high water conditions within WCA-3A must not be increased with implementation of CEPP (compared to ERTP), and the S-12s are the primary regulatory outlets for WCA-3A. Removal of all or portions of the Old Tamiami Trail, between ENP Tram Road and L-67 Extension (~6 miles), provides increased conveyance capacity for the S-12C and S-12D structures from WCA-3A and would enhance the spatial extent of sheetflow within western Shark River Slough (SRS). The CERP plan recommends complete removal of the L-29 Levee, which would require removal of the Old Tamiami Trail roadway to realize benefits. SAJ-EN anticipates that removal of more than ~1.5 miles of the L-67 Extension Canal (with or without adjacent levee removal) is anticipated to significantly reduce the outlet conveyance capacity of the S-12C and S-12D, and would require mitigation of these effects through removal of all or portions of this ~6-mile section of the Old Tamiami Trail. Note that removal of Old Tamiami Trail west of the ENP Tram Road is not included with CEPP due to the location of the Miccosukee Reservation along Tram Road and T&E concerns with releases from S-12A and S-12B.

Option 1: Remove of 1.5 miles of the L-67 Extension Levee and Canal (modeled CEPP Alternative 1). Removal of ~1.5 miles of the L-67 Extension Canal is anticipated to negligibly affect the outlet conveyance capacity of the S-12C and S-12D (previously considered with the MWD Project), and would not likely require mitigation through removal of all or portions of this section of the Old Tamiami Trail. This option would provide reduced hydrologic connectivity between Western SRS and Northeast SRS, as compared to the TSP (although greater than the No Action condition). Depending on the CEPP flow distributions within other parts of the system, which is still being adjusted with ongoing modeling, the stage differential between CEPP Alternative 1 (1.5 mile L-67 Extension removal) and CEPP Alternatives 2-4 (complete L-67 Extension removal) are negligible at NESRS-1 (see Alternative 2) and minor at approximately 0.1-0.2 feet at NP-201 (see accompanying figures). The performance-based TSP selection of Alternative 4 was not critically dependant on the L-67 Extension configuration. Option 1 is also a potential adaptive management increment.

Option 2: Remove most or all of L-67 Extension Levee and do not fill canal (not modeled in CEPP alternatives). This option would provide hydrologic connectivity between Western SRS and Northeast SRS, comparable to the CEPP TSP performance. A modest reduction in the outlet conveyance capacity of the S-12C and S-12D would be expected due to the increased hydrologic interaction between S-333 and the S-12s, although this may be offset with the significant reduced regulatory reliance on the S-12s with CEPP implementation (as modeled). Complete removal of the segment of Old Tamiami Trail would not be required and the L-67 Extension Levee material could be utilized for other CEPP components (i.e. Blue Shanty Levee), potentially with material processing requirements.

Preliminary disposition: *Address recommendation in development of Adaptive Management Plan.*


Duration Curves for ENP_NESRS1
Elev: 5.86 ft, NGVD29; Cell ID: 1917
Computed Head (ft, NGVD29)
Percent Time Equaled or Exceeded
10
9
8
7
6
5
0%
20%
40%
60%
80%
100%
FWO
ALT1
ALT2
ALT3
ALT4

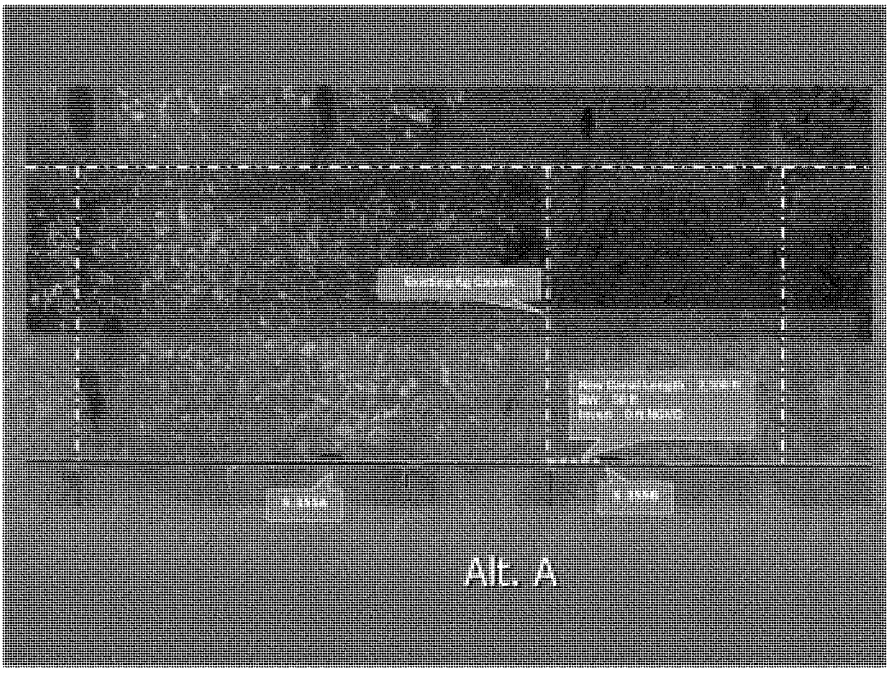

Duration Curves for ENP_NP-201
Elev: 6.94 ft, NGVD29; Cell ID: 1545
Computed Head (ft, NGVD29)
Percent Time Equaled or Exceeded
10
9
8
7
6
5
0%
20%
40%
60%
80%
100%
FWO
ALT1
ALT2
ALT3
ALT4

GB-2. Consider extending S-355B collector canal - Ongoing CEPP TSP adjustments and associated hydrologic modeling have included recommendations to increase stages within eastern WCA-3B, east of the Blue Shanty levee, compared with Alternative 4 stages. The TSP cost estimate included placeholders for potential conveyance improvements within the WCA-3B remnant agricultural ditches, east of the Blue Shanty levee. The conveyance improvements were intended to improve the ability to achieve north-to-south flows from eastern WCA-3B to the L-29 Canal, via the existing S-355A and S-355B gravity spillway structures.

Since the CEPP TSP does not include additional WCA-3B outlet structures for eastern WCA-3B, this proposal would extend the existing 1000 foot upstream collector canal for S-355B by 0.4 miles (~2100 feet) to tie-in with the Central remnant north-south agricultural ditch (with associated conveyance improvements to the Central remnant north-south agricultural ditch and the remnant east-west agricultural ditch), as shown in the below map. By providing a hydrologic connection between the S-355B collector canal and the remnant agricultural ditches, the efficiency and quantity of conveyance from southern WCA-3B to the S-355B will be improved (degree is dependent on operating stages within WCA-3B and design details). Gravity outflow from WCA-3B will remain dependant on managing water levels within WCA-3B higher than stages in the L-29 Canal, east of the proposed CEPP L-29 Divide structure. CEPP stakeholders have expressed concerns with significant increased water management stages within WCA-3B, without providing sufficient WCA-3B outlet capability. Collector canal construction would impact at minimum 7-10 acres of WCA-3B wetlands located along the interior toe of the L-29 Levee, assuming current dimensions of the S-355B collector canal.

The S-355A and associated collector canal is located east of the proposed Blue Shanty levee and 1.7 miles west of the Central remnant north-south agricultural ditch. The Western remnant north-south agricultural ditch is located within the footprint of the proposed Blue Shanty flow-way. The proposed S-355B collector canal extension represents the minimum amount of additional collector canal construction that would improve the capability to utilize the existing S-355s to convey water out of WCA-3B. Construction of a new gravity culvert structure at the southern terminus of the Central remnant north-south agricultural ditch could be considered as an alternative to the extension of the S-355B collector canal. These options have been previously proposed for consideration during the MWD Project.

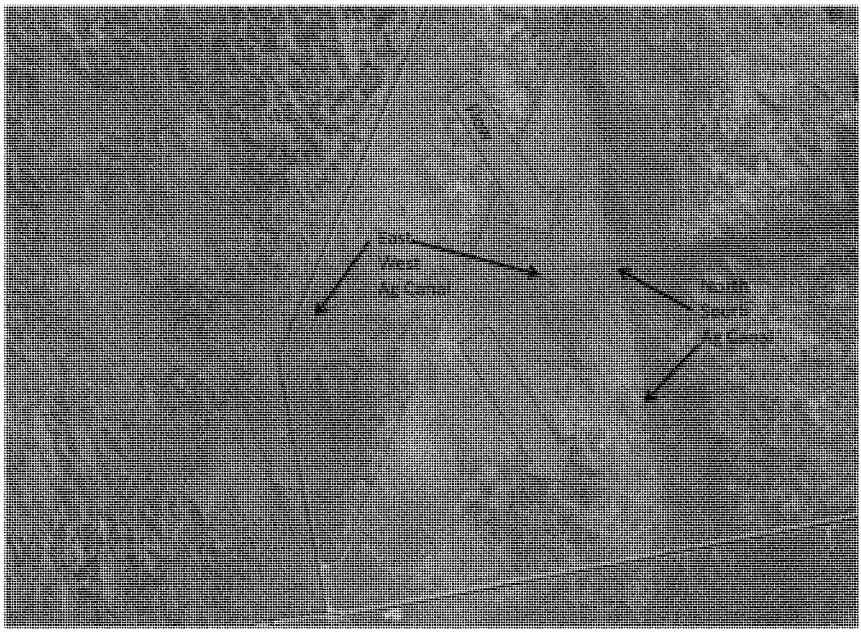
Preliminary disposition: *Address recommendation in both current plan development and development of the Adaptive Management Plan*


AIE. A

GB-3. Modify the ag canals in flowway - In southern WCA 3B there are remnant agricultural canals. Within the proposed Blue Shanty Flow way there is one east-west running canal that connects to one north south canal (Blue Shanty Canal). These canals impose a scar on the landscape that can easily be seen from an aerial view (see map below).

The agricultural canals are shallow and heavily vegetated with water lilies and cattails (indicating depths of 3-6 feet). There are mounds along both side of the canals, approximately one-foot higher than adjacent marsh grade. The mounds are heavily vegetated with willows and pond apple. If left in place, the spoil mounds along the canal impose barriers so sheetflow (see flow arrows in figure) when water levels are low. In addition, the north south canal will act as a drainage canal once the Blue Shanty Flowway is constructed. Removing the spoil mounds and backfilling the Blue shanty (north south) canal would improve the project benefit by removing barriers to sheetflow, and would provide water quality benefits by allowing water to flow through the marsh eliminating any short circuiting/drainage trough the north south canal. Additionally, removing the ag canals could help offset some of the environmental impacts from the proposed new levee in WCA 3B.

Preliminary disposition: *Address recommendation in both current plan development and development of the Adaptive Management Plan*



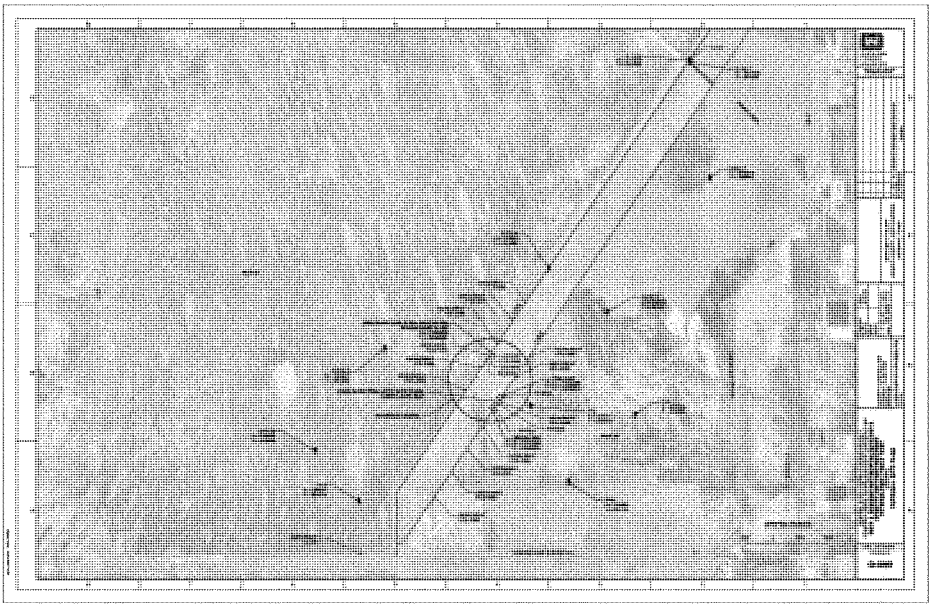
GB-4. Use vegetation management to reduce vegetative resistance to water flow downstream of L-67A new structures S-345D & G - Much of the vegetation and landscape structure south of L-67 levees in WCA 3B is dense sawgrass without any sloughs. The desired landscape structure is for longer hydroperiods that promote development of a ridge and slough landscape. There is a potential that sheetflow velocities may not be high enough from the L-67 structures to move sheetflow at rates fast enough across the sawgrass plain to get the desired restoration benefits. Sawgrass has a high friction coefficient that slows down velocity, and based on actual implementation, may require specific vegetation management activities to facilitate transition of the landscape to more ridge and sloughs (e.g., herbicide, focused fire during wet season, or other least destructive method).

Preliminary disposition: *Address recommendation in development of the Adaptive Management Plan*

GB-5 Retrofit DPM structure (S-152 800 cfs 10 - 60" HDPE barrels); Use DPM structure for interim period - USACE and SFWMD entered in a design agreement May 12, 2000 for purposes of conducting activities related to planning, engineering and design of CERP projects. The Decomp Physical Model known as DPM project was permitted as a large-scale field test designed to answer uncertainties with depth, hydroperiod, sheetflow and canal backfilling associated with the full-scale CERP DECOMP project. It was designed for a 5 year life cycle to go in place and be removed between 5-10 years as described in the DECOMP DPM Design Test Documentation Report. The DPM contract is scheduled for completion 2013. L-67C 3,000 ft gap was completed in Nov 2012. Plan is to conduct test for 2 years after construction complete for (2 months) of each year. Part of the permitting also conceptually approved de-installation (removal) of S-152, excavation of backfill material from L-67C canal, L-67A and L-67C levee reconstruction and finally removal of temporary access roads and spoil areas (see below drawing).

This VE recommendation proposes to retrofit the existing temporary (S-152 test structure) that was designed within the constraints noted above (design test, temporary nature, easily removable materials after test complete). A second part of this proposal is allow DPM components to remain in place and use it to continue to collect information through CEPP Adaptive Management. PROS – The existing temporary structure can be operated to see how 3B responds and what benefits you will achieve moving existing water through 3B and potentially the proposed flowway. CONS- maintenance responsibilities of the structure and functionality if left in place longer than the 10 year design life concept. It affects material selection as well as potential problems for seepage of the culverts. This idea is something that could merit consideration for the VE Report and further investigation during PED detail design phase.

Preliminary disposition: *Address recommendation in both project design phase and development of the Adaptive Management Plan*



GB-6. Re-visit L-29 gated divider structure to determine actual flow need and gate flow size - The current design flow capacity of the proposed L-29 gated divider structure is reported to be 1,350 cfs. It appears that no stormwater flow accommodation is needed in this location and a reduction in capacity may be possible. In addition to conveyance structure size reduction, lowering the flow rate may allow use of a pipe culvert in lieu of a more expensive concrete box.

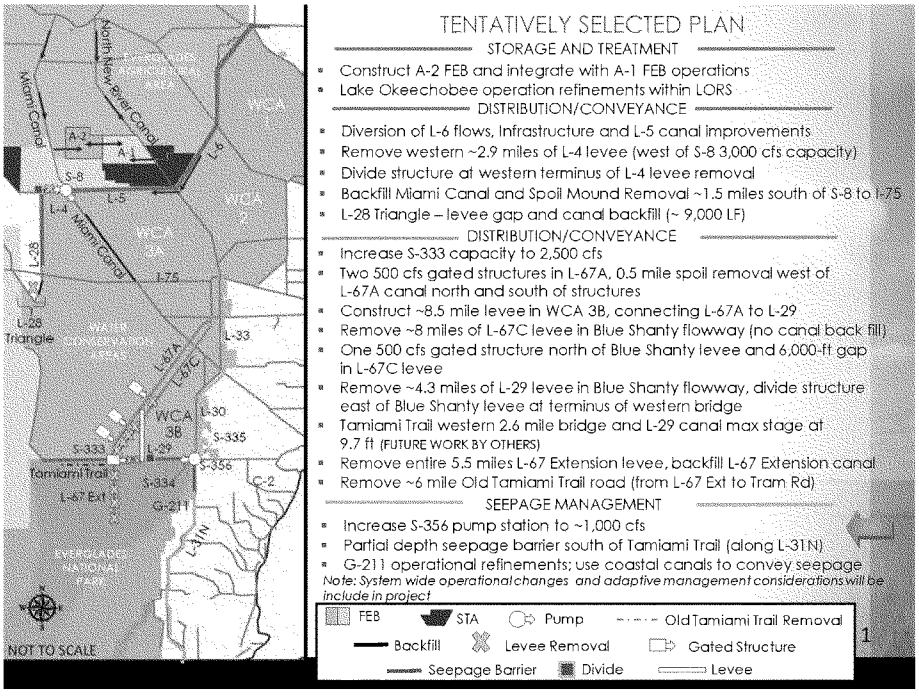
Preliminary disposition: *Address recommendation in both current plan development and development of the Adaptive Management Plan*

GB-7. Optimize operations at most northern structure into WCA 3B (consider for other control structures) - Discussions on the optimization of any structure would be dependent on a system-wide analysis of the operations , taking into account the water level regulations, existing and future structures, levees, and gaps, among other things. An individual refinement of operations that haven't been developed would be unable to yield useful information. At this stage, modeling would be required to determine what additional benefits could be obtained. When the operations are developed, each structure and feature's respective operations will be optimized to work together as part of the larger system. Such a structure where this appears to be pertinent is S-345C, the most northern control point of WCA 3B.

Preliminary disposition: *Address recommendation in development of the Adaptive Management Plan*



YELLOWLINE


TENTATIVELY SELECTED PLAN
STORAGE AND TREATMENT
Construct A-2 FEB and integrate with A-1 FEB operations
Lake Okeechobee operation refinements within LORS
DISTRIBUTION/CONVEYANCE
Diversion of L-6 flows, Infrastructure and L-5 canal improvements
Remove western ~2.9 miles of L-4 levee (west of S-8 3,000 cfs capacity)
Divide structure at western terminus of L-4 levee removal
Backfill Miami Canal and Spoil Mound Removal ~1.5 miles south of S-8 to I-75
L-28 Triangle – levee gap and canal backfill (~ 9,000 LF)
DISTRIBUTION/CONVEYANCE
Increase S-333 capacity to 2,500 cfs
Two 500 cfs gated structures in L-67A, 0.5 mile spoil removal west of L-67A canal north and south of structures
Construct ~8.5 mile levee in WCA 3B, connecting L-67A to L-29
Remove ~8 miles of L-67C levee in Blue Shanty flowway (no canal back fill)
One 500 cfs gated structure north of Blue Shanty levee and 6,000-ft gap in L-67C levee
Remove ~4.3 miles of L-29 levee in Blue Shanty flowway, divide structure east of Blue Shanty levee at terminus of western bridge
Tamiami Trail western 2.6 mile bridge and L-29 canal max stage at 9.7 ft (FUTURE WORK BY OTHERS)
Remove entire 5.5 miles L-67 Extension levee, backfill L-67 Extension canal
Remove ~6 mile Old Tamiami Trail road (from L-67 Ext to Tram Rd)
SEEPAGE MANAGEMENT
Increase S-356 pump station to ~1,000 cfs
Partial depth seepage barrier south of Tamiami Trail (along L-31N)
G-211 operational refinements; use coastal canals to convey seepage
Note: System wide operational changes and adaptive management considerations will be include in project
FEB
STA
Pump
Old Tamiami Trail Removal
Backfill
Levee Removal
Gated Structure
Seepage Barrier
Divide
Levee
NOT TO SCALE
North New River Canal
Miami Canal
WCA 1
WCA 2
WCA 3A
WCA 3B
L-28 Triangle
L-67A
L-67C
L-33
L-30
S-335
L-29
S-356
S-333
S-334
C-2
G-211
L-31N
Tamiami Trail
L-67 Ext
EVERGLADES NATIONAL PARK
1

Y-1 Determine new S-356 pump station capacity based on functional risk; do not design for both full contingency and unit redundancy – The proposed S-56 pump station is currently slated for 1,000 cfs capacity. This is based on current modeling of anticipated increased seepage flowrate of 750 cfs after completion of the adjacent canal seepage cut-off wall with project induced increased water levels in the Everglades Park (note that further modeling will likely change this value). The added 250 cfs is, for lack of a better term, contingency since seepage flow prediction has a relative degree of uncertainty.

Standard pump station design calls a unit redundancy such that design capacity is met with the largest unit out of operation. While not the same thing, but with some overlapping implicit risk, the above mentioned 'contingency' to some extent duplicates unit redundancy. While this station is indirectly a flood control feature as it will prevent downstream drainage canals from having elevated water levels, some reduction in total station size appears to be warranted given the above mention overlapping components of added reserve capacity.

The opportunity may exist to realize actual seepage flowrate via further use of the existing 500 cfs temporary pump station at this location. This would allow completion of the seepage wall and water delivery features such that seepage conveyance requirements can be measured (see **Recommendation Y-3** below).

Preliminary disposition: *Address recommendation in both current plan development and project design phase.*

Y-2 For S-356, eliminate redundant pump but incorporate possible future expansion –
If some risk is taken in the firm capacity design of S-356 as indicated above, then consideration should be given to the possible need to increase the pump station capacity. Such design features may include but not be limited to:

- Accommodating larger/faster motors such that individual pump unit capacities could be mechanically increased.
- Accommodating station expansion to one side (minimizing impact to ancillary features)
- Acquiring extra land to for possible expansion

Such design considerations would minimize the cost consequences if the new station is initially built with limited capacity.

Preliminary disposition: *Address recommendation in project design phase.*

Y-3 Defer construction of new S-356 pump station until adjacent seepage wall is constructed and system tested; further utilize existing S-356 temporary pump station – The S-356 site has an existing 500 cfs pump station that was installed for temporary service. It appears to be functional and potentially capable of limited continued service with some needed re-habilitation. Should further service form this station be applied, it will be possible to defer installation of the **$45 million** new S-356

station currently planned at 1,000 cfs capacity. This option would call for the construction of the proposed adjacent canal seepage barrier cut-off wall and project purpose water level increase in the Everglades Park. The existing 500 cfs pump station will likely be capable of accommodating most if not all seepage flow and actual pumping needs can be measured (see above recommendation regarding station design flowrate determination – 750 cfs / 1,000 cfs). Note that initial hydration of the Park can be initially controlled until such that pump station capacity is not exceeded.

In addition to the ability to refine design capacity for the new, permanent pump station (possibility of reduced station size and significant cost), two other benefits can be realized:

- First, given no delay in project benefits, the deferral of this $45 million expenditure negates interest lost during construction for the time period of temporary pump utilization (5 – 10-years @ 3.75% or about $8.5 to $17 million).

- ***Second, and more important, is the fact that deferring this expenditure allows placement of other features that will likely produce additional net project benefits in earlier years.***

Implementation of extending service of the temporary station appears to be difficult. Difficulties include, but may not be limited to:

- Expiration of current federal authorization and funding for operation and maintenance

- Ownership and responsibility

- Current litigation regarding discharge water quality (issue for permanent station as well but this option would require faster resolution)

- Physical rehabilitation of the station to facilitate continued use

Given the potential cost savings and advancement of some project benefits that this option would produce, addressing the above issues appears to warrant consideration.

Preliminary disposition: *Address recommendation in current plan development, project design phase and in development of the Adaptive Management Plan.*

Y-4 Phase implementation of seepage control features; use AM to determine path - Adaptive management is a structured management approach to use when outcomes (positive and/or negative) from management actions are uncertain. Management actions are tested by linking science to performance questions and informing decision-makers and stakeholders on the best action to achieve objectives and avoid constraints. **Seepage management is both high risk to achieving both restoration goals and water supply constraints, and the need for high certainty (low uncertainty) is key to moving Everglades restoration goals forward.** Agencies are uncertain about the best design to control seepage, as well as amount of seepage management cutoff walls to implement and how to best operate the system to avoid water supply issues during the dry season. Using information gained from the L-31 pilot study, the rock miner's seepage management project, and regional simulation modeling, the seepage management project will be phased to implement a minimum level of construction to test seepage management performance as flows are increased into Water Conservation Area 3B and Northeast Shark River Slough, and monitor any potential reductions to water supply on the eastern side of the levee (see map below). Performance based monitoring of surface/groundwater stages and flows on either side of the seepage management feature will be used to reduce uncertainty about the level of seepage implementation, recommendations will be made for the next phase of seepage management construction or operations of the S-356 and South Dade detention areas. Same approach can be used during implementation of L-67 structures and Blue shanty levee with L-29 levee removal. Value is increased certainty about the right design and amount/approach for seepage management to meet multiple objectives and stakeholder interests with a potential for construction cost savings, if monitoring reveals less is needed to meet those goals.

Preliminary disposition: *Address recommendation in development of the Adaptive Management Plan*

Colored arrows represent different lengths of seepage management features being constructed, up to the TSP's 5 mile. Circle represents S-356 seepage return pump.



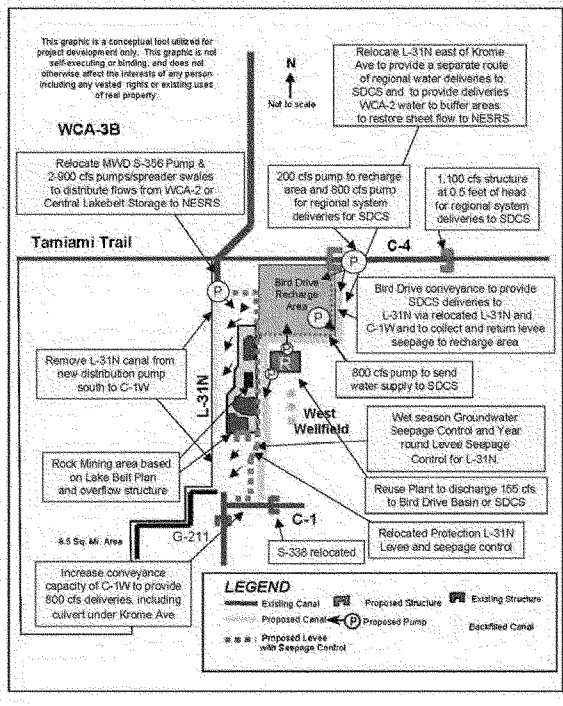
Y-5 Change the location L31N Seepage Management Pilot Project (SMPP) to the location which was the original location contained in the authorized decision document; use CEPP to increase the 902 Limit for L31N SMPP and install the L31N SMPP to remove project uncertainties - L-31N Seepage Management – Pilot Project is an authorized component in the Central and Southern Florida Project, Comprehensive Review Study, Final Integrated Feasibility Report and Programmatic Environmental Impact Statement.

This recommendation proposes that:

- The location of the pilot be returned to the original location as depicted on the below page excerpt from the study;
- CEPP be used to update the 902 limit for the pilot test and
- Implement the pilot test early in the project implementation phase to remove and define uncertainties.

As described in the restudy, the purpose of this feature is to reduce seepage flow across L-31N adjacent to Everglades National Park via a levee cutoff wall. Additionally, the feature was designed to reduce groundwater flows during the wet season by capturing groundwater flows with a series of groundwater wells adjacent to L-31N, then back-pumping those flows to Everglades National Park. The pilot project is necessary to determine the appropriate technology to control seepage from Everglades National Park. The pilot project will also provide necessary information to determine the appropriate amount of wet season groundwater flow to return that will minimize potential impacts to Miami-Dade County's West Wellfield and freshwater flows to Biscayne Bay.

Preliminary disposition: *– Not adopted. The PDT response changed from Address recommendation in current plan development in February 2013 Report to Not adopted in January 2014 to reflect subsequent report coordination. The L31 N SMPP was the pilot component of the original CERP L31N Improvements for Seepage Management. The CEPP PDT has decided to use the monitoring and results of a nearby constructed non-federal seepage project that was installed as described in main PIR sections 2.5.12 and 6.10.2.1 to address project uncertainties for CEPP.*



Alternative D13R
Bird Drive Basin and L-31N Seepage Management
Component Map 7

Y-6 Investigate alternative seepage barrier cutoff wall means (such as vinyl sheet pile) -
Completed work on L-31N (L30) Seepage Barrier Pilot Project should be evaluated for possible cost-effective alternatives to the currently planned seepage cut-off wall in this reach.

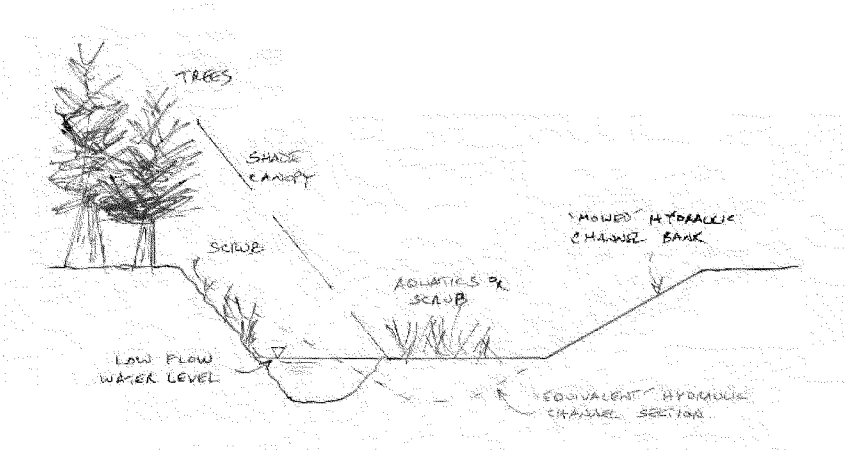
Preliminary disposition: *Address recommendation in project design phase.*

GENERAL CONSIDERATIONS

GC-1 Create 'environmental friendly' conveyance channels where opportunity exits –

Current plan alternative strategies identify trapezoidal channels for proposed conveyance modifications. It is suggested that where opportunity presents itself channels be designed and constructed in an 'environmentally friendly' manner as illustrated below. In such a design, the channel is oversized relative to a hydraulically equivalent mowed/maintained trapezoidal channel and is 'rough-cut' and allowed to vegetate. It may be practical for access and to ensure some form of snag removal maintenance, to mow only one side of the channel. As seen below, the 'sun bank' (summer sun – generally west or northwest side) is forested (planted if need be) to shade the permanent water bottom. This will lower summertime water temperature and improve oxygen content. The low flow immediate banks are allowed to overgrow with vegetation to create a complete stream habitat.

Preliminary disposition: *Address recommendation in both current plan development and project design phase.*

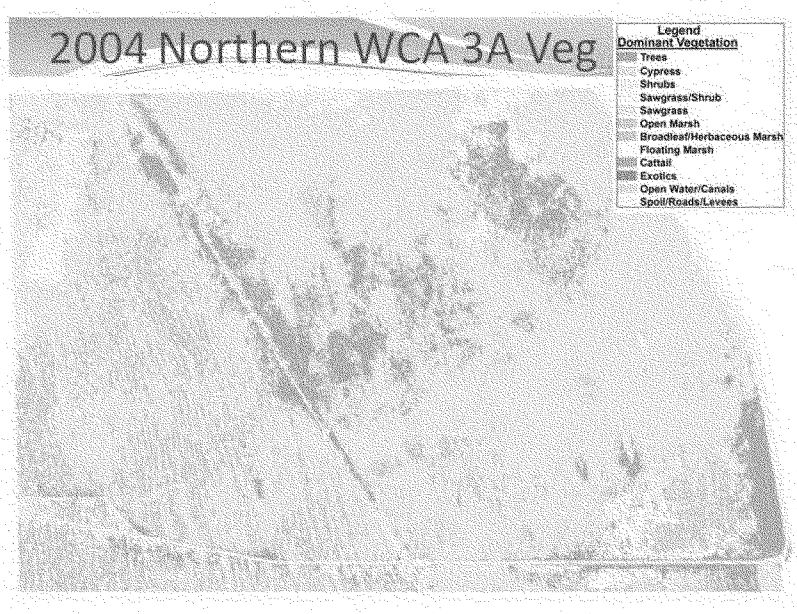


PROPOSED 'ENVIROMENTAL FRIENDLY' FLOW CONVEYANCE CHANNEL
TYPICAL SECTION – NO SCALE

GC-2 Coordinate vegetation management to achieve multiple objectives - Much of the vegetation south of L-4 levee are upland species due to the drying out of Northern Water Conservation Area 3A (WCA 3A). These woody species are likely to persist and may require specific vegetation management activities to facilitate transition of the landscape to more wetland type vegetation (e.g., sawgrass). Cattail and Willow expansion may be an issue and needs to be properly managed to avoided further degradation and complication in achieving a ridge and slough landscape south of the L4 spreader canal, as well as getting water out of the canal for flood control needs due to flow resistant vegetation. In addition, vegetation management will likely be needed during construction of the L4 spreader canal to remove nuisance and exotic species, as well as potentially create vegetation pockets to help facilitate flow of water to aid recreation of sloughs upon entry into marsh. There are likely opportunities to strategically coordinate multiple vegetation management objectives (e.g., construction, nuisance, and restoration enhancement) to most cost effectively implement vegetation management activities.

Timing and nature of each vegetation management activity would need to be discussed and coordinated amongst engineering design, construction, exotics removal, and ecological/adaptive management subteam to determine what vegetation management efforts are needed when and how they can be best be implemented. The Invasive and Native Nuisance Species Management Plan (INNSMP) would address responsibilities and timing. The INNSMP is a living document. It would be updated/revised as surveys are done and treatment/removals conducted, and include proposed schedules of surveys. During O&M, the structures would be monitored by the responsible operations entity. Areas of claimed benefits outside of the structures would be monitored by the project (PLMP, RECOVER, or other). Close coordination among agencies would be required for such a program to succeed. Areas needed to be treated most times can be covered by existing services contracts that the USACE/SFWMD already has in place.

Preliminary disposition: *Address recommendation in development of Adaptive Management Plan.*


2004 Northern WCA 3A Veg
Legend
Dominant Vegetation
Trees
Cypress
Shrubs
Sawgrass/Shrub
Sawgrass
Open Marsh
Broadleaf/Herbaceous Marsh
Floating Marsh
Cattail
Exotics
Open Water/Canals
Spoil/Roads/Levees

GC-3 Optimize pump station design – A number of new pump stations are proposed for this project. Design precedent has been to adhere to jointly developed DCM-5, Major Pumping Station Guidelines. The performance history of this type of pump station has been excellent but high construction cost is a project concern.

'Lessons learned' from among recent other Corps district projects could offer possibilities to improve current design cost-effectiveness.

Features that directly or indirectly affect pump station performance and cost include, but are not limited to the following:

- Mechanical unit redundancy
- Screen cleaning systems
- Discharge configuration (siphons or free discharge)
- Power supply
- Service crane(s) and structure size and configuration

Previous VE reviews of CERP/SFWMD pump stations have validated excellent design performance and cost-effectiveness of these items with primary change recommendations regarding the last item. The below discussion of possible design changes for the service crane and structure size and configurations should be considered.

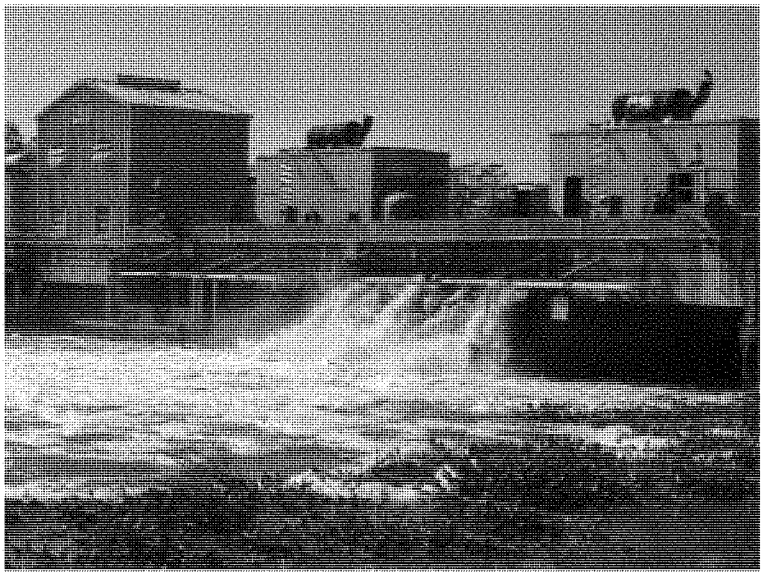
For most large pump stations, common practice is to include a lifting crane of capacity and geometry to remove the largest piece of equipment from the station. The crane is usually housed in the pump station structure and usually results in significant station height and associated structural cost. It is arguable as to whether or not such a crane is required on-site as it is always a relatively rare and major scheduled event to pull a large unit. If a large crane can be transported to the site, then one could argue that an on-site crane of that large capacity is not needed (note that smaller units are still needed for routine maintenance).

If a large crane cannot be practically transported to the pump station for a major maintenance event and an on-site unit is necessary it does not have to be housed within the pump station building. A rail/gantry system can be used and pump housing roof and/or cover pod can be removed for access. Protection and/or aesthetics of the crane may warrant cover housing in the non-used position. This housing does not have to support the lifting load of the crane, however. The East Ascension Parish, Louisiana Pump Station (5 by 1,000 cfs units) station does not have an on-site large crane (see photo below). It has steel cover pods over each pump/engine unit and a weather protection roof across the station (roof added later and not included in photo). Roof panels and pods can be lifted by a portable crane when necessary. This design saved significant cost and has performed well since its 1993 installation. Aesthetics of roof and pod covers can be improved if required.
Building plan area appears to be excessive in these stations. Overall centerline width between pump unit bays is far more than necessary. Validation to reduce this dimension is based on the following rationale. First, it appears that both a maintenance lay-out space is provided as an

extra end-bay service area in the station as well as alongside each pump/engine unit. Normal practice of others is for the end-bay area only. As second factor is the slanting of engines at 45 degrees to reportedly allow visual inspection of the flanks of the engines from the central control room. Also not a common practice and this function could be accomplished via camera system.

While industrial building square footage is normally not excessively expensive, this is ***not*** the case for a pump station structure. ***Increased pump bay width is translated all the way down to the base of the station to the roof. In combination with the extra height of the internal crane this can easily be over 50-feet of multi-level structure elevation.***

Preliminary disposition: *Address recommendation in project design phase.*



1,000 CFS PUMP UNITS – EAST ACENSION PARISH, LOUISIANA

APPENDIX A: VALUE ENGINEERING JOB PLAN AND WORKSHOP AGENDA

This workshop included the six-phase Value Engineering Job Plan as sanctioned by USACE and SAVE International. This process, as listed below, was executed as part of daily activities as described in the following Workshop Agenda:

USACE VALUE ENGINEERING JOB PLAN

Information Phase. At the beginning of the study, the project team presents current planning and design status of the project. This includes a general overview and various project requirements. Project details are presented as appropriate. Discussion with the VE Team enhances the Team's knowledge and understanding of the project. A field trip to the project site may also be included as part of information gathering.

Function Analysis Phase. Key to the VE process is the Function Analysis Process. Analyzing the functional requirements of a project is essential to assuring an owner that the project has been designed to meet the stated criteria and its need and purpose. The analysis of these functions is a primary element in a value study, and is used to develop alternatives. This procedure is beneficial to the team, as it forces the participants to think in terms of functions and their relative value in meeting the project's need and purpose. This facilitates a deeper understanding of the project.

Creativity Phase. The Creativity Phase involves identifying and listing creative ideas. During this phase, the team participates in a brainstorming session to identify as many means as possible to provide the necessary project functions. Judgment of the ideas is not permitted in order to generate a broad range of ideas.

Evaluation Phase. The purpose of the Evaluation Phase was to systematically assess the potential impacts of ideas generated during the Creativity Phase relative to their potential for value improvement. Each idea is evaluated in terms of its potential impact to cost and overall project performance. Once each idea is fully evaluated, it is given a rating to identify whether it would be carried forward and developed as an alternative, presented as a design suggestion, dismissed from further consideration or is already being done.

Development Phase. During the Development Phase, ideas passing evaluation are expanded and developed into value alternatives. The development process considers such things as the impact to performance, cost, constructability, and schedule of the alternative concepts relative to the baseline concept. This analysis is prepared as appropriate for each alternative, and the information may include an initial cost and life-cycle cost comparisons. Each alternative describes the baseline concept and proposed changes and includes a technical discussion. Sketches and calculations may also included for each alternative as appropriate.

Presentation Phase. The VE Workshop concludes with a preliminary presentation of the value team's assessment of the project and value alternatives. The presentation provides an opportunity for the owner, project team, and stakeholders to preview the alternatives and develop an understanding of the rationale behind them.

Central Everglades Planning Project
Cost Schedule Risk Analysis/
Value Engineering Workshop
Agenda

Monday February 4, 2013 9:30 AM – 4:30 PM

Meeting Location:
SAJ Participants will meet in VTC Conference Room 4108, 4E

Call-in number:
USA Toll-Free: (888)273-3658
Access Code: 2717496
Security Code: 4321

Web Meeting Address:
https://www.webmeeting.att.com
Meeting Number: 8882733658
Access Code: 2717496
* The first time you use the Web Meeting Service, you will need to download the client software. Web Meeting HELP & Software Downloads can be found at: https://www.webmeeting.att.com*

09:30 – 09:40 am	**Introductions and Opening Remarks**	Kim Vitek, USACE
09:40 – 11:00 am	**Overview**	USACE
	• Value Engineering	Jimmy Matthews, USACE
	• Cost Schedule Risk Analysis	Amro Habib, USACE
	• CEPP Tentatively Selected Plan	Murika Davis, USACE
	• Expectations of Workshop	Kim Vitek, USACE
11:00 – 11:10 am	*Break*	
11:10 – 12:30 pm	**North of the Redline - *Storage and Treatment***	
	• Policy Issues	
	• Cost Risk & Other considerations	
	• Evaluate/Identify Value Engineering Ideas	
	• Construction Sequencing/Implementation	
12:30 – 01:30 pm	*Lunch*	
01:30 – 02:45 pm	**North of the Redline Cont'd**	
02:30 – 02:45 pm	*Break*	
02:45 – 04:25 pm	**South of the Redline – *Distribution/Conveyance (L-6 Diversions, L-5 Improvements and Spreader Canal)***	
	• Policy Issues	
	• Cost Risk & Other considerations	
	• Evaluate/Identify Value Engineering Ideas	
	• Construction Sequencing/Implementation	
04:25 – 04:30 pm	**Next Steps - Closing Comments and Recap Assignments**	

Central Everglades Planning Project
Cost Schedule Risk Analysis/
Value Engineering Workshop
Day 2 Agenda

Tuesday February 5, 2013 9:00 AM – 4:30 PM

09:00 – 09:05 am	**Opening Remarks**	Kim Vitek, USACE
09:05 – 10:00 am	**South of the Redline Cont'd – *Distribution/Conveyance*** ***(Miami Canal Backfilling and L-28)*** • Policy Issues • Cost Risk & Other considerations • Evaluate/Identify Value Engineering Ideas • Construction Sequencing/Implementation	
10:00 – 10:15 am	*Break*	
10:15 – 12:00 pm	**Greenline – *Distribution/Conveyance*** ***(Structures in L-67A, Gaps in L-67C, S-333 increase)*** • Policy Issues • Cost Risk & Other considerations • Evaluate/Identify Value Engineering Ideas • Construction Sequencing/Implementation	
12:00 – 01:00 pm	*Lunch*	
01:00 – 03:00 pm	**Greenline Cont'd**	
03:00 – 03:15 pm	*Break*	
03:15 – 04:25 pm	**Blueline – *Distribution/Conveyance*** ***(Structures in L-29 levee, Degrade of L-67C ext, Improvements in 3B)*** • Policy Issues • Cost Risk & Other considerations • Evaluate/Identify Value Engineering Ideas	
04:25 – 04:30 pm	**Next Steps** **Closing Comments and Recap Assignments**	

Central Everglades Planning Project
Cost Schedule Risk Analysis/
Value Engineering Workshop
Day 3 Agenda

Wednesday February 6, 2013 9:00 AM – 4:30 PM

09:00 – 09:05 am	**Opening Remarks**	Kim Vitek, USACE
09:05 – 10:00 am	**Blueline Cont'd – *Distribution/Conveyance***	
	• Policy Issues	
	• Cost Risk & Other considerations	
	• Evaluate/Identify Value Engineering Ideas	
	• Construction Sequencing/Implementation	
10:00 – 10:15 am	*Break*	
10:15 – 12:00 pm	**Yellow line – *Seepage Management***	
	(S-356 increase, partial depth seepage barrier, G-211 mods)	
	• Policy Issues	
	• Cost Risk & Other considerations	
	• Evaluate/Identify Value Engineering Ideas	
	• Construction Sequencing/Implementation	
12:00 – 01:00 pm	*Lunch*	
01:00 – 03:00 pm	**Yellowline Cont'd**	
03:00 – 03:15 pm	*Break*	
03:15 – 04:25 pm	**Value Engineering/Cost Assignments**	
04:25 – 04:30 pm	**Next Steps**	
	Closing Comments and Recap Assignments	

Central Everglades Planning Project
Cost Schedule Risk Analysis/
Value Engineering Workshop
Day 4 Agenda

Thursday February 7, 2013 9:00 AM – 4:30 PM

09:00 – 09:05 am	**Opening Remarks**	Kim Vitek, USACE
09:05 – 10:30 pm	**System Wide Implementation** • CERP Overview • CEPP Schedule	Kim Vitek, Matt Morrison
10:30 – 10:40 pm	*Break*	
10:40 – 11:55 pm	**Cont'd** • Implementation, Sequencing, Operations	
12:00 – 01:00 pm	*Lunch*	
01:00 – 03:00 pm	**Cont'd** • Cost Risks	
03:00 – 03:15 pm	*Break*	
03:15 – 04:25 pm	**Continued Discussions**	
04:25 – 04:30 pm	**Next Steps Closing Comments and Recap Assignments**	

Central Everglades Planning Project
Cost Schedule Risk Analysis/
Value Engineering Workshop
Day 5 Agenda

Friday February 8, 2013 9:00 AM – 12:00 PM

09:00 – 09:05 am	**Opening Remarks**	Kim Vitek, USACE
09:05 – 10:30 pm	**Review of Cost Risk Contingencies**	
10:30 – 10:40 pm	*Break*	
10:40 – 11:55 pm	**Review of Value Engineering Proposals**	
11:55 – 12:00 pm	**Next Steps and Closing Comments**	

APPENDIX B: WORKSHOP PARTICIPANT ROSTER

Kim Vitek (Project Manager) Kimberly.A.Vitek@usace.army.mil	USACE-SAJ-PM-EO (904) 232-2583
Murika Davis (Engineer Technical Lead) Murika.Davis@usace.army.mil	USACE-SAJ-PD-C (904) 232-1604
Jimmy Matthews (VE Co-Facilitator) Jimmy.D.Matthews@usace.army.mil	USACE-SAJ-EN-Q (904) 232-2087
Frank Vicidomina (VE Co-Facilitator) Frank.Vicidomina@us.army.mil	USACE-MVN-PM (504) 862-1251
Andrew Loschiavo Andrew.J.LoEchiavo@usace.army.mil	USACE-PD-E (904) 232-2077
Bill Hamel William.T.Hamel@usace.army.mil	USACE-CESAJ-DC-C (904) 232-1269
Kelly Keefe Kelly.J.Keefe@usace.army.mil	USACE-CESAJ-PD-C (904) 232-1654
Dan Crawford Daniel.E.Crawford@usace.army.mil	USACE-CESAJ-EN-WM (904) 232-1079
Kevin Wittmann Kevin.M.Wittmann@usace.army.mil	USACE-CESAJ-PD-C (904) 233-3658
Amanda Lavingne Amanda.B.Lavigne@usace.army.mil	USACE-EN-WH (904) 232-2708
Jack Fross Jack.T.Fross@usace.army.mil	USACE-EN-DS (904) 232-2260
Manuel DeJesus Manuel.Dejesus@usace.army.mil	USACE-EN-DM (904) 232-2446
Donna George Donna.S.George@usace.army.mil	USACE-PM-EE (904) 232-1766
Brad Foster Bradley.A.Foster@usace.army.mil	USACE-PD-C (904) 232-2110
Kim Brooks-Hall Kimberly.Brooks-Hall@usace.army.mil	USACE-EN-T (904) 232-1902

Tracy Leeser Tracy.T.Leeser@usace.army.mil		USACE-EN-TC (904) 232-1043
Gwen Nelson Gwendolyn.J.Nelson@usace.army.mil		USACE-EN-DL (904) 232-1629
Cindy Thomas Cynthia.G.Thomas@usace.army.mil		USACE-PD-C (904) 232-1140
Jonathan Jenkins Jonathan.L.Jenkins@usace.army.mil		USACE-OD-MN (904) 232-3913
Nick Emigh Nick.A.Emigh@usace.army.mil		USACE-NWW-EC-X (509) 527-7587
Mike Jacobs Michael.P.Jacobs@usace.army.mil		USACE-NWW-EC-X (509) 527-7516
Joseph Tavares Joseph.Tavares@usace.army.mil		USACE-CD-Q (904) 232-3446
Amro Habib Amro.K.Habib@usace.army.mil		USACE-EN-TC (904) 232-1746
Robert Rene Robert.B.Rene@usace.army.mil		USACE-EN-TC (904) 232-1605
Gretchen Ehlinger Gretchen.S.Ehlinger@usace.army.mil		USACE-PD-EC (904) 232-1682
Don Nelson		USACE-RE
Robert Tucker Robert.C.Tucker@usace.army.mil		USACE-EN-W (904) 232- 1197
Scott Leech Scott.Leech@usace.army.mil		USACE-EN-G (904) 232-1183
Kim Taplin Kimberly.A.Taplin@usace.army.mil		USACE-PD-C (561) 801-0285
Lisa Gued Lisa.S.Gued@usace.army.mil		USACE-EN-G (904) 232-1793
Katrina Denson		USACE-CT
Scott Thorot	(called in)	SFWMD
Al Shirkey	(called in)	SFWMD
Paul Linton	(called in)	SFWMD

Armando Ramirez	(called in)	SFWMD
Matt Morrison	(called in)	SFWMD
Agnes McClean	(called in)	ENP
Kevin Koton	(called in)	ENP
Bob Johnson	(called in)	ENP
Dennis Duke	(called in)	DOI
Inger Hansen	(called in)	FDEP
Miles Myers	(called in)	FWS
Liberta Scotto	(called in)	FWS
Lori Miller	(called in)	FWS
Bob Progulske	(called in)	FWS

APPENDIX C: COST AND SCHEDULE RISK ANALYSIS MODERATE AND HIGH RISK ITEMS

NORTH OF REDLINE - COST AND SCHEDULE MODERATE AND HIGH RISK ITEMS			
	PROJECT & PROGRAM MGMT		
PPM-1	New Planning Process	Schedule risk project reaches mile stones and HQ revises or asks for changes to the process.	The conern is during the 3x3x3 planning phase HQ revises the anticipated cut come of the planning study and delays in the schedule will be encounterd. This assumption is due in part to the fact that this is a pilot study.
PPM-2	Cordination with DEP/Water Management	It is assumed that A1 will be completed prio to construction of A2.	The concern is that during construction there will be a need for on going comunication of the work and how it may affect the operation of existing structures.
	TECHNICAL RISKS		
TL-1	Maintain Flood Control	There is a pump station DS of the proposed location of the new spillway that can move 3700 CFS and the design of the new project feature is for 1500 CFS.	The spillway will need to match the size of the pump stattion and ensure that the flood control will still be maintained.
TL-2	Internal Water Convayance of the FEB	Existing ag canals in the proposed location of the FEB there are roads bordering each side of the canal	There is the possibility of piping through the proposed location of the premimiter levee. there is also the concern for not allowing sheet flow across the FEB with out Backfilling the AG canals.
TL-3	Spreader Canal	Assumed that the spreader canal is only on the norther end of the FEB.	There is concern that the canal may need to extend along the entire northern end to hydrate the east end of the FEB. this will in effect lengthen the canal
TL-4	Porisity of Lime Rock	Thre is the concert that the Lime rock is not capable of containing the Water	It is unknown what the geotechnical data is. There is concern that there could be a need to a liner or some way to ensure that there is minimial to no seepage. A1 will be constructed prior to A2 Management will need to watch this item.

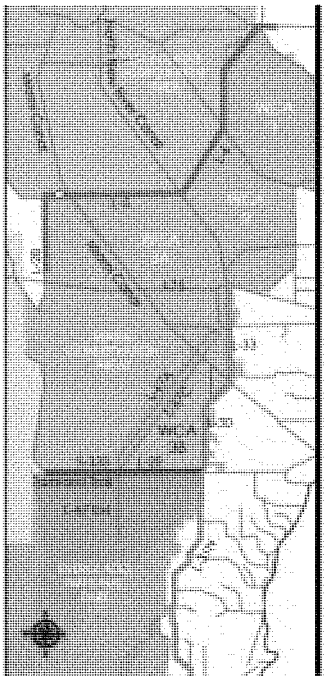
SOUTH OF REDLINE - COST AND SCHEDULE MODERATE AND HIGH RISK ITEMS			
	PROJECT & PROGRAM MGMT		
PPM-1	New Planning Process	As the project reaches mile stones and HQ revises or asks for changes to the process.	The concern is during the 3x3x3 planning phase HQ revises the anticipated cut come of the planning study and delays in the schedule will be encountered. This assumption is due in part to the fact that this is a pilot study.
	TECHNICAL RISKS		
TL-1	Maintain S-8 Flood Control	S-8 needs to provide flood control the entire time until downstream work is complete.	The work that effects the operation of S-8 must be complete prior to any modifications are completed at S-8. This could require material to be stock piled and additional cost for multiple handling of the material. There might also be a need for a temp canal to convey the water during construction.
TL-2	S-8 New Pump Station	The current plan is for a new pump station at the location of S-8	There is a possibility of an opportunity that there could be an upgrade of the existing structure to achieve the same conveyance as a new pump station. The new pump station appears to be 1000 CFS short costs should be checked.
	CONSTRUCTION RISKS		
CON-2	L-28 Material	Concern of usage of material	There is a concern that the Tribes feel that the material is their property. There is a risk that new fill may be needed in the backfill of the canal in those locations and stock piling of the levee may be needed.
CON-3	Backfill of Miami Canal	There is concern for sequence of construction when backfilling the Miami Canal.	The concern is that the project will extend over multiple years and there will be a need for culverts, plugs, extra work that is not currently in the estimate. This will need to be looked at and studied further.
	ESTIMATE AND SCHEDULE RISKS		
EST-1	200 CFS Structure	New 200 CFS Structure located at the Intersection of the L-28, L-3, L-4 intersection.	The cost for the new structure is needed to ensure that the cost is not missed. Impact will be changed after the cost for the new structure has been added.
	PROGRAMATIC RISKS		
PR-1	Funding Restraints	There is concern that the project will be limited at $50 M per year for construction.	The concern is that funding will be lacking and multiple contracts will adversely affect the goal of the project. There is concern that the project will not meet the desired goals in the time frame anticipated.

GREENLINE AND BLUELINE - COST AND SCHEDULE MODERATE AND HIGH RISK ITEMS			
	PROJECT & PROGRAM MGMT		
PPM-1	New Planning Process	As the project reaches mile stones and HQ revises or asks for changes to the process.	The concern is during the 3x3x3 planning phase HQ revises the anticipated out come of the planning study and delays in the schedule will be encountered. This assumption is due in part to the fact that this is a pilot study.
	TECHNICAL RISKS		
TL-2	Tamiami Trail Bridges	This work needs to be completed prior to CEPP acting as designed.	There is always a risk that all work will not be complete and this could add addational cost to the estimate and impacts to the structure.
TL-3	Broward County Water Preserve Area	This is work that will improve the water quality of the water provided to the Everglades National Park	This will need to be adressed in design and no effect cultural resources should be allowed.
TL-4	Old Tamiami Trail Removal	The old Trail is eligible or potentially eligible for national registry as a historical site.	The entire area is considered as eligible for the national historic registry any changes will need to be documented prior to construction. This will likely need to happen.
	LANDS AND DAMAGES RISKS		
LD-2	Policy Issues	If the current project is unable to obtain land to the 9.7 ft elevation it will need to be aquired under this project	Currently other projects have aquired land to the 8.5 elevation and it if they are not aquired to the 9.7 ft elevation. This is mainly at the location of fish camps and Airboat trails along the Tamiami Trail.
	REGULATORY AND ENVIRONMENTAL RISKS		
RE-1	Enviromental Impact	NEPA Impacts of changing the affected area unsure if the areas and volumes will ensure a nat postive effect.	Foot print of impact and what is removed from the system will be equal. That initally inculded removing the L67C and backfilling the canal. It is unclear if the material will be available to be used in construction of the new blue shanty levee.
	CONSTRUCTION RISKS		
CON-1	Sequencing of Construction	On site material may not be available to construct new levee	With out understanding the sequancing of the construction there may not be access to all on site material and new fill may be needed. the concern is also increased with the new design standards of levees.
	ESTIMATE AND SCHEDULE RISKS		
EST-1	Old Tamiami Trail	There is no cost in the estimate for removal of the old tamiami trail	This will need to be added to the estimate and schedule.
	PROGRAMATIC RISKS		
PR-1	Funding Restraints	There is concern that the project will be limited at $50 M per year for construction.	The concern is that funding will be lacking and multiple contracts will adversely affect the goal of the project. There is concern that the project will not meet the desired goals in the time frame anticipated.

YELLOWLINE - COST AND SCHEDULE MODERATE AND HIGH RISK ITEMS

	PROJECT & PROGRAM MGMT		
PPM-1	New Planning Process	As the project reaches mile stones and HQ revises or asks for changes to the process.	The concern is during the 3x3x3 planning phase HQ revises the anticipated out come of the planning study and delays in the schedule will be encountered. This assumption is due in part to the fact that this is a pilot study.
	TECHNICAL RISKS		
TL-2	Seepage Cutoff Walls Design and performance	There is limited to minimal long term data in the area that will show the success	There have been temp structures built but the long term performance is unknown at this time.
TL-3	Model Validation and Review- Accuracy and predictibility	There is always uncerntity of models at early stage designs	It is unknown if the depth of the seepage wall is the correct depth at 15 to 20% unsure of the accuracy of the depth.
TL-5	Design of Cutoff wall	Design thoght to be conservative overall however concequences are high if it does not work.	There is concern that there might be a need for windows in the cutoff wall along with injectionpumps and extensive monitoring.
	REGULATORY AND ENVIRONMENTAL RISKS		
RE-3	Water Quality	There is concern that there will be water quality issues that may need to be justified and validated to get necessary approval.	this concern is in part due to NEPA concerns about the quality of water that will be pumped out of the area. If the water quality is insufficent there could be major issues. Groundwater to Biscayne Bay may be an issue. Does water in canal equal water in goundwater table. Concerns with completion of other projects ensuring that system operates.
	ESTIMATE AND SCHEDULE RISKS		
EST-1	Unit Price of Cutoff Wall	The current assumption is assumed that the unit price includes all sepage monitoring	It is unknown at this time if the monitoring wells are correct.
EST-2	May Need Pilot Project Cutoff Wall	There is reason to belive that a piolt project needs to be installed	This price needs to be added to the estimate.
	PROGRAMMATIC RISKS		
PR-1	Funding Restraints	There is concern that the project will be limited at $50 M per year for construction.	The concern is that funding will be lacking and multiple contracts will adversely affect the goal of the project. There is concern that the project will not meet the desired goals in the time frame anticipated.
PR-2	Flooding of West Miami	There is uncertinity that if the seepage barrid is not installed there would be posibility of flooding miami	There is the belife that some operational configurations can alaviate the seepage.
PR-3	Biscane Bay	Fresh water supplied from WCA3 to the Bay flowing through miami.	There is the risk that water may need to be supplied to the Bay this is in the dry season to supply water to the well fields and also the southern bays. There should be water suppled to the area during the dry season.

APPENDIX D: PROJECT FUNCTIONS BY AREA



SCREENING COMPLETED

within considerations and constraints

North of the Redline

- Combination of features to increase water deliveries downstream and improve estuarine benefits

South of the Redline

- Features and their locations to best restore sheetflow in northern Water Conservation Area 3A

Greenline/Blueline

- Features to best restore sheetflow through southern WCA-3A and 3B
- Configuration of conveyance features to best restore flows to Everglades National Park

Yellowline

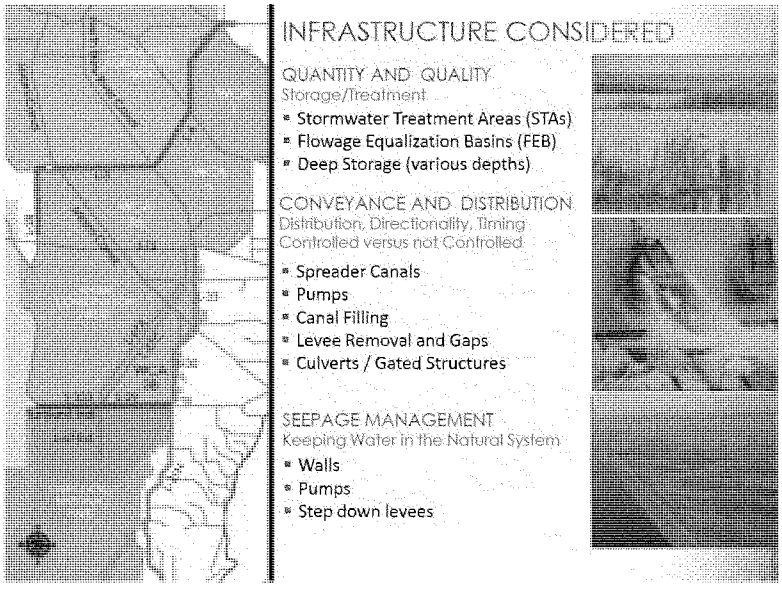
- Features to best compliment rest of project and manage seepage to the eastern urban area without impacting the water supply

Define and Implement PED
Develop project life cycle costs and schedule
Develop project construction sequencing

Adaptively Manage Implementation Sequence

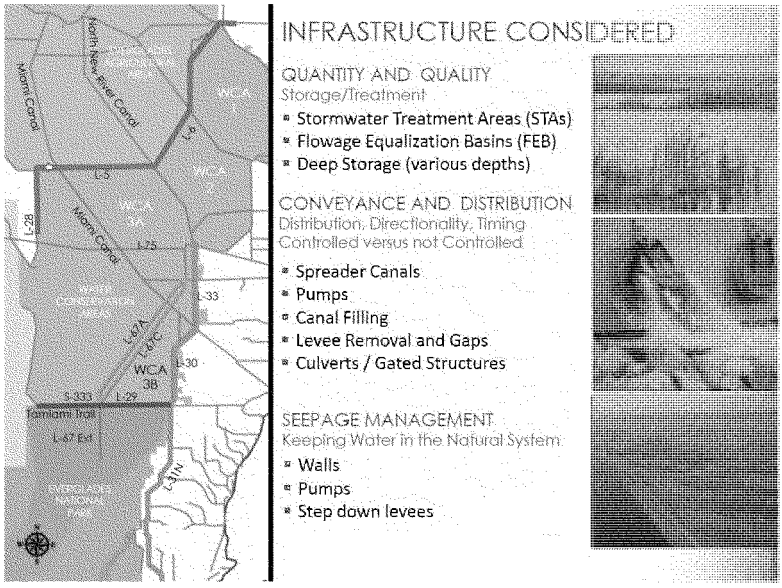
Good AM candidates are those features that can be adjusted (e.g., operations "adjust features", sequentially implemented "construct features, contracts, and installation in sequence with goal of learning", or easily modified "increase dimensions") in order to address questions about improving project performance, schedule and/or minimizing total project costs.

Identify AM Candidates
Increment Features
Increment Dimensions
Increment Contracts
Incrementally Install
Monitor Features
Assess Features



North of Redline
STORAGE AND TREATMENT

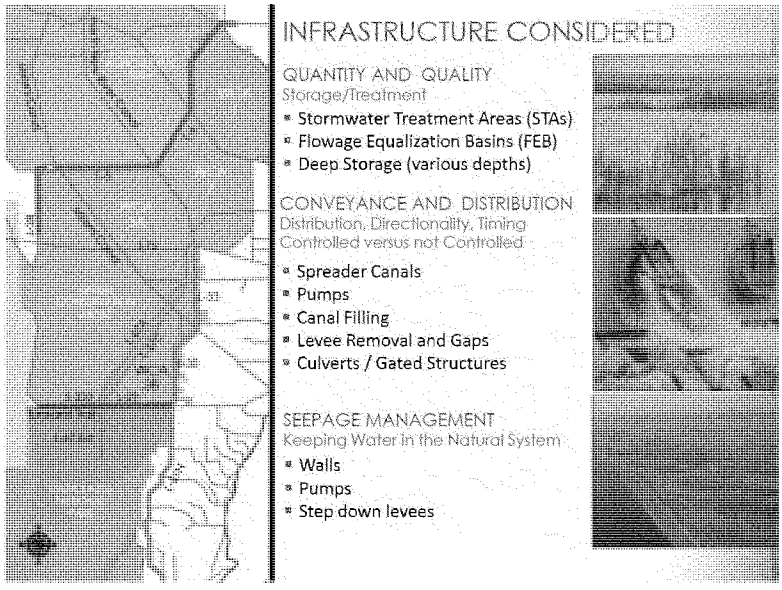
Store Water
Treat Water
Adjust Quantity
Correct Timing
Maintain Flood Protection
Control Cost Growth



South of Redline

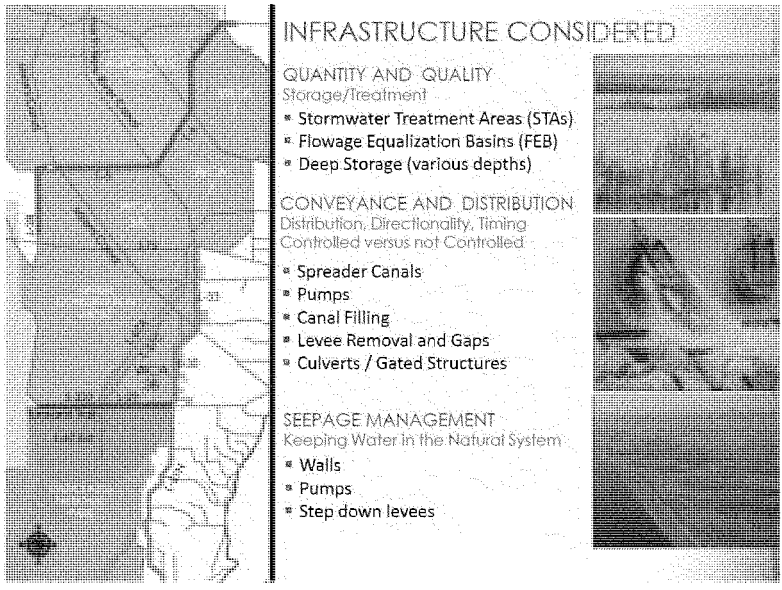
DISTRIBUTION/CONVEYANCE

Distribute Water
Convey Water
Adjust Quantity
Correct Timing
Improve Quality
Remove Flow Impediments
Restore Hydro pattern
Rehydrate Habitat
Reconnect/Connect Flow ways
Maintain Flood Protection



Green / Blueline
DISTRIBUTION/CONVEYANCE

Distribute Water
Convey Water
Adjust Quantity
Correct Timing
Improve Quality
Remove Flow Impediments
Restore Hydro pattern
Rehydrate Habitat
Reconnect/Connect Flow ways
Maintain Flood Protection



Yellowline
SEEPAGE MANAGEMENT

Manage Seepage
Maintain Flood Protection
Capture and/or Return Seepage
Block Seepage Pathways
Reduce or Eliminate Losses
Protect Water Supply

APPENDIX E: SPECULATION AND EVALUATION LISTS

Y/N	SPEC NO.	Recommendations
		Above RED LINE 1-20
y	1	2 cell FEB
y	w/1	internal baffling, breaking fetch length
n	2	integrate A-1 west levee
y	4	overflow weir and DS-9, include in A-1 construction
n	5	cut off wall
n	6	import clay
n	7	hydrologic ridge with seepage return water
bd	8	redirect to one pump sta and return
n	9	install perimeter relief wells and back pump
n	10	ASRs with FEB to maintain head
n	11	deepen seepage canal
bd	12	move water out faster
bd	13	investigate A-1 & previous STA designs and use in project scoping
bd	14	Develop strategic installation plan
bd	15	use cast in place for box culverts
y	16	add gravity structure on SE side of A-2
y	17	increasing the gate structure to maintain flood protection
		Below RED LINE 21-29
y	21	Add HP and/or supplemental open structure pump @ S-8
y	22	Add new pump station
n	23	consider gravity diversion
y	24	power diversion or pressurized diversion
y	25	optimze new pump sta design
y	26	coordinate veg management to meet mulitple objectives
y	27	integrate and optimze s-8 and g-404 system
y	28	build eco friendly canals, benches, etc..
y	29	2a look at operation schedule, raise the operation schedule 0.5 feet at end of wet season, slow return in dry season
y	30 w/29	present USFWS/FWC operation schedule to pdt for inclusion into project
n	31	make s-8 a dam, gap I4 & I5 on s ends, push mounds into gaps and then plug at I-75
y	32	add AM strategy for G-336G (L6 Diversion)
		GREEN and BLUE LINE 30-50
n	31	for levees being used for recreation access use min levee crown of 16' w/ surface stone
bd	33	construction sequencing for AM
n	36	plug in L-67A to block water quality... partial or full plug...
n	37	L-67A environmentally friendly canals, re-design to improve marsh to canal connectivity,
Y	38	plug the Miami Canal S of C-11 extension, use C-11 spoil material for the plug
bd	39	consider shifting blue shanty levee to make shorter and min impacts while achieving proj object
n	40	not extend blue shanty n of I-67c into pocket
y	41	remove only 1.5 miles of L-67 extension & optionally leave old TT intact as well; apply A.M.; evaluate borrow needs
n	42	consider reducing levee cross section
y	43 w 41	remove most or all of L-67 extension and not fill canal, add to 41
y	44 w 41	use spoil material to build blue shanty levee, add to 43; consider material quantity and processing
bd	45	backfill the L-67C canal, within BS flow way
y	46	construct 0.4 mile collector canal expansion from 355B to the W
y	34	plugs/culverts revisit L-29 divide structure to determine functon and flow rate
y	47	construct spreader canals S of TT at culverts
y	35	modify the ag ditches in flow way... fill, plug, gap, etc...
bd	48	optimize location of S333 structure
n	49	consider relocating S355B eastward in line w/ 1 mile eastern bridge
n	50	increase most northern structure into WCA 3B from 500 to 750cfs
y	51	optimize operations at most northern structure into WCA 3B from 500
y	52	retrofit DPM structure; use DPM structure for interim period
n	53	add ~ 75 cfs pump sta to add water into the N of 3B
y	54	use veg management to reduce n values S of eastern flow way structure (S345D & G)

Y/N	SPEC NO.	Recommendations
		YELLOW LINE 51-70
y	51	Phasing implemention - Use AM to determine path
y	52	consider defer pump sta construction until after seepage wall placement and monitoring; utilitze existing pump sta S-356
y	53	investigate alternative cut off wall materials (vinyl sheet pile)
y	54	change location L31N SMPP to this location; use yellow book authority; use original yellow book location
n	55	use electric motors for pump sta w/ d backup
y	56	Determine pump station firm capacity based on functional risk (e.g., 1,000 to 750 cfs)
n	57	assess the backup power for pump sta based on risk
y	58w/54	compare technologies in phased approach to determine final wall section, combine w/54
y	59	use S-356 to reduce project water quality uncertainty & risk
y	60w/59	add to TSP for future purpose
n	61	increase depth of seepage wall and eliminate pump sta; address source change
bd	62w/67	use varible depths for cut off wall; consider in pilot testing
n	63	add STA to treat pump water out flow
y	64	use reclaimed water for project, reference yellow book
y	65 w/59	consider a two location pump sta scheme for S-356
bd	67	add additional seepage wall demonstration testing

y = accept
n = do not accept
bd = already being done

WRITE UP NO	Recommendations	OUT BRIEF DISPOSITION:
1	Use two or more basin cells and/or wave-break structures to reduce wind fetch length	D
2	Integrate A-1 west levee with A-2 east levee	R & P
3	Add overflow weir and DS-9, include in A-1 construction	D
4	Recommendation Deleted, bd	
5	Add gravity structure on SE side of A-2	R & P
7	In-Line Structure for North New River Canal	R & P
6	Increase the gate structure to maintain flood protection flow rate and water elevation	R & P
21	Add HP and/or supplemental open structure pump @ S-8	P
22	Add new pump station	P
23	power diversion or pressurized diversion	D
24	optimize new pump sta design	P
25	coordinate veg management to meet multiple objectives	AM
26	integrate and optimize s-8 and g-404 system	R & P
27	build eco friendly canals, benches, etc..	R & P
28	2a look at operation schedule, raise the operation schedule 0.5 feet at end of wet season, slow return in dry season	
29 w/28	present USFWS/FWC operation schedule to pdt for inclusion into project	
30	add AM strategy for G-336G (L6 Diversion)	R & AM
31	remove only 1.5 miles of L-67 extension & optionally leave old TT intact as well; apply A.M.; evaluate borrow needs	AM
32 w 31	remove most or all of L-67 extension and not fill canal, add to 41	
33 w 31	use spoil material to build blue shanty levee, add to 43; consider material quantity and processing	
34	construct 0.4 mile collector canal expansion from 355B to the W	R & AM
34A	plugs/culverts, revisit L-29 divide structure to determine function and flow rate (1,350 cfs)	R & AM
35	construct spreader canals S of TT at culverts	D
35A	modify the ag ditches in flow way... fill, plug, gap, etc...	R & AM
36	optimize operations at most northern structure into WCA 3B from 500 cfs	P & AM
37	retrofit DPM structure; use DPM structure for interim period	R & AM
38	use veg management to reduce n values S of eastern flow way structure (S345D & G)	AM
39	Recommendation deleted, bd	
51	Phasing implementation - Use AM to determine path	AM
52	consider defer pump sta construction until after seepage wall placement and monitoring; utilize existing pump sta S-356	R & P
53	investigate alternative cut off wall materials (vinyl sheet pile)	R & P

54	change location L31N SMPP to this location; use yellow book authority; use original yellow book location	
55	not used	
56	Determine pump station firm capacity based on functional risk (e.g., 1,000 to 750 cfs)	R & AM
57	not used	
58w/54	compare technologies in phased approach to determine final wall section, combine w/54	
59	use S-356 to reduce project water quality uncertainty & risk	
60w/59	add to TSP for future purpose	
61	not used	
62w/67	not used, bd	
63		
64	use reclaimed water for project, reference yellow book	D
65 w/59	consider a two location pump sta scheme for S-356	
67	not used, bd	

Table Key: R = Report
P = PED
AM = Adapt Mgt
D = Drop

APPENDIX F: TENTATIVELY SELECTED PLAN PROJECT FEATURES ON DATE OF WORKSHOP

North and South of Redline Features:



Figure 1 –Total Redline Work

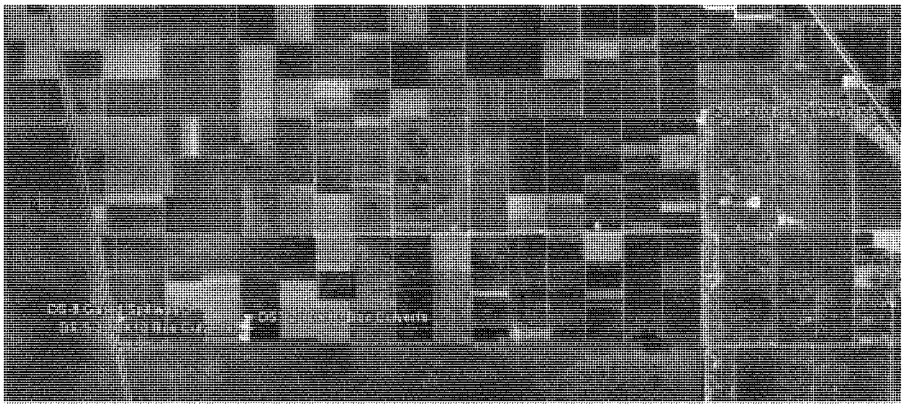


Figure 2 –A-2

Flow Equalization Basin (FEB) A-2 consists of:

Perimeter levee 11 miles around 11.3 feet high, 14ft crest width with 3:1 side slopes
Inflow Canal & Internal levee 4 miles long, 10ft deep canal, 60 ft bottom width, 126ft top width, LSS 4:1, RSS 2:1 11 feet high with 3:1 side slopes
External outflow canal 1.5 miles long with a 50 foot bottom width 17.5 foot depth 2:1 side slopes (1,500 -2,000 cfs)
DS-5 3 Sag Culvert 10X10 culverts inflow (1,500 - 2,000 cfs)
DS-7 outflow 2 9x9 box culverts (2,000 cfs)
DS-8 gated spillway with 3 26X15 gates (1,550 cfs), DS-9 2 9x9 box culverts (930 cfs), Emergency overflow weir 1,500 feet long (3,000 cfs)
Recreational Features:

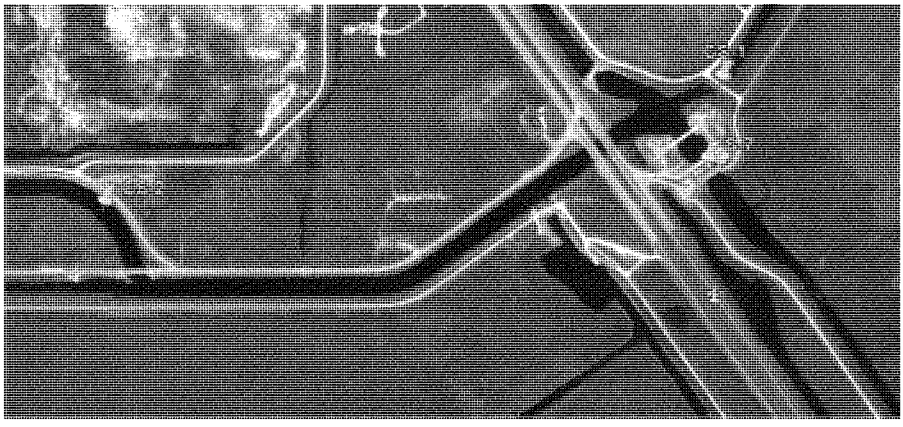


Figure 3 - L-6 Deliveries (near L-5/S-7) Features

L-6 Deliveries (near L-5/S-7) Features:
CS-1 500 cfs gated box culvert
CS-2 4200 cfs Spillway (STA ¾ discharges)
G-336G Improvements (changing open weir risers to gated culverts)? This may not be needed at all.

Figure 4 – L-5 Conveyance and Improvements

L-5 Conveyance & Improvements (east and west of plug) features: to accommodate full L-6 and STA 3/4 conveyances, 500 cfs and 2500 cfs (3000 cfs total)
L-5 500 cfs gravity structure (plug is removed) 9 9ftx11ft wide 100ft long concrete barrel culverts
West L-5 canal improvements - west portion required an expansion to a bottom width of 100 ft and a deepening to bottom elevation -5.6 ft NGVD (-7.0 ft NAVD).
East L-5 canal improvements - east portion of L-5 required an expansion to a bottom width of 50 ft and a deepening to bottom elevation of -5.1 ft NGVD (-6.5 ft NAVD) . Total excavation for both ~1.97 MCY.



Figure 5 – S-8 Improvements

S-8 Improvements

Construct a set of pipes to convey 3000 cfs into L-5 canal while maintaining 1000 cfs conveyance down Miami Canal.
Degrade 2.9 miles of L-4 interior levee starting 1 mile west of S-8.
200 cfs pump station at end of L-4/L-28 connection (this is still being discussed).

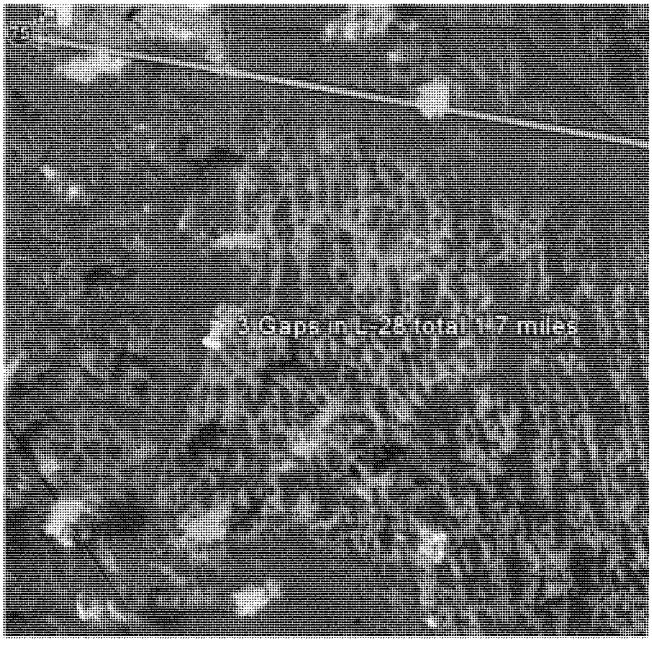


Figure 6 – L-28 Gaps

L-28 Gaps

Provide 3 gaps in the L-28 levee for a total of 1.7 miles.
Backfill canal.



Figure 7 – Miami Canal Improvements

Miami Canal Improvements

Backfill approximately 14 miles of Miami Canal to a point south of S-8 that allows flows of 1000 cfs to I-75.
Degrade spoil mounds North of S-339 and hybrid (leaving some created mounds in place) approach South of S-339.
Create Tree Island Mounds every 1 mile north S-339 and hybrid configuration south of S-339.

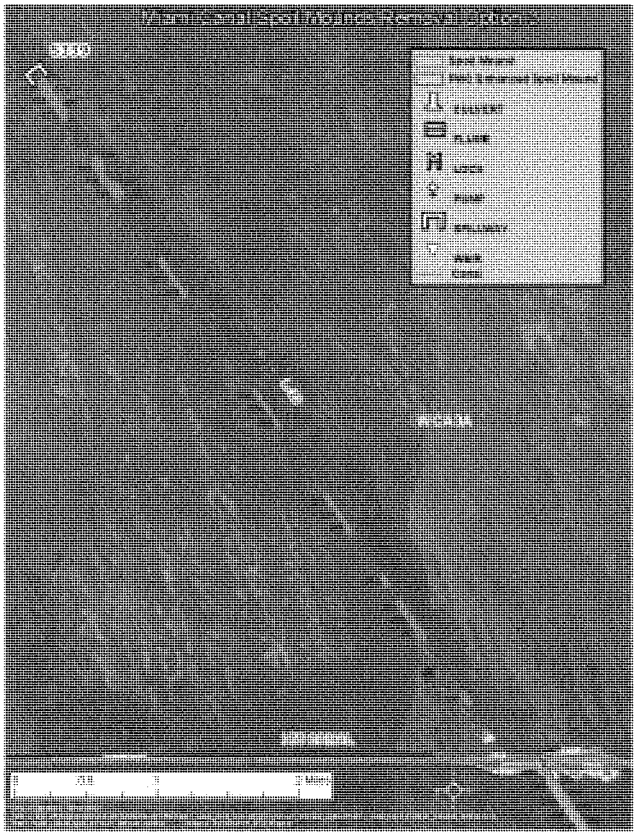


Figure 8 – Miami Canal Proposed Spoil Mounds

Greenline and Blueline Features:

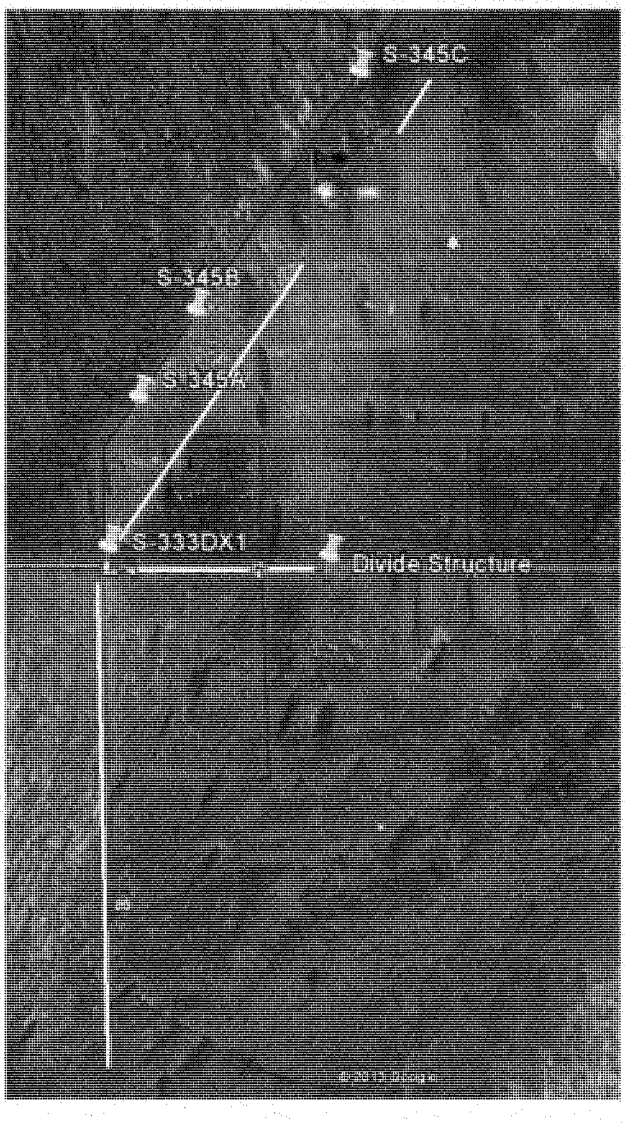


Figure 9 –Greenline and Blueline Features

Greenline and Blueline

Modify S-333 by adding additional structure (temporarily named S-333DX1) to the north with canal. The capacity of the structure is 2 bay 1350 cfs structure similar to S-65EX1. (New S-333 capacity ~2500 cfs).
Install 3 (500) cfs structures on L-67A. S-345 A, B south of new levee in WCA-3B and S-345 C north of new levee. These structures will be designed similar to S-152 (Decomp Physical Model) 10 HDPE pipes 60 inches in diameter with gated structures.
Gap 6000 feet of L-67C near S-345 C.
Degrade L-67C levee (8 miles) from south to the new levee.
Construct 8.5 mile New levee in WCA-3B 6 feet above grade 14' top width with 1 on 3 from L-29 to L-67A.
Remove spoil mounds west of L-67A canal near S-345's.
Divide Structure in L-29 Gated Stucture 1,300 cfs with bridge providing access back to Tamiami Trail
Degrade L-29 levee (4.3 miles) east of the monument to the New levee in WCA-3B
Degrade remaining 5.5 miles L-67 Extension and backfill L-67C canal.
Removal of Old Tamiami Trail west of L-67 ext, ~ 6 miles to Tram Rd.

Yellowline Features:



Figure 10 - Yellowline Features

Yellowline

Demolish S-356
Install new pump station north of the current S-334/S-356 location of 1000 cfs. The station shall have a redundant pump.
Install a seepage cut off wall south of Tamiami Trail down L-31N to connect to the existing wall for a length of 3 miles and 30 feet deep.

Structure/Feature Number	Structure/Feature Type	Design Capacity (cfs)	Location	Tech Specs & Notes
NORTH OF THE REDLINE – FLOW EQUALIZATION BASIN (FEB) – A 2				
S-623 (DS-8)	Gated Spillway	3700	In Miami Canal	Delivers water from Miami Canal to G-372
S-624 (DS-5)	Gated Sag Culvert FEB inflow structure	1550	On STA 3 / 4 Supply Canal	Receives water from G-372 via STA 3 / 4 Supply Canal and delivers to C-624 canal.
S-625 (DS-7)	Gated Culverts FEB discharge structure	1550	Discharge structure in FEB perimeter levee L-624	Delivers water to FEB outflow canal
S-626 (PS-1)	Seepage Pump Station	400	West side of seepage canal, C-626	Delivers seepage back into the canal/FEB
S-627 (CS-4)	Emergency Overflow weir	3000	Between A-2 and A-1 FEB, just north of S-627	
S-628 (DS-9)	Gated Culvert FEB intake/ discharge structure	930	Between A-2 and A-1 FEB	Delivers water between A-2 & A-1
L-624	Levee		FEB Perimeter Levee	~ 20 miles, el 20.3
L-625	Levee		FEB interior inflow canal levee	~ 4 miles,
C-624	Inflow Canal	1550	West side of FEB	~ 4 miles
C-624E	Spreader Canal		Northern boundary of FEB	~ 4+ miles
C-625E	Collection Canal	400	FEB interior collection canal; southern perimeter	Only provides conveyance when no sustained pool depth (i.e., only sheet flow)
C-625W	Outflow Canal	1550	FEB exterior outflow; between S-625 and G-372 HW	FEB Outflow is the existing seepage canal for the STA 3 / 4 Supply Canal
C-626	Seepage Canal	400	West and Northern exterior perimeter of FEB	~ 4 miles
SOUTH OF THE REDLINE – DIVERSION & CONVEYANCE				
S-620 (CS-1)	Gated Culvert	500	In L-6 Canal	Delivers water from L-6 canal to L-5 canal
S-621 (CS-2)	Gated Spillway	2500	On STA 3 / 4 Outflow Canal	
S-622 (CS-3)	Gated Spillway	500	In L-5 Canal	Delivers water from west to east in L-5 canal
New (S-8A) PS	Gated Culverts w/canal	3080 & 1020	In Miami and L-4 Canal	Delivers water from L-5 west to L-4
S-630	Pump Station	200	In L-4 Canal	Delivers water from L-4 canal west
	Levee Removal		L-4 Interior Levee	Removal of ~2.9 miles

	Levee Removal Gapping		L-28 Levee	Removal of ~ 1.7 miles = 3 gaps w/canal backfill
	Canal Backfilling		Miami Canal	Remove ~ 13.5 miles
	Tree Islands Mounds		Miami Canal	Create habitat and promote sheetflow in WCA-3A
Structure/Feature Number	**Structure/Feature Type**	**Design Capacity (cfs)**	**Location**	**Tech Specs & Notes**
SOUTH OF THE REDLINE CONT'D – DIVERSION & CONVEYANCE				
	Canal	500	L-5 east	Enlarging canal
	Canal	3000	L-5 west	Enlarging canal
BLUE GREEN YELLOW LINE – DISTRIBUTION, CONVEYANCE & SEEPAGE MANAGEMENT				
S-333 (N)	Gated Spillway w/new canal	1150	Just north of existing S-333	Delivers water from L-67A to L-29 canal
New S-356	Pump Station	1000	In vicinity of existing S-356	
S-631	Gated Culvert	500	In L-67A levee	Delivers water from WCA 3A to 3B
S-632	Gated Culvert	500	In L-67A levee	Delivers water from WCA 3A to 3B
S-633	Gated Culvert	500	In L-67A levee	Delivers water from WCA 3A to 3B
	Levee Removal Gap		In L-67C levee	~ 6000 ft gap corresponding to S-631
L-67D	New Levee		In WCA 3B	~ 8.5 miles connects from L-67A to L-29 14 crest width, 3:1 side slopes, 6 ft high
	Levee Removal		L-67C levee	~ 8 miles removal from New 3B Levee south to intersection of L-67A
S-355W	Gated Spillway	1230	In L29, east of New 3B levee terminus and TT 2.6 miles bridge	Delivers water from L-29 to S-356 & provides access for Tigertail Camp to Tamiami Trail.
	Levee Removal		In L-29 levee	~ 4.3 miles removal east of Valuejet monument to L-67D start.
	Road Removal		Old Tamiami Trail (from L-67 Ext west to tram Rd)	~ 6 miles of Old roadway removal
	Levee Removal		In L-67 Ext levee	~ 5.5 miles of L-67 Ext removal
	Seepage Barrier Cutoff Wall		In L-31N levee just south of Tamiami Trail	~3.5 miles of 3ft wide, 35 ft deep, Soil Cement Bentonite (SCB) Wall
	cfs = cubic feet per second			

ANNEX C-1. CIVIL PROJECT POINTS

Structures and Levees North of the Redline XY and Elevations

Levees

Description	Lat	Long	X	Y	Ground EL	Structure Invert EL	Height	Side Slopes	Crown
Perimeter Levee (L-624)									
FEB PT A	26 26 09.57	80 47 07.24	726408	784218		N/A	11.3	3	14
FEB PT B	26 29 35.06	80 47 10.89	726042	784965		N/A	11.3	3	14
FEB PT C	26 29 36.67	80 43 19.22	747089	785167		N/A	11.3	3	14
FEB PT D	26 28 43.91	80 43 18.16	747197	779841		N/A	11.3	3	14
FEB PT E	26 28 44.08	80 41 20.92	757850	779882		N/A	11.3	3	14
FEB PT F	26 26 10.15	80 41 18.82	758078	764341		N/A	11.3	3	14
Interior Levee (L-625)									
INT PT A	26 26 39.59	80 47 7.17	726408	767249		N/A	11	3	14
INT PT B	26 26 39.60	80 47 39.17	728919	767244		N/A	11	3	14
INT PT C	26 29 27.63	80 46 42.36	728635	784219		N/A	11	3	14

Canals

Description	Lat	Long	X	Y	Ground EL, NGVD	Canal Invert EL, NGVD	Depth ft	Bottom Width ft	Side slope Left	Side slope Right	Flow Rate CFS
Inflow Canal (C-624)											
INF C PT A	26 26 8.82	80 46 59.99	727613	764144	9.0	-5.0	25.3*	20	3	3	1550
INF C PT B	26 29 27.27	80 46 57.31	727276	784180	9.0	-5.0	25.3	20	3	3	1550
Outflow Canal (C-625W)											
OC PT A	26 26 15.27	80 47 6.68	726458	764793	Existing	-5.0	25*	20	2.5	2.5	1550
OC PT B	26 26 14.43	80 48 32.37	715669	764696	Existing	-5.0	21	20	2.5	2.5	1550
OC PT C	26 26 8.42	80 48 32.22	715684	764089	Existing	-5.0	21	20	2.5	2.5	1550
Spreader Canal (C-624E)											
SC PT A	26 29 45	80 47 20.55	727266	784751	9.0			275	2	2	
SC PT B	26 29 30.12	80 43 19.72	746868	784938	9.0			275	2	2	
SC PT B1			746976	779615							
SC PT B2			757625	779656							
Seepage Canal (C-626)											
SEC PT A	26 26 15.53	80 47 9.05	726243	764819	Existing	-5.5	14.5	15	2	2	
SEC PT B	26 29 37.70	80 47 12.57	725889	785231	Existing	-5.5	14.5	15	2	2	141.05
SEC PT C	26 29 37.72	80 43 18.77	747238	785276	Existing	-5.5	14.5	15	2	2	282.18
SEC PT C.5			747302	779948	Existing						
SEC PT D	26 28 44.85	80 41 20.13	757522	779960	Existing	-5.5	14.5	15	2	2	359.59
Collection Canal (C-625E)											
CC PT A	26 26 8.15	80 41 20.40	757935	764139	Existing	0.0	9	10	2	2	400*
CC PT B	26 26 6.89	80 48 22.91	719530	763936	Existing	0.0	9	10	2	2	400

*Depth is from top of levee at 20.3 NGVD to invert elev at -5.0 NGVD. Canal inv at -5.0 to match inlet/outlet elevation of DS-5 sag culvert

*Top of bank at el. 35.0 NGVD

*Top width of 350 ft.

* FEB outflow will rely primarily on above ground flow; the collection canal only provides conveyance when the FEB does not have a standing pool of water (i.e. only sheet flow)

Structures

Description	Lat	Long	X	Y	Ground EL	Structure Invert EL, NGVD	Depth FT	Width FT	Structure Footer EL	Flow Rate CFS
DS-5 (S-624)	26 26 8.82	80 46 59.99	727613	764144	9.0	-5.0	11	11	-7.5	1550
DS-7 (S-625)^	26 26 15.27	80 47 6.68	726458	764793	9.0	0.0	9	9	-2.5	1550
DS-8**	26 26 14.66	80 48 45.37	717665	764718	9.0	-8.5*	16.5	45	-6	3700
PS-1 (S-626)	26 29 37.70	80 47 12.57	725889	785231	9.0	-5.5	N/A	N/A	-16.5	400
DS-9 (S-628)[1]	26 28 35.11	80 41 20.80	757854	778977	9.0	0.0	9	9	-2.5	930

DS-5: (2) 11'x11' box culverts (sag culverts with four 45 deg bends); deepest elev at -14.0 ft NGVD

DS-7: (1) 9'x9' box culverts

DS-8: (4) 35'x16.5' gated spillway

DS-9: (2) 9'x9' box culverts

*Crest invert elev = -8.5 ft NGVD; approach apron at elev. -13.5 ft NGVD

Description	Lat	Long	X	Y	Ground EL	Crest EL, NGVD	Crest FT	Flow Rate CFS
Overflow Weir (S-627)	26 28 39.61	80 41 21.0	757844	779431	9	13.5	34	3000

Structures and Degrade South of the Redline XY and Elevations

Levee Degrade

Description	Lat	Long	X	Y	Ground EL	Structure Invert EL	Height	Side Slopes	Crown
L-4 Degrade									
PT A	26 19 54.30	80 47 0.09	727122	726329					
PT B	26 19 53.42	80 49 38.39	712720	726219					
L-28 Degrade									
PT A	26 9 2.50	80 49 33.08	713291	660500			Unknown	Unknown	Unknown
PT B	26 8 6.77	80 49 39.36	712727	654873			Unknown	Unknown	Unknown
PT C	26 6 55.30	80 49 59.12	710935	647655			Unknown	Unknown	Unknown

Canal Backfill

Description	Lat	Long	X	Y	Ground EL	Structure Invert EL	Height	Side Slopes	Crown
Miami Canal									
North	26 19 20.72	80 46 3.33	732292	722948					
South	26 08 49.09	80 38 00.87	776369	659277					
L-28 Canal Backfill									
PT A	26 9 2.50	80 49 33.08	713291	660500					
PT B	26 8 6.77	80 49 39.36	712727	654873					
PT C	26 6 55.30	80 49 59.12	710935	647655					

Canals

Description	Lat	Long	X	Y	Ground EL	Canal Invert EL	Depth	Width	Side slope Left	Side slope Right	Flow Rate CFS
L-5 Improvements											
L-5 PT A	26 20 12.36	80 32 11.83	807929	728365		-5.6		100			
L-5 PT B	26 19 53.79	80 38 3.53	775938	726388		-5.6		100			
L-5 PT C	26 19 55.02	80 46 28.86	729963	726407		-5.1		50			
Canal from Miami Canal to L-4											
C-8A	26 19 51.29	80 46 27.70	730069	726030							
C-8N	26 19 55.07	80 46 36.71	729249	726411							

Structures

Description	Lat	Long	X	Y	Ground EL	Structure Invert EL	Depth FT	Width FT	Structure Footer EL	Flow Rate CFS
CS-1 (S-620)	26 20 12.36	80 32 11.83	807929	728365						
CS-2 (S-621)	26 20 25	80 32 50.10	804442	729629						
CS-2 (S-622)	26 19 53.79	80 38 3.53	775938	726388						
S-8A S	26 19 49.55	80 46 25.25	730292	725855						1020
S-8AW	26 19 51.29	80 46 27.70	730069	726030						3020
S-630	26 19 53.42	80 49 38.39	712720	726219						

Weirs

Description	Lat	Long	X	Y	Ground EL	Structure EL	Length FT	Flow Rate CFS
L-6 Overflow Weir								
Overflow Weir PT A*	26 20 53.62	80 31 42.08	810620	732541	12	12.5	5280	
Overflow Weir PT B	26 20 11.73	80 32 10.08	808088	728302	12	12.5		

*Total length approximately 1 mile

Structures and Levees Green Blue Yellow XY and Elevations

Levees

Description	Lat	Long	X	Y	Ground EL	Structure Invert EL	Height	Side Slopes	Crown
L-67D									
PT A	25 52 43.96	80 36 36.74	784398	561995					
PT B	25 50 59.58	80 36 32.31	784834	551458					
PT C	25 45 41.38	80 36 21.53	785915	519337					

Canals

Description	Lat	Long	X	Y	Ground EL	Structure Invert EL	Height	Side Slopes	Crown
S-333 N Discharge Canal									
PT A	25 45 47.45	80 40 25.67	763593	519889					
PT B	25 45 44.81	80 40 18.58	764242	519624					
PT C	25 45 40.99	80 40 14.79	764590	519240					

Levee/Road Degrade

Description	Lat	Long	X	Y	Ground EL	Structure Invert EL	Height	Side Slopes	Crown
L-29 Degrade									
PT A	25 45 41.38	80 36 21.53	785915	519337					
PT B	25 45 40.99	80 40 14.79	764590	519240					
L-67 EXT. Degrade									
PT A	25 45 40.22	80 40 25.09	763648	519159					
PT B	25 45 39.21	80 40 25.68	763594	519057					
PT C	25 41 17.92	80 40 16.05	764541	492681					
PT D	25 40 57.82	80 40 23.18	763893	490651					
Old Tamiami Trail									
PT A	25 45 39.38	80 40 26.76	763496	519074					

PT B	25 45 39.11	80 45 58.94	733127	518983					
L-67 C North Degrade									
PT A	25 53 50.08	80 34 23.98	796502	568708					
PT B	25 52 57.17	80 35 3.77	792885	563354					
L-67C South Degrade									
PT A	25 50 58.69	80 36 32.94	784777	551368					
PT B	25 46 5.84	80 40 13.49	764702	521748					
PT C	25 46 3.17	80 40 24.76	763673	521476					

Structures

Description	Lat	Long	X	Y	Ground EL	Structure Invert EL	Depth FT	Width FT	Structure Footer EL	Flow Rate CFS
S-345C (S-633)	25 53 46.47	80 35 50.48	788604	568318						
S-345B (S-632)	25 49 40.91	80 38 56.18	771712	543479						
S-345A (S-631)	25 48 17.85	80 39 57.54	766105	543464						
L-29 Spillway (S-355W)	25 45 41.38	80 36 21.53	785915	519337						
S-333 Add (S-333 N)	25 45 47.45	80 40 25.67	763593	519889						
S-356	25 45 42.81	80 30 8.54	820014	519597						
L-31N Seepage Wall										
PT A	25 45 38.63	80 29 51.50	821574	519181						
PT B	25 43 0.84	80 29 45.32	822200	503253						

Structure Removal

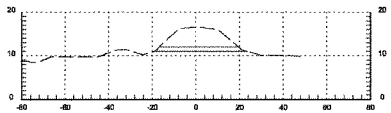
Description	Lat	Long	X	Y	Ground EL	Structure Invert EL	Depth FT	Diameter FT	Pipes Number
S-346	25 45 39.42	80 40 26.31	763537	519078					

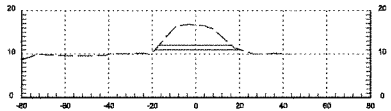
ANNEX C-2. CIVIL PLATES

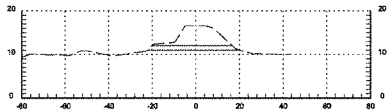
L-4 Levee Cross Section

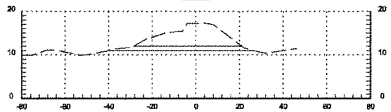
Typical Levee Cross Sections
(L-67A, L-67C, L-29, L-67D-Blue Shanty)

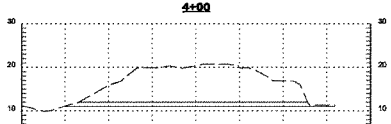
Miami Canal Backfill and Constructed Tree Islands (Mounds)
Initial Technical Recommendation
Ecological Recommendation

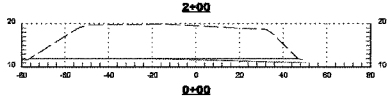

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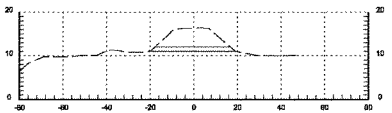

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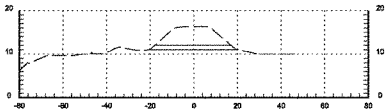

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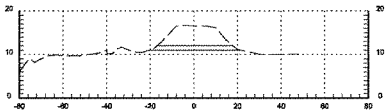

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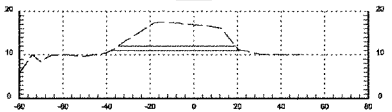

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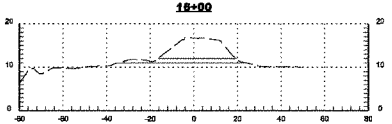

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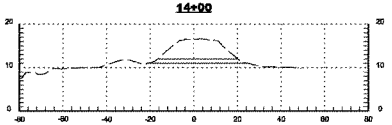

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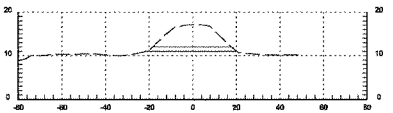

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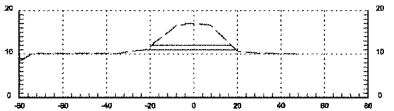

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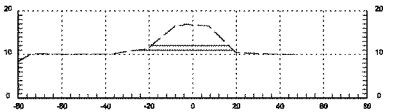

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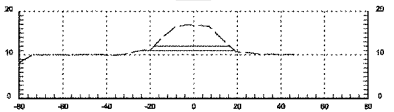

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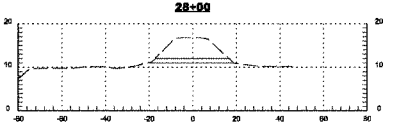

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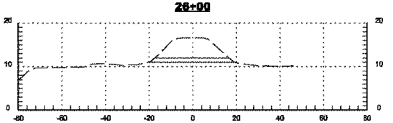

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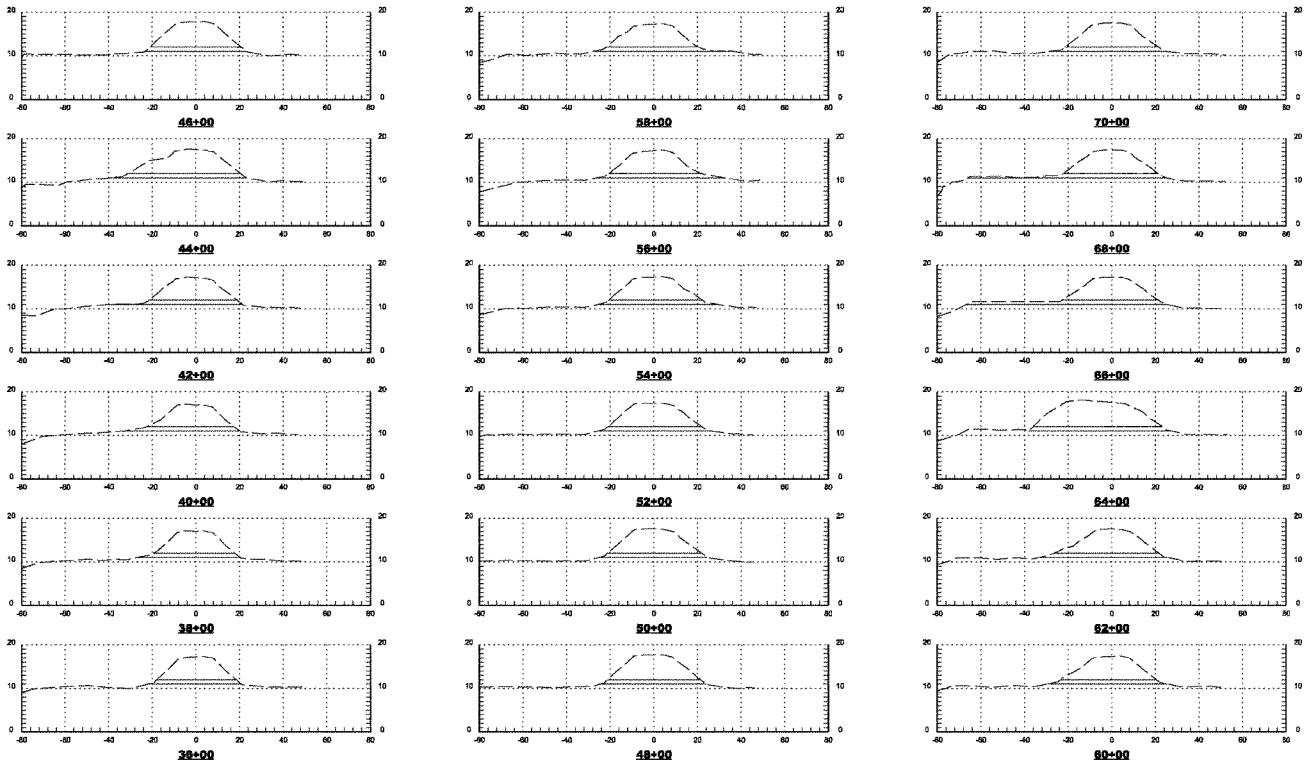

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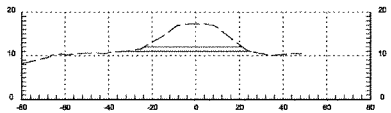

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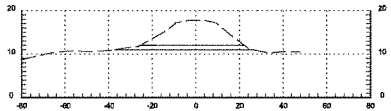

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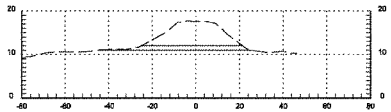

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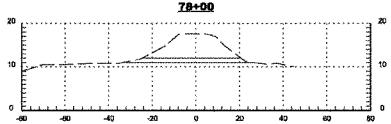

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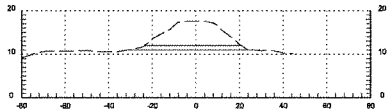

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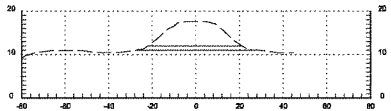

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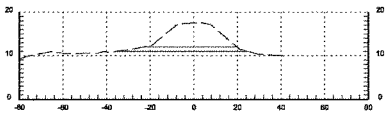

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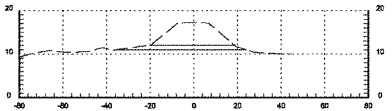

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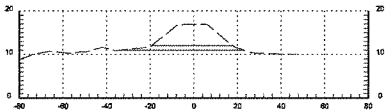

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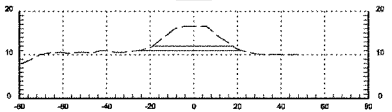

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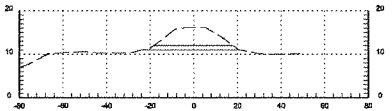

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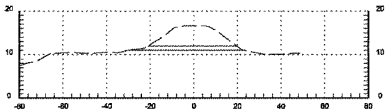

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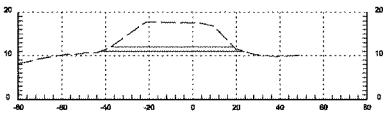

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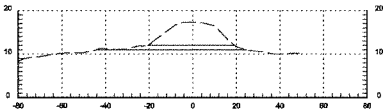

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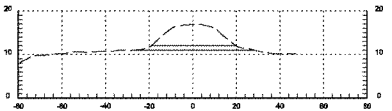

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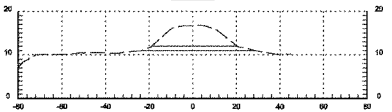

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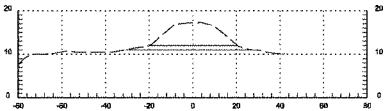

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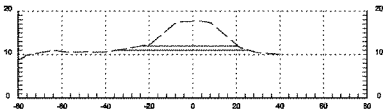

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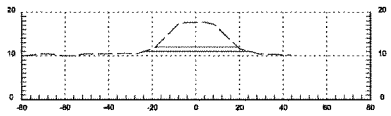

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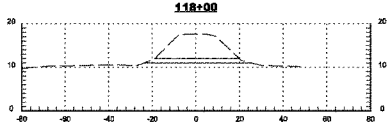

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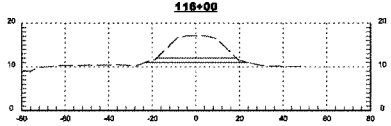

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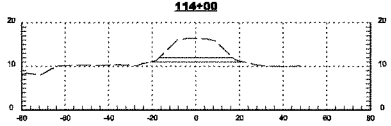

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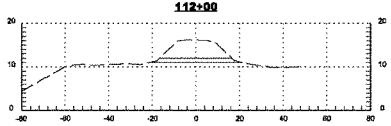

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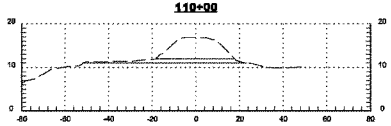

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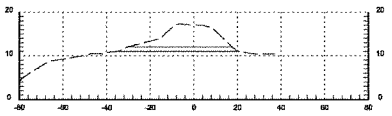

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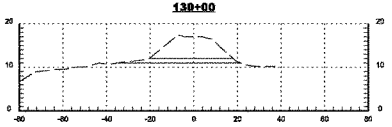

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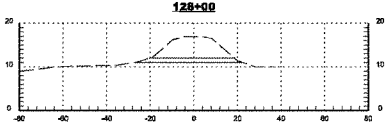

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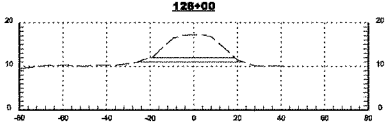

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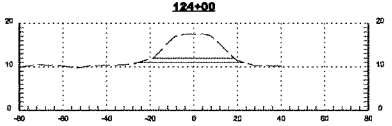

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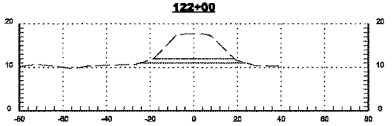

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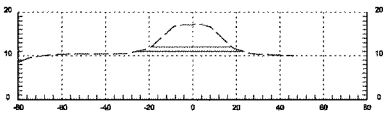

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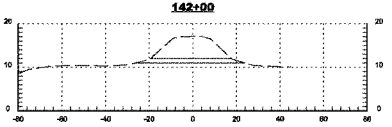

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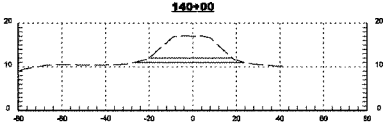

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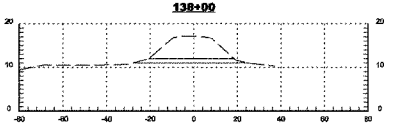

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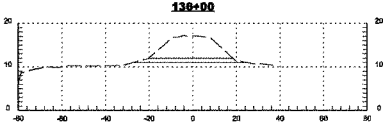

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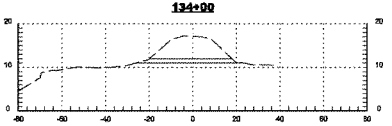

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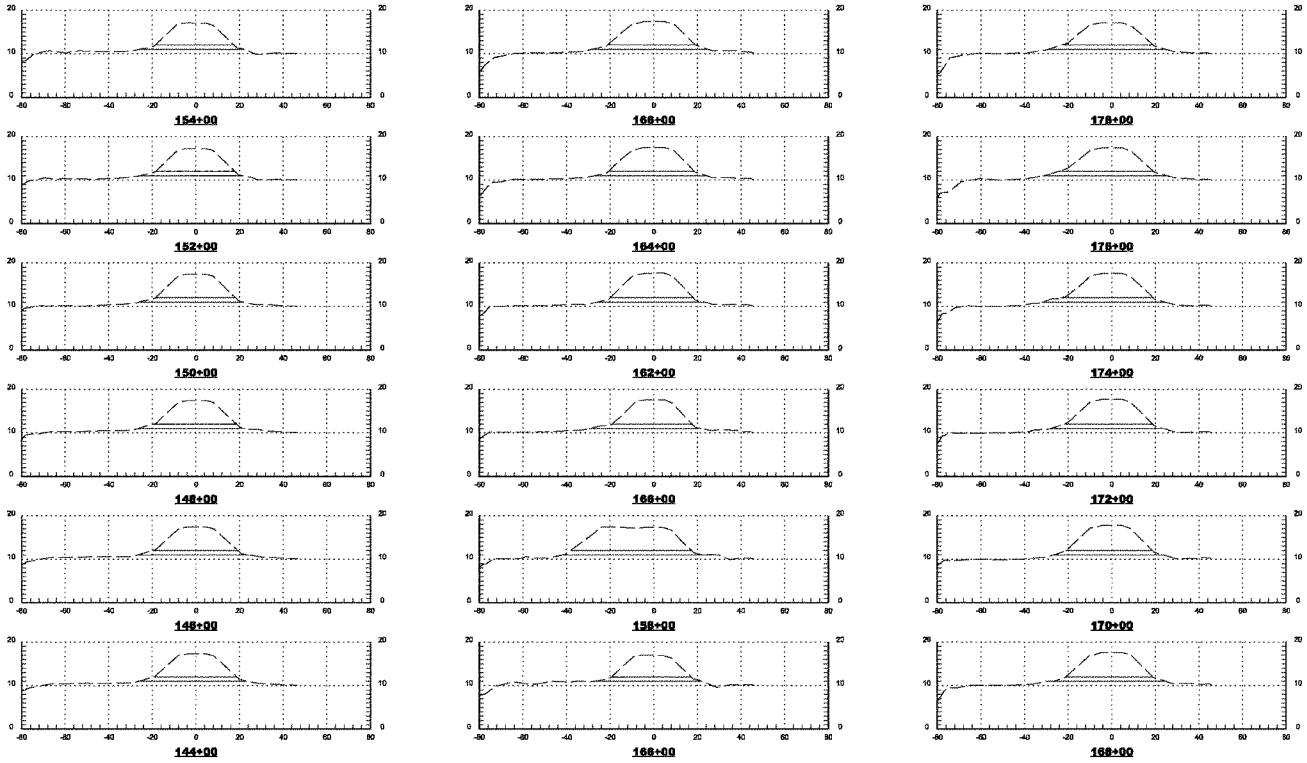

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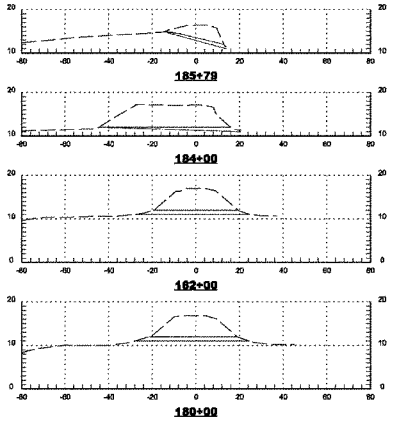

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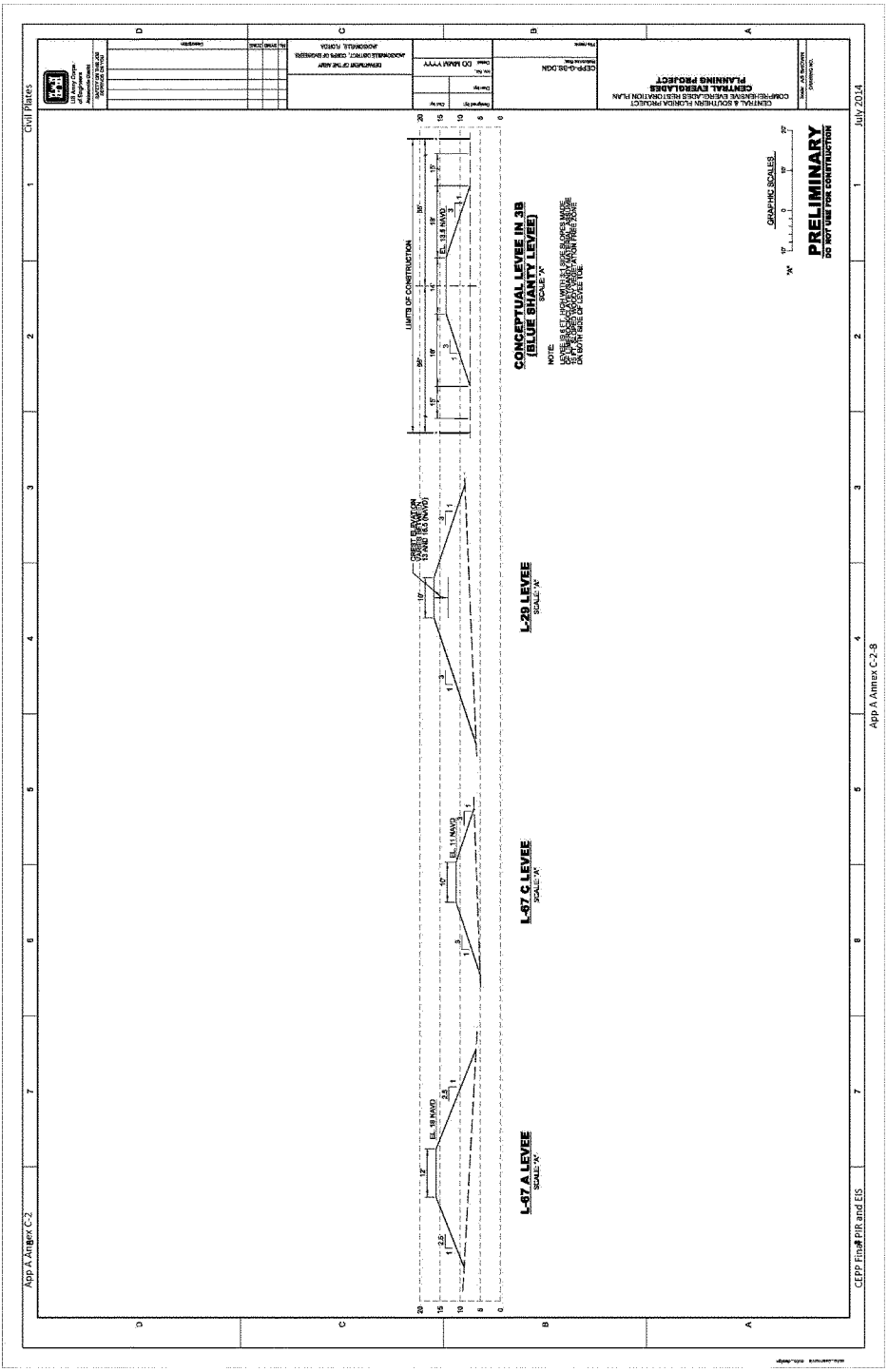

136+00


134+00


132+00


154+00
168+00
178+00
152+00
164+00
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144+00
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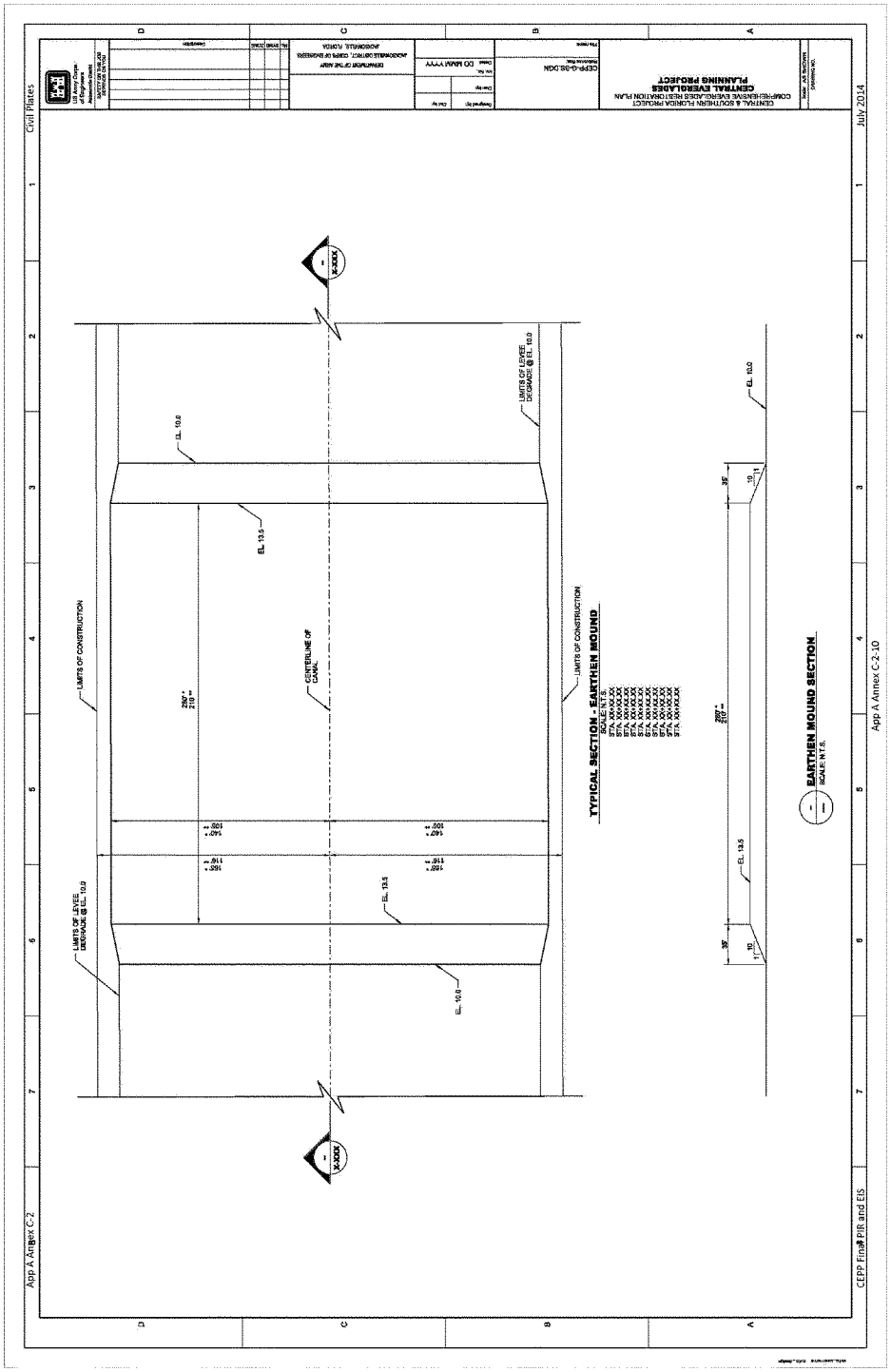

185+79
184+00
182+00
180+00

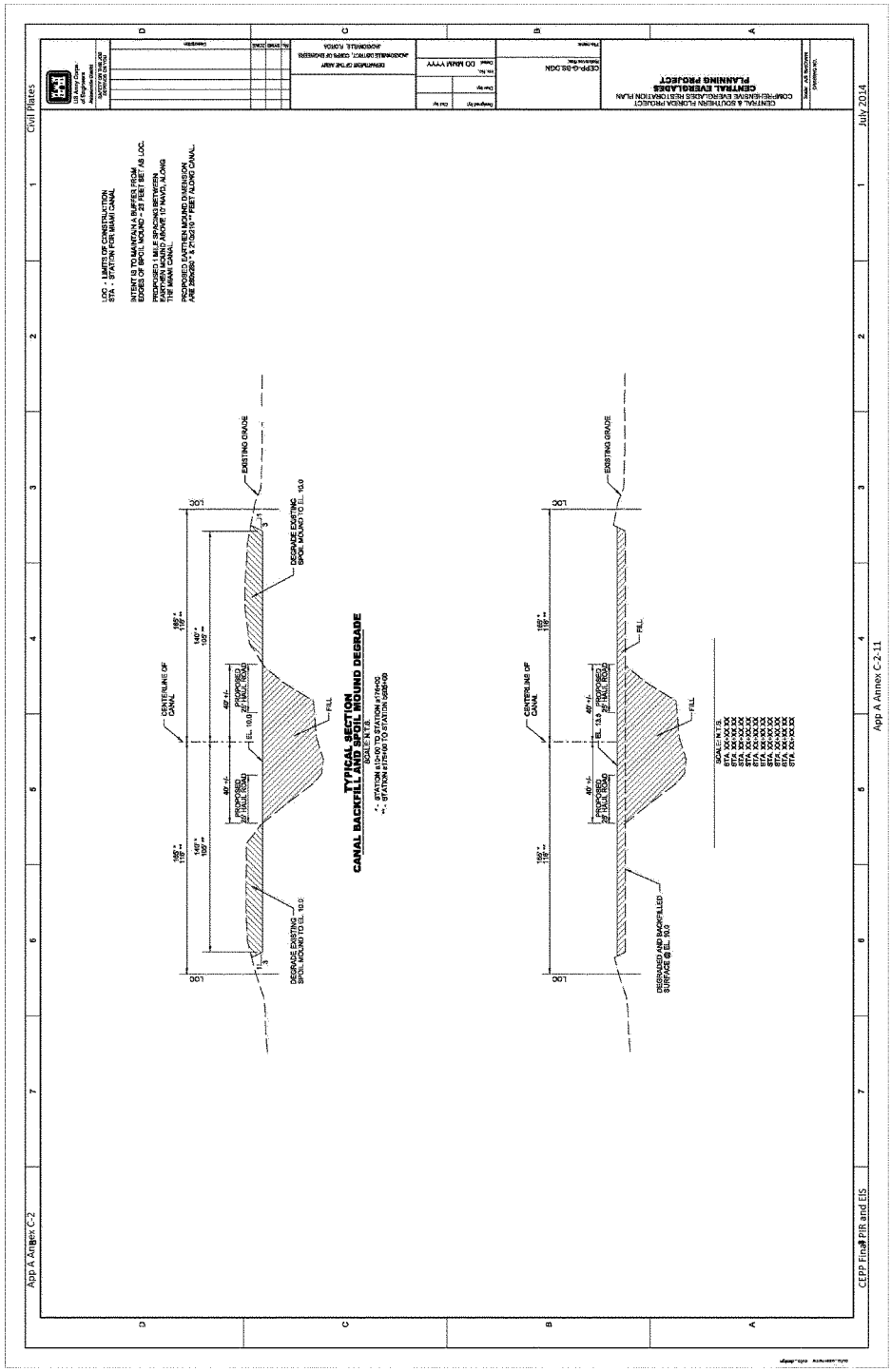

Civil Plates
App A Annex C-2
CEPP Final PIR and EIS
App A Annex C-2-8
July 2014
CENTRAL & SOUTHERN FLORIDA PROJECT
COMPREHENSIVE EVERGLADES RESTORATION PLAN
CENTRAL EVERGLADES
PLANNING PROJECT
CEPP-G-35.DGN
DO NOT SCALE DRAWING
GENERATED BY THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA
L-67 A LEVEE
SCALE: "A"
L-67 C LEVEE
SCALE: "A"
L-29 LEVEE
SCALE: "A"
CONCEPTUAL LEVEE IN 3B
(BLUE SHANTY LEVEE)
SCALE: "A"
NOTE:
LEVEE SLOPE VARY WHERE LEVEE BORDERS WATER BODIES OR WETLANDS TO MAINTAIN FREEBOARD ON BOTH SIDE OF LEVEE TOE
LIMITS OF CONSTRUCTION
CREST ELEVATION
(DESIGN HEIGHT)
EL. 18 NAVD
EL. 11 NAVD
EL. 18.5 NAVD
GRAPHIC SCALES
PRELIMINARY
DO NOT USE FOR CONSTRUCTION

ANNEX C-2.1

MIAMI CANAL BACKFILL AND CONSTRUCTED TREE ISLANDS

Miami Canal Backfill and Constructed Tree Islands (Mounds)
Initial Technical Recommendation
Ecological Recommendation


CENTRAL & SOUTHERN FLORIDA PROJECT
COMPREHENSIVE EVERGLADES RESTORATION PLAN
CENTRAL EVERGLADES
PLANNING PROJECT
CEPP-G-35.DGN
DD MMM YYYY
DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA
TYPICAL SECTION - EARTHEN MOUND
SCALE: N.T.S.
STA. XX+XX.XXX
STA. XX+XX.XXX
STA. XX+XX.XXX
STA. XX+XX.XXX
STA. XX+XX.XXX
STA. XX+XX.XXX
STA. XX+XX.XXX
STA. XX+XX.XXX
LIMITS OF CONSTRUCTION
LIMITS OF LEVEE DEGRADE @ EL. 10.0
CENTERLINE OF CANAL
EL. 13.5
EL. 10.0
EL. 19.0
297' ±
210' ±
100' ±
160' ±
EARTHEN MOUND SECTION
SCALE: N.T.S.
1:10
3H
1V
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CEPP Final PIR and EIS
July 2014
CENTRAL & SOUTHERN FLORIDA PROJECT
COMPREHENSIVE EVERGLADES RESTORATION PLAN
CENTRAL EVERGLADES
PLANNING PROJECT
CEPP-G-BS.DGN
DD MMM YYYY
DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA
LOC - LIMITS OF CONSTRUCTION
STA - STATION FOR MIAMI CANAL
INTENT IS TO MAINTAIN A BUFFER FROM
EDGES OF EXIST. MOUND ~ 25' FEET / AS LOC.
PROPOSED 1 MILE SPACING BETWEEN
TERMINATION POINTS
PROPOSED EARTHEN MOUND DIMENSION
ARE 350x50 ± 215x10 +/- FEET ALONG CANAL.
CENTERLINE OF CANAL
EXISTING GRADE
DEGRADE EXISTING SPOIL MOUND TO EL. 10.0
PROPOSED 20' HAUL ROAD
EL. 10.0
FILL
DEGRADED AND BACKFILLED SURFACE @ EL. 10.0
EL. 13.0
TYPICAL SECTION
CANAL BACKFILL AND SPOIL MOUND DEGRADE
SCALE: N.T.S.
+ - STATION 415+00 TO STATION 417+00
+ - STATION 415+00 TO STATION 0358+00
SCALE: N.T.S.
STA. XX+XX.XX
STA. XX+XX.XX
STA. XX+XX.XX
STA. XX+XX.XX
STA. XX+XX.XX
STA. XX+XX.XX
STA. XX+XX.XX
STA. XX+XX.XX

Miami Canal Backfill and Constructed Tree Islands (Ecological Recommendation)

The goal of the Miami Canal Backfill is to render the canal hydrologically and ecologically invisible at the landscape scale and eliminate the harmful drainage effects that the Miami Canal has on the interior Everglades marsh that results in adverse effects on flora and fauna. The Miami Canal will be backfilled to bedrock from about a mile south of S-8 to S-339 and to about one foot above bedrock from S-339 to I-75 so that the backfill will be ~1.5 below the peat surface for the entire length of the backfill. This project element proposes to remove all spoil mounds on the east and west side of the Miami Canal from S-8 to S-339. From S-339 to I-75 all spoil mounds will be removed except for 22 FWC enhanced spoil mounds identified by FWC as the highest priority. In addition, this project element proposes to construct and create mounds approximately every one mile along the entire reach of the Miami canal (S-8 to I-75) where historic tree islands once existed. The remaining FWC spoil mounds will be incorporated into the constructed mounds that will be constructed along the ridges of the historic ridge and slough landscape to use as potential tree island generators. Refuge for fur-bearing animals and other upland species will continue to be provided by the retention of 22 of the highest priority FWC enhanced spoil mounds and the creation of additional upland landscape in the constructed tree islands approximately every mile along the entire reach of the Miami canal (S-8 to I-75).

Miami Canal constructed tree island design details will be determined during CEPP PED phase; because of the low level of detail available during the planning discussions, CEPP PED discussions regarding Miami Canal backfilling and tree island construction/planting must include appropriate science team members with expertise in these topics to accomplish the restoration vision and intent of CEPP's backfilling and tree island construction. Scientists included in the PED effort will bring information from Florida Fish and Wildlife Commission and Loxahatchee Impoundment Landscape Assessment (LILA) tree island design and planting projects, and other relevant efforts.

The constructed tree islands are intended to block flow down the backfilled canal with a series of constructed tree islands having a profile across the landscape that varies, or undulates, in elevation. The longitudinal cross section of this series of mound varies from marsh grade to ~1.5' above marsh grade. This undulated elevation will provide somewhat natural slopes for vegetation and wildlife, provide higher habitat for diverse plant and animal species that require such habitat, and provide low elevation slough areas between each island to promote natural water flow paths through the Everglades. It is also suggested that sloughs could be enhanced surrounding the tree islands to create fire breaks that mimic historic conditions to buffer the tree islands from fires. Part of the changes associated with drainage in the Everglades has been the loss of sloughs and their conversion to sawgrass. The historic slough condition resembled moats near the islands (Lodge, 2005) and may have been important for buffering against fires and delivering water and nutrients to the tree island species' roots. This concept was not thoroughly vetted during the CEPP team discussions but has been suggested for further consideration during CEPP design.

Construction of Tree Islands

Contractors should use local materials as much as possible, when doing so reduces costs. The Miami Canal will be filled to bedrock level with compacted fill material. This base layer does not include branches, trunks, or organic material. The layer of fill from the top of the bedrock to the elevation of the mound will include a wide range of grain and rock sizes as well as non-uniform, randomly placed, non-mulched branches and trunks from Miami Canal spoil material after consultation with FDEP during the PED phase. This layer would include a range of rock sizes to provide the needed porosity throughout the mound to the bedrock level. The goal is to have enough porosity for plant roots to be able to reach water through the mound material; this is an essential need for tree island creation. The end result

should be rough terrain that is "difficult to walk on" (Figure C.2-1). The size of rock and volume will need to be specified, and there may be options to help alleviate compaction from machinery driving over the material; perhaps creating bigger planting holes to help plants have room to establish (see planting holes description below). The top layer of organic material is critical in the planting holes, where the plantings will be expected to root and grow. Organic muck should be spread 12" to 18" thick over the entire "high density" planting areas (defined below). Organic material spread 12'to 18"over the medium and low density planting areas of the island to promote native plant species recruitment on the islands is needed, but not as critical as in the high density planting areas. It remains to be determined whether the available muck will be clean and useable and, if not, whether it will be necessary to import material.

Creating planting holes and filling them with organic material will provide a rooting medium for the native plants and promote survival in harsh conditions without irrigation. The holes should be at least 1-ft diameter per tree; larger holes filled with organic material may boost survival. It is suggested that the hole depths can be a randomly distributed mixture of 1/3 each at 1', 2', 3' depths. Details can be determined during PED based on contracting capabilities. Depending on sequencing of construction, holes could be excavated and filled with muck for later planting; however, current knowledge suggests that creating and filling the holes without immediate planting may waste resources. Contractor capabilities should be considered and planting experts should be consulted again during detailed design phase to determine the best timing for digging, filling, and planting. As part of the final detailed design and contract development, the addition of a soil hydration polymer often used in agriculture and forestry, which is typically an adsorbant macromolecule granular powder that can be mixed into planting matter to limit soil water loss during dry periods should be considered. Such polymers can function for several years while plants' roots become established.

Tree Island Planting

The constructed tree islands will be planted using local plant sources to maintain Everglades genetic consistency among planted seedlings. All proposed plantings are assuming 3-gallon size plants. Immediately after planting, individual plants will be protected by ~3-ft metal exclosure, secured by metal stakes, to deter herbivores while the plants are becoming established. In high density planting areas, plants will be planted at ~6-ft on center spacing, along the northernmost and central area of each planted island. The high density area of the island should have 12-18" of organic material ("muck") spread on it before planting is conducted to provide decent growing condition for the plants; this organic material is a critical need for the high density planting area on the tree islands. In the medium density areas, plants will be planted at ~10-ft on center, starting from the high density planting southward about 75' and transitioning to "low density" planted island tail. If available the same depth of organic material should be spread in this area as in the high density area. In low density areas, plants will be planted at ~15-ft on center. If available the same depth of organic material should be spread in this area as in the high density area. Along the island perimeters, high density planting should be considered for the entire perimeter and tail of the tree islands to provide fire buffer between marsh and fire-sensitive tree island head. Species that can act as buffers include willow (*Salix caroliniana*) and pond apple (*Annona glabra*).

A diverse array of species will be planted, including trees, shrubs, and herbaceous species that are appropriate for these tree islands. The array will include a mix of faster-growing, desirable native species that will help to quickly create an environment on the constructed tree islands that is conducive for restoration, i.e., that will shade out weedy species and protect the organic layer on the island, will quickly develop root systems, and that will attract wildlife to the islands. Other desirable species that

may grow more slowly will also be planted to result in the appropriate species composition for restored tree islands in this area. In addition, species will be chosen that are fire tolerant for the outer edges of the constructed tree islands to buffer the inner island area from wildfires. It is expected that the islands will accrue additional native species over time by natural recruitment. Currently FWC plants species such as hackberry (*Celtis laevigata*), strangler fig (*Ficus aurea*), sweet bay (*Magnolia virginiana*), red maple (*Acer rubrum*), dahoon holly (*Ilex cassine*), pop ash (*Fraxinus caroliniana*), Carolina willow (*Salix caroliniana*), elderberry (*Sambucus simpsonii*), bald cypress (*Taxodium distichum*), wild coffee (*Psychotria nervosa*), pond apple (*Annona glabra*), firebush (*Hamelia patens*), cocoplum (*Chrysobalanus icaco*), and myrsine (*Rapanea guinensis*), and these will be considered for the Miami Canal tree island mounds. Other beneficial species may be considered if needed.

Construction of the tree islands does not need to take place in the wet season, but planting needs to be done at beginning of the wet season to attempt to avoid irrigation. Irrigation options will be determined during detailed design when more is known about the construction sequencing for the mounds; for example, some existing FWC tree island planting contracts specify that all plants shall be watered at least once every two days for the first 2 weeks with a minimum of 1 gallon of water per plant and the vendor is responsible for transporting water or locating alternative water sources. However, it is uncertain at the current level of design and construction sequencing detail for the CEPP Miami Canal mounds whether such a requirement is feasible. If irrigation requirements are included in the planting contracts for the Miami Canal tree island mounds, the contracts should also specify that the need for watering will be determined by rainfall shortly after the planting. A survival percentage of planted seedlings should be included in the contractor specifications; currently FWC usually specifies a 90% survival rate at 4-6 weeks after planting. Considerations from work done by Miami Dade County include contracting a nursery to grow the plants to make them available for planting on the tree island mounds, because growing to 3-gal size is an investment for the nursery and they may need assurance that someone will buy the plants. Doing so will ensure that plants will be available at the time and in the size needed. This may require funding to be guaranteed over consecutive years (~3 years) until the plants are obtained.

Dimensions and Slope of Islands from S-8 to S-339

The constructed tree islands from S-8 to S-339 will have a total width of 210' and overall length of 310'. The flat area should be 1.5' above marsh grade, 150' wide by 210' long, with no steeper than a 18:1 transition to marsh grade on the east and west sides and 1.5% to marsh grade along the tail (south side). The north side of the island can be as steep as feasible from a construction perspective (Figure C.2-2). Suggested slopes result in more natural grade and longer islands, which is not anticipated to require additional fill material because the material needed to create the length will come from the slopes less steep than originally suggested. The intent is to maintain the number of proposed tree islands using available fill but to make the tail end sloped to provide a more natural shape and lengthen the islands.

Dimensions and Slope of Islands from S-339 to I-75

The dimensions of the constructed tree islands from S-339 to I-75 are adjusted slightly from that described above to partner the constructed islands with the remaining portions of the FWC planted tree islands. These constructed mounds can be approximately 500' or 1500' long, depending on the linear extent of adjacent FWC Island maintained (Figure C.2-3 and Figure C.2-4). For areas with a FWC Island on one side of the mound each mound will have at its northern end a flat portion, raised 1.5' above marsh grade, that abuts and transition into the adjacent, existing FWC Island. The flat portion will transition at 20:1 down to marsh grade, on the marsh side (opposite FWC Island) and 1% to 1' below marsh grade on the "tail" side. For areas with FWC Islands on both sides of the mound (500' length), the

head of the mound will be 1.5' above marsh grade in the center, and be graded up at 18:1 on both sides to transition into the sides of the FWC Islands on both sides. The tail of the island will have a center at marsh grade, with similar upward 18:1 slopes (both sides) to transition into adjacent FWC islands. For areas with FWC Islands on both sides of the mound (1500' length), the mound configuration will be 3 of the above described 500' lengths in series. The two northern mound tails will transition to mash grade, and the southern mound tail will transition to bedrock grade.

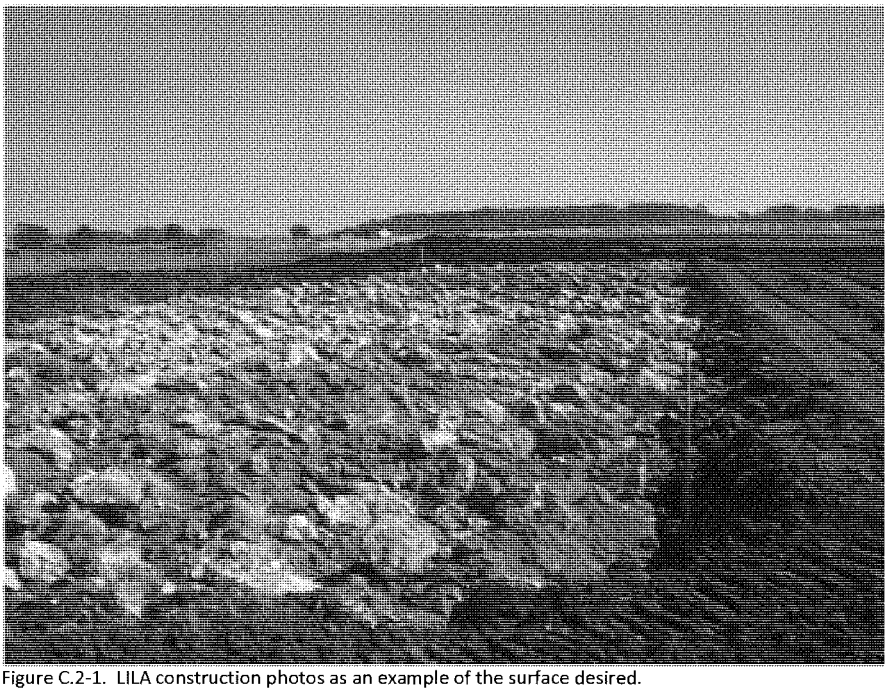


Figure C.2-1. LILA construction photos as an example of the surface desired.

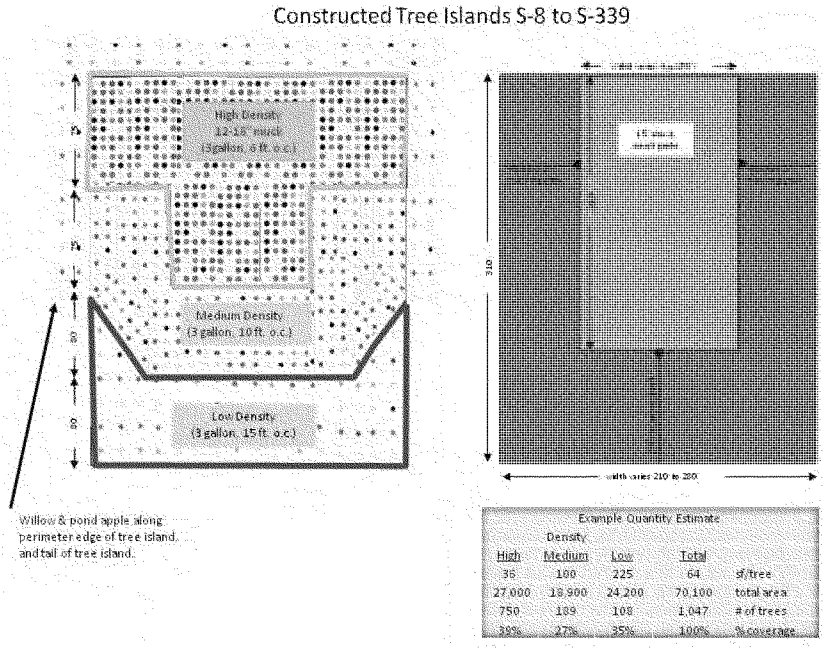


Figure C.2-2. Representation of recommended constructed tree islands from S-8 to S-339

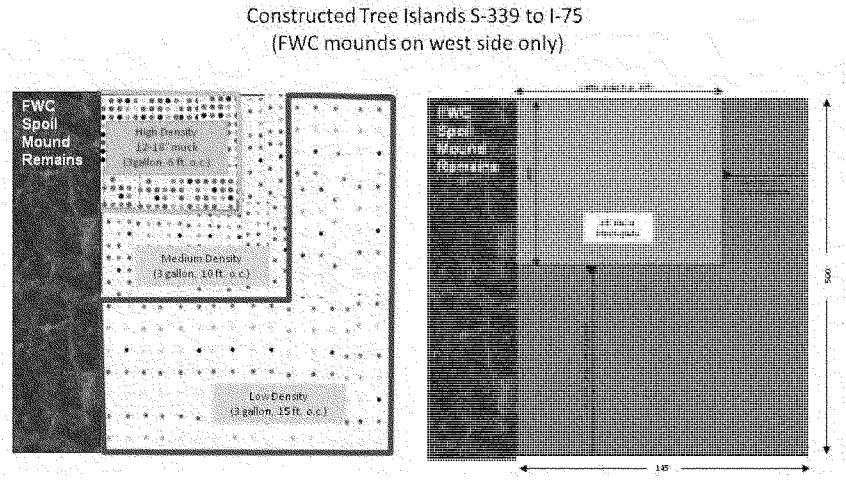


Figure C.2-3. Constructed tree island from S-339 to I-75 with a FWC spoil mound remaining on the west side.

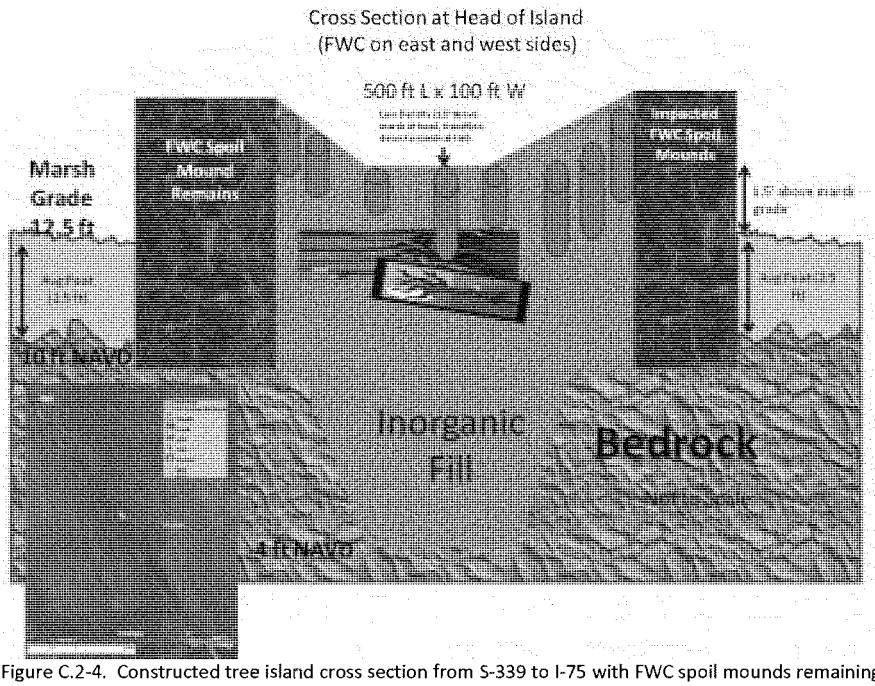
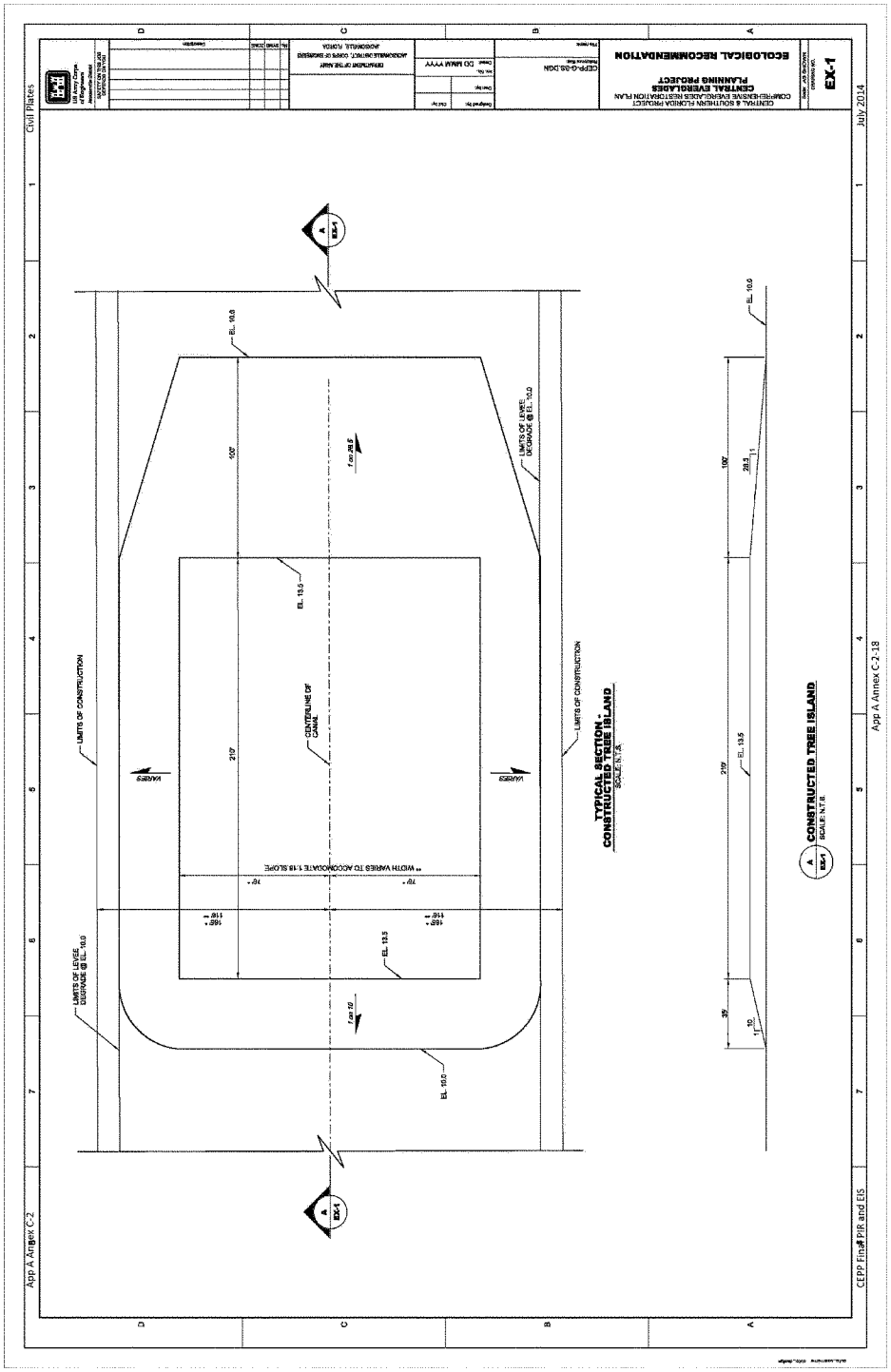


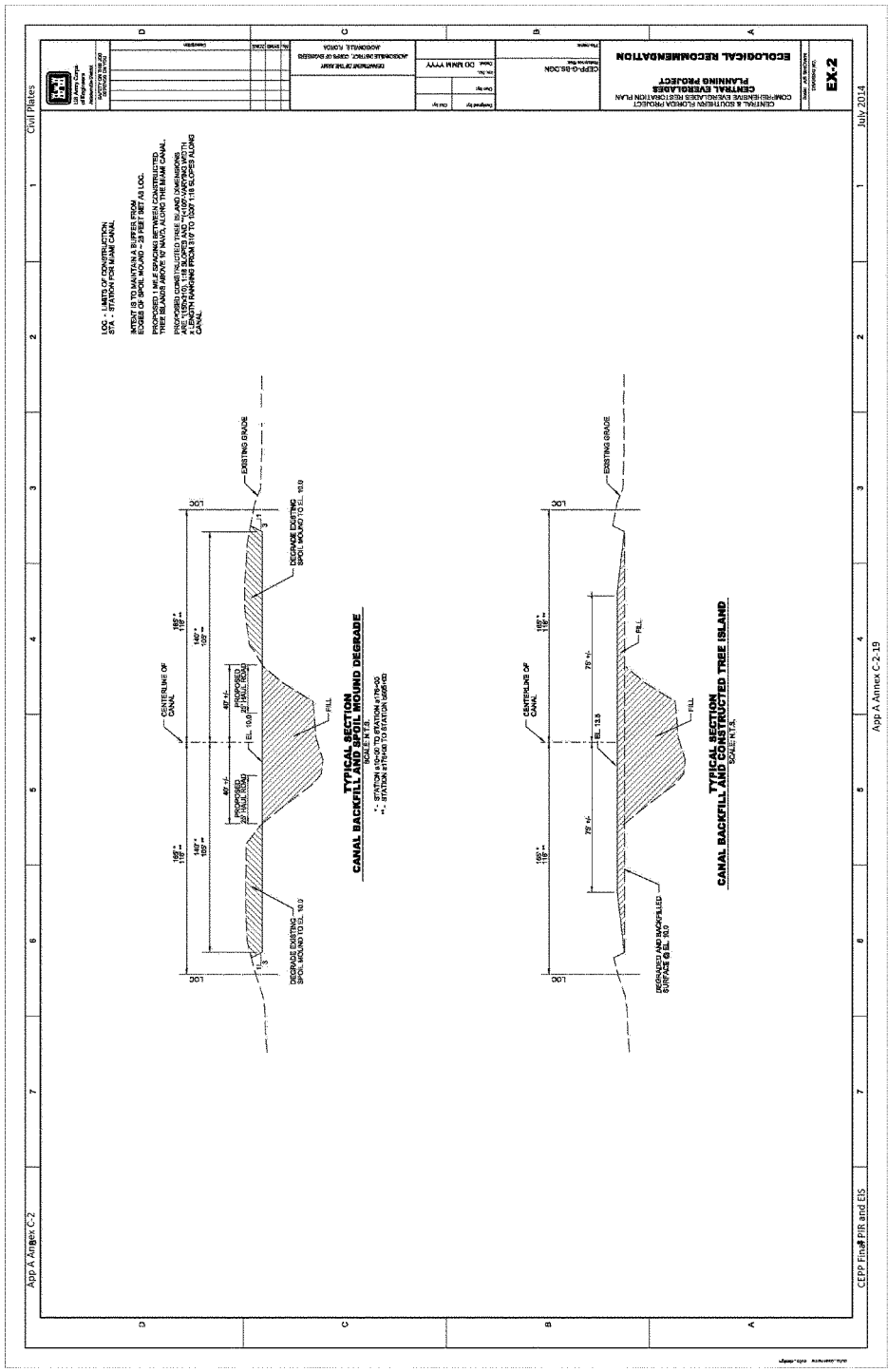
Figure C.2-4. Constructed tree island cross section from S-339 to I-75 with FWC spoil mounds remaining on the east and west sides.

See Engineering Plates EX-1 and EX-2.

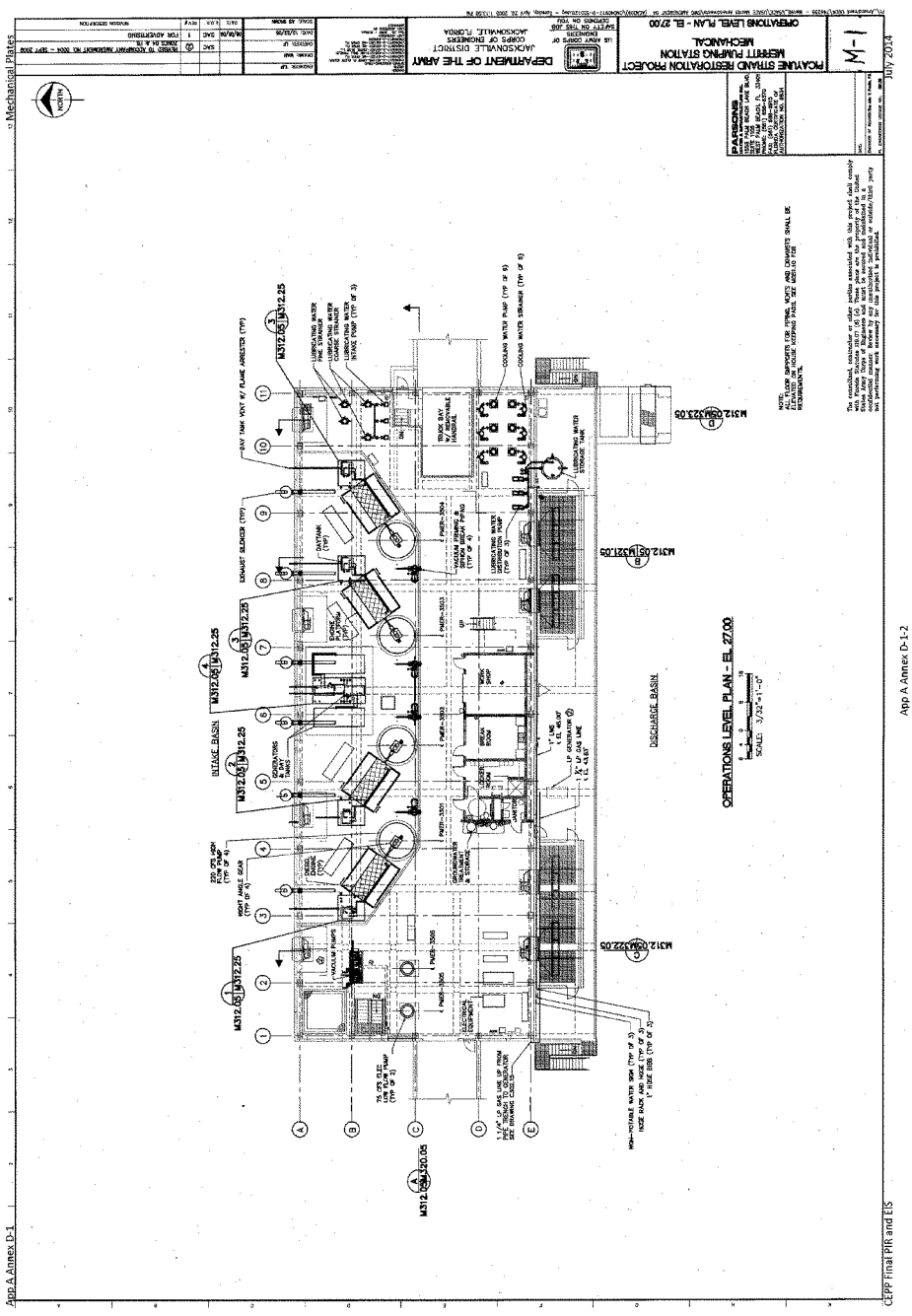
References

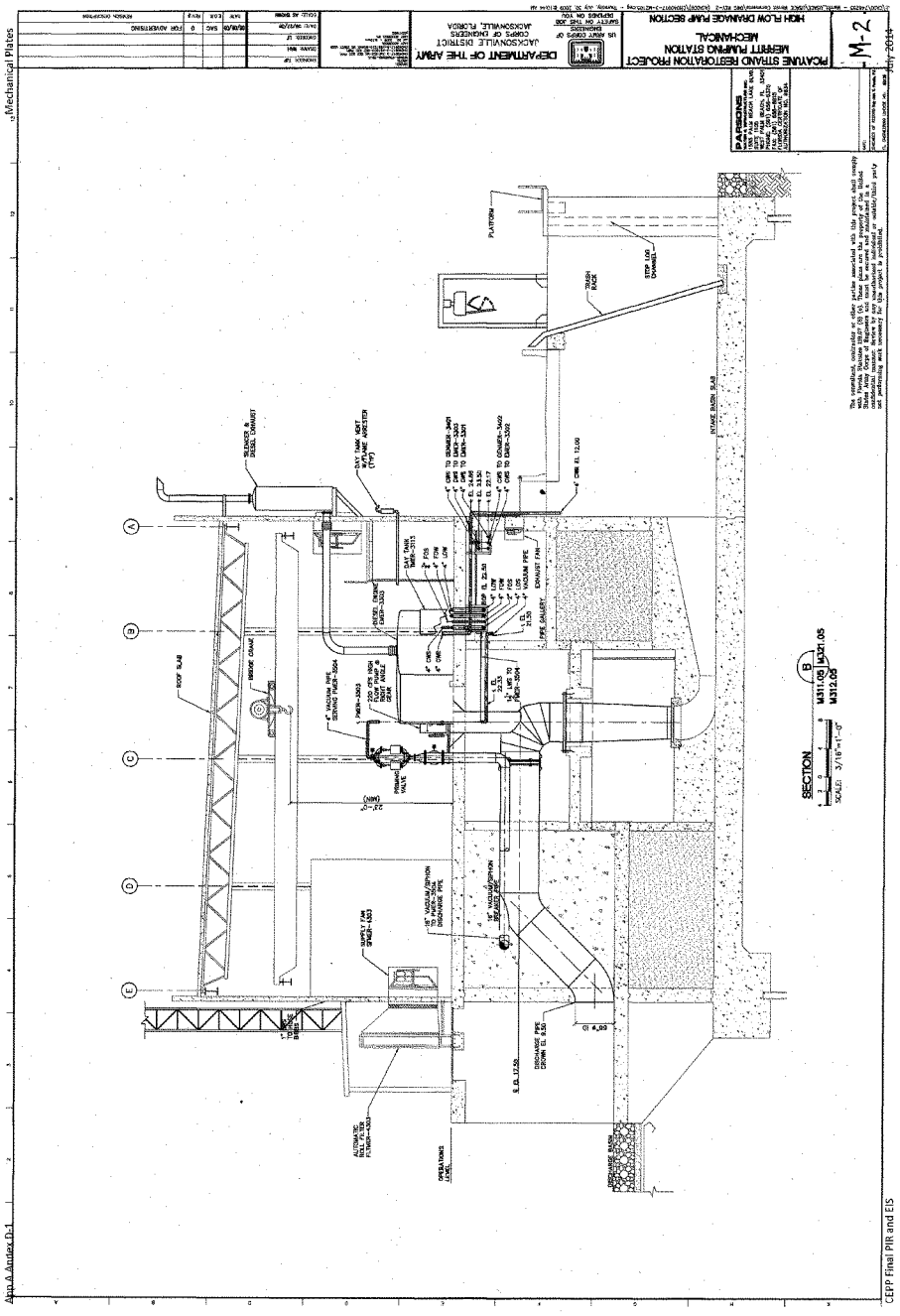
Lodge, T. E. 2005. The Everglades Handbook: Understanding the Ecosystem, Third Edition. CRC Press, Boca Raton, FL.

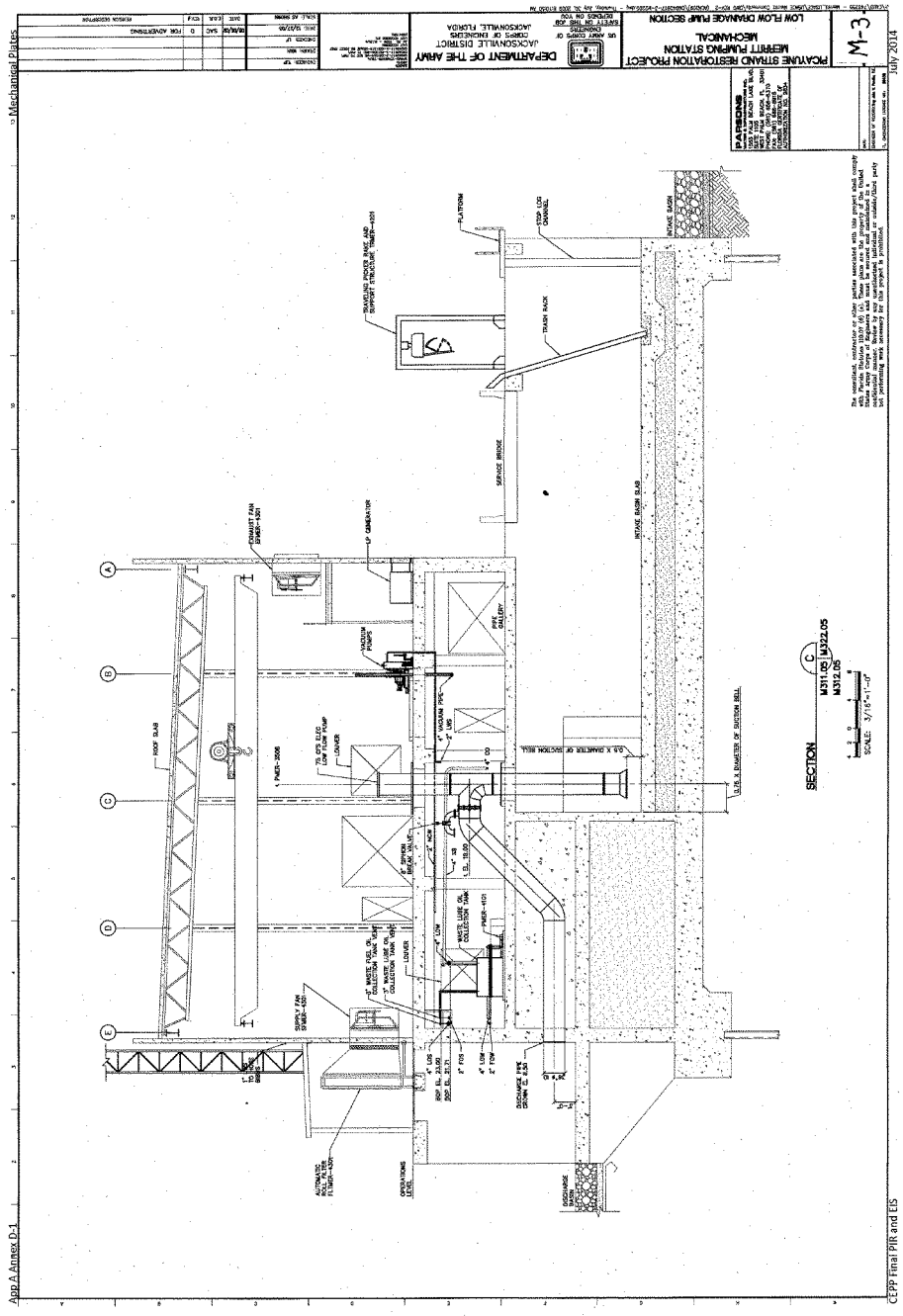

ECOLOGICAL RECONNAISSANCE
EX-1
TYPICAL SECTION -
CONSTRUCTED TREE ISLAND
SCALE: N.T.S.
CONSTRUCTED TREE ISLAND
SCALE: N.T.S.
LIMITS OF CONSTRUCTION
CENTERLINE OF CANAL
LIMITS OF LEVEE DEGRADE @ EL. 10.0
EL. 19.0
EL. 13.5
EL. 13.3
EL. 10.0
210'
100'
78'
WIDTH VARIES TO ACCOMODATE 1:1/8 SLOPE
1 on 10
1 on 20
1 on 2.5
1 on 3
VARIES
197'
28.5
35'
10'
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CEPP Final PIR and EIS

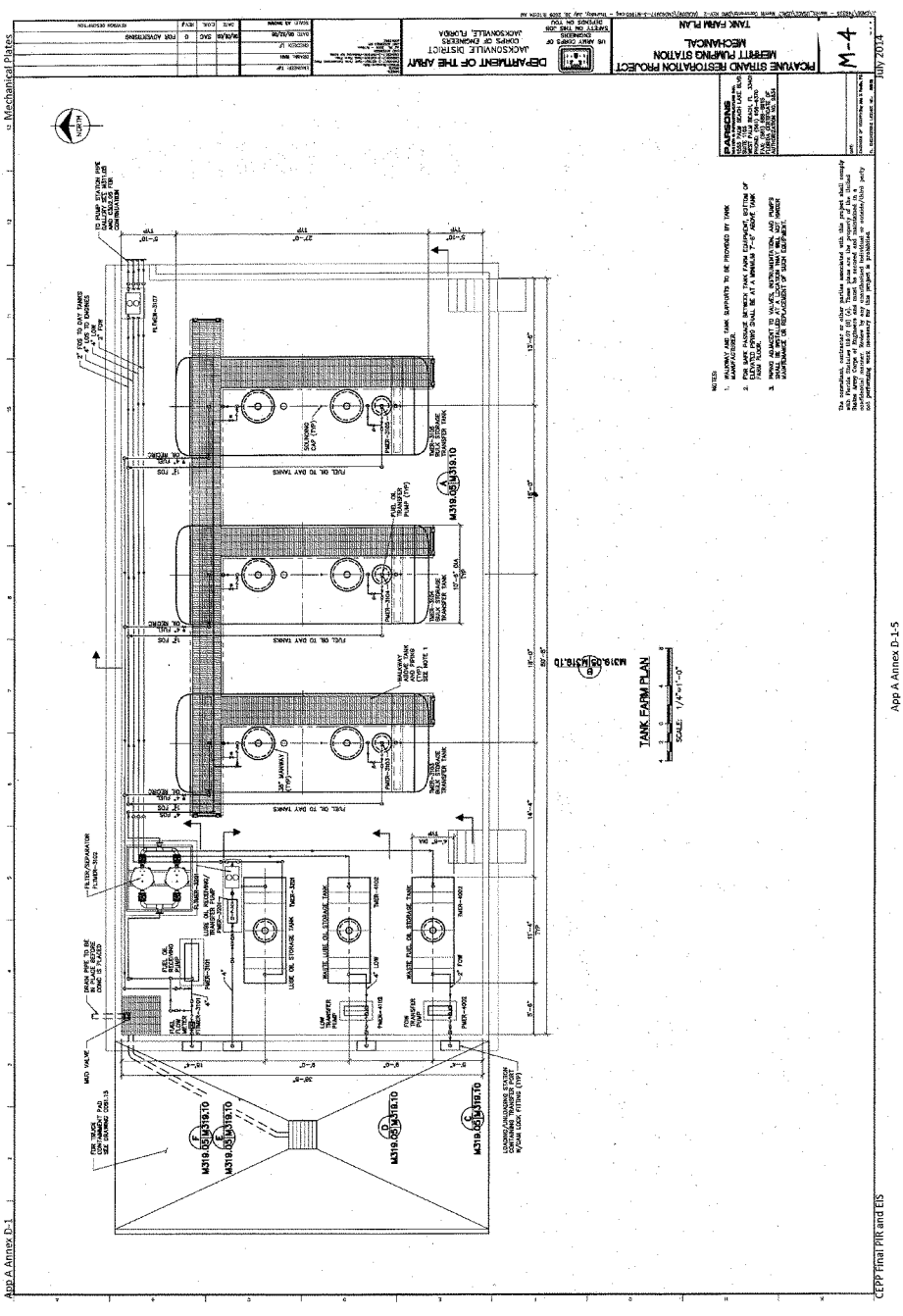

Civil Plates
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ECOLOGICAL RECOMMENDATION
CENTRAL & SOUTHERN FLORIDA PROJECT
COMPREHENSIVE EVERGLADES RESTORATION PLAN
CENTRAL EVERGLADES
PLANNING PROJECT
CEPP-G-BS.DGN
EX-2
LOC - LIMITS OF CONSTRUCTION
STA - STATION FOR MIAMI CANAL
MITHOUT IS TO MAINTAIN A BUFFER FROM
EDGE OF SPOIL MOUND = 25 FEET SET AS LOC.
PROPOSED 1 MILE SPACING BETWEEN CONSTRUCTED
TREE ISLANDS ABOVE 10' NAVD, ALONG THE MIAMI CANAL.
PROPOSED CONSTRUCTED TREE ISLAND DIMENSIONS
ARE 1,000 FEET WIDE PERPENDICULAR TO CANAL WITH
A LENGTH RANGING FROM 310' TO 1320' 116 SLOPES ALONG
CANAL
CENTERLINE OF CANAL
LOC
EXISTING GRADE
PROPOSED 40' HAUL ROAD
EL. 10.0
FILL
DEGRADE EXISTING SPOIL MOUND TO EL. 10.0
TYPICAL SECTION
CANAL BACKFILL AND SPOIL MOUND DEGRADE
SCALE: N.T.S.
*: STATION 615+00 TO STATION 675+00
**: STATION 675+00 TO STATION 1065+00
CENTERLINE OF CANAL
LOC
EXISTING GRADE
79' +/-
EL. 13.0
FILL
DEGRADED AND MOREFILLED SURFACE @ EL. 10.0
TYPICAL SECTION
CANAL BACKFILL AND CONSTRUCTED TREE ISLAND
SCALE: N.T.S.

ANNEX D-1. MECHANICAL PLATES


OPERATIONS LEVEL PLAN – EL. 27.00
SCALE: 3/32"=1'-0"
INTAKE BASIN
DISCHARGE BASIN
M-1
July 2014
App A Annex D-1
App A Annex D-1-2
CEPP Final PIR and EIS


PICAYUNE STRAND RESTORATION PROJECT
MERRITT PUMPING STATION
HIGH FLOW DRAINAGE RAMP SECTION
MECHANICAL
M-2
DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT
CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA
PARSONS
SECTION
SCALE: 3/16"=1'-0"
M311.05 M321.05
M312.05
ROOF SLAB
BRIDGE CRANE
SUPPLY FAN SFAN-1303
ALTERNATE EMERGENCY FLYWAY-1303
OPERATING LEVEL
DISCHARGE BASIN
STONE BASIN SLAB
TRASH RACK
PLATFORM
STOP LOG CHANNEL
PIPE GALLERY
EXHAUST FAN
BLOWER & DIESEL EXHAUST
DISCHARGE PIPE DOWN EL. 9.50
EL. 17.50
EL. 12.00
EL. 25.50
EL. 33.50
EL. 41.50
EL. 49.50
EL. 57.50
EL. 65.50
EL. 73.50
EL. 81.50
EL. 89.50
EL. 97.50
EL. 105.50
EL. 113.50
EL. 121.50
EL. 129.50
EL. 137.50
EL. 145.50
EL. 153.50
EL. 161.50
EL. 169.50
EL. 177.50
EL.


M-3
LOW FLOW DRAINAGE PLUMP SECTION
MECHANICAL
MERRITT PUMPING STATION
PCATUNE STRAND RESTORATION PROJECT
DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT
CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA
PARSONS
SECTION
M311-05 M322.05
M312.05
SCALE: 3/16"=1'-0"
July 2014
App A Annex D-1
App A Annex D-1-4
CEPP Final PIR and EIS


TANK FARM PLAN
FCAVANE STRAND RESTORATION PROJECT
MERRITT FUELING STATION
MECHANICAL
M-4
DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT
CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA
PARSONS
TANK FARM PLAN
TANK FARM PLAN
SCALE 1/4"=1'-0"
NOTES
1. RAILWAY AND TANK SUPPORTS TO BE PROVIDED BY TANK MANUFACTURER.
2. PIPING AND CONDUIT BETWEEN TANK FARM EQUIPMENT SHELTER AND ELEVATED TANKS SHALL BE AT A MINIMUM 7'-0" ABOVE TANK FOUNDATION.
3. PIPING ADJACENT TO VALVES, INSTRUMENTATION, AND PUMPS SHALL BE INSTALLED AT A LOCATION THAT WILL NOT HINDER MAINTENANCE OR REPLACEMENT OF THOSE EQUIPMENT.
July 2014
App A Annex D-1
App A Annex D-1-5
Mechanical Plates
CEPP Final PIR and EIS

RESTORING THE HEART OF THE EVERGLADES

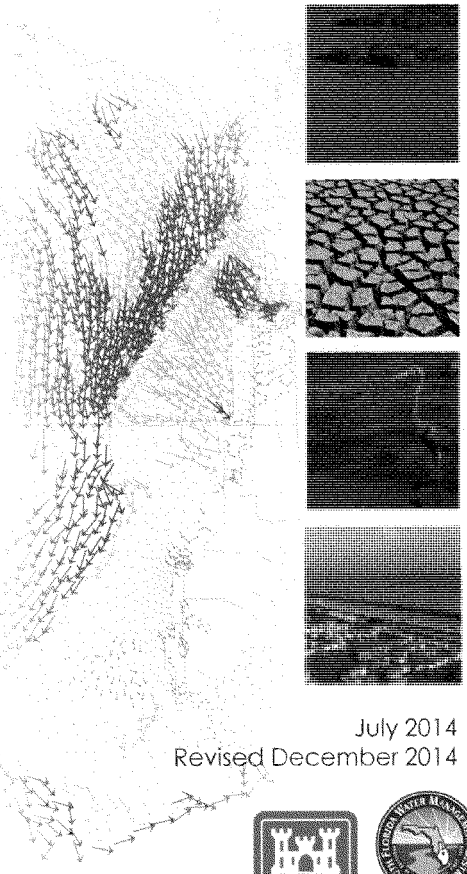


CENTRAL EVERGLADES PLANNING PROJECT

COMPREHENSIVE EVERGLADES RESTORATION PLAN

CENTRAL EVERGLADES PLANNING PROJECT

FINAL INTEGRATED PROJECT IMPLEMENTATION REPORT AND ENVIRONMENTAL IMPACT STATEMENT



July 2014
Revised December 2014

Appendix A - Annex G Part 1

Cover insets (left to right)

Landscapes: Lake Okeechobee, Water Conservation Area 3, Everglades National Park, Florida Bay; **Map:** Depicts Average Annual Overland Flow across the period of record (1965-2005) for existing conditions, as modeled by the CEPP regional hydrologic model (the coloration of the arrows represents the relative volume of flow, while the direction of the arrows represents the movement of flow across the landscape); **Small Landscapes:** Ponding, soil oxidation (peat reduction), dry area of Everglades National Park, juxtaposition of urban development.

ANNEX G-1. GEOLOGICAL INVESTIGATIONS NORTH OF THE REDLINE

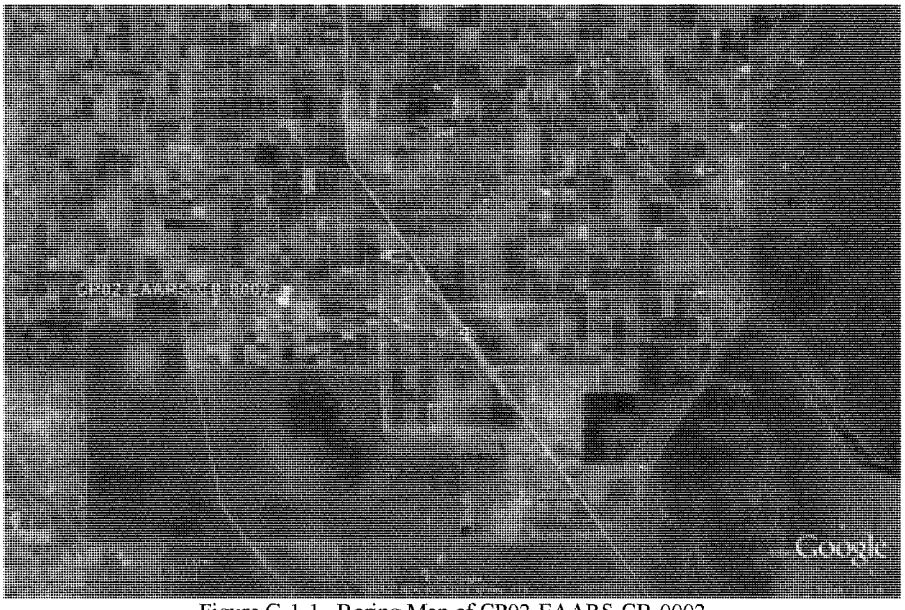


Figure G-1-1. Boring Map of CP02-EAARS-CB-0002

Boring Designation CP02-EAARS-CB-0002

DRILLING LOG

DIVISION: South Atlantic	INSTALLATION: Jacksonville District	SHEET 1 OF 16 SHEETS	
1. PROJECT: CERP Everglades Agricultural Area Reservoirs Phase 1, Effort 1, Compartment A	9. SIZE AND TYPE OF BIT: See Remarks		
	10. COORDINATE SYSTEM/DATUM: State Plane, FLE	HORIZONTAL: NAD83	VERTICAL: NAVD88
2. BORING DESIGNATION: CP02-EAARS-CB-0002	LOCATION COORDINATES: X = 736,775 Y = 775,528	11. MANUFACTURER'S DESIGNATION OF DRILL: CME-55	☐ AUTO HAMMER ☒ MANUAL HAMMER
3. DRILLING AGENCY: Ardaman & Associates, Inc.	CONTRACTOR FILE NO.: 02-042	12. TOTAL SAMPLES: 118	DISTURBED: 118 UNDISTURBED (UD): 0
4. NAME OF DRILLER: M. Gulick		13. TOTAL NUMBER CORE BOXES: 5	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL:	BEARING:	14. ELEVATION GROUND WATER: Not Determined
		15. DATE BORING:	STARTED: 08-13-02 COMPLETED: 09-03-02
6. THICKNESS OF OVERBURDEN: 5.4 Ft.		16. ELEVATION TOP OF BORING: 12.0 Ft.	
7. DEPTH DRILLED INTO ROCK: 13.5 Ft.		17. TOTAL RECOVERY FOR BORING: 80 %	
8. TOTAL DEPTH OF BORING: 180.0 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR: H. Snyder, Civil Engineer	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	REC.	BOX OR SAMPLE NO.	RQD OR CORE	REMARKS	BLOWS/0.5 FT.	N-VALUE
12.0	0.0						12.0		
			FILL, gravelly, mixture of fine gravel size limestone, fine to coarse grained limestone sand, and silt, dry, light gray	13	1		SPT Sampler	32 / 32 / 8	40
							10.4		
				40	2		SPT Sampler	4 / 6 / 6	12
9.0	3.0						9.0		
6.8	5.2		SAND, silty, mostly fine-grained , some silt, dry, dark brown (SM)	47	3		SPT Sampler	1 / 2 / 4	6
			Limestone, hard, slightly weathered, medium-grained, porous to pitted, light gray-green				7.4		
				100	4		SPT Sampler	16 / 50/0.4'	
							6.6		
5.0	7.0		Limestone, moderately hard	50	6 BOX 1	RQD 28	4 x 5-1/2" Diamond Impregnated Bit DT = 80 mins HP = 100 psi		
							2.0		
				100	7	RQD 0	4 x 5-1/2" Diamond Impregnated Bit 9 mins, 100 psi		
							0.9		
				80	8		SPT Sampler	4 / 4 / 29	33
							-0.6		
				50	9		-1.0 SPT Sampler 50/0.4'		
				45	BOX 1 OF 1	RQD 39	4 x 5-1/2" Diamond Impregnated Bit DT = 23 mins HP = 100 psi		

SAJ FORM 1836
JUN 02

(Continued)

Boring Designation CP02-EAARS-CB-0002

DRILLING LOG (Cont. Sheet)

INSTALLATION	SHEET 2 OF 10 SHEETS
Jacksonville District	

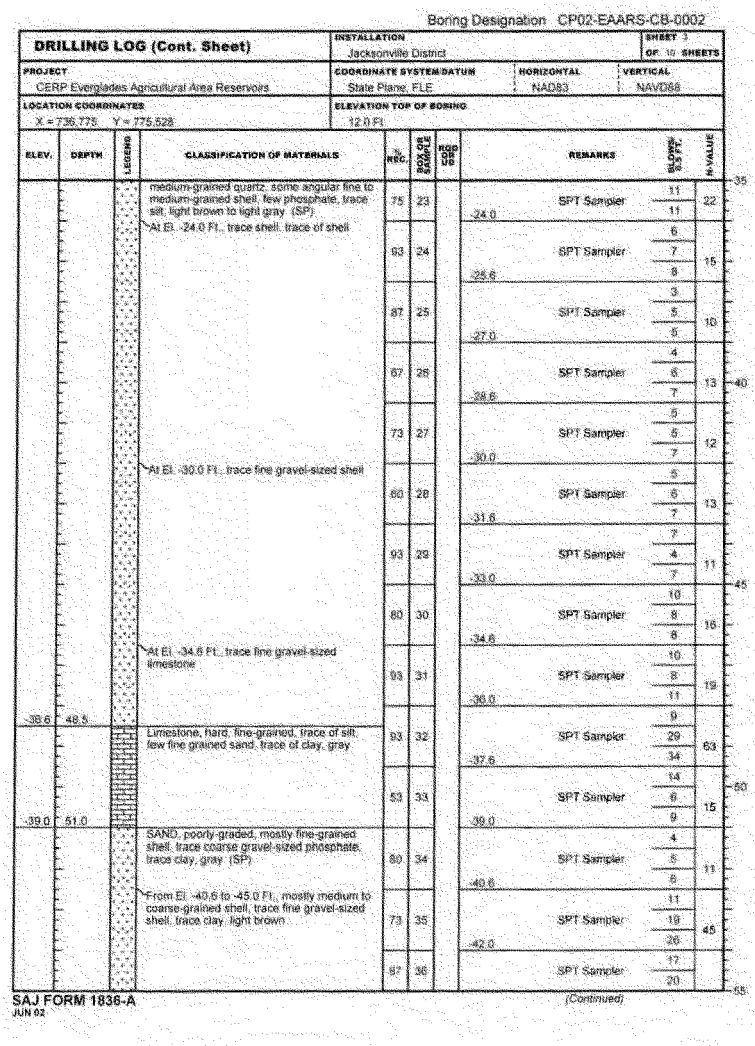
PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
CERP Everglades Agricultural Area Reservoirs	State Plane, FLE	NAD83	NAVD88

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 736,775 Y = 775,528	12.0 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	NO. REC.	BOX OR SAMPLE NO.	RQD OR UD	REMARKS	BLOWS/0.5 FT.	N-VALUE
-4.0	16.0	Weathered	At El. -3.0 Ft., vuggy	45	BOX 1	RQD 39	4 x 5-1/2" Diamond Impregnated Bit DT = 23 mins HP = 100 psi 500.2'		
			Limestone, hard, unweathered, fine-grained, vuggy, trace of shell, gray	NR	11		-4.0 -4.2 SPT Sampler		
				84	BOX 2	RQD 50	4 x 5-1/2" Diamond Impregnated Bit DT = 15 mins HP = 100 psi		
				70	BOX 3	RQD 40	-8.0 -9.0 4 x 5-1/2" Diamond Impregnated Bit 8 mins, 100 psi		
			At El. -9.0 Ft., little shell	33	14		SPT Sampler	9 7 8	15
			At El. -10.6 Ft., trace silt	47	15		-10.6 SPT Sampler	7 9 10	19
-12.0	24.0		SAND, poorly-graded with silt, some angular fine-grained quartz, some fine-grained limestone, little angular shell, trace phosphate, light brown (SP-SM)	47	16		-12.0 SPT Sampler	7 10 11	21
				47	17		-13.6 SPT Sampler	11 10 11	21
-15.0	27.0		SAND, silty, mostly fine-grained quartz, trace angular fine-grained shell, trace clay, trace phosphate, light gray (SM)	73	18		-15.0 SPT Sampler	8 9 9	18
			At El. -17.0 Ft., little clay	87	19		-16.6 SPT Sampler	7 8 5	12
				67	20		-18.0 SPT Sampler	8 5 5	10
-19.6	31.5		SAND, poorly-graded with silt, mostly fine-grained quartz, little shell, few silt, light brown (SP-SM)	73	21		-19.6 SPT Sampler	8 8 12	20
				73	22		-21.0 SPT Sampler	10 11 13	24
-22.6	34.5		SAND, poorly-graded, mostly fine to	75	23		-22.6 SPT Sampler	11	

SAJ FORM 1836-A
JUN 02

(Continued)



Boring Designation CP02-EAARS-CB-0002

DRILLING LOG (Cont. Sheet)	INSTALLATION: Jacksonville District	SHEET 3 OF 10 SHEETS
PROJECT: CERP Everglades Agricultural Area Reservoirs	COORDINATE SYSTEM/DATUM: State Plane, FLE	HORIZONTAL: NAD83 / VERTICAL: NAVD88
LOCATION COORDINATES: X = 736,775 Y = 775,528	ELEVATION TOP OF BORING: 12.0 Ft	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	ROCK QUALITY DESIGNATION	REMARKS	BLOWS/0.5 FT.	N-VALUE
			medium-grained quartz, some angular fine to medium-grained shell, few phosphate, trace silt, light brown to light gray (SP)	75	23	SPT Sampler	11 / 11	22
			At El. -24.0 Ft., trace shell, trace of shell	93	24	SPT Sampler	6 / 7 / 8	15
				87	25	SPT Sampler	3 / 5 / 5	10
				67	26	SPT Sampler	4 / 6 / 7	13
				73	27	SPT Sampler	5 / 5 / 7	12
			At El. -30.0 Ft., trace fine gravel-sized shell	60	28	SPT Sampler	5 / 6 / 7	13
				93	29	SPT Sampler	7 / 4 / 7	11
				80	30	SPT Sampler	10 / 8 / 8	16
			At El. -34.6 Ft., trace fine gravel-sized limestone	93	31	SPT Sampler	10 / 8 / 11	19
-38.6	48.5		Limestone, hard, fine-grained, trace of silt, few fine grained sand, trace of clay, gray	93	32	SPT Sampler	9 / 29 / 34	63
				53	33	SPT Sampler	14 / 6 / 9	15
-39.0	51.0		SAND, poorly-graded, mostly fine-grained shell, trace coarse gravel-sized phosphate, trace clay, gray (SP)	80	34	SPT Sampler	4 / 5 / 6	11
			From El. -40.6 to -45.0 Ft., mostly medium to coarse-grained shell, trace fine gravel-sized shell, trace clay, light brown	73	35	SPT Sampler	11 / 19 / 26	45
				87	36	SPT Sampler	17 / 20	

SAJ FORM 1836-A
JUN 02

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Boring Designation CP02-EAARS-CB-0002

DRILLING LOG (Cont. Sheet)

INSTALLATION: Jacksonville District | SHEET 4 OF 13 SHEETS

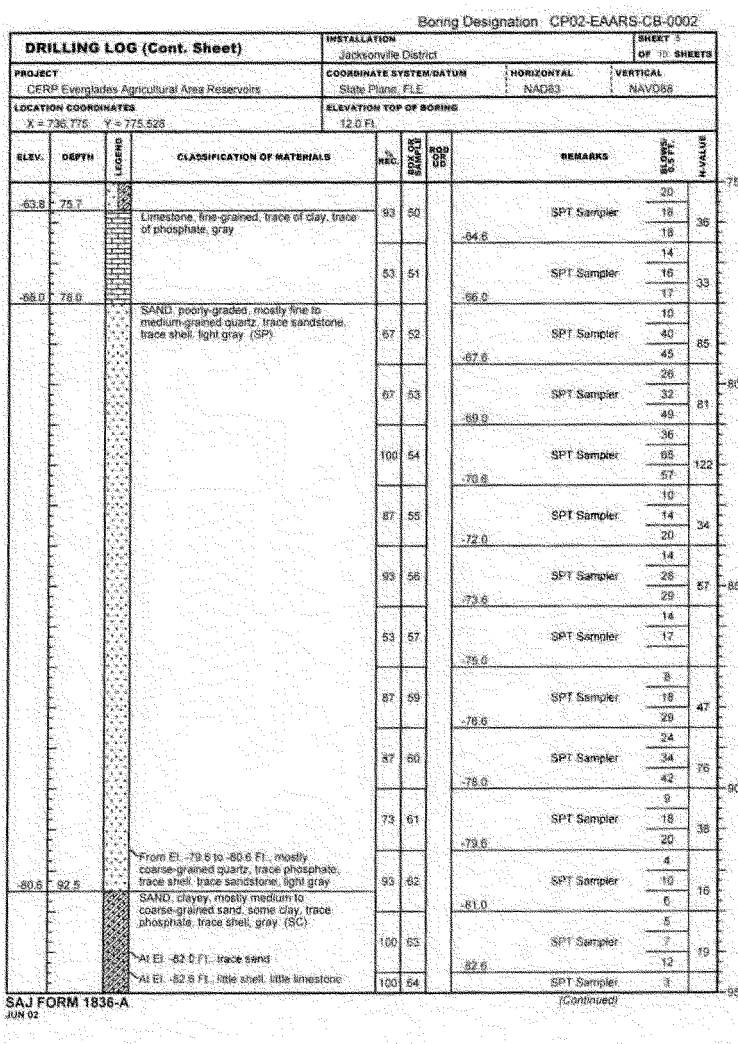
PROJECT: CERP Everglades Agricultural Area Reservoirs | COORDINATE SYSTEM DATUM: State Plane, FLE | HORIZONTAL: NAD83 | VERTICAL: NAVD88

LOCATION COORDINATES: X = 736,775 Y = 775,528 | ELEVATION TOP OF BORING: 12.0 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	REC. %	BOX OR SAMPLE NO.	ROD LOSS	REMARKS	BLOWS PER FT.	N VALUE
				87	36		-43.6 SPT Sampler	18	39
				87	37		SPT Sampler	15 19 22	41
-45.0	57.0		SAND, poorly-graded with clay, mostly medium-grained sand, little clay, little angular shell, trace fine gravel-sized shell, gray (SP-SC)	100	38		-45.0 SPT Sampler	12 16 13	29
			At El. -47.0 Ft., few shell, trace clay	60	39		-46.6 SPT Sampler	14 17 19	36
				93	40		-48.0 SPT Sampler	10 14 14	28
-49.6	61.5						-49.6		
			SAND, clayey, mostly fine to medium-grained sand, some clay, little fine gravel-sized shell, gray (SC)	87	41		SPT Sampler	10 19 31	50
				93	42		-51.0 SPT Sampler	10 13 12	25
			At El. -52.6 Ft., some shell, trace clay, lens of clay	73	43		-52.6 SPT Sampler	13 13 20	33
				100	44		-54.0 SPT Sampler	10 11 11	22
-55.6	67.5						-55.6		
			SAND, poorly-graded with clay, mostly shell (SP-SC)	67	45		SPT Sampler	10 12 16	28
				93	46		-57.0 SPT Sampler	15 14 12	26
				53	47		-58.6 SPT Sampler	11 12 16	28
				87	48		-60.0 SPT Sampler	18 14 19	33
			At El. -61.6 Ft., mostly shell	87	49		-61.6 SPT Sampler	8 12 15	27
							-63.0		

(Continued)

SAJ FORM 1836-A
JUN 02



Boring Designation CP02-EAARS-CB-0002

DRILLING LOG (Cont. Sheet)

INSTALLATION: Jacksonville District | SHEET 5 OF 10 SHEETS

PROJECT: CERP Everglades Agricultural Area Reservoirs | COORDINATE SYSTEM/DATUM: State Plane, FLE | HORIZONTAL: NAD83 | VERTICAL: NAVD88

LOCATION COORDINATES: X = 736,776 Y = 775,528 | ELEVATION TOP OF BORING: 12.0 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	REC.	ROCK QUALITY DESIGNATION (RQD)	REMARKS	BLOWS/6 IN. OR FT.	N-VALUE
-63.8	75.7			93	50	SPT Sampler	20 18 18	36
			Limestone, fine-grained, trace of clay, trace of phosphate, gray			-64.6		
				53	51	SPT Sampler	14 16 17	33
-68.0	78.0					-66.0		
			SAND, poorly-graded, mostly fine to medium-grained quartz, trace sandstone, trace shell, light gray (SP)	67	52	SPT Sampler	10 40 45	85
						-67.6		
				67	53	SPT Sampler	26 32 49	81
						-69.0		
				100	54	SPT Sampler	36 65 57	122
						-70.8		
				87	55	SPT Sampler	10 14 20	34
						-72.0		
				93	56	SPT Sampler	14 28 29	57
						-73.6		
				53	57	SPT Sampler	14 17	
						-75.0		
				87	59	SPT Sampler	8 18 29	47
						-76.6		
				87	60	SPT Sampler	24 34 42	76
						-78.0		
				73	61	SPT Sampler	9 18 20	38
						-79.6		
			From El. -79.6 to -80.6 Ft., mostly coarse-grained quartz, trace phosphate, trace shell, trace sandstone, light gray	93	62	SPT Sampler	4 10 6	16
-80.6	92.5					-81.0		
			SAND, clayey, mostly medium to coarse-grained sand, some clay, trace phosphate, trace shell, gray (SC)					
				100	63	SPT Sampler	5 7 12	19
			At El. -82.0 Ft., trace sand			-82.6		
			At El. -82.8 Ft., little shell, little limestone	100	64	SPT Sampler	3	

SAJ FORM 1836-A
JUN 02

(Continued)

Boring Designation CP02-EAARS-CB-0002

DRILLING LOG (Cont. Sheet)

INSTALLATION: Jacksonville District | SHEET 8 OF 10 SHEETS

PROJECT: CERP Everglades Agricultural Area Reservoirs | COORDINATE SYSTEM/DATUM: State Plane, FLE | HORIZONTAL: NAD83 | VERTICAL: NAVD88

LOCATION COORDINATES: X = 736,775 Y = 775,528 | ELEVATION TOP OF BORING: 12.0 Ft

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	SPT N VALUE BLANK	ROD CORE CO	REMARKS	BLOWS/0.5 FT.	N VALUE
				100	84		-84.0 SPT Sampler	9 / 7	16
			At El. -84.0 Ft., trace sand	100	85		-85.5 SPT Sampler	10 / 8 / 9	17
			At El. -86.0 Ft., trace limestone	87	66		-87.0 SPT Sampler	18 / 21 / 26	47
			At El. -87.0 Ft., some shell	67	67		-88.5 SPT Sampler	12 / 22 / 29	51
-88.6	100.5		SAND, clayey, mostly fine to coarse-grained sand, some clay, few shell, trace phosphate, gray (SC)	100	88		-90.0 SPT Sampler	14 / 9 / 14	23
-90.0	102.0		Sandstone, fine-grained, few shell, trace of clay, trace of phosphate, gray	67	69		-91.6 SPT Sampler	5 / 16 / 20	36
				100	70		-93.0 SPT Sampler	17 / 16 / 17	33
				87	71		-94.6 SPT Sampler	9 / 17 / 19	36
				87	72		-96.0 SPT Sampler	3 / 19 / 30	49
				73	73		-97.6 SPT Sampler	19 / 19 / 23	42
			At El. -98.0 Ft., few clay	93	74		-99.0 SPT Sampler	24 / 21 / 22	43
				93	75		-100.6 SPT Sampler	22 / 24 / 19	43
				93	76		-102.0 SPT Sampler	18 / 15 / 20	35
				87	77		SPT Sampler	14 / 16	

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JUN 02

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Boring Designation CP02-EAARS-CB-0002

DRILLING LOG (Cont. Sheet)

INSTALLATION: Jacksonville District | SHEET 7 OF 10 SHEETS

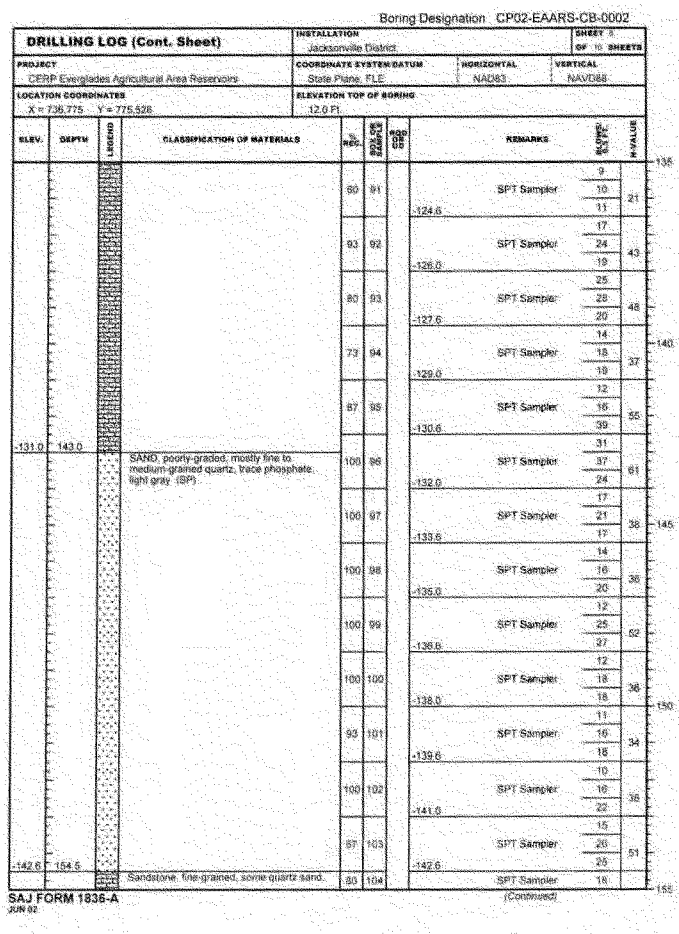
PROJECT: CERP Everglades Agricultural Area Reservoirs | COORDINATE SYSTEM/DATUM: State Plane, FLE | HORIZONTAL: NAD83 | VERTICAL: NAVD88

LOCATION COORDINATES: X = 736,775 Y = 775,528 | ELEVATION TOP OF BORING: 12.0 Ft

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	REC.	RQD OR CORE RECOVERY %	REMARKS	BLOWS PER 6 IN.	N-VALUE
				87	77	-103.6 SPT Sampler	17	33
				87	78	SPT Sampler	15 17 14	31
				93	79	-105.0 SPT Sampler	12 10 11	21
				100	80	-106.6 SPT Sampler	13 17 16	33
				93	81	-108.0 SPT Sampler	12 14 18	32
				87	82	-109.6 SPT Sampler	17 22 17	39
				93	83	-111.0 SPT Sampler	12 16 16	32
				73	84	-112.6 SPT Sampler	14 22 19	41
				87	85	-114.0 SPT Sampler	15 14 13	27
				93	86	-115.6 SPT Sampler	14 13 13	26
				73	87	-117.0 SPT Sampler	13 14 10	24
				87	88	-118.6 SPT Sampler	9 10 15	25
				80	89	-120.0 SPT Sampler	26 15 16	31
				87	90	-121.6 SPT Sampler	23 24 18	42
						-123.0		

(Continued)

SAJ FORM 1836-A
JUN 02



Boring Designation CP02-EAARS-CB-0002

DRILLING LOG (Cont. Sheet)	INSTALLATION Jacksonville District	SHEET 8 OF 16 SHEETS
PROJECT CERP Everglades Agricultural Area Reservoirs	COORDINATE SYSTEM/DATUM State Plane, FLE	HORIZONTAL NAD83 / VERTICAL NAVD88
LOCATION COORDINATES X = 736,775 Y = 775,528	ELEVATION TOP OF BORING 12.0 Ft	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	REC.	BLOCK	ROD CORE	REMARKS	BLOWS/6 IN.	N-VALUE
				90	91		-124.6 SPT Sampler	9 / 10 / 11	21
				93	92		-126.0 SPT Sampler	17 / 24 / 19	43
				80	93		-127.6 SPT Sampler	25 / 28 / 20	48
				73	94		-129.6 SPT Sampler	14 / 18 / 19	37
				87	95		-130.6 SPT Sampler	12 / 16 / 39	55
-131.0	143.0		SAND, poorly-graded, mostly fine to medium-grained quartz, trace phosphate, light gray (SP)	100	96		-132.0 SPT Sampler	31 / 37 / 24	61
				100	97		-133.6 SPT Sampler	17 / 21 / 17	38
				100	98		-135.0 SPT Sampler	14 / 16 / 20	36
				100	99		-136.6 SPT Sampler	12 / 25 / 27	52
				100	100		-138.0 SPT Sampler	12 / 18 / 18	36
				93	101		-139.6 SPT Sampler	11 / 16 / 18	34
				100	102		-141.6 SPT Sampler	10 / 16 / 22	38
				87	103		-142.6 SPT Sampler	15 / 26 / 25	51
-142.6	154.5		Sandstone, fine-grained, some quartz sand.	80	104		SPT Sampler	18	

SAJ FORM 1836-A
JUN 92

(Continued)

Boring Designation CP02-EAARS-CB-0002

DRILLING LOG (Cont. Sheet)

INSTALLATION: Jacksonville District

SHEET 2 OF 12 SHEETS

PROJECT: CERP Everglades Agricultural Area Reservoirs

COORDINATE SYSTEM DATUM: State Plane, FLE | HORIZONTAL: NAD83 | VERTICAL: NAVD88

LOCATION COORDINATES: X = 736,775 Y = 775,528

ELEVATION TOP OF BORING: 12.0 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR CORE SAMPLE #	ROD OR CORE	REMARKS	BLOWS/0.5 FT.	N-VALUE
			few clay, trace shell, trace phosphate, gray At El. -143.0 Ft., few shell	60	104		-144.0 SPT Sampler	20 19	39
				93	105		-145.5 SPT Sampler	25 22 24	46
			At El. -145.8 Ft., trace clay	100	106		-147.0 SPT Sampler	9 17 41	58
				73	107		-148.6 SPT Sampler	16 20 20	40
				60	108		-150.0 SPT Sampler	15 17 19	36
				80	109		-151.6 SPT Sampler	30 20 18	38
				73	110		-153.0 SPT Sampler	16 16 21	37
				80	111		-154.5 SPT Sampler	14 16 18	34
				80	112		-156.0 SPT Sampler	19 18 19	37
				73	113		-157.6 SPT Sampler	6 17 14	31
				100	114		-159.0 SPT Sampler	14 16 16	32
-159.0	171.0		SAND, poorly-graded, mostly fine to medium-grained quartz, trace fine gravel-sized sandstone, trace phosphate, light gray (SP)	100	115		-160.5 SPT Sampler	15 24 19	43
-161.0	173.0		Sandstone, medium-grained, some quartz sand, few clay, few shell, trace of phosphate, gray	100	116		-162.0 SPT Sampler	14 17 11	28
				87	117		SPT Sampler	24 24	

SAJ FORM 1836-A
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(Continued)

Boring Designation CP02-EAARS-CB-0002

DRILLING LOG (Cont. Sheet)

INSTALLATION: Jacksonville District			SHEET 10 OF 10 SHEETS
PROJECT: CERP Everglades Agricultural Area Reservoirs	COORDINATE SYSTEM/DATUM: State Plane, FLE	HORIZONTAL: NAD83	VERTICAL: NAVD88
LOCATION COORDINATES: X = 738,775 Y = 775,528	ELEVATION TOP OF BORING: 12.0 Ft.		

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	ROD OR CORE	REMARKS	BLOWS/0.5 FT.	N-VALUE
				87	117		-163.6 SPT Sampler	18	42
				87	118		SPT Sampler	16 16 18	34
							-165.0		
				100	119		SPT Sampler	17 18 19	37
							-166.6		
				100	120		SPT Sampler	25 26 29	55
-168.0	180.0						-168.0		

NOTES:

1. Soils are field visually classified in accordance with the Unified Soils Classification System.

2. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
119	177.0/178.5	*

*Lab visual classification based on gradation curve. No Atterberg limits.

3. Additional Laboratory Testing

119 Moisture Content

140# hammer w/30" drop used with 2.0" split spoon (1-3/8" I.D. x 2" O.D.)

Abbreviations:
NR = Not Recorded.
DT = Drill Time.
HP = Hydraulic Pressure.

SAJ FORM 1836-A
JUN 02

EVERGLADES AGRICULTURAL AREA RESERVOIR A-1 GEOTECHNICAL DATA REPORT

MARCH 17, 2006

BLACK & VEATCH

South Florida Water Management District
EAA Reservoir A-1 Geotechnical Data Report March 2006

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1.0 INTRODUCTION

1.0 INTRODUCTION

1.1 AUTHORIZATION FOR GEOTECHNICAL DATA REPORT (GDR)

This geotechnical data report (GDR) and the geotechnical investigations it documents were authorized by the South Florida Water Management District (SFWMD) under Work Order No. 9 (CN040932-WO09) approved on May 12, 2005.

1.2 PURPOSE AND SCOPE OF GDR

The purpose of the GDR is to present the results of geotechnical field investigations and laboratory testing performed for the Everglades Agricultural Area (EAA) Reservoir A-1 under Work Order No. 2, Test (Embankment) Cells, and Work Order No. 9, Supplemental Geotechnical Investigation.

The Test Cell geotechnical investigation was performed to provide information for design of the Test Cell construction and seepage monitoring program.

The supplemental geotechnical field investigation program was developed to provide a more complete characterization of the subsurface conditions for embankment design, embankment stability, settlement, seepage analyses, and to provide information for identifying potential borrow materials. The program was developed considering the results of the previous preliminary geotechnical investigations performed to evaluate the suitability of the EAA Reservoir A-1 Project site, the Test Cell embankment construction results, and requirements for on-site borrow materials.

The locations of borings previously performed were considered when locating the borings for this supplemental program. The previous geotechnical investigations were performed by Williams Earth Sciences, Inc. (separate reports dated June 11 and July 30, 2004) and by Nodarse & Associates (March-May 2004). This information is available upon request to the SFWMD.

Borings CPO5-EAARS-CB-0418 and CPO5-EAARS-CB-0419 were not accessible to the drill rigs. Blank boring logs were prepared for these borings and are included in Appendix 2.

The borings for both the Test Cell investigation and the supplemental investigation were assigned identification numbers using the numbering system developed jointly by the US Army Corps of Engineers (USACE) and the SFWMD. The boring numbers assigned were based on the block of numbers provided by Karen Pinchford of the USACE Jacksonville District office.

1.3 PROJECT DESCRIPTION

The EAA Reservoir A-1 Project (Project) is a feature of the Comprehensive Everglades Restoration Plan (CERP). The plan selected for the expedited EAA Reservoir A-1 design includes the following components:

- Approximately 190,000 acre-feet EAA Reservoir A-1 with a perimeter embankment and seepage canals

- Northeast pump station that pumps from North New River Canal (3,000 cfs) – this work item is included in Work Order No. 15
- A connector canal from the North New River Canal (NNRC) to the new northeast pump station
- Gated inlet and discharge structures – this work item is included in Work Order No. 15
- Seepage pump station – this work item is included in Work Order No. 15
- New four lane bridge on U.S. Highway 27 across the new connector canal – this work item is included in Work Order No. 15

The Project is located in Palm Beach County, Florida.

The purpose of the Project as defined in the CERP is to capture EAA basin runoff and releases from Lake Okeechobee. The facilities will be designed to improve the timing of environmental water supply deliveries to Stormwater Treatment Area 3/4 (STA-3/4) and the Water Conservation Areas (WCA), reduce Lake Okeechobee regulatory releases to the estuaries, meet supplemental agricultural irrigation deliveries, and increase flood protection within the EAA.

1.4 ORGANIZATION OF GDR

The remainder of this report is divided into three sections: Regional Geologic Setting, Field Exploration Program Summary, and Exploration Results. Regional Geologic Setting is a summary of information available on the Project geology and geologic conditions available in literature. Field Exploration Summary describes the field investigations and procedures and the laboratory testing completed on samples obtained during the investigations. The results of the investigation are described and a summary of the laboratory testing are contained in the Exploration Results Section. Boring logs and piezometer installation logs for the Test Cells and boring logs and piezometer installation logs for the supplemental borings are included in Appendix 1 and Appendix 2, respectively. Photographs of rock core and site photographs are found in Appendix 3. The hydraulic interval test results are included in Appendix 4. The detailed laboratory testing results are contained in Appendix 5.

1.5 LIMITATIONS

The data in this report were based on site conditions existing at the time of the investigations. Unanticipated conditions may be encountered during construction because of variations which were not detected during the investigation program. The construction process may also alter ground conditions. Therefore, experienced geotechnical engineering personnel were required to observe and document the conditions encountered and determine applicability of data.

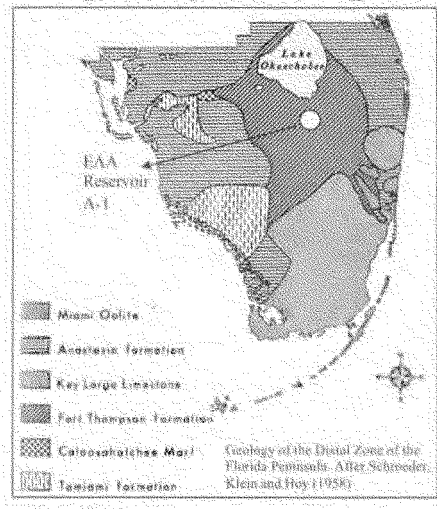
This report was prepared solely for the benefit of SFWMD by Black & Veatch Corporation (B&V) under the terms and conditions of the written agreement dated July 9, 2004 between SFWMD and B&V ("the Agreement"). Neither SFWMD nor B&V have made analysis, verified, or rendered an independent judgment of the validity of the information provided by others. WHILE IT IS BELIEVED THAT THE INFORMATION AND DATA CONTAINED HEREIN

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2.0 REGIONAL GEOLOGIC SETTING

2.0 REGIONAL GEOLOGIC SETTING

Figure 2-1 Regional Surficial Geology of the Southern Florida Peninsula



Geology of the Distal Zone of the Florida Peninsula. After Schroeder, Klein and Hoy (1958)

The following description of the regional geologic setting was developed from a review of selective geologic literature. The EAA Reservoir A-1 Project is located south of Lake Okeechobee within the Everglades physiographic subdivision of the Southern Zone (White, 1970). The Everglades is generally a flat, geologic depression between the Immokalee Rise and Big Cypress Spur physiographic subdivisions on the west, and the Atlantic Coastal Ridge physiographic subdivision on the east. The Everglades extends southward from Lake Okeechobee to Florida Bay with elevations near sea level. With the exception of the EAA, the Everglades landscape consists primarily of sawgrass marsh with hammocks of willow, myrtle, and bay trees.

The United States Department of Agriculture, Natural Resources Conservation Service (NRCS and formerly known as the Soil Conservation Service) published a soil survey for the Palm Beach County area in the mid 1970s (McCollum et. al., 1978). Seven primary soil types were identified in the EAA region as Torry muck, Terra Ceia muck, Pahokee muck, Lauderhill muck, Dania muck, Okeelanta muck, and Okeechobee muck. The soils at EAA Reservoir A-1 include the Pahokee muck (primarily in the southern portion of the site) and Lauderhill muck (primarily in the northern portion of the site). Based on geotechnical borings performed at the EAA Reservoir A-1 Project site, the muck ranges in thickness from less than one foot to approximately five feet.

According to the NRCS, the soils located beneath the former Talisman Sugar Corporation processing facility are classified as Urban land. Urban land soils are those which have been disturbed due to development.

The generalized regional geologic/hydrogeologic conditions for the surficial aquifer system in Palm Beach County are provided in Figure 2-1. It should be recognized that this representation is not all inclusive since the geology in southeast Florida is very complex, particularly the geology of the Plio-Pleistocene to Holocene Epochs. However, the primary geologic and hydrogeologic units that are formally recognized in Palm Beach County are represented.

In general, the surface and near surface geology of the region is complex and ranges from unconsolidated, variably calcareous and fossiliferous quartz sands to well indurated, sandy, fossiliferous fresh and marine limestones (Scott, 2001 and Schroeder et al., 1954). These sediments are Pleistocene to recent in age, and blanket most of Palm Beach County except for the Atlantic Coastal Ridge sediments on the east coast. The regional near surface geologic units are generally referred to, in descending order, as the Lake Flirt Marl, Fort Thompson Formation, and Caloosahatchee Formation. The total thickness of these units can range to nearly 50 feet.

The Pliocene-age Tamiami Formation underlies the Caloosahatchee Formation. The Tamiami Formation contains a wide range of mixed carbonate-siliciclastic lithologies and associated faunas (Missimer, 1992). The Tamiami Formation in the area is over 100 feet thick. The Tamiami Formation and overlying geologic units comprise the surficial aquifer system in Palm Beach County. Miller (Wesley, 1987) contoured the bottom of the surficial aquifer system (the top of the Hawthorn Group) in Palm Beach County using existing well logs. According to this work the bottom of the surficial aquifer system in the area of the Test Cell Program and the EAA Reservoir A-1 lies between about -200 to -220 feet.

Other geologic information may indicate that the Caloosahatchee Formation is thin, patchy, or not present at the EAA Reservoir A-1 Project site (Harvey et al., 2002). Also, as illustrated in Figure 2-2, recent geological work (Reese and Cunningham, 2000) has redefined the stratigraphy of the area. Presently, the Tamiami Formation has several recognized named and unnamed geologic members including the Ochopee Limestone Member and the Pinecrest Sand Member. Both Tamiami Formation members contain sandy strata, but the Pinecrest Sand Member is principally shelly, fine grained, quartz sand. The sands in the Caloosahatchee and Tamiami Formations are generally differentiated based on the fossil assemblages observed in outcrops, but key indicator fossils are typically not recovered in borings (Scott, 2005). Therefore, interpretation of the contact between the Caloosahatchee Formation and Tamiami Formation at the EAA Reservoir A-1 Project site is not possible. They will not be differentiated on the boring logs but will be designated the Caloosahatchee and Pinecrest sands.

An unnamed sand formation and the Hawthorn Group, both of Miocene-age, underlie the Tamiami Formation (Reese and Cunningham, 2002). The unnamed sand is thin in the project area, 25 to 30 feet thick and consist of very fine sand and silty sand. The Hawthorn Group consists of an interbedded sequence of widely varying lithologies and components that includes limestone, dolomite, dolosilt, shell, quartz sand, clay, phosphate grains and mixtures of these materials (Reese and Memberg, 2000). The characteristics that distinguish the Hawthorn Group from underlying units are its high and variable siliciclastic and phosphatic content, its color, which can be green, olive-gray, or light gray; and its gamma-ray log response. According to Scott (1988), the Hawthorn Group is approximately 700 feet thick in the region. The Hawthorn Group sediments retard the exchange of groundwater between the overlying surficial aquifer system and the underlying Eocene-age carbonates of the Floridan aquifer system, and are hydrogeologically referred to as the intermediate confining unit.

Eocene-age carbonates underlying the Hawthorn Group include, in descending order, the Ocala Limestone, Avon Park Formation, and Oldsmar Formation. The overlying Oligocene-age Suwannee Limestone is thin to discontinuous in the EAA region, and likely not present in the east half of Palm Beach County (Miller, James, 1986). The cumulative thickness of the Eocene-age carbonates in the region is approximately 2,500 feet (Miller, James, 1986).

Figure 2-2 Generalized Regional Geology and Hydrogeology

(from Reese and Cunningham, 2000)

Series	Lithostratigraphic units		Approximate thickness (feet)	Lithology	Hydrogeologic unit	Approximate thickness (feet)
HOLOCENE	LAKE BYRTH MARL, UNDIFFERENTIATED SOIL AND SAND	UNDIFFERENTIATED	0 - 8	Marl, peat, organic soil, quartz sand	WATER TABLE AQUIFER / BISCAYNE AQUIFER	0 - 120
PLEISTOCENE	PAMLICO SAND		0 - 50	Quartz sand		
	MIAMI LIMESTONE		0 - 30	Oolitic limestone		
	FORT THOMPSON FORMATION		0 - 100	Marine limestone and minor gastropod-rich freshwater limestone		
	ANASTASIA FORMATION		0 - 140	Coquina, quartz sand and sandy limestone		
	KEY LARGO LIMESTONE		0 - 20	Coralline reef rock		
PLIOCENE	TAMIAMI FORMATION	PINECREST SAND MEMBER	0 - 30	Quartz sand, pelecypod-rich quartz sandstone, terrigenous mudstone	UPPER SEMICONFINING TO CONFINING UNIT	0 - 130
		OCHOPEE LIMESTONE MEMBER	0 - 130	Pelecypod lime mudstone and floatstone, pelecypod-rich quartz sand, molsic quartz sandstone	GRAY LIMESTONE AQUIFER	0 - 130
				Pelecypod-rich quartz sand and sandstone	LOWER SEMICONFINING UNIT	0 - 20
MIOCENE	UNNAMED FORMATION		0 - 300	Quartz sand, sandstone, and pelecypod-rich quartz sand, local abundant phosphate grains	SAND AQUIFER(S)	0 - 100
	UPPER PART OF HAWTHORN GROUP	PEACE RIVER FORMATION	0 - 300	Clay-rich quartz sand, terrigenous mudstone, diatomaceous mudstone, local abundant phosphate grains	INTERMEDIATE CONFINING UNIT OR INTERMEDIATE AQUIFER SYSTEM	300±

SURFICIAL AQUIFER SYSTEM

Figure 4. Lithostratigraphic units recognized in the study area, their generalized geology, and relationship with hydrogeologic units. Modified from Gleason (1964), Hunter (1968), Miller (1986), Meisner (1982), and Wanless and others (1956).

3.0 FIELD EXPLORATION PROGRAM SUMMARY

3.0 FIELD EXPLORATION PROGRAM SUMMARY

Plate 1 shows the exploratory borings that have been completed and logged as part of this and previous phases of exploration within the perimeter of the EAA Reservoir A-1, with the exception of the Test Cell borings. Plate 2 shows borings completed and piezometers installed for the Test Cell program. Plate 3 contains the location of hydraulic interval tests. Appendix 1 and Appendix 2 contain the boring logs of borings completed during the Test Cell Program and the Supplemental Geotechnical Investigation respectively.

3.1 PREVIOUS EXPLORATION PROGRAMS

Soil borings from 50 to 100 feet deep were completed at the planned EAA Reservoir A-1 Project Test Cell site in December 2004 and during the test cell construction in early 2005. The boring location plan is shown in Plate 1. The boring logs for the Test Cell are included in Appendix 1.

One hundred thirty-eight geotechnical borings were completed for the SFWMD around the planned EAA Reservoir A-1 in 2003 and early 2004. Four of those borings are located in the vicinity of the Test Cell site: CB-0068, CB-0069, CB-0140, and CB-0142. Boring CB-0068 is about 800 feet northwest of the Test Cell site borrow area. Boring CB-0069 is located over 1,000 feet west of Test Cell 1. Boring CB-0140 is located about 800 feet east of Test Cell 2. Boring CB-0142 is located about 200 feet east of the borrow area and 1,300 feet north of the Test Cells. The borings were completed between 50.5 and 52 feet deep with rotary wash drilling and split-barrel sampling.

3.2 EXPLORATION PROGRAM FOR DESIGN

Additional borings were completed between December 7, 2004 and September 14, 2005 for design of the temporary embankments for the Test Cell construction and monitoring program and preliminary design of the EAA Reservoir A-1. The boring locations and depths are shown in Table 3-1. Borings TW-0196 through TW-0254 were completed for piezometer installation during the Test Cell construction and monitoring only; they were not sampled or logged.

The Test Cell borings and the supplemental borings were assigned temporary identification numbers prior to drilling. These temporary boring numbers will be referred to as old numbers in this Report. After completion of the Test Cell and supplemental borings, a block of new boring numbers was received from the USACE Jacksonville District office. The borings logs and piezometer installation logs for the Test Cell borings and the supplemental borings contain the boring identification numbers that were assigned by the USACE. Table 3-1 lists the new boring number and the corresponding old boring number.

EAA Reservoir A-1 Geotechnical Data Report March, 2006

Table 3-1 Boring Locations and Depths

Old Boring Number	New Boring Number	Depth (feet)	Northing	Easting	Location
Test Cell Borings					
BA-01	CP05-EAARS-CB-0168	50	776662.9	758833.1	Test Cell Borrow
BA-02	CP05-EAARS-CB-0169	50	776662.9	759333.1	Test Cell Borrow
BA-03	CP05-EAARS-CB-0170	50	776662.9	759833.1	Test Cell Borrow
BA-04	CP05-EAARS-CB-0171	50	776162.9	758833.1	Test Cell Borrow
BA-05	CP05-EAARS-CB-0172	50	776162.9	759333.1	Test Cell Borrow
BA-06	CP05-EAARS-CB-0173	50	776162.9	759833.1	Test Cell Borrow
BA-07	CP05-EAARS-CB-0174	50	775662.9	758833.1	Test Cell Borrow
BA-08	CP05-EAARS-CB-0175	50	775662.9	759333.1	Test Cell Borrow
BA-09	CP05-EAARS-CB-0176	50	775662.9	759833.1	Test Cell Borrow
BA-10	CP05-EAARS-CB-0177	50	775662.9	760333.1	Test Cell Borrow
TC-01	CP05-EAARS-CB-0178	50	774612.9	759154.5	Test Cell 1
TC-02	CP05-EAARS-CB-0179	50	774612.9	760243.1	Test Cell 1
TC-03	CP05-EAARS-CB-0180	50	773531.5	759154.5	Test Cell 1
TC-04	CP05-EAARS-CB-0181	50	773531.5	760243.1	Test Cell 1
TC-05	CP05-EAARS-CB-0182	50	774072.2	759698.8	Test Cell 1
TC-06	CP05-EAARS-CB-0183	50	774619.8	761239.5	Test Cell 2
TC-07	CP05-EAARS-CB-0184	50	774619.8	762328.1	Test Cell 2
TC-08	CP05-EAARS-CB-0185	50	773538.4	761239.5	Test Cell 2
TC-09	CP05-EAARS-CB-0186	50	773538.4	762328.1	Test Cell 2
TC-10	CP05-EAARS-CB-0187	50	774079.1	761783.8	Test Cell 2
TC1-E	CP05-EAARS-CB-0188	100	774072.0	760086.3	Test Cell 1
TC1-N	CP05-EAARS-CB-0189	100	774459.7	759698.8	Test Cell 1
TC1-W	CP05-EAARS-CB-0190	100	774072.2	759311.3	Test Cell 1
TC1-S	CP05-EAARS-CB-0191	100	773684.7	759698.8	Test Cell 1
TC2-E	CP05-EAARS-CB-0192	100	774079.1	762171.3	Test Cell 2
TC2-N	CP05-EAARS-CB-0193	100	774466.6	761783.8	Test Cell 2
TC2-W	CP05-EAARS-CB-0194	100	774079.1	761396.3	Test Cell 2
TC2-S	CP05-EAARS-CB-0195	100	773691.6	761783.8	Test Cell 2
PZ1BGSA	CP05-EAARS-TW-0196	25	773021.5	759162.0	TC SW Background
PZ1BGSB	CP05-EAARS-TW-0197	60	773031.5	759162.0	TC SW Background
PZ1BGSC	CP05-EAARS-TW-0198	100	773041.5	759162.0	TC SW Background
PZ1/2BGSA	CP05-EAARS-TW-0199	25	774065.7	760739.5	TC Middle Background
PZ1/2BGSB	CP05-EAARS-TW-0200	60	774075.7	760739.5	TC Middle Background
PZ1/2BGSC	CP05-EAARS-TW-0201	100	774085.7	760739.5	TC Middle Background
PZ2BGSA	CP05-EAARS-TW-0202	25	775109.8	762335.6	TC NE Background
PZ2BGSB	CP05-EAARS-TW-0203	60	775119.8	762335.6	TC NE Background
PZ2BGSC	CP05-EAARS-TW-0204	100	775129.8	762335.6	TC NE Background
PZ2BGSE	CP05-EAARS-TW-0205	25	761239.5	773038.4	TC NE Background
PZ2BGSW	CP05-EAARS-TW-0206	25	762328.1	773038.4	TC NE Background
PZ1N2A	CP05-EAARS-TW-0207	25	774397.9	759697.0	TC1 Inner Bench
PZ1N2B	CP05-EAARS-TW-0208	60	774407.9	759697.0	TC1 Inner Bench
PZ1N2C	CP05-EAARS-TW-0209	100	774417.9	759697.0	TC1 Inner Bench
PZ1N3A	CP05-EAARS-TW-0210	25	774487.9	759697.0	TC1 Outer Bench
PZ1N3B	CP05-EAARS-TW-0211	60	774497.9	759697.0	TC1 Outer Bench
PZ1N3C	CP05-EAARS-TW-0212	100	774507.9	759697.0	TC1 Outer Bench
PZ1E2A	CP05-EAARS-TW-0213	25	774071.0	760028.1	TC1 Inner Bench
PZ1E2B	CP05-EAARS-TW-0214	60	774071.0	760038.1	TC1 Inner Bench

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Old Boring Number	New Boring Number	Depth (feet)	Northing	Easting	Location
PZ1E2C	CP05-EAARS-TW-0215	100	774074.0	760048.1	TC1 Inner Bench
PZ1E3A	CP05-EAARS-TW-0216	25	774074.0	760118.1	TC1 Outer Bench
PZ1E3B	CP05-EAARS-TW-0217	60	774074.0	760118.1	TC1 Outer Bench
PZ1E3C	CP05-EAARS-TW-0218	100	774074.0	760138.1	TC1 Outer Bench
PZ1S2A	CP05-EAARS-TW-0219	25	773746.5	759700.6	TC1 Inner Bench
PZ1S2B	CP05-EAARS-TW-0220	60	773736.5	759700.6	TC1 Inner Bench
PZ1S2C	CP05-EAARS-TW-0221	100	773726.5	759700.6	TC1 Inner Bench
PZ1S3A	CP05-EAARS-TW-0222	25	773656.5	759700.6	TC1 Outer Bench
PZ1S3B	CP05-EAARS-TW-0223	60	773646.5	759700.6	TC1 Outer Bench
PZ1S3C	CP05-EAARS-TW-0224	100	773636.5	759700.6	TC1 Outer Bench
PZ1W2A	CP05-EAARS-TW-0225	25	774070.4	759369.5	TC1 Inner Bench
PZ1W2B	CP05-EAARS-TW-0226	60	774070.4	759359.5	TC1 Inner Bench
PZ1W2C	CP05-EAARS-TW-0227	100	774070.4	759349.5	TC1 Inner Bench
PZ1W3A	CP05-EAARS-TW-0228	25	774070.4	759279.5	TC1 Outer Bench
PZ1W3B	CP05-EAARS-TW-0229	60	774070.4	759269.5	TC1 Outer Bench
PZ1W3C	CP05-EAARS-TW-0230	100	774070.4	759259.5	TC1 Outer Bench
PZ2N2A	CP05-EAARS-TW-0231	25	774414.8	761772.0	TC2 Inner Bench
PZ2N2B	CP05-EAARS-TW-0232	60	774414.8	761782.0	TC2 Inner Bench
PZ2N2C	CP05-EAARS-TW-0233	100	774414.8	761792.0	TC2 Inner Bench
PZ2N3A	CP05-EAARS-TW-0234	25	774514.8	761772.0	TC2 Outer Bench
PZ2N3B	CP05-EAARS-TW-0235	60	774514.8	761782.0	TC2 Outer Bench
PZ2N3C	CP05-EAARS-TW-0236	100	774514.8	761792.0	TC2 Outer Bench
PZ2E2A	CP05-EAARS-TW-0237	25	774070.9	762123.1	TC2 Inner Bench
PZ2E2B	CP05-EAARS-TW-0238	60	774080.9	762123.1	TC2 Inner Bench
PZ2E2C	CP05-EAARS-TW-0239	100	774090.9	762123.1	TC2 Inner Bench
PZ2E3A	CP05-EAARS-TW-0240	25	774070.9	762223.1	TC2 Outer Bench
PZ2E3B	CP05-EAARS-TW-0241	60	774080.9	762223.1	TC2 Outer Bench
PZ2E3C	CP05-EAARS-TW-0242	100	774090.9	762223.1	TC2 Outer Bench
PZ2S2A	CP05-EAARS-TW-0243	25	773743.4	761775.6	TC2 Inner Bench
PZ2S2B	CP05-EAARS-TW-0244	60	773743.4	761785.6	TC2 Inner Bench
PZ2S2C	CP05-EAARS-TW-0245	100	773743.4	761795.6	TC2 Inner Bench
PZ2S3A	CP05-EAARS-TW-0246	25	773643.4	761775.6	TC2 Outer Bench
PZ2S3B	CP05-EAARS-TW-0247	60	773643.4	761785.6	TC2 Outer Bench
PZ2S3C	CP05-EAARS-TW-0248	100	773643.4	761785.6	TC2 Outer Bench
PZ2W2A	CP05-EAARS-TW-0249	25	774067.3	774824.8	TC2 Inner Bench
PZ2W2B	CP05-EAARS-TW-0250	60	774077.3	774824.8	TC2 Inner Bench
PZ2W2C	CP05-EAARS-TW-0251	100	774087.3	774824.8	TC2 Inner Bench
PZ2W3A	CP05-EAARS-TW-0252	25	774067.3	774724.8	TC2 Outer Bench
PZ2W3B	CP05-EAARS-TW-0253	60	774077.3	774724.8	TC2 Outer Bench
PZ2W3C	CP05-EAARS-TW-0254	100	774087.3	774724.8	TC2 Outer Bench
Supplemental Borings					
CB-0157	CP05-EAARS-CB-0255	100	781910.0	758371.0	A-1 Northwest Corner
CB-0158	CP05-EAARS-CB-0256	100	781984.0	761965.0	A-1 North Side
CB-0159	CP05-EAARS-CB-0257	100	783716.0	767707.0	A-1 Northeast Corner
CB-0160	CP05-EAARS-CB-0258	100	780135.0	770586.0	A-1 East Side
CB-0161	CP05-EAARS-CB-0259	100	776945.0	772723.0	A-1 East Side
CB-0162	CP05-EAARS-CB-0260	100	775586.0	775208.0	A-1 East Side
CB-0163	CP05-EAARS-CB-0261	100	770322.0	777070.0	A-1 East Side
CB-0165	CP05-EAARS-CB-0262	100	765552.0	781691.0	A-1 East Side
CB-0166	CP05-EAARS-CB-0263	100	759700.0	784911.0	A-1 East Side
CB-0167	CP05-EAARS-CB-0264	100	756500.0	786952.0	A-1 East Side

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Old Boring Number	New Boring Number	Depth (feet)	Northing	Easting	Location
CB-0168	CP05-EAARS-CB-0265	100	753214.0	789550.0	A-1 East Side
CB-0169	CP05-EAARS-CB-0266	100	750585.0	791221.0	A-1 Southeast Corner
CB-0170	CP05-EAARS-CB-0267	100	750246.0	787701.0	A-1 South Side
CB-0171	CP05-EAARS-CB-0268	100	750548.0	784355.0	A-1 South Side
CB-0172	CP05-EAARS-CB-0269	100	750220.0	780367.0	A-1 South Side
CB-0173	CP05-EAARS-CB-0270	100	750200.0	776528.0	A-1 South Side
CB-0175	CP05-EAARS-CB-0271	100	750130.0	769310.0	A-1 South Side
CB-0176	CP05-EAARS-CB-0272	100	750233.0	765878.0	A-1 South Side
CB-0177	CP05-EAARS-CB-0273	100	750080.0	762040.0	A-1 South Side
CB-0178	CP05-EAARS-CB-0274	100	750065.0	758699.0	A-1 Southwest Corner
CB-0179	CP05-EAARS-CB-0275	100	756315.0	758665.0	A-1 West Side
CB-0180	CP05-EAARS-CB-0276	100	764107.0	758486.0	A-1 West Side
CB-0181	CP05-EAARS-CB-0277	100	761543.0	760487.0	A-1 West Side
CB-0183	CP05-EAARS-CB-0278	100	768827.0	758019.0	A-1 West Side
CB-0184	CP05-EAARS-CB-0279	100	772221.0	757980.0	A-1 West Side
CB-0185	CP05-EAARS-CB-0280	100	776165.0	758181.0	A-1 West Side
CB-0186	CP05-EAARS-CB-0281	100	779806.0	757877.0	A-1 West Side
CB-0164	CP05-EAARS-RB-0282	240	766996.0	778268.0	A-1 East Side
CB-0174	CP05-EAARS-RB-0283	220	750073.0	773031.0	A-1 South Side
CB-0182	CP05-EAARS-RB-0284	240	764456.0	758050.0	A-1 West Side
CB-0190	CP05-EAARS-RB-0285	250	781923.0	766198.0	A-1 North Side
CB-0205	CP05-EAARS-RB-0286	220	764359.0	768550.0	A-1 Central
CB-0187	CP05-EAARS-CB-0287	31.5	783422.0	760195.0	A-1 North Side
CB-0188	CP05-EAARS-CB-0288	30	782018.0	762205.0	A-1 North Side
CB-0189	CP05-EAARS-CB-0289	30	783462.0	764332.0	A-1 North Side
CB-0191	CP05-EAARS-CB-0290	40.5	782440.0	768965.0	A-1 East Side
CB-0192	CP05-EAARS-CB-0291	42.5	780905.0	770048.0	A-1 East Side
CB-0193	CP05-EAARS-CB-0292	42.5	779231.0	771749.0	A-1 East Side
CB-0194	CP05-EAARS-CB-0293	42	777645.0	772555.0	A-1 East Side
CB-0195	CP05-EAARS-CB-0294	40	776025.0	773483.0	A-1 East Side
CB-0196	CP05-EAARS-CB-0295	30.5	774369.0	774857.0	A-1 East Side
CB-0197	CP05-EAARS-CB-0296	30	773030.0	775594.0	A-1 East Side
CB-0198	CP05-EAARS-CB-0297	30.5	771865.0	776117.0	A-1 East Side
CB-0199	CP05-EAARS-CB-0298	30.5	769649.0	777979.0	A-1 East Side
CB-0200	CP05-EAARS-CB-0299	30.5	768142.0	779025.0	A-1 East Side
CB-0201	CP05-EAARS-CB-0300	100	766330.0	780308.0	A-1 East Side
CB-0202	CP05-EAARS-CB-0301	30.5	764988.0	781256.0	A-1 East Side
CB-0203	CP05-EAARS-CB-0302	30.5	763913.0	781642.0	A-1 East Side
CB-0204	CP05-EAARS-CB-0303	30.5	761612.0	783518.0	A-1 East Side
CB-0206	CP05-EAARS-CB-0304	34.1	758279.0	785951.0	A-1 East Side
CB-0207	CP05-EAARS-CB-0305	30	778649.0	757994.0	A-1 West Side
CB-0208	CP05-EAARS-CB-0306	30.5	755048.0	788246.0	A-1 East Side
CB-0209	CP05-EAARS-CB-0307	30.5	753802.0	789084.0	A-1 East Side
CB-0210	CP05-EAARS-CB-0308	30.5	751534.0	790688.0	A-1 East Side
CB-0211	CP05-EAARS-CB-0309	30	750759.0	790521.0	A-1 South Side
CB-0212	CP05-EAARS-CB-0310	35	750227.0	788770.0	A-1 South Side
CB-0213	CP05-EAARS-CB-0311	30	750238.0	786937.0	A-1 South Side
CB-0214	CP05-EAARS-CB-0312	36.5	750245.0	785150.0	A-1 South Side
CB-0215	CP05-EAARS-CB-0313	30	750216.0	782576.0	A-1 South Side
CB-0216	CP05-EAARS-CB-0314	35	750217.0	781148.0	A-1 South Side
CB-0217	CP05-EAARS-CB-0315	45.5	750528.0	779484.0	A-1 South Side

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Old Boring Number	New Boring Number	Depth (feet)	Northing	Easting	Location
CB-0218	CP05-EAARS-CB-0316	35.5	750184.0	777664.0	A-1 South Side
CB-0219	CP05-EAARS-CB-0317	35.5	750159.0	775119.0	A-1 South Side
CB-0220	CP05-EAARS-CB-0318	30	750133.0	771527.0	A-1 South Side
CB-0221	CP05-EAARS-CB-0319	30.5	750096.0	767153.0	A-1 South Side
CB-0222	CP05-EAARS-CB-0320	30.5	750098.0	764703.0	A-1 South Side
CB-0223	CP05-EAARS-CB-0321	30.5	750082.0	763010.0	A-1 South Side
CB-0224	CP05-EAARS-CB-0322	35.5	750063.0	761074.0	A-1 South Side
CB-0225	CP05-EAARS-CB-0323	35	749972.0	759269.0	A-1 South Side
CB-0226	CP05-EAARS-CB-0324	35	751817.0	758603.0	A-1 West Side
CB-0227	CP05-EAARS-CB-0325	100	753491.0	758559.0	A-1 West Side
CB-0228	CP05-EAARS-CB-0326	35	755734.0	758535.0	A-1 West Side
CB-0229	CP05-EAARS-CB-0327	35	759750.0	758452.0	A-1 West Side
CB-0230	CP05-EAARS-CB-0328	35	765187.0	758085.0	A-1 West Side
CB-0231	CP05-EAARS-CB-0329	35	766160.0	758074.0	A-1 West Side
CB-0232	CP05-EAARS-CB-0330	30	767982.0	758285.0	A-1 West Side
CB-0233	CP05-EAARS-CB-0331	30	770143.0	758448.0	A-1 West Side
CB-0234	CP05-EAARS-CB-0332	30	775274.0	757910.0	A-1 West Side
CB-0235	CP05-EAARS-CB-0333	30	777640.0	757885.0	A-1 West Side
CB-0237	CP05-EAARS-CB-0334	30	754301.0	763206.0	A-1 Interior
CB-0238	CP05-EAARS-CB-0335	5.9	752382.0	769861.0	A-1 Interior
CB-0239	CP05-EAARS-CB-0336	30	752409.0	777773.0	A-1 Interior
CB-0240	CP05-EAARS-CB-0337	35	752266.0	784343.0	A-1 Interior
CB-0241	CP05-EAARS-CB-0338	7.5	754254.0	769704.0	A-1 Interior
CB-0242	CP05-EAARS-CB-0339	6.3	754350.0	769805.0	A-1 Interior
CB-0243	CP05-EAARS-CB-0340	30	754387.0	777734.0	A-1 Interior
CB-0244A	CP05-EAARS-CB-0341	36.5	754265.0	784323.0	A-1 Interior
CB-0244B	CP05-EAARS-CB-0342	38	754269.0	784326.0	A-1 Interior
CB-0245	CP05-EAARS-CB-0343	35	753277.0	786955.0	A-1 Interior
CB-0246	CP05-EAARS-CB-0344	6	758902.0	761980.0	A-1 Interior
CB-0247	CP05-EAARS-CB-0345	35.5	759005.0	768493.0	A-1 Interior
CB-0248	CP05-EAARS-CB-0346	10.8	758928.0	773757.0	A-1 Interior
CB-0249	CP05-EAARS-CB-0347	12.5	759074.0	780380.0	A-1 Interior
CB-0250	CP05-EAARS-CB-0348	8.5	761558.0	761980.0	A-1 Interior
CB-0251	CP05-EAARS-CB-0349	35.5	761600.0	768479.0	A-1 Interior
CB-0252	CP05-EAARS-CB-0350	12.5	761622.0	773855.0	A-1 Interior
CB-0253	CP05-EAARS-CB-0351	12	761656.0	779502.0	A-1 Interior
CB-0254	CP05-EAARS-CB-0352	34.3	759736.0	781668.0	A-1 Interior
CB-0255	CP05-EAARS-CB-0353	30	766808.0	760677.0	A-1 Interior
CB-0256	CP05-EAARS-CB-0354	9	766942.0	765980.0	A-1 Interior
CB-0257	CP05-EAARS-CB-0355	30	766738.0	771193.0	A-1 Interior
CB-0258	CP05-EAARS-CB-0356	13.5	766672.0	776448.0	A-1 Interior
CB-0259	CP05-EAARS-CB-0357	8	769496.0	760663.0	A-1 Interior
CB-0260	CP05-EAARS-CB-0358	14.5	769587.0	765916.0	A-1 Interior
CB-0261	CP05-EAARS-CB-0359	35	769421.0	770701.0	A-1 Interior
CB-0263	CP05-EAARS-CB-0360	35	774655.0	768482.0	A-1 Interior
CB-0264	CP05-EAARS-CB-0361	35	778254.0	768440.0	A-1 Interior
CB-0265	CP05-EAARS-CB-0362	30	781745.0	768432.0	A-1 Interior
CB-0266	CP05-EAARS-CB-0363	13	777293.0	771082.0	A-1 Interior
CB-0267	CP05-EAARS-CB-0364	14	774201.0	771181.0	A-1 Interior
CB-0268	CP05-EAARS-CB-0365	35	776579.0	765908.0	A-1 Interior
CB-0270	CP05-EAARS-CB-0366	14	752788.0	769704.0	A-1 Interior

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Old Boring Number	New Boring Number	Depth (feet)	Northing	Easting	Location
CB-0271	CP05-EAARS-CB-0367	30	752295.0	763219.0	A-1 Interior
CB-0272	CP05-EAARS-CB-0368	30	753762.0	767506.0	A-1 Interior
CB-0273	CP05-EAARS-CB-0369	30	753688.0	772154.0	A-1 Interior
CB-0274	CP05-EAARS-CB-0370	10.6	753744.0	775377.0	A-1 Interior
CB-0275	CP05-EAARS-CB-0371	35	753720.0	780369.0	A-1 Interior
CB-0276	CP05-EAARS-CB-0372	35.5	757929.0	776397.0	A-1 Interior
CB-0277	CP05-EAARS-CB-0373	35.5	758102.0	771124.0	A-1 Interior
CB-0278	CP05-EAARS-CB-0374	35.5	758247.0	765845.0	A-1 Interior
CB-0279	CP05-EAARS-CB-0375	35.5	762100.0	763174.0	A-1 Interior
CB-0280	CP05-EAARS-CB-0376	35.5	758795.0	760203.0	A-1 Interior
CB-0281	CP05-EAARS-CB-0377	35.5	756384.0	773911.0	A-1 Interior
CB-0282	CP05-EAARS-CB-0378	12.5	758500.0	760561.0	A-1 Interior
CB-0283	CP05-EAARS-CB-0379	13.5	769333.0	775402.0	A-1 Interior
CB-0284	CP05-EAARS-CB-0380	12	750090.0	763879.0	A-1 South Side
CB-0285	CP05-EAARS-CB-0381	10	773957.0	760070.0	A-1 Interior
CB-0286	CP05-EAARS-CB-0382	15	750598.0	784000.0	A-1 South Side
CB-0287	CP05-EAARS-CB-0383	11.5	773646.0	757946.0	A-1 West Side
CB-0288	CP05-EAARS-CB-0384	12	757725.0	783398.0	A-1 Interior
CB-0289	CP05-EAARS-CB-0385	12	764206.0	772656.0	A-1 Interior
CB-0290	CP05-EAARS-CB-0386	6.1	764152.0	761783.0	A-1 Interior
CB-0291	CP05-EAARS-CB-0387	12	772195.0	775012.0	A-1 Interior
CB-0292	CP05-EAARS-CB-0388	10	773931.0	759315.0	A-1 Interior
CB-0293	CP05-EAARS-CB-0389	13	787437.0	761044.0	A-1 Interior
CB-0294	CP05-EAARS-CB-0390	10.5	782063.0	757971.0	A-1 Interior
CB-0295	CP05-EAARS-CB-0391	12	750115.0	768244.0	A-1 Interior
CB-0296	CP05-EAARS-CB-0392	10	774441.0	759699.0	A-1 Interior
CB-0297	CP05-EAARS-CB-0393	10	773699.0	761785.0	A-1 Interior
CB-0298	CP05-EAARS-CB-0394	12	776830.0	772805.0	A-1 East Side
CB-0299	CP05-EAARS-CB-0395	40	763485.0	781629.0	A-1 East Side
CB-0300	CP05-EAARS-CB-0396	35	770101.0	777065.0	A-1 East Side
CB-0301	CP05-EAARS-CB-0397	12	757683.0	774766.0	A-1 Interior
CB-0302	CP05-EAARS-CB-0398	15	750753.0	791158.0	A-1 Southeast Corner
CB-0303	CP05-EAARS-CB-0399	13	758686.0	750096.0	A-1 Southwest Corner
CB-0304	CP05-EAARS-CB-0400	35.5	764135.0	758486.0	A-1 West Side
CB-0305	CP05-EAARS-CB-0401	10	779802.0	757725.0	A-1 West Side
CB-0306	CP05-EAARS-CB-0402	15	750729.0	791135.0	South Side
CB-0307	CP05-EAARS-CB-0403	11.5	761502.0	760599.0	A-1 West Side
CB-0308	CP05-EAARS-CB-0404	11.5	776148.0	759913.0	A-1 West Side
CB-0309	CP05-EAARS-CB-0405	35	775014.0	773698.0	A-1 East Side
CB-0310	CP05-EAARS-CB-0406	35	778285.0	765848.0	A-1 Interior
CB-0311	CP05-EAARS-CB-0407	38.5	756377.0	786638.0	A-1 East Side
CB-0312	CP05-EAARS-CB-0408	16	753570.0		A-1 West Side on Main Canal Levee
CB-0313	CP05-EAARS-CB-0409	16	757151.0		A-1 West Side On Main Canal Levee
CB-0314	CP05-EAARS-CB-0410	15.3	760332.0		A-1 South Side on Main Canal Levee
CB-0315	CP05-EAARS-CB-0411	12		762679.0	A-1 South Side on Main Canal Levee
CB-0316	CP05-EAARS-CB-0412	12		766635.0	A-1 South Side on Main Canal Levee

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Old Boring Number	New Boring Number	Depth (feet)	Northing	Easting	Location
CB-0317	CP05-EAARS-CB-0313	12		770593.0	A-1 South Side on Main Canal Levee
CB-0318	CP05-EAARS-CB-0314	13	750042.0	774548.0	A-1 South Side on Main Canal Levee
CB-0319	CP05-EAARS-CB-0315	14	750050.0	778522.0	A-1 South Side on Main Canal Levee
CB-0320	CP05-EAARS-CB-0316	17		782462.0	A-1 South Side on Main Canal Levee
CB-0321	CP05-EAARS-CB-0317	11.5	750108.0	786154.0	A-1 South Side on Main Canal Levee

A-1= EAA Reservoir A-1

3.2.1 Test Cell Borings

The Test Cell program involved the design, construction, installation of instrumentation, and monitoring of seepage from two Test Cells. Each Test Cell measured 500 feet square (at the embankment centerline) and consisted of an impoundment enclosed by a zoned earthen embankment surrounded by a seepage collection canal. The Test Cell site is located within the footprint of the planned EAA Reservoir A-1. Construction of the Test Cells was completed between January 10 and April 9, 2005.

Twenty geotechnical borings, CP05-EAARS-CB-0168 to CP05-EAARS-CB-0187, were completed at the Test Cell site in December of 2004, ten at the site borrow area and five at each Test Cell for design of the cells. The borings were drilled to a depth of 50 feet, primarily by rotary wash drilling using a heavy drilling mud to support the holes. The near surface limestone (caprock) was cored in each one of the holes, and a deeper, thinner limestone was cored at about 26 feet depth in two of the borings. Soils were sampled with Standard Penetration Test (SPT) methods. Drilling began on December 7, 2004 with the mobilization of two Diedrich D-50 Turbo drilling rigs to the site and was completed on December 11, 2004.

During the Test Cell program a series of eight borings CP05-EAARS-CB-0188 to CP05-EAARS-CB-0195, were drilled to a depth of 100 feet, one on each side of each Test Cell, to aid in the placement of Test Cell piezometer sensing zones. Test Cell piezometer installation logs are shown in Appendix 1. The borings were collared in the caprock in the stripped foundation of the Test Cells. The caprock was cored in three of the borings but drilled with a tricone bit in the others. The remainder of each boring was completed by rotary wash methods with soil sampling by SPT methods. The drilling was done with a Diedrich D-50 Turbo drilling rig. The two Test Cells were drilled over different time periods and the boring sequence was selected to not interfere with the Test Cell construction. The Test Cell 2 borings were completed between February 8 and 11, 2005. Test Cell 1 borings were completed between February 23 and 28, 2005.

3.2.2 Supplemental Borings

Borings CP05-EAARS-CB-0255 to CP05-EAARS-CB-0281, CP05-EAARS-CB-0282 to CP05-EAARS-CB-0286, and CP05-EAARS-CB-0287 to CP05-EAARS-CB-0417 were drilled for the supplemental geotechnical investigation. The supplemental geotechnical investigation included 100-foot deep perimeter borings, 30-foot deep perimeter borings intermediate between the 100-foot borings, and 50-foot deep interior borings. The exploration program also included 250 feet deep borings drilled to obtain continuous samples and to perform hydraulic interval testing. The

100-foot deep borings were generally drilled between the existing borings performed in 2003 and 2004, to achieve an equidistant spacing around the perimeter of the proposed EAA Reservoir A-1. The main purpose of the 100-foot deep borings was to investigate the stratigraphy beneath the proposed embankment and to provide data for developing seepage models. The 30-foot deep perimeter borings were placed between the 100 feet deep borings. This resulted in a spacing a perimeter boring spacing of about 900 to 1,000 feet. The interior borings were placed to fill gaps between the borings completed in 2003 and 2004. The resultant spacing of interior borings is between 2,000 and 3,000 feet. The primary purpose of the interior borings was to provide information for assessing the availability of borrow materials, especially the limestone caprock.

The five 250-feet deep rotosonic drill borings were drilled to characterize the stratigraphy and perform hydraulic testing at selected intervals. One boring was located at the approximate center of the planned EAA Reservoir A-1 and one near the middle of each side of the EAA Reservoir A-1. Piezometer installations for rotosonic drill borings are shown in Appendix 2. The exploration program began with the 100-foot perimeter borings to establish the general, overall site conditions. These were followed by the 30-foot perimeter borings, and then the interior borings. The 250-foot borings were scheduled and completed between July 25 and August 14, 2005.

The planned program was modified during drilling on the basis of the subsurface conditions discovered. Some of the planned 30-foot perimeter borings were deepened to core a limestone layer often encountered at 25 to 35 feet depth. The strength and continuity of this layer was investigated because any proposed cut-off wall would be excavated through it. Many of the interior borings were shortened when it became evident that shallow material for potential borrow below the caprock was consistent and continuous. These borings were terminated below the caprock.

Two series of borings were added to the program. Twenty-five short borings were added to check the caprock thickness at locations where previous borings had indicated thin, absent, or unusually thick caprock, or produced inconsistent data on the thickness. Ten shallow (approximately 12 to 16 feet deep) borings were also added to investigate the fill placed to construct the STA-3/4 main Supply Canal levee that is adjacent to the proposed EAA Reservoir A-1. The borings performed for the Test Cells, the piezometer borings and the borings performed during the summer of 2005 are listed in Table 3-1 with their depths and location coordinates.

The majority of the drilling was completed with standard rotary wash drilling in soil and rock coring, except the five deeper holes that were completed by rotosonic drilling. Five different drill rigs were used during the course of the investigations:

- Two Diedrich D-50 Turbo rotary drill rigs mounted on all-terrain-vehicles (ATV) with large pneumatic tires
- CME-55 rotary, truck mounted drill rig
- CME-45B rotary, tracked vehicle (Go Track) mounted drill rig
- SR0-190 truck mounted rotosonic drill rig

Drilling began the week of June 20, 2005 with one Diedrich D-50 Turbo on an ATV. The following week the second Diedrich D-50 Turbo rig was mobilized, and the week of July 11

2005 the CME-55 was brought to the site. One of the Diedrich D-50 Turbo rigs was replaced by the CME-45B track mounted rig on August 30, 2005 because it was better suited to reach some of the interior holes with difficult access. The track mounted rig left the site on September 13, 2005 followed by the other rotary rigs on the following day when drilling was completed. The SRO-190 track mounted rotosonic drill rig was on site from July 28 though August 12, 2005.

3.3 Boring Layout and Surveys

Boring locations and elevations for the supplemental borings were determined by Weidener Surveying and Mapping. The December Test Cell program borings were located by taping from existing surveyed points established by Weidener Surveying and Mapping. During the Test Cell construction the borings were located by taping from previously installed surveyed points established by the Test Cell contractor. The supplemental borings were originally located in the field at the planned coordinates using hand-held GPS units. The finished holes were staked for later survey. During the time period between the completion of the supplemental borings and the survey, many of the stakes were destroyed by hurricane Katrina and farming activities. The locations given on the boring logs are the surveyed location when available, or the GPS location when no survey data was available.

3.4 Drilling Procedures

Except for the five rotosonic drilled holes, the borings were advanced by a combination of rotary wash boring and coring. Coring with HQ sized core barrels was used to sample the caprock and deeper limestones in some of the rotary wash borings. Double tube, swivel type, "M" design core barrels were used to recover rock cores according to the American Society for Testing and Materials (ASTM) D2113 test procedure. Core runs were restricted to a length of five feet. When coring below the caprock, 4-inch casing was advanced down to the cored interval to prevent the hole from caving into the core barrel. The core was placed into temporary, waxed, corrugated paper boxes and core pieces of suitable length for unconfined compressive strength were wrapped in plastic film and aluminum foil to prevent dehydration. Total core recovery and Rock Quality Designation (RQD) were measured and calculated for each coring run according to ASTM D6032.

Rock bits with heavy bentonite mud flush were used to advance the borings through soil-like materials and through intervals of limestone that were not cored. The mud was recirculated through a trough that was periodically cleaned of the retained cuttings. Occasionally, caving conditions were encountered in the borehole and casing had to be advanced through the caving interval to keep the borehole open.

The soils were sampled with split-barrel samplers using the Standard Penetration Test (SPT) method in accordance with ASTM D1586 at 2.5-foot intervals or continuously above 10 feet depth and 5-foot intervals below 10 feet depth. In two of the 100-foot borings, CB-0256 and CB-0266, continuous split barrel samples were completed for the full length of the boreholes below the caprock. The soil samples were logged according to ASTM D2488 test procedures and placed in jars for transport to the testing laboratory.

Five holes, RB-0282 through RB-0286, were completed using a rotosonic drilling rig which drives a casing and core barrel into the ground by means of high frequency resonant energy. The core barrel was advanced and then overridden by the larger diameter casing that maintains an

open hole and prevents material from collapsing into the borehole. The nominal outside diameter of the casing was six inches and the outside diameter of the core barrel was five inches. The hole was cased continuously for the full depth and a continuous sample was recovered from the core barrel and placed into thin plastic tubes for inspection and subsequent sampling. These tubes were placed in corrugated plastic boxes. Samples were taken at 5-foot intervals from the plastic boxes and placed in 1-gallon plastic bags for shipment to the laboratory. The plastic core boxes are currently stored in a container at the SFWMD G-370 Pump Station construction trailer site.

All borings that were not used for piezometer installation were backfilled with cement/bentonite grout immediately upon completion.

3.5 PIEZOMETER INSTALLATION PROCEDURES

Standpipe piezometers were installed in three of the borings performed by the rotasonic drilling method. The piezometers were installed for long term monitoring of water levels, groundwater sampling and possibly extended aquifer performance tests in the future.

The installations comprise 3-inch diameter schedule S/40 PVC well casing and slotted screen. The slotted screen is 10 feet long and set in a sand filter. The screen has four rows of 0.010-inch slots at 3/16-inch spacing. The sand pack sensing zone is isolated with bentonite seals above and below the screen.

The installation details are shown in Table 3-2.

Table 3-2 Piezometer Installation Details

	Boring		
Installation Detail Depths (Feet)	RB-0283	RB-0284	RB-0286
Upper Grout And Bentonite Seal (Feet)	Ground surface to 108	Ground surface to 68	Ground surface to 148
Sensing Zone (Feet)	108 to 121.5	68 to 81	148 to 161
Lower Bentonite Seal (Feet)	121.5 to 220	81 to 240	161 to 220
Aquifer Monitored	Ochopee limestone of the Tamiami Formation	Ochopee limestone of the Tamiami Formation	Ochopee limestone of the Tamiami Formation

3.6 HYDRAULIC INTERVAL TESTING PROCEDURE

A program of hydraulic interval tests was performed during the investigation over the period of July to August, 2005. These tests were carried out in the rotosonic drilled borings at intervals as the borings were drilled to final depth. A 10-foot interval was drilled for each test. However, the open hole depth was measured again after the testing, and it was often less than the drilled 10 feet, indicating that the hole had partially collapsed during the testing. The depth intervals that were tested are listed in Table 3-3 along with the corresponding static water level.

Table 3-3 Hydraulic Interval Test Locations

Intervals Drilled Depth (feet)	RB-0282 Depth to static water level (feet), measured post-test zone	RB-0283 Depth to static water level (feet), measured post-test zone	RB-0284 Depth to static water level (feet), measured post-test zone	RB-0285 Depth to static water level (feet), measured post-test zone	RB-0286 Depth to static water level (feet), measured post-test zone
40-50		6.39 (40-49)	7.62 (40-46)	11.7 (40-50)	8.2 (40-52)
60-70	8.2 (60-64)				
70-80		7.44 (70-80)	7.45 (70-77)	11.68 (70-80)	8.3 (70-78.5)
80-90	8.21 (80-87)				
110-120		7.58 (150-160)	7.655 (110-118.5)	11.4 (110-120)	8.45 (110-120)
120-130	8.21 (120-130)				
150-160	7.95 (150-156)	7.67 (150-160)	7.79 (150-160)	11.44 (150-160)	8.53 (150-160)

Note: Water levels are measured from the deck of the drill rig.

Wherever possible a length of open hole was formed beneath the bottom of the casing and an electric submersible pump (2-inch diameter, 1.5HP Grundfos Model 15 SQ/SQE 200) was lowered into the casing and water was pumped out. There was a period of development pumping lasting up to two hours to clean up the discharge (removal of suspended material) that was followed by the hydraulic interval test. Initially the pumping was carried out at increasing discharge rates; this regime was then changed to pumping at one continuous discharge rate for the duration of the pumping phase. Water levels and discharge measurements were made throughout the pumping period. On cessation of pumping, recovery water level measurements were made.

Where the borehole would not stay open below the casing, a 10-foot length of well screen (Johnson continuous slot wire wrapped stainless steel) was lowered into the zone, and the top of the screen was sealed at the bottom of the cased length by means of a pneumatic packer. The 2- inch diameter electric submersible pump assembly was then used to pump out the water.

In two boreholes (RB-0283 and RB-0284) the pH, temperature and electric conductivity of the water discharged was monitored during the pumping phase. Readings were taken early in the pumping stage, usually within the first 20 minutes of the test. The later readings were taken prior to stopping the pump.

3.7 LABORATORY TESTING PROCEDURES

Laboratory testing was assigned for selected samples of soil and rock core from the borings. Laboratory testing was performed by Nodarse & Associates, Inc. The testing procedures assigned are identified in Table 3-4 and Table 3-5.

Table 3-4 Laboratory Rock Testing Procedures

Rock Laboratory Test	Testing Procedure
Unconfined Compressive Strength (UCS)	ASTM D2938
Resistance to Degradation by Abrasion	ASTM C535
Sulfate Soundness	ASTM C88
Specific Gravity and Absorption	ASTM D6473

Table 3-5 Laboratory Soil Testing Procedures

Soil Laboratory Test	Testing Procedure
Grain Size Analysis	ASTM D422
Carbonate Content (CO_3)	Florida DOT
Corrosivity	Florida DOT
Moisture Content	ASTM D2216
Hydrometer Analysis	ASTM D422

4.0 EXPLORATION RESULTS

4.0 EXPLORATION RESULTS

4.1 GEOLOGY

The site is generally covered by approximately one half to two feet of surficial peat/muck and marl. The marl beneath the peat and muck is known by some authors as the Lake Flirt Marl (Reese and Cunningham, 2000; Harvey et. al., 2002), but is undifferentiated from the peat and muck layer for this report. The borings completed at the Test Cell site in December 2004, during the Test Cell Program and during the supplemental investigation penetrated through the surficial peat, marl, (in some locations) road fill, and caprock, then through about 15 to 40 feet of primarily carbonate sand and limestone, and then into primarily shelly quartz sand with sparse limestone for about 25 to 60 feet.

The upper carbonate sand and limestone constitutes the Fort Thompson Formation at the site. At the top of the Fort Thompson is a hard limestone layer generally about 3.5 to 6-foot thick, locally called caprock. The caprock is underlain primarily by silty carbonate sand varying from about 18 to 42 feet depth where another hard limestone layer, generally 1.5 to 3-foot thick, is often encountered. Visual inspection of the sand samples from the borings reveals that the sand consists at least partly of shell fragments, and tends to be angular and platy. Thinner, hard limestone layers are sometimes encountered in the interval.

All the limestone layers exposed in cores from the site are very fossiliferous. The silty sand of the Fort Thompson Formation is also abundantly fossiliferous with gastropods, pelecypods, corals, and echinoderms. The caprock is white, light gray, tan and yellowish brown. The sand and lower limestone layers are white to very pale brown.

Below the Fort Thompson Formation, the shelly sand with sparse limestone constitutes the Caloosahatchee Formation and the upper member (the Pinecrest Sand) of the Tamiami Formation, which are not differentiated in this report. The deeper borings penetrated into mixed carbonate and quartz sand with carbonate predominant. The mixed sand with carbonate sand predominate is the Ochopee Limestone member of the Tamiami Formation.

The deepest borings, the rotosonic borings, passed through the mixed carbonated and quartz sand and then between 140 to 177-foot depth into very fine sand and silty sand grading to clayey sand at 191 to 200-foot depth. The very fine quartz sand and silty to clayey sand belongs to the unnamed sand formation and the top of the underlying Peace River Formation.

4.2 GROUND CONDITIONS AND LABORATORY TESTING RESULTS

The identification of the stratigraphic units below the Fort Thompson Formation in the borings is based on descriptions in Reese and Cunningham (2000). The laboratory testing results are summarized in Table 4-1 through Table 4-6. Figures 4-1 and 4-2 plot soil sample percent passing the 200 sieve and carbonate content versus depth, respectively.

Figure 4-1 Percent Finer Than the 200 Sieve Versus Sample Depth

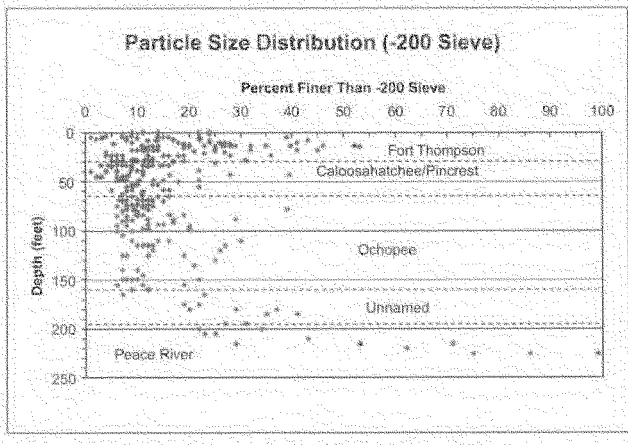
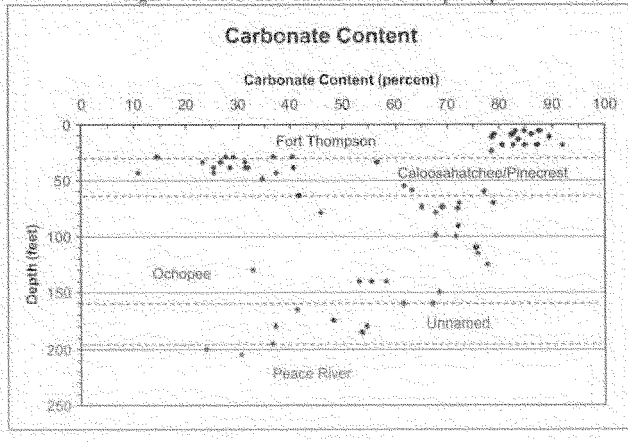


Figure 4-2 Carbonate Content Versus Sample Depth



4.2.1 Caprock

Immediately below the site soil layer is the top of the Fort Thompson Formation, a limestone layer locally called caprock. The thickness of the caprock in the borings ranged from 0 to 9.2-foot thick, but it is most often about 3.5 to 6-foot thick. The caprock is not a uniform hard limestone. It is thinly to medium bedded with bedding thickness generally less than one foot. The beds range from dense, hard, and strong to soft and friable. The hardness, strength, and density are related to the amount of fine, carbonate cement in the limestone. The softest beds consist of poorly cemented, calcite sand grains with possible shell fragments. In other beds, the grains are cemented at the contacts, and the rock is porous but generally moderately hard and moderately strong. In the hard and strong beds the grains are completely contained in a matrix of fine grained cement.

The caprock is jointed and contains solution cavities including local areas of anastomosing channels especially near the top, and single channels up to several inches in diameter that penetrate the full thickness. The solution channels in the caprock locally contain soil including the peat and marl.

Because of the variable material quality, core recovery from the borings was generally under 50 percent. The core recovery from the caprock ranged from 0 to 100 percent with an average of 42.4 percent. The RQD ranged from 0 to 92 percent with an average of 19 percent. The combination of variable rock hardness, thin bedding, and solution cavities combined to produce the low core recovery and RQD.

Pieces of core with sufficient length were selected from the borings, wrapped to preserve them, and sent to a laboratory for unconfined compressive strength (ASTM D2938), specific gravity and absorption testing (ASTM D6473). Crushed stone produced from the caprock during the Test Cell Program was also tested for specific gravity, absorption, and abrasion resistance (ASTM C535). Larger pieces of the caprock stockpiled as riprap were sent for sulfite soundness testing (ASTM C88).

The unconfined compressive strengths ranged from 433 to 9,768 pounds per square inch (psi) with an average of 2,928 psi. The bulk specific gravity ranged from 2.62 to 1.44 with an average of 2.25. The absorption ranged from 1.5 percent to 29.5 percent with an average of 6.1 percent. The losses on abrasion testing of three samples with "A" gradation were 31.3, 31.3, and 30.6 percent. The losses on soundness testing for three samples were 0 percent.

Three larger samples of caprock excavated for riprap during the Test Cell Program were selected from a stockpile and sent to the laboratory for specific gravity and absorption testing. The bulk specific gravities determined were 2.35, 2.4, and 2.35. The corresponding absorptions were 3.02, 3.12, and 2.93 percent, respectively.

It must be stressed that boring core recoveries in the caprock averaged less than 50 percent. These test results represent the high end of the caprock quality. The softer, less dense, and weaker rock was lost during the coring process or was retrieved in pieces too small for testing. Data from the testing is presented in Table 4-1.

Table 4-1 Caprock Laboratory Testing and Core Data

Boring Number	Run Depth (feet)	Core Recovery (percent)	RQD (percent)	Bulk Specific Gravity	Absorption (percent)	UCS (psi)
CP05-EAARS-CB-0255	1-6	22	16			
CP05-EAARS-CB-0256	1-5.5	61	35	2.41	3.3	2600
CP05-EAARS-CB-0257	4.75-9.75	76	48	2.03	7.71	1250
CP05-EAARS-CB-0257	9.75-11.75	100	92			
CP05-EAARS-CB-0258	4.5-9.5	54	22			
CP05-EAARS-CB-0259	3-8	56	24	1.44	29.5	1430
CP05-EAARS-CB-0259	8-10	55	0			
CP05-EAARS-CB-0260	7-12	48	22			9768
CP05-EAARS-CB-0261	5.5-10.5	44	32	2.32	5.39	4340
CP05-EAARS-CB-0261	5.5-10.5	44	32			9768
CP05-EAARS-CB-0262	6.5-11.5	48	30	2.43	2.39	3690
CP05-EAARS-CB-0263	8.5-13.5	20	0			
CP05-EAARS-CB-0264	6.5-11.5	62	40	2.27	4.93	1530
CP05-EAARS-CB-0265	4.5-9.6	44	0			
CP05-EAARS-CB-0266	1-4	17	0			
CP05-EAARS-CB-0267	6-9.5	54	53	2.32	5.35	
CP05-EAARS-CB-0268	2-7	50	24			
CP05-EAARS-CB-0269	2.5-7.5	36	28	2.52	3.1	1570
CP05-EAARS-CB-0270	3.5-8.3	26	22	2.35	3.32	1860
CP05-EAARS-CB-0271	3.5-6.5	38	45	2.62	2.1	3620
CP05-EAARS-CB-0271	6.5-10.5	25	0			
CP05-EAARS-CB-0272	0.1-5.1	46	14	2.4	3.65	2650
CP05-EAARS-CB-0273	4.5-9.5	54	30	2.14	4.73	3090
CP05-EAARS-CB-0274	9.3-12	33	15	2.26	4.1	433
CP05-EAARS-CB-0274	18-22	65	0			
CP05-EAARS-CB-0275	0.5-5.5	67	24	2.4	4.44	1676
CP05-EAARS-CB-0276	1-4.5	21	13	2.24	4.7	
CP05-EAARS-CB-0277	1.5-6.5	13	0			
CP05-EAARS-CB-0278	3.5-8.5	41	7			
CP05-EAARS-CB-0279	4-9	35	18	2.22	6.7	1870
CP05-EAARS-CB-0280	2-7	18	18			
CP05-EAARS-CB-0281	8-13	0	0			
CP05-EAARS-CB-0287	1-6	36	18	2	10.97	1105
CP05-EAARS-CB-0288	1-6	73	52	2.33	5.4	650
CP05-EAARS-CB-0289	1-6	42	14			
CP05-EAARS-CB-0289	5.5-10.5	68	38			
CP05-EAARS-CB-0290	4-9	60	23			
CP05-EAARS-CB-0290	9-13	58	28			874
CP05-EAARS-CB-0290	6-11	60	45			
CP05-EAARS-CB-0291	11-16	5	0			
CP05-EAARS-CB-0292	7-12	56	10			
CP05-EAARS-CB-0293	6-8.5	80	35			
CP05-EAARS-CB-0293	8.5-13.5	92	35			
CP05-EAARS-CB-0293	13.5-17.5	90	10			
CP05-EAARS-CB-0294	6-11	54	8			
CP05-EAARS-CB-0295	6-11	80	40			
CP05-EAARS-CB-0295	11-16	60	23			
CP05-EAARS-CB-0296	7-12	42	8			

Table 4-1 Continued - Caprock Laboratory Testing and Core Data

Boring Number	Run Depth (feet)	Core Recovery (percent)	RQD (percent)	Bulk Specific Gravity	Absorption (percent)	UCS (psi)
CP05-EAARS-CB-0297	4.5-9.5	80	56			
CP05-EAARS-CB-0297	9.5-14.5	66	31			
CP05-EAARS-CB-0298	5.5-7.5	100	38			
CP05-EAARS-CB-0298	8-13	74	46			
CP05-EAARS-CB-0298	13-17	44	16			
CP05-EAARS-CB-0299	8-13	62	13			
CP05-EAARS-CB-0300	6-11	62	24	2.31	7.96	
CP05-EAARS-CB-0301	7-12	95	85			
CP05-EAARS-CB-0301	12-17	24	10			
CP05-EAARS-CB-0302	6-11	46	28			
CP05-EAARS-CB-0302	11-16	48	28			
CP05-EAARS-CB-0303	6-10	85	78			
CP05-EAARS-CB-0303	10-15	65	52	2.05	10.43	
CP05-EAARS-CB-0303	15-18	37	28			
CP05-EAARS-CB-0304	8-9.5	67	29			
CP05-EAARS-CB-0304	9.5-14.5	60	43			
CP05-EAARS-CB-0305	0-5	22	0			
CP05-EAARS-CB-0305	5-10	8	0			
CP05-EAARS-CB-0306	6-8.3	100	82			
CP05-EAARS-CB-0306	8.3-11	93	63	2.47	2.60	8080
CP05-EAARS-CB-0306	11-14	60	27			
CP05-EAARS-CB-0306	14-17	42	28			
CP05-EAARS-CB-0307	3.5-10.5	90	68			
CP05-EAARS-CB-0307	10.5-15.5	78	42			
CP05-EAARS-CB-0308	5.5-10	45	30			
CP05-EAARS-CB-0308	10-15	46	8			
CP05-EAARS-CB-0309	5-10	58	32	2.46	1.83	8200
CP05-EAARS-CB-0309	11-16	22	0			
CP05-EAARS-CB-0310	4.5-8.5	50	0			
CP05-EAARS-CB-0310	8.5-9.5	100	0			
CP05-EAARS-CB-0310	10-15	20	14	1.74	8.41	2710
CP05-EAARS-CB-0311	3.5-8.5	28	0			
CP05-EAARS-CB-0311	8.5-13.5	14	10			
CP05-EAARS-CB-0312	3.5-8.5	38	0			
CP05-EAARS-CB-0312	8.5-13.5	8	0			
CP05-EAARS-CB-0313	1-6	26	0			
CP05-EAARS-CB-0313	6-11	24	0			
CP05-EAARS-CB-0314	4-8.5	22	0			
CP05-EAARS-CB-0314	8.8-13.5	12	0			
CP05-EAARS-CB-0316	5-10	38	30			
CP05-EAARS-CB-0317	3.5-7	83	70			
CP05-EAARS-CB-0318	5-10	50	22			
CP05-EAARS-CB-0319	3.5-8.5	45	22			
CP05-EAARS-CB-0319	8.5-13.5	97	0			
CP05-EAARS-CB-0320	5-10	45	15			
CP05-EAARS-CB-0320	10-14	32	31			
CP05-EAARS-CB-0321	5.5-11.5	8	8			
CP05-EAARS-CB-0322	6-13	48	22			

Table 4-1 Continued - Caprock Laboratory Testing and Core Data

Boring Number	Run Depth (feet)	Core Recovery (percent)	RQD (percent)	Bulk Specific Gravity	Absorption (percent)	UCS (psi)
CP05-EAARS-CB-0323	4-9	80	20			
CP05-EAARS-CB-0323	9-14	28	20			
CP05-EAARS-CB-0324	4.75-9.75	70	44	2.34	4.35	
CP05-EAARS-CB-0324	9.75-14.75	10	0			
CP05-EAARS-CB-0325	5.75-10.75	96	36	2.4	3.27	
CP05-EAARS-CB-0326	6.5-11.5	48	34	2.264	7.11	
CP05-EAARS-CB-0326	11.5-14	36	0			
CP05-EAARS-CB-0327	4-9	78	56	2.16	6.53	
CP05-EAARS-CB-0327	9-12	26	0			
CP05-EAARS-CB-0329	2-7	98	12			1867
CP05-EAARS-CB-0330	1-6	54	7			
CP05-EAARS-CB-0331	2.5-7.5	70	15	2.31	4	
CP05-EAARS-CB-0331	8-13	0	0			
CP05-EAARS-CB-0332	3-8	36	0			
CP05-EAARS-CB-0333	3.5-8.5	20	0			
CP05-EAARS-CB-0334	2.25-7.25	20	0			
CP05-EAARS-CB-0335	0.9-4.9	40	0			
CP05-EAARS-CB-0336	0.9-5.9	50	0			
CP05-EAARS-CB-0337	1.5-6.5	56	0			
CP05-EAARS-CB-0337	6.5-11.5	26	0			
CP05-EAARS-CB-0338	2.5-7.5	46	8			
CP05-EAARS-CB-0339	1.5-6.5	18	7			
CP05-EAARS-CB-0340	1.1-6.1	24	0			
CP05-EAARS-CB-0341	1.5-6.5	46	14			
CP05-EAARS-CB-0341	8.5-13.5	24	18			
CP05-EAARS-CB-0342	2-7	46	22			
CP05-EAARS-CB-0343	1-6	32	0			
CP05-EAARS-CB-0344	0.8-5.8	34	0			
CP05-EAARS-CB-0345	4-9	20	0			
CP05-EAARS-CB-0345	9-14	10	0			
CP05-EAARS-CB-0346	0.1-5.1	12	0			
CP05-EAARS-CB-0346	5.1-10.1	30	24			
CP05-EAARS-CB-0347	2-6	85	33			
CP05-EAARS-CB-0347	6-11	42	10			
CP05-EAARS-CB-0348	1.1-6.1	40	0			
CP05-EAARS-CB-0349	4-9	40	0			
CP05-EAARS-CB-0350	3.5-8.5	50	12			
CP05-EAARS-CB-0350	7.5-12.5	8	8			
CP05-EAARS-CB-0351	2-7	20	0			
CP05-EAARS-CB-0351	7-12	22	8			
CP05-EAARS-CB-0352	5.5-10.5	56	38			
CP05-EAARS-CB-0353	2-7.5	98	34			
CP05-EAARS-CB-0354	2.5-7.5	80	10			
CP05-EAARS-CB-0355	4.5-8.5	32	12			
CP05-EAARS-CB-0356	1-6	44	22			
CP05-EAARS-CB-0356	7-12	30	16			
CP05-EAARS-CB-0357	1.2-6.2	35	8			
CP05-EAARS-CB-0358	2-7	60	45			
CP05-EAARS-CB-0358	8.5-13	80	70			

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Table 4-1 Continued - Caprock Laboratory Testing and Core Data

Boring Number	Run Depth (feet)	Core Recovery (percent)	RQD (percent)	Bulk Specific Gravity	Absorption (percent)	UCS (psi)
CP05-EAARS-CB-0359	3.5-8.5	36	10			
CP05-EAARS-CB-0360	3.5-8.5	35	9			
CP05-EAARS-CB-0361	1.5-6.5	58	16			
CP05-EAARS-CB-0362	3.5-7.5	12	0			
CP05-EAARS-CB-0363	3-8	68	34			
CP05-EAARS-CB-0363	8-13	14	9			
CP05-EAARS-CB-0364	1.5-6.5	42	8			
CP05-EAARS-CB-0364	7.5-12.5	42	21			
CP05-EAARS-CB-0365	6.5-11.5	68	50			
CP05-EAARS-CB-0366	4-9	52	26			
CP05-EAARS-CB-0366	9-14	16	9			
CP05-EAARS-CB-0367	2-7	22	7			
CP05-EAARS-CB-0367	7-12	22	0			
CP05-EAARS-CB-0368	0.25-5.25	56	10			
CP05-EAARS-CB-0369	2-7	28	0			
CP05-EAARS-CB-0370	0.9-5.6	7	0			
CP05-EAARS-CB-0370	5.6-10.6	34	10			
CP05-EAARS-CB-0371	1.3-6.3	42	12			
CP05-EAARS-CB-0372	4-9	65	35			
CP05-EAARS-CB-0372	10-14	20	0			
CP05-EAARS-CB-0373	4.5-9.5	80	54			
CP05-EAARS-CB-0373	9.5-14.5	26	17			
CP05-EAARS-CB-0374	5.5-10.5	53	20			
CP05-EAARS-CB-0374	10.5-15.5	10	0			
CP05-EAARS-CB-0375	4.5-9.5	58	28			
CP05-EAARS-CB-0376	4.5-9.5	73	73			
CP05-EAARS-CB-0377	5.5-10.5	60	47			
CP05-EAARS-CB-0377	10.5-15.5	40	20			
CP05-EAARS-CB-0378	6-11	64	35			
CP05-EAARS-CB-0379	1.5-6.5	16	0			
CP05-EAARS-CB-0379	7-12	54	8			
CP05-EAARS-CB-0380	5.5-10	88	20			
CP05-EAARS-CB-0380	10-12	88	50			
CP05-EAARS-CB-0381	1-5	38	0			
CP05-EAARS-CB-0381	5-10	1	0			
CP05-EAARS-CB-0382	5.5-10	5	0			
CP05-EAARS-CB-0382	10-15	30	26			
CP05-EAARS-CB-0383	1.5-6.5	38	20			
CP05-EAARS-CB-0383	6.5-11.5	0	0			
CP05-EAARS-CB-0384	2-7	34	10			
CP05-EAARS-CB-0384	7-12	24	0			
CP05-EAARS-CB-0385	2-7	16	0			
CP05-EAARS-CB-0385	7-12	2	0			
CP05-EAARS-CB-0386	1.1-6.1	20	3			
CP05-EAARS-CB-0387	2-7	28	8			
CP05-EAARS-CB-0387	7-12	12	0			
CP05-EAARS-CB-0388	6.5	38	13			7119
CP05-EAARS-CB-0389	5-10	34	14			
CP05-EAARS-CB-0389	5-8	32	26			

Table 4-1 Continued - Caprock Laboratory Testing and Core Data

Boring Number	Run Depth (feet)	Core Recovery (percent)	RQD (percent)	Bulk Specific Gravity	Absorption (percent)	UCS (psi)
CP05-EAARS-CB-0389	8-13	0	0			
CP05-EAARS-CB-0390	0.5-5.5	68	20			
CP05-EAARS-CB-0390	5.5-10.5	12	0			
CP05-EAARS-CB-0391	5.5-10.5	40	20			
CP05-EAARS-CB-0392	0-5	48	30			1805
CP05-EAARS-CB-0392	5-10	0	0			
CP05-EAARS-CB-0393	0-5	40	22			
CP05-EAARS-CB-0393	5-10	6	0			
CP05-EAARS-CB-0394	2-7	50	15			
CP05-EAARS-CB-0394	7-12	38	15			
CP05-EAARS-CB-0395	8-13	36	10			
CP05-EAARS-CB-0395	13-18	18	13			
CP05-EAARS-CB-0396	3-8	80	28			
CP05-EAARS-CB-0397	2-7	24	8			
CP05-EAARS-CB-0397	7-12	6	0			
CP05-EAARS-CB-0398	5-7	25	0			
CP05-EAARS-CB-0398	7-12	60	45			
CP05-EAARS-CB-0398	12-17	29	19			
CP05-EAARS-CB-0399	6-9	67	19			
CP05-EAARS-CB-0399	9-13	31	13			
CP05-EAARS-CB-0400	3-9	40	0			
CP05-EAARS-CB-0401	5-10	10	0			
CP05-EAARS-CB-0402	5.3-10	44	32			
CP05-EAARS-CB-0402	10-15	10	0			
CP05-EAARS-CB-0403	5-10	35	25			
CP05-EAARS-CB-0404	1.5-6.5	42	28			
CP05-EAARS-CB-0404	6.5-11.5	6	0			
CP05-EAARS-CB-0405	4-9	45	15			
CP05-EAARS-CB-0405	9-14	34	9			
CP05-EAARS-CB-0406	0-5	46	30			
CP05-EAARS-CB-0406	5-10	52	35			
CP05-EAARS-CB-0407	5.5-10.5	50	18			
CP05-EAARS-CB-0416	12-17	62	39			

RQD = Rock Quality Designation as a percentage
UCS = Unconfined Compressive Strength in pounds per square inch (psi)

4.2.2 Fort Thompson Sand

The silty sand below the caprock is composed primarily of calcite grains. The carbonate content test was determined in accordance with the Florida Department of Transportation (FDOT) test procedure. Results ranged from 76.6 percent to 91.9 percent with an average of 83.6 percent carbonate content. The grains are platy and angular and many, when viewed with a magnifier, have a fluted surface on one of the plate sides. Most if not all the sand grains appear to be shell fragments. One corrosivity test series (FDOT) was performed on sand from the Fort Thompson Formation (RB-0282, 5 to 10- foot depth):

- Electrical resistivity – 6,100 Ohm-cm

- pH – 8.9
- Chlorides – 90 parts per million (ppm)
- Sulfates – 60 ppm.

SPT samples were assigned group symbols in accordance with ASTM D2487. Samples tested (90 tests) were mostly SM (53) with some SW-SM (12), SP-SM (6), and GP-GM (4) and with occasional GM (3), SP (3), GW (1), GW-GM (2), CL-ML (2), ML (2), and SW (1). Percent passing the 200 sieve ranged from 2 to 53 percent with an average of 19.9 percent. Moisture content (ASTM D2216) ranged from 6 percent to 63 percent with an average of 22.7 percent. Hydrometer analyses (ASTM D422) on the fines content of the two samples tested indicate them to be mostly silt with clay content of 5.8 to 8.8 percent. (Table 4-3)

The gravel content of the samples included shell fragments and limestone chips. Densities ranged from loose to very dense. Samples with high gravel content, especially limestone chips, generally correlate with high SPT blow counts. Intervals of hard drilling as judged from drilling rate, drill vibration and drill bit chatter also correlate with high SPT blow counts and limestone gravel content.

Table 4-2 Fort Thompson Formation Laboratory Soil Testing

Boring Number	Depth (feet)	Moisture (percent)	ASDM D2487 Class	-200 Sieve (percent)	Clay (percent)	CO_3 (percent)
CP05-EAARS-CB-0168	5.5					87.4
CP05-EAARS-CB-0169	18.5		SP-SM	11.4		
CP05-EAARS-CB-0170	13.5		SM	28.1		
CP05-EAARS-CB-0170	8.5					82.6
CP05-EAARS-CB-0171	13.5		GM	20.1	5.8	
CP05-EAARS-CB-0171	6					85.7
CP05-EAARS-CB-0171	18.5					82.7
CP05-EAARS-CB-0172	8.5					86.2
CP05-EAARS-CB-0173	13.5		SM	39.8		
CP05-EAARS-CB-0173	6					84.7
CP05-EAARS-CB-0174	6					83
CP05-EAARS-CB-0174	18.5					84.8
CP05-EAARS-CB-0175	28.5		SM	12.2		
CP05-EAARS-CB-0175	8.5					85.9
CP05-EAARS-CB-0175	13.5					83.7
CP05-EAARS-CB-0176	13.5		SM	29		
CP05-EAARS-CB-0176	23.5					78.5
CP05-EAARS-CB-0177	13.5					83.5
CP05-EAARS-CB-0179	8.5		SM	22.1		
CP05-EAARS-CB-0180	13.5		SM	26.6		
CP05-EAARS-CB-0181	6.5		SM	22.1	8.8	
CP05-EAARS-CB-0183	18.5		SM	13.1		
CP05-EAARS-CB-0185	8	19.2				
CP05-EAARS-CB-0186	23.5	26.2				
CP05-EAARS-CB-0187	18.5		SM	44.9		
CP05-EAARS-CB-0188	9					89.3
CP05-EAARS-CB-0189	5.5	15	SM	22		

Table 4-2 Continued - Fort Thompson Formation Laboratory Soil Testing

Boring Number	Depth (feet)	Moisture (percent)	ASDM D2487 Class	#200 Sieve (percent)	Clay (percent)	CO_3 (percent)
CP05-EAARS-CB-0189	13.5	21	SM	35		
CP05-EAARS-CB-0189	8.5					79
CP05-EAARS-CB-0190	13.5	26	SM	23		
CP05-EAARS-CB-0190	18.5					91.9
CP05-EAARS-CB-0191	13.5	21	SM	25		
CP05-EAARS-CB-0191	18.5					87.1
CP05-EAARS-CB-0192	18.5					80.6
CP05-EAARS-CB-0193	8.5		GM	13.6		
CP05-EAARS-CB-0193	28.5		GP-GM	7.3		
CP05-EAARS-CB-0193	11		GW-GM	5.5		
CP05-EAARS-CB-0193	13.5		GW-GM	10.8		
CP05-EAARS-CB-0193	5.5		SP	3.2		
CP05-EAARS-CB-0194	11					78.6
CP05-EAARS-CB-0195	8.5		SM	43		
CP05-EAARS-CB-0195	11					89.5
CP05-EAARS-CB-0255	9	33	SM	24		
CP05-EAARS-CB-0255	13.5	37	SM	32		
CP05-EAARS-CB-0255	18.5	19	SW-SM	11		
CP05-EAARS-CB-0256	14.5	03	GP-GM	12		
CP05-EAARS-CB-0256	21.5	21	SM	23		
CP05-EAARS-CB-0256	23.5	29	SM	19		
CP05-EAARS-CB-0266	11.5	34	SM	28		
CP05-EAARS-CB-0266	14.5	34	SM	34		
CP05-EAARS-CB-0266	16	36	SM	25		
CP05-EAARS-CB-0266	20.5	28	SM	27		
CP05-EAARS-CB-0266	5.5	13	SW-SM	8		76.6
CP05-EAARS-CB-0266	26.5	22	SW-SM	13		
CP05-EAARS-CB-0268	18.5	22	GP-GM	9		
CP05-EAARS-CB-0268	13.5	30	SM	27		
CP05-EAARS-CB-0268	7					81.6
CP05-EAARS-CB-0269	13.5	32	SM	25		
CP05-EAARS-CB-0269	8.5	24	SW-SM	12		
CP05-EAARS-CB-0269	18.5	23	SW-SM	10		
CP05-EAARS-CB-0270	13.5	36	SW	35		
CP05-EAARS-CB-0270	18.5	26	SW-SM	11		
CP05-EAARS-CB-0271	10.5	24	SM	18		
CP05-EAARS-CB-0271	18.5	25	SM	25		
CP05-EAARS-CB-0271	23.5	22	SW-SM	12		
CP05-EAARS-CB-0271	13.5					81.8
CP05-EAARS-CB-0272	5.1	19	SM	15		
CP05-EAARS-CB-0272	10	20	SM	24		
CP05-EAARS-CB-0272	18.5	11	SW-SM	9		
CP05-EAARS-CB-0272	33.5	15	SW-SM	7		
CP05-EAARS-CB-0275	3.5	25	SM	32		
CP05-EAARS-CB-0275	13.5	18	SM	19		
CP05-EAARS-CB-0275	8.5	28	SW-SM	10		
CP05-EAARS-CB-0275	23.5	16	SW-SM	5		
CP05-EAARS-CB-0276	13.5	25	SM	32		
CP05-EAARS-CB-0276	23.5	25	SP	4		

Table 4-2 Continued - Fort Thompson Formation Laboratory Soil Testing

Boring Number	Depth (feet)	Moisture (percent)	ASDM D2487 Class	-200 Sieve (percent)	Clay (percent)	CO_3 (percent)
CP05-EAARS-CB-0276	18.5	26	SP-SM	6		
CP05-EAARS-CB-0276	8	17	SW-SM	12		
CP05-EAARS-CB-0277	23.5	25	SM	16		
CP05-EAARS-CB-0278	18.5	21	SM	14		
CP05-EAARS-CB-0278	23.5	24	SM	19		
CP05-EAARS-CB-0280	7	18	GW	2		
CP05-EAARS-CB-0317	14	23	ML	52		
CP05-EAARS-CB-0326	14	23	SP-SM	11		
CP05-EAARS-CB-0329	8.5	17	SM	14		
CP05-EAARS-CB-0329	13.5	22	SM	14		
CP05-EAARS-CB-0329	18.5	13	SP-SM	12		
CP05-EAARS-CB-0333	8.5	24	SM	24		
CP05-EAARS-CB-0346	10	10	SP-SM	9		
CP05-EAARS-CB-0358	13	21	SM	20		
CP05-EAARS-CB-0360	8.5	26	GP-GM	8		
CP05-EAARS-CB-0360	13.5	31	SM	46		
CP05-EAARS-CB-0360	18.5	24	SM	32		
CP05-EAARS-CB-0365	11.5	29	SM	19		
CP05-EAARS-CB-0365	18.5	23	SM	41		
CP05-EAARS-CB-0365	23.5	23	SM	36		
CP05-EAARS-CB-0372	14.5	19	ML	53		
CP05-EAARS-CB-0373	19	25	SM	23		
CP05-EAARS-CB-0375	29	22	SM	19		
CP05-EAARS-CB-0377	15.5	18	SM	10		
CP05-EAARS-CB-0377	19	26	SM	25		
CP05-EAARS-CB-0377	24	19	SM	18		
CP05-EAARS-CB-0377	29	15	SM	17		
CP05-EAARS-CB-0406	23.5	26	SM	28		
CP05-EAARS-RB-0282	5	6	GM	14		
CP05-EAARS-RB-0282	10	21	SM	27		
CP05-EAARS-RB-0282	15	20	SM			
CP05-EAARS-RB-0283	5	10	CL-ML	39		
CP05-EAARS-RB-0283	10	23	CL-ML	41		
CP05-EAARS-RB-0284	10	18	SM	26		
CP05-EAARS-RB-0284	20	26	SP	4		
CP05-EAARS-RB-0286	15	18	SM	20		

4.2.3 Lower Fort Thompson Limestone

A cemented zone often occurs along the base of the Fort Thompson Formation or along the contact between the Fort Thompson Formation and the underlying Caloosahatchee or Pinecrest Sand. The cemented zone forms a limestone layer varying from 1 to 6 feet thick, and the top was penetrated between 19 and 39 foot depth in the borings around the perimeter of the EAA Reservoir A-1, primarily on the northern, eastern, and southern sides. It was only found north of boring CB-0280 on the western side of the EAA Reservoir A-1. It was deepest along the southern half of the eastern side and shallower to the north or along the south side. No attempt was made to trace it into the proposed EAA Reservoir A-1 interior.

For the most part, the limestone ranges from soft and weak to moderately hard, moderately strong and porous, consisting of sand sized grains cemented only at the contacts. Thin, strong, hard, dense beds are found within the interval all less than one foot thick. Some of the intervals near the bottom contain fine, subrounded, quartz sand similar to that in the underlying Caloosahatchee or Pinecrest Sand Member.

Attempts to core this lower limestone were made in 28 borings. Core recoveries ranged from 0 to 100 percent with an average of 45 percent. RQD ranged from 0 to 64 percent with an average of 18.5 percent. Selected samples were pulled from the core runs, wrapped for protection and sent to a laboratory for specific gravity and absorption (ASTM D6473), and unconfined compressive strength testing (ASTM D2938). Specific gravity ranged from 1.5 to 2.96 with an average of 2.17. Absorption ranged from 2.05 to 15.1 percent and averaged 8.05 percent. Unconfined compressive strength ranged from 960 to 5,920 psi and averaged 2,780 psi. Again as with the caprock, it must be emphasized that because of the large core sample losses these results probably represent the upper limits of the true range. (Table 4-3)

Table 4-3 Limestone Laboratory Testing and Core Data in the Fort Thompson Below Caprock

Boring Number	Run Depth (feet)	Core Recovery (percent)	RQD (percent)	Bulk Specific Gravity	Absorption (percent)	UCS (psi)
CP05-EAARS-CB-0168	23.5-28.5	26	16			
CP05-EAARS-CB-0170	25-29	22	13			
CP05-EAARS-CB-0287	25-30	84	62	2.47	2.05	2400
CP05-EAARS-CB-0288	15-20	0	0			
CP05-EAARS-CB-0289	20.5-25.5	57	14	2.46	3.36	
CP05-EAARS-CB-0290	23.5-28.5	0	0			
CP05-EAARS-CB-0290	34-39	28	14	2.31	5.26	2215
CP05-EAARS-CB-0291	23.5-28.5	15	0			
CP05-EAARS-CB-0291	36-40	65	17			
CP05-EAARS-CB-0293	37-42	92	47	2.14	9.02	1053
CP05-EAARS-CB-0304	14.5-19.5	56	12			
CP05-EAARS-CB-0304	19.5-23.5	15	0			
CP05-EAARS-CB-0310	30-35	56	24	2.96	6.1	5920
CP05-EAARS-CB-0311	13.5-18.5	10	0			
CP05-EAARS-CB-0311	23.5-28.5	75	18	1.91	13.28	
CP05-EAARS-CB-0312	23.5-28.5	40	0			
CP05-EAARS-CB-0312	28.5-33.5	66	14	1.501	7.18	
CP05-EAARS-CB-0312	33.5-36.5	33	0			
CP05-EAARS-CB-0313	25-30	68	52			
CP05-EAARS-CB-0314	25-30	60	48			2979
CP05-EAARS-CB-0314	30-35	96	64			4916
CP05-EAARS-CB-0316	21.5-25	56	28			
CP05-EAARS-CB-0316	25-30	76	49			
CP05-EAARS-CB-0318	19-25	100	46	1.93	15.1	960
CP05-EAARS-CB-0318	25-30	100	53.5	2.19	7.85	3095
CP05-EAARS-CB-0320	15-20	90	36			1481
CP05-EAARS-CB-0323	16-21	74	40			
CP05-EAARS-CB-0323	21-23.75	40	0			
CP05-EAARS-CB-0323	23.75-28.5	8	0			
CP05-EAARS-CB-0324	16-21	82	56	2.39	7.9	
CP05-EAARS-CB-0324	21-26	32	8			

Table 4-3 Continued - Limestone Laboratory Testing and Core Data in the Fort Thompson Below the Caprock

Boring Number	Run Depth (feet)	Core Recovery (percent)	RQD (percent)	Bulk Specific Gravity	Absorption (percent)	UCS (psi)
CP05-EAARS-CB-0326	17.5-22.5	80	52	2.01	11	
CP05-EAARS-CB-0326	22.5-27.5	36	0			
CP05-EAARS-CB-0327	18-23	78	28	1.901	9.63	
CP05-EAARS-CB-0327	23-28	44	16	1.97	11.57	
CP05-EAARS-CB-0330	10-15	12	0			
CP05-EAARS-CB-0330	19-24	34	0			
CP05-EAARS-CB-0332	15-20	34	0			
CP05-EAARS-CB-0332	23.5-28.5	48	12			
CP05-EAARS-CB-0333	22-27	10	6			
CP05-EAARS-CB-0341	21.5-26.5	26	0			
CP05-EAARS-CB-0341	26.5-31.5	32	8			
CP05-EAARS-CB-0341	31.5-36.5	40	8			
CP05-EAARS-CB-0395	30-35	29	13			
CP05-EAARS-CB-0395	35-40	40	23			
CP05-EAARS-CB-0396	25-30	14	0			
CP05-EAARS-CB-0396	30-35	28	10			
CP05-EAARS-CB-0400	0-15	42	0			
CP05-EAARS-CB-0400	15-20	80	28			
CP05-EAARS-CB-0400	20-25	20	0			
CP05-EAARS-CB-0405	25-30	10	0			
CP05-EAARS-CB-0405	30-35	0	0			
CP05-EAARS-CB-0407	28.5-33.5	28	14			
CP05-EAARS-CB-0407	33.5-38.5	74	28			

4.2.4 Caloosahatchee Formation and Pinecrest Sand

Below the Fort Thompson Formation the borings penetrated shelly, fine, uniform, subrounded, quartz sand with local cemented zones. In the rotosonic drilled borings, the cemented zones were recovered as gravel sized aggregates of the sand and shell fragments. The sand belongs to the Caloosahatchee Formation and/or the Pinecrest Sand Member of the Tamiami Formation that cannot be differentiated as noted above. The top of the sand in the recovered samples ranged from 18.5 to 43.5 feet and averaged 29 feet. Borings generally between about 30 and 50-foot deep ended in the sand. Only the borings of 100-foot depth or deeper penetrated into the underlying Ochopee Limestone Member of the Tamiami Formation. Along the eastern end of the south side of the EAA Reservoir A-1, borings CB-0267 through CB-0270 and CB-0283 penetrated a layer of silty sand near the base of the Tamiami Formation.

Densities ranged from loose to very dense. Samples sent for laboratory testing were classified as per USCS as mostly SP-SM (43), SM (23), and SW-SM (15) and occasionally SP (8), GP-GM (5), GP (1), and GM (1). Percent passing the 200 sieve ranged from 1 to 39.5 percent with an average of 10.7 percent. Moisture content and carbonate content ranged from 2 to 30 percent and 10.9 to 77.1 percent, averaging 21.3 percent and 36.1 percent, respectively. The clay content from hydrometer testing ranged from 1.4 to 6.6 percent with an average of 3.4 percent. (Table 4-4)

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Table 4-4 Caloosahatchee and Pinecrest Sand Laboratory Soil Testing

Boring Number	Depth (feet)	Moisture (percent)	ASDM D2487 Class	-200 Sieve (percent)	Clay (percent)	CO_3 (percent)
CP05-EAARS-CB-0168	48.5		SP-SM	7.5		
CP05-EAARS-CB-0168	28.5					29.1
CP05-EAARS-CB-0168	43.5					10.9
CP05-EAARS-CB-0170	48.5		SM	21.9	5.6	
CP05-EAARS-CB-0170	29					40.5
CP05-EAARS-CB-0170	43.5					37.3
CP05-EAARS-CB-0171	48.5		SP-SM	6.4		
CP05-EAARS-CB-0171	33.5					31.4
CP05-EAARS-CB-0172	28.5		SP-SM	11.4		36.8
CP05-EAARS-CB-0172	38.5					51.4
CP05-EAARS-CB-0173	28.5					27.6
CP05-EAARS-CB-0173	48.5					34.6
CP05-EAARS-CB-0174	43.5		SP-SM	8.4		
CP05-EAARS-CB-0174	38.5					28.5
CP05-EAARS-CB-0175	38.5					32
CP05-EAARS-CB-0176	43.5		SM	39.5	6.6	
CP05-EAARS-CB-0176	28.5					35.3
CP05-EAARS-CB-0177	33.5					26.7
CP05-EAARS-CB-0178	48.5		SP-SM	10.4	1.9	
CP05-EAARS-CB-0178	38.5	24.5				
CP05-EAARS-CB-0183	48.5	26.8				
CP05-EAARS-CB-0182	48.5		SM	13.2		
CP05-EAARS-CB-0183	28.5		SP-SM	9.2	1.4	
CP05-EAARS-CB-0184	28.5		SP-SM	9.5		
CP05-EAARS-CB-0185	43.5		SM	28		
CP05-EAARS-CB-0185	53.5	17	SM	14		
CP05-EAARS-CB-0185	58.5	25	SM	15		
CP05-EAARS-CB-0189	53.5	15	GM	13		
CP05-EAARS-CB-0189	33.5	26	SP-SM	6		
CP05-EAARS-CB-0189	58.5					63.5
CP05-EAARS-CB-0189	28.5					14.5
CP05-EAARS-CB-0189	63.5					41.6
CP05-EAARS-CB-0190	48.5	26	SM	18		
CP05-EAARS-CB-0190	33.5					36.5
CP05-EAARS-CB-0191	48.5		SM			
CP05-EAARS-CB-0191	33.5	20	SP-SM	6		
CP05-EAARS-CB-0191	38.5					49.7
CP05-EAARS-CB-0191	43.5					25.3
CP05-EAARS-CB-0192	48.5		GP-GM	7.9		
CP05-EAARS-CB-0192	28.5		SP-SM	10		
CP05-EAARS-CB-0193	68.5		GP-GM	6.4		
CP05-EAARS-CB-0193	58.5		SM	16.2		
CP05-EAARS-CB-0193	33.5		SP	4.2		
CP05-EAARS-CB-0193	38.5		SP-SM	8.8		
CP05-EAARS-CB-0193	63.5		SW-SM	10.8		
CP05-EAARS-CB-0194	33.5		SM	13.4		23.3
CP05-EAARS-CB-0195	43.5		SM	16.3		
CP05-EAARS-CB-0195	53.5		SW-SM	9.6		

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Table 4-4 Continued - Caloosahatchee and Pinecrest Sand Laboratory Soil Testing

Boring Number	Depth (feet)	Moisture (percent)	ASDM D2487 Class	#200 Sieve (percent)	Clay (percent)	CO_3 (percent)
CP05-EAARS-CB-0256	38.5	28	SM	22		
CP05-EAARS-CB-0256	44.5	29	SP-SM	8		
CP05-EAARS-CB-0256	55	23	SP-SM	8		
CP05-EAARS-CB-0256	50.5	19	SW-SM	10		
CP05-EAARS-CB-0266	31	22	SM	25		
CP05-EAARS-CB-0266	55	30	SM	22		
CP05-EAARS-CB-0266	44.5	25	SP	3		
CP05-EAARS-CB-0266	37	27	SW-SM	9		
CP05-EAARS-CB-0266	49	21	SW-SM	7		
CP05-EAARS-CB-0266	61	30	SW-SM	11		
CP05-EAARS-CB-0266	65.5	22	SW-SM	9		
CP05-EAARS-CB-0266	68.5	22	SW-SM	8		
CP05-EAARS-CB-0268	78.5	26	SM	39		
CP05-EAARS-CB-0268	33.5	18	SW-SM	9		
CP05-EAARS-CB-0269	33.5	16	SP	3		
CP05-EAARS-CB-0269	38.5	21	SW-SM	6		
CP05-EAARS-CB-0271	38.5	24	SP-SM	10		
CP05-EAARS-CB-0272	28.5	29	SP	5		
CP05-EAARS-CB-0272	58.5	21	SP-SM	5		
CP05-EAARS-CB-0272	33.5	16	SW-SM	5		
CP05-EAARS-CB-0275	28.5	15	SP-SM	7		
CP05-EAARS-CB-0275	33.5	25	SP-SM	7		
CP05-EAARS-CB-0275	38.5	21	SP-SM	4		
CP05-EAARS-CB-0275	48.5	21	SP-SM	6		
CP05-EAARS-CB-0275	73.5	22	SP-SM	10		
CP05-EAARS-CB-0275	58.5	23	SW-SM	9		
CP05-EAARS-CB-0275	63.5	20	SW-SM	7		
CP05-EAARS-CB-0276	28.5	27	SP-SM	6		
CP05-EAARS-CB-0276	33.5	27	SP-SM	9		
CP05-EAARS-CB-0277	28.5	34	SM	13		
CP05-EAARS-CB-0277	33.5	30	SM	16		
CP05-EAARS-CB-0278	33.5	24	SP-SM	6		
CP05-EAARS-CB-0278	28.5	12	SW-SM	9		
CP05-EAARS-CB-0280	28.5	13	GP-GM	9		
CP05-EAARS-CB-0280	33.5	28	SM	15		
CP05-EAARS-CB-0280	38.5	24	SP-SM	11		
CP05-EAARS-CB-0280	43.5	25	SP-SM	11		
CP05-EAARS-CB-0280	53.5	23	SP-SM	10		
CP05-EAARS-CB-0280	68.5	23	SP-SM	10		
CP05-EAARS-CB-0280	48.5	29	SW-SM	8		
CP05-EAARS-CB-0281	33.5					34.2
CP05-EAARS-CB-0317	34	35	SP-SM	12		
CP05-EAARS-CB-0329	33.5	26	SP-SM	6		
CP05-EAARS-CB-0329	33.5	16	SP-SM	8		
CP05-EAARS-CB-0360	33.5	32	SM	13		
CP05-EAARS-CB-0365	28.5	21	SM	31		
CP05-EAARS-CB-0365	33.5	13	SP-SM	11		
CP05-EAARS-CB-0373	34	26	SP	5		

Table 4-4 Continued - Caloosahatchee and Pinecrest Sand Laboratory Soil Testing

Boring Number	Depth (feet)	Moisture (percent)	ASDM D2487 Class	-200 Sieve (percent)	Clay (percent)	CO_3 (percent)
CP05-EAARS-CB-0406	33.5	13	SP-SM	13		
CP05-EAARS-RB-0282	30	8	SM	17		
CP05-EAARS-RB-0282	45	14	SP	2		
CP05-EAARS-RB-0282	60		SP-SM	8		
CP05-EAARS-RB-0283	40	17	SP-SM	6		
CP05-EAARS-RB-0283	45		GP-GM	6		
CP05-EAARS-RB-0283	60	8	SP-SM	8		
CP05-EAARS-RB-0283	70		SP-SM	15		
CP05-EAARS-RB-0284	40	2	GP	4		
CP05-EAARS-RB-0284	45		GP-GM	6		
CP05-EAARS-RB-0284	55	16	SP-SM	9		
CP05-EAARS-RB-0285	40		SP-SM	11		
CP05-EAARS-RB-0285	45		SP-SM	7		
CP05-EAARS-RB-0286	30	16	SP-SM	6		
CP05-EAARS-RB-0286	65	21	SM	16		
CP05-EAARS-RB-0286	35	24	SP-SM	5		
CP05-EAARS-RB-0286	40		SP	1		
CP05-EAARS-RB-0286	45		SP	3		
CP05-EAARS-RB-0286	50		SM	18		
CP05-EAARS-RB-0286	60	14	SP-SM	11		77.1

4.2.5 Ochopee Limestone

The top of the Ochopee Limestone Member of the Tamiami Formation was penetrated by the 100-foot long borings, and the total thickness was penetrated by the rotosonic drilled borings. The top of the Ochopee Limestone, as judged from the topmost SPT samples recovered and from the top in the rotosonic drilled borings, ranged from 63.5 to 89.3-foot depth, with an average of 74 feet. It averaged about 90 feet in the rotosonic drilled borings. In the borings, the Ochopee Limestone consisted of variable proportions of fine, subrounded quartz sand and fine to medium, angular to subrounded calcitic sand. Gravel sized aggregate clasts of the sand are common especially in the rotosonic drilled borings.

Density in the Ochopee Limestone as judged by SPT blow counts to 100-foot depth was mostly medium dense to dense with lesser instances of very dense zones, or refusal on apparently hard, cemented zones. Samples sent for laboratory testing were were classified as per USCS as mostly SP-SM (38), SM (24), and SW-SM (17) with a few GP-GM (4) and GW-GM (2). Percent passing the 200 sieve ranged from 7 to 30 percent with an average of 11.7 percent. Moisture content and carbonate content ranged from 7 to 28 percent and 32.8 to 78.8 percent, averaging 18.5 percent and 65.8 percent, respectively. (Table 4-5).

Table 4-5 Ochopee Limestone Laboratory Soil Testing

Boring Number	Depth (feet)	Moisture (percent)	ASDM D2487 Class	-200 Sieve (percent)	Clay (percent)	CO_3 (percent)
CP05-EAARS-CB-0189	68.5	18	GW-GM	11		
CP05-EAARS-CB-0189	88.5	25	SM	17		
CP05-EAARS-CB-0189	73.5	24	SP-SM	8		
CP05-EAARS-CB-0189	83.5	22	SP-SM	10		
CP05-EAARS-CB-0189	78.5					48.9
CP05-EAARS-CB-0189	73.5					69.1
CP05-EAARS-CB-0190	93.5	22	SM	14		
CP05-EAARS-CB-0190	68.5	19	SP-SM	12		
CP05-EAARS-CB-0190	78.5	22	SP-SM	12		
CP05-EAARS-CB-0190	73.5					65
CP05-EAARS-CB-0190	98.5					67.7
CP05-EAARS-CB-0191	68.5	20	SM	13		
CP05-EAARS-CB-0191	93.5	23	SM	12		
CP05-EAARS-CB-0191	73.5					68.9
CP05-EAARS-CB-0191	78.5					67.8
CP05-EAARS-CB-0192	78.5		SW-SM	9.2		
CP05-EAARS-CB-0194	83.5		SM	16.2		
CP05-EAARS-CB-0194	73.5		SP-SM	8.9		
CP05-EAARS-CB-0194	93.5		SW-SM	8.9		
CP05-EAARS-CB-0195	78.5		SP-SM	9.3		
CP05-EAARS-CB-0195	83.5		SW-SM	9.7		
CP05-EAARS-CB-0256	91	21	SM	17		
CP05-EAARS-CB-0256	95.5	19	SM	20		
CP05-EAARS-CB-0256	98.5	22	SM	20		
CP05-EAARS-CB-0256	70	28	SP-SM	13		
CP05-EAARS-CB-0256	76	28	SP-SM	11		
CP05-EAARS-CB-0256	80.5	26	SP-SM	10		
CP05-EAARS-CB-0256	65.5	21	SW-SM	14		
CP05-EAARS-CB-0256	85	26	SW-SM	10		
CP05-EAARS-CB-0256	89.5	22	SW-SM	9		
CP05-EAARS-CB-0266	85	14	GW-GM	6		
CP05-EAARS-CB-0266	73	21	SW-SM	10		
CP05-EAARS-CB-0266	76	18	SW-SM	11		
CP05-EAARS-CB-0266	89.5	14	SW-SM	8		
CP05-EAARS-CB-0267	88.5	31	SM	29		
CP05-EAARS-CB-0275	83.5	20	SW-SM	11		
CP05-EAARS-CB-0275	93.5	18	SW-SM	12		
CP05-EAARS-CB-0280	73.5	26	SM	12		
CP05-EAARS-CB-0280	83.5	22	SM	19		
CP05-EAARS-CB-0280	88.5	25	SM	12		
CP05-EAARS-CB-0280	93.5	24	SM	15		
CP05-EAARS-CB-0280	78.5	19	SP-SM	8		
CP05-EAARS-CB-0280	98.5	33	SP-SM	11		
CP05-EAARS-RB-0282	70	7	GP-GM	7		72.3
CP05-EAARS-RB-0282	65	14	GP-GM	7		
CP05-EAARS-RB-0282	80		SP-SM	7		

Table 4-5 Continued - Ochopee Limestone Laboratory Soil Testing

Boring Number	Depth (feet)	Moisture (percent)	ASDM D2487 Class	-200 Sieve (percent)	Clay (percent)	CO_3 (percent)
CP05-EAARS-RB-0282	85		SP-SM	8		
CP05-EAARS-RB-0282	115	20	SM	27		
CP05-EAARS-RB-0282	120	22	SM	26		
CP05-EAARS-RB-0282	125		SM	19		
CP05-EAARS-RB-0282	130	21	SM	25		32.8
CP05-EAARS-RB-0282	135	21	SM	21		
CP05-EAARS-RB-0282	150		SP-SM	7		
CP05-EAARS-RB-0282	155		GP-GM	6		
CP05-EAARS-RB-0282	95	22	SP-SM	6		
CP05-EAARS-RB-0282	145	13	SP-SM	11		
CP05-EAARS-RB-0283	75		SP-SM	8		
CP05-EAARS-RB-0283	110	18	SM	14		75.5
CP05-EAARS-RB-0283	155		SP-SM	11		
CP05-EAARS-RB-0283	100	11	SP-SM	9		71.7
CP05-EAARS-RB-0283	140	19	SP-SM	10		53
CP05-EAARS-RB-0283	115	16	SW-SM	12		75.9
CP05-EAARS-RB-0283	125	13	SW-SM	7		77.7
CP05-EAARS-RB-0283	150	13	SW-SM	8		68.3
CP05-EAARS-RB-0283	160	14	SW-SM	9		67.2
CP05-EAARS-RB-0284	100	11	GP-GM	6		
CP05-EAARS-RB-0284	120	13	SM	13		
CP05-EAARS-RB-0284	70	9	SP-SM	7		78.8
CP05-EAARS-RB-0284	75		SP-SM	6		
CP05-EAARS-RB-0284	90	15	SP-SM	7		72.1
CP05-EAARS-RB-0284	110		SP-SM	9		
CP05-EAARS-RB-0284	115		SM	13		
CP05-EAARS-RB-0284	125	10	SP-SM	8		
CP05-EAARS-RB-0284	140	9	SP-SM	7		55.4
CP05-EAARS-RB-0284	150		SP-SM	9		
CP05-EAARS-RB-0285	70		SM	13		
CP05-EAARS-RB-0285	75		SP-SM	11		
CP05-EAARS-RB-0285	110		SM	16		
CP05-EAARS-RB-0285	115		SP-SM	11		
CP05-EAARS-RB-0286	75	18	SM	13		72
CP05-EAARS-RB-0286	110	26	SM	30		
CP05-EAARS-RB-0286	70		SP-SM	13		
CP05-EAARS-RB-0286	80	12	SP-SM	7		
CP05-EAARS-RB-0286	95	17	SP-SM	8		
CP05-EAARS-RB-0286	105	14	SP-SM	7		
CP05-EAARS-RB-0286	115		SP-SM	10		
CP05-EAARS-RB-0286	125	17	SP-SM	12		
CP05-EAARS-RB-0286	140	15	SP-SM	7		58.2
CP05-EAARS-RB-0286	150		SP-SM	10		
CP05-EAARS-RB-0286	155		SP-SM	11		
CP05-EAARS-RB-0286	88.5	21	SW-SM	12		
CP05-EAARS-RB-0286	98.5	15	SW-SM	13		

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4.2.6 Unnamed Sand Formation

The unnamed sand formation was encountered in the rotosonic drilled borings between the Ochopee Limestone and the Fort Pearce Formation. It consists mostly of shelly, uniform, fine grained, subrounded quartz sand similar to that of the Pinecrest Sand Member, but it is silty. It is identified primarily by the yellow-gray color.

Samples sent for laboratory testing were assigned USCS classifications of SM (8), SP-SM (4), and CL-ML (1). Percent passing the 200 sieve ranged from 11 to 41 percent with an average of 24.4 percent. The moisture content on samples tested ranged between 12 percent and 21 percent and averaged 18.1 percent. Carbonate content ranged from 36.6 to 61.6 percent with an average of 47.6 percent. (Table 4-6)

Table 4-6 Laboratory Soil Testing for the Unnamed and Peace River Formations

Boring Number	Depth (feet)	Moisture (percent)	ASDM D2487 Class	-200 Sieve (percent)	Clay (percent)	CO_3 (percent)
Unnamed Formation						
CP05-EAARS-RB-0282	180	20	SM	20		34.5
CP05-EAARS-RB-0283	185	20	CL-ML	41		53.6
CP05-EAARS-RB-0283	165	20	SM	23		41.2
CP05-EAARS-RB-0283	180	20	SM	29		37.2
CP05-EAARS-RB-0283	195	17	SM	27		36.6
CP05-EAARS-RB-0284	175	17	SM	27		48.2
CP05-EAARS-RB-0284	185	15	SM	35		
CP05-EAARS-RB-0284	155	12	SP-SM	11	0	
CP05-EAARS-RB-0285	150	19	SM	22	0	
CP05-EAARS-RB-0285	135	18	SM	19	2	
CP05-EAARS-RB-0285	175	18	SM	21	0	
CP05-EAARS-RB-0285	190	28	SM	42		
CP05-EAARS-RB-0286	175	18	SM	19		
CP05-EAARS-RB-0286	180	21	SM	25		
CP05-EAARS-RB-0286	160	20	SP-SM	12		61.6
Peace River Formation						
CP05-EAARS-RB-0282	225	36	ML	75		
CP05-EAARS-RB-0282	200	20	SM	34		
CP05-EAARS-RB-0282	215	28	SM	29		
CP05-EAARS-RB-0283	200	25	SM	22		23.9
CP05-EAARS-RB-0283	205	26	SM	25		30.5
CP05-EAARS-RB-0284	225	25	ML	98		
CP05-EAARS-RB-0284	205	23	SM	23		
CP05-EAARS-RB-0284	210	26	SM	43		
CP05-EAARS-RB-0285	205	22	SM	19	13	
CP05-EAARS-RB-0285	210	24	SM	41	4	
CP05-EAARS-RB-0285	215	30	CL	71		
CP05-EAARS-RB-0285	215	43	MH	89	85	
CP05-EAARS-RB-0285	220	101	MH	88	86	
CP05-EAARS-RB-0285	230	80	CL	82		
CP05-EAARS-RB-0286	225	148	CH	86		
CP05-EAARS-RB-0286	240	153	MH	98	91	
CP05-EAARS-RB-0286	215	25	ML	53		
CP05-EAARS-RB-0286	185	19	SM	21		

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4.2.7 Peace River Formation

The top of the Peace River Formation was penetrated in the coreholes, drilled borings and all ended in the formation. The top of the formation ranged from 191 to 200-foot depth, and averaged 197 feet. In the borings, it mostly consisted of very fine, silty sand, grading to more finely grained with depth. Samples sent to the laboratory were USCS classified as SM (7), ML (3), CL (2), and CH (1). Percent passing the 200 sieve ranged from 22 to 99 percent with an average of 50.2 percent. Two carbonate content tests returned 23.9 to 30.5 percent. Moisture content ranged between 19 and 148 percent with an average of 44.8 percent. (Table 4-6)

4.3 HYDRAULIC INTERVAL TESTING RESULTS

At two of the locations (RB-0238 and RB-0286) the static water level below ground level was progressively lower as the hole was drilled deeper. At RB-0285 this trend was reversed. In RB-0284 the trend was for the water levels to lower with depth apart from the uppermost (40 to 50 feet) which was lower than the static water level at the 70 to 80-foot interval. At RB-0282 the levels were generally the same with depth until 155-160 feet where the static level was higher than the strata above.

The pH, temperature, and conductivity of effluent stream were generally checked twice during the pumping of each interval in borings RB-0284 and RB-0284, once about one-half way through pump testing and once near the end. The results of the chemistry monitoring are listed in Table 4-7.

Table 4-7 Groundwater Chemistry Monitoring Results

Interval Depth (feet)	Parameters	RB-0283		RB-0284	
		Early data	Late data	Early data	Late data
40-50	pH	7.63	7.43	6.6	7.3
	Temp °C	25.1	25.0	25.4	24.9
	Conductivity (microSiemens)	927	892	653	644
70-80	pH	7.43	7.39	7.28	7.41
	Temp °C	25.0	24.9	25.7	25.7
	Conductivity (microSiemens)	2410	2440	991	1017
110-120	pH	7.65	7.44	7.31	7.46
	Temp °C	24.8	24.9	25.3	25.2
	Conductivity (microSiemens)	2690	2680	4660	4700
150-160	pH	7.5	7.43	7.32	7.35
	Temp °C	25.1	24.9	25.3	25.1
	Conductivity (microSiemens)	4680	4700	7240	7290

The conductivity results indicate that the water quality decreases with depth in both boreholes from non brackish at the top to brackish at depth. This suggests that there is not much vertical movement and mixing of the groundwater.

Comparison of the same depth intervals between the two boreholes indicates that there are significant horizontal variations in quality.

4.3.1 Aquifer Responses

The pumping time/drawdown data have been analyzed using the Cooper-Jacob straight line method (semilog plot) and the Hantush curve matching method (log-log plot). Where the recovery data were suitable, they have been analyzed using the Cooper-Jacob straight line method. The units of transmissivity are feet squared per day (feet^2/day). Results are presented in Table 4-8 through Table 4-12.

There are large differences between the transmissivities determined for the pumping data by the semilog and log-log plot methods. The transmissivities determined with the semilog method are generally characteristic of the types of earth materials encountered. The transmissivities determined by the log-log method are too low for the types of earth materials encountered, and the data curves did not generally fit the type curve well. The transmissivities determined by the semilog method are more representative of the in situ materials.

Where available, the transmissivities determined from the recovery data generally are comparable to the transmissivities determined for the pumping data by the semilog method, just slightly higher. The drawdown in pumped wells is generally higher than the drawdown in the aquifer, so analyses of the data generally underestimates the transmissivity. The analysis of recovery data tends to mitigate the problem and thus gives results that are more representative of the aquifer characteristics. Where available, the transmissivities determined by the recovery analyses should be used, and the transmissivities determined from the pumping data by the semilog method should be used otherwise.

The results tabulated below include the pumping rates and the measured drawdowns at 30 minutes of pumping. Since the pumping rates for each interval were similar, the drawdowns are inversely related to the calculated transmissivities, and the greatest part of the total drawdown was achieved in the first 30 minutes of pumping in each interval. The total drawdown in RB-0285, 40 to 50 feet was less than 0.1 foot, too small to provide data suitable for analysis. No transmissivity is given for that interval. However, considering the small drawdown, the transmissivity is probably higher than that in RB-0283, 40 to 50 feet. The data for RB-0283, 40 to 50 feet, is also questionable because of the small drawdown, but the data at least shows an apparent linear trend. Both of these tests indicate high transmissivity intervals, but quantitative determinations cannot be made.

The complete pumping test data and analyses are contained in Appendix 4. It should be noted that a partial collapse often occurred in the open hole intervals during the pumping tests and was detected by measuring the hole depth again after the testing (see Table 4-8).

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Table 4-8 Aquifer Characteristics for RB-0282

RB-0282 Interval Depth (feet)	Pumping rate (gpm) and duration (minutes)	Draw-down at 30 minutes of pumping (feet)	Recovery monitoring period (minutes)	Semilog plot (time vs. drawdown) (feet²/day)	Log – log plot (time vs. draw-down) (feet²/day)	(feet²/day)	Recovery Semilog plot (time vs. drawdown) (feet²/day)
60-70	18	2.44		C	L		
	90		14	5300	540		5765
80-90	18	0.29		C	L	U (early)	
	80		30	25500	1750	9900	Too fast
120-130	2.44	18.52		C	L		
	120		60	6.3	0.002		4.1
150-160	18	1		C	L		
	60		45	18500	930		9900

C = Confined or unconfined aquifer without delayed yield
L = Leaky confined
U = Unconfined aquifer with delayed yield
gpm = Gallons per minute
feet²/day = Transmissivity units in feet squared per day

Table 4-9 Aquifer Characteristics for RB-0283

RB-0283 Interval Depth (feet)	Pumping rate (gpm) and duration (minutes)	Draw-down at 30 minutes of pumping (feet)	Recovery monitoring period (minutes)	Semilog plot (time vs. drawdown) (feet²/day)	Log – log plot (time vs. draw-down) (feet²/day)	(feet²/day)	Recovery Semilog plot (time vs. drawdown) (feet²/day)
40-50	18.75	0.05		C	L		
	30		10	63200	5700		Too fast
70-80	18.5	2.28		C	L		
	75		30	7300	105		7200
110-120	19.5	3.8		C	L		
	70		30	5900	70		8600
150-160	18.5	2.61		C	L		
	65		30	6700	100		7250

C = Confined or unconfined aquifer without delayed yield
L = Leaky confined
U = Unconfined aquifer with delayed yield
gpm = Gallons per minute
feet²/day = Transmissivity units in feet squared per day

EAA Reservoir A-1 Geotechnical Data Report March, 2006

Table 4-10 Aquifer Characteristics for RB-0284

RB-0284 Interval Depth (feet)	Pumping rate (gpm) and duration (minutes)	Draw-down at 30 minutes of pumping (feet)	Recovery monitoring period (minutes)	Semilog plot (time vs. drawdown) (feet²/day)	Log – log plot (time vs. draw-down) (feet²/day)	(feet²/day)	Recovery Semilog plot (time vs. drawdown) (feet²/day)
40-50	18.5	0.105		C	L		
	30		10	Bad Data	8900		Too fast
70-80	18.5	0.65		C	L		
	60		30	27000	800		32500
110-120	18.5	1.74		C	L		
	30		10	14200	580		Too fast
150-160	18.5	2.67		C	L		
	60		30	10400	370		Too fast

C = Confined or unconfined aquifer without delayed yield
L = Leaky confined
U = Unconfined aquifer with delayed yield
gpm = Gallons per minute
feet²/day = Transmissivity units in feet squared per day

Table 4-11 Aquifer Characteristics for RB-0285

RB-0285 Interval Depth (feet)	Pumping rate (gpm) and duration (minutes)	Draw-down at 30 minutes of pumping (feet)	Recovery monitoring period (minutes)	Semilog plot (time vs. drawdown) (feet²/day)	Log – log plot (time vs. draw-down) (feet²/day)	(feet²/day)	Recovery Semilog plot (time vs. drawdown) (feet²/day)
40-50	Stepped	5.34					
	16 max		14				166
70-80	Stepped	12.07					
	15.6 (max)		14				56
110-120	20.5	1.08		C	L		
	60		14	20800	1800		Too fast
150-160	22.5	2.92		C	L		
	120		14	10800	400		10600

C = Confined or unconfined aquifer without delayed yield
L = Leaky confined
U = Unconfined aquifer with delayed yield
gpm = Gallons per minute
feet²/day = Transmissivity units in feet squared per day

BLACK & VEATCH 4-21

Table 4-12 Aquifer Characteristics for RB-0286

RB-0286 Interval Depth (feet)	Pumping rate (gpm) and duration (minutes)	Draw-down at 30 minutes of pumping (feet)	Recovery monitoring period (minutes)	Semilog plot (time vs. drawdown) (feet^2/day)	Log – log plot (time vs. draw-down) (feet^2/day)	(feet^2/day)	Recovery Semilog plot (time vs. drawdown) (feet^2/day)
40-50	18	14.06		C	L		
	120		30	60	20		60
70-80	18	1.37		C	L	U (early)	
	75		30	2400	300	400	7050
110-120	18.75	4.31		C	L		
	75		30	4200	60		6606
150-160	18	0.91		C	L	U (early)	
	75		30	10400	280	50	12400

C = Confined or unconfined aquifer without delayed yield
L = Leaky confined
U = Unconfined aquifer with delayed yield
gpm = Gallons per minute
ft^2/day = Transmissivity units in feet squared per day

4.4 GROUNDWATER MONITORING RESULTS

The groundwater levels in the three piezometers installed during the summer 2005 drilling program were determined on November 22, 2005. The data are tabulated in Table 4-13. The depths are measured from the top of the flush mounted protective casing.

Table 4-13 Groundwater Depths

Boring	Interval Depth (feet)	Depth to Water (feet)
RB-0283	108 to 121.5	2.3
RB-0284	68 to 81	1.2
RB-0286	148 to 161	1.4

5.0 REFERENCES

5.0 REFERENCES

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——— Personal Communication. 2005.

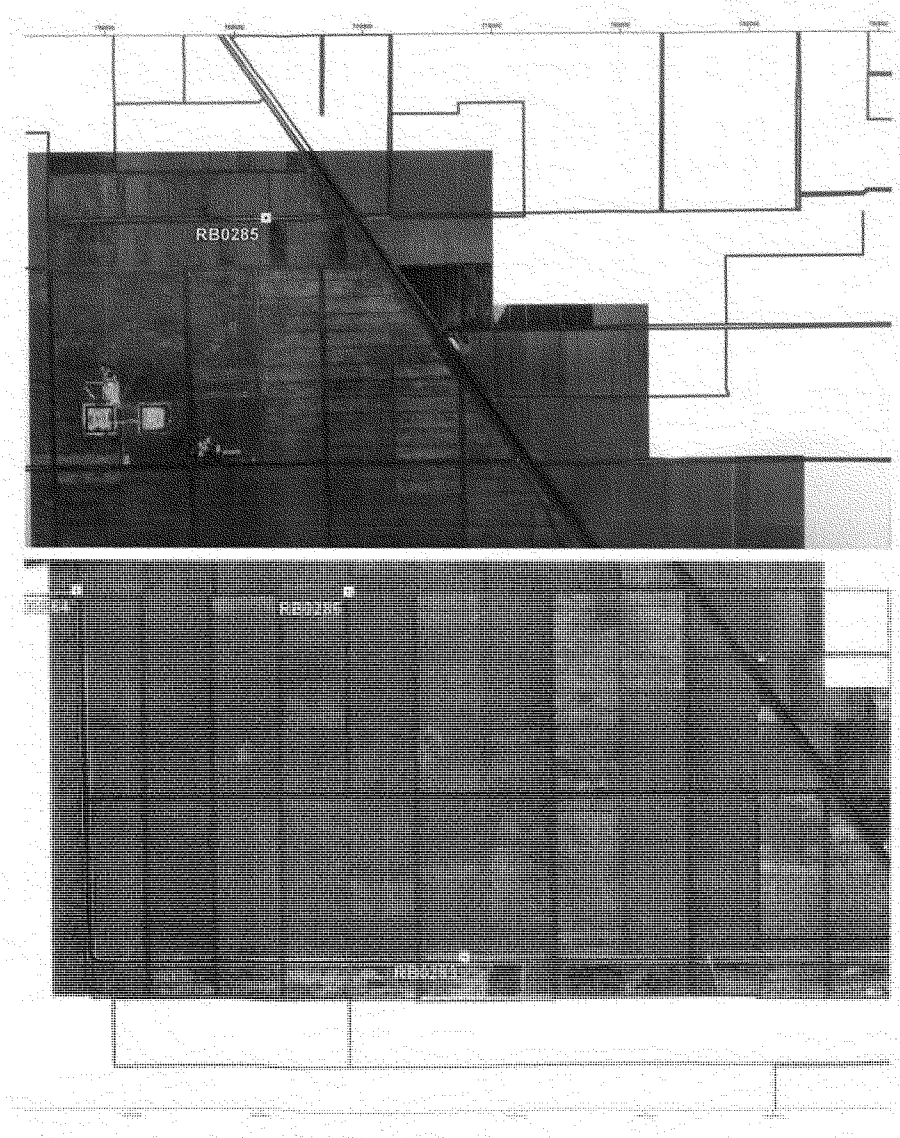
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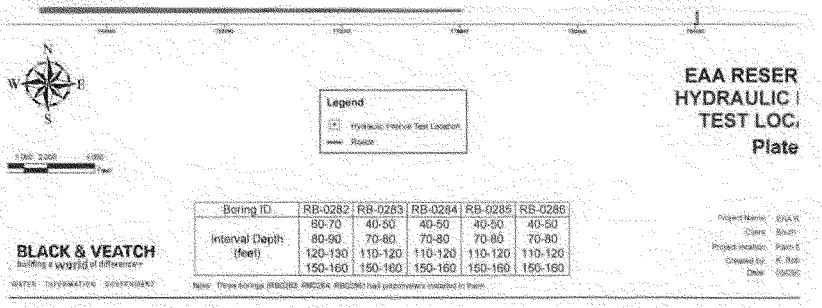
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PLATE 1
EAA RESERVOIR A-1
BORING LOCATION PLAN

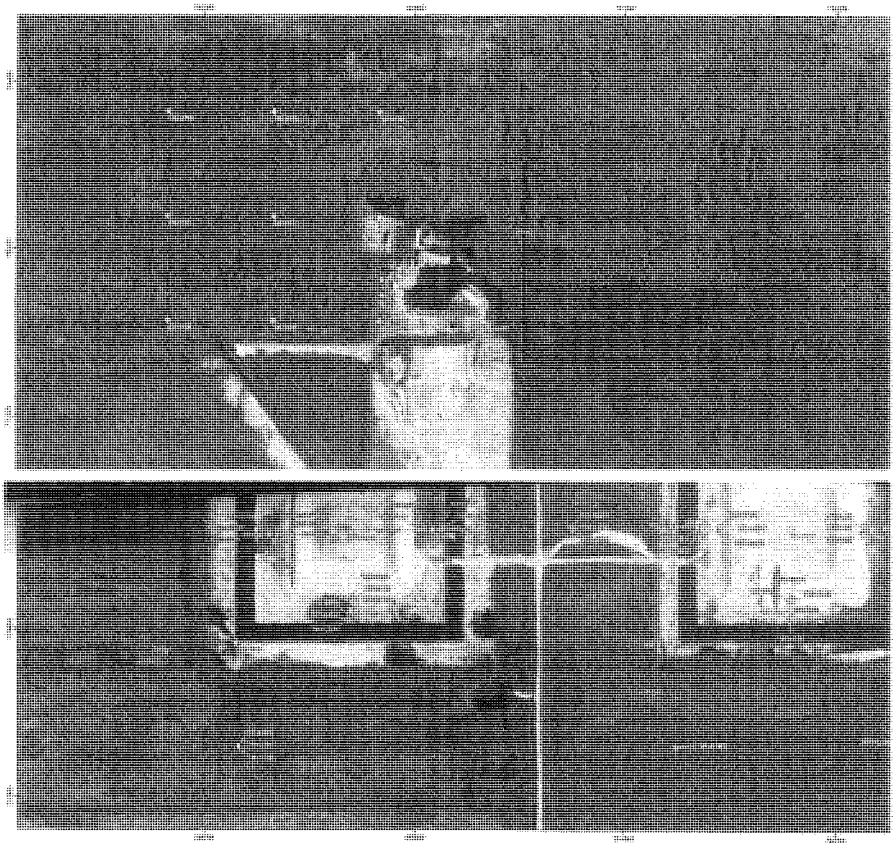


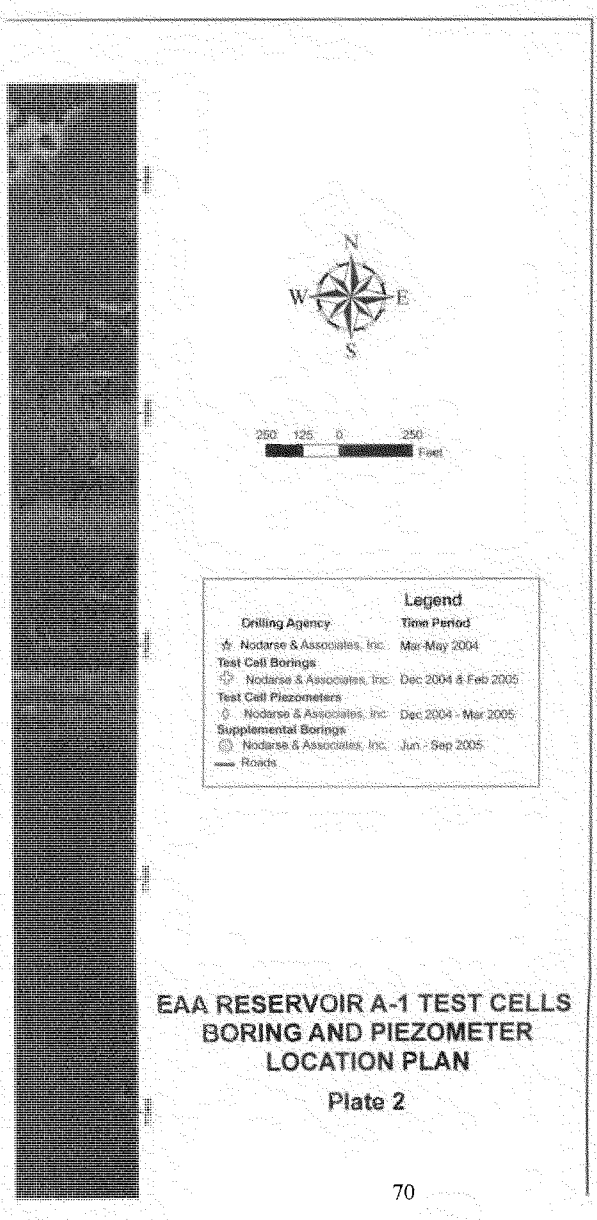
66



Boring ID	RB-0282	RB-0283	RB-0284	RB-0285	RB-0286
Interval Depth (feet)	60-70	40-50	40-50	40-50	40-50
	80-90	70-80	70-80	70-80	70-80
	120-130	110-120	110-120	110-120	110-120
	150-160	150-160	150-160	150-160	150-160

PLATE 2
EAA RESERVOIR A-1 TEST CELLS BORING AND PIEZOMETER LOCATION PLAN




N
W
E
S
250 125 0 250
Feet
Legend
Drilling Agency
Time Period
Nodarse & Associates, Inc.
Mar-May 2004
Test Cell Borings
Nodarse & Associates, Inc.
Dec 2004 & Feb 2005
Test Cell Piezometers
Nodarse & Associates, Inc.
Dec 2004 - Mar 2005
Supplemental Borings
Nodarse & Associates, Inc.
Jun - Sep 2005
Roads
EAA RESERVOIR A-1 TEST CELLS
BORING AND PIEZOMETER
LOCATION PLAN
Plate 2

70

PLATE 3
EAA RESERVOIR A-1 HYDRAULIC INTERVAL TEST LOCATIONS

APPENDIX 1

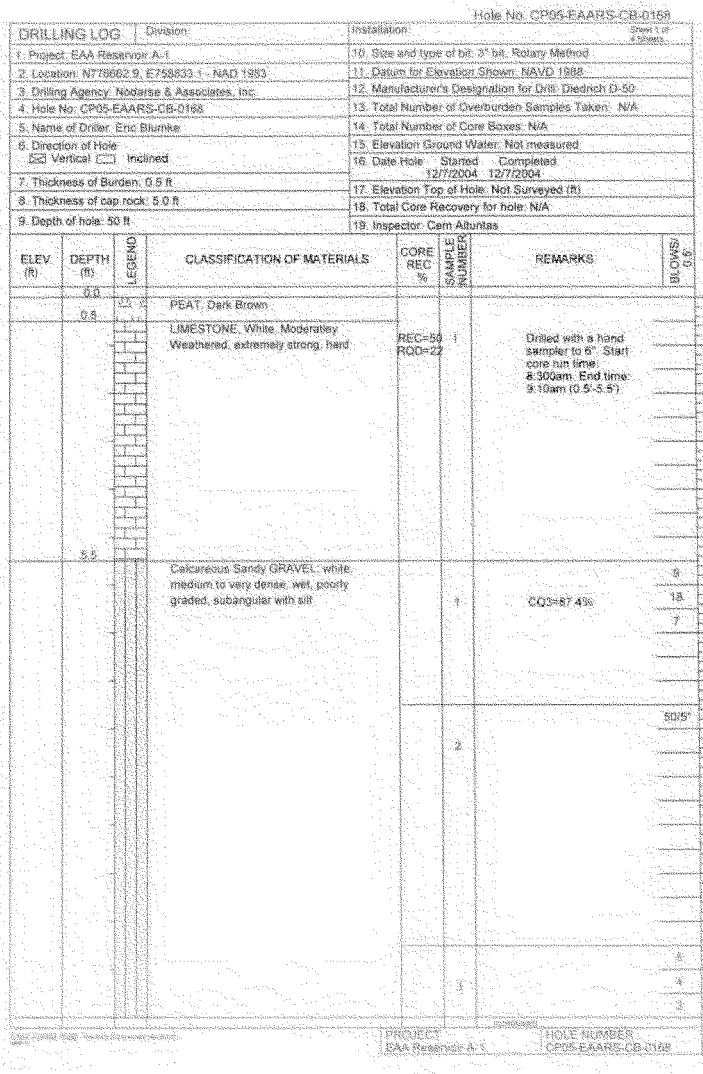
APPENDIX 1
TEST CELL BORINGS AND PIEZOMETER INSTALLATION LOGS: 168-180

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	SAND AND SANDY SOILS	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

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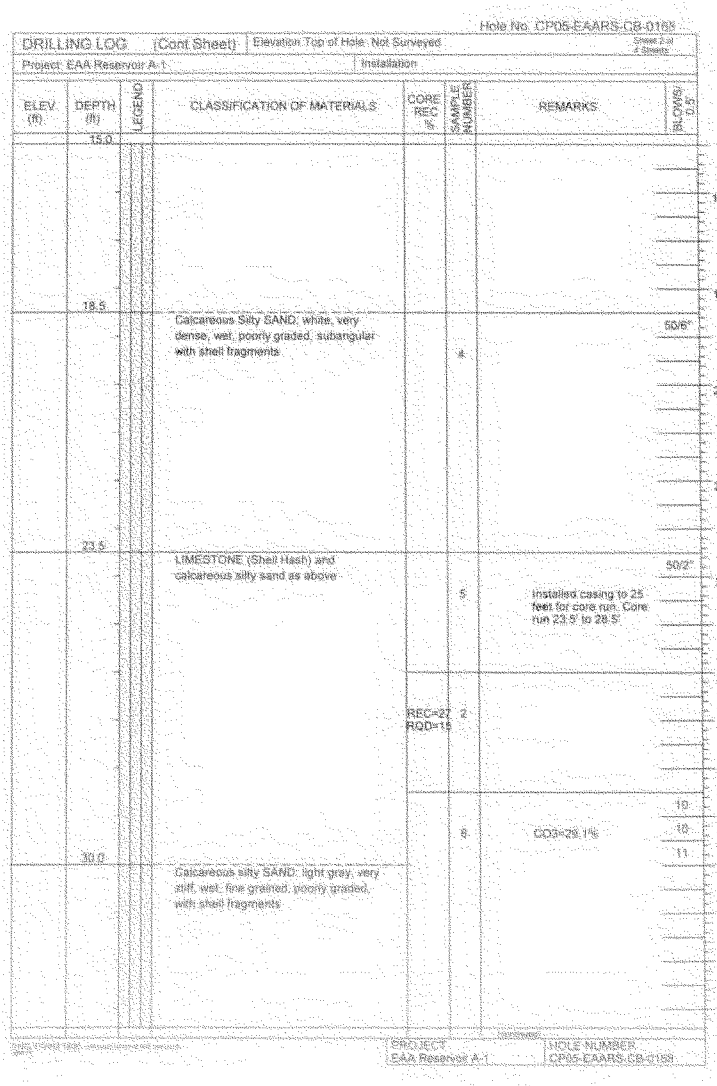
Hole No. CP05-EAARS-CB-0168

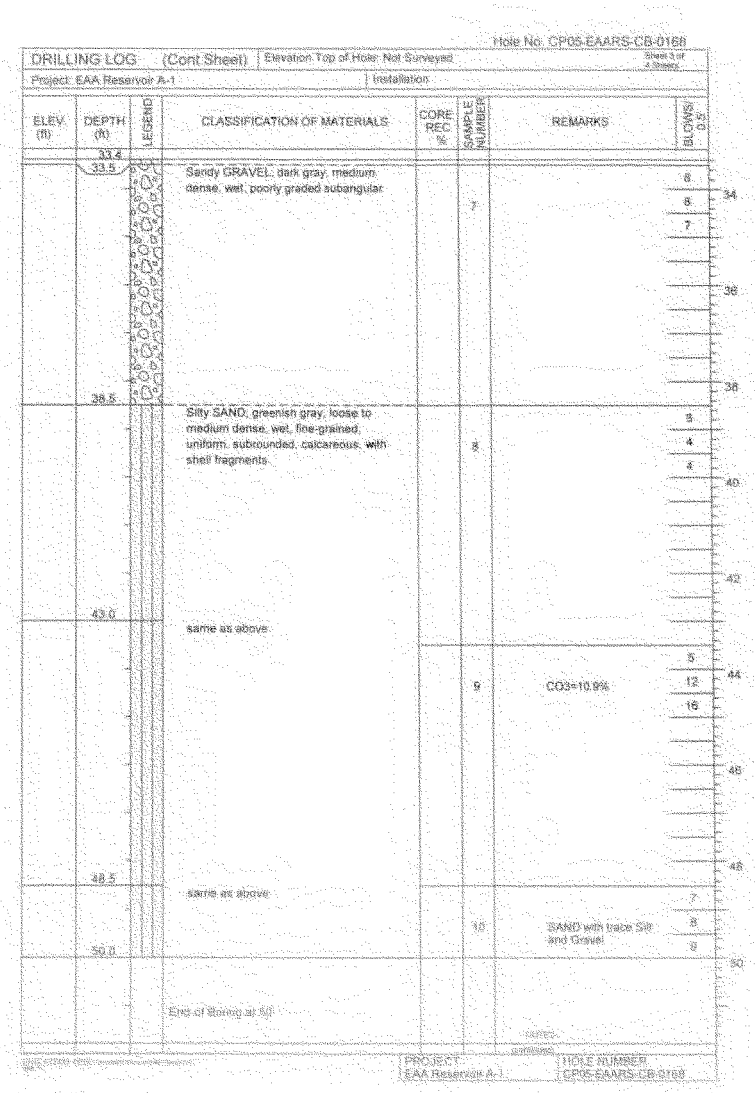
DRILLING LOG | Division: | Installation: | Sheet 1 of 4 Sheets

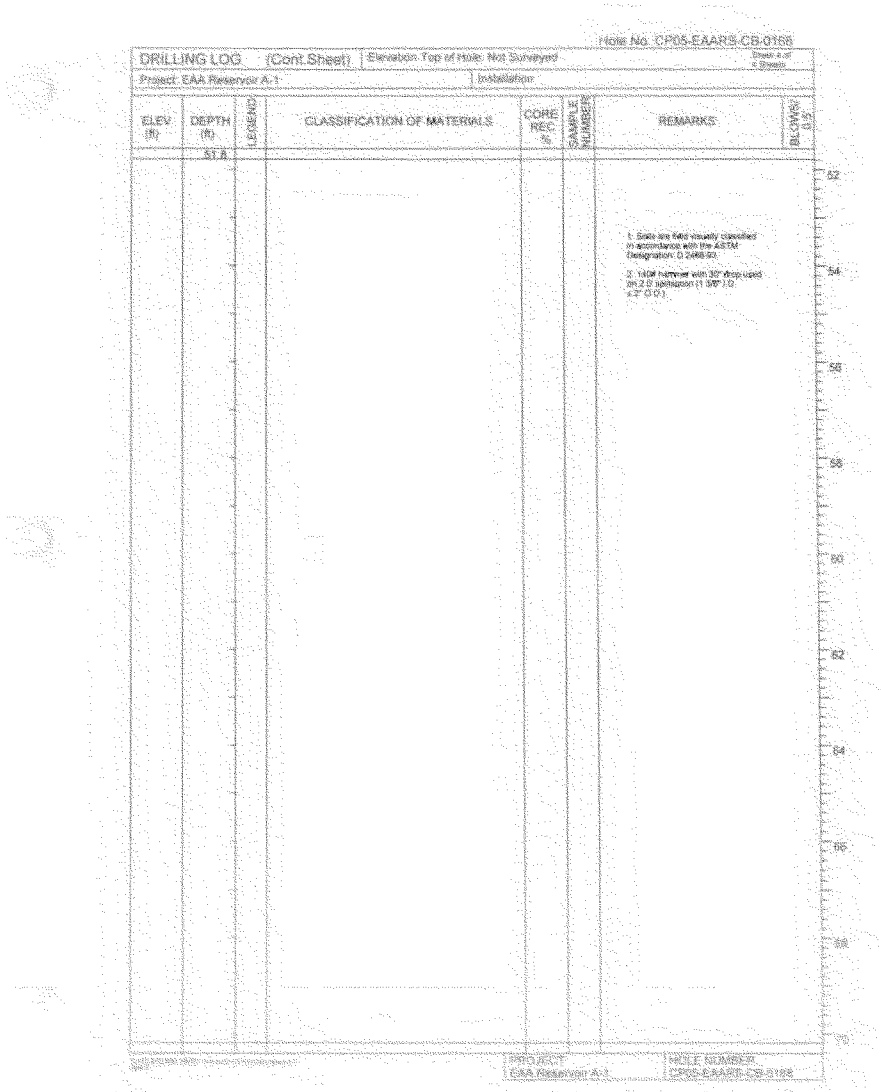
1. Project: EAA Reservoir A-1	10. Size and type of bit: 3" bit, Rotary Method
2. Location: N778662.9, E758833.1 - NAD 1983	11. Datum for Elevation Shown: NAVD 1988
3. Drilling Agency: Nodarse & Associates, Inc.	12. Manufacturer's Designation for Drill: Diedrich D-50
4. Hole No: CP05-EAARS-CB-0168	13. Total Number of Overburden Samples Taken: N/A
5. Name of Driller: Eric Blumke	14. Total Number of Core Boxes: N/A
6. Direction of Hole: ☒ Vertical ☐ Inclined	15. Elevation Ground Water: Not measured
	16. Date Hole: Started 12/7/2004 Completed 12/7/2004
7. Thickness of Burden: 0.5 ft	17. Elevation Top of Hole: Not Surveyed (ft)
8. Thickness of cap rock: 5.0 ft	18. Total Core Recovery for hole: N/A
9. Depth of hole: 50 ft	19. Inspector: Cem Altuntas

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
	0.0						
	0.5		PEAT, Dark Brown				
			LIMESTONE, White, Moderately Weathered, extremely strong, hard	REC=50 RQD=22	1	Drilled with a hand sampler to 6". Start core run time: 8:30am. End time: 9:10am (0.5'-5.5')	
	5.5		Calcareous Sandy GRAVEL, white, medium to very dense, wet, poorly graded, subangular with silt		1	CQ3=87.4%	9 18 7
					2		50/5"
					3		5 4 5

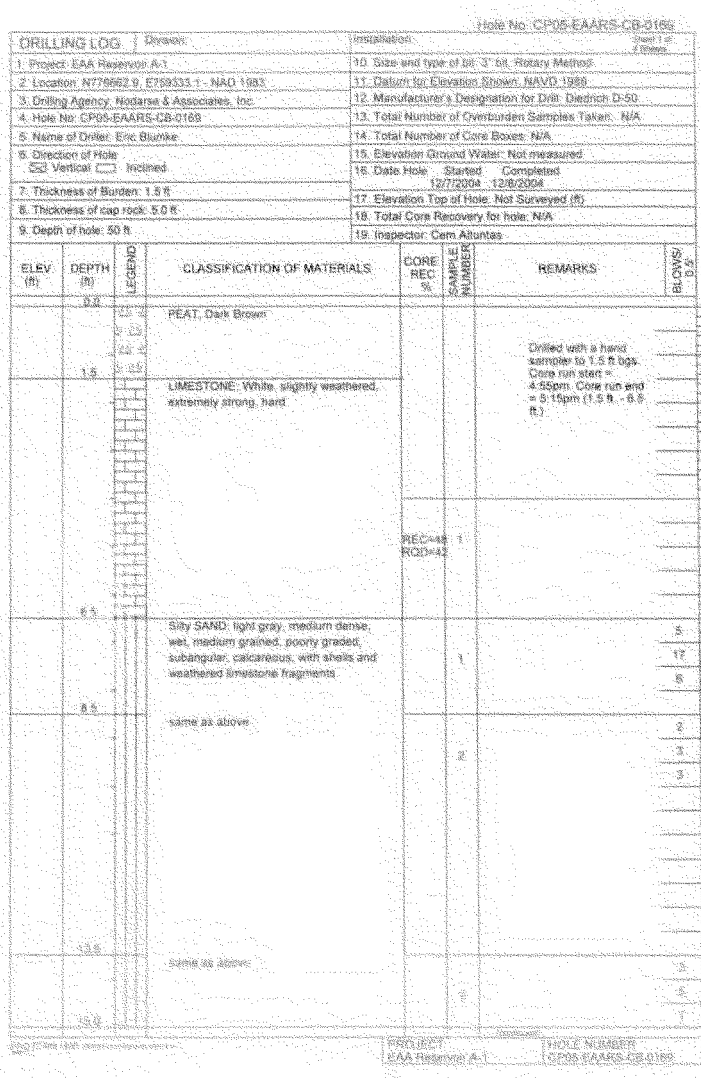
PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0168


Hole No. CP05-EAARS-CB-0188
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
15.0
18.5
Calcareous Silty SAND, white, very dense, wet, poorly graded, subangular with shell fragments
4
50/6"
23.5
LIMESTONE (Shell Hash) and calcareous silty sand as above
5
50/2"
Installed casing to 25 feet for core run. Core run 23.5' to 28.5'
REC=27
RQD=15
2
30.0
Calcareous silty SAND, light gray, very stiff, wet, fine grained, poorly graded, with shell fragments
6
CO3=29.1%
10
10
11
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0188


Hole No. CP05-EAARS-CB-0168
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: Not Surveyed
Sheet 3 of 4 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
33.5
Sandy GRAVEL, dark gray, medium dense, wet, poorly graded subangular
38.5
Silty SAND, greenish gray, loose to medium dense, wet, fine-grained, uniform, subrounded, calcareous, with shell fragments
43.0
same as above
CO3=10.9%
48.5
same as above
SAND with trace Silt and Gravel
50.0
End of Boring at 50'
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0168


DRILLING LOG
(Cont.Sheet)
Elevation Top of Hole: Not Surveyed
Hole No. CP05-EAAR5-CB-0158
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
51.8
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.5" diameter (1 3/8" I.D. x 3" O.D.)
52
54
56
58
60
62
64
66
68
70
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAAR5-CB-0158

78



Hole No: CP05-EAARS-CB-0169

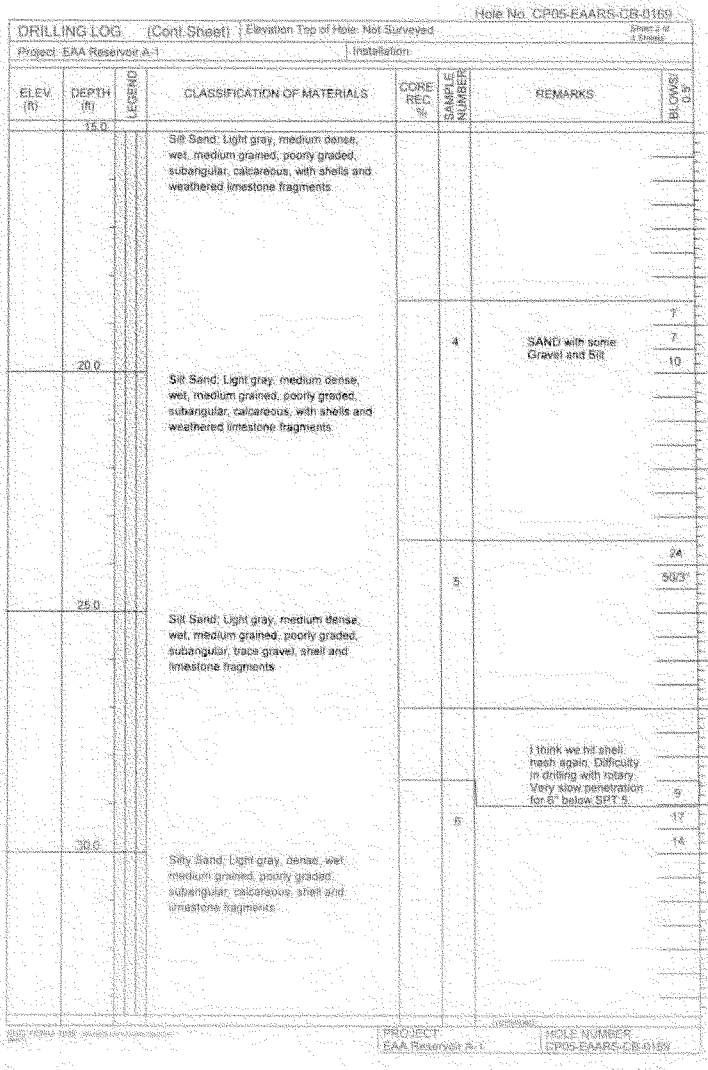
DRILLING LOG

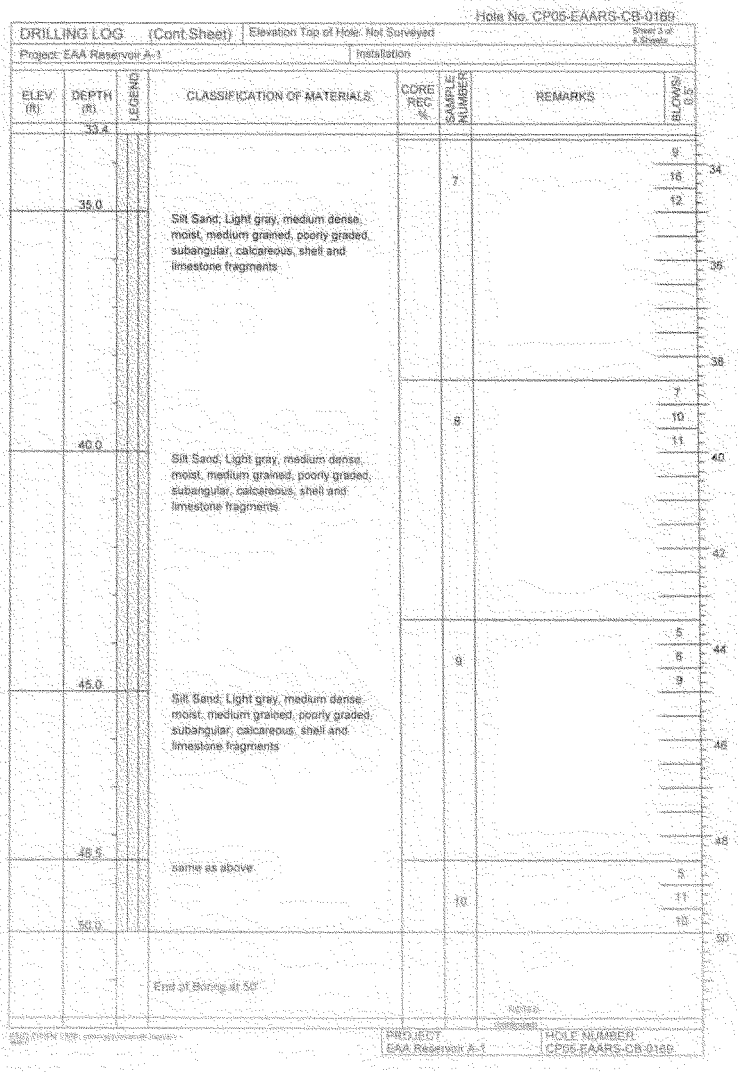
Drawn: Inspected: Sheet 1 of 2 Sheets

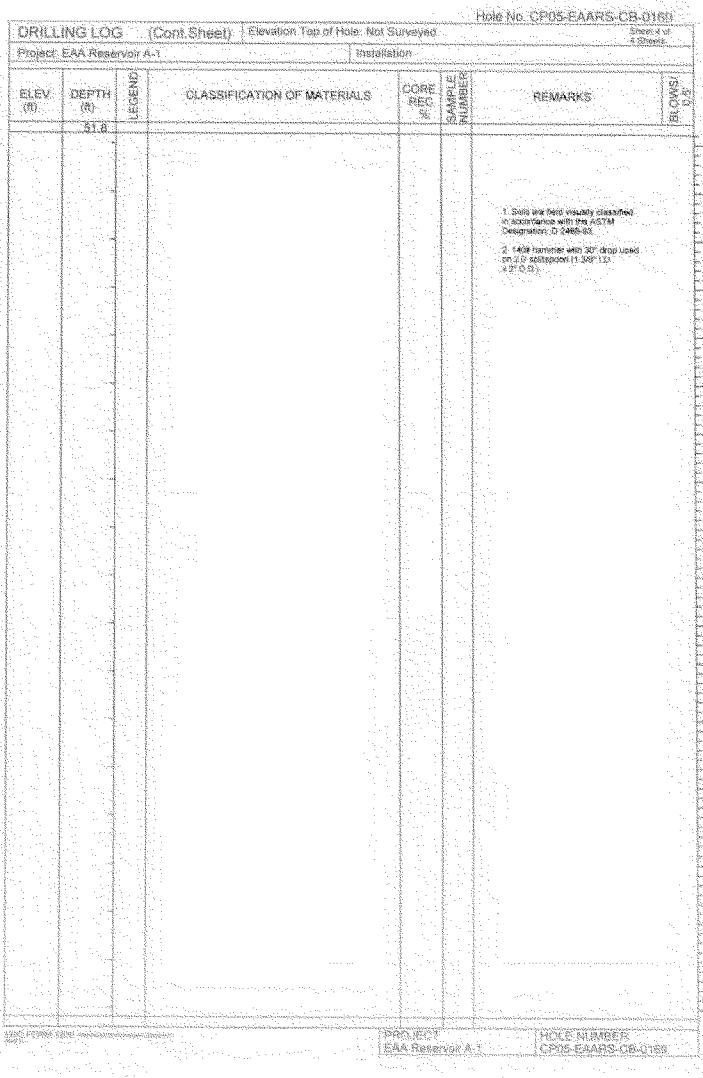
1. Project: EAA Reservoir A-1
2. Location: N778662.9, E759333.1 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0169
5. Name of Driller: Eric Blumke
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: 1.5 ft
8. Thickness of cap rock: 5.0 ft
9. Depth of hole: 50 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: N/A
15. Elevation Ground Water: Not measured
16. Date Hole: Started 12/7/2004 Completed 12/8/2004
17. Elevation Top of Hole: Not Surveyed (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: Cem Altuntas

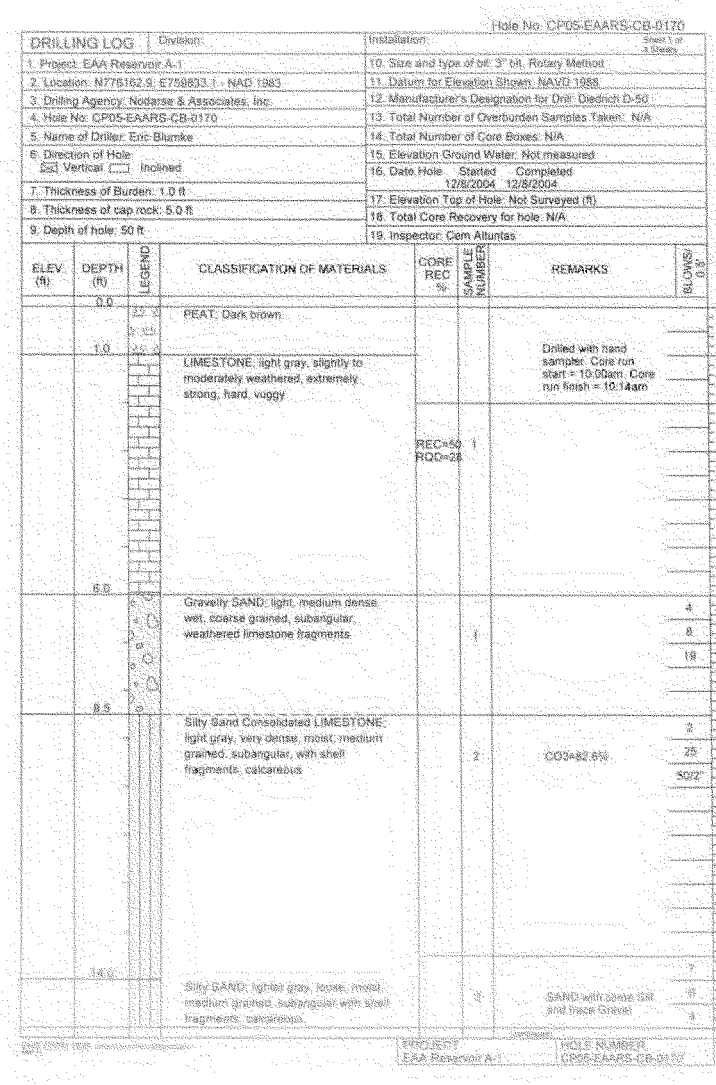
ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
	0.0		PEAT, Dark Brown				10
	1.5		LIMESTONE: White, slightly weathered, extremely strong, hard			Drilled with a hand sampler to 1.5 ft bgs. Core run start = 4:55pm. Core run end = 5:15pm (1.5 ft - 6.5 ft.)	2 4 8
				REC=48 RQD=42	1		
	6.5		Silty SAND: light gray, medium dense, wet, medium grained, poorly graded, subangular, calcareous, with shells and weathered limestone fragments		1		5 12 8 8
	8.5		same as above		2		2 3 3 10
	13.5		same as above		3		5 5 7 12
	18.5						

PROJECT: EAA Reservoir A-1 HOLE NUMBER: CP05-EAARS-CB-0169


Hole No. CP05-EAARS-CB-0169
DRILLING LOG (Cont Sheet) Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
15.0
Silt Sand; Light gray, medium dense, wet, medium grained, poorly graded, subangular, calcareous, with shells and weathered limestone fragments
16
18
7
7
10
4
SAND with some Gravel and Silt
20.0
Silt Sand; Light gray, medium dense, wet, medium grained, poorly graded, subangular, calcareous, with shells and weathered limestone fragments
20
22
24
50/3"
5
34
25.0
Silt Sand; Light gray, medium dense, wet, medium grained, poorly graded, subangular, trace gravel, shell and limestone fragments
26
I think we hit shell hash again. Difficulty in drilling with rotary. Very slow penetration for 6" below SPT 5
28
3
13
14
5
30.0
Silty Sand; Light gray, dense, wet, medium grained, poorly graded, subangular, calcareous, shell and limestone fragments
30
32
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0169


Hole No. CP05-EAARS-CB-0160
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
35.0
Silt Sand; Light gray, medium dense, moist, medium grained, poorly graded, subangular, calcareous, shell and limestone fragments
40.0
Silt Sand; Light gray, medium dense, moist, medium grained, poorly graded, subangular, calcareous, shell and limestone fragments
45.0
Silt Sand; Light gray, medium dense, moist, medium grained, poorly graded, subangular, calcareous, shell and limestone fragments
48.5
same as above
50.0
End of Boring at 50'
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0160


Hole No. CP05-EAARS-CB-0160
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: Not Surveyed
Sheet 4 of 4 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
51.8
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.0" splitspoon (1.38" I.D. x 2" O.D.).
52
54
56
58
60
62
64
66
68
70
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0160



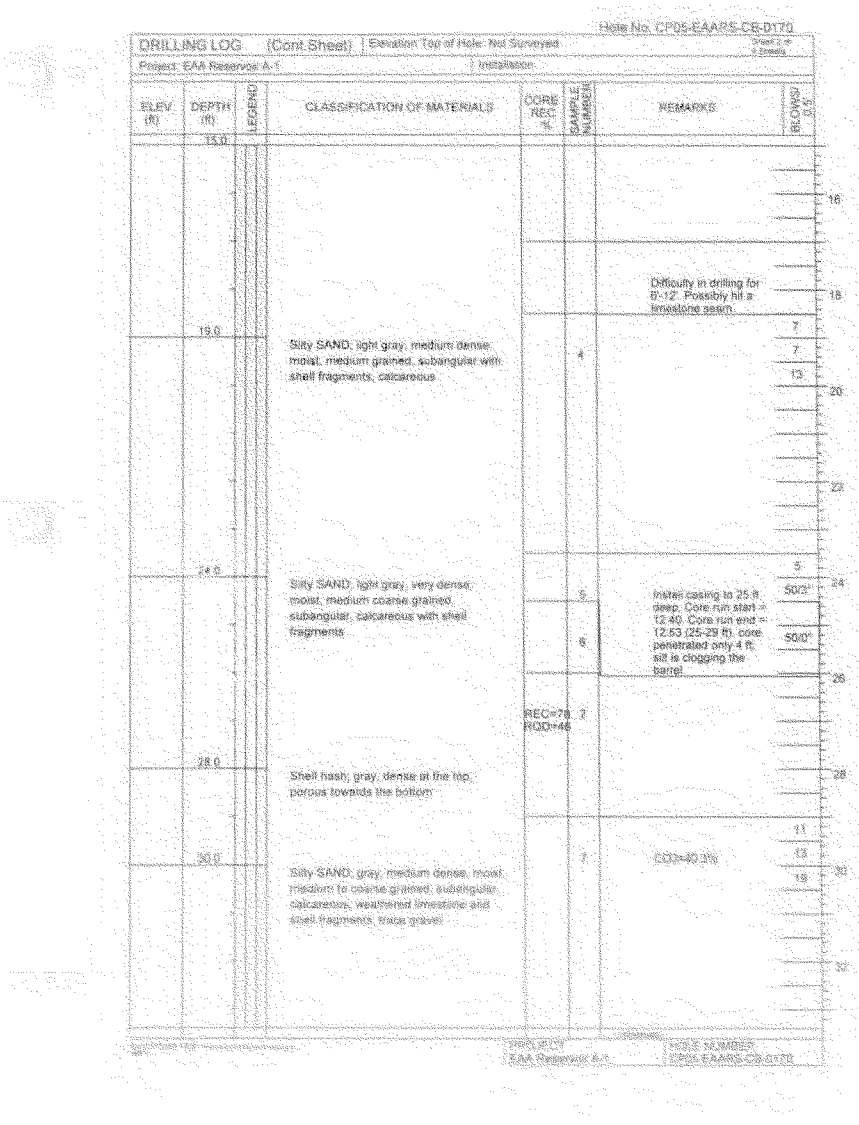
Hole No. CP05-EAARS-CB-0170

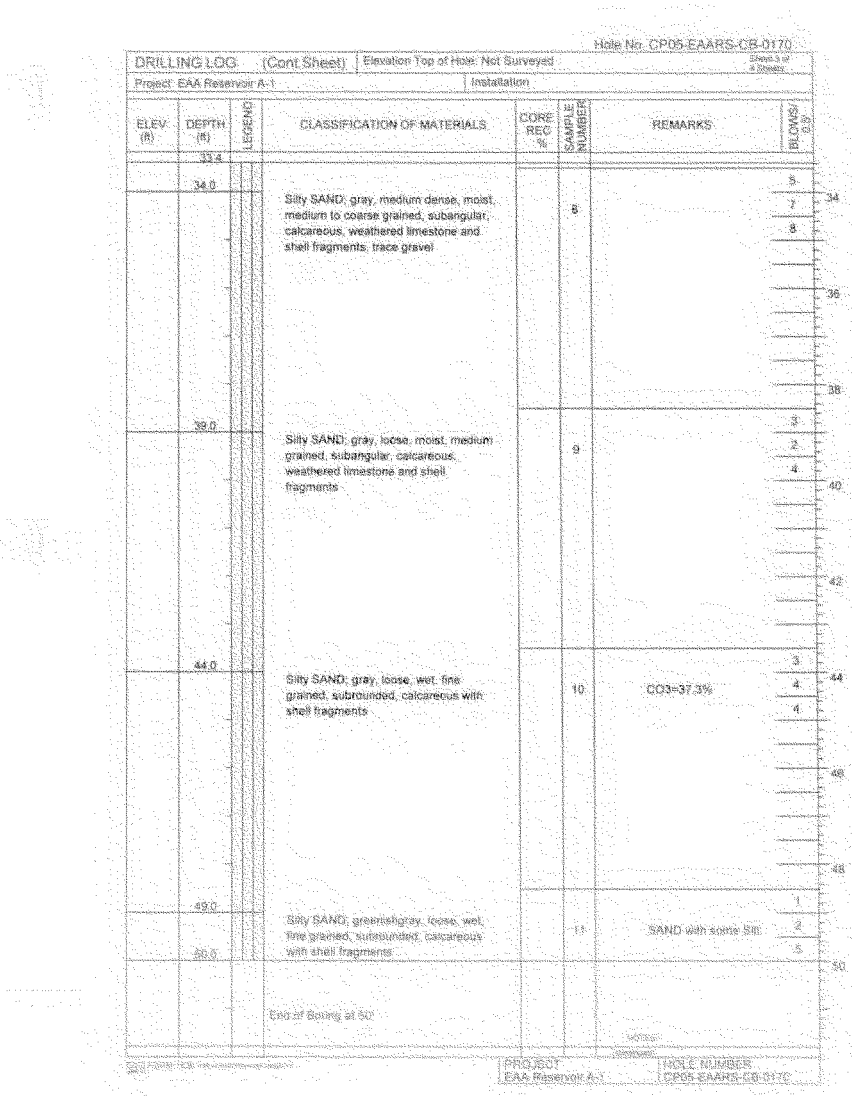
DRILLING LOG | Division: | Installation: | Sheet 1 of 3 Sheets

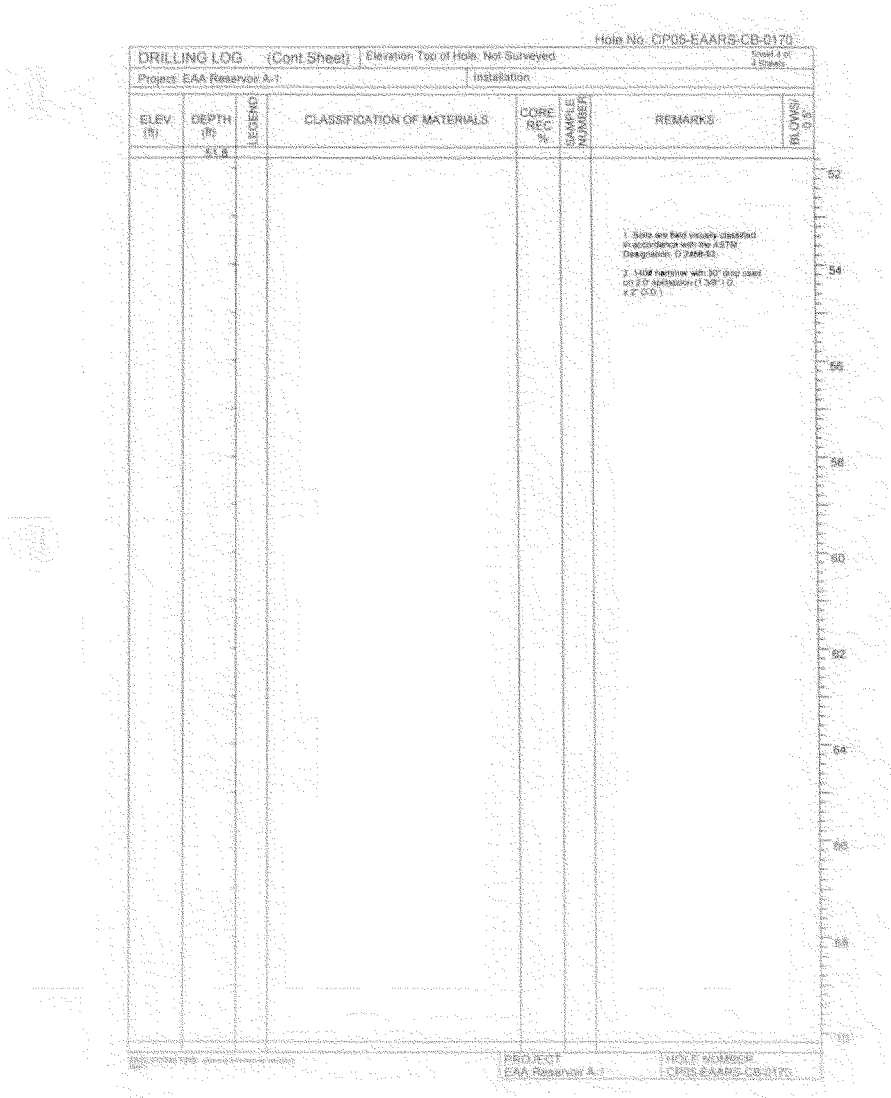
1. Project: EAA Reservoir A-1
2. Location: N775162.9, E759833.1 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0170
5. Name of Driller: Eric Blumke
6. Direction of Hole: [X] Vertical [ ] Inclined
7. Thickness of Burden: 1.0 ft
8. Thickness of cap rock: 5.0 ft
9. Depth of hole: 50 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: N/A
15. Elevation Ground Water: Not measured
16. Date Hole: Started 12/8/2004 Completed 12/8/2004
17. Elevation Top of Hole: Not Surveyed (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: Cem Altuntas

ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
	0.0		PEAT, Dark brown				
	1.0		LIMESTONE, light gray, slightly to moderately weathered, extremely strong, hard, vuggy			Drilled with hand sampler. Core run start = 10:00am. Core run finish = 10:14am	
				REC=50 RQD=28	1		
	6.0		Gravelly SAND: light, medium dense, wet, coarse grained, subangular, weathered limestone fragments		1		4 8 19
	8.5		Silty Sand Consolidated LIMESTONE, light gray, very dense, moist, medium grained, subangular, with shell fragments, calcareous		2	CO3=82.6%	25 50/2"
	14.0		Silty SAND: lighter gray, loose, moist, medium grained, subangular with shell fragments, calcareous		3	SAND with some silt and trace Gravel	7 6 5

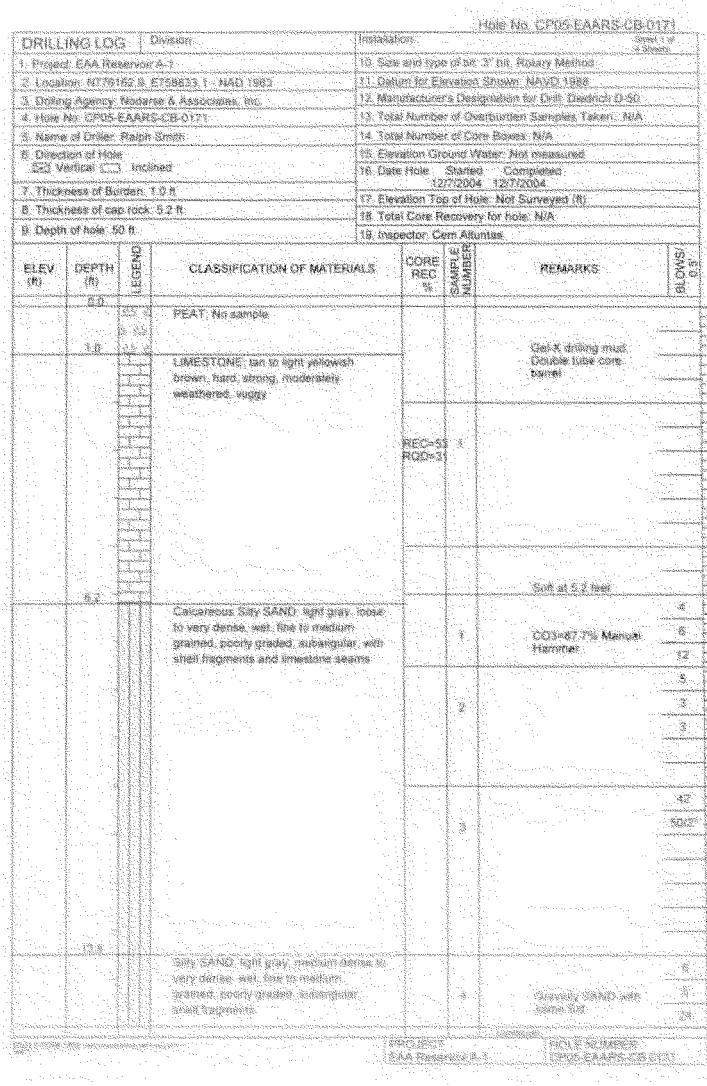
Drill Crew: [illegible] | PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0170


Hole No. CP05-EAARS-CB-DT70
DRILLING LOG (Cont Sheet) Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1 Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
13.0
Silty SAND, light gray, medium dense, moist, medium grained, subangular with shell fragments, calcareous
19.0
Silty SAND, light gray, very dense, moist, medium coarse grained, subangular, calcareous with shell fragments
Install casing to 25 ft bmp. Core run start = 12.40. Core run end = 12.53 (25-29 ft). core penetrated only 4 ft, silt is clogging the barrel
50/2"
50/0"
REC=78 ROD=46
28.0
Shell hash, gray, dense at the top, porous towards the bottom
30.0
Silty SAND, gray, medium dense, moist, medium to coarse grained, subangular, calcareous, weathered limestone and shell fragments, trace gravel
CO2=40.3%
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-DT70


Hole No. CP05-EAARS-CB-0170
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: Not Surveyed
Sheet 3 of 4 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
33.4
34.0
Silty SAND; gray, medium dense, moist, medium to coarse grained, subangular, calcareous, weathered limestone and shell fragments, trace gravel
8
5
7
8
34
36
38
39.0
Silty SAND; gray, loose, moist, medium grained, subangular, calcareous, weathered limestone and shell fragments
9
3
3
4
40
42
44.0
Silty SAND; gray, loose, wet, fine grained, subrounded, calcareous with shell fragments
10
CO3=37.3%
3
4
4
44
46
48
49.0
Silty SAND; greenish/gray, loose, wet, fine grained, subrounded, calcareous with shell fragments
11
SAND with some Silt
1
2
3
50
50.0
End of Boring at 50'
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0170


Hole No. CP05-EAARS-CB-0170
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: Not Surveyed
Sheet 4 of 4 Sheets
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
51.5
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.5" spt/casing (1.38" I.D. x 2" O.D.)
52
54
56
58
60
62
64
66
68
70
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0170

86



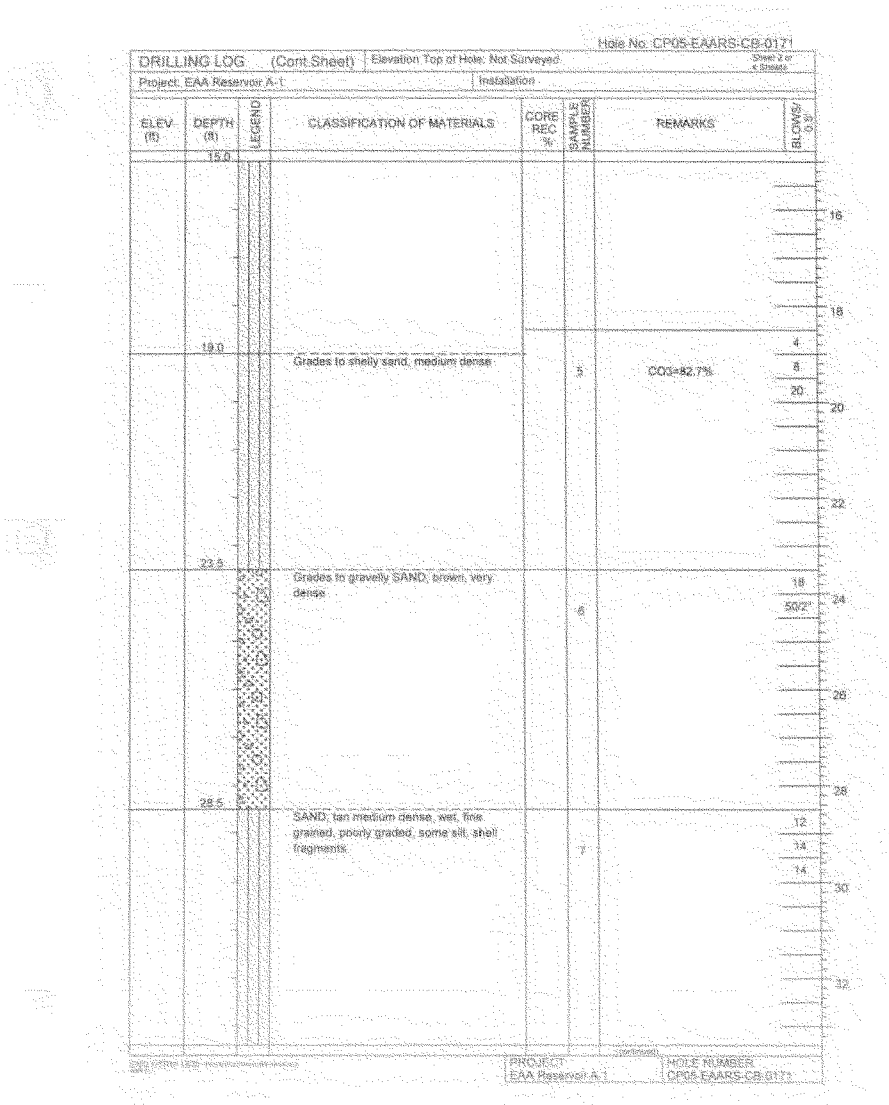
Hole No. CP05-EAARS-CB-017I

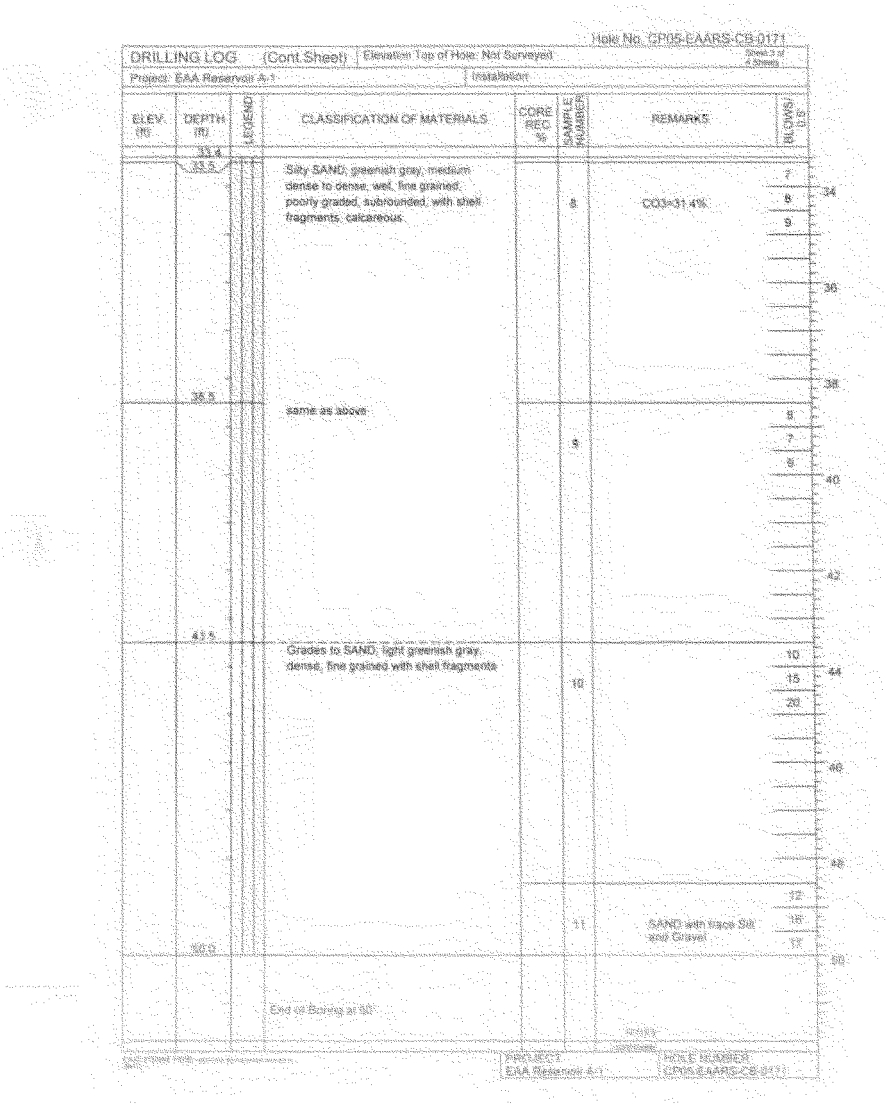
DRILLING LOG | Division: | Installation: | Sheet 1 of 3 Sheets

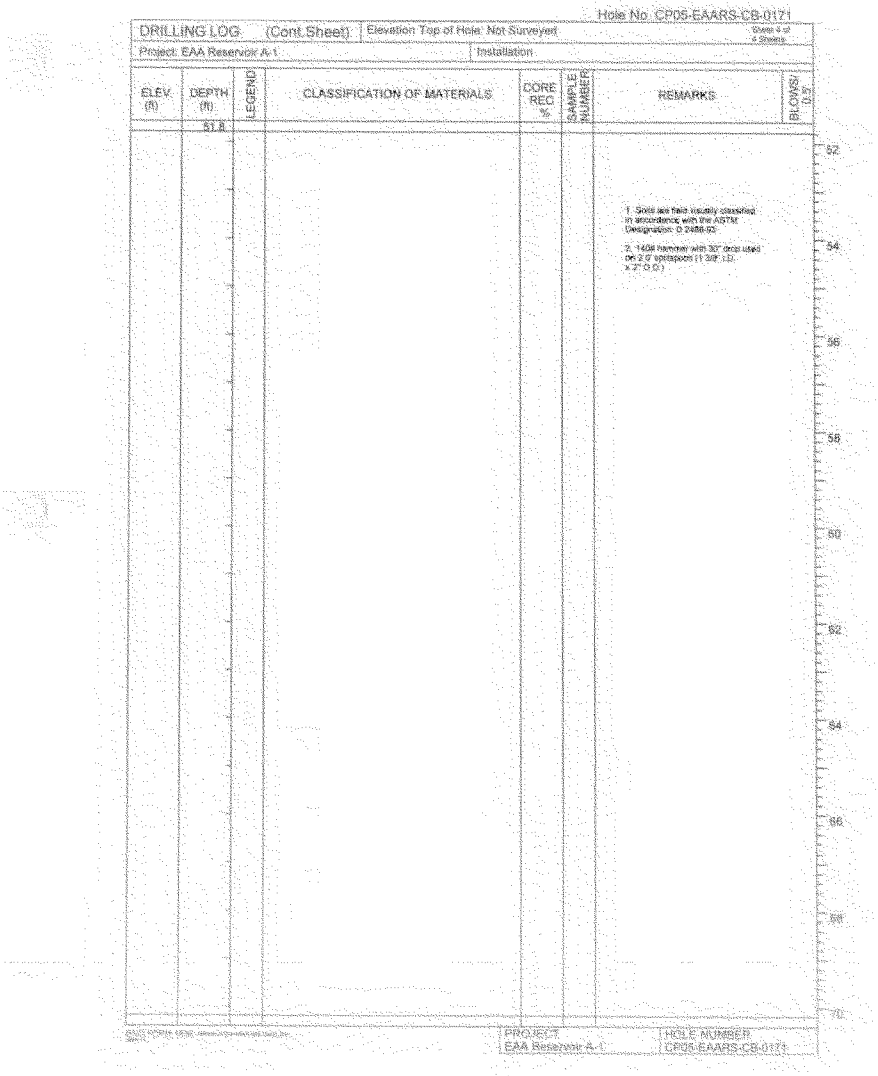
1. Project: EAA Reservoir A-1
2. Location: N779162.9, E758833.1 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-017I
5. Name of Driller: Ralph Smith
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: 1.0 ft
8. Thickness of cap rock: 5.2 ft
9. Depth of hole: 50 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: N/A
15. Elevation Ground Water: Not measured
16. Date Hole: Started 12/7/2004 Completed 12/7/2004
17. Elevation Top of Hole: Not Surveyed (ft)
18. Total Core Recovery for Hole: N/A
19. Inspector: Cem Altuntas

ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/6"
	0.0						0
			PEAT, No sample				
	1.0					Gel-X drilling mud. Double tube core barrel	
			LIMESTONE, tan to light yellowish brown, hard, strong, moderately weathered, vuggy	REC=55 RQD=31	1		2
							4
	5.2					Soft at 5.2 feet	6
			Calcareous Silty SAND, light gray, loose to very dense, wet, fine to medium grained, poorly graded, subangular, with shell fragments and limestone seams		1	CO3=87.7% Manual Hammer	4 6 12
					2		5 3 3
					3		42 50/3"
	19.8						12
			Silty SAND, light gray, medium dense to very dense, wet, fine to medium grained, poorly graded, subangular, shell fragments		4	Gravelly SAND with some Rock	5 5 24

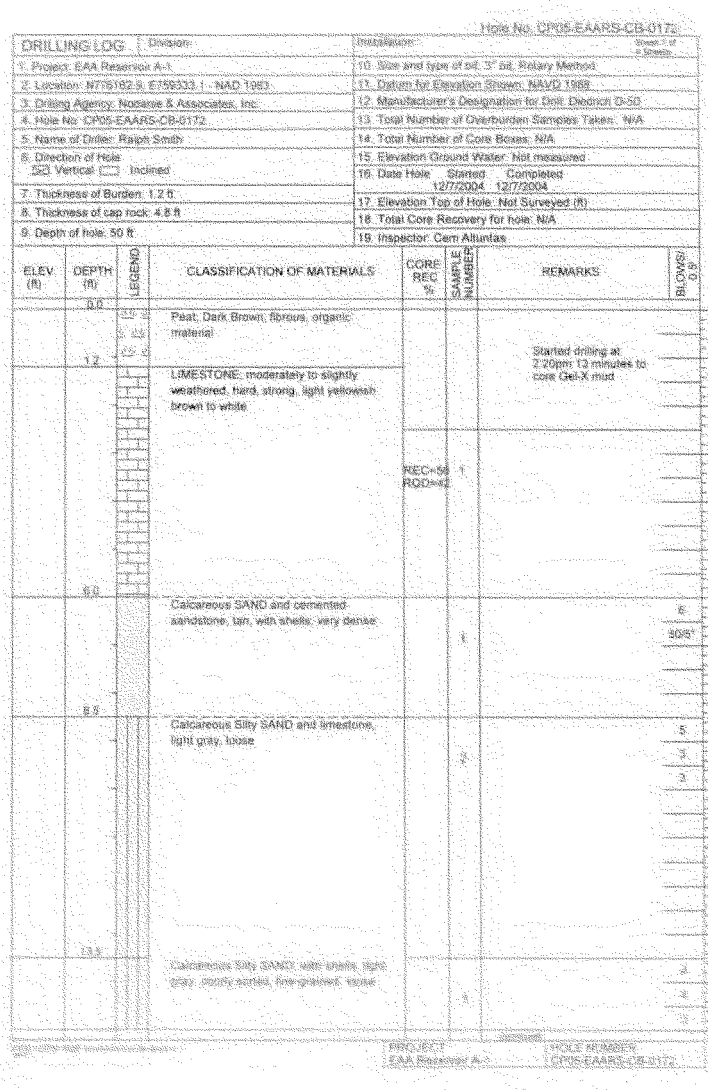
PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-017I


Hole No. CP05-EAARS-CB-017I
DRILLING LOG (Cont Sheet) Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1 Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.3'
15.0
19.0
Grades to shelly sand, medium dense
5
CO3=82.7%
23.5
Grades to gravelly SAND, brown, very dense
6
28.5
SAND, tan medium dense, wet, fine grained, poorly graded, some silt, shell fragments
7
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-017I


Hole No. CP05-EAARS-CB-0171
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/0.5ft
33.4
33.5
Silty SAND; greenish gray; medium dense to dense; wet; fine grained; poorly graded; subrounded; with shell fragments; calcareous
8
CO3=31.4%
7
8
9
34
36
38
35.5
same as above
5
5
7
8
40
42
41.5
Grades to SAND; light greenish gray; dense; fine grained with shell fragments
10
10
15
20
44
46
48
11
SAND with trace Silt and Gravel
12
18
19
50
End of Boring at 50'
Boring
Page 2 of 2
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0171


Hole No. CP05-EAARS-CB-0171
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: Not Surveyed
Sheet 3 of 4 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
51.8
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93
2. 140# hammer with 30" drop used on 2.5" splitspoon (1 3/8" I.D. x 2" O.D.)
52
54
56
58
60
62
64
66
68
70
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0171

90



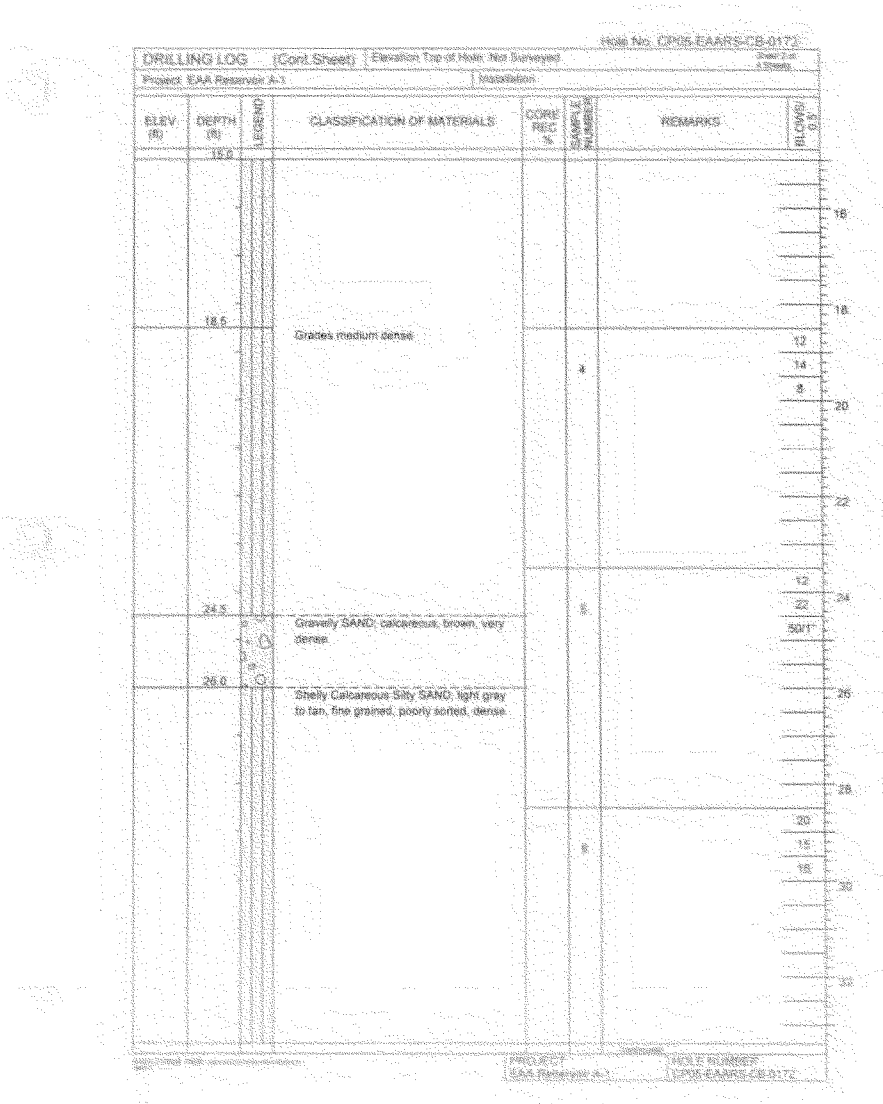
Hole No. CP05-EAARS-CB-0172

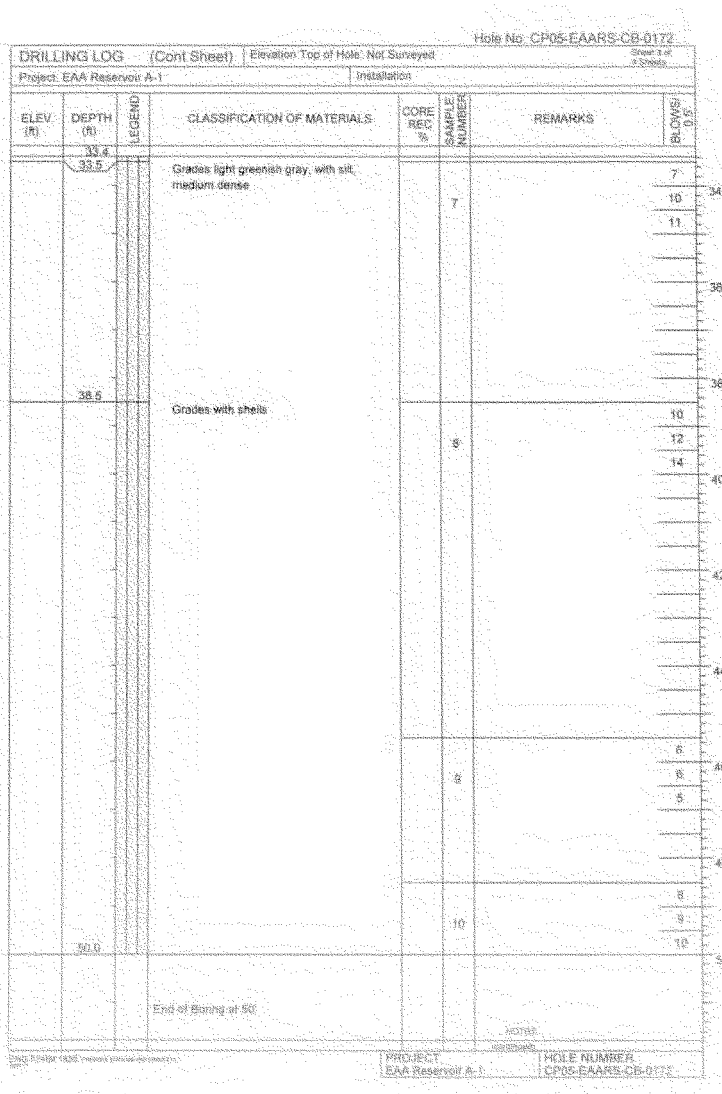
DRILLING LOG | Division: | Installation: | Sheet 1 of 2 Sheets

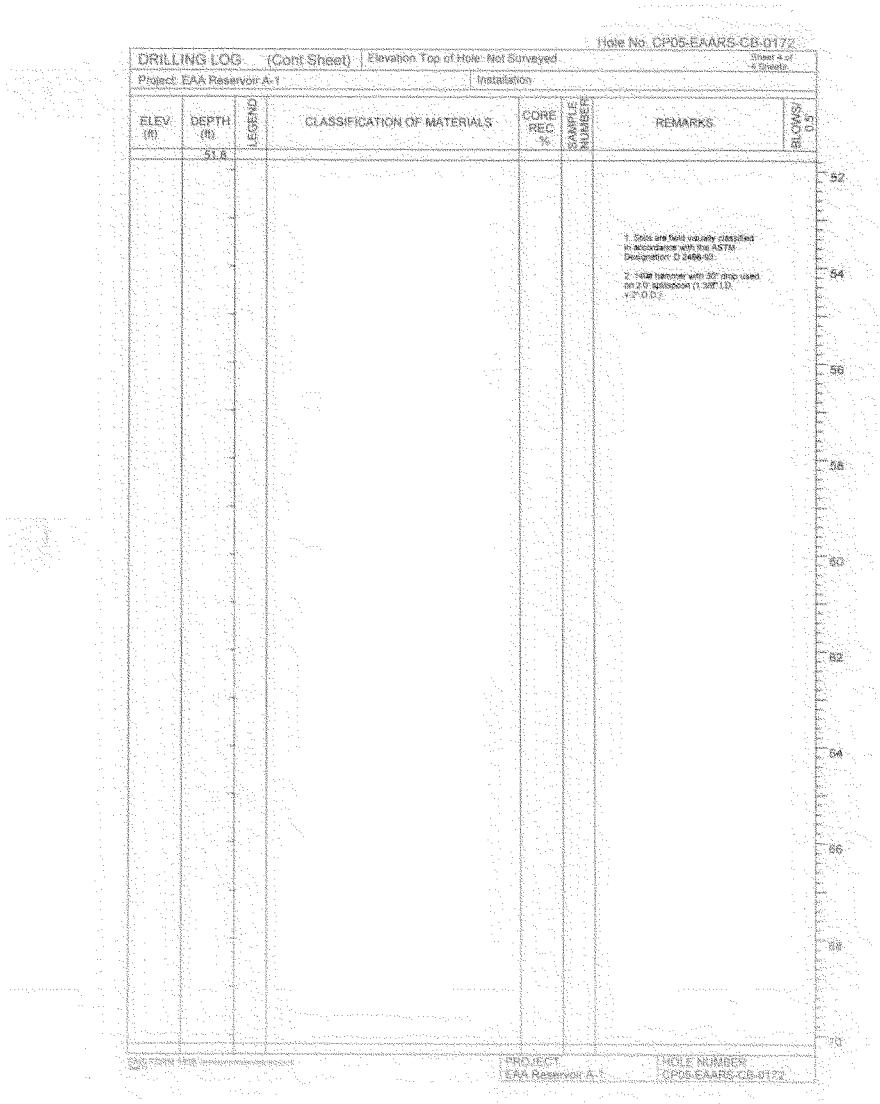
1. Project: EAA Reservoir A-1
2. Location: N775182.9, E758333.1 , NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0172
5. Name of Driller: Ralph Smith
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: 1.2 ft
8. Thickness of cap rock: 4.8 ft
9. Depth of hole: 50 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: N/A
15. Elevation Ground Water: Not measured
16. Date Hole: Started 12/7/2004 Completed 12/7/2004
17. Elevation Top of Hole: Not Surveyed (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: Cem Altuntas

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
	0.0		Peat, Dark Brown, fibrous, organic material				0
	1.2		LIMESTONE, moderately to slightly weathered, hard, strong, light yellowish brown to white			Started drilling at 2:20pm 13 minutes to core Gel-X mud	2
				REC=58 RQD=42	1		5
	6.0		Calcareous SAND and cemented sandstone, tan, with shells, very dense		1		6
	8.9		Calcareous Silty SAND and limestone, light gray, loose		2		5 4 3 10
	13.5		Calcareous Silty SAND, with shells, light gray, mostly sorted, fine-grained, loose		3		3 3 4

PROJECT: EAA Reservoir A-1 HOLE NUMBER: CP05-EAARS-CB-0172


DRILLING LOG (Cont.Sheet)
Project: EAA Reservoir A-1
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/6"
18.5
Grades medium dense
24.5
Gravelly SAND; calcareous, brown, very dense
26.0
Shelly Calcareous Silty SAND; light gray to tan, fine grained, poorly sorted, dense
50/1"
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CPP-EAARR-CB-017C


Hole No. CP05-EAARS-CB-0172
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
33.5
Grades light greenish gray, with silt, medium dense
38.5
Grades with shells
50.0
End of Boring at 50'
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0172



Hole No. CP05-EAARS-CB-0172

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: Not Surveyed | Sheet 4 of 4 Sheets

Project: EAA Reservoir A-1 | Installation:

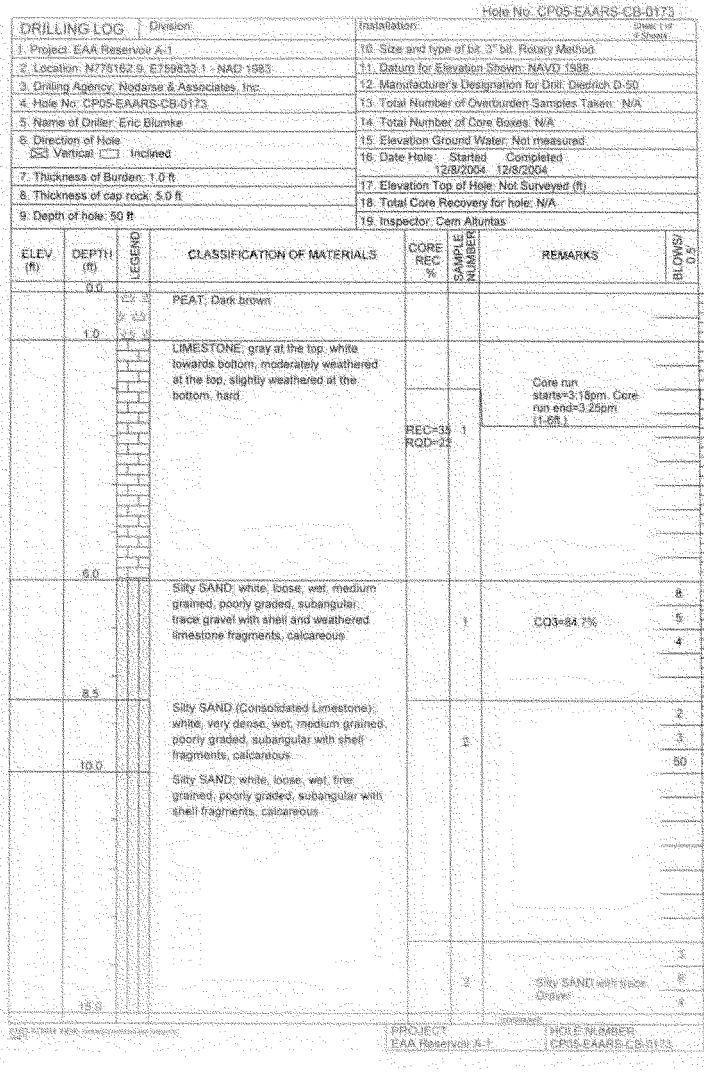
ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
	51.8						

1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1.38" I.D., 2.0" O.D.).

52
54
56
58
60
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70

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0172



Hole No: CP05-EAARS-CB-0173

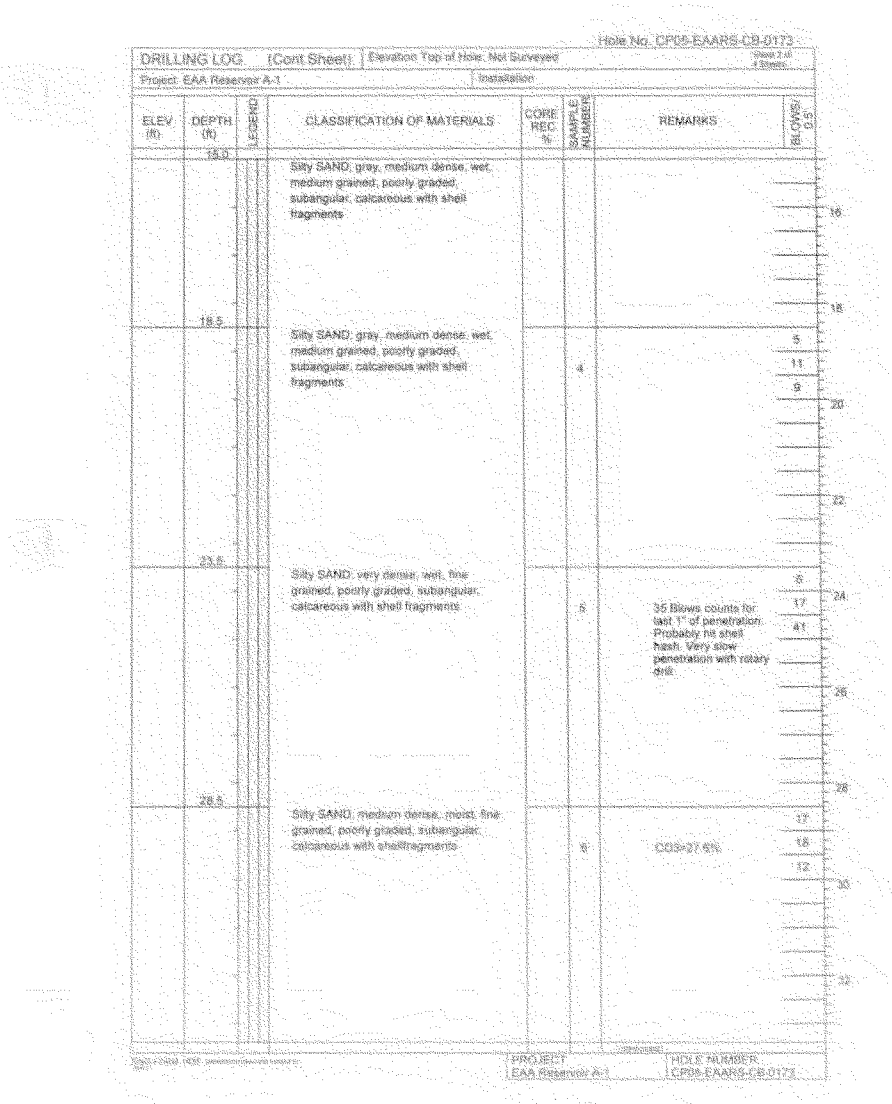
DRILLING LOG | Division: | Installation: | Sheet 1 of 1 Sheet

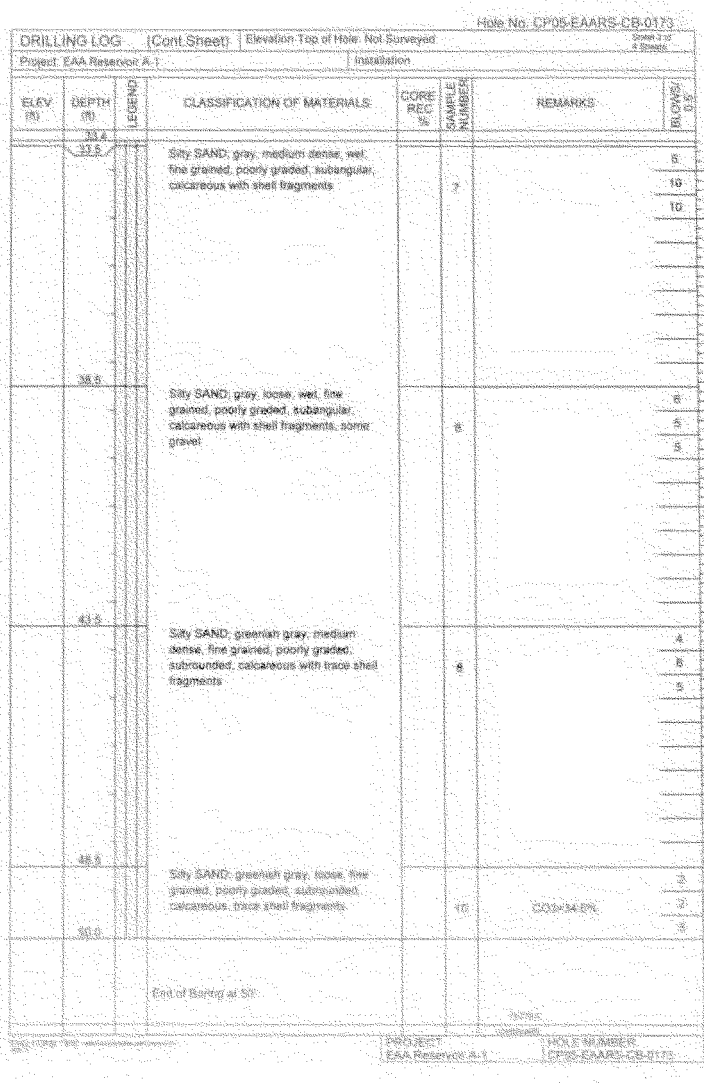
1. Project: EAA Reservoir A-1
2. Location: N776162.9, E759833.1 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0173
5. Name of Driller: Eric Blumke
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: 1.0 ft
8. Thickness of cap rock: 5.0 ft
9. Depth of hole: 50 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: N/A
15. Elevation Ground Water: Not measured
16. Date Hole: Started 12/8/2004 Completed 12/8/2004
17. Elevation Top of Hole: Not Surveyed (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: Cem Altuntas

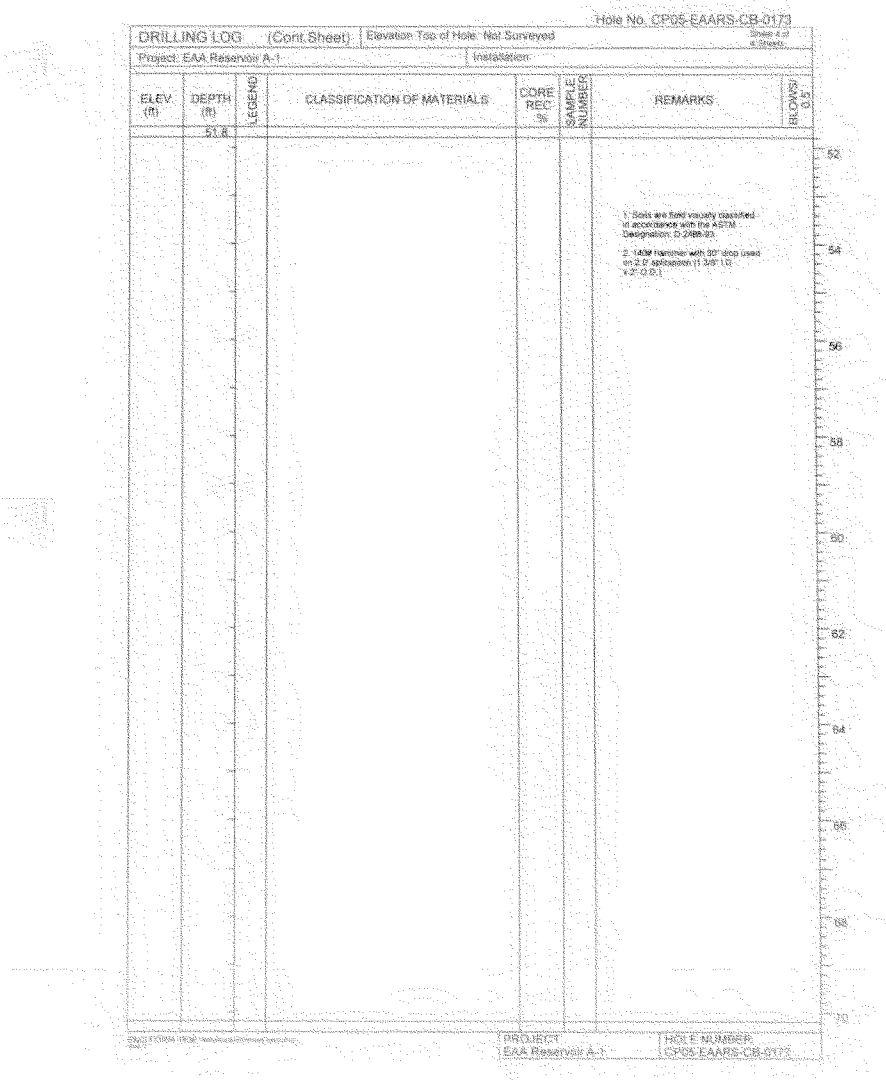
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/0.5'
	0.0						0
			PEAT; Dark brown				
	1.0						
			LIMESTONE; gray at the top, white towards bottom, moderately weathered at the top, slightly weathered at the bottom, hard			Core run starts=3:15pm. Core run end=3:25pm (1.6ft.)	2
				REC=35 RQD=22	1		4
	6.0						6
			Silty SAND; white, loose, wet, medium grained, poorly graded, subangular, trace gravel with shell and weathered limestone fragments, calcareous		1	CO3=84.7%	8
							5
	8.5						4
			Silty SAND (Consolidated Limestone); white, very dense, wet, medium grained, poorly graded, subangular with shell fragments, calcareous		13		9
	10.0						2
			Silty SAND; white, loose, wet, fine grained, poorly graded, subangular with shell fragments, calcareous				3
							50
							10
							12
							3
					2	Silty SAND with trace Gravel	8
	19.0						14

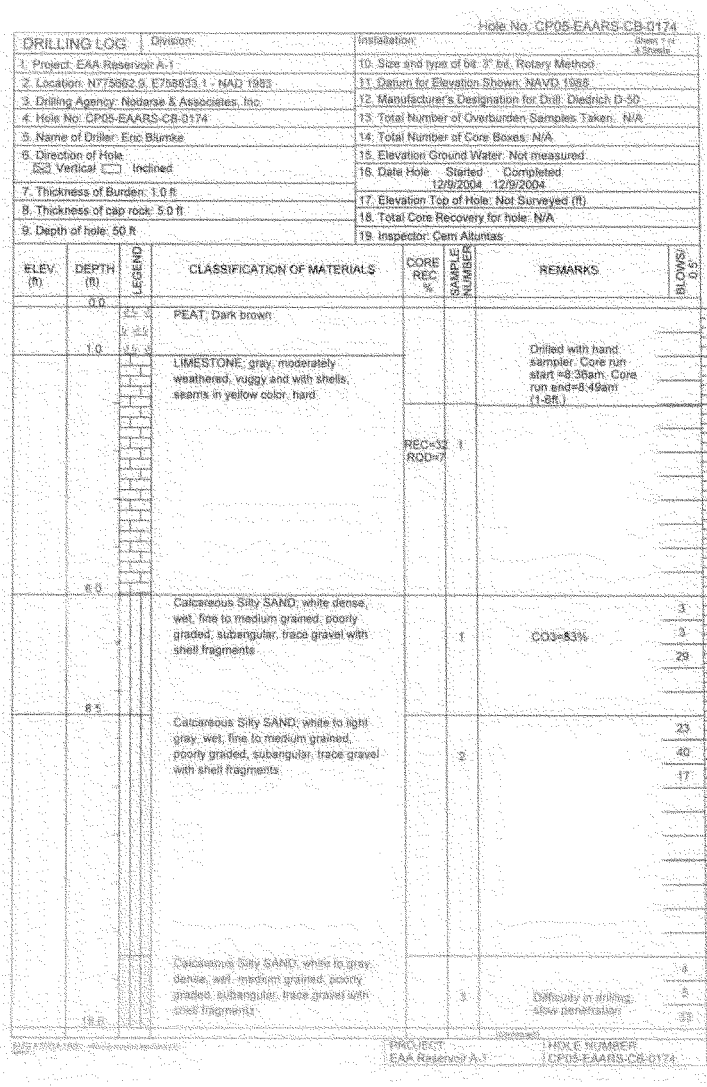
CHS STAR TEAM (continued from previous)

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0173


Hole No. CP09-EAARS-CB-0173
DRILLING LOG (Cont Sheet): Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
18.0
Silty SAND, gray, medium dense, wet, medium grained, poorly graded, subangular, calcareous with shell fragments
18.5
Silty SAND, gray, medium dense, wet, medium grained, poorly graded, subangular, calcareous with shell fragments
4
5
11
9
20
22
23.5
Silty SAND, very dense, wet, fine grained, poorly graded, subangular, calcareous with shell fragments
5
5
17
41
35 Blows counts for last 1" of penetration. Probably hit shell hash. Very slow penetration with rotary drill
24
28
28.5
Silty SAND, medium dense, moist, fine grained, poorly graded, subangular, calcareous with shellfragments
6
COS=27.6%
17
18
12
30
32
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP09-EAARS-CB-0173


Hole No. CP05-EAARS-CB-0173
DRILLING LOG (Cont Sheet) Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1 Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
33.4
33.5
Silty SAND; gray, medium dense, wet; fine grained, poorly graded, subangular, calcareous with shell fragments
38.5
Silty SAND; gray, loose, wet; fine grained, poorly graded, subangular, calcareous with shell fragments, some gravel
43.5
Silty SAND; greenish gray, medium dense, fine grained, poorly graded, subrounded, calcareous with trace shell fragments
48.5
Silty SAND; greenish gray, loose, fine grained, poorly graded, subrounded, calcareous, trace shell fragments
50.0
End of Boring at 50'
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0173


Hole No. CP05-EAARS-CB-0173
DRILLING LOG (Cont Sheet) Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1 Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS 0.5'
51.8
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# Hammer with 30" drop used on 2.0" split-spoon (1 3/8" I.D. x 2" O.D.).
52
54
56
58
60
62
64
66
68
70
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0173



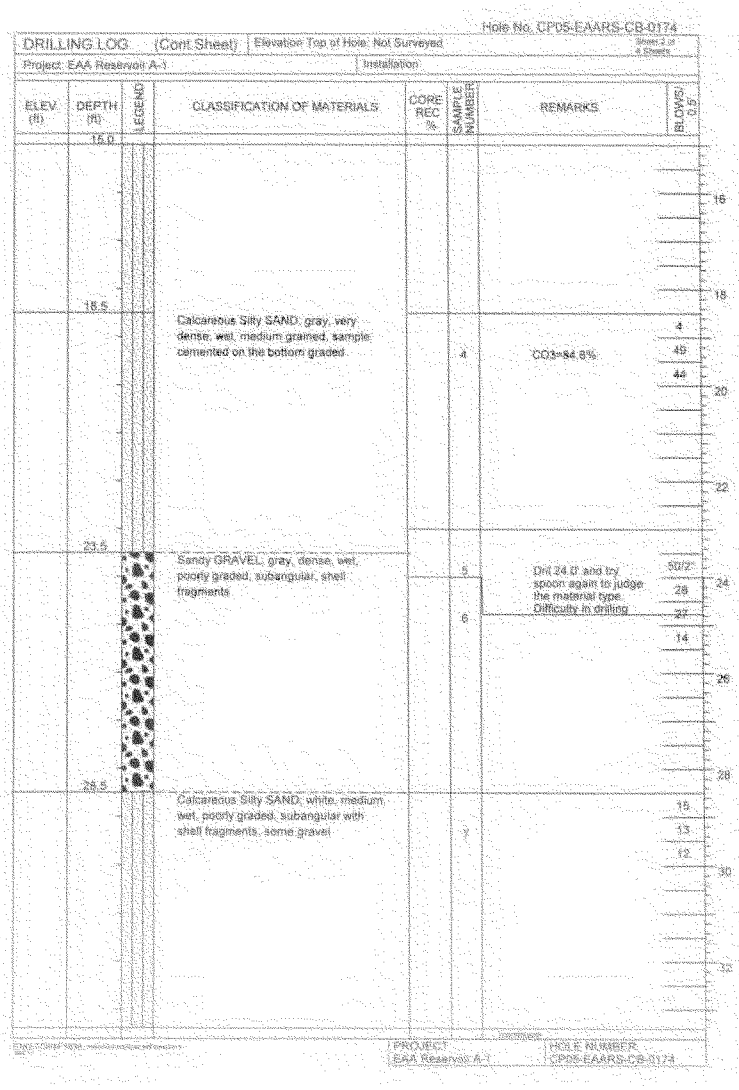
Hole No. CP05-EAARS-CB-0174

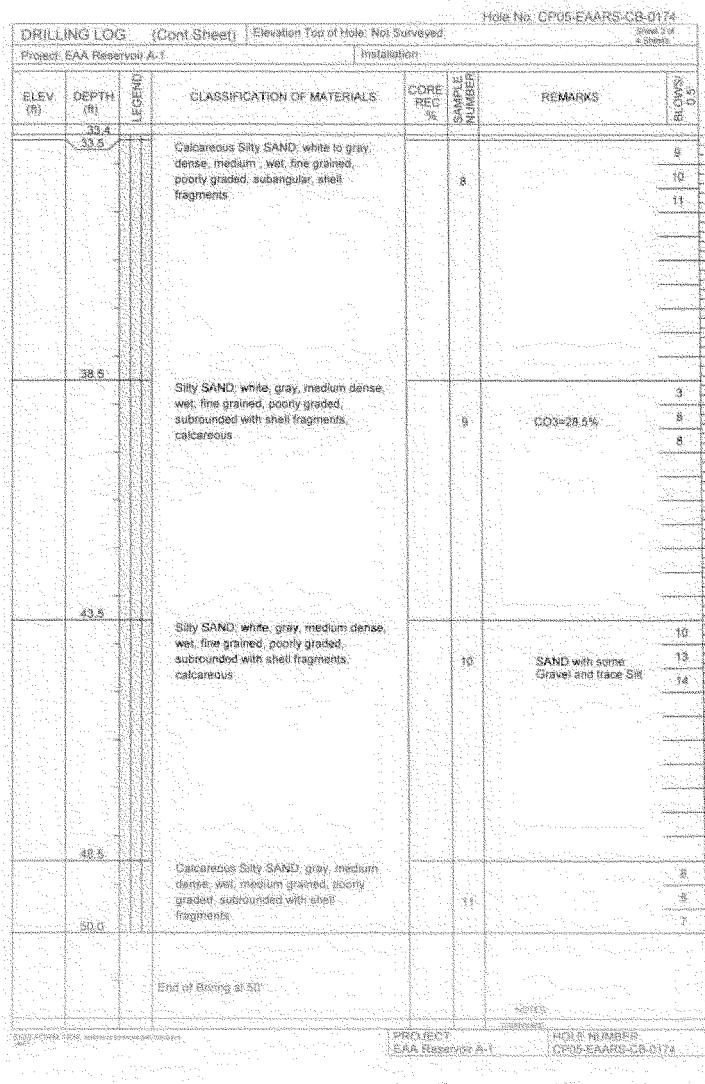
DRILLING LOG | Division: | Installation: | Sheet 1 of 1 Sheets

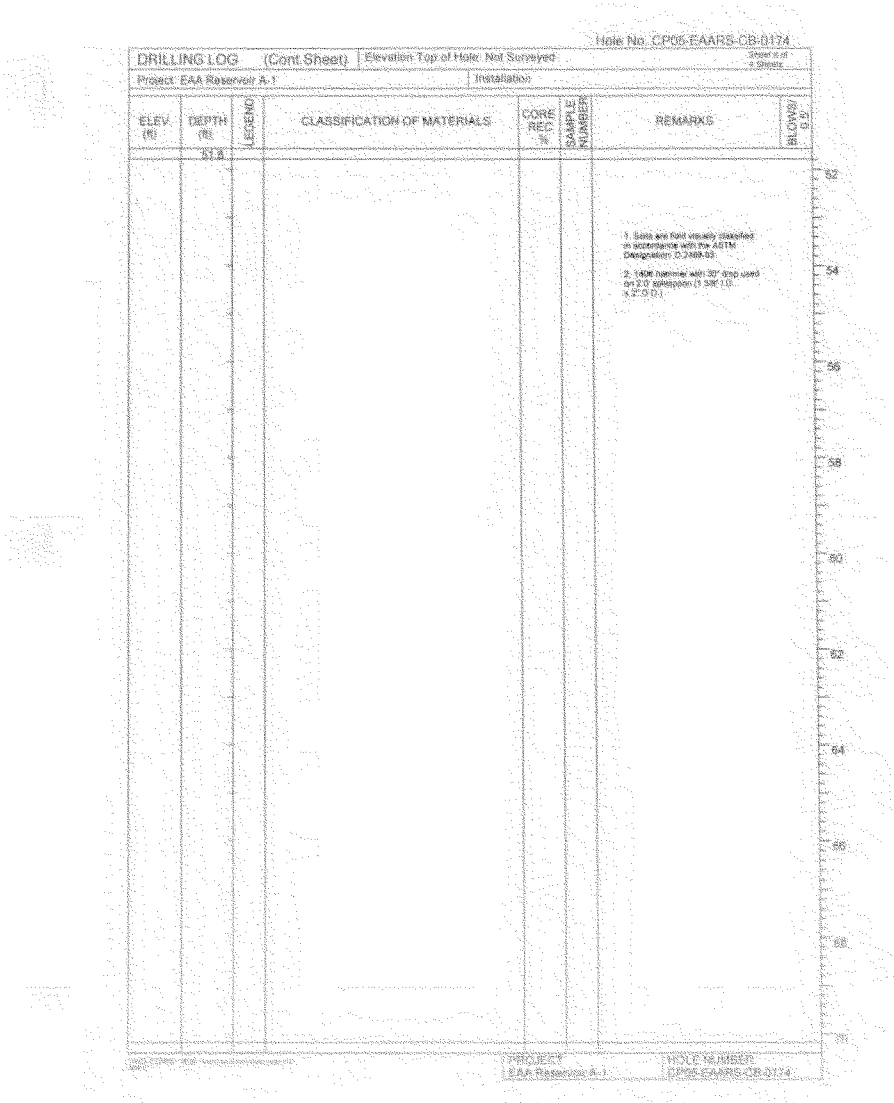
1. Project: EAA Reservoir A-1
2. Location: N775862.9, E756633.1 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0174
5. Name of Driller: Eric Blumke
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: 1.0 ft
8. Thickness of cap rock: 5.0 ft
9. Depth of hole: 50 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: N/A
15. Elevation Ground Water: Not measured
16. Date Hole: Started 12/9/2004 Completed 12/9/2004
17. Elevation Top of Hole: Not Surveyed (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: Cem Altuntas

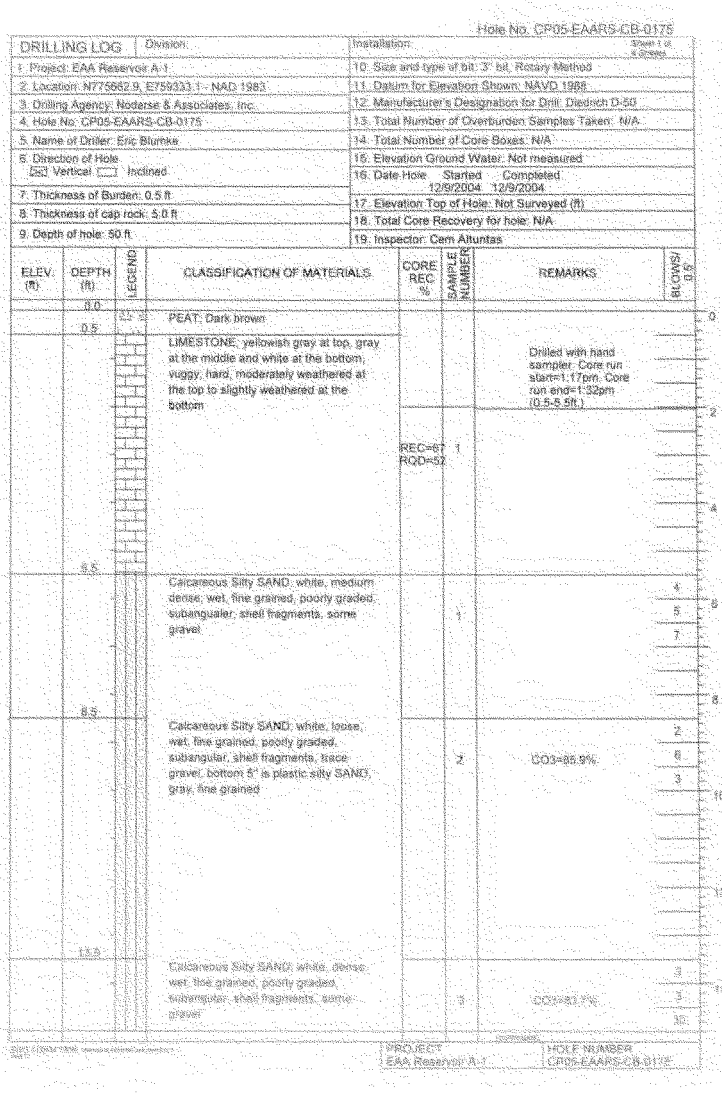
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
	0.0						
			PEAT, Dark brown				
	1.0					Drilled with hand sampler. Core run start =8:38am. Core run end=8:49am (1-5ft.)	
			LIMESTONE, gray, moderately weathered, vuggy and with shells, seams in yellow color, hard				
				REC=32 RQD=7	1		
	6.0						
			Calcareous Silty SAND, white dense, wet, fine to medium grained, poorly graded, subangular, trace gravel with shell fragments		1	CO3=83%	3 3 29
	8.5						
			Calcareous Silty SAND, white to light gray, wet, fine to medium grained, poorly graded, subangular, trace gravel with shell fragments		2		23 40 17
			Calcareous Silty SAND, white to gray, dense, wet, medium grained, poorly graded, subangular, trace gravel with shell fragments		3	Difficulty in drilling, slow penetration	4 5 33
	18.5						

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0174


Hole No. CP05-EAARS-CB-0174
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
15.0
18.5
Calcareous Silty SAND; gray, very dense, wet, medium grained, sample cemented on the bottom graded.
4
CO3=84.8%
4
45
44
23.5
Sandy GRAVEL; gray, dense, wet, poorly graded, subangular, shell fragments
5
6
Drill 24.5' and try spoon again to judge the material type. Difficulty in drilling
50/2"
28
27
14
28.5
Calcareous Silty SAND; white, medium, wet, poorly graded, subangular with shell fragments, some gravel
7
15
13
12
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0174


Hole No. CP05-EAARS-CB-0174
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: Not Surveyed
Sheet 2 of 4 Sheets
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
33.4
33.5
Calcareous Silty SAND; white to gray, dense, medium , wet, fine grained, poorly graded, subangular, shell fragments
8
9
10
11
34
38
39
38.5
Silty SAND; white, gray, medium dense, wet, fine grained, poorly graded, subrounded with shell fragments, calcareous
9
CO3=28.5%
3
8
8
40
42
43.5
Silty SAND; white, gray, medium dense, wet, fine grained, poorly graded, subrounded with shell fragments, calcareous
10
SAND with some Gravel and trace Silt
10
13
14
44
45
48
48.5
Calcareous Silty SAND; gray, medium dense, wet, medium grained, poorly graded, subrounded with shell fragments
11
8
9
7
50
50.0
End of Boring at 50'
NOTES:
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0174


Hole No. CP05-EAARS-CB-0174
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
51.8
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/6"
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140lb hammer with 30" drop used on 2.0 splitspoon (1 3/8" I.D. x 2" O.D.)
52
54
56
58
60
62
64
66
68
70
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0174



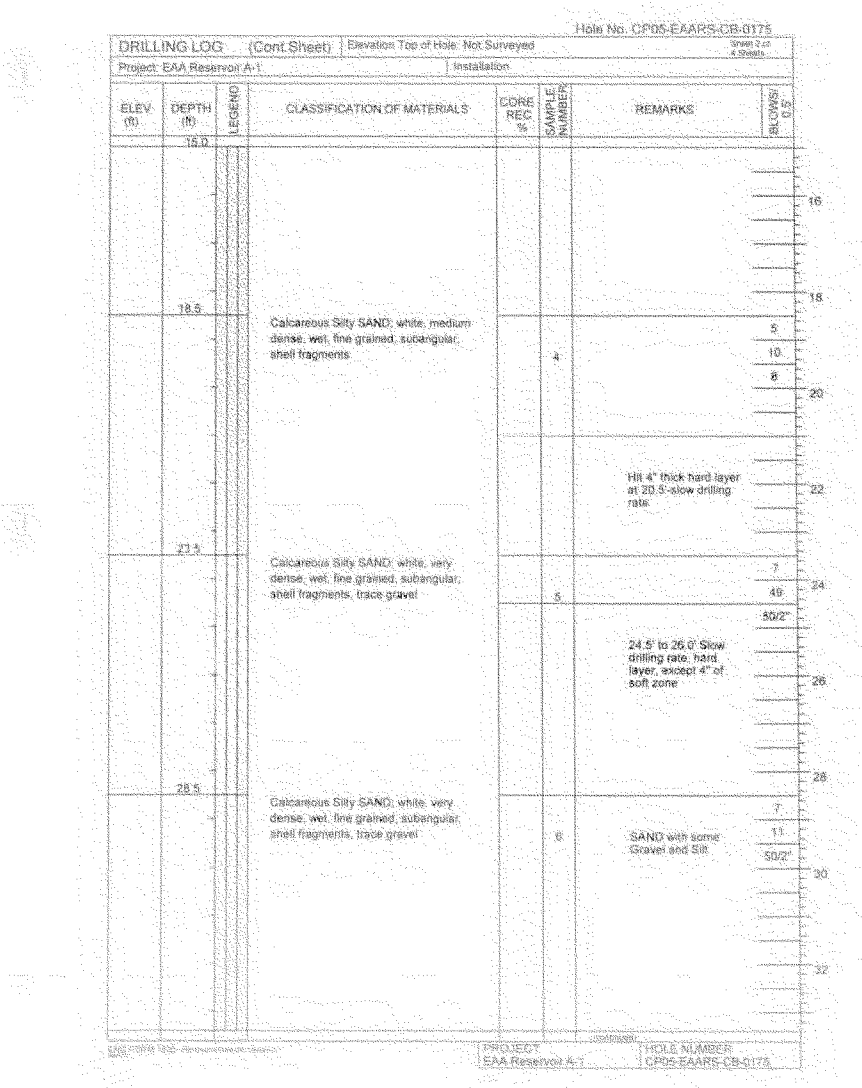
Hole No. CP05-EAARS-CB-0175

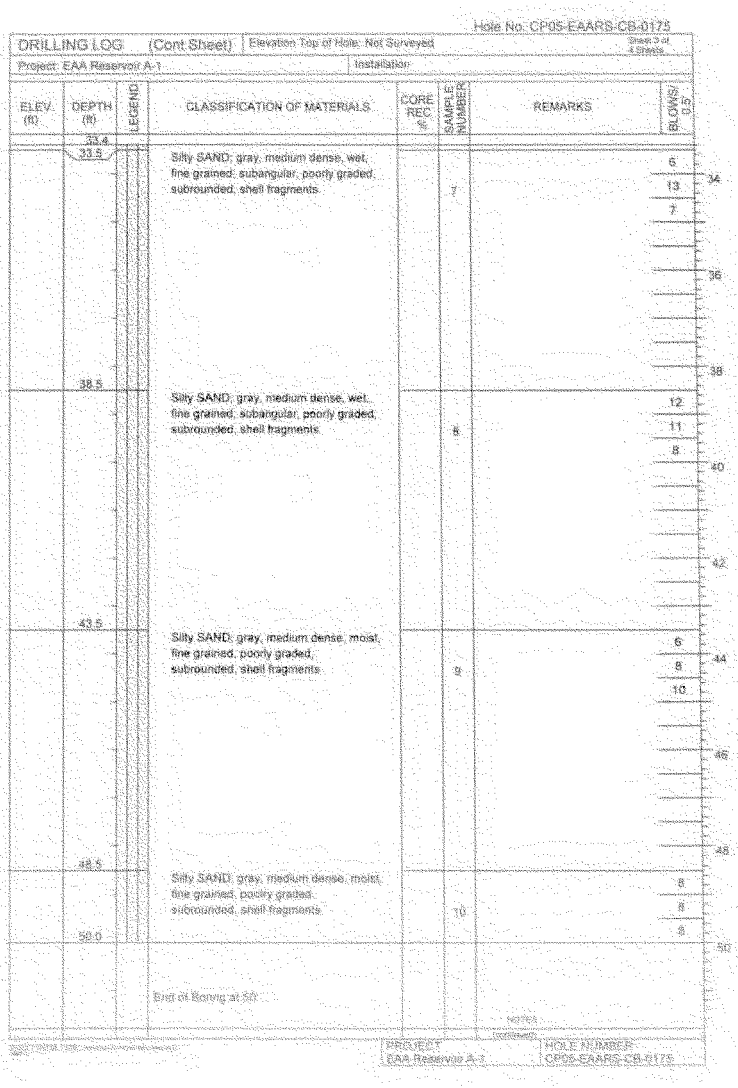
DRILLING LOG | Division: | Installation: | Sheet 1 of 4 Sheets

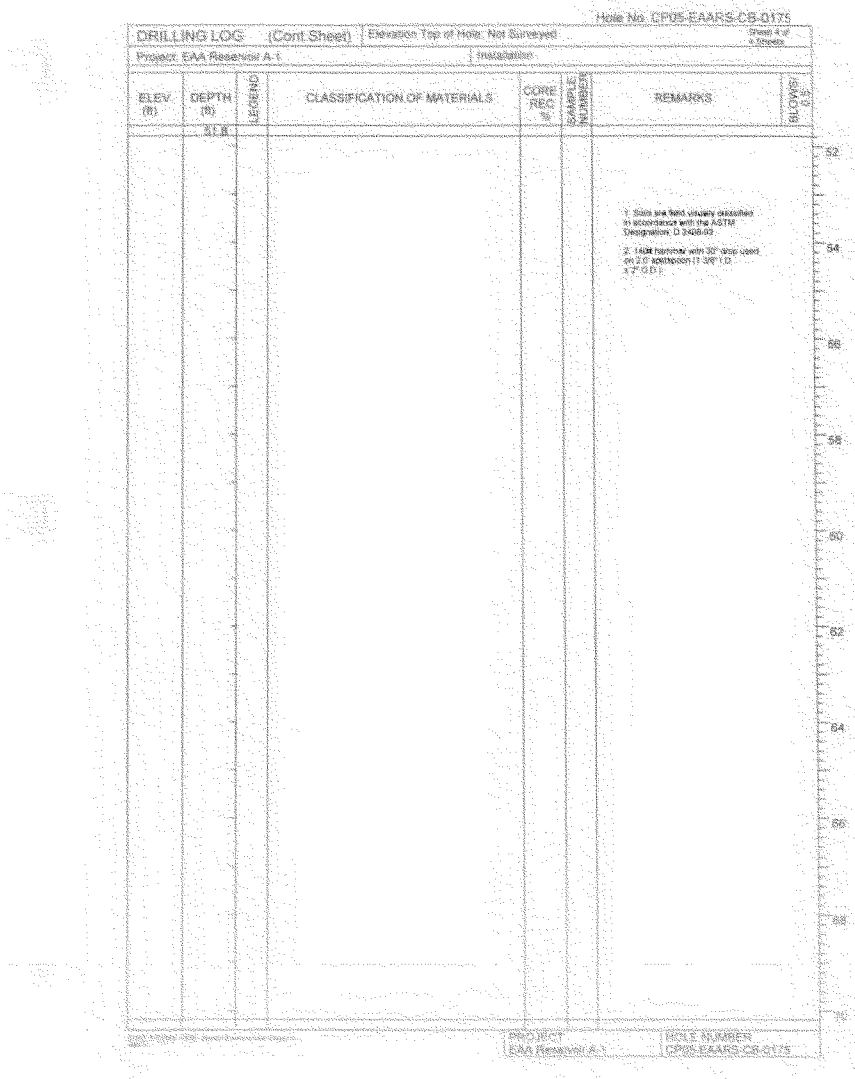
1. Project: EAA Reservoir A-1
2. Location: N775662.9, E759333.1 - NAD 1983
3. Drilling Agency: Noderse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0175
5. Name of Driller: Eric Blumke
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: 0.5 ft
8. Thickness of cap rock: 5.0 ft
9. Depth of hole: 50 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: N/A
15. Elevation Ground Water: Not measured
16. Date Hole: Started 12/9/2004 Completed 12/9/2004
17. Elevation Top of Hole: Not Surveyed (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: Cem Altuntas

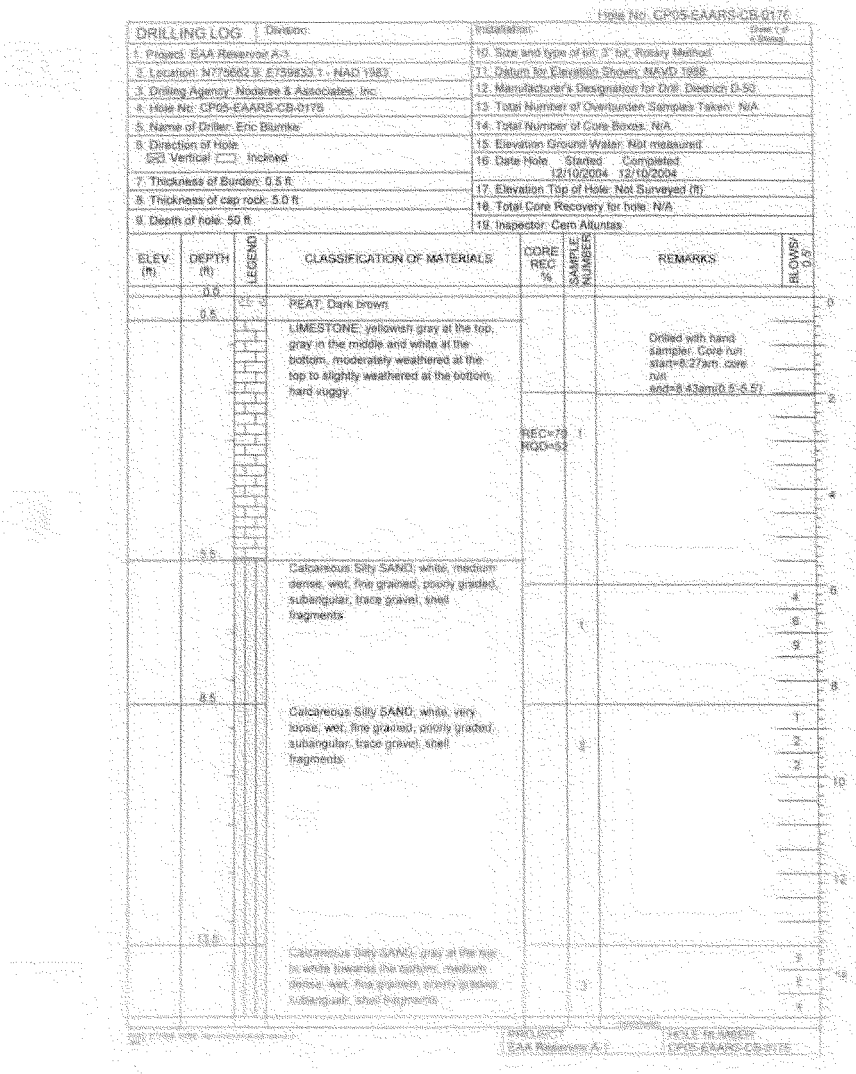
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/0.5'
	0.0						
	0.5		PEAT; Dark brown				
			LIMESTONE, yellowish gray at top, gray at the middle and white at the bottom, vuggy, hard, moderately weathered at the top to slightly weathered at the bottom			Drilled with hand sampler. Core run start=1:17pm. Core run end=1:32pm (0.5-5.5ft.)	
				REC=6T RQD=52	1		
	6.5		Calcareous Silty SAND, white, medium dense, wet, fine grained, poorly graded, subangualer, shell fragments, some gravel		1		
	8.5		Calcareous Silty SAND, white, loose, wet, fine grained, poorly graded, subangular, shell fragments, trace gravel, bottom 5" is plastic silty SAND, gray, fine grained		2	CO3=85.9%	
	13.5		Calcareous Silty SAND, white, dense, wet, fine grained, poorly graded, subangular, shell fragments, some gravel		3	CO3=83.9%	

PROJECT: EAA Reservoir A-1 HOLE NUMBER: CP05-EAARS-CB-0175


Hole No. CP05-EAARS-CB-0175
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5ft
16.0
18.5
Calcareous Silty SAND, white, medium dense, wet, fine grained, subangular, shell fragments
4
5
10
8
Hit 4" thick hard layer at 20.5'-slow drilling rate
23.5
Calcareous Silty SAND, white, very dense, wet, fine grained, subangular, shell fragments, trace gravel
5
7
46
50/2"
24.5' to 26.0' Slow drilling rate, hard layer, except 4" of soft zone
28.5
Calcareous Silty SAND, white, very dense, wet, fine grained, subangular, shell fragments, trace gravel
6
7
11
50/2"
SAND with some Gravel and Silt
16
18
20
22
24
26
28
30
32
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0175


Hole No. CP05-EAARS-CB-0175
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: Not Surveyed
Sheet 3 of 4 Sheets
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
33.4
33.5
Silty SAND; gray, medium dense, wet, fine grained, subangular, poorly graded, subrounded, shell fragments
7
6
13
7
34
36
38
38.5
Silty SAND; gray, medium dense, wet, fine grained, subangular, poorly graded, subrounded, shell fragments
8
12
11
8
40
42
43.5
Silty SAND; gray, medium dense, moist, fine grained, poorly graded, subrounded, shell fragments
9
6
8
10
44
46
48
48.5
Silty SAND; gray, medium dense, moist, fine grained, poorly graded, subrounded, shell fragments
10
8
8
8
50
50.0
End of Boring at 50'
NOTES
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0175


Hole No. CP05-EAARS-CB-0175
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1
Location
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. HQ3 triple-tube with 30° shoe used on 2.5° advancement (1.98" I.D. x 2.4" O.D.).
52
54
56
58
60
62
64
66
68
70
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0175



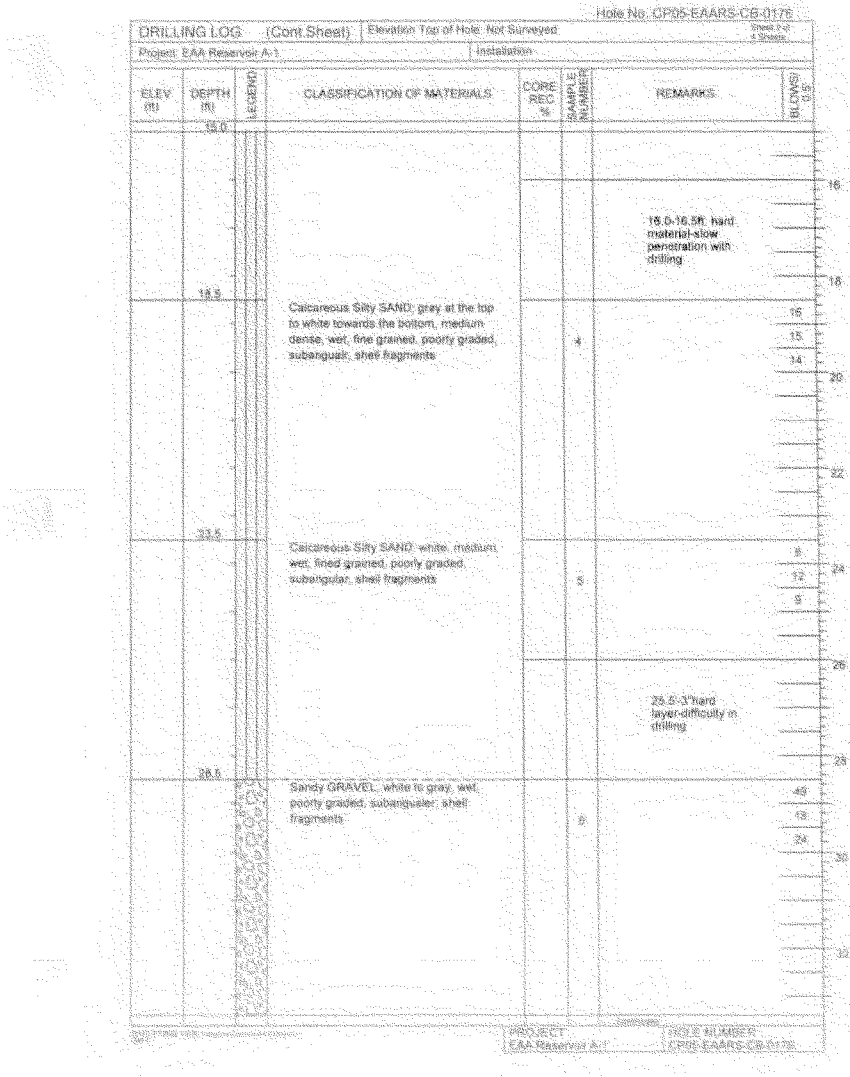
Hole No: CP05-EAARS-CB-0175

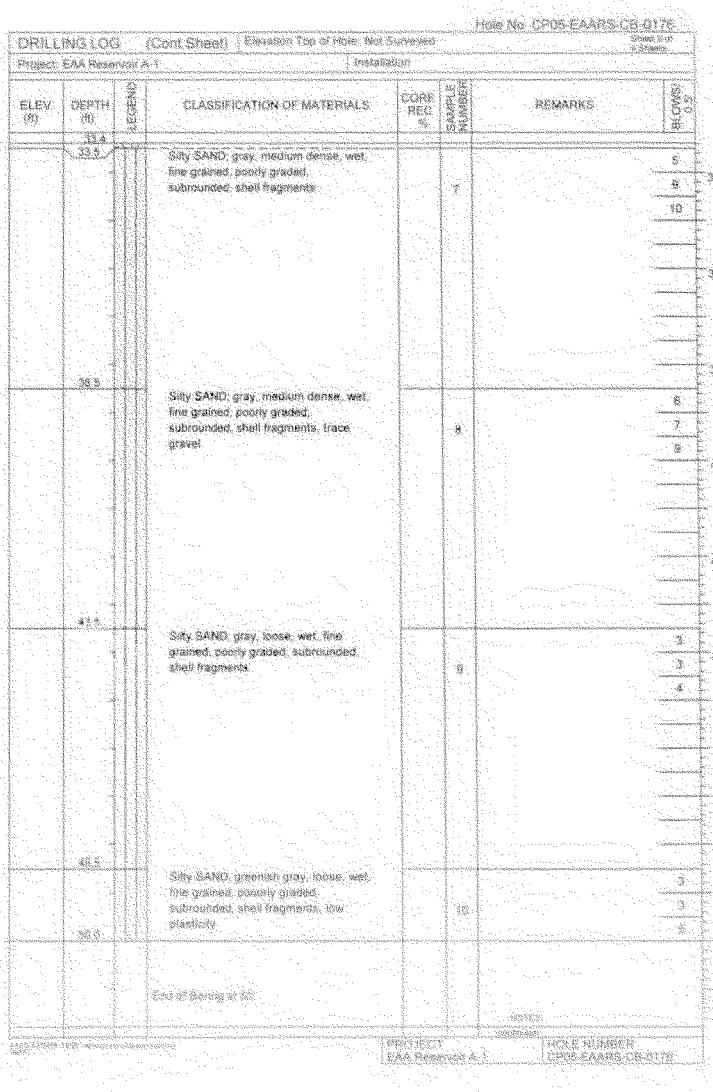
DRILLING LOG | Division: | Installation: | Sheet 1 of 1 Sheet(s)

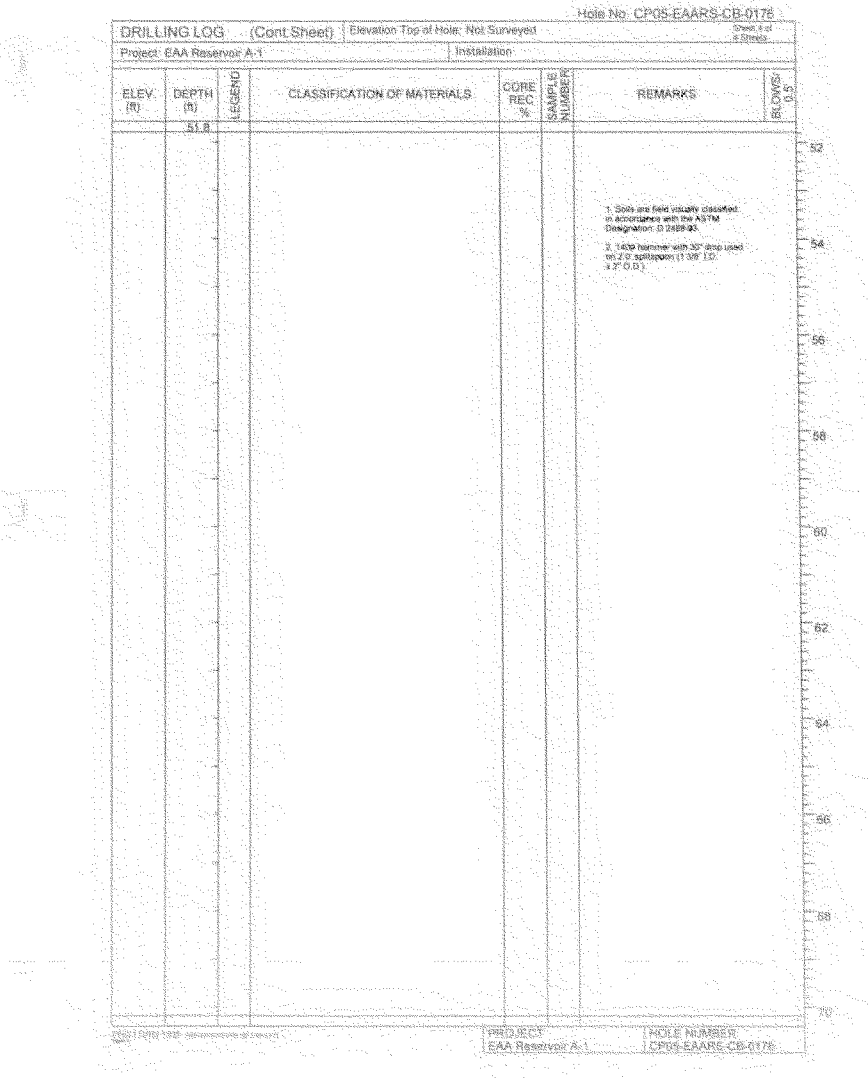
1. Project: EAA Reservoir A-3
2. Location: N775602.9; E759853.1 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0175
5. Name of Driller: Eric Blumke
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: 0.5 ft
8. Thickness of cap rock: 5.0 ft
9. Depth of hole: 50 ft
10. Size and type of bit: 3" tri. Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: N/A
15. Elevation Ground Water: Not measured
16. Date Hole: Started 12/10/2004 Completed 12/10/2004
17. Elevation Top of Hole: Not Surveyed (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: Cem Altuntas

ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
	0.0						0
	0.5		PEAT, Dark brown				
			LIMESTONE, yellowish gray at the top, gray in the middle and white at the bottom, moderately weathered at the top to slightly weathered at the bottom, hard vuggy			Drilled with hand sampler. Core run start=8.27am core run end=8.43am(0.5'-5.5')	2
				REC=73 RQD=52	1		4
	5.5		Calcareous Silty SAND, white, medium dense, wet, fine grained, poorly graded, subangular, trace gravel, shell fragments		1		6
							4
							6
							9
	8.5		Calcareous Silty SAND, white, very loose, wet, fine grained, poorly graded, subangular, trace gravel, shell fragments		2		8
							1
							2
							2
	13.5		Calcareous Silty SAND, gray at the top to white towards the bottom, medium dense, wet, fine grained, poorly graded, subangular, shell fragments		3		10
							4
							6
							8

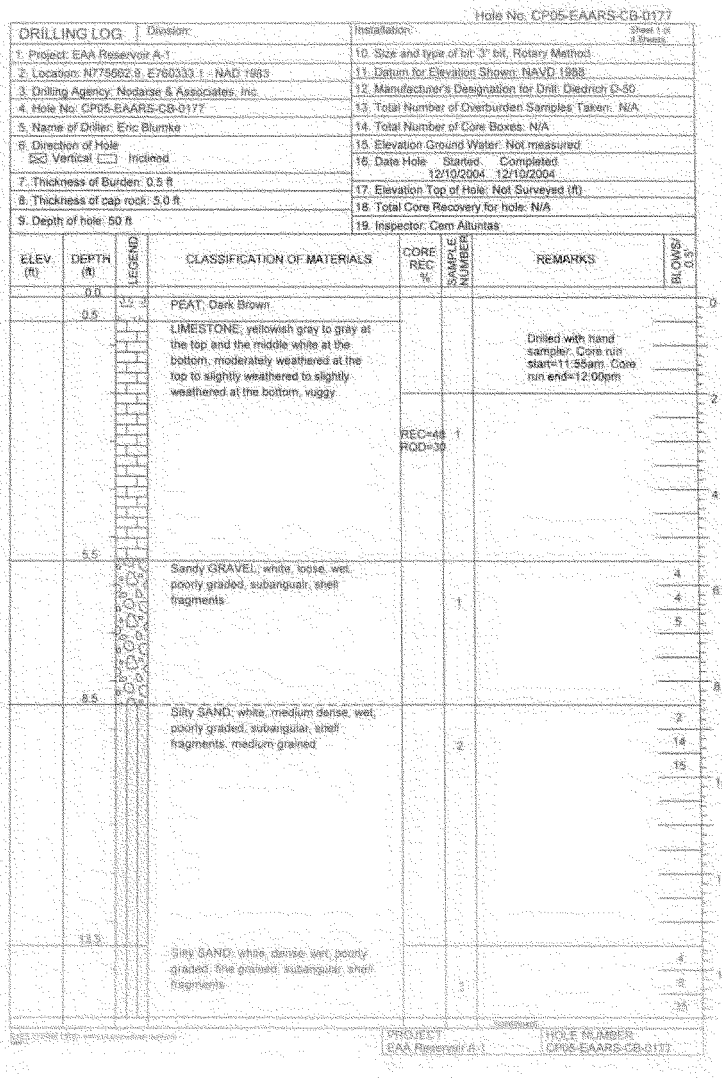
Well Name and Number: EAA Reservoir A-3 | Hole No: CP05-EAARS-CB-0175


Hole No. CP05-EAARS-CB-0176
DRILLING LOG (Cont Sheet) Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1 Installation
ELEV (ft) DEPTH (ft) GRAPHIC CLASSIFICATION OF MATERIALS CORE REC % SAMPLE NUMBER REMARKS BLOWS/ 6"
18.0
18.5
Calcareous Silty SAND; gray at the top to white towards the bottom, medium dense, wet, fine grained, poorly graded, subangular, shell fragments
33.5
Calcareous Silty SAND; white, medium wet, fined grained, poorly graded, subangular, shell fragments
38.5
Sandy GRAVEL; white to gray, wet, poorly graded, subangular, shell fragments
18.0-18.5ft: hard material-slow penetration with drilling
25.5-31'hard layer-difficulty in drilling
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0176


Hole No. CP05-EAARS-CB-017E
DRILLING LOG (Cont Sheet) Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1 Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
33.4
33.9
Silty SAND; gray, medium dense, wet, fine grained, poorly graded, subrounded, shell fragments
38.9
Silty SAND; gray, medium dense, wet, fine grained, poorly graded, subrounded, shell fragments, trace gravel
41.4
Silty SAND; gray, loose, wet, fine grained, poorly graded, subrounded, shell fragments
46.5
Silty SAND; greenish gray, loose, wet, fine grained, poorly graded, subrounded, shell fragments, low plasticity
50.0
End of Boring at 50
NOTES:
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-017E


Hole No. CP05-EAARS-CB-0176
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
51.8
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.0" split spoon (1 3/8" I.D. x 2" O.D.)
52
54
56
58
60
62
64
66
68
70
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0176

110



Hole No. CP05-EAARS-CB-0177

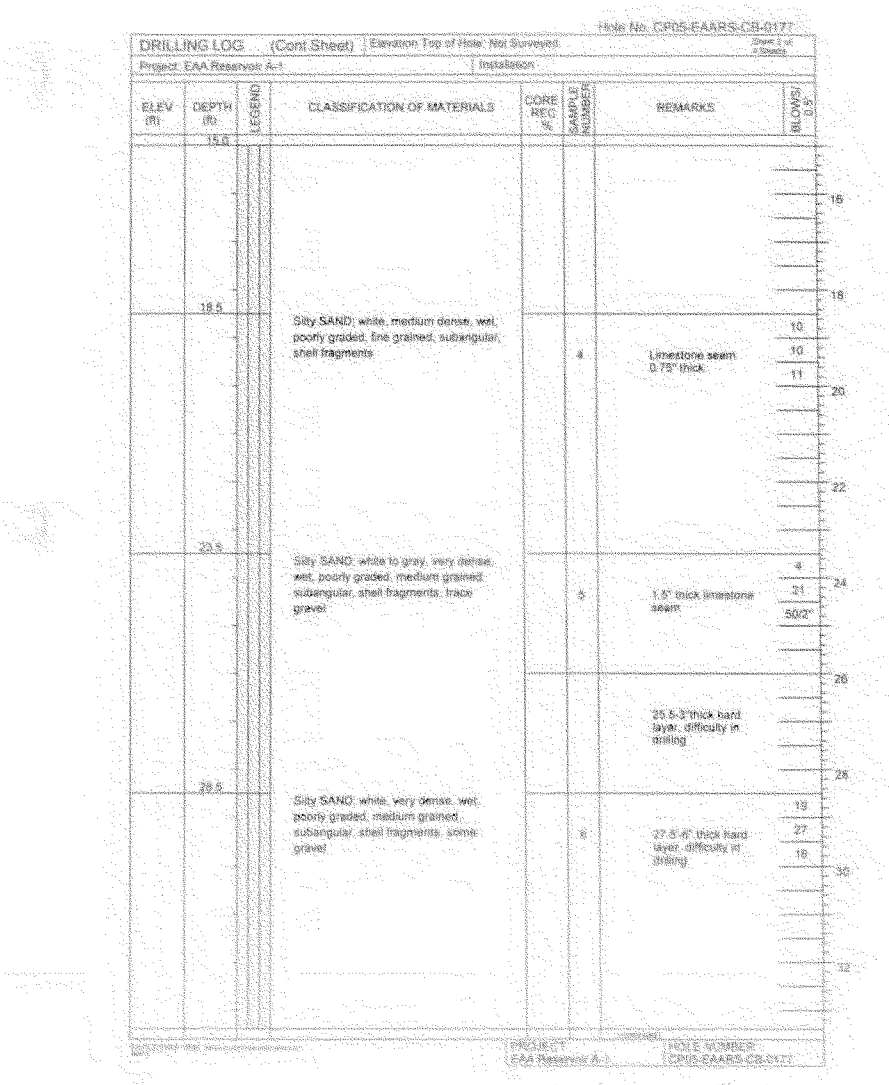
DRILLING LOG | Division: | Installation: | Sheet 1 of 1 Sheets

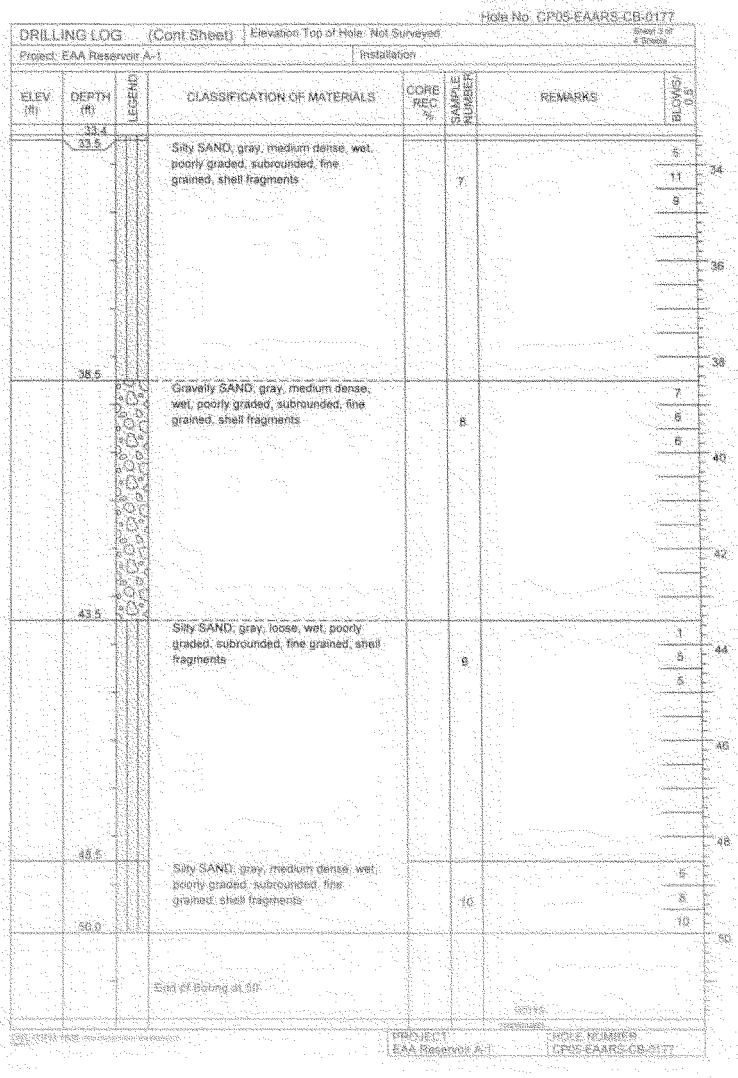
1. Project: EAA Reservoir A-1
2. Location: N775662.9, E760333.1 ; NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0177
5. Name of Driller: Eric Blumke
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: 0.5 ft
8. Thickness of cap rock: 5.0 ft
9. Depth of hole: 50 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: N/A
15. Elevation Ground Water: Not measured
16. Date Hole Started: 12/10/2004 Completed: 12/10/2004
17. Elevation Top of Hole: Not Surveyed (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: Cem Altuntas

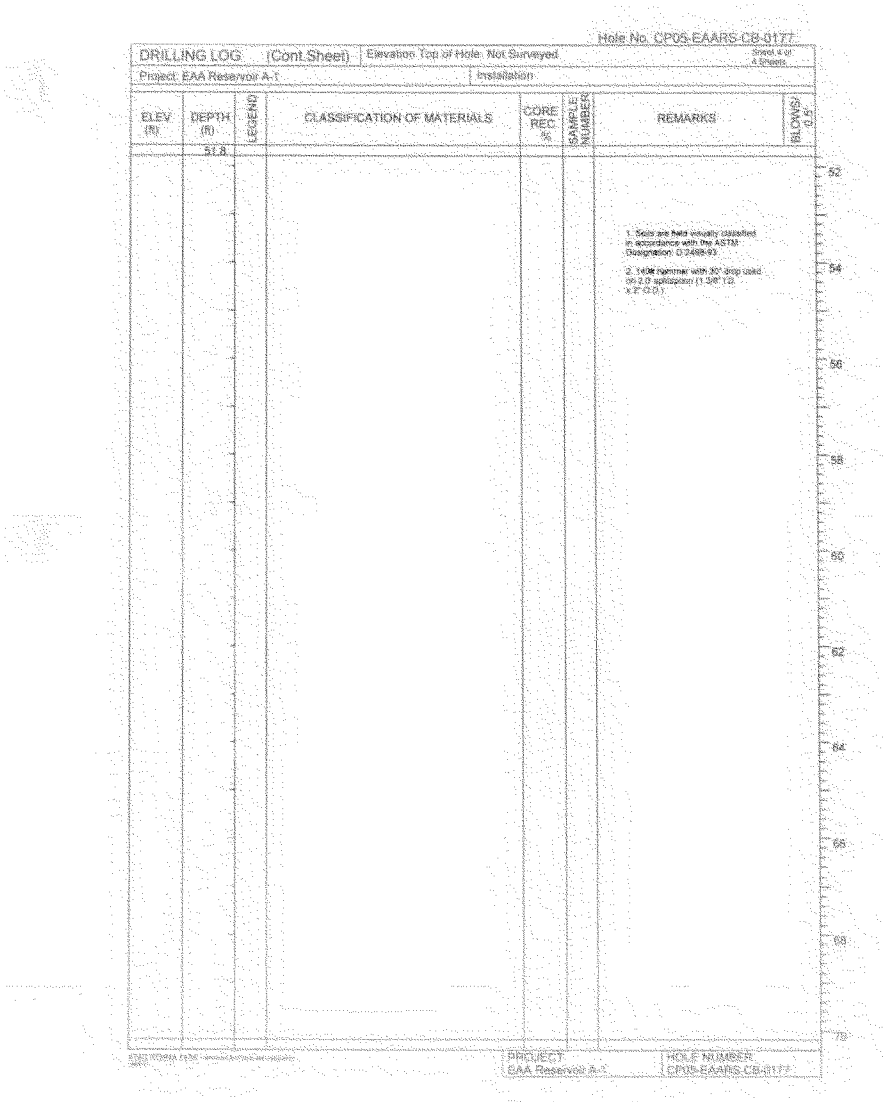
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
	0.0						
	0.5		PEAT, Dark Brown				
			LIMESTONE, yellowish gray to gray at the top and the middle white at the bottom, moderately weathered at the top to slightly weathered to slightly weathered at the bottom, vuggy			Drilled with hand sampler. Core run start=11:55am. Core run end=12:00pm	
				REC=48 RQD=30	1		
	5.5		Sandy GRAVEL, white, loose, wet, poorly graded, subangular, shell fragments		1		4 4 5
	8.5		Silty SAND, white, medium dense, wet, poorly graded, subangular, shell fragments, medium grained		2		2 14 15
	13.5		Silty SAND, white, dense, wet, poorly graded, fine grained, subangular, shell fragments		3		4 2 20

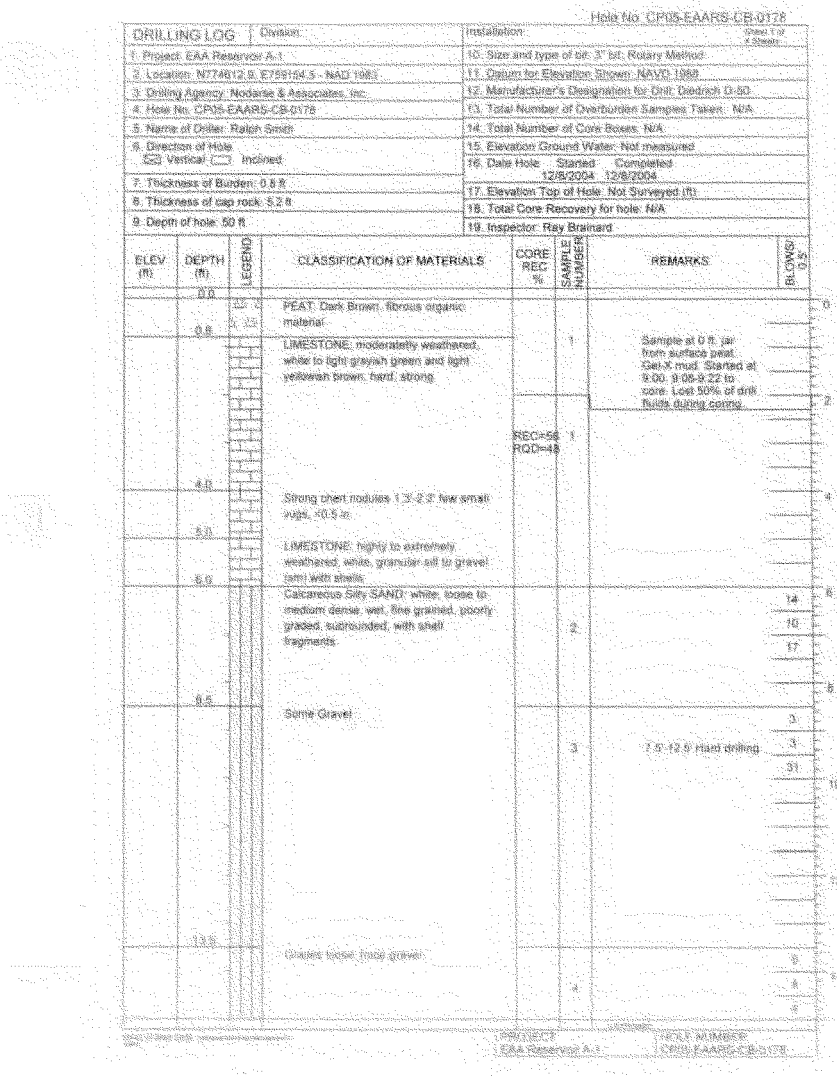
PROJECT: EAA Reservoir A-1 HOLE NUMBER: CP05-EAARS-CB-0177

111


Hole No. CP05-EAARS-CB-017
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
18.5
Silty SAND, white, medium dense, wet, poorly graded, fine grained, subangular, shell fragments
4
Limestone seam 0.75" thick
32.5
Silty SAND, white to gray, very dense, wet, poorly graded, medium grained, subangular, shell fragments, trace gravel
5
1.5" thick limestone seam
25.5-3" thick hard layer, difficulty in drilling
28.5
Silty SAND, white, very dense, wet, poorly graded, medium grained, subangular, shell fragments, some gravel
6
27.5-4" thick hard layer, difficulty in drilling
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-017


Hole No. CP05-EAARS-CB-0177
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS / 0.5'
33.4
33.5
Silty SAND, gray, medium dense, wet, poorly graded, subrounded, fine grained, shell fragments
7
5
11
9
34
36
38
38.5
Gravelly SAND, gray, medium dense, wet, poorly graded, subrounded, fine grained, shell fragments
8
7
6
6
40
42
43.5
Silty SAND, gray, loose, wet, poorly graded, subrounded, fine grained, shell fragments
9
1
5
5
44
46
48
48.5
Silty SAND, gray, medium dense, wet, poorly graded, subrounded, fine grained, shell fragments
10
5
8
10
50
50.0
End of Boring at 50'
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0177


Hole No. CP05-EAARS-CB-0177
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
51.8
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# Hammer with 30" drop used on 2.0 split spoon (1 3/8" I.D. x 2" O.D.)
52
54
56
58
60
62
64
66
68
70
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0177



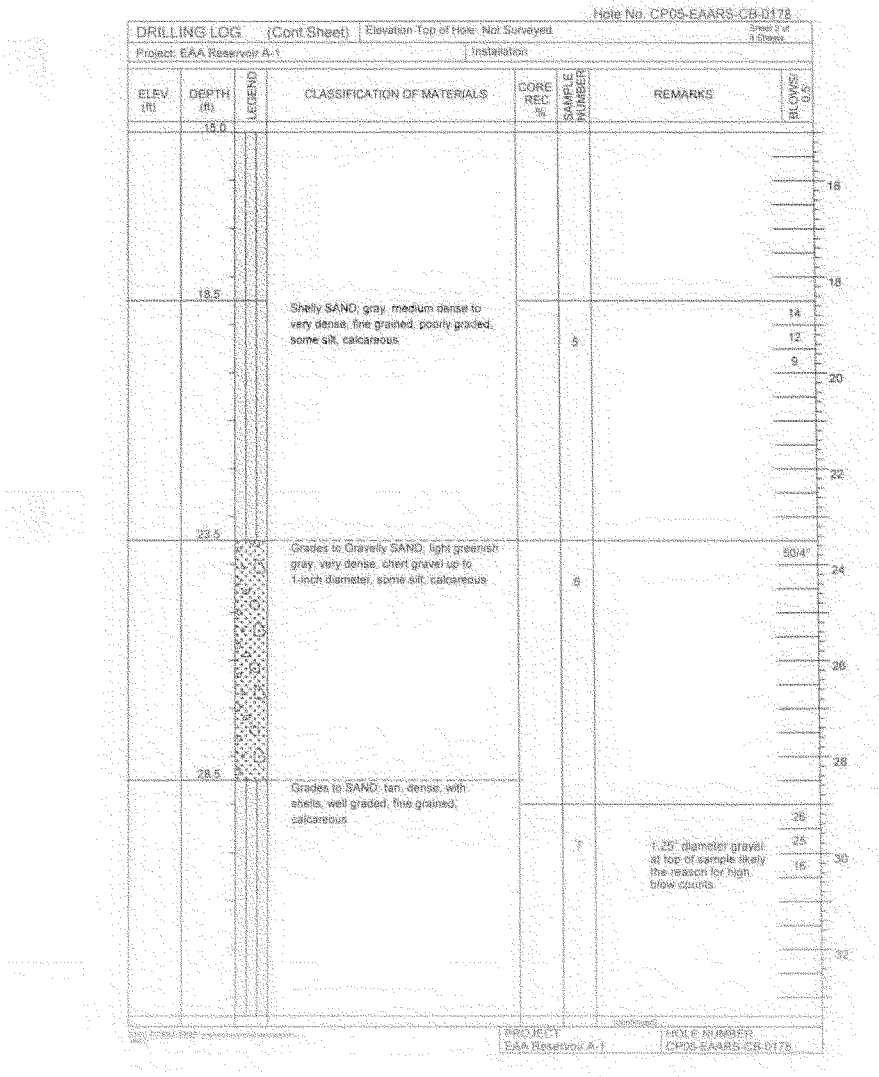
Hole No. CP05-EAARS-CB-0178

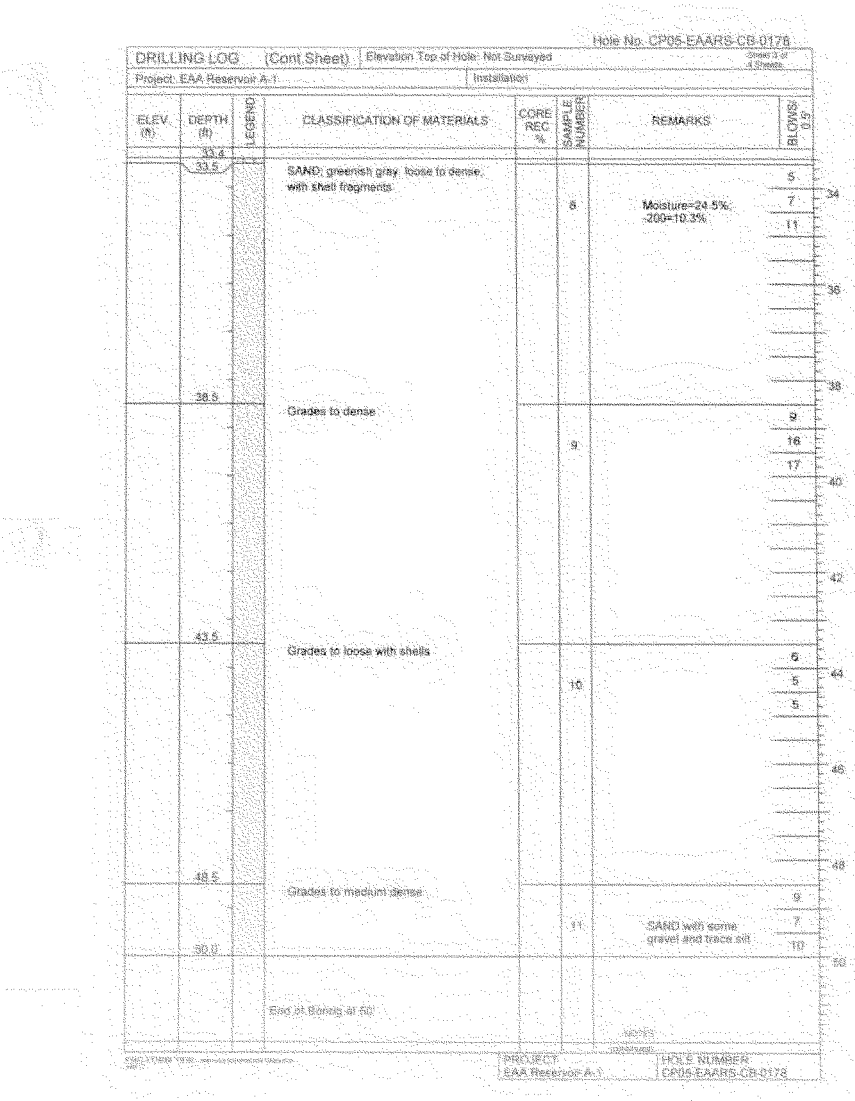
DRILLING LOG | Division: | Installation: | Sheet 1 of 4 Sheets

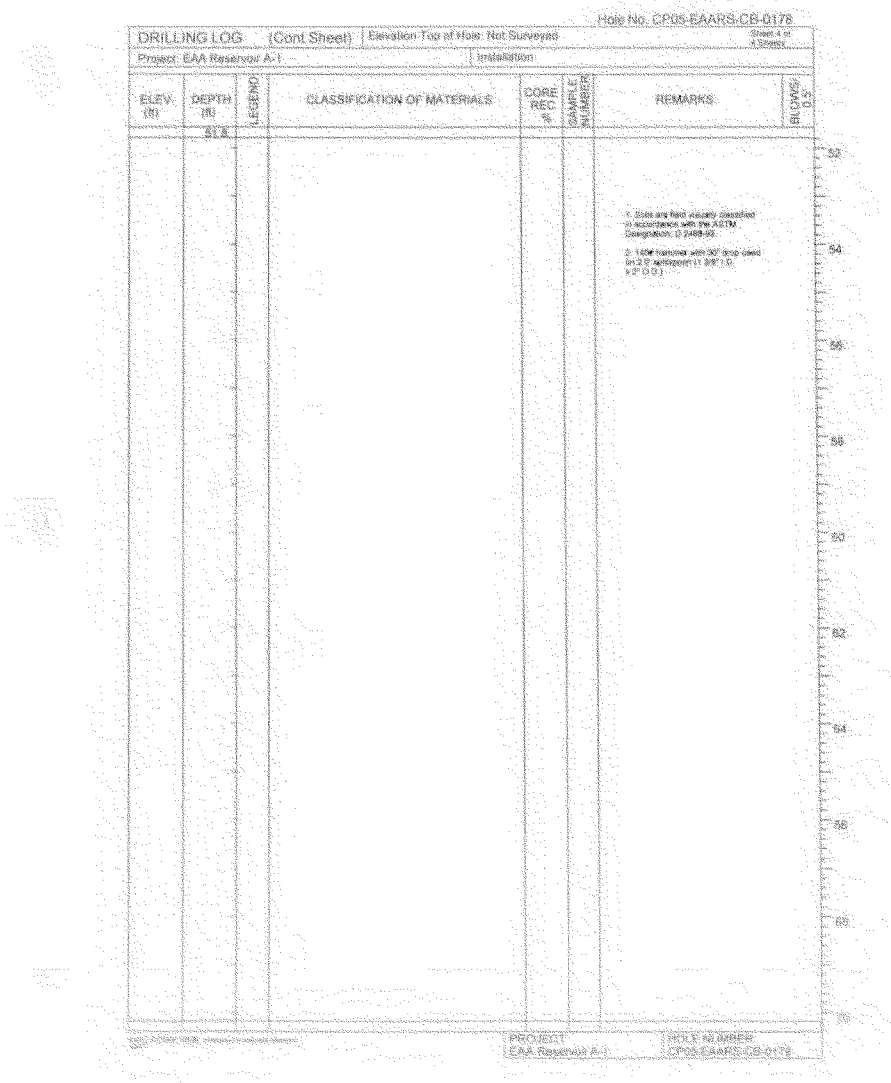
1. Project: EAA Reservoir A-1	10. Size and type of bit: 3" bit, Rotary Method
2. Location: N774812.9, E759154.5 - NAD 1983	11. Datum for Elevation Shown: NAVD 1988
3. Drilling Agency: Nodarse & Associates, Inc.	12. Manufacturer's Designation for Drill: Diedrich D-50
4. Hole No. CP05-EAARS-CB-0178	13. Total Number of Overburden Samples Taken: N/A
5. Name of Driller: Ralph Smith	14. Total Number of Core Boxes: N/A
6. Direction of Hole: ☒ Vertical ☐ Inclined	15. Elevation Ground Water: Not measured
	16. Date Hole: Started: 12/8/2004 Completed: 12/8/2004
7. Thickness of Burden: 0.8 ft	17. Elevation Top of Hole: Not Surveyed (ft)
8. Thickness of cap rock: 5.2 ft	18. Total Core Recovery for hole: N/A
9. Depth of hole: 50 ft	19. Inspector: Ray Brainard

ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
	0.0						0
	0.8		PEAT, Dark Brown, fibrous organic material		1	Sample at 0 ft. jar from surface peat. Gel-X mud. Started at 9:00, 9:06-9:22 to core. Lost 50% of drill fluids during coring.	
			LIMESTONE, moderately weathered, white to light grayish green and light yellowish brown, hard, strong	REC=56 RQD=48	1		2
	4.8						4
	5.3		Strong chert nodules 1.3'-2.3' few small vugs, <0.5 in.				
	6.0		LIMESTONE, highly to extremely weathered, white, granular silt to gravel sized with shells				
			Calcareous Silty SAND, white, loose to medium dense, wet, fine grained, poorly graded, subrounded, with shell fragments		2		14 / 10 / 17 / 6
	8.5		Some Gravel				
					3	7.5'-12.5' Hard drilling	3 / 3 / 31 / 10
	13.5		Shelly loose, more gravel		4		5 / 4 / 4 / 14

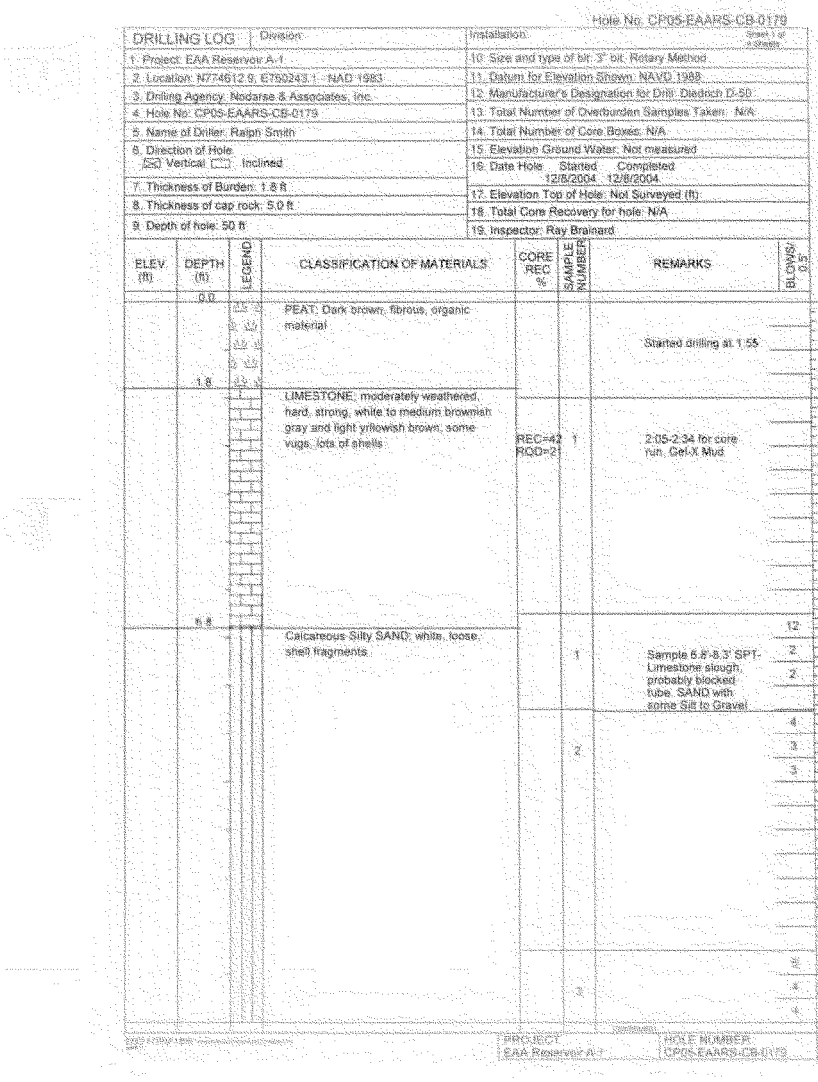
PROJECT: EAA Reservoir A-1 | FILE NUMBER: CP05-EAARS-CB-0178


Hole No. CP05-EAARS-CB-0178
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: Not Surveyed
Sheet 2 of 4 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
15.0
18.5
Shelly SAND, gray, medium dense to very dense, fine grained, poorly graded, some silt, calcareous
5
14
12
9
20
22
23.5
Grades to Gravelly SAND, light greenish gray, very dense, chert gravel up to 1-inch diameter, some silt, calcareous
6
50/4"
24
26
28
28.5
Grades to SAND, tan, dense, with shells, well graded, fine grained, calcareous
7
1.25" diameter gravel at top of sample likely the reason for high blow counts.
26
25
16
30
32
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0178


Hole No. CP05-EAARS-CB-0178
DRILLING LOG (Cont Sheet) Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1 Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
33.4
33.5
SAND; greenish gray, loose to dense, with shell fragments
8
Moisture=24.5%; -200=10.3%
5
7
11
34
36
38
38.5
Grades to dense
9
9
16
17
40
42
43.5
Grades to loose with shells
10
6
5
5
44
46
48
48.5
Grades to medium dense
11
SAND with some gravel and trace silt
9
7
10
50
50.0
End of Boring at 50'
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0178


Hole No. CP05-EAARS-CB-0178
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1 Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
51.8
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.5" sampler (1 3/8" I.D. x 3" O.D.)
52
54
56
58
60
62
64
66
68
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0178

118



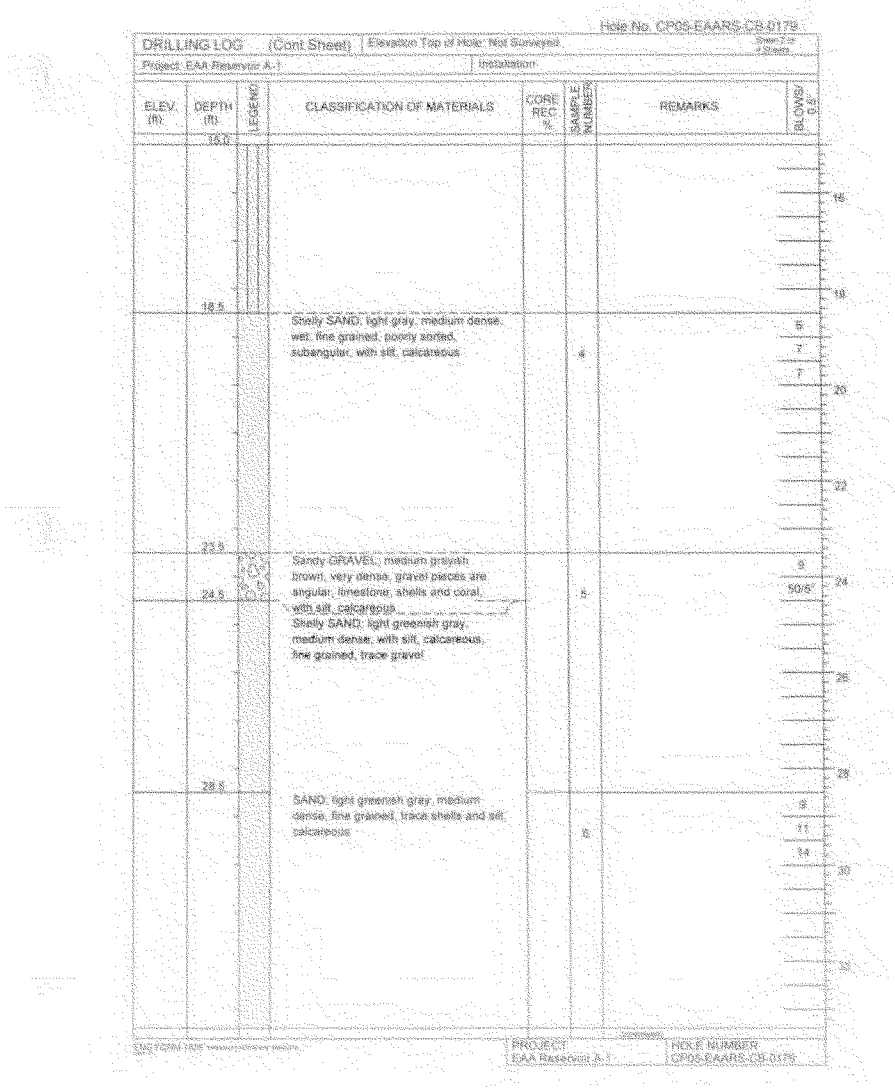
Hole No. CP05-EAARS-CB-0179

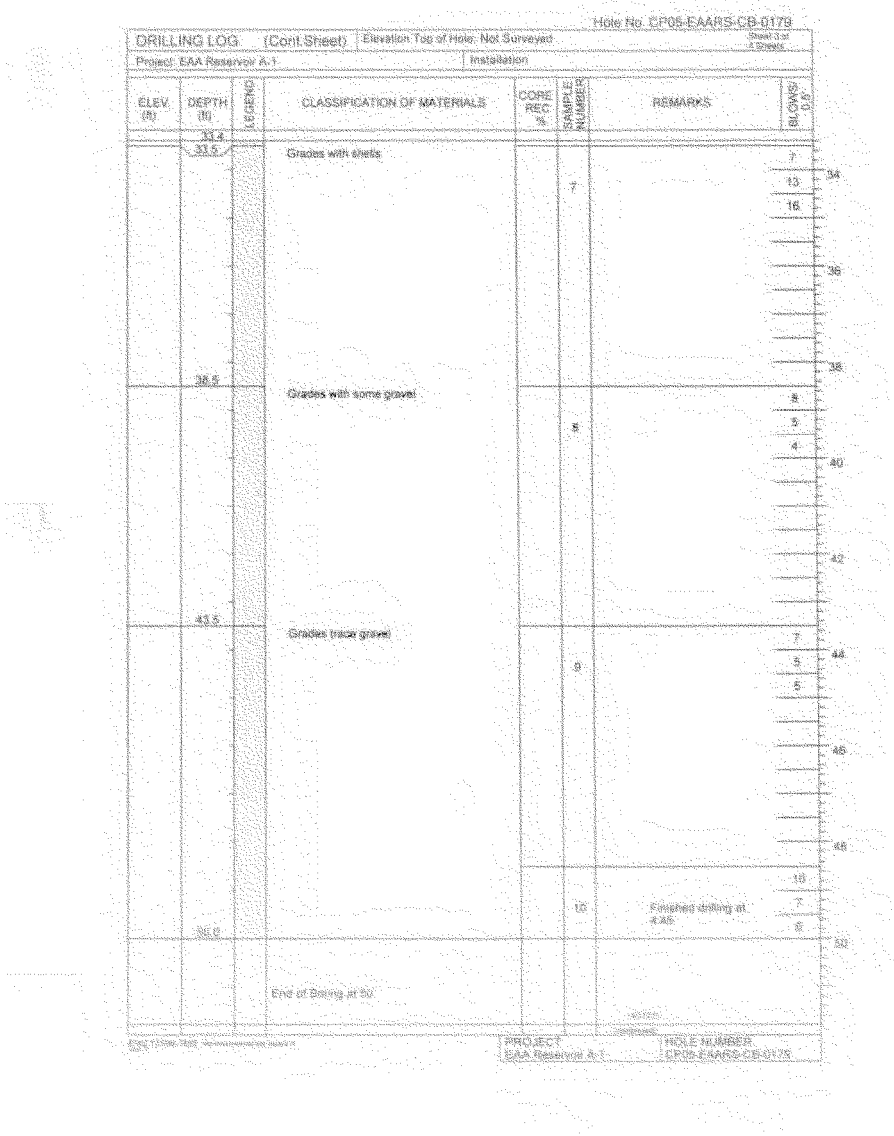
DRILLING LOG | Division: | Installation: | Sheet 1 of 4 Sheets

1. Project: EAA Reservoir A-1	10. Size and type of bit: 3" bit, Rotary Method
2. Location: N774612.9, E750243.1 NAD 1983	11. Datum for Elevation Shown: NAVD 1988
3. Drilling Agency: Nodarse & Associates, Inc.	12. Manufacturer's Designation for Drill: Diedrich D-50
4. Hole No: CP05-EAARS-CB-0179	13. Total Number of Overburden Samples Taken: N/A
5. Name of Driller: Ralph Smith	14. Total Number of Core Boxes: N/A
6. Direction of Hole: ☒ Vertical ☐ Inclined	15. Elevation Ground Water: Not measured
	16. Date Hole: Started 12/8/2004 Completed 12/8/2004
7. Thickness of Burden: 1.8 ft	17. Elevation Top of Hole: Not Surveyed (ft)
8. Thickness of cap rock: 5.0 ft	18. Total Core Recovery for hole: N/A
9. Depth of hole: 50 ft	19. Inspector: Ray Brainard

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
	0.0						0
			PEAT; Dark brown, fibrous, organic material			Started drilling at 1:55	
	1.8						
			LIMESTONE; moderately weathered, hard, strong, white to medium brownish gray and light yellowish brown, some vugs, lots of shells	REC=42 ROD=21	1	2.05-2.34 for core run, Gel-X Mud	2 4 6
	6.8						12
			Calcareous Silty SAND; white, loose, shell fragments		1	Sample 6.8'-8.3' SPT- Limestone slough, probably blocked tube. SAND with some Silt to Gravel	2 2 2 8
					2		4 3 3 10
					3		4 4 4 12

PROJECT: EAA Reservoir A-1 HOLE NUMBER: CP05-EAARS-CB-0179


Hole No. CP05-EAARS-CB-0179
DRILLING LOG (Cont Sheet) Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1 Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
18.5
Shelly SAND, light gray, medium dense, wet, fine grained, poorly sorted, subangular, with silt, calcareous
4
8
7
7
20
22
23.5
Sandy GRAVEL, medium grayish brown, very dense, gravel pieces are angular, limestone, shells and coral, with silt, calcareous
24.5
5
9
50/5"
24
Shelly SAND, light greenish gray, medium dense, with silt, calcareous, fine grained, trace gravel
26
28
28.5
SAND, light greenish gray, medium dense, fine grained, trace shells and silt, calcareous
6
8
11
14
30
32
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0179


Hole No. CP05-EAARS-CB-0179

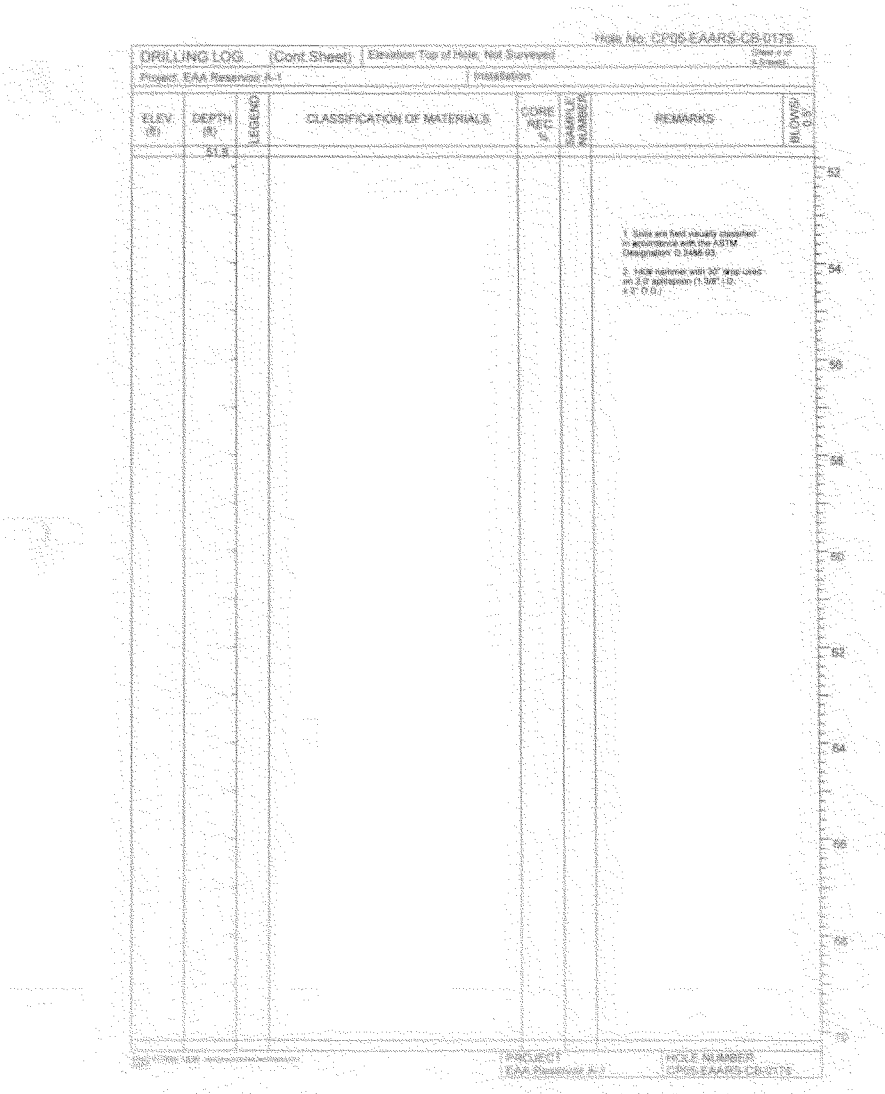
DRILLING LOG (Cont Sheet) Elevation Top of Hole: Not Surveyed Sheet 3 of 4 Sheets

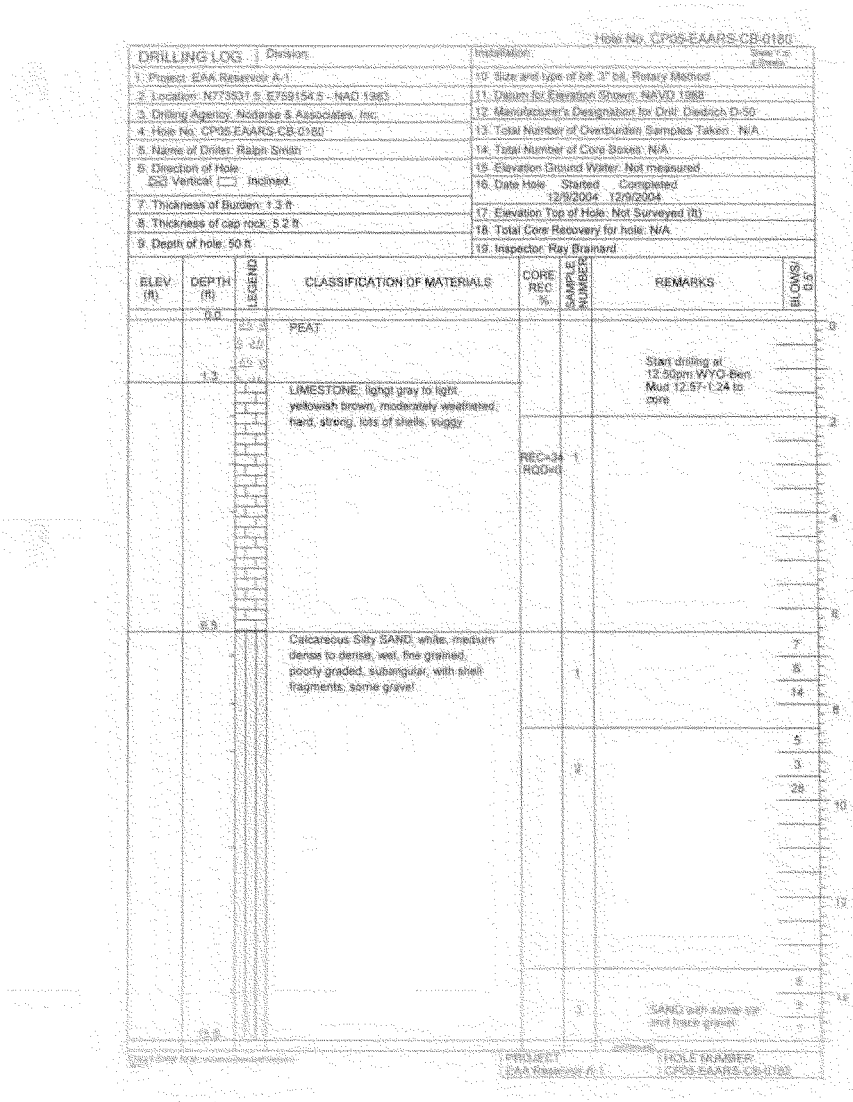
Project: EAA Reservoir A-1 Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE or NUMBER	REMARKS	BLOWS/ 0.5'
	33.5		Grades with shells		7		7 13 16
	38.5		Grades with some gravel		5		5 5 4
	43.5		Grades trace gravel		9		7 5 5
	50.0				10	Finished drilling at 4:45	10 7 8
			End of Boring at 50				

PROJECT: EAA Reservoir A-1 HOLE NUMBER: CP05-EAARS-CB-0179

34
36
38
40
42
44
46
48
50


Hole No. CP06-EAARS-CB-0178
DRILLING LOG (Cont Sheet) Elevation Top of Hole, Not Surveyed
Project: EAA Reservoir A-1 Location
ELEV. (ft)
DEPTH (ft)
51.8
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. (in)
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. Hole hammer with 30° drop uses an 2.5" apiezon (1 3/8" I.D. x 3" O.D.)
52
54
56
58
60
62
64
66
68
70
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP06-EAARS-CB-0178



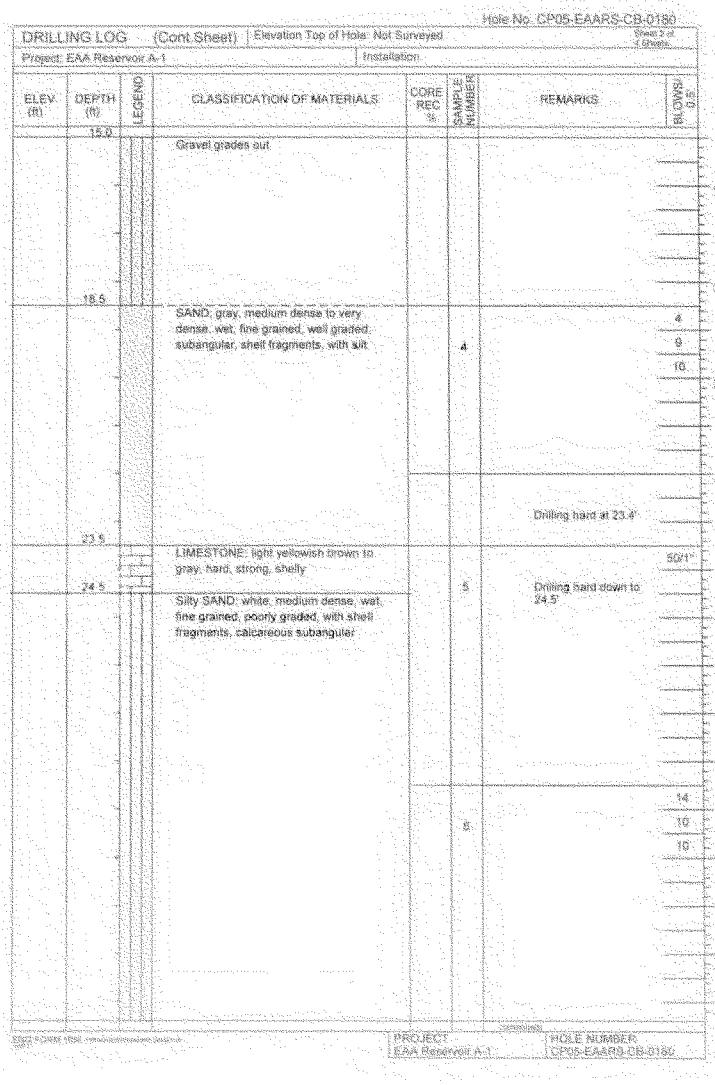
Hole No. CP05-EAARS-CB-0180

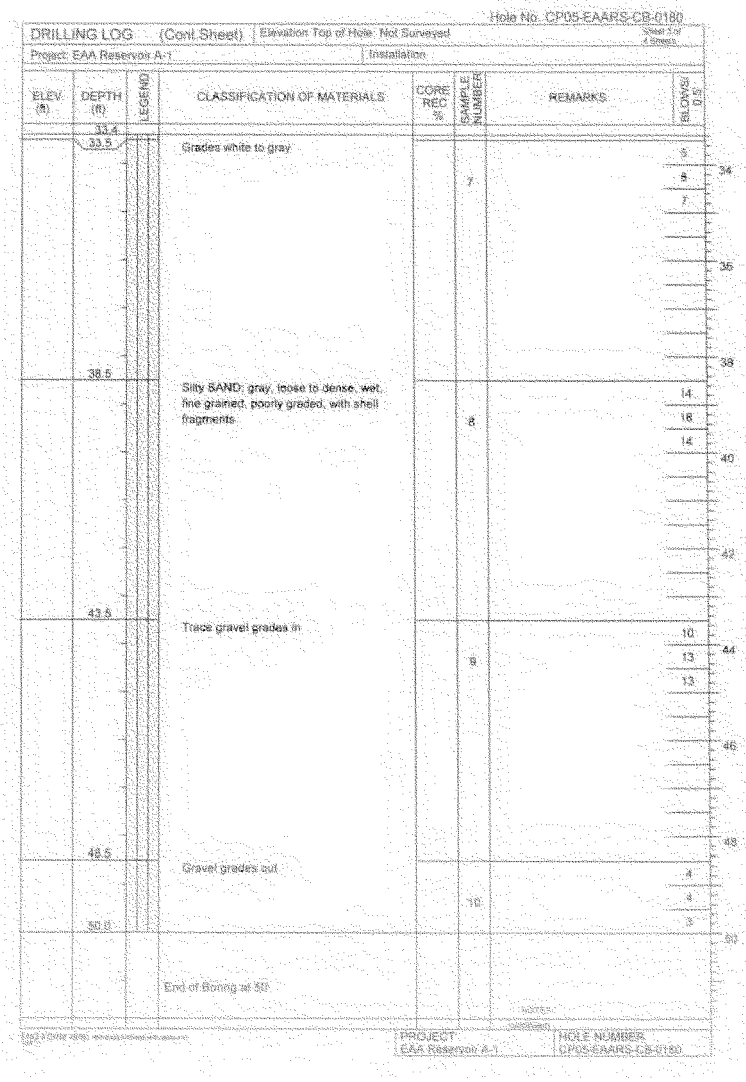
DRILLING LOG | Division: | Installation: | Sheet 1 of 2 Sheets

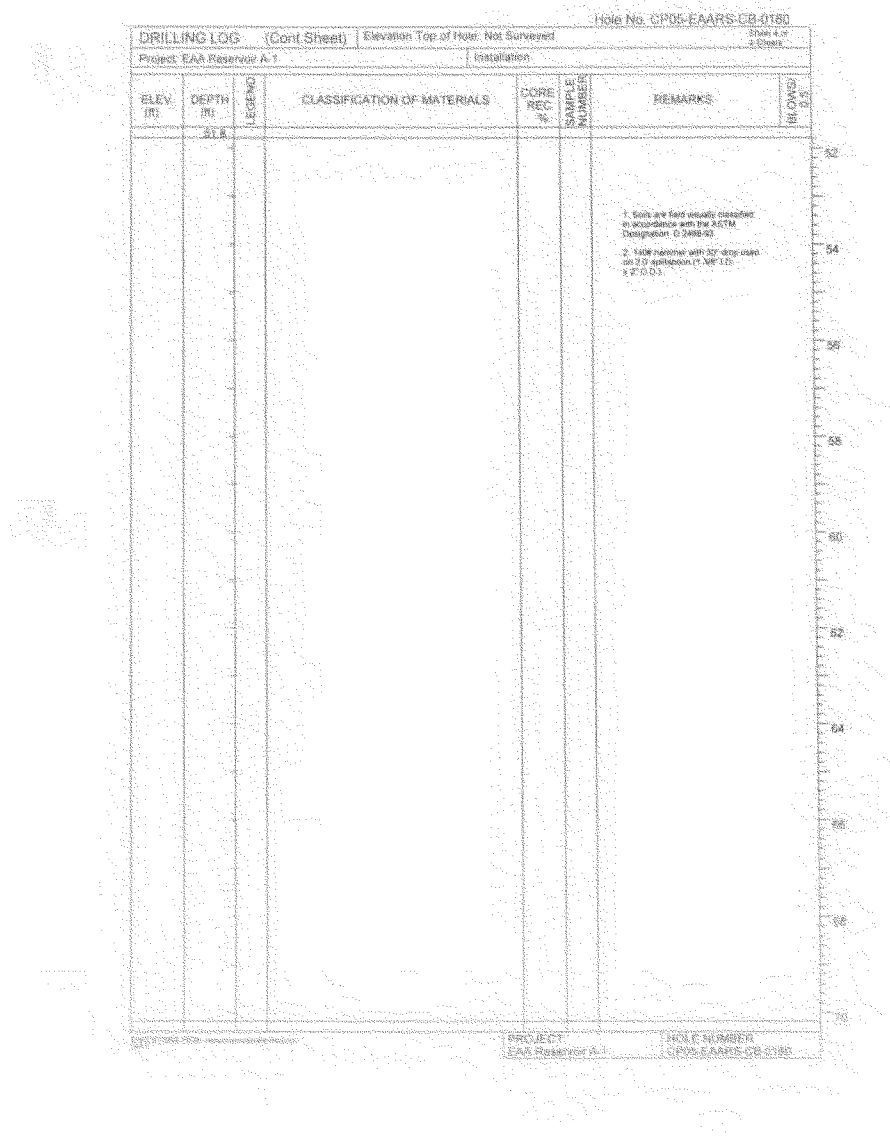
1. Project: EAA Reservoir A-1	10. Size and type of bit: 3" bit, Rotary Method
2. Location: N773537.5, E759154.5 - NAD 1983	11. Datum for Elevation Shown: NAVD 1988
3. Drilling Agency: Nodarse & Associates, Inc.	12. Manufacturer's Designation for Drill: Diedrich D-50
4. Hole No: CP05-EAARS-CB-0180	13. Total Number of Overburden Samples Taken: N/A
5. Name of Driller: Ralph Smith	14. Total Number of Core Boxes: N/A
6. Direction of Hole: ☒ Vertical ☐ Inclined	15. Elevation Ground Water: Not measured
	16. Date Hole: Started 12/9/2004 Completed 12/9/2004
7. Thickness of Burden: 1.3 ft	17. Elevation Top of Hole: Not Surveyed (ft)
8. Thickness of cap rock: 5.2 ft	18. Total Core Recovery for hole: N/A
9. Depth of hole: 50 ft	19. Inspector: Ray Brainard

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5
	0.0		PEAT			Start drilling at 12:50pm WYO Bent Mud 12:57-1.24 to core	0
	1.3		LIMESTONE: light gray to light yellowish brown, moderately weathered, hard, strong, lots of shells, vuggy	REC=34 ROD=0	1		2 4 6
	6.5		Calcareous Silty SAND: white, medium dense to dense, wet, fine grained, poorly graded, subangular, with shell fragments, some gravel		1		7 8 14 8
					2		5 3 28 10
					3	SAND with some silt and trace gravel	5 7 12 12

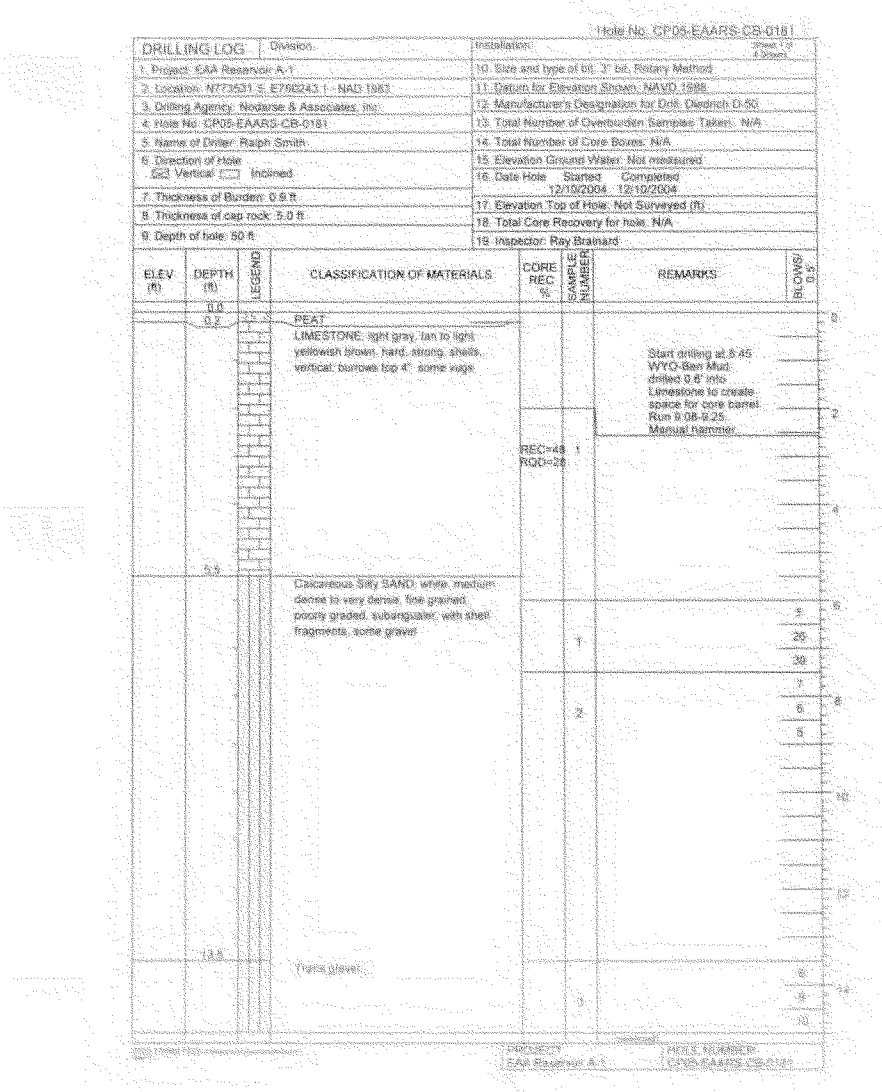
PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0180


Hole No. CP05-EAARS-CB-0180
DRILLING LOG (Cont Sheet) Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/6"
15.0
Gravel grades out
18.5
SAND, gray, medium dense to very dense, wet, fine grained, well graded, subangular, shell fragments, with silt
4
4
9
10
Drilling hard at 23.4'
23.5
LIMESTONE, light yellowish brown to gray, hard, strong, shelly
50/1"
24.5
5
Drilling hard down to 24.5'
Silty SAND, white, medium dense, wet, fine grained, poorly graded, with shell fragments, calcareous subangular
5
14
10
16
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0180


Hole No. CP05-EAARS-CB-0180
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: Not Surveyed
Sheet 2 of 4 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
33.4
33.5
Grades white to gray
38.5
Silty SAND: gray, loose to dense, wet, fine grained, poorly graded, with shell fragments
43.5
Trace gravel grades in
48.5
Gravel grades out
50.0
End of Boring at 50'
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0180


Hole No. CP05-EAARS-CB-0180
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
GW/OW
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.5" splitspoon (1 3/8" I.D. x 2" O.D.).
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0180

APPENDIX 1
TEST CELL BORINGS AND PIEZOMETER INSTALLATION LOGS: 181-200



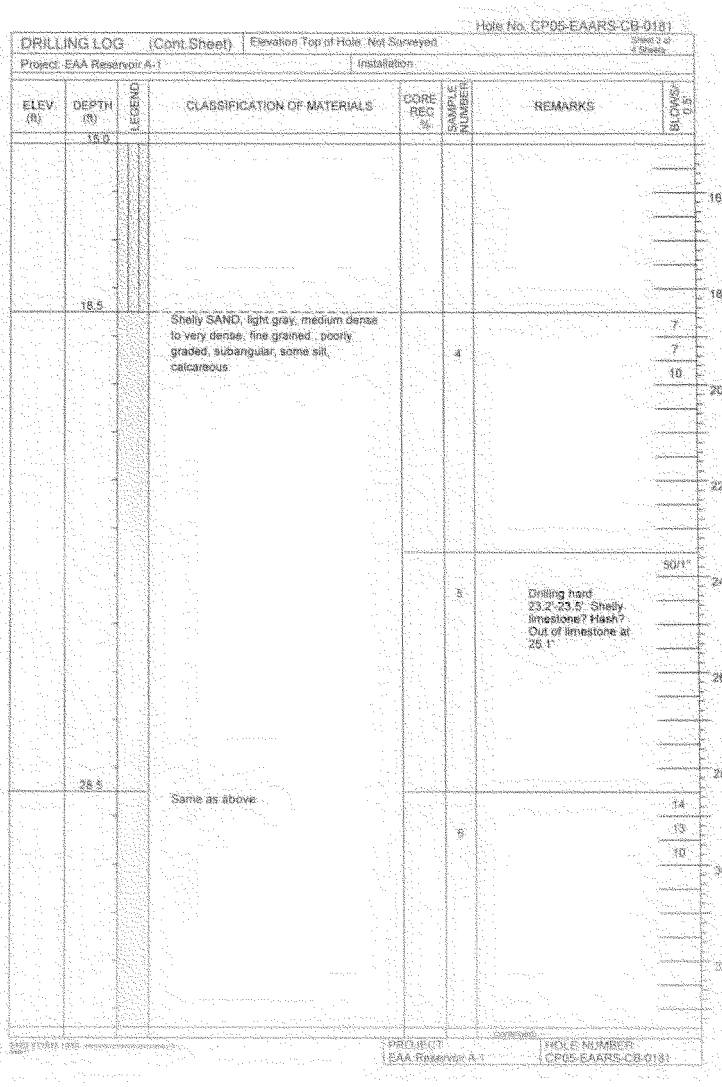
Hole No. CP05-EAARS-CB-0181

DRILLING LOG | Division: | Installation:

1. Project: EAA Reservoir A-1
2. Location: N773531 S, E795243 f - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0181
5. Name of Driller: Ralph Smith
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: 0.6 ft
8. Thickness of cap rock: 5.0 ft
9. Depth of hole: 50 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: N/A
15. Elevation Ground Water: Not measured
16. Date Hole: Started 12/10/2004 Completed 12/10/2004
17. Elevation Top of Hole: Not Surveyed (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: Ray Brainard

ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
	0.0						
	0.7		PEAT				
			LIMESTONE: light gray, tan to light yellowish brown, hard, strong, shells, vertical burrows top 4", some vugs			Start drilling at 8:45 WYO-Ben Mud; drilled 0.8' into Limestone to create space for core barrel. Run 9.08-9.25. Manual hammer.	
				REC=48 RQD=28	1		
	5.5		Calcareous Silty SAND, white, medium dense to very dense, fine grained, poorly graded, subangular, with shell fragments, some gravel				14 25 30
					2		7 6 8
	13.5		Trace gravel		3		6 10 14

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0181



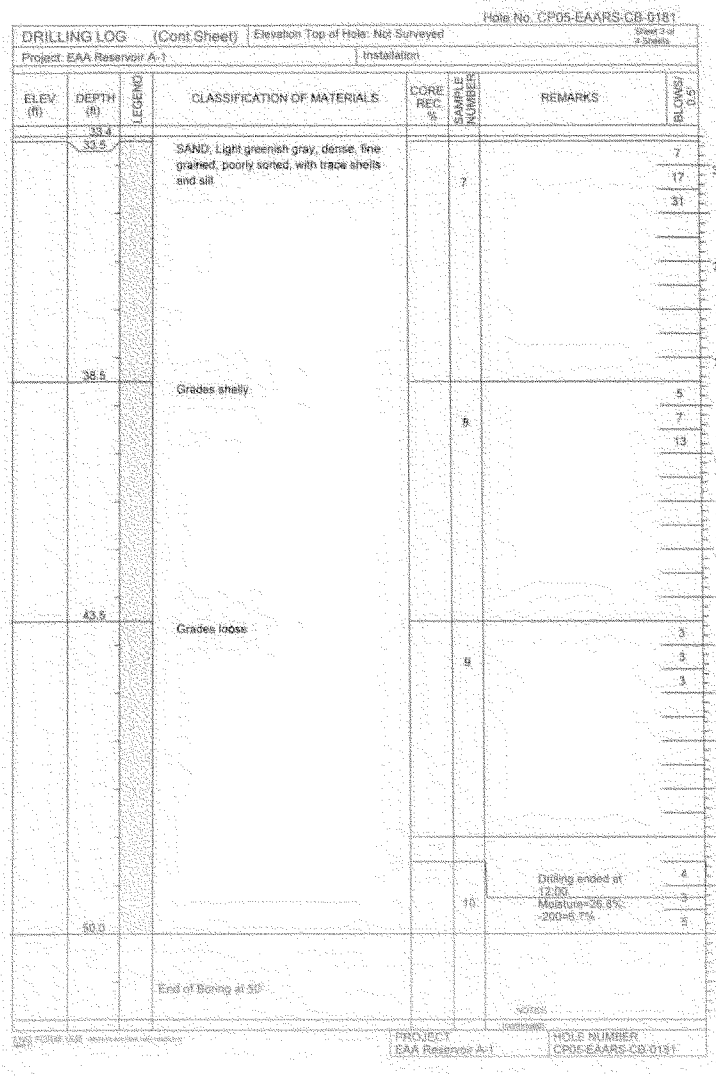
Hole No. CP05-EAARS-CB-018I

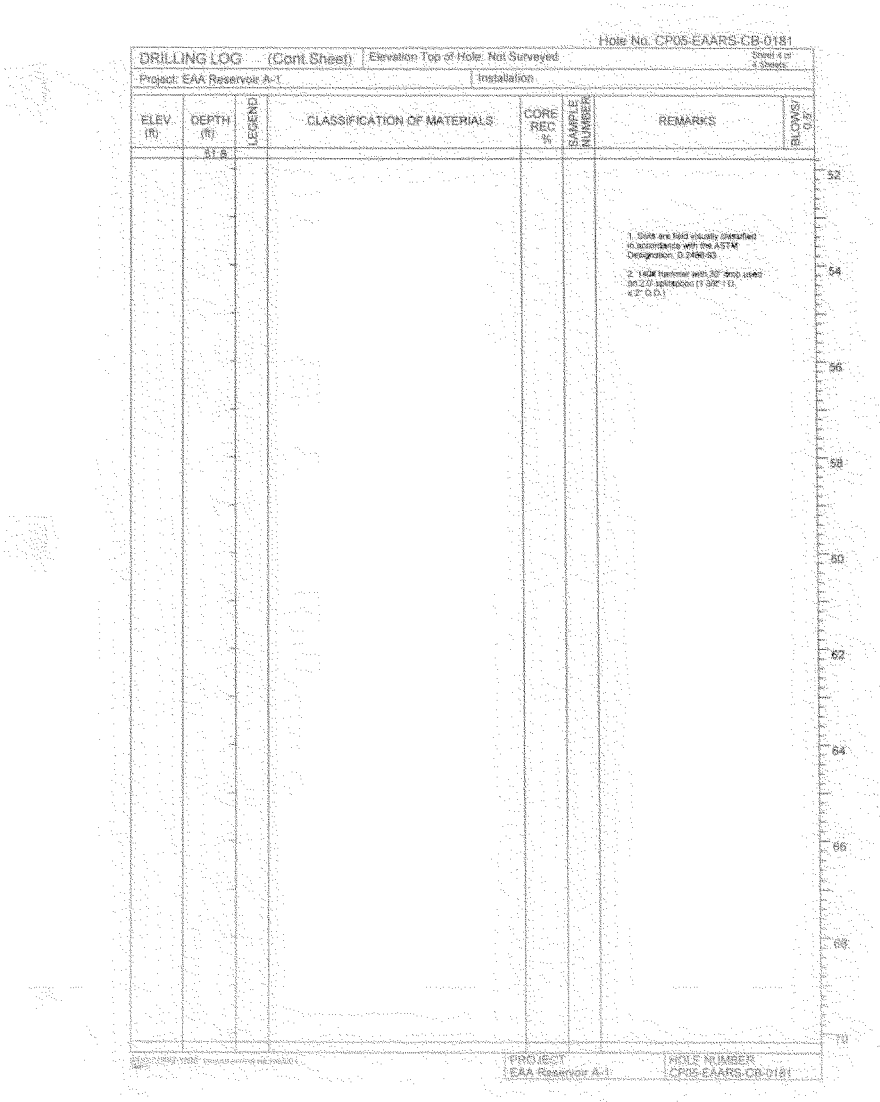
DRILLING LOG (Cont Sheet) | Elevation Top of Hole: Not Surveyed | Sheet 2 of 4 Sheets

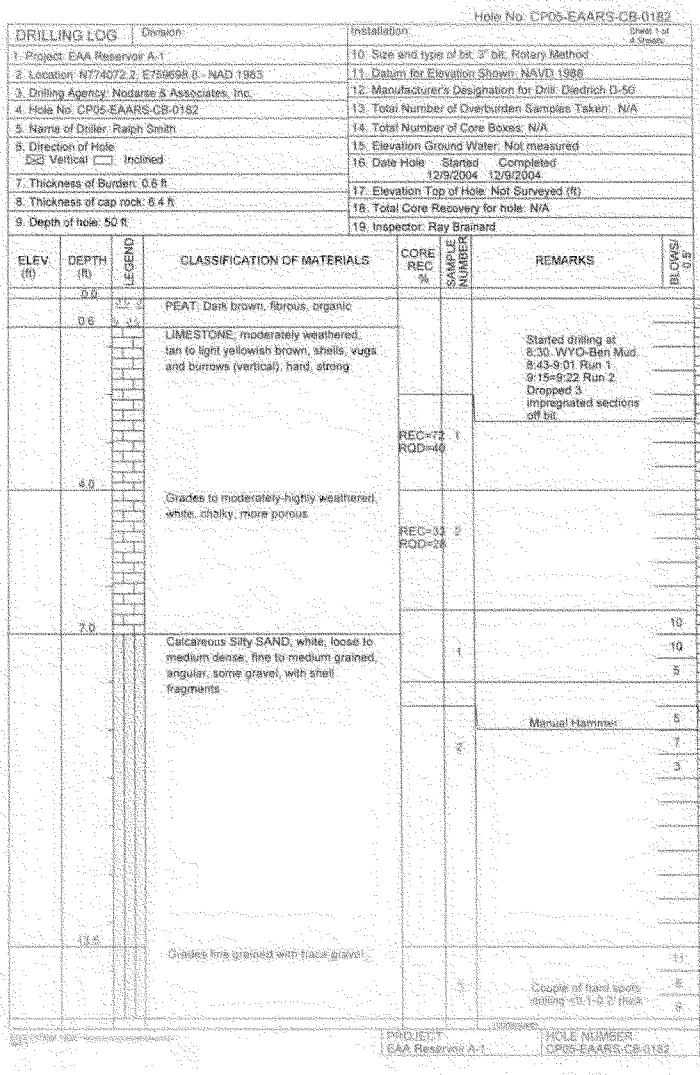
Project: EAA Reservoir A-1 | Installation:

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/0.5ft
	18.0						16 18
	18.5		Shelly SAND, light gray, medium dense to very dense, fine grained , poorly graded, subangular, some silt, calcareous		4		7 7 10 20 22
					5	Drilling hard 23.2'-23.5'. Shelly limestone? Hash? Out of limestone at 25.1'	50/1" 24 26 28
	28.5		Same as above.		6		14 13 10 30 32

SAMPLE TYPE: [illegible] | PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-018I


Hole No. CP05-EAARS-CB-0181
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
33.4
33.5
SAND; Light greenish gray, dense, fine grained, poorly sorted, with trace shells and silt
38.5
Grades shelly
43.5
Grades loose
50.0
End of Boring at 50'
Drilling ended at 12:00. Moisture=26.8%; -200=6.7%
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0181


Hole No. CP05-EAARS-CB-0181
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: Not Surveyed
Sheet 4 of 4 Sheets
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
37.8
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D., 2" O.D.)
52
54
56
58
60
62
64
66
68
70
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0181



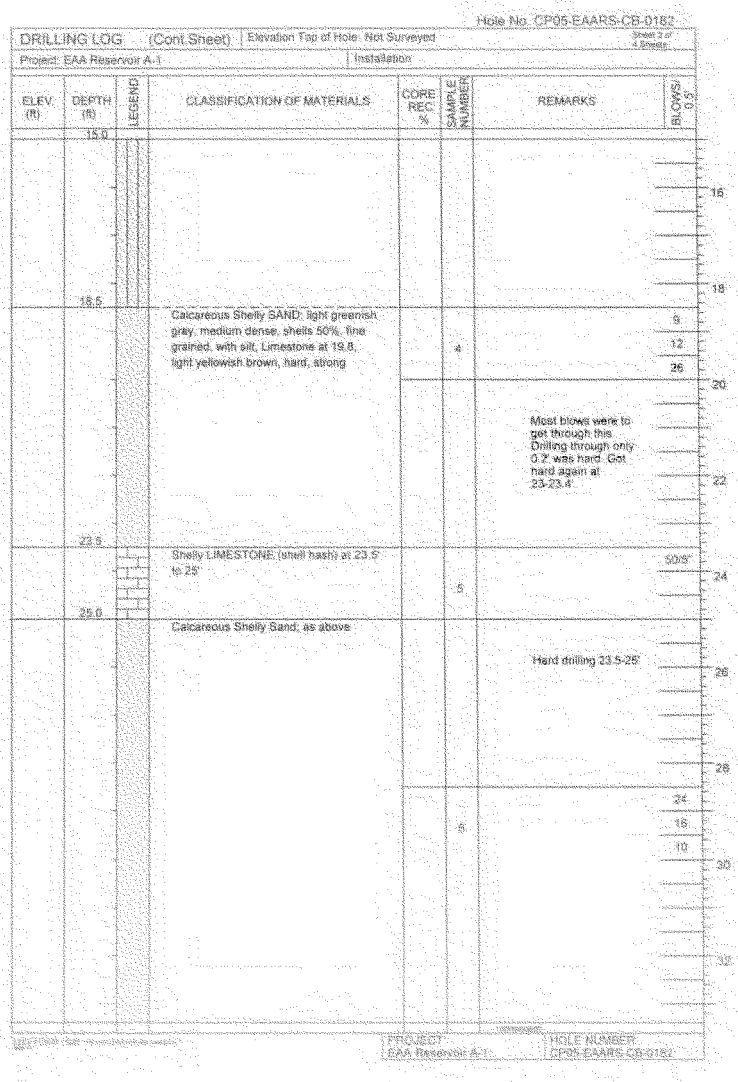
Hole No: CP05-EAARS-CB-0182

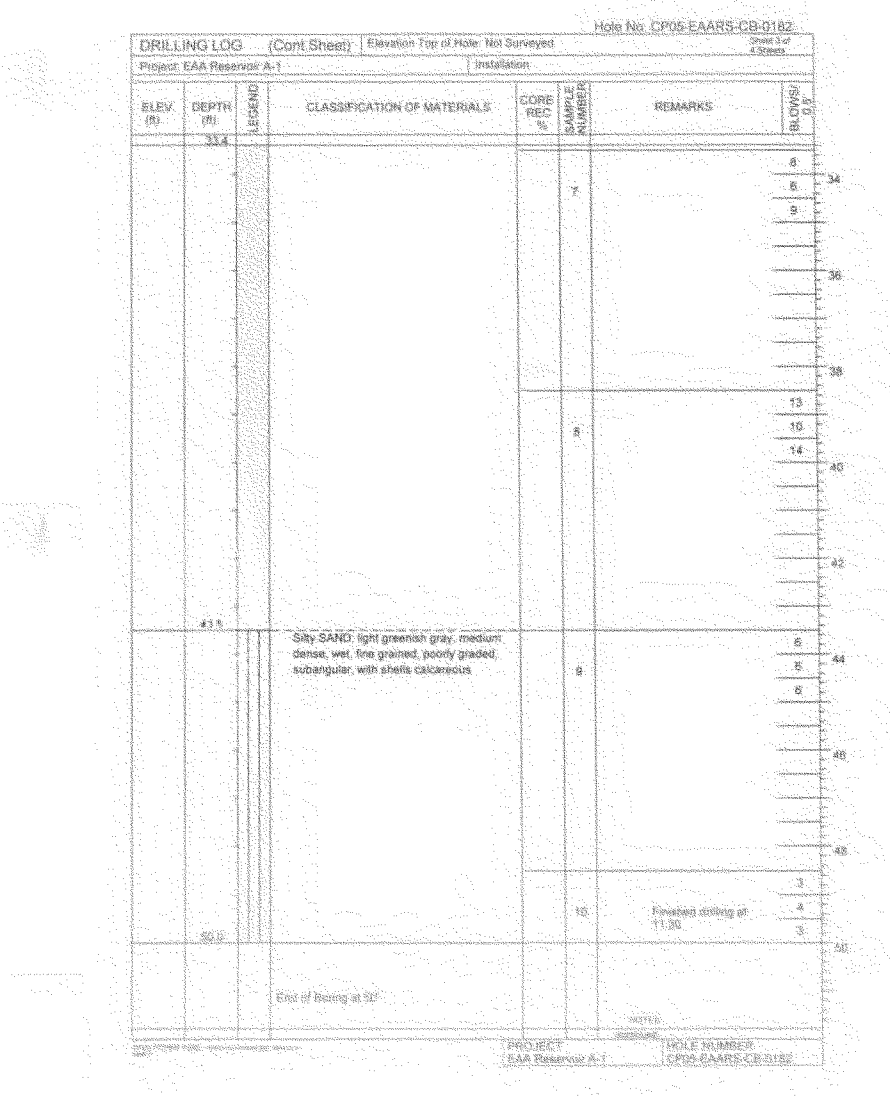
DRILLING LOG | Division: | Installation: | Sheet 1 of 2 Sheets

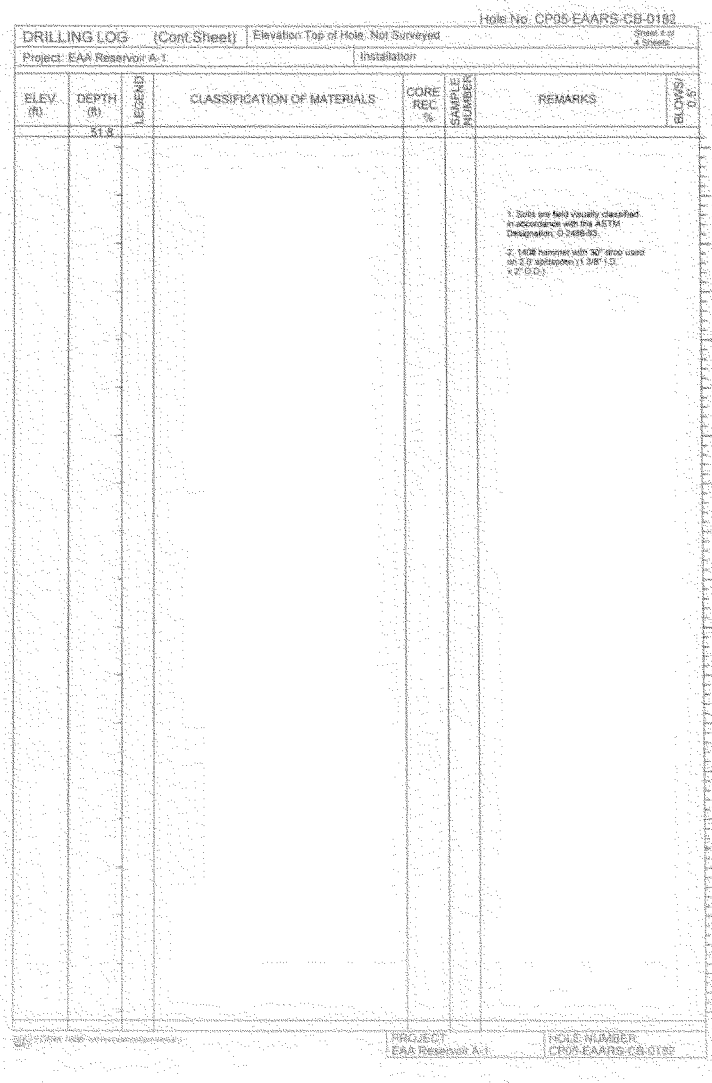
1. Project: EAA Reservoir A-1
2. Location: N774072.2, E759698.8 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0182
5. Name of Driller: Ralph Smith
6. Direction of Hole: [X] Vertical [ ] Inclined
7. Thickness of Burden: 0.6 ft
8. Thickness of cap rock: 6.4 ft
9. Depth of hole: 50 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: N/A
15. Elevation Ground Water: Not measured
16. Date Hole: Started 12/9/2004 Completed 12/9/2004
17. Elevation Top of Hole: Not Surveyed (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: Ray Brainard

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5
	0.0						0
	0.6		PEAT: Dark brown, fibrous, organic				
			LIMESTONE: moderately weathered, tan to light yellowish brown, shells, vugs and burrows (vertical), hard, strong			Started drilling at 8:30. WYO-Ben Mud. 8:43-9:01 Run 1. 9:15=9:22 Run 2. Dropped 3 impregnated sections off bit.	2
				REC=72 ROD=40	1		
	6.0						4
			Grades to moderately-highly weathered, white, chalky, more porous	REC=33 ROD=28	2		6
	7.0						10
			Calcareous Silty SAND, white, loose to medium dense, fine to medium grained, angular, some gravel, with shell fragments		1		10
							8
						Manual Hammer	5
					4		7
							3
							10
	13.5		Grades fine grained with trace gravel		3	Couple of hard spots drilling =0.1-0.3' thick	11
							5
							9

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0182


Hole No. CP05-EAARS-CB-0182
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1 Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
15.0
15.5
Calcareous Shelly SAND; light greenish gray, medium dense, shells 50%, fine grained, with silt, Limestone at 19.8, light yellowish brown, hard, strong
4
9
12
26
Most blows were to get through this. Drilling through only 0.2' was hard. Got hard again at 23-23.4'
23.5
Shelly LIMESTONE (shell hash) at 23.5 to 25'
5
50/5"
25.0
Calcareous Shelly Sand; as above
Hard drilling 23.5-25'
6
24
16
10
15
18
20
22
24
26
28
30
32
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0182


Hole No. CP05-EAAR5-CB-0182
DRILLING LOG (Cont Sheet) Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 6"
Silty SAND, light greenish gray, medium dense, wet, fine grained, poorly graded, subangular, with shells calcareous
Frosted drilling at 11:30
End of Boring at 50'
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAAR5-CB-0182



Hole No. CP05-EAARS-CB-0182

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: Not Surveyed | Sheet 4 of 4 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
	51.8						

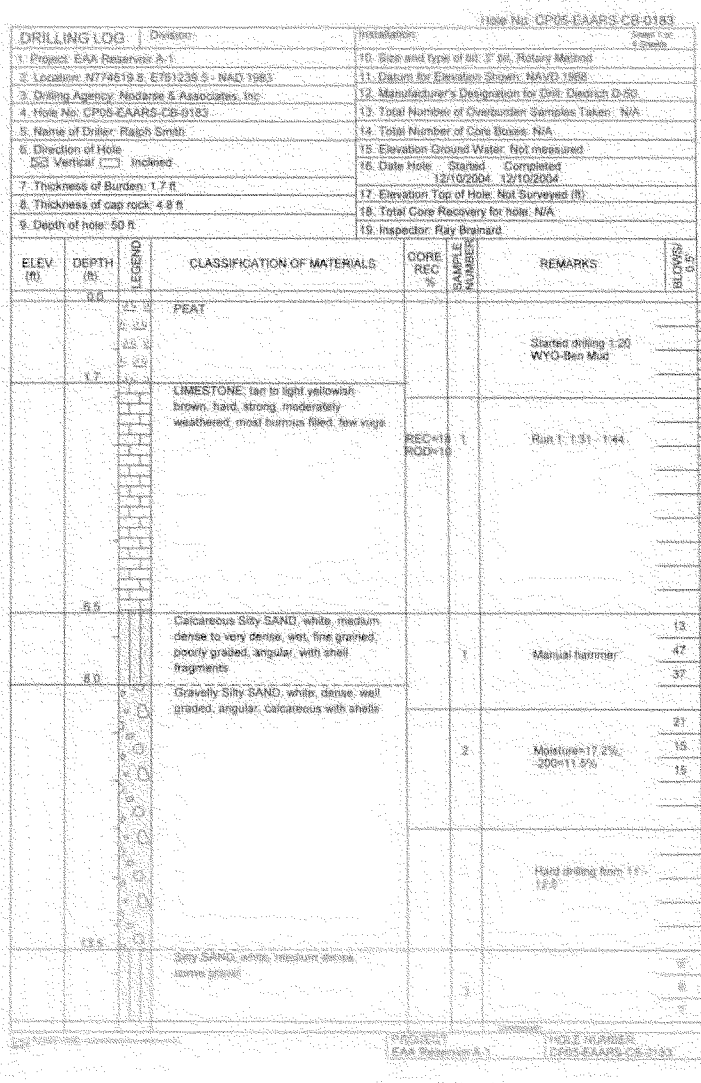
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.5" splitspoon (1 3/8" I.D. x 2" O.D.)

52 54 56 58 60 62 64 66 68 70

PROJECT: EAA Reservoir A-1

HOLE NUMBER: CP05-EAARS-CB-0182



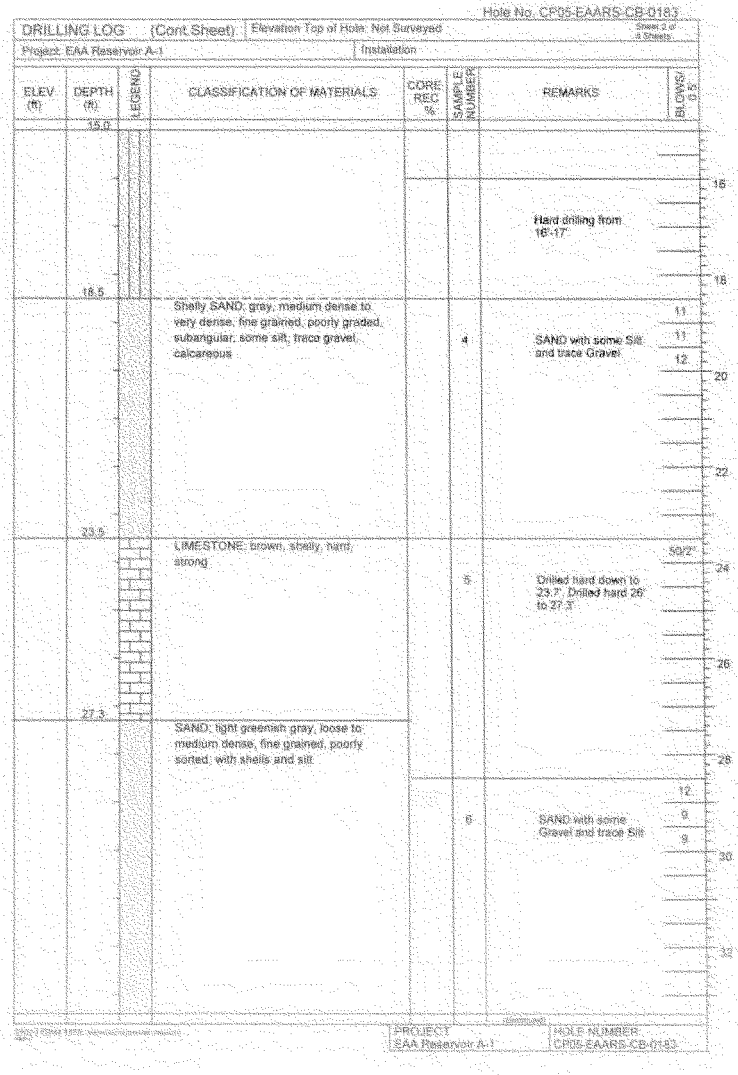
Hole No. CP05-EAARS-CB-0183

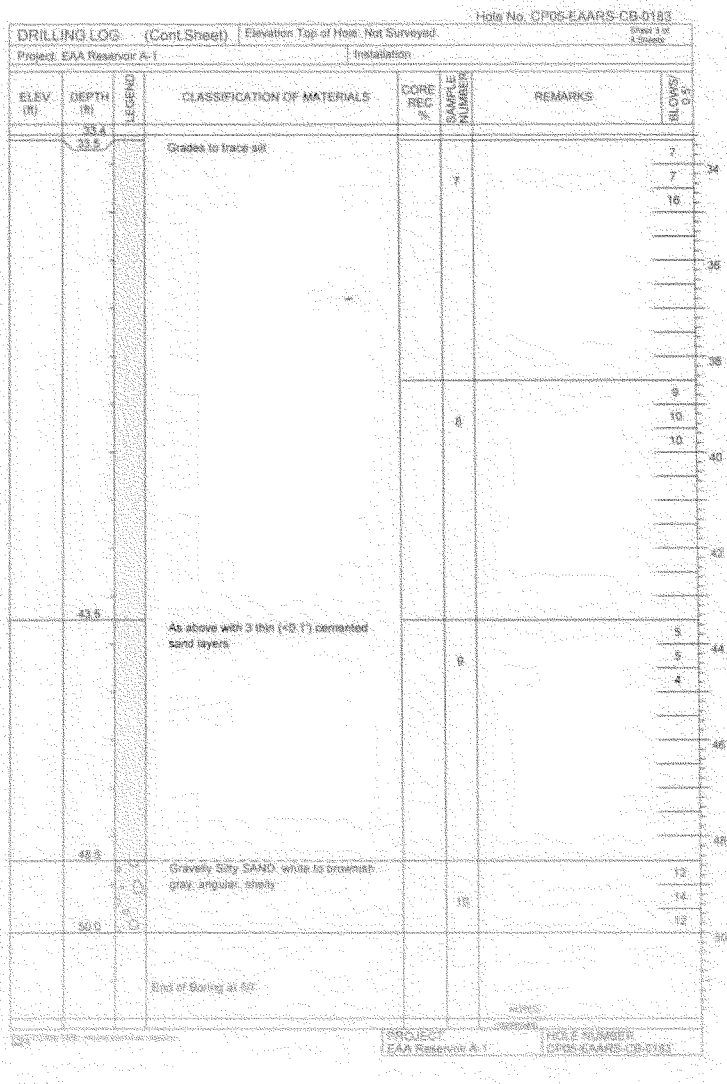
DRILLING LOG | Division: | Installation: | Sheet 1 of 4 Sheets

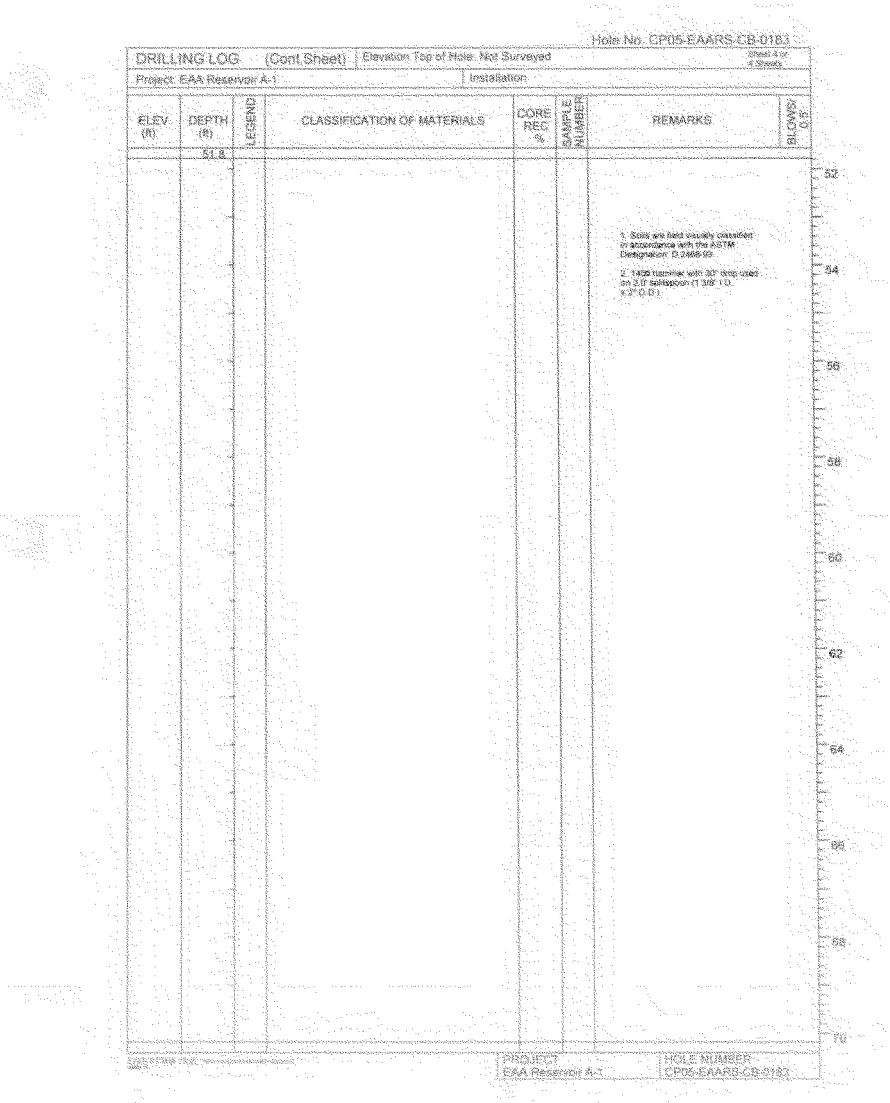
1. Project: EAA Reservoir A-1
2. Location: N774619.5, E751239.5 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0183
5. Name of Driller: Ralph Smith
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: 1.7 ft
8. Thickness of cap rock: 4.8 ft
9. Depth of hole: 50 ft
10. Size and type of bit: 5" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: N/A
15. Elevation Ground Water: Not measured
16. Date Hole: Started 12/10/2004 Completed 12/10/2004
17. Elevation Top of Hole: Not Surveyed (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: Ray Brainard

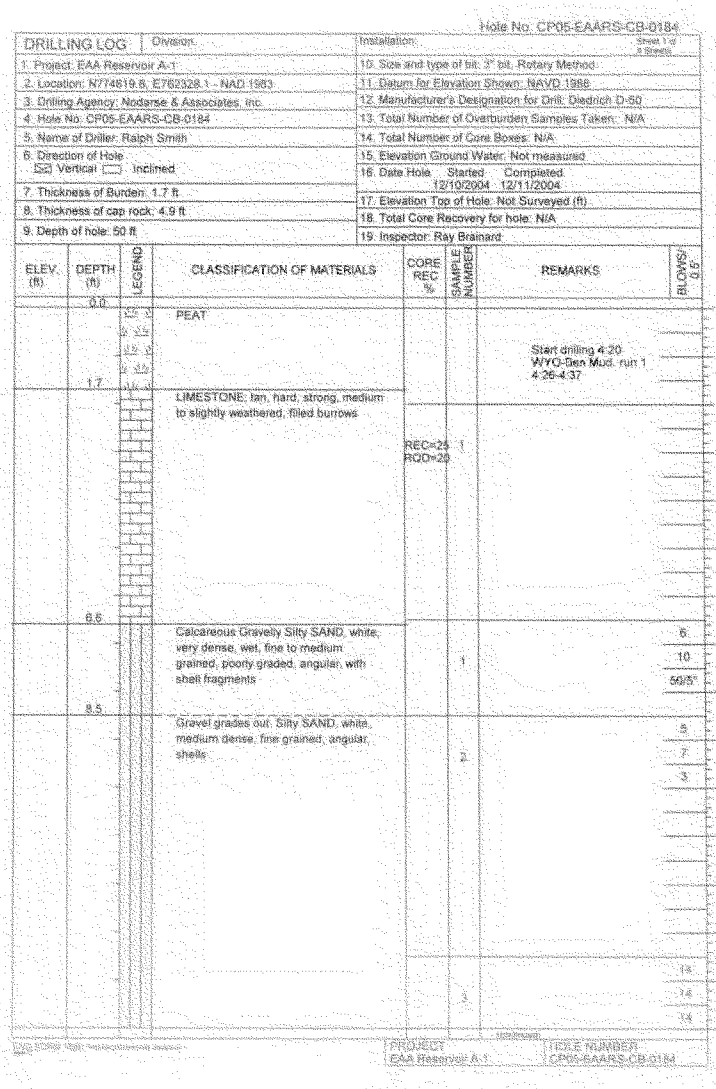
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
	0.0		PEAT			Started drilling 1:20 WYO-Ben Mud	
	1.7		LIMESTONE, tan to light yellowish brown, hard, strong, moderately weathered, moist burrows filled, few vugs	REC=18 ROD=18	1	Run 1, 1.31 - 1.44	
	5.5		Calcareous Silty SAND, white, medium dense to very dense, wet, fine grained, poorly graded, angular, with shell fragments		1	Manual hammer	13 47 37
	8.0		Gravelly Silty SAND, white, dense, well graded, angular, calcareous with shells		2	Moisture=17.2%, 200=11.5%	21 15 15
						Hard drilling from 11 - 12.5	
	12.5		Silty SAND, white, medium dense, some shells		3		8 8 7

PROJECT: EAA Reservoir A-1 HOLE NUMBER: CP05-EAARS-CB-0183


Hole No. CP05-EAARS-CB-0183
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: Not Surveyed
Sheet 2 of 9 Sheets
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
15.0
18.5
Shelly SAND; gray, medium dense to very dense, fine grained, poorly graded, subangular, some silt, trace gravel, calcareous
Hard drilling from 16'-17'
SAND with some Silt and trace Gravel
33.5
LIMESTONE; brown, shelly, hard, strong
Drilled hard down to 23.7'. Drilled hard 26' to 27.3'
50/2"
27.3
SAND; light greenish gray, loose to medium dense, fine grained, poorly sorted, with shells and silt
SAND with some Gravel and trace Silt
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0183


Hole No. CP05-EAARS-CB-0183
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
33.5
Grades to trace silt
43.5
As above with 3 thin (<0.1') cemented sand layers
48.0
Gravelly Silty SAND, white to brownish gray, angular, shelly
50.0
End of Boring at 50'
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0183


Hole No. CP05-EAARS-CB-0183
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
51.8
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.).
52
54
56
58
60
62
64
66
68
70
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0183



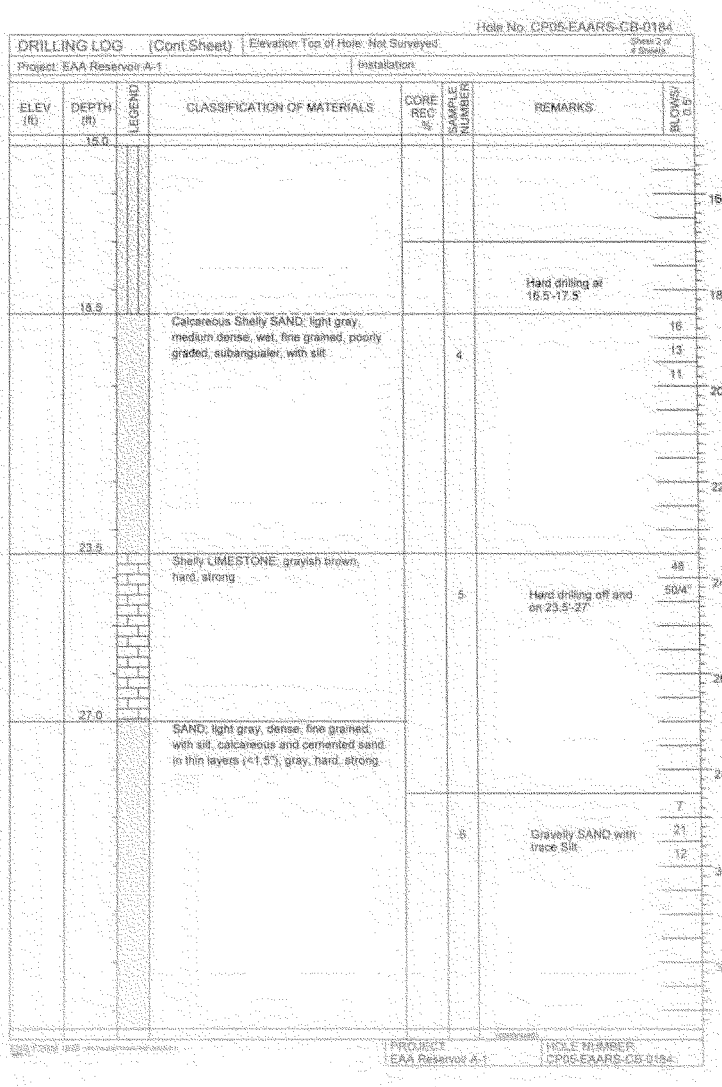
Hole No. CP05-EAARS-CB-0184

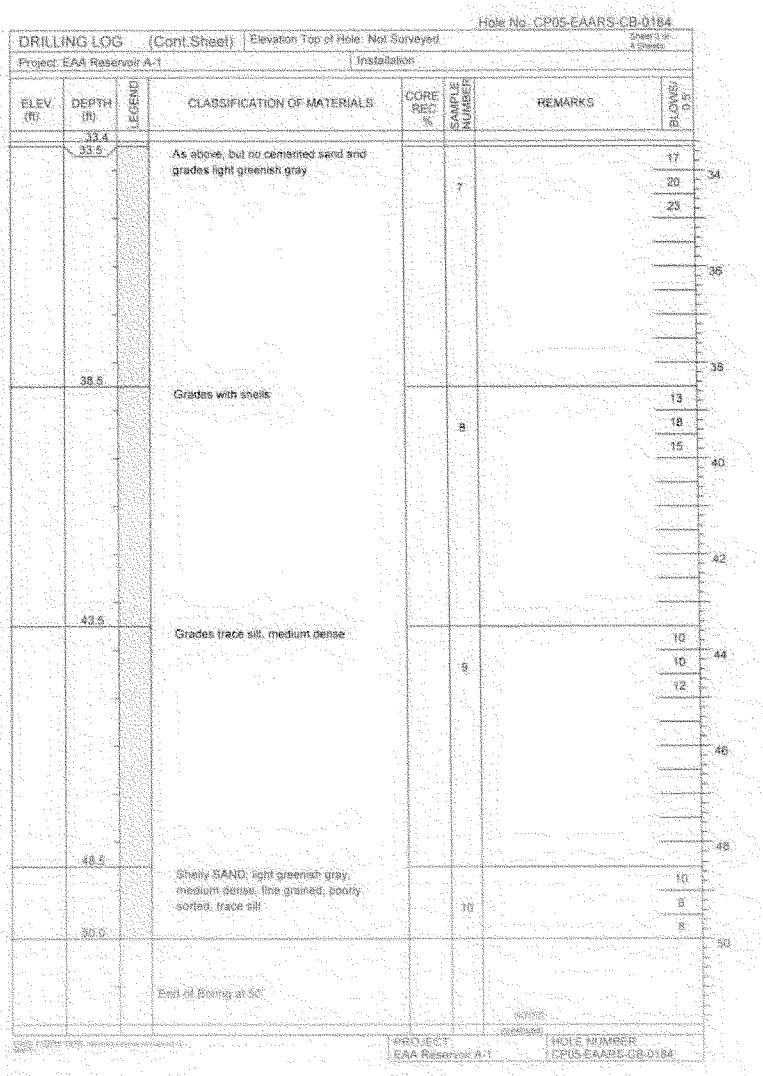
DRILLING LOG | Division: | Installation: | Sheet 1 of 2 Sheets

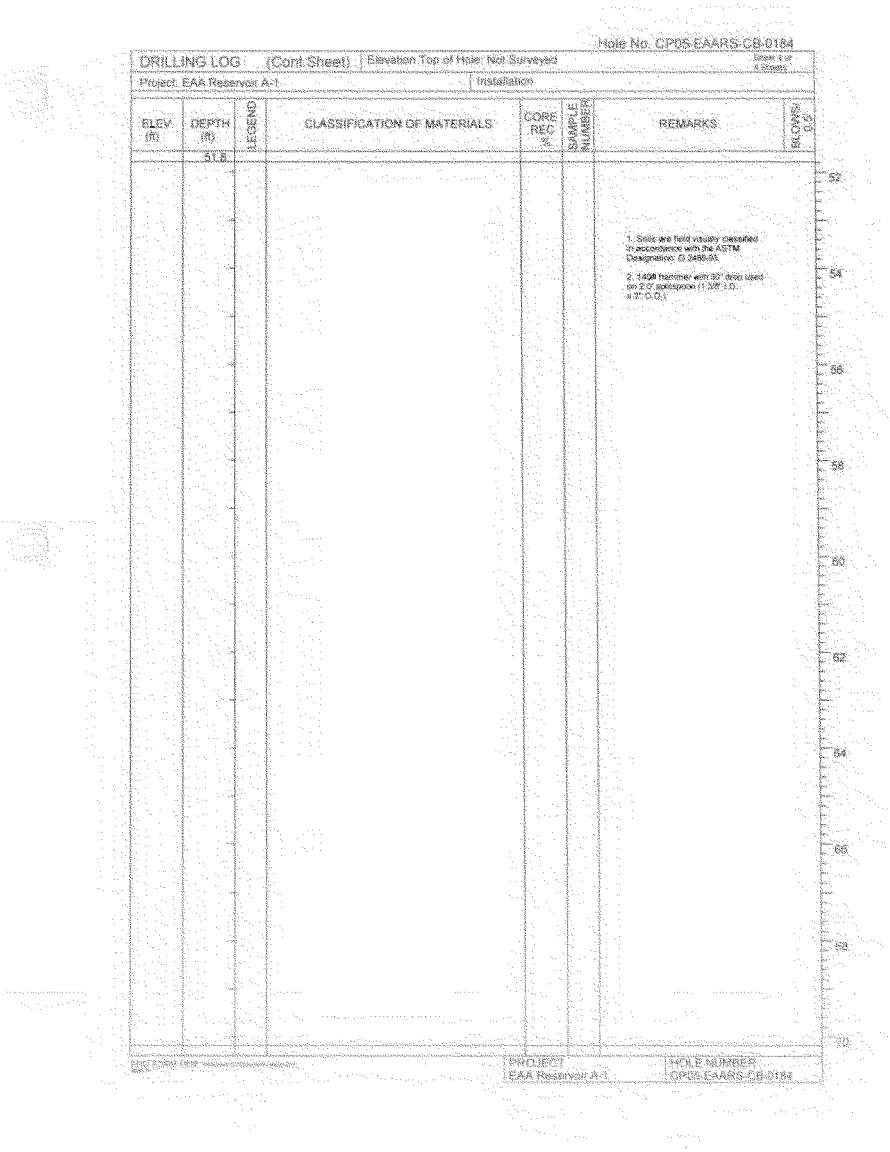
1. Project: EAA Reservoir A-1
2. Location: N774819.8, E762328.1 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No. CP05-EAARS-CB-0184
5. Name of Driller: Ralph Smith
6. Direction of Hole: [X] Vertical [ ] Inclined
7. Thickness of Burden: 1.7 ft
8. Thickness of cap rock: 4.9 ft
9. Depth of hole: 50 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: N/A
15. Elevation Ground Water: Not measured
16. Date Hole: Started 12/10/2004 Completed 12/11/2004
17. Elevation Top of Hole: Not Surveyed (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: Ray Brainard

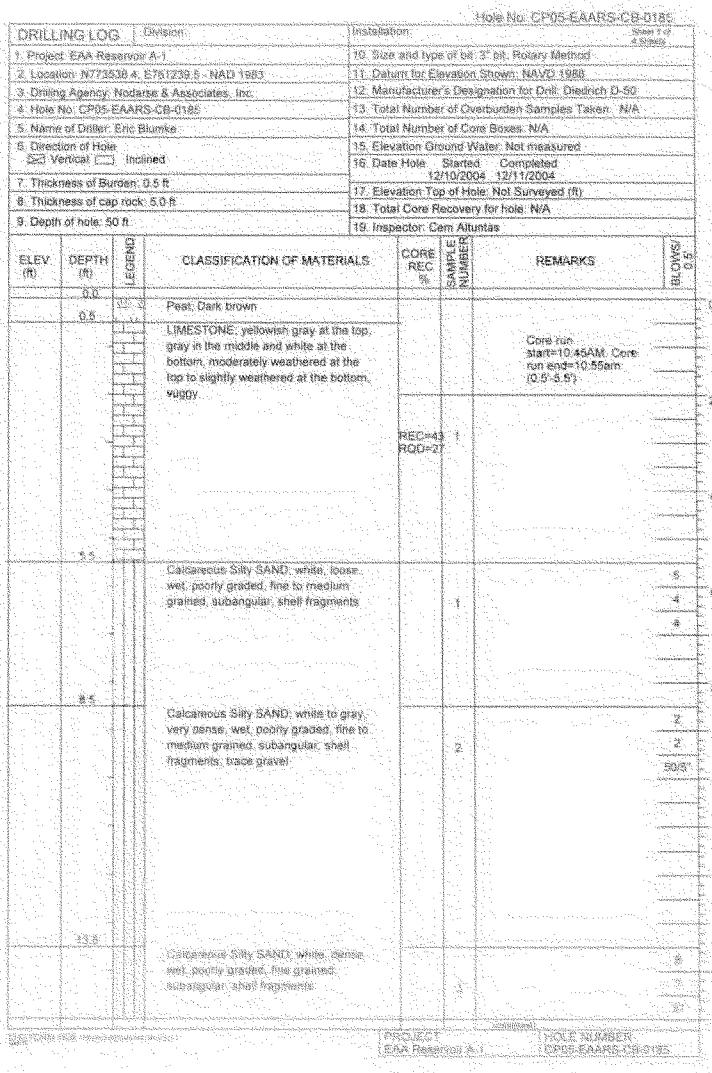
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
	0.0		PEAT			Start drilling 4:20 WYO-Ben Mud, run 1 4:26-4:37	
	1.7		LIMESTONE, tan, hard, strong, medium to slightly weathered, filled burrows	REC=25 RQD=20	1		
	8.6		Calcareous Gravelly Silty SAND, white, very dense, wet, fine to medium grained, poorly graded, angular, with shell fragments		1		6 10 50/5"
	9.5		Gravel grades out. Silty SAND, white, medium dense, fine grained, angular, shells		1		5 7 5
					1		13 14 14

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0184


Hole No. CP05-EAARS-CB-0184
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: Not Surveyed
Sheet 2 of 4 Sheets
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
15.0
18.5
Calcareous Shelly SAND; light gray, medium dense, wet, fine grained, poorly graded, subangualer, with silt
Hard drilling at 16.5'-17.5'
23.5
Shelly LIMESTONE; grayish brown, hard, strong
Hard drilling off and on 23.5'-27'
27.0
SAND; light gray, dense, fine grained, with silt, calcareous and cemented sand in thin layers (<1.5"), gray, hard, strong
Gravelly SAND with trace Silt
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0184


Hole No. CP05-EAARS-CB-0184
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS / 0.5'
33.4
33.5
As above, but no cemented sand and grades light greenish gray
7
17
20
23
34
35
38.8
38
Grades with shells
8
13
18
15
40
42
43.5
Grades trace silt, medium dense
9
10
10
12
44
46
48.5
48
Shelly SAND, light greenish gray, medium dense, fine grained, poorly sorted, trace silt
10
10
8
8
50
50.0
End of Boring at 50'
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0184


Hole No. CP05-EAARS-CB-0184
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1 Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
51.8
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 3" O.D.).
52
54
56
58
60
62
64
66
68
70
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0184



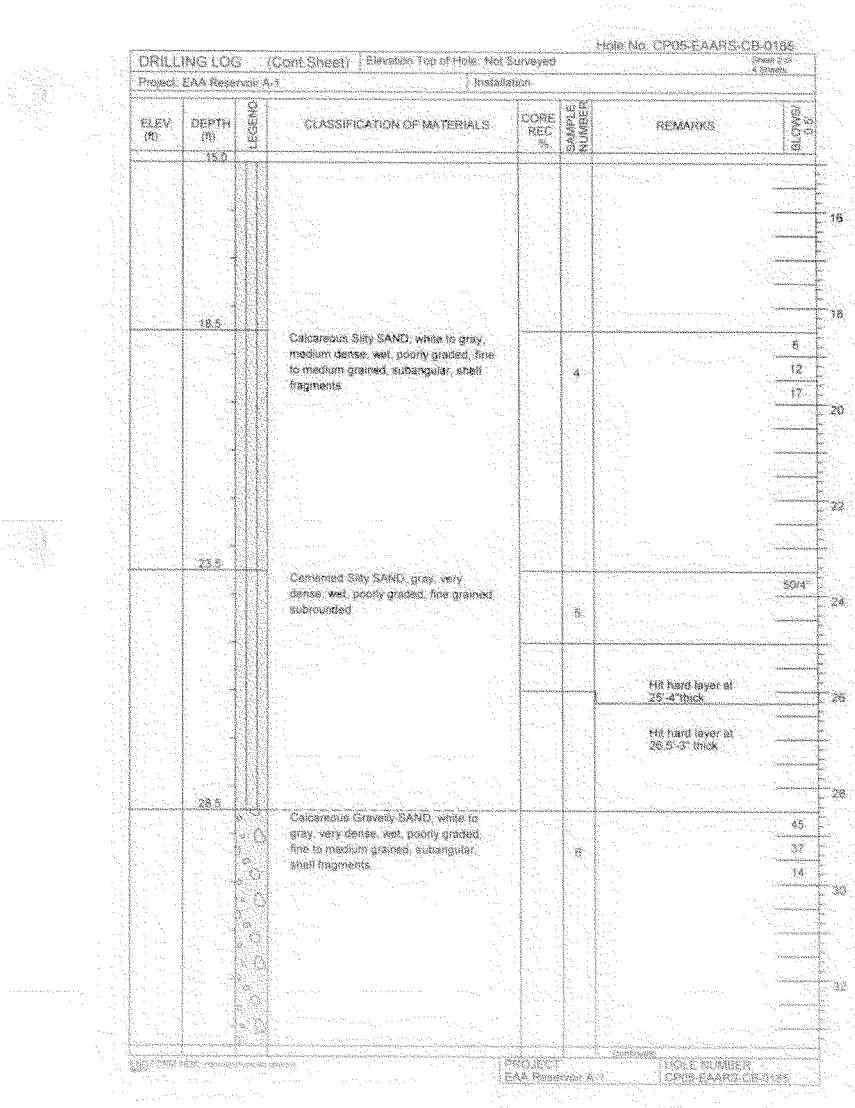
Hole No: CP05-EAARS-CB-0185

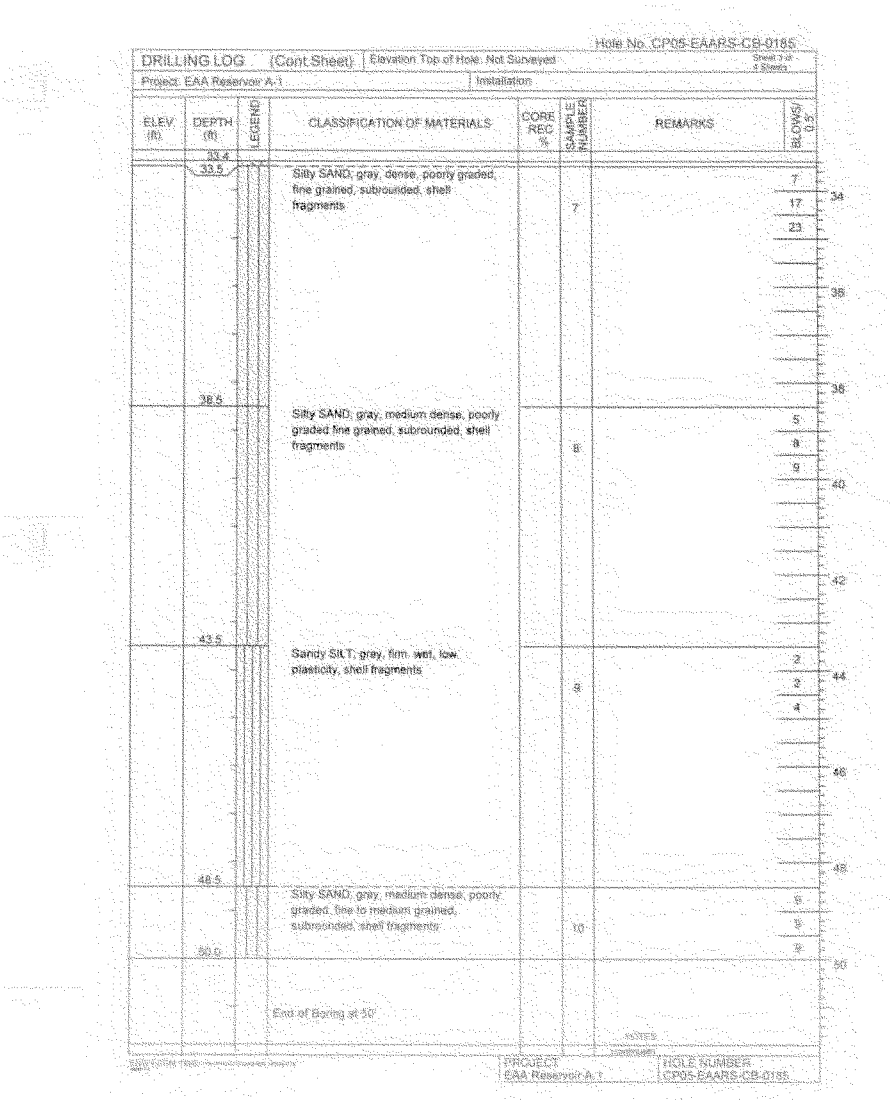
DRILLING LOG | Division: | Installation: | Sheet 1 of 4 Sheets

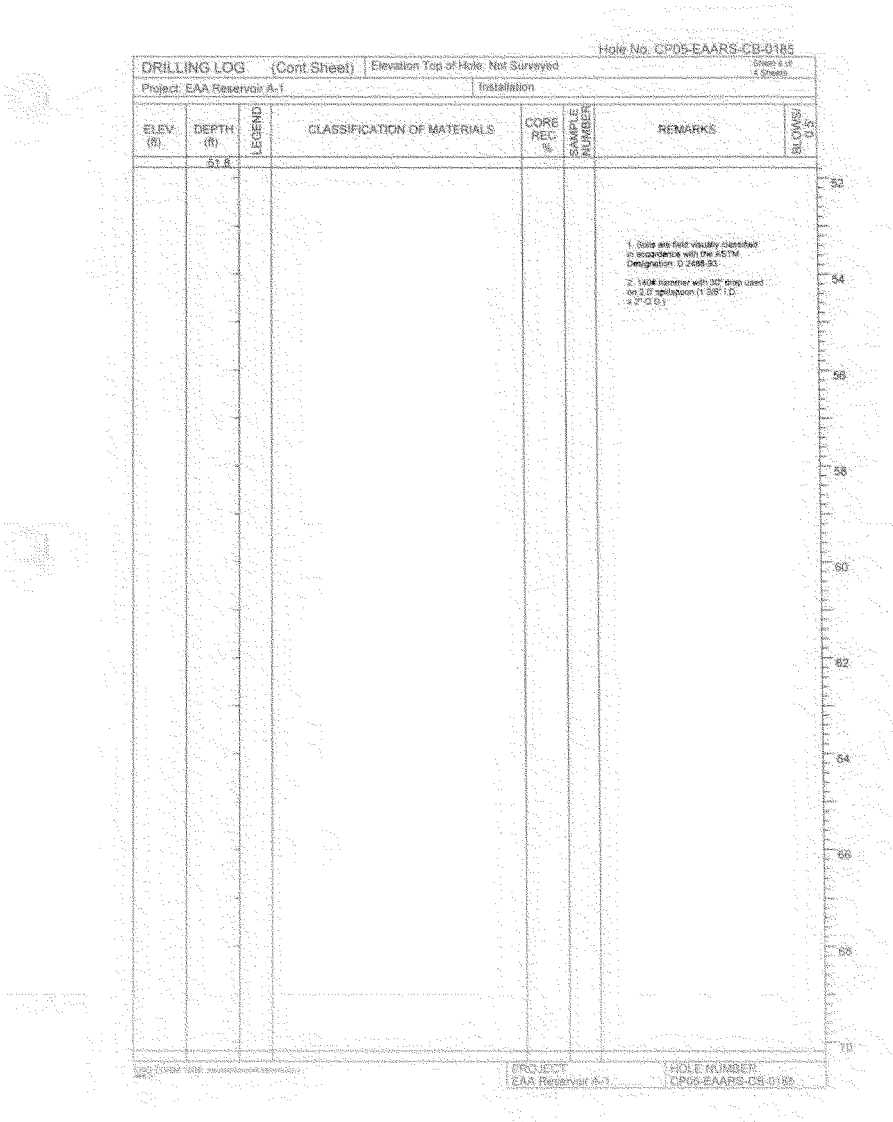
1. Project: EAA Reservoir A-1
2. Location: N773538.4, E751239.5 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0185
5. Name of Driller: Eric Blumke
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: 0.5 ft
8. Thickness of cap rock: 5.0 ft
9. Depth of hole: 50 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: N/A
15. Elevation Ground Water: Not measured
16. Date Hole: Started 12/10/2004 Completed 12/11/2004
17. Elevation Top of Hole: Not Surveyed (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: Cem Altuntas

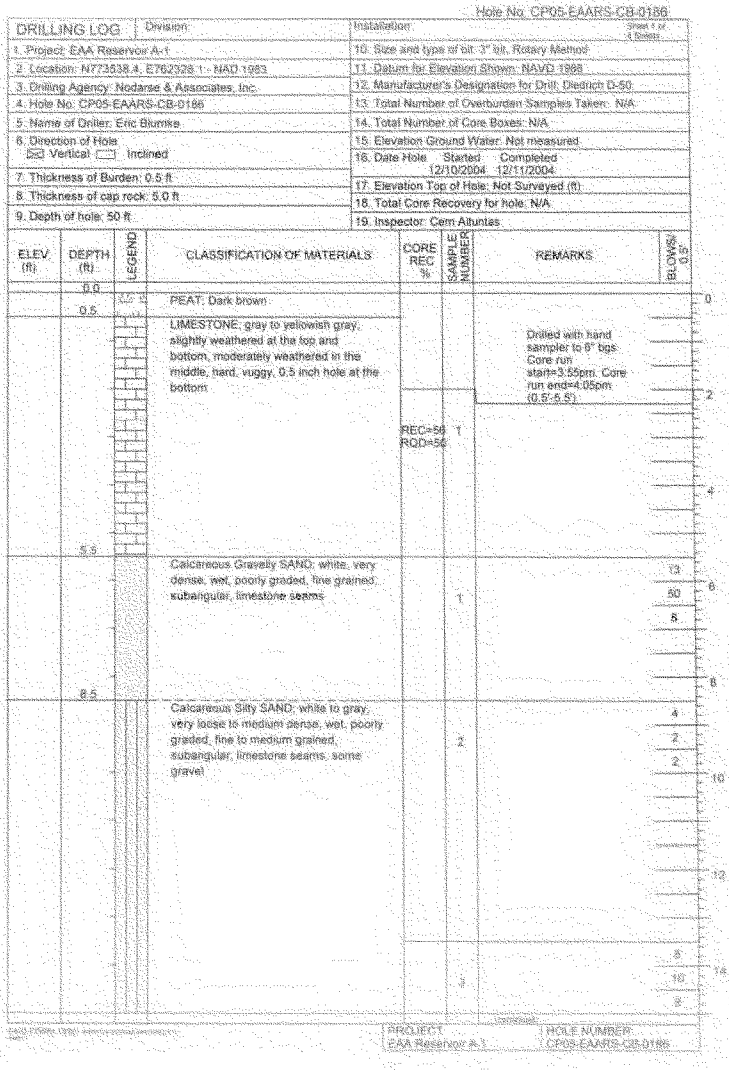
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
	0.0		Peat; Dark brown				0
	0.5		LIMESTONE; yellowish gray at the top, gray in the middle and white at the bottom, moderately weathered at the top to slightly weathered at the bottom, vuggy	REC=43 RQD=27	1	Core run start=10:45AM. Core run end=10:55am (0.5'-5.5')	2 4
	5.5		Calcareous Silty SAND; white, loose, wet, poorly graded, fine to medium grained, subangular, shell fragments		1		5 4 6 8
	8.5		Calcareous Silty SAND; white to gray, very dense, wet, poorly graded, fine to medium grained, subangular, shell fragments, trace gravel		2		2 2 50/3" 10 12
	13.5		Calcareous Silty SAND; white, dense, wet, poorly graded, fine grained, subangular, shell fragments		3		8 14

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0185


Hole No. CP05-EAARS-CB-0185
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1 Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/6"
15.0
18.5
Calcareous Silty SAND, white to gray, medium dense, wet, poorly graded, fine to medium grained, subangular, shell fragments
4
5
12
17
23.5
Cemented Silty SAND, gray, very dense, wet, poorly graded, fine grained, subrounded
5
50/4"
Hit hard layer at 25'-4"thick
Hit hard layer at 26.5'-3" thick
28.5
Calcareous Gravelly SAND, white to gray, very dense, wet, poorly graded, fine to medium grained, subangular, shell fragments
6
45
37
14
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0185


Hole No. CP05-EAARS-CB-0185
DRILLING LOG (Cont Sheet) Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
33.4
33.5
Silty SAND, gray, dense, poorly graded, fine grained, subrounded, shell fragments
7
7
17
23
34
35
36
38.5
Silty SAND, gray, medium dense, poorly graded fine grained, subrounded, shell fragments
8
5
8
9
40
42
43.5
Sandy SILT, gray, firm, wet, low plasticity, shell fragments
9
2
3
4
44
46
48
48.5
Silty SAND, gray, medium dense, poorly graded, fine to medium grained, subrounded, shell fragments
10
5
50.0
50
End of Boring at 50'
NOTES
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0185


Hole No. CP05-EAARS-CB-0185
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: Not Surveyed
Sheet 4 of 4 Sheets
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
51.8
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.5" split spoon (1 3/8" I.D. x 2" O.D.)
52
54
56
58
60
62
64
66
68
70
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0185



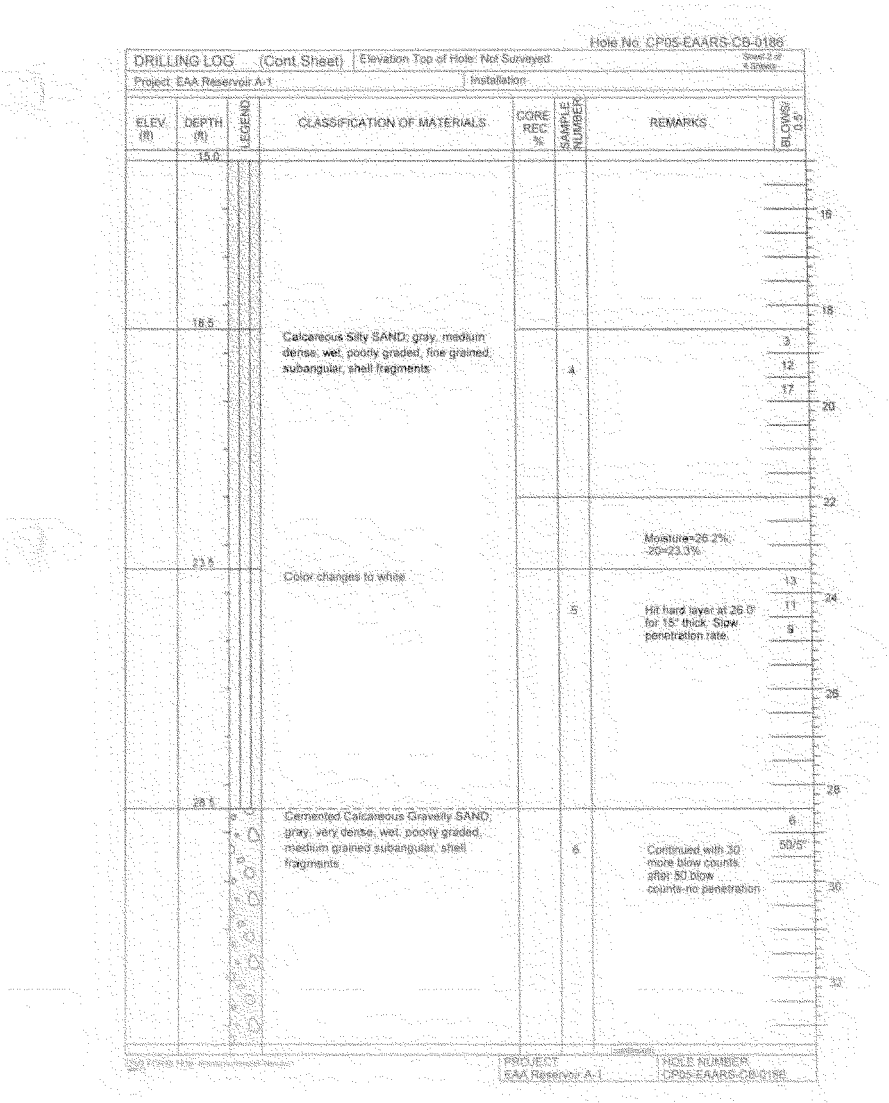
Hole No. CP05-EAARS-CB-0186

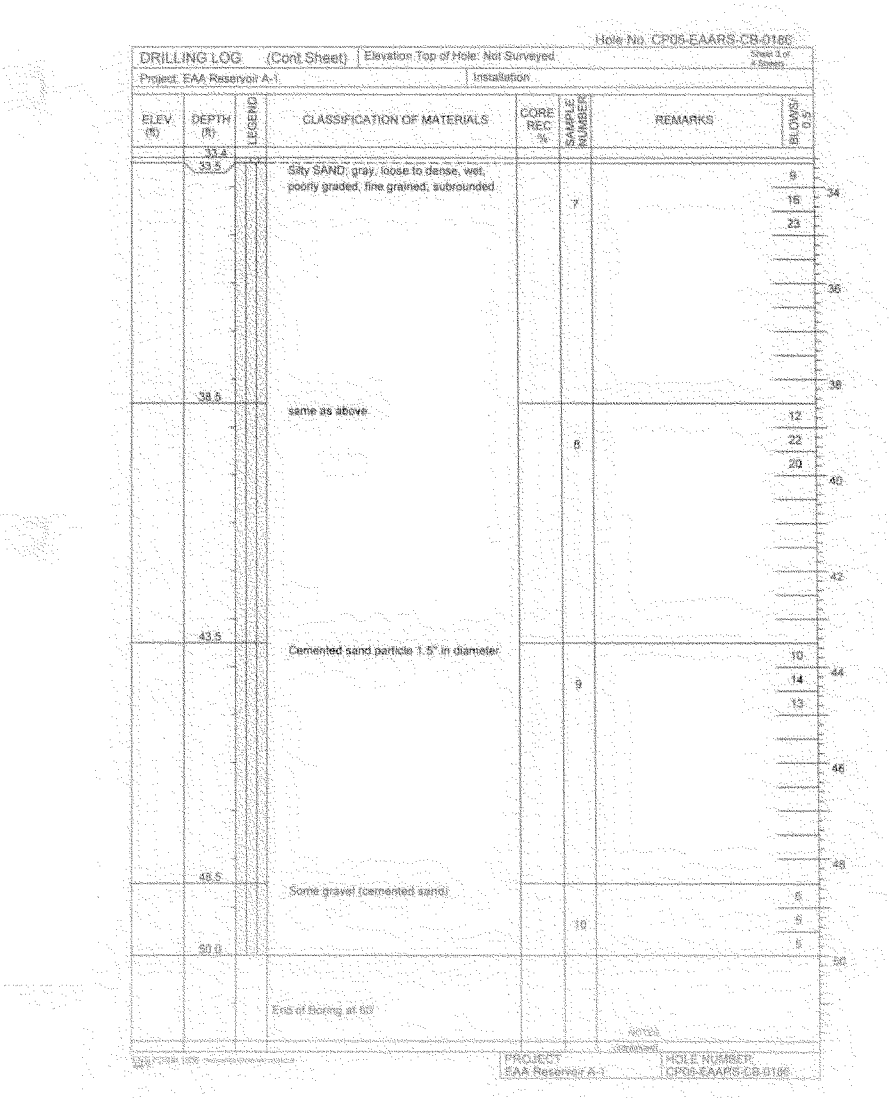
DRILLING LOG | Division: | Installation: | Sheet 1 of 1 Sheets

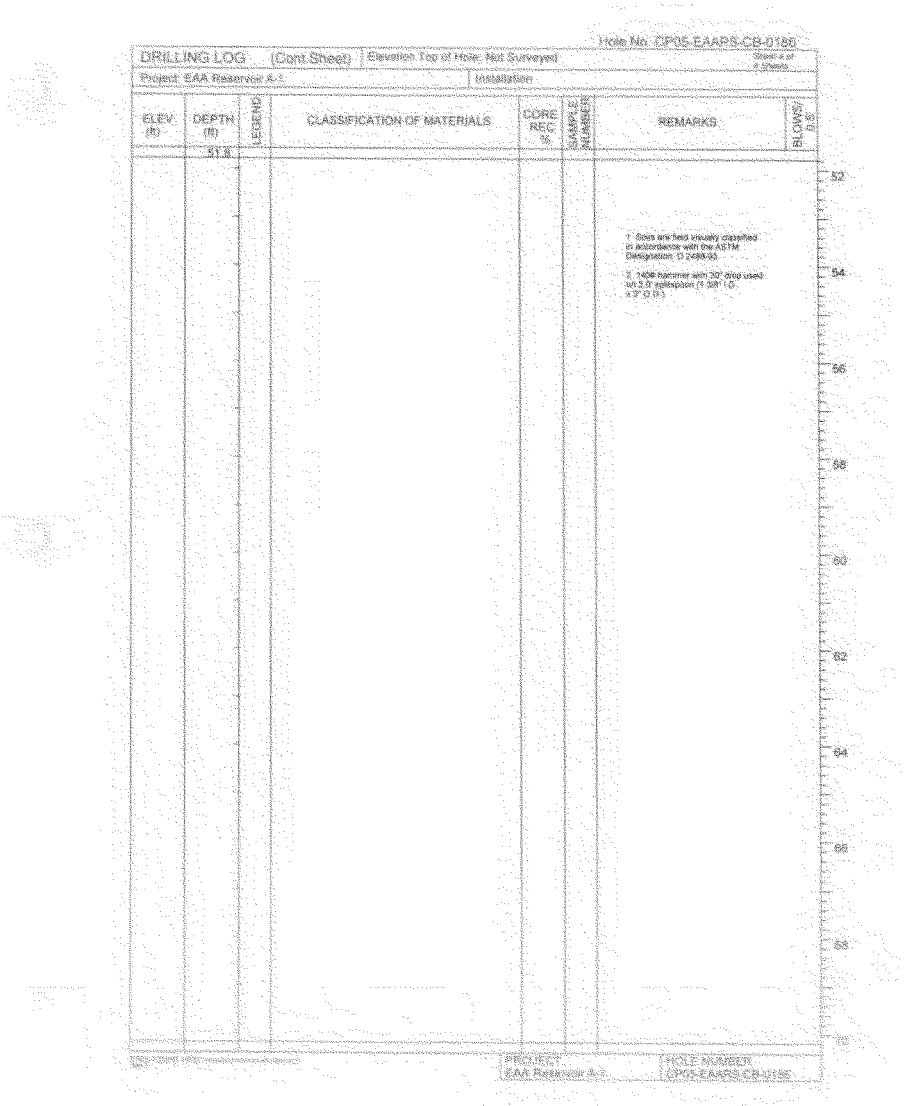
1. Project: EAA Reservoir A-1	10. Size and type of bit: 3" bit, Rotary Method
2. Location: N773538.4, E762328.1 - NAD 1983	11. Datum for Elevation Shown: NAVD 1988
3. Drilling Agency: Nodarse & Associates, Inc.	12. Manufacturer's Designation for Drill: Diedrich D-50
4. Hole No: CP05-EAARS-CB-0186	13. Total Number of Overburden Samples Taken: N/A
5. Name of Driller: Eric Blumke	14. Total Number of Core Boxes: N/A
6. Direction of Hole ☒ Vertical ☐ Inclined	15. Elevation Ground Water: Not measured
	16. Date Hole Started 12/10/2004 Completed 12/11/2004
7. Thickness of Burden: 0.5 ft	17. Elevation Top of Hole: Not Surveyed (ft)
8. Thickness of cap rock: 5.0 ft	18. Total Core Recovery for hole: N/A
9. Depth of hole: 50 ft	19. Inspector: Cem Altuntas

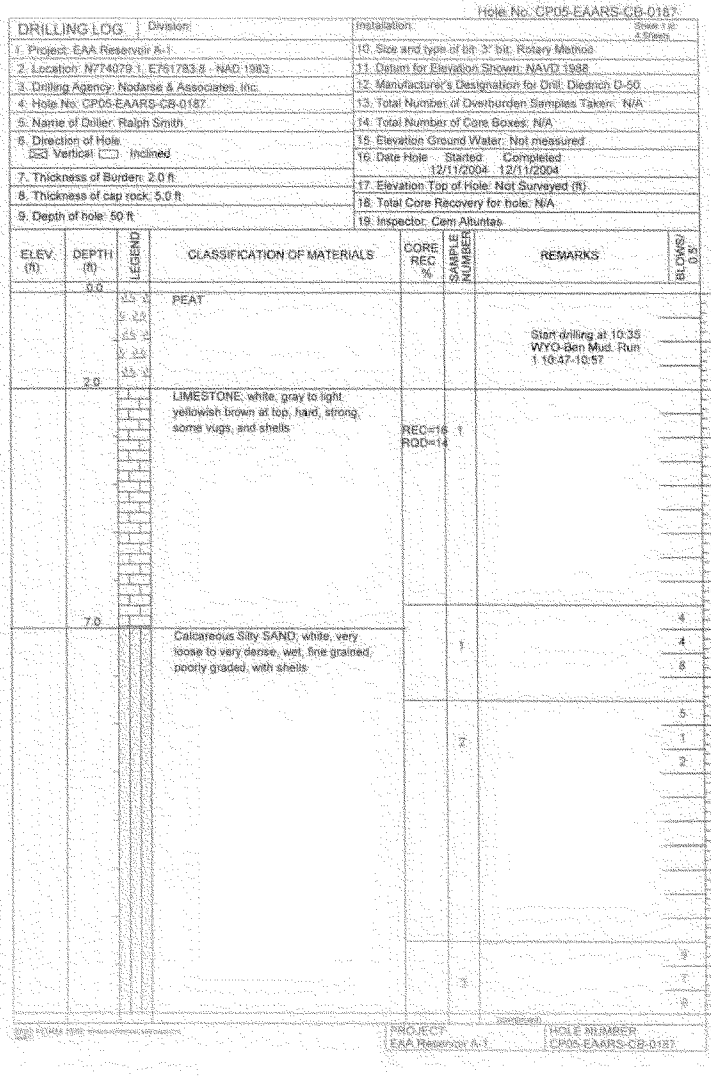
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/0.5'
	0.0						0
	0.5		PEAT: Dark brown				
			LIMESTONE: gray to yellowish gray, slightly weathered at the top and bottom, moderately weathered in the middle, hard, vuggy, 0.5 inch hole at the bottom			Drilled with hand sampler to 8" bgs. Core run start=3:55pm. Core run end=4:05pm (0.5'-5.5')	2
				REC=56 RQD=56	1		4
	5.5		Calcareous Gravelly SAND: white, very dense, wet, poorly graded, fine grained, subangular, limestone seams		1		13 50 8
	8.5		Calcareous Silty SAND: white to gray, very loose to medium dense, wet, poorly graded, fine to medium grained, subangular, limestone seams, some gravel		X		4 2 2
					X		5 10 8

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0186


Hole No. CPDS-EAARS-CB-0186
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
15.0
18.5
Calcareous Silty SAND; gray, medium dense, wet, poorly graded, fine grained, subangular, shell fragments
4
3
12
17
Moisture=26.2%, 20=23.3%
21.5
Color changes to white
5
13
11
9
Hit hard layer at 26.0' for 15" thick. Slow penetration rate.
28.5
Cemented Calcareous Gravelly SAND; gray, very dense, wet, poorly graded, medium grained subangular, shell fragments
6
8
50/5"
Continued with 30 more blow counts, after 50 blow counts-no penetration
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CPDS-EAARS-CB-0186


Hole No. CP05-EAARS-CB-0186
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
33.4
33.5
Silty SAND; gray, loose to dense, wet, poorly graded, fine grained, subrounded
7
9
15
23
34
36
38
38.5
same as above
8
12
22
20
40
42
43.5
Cemented sand particle 1.5" in diameter
9
10
14
13
44
46
48
48.5
Some gravel (cemented sand)
10
6
6
5
50.0
End of Boring at 50
NOTES
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0186


Hole No. CP05-EAARS-CB-0185
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
ST #
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 3.0" splitspoon (1 3/8" I.D., x 3" O.D.)
52
54
56
58
60
62
64
66
68
70
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0185



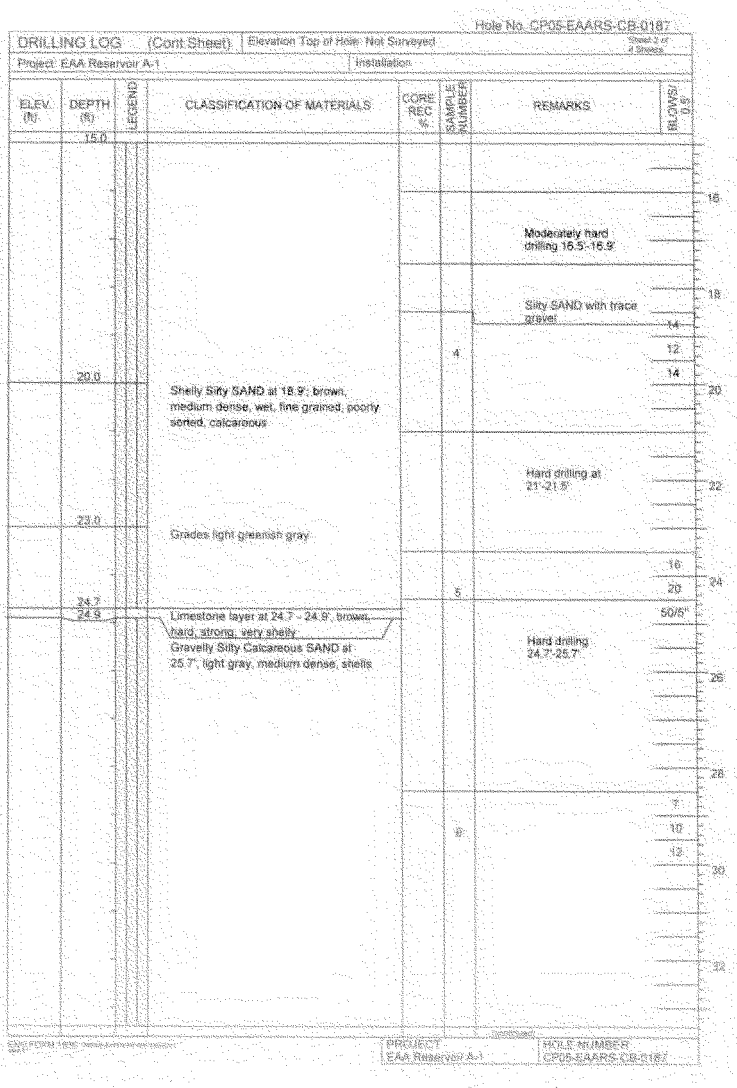
Hole No. CP05-EAARS-CB-0187

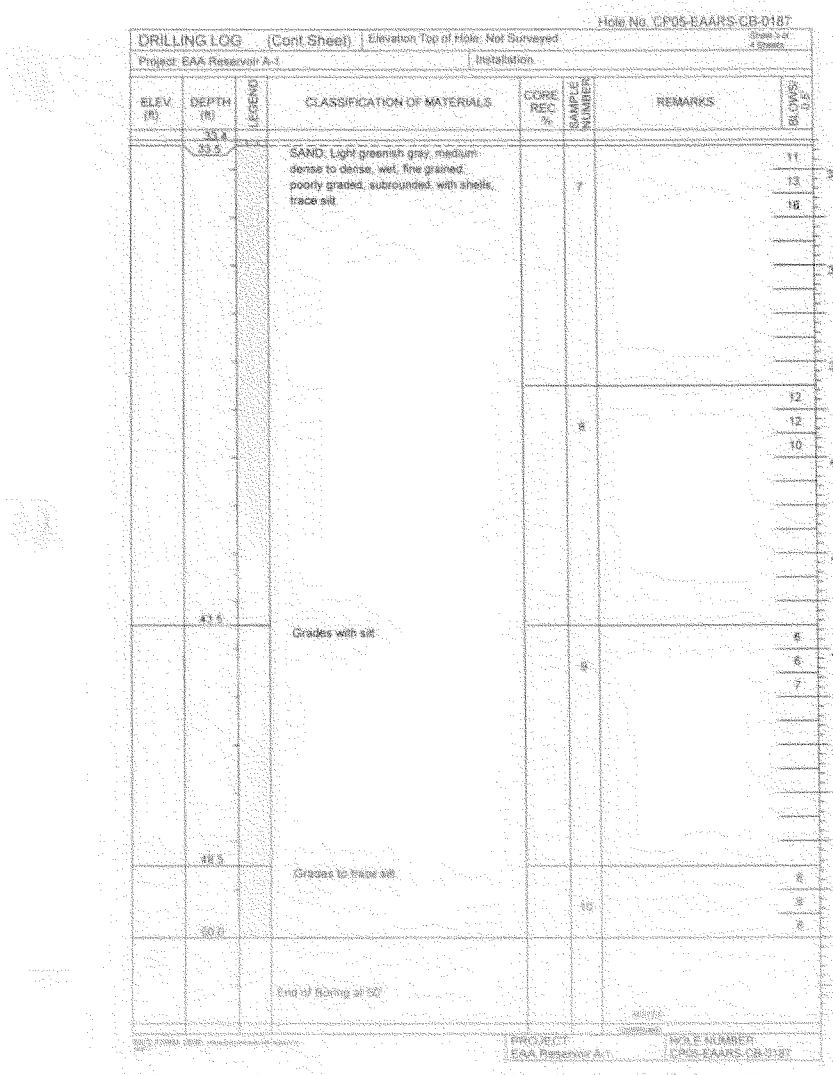
DRILLING LOG | Division: | Installation: | Sheet 1 of 4 Sheets

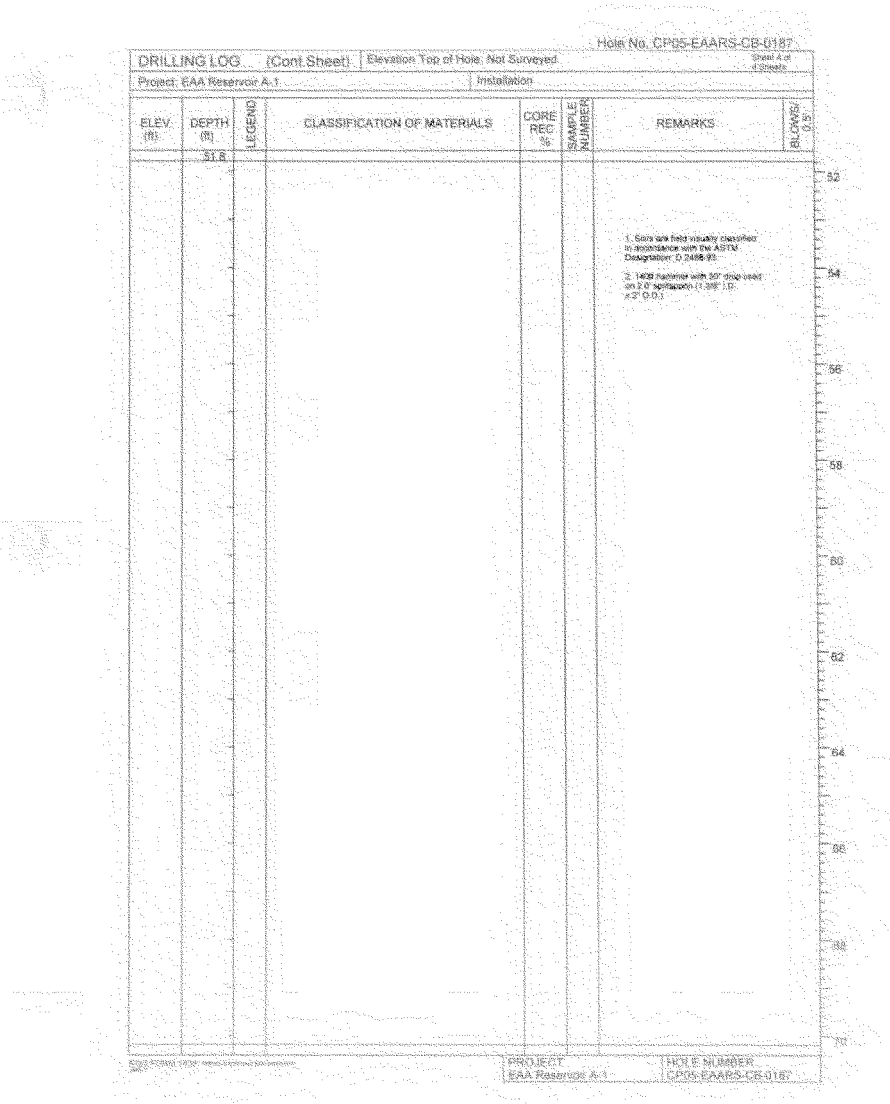
1. Project: EAA Reservoir A-1
2. Location: N774079.1, E761783.8 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0187
5. Name of Driller: Ralph Smith
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: 2.0 ft
8. Thickness of cap rock: 5.0 ft
9. Depth of hole: 50 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: N/A
15. Elevation Ground Water: Not measured
16. Date Hole Started 12/11/2004 Completed 12/11/2004
17. Elevation Top of Hole: Not Surveyed (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: Cem Altuntas

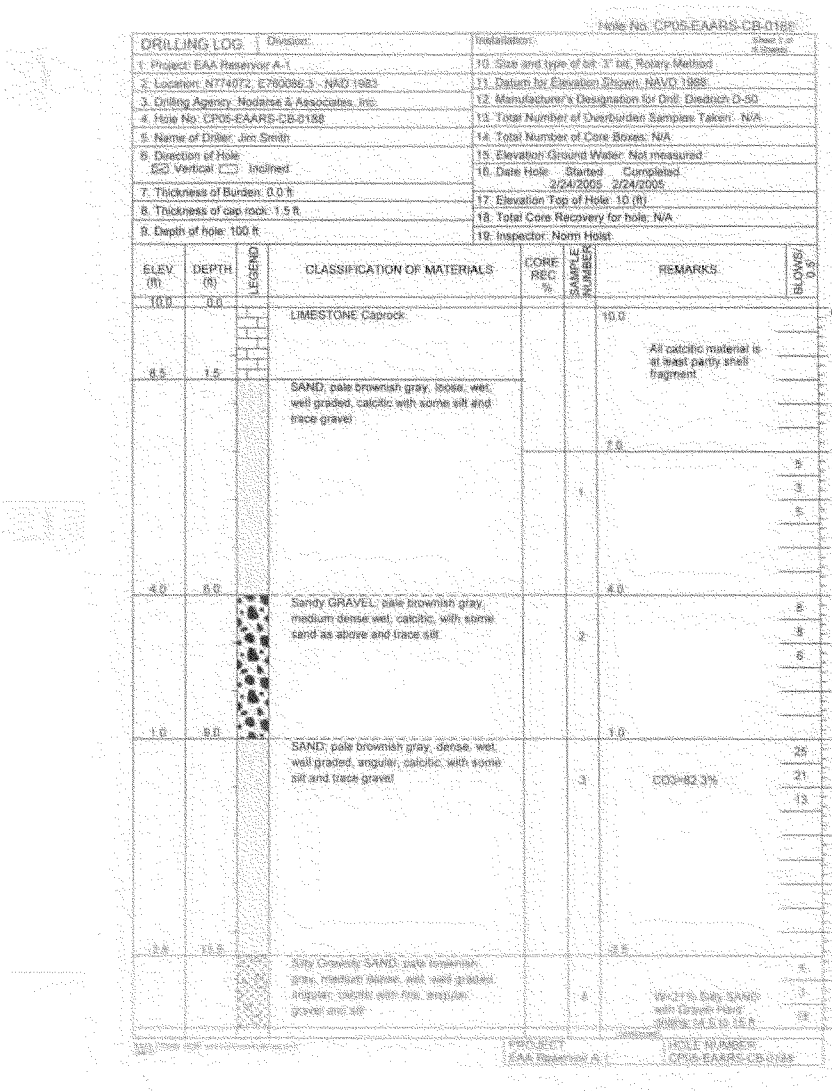
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
	0.0		PEAT			Start drilling at 10:35 WYO-Ben Mud. Run 1 10:47-10:57	0
	2.0		LIMESTONE, white, gray to light yellowish brown at top, hard, strong, some vugs, and shells	REC=16 RQD=14	1		2 4 6
	7.0		Calcareous Silty SAND, white, very loose to very dense, wet, fine grained, poorly graded, with shells		1		4 4 8 8
					2		5 7 2 10 12
					3		9 7 16

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0187


Hole No. CP05-EAARS-CB-0187
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/6"
15.0
20.0
23.0
24.7
24.9
Shelly Silty SAND at 18.9'; brown, medium dense, wet, fine grained, poorly sorted, calcareous
Grades light greenish gray
Limestone layer at 24.7' - 24.9', brown, hard, strong, very shelly
Gravelly Silty Calcareous SAND at 25.7', light gray, medium dense, shells
Moderately hard drilling 16.5'-18.9'
Silty SAND with trace gravel
Hard drilling at 21'-21.5'
Hard drilling 24.7'-25.7'
4
5
9
14
12
14
16
20
50/6"
3
10
12
16
18
20
22
24
26
28
30
32
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0187


Hole No. CP05-EAARS-CB-0187
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: Not Surveyed
Project: EAA Reservoir A-1 Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/0.5ft
33.4
33.5
SAND, Light greenish gray, medium dense to dense, wet, fine grained, poorly graded, subrounded, with shells, trace silt
41.5
Grades with silt
48.5
Grades to trace silt
50.0
End of Boring at 50'
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0187


Hole No. CP05-EAARS-CB-0187
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: Not Surveyed
Sheet 4 of 4 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC (in)
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
51.8
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.0" split spoon (1 3/8" I.D. x 2" O.D.)
52
54
56
58
60
62
64
66
68
70
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0187



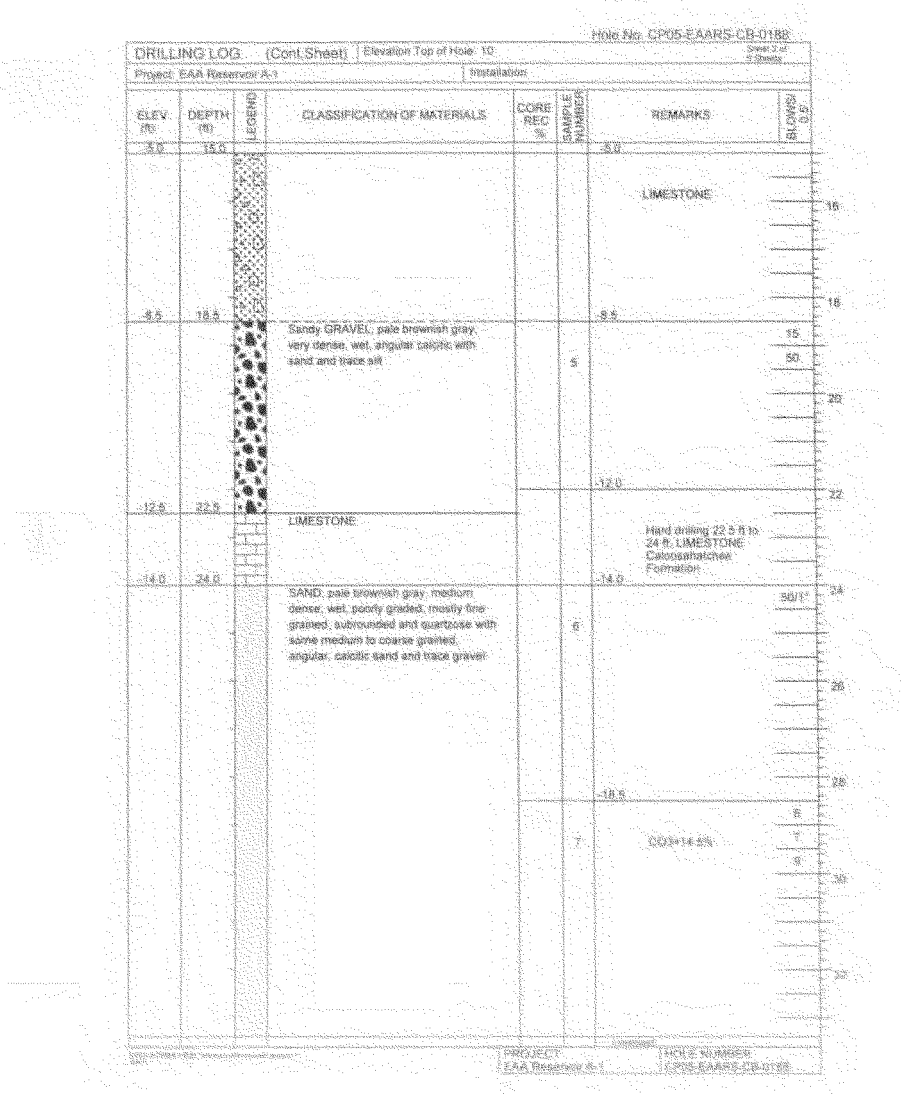
Hole No. CP05-EAARS-CB-0188

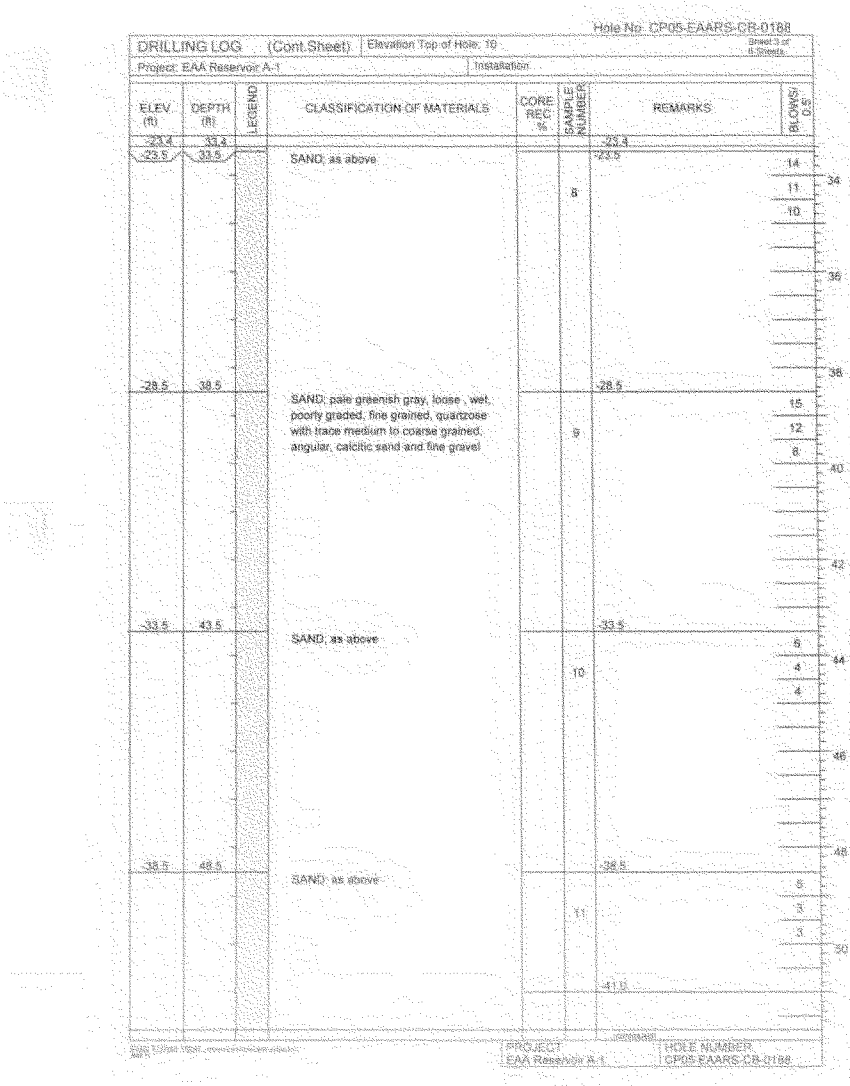
DRILLING LOG | Division: | Installation: | Sheet 1 of 4 Sheets

1. Project: EAA Reservoir A-1
2. Location: N774072, E780086.3 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0188
5. Name of Driller: Jim Smith
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: 0.0 ft
8. Thickness of cap rock: 1.5 ft
9. Depth of hole: 100 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: N/A
15. Elevation Ground Water: Not measured
16. Date Hole: Started 2/24/2005 Completed 2/24/2005
17. Elevation Top of Hole: 10 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: Norm Holst

ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
10.0	0.0		LIMESTONE Caprock			10.0	0
						All calcitic material is at least partly shell fragment	
8.5	1.5		SAND, pale brownish gray, loose, wet, well graded, calcitic with some silt and trace gravel				2
						7.5	3
					1		3
							4
4.0	6.0					4.0	5
			Sandy GRAVEL, pale brownish gray, medium dense wet, calcitic, with some sand as above and trace silt		2		5
							6
							8
1.0	9.0					1.0	
			SAND, pale brownish gray, dense, wet, well graded, angular, calcitic, with some silt and trace gravel		3	CCO=82.3%	25
							23
							10
							13
-3.5	13.5					-3.5	12
			Silty Gravelly SAND, pale brownish gray, medium dense, wet, well graded, angular, calcitic with fine, angular gravel and silt		4	Wt.21 lb Silty SAND with Gravel Hard drilling 54.5 to 55 ft	4
							3
							10
							14

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0188


Hole No. CP05-EAARS-CB-018B
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
-5.0
15.0
LIMESTONE
-8.5
18.5
Sandy GRAVEL, pale brownish gray, very dense, wet, angular calcitic with sand and trace silt
5
-12.0
22.0
LIMESTONE
Hard drilling 22.5 ft to 24 ft. LIMESTONE Caloosahatchee Formation
-14.0
24.0
SAND, pale brownish gray, medium dense, wet, poorly graded, mostly fine grained, subrounded and quartzose with some medium to coarse grained, angular, calcitic sand and trace gravel
6
50/1"
-18.5
28.5
7
CCS=14.5%
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-018B

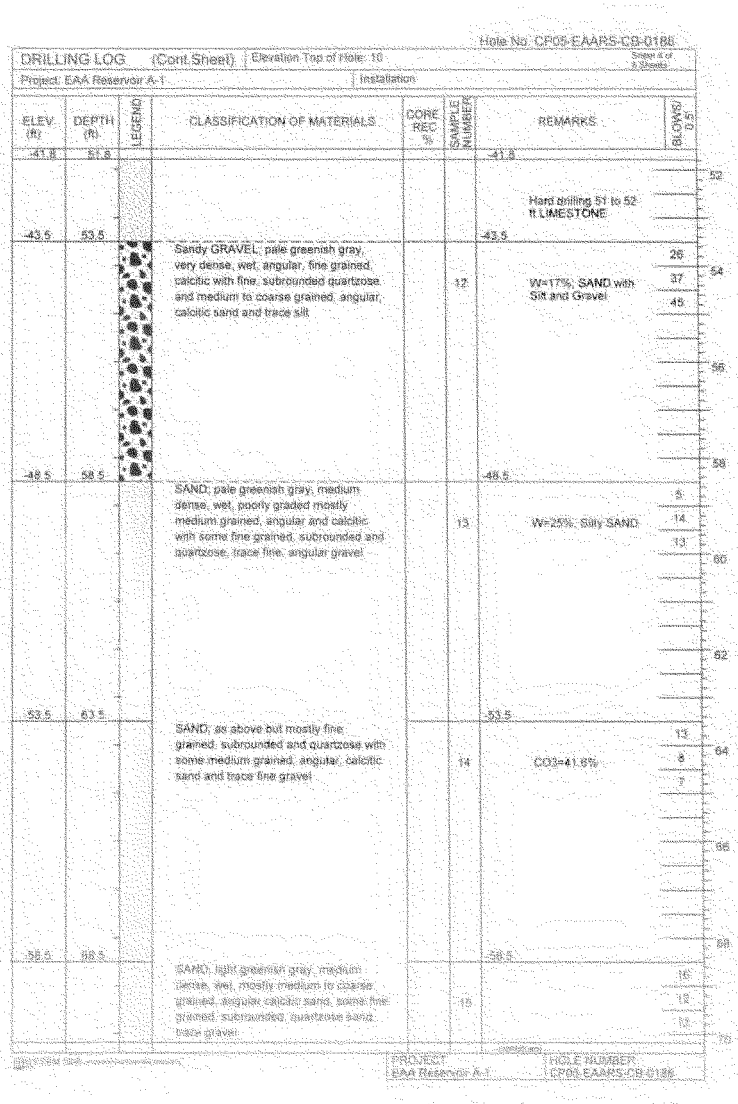

Hole No. CP05-EAARS-CB-0188

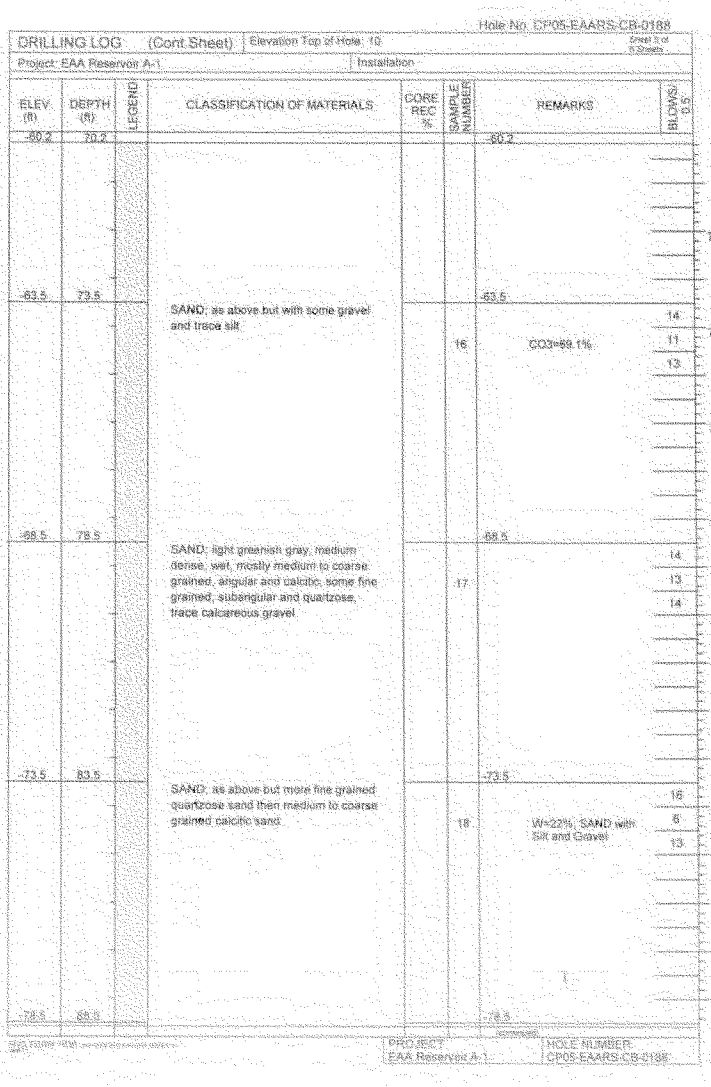
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: 19 Sheet 3 of 4 Sheets

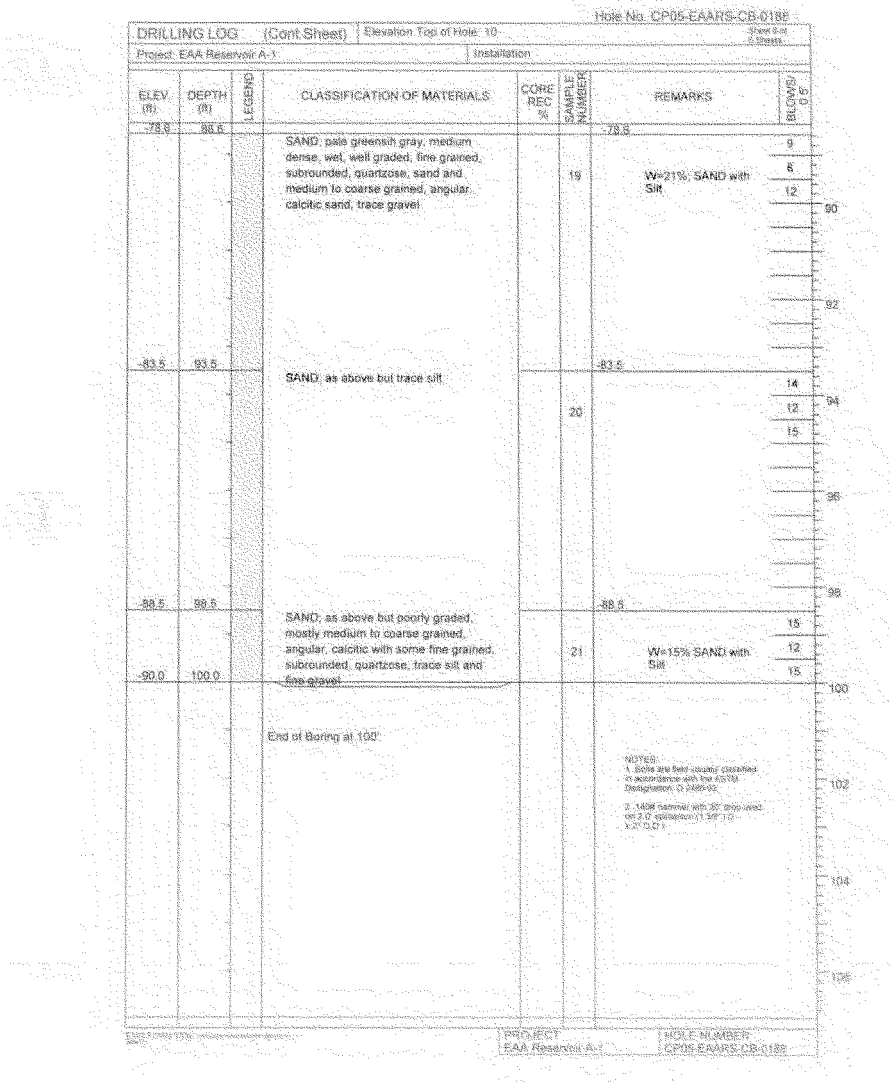
Project: EAA Reservoir A-1 Installation

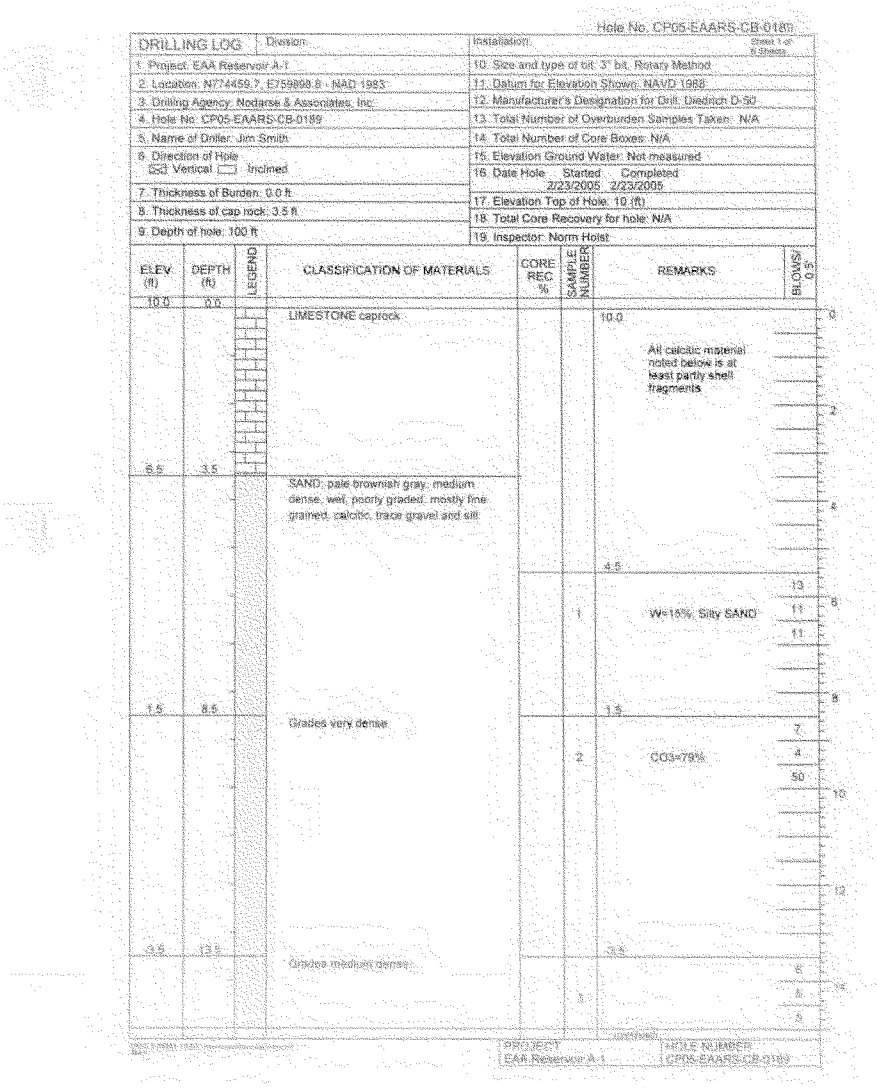
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5ft
-23.4	33.4					-23.4	
-23.5	33.5		SAND; as above			-23.5	14 11 10
					8		34
							36
-28.5	38.5					-28.5	38
			SAND; pale greenish gray, loose , wet, poorly graded, fine grained, quartzose with trace medium to coarse grained, angular, calcitic sand and fine gravel		9		15 12 8
							40
							42
-33.5	43.5					-33.5	
			SAND; as above		10		5 4 4
							44
							46
-38.5	48.5					-38.5	
			SAND; as above				5 3 3
					11		30
						-41.5	

PROJECT: EAA Reservoir A-1 HOLE NUMBER: CP05-EAARS-CB-0188


Hole No. CP05-EAARS-CB-0186
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 10
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5ft
-41.8
51.8
Hard drilling 51 to 52 ft LIMESTONE
52
-43.5
53.5
Sandy GRAVEL; pale greenish gray, very dense, wet, angular, fine grained, calcitic with fine, subrounded quartzose and medium to coarse grained, angular, calcitic sand and trace silt
12
W=17%; SAND with Silt and Gravel
26
37
45
54
56
58
-48.5
58.5
SAND; pale greenish gray, medium dense, wet, poorly graded mostly medium grained, angular and calcitic with some fine grained, subrounded and quartzose, trace fine, angular gravel
13
W=25%; Silty SAND
9
14
13
60
62
53.5
63.5
SAND, as above but mostly fine grained, subrounded and quartzose with some medium grained, angular, calcitic sand and trace fine gravel
14
CO3=41.6%
12
8
7
64
66
68
58.5
68.5
SAND; light greenish gray, medium dense, wet, mostly medium to coarse grained, angular calcitic sand, some fine grained, subrounded, quartzose sand, trace gravel
15
10
12
12
70
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0186


Hole No. CP05-EAARS-CB-0188
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-60.2
70.2
-63.5
73.5
SAND; as above but with some gravel and trace silt
16
CO3=89.1%
-68.5
78.5
SAND; light greenish gray, medium dense, wet, mostly medium to coarse grained, angular and calcitic, some fine grained, subangular and quartzose, trace calcareous gravel
17
-73.5
83.5
SAND; as above but more fine grained quartzose sand then medium to coarse grained calcitic sand
18
W=22%, SAND with Silt and Gravel
-78.5
88.5
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0188


Hole No. CP05-EAARS-CB-018E
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-78.5
98.5
SAND, pale greenish gray, medium dense, wet, well graded, fine grained, subrounded, quartzose, sand and medium to coarse grained, angular, calcitic sand, trace gravel
19
W=21%, SAND with Silt
9
8
12
90
92
-83.5
93.5
SAND, as above but trace silt
20
14
12
15
94
96
98
-88.5
98.5
SAND, as above but poorly graded, mostly medium to coarse grained, angular, calcitic with some fine grained, subrounded, quartzose, trace silt and fine gravel
21
W=15% SAND with Silt
15
12
15
-90.0
100.0
100
End of Boring at 100'
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.5" diameter (1 3/8" I.D. x 2" O.D.)
102
104
106
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-018E

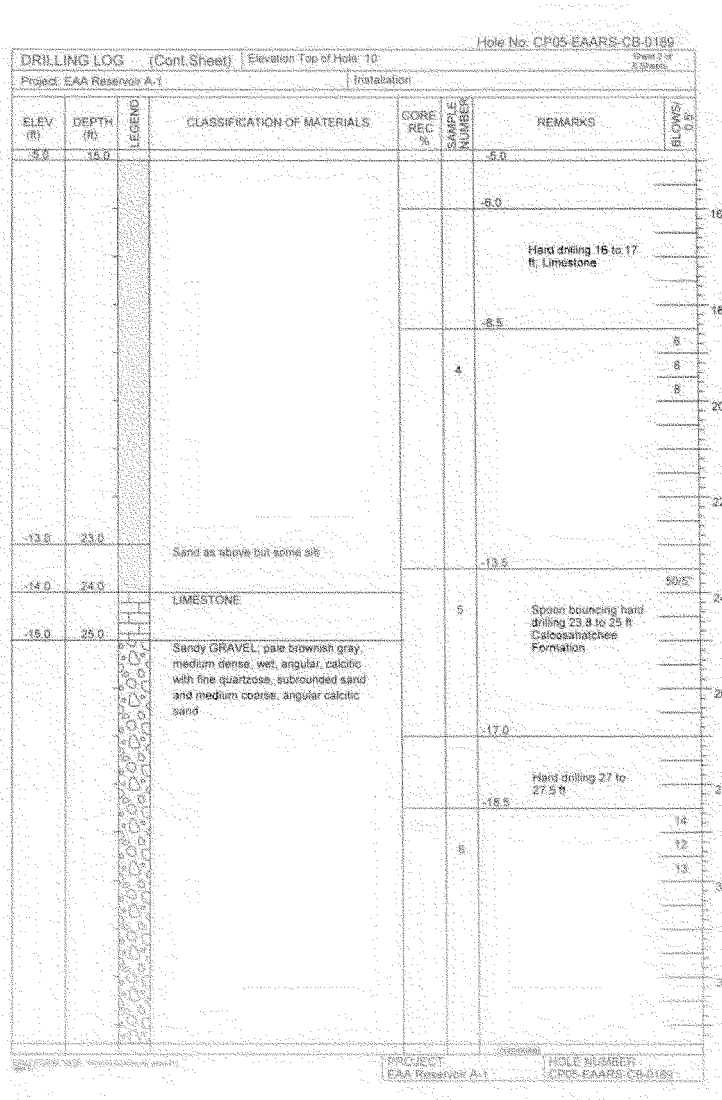


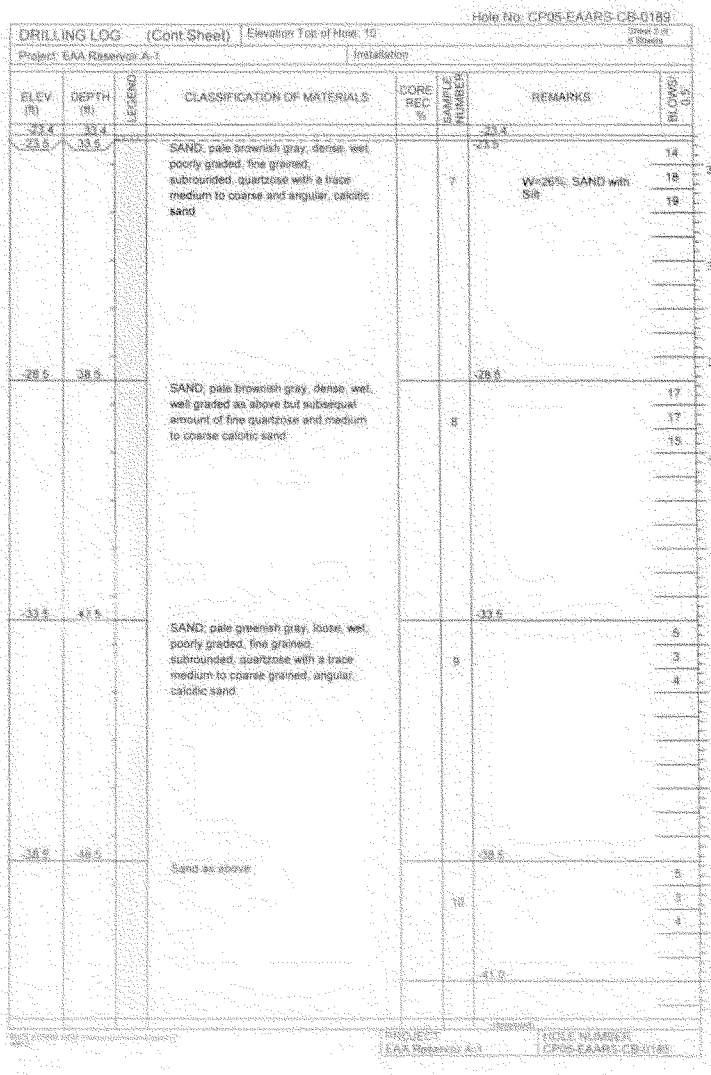
DRILLING LOG | Division: | Installation: | Hole No. CP05-EAARS-CB-0189 | Sheet 1 of 5 Sheets

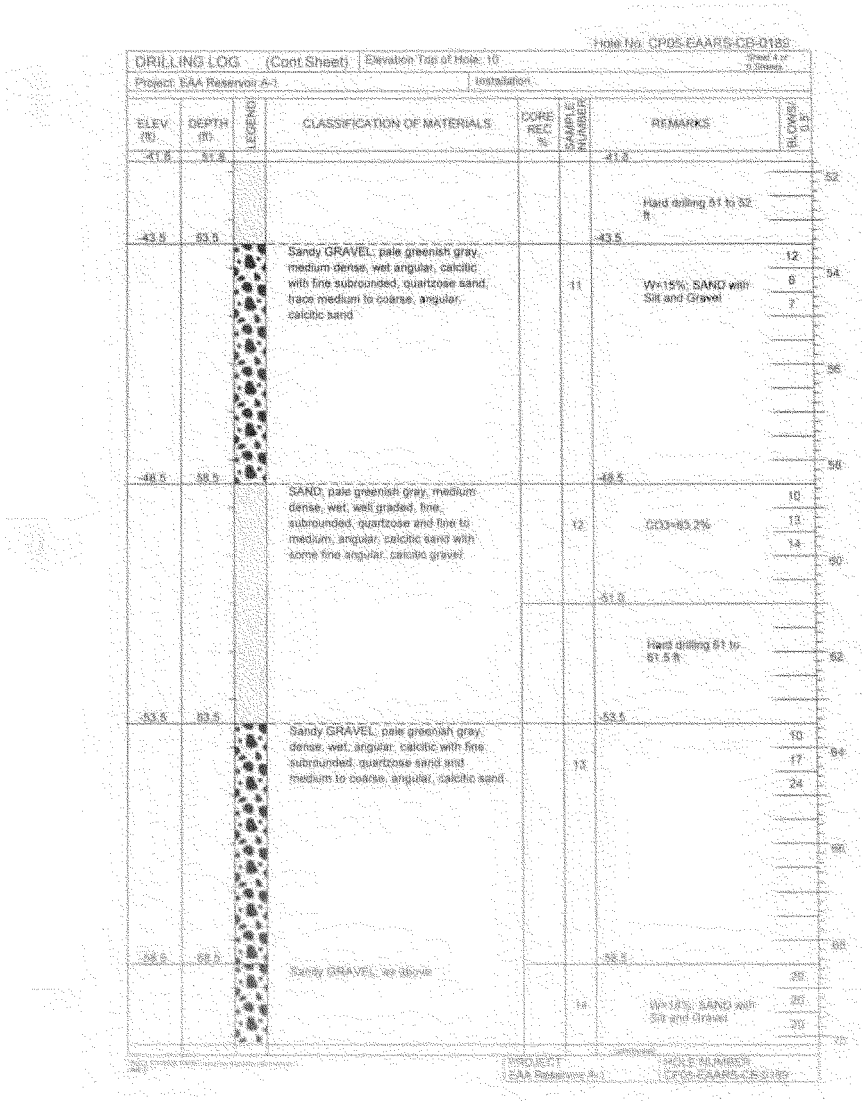
1. Project: EAA Reservoir A-1
2. Location: N774459.7, E755898.8 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0189
5. Name of Driller: Jim Smith
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: 0.0 ft.
8. Thickness of cap rock: 3.5 ft.
9. Depth of hole: 100 ft.
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: N/A
15. Elevation Ground Water: Not measured
16. Date Hole: Started 2/23/2005 Completed 2/23/2005
17. Elevation Top of Hole: 10 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: Norm Holst

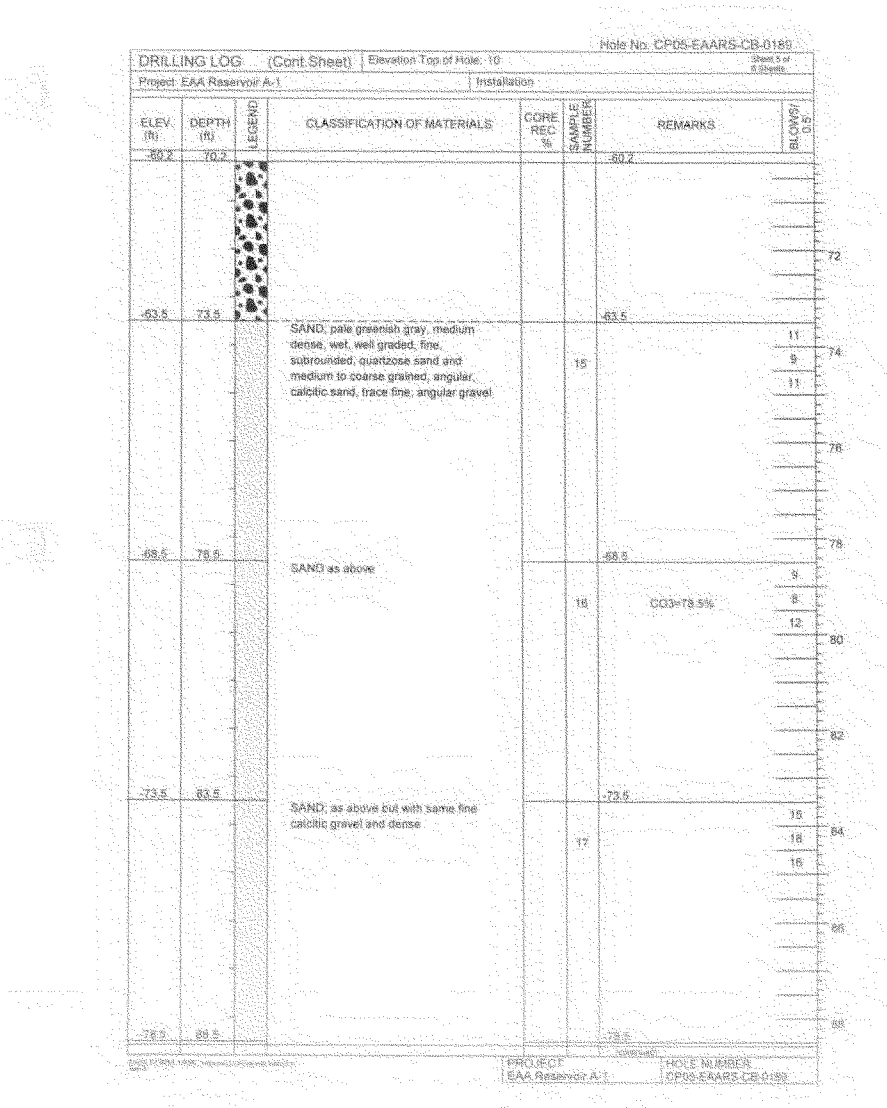
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
10.0	0.0		LIMESTONE caprock			10.0 All calcitic material noted below is at least partly shell fragments	0
6.5	3.5		SAND, pale brownish gray, medium dense, wet, poorly graded, mostly fine grained, calcitic, trace gravel and silt			4.5	2 4
1.5	8.5		Grades very dense		1	W=15%, Silty SAND 1.5	13 11 11 8
-3.5	13.5		Grades medium dense		2	CO3=79% -3.5	7 4 50 10 12
					3		6 8 14

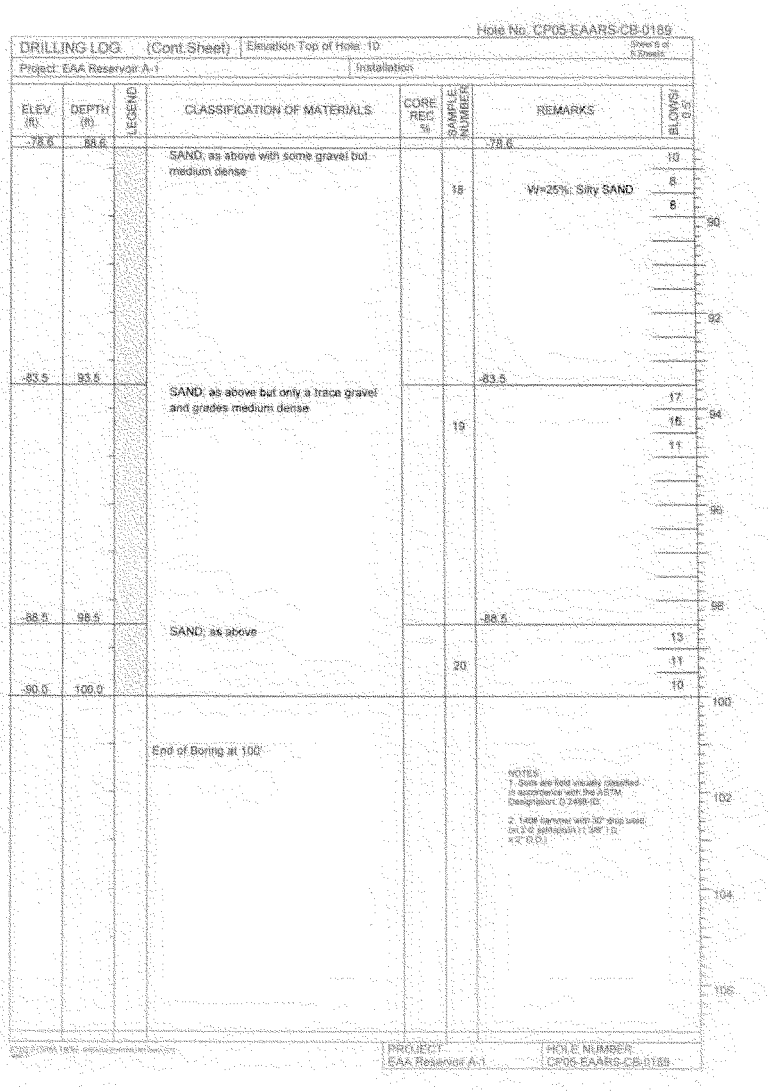
PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0189

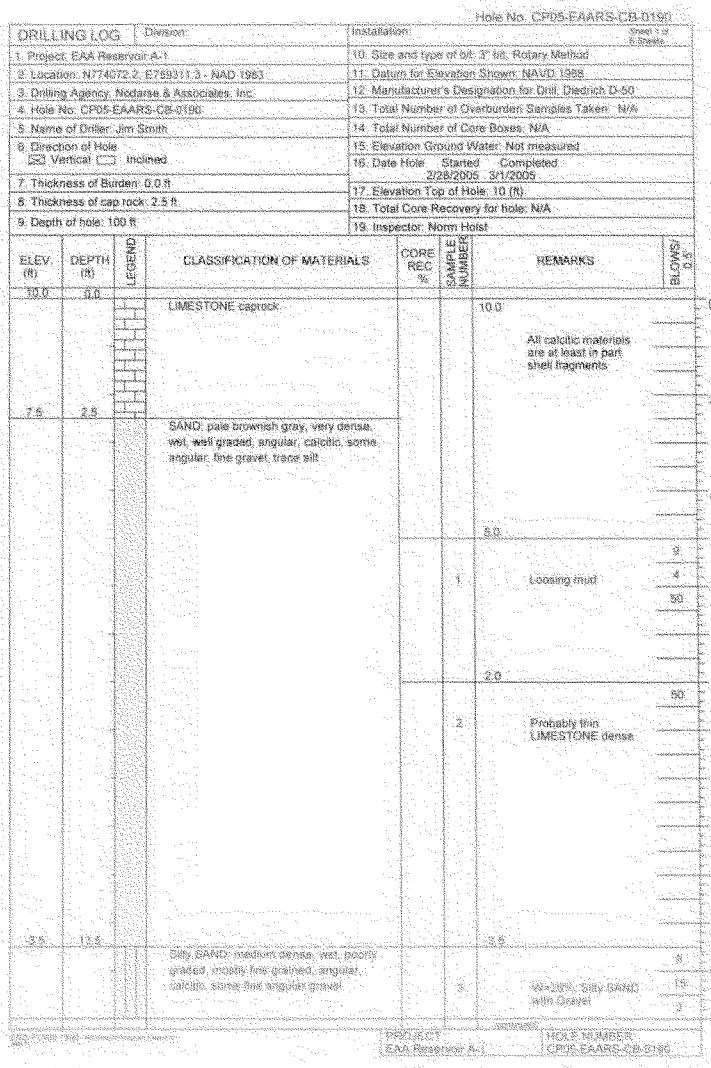

Hole No. CP05-EAARS-CB-0189
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 10
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS / 0.5'
5.0
15.0
-8.0
Hard drilling 16 to 17 ft, Limestone
-8.5
4
8
8
8
-13.0
23.0
Sand as above but some silt
-13.5
-14.0
24.0
LIMESTONE
50/5"
5
Spoon bouncing hard drilling 23.8 to 25 ft Caloosahatchee Formation
-15.0
25.0
Sandy GRAVEL, pale brownish gray, medium dense, wet, angular, calcitic with fine quartzose, subrounded sand and medium coarse, angular calcitic sand
-17.0
Hard drilling 27 to 27.5 ft
-18.5
6
14
12
13
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0189


Hole No. CP05-EAARS-CB-0189
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
33.5
33.5
SAND; pale brownish gray, dense, wet, poorly graded, fine grained, subrounded, quartzose with a trace medium to coarse and angular, calcitic sand
7
W=26%, SAND with Silt
14
18
19
34
35
38
38.5
SAND; pale brownish gray, dense, wet, well graded as above but subequal amount of fine quartzose and medium to coarse calcitic sand
8
17
17
15
40
42
41.5
SAND; pale greenish gray, loose, wet, poorly graded, fine grained, subrounded, quartzose with a trace medium to coarse grained, angular calcitic sand
9
5
3
4
44
46
48
46.5
Sand as above
10
5
5
4
50
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0189


Hole No. CPDS-EAARS-CB-0183
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/0.5 ft
Hard drilling 51 to 52 ft
Sandy GRAVEL; pale greenish gray, medium dense, wet angular, calcitic with fine subrounded, quartzose sand, trace medium to coarse, angular, calcitic sand
W=15%; SAND with Silt and Gravel
SAND; pale greenish gray, medium dense, wet, well graded, fine, subrounded, quartzose and fine to medium, angular, calcitic sand with some fine angular, calcitic gravel
GD3=65.2%
Hard drilling 61 to 61.5 ft
Sandy GRAVEL; pale greenish gray, dense, wet, angular, calcitic with fine subrounded, quartzose sand and medium to coarse, angular, calcitic sand
Sandy GRAVEL, as above
W=13%; SAND with Silt and Gravel
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CPDS-EAARS-CB-0183


Hole No. CPD5-EAARS-CB-0180
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10
Sheet 5 of 8 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-60.2
70.2
-63.5
73.5
SAND, pale greenish gray, medium dense, wet, well graded, fine, subrounded, quartzose sand and medium to coarse grained, angular, calcitic sand, trace fine, angular gravel
15
-68.5
78.5
SAND as above
18
CO3=78.5%
-73.5
83.5
SAND, as above cut with some fine calcitic gravel and dense
17
-78.5
88.5
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CPD5-EAARS-CB-0180


Hole No. CP05-EAARS-CB-0189
DRILLING LOG (Cont.Sheet) Elevation Top of Hole 10
Project EAA Reservoir A-1 Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
78.6
88.6
SAND, as above with some gravel but medium dense
18
W=25%; Silty SAND
10
8
8
90
92
83.5
93.5
SAND, as above but only a trace gravel and grades medium dense
19
83.5
17
15
11
94
96
88.5
98.5
SAND, as above
20
88.5
13
11
10
90.0
100.0
100
End of Boring at 100'
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-00
2. 140# hammer with 30" drop used on 2-0 samples (1 3/8" I.D. x 2" O.D.)
102
104
106
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0189

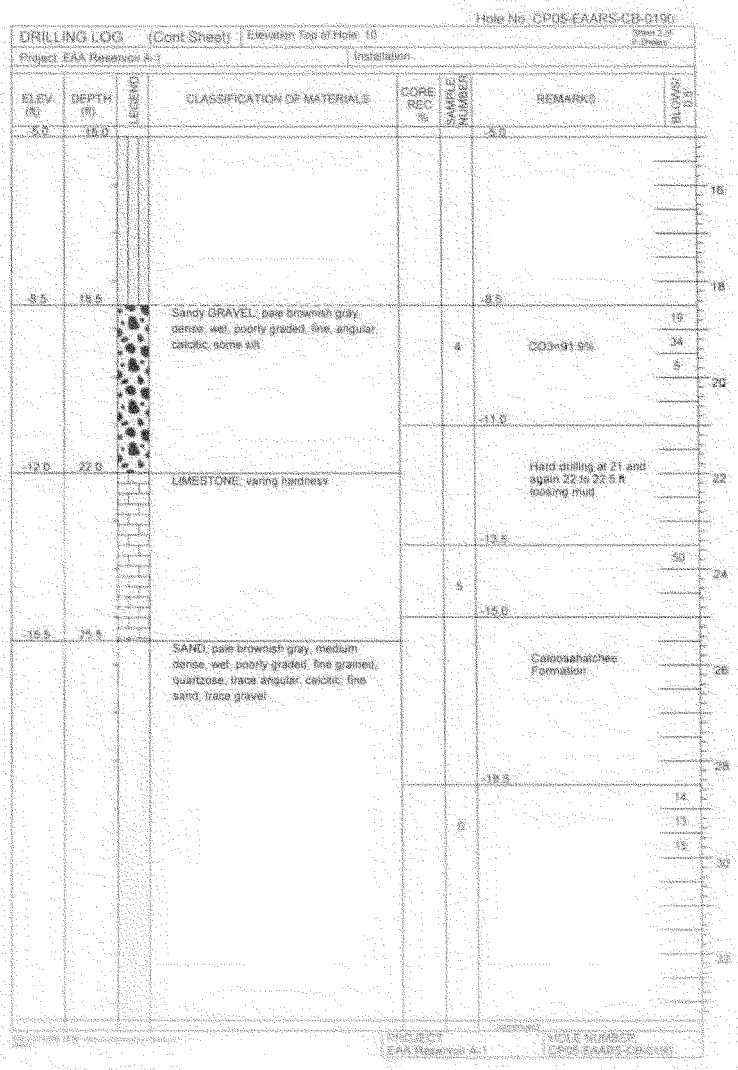


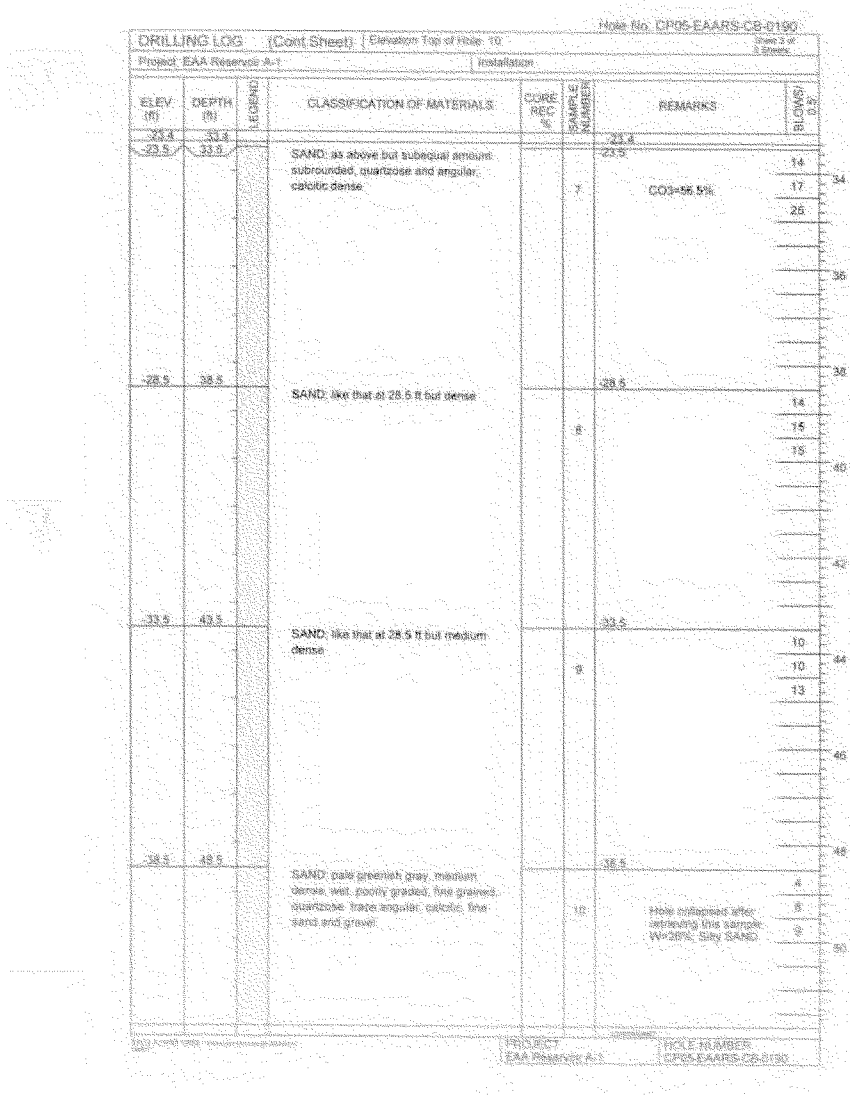
Hole No. CP05-EAARS-CB-0190

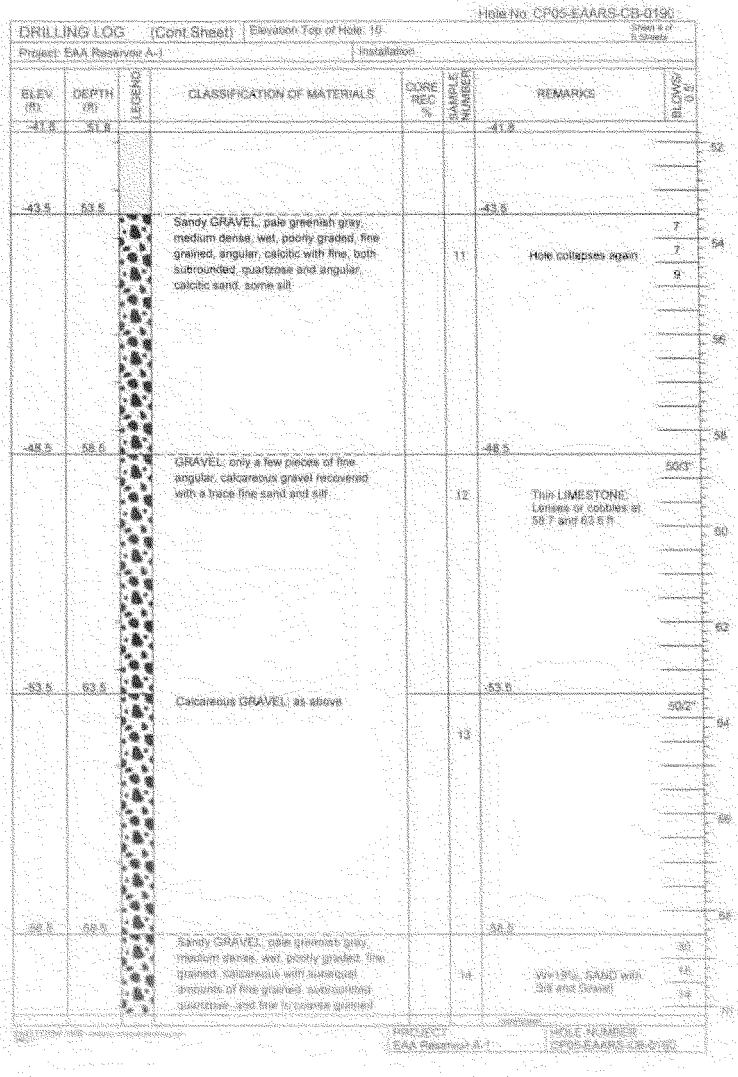
ORILLING LOG	Division:	Installation:	Sheet 1 of 6 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" tri. Rotary Method	
2. Location: N774072.2, E759311.3 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No. CP05-EAARS-CB-0190		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Jim Smith		14. Total Number of Core Boxes: N/A	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 2/28/2005 Completed 3/1/2005	
7. Thickness of Burden: 0.0 ft		17. Elevation Top of Hole: 10 (ft)	
8. Thickness of cap rock: 2.5 ft		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 100 ft		19. Inspector: Norm Hoist	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
10.0	0.0		LIMESTONE caprock			10.0 All calcitic materials are at least in part shell fragments	0
7.5	2.5		SAND: pale brownish gray, very dense, wet, well graded, angular, calcitic, some angular, fine gravel, trace silt			5.0	2 4
					1	Loosing mud 2.0	9 4 50/5
					2	Probably thin LIMESTONE dense 3.5	50/5 8 10 12
3.5	13.5		Silty SAND: medium dense, wet, poorly graded, mostly fine grained, angular, calcitic, some fine angular gravel		3	Washed, Silty SAND with Gravel	8 15 18

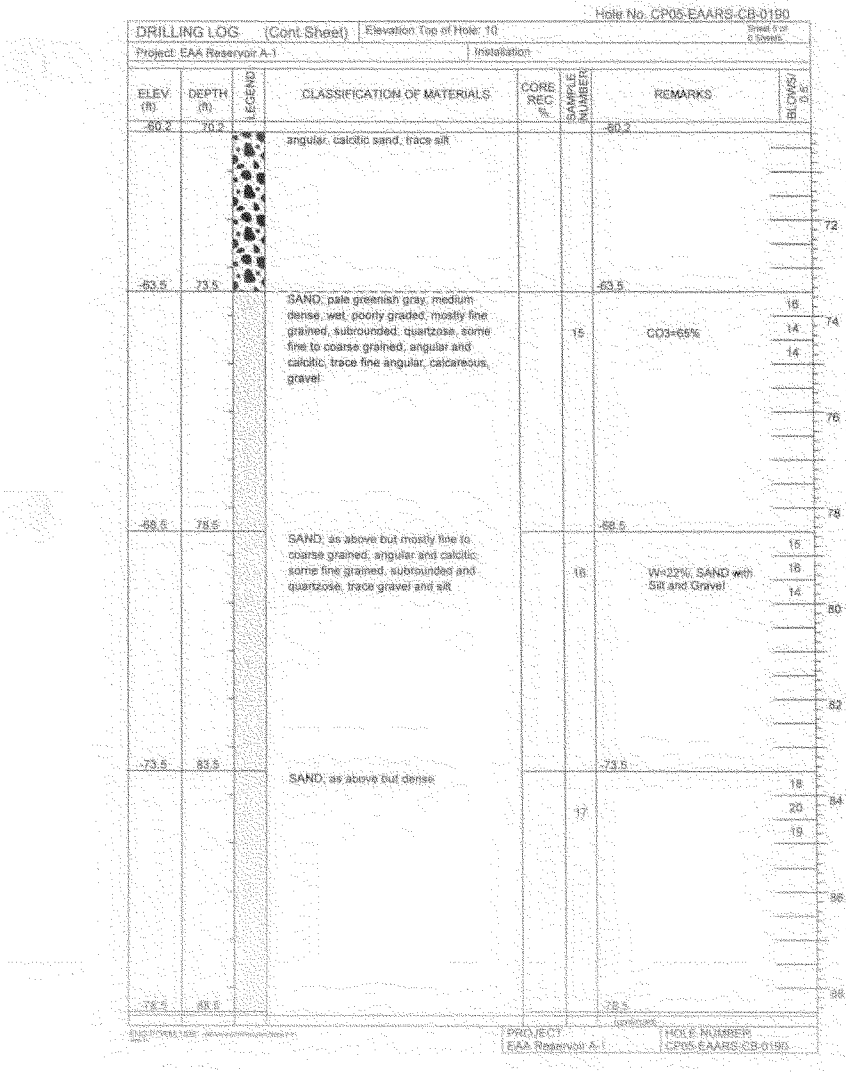
PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0190

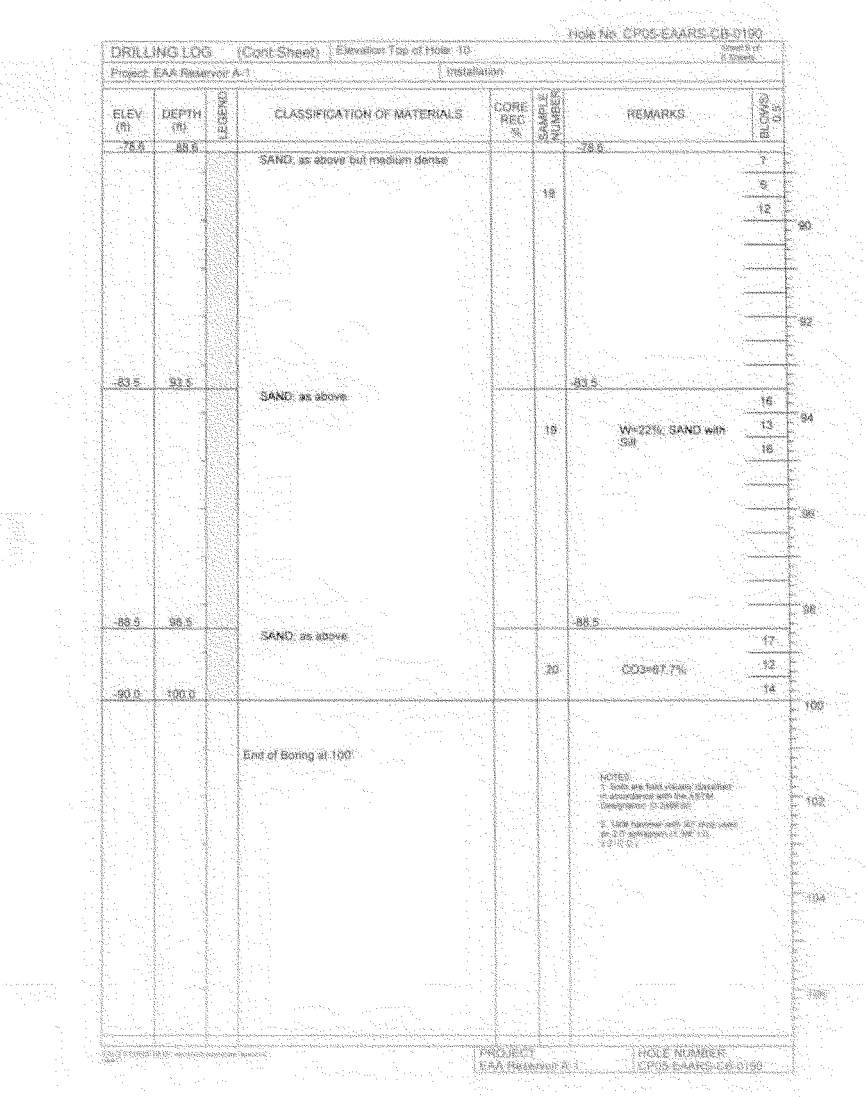

Hole No. CP05-EAARS-CB-0190
DRILLING LOG (Cont Sheet) Elevation Top of Hole 10
Project EAA Reservoir A-1 Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
10.0
8.5
18.5
Sandy GRAVEL; pale brownish gray, dense, wet, poorly graded, fine, angular, calcitic, some silt
CO3=91.9%
-11.0
-12.0
22.0
LIMESTONE; varing hardness
Hard drilling at 21 and again 22 to 22.5 ft loosing mud
-13.5
-15.0
-15.5
24.5
SAND; pale brownish gray, medium dense, wet, poorly graded, fine grained, quartzose, trace angular, calcitic, fine sand, trace gravel
Canoncahanchez Formation
-19.5
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0190

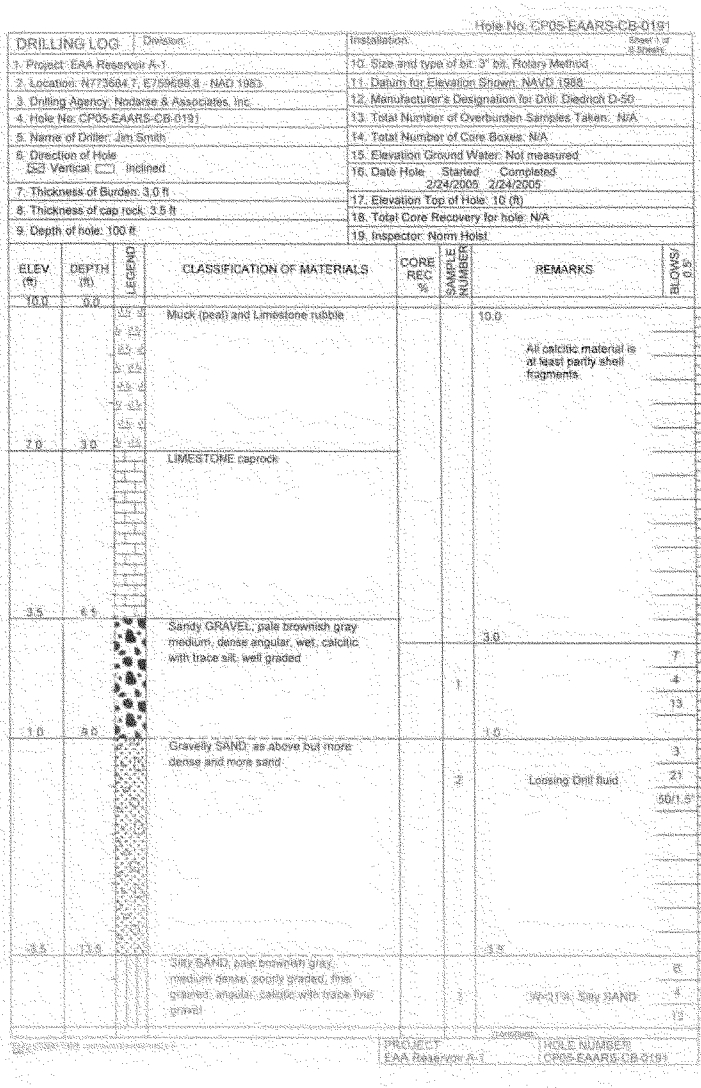

Hole No. CP05-EAARS-CB-0190
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 10
Sheet 3 of 3 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
23.5
33.5
SAND: as above but subequal amount subrounded, quartzose and angular, calcitic dense
23.5
CO3=56.5%
14
17
25
34
36
28.5
38.5
SAND: like that at 28.5 ft but dense
28.5
14
15
15
40
42
33.5
43.5
SAND: like that at 28.5 ft but medium dense
33.5
10
10
13
44
46
38.5
48.5
SAND: pale greenish gray, medium dense, wet, poorly graded, fine grained, quartzose, trace angular, calcitic, fine sand and gravel
38.5
4
5
9
48
50
How stopped after retrieving this sample W=28%, Silty SAND
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0190


Hole No. CP05-EAARS-CB-019C
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10
Sheet 4 of 5 Sheets
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-41.8
41.8
-43.5
53.5
Sandy GRAVEL, pale greenish gray, medium dense, wet, poorly graded, fine grained, angular, calcitic with fine, both subrounded, quartzose and angular, calcitic sand, some silt
11
Hole collapses again
7
7
9
52
54
56
58
-48.5
58.5
GRAVEL, only a few pieces of fine angular, calcareous gravel recovered with a trace fine sand and silt
12
Thin LIMESTONE Lenses or cobbles at 58.7 and 63.5 ft
50/3"
60
62
-53.5
63.5
Calcareous GRAVEL, as above
13
50/2"
64
66
68
-68.5
Sandy GRAVEL, pale greenish gray, medium dense, wet, poorly graded, fine grained, calcareous with subangular pebbles of fine grained, subrounded quartzose, and fine to coarse grained
14
WH/3%, SAND with Silt and Gravel
30
41
14
71
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-019C

171


Hole No. CP05-EAARS-CB-0190
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5ft
-60.2
70.2
angular, calcitic sand, trace silt
-63.5
73.5
SAND, pale greenish gray, medium dense, wet, poorly graded, mostly fine grained, subrounded, quantzose, some fine to coarse grained, angular and calcitic, trace fine angular, calcareous gravel
15
CO3=65%
18
14
14
-68.5
78.5
SAND, as above but mostly fine to coarse grained, angular and calcitic, some fine grained, subrounded and quantzose, trace gravel and silt
16
W=22%, SAND with Silt and Gravel
15
18
14
-73.5
83.5
SAND, as above but dense
17
18
20
19
-78.5
88.5
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0190
72
74
76
78
80
82
84
86
88


Hole No. CP05-EAARS-CB-0190
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 10
Project: EAA Reservoir A-1 Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. (%)
SAMPLE NUMBER
REMARKS
BLOWS/0.5ft
-78.5
88.5
SAND, as above but medium dense
18
78.5
7
8
12
90
92
-83.5
93.5
SAND, as above
83.5
16
13
18
19
W=22%, SAND with Silt
94
96
98
-88.5
98.5
SAND, as above
88.5
17
12
14
20
CO3=67.7%
-90.0
100.0
100
End of Boring at 100'
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-00
2. Use hammer with 30" drop used on 2.5" splitspoon (1 3/8" I.D., 2.0" O.D.)
102
104
106
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0190



Hole No. CP05-EAARS-CB-019

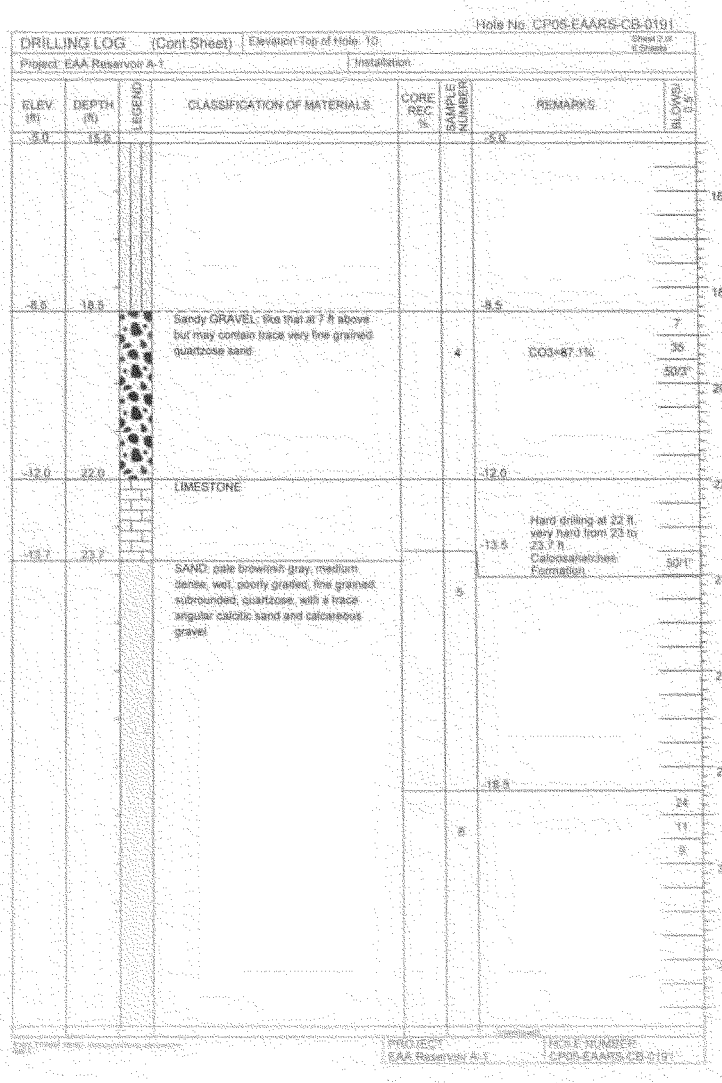
DRILLING LOG — Division: — Installation: — Sheet 1 of 3 Sheets

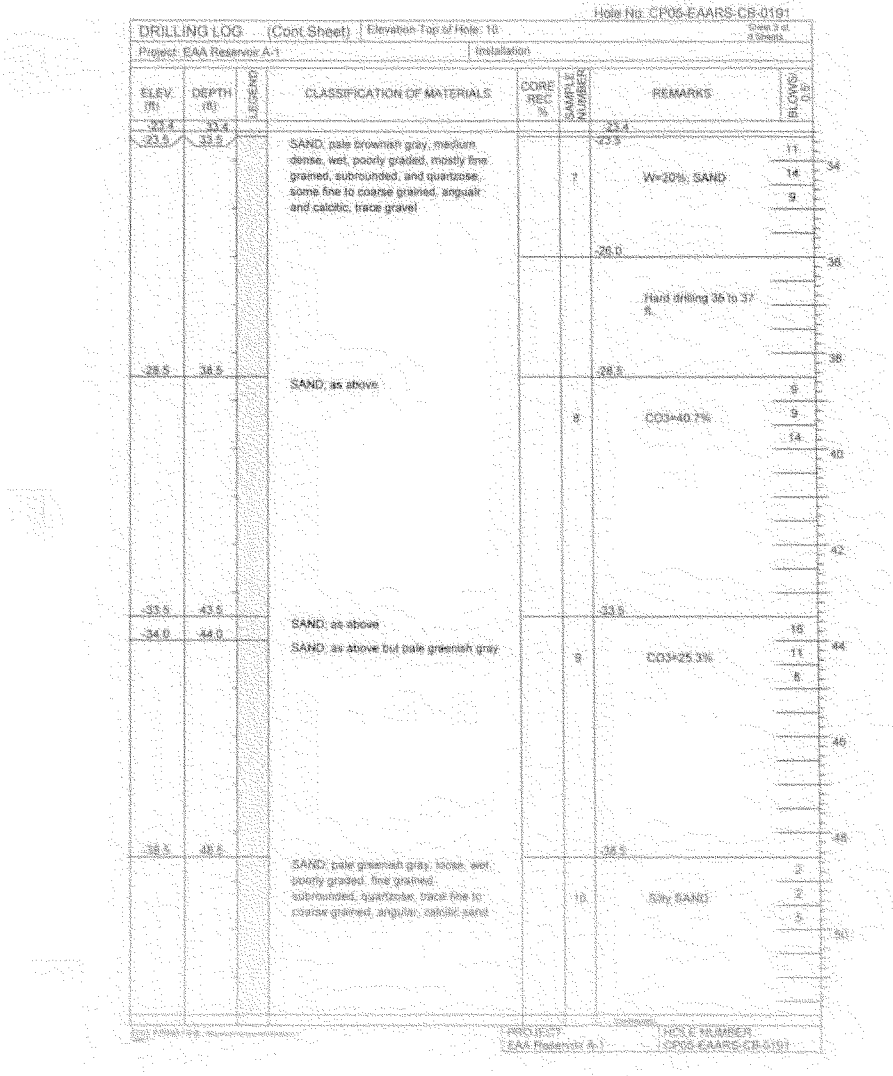
1. Project: EAA Reservoir A-1	10. Size and type of bit: 3" bit, Rotary Method
2. Location: N773684.7, E759698.8 - NAD 1983	11. Datum for Elevation Shown: NAVD 1988
3. Drilling Agency: Nodarse & Associates, Inc.	12. Manufacturer's Designation for Drill: Diedrich D-50
4. Hole No: CP05-EAARS-CB-019	13. Total Number of Overburden Samples Taken: N/A
5. Name of Driller: Jim Smith	14. Total Number of Core Boxes: N/A
6. Direction of Hole ☒ Vertical ☐ Inclined	15. Elevation Ground Water: Not measured
	16. Date Hole Started 2/24/2005 Completed 2/24/2005
7. Thickness of Burden: 3.0 ft	17. Elevation Top of Hole: 10 (ft)
8. Thickness of cap rock: 3.5 ft	18. Total Core Recovery for hole: N/A
9. Depth of hole: 100 ft	19. Inspector: Norm Holst

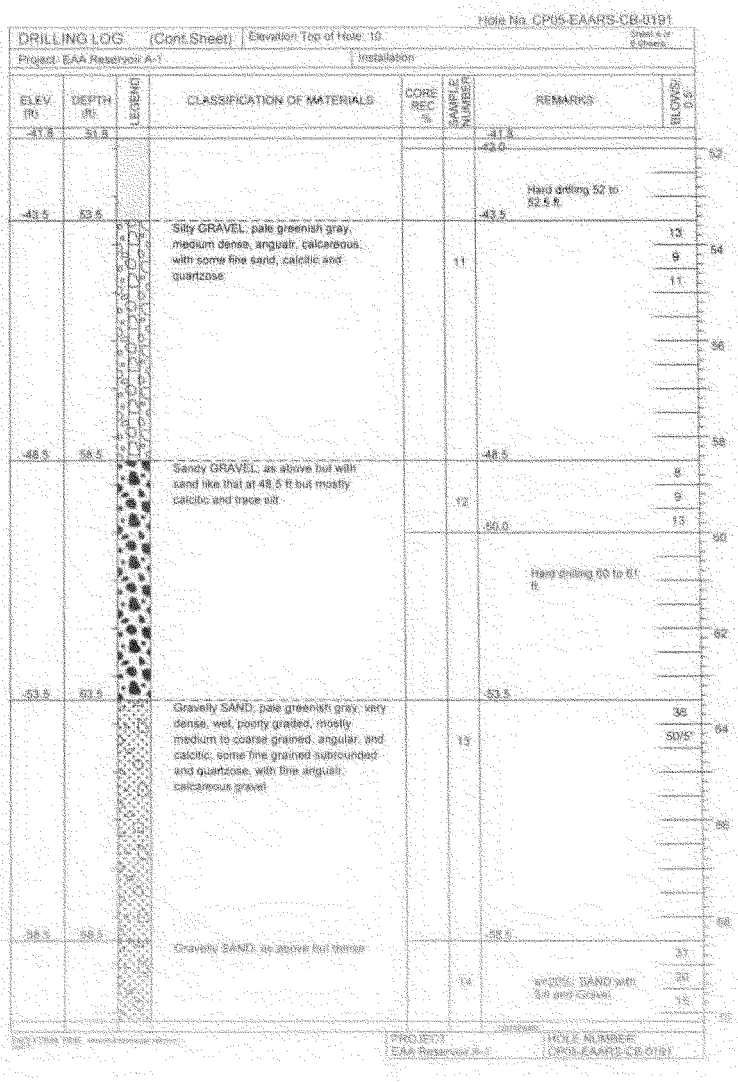
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5
10.0	0.0		Muck (peat) and Limestone rubble			10.0 All calcitic material is at least partly shell fragments	0 2 4 6
7.0	3.0		LIMESTONE caprock				
3.5	6.5		Sandy GRAVEL, pale brownish gray, medium, dense angular, wet, calcitic with trace silt, well graded		1	3.0	7 4 13
1.0	9.0		Gravelly SAND, as above but more dense and more sand		2	1.0 Loosing Drill fluid	3 21 50/1.5"
-3.5	13.5		Silty SAND, pale brownish gray, medium dense, poorly graded, fine grained, angular, calcitic with trace fine gravel		3	3.5 WOH, Silty SAND	6 4 15

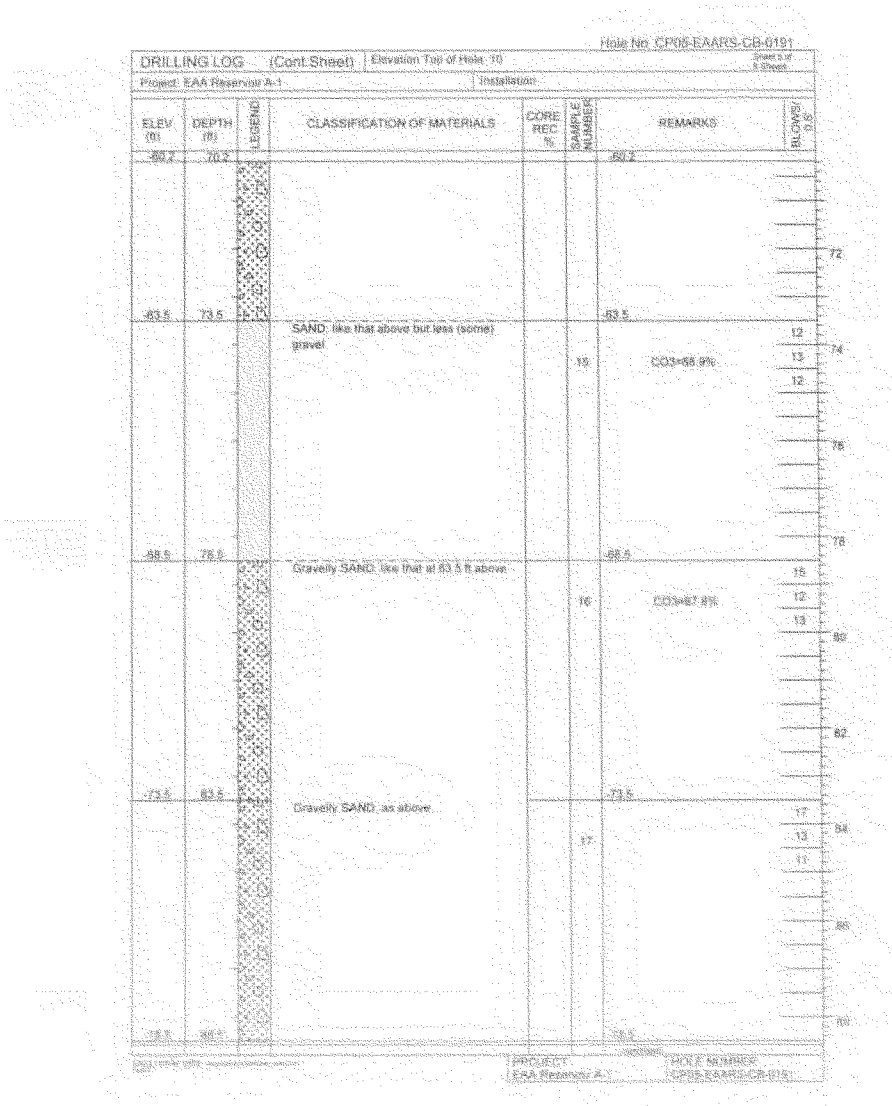
PROJECT: EAA Reservoir A-1 — HOLE NUMBER: CP05-EAARS-CB-019

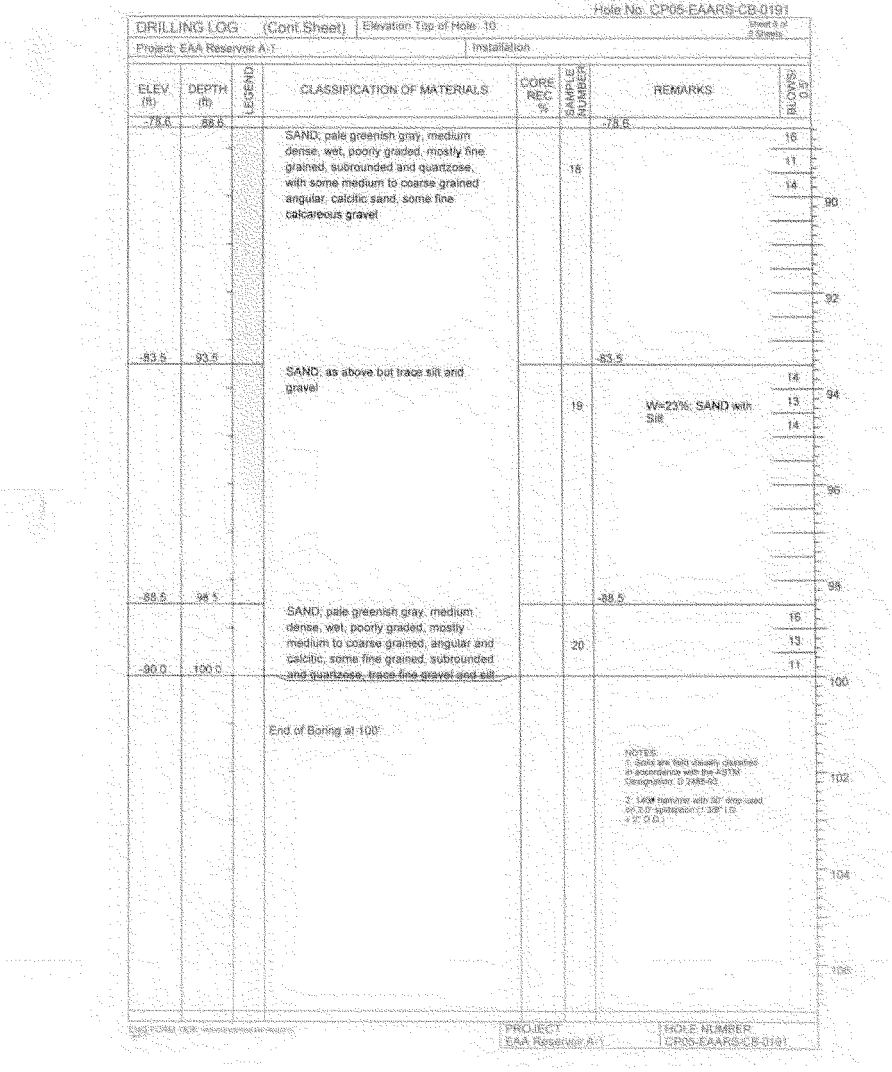
174


Hole No. CP05-EAARS-CB-019I
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/6"
-2.0
18.5
-8.5
18.5
Sandy GRAVEL: like that at 7 ft above but may contain trace very fine grained quartzose sand
4
CO3=87.1%
7
35
50/3"
-12.0
22.0
LIMESTONE
-13.5
23.7
Hard drilling at 22 ft, very hard from 23 to 23.7 ft
Caloosahatchee Formation
50/1"
SAND: pale brownish gray, medium dense, wet, poorly grafted, fine grained, subrounded, quartzose, with a trace angular calcitic sand and calcareous gravel
5
-18.5
6
24
11
9
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-019I


Hole No. CP05-EAARS-CB-0191
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: 18
Sheet 3 of 4 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-23.5
33.5
SAND, pale brownish gray, medium dense, wet, poorly graded, mostly fine grained, subrounded, and quartzose, some fine to coarse grained, angualr and calcitic, trace gravel
7
W=20%, SAND
11
14
9
54
-28.5
38.5
SAND, as above
8
CO3=40.1%
9
14
40
-33.5
43.5
SAND, as above
-34.0
44.0
SAND, as above but pale greenish gray
9
CO3=25.3%
16
11
8
44
46
-38.5
48.5
SAND, pale greenish gray, loose, wet, poorly graded, fine grained, subrounded, quartzose, trace fine to coarse grained, angular, calcitic sand
10
Silty SAND
2
2
5
50
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0191


Hole No. CP05-EAARS-CB-0191
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-41.5
51.5
-43.5
53.5
Silty GRAVEL, pale greenish gray, medium dense, angular, calcareous, with some fine sand, calcitic and quartzose
Hard drilling 52 to 52.5 ft.
-48.5
58.5
Sandy GRAVEL, as above but with sand like that at 48.5 ft but mostly calcitic and trace silt
Hard drilling 60 to 61 ft
-53.5
63.5
Gravelly SAND, pale greenish gray, very dense, wet, poorly graded, mostly medium to coarse grained, angular, and calcitic, some fine grained subrounded and quartzose, with fine angular calcareous gravel
50/5"
-58.5
68.5
Gravelly SAND, as above but denser
w=20%, SAND with 5/8 inch gravel
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0191


Hole No. CP06-EAARS-CB-0191
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: ft)
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 6 in.
83.5
73.5
SAND, like that above but less (some) gravel
CO3=65.9%
68.5
78.5
Gravelly SAND, like that at 83.5 ft above
CO3=67.8%
73.5
83.5
Gravelly SAND, as above
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP06-EAARS-CB-0191



Hole No. CP05-EAARS-CB-0191

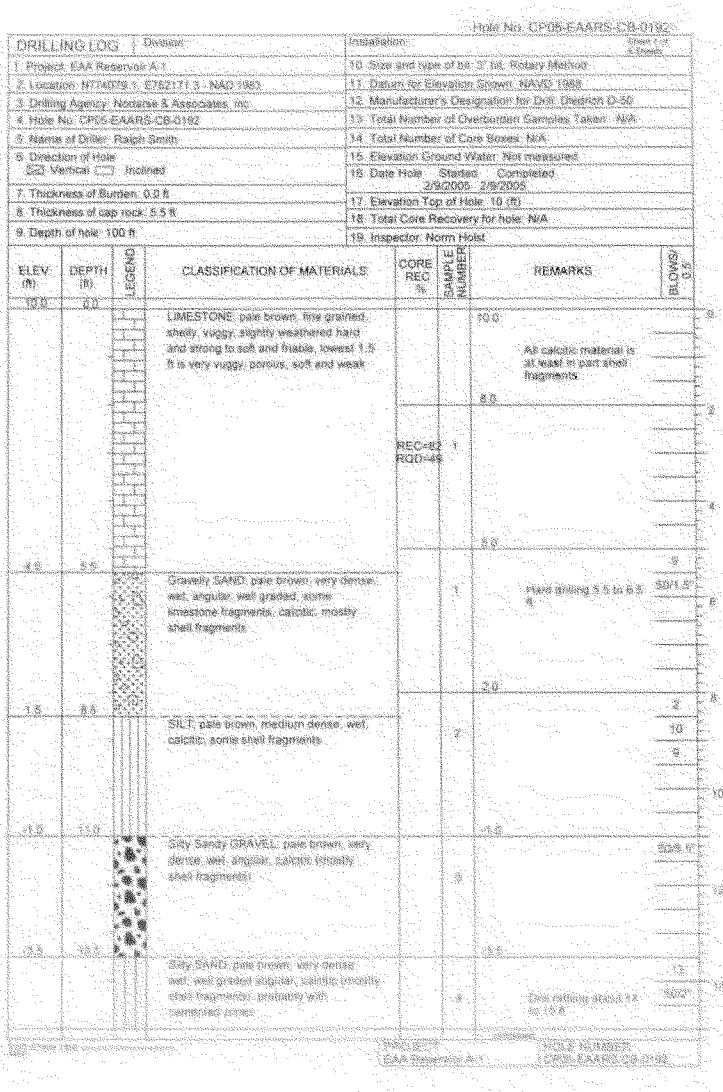
DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 10 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/0.5ft
-78.5	88.5		SAND, pale greenish gray, medium dense, wet, poorly graded, mostly fine grained, subrounded and quartzose, with some medium to coarse grained angular, calcitic sand, some fine calcareous gravel		18	-78.5	16 11 14 90 92
-83.5	93.5		SAND, as above but trace silt and gravel		19	-83.5 W=23%; SAND with Silt	14 13 14 94 96
-88.5	98.5		SAND, pale greenish gray, medium dense, wet, poorly graded, mostly medium to coarse grained, angular and calcitic, some fine grained, subrounded and quartzose, trace fine gravel and silt		20	-88.5	98 16 13 11 100
-90.0	100.0		End of Boring at 100'			NOTES: 1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93. 2. Use hammer with 30" drop used on 3.0" splitspoon (1 3/8" I.D. x 2" O.D.)	102 104 106

Last Card Date: [illegible]

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0191



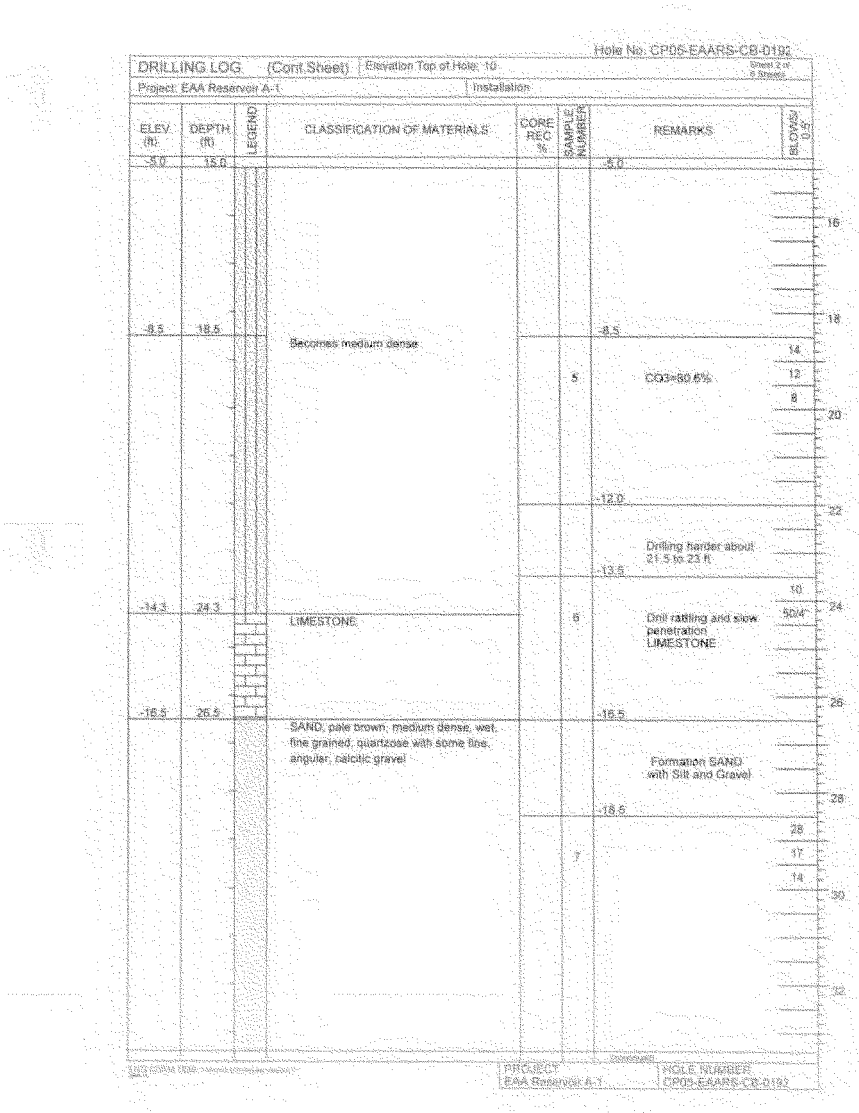
Hole No. CP05-EAARS-CB-0192

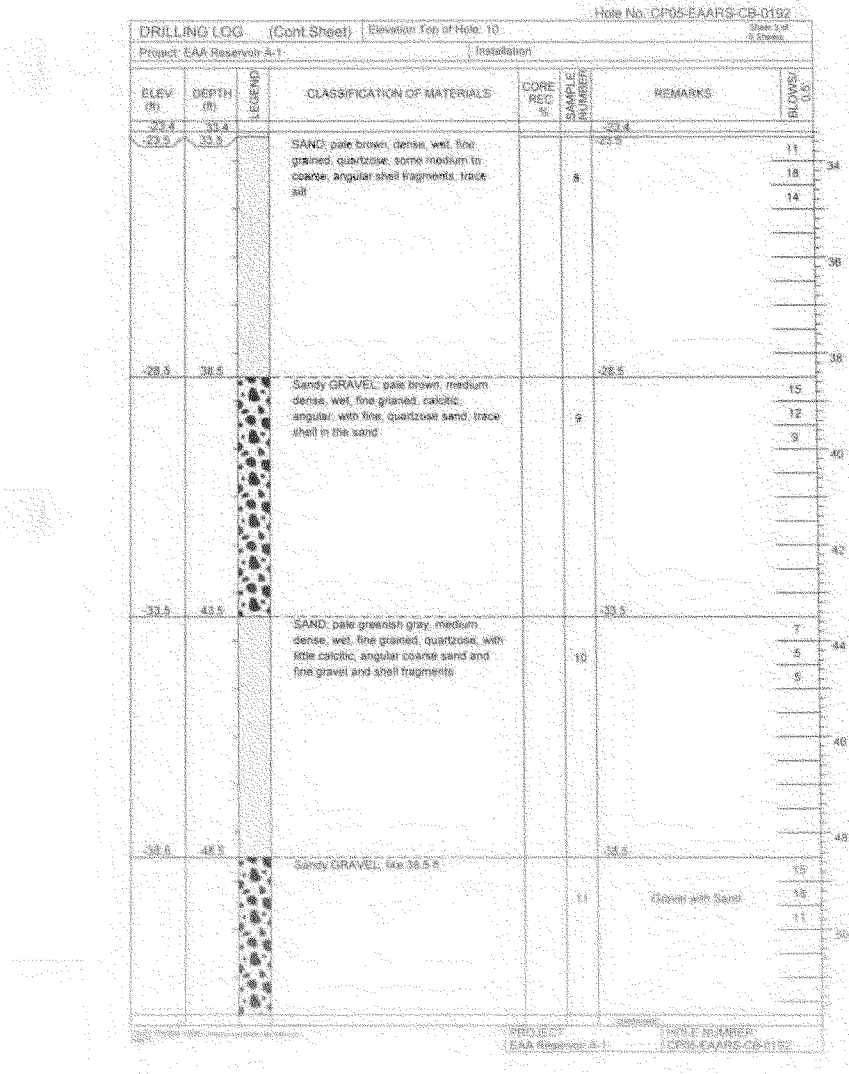
DRILLING LOG | Division: | Installation: | Sheet 1 of 3 Sheets

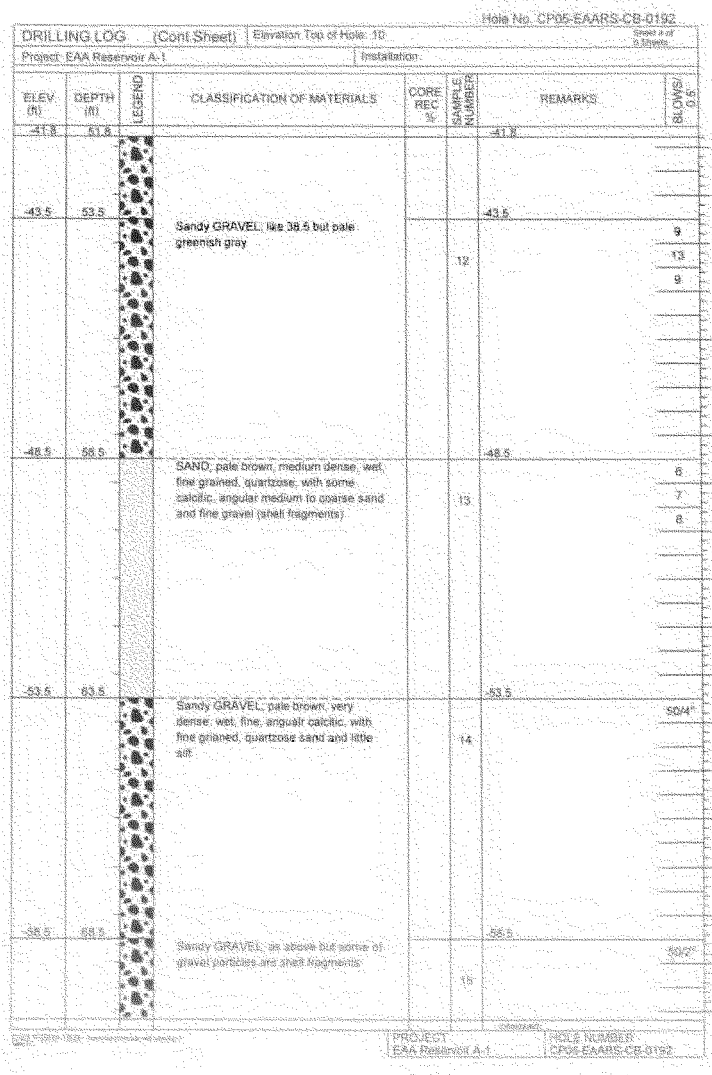
1. Project: EAA Reservoir A-1
2. Location: N774079.1, E782177.3 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0192
5. Name of Driller: Ralph Smith
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: 0.0 ft
8. Thickness of cap rock: 5.5 ft
9. Depth of hole: 100 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: N/A
15. Elevation Ground Water: Not measured
16. Date Hole: Started 2/9/2005 Completed 2/9/2005
17. Elevation Top of Hole: 10 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: Norm Holst

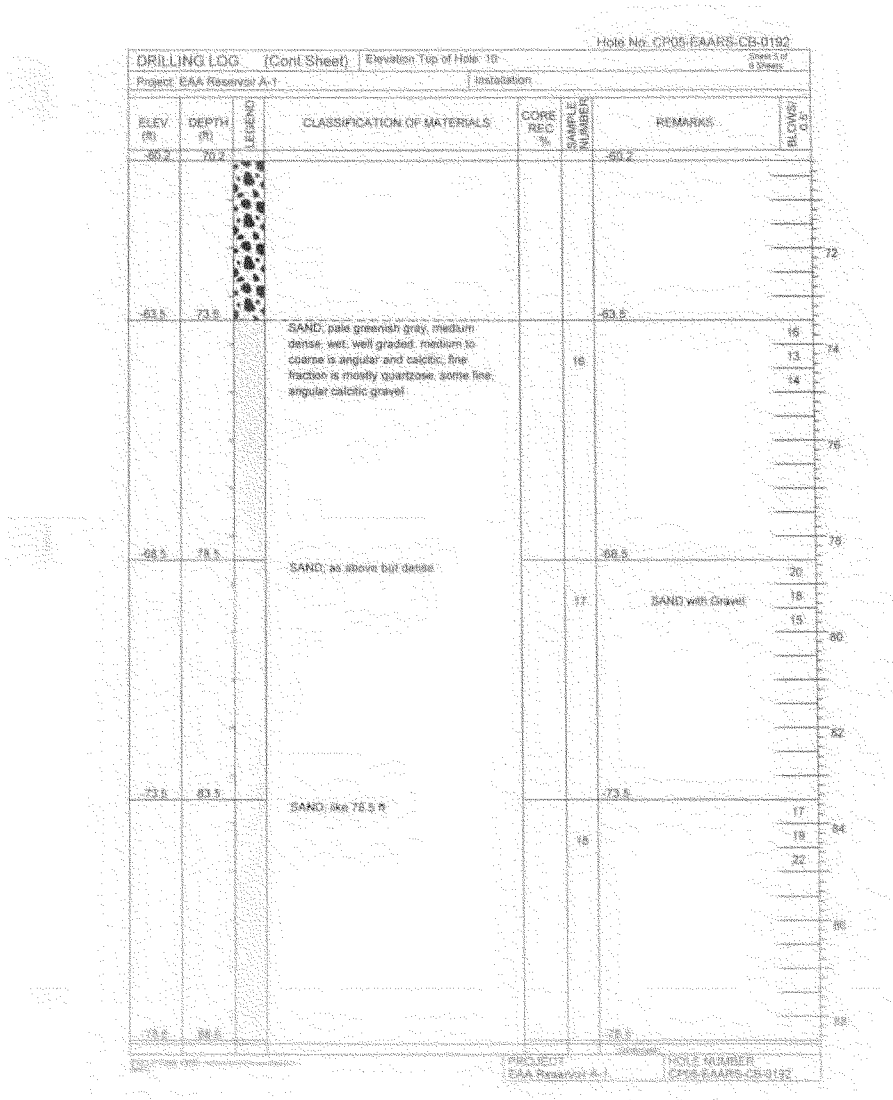
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
10.0	0.0		LIMESTONE, pale brown, fine grained, shelly, vuggy, slightly weathered hard and strong to soft and friable, lowest 1.5 ft is very vuggy, porous, soft and weak			10.0 All calcitic material is at least in part shell fragments. 8.5	
				REC=82 RQD=49	1	5.0	
4.5	5.5		Gravelly SAND, pale brown, very dense, wet, angular, well graded, some limestone fragments, calcitic, mostly shell fragments		1	Hard drilling 5.5 to 6.5 ft 2.0	SPT 5" 6" 8"
1.5	8.5		SILT, pale brown, medium dense, wet, calcitic, some shell fragments		2	-1.0	2 10 8
-1.5	11.0		Silty Sandy GRAVEL, pale brown, very dense, wet, angular, calcitic (mostly shell fragments)		3	-6.5	SPT 6" 12" 18"
-6.5	16.0		Silty SAND, pale brown, very dense, wet, well graded angular, calcitic (mostly shell fragments, probably with cemented zones		4	Drill rattling about 17 to 18 ft	SPT 12" 18" 18"

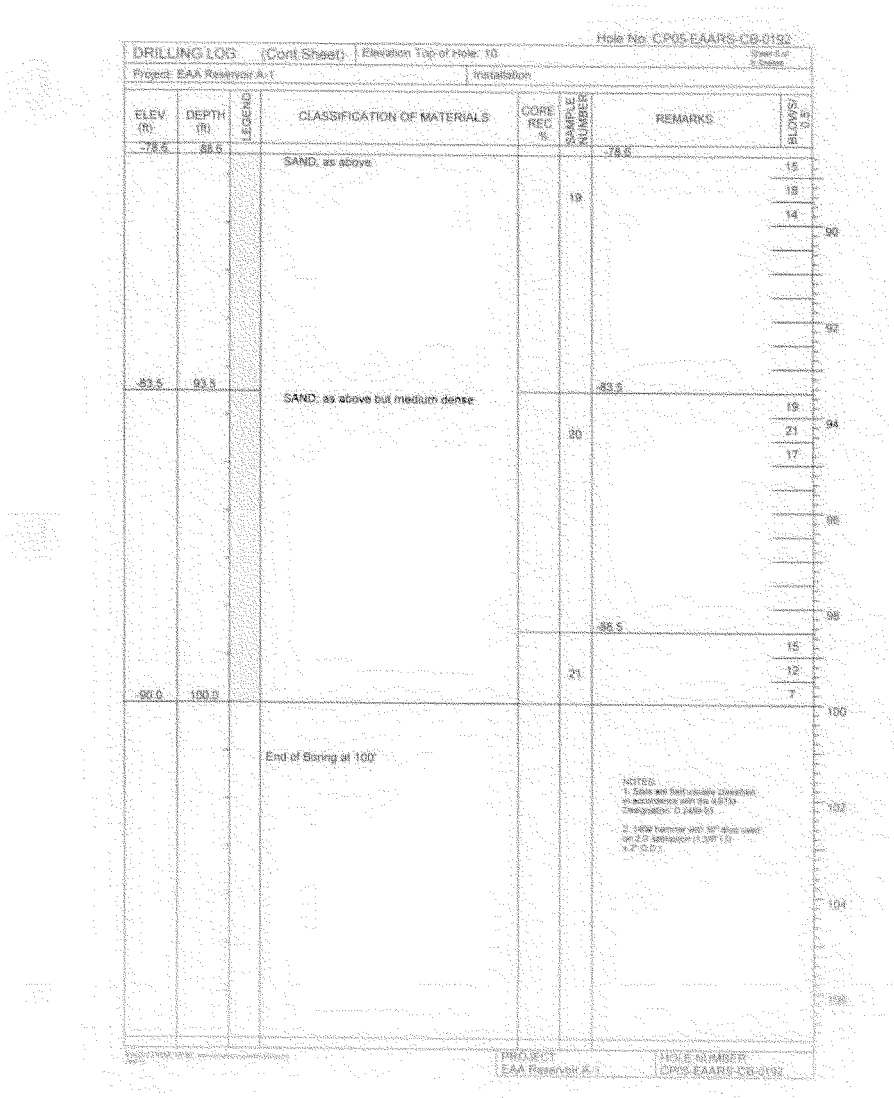
PROJECT: EAA Reservoir A-1 HOLE NUMBER: CP05-EAARS-CB-0192

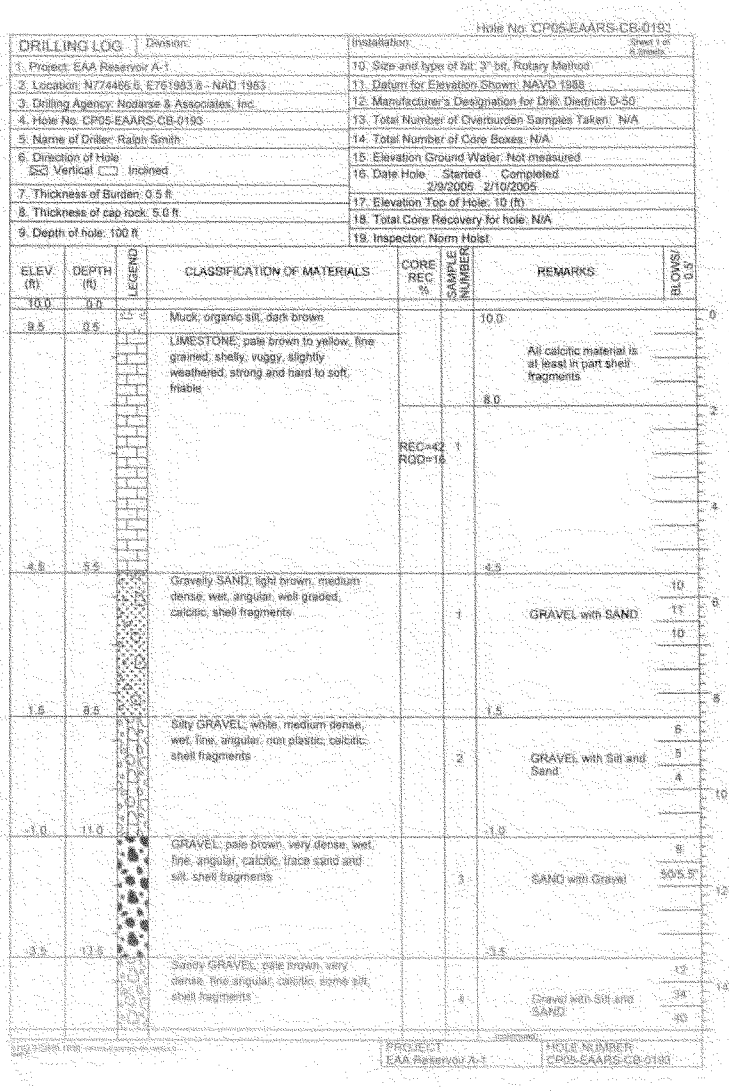

Hole No. CP05-EAARS-CB-0192
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-5.0
15.0
-8.5
18.5
Becomes medium dense
5
CO3=80.6%
-12.0
Drilling harder about 21.5 to 23 ft
-13.5
10
5/24"
Drill rattling and slow penetration
LIMESTONE
-14.3
24.3
LIMESTONE
6
-16.5
26.5
SAND, pale brown, medium dense, wet, fine grained, quartzose with some fine, angular, calcitic gravel
Formation SAND with Silt and Gravel
-18.5
7
28
17
14
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0192


Hole No. CP05-EAARS-CB-0192
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
SAND, pale brown, dense, wet, fine grained, quartzose, some medium to coarse, angular shell fragments, trace silt
Sandy GRAVEL, pale brown, medium dense, wet, fine grained, calcitic, angular, with fine, quartzose sand, trace shell in the sand
SAND, pale greenish gray, medium dense, wet, fine grained, quartzose, with little calcitic, angular coarse sand and fine gravel and shell fragments
Sandy GRAVEL, top 38.5 ft
Grown with Sand
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0192


Hole No. CP05-EAARS-CB-0192
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-41.5
51.5
-43.5
53.5
Sandy GRAVEL, like 38.5 but pale greenish gray
12
9
13
9
-43.5
-48.5
58.5
SAND, pale brown, medium dense, wet, fine grained, quartzose, with some calcitic, angular medium to coarse sand and fine gravel (shell fragments)
13
6
7
8
-48.5
-53.5
63.5
Sandy GRAVEL, pale brown, very dense, wet, fine, angualr calcitic, with fine grained, quartzose sand and little silt
14
50/4"
-53.5
-55.5
68.5
Sandy GRAVEL, as above but some of gravel particles are shell fragments
15
50/2"
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0192


Hole No. CP05-EAARS-CB-0192
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 16
Sheet 3 of 8 Sheets
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/6"
-63.5
73.5
SAND, pale greenish gray, medium dense, wet, well graded, medium to coarse is angular and calcitic, fine fraction is mostly quartzose, some fine angular calcitic gravel
16
13
14
-68.5
78.5
SAND, as above but dense
17
SAND with Gravel
20
18
15
-73.5
83.5
SAND, like 78.5 ft
15
17
18
22
-78.5
88.5
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CPP5-EAARS-CB-0192


DRILLING LOG (Cont Sheet)
Hole No CP05 EAARS CB-0192
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 6 in
-78.5
83.5
SAND, as above
19
15
16
14
90
92
83.5
93.5
SAND, as above but medium dense
19
20
21
17
94
96
98
86.5
15
21
12
7
90.0
100.0
100
End of Boring at 100'
NOTES:
102
104
106
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05 EAARS CB-0192



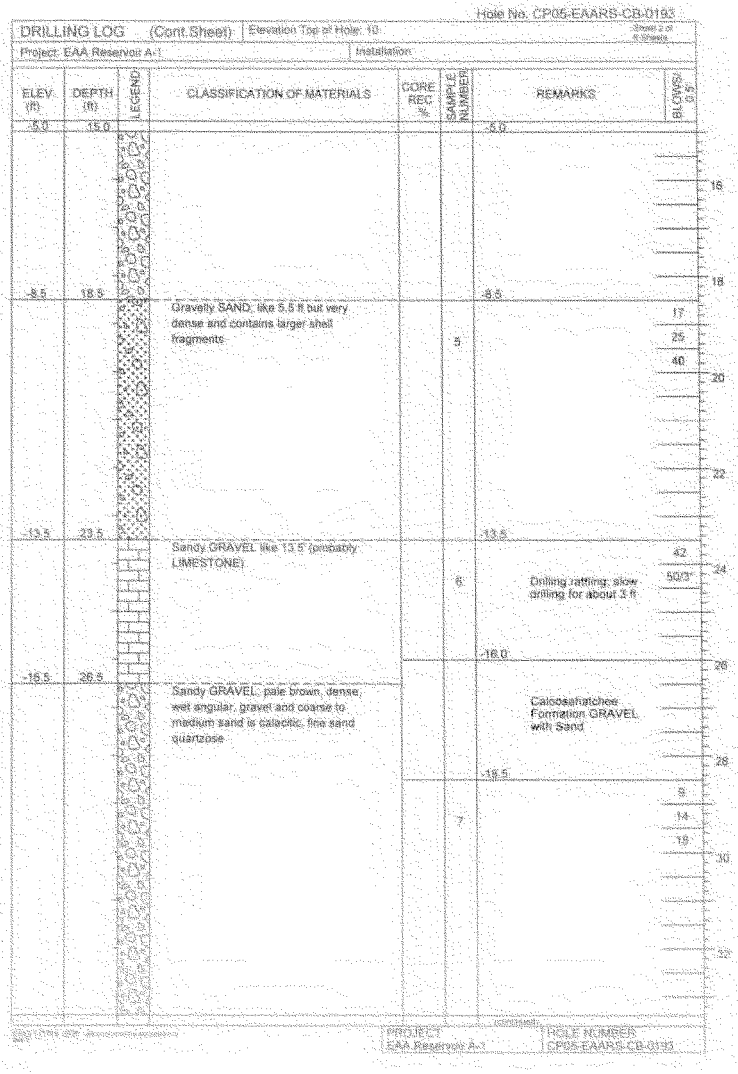
Hole No. CP05-EAARS-CB-0193

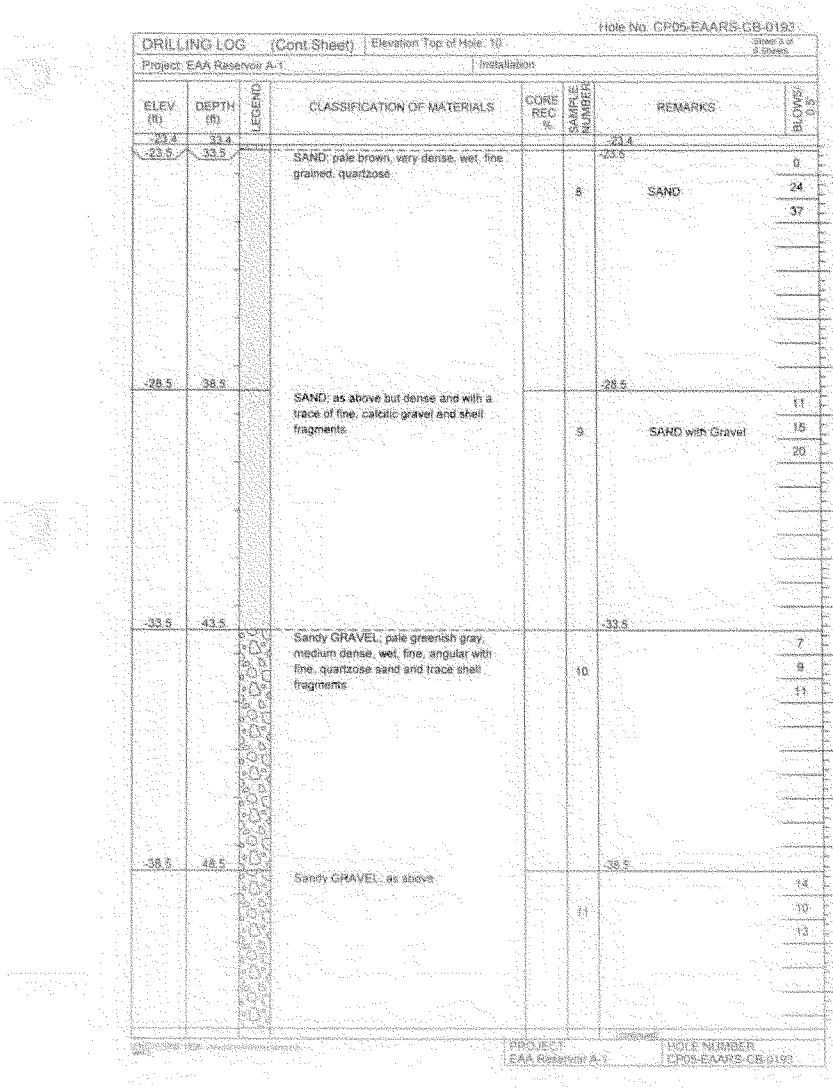
DRILLING LOG | Division: | Installation: | Sheet 1 of 4 Sheets

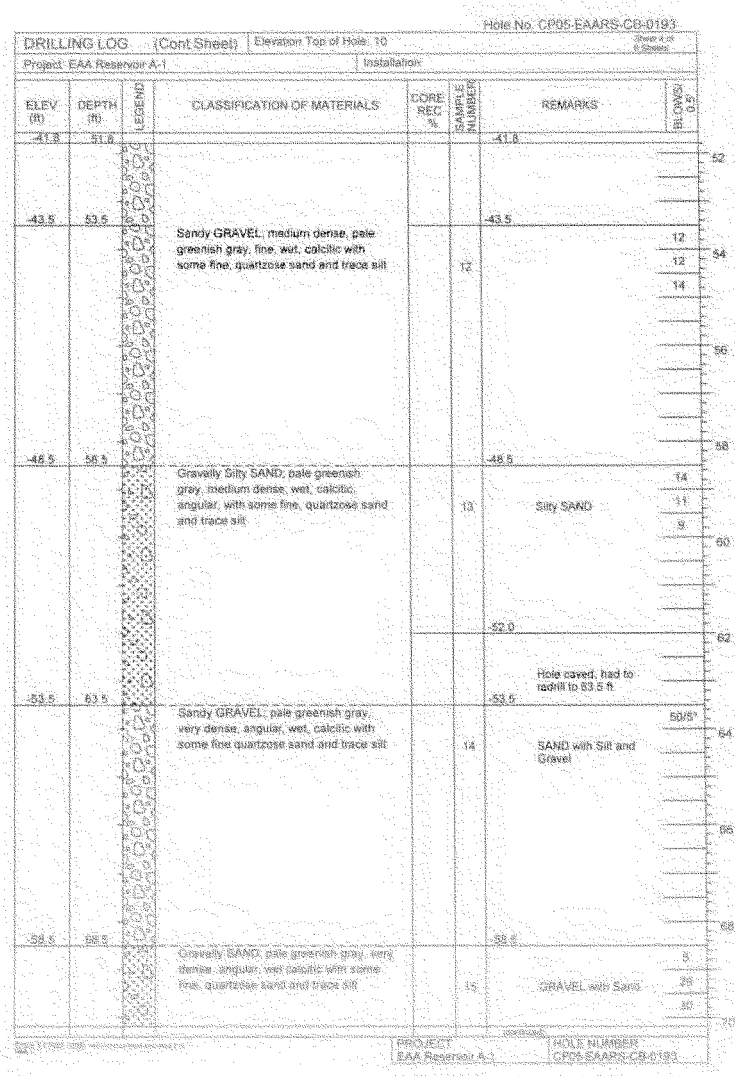
1. Project: EAA Reservoir A-1
2. Location: N774466.6, E761983.8 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No. CP05-EAARS-CB-0193
5. Name of Driller: Ralph Smith
6. Direction of Hole: Vertical / Inclined
7. Thickness of Burden: 0.5 ft
8. Thickness of cap rock: 5.0 ft
9. Depth of hole: 100 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Dietrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: N/A
15. Elevation Ground Water: Not measured
16. Date Hole: Started 2/9/2005 Completed 2/10/2005
17. Elevation Top of Hole: 10 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: Norm Holst

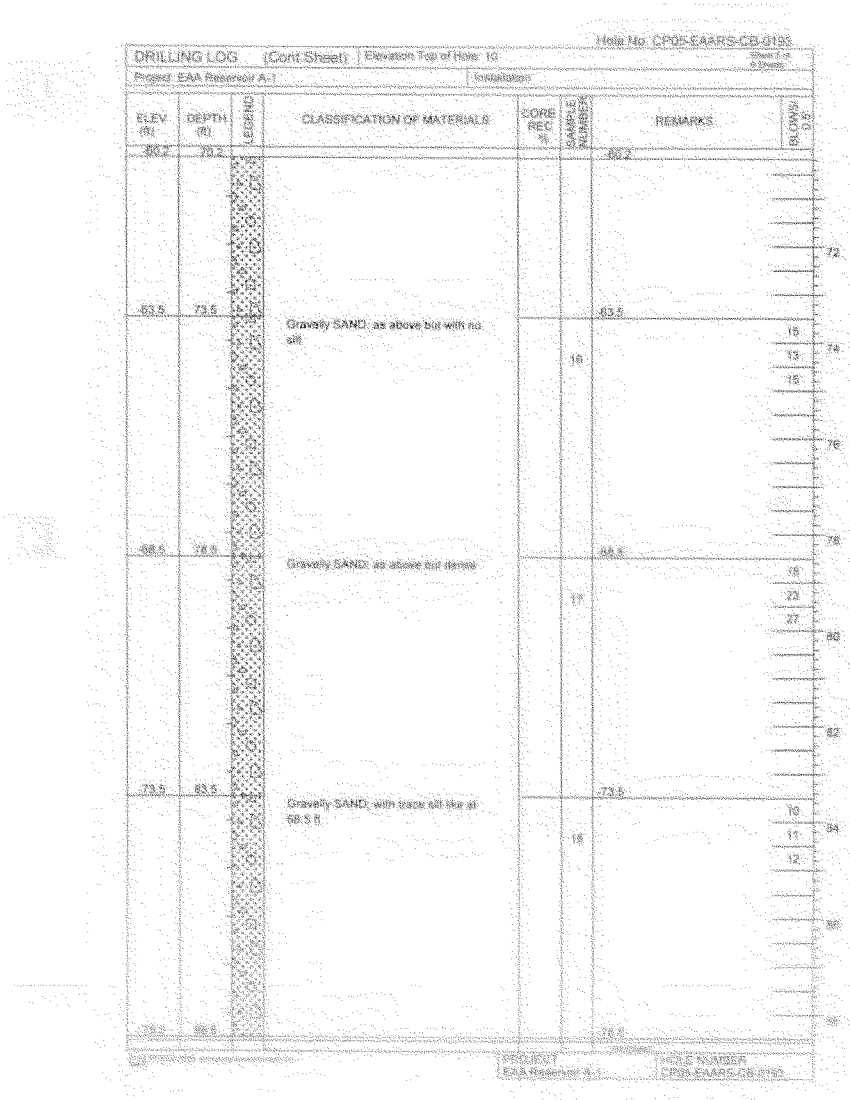
ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
10.0	0.0						
9.5	0.5		Muck, organic silt, dark brown			10.0	
			LIMESTONE, pale brown to yellow, fine grained, shelly, vuggy, slightly weathered, strong and hard to soft, friable			All calcitic material is at least in part shell fragments	
						8.0	
				REC=42 RQD=16	1		
4.5	5.5					4.5	
			Gravelly SAND, light brown, medium dense, wet, angular, well graded, calcitic, shell fragments		1	GRAVEL with SAND	10 12 10
1.5	8.5					1.5	
			Silty GRAVEL, white, medium dense, wet, fine, angular, non plastic, calcitic, shell fragments		2	GRAVEL with Silt and Sand	6 5 4
-1.0	11.0					-1.0	
			GRAVEL, pale brown, very dense, wet, fine, angular, calcitic, trace sand and silt, shell fragments		3	SAND with Gravel	8 50/5.5"
-3.5	13.5					-3.5	
			Sandy GRAVEL, pale brown, very dense, fine angular, calcitic, some silt, shell fragments		4	Gravel with Silt and SAND	17 34 40

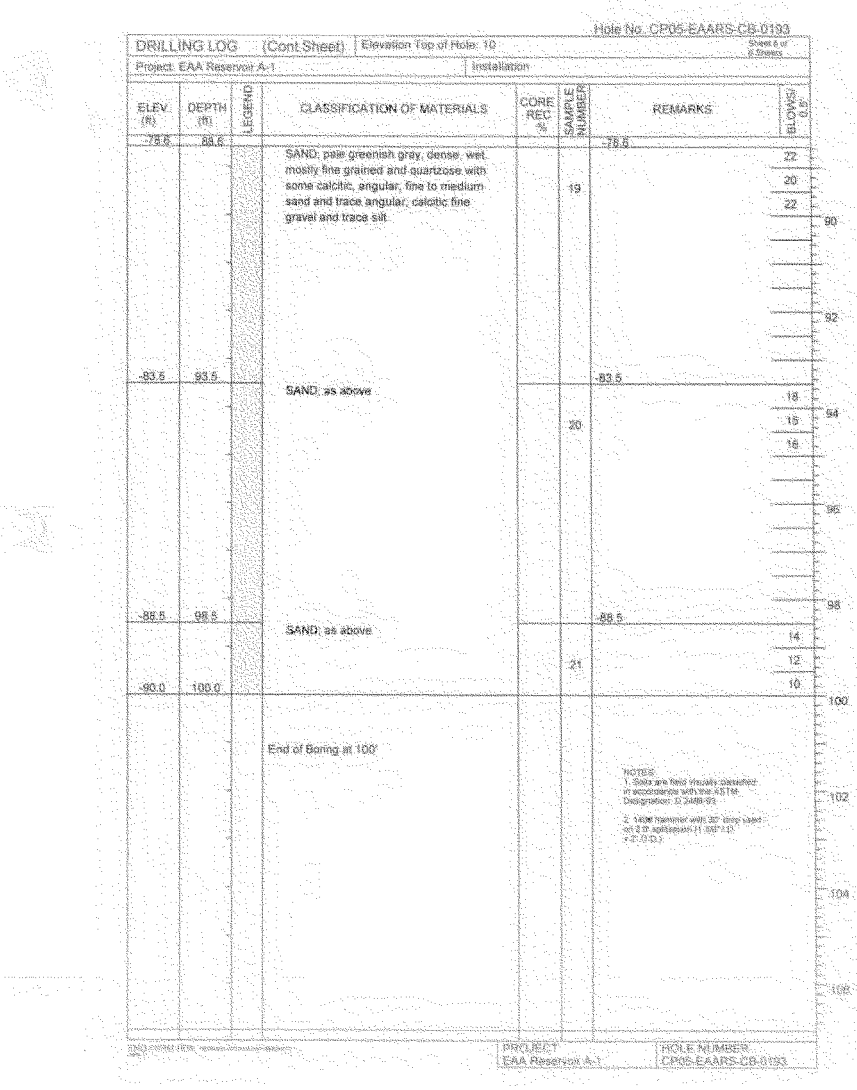
PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0193


Hole No. CP05-EAARS-CB-0193
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 10
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
5.0
15.0
-8.5
18.5
Gravelly SAND, like 5.5 ft but very dense and contains larger shell fragments
5
17
25
40
-13.5
23.5
Sandy GRAVEL like 13.5' (probably LIMESTONE)
6
42
50/3"
Drilling rattling; slow drilling for about 3 ft
-16.0
-16.5
26.5
Sandy GRAVEL, pale brown, dense, wet angular, gravel and coarse to medium sand is calcitic, fine sand quartzose
Caloosahatchee Formation GRAVEL with Sand
-18.5
7
8
14
19
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0193


Hole No. CP05-EAARS-CB-0193
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10
Sheet 3 of 3 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-23.4
33.4
-23.5
33.5
SAND; pale brown, very dense, wet, fine grained, quartzose
-23.5
8
SAND
0
24
37
34
36
38
-28.5
38.5
SAND; as above but dense and with a trace of fine, calcitic gravel and shell fragments
-28.5
9
SAND with Gravel
11
15
20
40
42
-33.5
43.5
Sandy GRAVEL; pale greenish gray, medium dense, wet, fine, angular with fine, quartzose sand and trace shell fragments
-33.5
10
7
9
11
44
46
48
-38.5
48.5
Sandy GRAVEL; as above
-38.5
11
14
10
13
50
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0193


Hole No. CP05-EAARS-CB-0193
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: TO
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
-41.8
51.8
-43.5
53.5
Sandy GRAVEL, medium dense, pale greenish gray, fine, wet, calcitic with some fine, quartzose sand and trace silt
12
-46.5
56.5
Gravelly Silty SAND, pale greenish gray, medium dense, wet, calcitic, angular, with some fine, quartzose sand and trace silt
13
Silty SAND
-52.0
Hole caved, had to redrill to 53.5 ft
-53.5
53.5
Sandy GRAVEL, pale greenish gray, very dense, angular, wet, calcitic with some fine quartzose sand and trace silt
14
SAND with Silt and Gravel
50/5"
-58.5
58.5
Gravelly SAND, pale greenish gray, very dense, angular, wet calcitic with some fine, quartzose sand and trace silt
15
GRAVEL with Sand
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0193


DRILLING LOG (Cont.Sheet)
Project: EAA Reservoir A-1
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
80.2
78.2
63.5
73.5
Gravelly SAND; as above but with no silt
68.5
78.5
Gravelly SAND; as above but dense
73.5
83.5
Gravelly SAND; with trace silt like at 68.5 ft
78.5
83.5


Hole No. CP05-EAARS-CB-0193
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-78.5
88.5
SAND; pale greenish gray, dense, wet, mostly fine grained and quartzose with some calcitic, angular, fine to medium sand and trace angular, calcitic fine gravel and trace silt
19
-78.5
22
20
22
90
92
-83.5
93.5
SAND; as above
-83.5
18
20
15
16
94
96
-88.5
98.5
SAND; as above
-88.5
14
21
12
10
-90.0
100.0
98
100
End of Boring at 100'
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93
2. 140# hammer with 30" drop used on 2.5" split spoon (1.500" I.D. x 2" O.D.)
102
104
106
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0193

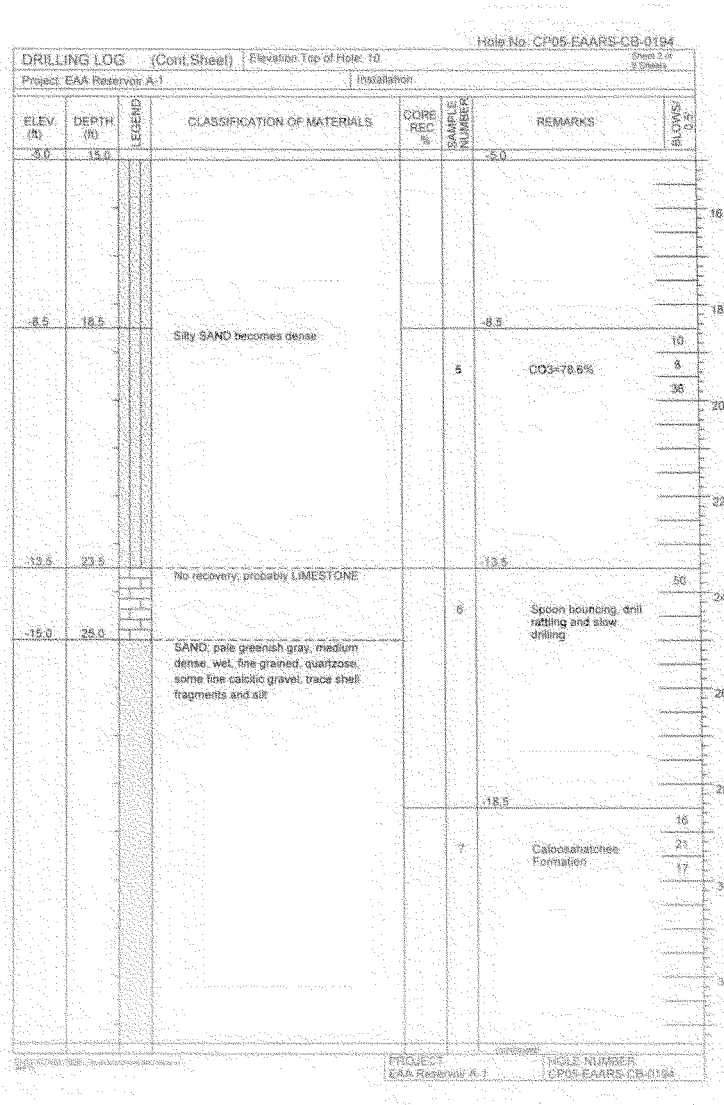
Hole No. CP05-EAARS-CB-0194

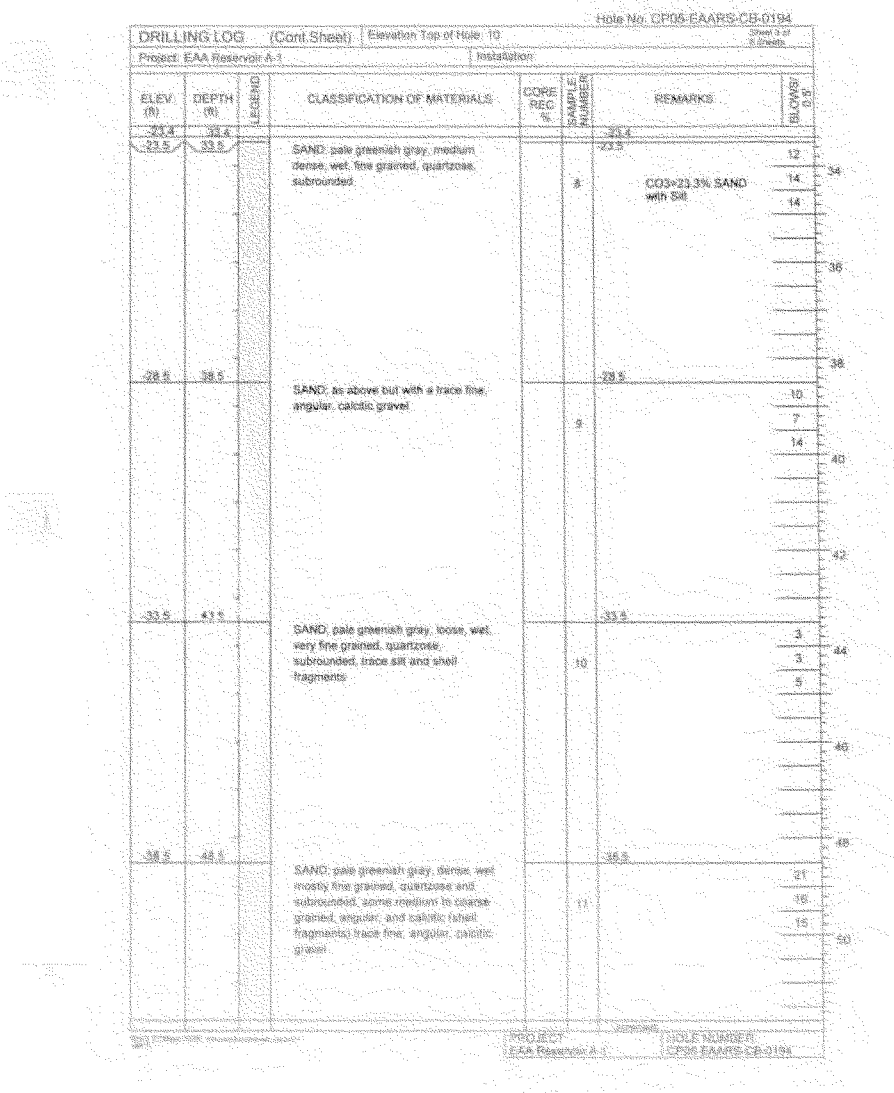
DRILLING LOG | Division: | Installation: | Sheet 1 of 3 Sheets

1. Project: EAA Reservoir A-1
2. Location: N774079.1, E761396.3 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0194
5. Name of Driller: Ralph Smith
6. Direction of Hole: [x] Vertical [ ] Inclined
7. Thickness of Burden: 1.0 ft
8. Thickness of cap rock: 5.5 ft
9. Depth of hole: 100 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: N/A
15. Elevation Ground Water: Not measured
16. Date Hole: Started 2/10/2005 Completed 2/11/2005
17. Elevation Top of Hole: 10 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: Norm Holst

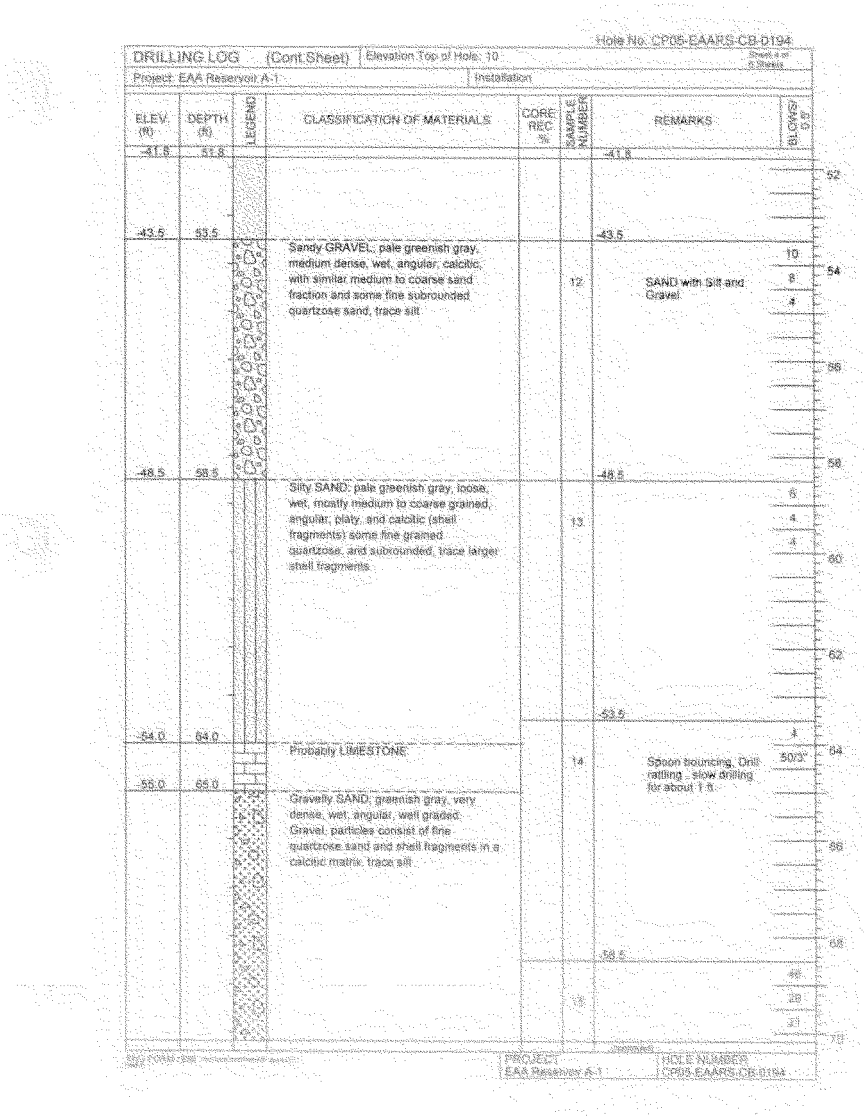
ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/0.5'
10.0	0.0		Fill and residual muck			10.0	
						Cored caprock	0
9.0	1.0		LIMESTONE, light brownish gray to pale brown, fine grained, shelly, vuggy, dense, hard and strong to soft, weak and porous			8.0	
				REC=38 RQD=13	1		2
							4
4.5	5.5					4.5	
			Gravelly SAND, very light to pale brown, very dense, wet, angular, calcitic, fine to medium grained, trace shells		1	All calcitic material is at least in part shell fragments	4 35 15 8
1.5	8.5					1.5	
			Silty GRAVEL, white, medium dense, wet, angular, calcitic and Gravelly SAND as above	42			4 16 50 10
-1.0	11.0					-1.0	
			Silty SAND, pale brown, medium dense, fine to medium grained, wet, angular, calcitic, some fine angular gravel		3		13 4 15 12
-3.5	13.5					-3.5	
			Silty SAND becomes very dense		4		4 18 50/5" 14

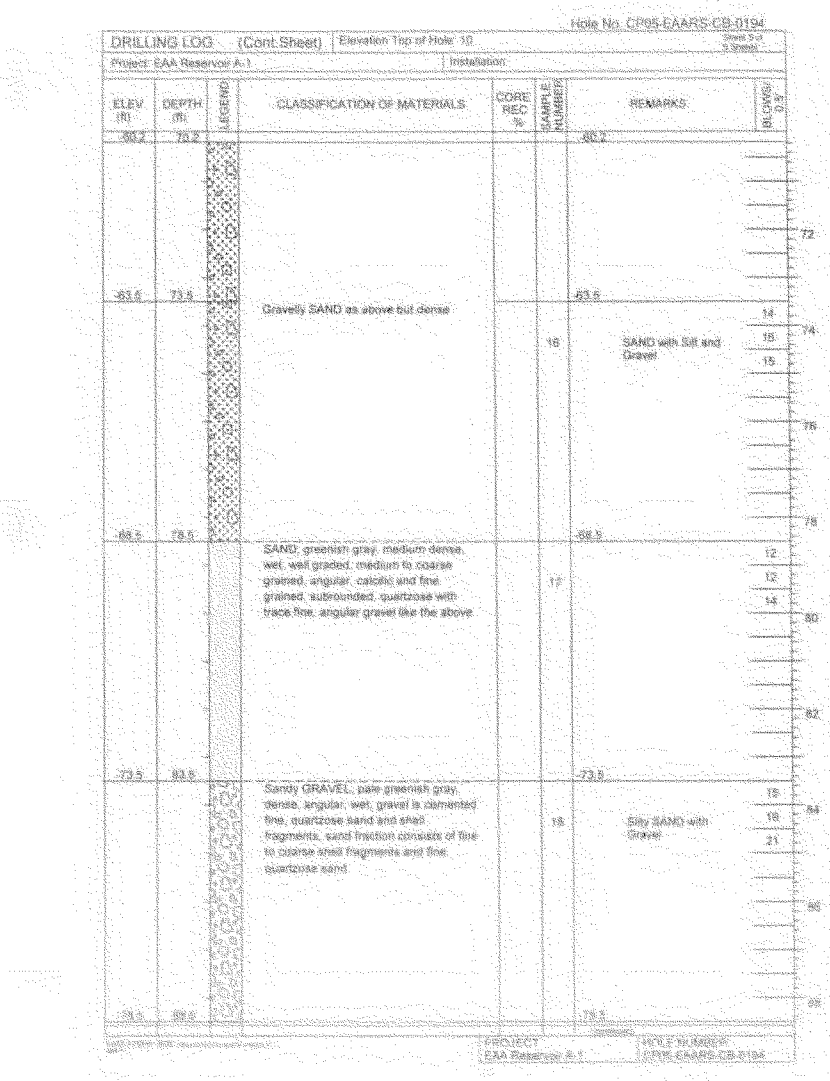
PROJECT: EAA Reservoir A-1 | BORING NUMBER: CP05-EAARS-CB-0194

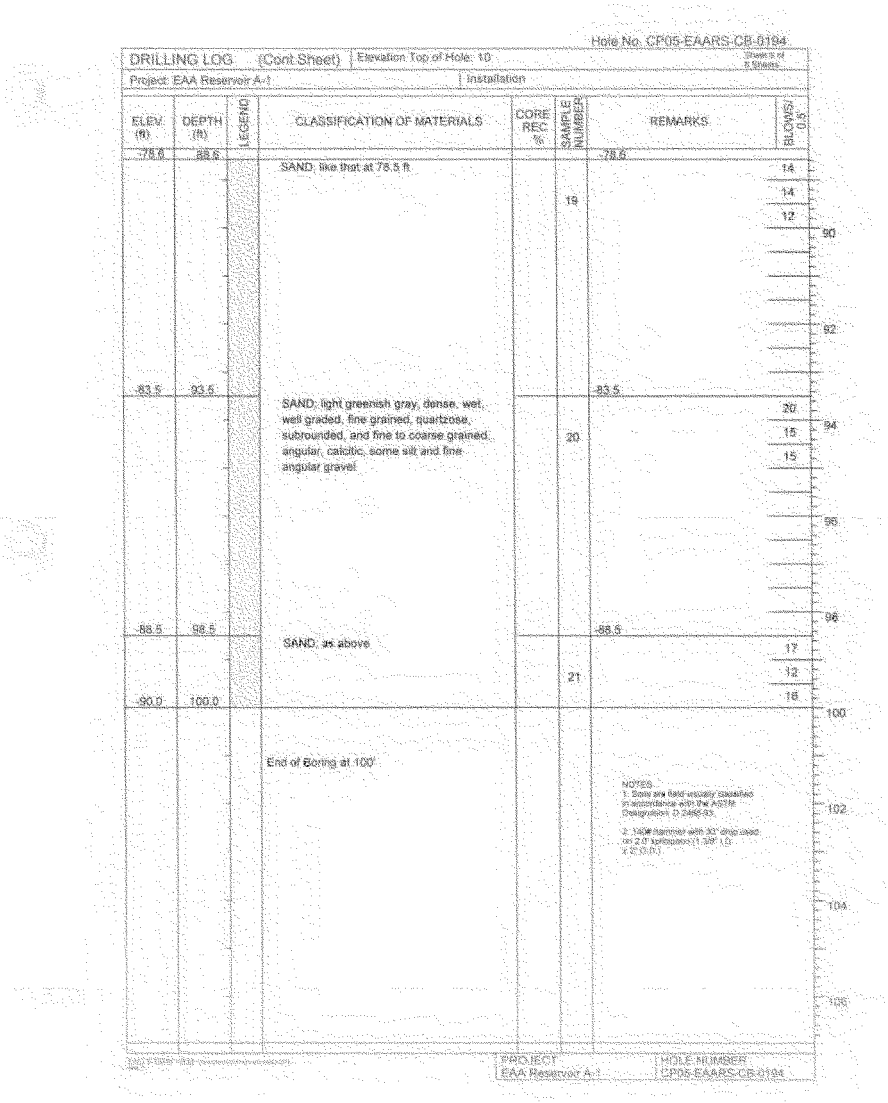

Hole No. CP05-EAARS-CB-0194
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 10
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-5.0
15.0
-8.5
18.5
Silty SAND becomes dense
5
CO3=78.6%
10
8
36
20
22
-13.5
23.5
No recovery; probably LIMESTONE
50
24
6
Spoon bouncing, drill rattling and slow drilling
-15.0
25.0
SAND; pale greenish gray, medium dense, wet, fine grained, quartzose, some fine calcitic gravel, trace shell fragments and silt
26
28
-18.5
16
7
Caloosahatchee Formation
21
17
30
32
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0194

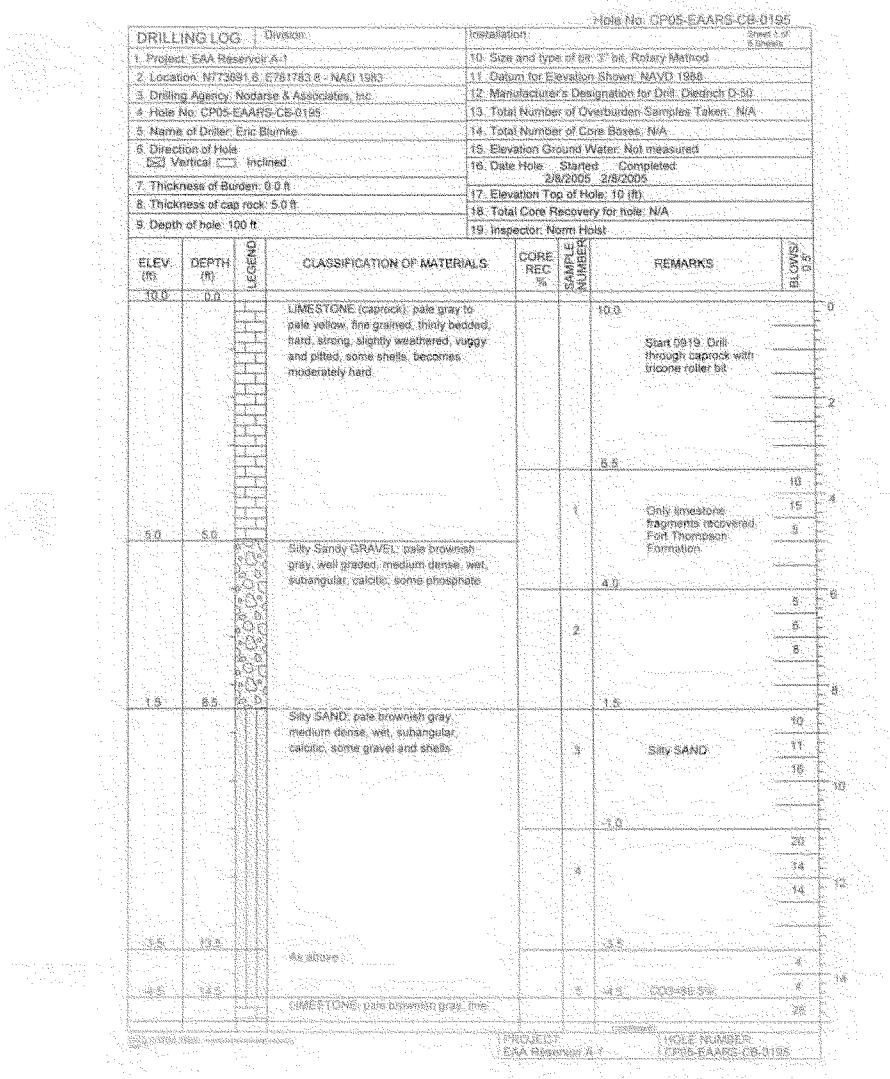

Hole No. CP05-EAARS-CB-0194
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
23.5
33.5
SAND, pale greenish gray, medium dense, wet, fine grained, quartzose, subrounded.
8
CO3=23.3% SAND with Silt
28.5
38.5
SAND, as above but with a trace fine, angular, calcitic gravel
9
33.5
41.5
SAND, pale greenish gray, loose, wet, very fine grained, quartzose, subrounded, trace silt and shell fragments
10
38.5
48.5
SAND, pale greenish gray, dense, wet, mostly fine grained, quartzose and subrounded, some medium to coarse grained, angular, and calcitic (shell fragments) trace fine, angular, calcitic gravel.
11
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05 EAARS CB-0194

194


Hole No. CP05-EAARS-CB-0194
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-41.5
51.5
-43.5
53.5
Sandy GRAVEL, pale greenish gray, medium dense, wet, angular, calcitic, with similar medium to coarse sand fraction and some fine subrounded quartzose sand, trace silt
12
SAND with Silt and Gravel
10
8
4
-48.5
58.5
Silty SAND: pale greenish gray, loose, wet, mostly medium to coarse grained, angular, platy, and calcitic (shell fragments) some fine grained quartzose, and subrounded, trace larger shell fragments
13
6
4
4
-54.0
64.0
Probably LIMESTONE
14
Spoon bouncing, Drill rattling , slow drilling for about 1 ft
50/3"
55.0
65.0
Gravelly SAND, greenish gray, very dense, wet, angular, well graded. Gravel particles consist of fine quartzose sand and shell fragments in a calcitic matrix, trace silt
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0194


Hole No. CP05-EAARS-CB-0194
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: 10
Project: EAA Reservoir A-1 Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
83.6
73.6
Gravelly SAND as above but dense
SAND with Silt and Gravel
88.5
78.5
SAND; greenish gray, medium dense, wet, well graded, medium to coarse grained, angular, calcite and fine grained, subrounded, quartzose with trace fine, angular gravel like the above
73.5
83.5
Sandy GRAVEL; pale greenish gray, dense, angular, wet, gravel is cemented fine, quartzose sand and shell fragments, sand fraction consists of fine to coarse shell fragments and fine quartzose sand
Silty SAND with Gravel
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0194


Hole No. CP05-EAARS-CB-0194
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-78.5
88.5
SAND, like that at 78.5 ft
19
14
14
12
90
92
-83.5
93.5
SAND, light greenish gray, dense, wet, well graded, fine grained, quartzose, subrounded, and fine to coarse grained, angular, calcitic, some silt and fine angular gravel
20
20
15
15
94
96
-88.5
98.5
SAND, as above
21
17
12
18
-90.0
100.0
100
End of Boring at 100'
NOTES
1. Soils are field-visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.0" sphoopoon (1.38" I.D. x 2" O.D.)
102
104
106
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0194



Hole No: CP05-EAARS-CB-0195

DRILLING LOG

Division:

Installation:

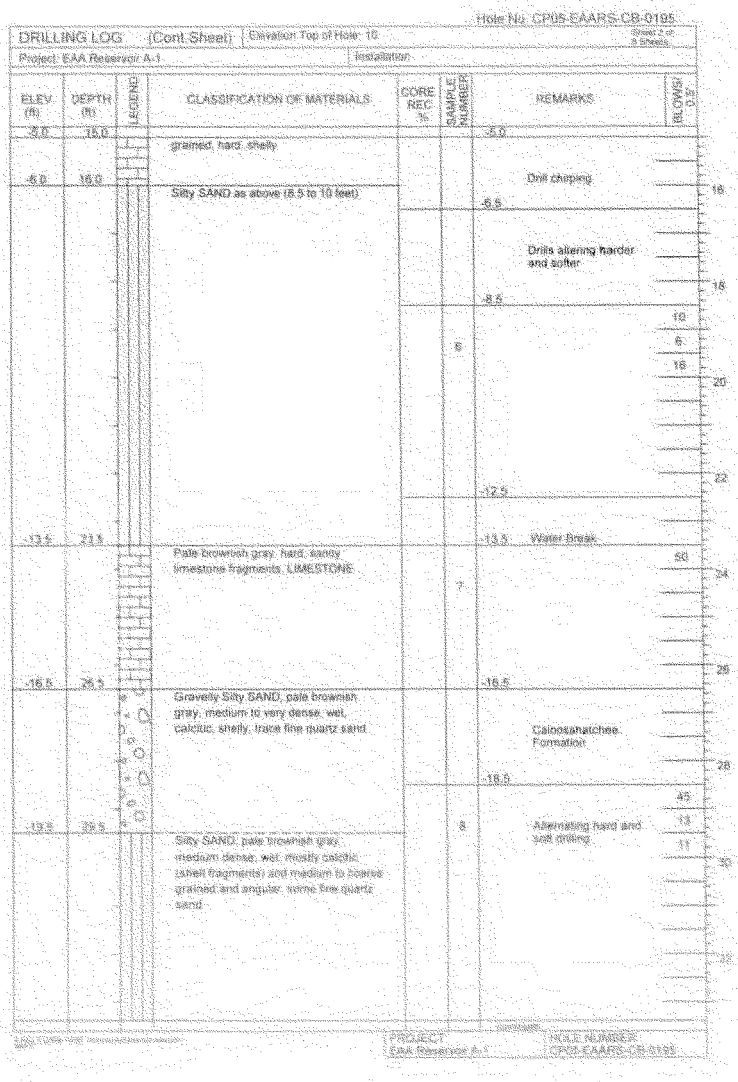
Sheet 1 of 6 sheets

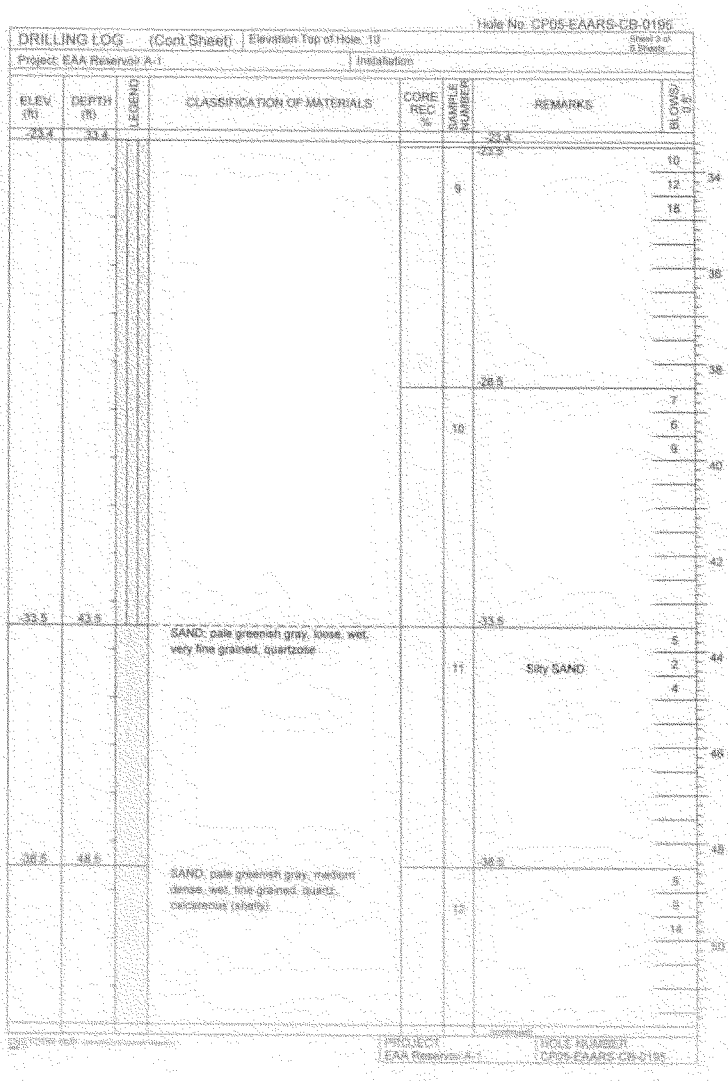
1. Project: EAA Reservoir A-1
2. Location: N773691.8, E781783.8 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0195
5. Name of Driller: Eric Blumke
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: 0.0 ft
8. Thickness of cap rock: 5.0 ft
9. Depth of hole: 100 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: N/A
15. Elevation Ground Water: Not measured
16. Date Hole: Started 2/8/2005 Completed 2/8/2005
17. Elevation Top of Hole: 10 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: Norm Holst

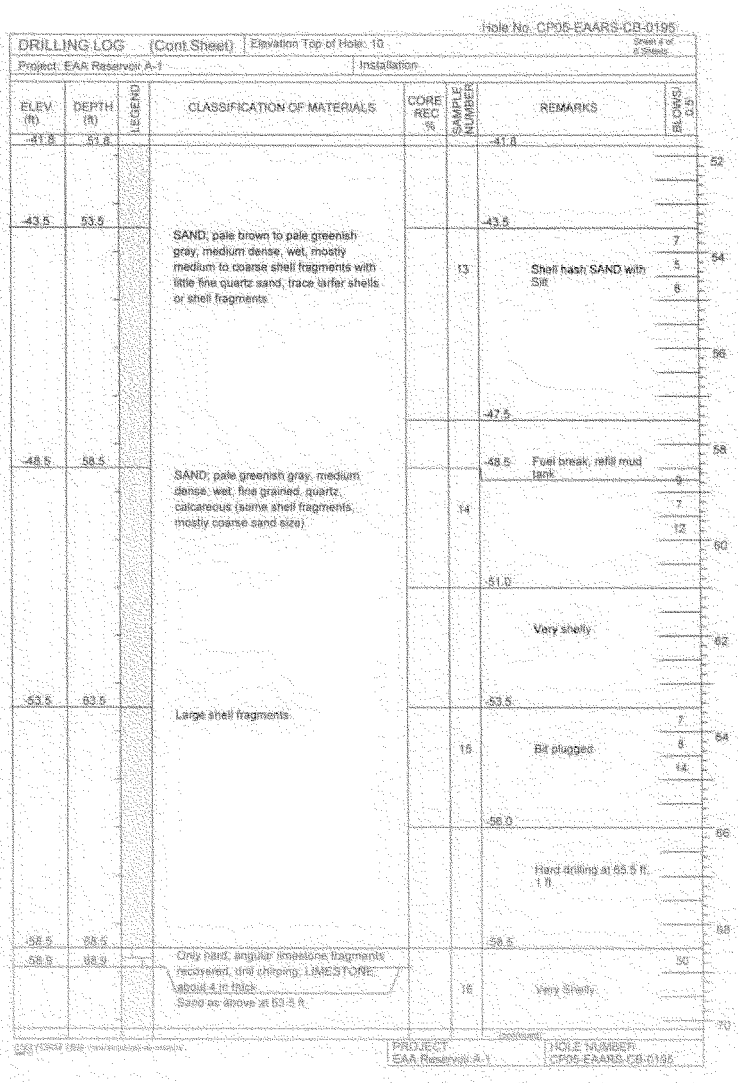
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
10.0	0.0		LIMESTONE (caprock): pale gray to pale yellow, fine grained, thinly bedded, hard, strong, slightly weathered, vuggy and pitted, some shells, becomes moderately hard.			10.0 Start 0919. Drill through caprock with tricone roller bit	0
						8.5	2
5.0	5.0		Silty Sandy GRAVEL: pale brownish gray, well graded, medium dense, wet, subangular, calcitic, some phosphate		1	Only limestone fragments recovered. Fort Thompson Formation.	10 15 9
						4.0	4
1.5	8.5		Silty SAND: pale brownish gray, medium dense, wet, subangular, calcitic, some gravel and shells		2	1.5	6 5 8
					3	Silty SAND	10 11 18
						-1.0	10
					4		20 14 14
-5.5	15.5		As above			-3.5	12
-8.5	18.5		LIMESTONE: pale brownish gray, fine-		5	-4.5 CORE-BE 5%	4 4 28

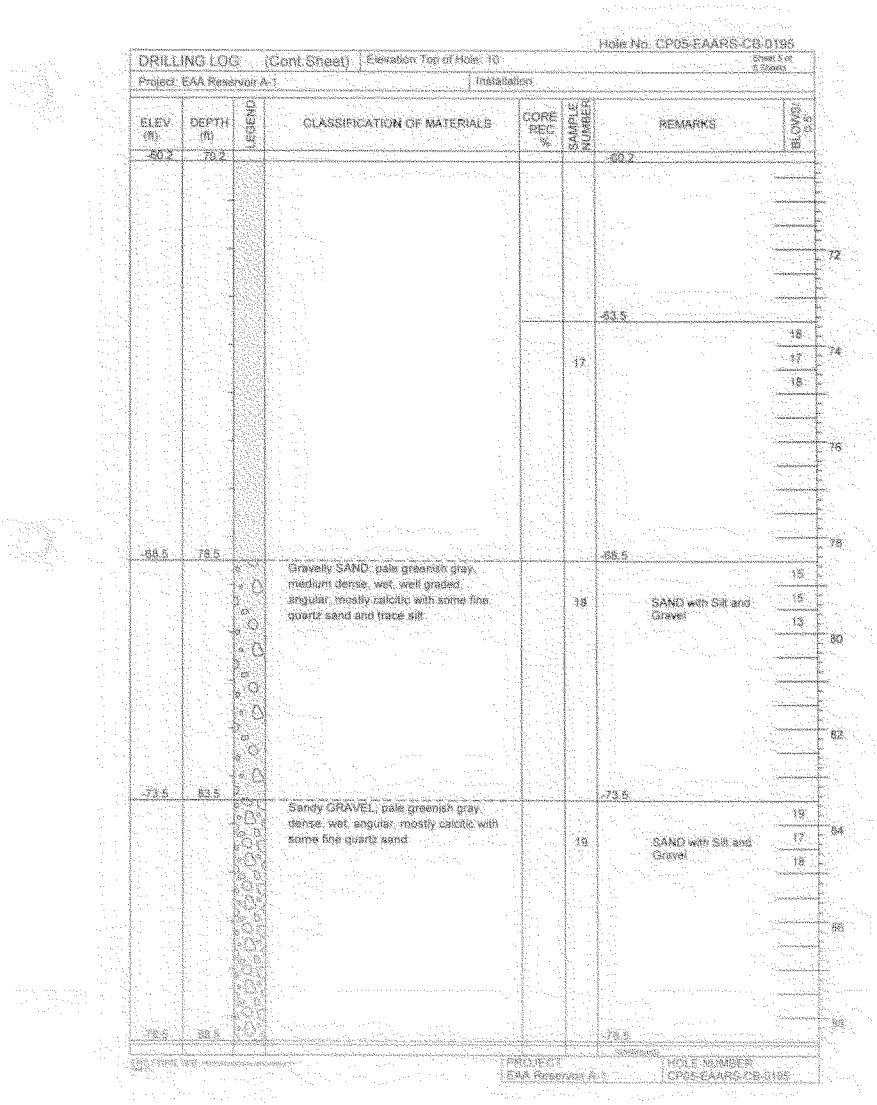
PROJECT: EAA Reservoir A-1

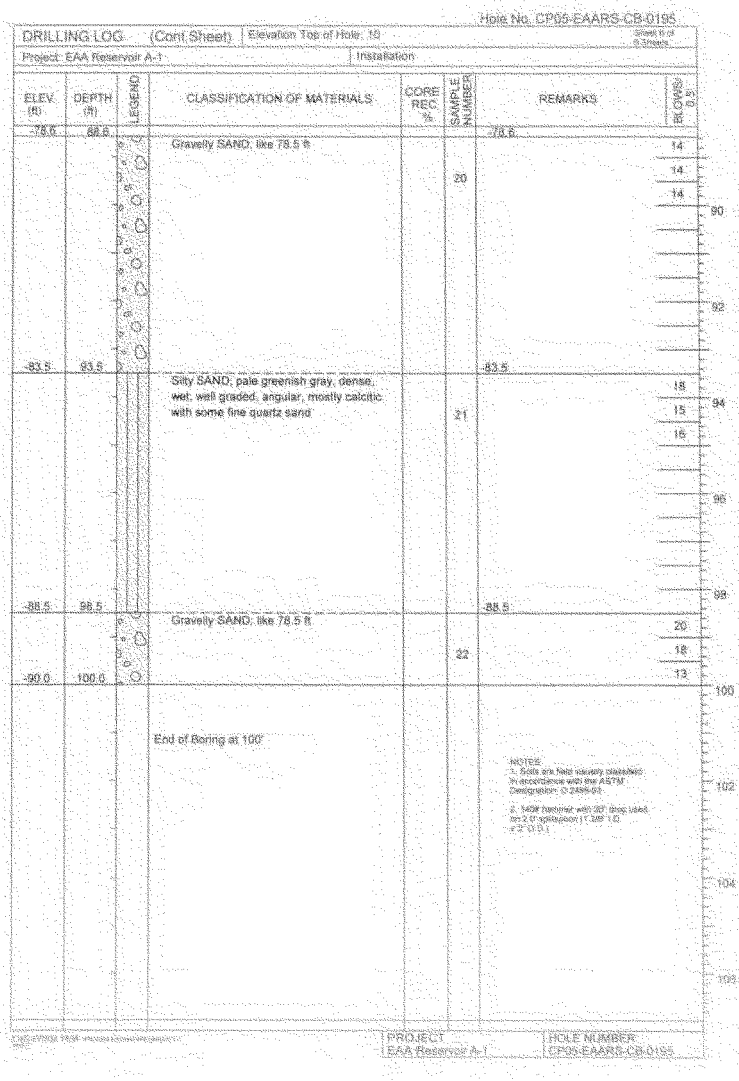
HOLE NUMBER: CP05-EAARS-CB-0195


Hole No. CP05-EAARS-CB-0195
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS PER 6 IN
3.0
15.0
grained, hard, shelly
-6.0
16.0
Silty SAND as above (8.5 to 10 feet)
-8.5
Drill chipping
-8.5
Drills altering harder and softer
-12.5
-13.5
21.5
Pale brownish gray, hard, sandy limestone fragments, LIMESTONE
-13.5
Water Break
-16.5
26.5
Gravelly Silty SAND, pale brownish gray, medium to very dense, wet, calcitic, shelly, trace fine quartz sand
Caloosahatchee Formation
-18.5
-19.5
29.5
Silty SAND, pale brownish gray, medium dense, wet, mostly calcitic (shell fragments) and medium to coarse grained and angular, some fine quartz sand
Alternating hard and soft drilling
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0195


Hole No. CP05-EAARS-CB-0195
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 10
Project: EAA Reservoir A-1 Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
33.5
43.5
SAND: pale greenish gray, loose, wet, very fine grained, quartzose
Silty SAND
38.5
48.5
SAND: pale greenish gray, medium dense, wet, fine grained, quartz, calcareous (shells)
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0195

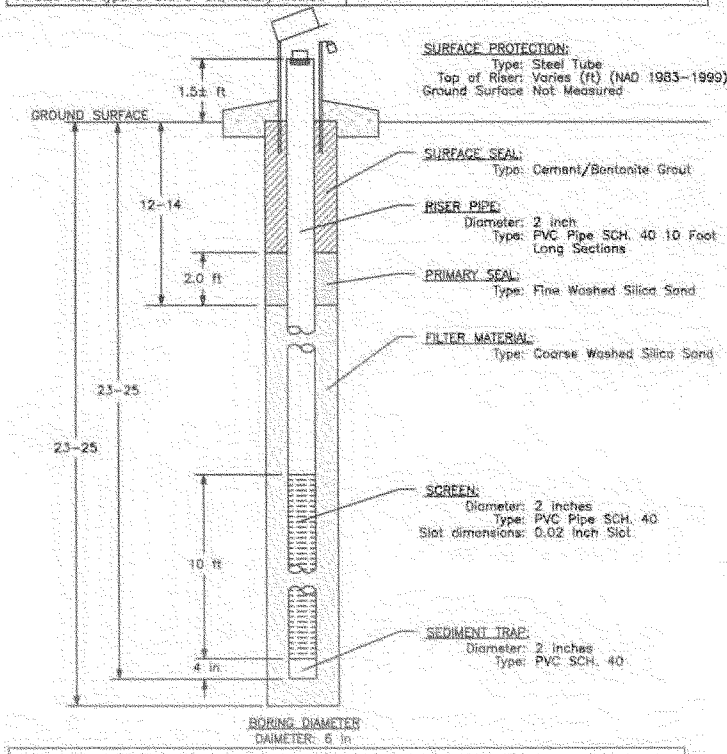

Hole No. CP06-EAARS-CB-0195
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-41.5
51.5
-41.5
52
-43.5
53.5
-43.5
SAND; pale brown to pale greenish gray, medium dense, wet, mostly medium to coarse shell fragments with little fine quartz sand, trace larger shells or shell fragments
13
Shell hash SAND with Silt
7
5
6
54
56
-47.5
58
-48.5
58.5
-48.5
Fuel break, refill mud tank
SAND; pale greenish gray, medium dense, wet, fine grained, quartz, calcareous (some shell fragments, mostly coarse sand size)
14
9
7
12
60
-51.0
Very shelly
62
-53.5
63.5
Large shell fragments
15
Bit plugged
7
8
14
64
-58.0
66
Hard drilling at 65.5 ft, 1 ft
68
-58.5
68.5
-58.5
68.9
Only hard, angular limestone fragments recovered, drill chipping. LIMESTONE about 4 in thick
Sand as above at 63.5 ft
16
Very Shelly
50
70
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP06-EAARS-CB-0195


Hole No. CP05-EAARS-CB-0195
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
-50.2
70.2
-63.5
17
-68.5
78.5
Gravelly SAND; pale greenish gray, medium dense, wet, well graded, angular, mostly calcitic with some fine quartz sand and trace silt
18
SAND with Silt and Gravel
-73.5
83.5
Sandy GRAVEL; pale greenish gray, dense, wet, angular, mostly calcitic with some fine quartz sand
19
SAND with Silt and Gravel
-78.5
88.5
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0195


Hole No. CP05-EAARS-CB-0195
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 19
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/6"
-78.5
88.5
Gravelly SAND, like 78.5 ft
20
14
14
14
-83.5
93.5
Silty SAND, pale greenish gray, dense, wet, well graded, angular, mostly calcitic with some fine quartz sand
21
18
15
16
-88.5
98.5
Gravelly SAND, like 78.5 ft
22
20
18
13
-90.0
100.0
End of Boring at 100'
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93
2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0195

Hole No. CP05-EAARS-TW-0196

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 773022, E 759162		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0196		11. Date Hole: Started 1-20-05 Completed 1-20-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 10.15
6. Depth of Piezometer: 25 ft		13. Inspector: Norm Holst
7. Size and type of bit: 6" bit, Rotary Method		

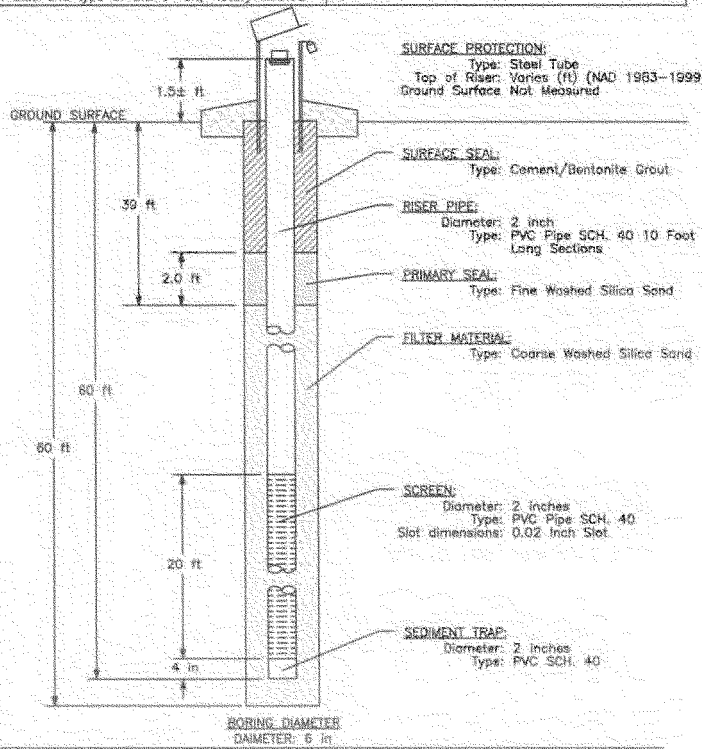


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 25 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0197

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 773032, E 759162		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0197		11. Date Hole: Started 1-27-05 Completed 1-27-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 9.57
6. Depth of Piezometer: 60 ft		13. Inspector: Norm Holst
7. Size and type of bit: 6" bit, Rotary Method		

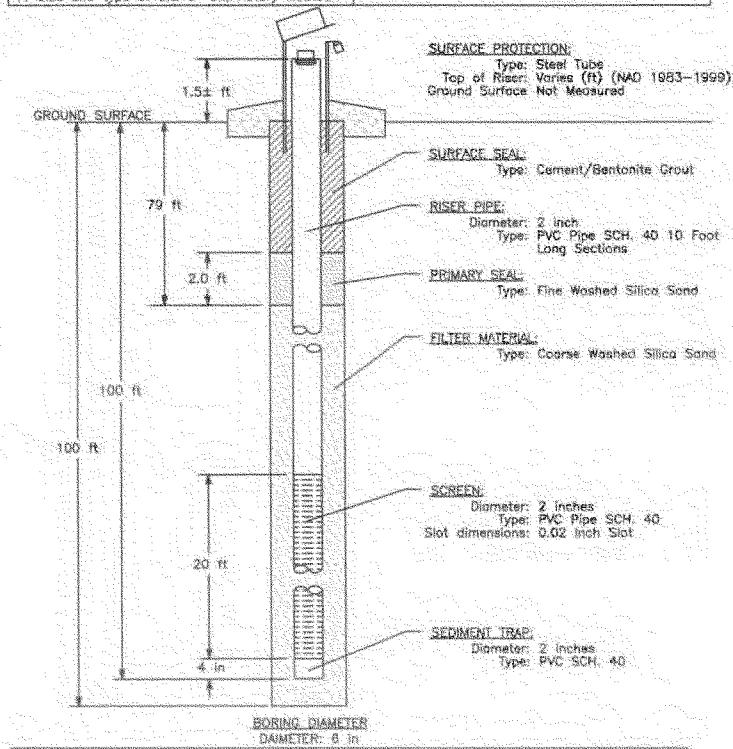


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 60 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0198

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 773042, E 759162		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0198		11. Date Hole: Started 1-28-05 Completed 1-28-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 10.31
6. Depth of Piezometer: 100 ft		13. Inspector: Norm Holst
7. Size and type of bit: 6" bit, Rotary Method		

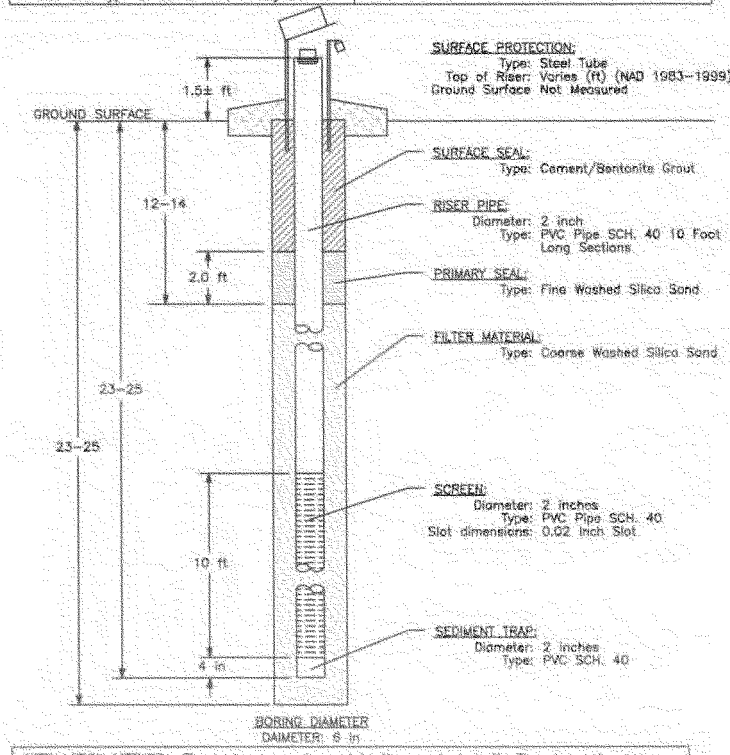


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 100 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0199

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 774086, E 760740		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0199		11. Date Hole: Started 1-20-05 Completed 1-20-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 9.73
6. Depth of Piezometer: 25 ft		13. Inspector: Norm Holst
7. Size and type of bit: 8" bit, Rotary Method		

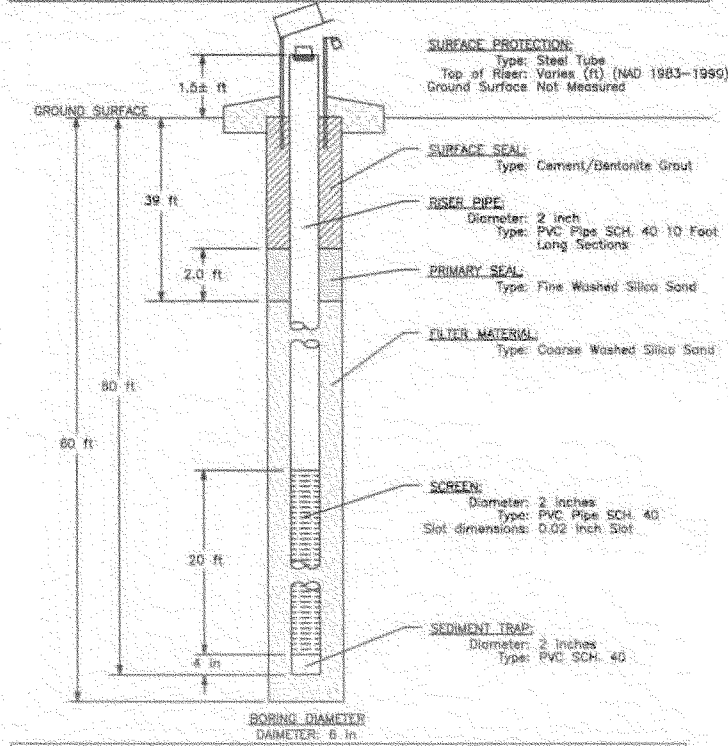


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 25 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0200

PIEZOMETER LOG	Division:	Installation:
1. Project: EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location: N 774076, E 780740		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0200		11. Date Hole: Started 1-26-05 Completed 1-26-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 9.92
6. Depth of Piezometer: 60 ft		
7. Size and type of bit: 6" bit, Rotary Method		13. Inspector: Norm Holst



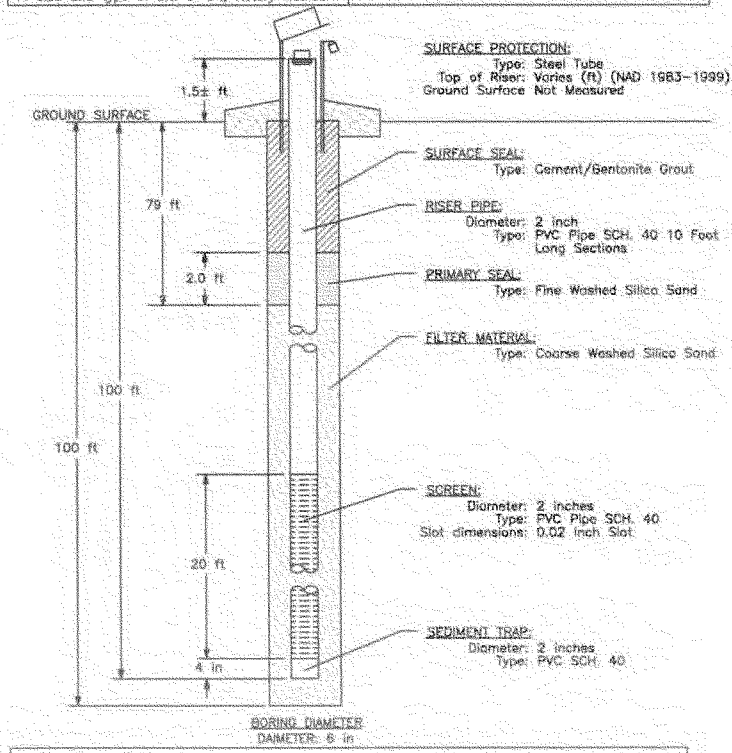
INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 60 foot Piezometer Installation

APPENDIX 1
TEST CELL BORINGS AND PIEZOMETER INSTALLATION LOGS: 201-220

Hole No. CP05-EAARS-TW-0201

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 774086, E 780740		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0201		11. Date Hole: Started 1-27-05 Completed 1-27-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 9.45
6. Depth of Piezometer: 100 ft		13. Inspector: Norm Holst
7. Size and type of bit: 6" bit, Rotary Method		

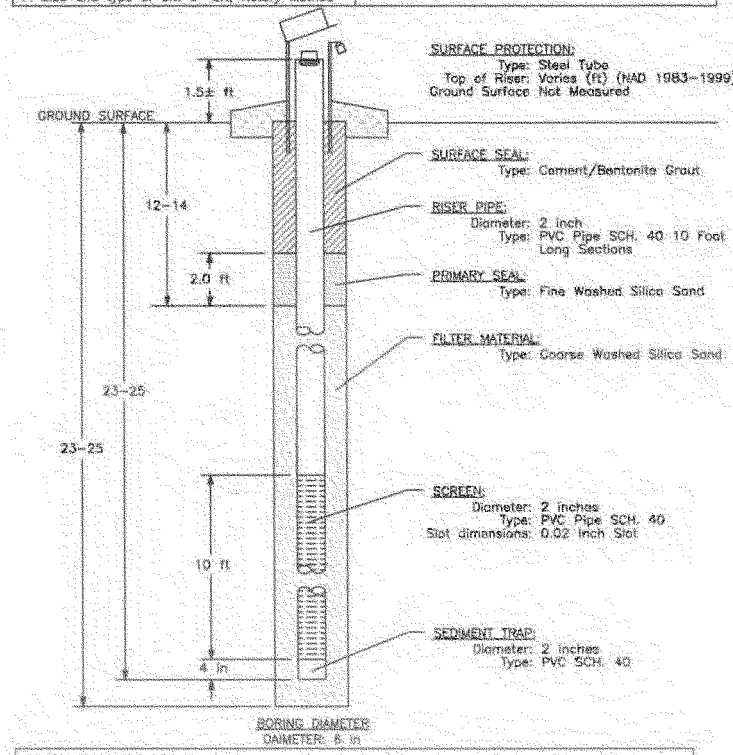


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 100 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0202

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 775110, E 782336		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0202		11. Date Hole: Started 1-19-05 Completed 1-19-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 9.45
6. Depth of Piezometer: 25 ft		13. Inspector: Norm Holet
7. Size and type of bit: 6" bit, Rotary Method		

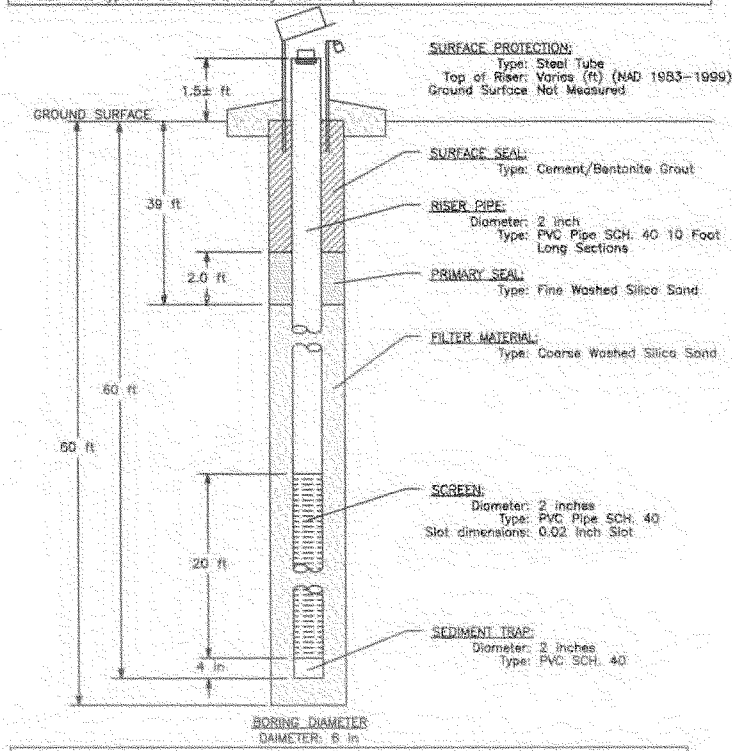


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 25 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0203

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 775120, E 762336		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0203		11. Date Hole: Started 1-29-05 Completed 1-29-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 10.08
6. Depth of Piezometer: 60 ft		13. Inspector: Norm Holst
7. Size and type of bit: 6" bit, Rotary Method		

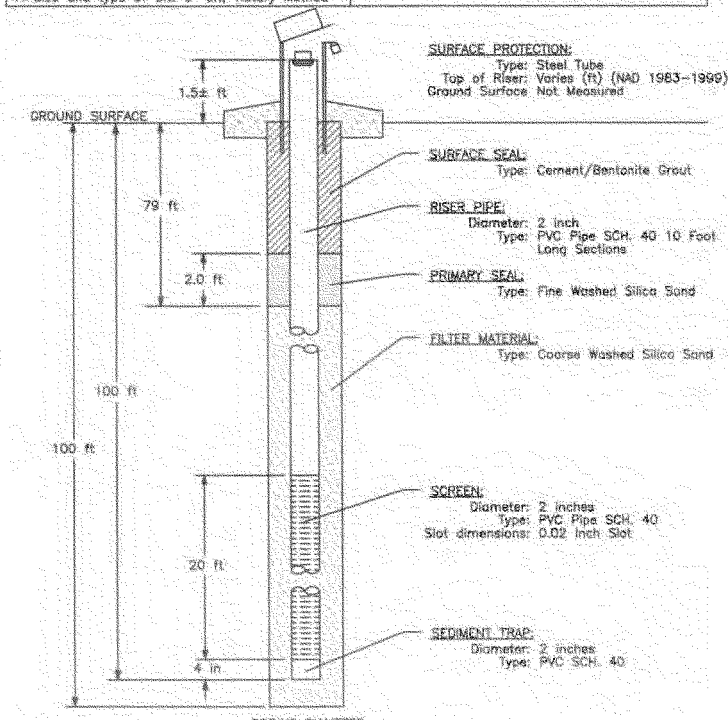


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 feet above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 60 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0204

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 775130, E 782336		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0204		11. Date Hole: Started 1-30-05 Completed 1-30-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 10.28
6. Depth of Piezometer: 100 ft		13. Inspector: Norm Holst
7. Size and type of bit: 6" bit, Rotary Method		

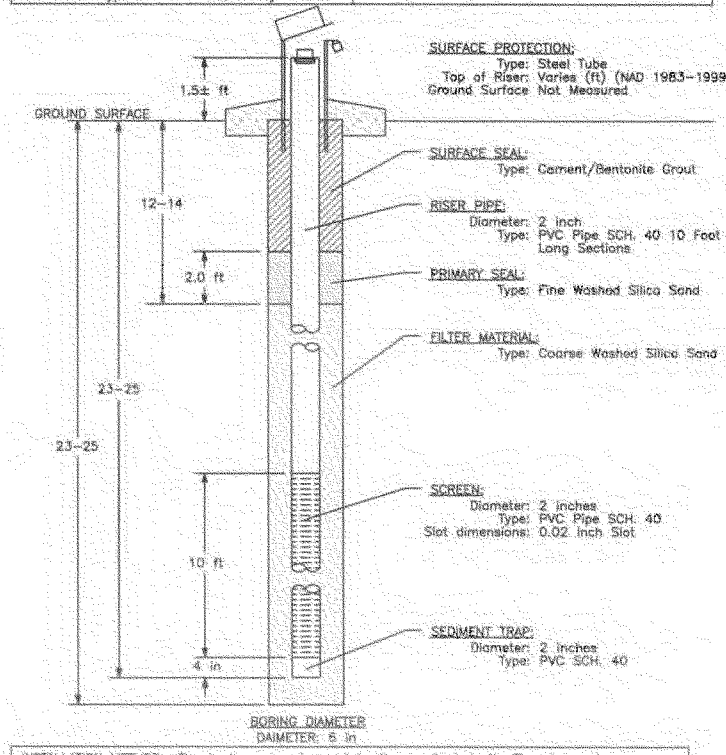


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 100 Foot Piezometer Installation

Hole No. CP05-EAARS-TW-0205

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 761240, E 773038		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0205		11. Date Hole: Started 3-28-05 Completed 3-28-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 11.73
6. Depth of Piezometer: 25 ft		
7. Size and type of bit: 6" bit, Rotary Method		13. Inspector: Norm Holst

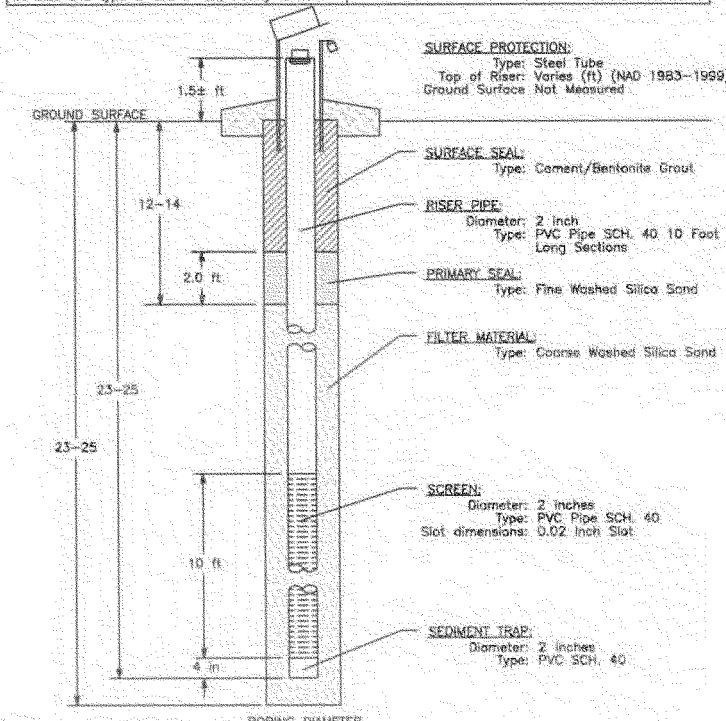


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 25 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0206

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 762328, E 773038		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0206		11. Date Hole: Started 3-28-05 Completed 3-28-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 11.37
6. Depth of Piezometer: 25 ft		13. Inspector: Norm Holst
7. Size and type of bit: 8" bit, Rotary Method		

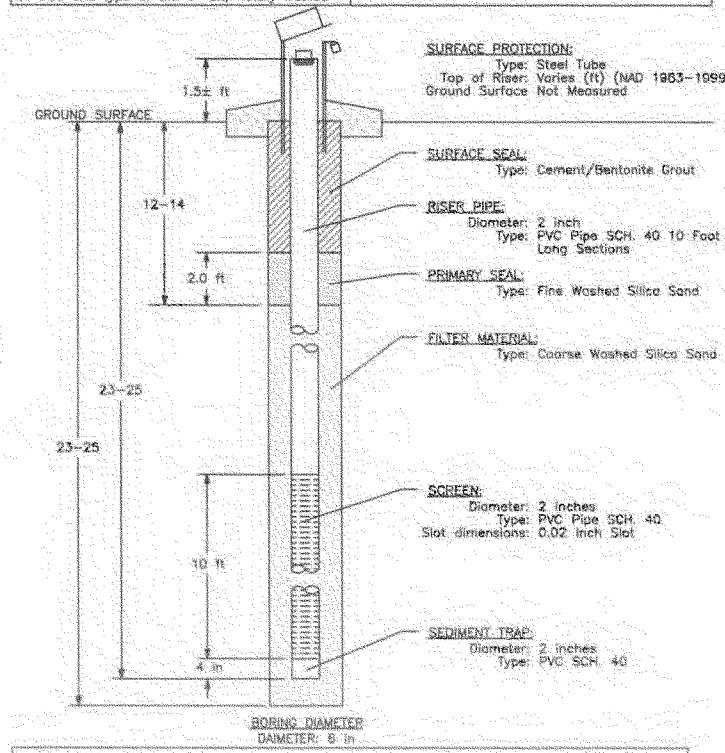


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 25 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0207

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 774398, E 759897		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0207		11. Date Hole: Started 3-15-05 Completed 3-15-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 9.61
6. Depth of Piezometer: 25 ft		13. Inspector: Norm Holst
7. Size and type of bit: 8" bit, Rotary Method		

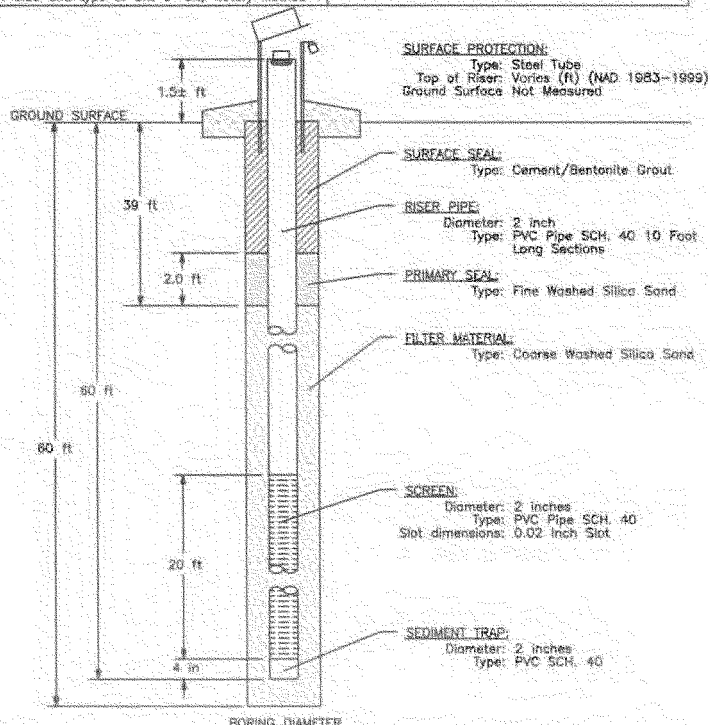


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 25 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0208

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 774408, E 758697		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0208		11. Date Hole: Started 3-15-05 Completed 3-15-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 9.39
6. Depth of Piezometer: 60 ft		13. Inspector: Norm Hotst
7. Size and type of bit: 6" bit, Rotary Method		

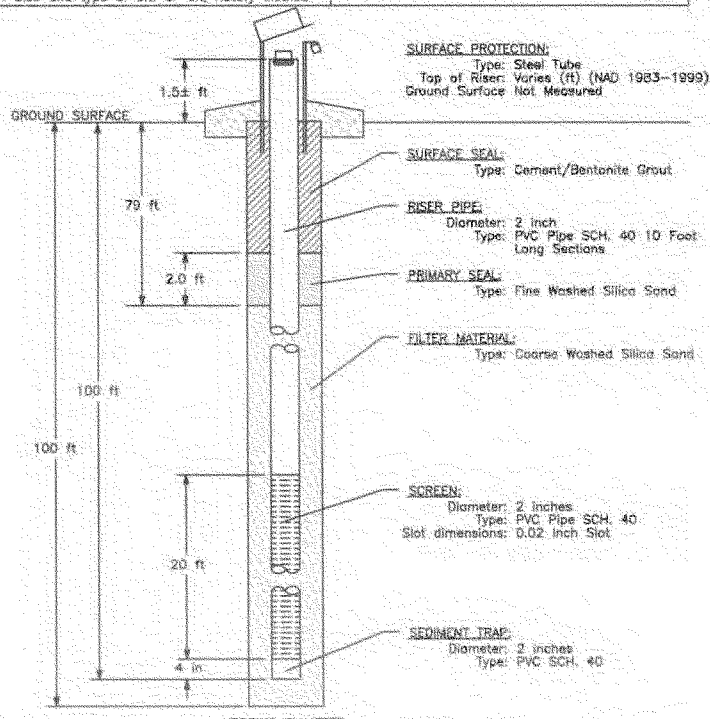


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 60 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0209

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 774418, E 759697		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0209		11. Date Hole: Started 3-15-05 Completed 3-15-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 9.45
6. Depth of Piezometer: 100 ft		13. Inspector: Norm Holst
7. Size and type of bit: 6" bit, Rotary Method		

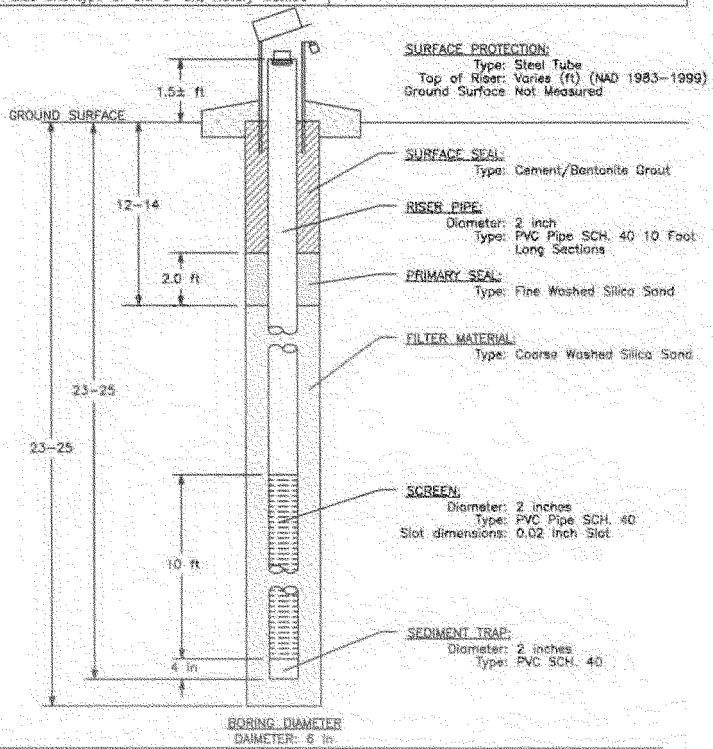


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 100 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0210

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 774488, E 759897		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0210		11. Date Hole: Started 3-15-05 Completed 3-15-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 9.48
6. Depth of Piezometer: 25 ft		13. Inspector: Norm Holst
7. Size and type of bit: 6" bit, Rotary Method		

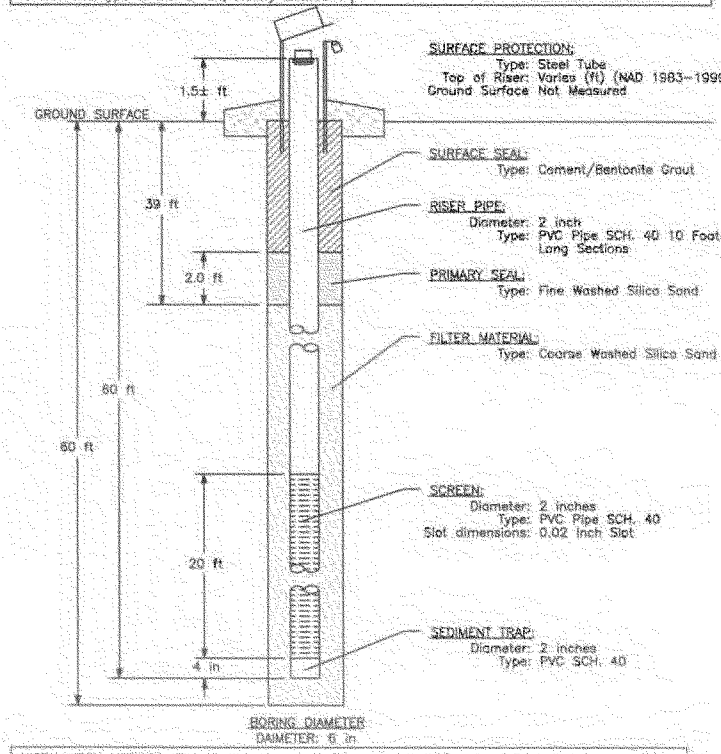


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 25 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0211

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 774498, E 759697		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0211		11. Date Hole: Started 3-15-05 Completed 3-15-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 9.32
6. Depth of Piezometer: 60 ft		13. Inspector: Norm Holst
7. Size and type of bit: 6" bit, Rotary Method		

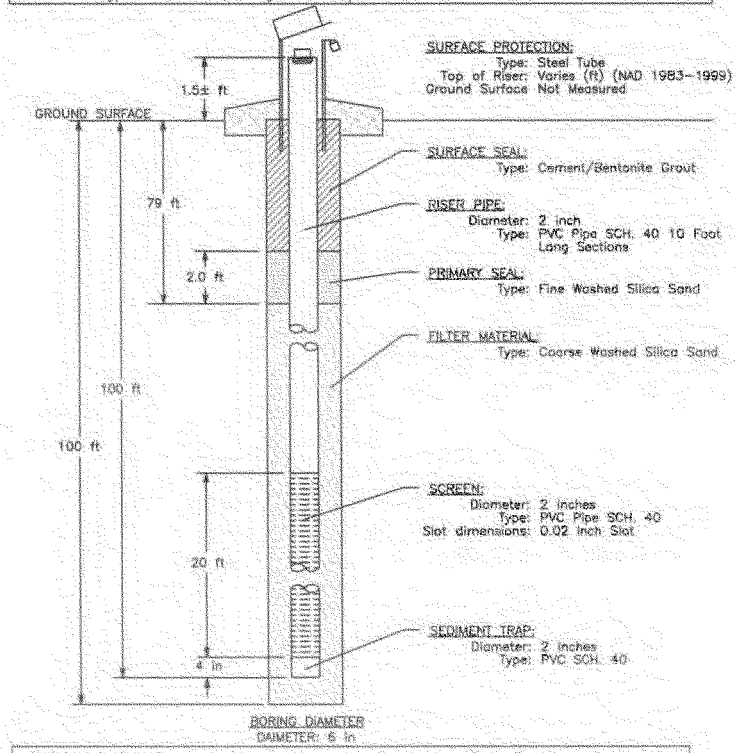


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 60 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0212

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 774508, E 759897		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0212		11. Date Hole: Started 3-15-05 Completed 3-16-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 9.32
6. Depth of Piezometer: 100 ft		13. Inspector: Norm Holst
7. Size and type of bit: 8" bit, Rotary Method		

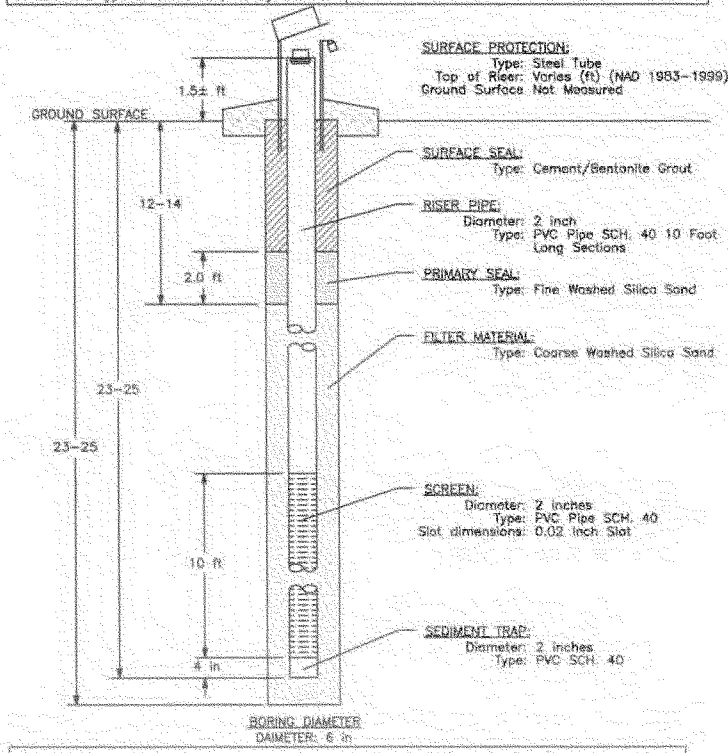


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 100 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0213

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 774074, E 780028		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0213		11. Date Hole: Started 3-15-05 Completed 3-15-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 10.63
6. Depth of Piezometer: 25 ft		13. Inspector: Norm Holst
7. Size and type of bit: 6" bit, Rotary Method		

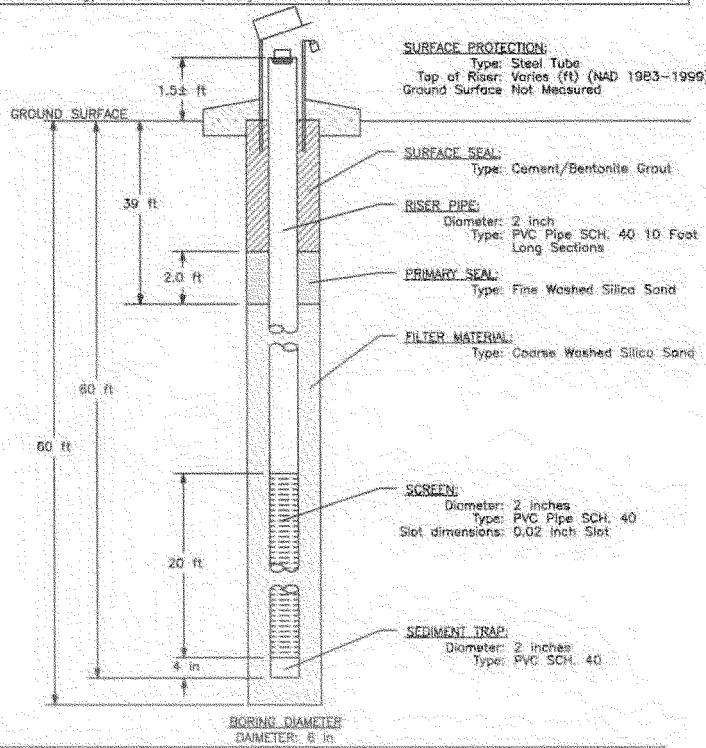


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 25 foot Piezometer Installation

Hole No. CP05-EAAR5-TW-0214

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 774074, E 760038		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0214		11. Date Hole: Started 3-15-05 Completed 3-15-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 8.57
6. Depth of Piezometer: 60 ft		13. Inspector: Norm Holst
7. Size and type of bit: 6" bit, Rotary Method		

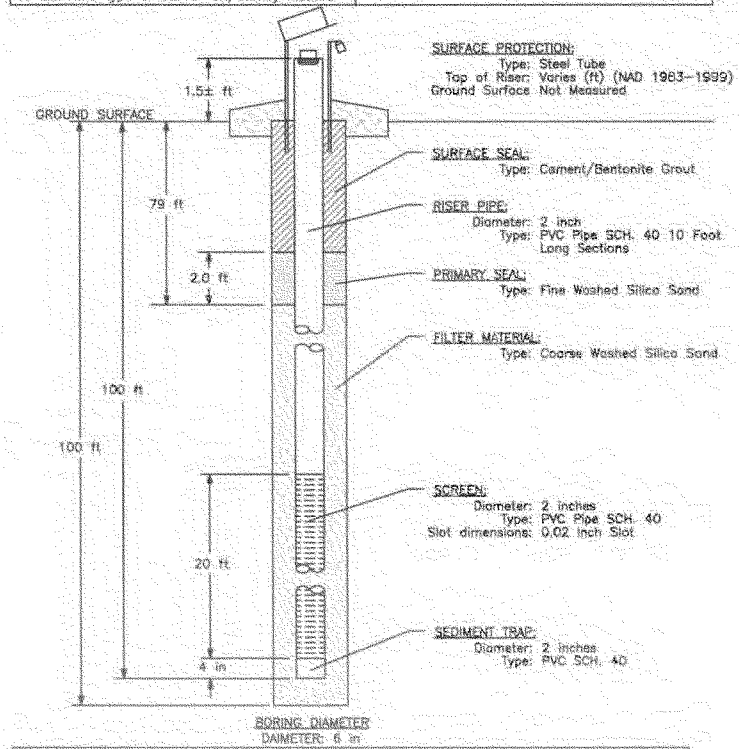


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 60 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0215

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 774074, E 780048		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0215		11. Date Hole: Started 3-15-05 Completed 3-15-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 8.19
6. Depth of Piezometer: 100 ft		13. Inspector: Norm Holst
7. Size and type of bit: 6" bit, Rotary Method		

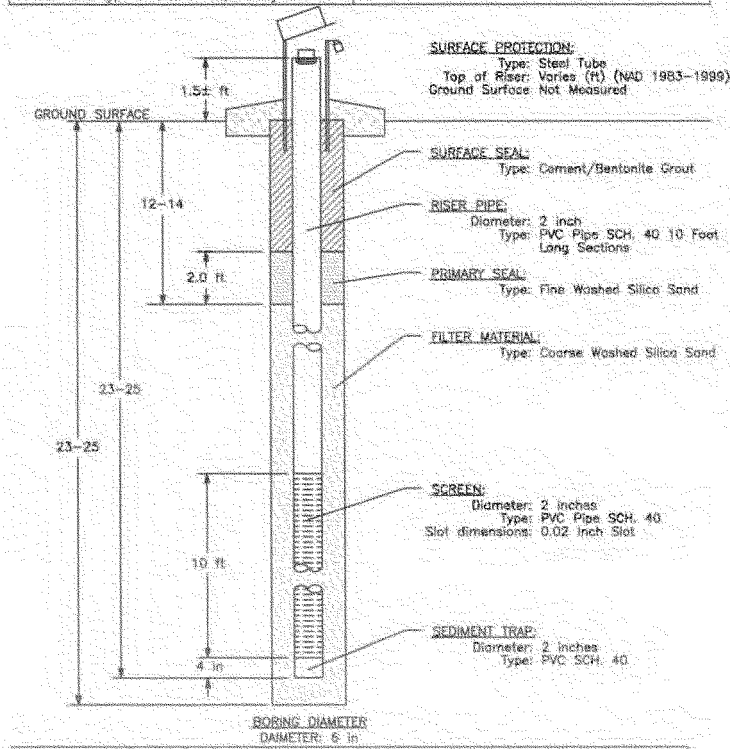


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 100 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0216

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 774074, E 780118		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0216		11. Date Hole: Started 3-16-05 Completed 3-16-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 10.40
6. Depth of Piezometer: 25 ft		
7. Size and type of bit: 6" bit, Rotary Method		13. Inspector: Norm Holst

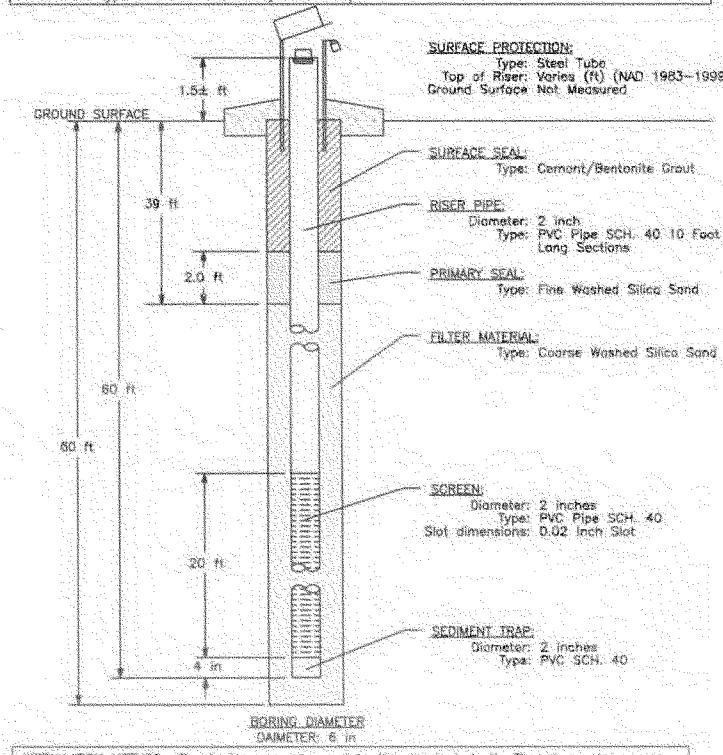


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 25 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0217

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 774074, E 760128		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0217		11. Date Hole: Started 3-16-05 Completed 3-16-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 8.04
6. Depth of Piezometer: 60 ft		13. Inspector: Norm Holst
7. Size and type of bit: 6" bit, Rotary Method		

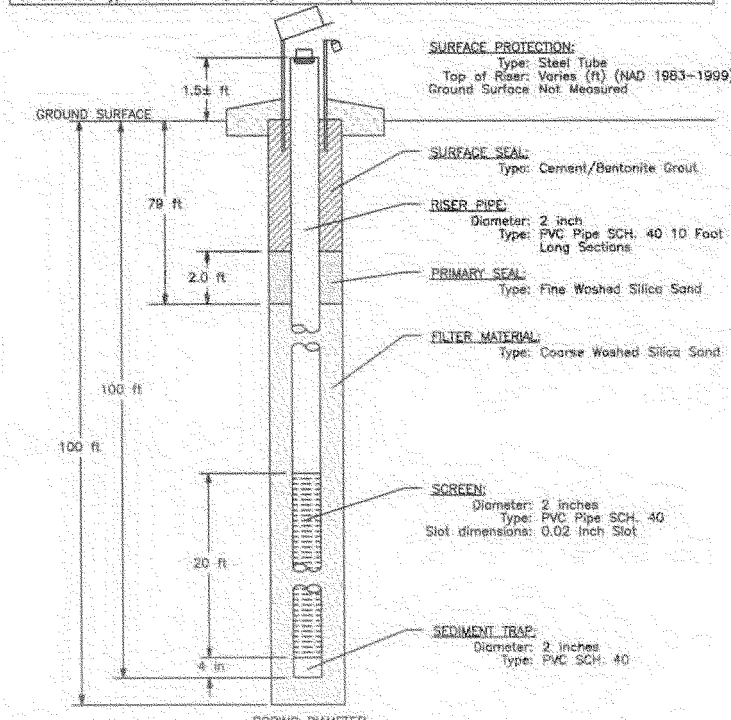


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 60 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0218

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 774074, E 780138		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0218		11. Date Hole: Started 3-16-05 Completed 3-16-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 7.81
6. Depth of Piezometer: 100 ft		13. Inspector: Norm Holst
7. Size and type of bit: 6" bit, Rotary Method		

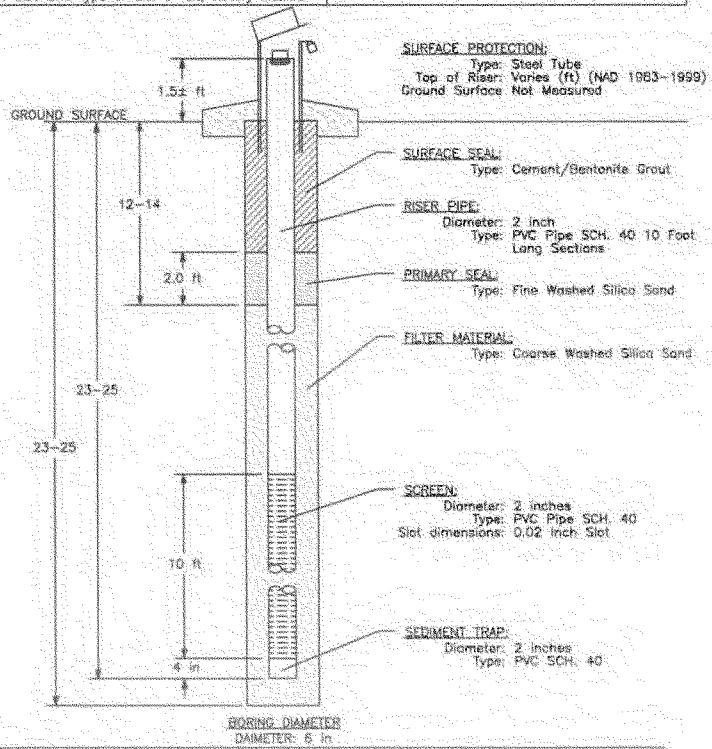


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 100 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0219

PIEZOMETER LOG	Division:	Installation:
1. Project: EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location: N 773747, E 759701		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodorse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No: CP05-EAARS-TW-0219		11. Date Hole: Started 3-2-05 Completed 3-2-05
5. Name of Driller: Nodorse & Associates, Inc.		12. Elevation Top of Riser: 9.75
6. Depth of Piezometer: 25 ft		13. Inspector: Norm Holst
7. Size and type of bit: 6" bit, Rotary Method		

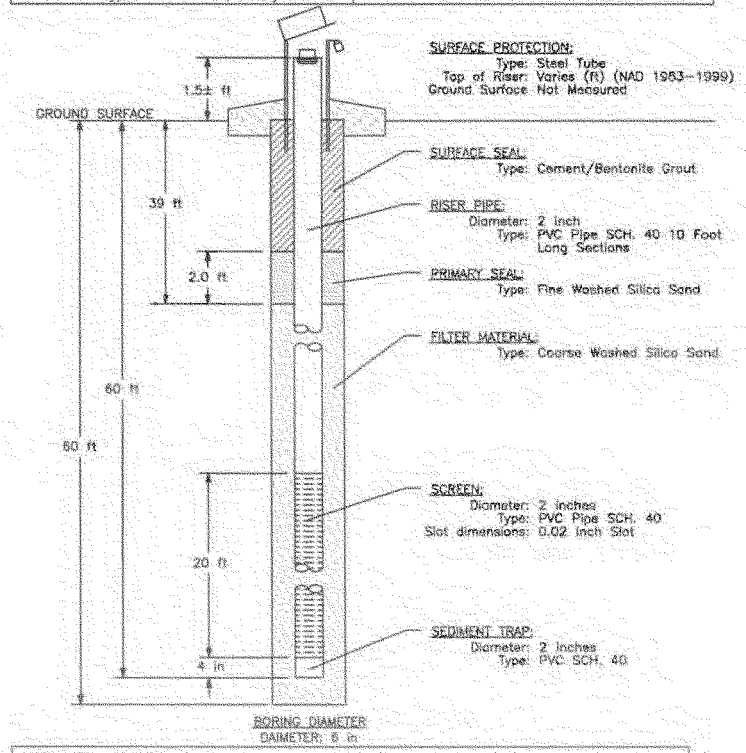


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5 feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 25 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0220

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 773737, E 759701		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0220		11. Date Hole: Started 3-3-05 Completed 3-3-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 9.27
6. Depth of Piezometer: 60 ft		
7. Size and type of bit: 6" bit, Rotary Method		13. Inspector: Norm Holst



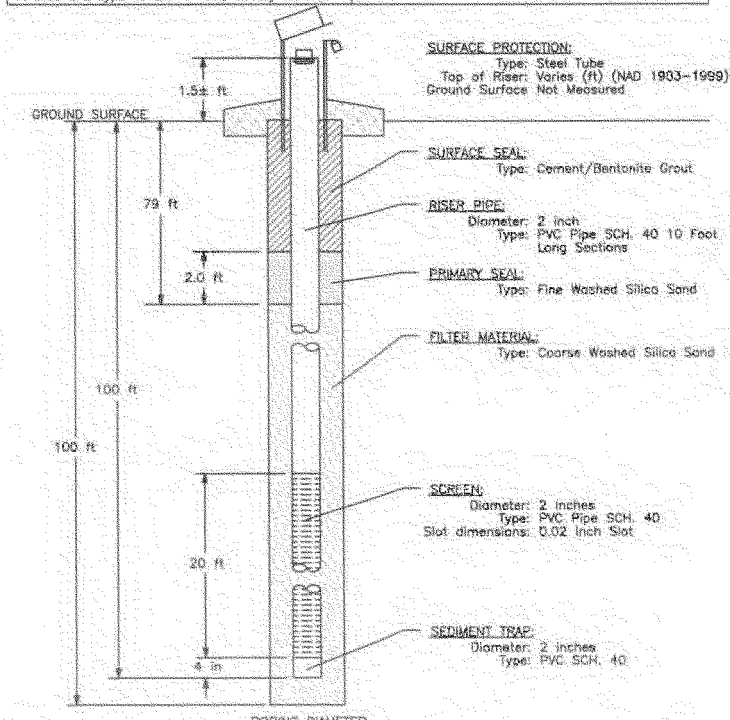
INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 60 foot Piezometer Installation

APPENDIX 1
TEST CELL BORINGS AND PIEZOMETER INSTALLATION LOGS: 221-240

Hole No. CP05-EAARS-TW-0221

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 773727, E 759701		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0221		11. Date Hole: Started 3-3-05 Completed 3-3-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 9.30
6. Depth of Piezometer: 100 ft		13. Inspector: Norm Holst
7. Size and type of bit: 6" bit, Rotary Method		

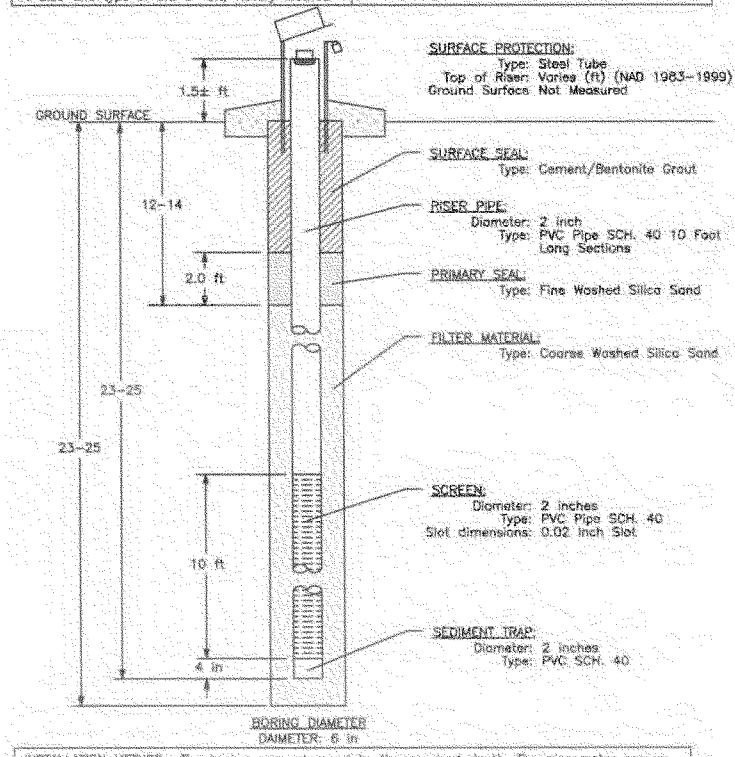


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 100 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0222

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 773857, E 759701		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0222		11. Date Hole: Started 3-5-05 Completed 3-5-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 8.79
6. Depth of Piezometer: 25 ft		
7. Size and type of bit: 8" bit, Rotary Method		13. Inspector: Norm Holst

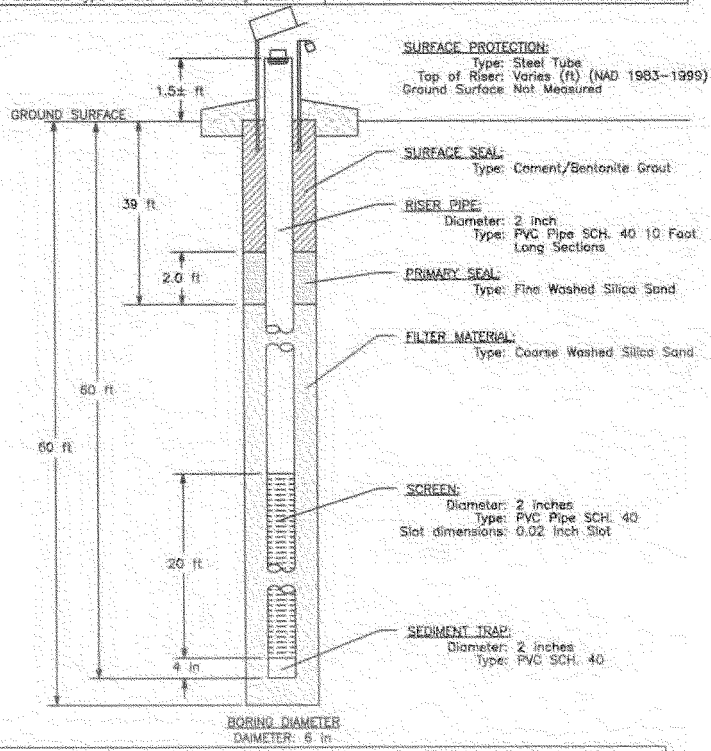


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 25 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0223

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 773647, E 759701		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0223		11. Date Hole: Started 3-5-06 Completed 3-9-06
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 7.75
6. Depth of Piezometer: 60 ft.		13. Inspector: Norm Holst
7. Size and type of bit: 6" bit, Rotary Method		

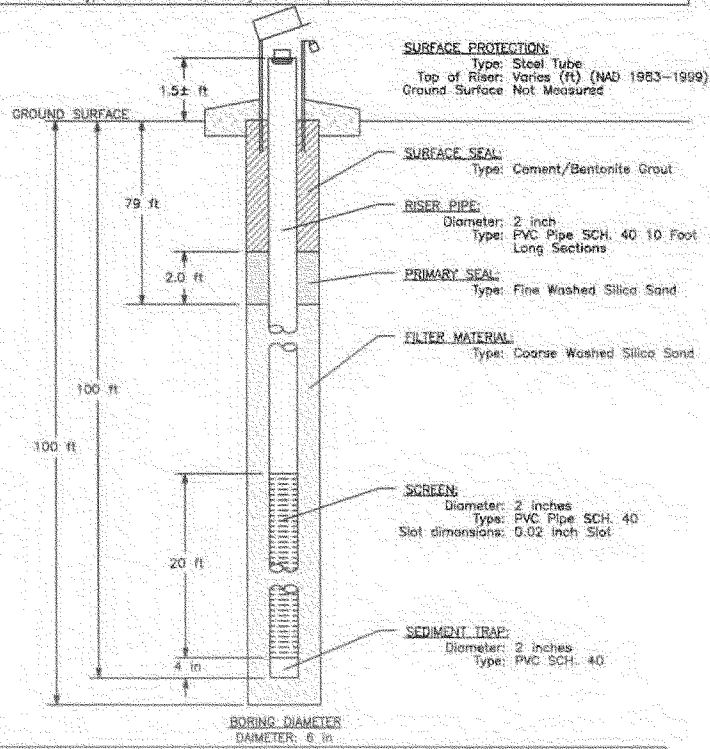


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 60 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0224

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 773637, E 759701		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0224		11. Date Hole: Started 3-5-05 Completed 3-5-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 7.92
6. Depth of Piezometer: 100 ft		13. Inspector: Norm Holst
7. Size and type of bit: 6" bit, Rotary Method		

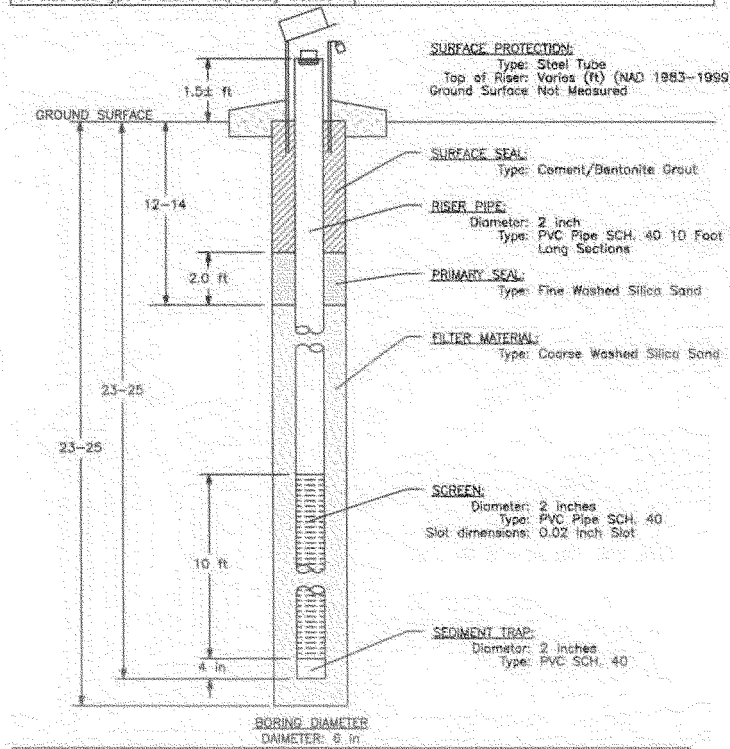


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 100 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0225

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 774070, E 759370		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0225		11. Date Hole: Started 3-10-05 Completed 3-10-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 8.41
6. Depth of Piezometer: 25 ft		
7. Size and type of bit: 6" bit, Rotary Method		13. Inspector: Norm Hoist



INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

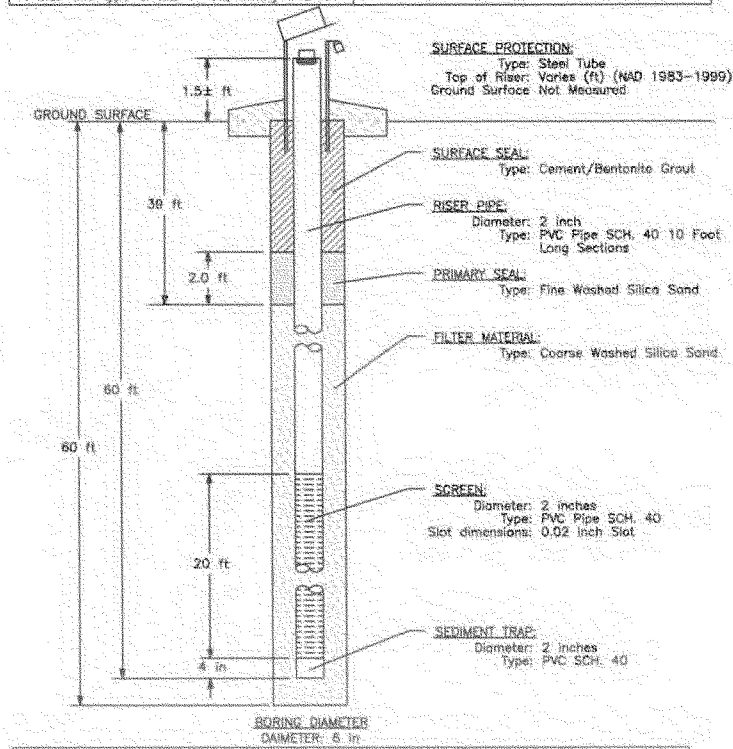
NOTES: Typical 25 foot Piezometer Installation

APPENDIX 2

APPENDIX 2
SUPPLEMENTAL BORINGS AND PIEZOMETER INSTALLATION LOGS: 255-260

Hole No. CP05-EAARS-TW-0226

PIEZOMETER LOG	Division:	Installation:
1. Project: EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location: N 774070, E 759360		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0226		11. Date Hole: Started 3-10-05 Completed 3-10-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 8.25
6. Depth of Piezometer: 60 ft		13. Inspector: Norm Holst
7. Size and type of bit: 8" bit, Rotary Method		

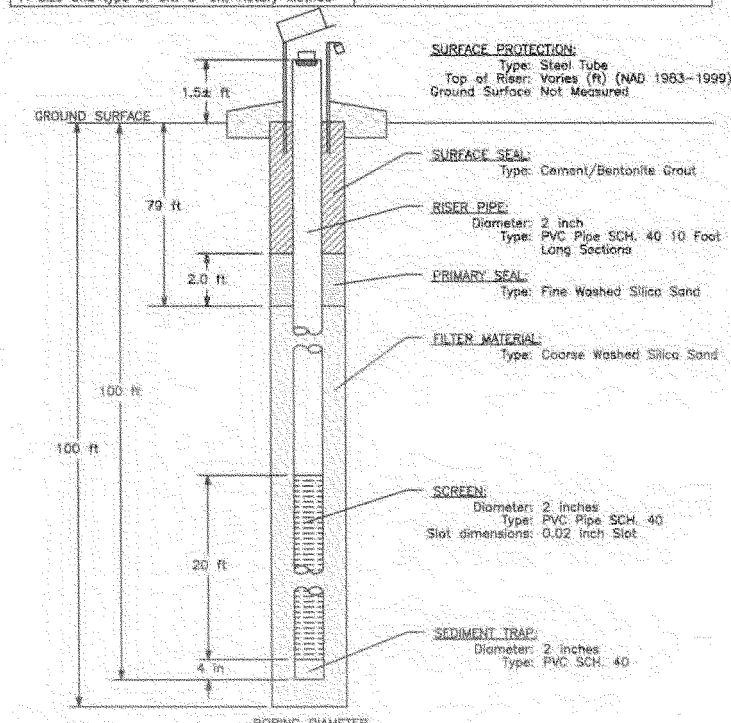


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 60 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0227

PIEZOMETER LOG	Division:	Installation:
1. Project: EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 774070, E 759350		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0227		11. Date Hole: Started 3-10-05 Completed 3-10-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 8.38
6. Depth of Piezometer: 100 ft		13. Inspector: Norm Holst
7. Size and type of bit: 6" bit, Rotary Method		

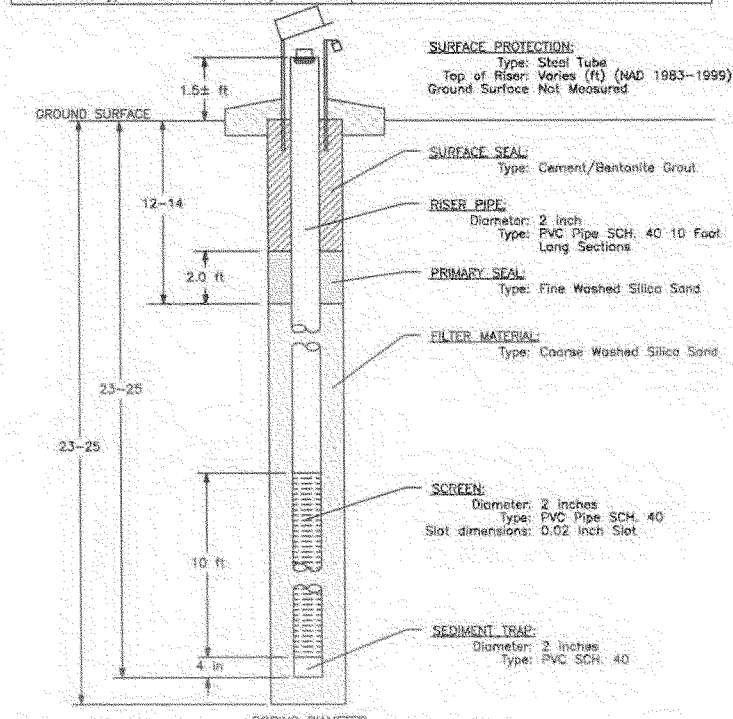


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 100 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0228

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 774070, E 759280		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0228		11. Date Hole: Started 3-10-05 Completed 3-10-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 9.52
6. Depth of Piezometer: 25 ft		13. Inspector: Norm Holst
7. Size and type of bit: 6" bit, Rotary Method		

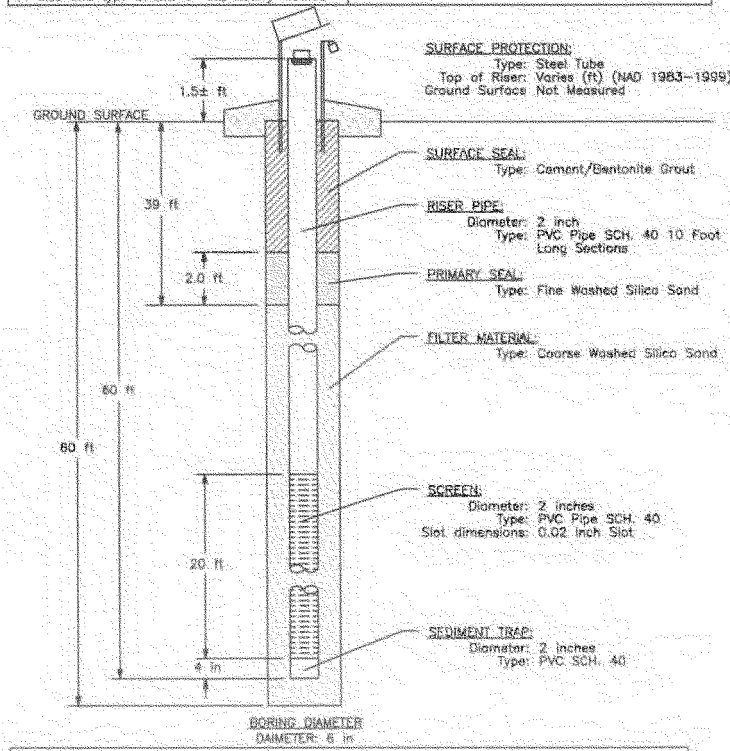


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 25 foot Piezometer Installation

Hole No. CPD5-EAARS-TW-0229

PIEZOMETER LOG	Division:	Installation:
1. Project: EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location: N 774070, E 759270		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
229		11. Date Hole: Started 3-10-05 Completed 3-10-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 9.23
6. Depth of Piezometer: 80 ft		13. Inspector: Norm Holst
7. Size and type of bit: 6" bit, Rotary Method		

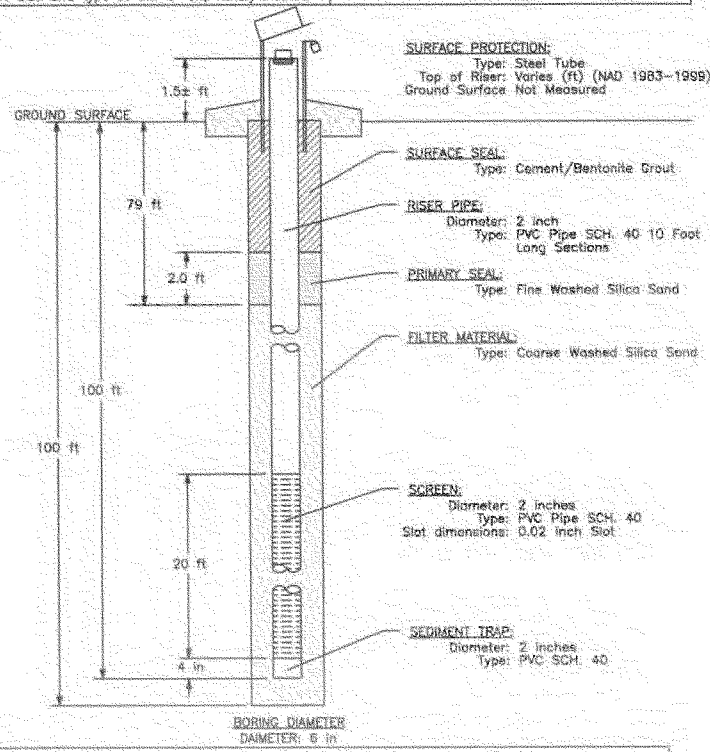


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 80 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0230

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 774070, E 759260		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0230		11. Date Hole: Started 3-10-05 Completed 3-10-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 9.47
6. Depth of Piezometer: 100 ft		13. Inspector: Norm Holst
7. Size and type of bit: 6" bit, Rotary Method		

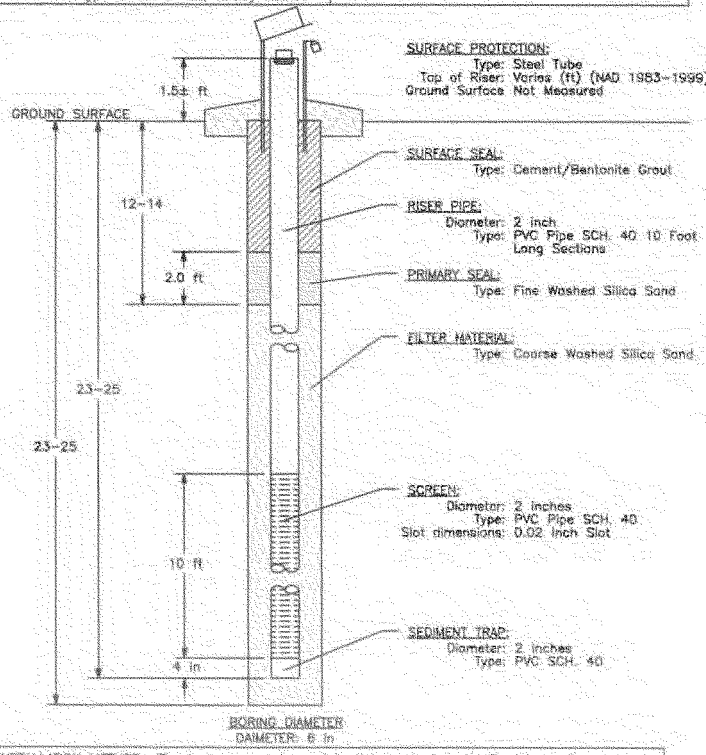


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 100 foot Piezometer Installation

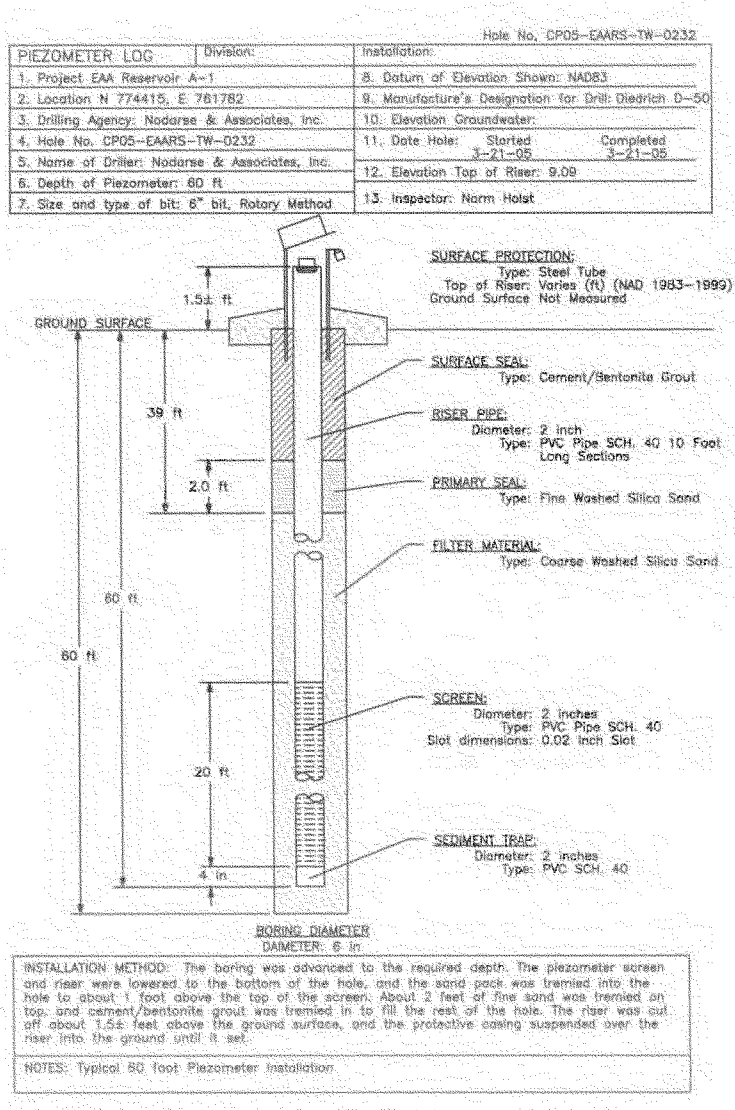
Hole No. CP05-EAARS-TW-0231

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 774415, E 761772		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0231		11. Date Hole: Started 3-21-05 Completed 3-21-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 9.23
6. Depth of Piezometer: 25 ft		13. Inspector: Norm Holst
7. Size and type of bit: 8" bit, Rotary Method		



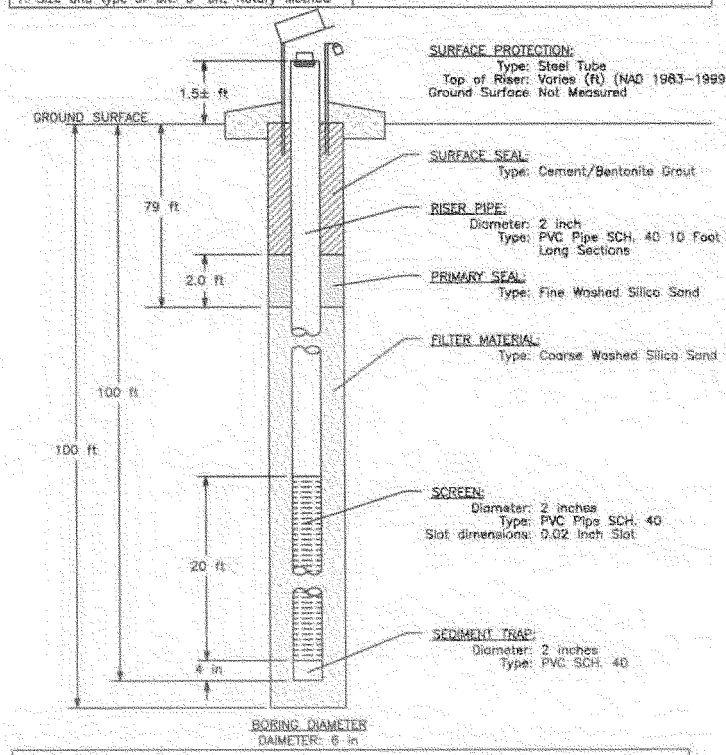
INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 25 foot Piezometer Installation


Hole No. CP05-EAARS-TW-0232
PIEZOMETER LOG
Division:
Installation:
1. Project EAA Reservoir A-1
2. Location N 774415, E 761782
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No. CP05-EAARS-TW-0232
5. Name of Driller: Nodarse & Associates, Inc.
6. Depth of Piezometer: 60 ft
7. Size and type of bit: 6" bit, Rotary Method
8. Datum of Elevation Shown: NAD83
9. Manufacture's Designation for Drill: Diedrich D-50
10. Elevation Groundwater:
11. Date Hole: Started 3-21-05 Completed 3-21-05
12. Elevation Top of Riser: 9.09
13. Inspector: Norm Holst
SURFACE PROTECTION:
Type: Steel Tube
Top of Riser: Varies (ft) (NAD 1983-1999)
Ground Surface Not Measured
1.5± ft
GROUND SURFACE
SURFACE SEAL:
Type: Cement/Bentonite Grout
39 ft
RISER PIPE:
Diameter: 2 inch
Type: PVC Pipe SCH. 40 10 Foot Long Sections
2.0 ft
PRIMARY SEAL:
Type: Fine Washed Silica Sand
FILTER MATERIAL:
Type: Coarse Washed Silica Sand
60 ft
60 ft
SCREEN:
Diameter: 2 inches
Type: PVC Pipe SCH. 40
Slot dimensions: 0.02 inch Slot
20 ft
SEDIMENT TRAP:
Diameter: 2 inches
Type: PVC SCH. 40
4 in
BORING DIAMETER
DIAMETER: 6 in
INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.
NOTES: Typical 60 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0233

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 774415, E 761792		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0233		11. Date Hole: Started 3-21-05 Completed 3-21-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 9.06
6. Depth of Piezometer: 100 ft		13. Inspector: Norm Holst
7. Size and type of bit: 6" bit, Rotary Method		

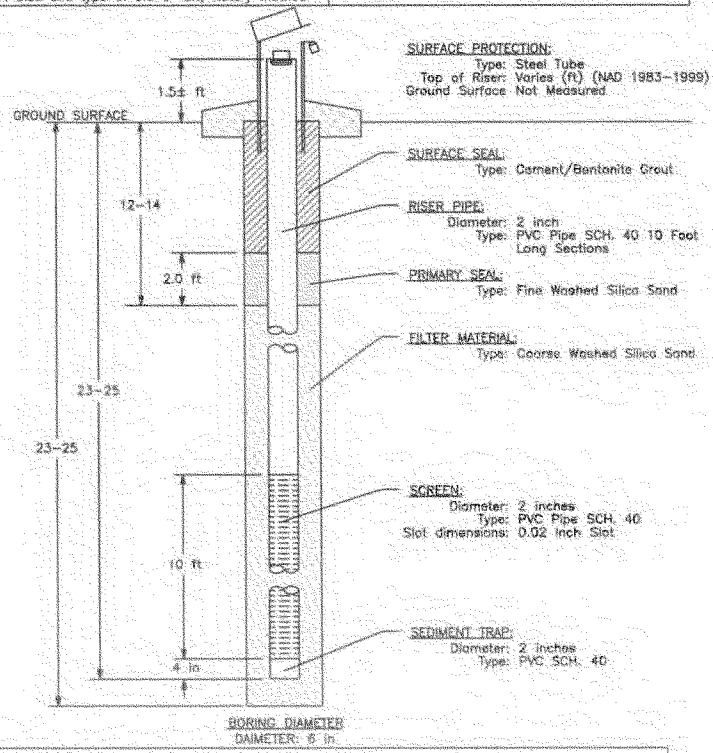


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5 feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 100 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0234

PIEZOMETER LOG:	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 774515, E 761772		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0234		11. Date Hole: Started 3-17-05 Completed 3-17-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 10.09
6. Depth of Piezometer: 25 ft		13. Inspector: Norm Holst
7. Size and type of bit: 6" bit, Rotary Method		

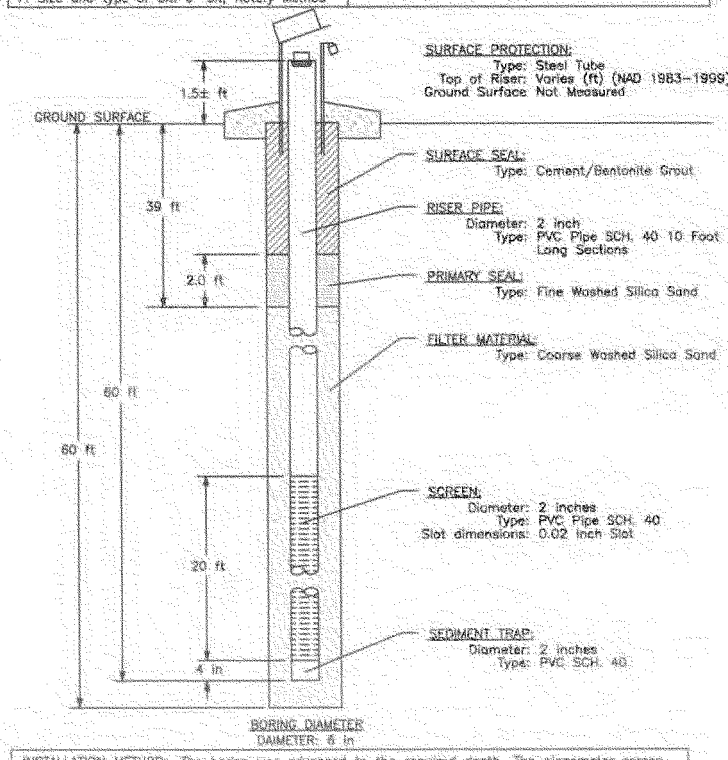


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 25 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0235

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 774515, E 761782		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0235		11. Date Hole: Started 3-16-05 Completed 3-16-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 8.98
6. Depth of Piezometer: 60 ft		13. Inspector: Norm Holst
7. Size and type of bit: 6" bit, Rotary Method		

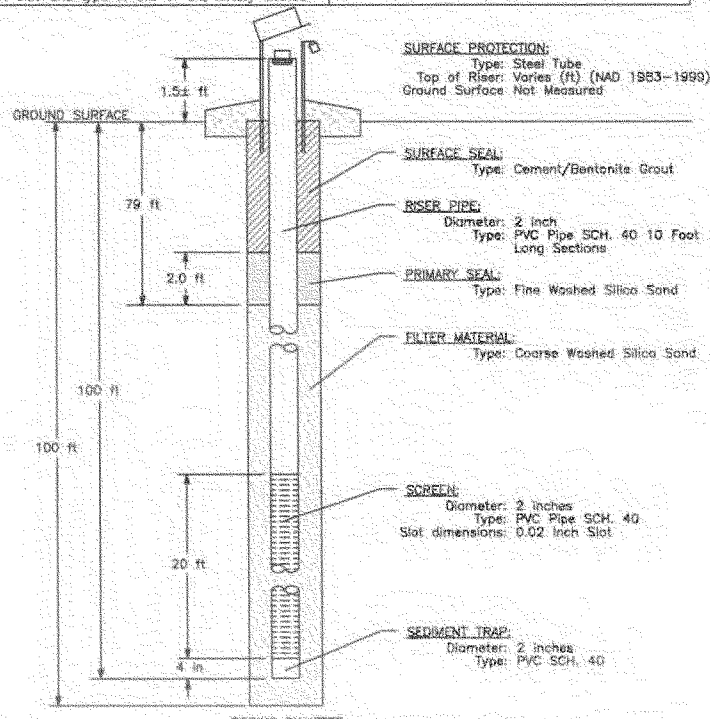


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 60 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0236

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 774515, E 761792		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0236		11. Date Hole: Started 3-17-05 Completed 3-17-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 9.90
6. Depth of Piezometer: 100 ft		13. Inspector: Norm Holst
7. Size and type of bit: 6" bit, Rotary Method		

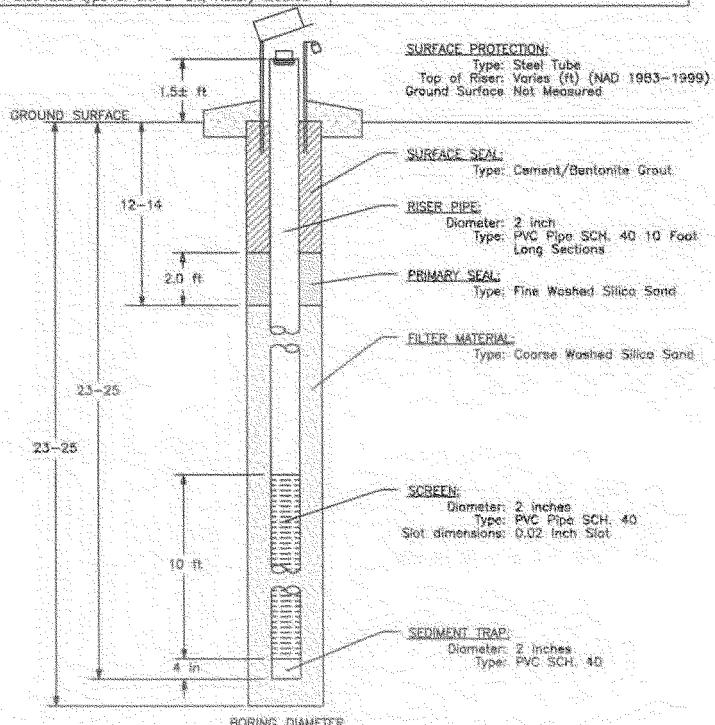


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 100 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0237

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 774071, E 782123		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0237		11. Date Hole: Started 12/7/2004 Completed 12/7/2004
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 9.04
6. Depth of Piezometer: 25 ft		13. Inspector: Norm Holst
7. Size and type of bit: 6" bit, Rotary Method		

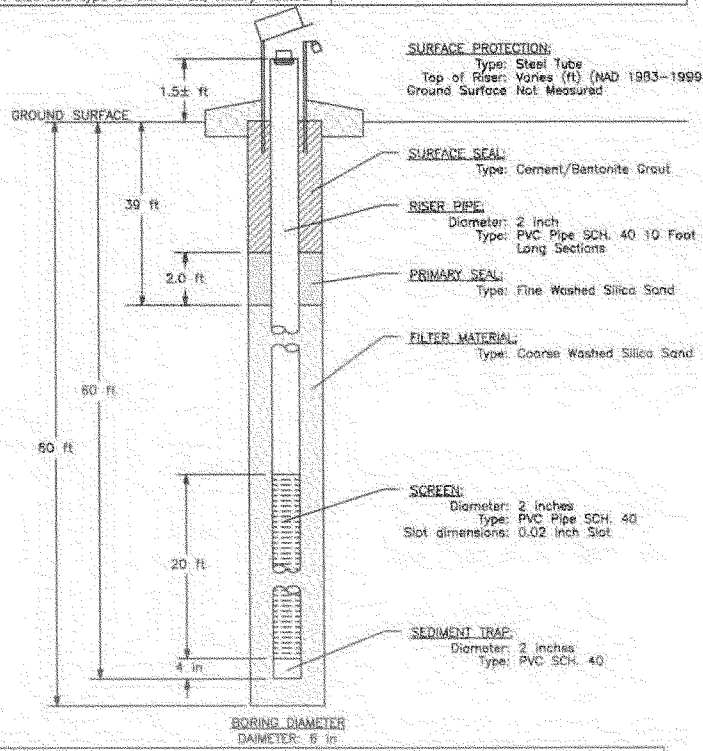


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 25 foot Piezometer Installation

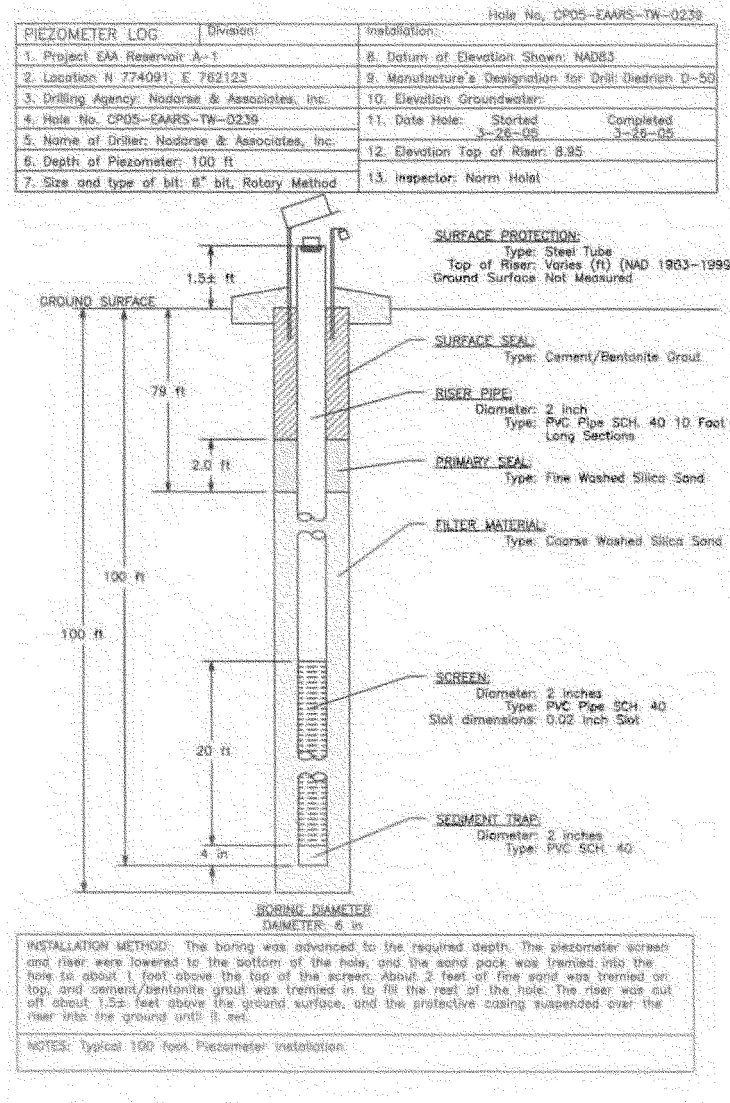
Hole No. CP05-EAARS-TW-0238

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 774081, E 782123		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0238		11. Date Hole: Started 3-26-05 Completed 3-26-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 8.87
6. Depth of Piezometer: 80 ft		13. Inspector: Norm Holst
7. Size and type of bit: 6" bit, Rotary Method		



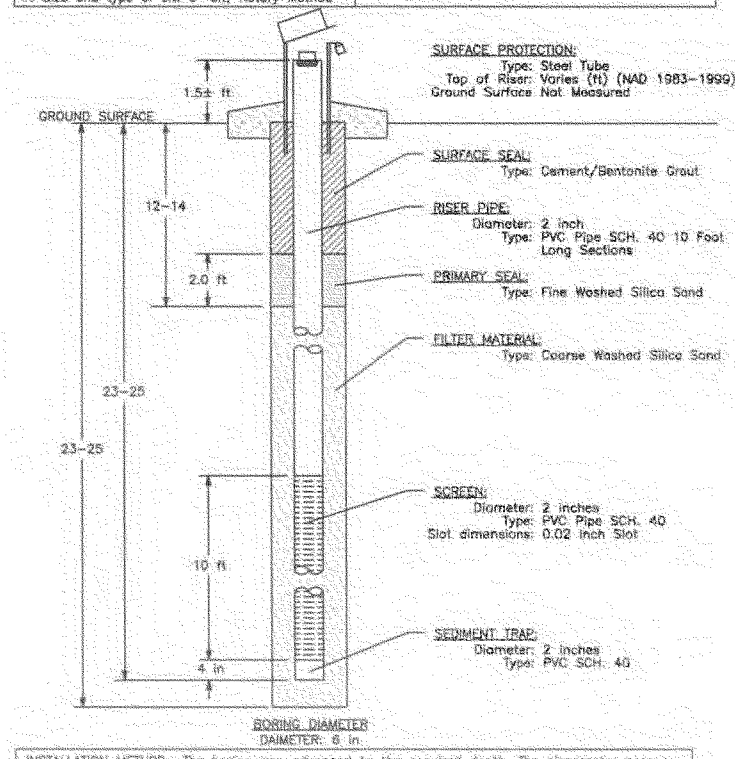
INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 80 foot Piezometer Installation


Hole No. CP05-EAARS-TW-0239
PIEZOMETER LOG
Division:
Installation:
1. Project EAA Reservoir A-1
2. Location N 774091, E 782123
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No. CP05-EAARS-TW-0239
5. Name of Driller: Nodarse & Associates, Inc.
6. Depth of Piezometer: 100 ft
7. Size and type of bit: 8" bit, Rotary Method
8. Datum of Elevation Shown: NAD83
9. Manufacture's Designation for Drill: Diedrich D-50
10. Elevation Groundwater:
11. Date Hole: Started 3-26-05 Completed 3-26-05
12. Elevation Top of Riser: 8.85
13. Inspector: Norm Holst
1.5± ft
GROUND SURFACE
79 ft
2.0 ft
100 ft
100 ft
20 ft
4 in
SURFACE PROTECTION:
Type: Steel Tube
Top of Riser: Varies (ft) (NAD 1983-1999)
Ground Surface: Not Measured
SURFACE SEAL:
Type: Cement/Bentonite Grout
RISER PIPE:
Diameter: 2 inch
Type: PVC Pipe SCH. 40 10 Foot Long Sections
PRIMARY SEAL:
Type: Fine Washed Silica Sand
FILTER MATERIAL:
Type: Coarse Washed Silica Sand
SCREEN:
Diameter: 2 inches
Type: PVC Pipe SCH. 40
Slot dimensions: 0.02 inch Slot
SEDIMENT TRAP:
Diameter: 2 inches
Type: PVC SCH. 40
BORING DIAMETER
DIAMETER: 6 in
INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.
NOTES: Typical 100 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0240

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 774071, E 762223		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0240		11. Date Hole: Started 3-16-05 Completed 3-16-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 8.11
6. Depth of Piezometer: 25 ft		13. Inspector: Norm Holst
7. Size and type of bit: 6" bit, Rotary Method		



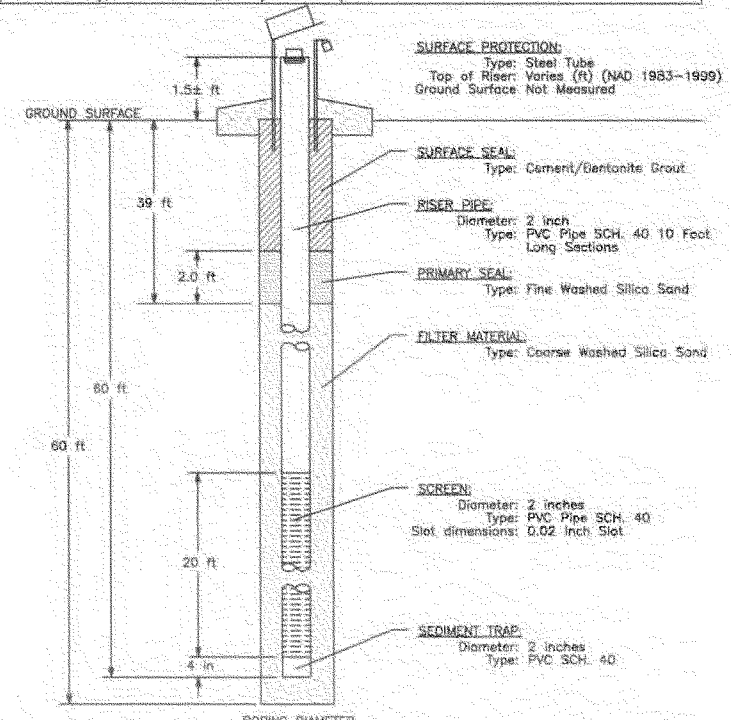
INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 25 foot Piezometer Installation

APPENDIX 1
TEST CELL BORINGS AND PIEZOMETER INSTALLATION LOGS: 241-254

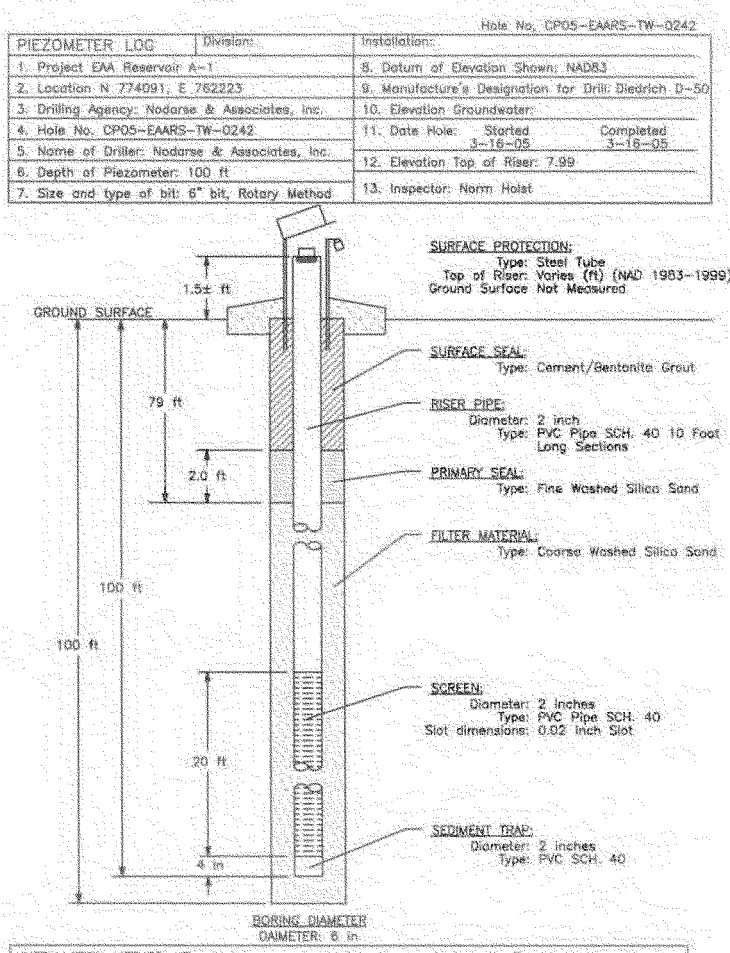
Hole No. CP05-EAARS-TW-0241

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N, E		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0		11. Date Hole: Started 3-16-05 Completed 3-16-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 8.11
6. Depth of Piezometer: 60 ft		
7. Size and type of bit: 6" bit, Rotary Method		13. Inspector: Norm Holst



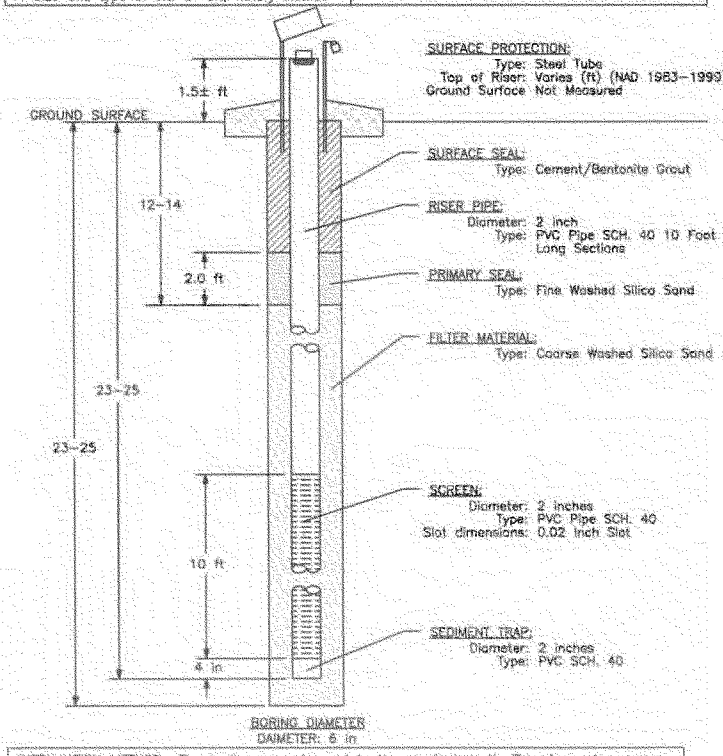
INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 60 foot Piezometer Installation


Hole No. CP05-EAARS-TW-0242
PIEZOMETER LOG
Division:
Installation:
1. Project EAA Reservoir A-1
2. Location N 774091; E 762223
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No. CP05-EAARS-TW-0242
5. Name of Driller: Nodarse & Associates, Inc.
6. Depth of Piezometer: 100 ft
7. Size and type of bit: 6" bit, Rotary Method
8. Datum of Elevation Shown: NAD83
9. Manufacture's Designation for Drill: Diedrich D-50
10. Elevation Groundwater:
11. Date Hole: Started 3-16-05 Completed 3-16-05
12. Elevation Top of Riser: 7.99
13. Inspector: Norm Holst
1.5± ft
GROUND SURFACE
79 ft
2.0 ft
100 ft
100 ft
20 ft
4 in
SURFACE PROTECTION:
Type: Steel Tube
Top of Riser: Varies (ft) (NAD 1983-1999)
Ground Surface Not Measured
SURFACE SEAL:
Type: Cement/Bentonite Grout
RISER PIPE:
Diameter: 2 inch
Type: PVC Pipe SCH. 40 10 Foot Long Sections
PRIMARY SEAL:
Type: Fine Washed Silica Sand
FILTER MATERIAL:
Type: Coarse Washed Silica Sand
SCREEN:
Diameter: 2 inches
Type: PVC Pipe SCH. 40
Slot dimensions: 0.02 inch Slot
SEDIMENT TRAP:
Diameter: 2 inches
Type: PVC SCH. 40
BORING DIAMETER
DIAMETER: 6 in
INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.
NOTES: Typical 100 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0243

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 773743, E 761776		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0243		11. Date Hole: Started 3-25-05 Completed 3-25-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 8.91
6. Depth of Piezometer: 25 ft		13. Inspector: Norm Holst
7. Size and type of bit: 6" bit, Rotary Method		

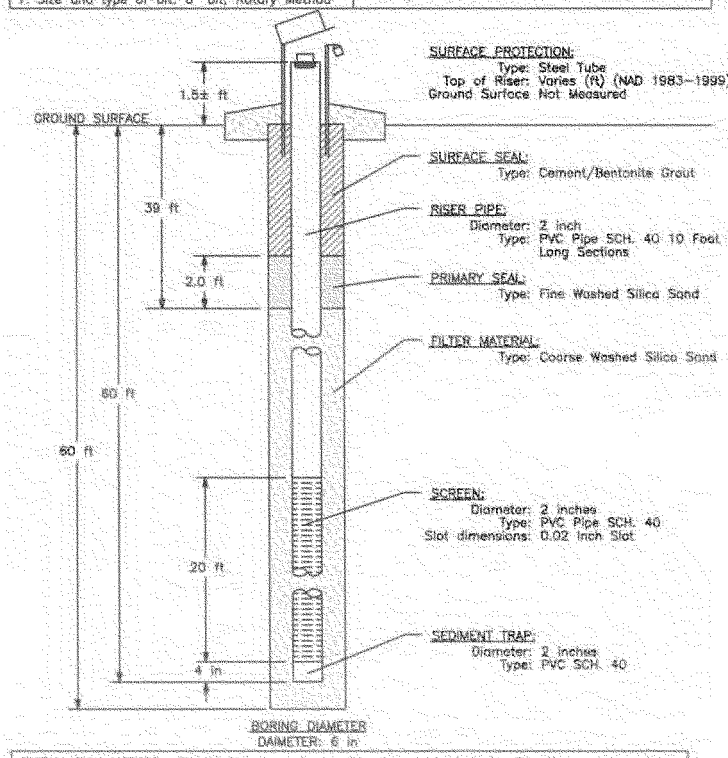


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 25 foot Piezometer Installation

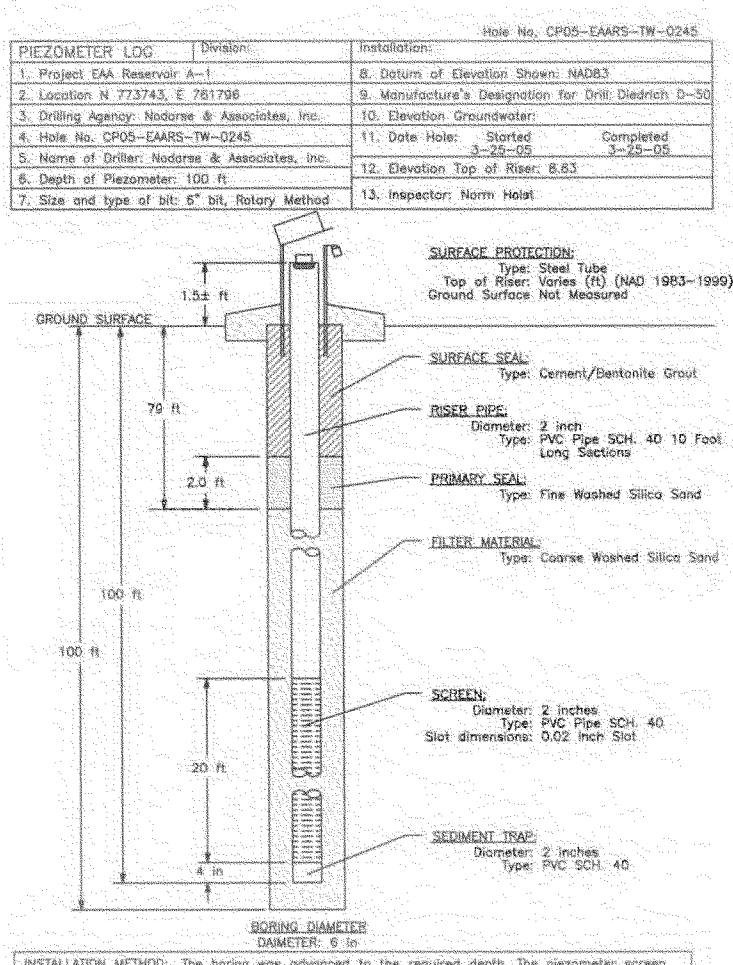
Hole No. CP05-EAARS-TW-0244

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 773743, E 761786		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0244		11. Date Hole: Started 3-25-05 Completed 3-25-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 9.12
6. Depth of Piezometer: 60 ft		
7. Size and type of bit: 8" bit, Rotary Method		13. Inspector: Norm Hoist



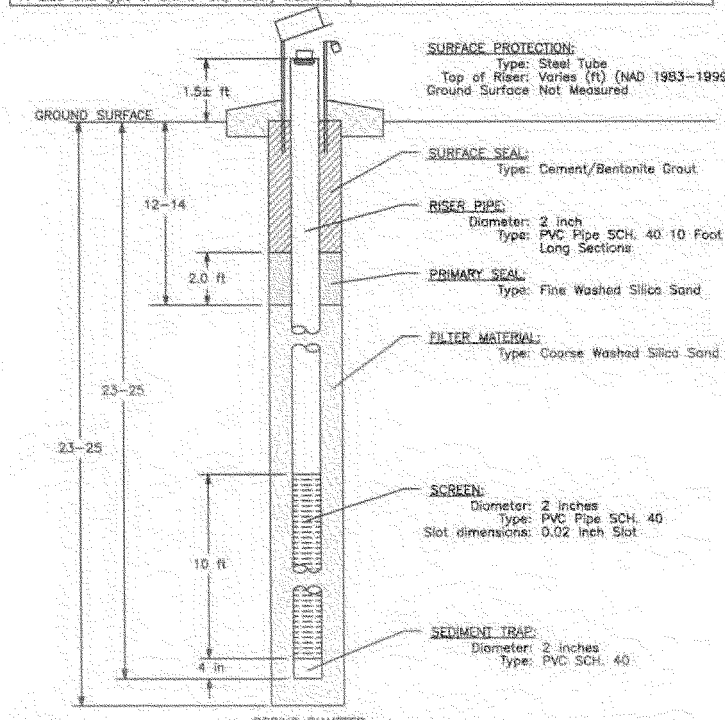
INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 60 foot Piezometer Installation


Hole No. CP05-EAARS-TW-0245
PIEZOMETER LOG
Division:
Installation:
1. Project EAA Reservoir A-1
2. Location N 773743, E 781798
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No. CP05-EAARS-TW-0245
5. Name of Driller: Nodarse & Associates, Inc.
6. Depth of Piezometer: 100 ft
7. Size and type of bit: 6" bit, Rotary Method
8. Datum of Elevation Shown: NAD83
9. Manufacture's Designation for Drill: Diedrich D-50
10. Elevation Groundwater:
11. Date Hole: Started 3-25-05 Completed 3-25-05
12. Elevation Top of Riser: 8.83
13. Inspector: Norm Holst
SURFACE PROTECTION:
Type: Steel Tube
Top of Riser: Varies (ft) (NAD 1983-1999)
Ground Surface Not Measured
1.5± ft
GROUND SURFACE
SURFACE SEAL:
Type: Cement/Bentonite Grout
79 ft
RISER PIPE:
Diameter: 2 inch
Type: PVC Pipe SCH. 40 10 Foot Long Sections
2.0 ft
PRIMARY SEAL:
Type: Fine Washed Silica Sand
FILTER MATERIAL:
Type: Coarse Washed Silica Sand
100 ft
100 ft
SCREEN:
Diameter: 2 inches
Type: PVC Pipe SCH. 40
Slot dimensions: 0.02 inch Slot
20 ft
SEDIMENT TRAP:
Diameter: 2 inches
Type: PVC SCH. 40
4 in
BORING DIAMETER
DAIMETER: 6 in
INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.
NOTES: Typical 100 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0246

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 773643, E 761778		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0246		11. Date Hole: Started 3-24-05 Completed 3-24-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 9.19
6. Depth of Piezometer: 25 ft		
7. Size and type of bit: 8" bit, Rotary Method		13. Inspector: Norm Holst

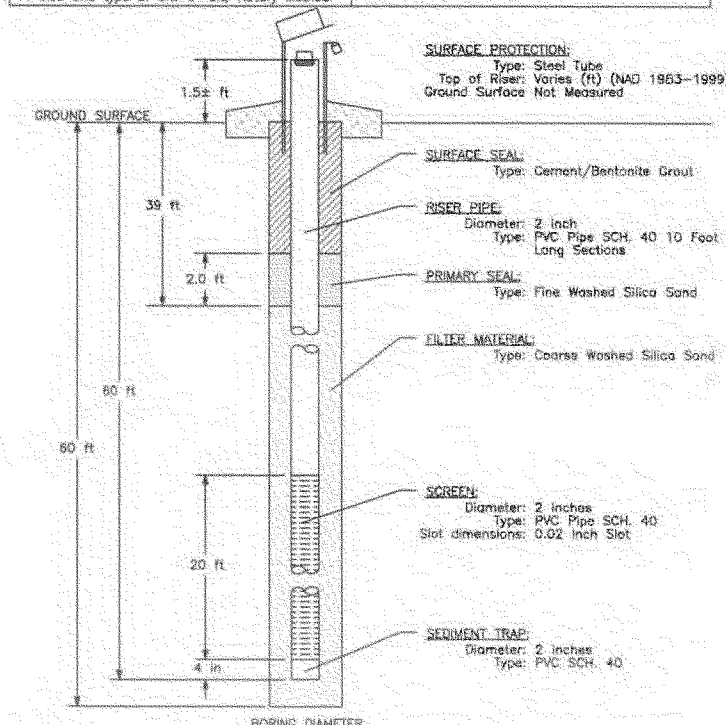


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 25 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0247

PIEZOMETER LOG	Division:	Installation:
1. Project: EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location: N 773643, E 761786		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nadarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0247		11. Date Hole: Started 3-25-05 Completed 3-25-05
5. Name of Driller: Nadarse & Associates, Inc.		12. Elevation Top of Riser: 9.02
6. Depth of Piezometer: 60 ft		
7. Size and type of bit: 8" bit, Rotary Method		13. Inspector: Norm Holst

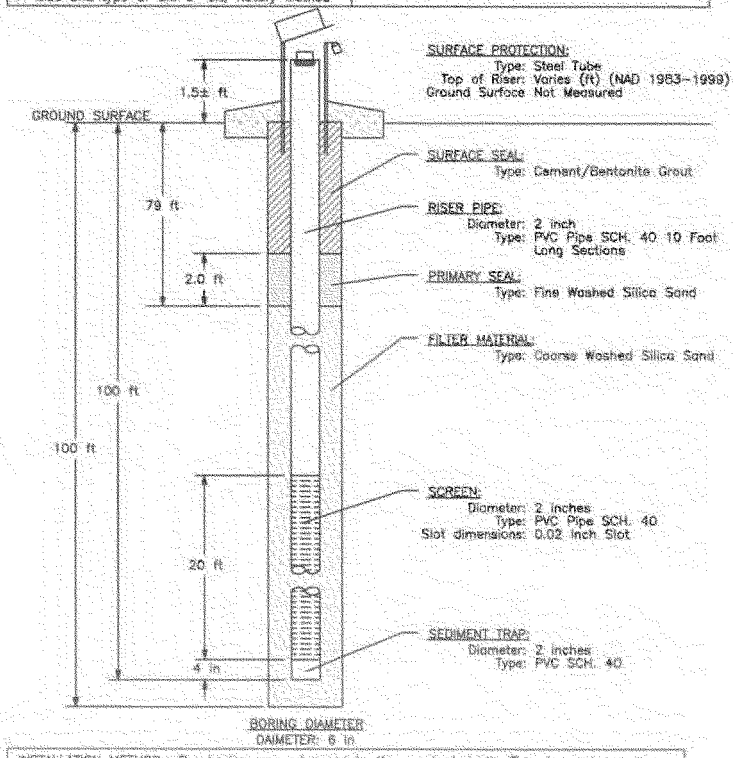


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 60 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0248

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 773643, E 781786		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0248		11. Date Hole: Started 3-25-05 Completed 3-25-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 8.63
6. Depth of Piezometer: 100 ft		
7. Size and type of bit: 8" bit, Rotary Method		13. Inspector: Norm Holst

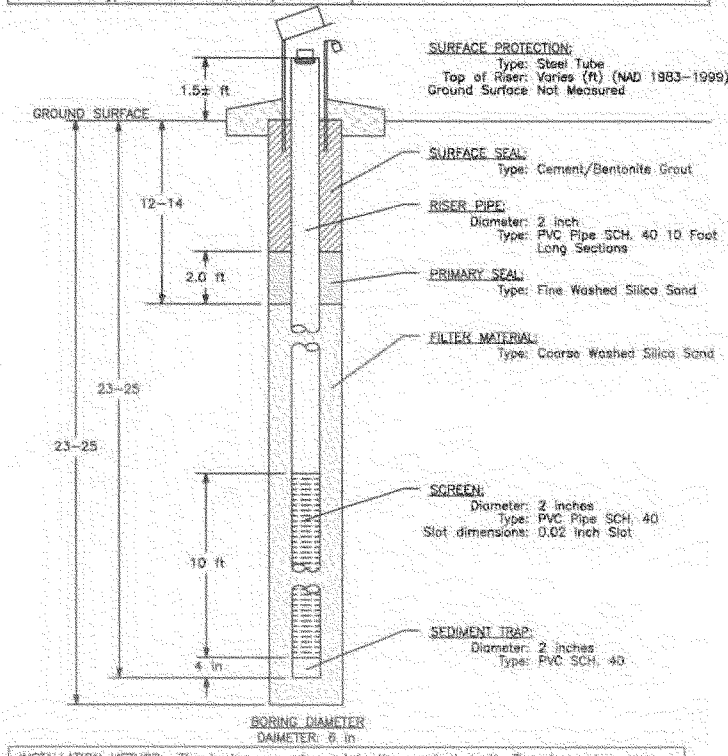


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 100 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0249

PIEZOMETER LOG	Division:	Installation:
1. Project: EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location: N 774067, E 774825		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0249		11. Date Hole: Started 3-25-05 Completed 3-25-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 9.81
6. Depth of Piezometer: 25 ft		
7. Size and type of bit: 8" bit, Rotary Method		13. Inspector: Norm Holst

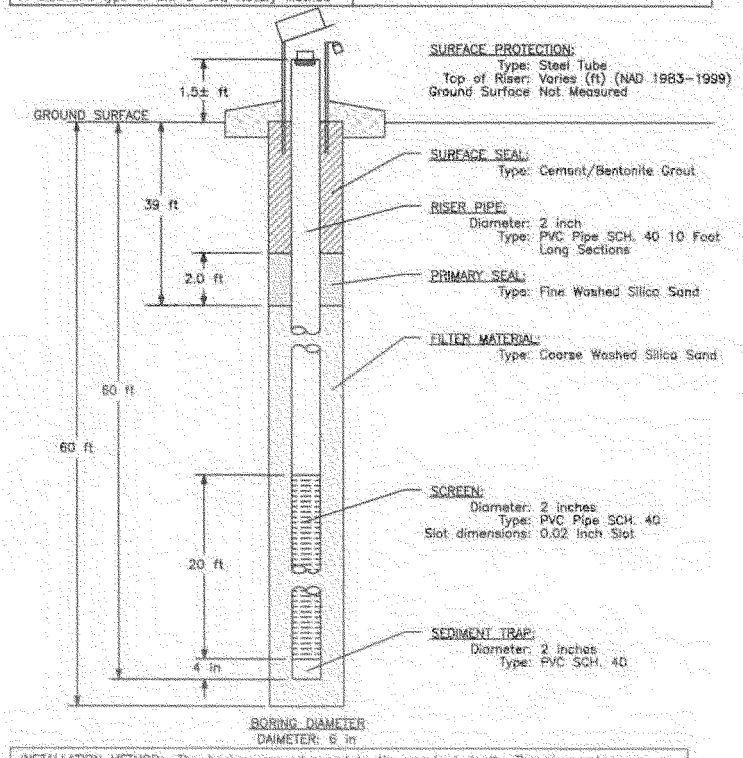


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 25 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0250

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 774077, E 774825		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0250		11. Date Hole: Started 3-25-05 Completed 3-25-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 9.80
6. Depth of Piezometer: 60 ft		
7. Size and type of bit: 6" bit, Rotary Method		13. Inspector: Norm Holst

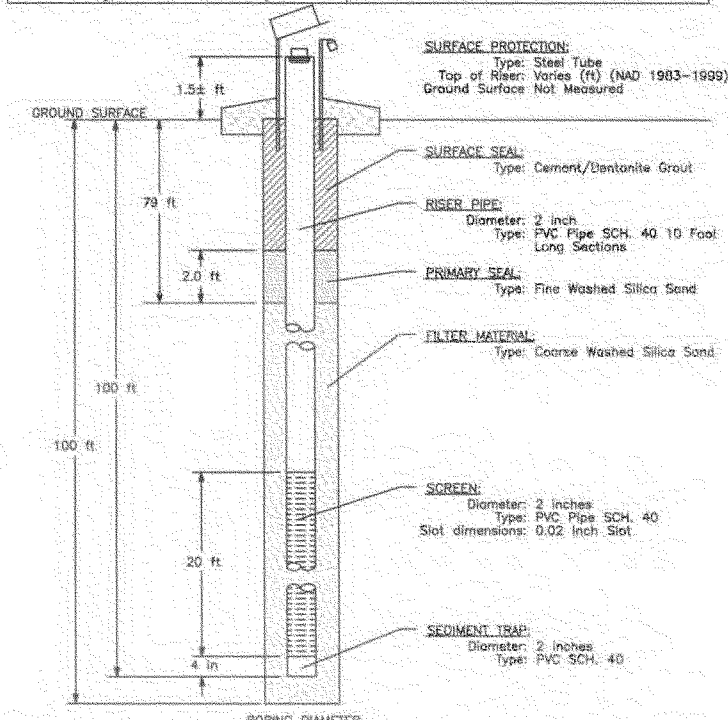


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 60 foot Piezometer Installation.

Hole No. CP05-EAARS-TW-0251

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 774087, E 774825		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0251		11. Date Hole: Started 3-22-05 Completed 3-25-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 9.59
6. Depth of Piezometer: 100 ft		13. Inspector: Norm Holst
7. Size and type of bit: 6" bit, Rotary Method		

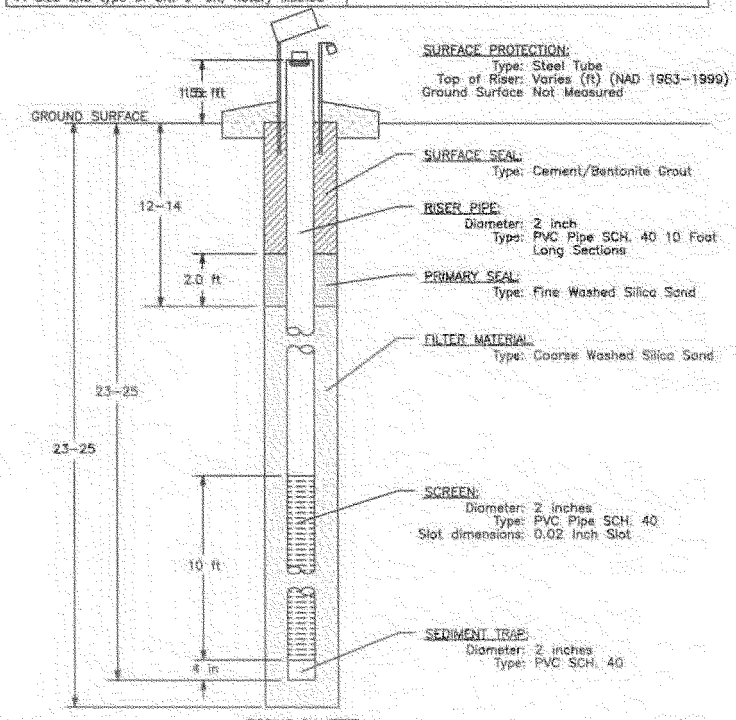


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 100 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0252

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 774087, E 774725		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0252		11. Date Hole: Started 3-25-05 Completed 3-25-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 9.35
6. Depth of Piezometer: 25 ft		
7. Size and type of bit: 8" bit, Rotary Method		13. Inspector: Norm Holst

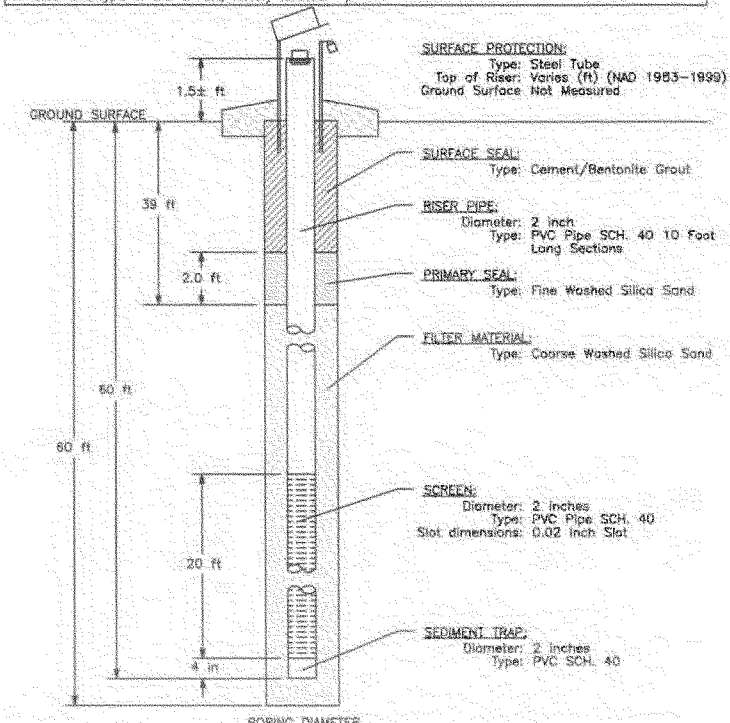


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 25 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0253

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 774077, E 774725		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0253		11. Date Hole: Started 3-25-05 Completed 3-25-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 9.20
6. Depth of Piezometer: 60 ft		13. Inspector: Norm Holst
7. Size and type of bit: 6" bit, Rotary Method		

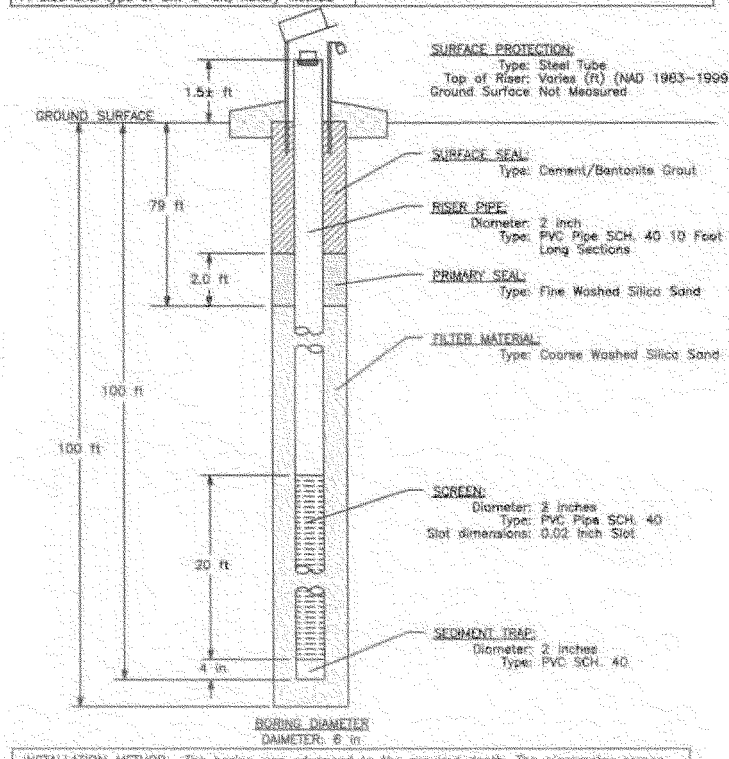


INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 60 foot Piezometer Installation

Hole No. CP05-EAARS-TW-0254

PIEZOMETER LOG	Division:	Installation:
1. Project: EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location: N 774087, E 774725		9. Manufacture's Designation for Drill: Diedrich D-50
3. Drilling Agency: Nodarse & Associates, Inc.		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0254		11. Date Hole: Started 3-25-05 Completed 3-25-05
5. Name of Driller: Nodarse & Associates, Inc.		12. Elevation Top of Riser: 9.45
6. Depth of Piezometer: 100 ft		
7. Size and type of bit: 8" bit, Rotary Method		13. Inspector: Norm Holst



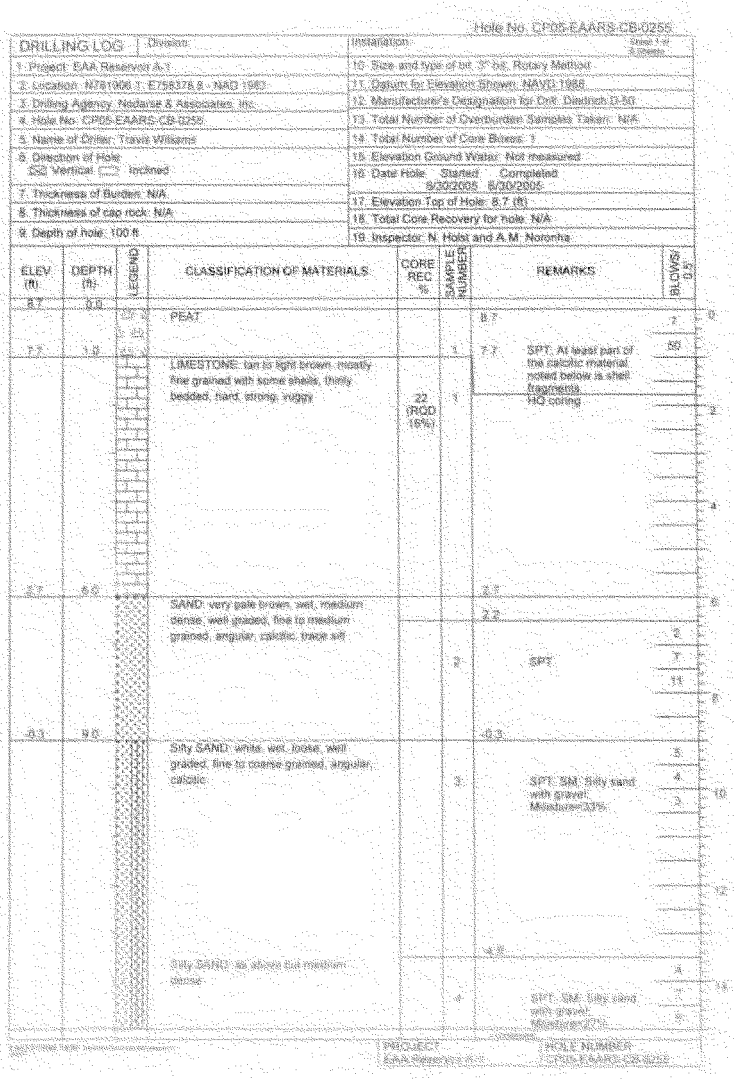
INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was trenied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was trenied on top, and cement/bentonite grout was trenied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 100 foot Piezometer Installation

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	SAND AND SANDY SOILS	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS



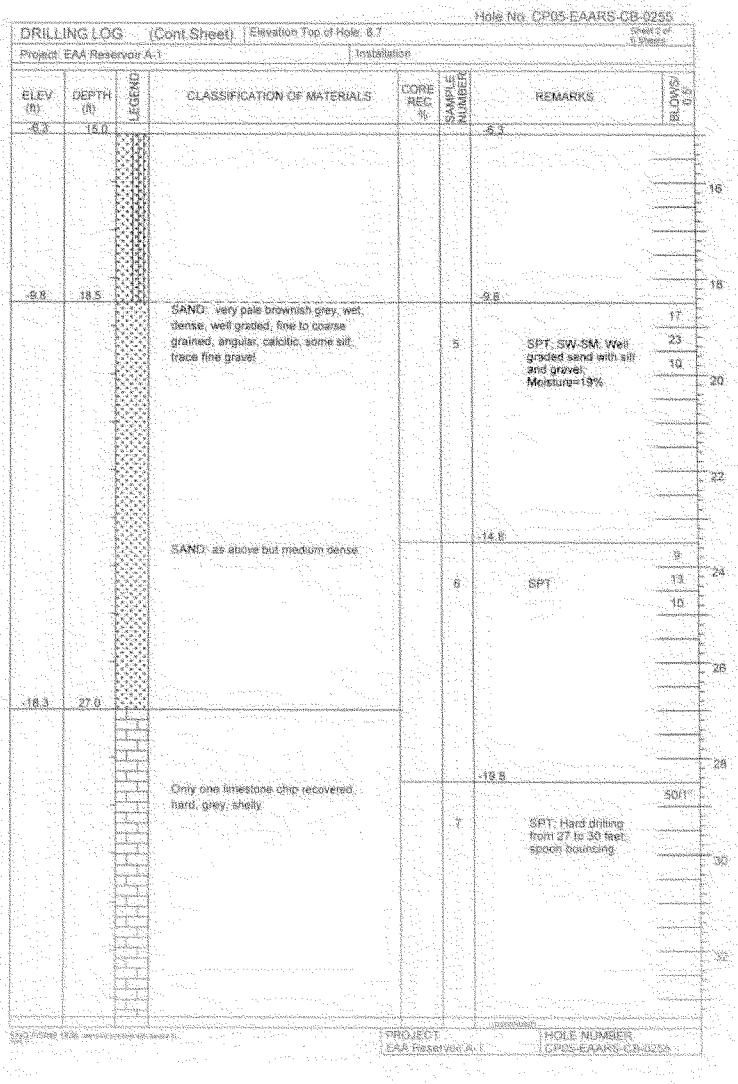
Hole No. CP05-EAARS-CB-0255

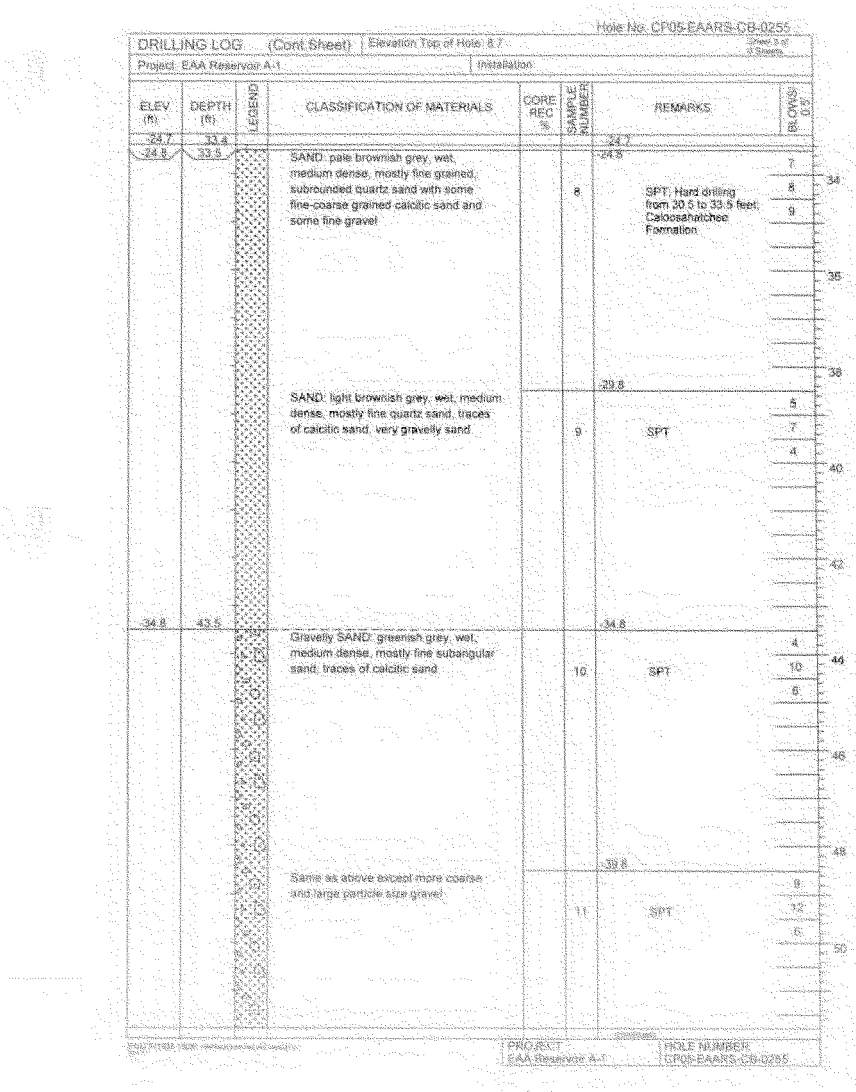
DRILLING LOG | Division: | Installation: | Sheet 1 of 3 Sheets

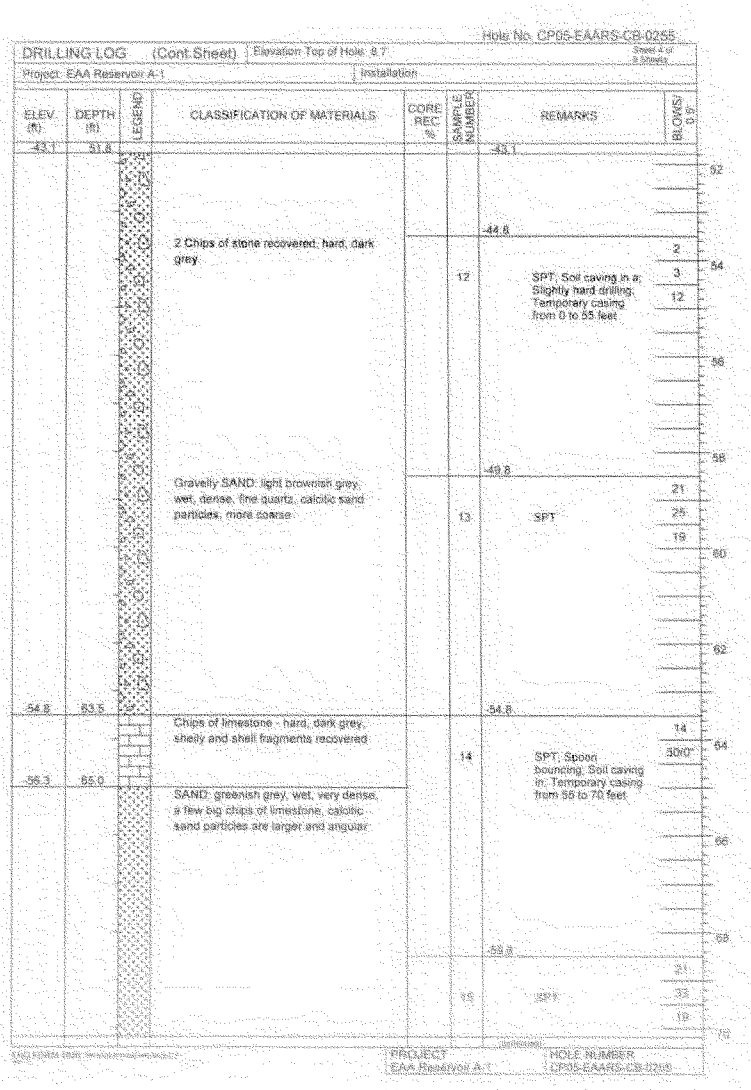
1. Project: EAA Reservoir A-1
2. Location: N781006.1; E756378.8 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No.: CP05-EAARS-CB-0255
5. Name of Driller: Travis Williams
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: N/A
8. Thickness of cap rock: N/A
9. Depth of hole: 100 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: 3
15. Elevation Ground Water: Not measured
16. Date Hole: Started: 9/30/2005 Completed: 9/30/2005
17. Elevation Top of Hole: 8.7 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: N. Holst and A.M. Noronha

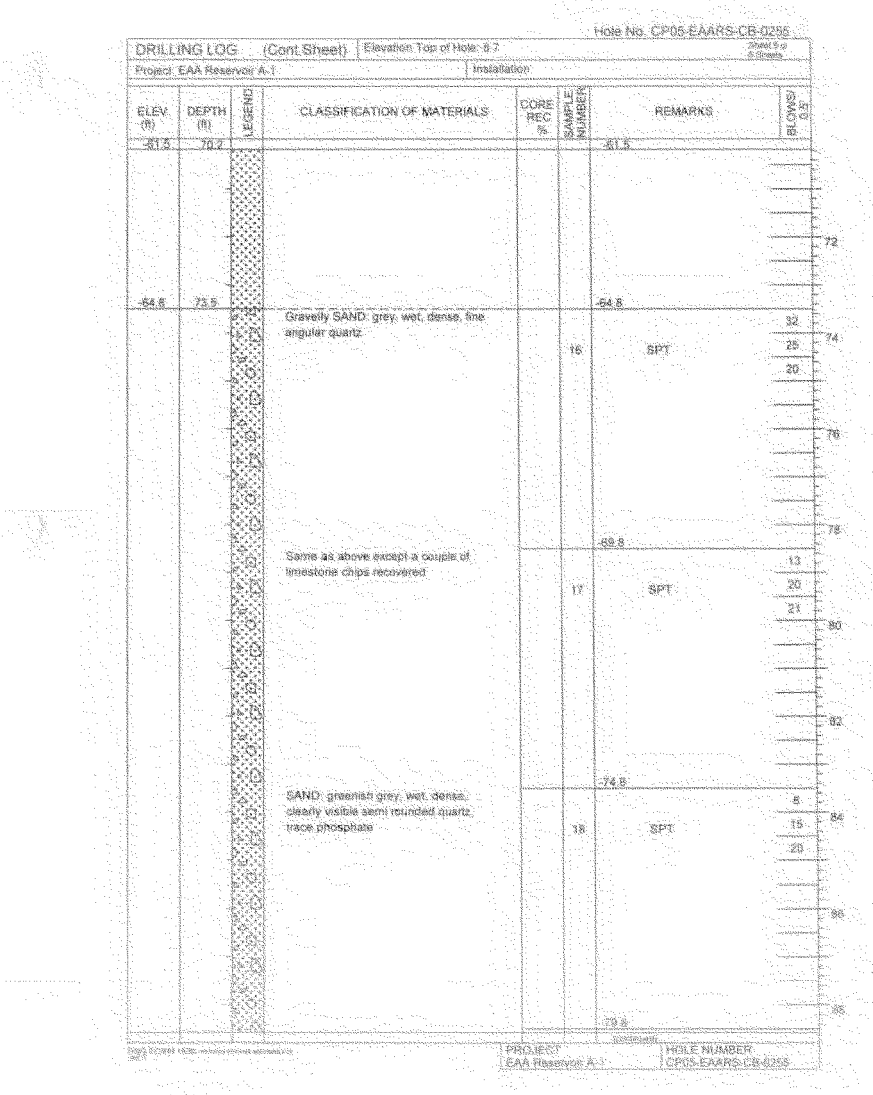
ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/0.5
8.7	0.0		PEAT			8.7	2
7.7	1.0				1	7.7 SPT: At least part of the calcitic material noted below is shell fragments	55
			LIMESTONE: tan to light brown, mostly fine grained with some shells, thinly bedded, hard, strong, vuggy	22 (RQD 16%)	1	HQ coring	
2.7	6.0					2.7	
			SAND: very pale brown, wet, medium dense, well graded, fine to medium grained, angular, calcitic, trace silt			2.2	6
					2	SPT	7 11
0.3	8.4					0.3	
			Silty SAND: white, wet, loose, well graded, fine to coarse grained, angular, calcitic		3	SPT: SM: Silty sand with gravel. Moisture=31%	5 4 3
						-4.8	
			Silty SAND: as above but medium dense		4	SPT: SM: Silty sand with gravel. Moisture=21%	4 7 9

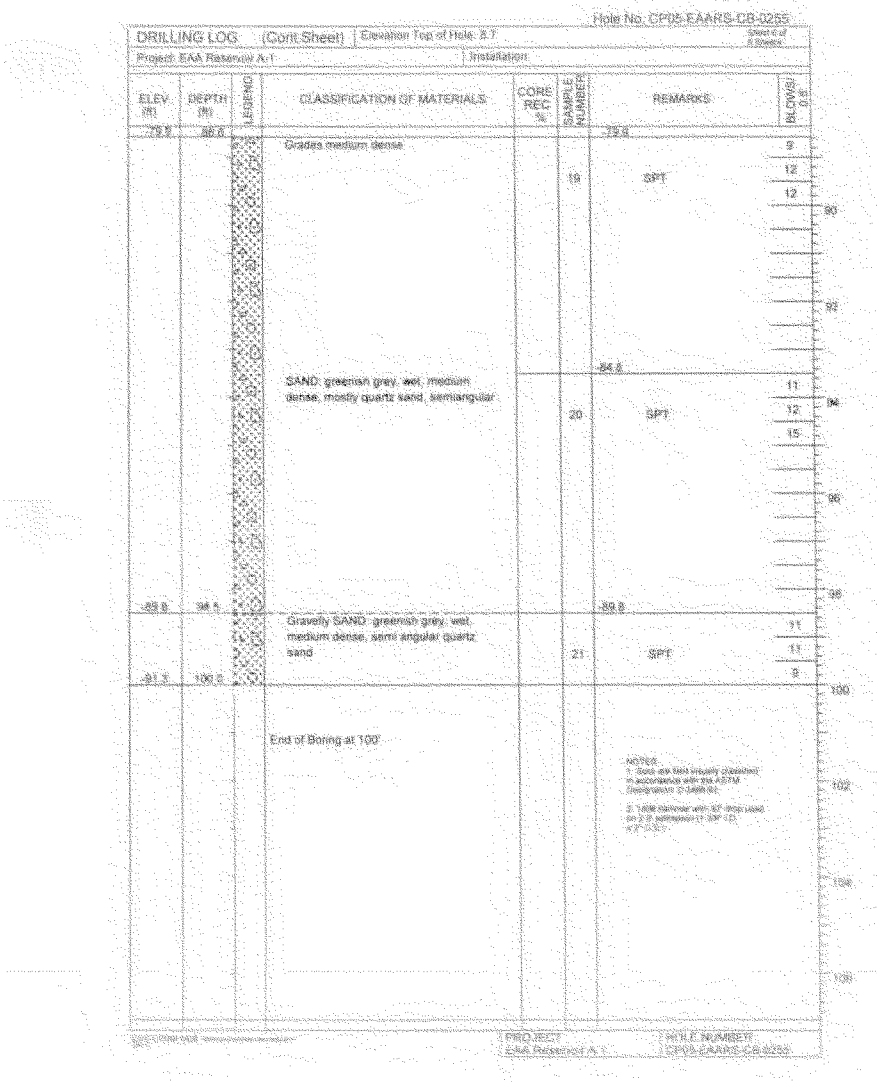
PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0255

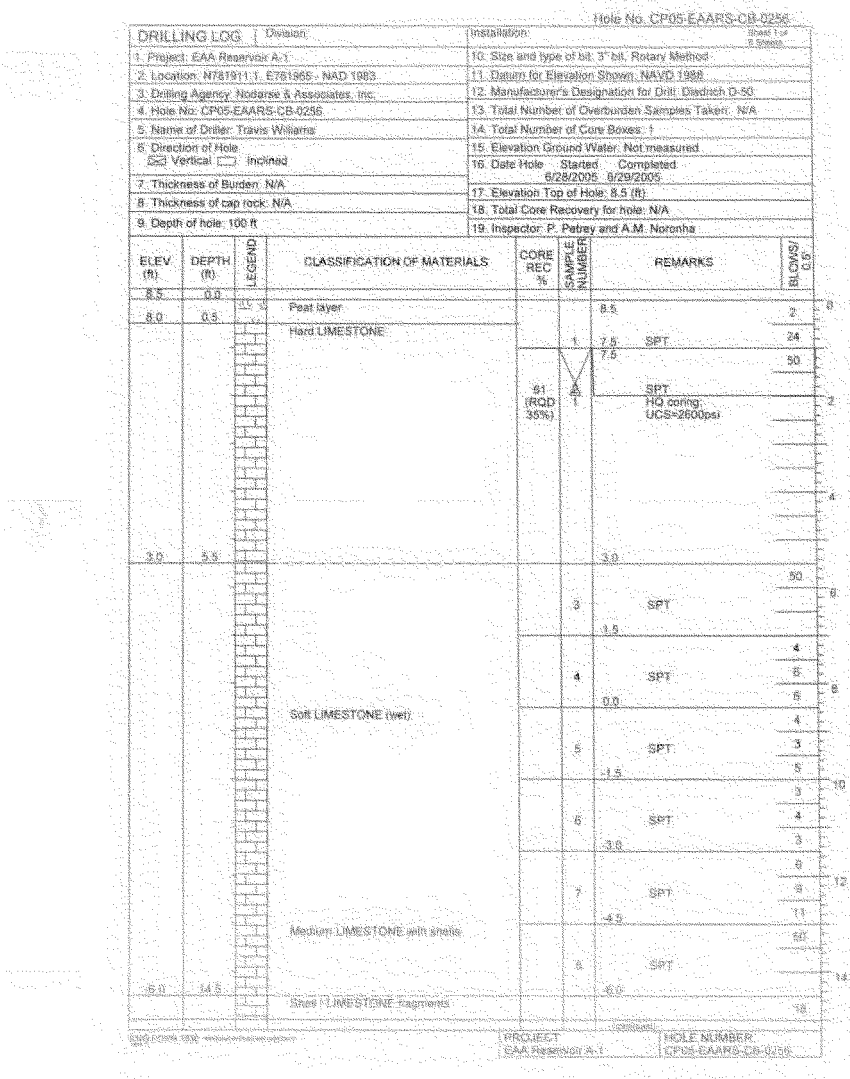

Hole No. CP05-EAARS-CB-025S
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 8.7
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-6.3
15.0
-9.8
18.5
SAND: very pale brownish grey, wet, dense, well graded, fine to coarse grained, angular, calcitic, some silt, trace fine gravel
5
SPT; SW-SM; Well graded sand with silt and gravel; Moisture=19%
17
23
10
-14.8
SAND: as above but medium dense
6
SPT
9
13
10
-18.3
27.0
-19.8
Only one limestone chip recovered, hard, grey, shelly
7
SPT; Hard drilling from 27 to 30 feet; spoon bouncing
50/1"
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-025S


Hole No. CP05-EAARS-CB-0255
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 8.7
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
24.7
33.4
24.8
33.5
SAND: pale brownish grey, wet, medium dense, mostly fine grained, subrounded quartz sand with some fine-coarse grained calcitic sand and some fine gravel
8
SPT; Hard drilling from 30.5 to 33.5 feet; Caloosahatchee Formation
7
8
9
34
35
38
29.8
SAND: light brownish grey, wet, medium dense, mostly fine quartz sand, traces of calcitic sand, very gravelly sand
9
SPT
5
7
4
40
42
34.8
43.5
Gravelly SAND: greenish grey, wet, medium dense, mostly fine subangular sand, traces of calcitic sand
10
SPT
4
10
6
44
46
48
39.8
Same as above except more coarse and large particle size gravel
11
SPT
9
12
5
50
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0255


Hole No. CP05-EAARS-CB-0255
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 97
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
43.1
51.8
2 Chips of stone recovered; hard, dark grey.
44.8
12
SPT; Soil caving in a; Slightly hard drilling; Temporary casing from 0 to 55 feet
2
3
12
49.8
Gravelly SAND: light brownish grey, wet, dense, fine quartz, calcitic sand particles, more coarse
13
SPT
21
25
19
54.8
83.5
Chips of limestone - hard, dark grey, shelly and shell fragments recovered
14
SPT; Spoon bouncing; Soil caving in; Temporary casing from 55 to 70 feet
14
50/0"
56.3
85.0
SAND: greenish grey, wet, very dense, a few big chips of limestone, calcitic sand particles are larger and angular
55.8
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0255


Hole No. CP05-EAARS-CB-0255
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 8.7
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/0.5ft
-61.5
70.2
-64.8
73.5
Gravelly SAND: grey, wet, dense, fine angular quartz
16
SPT
32
25
20
-69.8
Same as above except a couple of limestone chips recovered
11
SPT
13
20
21
-74.8
SAND: greenish grey, wet, dense, clearly visible semi rounded quartz, trace phosphate
18
SPT
5
15
20
79.8
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0255


Hole No. CP05-EAARS-CB-0255
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 8.7
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 6 in
Grades medium dense
SAND: greenish grey, wet, medium dense, mostly quartz sand, semiangular
Gravelly SAND: greenish grey, wet, medium dense, semi angular quartz sand
End of Boring at 100'
SPT
PROJECT
EAA Reservoir A-1
FILE NUMBER
CP05-EAARS-CB-0255



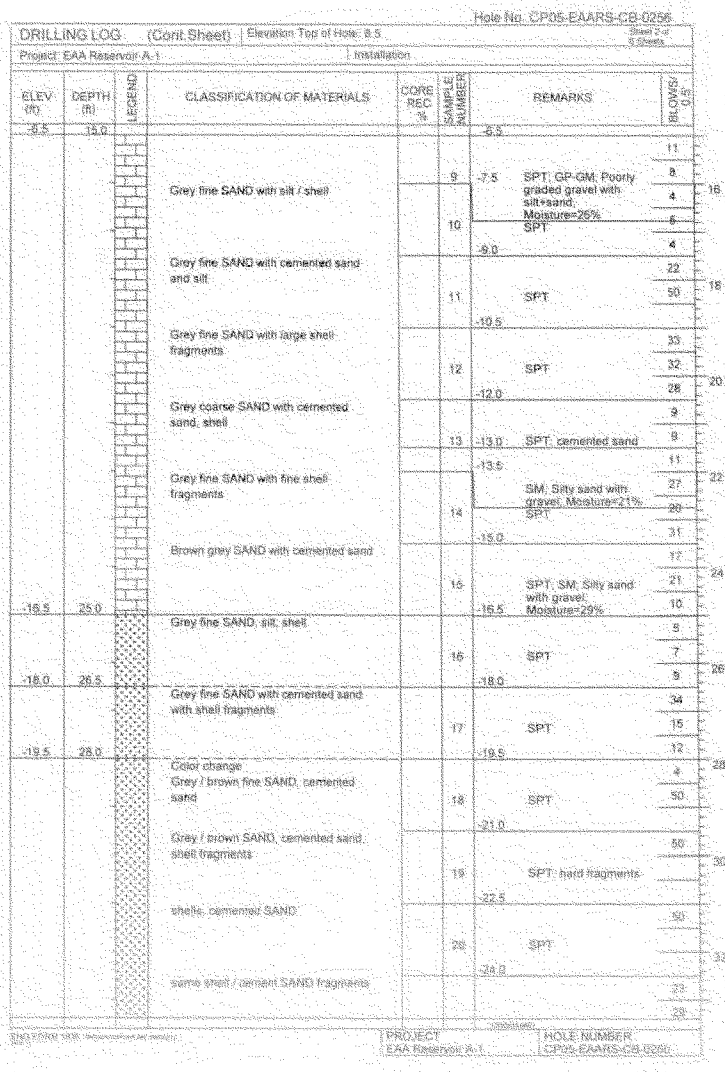
Hole No. CP05-EAARS-CB-0256

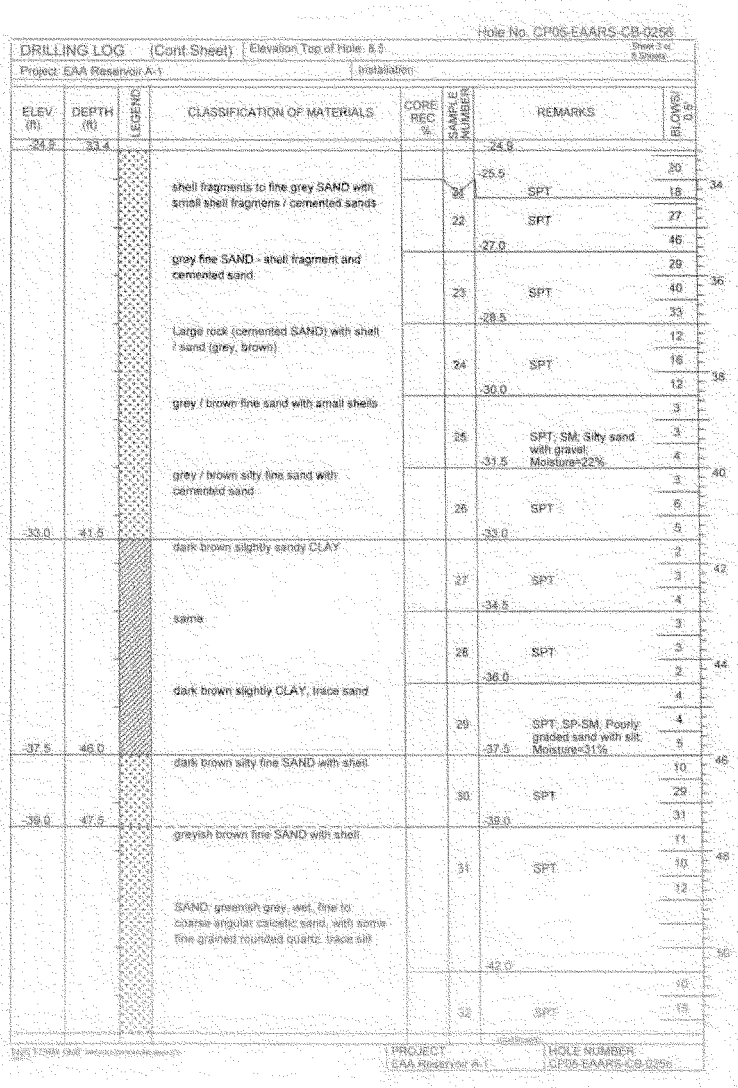
DRILLING LOG | Division: | Installation: | Sheet 1 of 5 Sheets

1. Project: EAA Reservoir A-1
2. Location: N781911.1, E781965 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0256
5. Name of Driller: Travis Williams
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: N/A
8. Thickness of cap rock: N/A
9. Depth of hole: 100 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: 1
15. Elevation Ground Water: Not measured
16. Date Hole Started 6/28/2005 Completed 6/29/2005
17. Elevation Top of Hole: 8.5 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: P. Patrey and A.M. Noronha

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.6'
8.5	0.0					8.5	2
8.0	0.5		Peat layer				
			Hard LIMESTONE		1	7.5 SPT	24
						7.5	50
				91 (RQD 35%)	1	SPT HQ coring; UCS=2600psi	
3.0	5.5					3.0	
					3	SPT	50
						1.5	
					4	SPT	4 5 5
			Soft LIMESTONE (wet)			0.0	
					5	SPT	4 3 5
						-1.5	
					6	SPT	3 4 3
						-3.0	
					7	SPT	8 3 11
			Medium LIMESTONE with shells			-4.5	
					8	SPT	50/
-5.0	14.5					-6.0	18
			Shell LIMESTONE fragments				

PROJECT: EAA Reservoir A-1 HOLE NUMBER: CP05-EAARS-CB-0256


Hole No. CP05-EAARS-CB-0256
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: 8.5
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.45
8.5
15.0
Grey fine SAND with silt / shell
-7.5
SPT; GP-GM; Poorly graded gravel with silt+sand; Moisture=25%
SPT
-9.0
Grey fine SAND with cemented sand and silt
SPT
-10.5
Grey fine SAND with large shell fragments
SPT
-12.0
Grey coarse SAND with cemented sand, shell
-13.0
SPT; cemented sand
-13.5
Grey fine SAND with fine shell fragments
SM; Silty sand with gravel; Moisture=21%
SPT
-15.0
Brown grey SAND with cemented sand
-16.5
SPT; SM; Silty sand with gravel; Moisture=29%
-16.5
25.0
Grey fine SAND, silt, shell
SPT
-18.0
26.5
-18.0
Grey fine SAND with cemented sand with shell fragments
SPT
-19.5
28.0
-19.5
Color change
Grey / brown fine SAND, cemented sand
SPT
-21.0
Grey / brown SAND, cemented sand, shell fragments
SPT; hard fragments
-22.5
shells, cemented SAND
SPT
-24.0
some shell / cement SAND fragments
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0256



Hole No. CP05-EAARS-CB-0256

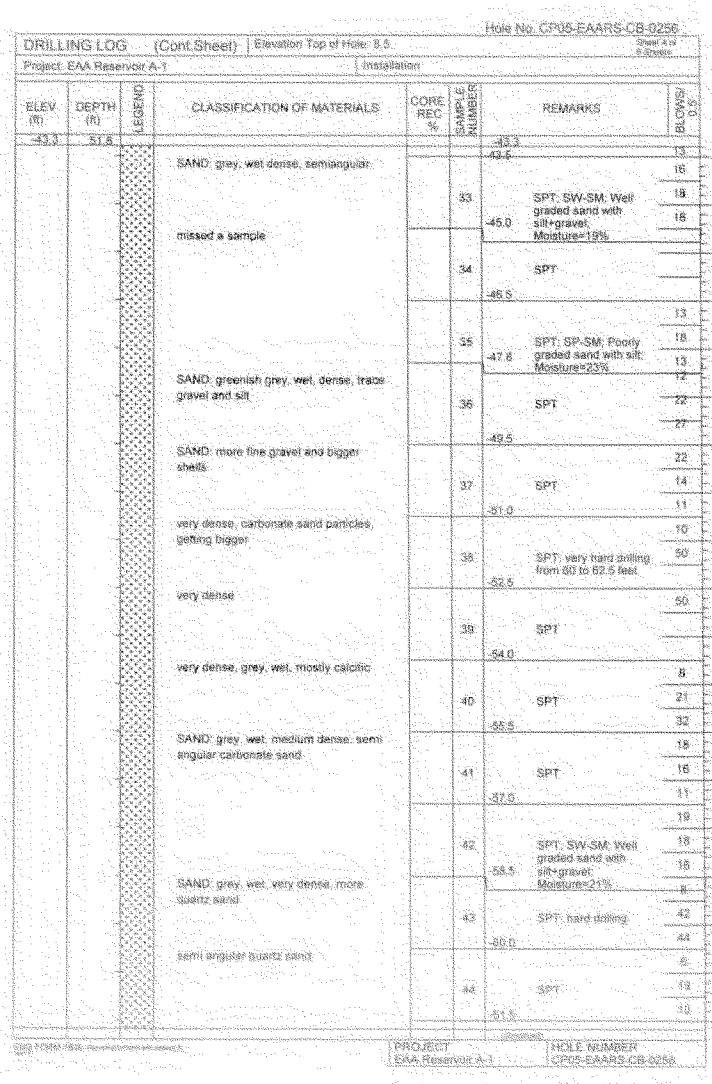
DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 8.5 | Sheet 3 of 5 Sheets

Project: EAA Reservoir A-1 | Installation:

ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/0.5ft	
-24.5	33.4					-24.5		
			shell fragments to fine grey SAND with small shell fragmens / cemented sands		21	-25.5 SPT	30 18	34
					22	SPT	27 46	
			grey fine SAND - shell fragment and cemented sand			-27.0		
					23	SPT	29 40 33	36
			Large rock (cemented SAND) with shell / sand (grey, brown)			-28.5		
					24	SPT	12 16 12	38
			grey / brown fine sand with small shells			-30.0		
					25	SPT; SM; Silty sand with gravel; Moisture=22%	3 3 4	
			grey / brown silty fine sand with cemented sand			-31.5		40
					26	SPT	3 6 5	
-33.0	41.5					-33.0		
			dark brown slightly sandy CLAY		27	SPT	2 3 4	42
						-34.5		
			same		28	SPT	3 2 2	44
			dark brown slightly CLAY, trace sand			-36.0		
					29	SPT; SP-SM; Poorly graded sand with silt; Moisture=31%	4 4 5	
-37.5	46.0					-37.5		
			dark brown silty fine SAND with shell		30	SPT	10 29 31	46
-39.0	47.5					-39.0		
			greyish brown fine SAND with shell		31	SPT	11 10 12	48
			SAND: greenish grey, wet, fine to coarse angular calcetic sand, with some fine grained rounded quartz, trace silt			-42.0		50
					32	SPT	10 15	

(continued)

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0256



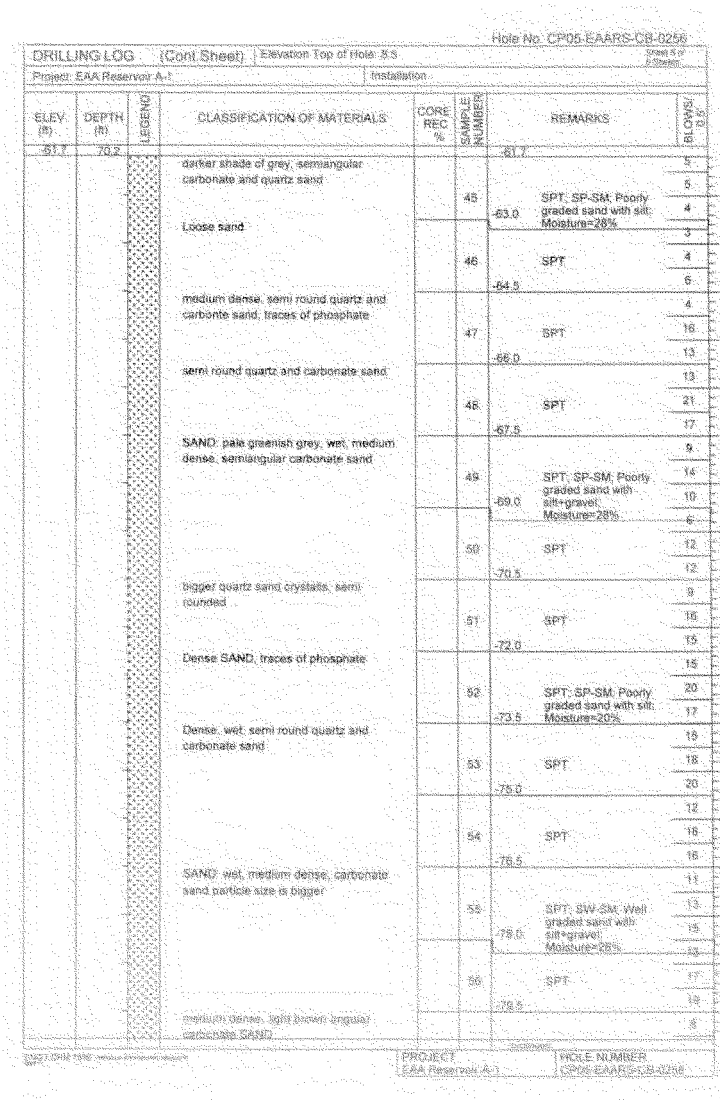
Hole No. CP05-EAARS-CB-0256

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 8.5 | Sheet 4 of 5 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'	
-43.3	51.8					-43.3		
			SAND: grey, wet dense, semiangular			-43.5	14	
							16	52
					33	SPT; SW-SM; Well graded sand with silt+gravel; Moisture=19%	18	
			missed a sample			-45.0	18	
					34	SPT		54
						-46.5		
							13	
					35	SPT; SP-SM; Poorly graded sand with silt; Moisture=23%	18	
						-47.8	13	56
			SAND: greenish grey, wet, dense, trace gravel and silt				12	
					36	SPT	22	
						-49.5	27	
			SAND: more fine gravel and bigger shells				22	58
					37	SPT	14	
						-51.0	11	
			very dense, carbonate sand particles, getting bigger				10	
					38	SPT; very hard drilling from 80 to 82.5 feet	50	60
						-52.5		
			very dense				50	
					39	SPT		62
						-54.0		
			very dense, grey, wet, mostly calcitic				8	
					40	SPT	21	
						-55.5	32	
			SAND: grey, wet, medium dense, semi angular carbonate sand				18	64
					41	SPT	16	
						-57.0	11	
							19	
					42	SPT; SW-SM; Well graded sand with silt+gravel;	18	66
						-58.5	16	
			SAND: grey, wet, very dense, more quartz sand			Moisture=21%	8	
					43	SPT; hard drilling	42	68
						-60.0	44	
			semi angular quartz sand				6	
					44	SPT	13	
						-61.5	10	70

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0256



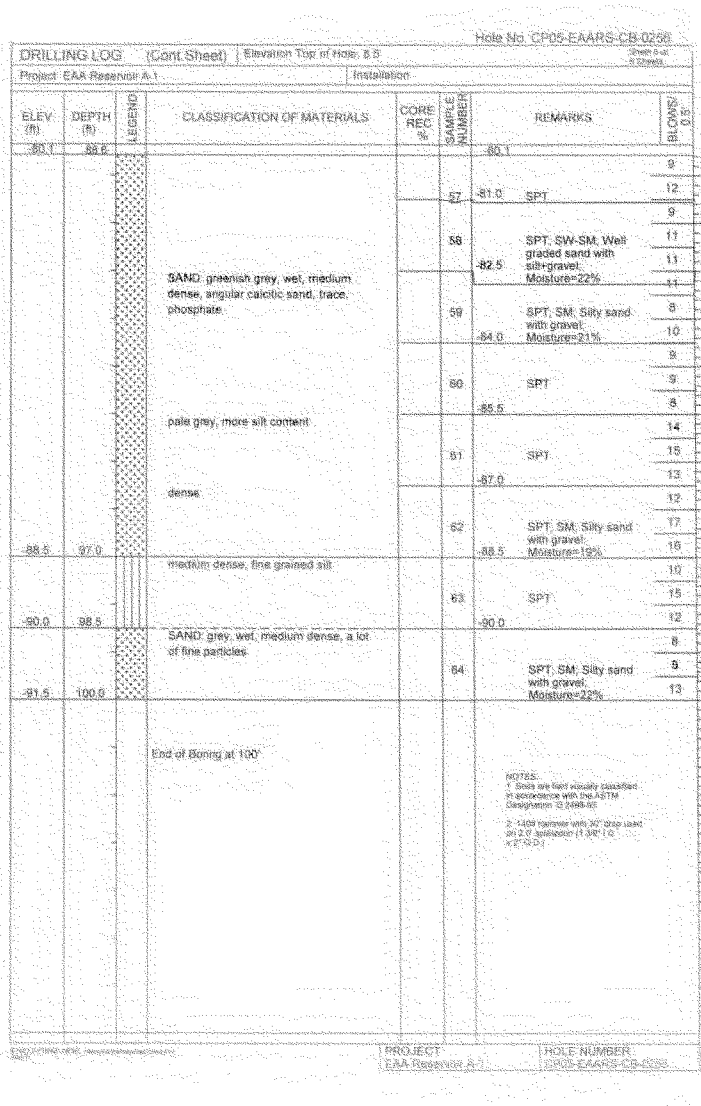
Hole No. CP05-EAARS-CB-0256

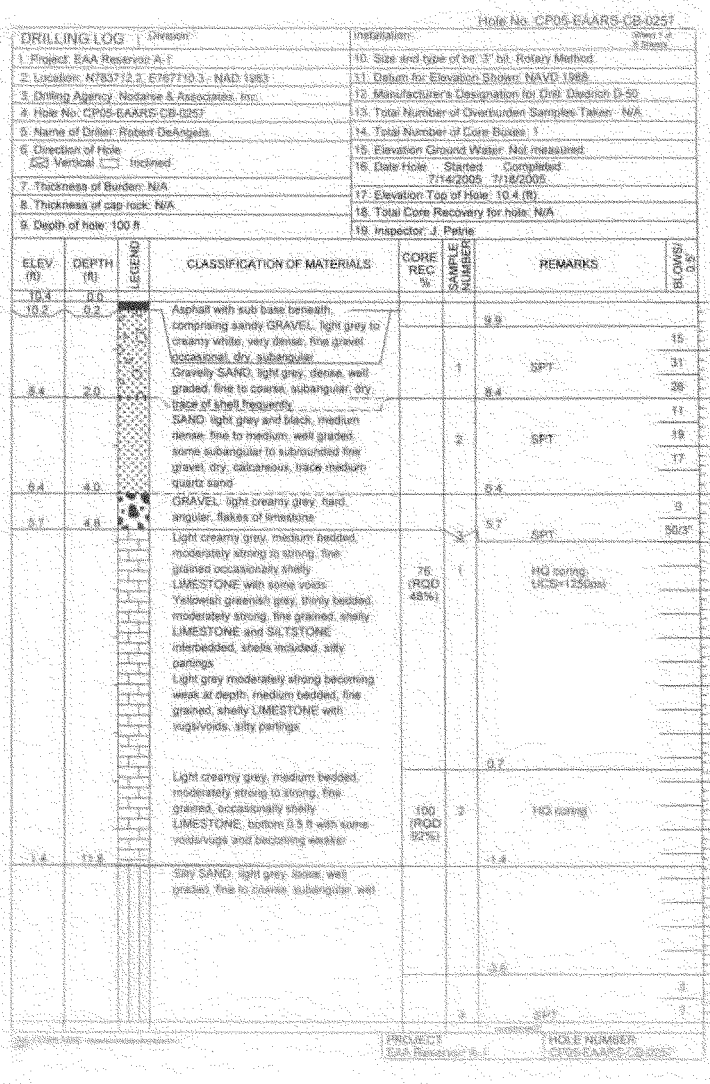
DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 8.3 | Sheet 5 of 6 Sheets

Project: EAA Reservoir A-1 | Installation:

ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/0.5ft	
-61.7	70.2					-61.7		
			darker shade of grey, semiangular carbonate and quartz sand		45	SPT; SP-SM; Poorly graded sand with silt; Moisture=28%	5 5 4	
			Loose sand			-63.0		
					46	SPT	3 4 6	72
						-64.5		
			medium dense, semi round quartz and carbonte sand, traces of phosphate		47	SPT	4 16 13	74
						-66.0		
			semi round quartz and carbonate sand		48	SPT	13 21 17	
			SAND: pale greenish grey, wet, medium dense, semiangular carbonate sand			-67.5		76
					49	SPT; SP-SM; Poorly graded sand with silt+gravel; Moisture=28%	5 14 10	
						-69.0		
					50	SPT	6 12 12	78
						-70.5		
			bigger quartz sand crystals, semi rounded		51	SPT	9 16 15	80
						-72.0		
			Dense SAND, traces of phosphate		52	SPT; SP-SM; Poorly graded sand with silt; Moisture=20%	15 20 17	
						-73.5		82
			Dense, wet, semi round quartz and carbonate sand		53	SPT	18 18 20	
						-75.0		
					54	SPT	12 18 18	84
						-76.5		
			SAND: wet, medium dense, carbonate sand particle size is bigger		55	SPT; SW-SM; Well graded sand with silt+gravel; Moisture=25%	11 13 15	86
						-78.0		
					56	SPT	17 18 8	
						-79.5		88
			medium dense, light brown angular carbonate SAND					

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0256


Hole No. CP05-EAARS-CB-025B
DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 8.5
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.15
90.1
88.6
SAND: greenish grey, wet, medium dense, angular calcitic sand, trace phosphate
57
81.0
SPT
58
82.5
SPT, SW-SM, Well graded sand with silt+gravel; Moisture=22%
59
84.0
SPT, SM, Silty sand with gravel; Moisture=21%
pale grey, more silt content
60
85.5
SPT
dense
61
87.0
SPT
62
88.5
SPT, SM, Silty sand with gravel; Moisture=19%
88.5
97.0
medium dense, fine grained silt
63
90.0
SPT
90.0
98.5
SAND: grey, wet, medium dense, a lot of fine particles
64
SPT, SM, Silty sand with gravel; Moisture=22%
91.5
100.0
End of Boring at 100'
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93
2. 140# hammer with 30" drop used on 2.0" split-spoon (1 3/8" I.D. x 2" O.D.)
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-025B



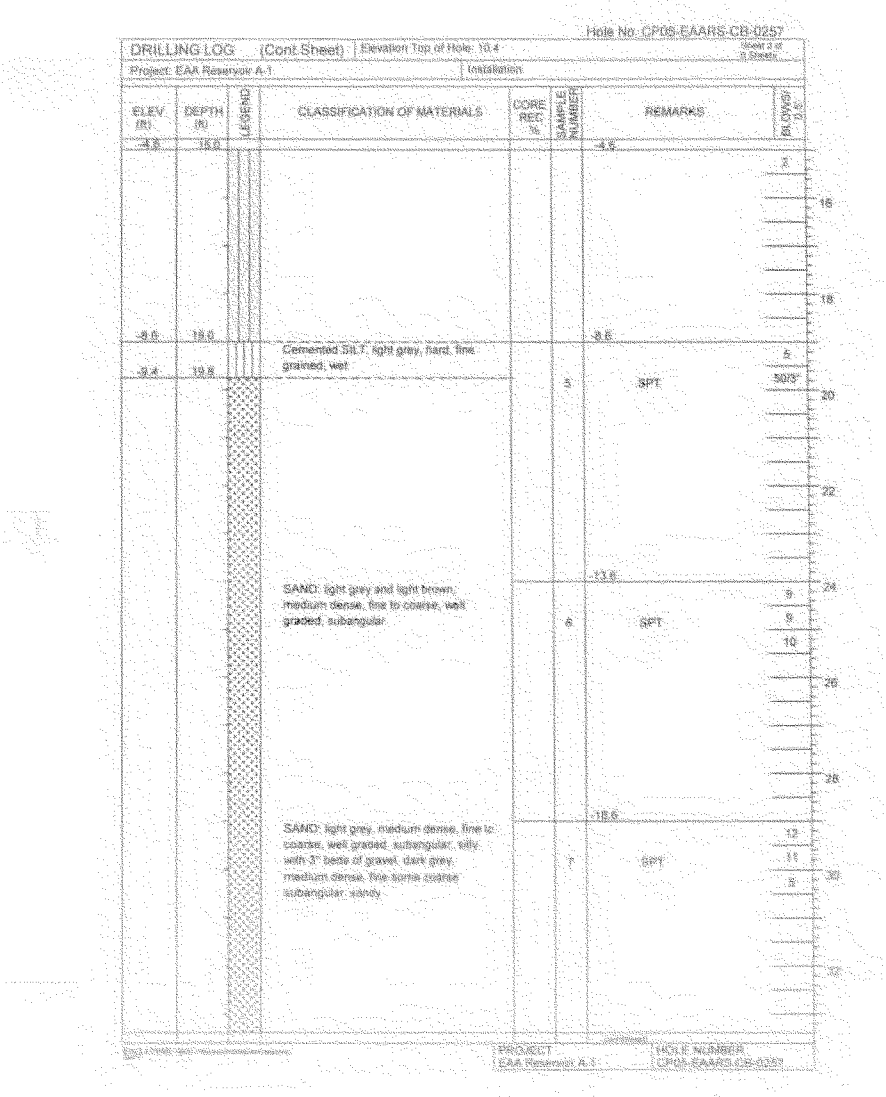
Hole No. CP05-EAARS-CB-0257

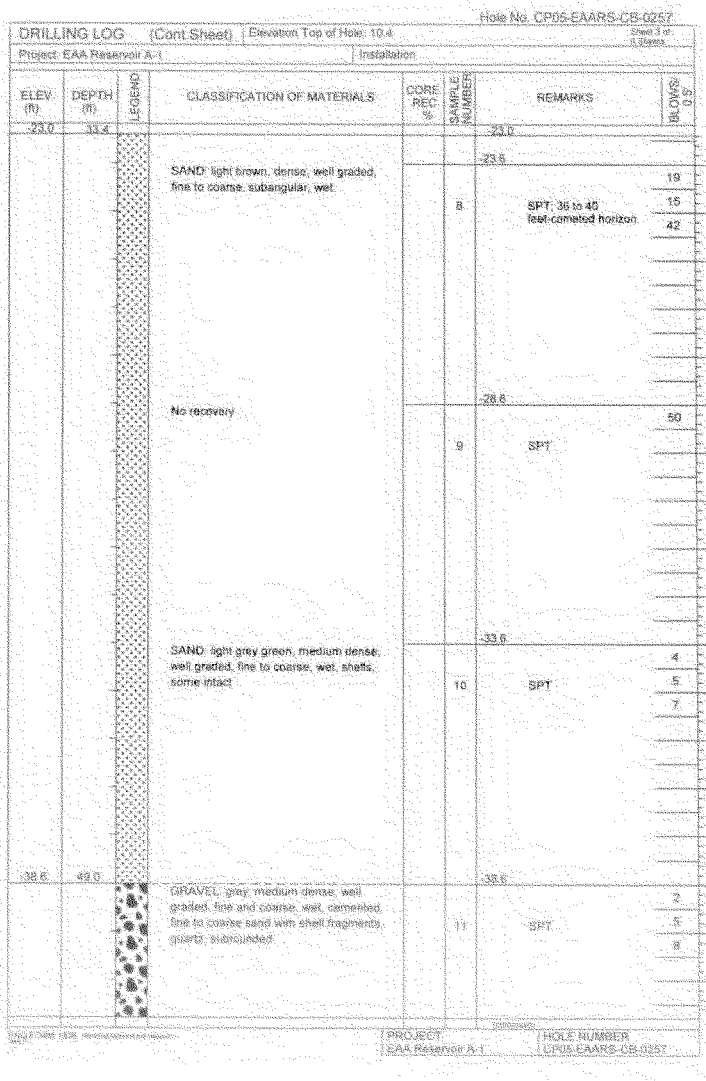
DRILLING LOG

1. Project: EAA Reservoir A-1	Installation:
2. Location: N783712.3, E767710.3 - NAD 1983	10. Size and type of bit: 3" bit, Rotary Method
3. Drilling Agency: Nodarse & Associates, Inc.	11. Datum for Elevation Shown: NAVD 1988
4. Hole No: CP05-EAARS-CB-0257	12. Manufacturer's Designation for Drill: Diedrich D-50
5. Name of Driller: Robert DeAngelis	13. Total Number of Overburden Samples Taken: N/A
6. Direction of Hole: ☒ Vertical ☐ Inclined	14. Total Number of Core Boxes: 1
7. Thickness of Burden: N/A	15. Elevation Ground Water: Not measured
8. Thickness of cap rock: N/A	16. Date Hole: Started 7/14/2005 Completed 7/18/2005
9. Depth of hole: 100 ft	17. Elevation Top of Hole: 10.4 (ft)
	18. Total Core Recovery for hole: N/A
	19. Inspector: J. Petrie

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
10.4	0.0						
10.2	0.2		Asphalt with sub base beneath, comprising sandy GRAVEL, light grey to creamy white, very dense, fine gravel occasional, dry, subangular			9,9	0
							15
					1	SPT	31
8.4	2.0		Gravelly SAND, light grey, dense, well graded, fine to coarse, subangular, dry, trace of shell frequently			8.4	36
							11
			SAND, light grey and black, medium dense, fine to medium, well graded, some subangular to subrounded fine gravel, dry, calcareous, trace medium quartz sand		2	SPT	19
							17
6.4	4.0					6.4	
5.7	4.8		GRAVEL, light creamy grey, hard, angular, flakes of limestone			5.7	9
					3	SPT	50/3"
			Light creamy grey, medium bedded, moderately strong to strong, fine grained occasionally shelly LIMESTONE with some voids. Yellowish greenish grey, thinly bedded, moderately strong, fine grained, shelly LIMESTONE and SILTSTONE interbedded, shells included, silty partings. Light grey moderately strong becoming weak at depth, medium bedded, fine grained, shelly LIMESTONE with vugs/voids, silty partings	75 (RQD 48%)	1	HQ coring, UCS=1250psi	
						0.7	
			Light creamy grey, medium bedded, moderately strong to strong, fine grained, occasionally shelly LIMESTONE, bottom 0.5 ft with some voids/vugs and becoming weaker	100 (RQD 92%)	2	HQ coring	
-1.4	11.8					-1.4	
			Silty SAND, light grey, loose, well graded, fine to coarse, subangular, wet				
						3,6	
							3
					4	SPT	7

PROJECT: EAA Reservoir A-1 HOLE NUMBER: CP05-EAARS-CB-0257


Hole No. CP05-EAARS-CB-0257
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 10.4
Project: EAA Reservoir A-1
Location
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
10.4
10.0
-9.6
19.6
Cemented SILT, light grey, hard, fine grained, wet
-9.4
19.8
5
SPT
50/5"
SAND: light grey and light brown, medium dense, fine to coarse, well graded, subangular
6
SPT
SAND: light grey, medium dense, fine to coarse, well graded, subangular, silty with 3" beds of gravel, dark grey, medium dense, fine to coarse coarse subangular, sandy
7
SPT
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0257


Hole No. CP05-EAARS-CB-0257

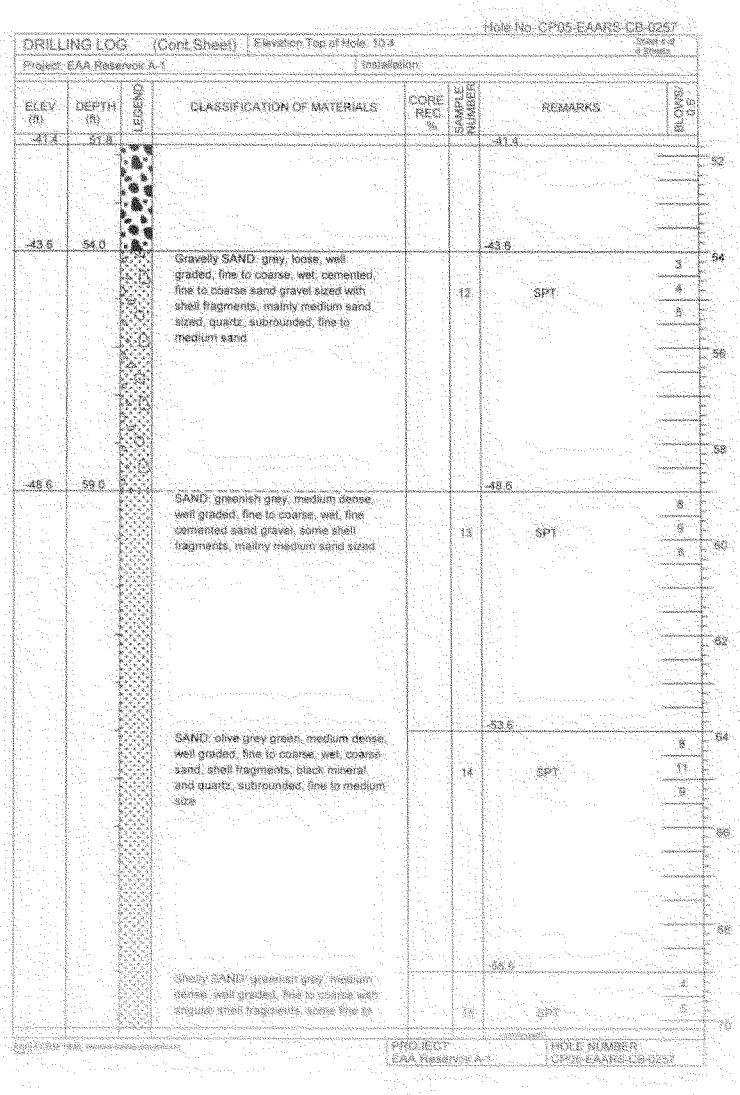
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 10.4 Sheet 3 of 3 Sheets

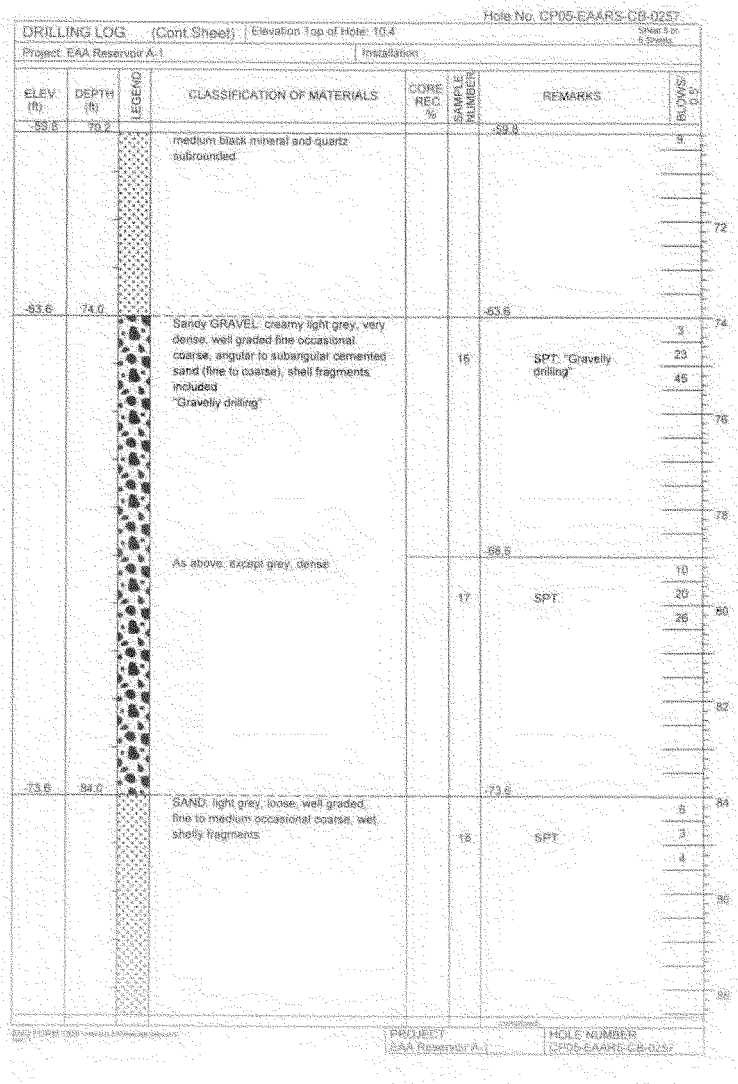
Project: EAA Reservoir A-1 Installation:

ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/0.5'	
-23.0	33.4					-23.0		
						-33.6		
			SAND: light brown, dense, well graded, fine to coarse, subangular, wet.		8	SPT; 35 to 40 feet-cemeted horizon	19 15 42	34 36 38
						-38.6		
			No recovery		9	SPT	50	40 42
						-33.6		
			SAND: light grey green, medium dense, well graded, fine to coarse, wet, shells, some intact		10	SPT	4 5 7	44 46 48
-38.6	49.0					-38.6		
			GRAVEL: gray, medium dense, well graded, fine and coarse, wet, cemented, fine to coarse sand with shell fragments, quartz, subrounded		11	SPT	2 5 8	50

Log of Hole CB05 Revised/Corrected Version

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0257


Hole No. CP05-EAARS-CB-025T
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 10 a
Project: EAA Reservoir A-1 Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5
-41.4
51.8
-41.4
52
-43.5
54.0
-43.6
Gravelly SAND: grey, loose, well graded, fine to coarse, wet, cemented, fine to coarse sand gravel sized with shell fragments, mainly medium sand sized, quartz, subrounded, fine to medium sand
12
SPT
3
4
5
54
56
58
-48.6
59.0
-48.6
SAND: greenish grey, medium dense, well graded, fine to coarse, wet, fine cemented sand gravel, some shell fragments, mainly medium sand sized
13
SPT
8
9
8
60
62
-53.6
SAND: olive grey green, medium dense, well graded, fine to coarse, wet, coarse sand, shell fragments, black mineral and quartz, subrounded, fine to medium size
14
SPT
8
11
9
64
66
68
-58.6
Shelly SAND: greenish grey, medium dense, well graded, fine to coarse with angular shell fragments, some fine to
15
SPT
4
5
70
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-025T



Hole No. CP05-EAAR'S-CB-025?

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 10.4 | Sheet 5 of 5 Sheets

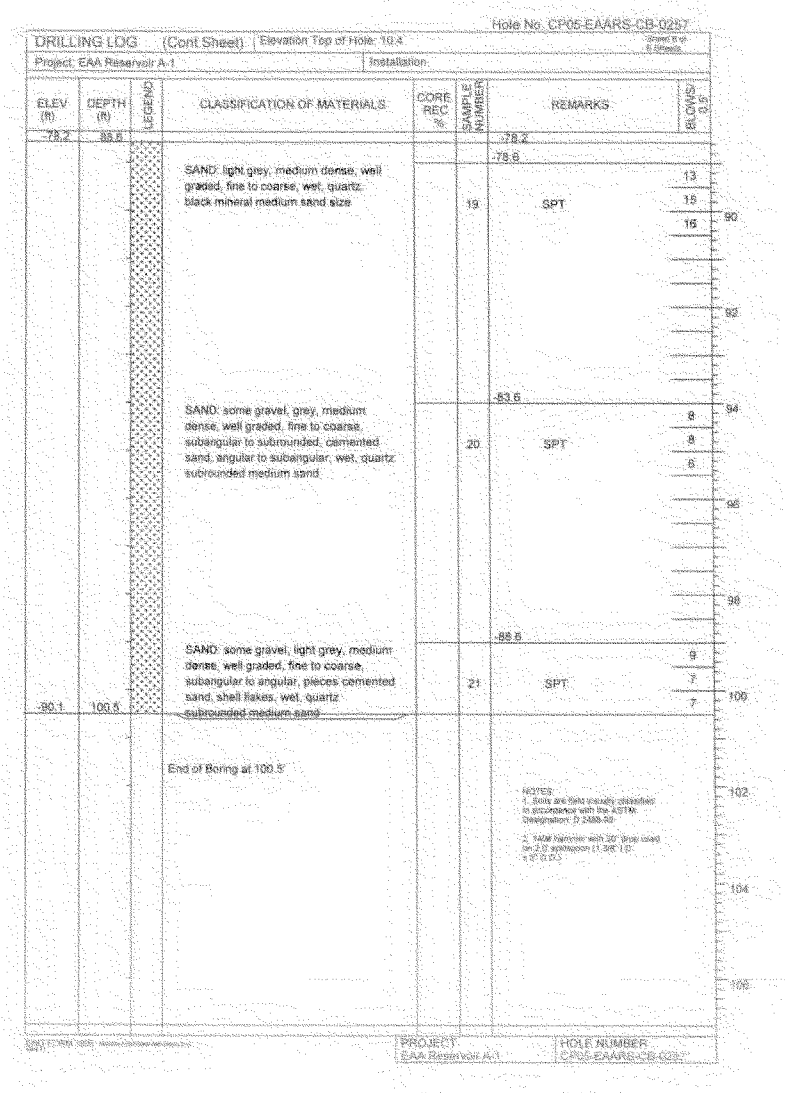
Project: EAA Reservoir A-1 | Installation:

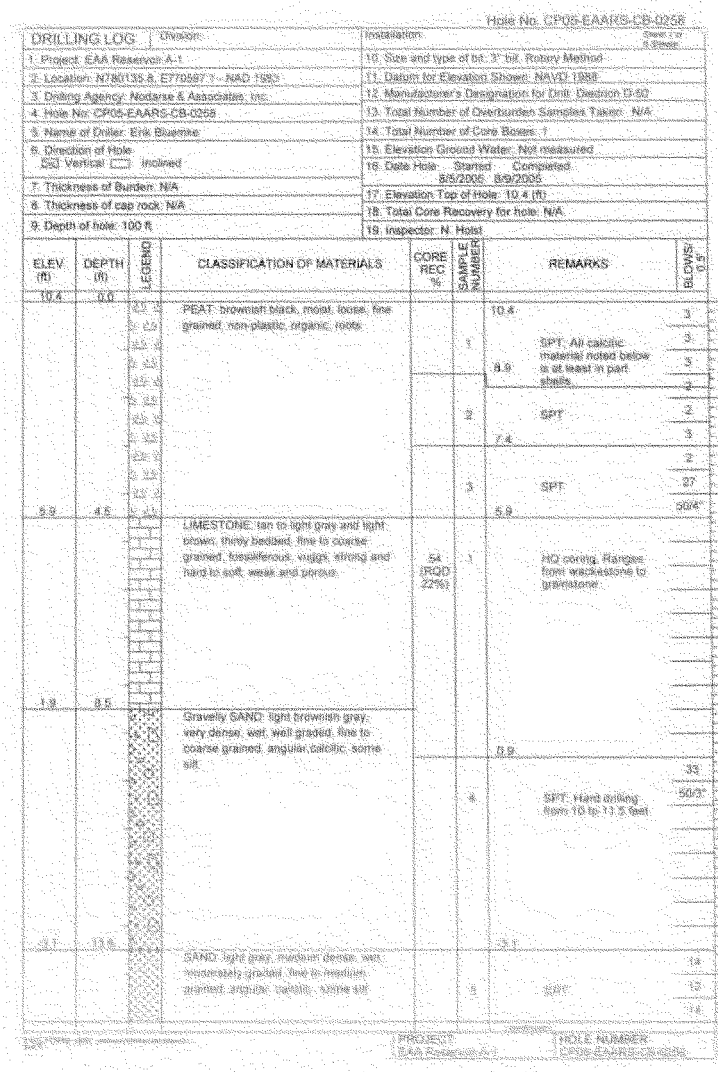
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS / 0.5'
-53.6	70.2		medium black mineral and quartz subrounded			-53.6	3
-63.6	74.0		Sandy GRAVEL: creamy light grey, very dense, well graded fine occasional coarse, angular to subangular cemented sand (fine to coarse), shell fragments, included "Gravelly drilling"		16	SPT: "Gravelly drilling"	3 23 45
			As above, except grey, dense		17	SPT	10 20 26
-73.6	84.0		SAND: light grey, loose, well graded fine to medium occasional coarse, wet, shelly fragments		18	SPT	5 3 4

-68.6 -73.6

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARC-CB-025?

72 74 76 78 80 82 84 86 88


Hole No. CP05-EAARS-CB-025?
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 78.4
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
78.2
83.6
SAND: light grey, medium dense, well graded, fine to coarse, wet, quartz, black mineral medium sand size
19
SPT
13
15
15
90
92
SAND: some gravel, grey, medium dense, well graded, fine to coarse, subangular to subrounded, cemented sand, angular to subangular, wet, quartz subrounded medium sand
20
SPT
8
9
6
94
96
98
SAND: some gravel, light grey, medium dense, well graded, fine to coarse, subangular to angular, pieces cemented sand, shell flakes, wet, quartz subrounded medium sand
21
SPT
9
7
7
100
-90.1
100.5
End of Boring at 100.5'
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93
2. 140# hammer with 30" drop used on 2.0 spoon (1 3/8" I.D. x 2" O.D.)
102
104
106
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-025



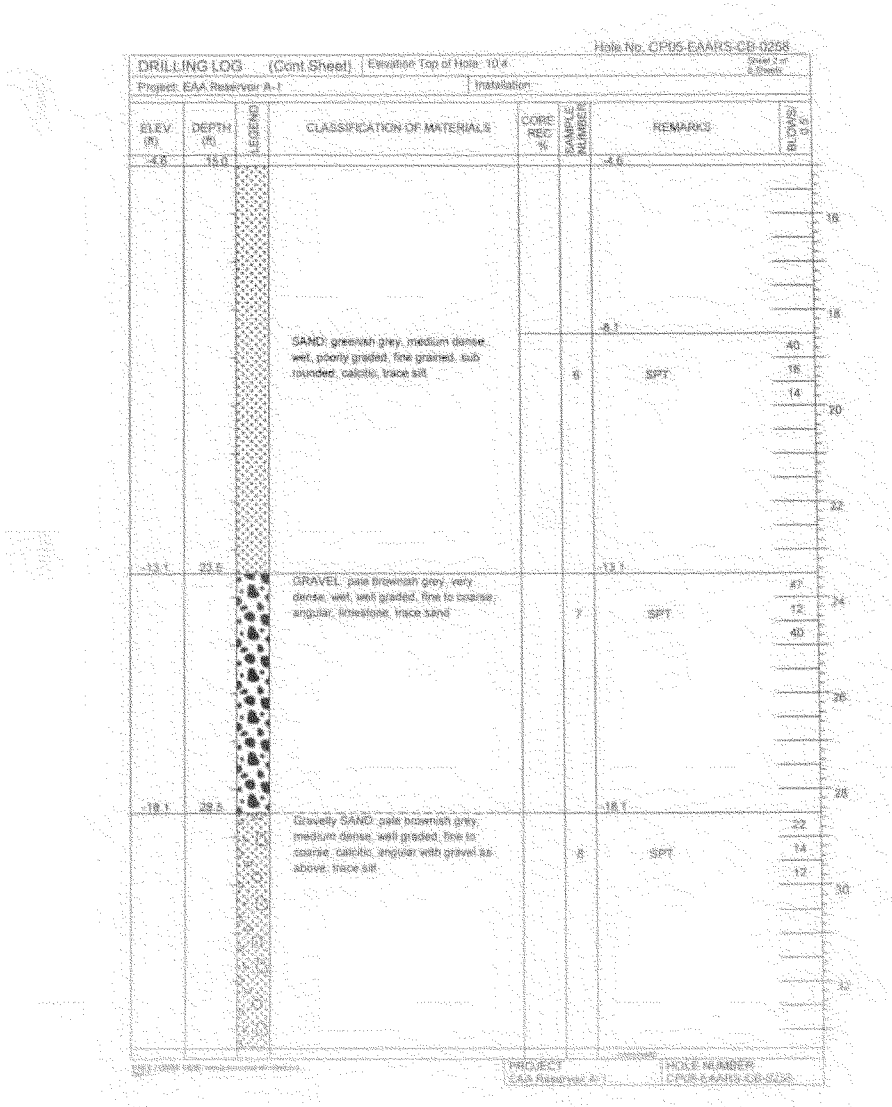
Hole No. CP05-EAARS-CB-0258

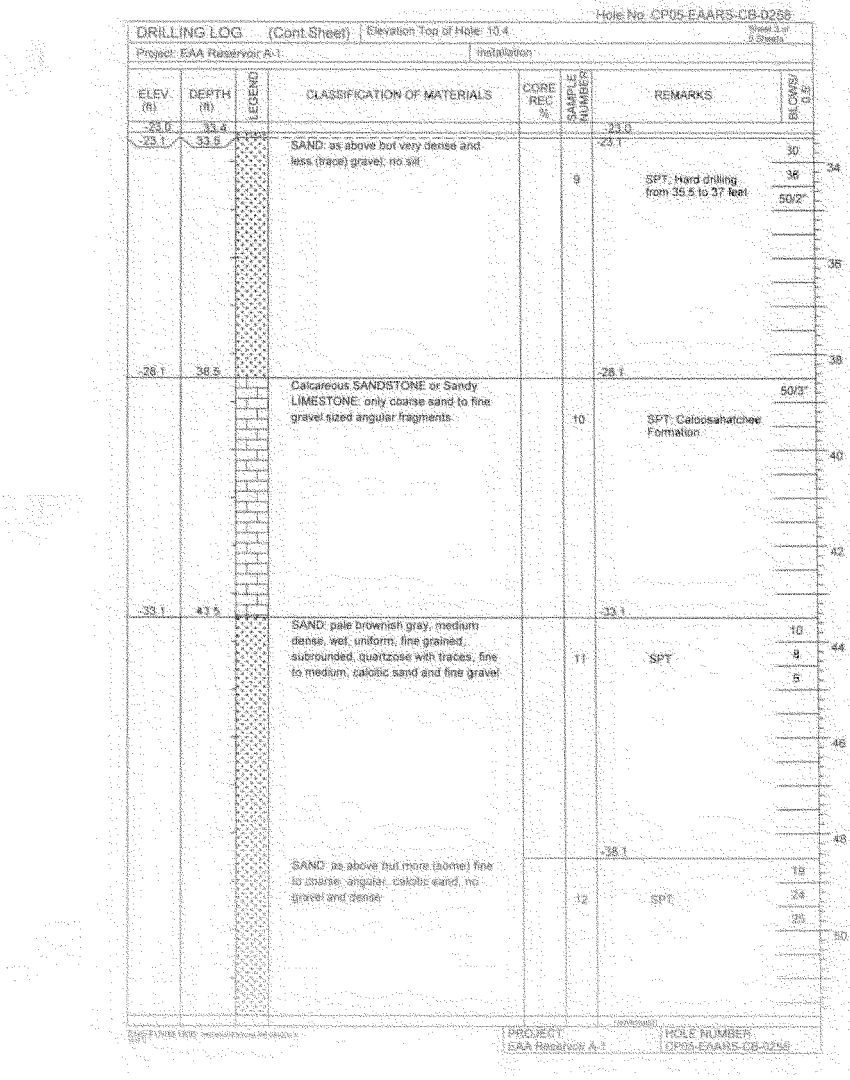
DRILLING LOG | Division: | Installation: | Sheet 1 of 1 Sheets

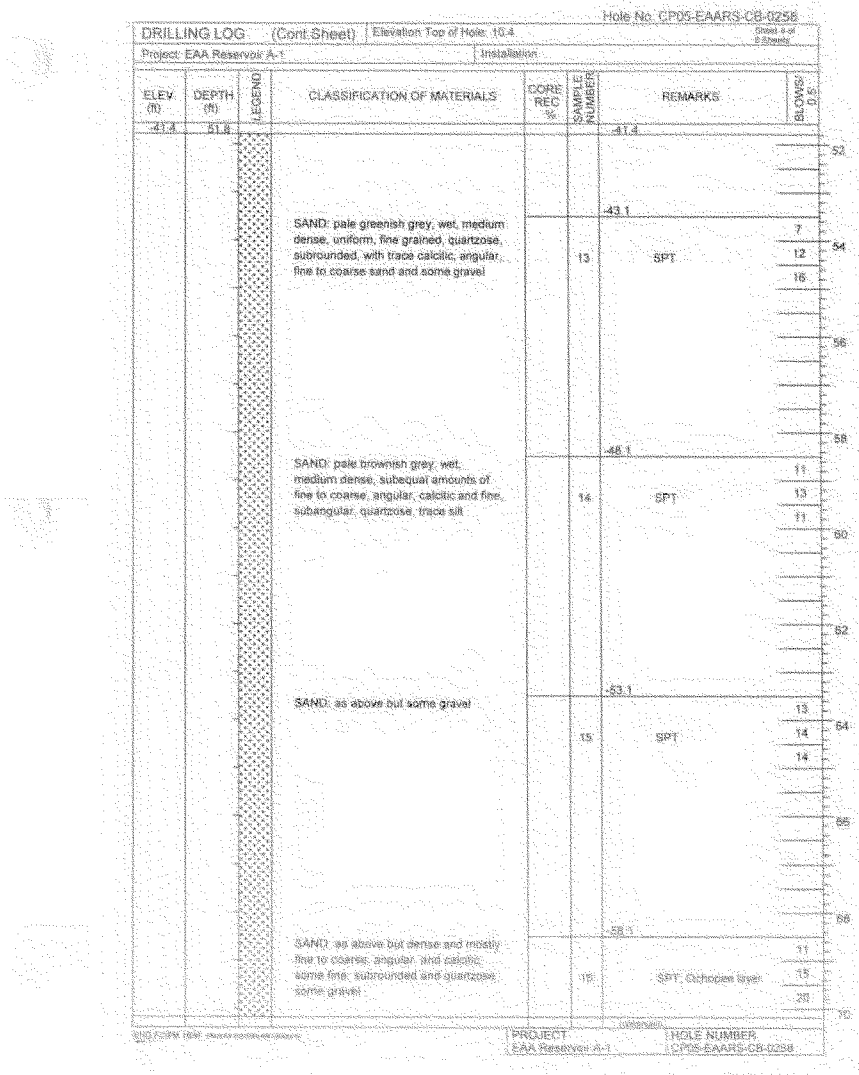
1. Project: EAA Reservoir A-1
2. Location: N780135.8, E770587.1 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0258
5. Name of Driller: Erik Buemke
6. Direction of Hole: [X] Vertical [ ] Inclined
7. Thickness of Burden: N/A
8. Thickness of cap rock: N/A
9. Depth of hole: 100 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: 1
15. Elevation Ground Water: Not measured
16. Date Hole: Started: 8/5/2005 Completed: 8/8/2005
17. Elevation Top of Hole: 10.4 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: N. Holst

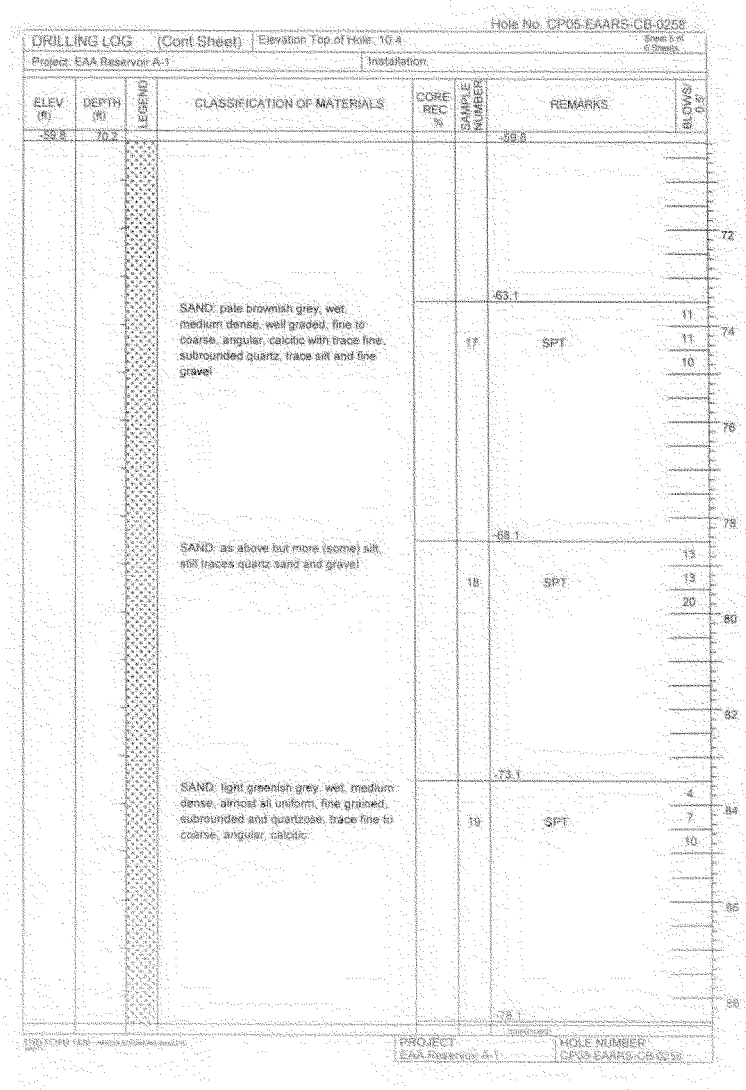
ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
10.4	0.0		PEAT: brownish black, moist, loose, fine grained, non-plastic, organic, roots		1	10.4 SPT. All calcitic materials noted below is at least in part shells 8.9	3 3 4
					2	SPT 7.4	4 2 3
					3	SPT 5.9	2 27 50/4"
5.9	4.5		LIMESTONE: tan to light gray and light brown, thinly bedded, fine to coarse grained, fossiliferous, vuggy, strong and hard to soft, weak and porous	54 (RQD 22%)	1	HQ coring. Ranges from wackestone to grainstone	
1.9	8.5		Gravelly SAND: light brownish gray, very dense, wet, well graded, fine to coarse grained, angular,calcitic, some silt			5.9	
					4	SPT. Hand drilling from 10 to 11.5 feet	33 50/3"
-1.1	12.5		SAND: light gray, medium dense, wet, moderately graded, fine to medium grained, angular, calcitic, some silt			-1.1	
					5	SPT	13 12 14

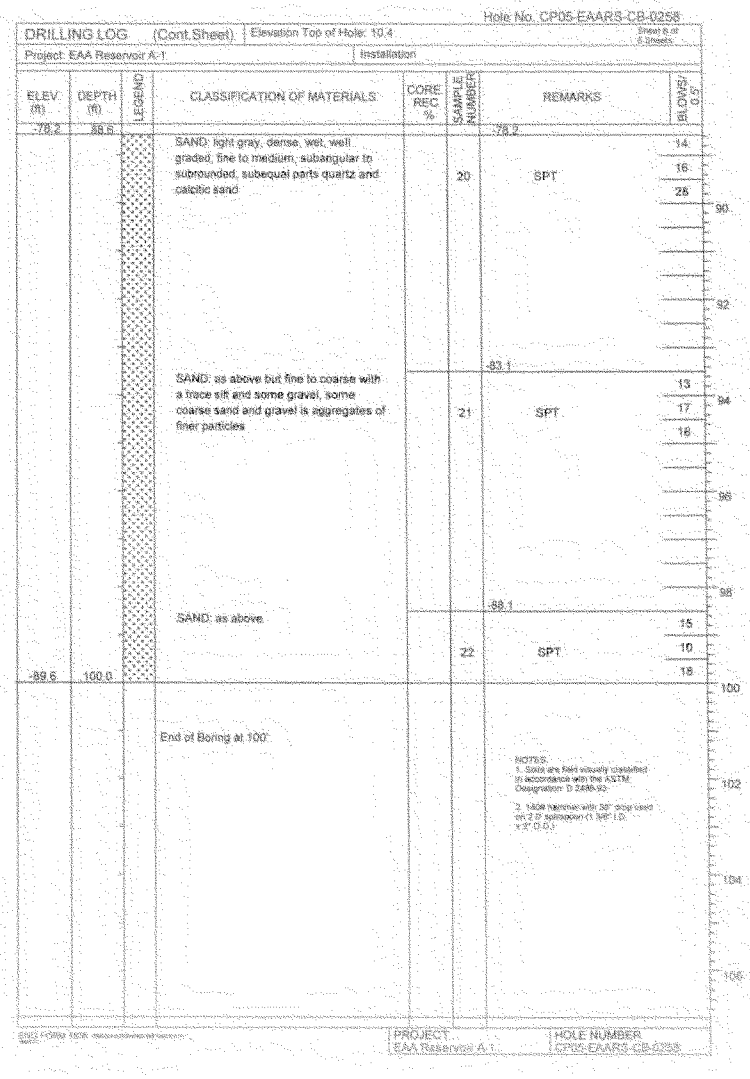
PROJECT: EAA Reservoir A-1 HOLE NUMBER: CP05-EAARS-CB-0258


Hole No. CP05-EAARS-CB-0258
DRILLING LOG (Cont.Sheet) Elevation Top of Hole 10.4
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS 0.5'
-4.6
15.0
-8.1
SAND: greenish grey, medium dense, wet, poorly graded, fine grained, sub rounded, calcitic, trace silt
6
SPT
40
16
14
30
-13.1
17.5
GRAVEL: pale brownish grey, very dense, wet, well graded, fine to coarse, angular, limestone, trace sand
7
SPT
47
32
40
72
-18.1
22.5
Gravelly SAND: pale brownish grey, medium dense, well graded, fine to coarse, calcitic, angular with gravel as above, trace silt
8
SPT
22
14
17
31
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0258


Hole No. CP05-EAARS-CB-0256
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 10.4
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-23.0
33.4
-23.1
33.5
SAND: as above but very dense and less (trace) gravel; no silt
9
-23.1
SPT; Hard drilling from 35.5 to 37 feet
30
36
50/2"
34
36
38
-28.1
38.5
Calcareous SANDSTONE or Sandy LIMESTONE: only coarse sand to fine gravel sized angular fragments
10
-28.1
SPT; Caloosahatchee Formation
50/3"
40
42
-33.1
43.5
SAND: pale brownish gray, medium dense, wet, uniform, fine grained, subrounded, quartzose with traces, fine to medium, calcitic sand and fine gravel
11
-33.1
SPT
10
9
5
44
46
48
-38.1
SAND: as above but more (some) fine to coarse, angular, calcitic sand, no gravel and dense
12
SPT
19
34
50
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0256


Hole No. CP05-EAARS-CB-0258
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 10.4
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-41.4
51.8
-43.1
SAND: pale greenish grey, wet, medium dense, uniform, fine grained, quartzose, subrounded, with trace calcitic, angular, fine to coarse sand and some gravel
13
SPT
7
12
16
-48.1
SAND: pale brownish grey, wet, medium dense, subequal amounts of fine to coarse, angular, calcitic and fine, subangular, quartzose, trace silt
14
SPT
11
13
11
-53.1
SAND: as above but some gravel
15
SPT
13
14
14
SAND: as above but dense and mostly fine to coarse, angular, and calcitic, some fine, subrounded and quartzose, some gravel
16
SPT, Cohesion lost
11
15
20
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0258


Hole No. CP05-EAARS-CB-0258
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10.4
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/0.3
59.8
70.2
SAND: pale brownish grey, wet, medium dense, well graded, fine to coarse, angular, calcitic with trace fine, subrounded quartz, trace silt and fine gravel
17
SPT
11
11
10
SAND: as above but more (some) silt, still traces quartz sand and gravel
18
SPT
13
13
20
SAND: light greenish grey, wet, medium dense, almost all uniform, fine grained, subrounded and quartzose, trace fine to coarse, angular, calcitic
19
SPT
4
7
10
72
74
76
78
80
82
84
86
88
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0258



Hole No. CP05-EAARS-CB-0258

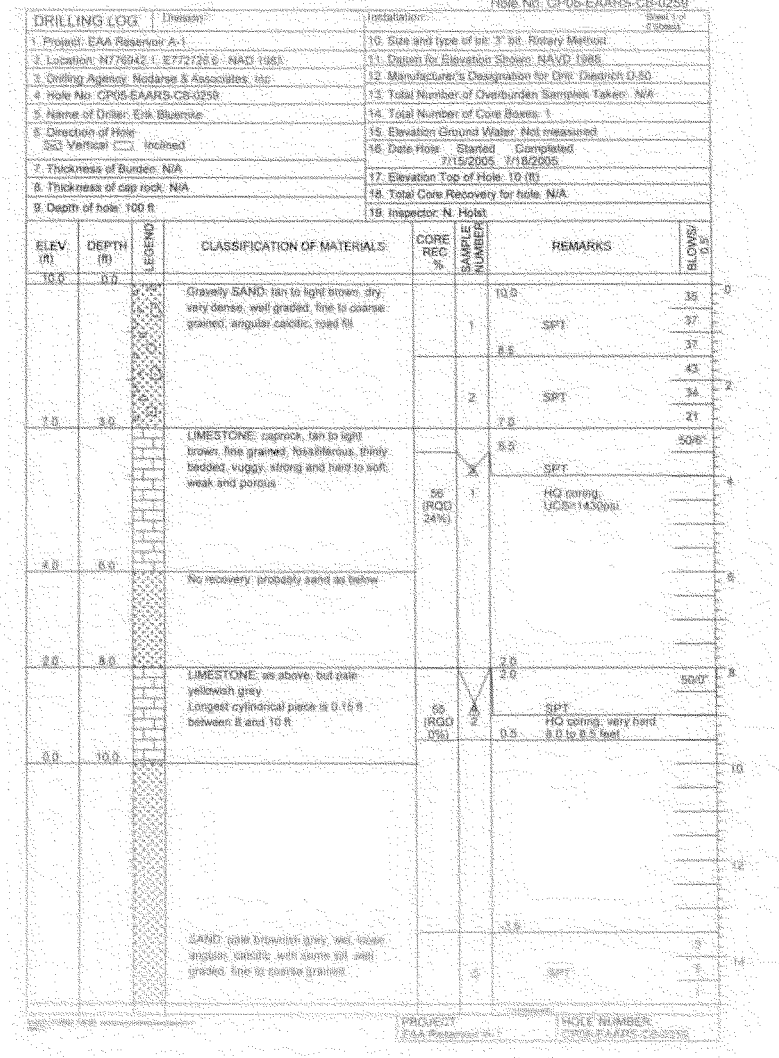
DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 10.4 | Sheet 6 of 6 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/0.5'
-78.2	88.6					-78.2	
			SAND: light gray, dense, wet, well graded, fine to medium, subangular to subrounded, subequal parts quartz and calcitic sand		20	SPT	14 16 28
							90
							92
						-83.1	
			SAND: as above but fine to coarse with a trace silt and some gravel, some coarse sand and gravel is aggregates of finer particles		21	SPT	13 17 18
							94
							96
							98
						-88.1	
			SAND: as above		22	SPT	15 10 15
-89.6	100.0						
							100
			End of Boring at 100'				
							102
							104
							106

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.5" splitspoon (1 3/8" I.D. x 2" O.D.).

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0258



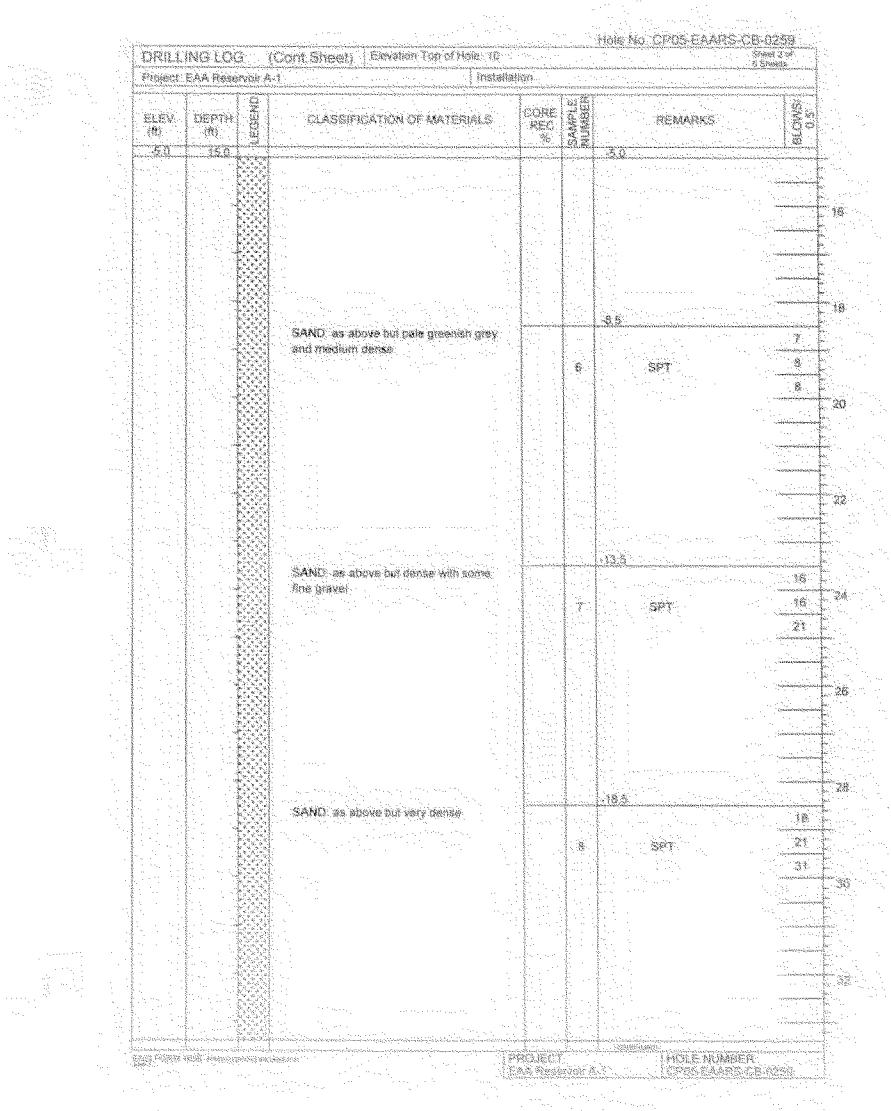
Hole No. CP05-EAARS-CB-0258

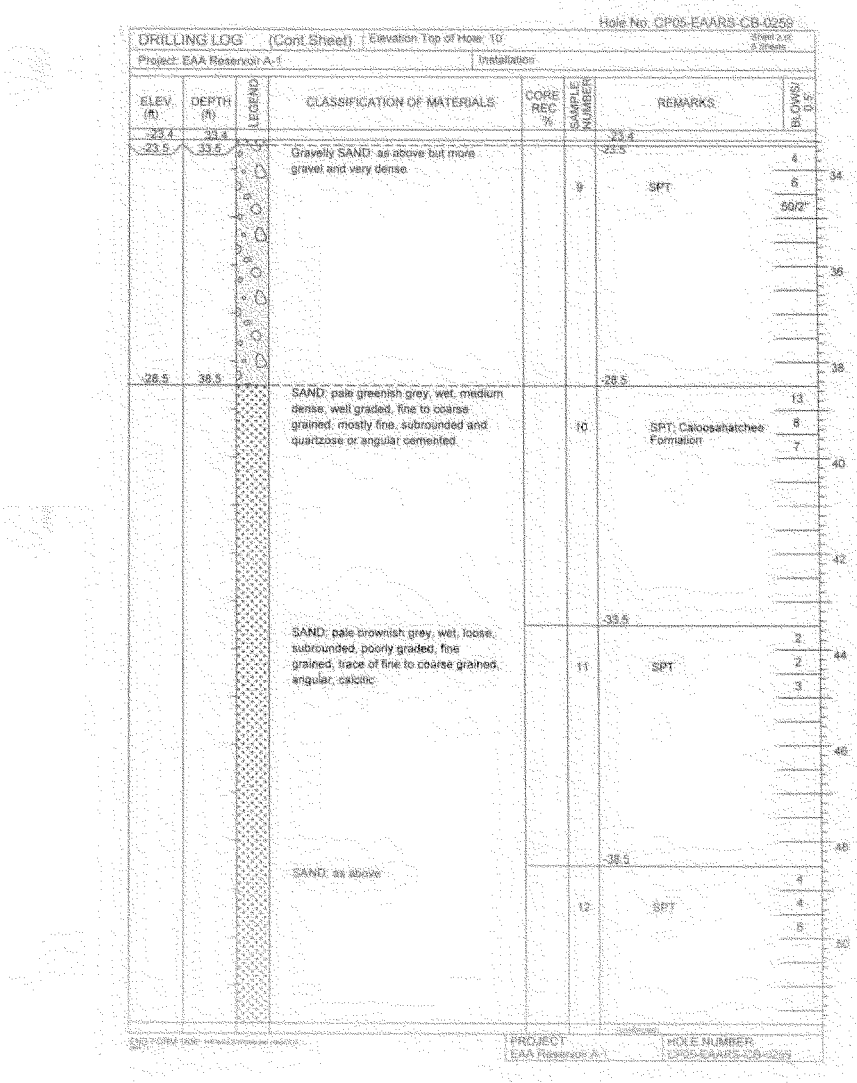
DRILLING LOG | Division: | Installation: | Sheet 1 of 2 Sheets

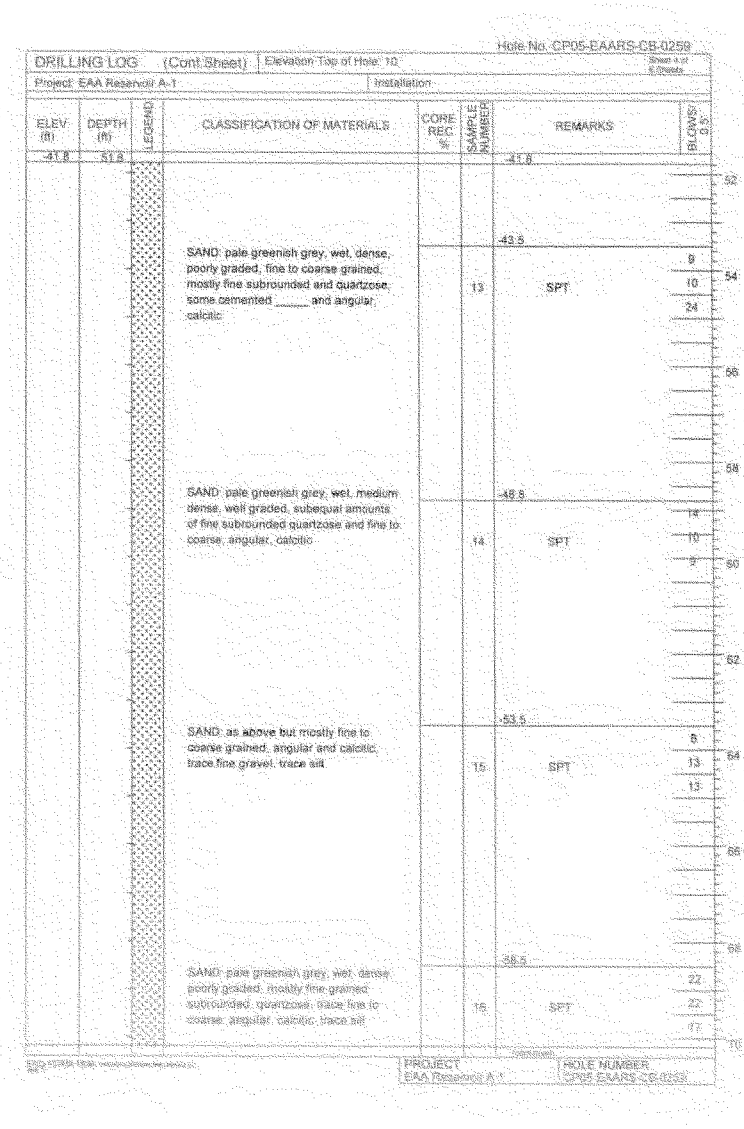
1. Project: EAA Reservoir A-1
2. Location: N776942.1, E772725.6 NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No. CP05-EAARS-CB-0258
5. Name of Driller: Erik Bluemke
6. Direction of Hole: [x] Vertical [ ] Inclined
7. Thickness of Burden: N/A
8. Thickness of cap rock: N/A
9. Depth of hole: 100 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: 1
15. Elevation Ground Water: Not measured
16. Date Hole: Started 7/15/2005 Completed 7/18/2005
17. Elevation Top of Hole: 10 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: N. Holst

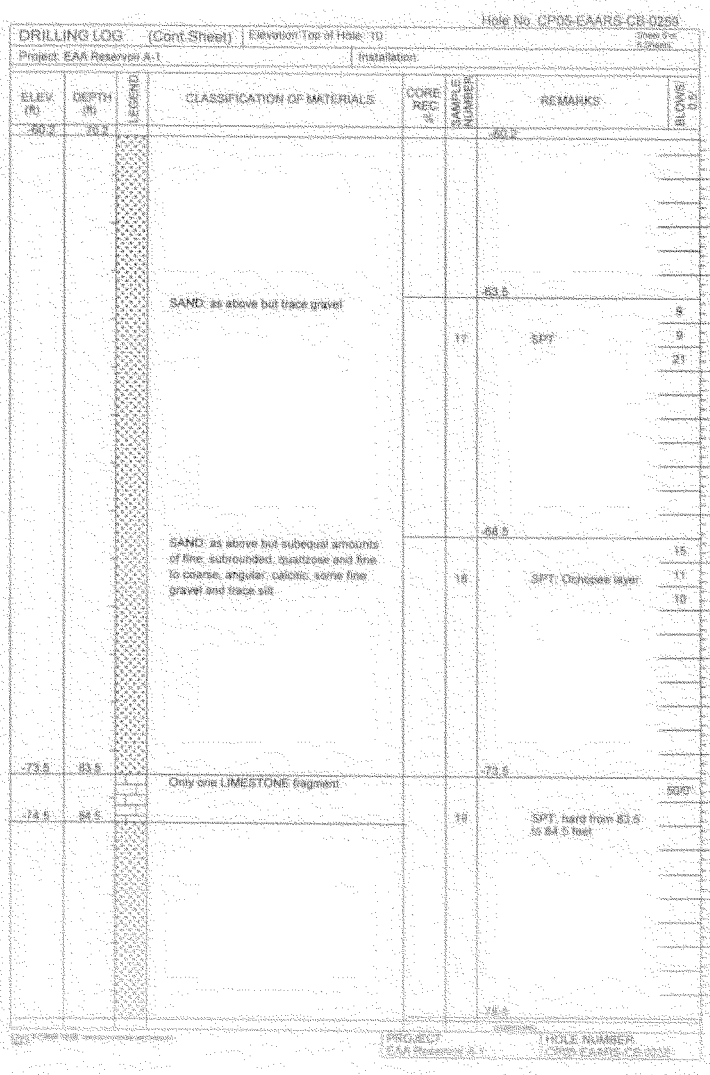
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
10.0	0.0						
			Gravelly SAND: tan to light brown, dry, very dense, well graded, fine to coarse grained, angular caustic, road fill		1	10.0 SPT 8.5	35 37 37
					2	SPT 7.0	43 34 21
7.0	3.0		LIMESTONE: caprock, tan to light brown, fine grained, fossiliferous, thinly bedded, vuggy, strong and hard to soft, weak and porous				
					3	6.5 SPT	50/6"
				56 (RQD 24%)	1	HQ coring UCS=1430psi	
4.0	6.0		No recovery, probably sand as below				
2.0	8.0		LIMESTONE: as above, but pale yellowish grey Longest cylindrical piece is 0.15 ft between 8 and 10 ft			2.0	
				55 (RQD 0%)	4 2	2.0 SPT 0.5	50/0" HQ coring, very hard 8.0 to 8.5 feet
0.0	10.0						
			SAND: pale brownish grey, wet, loose angular, caustic, with some silt, well graded, fine to coarse grained			0.5	
					5	SPT	3 3 4

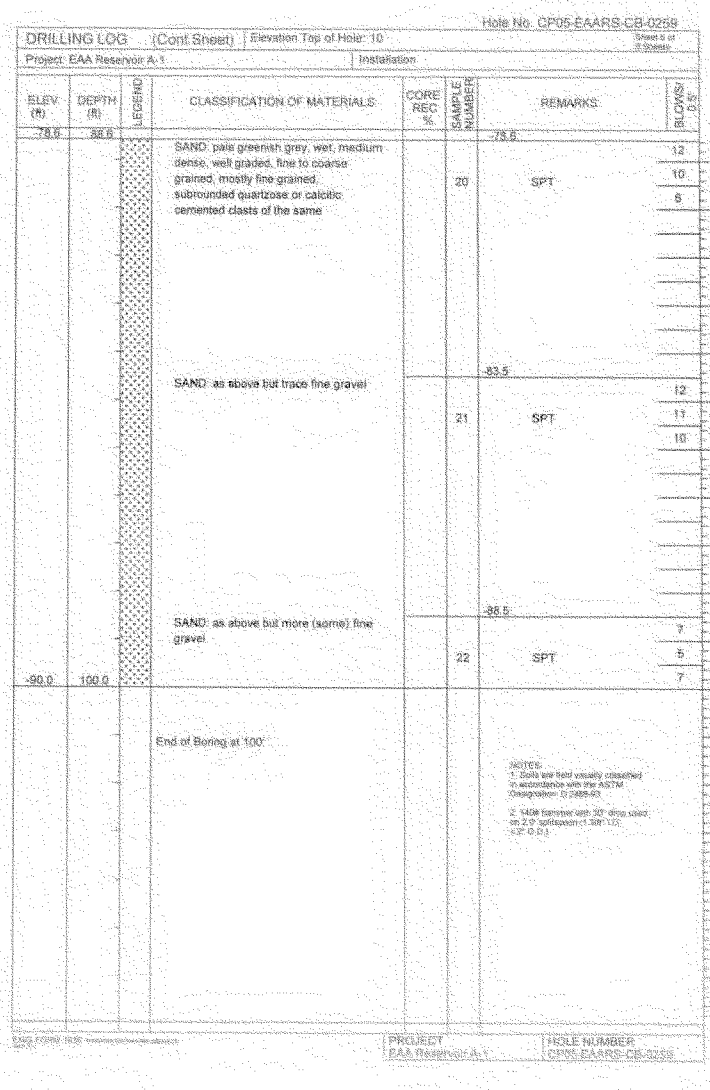
PROJECT | HOLE NUMBER

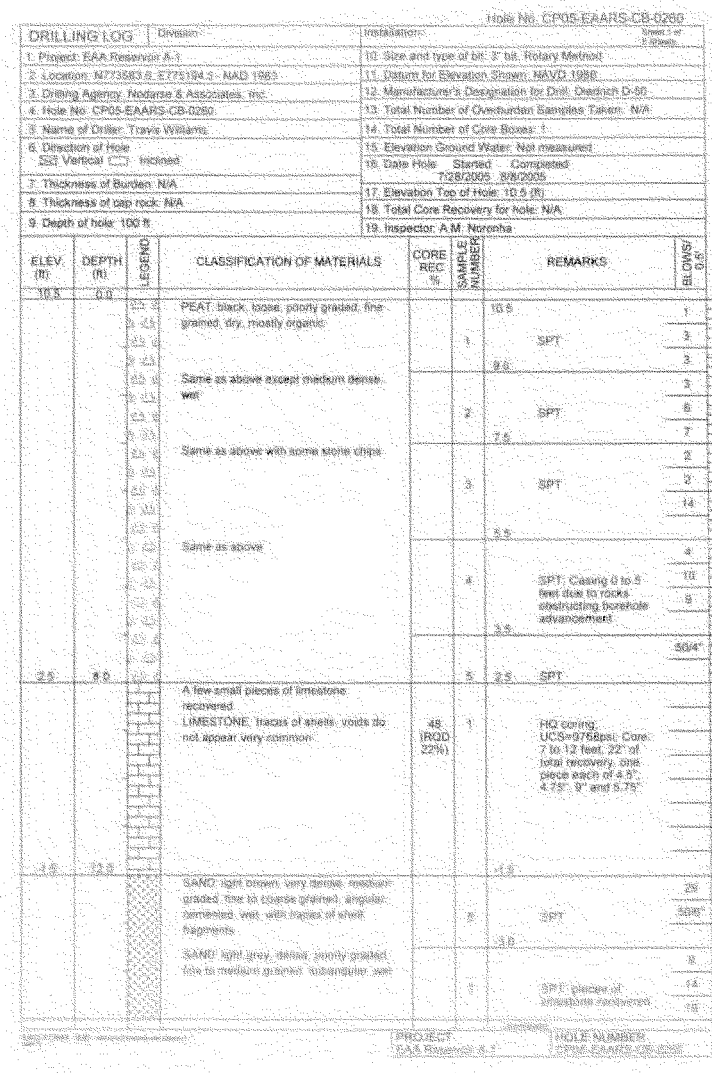

Hole No. CP05-EAARS-CB-0259
DRILLING LOG (Cont Sheet) Elevation Top of Hole: TD
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
5.0
SAND: as above but pale greenish grey and medium dense
8.5
SPT
13.5
SAND: as above but dense with some fine gravel
SPT
18.5
SAND: as above but very dense
SPT
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0259


Hole No. CP05-EAARS-CB-0259
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 10'
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
23.4
33.4
23.5
33.5
Gravelly SAND: as above but more gravel and very dense
9
SPT
4
6
50/2"
34
36
38
28.5
38.5
SAND: pale greenish grey, wet, medium dense, well graded, fine to coarse grained, mostly fine, subrounded and quartzose or angular cemented
10
SPT; Caloosahatchee Formation
13
8
7
40
42
33.5
SAND: pale brownish grey, wet, loose, subrounded, poorly graded, fine grained, trace of fine to coarse grained, angular, calcitic
11
SPT
2
2
3
44
46
48
38.5
SAND: as above
12
SPT
4
4
5
50
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0259


Hole No. CP05-EAARS-CB-0259
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-41.8
51.8
-43.5
SAND: pale greenish grey, wet, dense, poorly graded, fine to coarse grained, mostly fine subrounded and quartzose, some cemented _____ and angular, calcitic
13
SPT
9
10
24
-48.8
SAND: pale greenish grey, wet, medium dense, well graded, subequal amounts of fine subrounded quartzose and fine to coarse, angular, calcitic
14
SPT
14
10
7
-53.5
SAND: as above but mostly fine to coarse grained, angular and calcitic, trace fine gravel, trace silt
15
SPT
8
13
13
-58.5
SAND: pale greenish grey, wet, dense, poorly graded, mostly fine grained, subrounded, quartzose, trace fine to coarse, angular, calcitic, trace silt
16
SPT
22
32
47
52
54
56
58
60
62
64
66
68
70
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0259


DRILLING LOG (Cont Sheet)
Hole No. CP05-EAARS-CB-0258
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/6"
SAND: as above but trace gravel
SPT
SAND: as above but subequal amounts of fine, subrounded, quartzose and fine to coarse, angular, calcitic, some fine gravel and trace silt
SPT: Clogged layer
-73.5
83.5
Only one LIMESTONE fragment
50/0"
SPT, hard from 83.5 to 84.5 feet
-74.5
84.5
PROJECT
HOLE NUMBER


Hole No. CP05-EAARS-CB-0259
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
-78.0
88.0
SAND: pale greenish grey, wet, medium dense, well graded, fine to coarse grained, mostly fine grained, subrounded quartzose or calcitic cemented clasts of the same
20
SPT
12
10
8
-83.5
SAND: as above but trace fine gravel
21
SPT
12
11
10
-88.5
SAND: as above but more (some) fine gravel
22
SPT
7
5
7
-90.0
100.0
End of Boring at 100'
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93
2. 140# hammer with 30" drop used on 2.5" splitspoon (1 3/8" I.D. x 2" O.D.)
90
92
94
96
98
100
102
104
106
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0259



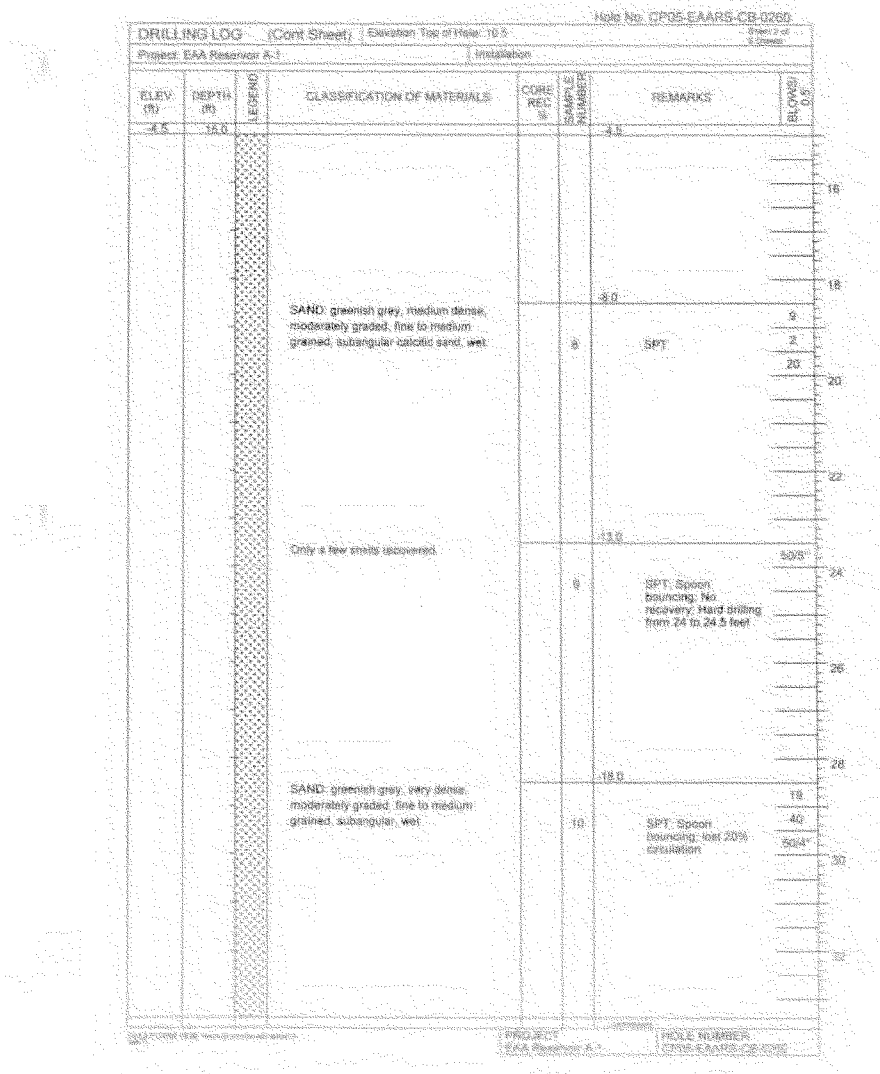
Hole No. CP05-EAARS-CB-0260

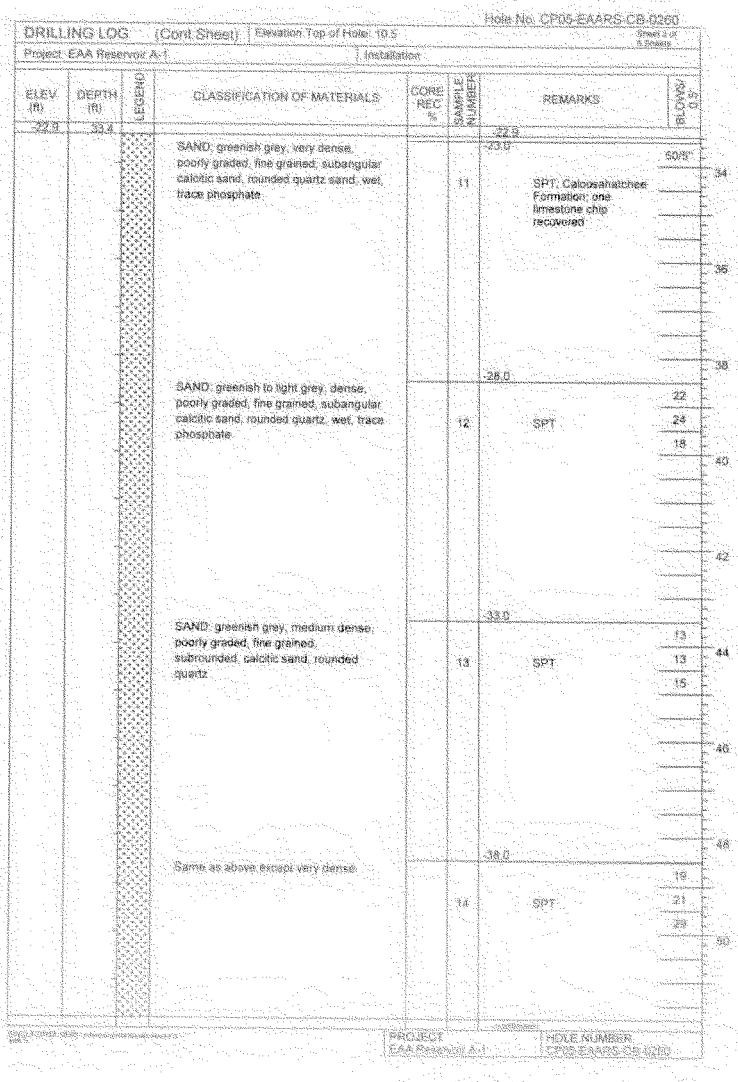
DRILLING LOG | Division: | Installation: | Sheet 1 of 3 sheets

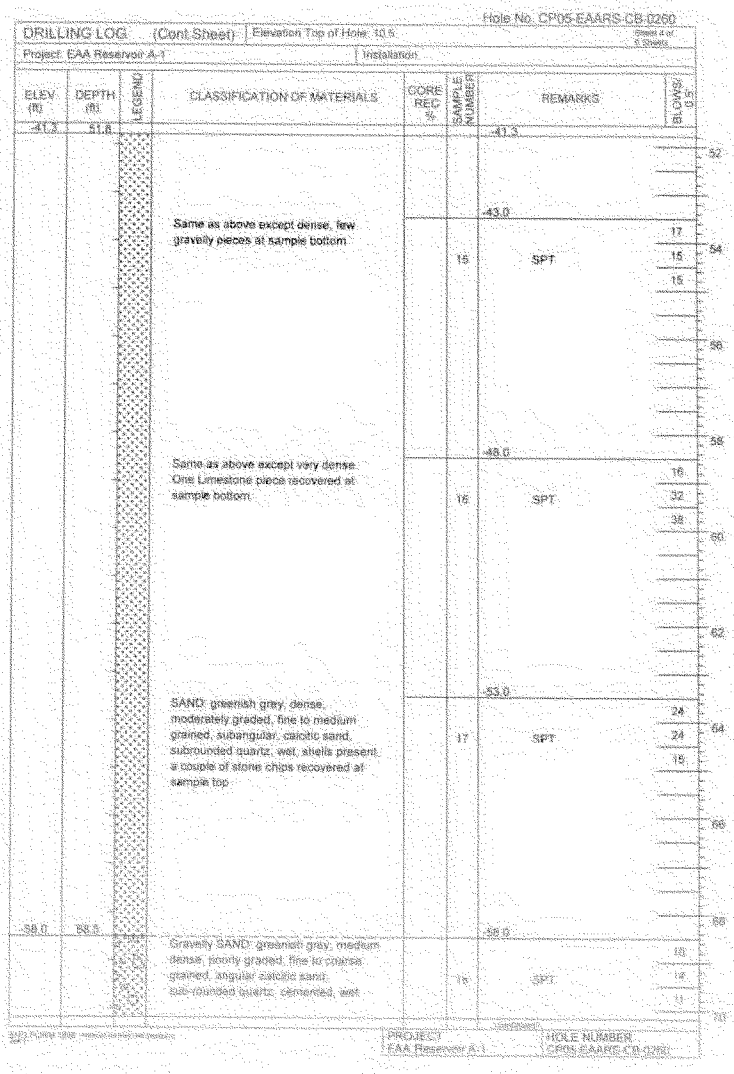
1. Project: EAA Reservoir A-1
2. Location: N773583.8, E775194.3 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No. CP05-EAARS-CB-0260
5. Name of Driller: Travis Williams
6. Direction of Hole: SSI Vertical ☐ Inclined
7. Thickness of Burden: N/A
8. Thickness of cap rock: N/A
9. Depth of hole: 100 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: 1
15. Elevation Ground Water: Not measured
16. Date Hole: Started 7/28/2005 Completed 8/8/2005
17. Elevation Top of Hole: 10.5 (ft)
18. Total Core Recovery for Hole: N/A
19. Inspector: A.M. Noronha

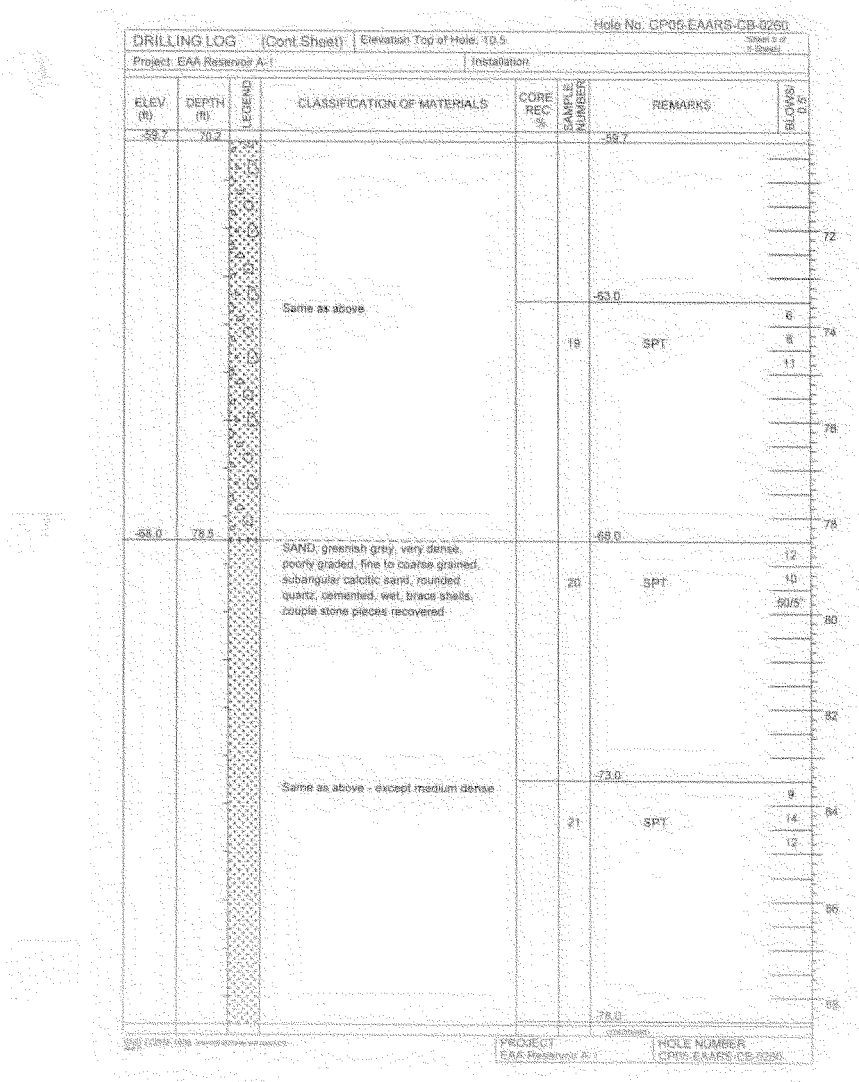
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER		REMARKS	BLOWS/ 0.5'
10.5	0.0					10.5		0
			PEAT, black, loose, poorly graded, fine grained, dry, mostly organic		1		SPT	1 3 3
			Same as above except medium dense, wet		2	9.0	SPT	3 5 7
			Same as above with some shell chips		3	7.5	SPT	2 5 14
			Same as above		4	5.5	SPT; Casing 0 to 5 feet due to rocks obstructing borehole advancement	4 10 8
						3.0		50/4"
2.5	8.0				5	2.5	SPT	8
			A few small pieces of limestone recovered LIMESTONE, traces of shells, voids do not appear very common	48 (RQD 22%)	1		HQ coring, UCS=9758psi. Core 7 to 12 feet, 22" of total recovery, one piece each of 4.5", 4.75", 9" and 5.75"	10
-1.5	12.0					-1.5		12
			SAND, light brown, very dense, medium grained, fine to coarse grained, angular, cemented, wet, with traces of shell fragments		6		SPT	25 50/6"
			SAND, light grey, dense, poorly graded, fine to medium grained, subangular, wet		7	-3.0	SPT; pieces of limestone recovered	8 14 16

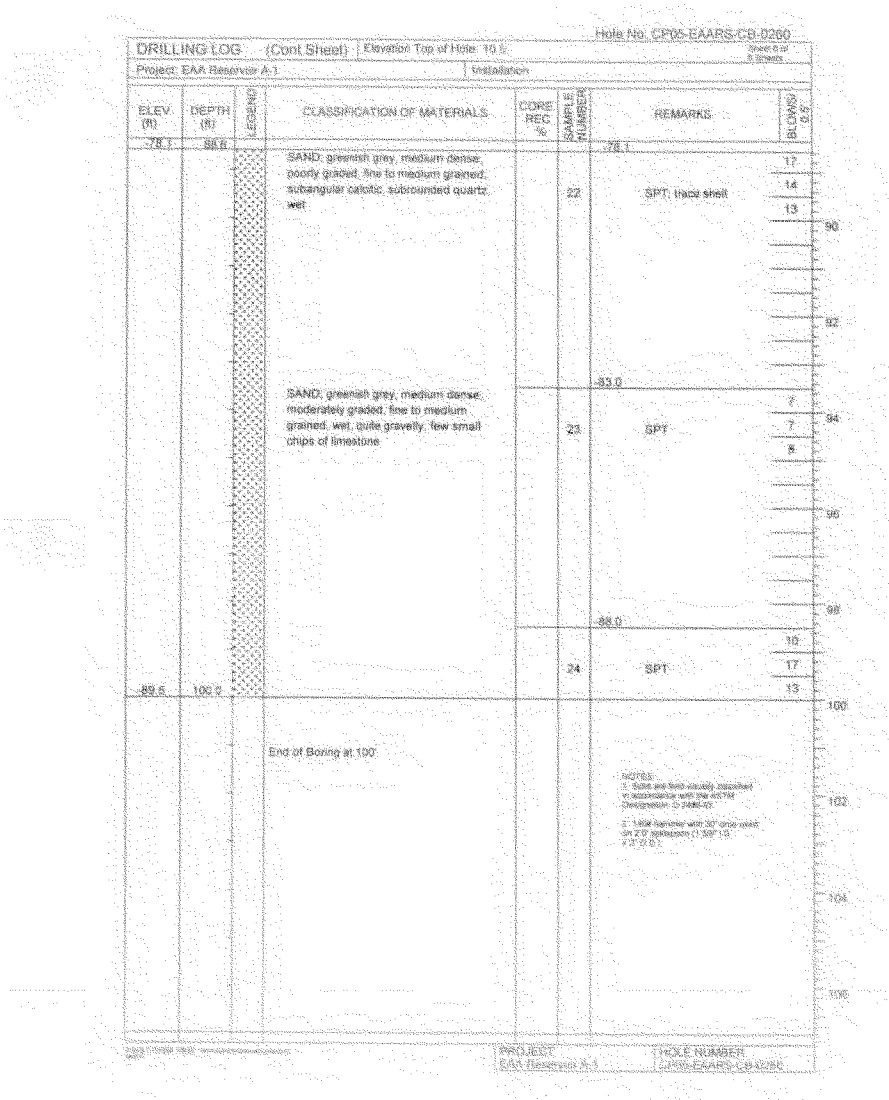
PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0260


Hole No. CP05-EAARS-CB-0260
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 19.5
Project: EAA Reservoir A-1 Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-2.5
22.0
3.0
SAND: greenish grey, medium dense, moderately graded, fine to medium grained, subangular calcitic sand, wet
9
SPT
9
2
20
13.0
Only a few shells recovered
50/5"
SPT: Spoon bouncing; No recovery; Hard drilling from 24 to 24.5 feet
18.0
SAND: greenish grey, very dense, moderately graded, fine to medium grained, subangular, wet
10
SPT: Spoon bouncing; lost 20% circulation
18
40
50/4"
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0260

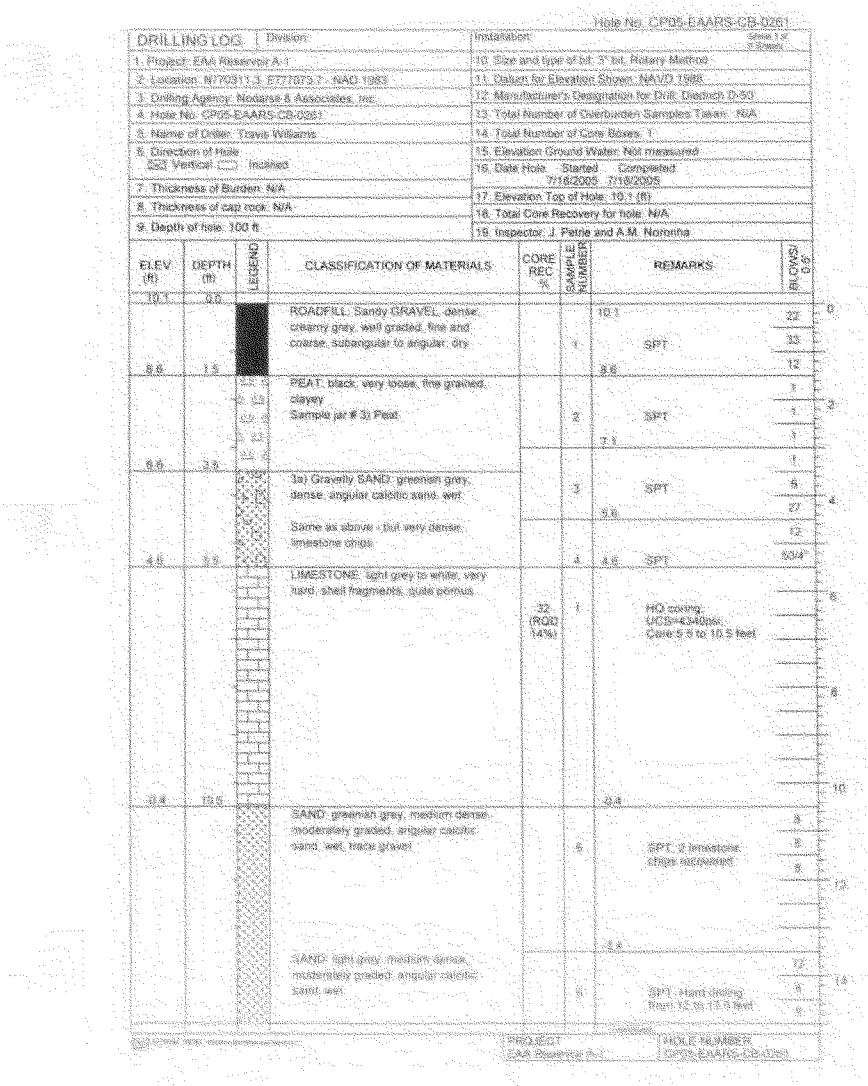

Hole No. CP05-EAARS-CB-0260
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 10.5
Project: EAA Reservoir A-1 Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
-22.5
33.4
SAND; greenish grey, very dense, poorly graded, fine grained, subangular calcitic sand, rounded quartz sand, wet, trace phosphate
-23.0
11
SPT; Caloosahatchee Formation; one limestone chip recovered
50/6"
-28.0
SAND; greenish to light grey, dense, poorly graded, fine grained, subangular calcitic sand, rounded quartz, wet, trace phosphate
12
SPT
22
24
18
-33.0
SAND; greenish grey, medium dense, poorly graded, fine grained, subrounded, calcitic sand, rounded quartz
13
SPT
13
13
15
-38.0
Same as above except very dense
14
SPT
19
21
29
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0260


Hole No. CP05-EAARS-CB-0260
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: 10.5
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/0.5ft
-41.3
51.8
-43.0
Same as above except dense, few gravelly pieces at sample bottom
15
SPT
17
15
15
-48.0
Same as above except very dense. One Limestone piece recovered at sample bottom
16
SPT
16
32
38
-53.0
SAND: greenish gray, dense, moderately graded, fine to medium grained, subangular, calcitic sand, subrounded quartz, wet, shells present, a couple of stone chips recovered at sample top
17
SPT
24
24
18
-58.0
88.5
Gravelly SAND: greenish grey, medium dense, poorly graded, fine to coarse grained, angular calcitic sand, sub-rounded quartz, cemented, wet
15
SPT
10
12
11
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0260


Hole No. CP05-EAARS-CB-0260
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 10.5
Project: EAA Reservoir A-1 Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS 0.5ft
59.7
70.2
Same as above
-53.0
19
SPT
6
8
11
72
74
78
-58.0
78.5
-68.0
SAND, greenish grey, very dense, poorly graded, fine to coarse grained, subangular calcitic sand, rounded quartz, cemented, wet, brace shells, couple stone pieces recovered
20
SPT
12
40
80
82
Same as above - except medium dense
-73.0
9
21
SPT
14
12
84
86
88
-78.0
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0260


Hole No. CP05-EAARS-CB-0260
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 10 ft
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
78.1
88.0
SAND; greenish grey, medium dense, poorly graded, fine to medium grained, subangular calcitic, subrounded quartz, wet
22
SPT; trace shell
17
14
13
90
92
83.0
SAND; greenish grey, medium dense, moderately graded, fine to medium grained, wet, quite gravelly, few small chips of limestone
23
SPT
7
7
8
94
96
88.0
24
SPT
10
17
13
98
100
89.5
100.2
End of Boring at 100'
102
104
106
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0260

APPENDIX 2
SUPPLEMENTAL BORINGS AND PIEZOMETER INSTALLATION LOGS: 261-280



Hole No. CP05-EAARS-CB-0261

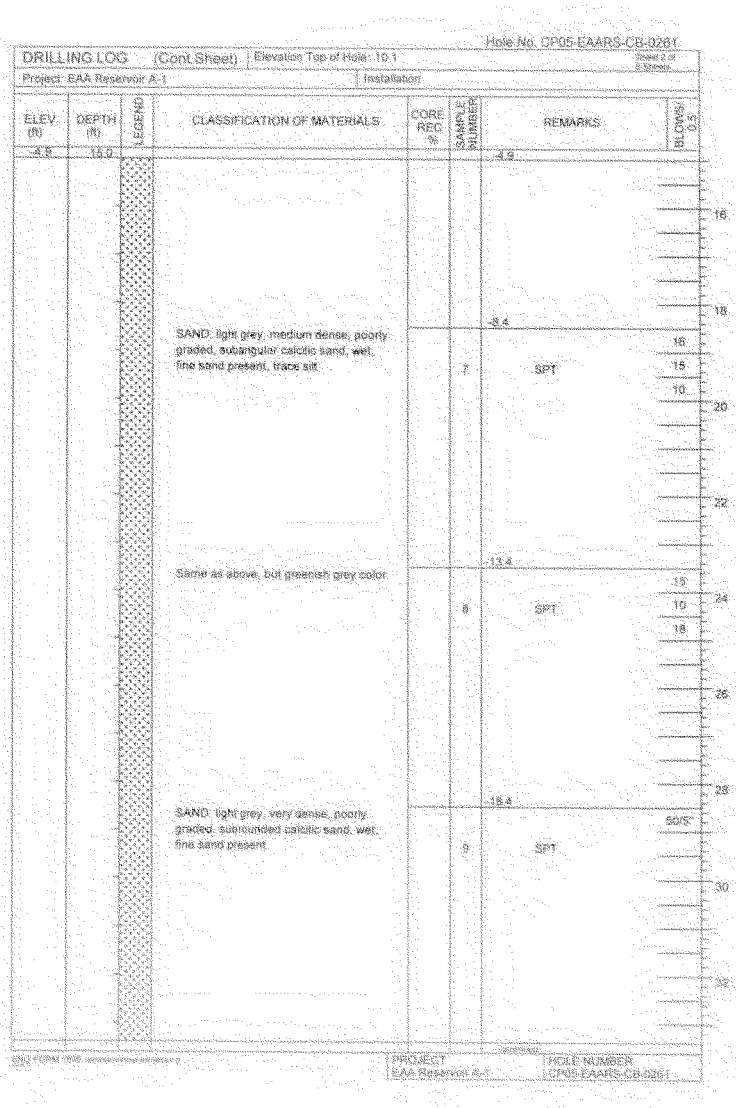
DRILLING LOG Division: Installation: Sheet 1 of 2 Sheets

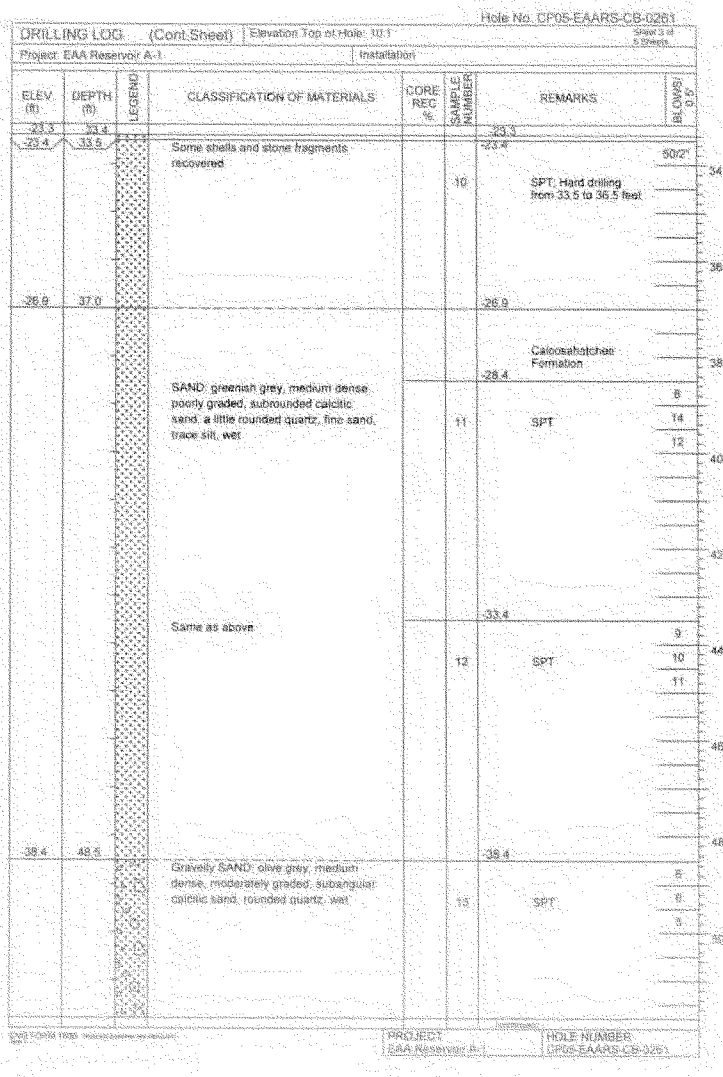
1. Project: EAA Reservoir A-1
2. Location: N770311.3, E777073.7 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No. CP05-EAARS-CB-0261
5. Name of Driller: Travis Williams
6. Direction of Hole: [X] Vertical [ ] Inclined
7. Thickness of Burden: N/A
8. Thickness of cap rock: N/A
9. Depth of hole: 100 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: 1
15. Elevation Ground Water: Not measured
16. Date Hole: Started 7/18/2005 Completed 7/18/2005
17. Elevation Top of Hole: 10.1 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: J. Petne and A.M. Noronha

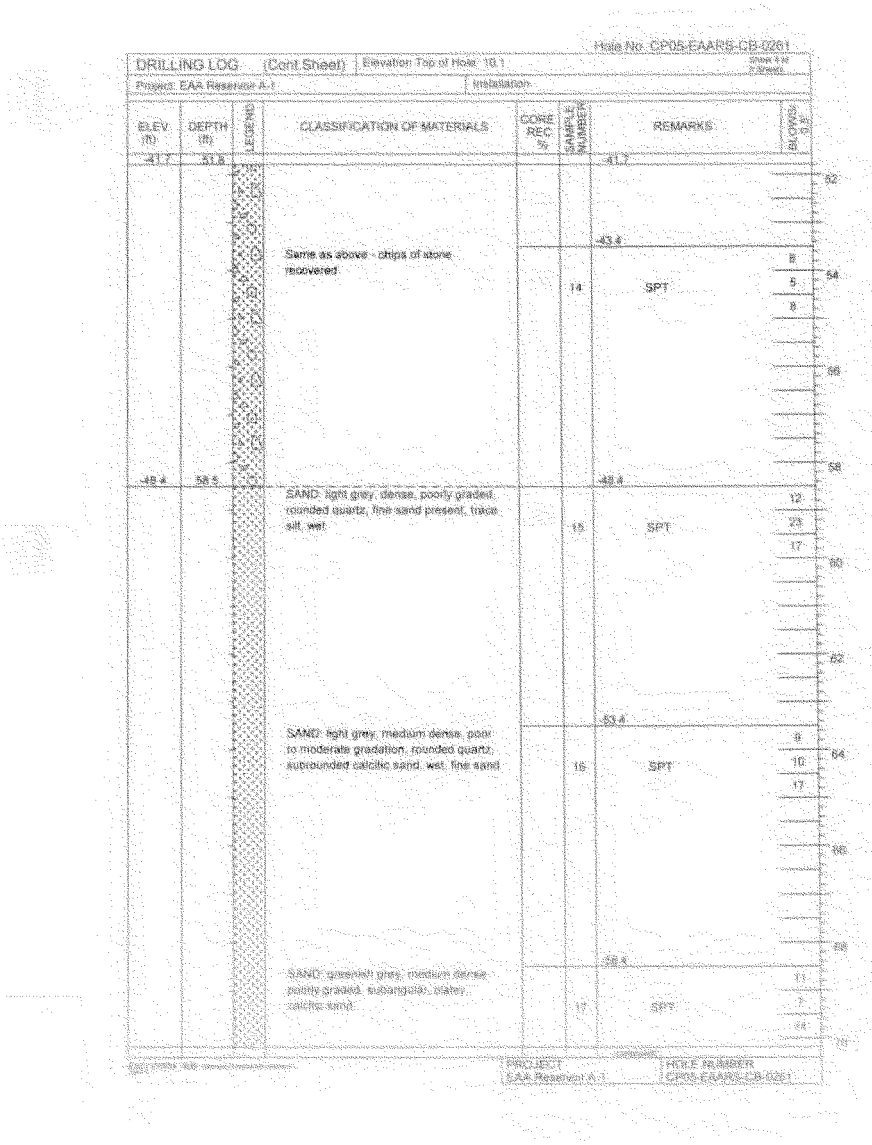
ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.6'
10.1	0.0					10.1	
			ROADFILL: Sandy GRAVEL, dense, creamy grey, well graded, fine and coarse, subangular to angular, dry		1	SPT	22 33 12
8.6	1.5					8.6	
			PEAT, black, very loose, fine grained, clayey Sample jar # 3) Peat		2	SPT	1 1 1
6.6	3.5					7.1	
			1a) Gravelly SAND: greenish grey, dense, angular calcitic sand, wet		3	SPT	1 5 27
			Same as above - but very dense, limestone chips			9.6	
4.6	5.5				4	4.6 SPT	12 30/4"
			LIMESTONE: light grey to white, very hard, shell fragments, quite porous	32 (ROD 14%)	1	HQ coring, UCS=4340psi, Core 5.5 to 10.5 feet	
0.4	10.5					9.4	
			SAND: greenish grey, medium dense, moderately graded, angular calcitic sand, wet, trace gravel		5	SPT, 2 limestone chips recovered	8 8 8
						9.4	
			SAND: light grey, medium dense, moderately graded, angular calcitic sand, wet		6	SPT, Hard Drilling from 12 to 13.5 feet	12 9 6

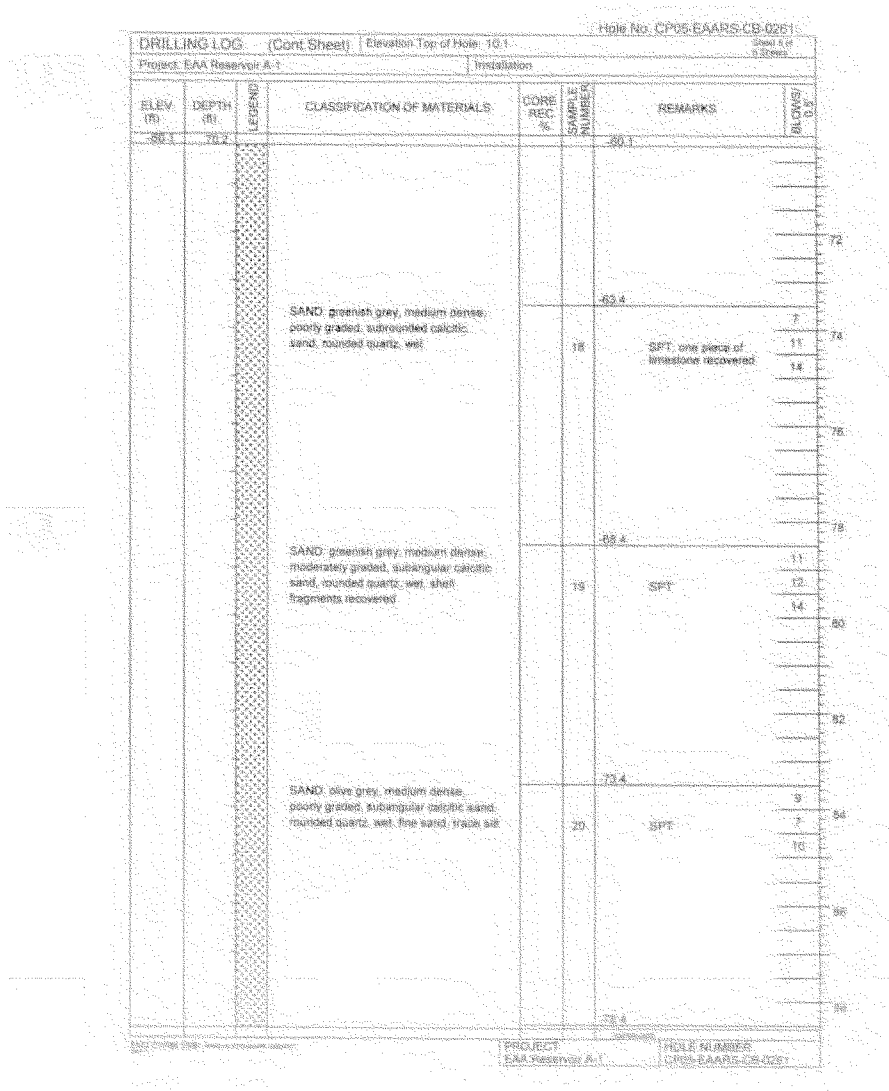
Drill Crew: N/A, Hammer: N/A

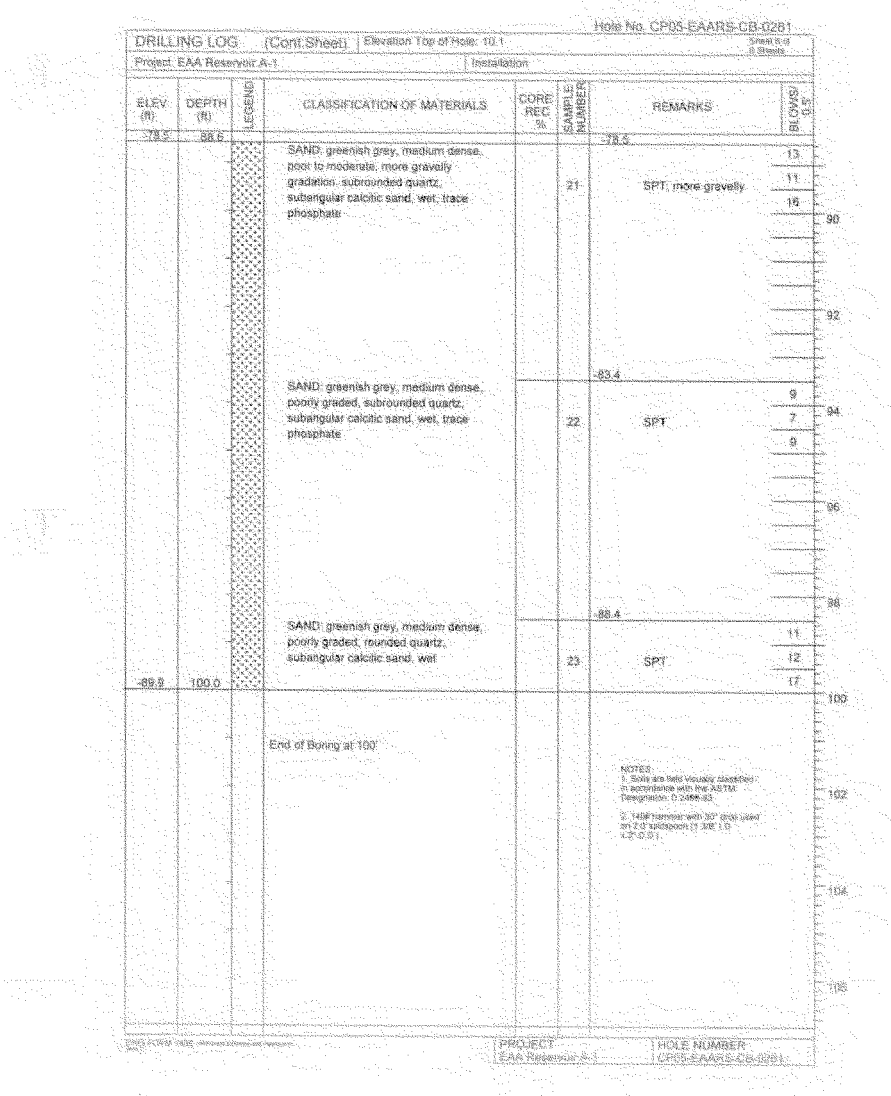
PROJECT: EAA Reservoir A-1 HOLE NUMBER: CP05-EAARS-CB-0261

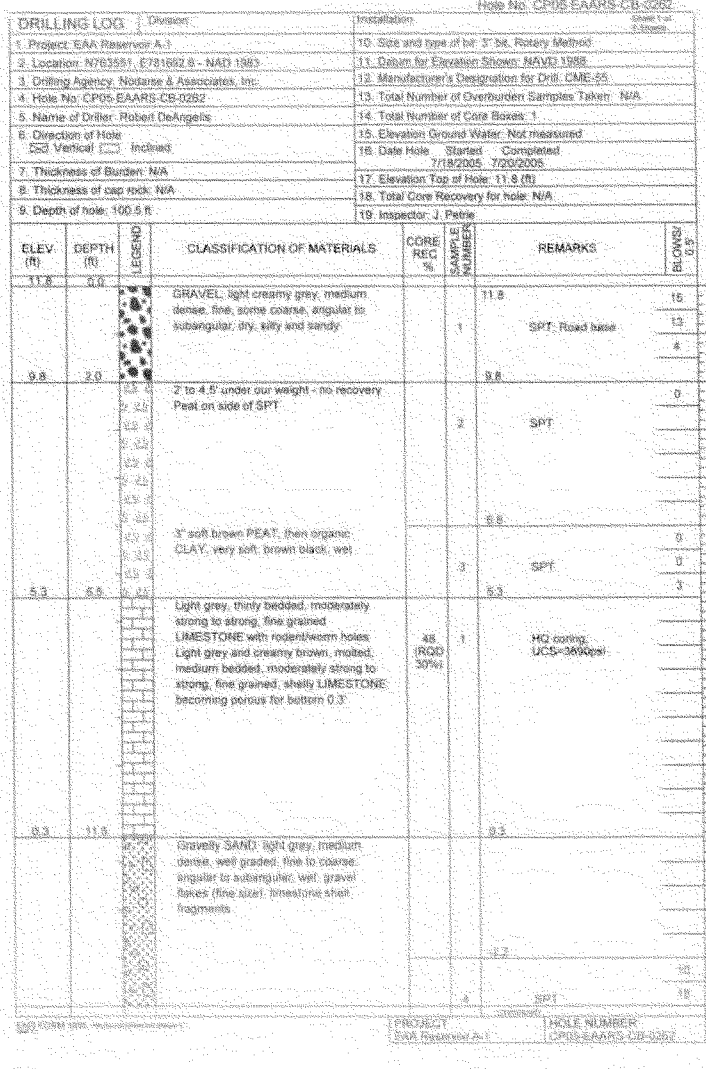

Hole No. CP05-EAARS-CB-0261
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: 10.1
Sheet 2 of 6 Sheets
Project: EAA Reservoir A-1 Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-5.9
15.0
-5.9
16
18
-8.4
SAND: light grey, medium dense, poorly graded, subangular calcitic sand, wet, fine sand present, trace silt
7
SPT
16
15
10
20
22
-13.4
Same as above, but greenish grey color
15
8
SPT
10
18
24
26
28
-18.4
SAND: light grey, very dense, poorly graded, subrounded calcitic sand, wet, fine sand present
50/5"
9
SPT
30
32
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0261


Hole No. CP05-EAARS-CB-0261
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 10.1
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/6"
-23.3
33.4
Some shells and stone fragments recovered.
-23.4
33.5
10
SPT; Hard drilling from 33.5 to 36.5 feet
50/2"
34
36
-26.9
37.0
-26.9
Caloosahatchee Formation
38
SAND: greenish grey, medium dense, poorly graded, subrounded calcitic sand, a little rounded quartz, fine sand, trace silt, wet
-28.4
11
SPT
8
14
12
40
42
Same as above
-33.4
12
SPT
9
10
11
44
46
48
-38.4
48.5
Gravelly SAND: olive grey, medium dense, moderately graded, subangular calcitic sand, rounded quartz, wet
-38.4
13
SPT
5
6
9
50
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0261


Hole No. CP05-EAARS-CB-0261
DRILLING LOG (Cont Sheet) Elevation Top of Hole 10.1
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/6"
41.7
51.8
43.4
Same as above - chips of stone recovered
14
SPT
48.4
58.5
SAND: light grey, dense, poorly graded, rounded quartz, fine sand present, trace silt, wet
15
SPT
53.4
SAND: light grey, medium dense, poor to moderate gradation, rounded quartz, subrounded calcitic sand, wet, fine sand
16
SPT
58.5
SAND: greenish grey, medium dense, poorly graded, subangular, platey, calcitic sand
17
SPT
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0261


Hole No. CP05-EAARS-CB-026T
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 10.1
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
60.1
72.2
SAND: greenish grey, medium dense, poorly graded, subrounded calcitic sand, rounded quartz, wet
63.4
18
SPT, one piece of limestone recovered
7
11
14
SAND: greenish grey, medium dense, moderately graded, subangular calcitic sand, rounded quartz, wet, shell fragments recovered
68.4
19
SPT
11
12
14
SAND: olive grey, medium dense, poorly graded, subangular calcitic sand, rounded quartz, wet, fine sand, trace silt
73.4
20
SPT
9
7
10
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-026T


Hole No. CP05-EAARS-CB-0281
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: 10.1
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
79.5
88.6
SAND: greenish grey, medium dense, poor to moderate, more gravelly gradation, subrounded quartz, subangular calcitic sand, wet, trace phosphate
21
SPT, more gravelly
13
11
16
90
92
-83.4
SAND: greenish grey, medium dense, poorly graded, subrounded quartz, subangular calcitic sand, wet, trace phosphate
22
SPT
9
7
9
94
96
98
-88.4
SAND: greenish grey, medium dense, poorly graded, rounded quartz, subangular calcitic sand, wet
23
SPT
11
12
17
-89.9
100.0
100
End of Boring at 100'
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93
2. 140# hammer with 30" drop used on 2.0" spoon(1 3/8" I.D. x 2.0" O.D.)
102
104
106
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0281



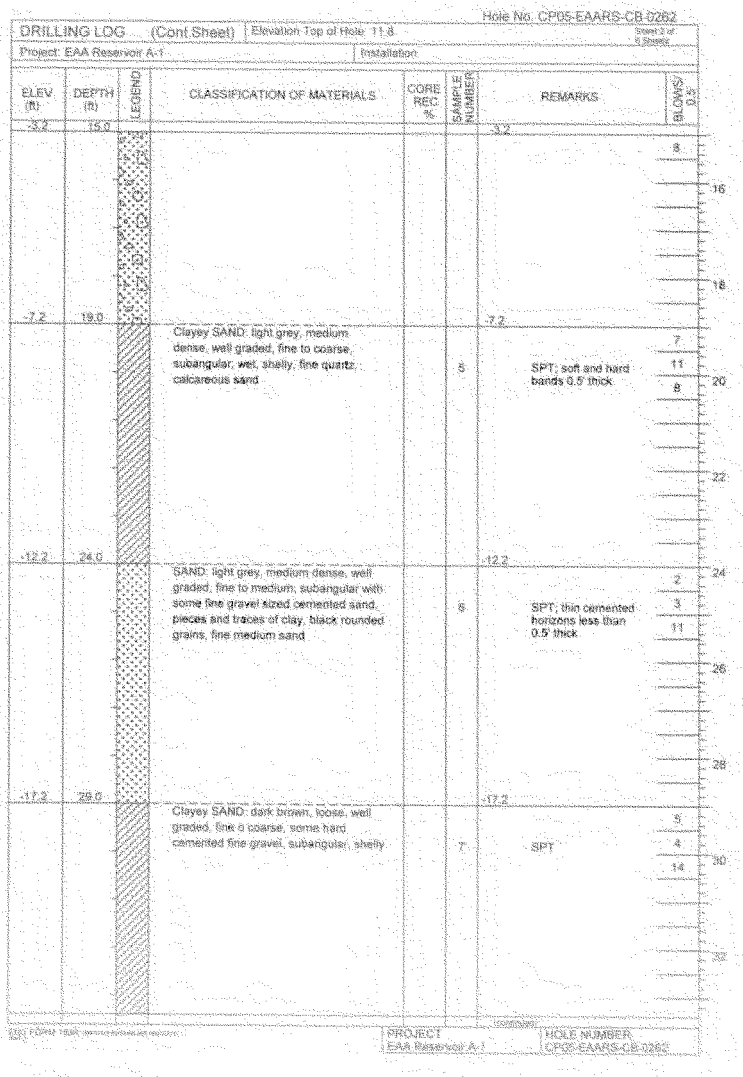
Hole No. CP05-EAARS-CB-0262

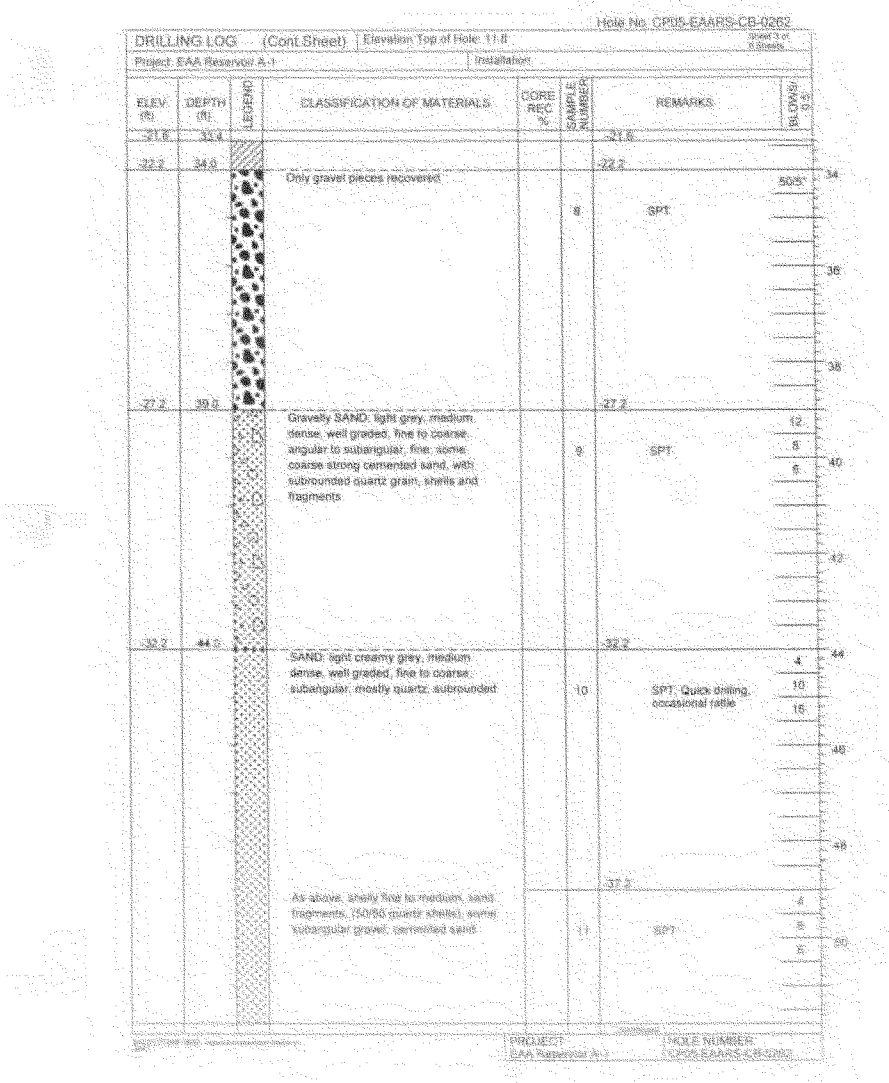
DRILLING LOG | Division: | Installation: | Sheet 1 of 1 Sheets

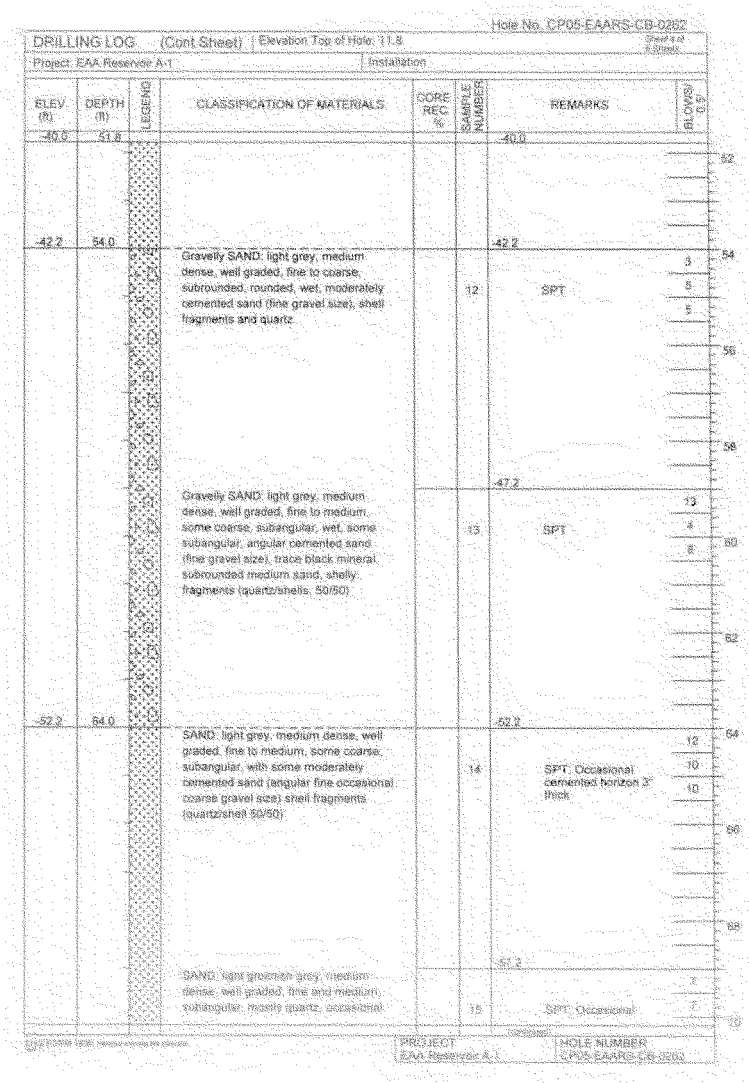
1. Project: EAA Reservoir A-1
2. Location: N763551, E781662.8 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0262
5. Name of Driller: Robert DeAngelis
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: N/A
8. Thickness of cap rock: N/A
9. Depth of hole: 100.5 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: CME-55
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: 1
15. Elevation Ground Water: Not measured
16. Date Hole: Started 7/19/2005 Completed 7/20/2005
17. Elevation Top of Hole: 11.8 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: J. Petrie

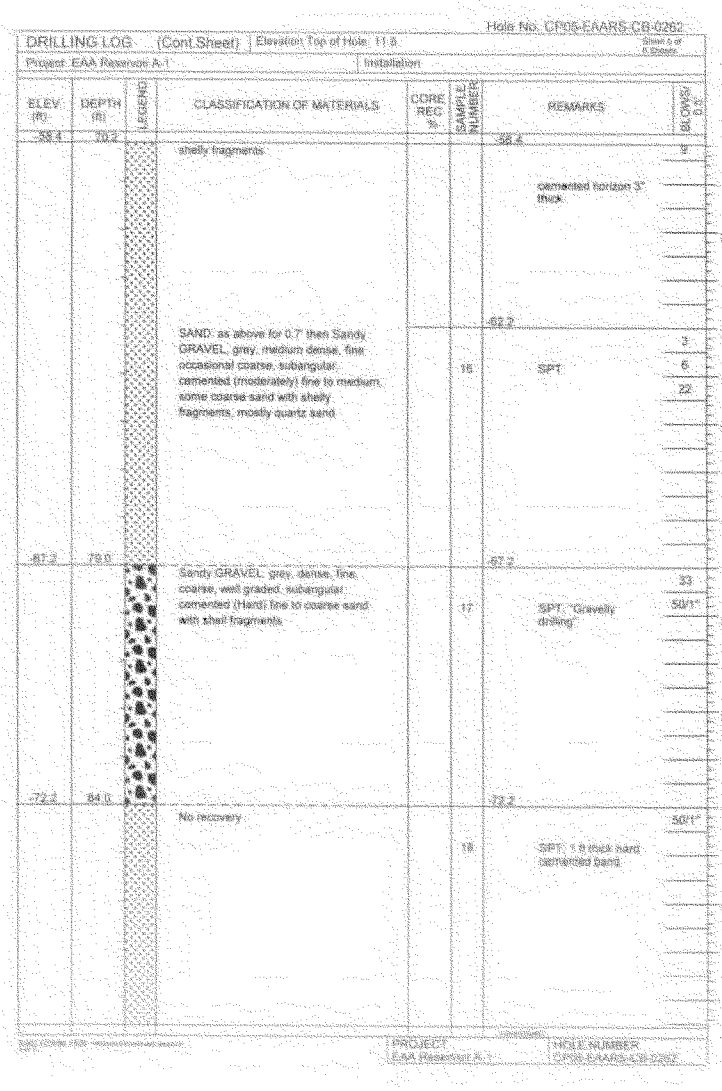
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
11.8	0.0					11.8	
			GRAVEL, light creamy grey, medium dense, fine, some coarse, angular to subangular, dry, silty and sandy		1	SPT: Road base	15 13 4
9.8	2.0					9.8	
			2' to 4.5' under our weight - no recovery Peat on side of SPT		2	SPT	0
						6.8	
			3" soft brown PEAT, then organic CLAY, very soft, brown black, wet		3	SPT	0 0 3
5.3	6.5					5.3	
			Light grey, thinly bedded, moderately strong to strong, fine grained LIMESTONE with rodent/worm holes Light grey and creamy brown, molted, medium bedded, moderately strong to strong, fine grained, shelly LIMESTONE becoming porous for bottom 0.3'	48 (RQD 30%)	1	HQ coring, UCS=3400psi	
0.3	11.5					0.3	
			Gravelly SAND, light grey, medium dense, well graded, fine to coarse, angular to subangular, wet, gravel flakes (fine size), limestone shell fragments				
						-1.7	
					4	SPT	18

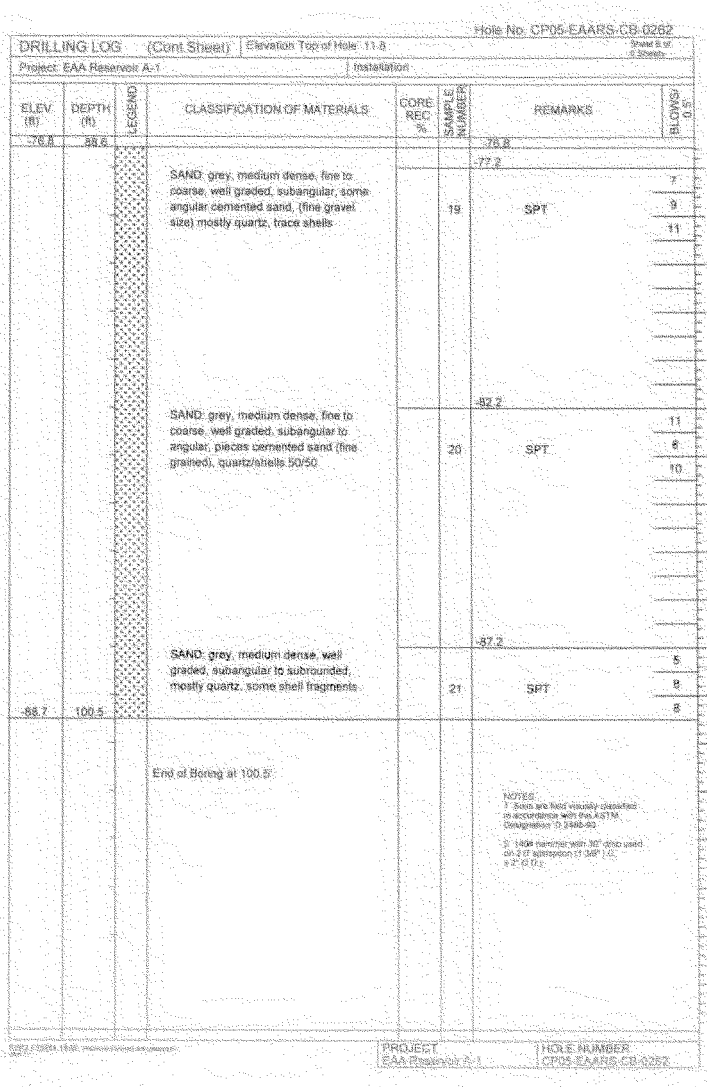
PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0262

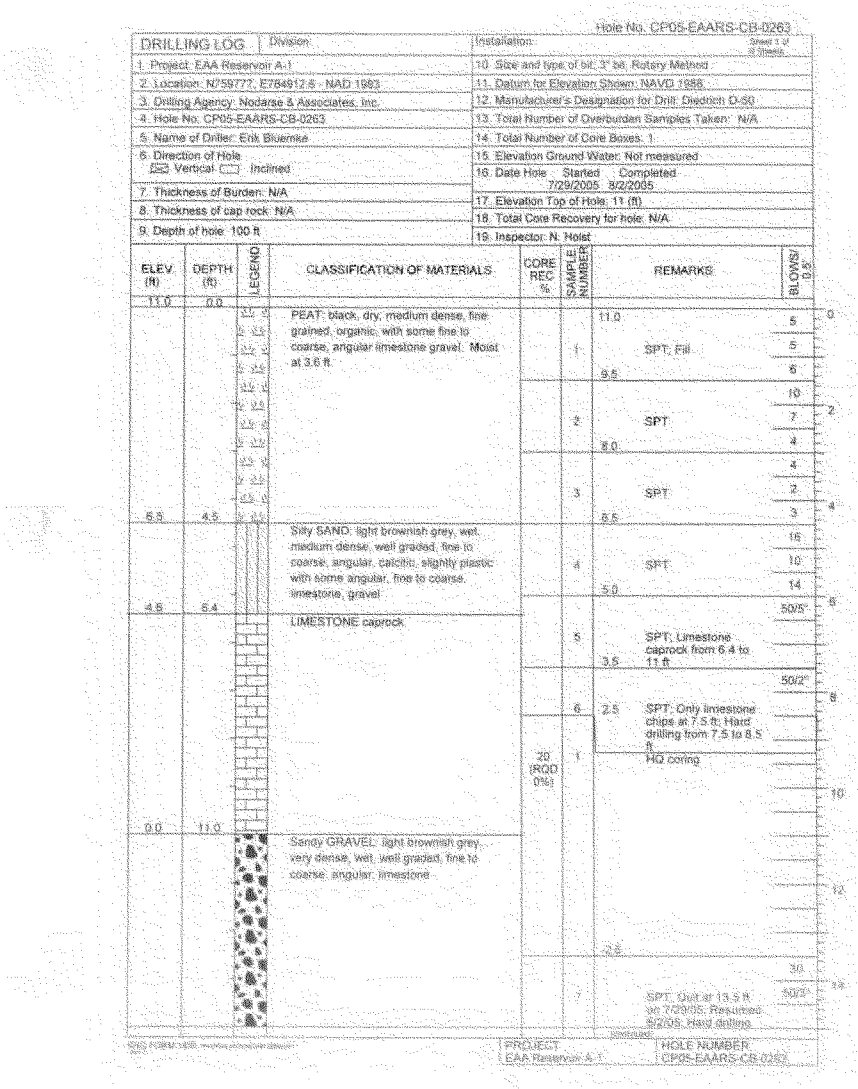

Hole No. CP05-EAARS-CB-0282
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 11.8
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
-3.2
15.0
-7.2
19.0
Clayey SAND: light grey, medium dense, well graded, fine to coarse, subangular, wet, shelly, fine quartz, calcareous sand
5
SPT; soft and hard bands 0.5' thick
-12.2
24.0
SAND: light grey, medium dense, well graded, fine to medium, subangular with some fine gravel sized cemented sand, pieces and traces of clay, black rounded grains, fine medium sand
6
SPT; thin cemented horizons less than 0.5' thick
-17.2
29.0
Clayey SAND: dark brown, loose, well graded, fine o coarse, some hard cemented fine gravel, subangular, shelly
7
SPT
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0282


Hole No. CP05-EAARS-CB-0262
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 11.8
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS / 6"
Only gravel pieces recovered
SPT
Gravelly SAND: light grey, medium dense, well graded, fine to coarse, angular to subangular, fine, some coarse strong cemented sand, with subrounded quartz grain, shells and fragments
SPT
SAND: light creamy grey, medium dense, well graded, fine to coarse, subangular, mostly quartz, subrounded
SPT, Quick drilling, occasional rattle
As above, shelly but no medium sand fragments, (50/50 quartz shells), some subangular gravel, cemented sand
SPT
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0262


Hole No. CP05-EAARS-CB-0202
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 11.8
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-40.0
41.8
40.0
-42.2
54.0
42.2
Gravelly SAND: light grey, medium dense, well graded, fine to coarse, subrounded, rounded, wet, moderately cemented sand (fine gravel size), shell fragments and quartz
12
SPT
3
5
5
47.2
Gravelly SAND: light grey, medium dense, well graded, fine to medium, some coarse, subangular, wet, some subangular, angular cemented sand (fine gravel size), trace black mineral, subrounded medium sand, shelly fragments (quartz/shells, 50/50)
13
SPT
13
4
6
-52.2
64.0
52.2
SAND: light grey, medium dense, well graded, fine to medium, some coarse, subangular, with some moderately cemented sand (angular fine occasional coarse gravel size) shell fragments (quartz/shell 50/50)
14
SPT. Occasional cemented horizon 3" thick
12
10
10
57.2
SAND: light greenish grey, medium dense, well graded, fine and medium, subangular, mostly quartz, occasional
15
SPT. Occasional
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0202


Hole No. CP16-EAARS-CB-0262
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 11.8
Sheet 5 of 6 Sheets
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 6"
-38.4
39.2
shelly fragments
-62.2
SAND: as above for 0.7' then Sandy GRAVEL, grey, medium dense, fine occasional coarse, subangular, cemented (moderately) fine to medium, some coarse sand with shelly fragments, mostly quartz sand
15
SPT
-67.2
Sandy GRAVEL: grey, dense, fine coarse, well graded, subangular, cemented (Hard) fine to coarse sand with shell fragments
17
SPT, "Gravelly drilling"
50/1"
-72.2
84.0
No recovery
-73.2
18
SPT, 1.0 thick hard cemented band
50/1"
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP16-EAARS-CB-0262


Hole No. CP05-EAARS-CB-0262
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 11.8
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
78.8
88.6
SAND: grey, medium dense, fine to coarse, well graded, subangular, some angular cemented sand, (fine gravel size) mostly quartz, trace shells
77.2
19
SPT
7
9
11
90
92
SAND: grey, medium dense, fine to coarse, well graded, subangular to angular, pieces cemented sand (fine grained), quartz/shells 50/50
82.2
20
SPT
11
8
10
94
96
98
SAND: grey, medium dense, well graded, subangular to subrounded, mostly quartz, some shell fragments
87.2
21
SPT
5
8
8
88.7
100.5
100
End of Boring at 100.5'
NOTES
1. Soils are field visually classified in accordance with the ASTM Designation D 2488-90.
2. 140# hammer with 30" drop used on 2.0" splitspoon (1.38" I.D. x 2" O.D.).
102
104
106
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0262



Hole No. CP05-EAARS-CB-0263

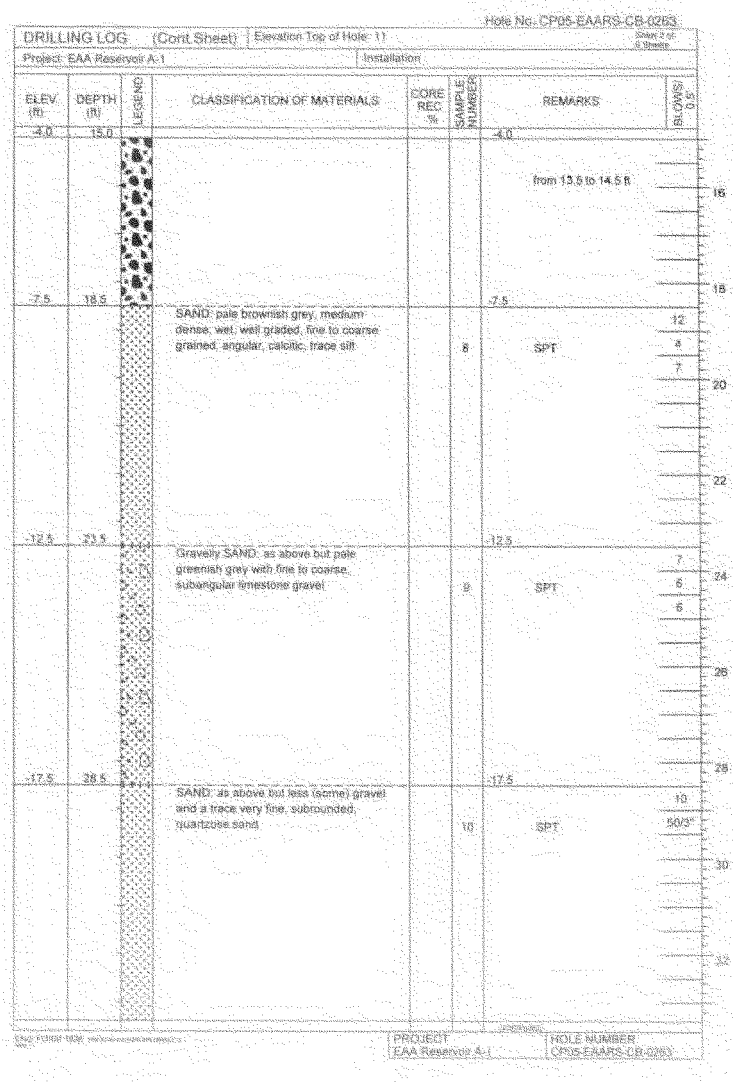
DRILLING LOG | Division: | Installation: | Sheet 1 of 2 Sheets

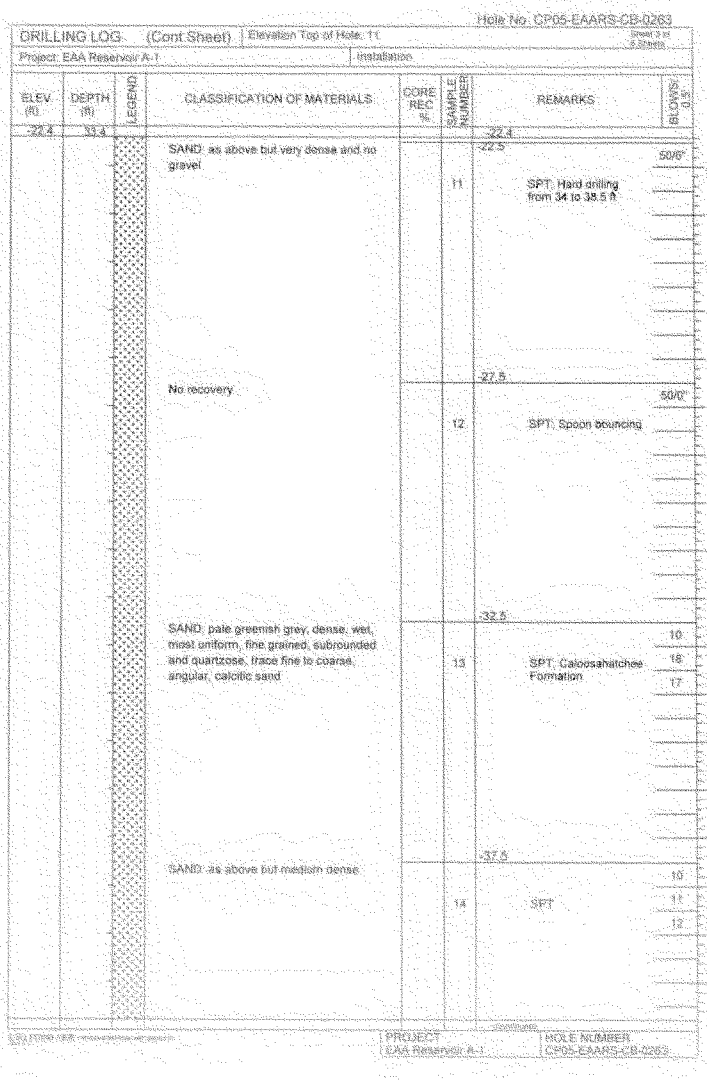
1. Project: EAA Reservoir A-1
2. Location: N759777, E784912.5 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No. CP05-EAARS-CB-0263
5. Name of Driller: Erik Bluemke
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: N/A
8. Thickness of cap rock: N/A
9. Depth of hole: 100 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: 1
15. Elevation Ground Water: Not measured
16. Date Hole: Started 7/29/2005 Completed 8/2/2005
17. Elevation Top of Hole: 11 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: N. Holst

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/0.5'
11.0	0.0		PEAT: black, dry, medium dense, fine grained, organic, with some fine to coarse, angular limestone gravel. Moist at 3.6 ft		1	11.0 SPT; Fill 9.5	5, 5, 6
					2	SPT 8.0	10, 7, 4
					3	SPT 6.5	4, 3, 3
5.5	4.5		Silty SAND: light brownish grey, wet, medium dense, well graded, fine to coarse, angular, calcitic, slightly plastic with some angular, fine to coarse, limestone, gravel		4	SPT 5.0	16, 10, 14
4.6	6.4		LIMESTONE caprock		5	SPT; Limestone caprock from 6.4 to 11 ft 3.5	50/5"
					6	2.5 SPT; Only limestone chips at 7.5 ft; Hard drilling from 7.5 to 8.5 ft	50/2"
				20 (RQD 0%)	1	HQ coring	
0.0	11.0		Sandy GRAVEL: light brownish grey, very dense, wet, well graded, fine to coarse, angular, limestone			2.5	
					7	SPT; Quit at 13.5 ft on 7/29/05. Resumed 8/2/05. Hard drilling	50/3"

(Continued)

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0263


Hole No. CP05-EAARS-CB-0253
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 11
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-4.0
15.0
from 13.5 to 14.5 ft
16
18
-7.5
18.5
SAND: pale brownish grey, medium dense, wet, well graded, fine to coarse grained, angular, calcitic, trace silt
8
SPT
12
4
7
20
22
-12.5
23.5
Gravelly SAND: as above but pale greenish grey with fine to coarse, subangular limestone gravel
9
SPT
7
8
6
24
26
28
-17.5
28.5
SAND: as above but less (some) gravel and a trace very fine, subrounded, quartzose sand
10
SPT
10
50/3"
30
32
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0253

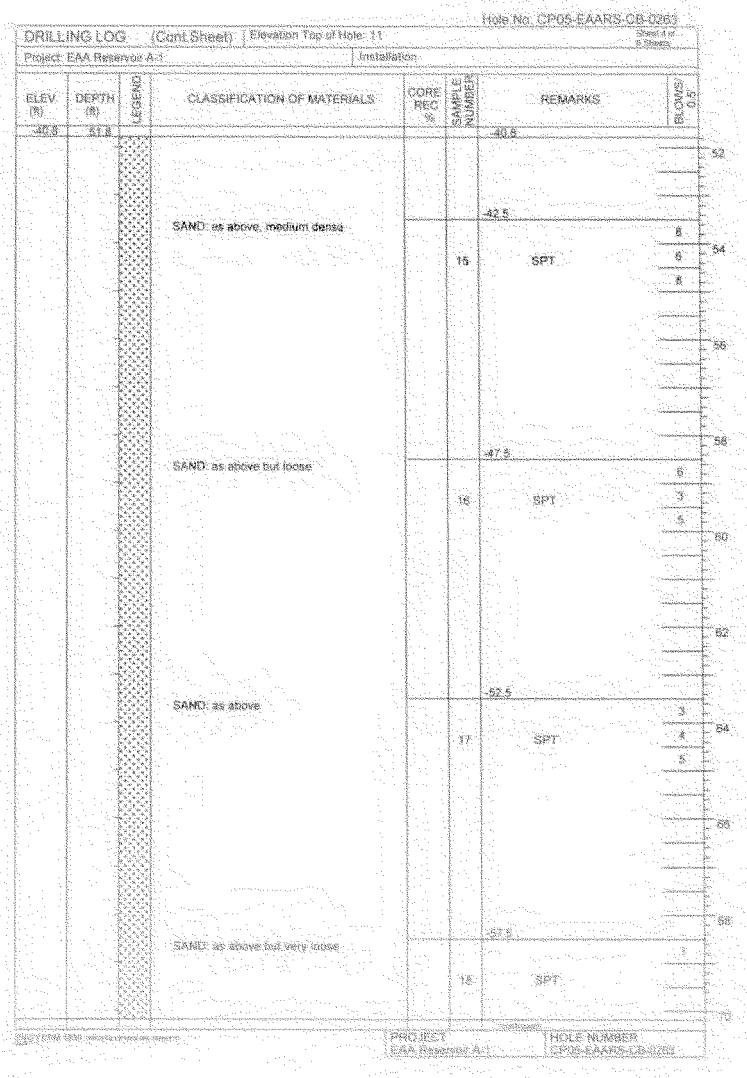

Hole No. CP05-EAARS-CB-0263

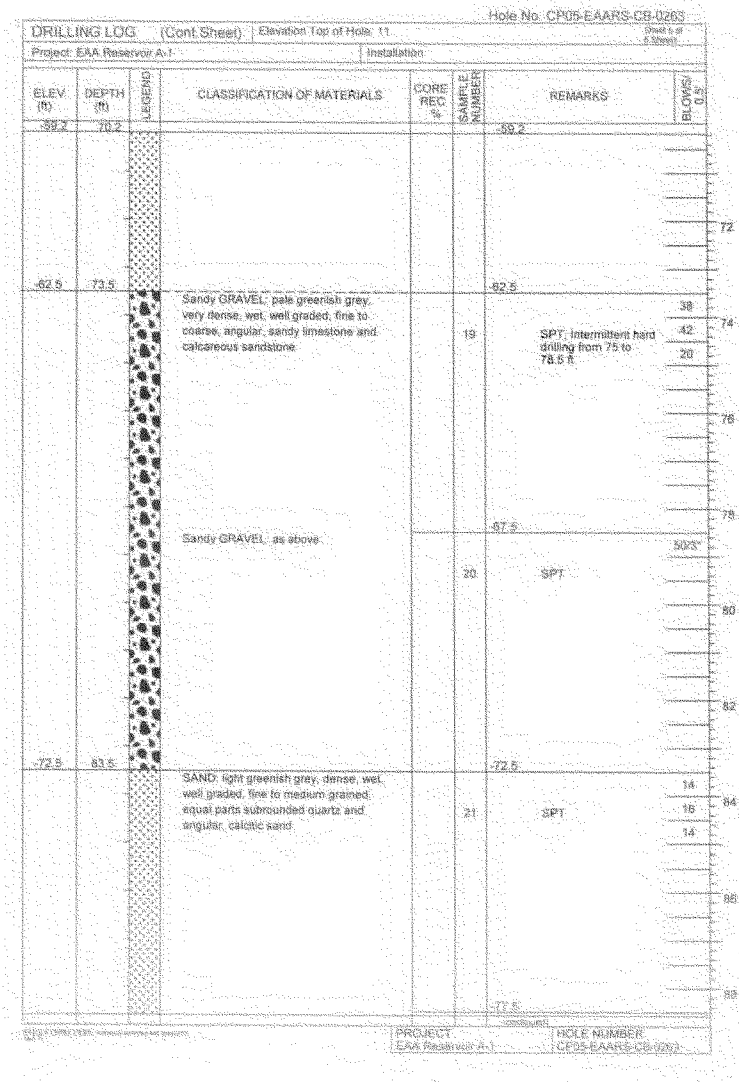
DRILLING LOG (Cont Sheet) | Elevation Top of Hole: ft | Sheet 3 of 4 Sheets

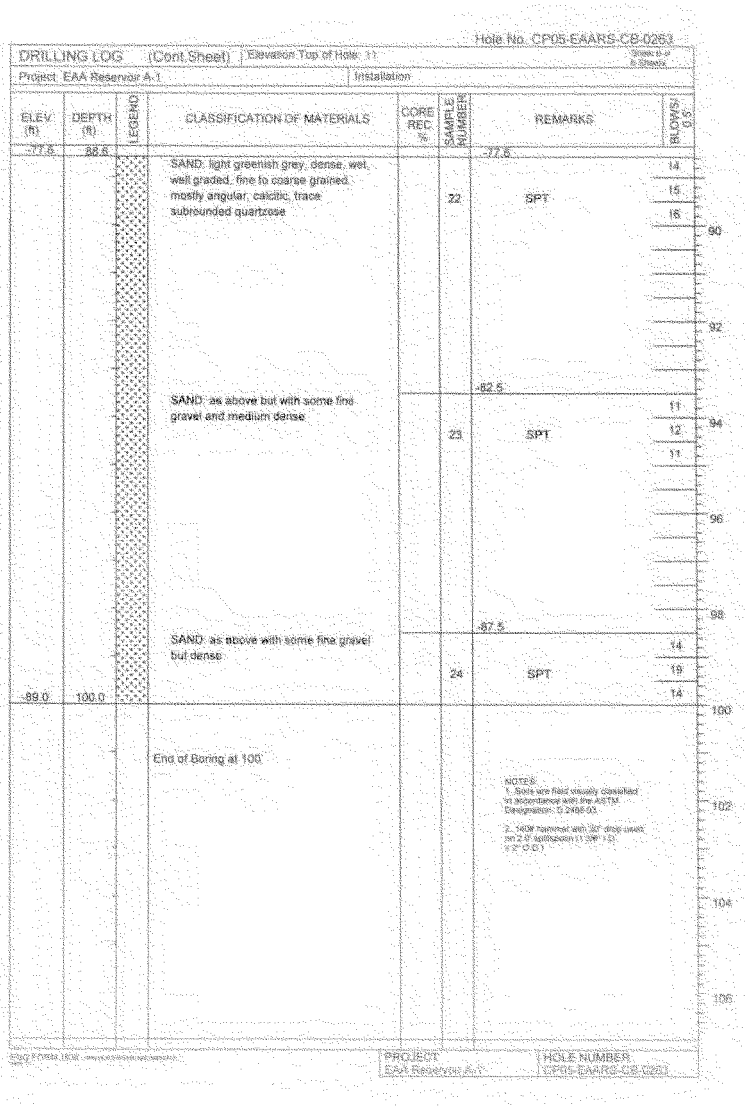
Project: EAA Reservoir A-1 | Installation:

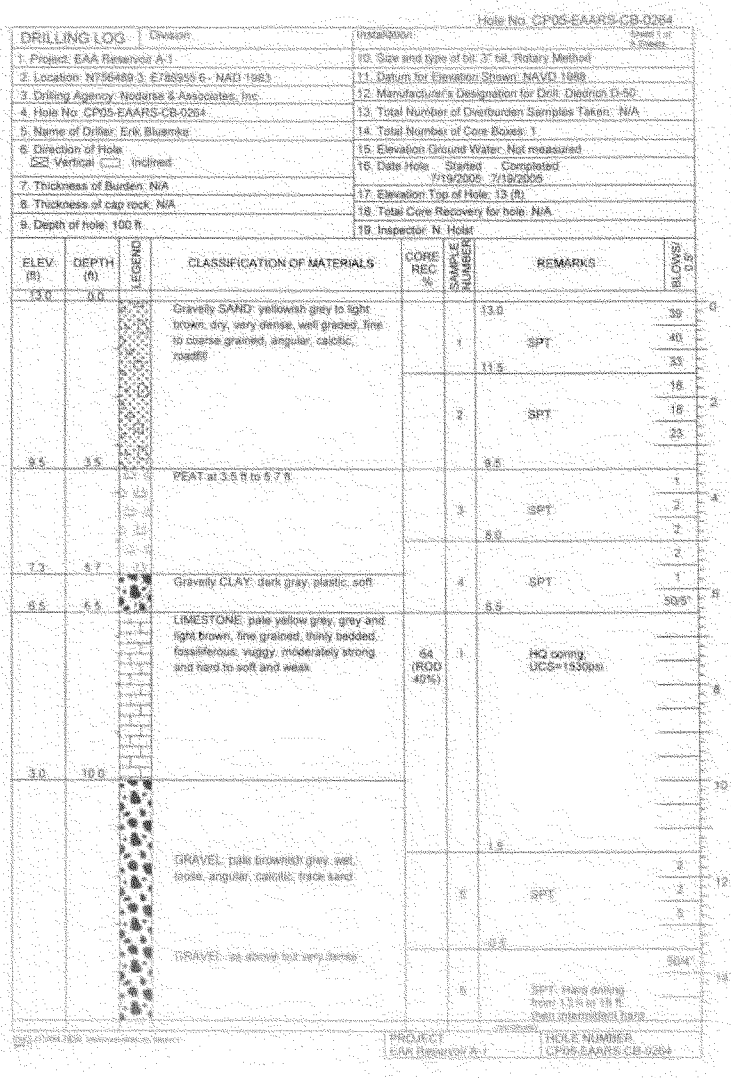
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-22.4	33.3					-22.4	
			SAND: as above but very dense and no gravel			-22.5	50/0"
					11	SPT. Hard drilling from 34 to 35.5 ft	34
							36
							38
			No recovery			-27.5	50/0"
					12	SPT. Spoon bouncing	40
							42
						-32.5	
			SAND: pale greenish grey, dense, wet, most uniform, fine grained, subrounded and quartzose, trace fine to coarse, angular, calcitic sand				10
					13	SPT. Caloosahatchee Formation	16 44 17
							46
							48
						-37.5	
			SAND: as above but medium dense				10
					14	SPT	11 12 50

CONTINUED NEXT PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0263


Hole No. CP05-EAARS-CB-0263
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 11
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS / 0.5
-40.8
-42.5
SAND: as above, medium dense
15
SPT
-47.5
SAND: as above but loose
16
SPT
-52.5
SAND: as above
17
SPT
-57.5
SAND: as above but very loose
18
SPT
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0263


Hole No. CP05-EAARS-CB-026S
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 11
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
69.2
70.2
Sandy GRAVEL; pale greenish grey, very dense, wet, well graded, fine to coarse, angular, sandy limestone and calcareous sandstone
62.5
73.5
19
SPT; intermittent hard drilling from 75 to 78.5 ft
38
42
20
Sandy GRAVEL; as above
67.5
20
SPT
50/3"
72.5
83.5
SAND; light greenish grey, dense, wet, well graded, fine to medium grained, equal parts subrounded quartz and angular, calcitic sand
21
SPT
14
16
14
77.5
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-026S


Hole No. CP05-EAARS-CB-0253
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: 11
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
-77.6
88.6
SAND: light greenish grey, dense, wet, well graded, fine to coarse grained, mostly angular, calcitic, trace subrounded quartzose
22
SPT
14
15
16
90
92
-82.5
SAND: as above but with some fine gravel and medium dense
23
SPT
11
12
11
94
96
98
-87.5
SAND: as above with some fine gravel but dense
24
SPT
14
19
14
-89.0
100.0
100
End of Boring at 100
102
104
106
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.5" split spoon (1 3/8" I.D. x 2" O.D.)
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0253



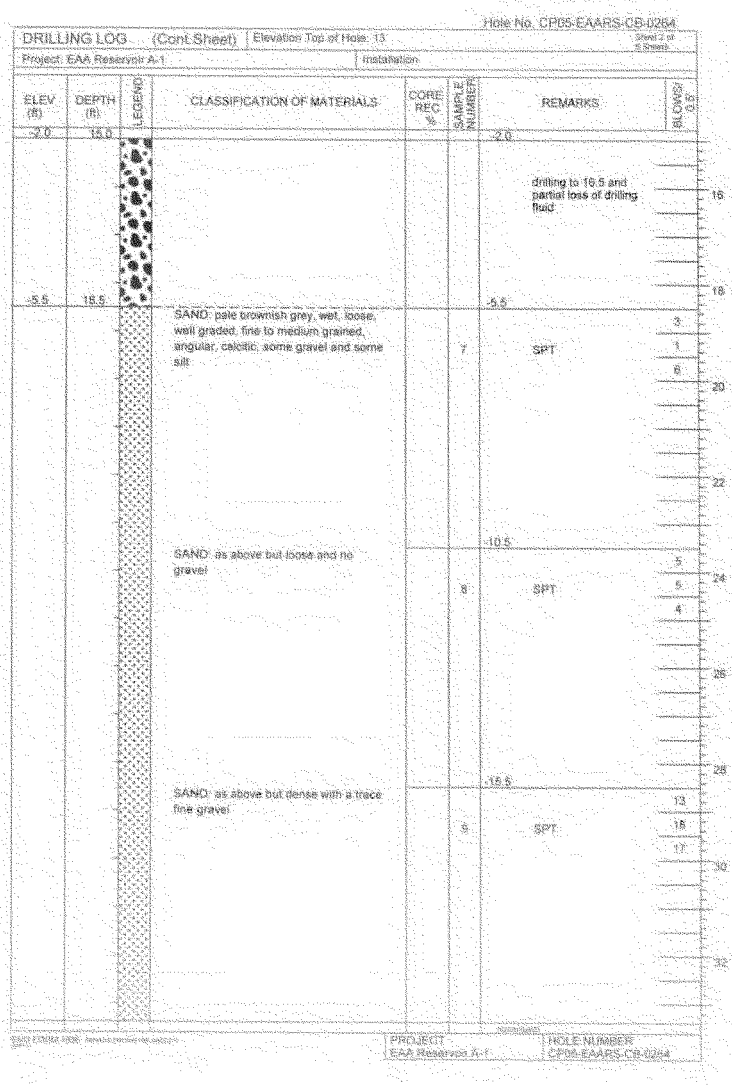
Hole No. CP05-EAARS-CB-0264

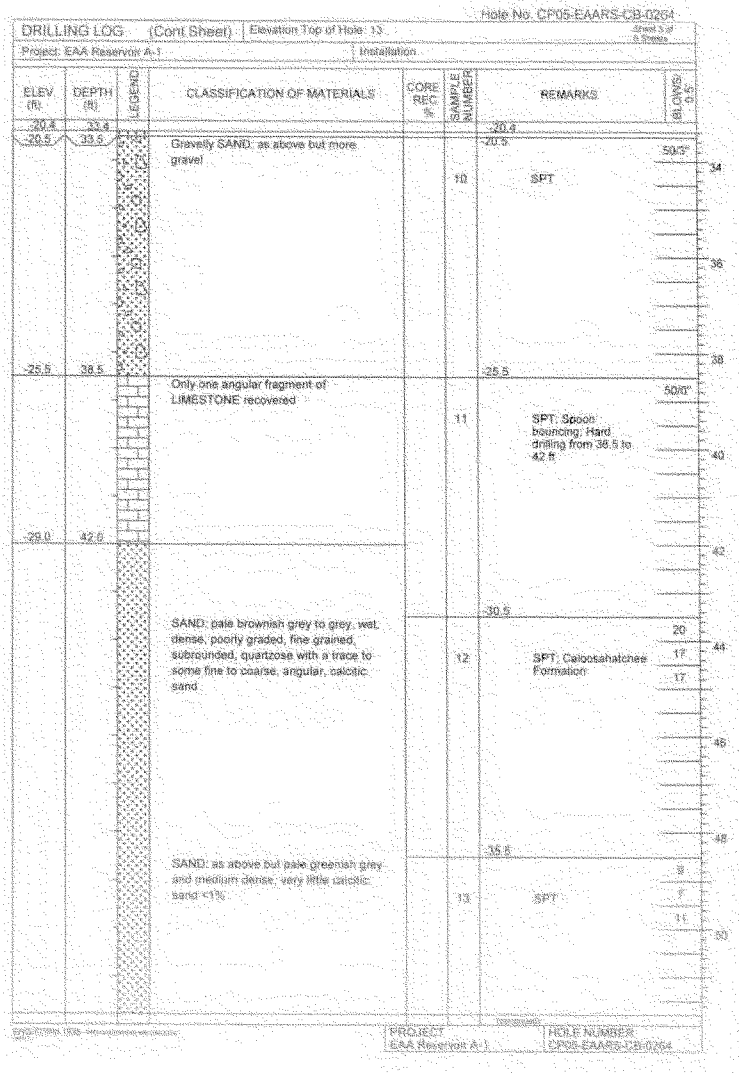
DRILLING LOG | Division: | Installation: | Sheet 1 of 3 Sheets

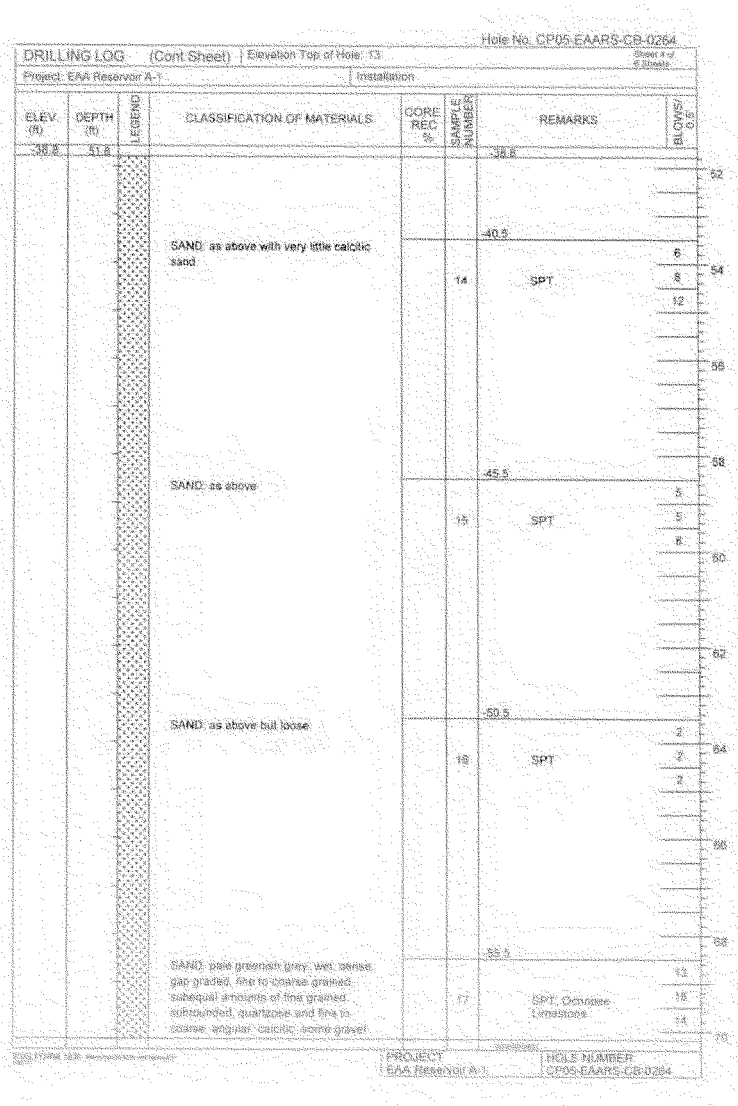
1. Project: EAA Reservoir A-1
2. Location: N756489.3, E788955.6 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0264
5. Name of Driller: Erik Bluemke
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: N/A
8. Thickness of cap rock: N/A
9. Depth of hole: 100 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: 1
15. Elevation Ground Water: Not measured
16. Date Hole: Started 7/19/2005 Completed 7/19/2005
17. Elevation Top of Hole: 13 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: N. Holst

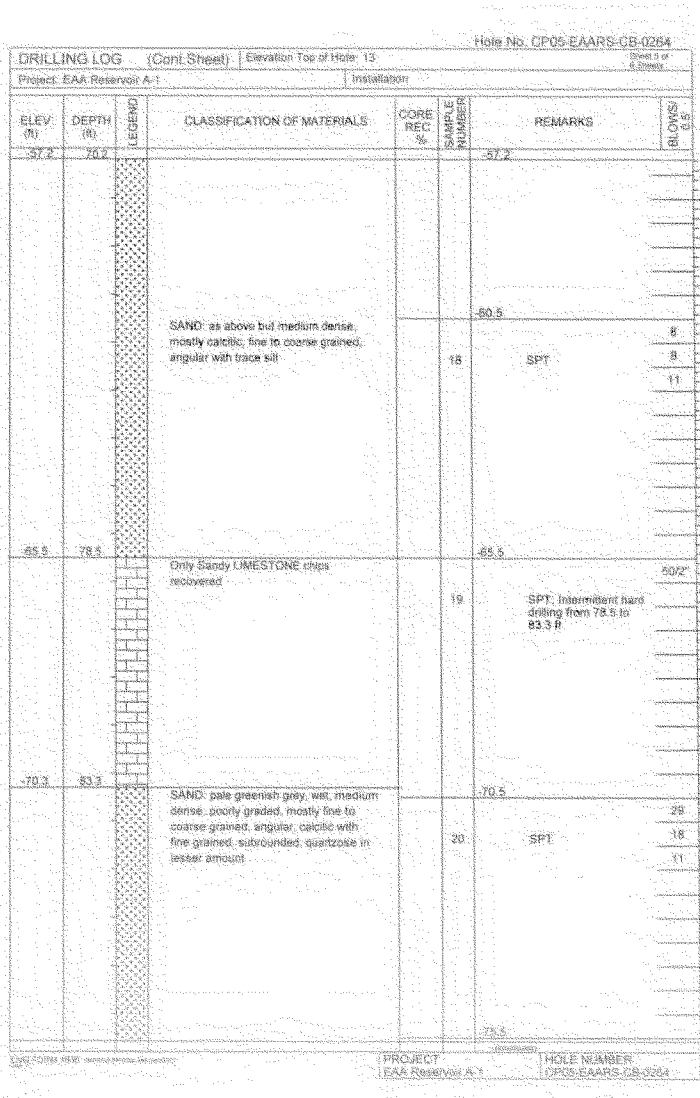
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
13.0	0.0						
			Gravelly SAND: yellowish grey to light brown, dry, very dense, well graded, fine to coarse grained, angular, calcitic, roadfill		1	13.0 SPT 11.5	39 40 33
					2	SPT 9.5	16 18 23
9.5	3.5		PEAT at 3.5 ft to 5.7 ft		3	SPT 8.0	1 2 2
7.3	5.7						2
6.5	6.5		Gravelly CLAY: dark gray, plastic, soft		4	SPT 6.5	1 50/5"
			LIMESTONE: pale yellow grey, grey and light brown, fine grained, thinly bedded, fossiliferous, vuggy, moderately strong and hard to soft and weak	64 (ROD 40%)	1	HQ coring UCS=1530psi	
3.0	10.0					1.5	
			GRAVEL: pale brownish grey, wet, loose, angular, calcitic, trace sand		5	SPT 0.5	2 3 5
			GRAVEL: as above but very dense		6	SPT: Hard drilling from 13.5 to 18 ft. Chert (dominant) hard	50/4"

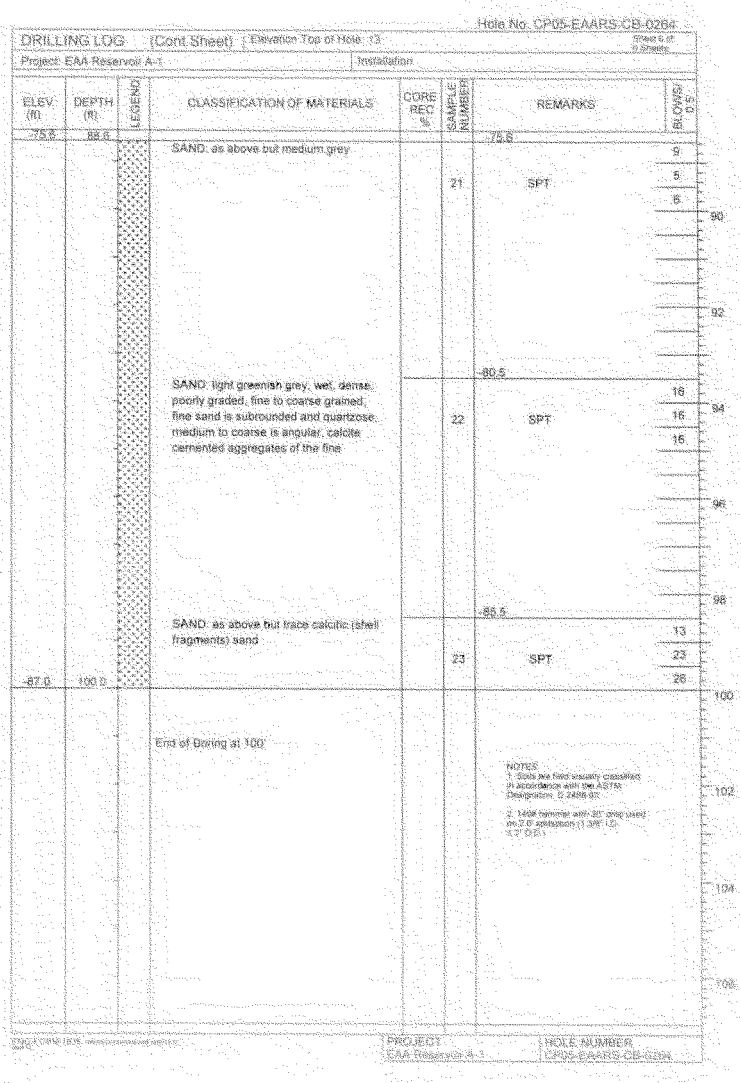
PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0264

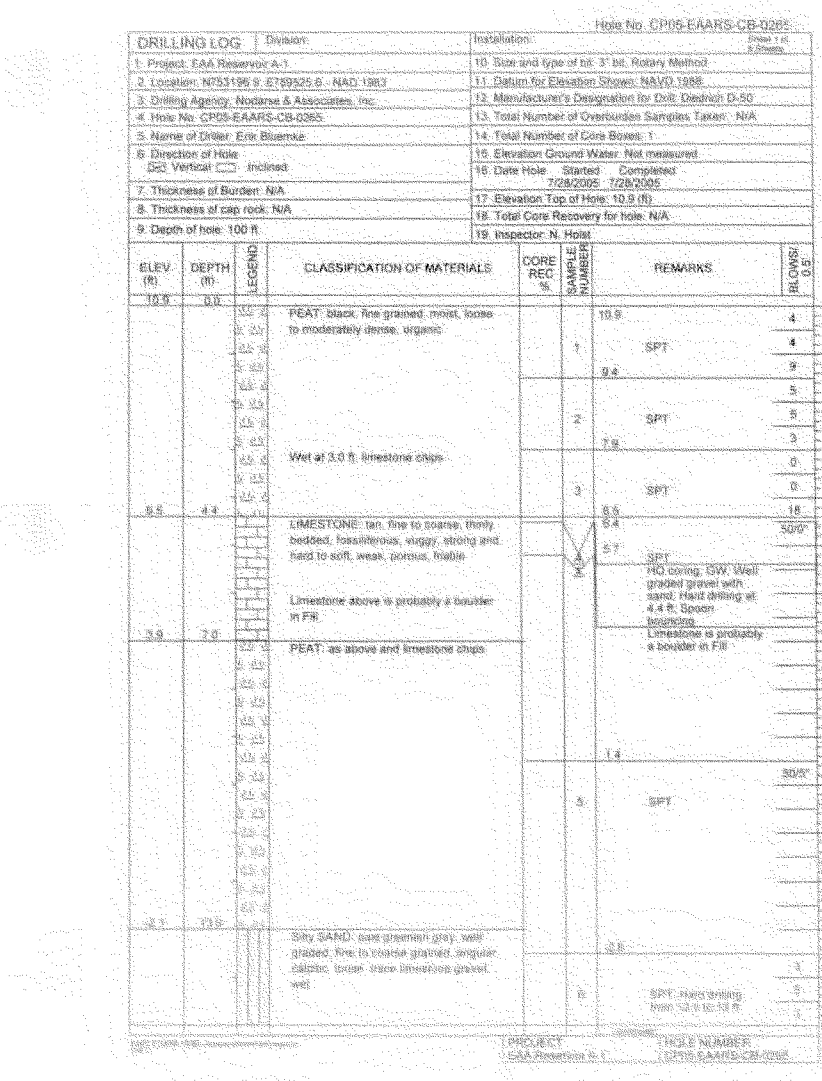

Hole No. CP05-EAARS-CB-0284
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 13
Sheet 2 of 5 Sheets
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5ft
-2.0
15.0
-2.0
drilling to 16.5 and partial loss of drilling fluid
15
18
-5.5
16.5
-5.5
SAND: pale brownish grey, wet, loose, well graded, fine to medium grained, angular, calcitic, some gravel and some silt
7
SPT
3
1
6
20
22
-10.5
SAND: as above but loose and no gravel
8
SPT
5
5
4
24
26
28
-15.5
SAND: as above but dense with a trace fine gravel
9
SPT
13
18
17
30
32
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0284


Hole No. CP05-EAARS-CB-0264
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 13
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
-20.4
23.4
-20.5
33.5
Gravelly SAND: as above but more gravel
10
SPT
50/3"
-25.5
38.5
Only one angular fragment of LIMESTONE recovered
11
SPT; Spoon bouncing; Hard drilling from 38.5 to 42 ft
50/0"
-29.0
42.0
SAND: pale brownish grey to grey, wet, dense, poorly graded, fine grained, subrounded, quartzose with a trace to some fine to coarse, angular, calcitic sand
12
SPT; Caloosahatchee Formation
20
17
17
SAND: as above but pale greenish grey and medium dense, very little calcitic sand <1%
13
SPT
9
6
11
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0264


Hole No. CP05-EAARS-CB-0264
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 13
Project: EAA Reservoir A-1 Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/6"
-38.8
51.8
-40.5
SAND: as above with very little calcitic sand
14
SPT
-45.5
SAND: as above
15
SPT
-50.5
SAND: as above but loose
16
SPT
-55.5
SAND: pale greenish grey, wet, dense, gap graded, fine to coarse grained, subequal amounts of fine grained, subrounded, quartzose and fine to coarse, angular, calcitic, some gravel
57
SPT, Oolitic Limestone
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0264


Hole No. CP05-EAARS-CB-026A
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 13
Project: EAA Reservoir A-1 Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-57.2
70.2
SAND: as above but medium dense, mostly calcitic, fine to coarse grained, angular with trace silt
-65.5
78.5
Only Sandy LIMESTONE chips recovered
-70.3
83.3
SAND: pale greenish grey, wet, medium dense, poorly graded, mostly fine to coarse grained, angular, calcitic with fine grained, subrounded, quartzose in lesser amount
-60.5
18
SPT
8
8
11
-65.5
19
SPT; Intermittent hard drilling from 78.5 to 83.3 ft
50/2"
-70.5
20
SPT
29
18
11
-73.3
72
74
76
78
80
82
84
86
88
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-026A

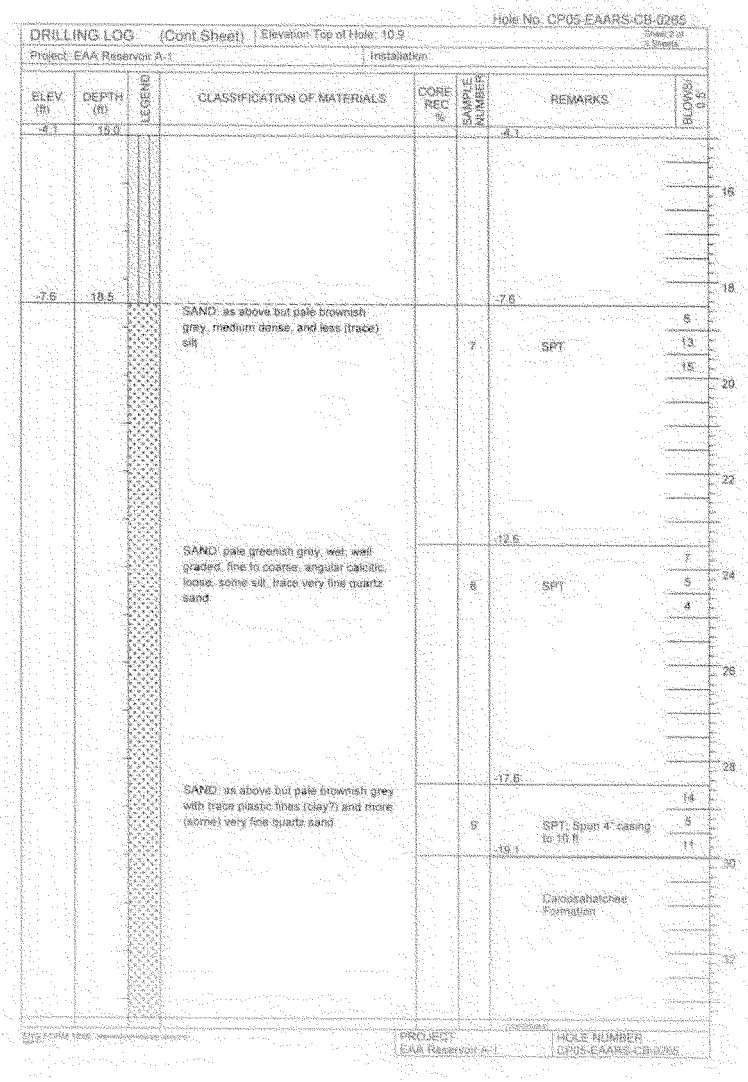

Hole No. CP05-EAARS-CB-0264
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 13
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
75.5
88.5
SAND: as above but medium grey
21
SPT
9
5
6
90
92
80.5
SAND: light greenish grey, wet, dense, poorly graded, fine to coarse grained, fine sand is subrounded and quartzose, medium to coarse is angular, calcite cemented aggregates of the fine
22
SPT
18
16
15
94
96
98
85.5
SAND: as above but trace calcitic (shell fragments) sand
23
SPT
13
23
26
87.0
100.0
100
End of Boring at 100'
NOTES
102
104
106
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0264

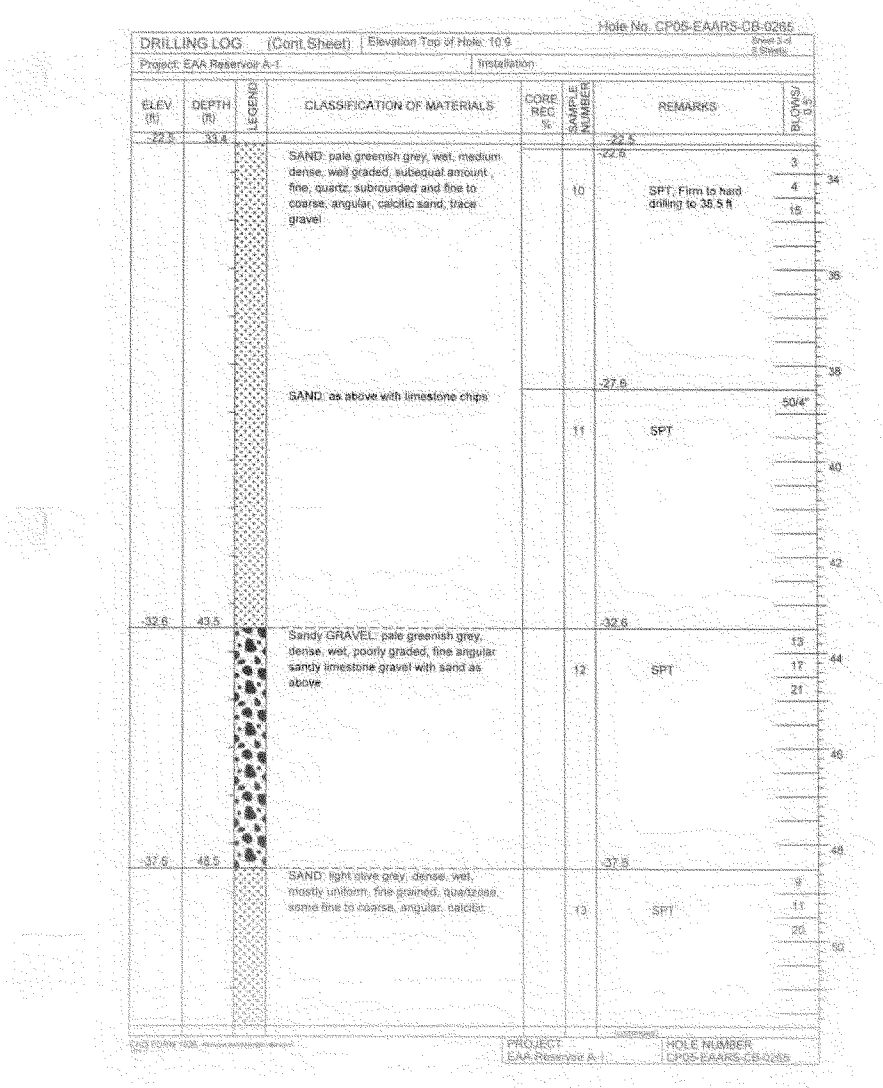


Hole No. CP05-EAARS-CB-0265

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N753196.9 E759525.8 , NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0265		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Eric Bluemke		14. Total Number of Core Boxes: 1	
6. Direction of Hole: ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole: Started 7/28/2005 Completed 7/28/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 10.9 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 100 ft		19. Inspector: N. Holst	

ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
10.9	0.0						
			PEAT: black, fine grained, moist, loose to moderately dense, organic		1	10.9 SPT 9.4	4 4 9
					2	SPT 7.9	5 5 3
			Wet at 3.0 ft, limestone chips		3	SPT 6.5	0 0 4
6.5	4.4		LIMESTONE: tan, fine to coarse, thinly bedded, fossiliferous, vuggy, strong and hard to soft, weak, porous, friable		4	6.4 5.7 SPT HQ coring, GW, Well graded gravel with sand, Hard drilling at 4.4 ft, Spoon bouncing Limestone is probably a boulder in Fill	50/0" 6
3.9	7.0		Limestone above is probably a boulder in Fill				
			PEAT: as above and limestone chips				
						1.4	
					5	SPT	50/4" 12
-4.1	15.0		Silty SAND: dark greenish gray, well graded, fine to coarse grained, angular calcitic, loose, trace limestone gravel, wet			-3.6	
					6	SPT, Hard drilling from 12.0 to 15 ft	4 5 14


Hole No. CP05-EAARS-CB-0285
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 10.9
Sheet 2 of 3 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
-7.6
18.5
SAND: as above but pale brownish grey, medium dense, and less (trace) silt
7
SPT
-12.6
SAND: pale greenish grey, wet, well graded, fine to coarse, angular calcitic, loose, some silt, trace very fine quartz sand
8
SPT
-17.6
SAND: as above but pale brownish grey with trace plastic fines (clay?) and more (some) very fine quartz sand
9
SPT; Spun 4" casing to 10 ft
-19.1
Caloosahatchee Formation
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0285



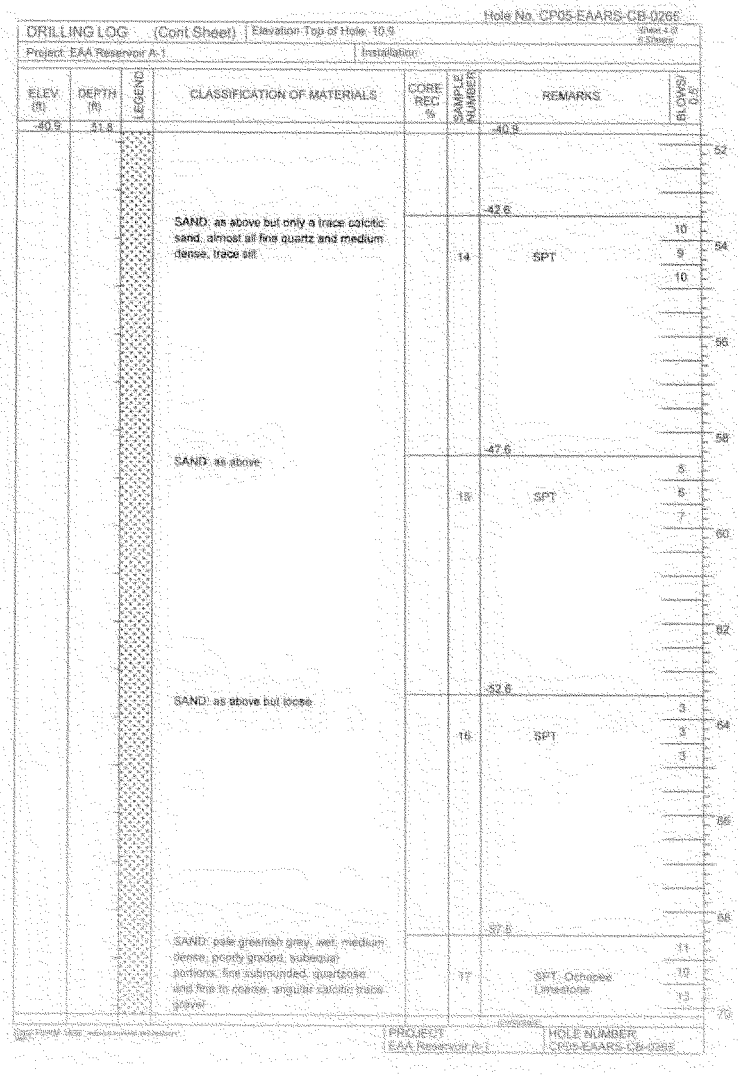
Hole No. CP05-EAARS-CB-0285

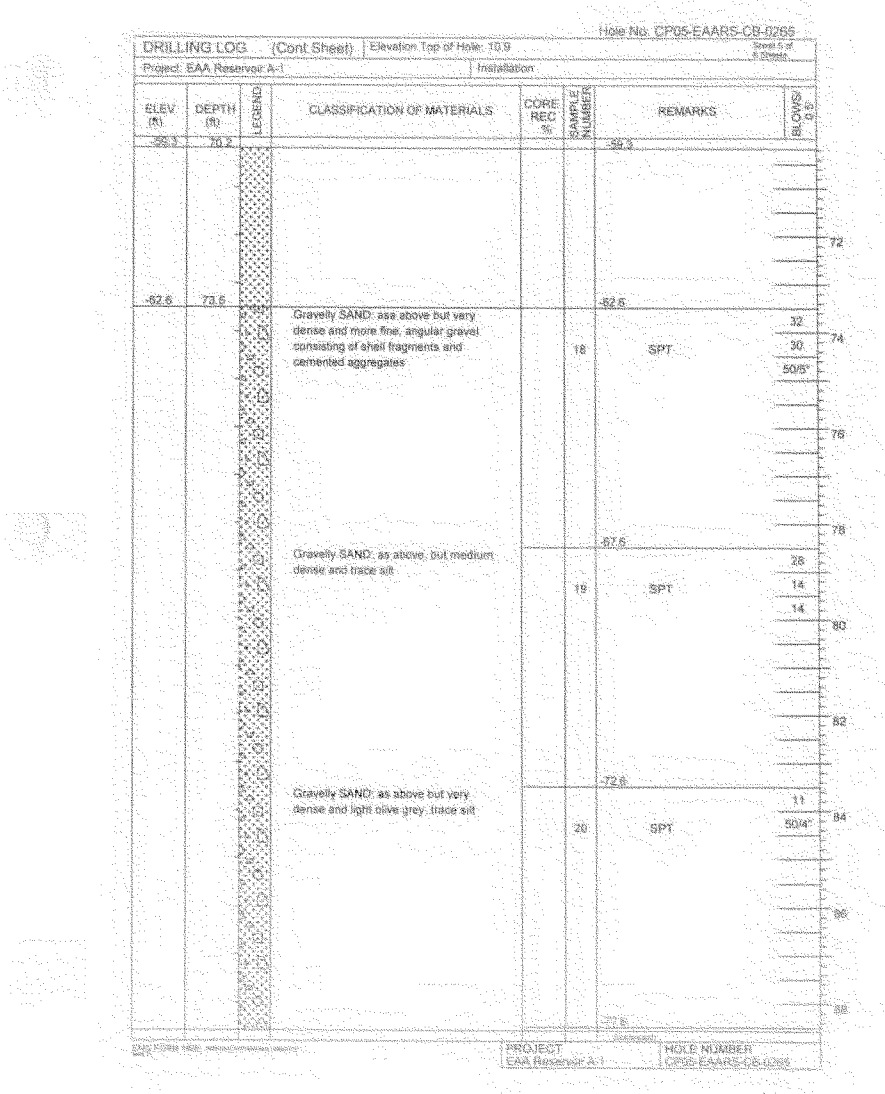
DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 10 ft | Sheet 3 of 3 Sheets

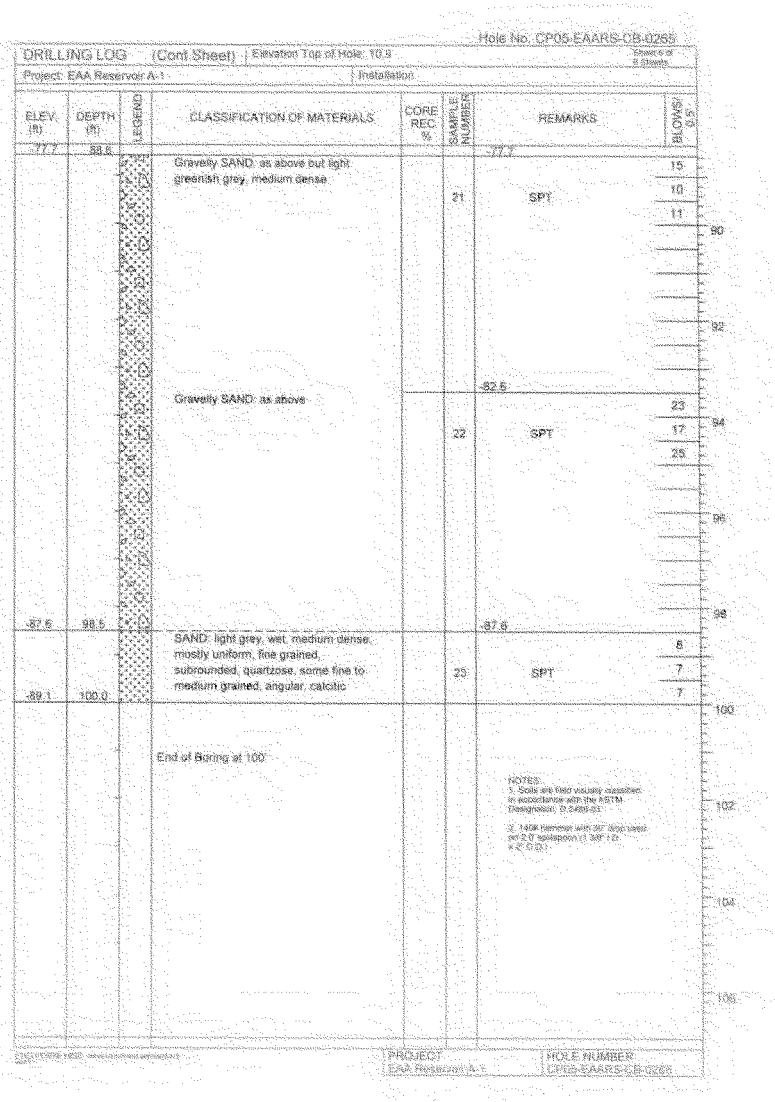
Project: EAA Reservoir A-1 | Installation:

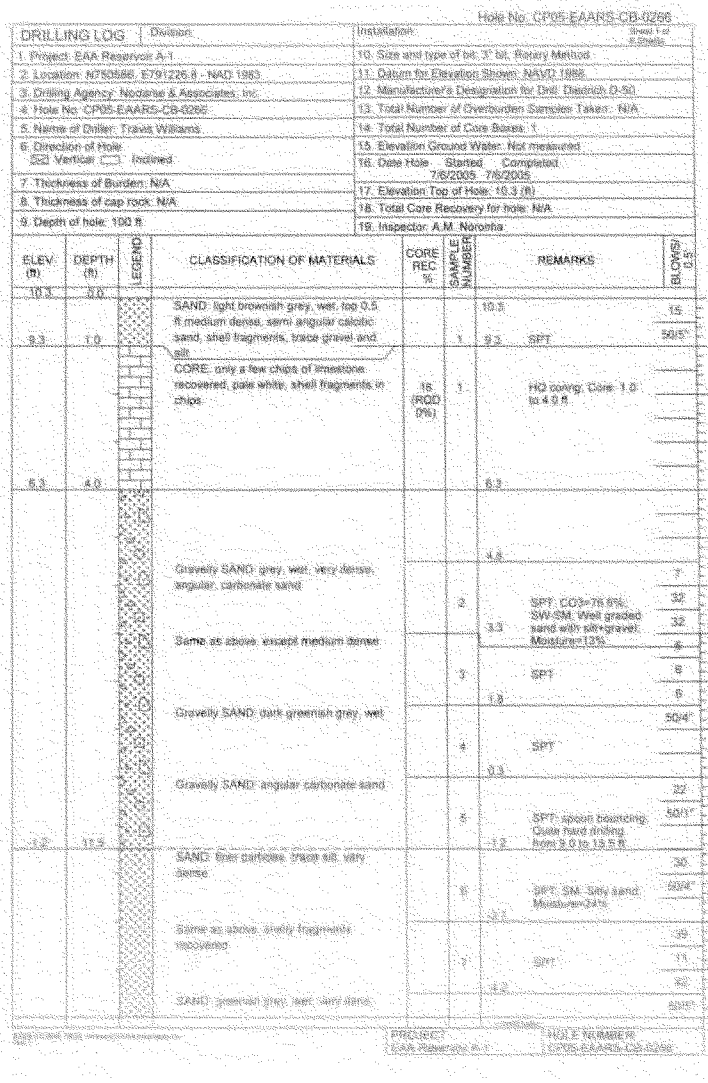
ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/0.5'
22.5	33.4					22.5	
			SAND: pale greenish grey, wet, medium dense, well graded, subequal amount fine, quartz, subrounded and fine to coarse, angular, calcitic sand, trace gravel		10	22.5 SPT, Firm to hard drilling to 35.5 ft	3 4 15 34 35 38
			SAND: as above with limestone chips		11	27.6 SPT	50/4" 40 42
32.6	43.5					32.6	
			Sandy GRAVEL: pale greenish grey, dense, wet, poorly graded, fine angular sandy limestone gravel with sand as above		12	SPT	13 17 21 44 46 48
37.5	48.5					37.5	
			SAND: light olive grey, dense, wet, mostly uniform, fine grained, quartzose, some fine to coarse, angular, calcite		13	SPT	9 11 20 50

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0285


Hole No. CP05-EAARS-CB-026E
DRILLING LOG (Cont Sheet) Elevation Top of Hole 10.9
Sheet 4 of 5 Sheets
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-40.9
41.8
40.9
42.6
SAND: as above but only a trace calcitic sand, almost all fine quartz and medium dense, trace silt
14
SPT
10
9
10
47.6
SAND: as above
18
SPT
5
6
7
52.6
SAND: as above but loose
16
SPT
3
3
3
57.6
SAND: pale greenish grey, wet, medium dense, poorly graded, subequal portions, fine subrounded, quartzose and fine to coarse, angular calcitic trace gravel
17
SPT, Orthotek Limestone
11
10
13
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-026E


Hole No. CP05-EAARS-CB-0265
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 10.9
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
-62.6
73.6
Gravelly SAND: asa above but very dense and more fine, angular gravel consisting of shell fragments and cemented aggregates
18
SPT
32
30
50/5"
-67.6
Gravelly SAND: as above, but medium dense and trace silt
19
SPT
28
14
14
-72.6
Gravelly SAND: as above but very dense and light olive grey, trace silt
20
SPT
11
50/4"
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0265


Hole No. CP05-EAARS-CB-0255
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 10.9
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
77.7
98.6
Gravelly SAND: as above but light greenish grey, medium dense
21
SPT
15
10
11
90
92
82.6
Gravelly SAND: as above
22
SPT
23
17
25
94
96
87.6
98.5
SAND: light grey, wet, medium dense, mostly uniform, fine grained, subrounded, quartzose, some fine to medium grained, angular, calcitic
23
SPT
8
7
7
98
89.1
100.0
End of Boring at 100'
100
102
104
106
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93
2. 140# Hammer with 30" drop used on 2.0" spoon (1 3/8" I.D. x 2" O.D.)
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0255



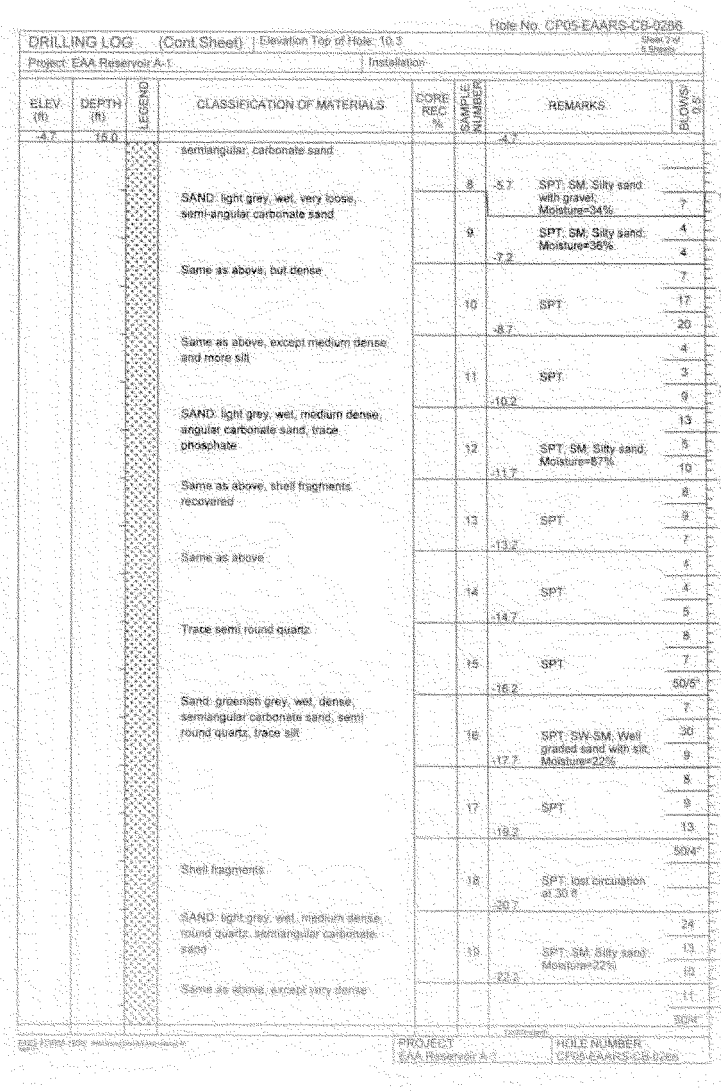
Hole No. CP05-EAARS-CB-0266

DRILLING LOG | Division: | Installation: | Sheet 1 of 6 Sheets

1. Project: EAA Reservoir A-1
2. Location: N750586, E791226.8 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0266
5. Name of Driller: Travis Williams
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: N/A
8. Thickness of cap rock: N/A
9. Depth of hole: 100 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: 1
15. Elevation Ground Water: Not measured
16. Date Hole: Started 7/6/2005 Completed 7/6/2005
17. Elevation Top of Hole: 10.3 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: A.M. Noronha

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5ft
10.3	0.0					10.3	
9.3	1.0		SAND: light brownish grey, wet, top 0.5 ft medium dense, semi angular calcitic sand, shell fragments, trace gravel and silt		1	9.3 SPT	15 50/5"
6.3	4.0		CORE: only a few chips of limestone recovered, pale white, shell fragments in chips	16 (ROD 0%)	1	HQ coring: Core 1.0 to 4.0 ft 6.3	
						4.8	
			Gravelly SAND: grey, wet, very dense, angular, carbonate sand		2	SPT: CO3=76.9%, SW-SM: Well graded sand with silt+gravel, Moisture=13% 3.3	7 32 32
			Same as above, except medium dense		3	SPT 1.8	6 6 6
			Gravelly SAND: dark greenish grey, wet		4	SPT 0.3	50/4"
			Gravelly SAND: angular carbonate sand		5	SPT: spoon bouncing. Chalk hard drilling from 9.0 to 13.5 ft 1.3	32 50/1"
-1.2	-11.5		SAND: fine particles, trace silt, very dense		6	SPT: SM: Silty sand, Moisture=24% -2.2	30 50/4"
			Same as above, shelly fragments recovered		7	SPT -4.2	35 71 80
			SAND: greenish grey, wet, very dense				50/4"

PROJECT: EAA Reservoir A-1 HOLE NUMBER: CP05-EAARS-CB-0266



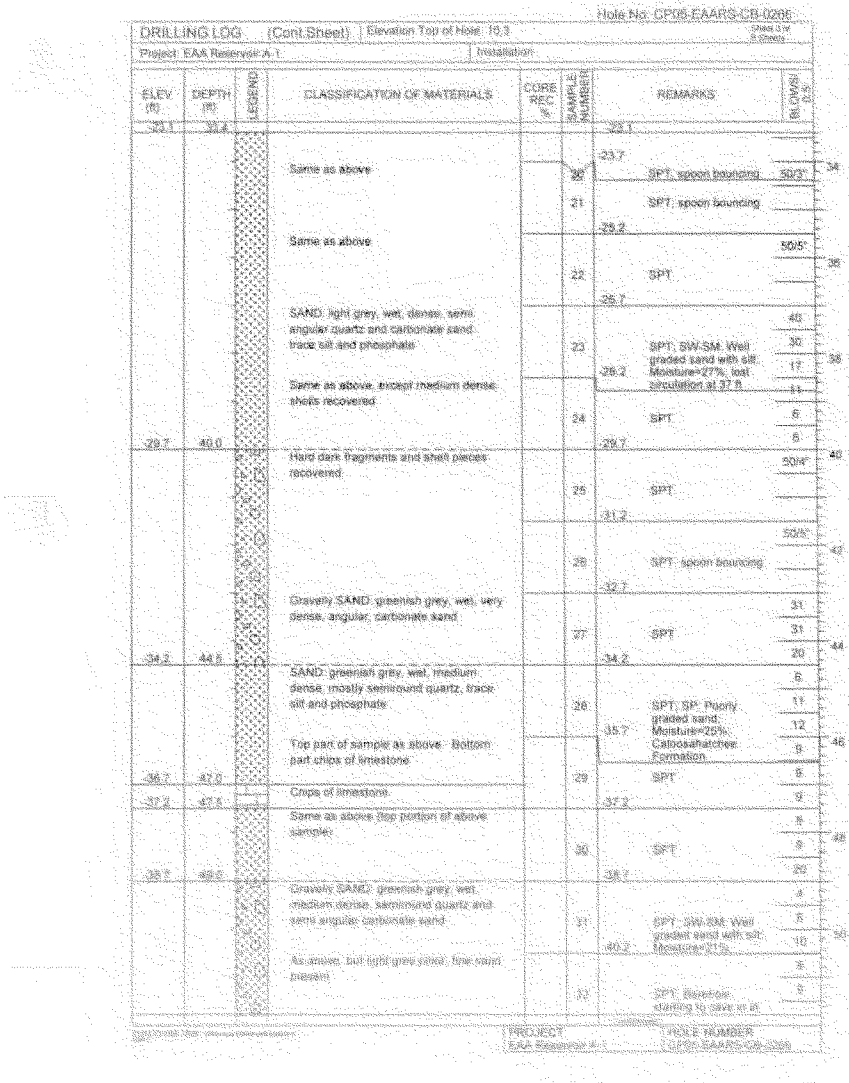
Hole No. CP05-EAARS-CE-0286

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 10.3 | Sheet 2 of 5 Sheets

Project: EAA Reservoir A-1 | Installation:

ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER		REMARKS	BLOWS/0.5'	
-4.7	15.0		semiangular, carbonate sand			-4.7			
			SAND: light grey, wet, very loose, semi-angular carbonate sand		8	-5.7	SPT; SM; Silty sand with gravel; Moisture=34%	1 7	16
					9	-7.2	SPT; SM; Silty sand; Moisture=36%	4 4	
			Same as above, but dense		10	-8.7	SPT	7 17 20	18
			Same as above, except medium dense and more silt		11	-10.2	SPT	4 3 9	20
			SAND: light grey, wet, medium dense, angular carbonate sand, trace phosphate		12	-11.7	SPT; SM; Silty sand; Moisture=87%	13 5 10	
			Same as above, shell fragments recovered		13	-13.2	SPT	8 9 7	22
			Same as above		14	-14.7	SPT	5 4 5	24
			Trace semi round quartz		15	-16.2	SPT	8 7 50/5"	26
			Sand: greenish grey, wet, dense, semiangular carbonate sand, semi round quartz, trace silt		16	-17.7	SPT; SW-SM; Well graded sand with silt; Moisture=22%	7 30 9	
					17	-19.2	SPT	8 9 13	28
			Shell fragments		18	-20.7	SPT; lost circulation at 30 ft	50/4" -	30
			SAND: light grey, wet, medium dense, round quartz, semiangular carbonate sand		19	-22.2	SPT; SM; Silty sand; Moisture=22%	24 13 10	32
			Same as above, except very dense					11 50/4"	

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CE-0286


Hole No. CP05-EAARS-CB-0205

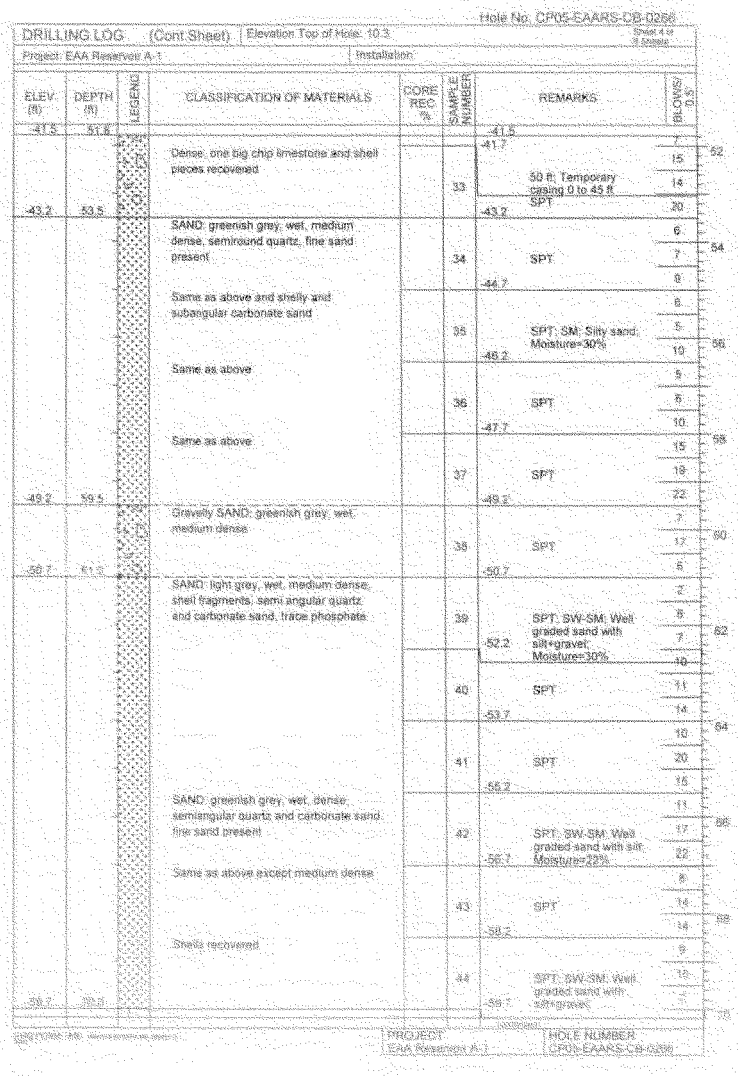
DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 10.3

Project: EAA Reservoir A-1 | Installation:

ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/0.5'	
32.1	33.6					32.1		
			Same as above		20	33.7 SPT, spoon bouncing	50/3"	34
					21	SPT, spoon bouncing		
			Same as above			29.2	50/5"	
					22	SPT		38
						35.7	40	
			SAND, light grey, wet, dense, semi angular quartz and carbonate sand trace silt and phosphate		23	SPT, SW-SM, Well graded sand with silt, Moisture=27%, lost circulation at 37 ft	30	38
						26.2	12	
			Same as above, except medium dense, shells recovered		24	SPT	11	
						29.7	6	
29.7	40.0						6	
			Hard dark fragments and shell pieces recovered		25	SPT	50/4"	48
						31.2		
					26	SPT, spoon bouncing	50/5"	42
						32.7		
			Gravelly SAND, greenish grey, wet, very dense, angular, carbonate sand		27	SPT	31	
						34.2	31	44
34.2	44.5						20	
			SAND, greenish grey, wet, medium dense, mostly semiround quartz, trace silt and phosphate		28	SPT, SP, Poorly graded sand, Moisture=25%, Caloosahatchee Formation	6	
						35.7	11	
			Top part of sample as above. Bottom part chips of limestone				12	46
36.7	47.0				29	SPT	9	
37.2	47.5		Chips of limestone			37.2	6	
			Same as above (top portion of above sample)				9	
					30	SPT	8	48
						39.2	9	
39.5	50.0						26	
			Gravelly SAND, greenish grey, wet, medium dense, semiround quartz and very angular carbonate sand		31	SPT, SW-SM, Well graded sand with silt, Moisture=11%	4	
						40.2	5	
			As above, but light grey sand, fine sand present				10	56
					32	SPT, Sand/silt starting to cave in @	5	
							5	

PROJECT: EAA Reservoir A-1

HOLE NUMBER: CP05-EAARS-CB-0205



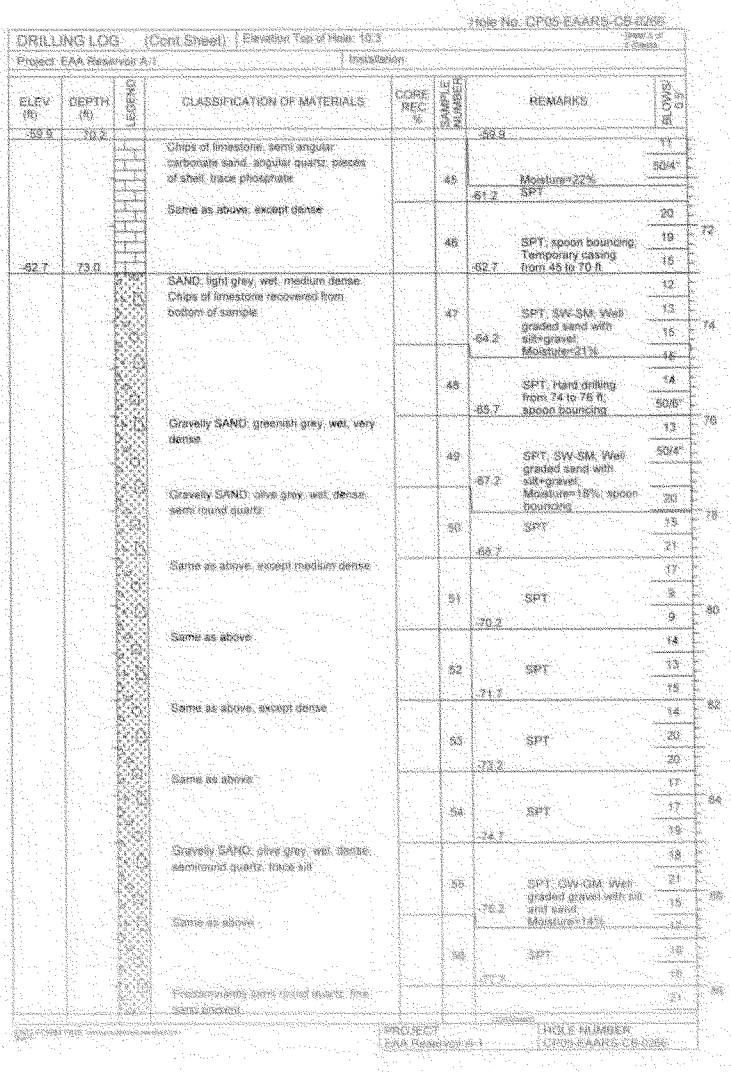
Hole No. CP05-EAARS-CB-0256

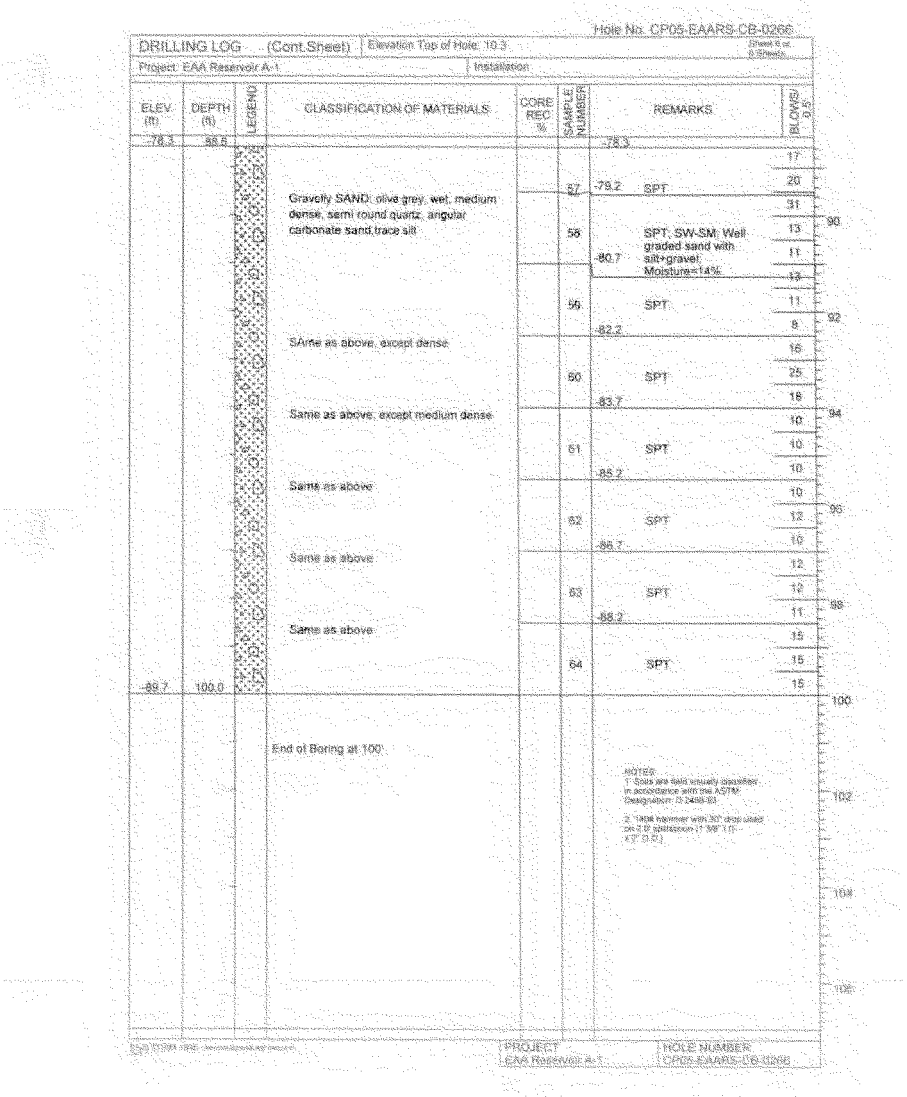
DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 10.3 | Sheet 4 of 9 Sheets

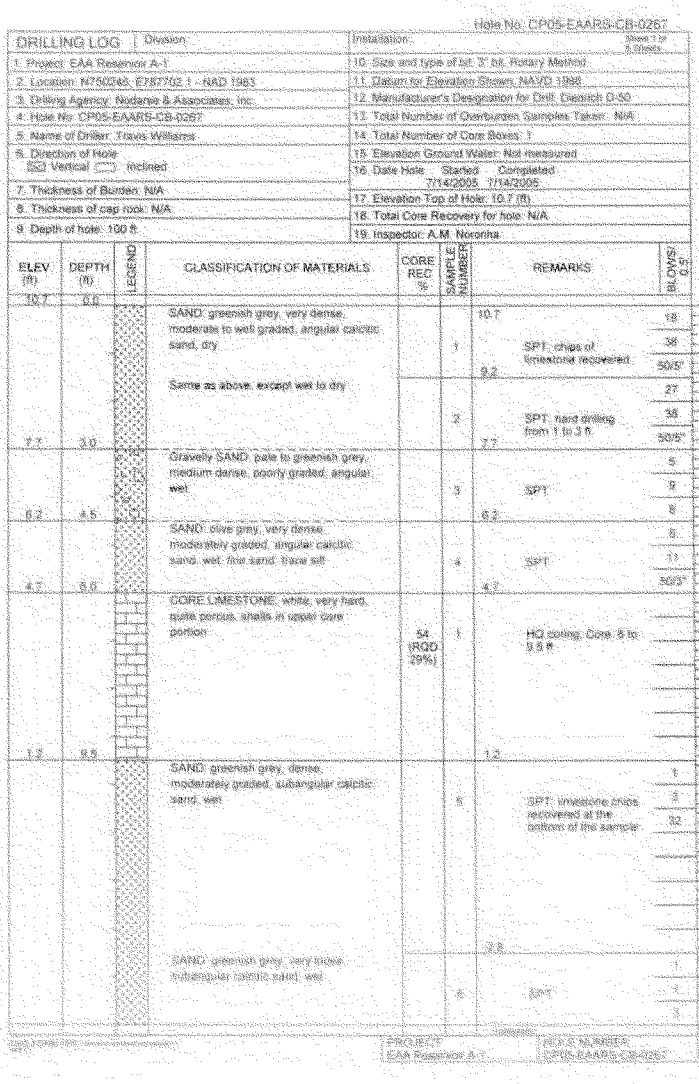
Project: EAA Reservoir A-1 | Installation:

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/0.5ft	
-41.5	51.8				-41.5			
			Dense, one big chip limestone and shell pieces recovered		-41.7		7	
					33	50 ft; Temporary casing 0 to 45 ft	15	52
-43.2	53.5				-43.2	SPT	14	
							20	
			SAND; greenish grey, wet, medium dense, semiround quartz, fine sand present		34	SPT	6	
							7	54
					-44.7		8	
			Same as above and shelly and subangular carbonate sand		35	SPT; SM; Silty sand; Moisture=30%	8	
							5	
					-46.2		10	56
			Same as above		36	SPT	5	
							8	
					-47.7		10	
			Same as above		37	SPT	15	58
							18	
-49.2	59.5				-49.2		22	
			Gravelly SAND; greenish grey, wet, medium dense		38	SPT	7	
							12	60
-50.7	61.0				-50.7		5	
			SAND; light grey, wet, medium dense, shell fragments, semi angular quartz and carbonate sand, trace phosphate		39	SPT; SW-SM; Well graded sand with silt+gravel; Moisture=30%	2	
							5	
					-52.2		7	62
					40	SPT	10	
							11	
					-53.7		14	
					41	SPT	18	64
							20	
					-55.2		15	
			SAND; greenish grey, wet, dense, semiangular quartz and carbonate sand, fine sand present		42	SPT; SW-SM; Well graded sand with silt; Moisture=28%	11	
							17	66
					-56.7		22	
			Same as above except medium dense		43	SPT	8	
							14	
					-58.2		14	68
			Shells recovered		44	SPT; SW-SM; Well graded sand with silt+gravel;	9	
							12	
-59.7	70.0				-59.7		5	70

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0256


Hole No. CP05-EAARS-CB-0266
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 19.3
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
-59.9
70.2
Chips of limestone, semi angular carbonate sand, angular quartz, pieces of shell, trace phosphate
45
Moisture=22%
-61.2
SPT
Same as above, except dense
46
SPT; spoon bouncing; Temporary casing from 45 to 70 ft
-62.7
73.0
SAND, light grey, wet, medium dense. Chips of limestone recovered from bottom of sample
47
SPT, SW-SM, Well graded sand with silt+gravel
-64.2
Moisture=21%
48
SPT, Hard drilling from 74 to 76 ft; spoon bouncing
-65.7
Gravelly SAND, greenish grey, wet, very dense
49
SPT, SW-SM, Well graded sand with silt+gravel
-67.2
Gravelly SAND, olive grey, wet, dense, semi round quartz
Moisture=18%; spoon bouncing
50
SPT
-68.7
Same as above, except medium dense
51
SPT
-70.2
Same as above
52
SPT
-71.7
Same as above, except dense
53
SPT
-73.2
Same as above
54
SPT
-74.7
Gravelly SAND, olive grey, wet, dense, semi round quartz, trace silt
55
SPT, GW-GM, Well graded gravel with silt and sand
-76.2
Moisture=14%
Same as above
56
SPT
-77.7
Predominantly semi rounded quartz, fine sand, poorly
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0266


Hole No. CP05-EAARS-CB-0266
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: 10.3
Project: EAA Reservoir A-1 Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-78.3
88.5
-79.2
Gravelly SAND; olive grey, wet, medium dense, semi round quartz, angular carbonate sand,trace silt
57
SPT
17
20
31
-80.7
58
SPT, SW-SM; Well graded sand with silt+gravel; Moisture=14%
13
11
90
59
SPT
13
11
9
92
-82.2
SAme as above, except dense
60
SPT
16
25
18
-83.7
Same as above, except medium dense
61
SPT
10
10
10
94
-85.2
Same as above
62
SPT
10
12
10
96
-86.7
Same as above
63
SPT
12
14
11
98
-88.2
Same as above
64
SPT
15
15
15
-89.7
100.0
100
End of Boring at 100'
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. Weight hammer with 30" drop used on 2 0" spli spoon (1 3/8" I.D. x 2" O.D.)
102
104
106
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0266



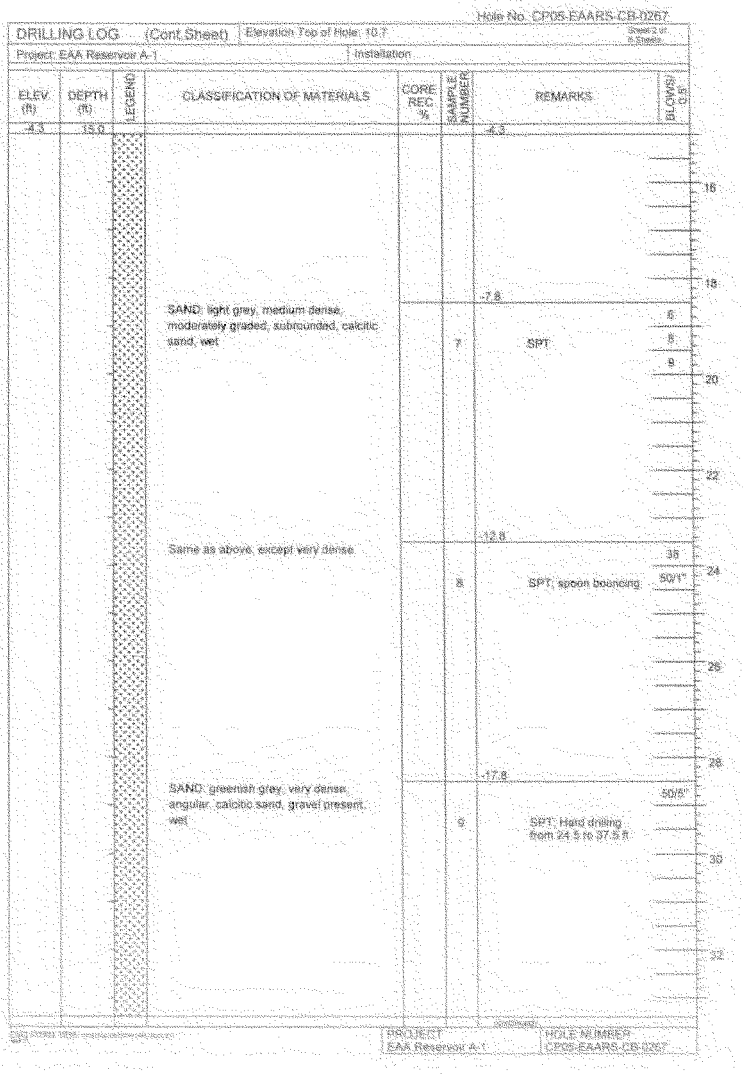
Hole No. CP05-EAARS-CB-026?

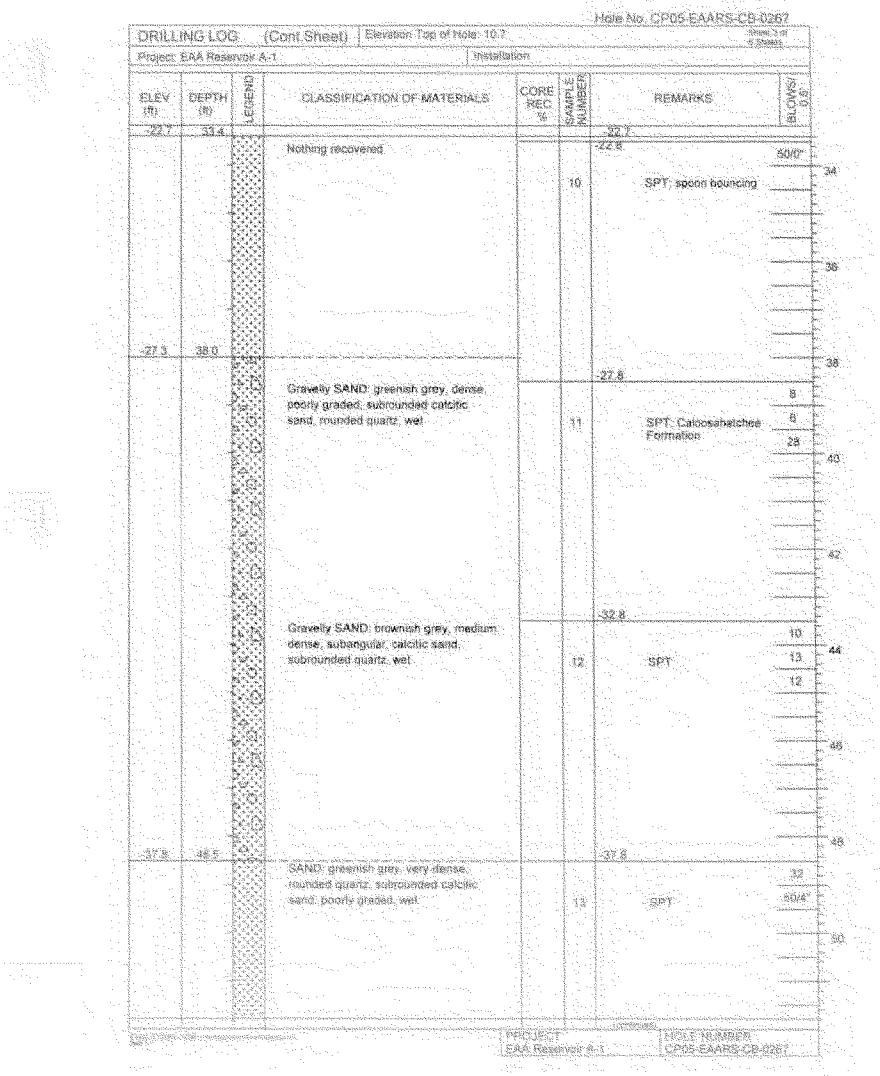
DRILLING LOG | Division | Installation | Sheet 1 of 2 Sheets

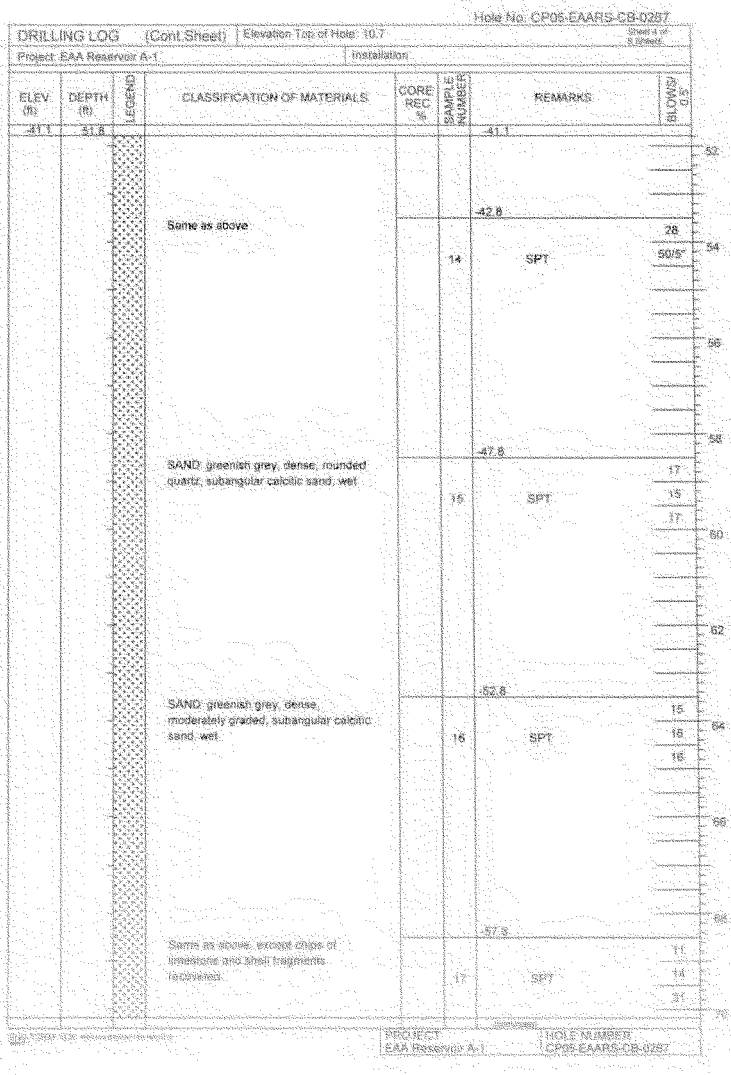
1. Project: EAA Reservoir A-1
2. Location: N750048, E787702.1 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-026?
5. Name of Driller: Travis Williams
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: N/A
8. Thickness of cap rock: N/A
9. Depth of hole: 100 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: 1
15. Elevation Ground Water: Not measured
16. Date Hole: Started 7/14/2005 Completed 7/14/2005
17. Elevation Top of Hole: 10.7 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: A.M. Noronha

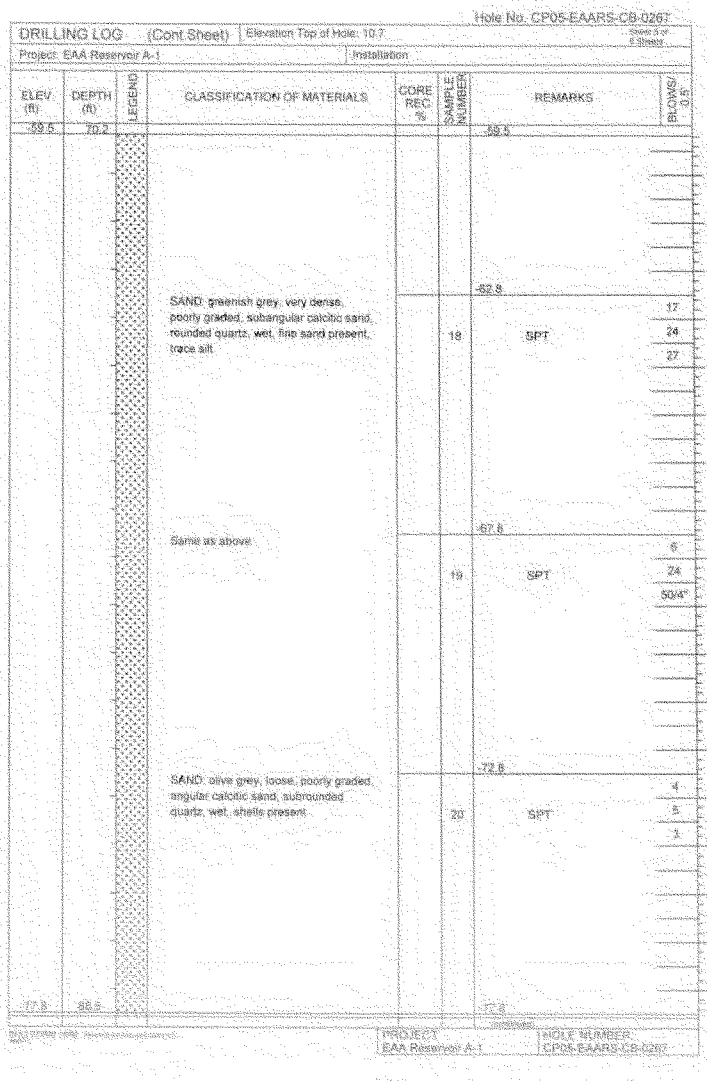
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
10.7	0.0		SAND, greenish grey, very dense, moderate to well graded, angular calcitic sand, dry		1	10.7 SPT, chips of limestone recovered	18 38 50/5"
			Same as above, except wet to dry		2	9.2 SPT, hard drilling from 1 to 3 ft	27 38 50/5"
7.7	3.0		Gravelly SAND, pale to greenish grey, medium dense, poorly graded, angular, wet		3	7.7 SPT	5 9 8
6.2	4.5		SAND, olive grey, very dense, moderately graded, angular calcitic sand, wet, fine sand, trace silt		4	6.2 SPT	8 11 50/3"
4.7	6.0		CORE LIMESTONE, white, very hard, quite porous, shells in upper core portion	54 (RQD 29%)	1	4.7 HQ coring, Core 6 to 9.5 ft	
1.2	9.5		SAND, greenish grey, dense, moderately graded, subangular calcitic sand, wet		5	1.2 SPT, limestone chips recovered at the bottom of the sample	1 9 32
			SAND, greenish grey, very dense, subangular calcitic sand, wet		6	-0.8 SPT	1 1 3

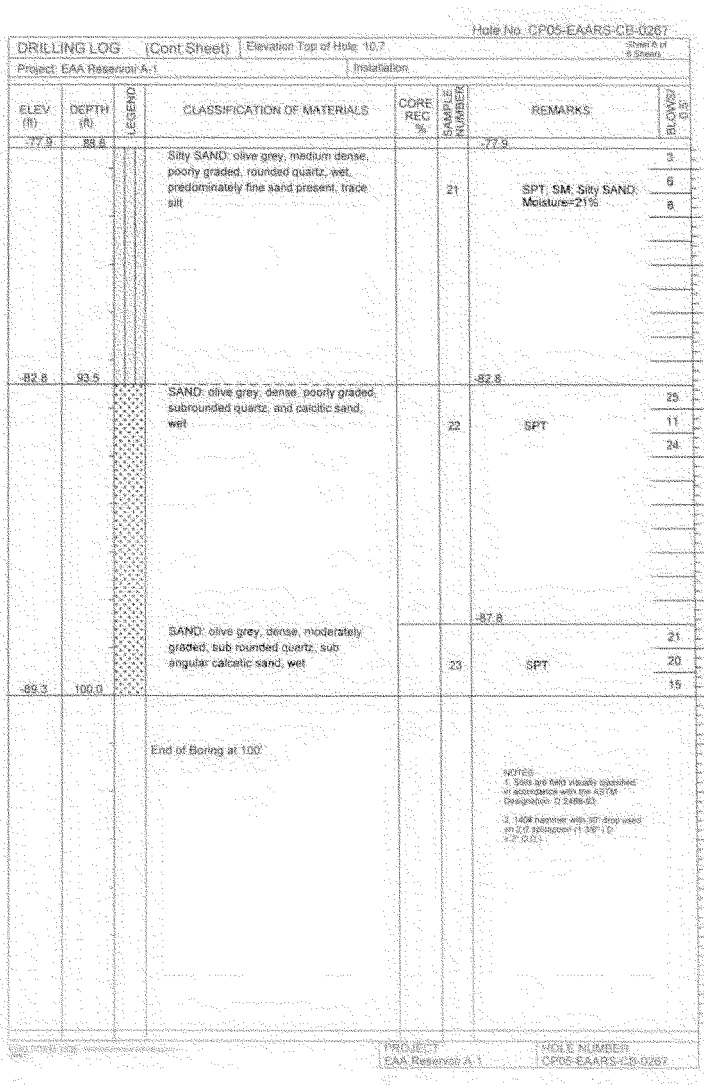
PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-026?

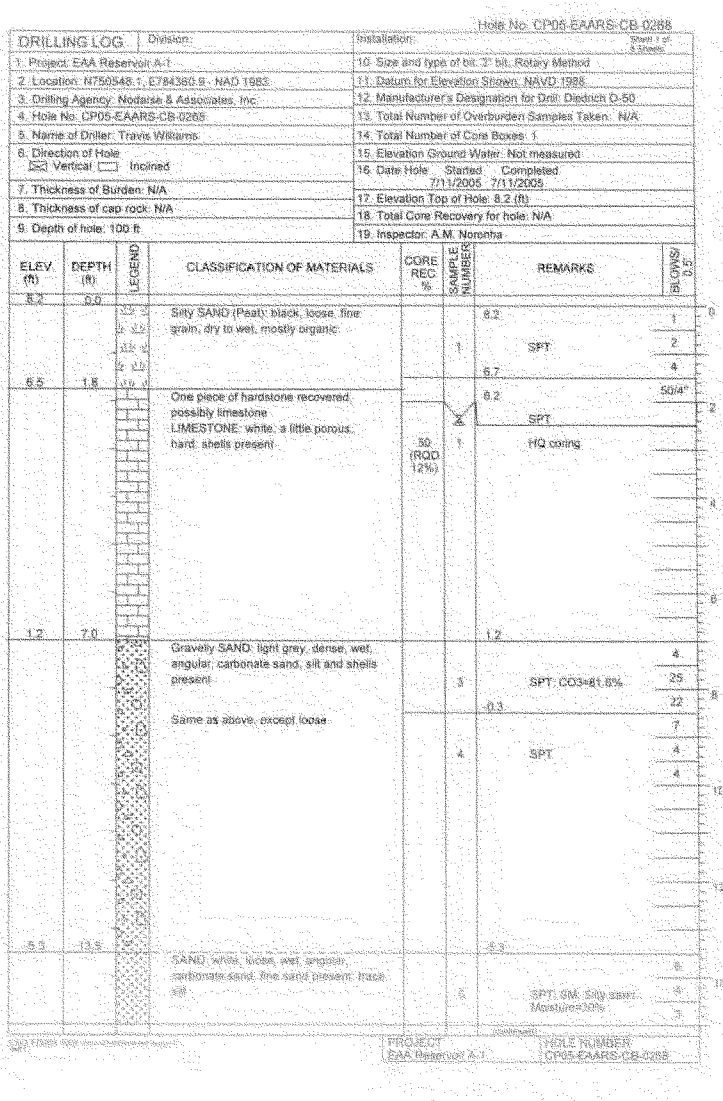

Hole No. CP05-EAARS-CB-0267
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10.7
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-4.3
15.0
-7.8
SAND, light grey, medium dense, moderately graded, subrounded, calcitic sand, wet
7
SPT
6
8
9
-12.8
Same as above, except very dense
8
SPT, spoon bouncing
35
50/1"
-17.8
SAND, greenish grey, very dense, angular, calcitic sand, gravel present, wet
9
SPT, Hard drilling from 24.5 to 37.5 ft
50/5"
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0267


Hole No. CP05-EAARS-CB-026?
DRILLING LOG (Cont.Sheet)
Elevation: Top of Hole: 10.7
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5ft
22.7
33.4
Nothing recovered
22.8
50/0"
10
SPT; spoon bouncing
34
36
27.3
38.0
38
27.8
Gravelly SAND; greenish grey, dense, poorly graded, subrounded calcitic sand, rounded quartz, wet
8
8
11
SPT; Caloosahatchee Formation
28
40
42
32.8
Gravelly SAND; brownish grey, medium dense, subangular, calcitic sand, subrounded quartz, wet
10
13
44
12
12
SPT
46
48
37.5
46.5
37.8
SAND; greenish grey, very dense, rounded quartz, subrounded calcitic sand, poorly graded, wet
32
50/4"
13
SPT
50
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-026?


Hole No. CP05-EAARS-CB-0297
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 10.7
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/6"
-31.1
-31.8
-41.1
-42.8
Same as above
14
SPT
28
50/5"
-47.8
SAND: greenish grey, dense, rounded quartz, subangular calcitic sand, wet
15
SPT
17
15
17
-52.8
SAND: greenish grey, dense, moderately graded, subangular calcitic sand, wet
16
SPT
15
16
16
-57.3
Same as above, except chips of limestone and shell fragments recovered.
17
SPT
11
14
31
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0297


Hole No. CP05-EAARS-CB-026
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10.7
Sheet 3 of 6 Sheets
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
59.5
70.2
SAND: greenish grey, very dense, poorly graded, subangular calcitic sand, rounded quartz, wet, fine sand present, trace silt
18
SPT
17
24
27
52.8
Same as above
19
SPT
6
24
50/4"
67.8
SAND: olive grey, loose, poorly graded, angular calcitic sand, subrounded quartz, wet, shells present
20
SPT
4
5
1
72.6
72
74
76
78
80
82
84
86
88
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-026


Hole No. CP05-EAARS-CB-0267
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 10.7
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
77.9
88.8
Silty SAND: olive grey, medium dense, poorly graded, rounded quartz, wet, predominately fine sand present, trace silt
21
SPT; SM; Silty SAND; Moisture=21%
3
6
8
90
92
82.8
93.5
SAND: olive grey, dense, poorly graded, subrounded quartz, and calcitic sand, wet
22
SPT
25
11
24
94
96
98
87.8
SAND: olive grey, dense, moderately graded, sub rounded quartz, sub angular calcetic sand, wet
23
SPT
21
20
15
89.3
100.0
100
End of Boring at 100'
NOTES
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93
2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. 2.0" O.D.)
102
104
106
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0267



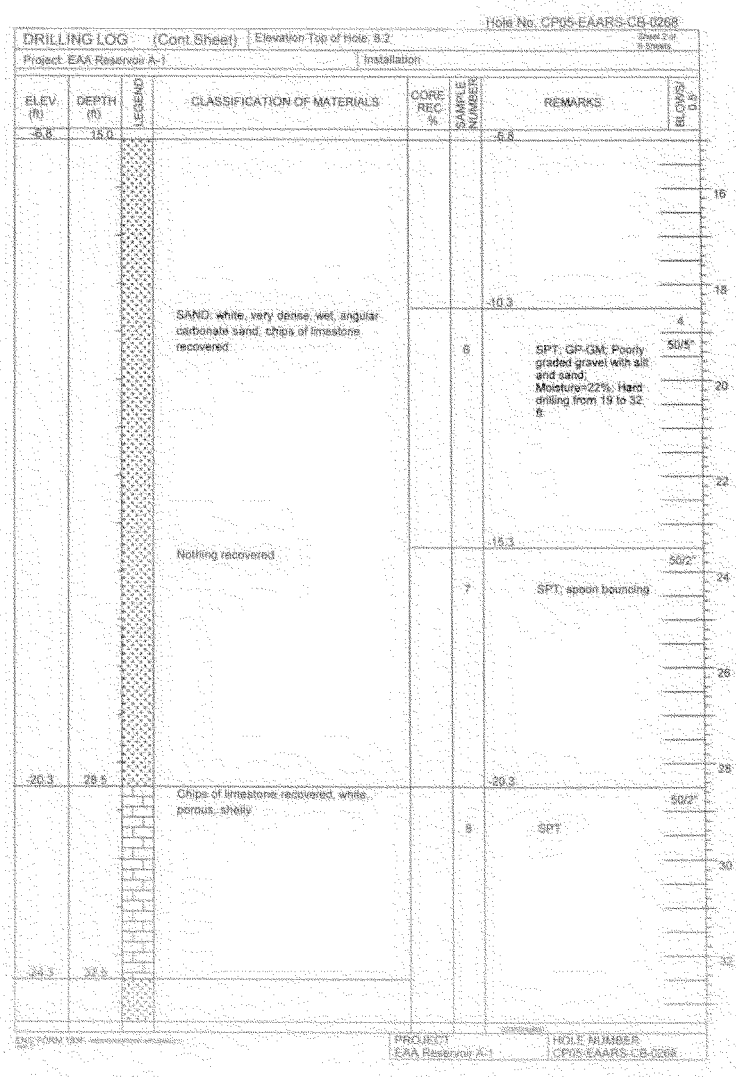
Hole No. CP05-EAARS-CB-0268

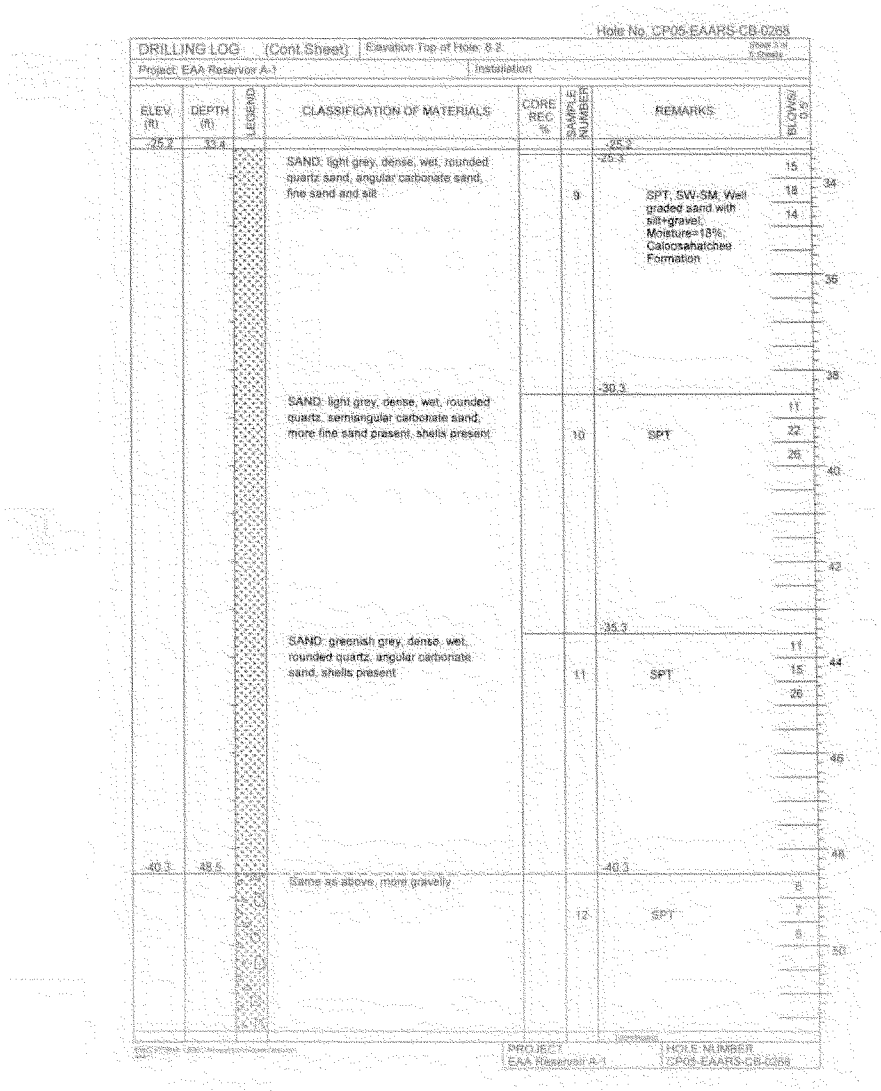
DRILLING LOG | Division: | Installation: | Sheet 1 of 3 Sheets

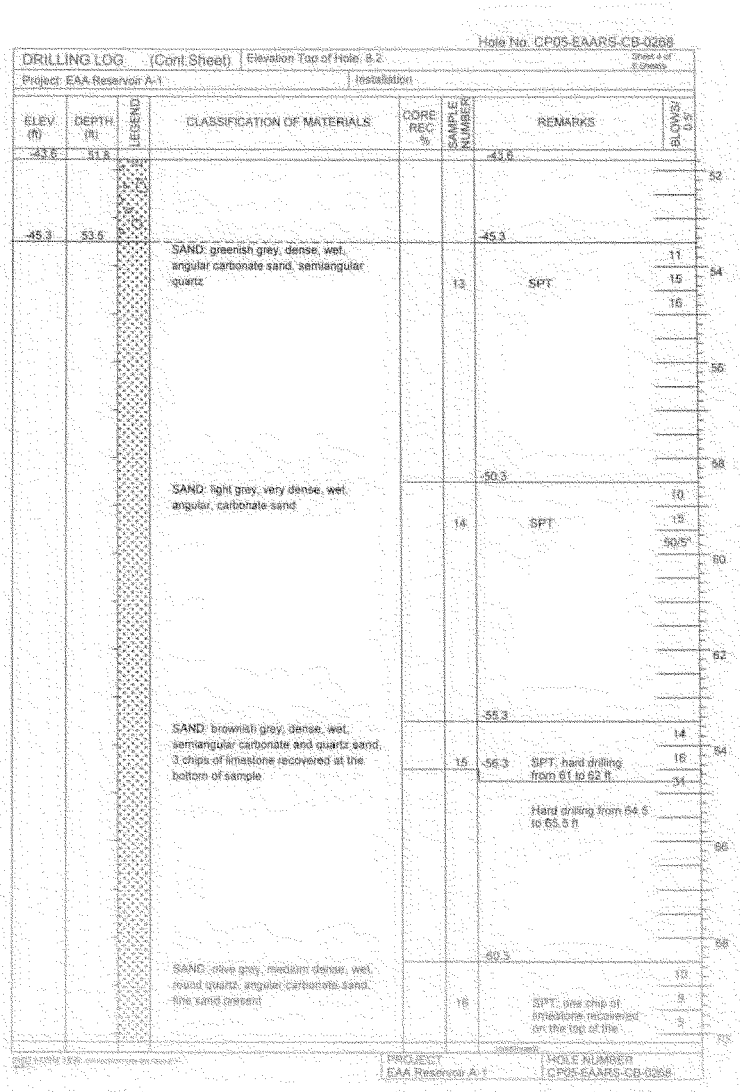
1. Project: EAA Reservoir A-1
2. Location: N750548.1, E784360.9 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No. CP05-EAARS-CB-0268
5. Name of Driller: Travis Williams
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: N/A
8. Thickness of cap rock: N/A
9. Depth of hole: 100 ft
10. Size and type of bit: 2" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: 1
15. Elevation Ground Water: Not measured
16. Date Hole: Started 7/11/2005 Completed 7/11/2005
17. Elevation Top of Hole: 8.2 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: A.M. Noronha

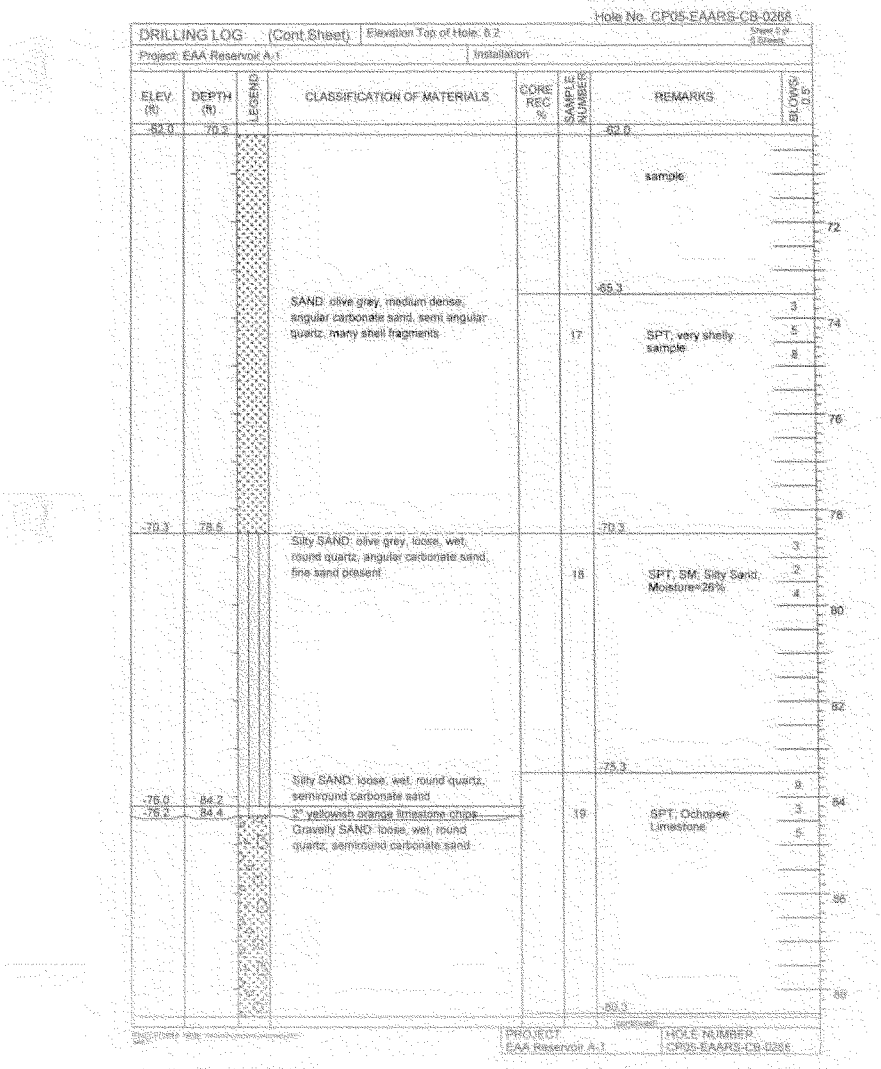
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
8.2	0.0		Silty SAND (Peat): black, loose, fine grain, dry to wet, mostly organic.		1	8.2 SPT 6.7	1, 2, 4
6.5	1.8		One piece of hardstone recovered, possibly limestone LIMESTONE: white, a little porous, hard, shells present	50 (RQD 12%)	1	6.2 SPT HQ coring	50/4"
1.2	7.0		Gravelly SAND: light grey, dense, wet, angular, carbonate sand, silt and shells present. Same as above, except loose		3	1.2 SPT: CO3=81.8% 0.3	4, 25, 22
					4	SPT	7, 4, 4
-3.3	11.5		SAND: white, loose, wet, angular, carbonate sand, fine sand present, trace silt		5	-3.3 SPT: SM: Silty sand Moisture=30%	6, 5, 5

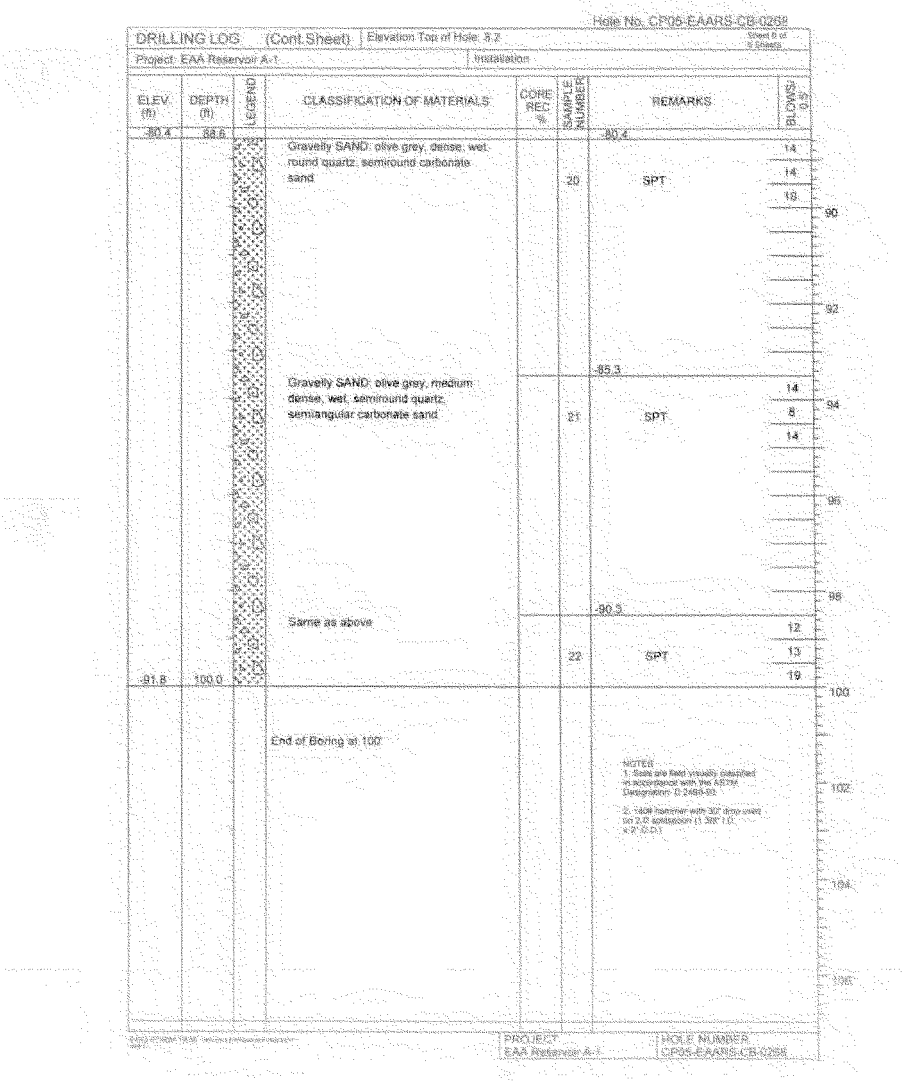
PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0268

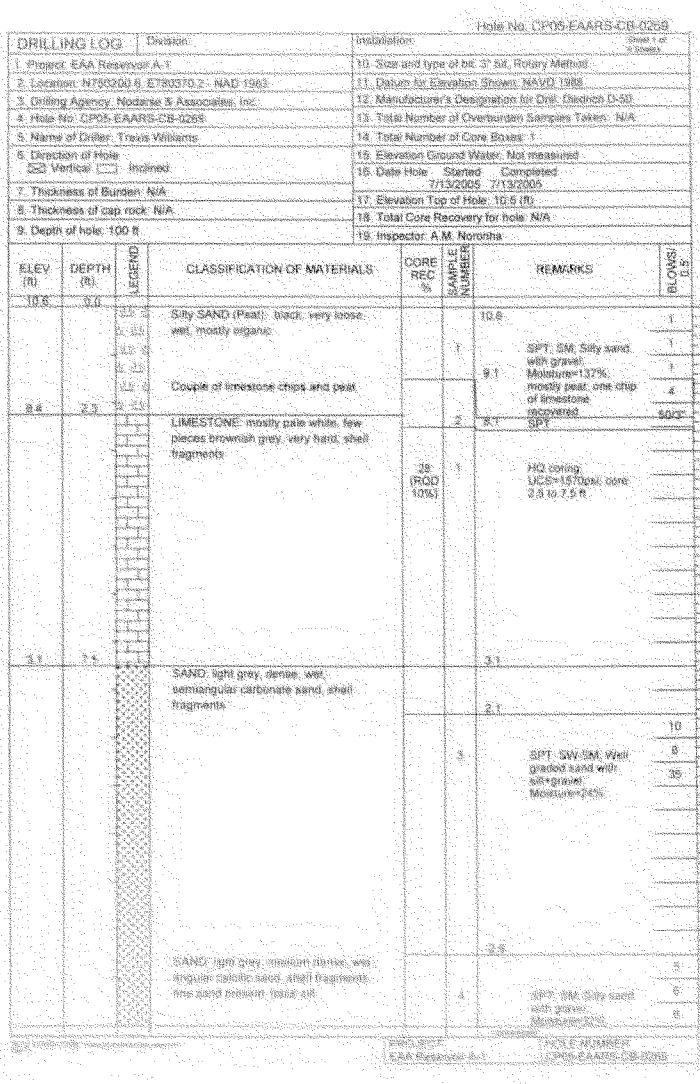

Hole No. CP05-EAARS-CB-0268
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: 8.2
Project: EAA Reservoir A-1 Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-5.8
18.0
SAND, white, very dense, wet, angular carbonate sand; chips of limestone recovered
6
SPT; GP-GM; Poorly graded gravel with silt and sand; Moisture=22%; Hard drilling from 19 to 32 ft
Nothing recovered
7
SPT; spoon bouncing
20.3
28.5
Chips of limestone recovered, white, porous, shelly
8
SPT
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0268


Hole No. CP05-EAARS-CB-0288
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 8.2
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS / 6"
-25.2
33.4
SAND: light grey, dense, wet, rounded quartz sand, angular carbonate sand, fine sand and silt
-25.3
9
SPT, SW-SM, Well graded sand with silt+gravel; Moisture=18%; Caloosahatchee Formation
15
18
14
34
35
38
-30.3
SAND: light grey, dense, wet, rounded quartz, semiangular carbonate sand, more fine sand present, shells present
10
SPT
11
22
26
40
42
-35.3
SAND: greenish grey, dense, wet, rounded quartz, angular carbonate sand, shells present
11
SPT
11
15
26
44
46
48
-40.3
48.5
Same as above, more gravelly
-40.3
12
SPT
8
7
8
50
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0288


Hole No. CP05-EAARS-CB-0268
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 8.2
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-43.6
51.8
-45.3
53.5
SAND: greenish grey, dense, wet, angular carbonate sand, semiangular quartz
13
SPT
11
15
16
-50.3
SAND: light grey, very dense, wet, angular, carbonate sand
14
SPT
10
19
50/5"
-55.3
SAND: brownish grey, dense, wet, semiangular carbonate and quartz sand, 3 chips of limestone recovered at the bottom of sample
15
-56.3
SPT, hard drilling from 61 to 62 ft
14
16
34
Hard drilling from 64.5 to 65.5 ft
-60.3
SAND: olive grey, medium dense, wet, round quartz, angular carbonate sand, fine sand present
16
SPT, one chip of limestone recovered on the top of the
15
8
5
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0268


Hole No. CP05-EAARS-CB-0268
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 8.2
Project: EAA Reservoir A-1 Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
82.0
70.2
82.0
sample
72
65.3
SAND: olive grey, medium dense, angular carbonate sand, semi angular quartz, many shell fragments
17
SPT, very shelly sample
3
5
8
74
76
78
-70.3
78.5
70.3
Silty SAND: olive grey, loose, wet, round quartz, angular carbonate sand, fine sand present
18
SPT, SM, Silty Sand, Moisture=25%
3
2
4
80
82
75.3
Silty SAND: loose, wet, round quartz, semiround carbonate sand
-76.0
84.2
-76.2
84.4
2" yellowish orange limestone chips
Gravelly SAND: loose, wet, round quartz, semiround carbonate sand
19
SPT; Ochopee Limestone
9
3
5
84
86
88
80.3
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0268


Hole No. CP05-EAARS-CB-026B
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 8.2
Sheet 6 of 9 Sheets
Project: EAA Reservoir A-1 Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-80.4
88.6
Gravelly SAND: olive grey, dense, wet, round quartz, semiround carbonate sand
20
SPT
14
14
18
90
92
-85.3
Gravelly SAND: olive grey, medium dense, wet, semiround quartz, semiangular carbonate sand
21
SPT
14
8
14
94
96
98
-90.5
Same as above
22
SPT
12
13
19
-91.8
100.0
100
End of Boring at 100'
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.0" samples (1.375" I.D. x 2" O.D.)
102
104
106
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-026B



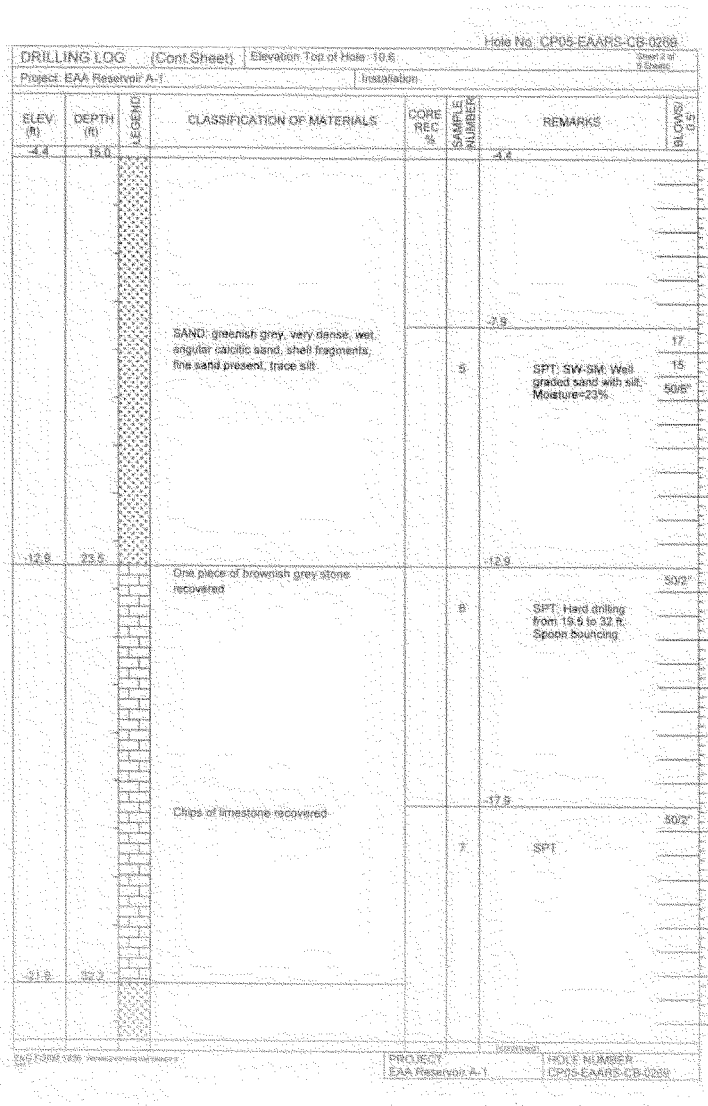
Hole No. CP05-EAARS-CB-0269

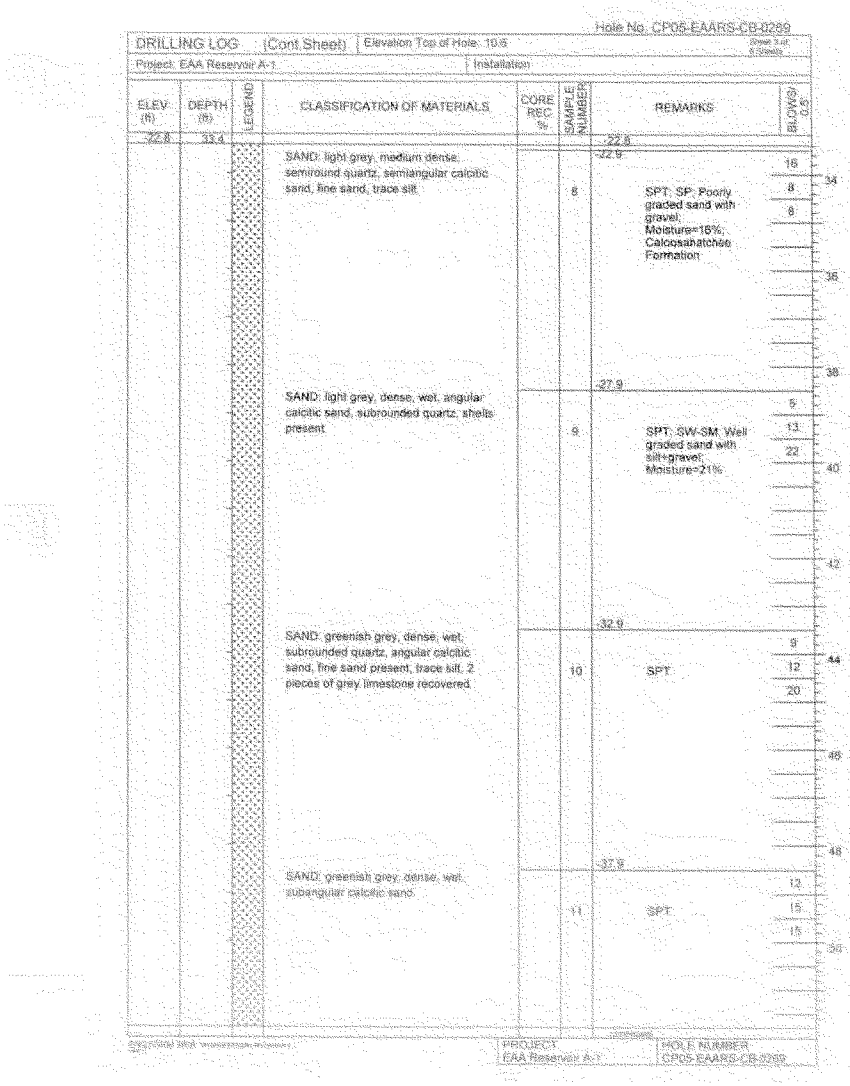
DRILLING LOG | Division: | Installation: | Sheet 1 of 2 Sheets

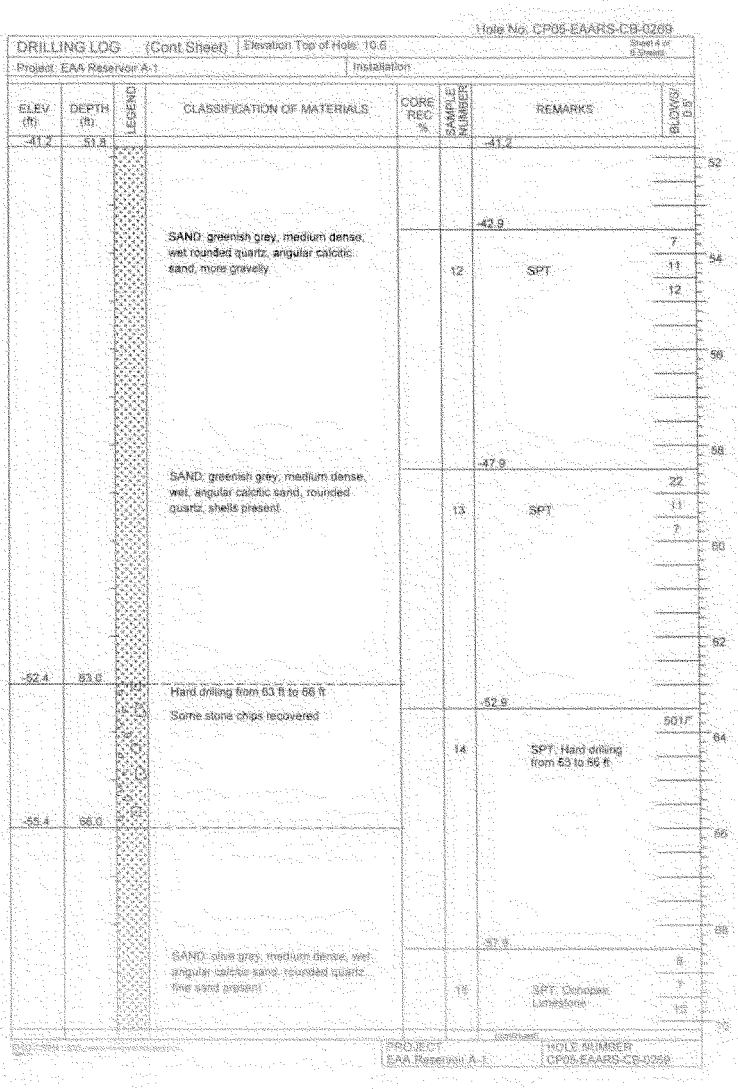
1. Project: EAA Reservoir A-1
2. Location: N750200.6, E780370.2 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0269
5. Name of Driller: Travis Williams
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: N/A
8. Thickness of cap rock: N/A
9. Depth of hole: 100 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: 1
15. Elevation Ground Water: Not measured
16. Date Hole: Started 7/13/2005 Completed 7/13/2005
17. Elevation Top of Hole: 10.6 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: A.M. Noronha

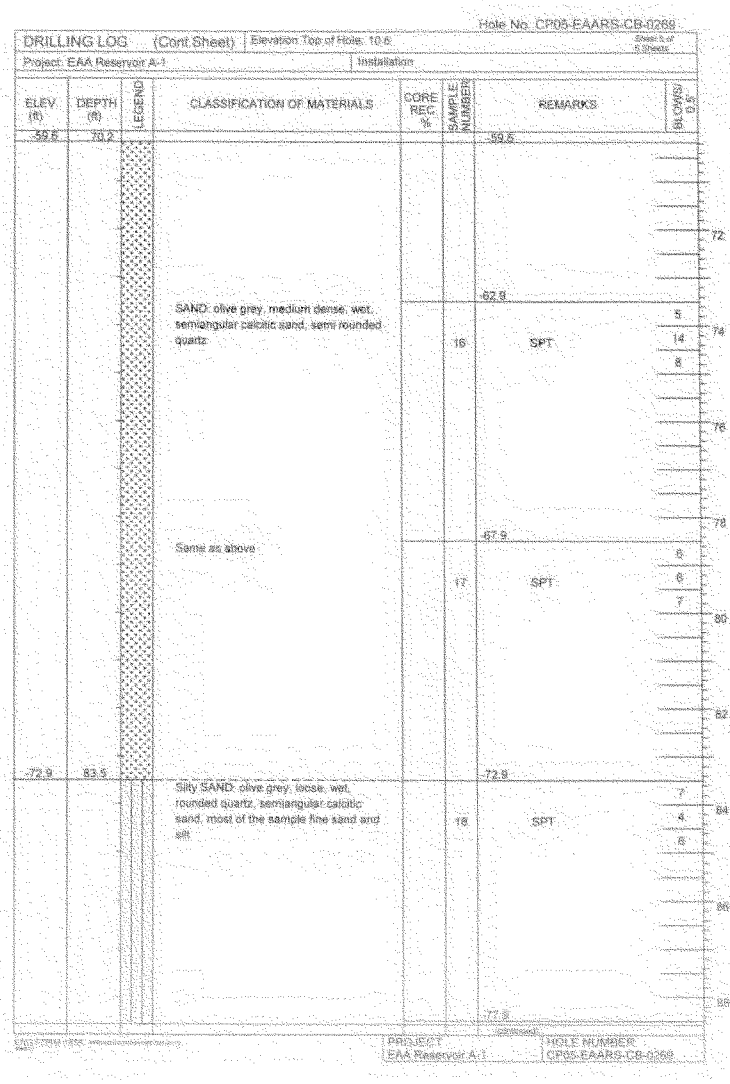
ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
10.6	0.0		Silty SAND (Peat): black, very loose, wet, mostly organic		1	10.6 SPT, SM, Silty sand with gravel, Moisture=137%, mostly peat, one chip of limestone recovered	1 1 1 4 50/3"
8.4	2.3		Couple of limestone chips and peat		2	9.1 SPT	
			LIMESTONE: mostly pale white, few pieces brownish grey, very hard, shell fragments	28 (ROD 10%)	1	HQ coring, UCS=16700psi, core 2.3 to 7.5 ft	
3.1	7.5					3.1	
			SAND: light grey, dense, wet, semiangular carbonate sand, shell fragments			2.1	10
					3	SPT, SW-SM, Well graded sand with silt+gravel, Moisture=14%	8 35
						-2.5	
			SAND: light grey, medium dense, wet, angular calcitic sand, shell fragments, fine sand percent, trace silt		4	SPT, SM, Silty sand with gravel, Moisture=8%	5 6 8

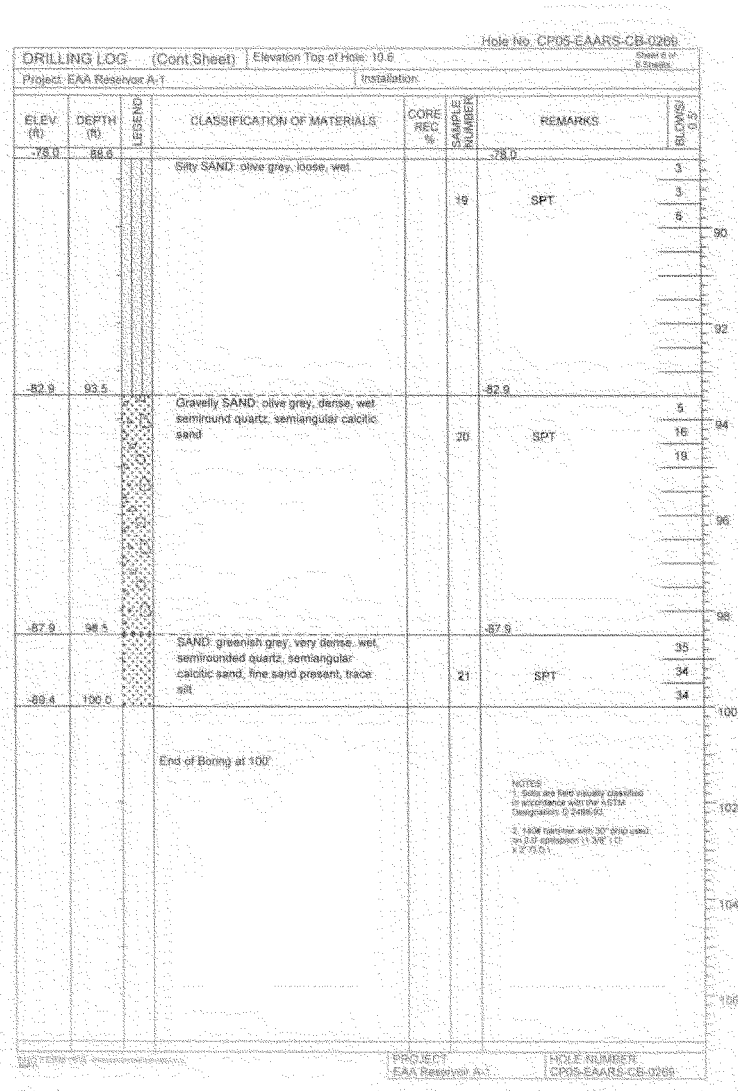
PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0269

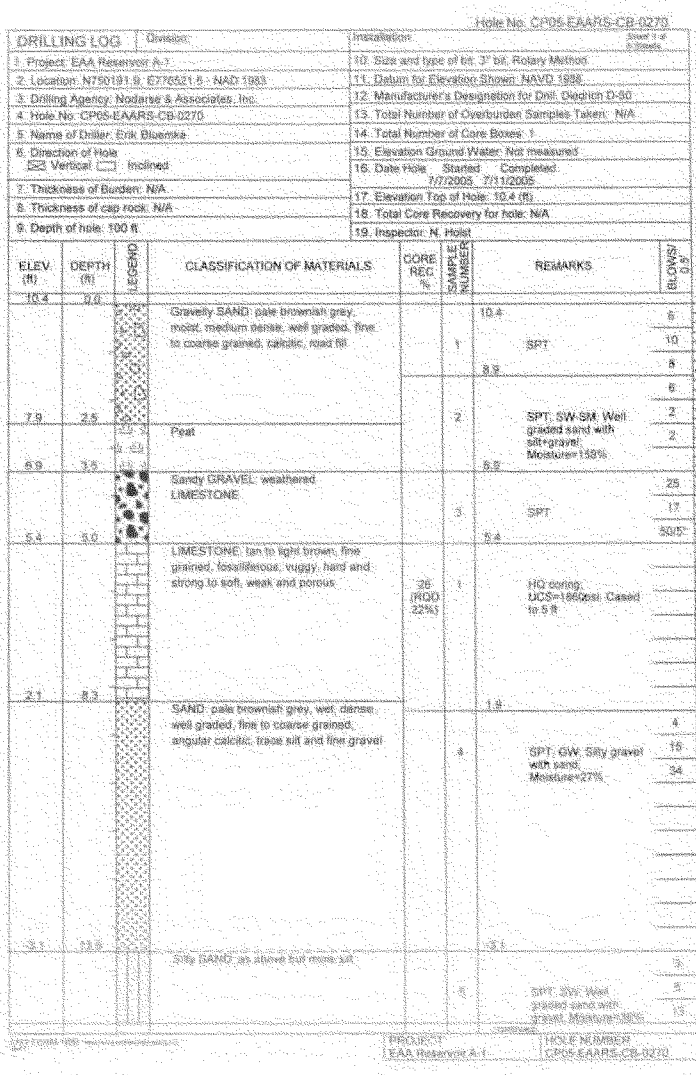

Hole No. CP05-EAARS-CB-0259
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 10.6
Sheet 2 of 5 Sheets
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
-4.4
15.0
SAND: greenish grey, very dense, wet, angular calcitic sand, shell fragments, fine sand present, trace silt.
-7.9
5
SPT: SW-SM: Well graded sand with silt. Moisture=23%
17
15
50/5"
-12.9
23.5
One piece of brownish grey stone recovered
-12.9
8
SPT: Hard drilling from 19.5 to 32 ft. Spoon bouncing
50/2"
-17.9
Chips of limestone recovered
7
SPT
50/2"
-31.9
42.4
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0259


Hole No. CP05-EAARS-CB-0289
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10.6
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/0.5ft
32.8
33.4
SAND: light grey, medium dense, semiround quartz, semiangular calcitic sand, fine sand, trace silt
22.9
6
SPT; SP; Poorly graded sand with gravel; Moisture=16%; Caloosahatchee Formation
16
8
8
34
35
38
27.9
SAND: light grey, dense, wet, angular calcitic sand, subrounded quartz, shells present
9
SPT; SW-SM; Well graded sand with silt+gravel; Moisture=21%
5
13
22
40
42
32.9
SAND: greenish grey, dense, wet, subrounded quartz, angular calcitic sand, fine sand present, trace silt, 2 pieces of grey limestone recovered
10
SPT
9
12
20
44
46
48
37.9
SAND: greenish grey, dense, wet, subangular calcitic sand
11
SPT
12
15
15
36
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0289


Hole No. CP05-EAARS-CB-0269
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10.6
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-41.2
51.8
SAND: greenish grey, medium dense, wet rounded quartz, angular calcitic sand, more gravelly
42.9
12
SPT
7
11
12
47.9
SAND: greenish grey, medium dense, wet, angular calcitic sand, rounded quartz, shells present
13
SPT
22
11
7
-52.4
53.0
Hard drilling from 53 ft to 56 ft
Some stone chips recovered
52.9
14
SPT: Hard drilling from 53 to 56 ft
50/1"
-55.4
56.0
SAND: olive grey, medium dense, wet, angular calcitic sand, rounded quartz, fine sand present
57.9
15
SPT: Compact Limestone
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0269


Hole No. CP05-EAARS-CB-0269
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10.6
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
59.6
70.2
72
62.8
SAND: olive grey, medium dense, wet, semiangular calcitic sand, semi rounded quartz
16
SPT
5
14
8
74
76
78
57.9
Same as above
17
SPT
8
6
7
80
82
-72.9
83.5
72.8
Silty SAND: olive grey, loose, wet, rounded quartz, semiangular calcitic sand, most of the sample fine sand and silt
18
SPT
7
4
6
84
86
88
77.5
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0269


Hole No. CP05-EAARS-CB-0268
ORILLING LOG (Cont Sheet)
Elevation Top of Hole: 10.6
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
78.0
88.5
Silty SAND: olive grey, loose, wet
19
SPT
3
3
5
82.9
93.5
Gravelly SAND: olive grey, dense, wet semirounnd quartz, semiangular calcitic sand
20
SPT
5
16
19
87.9
98.5
SAND: greenish grey, very dense, wet semirounded quartz, semiangular calcitic sand, fine sand present, trace silt
21
SPT
35
34
34
89.4
100.0
End of Boring at 100'
NOTES
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93
2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)
90
92
94
96
98
100
102
104
106
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0268



Hole No. CP05-EAARS-CB-0270

DRILLING LOG

Division:

Installation:

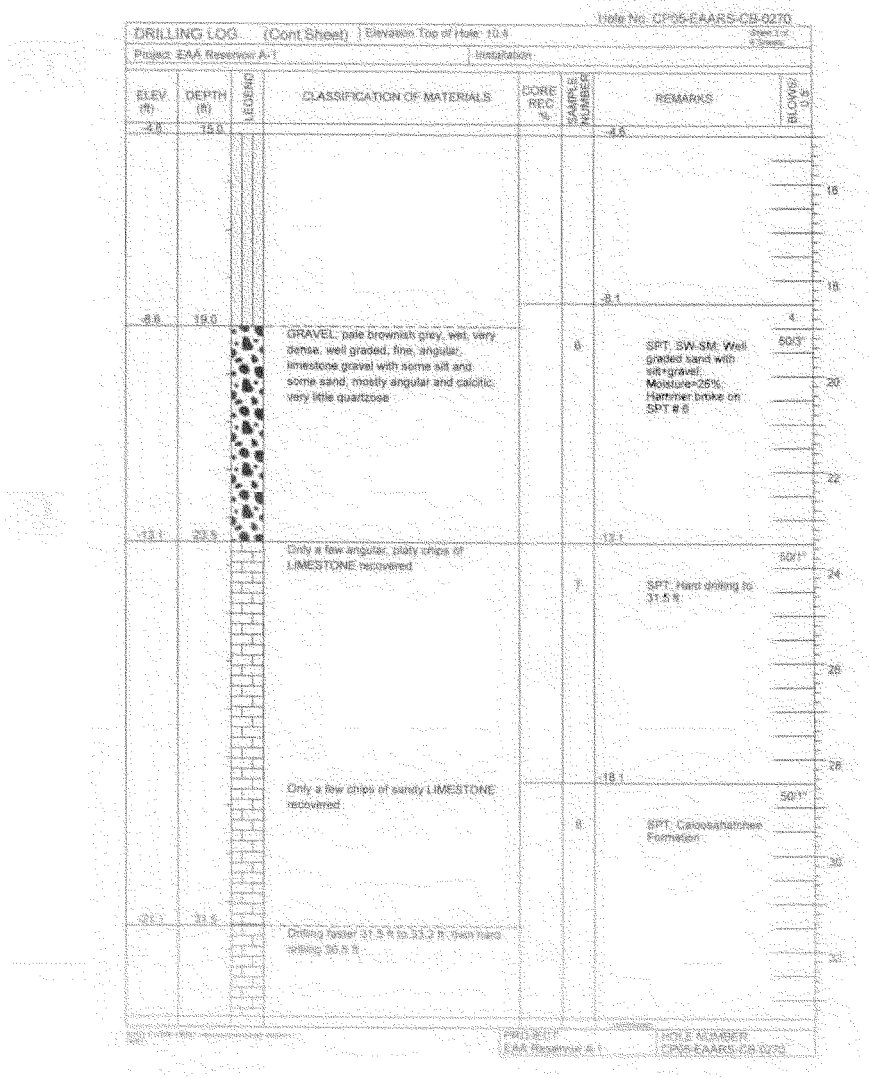
Sheet 1 of 1 Sheets

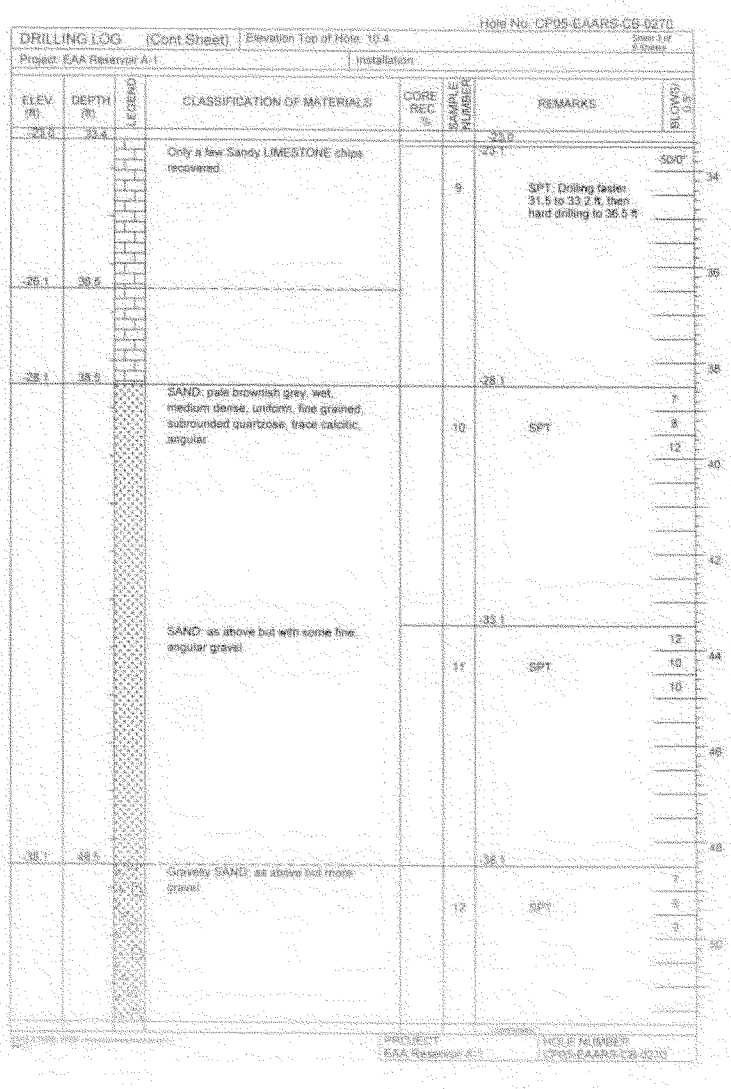
1. Project: EAA Reservoir A-1
2. Location: N750191.9, E776521.5 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No. CP05-EAARS-CB-0270
5. Name of Driller: Erik Bluemke
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: N/A
8. Thickness of cap rock: N/A
9. Depth of hole: 100 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: 1
15. Elevation Ground Water: Not measured
16. Date Hole: Started Completed: 7/7/2005 7/11/2005
17. Elevation Top of Hole: 10.4 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: N. Holst

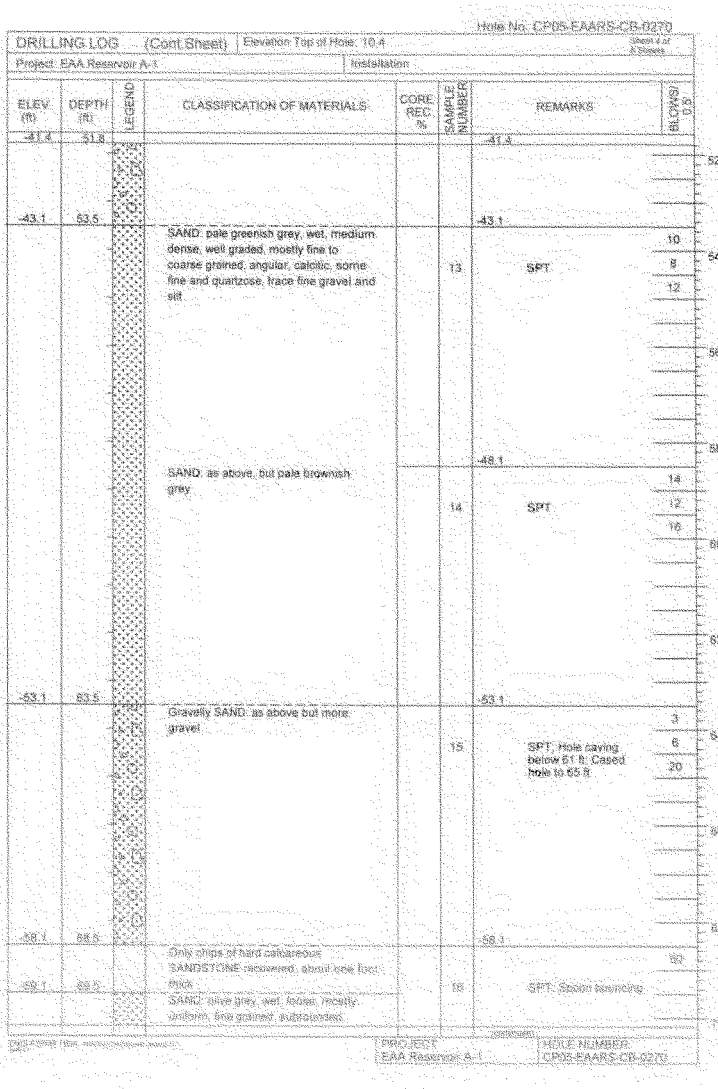
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/6"
10.4	0.0						
			Gravelly SAND: pale brownish grey, moist, medium dense, well graded, fine to coarse grained, calcitic, road fill		1	10.4 SPT 8.9	6 10 8
7.9	2.5		Peat		2	SPT: SW-SM: Well graded sand with silt+gravel Moisture=158% 6.9	6 2 2
6.9	3.5		Sandy GRAVEL: weathered LIMESTONE		3	SPT 5.4	25 17 50/5"
5.4	5.0		LIMESTONE: tan to light brown, fine grained, fossiliferous, vuggy, hard and strong to soft, weak and porous	26 (RQD 22%)	1	HQ coring; UCS=1860psi. Cased to 5 ft 1.9	
2.1	8.3		SAND: pale brownish grey, wet, dense, well graded, fine to coarse grained, angular calcitic, trace silt and fine gravel		4	SPT: GW: Silty gravel with sand; Moisture=27% 3.1	4 16 34
-3.1	13.5		Silty SAND: as above but more silt		5	SPT: SW: Well graded sand with gravel; Moisture=18%	5 5 13

PROJECT: EAA Reservoir A-1

HOLE NUMBER: CP05-EAARS-CB-0270


DRILLING LOG (Cont Sheet)
Project: EAA Reservoir A-1
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
-8.6
19.0
GRAVEL, pale brownish grey, wet, very dense, well graded, fine, angular, limestone gravel with some silt and some sand, mostly angular and calcitic, very little quartzose
SPT, SW-SM: Well graded sand with silt+gravel. Moisture=25%. Hammer broke on SPT # 6
50/3"
-13.1
23.5
Only a few angular, platy chips of LIMESTONE recovered
SPT: Hard drilling to 31.5 ft
50/1"
Only a few chips of sandy LIMESTONE recovered
SPT: Canowindra/Hawkesbury Formation
50/1"
-21.1
31.5
Drilling faster 31.5 ft to 33.2 ft, then hard drilling 36.5 ft
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CPG5-EAARC-7-B-0270


Hole No. CP05-EAARS-CS-0270
DRILLING LOG (Cont Sheet) Elevation Top of Hole 10.4
Project: EAA Reservoir A-1 Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
Only a few Sandy LIMESTONE chips recovered
SPT: Drilling faster 31.5 to 33.2 ft, then hard drilling to 35.5 ft
SAND: pale brownish grey, wet, medium dense, uniform, fine grained, subrounded quartzose, trace calcitic, angular
SPT
SAND: as above but with some fine angular gravel
SPT
Gravelly SAND: as above but more gravel
SPT
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CS-0270


Hole No. CP05-EAARS-CB-0270

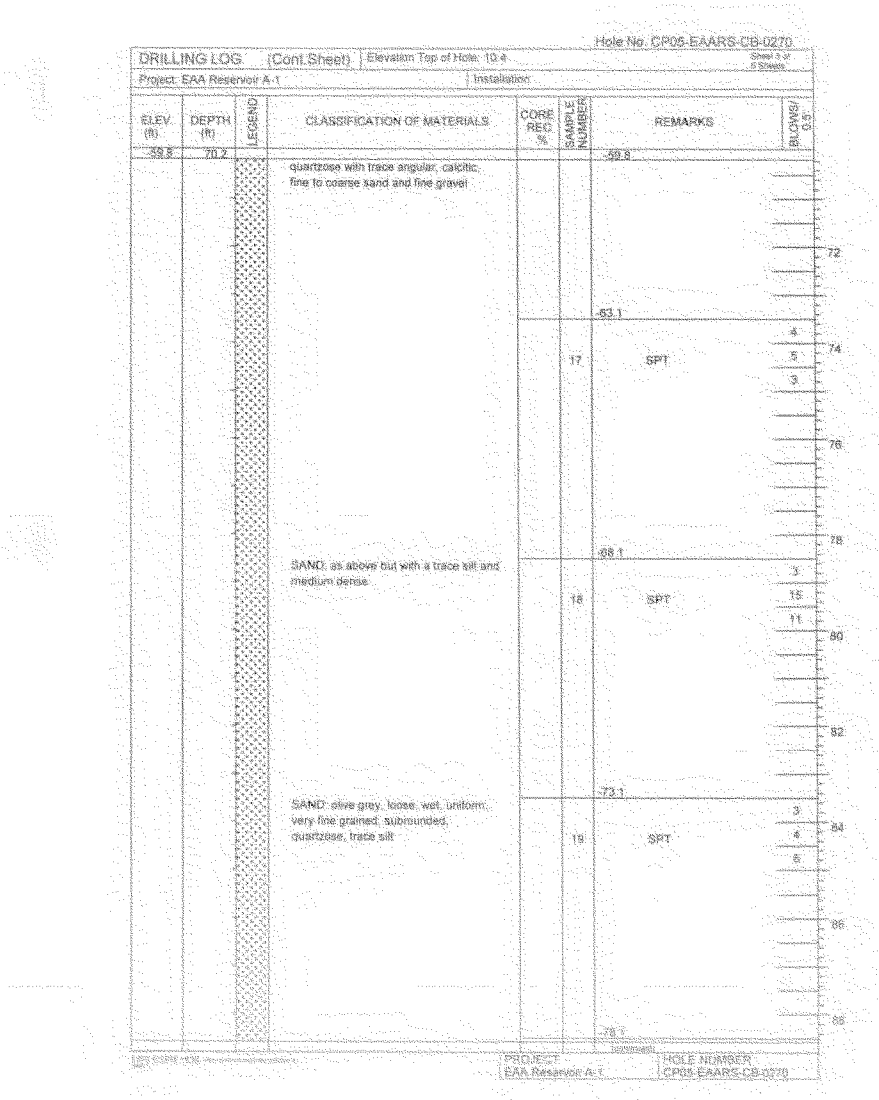
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 10.4 Sheet 4 of 4 Sheets

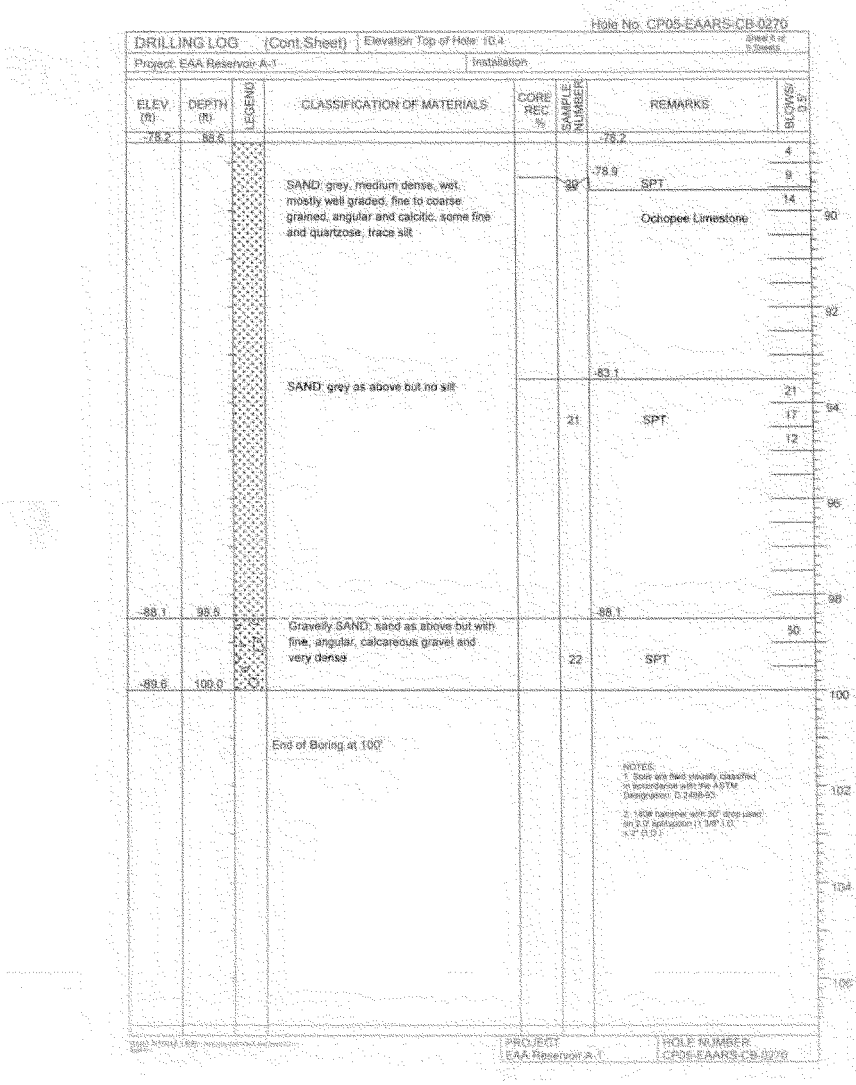
Project: EAA Reservoir A-1 Installation

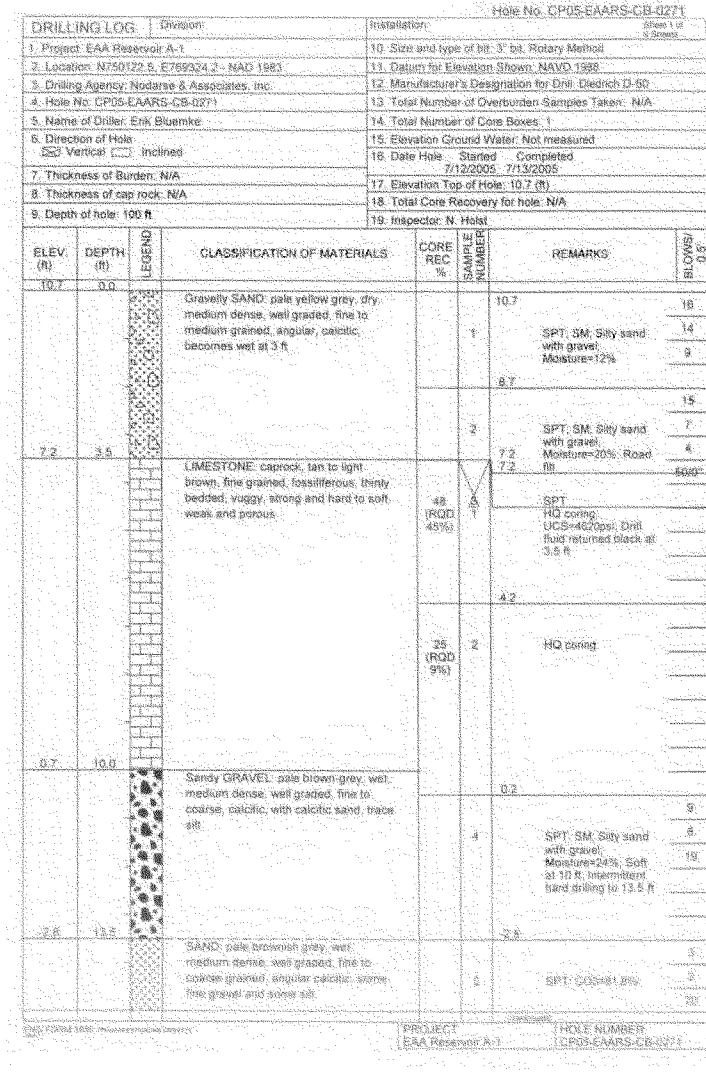
ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5 ft
-41.4	51.8					-41.4	
-43.1	53.5		SAND: pale greenish grey, wet, medium dense, well graded, mostly fine to coarse grained, angular, calcitic, some fine and quartzose, trace fine gravel and silt		13	-43.1 SPT	10, 8, 12
						-48.1	
			SAND: as above, but pale brownish grey		14	SPT	14, 12, 16
-53.1	63.5					-53.1	
			Gravelly SAND: as above but more gravel		15	SPT, Hole caving below 61 ft. Cased hole to 65 ft	3, 6, 20
-58.1	68.5					-58.1	
-59.1	69.5		Only chips of hard calcareous SANDSTONE recovered, about one foot thick		16	SPT, Stopped hamming	50/1"
			SAND: olive grey, wet, loose, mostly uniform, fine grained, subrounded				

(continued)

PROJECT: EAA Reservoir A-1 HOLE NUMBER: CP05-EAARS-CB-0270


Hole No. CP05-EAARS-CB-0270
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: 10.4
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
33.8
70.2
quartzose with trace angular, calcitic, fine to coarse sand and fine gravel
59.8
53.1
17
SPT
4
5
3
68.1
SAND: as above but with a trace silt and medium dense
18
SPT
3
15
11
73.1
SAND: olive grey, loose, wet, uniform, very fine grained, subrounded, quartzose, trace silt
19
SPT
3
4
5
78.1
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0270


Hole No. CP05-EAARS-CB-0270
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 10.4
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-78.2
88.6
SAND: grey, medium dense, wet, mostly well graded, fine to coarse grained, angular and calcitic, some fine and quartzose, trace silt
78.2
78.9
39
SPT
Ochopee Limestone
83.1
SAND: grey as above but no silt
21
SPT
-88.1
98.6
88.1
Gravelly SAND: sand as above but with fine, angular, calcareous gravel and very dense
22
SPT
50/5"
-89.6
100.0
End of Boring at 100'
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.0" split-spoon (1 3/8" I.D., 2.0" O.D.).
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0270
Sheet 3 of 5 Sheets
4
8
14
21
17
12
50/5"
90
92
94
96
98
100
102
104
106



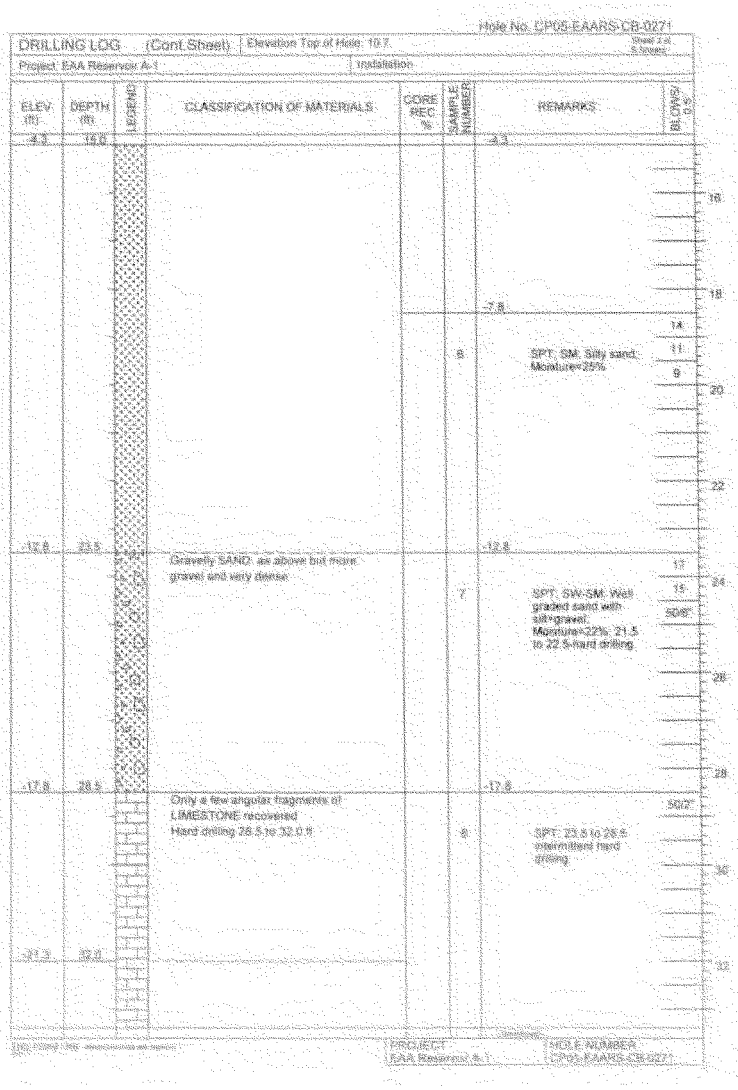
Hole No. CP05-EAARS-CB-027†

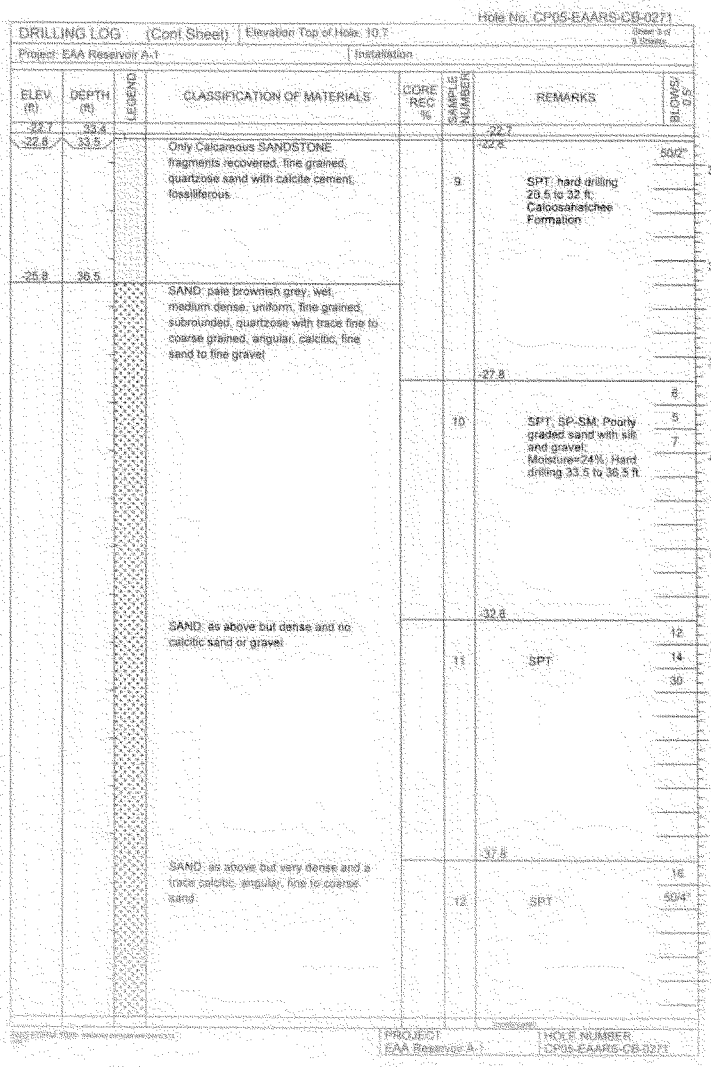
DRILLING LOG | Division: | Installation: | Sheet 1 of 3 Sheets

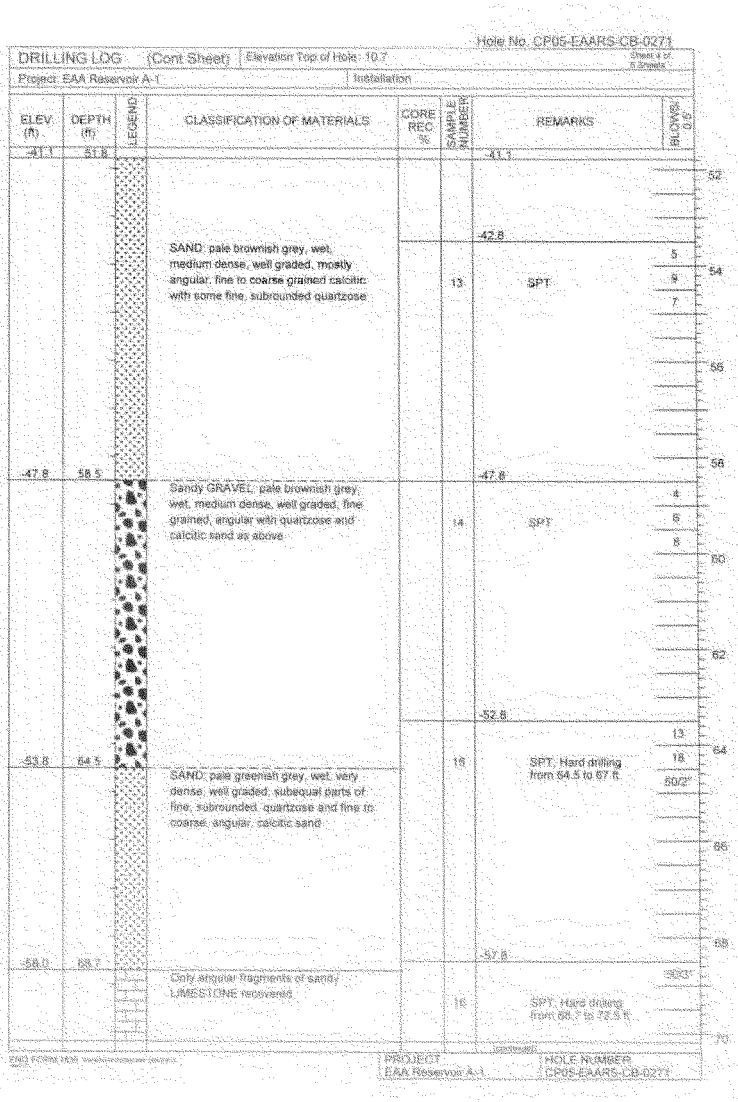
1. Project: EAA Reservoir A-1
2. Location: N750122.5, E769324.3 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-027†
5. Name of Driller: Erik Bluemke
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: N/A
8. Thickness of cap rock: N/A
9. Depth of hole: 100 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: 1
15. Elevation Ground Water: Not measured
16. Date Hole: Started 7/12/2005 Completed 7/13/2005
17. Elevation Top of Hole: 10.7 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: N. Holst

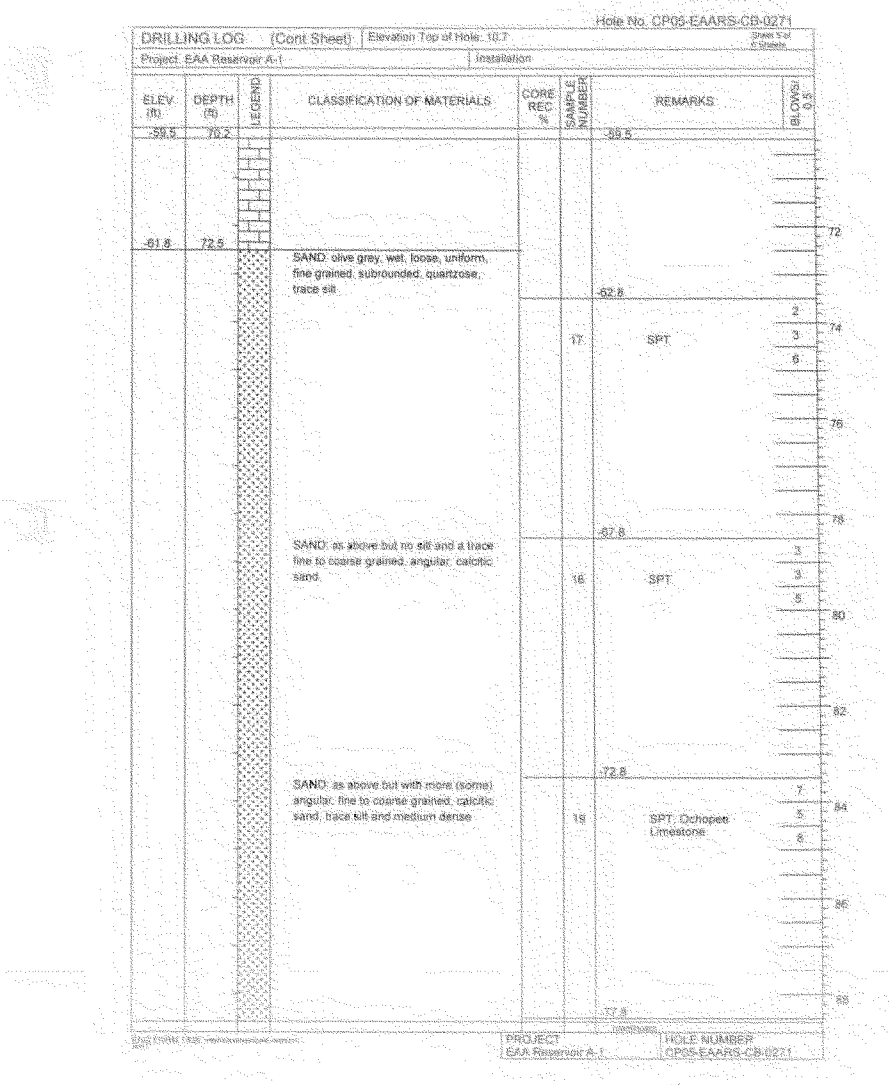
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/0.5'
10.7	0.0					10.7	18
			Gravelly SAND: pale yellow grey, dry, medium dense, well graded, fine to medium grained, angular, calcitic, becomes wet at 3 ft		1	SPT, SM; Silty sand with gravel. Moisture=12%	14
							9
						8.7	
					2	SPT, SM; Silty sand with gravel. Moisture=20%. Road fill	15
							7
7.2	3.5					7.2	4
			LIMESTONE: caprock, tan to light brown, fine grained, fossiliferous, thinly bedded, vuggy, strong and hard to soft, weak and porous	48 (RQD 45%)	3	7.2 fill SPT HQ coring: UCS=4620psi. Drill fluid returned black at 3.5 ft	50/0"
						4.2	
				25 (RQD 9%)	2	HQ coring	
0.7	10.0						
			Sandy GRAVEL: pale brown-grey, wet, medium dense, well graded, fine to coarse, calcitic, with calcitic sand, trace silt			0.2	9
					4	SPT, SM; Silty sand with gravel. Moisture=24%. Soft at 10 ft. Intermittent hard drilling to 13.5 ft	8
							19
-2.8	13.5					-2.8	
			SAND: pale brownish grey, wet, medium dense, well graded, fine to coarse grained, angular calcitic, some fine gravel and some silt		5	SPT: CONTINUED	5
							9
							20

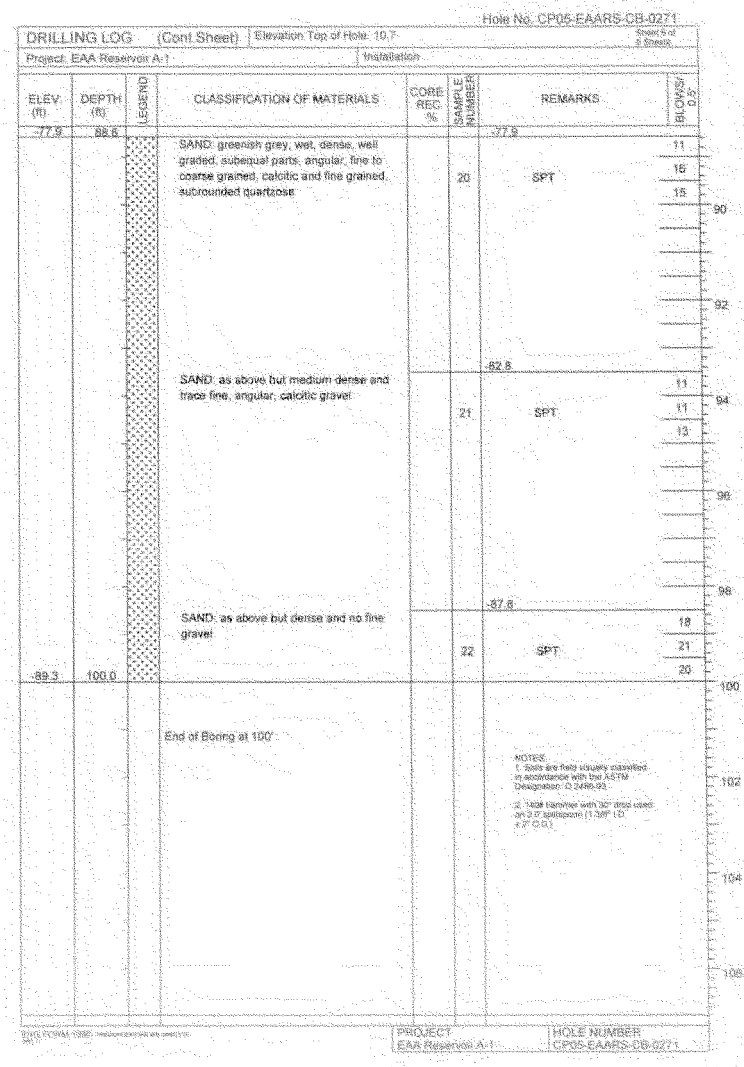
PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-027†

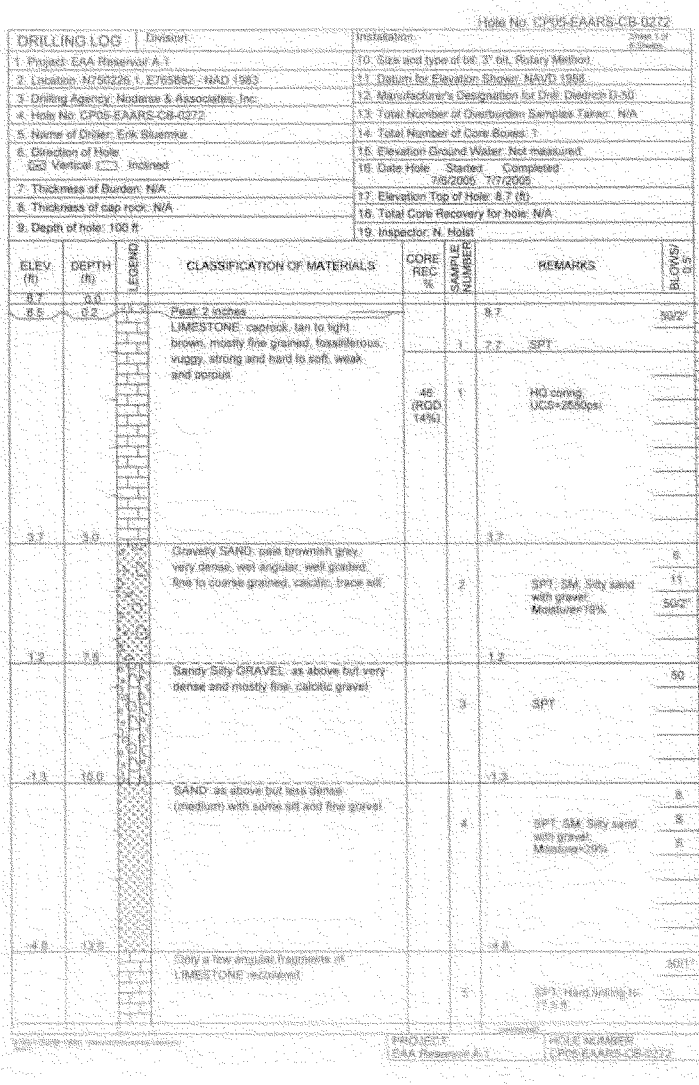

Hole No. CP05-EAARS-CB-0271
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 10.7
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-3.3
14.0
-7.8
SPT, SM, Silty sand, Moisture=35%
14
11
9
20
-12.8
Gravelly SAND, as above but more gravel and very dense
17
15
50/6"
SPT, SW-SM, Well graded sand with silt/gravel, Moisture=22%, 21.5 to 22.5-hard drilling
34
-17.8
28.5
Only a few angular fragments of LIMESTONE recovered Hard drilling 28.5 to 32.0 ft
-17.8
50/2"
SPT, 23.5 to 28.5 intermittent hard drilling
-21.3
32.0
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0271


Hole No. CP05-EAARS-CB-0271
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 10.7
Project: EAA Reservoir A-1 Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
33.4
22.8
33.5
Only Calcareous SANDSTONE fragments recovered, fine grained, quartzose sand with calcite cement, fossiliferous
22.8
9
SPT, hard drilling 28.5 to 32 ft; Caloosahatchee Formation
50/2"
25.8
36.5
SAND: pale brownish grey, wet, medium dense, uniform, fine grained, subrounded, quartzose with trace fine to coarse grained, angular, calcitic, fine sand to fine gravel
27.8
8
10
SPT, SP-SM, Poorly graded sand with silt and gravel; Moisture=24%, Hard drilling 33.5 to 38.5 ft
5
7
32.8
SAND: as above but dense and no calcitic sand or gravel
12
11
SPT
14
30
37.8
SAND: as above but very dense and a trace calcitic, angular, fine to coarse sand
16
12
SPT
50/4"
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0271


Hole No. CP05-EAARS-CB-0271
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 10.7
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-41.1
51.8
-42.8
SAND; pale brownish grey, wet, medium dense, well graded, mostly angular, fine to coarse grained calcitic with some fine, subrounded quartzose
13
SPT
5
9
7
-47.8
58.5
Sandy GRAVEL; pale brownish grey, wet, medium dense, well graded, fine grained, angular with quartzose and calcitic sand as above
14
SPT
4
6
8
-52.8
-53.8
64.5
SAND; pale greenish grey, wet, very dense, well graded, subequal parts of fine, subrounded, quartzose and fine to coarse, angular, calcitic sand
16
SPT, Hard drilling from 64.5 to 67 ft
13
18
50/2"
-57.8
-58.0
68.7
Only angular fragments of sandy LIMESTONE recovered
16
SPT, Hard drilling from 68.7 to 72.5 ft
50/1"
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0271


Hole No. CP05-EAARS-CB-0271
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 10.7
Project: EAA Reservoir A-1) Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-59.3
70.2
-61.8
72.5
SAND: olive grey, wet, loose, uniform, fine grained, subrounded, quartzose, trace silt
-65.5
-62.8
17
SPT
2
3
5
72
74
75
78
-67.8
SAND: as above but no silt and a trace fine to coarse grained, angular, calcitic sand.
16
SPT
3
3
5
80
82
-72.8
SAND: as above but with more (some) angular, fine to coarse grained, calcitic sand, trace silt and medium dense
19
SPT; Ochopee Limestone
7
5
8
84
86
88
-77.8
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0271


Hole No. CP05-EAARS-CB-0271
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 10.7
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
-77.9
88.6
SAND: greenish grey, wet, dense, well graded, subequal parts, angular, fine to coarse grained, calcitic and fine grained, subrounded quartzose
20
SPT
11
16
15
-82.8
SAND: as above but medium dense and trace fine, angular, calcitic gravel
21
SPT
11
11
13
-87.8
SAND: as above but dense and no fine gravel
22
SPT
18
21
20
-89.3
100.0
End of Boring at 100'
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. Hole diameter with 3" drive used an 2.0" splitspoon (1.380" I.D. x 2" O.D.)
90
92
94
96
98
100
102
104
106
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0271



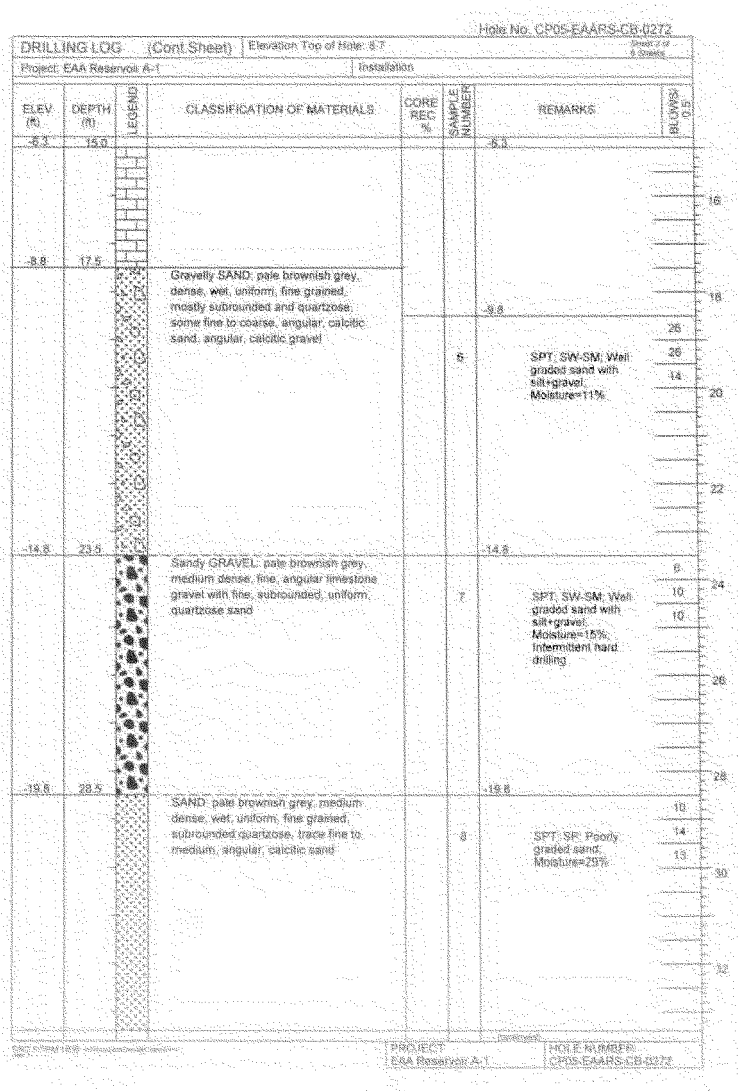
Hole No. CP05-EAARS-CB-0272

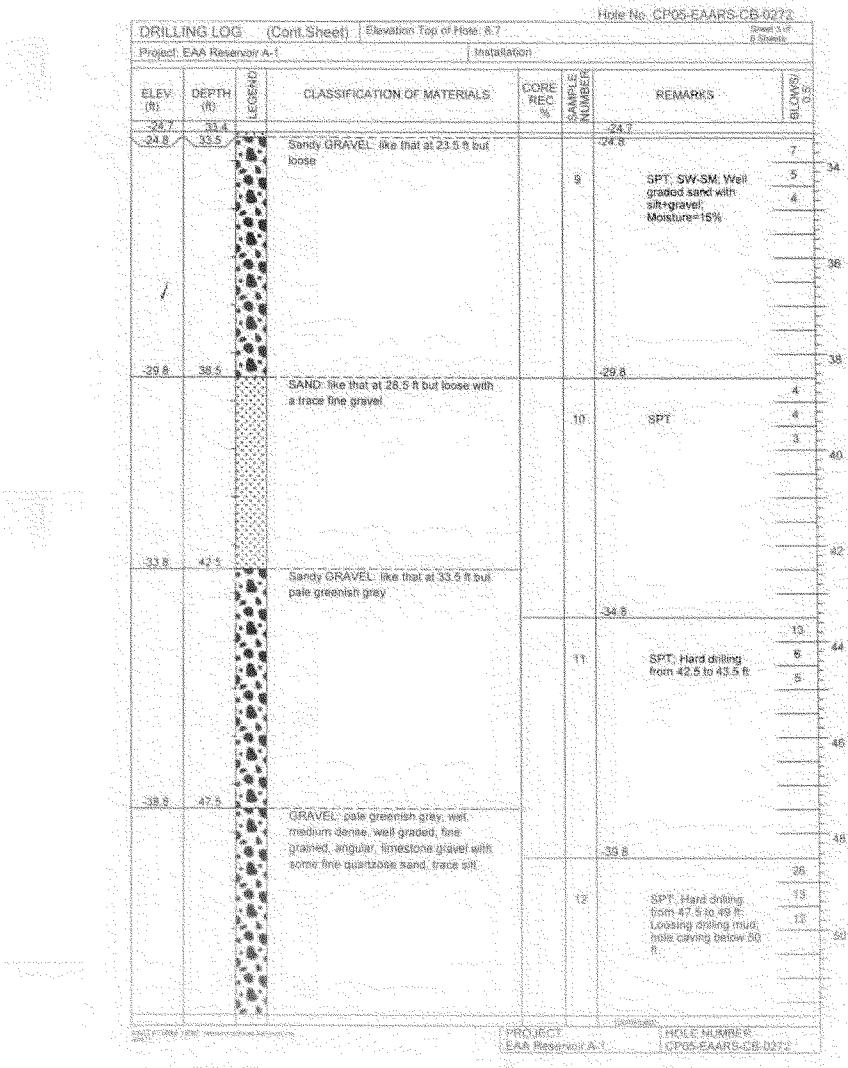
DRILLING LOG | Division: | Installation: | Sheet 1 of 4 Sheets

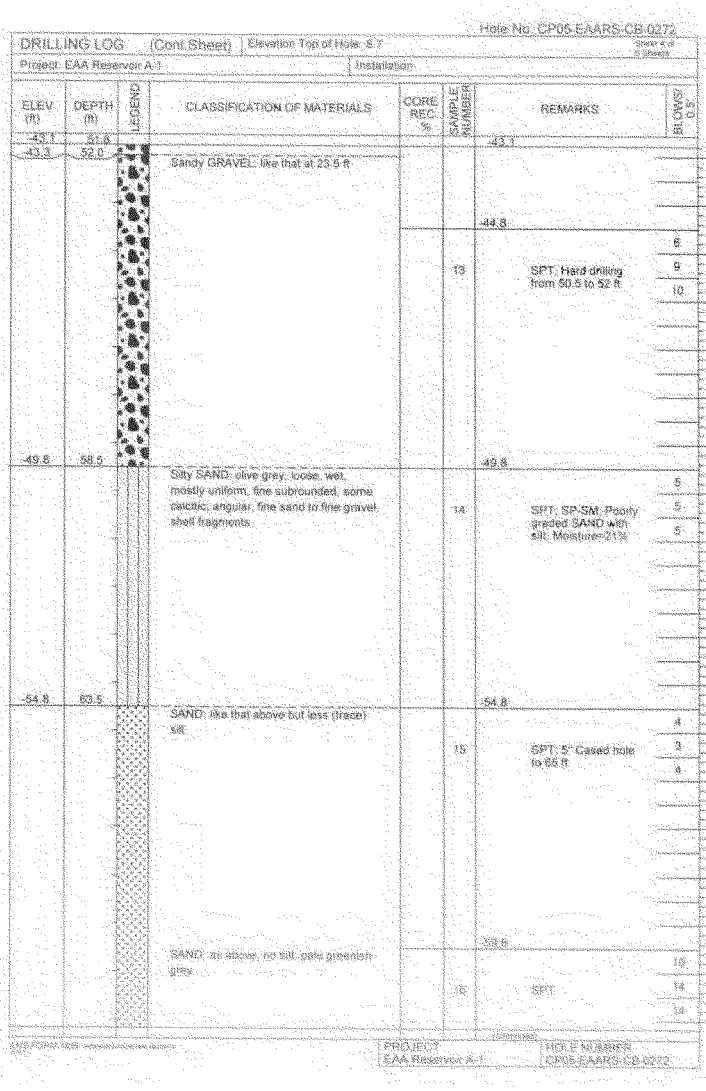
1. Project: EAA Reservoir A 1
2. Location: N750226.1, E765882 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0272
5. Name of Driller: Erik Bluemke
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: N/A
8. Thickness of cap rock: N/A
9. Depth of hole: 100 ft.
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: 1
15. Elevation Ground Water: Not measured
16. Date Hole: Started 7/6/2005 Completed 7/7/2005
17. Elevation Top of Hole: 8.7 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: N. Holst

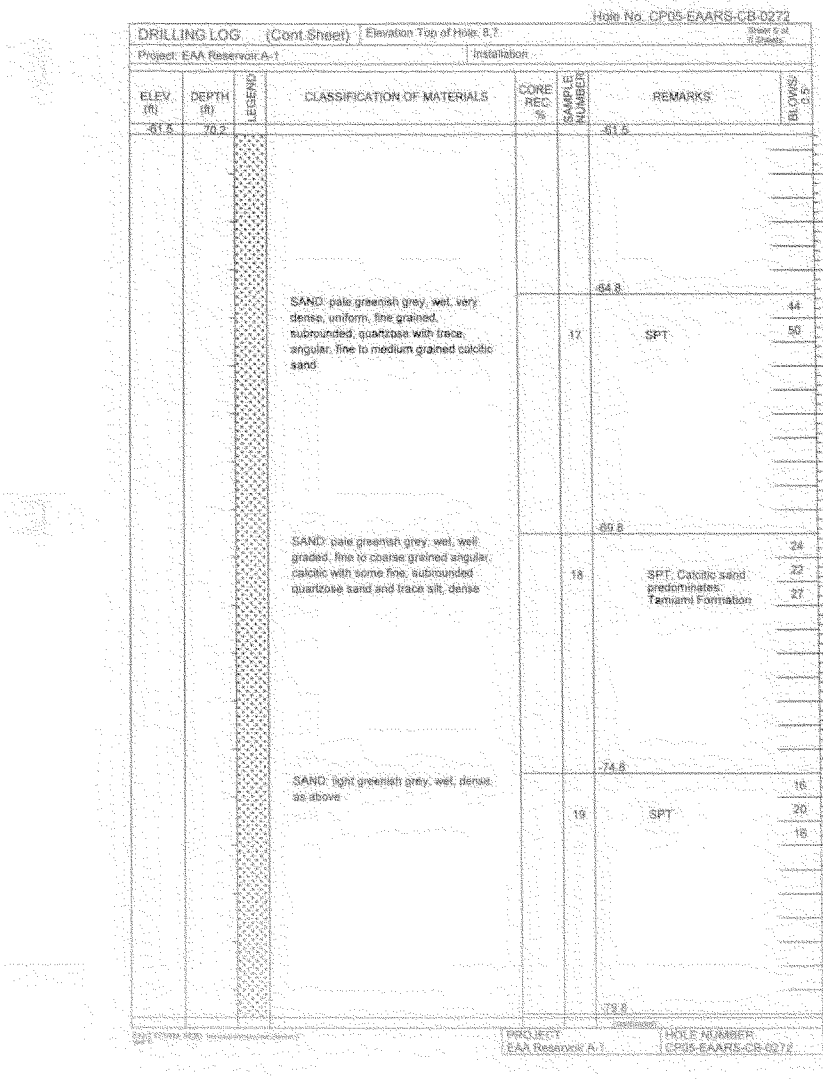
ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
8.7	0.0						
8.5	0.2		Peat: 2 inches			8.7	WOR
			LIMESTONE: cavinok, tan to light brown, mostly fine grained, foraminerous, vuggy, strong and hard to soft, weak and porous		1	7.7 SPT	
				46 (RQD 14%)	1	HQ coring, UCS=2550psi	
3.7	5.0					3.7	
			Gravelly SAND: pale brownish grey, very dense, wet angular, well graded, fine to coarse grained, calcitic, trace silt		2	SPT: SM: Silty sand with gravel: Moisture:19%	6 11 50/2"
1.2	7.5					1.2	
			Sandy Silty GRAVEL: as above but very dense and mostly fine, calcitic gravel		3	SPT	50
-3.3	10.0					-3.3	
			SAND: as above but less dense (medium) with some silt and fine gravel		4	SPT: SM: Silty sand with gravel: Moisture:10%	8 8 7
-8.8	15.5					-8.8	
			Only a few angular fragments of LIMESTONE recovered		5	SPT: Hard drilling at 19.5 ft	50/1"

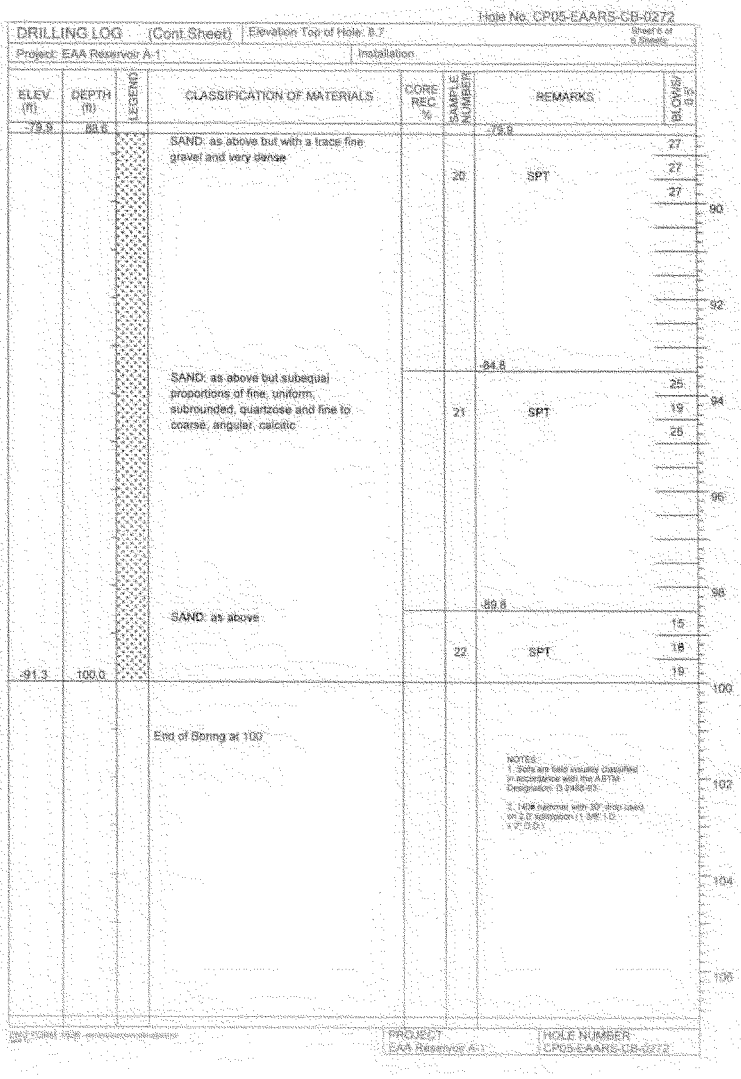
PROJECT: EAA Reservoir A 1 | HOLE NUMBER: CP05-EAARS-CB-0272

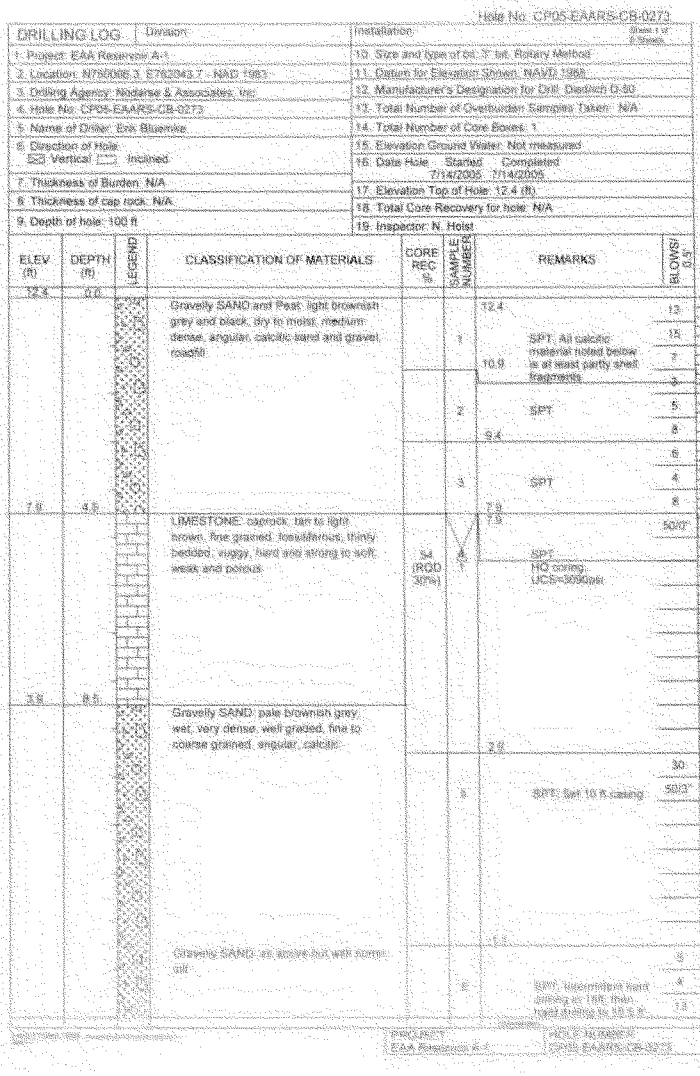

Hole No. CP05-EAARS-CB-0272
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 8.7
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS 0.5
8.7
15.0
-6.3
17.5
-8.8
Gravelly SAND; pale brownish grey, dense, wet, uniform, fine grained, mostly subrounded and quartzose; some fine to coarse, angular, calcitic sand, angular, calcitic gravel
6.3
16
18
5
SPT; SW-SM; Well graded sand with silt+gravel; Moisture=11%
9.8
26
26
14
20
22
23.5
-14.8
Sandy GRAVEL; pale brownish grey, medium dense, fine, angular limestone gravel with fine, subrounded, uniform, quartzose sand
14.8
7
SPT; SW-SM; Well graded sand with silt+gravel; Moisture=15%; Intermittent hard drilling
9
10
10
24
26
28
28.5
-19.8
SAND; pale brownish grey, medium dense, wet, uniform, fine grained, subrounded quartzose, trace fine to medium, angular, calcitic sand
19.8
8
SPT; SP; Poorly graded sand; Moisture=20%
10
14
13
30
32
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0272


Hole No. CP05-EAARS-CB-0272
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: 8.7
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5ft
-24.7
33.4
-24.8
33.5
Sandy GRAVEL: like that at 23.5 ft but loose
9
SPT; SW-SM; Well graded sand with silt+gravel; Moisture=15%
7
5
4
34
36
38
-29.8
38.5
SAND: like that at 28.5 ft but loose with a trace fine gravel
-29.8
10
SPT
4
4
3
40
42
-33.8
42.5
Sandy GRAVEL: like that at 33.5 ft but pale greenish grey
-34.8
11
SPT; Hard drilling from 42.5 to 43.5 ft
13
8
5
44
46
-38.8
47.5
GRAVEL: pale greenish grey, wet, medium dense, well graded, fine grained, angular, limestone gravel with some fine quartzose sand, trace silt
-39.8
12
SPT; Hard drilling from 47.5 to 49 ft; Loosing drilling mud; hole caving below 50 ft
26
15
12
48
50
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0272


Hole No. CP05-EAARS-CB-0272
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 8.7
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5ft
43.1
51.6
43.3
52.0
Sandy GRAVEL: like that at 23.9 ft
44.8
13
SPT: Hard drilling from 50.5 to 52 ft
6
9
10
49.8
58.5
Silty SAND: olive grey, loose, wet, mostly uniform, fine subrounded, some calcitic, angular, fine sand to fine gravel shell fragments
49.8
14
SPT: SP-SM: Poorly graded SAND with silt: Moisture=21%
5
5
5
54.8
63.5
SAND: like that above but less (trace) silt
54.8
15
SPT: 5" Cased hole to 65 ft
4
3
4
58.8
SAND: as above, no silt, pale greenish grey
16
SPT
18
14
12
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0272


Hole No. CP05-EAARS-CB-0272
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 8.7
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/0.5ft
-61.5
70.2
-61.5
72
-64.8
SAND: pale greenish grey, wet, very dense, uniform, fine grained, subrounded, quartzose with trace, angular, fine to medium grained calcitic sand
17
SPT
44
50
74
76
78
-69.8
SAND: pale greenish grey, wet, well graded, fine to coarse grained angular, calcitic with some fine, subrounded quartzose sand and trace silt, dense
18
SPT, Calcitic sand predominates: Tamiami Formation
24
22
27
80
82
-74.8
SAND: light greenish grey, wet, dense, as above
19
SPT
16
20
18
84
86
88
-78.8
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0272


Hole No. CP05-EAARS-CB-0272
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 8.7
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/6"
79.8
80.6
SAND: as above but with a trace fine gravel and very dense
20
SPT
27
27
27
90
92
84.8
SAND: as above but subequal proportions of fine, uniform, subrounded, quartzose and fine to coarse, angular, calcitic
21
SPT
25
19
25
94
96
89.8
SAND: as above
22
SPT
15
18
19
98
100
91.3
100.0
End of Boring at 100
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.5" sampler (1 3/8" I.D. x 2" O.D.)
102
104
106
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0272



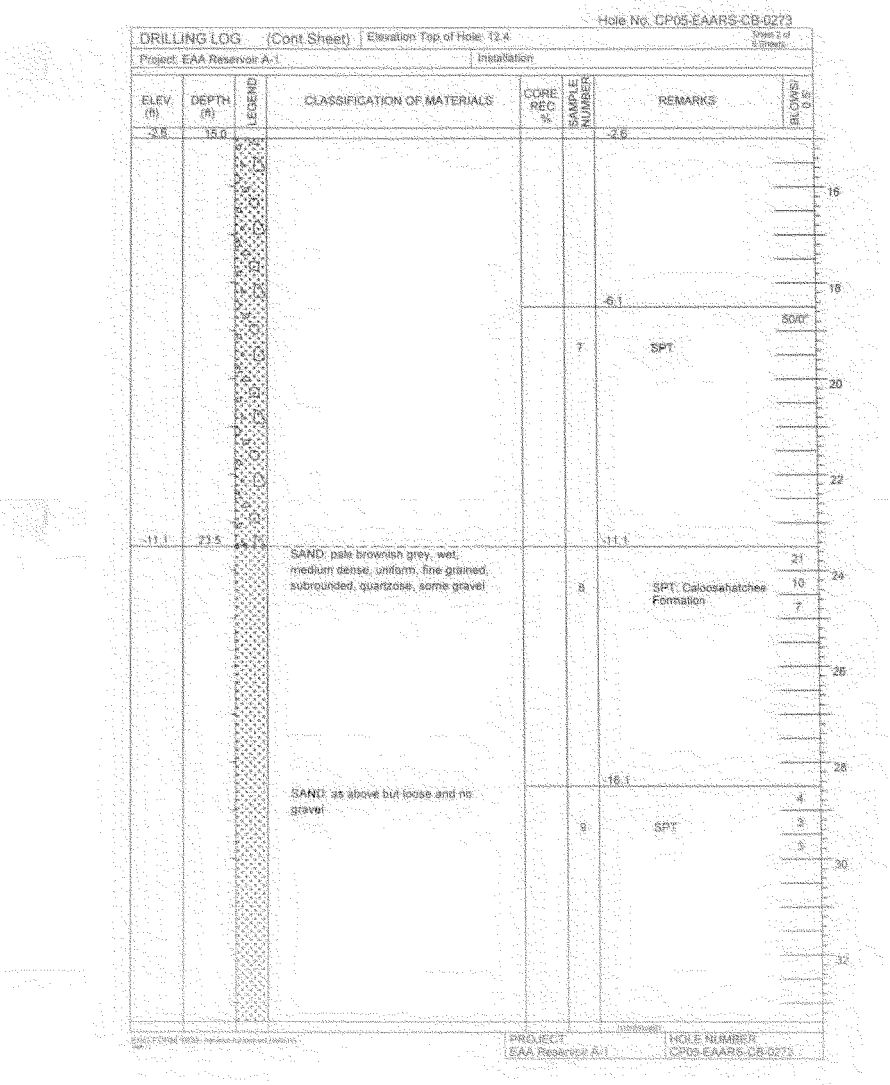
Hole No. CP05-EAARS-CB-0273

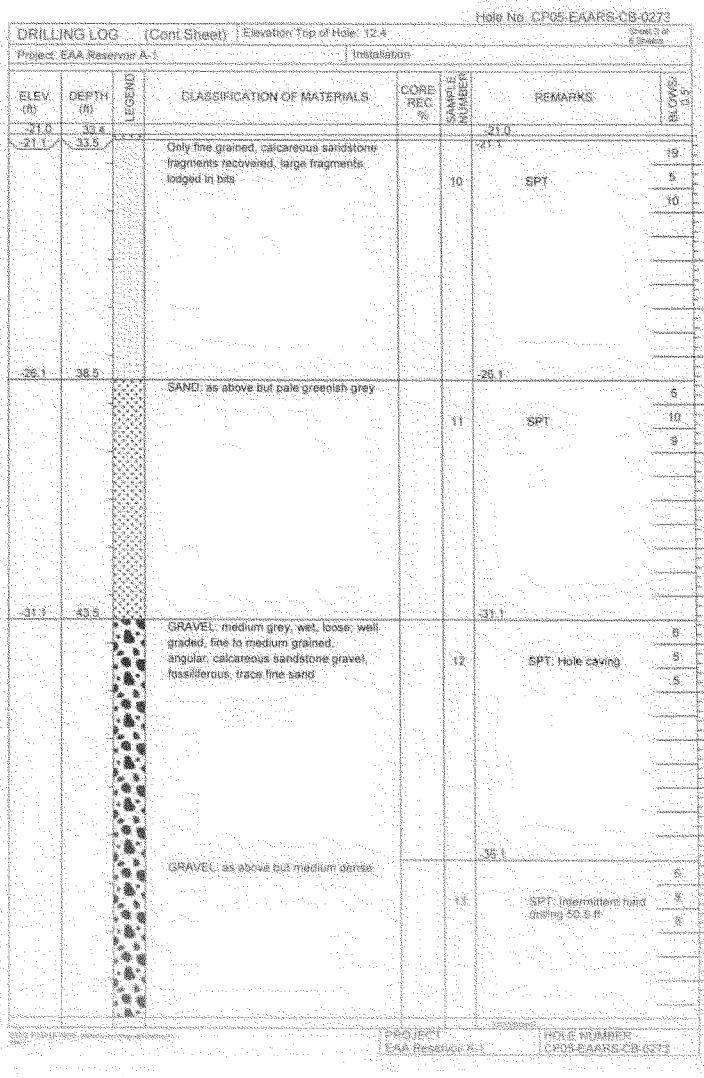
DRILLING LOG | Division | Installation | Sheet 1 of 6 Sheets

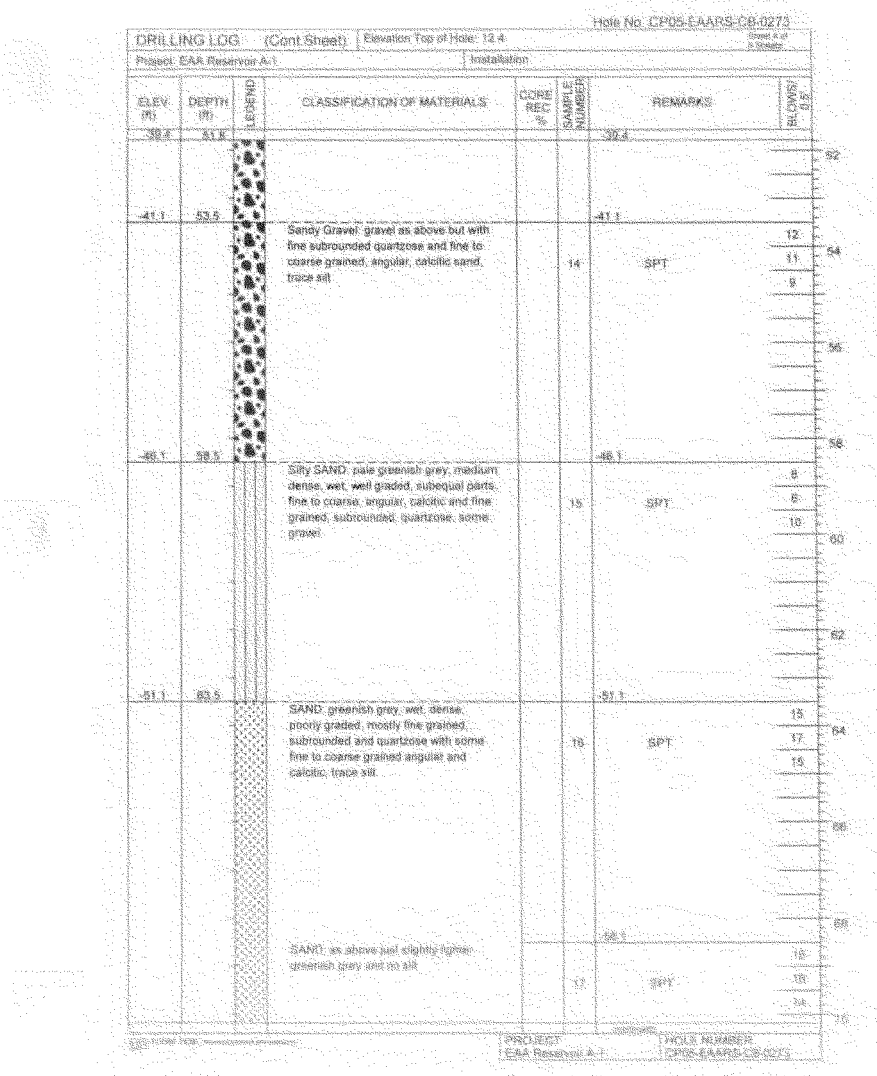
1. Project: EAA Reservoir A-1
2. Location: N750086.3, E762043.7 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0273
5. Name of Driller: Erik Bluemke
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: N/A
8. Thickness of cap rock: N/A
9. Depth of hole: 100 ft
10. Size and type of bit: 5" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: 1
15. Elevation Ground Water: Not measured
16. Date Hole: Started 7/14/2005 Completed 7/14/2005
17. Elevation Top of Hole: 12.4 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: N. Hoist

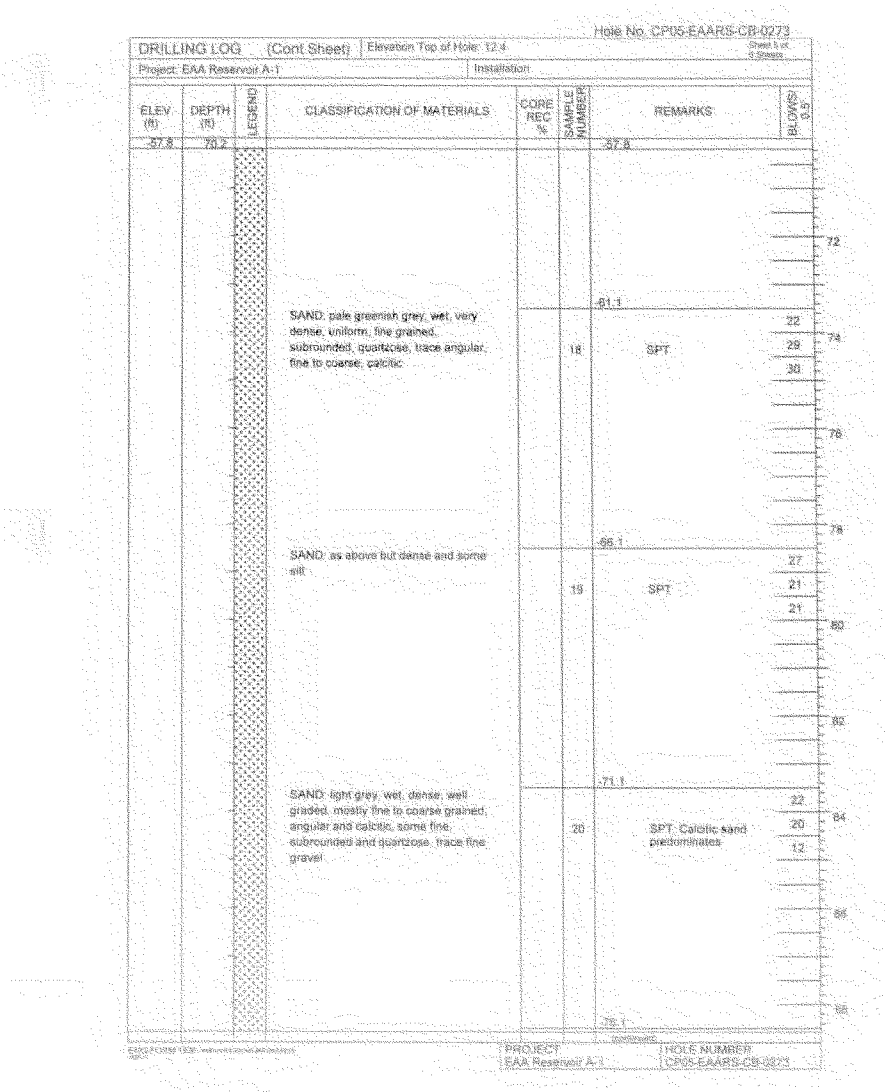
ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.3'
12.4	0.0						
			Gravelly SAND and Peat: light brownish grey and black, dry to moist, medium dense, angular, calcitic sand and gravel, roadfill		1	12.4 SPT. All calcitic material noted below is at least partly shell fragments 10.9	13 15 7
					2	SPT 9.4	5 5 8
					3	SPT 7.9	6 4 8
7.9	4.5		LIMESTONE: caprock, tan to light brown, fine grained, fossiliferous, thinly bedded, vuggy, hard and strong to soft, weak and porous	54 (RQD 30%)	4	7.9 SPT HQ coring; UCS=3090psi	50/0"
3.9	8.5		Gravelly SAND: pale brownish grey, wet, very dense, well graded, fine to coarse grained, angular, calcitic			2.9	30
					5	SPT; Set 10 ft casing	50/2"
			Gravelly SAND: as above but with some silt			1.5	
					6	SPT; Intermittent hard driving at 18ft, then hard driving to 19.5 ft	5 4 13

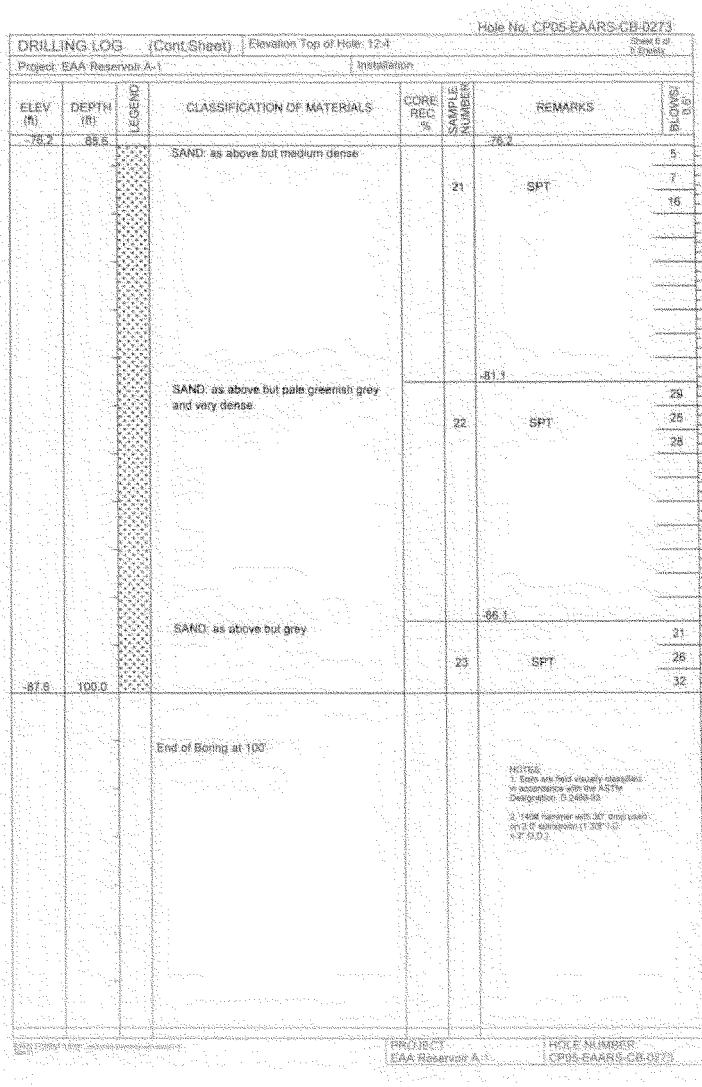
PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0273

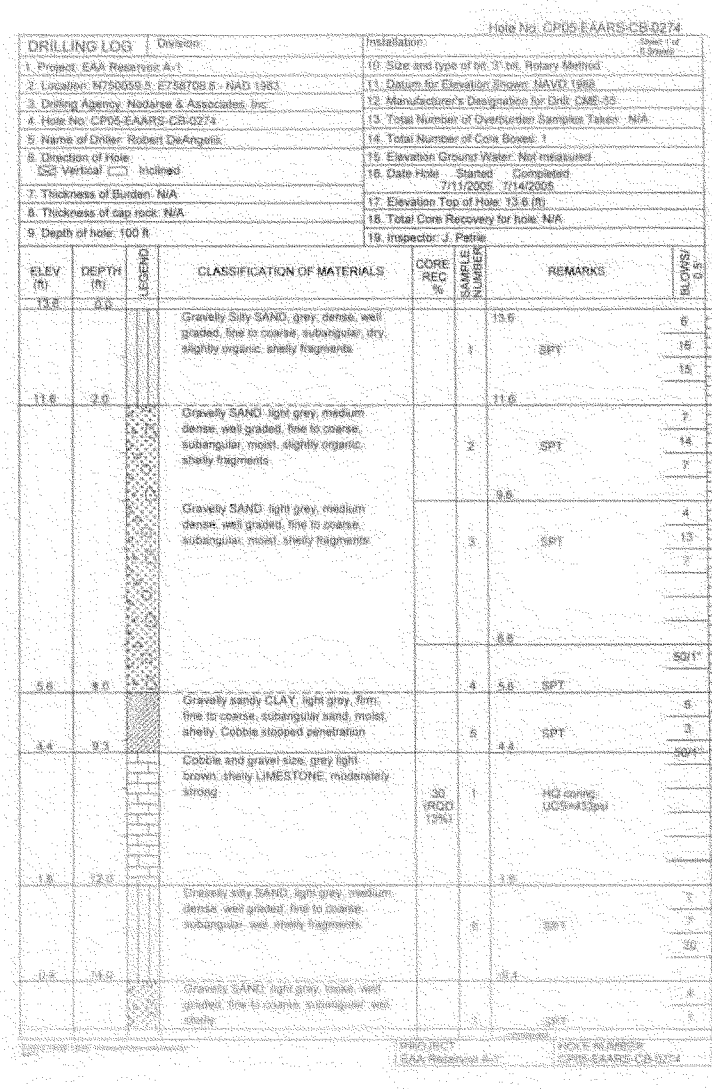

Hole No. CP05-EAARS-CB-0273
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 12.4
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
12.4
-2.6
15.0
-6.1
50/0"
7
SPT
-11.1
23.5
SAND: pale brownish grey, wet, medium dense, uniform, fine grained, subrounded, quartzose, some gravel
8
SPT, Caloosahatchee Formation
21
10
7
-16.1
SAND: as above but loose and no gravel
9
SPT
4
3
3
16
18
20
22
24
26
28
30
32
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0273


Hole No. CP05-EAARS-CB-0273
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 12.4
Sheet 3 of 6 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
-21.0
33.4
-21.1
33.5
Only fine grained, calcareous sandstone fragments recovered, large fragments lodged in bits
10
SPT
19
5
10
34
36
38
-26.1
38.5
SAND: as above but pale greenish grey
11
SPT
6
10
9
40
42
-31.1
43.5
GRAVEL: medium grey, wet, loose, well graded, fine to medium grained, angular, calcareous sandstone gravel, fossiliferous, trace fine sand
12
SPT. Hole caving
8
5
5
44
46
48
35.1
GRAVEL: as above but medium dense
13
SPT. Intermittent hard drilling 50.5 ft
6
8
8
50
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0273


Hole No. CP05-EAARS-CB-0273
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 12.4
Project: EAA Reservoir A-1 Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-39.6
51.8
-41.1
53.5
Sandy Gravel: gravel as above but with fine subrounded quartzose and fine to coarse grained, angular, calcitic sand, trace silt
14
SPT
12
11
9
-46.1
58.5
Silty SAND: pale greenish grey, medium dense, wet, well graded, subequal parts fine to coarse, angular, calcitic and fine grained, subrounded, quartzose, some gravel
15
SPT
8
8
10
-51.1
63.5
SAND: greenish grey, wet, dense, poorly graded, mostly fine grained, subrounded and quartzose with some fine to coarse grained angular and calcitic, trace silt
16
SPT
15
17
15
SAND: as above but slightly lighter greenish grey and no silt
17
SPT
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0273


Hole No. CP05-EAARS-CB-0273
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 12.4
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
-57.8
70.2
-57.8
72
-61.1
SAND, pale greenish grey, wet, very dense, uniform, fine grained, subrounded, quartzose, trace angular, fine to coarse, calcitic
18
SPT
22
29
30
74
76
-66.1
SAND, as above but dense and some silt
19
SPT
27
21
21
80
82
-71.1
SAND, light grey, wet, dense, well graded, mostly fine to coarse grained, angular and calcitic, some fine, subrounded and quartzose, trace fine gravel
20
SPT, Calcitic sand predominates
22
20
12
84
86
-75.1
88
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0273


Hole No. CP05-EAARS-CB-0273
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: 12.4
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5ft
-75.2
88.5
SAND: as above but medium dense
75.2
21
SPT
5
7
16
90
92
81.1
SAND: as above but pale greenish grey and very dense
22
SPT
29
25
28
94
96
86.1
SAND: as above but grey
23
SPT
31
26
32
-87.6
100.0
98
100
End of Boring at 100'
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93
2. 140# hammer with 30" drop used on 2.5" sampler (1 3/8" I.D. x 2" O.D.)
102
104
106
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0273



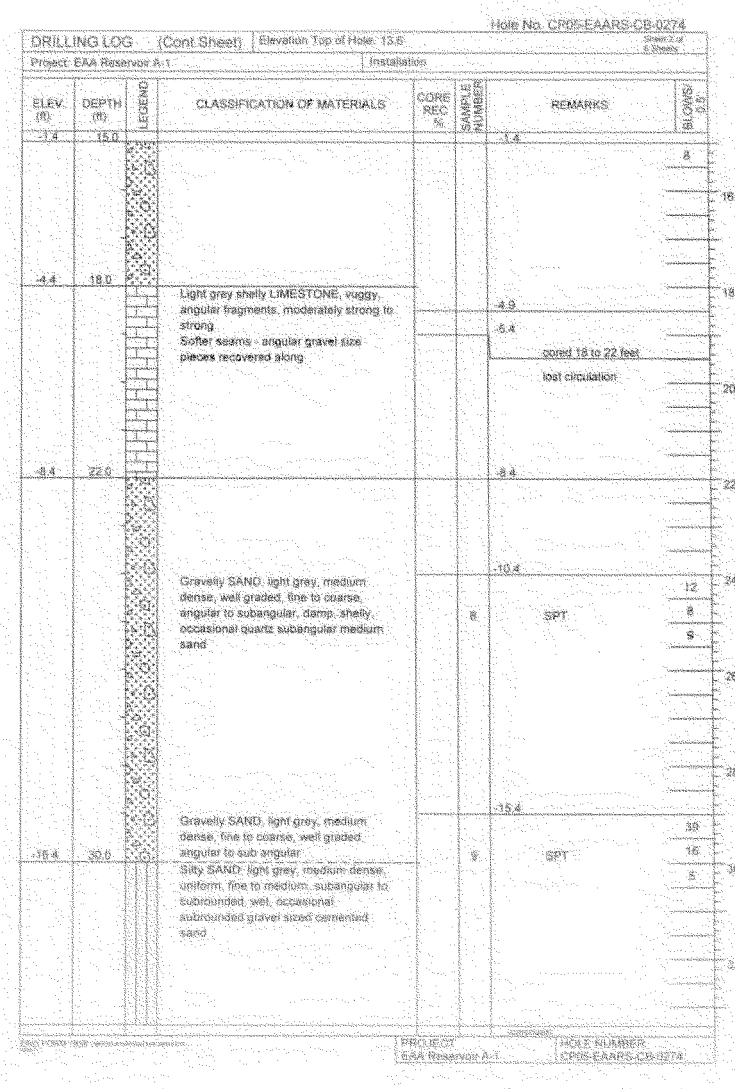
Hole No. CP05-EAARS-CB-0274

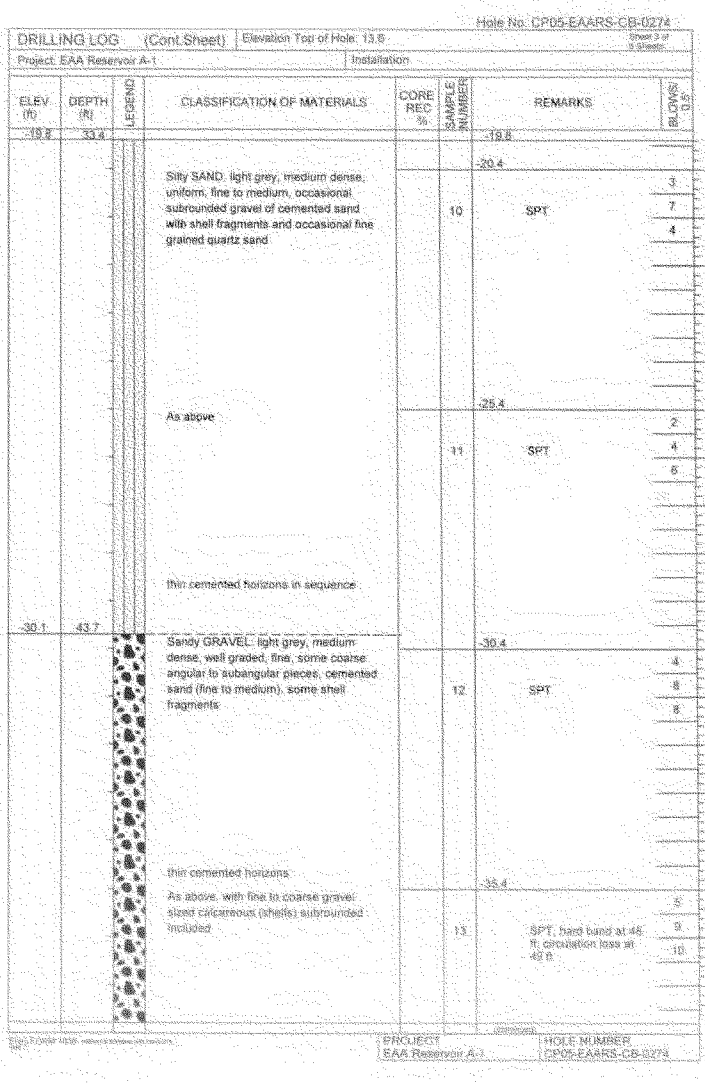
DRILLING LOG | Division: | Installation: | Sheet 1 of 1 Sheets

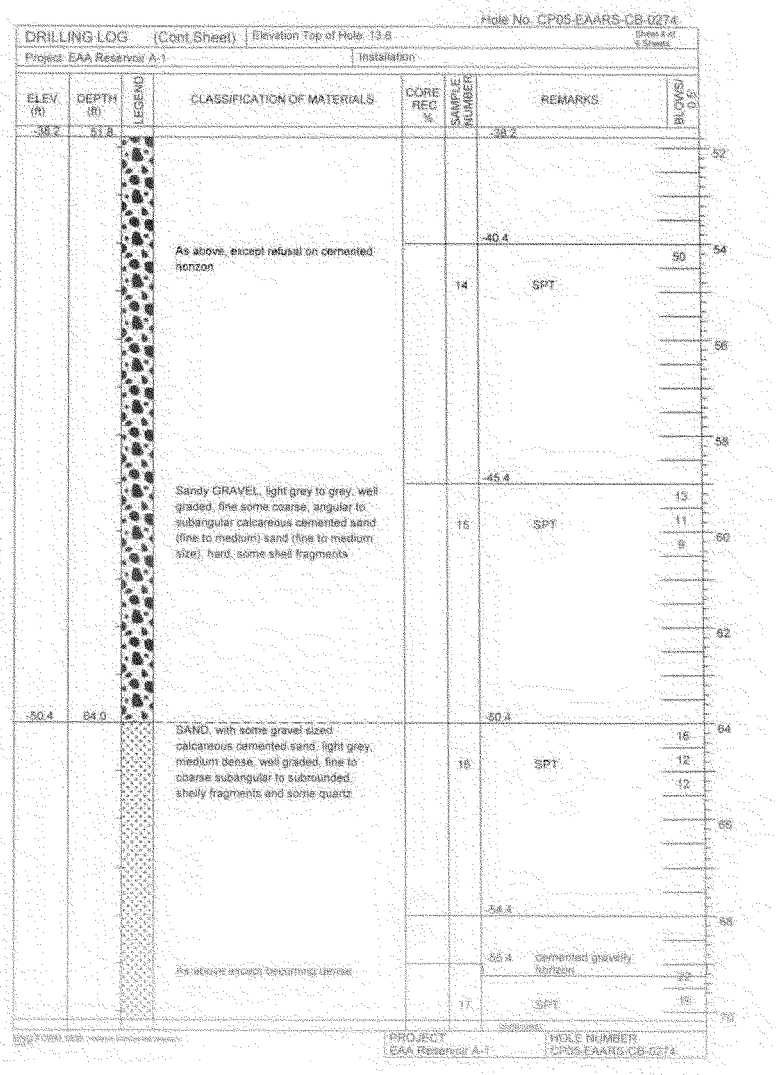
1. Project: EAA Reservoir A-1
2. Location: N750059.5 E758708.5 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0274
5. Name of Driller: Robert DeAngelis
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: N/A
8. Thickness of cap rock: N/A
9. Depth of hole: 100 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: CME-55
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: 1
15. Elevation Ground Water: Not measured
16. Date Hole: Started 7/11/2005 Completed 7/14/2005
17. Elevation Top of Hole: 13.6 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: J. Petrie

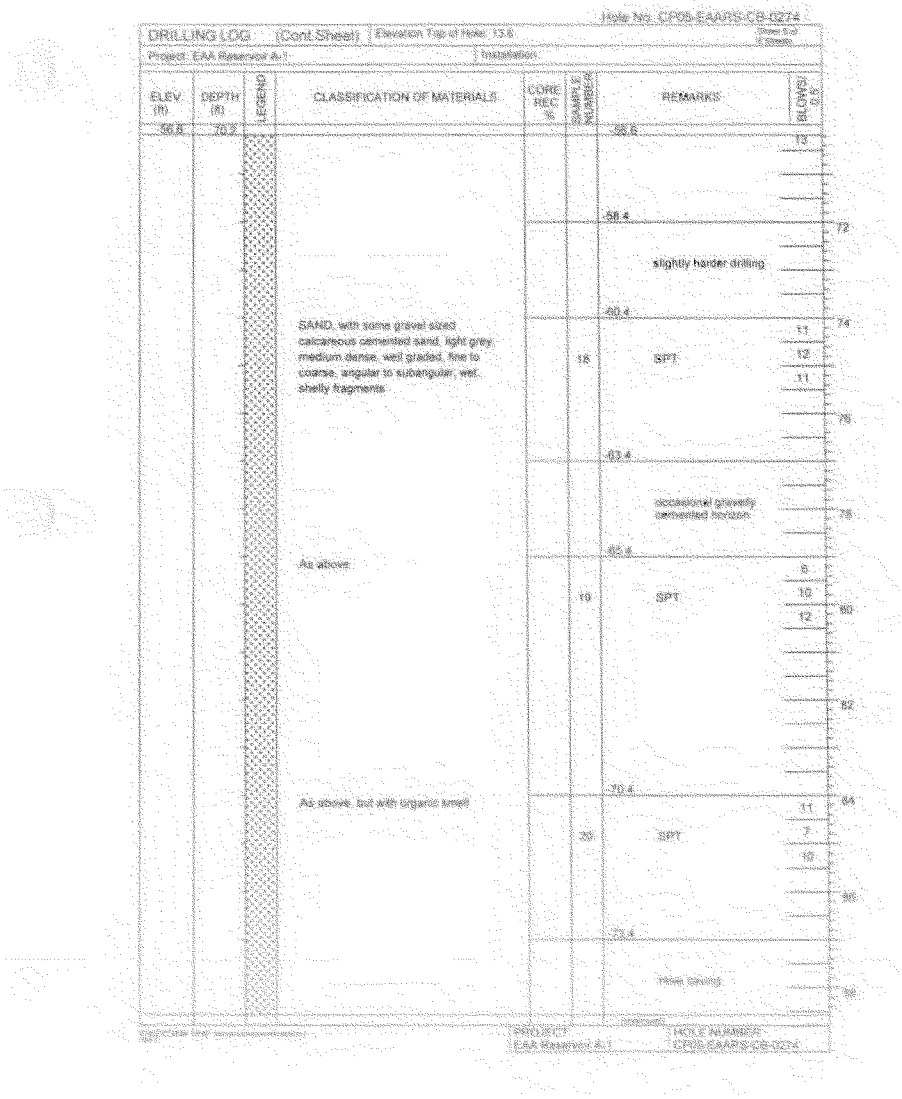
ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/0.5'
13.6	0.0						
			Gravelly Silty SAND, grey, dense, well graded, fine to coarse, subangular, dry, slightly organic, shelly fragments		1	13.6 SPT	6 15 15
11.6	2.0					11.6	
			Gravelly SAND, light grey, medium dense, well graded, fine to coarse, subangular, moist, slightly organic, shelly fragments		2	SPT	7 14 7
						9.6	
			Gravelly SAND, light grey, medium dense, well graded, fine to coarse, subangular, moist, shelly fragments		3	SPT	4 13 7
						6.6	6
					4	5.6 SPT	50/1"
5.6	8.0		Gravelly sandy CLAY, light grey, firm, fine to coarse, subangular sand, moist, shelly. Cobble stopped penetration		5	SPT	6 3 50/4"
4.4	9.3					4.6	
			Cobble and gravel size, grey light brown, shelly LIMESTONE, moderately strong	30 (ROD 13%)	1	HQ coring, (40.5x43.5in)	
1.6	12.0					1.6	
			Gravelly silty SAND, light grey, medium dense, well graded, fine to coarse, subangular, wet, shelly fragments		6	SPT	7 5 50
0.5	14.0					0.1	
			Gravelly SAND, light grey, loose, well graded, fine to coarse, subangular, wet, shelly			SPT	4 3

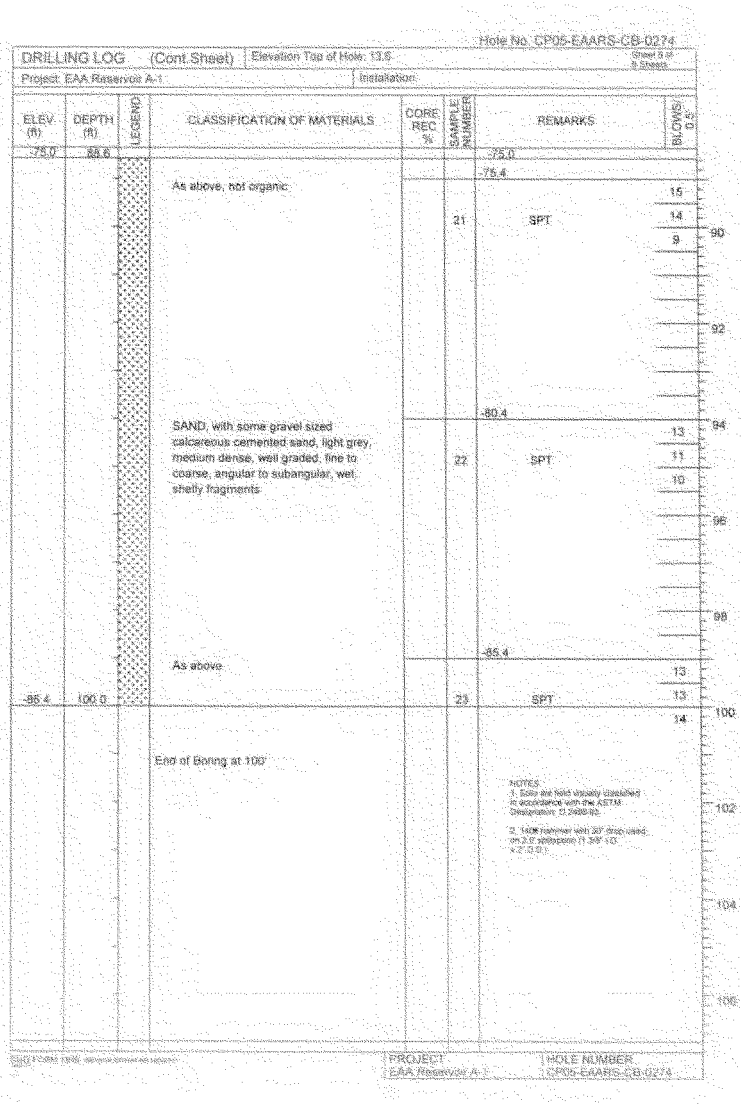
PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0274

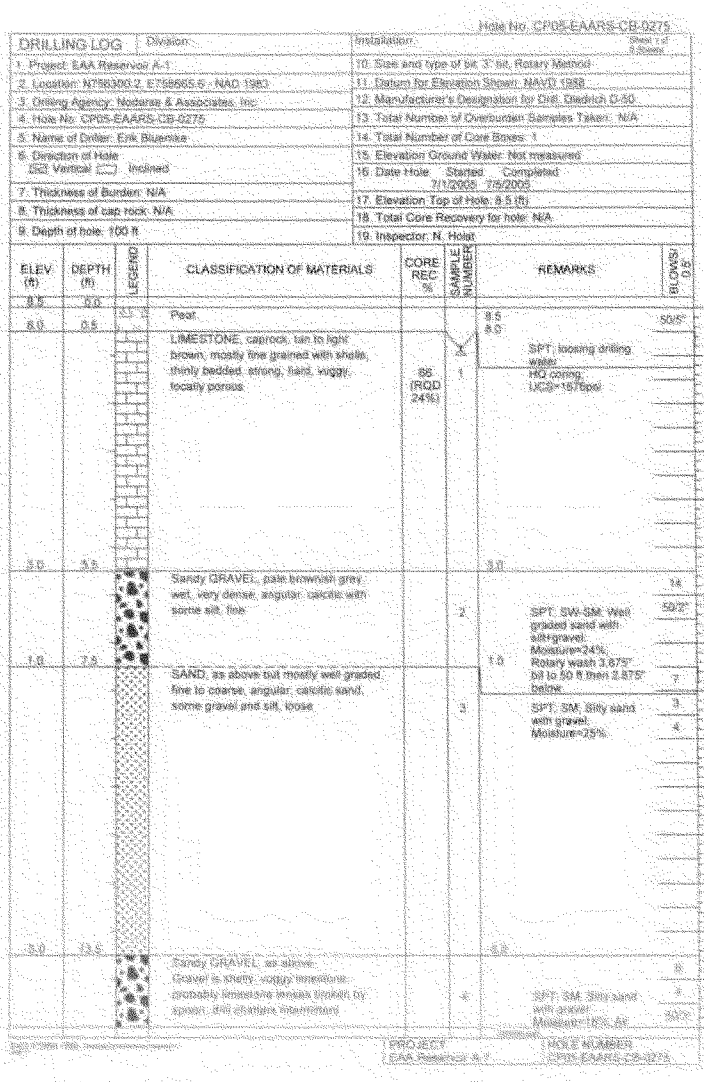

Hole No. CRDS-EAARS-CB-0274
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 13.6
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
-1.4
15.0
-4.4
18.0
Light grey shelly LIMESTONE, vuggy, angular fragments, moderately strong to strong
Softer seams - angular gravel size pieces recovered along
-8.4
22.0
cored 18 to 22 feet
lost circulation
Gravelly SAND, light grey, medium dense, well graded, fine to coarse, angular to subangular, damp, shelly, occasional quartz subangular medium sand
SPT
-15.4
30.0
Gravelly SAND, light grey, medium dense, fine to coarse, well graded angular to sub angular
Silty SAND, light grey, medium dense, uniform, fine to medium, subangular to subrounded, wet, occasional subrounded gravel sized cemented sand
SPT
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CRDS-EAARS-CB-0274


Hole No. CP05-EAARS-CB-0274
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 13.6
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/0.5ft
-19.8
33.4
-20.4
Silty SAND, light grey, medium dense, uniform, fine to medium, occasional subrounded gravel of cemented sand with shell fragments and occasional fine grained quartz sand
10
SPT
3
7
4
34
36
38
-25.4
As above
11
SPT
2
4
6
40
42
thin cemented horizons in sequence
-30.1
43.7
-30.4
Sandy GRAVEL, light grey, medium dense, well graded, fine, some coarse angular to subangular pieces, cemented sand (fine to medium), some shell fragments
12
SPT
4
8
8
44
46
48
thin cemented horizons
-35.4
As above, with fine to coarse gravel sized calcareous (shells) subrounded included
13
SPT, hard band at 48 ft, circulation loss at 49 ft
5
9
10
50
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0274


Hole No. CP05-EAARS-CB-0274
DRILLING LOG (Cont Sheet) Elevation Top of Hole 13.8
Project EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-38.2
51.8
As above, except refusal on cemented horizon
-40.4
14
SPT
50
-45.4
Sandy GRAVEL, light grey to grey, well graded, fine some coarse, angular to subangular calcareous cemented sand (fine to medium) sand (fine to medium size), hard, some shell fragments
15
SPT
13
11
9
-50.4
64.0
SAND, with some gravel sized calcareous cemented sand, light grey, medium dense, well graded, fine to coarse subangular to subrounded shelly fragments and some quartz
-50.4
16
SPT
18
12
12
-54.4
-55.4
cemented gravelly horizon
17
SPT
19
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0274


DRILLING LOG (Cont.Sheet)
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE or NUMBER
REMARKS
BLOWS/ 6"
SAND, with some gravel sized calcareous cemented sand, light grey, medium dense, well graded, fine to coarse, angular to subangular, wet, shelly fragments
SPT
slightly harder drilling
occasional gravelly cemented horizon
As above
As above, but with organic smell
Rock Coring
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CPP05-EAARR-CB-0274


Hole No. CP05-EAARS-CB-0274
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: 13.6
Sheet 8 of 9 Sheets
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
-75.0
88.6
-75.4
As above, not organic
21
SPT
15
14
9
90
92
-80.4
SAND, with some gravel sized calcareous cemented sand, light grey, medium dense, well graded, fine to coarse, angular to subangular, wet, shelly fragments
22
SPT
13
11
10
94
96
98
-85.4
As above
23
SPT
13
13
14
-95.4
100.0
100
End of Boring at 100'
102
104
106
NOTES
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.5" sampler (1.375" I.D. x 2" O.D.).
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0274



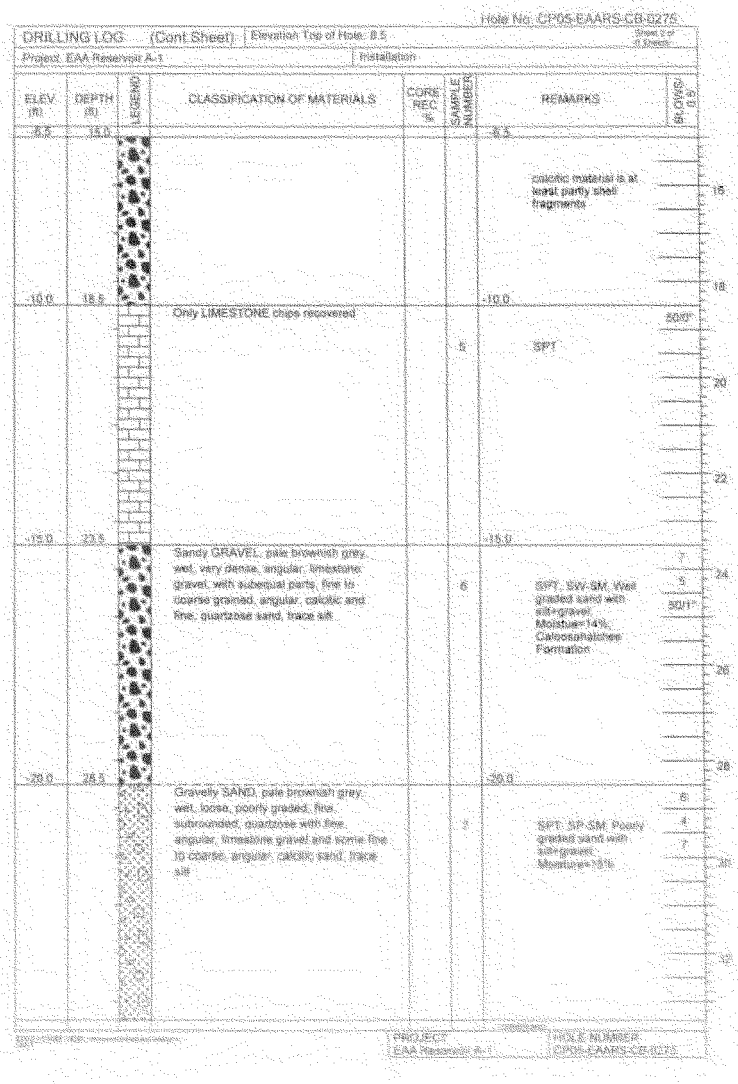
Hole No. CP05-EAARS-CB-0275

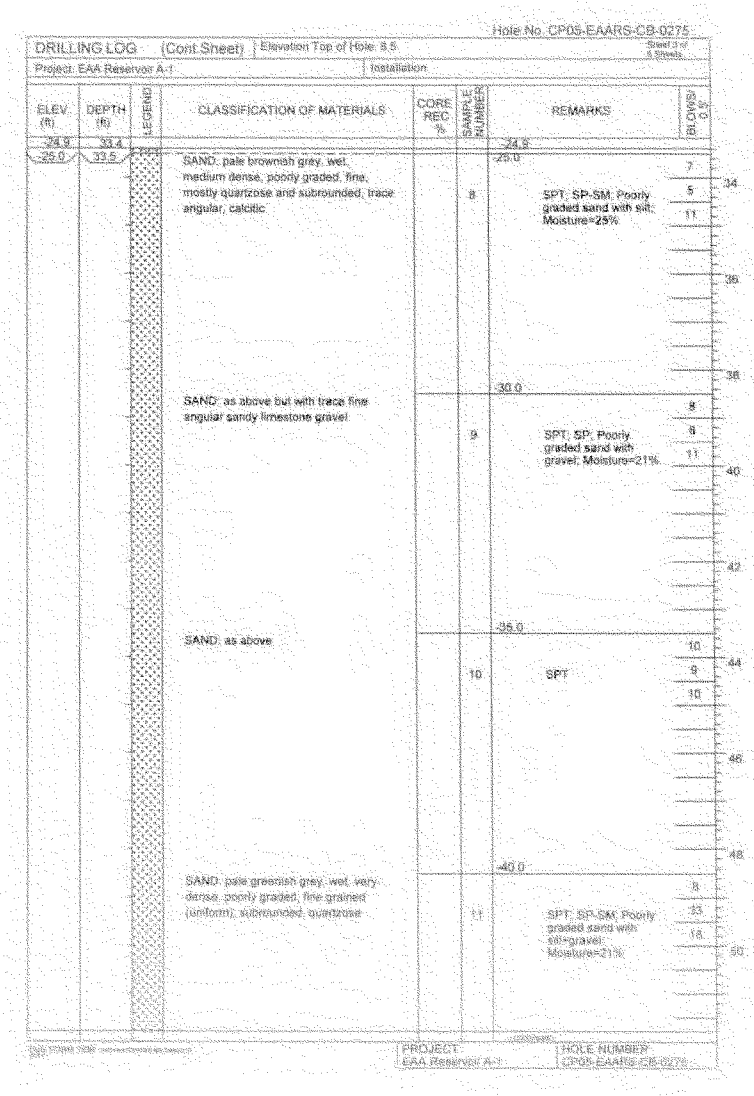
DRILLING LOG Division: Installation: Sheet 1 of 3 Sheets

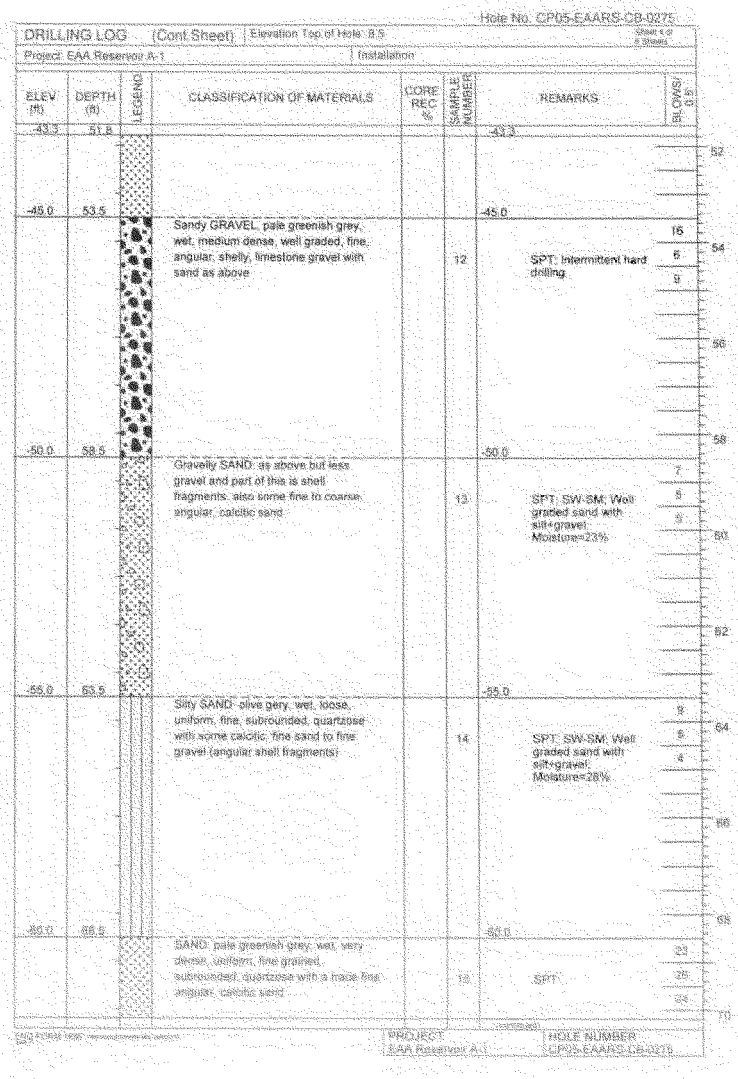
1. Project: EAA Reservoir A-1
2. Location: N758300.2, E756665.5 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No. CP05-EAARS-CB-0275
5. Name of Driller: Erik Bluemke
6. Direction of Hole: (☒) Vertical (☐) Inclined
7. Thickness of Burden: N/A
8. Thickness of cap rock: N/A
9. Depth of hole: 100 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: 1
15. Elevation Ground Water: Not measured
16. Date Hole: Started 7/1/2005 Completed 7/5/2005
17. Elevation Top of Hole: 8.5 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: N. Holst

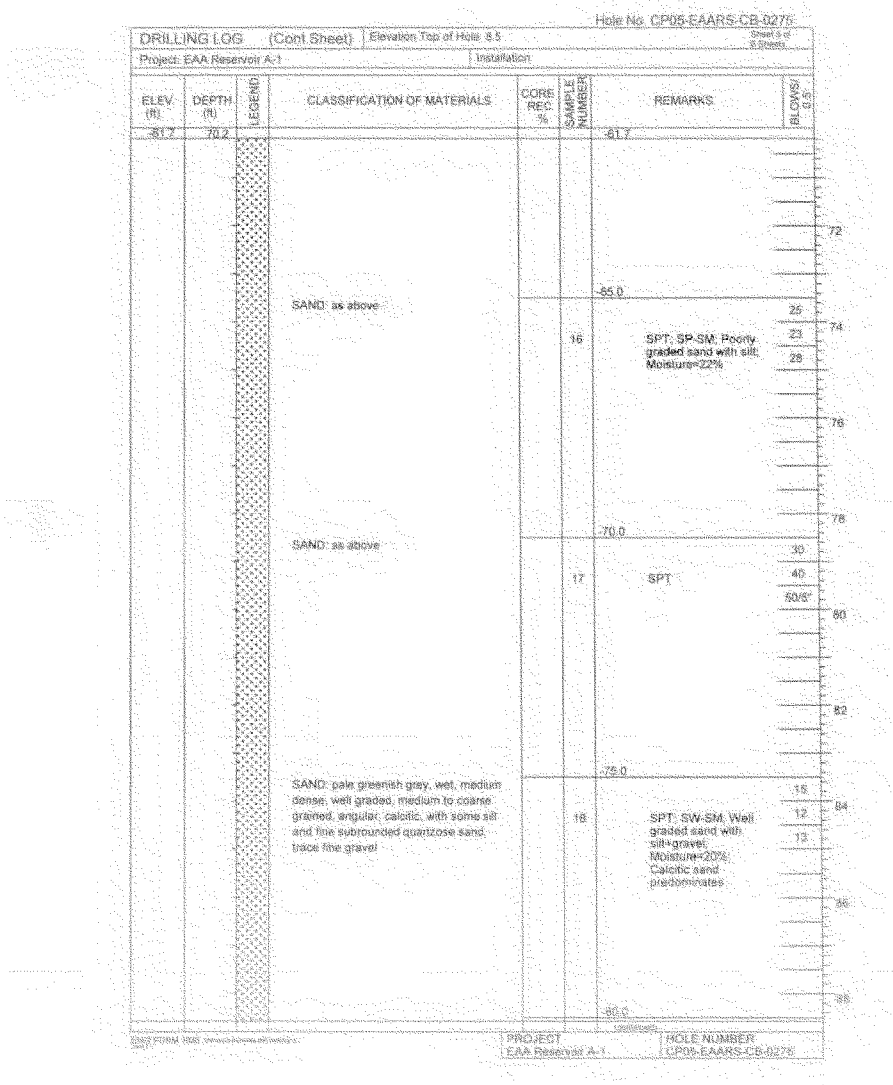
ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
8.5	0.0						
8.0	0.5		Peat.			8.5 to 8.0	50/5"
			LIMESTONE, caprock, tan to light brown, mostly fine grained with shells, thinly bedded, strong, hard, vuggy, locally porous.	86 (RQD 24%)	1	SPT, loosing drilling water. HQ coring; UCS=16.7ksi	
3.0	5.5					3.0	
1.0	7.5		Sandy GRAVEL, pale brownish grey, wet, very dense, angular, calcite with some silt, fine.		2	SPT, SW-SM, Well graded sand with silt+gravel. Moisture=24%. Rotary wash 3.875" bit to 50 ft then 2.875" below.	14 50/2"
			SAND, as above but mostly well graded fine to coarse, angular, calcitic sand, some gravel and silt, loose.		3	SPT, SM, Silty sand with gravel. Moisture=25%	3 4
-3.0	11.5					-3.0	
			Sandy GRAVEL, as above. Gravel is shelly, vuggy limestone, probably limestone recess broken by spoon, drill chatters intermittent.		4	SPT, SM, Silty sand with gravel. Moisture=16% dry	8 3 50/5"

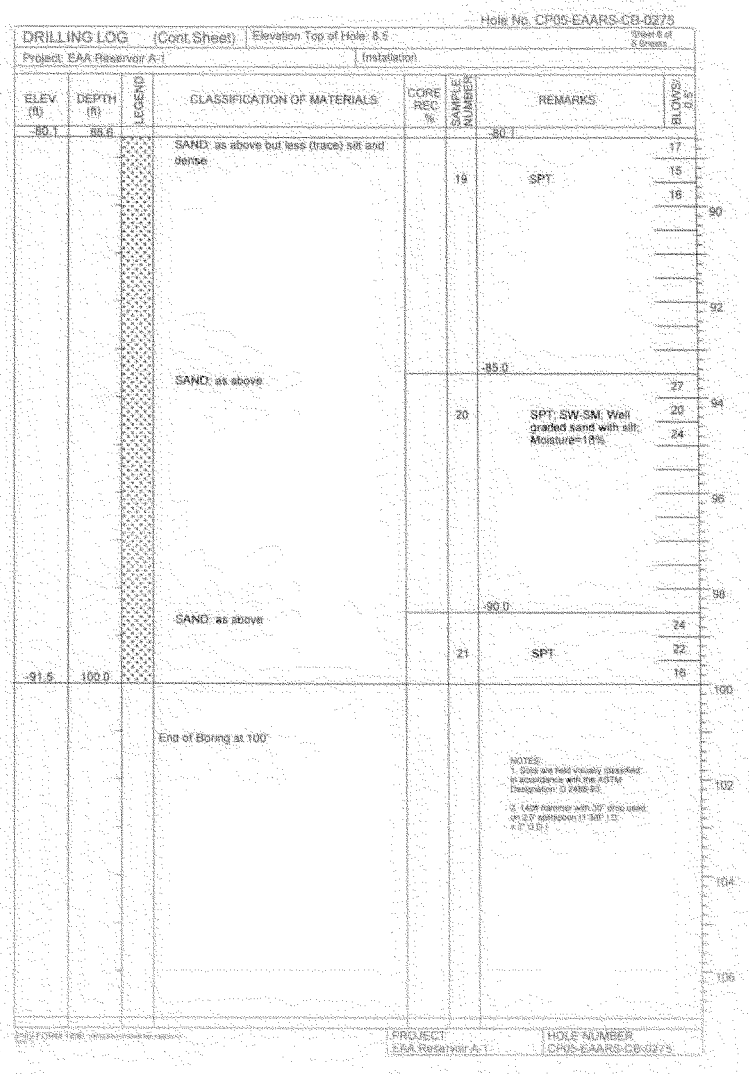
PROJECT: EAA Reservoir A-1 HOLE NUMBER: CP05-EAARS-CB-0275

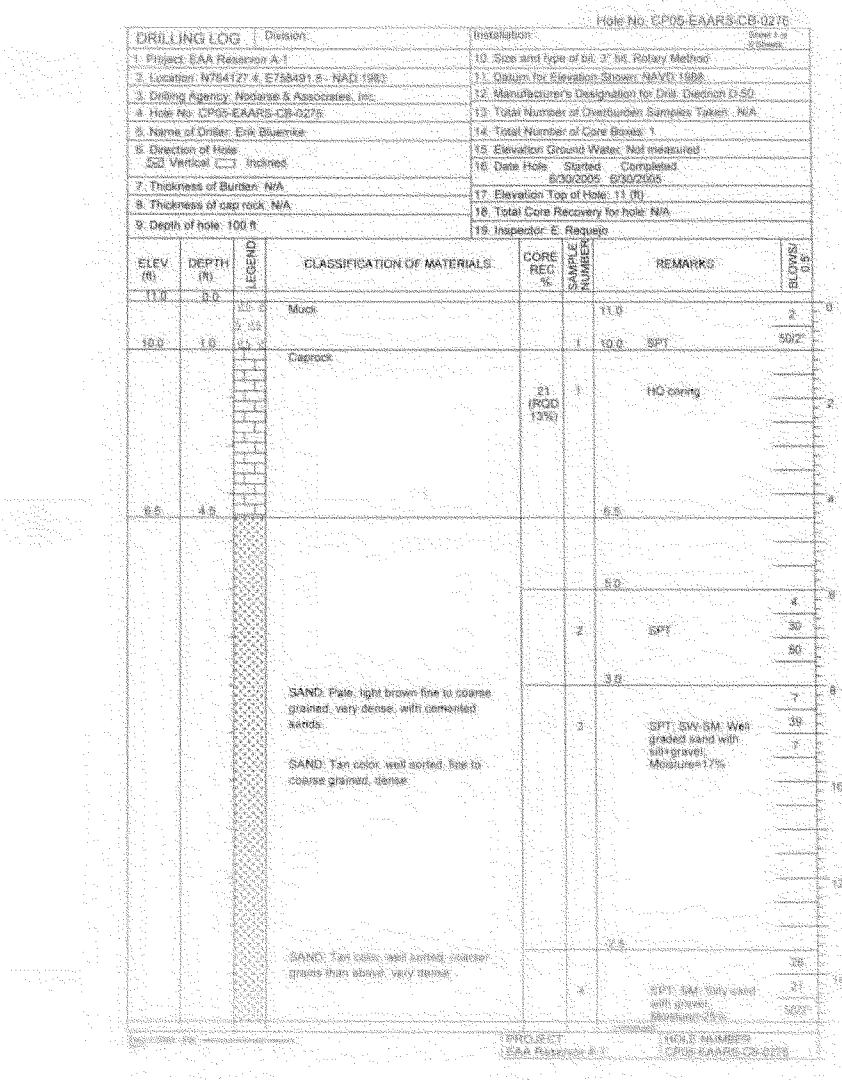

Hole No. CP05-EAARS-CB-0275
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 8.5
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS / 6"
8.5
18.5
calcitic material is at least partly shell fragments
-10.0
Only LIMESTONE chips recovered
SPT
50/0"
-15.0
23.5
Sandy GRAVEL, pale brownish grey, wet, very dense, angular, limestone gravel, with subequal parts, fine to coarse grained, angular, calcitic and fine, quartzose sand, trace silt
SPT, SW-SM, Well graded sand with silt+gravel. Moisture=14%. Calcosphaerites Formation
7
5
30/1"
-20.0
28.5
Gravelly SAND, pale brownish grey, wet, loose, poorly graded, fine, subrounded, quartzose with few, angular, limestone gravel and some fine to coarse, angular, calcitic sand, trace silt
SPT, SP-SM, Poorly graded sand with silt+gravel. Moisture=15%
6
4
7
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0275


Hole No. CP05-EAARS-CB-0275
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 9.5
Sheet 3 of 4 Sheets
Project: EAA Reservoir A-1 Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
-24.5
33.4
-25.0
33.5
SAND: pale brownish grey, wet, medium dense, poorly graded, fine, mostly quartzose and subrounded, trace angular, calcitic
8
SPT; SP-SM; Poorly graded sand with silt; Moisture=25%
7
5
11
34
36
38
-30.0
SAND: as above but with trace fine angular sandy limestone gravel
9
SPT; SP; Poorly graded sand with gravel; Moisture=21%
8
8
11
40
42
-35.0
SAND: as above
10
SPT
10
9
10
44
46
48
-40.0
SAND: pale greenish grey, wet, very dense, poorly graded, fine grained (uniform), subrounded, quartzose
11
SPT; SP-SM; Poorly graded sand with silt+gravel; Moisture=21%
8
33
18
50
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0275


Hole No. CP05-EAARS-CB-0275
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 8.5
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
-43.3
51.8
-45.0
53.5
Sandy GRAVEL, pale greenish grey, wet, medium dense, well graded, fine, angular, shelly, limestone gravel with sand as above
12
SPT: Intermittent hard drilling
-50.0
58.5
Gravelly SAND: as above but less gravel and part of this is shell fragments, also some fine to coarse angular, calcitic sand
13
SPT: SW-SM; Well graded sand with silt+gravel; Moisture=23%
-55.0
63.5
Silty SAND: olive gery, wet, loose, uniform, fine, subrounded, quartzose with some calcitic, fine sand to fine gravel (angular shell fragments)
14
SPT: SW-SM; Well graded sand with silt+gravel; Moisture=28%
-60.0
68.5
SAND: pale greenish grey, wet, very dense, uniform, fine grained, subrounded, quartzose with a trace fine angular, calcitic sand
15
SPT
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0275


Hole No. CP05-EAARS-CB-0275
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 8.5
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
-61.7
70.2
SAND: as above
-65.0
16
SPT; SP-SM; Poorly graded sand with silt; Moisture=22%
25
23
28
74
76
78
-70.0
SAND: as above
17
SPT
39
40
50/6"
80
82
-75.0
SAND: pale greenish gray, wet, medium dense, well graded, medium to coarse grained, angular, calcitic, with some silt and fine subrounded quartzose sand, trace fine gravel
18
SPT; SW-SM; Well graded sand with silt+gravel; Moisture=20%; Calcitic sand predominates
16
12
13
84
86
88
-90.0
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0275


Hole No. CP09-EAARS-CB-0275
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: 8.5
Project: EAA Reservoir A-1 Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 6"
80.1
88.6
SAND: as above but less (trace) silt and dense
19
SPT
17
15
16
90
92
-85.0
SAND: as above
20
SPT; SW-SM; Well graded sand with silt; Moisture=18%
27
20
24
94
96
-90.0
SAND: as above
21
SPT
24
22
18
-91.5
100.0
98
100
End of Boring at 100'
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.5" split spoon (1 3/8" I.D. x 2" O.D.)
102
104
106
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP09-EAARS-CB-0275



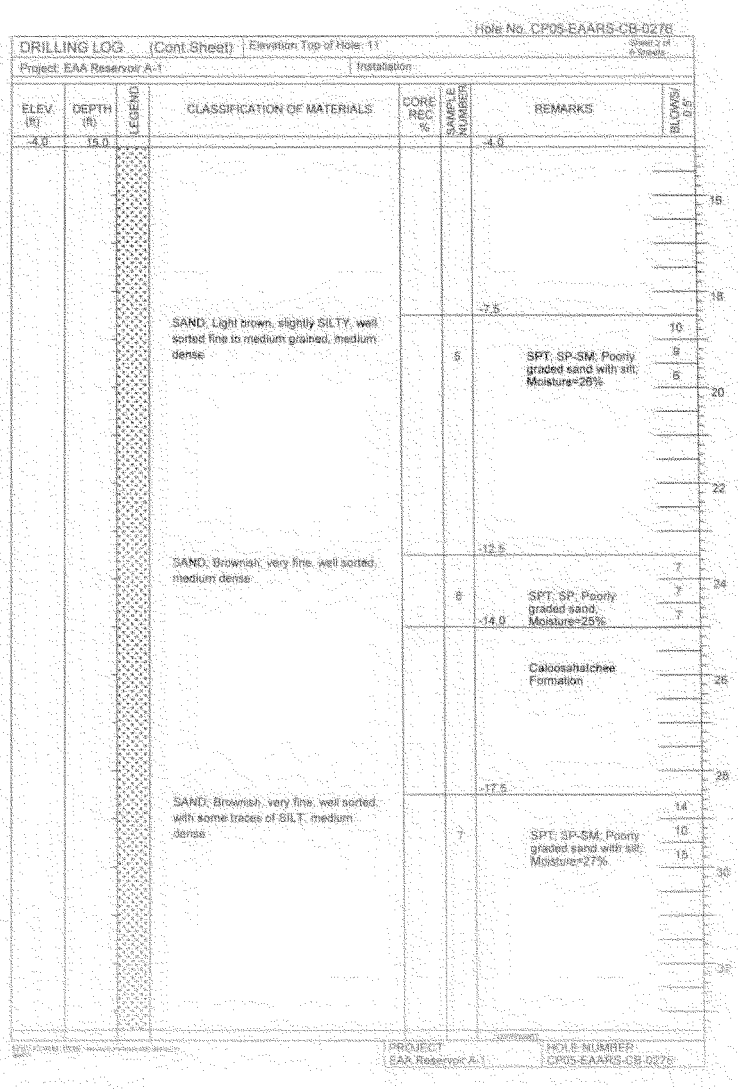
Hole No. CP05-EAARS-CB-0275

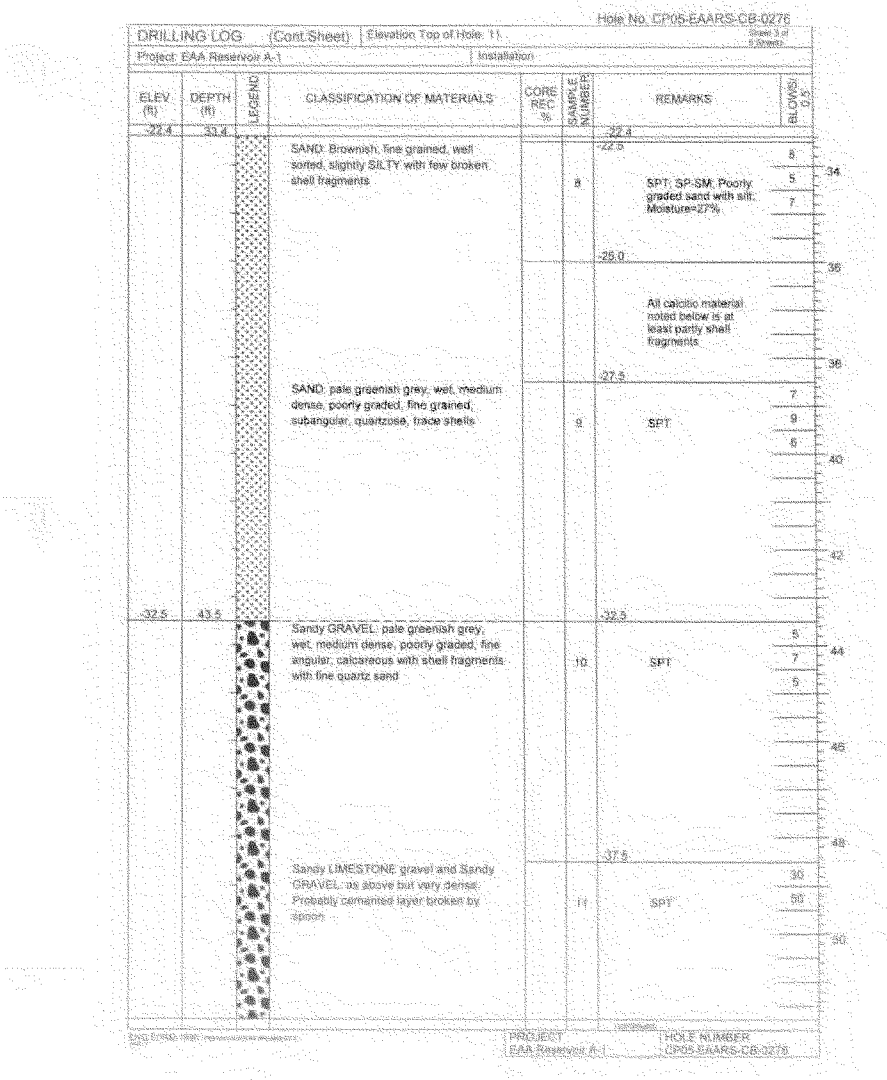
DRILLING LOG | Division: | Installation: | Sheet 1 of 2 Sheets

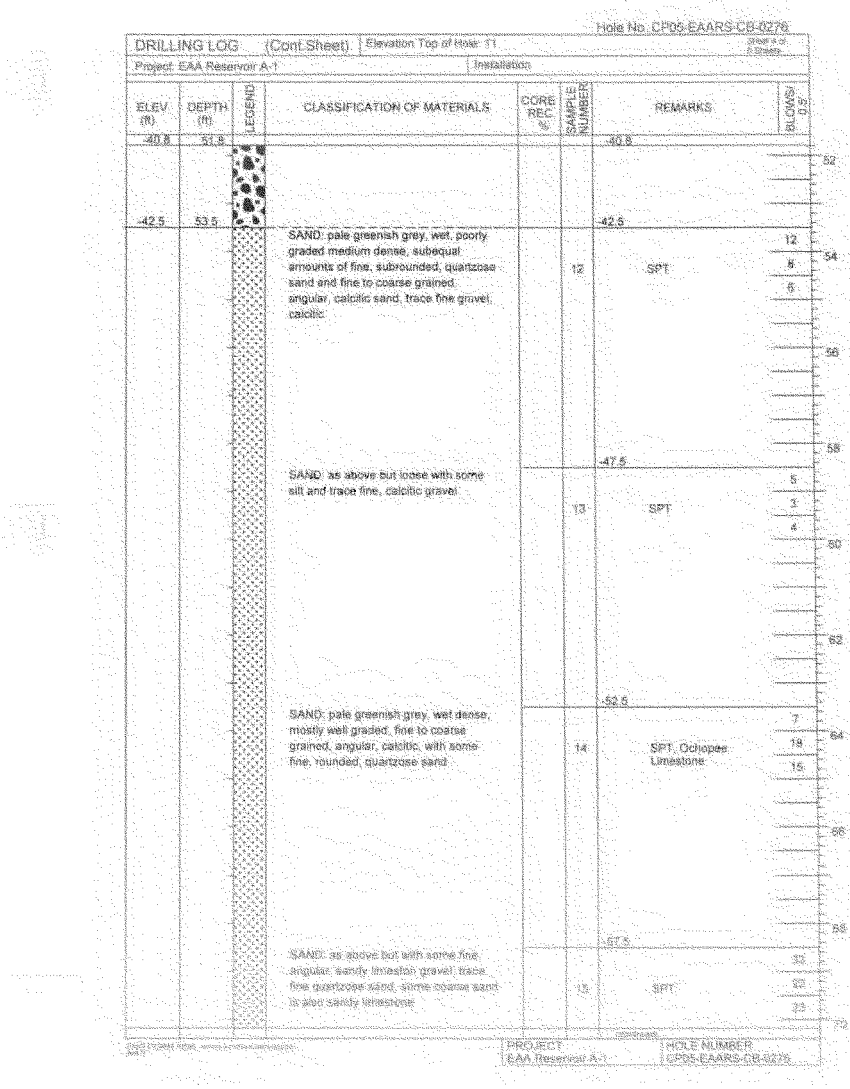
1. Project: EAA Reservoir A-1
2. Location: N754727.4, E758491.8 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0275
5. Name of Driller: Erik Bluemke
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: N/A
8. Thickness of cap rock: N/A
9. Depth of hole: 100 ft
10. Size and Type of bit: 3" NX Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: 1
15. Elevation Ground Water: Not measured
16. Date Hole: Started 6/30/2005 Completed 6/30/2005
17. Elevation Top of Hole: 11 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: E. Requejo

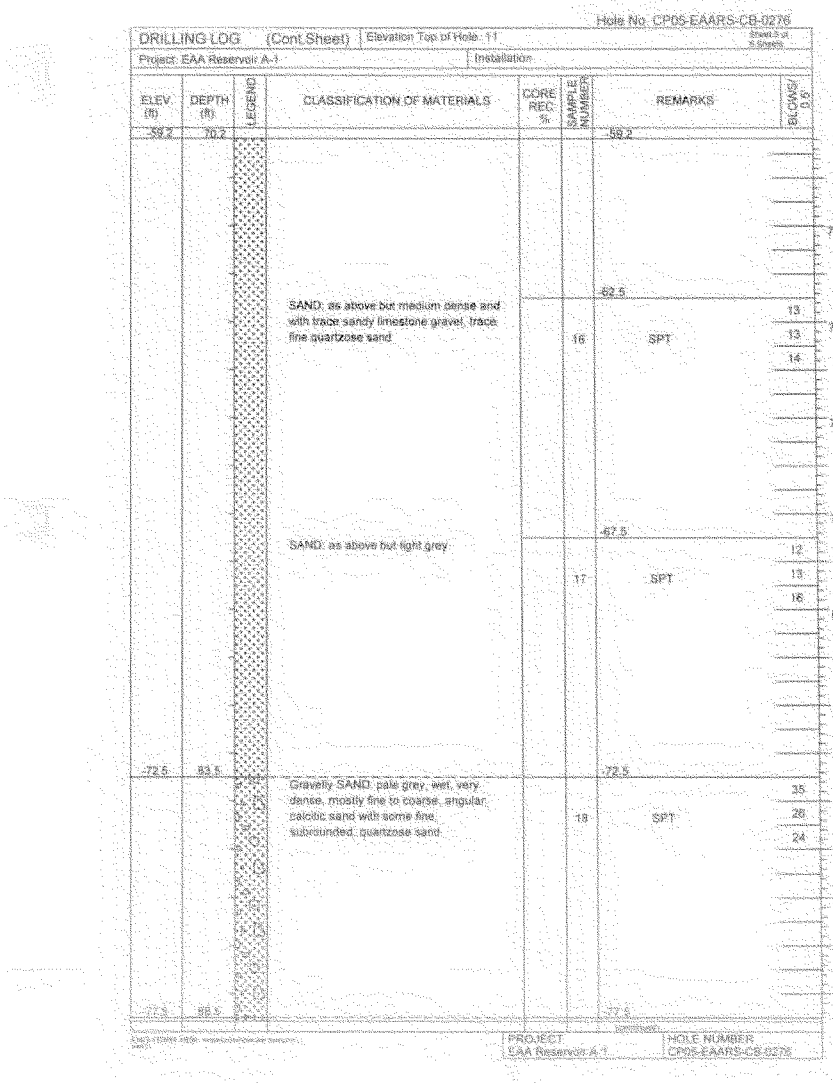
ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/0.5'
11.0	0.0						
			Muck			11.0	2
10.0	1.0				1	10.0 SPT	50/2"
			Caprock	21 (RQD 13%)	1	HQ coring	
6.5	4.5					6.5	
						5.0	
					2	SPT	4 30 50
			SAND: Pale, light brown fine to coarse grained, very dense, with cemented sands.			3.0	
			SAND: Tan color, well sorted, fine to coarse grained, dense		3	SPT: SW-SM: Well graded sand with silt+gravel. Moisture=17%	7 39 7
						2.5	
			SAND: Tan color, well sorted, coarser grains than above, very dense		4	SPT: SM: Silty sand with gravel. Moisture=3%	28 31 50/3"

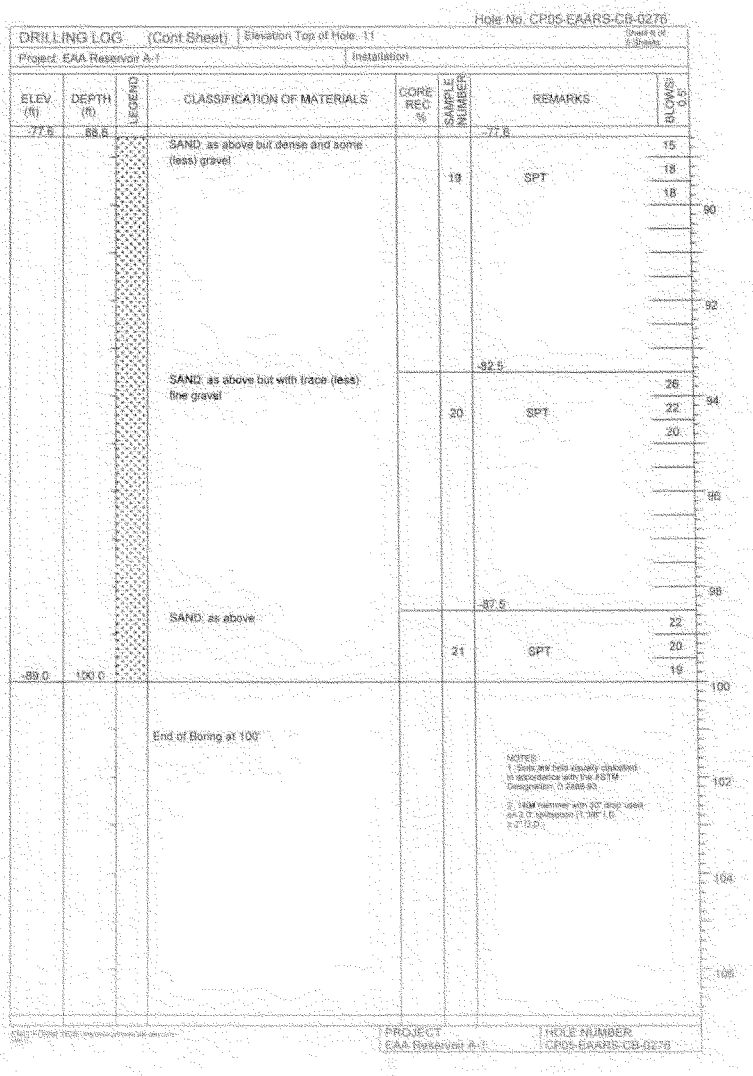
PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0275

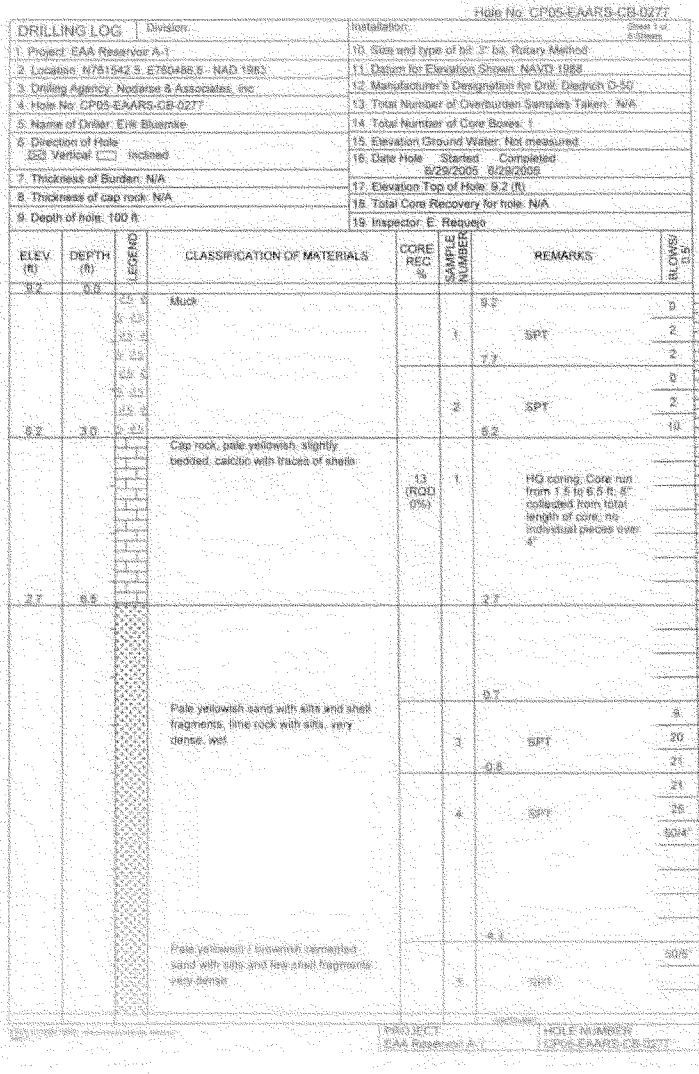

Hole No. CP05-EAARS-CB-0276
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 11'
Sheet 2 of 6 Sheets
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-4.0
15.0
-4.0
SAND, Light brown, slightly SILTY, well sorted fine to medium grained, medium dense
-7.5
5
SPT; SP-SM; Poorly graded sand with silt; Moisture=26%
10
9
6
SAND, Brownish, very fine, well sorted, medium dense
-12.5
6
SPT; SP; Poorly graded sand; Moisture=25%
7
7
7
-14.0
Caloosahatchee Formation
-17.5
SAND, Brownish, very fine, well sorted, with some traces of SILT, medium dense
7
SPT; SP-SM; Poorly graded sand with silt; Moisture=27%
14
10
15
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0276


Hole No. CP05-EAARS-CB-0276
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 11
Project: EAA Reservoir A-1 Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-22.4
33.4
SAND: Brownish, fine grained, well sorted, slightly SILTY with few broken shell fragments
-22.5
8
SPT; SP-SM; Poorly graded sand with silt; Moisture=27%
5
7
34
-26.0
36
All calcitic material noted below is at least partly shell fragments
38
-27.5
SAND: pale greenish grey, wet, medium dense, poorly graded, fine grained, subangular, quartzose, trace shells
9
SPT
7
9
8
40
42
-32.5
43.5
-32.5
Sandy GRAVEL: pale greenish grey, wet, medium dense, poorly graded, fine angular, calcareous with shell fragments with fine quartz sand
10
SPT
5
7
5
44
46
48
-37.5
Sandy LIMESTONE gravel and Sandy GRAVEL: as above but very dense. Probably cemented layer broken by spoon
11
SPT
30
50
50
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0276


Hole No. CP05-EAARS-CB-0276
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: 11
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/6"
-40.8
51.8
-42.5
53.5
SAND: pale greenish grey, wet, poorly graded medium dense, subequal amounts of fine, subrounded, quartzose sand and fine to coarse grained, angular, calcitic sand, trace fine gravel, calcitic
12
SPT
12
5
6
-47.5
SAND: as above but loose with some silt and trace fine, calcitic gravel
13
SPT
5
3
4
-52.5
SAND: pale greenish grey, wet dense, mostly well graded, fine to coarse grained, angular, calcitic, with some fine, rounded, quartzose sand
14
SPT, Ochopee Limestone
7
19
15
-57.5
SAND: as above but with some fine, angular, sandy limestone gravel, trace fine quartzose sand, some coarse sand is also sandy limestone
15
SPT
32
50
/5"
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0276


Hole No. CP05-EAARS-CB-0276
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: 11
Project: EAA Reservoir A-1 Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-59.2
70.2
-59.2
72
-62.5
SAND: as above but medium dense and with trace sandy limestone gravel, trace fine quartzose sand
16
SPT
13
13
14
74
76
78
-67.5
SAND: as above but light grey
17
SPT
12
13
16
80
82
-72.5
83.5
-72.5
Gravelly SAND: pale grey, wet, very dense, mostly fine to coarse, angular calcitic sand with some fine, subrounded, quartzose sand
19
SPT
35
28
24
84
86
88
-77.5
88.5
-77.5
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0276


Hole No. CP05-EAARS-CB-0276
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 11
Project: EAA Reservoir A-1 Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
77.5
88.8
SAND, as above but dense and some (less) gravel
77.8
SPT
15
18
18
90
92
92.5
SAND, as above but with trace (less) fine gravel
SPT
26
22
20
94
96
98
97.5
SAND, as above
SPT
22
20
19
-89.0
100.0
100
End of Boring at 100'
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.0" I.D. split-spoon (1 3/8" I.D. x 2" O.D.).
102
104
106
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0276



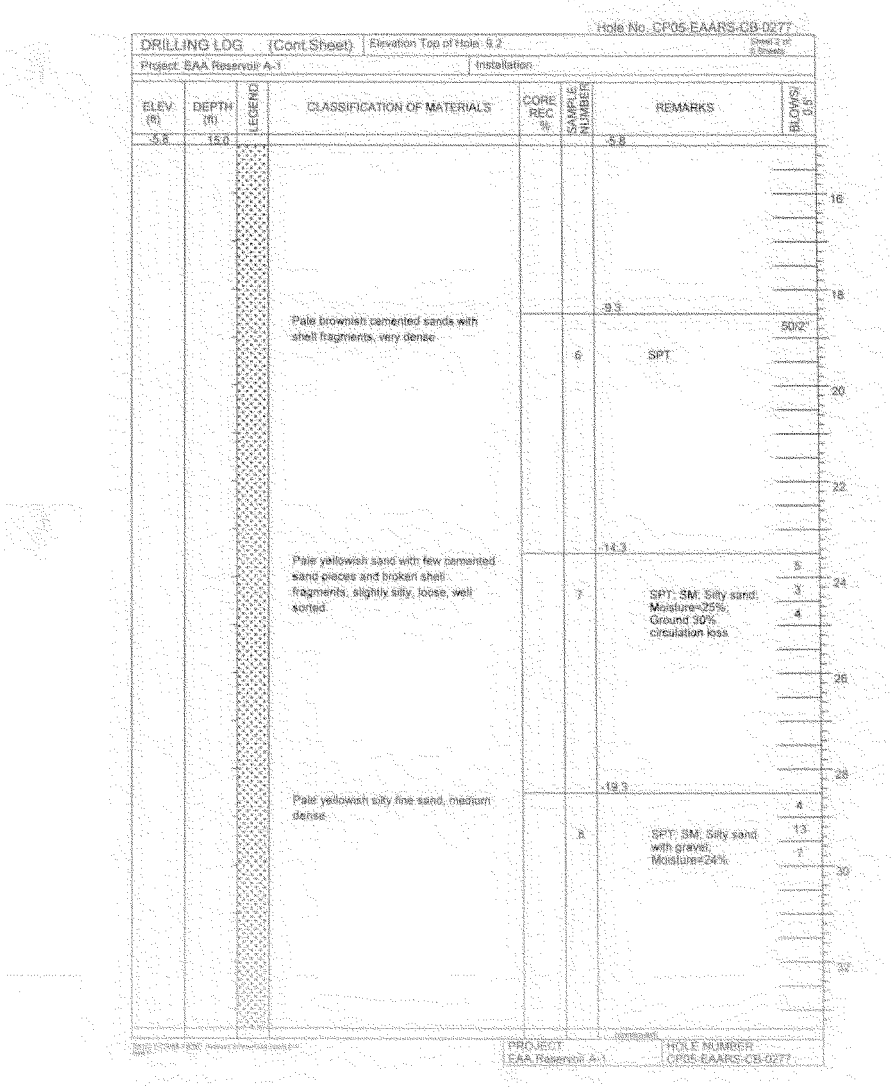
Hole No: CP05-EAARS-CB-0277

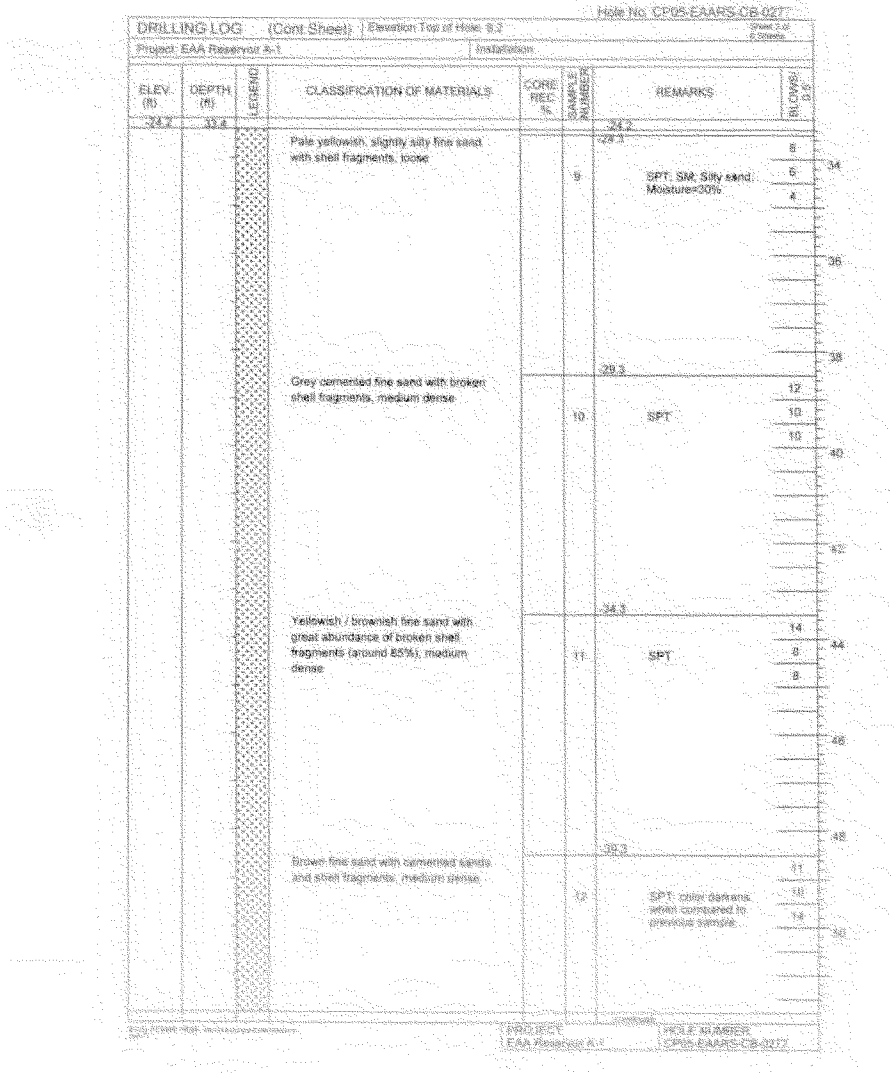
DRILLING LOG | Division: | Installation: | Sheet 1 of 5 Sheets

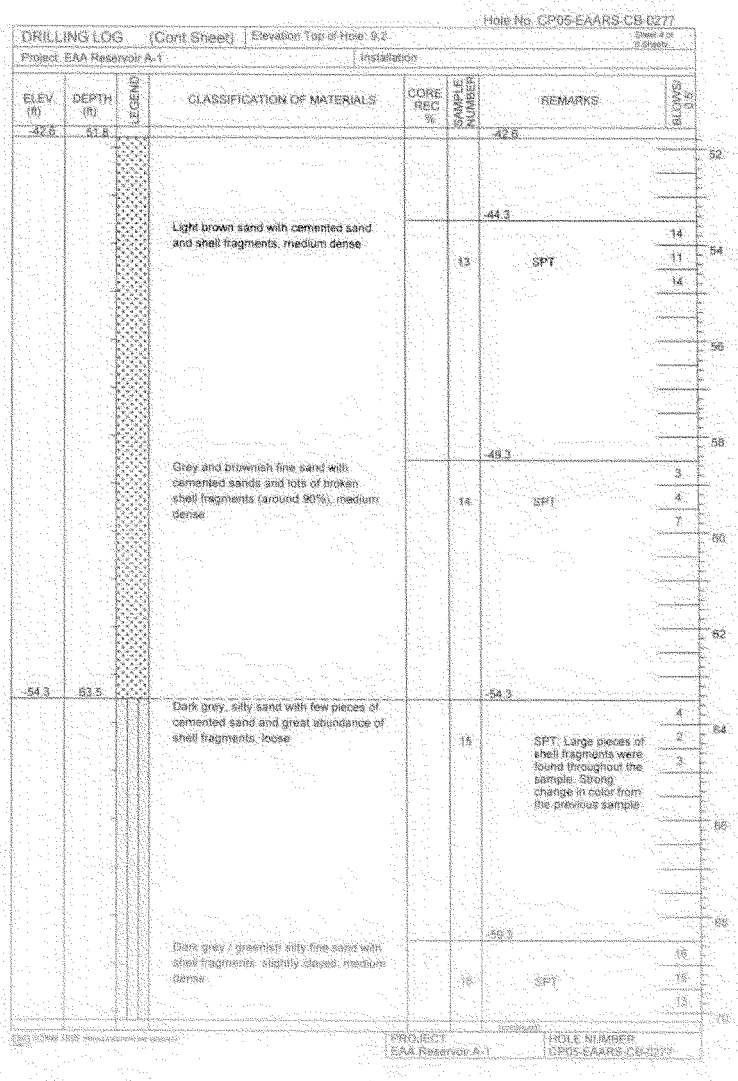
1. Project: EAA Reservoir A-1
2. Location: N751542.5, E760488.6 - NAD 1983
3. Drilling Agency: Nodarse & Associates, inc
4. Hole No: CP05-EAARS-CB-0277
5. Name of Driller: Elie Bluemke
6. Direction of Hole: [X] Vertical [ ] Inclined
7. Thickness of Burden: N/A
8. Thickness of cap rock: N/A
9. Depth of hole: 100 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: 1
15. Elevation Ground Water: Not measured
16. Date Hole: Started 8/29/2005 Completed 8/29/2005
17. Elevation Top of Hole: 9.2 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: E. Requejo

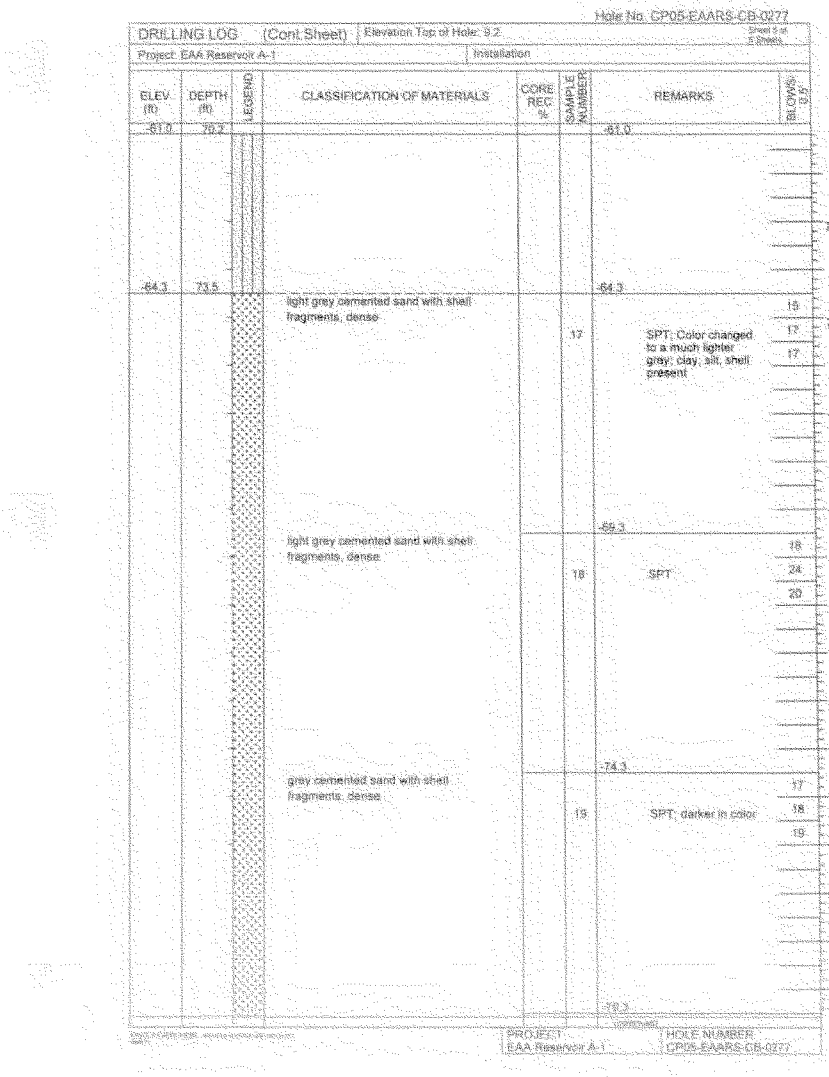
ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC.	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
9.2	0.0		Muck			9.2	0
					1	SPT	2
						7.7	2
							0
					2	SPT	2
6.2	3.0		Cap rock, pale yellowish, slightly bedded, calcitic with traces of shells			6.2	10
				13 (RQD 0%)	1	HQ coring, Core run from 1.5 to 6.5 ft, 6" collected from total length of core, no individual pieces over 4"	
2.7	6.5					2.7	
			Pale yellowish sand with silts and shell fragments, lime rock with silts, very dense, wet			0.7	9
					3	SPT	20
						0.8	21
							21
					4	SPT	28
							50/4"
						-0.3	
			Pale yellowish / brownish cemented sand with silts and few shell fragments, very dense		5	SPT	50/5

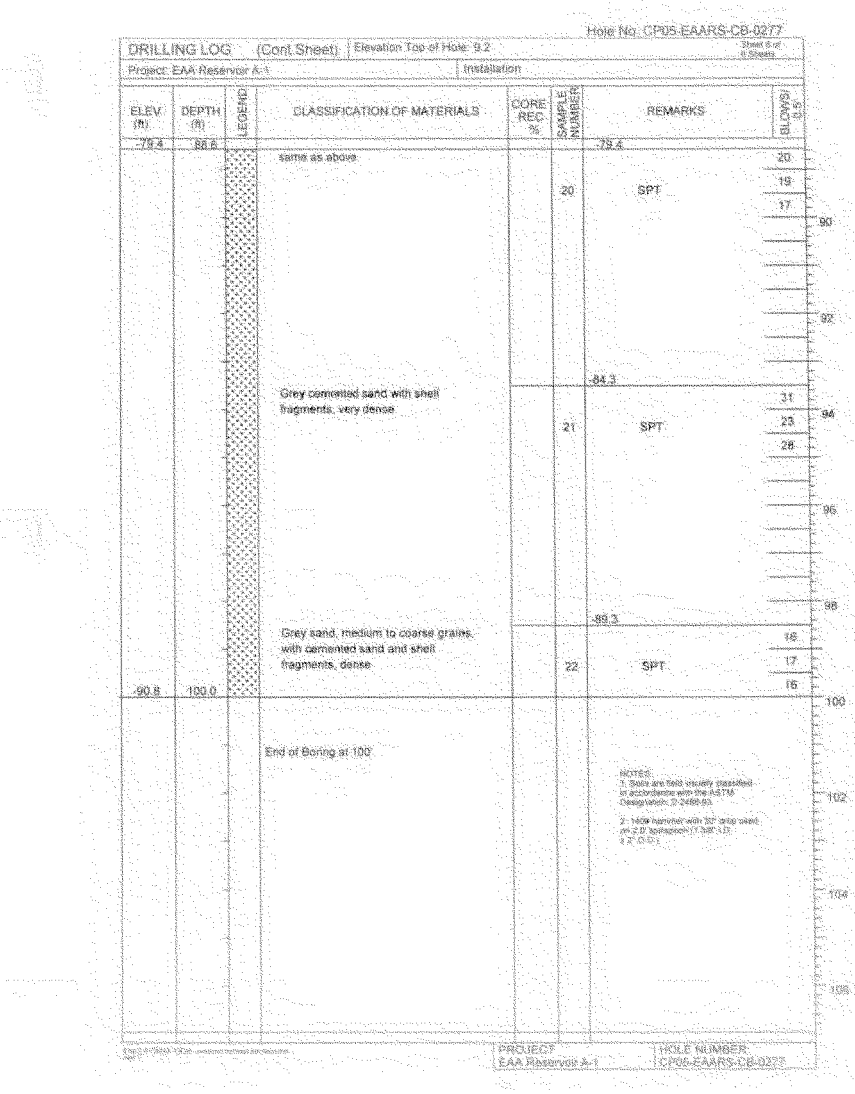
PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0277

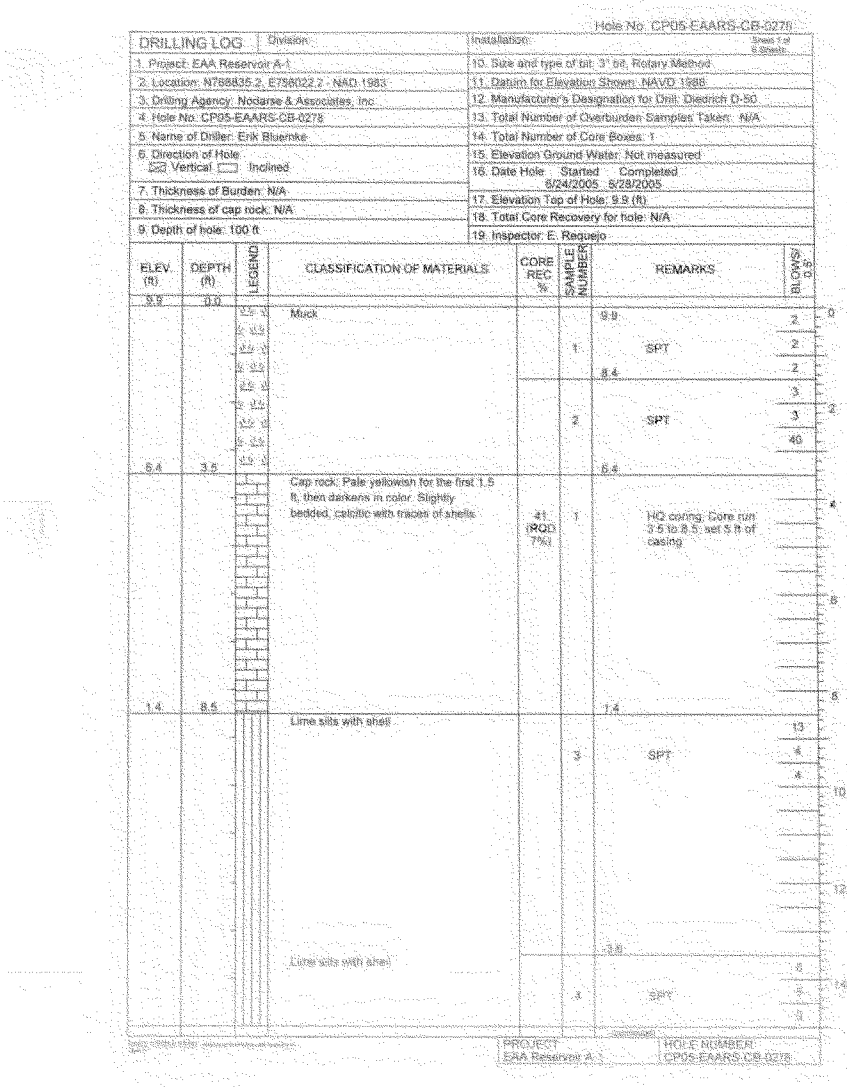

Hole No. CP05-EAARS-CB-0277
DRILLING LOG (Cont.Sheet) Elevation Top of Hole 9.2
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
5.8
15.0
Pale brownish cemented sands with shell fragments, very dense
9.3
6
SPT
50/2"
Pale yellowish sand with few cemented sand pieces and broken shell fragments, slightly silty, loose, well sorted
14.3
7
SPT; SM: Silty sand; Moisture=25%; Ground 30% circulation loss
5
3
4
Pale yellowish silty fine sand, medium dense
19.3
8
SPT; SM: Silty sand with gravel; Moisture=24%
4
13
7
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0277


Hole No. CP05-EAARS-CB-027
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 9.3
Project: EAA Reservoir A-1 Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
24.3
33.4
Pale yellowish, slightly silty fine sand with shell fragments, loose
9
SPT; SM; Silty sand; Moisture=30%
8
5
4
34
36
38
29.3
Grey cemented fine sand with broken shell fragments, medium dense
10
SPT
12
10
10
40
42
34.3
Yellowish / brownish fine sand with great abundance of broken shell fragments (around 85%), medium dense
11
SPT
14
8
8
44
46
48
39.3
Brown fine sand with cemented sands and shell fragments, medium dense
12
SPT; color darkens when compared to previous sample
11
18
14
32
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-027


Hole No. CP05-EAARS-CB-0277
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 9.2
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS 0.5'
-32.6
41.8
42.5
Light brown sand with cemented sand and shell fragments, medium dense
44.3
13
SPT
14
11
14
49.3
Grey and brownish fine sand with cemented sands and lots of broken shell fragments (around 90%), medium dense
14
SPT
3
4
7
-54.3
53.5
54.3
Dark grey, silty sand with few pieces of cemented sand and great abundance of shell fragments, loose
15
SPT. Large pieces of shell fragments were found throughout the sample. Strong change in color from the previous sample
4
2
3
59.3
Dark grey / greenish silty fine sand with shell fragments, slightly clayey, medium dense
16
SPT
16
15
13
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0277


Hole No. CP05-EAARS-CB-0277
DRILLING LOG (Cont. Sheet)
Elevation Top of Hole: 9.2
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS / 0.5'
61.0
70.2
64.3
73.5
light grey cemented sand with shell fragments, dense
SPT; Color changed to a much lighter grey; clay, silt, shell present
55.3
light grey cemented sand with shell fragments, dense
SPT
74.3
grey cemented sand with shell fragments, dense
SPT; darker in color
70.2
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0277


Hole No. CP05-EAARS-CB-0277
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 9.2
Project: EAA Reservoir A-1 Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/6"
-79.4
88.6
same as above
20
SPT
20
19
17
90
92
-84.3
Grey cemented sand with shell fragments, very dense
21
SPT
31
23
28
94
96
-89.3
Grey sand, medium to coarse grains, with cemented sand and shell fragments, dense
22
SPT
16
17
15
-90.8
100.0
98
100
End of Boring at 100'
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. SPT hammer with 30" drop used on 2.0" spoon(1 7/8" I.D. x 2" O.D.).
102
104
106
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0277

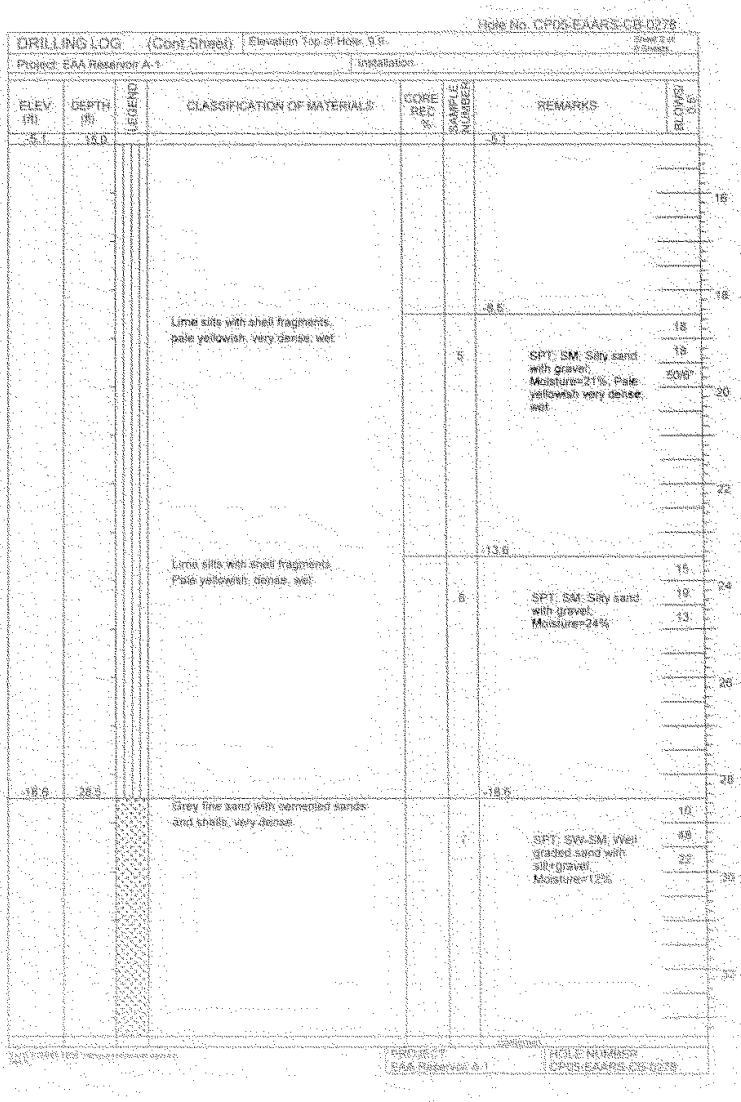


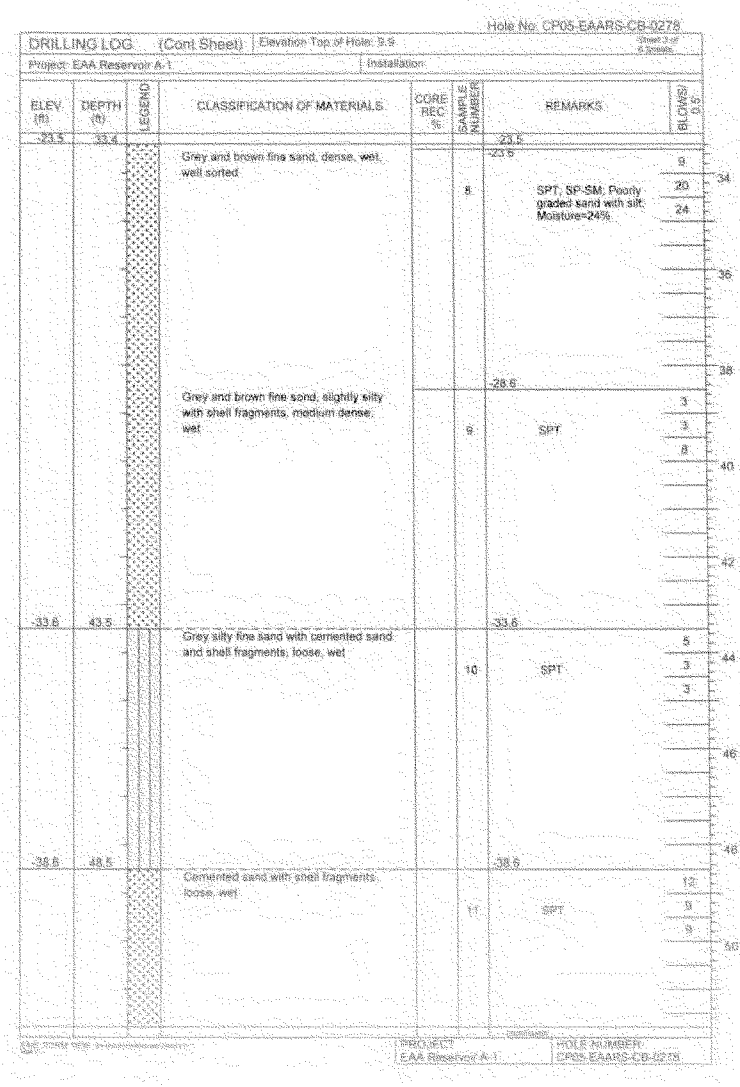
DRILLING LOG | Division: | Installation: | Hole No. CP05-EAARS-CB-027B | Sheet 1 of 6 Sheets

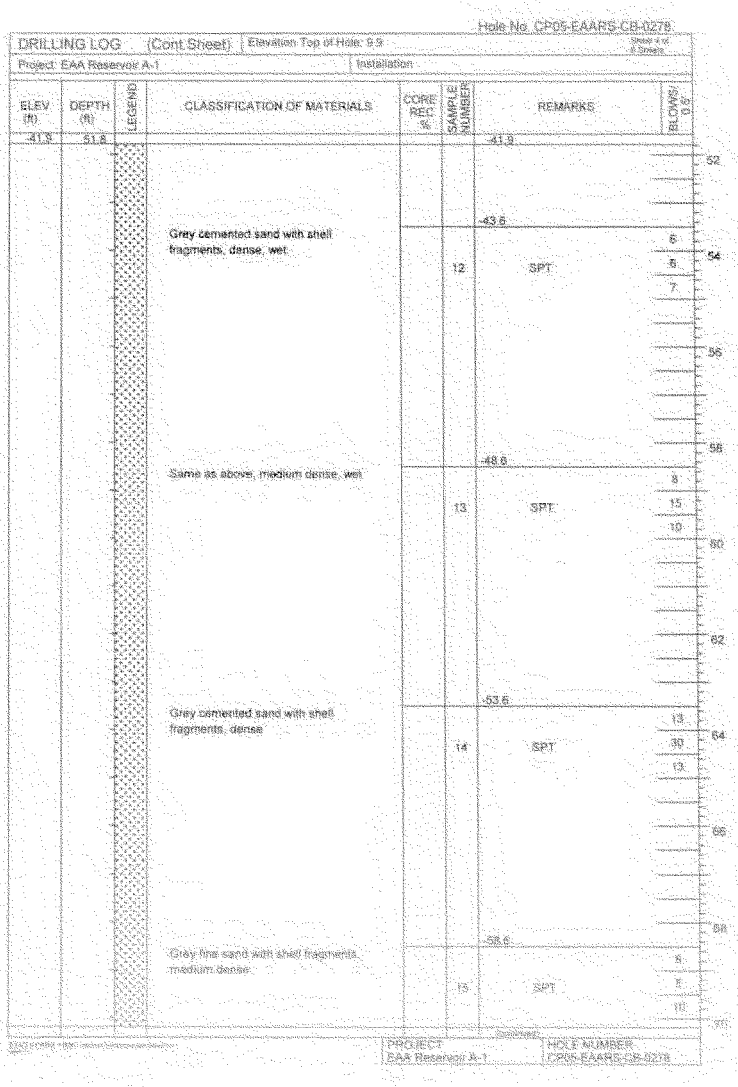
1. Project: EAA Reservoir A-1
2. Location: N788835.2, E798022.2 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-027B
5. Name of Driller: Erik Bluemke
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: N/A
8. Thickness of cap rock: N/A
9. Depth of hole: 100 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: 1
15. Elevation Ground Water: Not measured
16. Date Hole: Started 8/24/2005 Completed 8/28/2005
17. Elevation Top of Hole: 9.9 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: E. Requejo

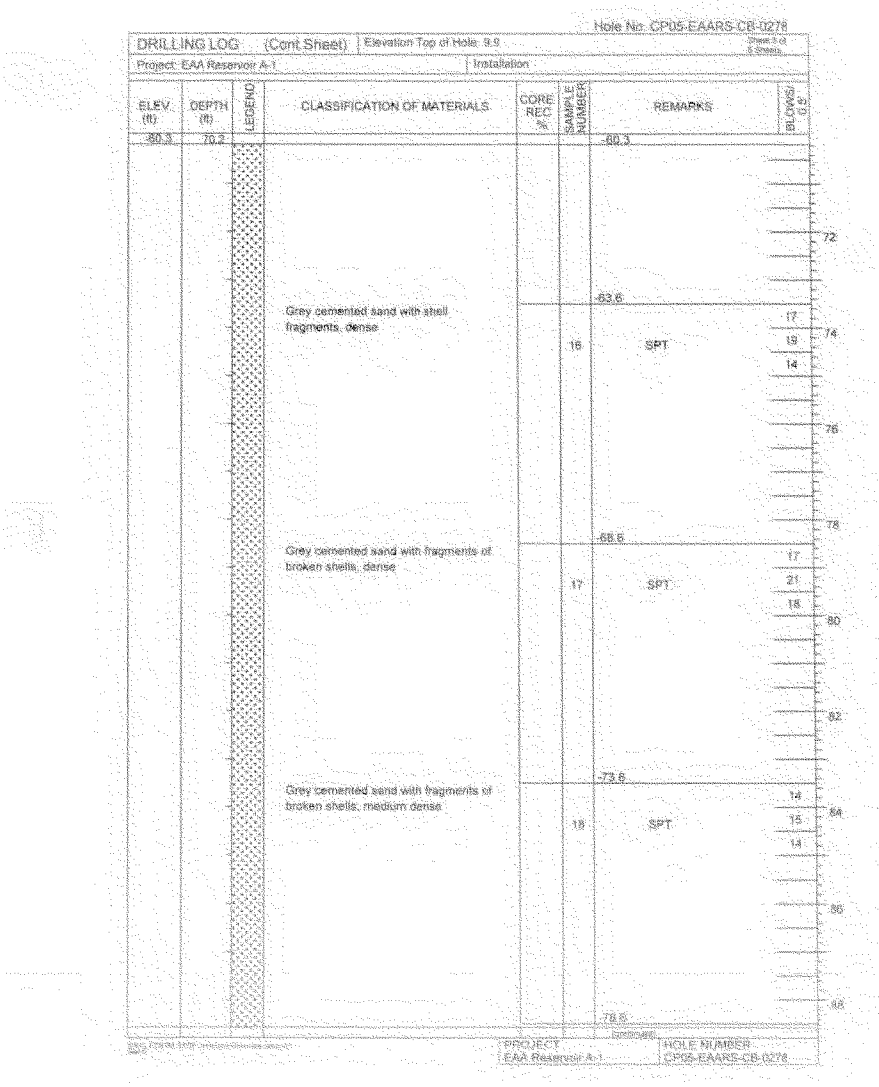
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/0.5'
9.9	0.0		Muck		1	SPT	2, 2, 2
8.4	1.5				2	SPT	3, 3, 40
6.4	3.5		Cap rock: Pale yellowish for the first 1.5 ft, then darkens in color. Slightly bedded, calcitic with traces of shells	41 (RQD 7%)	1	HQ coring; Core run 3.5 to 8.5; set 5 ft of casing	
1.4	8.5		Lime silts with shell		3	SPT	13, 4, 4, 10
-3.6	13.5		Lime silts with shell		4	SPT	5, 5, 8

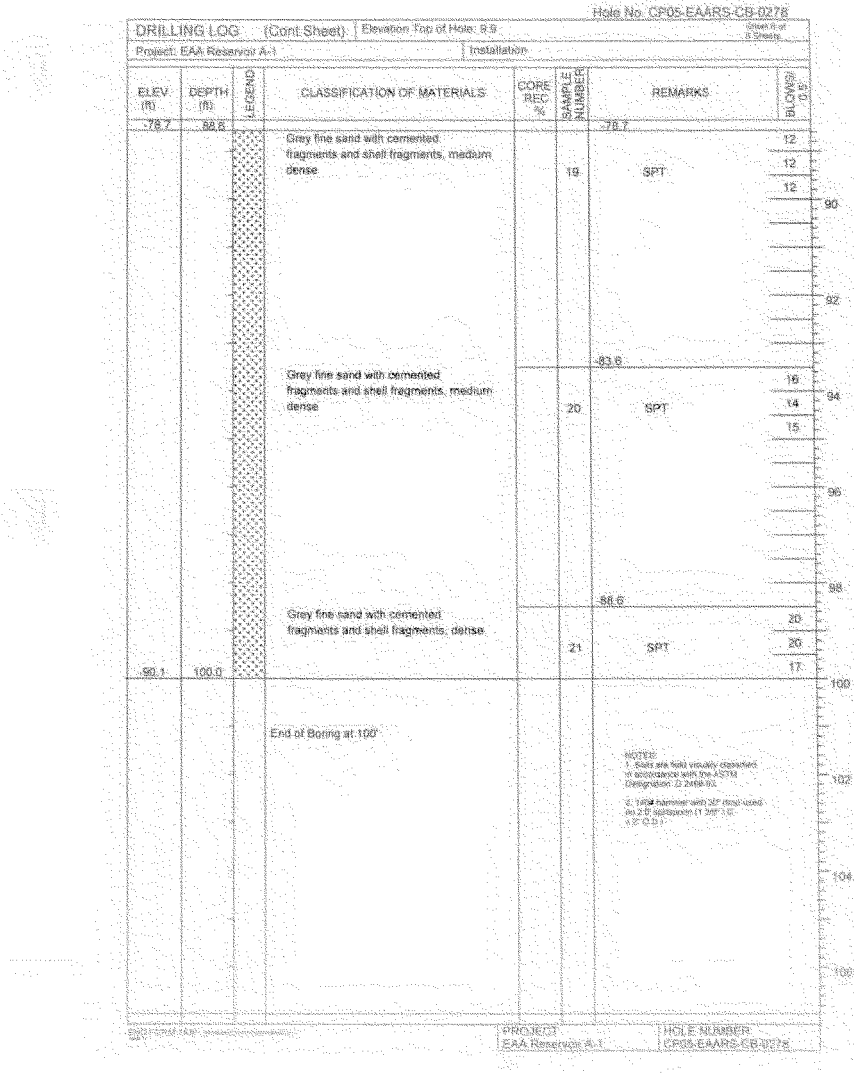
PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-027B

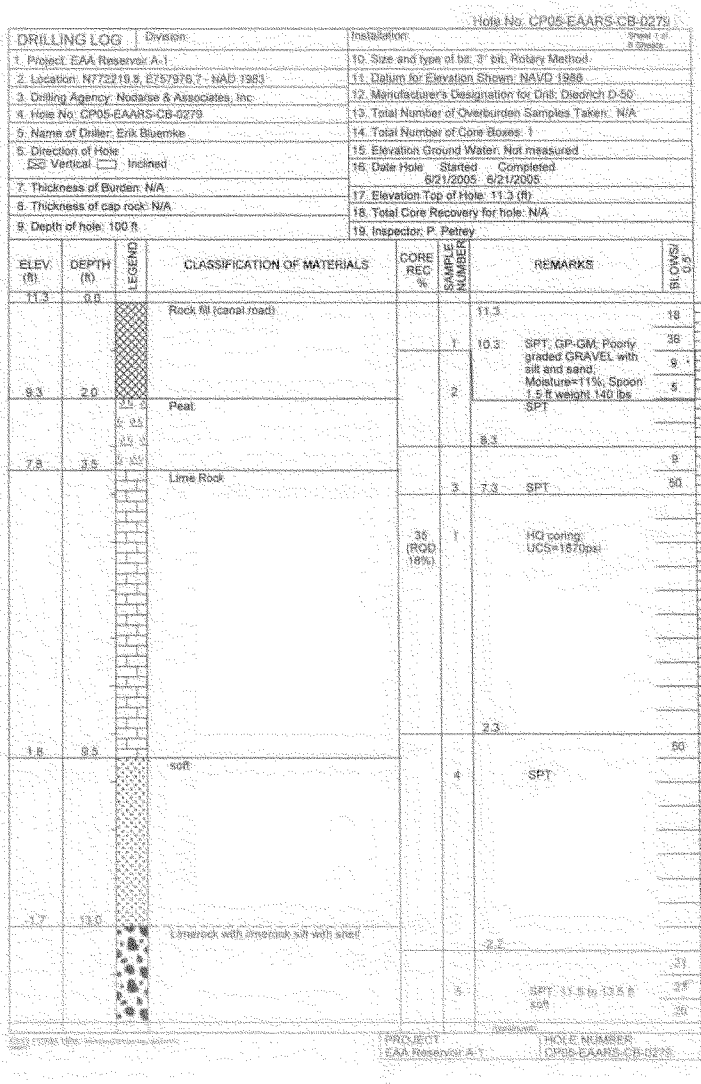

Hole No. CPDS-EAARS-CB-0278
DRILLING LOG (Cont Sheet) Elevation Top of Hole, 9.6
Project: EAA Reservoir A-1 Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE RED %
SAMPLE NUMBER
REMARKS
BLOWS 0.5'
9.1
10.0
Lime silts with shell fragments, pale yellowish, very dense, wet
8.6
SPT; SM; Silty sand with gravel; Moisture=21%; Pale yellowish very dense, wet
18
19
50/6"
13.6
Lime silts with shell fragments, Pale yellowish, dense, wet
SPT; SM; Silty sand with gravel; Moisture=24%
15
19
13
-18.6
28.5
Grey fine sand with cemented sands and shells, very dense
18.5
SPT; SW-SM; Well graded sand with silt+gravel; Moisture=12%
10
49
22
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CPDS-EAARS-CB-0278


Hole No. CP05-EAARS-CB-0278
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 9.9
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
23.5
33.4
Grey and brown fine sand, dense, wet, well sorted
23.5
8
SPT, SP-SM, Poorly graded sand with silt. Moisture=24%
9
20
24
34
36
38
28.6
Grey and brown fine sand, slightly silty with shell fragments, medium dense, wet
9
SPT
3
3
8
40
42
33.6
43.5
Grey silty fine sand with cemented sand and shell fragments, loose, wet
33.6
10
SPT
5
3
3
44
46
48
38.6
48.5
Cemented sand with shell fragments, loose, wet
38.6
11
SPT
12
3
3
50
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0278


Hole No. CP05-EAARS-CB-0278
DRILLING LOG (Cont Sheet) Elevation: Top of Hole: 9.9
Project: EAA Reservoir A-1 Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS / 0.5'
-41.9
-43.6
Grey cemented sand with shell fragments, dense, wet
12
SPT
6
6
7
-48.6
Same as above, medium dense, wet
13
SPT
8
15
10
-53.6
Grey cemented sand with shell fragments, dense
14
SPT
13
30
(3)
-58.6
Grey fine sand with shell fragments, medium dense
15
SPT
5
5
(8)
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0278


Hole No. CP05-EAARS-CB-0278
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 9.9
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
80.3
70.2
60.3
72
63.6
Grey cemented sand with shell fragments, dense
18
SPT
17
19
14
74
76
78
68.6
Grey cemented sand with fragments of broken shells, dense
17
SPT
17
21
18
80
82
73.6
Grey cemented sand with fragments of broken shells, medium dense
14
19
SPT
15
14
84
86
88
78.6
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0278


Hole No. CP05-EAARS-CB-0278
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 8.9
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. (%)
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-78.7
88.6
Grey fine sand with cemented fragments and shell fragments, medium dense
19
SPT
12
12
12
-83.6
Grey fine sand with cemented fragments and shell fragments, medium dense
20
SPT
16
14
15
-88.6
Grey fine sand with cemented fragments and shell fragments, dense
21
SPT
20
20
17
-90.1
100.0
End of Boring at 100'
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.0" split spoon (1 3/8" I.D. x 2" O.D.).
90
92
94
96
98
100
102
104
106
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0278



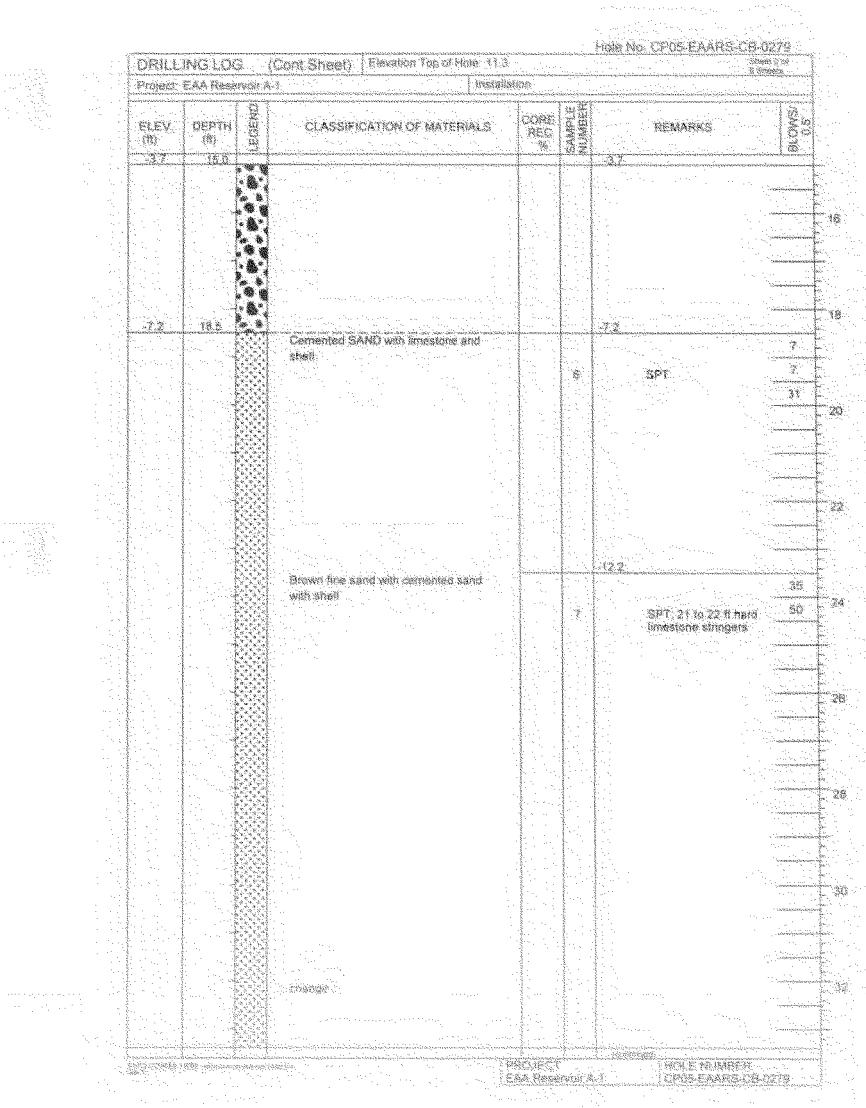
Hole No. CP05-EAARS-CB-0279

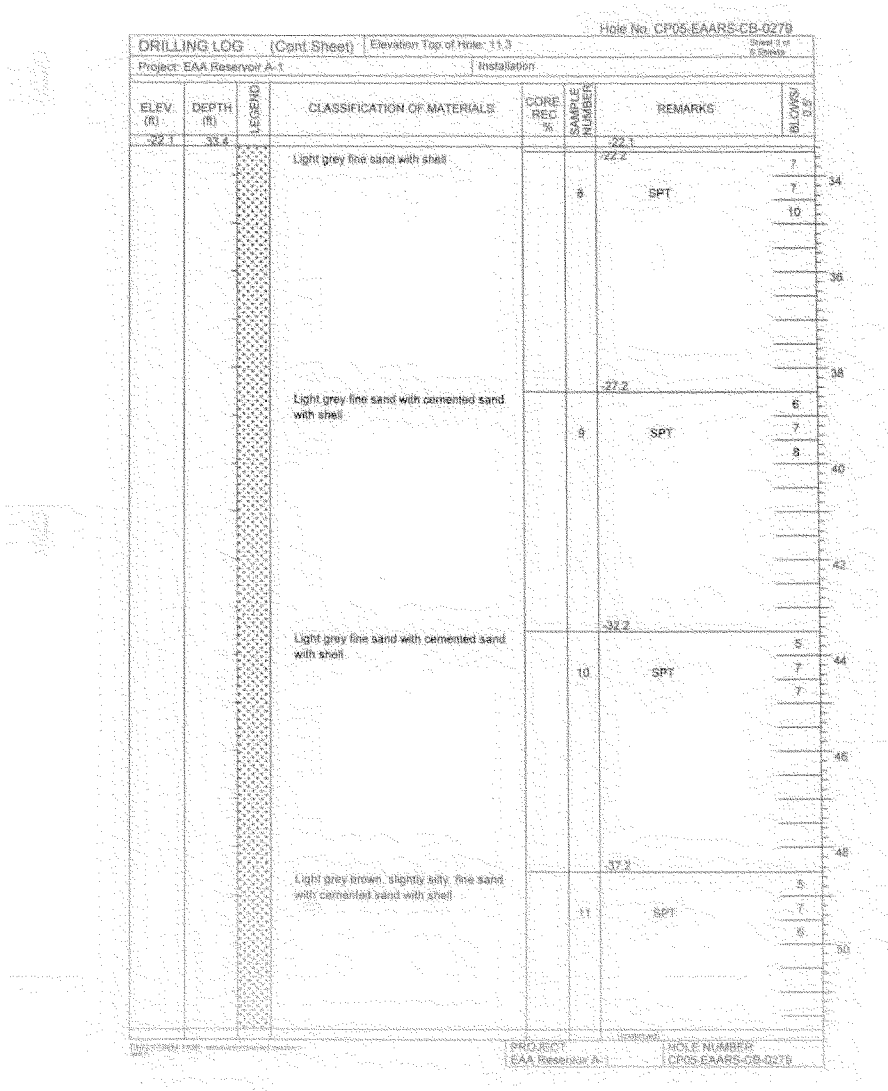
DRILLING LOG | Division: | Installation: | Sheet 1 of 2 Sheets

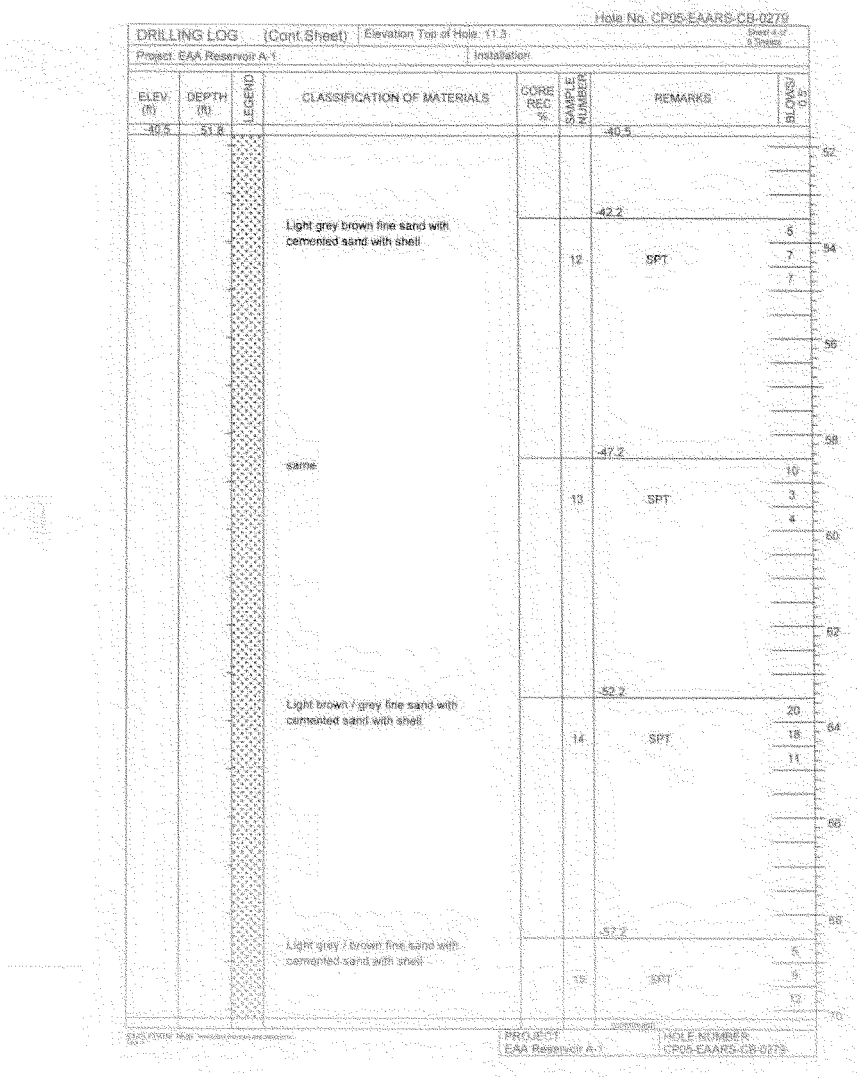
1. Project: EAA Reservoir A-1	10. Size and type of bit: 3" bit, Rotary Method
2. Location: N772219.8, E757976.7 - NAD 1983	11. Datum for Elevation Shown: NAVD 1988
3. Drilling Agency: Nodarse & Associates, Inc.	12. Manufacturer's Designation for Drill: Diedrich D-50
4. Hole No: CP05-EAARS-CB-0279	13. Total Number of Overburden Samples Taken: N/A
5. Name of Driller: Erik Bluemke	14. Total Number of Core Boxes: 1
6. Direction of Hole ☒ Vertical ☐ Inclined	15. Elevation Ground Water: Not measured
	16. Date Hole Started 6/21/2005 Completed 6/21/2005
7. Thickness of Burden: N/A	17. Elevation Top of Hole: 11.3 (ft)
8. Thickness of cap rock: N/A	18. Total Core Recovery for hole: N/A
9. Depth of hole: 100 ft	19. Inspector: P. Petrey

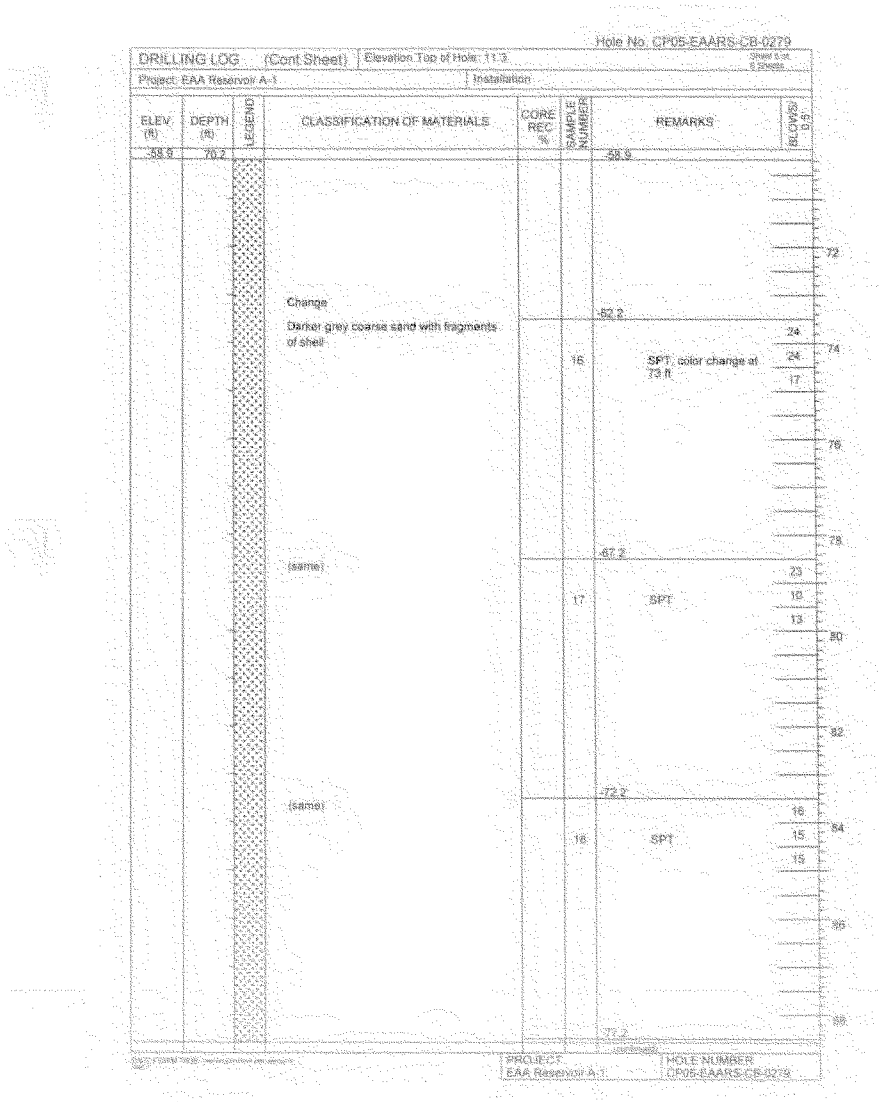
ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
11.3	0.0		Rock fill (canal road)		1	11.3	18
						10.3 SPT, GP-GM: Poorly graded GRAVEL with silt and sand; Moisture=11%; Spoon 1.5 ft weight 140 lbs	36
							9
9.3	2.0		Peat		2		5
						SPT	
						8.3	9
7.8	3.5		Lime Rock		3	7.3 SPT	50
				35 (ROD 18%)	1	HQ coring; UCS=1870psi	
						2.3	50
1.8	9.5		soft		4	SPT	
-1.7	13.0		Limerock with limerock silt with shell			2.5	
					5	SPT 11.5 to 13.5 ft soft	31 24 50

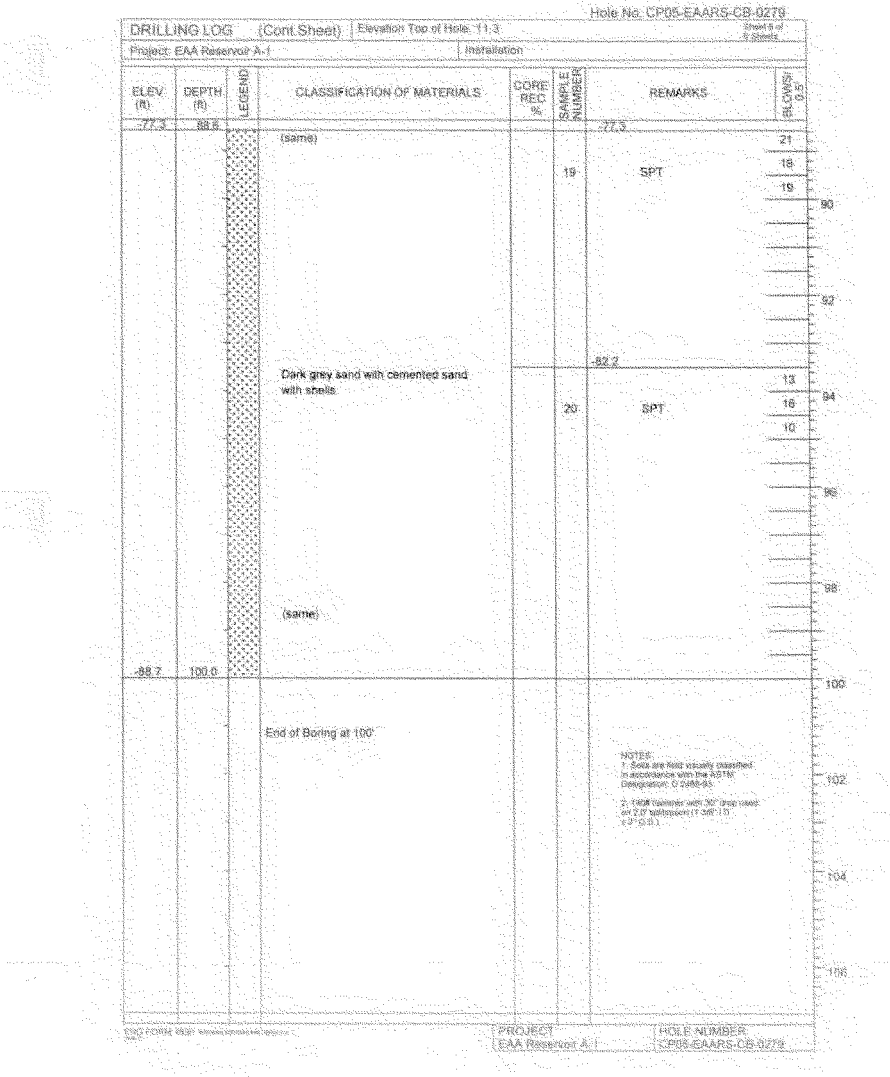
PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0279

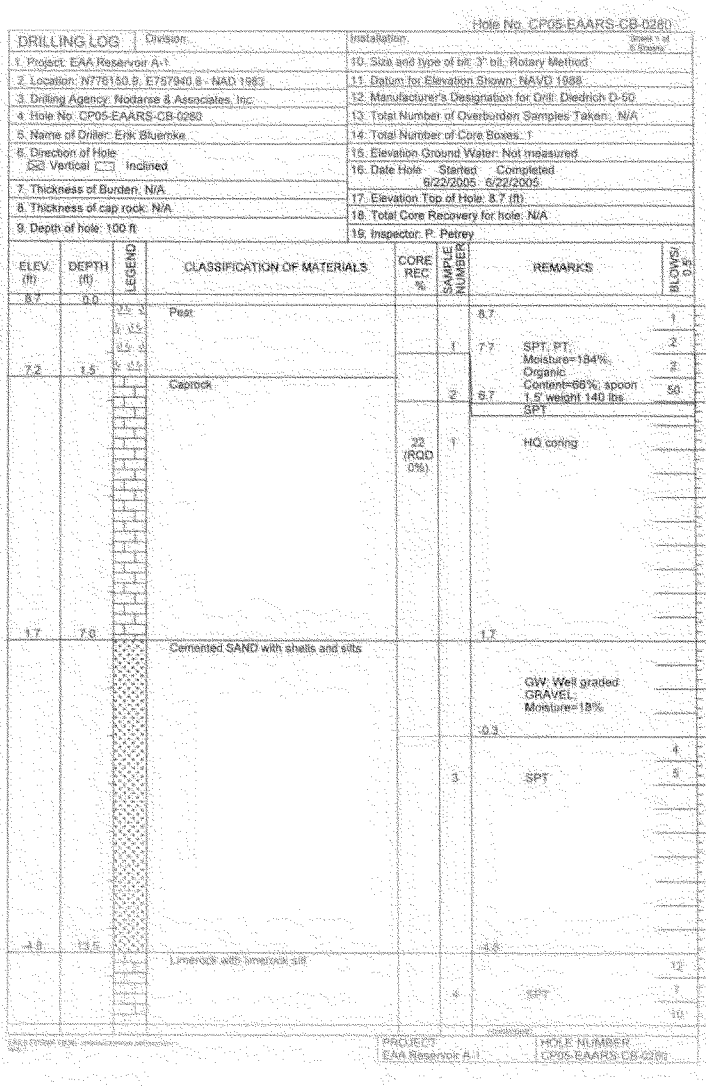

Hole No. CP05-EAARS-CB-0279
DRILLING LOG (Cont Sheet)
Elevation Top of Hole 11.3
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS / 0.5
-3.7
15.0
-7.2
18.5
Cemented SAND with limestone and shell
SPT
Brown fine sand with cemented sand with shell
SPT, 21 to 22 ft hard limestone stringers
change
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0279


Hole No. CP05-EAARS-CB-027B
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 11.3
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
22.1
33.4
Light grey fine sand with shell
22.2
8
SPT
7
7
10
34
36
38
27.2
Light grey fine sand with cemented sand with shell
6
9
SPT
7
8
40
42
32.2
Light grey fine sand with cemented sand with shell
5
10
SPT
7
7
44
46
48
37.2
Light grey brown, slightly silty, fine sand with cemented sand with shell
5
11
SPT
7
8
50
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-027B


Hole No. CP05-EAARS-CB-0279
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 11.3
Project: EAA Reservoir A-1 Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-40.5
51.8
-42.2
Light grey brown fine sand with cemented sand with shell
12
SPT
5
7
7
-47.2
same
13
SPT
10
3
4
-52.2
Light brown / grey fine sand with cemented sand with shell
14
SPT
20
18
11
-57.2
Light grey / brown fine sand with cemented sand with shell
15
SPT
5
9
12
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0279


Hole No. CP05-EAARS-CB-0279
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 11.3
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
59.9
70.2
Change
Darker grey coarse sand with fragments of shell
52.2
16
SPT, color change at 73 ft
24
24
17
74
76
78
(same)
67.2
17
SPT
23
18
13
80
82
(same)
72.2
16
SPT
16
15
15
84
86
88
72.2
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0279


Hole No. CP05-EAARS-CB-0279
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 11.3
Project: EAA Reservoir A-1 Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
77.3
88.6
(same)
19
SPT
21
18
19
90
92
82.2
Dark grey sand with cemented sand with shells
20
SPT
13
16
10
94
96
98
(same)
88.7
100.0
100
End of Boring at 100'
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 1 3/8" hammer with 30" drop used on 2.0" sampler (1 3/8" I.D. x 2" O.D.).
102
104
106
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0279



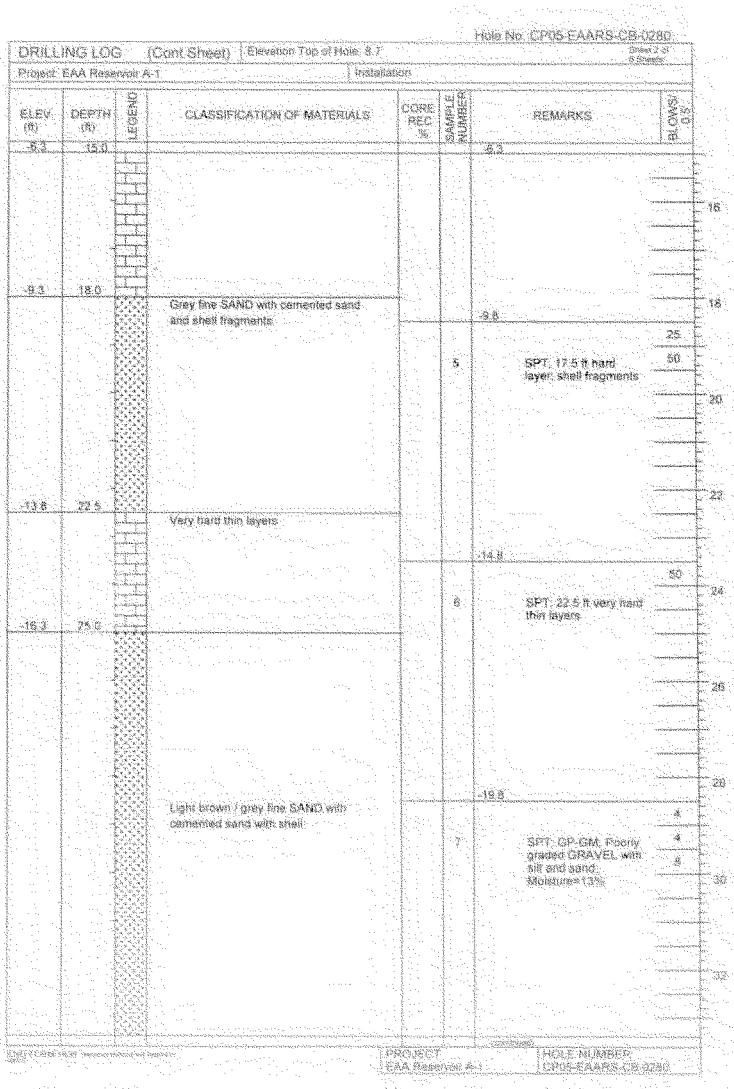
Hole No. CP05-EAARS-CB-0280

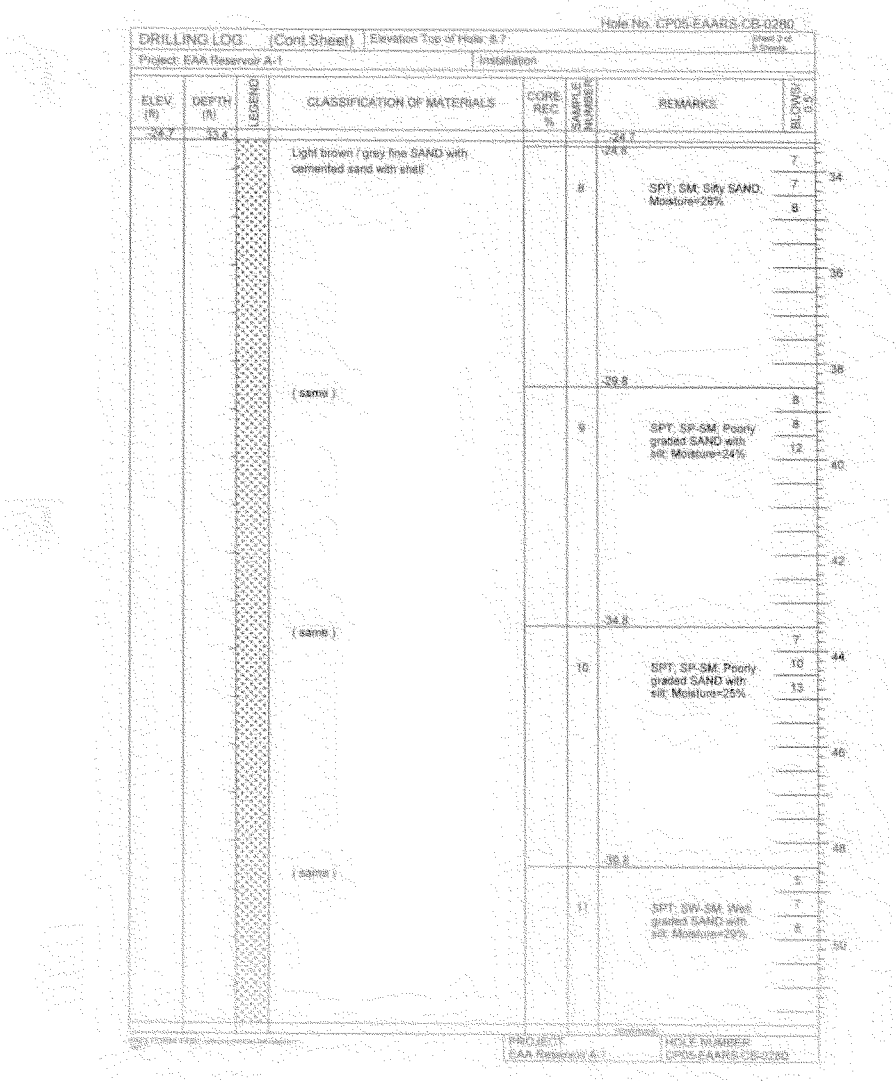
DRILLING LOG | Division: | Installation: | Sheet 1 of 6 Sheets

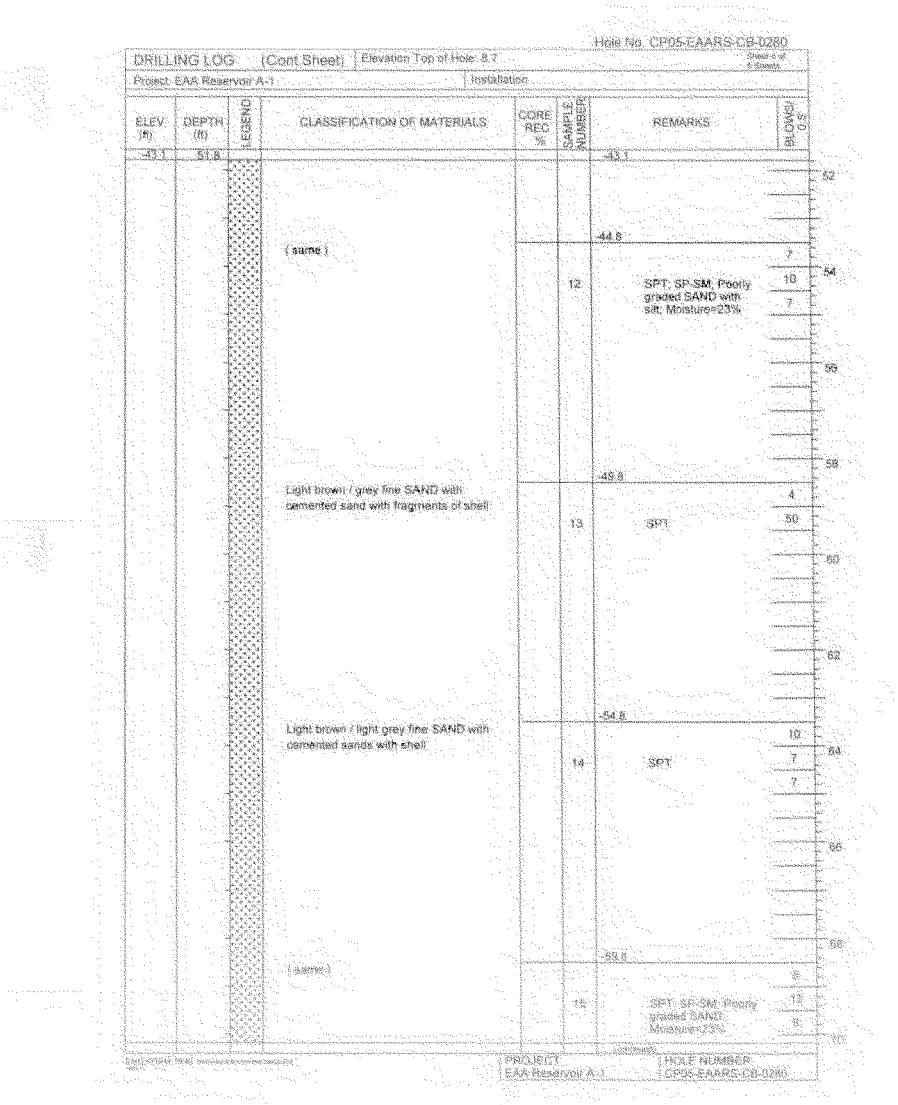
1. Project: EAA Reservoir A-1
2. Location: N776150.9, E757940.8 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0280
5. Name of Driller: Erik Bluemke
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: N/A
8. Thickness of cap rock: N/A
9. Depth of hole: 100 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: 1
15. Elevation Ground Water: Not measured
16. Date Hole: Started 6/22/2005 Completed 6/22/2005
17. Elevation Top of Hole: 8.7 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: P. Petrey

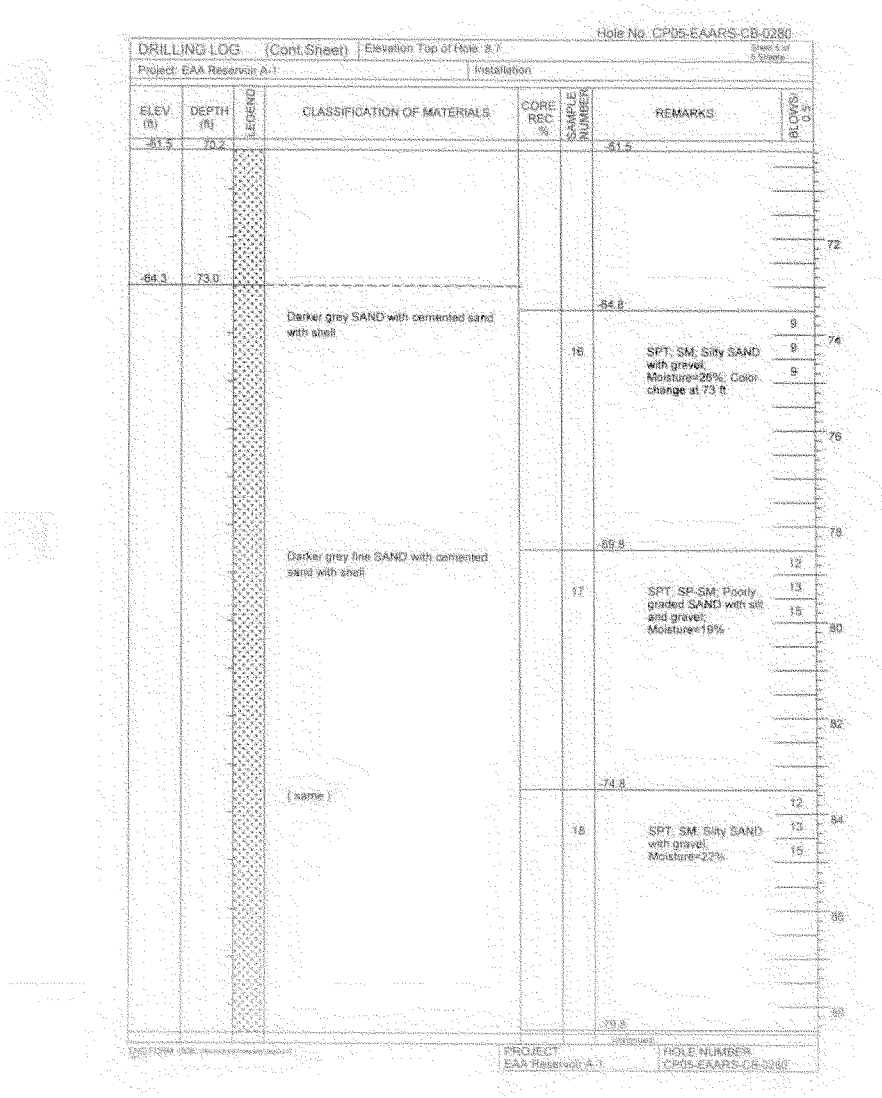
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/0.5'
8.7	0.0		Peat			8.7	1
					1	7.7 SPT, PT: Moisture=184%, Organic Content=66%, spoon	2
7.2	1.5		Caprock		2	6.7 1.5' weight 140 lbs. SPT	50
				22 (RQD 0%)	1	HQ coring	
1.7	7.0		Cemented SAND with shells and silts			1.7 GW: Well graded GRAVEL, Moisture=18%	
						0.3	4
					3	SPT	5
-4.8	13.5		Limerock with limerock silt			-4.8	12
					4	SPT	7
							10

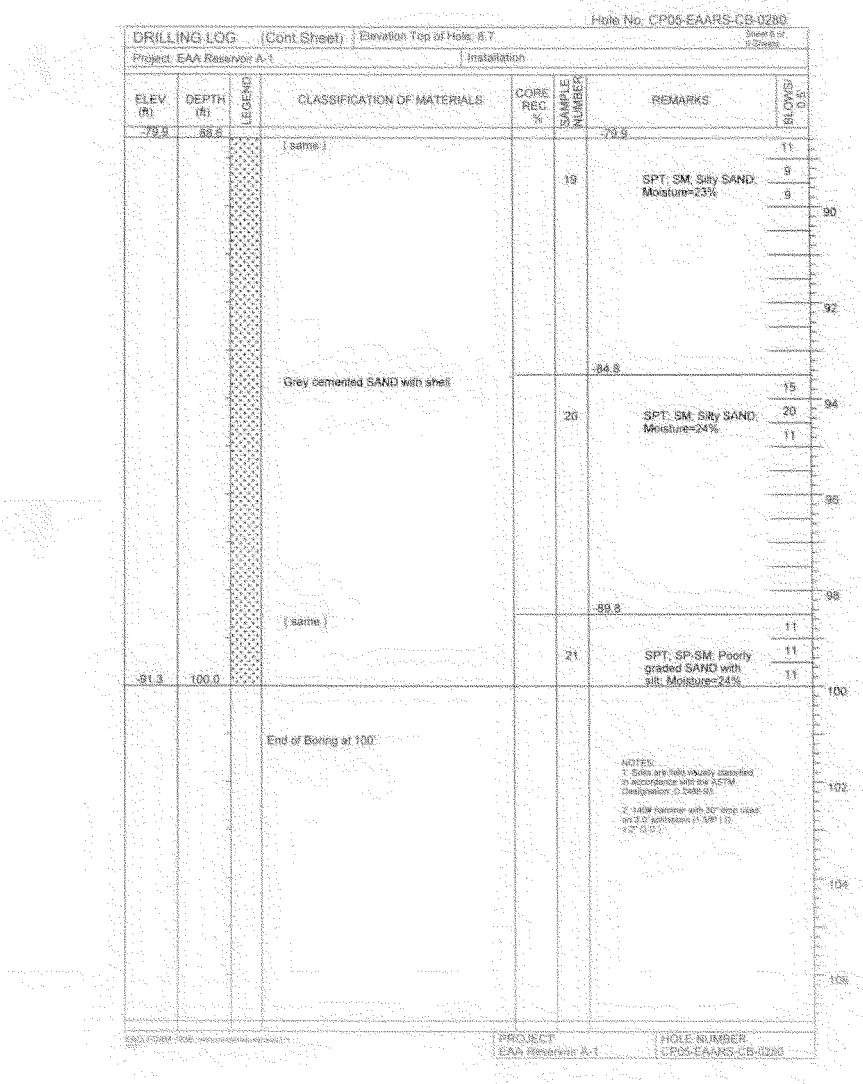
PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0280


Hole No. CP05-EAARS-CB-0280
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 8.7
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
-5.3
13.0
-9.3
18.0
Grey fine SAND with cemented sand and shell fragments
-9.8
5
SPT, 17.5 ft hard layer, shell fragments
-13.8
22.5
Very hard thin layers
-14.8
6
SPT, 22.5 ft very hard thin layers
-19.3
27.0
-19.8
Light brown / grey fine SAND with cemented sand with shell
7
SPT, GP-GM, Poorly graded GRAVEL with silt and sand; Moisture=13%
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0280

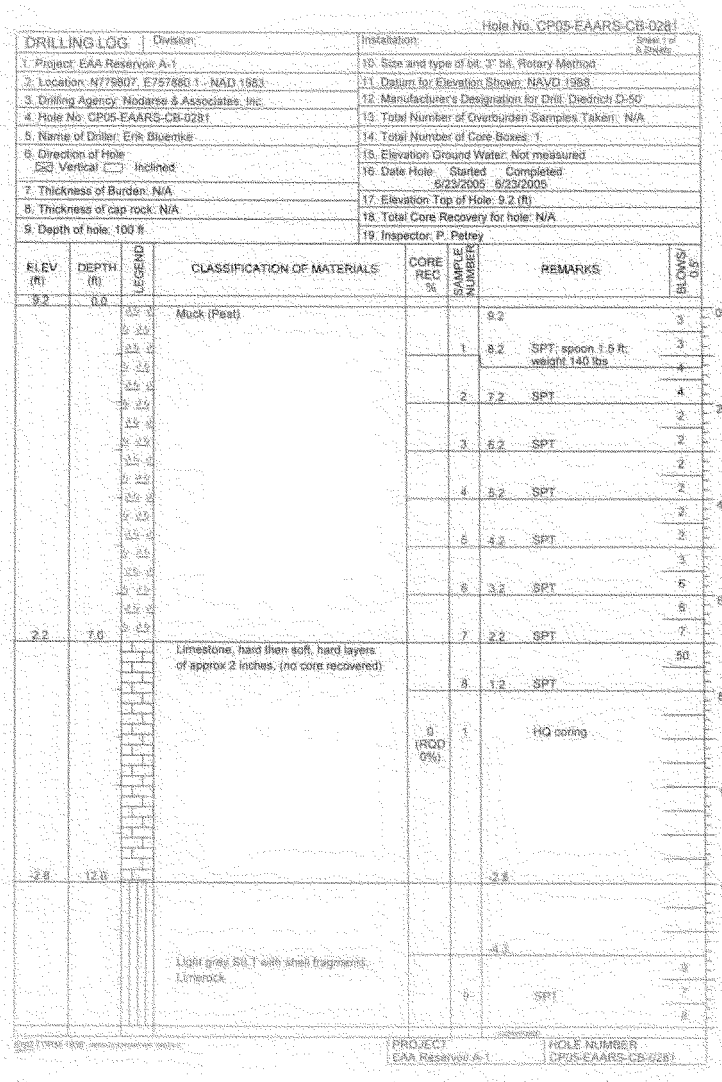

Hole No. CP05-EAARS-CB-0280
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: 8.7
Project: EAA Reservoir A-1 Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
24.7
Light brown / grey fine SAND with cemented sand with shell
24.8
8
SPT; SM; Silty SAND, Moisture=28%
7
7
8
34
36
38
(same)
39.8
9
SPT; SP-SM; Poorly graded SAND with silt; Moisture=24%
8
8
12
40
42
(same)
44.8
10
SPT; SP-SM; Poorly graded SAND with silt; Moisture=25%
7
10
13
44
46
48
(same)
49.8
11
SPT; SW-SM; Well graded SAND with silt; Moisture=29%
5
7
8
50
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0280


Hole No. CP05-EAARS-CB-0280
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 8.7
Project: EAA Reservoir A-1 Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5ft
-43.1
51.8
-44.8
(same)
12
SPT, SP-SM, Poorly graded SAND with silt, Moisture=23%
-49.8
Light brown / grey fine SAND with cemented sand with fragments of shell
13
SPT
-54.8
Light brown / light grey fine SAND with cemented sands with shell
14
SPT
-59.8
(same)
15
SPT, SP-SM, Poorly graded SAND, Moisture=23%
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0280


Hole No. CP05-EAARS-CB-0280
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: 8.7
Project: EAA Reservoir A-1 Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-81.5
73.2
-84.3
73.0
Darker grey SAND with cemented sand with shell
-84.8
16
SPT; SM; Silty SAND with gravel; Moisture=25%; Color change at 73 ft
9
9
9
72
74
76
78
Darker grey fine SAND with cemented sand with shell
-89.8
17
SPT; SP-SM; Poorly graded SAND with silt and gravel; Moisture=19%
12
13
15
80
82
(same)
-94.8
18
SPT; SM; Silty SAND with gravel; Moisture=22%
12
13
15
84
86
88
-99.8
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0280


Hole No. CP05-EAARS-CB-0280
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 8.7
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5ft
-79.9
88.8
(same)
19
SPT; SM; Silty SAND; Moisture=23%
11
9
9
90
92
-84.8
Grey cemented SAND with shell
15
20
94
20
SPT; SM; Silty SAND; Moisture=24%
11
96
98
-89.8
(same)
11
11
11
-91.3
100.0
21
SPT; SP-SM; Poorly graded SAND with silt; Moisture=24%
100
End of Boring at 100'
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 3.0" split-spoon (1 3/8" I.D. x 2" O.D.).
102
104
106
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0280

APPENDIX 2
SUPPLEMENTAL BORINGS AND PIEZOMETER INSTALLATION LOGS: 281-300



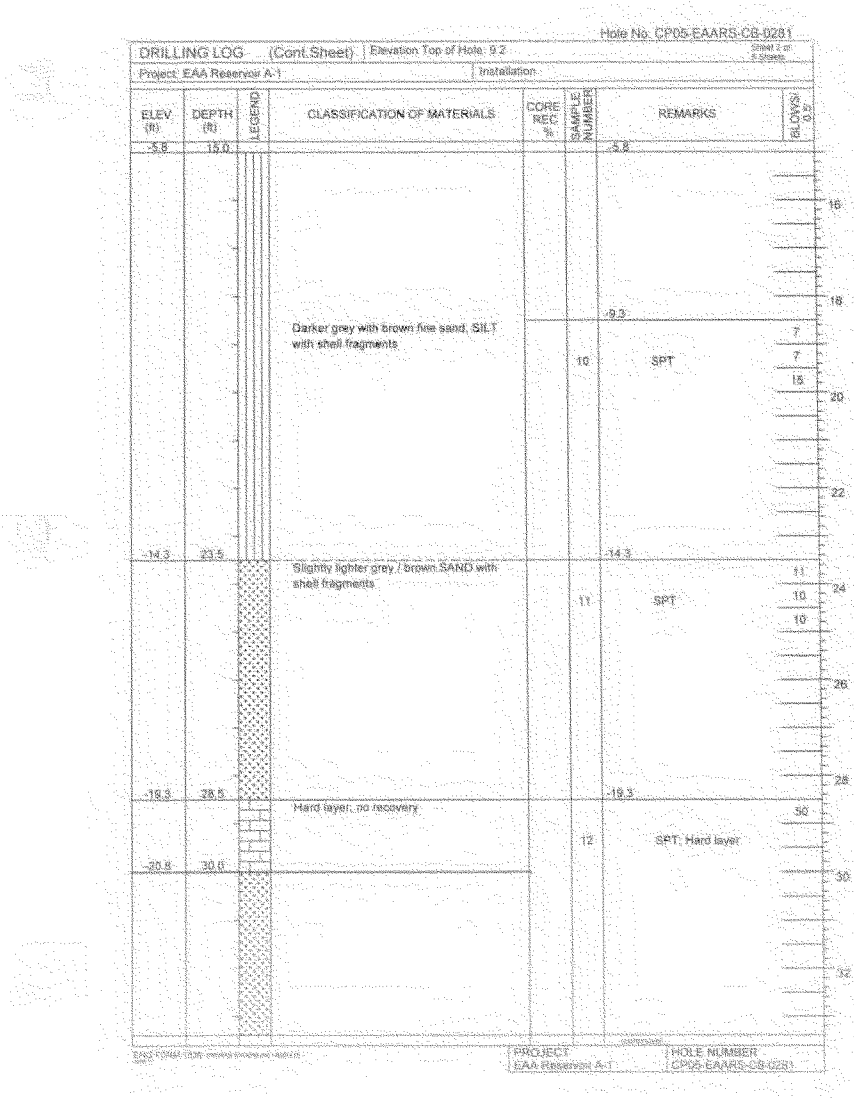
Hole No. CP05-EAARS-CB-0281

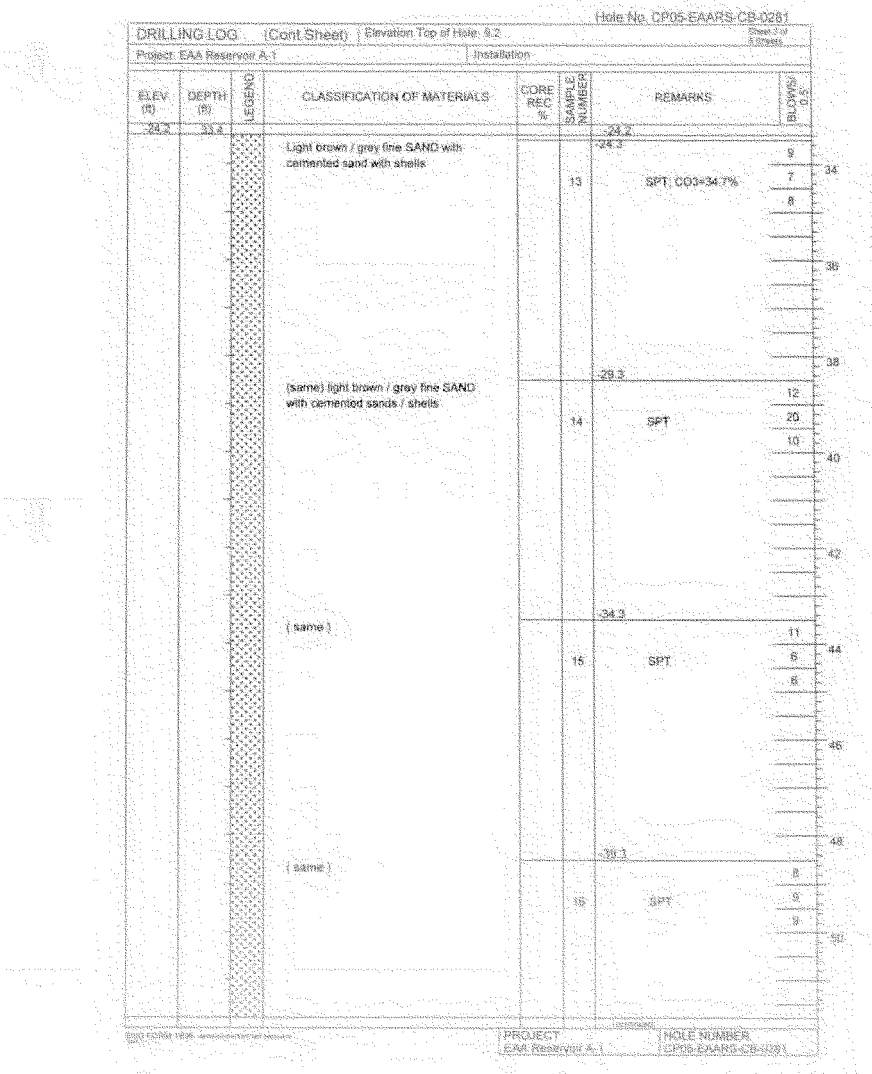
DRILLING LOG | Division: | Installation: | Sheet 1 of 8 Sheets

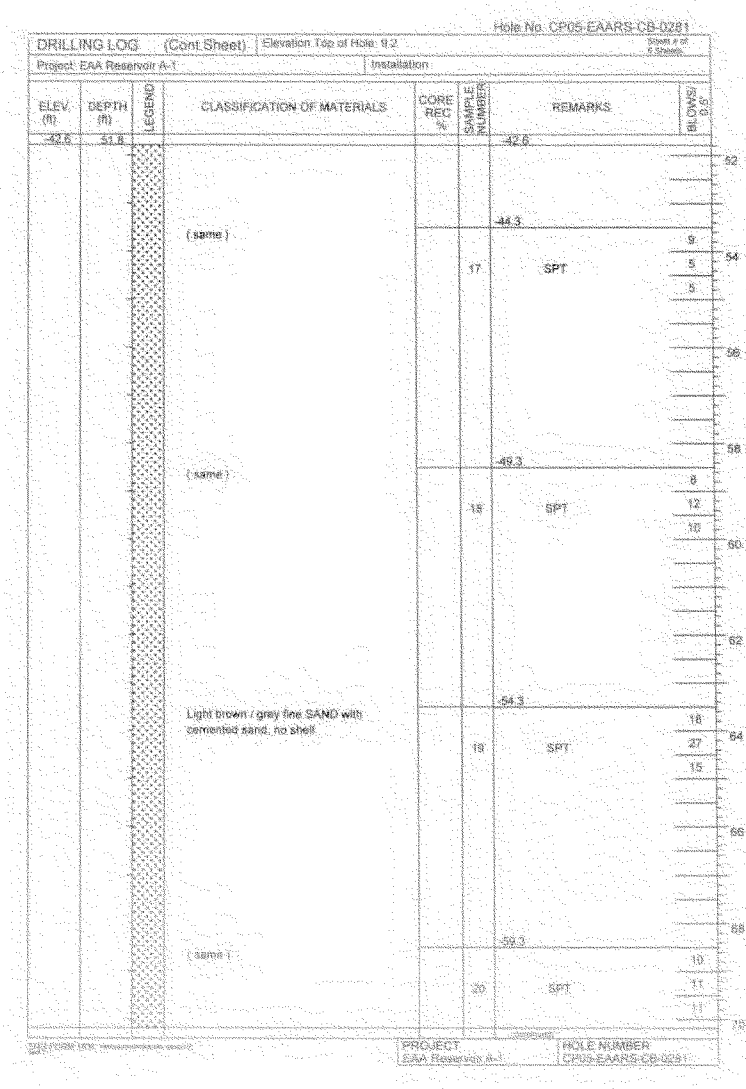
1. Project: EAA Reservoir A-1
2. Location: N779807, E757880.1 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0281
5. Name of Driller: Erik Bluemke
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: N/A
8. Thickness of cap rock: N/A
9. Depth of hole: 100 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: 1
15. Elevation Ground Water: Not measured
16. Date Hole: Started 6/23/2005 Completed 6/23/2005
17. Elevation Top of Hole: 9.2 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: P. Petrey

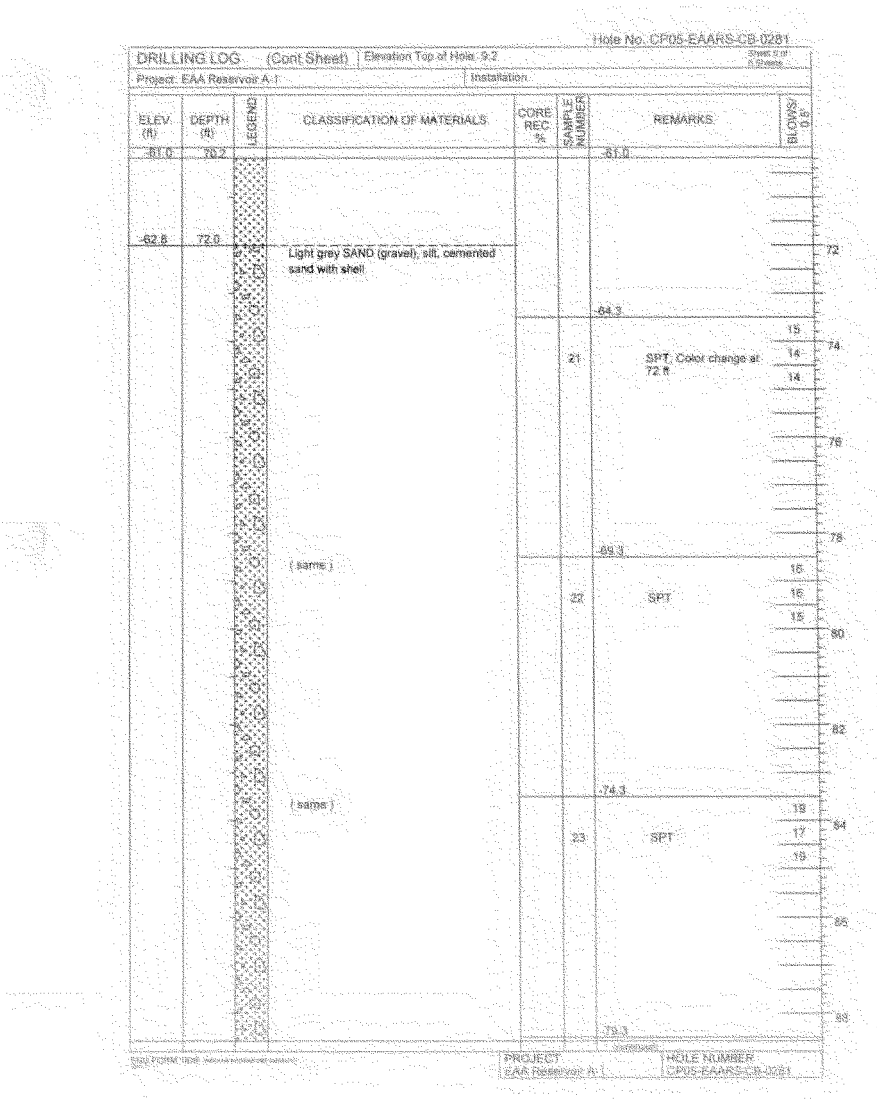
ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
9.2	0.0		Muck (Peat)			9.2	3
					1	8.2 SPT; spoon 1.5 ft; weight 140 lbs	3
							4
					2	7.2 SPT	4
							2
					3	6.2 SPT	2
							2
					4	5.2 SPT	2
							3
					5	4.2 SPT	3
							3
					6	3.2 SPT	5
							6
2.2	7.0				7	2.2 SPT	7
			Limestone, hard then soft, hard layers of approx 2 inches, (no core recovered)				50
					8	1.2 SPT	
				0 (RQD 0%)	1	HQ coring	
-2.8	12.0					-2.8	
			Light gray SILT with shell fragments, Limerock			-4.3	3
					9	SPT	3
							4

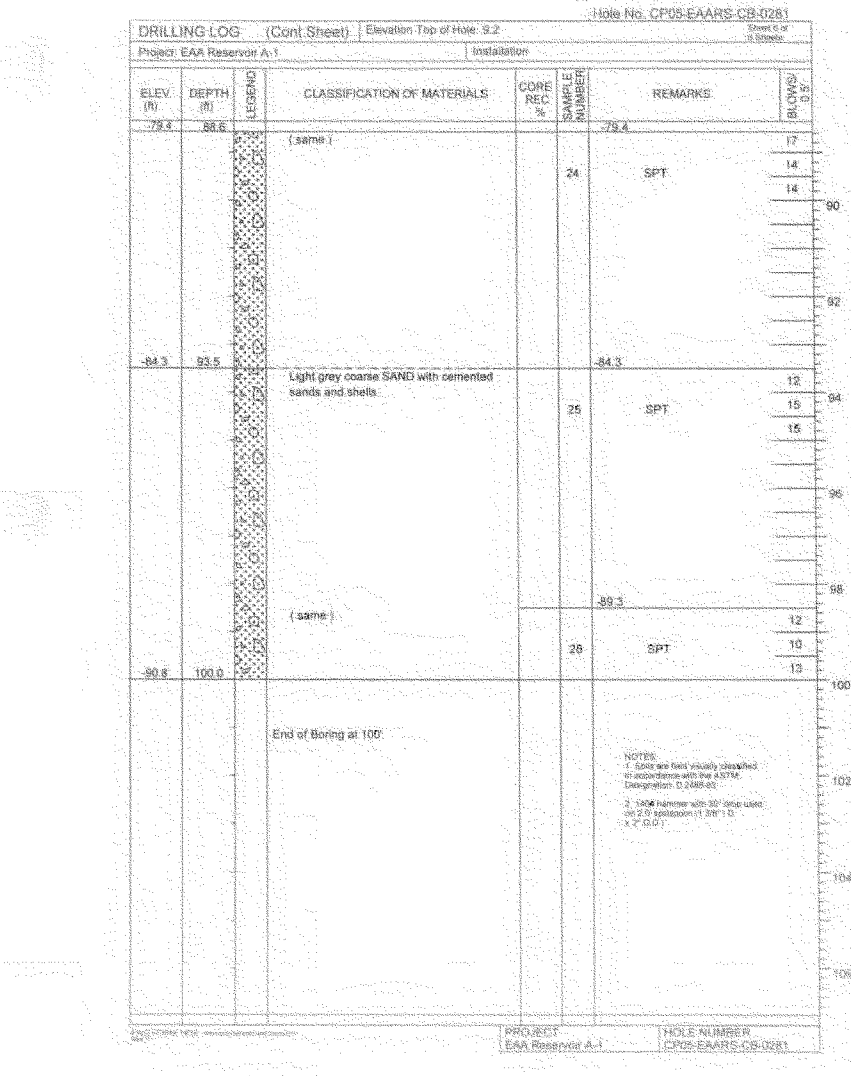
PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0281

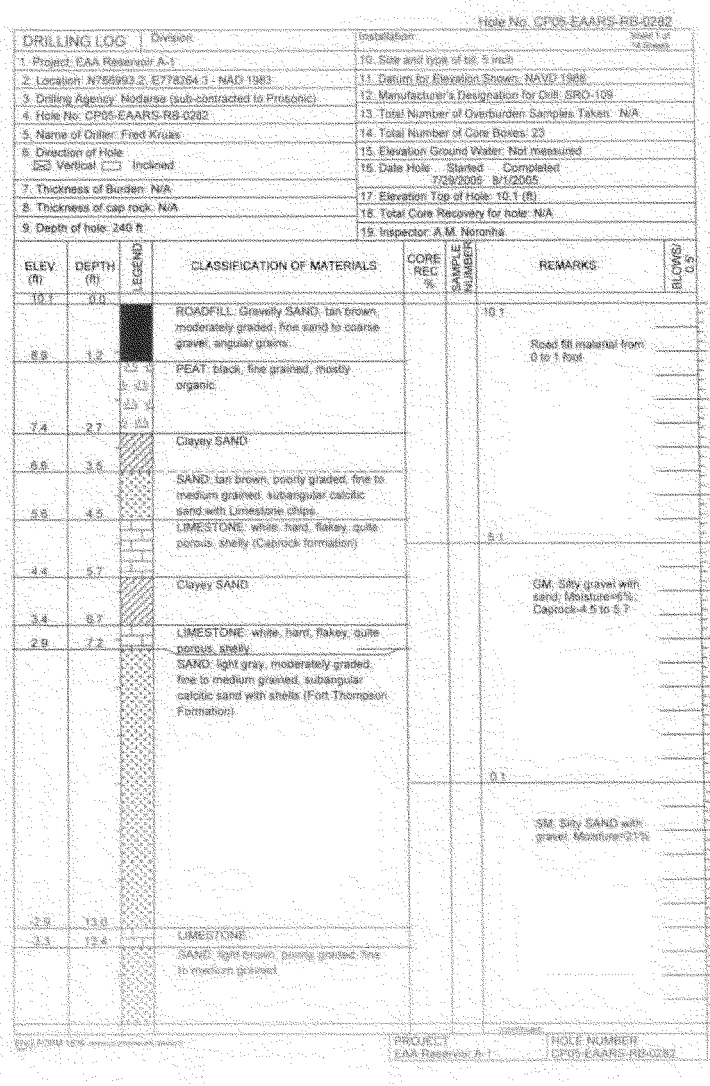

Hole No. CP05-EAARS-CB-0281
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 9.2
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLER NUMBER
REMARKS
BLOWS/0.5'
5.8
19.0
-9.3
Darker grey with brown fine sand, SILT with shell fragments
10
SPT
7
7
15
-14.3
23.5
Slightly lighter grey / brown SAND with shell fragments
11
SPT
11
10
10
-19.3
28.5
Hard layer, no recovery
12
SPT, Hard layer
50
-20.8
30.0
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0281


Hole No. CP05-EAARS-CB-0281
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 9.2
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
29.2
33.8
Light brown / grey fine SAND with cemented sand with shells
-29.2
-29.3
13
SPT; CO3=34.7%
9
7
8
34
36
38
(same) light brown / grey fine SAND with cemented sands / shells
-29.3
14
SPT
12
20
10
40
42
-34.3
(same)
15
SPT
11
6
6
44
46
48
-39.3
(same)
16
SPT
8
9
9
50
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0281


Hole No. CP05-EAARS-CB-0281
DRILLING LOG (Cont Sheet)
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
42.6
51.8
44.3
49.3
54.3
59.3
(same)
(same)
Light brown / grey fine SAND with cemented sand, no shell
(same)
17
15
19
20
SPT
SPT
SPT
SPT
9
5
5
8
12
18
18
27
15
10
11
11
52
54
56
58
60
62
64
66
68
70
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0281


Hole No. CP05-EAARS-CB-0281
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 9.2
Project: EAA Reservoir A-1 Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5ft
81.0
70.2
62.8
72.0
Light grey SAND (gravel), silt, cemented sand with shell
81.0
64.3
21
SPT, Color change at 72 ft
15
14
14
74
76
78
69.3
(same)
22
SPT
15
15
15
80
82
74.3
(same)
23
SPT
19
17
16
84
86
88
79.3
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0281


Hole No. CP08-EAARS-CB-0281
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 9.2
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
-79.4
88.6
(same)
24
SPT
17
14
14
90
92
-84.3
93.5
Light grey coarse SAND with cemented sands and shells
25
SPT
12
15
15
94
96
98
-89.3
(same)
28
SPT
12
10
13
-90.8
100.0
100
End of Boring at 100'
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.0" soil sample (1 3/8" I.D. x 2" O.D.)
102
104
106
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP08-EAARS-CB-0281



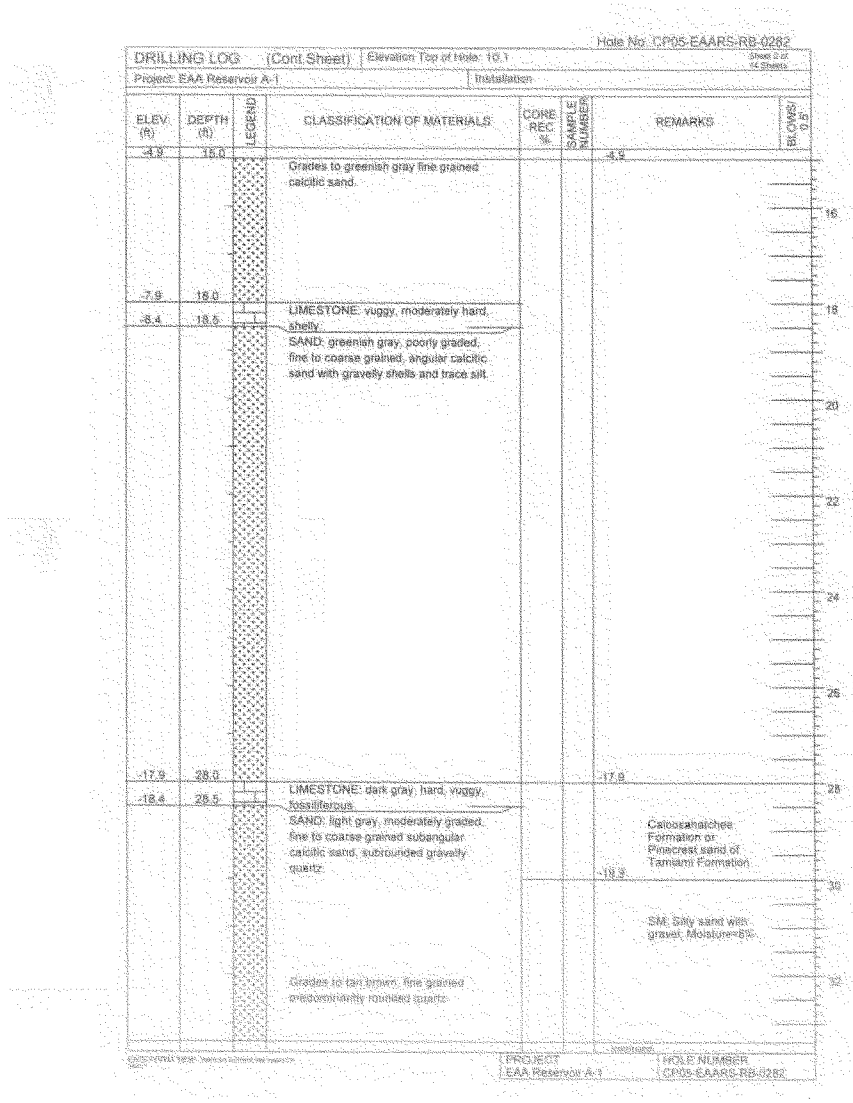
Hole No. CP05-EAARS-RB-0282

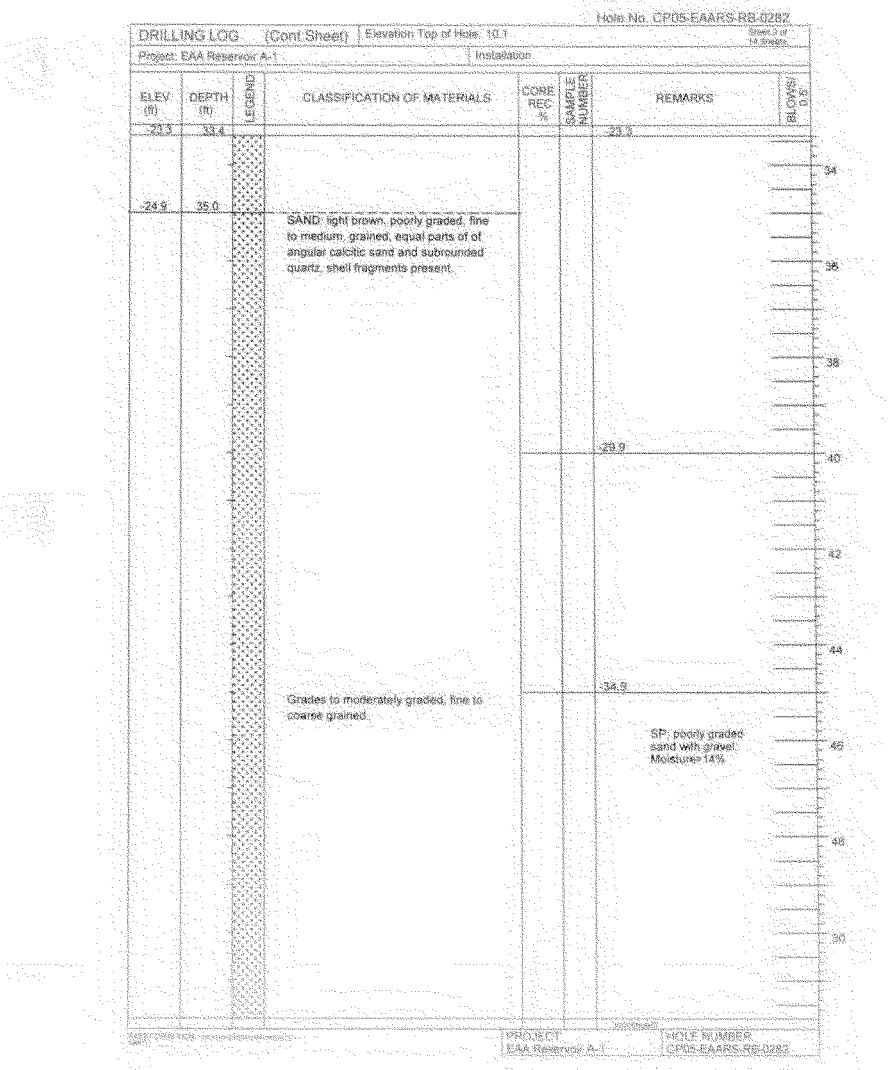
DRILLING LOG | Division: | Installation: | Sheet 1 of 1 Sheets

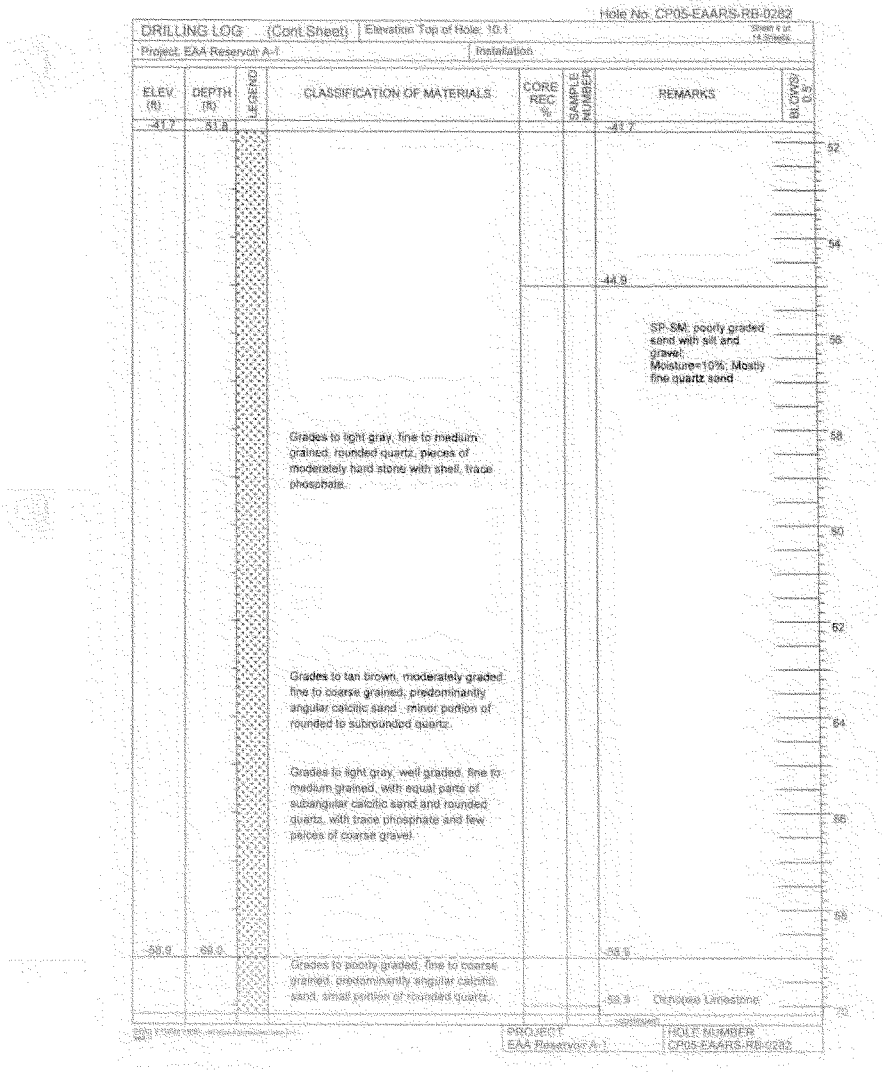
1. Project: EAA Reservoir A-1
2. Location: N755993.2, E778264.3 - NAD 1983
3. Drilling Agency: Nodarse (sub-contracted to Prosonic)
4. Hole No: CP05-EAARS-RB-0282
5. Name of Driller: Fred Kruse
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: N/A
8. Thickness of cap rock: N/A
9. Depth of hole: 240 ft
10. Size and type of bit: 5 inch
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: SRO-109
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: 23
15. Elevation Ground Water: Not measured
16. Date Hole: Started 7/29/2005 Completed 8/1/2005
17. Elevation Top of Hole: 10.1 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: A.M. Noronha

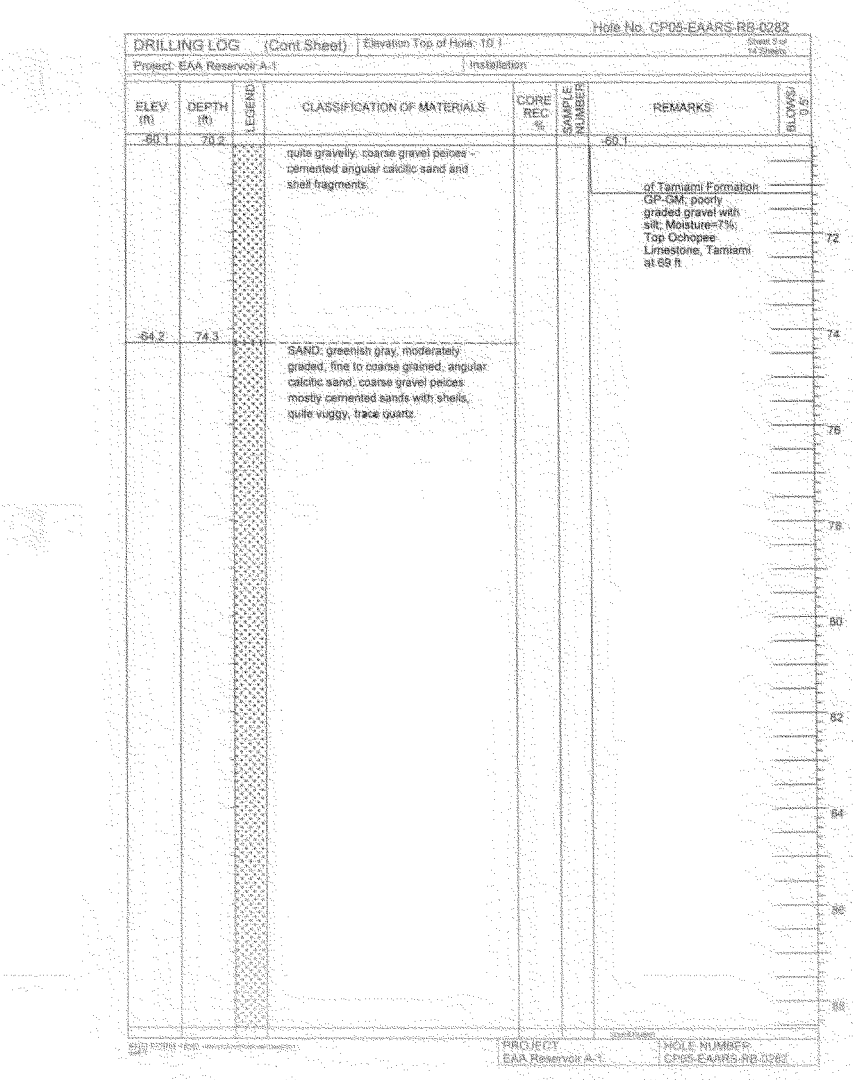
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
10.1	0.0					10.1	
8.9	1.2		ROADFILL: Gravelly SAND, tan brown, moderately graded, fine sand to coarse gravel, angular grains.			Road fill material from 0 to 1 foot.	
7.4	2.7		PEAT: black, fine grained, mostly organic.				
6.6	3.6		Clayey SAND				
5.5	4.5		SAND: tan brown, poorly graded, fine to medium grained, subangular calcitic sand with Limestone chips.				
4.4	5.7		LIMESTONE: white, hard, flakey, quite porous, shelly (Caprock formation)			5.1	
3.4	6.7		Clayey SAND			GM: Silty gravel with sand; Moisture=6%; Caprock=4.5 to 5.7	
2.9	7.2		LIMESTONE: white, hard, flakey, quite porous, shelly				
			SAND: light gray, moderately graded, fine to medium grained, subangular calcitic sand wih shells (Fort Thompson Formation)			9.1	
-3.9	13.0					SM: Silty SAND with gravel; Moisture=11%	
-4.3	13.4		LIMESTONE				
			SAND: light brown, poorly graded, fine to medium grained				

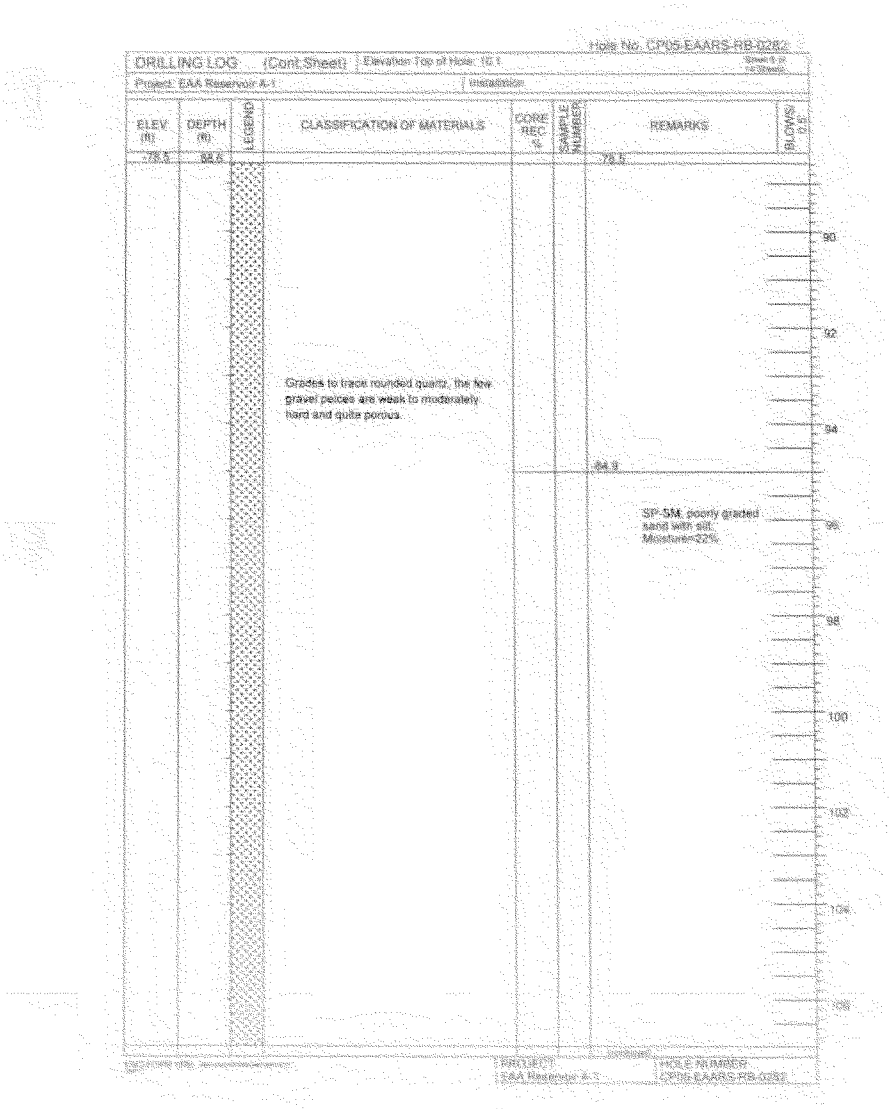
PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-RB-0282

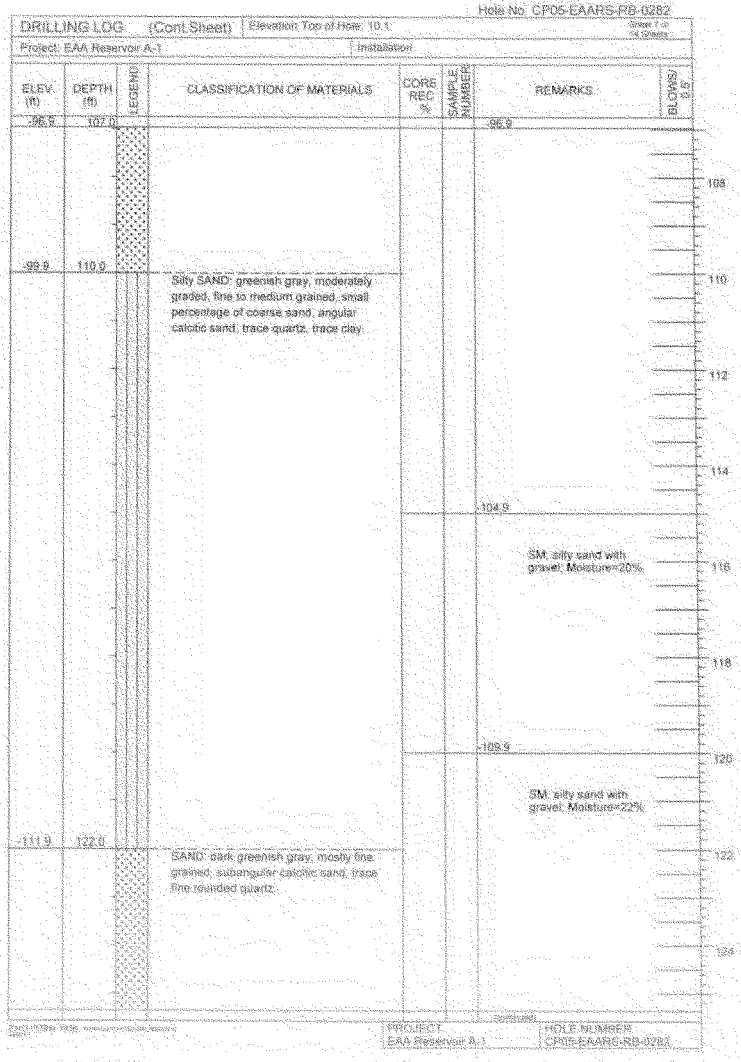

Hole No. CP05-EAARS-RB-0282
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 16.1
Sheet 2 of 4 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5ft
-4.9
16.0
Grades to greenish gray fine grained calcitic sand.
-7.9
18.0
-8.4
18.5
LIMESTONE: vuggy, moderately hard, shelly.
SAND: greenish gray, poorly graded, fine to coarse grained, angular calcitic sand with gravelly shells and trace silt.
-17.9
28.0
-18.4
28.5
LIMESTONE: dark gray, hard, vuggy, fossiliferous.
SAND: light gray, moderately graded, fine to coarse grained subangular calcitic sand, subrounded gravelly quartz.
Caloosahatchee Formation or Pinecrest sand of Tamiami Formation)
-19.9
SM; Silty sand with gravel; Moisture=8%
Grades to tan brown, fine grained predominantly rounded quartz.
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0282

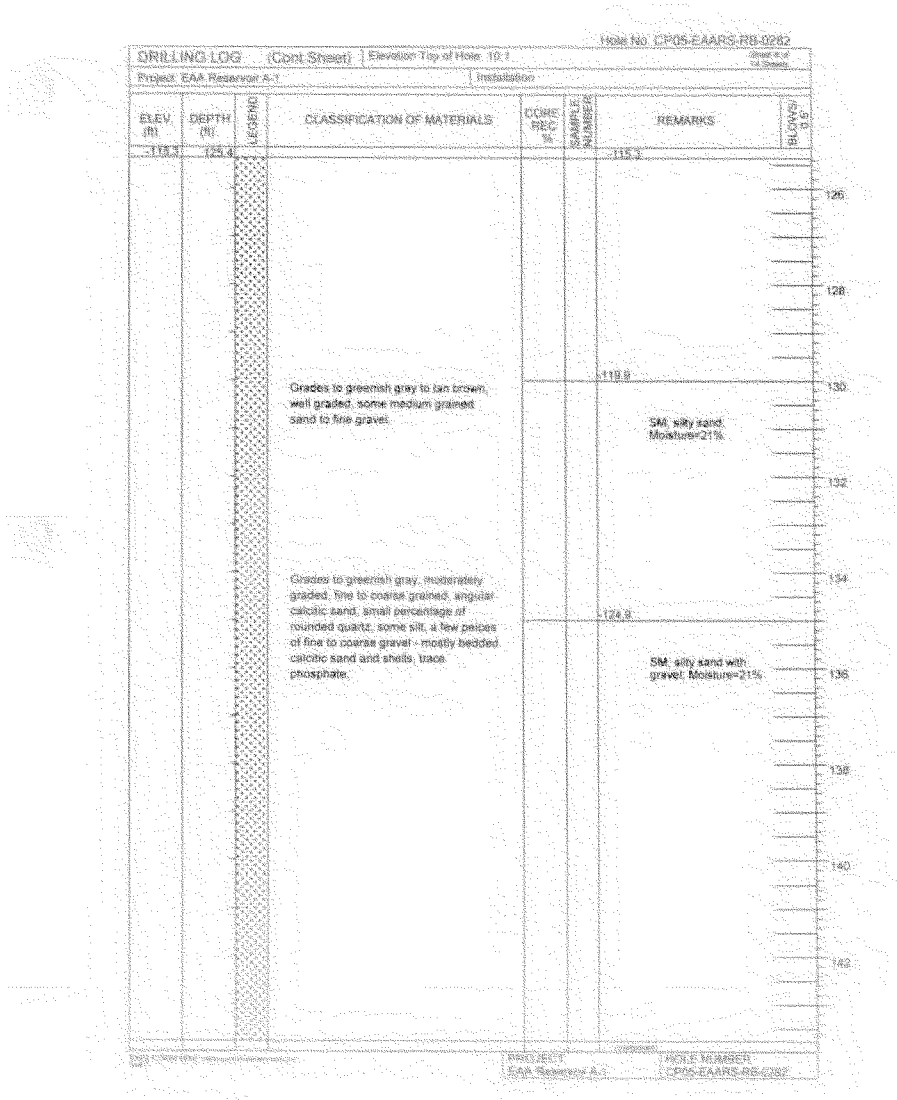

Hole No. CP05-EAARS-RB-0282
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10.1
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-23.3
33.4
-24.9
35.0
SAND: light brown, poorly graded, fine to medium, grained, equal parts of of angular calcitic sand and subrounded quartz, shell fragments present
-29.9
Grades to moderately graded, fine to coarse grained
-34.9
SP: poorly graded sand with gravel, Moisture 14%
34
36
38
40
42
44
46
48
50
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0282

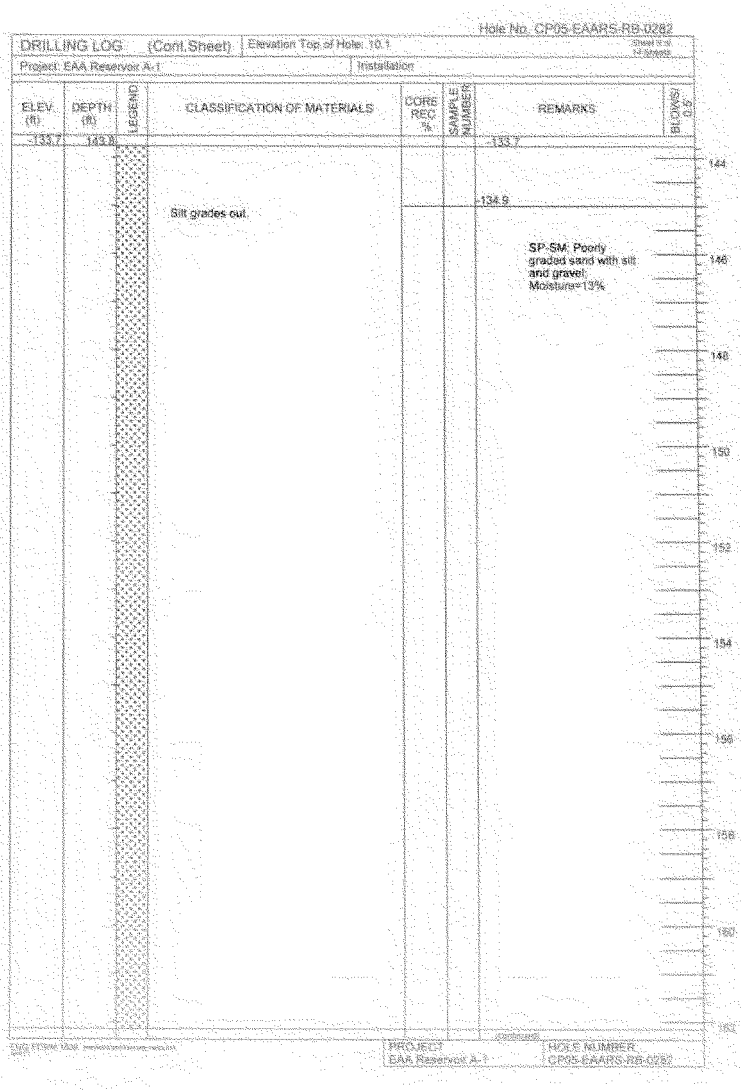

Hole No. CP05-EAARS-RB-0282
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10.1
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
41.7
51.8
44.8
SP-SM; poorly graded sand with silt and gravel; Moisture=10%; Mostly fine quartz sand
Grades to light gray, fine to medium grained, rounded quartz, pieces of moderately hard stone with shell, trace phosphate.
Grades to tan brown, moderately graded, fine to coarse grained, predominantly angular calcitic sand , minor portion of rounded to subrounded quartz.
Grades to light gray, well graded, fine to medium grained, with equal parts of subangular calcitic sand and rounded quartz, with trace phosphate and few pieces of coarse gravel.
59.0
69.0
58.9
Grades to poorly graded, fine to coarse grained, predominantly angular calcitic sand, small portion of rounded quartz.
58.9
Ocnyaka Limestone
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0282

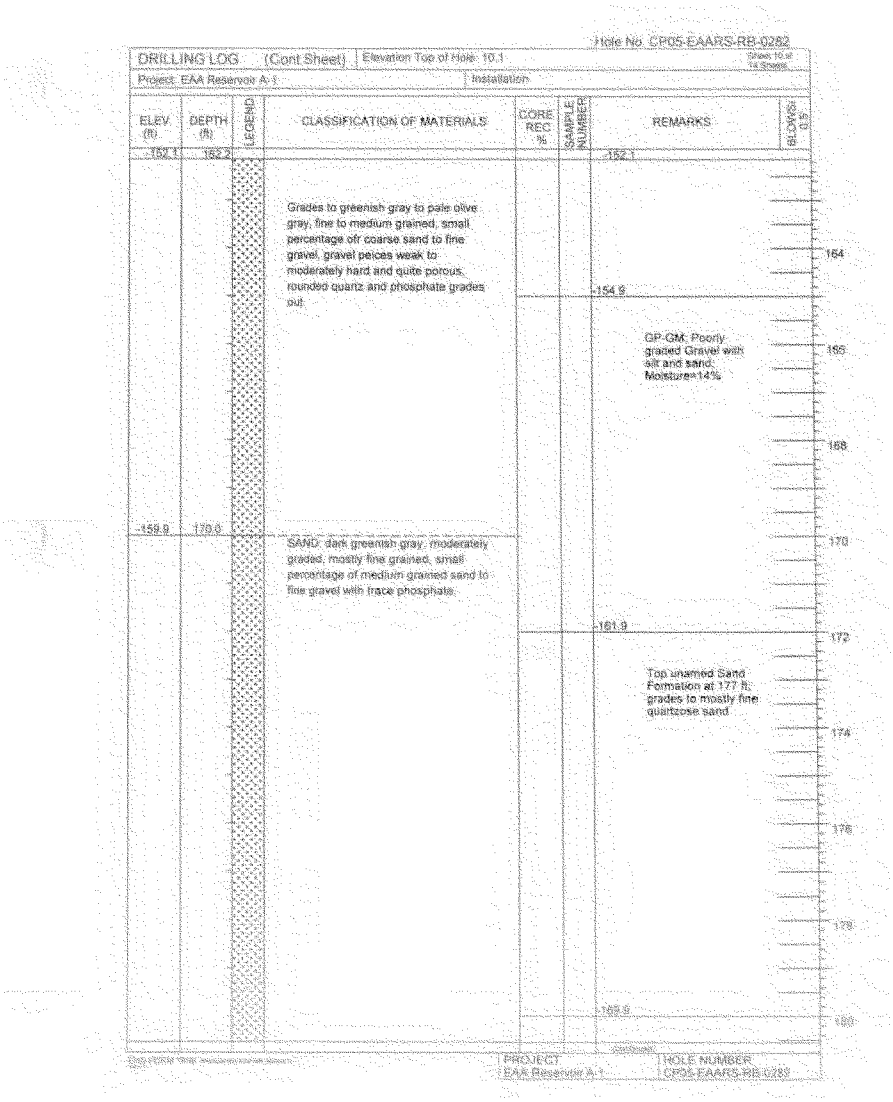

Hole No. CP05-EAARR-RB-0282
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10.1
Sheet 3 of 14 Sheets
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
60.1
70.2
quite gravelly, coarse gravel peices - cemented angular calcitic sand and shell fragments
of Tamiami Formation GP-GM; poorly graded gravel with silt; Moisture=7%; Top Ochopee Limestone, Tamiami at 69 ft
64.2
74.3
SAND: greenish gray, moderately graded, fine to coarse grained, angular calcitic sand, coarse gravel peices mostly cemented sands with shells, quite vuggy, trace quartz
72
74
76
78
80
82
84
86
88
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARR-RB-0282

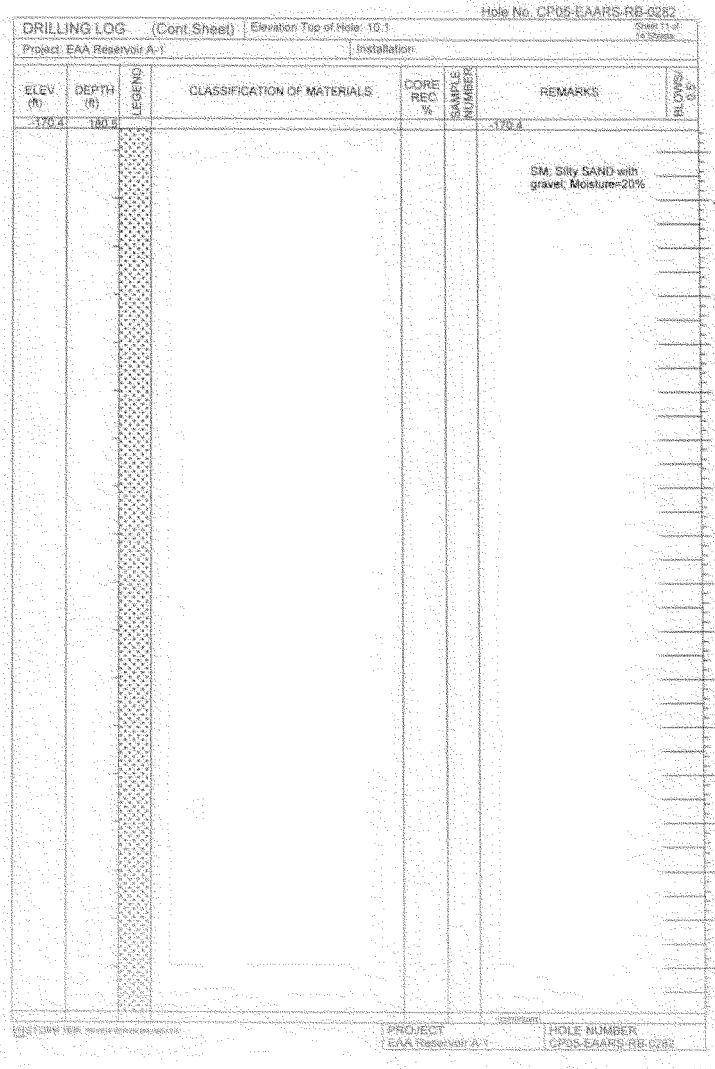

Hole No. CP05-EAARS-RB-028Z
ORILLING LOG (Cont.Sheet)
Project: EAA Reservoir A-1
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
79.5
82.5
Grades to track rounded quartz, the few gravel peices are weak to moderately hard and quite porous.
84.9
SP-SM, poorly graded sand with silt. Moisture=22%
90
92
94
96
98
100
102
104
106
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-028Z

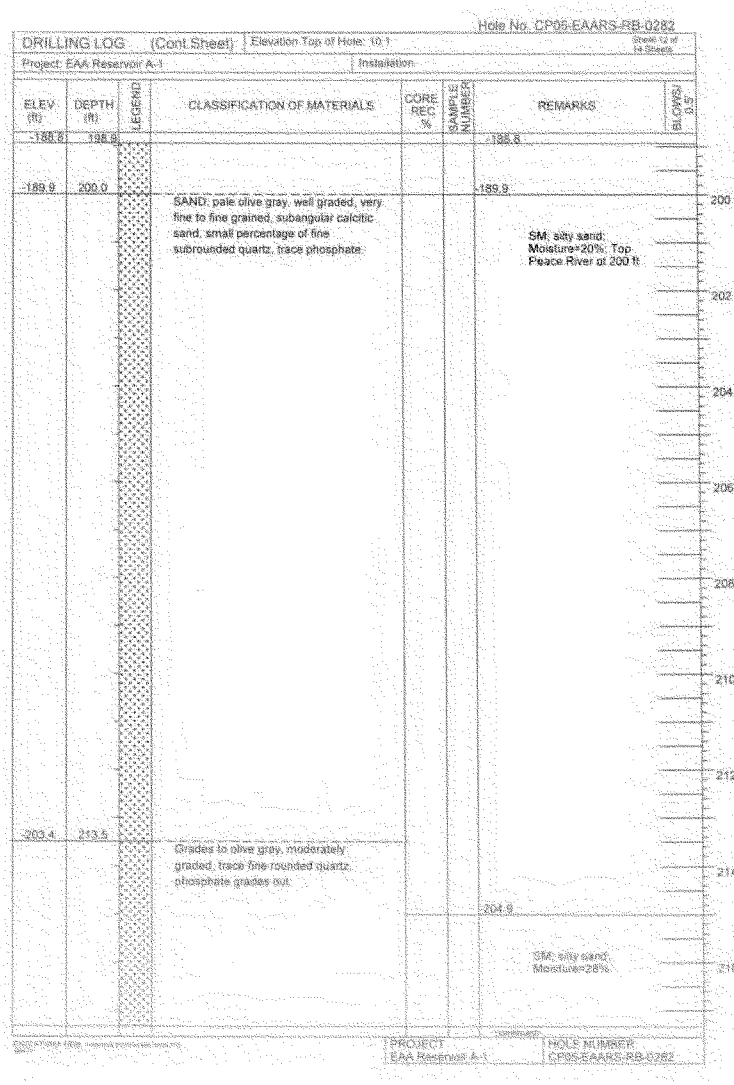

Hole No. CP05-EAARS-RB-0282
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 10.1
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-96.9
107.0
-99.9
110.0
Silty SAND: greenish gray, moderately graded, fine to medium grained, small percentage of coarse sand, angular calcitic sand, trace quartz, trace clay.
-104.9
SM: silty sand with gravel; Moisture=20%
-109.9
SM: silty sand with gravel; Moisture=22%
-111.9
122.0
SAND: dark greenish gray, mostly fine grained, subangular calcitic sand, trace fine rounded quartz.
108
110
112
114
116
118
120
122
124
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0282

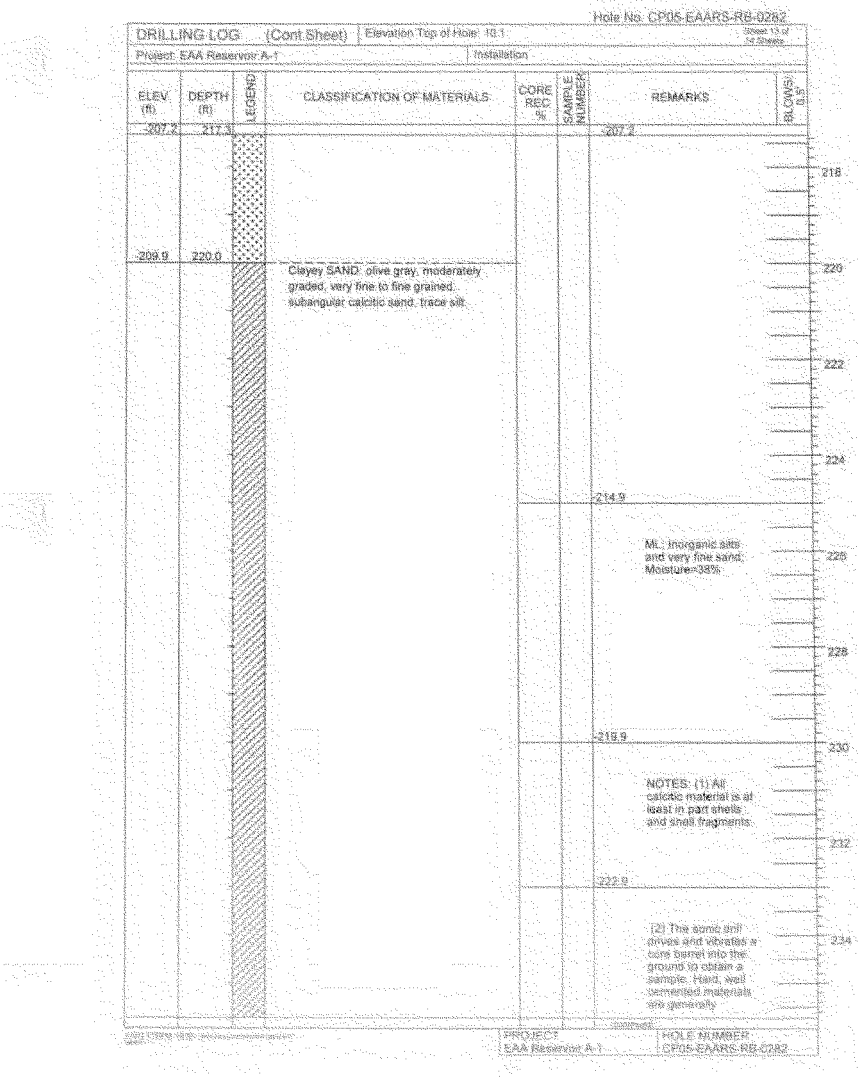

Hole No. CP05-EAARS-RB-0262
DRILLING LOG (Cont Sheet) Elevation Top of Hole 10.7
Project EAA Reservoir A-1 Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
115.7
125.4
115.7
Grades to greenish gray to tan brown, well graded, some medium grained sand to fine gravel.
SM; silty sand, Moisture=21%
119.8
Grades to greenish gray, moderately graded, fine to coarse grained, angular calcitic sand, small percentage of rounded quartz, some silt, a few pieces of fine to coarse gravel - mostly bedded calcitic sand and shells, trace phosphate.
SM; silty sand with gravel; Moisture=21%
124.8
125
128
130
132
134
136
138
140
142
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0262

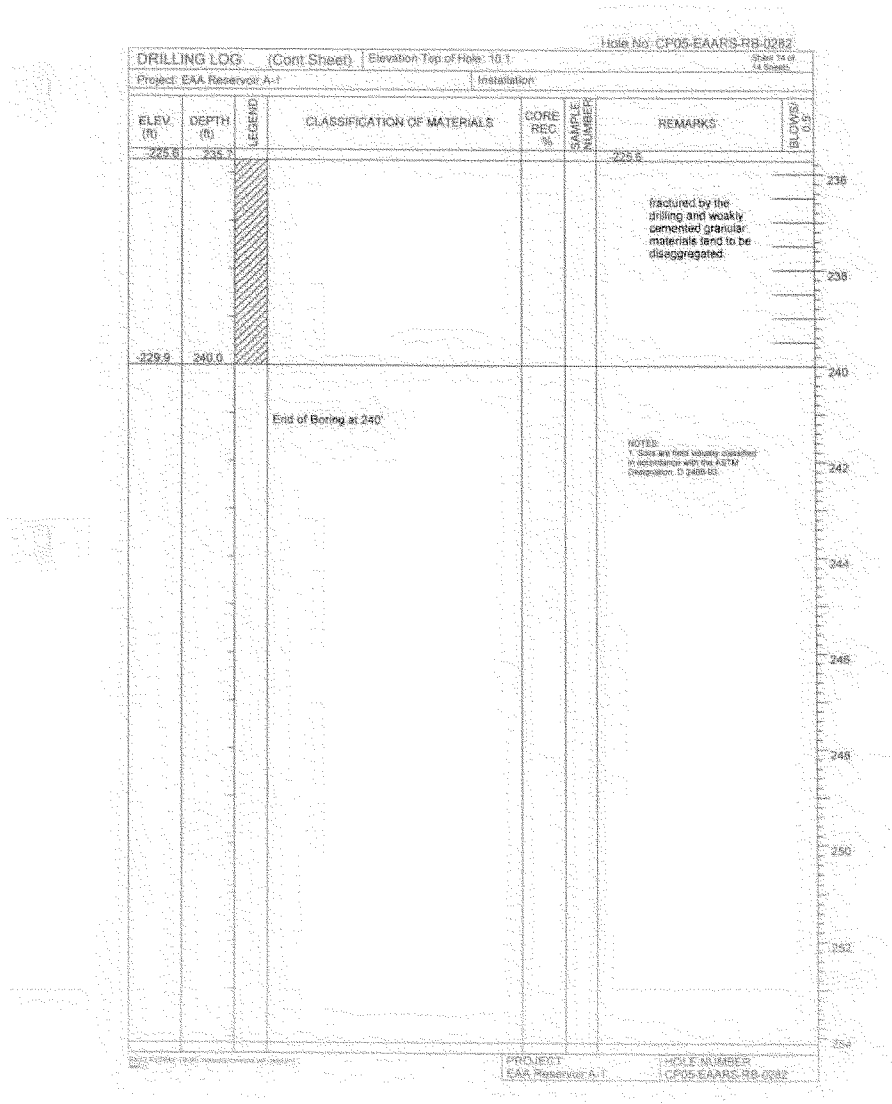

Hole No. CP05-EAARS-RB-0282
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: 10.1
Project: EAA Reservoir A-1 Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
133.7
149.8
133.7
134.9
Silt grades out.
SP-SM: Poorly graded sand with silt and gravel; Moisture=13%
144
146
148
150
152
154
156
158
160
162
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0282

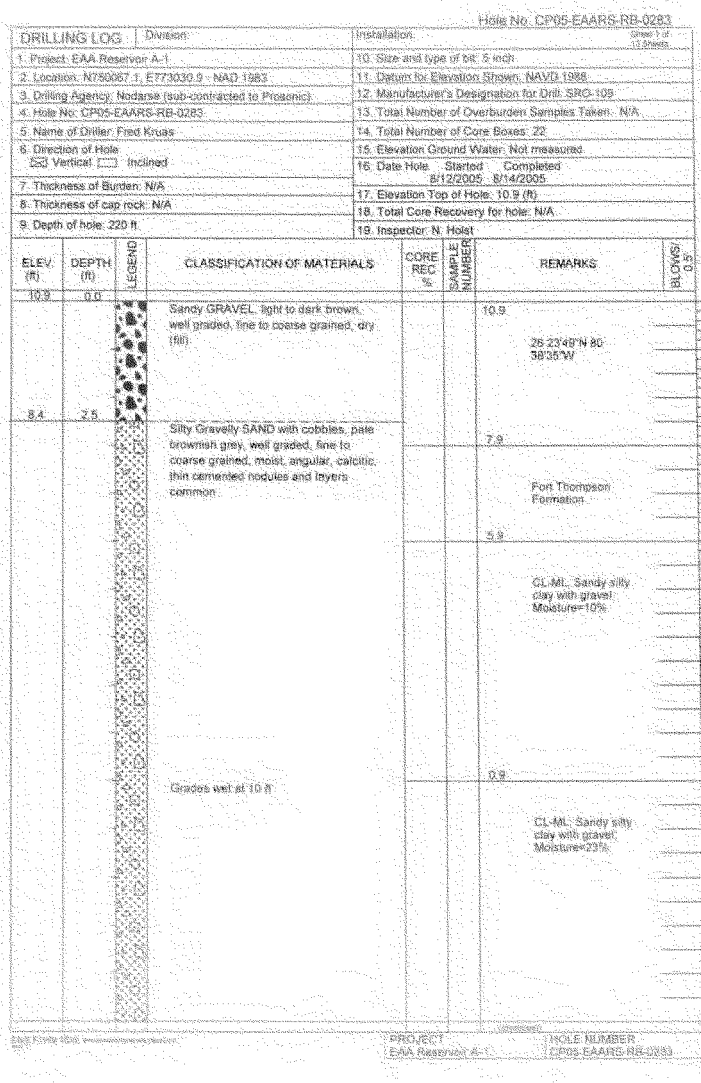

Hole No. CP05-EAARS-RR-0282
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10.1
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/6"
152.1
152.2
Grades to greenish gray to pale olive gray, fine to medium grained, small percentage off coarse sand to fine gravel, gravel peices weak to moderately hard and quite porous, rounded quartz and phosphate grades out
154.6
GP-GM: Poorly graded Gravel with silt and sand; Moisture=14%
159.9
170.0
SAND: dark greenish gray, moderately graded, mostly fine grained, small percentage of medium grained sand to fine gravel with trace phosphate
161.9
Top unamed Sand Formation at 177 ft, grades to mostly fine quartzose sand
169.9
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RR-0282


Hole No. CP05-EAARS-RB-0282
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 10.1
Sheet 11 of 14 Sheets
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/6 in
170.4
180.5
170.4
SM; Silty SAND with gravel; Moisture=20%
182
184
186
188
190
192
194
196
198
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0282


Hole No. CP05-EAARS-RB-0282
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: 10.1
Project: EAA Reservoir A-1 Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-188.8
198.8
189.9
200.0
SAND: pale olive gray, well graded, very fine to fine grained, subangular calcitic sand, small percentage of fine subrounded quartz, trace phosphate
-188.8
189.9
SM; silty sand; Moisture=20%; Top Peace River at 200 ft
200
202
204
206
208
210
212
214
216
203.4
213.5
Grades to olive gray, moderately graded, trace fine rounded quartz, phosphate grades out
204.9
SM; silty sand; Moisture=28%
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0282


Hole No. CP05-EAARS-RB-0282
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 18.1
Sheet 13 of 14 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
207.2
217.3
209.9
220.0
Clayey SAND: olive gray, moderately graded, very fine to fine grained, subangular calcitic sand, trace silt
214.9
ML: inorganic silts and very fine sand. Moisture=38%
219.9
NOTES: (1) All calcitic material is at least in part shells and shell fragments.
222.9
(2) The sonic drill drives and vibrates a core barrel into the ground to obtain a sample. Hard, well cemented materials are generally
218
220
222
224
226
228
230
232
234
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0282


Hole No. CP05-EAARS-RB-0282
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10.1
Sheet 14 of 14 Sheets
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
225.6
235.7
229.9
240.0
fractured by the drilling and weakly cemented granular materials tend to be disaggregated.
End of Boring at 240'
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0282



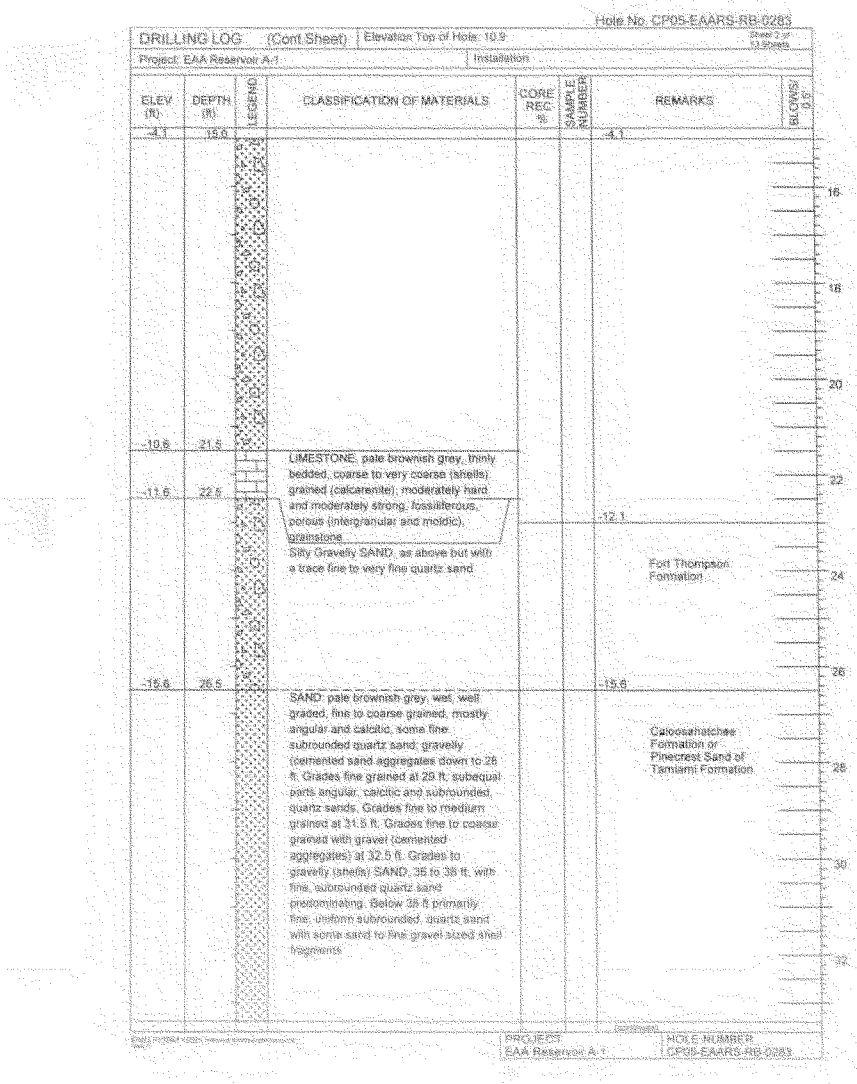
Hole No. CP05-EAARS-RB-0283

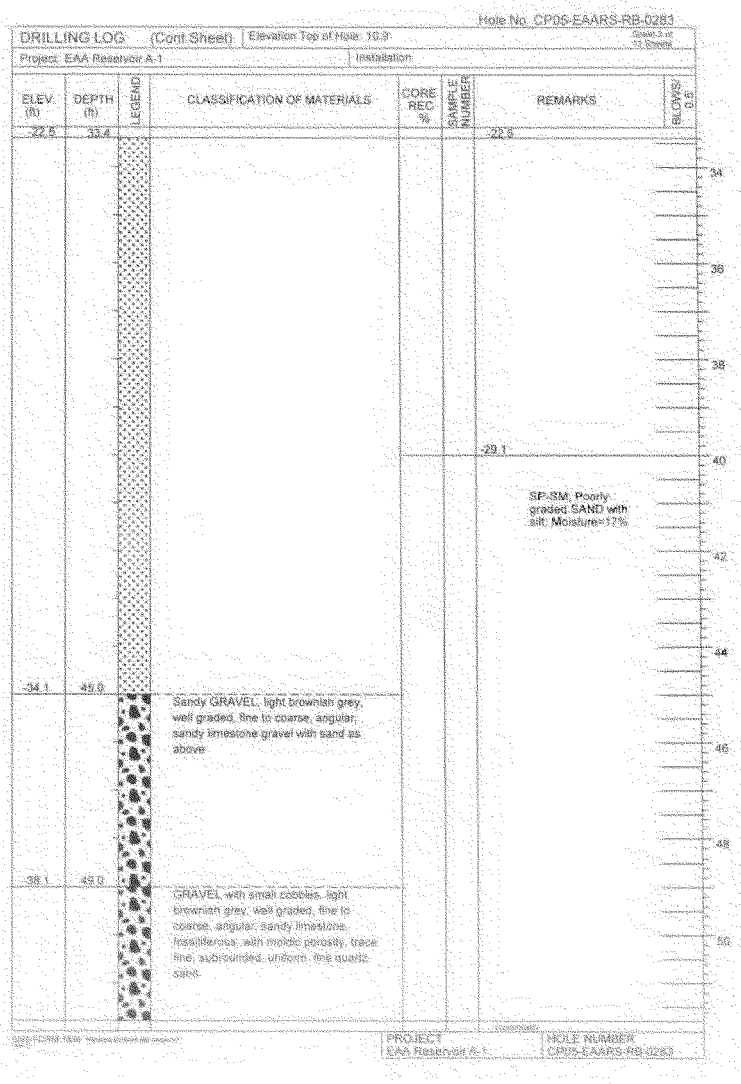
DRILLING LOG | Division: | Installation: | Sheet 1 of 10 Sheets

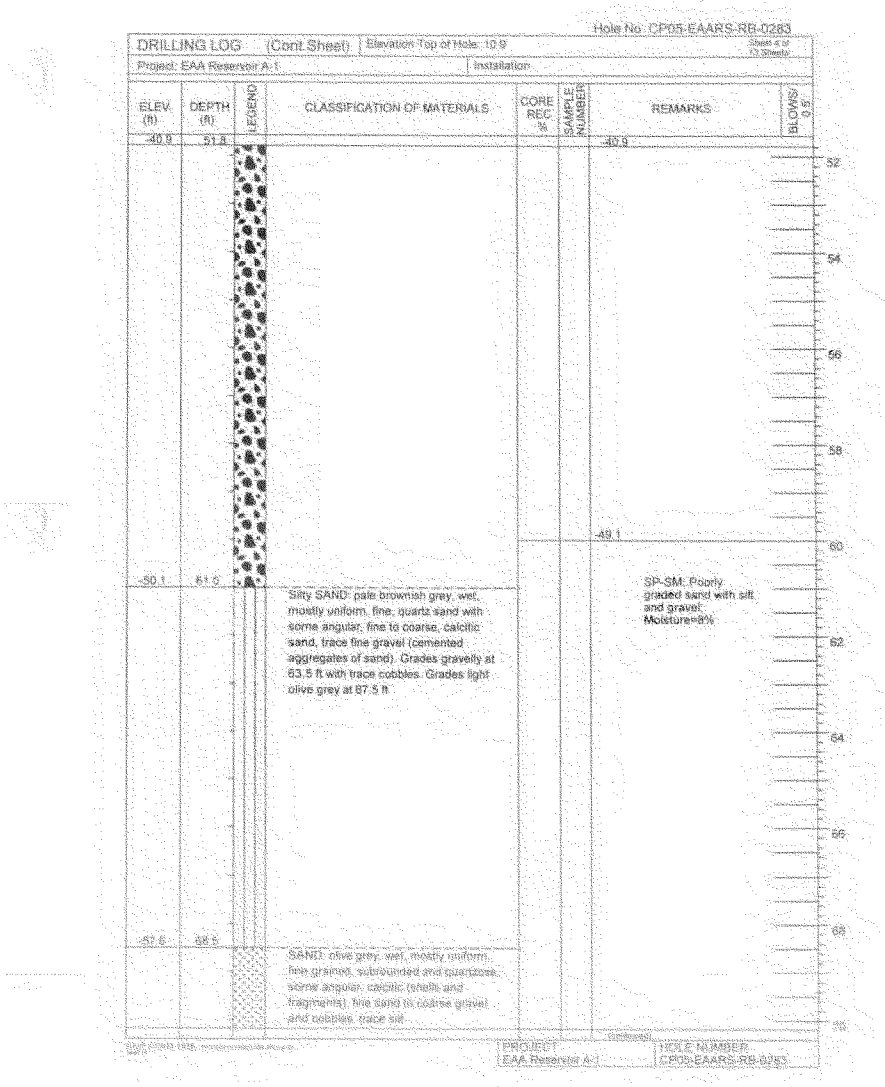
1. Project: EAA Reservoir A-1	10. Size and type of bit: 5 inch
2. Location: N750057.1, E773030.9 - NAD 1983	11. Datum for Elevation Shown: NAVD 1988
3. Drilling Agency: Nodarse (sub-contracted to Prosonic)	12. Manufacturer's Designation for Drill: SRC-105
4. Hole No: CP05-EAARS-RB-0283	13. Total Number of Overburden Samples Taken: N/A
5. Name of Driller: Fred Kruas	14. Total Number of Core Boxes: 22
6. Direction of Hole: ☒ Vertical ☐ Inclined	15. Elevation Ground Water: Not measured
	16. Date Hole: Started 8/12/2005 Completed 8/14/2005
7. Thickness of Burden: N/A	17. Elevation Top of Hole: 10.9 (ft)
8. Thickness of cap rock: N/A	18. Total Core Recovery for hole: N/A
9. Depth of hole: 220 ft	19. Inspector: N. Holst

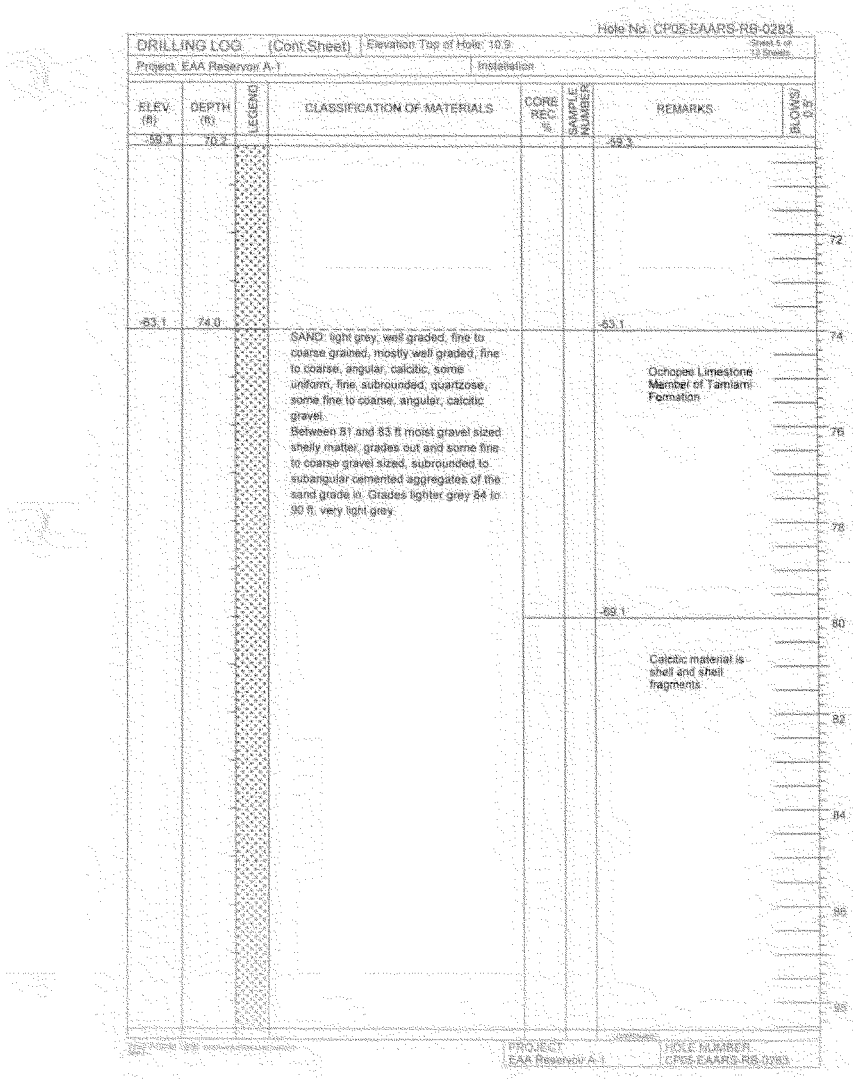
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5
10.9	0.0		Sandy GRAVEL, light to dark brown, well graded, fine to coarse grained, dry (fill)			10.9 26 23'48"N 80 38'35"W	
8.4	2.5		Silty Gravelly SAND with cobbles, pale brownish grey, well graded, fine to coarse grained, moist, angular, calcitic, thin cemented nodules and layers common			7.9 Fort Thompson Formation	
						5.9 CL-ML: Sandy silty clay with gravel Moisture=10%	
			Grades wet at 10 ft			0.9 CL-ML: Sandy silty clay with gravel Moisture=23%	

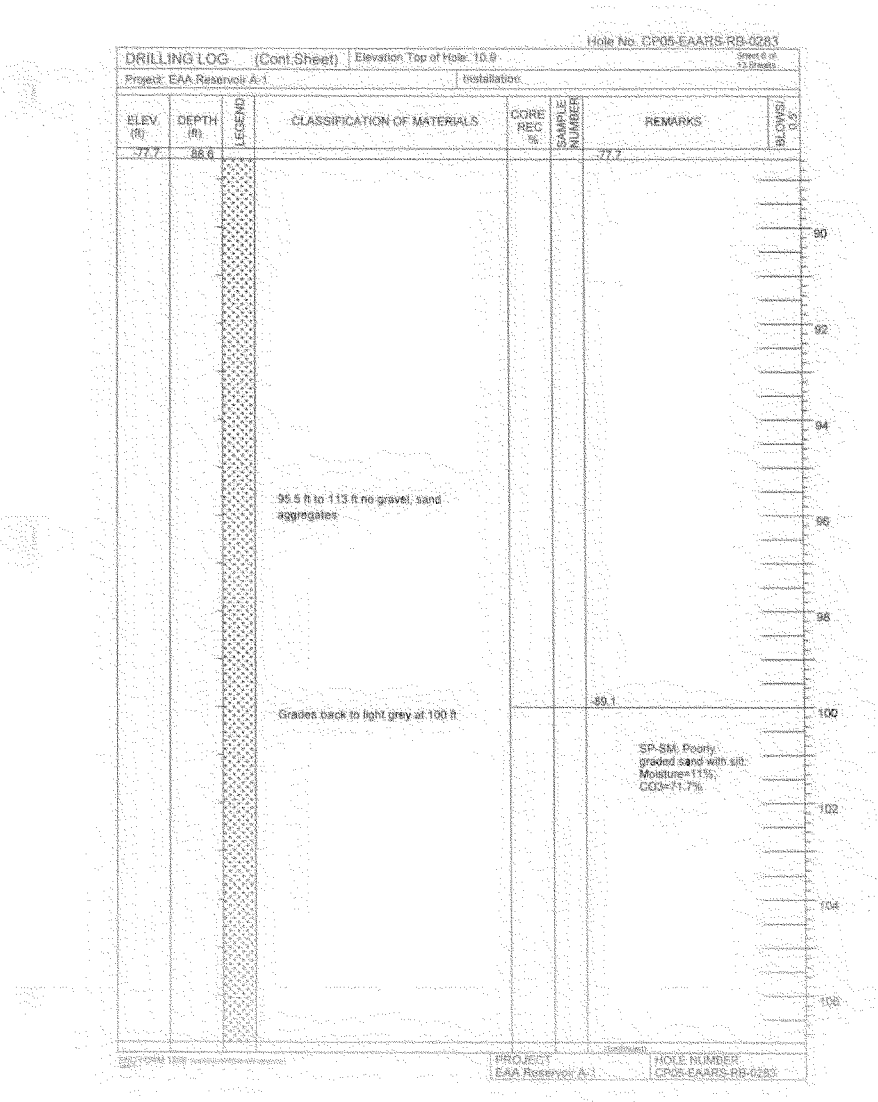
PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-RB-0283

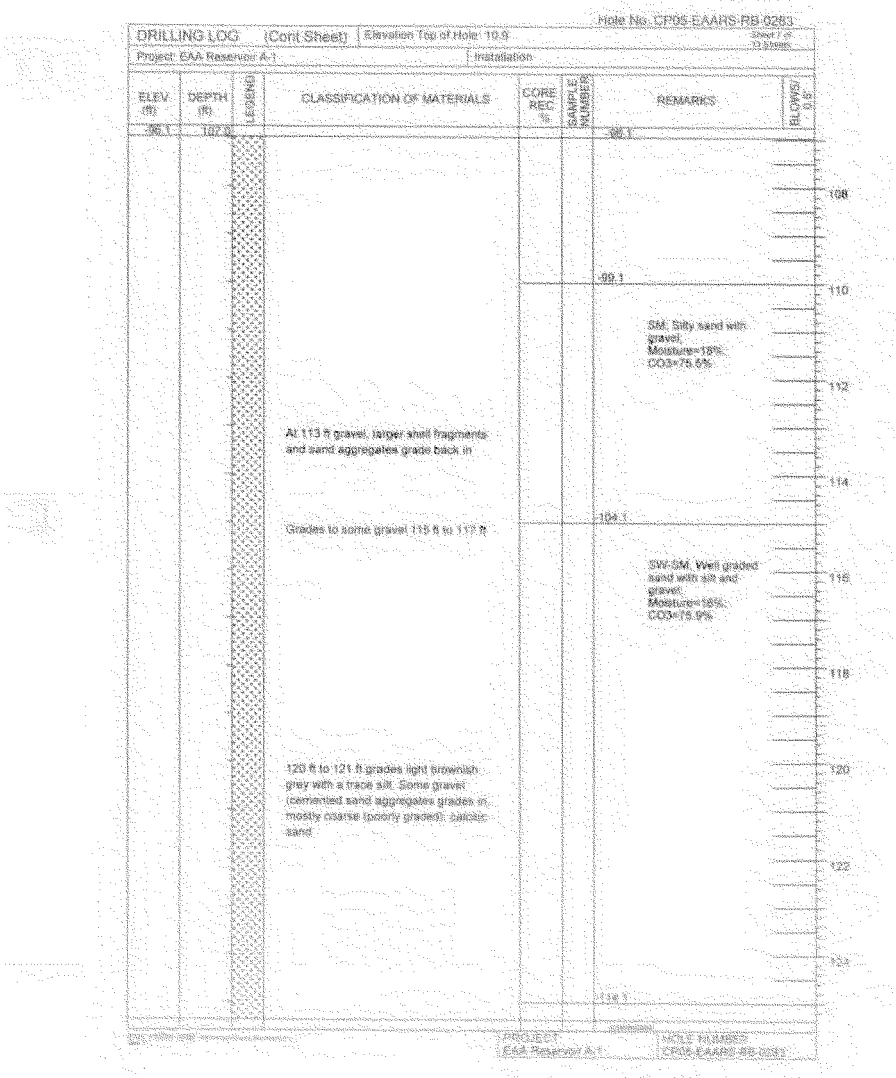

Hole No. CP05-EAARS-RB-0283
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: 10.9
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS / 0.5'
-4.1
15.0
-10.6
21.5
LIMESTONE, pale brownish grey, thinly bedded, coarse to very coarse (shells) grained (calcarenite), moderately hard and moderately strong, fossiliferous, porous (intergranular and moldic), grainstone
-11.6
22.5
Silty Gravelly SAND, as above but with a trace fine to very fine quartz sand
-12.1
Fort Thompson Formation
-15.6
26.5
SAND: pale brownish grey, wet, well graded, fine to coarse grained, mostly angular and calcitic, some fine subrounded quartz sand; gravelly (cemented sand aggregates down to 28 ft. Grades fine grained at 29 ft, subequal parts angular, calcitic and subrounded quartz sands. Grades fine to medium grained at 31.5 ft. Grades fine to coarse grained with gravel (cemented aggregates) at 32.5 ft. Grades to gravelly (shells) SAND, 35 to 38 ft, with fine, subrounded quartz sand predominating. Below 38 ft primarily fine, uniform subrounded, quartz sand with some sand to fine gravel sized shell fragments
-15.6
Caloosahatchee Formation or Pinecrest Sand of Tamiami Formation
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0283
16
18
20
22
24
26
28
30
32

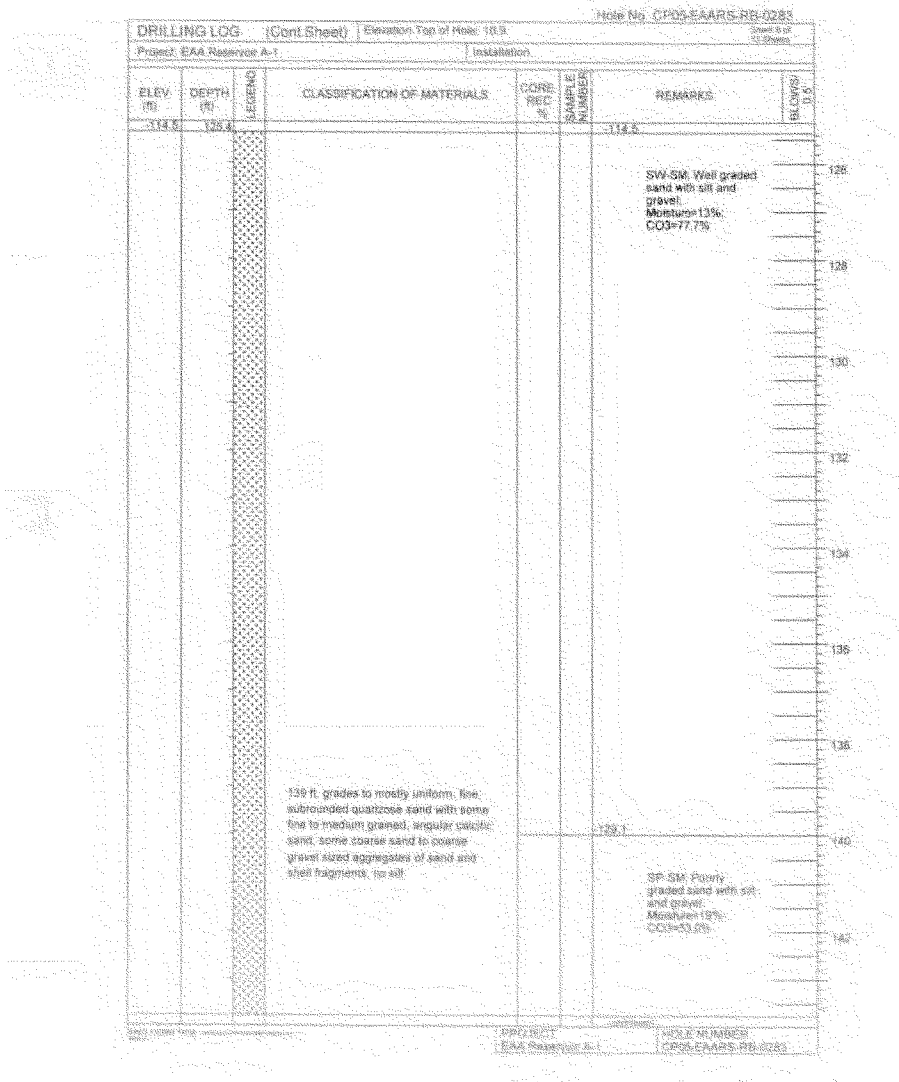

Hole No. CP05-EAARS-RB-0283
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 10.9'
Sheet 3 of 12 Sheets
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-22.5
33.4
-29.1
SP-SM: Poorly graded SAND with silt; Moisture=12%
-34.1
45.0
Sandy GRAVEL, light brownish grey, well graded, fine to coarse, angular, sandy limestone gravel with sand as above
-38.1
49.0
GRAVEL with small cobbles, light brownish grey, well graded, fine to coarse, angular, sandy limestone, fossiliferous, with moldic porosity, trace fine, subrounded, uniform, fine quartz sand.
34
36
38
40
42
44
46
48
50
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0283

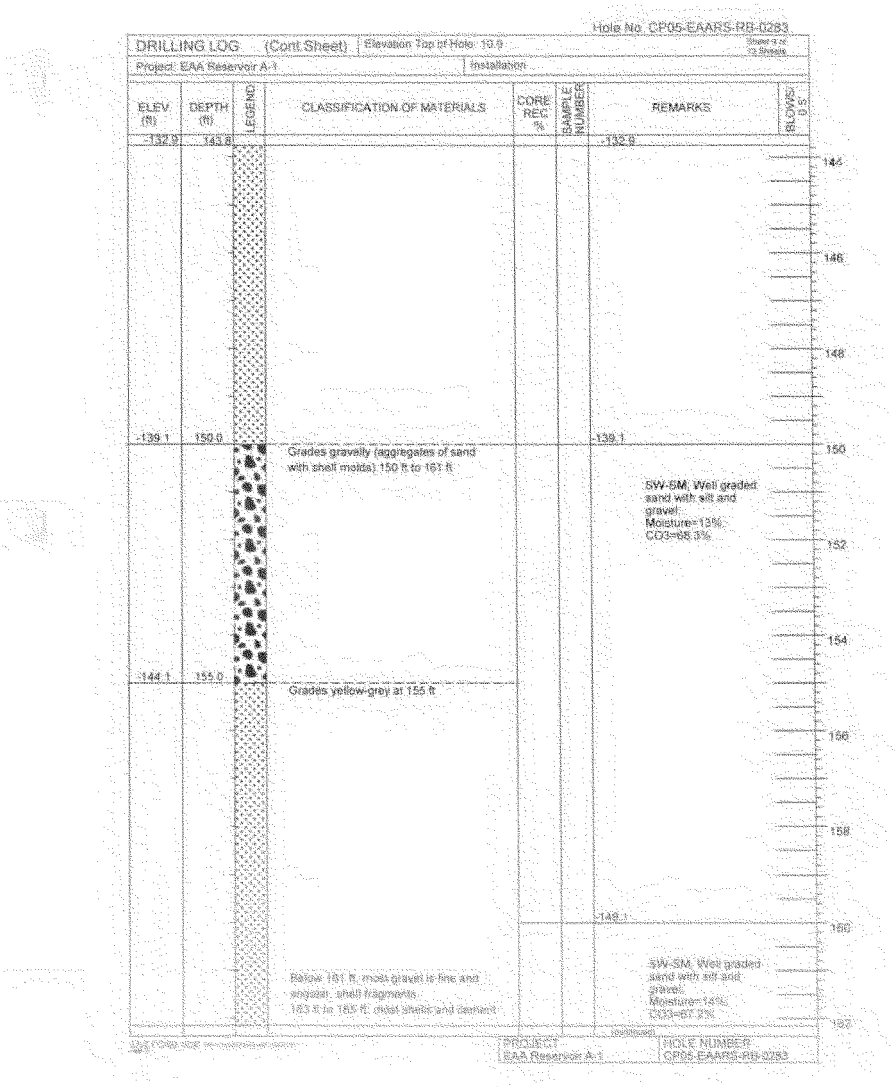

Hole No. CP05-EAARS-RB-0283
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10.9
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-40.9
51.8
-49.1
-50.1
61.0
Silty SAND: pale brownish grey, wet, mostly uniform, fine, quartz sand with some angular, fine to coarse, calcitic sand, trace fine gravel (cemented aggregates of sand). Grades gravelly at 63.5 ft with trace cobbles. Grades light olive grey at 87.5 ft
SP-SM: Poorly graded sand with silt and gravel. Moisture=8%
-57.6
68.5
SAND: olive grey, wet, mostly uniform, fine grained, subrounded and quartzose, some angular, calcitic (shells and fragments), fine sand to coarse gravel and pebbles, trace silt
PROJECT
EAA Reservoir A-1
TEST NUMBER
CP05-EAARS-RB-0283

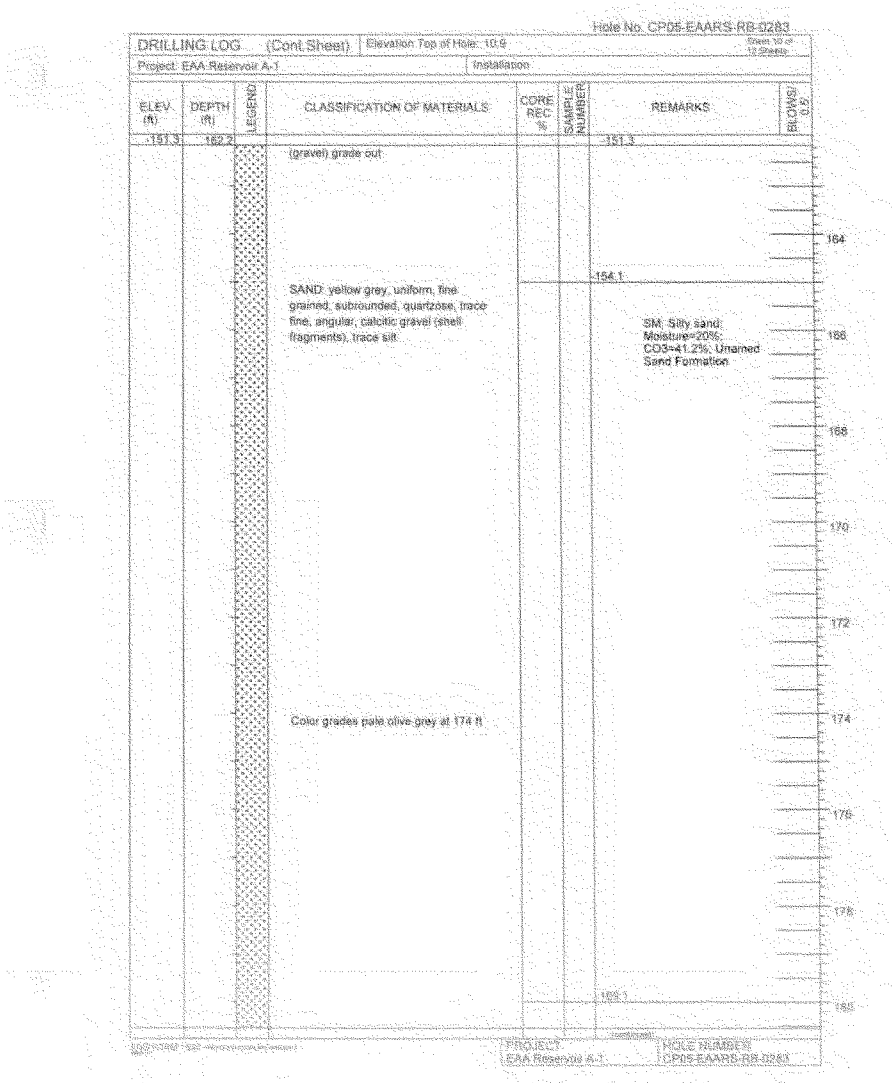

Hole No. CP05-EAARS-RB-0283
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: 10.9
Project: EAA Reservoir A-1 Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/0.5ft
-59.3
70.2
-63.1
74.0
SAND: light grey, well graded, fine to coarse grained, mostly well graded, fine to coarse, angular, calcitic, some uniform, fine, subrounded, quartzose, some fine to coarse, angular, calcitic gravel.
Between 81 and 83 ft moist gravel sized shelly matter, grades out and some fine to coarse gravel sized, subrounded to subangular cemented aggregates of the sand grade in. Grades lighter grey 84 to 90 ft. very light grey.
-59.3
-63.1
Ochopee Limestone Member of Tamiami Formation
Calcitic material is shell and shell fragments
72
74
76
78
80
82
84
86
88
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0283

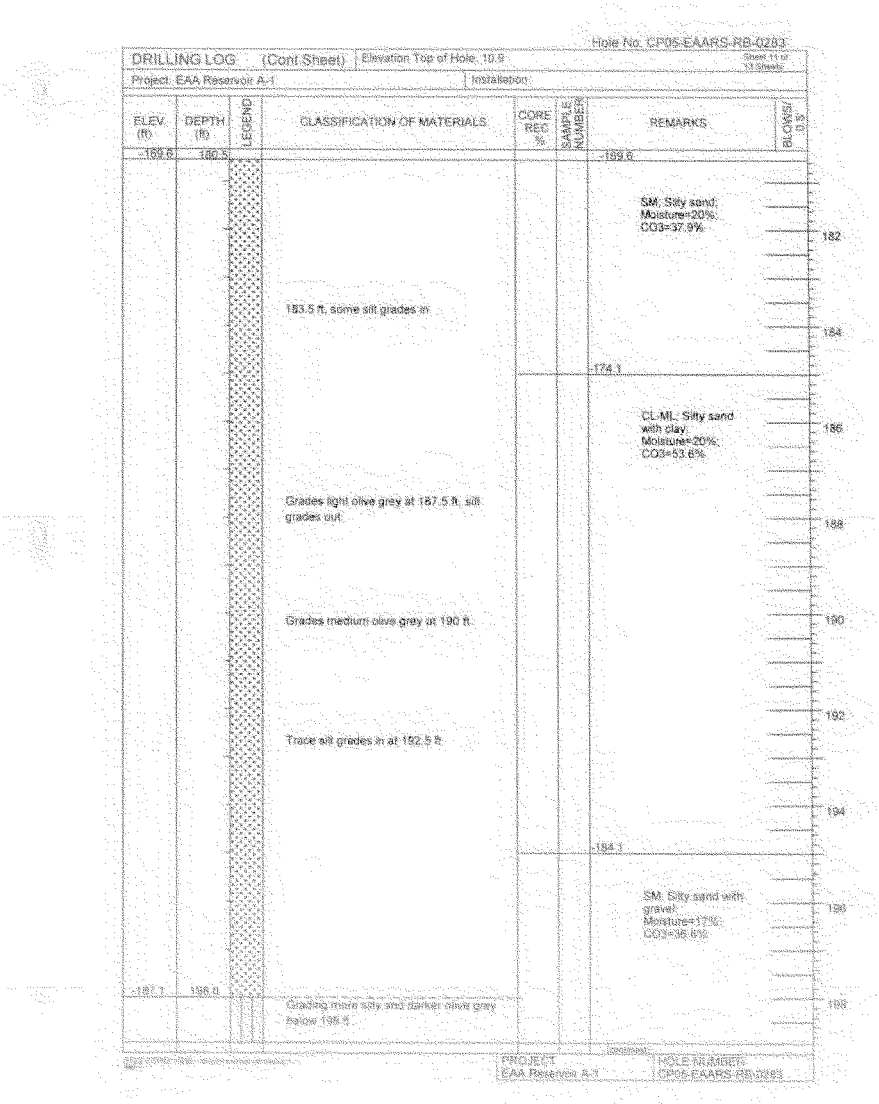

Hole No. CP05-EAARS-RB-0283
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 10.9
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
RQD %
77.7
88.6
95.5 ft to 113 ft no gravel, sand aggregates
89.1
Grades back to light grey at 100 ft
SP-SM, Poorly graded sand with silt, Moisture=11%, CO3=11.7%
90
92
94
96
98
100
102
104
106
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0283

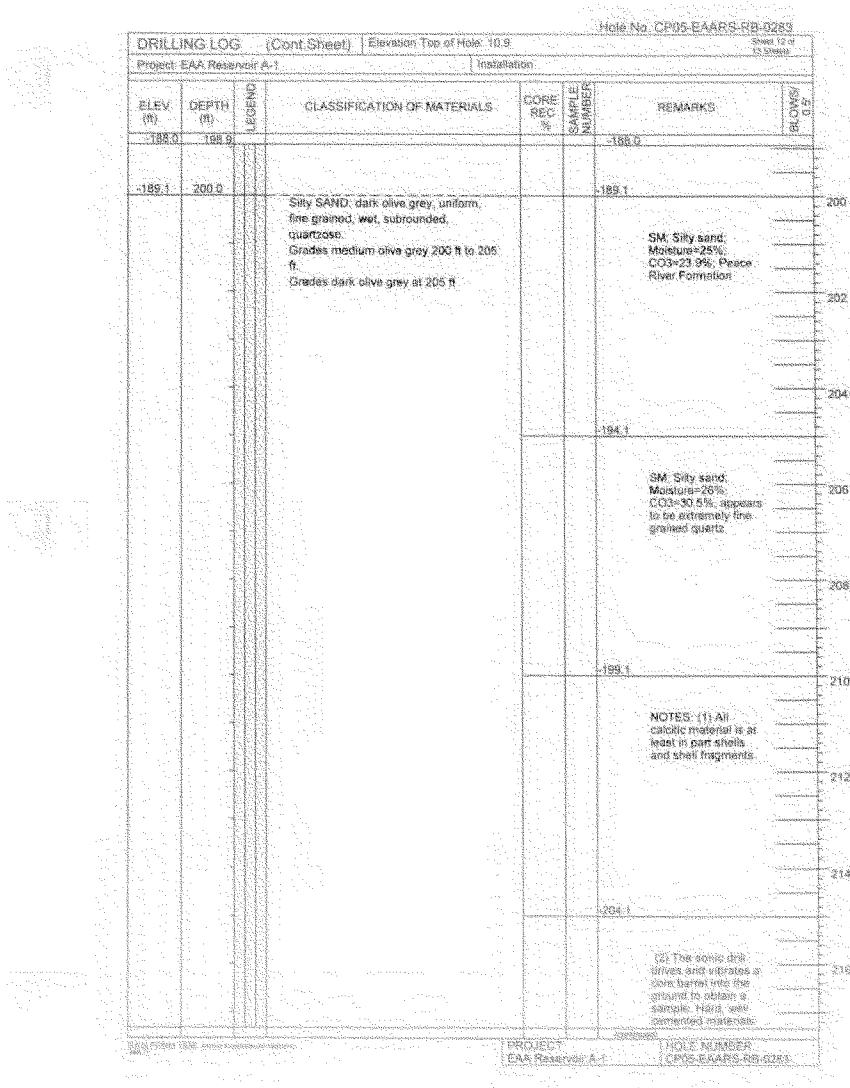

Hole No. CP05-EAARS-RB-0253
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 10.9
Project: EAA Reservoir A-1 Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
99.1
107.8
SM: Silty sand with gravel Moisture=18% CO3=75.6%
At 113 ft gravel, larger shell fragments and sand aggregates grade back in
Grades to some gravel 115 ft to 117 ft
104.1
SW-SM: Well graded sand with silt and gravel Moisture=15% CO3=75.9%
120 ft to 121 ft grades light brownish grey with a trace silt. Some gravel (cemented sand aggregates grades in, mostly coarse (poorly graded) calcic sand
118.3
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0253


DRILLING LOG (Cont.Sheet)
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
114.5
125.4
SW-SM, Well graded sand with silt and gravel. Moisture=13%, CO3=77.7%
139 ft, grades to mostly uniform, fine, subrounded quartzose sand with some fine to medium grained, angular calcite sand, some coarse sand to coarse gravel sized aggregates of sand and shell fragments, no silt
139.1
SP-SM, Poorly graded sand with silt and gravel. Moisture=9%, CO3=51.5%
125
128
130
132
134
136
138
140
142
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CPDS-EAARS-RB-0283


Hole No. CP05-EAARS-RB-0283
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10.0
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-132.9
141.8
-139.1
150.0
-144.1
155.0
Grades gravelly (aggregates of sand with shell molds) 150 ft to 161 ft
Grades yellow-grey at 155 ft
Below 161 ft, most gravel is fine and angular, shell fragments
163 ft to 165 ft, most shells and cement
SW-SM, Well graded sand with silt and gravel;
Moisture=13%
CO3=68.3%
-149.1
SW-SM, Well graded sand with silt and gravel;
Moisture=14%
CO3=67.8%
(continued)
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0283


Hole No. CP05-EAARS-RB-0283
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10.9
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5
151.3
162.2
(gravel) grade out
151.3
154.1
SAND: yellow grey, uniform, fine grained, subrounded, quartzose, trace fine, angular, calcitic gravel (shell fragments), trace silt
SM: Silty sand; Moisture=20%; CO3=41.2%; Unarned Sand Formation
Color grades pale olive grey at 174 ft
164
166
168
170
172
174
176
178
180
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0283


Hole No. CP05-EAARS-RB-0283
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10.9
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5ft
-189.6
180.5
SM; Silty sand; Moisture=20%; CO3=37.9%
182
183.5 ft, some silt grades in
184
-174.1
CL-ML; Silty sand with clay; Moisture=20%; CO3=53.6%
186
Grades light olive grey at 187.5 ft, silt grades out
188
Grades medium olive grey at 190 ft
190
192
Trace silt grades in at 192.5 ft
194
-194.1
SM; Silty sand with gravel; Moisture=17%; CO3=36.6%
196
-197.1
196.0
Grading more silty and darker olive grey below 196 ft
198
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0283



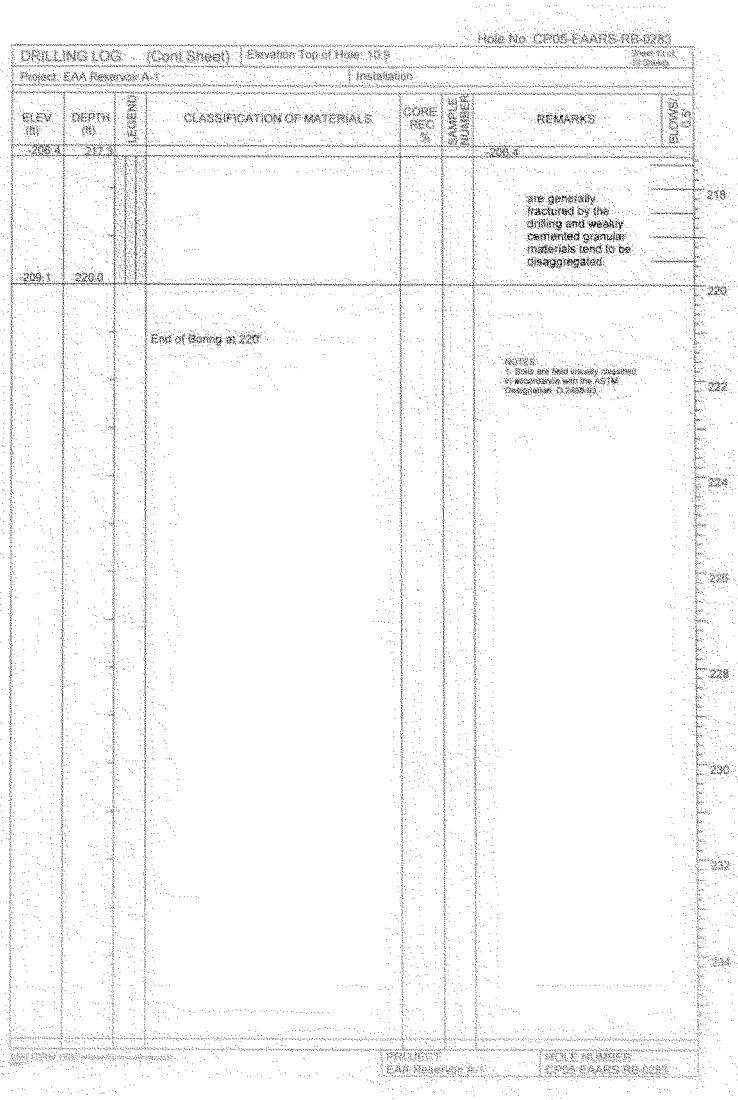
Hole No. CP05-EAARS-RB-0283

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 10.9 | Sheet 12 of 13 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-188.0	198.9				-188.0		
-189.1	200.0		Silty SAND; dark olive grey, uniform, fine grained, wet, subrounded, quartzose. Grades medium olive grey 200 ft to 205 ft. Grades dark olive grey at 205 ft		-189.1	SM; Silty sand; Moisture=25%; CO3=23.9%; Peace River Formation	
					-194.1	SM; Silty sand; Moisture=26%; CO3=30.5%; appears to be extremely fine grained quartz	
					-199.1	NOTES: (1) All calcitic material is at least in part shells and shell fragments.	
					-204.1	(2) The sonic drill drives and vibrates a core barrel into the ground to obtain a sample. Hard, well cemented materials	

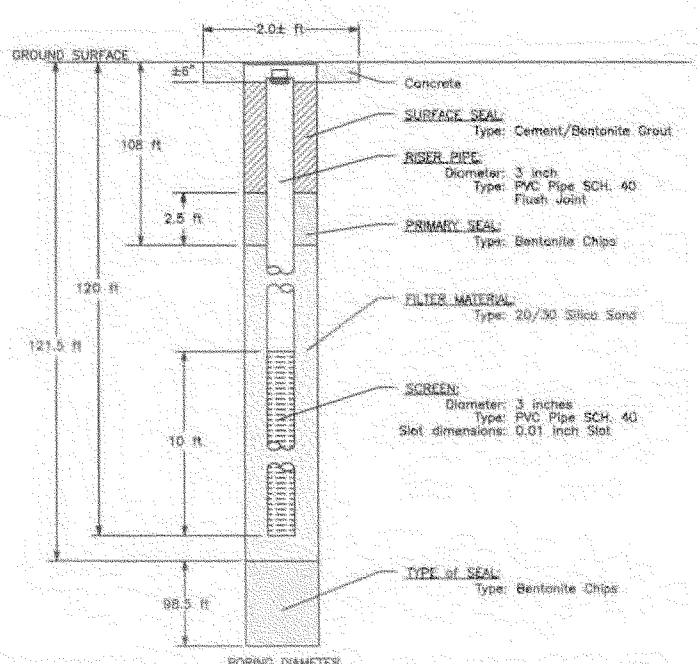
PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-RB-0283


Hole No. CP05-EAARS-RB-028J
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 10.9
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
209.4
217.3
209.1
220.0
are generally fractured by the drilling and weakly cemented granular materials tend to be disaggregated.
End of Boring at 220'
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
218
220
222
224
226
228
230
232
234
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-028J

Hole No. CP05-EAARS-TW-0283

PIEZOMETER LOG	Division:	Installation:
1. Project: EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location: N 750072, E 773031		9. Manufacture's Designation for Drill: SRD-109
3. Drilling Agency: Prosonic		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0283		11. Date Hole: Started 8-14-05 Completed 8-14-05
5. Name of Driller: Fred Krusna		12. Elevation Top of Riser: ±10'
6. Depth of Piezometer: 25 ft		
7. Size and type of bit: 6" bit, Rotary Method		13. Inspector: JP

FLUSH MOUNT



INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 25 foot Piezometer Installation

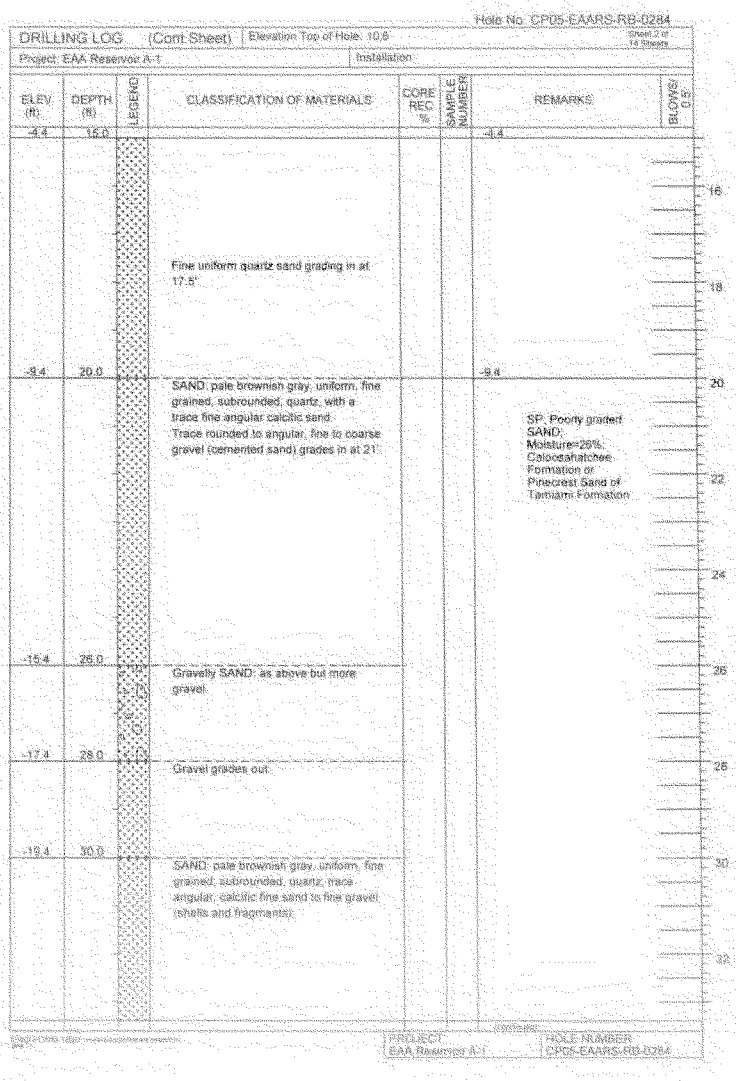
Hole No. CP05-EAARS-RB-0284

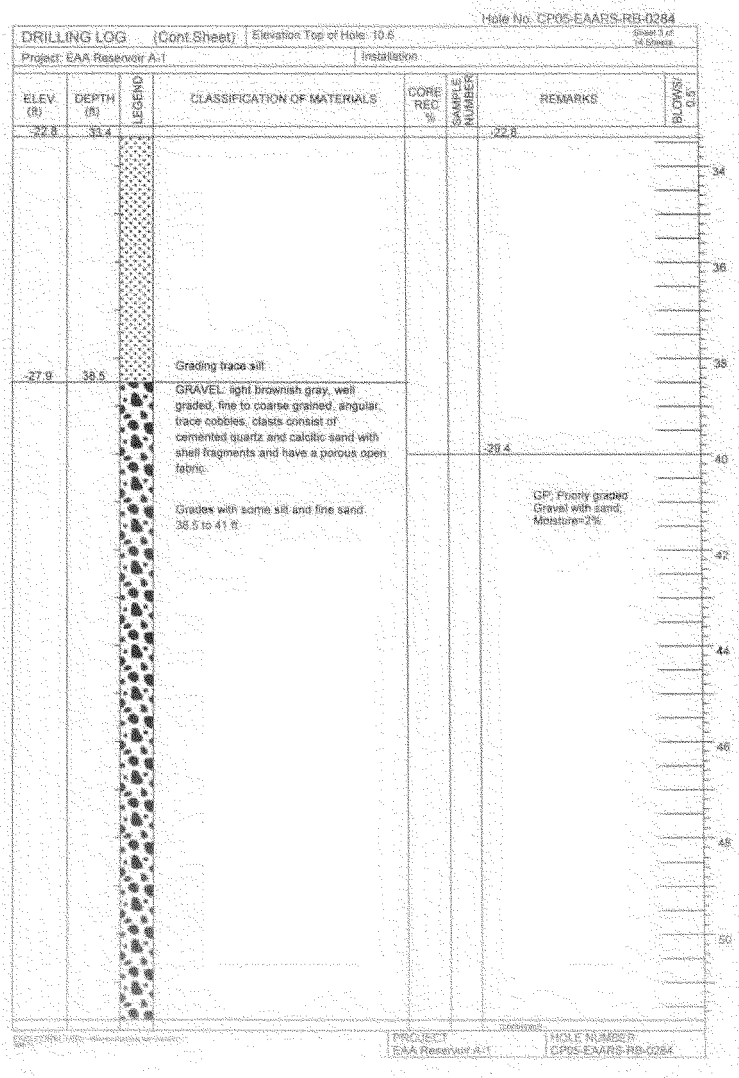
DRILLING LOG | Division: | Installation: | Sheet 1 of 14 Sheets

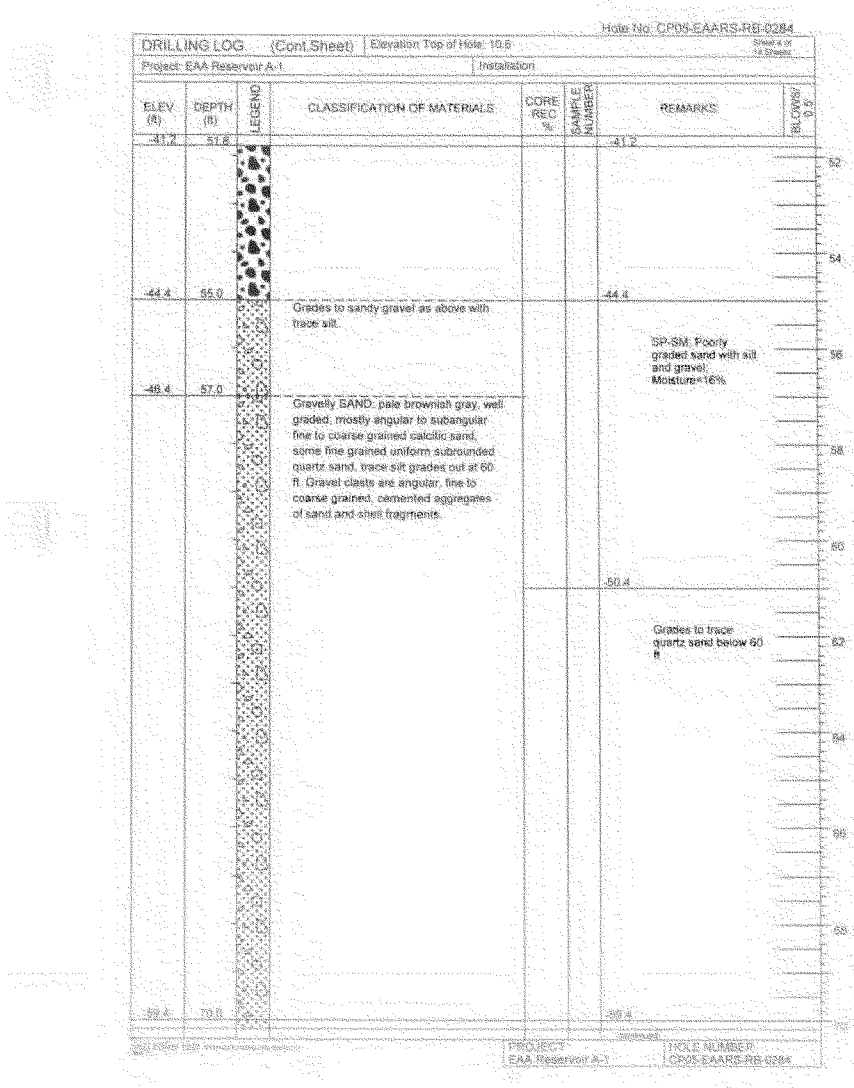
1. Project: EAA Reservoir A-1	10. Size and type of bit: 5 inch
2. Location: N764450.8, E758066.4 - NAD 1983	11. Datum for Elevation Shown: NAVD 1988
3. Drilling Agency: Nodarse (sub-contracted to Prosonic)	12. Manufacturer's Designation for Drill: SRO-109
4. Hole No: CP05-EAARS-RB-0284	13. Total Number of Overburden Samples Taken: N/A
5. Name of Driller: Fred Kruss	14. Total Number of Core Boxes: 23
6. Direction of Hole: ☒ Vertical ☐ Inclined	15. Elevation Ground Water: Not measured
	16. Date Hole: Started 8/9/2005 Completed 8/11/2005
7. Thickness of Burden: N/A	17. Elevation Top of Hole: 10.6 (ft)
8. Thickness of cap rock: N/A	18. Total Core Recovery for hole: N/A
9. Depth of hole: 240 ft	19. Inspector: N. Holst

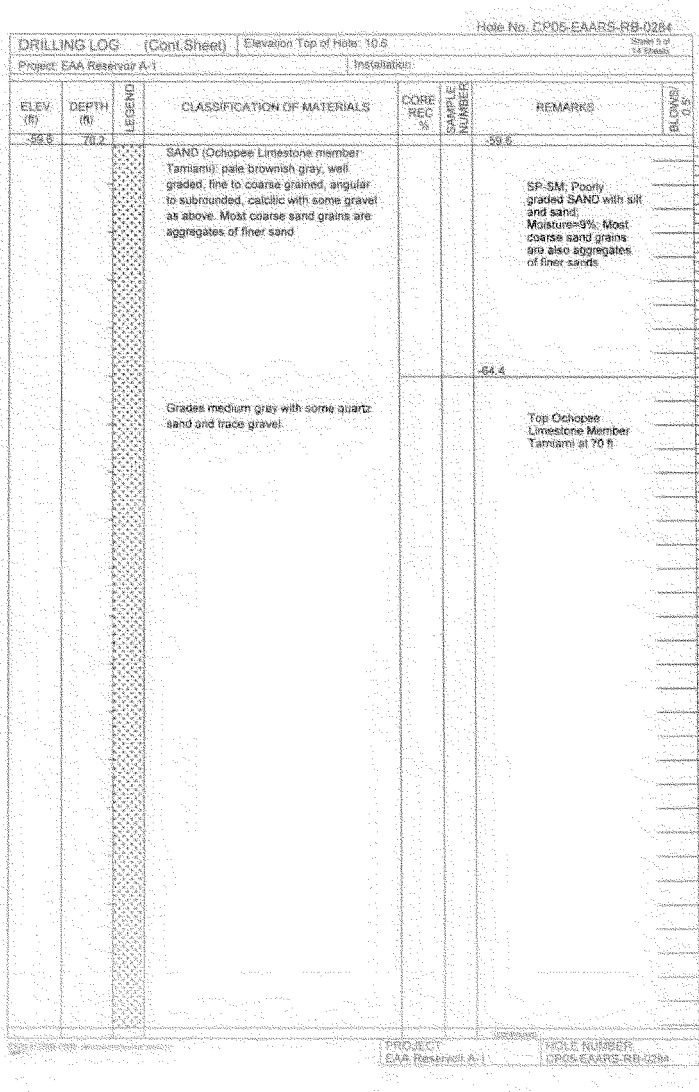
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/0.5'
10.6	0.0						
10.1	0.5		ROADFILL				
			PEAT: brownish black, fine grained, non-plastic, organic silt				
5.6	5.0					5.6	
			Gravelly CLAY and Silty GRAVEL (Marl): gray, low plasticity Clay with subrounded limestone gravel to angular limestone with silt with depth. Lower part is weathered caprock.			Fort Thompson Formation	
4.1	6.5						
3.6	7.0		LIMESTONE (Caprock): tan, fine to coarse grained, thinly bedded, fossiliferous, hard and strong.				
			SAND: pale brownish gray, well graded, fine to coarse grained, angular, calcitic, some fine to coarse angular limestone gravel, trace to some silt, trace tabular cobbles (limestone layers to 2" thick.)			9.5	
						SM: silty sand with gravel; Moisture=13%	

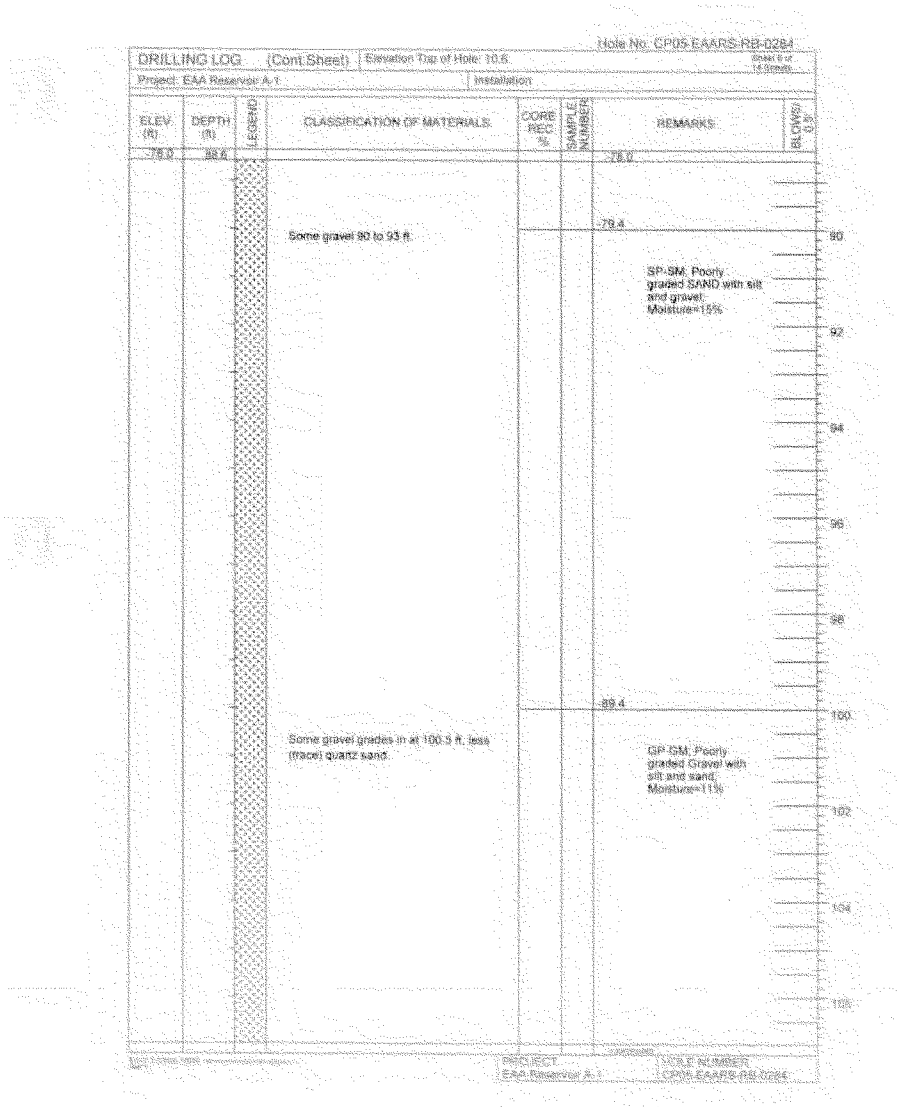
PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-RB-0284

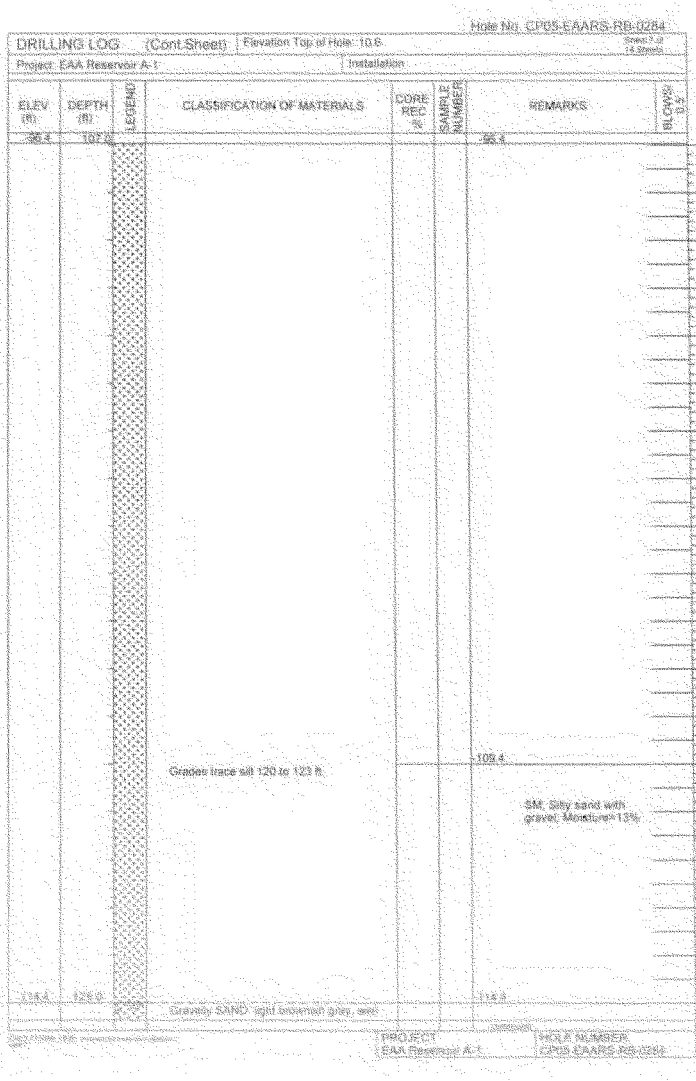

Hole No. CP05-EAARS-RB-0284
DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 10.8
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5ft
-4.4
15.0
Fine uniform quartz sand grading in at 17.5'
-9.4
20.0
SAND: pale brownish gray, uniform, fine grained, subrounded, quartz, with a trace fine angular calcitic sand. Trace rounded to angular, fine to coarse gravel (cemented sand) grades in at 21'
SP; Poorly graded SAND; Moisture=25%; Caloosahatchee Formation or Pinecrest Sand of Tamiami Formation
-15.4
25.0
Gravelly SAND: as above but more gravel.
-17.4
28.0
Gravel grades out.
-19.4
30.0
SAND: pale brownish gray, uniform, fine grained, subrounded, quartz, trace angular, calcitic fine sand to fine gravel (shells and fragments).
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0284

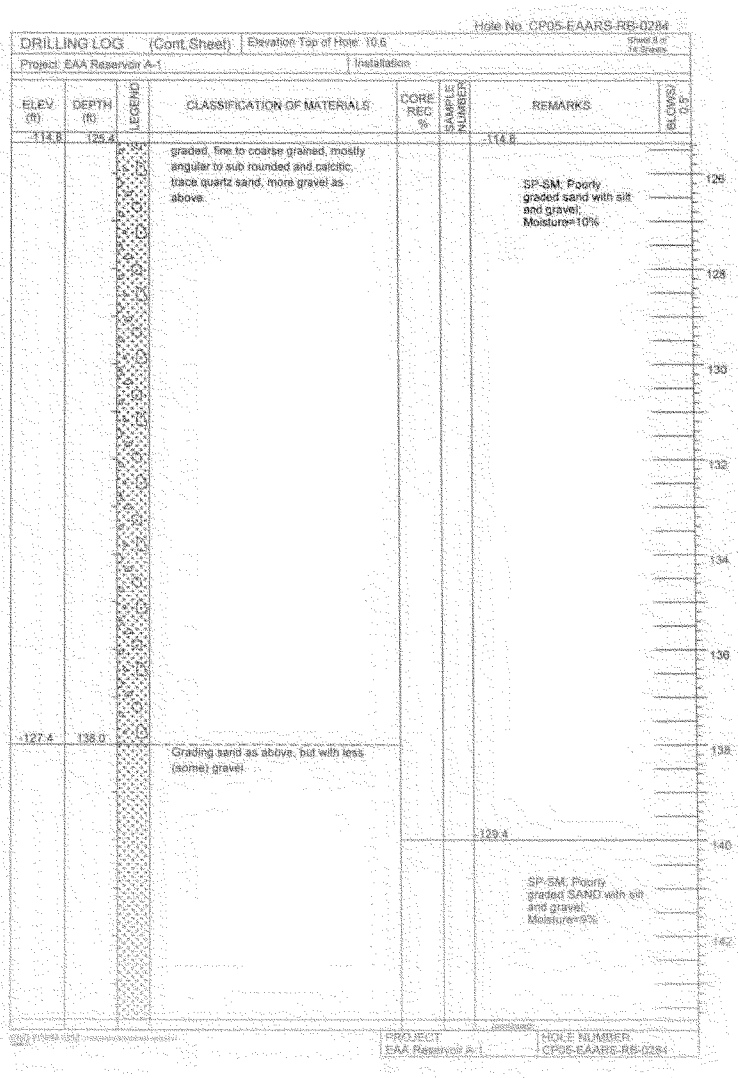

Hole No. CP05-EAARS-RB-0284
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10.6
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-22.8
33.4
Grading trace silt
-27.9
38.5
GRAVEL: light brownish gray, well graded, fine to coarse grained, angular, trace cobbles, clasts consist of cemented quartz and calcitic sand with shell fragments and have a porous open fabric.
-29.4
Grades with some silt and fine sand 38.5 to 41 ft
GP; Poorly graded Gravel with sand; Moisture=2%
34
36
38
40
42
44
46
48
50
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0284

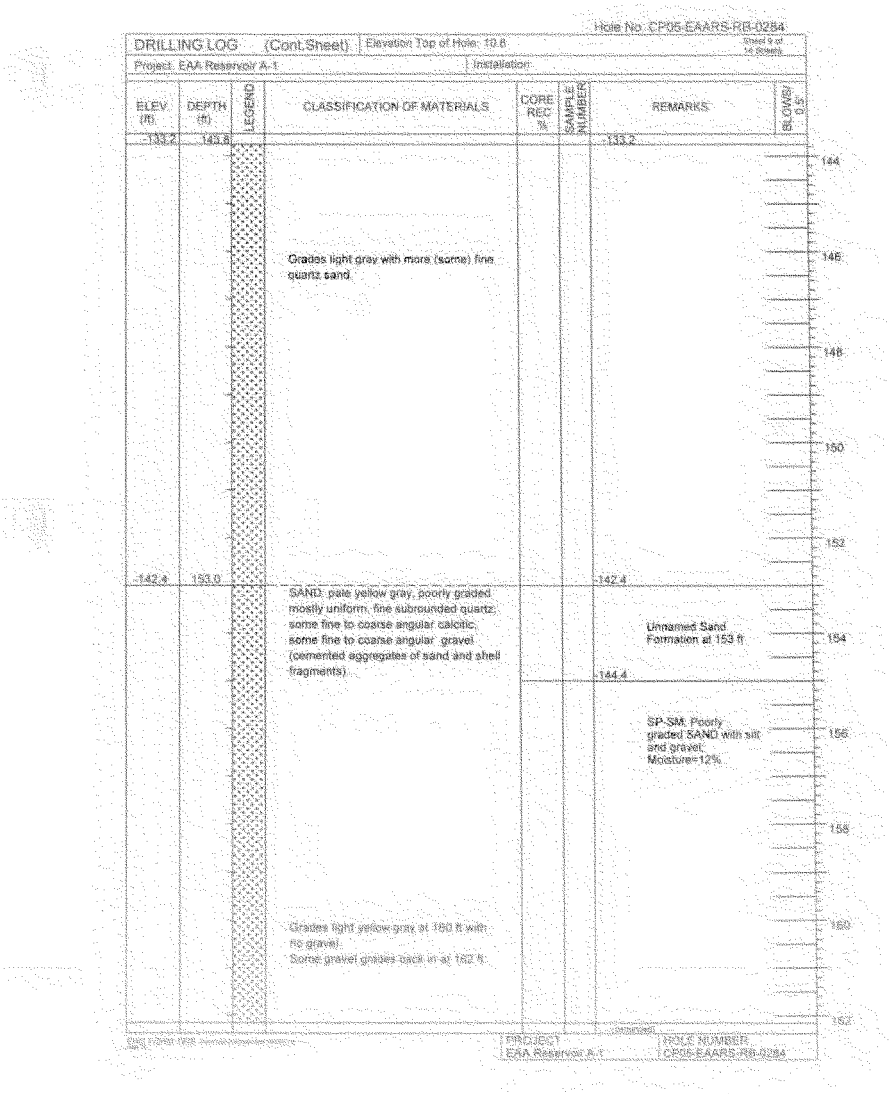

Hole No. CP05-EAARS-RB-0284
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 101.6
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-41.2
51.8
-44.4
55.0
Grades to sandy gravel as above with trace silt.
SP-SM; Poorly graded sand with silt and gravel; Moisture=16%
-46.4
57.0
Gravelly SAND; pale brownish gray, well graded, mostly angular to subangular fine to coarse grained calcitic sand, some fine grained uniform subrounded quartz sand, trace silt grades out at 60 ft. Gravel clasts are angular, fine to coarse grained, cemented aggregates of sand and shell fragments.
-50.4
Grades to trace quartz sand below 60 ft
52
54
56
58
60
62
64
66
68
69.4
70.8
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0284

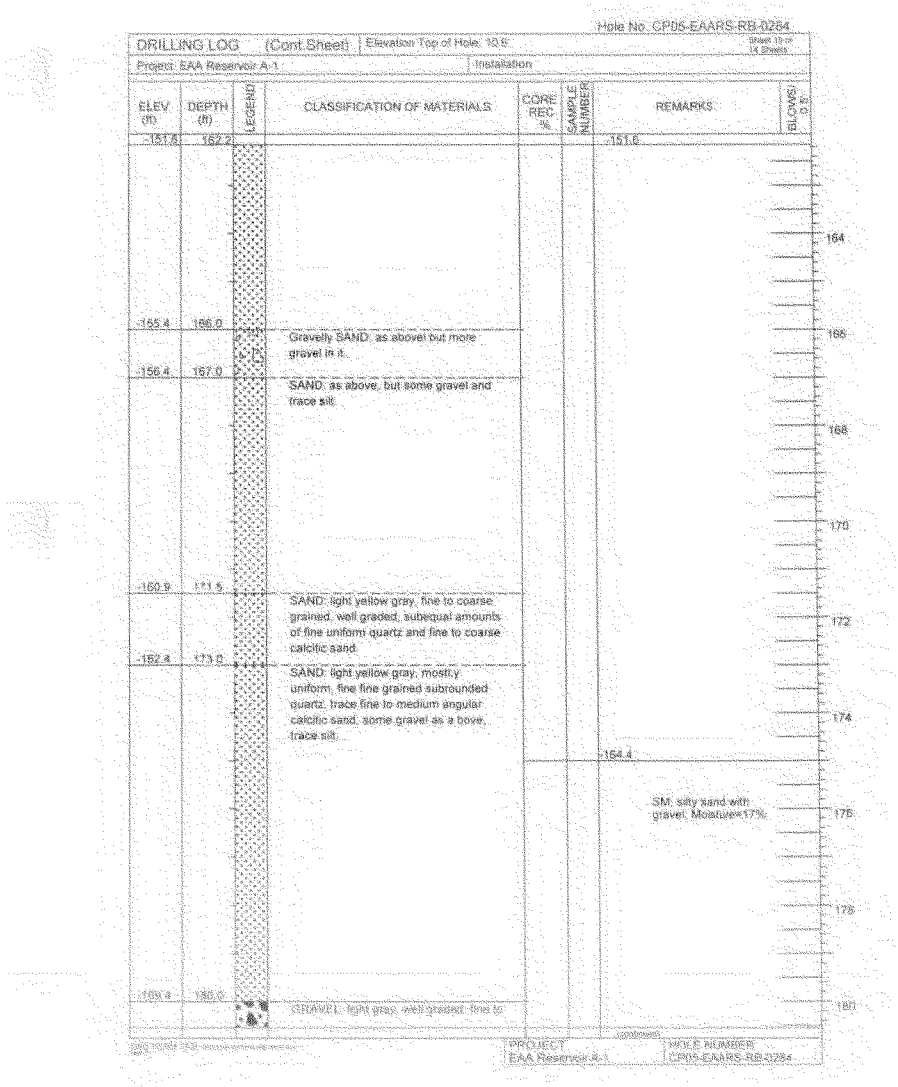

Hole No. CP05-EAARS-RB-0284
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 10.6
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS / 0.5
-59.6
-64.4
SAND (Ochopee Limestone member Tamiami): pale brownish gray, well graded, fine to coarse grained, angular to subrounded, calcitic with some gravel as above. Most coarse sand grains are aggregates of finer sand
SP-SM; Poorly graded SAND with silt and sand; Moisture=9%; Most coarse sand grains are also aggregates of finer sands
Grades medium gray with some quartz sand and trace gravel
Top Ochopee Limestone Member Tamiami at 70 ft
72
74
76
78
80
82
84
86
88
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0284

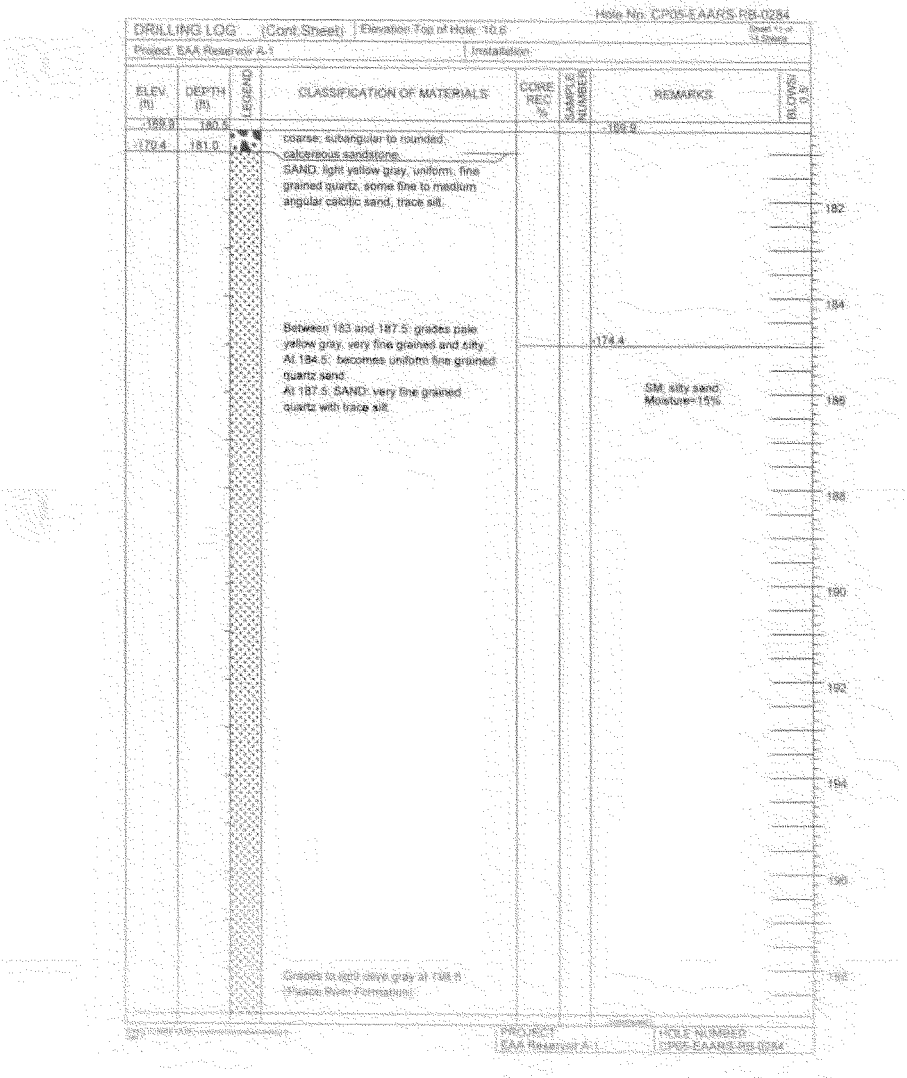

Hole No. CP05-EAARS-RB-0284
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10.6
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5ft
78.0
88.6
78.0
79.4
Some gravel 90 to 93 ft
SP-SM: Poorly graded SAND with silt and gravel; Moisture=15%
89.4
Some gravel grades in at 100.5 ft, less (trace) quartz sand
GP-GM: Poorly graded Gravel with silt and sand; Moisture=11%
90
92
94
96
98
100
102
104
106
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0284

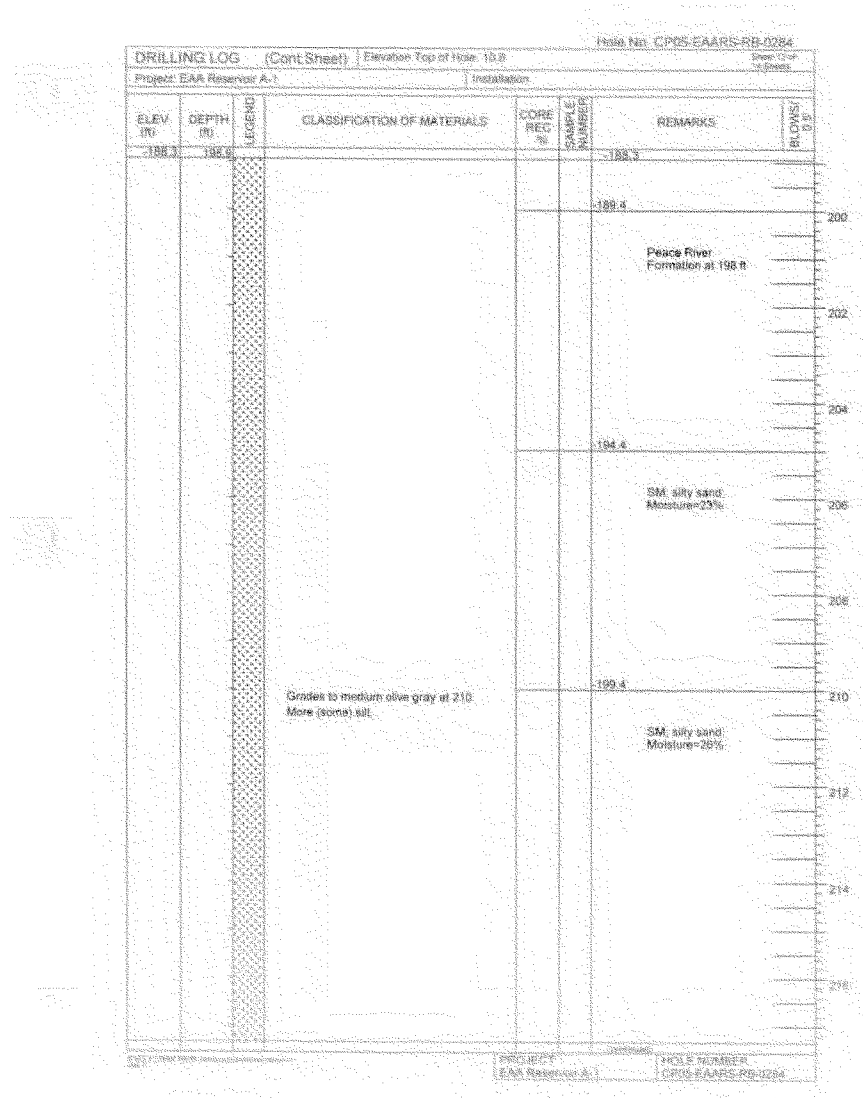

Hole No. CP05-EAARS-RB-0264
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 10.6
Project: EAA Reservoir A-1 Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS 0.5'
90.4
107.6
95.4
108
110
112
114
116
118
120
122
124
Grades trace silt 120 to 123 ft.
109.4
SM, Silty sand with gravel, Moisture=13%
114.4
116.0
Gravelly SAND, light brownish gray, wet
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0264

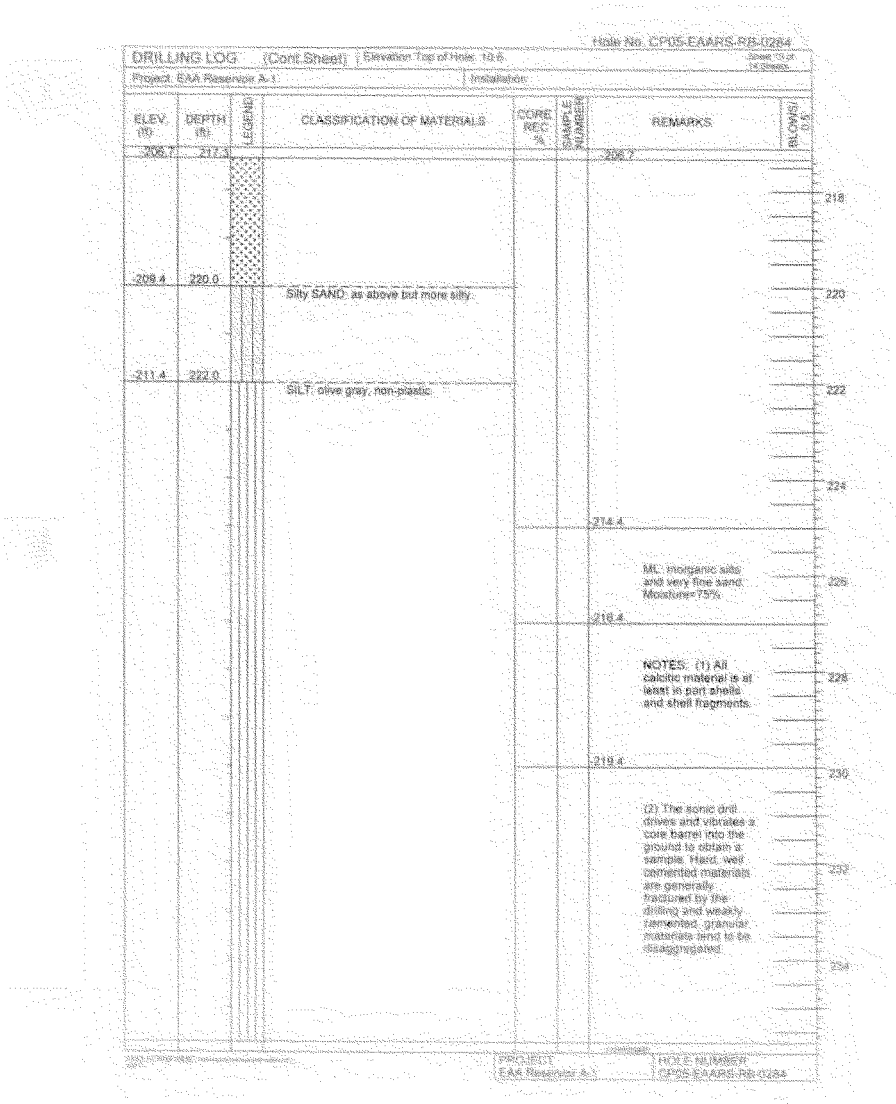

Hole No. CP05-EAARS-RB-0284
DRILLING LOG (Cont. Sheet) Elevation Top of Hole: 10.6
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-114.8
125.4
graded, fine to coarse grained, mostly angular to sub rounded and calcitic, trace quartz sand, more gravel as above.
-114.8
SP-SM; Poorly graded sand with silt and gravel; Moisture=10%
-127.4
138.0
Grading sand as above, but with less (some) gravel.
-129.4
SP-SM; Poorly graded SAND with silt and gravel; Moisture=9%
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0284

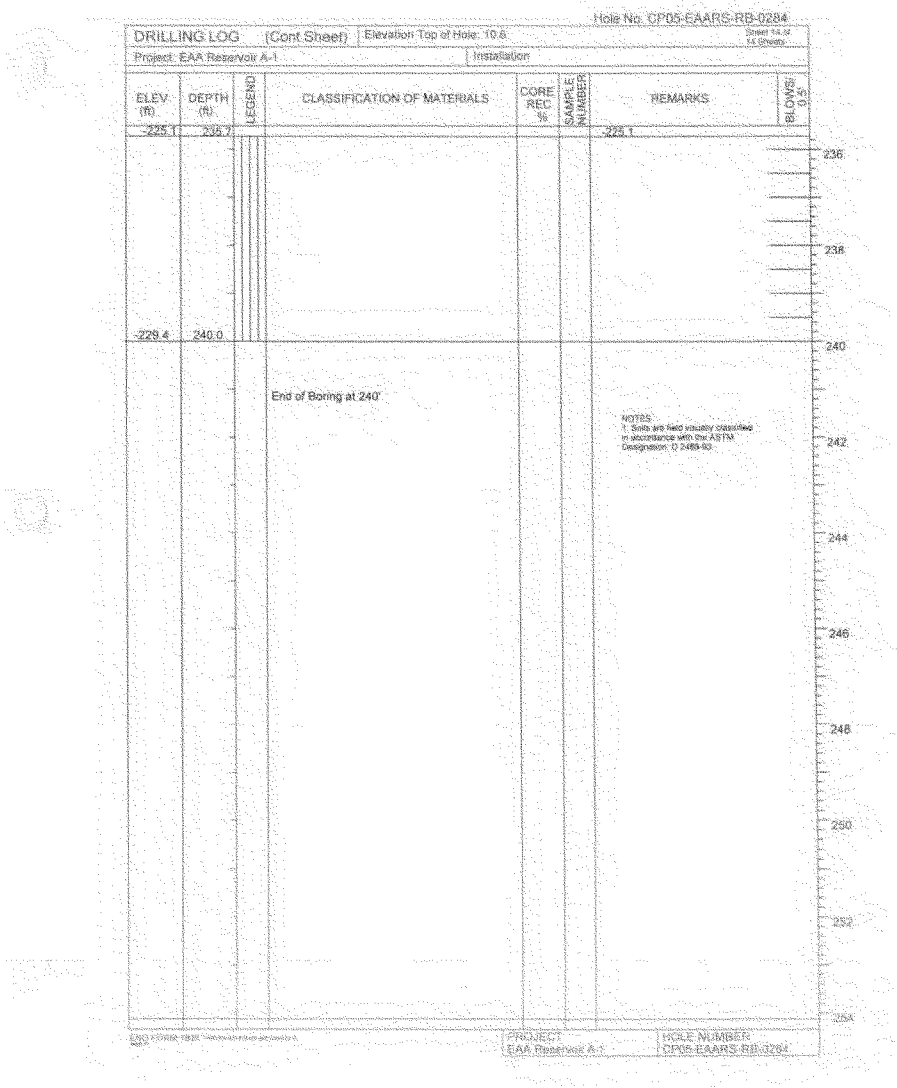

Hole No. CP05-EAARS-RB-0284
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 10.8
Sheet 9 of 14 Sheets
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
133.2
143.8
133.2
Grades light gray with more (some) fine quartz sand.
142.4
153.0
142.4
SAND: pale yellow gray, poorly graded, mostly uniform, fine subrounded quartz, some fine to coarse angular calcitic, some fine to coarse angular gravel (cemented aggregates of sand and shell fragments).
Unnamed Sand Formation at 153 ft
144.4
SP-SM: Poorly graded SAND with silt and gravel; Moisture=12%
Grades light yellow gray at 150 ft with no gravel.
Some gravel grades back in at 152 ft.
144
146
148
150
152
154
156
158
160
162
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0284


Hole No. CP05-EAARS-RB-0284
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 10.5
Sheet 10 of 14 Sheets
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
151.6
152.2
151.6
164
155.4
156.0
Gravelly SAND: as above but more gravel in it.
166
156.4
157.0
SAND: as above, but some gravel and trace silt
168
170
160.9
171.5
SAND: light yellow gray, fine to coarse grained, well graded, subequal amounts of fine uniform quartz and fine to coarse calcitic sand.
172
162.4
173.0
SAND: light yellow gray, mostly uniform, fine fine grained subrounded quartz, trace fine to medium angular calcitic sand, some gravel as a bove, trace silt.
174
164.4
SM: silty sand with gravel. Moisture=17%
175
178
180
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0284


Hole No. CPG-EAARS-RB-0284
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 19.6
Project: EAA Reservoir A-1 Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC'D %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
189.9
180.5
170.4
181.0
coarse; subangular to rounded; calcareous sandstone.
SAND: light yellow gray, uniform, fine grained quartz, some fine to medium angular calcitic sand, trace silt.
Between 183 and 187.5: grades pale yellow gray, very fine grained and silty
At 184.5: becomes uniform fine grained quartz sand
At 187.5: SAND: very fine grained quartz with trace silt
174.4
SM: silty sand; Moisture=15%
182
184
186
188
190
192
194
196
198
Grades to light olive gray at 198.5
Pierce River Formation
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CPG-EAARS-RB-0284

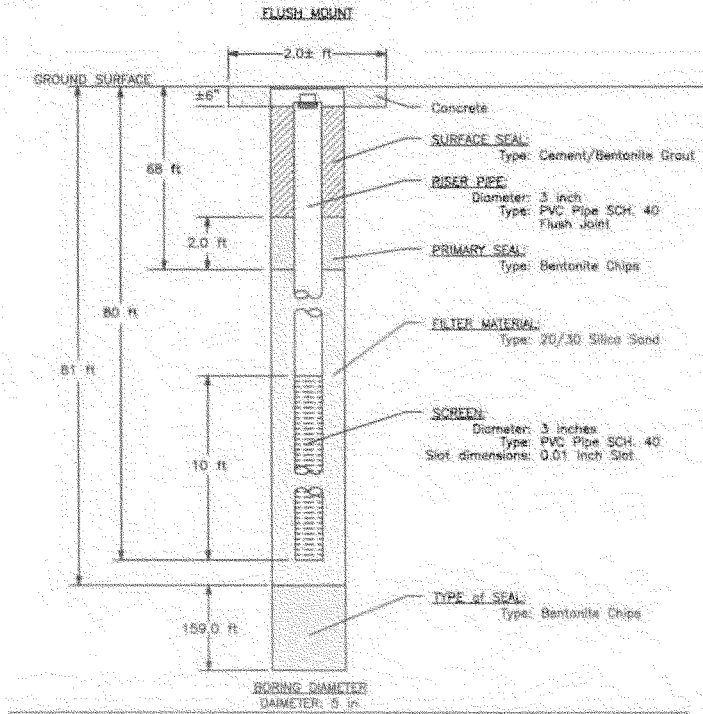

DRILLING LOG (Cont Sheet)
Project: EAR Reservoir A-1
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
198.3
198.6
Peace River Formation at 198 ft
194.4
SM; silty sand; Moisture=23%
199.4
Grades to medium olive gray at 210
More (some) silt
SM; silty sand; Moisture=26%
200
202
204
206
208
210
212
214
216


DRILLING LOG (Cont Sheet)
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
208.4
220.0
Silty SAND as above but more silty.
211.4
222.0
SILT: olive gray, non-plastic.
214.4
ML: inorganic silts and very fine sand. Moisture=75%
216.4
NOTES: (1) All calcitic material is at least in part shells and shell fragments.
219.4
(2) The sonic drill drives and vibrates a core barrel into the ground to obtain a sample. Hard, well cemented materials are generally fractured by the drilling and weakly cemented, granular materials tend to be disaggregated.
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CPP05-EAARS-RB-1284


Hole No. CP05-EAARS-RB-0284
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 10.6
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
225.1
235.7
229.4
240.0
End of Boring at 240'
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93
236
238
240
242
244
246
248
250
252
254
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0284

Hole No. CP05-EAARS-TW-0284

PIEZOMETER LOG	Division:	Installation:
1. Project: EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location: N 764456, E 758050		9. Manufacture's Designation for Drill: SRO-109
3. Drilling Agency: Proseniic		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0284		11. Date Hole: Started 8-11-05 Completed 8-11-05
5. Name of Driller: Fred Krupas		12. Elevation Top of Riser: ±10'
6. Depth of Piezometer: 25 ft		
7. Size and type of bit: 6" bit, Rotary Method		13. Inspector: JP



INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

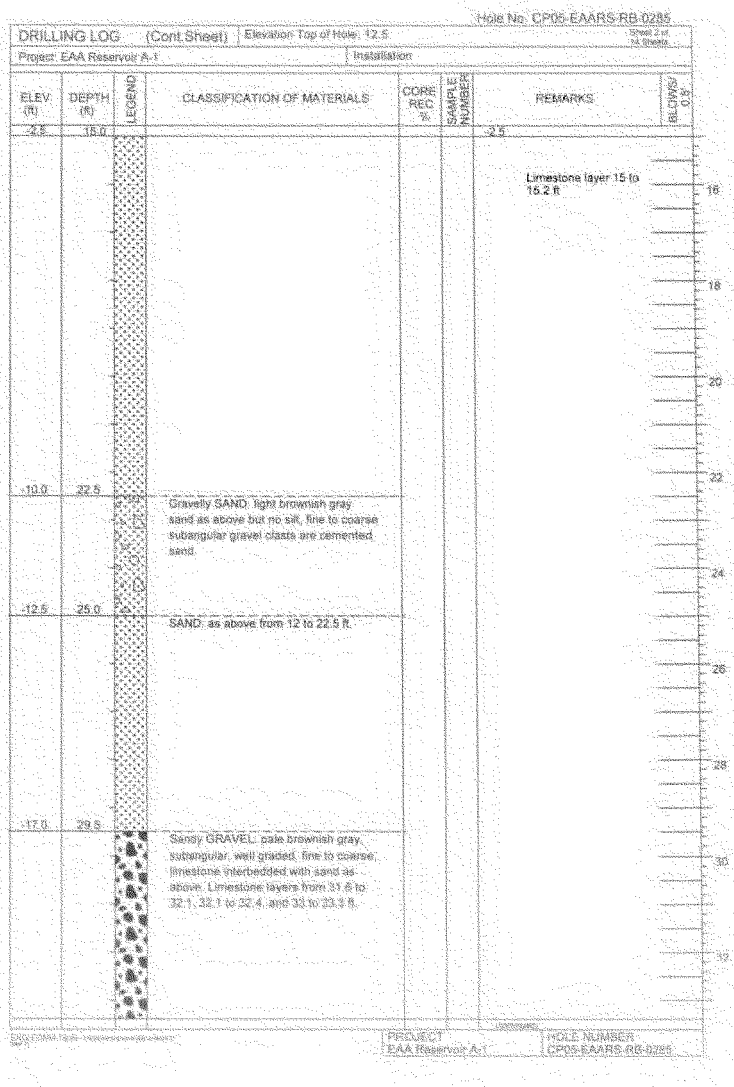
NOTES: Typical 25 foot Piezometer Installation

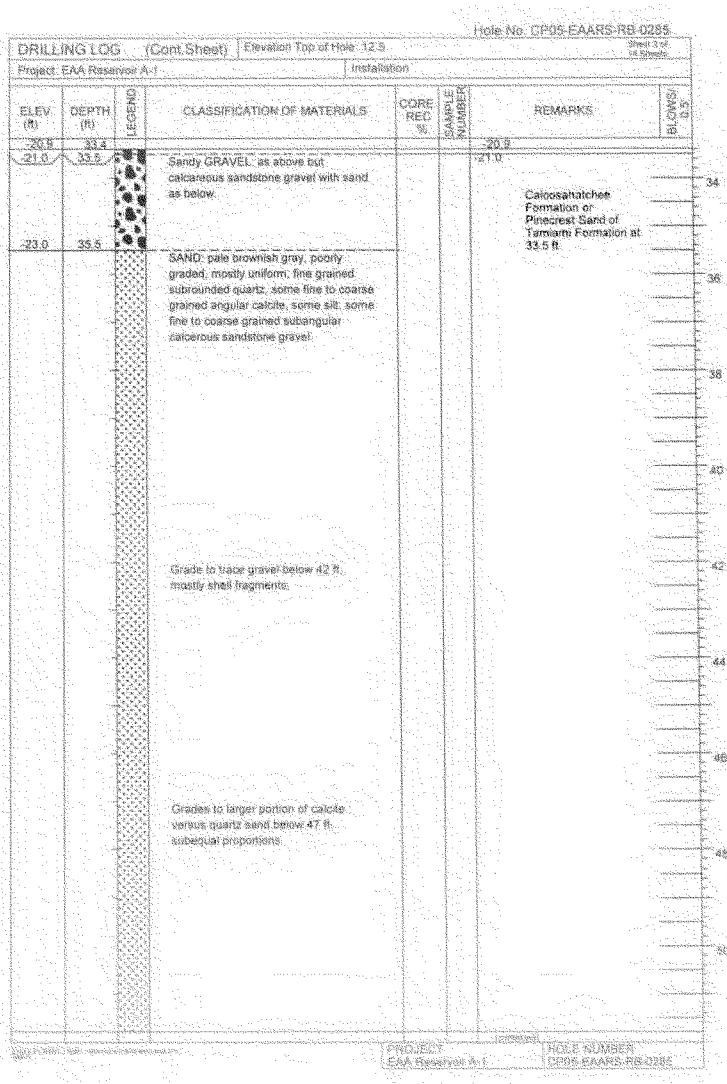
Hole No. CP05-EAARS-RB-0285

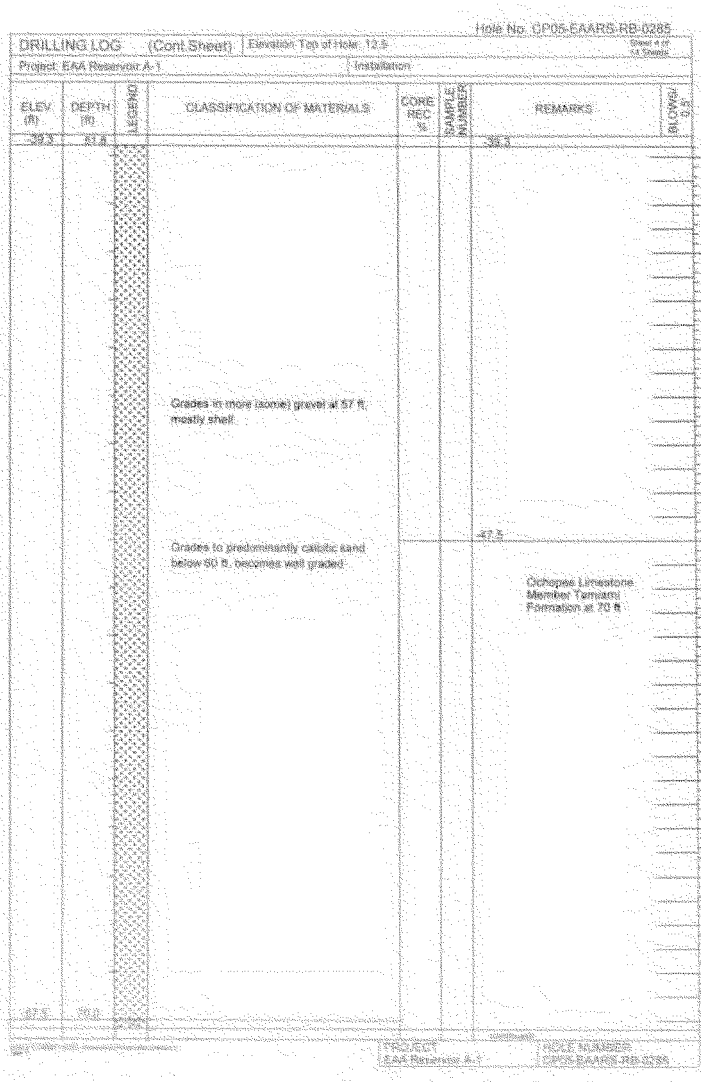
DRILLING LOG	Division:	Installation:	Sheet 1 of 14 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 5 inch	
2. Location: N781917.3, E786194.9 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse (sub-contracted to Prosonic)		12. Manufacturer's Designation for Drill: SRO-109	
4. Hole No: CP05-EAARS-RB-0285		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Fred Kraus		14. Total Number of Core Boxes: 29	
6. Direction of Hole: ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
7. Thickness of Burden: N/A		16. Date Hole: Started 7/26/2005 Completed 7/28/2005	
8. Thickness of cap rock: N/A		17. Elevation Top of Hole: 12.5 (ft)	
9. Depth of hole: 250 ft		18. Total Core Recovery for hole: N/A	
		19. Inspector: N. Holst	

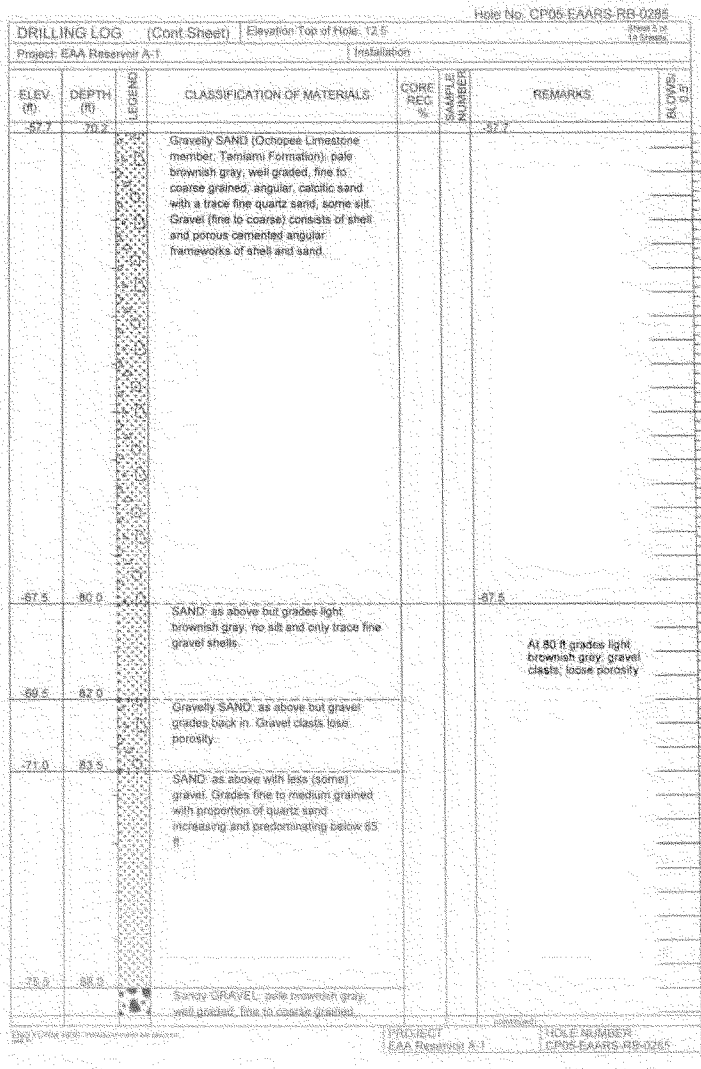
ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/0.5'
12.5	0.0		ROADFILL (GRAVEL): tan, well graded, fine to coarse, angular, some sand, cobbles and boulders, trace silt.				
9.5	3.0		PEAT				
7.5	5.0		GRAVEL				
6.5	6.0		LIMESTONE (caprock): tan to light brown and gray, thinly bedded, fine to coarse grained, vuggy, strong and hard to porous, soft and weak.				
1.5	11.0		Silty SAND: as below but more silt.				
0.5	12.0		SAND: pale brownish gray, well graded, fine to coarse grained, angular, calcitic, some fine gravel (cemented sand and shells), trace to some silt. Limestone layer from 15' to 15.2'				

PROJECT: EAA Reservoir A-1 HOLE NUMBER: CP05-EAARS-RB-0285


Hole No. CP05-EAARS-RB-0285
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 12.5
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
2.5
15.0
2.5
Limestone layer 15 to 15.2 ft
-10.0
22.5
Gravelly SAND: light brownish gray sand as above but no silt, fine to coarse subangular gravel clasts are cemented sand.
-12.5
25.0
SAND: as above from 12 to 22.5 ft.
-17.0
29.5
Sandy GRAVEL: pale brownish gray, subangular, well graded, fine to coarse, limestone interbedded with sand as above. Limestone layers from 31.6 to 32.1, 32.1 to 32.4, and 33 to 33.3 ft.
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0285


Hole No. CP05-EAARS-RB-0285
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole 12.9
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-20.8
33.4
-21.0
33.5
Sandy GRAVEL: as above but calcareous sandstone gravel with sand as below.
-20.8
-21.0
Caloosahatchee Formation or Pinecrest Sand of Tamiami Formation at 33.5 ft.
-23.0
35.5
SAND: pale brownish gray, poorly graded, mostly uniform, fine grained subrounded quartz, some fine to coarse grained angular calcite, some silt, some fine to coarse grained subangular calcerous sandstone gravel.
Grade to trace gravel below 42 ft, mostly shell fragments.
Grades to larger portion of calcite versus quartz sand below 47 ft, subequal proportions.
34
36
38
40
42
44
46
48
50
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0285


Hole No. CP05-EAARS-RB-0285
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 12.5
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ft
38.3
51.8
Grades in more (some) gravel at 57 ft, mostly shell
Grades to predominantly calcitic sand below 60 ft, becomes well graded
47.5
Ochopee Limestone Member Tamiami Formation at 70 ft
52
54
56
58
60
62
64
66
68
70
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0285


Hole No. CP05-EAARS-RB-0285

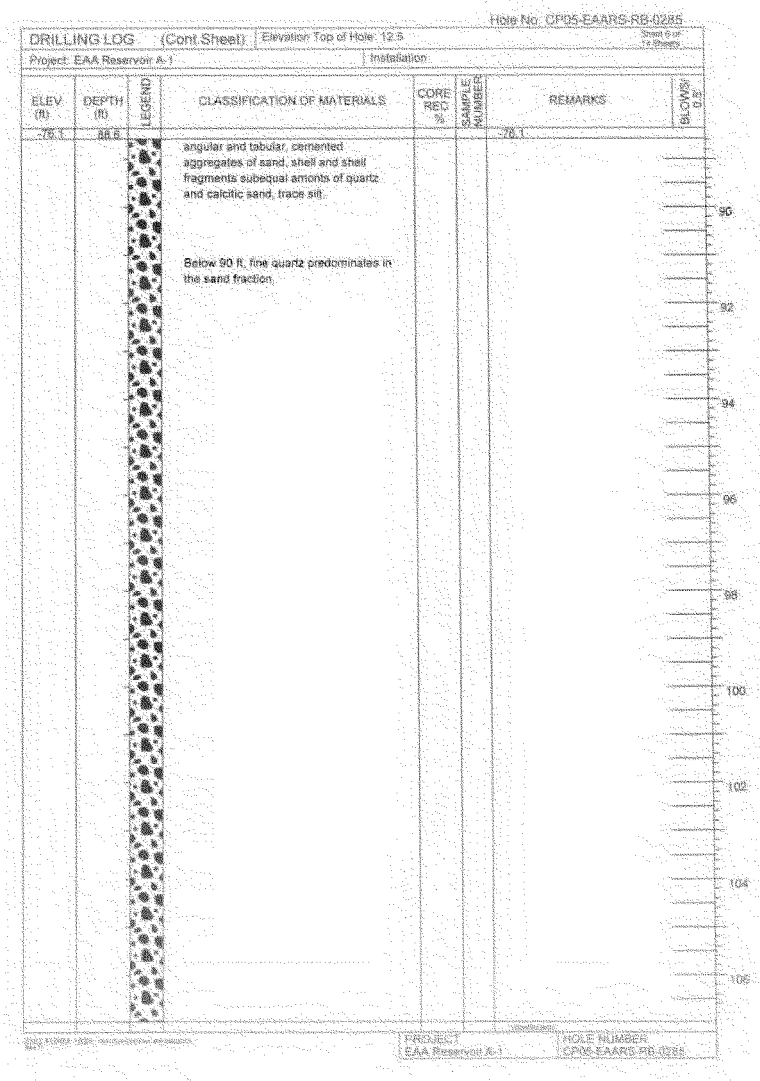
DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 12.5 | Sheet 3 of 10 Sheets

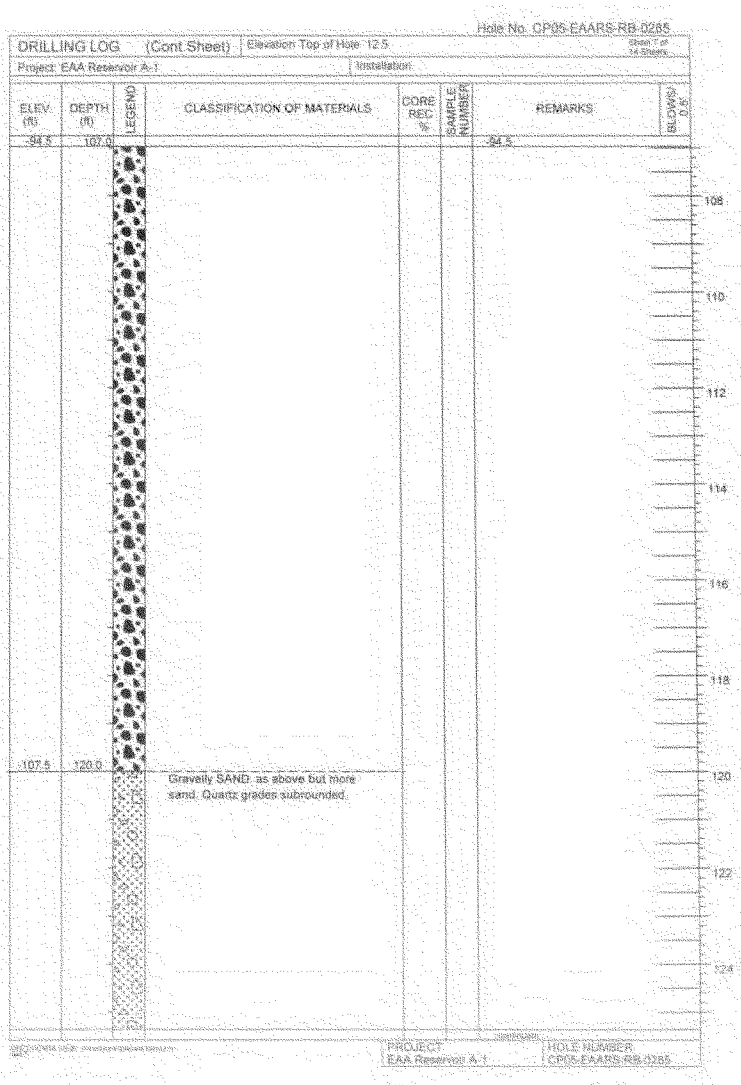
Project: EAA Reservoir A-1 | Installation

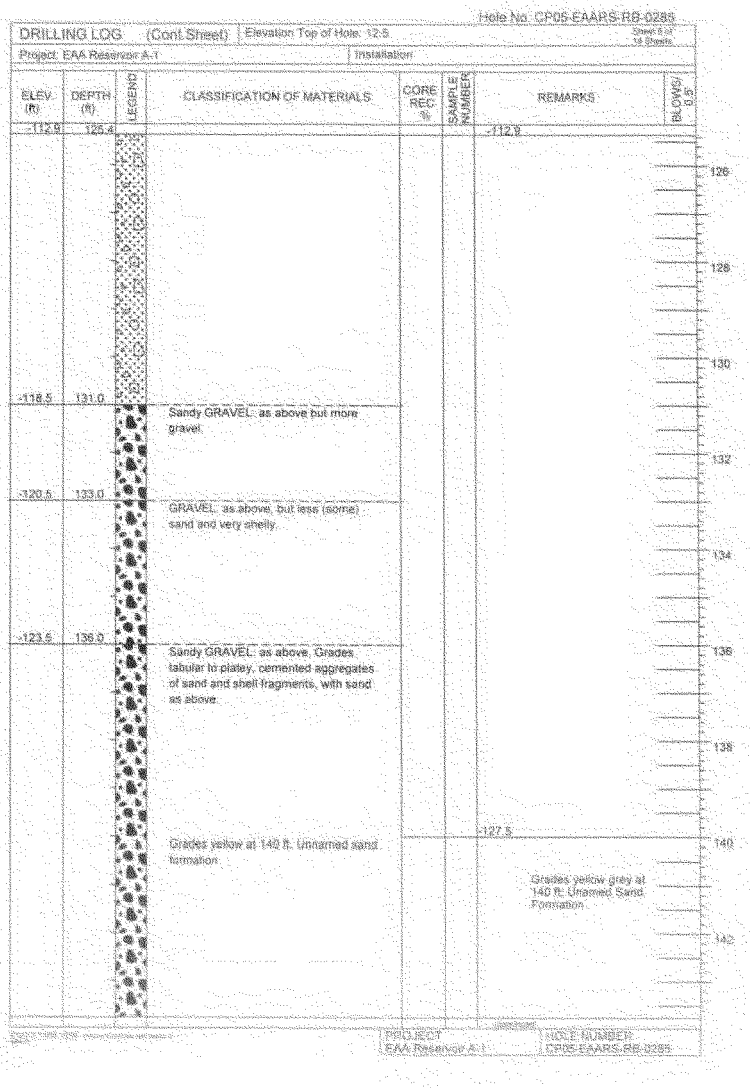
ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS 0.5'
-57.7	70.2					-57.7	
			Gravelly SAND (Ochopee Limestone member, Tamiami Formation): pale brownish gray, well graded, fine to coarse grained, angular, calcitic sand with a trace fine quartz sand, some silt. Gravel (fine to coarse) consists of shell and porous cemented angular frameworks of shell and sand.				
-67.5	80.0		SAND: as above but grades light brownish gray, no silt and only trace fine gravel shells.			-67.5 At 80 ft grades light brownish grey, gravel clasts, loose porosity	
-69.5	82.0		Gravelly SAND: as above but gravel grades back in. Gravel clasts lose porosity.				
-71.0	83.5		SAND: as above with less (some) gravel. Grades fine to medium grained with proportion of quartz sand increasing and predominating below 85 ft.				
-75.0	88.0		Sandy GRAVEL: pale brownish gray, well graded, fine to coarse grained.				

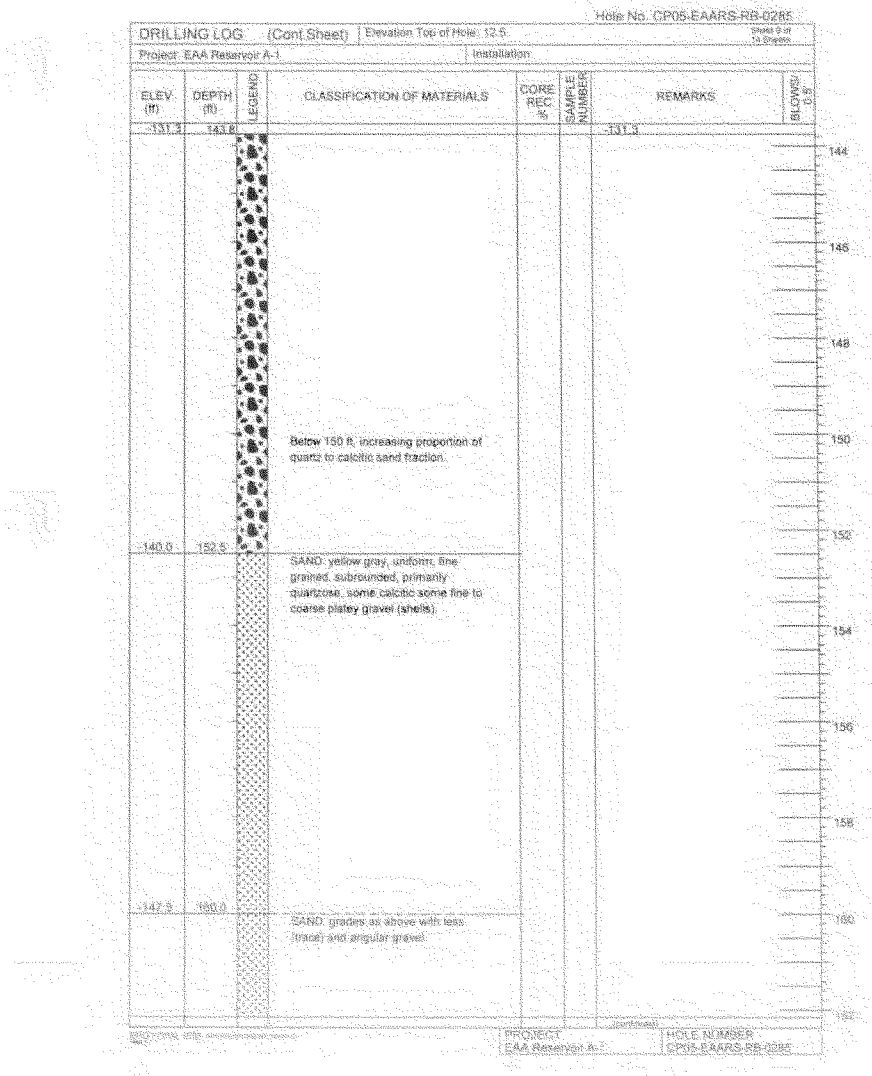
Axis: 72, 74, 76, 78, 80, 82, 84, 86, 88

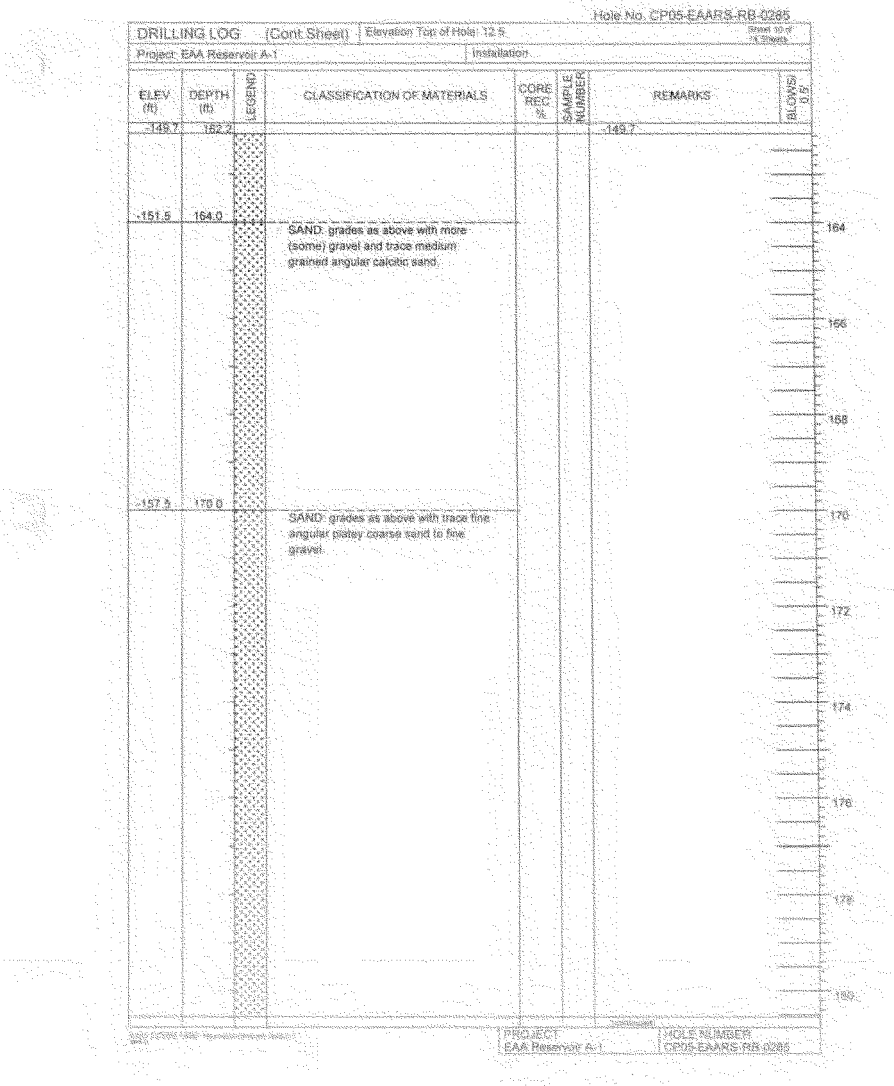
PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-RB-0285

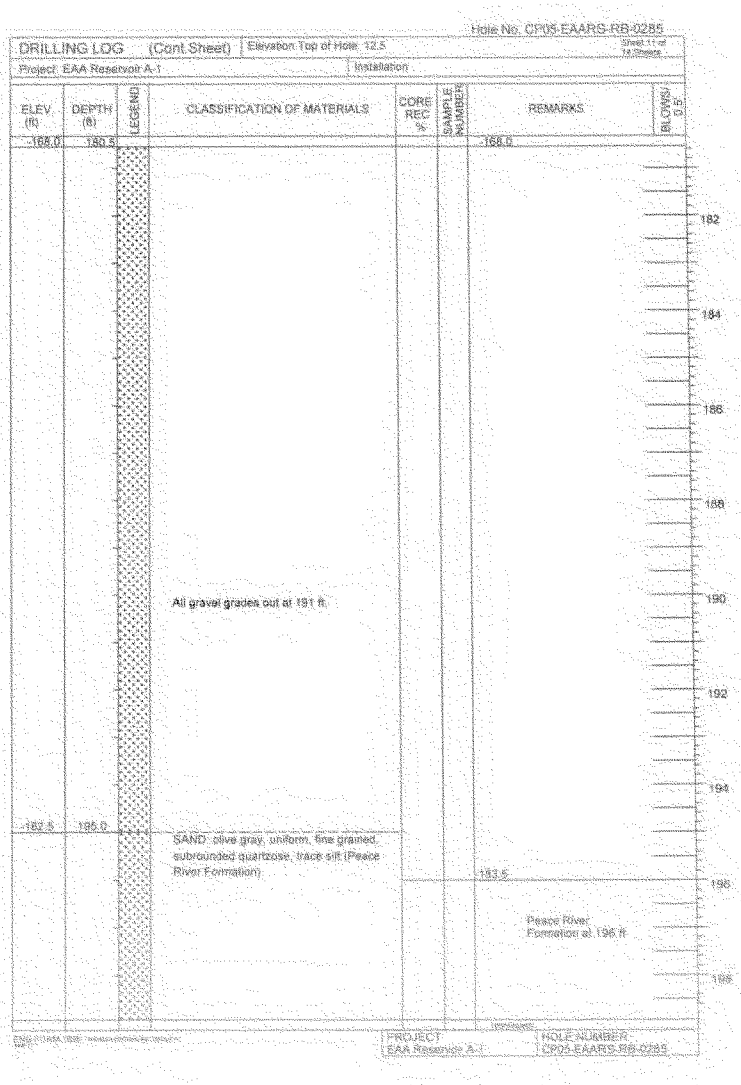

Hole No. CP05-EAARS-RB-0285
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 12.5
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5 ft
-79.1
88.6
-79.1
angular and tabular, cemented aggregates of sand, shell and shell fragments subequal amonts of quartz and calcitic sand, trace silt.
Below 90 ft, fine quartz predominates in the sand fraction.
90
92
94
96
98
100
102
104
106
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0285

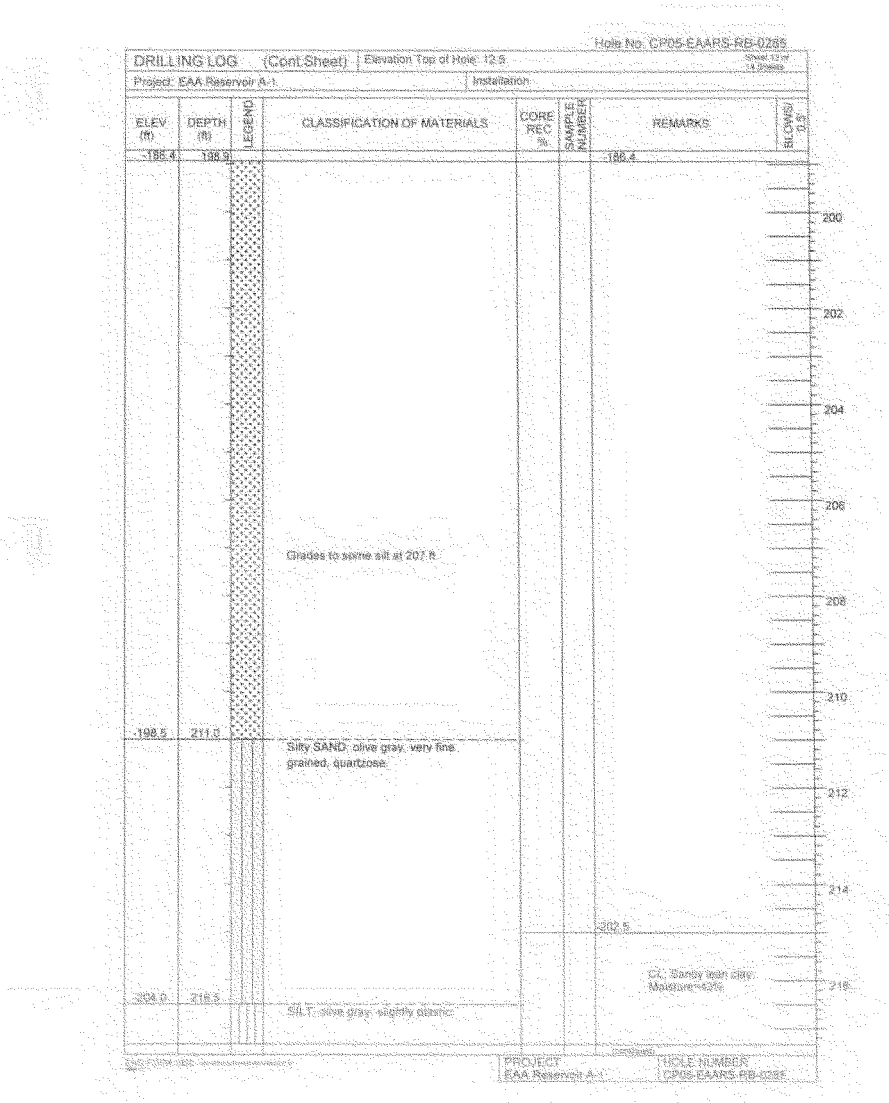

Hole No. CP05-EAARS-RB-0285
DRILLING LOG (Cont Sheet)
Elevation Top of Hole 12.5
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5ft
94.5
107.0
94.5
107.5
120.0
Gravelly SAND: as above but more sand. Quartz grades subrounded.
108
110
112
114
116
118
120
122
124
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0285

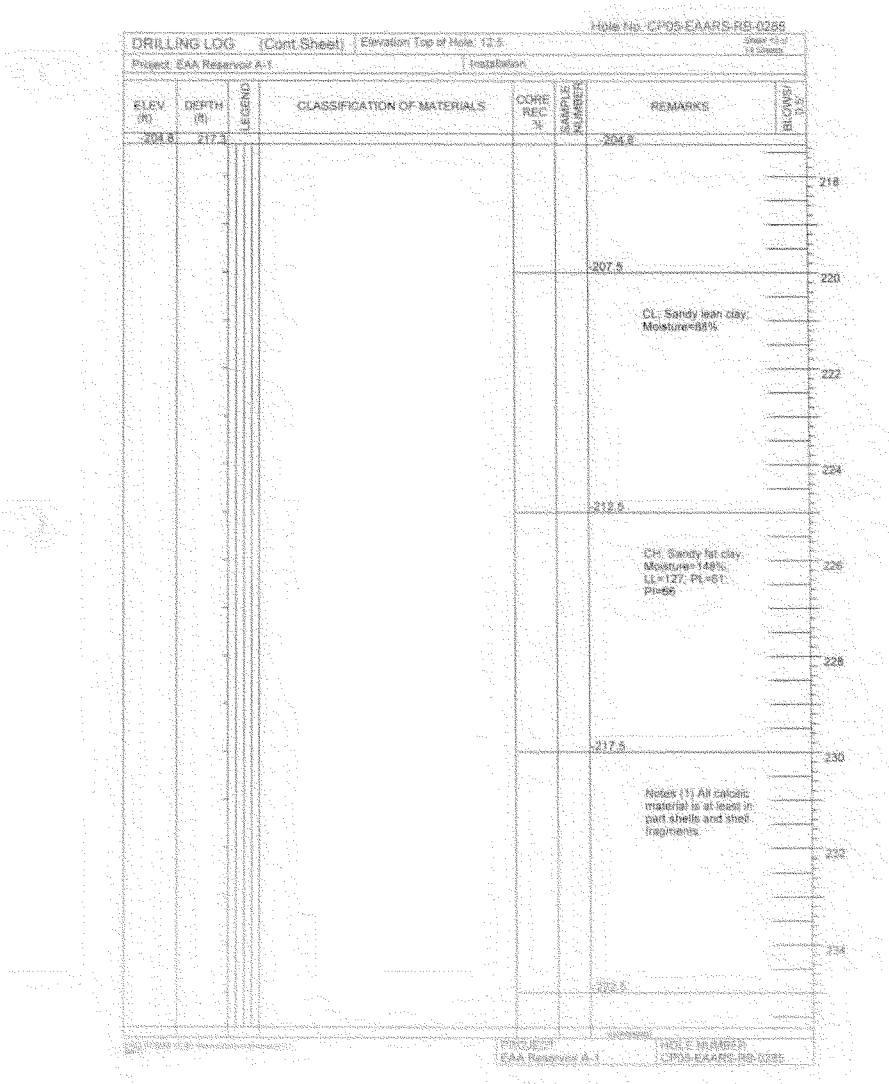

Hole No. CP05-EAARS-RB-0285
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 12.5
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.3ft
-112.5
125.4
-112.9
-118.5
131.0
Sandy GRAVEL, as above but more gravel
-120.5
133.0
GRAVEL, as above, but less (some) sand and very shelly
-123.5
136.0
Sandy GRAVEL, as above. Grades tabular to platey, cemented aggregates of sand and shell fragments, with sand as above
-127.5
Grades yellow at 140 ft. Unnamed sand formation
Grades yellow grey at 140 ft. Unamed Sand Formation
126
128
130
132
134
136
138
140
142
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0285

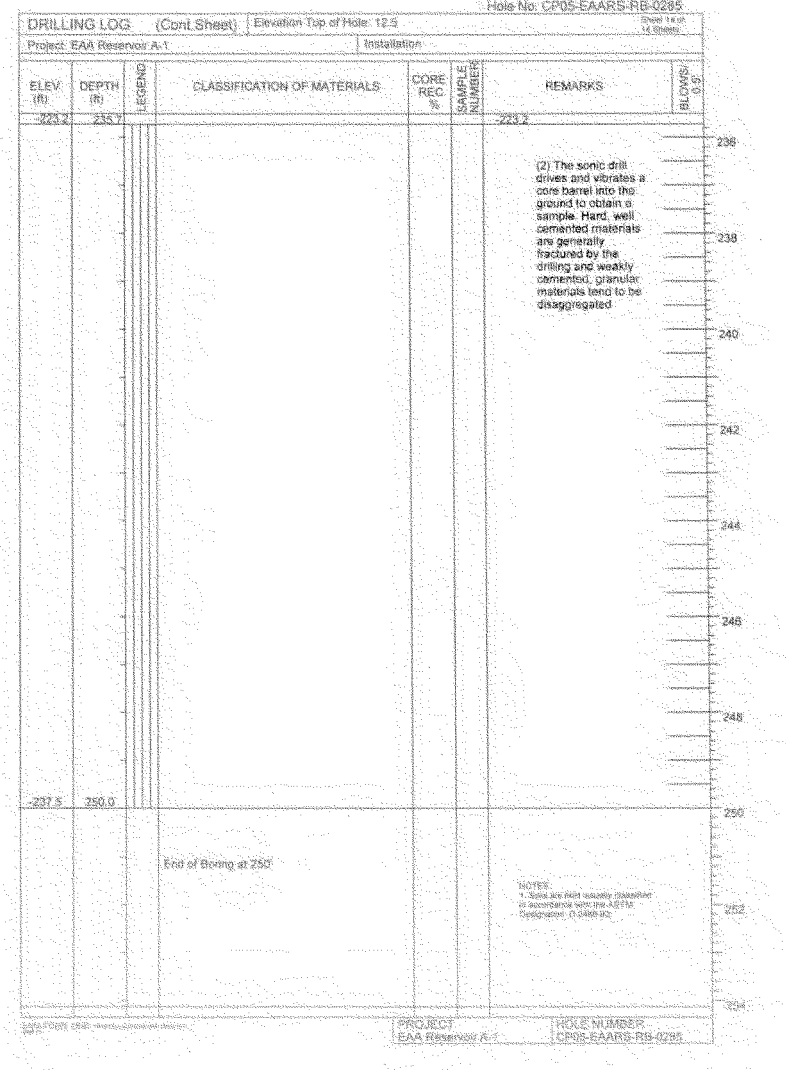

Hole No. CP05-EAARS-RB-0285
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 12.5
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
131.3
143.8
131.3
Below 150 ft, increasing proportion of quartz to calcitic sand fraction.
140.0
152.5
SAND: yellow gray, uniform, fine grained, subrounded, primarily quartzose, some calcitic some fine to coarse platey gravel (shells).
147.5
160.0
SAND: grades as above with less (trace) and angular gravel.
144
146
148
150
152
154
156
158
160
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0285


Hole No. CP05-EAARS-RB-0285
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 12.5
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-149.7
162.2
-151.5
164.0
SAND: grades as above with more (some) gravel and trace medium grained angular calcitic sand.
-157.5
170.0
SAND: grades as above with trace fine angular platey coarse sand to fine gravel.
164
166
168
170
172
174
176
178
180
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0285


Hole No. CP05-EAARS-RB-0285
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 12.5
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5ft
188.0
180.5
All gravel grades out at 191 ft.
182.5
186.0
SAND: olive gray, uniform, fine grained, subrounded quartzose, trace silt (Peace River Formation)
183.5
Peace River Formation at 186 ft
182
184
186
188
190
192
194
196
198
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0285


Hole No. CP05-EAARS-RB-0285
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: 12.5
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
186.4
188.9
Grades to some silt at 207 ft
198.5
211.0
Silty SAND; olive gray, very fine grained, quartzose
202.5
CL; Sandy lean clay
Moisture=23%
204.0
215.5
SILT; olive gray, slightly plastic
200
202
204
206
208
210
212
214
216
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0285


Hole No. CP05-EAARS-RB-0288
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 12.5
Project: EAA Reservoir A-1 Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
204.5
217.5
207.5
212.5
CL: Sandy lean clay; Moisture=88%
CH: Sandy fat clay; Moisture=148%; LL=127; PL=61; Pi=66
Notes: (1) All calcite material is at least in part shells and shell fragments.
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0288

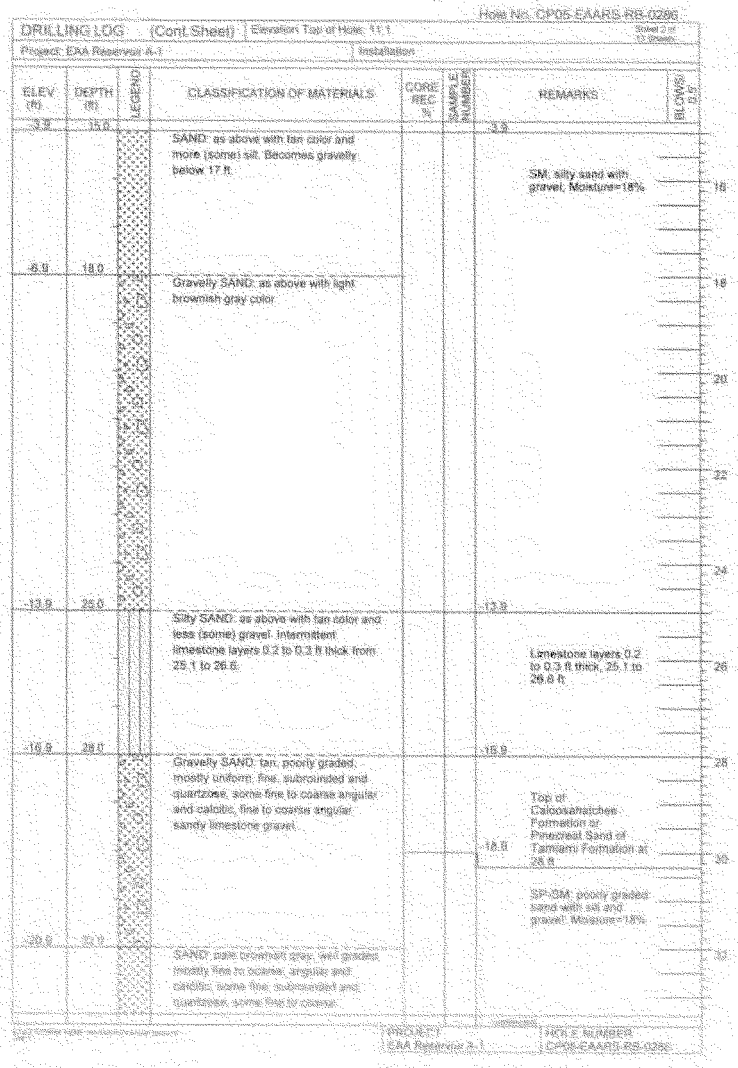

Hole No. CP05-EAARS-RB-0285
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 12.5
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
223.2
235.7
(2) The sonic drill drives and vibrates a core barrel into the ground to obtain a sample. Hard, well cemented materials are generally fractured by the drilling and weakly cemented, granular materials tend to be disaggregated
237.5
250.0
End of Boring at 250'
NOTES
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-90.
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0285

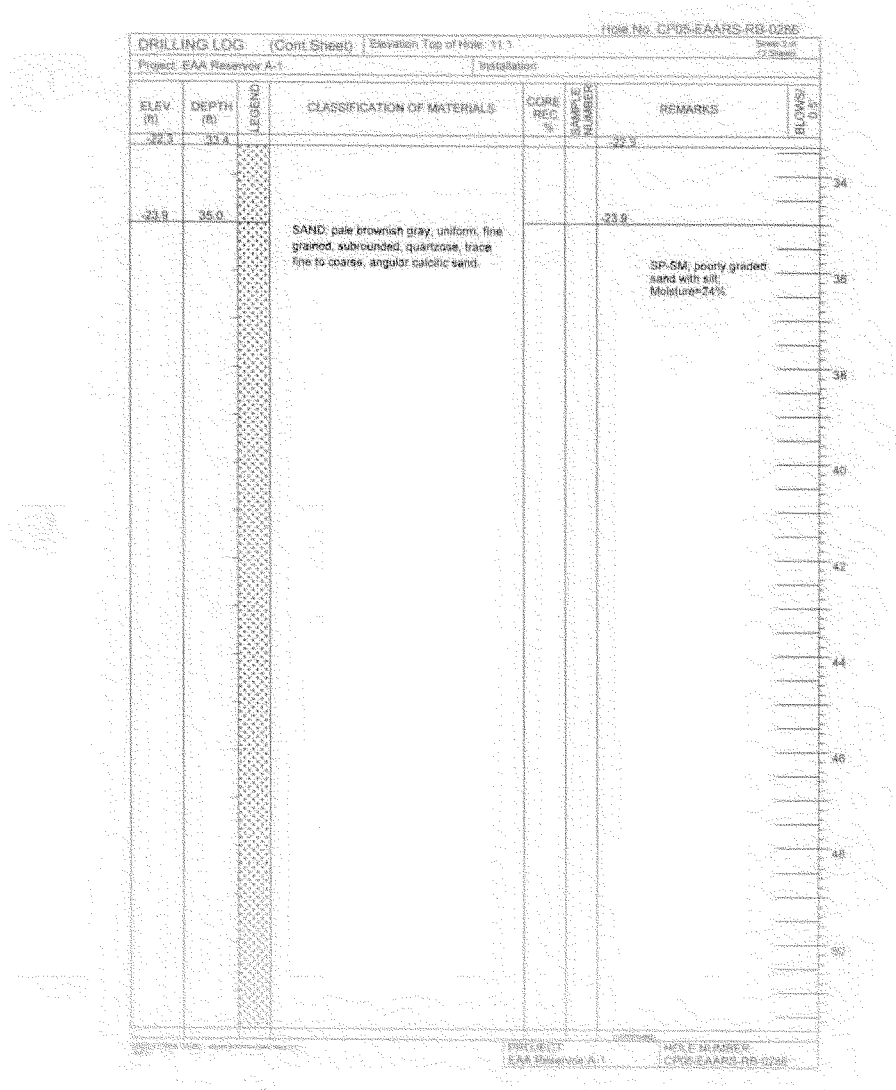
Hole No. CP05-EAARS-RB-0286

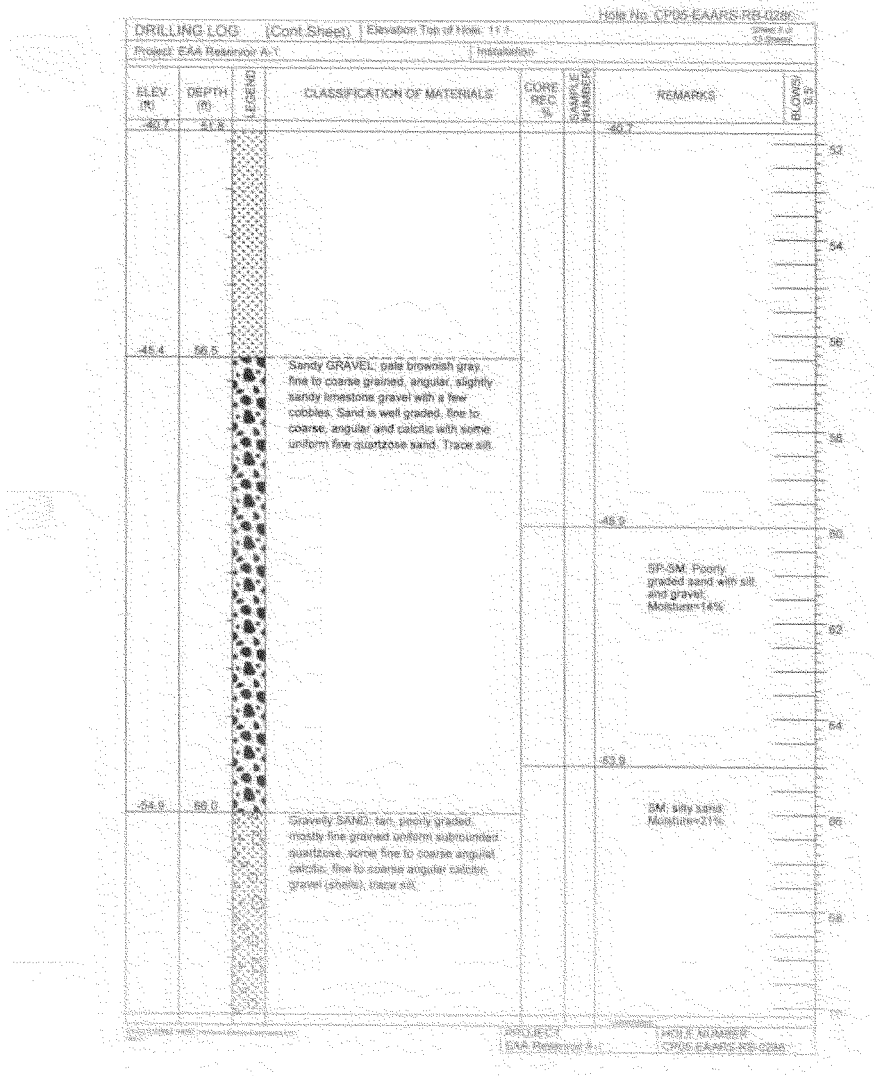
DRILLING LOG	Division:	Installation:	Sheet 1 of 10 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 5 inch	
2. Location: N784302, E756597.5 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse (sub-contracted to Prosonic)		12. Manufacturer's Designation for Drill: SRO-109	
4. Hole No: CP05-EAARS-RB-0286		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Fred Kraas		14. Total Number of Core Boxes: 21	
6. Direction of Hole: ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole: Started 8/1/2005 Completed 8/8/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 11.1 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 220 ft		19. Inspector: N. Holst	

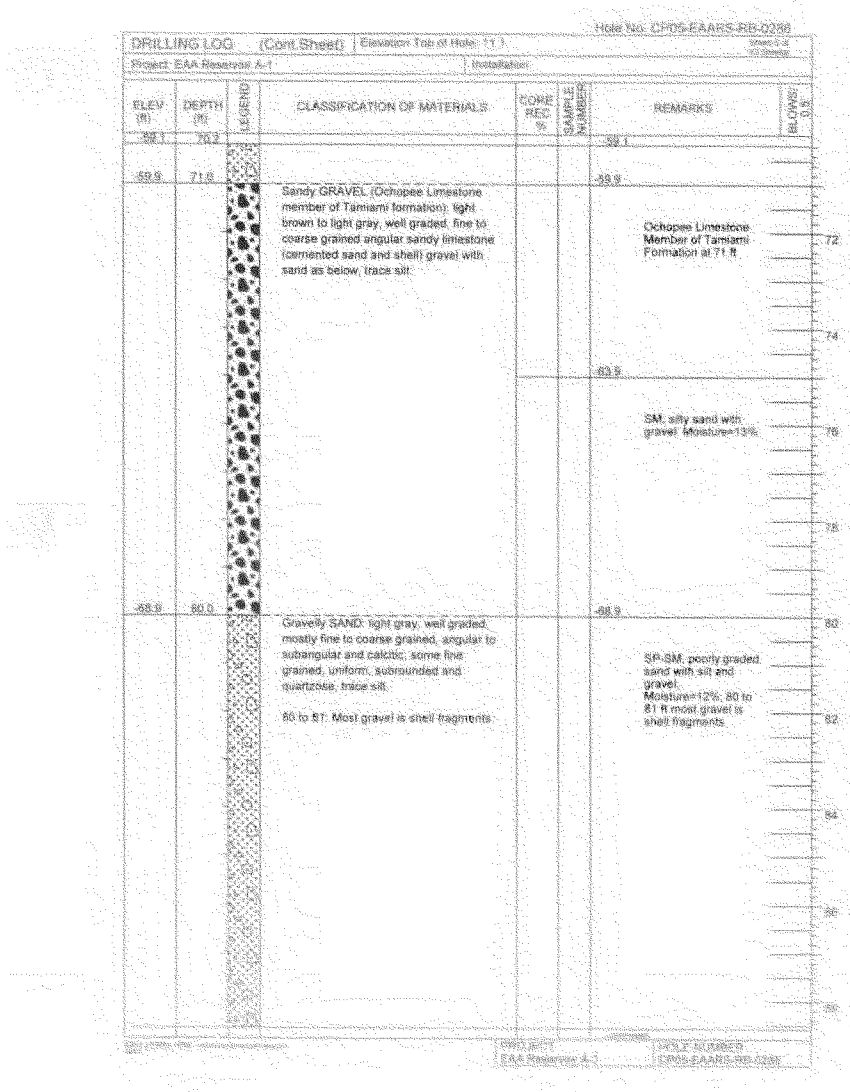
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
11.1	0.0		SAND (Road Fill): pale brownish gray, well graded, fine to coarse grained, angular, calcitic, some fine to coarse gravel, few cobbles.				
8.1	3.0		SAND: as above with dark gray color and organic contents (Peat).				
7.3	3.8		SAND: as above from 0 to 3 ft.				
						SM, silty sand with gravel, Moisture 14%	
1.1	10.0		Sample missing (placed in bucket for Proctor testing)				
0.6	10.5		SAND: pale brownish gray, well graded, fine to coarse, angular, calcitic, with trace silt.				
-3.9	15.0						

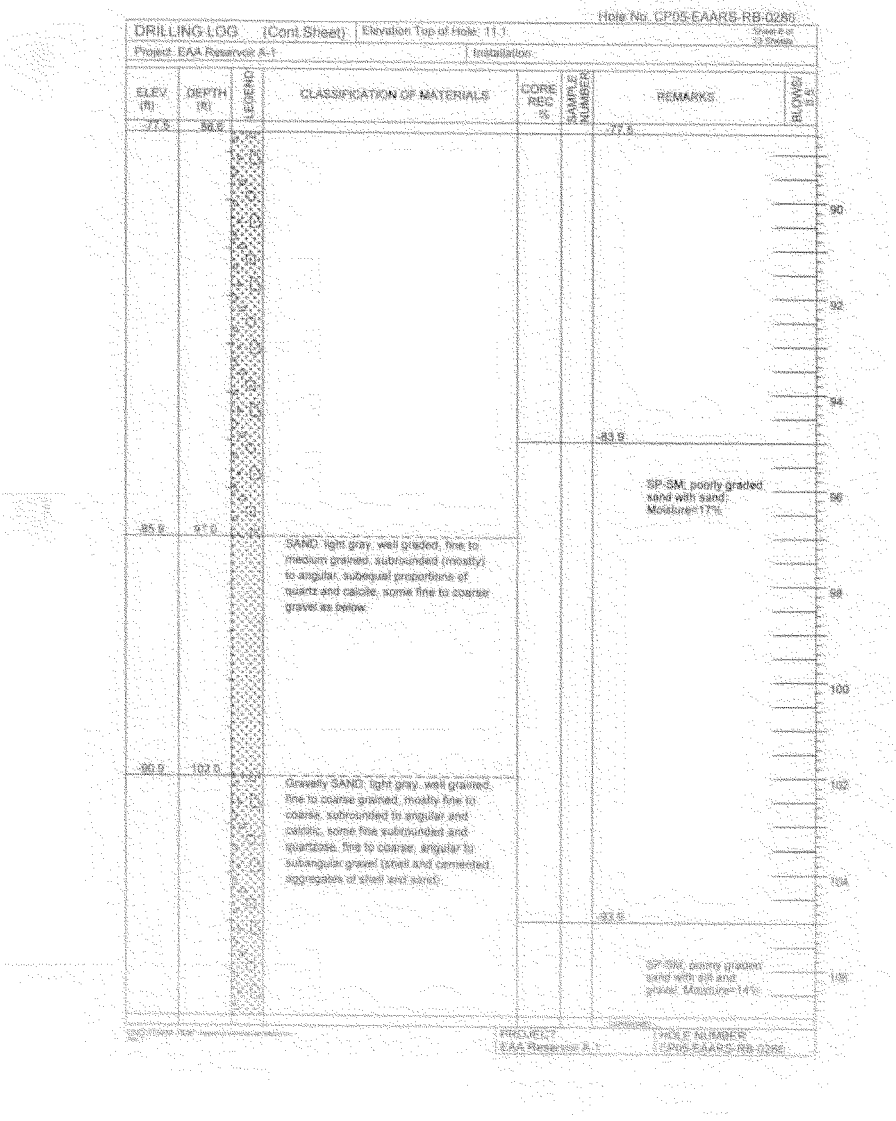
PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-RB-0286

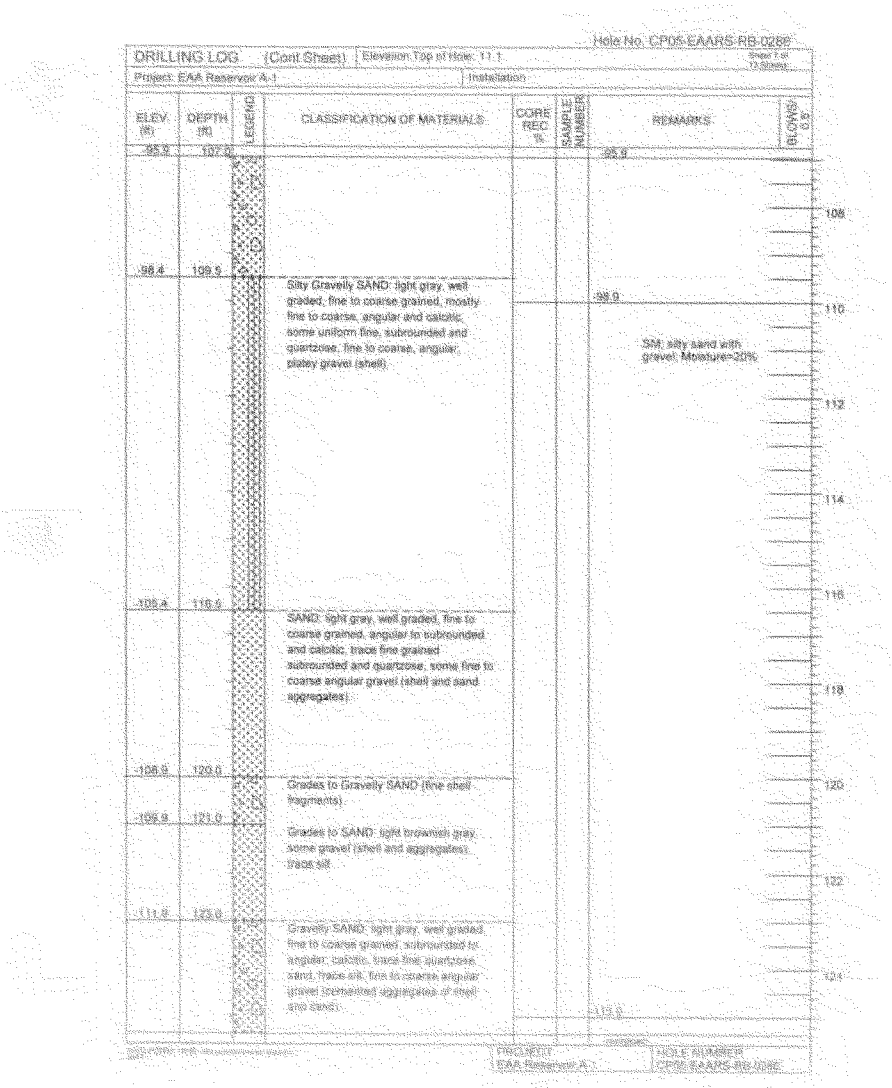

Hole No. CP05-EAARS-RR-0286
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 11.1
Sheet 2 of 10 Sheets
Project: EAA Reservoir A-1 Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
-5.9
15.0
SAND: as above with tan color and more (some) silt. Becomes gravelly below 17 ft.
SM: silty sand with gravel; Moisture=18%
-5.9
18.0
Gravelly SAND: as above with light brownish gray color
-13.9
25.0
Silty SAND: as above with tan color and less (some) gravel. Intermittent limestone layers 0.2 to 0.3 ft thick from 25.1 to 26.6.
Limestone layers 0.2 to 0.3 ft thick, 25.1 to 26.6 ft.
-16.9
28.0
Gravelly SAND, tan, poorly graded, mostly uniform, fine, subrounded and quartzose, some fine to coarse angular and calcitic, fine to coarse angular sandy limestone gravel.
Top of Caloosahatchee Formation or Pinecrest Sand of Tamiami Formation at 28 ft
SP-SM: poorly graded sand with silt and gravel; Moisture=18%
-29.9
30.0
SAND: pale brownish gray, well graded, mostly fine to coarse, angular and calcitic, some fine, subrounded and quartzose, some fine to coarse.
HOLE NUMBER
CP05-EAARS-RR-0286

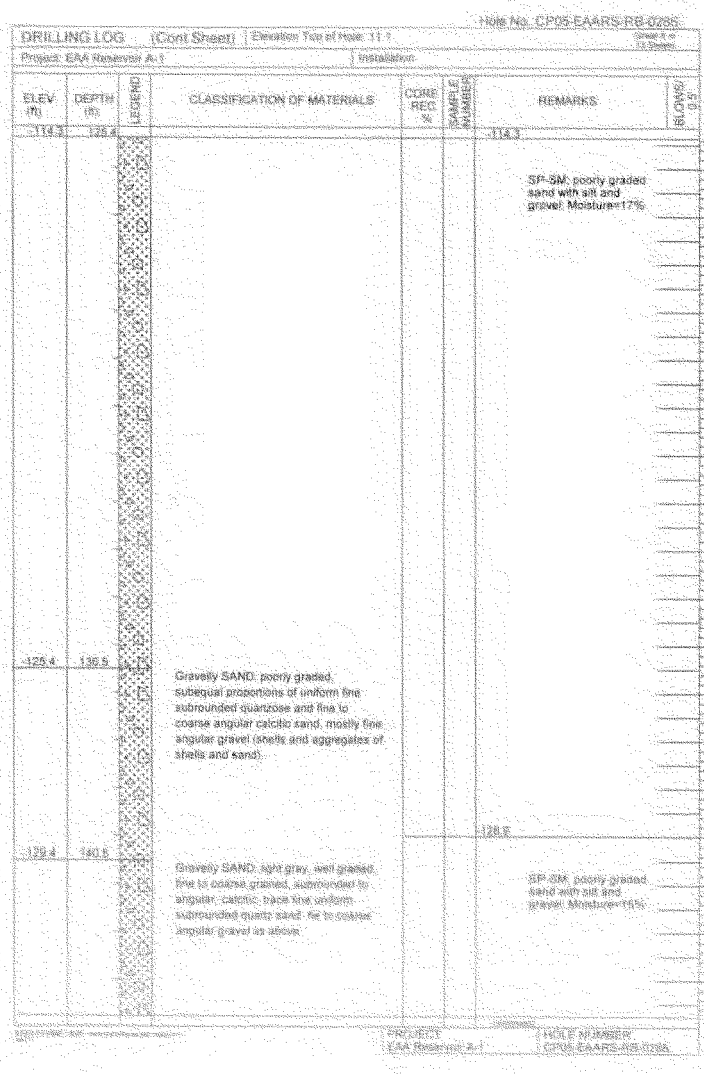

DRILLING LOG (Cont Sheet)
Project: EAA Reservoir A-1
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
23.9
35.0
SAND; pale brownish gray, uniform, fine grained, subrounded, quartzose, trace fine to coarse, angular calcitic sand.
SP-SM; poorly graded sand with silt. Moisture=24%
34
36
38
40
42
44
46
48
50

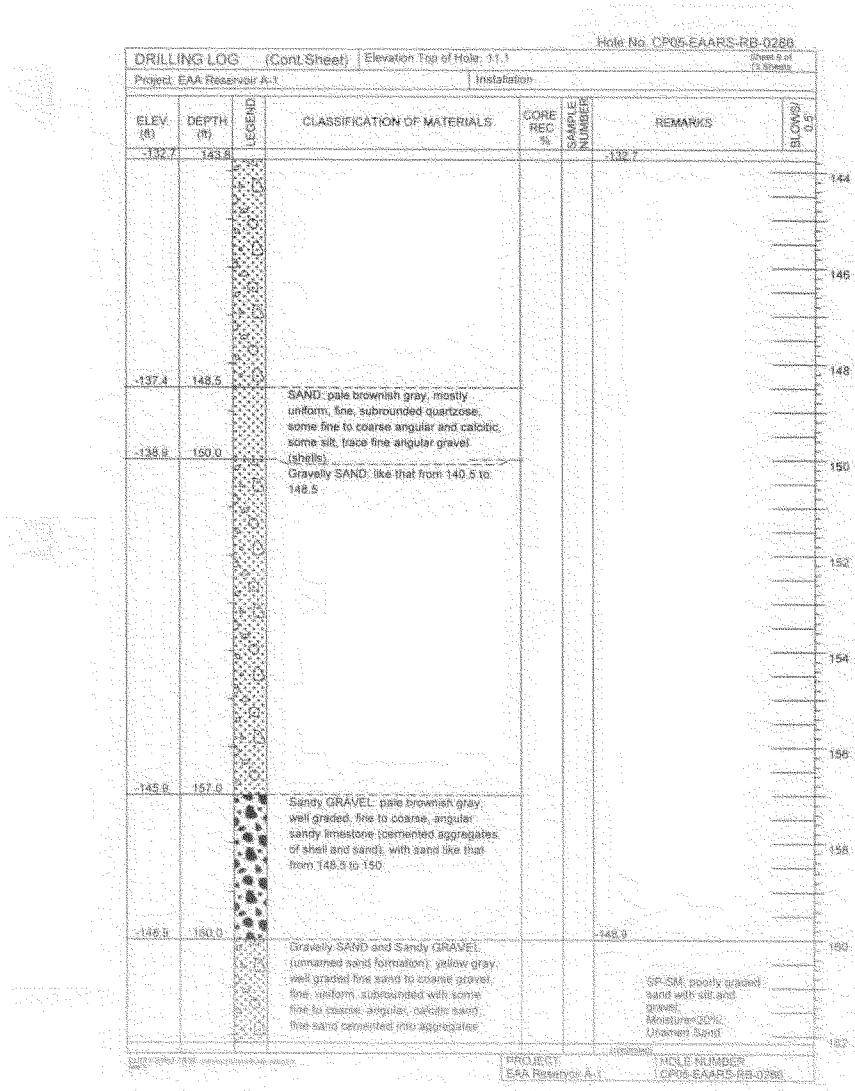

DRILLING LOG (Cont Sheet)
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-45.4
56.5
Sandy GRAVEL; pale brownish gray, fine to coarse grained, angular, slightly sandy limestone gravel with a few cobbles. Sand is well graded, fine to coarse, angular and calcitic with some uniform fine quartzose sand. Trace silt.
-45.9
SP-SM: Poorly graded sand with silt and gravel; Moisture=14%
-53.9
SM: silty sand; Moisture=21%
-54.9
56.0
Gravelly SAND; tan, poorly graded, mostly fine grained uniform subrounded quartzose, some fine to coarse angular calcitic, fine to coarse angular calcitic gravel (shells), trace silt.
52
54
56
58
60
62
64
66
68
70
EAA Reservoir A-1
CPP05-EAARS-RB-0286

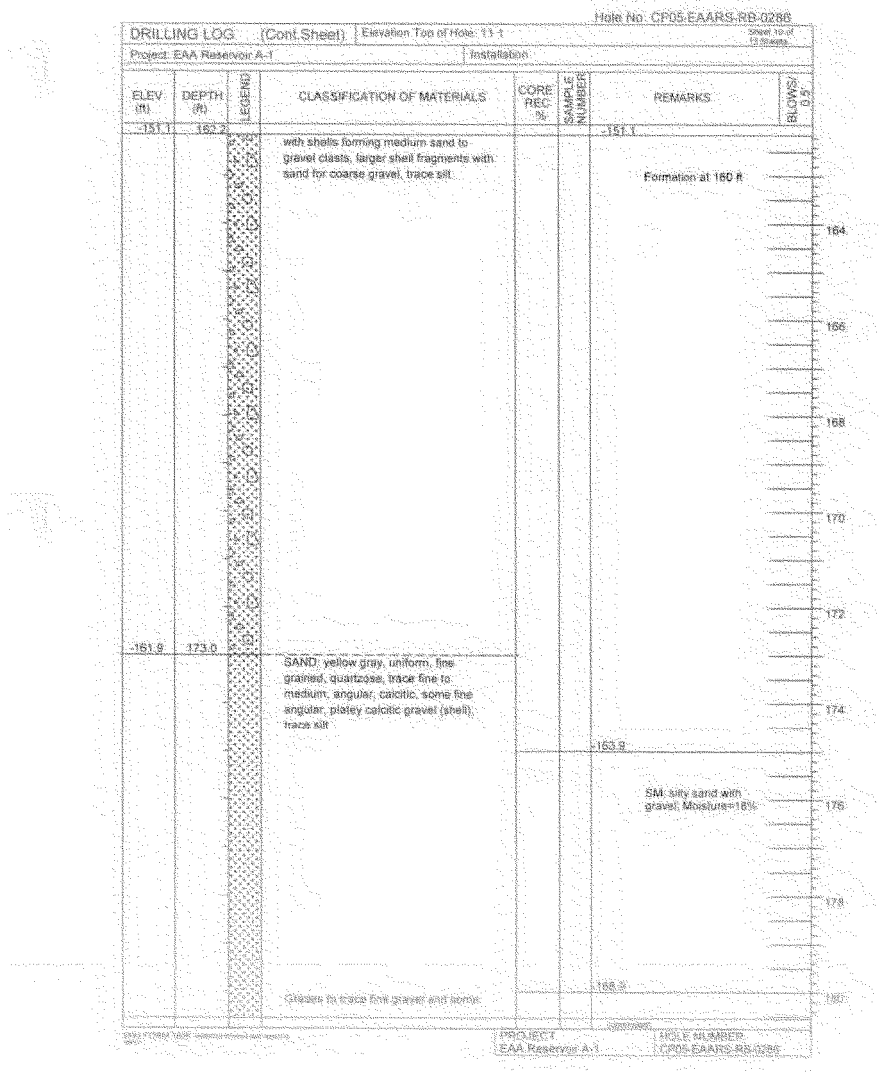

DRILLING LOG (Cont Sheet)
Project: EAA Reservoir A-1
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-59.1
70.2
-59.9
71.0
Sandy GRAVEL (Ochopee Limestone member of Tamiami formation): light brown to light gray, well graded, fine to coarse grained angular sandy limestone (cemented sand and shell) gravel with sand as below, trace silt.
Ochopee Limestone Member of Tamiami Formation at 71 ft
-59.1
-59.9
-63.9
SM: silty sand with gravel. Moisture=13%
-68.9
80.0
Gravelly SAND: light gray, well graded, mostly fine to coarse grained, angular to subangular and calcitic, some fine grained, uniform, subrounded and quartzose, trace silt.
80 to 81: Most gravel is shell fragments
-68.9
SP-SM: poorly graded sand with silt and gravel. Moisture=12%. 80 to 81 ft most gravel is shell fragments
72
74
76
78
80
82
84
86
88
EAA Reservoir A-1

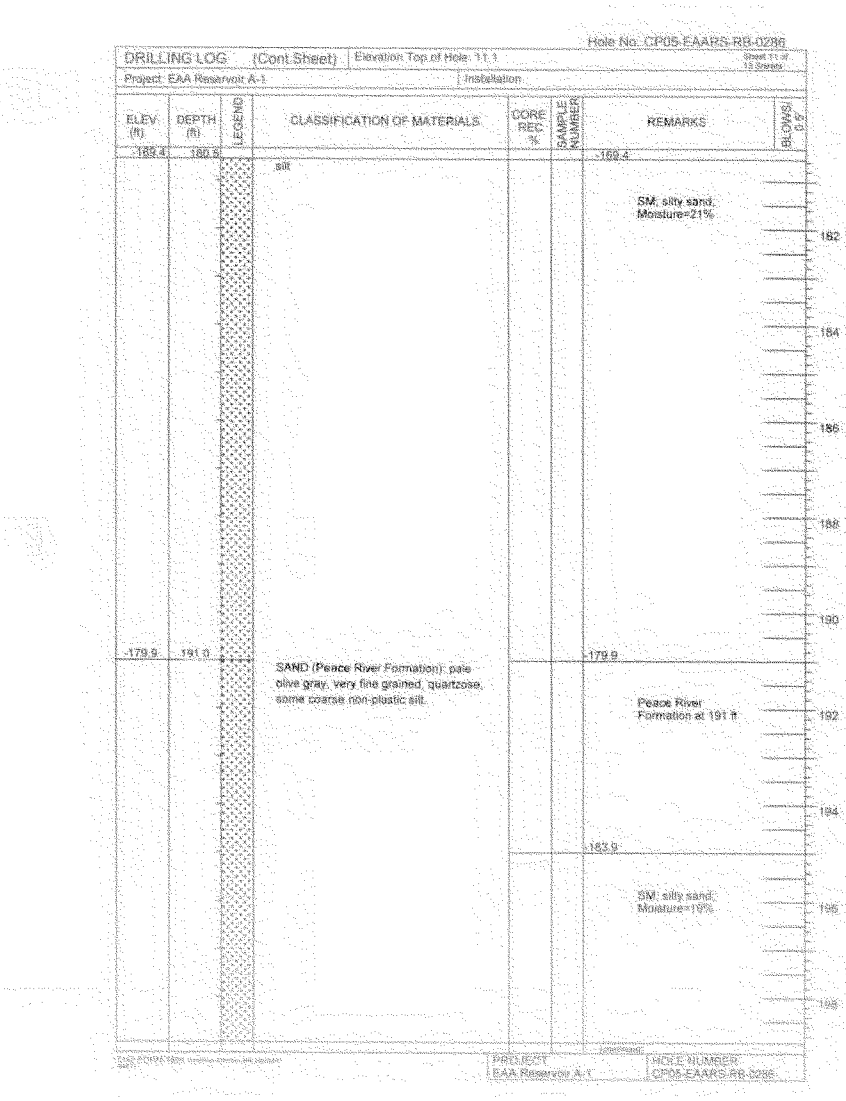

Hole No. CP05-EAARS-RB-0280
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: 11.1
Project: EAA Reservoir A-1 Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/6 in
77.5
80.0
83.0
SP-SM; poorly graded sand with sand; Moisture:17%
85.0
97.0
SAND; light gray, well graded, fine to medium grained, subrounded (mostly) to angular, subequal proportions of quartz and calcite, some fine to coarse gravel as below.
90.0
102.0
Gravelly SAND; light gray, well grained, fine to coarse grained, mostly fine to coarse, subrounded to angular and calcitic, some fine subrounded and quartzose, fine to coarse, angular to subangular gravel (shell and cemented aggregates of shell and sand).
93.0
SP-SM; poorly graded sand with silt and gravel; Moisture:14%
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0280
90
92
94
96
98
100
102
104
106

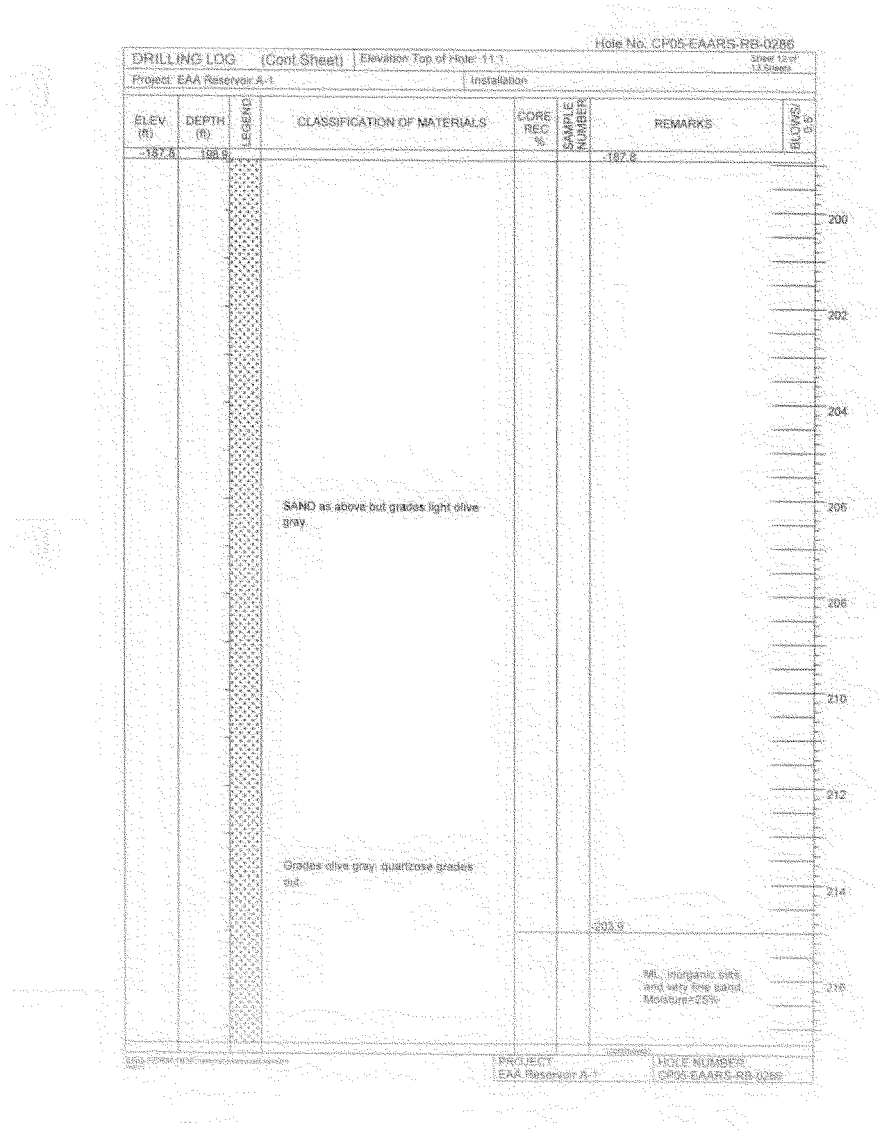

DRILLING LOG (Cont Sheet) Elevation Top of Hole: 11.1
Hole No. CP05-EAARS-RB-0286
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
95.9
107.0
98.4
109.5
Silty Gravelly SAND: light gray, well graded, fine to coarse grained, mostly fine to coarse, angular and calcitic, some uniform fine, subrounded and quartzose, fine to coarse, angular, platey gravel (shell).
98.9
SM; silty sand with gravel; Moisture=20%
105.4
116.0
SAND: light gray, well graded, fine to coarse grained, angular to subrounded and calcitic, trace fine grained subrounded and quartzose, some fine to coarse angular gravel (shell and sand aggregates).
106.9
120.0
Grades to Gravelly SAND (fine shell fragments)
109.9
121.0
Grades to SAND: light brownish gray, some gravel (shell and aggregates), trace silt
111.8
123.0
Gravelly SAND: light gray, well graded, fine to coarse grained, subrounded to angular, calcitic, trace fine quartzose sand, trace silt, fine to coarse angular gravel (cemented aggregates of shell and sand)
113.9
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0286

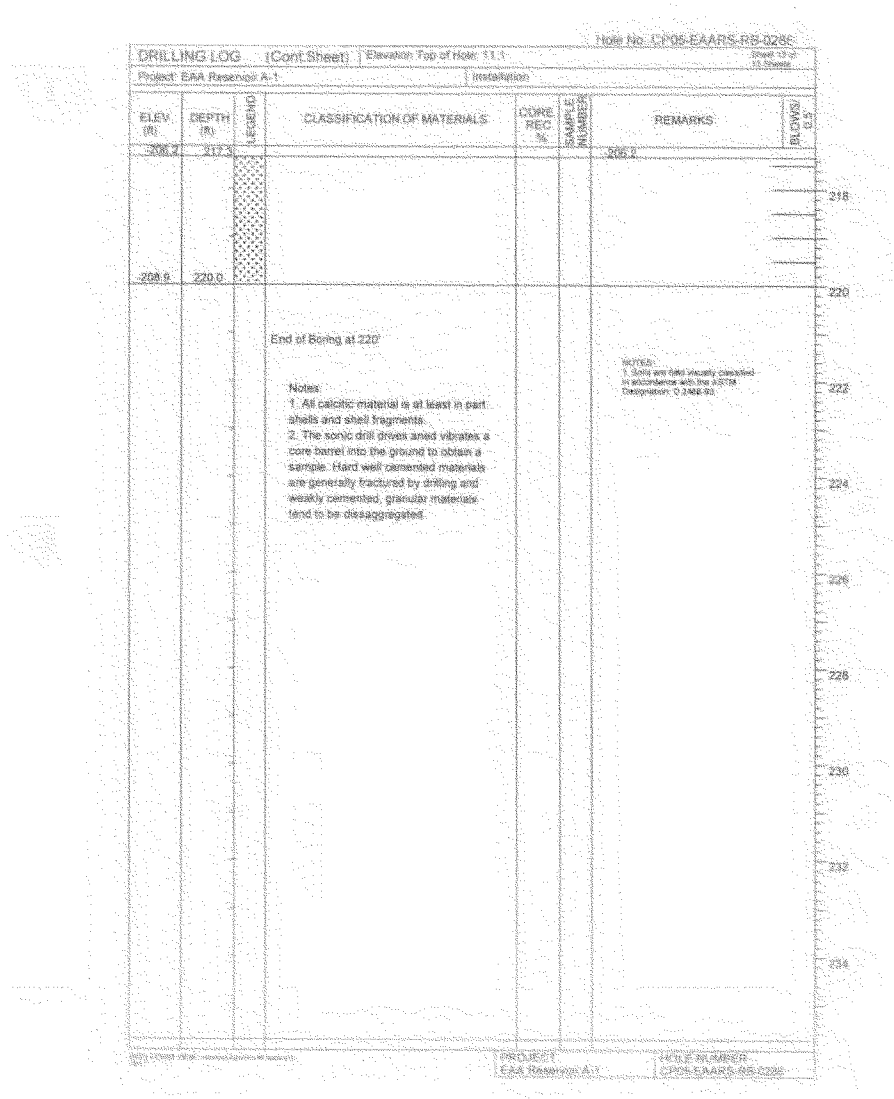

Hole No. CP05-EAARS-RB-0265
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 11.1
Project: EAA Reservoir A-1
Inspector:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 6"
118.3
SP-SM; poorly graded sand with silt and gravel; Moisture=17%
Gravelly SAND; poorly graded, subequal proportions of uniform fine subrounded quartzose and fine to coarse angular calcitic sand, mostly fine angular gravel (shells and aggregates of shells and sand)
125.4
130.5
128.5
SP-SM; poorly graded sand with silt and gravel; Moisture=16%
129.4
140.5
Gravelly SAND; light gray, well graded, fine to coarse grained, subrounded to angular, calcitic, trace fine uniform subrounded quartz sand, fine to coarse angular gravel as above
126
128
130
132
134
136
138
140
142
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0265


Hole No. CP05-EAARS-RB-0288
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 11.1
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-132.7
143.8
-137.4
148.5
SAND: pale brownish gray, mostly uniform, fine, subrounded quartzose, some fine to coarse angular and calcitic, some silt, trace fine angular gravel (shells)
-138.9
150.0
Gravelly SAND: like that from 140.5 to 148.5
-145.9
157.0
Sandy GRAVEL: pale brownish gray, well graded, fine to coarse, angular, sandy limestone (cemented aggregates of shell and sand), with sand like that from 148.5 to 150
-146.9
150.0
148.9
Gravelly SAND and Sandy GRAVEL (unnamed sand formation): yellow gray, well graded fine sand to coarse gravel, fine, uniform, subrounded with some fine to coarse, angular, calcitic sand, fine sand cemented into aggregates
SP-SM: poorly graded sand with silt and gravel
Moisture:20%
Unaxial Sand
144
146
148
150
152
154
156
158
160
162
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0288


Hole No. CP05-EAARS-RB-0280
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: 11.1
Project: EAA Reservoir A-1 Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5 ft
-151.1
162.2
with shells forming medium sand to gravel clasts, larger shell fragments with sand for coarse gravel, trace silt
-151.1
Formation at 160 ft
164
166
168
170
172
-151.9
173.0
SAND; yellow gray, uniform, fine grained, quartzose, trace fine to medium, angular, calcitic, some fine angular, platey calcitic gravel (shell), trace silt
174
-163.9
SM; silty sand with gravel, Moisture=18%
176
178
-168.3
Grades to trace fine gravel and some
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0280


Hole No. CP05-EAARS-RB-0286
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 11.1
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
189.4
180.9
silt
189.4
SM; silty sand, Moisture=21%
182
184
186
188
190
179.9
191.0
SAND (Peace River Formation): pale olive gray, very fine grained, quartzose, some coarse non-plastic silt.
179.9
Peace River Formation at 191 ft
192
194
183.9
SM; silty sand, Moisture=19%
196
198
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0286

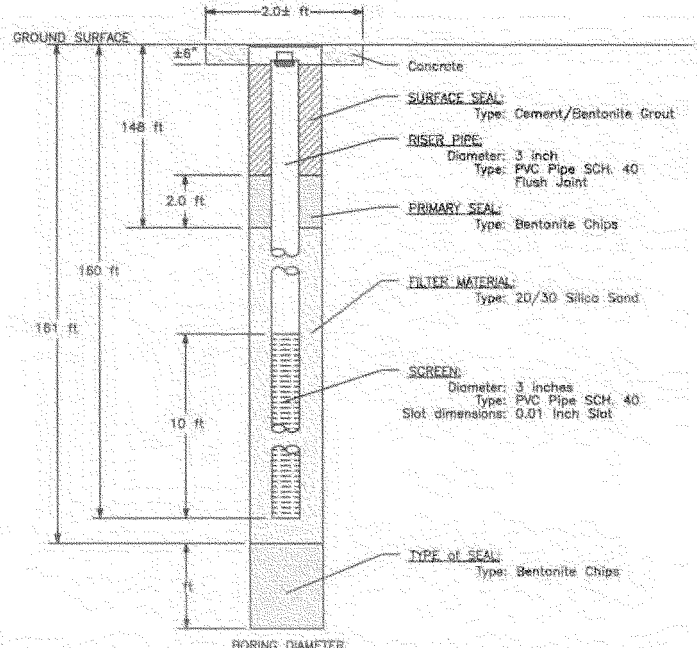

Hole No. CP05-EAARS-RB-0286
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 11.1
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-187.8
198.9
SAND as above but grades light olive gray.
Grades olive gray, quartzose grades out.
203.9
ML, Inorganic silts and very fine sand, Moisture=25%
200
202
204
206
208
210
212
214
216
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-RB-0286


DRILLING LOG (Cont.Sheet)
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
CLASSIFICATION OF MATERIALS
CORE REC %
REMARKS
BLOWS/ 0.5'
208.9
220.0
End of Boring at 220'
Notes:
1. All calcitic material is at least in part shells and shell fragments.
2. The sonic drill drives aned vibrates a core barrel into the ground to obtain a sample. Hard well cemented materials are generally fractured by drilling and weakly cemented, granular materials tend to be disaggregated.
218
220
222
224
226
228
230
232
234

Hole No. CP05-EAARS-TW-0286

PIEZOMETER LOG	Division:	Installation:
1. Project EAA Reservoir A-1		8. Datum of Elevation Shown: NAD83
2. Location N 764359, E 788550		9. Manufacture's Designation for Drill: SR0-109
3. Drilling Agency: Prosonic		10. Elevation Groundwater:
4. Hole No. CP05-EAARS-TW-0286		11. Date Hole: Started 8-2-05 Completed 8-2-05
5. Name of Driller: Fred Kruass		12. Elevation Top of Riser: ±10'
6. Depth of Piezometer: 161 ft		13. Inspector: JP
7. Size and type of bit: 6" bit, Rotary Method		

FLUSH MOUNT



INSTALLATION METHOD: The boring was advanced to the required depth. The piezometer screen and riser were lowered to the bottom of the hole, and the sand pack was tremied into the hole to about 1 foot above the top of the screen. About 2 feet of fine sand was tremied on top, and cement/bentonite grout was tremied in to fill the rest of the hole. The riser was cut off about 1.5± feet above the ground surface, and the protective casing suspended over the riser into the ground until it set.

NOTES: Typical 25 foot Piezometer Installation

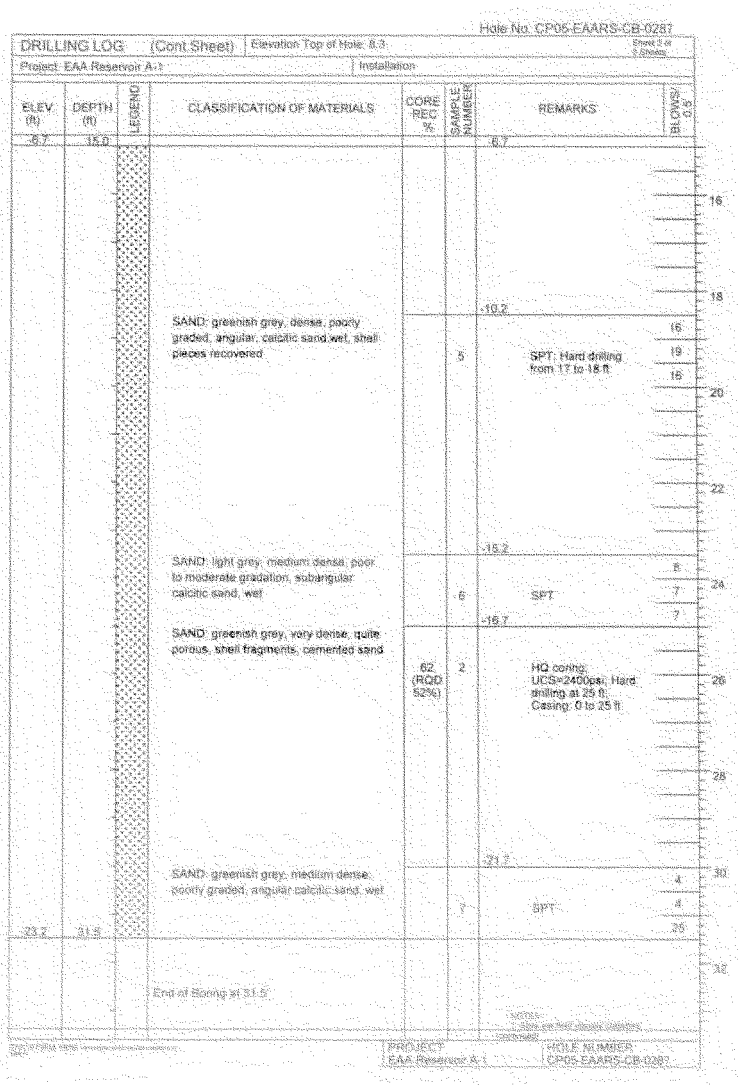
Hole No. CP05-EAARS-CB-0287

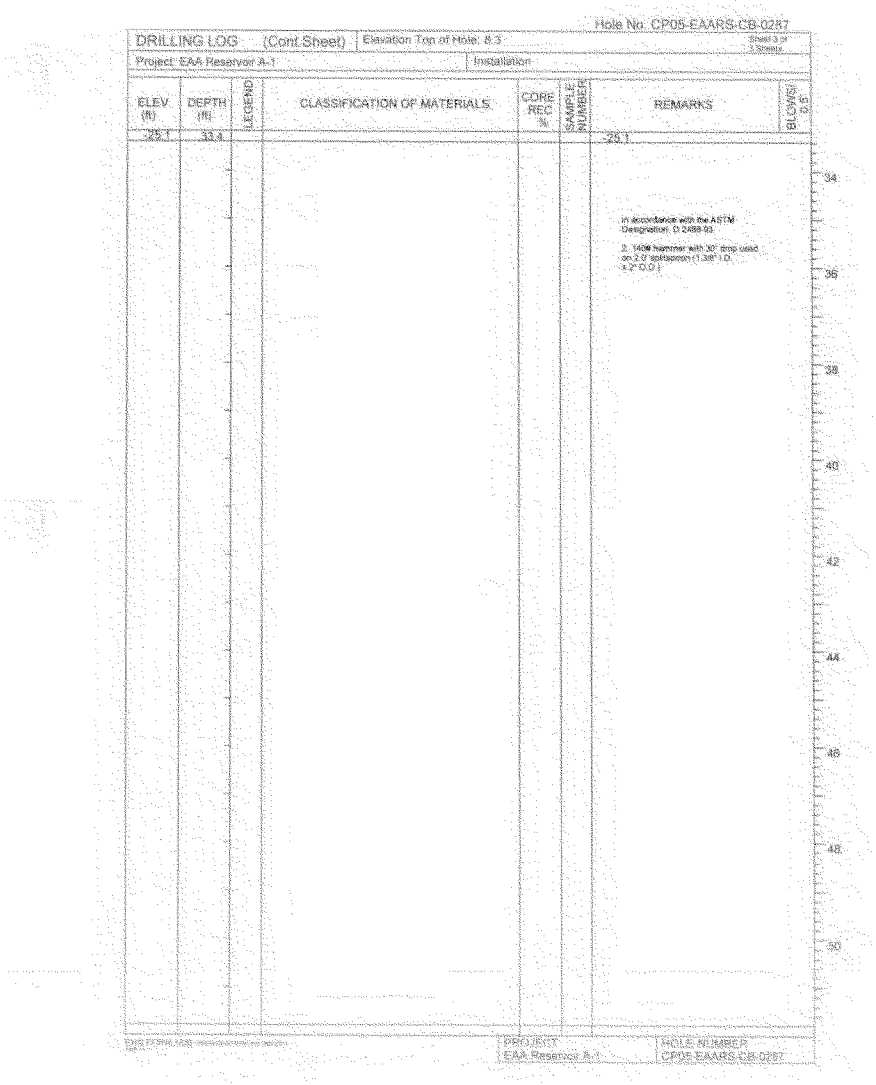
DRILLING LOG | Division: | Installation: | Sheet 1 of 1 Sheet(s)

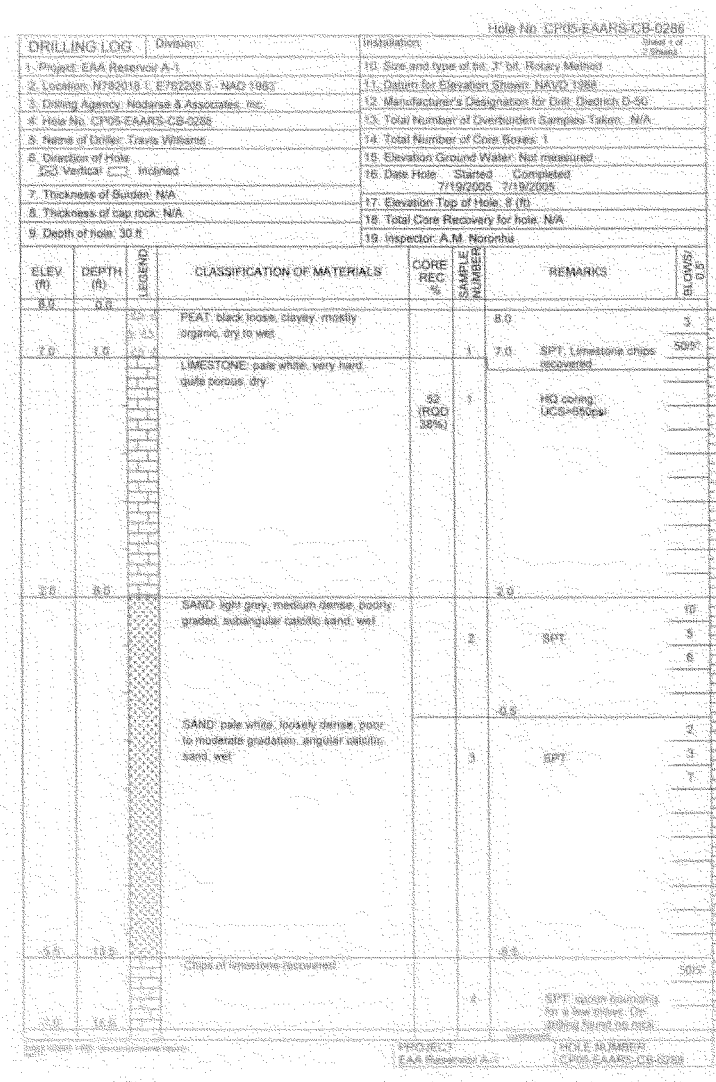
1. Project: EAA Reservoir A-1	10. Size and type of bit: 3" bit, Rotary Method
2. Location: N783418.8, E750201 - NAD 1983	11. Datum for Elevation Shown: NAVD 1988
3. Drilling Agency: Nodarse & Associates, Inc.	12. Manufacturer's Designation for Drill: Diedrich D-50
4. Hole No: CP05-EAARS-CB-0287	13. Total Number of Overburden Samples Taken: N/A
5. Name of Driller: Travis Williams	14. Total Number of Core Boxes: 1
6. Direction of Hole: ☒ Vertical ☐ Inclined	15. Elevation Ground Water: Not measured
	16. Date Hole: Started 7/20/2005 Completed 7/20/2005
7. Thickness of Burden: N/A	17. Elevation Top of Hole: 8.3 (ft)
8. Thickness of cap rock: N/A	18. Total Core Recovery for hole: N/A
9. Depth of hole: 31.5 ft	19. Inspector: A.M. Noronha

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
8.3	0.0					8.3	3
			PEAT: black, very loose, wet to dry, highly organic, limestone chips recovered on sample bottom		1	7.3 SPT	50/3"
7.3	1.0		LIMESTONE: brownish white to white, very hard, quite porous, shell fragments, dry	36 (RQD 18%)	1	HQ coring; UCS=1105psi	
2.3	6.0		SAND: pale white, very dense, poorly graded, subangular calcitic sand, wet		2	2.3 SPT	7 21 33
			SAND: white, very loose, poorly graded, subrounded calcitic sand, wet, fine sand present, trace silt, shell pieces recovered		3	-6.2 SPT, quite silty	2 1 1
			Same as above, but loose and less silty, no shells		4	-9.2 SPT	4 5 7

PROJECT: EAA Reservoir A-1 HOLE NUMBER: CP05-EAARS-CB-0287


Hole No. CP05-EAARS-CB-0287
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 8.3
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5ft
8.7
15.0
SAND: greenish grey, dense, poorly graded, angular, calcitic sand,wet, shell pieces recovered
-10.2
5
SPT; Hard drilling from 17 to 18 ft
-15.2
SAND: light grey, medium dense, poor to moderate gradation, subangular calcitic sand, wet
6
SPT
-16.7
SAND: greenish grey, very dense, quite porous, shell fragments, cemented sand
62 (RQD 52%)
2
HQ coring; UCS=2400psi; Hard drilling at 25 ft; Casing: 0 to 25 ft
-21.7
SAND: greenish grey, medium dense, poorly graded, angular calcitic sand, wet
7
SPT
-23.2
31.5
End of Boring at 31.5
PROJECT
EAA Reservoir A-1
FILE NUMBER
CP05-EAARS-CB-0287


Hole No. CP05-EAARS-CB-0287
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 8.3
Sheet 3 of 3 Sheets
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
25.1
33.3
25.1
in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.0" split spoon (1.38" I.D. x 2" O.D.)
34
36
38
40
42
44
46
48
50
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0287



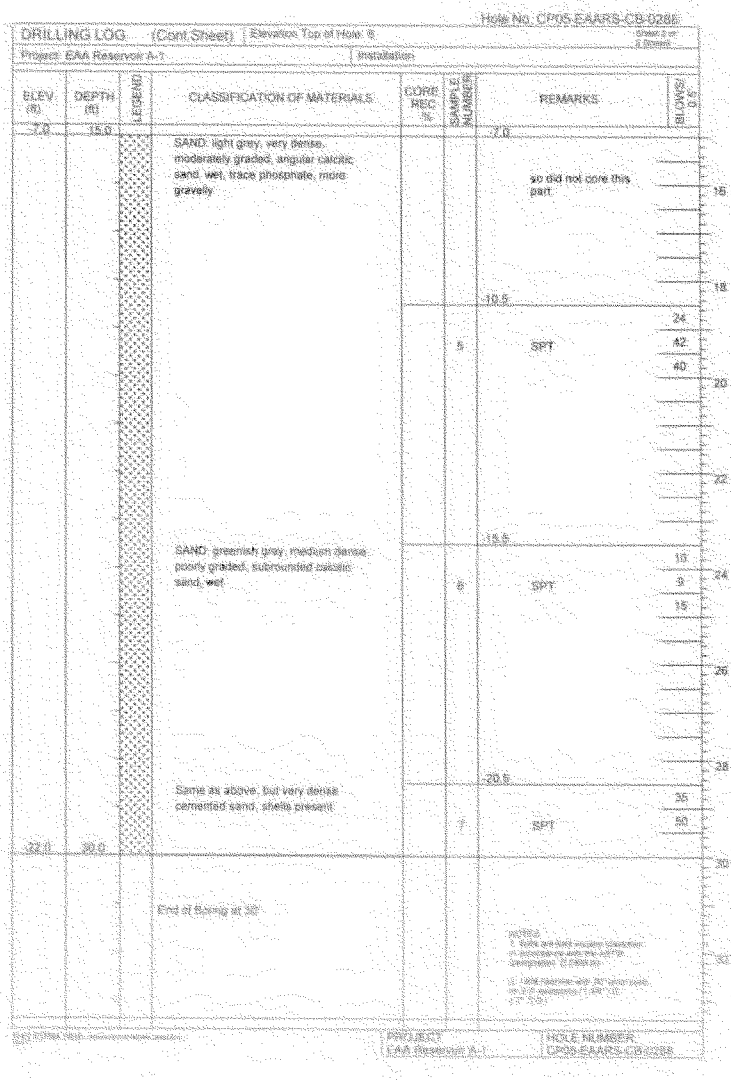
Hole No. CP05-EAARS-CB-0286

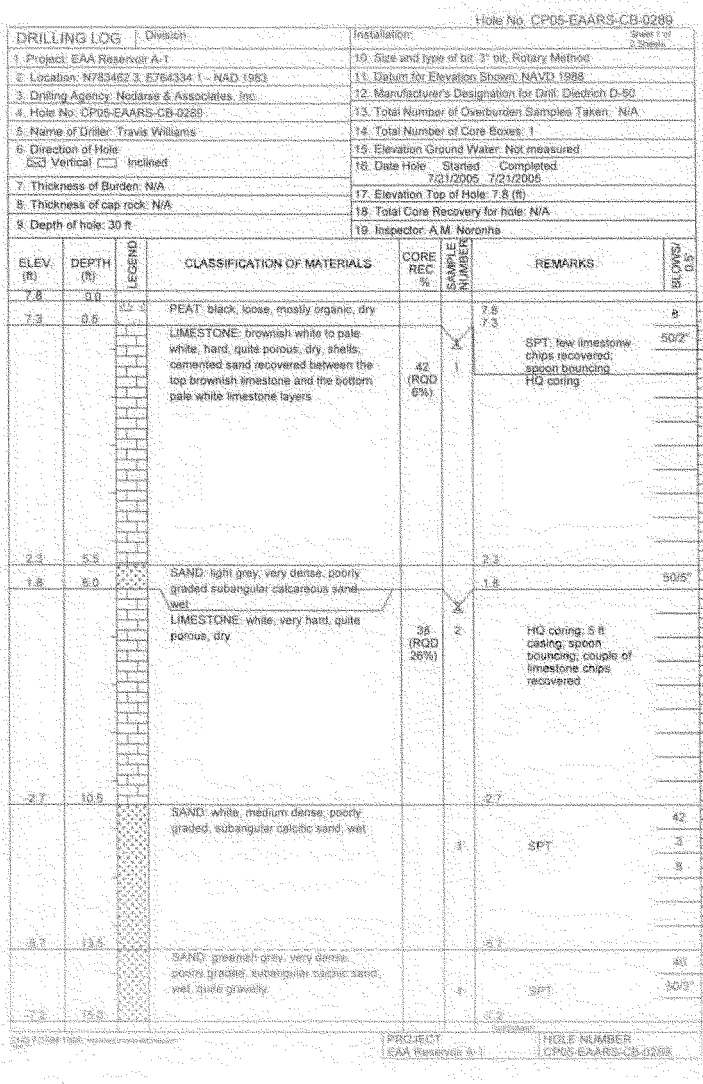
DRILLING LOG | Division: | Installation: | Sheet 1 of 2 Sheets

1. Project: EAA Reservoir A-1	10. Size and type of bit: 3" bit, Rotary Method
2. Location: N793018.1, E762206.5 - NAD 1983	11. Datum for Elevation Shown: NAVD 1988
3. Drilling Agency: Nodarse & Associates, Inc.	12. Manufacturer's Designation for Drill: Diedrich D-50
4. Hole No. CP05-EAARS-CB-0286	13. Total Number of Overburden Samples Taken: N/A
5. Name of Driller: Travis Williams	14. Total Number of Core Boxes: 1
6. Direction of Hole: ☒ Vertical ☐ Inclined	15. Elevation Ground Water: Not measured
	16. Date Hole: Started 7/19/2005 Completed 7/19/2005
7. Thickness of Burden: N/A	17. Elevation Top of Hole: 8 (ft)
8. Thickness of cap rock: N/A	18. Total Core Recovery for hole: N/A
9. Depth of hole: 30 ft	19. Inspector: A.M. Noronha

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/6"
8.0	0.0					8.0	3
			PEAT: black loose, clayey, mostly organic, dry to wet				50/5"
7.0	1.0				1	7.0 SPT: Limestone chips recovered	
			LIMESTONE: pale white, very hard, quite porous, dry	52 (ROD 38%)	1	RQ coring UCS=650psi	
3.0	5.0					3.0	
			SAND: light grey, medium dense, poorly graded, subangular calcitic sand, wet		2	SPT	10 5 6
			SAND: pale white, loosely dense, poor to moderate gradation, angular calcitic sand, wet		3	SPT	4 4 7
-5.5	13.5					-5.5	
			Chips of limestone recovered		4	SPT: sleeve slamming for a few inches. On drilling fluid no rock.	50/1"
-7.0	15.0						

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0286


Hole No. CP05-EAARS-CB-028E
DRILLING LOG (Cont Sheet) Elevation Top of Hole: ft
Project: EAA Reservoir A-1 Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/6"
7.0
15.0
SAND: light gray, very dense, moderately graded, angular calcitic sand, wet, trace phosphate, more gravelly
no did not core this part
10.5
5
SPT
24
42
40
15.5
SAND: greenish gray, medium dense, poorly graded, subrounded calcitic sand, wet
6
SPT
10
9
15
20.5
Same as above, but very dense cemented sand, shells present
7
SPT
35
50
22.0
30.0
End of Boring at 30'
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-028E



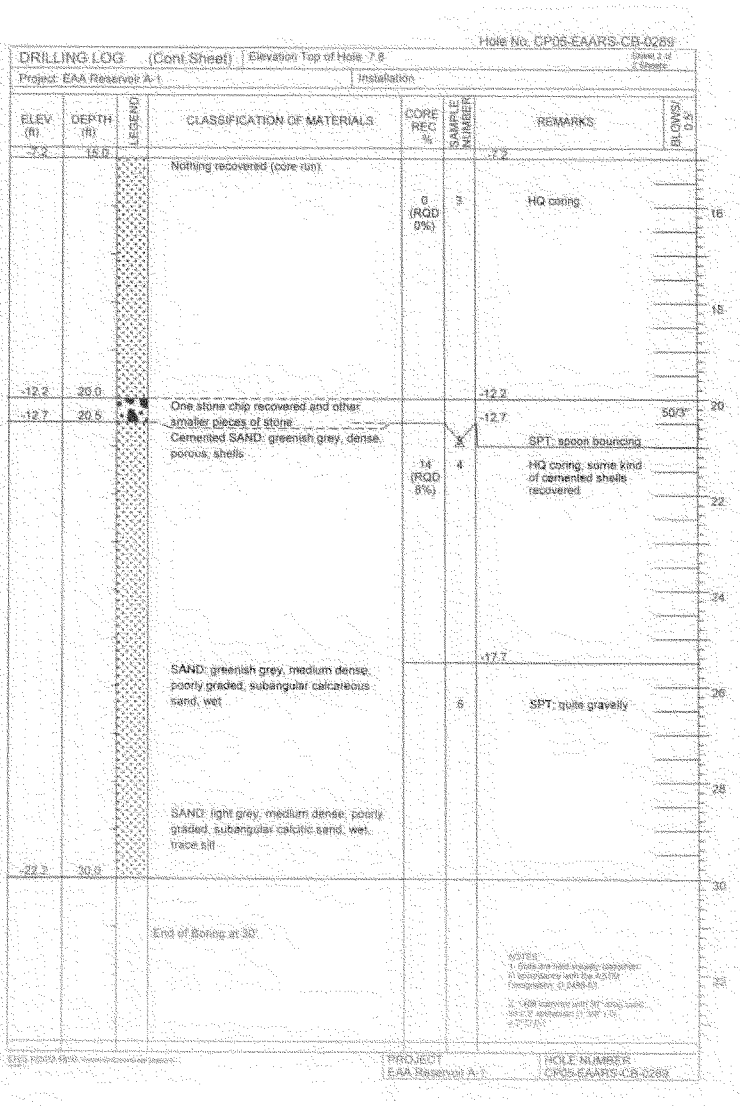
Hole No. CP05-EAARS-CB-0289

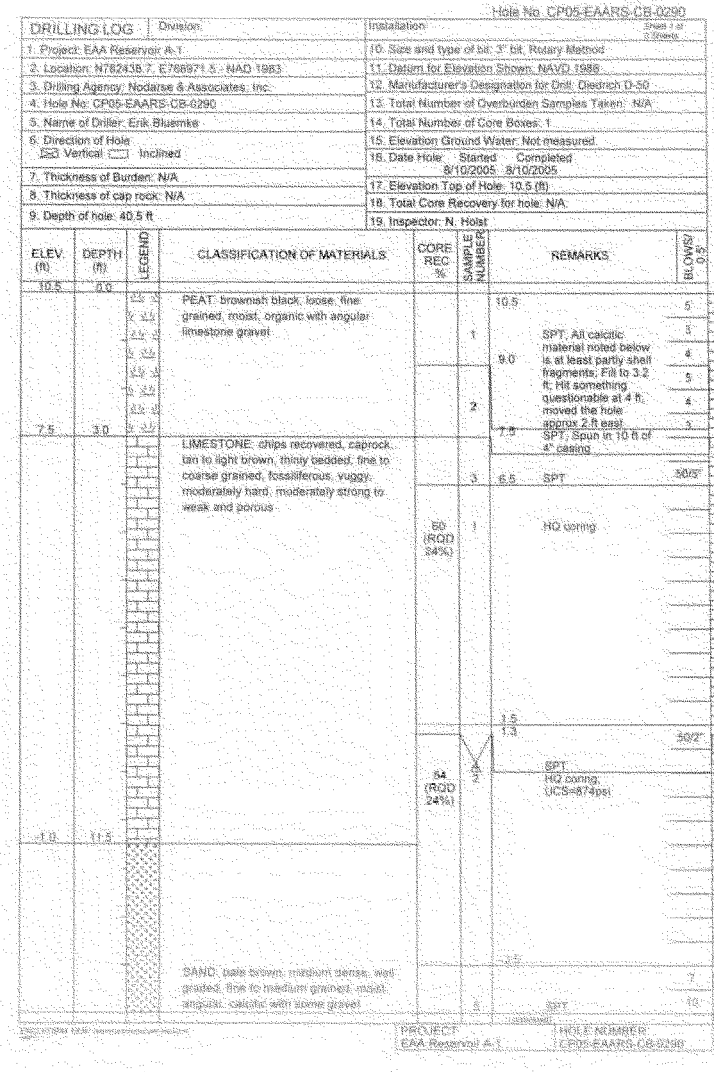
DRILLING LOG | Division: | Installation: | Sheet 1 of 2 Sheets

1. Project: EAA Reservoir A-1
2. Location: N783462.3, E764334.1 – NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0289
5. Name of Driller: Travis Williams
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: N/A
8. Thickness of cap rock: N/A
9. Depth of hole: 30 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: 1
15. Elevation Ground Water: Not measured
16. Date Hole: Started 7/21/2005 Completed 7/21/2005
17. Elevation Top of Hole: 7.8 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: A.M. Noronha

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
7.8	0.0						
7.3	0.5		PEAT: black, loose, mostly organic, dry			7.8 / 7.3	8
			LIMESTONE: brownish white to pale white, hard, quite porous, dry, shells, cemented sand recovered between the top brownish limestone and the bottom pale white limestone layers	42 (RQD 6%)	1	SPT; few limestone chips recovered; spoon bouncing HQ coring	50/2"
2.3	5.5					2.3	
1.8	6.0		SAND: light grey, very dense, poorly graded subangular calcareous sand, wet			1.8	50/5"
			LIMESTONE: white, very hard, quite porous, dry	38 (RQD 26%)	2	HQ coring; 5 ft casing; spoon bouncing; couple of limestone chips recovered	
-2.7	10.5					-2.7	
			SAND: white, medium dense, poorly graded, subangular calcitic sand, wet		3	SPT	42 3 3 12
-8.7	16.5					-8.7	
			SAND: greenish grey, very dense, poorly graded, subangular calcitic sand, wet, some gravels		4	SPT	40 50/3"
-12	19.8					-12	

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0289


Hole No. CP05-EAARS-CB-0289
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 7.8
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-7.2
15.0
Nothing recovered (core run)
0 (RQD 0%)
3
HQ coring
-12.2
20.0
-12.7
20.5
One stone chip recovered and other smaller pieces of stone
Cemented SAND: greenish grey, dense, porous, shells
14' (RQD 8%)
4
HQ coring, some kind of cemented shells recovered
50/3"
5
SPT; spoon bouncing
-17.7
SAND: greenish grey, medium dense, poorly graded, subangular calcareous sand, wet
6
SPT; quite gravelly
SAND: light grey, medium dense, poorly graded, subangular calcitic sand, wet, trace silt
-22.2
30.0
End of Boring at 30'
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0289



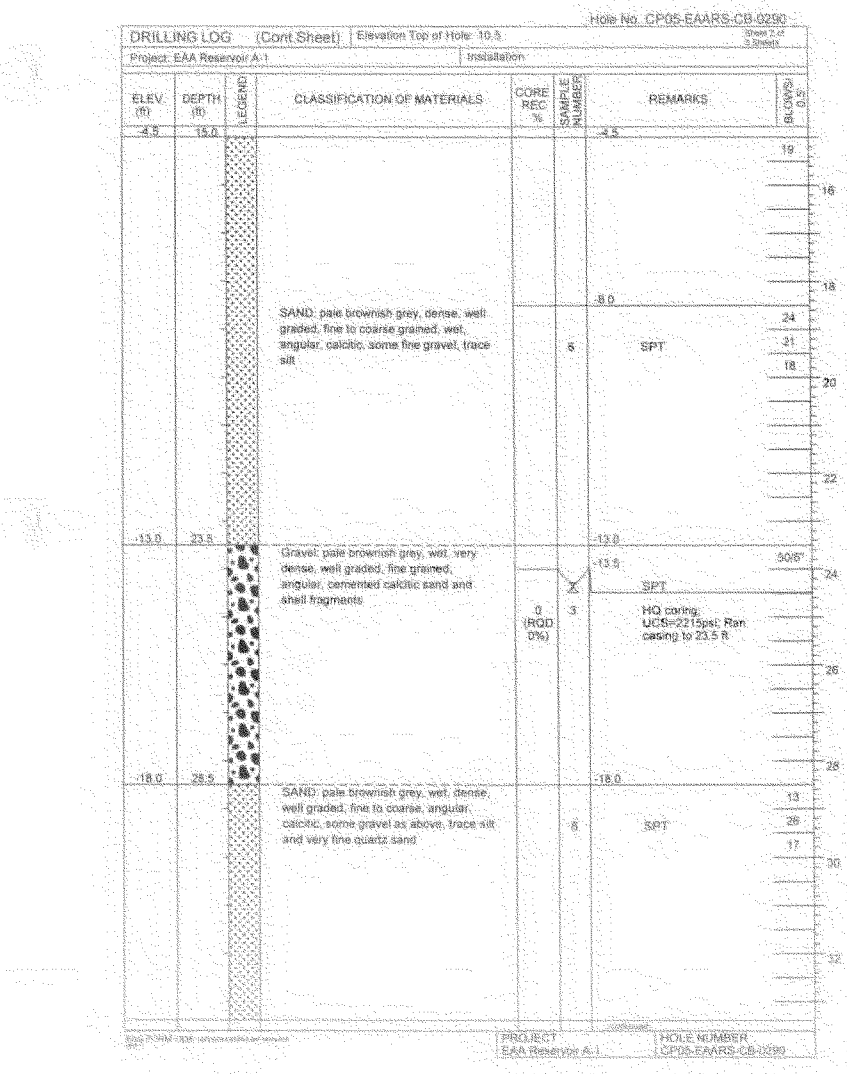
Hole No. CP05-EAARS-CB-0290

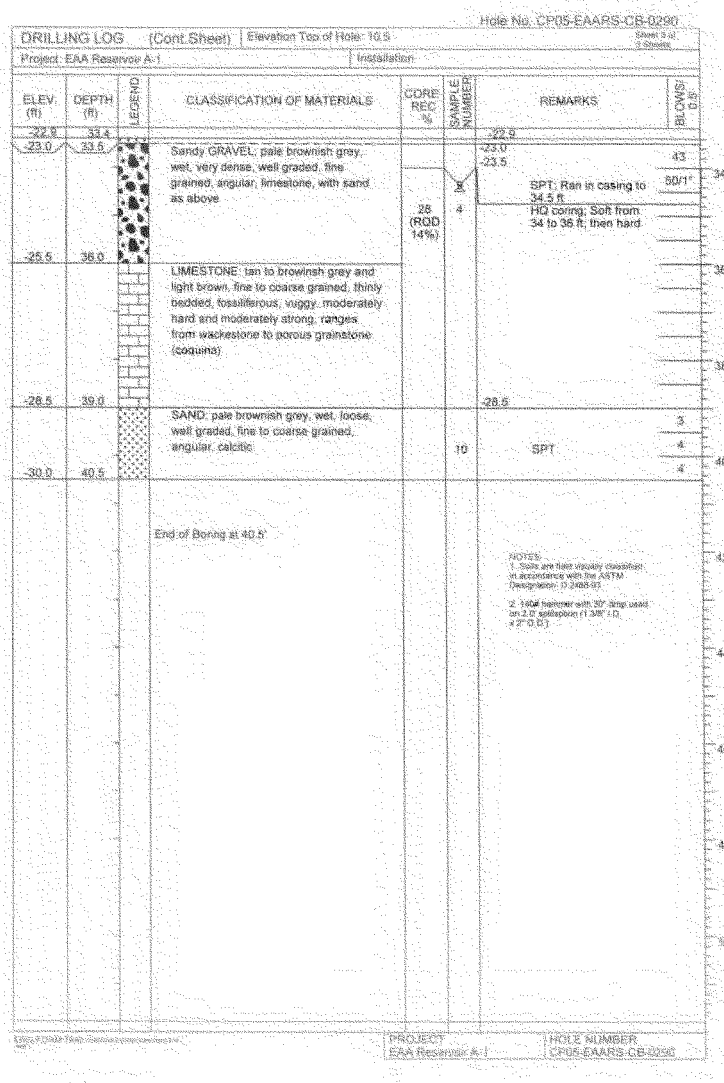
DRILLING LOG | Division: | Installation: | Sheet 1 of 2 Sheets

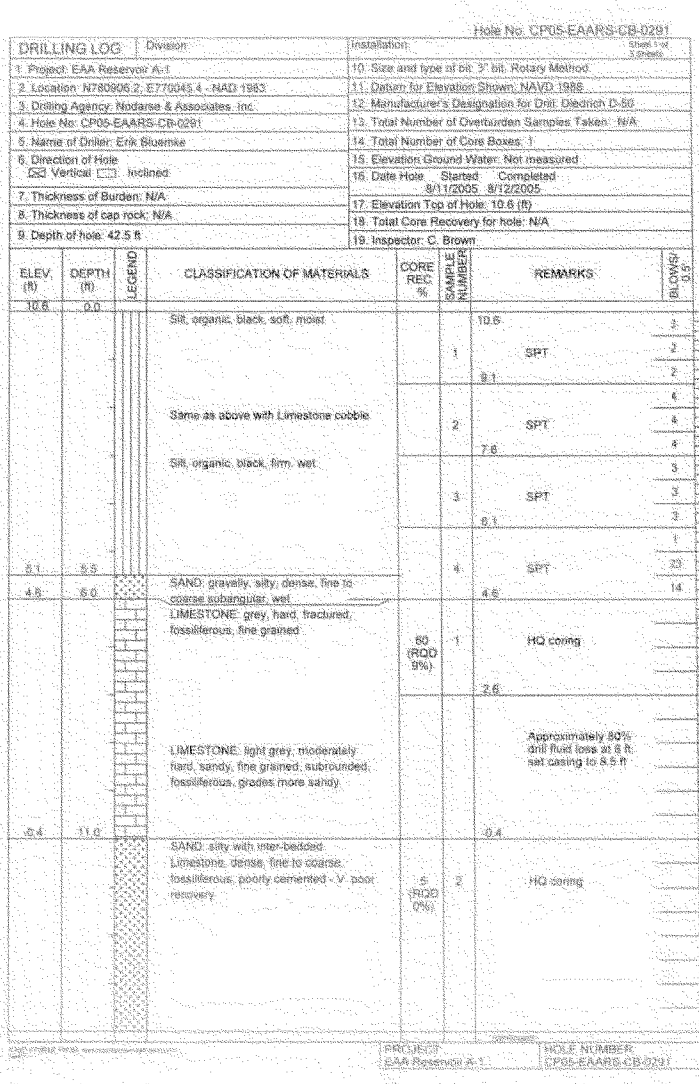
1. Project: EAA Reservoir A-1
2. Location: N782438.7, E786971.5 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0290
5. Name of Driller: Erik Bluemke
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: N/A
8. Thickness of cap rock: N/A
9. Depth of hole: 40.5 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: 1
15. Elevation Ground Water: Not measured
16. Date Hole: Started 8/10/2005 Completed 8/10/2005
17. Elevation Top of Hole: 10.5 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: N. Holst

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
10.5	0.0		PEAT: brownish black, loose, fine grained, moist, organic with angular limestone gravel		1	10.5 SPT. All calcitic material noted below is at least partly shell fragments. Fill to 3.2 ft. Hit something questionable at 4 ft, moved the hole approx 2 ft east	5 5 4 5 4 3
7.5	3.0		LIMESTONE: chips recovered, caprock, tan to light brown, thinly bedded, fine to coarse grained, fossiliferous, vuggy, moderately hard, moderately strong to weak and porous	60 (ROD 34%)	2	9.0 7.5 SPT, Spun in 10 ft of 4" casing	50/5"
					3	6.5 SPT	50/2"
					1	HQ coring	
				54 (ROD 24%)	2	3.5 1.3 SPT HQ coring, UCS=874psi	50/2"
1.0	11.5		SAND: pale brown, medium dense, well graded, fine to medium grained, moist, angular, calcitic with some gravel		4	SPT	7 10

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0290


Hole No. CP05-EAARS-CB-0290
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10.5
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-4.5
13.0
23.5
18.0
28.5
SAND: pale brownish grey, dense, well graded, fine to coarse grained, wet, angular, calcitic, some fine gravel, trace silt
Gravel: pale brownish grey, wet, very dense, well graded, fine grained, angular, cemented calcitic sand and shell fragments
SAND: pale brownish grey, wet, dense, well graded, fine to coarse, angular, calcitic, some gravel as above, trace silt and very fine quartz sand
-4.5
-8.0
-13.0
-18.0
19
16
18
24
31
18
20
22
50/5"
24
26
28
13
26
17
30
32
8
SPT
0 (RQD 0%)
3
HQ coring, UCS=2215psi; Ran casing to 23.5 ft
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0290


Hole No. CP05-EAARS-CB-0290
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: 10.5
Project: EAA Reservoir A-1 Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/0.5ft
-22.5
33.4
-23.0
33.5
Sandy GRAVEL, pale brownish grey, wet, very dense, well graded, fine grained, angular, limestone, with sand as above
-23.0
-23.5
5
SPT; Ran in casing to 34.5 ft.
HQ coring; Soft from 34 to 35 ft; then hard
43
50/1"
28 (RQD 14%)
4
-25.5
38.0
LIMESTONE: tan to brownish grey and light brown, fine to coarse grained, thinly bedded, fossiliferous, vuggy, moderately hard and moderately strong, ranges from wackestone to porous grainstone (coquina)
-28.5
39.0
SAND: pale brownish grey, wet, loose, well graded, fine to coarse grained, angular, calcitic
-28.5
10
SPT
3
4
4
-30.0
40.5
End of Boring at 40.5'
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93
2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0290



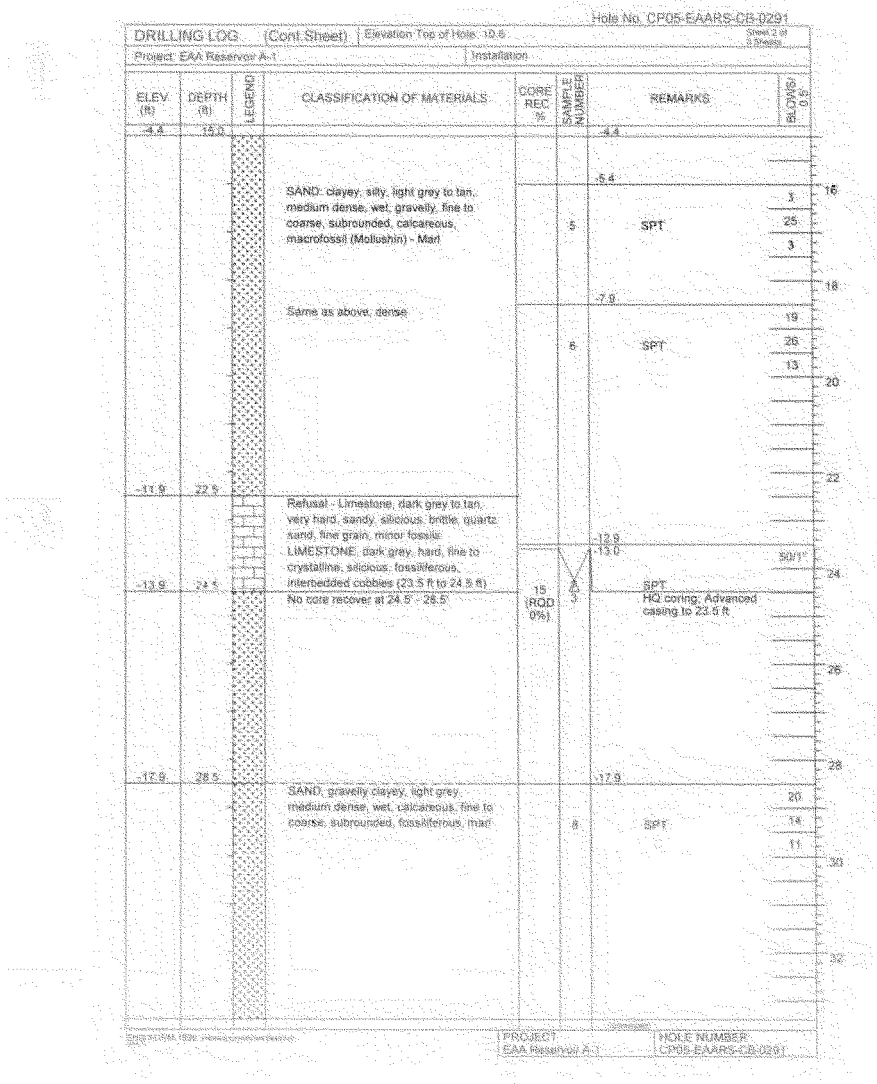
Hole No: CP05-EAARS-CB-0291

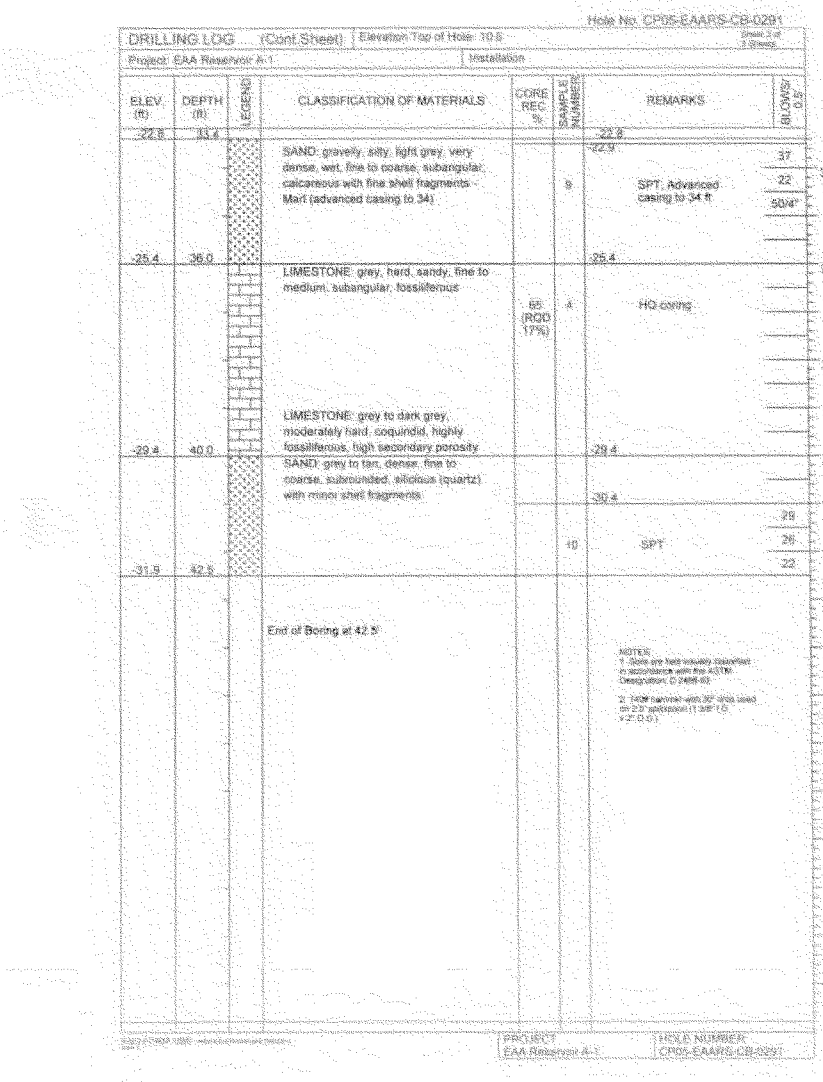
DRILLING LOG | Division | Installation | Sheet 1 of 3 Sheets

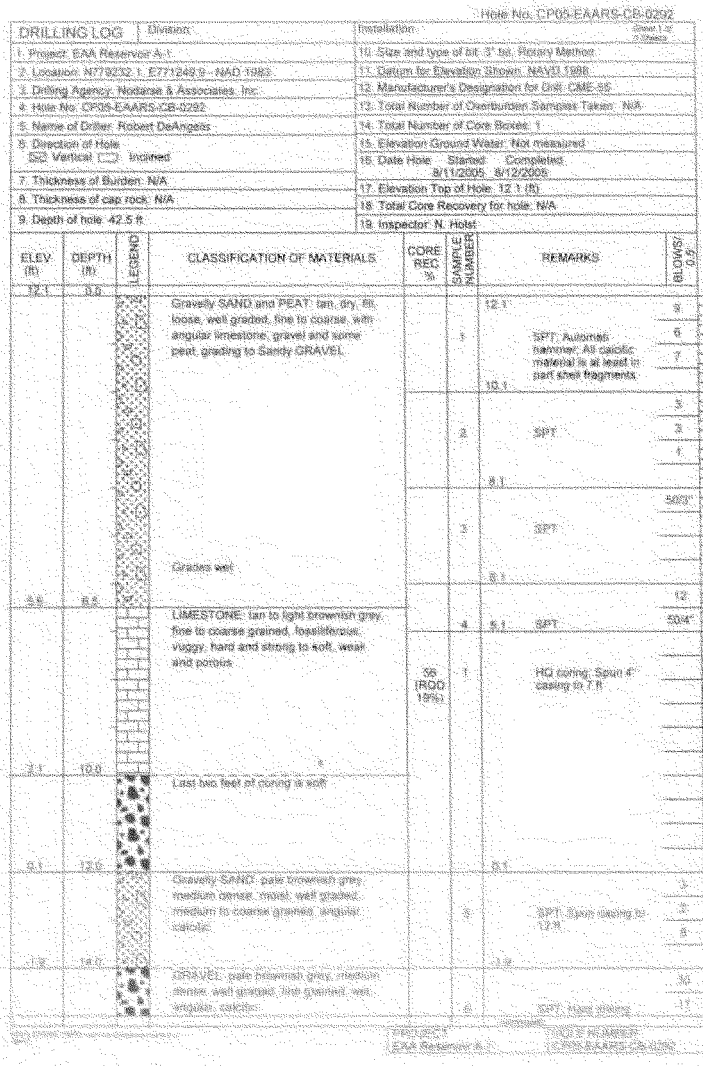
1. Project: EAA Reservoir A-1
2. Location: N780906.2, E770045.4 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0291
5. Name of Driller: Erik Bluemke
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: N/A
8. Thickness of cap rock: N/A
9. Depth of hole: 42.5 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: 1
15. Elevation Ground Water: Not measured
16. Date Hole: Started 8/11/2005 Completed 8/12/2005
17. Elevation Top of Hole: 10.6 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: C. Brown

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5
10.6	0.0		Silt, organic, black, soft, moist		1	SPT	1, 2, 2
9.1	1.5		Same as above with Limestone cobble		2	SPT	4, 4, 4
7.6	3.0		Silt, organic, black, firm, wet		3	SPT	3, 3, 3
6.1	4.5				4	SPT	1, 23, 14
4.6	6.0		SAND: gravelly, silty, dense, fine to coarse subangular, wet				
			LIMESTONE: grey, hard, fractured, fossiliferous, fine grained	60 (ROD 9%)	1	HQ coring	
2.6	8.0					Approximately 80% drill fluid loss at 8 ft, set casing to 8.5 ft	
			LIMESTONE: light grey, moderately hard, sandy, fine grained, subrounded, fossiliferous, grades more sandy				
0.4	11.0						
			SAND: silty with inter-bedded Limestone, dense, fine to coarse, fossiliferous, poorly cemented - V. poor recovery	5 (ROD 0%)	2	HQ coring	

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0291


Hole No. CP05-EAARS-CB-0291
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10.6
Sheet 2 of 3 Sheets
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-4.4
15.0
SAND: clayey, silty, light grey to tan, medium dense, wet, gravelly, fine to coarse, subrounded, calcareous, macrofossil (Mollushin) - Marl
-5.4
5
SPT
1
25
3
16
-7.8
Same as above, dense
6
SPT
19
26
13
20
22
-11.9
22.5
Refusal - Limestone, dark grey to tan, very hard, sandy, silicious, brittle, quartz sand, fine grain, minor fossils
LIMESTONE, dark grey, hard, fine to crystalline, silicious, fossiliferous, interbedded cobbles (23.5 ft to 24.5 ft)
No core recover at 24.5' - 25.5'
-12.9
-13.0
50/1"
24
-13.9
24.5
15 (ROD 0%)
3
SPT
HQ coring; Advanced casing to 23.5 ft
26
28
-17.9
28.5
SAND, gravelly clayey, light grey, medium dense, wet, calcareous, fine to coarse, subrounded, fossiliferous, marl
-17.9
8
SPT
20
14
11
30
32
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0291


Hole No. CP05-EAARS-CB-0291
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 10.6
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
-22.8
33.4
SAND: gravelly, silty, light grey, very dense, wet, fine to coarse, subangular, calcareous with fine shell fragments - Marl (advanced casing to 34)
-22.8
9
SPT; Advanced casing to 34 ft
37
22
50/4"
34
-25.4
36.0
LIMESTONE: grey, hard, sandy, fine to medium, subangular, fossiliferous
-25.4
65 (ROD 17%)
4
HQ coring
36
38
LIMESTONE: grey to dark grey, moderately hard, coquinoid, highly fossiliferous, high secondary porosity
-29.4
40.0
SAND: grey to tan, dense, fine to coarse, subrounded, siliceous (quartz) with minor shell fragments
-29.4
-30.4
40
42
-31.9
42.5
10
SPT
29
26
23
End of Boring at 42.5'
NOTES:
1. Tests are field visually classified in accordance with the ASTM Designation: D 2488-93
2. 140# hammer with 30" drop used on 2.0" splitspoon (1.38" I.D. x 2" O.D.)
44
46
48
50
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0291

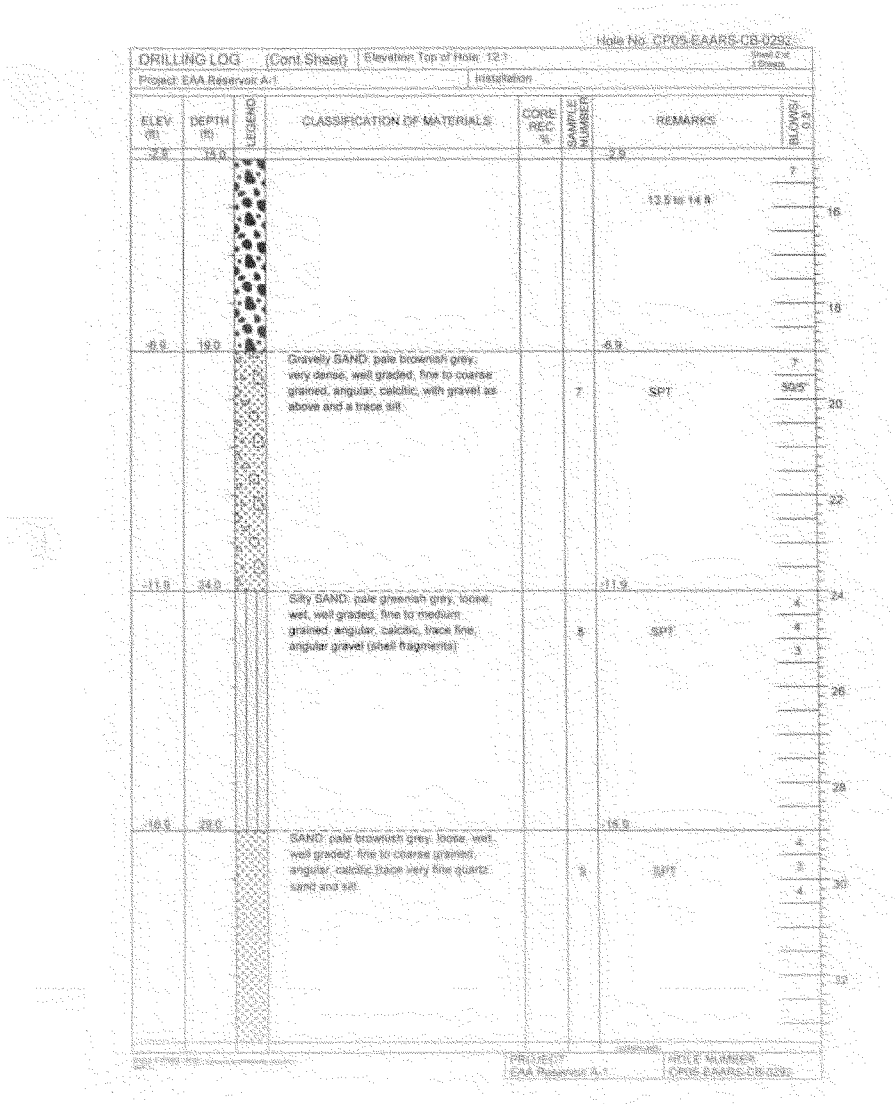


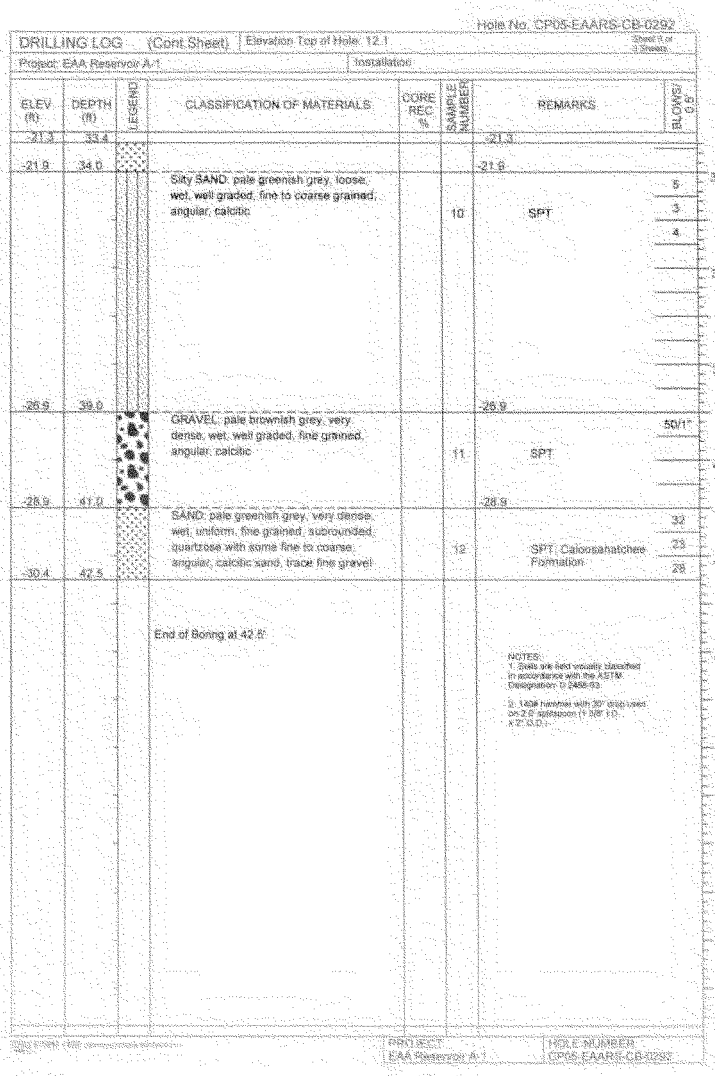
Hole No. CP05-EAARS-CB-0292

DRILLING LOG | Division: | Installation: | Sheet 1 of 2 Sheets

1. Project: EAA Reservoir A-1
2. Location: N779232.1, E771248.9 – NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0292
5. Name of Driller: Robert DeAngelis
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: N/A
8. Thickness of cap rock: N/A
9. Depth of hole: 42.5 ft
10. Size and type of bit: 3" tol, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: CME-55
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: 1
15. Elevation Ground Water: Not measured
16. Date Hole: Started: 8/11/2005 Completed: 8/12/2005
17. Elevation Top of Hole: 12.1 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: N. Holst

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/0.5'
12.1	0.0		Gravelly SAND and PEAT: tan, dry, fill, loose, well graded, fine to coarse, with angular limestone gravel and some peat, grading to Sandy GRAVEL		1	12.1 SPT, Automatic hammer; All calcitic material is at least in part shell fragments 10.1	6 6 7
					2	SPT 8.1	3 3 4
			Grades wet		3	SPT 6.1	50/5"
5.6	6.5				4	5.1 SPT	12 50/4"
			LIMESTONE: tan to light brownish gray, fine to coarse grained, fossiliferous, vuggy, hard and strong to soft, weak and porous	56 (RQD 19%)	1	HQ coring; Spun 4" casing to 7 ft	
2.1	10.0		Last two feet of coring is soft			10.1	
0.1	12.0		Gravelly SAND: pale brownish grey, medium dense, moist, well graded, medium to coarse grained, angular calcite		5	SPT, Spun casing to 12 ft	3 5 8
-1.9	14.0		GRAVEL: pale brownish grey, medium dense, well graded, fine grained, wet, angular calcite		6	13.9 SPT, Hard driving	30 17


DRILLING LOG (Cont Sheet)
Project: EAA Reservoir A-1
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS / 0.5'
Gravelly SAND: pale brownish grey, very dense, well graded, fine to coarse grained, angular, calcitic, with gravel as above and a trace silt
SPT
Silty SAND: pale greenish grey, loose, wet, well graded, fine to medium grained, angular, calcitic, trace fine angular gravel (shell fragments)
SPT
SAND: pale brownish grey, loose, wet, well graded, fine to coarse grained, angular, calcitic trace very fine quartz sand and silt
SPT



Hole No. CP05-EAARS-CB-0292

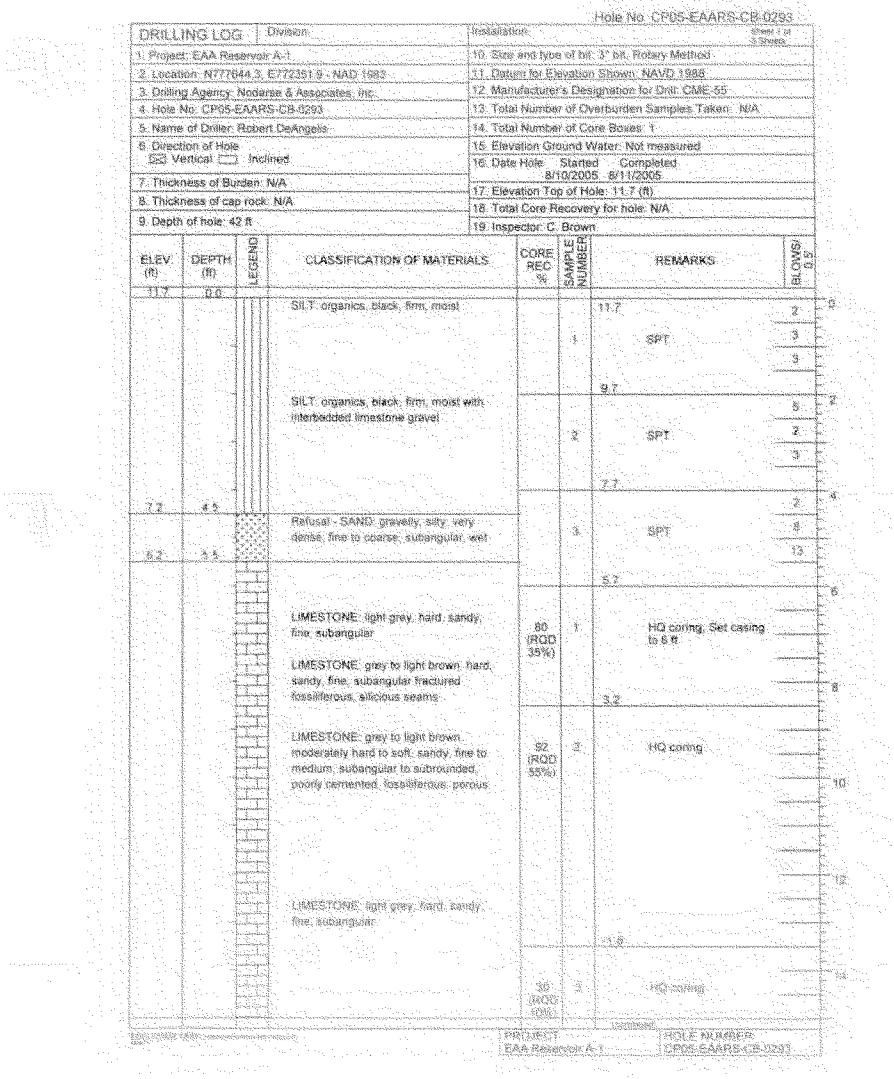
DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 12.1 | Sheet 2 of 3 Sheets

Project: EAA Reservoir A-1 | Installation:

ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5ft
-21.3	33.4					-21.9	
-21.9	34.0		Silty SAND: pale greenish grey, loose, wet, well graded, fine to coarse grained, angular, calcitic		10	SPT	5 3 4
-26.9	39.0		GRAVEL: pale brownish grey, very dense, wet, well graded, fine grained, angular, calcitic		11	-26.9 SPT	50/1"
-28.9	41.0		SAND: pale greenish grey, very dense, wet, uniform, fine grained, subrounded quartzose with some fine to coarse, angular, calcitic sand, trace fine gravel		12	-28.9 SPT; Caloosahatchee Formation	32 23 28
-30.4	42.5		End of Boring at 42.5'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.).

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0292



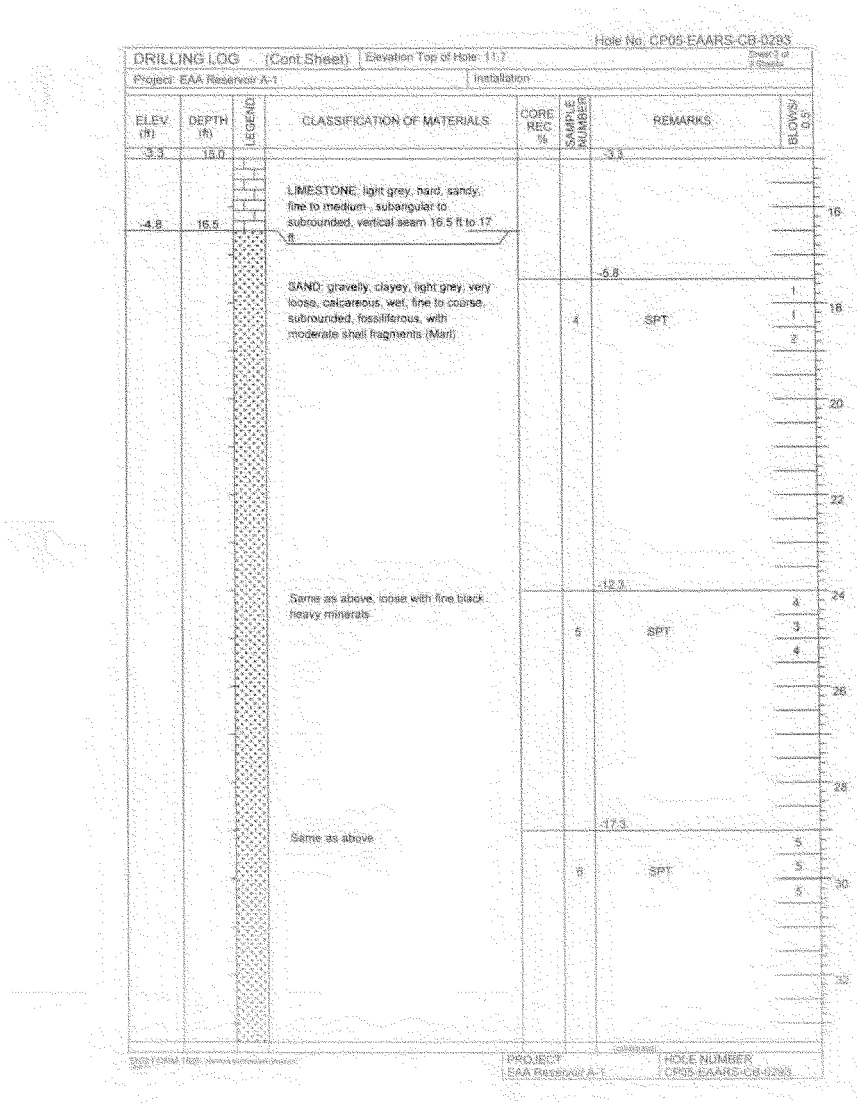
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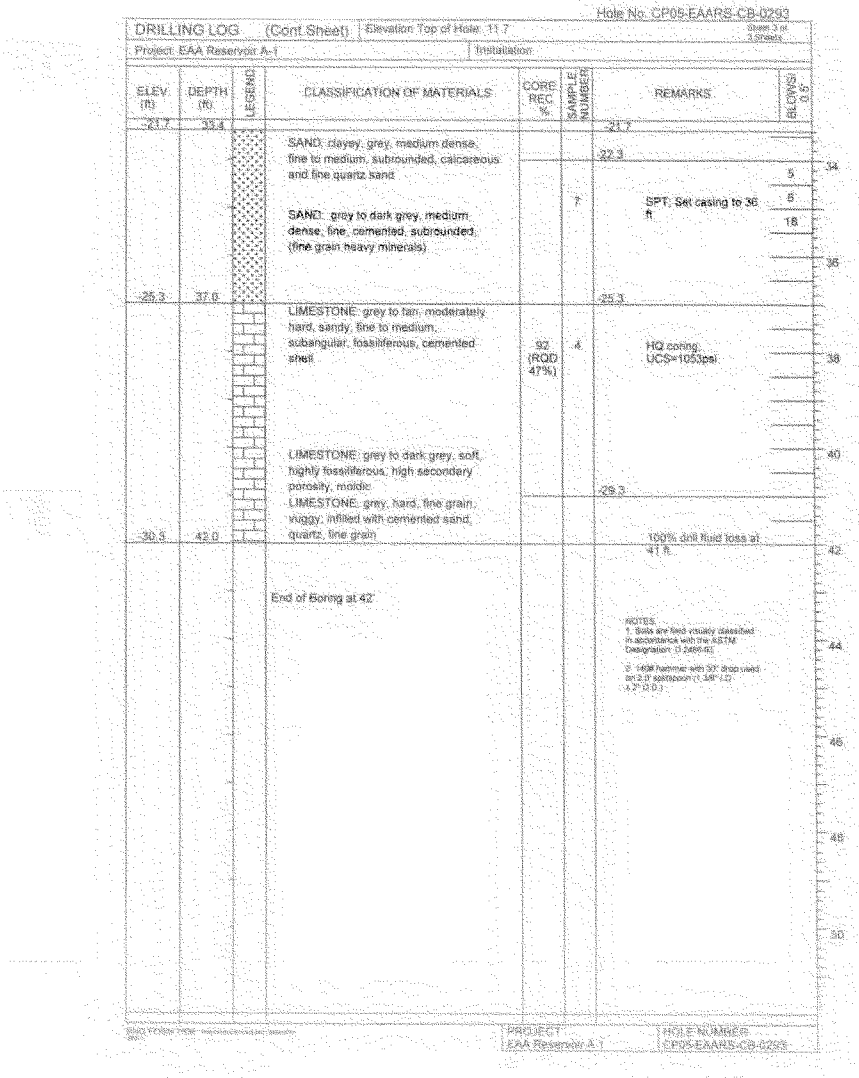
DRILLING LOG | Division: | Installation: | Sheet 1 of 3 Sheets

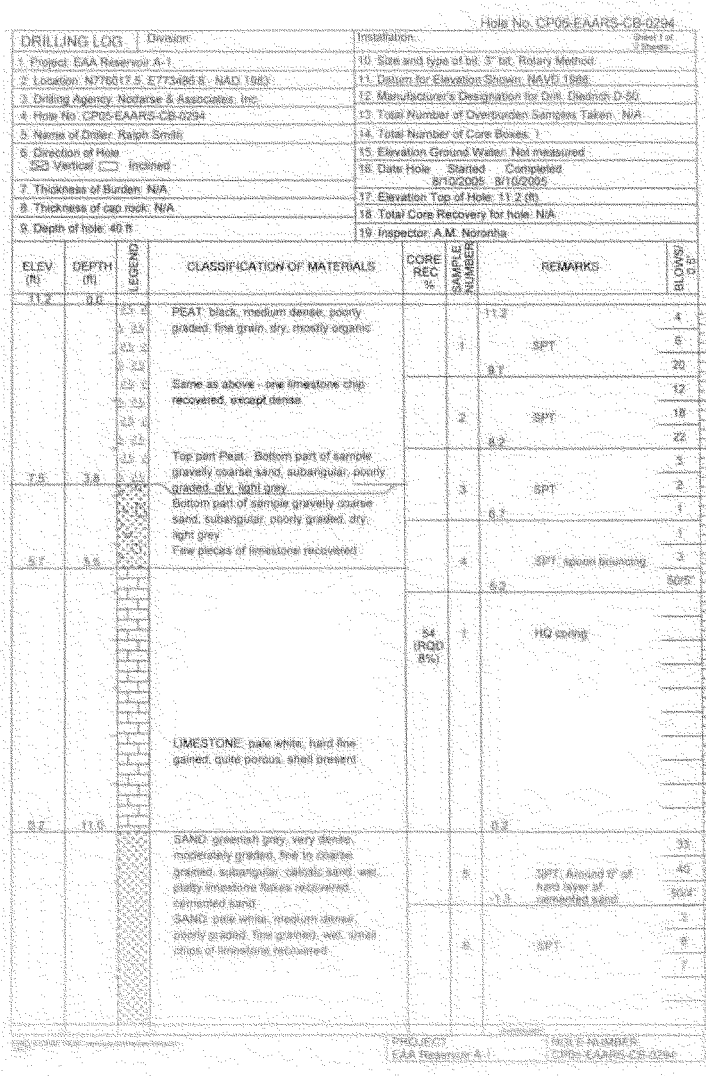
1. Project: EAA Reservoir A-1	10. Size and type of bit: 3" bit, Rotary Method
2. Location: N777644.3, E772351.9 - NAD 1983	11. Datum for Elevation Shown: NAVD 1988
3. Drilling Agency: Nodarse & Associates, Inc.	12. Manufacturer's Designation for Drill: CME-55
4. Hole No: CP05-EAARS-CB-0293	13. Total Number of Overburden Samples Taken: N/A
5. Name of Driller: Robert DeAngelis	14. Total Number of Core Boxes: 1
6. Direction of Hole ☒ Vertical ☐ Inclined	15. Elevation Ground Water: Not measured
	16. Date Hole: Started 8/10/2005 Completed 8/11/2005
7. Thickness of Burden: N/A	17. Elevation Top of Hole: 11.7 (ft)
8. Thickness of cap rock: N/A	18. Total Core Recovery for hole: N/A
9. Depth of hole: 42 ft	19. Inspector: C. Brown

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
11.7	0.0		SILT: organics, black, firm, moist		1	11.7 SPT	2, 3, 3
			SILT: organics, black, firm, moist with interbedded limestone gravel		2	9.7 SPT	5, 2, 3
7.2	4.5		Refusal - SAND: gravelly, silty, very dense, fine to coarse, subangular, wet		3	7.7 SPT	2, 4, 13
6.2	5.5		LIMESTONE: light grey, hard, sandy, fine, subangular	80 (RQD 35%)	1	5.7 HQ coring, Set casing to 6 ft	
			LIMESTONE: grey to light brown, hard, sandy, fine, subangular fractured fossiliferous, silicious seams			3.2	
			LIMESTONE: grey to light brown, moderately hard to soft, sandy, fine to medium, subangular to subrounded, poorly cemented, fossiliferous, porous	92 (RQD 55%)	2	HQ coring	
			LIMESTONE: light grey, hard, sandy, fine, subangular			-11.8	
				35 (RQD 35%)	3	HQ coring	

PROJECT: EAA Reservoir A-1 HOLE NUMBER: CP05-EAARS-CB-0293


Hole No. CP05-EAARS-CB-0293
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 11.7
Sheet 3 of 3 Sheets
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-3.3
15.0
LIMESTONE, light grey, hard, sandy, fine to medium , subangular to subrounded, vertical seam 16.5 ft to 17 ft
-4.8
16.5
-5.8
SAND: gravelly, clayey, light grey, very loose, calcareous, wet, fine to coarse, subrounded, fossiliferous, with moderate shell fragments (Marl)
4
SPT
1
1
2
-12.3
Same as above, loose with fine black heavy minerals
5
SPT
2
3
4
-17.3
Same as above
6
SPT
5
5
5
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0293


Hole No. CP05-EAARS-CB-0293
DRILLING LOG (Cont Sheet) Elevation Top of Hole 11.7
Sheet 3 of 3 Sheets
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-21.7
33.4
SAND: clayey, grey, medium dense, fine to medium, subrounded, calcareous and fine quartz sand
-22.3
5
7
5
18
SPT, Set casing to 36 ft
34
36
-25.3
37.0
LIMESTONE: grey to tan, moderately hard, sandy, fine to medium, subangular, fossiliferous, cemented shell
92 (RQD 47%)
4
HQ coring, UCS=1053psi
-25.3
38
LIMESTONE: grey to dark grey, soft, highly fossiliferous, high secondary porosity, moldic
40
LIMESTONE: grey, hard, fine grain, vuggy, infilled with cemented sand, quartz, fine grain
-30.3
42.0
100% drill fluid loss at 41 ft
42
End of Boring at 42'
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-06.
2. 140# hammer with 30" drop used on 2.0" samplers (1.38" I.D. x 2" O.D.)
44
46
48
50
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0293



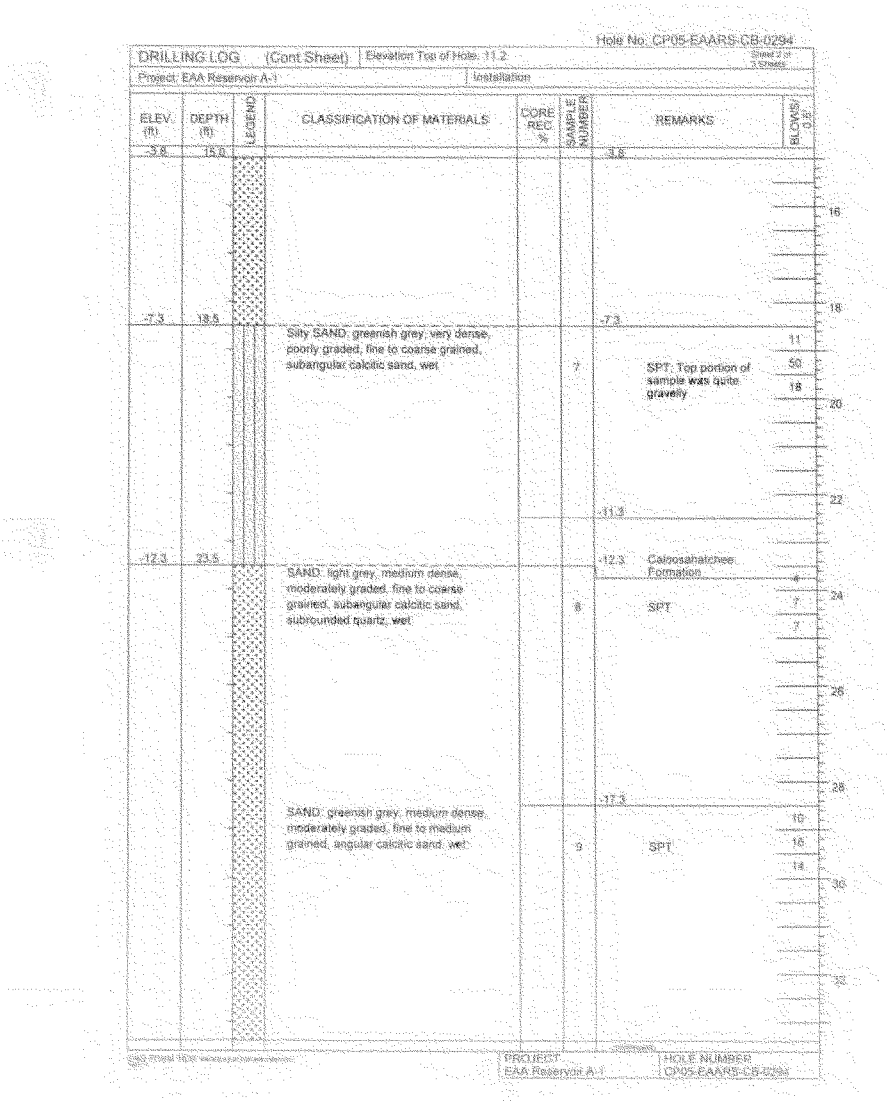
Hole No. CP05-EAARS-CB-0294

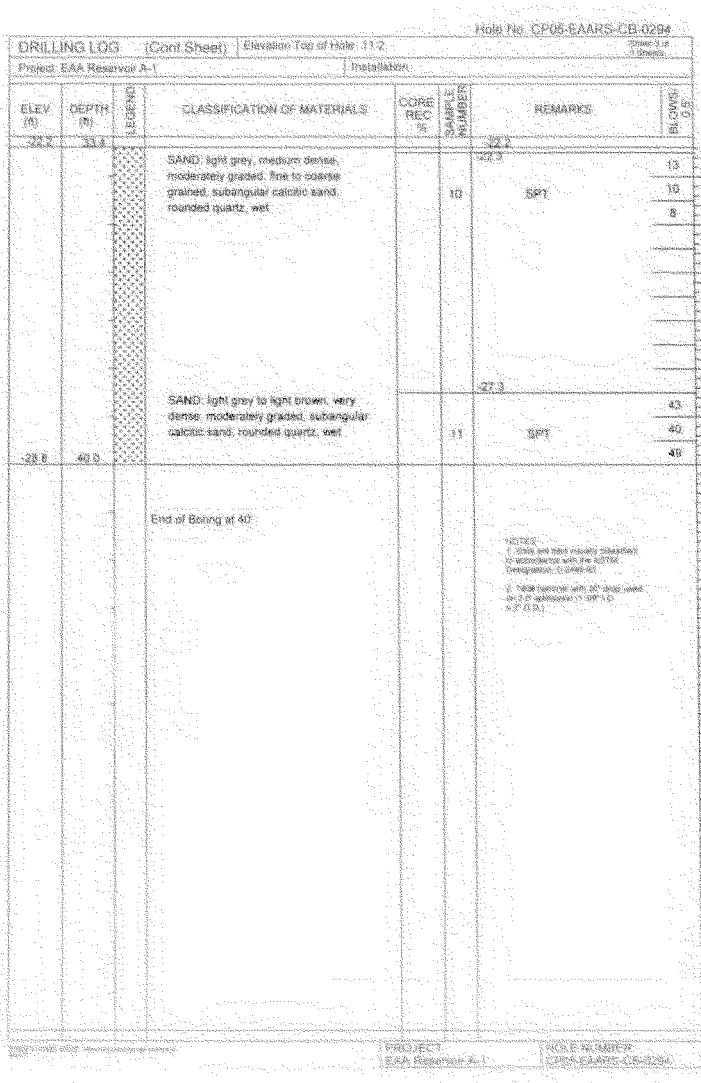
DRILLING LOG | Division: | Installation: | Sheet 1 of 2 Sheets

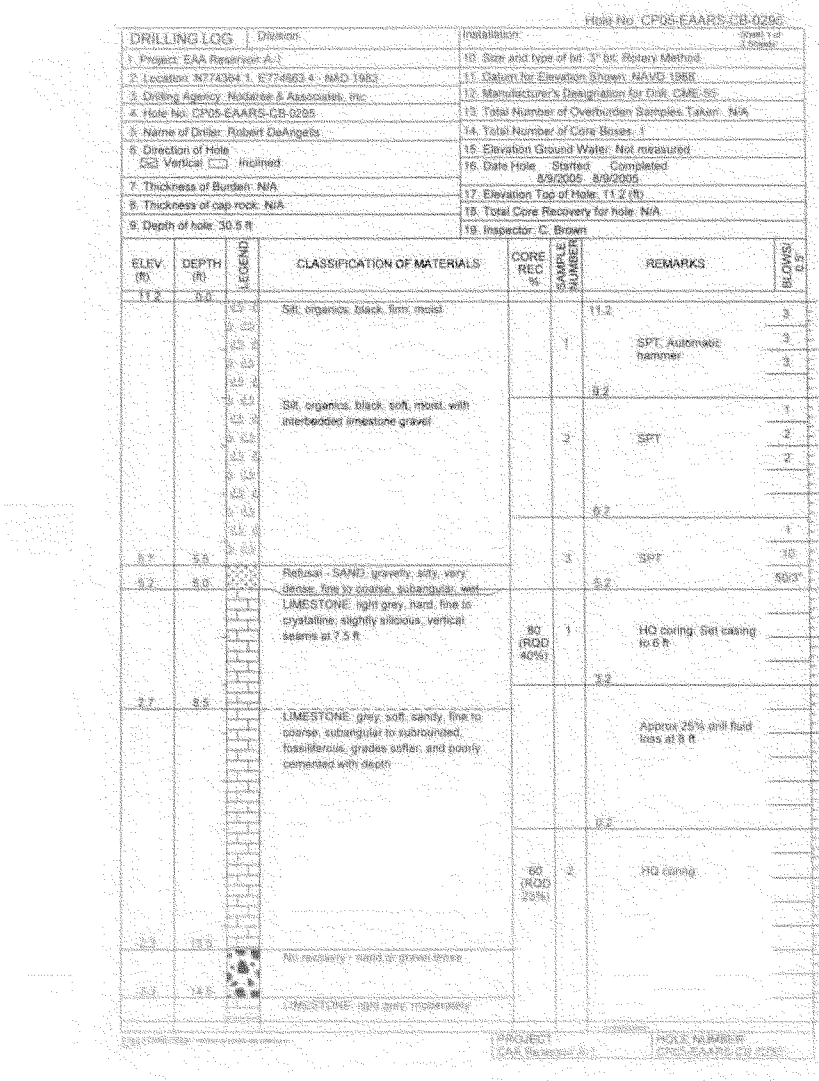
1. Project: EAA Reservoir A-1
2. Location: N776017.5, E775486.8 , NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No. CP05-EAARS-CB-0294
5. Name of Driller: Ralph Smith
6. Direction of Hole: 523 Vertical ☐ Inclined
7. Thickness of Burden: N/A
8. Thickness of cap rock: N/A
9. Depth of hole: 40 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: 1
15. Elevation Ground Water: Not measured
16. Date Hole: Started 8/10/2005 Completed 8/10/2005
17. Elevation Top of Hole: 11.2 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: A.M. Noronha

ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/0.5'
11.2	0.0		PEAT: black, medium dense, poorly graded, fine grain, dry, mostly organic		1	11.2 SPT 9.7	4, 6, 20
			Same as above - one limestone chip recovered, except dense		2	SPT 8.2	12, 18, 22
7.5	3.8		Top part Peat. Bottom part of sample gravelly coarse sand, subangular, poorly graded, dry, light grey		3	SPT 6.7	4, 2, 1
5.7	5.5		Bottom part of sample gravelly coarse sand, subangular, poorly graded, dry, light grey. Few pieces of limestone recovered		4	SPT spoon bouncing 6.2	1, 3, 50/5"
				54 (RQD 8%)	1	HQ coring	
0.2	11.0		LIMESTONE: pale white, hard fine grained, quite porous, shell present			0.2	
			SAND: greenish grey, very dense, moderately graded, fine to coarse grained, subangular, calcitic sand, wet, platy limestone flakes recovered, cemented sand		5	SPT. Around 9" of hard layer of cemented sand 11.3	33, 40, 50/4"
			SAND: pale white, medium dense, poorly graded, fine grained, wet, small chips of limestone recovered		6	SPT	5, 6, 7, 7

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0294


Hole No. CP05-EAARS-CB-0294
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 11.2
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-3.8
15.0
-7.3
18.5
Silty SAND: greenish grey, very dense, poorly graded, fine to coarse grained, subangular calcitic sand, wet
7
SPT; Top portion of sample was quite gravelly
11
50
18
-11.3
-12.3
23.5
SAND: light grey, medium dense, moderately graded, fine to coarse grained, subangular calcitic sand, subrounded quartz, wet
Caloosahatchee Formation
8
SPT
6
7
7
-17.3
SAND: greenish grey, medium dense, moderately graded, fine to medium grained, angular calcitic sand, wet
9
SPT
10
16
14
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0294


Hole No. CP05-EAARS-CB-0294
DRILLING LOG (Cont Sheet)
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE # NUMBER
REMARKS
BLOWS/ 0.5'
-27.3
SAND, light grey, medium dense, moderately graded, fine to coarse grained, subangular calcitic sand, rounded quartz, wet
10
SPT
13
10
8
34
36
38
-27.3
SAND, light grey to light brown, very dense, moderately graded, subangular calcitic sand, rounded quartz, wet
11
SPT
43
40
49
-28.8
40.8
End of Boring at 40'
40
42
44
46
48
50
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0294



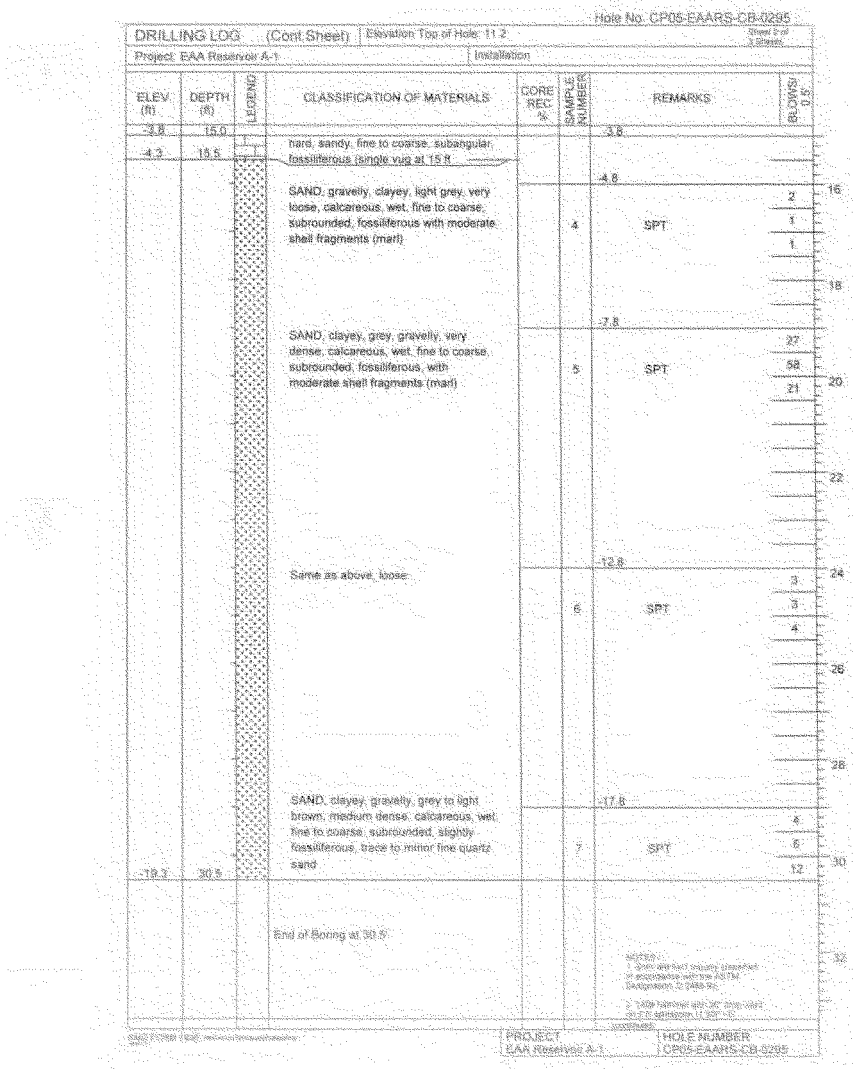
Hole No. CP05-EAARS-CB-0295

DRILLING LOG | Division: | Installation: | Sheet 1 of 3 Sheets

1. Project: EAA Reservoir A-1
2. Location: N774364.1, E774663.4 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0295
5. Name of Driller: Robert DeAngelis
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: N/A
8. Thickness of cap rock: N/A
9. Depth of hole: 30.5 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: CME-55
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: 1
15. Elevation Ground Water: Not measured
16. Date Hole: Started 8/9/2005 Completed 8/9/2005
17. Elevation Top of Hole: 11.2 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: C. Brown

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
11.2	0.0		Silt, organics, black, firm, moist		1	SPT, Automatic hammer	3 3 3
9.2	2.0		Silt, organics, black, soft, moist, with interbedded limestone gravel		2	SPT	1 2 2
8.7	2.5				3	SPT	1 15 50/3"
8.2	3.0		Refusal - SAND, gravelly, silty, very dense, fine to coarse, subangular, wet				
7.7	3.5		LIMESTONE, light grey, hard, fine to crystalline, slightly silicious, vertical seams at 7.5 ft	80 (RQD 40%)	1	HQ coring. Set casing to 6 ft	
			LIMESTONE, grey, soft, sandy, fine to coarse, subangular to subrounded, fossiliferous, grades softer, and poorly cemented with depth			Approx 25% drill fluid loss at 8 ft	
2.7	8.5			60 (RQD 25%)	2	HQ coring	
2.2	9.0		Air resistant - sand or gravel lense				
0.2	11.0		LIMESTONE, light grey, moderately				

PROJECT: EAA Reservoir A-1 HOLE NUMBER: CP05-EAARS-CB-0295



Hole No. CP05-EAARS-CB-0295

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 11.2 | Sheet 2 of 3 Sheets

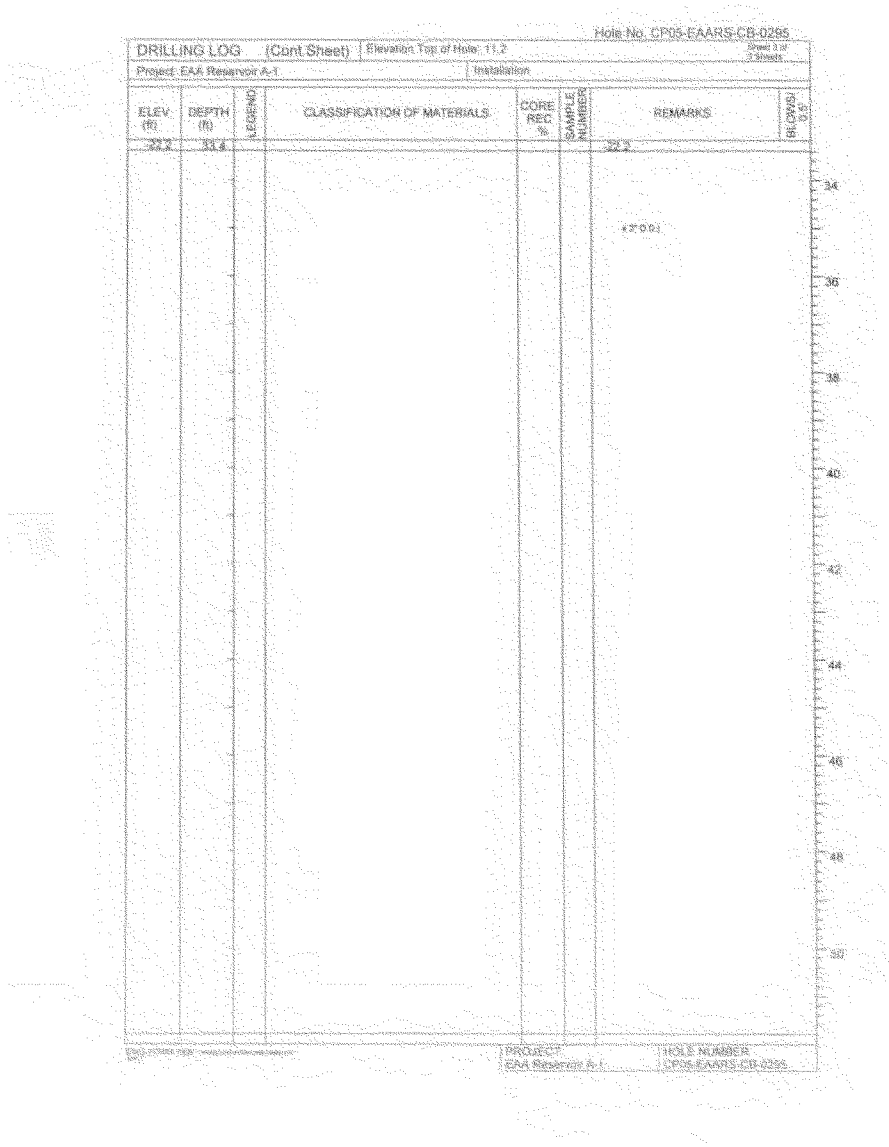
Project: EAA Reservoir A-1 | Installation

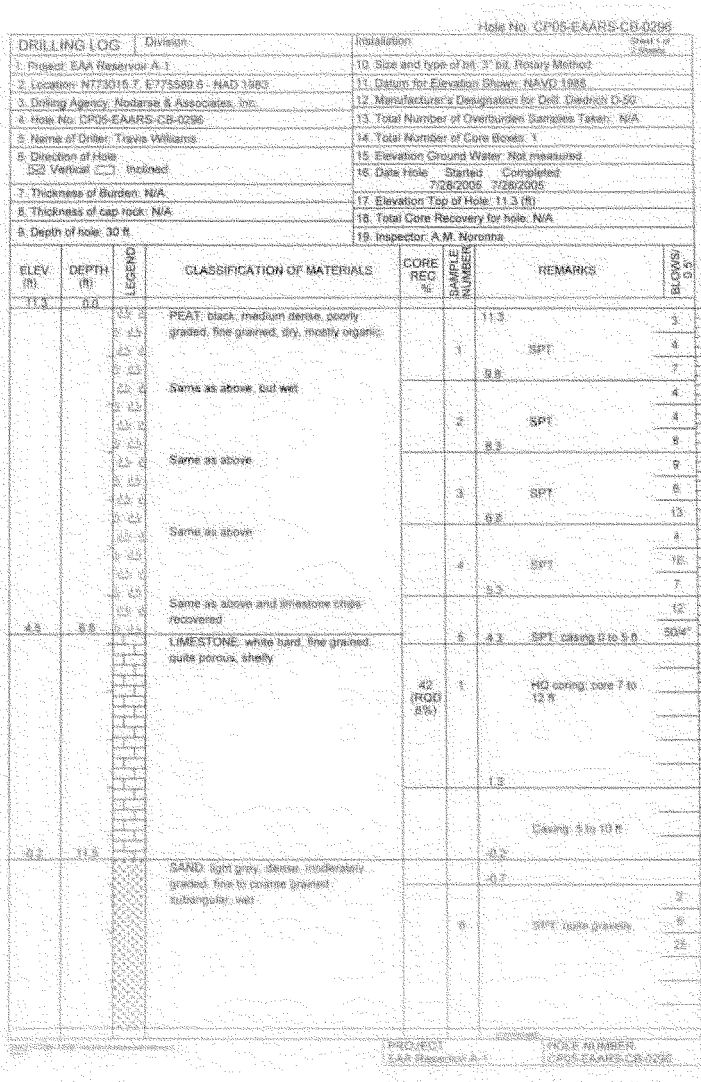
ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/0.5ft
-3.8	15.0					-3.8	
-4.3	15.5		hard, sandy, fine to coarse, subangular, fossiliferous (single vug at 15 ft			-4.8	
			SAND, gravelly, clayey, light grey, very loose, calcareous, wet, fine to coarse, subrounded, fossiliferous with moderate shell fragments (marl)		4	SPT	2 1 1
						-7.8	
			SAND, clayey, grey, gravelly, very dense, calcareous, wet, fine to coarse, subrounded, fossiliferous, with moderate shell fragments (marl)		5	SPT	27 58 21
						-12.8	
			Same as above, loose		6	SPT	3 3 4
						-17.8	
-19.2	30.5		SAND, clayey, gravelly, grey to light brown, medium dense, calcareous, wet, fine to coarse, subrounded, slightly fossiliferous, trace to minor fine quartz sand		7	SPT	4 6 12
			End of Boring at 30.5				

NOTES:
1. Core and bulk samples preserved in accordance with the ASTM Designation D 2488-90.
2. Split spoon sampling (2" O.D. 1-3/8" I.D.) in accordance with ASTM D 1586.

SMC Form 1006 revised November 2011

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0295


Hole No. CP05-EAARS-CB-0295
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 11.2
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/6 IN
34
36
38
40
42
44
46
48
50
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0295



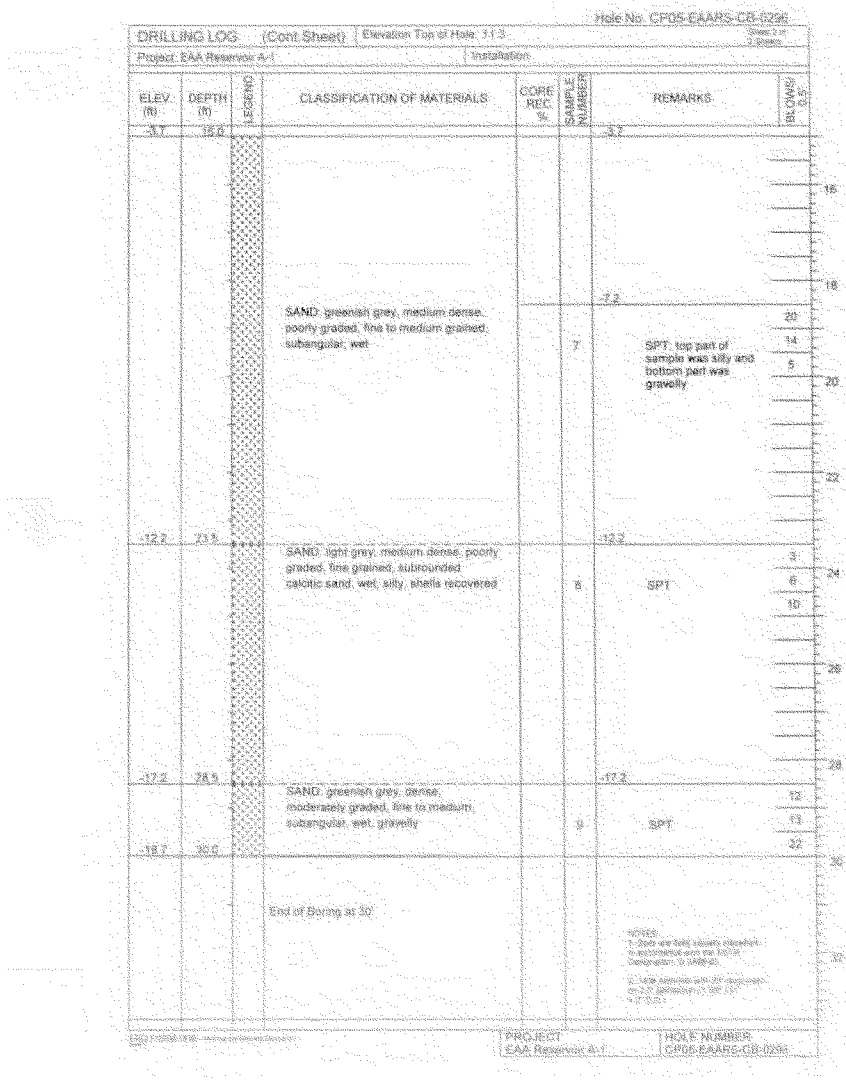
Hole No. CP05-EAARS-CB-0296

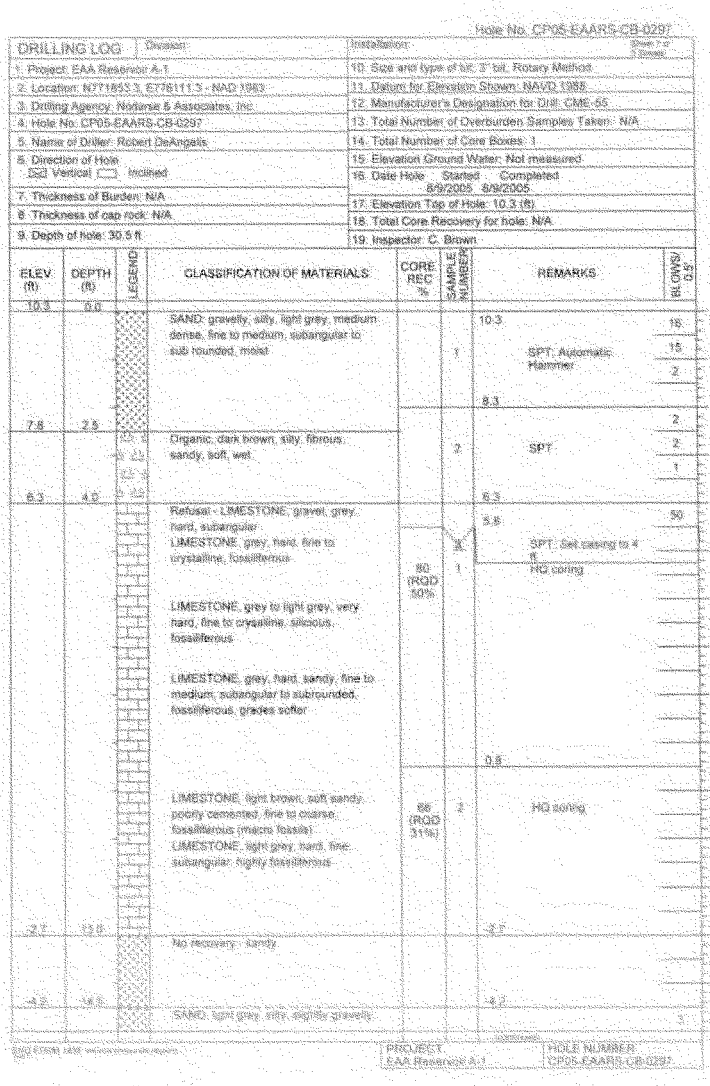
DRILLING LOG | Division: | Installation: | Sheet 1 of 3 Sheets

1. Project: EAA Reservoir A-1
2. Location: N773015.7, E775589.6 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0296
5. Name of Driller: Travis Williams
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: N/A
8. Thickness of cap rock: N/A
9. Depth of hole: 30 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: 1
15. Elevation Ground Water: Not measured
16. Date Hole: Started 7/28/2005 Completed 7/28/2005
17. Elevation Top of Hole: 11.3 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: A.M. Noronha

ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER		REMARKS	BLOWS/ 0.5'
11.3	0.0					11.3		
			PEAT: black, medium dense, poorly graded, fine grained, dry, mostly organic.		1		SPT	4 4 7
						9.8		
			Same as above, but wet.		2		SPT	4 4 5
						8.3		
			Same as above.		3		SPT	9 8 13
						6.8		
			Same as above.		4		SPT	4 10 7
						5.3		
			Same as above and limestone chips recovered.		5	4.3	SPT, casing 0 to 5 ft	12 50/4"
4.3	6.8							
			LIMESTONE: white hard, fine grained, quite porous, shelly.	42 (ROD 8%)	1		HQ coring, core 7 to 12 ft	
						1.3		
							Casing: 5 to 10 ft	
0.3	11.0					0.3		
			SAND: light grey, dense, moderately graded, fine to coarse grained, subangular, wet.			0.7		
					6		SPT, some gravels	3 5 25

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0296


Hole No. CP05-EAARS-CB-0296
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 113
Project: EAA Reservoir A-1 Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
SAND: greenish grey, medium dense, poorly graded, fine to medium grained, subangular, wet
SPT, top part of sample was silty and bottom part was gravelly
SAND: light grey, medium dense, poorly graded, fine grained, subrounded calcitic sand, wet, silty, shells recovered
SPT
SAND: greenish grey, dense, moderately graded, fine to medium, subangular, wet, gravelly
SPT
End of Boring at 30'
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0296



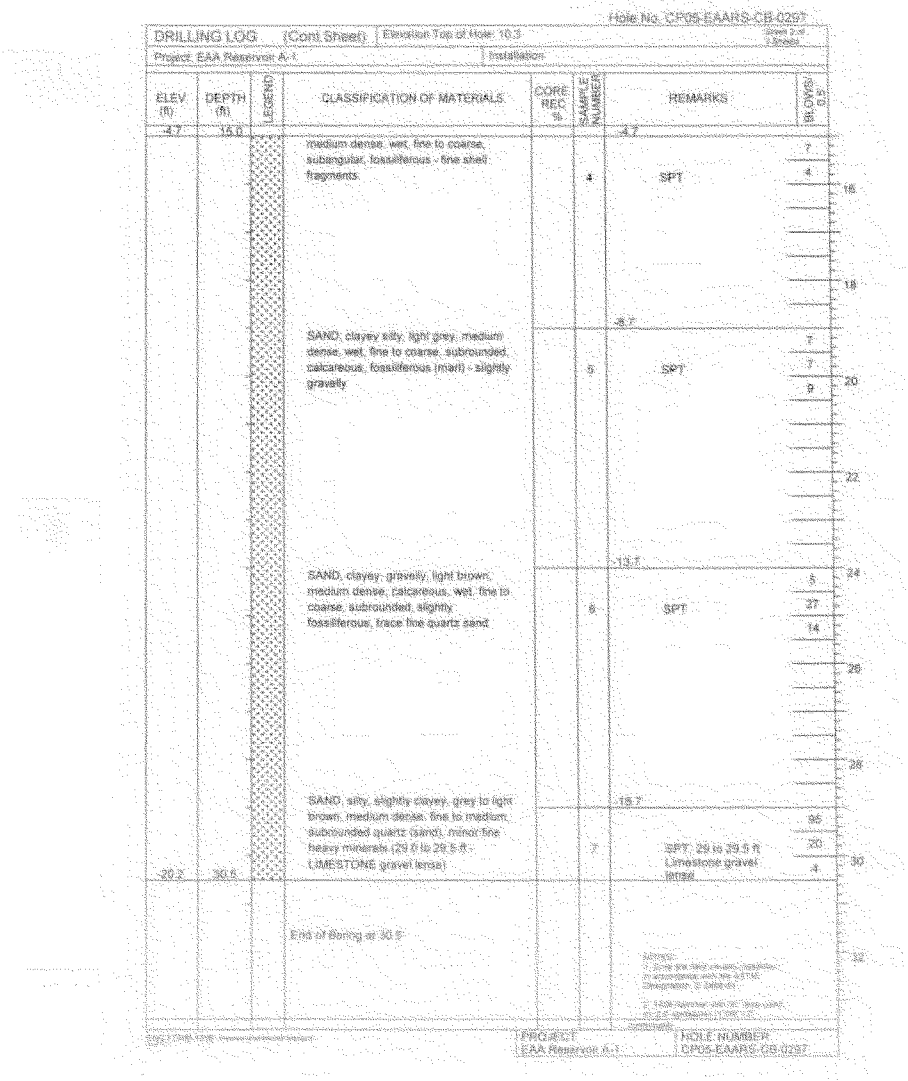
Hole No. CP05-EAARS-CB-0297

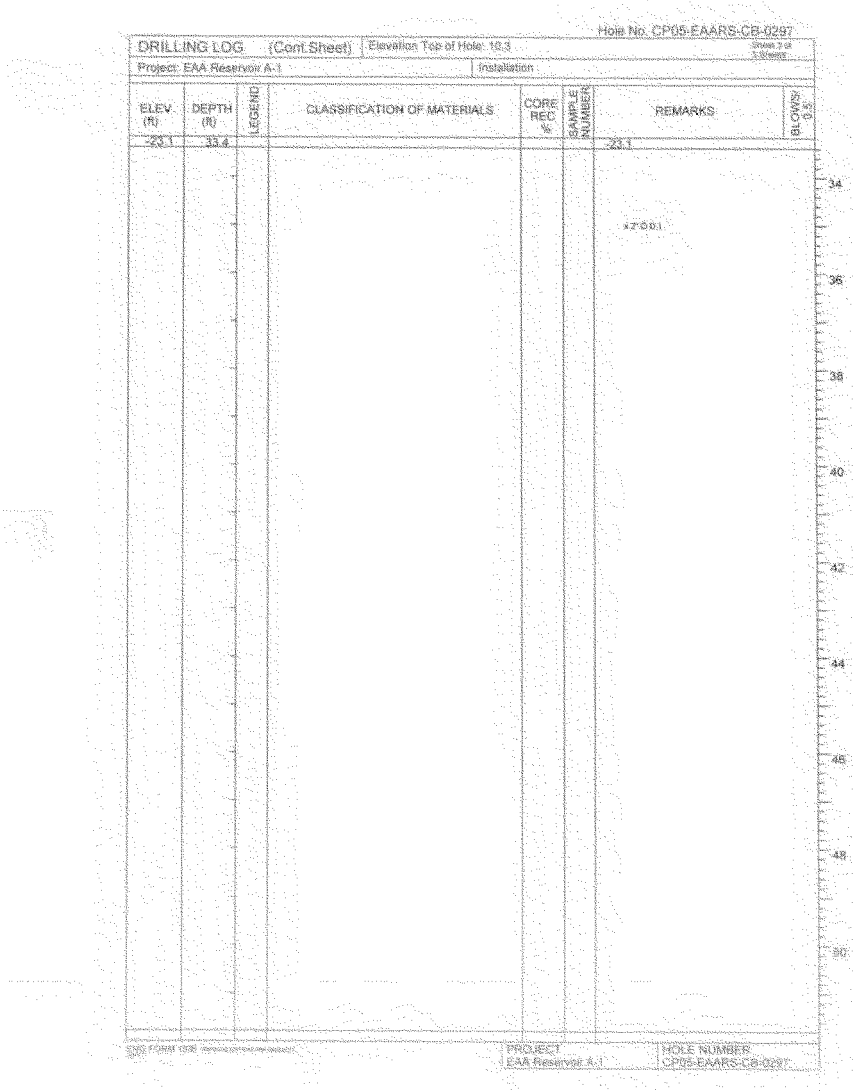
DRILLING LOG | Division: | Installation: | Sheet 1 of 3 Sheets

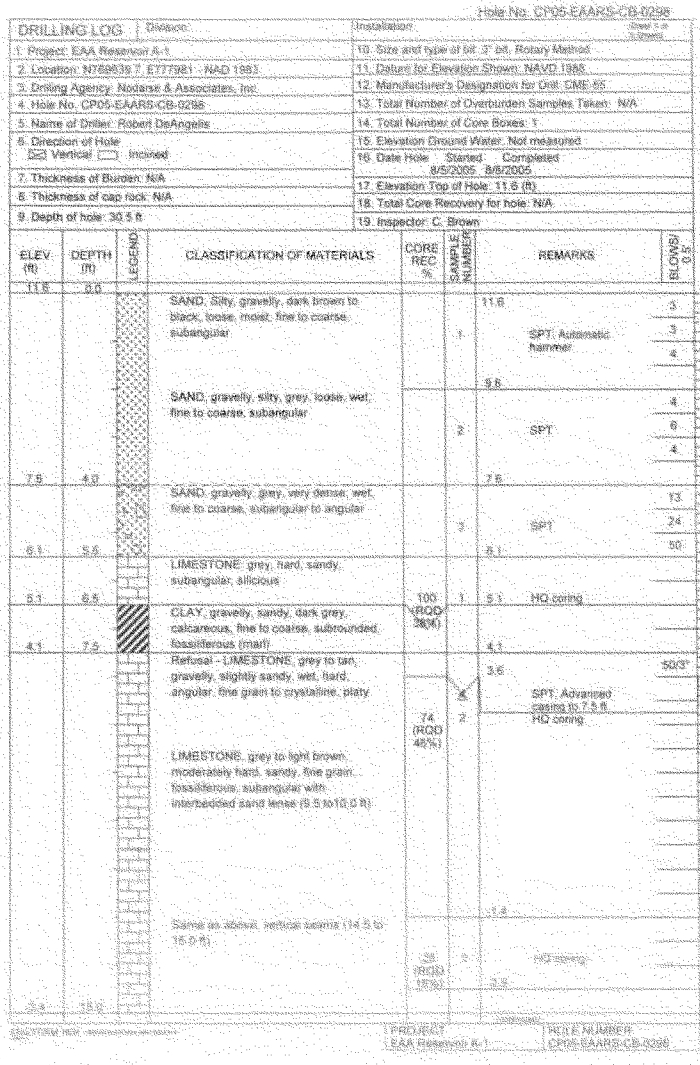
1. Project: EAA Reservoir A-1
2. Location: N771853.3, E781111.3 - NAD 1983
3. Drilling Agency: Norcross & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0297
5. Name of Driller: Robert DeAngelis
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: N/A
8. Thickness of cap rock: N/A
9. Depth of hole: 30.5 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: CME-55
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: 1
15. Elevation Ground Water: Not measured
16. Date Hole: Started 8/9/2005 Completed 8/9/2005
17. Elevation Top of Hole: 10.3 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: C. Brown

ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/0.5'
10.3	0.0		SAND, gravelly, silty, light grey, medium dense, fine to medium, subangular to sub rounded, moist		1	10.3 SPT, Automatic Hammer 8.3	18 15 2
7.8	2.5		Organic, dark brown, silty, fibrous, sandy, soft, wet		2	SPT 6.3	2 2 1
6.3	4.0		Refusal - LIMESTONE, gravel, grey, hard, subangular LIMESTONE, grey, hard, fine to crystalline, fossiliferous LIMESTONE, grey to light grey, very hard, fine to crystalline, silicous, fossiliferous LIMESTONE, grey, hard, sandy, fine to medium, subangular to subrounded, fossiliferous, grades softer	80 (RQD 50%	3 1	5.8 SPT, Set casing to 4 ft HQ coring 0.5	50
3.2	7.1		LIMESTONE, light brown, soft sandy, poorly cemented, fine to coarse, fossiliferous (micro fossils) LIMESTONE, light grey, hard, fine, subangular, highly fossiliferous	85 (RQD 31%)	2	HQ coring 3.2	
3.2	7.1		No recovery - sandy			3.2	
2.2	8.1		SAND, light grey, silty, slightly gravelly				3

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0297


Hole No. CP05-EAARS-CB-0297
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 10.3
Project: EAA Reservoir A-1 Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
4.7
15.0
medium dense, wet, fine to coarse, subangular, fossiliferous - fine shell fragments
4
SPT
7
4
18
18
-8.7
SAND, clayey silty, light grey, medium dense, wet, fine to coarse, subrounded, calcareous, fossiliferous (marl) - slightly gravelly
5
SPT
7
7
9
20
22
-13.7
SAND, clayey, gravelly, light brown, medium dense, calcareous, wet, fine to coarse, subrounded, slightly fossiliferous, trace fine quartz sand
6
SPT
5
27
14
24
28
28
-15.7
SAND, silty, slightly clayey, grey to light brown, medium dense, fine to medium, subrounded quartz (sand), minor fine heavy minerals (29.0 to 29.5 ft - LIMESTONE gravel lense)
7
SPT, 29 to 29.5 ft Limestone gravel lense
35
20
4
30
-20.3
30.6
End of Boring at 30.6
32
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0297


Hole No. CP05-EAARS-CB-0297
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 103
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5
23.1
33.4
23.1
4.2" O.D.
34
36
38
40
42
44
46
48
50
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0297



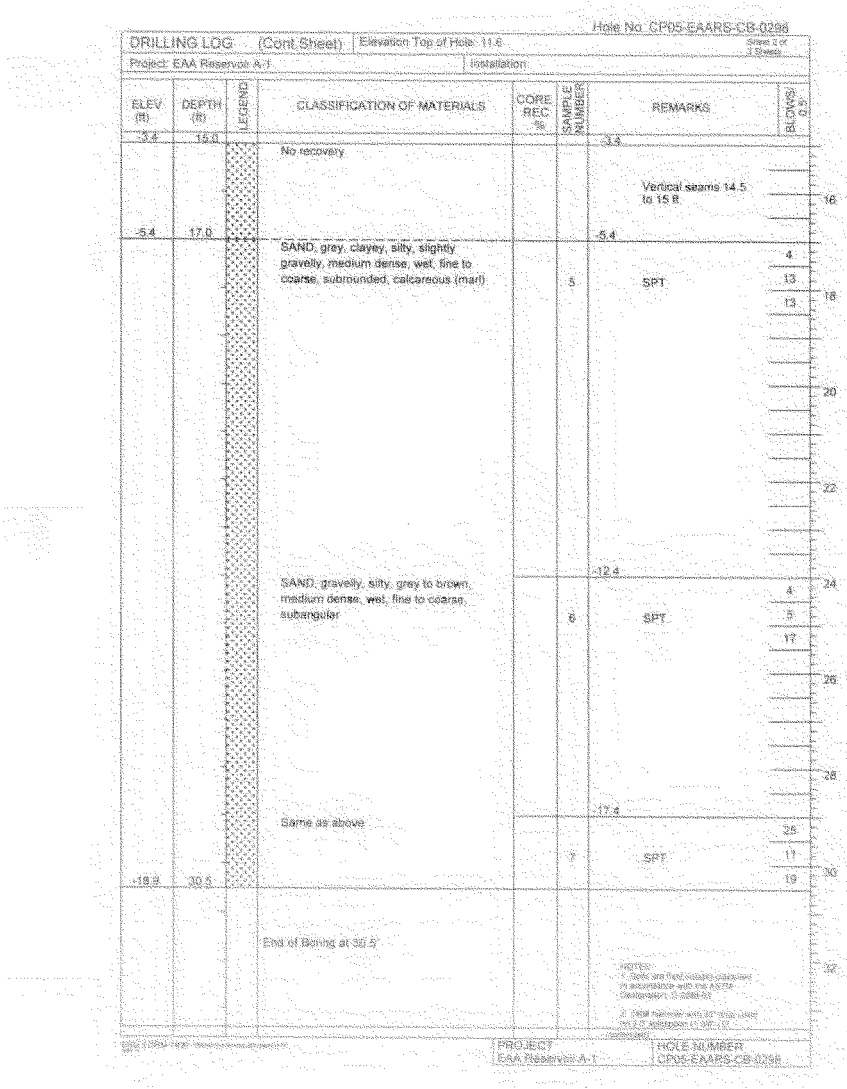
Hole No. CP05-EAARS-CB-0286

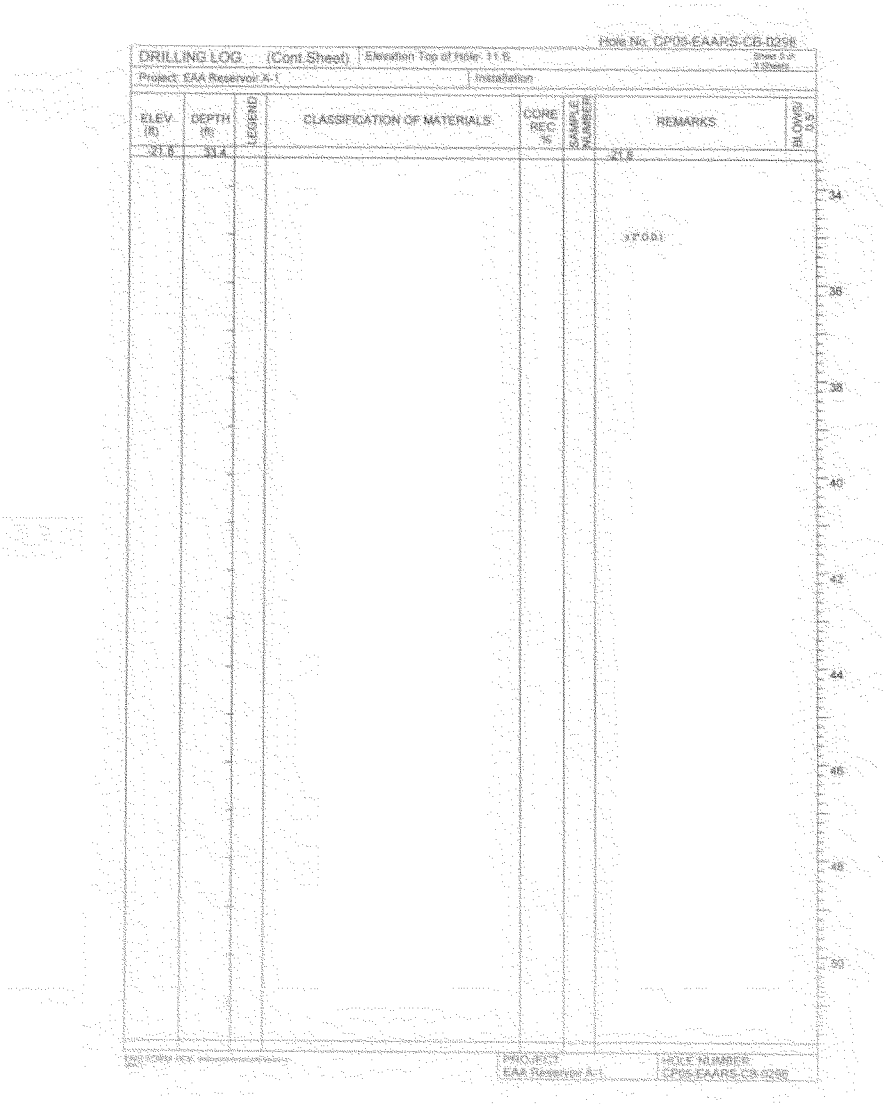
DRILLING LOG | Division: | Installation: | Sheet 1 of 1 Sheets

1. Project: EAA Reservoir A-1
2. Location: N788938.7, E777981 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No. CP05-EAARS-CB-0286
5. Name of Driller: Robert DeAngelis
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: N/A
8. Thickness of cap rock: N/A
9. Depth of hole: 30.5 ft
10. Size and type of bit: 3" bit, Rotary Method
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: CME 45
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: 1
15. Elevation Ground Water: Not measured
16. Date Hole: Started 8/5/2005 Completed 8/8/2005
17. Elevation Top of Hole: 11.6 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: C. Brown

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
11.6	0.0						
			SAND, Silty, gravelly, dark brown to black, loose, moist, fine to coarse, subangular		1	11.6 SPT, Automatic hammer	3 3 4
			SAND, gravelly, silty, grey, loose, wet, fine to coarse, subangular		2	9.8 SPT	4 6 4
7.5	4.0					7.5	
			SAND, gravelly, grey, very dense, wet, fine to coarse, subangular to angular		3	SPT	13 24 50
6.1	5.5					6.1	
			LIMESTONE, grey, hard, sandy, subangular, silicious	100 (RQD 26%)	1	5.1 HQ coring	
5.1	6.5						
			CLAY, gravelly, sandy, dark grey, calcareous, fine to coarse, subrounded, fossiliferous (marl)				
4.1	7.5					4.3	
			Refusal - LIMESTONE, grey to tan, gravelly, slightly sandy, wet, hard, angular, fine grain to crystaline, platy	74 (RQD 42%)	4 2	3.6 SPT, Advanced casing to 7.5 ft HQ coring	50/3"
			LIMESTONE, grey to light brown, moderately hard, sandy, fine grain, fossiliferous, subangular with interbedded sand lense (8.5 to10.0 ft)				
			Same as above, vertical seams (14.5 to 15.0 ft)			13.8	
				98 (RQD 16%)	5	13.8 HQ coring	
2.6	15.0						

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0286

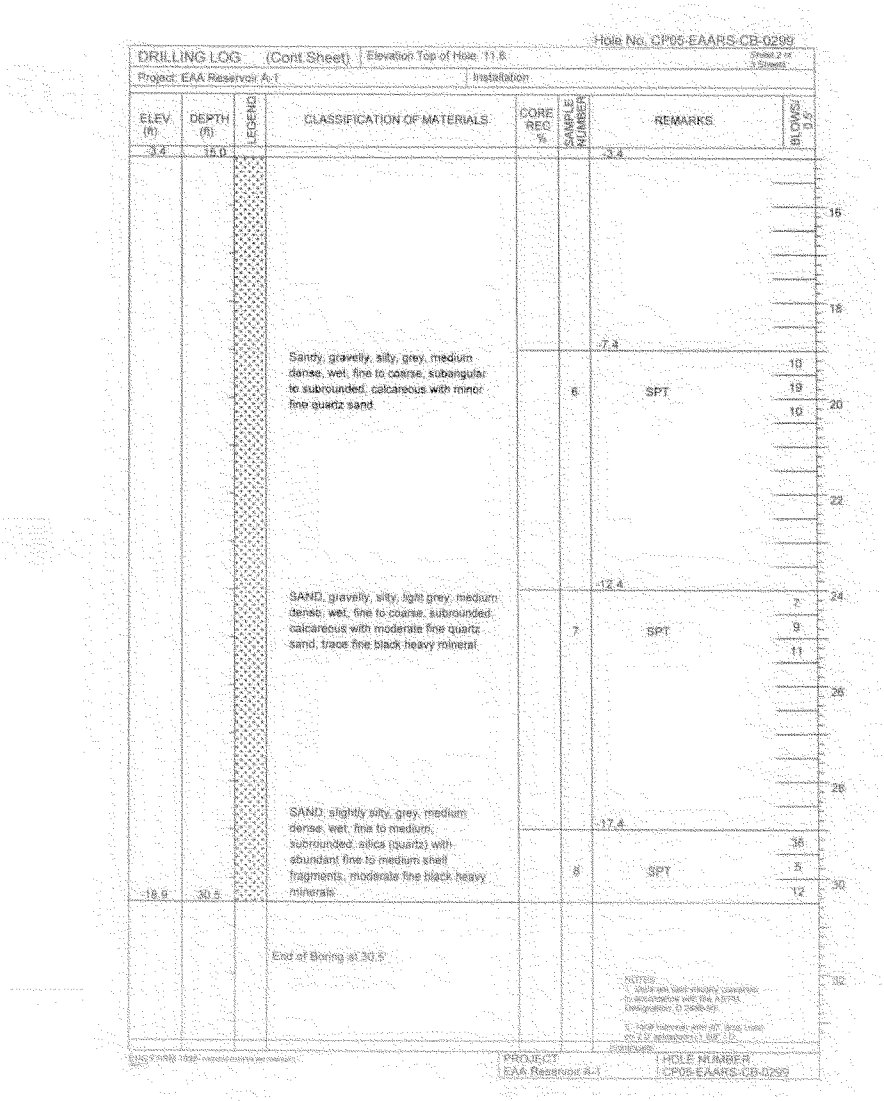

Hole No. CP05-EAARS-CB-0298
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 11.6
Project: EAA Reservoir A-1
Installation:
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/0.5'
-3.4
15.0
No recovery
Vertical seams 14.5 to 15.8
-5.4
17.0
SAND, grey, clayey, silty, slightly gravelly, medium dense, wet, fine to coarse, subrounded, calcareous (marl)
5
SPT
-12.4
SAND, gravelly, silty, grey to brown, medium dense, wet, fine to coarse, subangular
6
SPT
-17.4
Same as above
7
SPT
-19.9
30.5
End of Boring at 30.5'
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0298

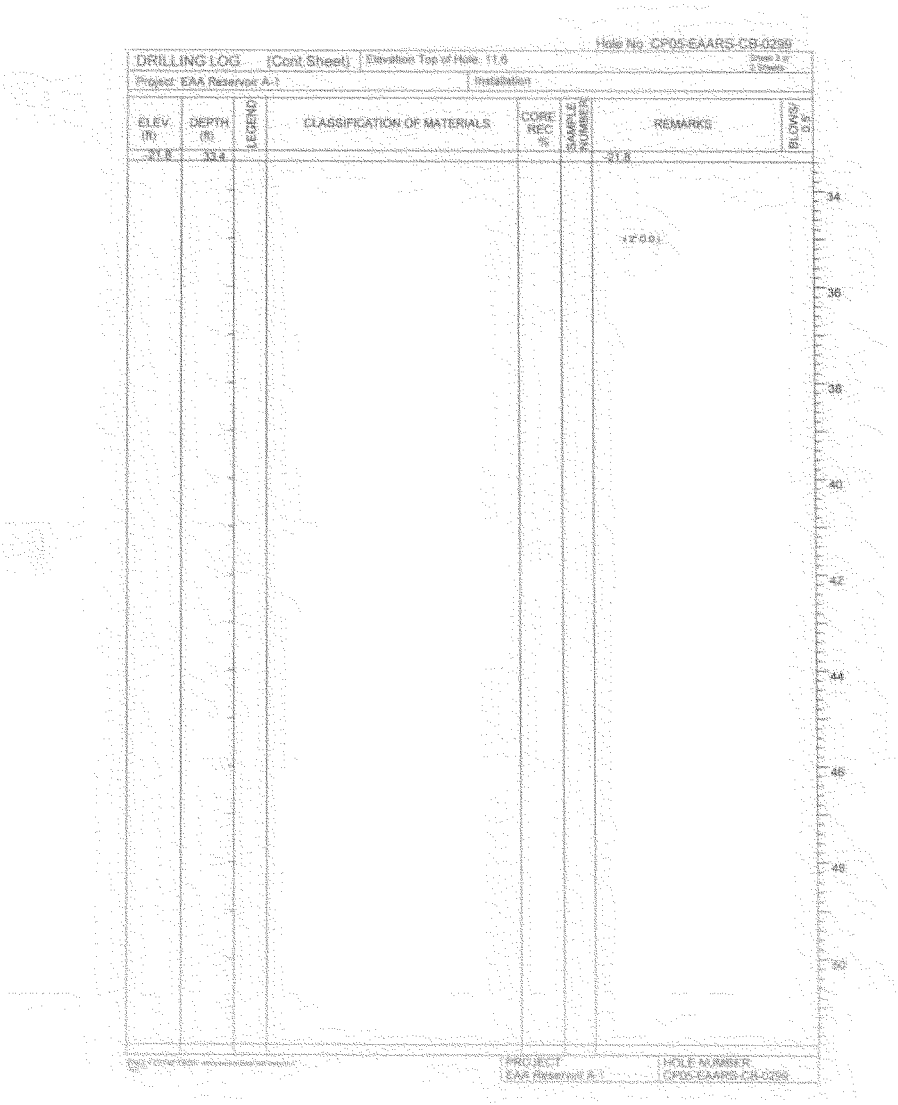

Hole No. CP05-EAARS-CB-029R
DRILLING LOG (Cont Sheet)
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
31.6
33.4
31.6
(P.O.B.)
34
36
38
40
42
44
46
48
50
EAA Reservoir A-1
CP05-EAARS-CB-029R

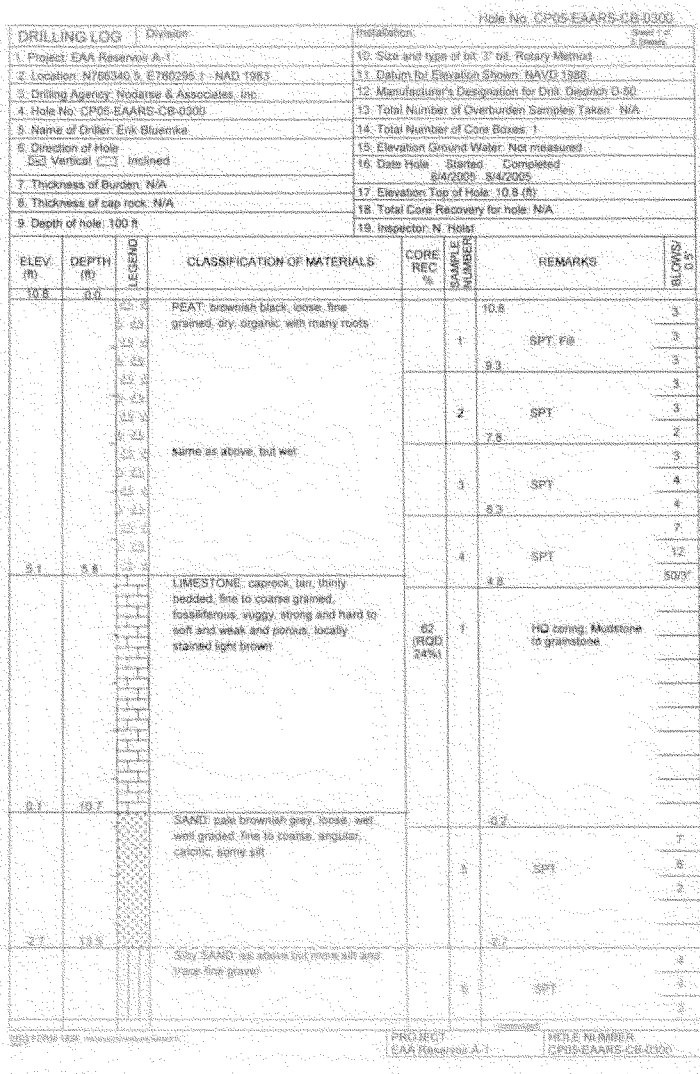
Hole No. CP05-EAARS-CB-0299

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N768147.7, E778025.5 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0299		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole: ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole: Started 8/5/2005 Completed 8/5/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 11.6 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 30.5 ft		19. Inspector: C. Brown	

ELEV (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/6"
11.6	0.0						
11.1	0.5		Silty, organic, dark brown to black				
			SAND, gravelly, slightly silty, grey, medium dense, fine to coarse, moist, subrounded with shell fragments		1	11.6 SPT, Automatic hammer 9.6	3 5 10
			same as above		2	SPT 7.6	7 7 8
			same as above, wet		3	SPT 5.6	4 15 12
			SAND, clayey, silty, gravelly, dark grey, very dense, fine to coarse, wet, subangular to angular		4	SPT 3.6	3 3 14
3.8	7.8		LIMESTONE, light grey, moderately hard to soft, sandy, fine to coarse, subrounded to subangular, fossiliferous (macro fossils), grades softer with depth	82 (RQD 13%)	1	HQ coring. Top of rock at 7.8 ft. Set casing to 8 ft.	
-9.4	21.0						
			Sandy, gravelly, silty, light grey, medium dense, wet, fine to coarse, subangular, calcareous		2	SPT	11 3 7


Hole No. CP05-EAARS-CB-0299
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 11.8
Project: EAA Reservoir A-1 Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
11.8
-3.4
15.0
7.3
Sandy, gravelly, silty, grey, medium dense, wet, fine to coarse, subangular to subrounded, calcareous with minor fine quartz sand
6
SPT
10
13
10
12.4
SAND, gravelly, silty, light grey, medium dense, wet, fine to coarse, subrounded, calcareous with moderate fine quartz sand, trace fine black heavy mineral
7
SPT
7
9
11
17.4
SAND, slightly silty, grey, medium dense, wet, fine to medium, subrounded, silica (quartz) with abundant fine to medium shell fragments, moderate fine black heavy minerals
8
SPT
18
5
12
-18.9
30.5
End of Boring at 30.5'
NOTES
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0299


Hole No. CP05-EAARS-CB-0259
DRILLING LOG (Cont.Sheet) Elevation Top of Hole: 11.6
Project: EAA Reservoir A-1 Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-31.8
32.4
-31.8
(12.0 ft)
34
36
38
40
42
44
46
48
50
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0259



Hole No. CP05-EAARS-CB-0300

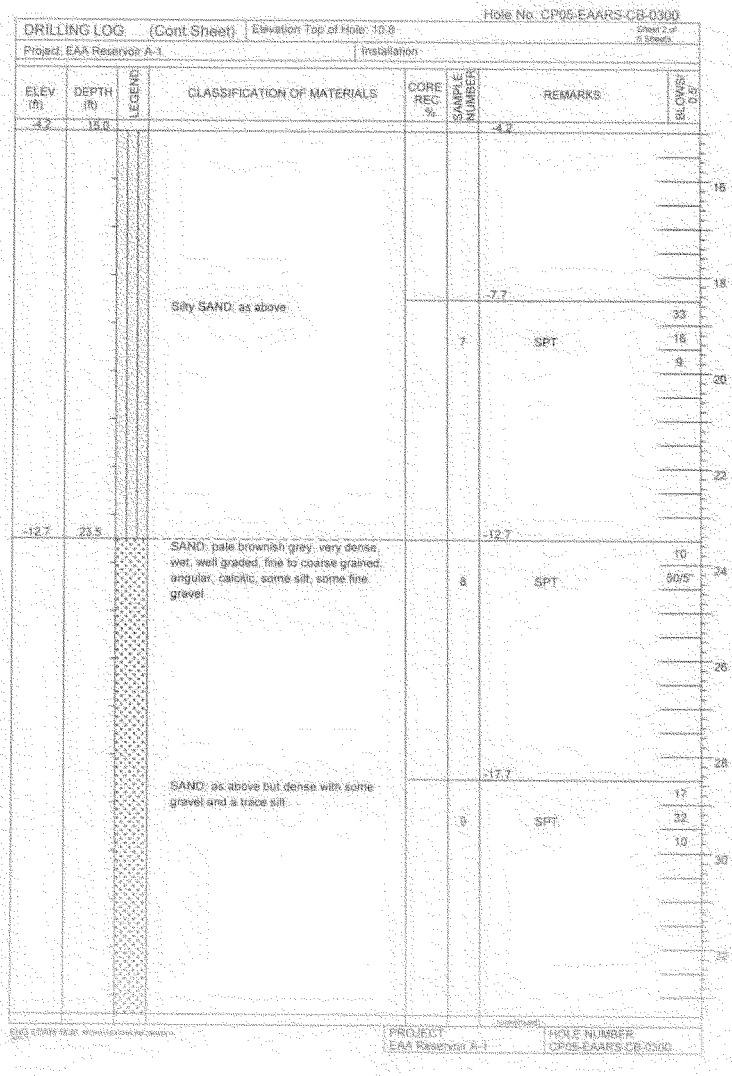
DRILLING LOG 1. Division: Installation: Sheet 1 of 1 Sheets

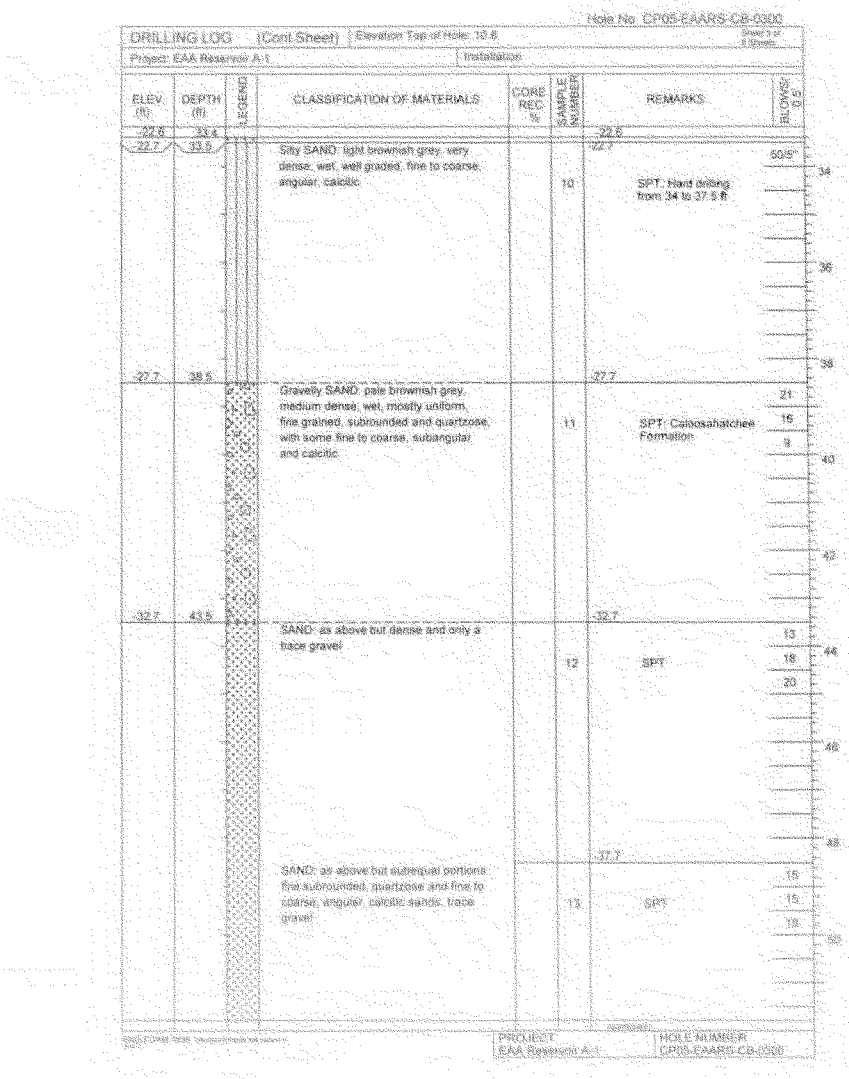
1. Project: EAA Reservoir A-1
2. Location: N766340.9, E780295.1 - NAD 1983
3. Drilling Agency: Nodarse & Associates, Inc.
4. Hole No: CP05-EAARS-CB-0300
5. Name of Driller: Erik Bluemke
6. Direction of Hole: ☒ Vertical ☐ Inclined
7. Thickness of Burden: N/A
8. Thickness of cap rock: N/A
9. Depth of hole: 100 ft
10. Size and type of bit: 3" dia. Rotary Manual
11. Datum for Elevation Shown: NAVD 1988
12. Manufacturer's Designation for Drill: Diedrich D-50
13. Total Number of Overburden Samples Taken: N/A
14. Total Number of Core Boxes: 1
15. Elevation Ground Water: Not measured
16. Date Hole: Started: 8/4/2005 Completed: 8/4/2005
17. Elevation Top of Hole: 10.8 (ft)
18. Total Core Recovery for hole: N/A
19. Inspector: N. Hales

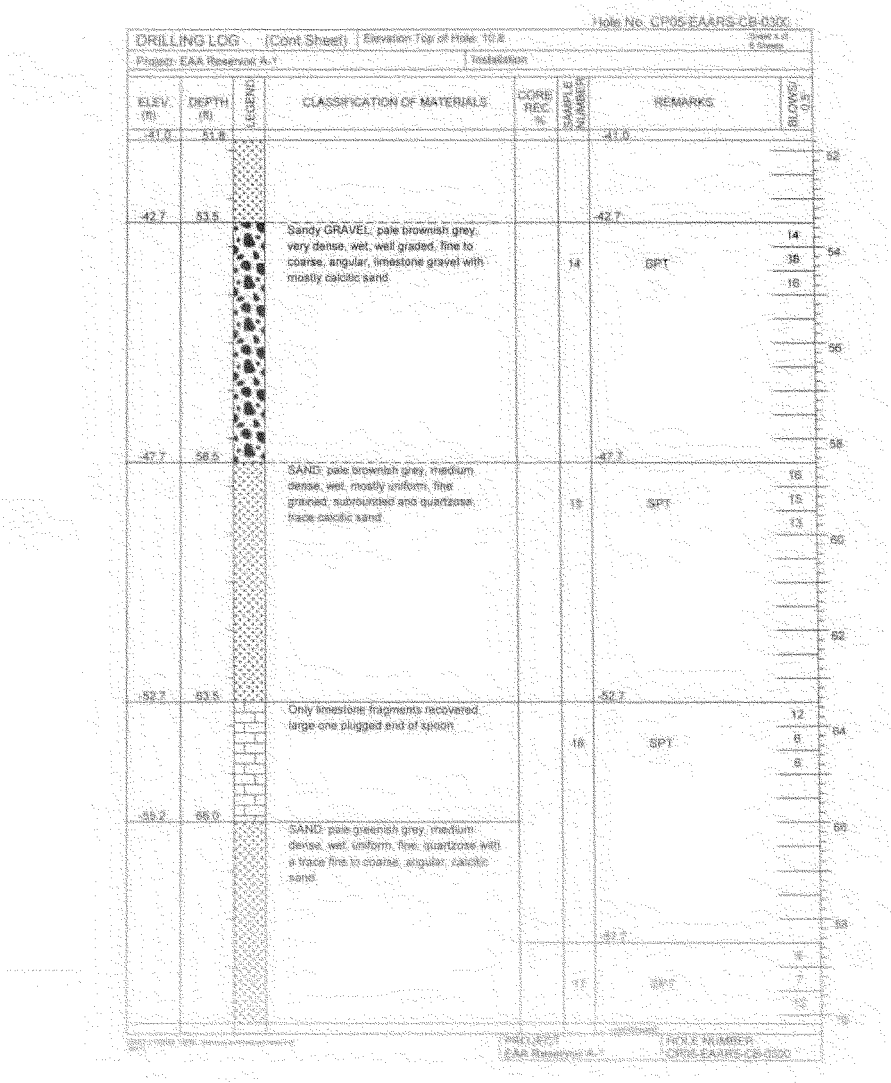
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC. %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
10.8	0.0					10.8	3
			PEAT: brownish black, loose, fine grained, dry, organic, with many roots		1	SPT, Fill	3
						9.3	3
							3
					2	SPT	3
			Same as above, but wet			7.8	2
							3
					3	SPT	4
						5.3	4
							7
					4	SPT	12
3.1	7.8					4.8	50/3"
			LIMESTONE: caprock, tan, thinly bedded, fine to coarse grained, fossiliferous, vuggy, strong and hard to soft and weak and porous, locally stained light brown	62 (RQD 24%)	1	HQ coring, Mudstone to grainstone	
0.7	10.1						
			SAND: pale brownish grey, loose, wet, well graded, fine to coarse, angular, calcitic, some silt			0.7	
					5	SPT	7
							8
							5
-2.7	13.5					-2.7	
			Silty SAND: as above but more silt and trace fine gravel		6	SPT	4
							4
							3

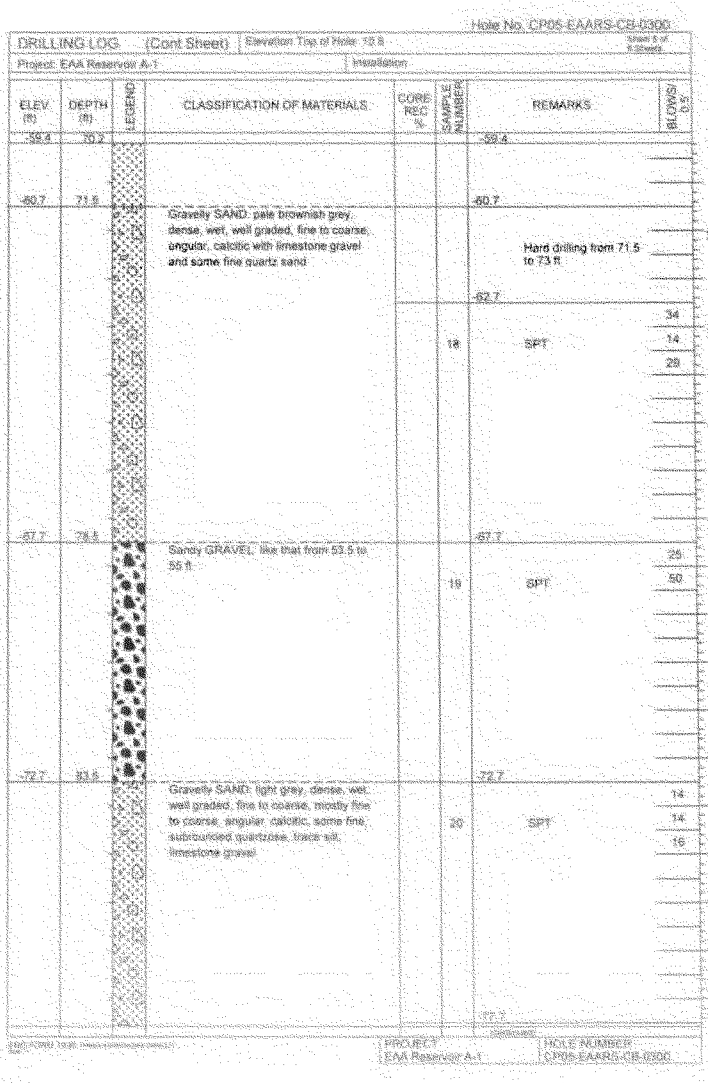
USE FORM 1836, PREVIOUS EDITIONS OBSOLETE

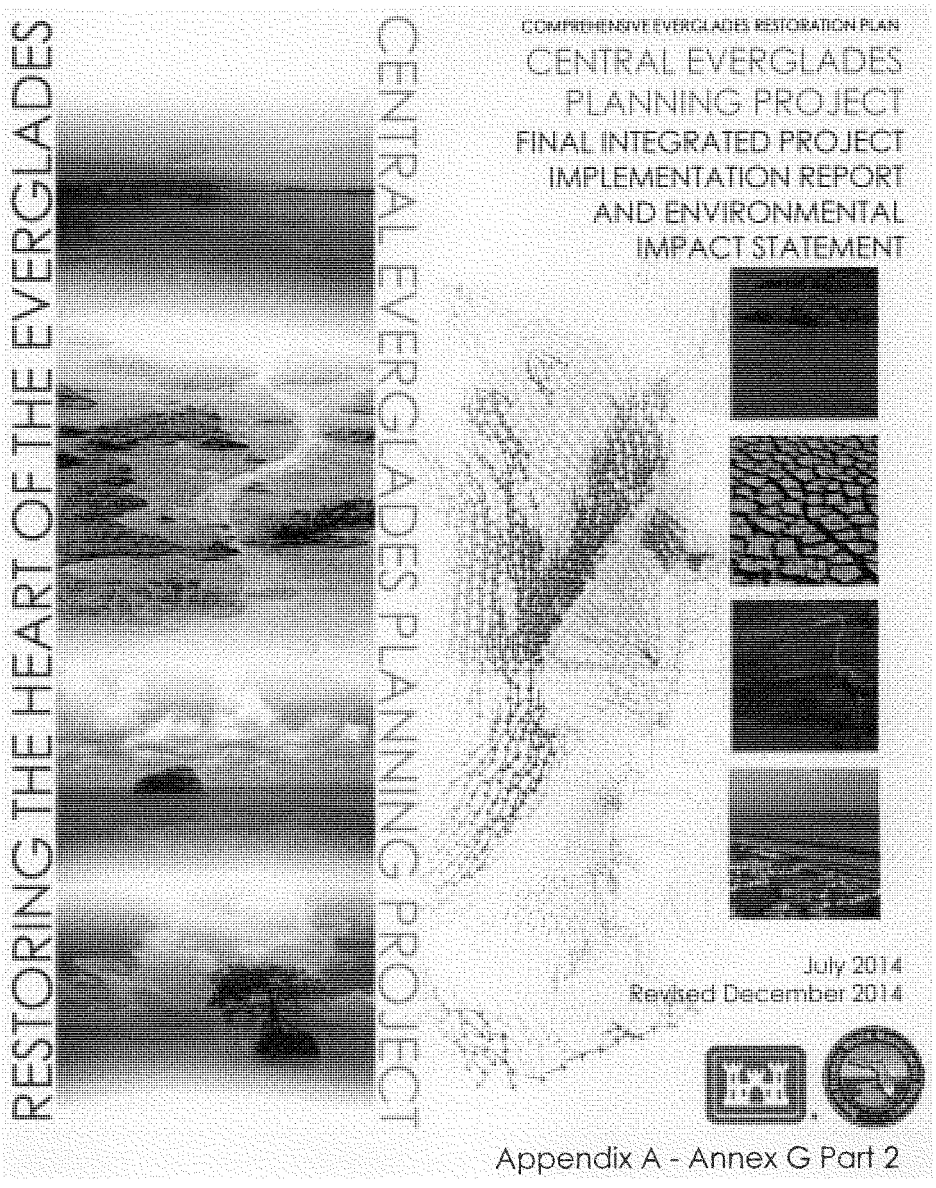
PROJECT: EAA Reservoir A-1 HOLE NUMBER: CP05-EAARS-CB-0300


Hole No. CP05-EAARS-CB-0300
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 10.8
Sheet 2 of 6 Sheets
Project: EAA Reservoir A-1
Installation
ELEV (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-3.2
13.0
Silty SAND: as above
-7.7
7
SPT
33
18
9
-12.7
23.5
SAND: pale brownish grey, very dense, wet, well graded, fine to coarse grained, angular, calcitic, some silt, some fine gravel
-12.7
8
SPT
10
50/5"
SAND: as above but dense with some gravel and a trace silt
-17.7
9
SPT
17
32
10
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0300


Hole No. CP05-EAARS-CB-0300
DRILLING LOG (Cont.Sheet)
Project: EAA Reservoir A-1
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/ 6 in
-22.8
33.4
-22.7
33.5
Silty SAND: light brownish grey, very dense, wet, well graded, fine to coarse, angular, calcitic.
10
-22.7
SPT: Hard drilling from 34 to 37.5 ft
50/5"
34
36
38
-27.7
38.5
Gravelly SAND: pale brownish grey, medium dense, wet, mostly uniform, fine grained, subrounded and quartzose, with some fine to coarse, subangular and calcitic.
11
-27.7
SPT: Calnosahatchee Formation
21
16
9
40
42
-32.7
43.5
SAND: as above but dense and only a trace gravel
12
-32.7
SPT
13
18
20
44
46
48
-37.7
SAND: as above but subequal portions fine subrounded, quartzose and fine to coarse, angular, calcitic sands, trace gravel
13
-37.7
SPT
15
15
18
50
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0300


Hole No. CP05-EAARS-CB-030C
DRILLING LOG (Cont Sheet) Elevation Top of Hole: 101.8
Project: EAA Reservoir A-1
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC. %
SAMPLE NUMBER
REMARKS
BLOWS/0.3 m
101.0
51.8
42.7
53.5
Sandy GRAVEL, pale brownish grey, very dense, wet, well graded, fine to coarse, angular, limestone gravel with mostly calcitic sand.
14
SPT
14
38
16
54
47.7
56.5
SAND, pale brownish grey, medium dense, wet, mostly uniform, fine grained, subrounded and quartzose, trace calcitic sand.
15
SPT
15
15
12
52.2
61.5
Only limestone fragments recovered, large one plugged end of spoon.
16
SPT
12
8
8
55.2
66.0
SAND, pale greenish grey, medium dense, wet, uniform, fine, quartzose with a trace fine to coarse, angular, calcitic sand.
47.7
15
SPT
6
7
10
17
HOLE NUMBER
EAA Reservoir A-1
CP05-EAARS-CB-030C


Hole No. CP05-EAARS-CB-0300
DRILLING LOG (Cont Sheet)
Project: EAA Reservoir A-1
Installation:
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-59.4
70.2
-60.7
71.5
Gravelly SAND: pale brownish grey, dense, wet, well graded, fine to coarse, angular, calcitic with limestone gravel and some fine quartz sand
Hard drilling from 71.5 to 73 ft
-62.7
18
SPT
34
14
28
72
74
76
78
-67.7
73.5
Sandy GRAVEL: like that from 53.5 to 55 ft
19
SPT
25
50
80
82
-72.7
83.5
Gravelly SAND: light grey, dense, wet, well graded, fine to coarse, mostly fine to coarse, angular, calcitic, some fine subrounded quartzose, trace silt, limestone gravel
20
SPT
14
14
16
84
86
88
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0300


RESTORING THE HEART OF THE EVERGLADES
CENTRAL EVERGLADES PLANNING PROJECT
COMPREHENSIVE EVERGLADES RESTORATION PLAN
CENTRAL EVERGLADES PLANNING PROJECT
FINAL INTEGRATED PROJECT IMPLEMENTATION REPORT AND ENVIRONMENTAL IMPACT STATEMENT
July 2014
Revised December 2014
Appendix A - Annex G Part 2

Cover insets (left to right):

Landscapes: Lake Okeechobee, Water Conservation Area 3, Everglades National Park, Florida Bay; **Map:** Depicts Average Annual Overland Flow across the period of record (1965-2005) for existing conditions, as modeled by the CEPP regional hydrologic model (the coloration of the arrows represents the relative volume of flow, while the direction of the arrows represents the movement of flow across the landscape); **Small Landscapes:** Ponding, soil oxidation (peat reduction), dry area of Everglades National Park, juxtaposition of urban development.

APPENDIX 2
SUPPLEMENTAL BORINGS AND PIEZOMETER INSTALLATION LOGS: 301-320

Hole No. CP05-EAARS-CB-0301

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N764973.7, E781256.9 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0301		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/4/2005 Completed 8/4/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 11.7 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 30.5 ft		19. Inspector: C. Brown	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
11.7	0.0						
11.2	0.5		Silty, organic, black			11.7	7
			SAND, gravelly, silty, grey, well graded, fine to coarse, loose, moist, subangular to angular		1	SPT	4
							4
						9.7	
			Same as above, medium dense, wet		2	SPT	8
							8
							6
						7.7	
			Same as above		3	SPT	10
							4
							10
						5.7	
			Same as above, (limestone, green-grey, hard, fine grain at tip)		4	SPT	8
							7
4.6	7.1						50/1"
			LIMESTONE, grey to green, fine grain to crystalline, hard, minor porosity, fossiliferous, silicious			3.7	
				95 (RQD 85%)	1	HQ coring; partial loss of drilling fluid circulation at 7 ft	
			LIMESTONE, grey, hard, fine grain, highly fossiliferous and porous in lenses, silicious, grades softer			-0.3	
			LIMESTONE, grey to green, fine grain to crystalline, hard, fossiliferous, (maybe dolomitic)	34 (RQD 10%)	2	HQ coring	

(continued)

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PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0301

Hole No. CP05-EAARS-CB-0301

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 11.7 | Sheet 2 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-3.3	15.0					-3.3	
-5.3	17.0		LIMESTONE, light grey, moderately hard, sandy, fine to medium, slightly fossiliferous, porous in lenses, grades softer			-5.3	16
-12.3	24.0		SAND, gravelly, silty to clayey, grey, medium dense, fine to coarse, calcareous with moderate macro fossils, subangular - wet		5	SPT	3 5 12
-17.3	29.0		SAND, gravelly, slightly silty, grey, dense, wet, fine to coarse, subangular to subrounded, calcareous, with fine quartz sand, some shell fragments		6	SPT	5 8 13
-18.8	30.5		SAND, gravelly, silty, clayey, light grey, medium dense, wet, fine to coarse, subangular to subrounded, calcareous, (marl) with fine shell fragments		7	SPT	15 11 5
			End of Boring at 30.5'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.0" split spoon (1 3/8" I.D.

(continued)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0301

Hole No. CP05-EAARS-CB-0301

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 11.7 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-21.7	33.4					-21.7	

x 2" O.D.)

34
36
38
40
42
44
46
48
50

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0301

Hole No. CP05-EAARS-CB-0302

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N763912, E781642 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0302		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/3/2005 Completed 8/3/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 12.5 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 30.5 ft		19. Inspector: C. Brown	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
12.5	0.0						
12.0	0.5		Asphalt Pavement			12.0	
			SAND: gravelly, silty, grey, dense, well graded, dry, fine to coarse, angular to subangular (FILL)		1	SPT; Automatic hammer	24 27 24
						10.5	
			Same as above, moist		2	SPT	14 23 25
						8.5	
			Same as above - medium dense, wet		3	SPT	13 16 10
6.5	6.0					6.5	
6.0	6.5		Refusal cuttings			6.5	50/1"
			LIMESTONE: grey to light tan, hard, brittle, fine grained to crystalline, silicious, fossiliferous, vertical seams	46 (RQD 26%)	1	SPT Set casing to 6 ft	
						1.5	
			LIMESTONE: light grey, hard, brittle, crystalline to microcrystalline, silicious	48 (RQD 25%)	2	HQ coring; 100% drill fluid loss at 9 ft, Advanced casing to 11 ft	
-2.5	15.0		LIMESTONE, grey to light tan, hard, fine grain to crystalline, fossiliferous, slightly silicious				

(continued)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE Sheet 1

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0302

Hole No. CP05-EAARS-CB-0302

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 12.5 | Sheet 2 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-2.5	15.0					-2.5	
			SAND: gravelly, slighty silt, light grey, very loose, well-graded, fine to coarse, wet, calcareous, angular to subangular with shell fragments		5	-3.5 SPT, Advanced casing to 15 ft	5 2 1
						-6.5	
			SAND: gravelly, silty, slight clayey, grey, calcareous, medium dense, wet, subangular with abundant shell fragments		6	SPT	5 10 10
-11.5	24.0					-11.5	
			SAND: slight silty, light brown to grey, fine to coarse, dense, wet, carbonate, with some silica (Quartz sand), partial cemented, subrounded, trace of fine black heavy minerals		7	SPT	5 8 34
-16.5	29.0					-16.5	
			SAND: silty, grey, fine to medium, dense, wet, subrounded, with trace of fine black heavy minerals		8	SPT	10 18 21
-18.0	30.5						
			End of Boring at 30.5'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93
2. 140# hammer with 30" drop used on 2.0" split spoon (1 3/8" I.D.

(continued)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0302

Hole No. CP05-EAARS-CB-0302

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 12.5 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-20.9	33.4					-20.9	

x 2" O.D.)

34
36
38
40
42
44
46
48
50

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0302

Hole No. CP05-EAARS-CB-0303

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N761607.6, E783513.8 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0303		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/3/2005 Completed 8/3/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 11.8 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 30.5 ft		19. Inspector: C. Brown	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
11.8	0.0		SAND: gravelly, silty, grey, medium dense, well graded, fine to course, clay, angular, to subangular		1	11.8 SPT	12 14 16
			Same as above, moist - fill		2	9.8 SPT	8 11 9
			Refusal at 5', top of caprock		3	7.8 SPT	6 12
6.8	5.0		LIMESTONE: gray, hard, fossiliferous, porous, fine grain	85 (RQD 78%)	1	HQ coring; set casing to 5 ft	50/0"
			LIMESTONE, grey, hard to very hard, silicious, fine to crystalline				
			LIMESTONE, grey, hard to moderately hard, vuggy, sandy, fine to coarse, subangular, highly fossiliferous and vuggy in lenses			1.8	
			LIMESTONE, light grey, hard, sandy, fine to crystaline, subangular, slightly silicious	65 (RQD 52%)	2	HQ coring; UCS=8389psi	
			LIMESTONE, grey, moderately hard, sandy, fossiliferous, porous, grades softer with depth with macro-fossils			-3.2 (continued)	

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0303

Hole No. CP05-EAARS-CB-0303

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 11.8 | Sheet 2 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
3.2	15.0					3.2	
-4.7	16.5		LIMESTONE, grey to light grey, hard brittle, fine to crystalline, fossiliferous, silicious, vertical seams	37 (RQD 28%)	3	HQ coring	16
			SAND: gravelly, silty, light grey, dense, wet, well graded, fine to coarse, subangular to angular, calcareous, abundant shell fragments interbedded calcareous clay lenses - Marl			-6.2	18
						-7.2	
					4	SPT	4 31 17
-11.2	23.0					-12.2	20 22 24
			SAND: silty, light grey, medium dense, wet, fine to medium, wet, subangular, with shell fragments and traces of black fine heavy minerals		5	SPT	3 4 8
						-17.2	26 28
-18.7	30.5		Same as above, loose with tin lenses of grey to brown, limestone, fine grain, (HARD), silicious		6	SPT	10 5 3
			End of Boring at 30.5'				30 32

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D.

(continued)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0303

Hole No. CP05-EAARS-CB-0303

DRILLING LOG (Cont.Sheet)	Elevation Top of Hole: 11.8	Sheet 3 of 3 Sheets
Project: EAA Reservoir A-1	Installation	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-21.6	33.4					-21.6	

x 3" O.D.)

34
36
38
40
42
44
46
48
50

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE Sheet 3

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0303

Hole No. CP05-EAARS-CB-0304

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N758275.1, E785955.4 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0304		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/2/2005 Completed 8/2/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 10.7 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 34.5 ft		19. Inspector: C. Brown	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
10.7	0.0						
			Silt, organic, black, moist		1	10.7 SPT; Automatic hammer	1 1 3
			Same as above, firm, moist		2	8.7 SPT	2 3 2
					3	6.7 SPT	1 2 8
5.2	5.5						
4.7	6.0		SAND: gravelly, light gray, fine to coarse, subangular, wet, silt, organic, black, wet			4.7	
4.2	6.5		SILT, organic, black, wet		4	SPT	3 26 14
			LIMESTONE: grey, gravel, weathered, hard, (Marl) fine to coarse, subangular, wet			2.7	
			LIMESTONE: grey, hard, fine grain, silicious, slightly vuggy	57 (RQD 24%)	1	HQ coring	
						1.2	
				60 (RQD 43%)	2	HQ coring; UCS=3195psi	
			LIMESTONE, grey, moderately hard, sandy, fine to coarse grain, fossiliferous (shell fragments) with interbedded calcareous clay lenses				
						-3.8	

(continued)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0304

Hole No. CP05-EAARS-CB-0304

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 10.7 | Sheet 2 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/0.5'
-4.3	15.0					-4.3	
			Same as above, softer at 17.5	36 (RQD 12%)	3	HQ coring; advanced casing to 14.5 ft	16
							18
						-8.8	
-10.3	21.0		LIMESTONE: grey, soft, sandy, fine to coarse grain, fossiliferous, porous	15 (RQD 0%)	4	HQ coring	20
			SAND: gravelly, silty, light grey, loose, well graded, fine to coarse, wet, angular to subangular, calcareous, some shell fragments				22
						-12.8	
						-13.3	
					5	SPT; approx 50% drill fluid loss	1 3 2
							24 26
-17.3	28.0						28
			SAND: silty, light grey, dense, fine to medium, subangular, with shell fragments, traces of heavy minerals			-18.3	
					6	SPT	27 30 14
							30 32

(continued)

ENG FORM 1836, PREVIOUS EDITIONS ARE OBSOLETE

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0304

Hole No. CP05-EAARS-CB-0304

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 10.7 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-22.7	33.4					-22.7	
						-23.3	
-23.8	34.5		Refusal - No Recovery				50/0.5"
					7	SPT	
			End of Boring at 34.5'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0' splitspoon (1 3/8" I.D. x 2" O.D.)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0304

Hole No. CP05-EAARS-CB-0305

DRILLING LOG	Division:	Installation:	Sheet 1 of 1 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N778651.2, E757998.1 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0305		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Ralph Smith		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/16/2005 Completed 8/16/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 8.7 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 10 ft		19. Inspector: A.M. Noronha	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
8.7	0.0						
8.4	0.3		Rock First 4" rock, then 1.0 ft of peat followed by around 2.5' of limestone	22 (RQD 0%)	1	8.7 HQ coring; Bottom half of sample recovered had weathered limestone pieces	
7.4	1.3		Peat LIMESTONE: pale white, hard, fine grained, quite porous, shells present				
4.9	3.8					3.7	
0.7	8.0			8 (RQD 0%)	2	HQ coring; Hard coring from 8 to 9 ft	
-0.3	9.0		LIMESTONE: brownish white, hard, fine grained, quite porous				
-1.3	10.0		No recovery				
			End of Boring at 10'			NOTES: 1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93 2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)	

0 2 4 6 8 10 12 14

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT: EAA Reservoir A-1 HOLE NUMBER: CP05-EAARS-CB-0305

Hole No. CP05-EAARS-CB-0306

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N755049.5, E788243.5 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0306		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/1/2005 Completed 8/1/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 12.5 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 30.5 ft		19. Inspector: C. Brown	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
12.5	0.0						
12.3	0.3		SILT: organic, dark brown			12.5	3
			SAND: gravelly, silty, grey, medium dense, well graded, fine to coarse, subangular, subrounded, dry, trace shell fragments		1	SPT; automatic hammer	7 14
						10.5	
			SAND: gravelly, silty, grey, dense, well graded, fine to coarse, subangular, platy chert (cobble), moist		2	SPT	15 21 24
						8.5	
			SAND: gravelly, grey, loose, well graded, fine to coarse, subangular, moist, (Black organic silt at 5.5')		3	SPT	8 6 4
6.5	6.0					6.5	
			LIMESTONE: grey to light tan, hard, fossiliferous, vuggy, fine grained	98 (RQD 82%)	1	HQ coring	
			Same as above, grades Sandy, moderately hard with calcareous clay in lenses			4.2	
				93 (RQD 63%)	2	HQ coring; UCS=8080psi	
			LIMESTONE: light grey to brown, very fine grain to crystalline, fossiliferous, silicious			1.5	
			LIMESTONE: grey, very sandy, highly fossiliferous, poorly cemented, grades softer to calcareous Sandy Clay - Marl	64 (RQD 27%)	3	HQ coring; Set casing to 11 ft	
						-1.3	
-2.5	15.0			39	4	HQ coring	

(continued)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0306

Hole No. CP05-EAARS-CB-0306

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 12.5 | Sheet 2 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-2.5	15.0					-2.5	
			SAND: lense - No recovery	(RQD 28%)			16
-4.5	17.0					-4.5	
			SAND: gravelly, light grey, dense, well graded, wet, fine to coarse, angular to subangular, calcareous, trace to some shell fragments		4	SPT	7 26 7
							18
							20
							22
-10.5	23.0					-10.5	
			SAND: silty, light grey, medium dense, fine to medium, wet, subrounded to subangular, calcareous, trace to some gravel		5	SPT	12 10 11
							24
							26
							28
-16.5	29.0					-16.5	
			SAND: slighty silty, grey, medium dense, fine to medium, angular to subangular, silicious (quartzose) some shell fragments		6	SPT	4 24 18
-18.0	30.5						30
			End of Boring at 30.5'				
							32

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D.

(continued)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0306

Hole No. CP05-EAARS-CB-0306

DRILLING LOG (Cont.Sheet)	Elevation Top of Hole: 12.5	Sheet 3 of 3 Sheets
Project: EAA Reservoir A-1	Installation	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-20.9	33.4					-20.9	

x 2" O.D.)

34
36
38
40
42
44
46
48
50

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0306

Hole No. CP05-EAARS-CB-0307

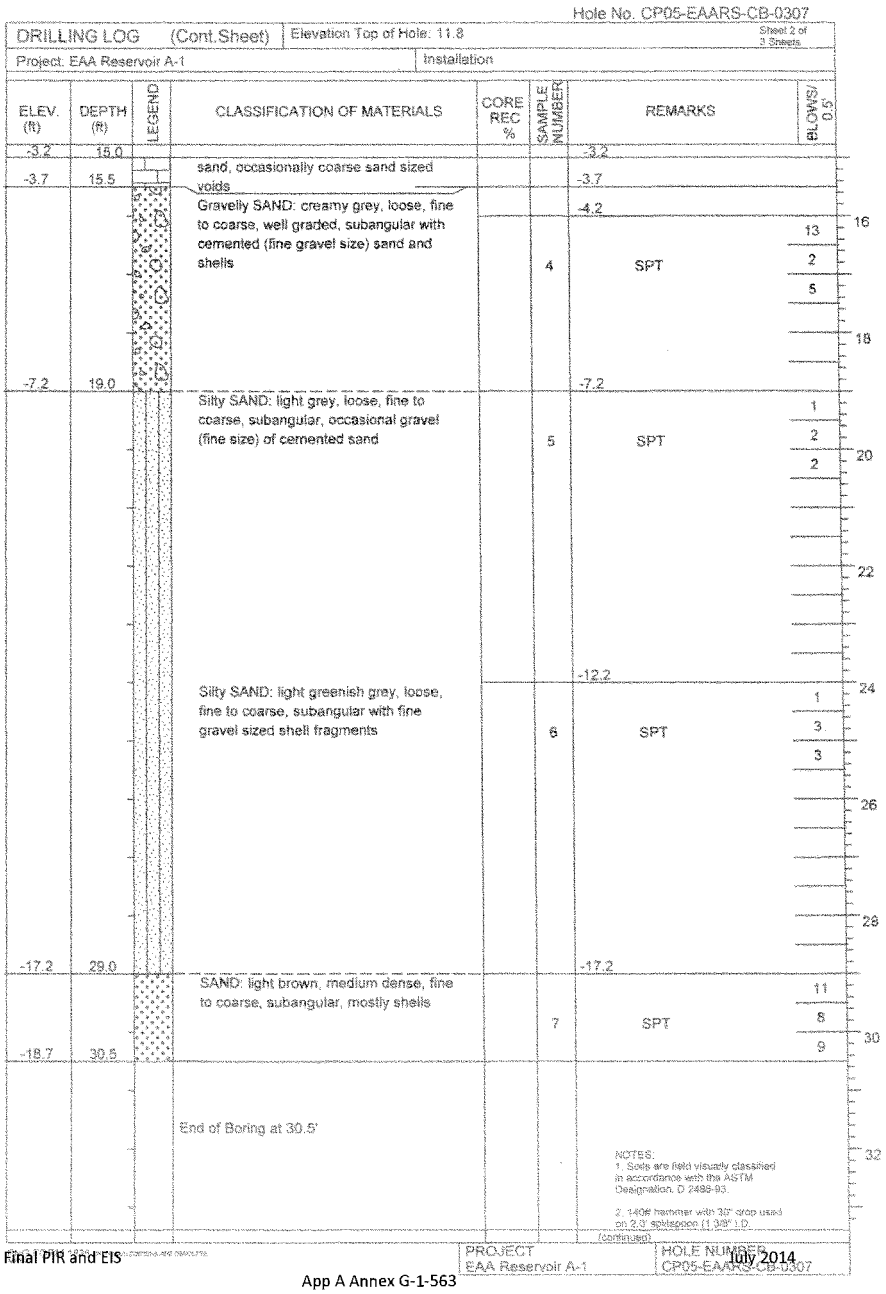
DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N753807.6, E789116.6 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0307		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 7/29/2005 Completed 7/29/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 11.8 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 30.5 ft		19. Inspector: J. Petrie	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
11.8	0.0						
			PEAT, black, firm to stiff SILT		1	11.8 SPT	1 2 3
			PEAT, black, firm SILT		2	9.8 SPT	2 2 3
			PEAT, black, soft to firm CLAY		3	7.8 SPT	2 2 50/1"
6.3	5.5					6.3	
			light creamy grey to grey mottled, medium bedded, moderately strong to strong, fine grained LIMESTONE with trace of shells and irregular voids (coarse sand, fine gravel size)	90 RQD 68%)	1	HQ coring; 3 pieces > 0.4 ft long	
			light creamy grey occasional yellowish brown mottled, medium bedded, strong fine grained LIMESTONE with trace fine to medium sized voids, shelly horizon at base				
			Creamy grey to light grey, moderately strong to strong, fine grained LIMESTONE with laminations (silty) and shelly horizons			1.3	
			Creamy white, medium bedded moderately strong to strong fine grained shelly LIMESTONE	78 (RQD 42%)	2	HQ coring; 3 pieces > 0.4 ft long	
			Creamy grey, medium bedded, moderately strong to strong fine grained LIMESTONE				
			Creamy grey, soft to firm silts, sandy gravel, shelly fragments				
			Creamy grey, medium bedded, moderately strong to strong, fine grained LIMESTONE with some fine				

(continued)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE. MAR 77

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0307



Hole No. CP05-EAARS-CB-0307

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 11.8 | Sheet 2 of 3 Sheets

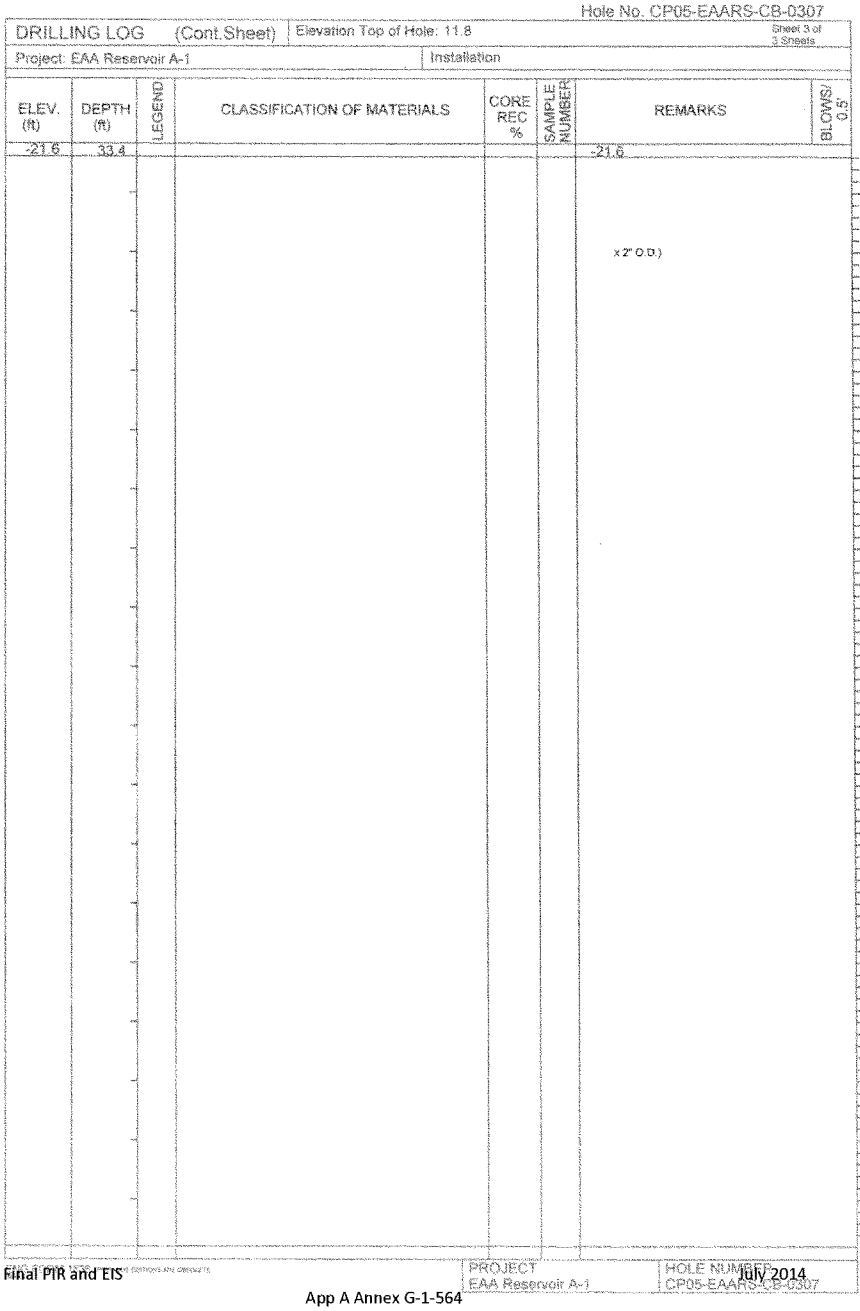
Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-3.2	15.0					-3.2	
-3.7	15.5		sand, occasionally coarse sand sized voids			-3.7	
			Gravelly SAND: creamy grey, loose, fine to coarse, well graded, subangular with cemented (fine gravel size) sand and shells		4	-4.2 SPT	13 2 5
-7.2	19.0		Silty SAND: light grey, loose, fine to coarse, subangular, occasional gravel (fine size) of cemented sand		5	-7.2 SPT	1 2 2
			Silty SAND: light greenish grey, loose, fine to coarse, subangular with fine gravel sized shell fragments		6	-12.2 SPT	1 3 3
-17.2	29.0		SAND: light brown, medium dense, fine to coarse, subangular, mostly shells		7	-17.2 SPT	11 8 9
-18.7	30.5		End of Boring at 30.5'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation, D 2488-93.
2. 140# hammer with 30" drop used on 2.3" splitspoon (1 3/8" I.D.

(continued)

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0307

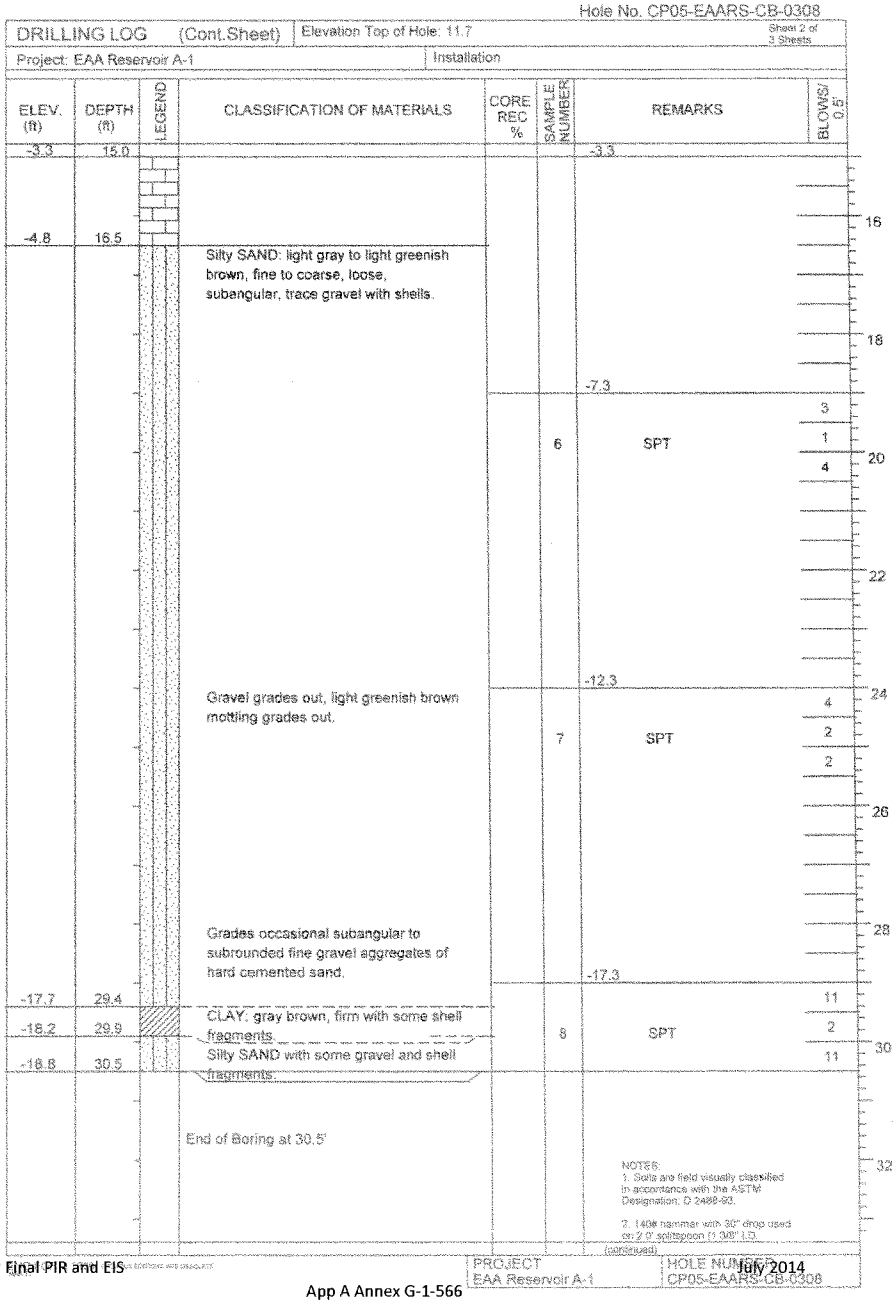

Hole No. CP05-EAARS-CB-0307
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 11.8
Sheet 3 of 3 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-21.6
33.4
-21.6
x 2" O.D.)
34
36
38
40
42
44
46
48
50
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0307

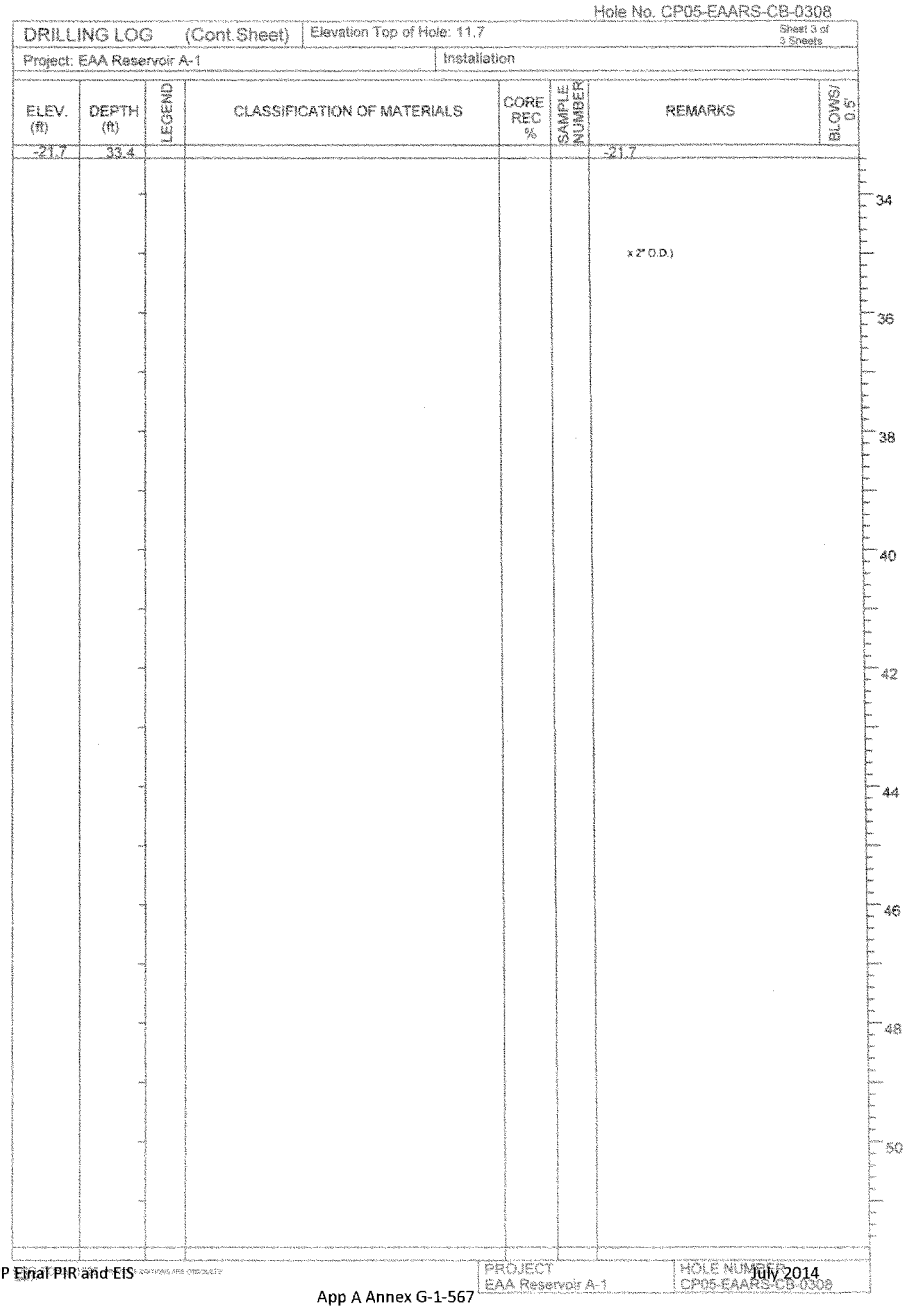
Hole No. CP05-EAARS-CB-0308

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N751544.6, E790701.3 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0308		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 7/28/2005 Completed 7/28/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 11.7 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 30.5 ft		19. Inspector: J. Petrie	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
11.7	0.0		PEAT: black, sandy silt, firm, with subangular fine gravel.		1	11.7 SPT	2, 4, 4
			Grades firm to stiff, gravel grades out.		2	9.7 SPT	3, 4, 2
7.5	4.2		Gravelly SAND: Creamy gray, medium dense, well graded, fine to coarse, subangular, fine gravel size peices of limestone.		3	7.7 SPT	5, 8, 30
5.7	6.0		LIMESTONE: light creamy gray with greenish gray mottling, moderately strong to strong, medium bedded, fine grained with trace shells and voids (coarse sand and fine gravel size).	45 (RQD 30%)	4	5.7 5.5 HQ coring; 2 pieces > 0.4 ft long	50/3"
			Grades to light creamy brown			1.7	
			Grades to light creamy gray	46 (RQD 8%)	5	1.5 HQ coring; 1 piece > 0.4 ft long	6, 50/3"
						-3.3 (continued)	

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0308


Hole No. CP05-EAARS-CB-0308
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 11.7
Sheet 2 of 3 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-3.3
15.0
-4.8
16.5
Silty SAND: light gray to light greenish brown, fine to coarse, loose, subangular, trace gravel with shells.
-7.3
6
SPT
3
1
4
-12.3
Gravel grades out, light greenish brown mottling grades out.
7
SPT
4
2
2
Grades occasional subangular to subrounded fine gravel aggregates of hard cemented sand.
-17.3
-17.7
29.4
CLAY: gray brown, firm with some shell fragments.
-18.2
29.9
8
SPT
11
2
11
Silty SAND with some gravel and shell fragments.
-18.8
30.5
End of Boring at 30.5'
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammar with 30" drop used on 2.0" splitspoon (1.38" I.D.
(continued)
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0308
16
18
20
22
24
26
28
30
32


Hole No. CP05-EAARS-CB-0308
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 11.7
Sheet 3 of 3 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-21.7
33.4
-21.7
x 2" O.D.)
34
36
38
40
42
44
46
48
50
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0308

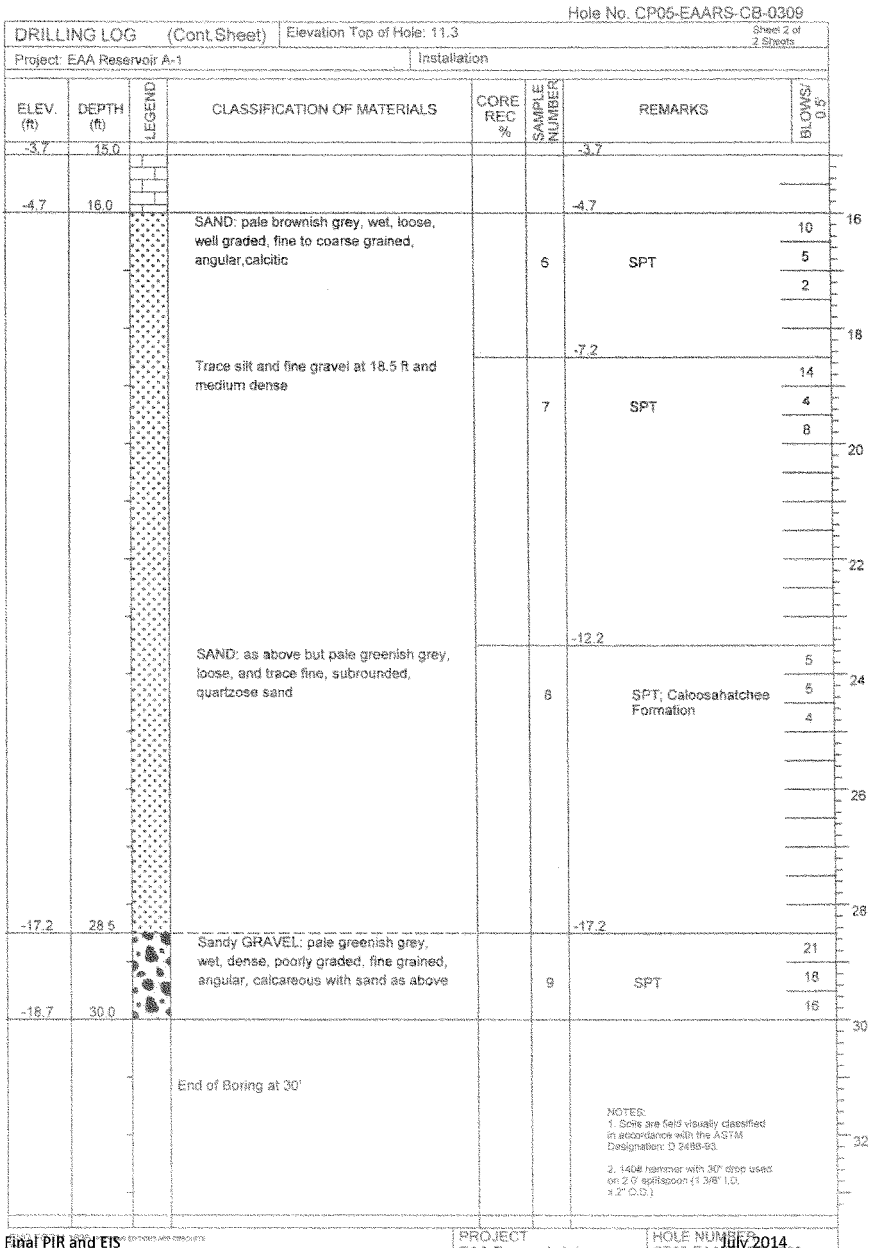
Hole No. CP05-EAARS-CB-0309

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N750755, E790531.8 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0309		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Erik Bluemke		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
7. Thickness of Burden: N/A		16. Date Hole Started 7/20/2005 Completed 7/20/2005	
8. Thickness of cap rock: N/A		17. Elevation Top of Hole: 11.3 (ft)	
9. Depth of hole: 30 ft		18. Total Core Recovery for hole: N/A	
		19. Inspector: N. Holst	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5
11.3	0.0						
			Gravelly SAND: tan to light brown, dry, dense, well graded, road fill		1	11.3 SPT; Note: all calcitic material noted below is at least partly shell fragments	24, 16, 21
9.8	1.5		PEAT		2	9.8 SPT	5, 2, 2
					3	8.3 SPT	2, 2, 3
6.3	5.0		LIMESTONE: caprock, tan to light brown, fine grained, thinly bedded, fossiliferous, vuggy, hard and strong to soft, weak, porous	58 (RQD 32%)	1	6.3 SPT; HQ coring; UCS=5200psi; 4" casing to 5 ft	50/5"
1.3	10.0		Gravelly SAND: pale brownish grey			1.3	
0.6	10.7		LIMESTONE: tan, fine grained, thinly bedded, fossiliferous, vuggy to porous, moderately hard, moderately strong, high core loss is probably poorly cemented sand	22 (RQD 0%)	5	0.3 SPT; hard drilling 10 to 11 ft; Spun in 5 more feet of casing	32, 50/2"
					2	HQ coring	

(continued)

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0309


Hole No. CP05-EAARS-CB-0309
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 11.3
Sheet 2 of 2 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-3.7
15.0
-4.7
16.0
SAND: pale brownish grey, wet, loose, well graded, fine to coarse grained, angular,calcitic
5
SPT
10
5
2
-7.2
Trace silt and fine gravel at 18.5 ft and medium dense
7
SPT
14
4
8
-12.2
SAND: as above but pale greenish grey, loose, and trace fine, subrounded, quartzose sand
6
SPT; Caloosahatchee Formation
5
5
4
-17.2
28.5
Sandy GRAVEL: pale greenish grey, wet, dense, poorly graded, fine grained, angular, calcareous with sand as above
9
SPT
21
18
16
-18.7
30.0
End of Boring at 30'
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D., 2" O.D.)
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0309

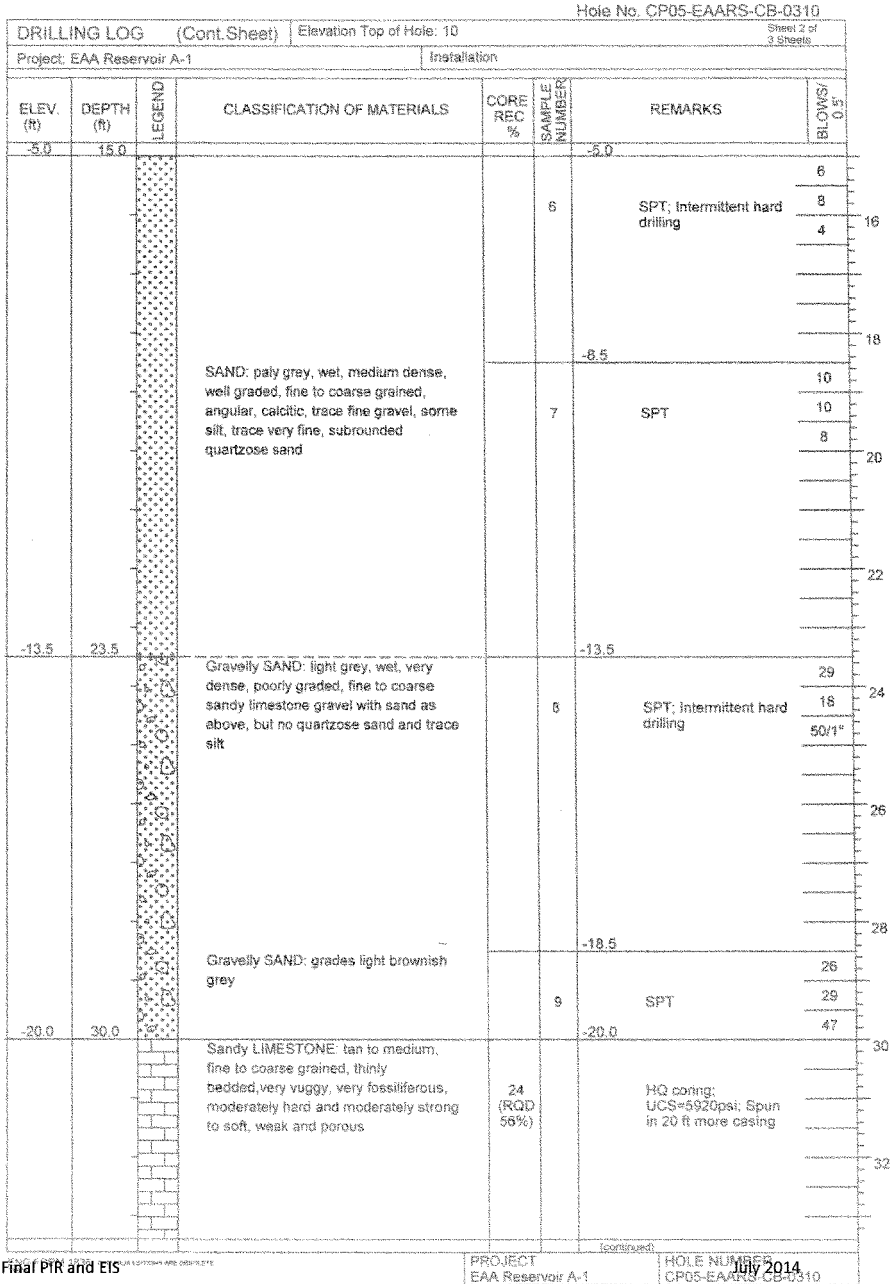
Hole No. CP05-EAARS-CB-0310

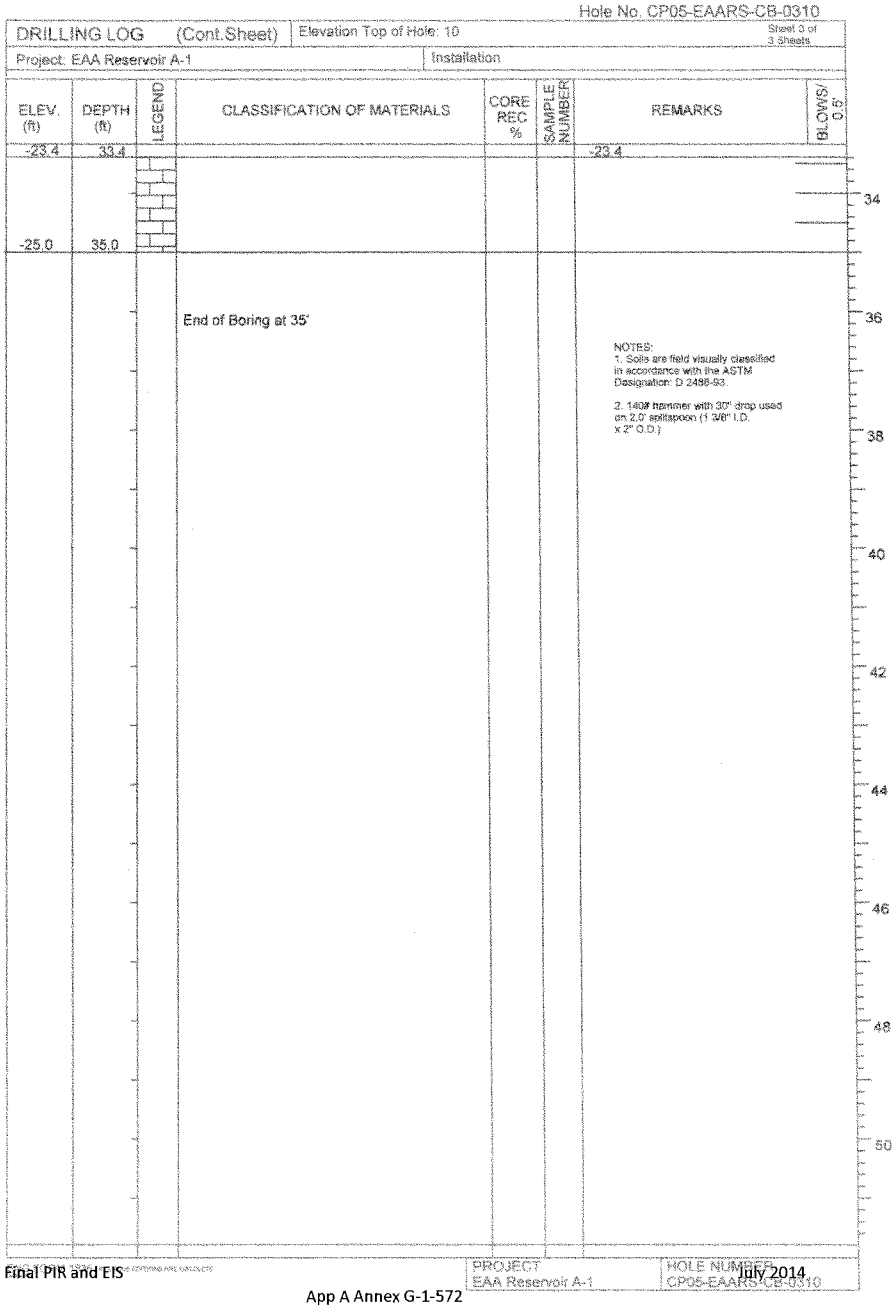
DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N750243.3, E786786.4 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0310		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Erik Bluemke		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
7. Thickness of Burden: N/A		16. Date Hole Started 7/20/2005 Completed 7/20/2005	
8. Thickness of cap rock: N/A		17. Elevation Top of Hole: 10 (ft)	
9. Depth of hole: 35 ft		18. Total Core Recovery for hole: N/A	
		19. Inspector: N. Holst	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
10.0	0.0		Gravelly SAND: tan, dry, dense, angular, well graded, fine to coarse grained, calcitic limestone gravel		1	10.0 SPT; All calcitic material noted below is at least partly shell fragments	44
							24
						8.5	18
							31
					2	SPT	15
7.0	3.0					7.0	6
			Grades to Sandy GRAVEL at 3 ft		3	SPT	9
							9
5.5	4.5					5.5	35
			LIMESTONE: caprock, tan to light brown, fine grained, thinly bedded, fossiliferous, vuggy, hard and strong to soft, weak, porous			5.3	50/3"
				50 (RQD 0%)	1	SPT HQ coring; Hard drilling from 0 to 4.5 ft; Spoon bouncing	
						1.5	
0.5	9.5			100 (RQD 5%)	2	0.5 HQ coring	
			SAND: pale grey, wet, very dense, well graded, fine to coarse grained, angular, calcitic, some limestone gravel, with limestone layers up to 0.7 ft thick			0.0	6
						SPT; Soft from 9.5 to 10 ft	50/1"
				20 (RQD 14%)	3	HQ coring; UCS=2710psi; Spun in 10 ft of 4" casing	
						-5.0	

(continued)

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0310


Hole No. CP05-EAARS-CB-0310
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 10
Sheet 2 of 3 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-5.0
15.0
-5.0
6
8
4
16
6
SPT; Intermittent hard drilling
18
-8.5
SAND: paly grey, wet, medium dense, well graded, fine to coarse grained, angular, calcitic, trace fine gravel, some silt, trace very fine, subrounded quartzose sand
10
10
8
20
7
SPT
22
-13.5
23.5
-13.5
Gravelly SAND: light grey, wet, very dense, poorly graded, fine to coarse sandy limestone gravel with sand as above, but no quartzose sand and trace silt
29
18
50/1"
24
6
SPT; Intermittent hard drilling
26
28
-18.5
Gravelly SAND: grades light brownish grey
26
29
47
30
9
SPT
-20.0
30.0
-20.0
Sandy LIMESTONE: tan to medium, fine to coarse grained, thinly bedded,very vuggy, very fossiliferous, moderately hard and moderately strong to soft, weak and porous
24 (RQD 56%)
HQ coring; UCS=5920psi; Spun in 20 ft more casing
32
(continued)
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0310



Hole No. CP05-EAARS-CB-0310

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 10 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-23.4	33.4					-23.4	
-25.0	35.0		End of Boring at 35'			NOTES: 1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93. 2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)	

34 36 38 40 42 44 46 48 50

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0310

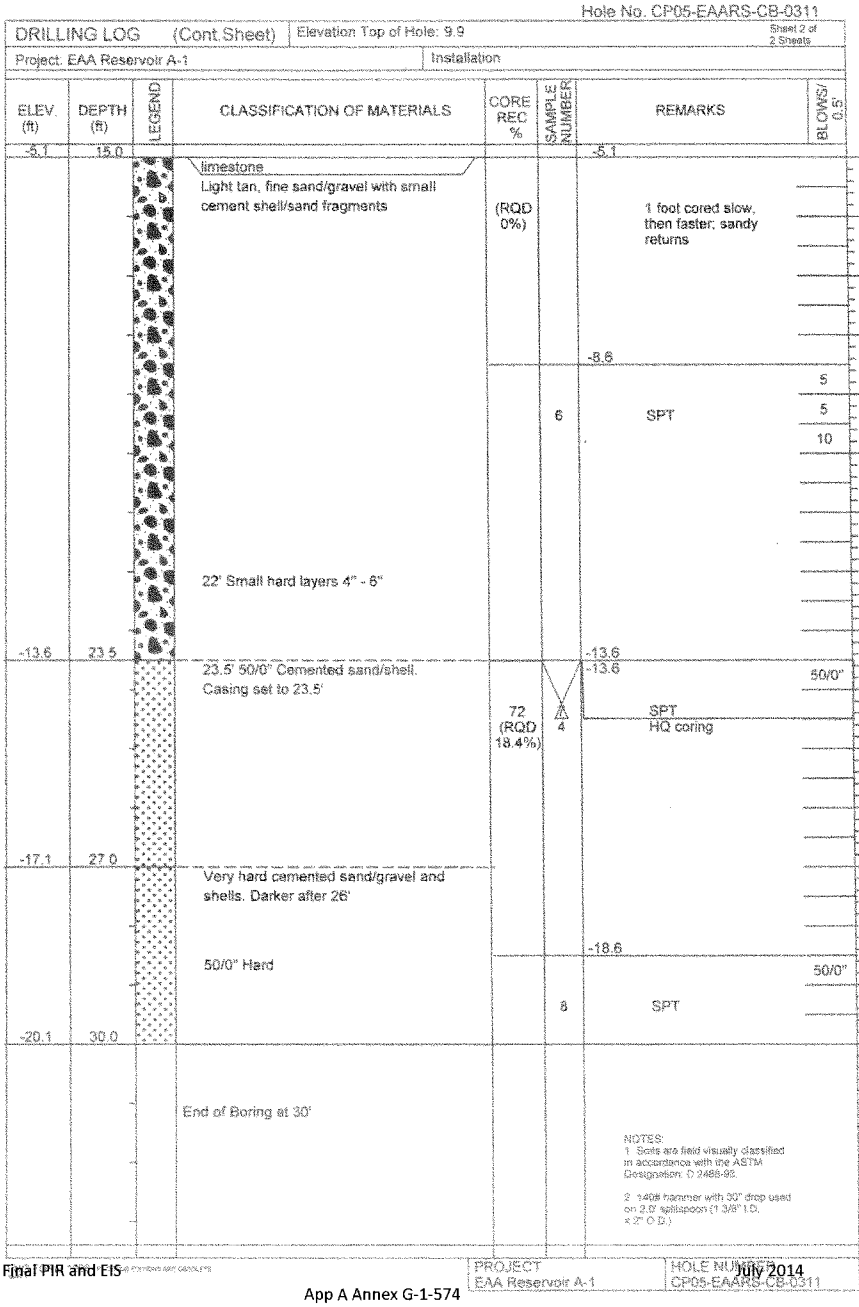
Hole No. CP05-EAARS-CB-0311

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N750237.4, E786933.7 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0311		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Erik Bluemke		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 7/22/2005 Completed 7/22/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 9.9 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 30 ft		19. Inspector: N. Holst	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
9.9	0.0		Sandy GRAVEL and Gravelly SAND: tan, gray and light brown, dry, well graded, fine to coarse, angular, calcitic with angular, fine to coarse limestone gravel, also cobbles and boulders		1	9.9 SPT; All calcitic material noted below is at least partly shell fragments; Road fill	50/4"
						8.4	8
					2	SPT; Hard drilling from 2.1 to 3.5 ft	3
						6.9	50/3"
						6.4 SPT	50/3"
				28 (RQD 0%)	1	HQ coring; Spoon bouncing	
4.4	5.5		LIMESTONE: caprock, tan to light brown, fine grained, thinly bedded, fossiliferous, vuggy, hard and strong to soft, weak and porous				
1.4	8.5		Sandy GRAVEL: as above Pale white, hard, fine grained, quite porous			1.4	
					4	0.7 SPT	18 50/3"
				14 (RQD 10%)	2	HQ coring; 4" casing to 8.5 ft; Hard at 5.7 ft; last 0.3 ft soft	
						-3.6	
-4.1	14.0		Fine Sandy Gravel. Casing set at 13.5 ' for Core Run #3			-4.1 SPT	50/5"
-5.1	15.0		Fractured Limestone, tan, brown dolomite limestone to soft tan vuggy	10	3	HQ coring; 1st 0.5 to	

(continued)

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0311


Hole No. CP05-EAARS-CB-0311
DRILLING LOG (Cont. Sheet)
Elevation Top of Hole: 9.9
Sheet 2 of 2 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-5.1
15.0
limestone
Light tan, fine sand/gravel with small cement shell/sand fragments
(RQD 0%)
1 foot cored slow, then faster; sandy returns
-8.6
6
SPT
5
5
10
22' Small hard layers 4" - 6"
-13.6
23.5
23.5' 50/0" Cemented sand/shell. Casing set to 23.5'
72 (RQD 18.4%)
4
50/0"
SPT
HQ coring
-17.1
27.0
Very hard cemented sand/gravel and shells. Darker after 26'
50/0" Hard
-18.6
8
50/0"
SPT
-20.1
30.0
End of Boring at 30'
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0311

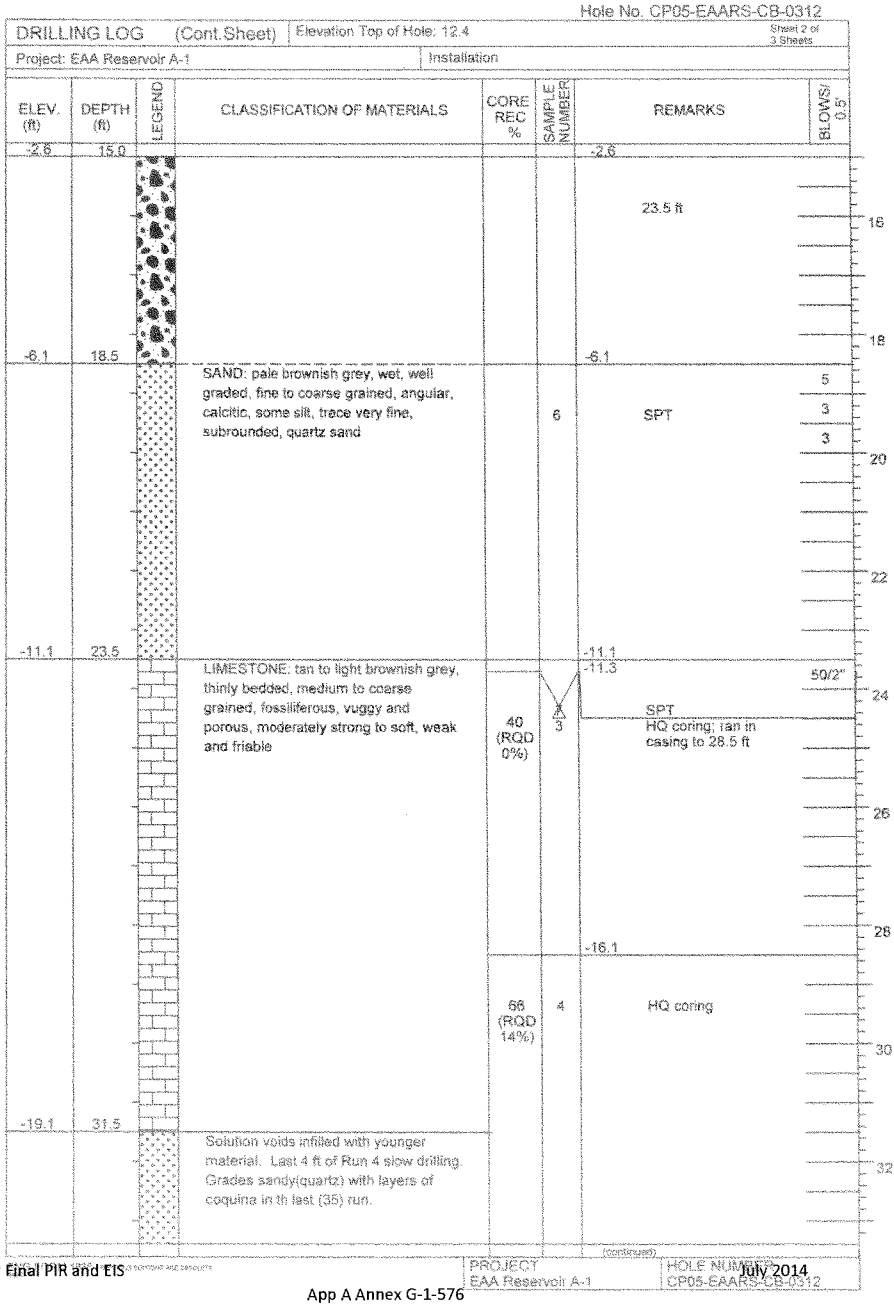
Hole No. CP05-EAARS-CB-0312

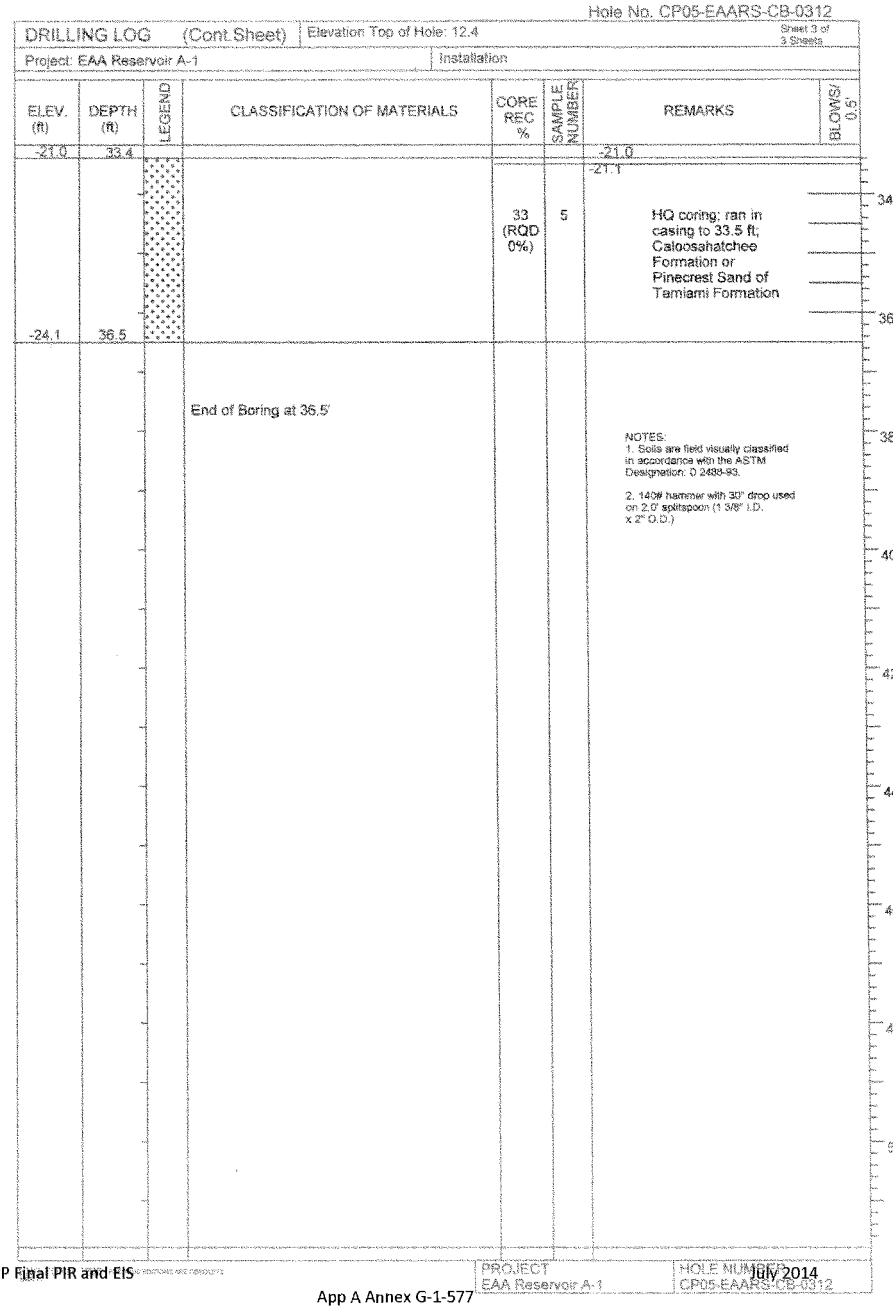
DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N750228, E785146.2 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0312		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Erik Bluemke		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
7. Thickness of Burden: N/A		16. Date Hole Started 7/26/2005 Completed 7/26/2005	
8. Thickness of cap rock: N/A		17. Elevation Top of Hole: 12.4 (ft)	
9. Depth of hole: 36.5 ft		18. Total Core Recovery for hole: N/A	
		19. Inspector: N. Holst	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5
12.4	0.0		Sandy GRAVEL: tan to light brown, dry dense to very dense, well graded, fine to coarse, limestone with well graded, angular fine to coarse, calcitic sand, cobbles and boulders		1	12.4 SPT; All calcitic material noted below is at least partly shell fragments; Road fill 10.9	19 37 25 23
					2	SPT; Grades to gravelly sand 9.4	19 19
					3	SPT; wet at 3 ft; Peat at bottom of SPT 3 7.9	22 26 4
7.9	4.5		LIMESTONE: caprock, tan to light brown, thinly bedded, fine grained, fossiliferous, vuggy, hard and strong to soft, weak and porous	38 (RQD 0%)	1	HQ coring; cased to 4.5 ft 3.9	
				8 (RQD 0%)	A 2	3.9 SPT HQ coring; ran casing to 8.5 ft	50/0"
0.9	11.5		Sandy GRAVEL: as above (0 to 5 ft) but pale brownish grey, wet, poorly graded, fine to coarse grained, angular limestone with fine to coarse, angular, calcitic sand			0.9 soft drilling at 11.5 ft -1.1	
					5	SPT; Intermittent hard drilling to 16.5 ft; then soft drilling to	1 28 50/5"

(continued)

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0312


Hole No. CP05-EAARS-CB-0312
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 12.4
Sheet 2 of 3 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-2.6
15.0
-2.6
23.5 ft
-6.1
18.5
-6.1
SAND: pale brownish grey, wet, well graded, fine to coarse grained, angular, calcitic, some silt, trace very fine, subrounded, quartz sand
6
SPT
5
3
3
-11.1
23.5
-11.1
LIMESTONE: tan to light brownish grey, thinly bedded, medium to coarse grained, fossiliferous, vuggy and porous, moderately strong to soft, weak and friable
-11.3
50/2"
40 (RQD 0%)
3
SPT
HQ coring; ran in casing to 28.5 ft
-16.1
66 (RQD 14%)
4
HQ coring
-19.1
31.5
Solution voids infilled with younger material. Last 4 ft of Run 4 slow drilling. Grades sandy(quartz) with layers of coquina in th last (35) run.
(continued)
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0312



Hole No. CP05-EAARS-CB-0312

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 12.4 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-21.0	33.4					-21.0	
						-21.1	
				33 (RQD 0%)	5	HQ coring; ran in casing to 33.5 ft; Caloosahatchee Formation or Pinecrest Sand of Tamiami Formation	
-24.1	36.5						
			End of Boring at 36.5'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0' splitspoon (1 3/8" I.D. x 2" O.D.)

34 36 38 40 42 44 46 48 50

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0312

Hole No. CP05-EAARS-CB-0313

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N7501184.9, E7782576 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0313		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Erik Bluemke		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 7/27/2005 Completed 7/27/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 11.5 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 30 ft		19. Inspector: N. Holst	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
11.5	0.0		Gravelly SAND: tan to light brown, wet, dense, angular, well graded, fine to coarse grained, calcitic with limestone gravel, cobbles and boulders at 1 ft. Circulation turned black briefly.		1	11.5 10.5 SPT; All calcitic material noted below is at least partly shell fragments; Road fill	10 16 50/3"
				26 (RQD 0%)	1	HQ coring; Ranges from wackestone to grainstone, some coquina; 4" casing to 5 ft	
7.5	4.0		LIMESTONE: caprock, tan to light brown, fine to coarse grained, thinly bedded, fossiliferous, vuggy, strong and hard to soft, weak, and porous				
						5.5	
				24 (RQD 0%)	2	5.5 SPT HQ coring	50/0"
2.5	9.0		Silty SAND: greyish white, wet, very dense, well graded, fine to coarse grained, angular, calcitic				
						0.5	
					3	SPT	3 1 50/5"
-2.0	13.5					-2.0	
			Grades pale brownish grey with less (trace) silt SAND: as above but light brownish grey		4	SPT; grades pale brownish grey with less (trace) silt	3 27 8

(continued)

	PROJECT	HOLE NUMBER
	EAA Reservoir A-1	CP05-EAARS-CB-0313

Hole No. CP05-EAARS-CB-0313

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 11.5 | Sheet 2 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-3.5	15.0		with some clay (plastic fines)			-3.5	
							16
						-7.0	18
			SAND: pale brownish grey, wet, very dense, well graded, fine to coarse grained, mostly angular and calcitic, trace very fine quartz sand, some silt, some fine gravel		5	SPT; Intermittent hard drilling to 23.5 ft	9 29 28
							20
							22
-12.0	23.5					-12.0	
			Sandy LIMESTONE/Calcareous SAND: light to medium grey, fine to coarse grained, very vuggy, porous, fossiliferous, thinly to medium bedded, moderately hard and moderately strong		6	SPT; Caloosahatchee Formation	20 28 50/2"
						-13.5	24
				68 (RQD 52%)	3	HQ coring	
							26
							28
-18.5	30.0						30
			End of Boring at 30'				
							32

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation, D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0313

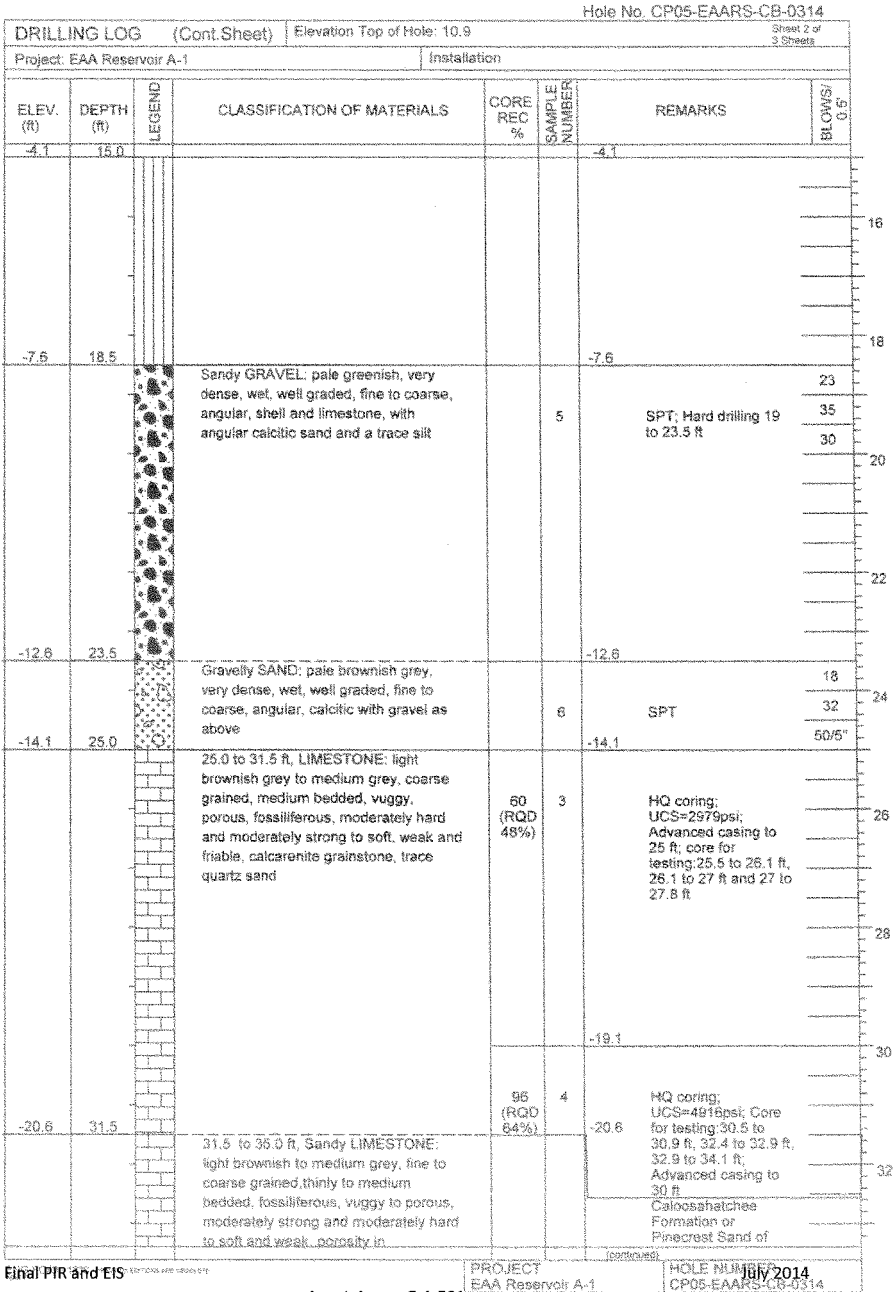
Hole No. CP05-EAARS-CB-0314

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N750202.1, E781140 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0314		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Erik Bluemke		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/15/2005 Completed 8/16/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 10.9 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 35 ft		19. Inspector: N. Holst	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
10.9	0.0					10.9	38
			Gravelly SAND: light brownish grey, well graded, fine to coarse, angular, calcitic with limestone gravel, cobble and boulders		1	SPT; All calcitic material noted below is at least partly shell fragments; Bore hole on boulders, moved 3 ft; Fill	
						9.4	18
					2	SPT	5
						7.9	8
							5
6.9	4.0				3	6.9 SPT	20
			LIMESTONE: caprock, tan to light brown, fine to coarse grained, thinly bedded, vuggy and fossiliferous, strong and hard to soft, weak and porous	22 (RQD 0%)	1	HQ coring	50/1"
						5.4	
						Lost all circulation at 5.5 ft	
						2.4	
1.4	9.5			12 (RQD 0%)	2	HQ coring; Installed 4" casing to 8.5 ft	
			SILT: pale greenish grey, stiff, moist, non-plastic, trace sand, some gravel				
						-2.6	
					4	SPT; Advanced casing to 13.5 ft	8 6 7

(continued)

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0314



Hole No. CP05-EAARS-CB-0314

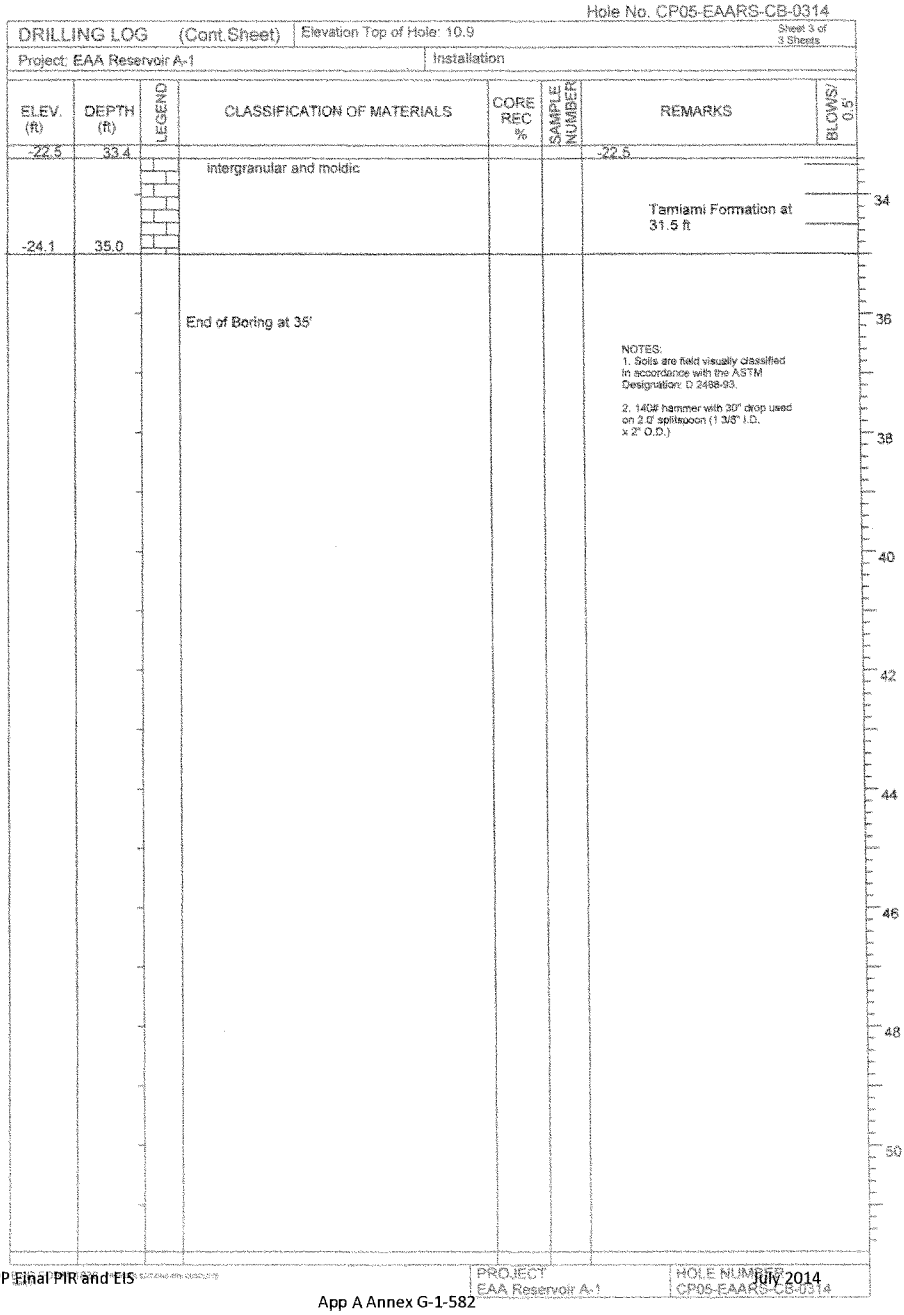
DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 10.9 | Sheet 2 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-4.1	15.0					-4.1	
-7.6	18.5		Sandy GRAVEL: pale greenish, very dense, wet, well graded, fine to coarse, angular, shell and limestone, with angular calcitic sand and a trace silt		5	-7.6 SPT; Hard drilling 19 to 23.5 ft	23 35 30
-12.6	23.5		Gravelly SAND: pale brownish grey, very dense, wet, well graded, fine to coarse, angular, calcitic with gravel as above		6	-12.6 SPT	18 32 50/5"
-14.1	25.0		25.0 to 31.5 ft, LIMESTONE: light brownish grey to medium grey, coarse grained, medium bedded, vuggy, porous, fossiliferous, moderately hard and moderately strong to soft, weak and friable, calcarenite grainstone, trace quartz sand	60 (RQD 48%)	3	-14.1 HQ coring; UCS=2979psi; Advanced casing to 25 ft; core for testing:25.5 to 26.1 ft, 26.1 to 27 ft and 27 to 27.8 ft	
-20.6	31.5		31.5 to 36.0 ft, Sandy LIMESTONE: light brownish to medium grey, fine to coarse grained,thinly to medium bedded, fossiliferous, vuggy to porous, moderately strong and moderately hard to soft and weak, porosity in	96 (RQD 64%)	4	-19.1 -20.6 HQ coring; UCS=4916psi; Core for testing:30.5 to 30.9 ft, 32.4 to 32.9 ft, 32.9 to 34.1 ft; Advanced casing to 30 ft Caloosahatchee Formation or Pinecrest Sand of	

(continued)

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0314



Hole No. CP05-EAARS-CB-0314

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 10.9 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-22.5	33.4		intergranular and moldic			-22.5 Tamiami Formation at 31.5 ft	
-24.1	35.0		End of Boring at 35'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

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PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0314

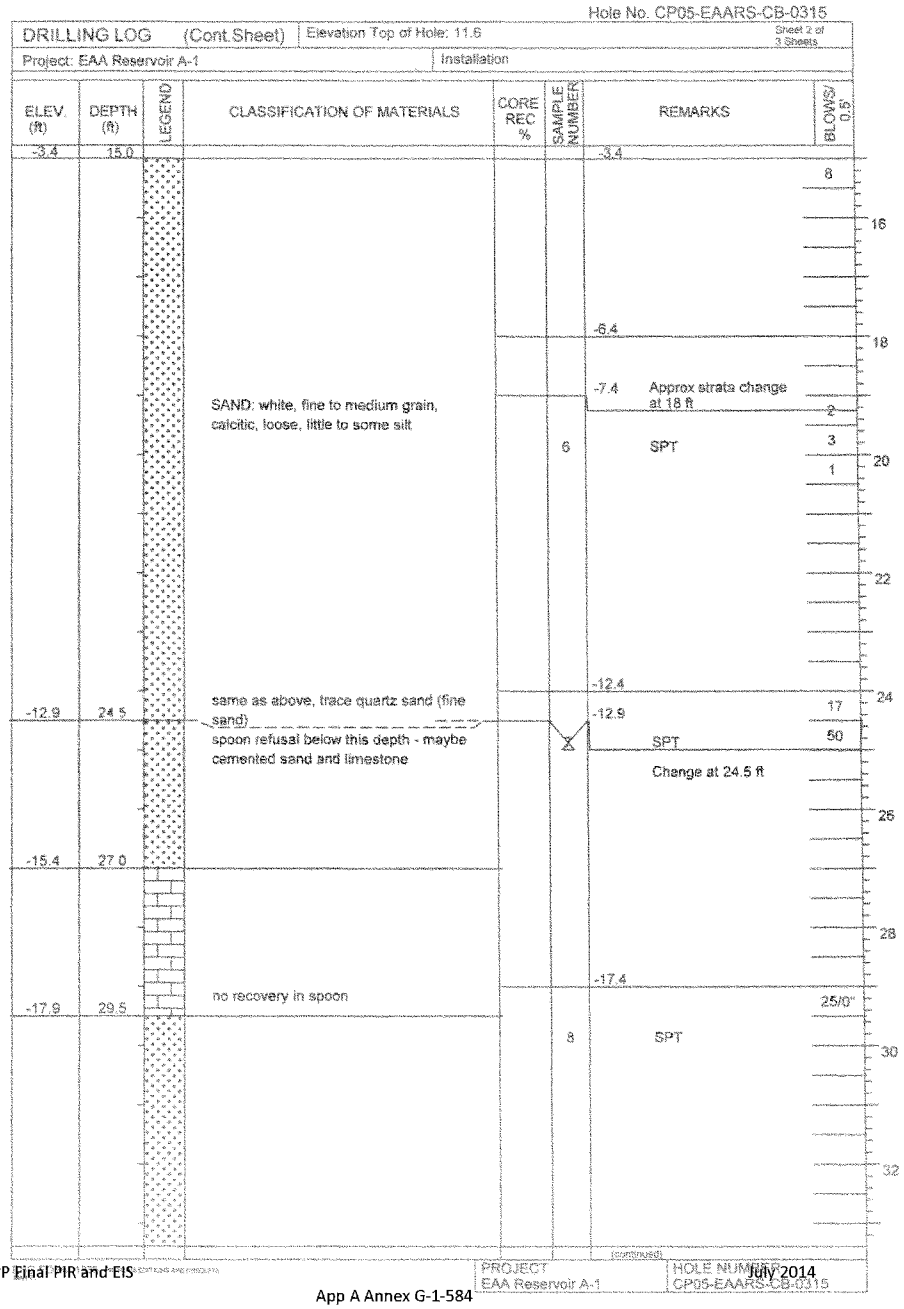
Hole No. CP05-EAARS-CB-0315

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N750186.2, E779486.1 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0315		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/23/2005 Completed 8/23/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 11.6 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 35.5 ft		19. Inspector: B. Levesque	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
11.6	0.0		GRAVEL: light brown, dense, fine to coarse grained, dry, andgular to subangular, little fine to coarse sand, subangular, calcitic, little silt		1	11.6 SPT 10.1	23, 48, 16
					2	SPT	8, 8, 5
8.9	2.7		PEAT: black, soft, moist, medium dense			8.6	
8.1	3.5		GRAVEL: brown to black, moist, fine to coarse grained, subangular, little fine to coarse sand, subangular, calcitic, little to some silt, trace organic		3	SPT	2, 50/3"
6.6	5.0		LIMESTONE: fine grained, hard, slightly vuggy, strong, fossiliferous, brown to grey, thin bedded		1	6.6 HQ coring	
			LIMESTONE: brown to grey brown, fine to coarse grained, weak to moderately strong, thinly bedded, vuggy				
1.6	10.0		SAND: grey to white, fine to coarse grain, calcitic, some fine gravel, little silt, moist, moderately dense		4	1.6 SPT -2.4	25, 9, 8
			same as above		5	SPT	7, 9

(CONTINUED)

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0315


Hole No. CP05-EAARS-CB-0315
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 11.6
Sheet 2 of 3 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-3.4
15.0
SAND: white, fine to medium grain, calcitic, loose, little to some silt
-6.4
-7.4
Approx strata change at 18 ft
6
SPT
-12.4
-12.9
24.5
same as above, trace quartz sand (fine sand)
spoon refusal below this depth - maybe cemented sand and limestone
Change at 24.5 ft
-15.4
27.0
-17.4
-17.9
29.5
no recovery in spoon
8
SPT
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0315

Hole No. CP05-EAARS-CB-0315

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 11.6 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-21.8	33.4					-21.8	
-22.4	34.0		GRAVEL: white to grey, angular, little fine to coarse sand, trace silt		9	SPT	7 50
-23.9	35.5		End of Boring at 35.5'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1.38" I.D. x 2" O.D.)

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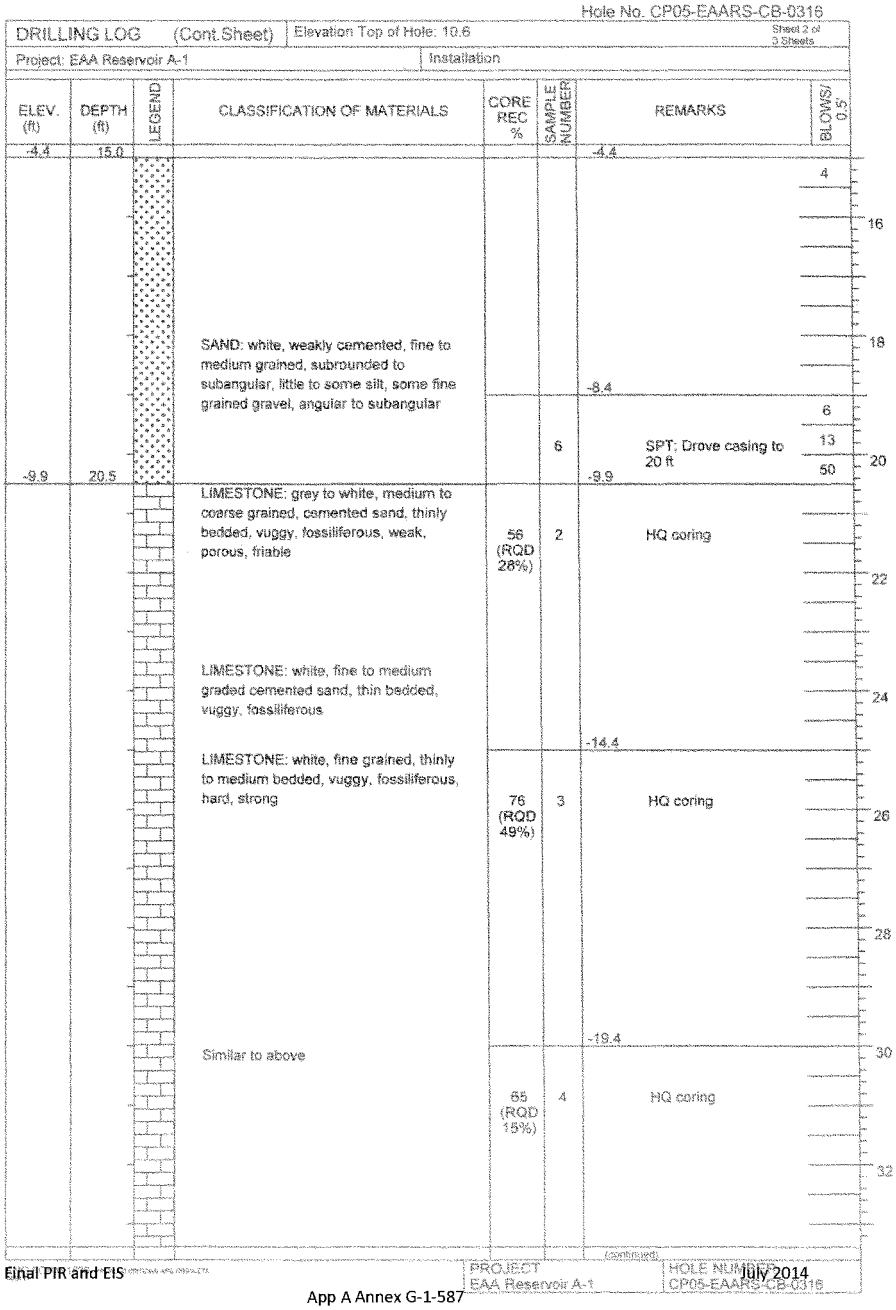
PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0315

Hole No. CP05-EAARS-CB-0316

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N750172.7, E777661 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0316		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/23/2005 Completed 8/23/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 10.6 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 35.5 ft		19. Inspector: B. Levesque	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
10.6	0.0		GRAVEL: light brown, medium dense, well graded, fine to coarse grained, sub angular, some to little sand, little silt		1	10.6 SPT 9.1	21, 14, 13
			GRAVEL: grey brown black, fine to coarse grain, little fine sand, organic (peat), little silt		2	SPT 7.6	3, 4, 4
					3	SPT	4, 7, 50/3"
6.1	4.5		LIMESTONE: grey to brown			5.6	
				38 (RQD 30%)	1	HQ coring; Casing down to 5 ft	
0.6	10.0					0.6	
			SAND: white, fine to medium grained, calcitic, subrounded to sub angular, some to little silt, moderately dense, wet		4	SPT -3.4	6, 7, 4
			SAND: white, fine to medium grained, calcitic, subrounded, some silt, fossiliferous (shell), trace gravel		5	SPT	0, 2

(continued)


Hole No. CP05-EAARS-CB-0316
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 19.6
Sheet 2 of 3 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-4.4
15.0
-9.9
20.5
SAND: white, weakly cemented, fine to medium grained, subrounded to subangular, little to some silt, some fine grained gravel, angular to subangular
-8.4
SPT; Drove casing to 20 ft
LIMESTONE: grey to white, medium to coarse grained, cemented sand, thinly bedded, vuggy, fossiliferous, weak, porous, friable
56 (RQD 28%)
HQ coring
LIMESTONE: white, fine to medium graded cemented sand, thin bedded, vuggy, fossiliferous
-14.4
LIMESTONE: white, fine grained, thinly to medium bedded, vuggy, fossiliferous, hard, strong
76 (RQD 49%)
HQ coring
-19.4
Similar to above
55 (RQD 15%)
HQ coring
(continued)
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0316

Hole No. CP05-EAARS-CB-0316

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 10.6 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-22.8	33.4					-22.8	
-24.9	35.5		End of Boring at 35.5'			NOTES: 1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93. 2. 140# hammer with 30" drop used on 2.0' splitspoon (1 3/8" I.D. x 2" O.D.)	

34 36 38 40 42 44 46 48 50

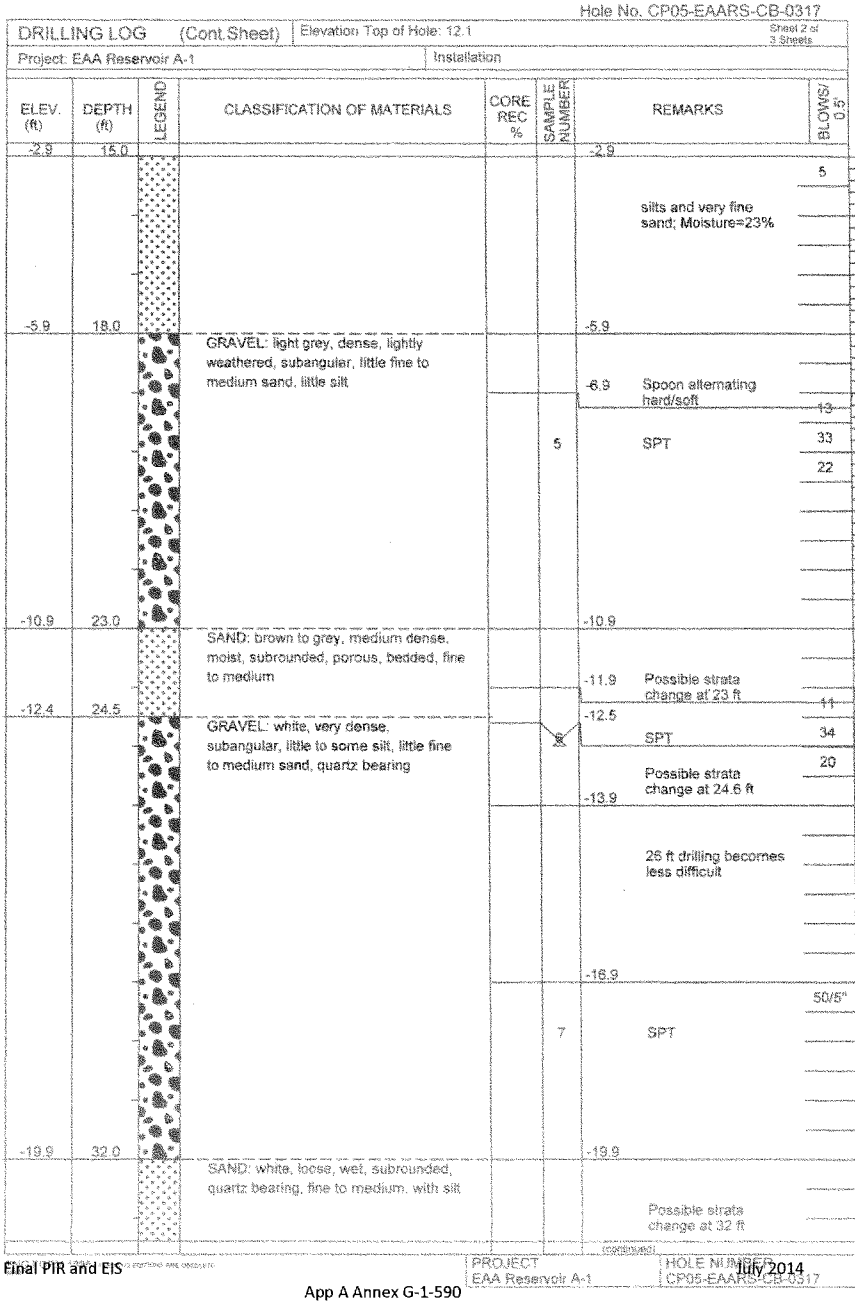
PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0316

Hole No. CP05-EAARS-CB-0317

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N750154.6, E775119.2 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0317		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/22/2005 Completed 8/22/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 12.1 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 35.5 ft		19. Inspector: B. Levesque	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
12.1	0.0						
			GRAVEL: light brown, medium dense, well graded, fine to coarse grained, sub angular, little to some fine sand, little silt (Fill)		1	12.1 SPT; slight organic odour	13 15 10
			GRAVEL: light brown to black-grey, medium dense, fine to coarse grained, subangular, little fine to coarse sand, trace organic (peat)		2	10.1 SPT	4 10 14
			GRAVEL: tan, dense, fine to medium grained, shells		3	8.6 SPT	36 37 50
6.6	5.5		LIMESTONE: pink-brown, coarse-grained, thinnly bedded, vuggy, soft, weak, friable	70 (RQD 8%)	1	6.6 HQ coring	
			LIMESTONE: fine to coarse cemented sand, thinly bedded, soft, weak, friable	60 (RQD 50%)	2	5.1 HQ coring	
0.1	12.0		LIMESTONE: white, fine grained, thinly bedded, fossiliferouss			0.1	
			SAND: white, medium dense, subrounded, moist, calcitic, fine to medium, some to little silt			-1.9	
					4	SPT; ML, Inorganic (continued)	34 13

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0317


Hole No. CP05-EAARS-CB-0317
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 12.1
Sheet 2 of 3 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-2.9
15.0
-2.9
5
silts and very fine sand; Moisture=23%
16
-5.9
18.0
GRAVEL: light grey, dense, lightly weathered, subangular, little fine to medium sand, little silt
-5.9
18
-6.9
Spoon alternating hard/soft
13
5
SPT
33
22
20
22
-10.9
23.0
SAND: brown to grey, medium dense, moist, subrounded, porous, bedded, fine to medium
-10.9
-11.9
Possible strata change at 23 ft
11
24
-12.4
24.5
GRAVEL: white, very dense, subangular, little to some silt, little fine to medium sand, quartz bearing
-12.5
6
SPT
34
20
Possible strata change at 24.6 ft
-13.9
26
25 ft drilling becomes less difficult
28
-16.9
50/5"
7
SPT
30
-19.9
32.0
SAND: white, loose, wet, subrounded, quartz bearing, fine to medium, with silt
-19.9
32
Possible strata change at 32 ft
(continued)
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0317

Hole No. CP05-EAARS-CB-0317

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 12.1 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-21.3	33.4					-21.3	
						-21.9	
-23.4	35.5				8	SPT; SP-SM; poorly graded sand with silt; Moisture=25%	4 4 4
			End of Boring at 35.5'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0' splitspoon (1 3/8" I.D. x 2" O.D.)

34 36 38 40 42 44 46 48 50

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0317

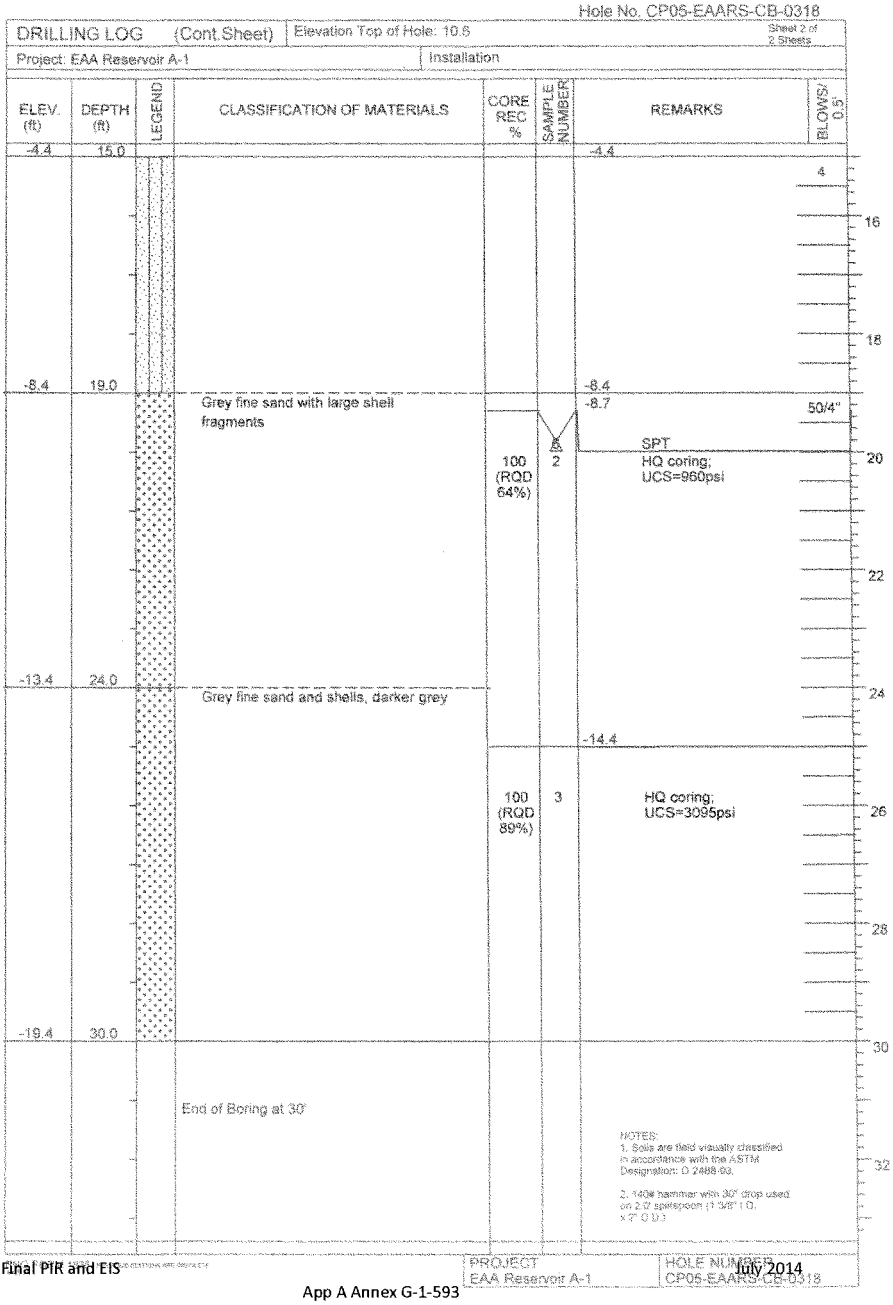
Hole No. CP05-EAARS-CB-0318

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N750133.1, E771124.2 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0318		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/18/2005 Completed 8/18/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 10.6 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 30 ft		19. Inspector: P. Petrey	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5
10.6	0.0						
			Road fill material (broke Limestone)		1	10.6 SPT	26 28 18
8.6	2.0					8.6	
			Peat (muck layer)		2	SPT	3 2 3
6.1	4.5					6.6	
			Dark grey with Limestone fragments and some Clay (Marl)		3	5.6 SPT	12 50/5"
				51 (RQD 32%)	1	HQ coring	
			Hard Limestone				
0.6	10.0					0.6	
			Light grey, coarse sand with cemented sand and shell fragments		4	SPT	2 6 29
-3.4	14.0					-3.4	
			Grey, fine sand and silt		5	SPT	3 7

(continued)

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0318


Hole No. CP05-EAARS-CB-0318
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 10.8
Sheet 2 of 2 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-4.4
15.0
-8.4
19.0
Grey fine sand with large shell fragments
-8.7
50/4"
SPT
HQ coring; UCS=960psi
100 (RQD 64%)
2
-13.4
24.0
Grey fine sand and shells, darker grey
-14.4
100 (RQD 89%)
3
HQ coring; UCS=3095psi
-19.4
30.0
End of Boring at 30'
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0318

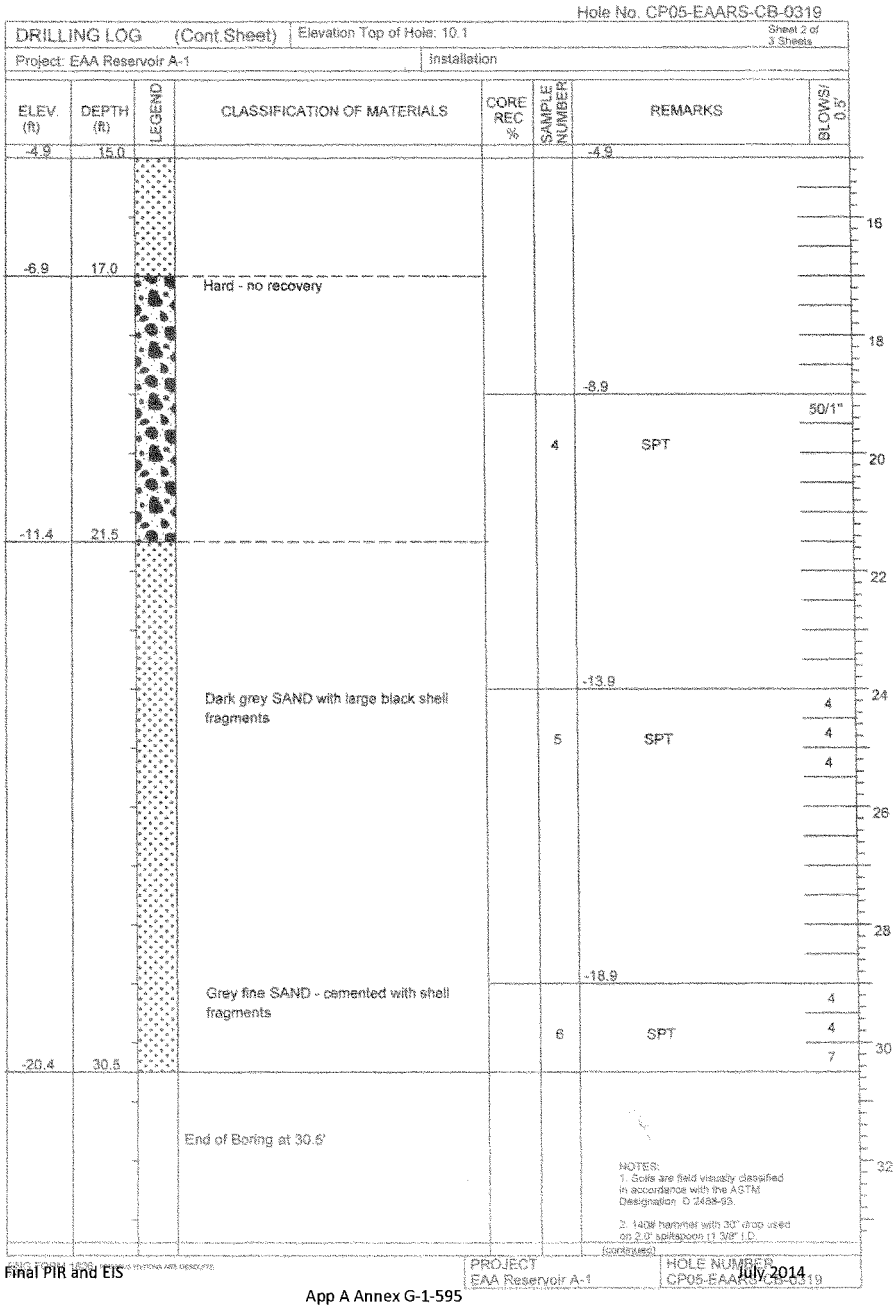
Hole No. CP05-EAARS-CB-0319

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N750098.3, E767140.5 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Noderse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0319		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/18/2005 Completed 8/18/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 10.1 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 30.5 ft		19. Inspector: P. Petrey	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
10.1	0.0						
			Road fill material		1	10.1 SPT	10 12 9
						8.1	
					2	SPT	25 15 50/2"
7.1	3.0					6.6	
			Hard LIMESTONE - some soft limestone layers	45 (RQD 22%)	1	HQ coring	
						1.6	
				48 (RQD 0%)	2	HQ coring	
-1.9	12.0					-3.4	
			Grey soft SAND / shell with shell fragments, silt		3	SPT	6 4 4

(continued)

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0319


Hole No. CP05-EAARS-CB-0319
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 10.1
Sheet 2 of 3 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-4.9
15.0
-6.9
17.0
Hard - no recovery
-8.9
50/1"
4
SPT
-11.4
21.5
-13.9
Dark grey SAND with large black shell fragments
5
SPT
4
4
4
-18.9
Grey fine SAND - cemented with shell fragments
6
SPT
4
4
7
-20.4
30.5
End of Boring at 30.5'
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D.
(continued)
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0319

Hole No. CP05-EAARS-CB-0319

DRILLING LOG (Cont.Sheet)	Elevation Top of Hole: 10.1	Sheet 3 of 3 Sheets
Project: EAA Reservoir A-1	Installation	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-23.3	33.4					-23.3	

x 2" O.D.)

34
36
38
40
42
44
46
48
50

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0319

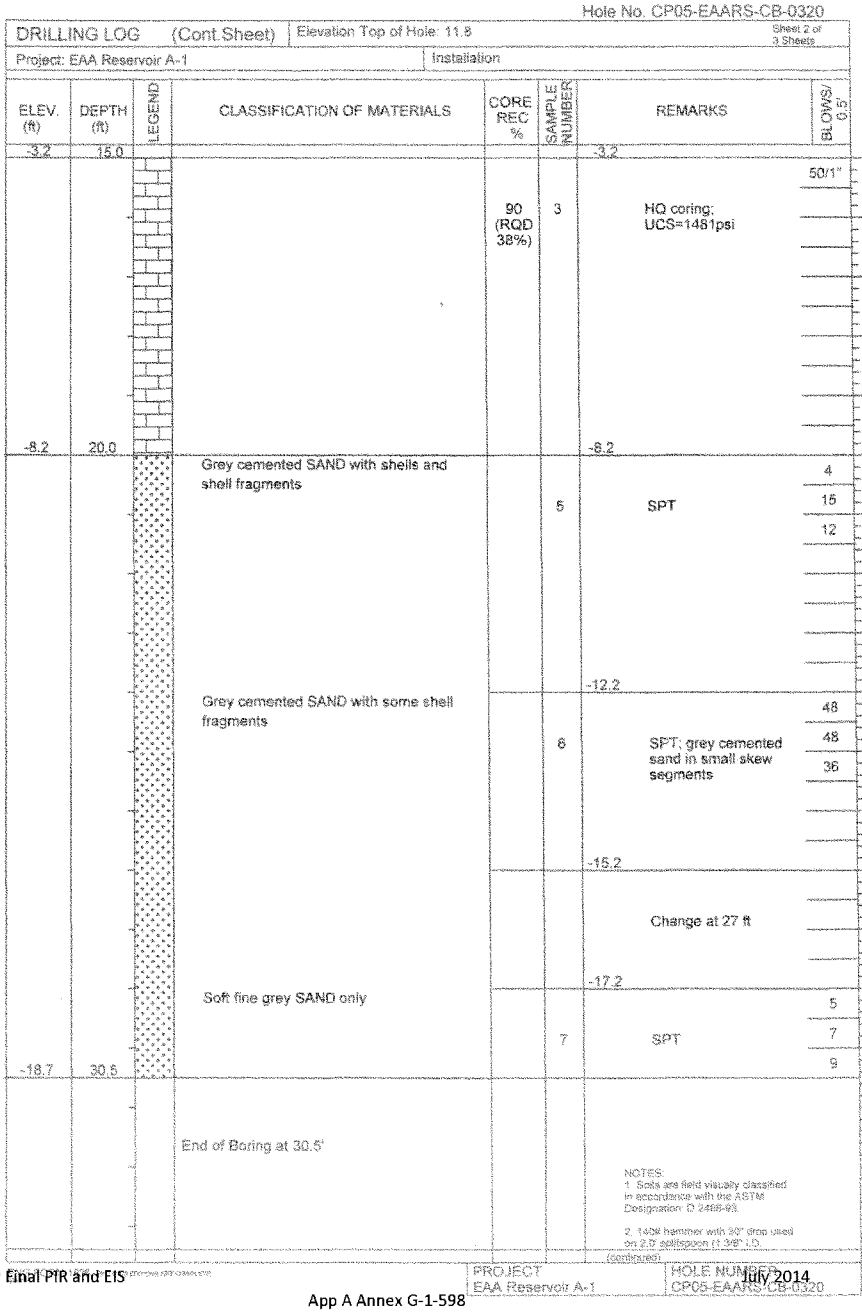
Hole No. CP05-EAARS-CB-0320

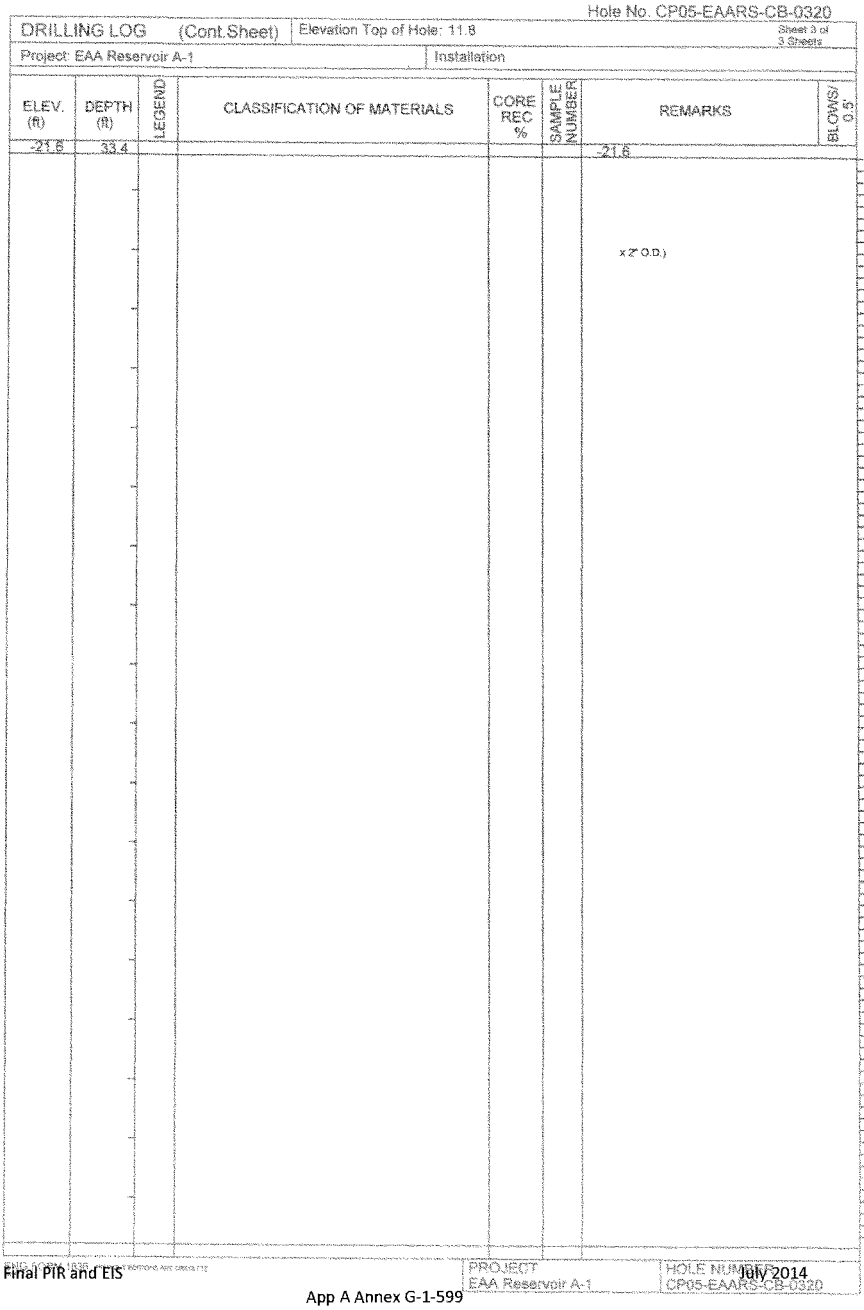
DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N750089, E764793 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0320		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
7. Thickness of Burden: N/A		16. Date Hole Started 8/17/2005 Completed 8/17/2005	
8. Thickness of cap rock: N/A		17. Elevation Top of Hole: 11.8 (ft)	
9. Depth of hole: 30 ft		18. Total Core Recovery for hole: N/A	
		19. Inspector: P. Petrey	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
11.8	0.0						
			Road fill material		1	11.8 SPT	19 21 18
10.3	1.5						
			soft road fill, Peat (muck layer)		2	9.8 SPT	8 10 2
						7.8	
6.8	5.0				3	6.8 SPT	3 50/4"
			LIMESTONE - caprock	45 (RQD 17%)	1	HQ coring	
						1.8	
					2	HQ coring	
-2.2	14.0					-2.2	
			Soft grey limestone and shell fragments some fine sand		4	-3.2 SPT	4 4

(continued)

PROJECT: EAA Reservoir A-1 HOLE NUMBER: CP05-EAARS-CB-0320


Hole No. CP05-EAARS-CB-0320
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 11.8
Sheet 2 of 3 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-3.2
15.0
-3.2
50/1"
90 (RQD 38%)
3
HQ coring; UCS=1481psi
16
18
-8.2
20.0
-8.2
Grey cemented SAND with shells and shell fragments
20
4
5
SPT
15
12
22
-12.2
Grey cemented SAND with some shell fragments
24
48
6
SPT; grey cemented sand in small skew segments
48
36
26
-15.2
Change at 27 ft
28
-17.2
Soft fine grey SAND only
5
7
SPT
7
9
30
-18.7
30.5
End of Boring at 30.5'
32
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.5" splitspoon (1 3/8" I.D. (continued)
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0320

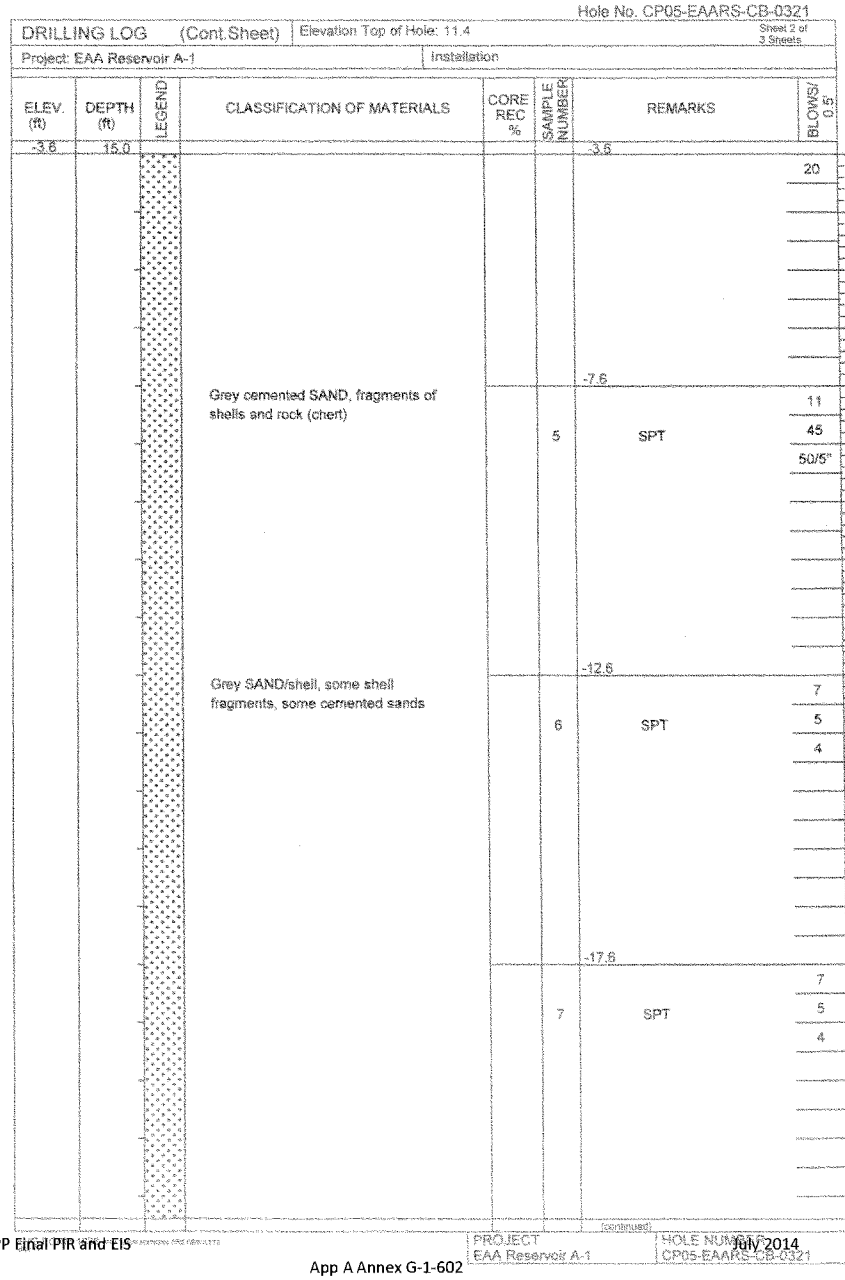

Hole No. CP05-EAARS-CB-0320
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 11.8
Sheet 3 of 3 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-21.6
33.4
-21.6
x 2" O.D.)
34
36
38
40
42
44
46
48
50
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0320

APPENDIX 2
SUPPLEMENTAL BORINGS AND PIEZOMETER INSTALLATION LOGS: 321-340

Hole No. CP05-EAARS-CB-0321

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N750076.6, E763011.9 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0321		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/16/2005 Completed 8/16/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 11.4 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 35.5 ft		19. Inspector: P. Petrey	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
11.4	0.0		Road fill material		1	11.4 SPT	8 9 9
					2	9.4 SPT	50/2"
					3	7.4 SPT	34 50/1"
5.9	5.5		LIMESTONE: caprock	8 (RQD 8%)	1	5.9 HQ coring	
-0.1	11.5		Grey cement SAND with shells		4	0.9 -2.6 SPT	4 48


Hole No. CP05-EAARS-CB-0321
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 11.4
Sheet 2 of 3 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-3.6
15.0
-3.6
20
16
18
-7.6
Grey cemented SAND, fragments of shells and rock (chert)
11
45
5
SPT
50/5"
20
22
-12.6
Grey SAND/shell, some shell fragments, some cemented sands
24
7
5
6
SPT
4
26
28
-17.6
7
5
7
SPT
4
30
32
(continued)
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0321

Hole No. CP05-EAARS-CB-0321

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 11.4 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-22.0	33.4					-22.0	
			Grey fine SAND with cemented sands			-22.6	
					8	SPT	3 3 4
-24.1	35.5		End of Boring at 35.5'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

34 36 38 40 42 44 46 48 50

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0321

Hole No. CP05-EAARS-CB-0322

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N750065.2, E761081.7 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0322		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/15/2005 Completed 8/15/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 12.9 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 35.5 ft		19. Inspector: E. Requejo	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
12.9	0.0		SAND: top fill, medium to fine grained, sand, dark gray color, with traces of limestone		1	12.9 SPT	21 18 17
					2	10.9 SPT	30 19 15
8.9	4.0		Muck: dark black color, very light, organic		3	8.9 SPT; Less compacted	5 4 10
6.9	6.0		SAND: light brown, slightly silty, fine grained, with some limestone fragments and traces of shell calcitic		4	6.9 SPT; water table encountered at 6 ft; Lost circulation	6 5 12
4.9	8.0		Core recovered 2'4"	36 (RQD 17%)	1	4.9 HQ coring	
-0.1	13.0		SAND: pale gray, coarse grained sand, angular, with cemented sand, and traces of shell		5	-0.1 SPT	3 3 2

0 2 4 6 8 10 12 14

(continued)

ENG. FORM 1836	PREVIOUS EDITIONS ARE OBSOLETE	PROJECT	HOLE NUMBER
		EAA Reservoir A-1	CP05-EAARS-CB-0322

Hole No. CP05-EAARS-CB-0322

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 12.9 | Sheet 2 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-2.1	15.0					-2.1	
-3.6	16.5		Hard layer			-3.6	16
-5.1	18.0		Core: 18 ft to 23 ft			No circulation -5.1	18
			Hard		2	HQ coring	
			Soft				20
			Moderately hard				
			soft				22
-10.1	23.0		soft			-10.1	
			Gray and gray brown sand and cemented sand, some small shells		6	SPT	11 7 8 24
							26
							28
			Gray fine sand			-16.1	
					7	SPT; soft	4 3 4 30
							32

(continued)

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0322

Hole No. CP05-EAARS-CB-0322

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 12.9 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-20.5	33.4					-20.6	
			Grey fine sand with large pieces of cemented sand			-21.1	5
					8	SPT	7
-22.6	35.5						9
			End of Boring at 35.5'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

34 36 38 40 42 44 46 48 50

ENG FORM 1836, 2000/2 EDITIONS ARE OBSOLETE. PROJECT EAA Reservoir A-1 HOLE NUMBER CP05-EAARS-CB-0322

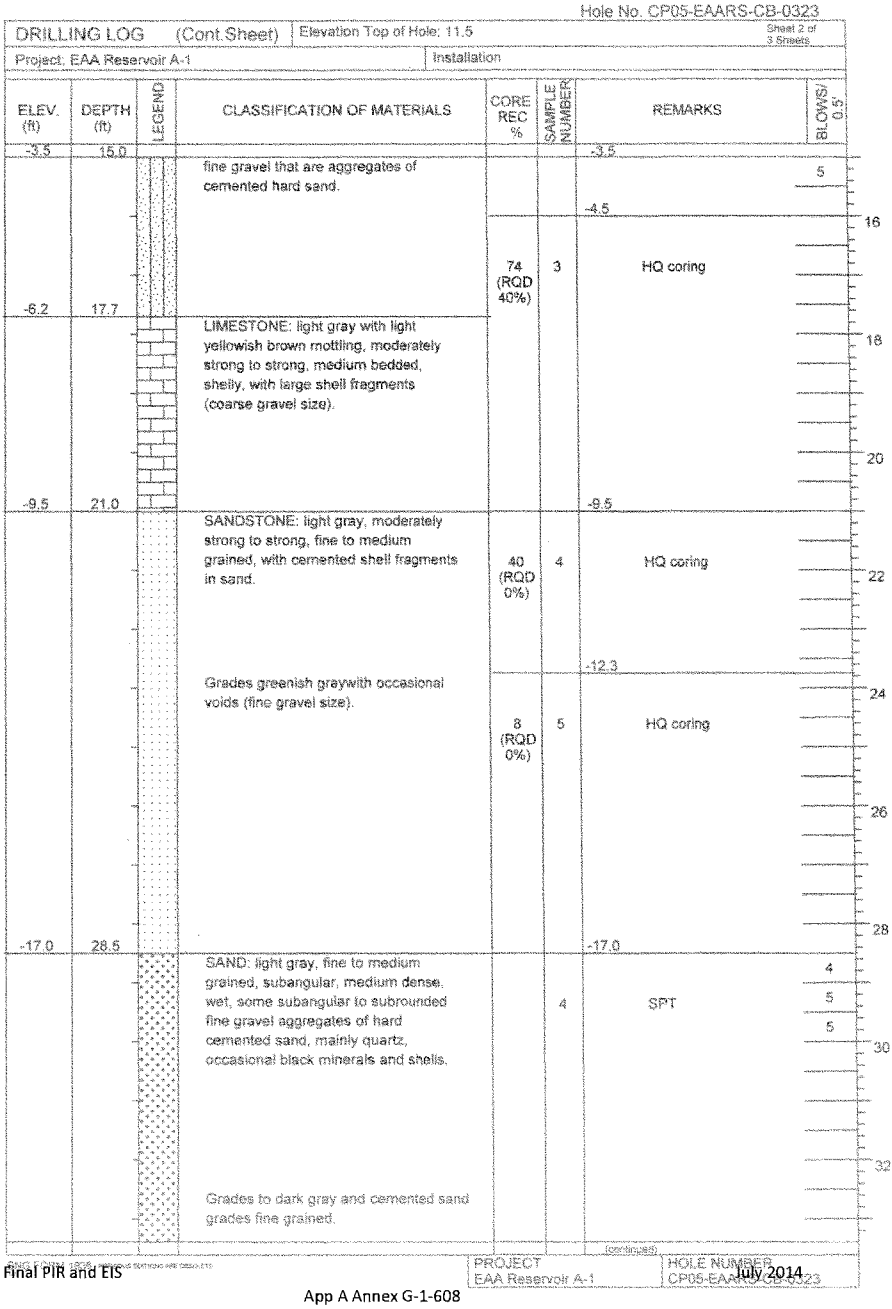
Hole No. CP05-EAARS-CB-0323

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N749972.4, E759265.6 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0323		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 7/27/2005 Completed 7/27/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 11.5 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 35 ft		19. Inspector: J. Petrie	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
11.5	0.0		Sandy GRAVEL: light creamy white with light brown and black mottling, fine and occasionally coarse, dense, subangular, dry (FILL)		1	11.5 SPT	13, 26, 14
10.0	1.5		Silty SAND: light creamy gray, fine to coarse, well graded, subangular to subrounded, dry, medium dense (Fill)		2	9.5 SPT	14, 12, 6
8.0	3.5		PEAT			7.5	
7.5	4.0		LIMESTONE: Creamy white with yellowish brown stains, moderately strong to strong, medium bedded, fine grained, with some shells and irregular shaped voids (burrows, roots). LIMESTONE: Creamy white with yellowish brown stains, moderately strong to strong, medium bedded, fine grained, with some shells and irregular shaped voids (burrows, roots).	60 (RQD 38%)	1	HQ coring; 6" peat above rock at 4 ft	
			Grades light gray and thinly bedded			2.5	
			Grades light creamy brown, medium bedded.	28 (RQD 20%)	2	HQ coring	
-2.5	14.0		Silty SAND: light gray, fine to coarse grained, subangular, wet, shelly, medium dense, with some subangular		3	-2.5 SPT	8, 5

(continued)

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0323


Hole No. CP05-EAARS-CB-0323
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 11.5
Sheet 2 of 3 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-3.5
15.0
fine gravel that are aggregates of cemented hard sand.
-3.5
5
-4.5
16
74 (RQD 40%)
3
HQ coring
-6.2
17.7
LIMESTONE: light gray with light yellowish brown mottling, moderately strong to strong, medium bedded, shelly, with large shell fragments (coarse gravel size).
18
20
-9.5
21.0
SANDSTONE: light gray, moderately strong to strong, fine to medium grained, with cemented shell fragments in sand.
-9.5
40 (RQD 0%)
4
HQ coring
22
-12.3
Grades greenish graywith occasional voids (fine gravel size).
8 (RQD 0%)
5
HQ coring
24
26
-17.0
28.5
SAND: light gray, fine to medium grained, subangular, medium dense, wet, some subangular to subrounded fine gravel aggregates of hard cemented sand, mainly quartz, occasional black minerals and shells.
-17.0
4
4
SPT
5
5
30
Grades to dark gray and cemented sand grades fine grained.
32
(continued)
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0323

Hole No. CP05-EAARS-CB-0323

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 11.5 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-21.9	33.4					-21.9	
						-22.5	
							5
					5	SPT	4
-24.0	35.5						6
			End of Boring at 35.5'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0' splitspoon (1 3/8" I.D. x 2" O.D.)

34 36 38 40 42 44 46 48 50

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0323

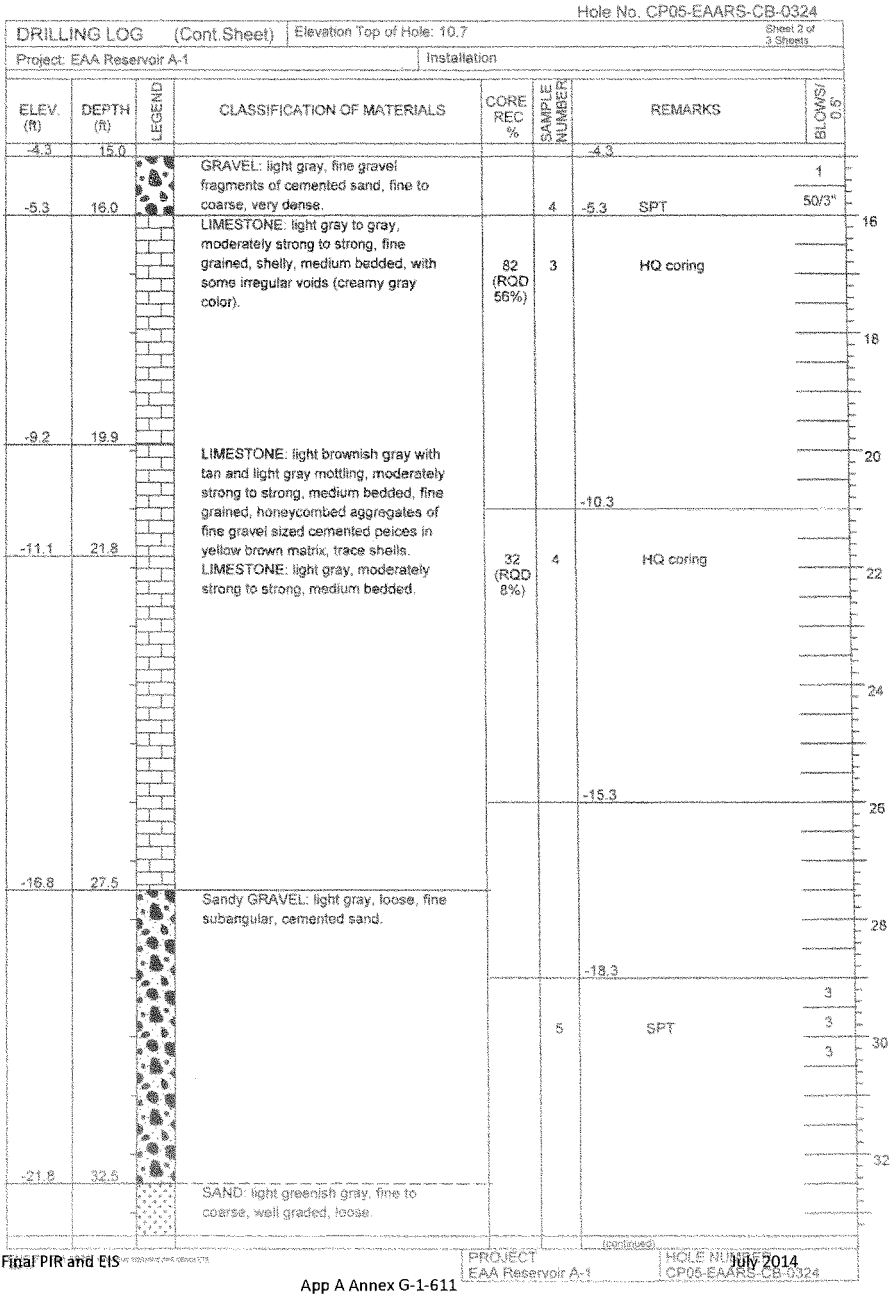
Hole No. CP05-EAARS-CB-0324

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N751804.4, E758607.9 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0324		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 7/26/2005 Completed 7/27/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 10.7 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 35.5 ft		19. Inspector: J. Petrie	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/0.5'
10.7	0.0						
			Silty SAND: light gray with creamy gray and black mottling, fine to coarse grained, well graded, subangular, dense, with fine and coarse gravel, dry (FILL)		1	10.7 SPT	15 43 50/2"
8.7	2.0					8.7	
			Sandy GRAVEL: creamy gray, fine to coarse grained, well graded, dense, sand is fine to coarse grained, with some silt and shell fragments (fill).		2	SPT	6 24 13
6.7	4.0					6.7	
6.0	4.8		GRAVEL: light brown, fine to coarse grained, angular, dense, some silty sand.		3	6.0 SPT	8 50/4"
			LIMESTONE: creamy white with tan mottling, moderately strong to strong, medium bedded, fine grained, with some shells and irregular shaped voids.	70 (RQD 44%)	1	HQ coring	
			Grades some coarse sand sized voids.				
			Grades gray, very shelly, thinly bedded, moderately strong Grades light creamy gray with tan mottling, medium bedded with thin partings of silty/sandy material.				
						0.9	
			Grades to thinly bedded. Thin partings grade out.	10 (RQD 0%)	2	HQ coring	
-4.3	15.0					-4.1 -4.3	

(continued)

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0324


Hole No. CP05-EAARS-CB-0324
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 10.7
Sheet 2 of 3 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-4.3
15.0
GRAVEL: light gray, fine gravel fragments of cemented sand, fine to coarse, very dense.
-5.3
16.0
LIMESTONE: light gray to gray, moderately strong to strong, fine grained, shelly, medium bedded, with some irregular voids (creamy gray color).
82 (RQD 56%)
3
HQ coring
-9.2
19.9
LIMESTONE: light brownish gray with tan and light gray mottling, moderately strong to strong, medium bedded, fine grained, honeycombed aggregates of fine gravel sized cemented peices in yellow brown matrix, trace shells.
LIMESTONE: light gray, moderately strong to strong, medium bedded.
-11.1
21.8
32 (RQD 8%)
4
HQ coring
-16.8
27.5
Sandy GRAVEL: light gray, loose, fine subangular, cemented sand.
-21.8
32.5
SAND: light greenish gray, fine to coarse, well graded, loose.
5
SPT
1
50/3"
3
3
3
-4.3
-5.3
SPT
-10.3
-15.3
-18.3
16
18
20
22
24
25
28
30
32
(continued)
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0324

Hole No. CP05-EAARS-CB-0324

DRILLING LOG (Cont.Sheet)	Elevation Top of Hole: 10.7	Sheet 3 of 3 Sheets
Project: EAA Reservoir A-1	Installation	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-22.7	33.4					-22.7	
						-23.3	
					6	SPT	1 3 2
-24.8	35.5						
			End of Boring at 35.5'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0' splitspoon (1 3/8" I.D. x 2" O.D.)

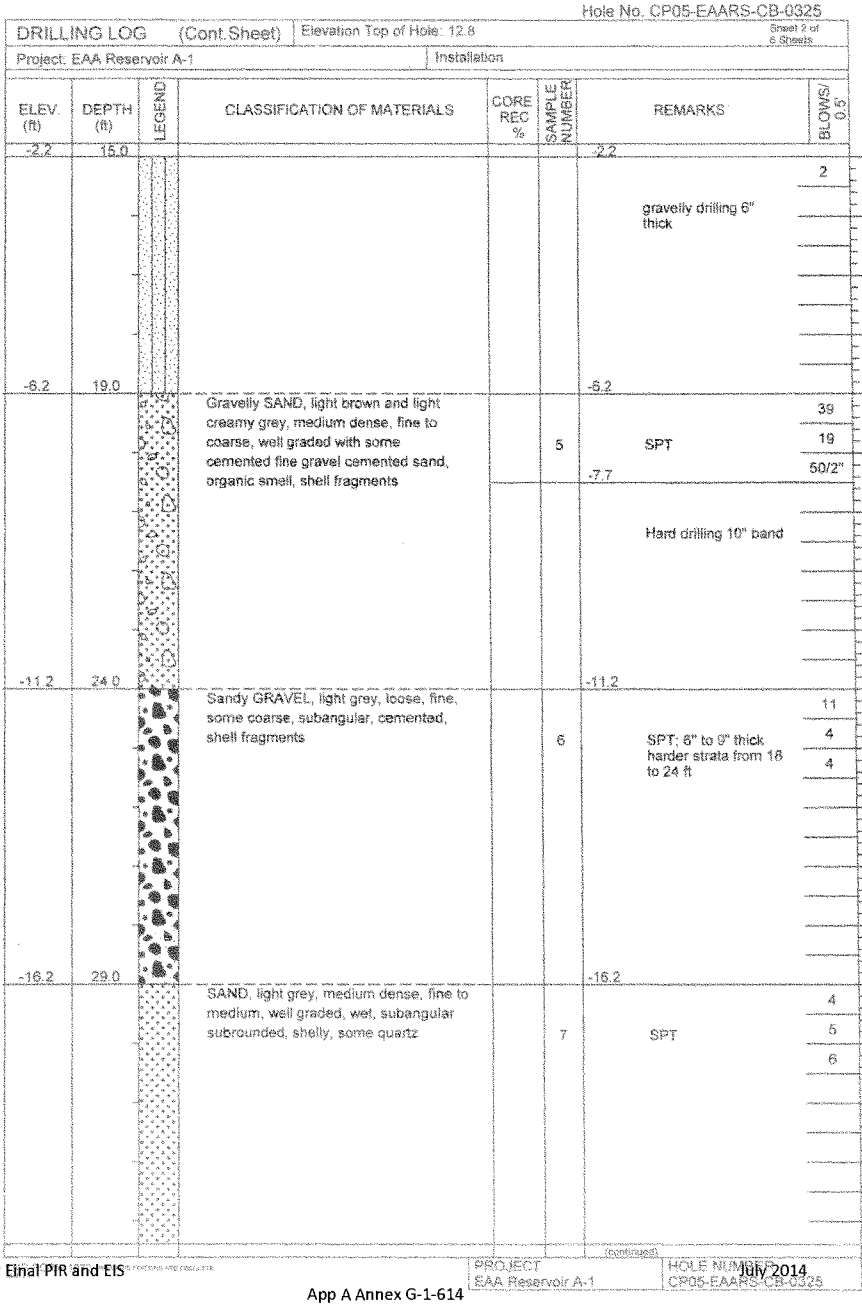
34 35 38 40 42 44 46 48 50

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0324

Hole No. CP05-EAARS-CB-0325

DRILLING LOG	Division:	Installation:	Sheet 1 of 6 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N753486, E758570.4 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0325		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
7. Thickness of Burden: N/A		16. Date Hole Started 7/20/2005 Completed 7/22/2005	
8. Thickness of cap rock: N/A		17. Elevation Top of Hole: 12.8 (ft)	
9. Depth of hole: 100 ft		18. Total Core Recovery for hole: N/A	
		19. Inspector: J. Petrie	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
12.8	0.0		Silty SAND, brown and creamy white, medium dense, fine to coarse, well graded, dry with gravel and cobble size light creamy grey angular / subangular limestone (fill)		1	12.8 SPT 10.8	7, 37, 26
			Silty SAND, light creamy grey, medium dense, well graded fine to coarse, dry , with angular fine and coarse gravel size limestone fragments (fill)		2	SPT 8.8	3, 7, 8
8.8	4.0		PEAT, dark brown to black, soft, damp becoming organic clayey SILT		3	SPT 7.1	4, 2, 3
7.1	5.8		0.8' light creamy grey with dark grey inclusions, thinly to medium bedded, moderately strong to strong, fine grained LIMESTONE with some irregular inclusions of dark grey limestone, occasional vugs 0.8' to 2.2' light grey occasional yellowish brown staining, medium bedded, moderately strong to strong, fine grained LIMESTONE with trace shells 2.2' to 3.4' light grey, medium bedded, moderately strong to strong, fine grained LIMESTONE with some vugs 3.4' to 4.8' as above but with more vugs of medium sand size	96 (RQD 36%)	1	HQ coring 2.1	
2.1	10.8		Silty SAND, light grey to white, loose, fine to coarse, well graded, wet, some angular, subangular gravel size cemented sand, trace shell fragments			0.8 12 to 13 ft cemented -1.2	
					4	SPT, occasional (continued)	6, 6



Hole No. CP05-EAARS-CB-0325

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 12.8 | Sheet 2 of 6 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-2.2	15.0					-2.2	
						gravelly drilling 6" thick	2
-6.2	19.0		Gravelly SAND, light brown and light creamy grey, medium dense, fine to coarse, well graded with some cemented fine gravel cemented sand, organic smell, shell fragments		5	-6.2 SPT	39 19 50/2"
						-7.7 Hard drilling 10" band	
-11.2	24.0		Sandy GRAVEL, light grey, loose, fine, some coarse, subangular, cemented, shell fragments		6	-11.2 SPT; 6" to 9" thick harder strata from 18 to 24 ft	11 4 4
-16.2	29.0		SAND, light grey, medium dense, fine to medium, well graded, wet, subangular subrounded, shelly, some quartz		7	-16.2 SPT	4 5 6

(continued)

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0325

Hole No. CP05-EAARS-CB-0325

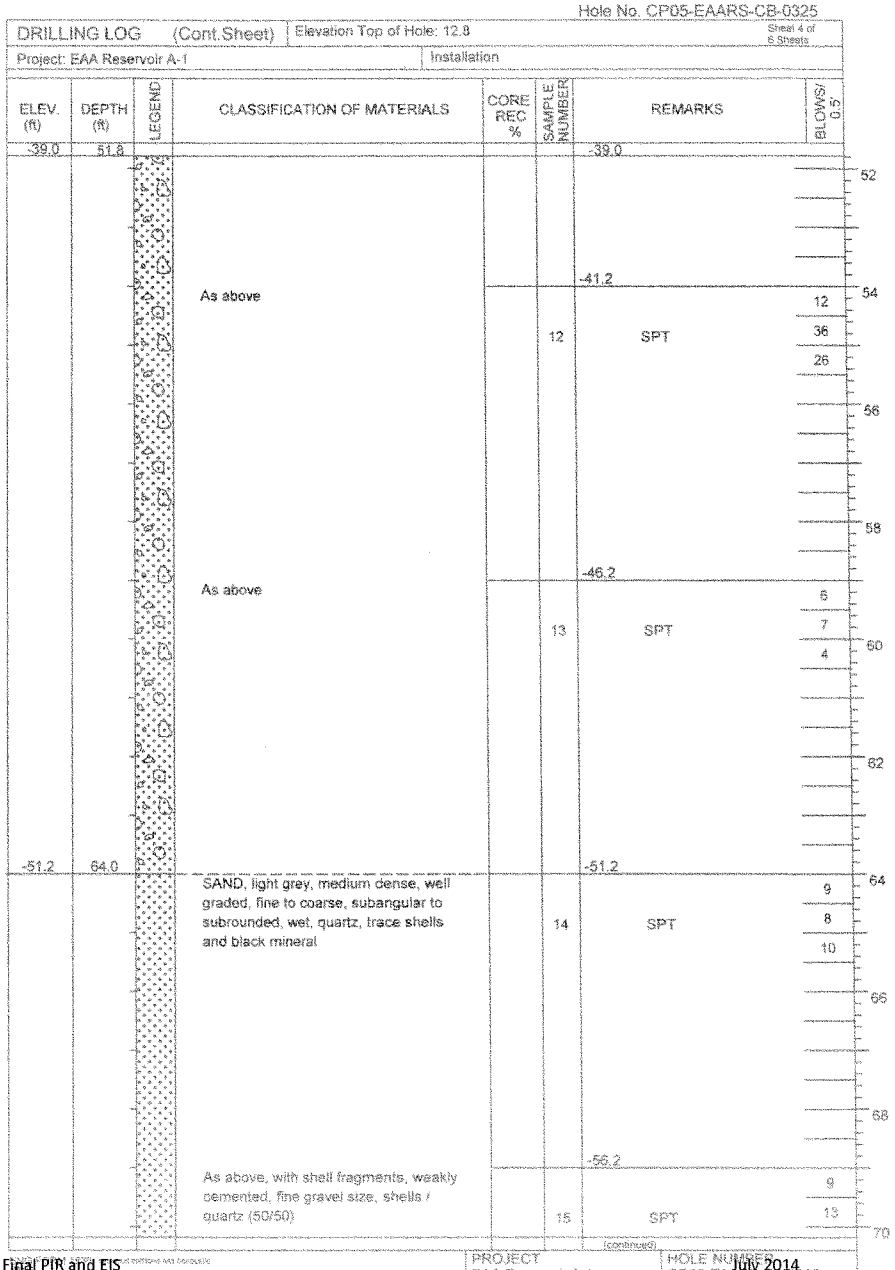
DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 12.8 | Sheet 3 of 6 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-20.6	33.4					-20.6	
						-21.2	
			SAND, light grey, loose, well graded, fine and medium, subangular to subrounded, wet, quartz, some shelly fragments		8	SPT	4 4 4
-26.2	39.0					-26.2	
			Gravelly SAND, light grey, loose, well graded, fine to medium, subangular to subrounded, wet, fine and coarse, hard cemented sand, gravel (subangular), grey colored, quite sandy		9	SPT	4 4 5
						-29.2	
						gravelly drilling	
-31.2	44.0					-31.2	
			GRAVEL, grey, medium dense, well graded, fine, occasional coarse, subangular, hard cemented sand (fine to medium), some sand and shell fragments		10	SPT	7 5 11
-36.2	49.0					-36.2	
			Sandy GRAVEL, light grey, medium dense, well graded, fine to coarse, subangular, hard cemented gravel of fine to medium sand		11	SPT, gravelly drilling, no flush return	8 8 12

(continued)

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0325


Hole No. CP05-EAARS-CB-0325
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 12.8
Sheet 4 of 5 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-39.0
51.8
-39.0
52
As above
-41.2
54
12
36
26
12
SPT
56
58
-46.2
As above
5
7
4
13
SPT
60
62
-51.2
64.0
-51.2
64
SAND, light grey, medium dense, well graded, fine to coarse, subangular to subrounded, wet, quartz, trace shells and black mineral
9
8
10
14
SPT
66
68
-56.2
As above, with shell fragments, weakly cemented, fine gravel size, shells / quartz (50/50)
9
13
15
SPT
70
(continued)
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0325

Hole No. CP05-EAARS-CB-0325

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 12.8 | Sheet 5 of 6 Sheets

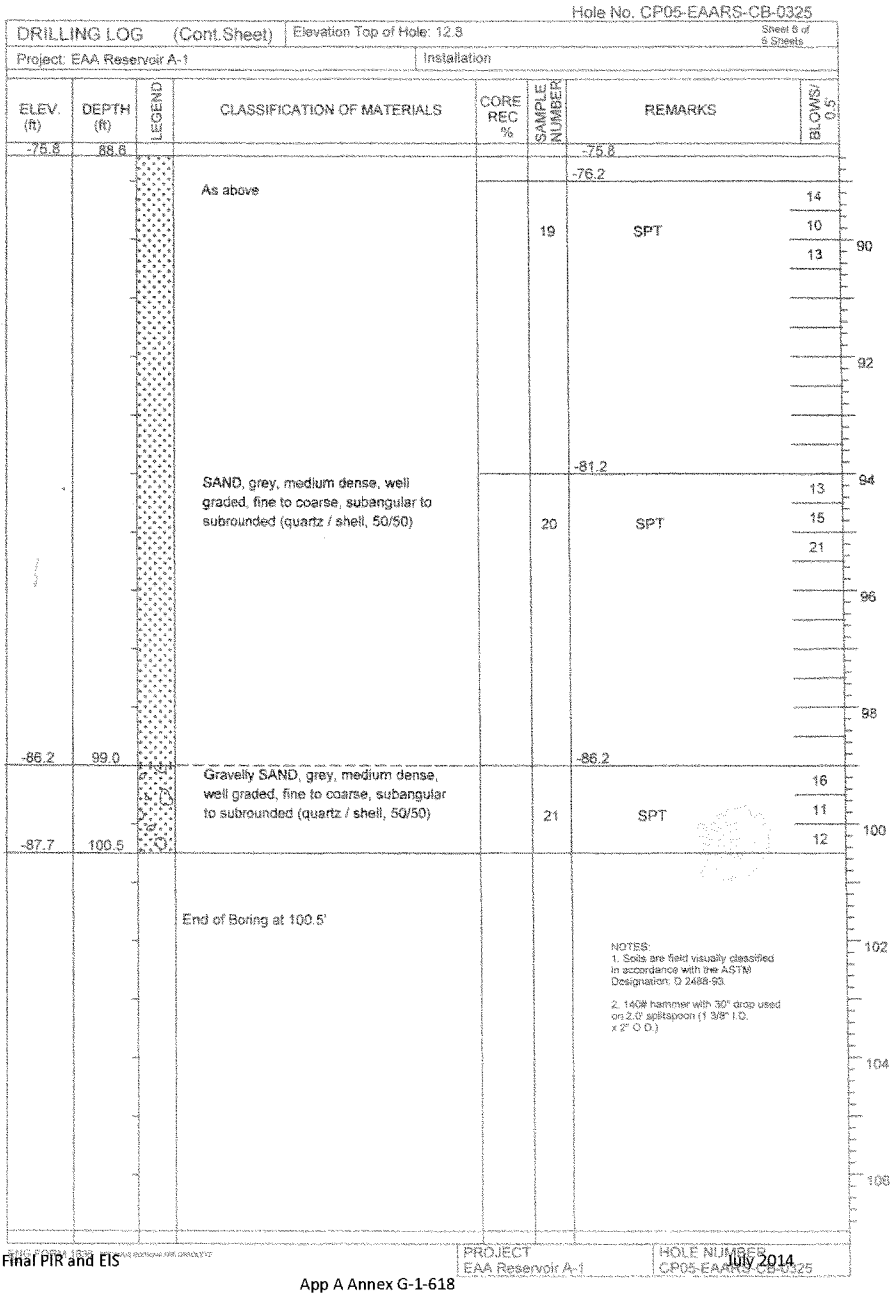
Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-57.4	70.2					-57.4	11
							72
						-61.2	
			SAND, light greenish grey, medium dense, well graded, fine to medium, subangular to subrounded with angular shell fragments (fine gravel size), mainly quartz, some shells and black subrounded fine to medium size mineral		16	SPT	10 12 11
							74 76 78
						-68.2	
			SAND, light creamy grey, medium dense, well graded, fine to coarse, subangular with angular shell fragments, mainly shelly grains, some quartz, fine gravel sized hard cemented fine to medium sand		17	SPT	11 10 11
							80 82
						-71.2	
			As above		18	SPT	14 20 16
							84 86 88

(continued)

BOXES CHECK ONE ONLY - ALL DIMENSIONS ARE DEPICTED IN

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0325



Hole No. CP05-EAARS-CB-0325

DRILLING LOG (Cont.Sheet) Elevation Top of Hole: 12.8 Sheet 6 of 6 Sheets

Project: EAA Reservoir A-1 Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5
-75.8	88.6					-75.8	
						-76.2	
			As above		19	SPT	14 10 13
						-81.2	
			SAND, grey, medium dense, well graded, fine to coarse, subangular to subrounded (quartz / shell, 50/50)		20	SPT	13 15 21
-86.2	99.0					-86.2	
			Gravelly SAND, grey, medium dense, well graded, fine to coarse, subangular to subrounded (quartz / shell, 50/50)		21	SPT	16 11 12
-87.7	100.5						
			End of Boring at 100.5'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

90 92 94 96 98 100 102 104 106

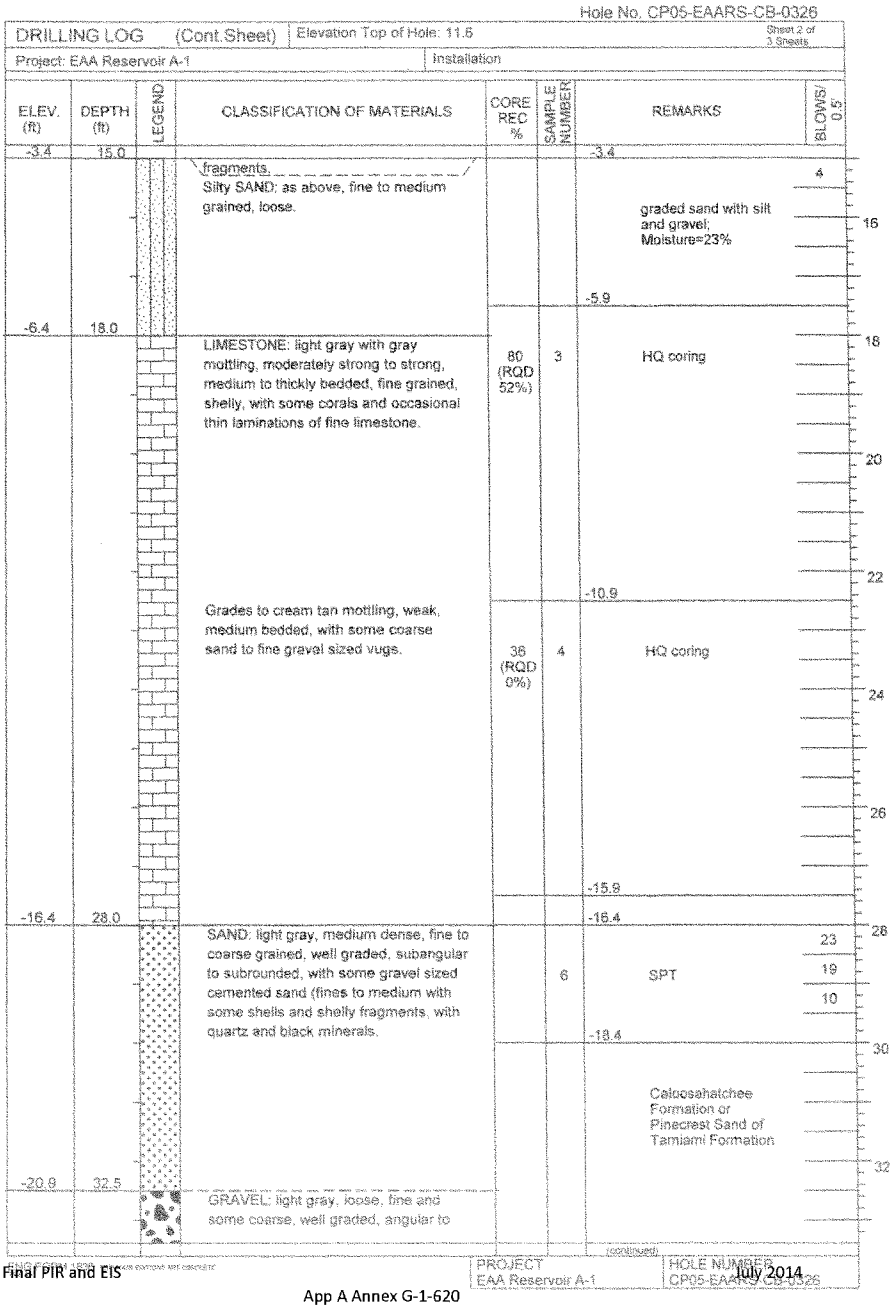
PROJECT EAA Reservoir A-1 HOLE NUMBER CP05-EAARS-CB-0325

Hole No. CP05-EAARS-CB-0326

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N755746.4, E758530.9 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0326		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 7/22/2005 Completed 7/25/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 11.6 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 35.5 ft		19. Inspector: J. Petrie	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
11.6	0.0		Silty SAND and GRAVEL: light brown, fine to coarse sand, well graded, fine gravel, angular to subangular, medium dense, dry (FILL).		1	11.6 SPT	9 4 10
					2	9.6 SPT	5 9 5
			Grades creamy gray and yellow brown		3	7.6 SPT; GP; Poorly graded Gravel with sand; Moisture=5%	7 11 8
5.6	6.0		LIMESTONE: light gray with some yellow brown staining, medium bedded, fine grained, moderately strong to strong, with trace of shell fragments and fine to medium sand, some medium sized voids.	48 (RQD 34%)	1	5.6 5.1 SPT HQ coring; Lost circulation 6.5 to 7.5 ft	50/5"
			Grades to creamy gray				
			Grades to gray, thinly bedded, with thin bands of tan color.	36 (RQD 0%)	2	0.1 HQ coring	
-2.4	14.0		SAND: Creamy white, fine to coarse grained, well graded, subangular, medium dense, wet, mainly shelly		5	-2.4 SPT; SP-SM; Poorly	13 13
-3.4	15.0					(continued)	

PROJECT: EAA Reservoir A-1 HOLE NUMBER: CP05-EAARS-CB-0326


Hole No. CP05-EAARS-CB-0326
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 11.5
Sheet 2 of 3 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-3.4
15.0
fragments.
Silty SAND: as above, fine to medium grained, loose.
-3.4
4
graded sand with silt and gravel; Moisture=23%
16
-5.9
-6.4
18.0
LIMESTONE: light gray with gray mottling, moderately strong to strong, medium to thickly bedded, fine grained, shelly, with some corals and occasional thin laminations of fine limestone.
80 (RQD 52%)
3
HQ coring
18
20
22
-10.9
Grades to cream tan mottling, weak, medium bedded, with some coarse sand to fine gravel sized vugs.
36 (RQD 0%)
4
HQ coring
24
26
-15.9
-16.4
28.0
-16.4
SAND: light gray, medium dense, fine to coarse grained, well graded, subangular to subrounded, with some gravel sized cemented sand (fines to medium with some shells and shelly fragments, with quartz and black minerals.
6
SPT
23
19
10
28
-18.4
30
Caloosahatchee Formation or Pinecrest Sand of Tamiami Formation
32
-20.9
32.5
GRAVEL: light gray, loose, fine and some coarse, well graded, angular to
(continued)
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0326

Hole No. CP05-EAARS-CB-0326

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 11.6 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-21.8	33.4					-21.8	
			subangular peices of hard cemented sand (subequal proportions of quartz and shells) and shell fragments.			-22.4	
					7	SPT	3 4 3
-23.9	35.5		End of Boring at 35.5'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

34 36 38 40 42 44 46 48 50

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0326

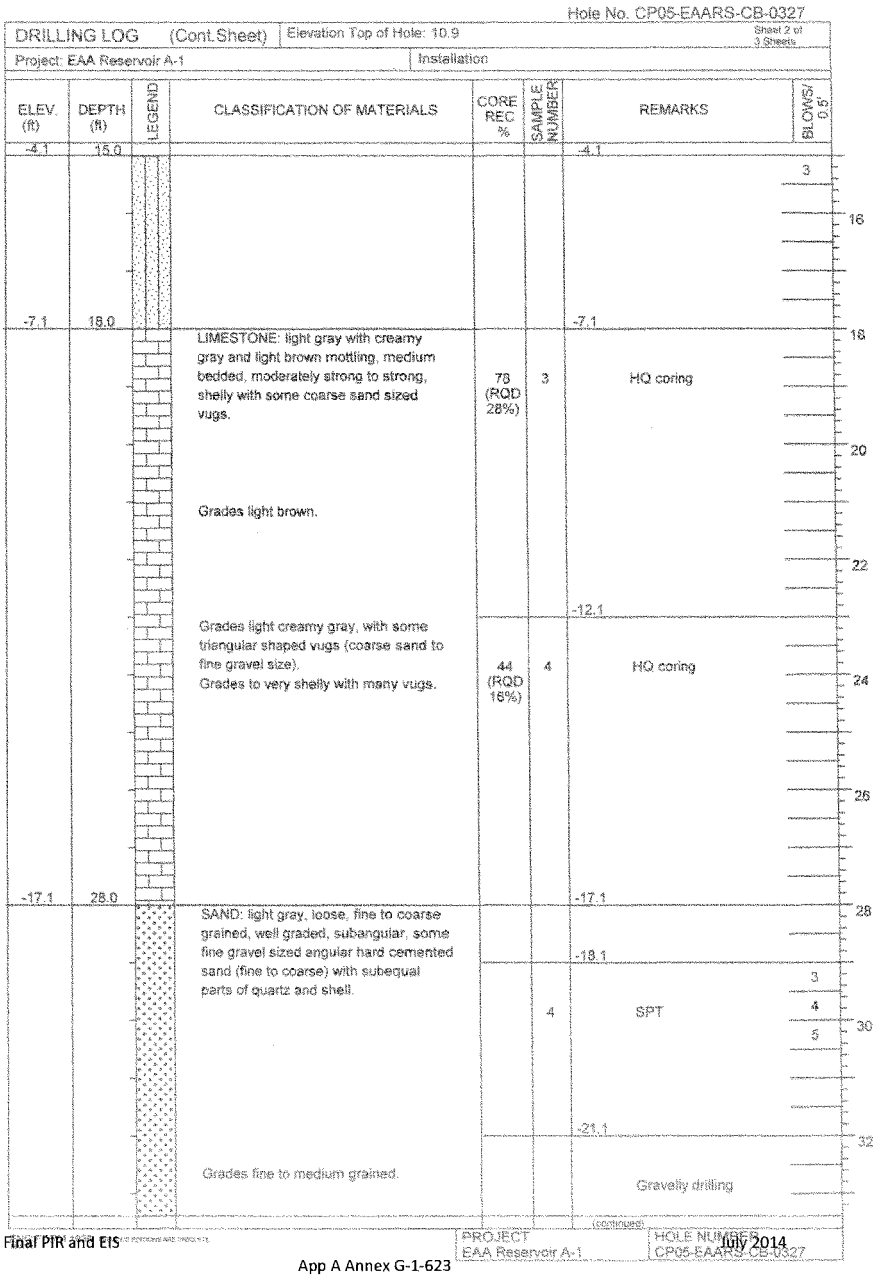
Hole No. CP05-EAARS-CB-0327

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N759759.6, E758445.2 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0327		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 7/25/2005 Completed 7/26/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 10.9 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 35.5 ft		19. Inspector: J. Petrie	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
10.9	0.0		Sandy GRAVEL: light gray with yellowish brown and black mottling, medium dense, fine and occasionally coarsegrained, subangular tyo angular, dry. Sand is fine to coarse grained (Fill). Gravel fragments of creamy grey limestone		1	10.9 SPT	13, 16, 12
9.4	1.5					8.9	
					2	SPT	50/5"
6.9	4.0					6.9	
			LIMESTONE: light creamy gray with some yellowish brown staining, medium bedded, moderately strong to strong, fine grained, voids filled with black peat and fine gravel to 5.8. Grades empty voids (coarse sand sized) and occasional fissures.	78 (ROD 56%)	1	HQ coring	
						1.9	
			Grades gray and shelly	26 (ROD 0%)	2	HQ coring	
-1.1	12.0					-1.1	
			Silty SAND: light creamy gray, loose, fine to coarse grained, well graded, subangular, wet, some hard cemented fine to coarse sand as fine gravel, shell fragments.			-3.1	
					3	SPT	2, 4

(continued)

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0327


Hole No. CP05-EAARS-CB-0327
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 10.9
Sheet 2 of 3 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-4.1
15.0
-7.1
18.0
LIMESTONE: light gray with creamy gray and light brown mottling, medium bedded, moderately strong to strong, shelly with some coarse sand sized vugs.
78 (RQD 28%)
3
HQ coring
Grades light brown.
-12.1
Grades light creamy gray, with some triangular shaped vugs (coarse sand to fine gravel size).
Grades to very shelly with many vugs.
44 (RQD 16%)
4
HQ coring
-17.1
28.0
SAND: light gray, loose, fine to coarse grained, well graded, subangular, some fine gravel sized angular hard cemented sand (fine to coarse) with subequal parts of quartz and shell.
-18.1
4
SPT
3
4
5
-21.1
Grades fine to medium grained.
Gravelly drilling
(continued)
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0327

Hole No. CP05-EAARS-CB-0327

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 10.9 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-22.5	33.4					-22.5	
						-23.1	
							4
					5	SPT	6
-24.6	35.5						8
			End of Boring at 35.5'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

34 36 38 40 42 44 46 48 50

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PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0327

Hole No. CP05-EAARS-CB-0328

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N765178.1, E758078.3 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0328		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Ralph Smith		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
7. Thickness of Burden: N/A		16. Date Hole Started 8/11/2005 Completed 8/11/2005	
8. Thickness of cap rock: N/A		17. Elevation Top of Hole: 9.9 (ft)	
9. Depth of hole: 35 ft		18. Total Core Recovery for hole: N/A	
		19. Inspector: A.M. Noronha	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'	
9.9	0.0							
			PEAT: black, loose, poorly graded, fine grained, dry, mostly organic		1	9.9 SPT 8.4	2 3 3	0
			Same as above, except dry to wet and dense		2	SPT; 2 limestone chips recovered 6.9	5 26 21	2
			Same as above, except wet, medium dense		3	SPT 5.4	11 8 8	4
			Same as above, quite gravelly		4	SPT 3.9	5 10 13	
3.9	6.0		SAND: greenish grey, medium dense, moderately graded, fine to coarse grained, angular		5	SPT; one small limestone piece recovered 1.9	6 11 15	6
			SAND: light grey, dense, moderately graded, fine to medium grained, angular, wet, shelly		6	SPT -0.1	10 19 14	8
			SAND: white, very loose, poorly graded, fine calcitic sand, subangular, wet		7	SPT -3.6	3 2 2	10 12
-3.6	13.5		Gravelly SAND: greenish grey, dense, moderately graded, fine to coarse grained, subangular calcitic sand, wet, shelly		8	SPT	30 16 21	14

(continued)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0328

Hole No. CP05-EAARS-CB-0328

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 9.9 | Sheet 2 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-5.1	15.0					-5.1	
-8.6	18.5		SAND: greenish grey, dense, moderately graded, fine to coarse grained, subangular calcitic sand, subrounded quartz, cemented sand, wet, trace shell fragments		9	SPT	16 33 8
						-13.6	
			SAND: greenish grey, dense, poorly graded, fine to medium grained, subangular, calcitic sand, subrounded quartz, wet		10	SPT	6 19 23
						-18.6	
			Same as above - except dense fragments of shells present		11	SPT	7 11 17

(continued)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0328

Hole No. CP05-EAARS-CB-0328

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 9.9 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-23.5	33.4					-23.5	
			SAND: greenish grey, medium dense, moderately graded, subangular calcetic sand, rounded quartz, wet			-23.6	5
					12	SPT	8
-25.1	35.0						8
			End of Boring at 35'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

34 36 38 40 42 44 46 48 50

ENG FORM 1836 previous editions are obsolete

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0328

Hole No. CP05-EAARS-CB-0329

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N766153.8, E758070.3 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0329		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Ralph Smith		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/10/2005 Completed 8/11/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 9.9 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 35 ft		19. Inspector: A.M. Noronha	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
9.9	0.0						
			PEAT: black, very loose, poorly graded, fine grained, dry, mostly organic		1	9.9 SPT 8.4	3 2 2
7.9	2.0		Same as above			7.9 SPT; spoon bouncing	50/5"
			LIMESTONE: light brown to pale white, hard, fine grained, quite porous, shells present	45 (RQD 12%)	1	HQ coring; UCS=1857psi	
2.9	7.0					2.9	
			SAND: light grey, medium dense, moderately graded, fine to medium grained, subangular calcitic sand, wet		3	SPT 1.4	11 7 6
			Same as above, except dense		4	SPT; SM; Silty sand with gravel; Moisture=17%	4 25 17
						-3.6	
			SAND: light grey, medium dense, moderately graded, fine to medium grained, angular calcitic sand, wet, shell fragments present		5	SPT; SM; Silty sand; Moisture=22%	15 18 17

(continued)

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PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0329

Hole No. CP05-EAARS-CB-0329

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 9.9 | Sheet 2 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5
-5.1	15.0					-5.1	
							16
						-8.6	18
			SAND: light grey, dense, moderately graded, fine to coarse grained, subangular calcitic sand, wet		6	SPT; SP-SM; Poorly graded sand with silt and gravel; Moisture=13%	10 26 17
							20
						-12.6	22
						-13.6 Caloosahatchee Formation at 22.5 ft	5
			SAND: greenish grey, medium dense, poorly graded, fine to medium grained, subangular calcitic sand, rounded quartz		7	SPT; SP-SM; Poorly graded sand with silt; Moisture=6%	7 10
							24
							26
						-18.6	28
			Same as above		8	SPT	5 7 10
							30
							32

(continued)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0329

Hole No. CP05-EAARS-CB-0329

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 9.9 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-23.5	33.4					-23.5	
-25.1	35.0		SAND: greenish grey, medium dense, moderately graded, fine to coarse grained, subangular calcitic sand, rounded quartz, cemented sand wet		9	-23.5 SPT; SP-SM; Poorly graded fine sand with silt and gravel; Moisture=8%	6 5 6
			End of Boring at 35'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0' splitspoon (1 3/8" I.D. x 2" O.D.)

34 36 38 40 42 44 46 48 50

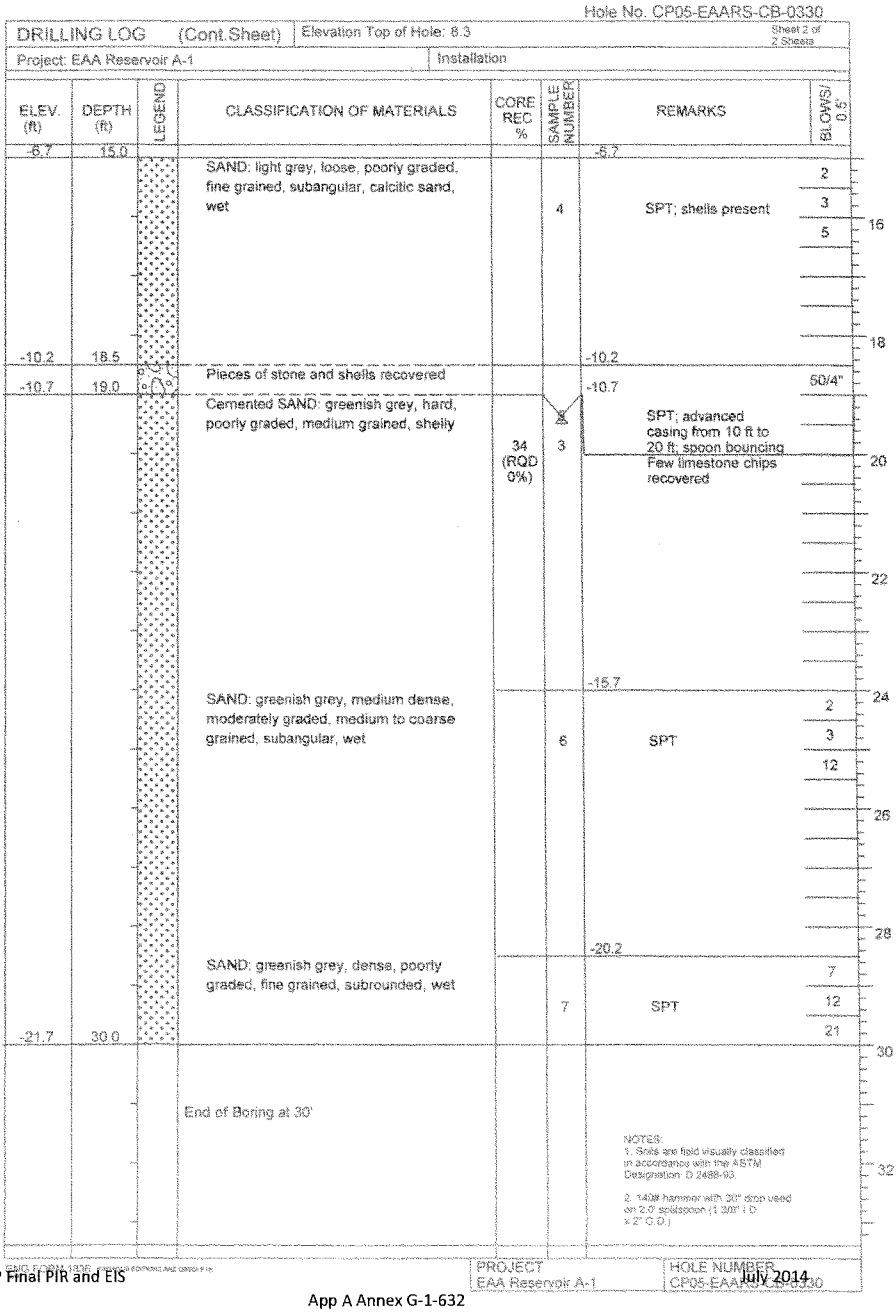
ENG FORM 4938 PREVIOUS EDITIONS ARE OBSOLETE | PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0329

Hole No. CP05-EAARS-CB-0330

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N767986.5, E758277.3 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0330		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Travis Williams		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 7/27/2005 Completed 7/27/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 8.3 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 30 ft		19. Inspector: A.M. Noronha	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
8.3	0.0					8.3	2
			PEAT: black, very loose, poorly graded, fine grained, dry, mostly organic				50/4"
7.3	1.0				1	7.3 SPT	
			LIMESTONE: white, hard, fine grained, porous, shelly	54 (RQD 7%)	1	HQ coring	
3.3	5.0					3.3	
						2.3 Caprock ends at 5 ft	
			SAND: greenish grey, medium dense, poorly graded, fine to medium grained, sub angular, wet		2	SPT	8 12 16
						-0.2	
			SAND: light grey, very dense, moderately graded, fine to coarse grained, angular, wet		3	SPT; shells present; advanced 10 ft of casing	10 42 50/3"
-1.5	9.8					-1.7	
			Chips of limestone and pieces of cemented sand with shells recovered	12 (RQD 0%)	2	HQ coring	
-8.7	15.0					-8.7 (continued)	

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0330



Hole No. CP05-EAARS-CB-0330

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 8.3 | Sheet 2 of 2 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-6.7	15.0					-6.7	
			SAND: light grey, loose, poorly graded, fine grained, subangular, calcitic sand, wet		4	SPT; shells present	2 3 5
-10.2	18.5					-10.2	
-10.7	19.0		Pieces of stone and shells recovered			-10.7	50/4"
			Cemented SAND: greenish grey, hard, poorly graded, medium grained, shelly	34 (RQD 9%)	3	SPT; advanced casing from 10 ft to 20 ft; spoon bouncing Few limestone chips recovered	
						-15.7	
			SAND: greenish grey, medium dense, moderately graded, medium to coarse grained, subangular, wet		6	SPT	2 3 12
						-20.2	
			SAND: greenish grey, dense, poorly graded, fine grained, subrounded, wet		7	SPT	7 12 21
-21.7	30.0						
			End of Boring at 30'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.0" splitspoon (1.375" I.D. x 2" O.D.)

ENG FORM 1836, PREVIOUS EDITIONS ARE OBSOLETE

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0330

Hole No. CP05-EAARS-CB-0331

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N770127.1, E758453.9 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0331		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Travis Williams		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
7. Thickness of Burden: N/A		16. Date Hole Started 7/27/2005 Completed 7/27/2005	
8. Thickness of cap rock: N/A		17. Elevation Top of Hole: 9.3 (ft)	
9. Depth of hole: 30 ft		18. Total Core Recovery for hole: N/A	
		19. Inspector: A.M. Noronha	

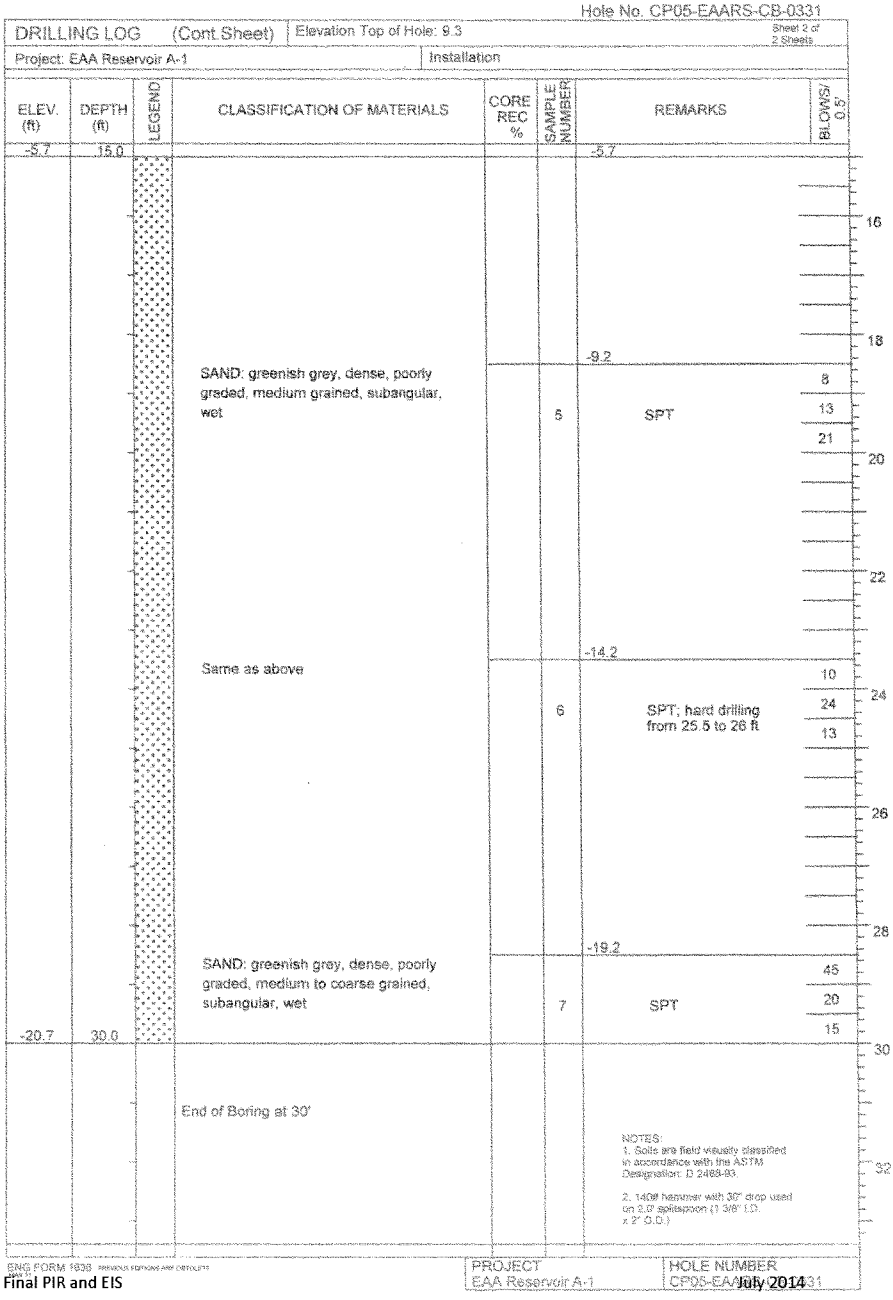
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
9.3	0.0						
			PEAT: black, very loose, poorly graded, fine grained, dry bottom 0.3' of peat, wet		1	9.3 SPT 7.8	1 2 2
7.5	1.8						14
6.8	2.5		SAND: brownish grey, very dense, poorly graded, medium grained, subangular, wet		2	6.8 SPT	50/5"
			Part LIMESTONE: white, hard, fine grained, quite porous Part Cemented SAND: greenish grey, hard, fine to medium grained, shelly porous	70 (RQD 15%)	1	HQ coring; Layered core sample recovered	
1.8	7.5					1.8	
1.3	8.0		SAND: greenish grey, very dense, poorly graded, medium grained, angular, wet		3	1.3 SPT	50/3"
			LIMESTONE: white, hard, fine to medium grained, porous, shelly	6 (RQD 0%)	2	HQ coring	
0.0	9.3					-0.2	
			SAND: light grey, dense, poorly graded, fine to medium grained, wet, quite silty, shells present			Caprock ends at around 9.5 ft; advanced 5 ft of casing	
						-3.7	
					4	SPT; quite silty, shells present	35 20 20

0 2 4 6 8 10 12 14

(continued)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0331


Hole No. CP05-EAARS-CB-0331
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 9.3
Sheet 2 of 2 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-5.7
15.0
-9.2
SAND: greenish grey, dense, poorly graded, medium grained, subangular, wet
5
SPT
8
13
21
-14.2
Same as above
6
SPT; hard drilling from 25.5 to 26 ft
10
24
13
-19.2
SAND: greenish grey, dense, poorly graded, medium to coarse grained, subangular, wet
7
SPT
45
20
15
-20.7
30.0
End of Boring at 30'
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 3.0 splitspoon (1 3/8" I.D. x 2" O.D.)
16
18
20
22
24
26
28
30
32
ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0331

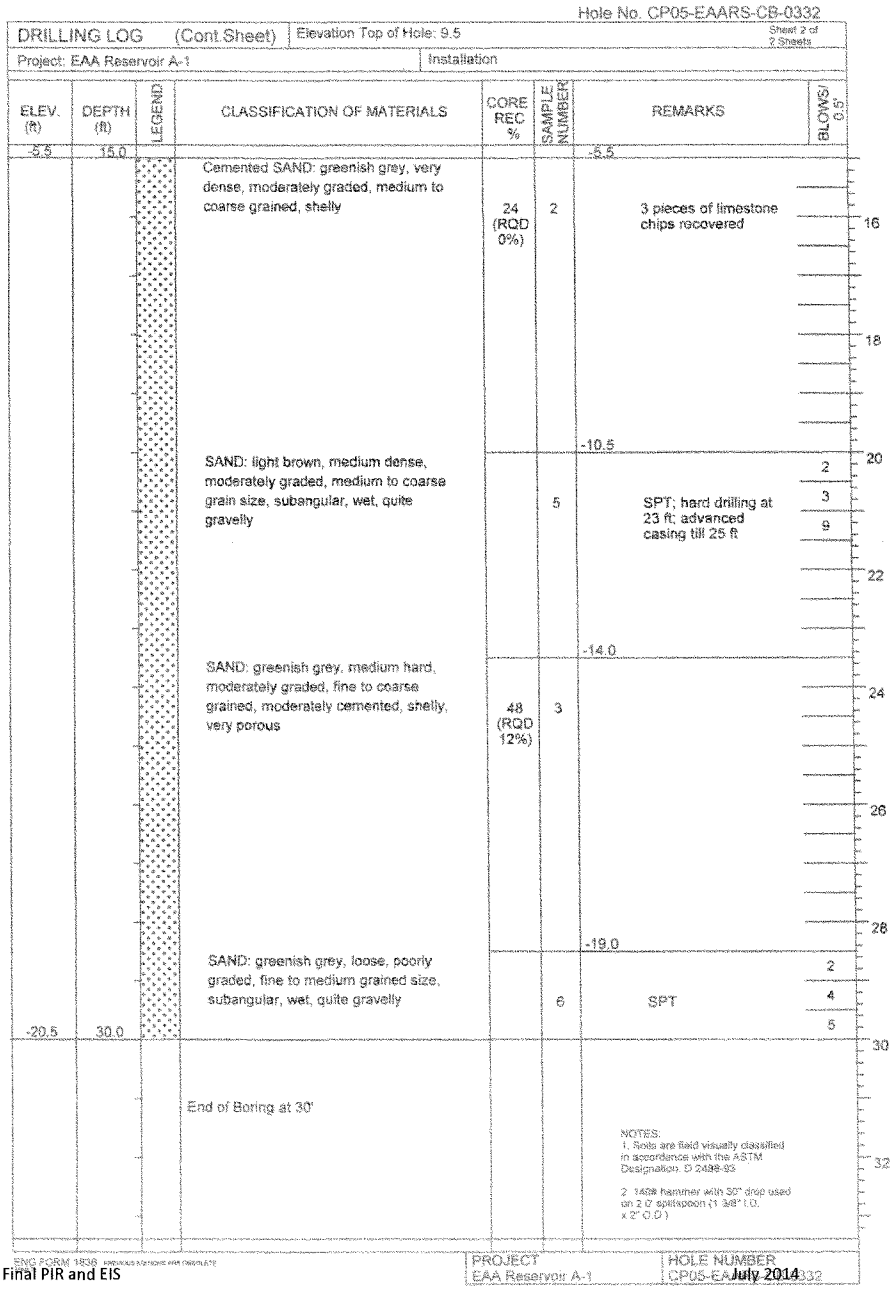
Hole No. CP05-EAARS-CB-0332

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N775270.8, E757918.8 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0332		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Travis Williams		14. Total Number of Core Boxes: 1	
5. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
7. Thickness of Burden: N/A		16. Date Hole Started 7/26/2005 Completed 7/26/2005	
8. Thickness of cap rock: N/A		17. Elevation Top of Hole: 9.5 (ft)	
9. Depth of hole: 30 ft		18. Total Core Recovery for hole: N/A	
		19. Inspector: A.M. Noronha	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
9.5	0.0		PEAT: black, loose, poorly graded, fine grained, dry, mostly organic		1	9.5 SPT	2 3 3
8.0	1.5		SAND: brownish grey, very dense, poorly graded, fine grained, angular, dry		2	8.0 SPT; limestone chips recovered	10 18 50/3"
6.8	2.8		LIMESTONE: greenish grey to pale white, very hard, fine grained, shelly	36 (RQD 0%)	1	6.5 HQ coring	
1.8	7.8		SAND: pale white, dense, fine to medium well graded, subangular, wet		3	1.5 SPT; caprock ends at around 7.75 ft	3 15 26
-4.0	13.5		SAND: light grey, very dense, fine to medium grained size, well graded, subangular calcitic sand, wet, silty		4	-4.0 SPT; casing down to 15 ft	7 10 50/5"
-5.5	15.0					-5.5 (continued)	

ENG FORM 1836, 1 NOV 68, SUPERSEDES ENG FORM 1836, 1 OCT 63 (7 PP)

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0332



Hole No. CP05-EAARS-CB-0332

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 9.5 | Sheet 2 of 2 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 6.5'
-5.5	15.0		Cemented SAND: greenish grey, very dense, moderately graded, medium to coarse grained, shelly	24 (RQD 0%)	2	3 pieces of limestone chips recovered	
						-10.5	
			SAND: light brown, medium dense, moderately graded, medium to coarse grain size, subangular, wet, quite gravelly		5	SPT; hard drilling at 23 ft; advanced casing till 25 ft	2 3 9
						-14.0	
			SAND: greenish grey, medium hard, moderately graded, fine to coarse grained, moderately cemented, shelly, very porous	48 (RQD 12%)	3		
						-19.0	
-20.5	30.0		SAND: greenish grey, loose, poorly graded, fine to medium grained size, subangular, wet, quite gravelly		6	SPT	2 4 5
			End of Boring at 30'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93

2. 140# hammer with 30" drop used on 2 0" splitspoon (1 3/8" I.D. x 2" O.D.)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0332

Hole No. CP05-EAARS-CB-0333

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N777626.2, E757886.5 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0333		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Travis Williams		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 7/26/2005 Completed 7/26/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 9.6 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 30 ft		19. Inspector: A.M. Noronha	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
9.6	0.0		PEAT: black, very loose, poorly graded, fine grained, dry, mostly organic		1	9.6 SPT	1, 2, 2
			Same as above - except loose, dry to wet		2	8.1 SPT	3, 3, 3
6.4	3.2		One piece of limestone recovered and some peat			6.6	
			LIMESTONE: light brown to white, hard, fine grained, shelly, porous	20 (RQD 0%)	1	6.1 SPT HQ coring	50/2"
2.1	7.5		SAND: pale white, medium dense, moderately graded, fine to medium grains, wet, silty and gravelly, subangular			2.1 1.1 Caprock ended at around 7.5 ft	
					4	SPT; SM; Silty sand with gravel; Moisture=24%	2, 28
-3.9	13.5		SAND: white, loose, poorly graded, fine grained, subrounded, calcitic sand, wet, silty		5	-3.9 SPT	5, 5, 5

(continued)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0333

Hole No. CP05-EAARS-CB-0333

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 9.6 | Sheet 2 of 2 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-5.4	15.0					-5.4	
-8.9	18.5		SAND: light grey, medium dense, poorly graded, medium grained, subangular, wet		6	-8.9 SPT	9 12 9
						-12.4	
			SAND: light grey, hard, moderately graded, fine to medium grained, cemented, shelly, porous	10 (RQD 6%)	2	HQ coring; Hard drilling at 22 ft; advanced 20 ft of casing	
						-17.4	
			SAND: light grey, medium dense, poorly graded, fine to coarse, subangular, wet		7	-18.9 SPT; Top half gravelly, bottom half silty, separated by stone chips	4 8 10 20
-20.4	30.0		SAND: light grey,medium dense, poorly graded, fine grained, subrounded, calcitic sand, wet		8	SPT	14 12
			End of Boring at 30'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 3.0" splitspoon (1 3/8" I.D. x 2" O.D.)

ENG FORM 1836, APR 88 EDITIONS ARE OBSOLETE

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0333

Hole No. CP05-EAARS-CB-0334

DRILLING LOG	Division:	Installation:	Sheet 1 of 7 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N754292.8, E763213.5 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0334		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Travis Williams		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/2/2005 Completed 9/2/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 8.8 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 30 ft		19. Inspector: N. Holst	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
8.8	0.0		PEAT: Not sampled				0
6.6	2.3					6.6	2
4.1	4.8		LIMESTONE: tan to light brown, fine to coarse grained, thinly bedded, vuggy, hard and strong to moderately hard and moderately strong, fossiliferous.	20 (RQD 0%)	1	HQ coring; Intermittent hard and soft drilling to 4.75 ft	4
			SAND: pale brownish gray, well graded, fine to coarse, angular, calcitic, some fine gravel (shells and limestone).			1.6	6
						1.3	
					1	SPT	47 42 8
-2.2	11.0					-2.2	8 10
			Silty SAND: as above but silty, loose and with a trace of fine gravel.		2	SPT; Very soft drilling to 11 ft; spoon bouncing at 12 ft	7 2 50/5"
-4.7	13.5					-4.7	12
			SAND: as above but very dense and only a trace of silt and fine gravel.		3	SPT; Hard drilling 13.5 to 16.5 ft	25 50/2"
							14

(continued)

EAG FORM 1508 - PREVIOUS EDITIONS ARE OBSOLETE

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0334

Hole No. CP05-EAARS-CB-0334

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 8.8 | Sheet 2 of 2 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-6.2	15.0					-6.2	
-9.7	18.5		Gravelly SAND: as above but very dense with fine angular limestone gravel and a trace silt.		4	-9.7	26 33 26
-11.7	20.5		SAND (Caloosahatchee Formation): pale brownish gray, medium dense, uniform, fine grained, subrouded, quartzose, trace fine to coarse, angular calcitic sand.			-11.7 Caloosahatchee Formation or Pinecrest Sand of Tamiami Formation	
					5	-14.7 SPT; Soft below 23.5 ft	4 5 6
			Grades as above with some fine angular limestone gravel.		6	-19.7	5 5 5
-21.2	30.0		End of Boring at 30'			NOTES: 1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93 2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)	

ENG FORM 4876, PREVIOUS EDITIONS ARE OBSOLETE

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0334

Hole No. CP05-EAARS-CB-0335

DRILLING LOG	Division:	Installation:	Sheet 1 of 1 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N752370.8, E769865.5 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0335		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Erik Bluemke		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/31/2005 Completed 8/31/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 8.4 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 5.9 ft		19. Inspector: N. Holst	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
8.4	0.0						
7.5	0.9		PEAT: 0 ft to 0.9 ft, not sampled			7.4	
4.0	4.4		LIMESTONE: caprock, tan to light brown, fine to coarse grained, thinly bedded, vuggy; Fossiliferous, ranges from hard to strong (wackestone and packstone to moderately hard, moderately strong and porous grainstone)	40 (RQD 0%)	1	HQ coring; soft at 4.4 ft	
2.5	5.9		End of Boring at 5.9'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0' splitspoon (1 3/8" I.D. x 2" O.D.)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0335

Hole No. CP05-EAARS-CB-0336

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N752408.8, E777773.1 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0336		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Erik Bluemke		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/30/2005 Completed 8/30/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 7.7 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 30 ft		19. Inspector: N. Holst	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
7.7	0.0						
6.8	0.9		PEAT to 0.9 ft: not sampled			6.8	
2.8	4.9		LIMESTONE: tan to light brown and grey, fine to coarse grained, vuggy, fossiliferous, hard and strong, angular to rounded pieces	30 (RQD 0%)	1	HQ coring; mostly fine to coarse gravel; soft at 4.9 ft	
						1.7	
			SAND: pale brown, medium dense, well graded, fine to coarse, angular, moist, calcitic, some fine gravel, gravelly (shells and limestone)		1	SPT	5 6 12
						-0.8	
			SAND: pale brownish grey, well graded, fine to coarse, angular, calcitic, wet, silty in the upper half of sample		2	SPT	2 16 11
-5.8	13.5					-5.8	
			Silty SAND: pale brownish grey, medium dense, well graded, fine to medium grained, angular, calcitic, wet, trace fine, angular gravel (shells)		3	SPT	4 4 7

(continued)

ENG FORM 1836, replaces EDITION ARE OBSOLETE.

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0336

Hole No. CP05-EAARS-CB-0336

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 7.7 | Sheet 2 of 2 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5
-7.3	15.0					-7.3	
-10.8	18.5		SAND: light brownish grey, very dense, well graded, fine to coarse, moist, angular, calcitic, trace fine gravel (shell)		4	-10.8 SPT; Intermittent hard drilling below 19 ft	15 29 50/2"
-15.8	23.5		no recovery		5	-15.8 SPT	50/0"
						-20.8	
-22.3	30.0		no recovery		6	SPT	50/0"
			End of Boring at 30'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0336

Hole No. CP05-EAARS-CB-0337

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N752253.4, E784339.2 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0337		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Erik Bluemke		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/17/2005 Completed 8/17/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 8.6 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 35 ft		19. Inspector: N. Holst	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
8.6	0.0						
			PEAT: black, moist, fine grained, organic		1	8.6 SPT; All calcitic material noted below is at least in part shell fragments	4 7 50/5"
7.1	1.5					7.1	
			LIMESTONE: light to medium grey and light brown, fine to coarse grained, thinly bedded, fossiliferous, vuggy, hard and strong, caprock	52 (RQD 0%)	1	HQ coring; Ranges from calcilutite to calcarenite; softer 5 to 7.5 ft, then hard 7.5 to 9.5 ft, then soft again below 9.5 ft	
			LIMESTONE: pale brownish grey, thinly bedded, fossiliferous, some very fine grained (calcilutite), slightly vuggy to dense, hard and strong, mostly medium to medium to coarse (calcarenite) porous, moderately hard and moderately strong			2.1	
				26 (RQD 0%)	2	1.9 SPT HQ coring	50/3"
						-2.9	
-3.4	12.0						9
			SAND: pale brownish grey, very dense, well graded, fine to coarse grained, angular, wet, calcitic, with some gravel (angular limestone chips and shells), trace silt		3	SPT -4.9	50/4"
					4	SPT	50/3"

(continued)

ENG FORM 1836, PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0337

Hole No. CP05-EAARS-CB-0337

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 8.6 | Sheet 2 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-6.4	15.0					-6.4	
-9.9	18.5		Grades to Gravelly SAND: more gravel		5	-9.9 SPT	25 33 40
-14.9	23.5		SAND: pale brownish grey, very dense, well graded, fine to coarse grained, angular, wet, calcitic, with a trace fine gravel and trace very fine quartz sand		6	-14.9 SPT; Intermittent hard drilling from 21 to 23 ft	15 12 50/2"
-19.9	28.5		Only chips of Sandy LIMESTONE recovered		7	-19.9 SPT; Intermittent hard drilling from 28.5 to 33.5 ft	50/2"
-23.9	32.5		SAND: pale brownish grey, very dense, poorly graded, mostly uniform, fine			-23.9	5 14

(continued)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0337

Hole No. CP05-EAARS-CB-0337

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 8.6 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-24.8	33.4		grained, subrounded and quartzose, some fine to medium grained, angular and calcitic, trace fine gravel		8	-24.8 SPT; Caloosahatchee Formation or Pinecrest Sand of Tamiami Formation	50/4"
-26.4	35.0		End of Boring at 35'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.6" splitspoon (1 3/8" I.D. x 2" O.D.)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0337

Hole No. CP05-EAARS-CB-0338

DRILLING LOG	Division:	Installation:	Sheet 1 of 1 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N754257.9, E760698.6 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0338		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Erik Bluemke		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/1/2005 Completed 9/1/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 8.9 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 7.5 ft		19. Inspector: N. Holst	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
8.9	0.0		PEAT: not sampled				
6.4	2.5					6.4	
			LIMESTONE: tan to light brown and grey, thinly bedded, fine to coarse grained, vuggy, Fossiliferous, hard and strong to moderately hard, moderately strong and porous	46 (RQD 8%)	1	HQ coring; Intermittent soft drilling from 3.5 to 4.5 ft, soft at 5.5 ft	
3.4	5.5						
			No recovery				
1.4	7.5						
			End of Boring at 7.5'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

0 2 4 6 8 10 12 14

ENG FORM 1836 PREVIOUS EDITION MAY BE OBSOLETE | PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0338

Hole No. CP05-EAARS-CB-0339

DRILLING LOG	Division:	Installation:	Sheet 1 of 1 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N754349.7, E769822.3 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0339		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Erik Bluemke		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/1/2005 Completed 9/1/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 8.1 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 6.3 ft		19. Inspector: N. Holst	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5
8.1	0.0		Did not sample. Just drilled down to caprock.				
6.8	1.3					6.8	
3.1	5.0		LIMESTONE: caprock, tan to light brown, thinly bedded, fine to coarse grained, vuggy, fossiliferous, hard and strong, ranges mudstone to packstone	18 (RQD 7%)	1	HQ coring; soft from 2.3 ft to 3.9 ft	
1.8	6.3		No recovery for this depth interval				
			End of Boring at 6.3'			NOTES: 1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93. 2. 140# hammer with 30" drop used on 2.0' splitspoon (1 3/8" I.D. x 2" O.D.)	

0 2 4 6 8 10 12 14

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE Sheet 1

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0339

Hole No. CP05-EAARS-CB-0340

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N754381.6, E777736 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0340		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Erik Bluemke		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/30/2005 Completed 8/30/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 7.3 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 30 ft		19. Inspector: N. Holst	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
7.3	0.0						
			1.1 ft of PEAT: not sampled				
6.2	1.1					6.2	
			LIMESTONE: tan to light brown, thinly bedded, fine to coarse grained, fossiliferous, vuggy to porous, moderately hard and moderately strong	24 (ROD 0%)	1	HQ coring: soft from 1.6 to 2.1 ft and 4.1 to 5.1 ft	
1.3	6.0					1.3	
			Sandy GRAVEL: tan, poorly graded, fine grained, subangular, limestone with angular, fine to coarse, calcitic sand, trace silt, medium dense, wet		1	SPT	4 6 6
-3.2	10.5					-3.2	
			SAND: pale brownish grey, medium, dense, well graded, fine to coarse, angular, calcitic, some fine gravel (shells), trace silt, wet		2	SPT	15 9 9
-6.2	13.5					-6.2	
			Silty SAND: as above but silty with trace gravel (shells)		3	SPT	4 6 5

(continued)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0340

Hole No. CP05-EAARS-CB-0340

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 7.3 | Sheet 2 of 2 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-7.7	15.0					-7.7	
-11.2	18.5		Silty SAND: as above but very dense, some gravel (limestone)		4	-11.2 SPT; hard layers below 17.5 ft, intermittent	8 50/5"
-16.2	23.5		Sandy GRAVEL: pale brownish grey, well graded, fine to coarse, very dense, subangular, limestone, with calcitic, angular sand, some silt		5	-16.2 SPT	28 47 12
-21.2	28.5		SAND: pale brownish grey, medium dense, wet, uniform, fine, subrounded, quartzose, some calcitic, angular, fine sand to fine gravel, trace silt		6	-21.2 SPT; Caloosahatchee Formation or Pinecrest Sand of Tamiami Formation	31 16 7
-22.7	30.0		End of Boring at 30'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0340

APPENDIX 2
SUPPLEMENTAL BORINGS AND PIEZOMETER INSTALLATION LOGS: 341-360

Hole No. CP05-EAARS-CB-0341

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N754254.6, E784321.7 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0341		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Erik Bluemke		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/17/2005 Completed 8/18/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 8.9 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 36.5 ft		19. Inspector: N. Holst	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
8.9	0.0		PEAT: brownish black, fine, loose, moist, non-plastic, organic		1	8.9 SPT 7.4	2 2 6
7.4	1.5		LIMESTONE: tan to light grey and light brown, very fine to coarse grained, thinly bedded, fossiliferous, ranges from very fine (calcilutite), dense but vuggy, strong and hard to medium and coarse grained (Calcarenite), porous, moderately hard and moderately strong.	46 (RQD 14%)	1	7.4 SPT HQ coring	50/2"
2.4	6.5		1.2 ft of tan, vuggy, hard, and strong calcilutite recovered in Run # 2.	24 (RQD 18%)	2	HQ coring; Ranges from mudstone to grainstone 2.4	
-2.6	11.5		0.3 in of the same recovered at the top of Run # 3.	6 (RQD 0%)	3	HQ coring; Soft drilling from 9 to 11.2 ft; soft drilling from 11.8 to 23 ft	

0 2 4 6 8 10 12 14

(continued)

ENG FORM 1836, PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0341

Hole No. CP05-EAARS-CB-0341

DRILLING LOG (Cont. Sheet) | Elevation Top of Hole: 8.9 | Sheet 2 of 3 Sheets

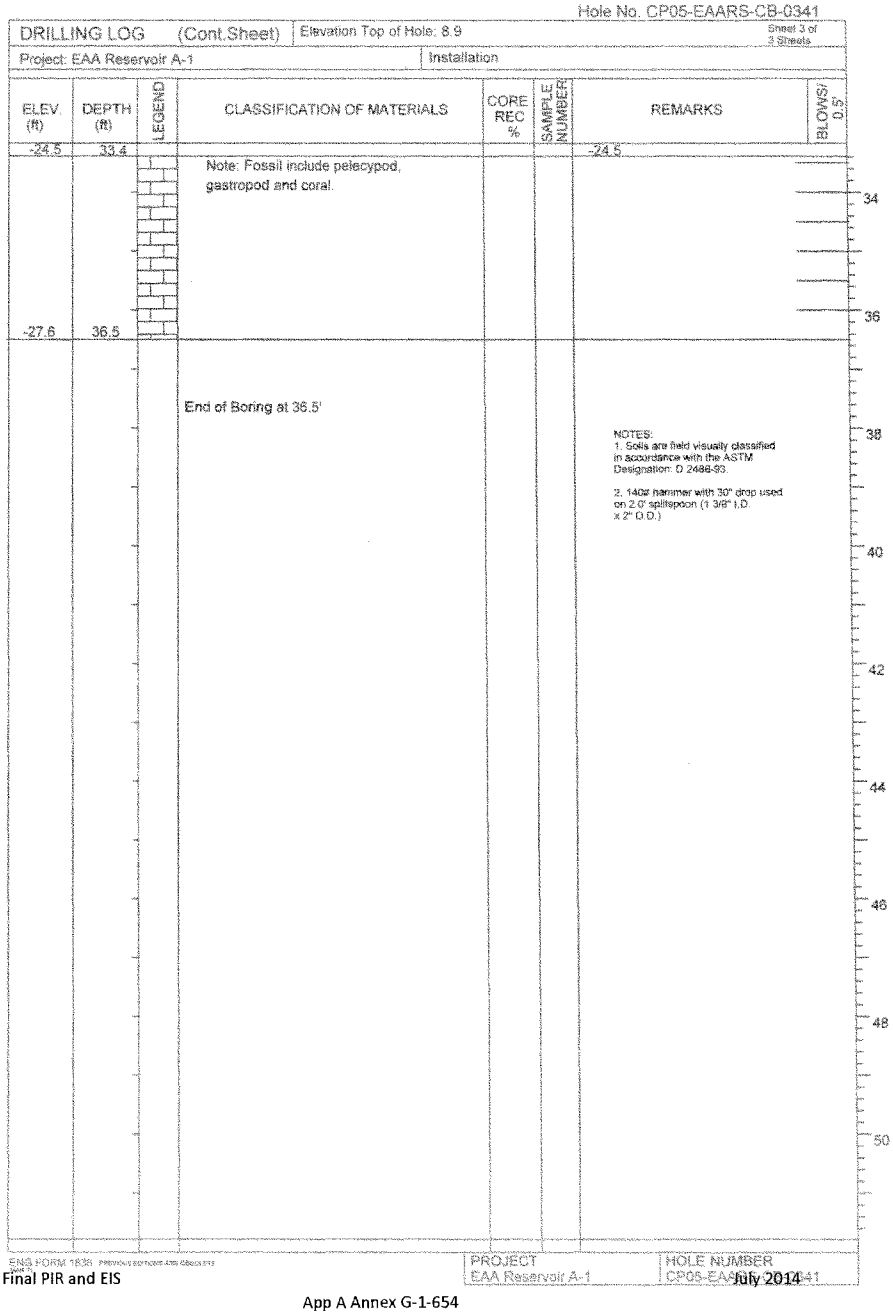
Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-6.1	15.0					-6.1	
-7.6	16.5		No core recovery	0 (RQD 0%)	4	HQ coring	16
-12.6	21.5		Calcarinite and shells: Light brownish grey, fine to coarse grained, porous, moderately hard and moderately strong to soft and weak grain stone recovered in Run # 5.	26 (RQD 0%)	5	HQ coring; Short sections of firm drilling at middle and end of run # 5	18 20 22 24
-17.6	26.5		Calcarinite and shells: light brownish grey to light and medium grey, porous, moderately hard and moderately strong to soft, weak and friable grain stone with a trace of quartz sand, also hard and strong pack stone with some fine quartz sand with apparent solution voids infilled with the grainstone in Run # 6.	42 (RQD 8%)	6	HQ coring; Intermittent firm drilling in run # 6	26 28 30
-22.6	31.5		Light to medium grained, shelly, dense, hard and strong to porous, moderately hard and moderately hard packstone recovered in Run # 7. For most part, core is only half cylinder (possible solution cavity?)	40 (RQD 0%)	7	HQ coring; Complete circulation loss in run # 7; 4" casing down to 30 ft	32

(continued)

END FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0341



Hole No. CP05-EAARS-CB-0341

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 8.9 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-24.5	33.4					-24.5	
			Note: Fossil include pelecypod, gastropod and coral.				
-27.6	36.5		End of Boring at 36.5'			NOTES: 1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93. 2. 140# hammer with 30" drop used on 2.0' splitspoon (1 3/8" I.D. x 2" O.D.)	

34 36 38 40 42 44 46 48 50

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0341

Hole No. CP05-EAARS-CB-0342

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N754260.6, E764321.2 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0342		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Erik Bluemke		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/18/2005 Completed 8/19/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 11.4 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 35 ft		19. Inspector: N. Holst	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
11.4	0.0						
			Peat: black, loose, fine grained, non-plastic, moist, organic		1	11.4 SPT; All calcitic material noted below is at least in part shell fragments.	4 3 3
9.4	2.0					9.9 9.4	50/6"
			LIMESTONE: tan to brownish grey and light brown, fine to coarse grained, thinly to medium bedded, vuggy, fossiliferous, strong and hard	46 (RQD 22%)	1	SPT HQ coring; Caprock from 2 to 8 ft; soft from 4 to 4.9 ft; Core pieces for testing: 2.3 to 4 ft and 4 to 4.4 ft	
5.2	6.2						
			Only uniform fine, angular, limestone gravel: looks like drill cuttings			4.4	50/2"
2.9	8.5				3	SPT 2.9	
			SAND: pale brownish grey, loose, wet, well graded, fine to coarse, angular, calcitic, some silt, trace gravel		4	SPT	3 3 2
						0.4	
			Grades to some gravel		5	SPT	10 4 3
-2.1	13.5					-2.1	
			Grades to Gravelly SAND (as above) with some silt, medium dense		6	SPT	3 7 18

(continued)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE. (EP)

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0342

Hole No. CP05-EAARS-CB-0342

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 11.4 | Sheet 2 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-3.6	15.0					-3.6	
-4.6	16.0					-4.6	
			Grades to SAND: as above but no gravel, trace silt, medium dense		7	SPT	19 10 7
-7.1	18.5					-7.1	
			Grades to Silty SAND (as above) but pale greenish grey, loose, and silty		8	SPT	6 4 4
-9.6	21.0					-9.6	
			Grades to Gravelly SAND: like that at 13.5 but very dense, pale brownish grey		9	SPT	50/6"
						-12.1	
			Gravelly SAND as above, but a race very fine, subrounded quartz		10	SPT	24 50/5"
-14.6	26.0					-14.6	
			SAND (as above), with some gravel and silt, trace very fine quartz		11	SPT	15 12 50
						-17.1	
			No recovery		12	SPT; Hard drilling from 28.5 to 31 ft	50/0"
-19.6	31.0					-19.6	
			Sandy GRAVEL: pale brownish grey, very dense, well graded, fine to coarse, angular, limestone (trace very fine quartz sand with sand as above		13	SPT; Hard drilling from 31 to 33. 5 ft	22 39 50/2"

(continued)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0342

Hole No. CP05-EAARS-CB-0342

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 11.4 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-22.0	33.4					-22.0	
						-22.1	50/2"
					14	SPT	
-23.6	35.0						
			End of Boring at 35'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0' splitspoon (1 3/8" I.D. x 2" O.D.)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0342

Hole No. CP05-EAARS-CB-0343

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N753259.7, E786969.9 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0343		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Erik Bluemke		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/16/2005 Completed 8/16/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 8.6 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 35 ft		19. Inspector: N. Holst	

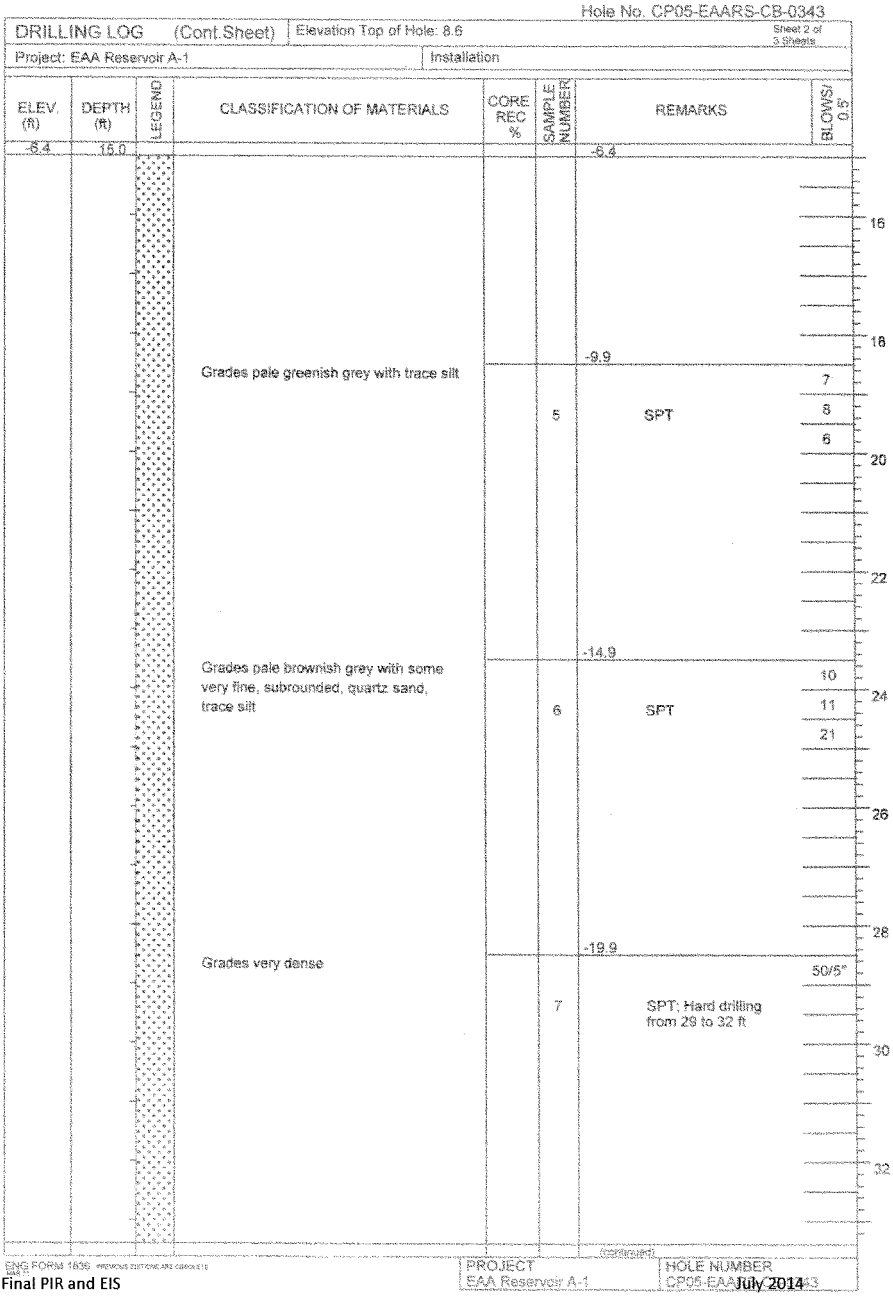
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
8.6	0.0		Peat: brownish black, loose, fine grained, non-plastic, organic, moist		1	8.6 SPT 7.1	4, 2, 2
					2	SPT 5.6	2, 2, 2
5.1	3.5		Wet at 3 ft		3	4.6 SPT	3, 50/3"
			LIMESTONE: caprock, tan to light brown, mostly fine grained, vuggy, and fossiliferous, thinly bedded, strong and hard	32 (RQD 0%)	1	HQ coring	
1.1	7.5					-0.4	
			SAND: pale brownish gray, loose, well graded, fine to coarse, angular, calcitic, trace gravel, some silt			-4.9	
					4	SPT	4, 2, 4

0 2 4 6 8 10 12 14

(continued)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0343


Hole No. CP05-EAARS-CB-0343
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 8.6
Sheet 2 of 3 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-8.4
15.0
-8.4
16
18
-9.9
Grades pale greenish grey with trace silt
5
SPT
7
8
6
20
22
-14.9
Grades pale brownish grey with some very fine, subrounded, quartz sand, trace silt
6
SPT
10
11
21
24
26
28
-19.9
Grades very dense
7
SPT; Hard drilling from 29 to 32 ft
50/5"
30
32
(Continued)
ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAA

Hole No. CP05-EAARS-CB-0343

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 8.6 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-24.8	33.4					-24.8	
-24.9	33.5		Sandy GRAVEL: pale greenish grey, very dense, gap graded, fine to coarse, subangular, sandy limestone, with angular, calcitic sand		8	-24.9 SPT	15 50/3"
-26.4	35.0		End of Boring at 35'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0343

Hole No. CP05-EAARS-CB-0344

DRILLING LOG	Division:	Installation:	Sheet 1 of 1 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N758906.8, E761991.5 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0344		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Erik Bluemke		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/7/2005 Completed 9/7/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 8.4 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 5.8 ft		19. Inspector: N. Holst	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
8.4	0.0						
7.6	0.8		PEAT: Not Sampled			7.6	
3.2	5.2		LIMESTONE: tan to light brown and gray, fine to coarse grained, thinly bedded, fossiliferous, vuggy to porous, hard and strong to moderately hard to moderately strong.	34 (RQD 0%)	1	HQ coring; Loosing water in caprock; Very hard to 3 ft, soft at 5.2 ft	
2.6	5.8		No recovery				
			End of Boring at 5.8'			NOTES: 1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93 2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)	

0 2 4 6 8 10 12 14

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0344

Hole No. CP05-EAARS-CB-0345

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N759008.3, E768486.5 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0345		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
7. Thickness of Burden: N/A		16. Date Hole Started 9/7/2005 Completed 9/7/2005	
8. Thickness of cap rock: N/A		17. Elevation Top of Hole: 10.5 (ft)	
9. Depth of hole: 35.5 ft		18. Total Core Recovery for hole: N/A	
		19. Inspector: K. Jones	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
10.5	0.0		ROADFILL: Not sampled.				0
8.0	2.5		PEAT: Not sampled.				2
6.5	4.0		LIMESTONE: pale yellowish brown to tan, granular, very hard to medium soft, dense, fractured with fractures filled with calcerous silt becoming weathered and softer at bottom. A 1 ft void in the core from 6.0 to 7.0	70 (RQD 20%)	1	HQ coring	4 6 8
1.5				10 (RQD 0%)	2	HQ coring, only recovered bottom 6" of core	10
-3.5	14.0		Grades to tan, soft, granular, calcareous, silty, with some cemented shell.				12
			Sandy GRAVEL: gray to tan, medium dense, calcareous, subangular, fine to coarse grained, well graded, some gray		1	SPT	14 4 4

(continued)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0345

Hole No. CP05-EAARS-CB-0345

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 10.5 | Sheet 2 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-4.5	15.0		silt.			-4.5	7
-7.0	17.5		Gravelly SAND: grades as above.			-8.5	16
					2	SPT	2
							2
							12
			A layer of Limeston from 24 to 24.75.		3	SPT	50/1"
-16.5	27.0		Sandy GRAVEL (Caloosahatchee Formation): gray to tan, very dense, siliceous, calcereous, subangular, well graded, some silt.			-17.0	
						-18.5 Top of Caloosahatchee Formation	
					4	SPT; cemented quartz sand	14
							25
							27
-22.0	32.5		SAND: gray, dense, uniform consistency, subangular, trace of black				

(continued)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0345

Hole No. CP05-EAARS-CB-0345

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 10.5 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-22.9	33.4		phosphorite and tan calcerous sand.			-22.9	
						-23.5	
					5	SPT	9 14 15
-25.0	35.5		End of Boring at 35.5'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0' splitspoon (1 3/8" I.D. X 2" O.D.)

34 36 38 40 42 44 46 48 50

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0345

Hole No. CP05-EAARS-CB-0346

DRILLING LOG	Division:	Installation:	Sheet 1 of 1 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N758929.4, E773783.5 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0346		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Erik Bluemke		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/8/2005 Completed 9/8/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 10 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 11.5 ft		19. Inspector: N. Holst	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
10.0	0.0		ROADFILL: Limestone gravel and cobbles recovered.	12 (RQD 0%)	1	10.0 HQ coring; Hard 0.1 to 0.6 ft; soft to 4.3 ft; then hard from 4.3 to 4.6 ft; hard from 4.8 to 7.3 ft; soft from 7.3 to 9.1 ft; hard from 9.1 to 9.6 ft and then soft	
5.4	4.6		LIMESTONE (Caprock): tan to light brown, fine to coarse grained, thinly bedded, fossiliferous, vuggy, hard and strong.	40 (RQD 24%)	2	5.0 HQ coring; UCS=5010psi; core samples for testing: 5.0 to 5.6 ft and 5.9 to 6.5 ft	
0.4	9.6		SAND: pale brownish gray, medium dense, well graded, fine to coarse grained, angular, calcitic, some fine angular Limsestone gravel, trace silt.		1	0.0 SPT; SP-SM; poorly graded sand with silt and gravel; Moisture=10%	7 6 6
-1.5	11.5		End of Boring at 11.5'			NOTES: 1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93. 2. 140# hammer with 30" drop used on 2.0" split spoon (1 3/8" I.D. x 2" O.D.)	

ENG FORM 1836 PREVIOUS EDITION ARE OBSOLETE

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0346

Hole No. CP05-EAARS-CB-0347

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N759062.5, E760380.1 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0347		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Erik Bluemke		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/8/2005 Completed 9/8/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 7.7 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 12.5 ft		19. Inspector: N. Holst	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
7.7	0.0						
			PEAT: Not sampled				0
5.7	2.0					5.7	
			LIMESTONE (Caprock): tan to light brown, thinly bedded, fine to coarse grained, fossiliferous, vuggy, strong and hard to porous, soft and weak.	88 (RQD 43%)	1	HQ coring; soft from 3.2 to 3.5 ft and 3.6 to 5.8 ft; intermittent hard drilling from 5.8 to 8.5 ft; then soft below 8.5 ft	2
							4
						1.7	
				42 (RQD 10%)	2	HQ coring; Core samples for testing: 2.4 to 3 f, 3.0 to 3.7 ft and 6.0 to 6.5 ft	6
-0.8	8.5						8
			Gravelly SAND: pale brownish gray, well graded, fine to coarse grained, loose, wet, angular, calcitic, fine subrounded gravel.				10
						-3.3	
					1	SPT	2 2 2
-4.8	12.5						12
			End of Boring at 12.5'				14

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

(continued)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0347

Hole No. CP05-EAARS-CB-0347

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 7.7 | Sheet 2 of 2 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-7.3	15.0					-7.3	

2. 140# hammer with 30" drop used on 2.0' splitspoon (1 3/8" I.D. x 2" O.D.)

16 18 20 22 24 26 28 30 32

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0347

Hole No. CP05-EAARS-CB-0348

DRILLING LOG	Division:	Installation:	Sheet 1 of 1 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N7615525, E7619843 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0348		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Erik Bluemke		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/7/2005 Completed 9/7/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 8.4 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 8.5 ft		19. Inspector: N. Holst	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
8.4	0.0		PEAT: Not sampled.				
7.3	1.1					7.4	
			LIMESTONE (Caprock)	40 (RQD 0%)	1	HQ coring; soft from 2.1 to 3.8 ft and at 4.6 ft	
3.8	4.6						
			SAND: pale brownish gray, dense, well graded, fine to coarse grained, angular, calcitic, moist, with some fine angular, limestone gravel.			2.4	
						1.4	
					1	SPT	26 23 25
-0.1	8.5						
			End of Boring at 8.5'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0348

Hole No. CP05-EAARS-CB-0349

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N761596.4, E768469.3 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0349		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/7/2005 Completed 9/7/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 10 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 35.5 ft		19. Inspector: K. Jones	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
10.0	0.0		ROADFILL: Not sampled.				0
							2
6.0	4.0					6.0	
			LIMESTONE (Caprock): dark brown to gray, hard and brittle to medium soft, weathered, and porous.	40 (RQD 22%)	1	HQ coring	4
							6
2.5	7.5						
			Gravelly SAND: gray to tan, calcereous, very loose, well graded, subangular, some tan calcereous silt.				8
						1.0	
					1	SPT; very soft at 7.5 ft during coring	5 2 1
-3.0	13.0						10
							12
			Sandy SILT: gray, stiff, calcereous, well graded, interbedded with gray tan shells and shell fragments.			-4.0	
							14
					2	SPT (continued)	5 4

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0349

Hole No. CP05-EAARS-CB-0349

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 10 | Sheet 2 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-5.0	15.0					-5.0	9
							16
-8.5	18.5		LIMESTONE: dark brown, very hard, brittle, silicified, fossiliferous, sandy.			-9.0	18
					3	SPT; this is only a limestone stringer becoming softer	50/3"
							20
-12.5	22.5		SAND: gray, dense, calcereous, well graded.			-14.0	22
-15.0	25.0		LIMESTONE: dark gray, hard, brittle, moldic, angular, fossiliferous.		4	SPT	13
							24
							50/2"
							26
						-18.5	28
			LIMESTONE (Caloosahatchee Formation): dark gray, hard, sandy (quartz), fossiliferous, some gray quartz sand.			-19.0	
-20.0	30.0				5	Caloosahatchee Formation or Pinecrest Sand of Tamiami Formation SPT	50/4"
			SAND: gray, loose, uniform consistency, subangular quartz, some tan shell fragments.				30
							32

(continued)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0349

Hole No. CP05-EAARS-CB-0349

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 10 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-23.4	33.4					-23.4	
						-24.0	
							6
					6	SPT	8
-25.5	35.5						5
			End of Boring at 35.5'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

34 36 38 40 42 44 46 48 50

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0349

Hole No. CP05-EAARS-CB-0350

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N761606.5, E773832.1 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-45B	
4. Hole No: CP05-EAARS-CB-0350		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Ralph Smith		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/13/2005 Completed 9/13/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 8.7 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 12.5 ft		19. Inspector: A.M. Noronha	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
8.7	0.0		PEAT: Not sampled.				0
6.2	2.5		Silty SAND: greenish gray, soft, fine grained, angular calcitic sand.			6.2	2
5.2	3.5		LIMESTONE (Caprock): tan brown to light gray, hard, fine to medium grained, shelly.	34 (RQD 12%)	1	HQ coring; 0.6 ft piece of Silty SAND recovered; 1.1 ft of limestone piece recovered	4
						1.2	6
-0.3	9.0		Grades white and porous.	8 (RQD 8%)	2	HQ coring; one piece of 0.4 ft	8
-3.8	12.5		No recovery				10
			End of Boring at 12.5'				12
							14

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

(continued)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0350

Hole No. CP05-EAARS-CB-0350

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 8.7 | Sheet 2 of 2 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-6.3	15.0					-6.3	

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

16 18 20 22 24 26 28 30 32

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE MAR 77

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0350

Hole No. CP05-EAARS-CB-0351

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N761648.4, E779503.9 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-45B	
4. Hole No: CP05-EAARS-CB-0351		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Ralph Smith		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/12/2005 Completed 9/12/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 7.9 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 12 ft		19. Inspector: A.M. Noronha	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5
7.9	0.0		PEAT: Not sampled.				
5.9	2.0		LIMESTONE (Caprock): light gray, hard, fine to medium grained, porous.	20 (RQD 0%)	1	HQ coring 5.9	
-0.1	8.0		Grades to moderately hard, vuggy, fossiliferous, shelly. Alternate layers of cemented sand, not much limestone.	22 (RQD 8%)	2	HQ coring; one piece of 0.4 ft recovered 0.9	
-4.1	12.0		End of Boring at 12'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D.

(continued)

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0351

Hole No. CP05-EAARS-CB-0351

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 7.9 | Sheet 2 of 2 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-7.1	15.0					-7.1	

x 2" O.D.)

16
18
20
22
24
26
28
30
32

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0351

Hole No. CP05-EAARS-CB-0352

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N759734.9, E781678.1 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0352		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/25/2005 Completed 8/25/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 11 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 35 ft		19. Inspector: B. Levesque	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5
11.0	0.0						
			GRAVEL: brown to grey, medium dense, dry, fine to coarse graded, subangular to subrounded, some fine to medium sand, subangular to subrounded, little silt, trace organics		1	11.0 SPT	15 16 4
9.0	2.0					9.0	
			PEAT: black, very loose, fibrous, moist, little to trace fine to medium sand, little silt		2	SPT	
						7.0	
					3	SPT	9 12 50/4"
5.5	5.5					5.5	
			LIMESTONE: white to grey, fine grained to whackestone, hard and strong, slightly porous, slightly vuggy to vuggy, thinly bedded, fossiliferous	55 (RQD 35%)	1	HQ coring	
0.5	10.5					0.5	
			SAND: white, calcitic, fine to medium grained, little to some fine to coarse gravel, subangular and subrounded, little silt, very loose, moist, poorly graded		4	SPT; broke through the cap at 10.5 ft	7 1 2
						-3.0	
			SAND: white, calcitic, fine to medium grained, little silt, fossiliferous, very loose		5	SPT	2 2

(continued)

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0352

Hole No. CP05-EAARS-CB-0352

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 11 | Sheet 2 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-4.0	15.0					-4.0	2 16 18
			same as above, silty, dense		6	-8.0 SPT	3 5 4 20 22
			same as above, medium dense state		7	-13.0 SPT; slightly hard drilling at 23 ft	5 10 7 24 26 28
					8	-18.0 SPT	7 7 6 30 32

(continued)

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0352

Hole No. CP05-EAARS-CB-0352

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 11 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-22.4	33.4					-22.4	
						-23.0	
			SAND: white to grey, fine to coarse, calcitic, trace fine to medium quartz, trace fine gravel, little silt				64/4"
-24.0	35.0				9	SPT	10/0"
			End of Boring at 35'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

34 36 38 40 42 44 46 48 50

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0352

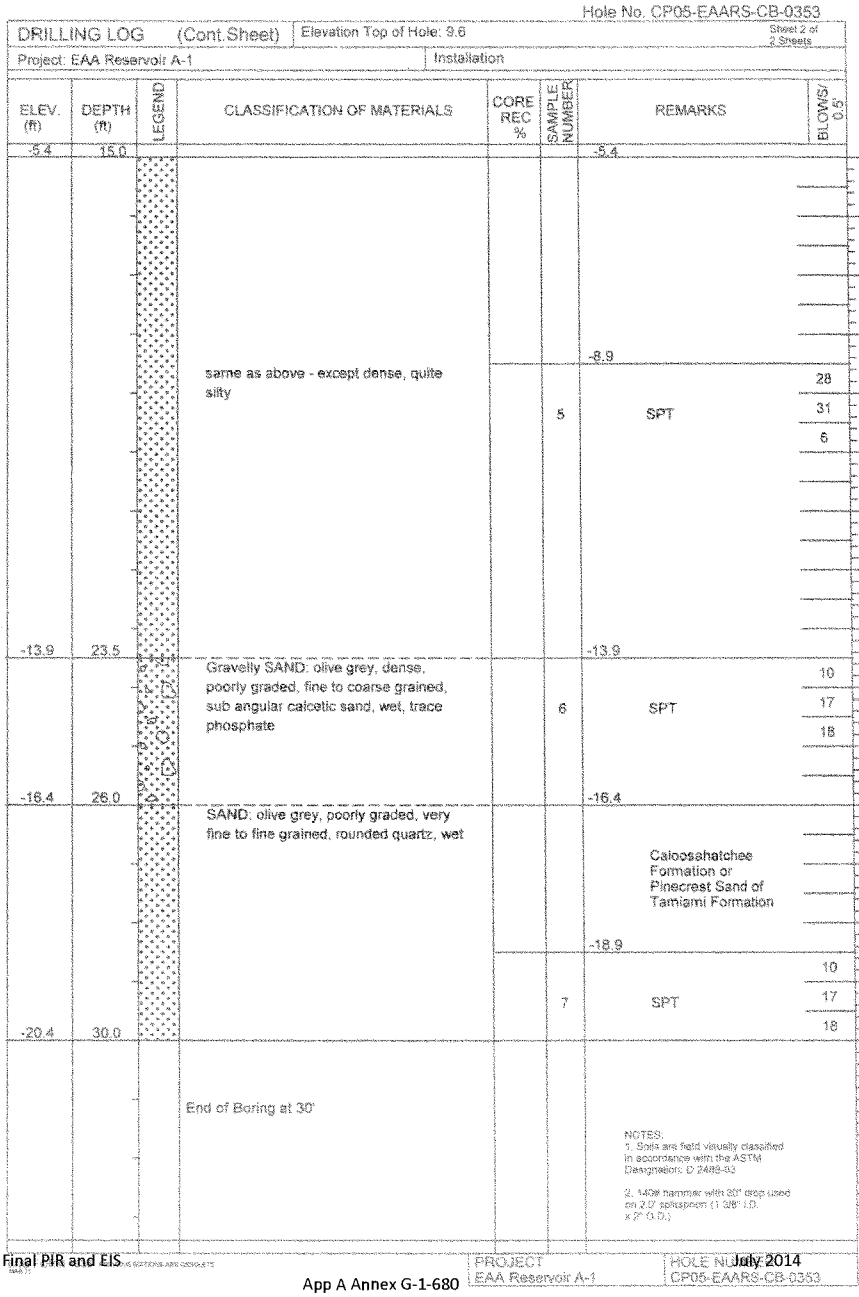
Hole No. CP05-EAARS-CB-0353

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N766803.5, E760673.5 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-45B	
4. Hole No: CP05-EAARS-CB-0353		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Ralph Smith		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/1/2005 Completed 9/1/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 9.6 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 30 ft		19. Inspector: A.M. Noronha	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
9.6	0.0		PEAT: black, loose, poorly graded, fine grained, dry		1	9.6 SPT 8.1	2 3 3
			same as above - except wet		2	SPT; couple of limestone chips at sample bottom	3 50/5"
7.1	2.5		LIMESTONE: tan brown, hard, fine to coarse grained, quite porous, shelly			6.6	
				56 (RQD 34%)	1	HQ coring; 2 pieces each of 0.45 ft and 0.4 ft	
3.6	6.0		SAND: greenish grey, loose, moderately graded, fine to medium grained, wet, subangular, calcetic sand			2.1	
					3	SPT	8 7 3
			SAND: light grey, very dense, moderately graded, fine to medium grained, sub angular, calcetic sand, wet			-3.9	
					4	SPT; 3" of hard layer	3 38 50/4"

(continued)

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0353


Hole No. CP05-EAARS-CB-0353
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 9.6
Sheet 2 of 2 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-5.4
15.0
-8.9
same as above - except dense, quite silty
5
SPT
28
31
6
-13.9
23.5
Gravelly SAND: olive grey, dense, poorly graded, fine to coarse grained, sub angular calcetic sand, wet, trace phosphate
6
SPT
10
17
18
-16.4
26.0
SAND: olive grey, poorly graded, very fine to fine grained, rounded quartz, wet
Caloosahatchee Formation or Pinecrest Sand of Tamiami Formation
-18.9
7
SPT
10
17
18
-20.4
30.0
End of Boring at 30'
NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93
2. 140# hammer with 30" drop used on 2.0" split-spoon (1 3/8" I.D. x 2" O.D.)
16
18
20
22
24
26
28
30
32
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0353

Hole No. CP05-EAARS-CB-0354

DRILLING LOG	Division:	Installation:	Sheet 1 of 1 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N766938.9, E765962.3 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-45B	
4. Hole No: CP05-EAARS-CB-0354		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Ralph Smith		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/1/2005 Completed 9/1/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 8.8 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 9 ft		19. Inspector: A.M. Noronha	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
8.8	0.0		Rotary wash from 0.0 ft to 2.5 ft. Not sampled.				
6.3	2.5		LIMESTONE: tan brown to white, hard, vuggy, shelly, fine to medium grained	30 (RQD 10%)	1	HQ coring; one piece 0.5 ft long	
3.3	5.5		SAND: light grey, very dense, poorly graded fine to coarse grained, wet, shelly				
						1.3	
					1	SPT	7 44 13
-0.2	9.0		End of Boring at 9'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0354

Hole No. CP05-EAARS-CB-0355

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N766734.9, E771197 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-45B	
4. Hole No: CP05-EAARS-CB-0355		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Ralph Smith		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/31/2005 Completed 8/31/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 8.7 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 30 ft		19. Inspector: A.M. Noronha	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
8.7	0.0		Peat: dark brown to black, loose, poorly graded, fine grained, moist		1	8.7 SPT	3 2 4
			same as above - black color		2	7.2 SPT	3 7 14
5.2	3.5		Gravelly SAND: olive grey, very dense, poorly graded, fine to coarse grained, wet		3	5.7 SPT; couple of limestone chips recovered	12 50/0"
2.7	6.0		LIMESTONE: tan brown to white, hard, fine to medium grained, shelly, a little porous	32 (RQD 12%)	1	4.2 HQ coring; Caprock 2.5 ft, 1 piece of 0.6 ft	
			No recovery		4	0.2 SPT	7 2 1
-4.8	13.5		SAND: light grey, medium dense, moderately graded, fine to medium grained, sub angular calcetic sand, wet, shells present, silty, trace phosphate		5	-4.8 SPT	17 14 11

(continued)

Hole No. CP05-EAARS-CB-0355

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 8.7 | Sheet 2 of 2 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-8.3	15.0					-8.3	
			same as above - except very dense		6	-9.8 SPT	23 31 24
-14.8	23.5		few shells and stone pieces recovered		7	-14.8 SPT; less than a foot of hard layer	50/5"
-15.8	24.5		SAND: light grey, medium dense, moderately graded, fine to medium grained, sub angular calcetic sand, rounded quartz, wet, shells present, silty, trace phosphate			-17.8 Caloosahatchee Formation or Pinecrest Sand of Tamiami Formation -19.8	
-21.3	30.0		End of Boring at 30'		8	SPT	12 12 14

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140lb hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0355

Hole No. CP05-EAARS-CB-0356

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N766664.2, E776454.1 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-45B	
4. Hole No: CP05-EAARS-CB-0356		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Ralph Smith		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/2/2005 Completed 9/2/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 8.3 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 13.5 ft		19. Inspector: A.M. Noronha	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
8.3	0.0		Not sampled				
7.3	1.0		LIMESTONE: light grey, hard, fine to medium grained, porous, shelly	94 (RQD 42%)	1	HQ coring; 1 piece each of 0.9 ft, 0.35 ft, 0.5 ft and 0.35 ft	
3.3	5.0		Cemented SAND: greenish grey, very dense, poorly graded, fine to coarse grained, sub angular calcetic sand, wet			7.3 / 2.3	
						1.8	11
1.3	7.0		LIMESTONE: light grey, hard, fine to medium grained, quite porous			1.3 SPT	50/3"
						SPT	
-0.2	8.5		SAND: light grey, loose, moderately graded, fine to medium grained, sub angular calcetic sand, wet	30 (RQD 15%)	2	HQ coring: 1 piece of 0.35 ft and 0.4 ft	
						-3.7	
-5.2	13.5				3	SPT	3 2 5
			End of Boring at 13.5'				

0 2 4 6 8 10 12 14

(continued)

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0356

Hole No. CP05-EAARS-CB-0356

DRILLING LOG (Cont.Sheet)	Elevation Top of Hole: 8.3	Sheet 2 of 3 Sheets
Project: EAA Reservoir A-1	Installation	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-6.7	15.0					-6.7	

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

16
18
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	PROJECT	HOLE NUMBER
	EAA Reservoir A-1	CP05-EAARS-CB-0356

Hole No. CP05-EAARS-CB-0357

DRILLING LOG	Division:	Installation:	Sheet 1 of 1 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N769494.6, E760664.8 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-45B	
4. Hole No: CP05-EAARS-CB-0357		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Ralph Smith		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/1/2005 Completed 9/1/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 8.4 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 8 ft		19. Inspector: A.M. Noronha	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
8.4	0.0						
			Rotary wash drilling from 0.0 ft to 1.5 ft. Not sampled.				
6.9	1.5					6.9	
			LIMESTONE: tan brown to pale white, moderately hard, fine to coarse grained, vuggy, shelly	35 (RQD 8%)	1	HQ coring; 1 piece of 0.4 ft; Caprock - 4 ft	
2.9	5.5						
			SAND: greenish grey, medium dense, poorly graded, fine to coarse grained, angular calcetic sand, wet, lots of shells, quite gravelly			1.9	
					1	SPT	3 6 14
0.4	8.0						
			End of Boring at 8'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0357

Hole No. CP05-EAARS-CB-0358

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N769579.6, E765913.5 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-45B	
4. Hole No: CP05-EAARS-CB-0358		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Ralph Smith		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/1/2005 Completed 9/1/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 9.2 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 14.5 ft		19. Inspector: A.M. Noronha	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
9.2	0.0		Rotary wash drilling from 0.0 ft to 2.0 ft. Not sampled.				
7.2	2.0		LIMESTONE: light grey to tan brown, hard, fine to coarse grained, quite porous, shells present. Staggered limestone and cemented sand layers	64 (RQD 45%)	1	HQ coring; 1 piece each of 0.4 ft, 0.4 ft, 0.35 ft, 0.45 ft and 0.65 ft	
2.2	7.0		SAND: light grey, very dense, poorly graded, fine to coarse grained, sub angular calcetic sand, limestone chips, wet		1	SPT; spoon bouncing	7 50/1"
1.2	8.0		LIMESTONE: pale white, hard, fine to medium grained, porous	30 (RQD 22%)	2	HQ coring; UCS=2500psi; 1 piece each of 0.6 ft and 0.5 ft	
-3.8	13.0		SAND: light grey to greenish grey, very dense, moderately graded, fine to coarse grained, wet		2	SPT; SM; silty sand with gravel; Moisture=21%	8 44 16
-5.3	14.5						

(continued)

PROJECT: EAA Reservoir A-1 HOLE NUMBER: CP05-EAARS-CB-0358

Hole No. CP05-EAARS-CB-0358

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 9.2 | Sheet 2 of 2 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-5.8	15.0					-5.8	
			End of Boring at 14.5'			NOTES: 1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93. 2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)	

16 18 20 22 24 26 28 30 32

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0358

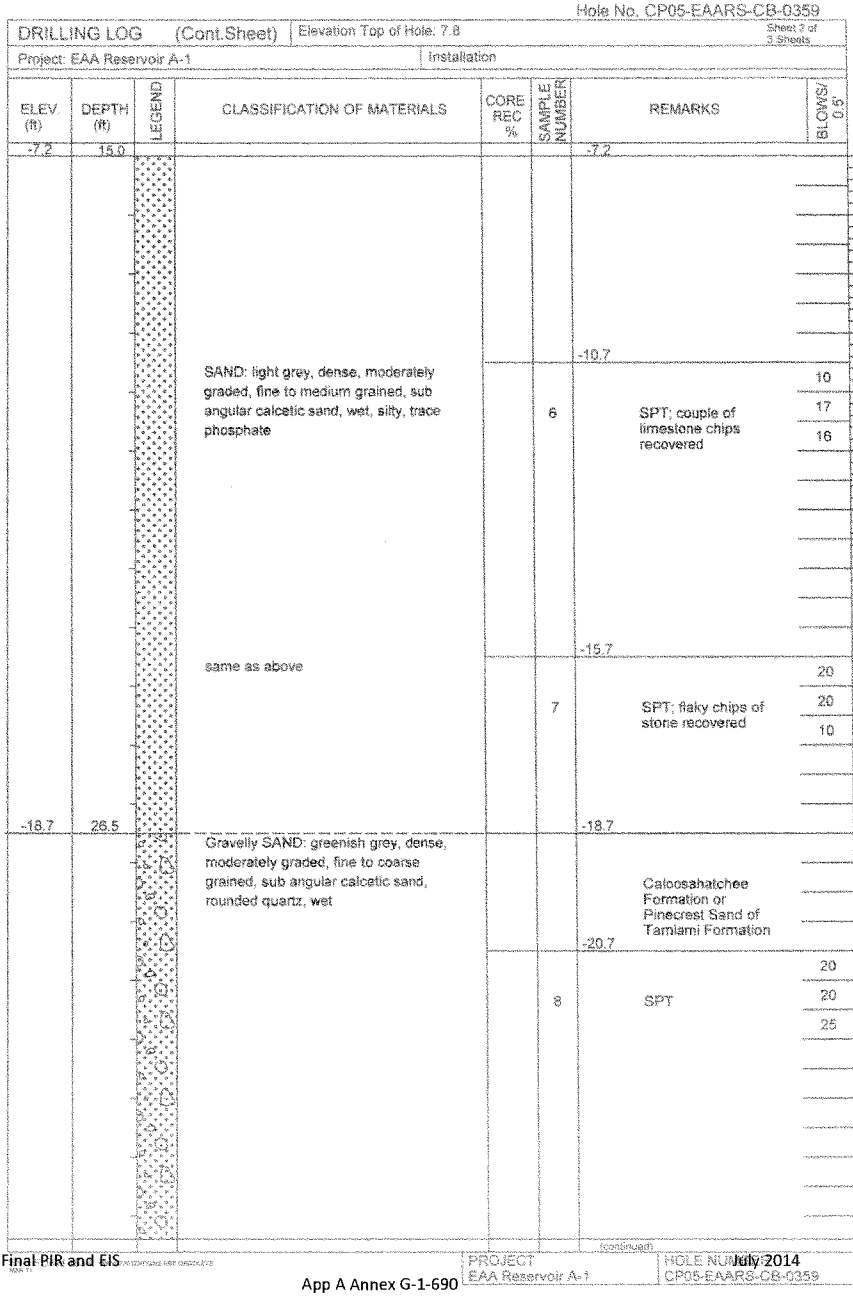
Hole No. CP05-EAARS-CB-0359

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N769432.1, E770696.1 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0359		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Ralph Smith		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
7. Thickness of Burden: N/A		16. Date Hole Started 8/24/2005 Completed 8/24/2005	
8. Thickness of cap rock: N/A		17. Elevation Top of Hole: 7.8 (ft)	
9. Depth of hole: 35 ft		18. Total Core Recovery for hole: N/A	
		19. Inspector: A.M. Noronha	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
7.8	0.0						
			PEAT: black, medium dense, fine grained, moist, organic		1	7.8 SPT	1 6 6
6.3	1.5					6.3	
			Gravelly SAND mixed with peat, wet, limestone chips recovered		2	SPT	12 36 36
4.3	3.5					4.3	
			a few limestone chips recovered	36 (RQD 10%)	1	4.3 SPT HQ coring: 1 piece of 0.5 ft	50/2"
			LIMESTONE: grey to pale white, hard, fine to medium grained, quite porous, shelly				
0.8	7.0					-0.7	
			SAND: light grey, medium dense, moderately graded, fine to coarse grained, angular calcetic sand, wet, trace silty, shells present		4	SPT	3 3 14
			same as above			-5.7	14
					5	SPT	10 12

(continued)

PROJECT EAA Reservoir A-1 HOLE NUMBER CP05-EAARS-CB-0359


Hole No. CP05-EAARS-CB-0359
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 7.8
Sheet 2 of 3 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.6'
-7.2
15.0
-7.2
16
18
-10.7
SAND: light grey, dense, moderately graded, fine to medium grained, sub angular calcetic sand, wet, silty, trace phosphate
6
SPT; couple of limestone chips recovered
10
17
16
20
22
-15.7
same as above
7
SPT; flaky chips of stone recovered
20
20
10
24
26
-18.7
26.5
-18.7
Gravelly SAND: greenish grey, dense, moderately graded, fine to coarse grained, sub angular calcetic sand, rounded quartz, wet
Caloosahatchee Formation or Pinecrest Sand of Tamiami Formation
28
-20.7
8
SPT
20
20
25
30
32
continued
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0359

Hole No. CP05-EAARS-CB-0359

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 7.8 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-25.6	33.4					-25.6	
			SAND: greenish grey, medium dense, moderately graded, fine to coarse grained, sub angular calcetic sand, rounded quartz, wet			-25.7	13
-26.7	34.5				9	SPT; 2 chips of limestone recovered	7
-27.2	35.0						5
			End of Boring at 35'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

34 36 38 40 42 44 46 48 50

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0359

Hole No. CP05-EAARS-CB-0360

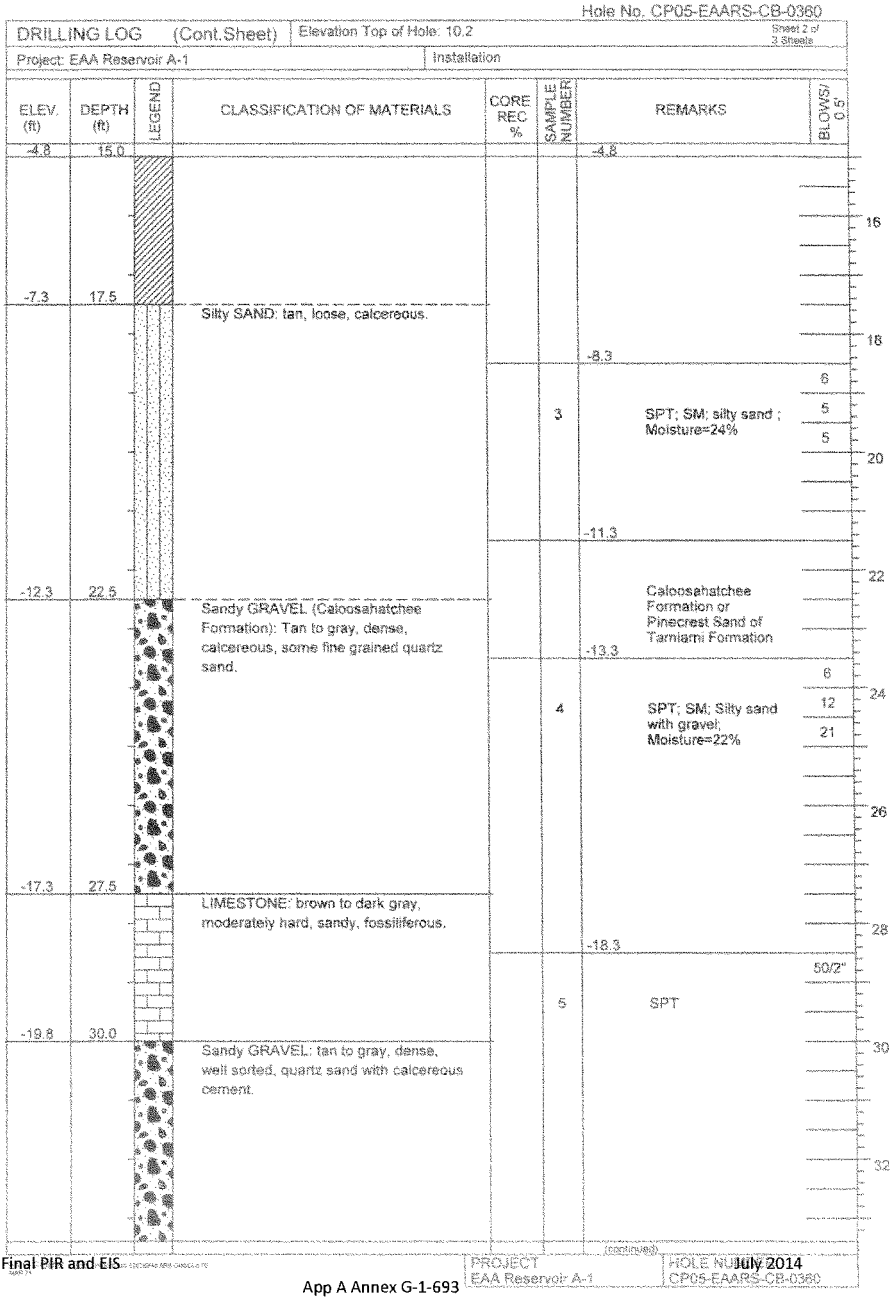
DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N774647.1, E768471.1 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0360		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Erik Bluemke		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/12/2005 Completed 9/12/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 10.2 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 35 ft		19. Inspector: K. Jones	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5
10.2	0.0		ROADFILL: Not sampled.				0
8.2	2.0		PEAT: Not sampled.				2
6.7	3.5		LIMESTONE (Caprock): tan, very hard, microcrystalline, dense. Grades to light to dark brown, fractured, fossiliferous, medium hard, porous, soft voids are filled with silt.	35 (RQD 9%)	1	HQ coring	4 6
2.7	7.5		Sandy GRAVEL: tan, very dense, calcereous, well sorted, subangular, calcitic shell hash.			6.7 Become soft at 7.5 ft	8
-2.3	12.5		CLAY: cream color, Some silt and sand, firm, calcereous, with trace fine gravel.		1	SPT; GP-GM; Poorly graded gravel with silt and sand; Moisture=26%	15 21 30 10 12
					2	SPT; SM; silty sand with gravel; Moisture=31%	2 3 4 14

2.7 — 2.7 — 1.7 — -2.3

(continued)

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0360


Hole No. CP05-EAARS-CB-0360
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 10.2
Sheet 2 of 3 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-4.8
15.0
-7.3
17.5
Silty SAND: tan, loose, calcereous.
-8.3
3
SPT; SM; silty sand ; Moisture=24%
6
5
5
-11.3
-12.3
22.5
Sandy GRAVEL (Caloosahatchee Formation): Tan to gray, dense, calcereous, some fine grained quartz sand.
Caloosahatchee Formation or Pinecrest Sand of Tamiami Formation
-13.3
4
SPT; SM; Silty sand with gravel; Moisture=22%
6
12
21
-17.3
27.5
LIMESTONE: brown to dark gray, moderately hard, sandy, fossiliferous.
-18.3
5
SPT
50/2"
-19.8
30.0
Sandy GRAVEL: tan to gray, dense, well sorted, quartz sand with calcereous cement.
16
18
20
22
24
26
28
30
32
(continued)
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0360

Hole No. CP05-EAARS-CB-0360

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 10.2 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-23.2	33.4					-23.2	
						-23.3	
					6	SPT	20 16 20
-24.8	35.0		End of Boring at 35'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

34 36 38 40 42 44 46 48 50

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0360

APPENDIX 2
SUPPLEMENTAL BORINGS AND PIEZOMETER INSTALLATION LOGS: 361-380

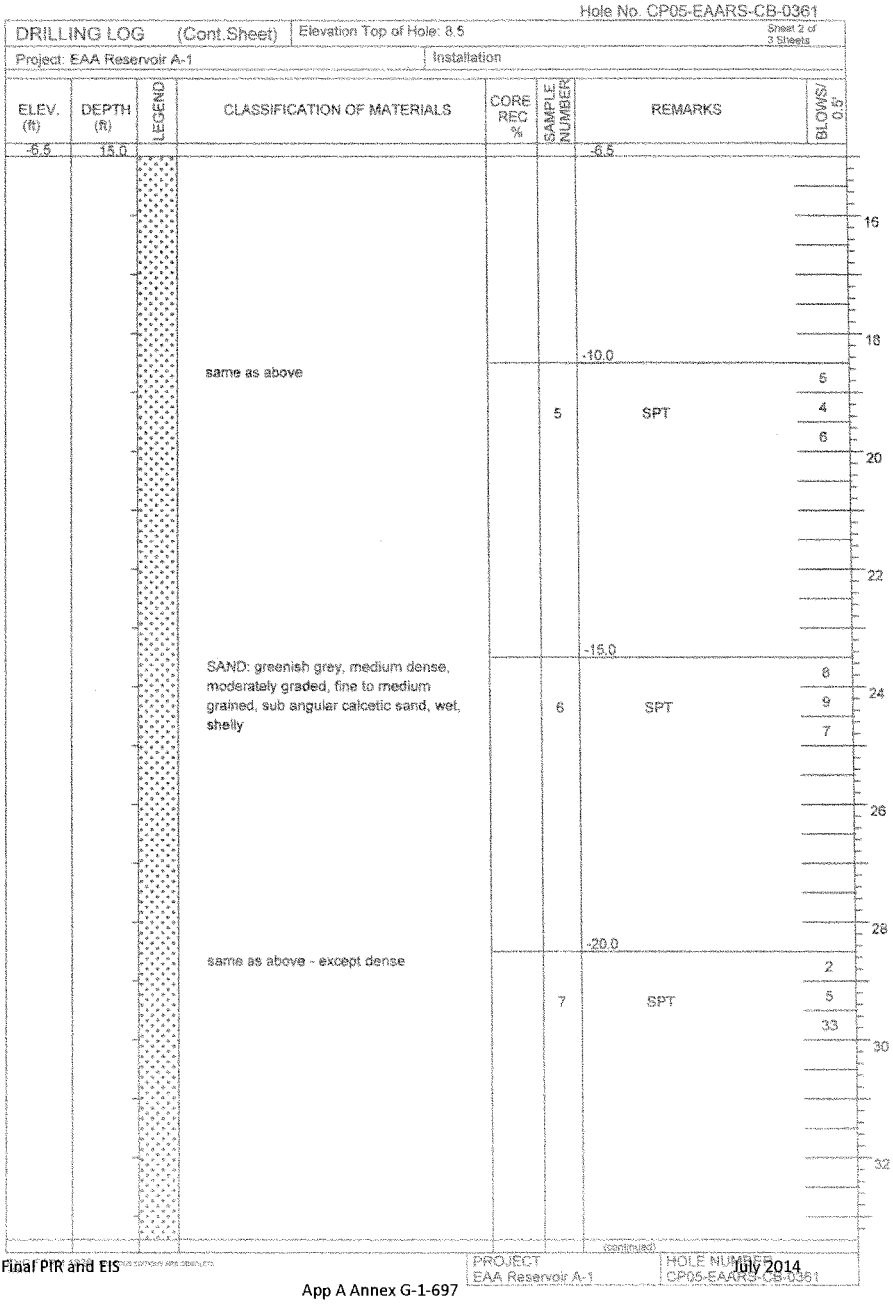
Hole No. CP05-EAARS-CB-0361

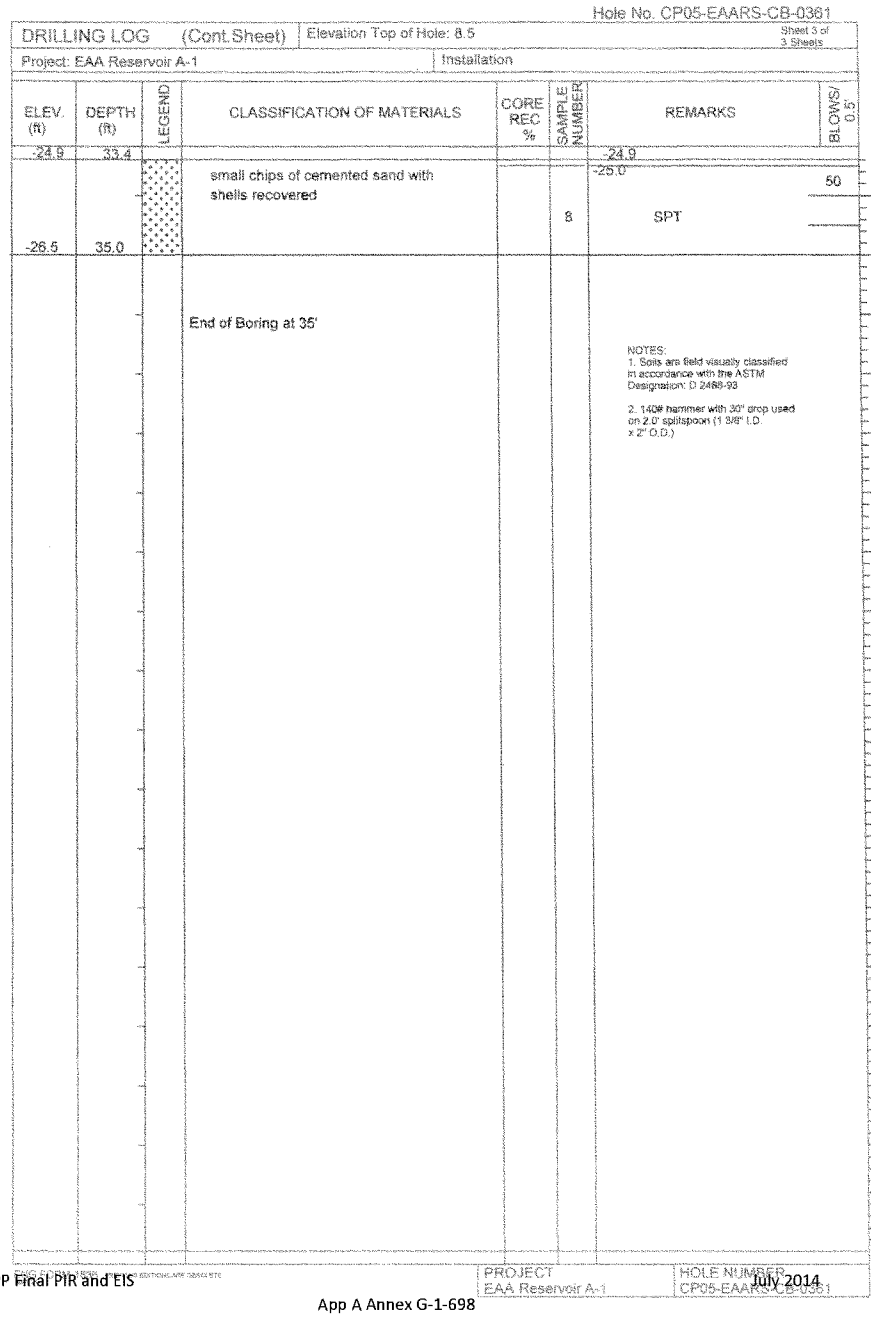
DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N778258.4, E768445.3 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0361		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Ralph Smith		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/23/2005 Completed 8/23/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 8.5 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 35 ft		19. Inspector:	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
8.5	0.0						
			PEAT: black, loose, poorly graded, fine grained, organic, dry		1	8.5 SPT	2 2 50
7.2	1.3		small pieces of limestone caprock	50 (RQD 16%)	1	7.0 HQ coring	
			LIMESTONE: light grey to pale white, hard, fine to medium grained, quite porous				
2.0	6.5		SAND: greenish grey, very dense, moderately graded, fine to coarse grained, sub angular calcetic sand, cemented, wet		2	2.0 SPT	27 27 50
			SAND: light brown, medium dense, moderately graded, fine to medium grained, sub angular calcetic sand, wet		3	0.0 SPT	2 5 5
			SAND: light grey, loose, well graded, fine to coarse grained, sub angular calcetic sand, wet, shells present, quite silty		4	-5.0 SPT	2 5 2

(continued)

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0361


Hole No. CP05-EAARS-CB-0361
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 8.5
Sheet 2 of 3 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-6.5
15.0
-8.5
16
18
same as above
-10.0
5
SPT
5
4
6
20
22
SAND: greenish grey, medium dense, moderately graded, fine to medium grained, sub angular calcetic sand, wet, shelly
-15.0
6
SPT
8
9
7
24
26
28
same as above - except dense
-20.0
7
SPT
2
5
33
30
32
(continued)
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0361



Hole No. CP05-EAARS-CB-0361

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 8.5 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-24.9	33.4		small chips of cemented sand with shells recovered		8	-25.0' SPT	50
-26.5	35.0		End of Boring at 35'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93

2. 140# hammer with 30" drop used on 2.0' splitspoon (1 3/8" I.D. x 2" O.D.)

34 36 38 40 42 44 46 48 50

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0361

Hole No. CP05-EAARS-CB-0362

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N781742.1, E760429 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-45B	
4. Hole No: CP05-EAARS-CB-0362		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Ralph Smith		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
7. Thickness of Burden: N/A		16. Date Hole Started 9/8/2005 Completed 9/8/2005	
8. Thickness of cap rock: N/A		17. Elevation Top of Hole: 8.8 (ft)	
9. Depth of hole: 30 ft		18. Total Core Recovery for hole: N/A	
		19. Inspector: A.M. Noronha	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
8.8	0.0		PEAT: black, very loose, poorly graded, fine to medium grained, moist, mostly organic.		1	8.8 SPT 7.3	2 2 2
6.8	2.0		LIMESTONE (Caprock): tan brown, hard, fine to medium grained, shells present.		2	SPT 5.8	1 50/1"
4.8	4.0		SAND: Light gray, medium dense, moderately graded, fine to coarse grained, subangular calcitic sand, wet.	12 (RQD 0%)	1	HQ coring; Caprock - 1.5 ft 1.3	
-4.7	13.5		SAND (Caloosahatchee Formation): light gray, loose, moderately graded, fine to medium grained, subangular calcitic sand, wet, quite silty,		3	SPT -4.7	12 11 10
					4	SPT -6.2 (continued)	6 6 4

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0362

Hole No. CP05-EAARS-CB-0362

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 8.8 | Sheet 2 of 2 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-5.2	15.0		subrounded quartz.			-5.2	
						Caloosahatchee Formation	16
			Grades to greenish gray and dense, with trace phosphate.				18
						-9.7	
					5	SPT	15 16 10
							20
			Grades to medium dense, poorly graded, fine to coarse grained, rounded quartz, shells present.				22
						-14.7	
					6	SPT	9 7 6
							24
							26
							28
-19.7	28.5					-19.7	
			LIMESTONE		7	SPT; Spoon bouncing	50/3"
-21.2	30.0						30
			End of Boring at 30'				32

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93
2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0362

Hole No. CP05-EAARS-CB-0363

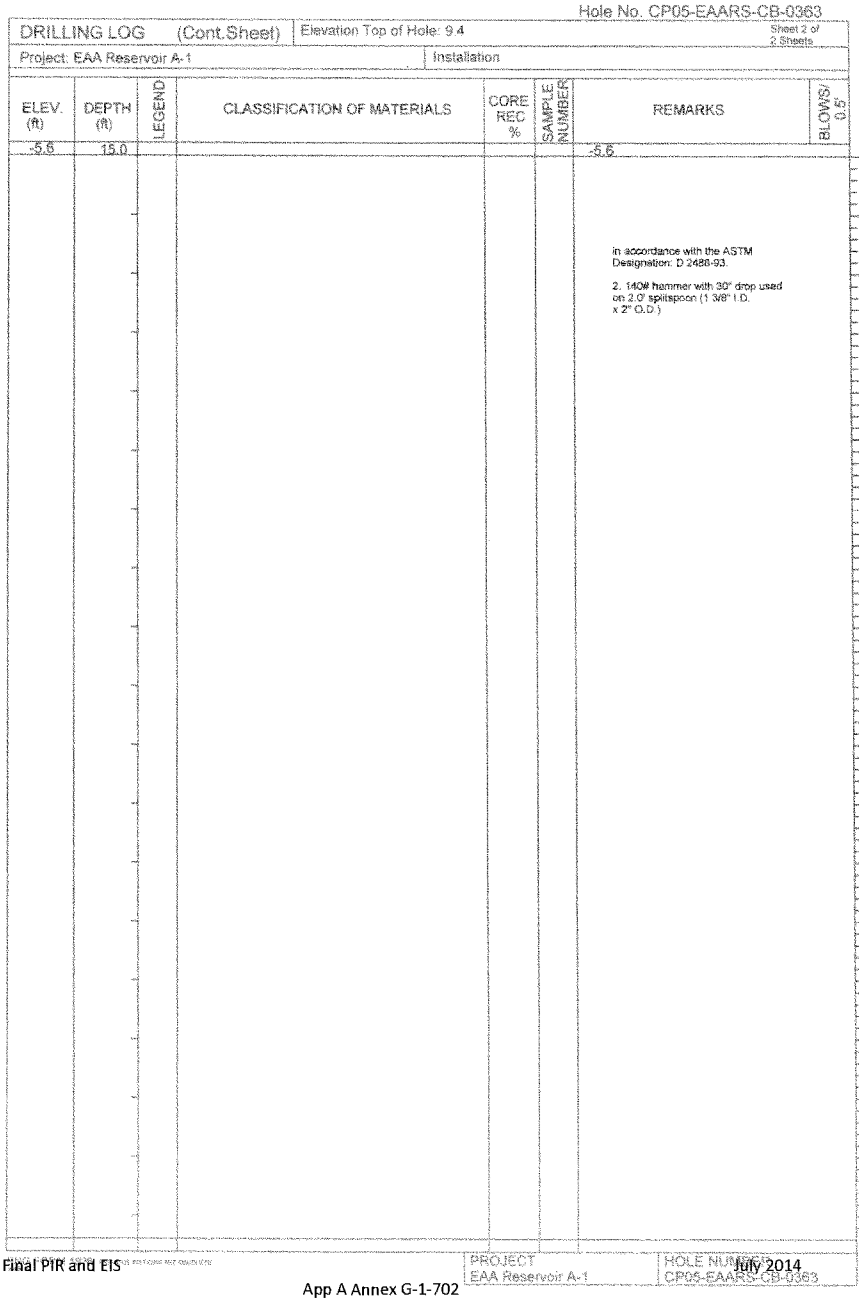
DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N777276.3, E771077.2 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-45B	
4. Hole No: CP05-EAARS-CB-0363		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Ralph Smith		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/7/2005 Completed 9/7/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 9.4 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 13 ft		19. Inspector: A.M. Noronha	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
9.4	0.0		Not Sampled				
6.4	3.0		LIMESTONE (Caprock): light gray to white, hard, fine to medium grained, quite porous, shelly.	68 (RQD 34%)	1	HQ coring; 1 piece each of 0.9 ft, 0.35 ft and 0.45 ft; Caprock - 5.5 ft	
1.4	8.0		Grades to white, shells grade out.	14 (RQD 9%)	2	HQ coring; 1 piece of 0.45 ft	
0.2	9.2		No recovery				
-3.6	13.0		End of Boring at 13'				

NOTES:
1. Soils are field visually classified

(continued)

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0363



Hole No. CP05-EAARS-CB-0363

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 9.4 | Sheet 2 of 2 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-5.6	15.0					-5.6	

in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

16
18
20
22
24
26
28
30
32

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0363

Hole No. CP05-EAARS-CB-0364

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N774274.5, E771159.4 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-45B	
4. Hole No: CP05-EAARS-CB-0364		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Ralph Smith		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/7/2005 Completed 9/7/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 8.4 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 14 ft		19. Inspector: A.M. Noronha	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
8.4	0.0		Not sampled.				
6.9	1.5					6.9	
			LIMESTONE (Caprock): tan brown to pale white, hard, fine to medium grained, shelly.	42 (RQD 8%)	1	HQ coring; 1 piece of 0.4 ft	
4.4	4.0						
			SAND: light gray, very dense, moderately graded, fine to medium grained sub angular calcitic sand, wet, some silt, shells present.				
						1.9	
1.2	7.3						50
			LIMESTONE: white, moderately hard, fine to medium grained, vuggy, shells present.		1	SPT	50/3"
						0.4	
				42 (RQD 21%)	2	HQ coring; 1 piece each of 0.5 ft and 0.55 ft	
-1.6	10.0		SAND: greenish gray, medium dense, moderately graded, fine to medium grained subangular calcitic sand, wet, with some limestone peices.				
						-4.1	
					2	SPT	10 8 8
-5.6	14.0						

(continued)

PROJECT EAA Reservoir A-1 HOLE NUMBER CP05-EAARS-CB-0364

Hole No. CP05-EAARS-CB-0364

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 8.4 | Sheet 2 of 2 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-6.6	15.0		End of Boring at 14'			-6.6	

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140lb hammer with 30" drop used on 2.0' splitspoon (1 3/8" I.D. x 2" O.D.)

16 18 20 22 24 26 28 30 32

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0364

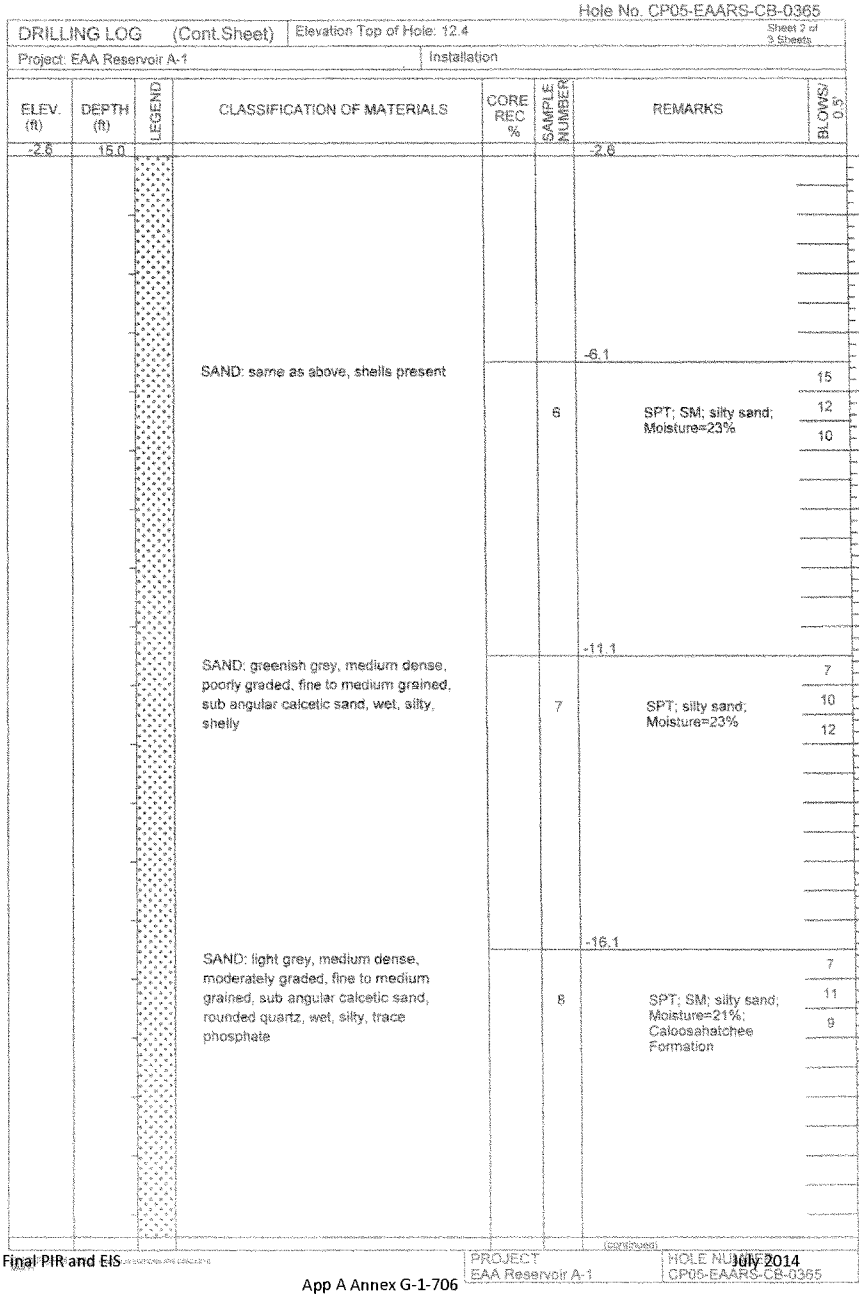
Hole No. CP05-EAARS-CB-0365

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N776581.1, E765893.6 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0365		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Ralph Smith		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/23/2005 Completed 8/23/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 12.4 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 35 ft		19. Inspector: A.M. Noronha	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
12.4	0.0		SAND: light to tan brown, dense, moderately graded, fine to medium grained, sub angular calcetic sand, dry		1	12.4 SPT; SM; silty sand with gravel; Moisture=10%	17, 26, 20
			SAND: light grey, dense, poorly graded, fine to coarse grained, sub angular calceetic sand, dry to wet		2	SPT; SM; silty sand with gravel; Moisture=13%	17, 21, 21
8.9	3.5		PEAT: black, fine grained, organic, dry			8.9	
7.9	4.5				3	SPT; SP-SM; poorly graded sand with silt and gravel; Moisture=88%	3, 2, 6
			Gravelly SAND: greenish grey, cemented			7.4	24
			Gravelly SAND: greenish grey, very dense, moderately graded, fine to coarse grained, sub angular, cemented, wet		4	SPT; SP-SM; Poorly graded sand with silt and gravel; Moisture=13%	27, 50/3"
5.9	6.5		LIMESTONE: kight grey to white, very hard, fine to medium grained	68 (RQD 50%)	1	5.9 HQ coring; UCS=1500psi; 1 piece each of 1.1 ft, 0.8 ft and 0.5 ft; Very hard coring; 5 ft took 70 minutes	
0.9	11.5		SAND: light grey, medium dense, moderately graded, fine to coarse grained, sub angular calcetic sand, wet, silt present		5	0.9 SPT; SM; silty sand with gravel; Moisture=29%	5, 3, 22

(continued)

PROJECT EAA Reservoir A-1 HOLE NUMBER CP05-EAARS-CB-0365


Hole No. CP05-EAARS-CB-0365
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 12.4
Sheet 2 of 3 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-2.6
15.0
-2.6
SAND: same as above, shells present
-6.1
6
SPT; SM; silty sand; Moisture=23%
15
12
10
-11.1
SAND: greenish grey, medium dense, poorly graded, fine to medium grained, sub angular calcetic sand, wet, silty, shelly
7
SPT; silty sand; Moisture=23%
7
10
12
-16.1
SAND: light grey, medium dense, moderately graded, fine to medium grained, sub angular calcetic sand, rounded quartz, wet, silty, trace phosphate
8
SPT; SM; silty sand; Moisture=21%; Caloosahatchee Formation
7
11
9
16
18
20
22
24
26
28
30
32
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0365

Hole No. CP05-EAARS-CB-0365

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 12.4 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-21.0	33.4					-21.0	
-21.1	33.5		Gravelly SAND: greenish grey, very dense, moderately graded, fine to coarse grained, sub angular calcetic sand, rounded quartz, cemented, wet		9	-21.1 SPT; SP-SM; poorly graded sand with silt and gravel; Moisture=13%	10 28 50/5"
-22.6	35.0		End of Boring at 35'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

34 36 38 40 42 44 46 48 50

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0365

Hole No. CP05-EAARS-CB-0366

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N752271.1, E760713.6 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0366		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Erik Bluemke		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/1/2005 Completed 9/1/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 9.4 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 14 ft		19. Inspector: N. Holst	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
9.4	0.0		PEAT: not sampled				0
							2
5.4	4.0					5.4	
			LIMESTONE: caprock, tan to light brown, thinly bedded, fine to coarse grained, vuggy to porous, fossiliferous, hard and strong to moderately hard and strong	52 (RQD 26%)	1	HQ coring; Soft from 5.5 ft to 7.5 ft, then firm	4
3.9	5.5		LIMESTONE: pale to light brownish grey, fine to coarse grained, thinly bedded, porous, fossiliferous, moderately hard, and moderately strong				6
							8
-0.1	9.5					0.4	
			soft below 9.5 ft. No recovery.	10 (RQD 9%)	2	HQ coring; soft below 9.5 ft	10
							12
-4.6	14.0						14

(continued)

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0366

Hole No. CP05-EAARS-CB-0366

DRILLING LOG (Cont.Sheet)	Elevation Top of Hole: 9.4	Sheet 2 of 2 Sheets
Project: EAA Reservoir A-1	Installation	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-5.6	15.0		End of Boring at 14'			-5.6	

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0' splitspoon (1 3/8" I.D. x 2" O.D.)

16 18 20 22 24 26 28 30 32

PROJECT EAA Reservoir A-1 HOLE NUMBER CP05-EAARS-CB-0366

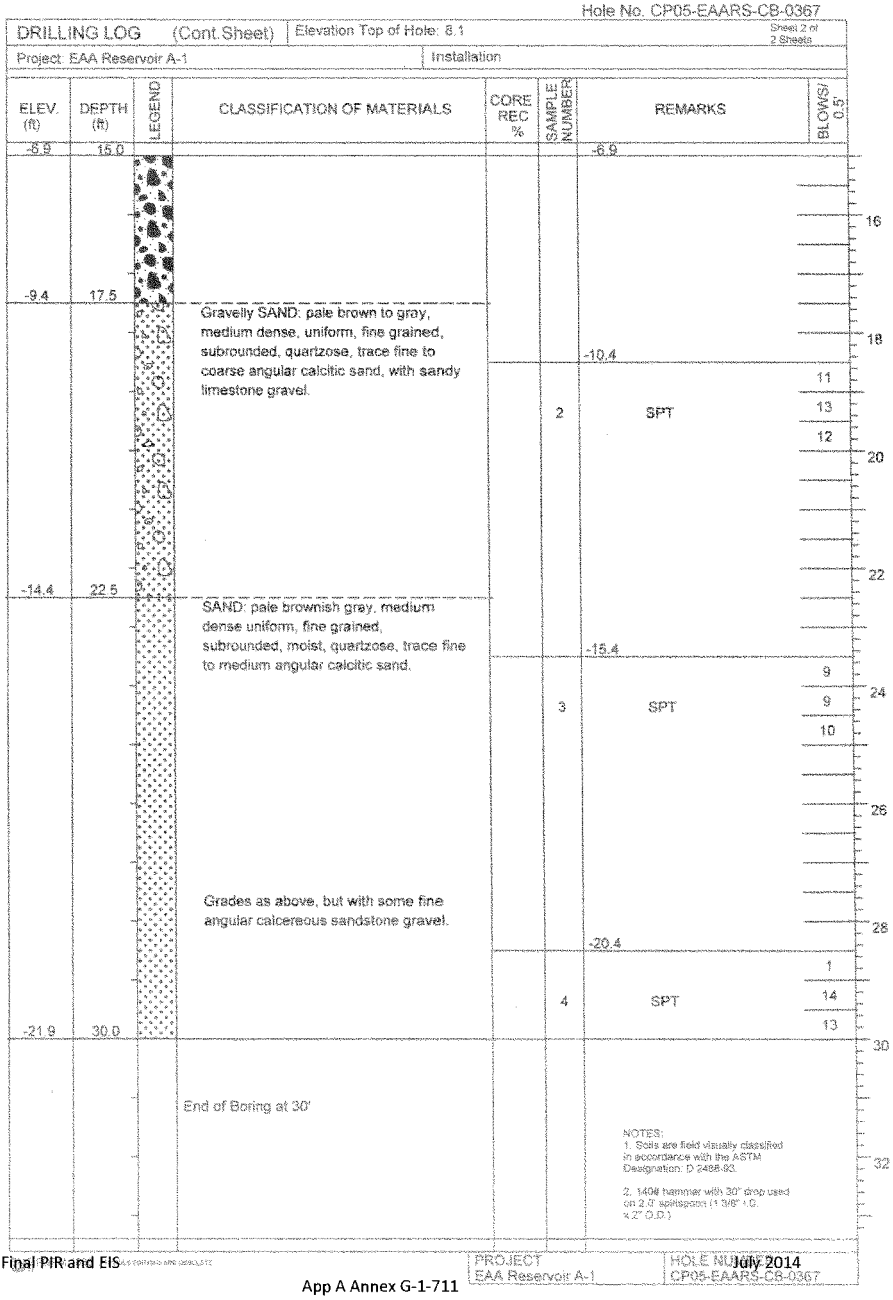
Hole No. CP05-EAARS-CB-0367

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N752287.5, E783220.4 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0367		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Erik Bluemke		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/7/2005 Completed 9/7/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 8.1 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 30 ft		19. Inspector: N. Holst	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
8.1	0.0		PEAT: Not sampled.				
6.1	2.0		LIMESTONE (Caprock): tan, fine to coarse grained, thinly bedded, vuggy to porous, fossiliferous, hard and strong to moderately hard and moderately strong.	22 (RQD 7%)	1	6.1 HQ coring; soft below 4.2 ft	
3.9	4.2		Sandy GRAVEL: pale brownish gray, very dense, well graded, fine grained, angular limestone.			1.1	
1.1	7.0		LIMESTONE: tan to light gray, fine to coarse grained, thinly bedded, fossiliferous mostly soft and weak. (First 0.2 ft is hard.)	22 (RQD 0%)	2	HQ coring; hard at 7 ft; spoon bouncing; many loose shells in the core	
-0.2	8.3		Sandy GRAVEL: As above, but with trace silt.			-3.9	
						-5.4	
					1	SPT	50/3"

(continued)

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0367



Hole No. CP05-EAARS-CB-0367

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 8.1 | Sheet 2 of 2 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-8.9	15.0					-8.9	
-9.4	17.5		Gravelly SAND: pale brown to gray, medium dense, uniform, fine grained, subrounded, quartzose, trace fine to coarse angular calcitic sand, with sandy limestone gravel.			-10.4	
					2	SPT	11 13 12
-14.4	22.5		SAND: pale brownish gray, medium dense uniform, fine grained, subrounded, moist, quartzose, trace fine to medium angular calcitic sand.			-15.4	
					3	SPT	9 9 10
			Grades as above, but with some fine angular calcereous sandstone gravel.			-20.4	
					4	SPT	1 14 13
-21.9	30.0		End of Boring at 30'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.0" split spoon (1 3/8" I.D. x 2" O.D.)

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0367

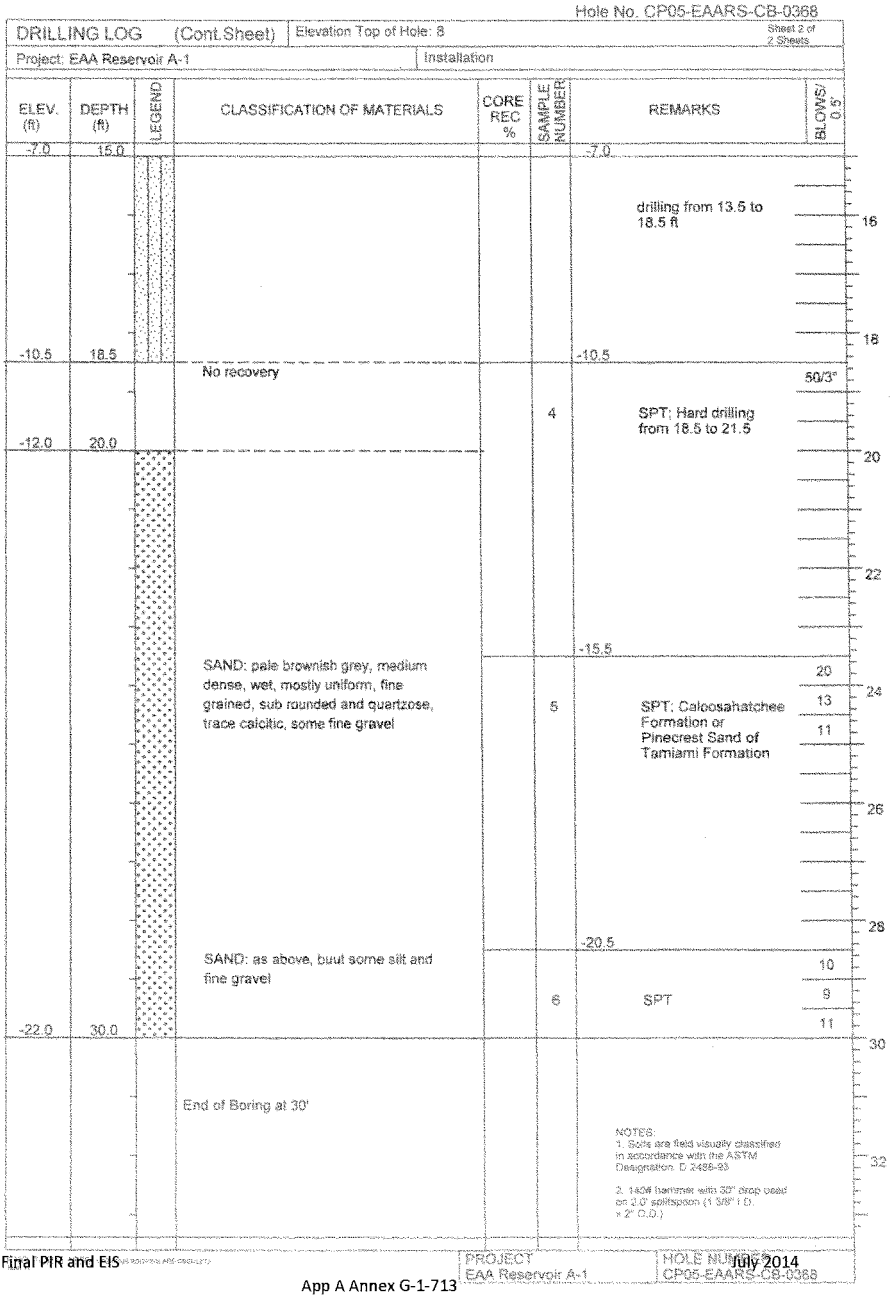
Hole No. CP05-EAARS-CB-0368

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N753662.4, E767510 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0368		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Erik Bluemke		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/1/2005 Completed 9/1/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 8 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 30 ft		19. Inspector: N. Holst	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
8.0	0.0						
7.8	0.3		PEAT			7.8	
			LIMESTONE: caprock, pale brownish grey to light brown, thinly bedded, fine to coarse grained, vuggy, fossiliferous, hard and strong, weakly cemented sand below	36 (RQD 10%)	1	HQ coring; Good core piece for testing 0.25 to 0.75 ft; Soft drilling at 1.25 ft	
2.8	5.3		Gravelly SAND: pale brownish grey, dense, well graded, fine to coarse, angular, calcitic, trace silt		1	SPT	5 16 18
-0.5	8.5		Only LIMESTONE chips recovered		2	SPT; Hard drilling from 8.3 to 8.7 ft	50/2"
-2.0	10.0		Silty SAND: pale brownish grey, very dense to loose, well graded, fine to coarse, wet, angular, calcitic, trace fine gravel				
						-5.5	
					3	SPT; Hard drilling from 12.5 to 13.0 ft; Intermittent hard	2 3 50/2"

(continued)

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0368



Hole No. CP05-EAARS-CB-0368

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 8 | Sheet 2 of 2 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-7.0	15.0					-7.0 drilling from 13.5 to 18.5 ft	16 18
-10.5	18.5		No recovery		4	-10.5 SPT; Hard drilling from 18.5 to 21.5	50/3" 20 22
			SAND: pale brownish grey, medium dense, wet, mostly uniform, fine grained, sub rounded and quartzose, trace calcitic, some fine gravel		5	-15.5 SPT; Caloosahatchee Formation or Pinecrest Sand of Tamiami Formation	20 13 11 24 26 28
-22.0	30.0		SAND: as above, buut some silt and fine gravel		6	-20.5 SPT	10 9 11 30
			End of Boring at 30'				32

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93
2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0368

Hole No. CP05-EAARS-CB-0369

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N753677, E772160.1 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0369		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Erik Bluemke		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/31/2005 Completed 8/31/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 8 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 30 ft		19. Inspector: N. Holst	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
8.0	0.0						0
			PEAT: not sampled				
6.0	2.0					6.0	2
			LIMESTONE: caprock: tan to light brown, fine to coarse grained, fossiliferous, vuggy, hard and strong, very closely fractured	28 (ROD 0%)	1	HQ coring; Soft from 3.5 to 4.5 ft; Packstone, soft at 6 ft	4
2.0	6.0					1.0	6
			Sandy GRAVEL: tan, loose, wet, subangular, weakly cemented limestone, poorly graded, fine to coarse		1	SPT	5 4 5
-3.0	11.0					-3.0	8 10
			Silty SAND: pale greenish grey, very dense, well graded, fine to coarse, angular, calcitic, some fine gravel (shells)		2	SPT	28 13 50/5"
-5.5	13.5					-5.5	12
			SAND: pale greenish grey, loose, well graded, fine to medium grained, subangular, calcitic, some silt		3	SPT	7 5 3
							14

(continued)

PROJECT: EAA Reservoir A-1 HOLE NUMBER: CP05-EAARS-CB-0369

Hole No. CP05-EAARS-CB-0369

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 8 | Sheet 2 of 2 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-7.0	15.0					-7.0	
-10.5	18.5		GRAVEL: tan, very dense, poorly graded, fine, subangular, limestone, some calcitic sand		4	-10.5 SPT; Hard drilling from 20 to 23.5 ft	50/4"
-15.5	23.5		Gravelly SAND: pale brownish grey, very dense, well graded, fine to coarse, angular, calcitic, wet, with limestone gravel		5	-15.5 SPT; Intermittent hard drilling from 23.5 to 28.5 ft	47 50/4"
-20.5	28.5		SAND: pale greenish grey, medium dense, mostly uniform, fine grained and quartzose, some fine to medium, angular, calcitic, trace sandy limestone gravel		6	-20.5 SPT; Caloosahatchee Formation or Pinecrest Sand of Tamiami Formation	18 11 17
-22.0	30.0		End of Boring at 30'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation, D 2488-93.
2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0369

Hole No. CP05-EAARS-CB-0370

DRILLING LOG	Division:	Installation:	Sheet 1 of 1 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N753743.1, E775375.5 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0370		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Erik Bluemke		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/30/2005 Completed 8/30/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 7.9 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 10.6 ft		19. Inspector: N. Holst	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
7.9	0.0		PEAT: not sampled				
7.0	0.9		LIMESTONE: tan to light brown, fine to coarse grained, thinly bedded, fossiliferous, vuggy to porous, hard and strong to moderately hard and moderately strong, most recovery in gravel sized rounded to angular	7 (RQD 0%)	1	HQ coring; Soft from 1.5 to 4.4 ft	
						6.9	
						2.4	
				24 (RQD 10%)	2	HQ coring; Soft at 8 ft	
-0.1	8.0		soft at 8 ft. No recovery.				
-2.7	10.6		End of Boring at 10.6'				

0 2 4 5 8 10 12 14

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

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PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0370

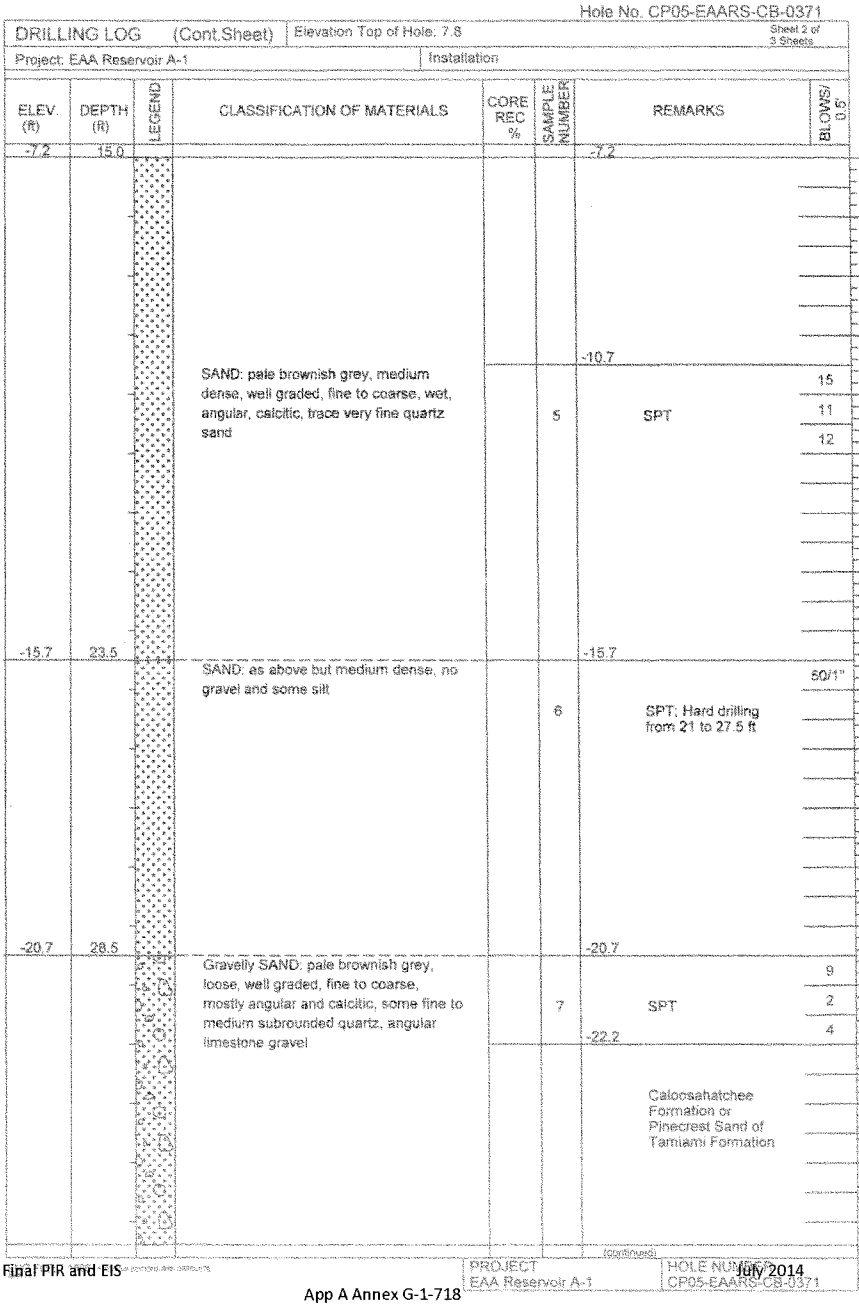
Hole No. CP05-EAARS-CB-0371

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N753716.1, E780372.6 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0371		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Erik Bluemke		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/23/2005 Completed 8/23/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 7.8 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 35 ft		19. Inspector: N. Holst	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
7.8	0.0						
			PEAT			7.8	4
					1	SPT	2
6.6	1.3					6.5	50/4"
			LIMESTONE: caprock: tan to light brown, grades from strong, hard, vuggy mudstone and wackestone to soft, weak, porous grainstone	42 (RQD 12%)	1	HQ coring; Core piece for testing:3.9 to 4.5 ft; Becomes soft from 4.7 to 5 ft	
			Had to redrill core run to remove debris				
						1.5	
0.8	7.0					0.8	
			Silty SAND: pale brownish grey, medium dense, wet, well graded, fine to coarse grained, angular, calcitic, with some fine angular, limestone gravel Grades loose with no gravel		2	SPT	6 9 13
						-0.7	
					3	SPT	2 1 7
-5.7	13.5					-5.7	
					4	SPT	6 9 10

(continued)

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0371



Hole No. CP05-EAARS-CB-0371

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 7.8 | Sheet 2 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-7.2	15.0					-7.2	
			SAND: pale brownish grey, medium dense, well graded, fine to coarse, wet, angular, calcitic, trace very fine quartz sand				16
						-10.7	18
					5	SPT	15 11 12
							20
							22
-15.7	23.5					-15.7	
			SAND: as above but medium dense, no gravel and some silt		6	SPT; Hard drilling from 21 to 27.5 ft	50/1"
							24
							26
							28
-20.7	28.5					-20.7	
			Gravelly SAND: pale brownish grey, loose, well graded, fine to coarse, mostly angular and calcitic, some fine to medium subrounded quartz, angular limestone gravel		7	SPT	9 2 4
						-22.2	30
						Caloosahatchee Formation or Pinecrest Sand of Tamiami Formation	
							32

(continued)

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0371

Hole No. CP05-EAARS-CB-0371

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 7.8 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS 0.5'
-25.6	33.4					-25.6	
-25.7	33.5		SAND: light brownish gray, medium dense, moist, mostly uniform, fine grained, subrounded and quartzose, some calcitic, angular, fine to coarse sand and fine gravel at 33.5 ft.		S	-25.7 SPT	6 8 8
-27.2	35.0		End of Boring at 35'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

34 36 38 40 42 44 46 48 50

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0371

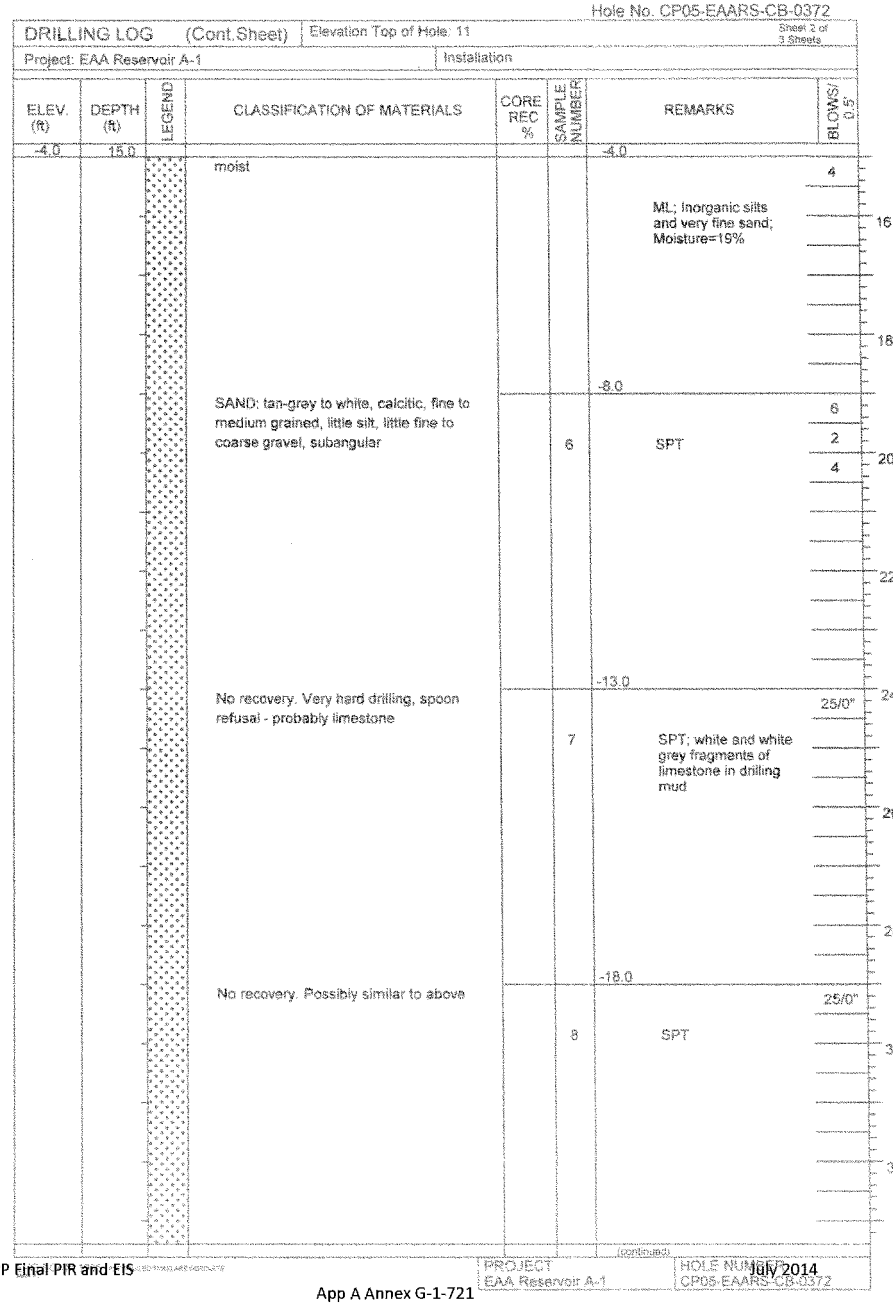
Hole No. CP05-EAARS-CB-0372

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N757932.6, E776407.6 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0372		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/30/2005 Completed 8/30/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 11 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 35.5 ft		19. Inspector: B. Levesque	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5
11.0	0.0		SAND: light brown, moderately dense, fine to medium gradation, some coarse to fine gravel, angular to subangular		1	11.0 SPT	7, 7, 7
9.0	2.0		PEAT: black, moist, fibrous, trace fine to medium calcitic sand, shells		2	9.0 SPT	4, 2, 1
7.3							
7.0	4.0		LIMESTONE: white to light tan-grey, fine to medium graded, non porous to slightly porous, fossiliferous, slightly vuggy, hard, moderately strong to strong	65 (RQD45%)	1	7.0 SPT HQ coring; UCS=3570psi	50/0"
2.0	9.0		SAND: white, fine to medium gradation, subangular, shelly, little silt		4	2.0 1.0 SPT	3, 5
1.0	10.0		LIMESTONE: white, fine to coarse grained, fractured, porous to slightly porous, slightly vuggy, hard, weak, thinly bedded	20 (RQD 0%)	1	HQ coring; UCS=1570psi; Broke through about 13.5 ft	50/2"
-3.0	14.0		SAND: light grey to tan, medium graded, some shells, trace fine sand, calcitic, angular to subangular, loose,		3	-3.0 -3.5 SPT	3, 6

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PROJECT EAA Reservoir A-1 HOLE NUMBER CP05-EAARS-CB-0372



Hole No. CP05-EAARS-CB-0372

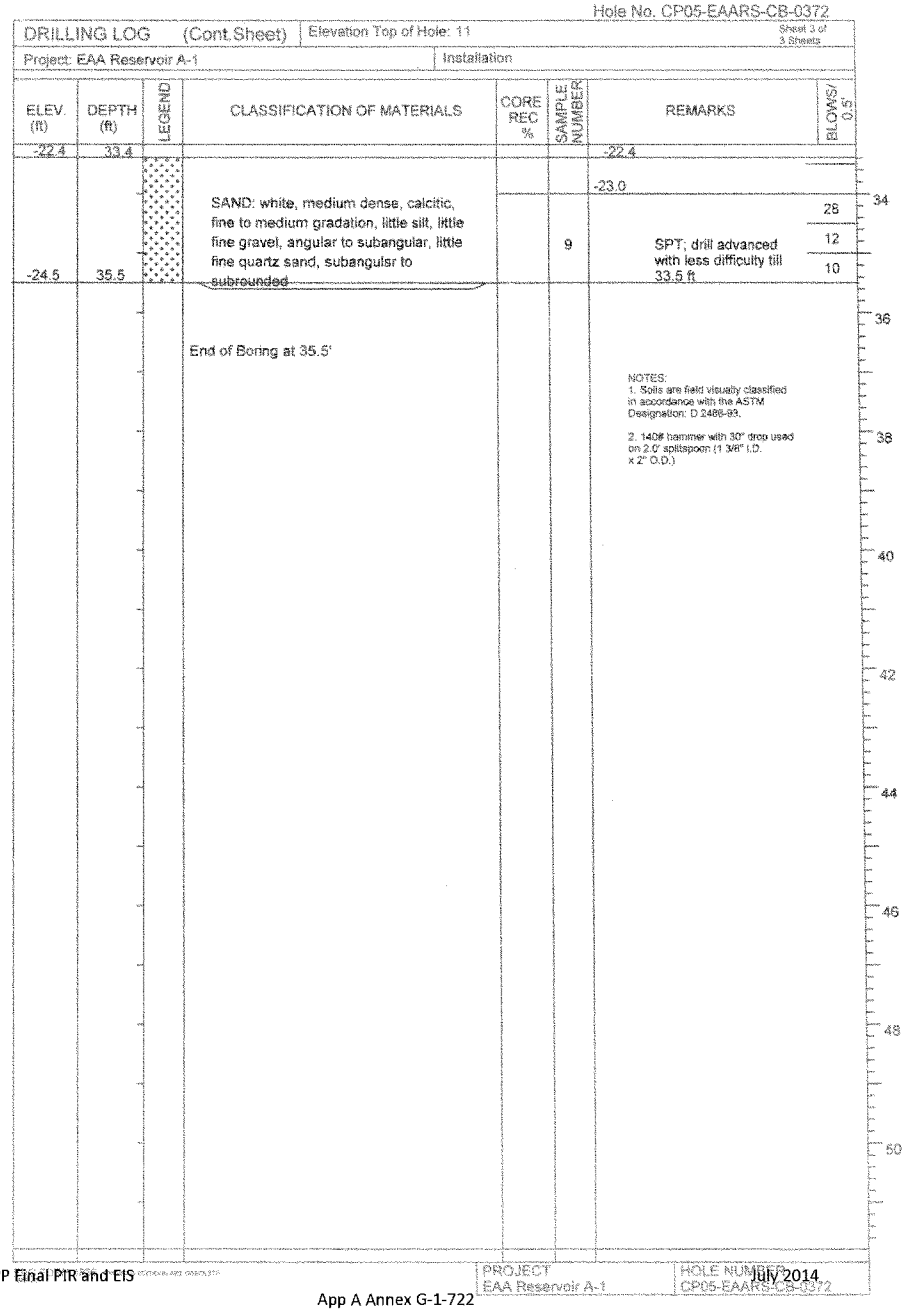
DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 11 | Sheet 2 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-4.0	15.0		moist			-4.0 ML; inorganic silts and very fine sand; Moisture=19%	4 16 18
			SAND: tan-grey to white, calcitic, fine to medium grained, little silt, little fine to coarse gravel, subangular		6	-8.0 SPT	6 2 4 20 22
			No recovery. Very hard drilling, spoon refusal - probably limestone		7	-13.0 SPT; white and white grey fragments of limestone in drilling mud	25/0" 24 26 28
			No recovery. Possibly similar to above		8	-18.0 SPT	25/0" 30 32

(continued)

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0372



Hole No. CP05-EAARS-CB-0372

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 11 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-22.4	33.4					-22.4	
						-23.0	
			SAND: white, medium dense, calcitic, fine to medium gradation, little silt, little fine gravel, angular to subangular, little fine quartz sand, subangulsr to subrounded		9	SPT; drill advanced with less difficulty till 33.5 ft	28 12 10
-24.5	35.5						
			End of Boring at 35.5'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140lf hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

34 36 38 40 42 44 46 48 50

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0372

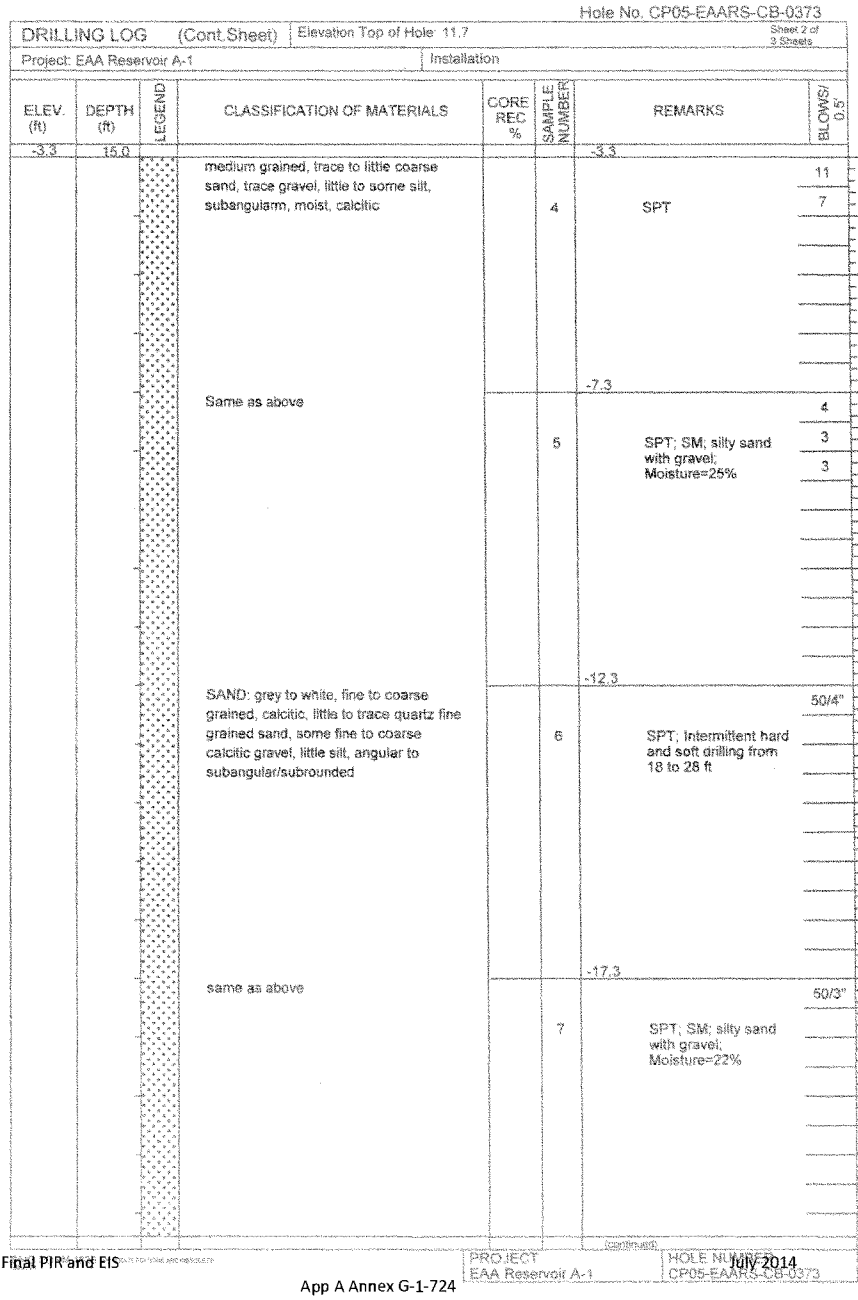
Hole No. CP05-EAARS-CB-0373

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N758092.4, E771124.9 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0373		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/30/2005 Completed 9/1/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 11.7 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 35.5 ft		19. Inspector: B. Levesque	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
11.7	0.0		SAND: grey-brown, fine to medium gradation, moderately dense, calcitic, little fine to coarse gravel, angular to subangular, little silt, organic (peat, silt) (FILL)		1	11.7 SPT	7 11 7
9.7	2.0		PEAT: black, moist, loose, fibrous, fine to coarse calcitic sand, shell fragments		2	9.7 SPT	7 2 3
7.7	4.0		GRAVEL: light tan, coarse grained, little trace silt, fine sand, calcitic, angular, dense		3	7.7 SPT	4 50/4"
7.2	4.5		LIMESTONE: grey to white, very vuggy to vuggy, finr to coarse to fine to medium gravel, porous, slightly porous, moderately strong and hard, fossiliferous	80 (RQD 54%)	1	7.2 HQ coring; UCS=1000psi	
-2.8	14.5		LIMESTONE: white, fine to coarse grained, vuggy and porous, weak to moderately strong, friable, moderately hard, fossiliferous	26 (RQD 17%)	2	2.2 HQ coring; UCS=4430psi; bottom of caprock at 14.5 ft	
			SAND: white, moderately dense, fine to			-2.8	6

(continued)

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0373


Hole No. CP05-EAARS-CB-0373
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole 11.7
Sheet 2 of 3 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-3.3
15.0
medium grained, trace to little coarse sand, trace gravel, little to some silt, subangularm, moist, calcitic
4
SPT
11
7
16
18
-7.3
Same as above
5
SPT; SM; silty sand with gravel; Moisture=25%
4
3
3
20
22
-12.3
SAND: grey to white, fine to coarse grained, calcitic, little to trace quartz fine grained sand, some fine to coarse calcitic gravel, little silt, angular to subangular/subrounded
6
SPT; Intermittent hard and soft drilling from 18 to 28 ft
50/4"
24
26
28
-17.3
same as above
7
SPT; SM; silty sand with gravel; Moisture=22%
50/3"
30
32
(continued)
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0373

Hole No. CP05-EAARS-CB-0373

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 11.7 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-21.7	33.4					-21.7	
						-22.3	
			SAND: white, fine grained, calcitic and quartz, little silt, trace fine gravel, odor (sulphides), medium dense		8	SPT; SP; poorly graded sand; Moisture=26%; Drill bit chattering from 30 to 34 ft; then relatively easy drilling	11 8 8
-23.8	35.5		End of Boring at 35.5'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

34 36 38 40 42 44 46 48 50

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0373

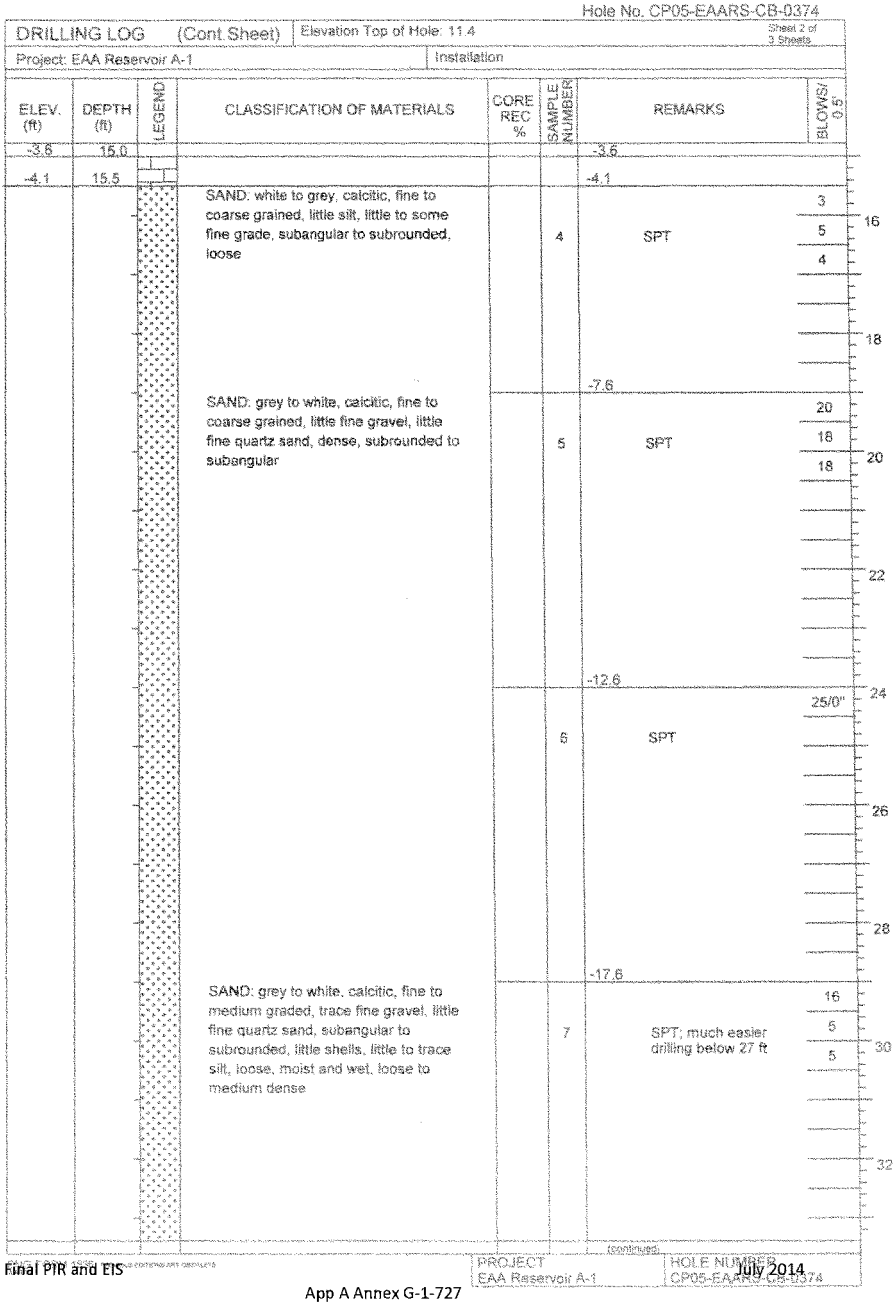
Hole No. CP05-EAARS-CB-0374

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N758239.4, E765844.9 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0374		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/1/2005 Completed 9/1/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 11.4 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 35.5 ft		19. Inspector: B. Levesque	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
11.4	0.0		SAND: brown grey, fine to medium gradation, little silt, little fine to coarse gravel, subangular, dry, medium dense (FILL)		1	11.4 SPT	8, 7, 14
			same as above		2	9.4 SPT	11, 6, 5
			SAND: grey brown, fine to medium gradation, little gravel, clay in seams, shells, moderately dense, moist		3	7.4 SPT	3, 14, 30
5.9	5.5		LIMESTONE: light tan-grey with rust staining, hard, moderately strong, fine to coarse grained, fossiliferous, slightly porous	53 (RQD 26%)	1	5.9 HQ coring	
			LIMESTONE: grey to white, medium to coarse grained, fossiliferous, very vuggy, moderately hard to soft, moderately strong to weak, very porous to porous				
				10 (RQD 0%)	2	0.9 HQ coring; weakly cemented sand and gravel	

(continued)

PROJECT EAA Reservoir A-1 HOLE NUMBER CP05-EAARS-CB-0374



Hole No. CP05-EAARS-CB-0374

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 11.4 | Sheet 2 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-3.6	15.0					-3.6	
-4.1	15.5					-4.1	
			SAND: white to grey, calcitic, fine to coarse grained, little silt, little to some fine grade, subangular to subrounded, loose		4	SPT	3 5 4
						-7.6	
			SAND: grey to white, calcitic, fine to coarse grained, little fine gravel, little fine quartz sand, dense, subrounded to subangular		5	SPT	20 18 18
						-12.6	
					6	SPT	25/0"
						-17.6	
			SAND: grey to white, calcitic, fine to medium graded, trace fine gravel, little fine quartz sand, subangular to subrounded, little shells, little to trace silt, loose, moist and wet, loose to medium dense		7	SPT; much easier drilling below 27 ft	16 5 5

16 18 20 22 24 26 28 30 32

(continued)

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0374

Hole No. CP05-EAARS-CB-0374

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 11.4 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-22.0	33.4					-22.0	
						-22.6	
			Same as above				3
					8	SPT	5
-24.1	35.5						7
			End of Boring at 35.5'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

34 36 38 40 42 44 46 48 50

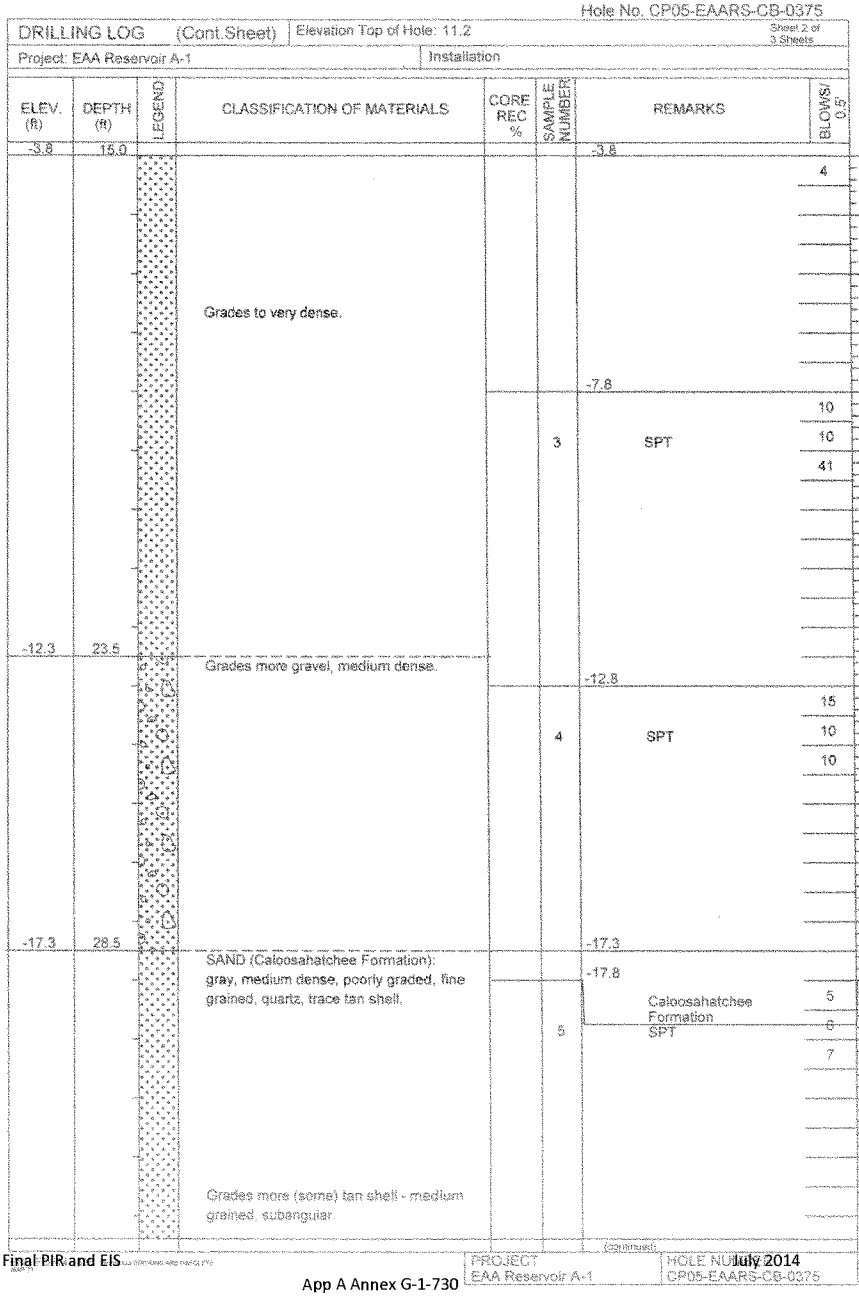
PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0374

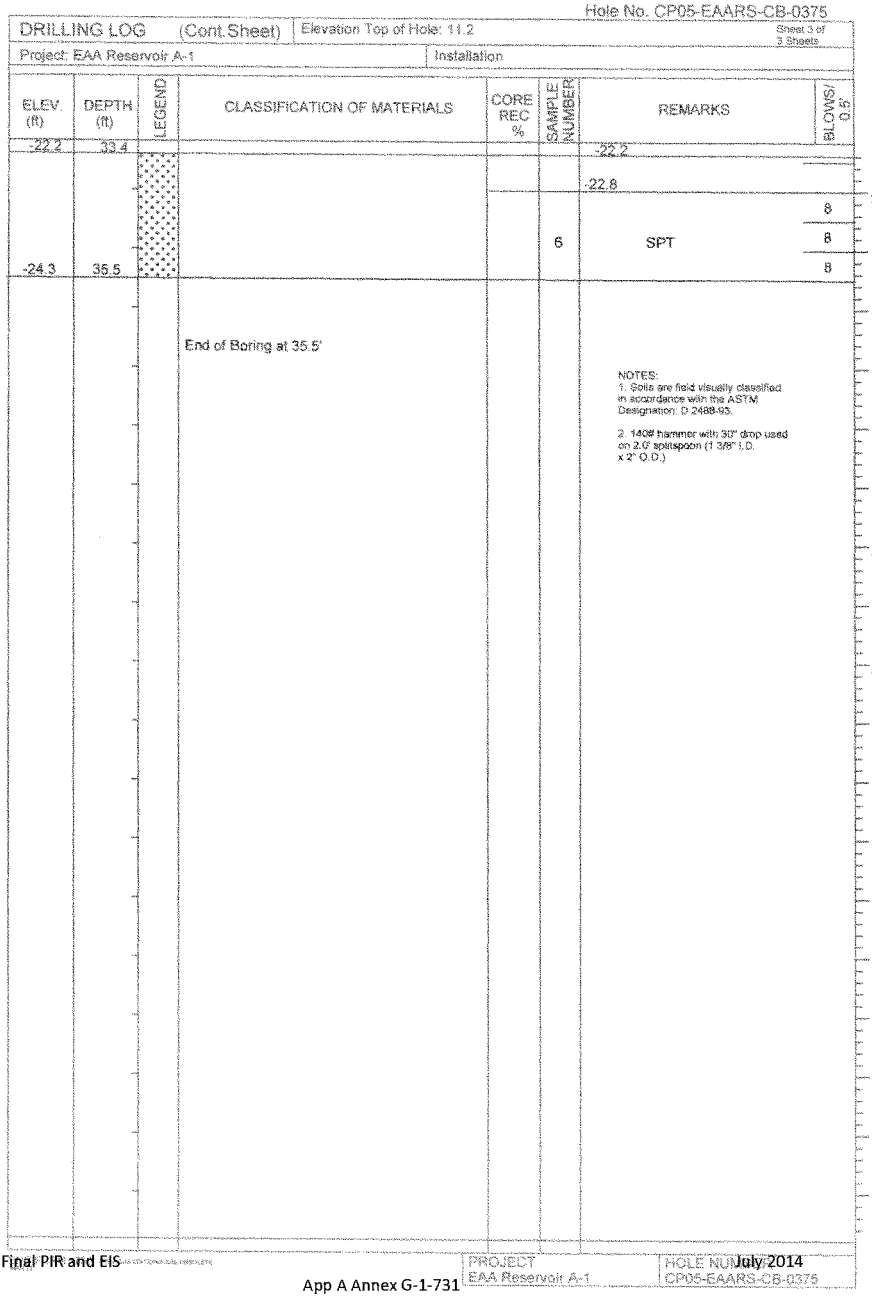
Hole No. CP05-EAARS-CB-0375

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N762103.3, E763178.5 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0375		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/6/2005 Completed 9/6/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 11.2 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 35.5 ft		19. Inspector: N. Holst	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
11.2	0.0		ROADFILL: Not sampled.				0
7.7	3.5		PEAT: Not sampled.			6.7	2 4
6.7	4.5		LIMESTONE (Caprock): tan to light gray, granular, grading hard to medium soft from top to bottom of the layer, fractured, moldic, vuggy, some fractures filled with calcereous sand.	58 (RQD 28%)	1	HQ coring	6
2.7	8.5		SAND: light gray, loose, fine to coarse grained, well graded, angular, trace of limestone gravel.			1.7	8
					1	SPT	13 5 3 10
			Grades more (some) calcereous gravel.			-2.8	12
					2	SPT (continued)	5 6 14

PROJECT: EAA Reservoir A-1 HOLE NUMBER: CP05-EAARS-CB-0375


Hole No. CP05-EAARS-CB-0375
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 11.2
Sheet 2 of 3 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5
-3.8
15.0
Grades to very dense.
-7.8
3
SPT
10
10
41
-12.3
23.5
Grades more gravel, medium dense.
-12.8
4
SPT
15
10
10
-17.3
28.5
SAND (Caloosahatchee Formation): gray, medium dense, poorly graded, fine grained, quartz, trace tan shell.
-17.8
Caloosahatchee Formation
5
SPT
5
6
7
Grades more (some) tan shell - medium grained, subangular.
(continued)
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0375
16
18
20
22
24
26
28
30
32



Hole No. CP05-EAARS-CB-0375

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 11.2 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-22.2	33.4					-22.2	
						-22.8	
							8
					6	SPT	8
-24.3	35.5						8
			End of Boring at 35.5'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

34 36 38 40 42 44 46 48 50

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0375

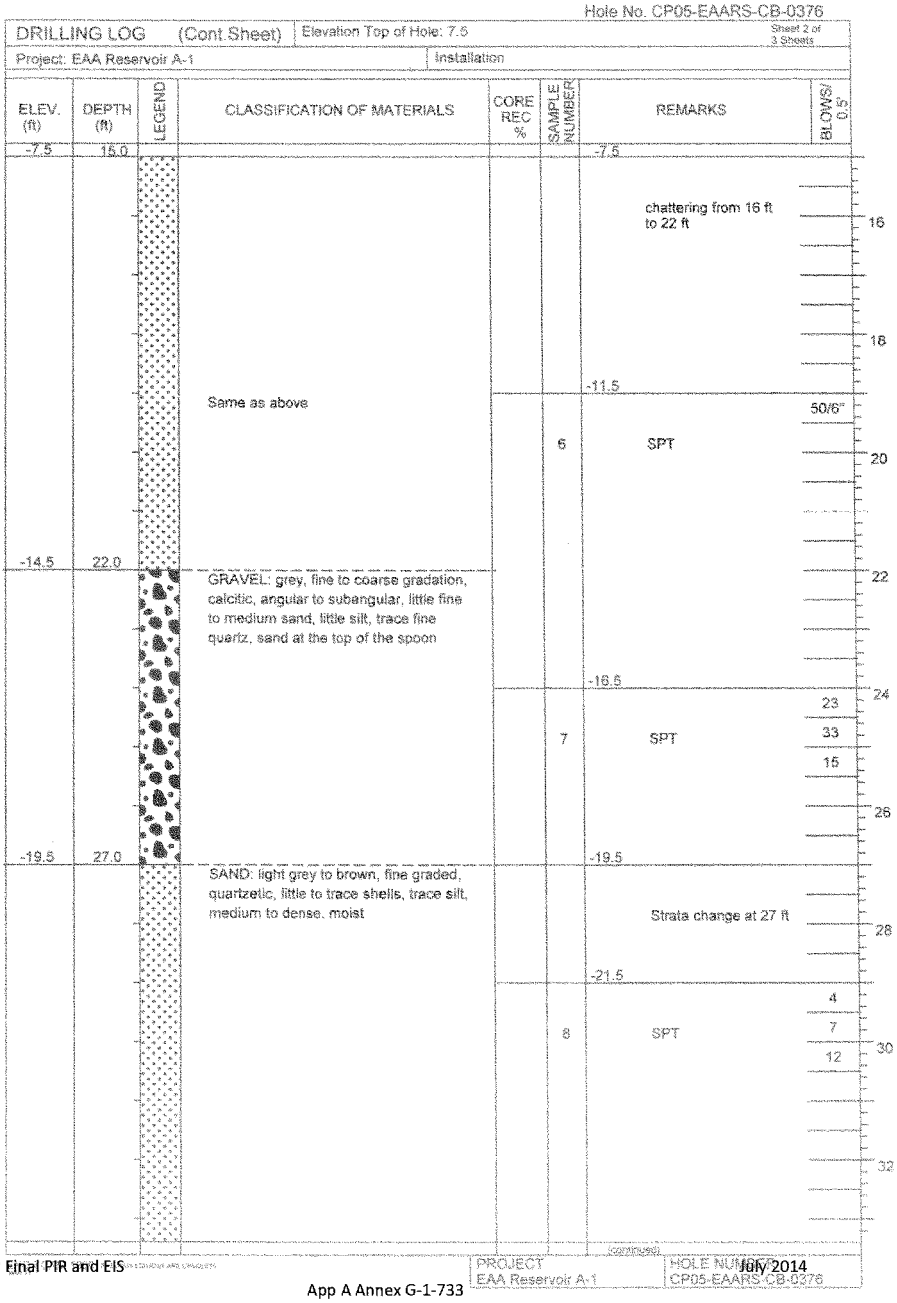
Hole No. CP05-EAARS-CB-0376

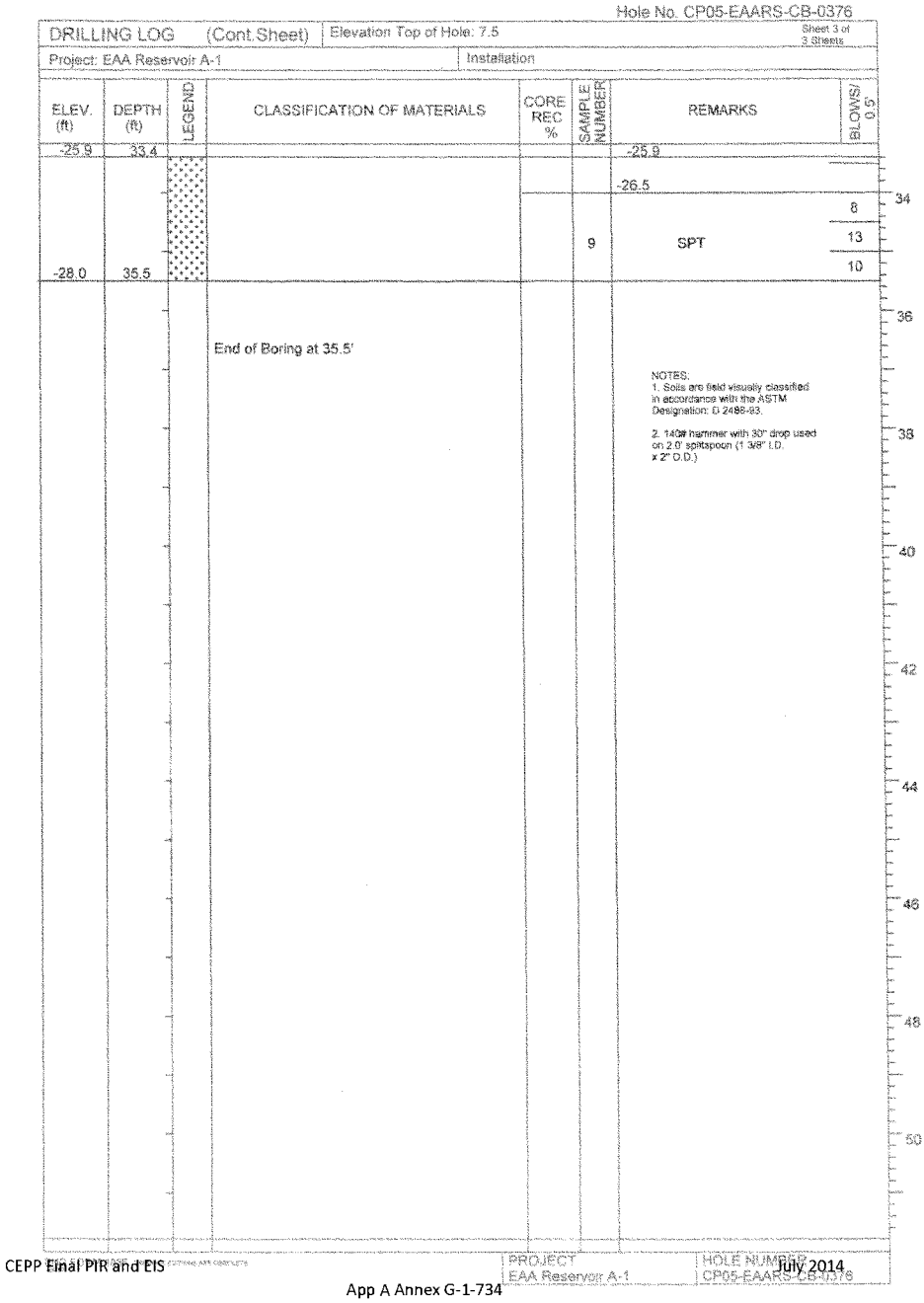
DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N758795.1, E760203.1 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Noderse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0376		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/2/2005 Completed 9/2/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 7.5 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 35.5 ft		19. Inspector: B. Levesque	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
7.5	0.0		Black to light		1	7.5 SPT	8 8 5
6.0	1.5		SAND: grey-white, calcitic, fine to medium grained, subangular to subrounded, little to trace fine gravel, trace to little silt, clay, medium dense, moist		2	5.5 SPT	14 7 7
3.0	4.5		LIMESTONE: white, medium to coarse grained, porous, moderately hard, moderately strong, thinly bonded, vuggy, fossileferous	73 (RQD 73%)	1	3.5 3.0 SPT; refusal at 4.5 ft-top of caprock HQ coring	4 50/4"
-1.5	9.0		SAND: white, fine to medium grained, little fine gravel, calcitic, shelly, subangular to subrounded, moist, medium dense		4	-2.0 SPT	2 4 7
			Same as above, except trace fine quartz sand, very dense		5	-6.5 SPT: Hard drilling, bit (continued)	16 50/6"

0 2 4 6 8 10 12 14

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0376


Hole No. CP05-EAARS-CB-0376
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 7.5
Sheet 2 of 3 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-7.5
15.0
chattering from 16 ft to 22 ft
16
18
-11.5
Same as above
50/6"
6
SPT
20
-14.5
22.0
GRAVEL: grey, fine to coarse gradation, calcitic, angular to subangular, little fine to medium sand, little silt, trace fine quartz, sand at the top of the spoon
22
-16.6
23
24
7
SPT
33
15
26
-19.5
27.0
SAND: light grey to brown, fine graded, quartzetic, little to trace shells, trace silt, medium to dense, moist
-19.5
Strata change at 27 ft
28
-21.5
4
7
8
SPT
12
30
32
(continued)
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0376



Hole No. CP05-EAARS-CB-0376

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 7.5 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-25.9	33.4					-25.9	
						-26.5	
							8
					9	SPT	13
-28.0	35.5						10
			End of Boring at 35.5'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0' splitspoon (1 3/8" I.D. x 2" O.D.)

34 36 38 40 42 44 46 48 50

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0376

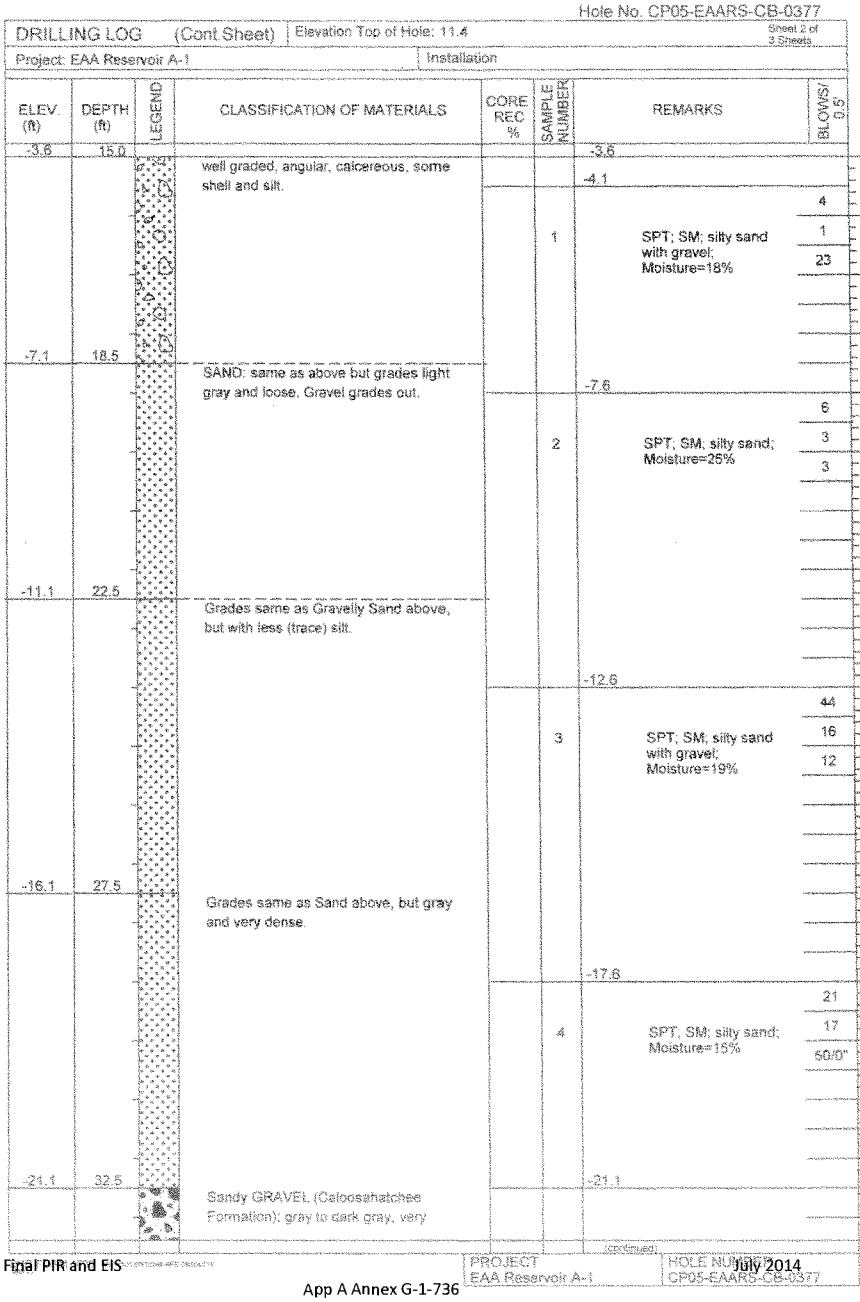
Hole No. CP05-EAARS-CB-0377

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N756371, E773911.6 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0377		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/6/2005 Completed 9/6/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 11.4 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 35.5 ft		19. Inspector: K. Jones	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
11.4	0.0		ROADFILL: Not sampled.				0
7.9	3.5		PEAT: Not sampled				2
5.9	5.5		LIMESTONE (Caprock): tan to light orange, hard, fractured, dense, granular, vuggy, fractures filled with gray silt, becomes softer with increasing depth.	60 (RQD 40%)	1	5.9 HQ coring; UCS=3860psi	4 6 8
			Grades tan to gray, hard, less fractured and vuggy.	40 (RQD 20%)	2	10.9 HQ coring; UCS=2250psi	10 12
-3.1	14.5		Gravelly SAND: gray, medium dense.				14

(continued)

PROJECT EAA Reservoir A-1 HOLE NUMBER CP05-EAARS-CB-0377


Hole No. CP05-EAARS-CB-0377
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 11.4
Sheet 2 of 3 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-3.6
15.0
well graded, angular, calcereous, some shell and silt.
-4.1
1
SPT; SM; silty sand with gravel; Moisture=18%
4
1
23
16
18
-7.1
18.5
SAND: same as above but grades light gray and loose. Gravel grades out.
-7.6
2
SPT; SM; silty sand; Moisture=25%
6
3
3
20
22
-11.1
22.5
Grades same as Gravelly Sand above, but with less (trace) silt.
-12.6
3
SPT; SM; silty sand with gravel; Moisture=19%
44
16
12
24
26
-16.1
27.5
Grades same as Sand above, but gray and very dense.
28
-17.6
4
SPT, SM; silty sand; Moisture=15%
21
17
50/0"
30
32
-21.1
32.5
Sandy GRAVEL (Caloosahatchee Formation); gray to dark gray, very
-21.1
(continued)
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0377

Hole No. CP05-EAARS-CB-0377

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 11.4 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-22.0	33.4		dense, well graded, angular, calcereous, some shell and quartz sand.			-22.0 -22.6 Caloosahatchee Formation SPT	50/6"
-24.1	35.5		End of Boring at 35.5'		5		

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0377

Hole No. CP05-EAARS-CB-0378

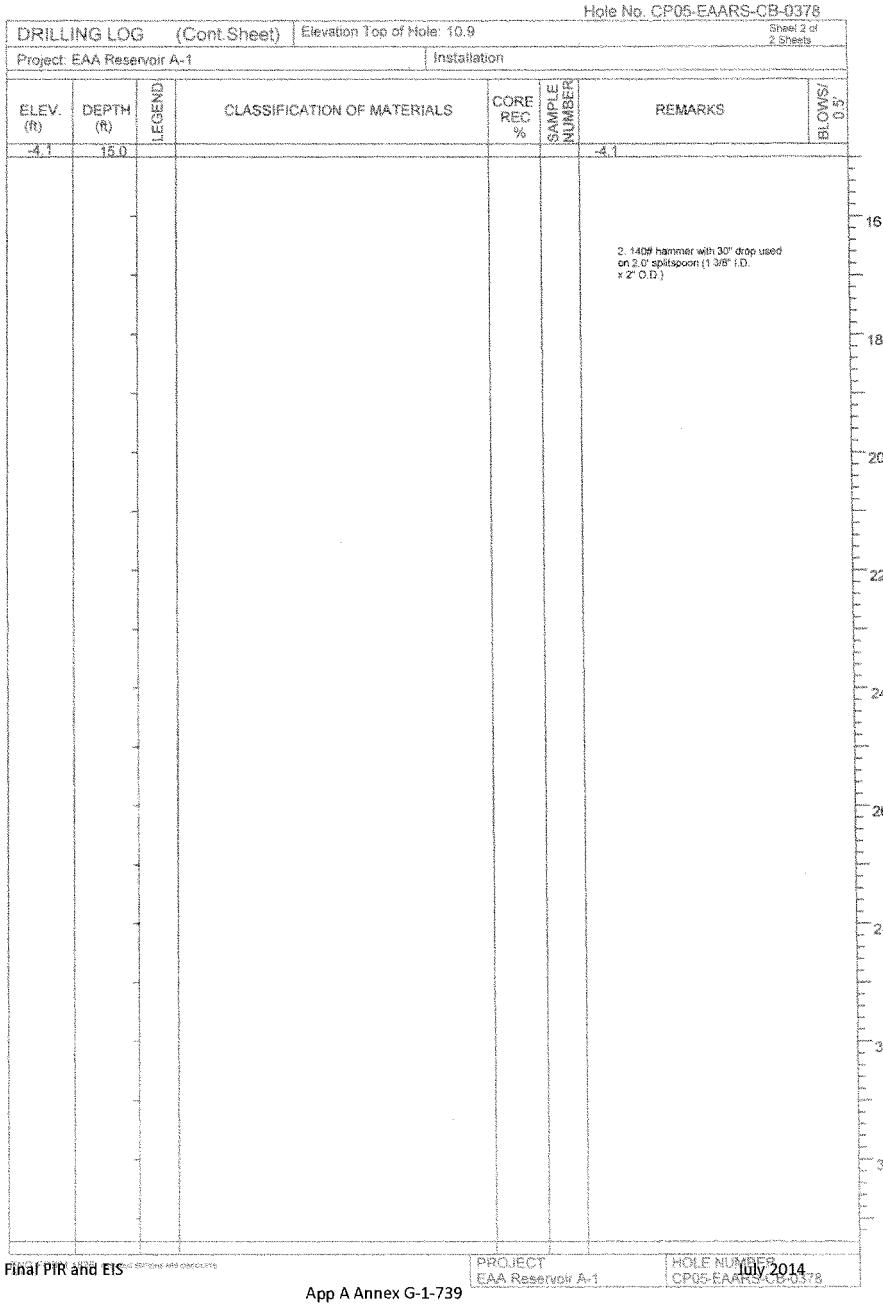
DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N758504.9, E760564.9 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0378		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/9/2005 Completed 9/9/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 10.9 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 12.5 ft		19. Inspector: K. Jones	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
10.9	0.0		FILL: Not sampled.				
7.4	3.5		PEAT: Not sampled.				
4.9	6.0		LIMESTONE (Caprock): brown to gray, medium hard, fractured, fossiliferous, crystalline.	64 (RQD 35%)	1	HQ coring; soft coring at 9.5 ft	
1.4	9.5		Grades light brown, medium soft, oolitic, granular.				
-1.6	12.5		Gravelly SAND: gray to tan, very loose, well graded, calcareous, subangular, with some silt.		1	SPT	1 1 1
			End of Boring at 12.5'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

(continued)

PROJECT: EAA Reservoir A-1 HOLE NUMBER: CP05-EAARS-CB-0378



Hole No. CP05-EAARS-CB-0378

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 10.9 | Sheet 2 of 2 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-4.1	15.0					-4.1	

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

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PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0378

Hole No. CP05-EAARS-CB-0379

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N769312.2, E775409.1 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-45B	
4. Hole No: CP05-EAARS-CB-0379		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Ralph Smith		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/7/2005 Completed 9/7/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 8 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 13.5 ft		19. Inspector: A.M. Noronha	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
8.0	0.0		Not Sampled.				
6.5	1.5		LIMESTONE (Caprock): light gray to pale white, hard, fine to medium grained, quite porous, shelly.	16 (RQD 0%)	1	HQ coring 6.5	
						1.5	18
			Grades moderately hard. Intermittant cemented sand layers.		1	SPT	50/1"
						0.0	
-1.5	9.5		SAND: greenish gray, medium dense, poorly graded, medium to coarse grained angular calcitic sand, wet.	54 (RQD 8%)	2	HQ coring; Caprock has cemented sand layers; One piece - 0.4 ft	
						-4.0	4
-5.5	13.5				2	SPT	6
							21
			End of Boring at 13.5'				

0 2 4 6 8 10 12 14

(continued)

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0379

Hole No. CP05-EAARS-CB-0379

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 8 | Sheet 2 of 2 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-7.0	15.0					-7.0	

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140lt hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

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PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0379

Hole No. CP05-EAARS-CB-0380

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N750090.8, E763879.1 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0380		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/17/2005 Completed 8/17/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 11.6 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 12 ft		19. Inspector: P. Petrey	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
11.6	0.0		Road fill material		1	11.6 SPT	7, 3, 6
9.6	2.0		Peat (muck layer)		2	9.6 SPT	2, 2, 2
7.6	4.0		Broken Limestone - Top caprock		3	7.6 SPT	2, 11, 8
				88 (RQD 20%)	1	6.1 HQ coring; 5.5 ft-top of caprock	
3.6	8.0		Soft 8 to 10 ft				
1.6	10.0		Hit hard layer again, 10 ft to 12 ft	88 (RQD 50%)	2	1.6 HQ coring	
-0.4	12.0		End of Boring at 12'				

0 2 4 6 8 10 12 14

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.0" split-spoon (1 3/8" I.D.

(continued)

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0380

Hole No. CP05-EAARS-CB-0380

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 11.6 | Sheet 2 of 2 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-3.4	15.0					-3.4	

x 2" O.D.)

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PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0380

APPENDIX 2
SUPPLEMENTAL BORINGS AND PIEZOMETER INSTALLATION LOGS: 381-419

Hole No. CP05-EAARS-CB-0381

DRILLING LOG	Division:	Installation:	Sheet 1 of 1 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N773961, E760078.9 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0381		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/11/2005 Completed 8/11/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 7.5 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 10 ft		19. Inspector: A.M. Noronha	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
7.5	0.0		LIMESTONE: light brown to white, hard, fine to medium grained, quite porous, shelly	38 (RQD 0%)	1	7.5	0 2 4
2.5	5.0		Cemented SAND: light grey, fine to medium grained, shells present	1 (RQD 0%)	2	2.5	6 8
-2.5	10.0		End of Boring at 10'			NOTES: 1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93. 2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)	10 12 14

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PROJECT EAA Reservoir A-1 HOLE NUMBER CP05-EAA-CB-0381

Hole No. CP05-EAARS-CB-0382

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N750597.1, E783999.8 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0382		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/24/2005 Completed 8/24/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 8 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 15 ft		19. Inspector: B. Levesque	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
8.0	0.0		GRAVEL: tan gray, dense, fine to coarse grained, dense, subangular, trace silt, trace fine to coarse sand, well graded, subangular to subrounded.		1	8.0 SPT	20 28 23
6.5	1.5		PEAT: black, fibrous, moist, trace fine to medium calcitic sand.			6.0	
4.5	3.5		GRAVEL: Grades as Gravel above, but angular to subangular.		2	SPT 4.0	5 5 3
2.5	5.5		GRAVEL (Caprock): grades as above.		3	SPT 2.5	10 16 30
0.0	8.0		LIMESTONE: tan white to white, soft to moderately hard, fine to medium grained, slightly porous, fossiliferous, weathered.	5 (RQD 0%)	1	HQ coring; 5.5 ft- top of Caprock	
						-2.0	
				30 (RQD 26%)	2	HQ coring; broke through at 15 ft, softer soil below caprock	
-7.0	15.0						

0 2 4 6 8 10 12 14

(continued)

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PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0382

Hole No. CP05-EAARS-CB-0382

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 8 | Sheet 2 of 2 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-7.0	15.0					-7.0	
			End of Boring at 15'			NOTES: 1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93. 2. 140# hammer with 30" drop used on 2.0' splitspoon (1 3/8" I.D. x 2" O.D.)	

16 18 20 22 24 26 28 30 32

ENG FORM 1836 PROJECT: EAA Reservoir A-1 HOLE NUMBER: CP05-EAARS-CB-0382

Hole No. CP05-EAARS-CB-0383

DRILLING LOG	Division:	Installation:	Sheet 1 of 1 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N773629.4, E757955 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0383		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Ralph Smith		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
7. Thickness of Burden: N/A		16. Date Hole Started 8/16/2005 Completed 8/16/2005	
8. Thickness of cap rock: N/A		17. Elevation Top of Hole: 9.1 (ft)	
9. Depth of hole: 11.5 ft		18. Total Core Recovery for hole: N/A	
		19. Inspector: A.M. Noronha	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
9.1	0.0		Peat, black, organic				
7.6	1.5					7.6	
			LIMESTONE: pale white to light grey, hard, fine grained, porous, shelly	38 (RQD 20%)	1	HQ coring; easy coring all the way	
2.6	6.5					2.6	
			No recovery	0 (RQD 0%)	2	HQ coring	
-2.4	11.5						
			End of Boring at 11.5'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0383

Hole No. CP05-EAARS-CB-0384

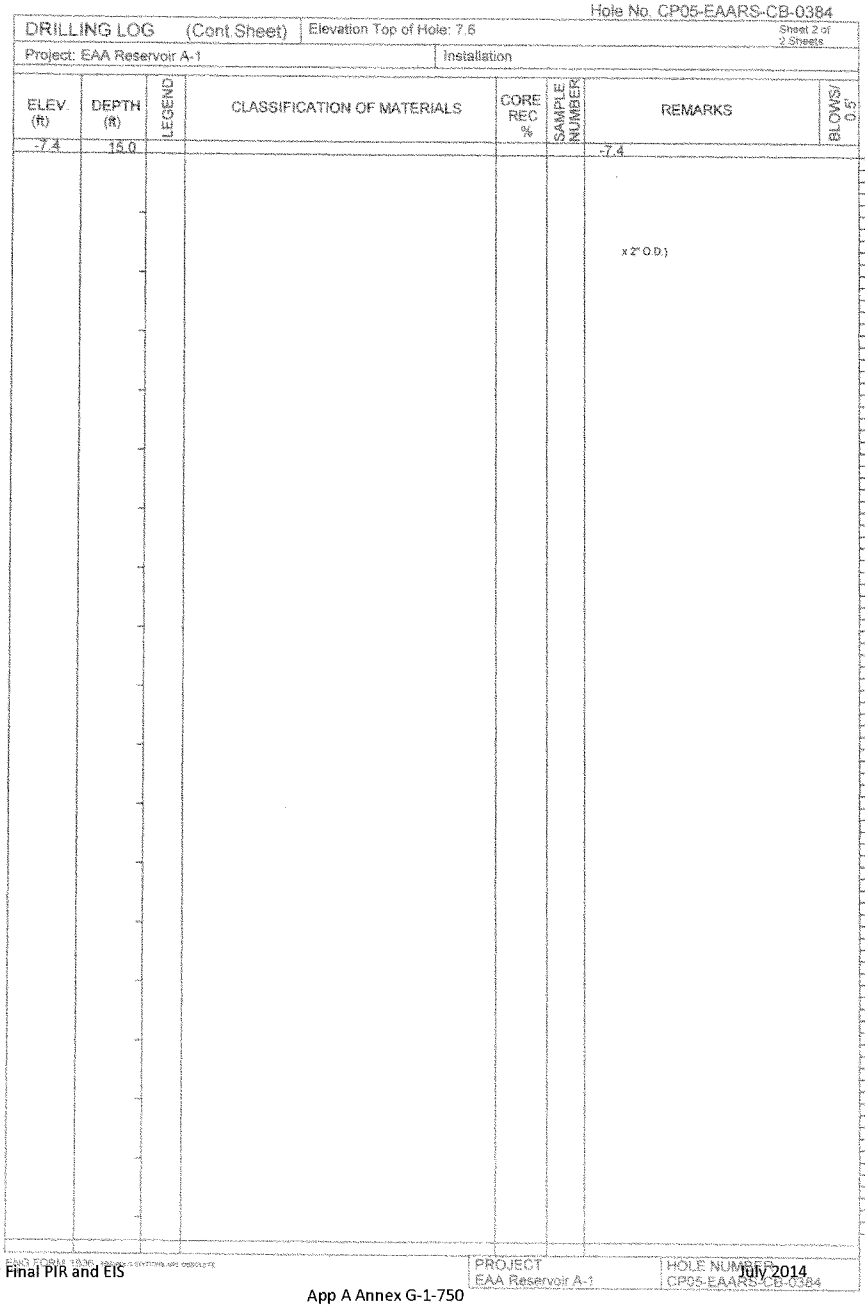
DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N757724.6, E783603.8 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-45B	
4. Hole No: CP05-EAARS-CB-0384		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Ralph Smith		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
7. Thickness of Burden: N/A		16. Date Hole Started 9/13/2005 Completed 9/13/2005	
8. Thickness of cap rock: N/A		17. Elevation Top of Hole: 7.6 (ft)	
9. Depth of hole: 12 ft		18. Total Core Recovery for hole: N/A	
		19. Inspector: A.M. Noronha	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
7.6	0.0		PEAT: Not sampled.				
5.6	2.0					5.6	
			LIMESTONE (Caprock): light gray, hard, fine to medium grained, quite porous, fossiliferous, shelly.	24 (RQD 10%)	1	HQ coring; 1 piece - 0.5 ft	
						0.6	
-0.9	8.5			24 (RQD 0%)	2	HQ coring	
			No recovery				
-4.4	12.0						
			End of Boring at 12'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D.

(continued)

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0384


Hole No. CP05-EAARS-CB-0384
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 7.6
Sheet 2 of 2 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-7.4
15.0
-7.4
x 2" O.D.)
16
18
20
22
24
26
28
30
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PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0384

Hole No. CP05-EAARS-CB-0385

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N764205.7, E772656.2 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-45B	
4. Hole No: CP05-EAARS-CB-0385		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Ralph Smith		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/13/2005 Completed 9/13/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 7.9 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 12 ft		19. Inspector: A.M. Noronha	

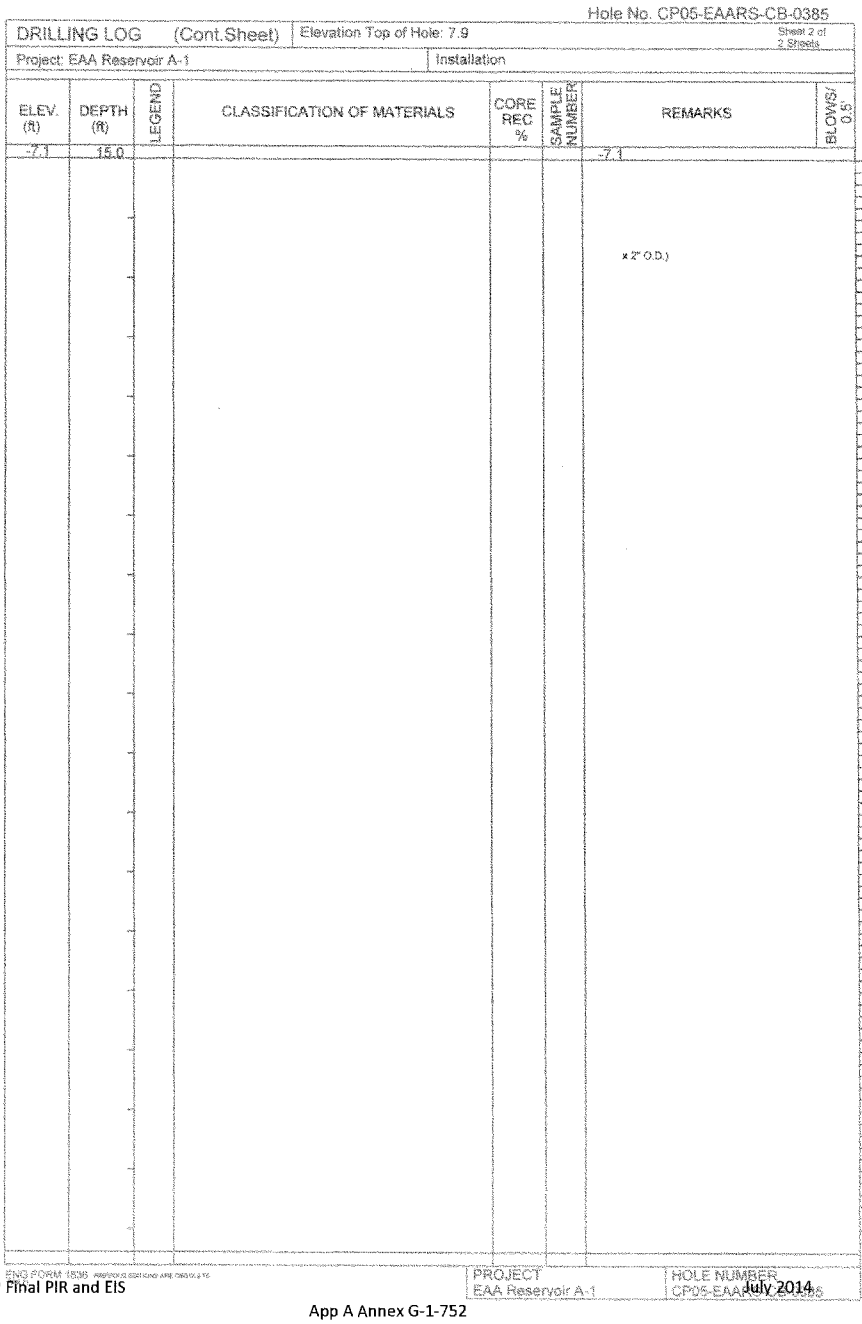
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
7.9	0.0		PEAT: Not sampled.				0
5.9	2.0		LIMESTONE (Caprock): white to light gray, hard, fine to medium grained, moderately porous, shell fragments.	16 (RQD 0%)	1	HQ coring	2
1.9	6.0		Only one small piece of limestone recovered			5.9	4
				2 (RQD 0%)	2	HQ coring	6
-4.1	12.0		End of Boring at 12'			0.9	8
							10
							12
							14

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D.

(continued)

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PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0385



Hole No. CP05-EAARS-CB-0385

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 7.9 | Sheet 2 of 2 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5
-7.1	15.0					-7.1	

x 2" O.D.)

16 18 20 22 24 26 28 30 32

ENG FORM 1836 PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0385

Hole No. CP05-EAARS-CB-0386

DRILLING LOG	Division:	Installation:	Sheet 1 of 1 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N764152.1, E761782.8 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0386		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Erik Bluemke		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/8/2005 Completed 9/8/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 8.4 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 6.1 ft		19. Inspector: N. Holst	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
8.4	0.0		PEAT: not sampled.				
7.3	1.1					7.3	
			LIMESTONE (Caprock): tan to light brown and gray, thinly bedded, fine to coarse grained, fossiliferous, vuggy to porous, hard and strong to moderately hard and moderately strong.	36 (RQD 7%)	1	HQ coring; soft from 2.2 to 2.6 ft, soft at 3 ft; core sample for testing from 1.3 to 1.8 ft	
5.4	3.0						
			No recovery				
2.3	6.1						
			End of Boring at 6.1'			NOTES: 1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93. 2. 140# hammer with 30" drop used on 2.0' splitspoon (1 3/8" I.D. x 2" O.D.)	

0 2 4 6 8 10 12 14

ENG FORM 1836, PREVIOUS EDITIONS ARE OBSOLETE

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0386

Hole No. CP05-EAARS-CB-0387

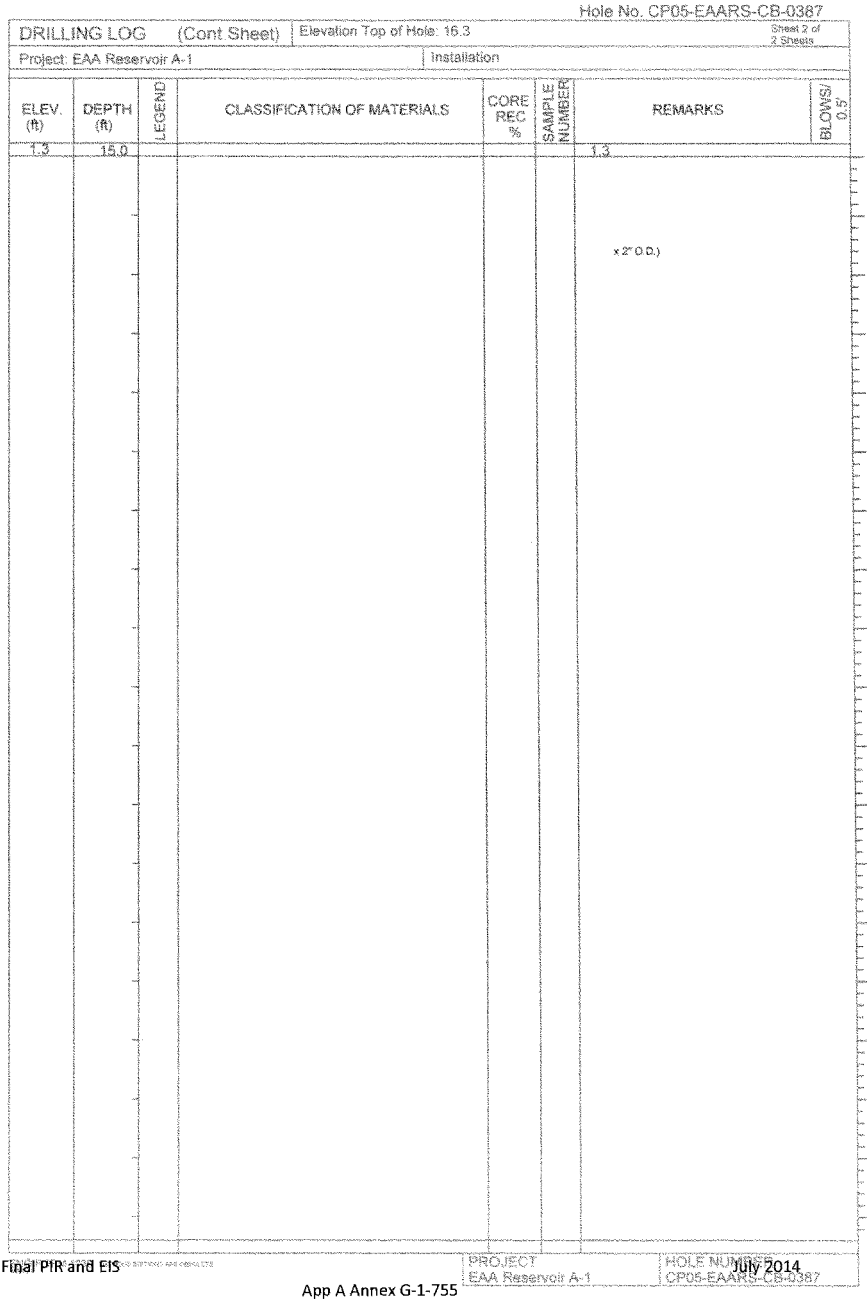
DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N772246.4, E775085.6 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0387		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Ralph Smith		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/24/2005 Completed 8/29/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 16.3 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 12 ft		19. Inspector: A.M. Noronha	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5
16.3	0.0		Rotary wash. Not sampled.				0
14.3	2.0		LIMESTONE: light brown to pale white, hard, fine to medium grained, quite porous	28 (RQD 9%)	1	14.3 HQ coring; very hard coring from 2 to 7.5 ft	2 4 6
8.8	7.5		Few pieces of coral and a couple of pieces of limestone recovered	12 (RQD 0%)	2	9.3 HQ coring; hard coring from 9.5 to 10.5 ft	8 10
6.8	9.5						
5.8	10.5		No recovery				12
4.3	12.0		End of Boring at 12'				14

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D.

(continued)

PROJECT: EAA Reservoir A-1 HOLE NUMBER: CP05-EAARS-CB-0387



Hole No. CP05-EAARS-CB-0387

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 16.3 | Sheet 2 of 2 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
1.3	15.0					1.3	

x 2" O.D.)

16
18
20
22
24
26
28
30
32

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0387

Hole No. CP05-EAARS-CB-0388

DRILLING LOG	Division:	Installation:	Sheet 1 of 1 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N773937.1, E759316.6 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0388		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Ralph Smith		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
7. Thickness of Burden: N/A		16. Date Hole Started 8/12/2005 Completed 8/12/2005	
8. Thickness of cap rock: N/A		17. Elevation Top of Hole: 7.6 (ft)	
9. Depth of hole: 10 ft		18. Total Core Recovery for hole: N/A	
		19. Inspector: A.M. Noronha	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
7.6	0.0		LIMESTONE: greenish grey to pale whit, hard, fine to medium grained, quite porous, shells present Little Peat recovered	38 (RQD 13%)	1	7.6 HQ Coring; UCS=2119psi; around 8" of hard coring	
-2.6	5.0		Cemented SAND: pale white, dense, fine to coarse grained, subangular	24 (RQD 14%)	2	2.6 HQ Coring: 7.5 to 9.5 ft hard coring	
-2.4	10.0		End of Boring at 10'			NOTES: 1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-90. 2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)	

0 2 4 6 8 10 12 14

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0388

Hole No. CP05-EAARS-CB-0389

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N783425.5, E761054.2 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-45B	
4. Hole No: CP05-EAARS-CB-0389		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Ralph Smith		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/8/2005 Completed 9/8/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 8 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 13 ft		19. Inspector: A.M. Noronha	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
8.0	0.0		Not Sampled				
5.0	3.0					5.0	
			LIMESTONE (Caprock): white, hard, fine to medium grained, quite porous, shells present.	42 (RQD 28%)	1	HQ coring; 1 piece each of 0.85 ft and 0.55 ft recovered	
2.9	5.1		No recovery				
						0.0	
				0 (RQD 0%)	2	HQ coring; very easy coring	
-5.0	13.0						
			End of Boring at 13'			NOTES: 1. Soils are field visually classified	

(continued)

ENG FORM 1836, previous editions are obsolete. PROJECT EAA Reservoir A-1 HOLE NUMBER CP05-EAARS-CB-0389

Hole No. CP05-EAARS-CB-0389

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 8 | Sheet 2 of 2 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-7.0	15.0					-7.0	

in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

16 18 20 22 24 26 28 30 32

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PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0389

Hole No. CP05-EAARS-CB-0390

DRILLING LOG	Division:	Installation:	Sheet 1 of 1 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N782077.2, E757968.6 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-45B	
4. Hole No: CP05-EAARS-CB-0390		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Ralph Smith		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/8/2005 Completed 9/8/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 8.2 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 10.5 ft		19. Inspector: A.M. Noronha	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
8.2	0.0						
7.7	0.5		Not sampled			7.7	
			LIMESTONE (Caprock): hard to moderately hard, fine to medium grained, shelly.	68 (RQD 20%)	1	HQ coring; 1 piece each of 0.65 ft and 0.35 ft recovered; caprock - 5.5 ft	
			At 5.5 ft, grades as above with fine to coarse grained, and vuggy.			2.7	
2.2	6.0		No recovery	12 (RQD 0%)	2	HQ coring	
-2.3	10.5		End of Boring at 10.5'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-03.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

ENG FORM 1836, PREVIOUS EDITIONS ARE OBSOLETE

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0390

Hole No. CP05-EAARS-CB-0391

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N750104.5, E768244.7 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0391		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/19/2005 Completed 8/19/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 10.5 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 12 ft		19. Inspector: P. Petrey	

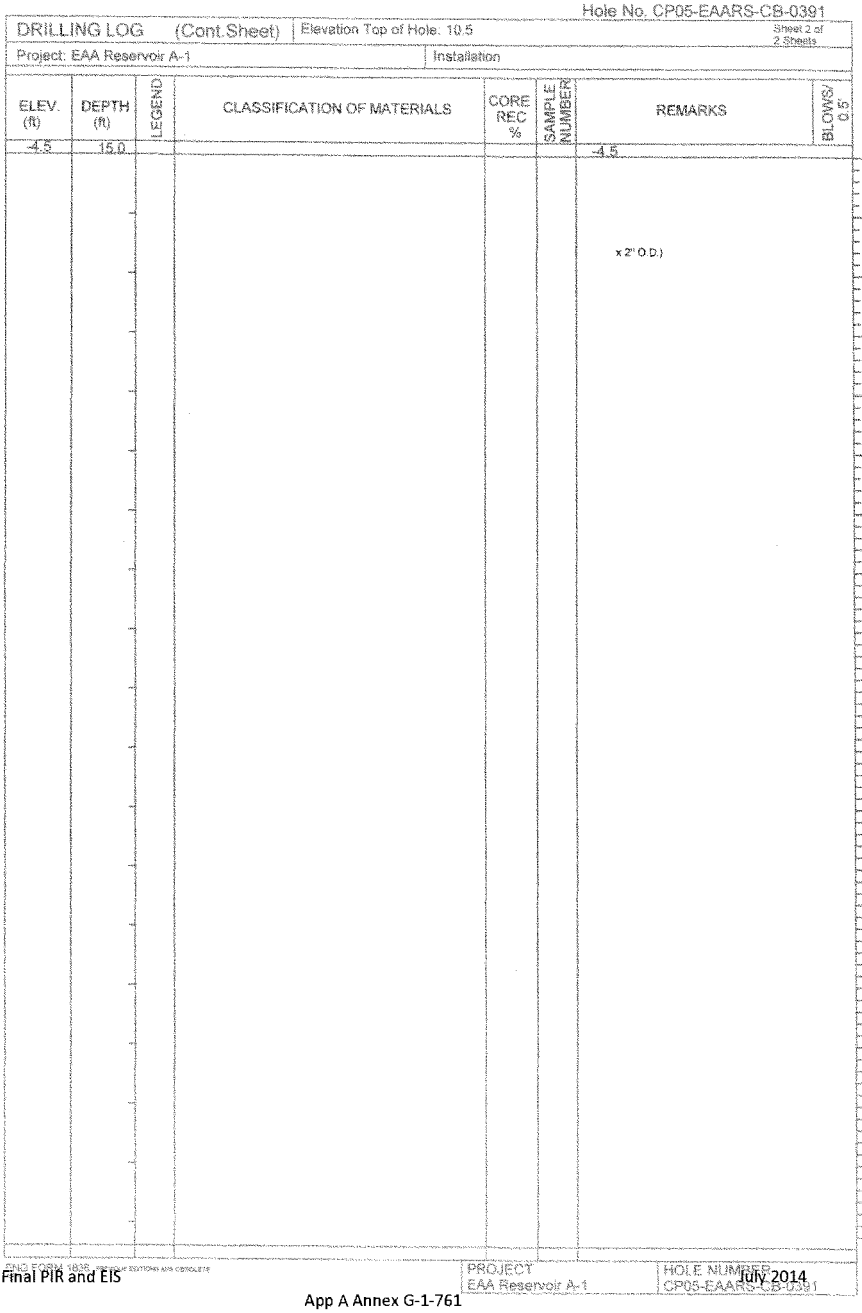
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
10.5	0.0		Road fill material		1	10.5 SPT	24 16 18
			Grey / black road fill material		2	8.5 SPT	12 6 12
6.5	4.0		Peat/sand/silt		3	6.5 SPT	4 3 50/5"
5.0	5.5		Caprock: LIMESTONE	40 (RQD 20%)	1	5.0 HQ coring; 5.5 ft of caprock	
3.0	7.5		Light brown soft sand, shell, silt		4	0.0 SPT; hard at 12 ft	5 12 36
-1.5	12.0		End of Boring at 12'				

0 2 4 6 8 10 12 14

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D.

(continued)

PROJECT: EAA Reservoir A-1 HOLE NUMBER: CP05-EAARS-CB-0391


Hole No. CP05-EAARS-CB-0391
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 19.5
Sheet 2 of 2 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-4.5
15.0
-4.5
x 2" O.D.)
16
18
20
22
24
26
28
30
32
ENG FORM 1836, 1 SEP 87 PREVIOUS EDITIONS ARE OBSOLETE
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0391

Hole No. CP05-EAARS-CB-0392

DRILLING LOG	Division:	Installation:	Sheet 1 of 1 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N774439.9, E759696.6 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0392		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Ralph Smith		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/12/2005 Completed 8/12/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 8 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 10 ft		19. Inspector: A.M. Noronha	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
8.0	0.0		LIMESTONE: light grey, hard, fine grained, porous, shelly	48 (RQD 30%)	1	8.0 HQ Coring: UCS=1805psi; hard coring from 0 to 4.5 ft	
3.5	4.5		No recovery	0 (RQD 0%)	2	3.0	
-2.0	10.0		End of Boring at 10'			NOTES: 1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93. 2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)	

0 2 4 6 8 10 12 14

ENG FORM 1836, previous editions not obsolete	PROJECT EAA Reservoir A-1	HOLE NUMBER CP05-EAARS-CB-0392

Hole No. CP05-EAARS-CB-0393

DRILLING LOG	Division:	Installation:	Sheet 1 of 1 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N773687.1, E761788.9 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No. CP05-EAARS-CB-0393		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Ralph Smith		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/16/2005 Completed 8/16/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 7.4 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 10 ft		19. Inspector: A.M. Noronha	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
7.4	0.0						
7.1	0.3		0.3' of grey cemented sand recovered			7.4	
			0.6' of limestone, pale white, moderately hard, highly porous, fine to medium grained, shelly Caprock mostly moderately hard porous limestone	40 (RQD 22%)	1	HQ coring	
			Few Limestone chips			2.4	
1.4	6.0		One piece of cemented sand with shells	6 (RQD 0%)	2	HQ coring	
-2.6	10.0		End of Boring at 10'			NOTES: 1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93. 2. 140# hammer with 30" drop used on 2.0" split spoon (1 3/8" I.D. x 2" O.D.)	

0 2 4 6 8 10 12 14

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0393

Hole No. CP05-EAARS-CB-0394

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N776821.9, E772809.6 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-45B	
4. Hole No: CP05-EAARS-CB-0394		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Ralph Smith		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/8/2005 Completed 9/8/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 9.9 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 12 ft		19. Inspector: A.M. Noronha	

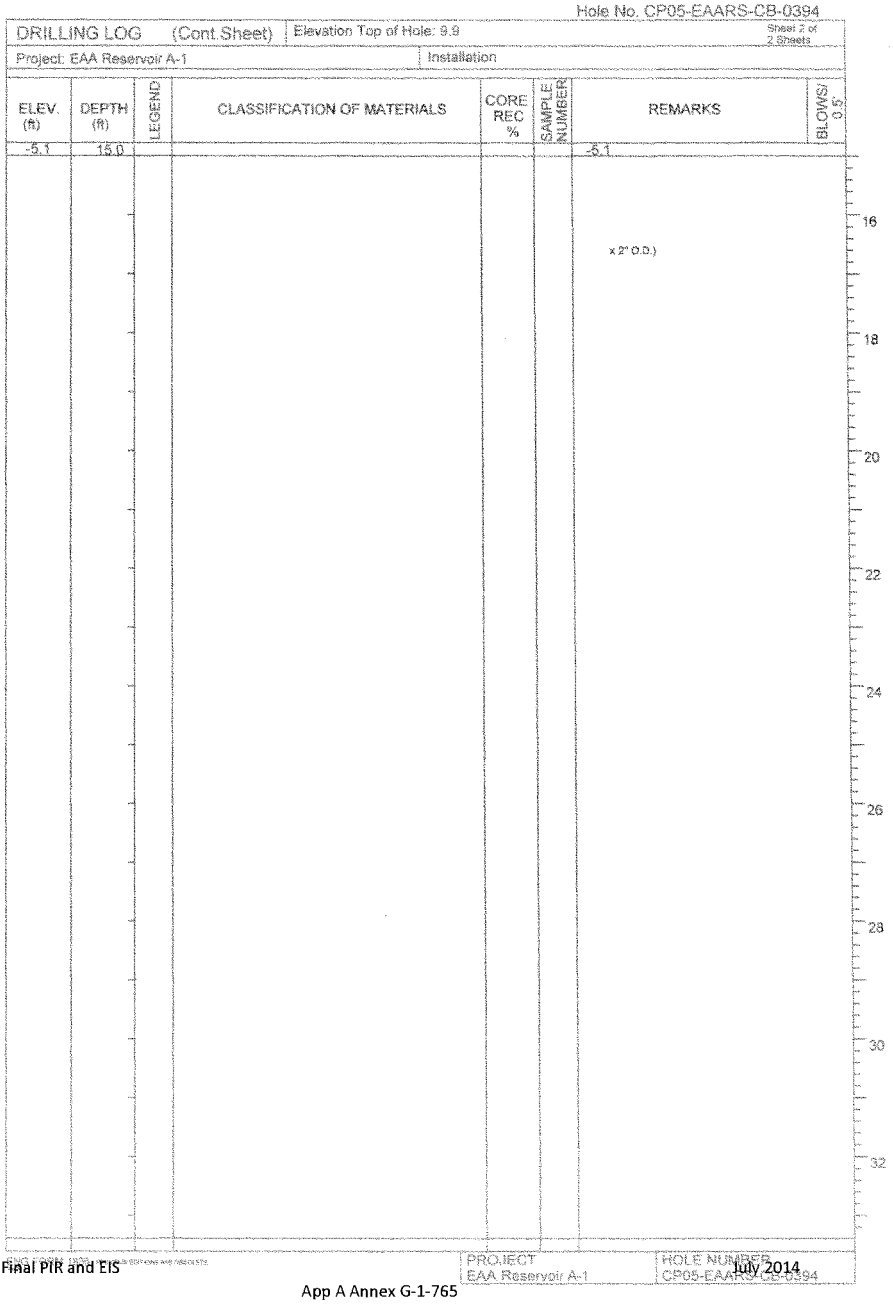
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
9.9	0.0		Not Sampled				
7.9	2.0		LIMESTONE (Caprock): gray to white, hard, vuggy, shelly, fossiliferous, fine to medium grained.	50 (RQD 15%)	1	HQ coring; one piece of 0.75 ft recovered	
						7.9	
				38 (RQD 15%)	2	HQ coring; one piece of 0.75 ft recovered; caprock around 7 ft thick	
0.9	9.0		No recovery				
-2.1	12.0		End of Boring at 12'				
						2.9	

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93
2. 140# hammer with 30" drop used on 2.0 split spoon (1 3/8" I.D.

(continued)

ENG FORM 1836, PREVIOUS EDITIONS ARE OBSOLETE

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAA



Hole No. CP05-EAARS-CB-0394

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 9.9 | Sheet 2 of 2 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-5.1	15.0					-5.1	

x 2" O.D.)

16 18 20 22 24 26 28 30 32

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0394

Hole No. CP05-EAARS-CB-0395

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N763476.7, E781637.8 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0395		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/29/2005 Completed 8/29/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 11.2 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 40 ft		19. Inspector: B. Levesque	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
11.2	0.0						
			GRAVEL (FILL): brown gray, fine to coarse grained, subangular to subrounded, trace fine to medium grained sand, trace silt.		1	11.2 SPT	12 9 3
9.7	1.5		PEAT: black, very loose, moist, trace fine to medium grained sand, trace gravel.			9.2	
					2	SPT	1 2 2
						7.2	
6.2	5.0				3	SPT	2 2 9
			SAND: brown, medium dense, some silt, trace fine to coarse gravel, trace organics (Peat fibers).			5.2	
					4	SPT; probable change between 7.5 and 8.0 ft	2 8 3
3.2	8.0					3.2	
			LIMESTONE (Caprock): white, fine to coarse grained, porous, vuggy, moderately hard and moderately brittle to friable and weak, intermittant cemented sands.	36 (RQD 20%)	1	HQ coring	
						-1.8	
				18 (RQD 13%)	2	HQ coring; broke through at 18 ft	

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ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0395

Hole No. CP05-EAARS-CB-0395

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 11.2 | Sheet 2 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-3.8	15.0					-3.8	
-6.8	18.0		SAND: white, medium dense, fine to coarse grained, calcitic, angular to subangular, trace to some silt, trace fine gravel.			-6.8	
						-8.8	
					5	SPT	3 10 8
-11.8	23.0		SAND: white, dense, fine to medium grained calcitic sand, angular to subangular, trace to some fine quartz sand, trace silt, trace fine gravel. Sand getting progressively denser with depth.			-12.8	
					6	SPT; possible change at 23 ft; Caloosahatchee Formation or Pinecrest Sand of Tamiami Formation	2 7 27
						-16.8	
						sands and gravel, seems to be getting harder with depth	
-18.8	30.0		LIMESTONE: gray brown, fine to coarse grained, hard, weak to moderately strong, fossiliferous, porous.	29 (RQD 13%)	3	-18.8 HQ coring; whackstone in the upper 3.5 ft of sample run	

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ENG FORM 1836, previous editions are obsolete

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAA[illegible]0395

Hole No. CP05-EAARS-CB-0395

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 11.2 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-22.2	33.4					-22.2	
			Grades as above with light gray to tan white color.				
						-23.8	
				40 (RQD 24%)	4	HQ coring	
-25.8	37.0		No recovery				
-28.8	40.0		End of Boring at 40'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0395

Hole No. CP05-EAARS-CB-0396

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N770099.6, E777060.6 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0396		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Ralph Smith		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/29/2005 Completed 8/30/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 9.9 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 35 ft		19. Inspector: A.M. Noronha	

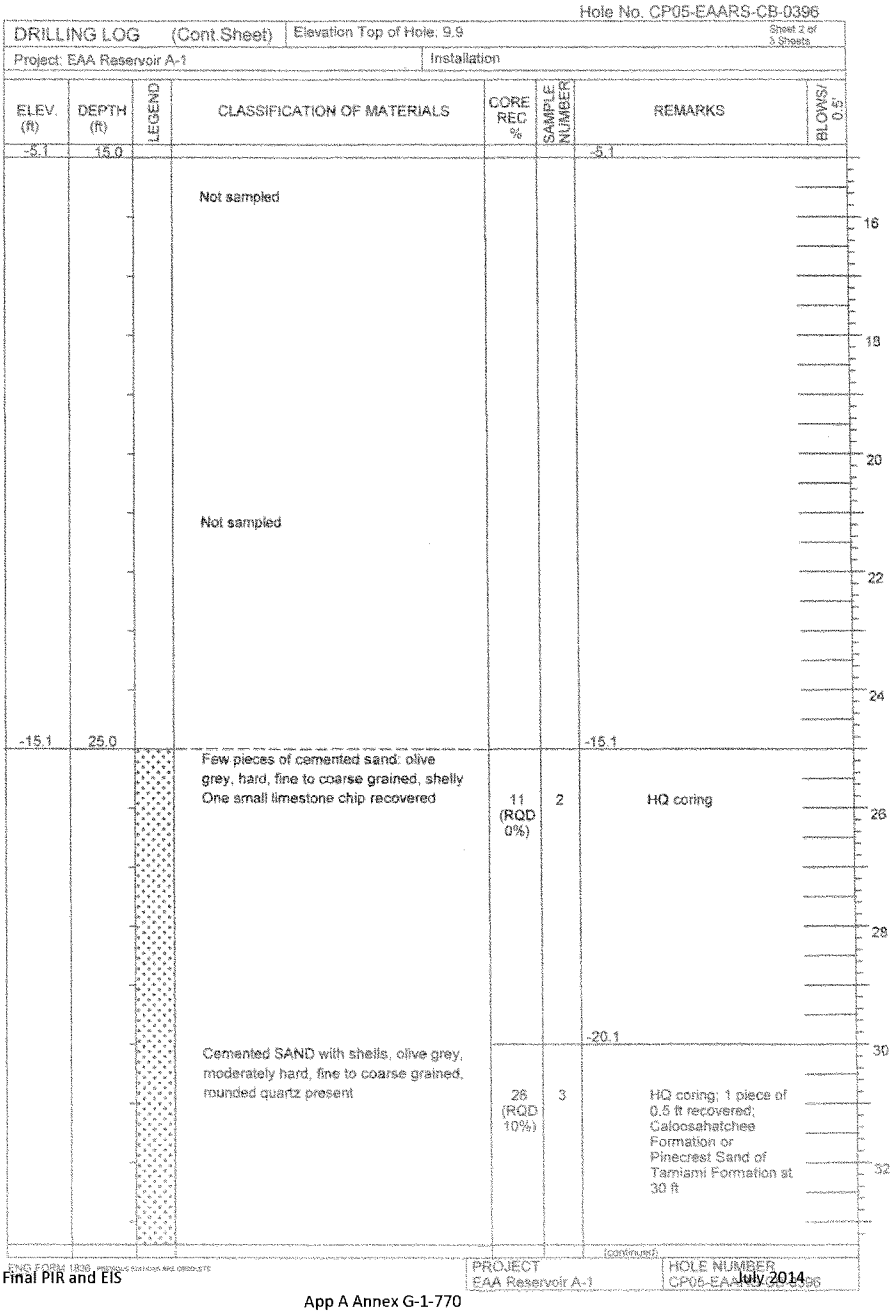
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
9.9	0.0		Rotary wash drilling. Not sampled.				
6.9	3.0					6.9	
2.7	7.3		LIMESTONE: white to light grey, hard, fine to medium grained, shelly, vuggy	80 (RQD 26%)	1	HQ coring; 2 pieces of 4.5" and 1 piece of 5" recovered	
1.9	8.0		Cemented sand			1.9	
			Not sampled			8 to 25 ft - rotary wash drilling; no hard layer encountered. Not sampled.	
			Not sampled				

0 2 4 6 8 10 12 14

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ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT EAA Reservoir A-1 HOLE NUMBER CP05-EAARS-CB-0396



Hole No. CP05-EAARS-CB-0396

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 9.9 | Sheet 2 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-5.1	15.0					-5.1	
			Not sampled				16
							18
							20
			Not sampled				22
							24
-15.1	25.0					-15.1	
			Few pieces of cemented sand: olive grey, hard, fine to coarse grained, shelly One small limestone chip recovered	11 (RQD 0%)	2	HQ coring	26
							28
						-20.1	30
			Cemented SAND with shells, olive grey, moderately hard, fine to coarse grained, rounded quartz present	26 (RQD 10%)	3	HQ coring; 1 piece of 0.5 ft recovered; Caloosahatchee Formation or Pinecrest Sand of Tamiami Formation at 30 ft	32

ENG FORM 1836, PREVIOUS EDITIONS ARE OBSOLETE (continued)

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0396

Hole No. CP05-EAARS-CB-0396

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 9 9 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-23.5	33.4					-23.5	
-25.1	35.0		End of Boring at 35'			NOTES: 1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93. 2. 140# hammer with 30" drop used on 2.0' splitspoon (1 3/8" I.D. x 2" O.D.)	

34 36 38 40 42 44 46 48 50

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0396

Hole No. CP05-EAARS-CB-0397

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N757685.2, E774781.6 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-45B	
4. Hole No: CP05-EAARS-CB-0397		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Ralph Smith		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/13/2005 Completed 9/13/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 8 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 12 ft		19. Inspector: A.M. Noronha	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
8.0	0.0		PEAT: Not sampled.			8.0 2 ft of peat 6.0	0
6.0	2.0		LIMESTONE (Caprock): tan brown to white, hard, fine grained, slightly porous, shelly, fossiliferous. Intermittant cemented sand seams. Grades weak to moderately hard, fine to medium grained and vuggy at 7.0.	24 (RQD 8%)	1	HQ coring; 1 piece of 0.4 ft recovered 1.0	2 4 6
0.5	7.5		No recovery	6 (RQD 0%)	2	HQ coring; caprock was around 5 ft thick with intermediate layers of softer cemented sands	8 10
-4.0	12.0		End of Boring at 12'				12 14

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D.

(continued)

END OF HOLE 1399 - PREVIOUS EDITIONS ARE OBSOLETE

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0397

Hole No. CP05-EAARS-CB-0397

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 8 | Sheet 2 of 2 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-7.0	15.0					-7.0	
						x 2" O.D.)	

16 18 20 22 24 26 28 30 32

ENG FORM 1836, PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0397

Hole No. CP05-EAARS-CB-0398

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N750736.6, E791146 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0398		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/24/2005 Completed 8/24/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 10.3 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 17 ft		19. Inspector: B. Levesque	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
10.3	0.0						
			GRAVEL: brown, fine to coarse gravel, angular, dry, little fine to medium sand, little silt, subangular to subrounded		1	10.3 SPT 8.8	12 38 22
8.3	2.0		PEAT: black, fibrous, moist, soft, trace fine to medium calcitic sand, subangular to subrounded		2	SPT 6.8	4 2 1
					3	SPT 5.3	50/2"
5.3	5.0		LIMESTONE: grey to white, fine to coarse grained, fossiliferous, moderately strong, hard to weak and friable, thinly bedded	25 (RQD 0%)	1	HQ coring 3.3	
			LIMESTONE: tan grey, fine to medium grained, fossiliferous, moderately strong, hard to weak, friable, perous to slightly porous, thinly bedded	50 (RQD 45%)	2	HQ coring; UCS=2100psi -1.7	
-2.2	12.5		LIMESTONE: fine grained, vuggy, porous to slightly porous, moderately strong, slightly friable to hard No recovery	29 (RQD 19%)	3	HQ coring; UCS=1040psi	

0 2 4 6 8 10 12 14

(continued)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0398

Hole No. CP05-EAARS-CB-0398

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 10.3 | Sheet 2 of 2 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-4.7	15.0					-4.7	
-6.7	17.0		End of Boring at 17'			NOTES: 1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93. 2. 140# hammer with 30" drop used on 2.0' splitspoon (1 3/8" I.D. x 2" O.D.)	

16 18 20 22 24 26 28 30 32

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0398

Hole No. CP05-EAARS-CB-0399

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N7500087.5, E758686.4 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0399		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/12/2005 Completed 9/12/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 13.7 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 13 ft		19. Inspector: P. Petrey	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
13.7	0.0		ROADFILL. Not sampled.			13.7 Wash / drilled down to top of caprock	0
7.7	6.0		LIMESTONE (Caprock)	67 (RQD 19%)	1	7.7 HQ coring	6
2.7	11.0		LIMESTONE: Broken peices recovered from coring between 9.0 and 13.0.	31 (RQD 13%)	2	4.7 HQ coring; very soft from 11 to 12 ft	10
1.7	12.0		Softer material (sand) from 11.0 to 12.0				12
0.7	13.0		End of Boring at 13'				14

NOTES:
1. Soils are field visually classified (continued)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0399

Hole No. CP05-EAARS-CB-0399

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 13.7 | Sheet 2 of 2 Sheets

Project: EAA Reservoir A-1 | Installation:

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-1.3	15.0					-1.3	

In accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0' splitspoon (1 3/8" I.D. x 2" O.D.)

16 18 20 22 24 26 28 30 32

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0399

Hole No. CP05-EAARS-CB-0400

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N764134.7, E758499.8 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0400		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/8/2005 Completed 9/8/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 10.7 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 35.5 ft		19. Inspector: K. Jones	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
10.7	0.0		ROADFILL: Not sampled.				0
7.7	3.0		PEAT: Not sampled.				2
6.7	4.0		LIMESTONE (Caprock): olive brown, hard, vuggy, fossiliferous, with shells, fractured, angular and granular.	40 (RQD 0%)	1	6.7 HQ coring; soft coring from 6.5 to 8 ft; hard from 8 to 9 ft	4
4.2	6.5		LIMESTONE: olive brown, medium soft, oolitic, granular, fractured.				6
2.7	8.0		Grades to medium hard.				8
1.7	9.0		Grades to tan gray, medium soft, with shell hash.	45 (RQD 16%)	2	1.7 SPT HQ coring; cavities are probably filled with fine sediment	50/1" 10
-3.3	14.0		Grades to dark brown, fossiliferous, vuggy, fractured, voids filled with silty sediments, shell hash grades out.			-4.3 (continued)	12 14

END FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0400

Hole No. CP05-EAARS-CB-0400

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 10.7 | Sheet 2 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-4.3	15.0					-4.3	
-5.3	16.0		Grades tan, colitic.	80 (RQD 25%)	3	HQ coring	16
-7.3	18.0		Grades dark gray to brown, medium soft to medium hard, very fossiliferous, with shell hash, some quartz sand.			-7.3 Caloosahatchee Formation or Pinecrest Sand of Tamiami Formation	18
-9.3						-9.3	20
-11.3	22.0		SAND: gray, fine grained, uniform, trace shell fragments	20 (RQD 0%)	4	HQ coring; retreived sand from the core barrel	22
-13.3	24.0		LIMESTONE: as from 18.0 to 22.0			-14.3	24
-16.8	27.5		SAND: gray, medium dense, uniform, fine grained, subangular, interbedded with thin layers of tan sandy and soft limestone.			-18.3	26
					2	SPT 5 6 5	28 30
			Grades loose with subangular quartz at 34 ft.				32

(continued)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0400

Hole No. CP05-EAARS-CB-0400

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 10.7 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-22.7	33.4					-22.7	
						-23.3	
					3	SPT	4 4 3
-24.8	35.5		End of Boring at 35.5'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

34 35 38 40 42 44 46 48 50

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0400

Hole No. CP05-EAARS-CB-0401

DRILLING LOG	Division:	Installation:	Sheet 1 of 1 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N779797.4, E757729 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0401		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Ralph Smith		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/18/2005 Completed 8/18/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 10.7 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 10 ft		19. Inspector: A.M. Noronha	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
10.7	0.0						
9.7	1.0		1 foot of Sand				
5.7	5.0		4 feet of Peat, black, organic			5.7	
3.7	7.0		No recovery	10 (RQD 0%)	1	HQ coring; hard coring from 7 to 8.5 ft	
2.2	8.5		LIMESTONE: grey, hard, fine grained, quite porous				
0.7	10.0		No recovery				
			End of Boring at 10'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" split spoon (1 3/8" I.D. x 2" O.D.)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0401

Hole No. CP05-EAARS-CB-0402

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N750727.4, E791134.6 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0402		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/24/2005 Completed 8/24/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 10.8 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 15 ft		19. Inspector: B. Levesque	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
10.8	0.0						
			GRAVEL: brown, fine to coarse graded, subangular, little fine to coarse sand, subrounded to subanguiar, little silt		1	10.8 SPT 9.3	16 13 23
9.3	1.5		PEAT: black, organic, fibrous, soft, moist, trace fine to medium calcitic sand, subrounded		2	SPT 7.8	4 2 2
7.8	3.0		GRAVEL: brown to white, coarse graded, shelly, subangular to angular, little fine to medium sand, subangular to subrounded, trace silt		3	SPT 6.3	4 11 12
5.5	5.3				4	5.5 SPT	5 50/4"
			LIMESTONE: grey to white tan, fine to coarse grained, fossiliferous, whackstone, hard, non porous to slightly porous, thinly bedded	44 (RQD 32%)	1	HQ coring: top of rock at 5.3 ft	
			LIMESTONE: cemented sands, fine to coarse grained, weak, fibrous, friable				
			LIMESTONE: tan to white, fine to medium grained, moderately hard, strong, slightly vuggy, slightly porous				
0.8	10.0					0.8	
			Very little recovery, believed to be very weak limestone and/or cemented sands and gravel	10 (RQD 0%)	2	HQ coring	
			No recovery				
-4.2	15.0						

(continued)

PROJECT EAA Reservoir A-1 HOLE NUMBER CP05-EAARS-CB-0402

Hole No. CP05-EAARS-CB-0402

DRILLING LOG (Cont.Sheet)	Elevation Top of Hole: 10.8	Sheet 2 of 2 Sheets
Project: EAA Reservoir A-1	Installation	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-4.2	15.0					-4.2	
			End of Boring at 15'			NOTES: 1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93. 2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)	

16 18 20 22 24 26 28 30 32

ENG 4 (8-95) USACE - OMAHA DISTRICT EDITION OF 1 NOV 85 IS OBSOLETE

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0402

Hole No. CP05-EAARS-CB-0403

DRILLING LOG	Division:	Installation:	Sheet 1 of 1 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N761498.5, E760588.8 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0403		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/9/2005 Completed 9/9/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 11.1 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 11.5 ft		19. Inspector: K. Jones	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
11.1	0.0						
			FILL: Not sampled.				
7.1	4.0						
			PEAT: Not sampled.				
6.1	5.0					6.1	
			LIMESTONE (Caprock): tan to light brown, crystalline, fractured, vuggy.	55 (RQD 25%)	1	HQ coring; coring became softer at 8.5 ft	
			Grades medium soft, sandy, granular.				
			Grades medium hard.				
1.1	10.0					1.1	
			Gravelly SAND: gray, dense, well graded, subangular, calcereous, with oolitic shell hash.		1	SPT	3 13 28
-0.4	11.5						
			End of Boring at 11.5'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation, D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0403

Hole No. CP05-EAARS-CB-0404

DRILLING LOG	Division:	Installation:	Sheet 1 of 1 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N776147.9, E757911 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0404		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Ralph Smith		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/16/2005 Completed 8/16/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 9.2 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 11.5 ft		19. Inspector: A.M. Noronha	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
9.2	0.0						
			Peat: black, organic				
7.7	1.5					7.7	
			LIMESTONE: pale white, hard, fine grained, quite porous, shells in sample	42 (RQD 28%)	1	HQ coring	
2.7	6.5					2.7	
			Two pieces of limestone recovered, same as above	6 (RQD 0%)	2	HQ coring	
			No recovery				
-2.3	11.5						
			End of Boring at 11.5'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0404

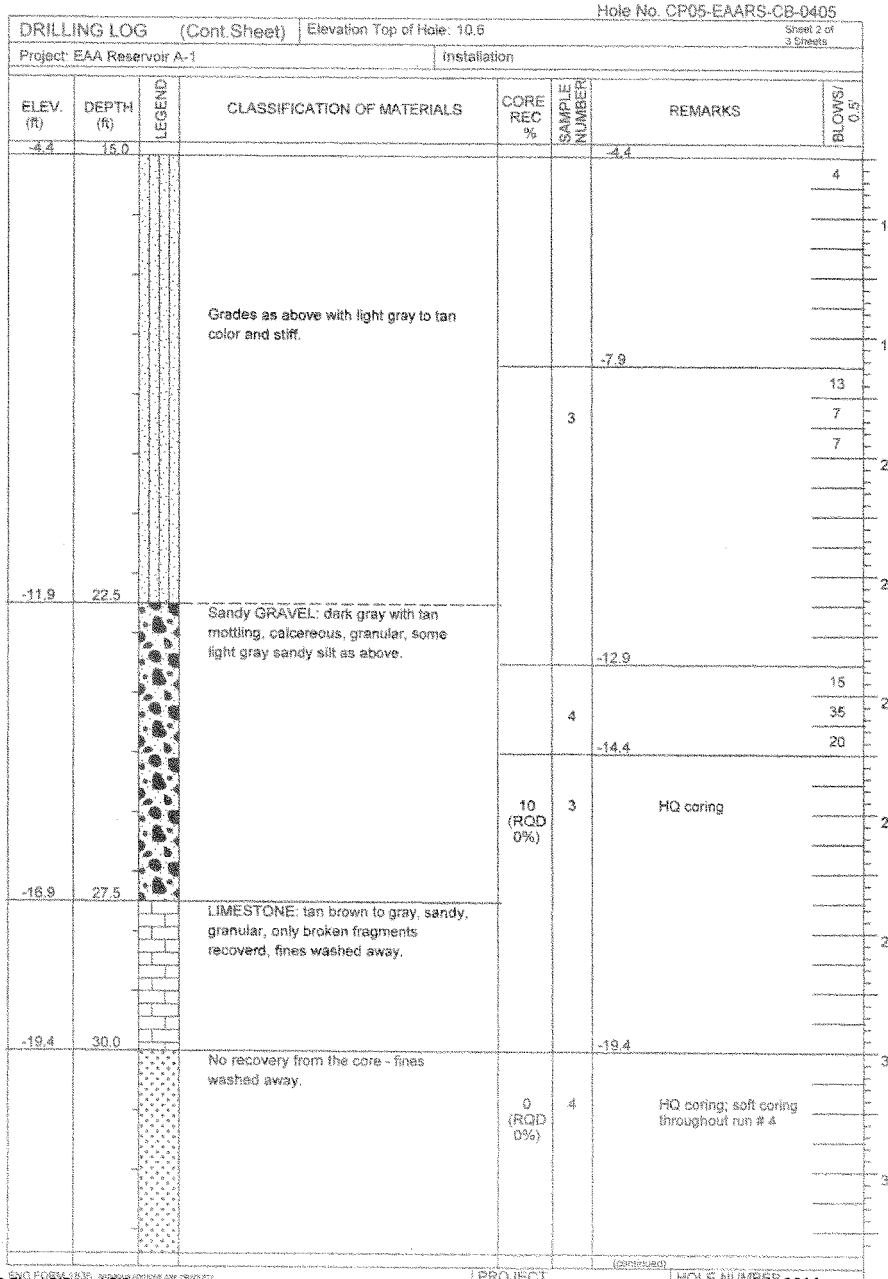
Hole No. CP05-EAARS-CB-0405

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N774986.3, E773717.1 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0405		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Erik Bluemke		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/13/2005 Completed 9/13/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 10.6 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 35 ft		19. Inspector: K. Jones	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
10.6	0.0		ROADFILL: Not sampled.				0
8.6	2.0		PEAT: Not sampled.			6.6	2
6.6	4.0		LIMESTONE (Caprock): tan gray, crystalline, dense, soft areas filled with gray silty clay, granular, fossiliferous, heavily fractured.	45 (RQD 13%)	1	HQ coring; soft coring at 8 ft	4
2.6	8.0						6
1.6	9.0					1.6	8
			LIMESTONE: brown, medium hard, granular, fossiliferous, vuggy, fractured.			1.2 50/5"	
-1.4	12.0		Grades tan, hard, dense, crystalline and fractured at 11.0.	34 (RQD 9%)	2	HQ coring; soft coring at 12 ft	10
			Sandy SILT: light gray, firm, calcereous, well graded, some shell fragments and calcereous oolitic gravel.			-3.4	12
					2	(continued)	8 4 14

PREVIOUS EDITIONS ARE OBSOLETE

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0405


Hole No. CP05-EAARS-CB-0405
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 10.6
Sheet 2 of 3 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
-4.4
15.0
-4.4
4
16
Grades as above with light gray to tan color and stiff.
-7.9
13
7
7
3
20
-11.9
22.5
22
Sandy GRAVEL: dark gray with tan mottling, calcereous, granular, some light gray sandy silt as above.
-12.9
15
35
20
4
24
-14.4
10 (RQD 0%)
3
HQ coring
26
-16.9
27.5
LIMESTONE: tan brown to gray, sandy, granular, only broken fragments recoverd, fines washed away.
28
-19.4
30.0
-19.4
No recovery from the core - fines washed away.
30
0 (RQD 0%)
4
HQ coring; soft coring throughout run # 4
32
(continued)
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0405

Hole No. CP05-EAARS-CB-0405

DRILLING LOG (Cont.Sheet)	Elevation Top of Hole: 10.6	Sheet 3 of 3 Sheets
Project: EAA Reservoir A-1	Installation	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-22.8	33.4					-22.8	
-24.4	35.0		End of Boring at 35'			NOTES: 1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93. 2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)	

34 36 38 40 42 44 46 48 50

PROJECT EAA Reservoir A-1 HOLE NUMBER CP05-EAARS-CB-0405

Hole No. CP05-EAARS-CB-0406

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N778276.9, E765846.2 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0406		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Ralph Smith		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/18/2005 Completed 8/19/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 9 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 35 ft		19. Inspector: A.M. Noronha	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
9.0	0.0		Road fill material. Not sampled.			9.0	0
				46 (RQD 30%)	1	HQ coring; hard coring from 2.5 to 5 ft; recovered 1 piece each of 0.6 ft, 0.35 ft and 0.55 ft	2
6.5	2.5		LIMESTONE: greenish grey, moderately hard to hard, fine to medium grained, porous, shelly				4
						4.0	
			LIMESTONE: pale white, hard, fine grained, quite porous	52 (RQD 35%)	2	HQ coring; very hard coring from 5 to 10 ft; recovered 1 piece each of 0.8 ft, 0.5 ft and 0.45 ft; caprock - 7.5 ft thick	6
							8
-1.0	10.0		SAND: light grey, very loose, fine to medium grained, angular calcitic sand, wet, few small chips of limestone recovered		1	SPT	10
							3
							1
							12
						-4.5	
			SAND: light grey, very dense, fine to coarse grained, poorly graded, subangular calcitic sand, wet, quite silty		2	SPT; around 8" of hard layer	50/5"
							14

(continued)

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0406

Hole No. CP05-EAARS-CB-0406

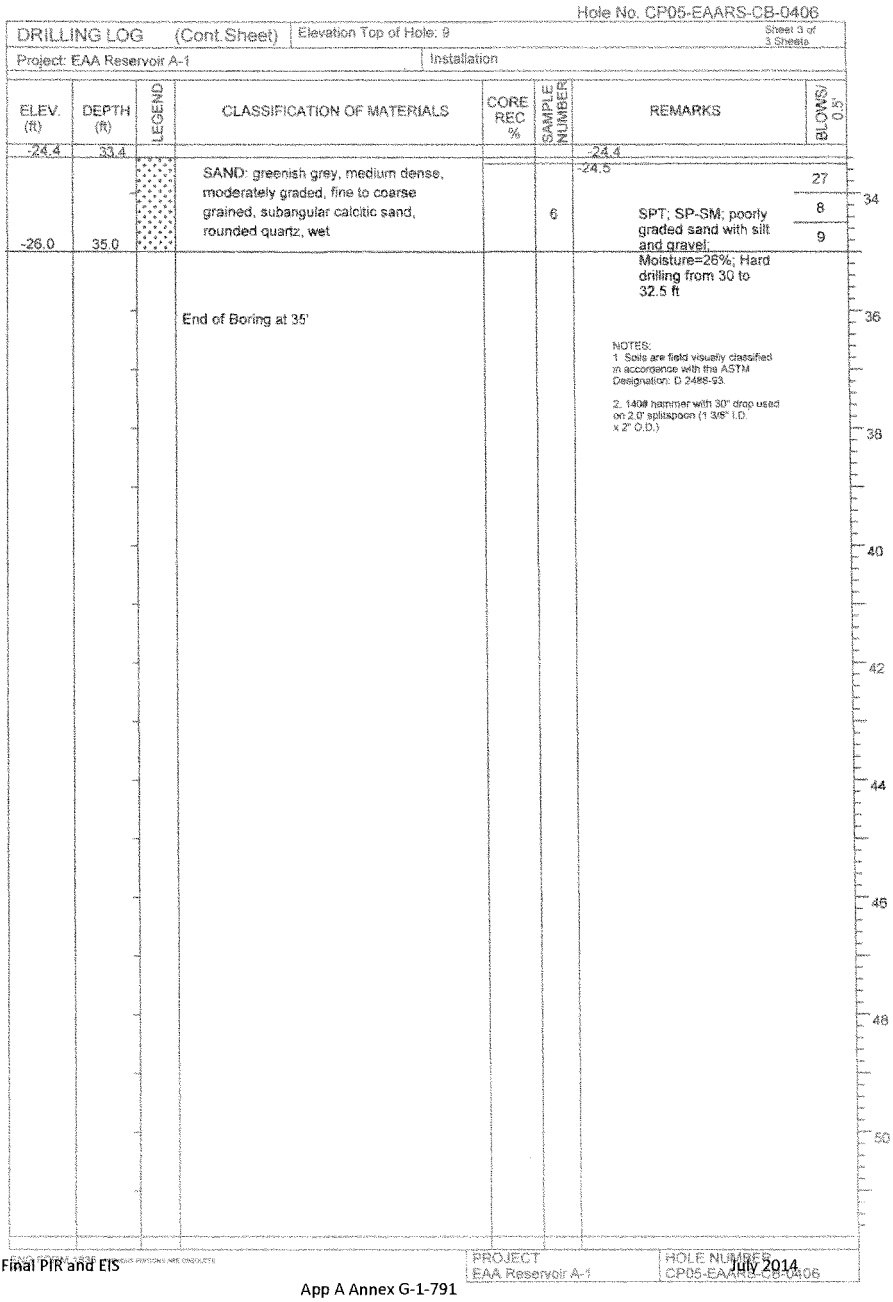
DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 9 | Sheet 2 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-6.0	15.0					-6.0	
							16
							18
-9.5	18.5		Gravelly SAND: light grey, very dense, moderately graded, fine to coarse grained, subangular, wet		3	-9.5 SPT; spoon bouncing	50/4"
							20
							22
-14.5	23.5		SAND: light brown, very dense, moderately graded, fine to coarse grained, subangular, wet		4	-14.5 SPT; SM; silty sand with gravel; Moisture=26%; shells present	28 27 24
			As above, but greenish grey color rounded quartz sand			-16.0 Caloosahatchee Formation or Pinecrest Sand of Tamiami Formation	24
							26
							28
			Same as above - greenish grey		5	-19.5 SPT	41 18 50/2"
							30
							32

(continued)

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0406



Hole No. CP05-EAARS-CB-0406

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 9 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-24.4	33.4					-24.4	
			SAND: greenish grey, medium dense, moderately graded, fine to coarse grained, subangular calcitic sand, rounded quartz, wet		6	-24.5 SPT; SP-SM; poorly graded sand with silt and gravel; Moisture=26%; Hard drilling from 30 to 32.5 ft	27 8 9
-26.0	35.0		End of Boring at 35'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

34 36 38 40 42 44 46 48 50

EXCEPTIONS TO THESE SYMBOLS AND TERMS ARE EXPLICITLY STATED

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0406

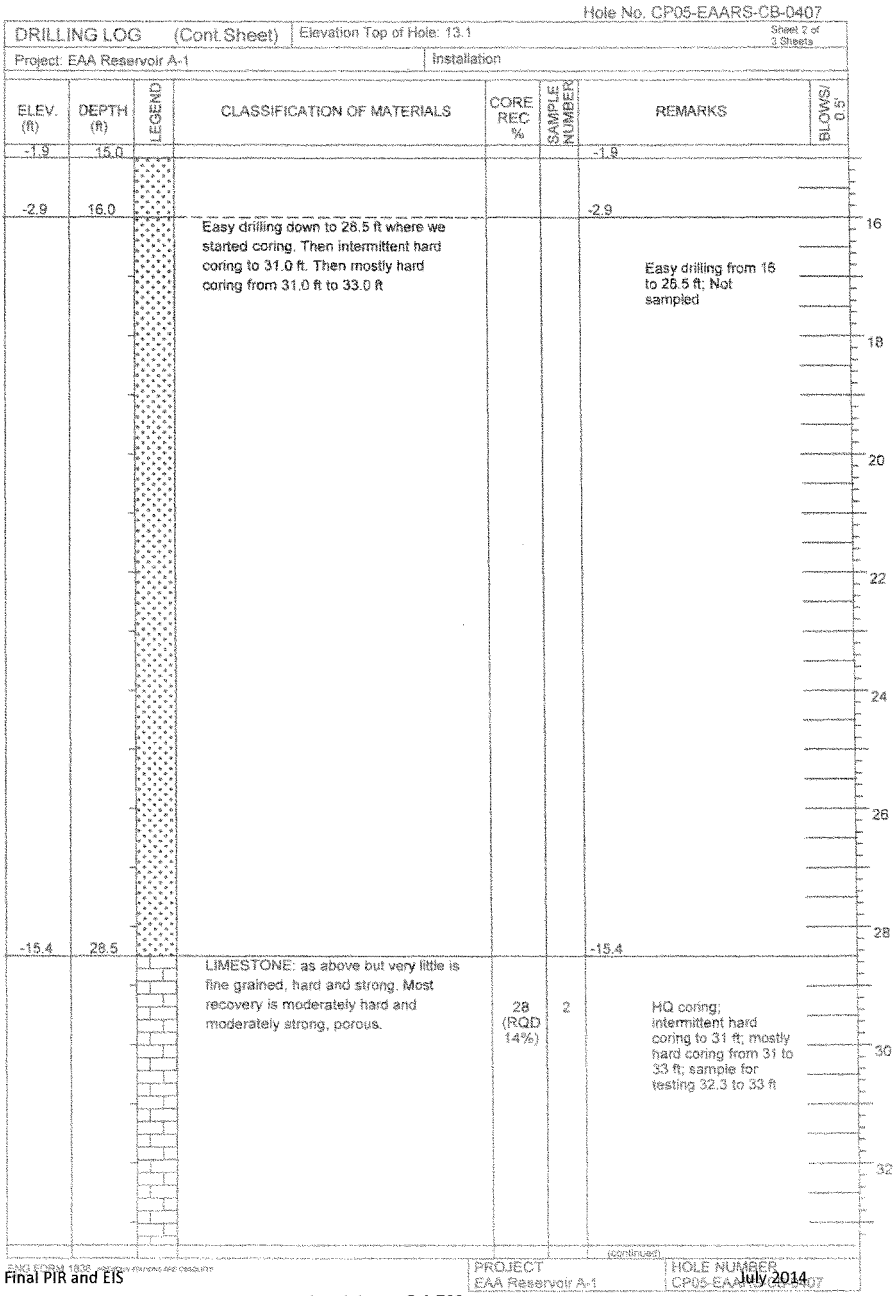
Hole No. CP05-EAARS-CB-0407

DRILLING LOG	Division:	Installation:	Sheet 1 of 3 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N756369.5, E786640.6 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0407		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Erik Bluemke		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 8/29/2005 Completed 8/29/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 13.1 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 38.5 ft		19. Inspector: N. Holst	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
13.1	0.0		Drilled through road fill and peat without sampling				0
							2
							4
7.6	5.5					7.6	
			LIMESTONE: tan to light brown and light grey, thinly bedded, fossiliferous, fine to coarse grained, hard, strong and vuggy to soft, weak and porous	50 (RQD 18%)	1	HQ coring; soft drilling from 8 to 9.4 ft; no good core for testing	6
			Soft drilling 8.0 ft to 9.4 ft. No good core for testing.				8
							10
1.1	12.0					2.8	
			Intermittent hard drilling to 16 ft			Intermittent hard drilling from 10.5 to 16 ft	12
			Not Sampled				14

(continued)

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0407



Hole No. CP05-EAARS-CB-0407

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 13.1 | Sheet 2 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

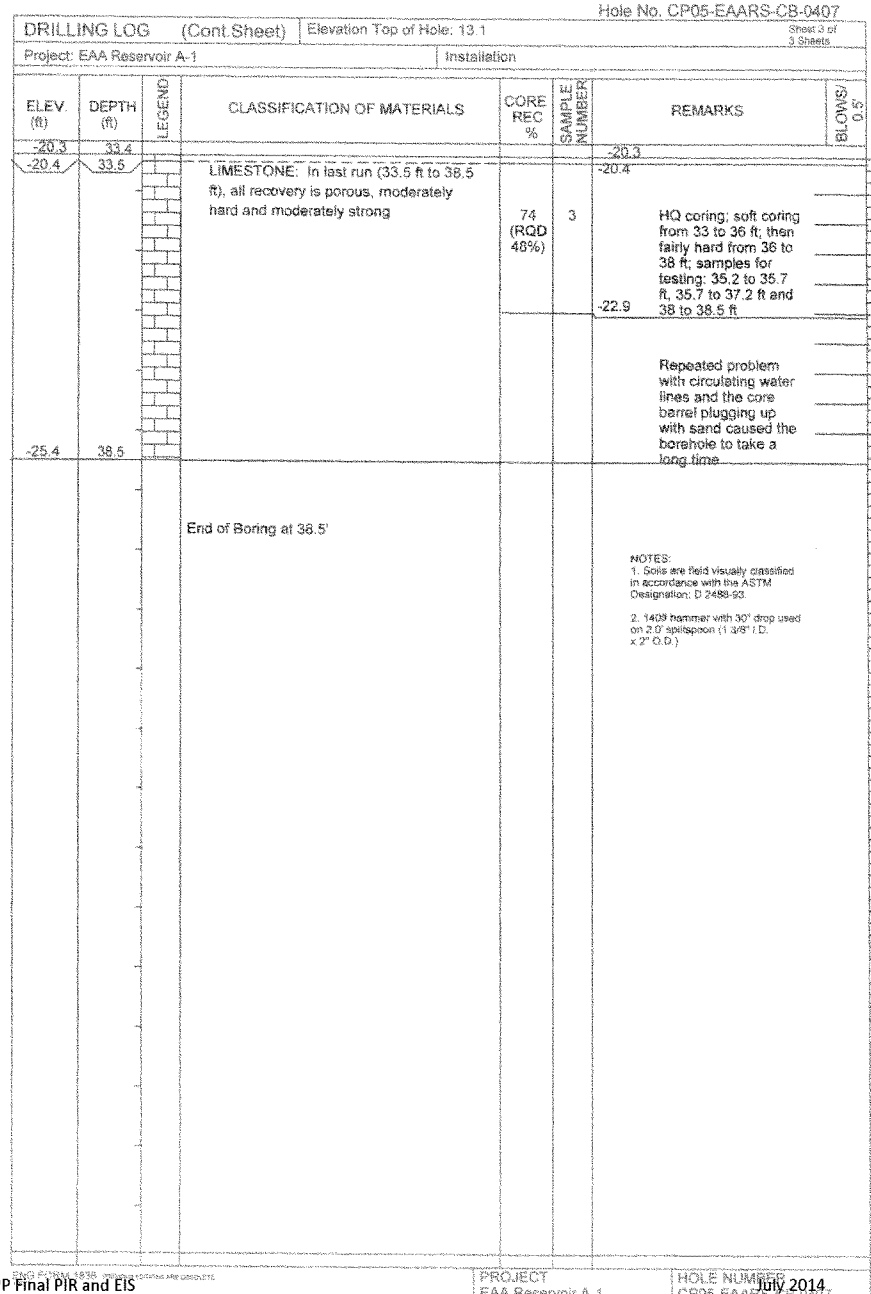
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-1.9	15.0					-1.9	
-2.9	16.0		Easy drilling down to 28.5 ft where we started coring. Then intermittent hard coring to 31.0 ft. Then mostly hard coring from 31.0 ft to 33.0 ft			-2.9 Easy drilling from 16 to 28.5 ft; Not sampled	
-15.4	28.5		LIMESTONE: as above but very little is fine grained, hard and strong. Most recovery is moderately hard and moderately strong, porous.	28 (RQD 14%)	2	-15.4 HQ coring; intermittent hard coring to 31 ft; mostly hard coring from 31 to 33 ft; sample for testing 32.3 to 33 ft	

16 18 20 22 24 26 28 30 32

(continued)

EAAG FORM 1802 (CONSULTANTS ARE RESPONSIBLE)

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0407



Hole No. CP05-EAARS-CB-0407

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 13.1 | Sheet 3 of 3 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
-20.3	33.4					-20.3	
-20.4	33.5		LIMESTONE: In last run (33.5 ft to 38.5 ft), all recovery is porous, moderately hard and moderately strong	74 (RQD 48%)	3	-20.4 HQ coring; soft coring from 33 to 36 ft; then fairly hard from 36 to 38 ft; samples for testing: 35.2 to 35.7 ft, 35.7 to 37.2 ft and 38 to 38.5 ft	
						-22.9 Repeated problem with circulating water lines and the core barrel plugging up with sand caused the borehole to take a long time	
-25.4	38.5		End of Boring at 38.5'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

34 36 38 40 42 44 46 48 50

DWG # 7XXX-1838 ... PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0407

Hole No. CP05-EAARS-CB-0408

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N753566.5, E758489.8 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Noderse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0408		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/13/2005 Completed 9/13/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 22 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 16 ft		19. Inspector: P. Petrey	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
22.0	0.0		Levee road material Crushed rock / sand with some peat		1	22.0 SPT	30 26 12
20.0	2.0		Dark grey to grey sand with rock fragments		2	20.0 SPT	12 12 9
18.0	4.0		Broken rock and peat and some fine sand		3	18.0 SPT	6 40 50/2"
			Same as above		4	16.0 SPT	4 5 10
			Crushed limestone and sand; light grey		5	14.0 SPT	8 9 13
			same as above		6	12.0 SPT	15 15 15
			Rock		7	10.0 SPT	10 20 50/0"
			Rock with large rock fragments		8	8.0 SPT	49 50/2"

(continued)

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0408

Hole No. CP05-EAARS-CB-0408

DRILLING LOG (Cont Sheet) | Elevation Top of Hole: 22 | Sheet 2 of 2 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
7.0	15.0					7.0	
6.0	16.0		End of Boring at 16'			NOTES: 1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93. 2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)	

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0408

Hole No. CP05-EAARS-CB-0409

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N757151, E758420.7 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0409		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/13/2005 Completed 9/13/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 21.8 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 15 ft		19. Inspector: P. Petrey	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
21.8	0.0		Top of west side levee road. Building material; broken rock and sand		1	21.8 SPT	22 29 27
			Crushed rock and shell with some peat		2	19.8 SPT	13 21 15
			Crushed rock wih shell fragments; sand and drilling mud		3	17.8 SPT	7 9 15
			Finer crushed rocks; sand; silt with some dark peat and light brown		4	15.8 SPT	13 18 22
			Light grey with large rock fragments and sand		5	13.8 SPT	35 15 29
			Small rock fragments and peat mix with dark grey		6	11.8 SPT	7 9 10
			Grey rock fragments; sand		7	9.8 SPT	6 5 5
7.8	14.0		Peat with sand; small rock fragments		8	7.8 SPT; caprock	3 3

(continued)

PROJECT EAA Reservoir A-1 HOLE NUMBER CP05-EAARS-CB-0409

Hole No. CP05-EAARS-CB-0409

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 21.8 | Sheet 2 of 2 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
6.8	15.0					6.8	
							4
5.8	16.0					encountered at 15.3 ft	

End of Boring at 16'

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)



PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0409

Hole No. CP05-EAARS-CB-0410

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N760726.5, E758352.9 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0410		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/12/2005 Completed 9/12/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 22.3 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 16 ft		19. Inspector: P. Petrey	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
22.3	0.0		Levee road; rock; shell; sand; silt; dark grey		1	22.3 SPT 20.3	19 15 27
			same as above		2	SPT 18.8	15 14 19
					3	SPT 16.3	41 50/4"
16.3	6.0		Crushed cemented sand; shells; grey light brown		4	SPT 14.3	17 15 23
			Crushed shell with sands; light grey		5	SPT 12.3	8 8 20
			Crushed shell with sand; silt; grey		6	SPT 10.3	20 11 7
					7	SPT 8.3	5 11 18
					8	7.3 SPT (continued)	5 29

	PROJECT	HOLE NUMBER
	EAA Reservoir A-1	CP05-EAARS-CB-0410

Hole No. CP05-EAARS-CB-0410

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 22.3 | Sheet 2 of 2 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
7.3	15.0					7.3	
							50/3"
6.3	16.0					Caprock at 15.3'	

End of Boring at 16'

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

15 18 20 22 24 26 28 30 32

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0410

Hole No. CP05-EAARS-CB-0411

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N749946.9, E762685.4 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0411		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/13/2005 Completed 9/13/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 18.4 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 12 ft		19. Inspector: P. Petrey	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5
18.4	0.0		Top of south levee road; large broken rock		1	18.4 SPT 16.4	25, 23, 21
			Grey rock fragments; sand		2	SPT 14.4	22, 17, 28
			Light grey rock fragments with shell fragments; sand; some silt		3	SPT 12.4	29, 17, 50
			same as above; with large rock fragments		4	SPT 10.4	16, 14, 15
			same as above		5	SPT 8.4	18, 50/5",
			Dark grey rock fragments with sand; silt; peat Caprock at 10.5 ft; Soil at 12 ft.		6	SPT 6.9	2, 50/1", 50/0"
6.4	12.0				7	SPT	
			End of Boring at 12'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D.

(continued)

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0411

Hole No. CP05-EAARS-CB-0411

DRILLING LOG (Cont.Sheet) Elevation Top of Hole: 18.4 Sheet 2 of 2 Sheets

Project: EAA Reservoir A-1 Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
3.4	15.0					3.4	
						x 2" O.D.)	

16
18
20
22
24
26
28
30
32

PROJECT EAA Reservoir A-1 HOLE NUMBER CP05-EAARS-CB-0411

Hole No. CP05-EAARS-CB-0412

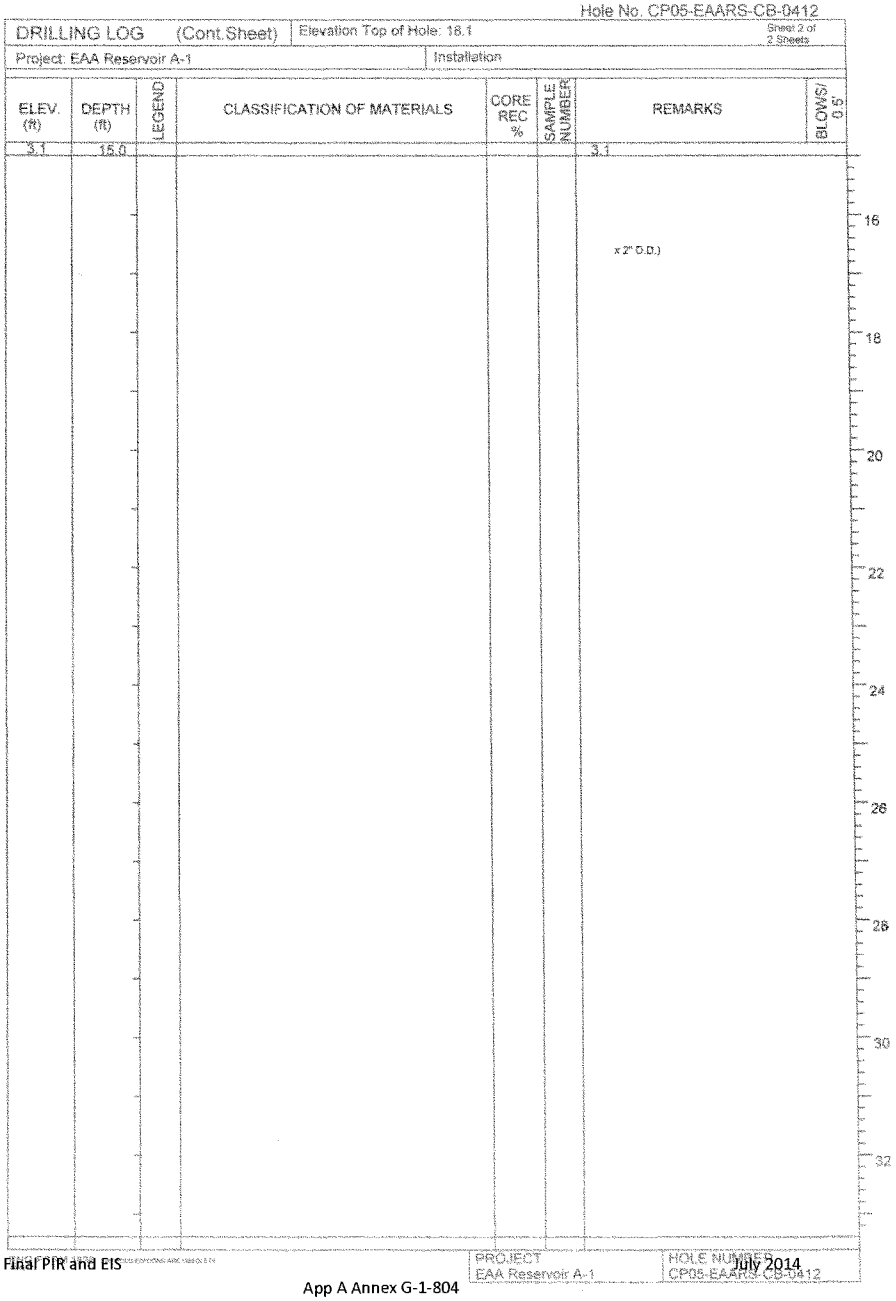
DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N749972.9, E766641.9 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0412		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
7. Thickness of Burden: N/A		16. Date Hole Started 9/14/2005 Completed 9/14/2005	
8. Thickness of cap rock: N/A		17. Elevation Top of Hole: 18.1 (ft)	
9. Depth of hole: 12 ft		18. Total Core Recovery for hole: N/A	
		19. Inspector: P. Petrey	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
18.1	0.0						
			Levee road; building material Grey fine sand with rock fragments		1	18.1 SPT	22 18 11
			Grey fine sand with rock fragments		2	16.1 SPT	15 10 7
			Rock fragments; sand; peat		3	14.1 SPT	9 5 12
12.1	6.0					12.1	
			Grey-tan flen sand with small rock fragments		4	SPT	20 23 30
10.1	8.0					10.1	
			Tan/ brown/ grey rock fragments with fine sand		5	SPT	12 28 31
8.1	10.0					8.1	
			Peat		6	SPT; caprock encountered at 12 ft	12 10 6
6.1	12.0						
			End of Boring at 12'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D.

(continued)

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0412


Hole No. CP05-EAARS-CB-0412
DRILLING LOG (Cont.Sheet)
Elevation Top of Hole: 18.1
Sheet 2 of 2 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
3.1
15.0
3.1
x 2" O.D.)
16
18
20
22
24
26
28
30
32
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0412

Hole No. CP05-EAARS-CB-0413

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N749995, E770595.3 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0413		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
7. Thickness of Burden: N/A		16. Date Hole Started 9/14/2005 Completed 9/14/2005	
8. Thickness of cap rock: N/A		17. Elevation Top of Hole: 18.6 (ft)	
9. Depth of hole: 12 ft		18. Total Core Recovery for hole: N/A	
		19. Inspector: P. Petrey	

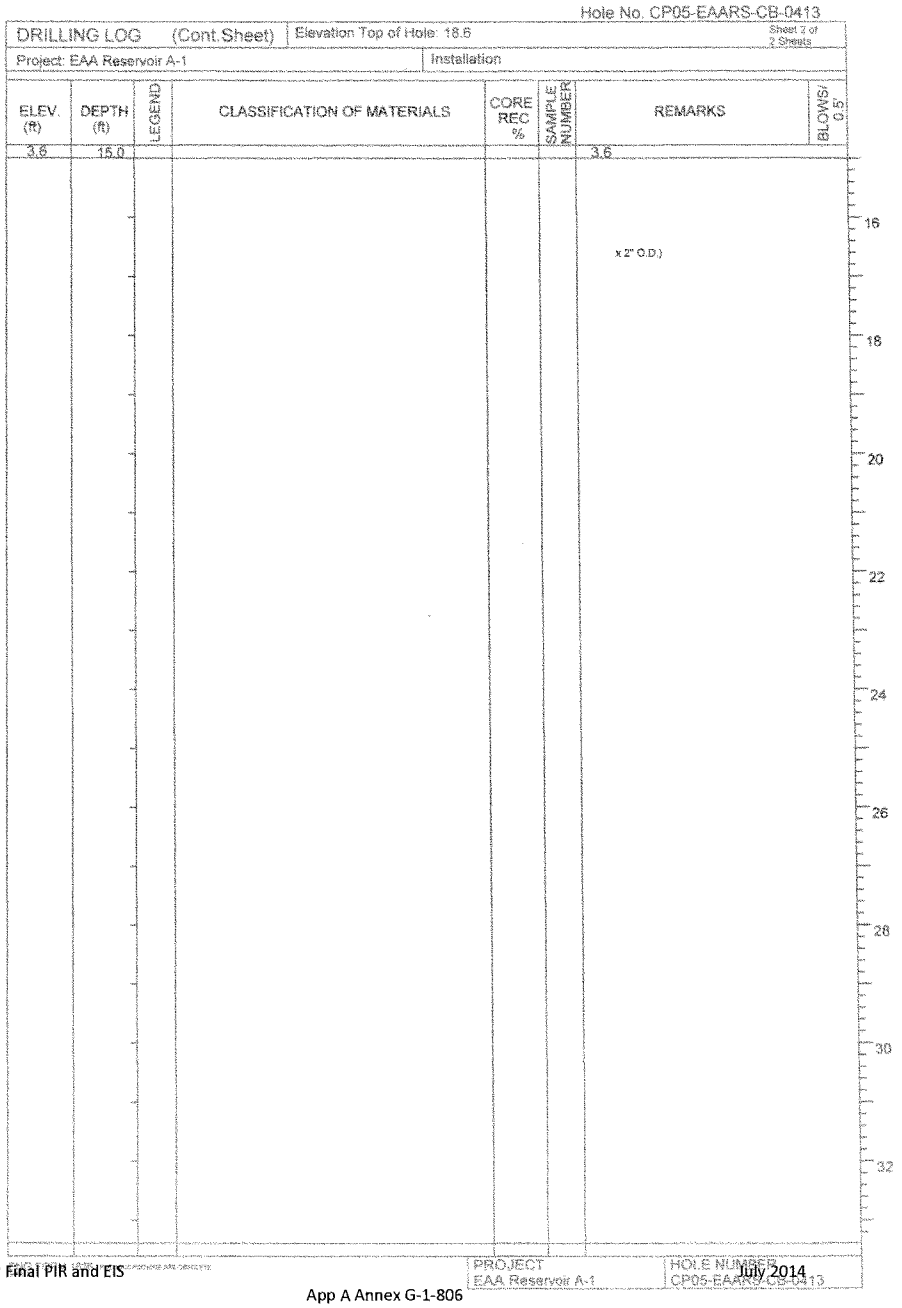
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
18.6	0.0		Grey fine sand; limestone fragments; silt		1	18.6 SPT 16.6	40 49 49
			Same as above		2	SPT 14.6	9 6 4
12.6	6.0		Light grey; tan limestone fragments; sand; silt		3	SPT 12.6	10 13 16
			same as above; with larger rock fragments		4	SPT 10.6	13 18 14
8.6	10.0		Crushed limestone; sand; peat		5	SPT 8.6	13 12 8
6.6	12.0		Peat		6	SPT; caprock at 11'10"	3 4 3
			End of Boring at 12'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93
2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D.

(continued)

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PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0413


Hole No. CP05-EAARS-CB-0413
DRILLING LOG (Cont Sheet)
Elevation Top of Hole: 18.6
Sheet 2 of 2 Sheets
Project: EAA Reservoir A-1
Installation
ELEV. (ft)
DEPTH (ft)
LEGEND
CLASSIFICATION OF MATERIALS
CORE REC %
SAMPLE NUMBER
REMARKS
BLOWS/ 0.5'
3.6
15.0
3.6
x 2" O.D.)
16
18
20
22
24
26
28
30
32
PROJECT
EAA Reservoir A-1
HOLE NUMBER
CP05-EAARS-CB-0413

Hole No. CP05-EAARS-CB-0414

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N750031.1, E774559.1 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0414		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Erik Bluemke		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
7. Thickness of Burden: N/A		16. Date Hole Started 9/14/2005 Completed 9/14/2005	
8. Thickness of cap rock: N/A		17. Elevation Top of Hole: 18.3 (ft)	
9. Depth of hole: 13 ft		18. Total Core Recovery for hole: N/A	
		19. Inspector: K. Jones	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
18.3	0.0		Limerock road base		1	18.3 SPT; road base	50/2"
16.3	2.0		Sandy gravel: grey-tan; as above; some dark grey silty clay		2	16.3 SPT; road base	23, 38, 14
			As above; mottled		3	14.3 SPT; road base	25, 28, 12
			Gravely sand: grey-tan; mottled; trace of dark grey silty clay		4	12.3 SPT; road base	25, 12, 13
			Sandy gravel: tan-brown; hard; boulder		5	10.3 SPT; boulder at 8.5 ft	34, 50/3"
7.8	10.5					8.3	
			Peat; dark brown-black		6	SPT	8, 4, 12
6.3	12.0					6.3	
5.8	12.5		Clay; grey; silty; sandy; stiff; calcareous		7	SPT; hit caprock at 12.5 ft	10, 50/3"
5.3	13.0		End of Boring at 13'				

NOTES:
1. Soils are field visually classified

(continued)

SEND E-FORM TO [illegible] WHEN COMPLETE

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0414

Hole No. CP05-EAARS-CB-0414

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 18.3 | Sheet 2 of 2 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
3.3	15.0					3.3	

In accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop usnd on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

16 18 20 22 24 26 28 30 32

PROJECT: EAA Reservoir A-1 | HOLE NUMBER: CP05-EAARS-CB-0414

Hole No. CP05-EAARS-CB-0415

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N760058.6, E778518.6 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0415		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Erik Bluemke		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
7. Thickness of Burden: N/A		16. Date Hole Started 9/14/2005 Completed 9/14/2005	
8. Thickness of cap rock: N/A		17. Elevation Top of Hole: 18.3 (ft)	
9. Depth of hole: 14 ft		18. Total Core Recovery for hole: N/A	
		19. Inspector: K. Jones	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
18.3	0.0		Sandy Gravel; grey to tan; mottled; limerock (road base)		1	18.3 SPT; road base	50/3"
			Same as above		2	16.3 SPT; road base	30 30 18
14.3	4.0		Dark grey peat		3	14.3 SPT; road base	20 28 14
13.3	5.0		Limerock road base with a trace of dark grey peat same as above Hit a boulder at 7.5'		4	12.3 SPT	37 13 50/5"
10.3	8.0		Sandy Gravel: road base; tan to grey; no peat		5	10.3 SPT; road base without peat	28 50/0"
8.3	10.0		Peat; dark grey to black		6	8.3 SPT; 3 ft of peat	4 20 13
6.3	12.0		Same as above Mixture of peat and sandy gravel		7	6.3 SPT; caprock at 13.5 ft	7 16 50/2"
4.8	13.5		Limestone: dark brown; hard; dense; fractured				
4.3	14.0						

(continued)

PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0415

Hole No. CP05-EAARS-CB-0415

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 18.3 | Sheet 2 of 2 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
3.3	15.0		End of Boring at 14'			3.3	

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.

2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

16 18 20 22 24 26 28 30 32

ENG FORM 1836, previous editions are obsolete

PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0415

Hole No. CP05-EAARS-CB-0416

DRILLING LOG	Division:	Installation:	Sheet 1 of 2 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N750086.6, E782465.6 - NAD 1983		11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.		12. Manufacturer's Designation for Drill: CME-55	
4. Hole No: CP05-EAARS-CB-0416		13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Robert DeAngelis		14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water: Not measured	
		16. Date Hole Started 9/14/2005 Completed 9/14/2005	
7. Thickness of Burden: N/A		17. Elevation Top of Hole: 18.5 (ft)	
8. Thickness of cap rock: N/A		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 17 ft		19. Inspector: P. Petrey	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
18.5	0.0		Fine grey rock fragments; sand; silt		1	18.5 SPT 16.5	33, 43, 41
			same as above; a little lighter grey		2	SPT 14.5	17, 12, 13
			Rock fragments and peat		3	SPT 12.5	8, 10, 13
			Light grey crushed limestone; sand; silt		4	SPT 10.5	15, 18, 17
			Crushed limestone; peat with fine sand		5	SPT 8.5	14, 5, 15
8.5	10.0		Grey fine sand with rock fragments		6	SPT 6.5	11, 4, 50/2"
6.5	12.0		Core run	62 (RQD 49%)	1	HQ coring; coring caprock	

(continued)

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Hole No. CP05-EAARS-CB-0416

DRILLING LOG (Cont.Sheet) | Elevation Top of Hole: 18.5 | Sheet 2 of 2 Sheets

Project: EAA Reservoir A-1 | Installation

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
3.5	15.0					3.5	
1.5	17.0		End of Boring at 17'			NOTES: 1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93. 2. 140# hammer with 30" drop used on 2.0' splitspoon (1 3/8" I.D. x 2" O.D.)	

16 18 20 22 24 26 28 30 32

EM 385-1-1 Appendix B (Optional Form) 1 Apr 98 | PROJECT EAA Reservoir A-1 | HOLE NUMBER CP05-EAARS-CB-0416

Hole No. CP05-EAARS-CB-0417

DRILLING LOG | Division:	Installation:	Sheet 1 of 1 Sheets
1. Project: EAA Reservoir A-1	10. Size and type of bit: 3" bit, Rotary Method	
2. Location: N750127.7, E786154.4 - NAD 1983	11. Datum for Elevation Shown: NAVD 1988	
3. Drilling Agency: Nodarse & Associates, Inc.	12. Manufacturer's Designation for Drill: Diedrich D-50	
4. Hole No: CP05-EAARS-CB-0417	13. Total Number of Overburden Samples Taken: N/A	
5. Name of Driller: Erik Bluemke	14. Total Number of Core Boxes: 1	
6. Direction of Hole ☒ Vertical ☐ Inclined	15. Elevation Ground Water: Not measured	
	16. Date Hole Started 9/13/2005 Completed 9/13/2005	
7. Thickness of Burden: N/A	17. Elevation Top of Hole: 16.9 (ft)	
8. Thickness of cap rock: N/A	18. Total Core Recovery for hole: N/A	
9. Depth of hole: 11.5 ft	19. Inspector: K. Jones	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
16.9	0.0						
16.4	0.5		Limerock base			16.9	50/2"
			Sandy gravel: lime rock base; grey to tan mottled		1	SPT; road base	
						14.9	
					2	SPT; road base	19 50/2"
			Sandy gravel: lime rock base; grey to tan mottled; dense; fill			12.9	
					3	SPT; road base	26 21 18
			Same as above			10.9	
					4	SPT; road base	20 43 28
8.9	8.0					8.9	
			Limerock; boulder; brown; hard		5	SPT; road base; Probably a Limestone boulder	50/2"
6.9	10.0					6.9	
			Peat; dark brown; silty; clayey		6	SPT; 1 ft of peat; Hit caprock at 11.5'	9 10 50/0"
5.4	11.5						
			End of Boring at 11.5'				

NOTES:
1. Soils are field visually classified in accordance with the ASTM Designation: D 2488-93.
2. 140# hammer with 30" drop used on 2.0" splitspoon (1 3/8" I.D. x 2" O.D.)

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PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0417

Hole No. CP05-EAARS-CB-0418

DRILLING LOG	Division:	Installation:	Sheet 1 of 1 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit:	
2. Location: N, E -		11. Datum for Elevation Shown:	
3. Drilling Agency:		12. Manufacturer's Designation for Drill:	
4. Hole No: CP05-EAARS-CB-0418		13. Total Number of Overburden Samples Taken:	
5. Name of Driller:		14. Total Number of Core Boxes:	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water:	
		16. Date Hole Started Completed	
7. Thickness of Burden:		17. Elevation Top of Hole: (ft)	
8. Thickness of cap rock:		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 0 ft		19. Inspector:	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
	0.0					Boring not drilled because it was inaccessible.	

0 2 4 6 8 10 12 14

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PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0418

Hole No. CP05-EAARS-CB-0419

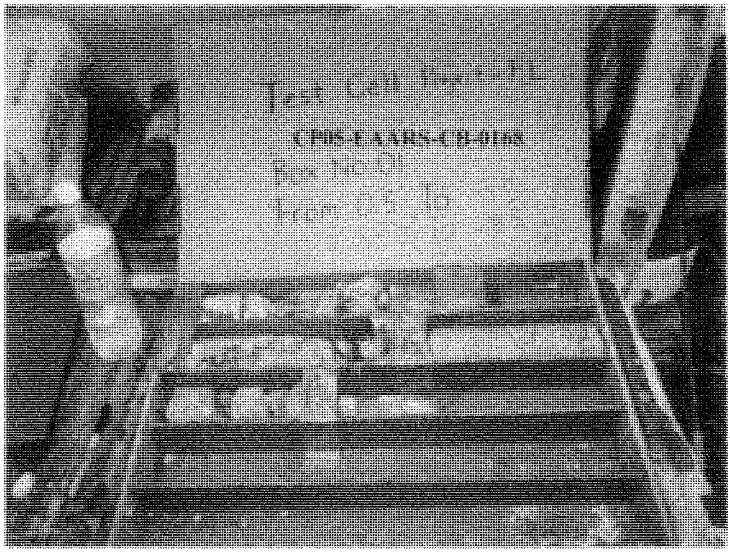
DRILLING LOG	Division:	Installation:	Sheet 1 of 1 Sheets
1. Project: EAA Reservoir A-1		10. Size and type of bit:	
2. Location: N, E -		11. Datum for Elevation Shown:	
3. Drilling Agency:		12. Manufacturer's Designation for Drill:	
4. Hole No: CP05-EAARS-CB-0419		13. Total Number of Overburden Samples Taken:	
5. Name of Driller:		14. Total Number of Core Boxes:	
6. Direction of Hole ☒ Vertical ☐ Inclined		15. Elevation Ground Water:	
		16. Date Hole Started Completed	
7. Thickness of Burden:		17. Elevation Top of Hole: (ft)	
8. Thickness of cap rock:		18. Total Core Recovery for hole: N/A	
9. Depth of hole: 0 ft		19. Inspector:	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/ 0.5'
	0.0					Boring not drilled because it was inaccessible.	

0 2 4 6 8 10 12 14

ENG 1 OPDM 1836, previous editions are obsolete

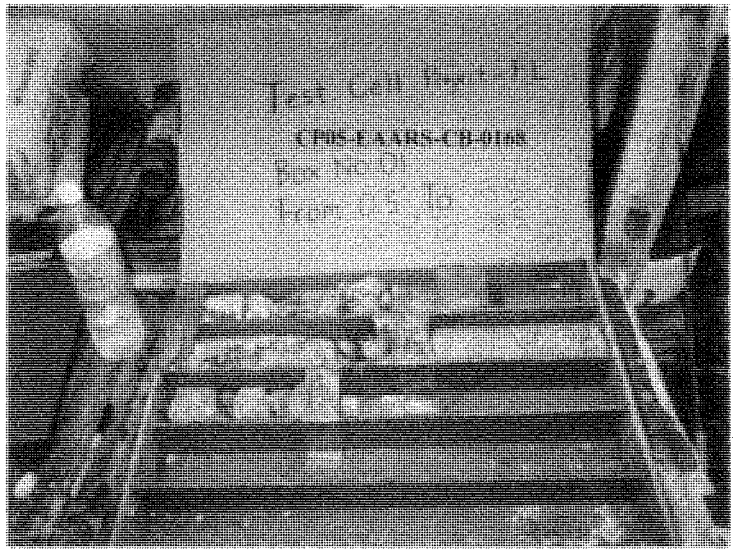
PROJECT	HOLE NUMBER
EAA Reservoir A-1	CP05-EAARS-CB-0419



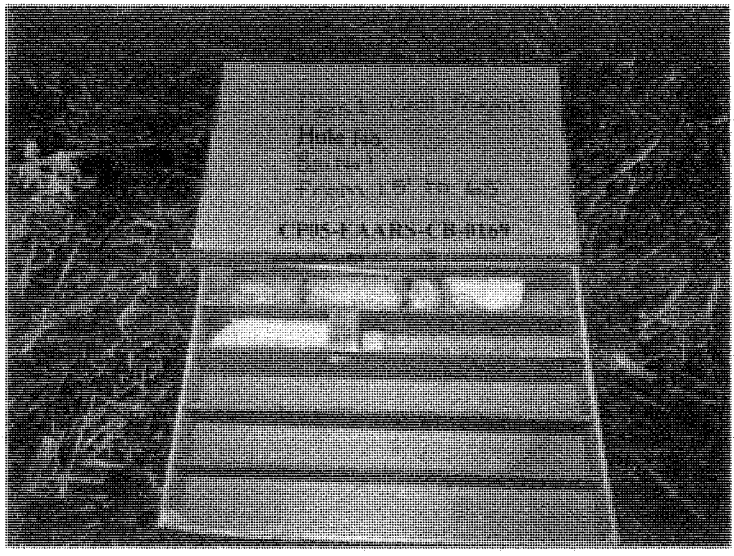
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0168	
Location	North West of Test Cells	
Depth (feet)	Percentage Recovery	RQD
0.50 to 5.50	50.00	22.00
23.50 to 28.50	27.00	15.00

APPENDIX 3

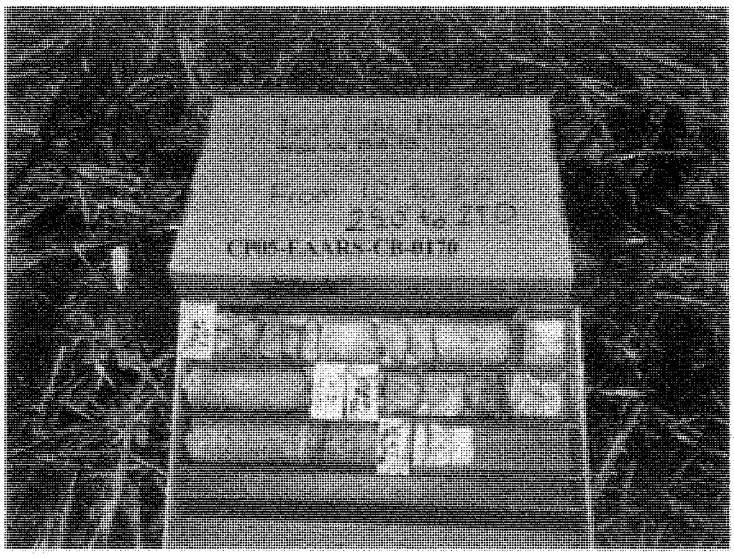
APPENDIX 3
ROCK CORES AND OTHER PHOTOGRAPHS: 168-187



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0168	
Location	North West of Test Cells	
Depth (feet)	Percentage Recovery	RQD
0.50 to 5.50	50.00	22.00
23.50 to 28.50	27.00	15.00



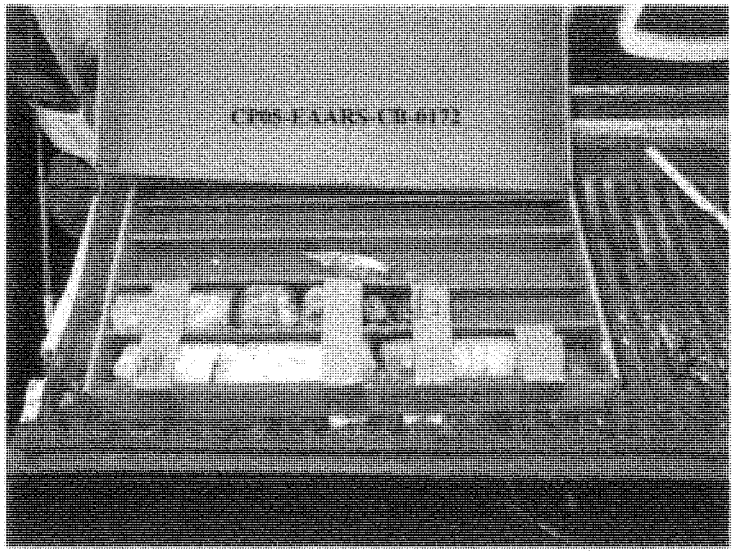
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0169	
Location	North West of Test Cells	
Depth (feet)	Percentage Recovery	RQD
1.50 to 6.50	48.00	42.00



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0170	
Location	North West of Test Cells	
Depth (feet)	Percentage Recovery	RQD
1.00 to 6.00	50.00	28.00
25.00 to 29.00	78.00	46.00



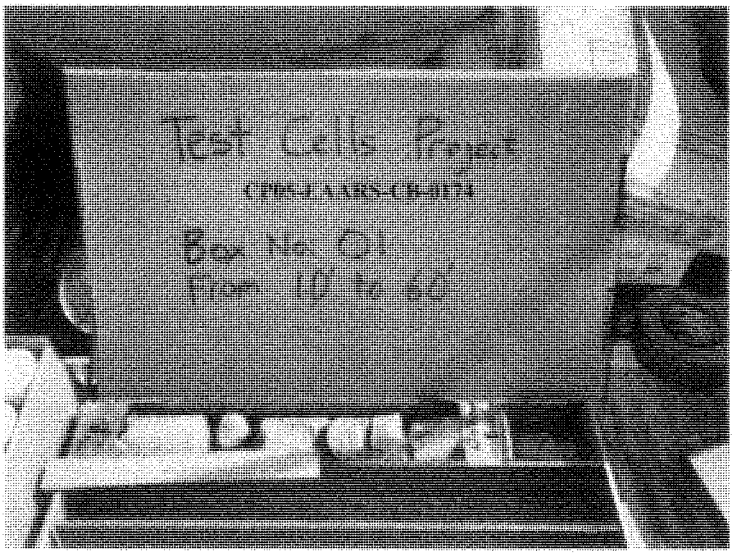
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0171	
Location	North West of Test Cells	
Depth (feet)	Percentage Recovery	RQD
1.00 to 6.00	53.00	31.00



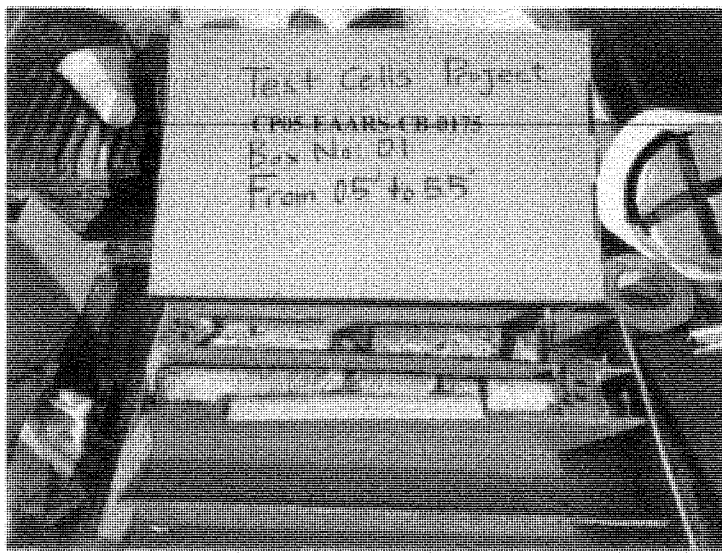
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0172	
Location	North West of Test Cells	
Depth (feet)	Percentage Recovery	RQD
1.00 to 6.00	56.00	42.00



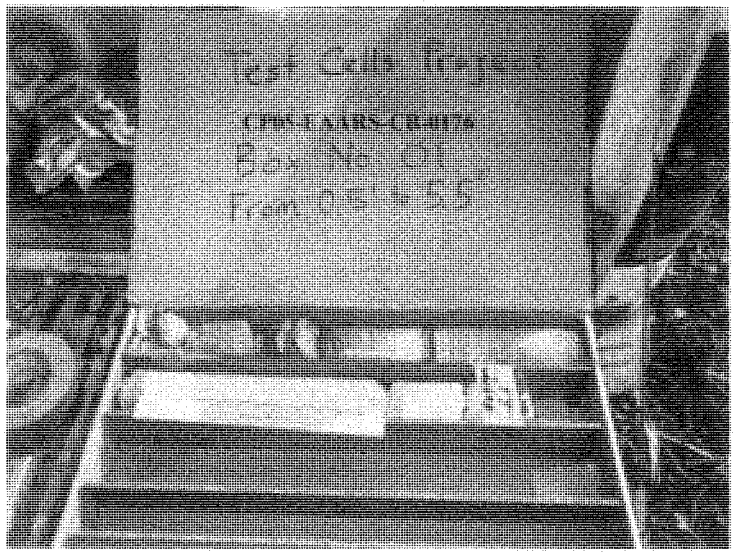
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0173	
Location	North West of Test Cells	
Depth (feet)	Percentage Recovery	RQD
1.00 to 6.00	35.00	22.00



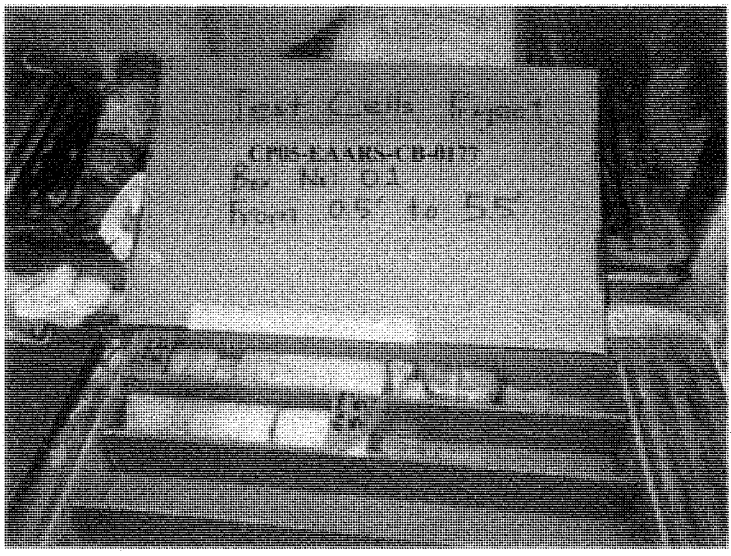
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0174	
Location	North West of Test Cells	
Depth (feet)	Percentage Recovery	RQD
1.00 to 6.00	32.00	7.00



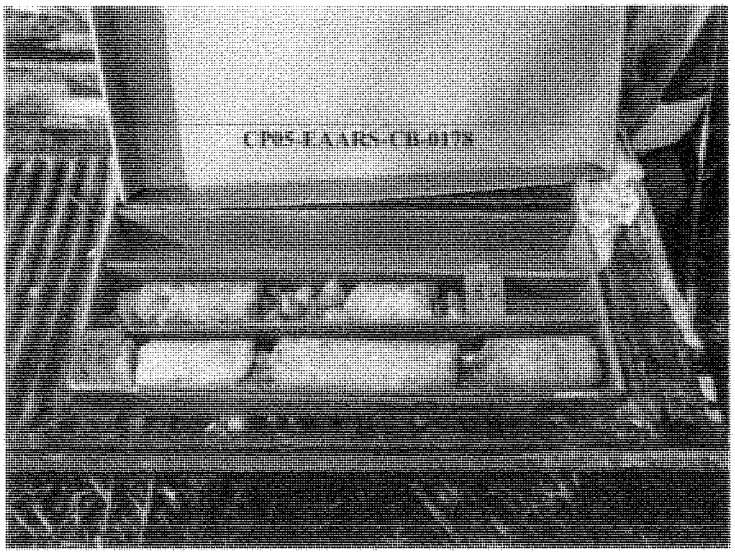
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0175	
Location	North West of Test Cells	
Depth (feet)	Percentage Recovery	RQD
0.50 to 5.50	67.00	52.00



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0176	
Location	North West of Test Cells	
Depth (feet)	Percentage Recovery	RQD
0.50 to 5.50	70.00	52.00



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0177	
Location	North West of Test Cells	
Depth (feet)	Percentage Recovery	RQD
0.50 to 5.50	48.00	30.00



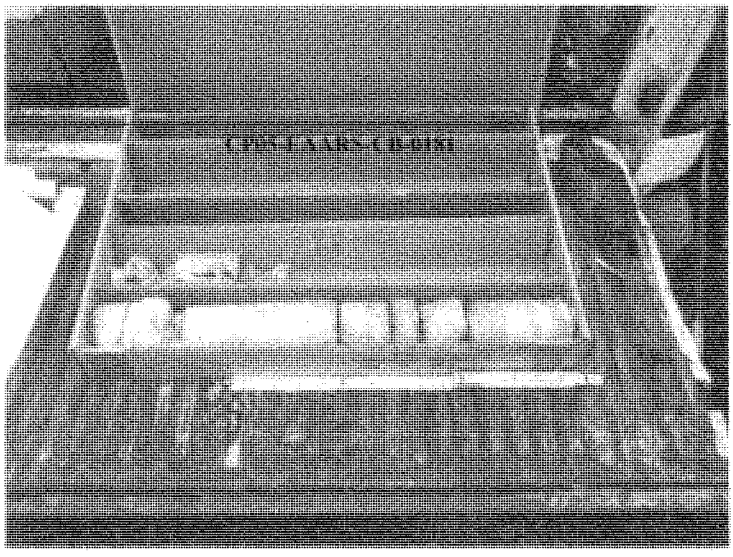
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0178	
Location	North West Corner of Test Cell-1	
Depth (feet)	Percentage Recovery	RQD
1.00 to 6.00	56.00	48.00



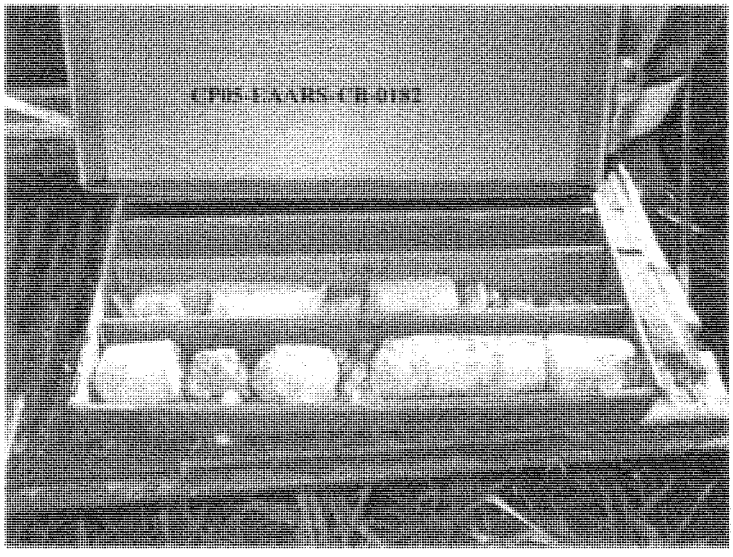
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0179	
Location	North East Corner of Test Cell-1	
Depth (feet)	Percentage Recovery	RQD
2.00 to 7.00	42.00	21.00



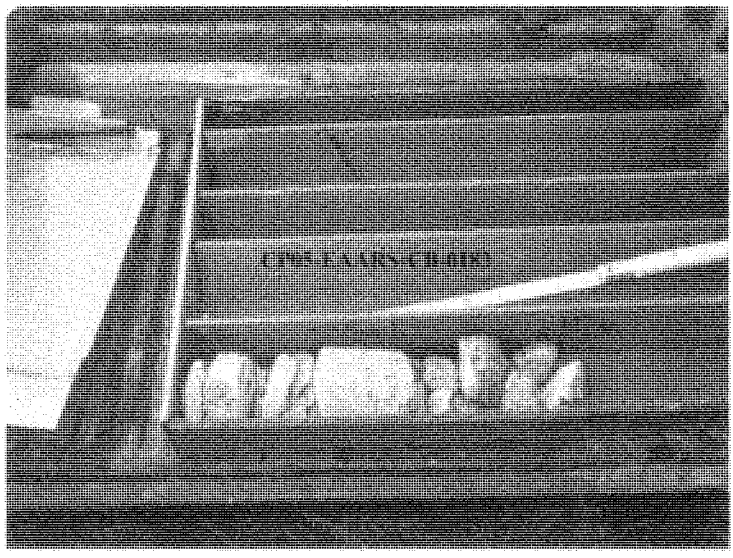
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0180	
Location	South West Corner of Test Cell-1	
Depth (feet)	Percentage Recovery	RQD
1.50 to 6.50	34.00	0



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0181	
Location	South East Corner of Test Cell-1	
Depth (feet)	Percentage Recovery	RQD
0.50 to 5.50	48.00	28.00



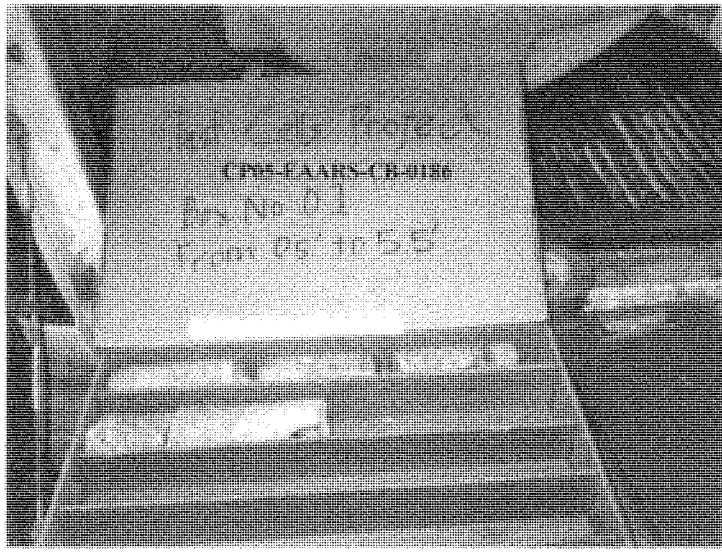
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0182	
Location	Center of Test Cell-1	
Depth (feet)	Percentage Recovery	RQD
0.50 to 4.00	72.00	40.00
4.00 to 7.00	33.00	28.00



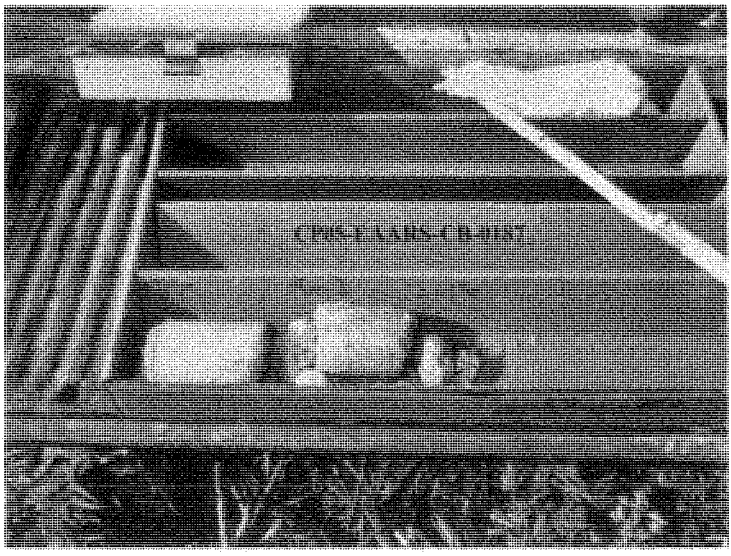
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0183	
Location	North West Corner of Test Cell-2	
Depth (feet)	Percentage Recovery	RQD
1.50 to 6.50	18.00	10.00



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0185	
Location	South West Corner of Test Cell-2	
Depth (feet)	Percentage Recovery	RQD
0.50 to 5.50	43.00	27.00

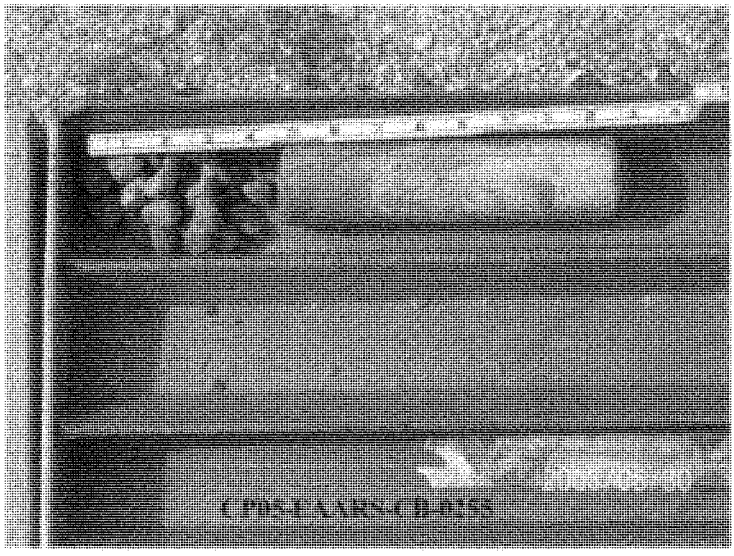


Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0186	
Location	South East Corner of Test Cell-2	
Depth (feet)	Percentage Recovery	RQD
0.50 to 5.50	56.00	50.00

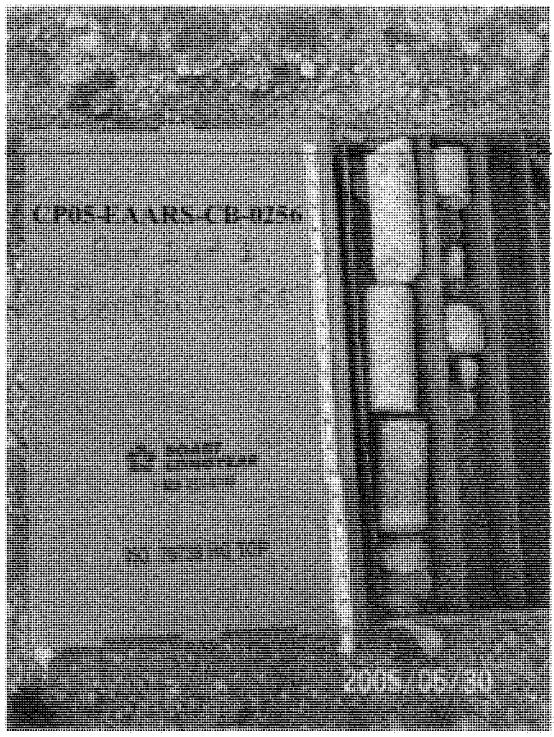


Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0187	
Location	Center of Test Cell-2	
Depth (feet)	Percentage Recovery	RQD
0.50 to 5.50	16.00	14.00

APPENDIX 3
ROCK CORES AND OTHER PHOTOGRAPHS: 255-300



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0255	
Location	North Edge	
Depth (feet)	**Percentage Recovery**	**RQD**
1.00 to 6.00	22.00	16.00



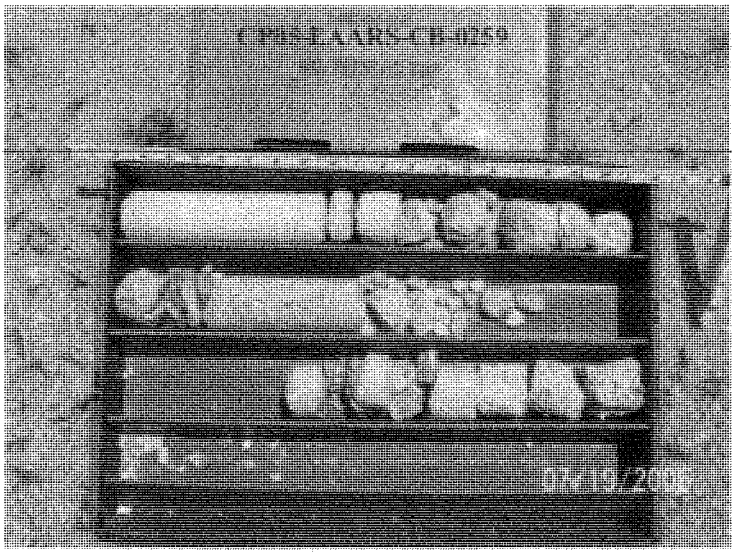
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0256	
Location	North Edge	
Depth (feet)	Percentage Recovery	RQD
1.00 to 5.50	61.11	35.11



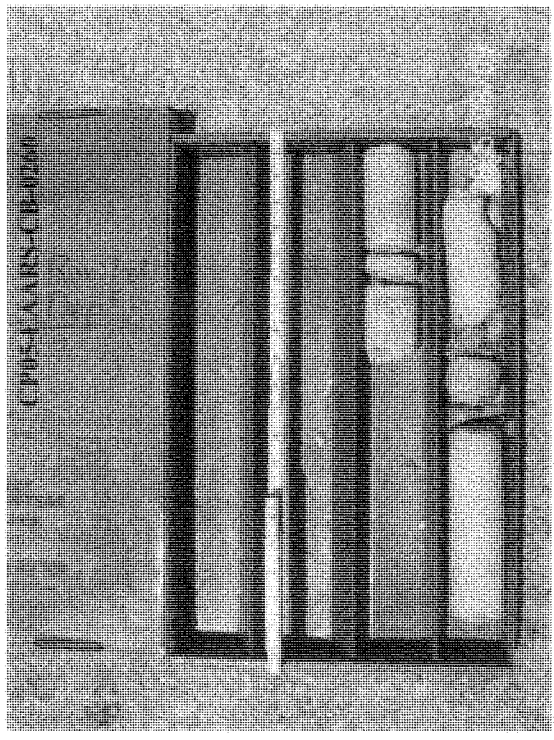
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0257	
Location	North East Corner	
Depth (feet)	**Percentage Recovery**	**RQD**
4.75 to 9.75	76.00	48.00
9.75 to 11.75	100.00	92.00



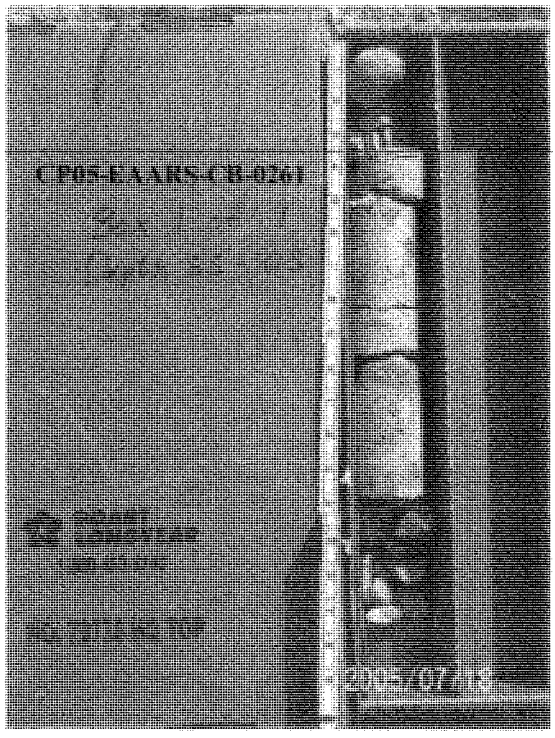
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0258	
Location	East Side	
Depth (feet)	Percentage Recovery	RQD
4.50 to 9.50	54.00	22.00



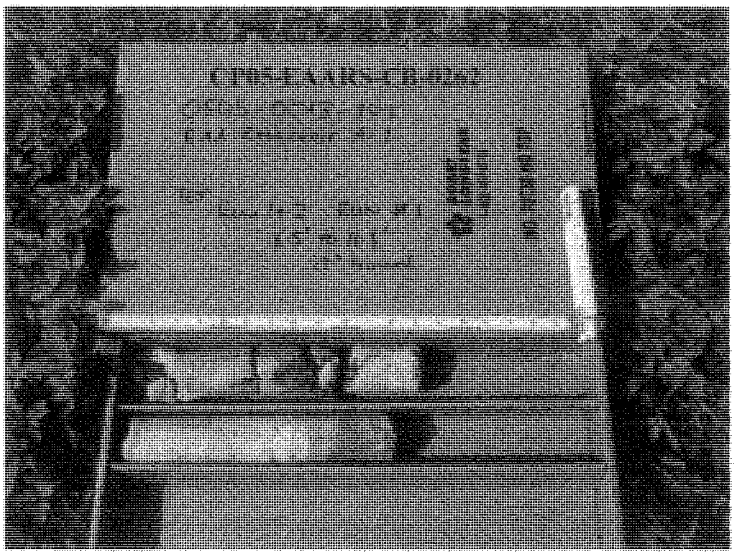
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0259	
Location	East Side	
Depth (feet)	**Percentage Recovery**	**RQD**
3.00 to 8.00	56.00	24.00
8.00 to 10.00	55.00	0



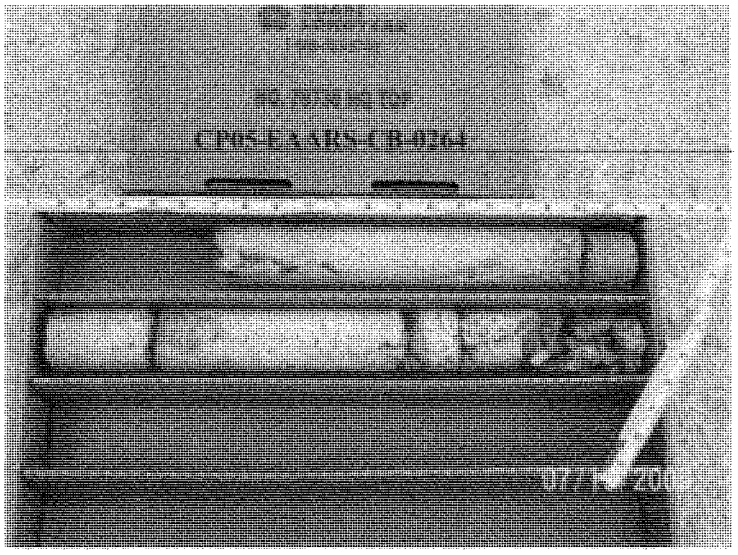
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0260	
Location	East Side	
Depth (feet)	Percentage Recovery	RQD
7.00 to 12.00	48.00	22.00



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0261	
Location	East Side	
Depth (feet)	Percentage Recovery	RQD
5.50 to 10.50	32.00	14.00



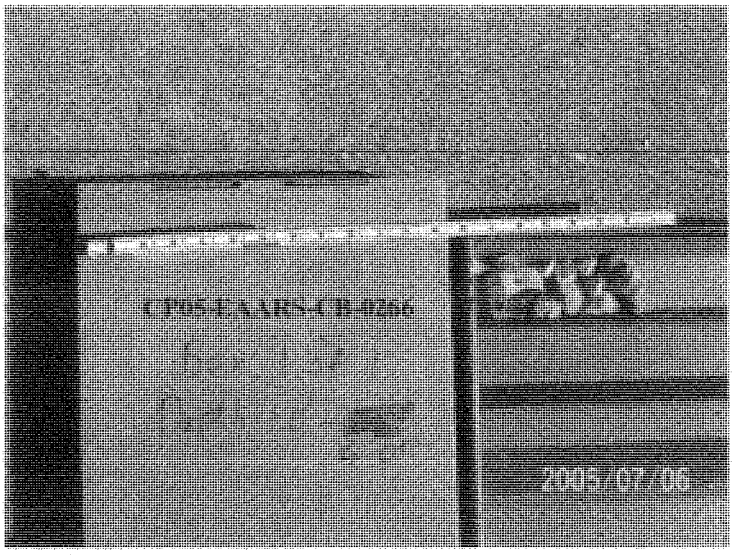
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0262	
Location	East Side	
Depth (feet)	Percentage Recovery	RQD
6.50 to 11.50	48.00	30.00



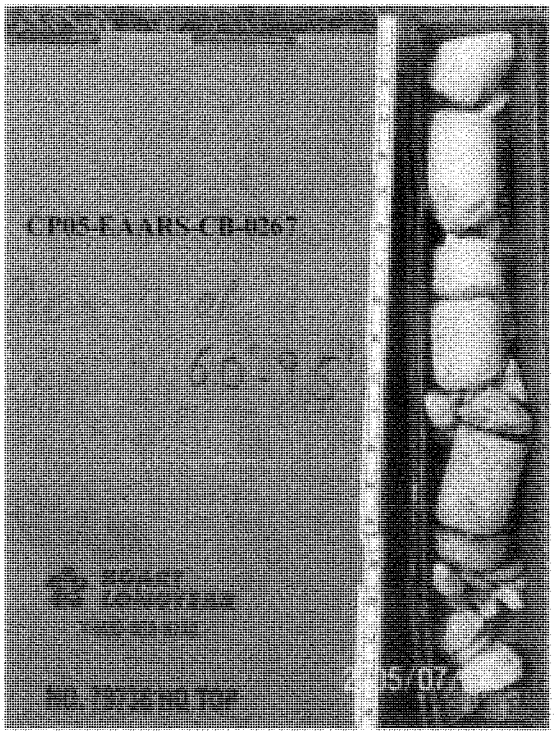
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0264	
Location	East Side	
Depth (feet)	**Percentage Recovery**	**RQD**
6.50 to 11.50	67.00	40.00



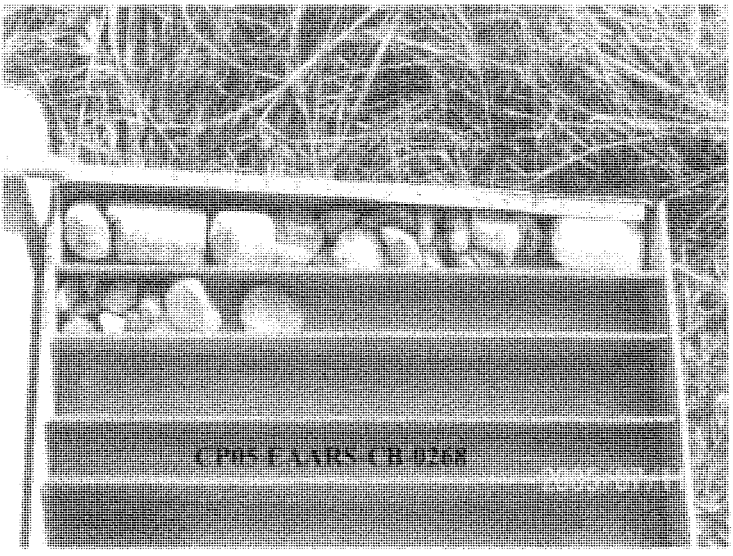
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0265	
Location	East Side	
Depth (feet)	Percentage Recovery	RQD
4.50 to 9.50	44.00	0



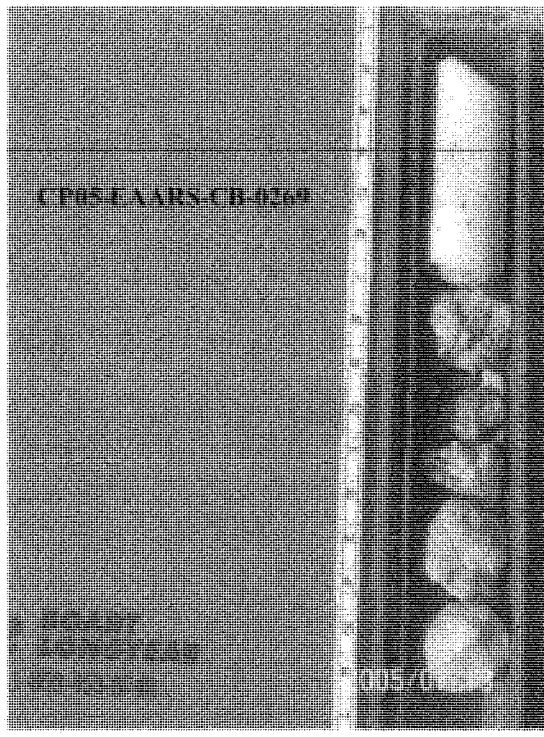
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0266	
Location	South East Corner	
Depth (feet)	Percentage Recovery	RQD
1.00 to 4.00	16.70	0



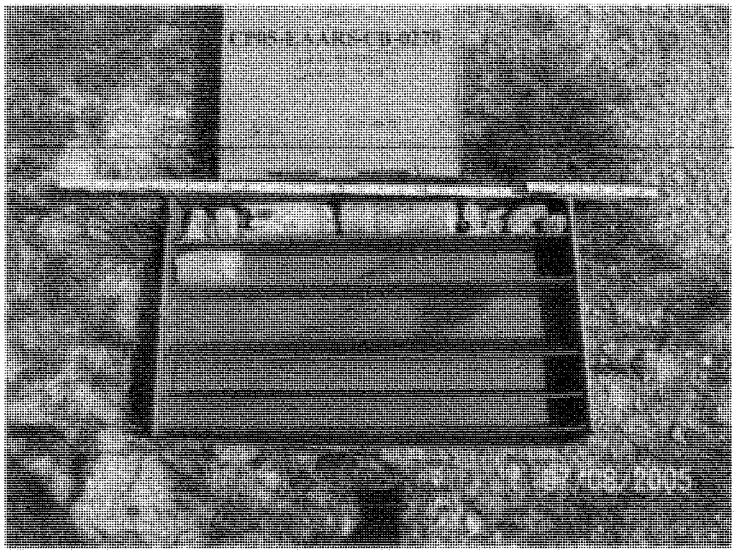
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0267	
Location	South East Section	
Depth (feet)	Percentage Recovery	RQD
6.00 to 9.50	54.29	28.57



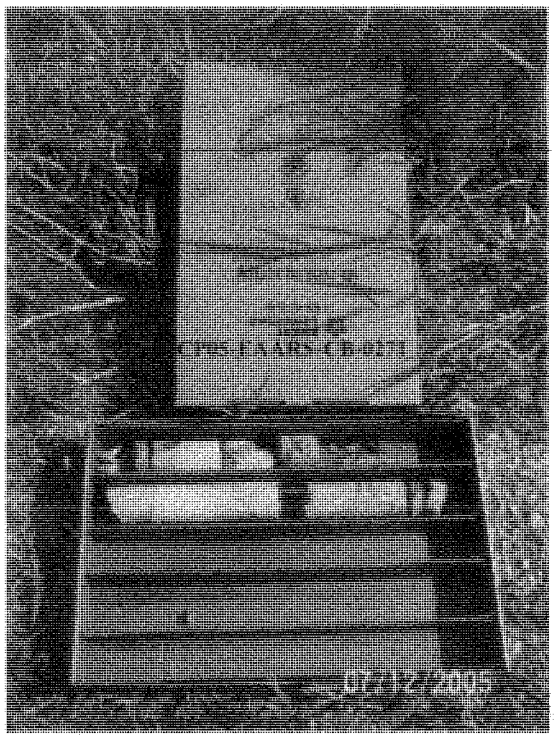
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0268	
Location	South East Section	
Depth (feet)	Percentage Recovery	RQD
2.00 to 7.00	50.00	12.00



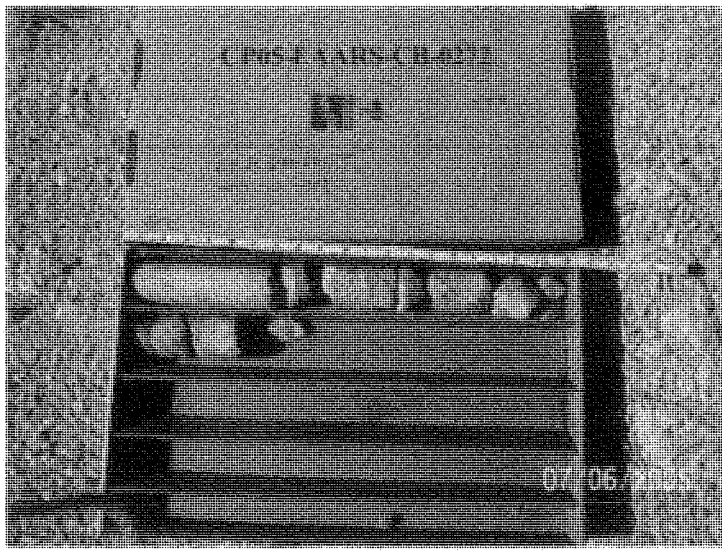
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0269	
Location	South East Section	
Depth (feet)	Percentage Recovery	RQD
2.50 to 7.50	28.00	10.00



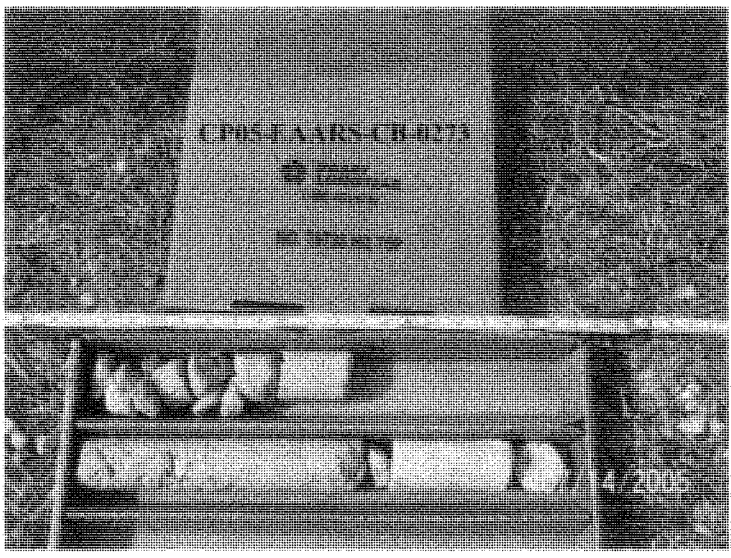
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0270	
Location	South Side	
Depth (feet)	Percentage Recovery	RQD
3.50 to 8.50	26.00	22.00



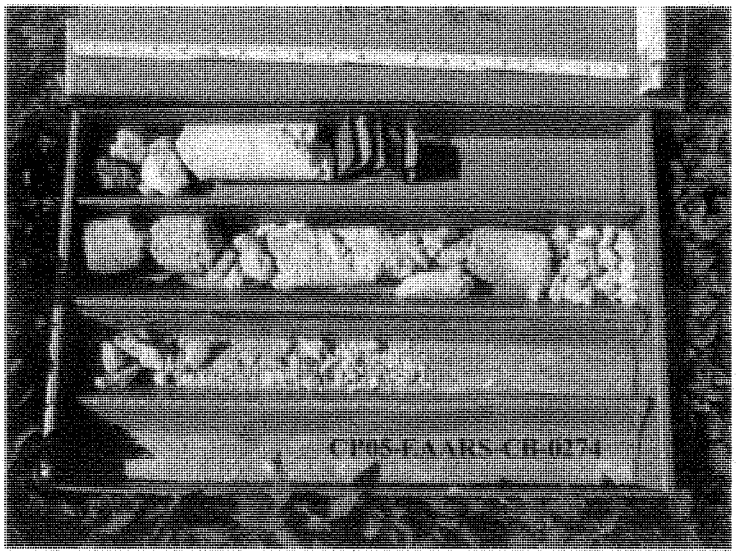
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0271	
Location	South Side	
Depth (feet)	Percentage Recovery	RQD
3.50 to 6.50	48.00	45.00
6.50 to 10.50	25.00	9.00



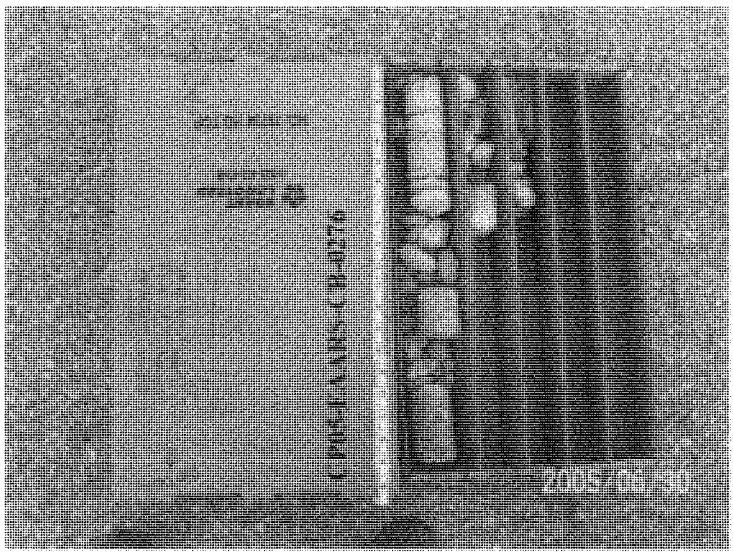
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0272	
Location	South Side	
Depth (feet)	Percentage Recovery	RQD
0.00 to 5.00	46.00	14.00



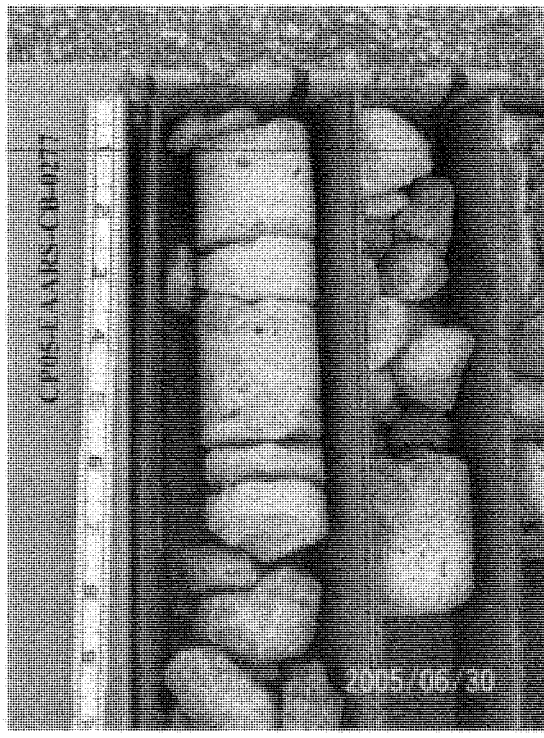
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0273	
Location	South Side	
Depth (feet)	**Percentage Recovery**	**RQD**
4.50 to 9.50	54.00	30.00



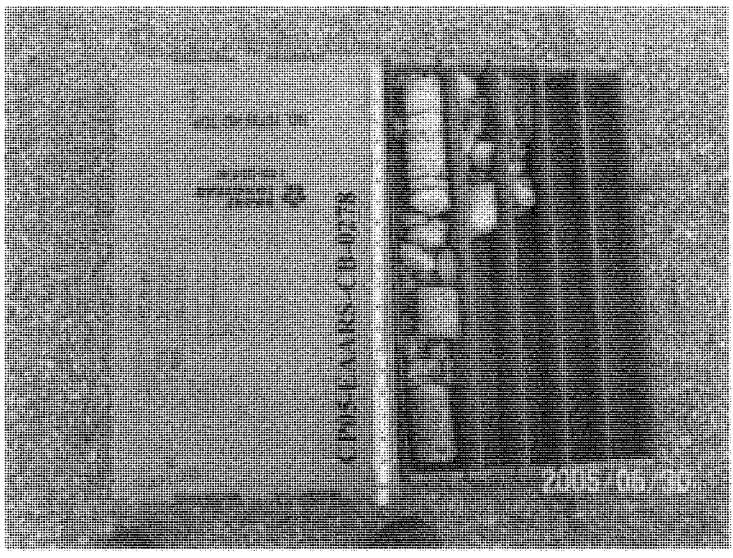
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0274	
Location	South Side	
Depth (feet)	Percentage Recovery	RQD
9.25 to 12.00	32.73	14.55
18.00 to 22.00	62.50	0



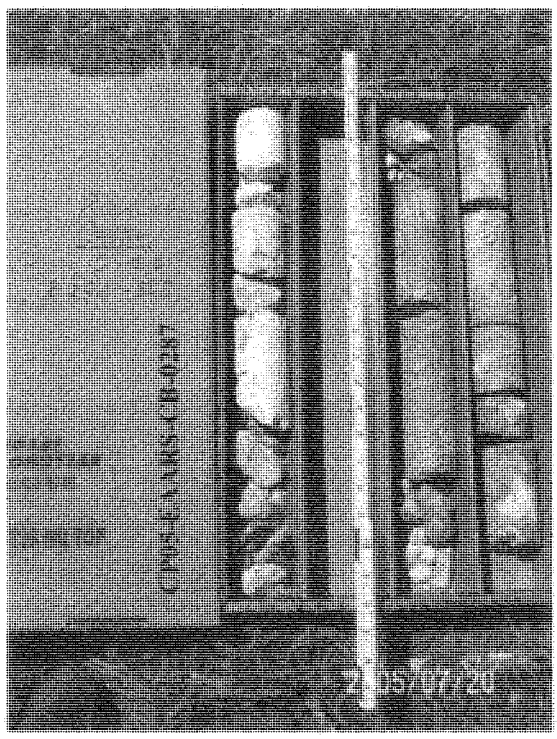
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0276	
Location	West Side	
Depth (feet)	Percentage Recovery	RQD
1.00 to 4.50	21.43	13.10



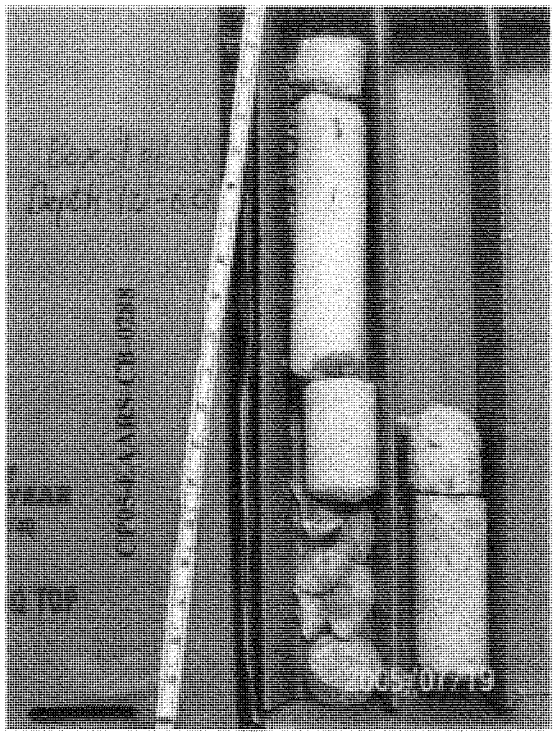
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0277	
Location	West Side	
Depth (feet)	Percentage Recovery	RQD
1.50 to 6.50	13.33	0



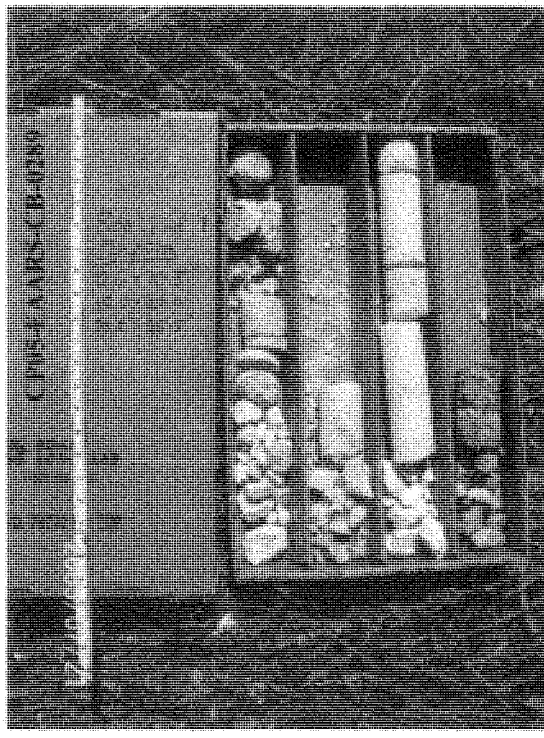
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0278	
Location	West Side	
Depth (feet)	Percentage Recovery	RQD
3.50 to 8.50	40.83	7.00



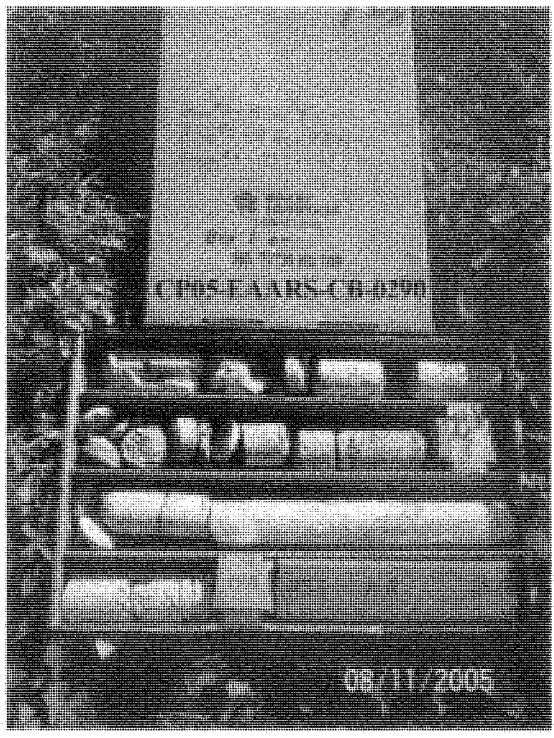
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0287	
Location	North Side	
Depth (feet)	Percentage Recovery	RQD
1.00 to 6.00	36.00	18.00
25.00 to 30.00	62.00	52.00



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0288	
Location	North Side	
Depth (feet)	Percentage Recovery	RQD
1.00 to 6.00	52.00	38.00



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0289	
Location	North Side	
Depth (feet)	Percentage Recovery	RQD
0.50 to 5.50	42.00	6.00
5.50 to 10.50	38.00	26.00
15.00 to 20.00	0	0
20.50 to 25.50	14.00	8.00



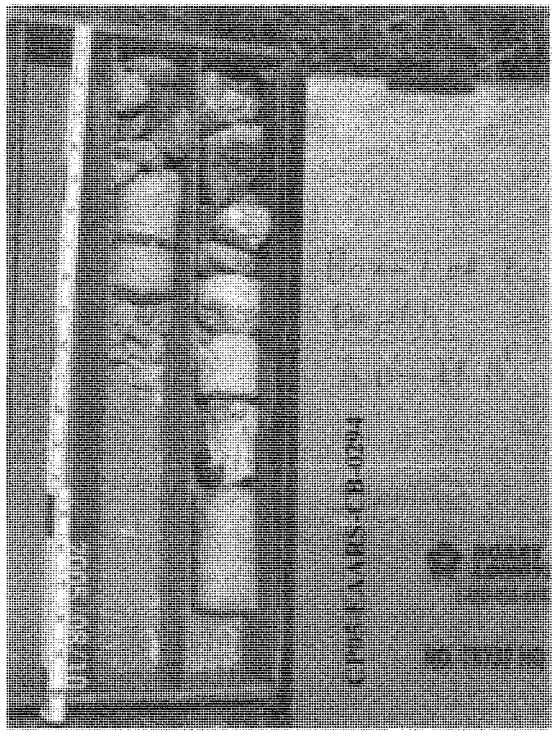
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0290 (Box 1 of 2)	
Location	East Side	
Depth (feet)	Percentage Recovery	RQD
4.00 to 9.00	60.00	24.00
9.00 to 14.00	54.00	24.00
23.50 to 28.50	0	0
34.00 to 39.00	28.00	14.00



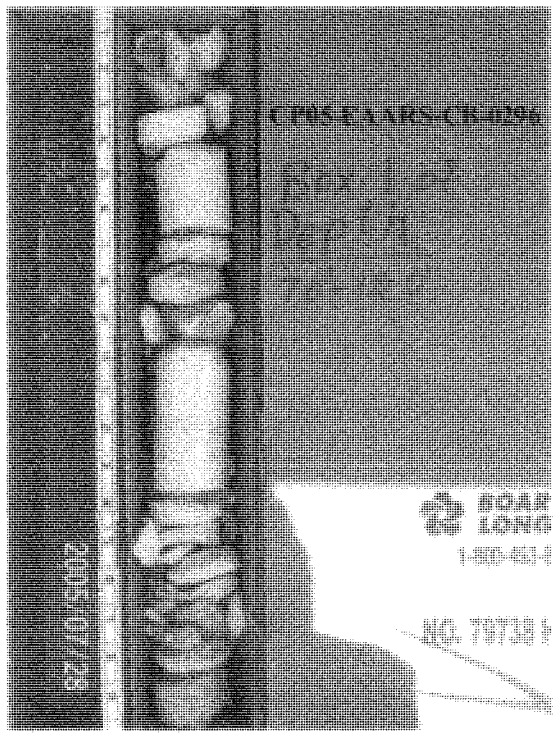
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0290 (Box 2 of 2)	
Location	East Side	
Depth (feet)	**Percentage Recovery**	**RQD**
4.00 to 9.00	60.00	24.00
9.00 to 14.00	54.00	24.00
23.50 to 28.50	0	0
34.00 to 39.00	28.00	14.00



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0292	
Location	East Side	
Depth (feet)	**Percentage Recovery**	**RQD**
7.00 to 12.00	56.00	19.00



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0294	
Location	East Side	
Depth (feet)	Percentage Recovery	RQD
6.00 to 11.00	54.00	8.00

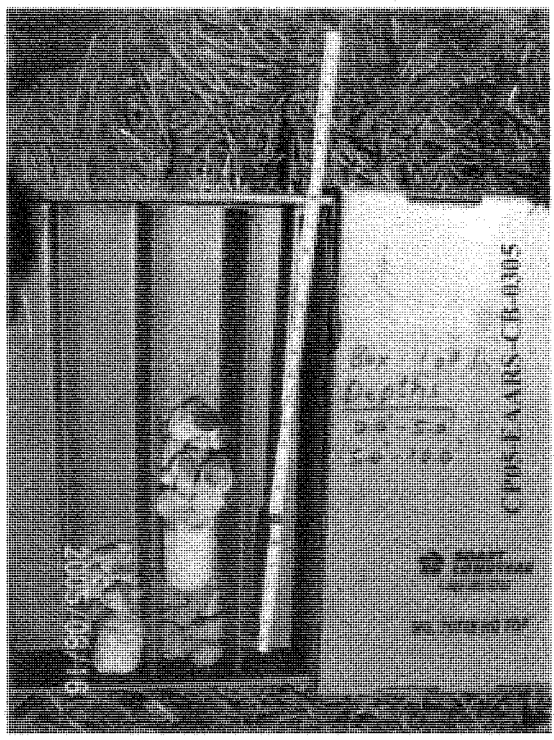


Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0296	
Location	East Side	
Depth (feet)	Percentage Recovery	RQD
7.00 to 12.00	42.00	8.00



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0300	
Location	East Side	
Depth (feet)	Percentage Recovery	RQD
6.00 to 11.00	62.00	24.00

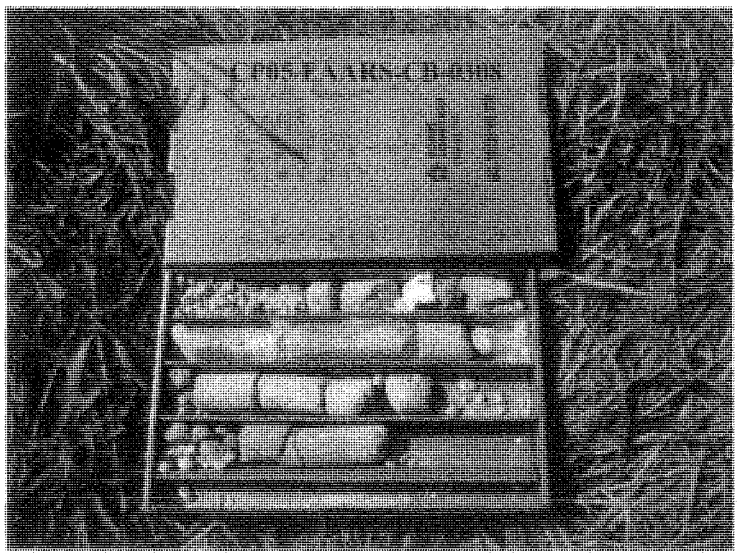
APPENDIX 3
ROCK CORES AND OTHER PHOTOGRAPHS: 301-340



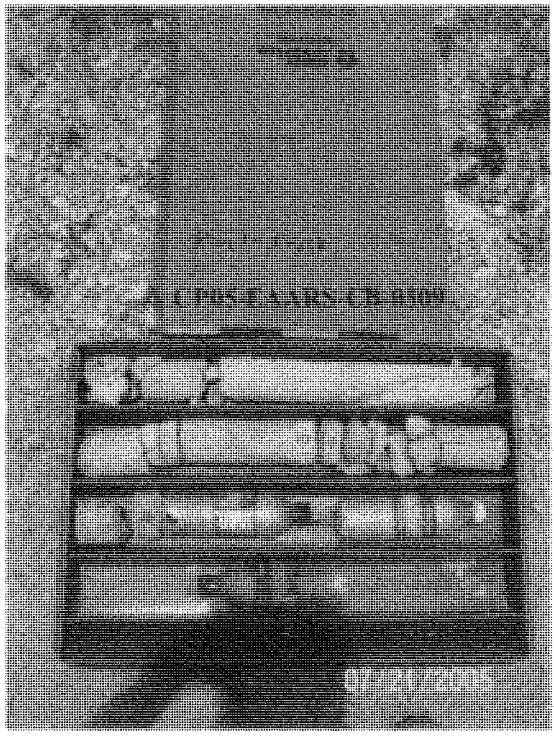
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0305	
Location	West Side	
Depth (feet)	**Percentage Recovery**	**RQD**
0.00 to 5.00	22.00	0
5.00 to 10.00	8.00	0



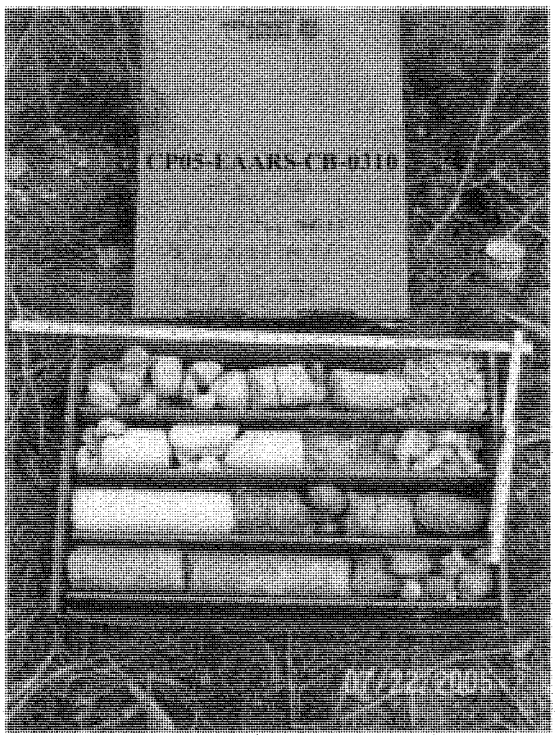
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0307	
Location	East Side	
Depth (feet)	**Percentage Recovery**	**RQD**
5.50 to 10.50	90.00	68.00
10.50 to 15.50	78.00	42.00



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0308	
Location	East Side	
Depth (feet)	**Percentage Recovery**	**RQD**
6.00 to 10.00	45.00	30.00
10.75 to 15.00	46.00	8.00



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0309	
Location	South Side	
Depth (feet)	Percentage Recovery	RQD
5.00 to 10.00	58.00	32.00
11.00 to 16.00	22.00	0



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0310	
Location	South Side	
Depth (feet)	Percentage Recovery	RQD
4.50 to 8.50	50.00	0
8.50 to 10.00	100.00	0
10.00 to 15.00	20.00	14.00
30.00 to 35.00	56.00	24.00



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0312 (Box 1 of 2)	
Location	South Side	
Depth (feet)	**Percentage Recovery**	**RQD**
4.50 to 8.50	98.00	0
8.50 to 13.50	8.0	0
23.5 to 28.5	40.00	0
30.00 to 33.50	66.00	14.00
33.50 to 38.50	33.00	0



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0312 (Box 2 of 2)	
Location	South Side	
Depth (feet)	**Percentage Recovery**	**RQD**
4.50 to 8.50	98.00	0
8.50 to 13.50	8.0	0
23.5 to 28.5	40.00	0
30.00 to 33.50	66.00	14.00
33.50 to 38.50	33.00	0



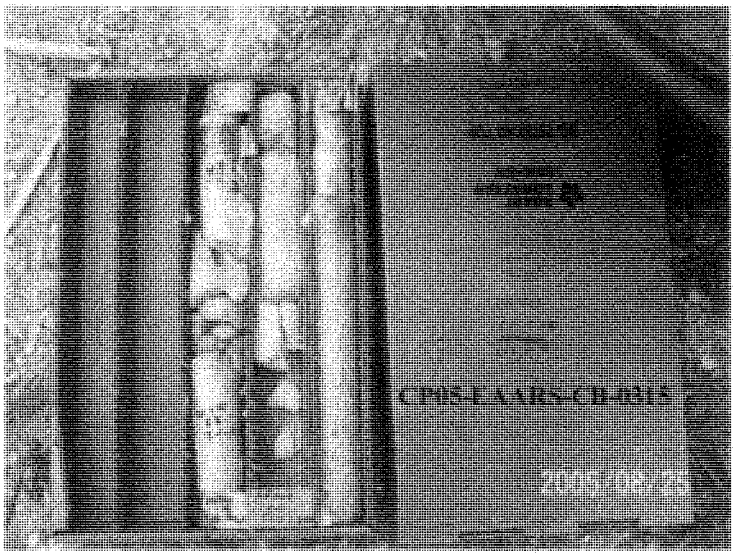
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0313	
Location	South Side	
Depth (feet)	**Percentage Recovery**	**RQD**
1.00 to 6.00	26.00	0
6.00 to 11.00	24.00	0
25.00 to 30.00	68.00	52.00



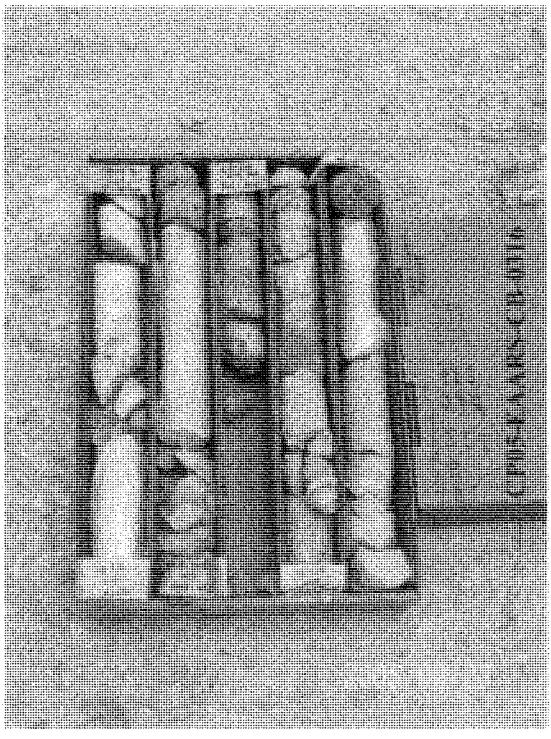
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0314 (Box 1 of 2)	
Location	South Side	
Depth (feet)	**Percentage Recovery**	**RQD**
4.00 to 8.50	22.00	0
8.50 to 13.50	12.00	0
25.00 to 30.00	60.00	48.00
30.00 to 35.00	96.00	64.00



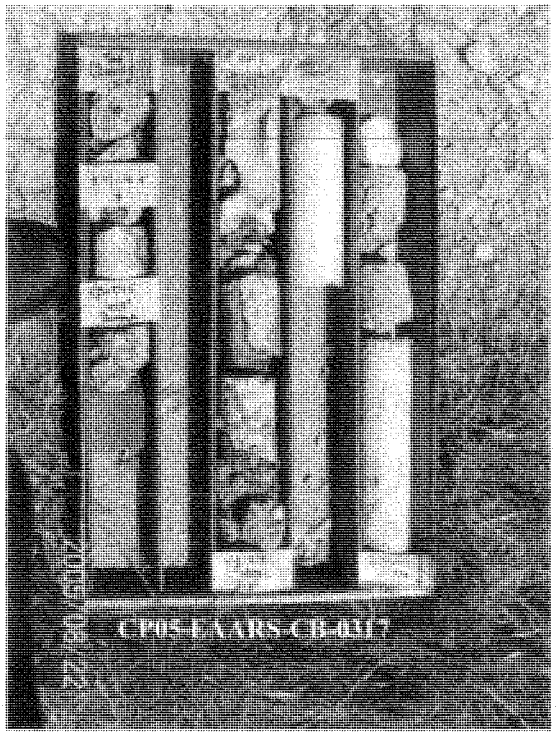
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0314 (Box 2 of 2)	
Location	South Side	
Depth (feet)	**Percentage Recovery**	**RQD**
4.00 to 8.50	22.00	0
8.50 to 13.50	12.00	0
25.00 to 30.00	60.00	48.00
30.00 to 35.00	96.00	64.00



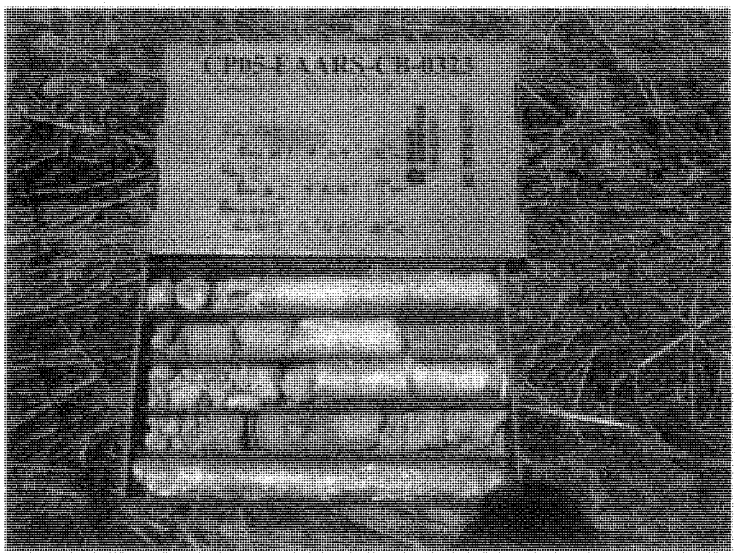
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0315	
Location	South Side	
Depth (feet)	Percentage Recovery	RQD
5.00 to 10.00	Not recorded	Not recorded



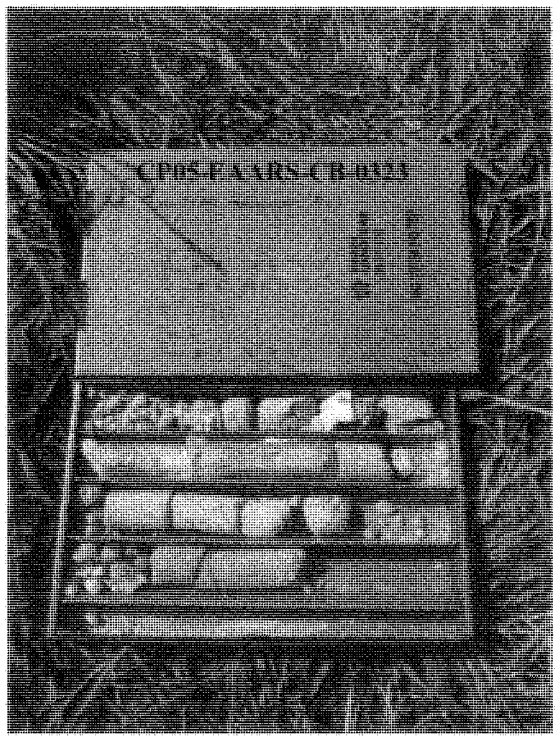
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0316	
Location	South Side	
Depth (feet)	**Percentage Recovery**	**RQD**
5.00 to 10.00	38.00	30.00
20.50 to 25.50	56.00	27.50
25.50 to 30.50	76.00	49.00
30.50 to 35.50	65.00	45.00



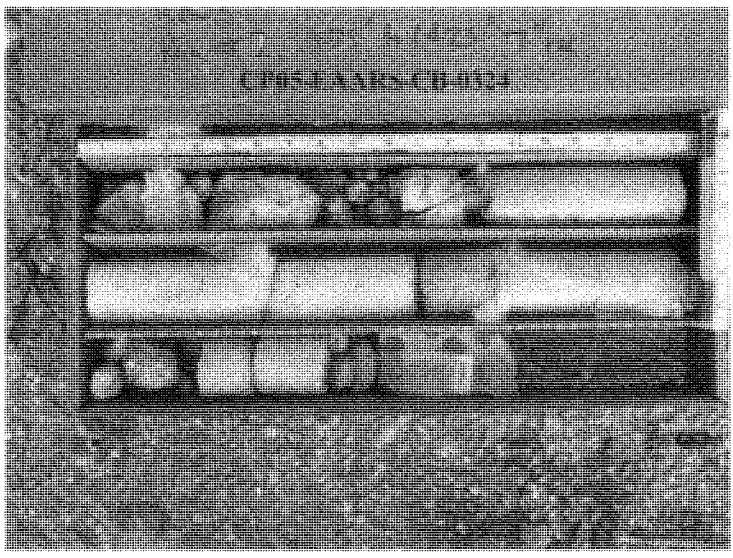
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0317	
Location	South Side	
Depth (feet)	Percentage Recovery	RQD
5.50 to 7.00	70.00	8.30
7.00 to 12.00	60.00	50.00



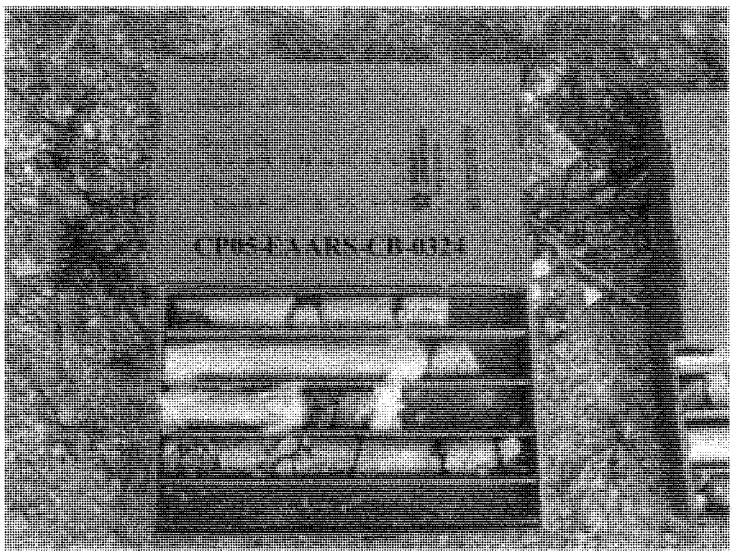
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0323 (Box 1 of 2)	
Location	South Side	
Depth (feet)	**Percentage Recovery**	**RQD**
4.00 to 9.00	60.00	38.00
9.00 to 14.00	28.00	20.00
16.00 to 21.00	74.00	40.00



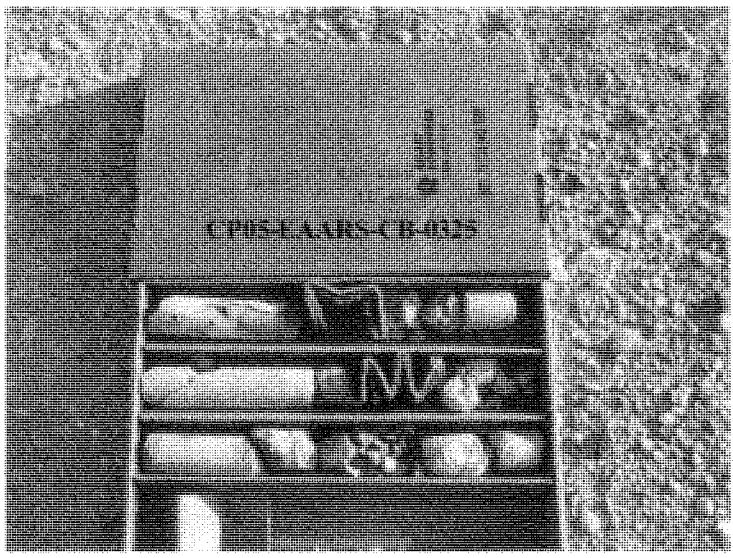
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0323 (Box 2 of 2)	
Location	South Side	
Depth (feet)	**Percentage Recovery**	**RQD**
21.00 to 23.75	40.00	0
23.75 to 28.5	8.00	0



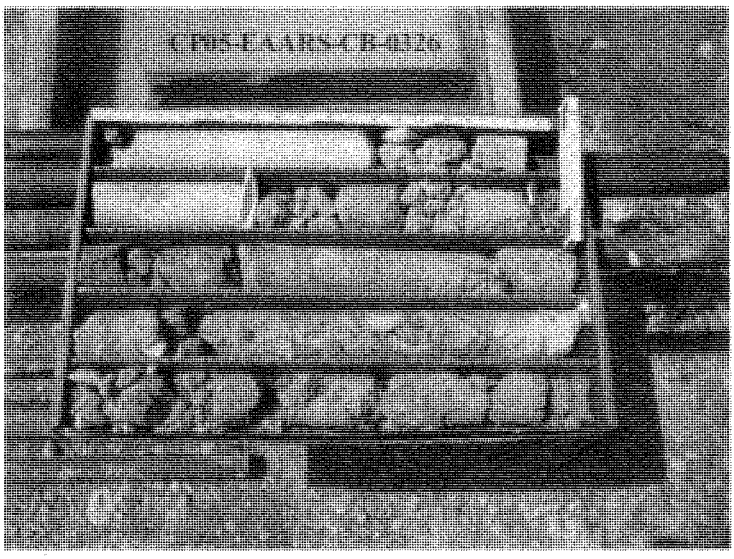
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0324 (Box 1 of 2)	
Location	West Side	
Depth (feet)	**Percentage Recovery**	**RQD**
4.75 to 9.75	70.00	44.00
9.75 to 14.75	10.00	0



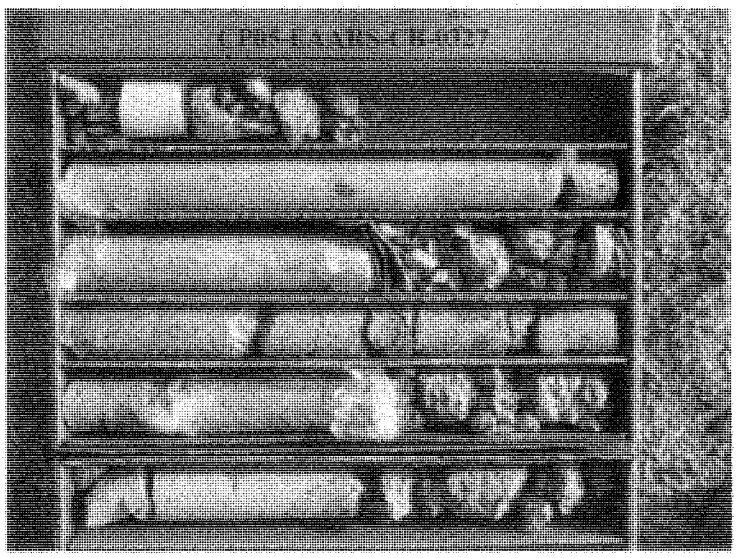
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0324 (Box 2 of 2)	
Location	West Side	
Depth (feet)	**Percentage Recovery**	**RQD**
16.00 to 21.00	82.00	56.00
21.00 to 26.00	32.00	8.00



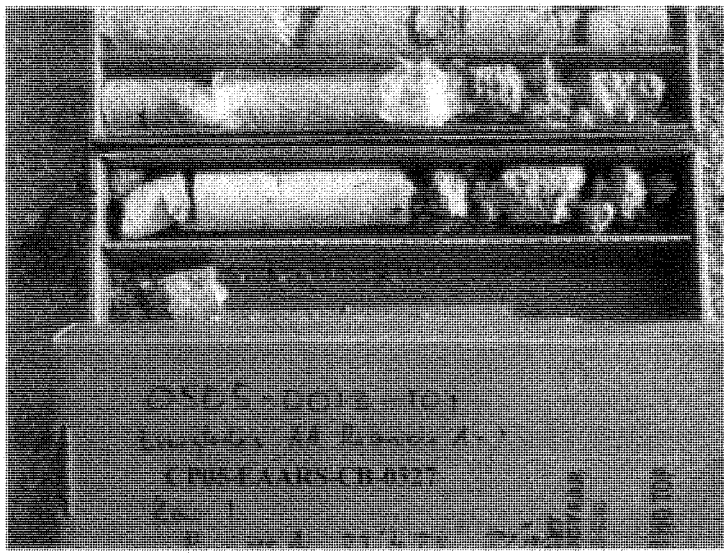
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0325	
Location	West Side	
Depth (feet)	Percentage Recovery	RQD
5.75 to 10.75	96.00	36.00



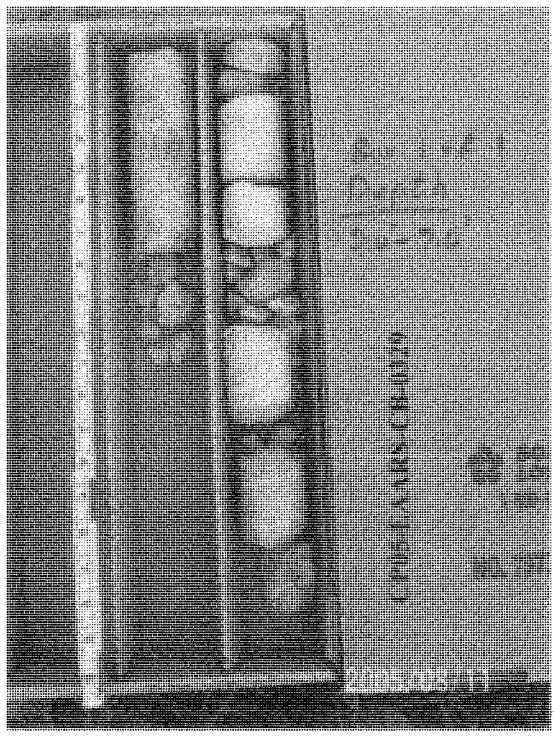
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0326	
Location	West Side	
Depth (feet)	Percentage Recovery	RQD
6.50 to 11.50	48.00	34.00
11.50 to 14.00	36.00	0
17.50 to 22.50	80.00	52.00
22.50 to 27.50	36.00	0



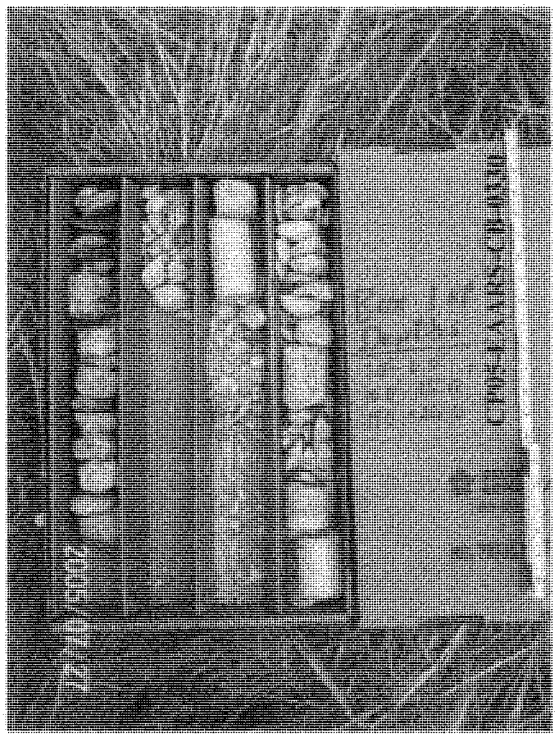
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0327 (Box 1 of 2)	
Location	West Side	
Depth (feet)	**Percentage Recovery**	**RQD**
4.00 to 9.00	78.00	56.00
9.00 to 12.00	26.00	0
18.00 to 23.00	78.00	28.00



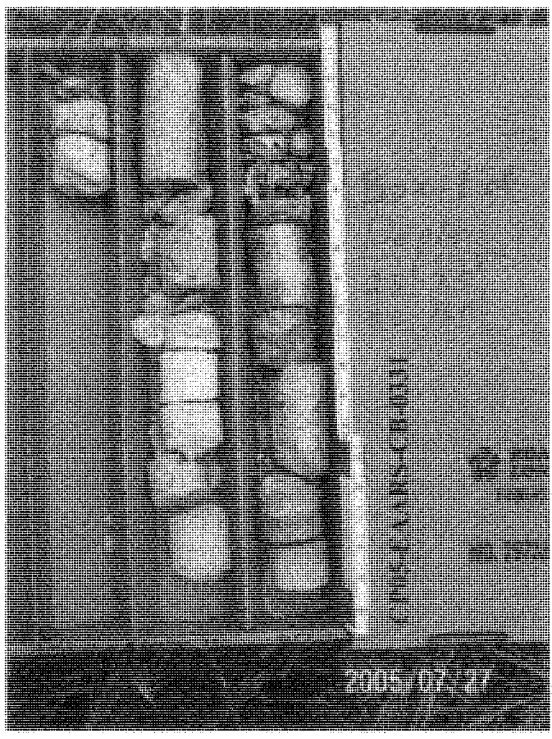
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0327 (Box 2 of 2)	
Location	West Side	
Depth (feet)	**Percentage Recovery**	**RQD**
23.00 to 28.00	44.00	16.00



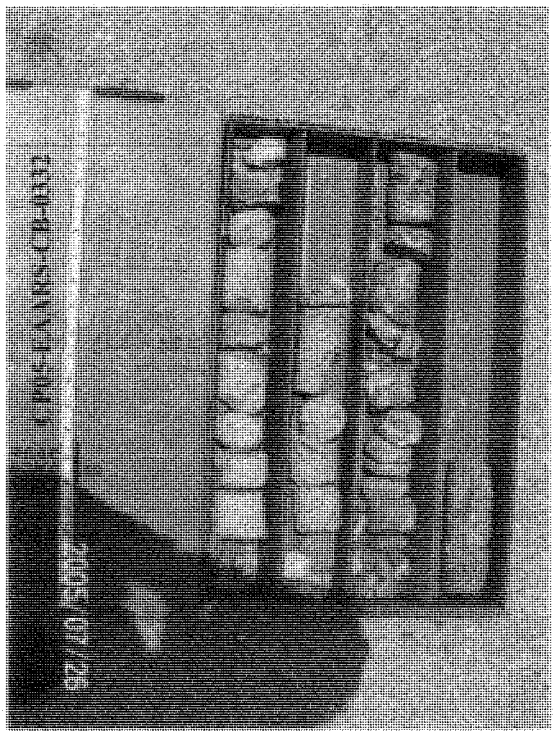
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0329	
Location	West Side	
Depth (feet)	**Percentage Recovery**	**RQD**
2.00 to 7.00	46.00	12.00



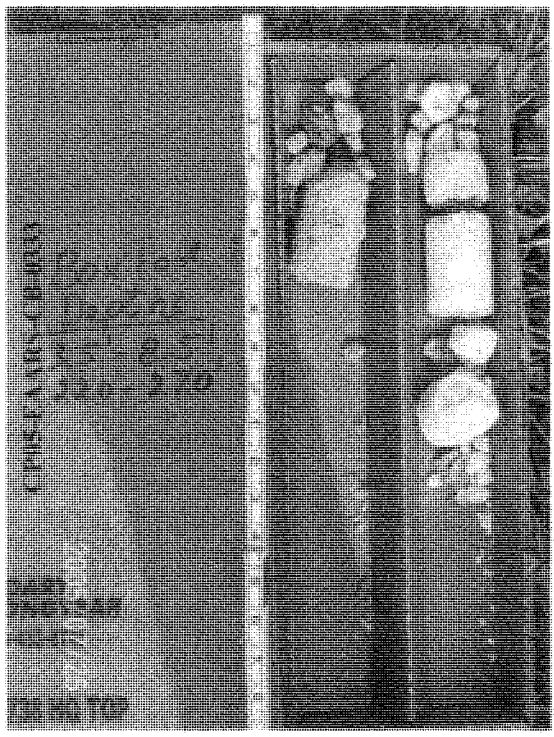
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0330	
Location	West Side	
Depth (feet)	Percentage Recovery	RQD
1.00 to 6.00	54.00	7.00
10.00 to 15.00	12.00	0
19.00 to 24.00	34.00	0



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0331	
Location	West Side	
Depth (feet)	**Percentage Recovery**	**RQD**
2.50 to 7.50	70.00	15.00
8.00 to 13.00	6.00	0



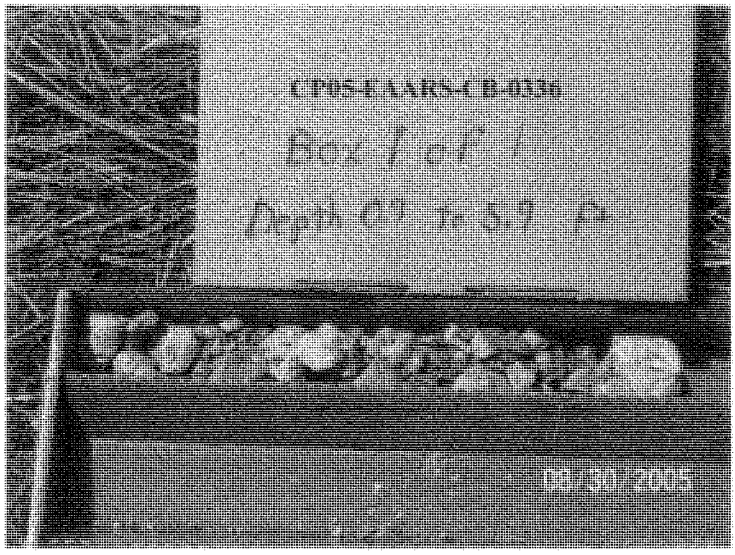
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0332	
Location	North West Section	
Depth (feet)	**Percentage Recovery**	**RQD**
3.00 to 8.00	36.00	0
15.00 to 20.00	24.00	0
23.50 to 28.50	48.00	12.00



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0333	
Location	North West Section	
Depth (feet)	**Percentage Recovery**	**RQD**
3.50 to 8.50	20.00	0
22.00 to 27.00	10.00	6.00



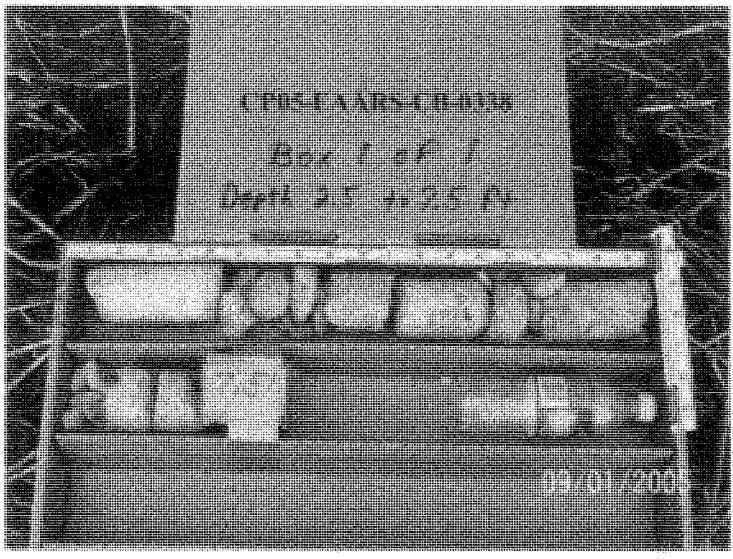
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0334	
Location	South-West Interior	
Depth (feet)	Percentage Recovery	RQD
2.25 to 7.25	20.00	0



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0336	
Location	South-East Interior	
Depth (feet)	Percentage Recovery	RQD
1.00 to 6.00	30.00	0



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0337	
Location	South-East Interior	
Depth (feet)	Percentage Recovery	RQD
1.50 to 6.50	52.00	0
6.50 to 11.50	26.00	0



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0338	
Location	South-West Interior	
Depth (feet)	Percentage Recovery	RQD
2.50 to 7.50	46.00	8.00



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0339	
Location	South-West Interior	
Depth (feet)	**Percentage Recovery**	**RQD**
1.30 to 6.30	18.00	7.00



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0340	
Location	South-East Interior	
Depth (feet)	**Percentage Recovery**	**RQD**
1.00 to 6.00	24.00	0

APPENDIX 3
ROCK CORES AND OTHER PHOTOGRAPHS: 341-380



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0341 (Box 1 of 2)	
Location	South-East Interior	
Depth (feet)	**Percentage Recovery**	**RQD**
1.50 to 6.50	46.00	14.00
6.50 to 11.50	24.00	18.00
11.50 to 16.50	6.00	0
16.50 to 21.50	0	0
21.50 to 26.50	26.00	0
26.50 to 31.50	42.00	8.00
31.50 to 36.50	40.00	0



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0341 (Box 2 of 2)	
Location	South-East Interior	
Depth (feet)	**Percentage Recovery**	**RQD**
1.50 to 6.50	46.00	14.00
6.50 to 11.50	24.00	18.00
11.50 to 16.50	6.00	0
16.50 to 21.50	0	0
21.50 to 26.50	26.00	0
26.50 to 31.50	42.00	8.00
31.50 to 36.50	40.00	0



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0342	
Location	South-East Interior	
Depth (feet)	Percentage Recovery	RQD
2.00 to 7.00	46.00	22.00



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0343	
Location	South-East Interior	
Depth (feet)	**Percentage Recovery**	**RQD**
4.00 to 9.00	32.00	0



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0344	
Location	South-West Interior	
Depth (feet)	**Percentage Recovery**	**RQD**
0.80 to 5.80	34.00	0



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0345	
Location	Central Farm Road	
Depth (feet)	**Percentage Recovery**	**RQD**
4.00 to 9.00	70.00	20.00
9.00 to 14.00	10.00	0



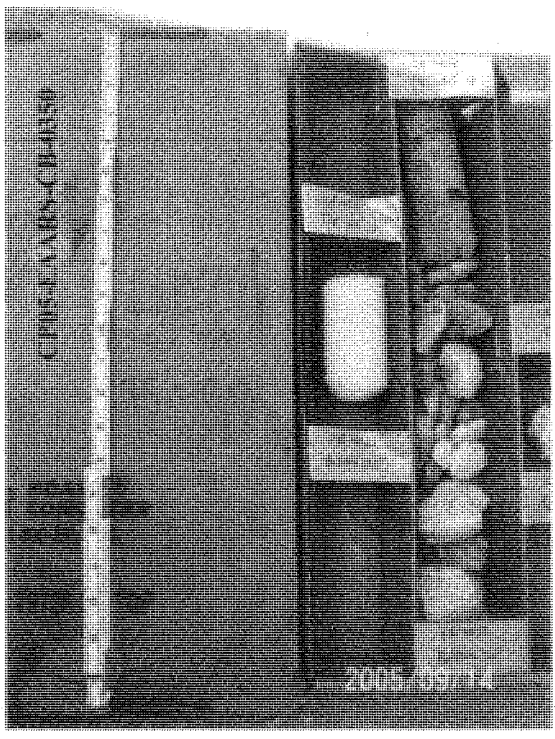
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0347	
Location	East Section Interior	
Depth (feet)	**Percentage Recovery**	**RQD**
2.00 to 6.00	87.50	42.50
6.00 to 11.00	42.00	10.00



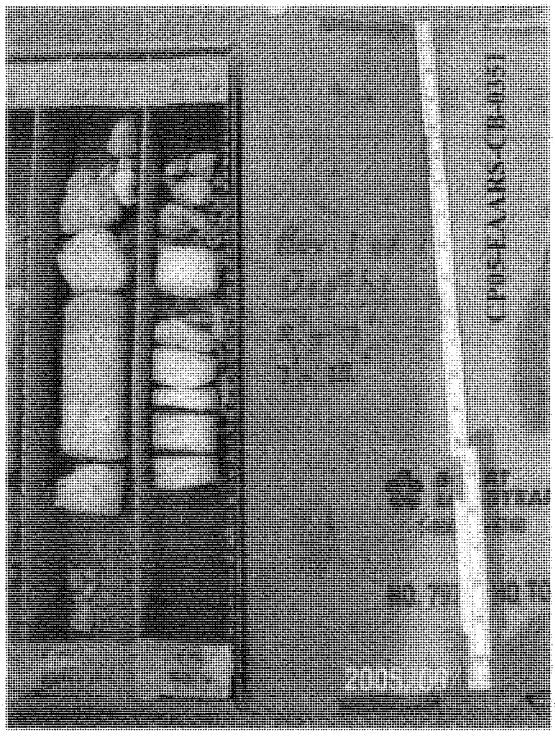
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0348	
Location	South-West Interior	
Depth (feet)	**Percentage Recovery**	**RQD**
1.00 to 6.00	40.00	0



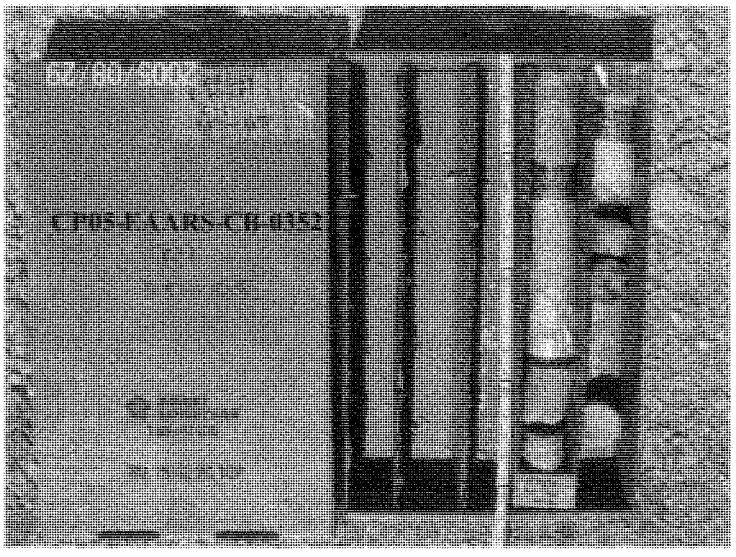
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0349	
Location	Central Farm Road	
Depth (feet)	**Percentage Recovery**	**RQD**
4.00 to 9.00	40.00	22.00



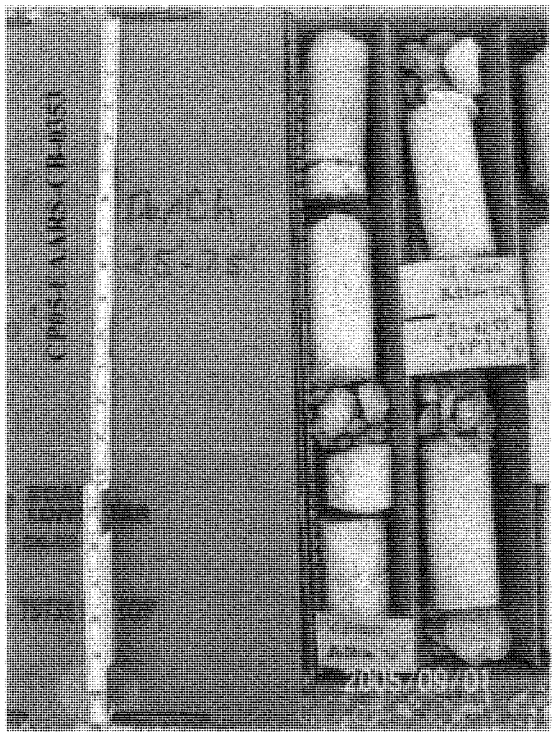
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0350	
Location	Central Area	
Depth (feet)	Percentage Recovery	RQD
2.50 to 7.50	34.00	12.00
7.50 to 12.50	8.00	8.00



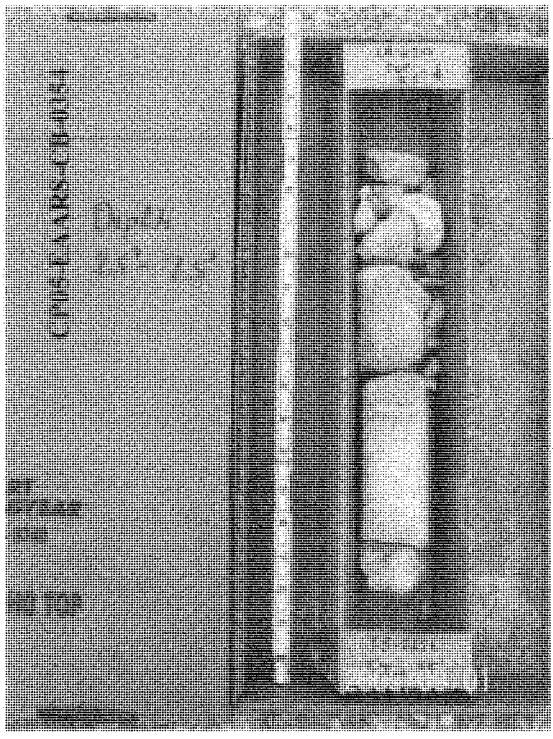
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0351	
Location	East-Central Area	
Depth (feet)	**Percentage Recovery**	**RQD**
2.00 to 7.00	20.00	0
7.00 to 12.00	22.00	8.00



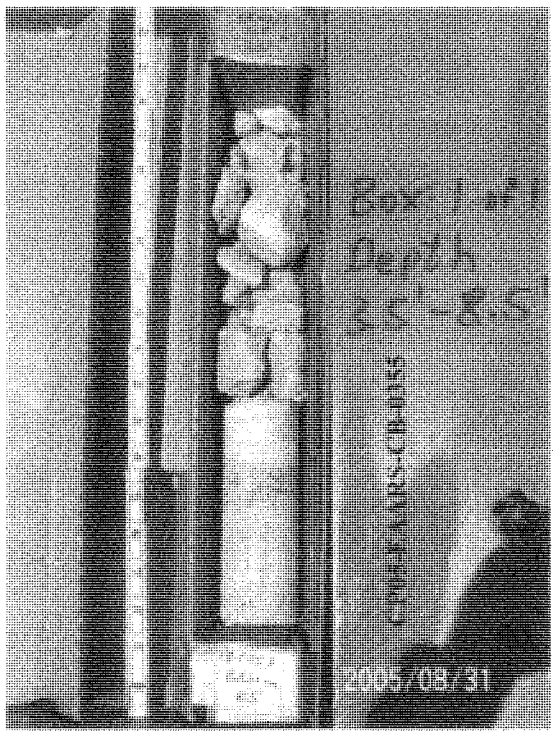
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0352	
Location	North-East Interior	
Depth (feet)	**Percentage Recovery**	**RQD**
5.50 to 10.50	56.00	35.00



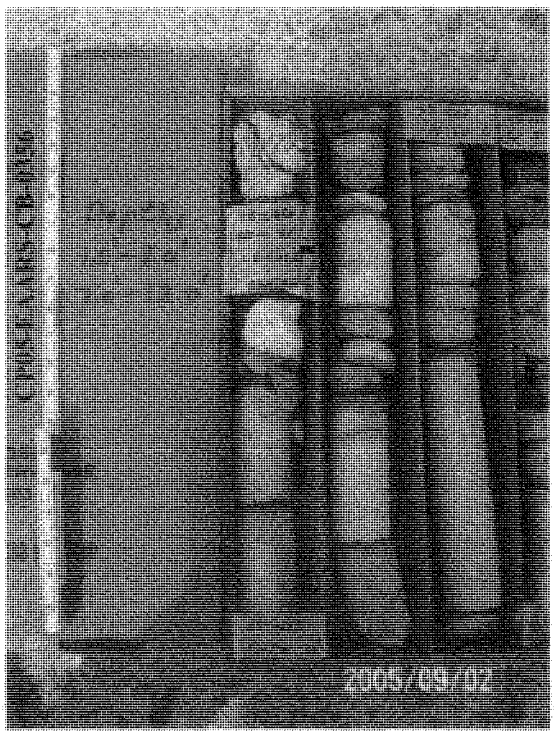
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0353	
Location	West Side	
Depth (feet)	Percentage Recovery	RQD
2.50 to 7.50	56.00	34.00



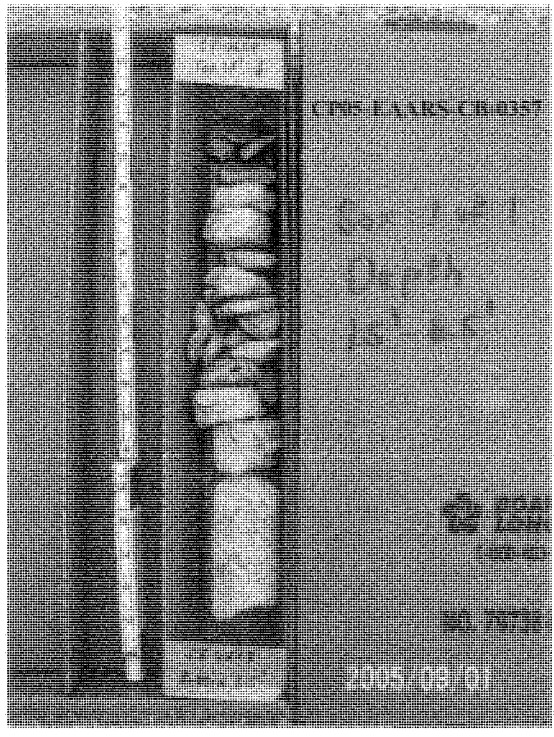
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0354	
Location	West-Central Area	
Depth (feet)	Percentage Recovery	RQD
2.50 to 7.50	30.00	10.00



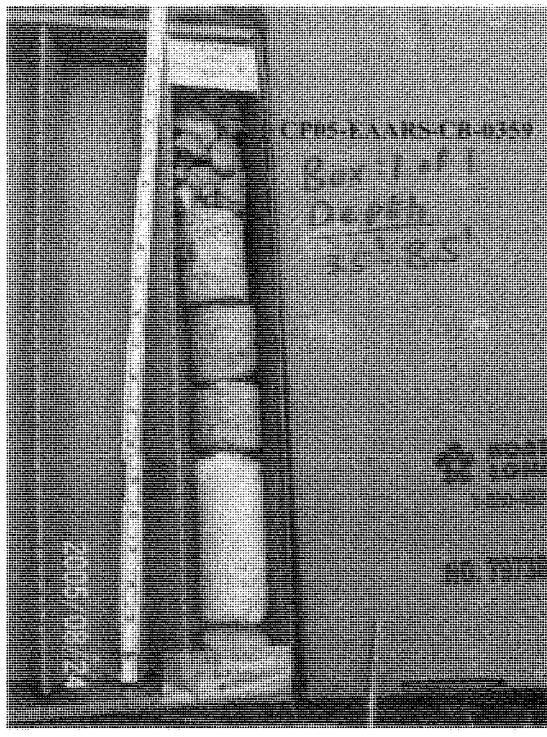
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0355	
Location	Central Region	
Depth (feet)	Percentage Recovery	RQD
3.50 to 8.50	32.00	12.00



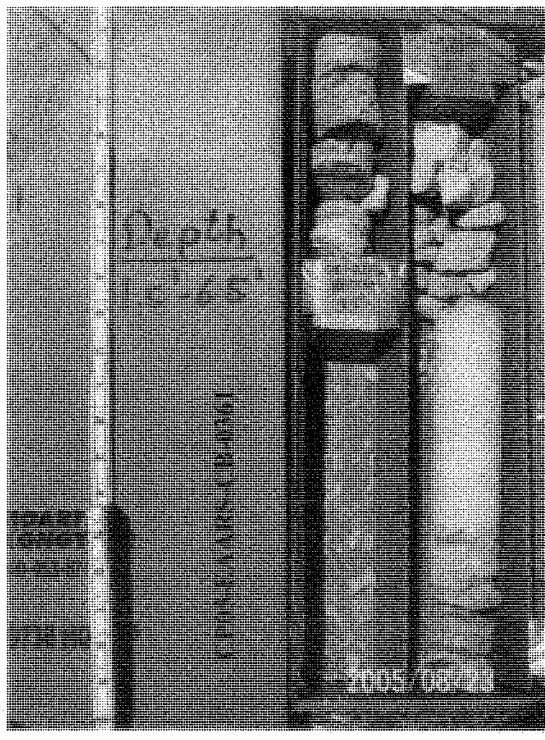
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0356	
Location	Central Region	
Depth (feet)	Percentage Recovery	RQD
1.00 to 6.00	94.00	42.00
7.00 to 12.00	30.00	15.00



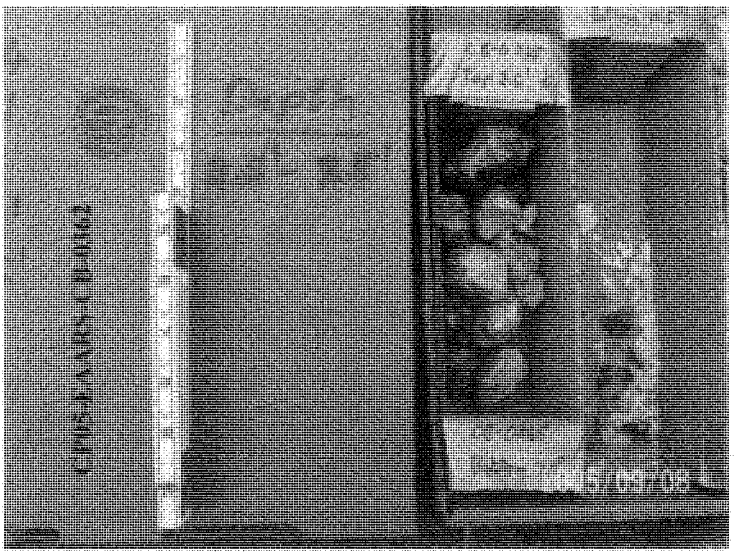
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0357	
Location	East-Central Region	
Depth (feet)	Percentage Recovery	RQD
1.50 to 6.50	35.00	8.00



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0359	
Location	Central Region	
Depth (feet)	Percentage Recovery	RQD
3.50 to 8.50	36.00	10.00



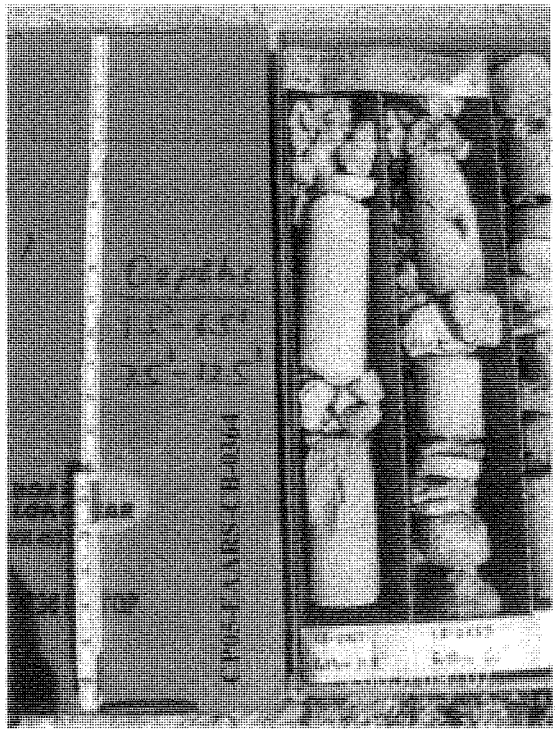
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0361	
Location	North Interior	
Depth (feet)	Percentage Recovery	RQD
1.50 to 6.50	50.00	16.00



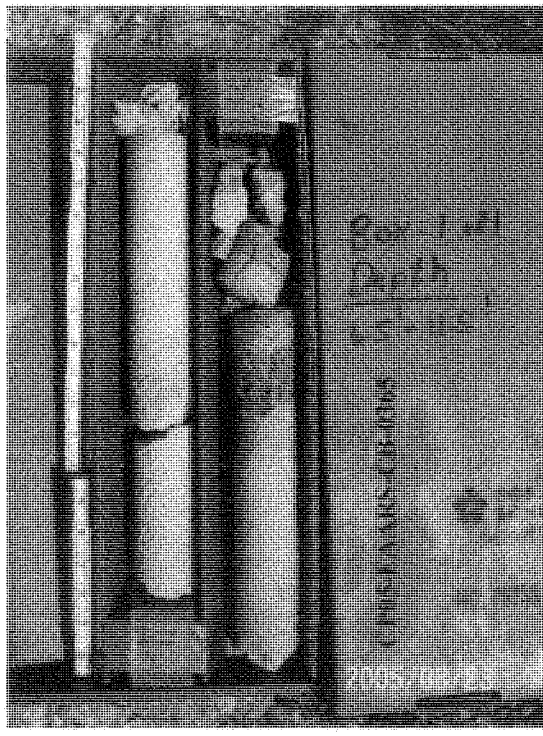
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0362	
Location	North Section	
Depth (feet)	Percentage Recovery	RQD
2.50 to 7.50	12.00	0



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0363	
Location	East Side	
Depth (feet)	Percentage Recovery	RQD
3.00 to 8.00	68.00	34.00
8.00 to 13.00	14.00	9.00



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0364	
Location	East Side	
Depth (feet)	Percentage Recovery	RQD
1.50 to 6.50	42.00	8.00
7.50 to 12.50	42.00	21.00



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0365	
Location	North-Interior	
Depth (feet)	Percentage Recovery	RQD
6.50 to 11.50	68.00	50.00



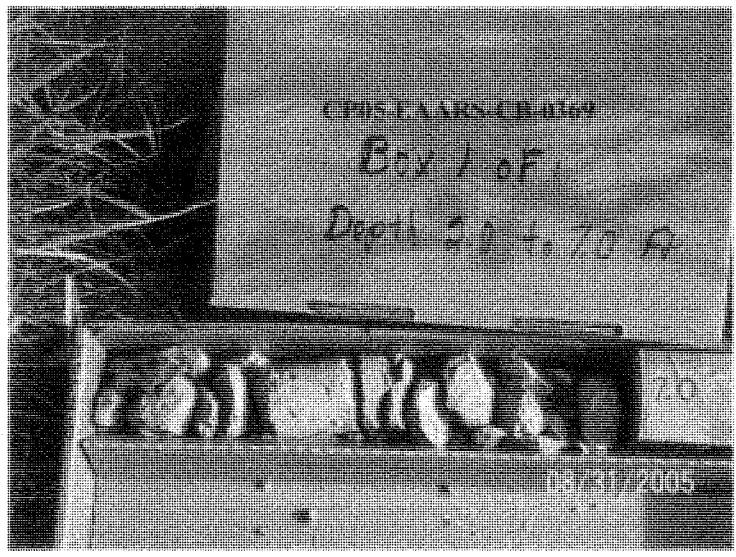
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0366	
Location	South-West Interior	
Depth (feet)	**Percentage Recovery**	**RQD**
4.00 to 9.00	52.00	26.00
9.00 to 14.00	10.00	9.00



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0367	
Location	South-West Interior	
Depth (feet)	**Percentage Recovery**	**RQD**
2.00 to 7.00	22.00	7.00
7.00 to 12.00	22.00	0



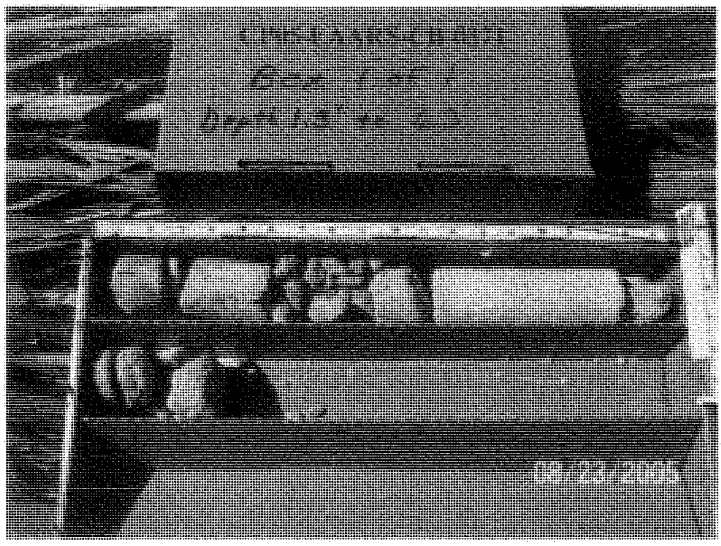
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0368	
Location	South-West Interior	
Depth (feet)	Percentage Recovery	RQD
0.25 to 5.25	36.00	10.00



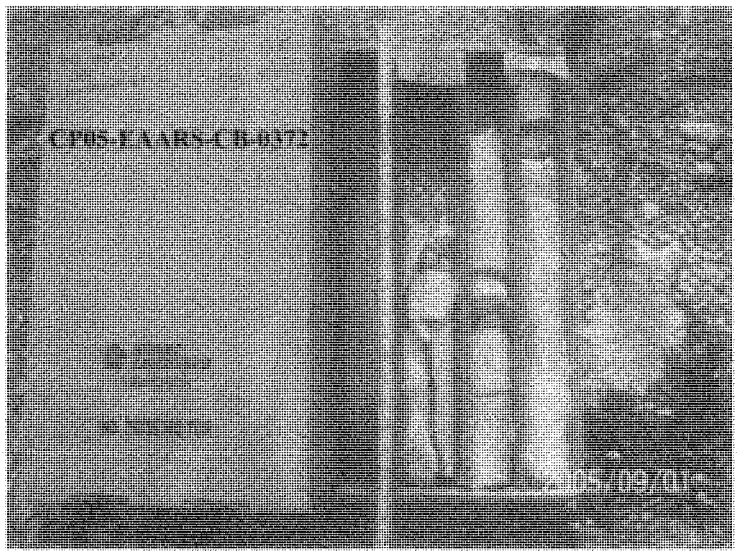
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0369	
Location	South-West Interior	
Depth (feet)	**Percentage Recovery**	**RQD**
2.00 to 7.00	28.00	0



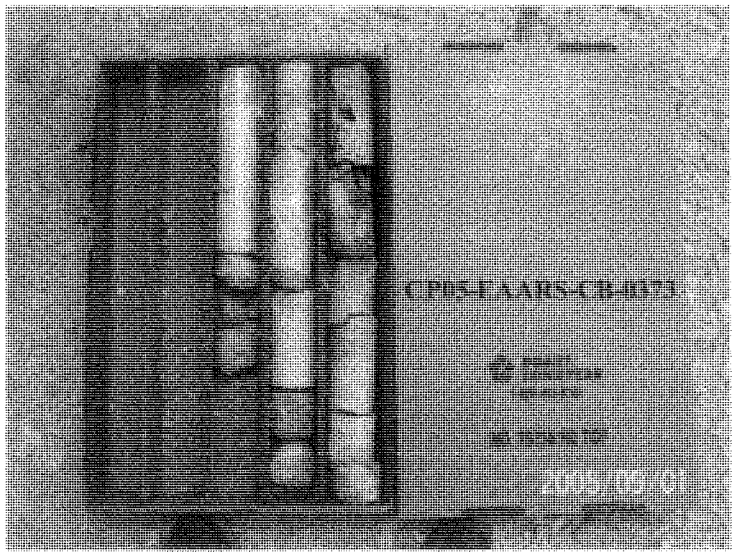
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0370	
Location	South-East Interior	
Depth (feet)	**Percentage Recovery**	**RQD**
0.90 to 5.50	7.00	0
5.50 to 10.50	24.00	10.00



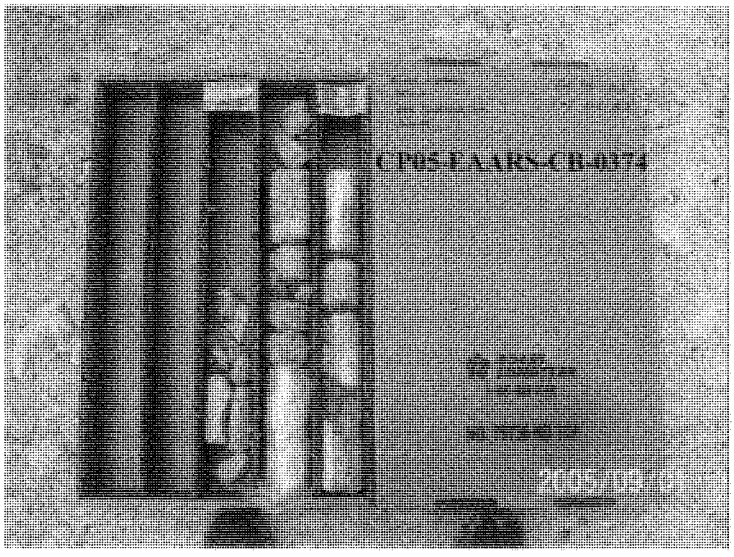
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0371	
Location	South-East Interior	
Depth (feet)	Percentage Recovery	RQD
1.50 to 6.50	42.00	12.00



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0372	
Location	Interior	
Depth (feet)	Percentage Recovery	RQD
4.00 to 9.00	65.00	45.00
10.00 to 14.00	20.00	0



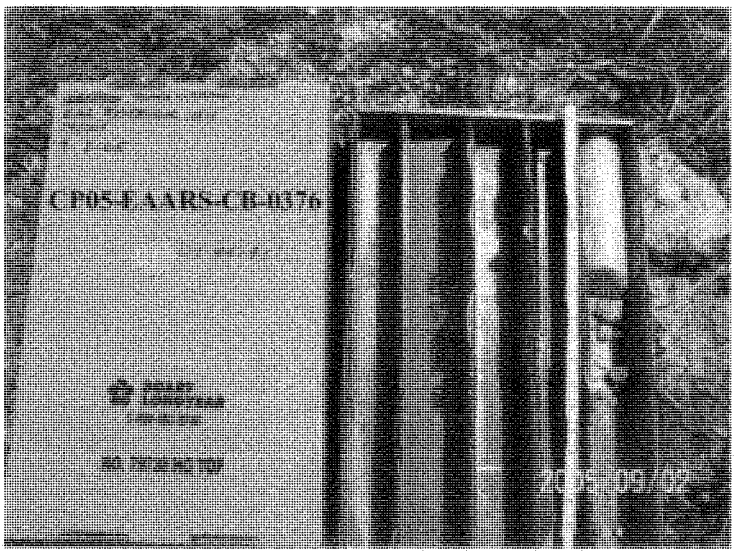
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0373	
Location	Interior	
Depth (feet)	**Percentage Recovery**	**RQD**
4.50 to 9.50	80.00	54.00
9.50 to 14.50	26.00	17.00



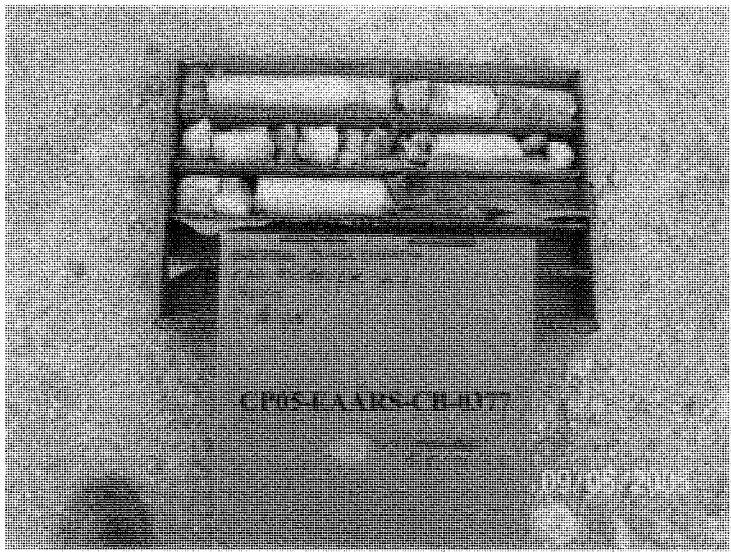
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0374	
Location	Interior	
Depth (feet)	**Percentage Recovery**	**RQD**
5.50 to 10.50	53.00	26.00
10.50 to 15.50	10.00	0



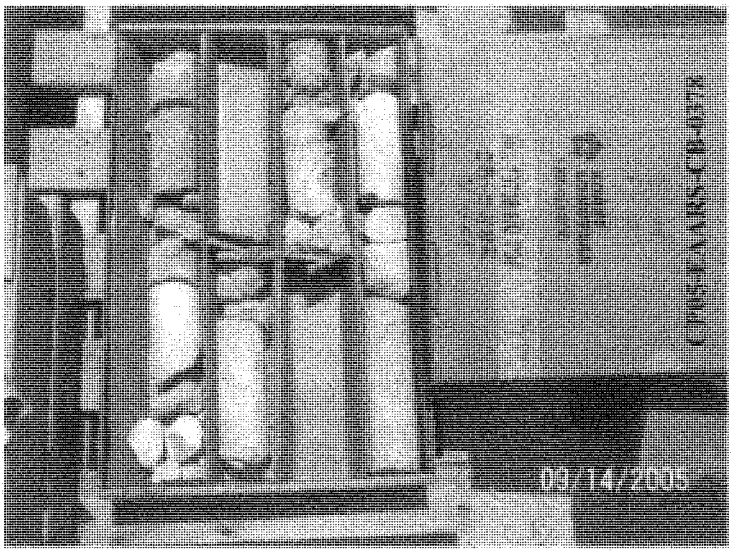
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0375	
Location	West Section Interior	
Depth (feet)	Percentage Recovery	RQD
4.50 to 9.50	58.00	28.00



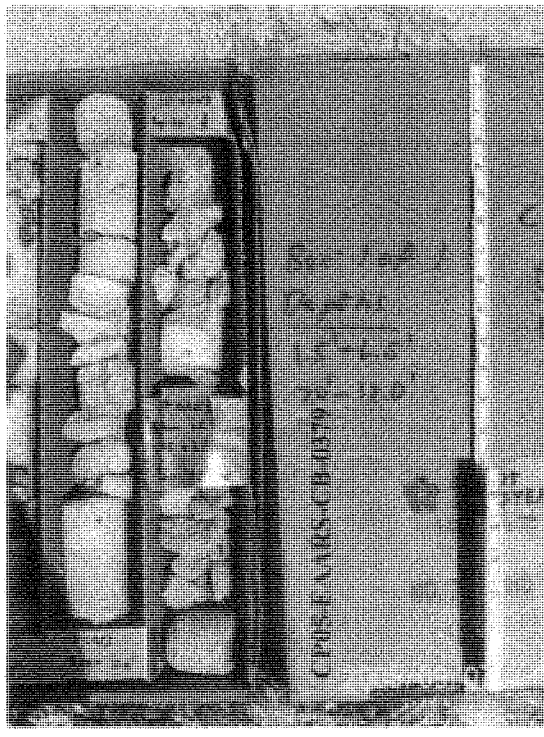
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0376	
Location	West Section Interior	
Depth (feet)	Percentage Recovery	RQD
4.50 to 9.50	73.00	73.00



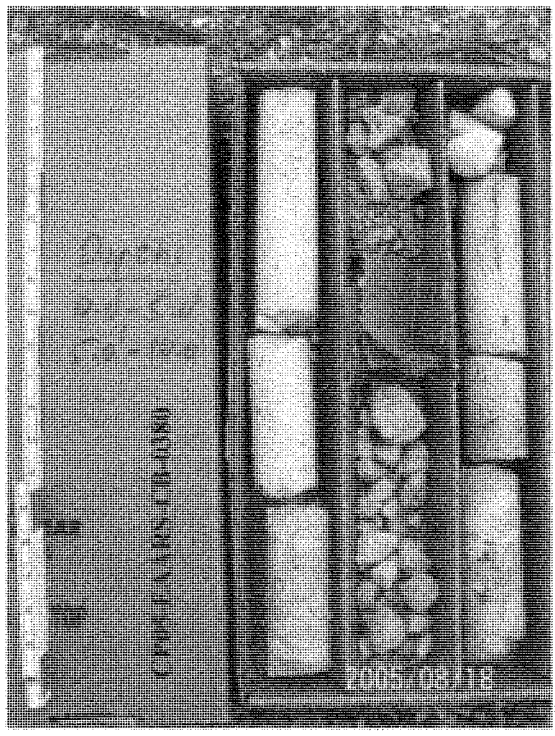
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0377	
Location	Interior	
Depth (feet)	**Percentage Recovery**	**RQD**
5.50 to 10.50	60.00	40.00
10.50 to 15.50	40.00	20.00



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0378	
Location	West Central Section	
Depth (feet)	**Percentage Recovery**	**RQD**
6.00 to 11.00	64.00	35.00

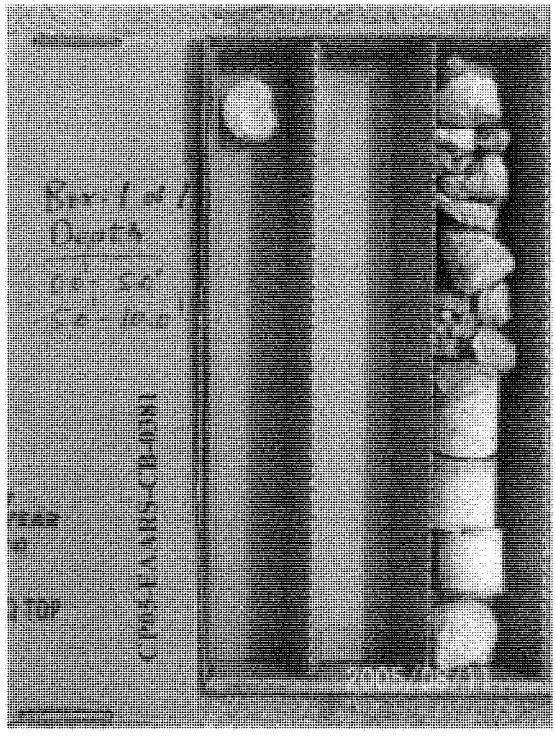


Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0379	
Location	East Central Section	
Depth (feet)	**Percentage Recovery**	**RQD**
1.50 to 6.50	16.00	0
7.00 to 12.00	54.00	8.00

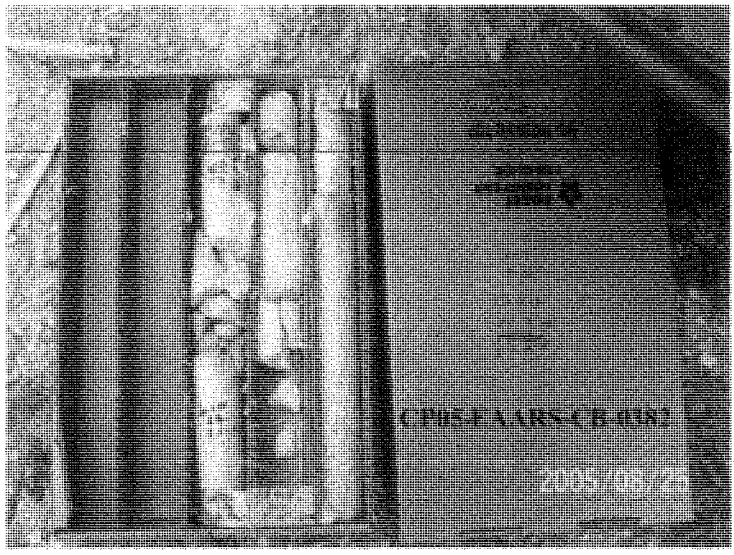


Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0380	
Location	South Side	
Depth (feet)	Percentage Recovery	RQD
5.50 to 10.00	88.00	20.37
10.00 to 12.00	88.00	50.00

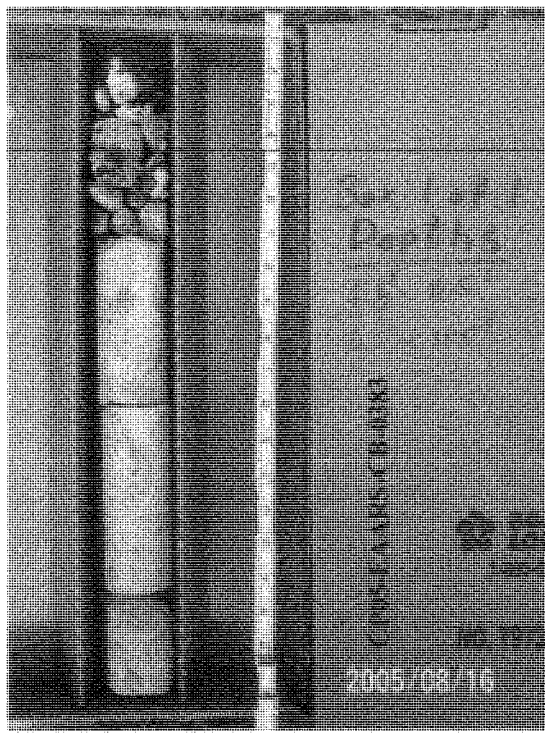
APPENDIX 3
ROCK CORES AND OTHER PHOTOGRAPHS: 381-416



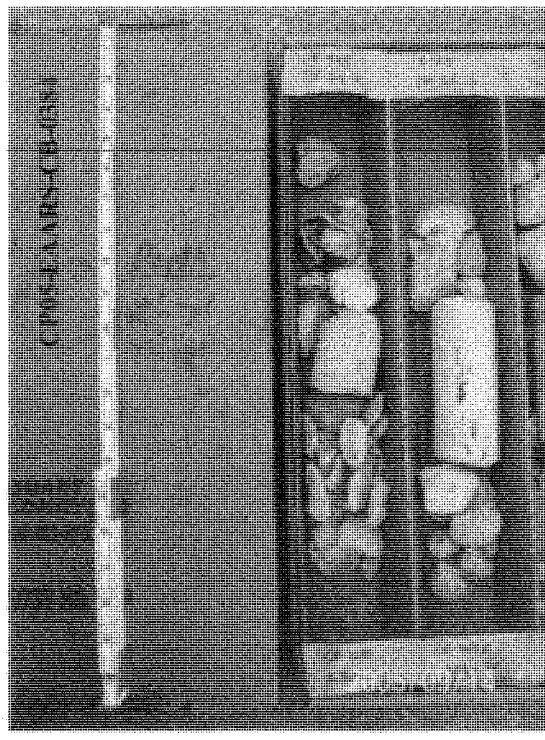
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0381	
Location	East of Test Cell 1	
Depth (feet)	Percentage Recovery	RQD
0.00 to 5.00	38.00	0
5.00 to 10.00	1.00	0



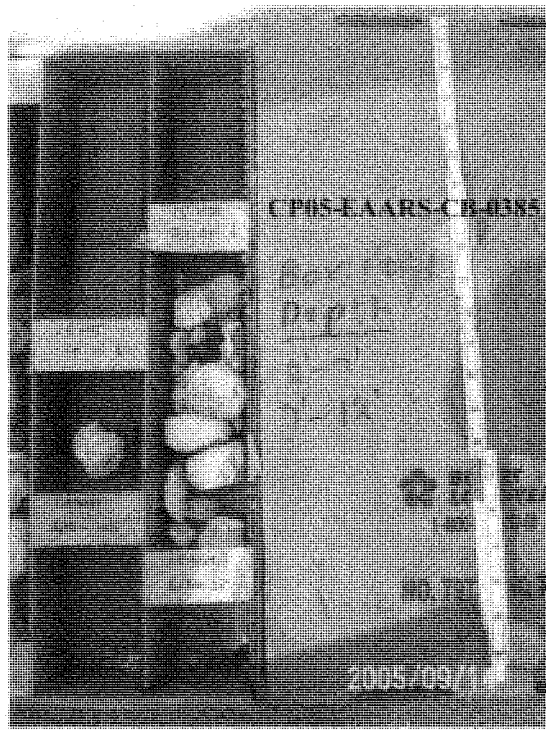
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0382	
Location	South Side	
Depth (feet)	**Percentage Recovery**	**RQD**
5.50 to 10.00	5.00	0
10.00 to 15.00	30.00	26.00



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0383	
Location	West Side	
Depth (feet)	Percentage Recovery	RQD
1.50 to 6.50	38.00	20.00
6.50 to 11.50	0	0



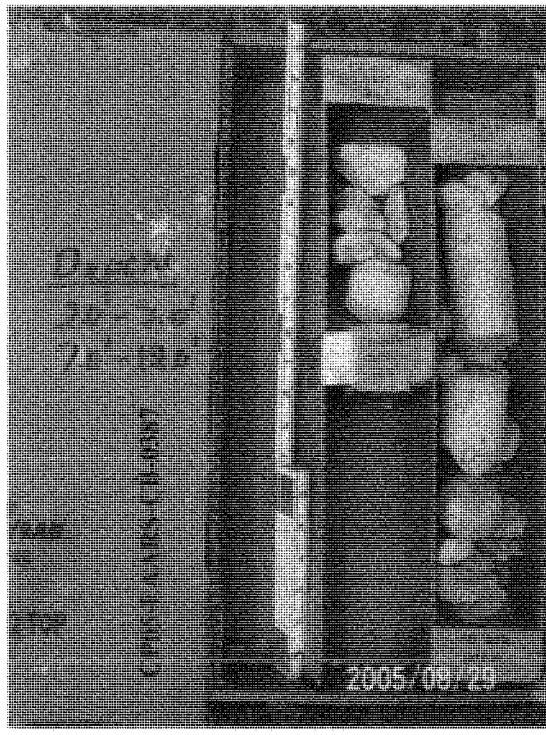
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0384	
Location	East Side	
Depth (feet)	Percentage Recovery	RQD
2.00 to 7.00	24.00	10.00
7.00 to 12.00	24.00	0



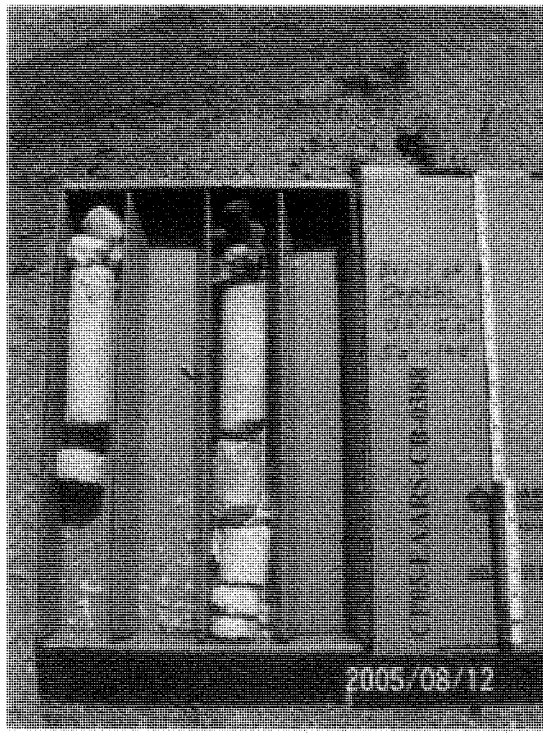
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0385	
Location	Interior	
Depth (feet)	Percentage Recovery	RQD
2.00 to 7.00	16.00	0
7.00 to 12.00	2.00	0



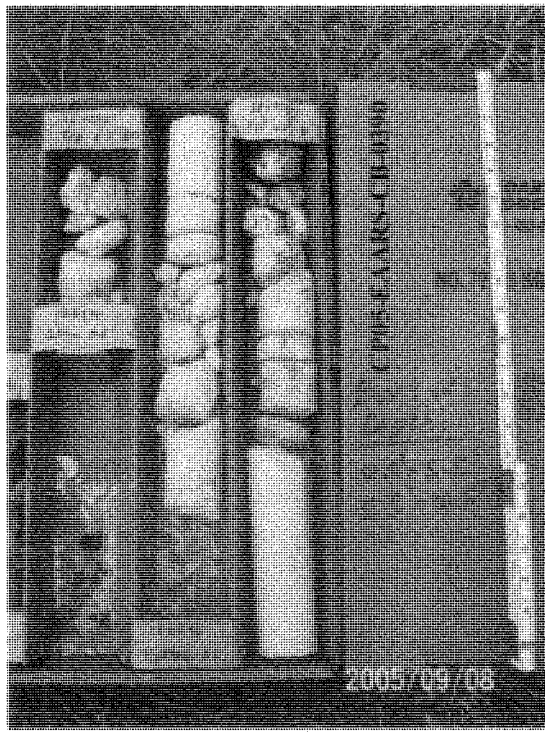
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0386	
Location	West Side Interior	
Depth (feet)	**Percentage Recovery**	**RQD**
1.10 to 6.10	36.00	7.00



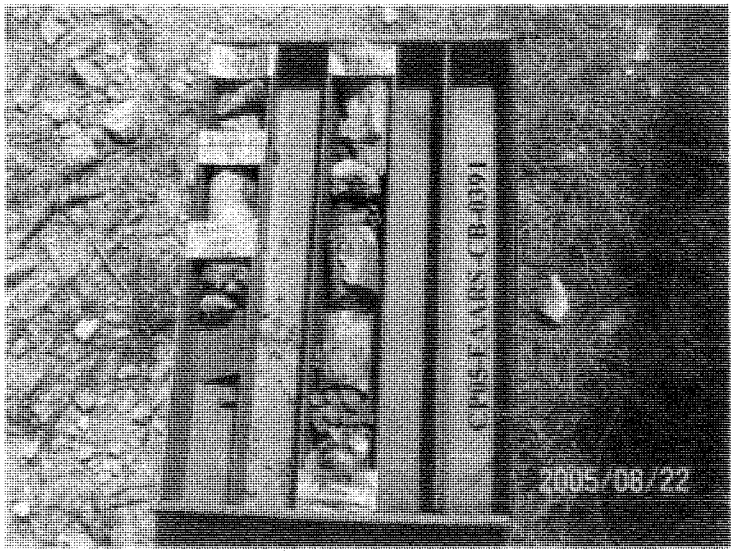
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0387	
Location	North-East Section Interior	
Depth (feet)	Percentage Recovery	RQD
2.00 to 7.00	28.00	8.00
7.00 to 12.00	12.00	0



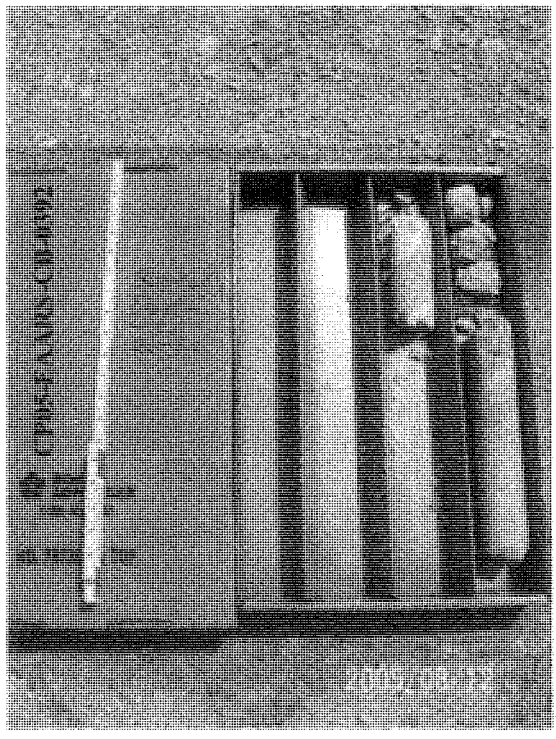
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0388	
Location	West of Test Cell 1	
Depth (feet)	Percentage Recovery	RQD
0.00 to 5.00	38.00	13.00
5.00 to 10.00	24.00	14.00



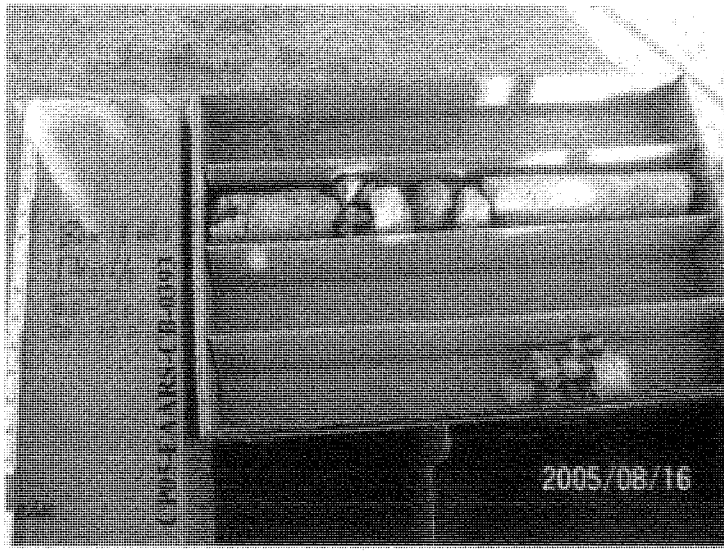
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0390	
Location	North West Section	
Depth (feet)	**Percentage Recovery**	**RQD**
0.50 to 5.50	68.00	20.00
5.50 to 10.50	12.00	0



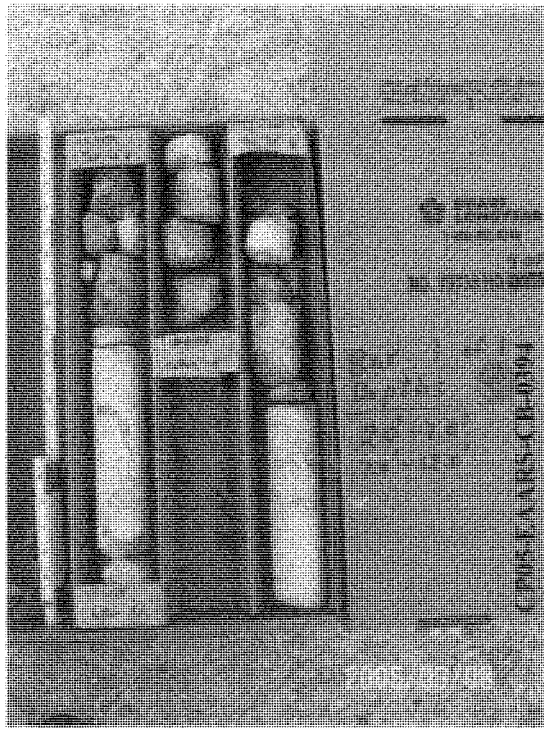
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0391	
Location	South Side	
Depth (feet)	Percentage Recovery	RQD
5.50 to 10.50	20.00	0



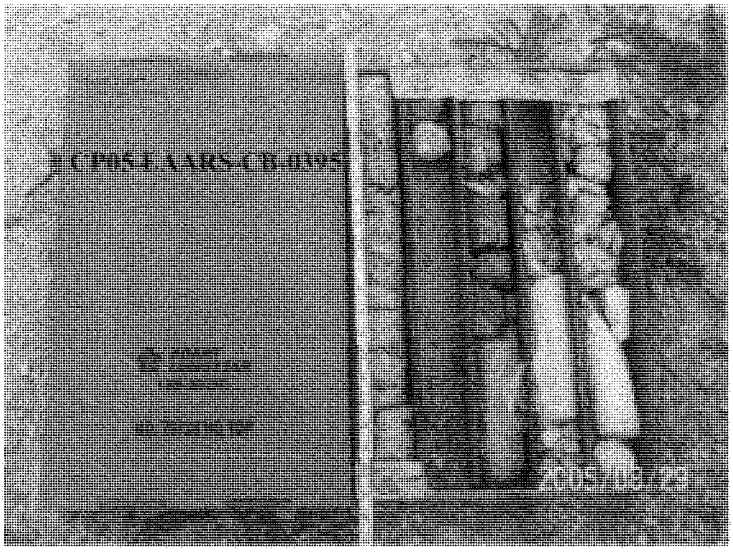
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0392	
Location	North of Test Cell 1	
Depth (feet)	Percentage Recovery	RQD
0.00 to 5.00	48.00	30.00
5.00 to 10.00	0	0



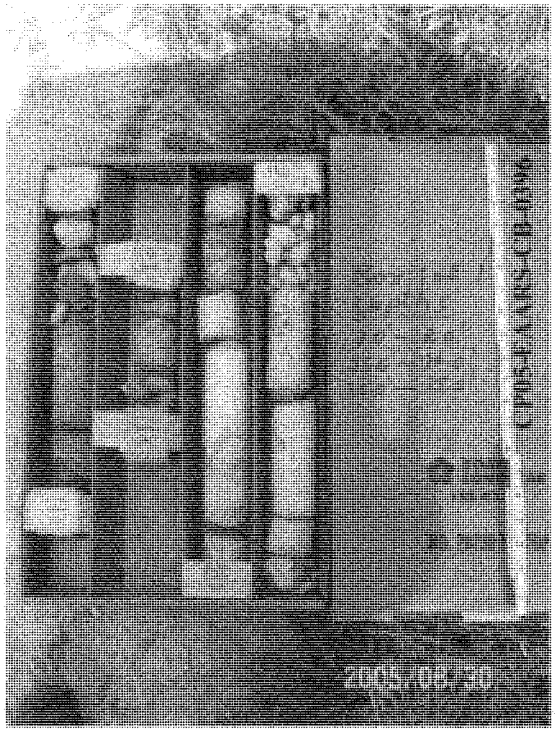
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0393	
Location	South of Test Cell 2	
Depth (feet)	**Percentage Recovery**	**RQD**
0.00 to 5.00	40.00	22.00
5.00 to 10.00	6.00	0



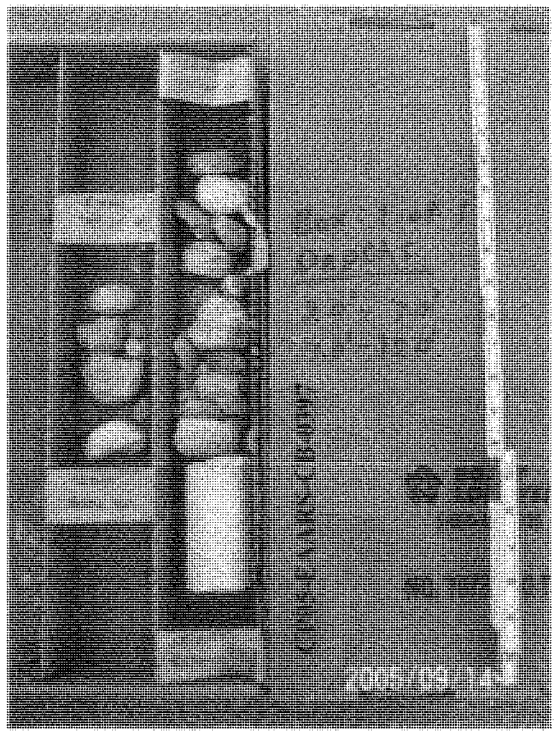
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0394	
Location	East Side	
Depth (feet)	Percentage Recovery	RQD
2.00 to 7.00	50.00	15.00
7.00 to 12.00	38.00	15.00



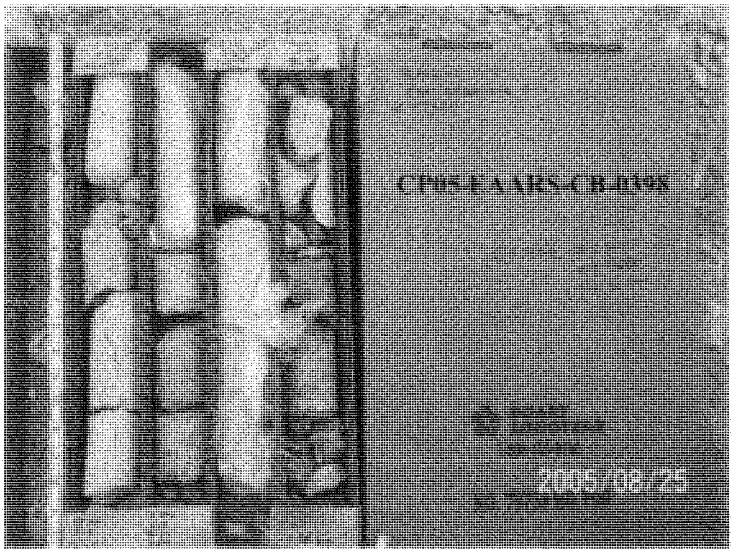
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0395	
Location	North-East Interior	
Depth (feet)	**Percentage Recovery**	**RQD**
8.00 to 13.00	36.00	20.00
13.00 to 18.00	18.00	13.00
30.00 to 35.00	29.00	13.00
35.00 to 40.00	40.00	24.00



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0396	
Location	East Side	
Depth (feet)	Percentage Recovery	RQD
3.00 to 8.00	80.00	28.00
25.00 to 30.00	11.00	0
30.00 to 35.00	26.00	10.00



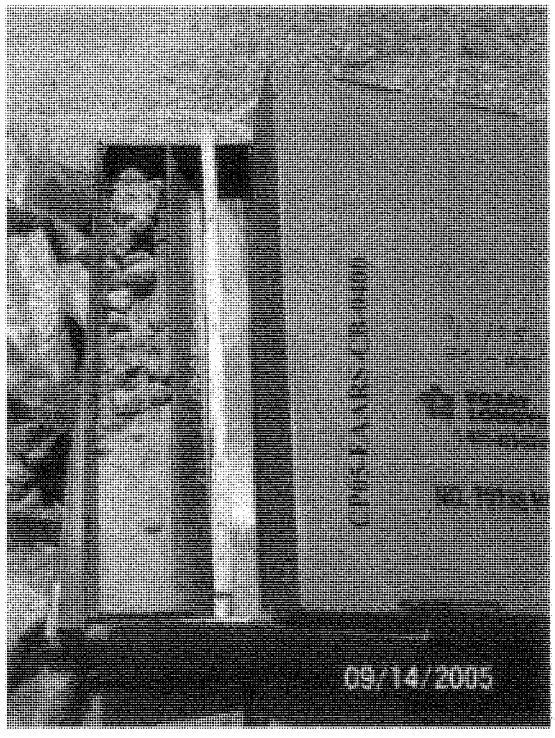
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0397	
Location	Interior	
Depth (feet)	Percentage Recovery	RQD
2.00 to 7.00	24.00	8.00
7.00 to 12.00	6.00	0



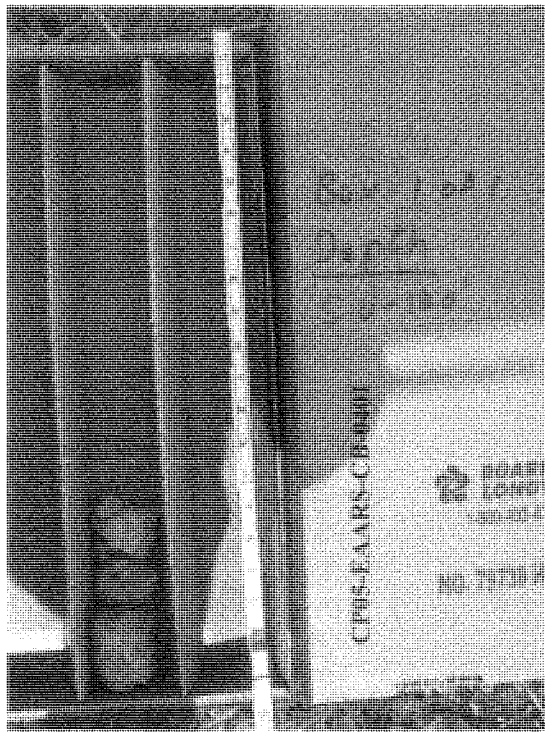
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0398	
Location	South Side	
Depth (feet)	**Percentage Recovery**	**RQD**
5.00 to 7.00	25.00	0
7.00 to 12.00	60.00	45.00
12.00 to 17.00	29.00	19.00



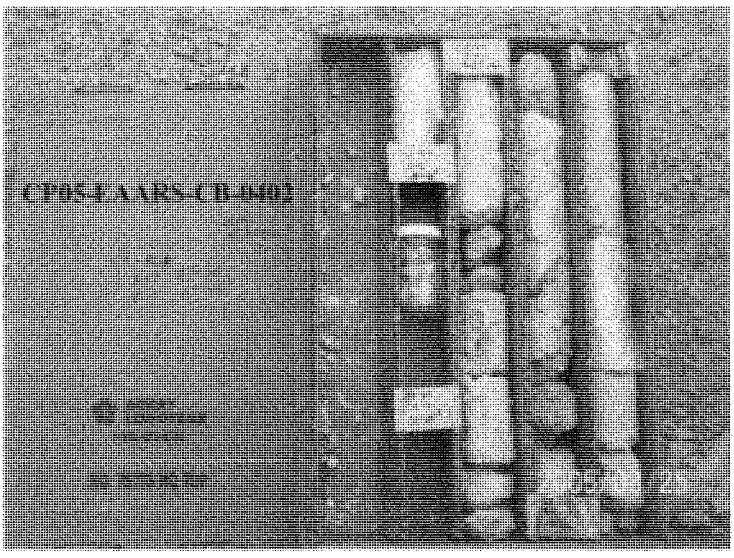
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0399	
Location	South-West Corner	
Depth (feet)	Percentage Recovery	RQD
6.00 to 9.00	66.67	19.44
9.00 to 13.00	31.25	12.50



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0400	
Location	West Central Farm Road	
Depth (feet)	**Percentage Recovery**	**RQD**
4.00 to 9.00	40.00	0
9.00 to 15.00	45.00	13.33
15.00 to 20.00	80.00	25.00
20.00 to 25.00	20.00	0



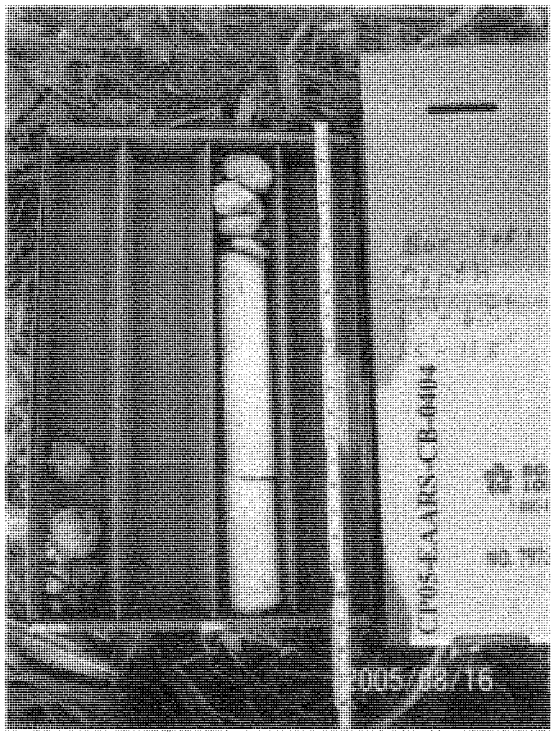
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0401	
Location	West Side	
Depth (feet)	Percentage Recovery	RQD
5.00 to 10.00	10.00	0



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0402	
Location	South Side	
Depth (feet)	**Percentage Recovery**	**RQD**
5.00 to 10.00	44.00	32.00
10.00 to 15.00	10.00	0



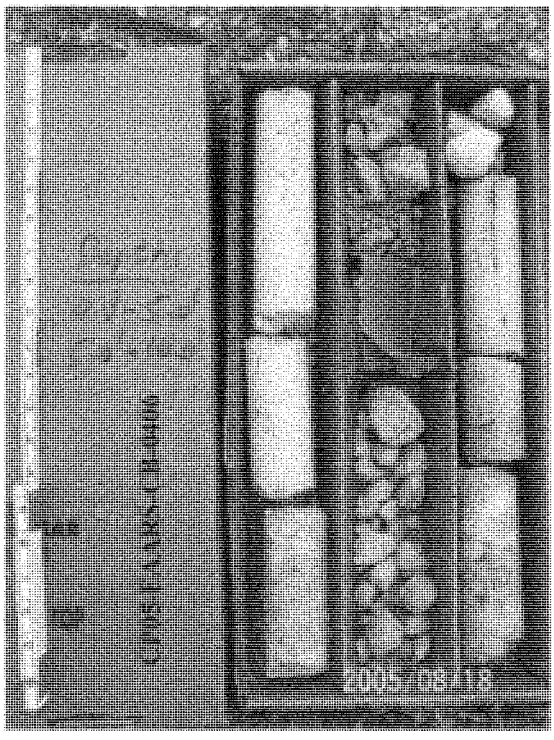
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0403	
Location	West Central Side	
Depth (feet)	Percentage Recovery	RQD
5.00 to 10.00	55.00	25.00



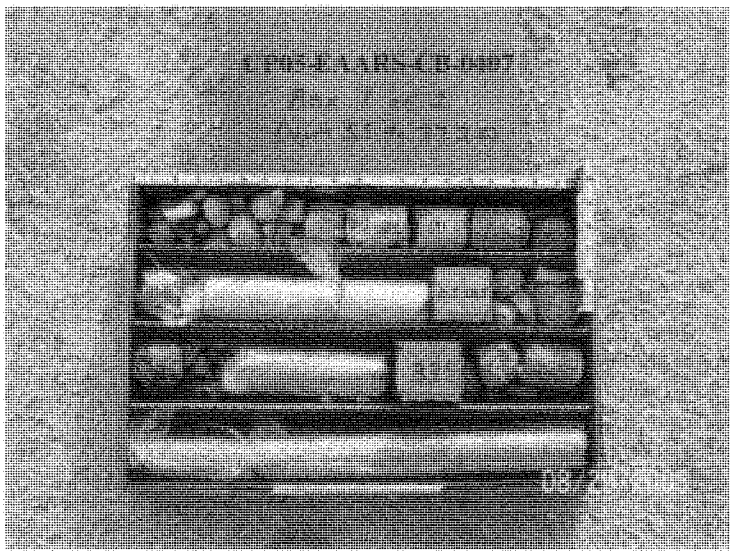
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0404	
Location	West Side	
Depth (feet)	Percentage Recovery	RQD
1.50 to 6.50	42.00	28.00
6.50 to 11.50	6.00	0



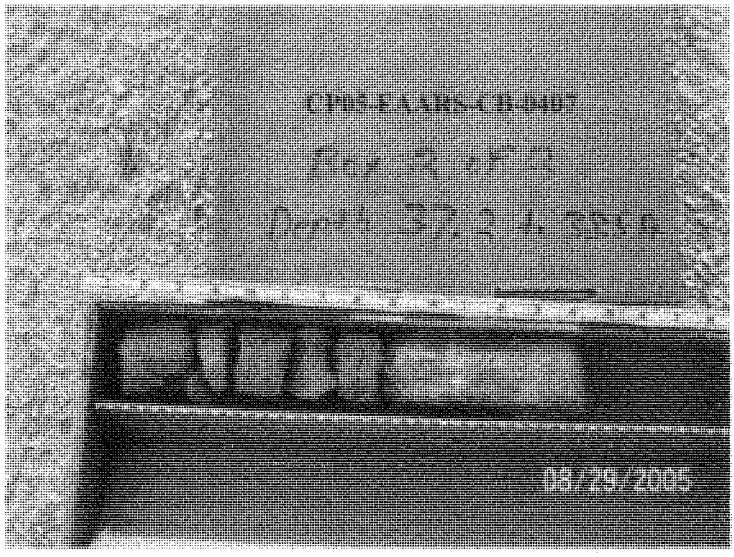
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0405	
Location	Interior	
Depth (feet)	**Percentage Recovery**	**RQD**
4.00 to 9.00	45.00	13.00
9.00 to 14.00	34.00	9.00
25.00 to 30.00	10.00	0
30.00 to 35.00	0	0



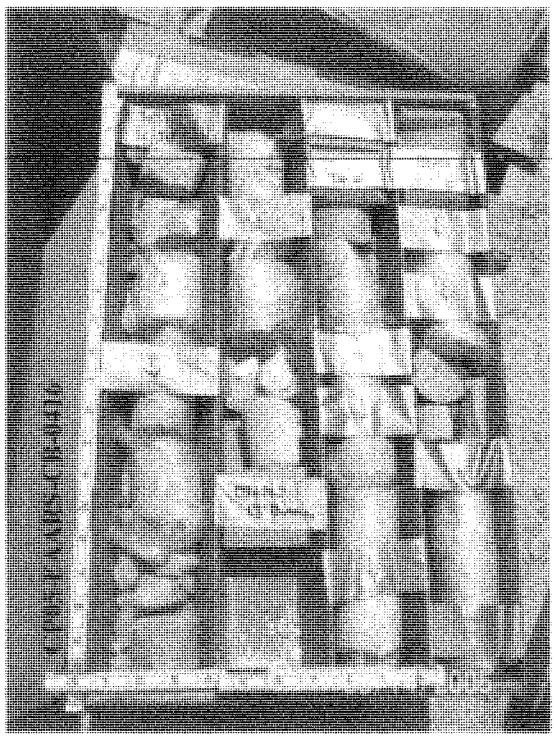
Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0406	
Location	North Section Interior	
Depth (feet)	Percentage Recovery	RQD
0.00 to 5.00	46.00	30.00
5.00 to 10.00	52.00	35.00



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0407 (Box 1 of 2)	
Location	East Side	
Depth (feet)	**Percentage Recovery**	**RQD**
5.50 to 10.50	50.00	18.00
28.50 to 33.50	28.00	14.00
33.50 to 38.50	74.00	48.00



Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0407 (Box 2 of 2)	
Location	East Side	
Depth (feet)	**Percentage Recovery**	**RQD**
5.50 to 10.50	50.00	18.00
28.50 to 33.50	28.00	14.00
33.50 to 38.50	74.00	48.00

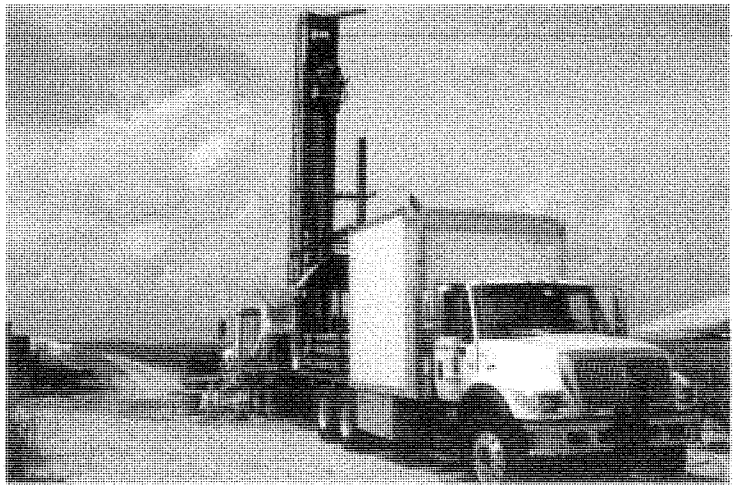


Project	Everglades Agricultural Area	
Boring Number	CP05-EAARS-CB-0416	
Location	South Levee Road	
Depth (feet)	Percentage Recovery	RQD
12.00 to 17.00	61.67	49.17

APPENDIX 3
OTHER PHOTOGRAPHS

Rotosonic Drilling Technique

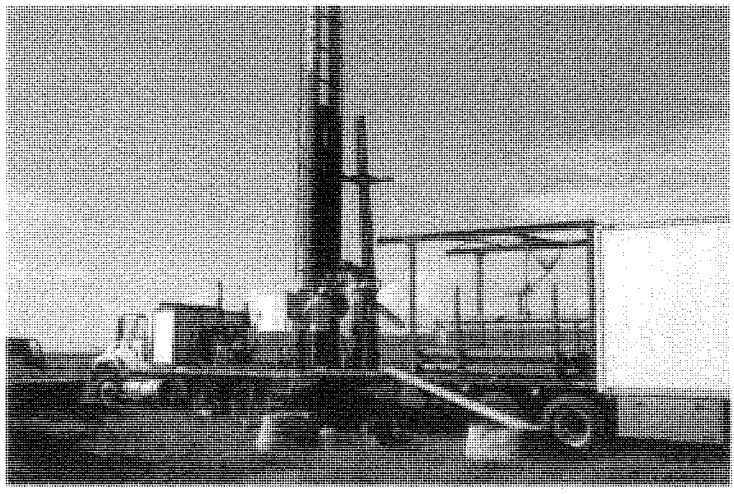
Setup of the Rotosonic Drill Rig



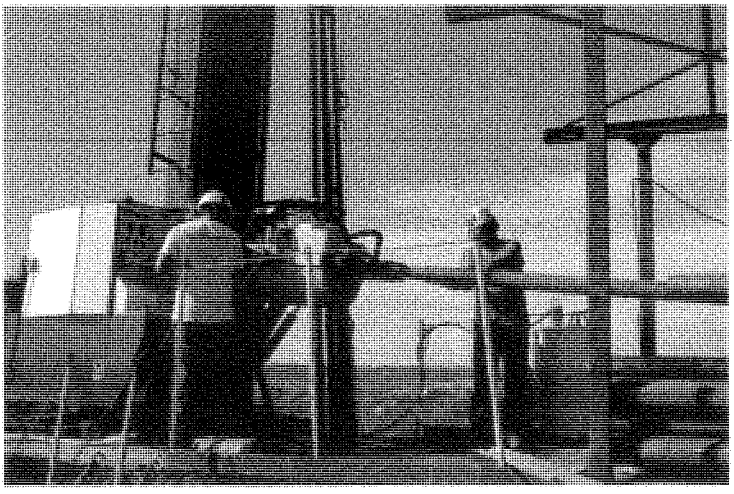
Setup of the Rotosonic Drill Rig



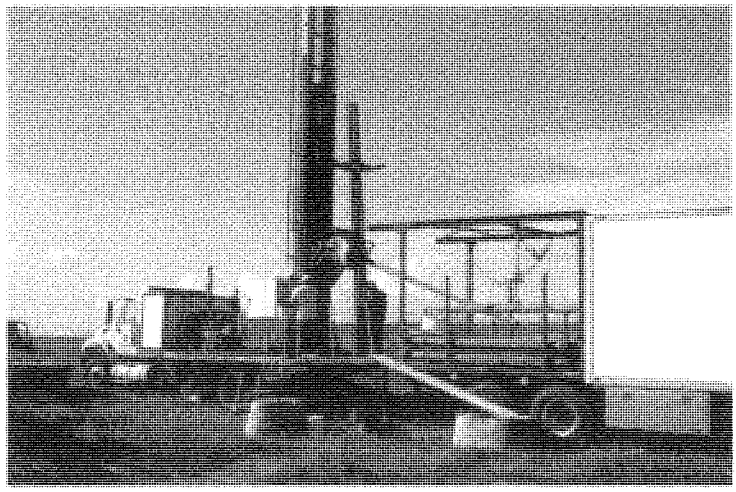
Hydraulic arm used for lifting



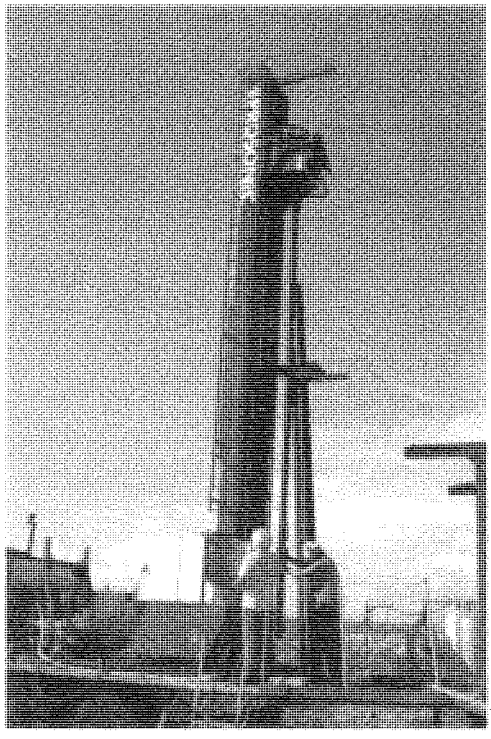
Attaching the next core barrel extension



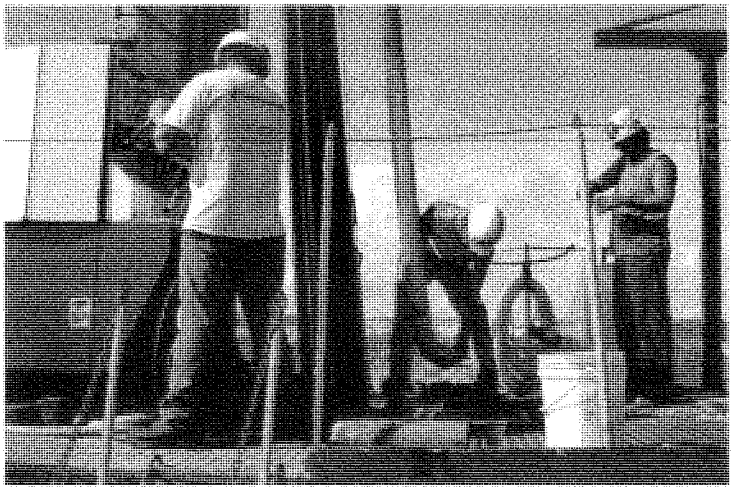
Using the hydraulics to lift the core barrel extension piece



Lowering casing into the borehole



Core Recovery in Progress



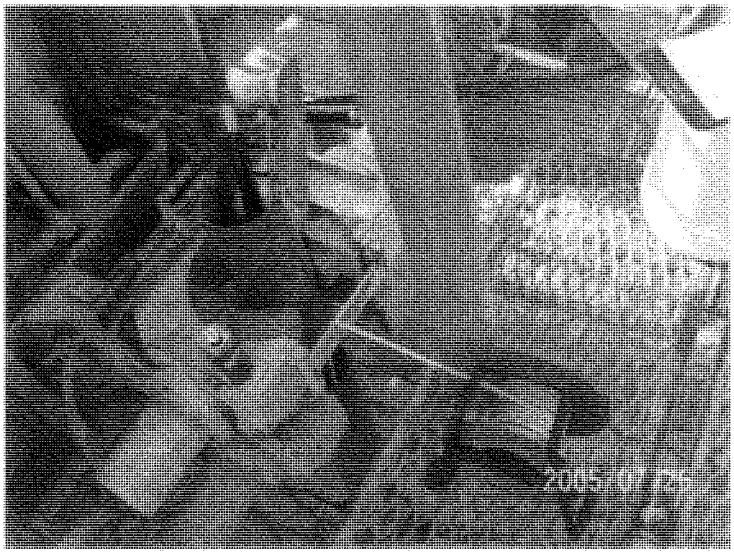
Core after bagging



Core recovered from the Rotosonic drilling


2005/06/04

Hydraulic Testing

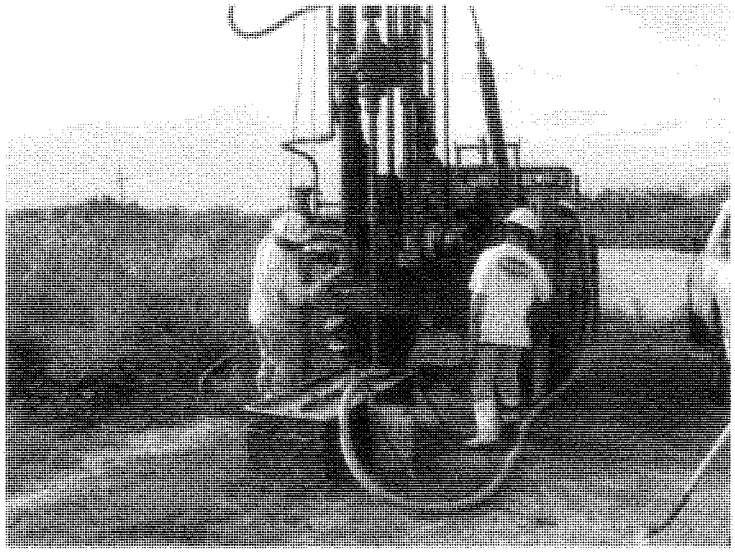


Rotary Wash Boring

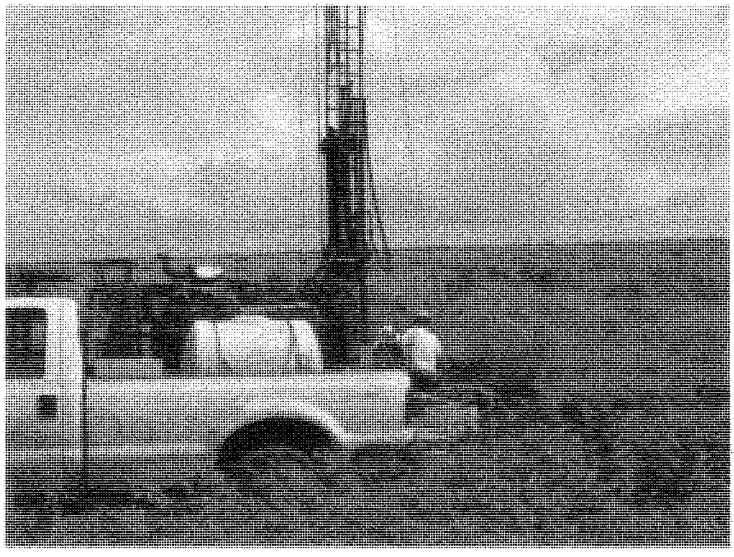
Setting up a Diedrich D-50 drill rig



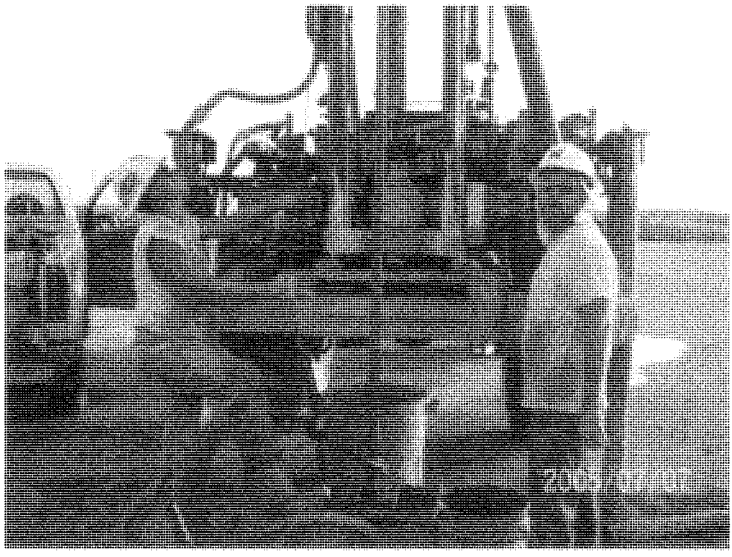
Drilling with bentonite mud



Diedrich D-50 drill rig with water supply tank



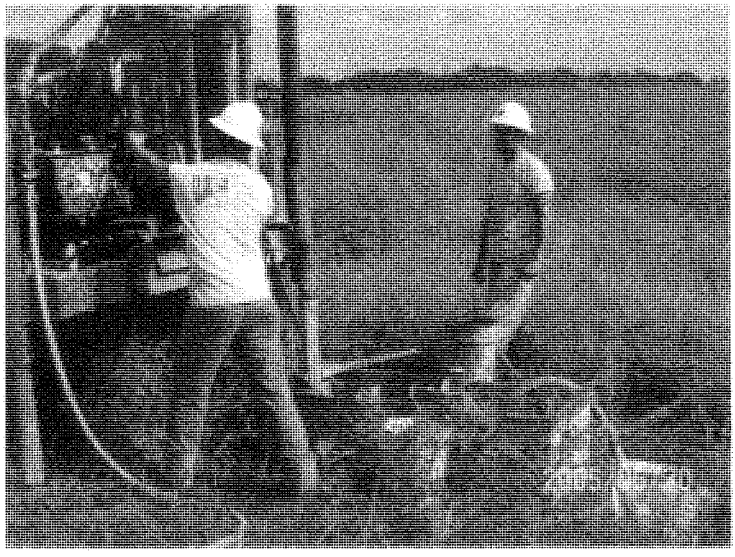
Grouting a hole



Pulling drill rods



Setting up for coring



APPENDIX 4

APPENDIX 4
HYDRAULIC INTERVAL TESTS

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Project	Everglades AA Reservoir A-1	Pumping Test Well	RB-0282
Project No.	142204		
Client	SFWMD	Interval Test	From 60
			To 70

Location	Eastside	Coordinates	East 778268	North 766998	Sheet 1 of 2		
Casing Depth	60	Reference Point	Drilling Platform				
Open Hole Depth	64 After test	Height Above Ground Level	5ft				
Screen Depth							
Pump Setting Depth	20	Pump Details	Diameter	3"	Discharge	Flowmeter	No
			Capacity	15gpm		Volume Tank	Yes
Static Water Level	8.2		Generator	6000	Water Level	Transducer	No

Reference Clock Time			Data from when the pumping started					
Date	Time Hrs.	Time Min.	Elapsed Time Minutes	Water Level Feet	Drawdown Feet	Flow Meter Reading	Discharge	Notes
07/30/2005	9	51	0.00	8.2	0		0	
			0.25	10	1.8			
			0.50	10.33	2.13			
			0.75	10.44	2.24			
			1.00	10.49	2.29			
			1.50	10.52	2.32			
			2.00	10.55	2.35			
			2.50	10.58	2.38			
			3.00	10.58	2.38			
			3.50	10.59	2.39			
			4.00	10.59	2.39			
			4.50	10.6	2.4			
			5.00	10.6	2.4			
			5.50	10.6	2.4			
			6.00	10.61	2.41			
			8.00	10.64	2.44			
			10.00	10.65	2.45		18	Check Flow Rate
			12.00	10.66	2.46			2 minutes for 36 gallons
			14.00	10.65	2.45			
			16.00	10.68	2.48			
			18.00	10.68	2.48			
			20.00	10.66	2.46		18	Check Flow Rate
			25.00	10.64	2.44			3 minutes for 54 gallons
			30.00	10.64	2.44			Check Flow Rate
			35.00	10.66	2.46			
			40.00	10.5	2.3			
			45.00	10.48	2.28			
			50.00	10.46	2.26			
			55.00	10.46	2.26			
			60.00	10.46	2.26		18	Check Flow Rate
			75.00	10.45	2.25			1 minute for 18 gallons
	11	21	90.00	10.45	2.25			

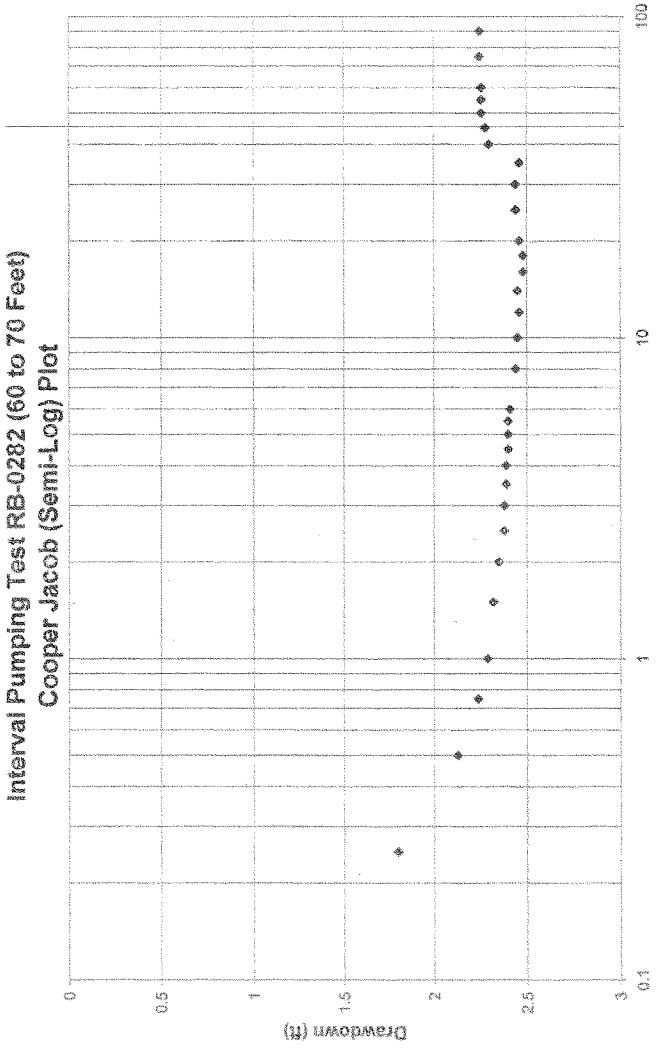
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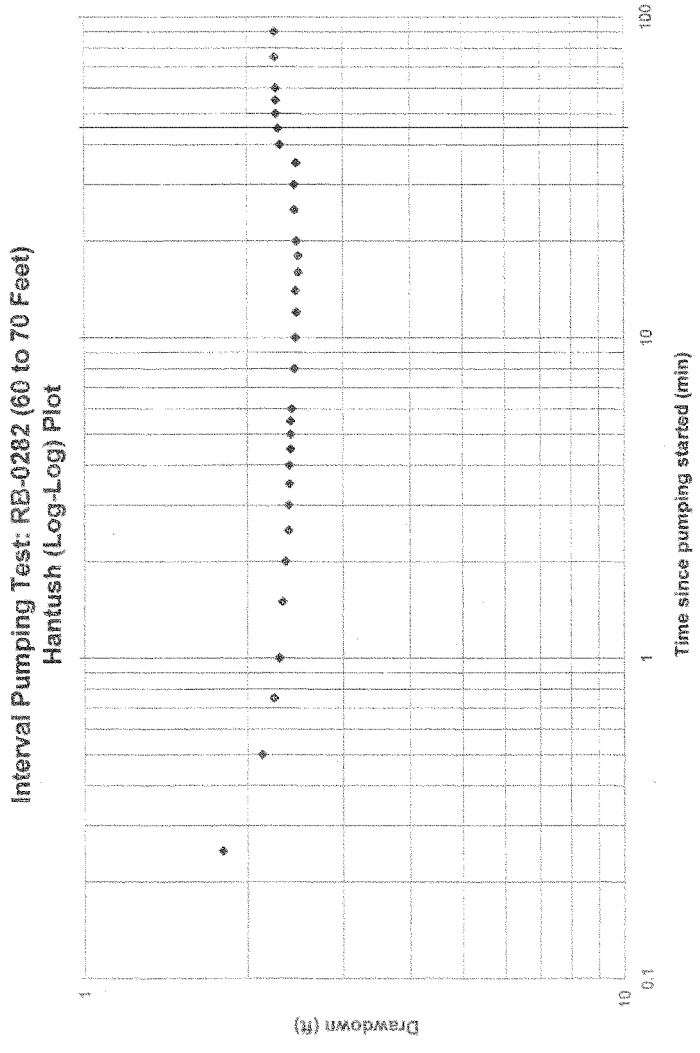
Project	Everglades AA Reservoir A-1	Pumping Test Well	RB-0282
Project No.	142204		
Client	SFWMD	Interval Test	From 60
			To 70

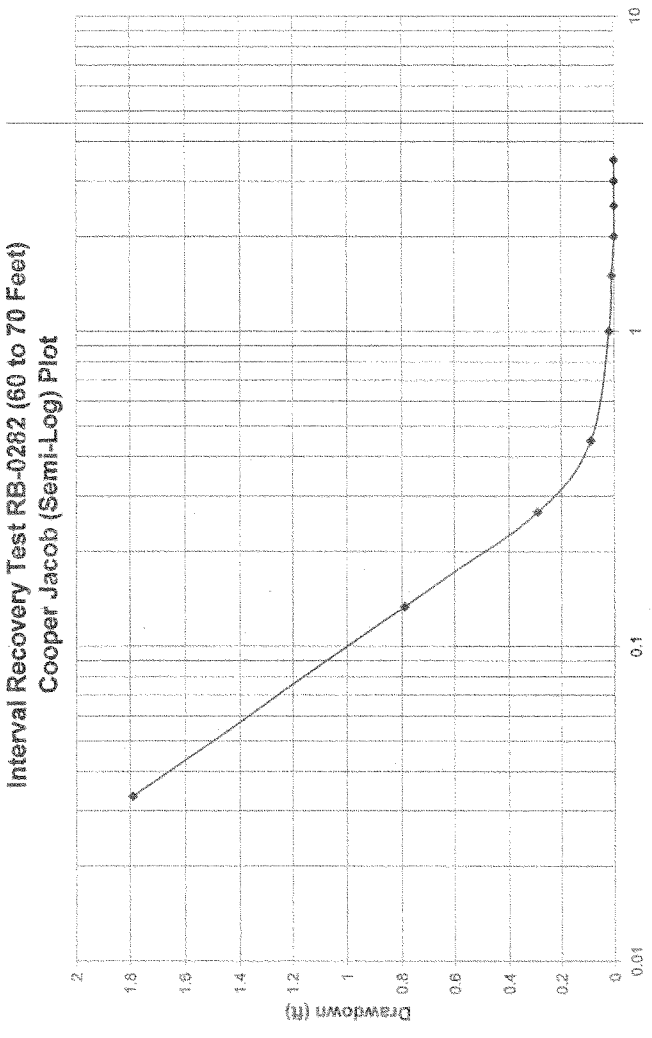
Sheet 2 of 2

Location	Eastside	Coordinates	East 778268	North 766996			
Casing Depth	60	Reference Point	Drilling Platform				
Open Hole Depth	64 After test	Height Above Ground Level	5ft				
Screen Depth							
Pump Setting Depth	20	Pump Details	Diameter	3"	Discharge	Flowmeter	No
			Capacity	15gpm		Volume Tank	Yes
Static Water Level	8.2		Generator		Water Level	Transducer	Yes

Reference Clock Time			Data from when the pumping stopped.			Not Applicable		
Date	Time Hrs.	Time Min.	Elapsed Time Minutes	Water Level Feet	Recovery Feet	Flow Meter Reading	Discharge	Notes
07/30/2005	11	21	0.00	10.45	2.25		18	Last Flow Rate
			0.03	10	1.8			
			0.13	9	0.8			
			0.26	8.5	0.3			
			0.45	8.3	0.1			
			1.00	8.23	0.03			
			2.00	8.22	0.02			
			3.00	8.21	0.01			
			4.00	8.205	0.005			
			5.00	8.21	0.01			
			6.00	8.21	0.01			
			7.00	8.21	0.01			
			8.00	8.21	0.01			
			9.83	8.21	0.01			
			10.00	8.21	0.01			
			12.00	8.21	0.01			
	11	35	14.00	8.21	0.01			
			16.83					
			18.83					
			20.00					
			25.00					
			30.00					


Interval Pumping Test RB-0282 (60 to 70 Feet)
Cooper Jacob (Semi-Log) Plot
Drawdown (ft)
0
0.5
1
1.5
2
2.5
3
0.1
1
10
100
Time since pumping started (min)


Interval Pumping Test: RB-0282 (60 to 70 Feet)
Hantush (Log-Log) Plot
Drawdown (ft)
Time since pumping started (min)
1
10
0.1
1
10
100


Interval Recovery Test RB-0282 (60 to 70 Feet)
Cooper Jacob (Semi-Log) Plot
Drawdown (ft)
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.01
0.1
1
10
Time (min)

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Project	Everglades AA Reservoir A-1	Pumping Test Well	RB-0282
Project No.	142204		
Client	SFWMD	Interval Test	From 80
			To 90

Location	Eastside	Coordinates	East 778266	North 766996	Sheet 1 of 2		
Casing Depth	80	Reference Point	Drilling Platform				
Open Hole Depth	87 After test	Height Above Ground Level	5ft				
Screen Depth							
Pump Setting Depth	20	Pump Details	Diameter	3"	Discharge	Flowmeter	No
			Capacity	15gpm		Volume Tank	Yes
Static Water Level	8.21		Generator	6000	Water Level	Transducer	No

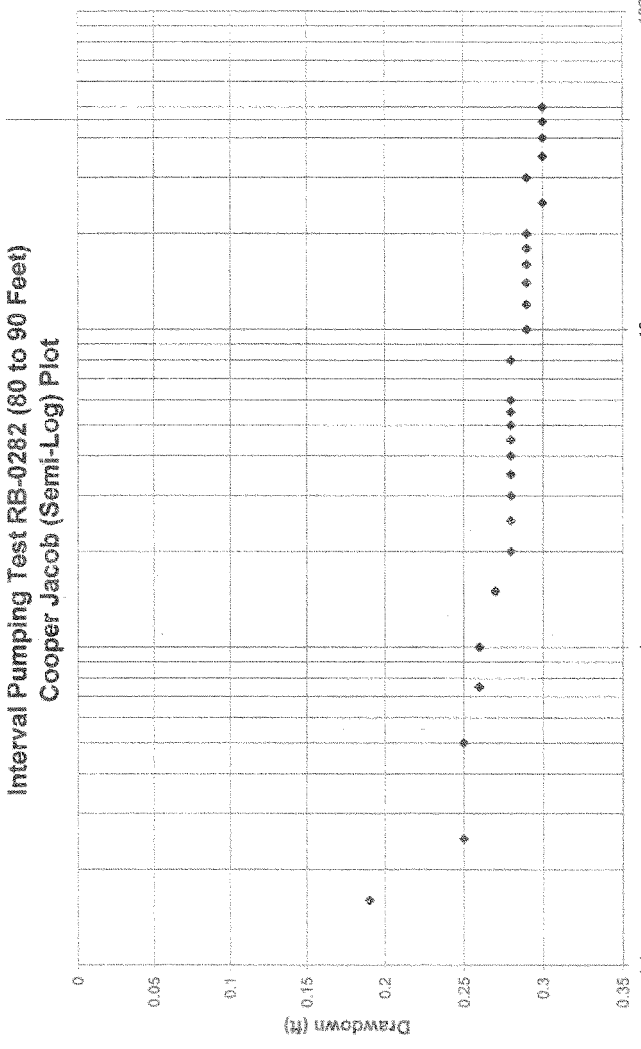
Reference Clock Time			Data from when the pumping started					
Date	Time Hrs	Time Min	Elapsed Time Minutes	Water Level Feet	Drawdown Feet	Flow Meter Reading	Discharge	Notes
07/30/2005	13	14	0.00	8.21	0		0	
			0.16	8.4	0.19			
			0.25	8.46	0.25			
			0.50	8.46	0.25			
			0.75	8.47	0.26			
			1.00	8.47	0.26			
			1.50	8.48	0.27			
			2.00	8.49	0.28			
			2.50	8.49	0.28			
			3.00	8.49	0.28			
			3.50	8.49	0.28			
			4.00	8.49	0.28			H_2S smell,
			4.50	8.49	0.28			turns black on
			5.00	8.49	0.28			exposure to air
			5.50	8.49	0.28			
			6.00	8.49	0.28			
			8.00	8.49	0.28			
			10.00	8.5	0.29		18	Check Flow Rate
			12.00	8.5	0.29			1 minute for 18 gallons
			14.00	8.5	0.29			
			16.00	8.5	0.29			
			18.00	8.5	0.29			
			20.00	8.5	0.29		18	Check Flow Rate
			25.00	8.51	0.3			2 minutes for 36 gallons
			30.00	8.5	0.29			Check Flow Rate
			35.00	8.51	0.3			
			40.00	8.51	0.3			
			45.00	8.51	0.3			
			50.00	8.51	0.3			
			55.00					
			60.00					Check Flow Rate

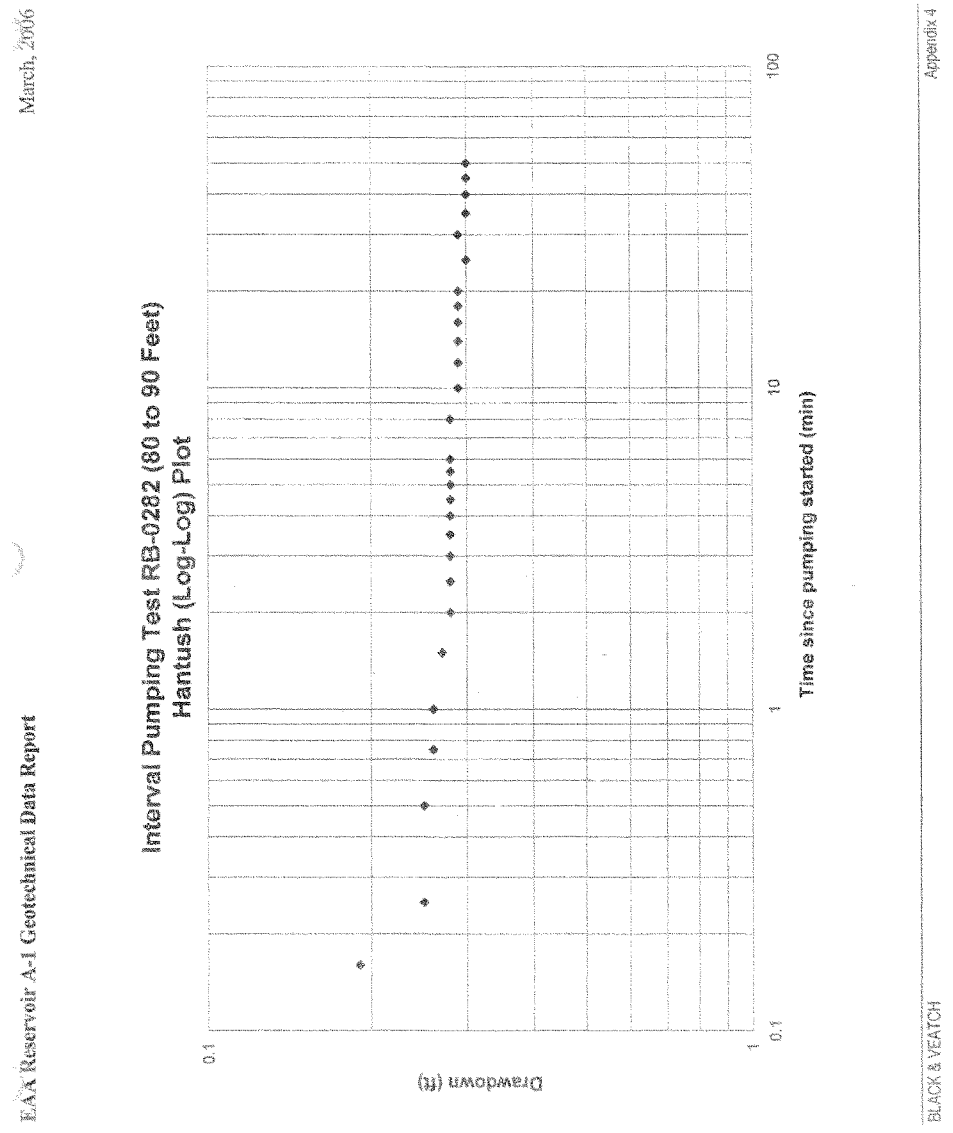
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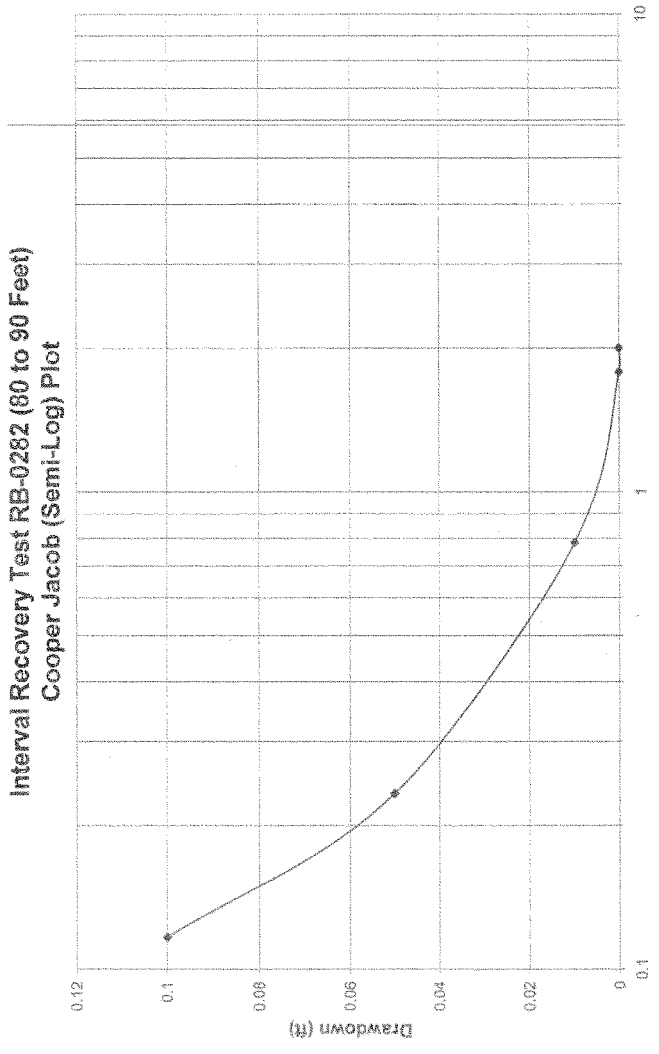
Project	Everglades AA Reservoir A-1	Pumping Test Well	RB-0282
Project No.	142204		
Client	SFWMD	Interval Test From	80
		To	90

Location	Eastside	Coordinates	East 776268	North 768996	Sheet 2 of 2		
Casing Depth	80	Reference Point	Drilling Platform				
Open Hole Depth	87 After test	Height Above Ground Level	5ft				
Screen Depth							
Pump Setting Depth	20	Pump Details	Diameter	3"	Discharge	Flowmeter	No
			Capacity	15gpm		Volume Tank	Yes
Static Water Level	8.21		Generator		Water Level	Transducer	No

Reference Clock Time			Data from when the pumping stopped.			Not Applicable		
Date	Time Hrs.	Time Min.	Elapsed Time Minutes	Water Level Feet	Recovery Feet	Flow Meter Reading	Discharge	Notes
07/30/2005			0.00	8.51	0.3		18	Last Flow Rate
			0.01	8.4	0.19			
			0.11	8.35	0.14			
			0.23	8.3	0.09			
			0.78	8.26	0.05			
			1.66	8.25	0.04			
			2.00	8.25	0.04			
			3.00	8.25	0.04			
			4.00	8.25	0.04			
			5.00	8.24	0.03			
			6.00	8.24	0.03			
			7.00	8.24	0.03			
			8.00	8.24	0.03			
			9.83	8.24	0.03			
			10.00	8.24	0.03			
			12.00	8.25	0.04			
			14.00	8.25	0.04			
			16.83	8.25	0.04			
			18.83	8.25	0.04			
			20.00	8.25	0.04			
			25.00	8.25	0.04			
			30.00	8.25	0.04			


Interval Pumping Test RB-0282 (80 to 90 Feet)
Cooper Jacob (Semi-Log) Plot
Drawdown (ft)
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.1
1
10
100
Time since pumping started (min)


EAA Reservoir A-1 Geotechnical Data Report
March, 2006
Interval Pumping Test RB-0282 (80 to 90 Feet)
Hantush (Log-Log) Plot
Drawdown (ft)
0.1
1
0.1
1
10
100
Time since pumping started (min)
Appendix 4
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Interval Recovery Test RB-0282 (80 to 90 Feet)
Cooper Jacob (Semi-Log) Plot
Drawdown (ft)
0.12
0.1
0.08
0.06
0.04
0.02
0
0.1
1
10
Time (min)

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Project	Everglades AA Reservoir A-1	Pumping Test Well	RB-0282
Project No.	142004		
Client	SFWMD	Interval Test	From 120ft
			To 130ft

				East	North	Sheet 1 of 3		
Location	Eastside	Coordinates		778268	766996			
Casing Depth	120	Reference Point		Breakout				
Open Hole Depth	130 After test	Height Above Ground Level		5				
Screen Depth								
Pump Setting Depth	50	Pump Details	Diameter	2"	Discharge	Flowmeter	No	
			Capacity	2gpm		Volume Tank	Yes	
Static Water Level	8.21		Generator	12 volt	Water Level	Transducer	No	

Reference Clock Time			Data from when the pumping started					
Date	Time Hrs.	Min.	Elapsed Time Minutes	Water Level Feet	Drawdown Feet	Flow Meter Reading	Discharge	Notes
Jul-31	10	24	0.00	8.19	0		0	
			0.33	8.93	0.74			
			0.66	9.62	1.43			
			0.75					
			1.00	10.28	2.09			
			1.50	11.33	3.14			
			2.00	12.47	4.28			
			2.50	13.43	5.24			
			3.00	14.06	5.87			
			3.50	14.81	6.62			
			4.00	15.54	7.35			
			4.50	16.16	7.97			
			5.00	16.79	8.6			
			5.50	17.37	9.18			
			6.00	17.92	9.73			
			8.00	19.83	11.64			9' to 13.5' for 10 gallons
			10.00	21.45	13.26		2.22	Check Flow Rate
			12.00	22.77	14.58			
			14.00	23.69	15.5			
			16.00	24.42	16.23			
			18.00	25.02	16.83		2.42	9' to 17:15 for 20 gallons
			20.00	25.49	17.3			Check Flow Rate
			25.00	26.3	18.11		2.44	9' to 21:15 for 30 gallons
			30.00	26.71	18.52			Check Flow Rate
			35.00	27.1	18.91		2.44	9' to 29:30 for 50 gallons
			40.00	27.38	19.19			
			45.00	27.53	19.34			
			50.00	27.68	19.49			
			55.00	27.75	19.56		2.42	1:08:00 to 1:16:15 for 20 gallons
			60.00	27.81	19.62			Check Flow Rate
			75.00	27.98	19.79			
			90.00	27.94	19.75			
			105.00	27.91	19.72			
			120.00	27.82	19.63			

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Project	Everglades AA Reservoir A-1	Pumping Test Well	RB-0282
Project No.	142004		
Client	SFWMD	Interval Test	From 120ft To 130ft

Location	Eastside	Coordinates	East 778268	North 766996	Sheet 2 of 3			
Casing Depth	120	Reference Point	Breakout					
Open Hole Depth	130 After test	Height Above Ground Level	5					
Screen Depth								
Pump Setting Depth	50	Pump Details	Diameter	2"	Discharge	Flowmeter	No	
			Capacity	2gpm		Volume Tank	Yes	
Static Water Level	8.21		Generator	12 volt	Water Level	Transducer	No	

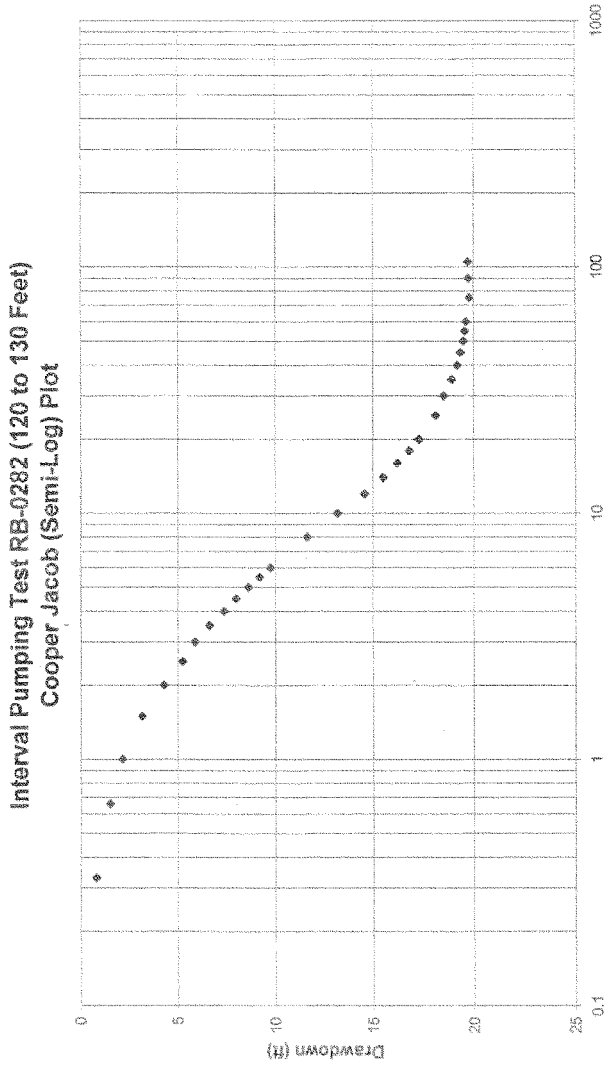
Reference Clock Time			Data from when the pumping stopped.			Not Applicable		
Date	Time Hrs.	Time Min.	Elapsed Time Minutes	Water Level Feet	Recovery Feet	Flow Meter Reading	Discharge	Notes
	12	25	0.00	27.82	19.63			Last Flow Rate
			0.30	27.00	18.81			
			0.60	26.50	18.31			
			0.85	26.00	17.81			
			1.15	25.50	17.31			
			1.47	25.00	16.81			
			2.00	24.05	15.86			
			3.00	22.50	14.31			
			4.00	20.80	12.61			
			5.00	19.55	11.36			
			6.00	18.41	10.22			
			7.00	17.37	9.18			
			8.00	16.41	8.22			
			9.00	15.57	7.38			
			10.00	14.80	6.61			
			12.00	13.46	5.27			
			14.00	12.39	4.20			
			16.00	11.36	3.17			
			18.00	10.62	2.43			
			20.00	10.12	1.93			
			25.00	9.24	1.05			
			30.00	8.76	0.57			
			35.00	8.50	0.31			
			40.00	8.37	0.18			
			50.00	8.27	0.08			
	14		119.00	8.25	0.06			

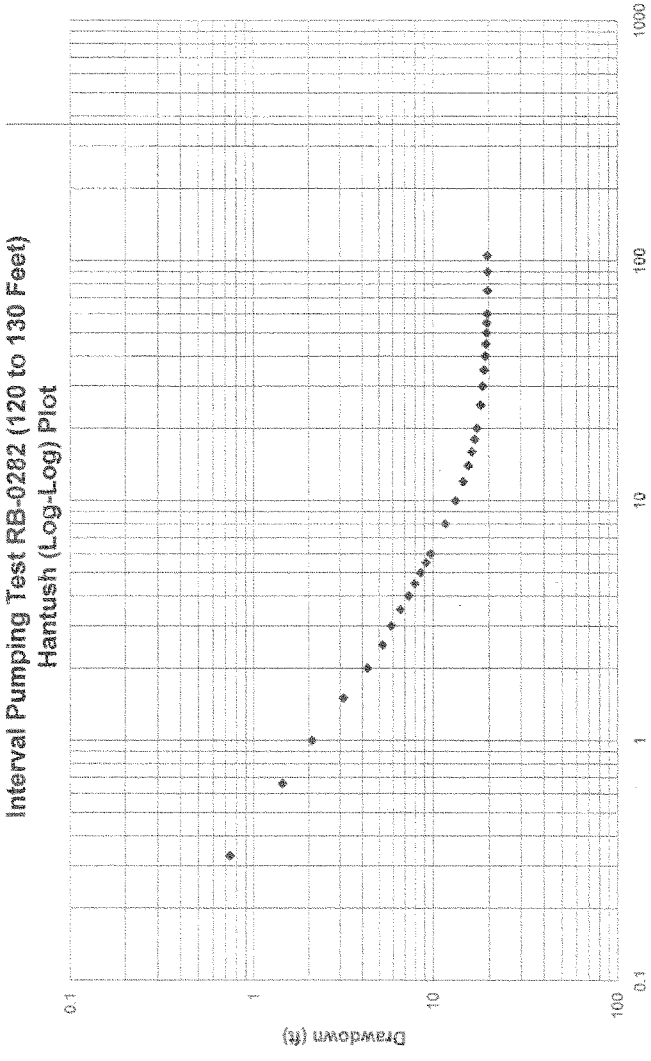
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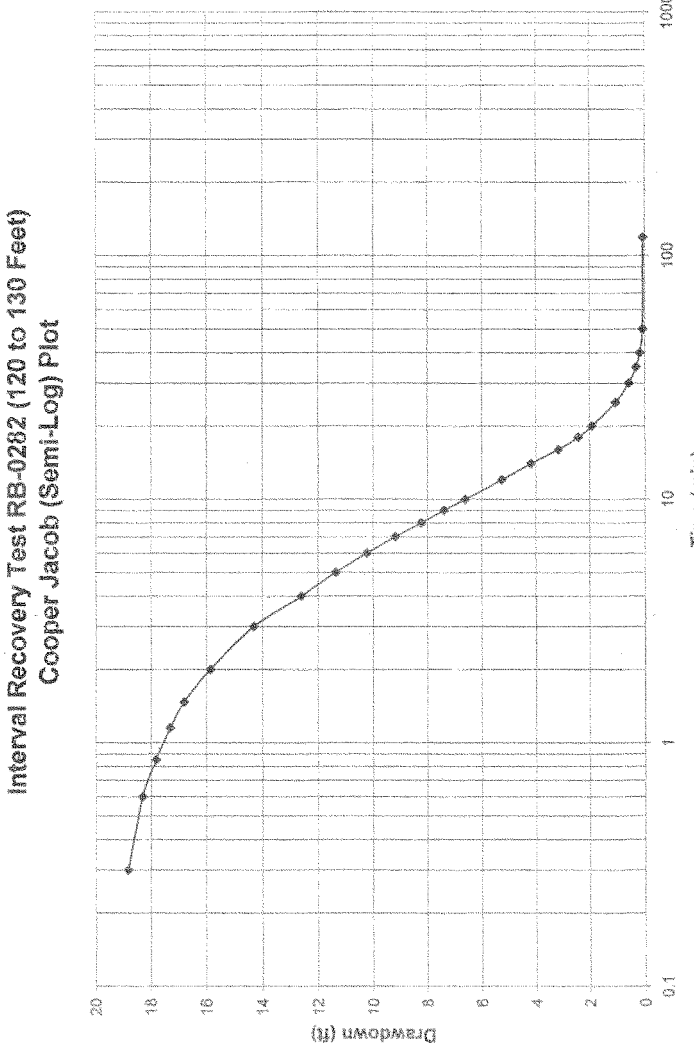
Project	Everglades AA Reservoir A-1	**Pumping Test Well**	RB-0282
Project No.	142004		
Client	SFWMD	**Interval Test**	From 120ft To 130ft

			East	North	Sheet 3 of 3	
Location	Eastside	**Coordinates**	778268	766996		
Casing Depth	120	Reference Point	Breakout			
Open Hole Depth	130 After test	Height Above Ground Level	5			
Screen Depth						
Pump Setting Depth	50	Pump Details Diameter	2"	Discharge	Flowmeter	No
		Capacity	2gpm		Volume Tank	Yes
Static Water Level	8.21	Generator	12 volt	Water Level	Transducer	No

Reference Clock Time			Data from when the pumping stopped			Not Applicable		
Date	Time Hrs	Time Min	Elapsed Time Minutes	Water Level Feet	Recovery Feet	Flow Meter Reading	Discharge	Notes
7/31/05	9	45	0.00	28.88				Last Flow Rate
			4.00					
			6.00					
			6.83					
			9.01					
			10.27					
			11.70					
			13.45					
			15.35					
			17.58					
			21.15					
			27.70					


Interval Pumping Test RB-0282 (120 to 130 Feet)
Cooper Jacob (Semi-Log) Plot
Drawdown (ft)
0
5
10
15
20
25
Time since pumping started (min)
0.1
1
10
100
1000


Interval Pumping Test RB-0282 (120 to 130 Feet)
Hantush (Log-Log) Plot
Drawdown (ft)
Time since pumping started (min)
0.1
1
10
100
0.1
1
10
100
1000


Interval Recovery Test RB-0282 (120 to 130 Feet)
Cooper Jacob (Semi-Log) Plot
Drawdown (ft)
Time (min)
0
2
4
6
8
10
12
14
16
18
20
0.1
1
10
100
1000

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Project	Everglades AA Reservoir A-1	Pumping Test Well	RB-0282
Project No.	142204		
Client	SFWMD	Interval Test From	150
		To	160

Location	Eastside	Coordinates	East 778268	North 766996	Sheet 1 of 2		
Casing Depth	150	Reference Point	Drilling Platform				
Open Hole Depth	156 After test 156	Height Above Ground Level	5ft				
Screen Depth							
Pump Setting Depth	20	Pump Details	Diameter	3"	Discharge	Flowmeter	No
			Capacity	18gpm		Volume Tank	Yes
Static Water Level	7.95		Generator		Water Level	Transducer	No

Reference Clock Time			Data from when the pumping started					
Date	Time Hrs.	Min	Elapsed Time Minutes	Water Level Feet	Drawdown Feet	Flow Meter Reading	Discharge	Notes
1/8/2005	9	0	0.00	7.95	0		0	
			0.25	8.85	0.9			
			0.50	8.89	0.94			
			0.75	8.89	0.94			
			1.00	8.9	0.95			
			1.50	8.91	0.96			
			2.00	8.92	0.97			
			2.50	8.93	0.98			
			3.00	8.94	0.99			
			3.50	8.94	0.99			
			4.00	8.94	0.99			H_2S smell,
			4.50	8.945	0.995			turns black on
			5.00	8.95	1			exposure to air
			5.50	8.95	1			
			6.00	8.95	1			
			8.00	8.95	1			
			10.00	8.96	1.01			Check Flow Rate
			12.00	8.96	1.01			
			14.00	8.95	1			
			16.00	8.95	1		18	2 minutes for 36 gallons
			18.00	8.95	1			
			20.00	8.95	1			Check Flow Rate
			25.00	8.955	1.005			
			30.00	8.96	1.01			Check Flow Rate
			35.00	8.95	1		18	2 minutes for 36 gallons
			40.00	8.95	1			
			45.00	8.96	1.01			
			50.00	8.95	1			
			55.00	8.95	1		18	2 minutes for 36 gallons
			60.00	8.95	1			Check Flow Rate

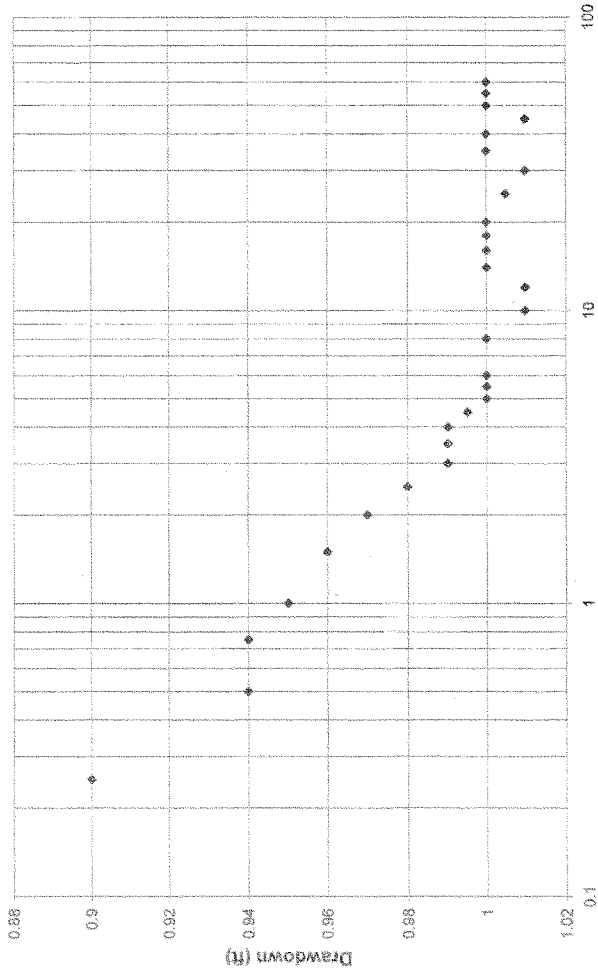
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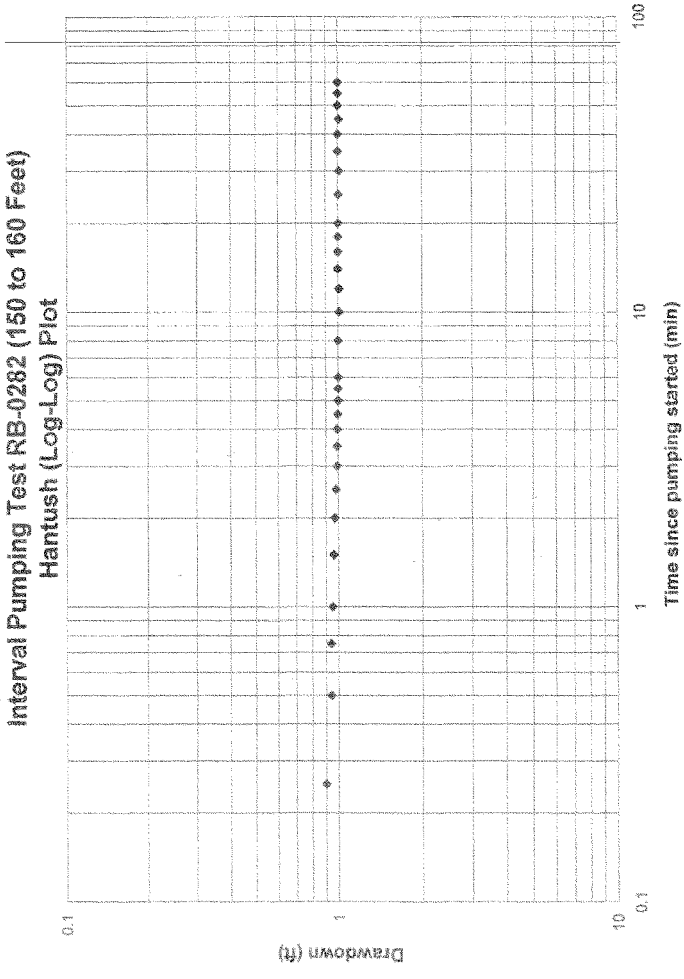
Project	Everglades AA Reservoir A-1	Pumping Test Well	RB-0282
Project No.	142204		
Client	SFWMD	Interval Test	From 150
			To 160

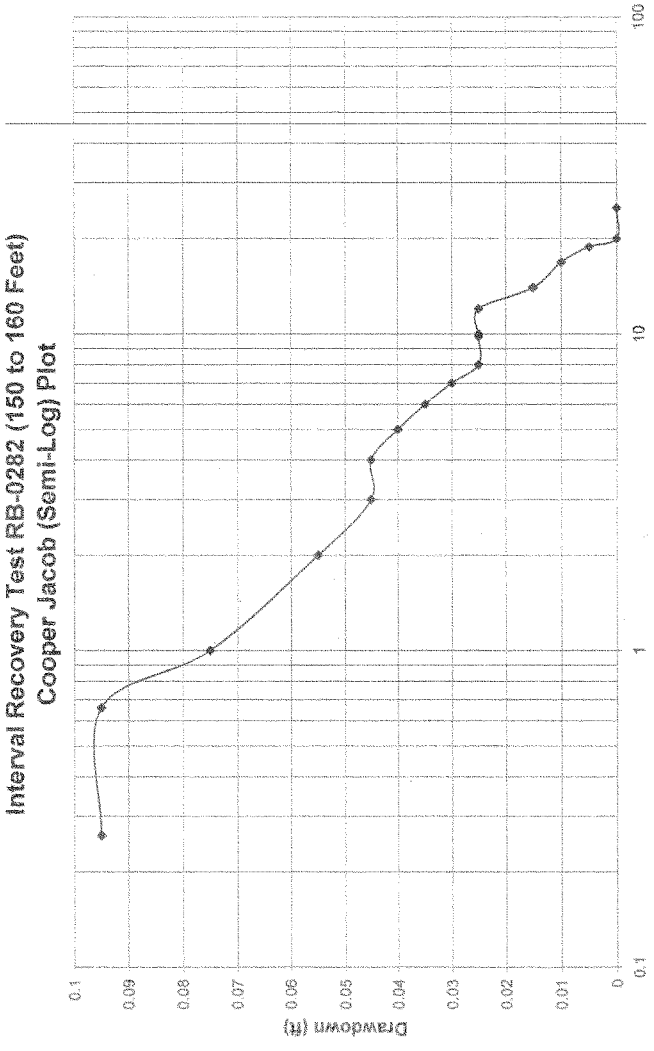
Sheet 2 of 2

Location	Eastside	Coordinates	East 778268	North 768996			
Casing Depth	150	Reference Point	Drilling Platform				
Open Hole Depth	156 After test 156	Height Above Ground Level	5ft				
Screen Depth							
Pump Setting Depth	20	Pump Details	Diameter	3"	Discharge	Flowmeter	No
			Capacity	18gpm		Volume Tank	Yes
Static Water Level	7.95		Generator		Water Level	Transducer	No

Reference Clock Time			Data from when the pumping stopped.			Not Applicable		
Date	Time Hrs	Min	Elapsed Time Minutes	Water Level Feet	Recovery Feet	Flow Meter Reading	Discharge	Notes
1/8/2005	10	0	0.00	8.95	1		18	Last Flow Rate
			0.26	8	0.05			
			0.66	8	0.05			
			1.00	7.98	0.03			
			2.00	7.96	0.01			
			3.00	7.95	0			
			4.00	7.95	0			
			5.00	7.945	-0.005			
			6.00	7.94	-0.01			
			7.00	7.935	-0.015			
			8.00	7.93	-0.02			
			9.83	7.93	-0.02			
			10.00	7.93	-0.02			
			12.00	7.93	-0.02			
			14.00	7.92	-0.03			
			16.83	7.915	-0.035			
			18.83	7.91	-0.04			
			20.00	7.905	-0.045			
			25.00	7.905	-0.045			
			30.00	7.905	-0.045			
			35.00	7.9	-0.05			
			40.00	7.905	-0.045			
			45.00	7.905	-0.045			


Interval Pumping Test RB-0282 (150 to 160 Feet)
Cooper Jacob (Semi-Log) Plot
Drawdown (ft)
0.88
0.9
0.92
0.94
0.96
0.98
1
1.02
0.1
1
10
100
Time since pumping started (min)


Interval Pumping Test RB-0282 (150 to 160 Feet)
Hantush (Log-Log) Plot
Drawdown (ft)
Time since pumping started (min)
0.1
1
10
100
0.1
1
10


Interval Recovery Test RB-0282 (150 to 160 Feet)
Cooper Jacob (Semi-Log) Plot
Drawdown (ft)
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
0.1
1
10
100
Time (min)

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Project	Everglades AA Reservoir A-1	Pumping Test Well	RB-0263
Project No.	142004		
Client	SFWMD	Interval Test	From 40
			To 50

Location	Southside, centre	Coordinates	East 773034	North 750069	Sheet1 of 2			
Casing Depth	40	Reference Point	Breakout					
Open Hole Depth	49 After test 49	Height Above Ground Level	4.8					
Screen Depth								
Pump Setting Depth	30	Pump Details	Diameter	3"	Discharge	Flowmeter	No	
			Capacity	18gpm		Volume Tank	Yes	
Static Water Level	6.39		Generator		Water Level	Transducer	No	

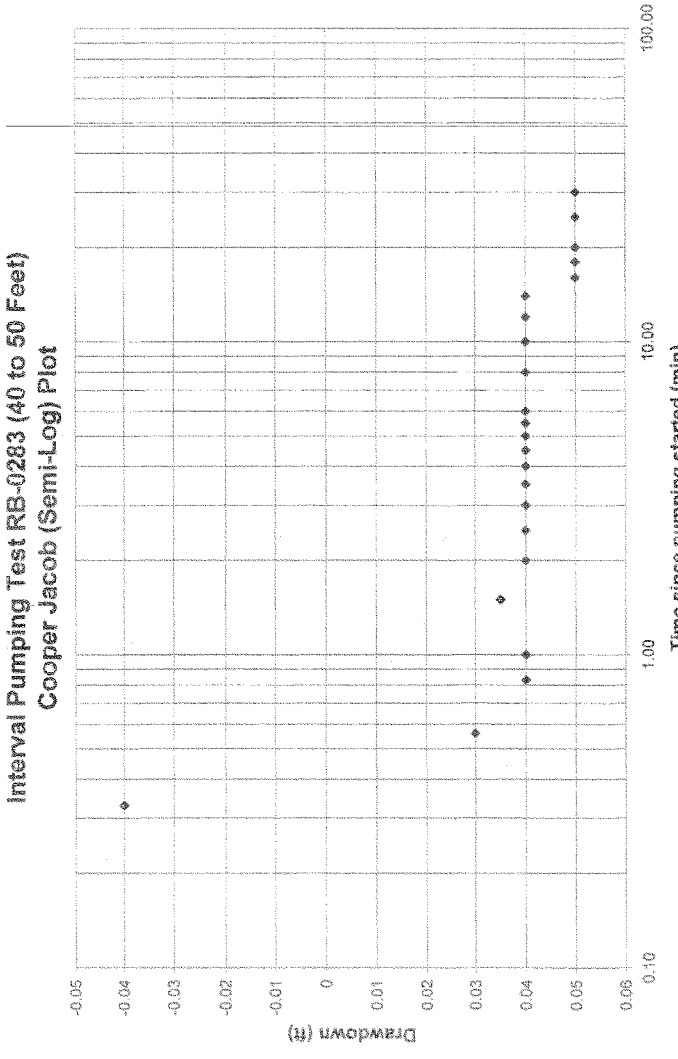
Reference Clock Time			Data from when the pumping started					
Date	Time Hrs	Time Min	Elapsed Time Minutes	Water Level Feet	Drawdown Feet	Flow Meter Reading	Discharge	Notes
12/8/2005	9	0	0.00	6.39	0		0	
			0.33	6.35	-0.04			
			0.56	6.42	0.03			
			0.83	6.43	0.04			
			1.00	6.43	0.04			
			1.50	6.425	0.035			
			2.00	6.43	0.04			
			2.50	6.43	0.04			
			3.00	6.43	0.04			
			3.50	6.43	0.04			
			4.00	6.43	0.04			
			4.50	6.43	0.04			
			5.00	6.43	0.04			
			5.50	6.43	0.04			
			6.00	6.43	0.04			
			8.00	6.43	0.04		18.5	2 minutes for 37 gallons
			10.00	6.43	0.04			Check Flow Rate
			12.00	6.43	0.04			pH=7.63, 25.1°C,EC=927 microS
			14.00	6.43	0.04			
			16.00	6.44	0.05			
			18.00	6.44	0.05		18.75	2 minutes for 37.5 gallons
			20.00	6.44	0.05			Check Flow Rate
			25.00	6.44	0.05			pH=7.43, 25.0°C,EC=892 microS
	9	30	30.00	6.44	0.05			Check Flow Rate
								Check Flow Rate
								Solution reading
							EC	1500 1527
							pH	4 4.16
							pH	7 6.94

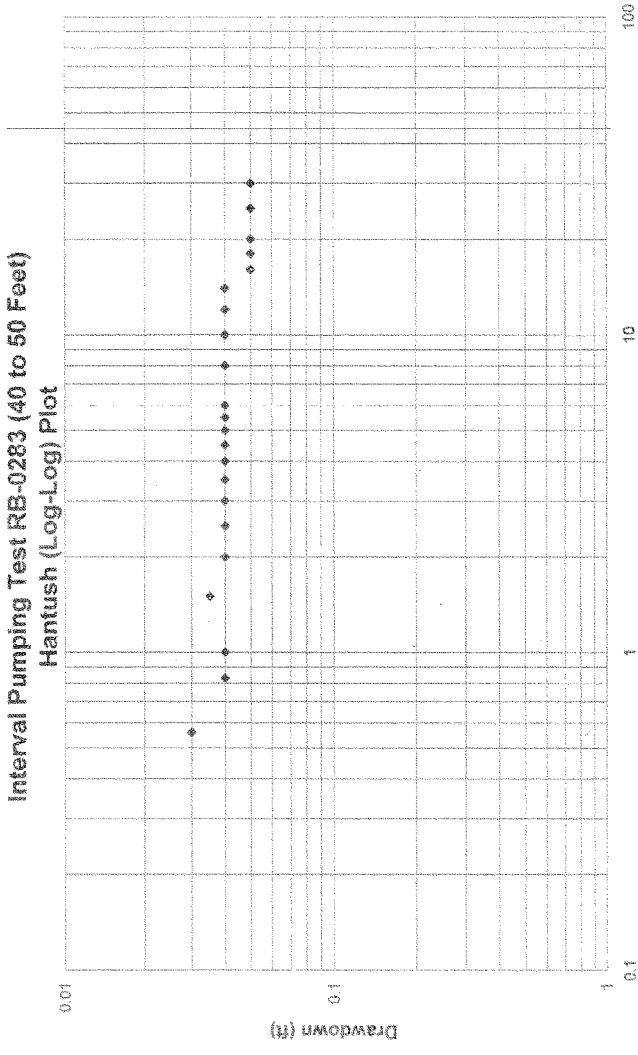
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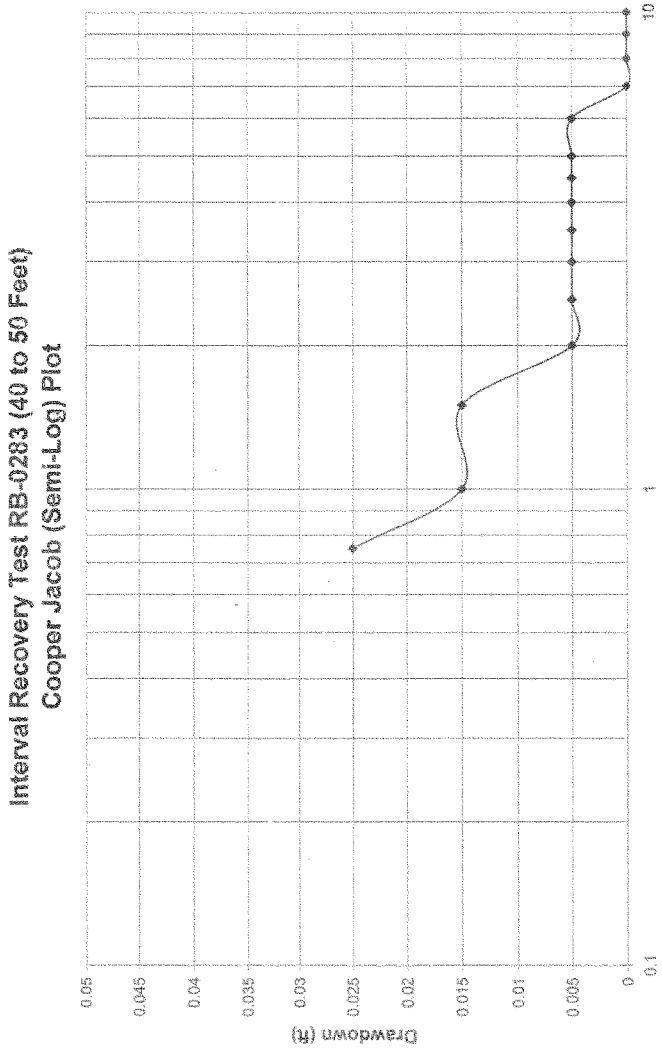
Project	Everglades AA Reservoir A-1	Pumping Test Well	RB-0283
Project No.	142004		
Client	SFWMD	Interval Test	From 40
			To 50

				East	North	Sheet 2 of 2		
Location	Southside, centre		Coordinates	773034	750089			
Casing Depth	40		Reference Point	Breakout				
Open Hole Depth	49	After test 49	Height Above Ground Level	4.8				
Screen Depth								
Pump Setting Depth	30		Pump Details	Diameter	3"	Discharge	Flowmeter	No
				Capacity	18gpm		Volume Tank	Yes
Static Water Level	5.39			Generator		Water Level	Transducer	No

Reference Clock Time			Data from when the pumping stopped			Not Applicable		
Date	Time Hrs	Time Min	Elapsed Time Minutes	Water Level Feet	Recovery Feet	Flow Meter Reading	Discharge	Notes
12/8/2005	9	30	0.00	6.44	0.05		18.5	Last Flow Rate
			0.25	6.4	0.01			
			0.50	6.44	0.05			
			0.75	6.41	0.02			
			1.00	6.4	0.01			
			1.50	6.4	0.01			
			2.00	6.39	0			
			2.50	6.39	0			
			3.00	6.39	0			
			3.50	6.39	0			
			4.00	6.39	0			
			4.50	6.39	0			
			5.00	6.39	0			
			6.00	6.39	0			
			7.00	6.385	-0.005			
			8.00	6.385	-0.005			
			9.00	6.385	-0.005			
	9	40	10.00	6.385	-0.005			


Interval Pumping Test RB-0283 (40 to 50 Feet)
Cooper-Jacob (Semi-Log) Plot
Drawdown (ft)
-0.05
-0.04
-0.03
-0.02
-0.01
0
0.01
0.02
0.03
0.04
0.05
0.06
0.10
1.00
10.00
100.00
Time since pumping started (min)


Interval Pumping Test RB-0283 (40 to 50 Feet)
Hantush (Log-Log) Plot
Drawdown (ft)
0.01
0.1
1
0.1
1
10
100
Time since pumping started (min)


Interval Recovery Test RB-0283 (40 to 50 Feet)
Cooper Jacob (Semi-Log) Plot
Drawdown (ft)
0.05
0.045
0.04
0.035
0.03
0.025
0.02
0.015
0.01
0.005
0
0.1
1
10
Time (min)

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Project	Everglades AA Reservoir A-1	Pumping Test Well	RB-0283
Project No.	142004		
Client	SFWMD	Interval Test From	70
		To	80

			East	North	Sheet1 of 2
Location	Southside, centre	Coordinates	773034	750069	

Casing Depth	70	Reference Point	Breakout				
Open Hole Depth	80 After test	Height Above Ground Level	4.8				
Screen Depth							
Pump Setting Depth	30	Pump Details	Diameter	3"	Discharge	Flowmeter	No
			Capacity	18gpm		Volume Tank	Yes
Static Water Level	7.44		Generator		Water Level	Transducer	No

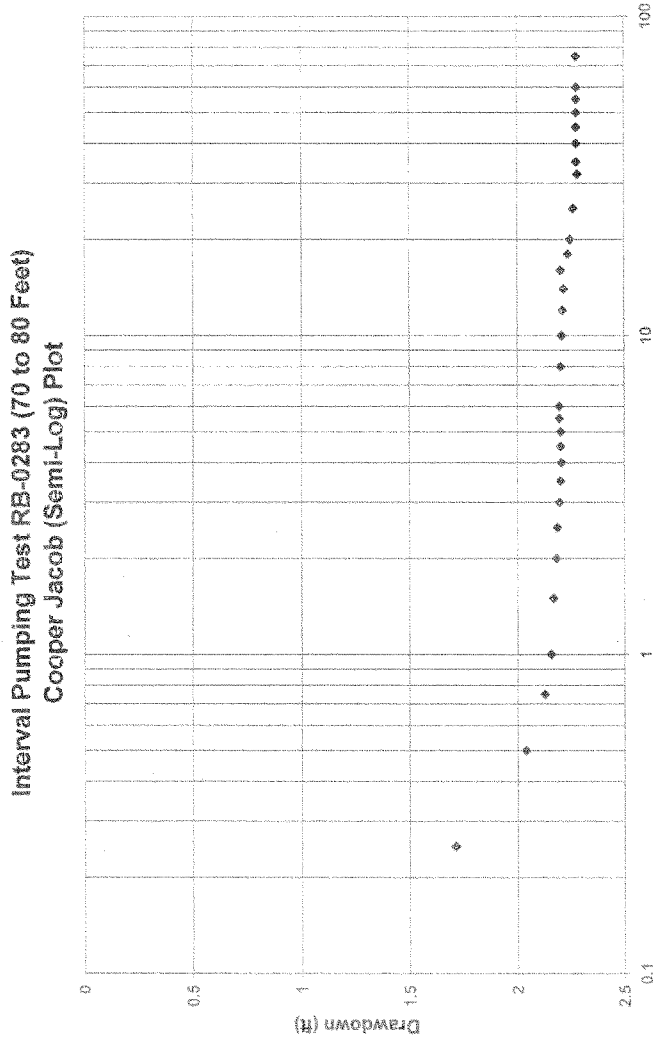
Reference Clock Time			Data from when the pumping started					
Date	Time Hrs	Time Min	Elapsed Time Minutes	Water Level Feet	Drawdown Feet	Flow Meter Reading	Discharge	Notes
12/8/2005	12	17	0.00	7.44	0		0	
			0.25	9.15	1.71			
			0.50	9.48	2.04			
			0.75	9.57	2.13			
			1.00	9.6	2.16			
			1.50	9.61	2.17			
			2.00	9.625	2.185			
			2.50	9.63	2.19			
			3.00	9.64	2.2			
			3.50	9.645	2.205			
			4.00	9.65	2.21			
			4.50	9.645	2.205			
			5.00	9.645	2.205			
			5.50	9.64	2.2			
			6.00	9.64	2.2			
			8.00	9.645	2.205		18.5	2 minutes for 37 gallons
			10.00	9.65	2.21			Check Flow Rate
			12.00	9.655	2.215			pH=7.43, 25.0°C,EC=2.41 milliS
			14.00	9.66	2.22			
			16.00	9.645	2.205			
			18.00	9.68	2.24		18.5	2 minutes for 37 gallons
			20.00	9.69	2.25			Check Flow Rate
			25.00	9.705	2.265			pH=7.52, 24.8°C,EC=2.44 milliS
			32.00	9.725	2.285			Check Flow Rate
			35.00	9.72	2.28			
			40.00	9.72	2.28			
			45.00	9.72	2.28			
			50.00	9.72	2.28			
			55.00	9.72	2.28		18.5	2 minutes for 37 gallons
			60.00	9.72	2.28			Check Flow Rate
	13	32	75.00	9.72	2.28			pH=7.39, 24.9°C,EC=2.44 milliS
								Solution reading
							EC	1500 1527
							pH	4 4.16
							pH	7 6.94

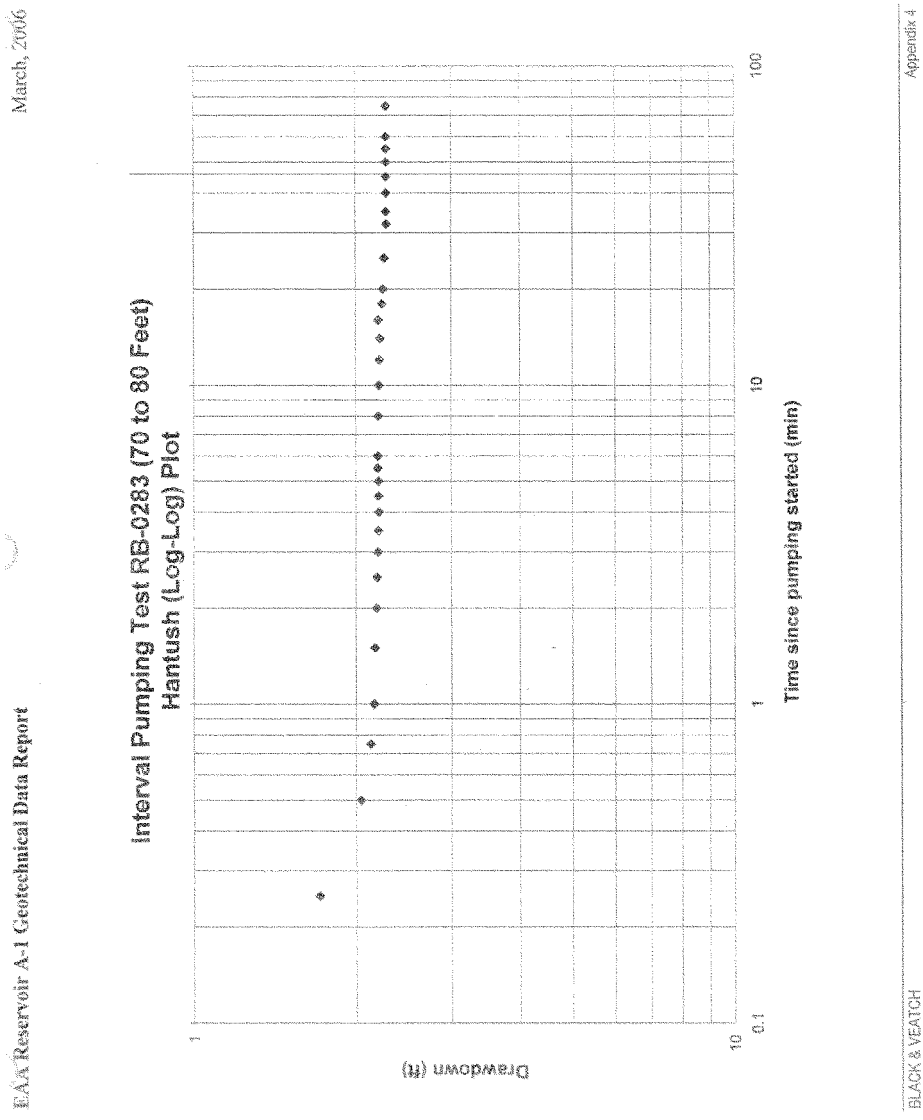
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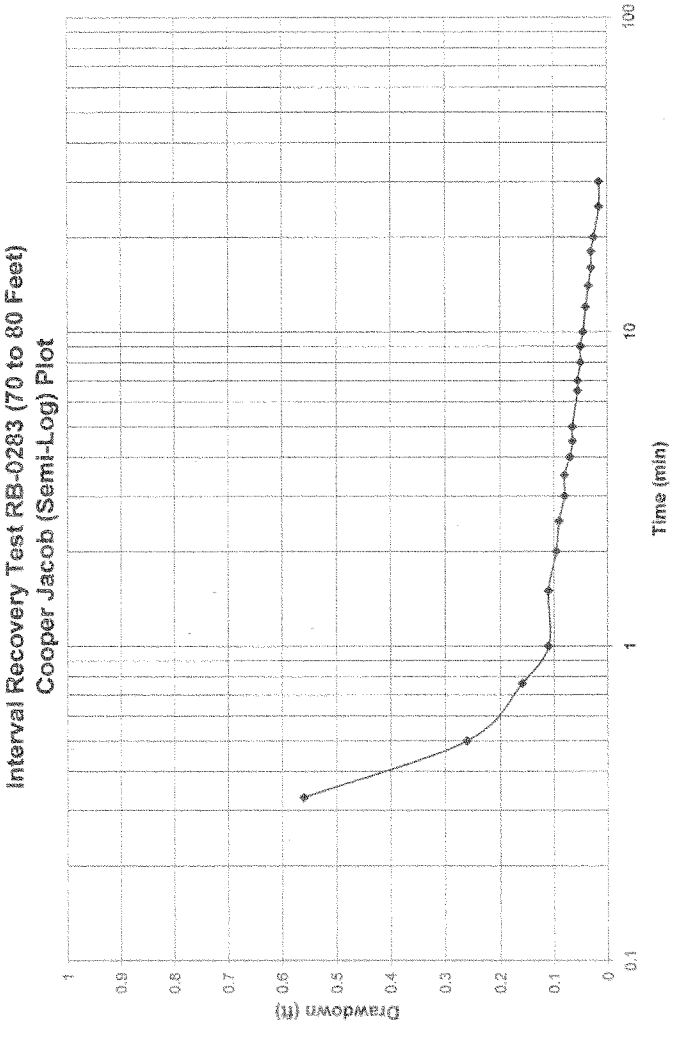
Project	Everglades AA Reservoir A-1	Pumping Test Well	RB-0283
Project No.	142004		
Client	SFWMD	Interval Test	From 70
			To 80

Location	Southside, centre	Coordinates	East 773034	North 750069	Sheet 2 of 2			
Casing Depth	70	Reference Point	Breakout					
Open Hole Depth	80 After test	Height Above Ground Level	4.8					
Screen Depth								
Pump Setting Depth	30	Pump Details	Diameter	3"	Discharge	Flowmeter	No	
			Capacity	18gpm		Volume Tank	Yes	
Static Water Level	7.44		Generator		Water Level	Transducer	No	

Reference Clock Time			Data from when the pumping stopped			Not Applicable		
Date	Time Hrs.	Time Min.	Elapsed Time Minutes	Water Level Feet	Recovery Feet	Flow Meter Reading	Discharge	Notes
12/8/2005	13	32	0.00	9.72	2.28		18.5	Last Flow Rate
			0.16	9	1.56			
			0.26	8.2	0.76			
			0.33	8	0.56			
			0.50	7.7	0.26			
			0.76	7.6	0.16			
			1.00	7.55	0.11			
			1.50	7.55	0.11			
			2.00	7.535	0.095			
			2.50	7.53	0.09			
			3.00	7.52	0.08			
			3.50	7.52	0.08			
			4.00	7.51	0.07			
			4.50	7.505	0.065			
			5.00	7.505	0.065			
			6.50	7.495	0.055			
			7.00	7.495	0.055			
			8.00	7.49	0.05			
			9.00	7.49	0.05			
			10.00	7.485	0.045			
			12.00	7.48	0.04			
			14.00	7.475	0.035			
			16.00	7.47	0.03			
			18.00	7.47	0.03			
			20.00	7.465	0.025			
			25.00	7.455	0.015			
	14	2	30.00	7.455	0.015			


Interval Pumping Test RB-0283 (70 to 80 Feet)
Cooper Jacob (Semi-Log) Plot
Drawdown (ft)
0
0.5
1
1.5
2
2.5
0.1
1
10
100
Time since pumping started (min)


March, 2006
EAA Reservoir A-1 Geotechnical Data Report
Interval Pumping Test RB-0283 (70 to 80 Feet)
Hantush (Log-Log) Plot
Drawdown (ft)
Time since pumping started (min)
1
10
0.1
1
10
100
Appendix 4
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Interval Recovery Test RB-0283 (70 to 80 Feet)
Cooper Jacob (Semi-Log) Plot
Drawdown (ft)
Time (min)
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
0.1
1
10
100

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Project	Everglades AA Reservoir A-1	Pumping Test Well	RB-0283
Project No.	142004		
Client	SFWMD	Interval Test	From 110
			To 120

Location	Southside, centre	Coordinates	East 773034	North 750069	Sheet1 of 2		
Casing Depth	110	Reference Point	Breakout				
Open Hole Depth	115 After test 113	Height Above Ground Level	4.66				
Screen Depth							
Pump Setting Depth	30	Pump Details	Diameter 3"	Discharge	Flowmeter	No	
			Capacity 19gpm		Volume Tank	Yes	
Static Water Level	7.58		Generator	Water Level	Transducer	No	

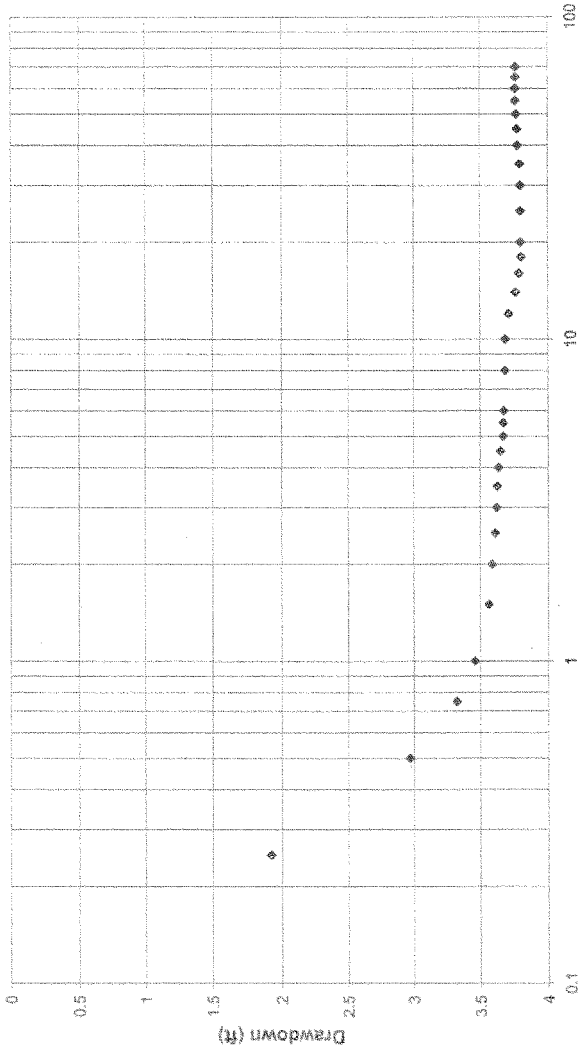
Reference Clock Time			Data from when the pumping started					
Date	Time Hrs	Time Min	Elapsed Time Minutes	Water Level Feet	Drawdown Feet	Flow Meter Reading	Discharge	Notes
08/13/2005	9	15	0.00	7.58	0		0	
			0.25	9.5	1.92			
			0.50	10.55	2.97			
			0.75	10.9	3.32			
			1.00	11.04	3.46			
			1.50	11.145	3.565			
			2.00	11.17	3.59			
			2.50	11.195	3.615			
			3.00	11.205	3.625			
			3.50	11.21	3.63			
			4.00	11.22	3.64			
			4.50	11.235	3.655			
			5.00	11.255	3.675			
			5.50	11.255	3.675			
			6.00	11.26	3.68			
			8.00	11.27	3.69			
			10.00	11.27	3.69			Check Flow Rate
			12.00	11.295	3.715			
			14.00	11.345	3.765		19	
			16.00	11.37	3.79			
			18.00	11.385	3.805			
			20.00	11.38	3.8			Check Flow Rate
			25.00	11.38	3.8		19	
			30.00	11.38	3.8			Check Flow Rate
			35.00	11.375	3.795			pH=7.65, 24.8°C,EC=2.69 milliS
			40.00	11.36	3.78			
			45.00	11.355	3.775			
			50.00	11.35	3.77			
			55.00	11.345	3.765			
			60.00	11.345	3.765		19.5	Check Flow Rate
			65.00	11.345	3.765			pH=7.44, 24.9°C,EC=2.68 milliS
	10	25	70.00	11.345	3.765			Solution reading
							EC	1500 1527
							pH	4 4.16
							pH	7 6.94

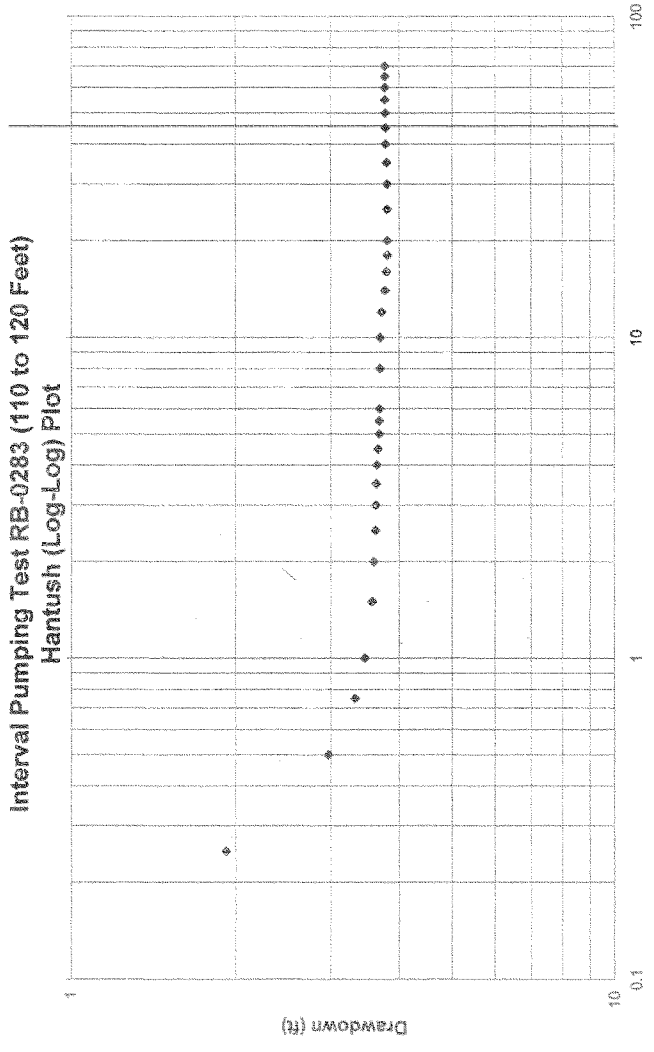
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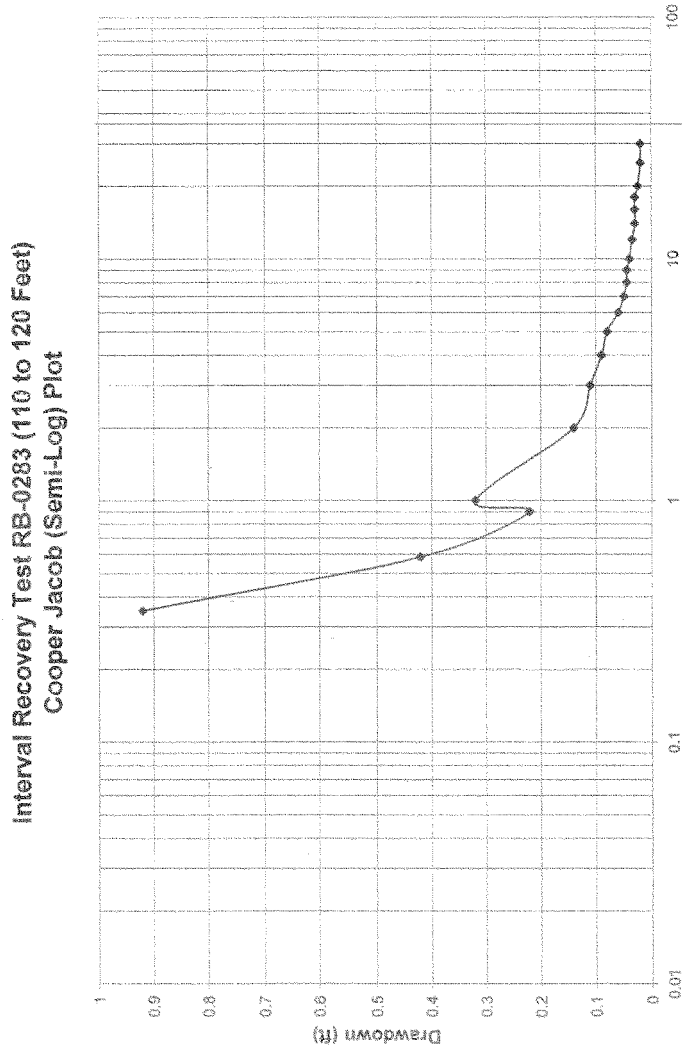
Project	Everglades AA Reservoir A-1	Pumping Test Well	RB-0283
Project No.	142004		
Client	SFWMD	Interval Test From	110
		To	120

Location	Southside, centre	Coordinates	East 773034	North 750069	Sheet 2 of 2			
Casing Depth	110	Reference Point	Breakout					
Open Hole Depth	115 After test 113	Height Above Ground Level	4.66					
Screen Depth								
Pump Setting Depth	30	Pump Details	Diameter	3"	Discharge	Flowmeter	No	
			Capacity	18gpm		Volume Tank	Yes	
Static Water Level	7.58		Generator		Water Level	Transducer	No	

Reference Clock Time			Data from when the pumping stopped.			Not Applicable		
Date	Time Hrs.	Time Min.	Elapsed Time Minutes	Water Level Feet	Recovery Feet	Flow Meter Reading	Discharge	Notes
08/13/2005	10	25	0.00	11.345	3.765		19.5	Last Flow Rate
			0.05	11	3.42			
			0.13	10	2.42			
			0.35	8.5	0.92			
			0.58	8	0.42			
			0.90	7.8	0.22			
			1.00	7.9	0.32			
			1.50	7.74	0.16			
			2.00	7.72	0.14			
			2.50	7.7	0.12			
			3.00	7.69	0.11			
			3.50	7.68	0.1			
			4.00	7.67	0.09			
			4.50	7.66	0.08			
			5.00	7.66	0.08			
			7.00	7.63	0.05			
			8.00	7.625	0.045			
			9.00	7.625	0.045			
			10.00	7.62	0.04			
			12.00	7.615	0.035			
			14.00	7.61	0.03			
			16.00	7.61	0.03			
			18.00	7.61	0.03			
			20.00	7.605	0.025			
			25.00	7.6	0.02			
	10	55	30.00	7.6	0.02			


Interval Pumping Test RB-0283 (110 to 120 Feet)
Cooper Jacob (Semi-Log) Plot
Drawdown (ft)
0
0.5
1
1.5
2
2.5
3
3.5
4
0.1
1
10
100
Time since pumping started (min)


Interval Pumping Test RB-0283 (110 to 120 Feet)
Hantush (Log-Log) Plot
Drawdown (ft)
Time since pumping started (min)
1
10
0.1
1
10
100


Interval Recovery Test RB-0283 (110 to 120 Feet)
Cooper Jacob (Semi-Log) Plot
Drawdown (ft)
Time (min)
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0.01
0.1
1
10
100

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Project	Everglades AA Reservoir A-1	Pumping Test Well	RB-0283
Project No.	142004		
Client	SFWMD	Interval Test	From 150
			To 160

Location	Southside, centre	Coordinates	East 773034	North 750069	Sheet1 of 2		
Casing Depth	150	Reference Point	Breakout				
Open Hole Depth	160 After test 160	Height Above Ground Level	4.66				
Screen Depth							
Pump Setting Depth	30	Pump Details	Diameter	3"	Discharge	Flowmeter	No
			Capacity	18gpm		Volume Tank	Yes
Static Water Level	7.67		Generator		Water Level	Transducer	No

Reference Clock Time			Data from when the pumping started					
Date	Time Hrs	Time Min	Elapsed Time Minutes	Water Level Feet	Drawdown Feet	Flow Meter Reading	Discharge	Notes
08/13/2005	13	15	0.00	7.67	0		0	
			0.25	9.45	1.78			
			0.50	9.95	2.28			
			0.75	10.08	2.41			
			1.00	10.13	2.46			
			1.50	10.16	2.49			
			2.00	10.18	2.51			
			2.50	10.185	2.515			
			3.00	10.19	2.52			
			3.50	10.2	2.53			
			4.00	10.2	2.53			
			4.50	10.21	2.54			
			5.00	10.21	2.54			
			5.50	10.22	2.55			
			6.00	10.22	2.55			
			8.00	10.23	2.56			
			10.00	10.24	2.57			Check Flow Rate
			12.00	10.245	2.575			
			14.00	10.25	2.58			
			16.00	10.25	2.58			
			18.00	10.155	2.485			
			20.00	10.26	2.59		18.5	Check Flow Rate
			25.00	10.265	2.595			pH=7.50, 25.1°C,EC=4.68 milliS
			30.00	10.265	2.595			Check Flow Rate
			35.00	10.285	2.615		18.5	pH=7.43, 24.9°C,EC=4.70milliS
			40.00	10.28	2.61			
			45.00	10.185	2.515			
			50.00	10.29	2.62			
			55.00	10.29	2.62			
			60.00	10.29	2.62		18.5	Check Flow Rate
	14.2	20	65.00	10.29	2.62			
								Solution reading
							EC	1500 1527
							pH	4 4.16
							pH	7 6.94

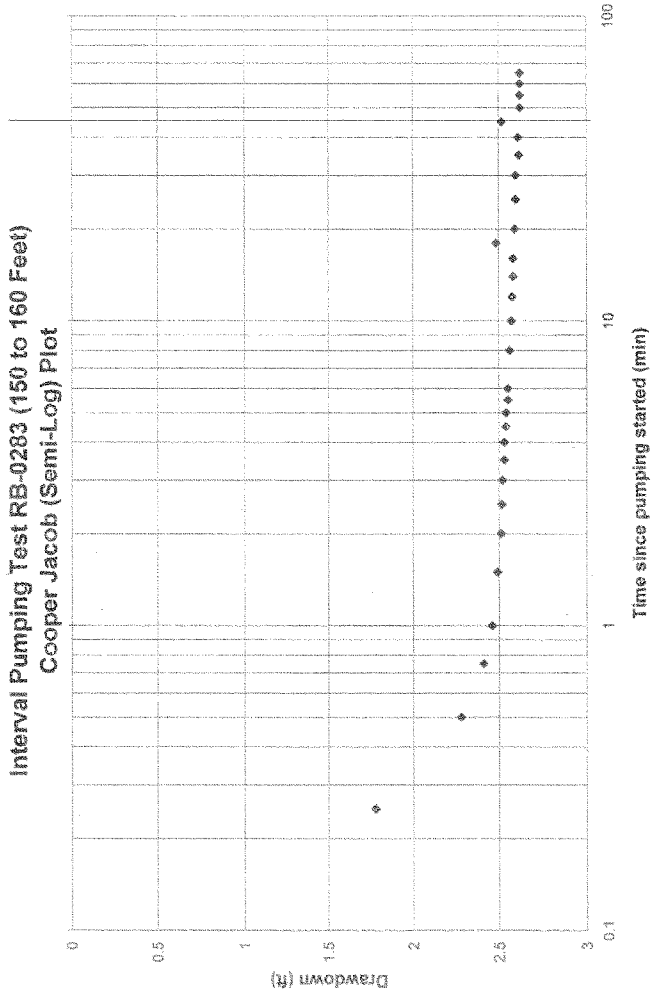
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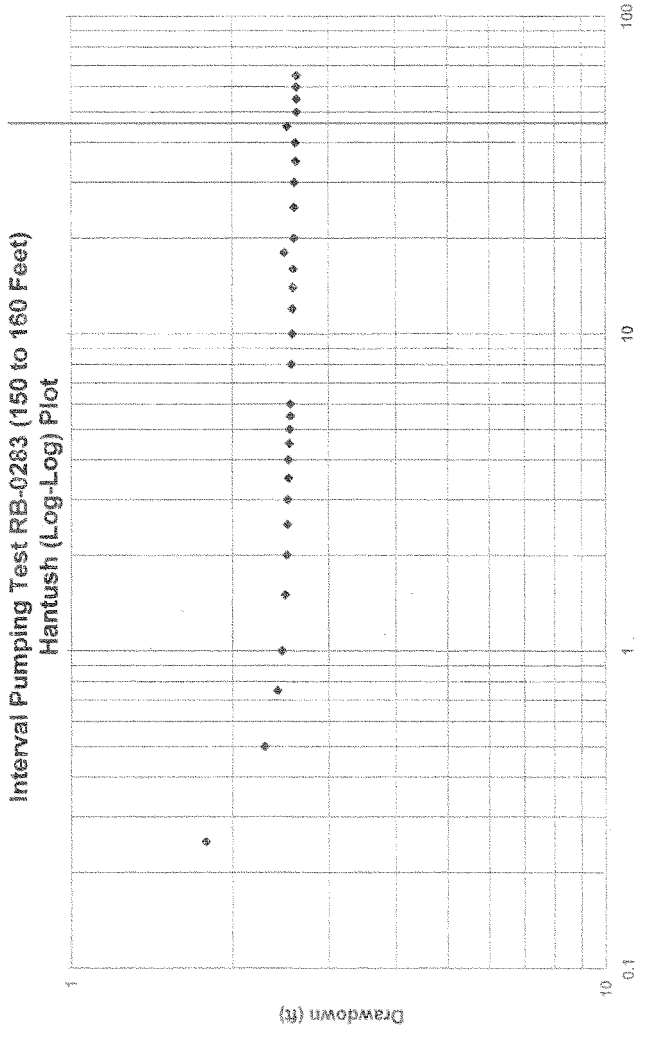
Project	Everglades AA Reservoir A-1	Pumping Test Well	RB-0283
Project No.	142004		
Client	SFWMD	Interval Test	From 150
			To 160

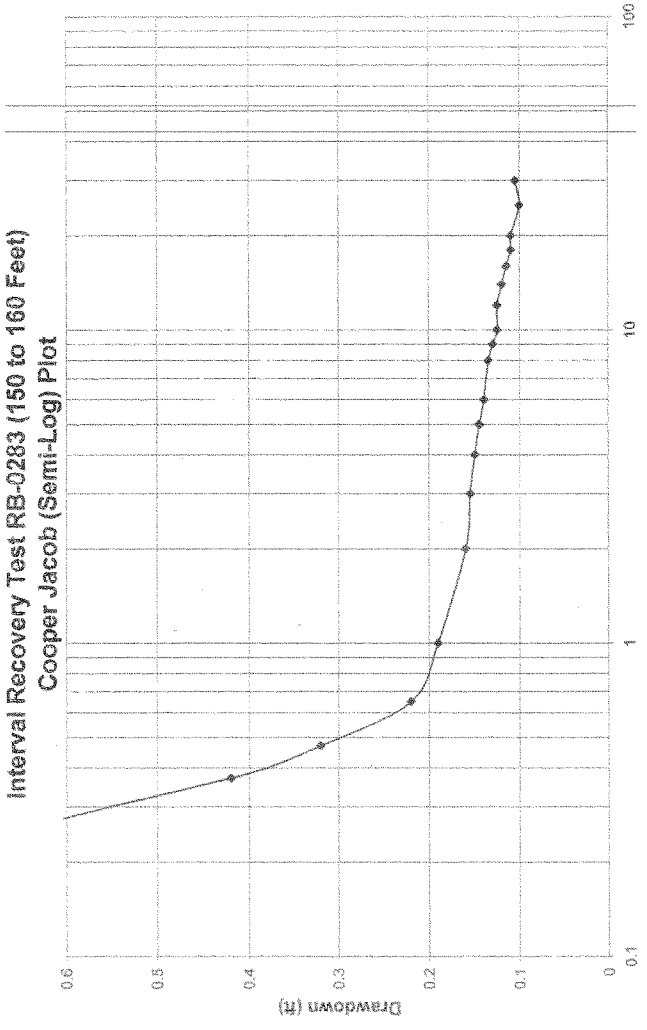
Sheet 2 of 2

Location	Southside, centre	Coordinates	East 773034	North 750059			
Casing Depth	150	Reference Point	Breakout				
Open Hole Depth	160 After test 160	Height Above Ground Level	4.56				
Screen Depth							
Pump Setting Depth	30	Pump Details	Diameter	3"	Discharge	Flowmeter	No
			Capacity	18gpm		Volume Tank	Yes
Static Water Level	7.67		Generator		Water Level	Transducer	No

Reference Clock Time			Data from when the pumping stopped.			Not Applicable		
Date	Time Hrs	Time Min	Elapsed Time Minutes	Water Level Feet	Recovery Feet	Flow Meter Reading	Discharge	Notes
08/13/2005	14	20	0.00	10.29	2.62		18.5	Last Flow Rate
			0.13	9	1.33			
			0.21	8.5	0.83			
			0.36	8	0.33			
			0.46	7.9	0.23			
			0.65	7.8	0.13			
			1.00	7.77	0.1			
			1.50	7.775	0.105			
			2.00	7.74	0.07			
			2.50	7.74	0.07			
			3.00	7.735	0.065			
			3.50	7.735	0.065			
			4.00	7.73	0.06			
			4.50	7.725	0.055			
			5.00	7.72	0.05			
			6.00	7.72	0.05			
			8.00	7.715	0.045			
			9.00	7.71	0.04			
			10.00	7.705	0.035			
			12.00	7.705	0.035			
			14.00	7.7	0.03			
			16.00	7.695	0.025			
			18.00	7.69	0.02			
			20.00	7.69	0.02			
			25.00	7.68	0.01			
	14	50	30.00	7.685	0.015			


Interval Pumping Test RB-0283 (150 to 160 Feet)
Cooper Jacob (Semi-Log) Plot
Drawdown (ft)
0
0.5
1
1.5
2
2.5
3
Time since pumping started (min)
0.1
1
10
100


Interval Pumping Test RB-0263 (150 to 160 Feet)
Hantush (Log-Log) Plot
Drawdown (ft)
Time since pumping started (min)
1
10
0.1
1
10
100


Interval Recovery Test RB-0283 (150 to 160 Feet)
Cooper Jacob (Semi-Log) Plot
Drawdown (ft)
0
0.1
0.2
0.3
0.4
0.5
0.6
Time (min)
0.1
1
10
100

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Project	Everglades AA Reservoir A-1	Pumping Test Well	RB-0284
Project No.	142004		
Client	SFWMD	Interval Test	From 40
			To 50

Location	Westside, centre	Coordinates	East 758050	North 764456	Sheet1 of 2			
Casing Depth	40	Reference Point	Breakout					
Open Hole Depth	46 After test 46	Height Above Ground Level	5					
Screen Depth								
Pump Setting Depth	30	Pump Details	Diameter	3"	Discharge	Flowmeter	No	
			Capacity	18gpm		Volume Tank	Yes	
Static Water Level	7.62		Generator		Water Level	Transducer	No	

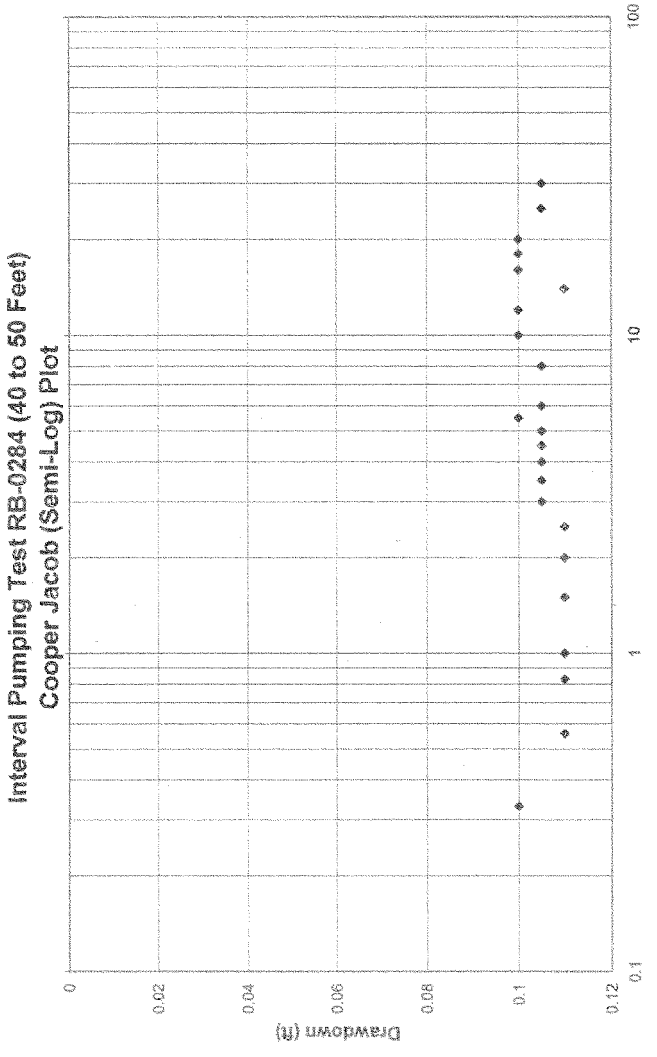
Reference Clock Time			Data from when the pumping started					
Date	Time Hrs.	Time Min.	Elapsed Time Minutes	Water Level Feet	Drawdown Feet	Flow Meter Reading	Discharge	Notes
9/8/2005	13	15	0.00		0		0	
			0.33	7.72	0.1			
			0.56	7.73	0.11			
			0.83	7.73	0.11			
			1.00	7.73	0.11			
			1.50	7.73	0.11			
			2.00	7.73	0.11			
			2.50	7.73	0.11			
			3.00	7.725	0.105			
			3.50	7.725	0.105			
			4.00	7.725	0.105			
			4.50	7.725	0.105			
			5.00	7.725	0.105			
			5.50	7.72	0.1			
			6.00	7.725	0.105			
			8.00	7.725	0.105		19	2 minutes for 38 gallons
			10.00	7.72	0.1			Check Flow Rate
			12.00	7.72	0.1			
			14.00	7.73	0.11			
			16.00	7.72	0.1			
			18.00	7.72	0.1			pH=6.6, 25.4°C,EC=653 microS
			20.00	7.72	0.1			Check Flow Rate
			25.00	7.725	0.105			pH=7.3, 24.9°C,EC=644 microS
	13	45	30.00	7.725	0.105			Check Flow Rate
							18.5	2 minutes for 37 gallons
								Check Flow Rate
								Solution reading
							EC	1500 1527
							pH	4 4.16
							pH	7 6.94

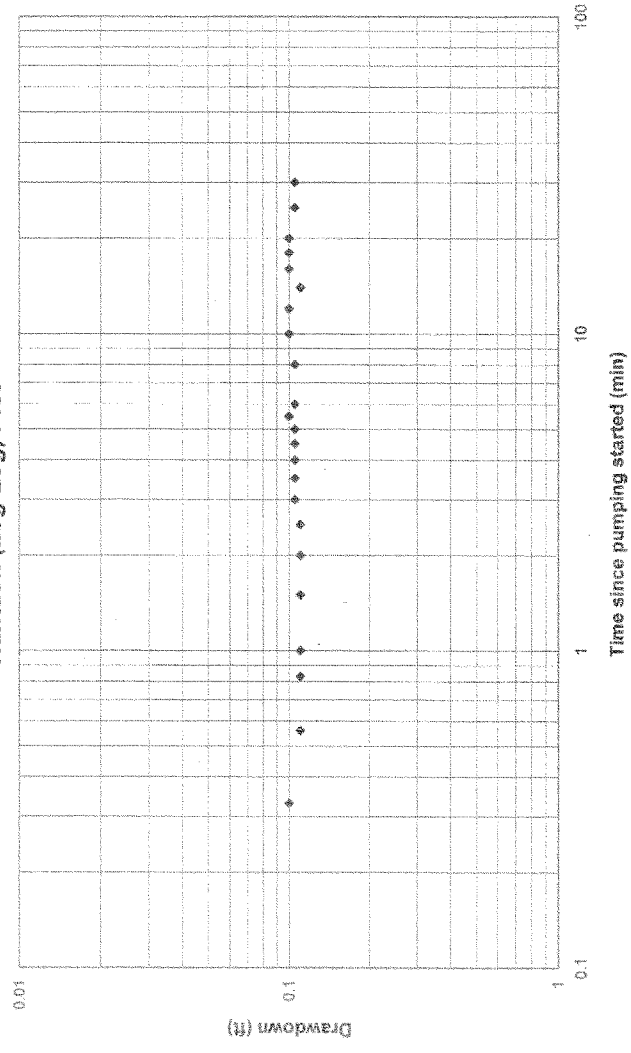
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Project	Everglades AA Reservoir A-1	Pumping Test Well	RB-0284
Project No.	142004		
Client	SFWMD	Interval Test	From 40
			To 50

Location	Westside, centre	Coordinates	East 758050	North 764456	Sheet 2 of 2		
Casing Depth	40	Reference Point	Breakout				
Open Hole Depth	46 After test 46	Height Above Ground Level	5				
Screen Depth							
Pump Setting Depth	30	Pump Details	Diameter	3"	Discharge	Flowmeter	No
			Capacity	18gpm		Volume Tank	Yes
Static Water Level	7.62		Generator		Water Level	Transducer	No

Reference Clock Time			Data from when the pumping stopped.			Not Applicable		
Date	Time Hrs	Time Min	Elapsed Time Minutes	Water Level Feet	Recovery Feet	Flow Meter Reading	Discharge	Notes
9/8/2005	13	45	0.00	7.725	0.125		18.5	Last Flow Rate
			0.10	7.6	0			
			0.50	7.6	0			
			1.00	7.6	0			
			1.50	7.6	0			
			2.00	7.6	0			
			2.50	7.6	0			
			3.00	7.6	0			
			3.50	7.6	0			
			4.00	7.6	0			
			4.50	7.6	0			
			5.00	7.6	0			
			6.00	7.6	0			
			7.00	7.6	0			
			8.00	7.6	0			
			9.00	7.6	0			
			10.00	7.6	0			


Interval Pumping Test RB-0284 (40 to 50 Feet)
Cooper Jacob (Semi-Log) Plot
Drawdown (ft)
0
0.02
0.04
0.06
0.08
0.1
0.12
0.1
1
10
100
Time since pumping started (min)


Interval Pumping Test RB-0284 (40 to 50 Feet)
Hantush (Log-Log) Plot
Drawdown (ft)
0.01
0.1
1
0.1
1
10
100
Time since pumping started (min)

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Project	Everglades AA Reservoir A-1	Pumping Test Well	RB-0284
Project No.	142004		
Client	SFWMD	Interval Test From	70
		To	80

Location	Westside, centre	Coordinates	East 758050	North 764456	Sheet1 of 2		
Casing Depth	70	Reference Point	Breakout				
Open Hole Depth	77 After test 77	Height Above Ground Level	5				
Screen Depth							
Pump Setting Depth	30	Pump Details Diameter	3"	Discharge	Flowmeter	No	
		Capacity	18gpm		Volume Tank	Yes	
Static Water Level	7.46	Generator		Water Level	Transducer	No	

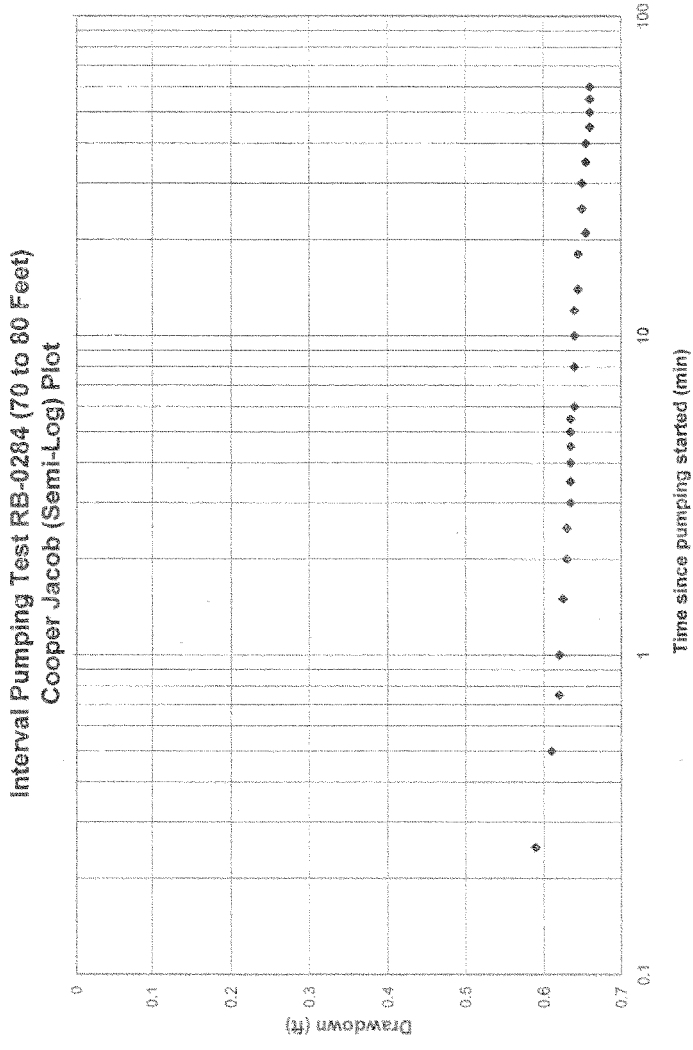
Reference Clock Time			Data from when the pumping started					
Date	Time Hrs.	Time Min.	Elapsed Time Minutes	Water Level Feet	Drawdown Feet	Flow Meter Reading	Discharge	Notes
9/8/2005	15	15	0.00	7.45	0		0	
			0.25	8.04	0.59			
			0.50	8.06	0.61			
			0.75	8.07	0.62			
			1.00	8.07	0.62			
			1.50	8.075	0.625			
			2.00	8.08	0.63			
			2.50	8.08	0.63			
			3.00	8.085	0.635			
			3.50	8.085	0.635			
			4.00	8.085	0.635			
			4.50	8.085	0.635			
			5.00	8.085	0.635			
			5.50	8.085	0.635			
			6.00	8.09	0.64			
			8.00	8.09	0.64		18.75	2 minutes for 37.5 gallons
			10.00	8.09	0.64			Check Flow Rate
			12.00	8.09	0.64			
			14.00	8.095	0.645			pH=7.28, 25.7°C,EC=993 microS
			16.00					
			18.00	8.095	0.645		18.5	2 minutes for 37 gallons
			21.00	8.105	0.655			Check Flow Rate
			25.00	8.1	0.65			pH=7.29, 25.8°C,EC=999 microS
			30.00	8.1	0.65			Check Flow Rate
			35.00	8.105	0.655			
			40.00	8.105	0.655			
			45.00	8.11	0.66			
			50.00	8.11	0.66			pH=7.41, 25.7°C,EC=1017 microS
			55.00	8.11	0.66			2 minutes for 37 gallons
	16	15	60.00	8.11	0.66			Check Flow Rate
								Solution reading
							EC	1500 1527
							pH	4 4.16
							pH	7 6.94

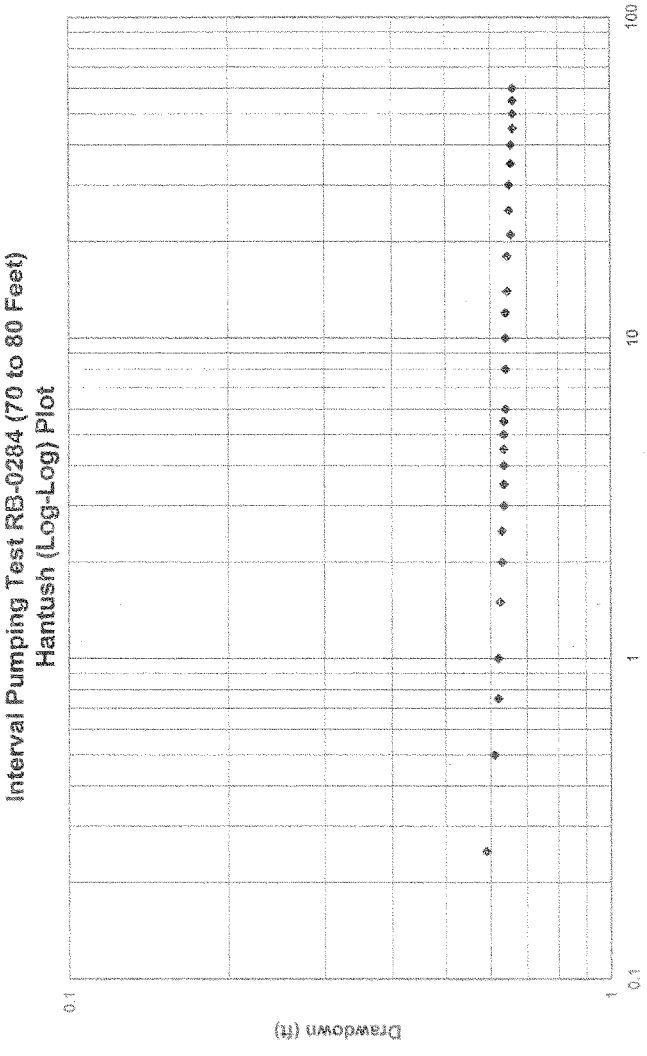
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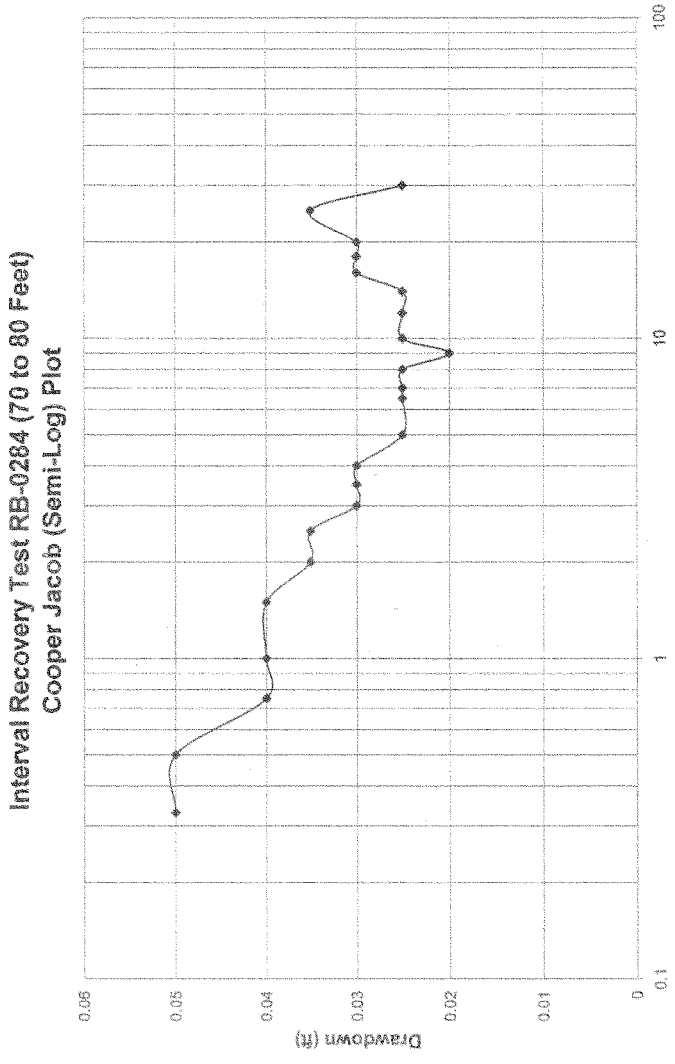
Project	Everglades AA Reservoir A-1	Pumping Test Well	RB-0284
Project No.	142004		
Client	SFWMD	Interval Test From	70
		To	80

Location	Westside, centre	Coordinates	East 758050	North 764456	Sheet 2 of 2		
Casing Depth	70	Reference Point	Breakout				
Open Hole Depth	77 After test 77	Height Above Ground Level	5				
Screen Depth							
Pump Setting Depth	30	Pump Details	Diameter	3"	Discharge	Flowmeter	No
			Capacity	18gpm		Volume Tank	Yes
Static Water Level	7.45		Generator		Water Level	Transducer	No

Reference Clock Time			Data from when the pumping stopped			Not Applicable		
Date	Time Hrs.	Time Min.	Elapsed Time Minutes	Water Level Feet	Recovery Feet	Flow Meter Reading	Discharge	Notes
9/8/2005	16	15	0.00	8.11	0.66		18.5	Last Flow Rate
			0.33	7.5	0.05			
			0.50	7.5	0.05			
			0.75	7.49	0.04			
			1.00	7.49	0.04			
			1.50	7.49	0.04			
			2.00	7.485	0.035			
			2.50	7.485	0.035			
			3.00	7.48	0.03			
			3.50	7.48	0.03			
			4.00	7.48	0.03			
			4.50					
			5.00	7.475	0.025			
			6.50	7.475	0.025			
			7.00	7.475	0.025			
			8.00	7.475	0.025			
			9.00	7.47	0.02			
			10.00	7.475	0.025			
			12.00	7.475	0.025			
			14.00	7.475	0.025			
			16.00	7.48	0.03			
			18.00	7.48	0.03			
			20.00	7.48	0.03			
			25.00	7.485	0.035			
	16	45	30.00	7.475	0.025			


Interval Pumping Test RB-0284 (70 to 80 Feet)
Cooper Jacob (Semi-Log) Plot
Drawdown (ft)
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.1
1
10
100
Time since pumping started (min)


Interval Pumping Test RB-0284 (70 to 80 Feet)
Hantush (Log-Log) Plot
Drawdown (ft)
Time since pumping started (min)
0.1
1
10
100
1
0.1


Interval Recovery Test RB-0284 (70 to 80 Feet)
Cooper Jacob (Semi-Log) Plot
Drawdown (ft)
0.06
0.05
0.04
0.03
0.02
0.01
0
0.1
1
10
100
Time (min)

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Project	Everglades AA Reservoir A-1	Pumping Test Well	RB-0284
Project No.	142004		
Client	SFWMD	Interval Test From	110
		To	120

			East	North	Sheet1 of 2
Location	Westside, centre	Coordinates	758050	764456	

Casing Depth	110	Reference Point	Breakout				
Open Hole Depth	118.5 After test 118	Height Above Ground Level	4.8				
Screen Depth							
Pump Setting Depth	30	Pump Details	Diameter	3"	Discharge	Flowmeter	No
			Capacity	18gpm		Volume Tank	Yes
Static Water Level	7.655		Generator		Water Level	Transducer	No

Reference Clock Time			Data from when the pumping started					
Date	Time Hrs.	Min	Elapsed Time Minutes	Water Level Feet	Drawdown Feet	Flow Meter Reading	Discharge	Notes
10/8/2005	8	35	0.00	7.655	0		0	
			0.25	9.13	1.475			
			0.50	9.3	1.645			
			0.75	9.33	1.675			
			1.00	9.34	1.685			
			1.50	9.35	1.695			
			2.00	9.36	1.705			
			2.50	9.36	1.705			
			3.00	9.365	1.71			
			3.50	9.365	1.71			
			4.00	9.37	1.715			
			4.50	9.37	1.715			
			5.00	9.375	1.72			
			5.50	9.375	1.72			
			6.00	9.375	1.72			
			8.00	9.38	1.725		18.5	2 minutes for 37 gallons
			10.00	9.385	1.73			Check Flow Rate
			12.00	9.38	1.725			
			14.00	9.385	1.73			pH=7.31, 25.3°C,EC=4.66 milliS
			16.00	9.39	1.735			
			18.00	9.39	1.735			
			21.00	9.39	1.735			Check Flow Rate
			25.00	9.395	1.74			pH=7.46, 25.2°C,EC=4.70 milliS
	9	5	30.00	9.395	1.74			Check Flow Rate
							18.5	2 minutes for 37 gallons
								Check Flow Rate
								Solution reading
							EC	1500 1527
							pH	4 4.16
							pH	7 6.94

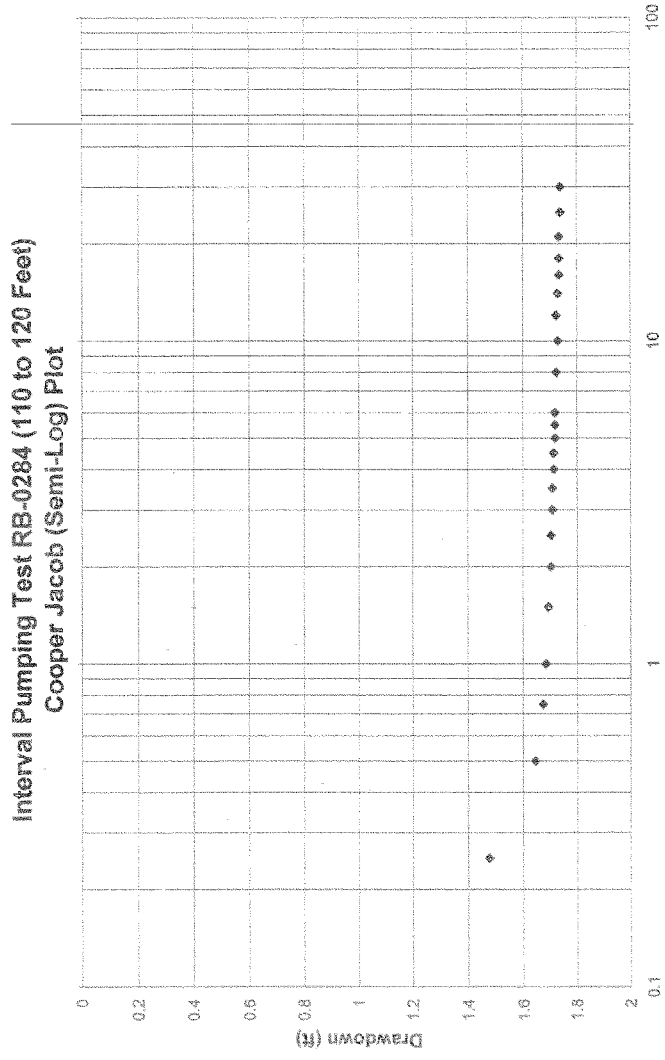
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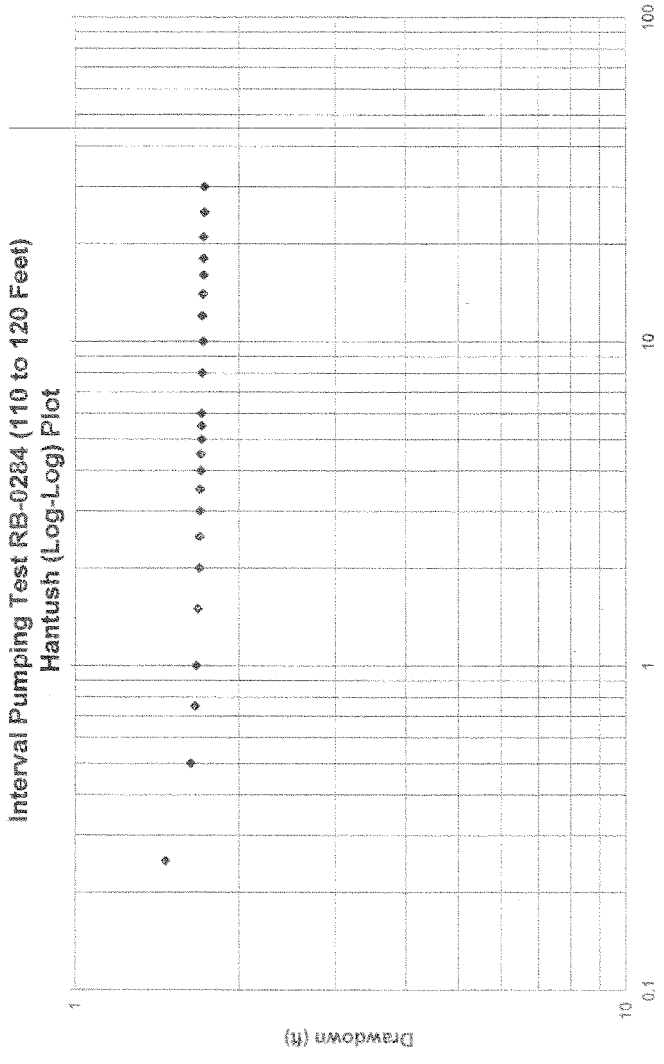
Project	Everglades AA Reservoir A-1	Pumping Test Well	RB-0284
Project No.	142004		
Client	SFWMD	Interval Test From	110
		To	120

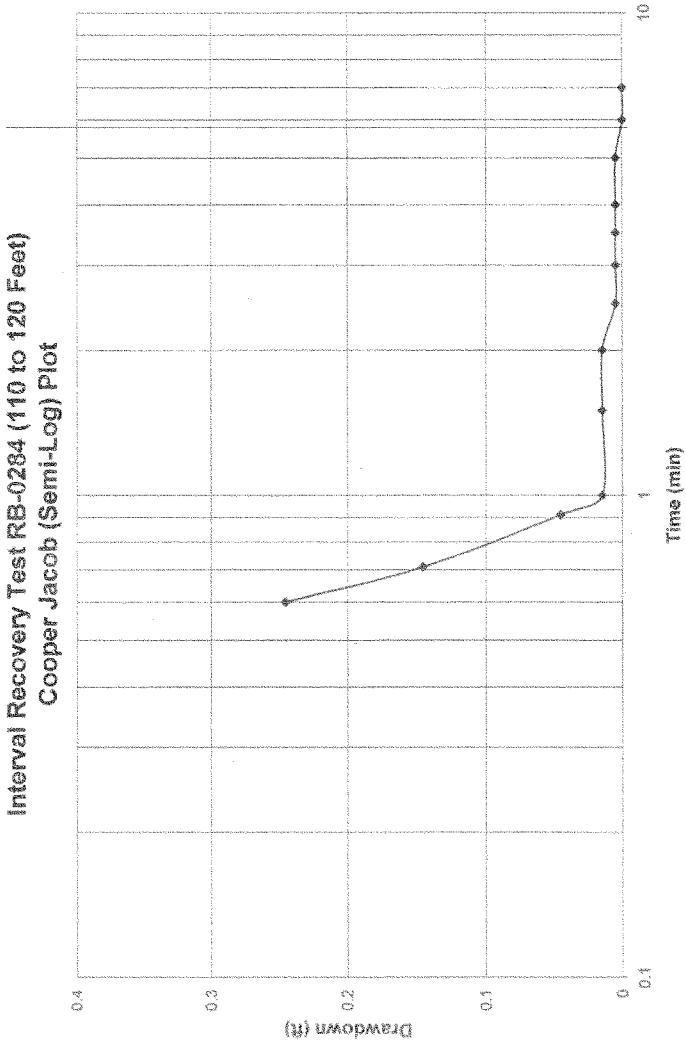
Sheet 2 of 2

Location	Westside, centre	Coordinates	East 758050	North 764456			
Casing Depth	110	Reference Point	Breakout				
Open Hole Depth	118.5 After test 118	Height Above Ground Level	4.8				
Screen Depth							
Pump Setting Depth	30	Pump Details	Diameter	3"	Discharge	Flowmeter	No
			Capacity	18gpm		Volume Tank	Yes
Static Water Level	7.655		Generator		Water Level	Transducer	No

Reference Clock Time			Data from when the pumping stopped.			Not Applicable		
Date	Time Hrs.	Time Min.	Elapsed Time Minutes	Water Level Feet	Recovery Feet	Flow Meter Reading	Discharge	Notes
10/8/2005	9	5	0.00	9.395	1.74		18.5	Last Flow Rate
			0.53	9	1.345			
			0.60	7.9	0.245			
			0.71	7.8	0.145			
			0.91	7.7	0.045			
			1.00	7.67	0.015			
			1.50	7.67	0.015			
			2.00	7.67	0.015			
			2.50	7.66	0.005			
			3.00	7.66	0.005			
			3.50	7.66	0.005			
			4.00	7.66	0.005			
			5.00	7.66	0.005			
			6.00	7.655	0			
			7.00	7.655	0			
			8.00	7.655	0			
			9.00	7.655	0			
	9	15	10.00	7.655	0			
			12.00					
			14.00					
			16.00					
			18.00					
			20.00					
			25.00					
			30.00					


Interval Pumping Test RB-0284 (110 to 120 Feet)
Cooper Jacob (Semi-Log) Plot
Drawdown (ft)
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2
0.1
1
10
100
Time since pumping started (min)


Interval Pumping Test RB-0284 (110 to 120 Feet)
Hantush (Log-Log) Plot
Drawdown (ft)
Time since pumping started (min)
1
10
0.1
1
10
100


Interval Recovery Test RB-0284 (110 to 120 Feet)
Cooper Jacob (Semi-Log) Plot
Drawdown (ft)
0.4
0.3
0.2
0.1
0
0.1
1
10
Time (min)

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Project	Everglades AA Reservoir A-1	Pumping Test Well	RB-0284
Project No.	142004		
Client	SFWMD	Interval Test	From 150
			To 160

Location	Westside, centre		Coordinates	East 758050	North 754456				Sheet1 of 2
Casing Depth	150		Reference Point	Breakout					
Open Hole Depth	160	After test 159	Height Above Ground Level	4.8					
Screen Depth									
Pump Setting Depth	30		Pump Details	Diameter	3"	Discharge	Flowmeter	No	
				Capacity	18gpm		Volume Tank	Yes	
Static Water Level	7.79			Generator		Water Level	Transducer	No	

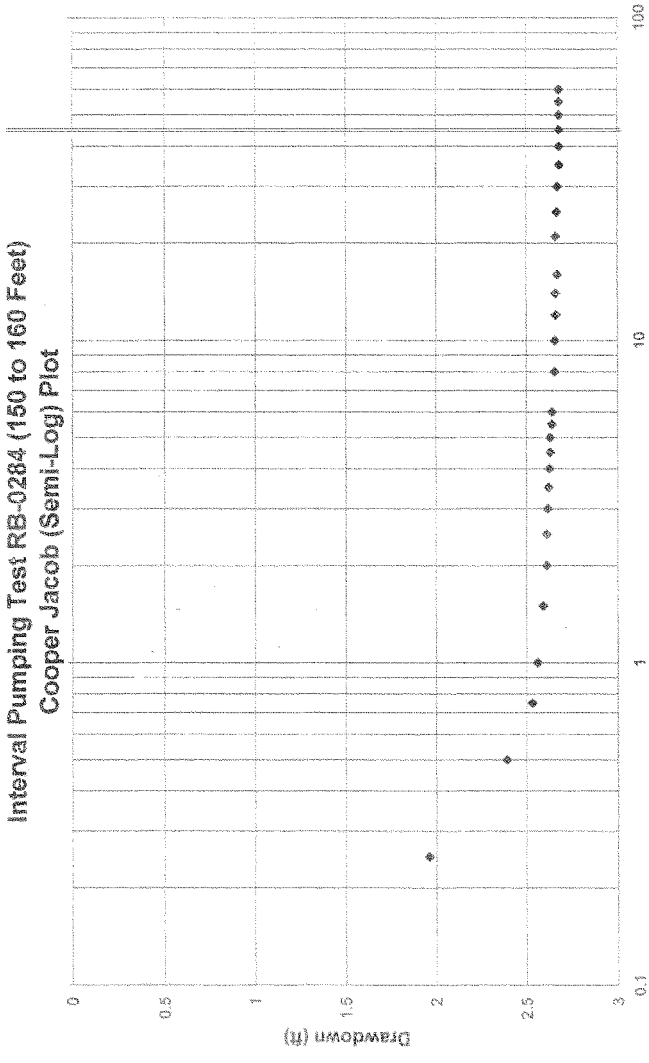
Reference Clock Time			Data from when the pumping started					
Date	Time Hrs	Time Min	Elapsed Time Minutes	Water Level Feet	Drawdown Feet	Flow Meter Reading	Discharge	Notes
10/8/2005	11	40	0.00	7.79	0		0	1hr25' development
			0.25	9.75	1.96			
			0.50	10.18	2.39			
			0.75	10.32	2.53			
			1.00	10.35	2.56			
			1.50	10.38	2.59			
			2.00	10.4	2.61			
			2.50	10.4	2.61			
			3.00	10.405	2.62			
			3.50	10.41	2.62			
			4.00	10.415	2.63			
			4.50	10.42	2.63			
			5.00	10.42	2.63			
			5.50	10.43	2.64			
			6.00	10.43	2.64			
			8.00	10.445	2.66			
			10.00	10.445	2.66			Check Flow Rate
			12.00	10.45	2.66			
			14.00	10.45	2.66		18.75	2 minutes for 37.5 gallons
			16.00	10.46	2.67			
			18.00					pH=7.32, 25.3°C,EC=7.24 milliS
			21.00	10.45	2.66			Check Flow Rate
			25.00	10.455	2.67			
			30.00	10.46	2.67			Check Flow Rate
			35.00	10.47	2.68		18.5	2 minutes for 37 gallons
			40.00	10.47	2.68			pH=7.49, 25.2°C,EC=7.26 milliS
			45.00	10.47	2.68			
			50.00	10.47	2.68			pH=7.55, 25.1°C,EC=7.29 milliS
			55.00	10.47	2.68		18.5	2 minutes for 37 gallons
	12	40	60.00	10.47	2.68			Check Flow Rate
								Solution reading
							EC	1500 1527
							pH	4 4.16
							pH	7 6.94

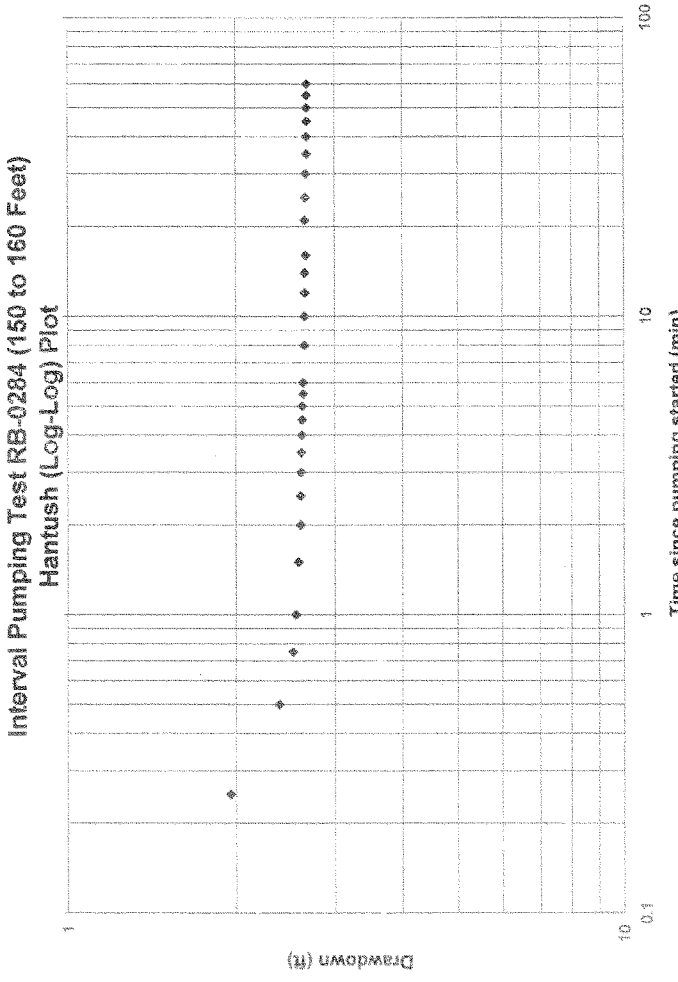
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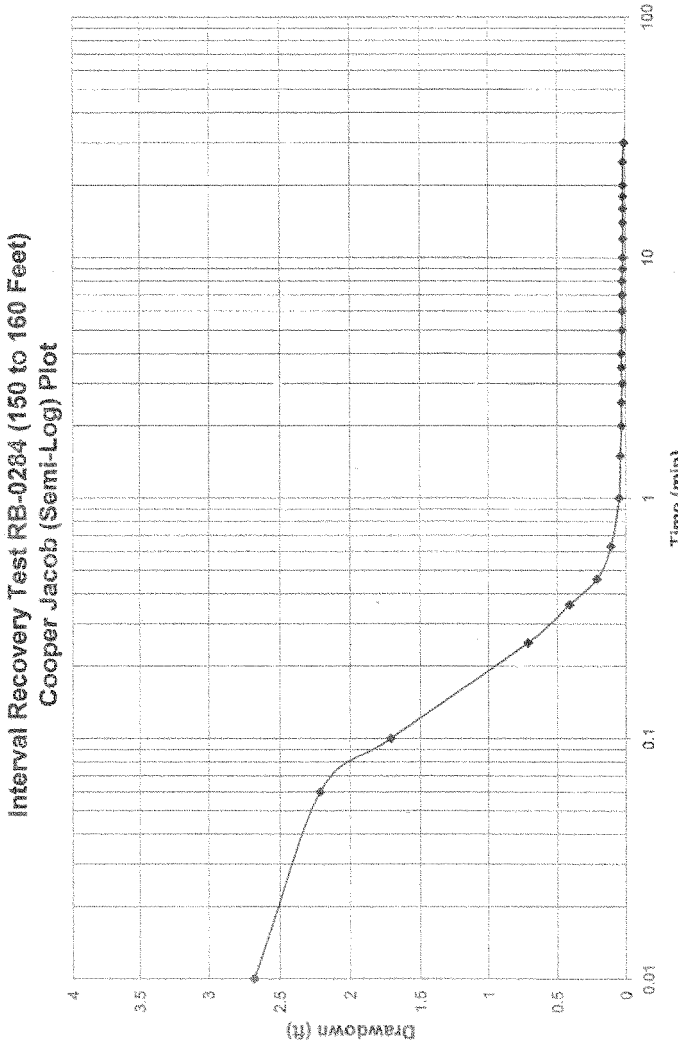
Project	Everglades AA Reservoir A-1	Pumping Test Well	RB-0284
Project No.	142004		
Client	SFWMD	Interval Test From	150
		To	160

Location	Westside, centre	Coordinates	East 758050	North 764456	Sheet 2 of 2			
Casing Depth	150	Reference Point	Breakout					
Open Hole Depth	160 After test 159	Height Above Ground Level	4.8					
Screen Depth								
Pump Setting Depth	30	Pump Details	Diameter	3"	Discharge	Flowmeter	No	
			Capacity	18gpm		Volume Tank	Yes	
Static Water Level	7.79		Generator		Water Level	Transducer	No	

Reference Clock Time			Data from when the pumping stopped.			Not Applicable		
Date	Time Hrs	Time Min	Elapsed Time Minutes	Water Level Feet	Recovery Feet	Flow Meter Reading	Discharge	Notes
10/8/2005	12	40	0.00	10.47	2.68		18.5	Last Flow Rate
			0.06	10	2.21			
			0.10	9.5	1.71			
			0.25	8.5	0.71			
			0.36	8.2	0.41			
			0.46	8	0.21			
			0.63	7.9	0.11			
			1.00	7.84	0.05			
			1.50	7.83	0.04			
			2.00	7.82	0.03			
			2.50	7.82	0.03			
			3.00	7.815	0.025			
			3.50	7.82	0.03			
			4.00	7.82	0.03			
			5.00	7.815	0.025			
			6.00	7.815	0.025			
			7.00	7.815	0.025			
			8.00	7.815	0.025			
			9.00	7.81	0.02			
			10.00	7.81	0.02			
			12.00	7.81	0.02			
			14.00	7.81	0.02			
			16.00	7.81	0.02			
			18.00	7.81	0.02			
			20.00	7.81	0.02			
			25.00	7.81	0.02			
	13	10	30.00	7.8	0.01			


Interval Pumping Test RB-0284 (150 to 160 Feet)
Cooper Jacob (Semi-Log) Plot
Drawdown (ft)
0
0.5
1
1.5
2
2.5
3
0.1
1
10
100
Time since pumping started (min)


Interval Pumping Test RB-0284 (150 to 160 Feet)
Hantush (Log-Log) Plot
Drawdown (ft)
Time since pumping started (min)
1
10
0.1
1
10
100

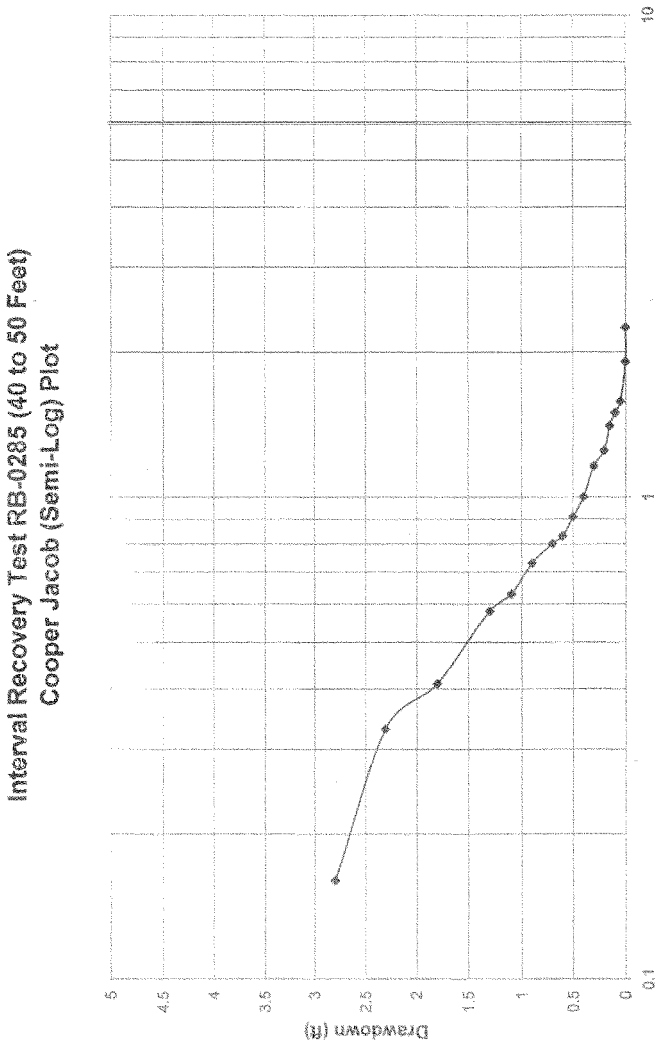

Interval Recovery Test RB-0284 (150 to 160 Feet)
Cooper Jacob (Semi-Log) Plot
Drawdown (ft)
Time (min)
0
0.5
1
1.5
2
2.5
3
3.5
4
0.01
0.1
1
10
100

EAA-1 Reservoir
Well: RB-0285
250' boring with Interval Testing Rig Floor Measuring Point: 4.70' above ground level

Water Levels in Feet, measured form the Rig Floor.
Time is minutes

First Interval Test
40' - 50' openhole section
Static Water Level: 11.70

	1st Step		2nd Step		3rd Step		4th Step		Recovery		Recovery
Flow Rate	4.6 gpm	Drawdown	9.3 gpm	Drawdown	13.8 gpm	Drawdown	16 gpm	Drawdown	Time (min.)	Water Levels	Feet
Time (min.)	Water Levels	Feet	Water Levels	Feet	Water Levels	Feet	Water Levels	Feet			
0.33	13.10	1.40	14.39	2.69	16.00	4.30	16.90	5.20	0.00	17.05	5.35
0.66	13.25	1.55	14.75	3.05	16.27	4.57	16.96	5.26	0.16	14.50	2.80
1.00	13.40	1.70	14.89	3.19	16.40	4.70	17.00	5.30	0.33	14.00	2.30
1.33	13.48	1.78	14.95	3.25	16.48	4.78	17.03	5.33	0.41	13.50	1.80
1.66	13.50	1.80	14.96	3.26	16.50	4.80	17.02	5.32	0.58	13.00	1.30
2.00	13.52	1.82	14.99	3.29	16.52	4.82	17.00	5.30	0.63	12.80	1.10
2.33	13.54	1.84	14.98	3.28	16.52	4.82	17.01	5.31	0.73	12.60	0.90
2.66	13.54	1.84	14.99	3.29	16.56	4.86	17.02	5.32	0.80	12.40	0.70
3.00	13.54	1.84	14.99	3.29	16.70	5.00	17.03	5.33	0.83	12.30	0.60
3.33	13.54	1.84	14.98	3.28	16.76	5.06	17.05	5.35	0.91	12.20	0.50
3.60	13.54	1.84	14.98	3.28	16.80	5.10	17.05	5.35	1.00	12.10	0.40
4.00	13.55	1.85	15.00	3.30	16.82	5.12	17.07	5.37	1.16	12.00	0.30
4.33	13.55	1.85	15.00	3.30	16.79	5.09	17.07	5.37	1.25	11.90	0.20
4.66	13.55	1.85	15.02	3.32	16.75	5.05	17.07	5.37	1.41	11.85	0.15
5.00	13.54	1.84	15.03	3.33	16.70	5.00	17.07	5.37	1.50	11.80	0.10
5.33	13.53	1.83	15.03	3.33	16.66	4.96	17.07	5.37	1.58	11.75	0.05
5.66	13.53	1.83	15.04	3.34	16.64	4.94	17.07	5.37	1.91	11.70	0.00
6.00	13.53	1.83	15.04	3.34	16.63	4.93	17.07	5.37	2.25	11.70	0.00
8.00	13.53	1.83	15.02	3.32	16.60	4.90	17.08	5.38			
10.00	13.53	1.83	14.98	3.28	16.54	4.84	17.08	5.38			
12.00	13.53	1.83	14.99	3.29	16.46	4.76	17.08	5.38			
14.00	13.53	1.83	14.99	3.29	16.44	4.74	17.08	5.38			
15.00	13.53	1.83	15.00	3.30	16.44	4.74	17.08	5.38			
20.00	13.53	1.83	15.00	3.30	16.44	4.74	17.08	5.38			
25.00	13.53	1.83	15.00	3.30	16.44	4.74	17.08	5.38			
30.00	13.53	1.83	14.92	3.22	16.44	4.74	17.04	5.34			
35.00			14.98	3.28	16.44	4.74	17.05	5.35			
40.00			14.99	3.29							
45.00			15.00	3.30							
50.00											
55.00				* Generator out of fuel, at the 30 min. mark, down one minute.							
60.00											


Interval Recovery Test RB-0285 (40 to 50 Feet)
Cooper Jacob (Semi-Log) Plot
Drawdown (ft)
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
0.1
1
10
Time (min)

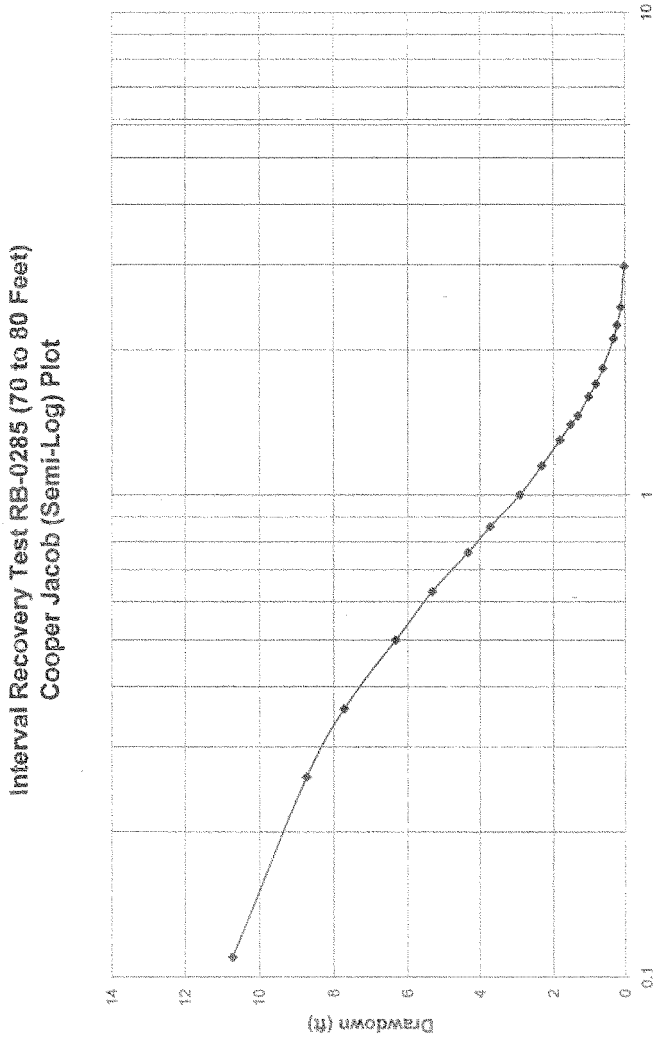
EAA-1 Reservoir
Well: RB-0285
250' boring with interval Testing Rig Floor Measuring Point: 4.70' above ground level.

Water Levels in Feet, measured form the Rig Floor.
Time is minutes

Static Water Level: 11.68

Second interval Test
70' - 80' openhole section

	1st Step		2nd Step		3rd Step		4th Step		Recovery	
Flow Rate	4.8 gpm	Drawdown	10.2 gpm	Drawdown	12.7 gpm	Drawdown	15.7 gpm	Drawdown	Time (min,	Water Level	Recovery Feet
Time (min	Water Level	Feet	Water Level	Feet	Water Level	Feet	Water Level	Feet			
0.33	12.35	0.67	13.35	1.67	17.10	5.42	20.10	8.42	0.11	22.40	10.72
0.66	12.40	0.72	13.95	2.27	17.50	5.82	20.65	8.97	0.26	20.40	8.72
1.00	12.43	0.75	14.03	2.35	17.70	6.02	21.00	9.32	0.36	19.40	7.72
1.33	12.43	0.75	14.50	2.82	17.84	6.16	21.28	9.60	0.50	18.06	6.32
1.66	12.43	0.75	14.70	3.02	17.95	6.27	21.50	9.82	0.63	17.00	5.32
2.00	12.43	0.75	14.90	3.22	18.07	6.39	21.70	10.02	0.76	16.00	4.32
2.33	12.44	0.76	15.08	3.40	18.18	6.48	21.84	10.16	0.86	15.40	3.72
2.66	12.44	0.76	15.14	3.46	18.24	6.56	21.95	10.27	1.00	14.60	2.92
3.00	12.44	0.76	15.20	3.52	18.31	6.63	22.09	10.41	1.15	14.00	2.32
3.33	12.44	0.76	15.27	3.59	18.38	6.70	22.18	10.50	1.30	13.50	1.82
3.66	12.44	0.76	15.35	3.67	18.42	6.74	22.24	10.56	1.40	13.20	1.52
4.00	12.44	0.76	15.40	3.72	18.48	6.80	22.32	10.64	1.46	13.00	1.32
4.33	12.44	0.76	15.45	3.77	18.50	6.82	22.35	10.67	1.60	12.70	1.02
4.66	12.44	0.76	15.48	3.80	18.53	6.85	22.42	10.74	1.70	12.50	0.82
5.00	12.45	0.77	15.51	3.83	18.57	6.89	22.47	10.79	1.83	12.30	0.62
5.33	12.45	0.77	15.55	3.87	18.60	6.92	22.53	10.85	2.11	12.00	0.32
5.66	12.45	0.77	15.58	3.90	18.64	6.96	22.58	10.90	2.25	11.90	0.22
6.00	12.45	0.77	15.62	3.94	18.68	7.00	22.61	10.93	2.45	11.80	0.12
8.00	12.45	0.77	15.66	3.98	18.88	7.20	22.82	11.14	2.68	11.70	0.02
10.00	12.45	0.77	15.75	4.07	18.91	7.23	23.05	11.37			
12.00	12.45	0.77	15.89	4.21	18.98	7.30	23.14	11.46			
14.00	12.45	0.77	15.95	4.27	19.02	7.34	23.22	11.54			
15.00	12.45	0.77	16.00	4.32	19.04	7.36	23.30	11.62			
20.00	12.45	0.77	16.09	4.41	19.13	7.45	23.54	11.86			
25.00	12.45	0.77	16.24	4.56	19.21	7.53	23.72	12.04			
30.00			16.28	4.60	19.28	7.60	23.75	12.07			
35.00			16.33	4.65	19.30	7.62	23.81	12.13			
40.00			16.39	4.71	19.32	7.64	23.74	12.06			
45.00							23.86	12.18			
50.00							23.95	12.27			
55.00							23.96	12.28			
60.00							24.04	12.36			


Interval Recovery Test RB-0285 (70 to 80 Feet)
Cooper Jacob (Semi-Log) Plot
Drawdown (ft)
0
2
4
6
8
10
12
14
Time (min)
0.1
1
10

EAA-1 Resvoir Project

Page 1

Well Number: RB-0285
Date: July 28,2005

Static Water Level 11.40

	From	To
Test Interval	110	120
Flow Rate	20.2	gpm

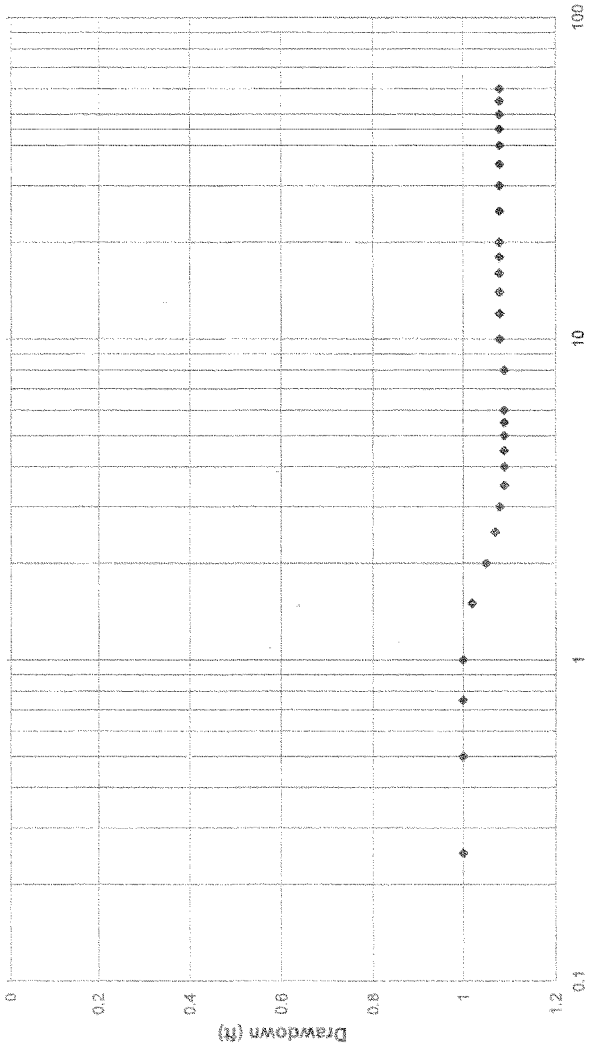
B&V Engineer: Paul Petrey

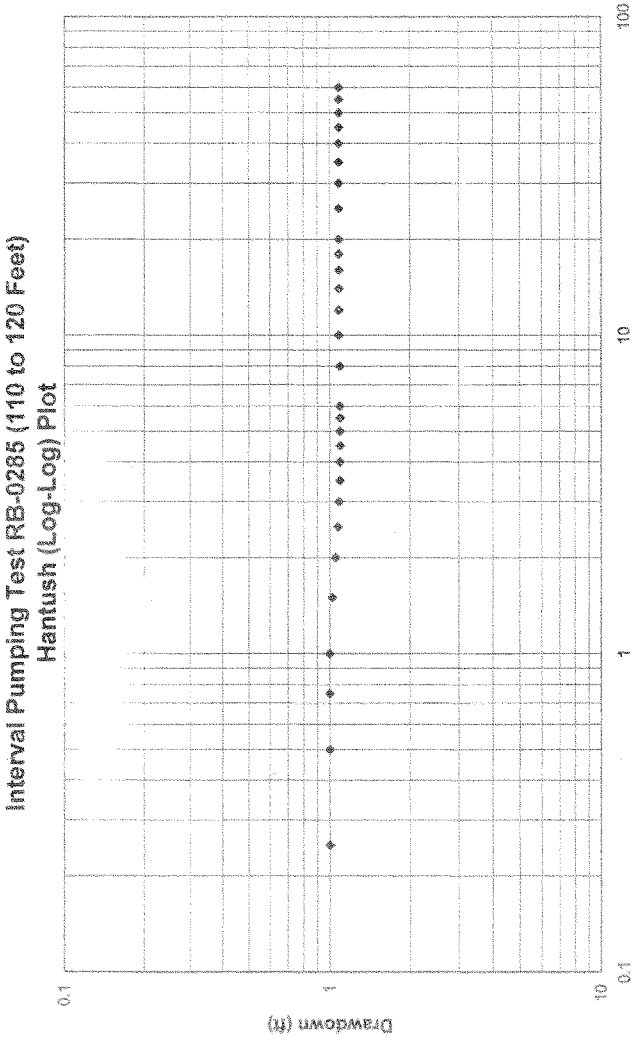
Drawdown Test

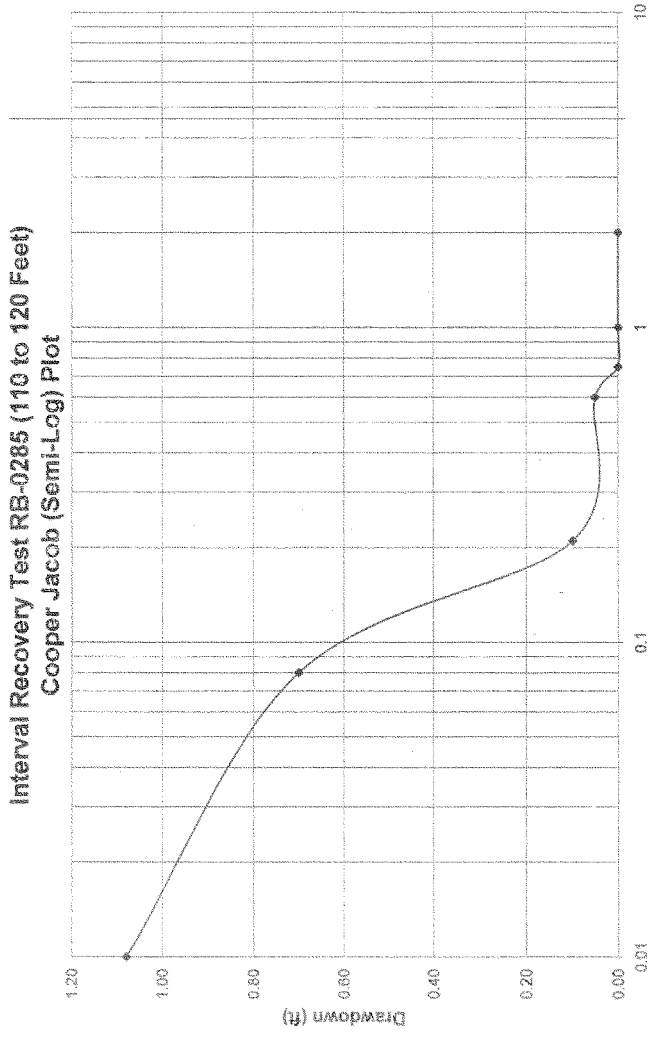
Time Minutes	Water Level Feet	Drawdown Feet
0.00	12.35	
0.25	12.40	1.00
0.50	12.40	1.00
0.75	12.40	1.00
1.00	12.40	1.00
1.50	12.42	1.02
2.00	12.45	1.05
2.50	12.47	1.07
3.00	12.48	1.08
3.50	12.49	1.09
4.00	12.49	1.09
4.50	12.49	1.09
5.00	12.49	1.09
5.50	12.49	1.09
6.00	12.49	1.09
8.00	12.49	1.09
10.00	12.48	1.08
12.00	12.48	1.08
14.00	12.48	1.08
16.00	12.48	1.08
18.00	12.48	1.08
20.00	12.48	1.08
25.00	12.48	1.08
30.00	12.48	1.08
35.00	12.48	1.08
40.00	12.48	1.08
45.00	12.48	1.08
50.00	12.48	1.08
55.00	12.48	1.08
60.00	12.48	1.08
75.00		
90.00		
105.00		
120.00		
135.00		
150.00		
165.00		
180.00		

Recovery Test

Time Minutes	Water Level Feet	Drawdown Feet
0.00	12.48	1.08
0.08	12.10	0.70
0.21	11.50	0.10
0.60	11.45	0.05
0.75	11.40	0.00
1.00	11.40	0.00
2.00	11.40	0.00
3.00	11.40	0.00
4.00	11.40	0.00
5.00	11.40	0.00
6.00	11.40	0.00
7.00	11.40	0.00
8.00	11.40	0.00
9.00	11.40	0.00
10.00	11.40	0.00
12.00	11.40	0.00
14.00	11.40	0.00
16.00		
18.00		
20.00		
22.00		
24.00		
26.00		
28.00		
30.00		


Interval Pumping Test RB-0285 (110 to 120 Feet)
Cooper Jacob (Semi-Log) Plot
Drawdown (ft)
0
0.2
0.4
0.6
0.8
1
1.2
0.1
1
10
100
Time since pumping started (min)


Interval Pumping Test RB-0285 (110 to 120 Feet)
Hantush (Log-Log) Plot
Drawdown (ft)
Time since pumping started (min)
0.1
1
10
100
0.1
1
10


Interval Recovery Test RB-0285 (110 to 120 Feet)
Cooper Jacob (Semi-Log) Plot
Drawdown (ft)
1.20
1.00
0.80
0.60
0.40
0.20
0.00
0.01
0.1
1
10
Time (min)

EAA-1 Resvoir Project

Page 1

Well Number: RB-0285
Date: July 28,2005

Static Water Level 11.44

	From	To
Test Interval	150	160
Flow Rate	22.5	gpm

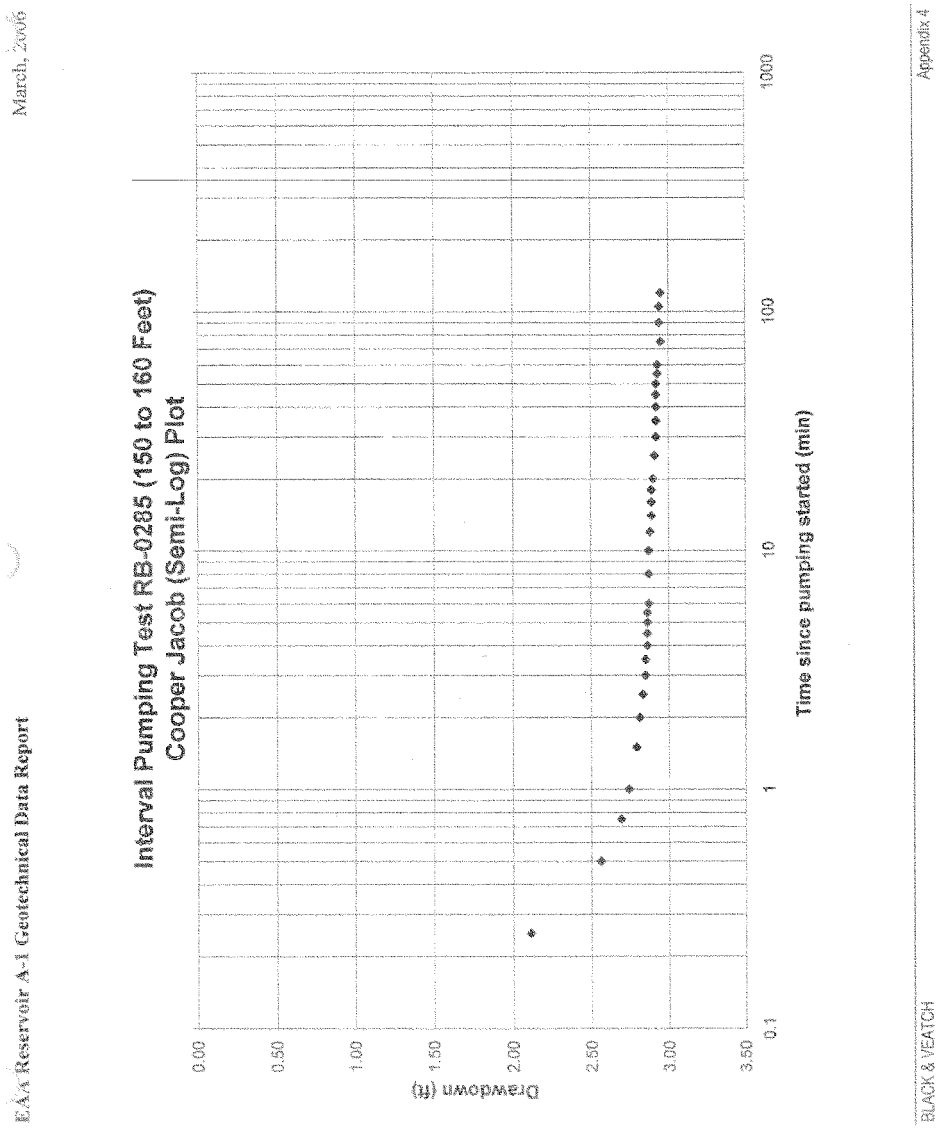
B&V Engineer: Paul Petrey

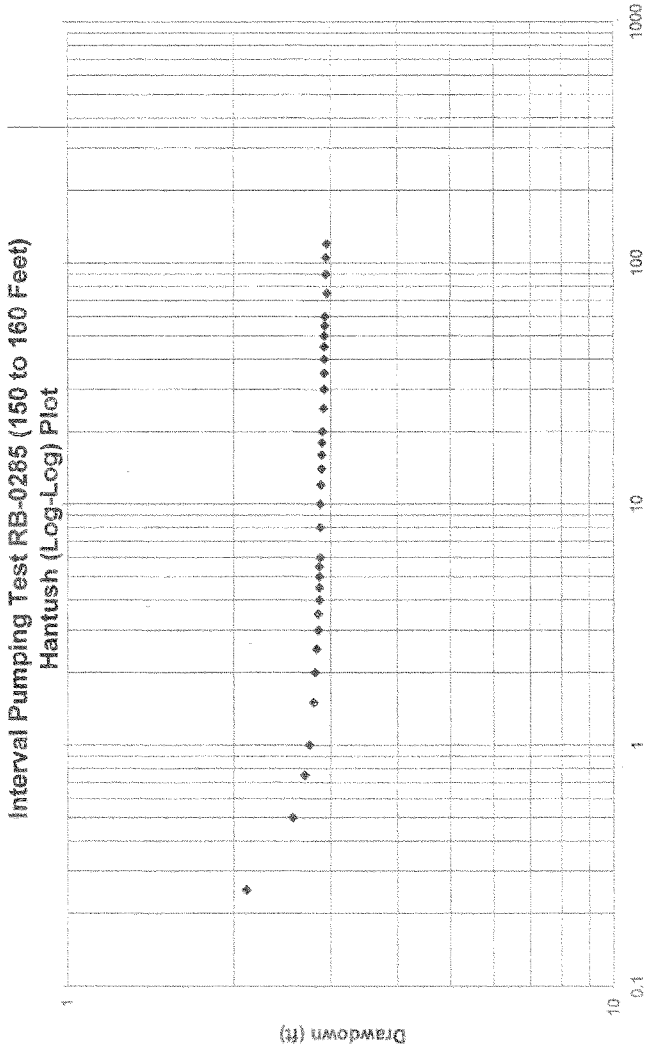
Drawdown Test

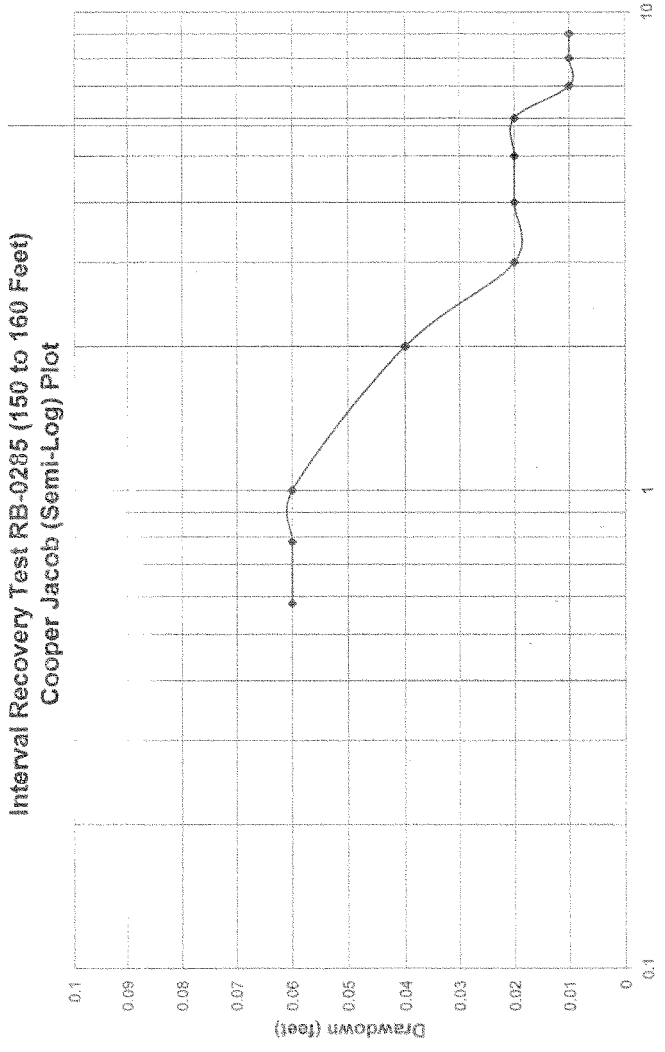
Time Minutes	Water Level Feet	Drawdown Feet
0.00	11.44	
0.25	13.55	2.11
0.50	14.00	2.56
0.75	14.13	2.69
1.00	14.18	2.74
1.50	14.23	2.79
2.00	14.25	2.81
2.50	14.27	2.83
3.00	14.29	2.85
3.50	14.29	2.85
4.00	14.30	2.86
4.50	14.30	2.86
5.00	14.30	2.86
5.50	14.30	2.86
6.00	14.31	2.87
8.00	14.31	2.87
10.00	14.31	2.87
12.00	14.32	2.88
14.00	14.33	2.89
16.00	14.33	2.89
18.00	14.33	2.89
20.00	14.34	2.90
25.00	14.35	2.91
30.00	14.36	2.92
35.00	14.36	2.92
40.00	14.36	2.92
45.00	14.36	2.92
50.00	14.36	2.92
55.00	14.37	2.93
60.00	14.37	2.93
75.00	14.39	2.95
90.00	14.38	2.94
105.00	14.38	2.94
120.00	14.39	2.95
135.00		
150.00		
165.00		
180.00		

Recovery Test

Time Minutes	Water Level Feet	Drawdown Feet
0.00	14.39	2.95
0.60	12.00	0.56
0.26	11.70	0.26
0.58	11.50	0.06
0.78	11.50	0.06
1.00	11.50	0.06
2.00	11.48	0.04
3.00	11.46	0.02
4.00	11.46	0.02
5.00	11.46	0.02
6.00	11.46	0.02
7.00	11.45	0.01
8.00	11.45	0.01
9.00	11.45	0.01
10.00	11.45	0.01
12.00	11.45	0.01
14.00	11.45	0.01
16.00		
18.00		
20.00		
22.00		
24.00		
26.00		
28.00		
30.00		


March, 2006
EAA Reservoir A-1 Geotechnical Data Report
Interval Pumping Test RB-0285 (150 to 160 Feet)
Cooper Jacob (Semi-Log) Plot
Drawdown (ft)
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
0.1
1
10
100
1000
Time since pumping started (min)
Appendix 4
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Interval Pumping Test RB-0285 (150 to 160 Feet)
Hantush (Log-Log) Plot
Drawdown (ft)
Time since pumping started (min)
1
10
0.1
1
10
100
1000


Interval Recovery Test RB-0285 (150 to 160 Feet)
Cooper Jacob (Semi-Log) Plot
Drawdown (feet)
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
0.1
1
10
Time (min)

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Project	Everglades AA Reservoir A-1	Pumping Test Well	RB-0286
Project No.	142004		
Client	SFWMD	Interval Test	From 40
			To 50

Location	Centre of site	Coordinates	East 768550	North 764359	Sheet1 of 2			
Casing Depth	40	Reference Point	Breakout					
Open Hole Depth	52 After test 52	Height Above Ground Level	5					
Screen Depth	52							
Pump Setting Depth	30	Pump Details	Diameter	3"	Discharge	Flowmeter	No	
			Capacity	18gpm		Volume Tank	Yes	
Static Water Level	8.2		Generator		Water Level	Transducer	No	

Reference Clock Time			Data from when the pumping started					
Date	Time Hrs	Time Min	Elapsed Time Minutes	Water Level Feet	Drawdown Feet	Flow Meter Reading	Discharge	Notes
2/8/2005	10	5	0.00		0		0	
			0.33	12	3.8			
			0.56	14.5	6.3			
			0.83	16.5	8.3			
			1.00	17.6	9.4			
			1.50	19.5	11.3			
			2.00	20.8	12.6			
			2.50	21.45	13.25			
			3.00	21.75	13.55			
			3.50	21.95	13.75			
			4.00	22.05	13.85			
			4.50	22.12	13.92			
			5.00	22.16	13.96			
			5.50	22.19	13.99			
			6.00	22.2	14			
			8.00	22.23	14.03		18	2 minutes for 36 gallons
			10.00	22.23	14.03			Check Flow Rate
			12.00	22.23	14.03			
			14.00	22.24	14.04			
			16.00	22.24	14.04			
			18.00	22.25	14.05			
			20.00	22.25	14.05			Check Flow Rate
			25.00	22.26	14.06		18	2 minutes for 36 gallons
			30.00	22.26	14.06			Check Flow Rate
			35.00	22.27	14.07			
			40.00	22.275	14.075		18	2 minutes for 36 gallons
			45.00	22.285	14.085			
			50.00	22.3	14.1			
			55.00	22.305	14.105			
			60.00	22.31	14.11			Check Flow Rate
			75.00	22.31	14.11		18	2 minutes for 36 gallons
			90.00	22.33	14.13			
			105.00	22.34	14.14		18	2 minutes for 36 gallons
	12	5	120.00	22.355	14.155			

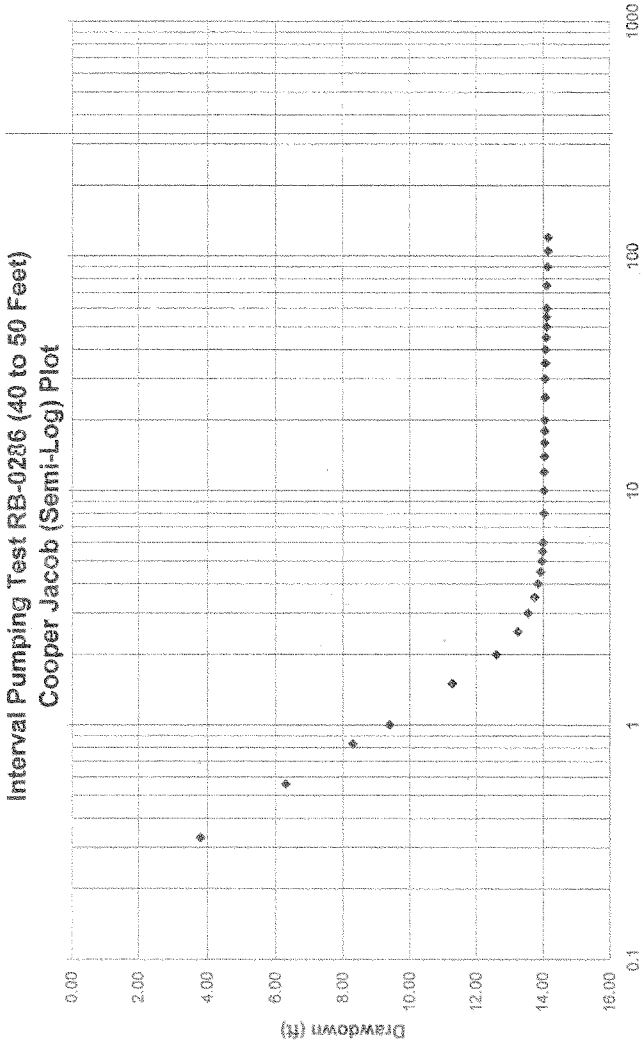
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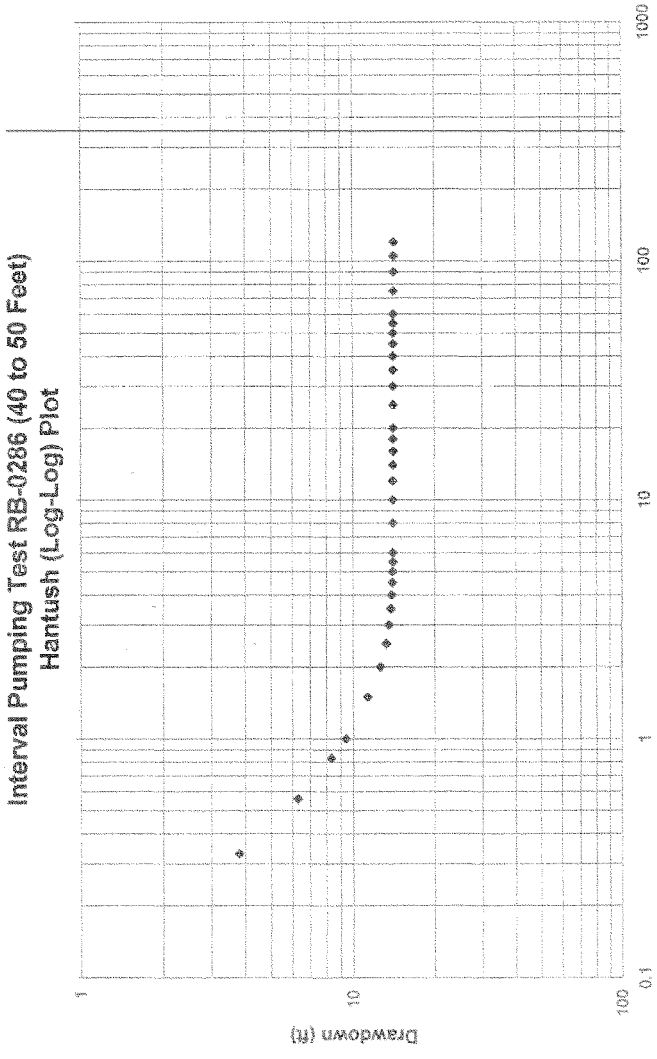
Project	Everglades AA Reservoir A-1	Pumping Test Well	RB-0286
Project No.	142004		
Client	SFWMD	Interval Test From	40
		To	50

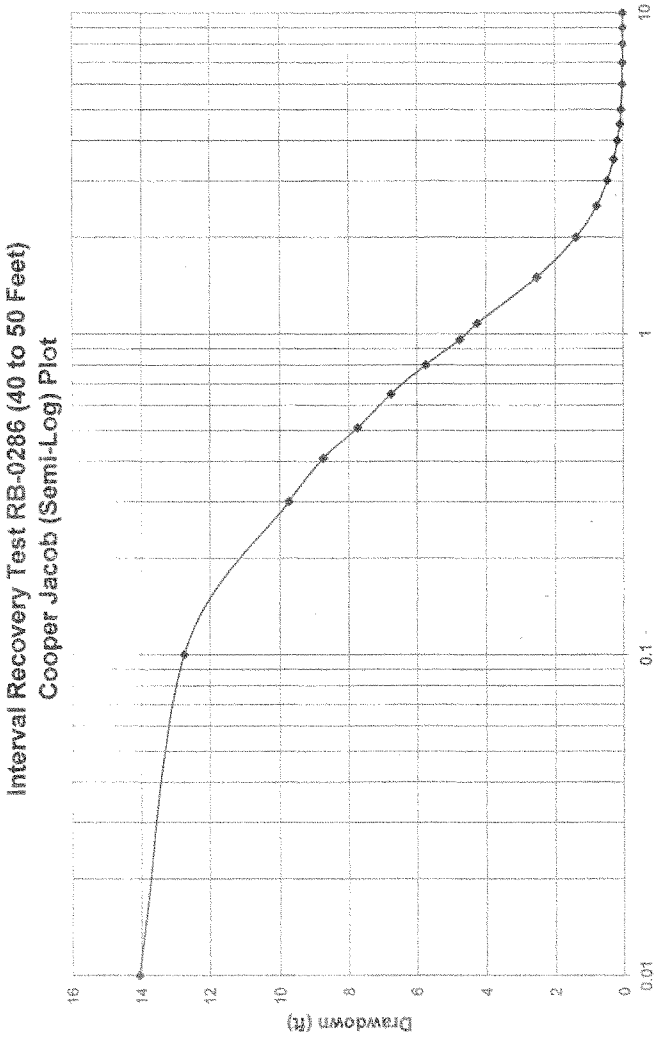
Sheet 2 of 2

Location	Centre of site	Coordinates	East 768550	North 764359			
Casing Depth	40	Reference Point	Breakout				
Open Hole Depth	52 After test 52	Height Above Ground Level	5				
Screen Depth	52						
Pump Setting Depth	30	Pump Details	Diameter	3"	Discharge	Flowmeter	No
			Capacity	18gpm		Volume Tank	Yes
Static Water Level	8.2		Generator		Water Level	Transducer	No

Reference Clock Time			Data from when the pumping stopped			Not Applicable		
Date	Time Hrs.	Time Min	Elapsed Time Minutes	Water Level Feet	Recovery Feet	Flow Meter Reading	Discharge	Notes
	12	5	0.00	22.325	14.125			Last Flow Rate
			0.10	21	12.8			
			0.30	18	9.8			
			0.41	17	8.8			
			0.51	16	7.8			
			0.65	15	6.8			
			0.80	14	5.8			
			0.96	13	4.8			
			1.08	12.5	4.3			
			1.50	10.8	2.6			
			2.00	9.65	1.45			
			2.50	9.05	0.85			
			3.00	8.73	0.53			
			3.50	8.53	0.33			
			4.00	8.42	0.22			
			4.50	8.35	0.15			
			5.00	8.32	0.12			
			6.00	8.28	0.08			
			7.00	8.27	0.07			
			8.00	8.26	0.06			
			9.00	8.26	0.06			
			10.00	8.26	0.06			
			12.00	8.26	0.06			
			14.00	8.26	0.06			
			16.00	8.26	0.06			
			18.00	8.26	0.06			
			20.00	8.26	0.06			
			25.00	8.26	0.06			
	12	35	30.00	8.26	0.06			


Interval Pumping Test RB-0236 (40 to 50 Feet)
Cooper Jacob (Semi-Log) Plot
Drawdown (ft)
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
0.1
1
10
100
1000
Time since pumping started (min)


Interval Pumping Test RB-0286 (40 to 50 Feet)
Hantush (Log-Log) Plot
Drawdown (ft)
Time since pumping started (min)
1
10
100
0.1
1
10
100
1000


Interval Recovery Test RB-0286 (40 to 50 Feet)
Cooper Jacob (Semi-Log) Plot
Drawdown (ft)
Time (min)
0
2
4
6
8
10
12
14
16
0.01
0.1
1
10

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Project	Everglades AA Reservoir A-1	Pumping Test Well	RB-0286
Project No.	142004		
Client	SFWMD	Interval Test From	70
		To	80

Location	Centre of site	Coordinates	East 768550	North 764359	Sheet 1 of 2			
Casing Depth	70	Reference Point	Breakout					
Open Hole Depth	78.5 After test	Height Above Ground Level	5					
Screen Depth								
Pump Setting Depth	30	Pump Details	Diameter	3"	Discharge	Flowmeter	No	
			Capacity	18gpm		Volume Tank	Yes	
Static Water Level	8.3		Generator		Water Level	Transducer	No	

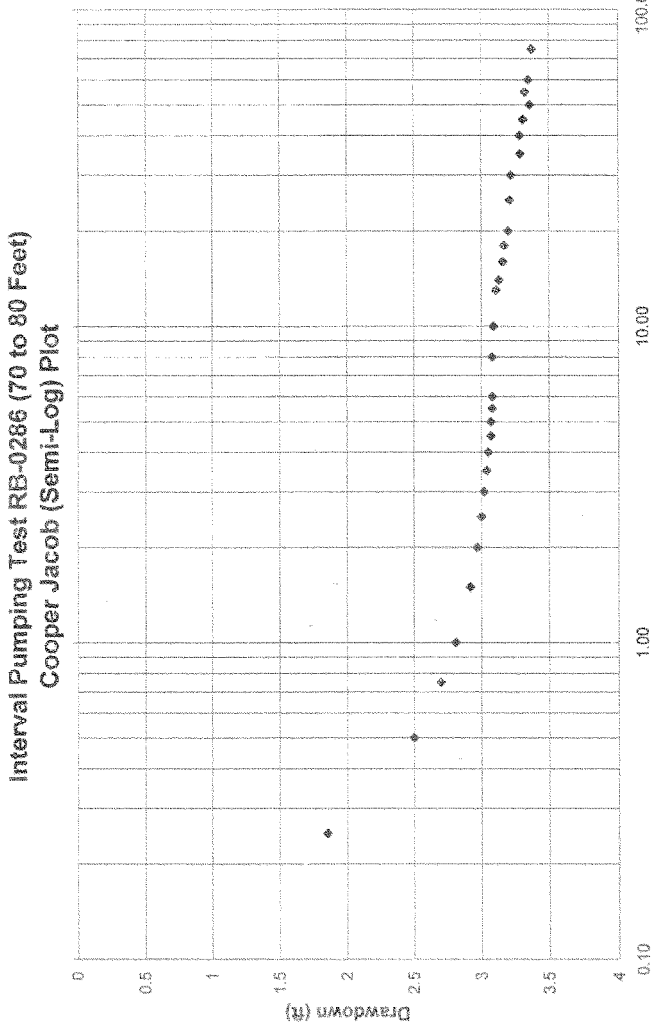
Reference Clock Time			Data from when the pumping started					
Date	Time Hrs	Time Min	Elapsed Time Minutes	Water Level Feet	Drawdown Feet	Flow Meter Reading	Discharge	Notes
2/8/2005	15.2	20	0.00		0		0	
			0.25	10.15	1.85			
			0.50	10.8	2.5			
			0.75	11	2.7			
			1.00	11.11	2.81			
			1.50	11.22	2.92			
			2.00	11.27	2.97			
			2.50	11.3	3			
			3.00	11.32	3.02			
			3.50	11.34	3.04			
			4.00	11.35	3.05			
			4.50	11.37	3.07			
			5.00	11.37	3.07			
			5.50	11.38	3.08			
			6.00	11.38	3.08			
			8.00	11.38	3.08		18	2 minutes for 38 gallons
			10.00	11.39	3.09			Check Flow Rate
			13.00	11.41	3.11			
			14.00	11.43	3.13			
			16.00	11.46	3.16			
			18.00	11.47	3.17			
			20.00	11.5	3.2			Check Flow Rate
			25.00	11.51	3.21		18	2 minutes for 38 gallons
			30.00	11.52	3.22			Check Flow Rate
			35.00	11.59	3.29		18	2 minutes for 38 gallons
			40.00	11.585	3.285			
			45.00	11.61	3.31			
			50.00	11.66	3.36			
			55.00	11.625	3.325		18	2 minutes for 38 gallons
			60.00	11.65	3.35			Check Flow Rate
			75.00	11.675	3.375			Thunderstorm approaching

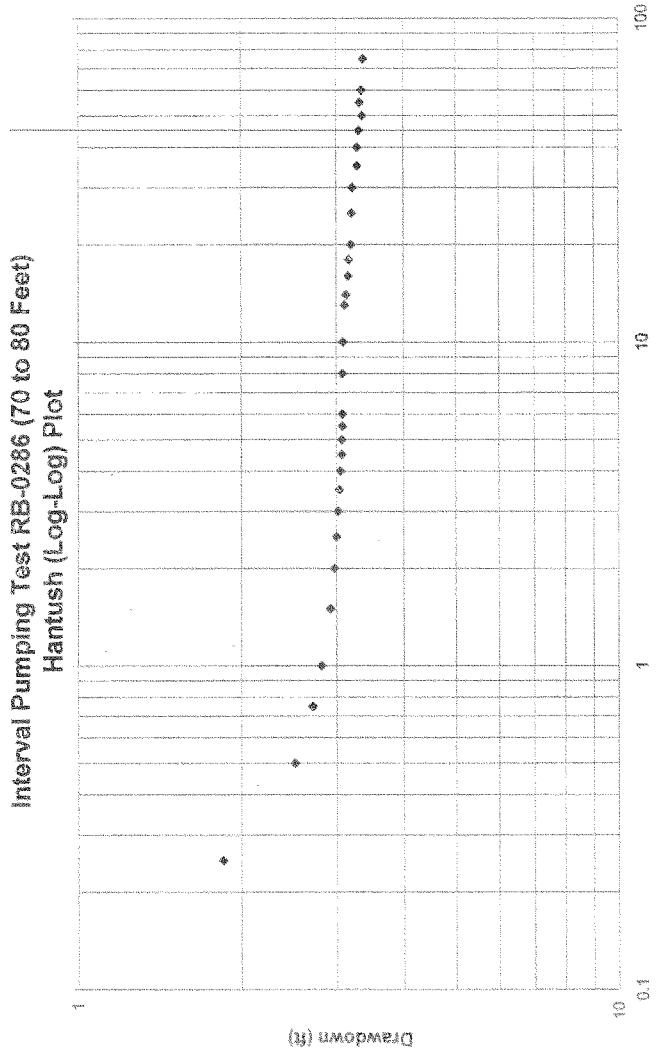
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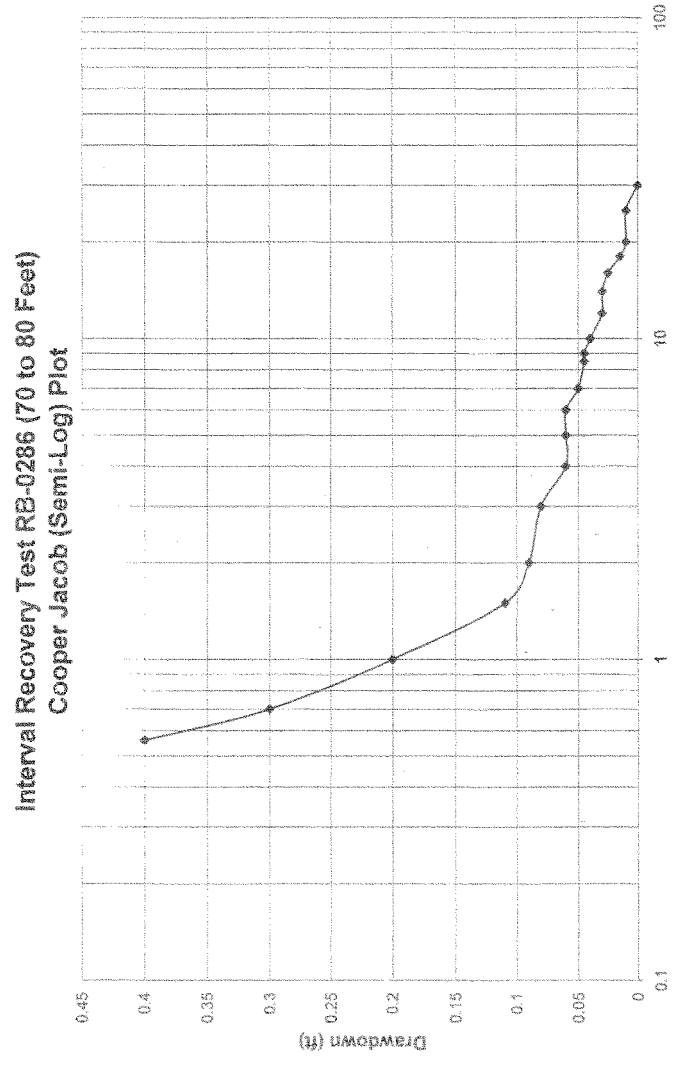
Project		Pumping Test Well	RB-0286
Project No.			
Client		Interval Test	From 70
			To 80

Location	Centre of site	Coordinates	East 768560	North 784359	Sheet 2 of 2		
Casing Depth	70	Reference Point	Breakout				
Open Hole Depth	78.5 After test	Height Above Ground Level	5				
Screen Depth							
Pump Setting Depth	30	Pump Details	Diameter	3"	Discharge	Flowmeter	No
			Capacity	16gpm		Volume Tank	Yes
Static Water Level	6.3		Generator		Water Level	Transducer	No

Reference Clock Time			Data from when the pumping stopped.			Not Applicable		
Date	Time Hrs	Time Min	Elapsed Time Minutes	Water Level Feet	Recovery Feet	Flow Meter Reading	Discharge	Notes
2/8/2005	16	36	0.00	11.675	3.375			Last Flow Rate
			0.08	11	2.7			
			0.16	10	1.7			
			0.23	9.5	1.2			
			0.38	9	0.7			
			0.50	8.8	0.5			
			0.56	8.7	0.4			
			0.70	8.6	0.3			
			1.00	8.5	0.2			
			1.50	8.41	0.11			
			2.00	8.39	0.09			
			3.00	8.38	0.08			
			4.00	8.36	0.06			
			5.00	8.36	0.06			
			6.00	8.36	0.06			
			7.00	8.35	0.05			
			8.50	8.345	0.045			
			9.00	8.345	0.045			
			10.00	8.34	0.04			
			12.00	8.33	0.03			
			14.00	8.33	0.03			
			16.00	8.325	0.025			
			18.00	8.315	0.015			
			20.00	8.31	0.01			
			25.00	8.31	0.01			
			30.00	8.3	0			


Interval Pumping Test RB-0286 (70 to 80 Feet)
Cooper Jacob (Semi-Log) Plot
Drawdown (ft)
0
0.5
1
1.5
2
2.5
3
3.5
4
0.10
1.00
10.00
100.00
Time since pumping started (min)


Interval Pumping Test RB-0286 (70 to 80 Feet)
Hantush (Log-Log) Plot
Drawdown (ft)
Time since pumping started (min)
1
10
0.1
1
10
100


Interval Recovery Test RB-0286 (70 to 80 Feet)
Cooper Jacob (Semi-Log) Plot
Drawdown (ft)
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
0.1
1
10
100
Time (min)

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Project	Everglades AA Reservoir A-1	Pumping Test Well	RB-0286
Project No.	142004		
Client	SFWMD	Interval Test	From 110
			To 120

Location	Centre of site	Coordinates	East 788550	North 784359	Sheet 1 of 2		
Casing Depth	110	Reference Point	Breakout				
Open Hole Depth	120 After test 120	Height Above Ground Level	5				
Screen Depth							
Pump Setting Depth	30	Pump Details	Diameter	3"	Discharge	Flowmeter	No
			Capacity	18gpm		Volume Tank	Yes
Static Water Level	8.45		Generator		Water Level	Transducer	No

Reference Clock Time			Data from when the pumping started					
Date	Time Hrs	Time Min	Elapsed Time Minutes	Water Level Feet	Drawdown Feet	Flow Meter Reading	Discharge	Notes
3/8/2005	9	7	0.00	8.45	0		0	
			0.33	10.9	2.45			
			0.50	11.9	3.45			
			0.75	12.3	3.85			
			1.00	12.42	3.97			
			1.50	12.5	4.05			
			2.00	12.5	4.05			
			2.50	12.53	4.08			
			3.00	12.54	4.09			
			3.50	12.55	4.1			
			4.00	12.56	4.11			
			4.50	12.56	4.11			
			5.00	12.57	4.12			
			5.50	12.58	4.13			
			6.00	12.58	4.13			
			8.00	12.6	4.15			
			10.00	12.61	4.16			Check Flow Rate
			13.00	12.61	4.16		18.75	2 minutes for 37.5 gallons
			14.00	12.62	4.17			
			16.00	12.65	4.2			
			18.00	12.66	4.21			
			20.00	12.665	4.215			Check Flow Rate
			25.00	12.715	4.265			
			30.00	12.73	4.28			Check Flow Rate
			35.00	12.74	4.29		18.75	2 minutes for 37.5 gallons
			40.00	12.75	4.3			
			45.00	12.755	4.305			
			50.00	12.76	4.31			
			55.00	12.76	4.31			
			60.00	12.76	4.31			Check Flow Rate
			75.00	12.76	4.31		18.75	2 minutes for 37.5 gallons
			90.00					
			105.00					
			120.00					

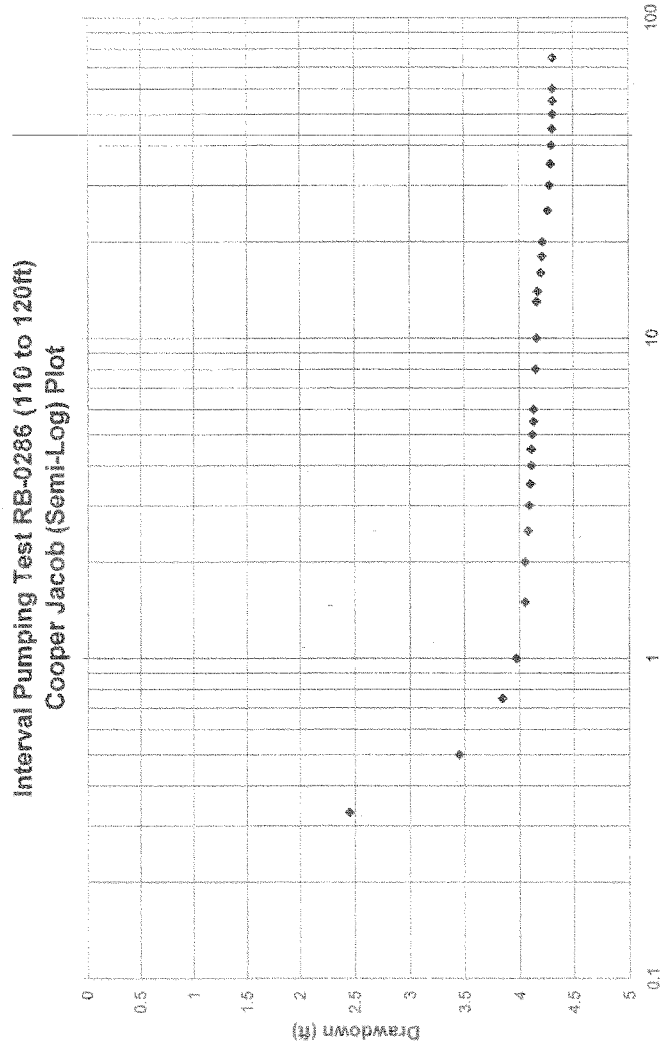
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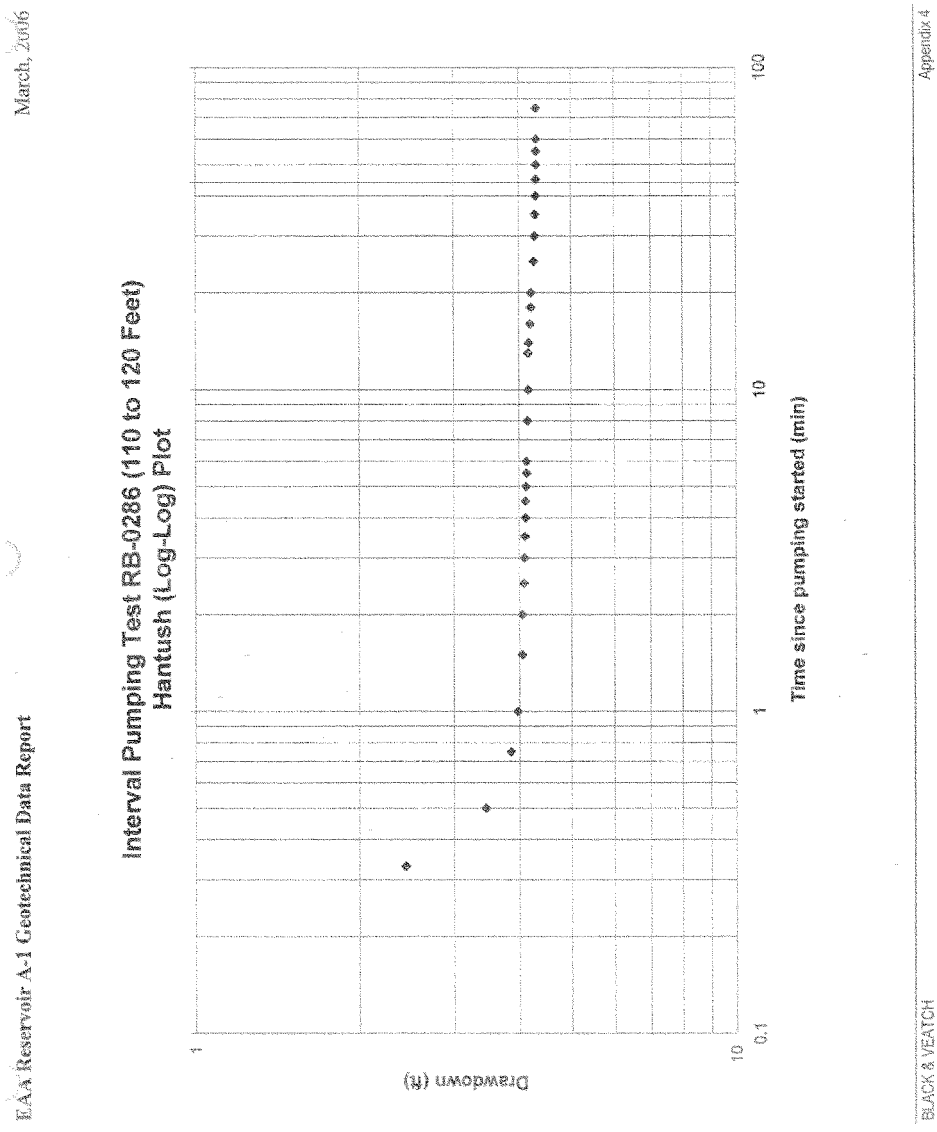
Project		Pumping Test Well	RB-0286
Project No.			
Client		Interval Test From	110
		To	120

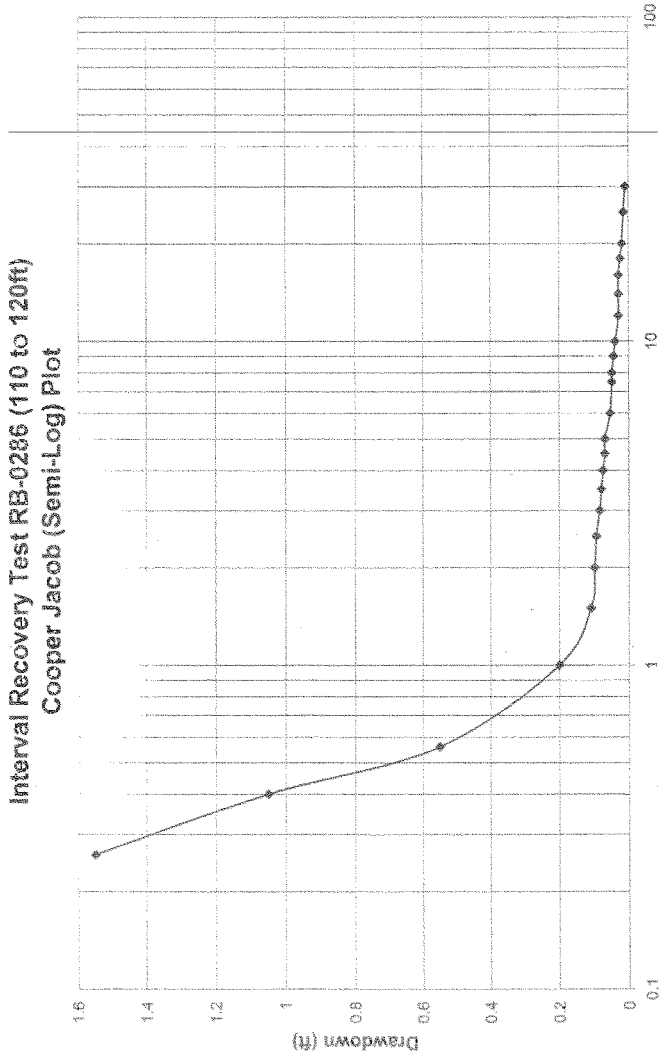
Location: Centre of site | Coordinates: East 766550, North 764359 | Sheet 2 of 2

Casing Depth	110	Reference Point	Breakout				
Open Hole Depth	120 After test 120	Height Above Ground Level	5				
Screen Depth							
Pump Setting Depth	30	Pump Details	Diameter	3"	Discharge	Flowmeter	No
			Capacity	18gpm		Volume Tank	Yes
Static Water Level	8.45		Generator		Water Level	Transducer	No

Reference Clock Time			Data from when the pumping stopped.			Not Applicable		
Date	Time Hrs.	Time Min	Elapsed Time Minutes	Water Level Feet	Recovery Feet	Flow Meter Reading	Discharge	Notes
2/8/2005	16	36	0.00	12.76	4.31		18.75	Last Flow Rate
			0.26	10	1.55			
			0.40	9.5	1.05			
			0.56	9	0.55			
			1.00	8.65	0.2			
			1.50	8.56	0.11			
			2.00	8.55	0.1			
			2.50	8.545	0.095			
			3.00	8.535	0.085			
			3.50	8.53	0.08			
			4.00	8.525	0.075			
			4.50	8.52	0.07			
			5.00	8.52	0.07			
			6.00	8.505	0.055			
			7.50	8.5	0.05			
			8.00	8.5	0.05			
			9.00	8.495	0.045			
			10.00	8.49	0.04			
			12.00	8.48	0.03			
			14.00	8.48	0.03			
			16.00	8.48	0.03			
			18.00	8.475	0.025			
			20.00	8.47	0.02			
			25.00	8.465	0.015			
			30.00	8.46	0.01			


Interval Pumping Test RB-0286 (110 to 120ft)
Cooper Jacob (Semi-Log) Plot
Drawdown (ft)
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
0.1
1
10
100
Time since pumping started (min)


E.A.A Reservoir A-1 Geotechnical Data Report
March, 2006
Interval Pumping Test RB-0286 (110 to 120 Feet)
Hantush (Log-Log) Plot
Drawdown (ft)
Time since pumping started (min)
1
10
0.1
1
10
100
Appendix 4
BLACK & VEATCH


Interval Recovery Test RB-0236 (110 to 120ft)
Cooper Jacob (Semi-Log) Plot
Drawdown (ft)
Time (min)
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.1
1
10
100

BLACK & VEATCH
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Project	Everglades AA Reservoir A-1	Pumping Test Well	RB-0286
Project No.	142004		
Client	SFWMD	Interval Test From	150
		To	160

Location: Centre of site | Coordinates: East 768550, North 764350 | Sheet 1 of 2

Casing Depth	150	Reference Point	Breakout				
Open Hole Depth	160 After test 160	Height Above Ground Level	5				
Screen Depth							
Pump Setting Depth	30	Pump Details	Diameter	3"	Discharge	Flowmeter	No
			Capacity	18gpm		Volume Tank	Yes
Static Water Level	8.53		Generator		Water Level	Transducer	No

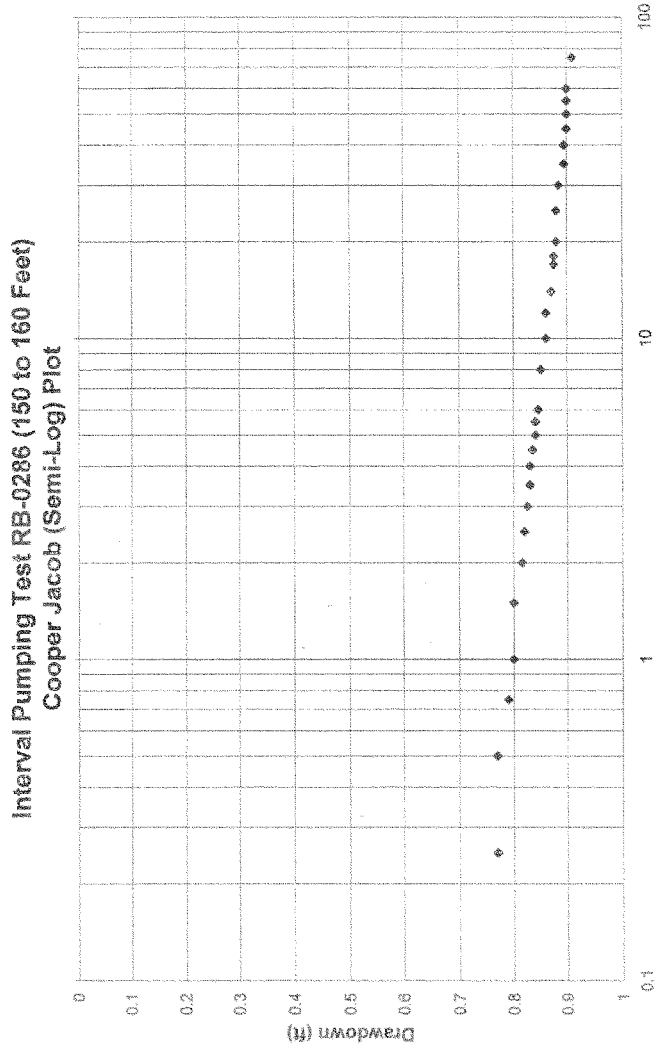
Reference Clock Time			Data from when the pumping started					
Date	Time Hrs	Time Min	Elapsed Time Minutes	Water Level Feet	Drawdown Feet	Flow Meter Reading	Discharge	Notes
3/8/2005	12	36	0.00	8.53	0		0	
			0.25	9.3	0.77			
			0.50	9.3	0.77			
			0.75	9.32	0.79			
			1.00	9.33	0.8			
			1.50	9.33	0.8			
			2.00	9.345	0.815			
			2.50	9.35	0.82			
			3.00	9.355	0.825			
			3.50	9.36	0.83			
			4.00	9.36	0.83			
			4.50	9.365	0.835			
			5.00	9.37	0.84			
			5.50	9.37	0.84			
			6.00	9.375	0.845			
			8.00	9.38	0.85			
			10.00	9.39	0.86			Check Flow Rate
			12.00	9.39	0.86		18	2 minutes for 36 gallons
			14.00	9.4	0.87			
			17.00	9.405	0.875			
			18.00	9.405	0.875			
			20.00	9.41	0.88			Check Flow Rate
			25.00	9.41	0.88		18.5	2 minutes for 37 gallons
			30.00	9.415	0.885			Check Flow Rate
			35.00	9.425	0.895			
			40.00	9.425	0.895			
			45.00	9.43	0.9		18	2 minutes for 36 gallons
			50.00	9.43	0.9			
			55.00	9.43	0.9			
			60.00	9.43	0.9			Check Flow Rate
			75.00	9.44	0.91		18	2 minutes for 36 gallons

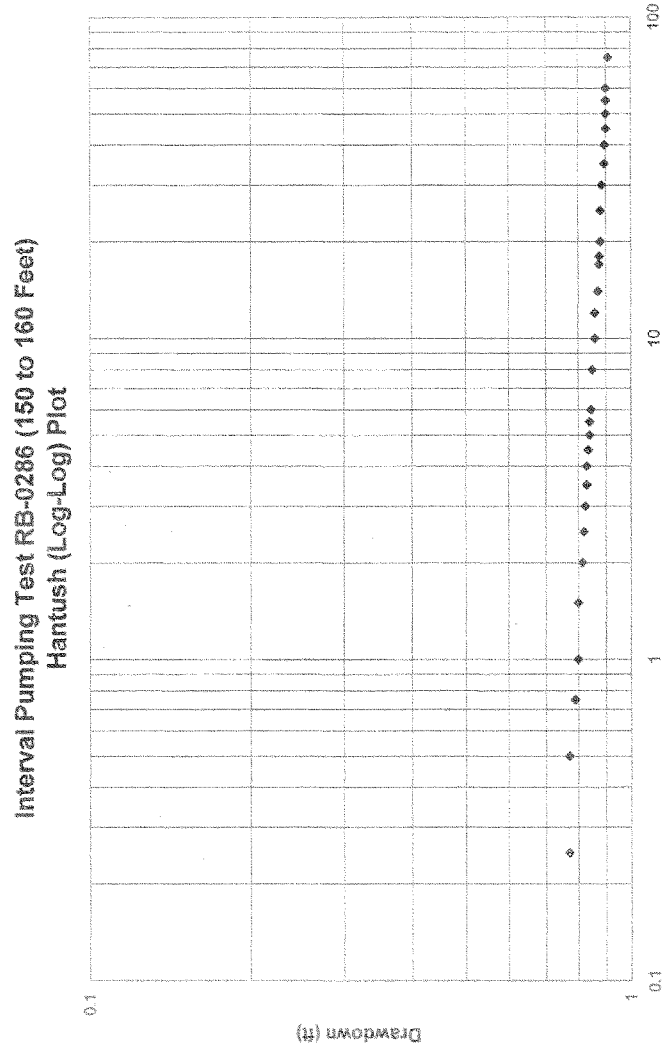
BLACK & VEATCH
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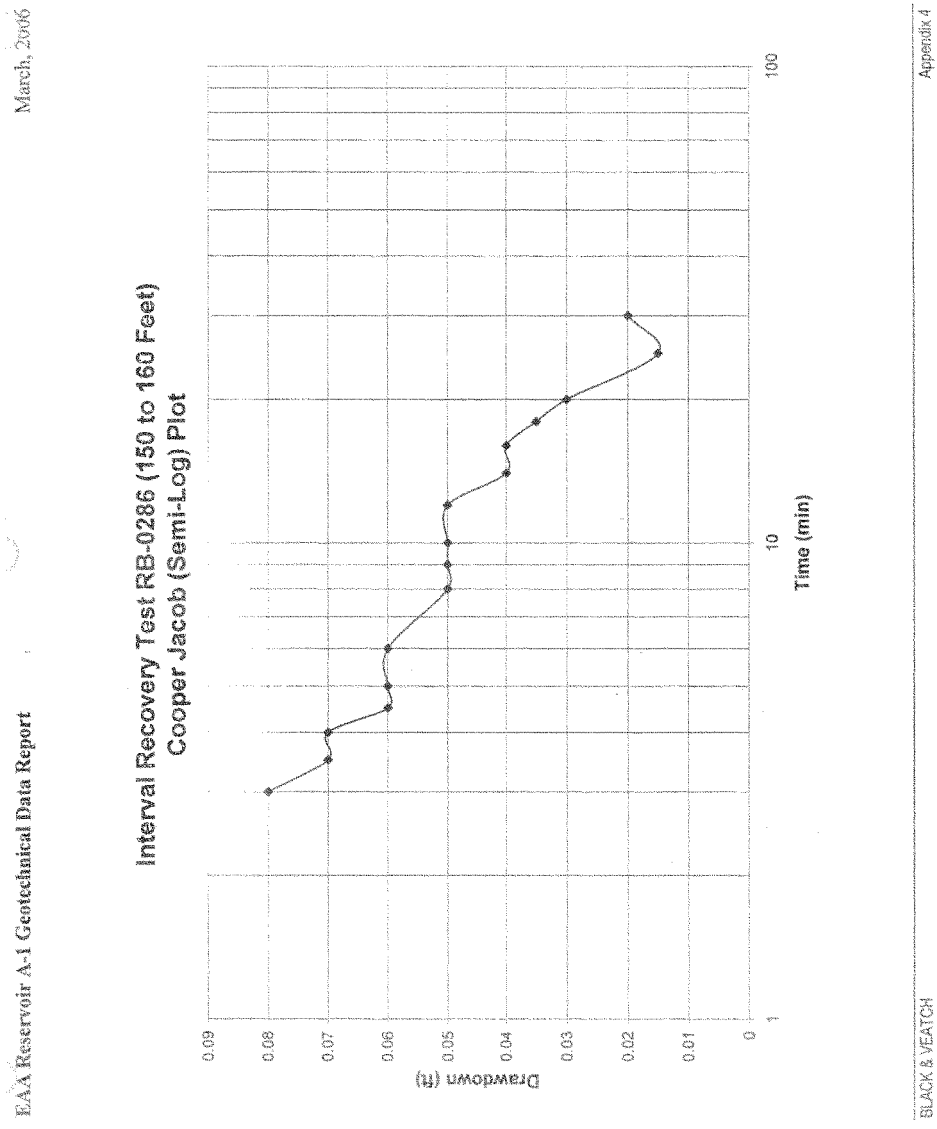
Project		Pumping Test Well	RB-0286
Project No.			
Client		Interval Test	From 150
			To 160

Location	Centre of site	Coordinates	East 766550	North 764359	Sheet 2 of 2		
Casing Depth	150	Reference Point	Breakout				
Open Hole Depth	160 After test 160	Height Above Ground Level	5				
Screen Depth							
Pump Setting Depth	30	Pump Details	Diameter	3"	Discharge	Flowmeter	No
			Capacity	18gpm		Volume Tank	Yes
Static Water Level	8.53		Generator		Water Level	Transducer	No

Reference Clock Time			Data from when the pumping stopped			Not Applicable		
Date	Time Hrs.	Time Min.	Elapsed Time Minutes	Water Level Feet	Recovery Feet	Flow Meter Reading	Discharge	Notes
2/8/2005	16	36	0.00	9.44	0.91		18	Last Flow Rate
			0.41	8.65	0.12			
			0.80	8.6	0.07			
			1.00	8.63	0.1			
			1.50	8.62	0.09			
			2.00	8.61	0.08			
			3.00	8.61	0.08			
			3.50	8.6	0.07			
			4.00	8.6	0.07			
			4.50	8.59	0.06			
			5.00	8.59	0.06			
			6.00	8.59	0.06			
			7.00					
			8.00	8.58	0.05			
			9.00	8.58	0.05			
			10.00	8.58	0.05			
			12.00	8.58	0.05			
			14.00	8.57	0.04			
			16.00	8.57	0.04			
			18.00	8.565	0.035			
			20.00	8.56	0.03			
			25.00	8.545	0.015			
			30.00	8.55	0.02			


Interval Pumping Test RB-0286 (150 to 160 Feet)
Cooper Jacob (Semi-Log) Plot
Drawdown (ft)
Time since pumping started (min)
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
0.1
1
10
100


Interval Pumping Test RB-0286 (150 to 160 Feet)
Hantush (Log-Log) Plot
Drawdown (ft)
Time since pumping started (min)
0.1
1
10
100
0.1
1


March, 2006
EAA Reservoir A-1 Geotechnical Data Report
Interval Recovery Test RB-0286 (150 to 160 Feet)
Cooper Jacob (Semi-Log) Plot
Drawdown (ft)
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
1
10
100
Time (min)
Appendix 4
BLACK & VEATCH

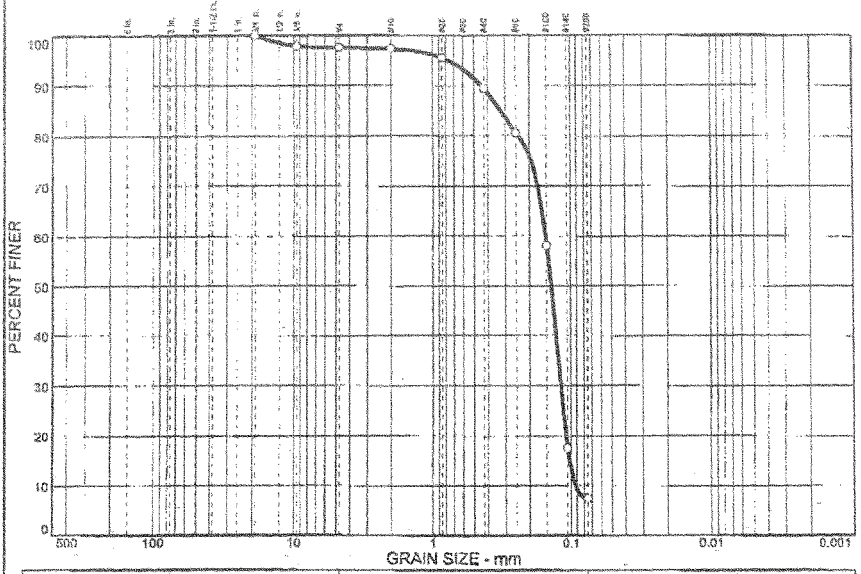
APPENDIX 5

APPENDIX 5
LABORATORY TEST RESULTS
GRAIN SIZE ANALYSIS

Note: The borings at the Test Cell Site and the supplemental borings were assigned temporary identification numbers prior to drilling. These temporary boring numbers are referred to as old boring numbers in the report text. After completion of the test cell and supplemental borings, a block of new boring numbers was received from the USACE Jacksonville District office. Software used for the test results from the summer 2005 borings did not permit the old boring number to be altered. Therefore, the test results for the supplemental borings contain both the old boring number and its corresponding new number. The new boring number was inserted in the remarks column of the test results for the supplemental borings. The laboratory test results for the Test Cell borings contain only the old boring numbers. For ease of reference, the table below shows the old boring numbers for the Test Cell boring and the corresponding new boring number.

Test Cell Borings	
Old Boring Number	New Boring Number
BA-01	CP05-EAARS-CB-0168
BA-02	CP05-EAARS-CB-0169
BA-03	CP05-EAARS-CB-0170
BA-04	CP05-EAARS-CB-0171
BA-05	CP05-EAARS-CB-0172
BA-06	CP05-EAARS-CB-0173
BA-07	CP05-EAARS-CB-0174
BA-08	CP05-EAARS-CB-0175
BA-09	CP05-EAARS-CB-0176
BA-10	CP05-EAARS-CB-0177
TC-01	CP05-EAARS-CB-0178
TC-02	CP05-EAARS-CB-0179
TC-03	CP05-EAARS-CB-0180
TC-04	CP05-EAARS-CB-0181
TC-05	CP05-EAARS-CB-0182
TC-06	CP05-EAARS-CB-0183
TC-07	CP05-EAARS-CB-0184
TC-08	CP05-EAARS-CB-0185
TC-09	CP05-EAARS-CB-0186
TC-10	CP05-EAARS-CB-0187
TC1-E	CP05-EAARS-CB-0188
TC1-N	CP05-EAARS-CB-0189
TC1-W	CP05-EAARS-CB-0190
TC1-S	CP05-EAARS-CB-0191
TC2-E	CP05-EAARS-CB-0192
TC2-N	CP05-EAARS-CB-0193
TC2-W	CP05-EAARS-CB-0194
TC2-S	CP05-EAARS-CB-0195

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	2.4	0.2	8.0	81.9	7.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4 in.	100.0		
3/8 in.	97.9		
#4	97.6		
#10	97.4		
#20	95.3		
#40	89.4		
#60	80.6		
#100	58.1		
#140	17.5		
#200	7.5		

*(no specification provided)

Soil Description

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.324 D_{60}= 0.153 D_{50}= 0.140

D_{30}= 0.119 D_{15}= 0.103 D_{10}= 0.0926

C_u= 1.65 C_c= 1.01

Classification

USCS= AASHTO=

Remarks

Sample No.: B234 Source of Sample: Date:

Location: BA-01 Elev./Depth: 48.5-50.0'

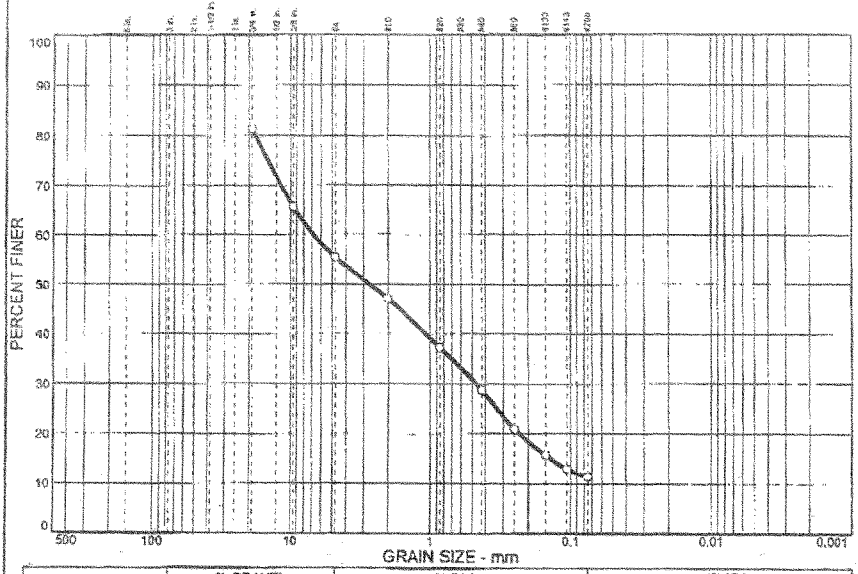
NODARSE & ASSOCIATES, INC.

Client:

Project: EAA

Project No: W04-G-487 Plate

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
		25.9	8.3	18.4	17.3	11.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4 in.	81.3		
3/8 in.	65.6		
#4	55.4		
#10	47.1		
#20	37.3		
#40	28.7		
#60	20.9		
#100	15.7		
#140	12.9		
#200	11.4		

*(no specification provided)

Soil Description

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= D_{60}= 6.82 D_{50}= 2.72

D_{30}= 0.466 D_{15}= 0.139 D_{10}=

C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Sample No.: BB01 Source of Sample: Date:

Location: BA-02 Elev./Depth: 18.5-20.0'

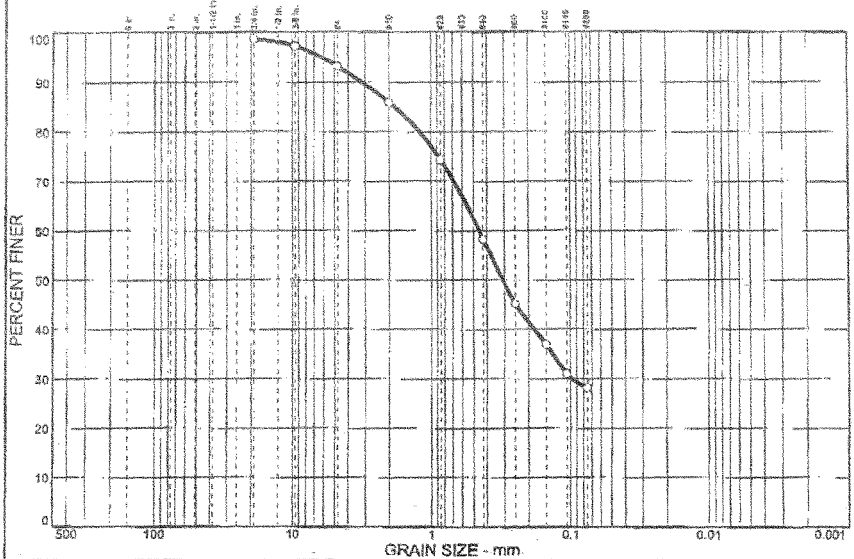
NODARSE & ASSOCIATES, INC.

Client:

Project: EAA

Project No: W04-G-487 Plate

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
		5.5	7.2	27.6	30.2	28.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4 in.	98.6		
3/8 in.	97.2		
#4	93.1		
#10	85.9		
#20	74.3		
#40	58.3		
#60	45.2		
#100	36.9		
#140	31.0		
#200	28.1		

* (no specification provided)

Soil Description

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 1.83 D_{60}= 0.454 D_{50}= 0.309

D_{30}= 0.0972 D_{15}= D_{10}=

C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Sample No.: B280 Source of Sample: Date:

Location: BA-03 Elev./Depth: 13.5-15.0'

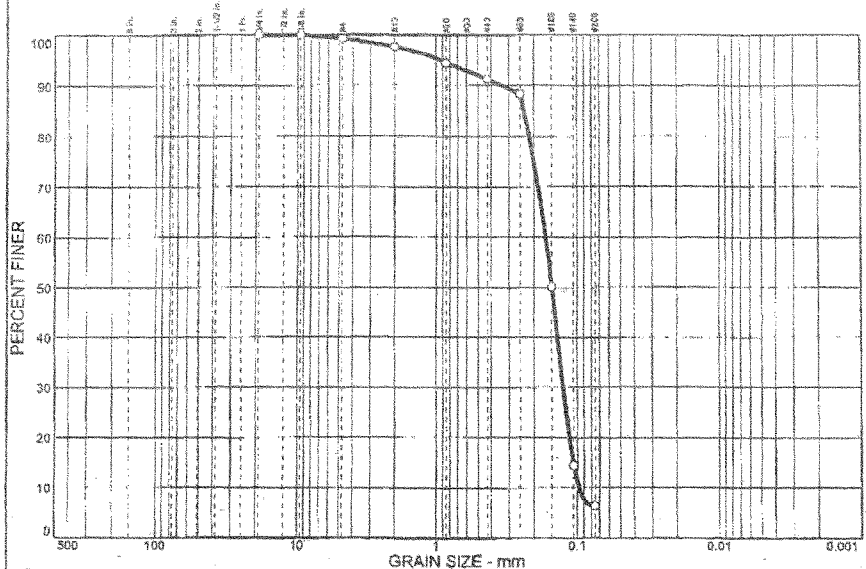
NODARSE & ASSOCIATES, INC.

Client:

Project: EAA

Project No: W04-G-487 Plate

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.7	1.6	6.4	84.9	6.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4 in.	100.0		
3/8 in.	100.0		
#4	99.3		
#10	97.7		
#20	94.5		
#40	91.3		
#60	88.3		
#100	50.1		
#140	14.5		
#200	6.4		

* (no specification provided)

Soil Description

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.237 D_{60}= 0.166 D_{50}= 0.150

D_{30}= 0.125 D_{15}= 0.107 D_{10}= 0.0973

C_U= 1.71 C_C= 0.97

Classification

USCS= AASHTO=

Remarks

Sample No.: 0262 Source of Sample: Date:

Location: BA-04 Elev./Depth: 48.5-50.0'

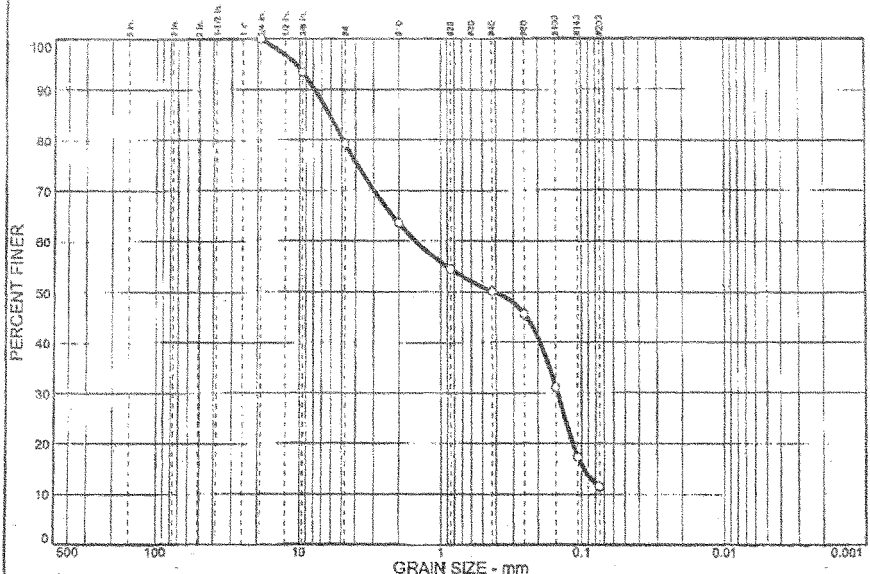
NODARSE & ASSOCIATES, INC.

Client:

Project: EAA

Project No: W04-C-487 Plate

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	20.8	15.7	13.3	38.8	11.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4 in.	100.0		
3/8 in.	93.4		
#4	79.2		
#10	63.5		
#20	54.6		
#40	50.2		
#60	45.7		
#100	31.1		
#140	17.2		
#200	11.4		

* (no specification provided)

Soil Description

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 6.18 D_{60}= 1.52 D_{50}= 0.408

D_{30}= 0.146 D_{15}= 0.0972 D_{10}=

C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Sample No.: BCBR Source of Sample: Date:

Location: BA-05 Elev./Depth: 28.5-30.0'

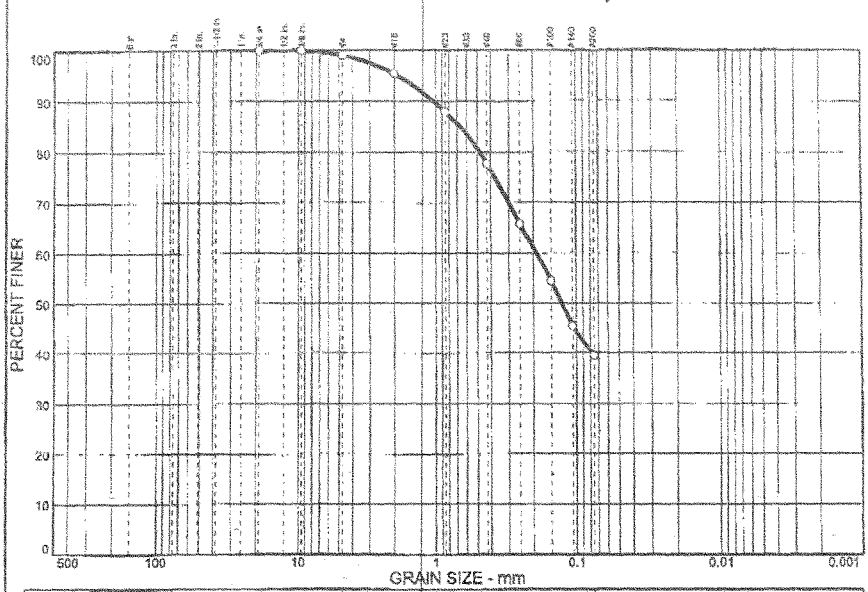
NODARSE & ASSOCIATES, INC.

Client:

Project: BAA

Project No: W04-G-487 Plate

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.9	3.7	17.8	38.1	39.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4 in.	100.0		
3/8 in.	100.0		
#4	99.1		
#10	95.4		
#20	87.9		
#40	77.6		
#60	65.7		
#100	54.4		
#140	45.4		
#200	39.5		

* (no specification provided)

Soil Description

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.669 D_{50}= 0.191 D_{60}= 0.127

D_{30}= D_{15}= D_{10}=

C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Sample No.: B237 Source of Sample: Date:

Location: BA-06 Elev./Depth: 13.5-15.0'

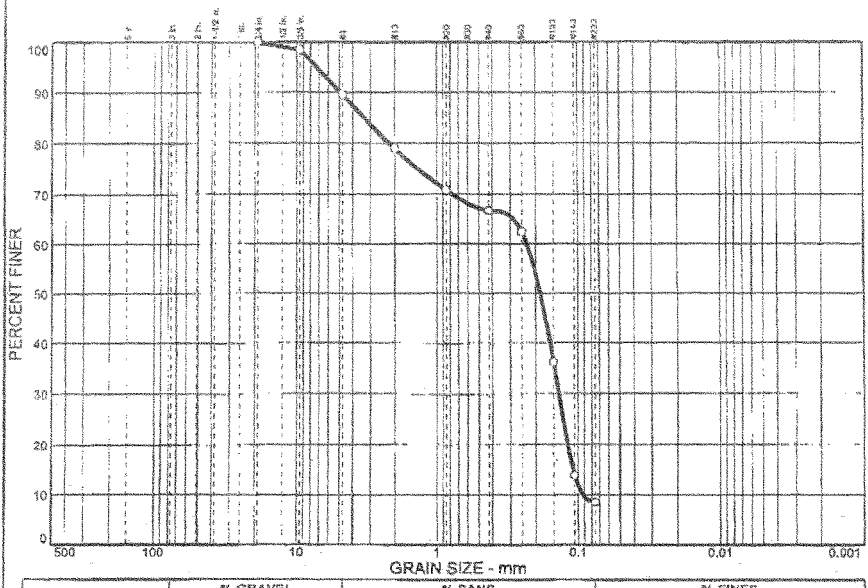
NODARSE & ASSOCIATES, INC.

Client:

Project: EAA

Project No: W04-G-487 Plate

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	10.4	10.7	12.2	58.3	8.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4 in.	100.0		
3/8 in.	98.5		
#4	89.6		
#10	78.9		
#20	70.8		
#40	66.7		
#60	62.4		
#100	36.3		
#140	13.8		
#200	8.4		

* (no specification provided)

Soil Description

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 3.32 D_{60}= 0.231 D_{50}= 0.186

D_{30}= 0.138 D_{15}= 0.109 D_{10}= 0.0929

C_U= 2.49 C_C= 0.88

Classification

USCS= AASHTO=

Remarks

Sample No.: B259 Source of Sample: Date:

Location: BA-07 Elev./Depth: 43.5-45.0'

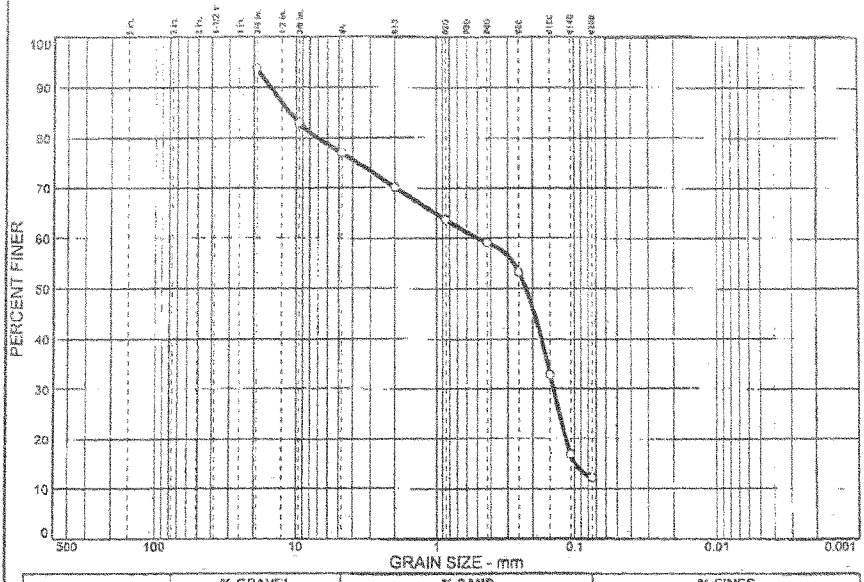
NODARSE & ASSOCIATES, INC.

Client:

Project: EAA

Project No: W04-G-487 Plate

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
		16.9	6.9	11.0	46.9	12.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4 in.	93.9		
3/8 in.	83.0		
#4	77.0		
#10	70.1		
#20	63.6		
#40	59.1		
#60	53.2		
#100	32.9		
#140	16.9		
#200	12.2		

* (no specification provided)

Soil Description

Afterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 11.1 D_{60}= 0.499 D_{50}= 0.223
D_{30}= 0.142 D_{15}= 0.0984 D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

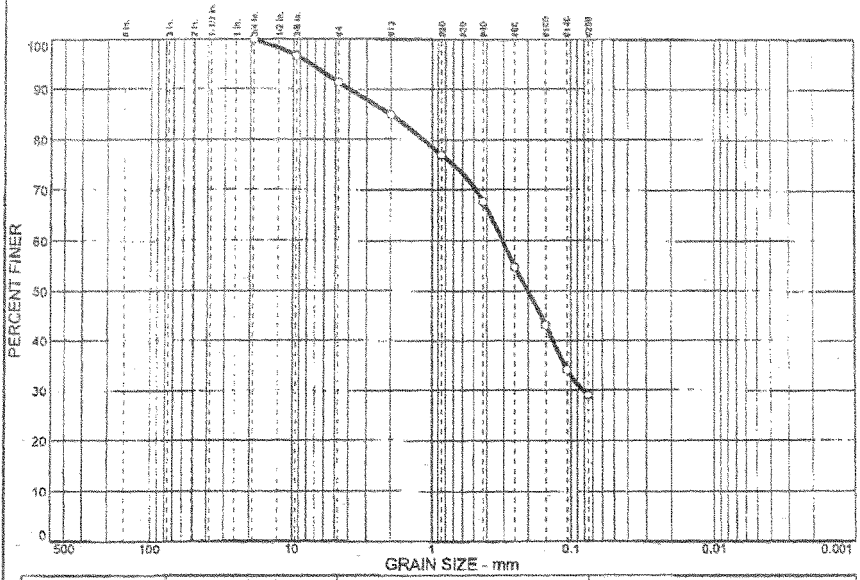
Remarks

Sample No.: B308 Source of Sample: Date:
Location: BA-08 Elev./Depth: 28.5-30.0'

NODARSE & ASSOCIATES, INC.

Client:
Project: BAA
Project No: W04-0-4X7 Plate

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	8.7	6.4	17.3	38.6	29.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4 in.	100.0		
3/8 in.	96.7		
#4	91.3		
#10	84.9		
#20	76.9		
#40	67.6		
#60	54.8		
#100	43.1		
#140	34.1		
#200	29.0		

* (no specification provided)

Soil Description

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 2.02 D_{60}= 0.308 D_{50}= 0.202
D_{30}= 0.0817 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

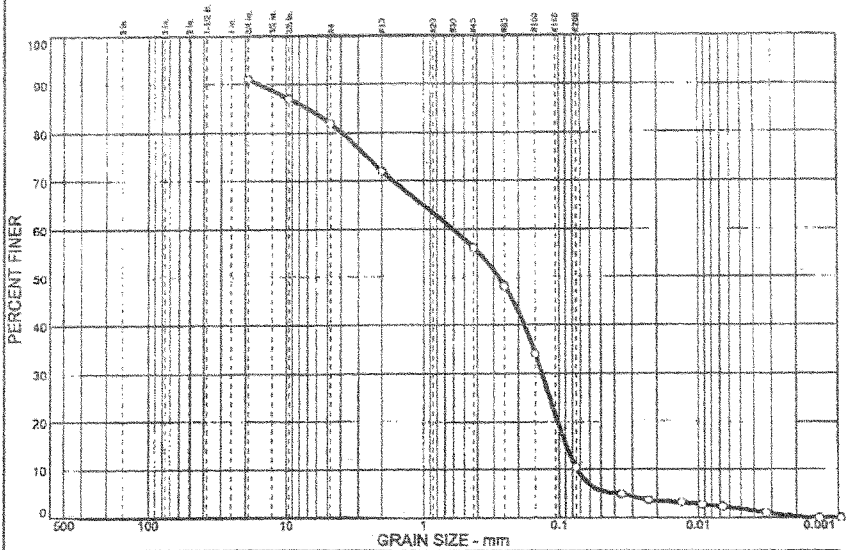
Remarks

Sample No.: B305 Source of Sample: Date:
Location: BA-09 Elev./Depth: 10.5-15.0'

NODARSE & ASSOCIATES, INC.

Client:
Project: BAA
Project No: W04-G-487 Plate

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
		9.2	9.9	15.9	45.7	8.5	1.9

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4 in.	91.1		
3/8 in.	87.0		
#4	81.9		
#10	72.0		
#40	56.1		
#60	48.1		
#100	34.1		
#200	10.4		

* (no specification provided)

Soil Description

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 6.97 D_{60}= 0.607 D_{50}= 0.276
D_{30}= 0.134 D_{15}= 0.0888 D_{10}= 0.0736
C_u= 8.24 C_c= 0.40

Classification

USCS= AASHTO=

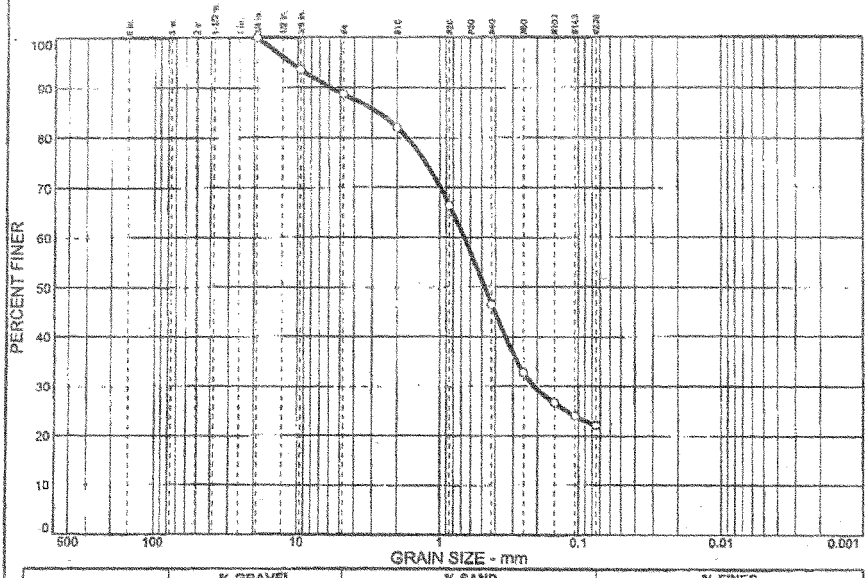
Remarks

Sample No.: T Source of Sample: Date:
Location: TC-1-11 Elev./Depth: 48.5'

NODARSE & ASSOCIATES, INC.

Client:
Project: BAA
Project No: W04-G-487 Plate

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	11.3	6.7	35.5	24.4	22.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4 in.	100.0		
3/8 in.	93.6		
#4	88.7		
#10	82.0		
#20	66.4		
#40	46.5		
#60	32.8		
#100	26.7		
#140	24.0		
#200	22.1		

* (no specification provided)

Soil Description

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 2.72 D_{60}= 0.670 D_{50}= 0.478

D_{30}= 0.209 D_{15}= D_{10}=

C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Sample No.: 999 Source of Sample: Date:

Location: TC-2-2 Elev./Depth: 8.3'

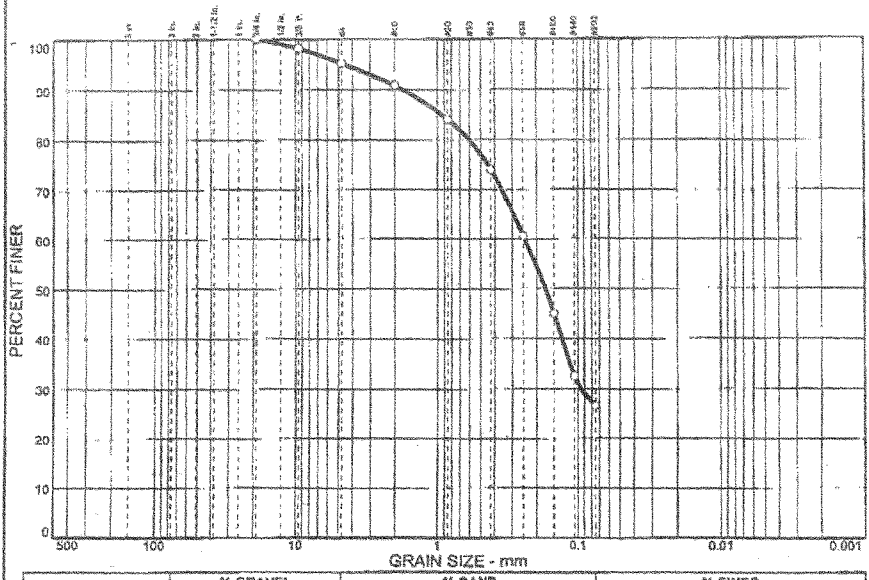
NODARSE & ASSOCIATES, INC.

Client:

Project: EAA

Project No: W04-G-487 Plate

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	4.8	4.4	16.8	47.4	26.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4 in.	100.0		
3/8 in.	98.2		
#4	95.2		
#10	90.8		
#20	84.1		
#40	74.0		
#60	60.6		
#100	45.1		
#140	32.6		
#200	26.6		

* (no specification provided)

Soil Description

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.931 D_{60}= 0.245 D_{50}= 0.173
D_{30}= 0.0948 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

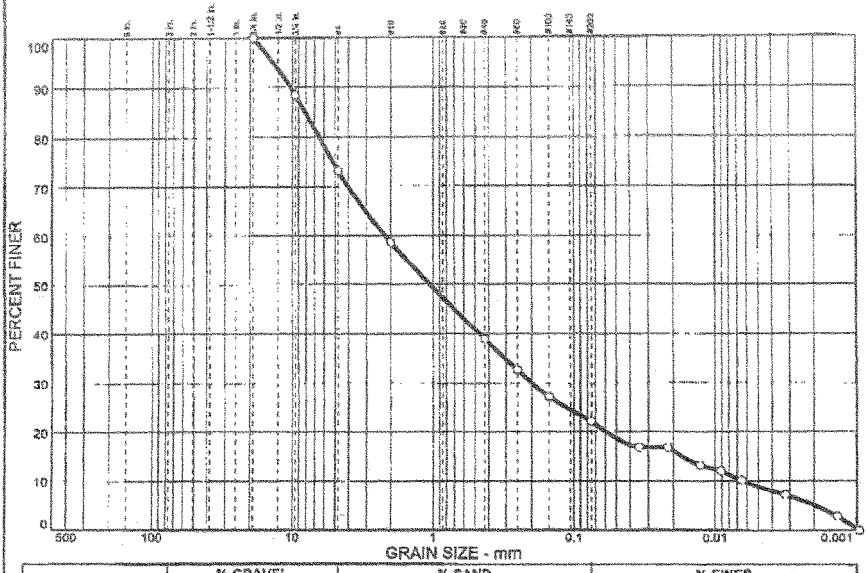
Remarks

Sample No.: 211 Source of Sample: Date:
Location: TC-3-3 Elev/Depth: 13.5'

NODARSE & ASSOCIATES, INC.

Client:
Project: EAA
Project No: W04-G-487 Plate

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	26.8	14.6	19.7	16.8	13.3	8.8

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4 in.	100.0		
3/8 in.	88.4		
#4	73.2		
#10	58.6		
#40	38.9		
#60	32.6		
#100	27.2		
#200	22.1		

* (no specification provided)

Soil Description

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 8.10 D_{60}= 2.20 D_{50}= 1.05
D_{30}= 0.199 D_{15}= 0.0171 D_{10}= 0.0064
C_u= 346.52 C_c= 2.82

Classification

USCS= AASHTO=

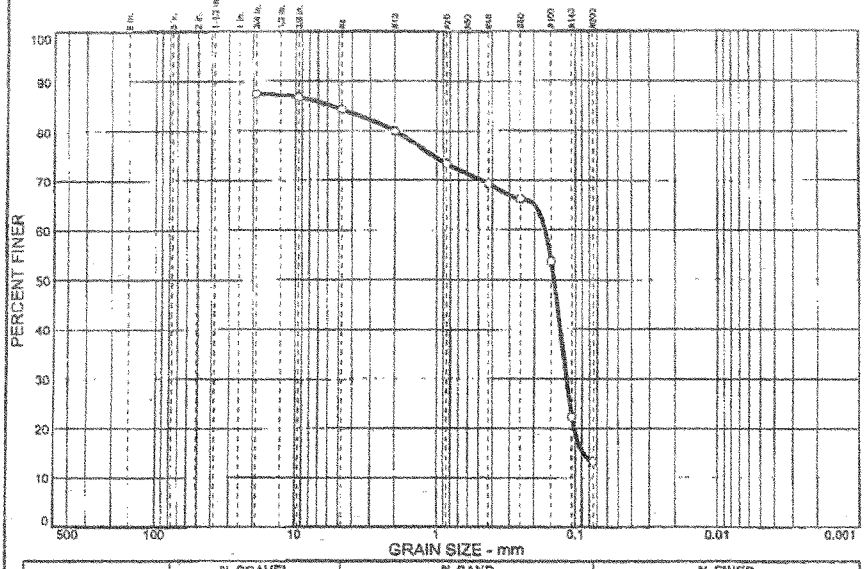
Remarks

Sample No.: A Source of Sample: Date:
Location: TC-4-2 Elev./Depth: 7.4'

NODARSE & ASSOCIATES, INC.

Client:
Project: EAA
Project No: W04-G-487 Plate

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
		3.1	4.4	10.6	56.1	13.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4 in.	87.4		
3/8 in.	86.8		
#4	84.3		
#10	79.9		
#20	73.4		
#40	69.3		
#60	66.3		
#100	53.7		
#140	22.3		
#200	13.2		

* (no specification provided)

Soil Description

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 5.61 D_{60}= 0.167 D_{50}= 0.143
D_{30}= 0.117 D_{15}= 0.0868 D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

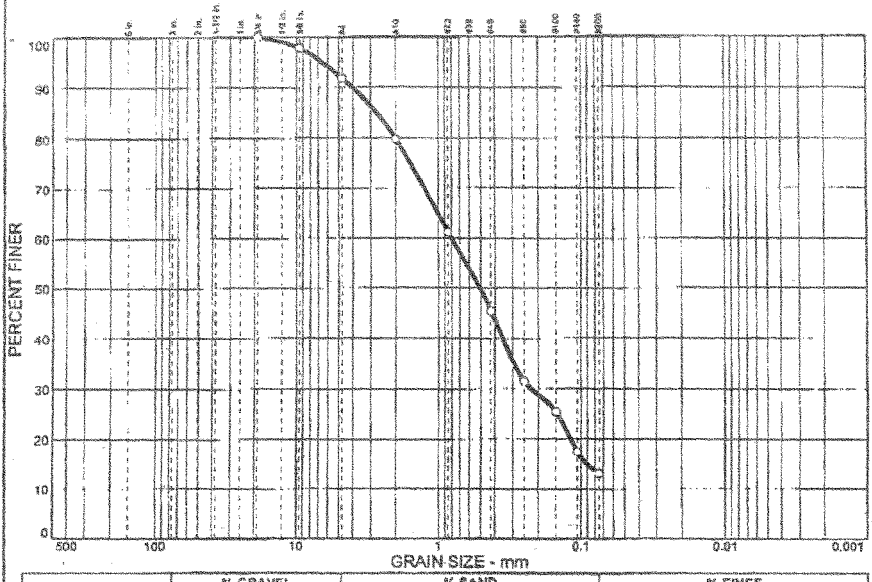
Remarks

Sample No.: 269 Source of Sample: Date:
Location: TC-5-10 Elev/Depth: 48.5'

NODARSE & ASSOCIATES, INC.

Client:
Project: DAA
Project No: W04-C-487 Plate

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	8.2	12.0	34.4	32.3	13.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4 in.	100.0		
3/8 in.	97.8		
#4	91.8		
#10	79.8		
#20	61.2		
#40	45.4		
#60	31.5		
#100	23.4		
#140	17.4		
#200	13.1		

* (no specification provided)

Soil Description

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 2.74 D_{60}= 0.804 D_{50}= 0.509
D_{30}= 0.225 D_{15}= 0.0909 D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

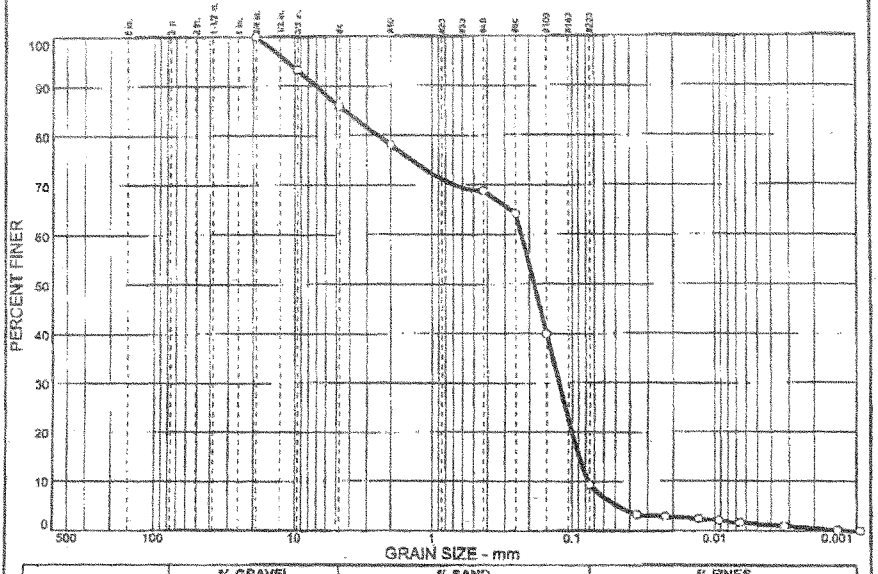
Remarks

Sample No.: 307 Source of Sample: Date:
Location: TC-6-4 Elev./Depth: 18.5'

NODARSE & ASSOCIATES, INC.

Client:
Project: EAA
Project No: W04-G-487 Plate

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	14.1	7.8	9.4	59.5	7.8	1.4

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4 in.	100.0		
3/8 in.	93.2		
#4	85.9		
#10	78.1		
#40	68.7		
#60	64.2		
#100	39.9		
#200	9.2		

* (no specification provided)

Soil Description

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 4.33 D_{60}= 0.228 D_{50}= 0.184
D_{30}= 0.123 D_{15}= 0.0892 D_{10}= 0.0772
C_u= 2.96 C_c= 0.87

Classification

USCS= AASHTO=

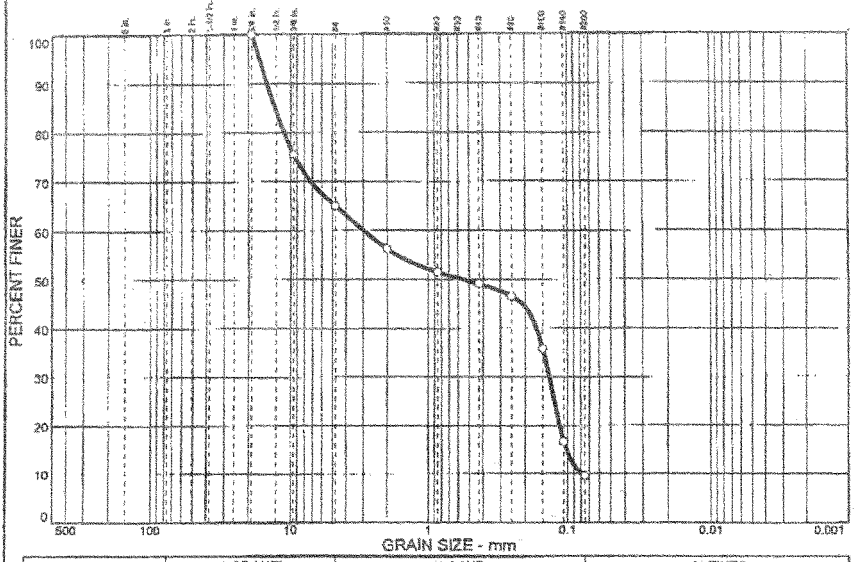
Remarks

Sample No.: AS Source of Sample: Date:
Location: TC-6-6 Elev./Depth: 28.5'

NODARSE & ASSOCIATES, INC.

Client:
Project: FAA
Project No: W04-G-487 Plate

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	35.0	8.8	7.2	39.5	9.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4 in.	100.0		
3/8 in.	75.5		
#4	65.0		
#10	56.2		
#20	51.5		
#40	49.0		
#60	46.5		
#100	35.8		
#140	16.6		
#200	9.5		

* (no specification provided)

Soil Description

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 13.0 D_{60}= 2.99 D_{50}= 0.561
D_{30}= 0.135 D_{15}= 0.102 D_{10}= 0.0789
C_u= 37.83 C_c= 0.08

Classification

USCS= AASHTO=

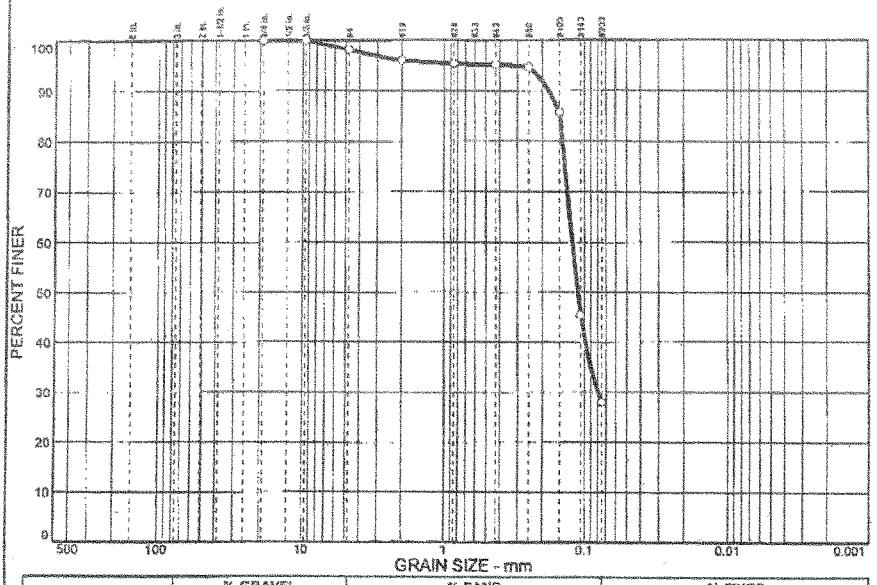
Remarks

Sample No.: 254 Source of Sample: Date:
Location: TC-7-6 Elev./Depth: 28.5

NODARSE & ASSOCIATES, INC.

Client:
Project: EAA
Project No: W04-G-487 Plate

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	1.8	2.2	0.8	67.2	28.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4 in.	100.0		
3/8 in.	100.0		
#4	98.2		
#10	96.0		
#20	95.4		
#40	95.2		
#60	94.7		
#100	85.8		
#140	45.4		
#200	28.0		

* (no specification provided)

Soil Description

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.149 D_{60}= 0.122 D_{50}= 0.111
D_{30}= 0.0796 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

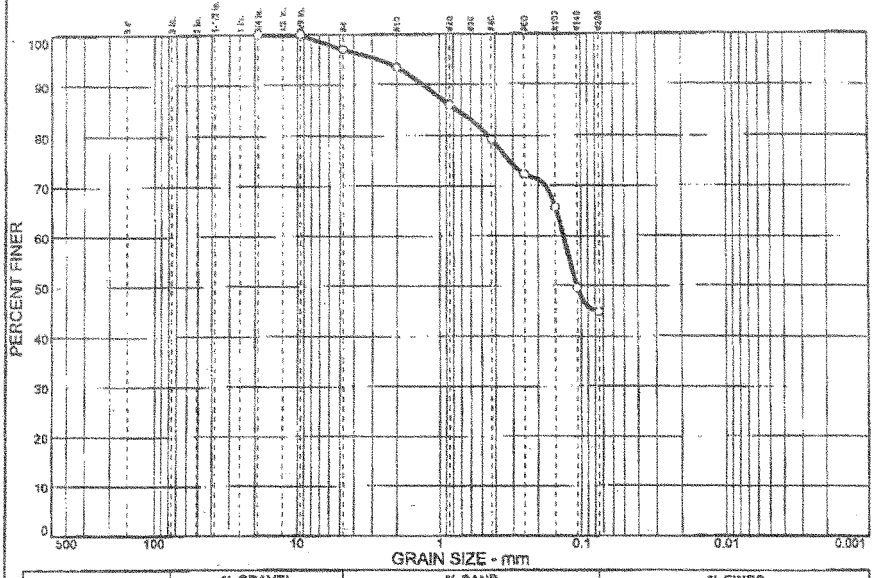
Remarks

Sample No.: 203 Source of Sample: Date:
Location: TC-8-9 Elev./Depth: 43.5-45.0'

NODARSE & ASSOCIATES, INC.

Client:
Project: EAA
Project No: W04-G-487 Plate

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	3.0	3.6	14.2	34.3	44.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4 in.	100.0		
3/8 in.	100.0		
#4	97.0		
#10	93.4		
#20	86.0		
#40	79.2		
#60	72.3		
#100	65.8		
#140	49.6		
#200	44.9		

* (no specification provided)

Soil Description

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.755 D_{60}= 0.132 D_{50}= 0.107

D_{30}= D_{15}= D_{10}=

C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Sample No.: 249 Source of Sample: Date:

Location: TC-10-4 Elev./Depth: 18.5'

NODARSE & ASSOCIATES, INC.

Client:

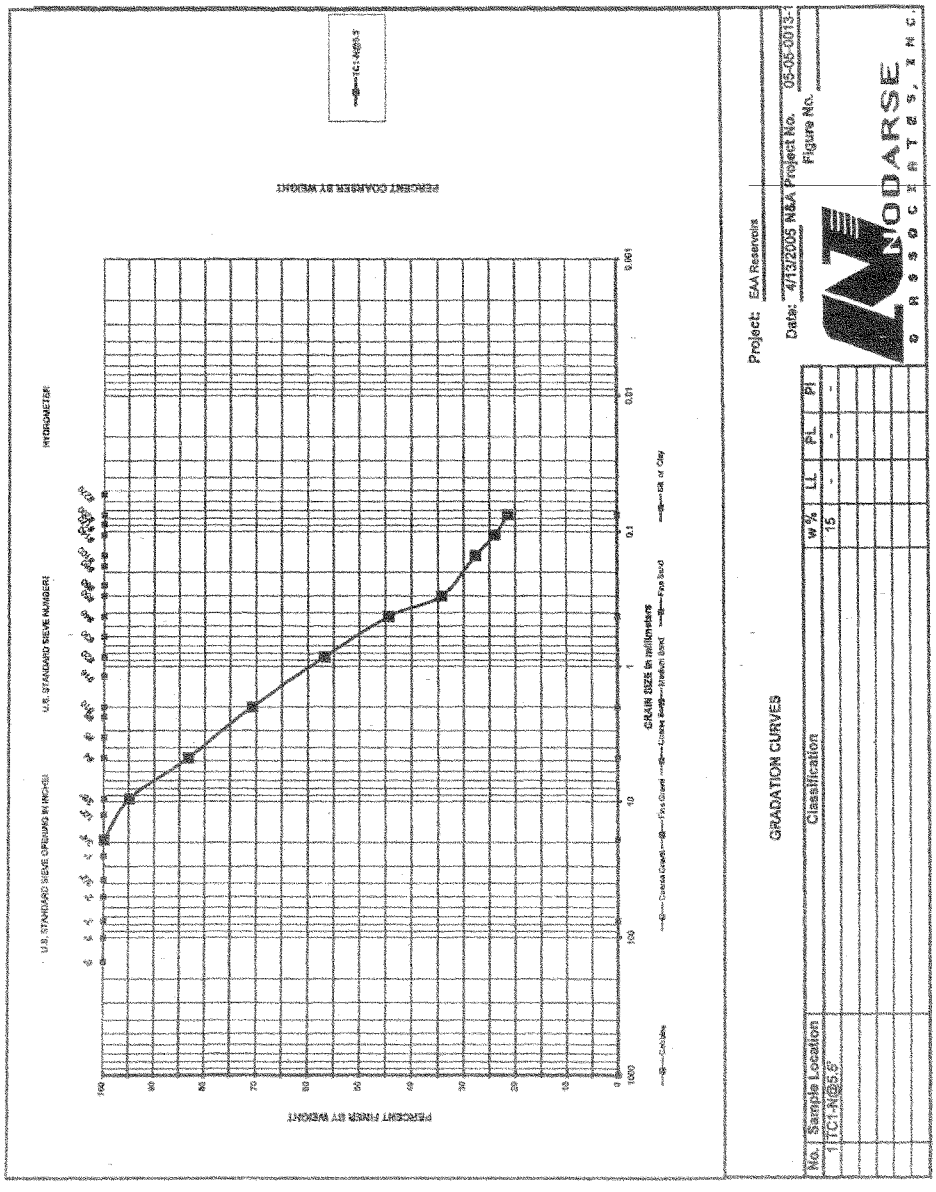
Project: EAA

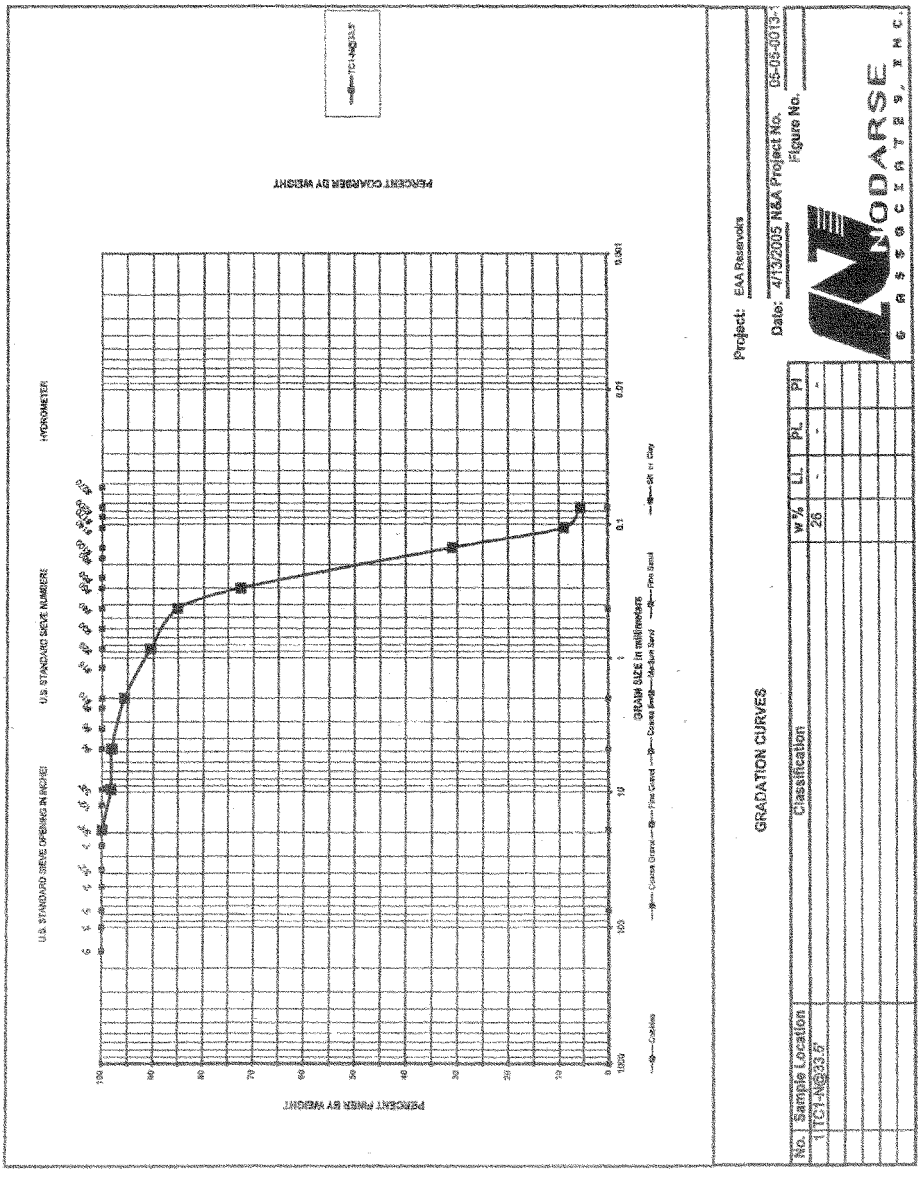
Project No: W04-G-487 Plate

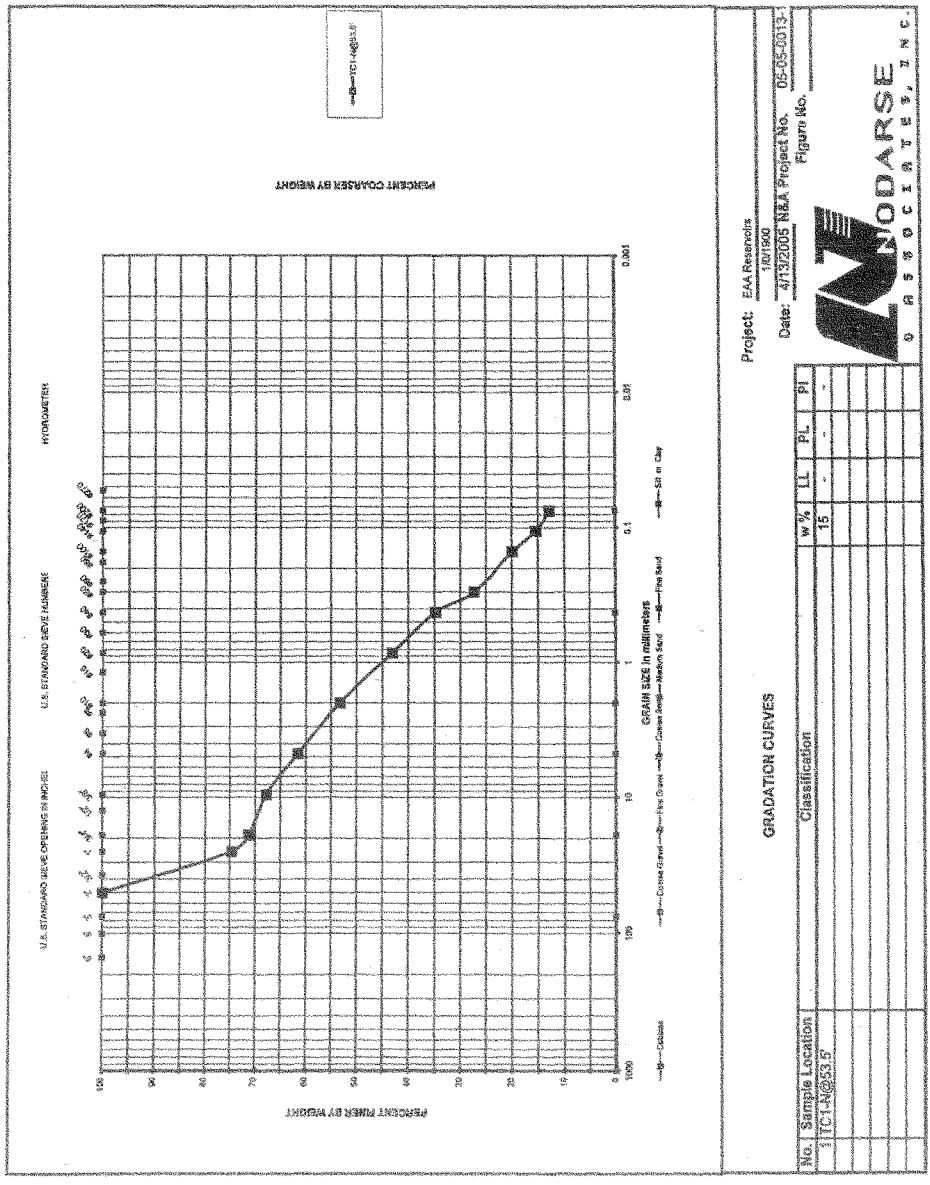
LABORATORY TEST RESULTS FOR
EAA RESERVOIR
PROJECT No: 05-05-0013-101.
N&A

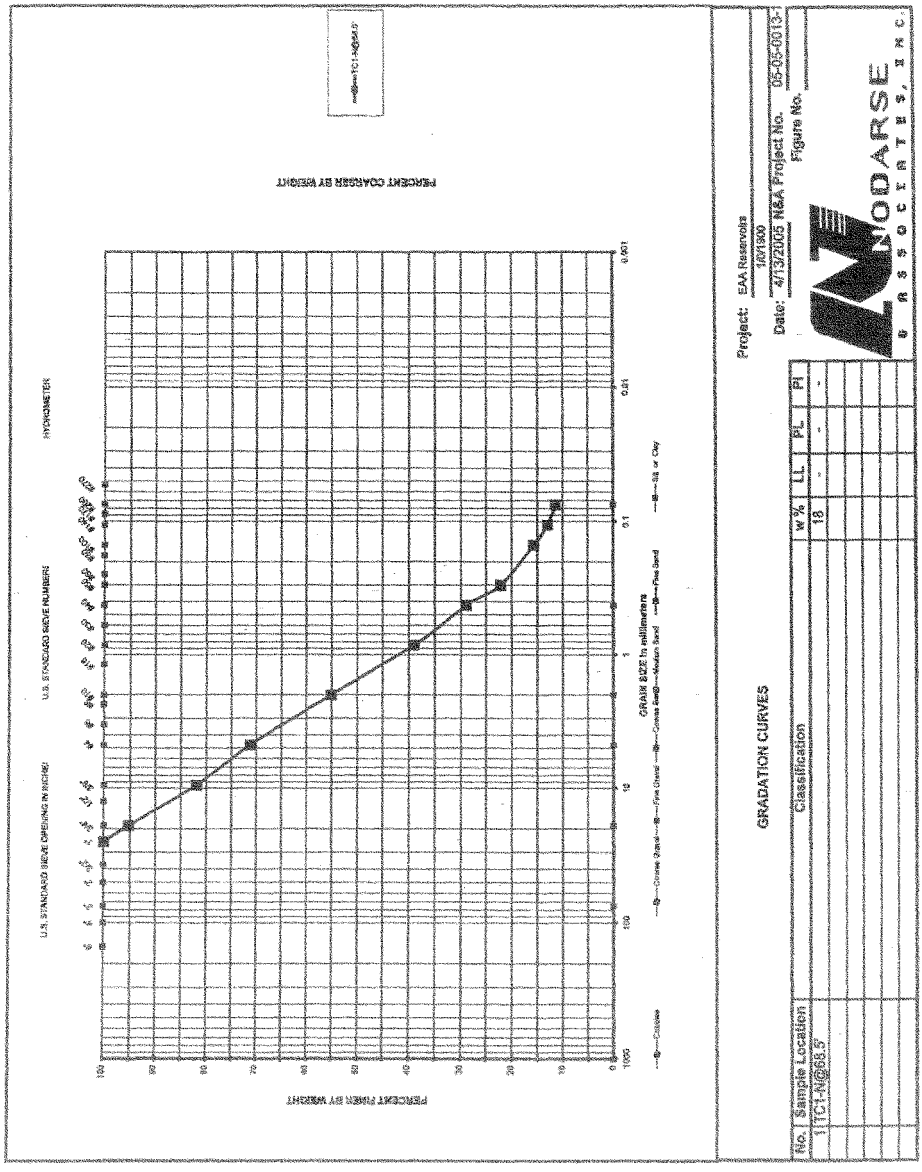
Boring Number	Approximate Sample Depth (feet)	Passing Sieve Number (%)					Moisture Content (%)	Organic Content (%)	Atterberg Limits		Classification	Stratum Number
		10	40	60	100	200			LL	PI		
TC1-N	5.5'	71	44	34	28	22	15	-	-	-		
TC1-N	33.5'	96	85	73	31	6	26	-	-	-		
TC1-N	53.5'	53	35	27	20	13	15	-	-	-		
TC1-N	68.5'	55	29	22	16	11	18	-	-	-		
TC1-N	73.5'	63	30	20	11	8	24	-	-	-		
TC1-N	88.5'	76	50	37	21	17	25	-	-	-		
TC1-E	13.5'	69	53	44	35	25	21	-	-	-		
TC1-E	53.5'	50	28	22	18	14	17	-	-	-		
TC1-E	58.5'	79	43	30	20	15	25	-	-	-		
TC1-E	83.5'	60	34	23	13	10	22	-	-	-		
TC1-E	88.5'	82	49	29	14	12	21	-	-	-		
TC1-E	98.5'	73	35	25	16	12	15	-	-	-		
TC1-W	13.5'	69	55	46	36	23	26	-	-	-		
TC1-W	48.5'	88	79	75	53	15	26	-	-	-		

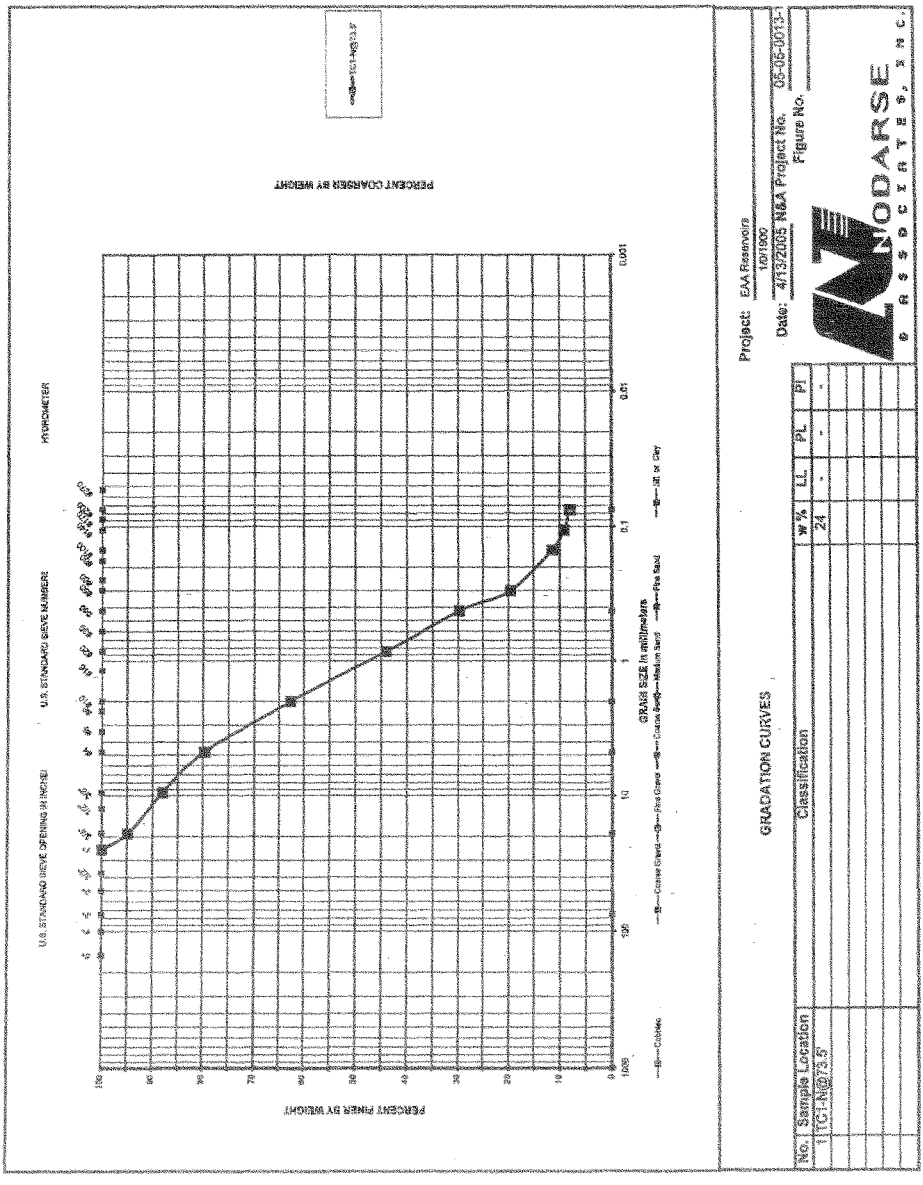
Boring Number	Approximate Sample Depth (feet)	Passing Sieve Number (%)					Moisture Content (%)	Organic Content (%)	Atterberg Limits		Classification	Stratum Number
		10	40	60	100	200			LL	PI		
TC1-W	68.5'	36	29	22	15	12	19	-	-	-		
TC1-W	78.5'	69	37	25	15	12	22	-	-	-		
TC1-W	93.5'	84	39	23	17	14	22	-	-	-		
TC1-S	13.5'	84	68	57	43	25	21	-	-	-		
TC1-S	33.5'	82	53	34	19	6	20	-	-	-		
TC1-S	68.5'	63	33	25	17	13	20	-	-	-		
TC1-S	93.5'	82	39	22	14	12	23	-	-	-		

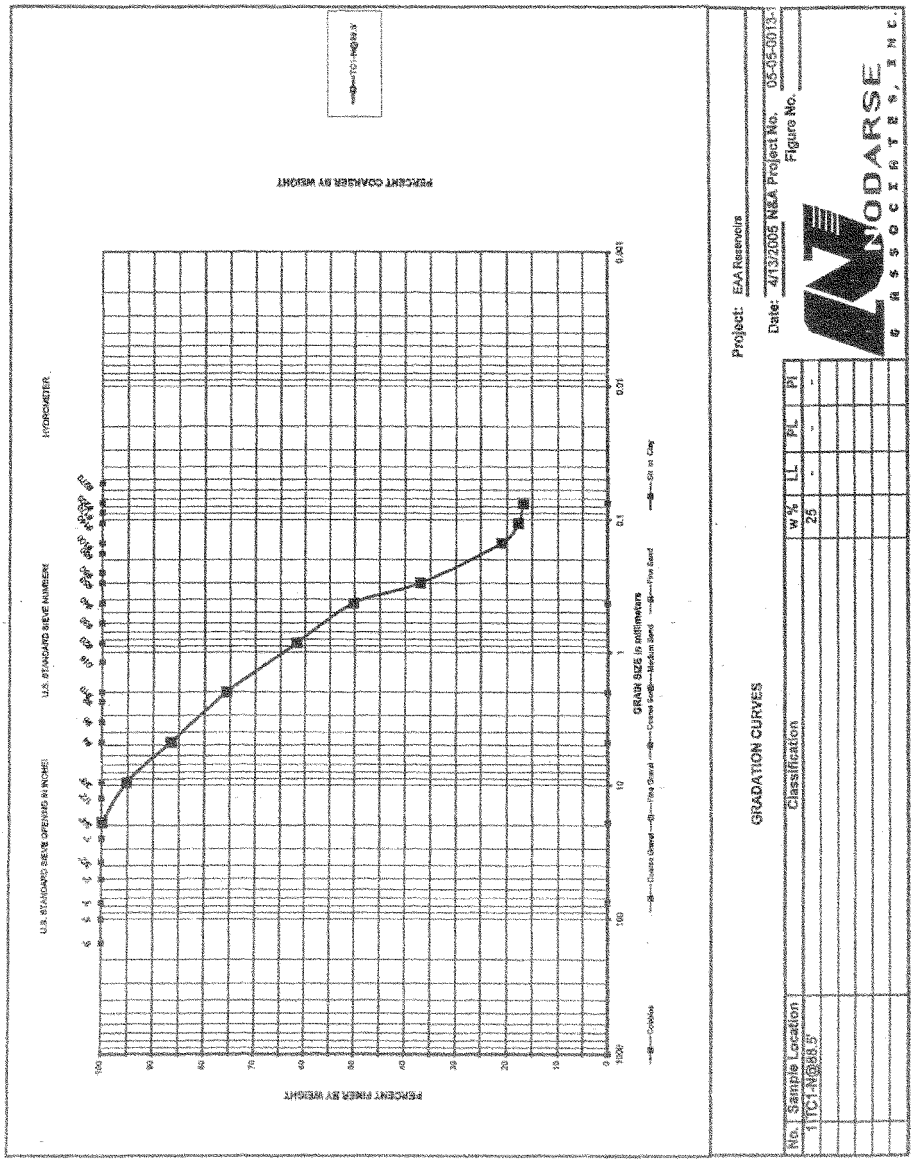

GRADATION CURVES
Project: EAA Reservoirs
Date: 4/13/2005 M&A Project No. 05-05-5013-1
Figure No.
NODARSE
& Associates, Inc.
No. Sample Location Classification w % LL PL PI
1 TC1-N@5.5' 15 - - -
U.S. STANDARD SIEVE OPENING IN INCHES
U.S. STANDARD SIEVE NUMBER
HYDROMETER
PERCENT FINER BY WEIGHT
PERCENT COARSER BY WEIGHT
GRAIN SIZE in millimeters
Coarse Gravel
Fine Gravel
Coarse Sand
Medium Sand
Fine Sand
Silt or Clay
Cobbles

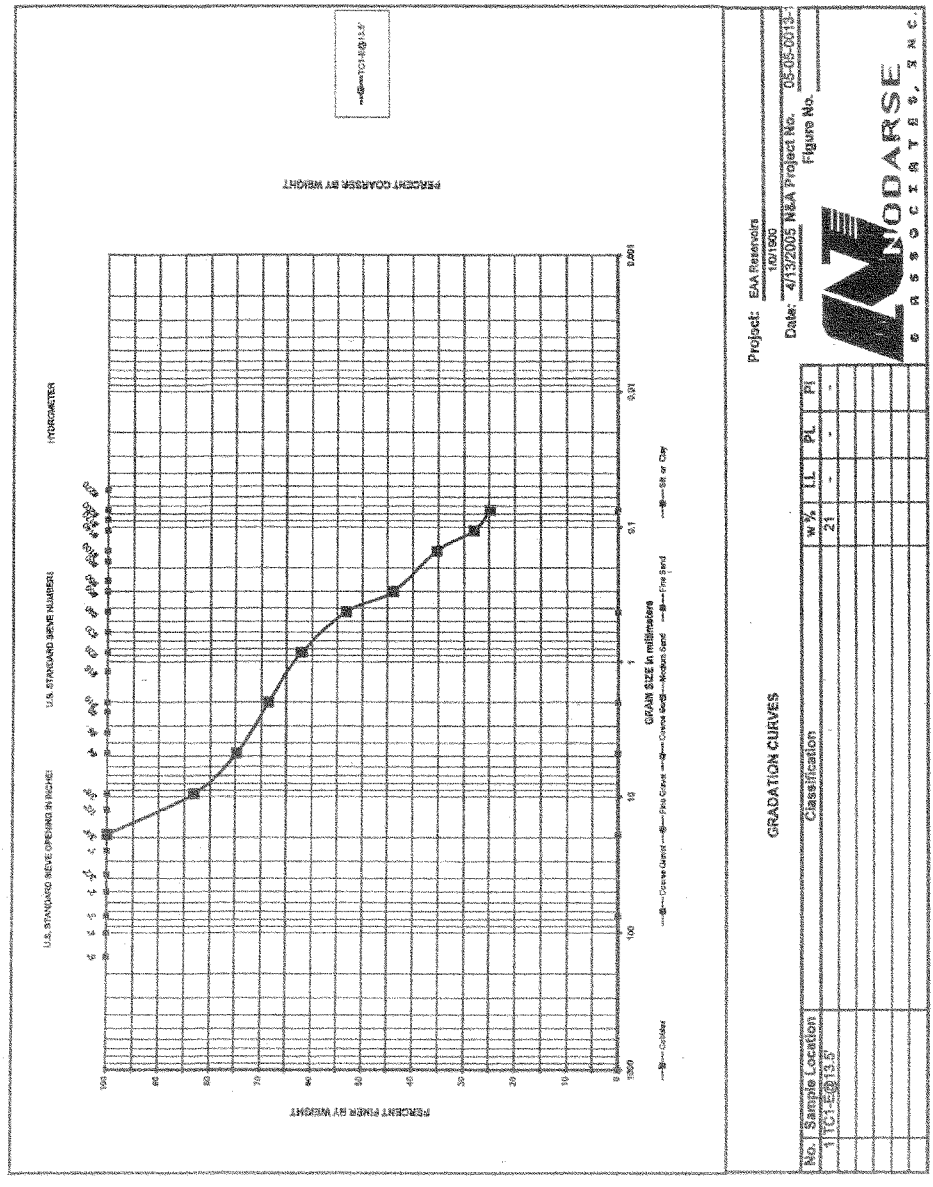

GRADATION CURVES
Project: EAA Reservoirs
Date: 4/13/2005 N&A Project No. 05-05-0013
Figure No.
NODARSE
& ASSOCIATES, INC.
No. Sample Location Classification W % LL PL PI
1 TC1-NB33.5 26 - - -
U.S. STANDARD SIEVE OPENING IN INCHES
U.S. STANDARD SIEVE NUMBERS
HYDROMETER
PERCENT FINER BY WEIGHT
PERCENT COARSER BY WEIGHT
GRAIN SIZE in millimeters
Cobbles
Coarse Gravel
Fine Gravel
Coarse Sand
Medium Sand
Fine Sand
Silt or Clay
TC1-NB33.5

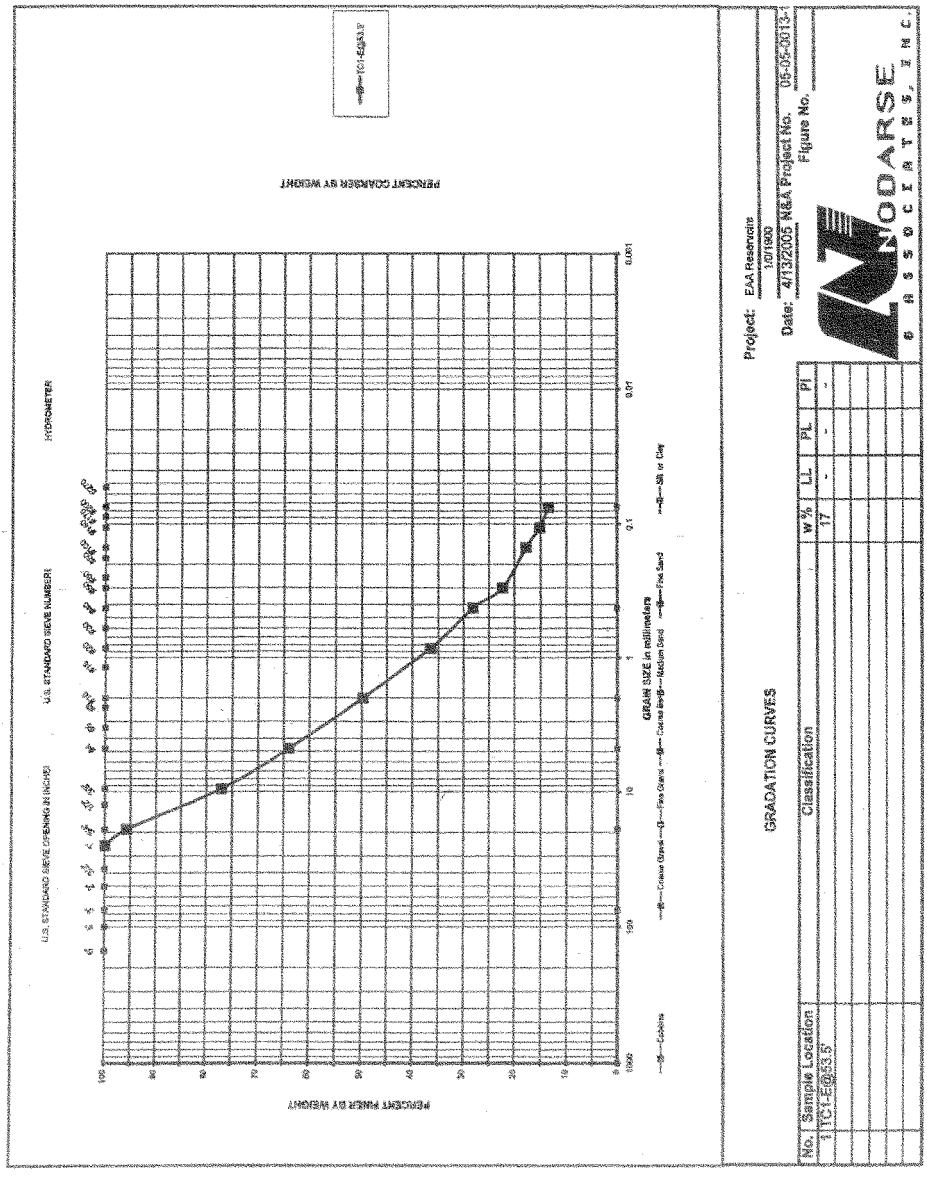

GRADATION CURVES
Project: EAA Reservoirs
1601900
Date: 4/13/2005 N&A Project No. 05-05-0013-
Figure No.
NODARSE
& ASSOCIATES, INC.
No. Sample Location
Classification
w %
LL
PL
PI
1 TC1-N@53.5'
15
-
-
-
U.S. STANDARD SIEVE OPENING IN INCHES
U.S. STANDARD SIEVE NUMBERS
HYDROMETER
PERCENT FINER BY WEIGHT
PERCENT COARSER BY WEIGHT
GRAIN SIZE in millimeters
Cobbles
Coarse Gravel
Fine Gravel
Coarse Sand
Medium Sand
Fine Sand
Silt or Clay
TC1-N@53.5'

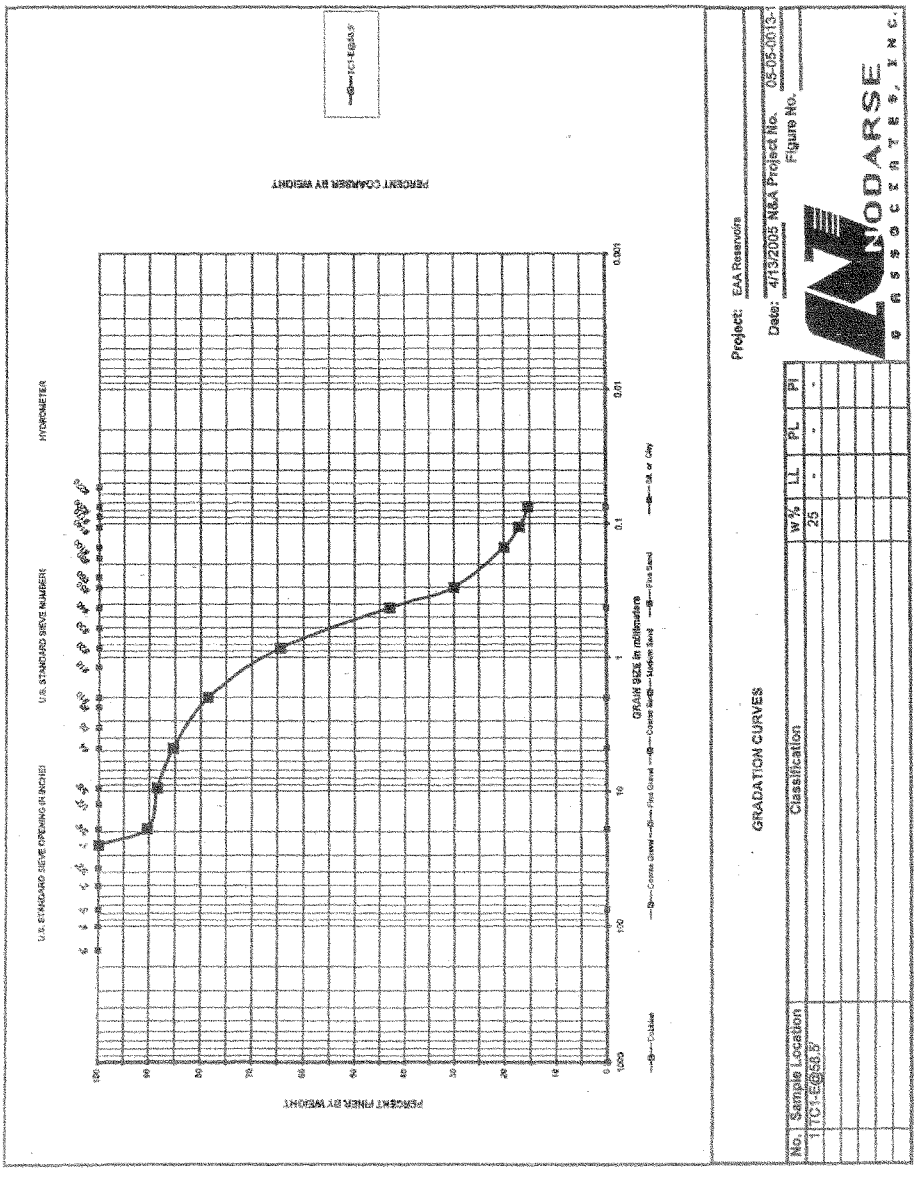

GRADATION CURVES
Project: EAA Reservoirs
Date: 4/13/2005 N&A Project No. 06-05-6013-
Figure No.
MODARSE
& ASSOCIATES, INC.
No. Sample Location Classification w % LL PL PI
11C1-N@68.5'
U.S. STANDARD SIEVE OPENING IN INCHES
U.S. STANDARD SIEVE NUMBERS
HYDROMETER
PERCENT FINER BY WEIGHT
PERCENT COARSER BY WEIGHT
GRAIN SIZE in millimeters
Cobbles
Gravel
Coarse
Fine Gravel
Sand
Coarse
Medium
Fine Sand
Silt or Clay

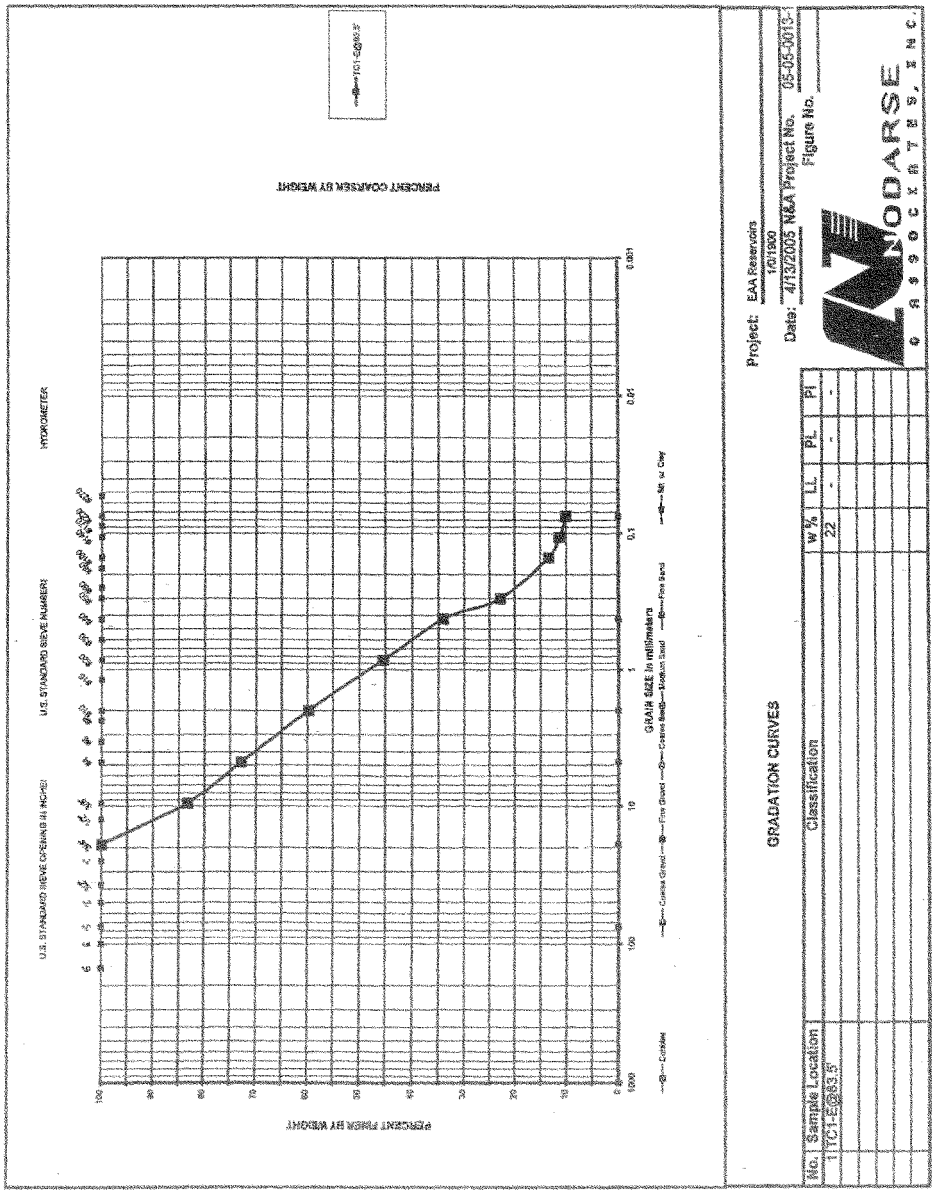

GRADATION CURVES
Project: EAA Reservoirs
19/1900
Date: 4/13/2005 N&A Project No. 05-05-10013-
Figure No.
NODARSE
& Associates, Inc.
No. Sample Location Classification W% LL PL PI
1 TG1-N@73.5' 24 - - -
U.S. STANDARD SIEVE OPENING IN INCHES
U.S. STANDARD SIEVE NUMBERS
HYDROMETER
PERCENT FINER BY WEIGHT
PERCENT COARSER BY WEIGHT
GRAIN SIZE in millimeters
—Cobbles —Coarse Gravel —Fine Gravel —Coarse Sand —Medium Sand —Fine Sand —Silt or Clay

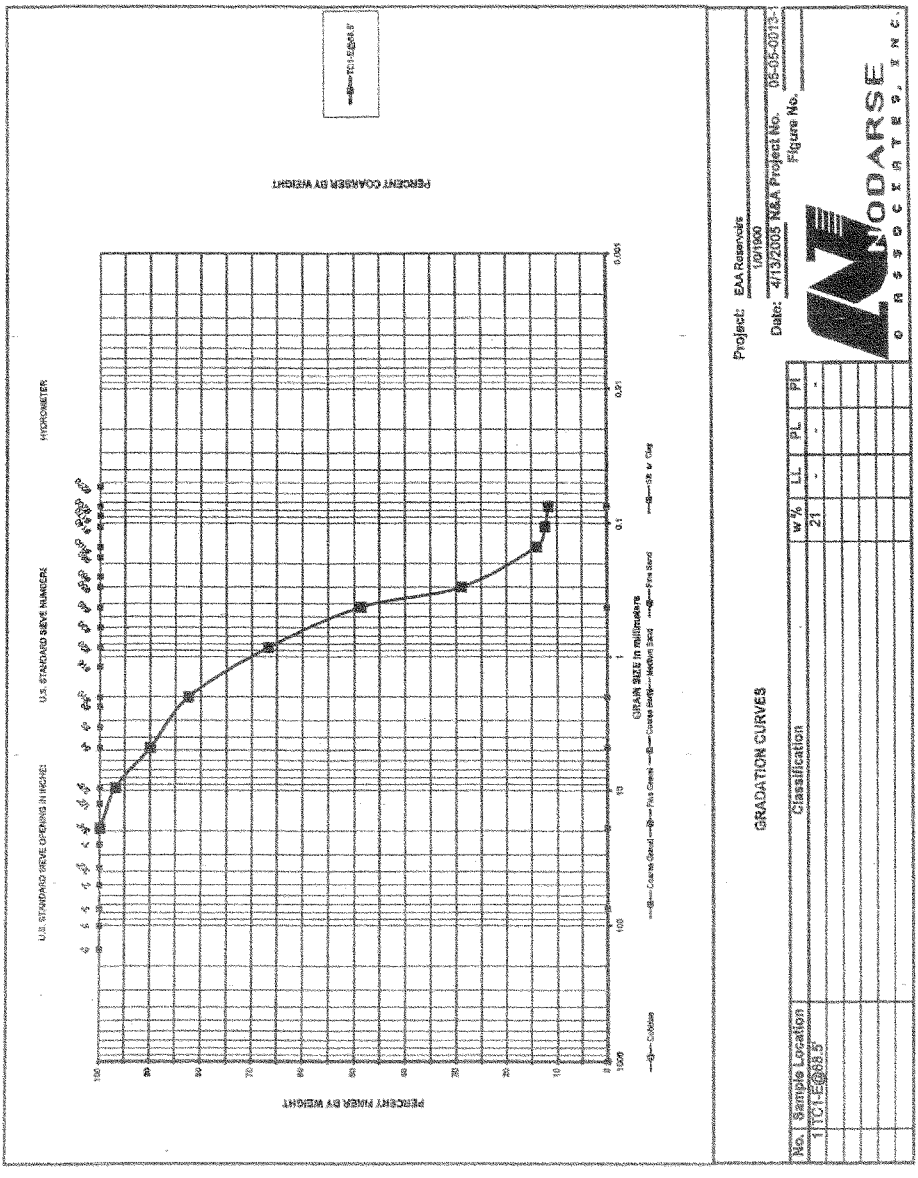

GRADATION CURVES
Project: EMA Reservoir
Date: 4/13/2005 N&A Project No. 05-05-0013
Figure No.
NODARSE & Associates, Inc.
No. | Sample Location | Classification | W % | LL | PL | PI
1 | TC1-N@88.5' | | 25 | - | - | -
U.S. STANDARD SIEVE OPENING IN INCHES
U.S. STANDARD SIEVE NUMBER
HYDROMETER
PERCENT FINER BY WEIGHT
PERCENT COARSER BY WEIGHT
GRAIN SIZE in millimeters
Cobbles
Coarse Gravel
Fine Gravel
Coarse Sand
Medium Sand
Fine Sand
Silt or Clay

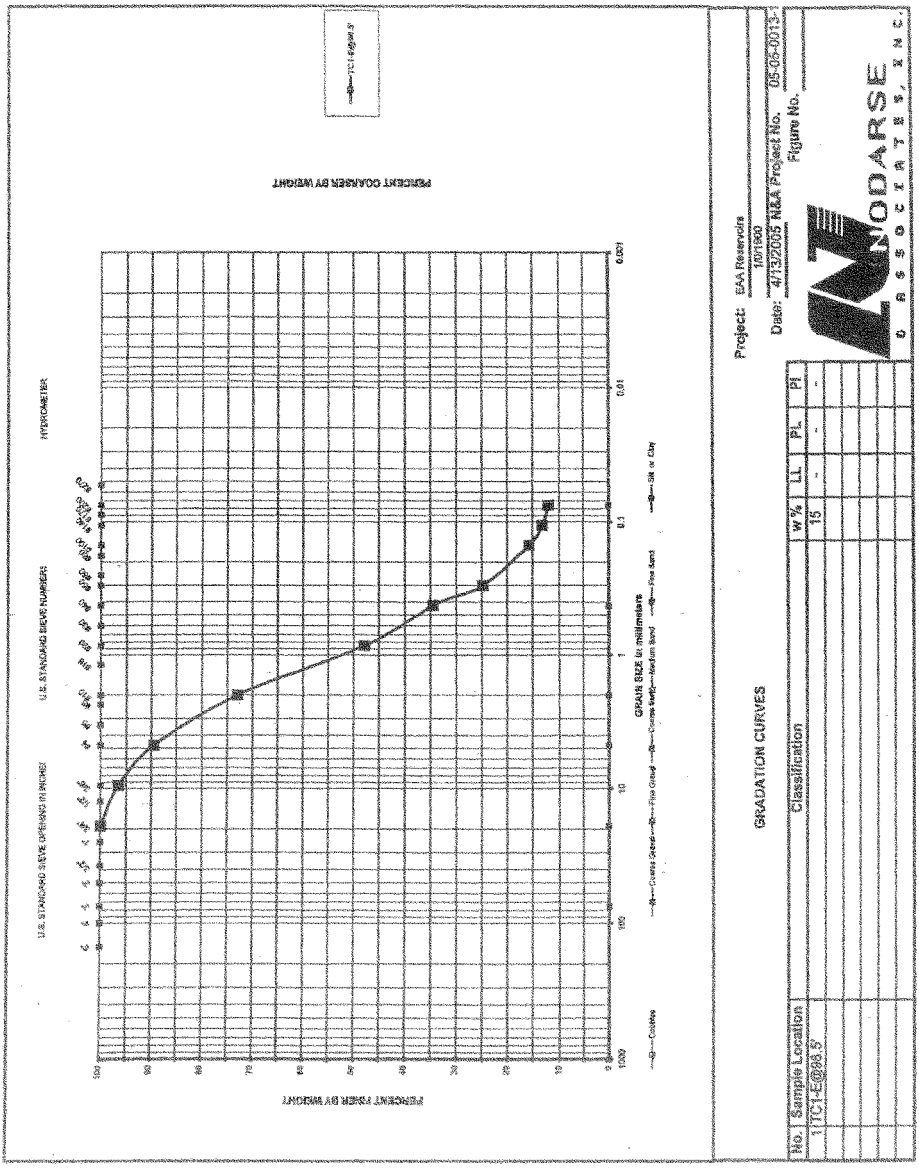

GRADATION CURVES
Project: EAA Reservoirs
Date: 4/13/2005 N&A Project No. 05-05-0013-1
Figure No.
NODARSE & ASSOCIATES, INC
No. Sample Location Classification w % LL PL PI
1 TC1-E@13.5' 21 - - -
PERCENT FINER BY WEIGHT
PERCENT COARSER BY WEIGHT
U.S. STANDARD SIEVE OPENING IN INCHES
U.S. STANDARD SIEVE NUMBERS
HYDROMETER
GRAIN SIZE in millimeters
Cobbles
Coarse Gravel
Fine Gravel
Coarse Sand
Medium Sand
Fine Sand
Silt or Clay
TC1-E@13.5'

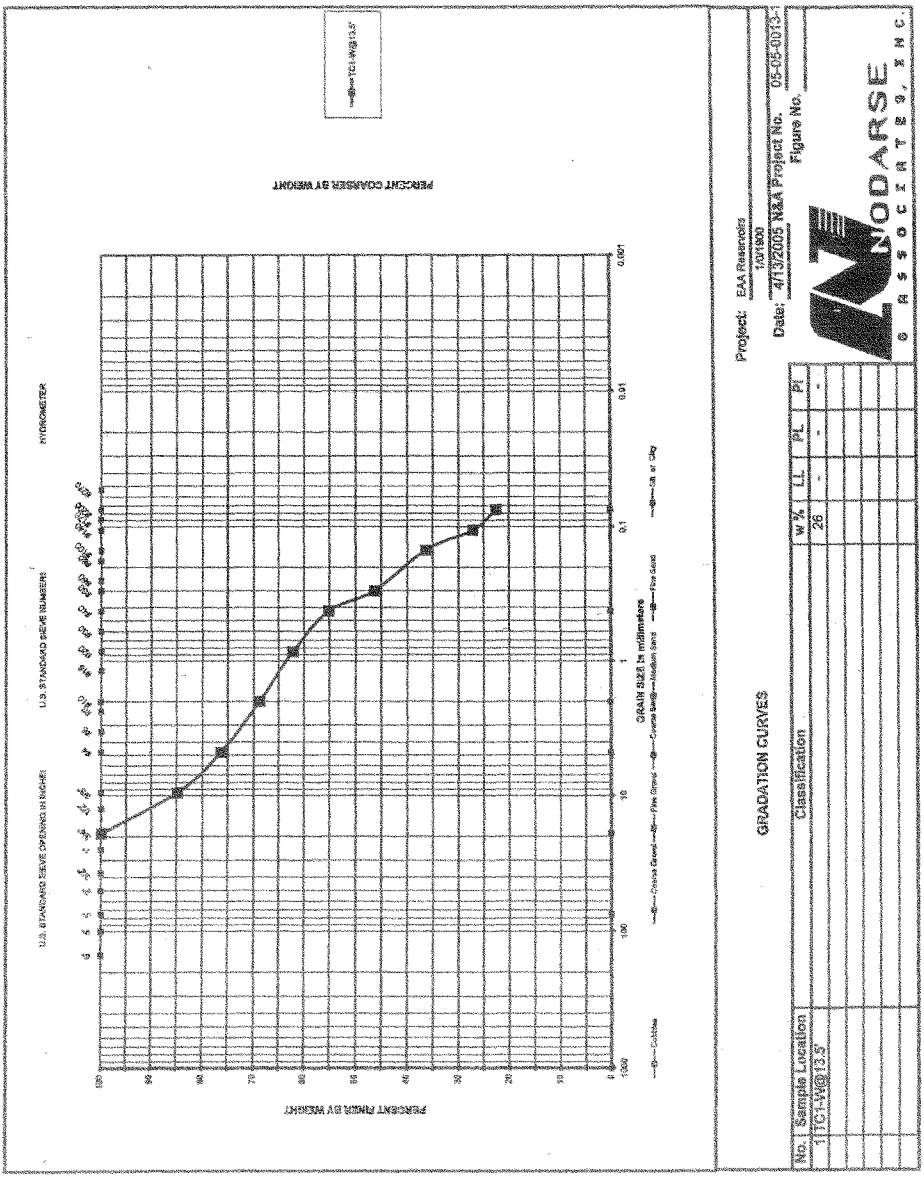

GRADATION CURVES
Project: EAA Reservoir
1071900
Date: 4/13/2005 N&A Project No. 05-05-3013-1
Figure No.
NODARSE & ASSOCIATES, INC.
No. Sample Location Classification w% LL PL PI
1 TC1-E@3.5' 17 - - -
PERCENT FINER BY WEIGHT
PERCENT COARSER BY WEIGHT
GRAIN SIZE in millimeters
U.S. STANDARD SIEVE NUMBERS
U.S. STANDARD SIEVE OPENINGS IN INCHES
HYDROMETER
Cobbles
Coarse Gravel
Fine Gravel
Coarse Sand
Medium Sand
Fine Sand
Silt or Clay

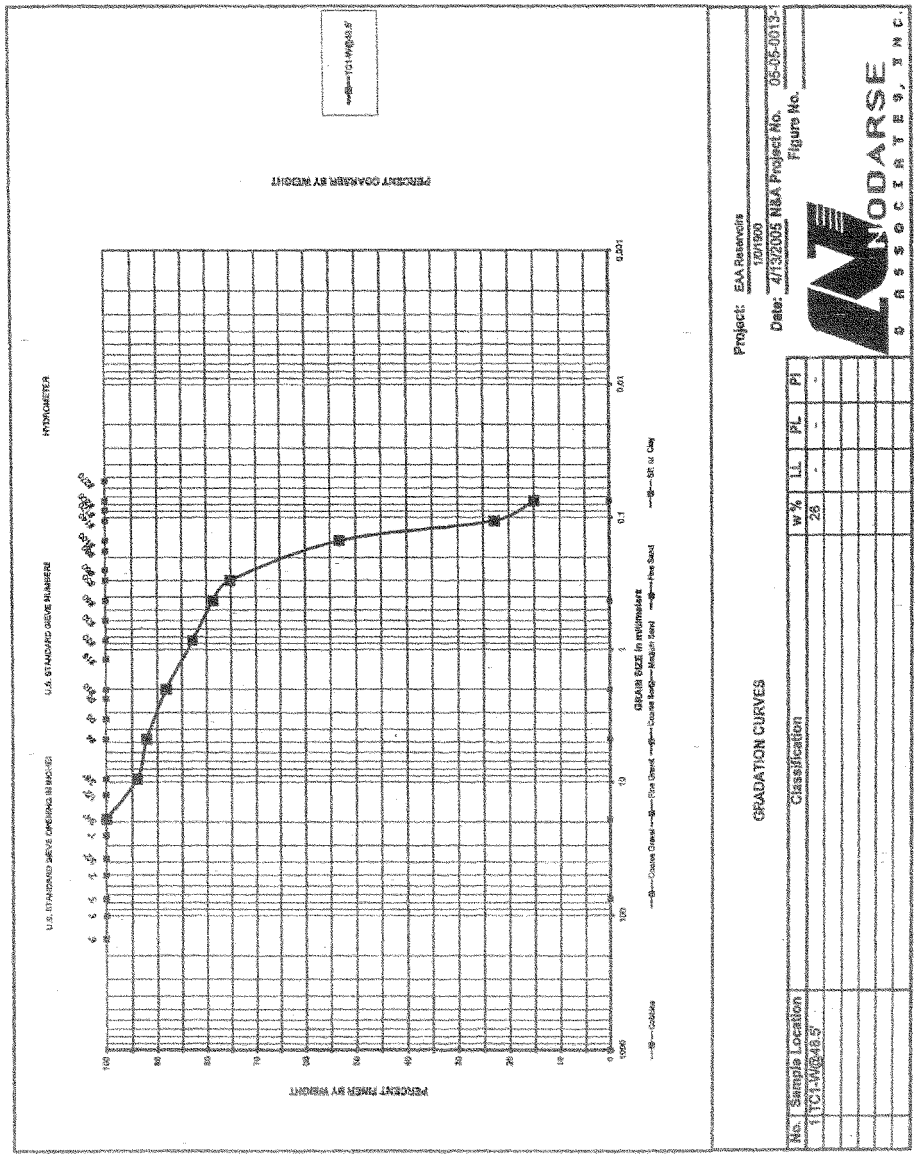

GRADATION CURVES
Project: EAA Reservoirs
Date: 4/13/2005 N&A Project No. 05-05-0013-1
Figure No.
NODARSE & ASSOCIATES, INC.
No. Sample Location Classification w % LL PL PI
1 TC1-EB68.5' 25 - - -
PERCENT FINER BY WEIGHT
PERCENT COARSER BY WEIGHT
GRAIN SIZE in millimeters
U.S. STANDARD SIEVE OPENING IN INCHES
U.S. STANDARD SIEVE NUMBERS
HYDROMETER
TC1-EB68.5'
Cobbles
Coarse Gravel
Fine Gravel
Coarse Sand
Medium Sand
Fine Sand
Silt or Clay

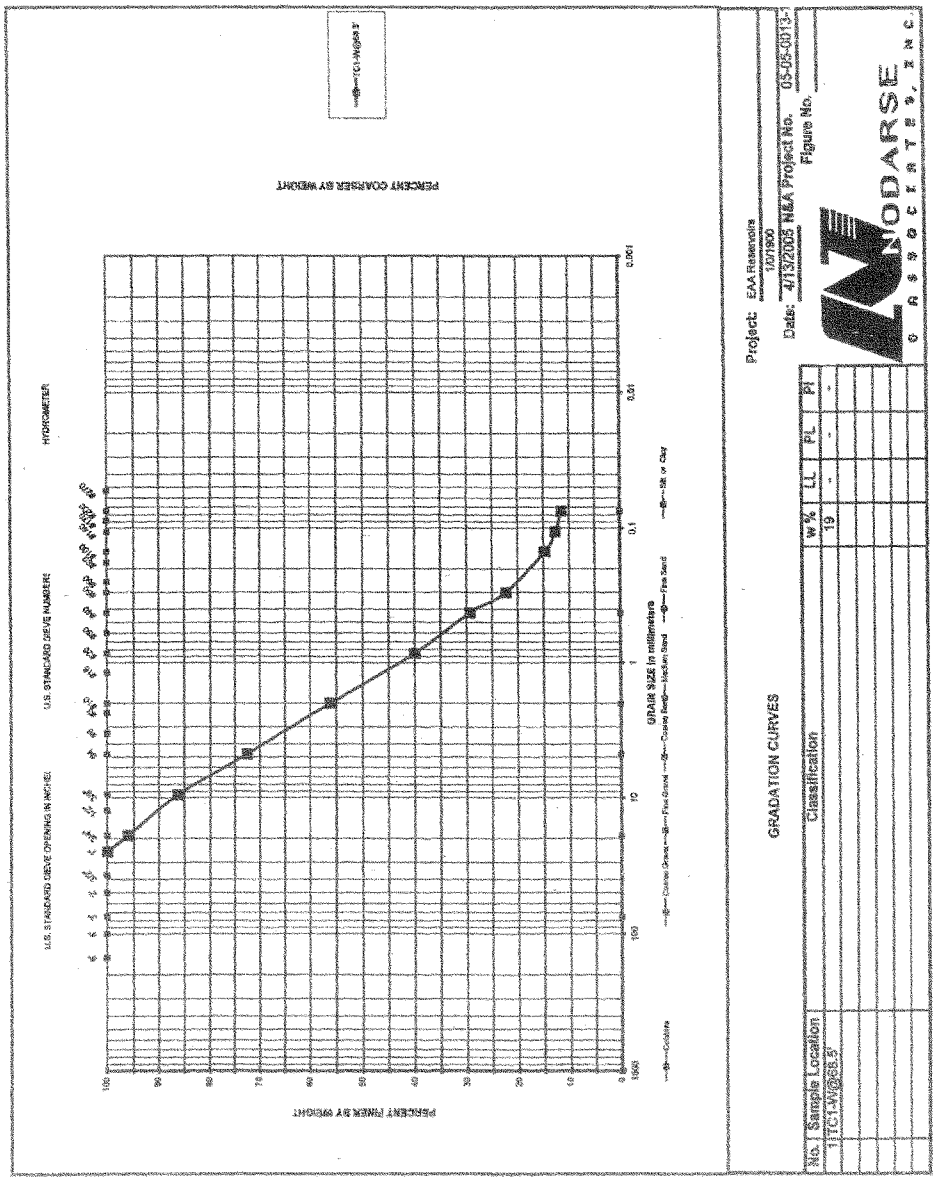

GRADATION CURVES
Project: EAA Reservoirs
1(d)1900
Date: 4/13/2005 N&A Project No. 05-05-0013
Figure No.
MODARSE
ASSOCIATES, INC.
No. Sample Location Classification w % LL PL PI
1 TC1-E283.5' 22 - - -
U.S. STANDARD SIEVE OPENINGS IN INCHES
U.S. STANDARD SIEVE NUMBERS
HYDROMETER
PERCENT FINER BY WEIGHT
PERCENT COARSER BY WEIGHT
GRAIN SIZE in millimeters
Cobbles
Coarse Gravel
Fine Gravel
Coarse Sand
Medium Sand
Fine Sand
Si. or Clay
TC1-E283.5'

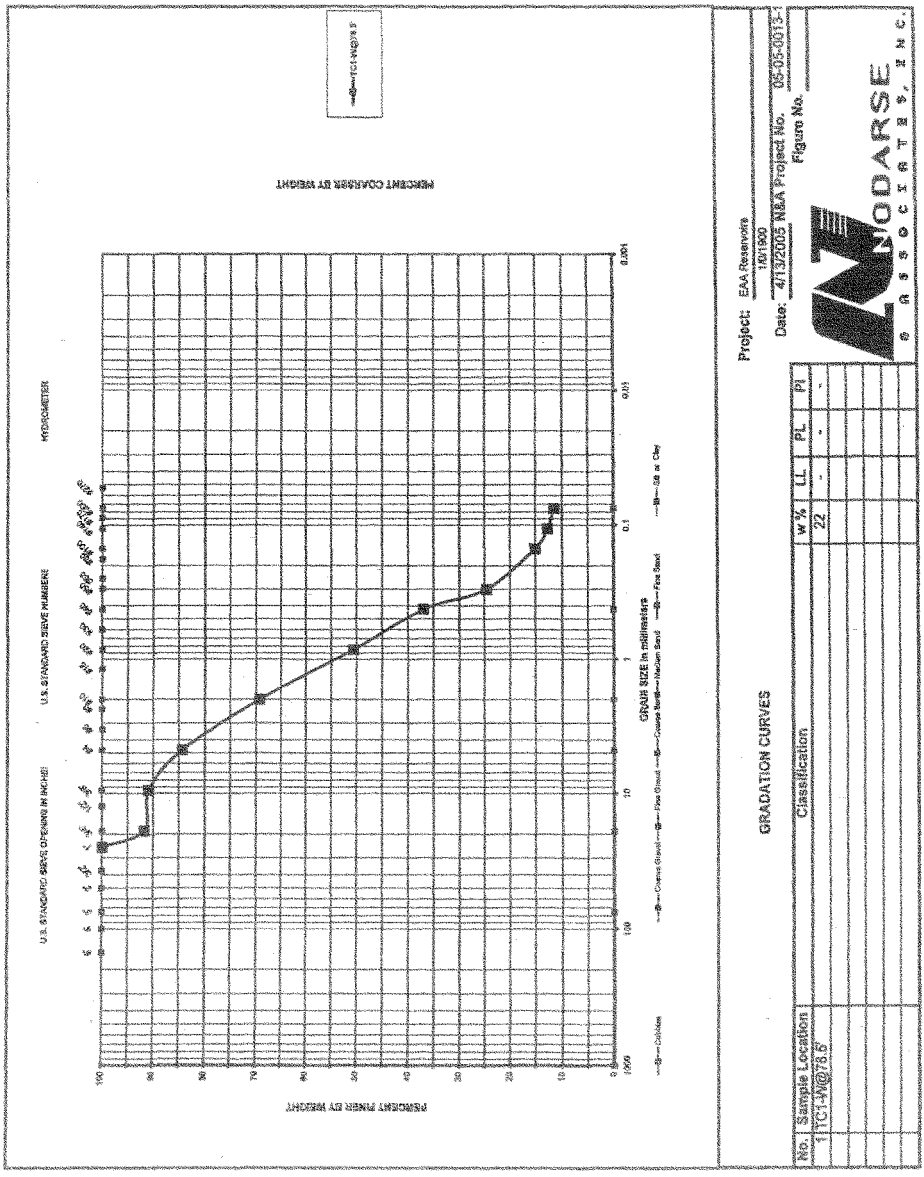

GRADATION CURVES
Project: EAA Reservoirs
1/01900
Date: 4/13/2005 N&A Project No. 05-05-0013-1
Figure No.
NODARSE & ASSOCIATES, INC.
No. Sample Location Classification w % LL PL PI
1 TC1-E@68.5' 21 - - -
U.S. STANDARD SIEVE OPENING IN INCHES
U.S. STANDARD SIEVE NUMBERS
HYDROMETER
PERCENT FINER BY WEIGHT
PERCENT COARSER BY WEIGHT
GRAIN SIZE in millimeters
Cobbles
Coarse Gravel
Fine Gravel
Coarse Sand
Medium Sand
Fine Sand
Silt or Clay

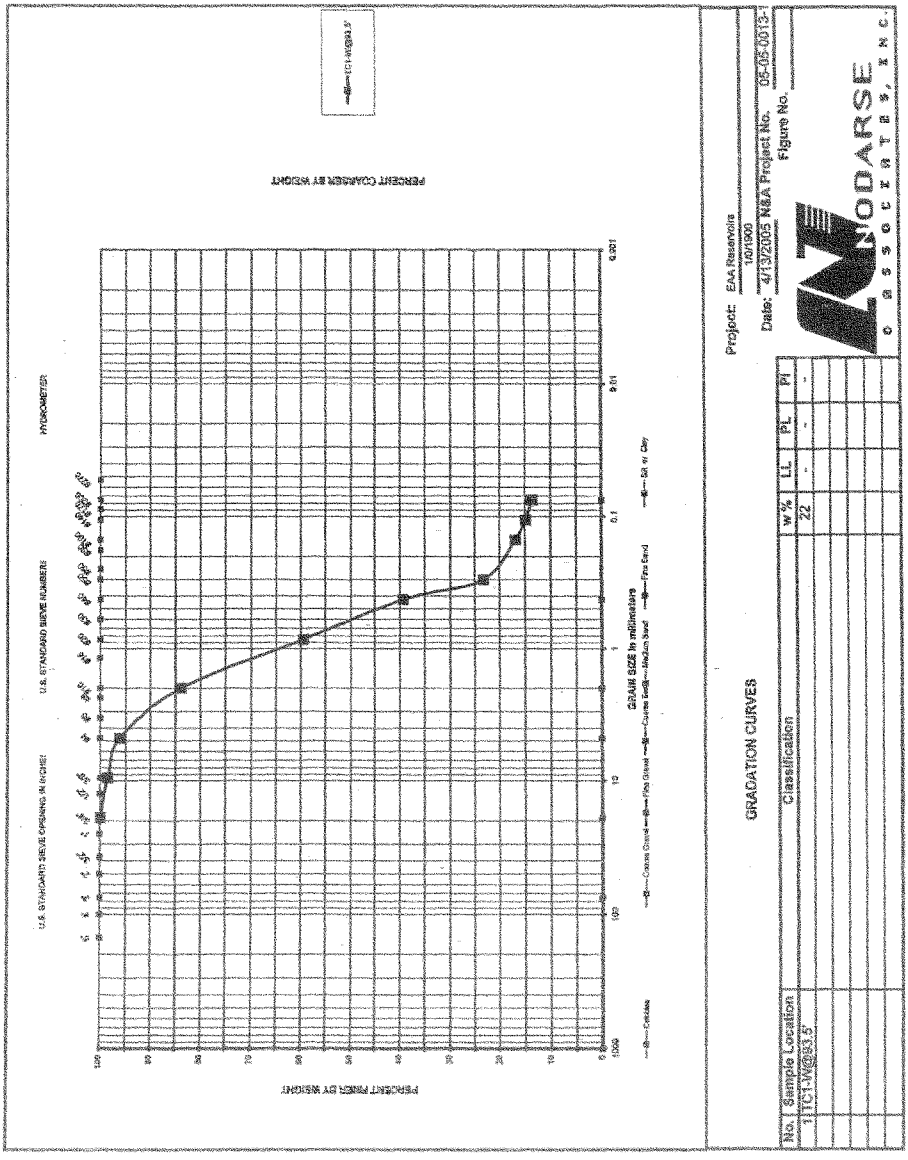

GRADATION CURVES
Project: EAA Reservoirs
15/1800
Date: 4/13/2005 N&A Project No. 05-05-0013
Figure No.
NODARSE & ASSOCIATES, INC.
No. Sample Location Classification W % LL PL PI
1 TC1-E@98.5' 15 - - -
U.S. STANDARD SIEVE OPENINGS IN INCHES
U.S. STANDARD SIEVE NUMBERS
HYDROMETER
PERCENT FINER BY WEIGHT
PERCENT COARSER BY WEIGHT
GRAIN SIZE in millimeters
Coarse Gravel
Fine Gravel
Coarse Sand
Medium Sand
Fine Sand
Silt or Clay
Cobbles
TC1-E@98.5'

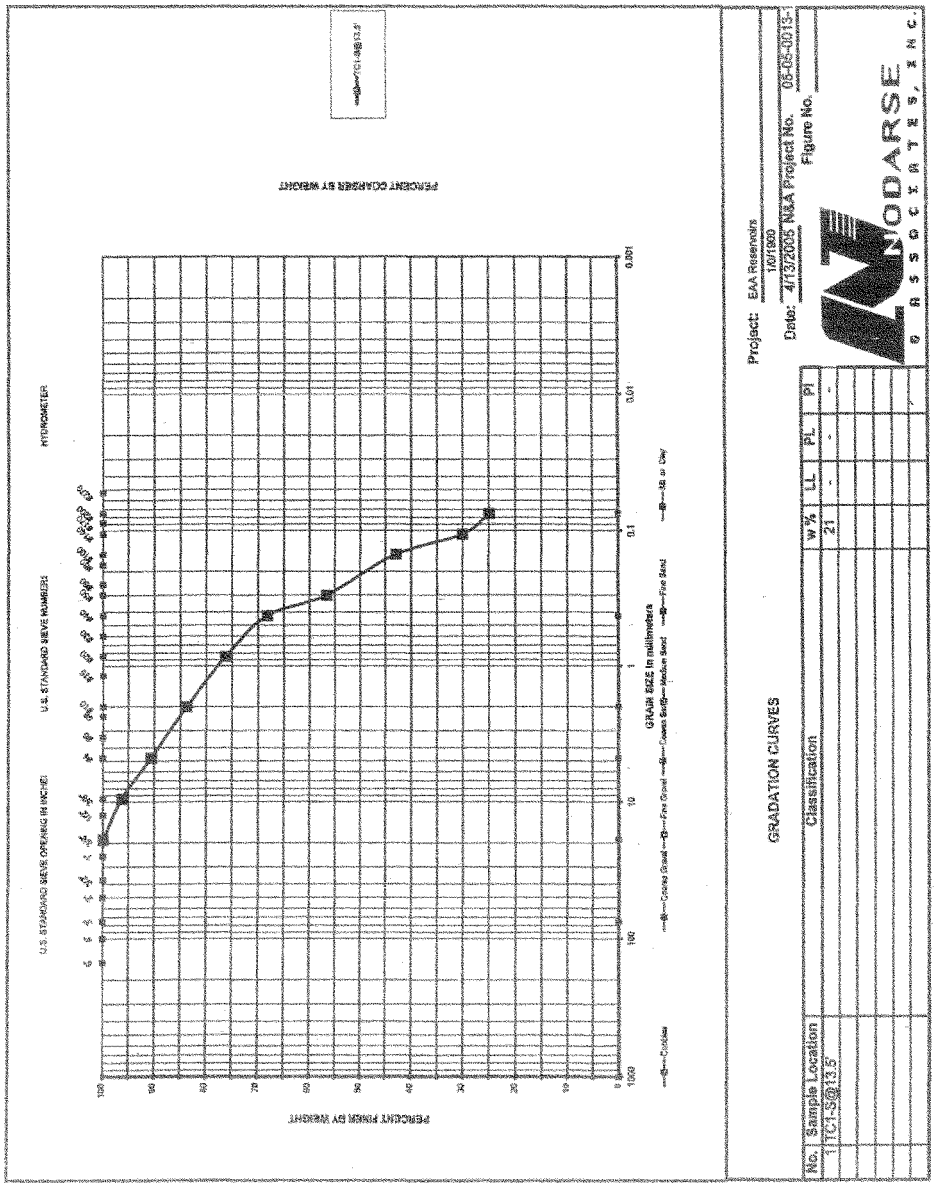

GRADATION CURVES
Project: EAA Reservoirs
1:01800
Date: 4/13/2005 N&A Project No. 05-05-0013-
Figure No.
NODARSE
& ASSOCIATES, INC.
No. | Sample Location | Classification | w % | LL | PL | PI
11TC1-W@13.5' | 26 | - | - | -
U.S. STANDARD SIEVE OPENING IN INCHES
U.S. STANDARD SIEVE NUMBERS
HYDROMETER
PERCENT FINER BY WEIGHT
PERCENT COARSER BY WEIGHT
GRAIN SIZE in millimeters
Cobbles
Coarse Gravel
Fine Gravel
Coarse Sand
Medium Sand
Fine Sand
Silt or Clay
TC1-W@13.5'

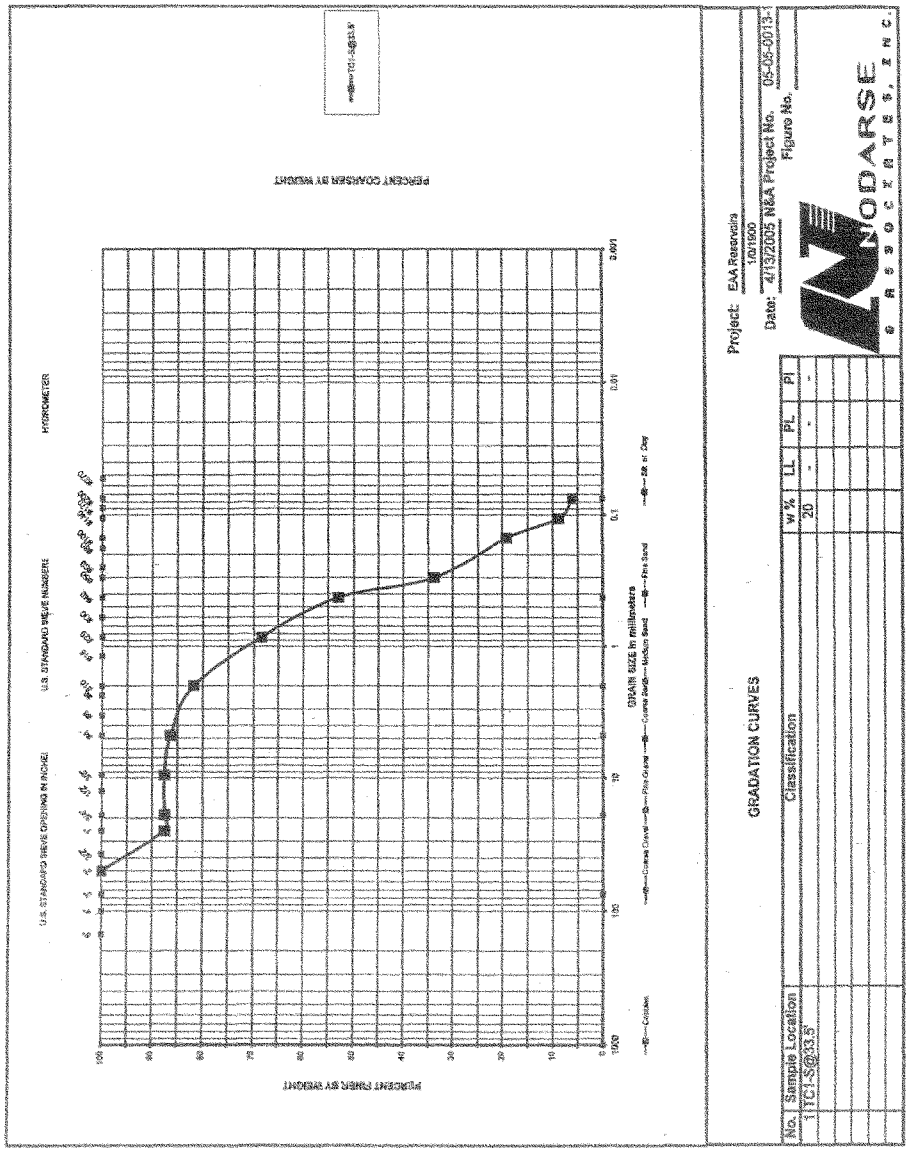

GRADATION CURVES
Project: EAA Reservoirs
1701900
Date: 4/13/2005 N&A Project No. 05-05-0013-1
Figure No.
NODARSE & ASSOCIATES, INC.
No. Sample Location Classification w % LL PL PI
1 TC1-W@46.5' 28 - - -
PERCENT FINER BY WEIGHT
GRAIN SIZE in millimeters
TC1-W@46.5'
HYDROMETER
U.S. STANDARD SIEVE NUMBERS
U.S. STANDARD SIEVE OPENINGS IN INCHES
Cobbles
Coarse Gravel
Fine Gravel
Coarse Sand
Medium Sand
Fine Sand
Silt or Clay

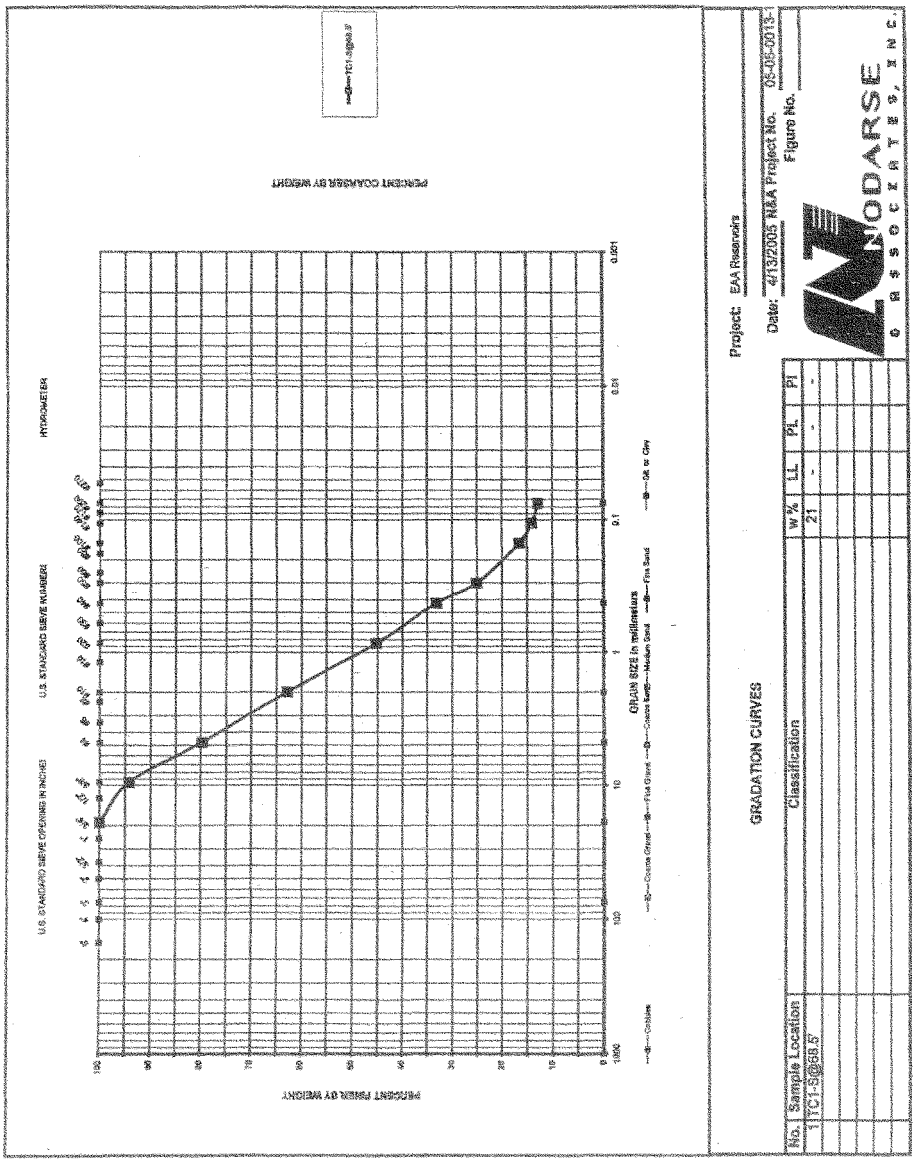

GRADATION CURVES
Project: EAA Reservoirs
10/1900
Date: 4/13/2005 N&A Project No. 05-06-0013
Figure No.
NODARSE & ASSOCIATES, INC
No. Sample Location
Classification
w %
LL
PL
PI
1 TC1-W@68.5'
19
-
-
-
U.S. STANDARD SIEVE NUMBERS
U.S. STANDARD SIEVE OPENING IN INCHES
HYDROMETER
GRAIN SIZE in millimeters
PERCENT FINER BY WEIGHT
PERCENT COARSER BY WEIGHT
Cobbles
Coarse Gravel
Fine Gravel
Coarse Sand
Medium Sand
Fine Sand
Silt or Clay
TC1-W@68.5'

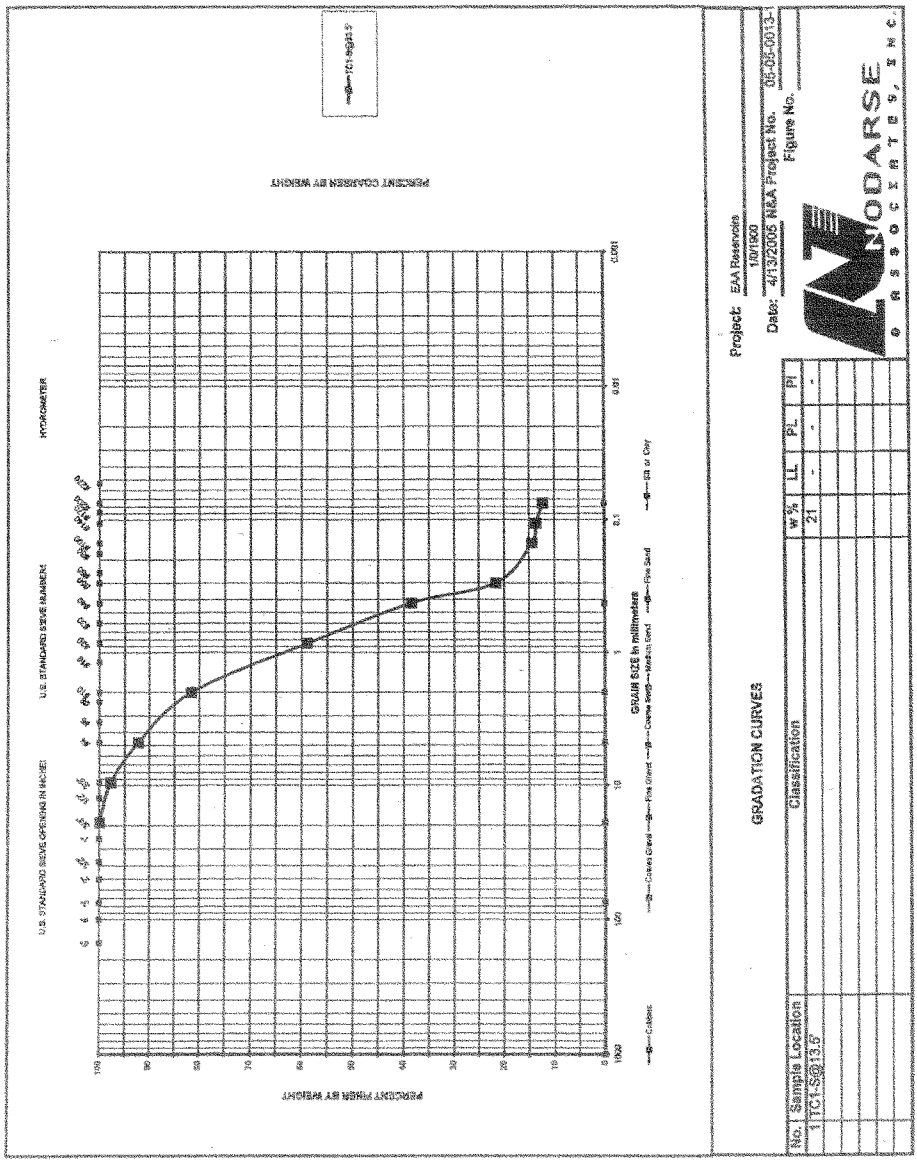

GRADATION CURVES
Project: EAA Reservoirs
1/9/1900
Date: 4/13/2005 N&A Project No. 05-05-0013
Figure No.
MODARSE
& ASSOCIATES, INC.
No. Sample Location Classification w % LL PL PI
1 TC1-W@78.5 22 - - -
U.S. STANDARD SIEVE OPENING IN INCHES
U.S. STANDARD SIEVE NUMBERS
HYDROMETER
PERCENT FINER BY WEIGHT
GRAIN SIZE in millimeters
Clay or Clay
PERCENT COARSER BY WEIGHT


GRADATION CURVES
Project: EAA Reservoirs
10/1900
Date: 4/13/2005 N&A Project No. 06-05-0013-1
Figure No.
MODARSE
ASSOCIATES, INC.
No. | Sample Location | Classification | w% | LL | PL | PI
1 | TC1-W@3.5' | | 22 | - | - | -
U.S. STANDARD SIEVE OPENING IN INCHES
U.S. STANDARD SIEVE NUMBERS
HYDROMETER
PERCENT FINER BY WEIGHT
PERCENT COARSER BY WEIGHT
GRAIN SIZE in millimeters
Fine Sand
Silt or Clay
TC1-W@3.5'

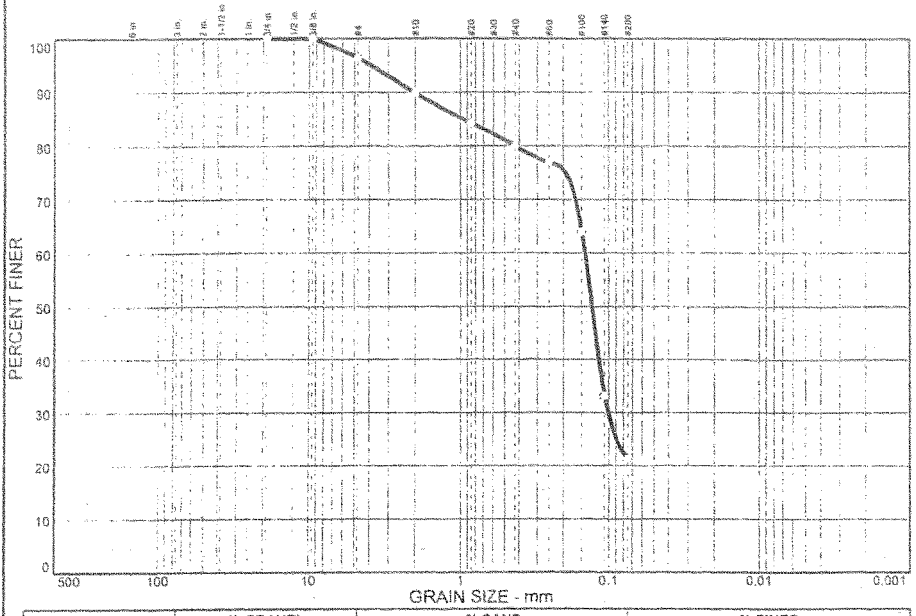

GRADATION CURVES
Project: EAA Reservoirs
10/7/80
Date: 4/13/2005 N&A Project No. 05-05-0013-1
Figure No.
NODARSE & ASSOCIATES, INC.
No. Sample Location Classification w % LL PL PI
1 TC1-S@13.5' 21 - - -
U.S. STANDARD SIEVE OPENING IN INCHES
U.S. STANDARD SIEVE NUMBERS
HYDROMETER
PERCENT FINER BY WEIGHT
PERCENT COARSER BY WEIGHT
GRAIN SIZE In millimeters
Cobbles
Coarse Gravel
Fine Gravel
Coarse Sand
Medium Sand
Fine Sand
Silt or Clay


GRADATION CURVES
Project: EAA Reservoirs
10/1500
Date: 4/13/2005 N&A Project No. 05-05-00113-
Figure No.
NODARSE
& ASSOCIATES, INC.
No. Sample Location
Classification
w %
LL
PL
PI
1 TC1-S@3.5'
20
-
-
-
U.S. STANDARD SIEVE OPENING IN INCHES
U.S. STANDARD SIEVE NUMBERS
HYDROMETER
PERCENT FINER BY WEIGHT
PERCENT COARSER BY WEIGHT
GRAIN SIZE in millimeters
Cobbles
Coarse Gravel
Fine Gravel
Coarse Sand
Medium Sand
Fine Sand
Silt or Clay
TC1-S@3.5'


GRADATION CURVES
Project: EAA Reservoirs
Date: 4/13/2005 N&A Project No. 05-05-0013-
Figure No.
NODARSE & Associates, Inc.
No. Sample Location Classification w % LL PL PI
11C1-S@68.5' 21 - - -
U.S. STANDARD SIEVE OPENING IN INCHES
U.S. STANDARD SIEVE NUMBER
HYDROMETER
PERCENT FINER BY WEIGHT
PERCENT COARSER BY WEIGHT
GRAIN SIZE in millimeters
Cobbles
Coarse Gravel
Fine Gravel
Coarse Sand
Medium Sand
Fine Sand
Silt or Clay


GRADATION CURVES
Project: EAA Reservoirs
1W1900
Date: 4/13/2005 N&A Project No. 05-05-0013-1
Figure No.
MODARSE ASSOCIATES, INC.
No. Sample Location Classification w % LL PL PI
1 TC1-S@13.5 21 - - -
U.S. STANDARD SIEVE OPENING IN INCHES
U.S. STANDARD SIEVE NUMBER
HYDROMETER
PERCENT FINER BY WEIGHT
PERCENT COARSER BY WEIGHT
GRAIN SIZE in millimeters
Cobbles
Coarse Gravel
Fine Gravel
Coarse Sand
Medium Sand
Fine Sand
Silt or Clay
TC1-S@13.5

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	3.6	6.5	9.9	58.8	21.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4 in.	100.0		
3/8 in.	100.0		
#4	96.4		
#10	89.9		
#20	84.3		
#40	80.0		
#60	77.0		
#100	64.0		
#140	33.1		
#200	21.2		

* (no specification provided)

Soil Description

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.954 D_{60}= 0.143 D_{50}= 0.128
D_{30}= 0.101 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Sample No.: 282 Source of Sample: Date:
Location: TC1S-10 Elev./Depth: 48.5'

NODARSE & ASSOCIATES, INC.

Client:
Project: EAA
Project No: W04-C-487 Plate

LABORATORY TEST RESULTS FOR
EAA RESERVOIR - WO#2
PROJECT No: 05-05-0013-101
N&A

Boring Number	Approximate Sample Depth (feet)	Passing Sieve Number (%)					Moisture Content (%)	Organic Content (%)	Atterberg Limits		Classification	Stratum Number
		10	20	60	100	200			LL	PI		
CB-157 CP05-EAARS-CB-0255	9.0'	74	44	35	29	24	33	-	-	-	SM	Silty sand with gravel
CB-157 CP05-EAARS-CB-0255	13.5'	81	66	57	47	32	27	-	-	-	SM	Silty sand with gravel
CB-157 CP05-EAARS-CB-0255	18.5'	54	35	27	20	11	19	-	-	-	SW-SM	Well graded sand with silt+gravel
CB-158 CP05-EAARS-CB-0256	50.5'	75	46	32	17	10	19	-	-	-	SW-SM	Well graded sand with silt+gravel
CB-158 CP05-EAARS-CB-0256	55.0'	97	61	39	17	8	23	-	-	-	SP-SM	Poorly graded sand with silt
CB-158 CP05-EAARS-CB-0256	65.5'	74	49	34	21	14	21	-	-	-	SW-SM	Well graded sand with gravel
CB-158 CP05-EAARS-CB-0256	70.0'	93	83	67	35	13	28	-	-	-	SP-SM	Poorly graded sand with silt
CB-158 CP05-EAARS-CB-0256	38.5'	86	81	79	59	22	28	-	-	-	SM	Silty sand
CB-158 CP05-EAARS-CB-0256	44.5'	99	97	92	27	8	29	-	-	-	SP-SM	Poorly graded sand with silt

Boring Number	Approximate Sample Depth (feet)	Passing Sieve Number (%)					Moisture Content (%)	Organic Content (%)	Atterberg Limits		Classification	Stratum Number
		10	20	60	100	200			LL	PI		
CB-158 CP05-EAARS-CB-0256	23.5'	72	43	33	26	19	29	-	-	-	SM	Silty sand with gravel
CB-158 CP05-EAARS-CB-0256	21.5'	65	41	34	30	23	21	-	-	-	SM	Silty sand with gravel
CB-158 CP05-EAARS-CB-0256	76.0'	54	29	21	16	11	28	-	-	-	SP-SM	Poorly graded sand with gravel
CB-158 CP05-EAARS-CB-0256	80.5'	55	26	18	12	10	26	-	-	-	SP-SM	Poorly graded sand with silt
CB-158 CP05-EAARS-CB-0256	85.0'	55	26	18	12	10	26	-	-	-	SW-SM	Well graded sand with silt+gravel
CB-158 CP05-EAARS-CB-0256	89.5'	53	27	14	11	9	22	-	-	-	SW-SM	Well graded sand with silt+gravel
CB-158 CP05-EAARS-CB-0256	91.0'	57	43	38	23	17	21	-	-	-	SM	Silty sand with gravel
CB-158 CP05-EAARS-CB-0256	98.5'	71	61	56	34	20	22	-	-	-	SM	Silty sand with gravel

LABORATORY TEST RESULTS FOR
EAA RESERVOIR - WO#4
PROJECT No: 05-05-0013-101
N&A

Boring Number	Approximate Sample Depth (feet)	Passing Sieve Number (%)						Moisture Content (%)	Organic Content (%)	Atterberg Limits		Classification	Stratum Number
		#4	#10	#40	#100	#200				LL	PI		
CB-0108 CPOS-#AA125 -CB0265	4.5-9.5'	32	20	6	5	1		-	-	-	-	Well graded gravel with sand.	(GW)

LABORATORY TEST RESULTS FOR
EAA RESERVOIR - WO#3
PROJECT No: 05-05-0013-101
N&A

Boring Number	Approximate Sample Depth (feet)	Passing Sieve Number (%)					Moisture Content (%)	Organic Content (%)	Atterberg Limits		Classification	Stratum Number
		10	20	60	100	200			LL	PI		
CB-0169 CP05-EAARS-CB-0266	5.5'	37	25	14	11	8	13	-	-	-	Well graded sand with silt+gravel.	(SW-SM)
CB-0169 CP05-EAARS-CB-0266	11.5'	72	59	39	33	28	24	-	-	-	Silty sand with gravel.	(SM)
CB-0169 CP05-EAARS-CB-0266	14.5'	48	36	22	18	14	34	-	-	-	Well graded sand with silt and gravel.	(SW-SM)
CB-0169 CP05-EAARS-CB-0266	16'	81	65	41	32	25	36	-	-	-	Silty sand.	(SM)
CB-0169 CP05-EAARS-CB-0266	20.5'	87	76	54	42	27	28	-	-	-	Silty sand.	(SM)
CB-0169 CP05-EAARS-CB-0266	26.5'	87	72	48	35	13	22	-	-	-	Well graded sand with silt.	(SW-SM)
CB-0169 CP05-EAARS-CB-0266	31.0'	81	71	53	41	25	22	-	-	-	Silty sand.	(SM)
CB-0169 CP05-EAARS-CB-0266	37.0'	75	60	39	27	9	27	-	-	-	Well graded sand with silt.	(SW-SM)
CB-0169 CP05-EAARS-CB-0266	44.5'	99	94	22	8	3	25	-	-	-	Poorly graded sand.	(SP)
CB-0169 CP05-EAARS-CB-0266	49.0'	57	47	20	13	7	21	-	-	-	Well graded sand with silt and gravel.	(SW-SM)
CB-0169 CP05-EAARS-CB-0266	55.0'	86	81	75	59	22	30	-	-	-	Silty sand.	(SM)
CB-0169 CP05-EAARS-CB-0266	61.0'	44	36	23	17	11	30	-	-	-	Well graded sand with silt+gravel.	(SW-SM)

1

CB-0169 CP05-EAARS-CB-0266	65.5'	94	81	35	18	9	22	-	-	-	Well graded sand with silt.	(SW-SM)
CB-0169 CP05-EAARS-CB-0266	68.5'	62	50	26	18	8	22	-	-	-	Well graded sand with silt+gravel.	(SW-SM)
CB-0169 CP05-EAARS-CB-0266	73.0'	64	56	38	19	10	21	-	-	-	Well graded sand with silt+gravel.	(SW-SM)
CB-0169 CP05-EAARS-CB-0266	76.0'	56	48	29	17	11	18	-	-	-	Well graded sand with silt+gravel.	(SW-SM)
CB-0169 CP05-EAARS-CB-0266	85.0'	33	25	12	8	6	14	-	-	-	Well graded gravel with silt and sand.	(GW-GM)
CB-0169 CP05-EAARS-CB-0266	89.5'	52	39	13	10	8	14	-	-	-	Well graded sand with silt+gravel.	(SW-SM)
CB-0171 CP05-EAARS-CB-0268	13.5'	84	71	46	37	27	30	-	-	-	Silty sand.	(SM)
CB-0171 CP05-EAARS-CB-0268	18.5'	42	38	25	18	9	22	-	-	-	Poorly graded gravel with silt and sand.	(GP-GM)
CB-0171 CP05-EAARS-CB-0268	33.5'	76	66	47	30	9	18	-	-	-	Well graded sand with silt+gravel.	(SW-SM)
CB-0172 CP05-EAARS-CB-0269	0.0'	76	72	35	21	14	137	-	-	-	Silty sand with gravel.	(SM)
CB-0172 CP05-EAARS-CB-0269	8.5'	57	39	21	16	12	24	-	-	-	Well graded sand with silt+gravel.	(SW-SM)
CB-0172 CP05-EAARS-CB-0269	13.5'	78	71	49	38	25	32	-	-	-	Silty sand with gravel.	(SM)
CB-0172 CP05-EAARS-CB-0269	18.5'	85	68	40	27	10	23	-	-	-	Well graded sand with silt.	(SW-SM)
CB-0172 CP05-EAARS-CB-0269	33.5'	56	51	40	28	3	16	-	-	-	Poorly graded sand with gravel.	(SP)
CB-0172 CP05-EAARS-CB-0269	38.5'	74	65	52	22	6	21	-	-	-	Well graded sand with silt+gravel.	(SW-SM)
CB-0173 CP05-EAARS-CB-0270	1.5'	45	31	15	10	7	158	-	-	-	Well graded sand with silt+gravel.	(SW-SM)
CB-0173 CP05-EAARS-CB-0270	3.5'	26	22	18	16	14	27	-	-	-	Silty gravel with sand	(GM)

CB-0173 CP05-EAARS-CB-0270	13.5'	77	65	47	41	35	36	"	"	"	Silty sand.	(SM)
CB-0173 CP05-EAARS-CB-0270	18.5'	46	37	24	18	11	26	"	"	"	Well graded sand with silt+gravel.	(SW-SM)
CB-0175 CP05-EAARS-CB-0271	0.0'	58	47	33	28	22	12	"	"	"	Silty sand with gravel.	(SM)
CB-0175 CP05-EAARS-CB-0271	2.8'	60	50	36	29	22	20	"	"	"	Silty sand with gravel.	(SM)
CB-0175 CP05-EAARS-CB-0271	10.5'	46	37	26	21	18	24	"	"	"	Silty sand with gravel.	(SM)
CB-0175 CP05-EAARS-CB-0271	18.5'	82	73	51	37	25	25	"	"	"	Silty sand.	(SM)
CB-0175 CP05-EAARS-CB-0271	23.5'	67	59	39	26	12	22	"	"	"	Well graded sand with silt+gravel.	(SW-SM)
CB-0175 CP05-EAARS-CB-0271	38.5'	82	77	55	25	10	24	"	"	"	Poorly graded sand with silt and gravel.	(SP-SM)
CB-0176 CP05-EAARS-CB-0272	5.1'	45	33	21	18	15	19	"	"	"	Silty sand with gravel.	(SM)
CB-0176 CP05-EAARS-CB-0272	10.0'	79	69	55	39	24	29	"	"	"	Silty sand with gravel.	(SM)
CB-0176 CP05-EAARS-CB-0272	18.5'	52	46	36	22	9	11	"	"	"	Well graded sand with silt+gravel.	(SW-SM)
CB-0176 CP05-EAARS-CB-0272	23.5'	47	42	32	22	7	15	"	"	"	Well graded sand with silt+gravel.	(SW-SM)
CB-0176 CP05-EAARS-CB-0272	28.5'	98	97	94	38	5	29	"	"	"	Poorly graded sand.	(SP)
CB-0176 CP05-EAARS-CB-0272	33.5'	53	48	27	16	5	16	"	"	"	Well graded sand with silt+gravel.	(SW-SM)
CB-0179 CP05-EAARS-CB-0275	5.5'	41	30	17	13	10	24	"	"	"	Well graded sand with silt+gravel.	(SW-SM)
CB-0179 CP05-EAARS-CB-0275	7.5'	58	46	27	21	17	25	"	"	"	Silty sand with gravel.	(SM)
CB-0179 CP05-EAARS-CB-0275	13.5'	59	40	26	23	19	18	"	"	"	Silty sand with gravel.	(SM)

CB-0179 CP05-EAARS-CB-0275	23.5'	38	29	22	14	5	14	"	"	"	Well graded sand with gravel.	(SW)
CB-0179 CP05-EAARS-CB-0275	28.5'	52	48	39	21	7	15	"	"	"	Poorly graded sand with silt.	(SP-SM)
CB-0179 CP05-EAARS-CB-0275	33.5'	91	91	86	27	7	25	"	"	"	Poorly graded sand with silt.	(SP-SM)
CB-0179 CP05-EAARS-CB-0275	38.5'	72	71	49	15	4	21	"	"	"	Poorly graded sand with gravel.	(SP)
CB-0179 CP05-EAARS-CB-0275	48.5'	83	83	75	17	6	21	"	"	"	Poorly graded sand with silt+gravel.	(SP-SM)
CB-0179 CP05-EAARS-CB-0275	58.5'	61	53	35	20	9	23	"	"	"	Well graded sand with silt+gravel.	(SW-SM)
CB-0179 CP05-EAARS-CB-0275	63.5'	57	48	33	16	7	28	"	"	"	Well graded sand with silt+gravel.	(SW-SM)
CB-0179 CP05-EAARS-CB-0275	73.5'	99	96	70	15	10	22	"	"	"	Poorly graded sand with silt.	(SP-SM)
CB-0179 CP05-EAARS-CB-0275	83.5'	57	38	20	14	11	20	"	"	"	Well graded sand with silt+gravel.	(SW-SM)
CB-0179 CP05-EAARS-CB-0275	93.5'	64	42	21	16	12	18	"	"	"	Well graded sand with silt.	(SW-SM)
CB-0180 CP05-EAARS-CB-0276	8.0'	43	32	21	17	12	17	"	"	"	Well graded sand with silt+gravel.	(SW-SM)
CB-0180 CP05-EAARS-CB-0276	13.5'	54	43	27	21	13	25	"	"	"	Well graded sand with silt+gravel.	(SW-SM)
CB-0180 CP05-EAARS-CB-0276	18.5'	88	84	76	29	9	26	"	"	"	Poorly graded sand with silt.	(SP-SM)
CB-0180 CP05-EAARS-CB-0276	23.5'	87	81	58	19	4	25	"	"	"	Poorly graded sand.	(SP)
CB-0180 CP05-EAARS-CB-0276	28.5'	99	97	82	22	6	27	"	"	"	Poorly graded sand with silt.	(SP-SM)
CB-0180 CP05-EAARS-CB-0276	33.5'	96	95	92	44	9	27	"	"	"	Poorly graded sand with silt.	(SP-SM)
CB-0181 CP05-EAARS-CB-0277	23.5'	82	74	63	44	16	25	"	"	"	Silty sand.	(SM)

CB-0181 CP05-EAARS-CB-0277	28.5'	93	82	80	59	13	24	-	-	-	Poorly graded sand with silt and gravel.	(SP-SM)
CB-0181 CP05-EAARS-CB-0277	33.5'	93	84	71	50	16	39	-	-	-	Silty sand	(SM)
CB-0183 CP05-EAARS-CB-0278	18.5'	57	43	25	19	14	21				Well graded sand with silt+gravel.	(SW-SM)
CB-0183 CP05-EAARS-CB-0278	23.5'	81	64	45	29	19	24				Silty sand with gravel.	(SM)
CB-0183 CP05-EAARS-CB-0278	28.5'	52	45	37	24	9	12				Well graded sand with silt+gravel.	(SW-SM)
CB-0183 CP05-EAARS-CB-0278	33.5'	93	93	91	26	6	24				Poorly graded sand with silt.	(SP-SM)

LABORATORY TEST RESULTS FOR
EAA RESERVOIR - WO#5
PROJECT No: 05-05-0013-101
N&A

Boring Number	Approximate Sample Depth (feet)	Passing Sieve Number (%)					Moisture Content (%)	Organic Content (%)	Atterberg Limits		Classification	Stratum Number
		10	20	60	100	200			LL	PI		
CB-0174 CP05-EAARS-VB-0283	5-10'	71	63	30	45	39	10	-	-	-	Sandy silty clay with gravel.	(CL-ML)
CB-0174 CP05-EAARS-VB-0283	10-15'	69	61	50	46	41	23	-	-	-	Sandy silty clay with gravel.	(CL-ML)
CB-0174 CP05-EAARS-VB-0283	100-105'	85	49	13	11	9	11	-	-	-	Poorly graded sand with silt.	(SP-SM)
CB-0174 CP05-EAARS-VB-0283	110-115'	81	52	22	17	14	18	-	-	-	Silty sand with gravel.	(SM)
CB-0174 CP05-EAARS-VB-0283	115-120'	66	46	20	15	12	16	-	-	-	Well graded sand with silt and gravel.	(SW-SM)
CB-0174 CP05-EAARS-VB-0283	125-130'	41	28	15	10	7	13	-	-	-	Well graded sand with silt and gravel.	(SW-SM)
CB-0174 CP05-EAARS-VB-0283	140-145'	76	63	45	15	10	19	-	-	-	Poorly graded sand with silt and gravel.	(SP-SM)
CB-0174 CP05-EAARS-VB-0283	150-155'	53	37	22	12	8	13	-	-	-	Well graded sand with silt and gravel.	(SW-SM)
CB-0174 CP05-EAARS-VB-0283	160-165'	50	35	21	15	9	14	-	-	-	Well graded sand with silt and gravel.	(SW-SM)

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CB-0174 CP05-EAARS-VB-0283	165-170'	92	87	78	40	23	20	"	"	"	Silty sand.	(SM)
CB-0174 CP05-EAARS-VB-0283	180-185'	92	92	88	55	29	20	"	"	"	Silty sand.	(SM)
CB-0174 CP05-EAARS-VB-0283	185-190'	90	85	82	66	41	20	"	"	"	Silty sandy with gravel.	(SM)
CB-0174 CP05-EAARS-VB-0283	195-200'	89	86	81	70	27	17	"	"	"	Silty sand with gravel.	(SM)
CB-0174 CP05-EAARS-VB-0283	200-205'	"	"	100	100	22	25	"	"	"	Silty sand.	(SM)
CB-0174 CP05-EAARS-VB-0283	205-210'	"	"	100	100	25	26	"	"	"	Silty sand.	(SM)

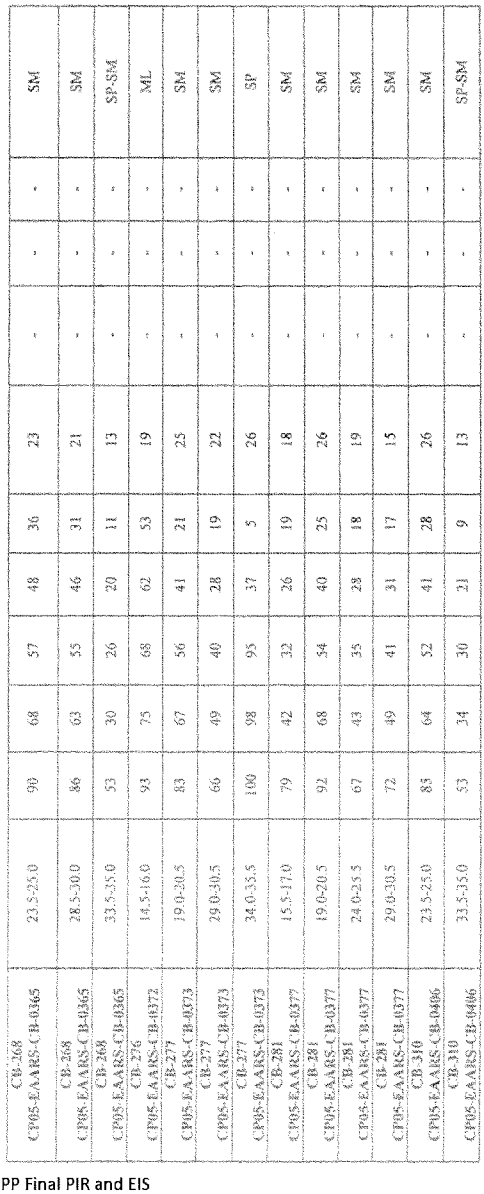
LABORATORY TEST RESULTS FOR
PROJECT NAME: EAA RESERVOIR (BLACK AND VEATCH) Work Order No. 6
PROJECT No: 05-05-0013-101
PALM BEACH COUNTY, FLORIDA
N&A

Boring No	Approximate Sample Depth (feet)	Passing Sieve Number (%)					Moisture Content (%)	Organic Content (%)	Atterberg Limits		AASHTO or U.S.C.S. Classification
		10	40	60	100	200			LL	PI	
CB-164 CP05-EAARS-VB-0282	5.0-10.0	37	24	20	17	14	6	-	-	-	GM
CB-164 CP05-EAARS-VB-0282	10.0-15.0	70	46	38	33	27	21	-	-	-	SM
CB-164 CP05-EAARS-VB-0282	30.0-35.0	50	39	34	26	17	8	-	-	-	SM
CB-164 CP05-EAARS-VB-0282	45.0-50.0	78	21	9	5	2	14	-	-	-	SP
CB-164 CP05-EAARS-VB-0282	55.0-60.0	51	30	20	15	8	10	-	-	-	SP-SM
CB-164 CP05-EAARS-VB-0282	70.0-75.0	31	22	17	12	7	7	-	-	-	GP-GM
CB-164 CP05-EAARS-VB-0282	95.0-100.0	78	36	17	8	6	22	-	-	-	SP-SM
CB-164 CP05-EAARS-VB-0282	115.0-120.0	67	56	53	42	27	20	-	-	-	SM
CB-164 CP05-EAARS-VB-0282	120.0-125.0	77	67	64	46	26	22	-	-	-	SM
CB-164 CP05-EAARS-VB-0282	130.0-135.0	89	84	83	60	25	21	-	-	-	SM
CB-164 CP05-EAARS-VB-0282	135.0-140.0	64	51	49	30	21	21	-	-	-	SM
CB-164 CP05-EAARS-VB-0282	145.0-150.0	60	43	39	18	11	13	-	-	-	SP-SM
CB-164 CP05-EAARS-VB-0282	165.0-170.0	37	21	18	12	7	14	-	-	-	GP-GM
CB-164 CP05-EAARS-VB-0282	180.0-185.0	81	68	65	51	20	20	-	-	-	SM
CB-164 CP05-EAARS-VB-0282	200.0-205.0	99	98	97	72	34	20	-	-	-	SM

CB-164 CP05-EAARS-VB-0282	215.0-220.0	100	100	100	100	29	28	-	-	-	-	SM
CB-164 CP05-EAARS-VB-0282	225.0-230.0	100	100	99	98	75	36	-	-	-	-	ML
CB-170 CP05-EAARS-CB-0267	88.5-90.0	96	85	75	46	29	21	-	-	-	-	SM
CB-171 CP05-EAARS-CB-0268	78.5-80.0	99	92	86	65	39	26	-	-	-	-	SM
CB-174 CP05-EAARS-VB-0283	40.0-45.0	88	82	79	43	6	17	-	-	-	-	SP-SM
CB-174 CP05-EAARS-VB-0283	60.0-65.0	46	34	26	15	8	8	-	-	-	-	SP-SM
CB-176 CP05-EAARS-CB-0272	58.5-60.0	64	40	31	18	5	21	-	-	-	-	SP-SM
CB-182 CP05-EAARS-VB-0284	10.0-15.0	63	52	46	39	26	18	-	-	-	-	SM
CB-182 CP05-EAARS-VB-0284	20.0-25.0	97	95	91	31	4	26	-	-	-	-	SP
CB-182 CP05-EAARS-VB-0284	40.0-45.0	31	20	13	8	4	2	-	-	-	-	GP
CB-182 CP05-EAARS-VB-0284	55.0-60.0	50	39	31	18	9	16	-	-	-	-	SP-SM
CB-182 CP05-EAARS-VB-0284	70.0-75.0	53	20	14	10	7	9	-	-	-	-	SP-SM
CB-182 CP05-EAARS-VB-0284	90.0-95.0	65	25	15	9	7	15	-	-	-	-	SP-SM
CB-182 CP05-EAARS-VB-0284	100.0-105.0	49	17	11	8	6	11	-	-	-	-	GP-GM
CB-182 CP05-EAARS-VB-0284	120.0-125.0	53	30	25	19	13	13	-	-	-	-	SM
CB-182 CP05-EAARS-VB-0284	125.0-130.0	40	19	14	11	8	10	-	-	-	-	SP-SM
CB-182 CP05-EAARS-VB-0284	140.0-145.0	54	29	10	8	7	9	-	-	-	-	SP-SM
CB-182 CP05-EAARS-VB-0284	155.0-160.0	63	50	46	19	11	12	-	-	-	-	SP-SM
CB-182 CP05-EAARS-VB-0284	175.0-180.0	78	66	63	52	22	17	-	-	-	-	SM
CB-182 CP05-EAARS-VB-0284	185.0-190.0	93	83	82	75	35	15	-	-	-	-	SM
CB-182 CP05-EAARS-VB-0284	205.0-210.0	100	100	100	100	45	23	-	-	-	-	ML
CB-182 CP05-EAARS-VB-0284	210.0-215.0	100	100	100	99	43	26	-	-	-	-	ML

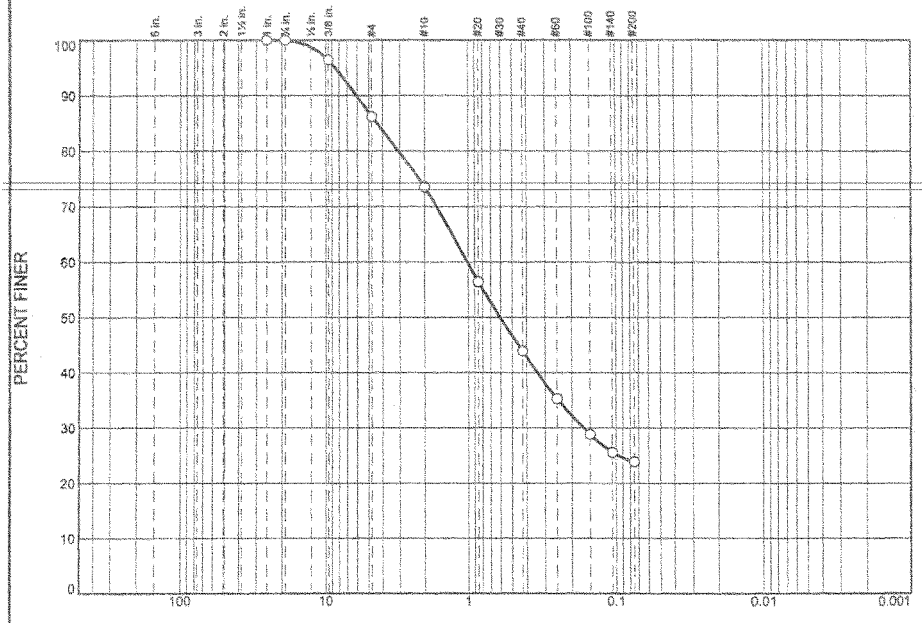
CB-182 CP05-EAARS-VB-0284	225.0-230.0	100	100	100	99	99	75	-	-	-	ML
CB-190 CP05-EAARS-VB-0285	215.0-220.0	100	97	95	91	71	43	-	-	-	CL
CB-190 CP05-EAARS-VB-0285	220.0-225.0	100	90	80	71	62	38	-	-	-	CL
CB-190 CP05-EAARS-VB-0285	225.0-230.0	100	93	92	89	86	148	-	127	66	CH
CB-205 CP05-EAARS-VB-0286	5.0-10.0	52	11	25	21	16	14	-	-	-	SM
CB-205 CP05-EAARS-VB-0286	15.0-20.0	67	49	40	31	20	18	-	-	-	SM
CB-205 CP05-EAARS-VB-0286	30.0-35.0	77	56	43	25	6	16	-	-	-	SP-SM
CB-205 CP05-EAARS-VB-0286	35.0-40.0	100	97	93	46	5	24	-	-	-	SP-SM
CB-205 CP05-EAARS-VB-0286	60.0-65.0	49	31	23	16	11	14	-	-	-	SP-SM
CB-205 CP05-EAARS-VB-0286	65.0-70.0	91	79	71	45	16	21	-	-	-	SM
CB-205 CP05-EAARS-VB-0286	75.0-80.0	52	33	24	16	13	13	-	-	-	SM
CB-205 CP05-EAARS-VB-0286	80.0-85.0	40	21	15	8	7	12	-	-	-	SP-SM
CB-205 CP05-EAARS-VB-0286	95.0-100.0	87	48	24	11	8	17	-	-	-	SP-SM
CB-205 CP05-EAARS-VB-0286	105.0-110.0	52	16	12	9	7	14	-	-	-	SP-SM
CB-205 CP05-EAARS-VB-0286	110.0-115.0	62	46	43	37	30	20	-	-	-	SM
CB-205 CP05-EAARS-VB-0286	125.0-130.0	50	25	20	16	12	17	-	-	-	SP-SM
CB-205 CP05-EAARS-VB-0286	140.0-145.0	58	38	32	13	7	15	-	-	-	SP-SM
CB-205 CP05-EAARS-VB-0286	160.0-165.0	58	39	35	24	12	20	-	-	-	SP-SM
CB-205 CP05-EAARS-VB-0286	175.0-180.0	77	67	66	56	19	18	-	-	-	SM
CB-205 CP05-EAARS-VB-0286	180.0-185.0	96	91	90	82	37	21	-	-	-	SM
CB-205 CP05-EAARS-VB-0286	195.0-200.0	95	90	89	74	31	19	-	-	-	SM
CB-205 CP05-EAARS-VB-0286	215.0-220.0	100	100	100	100	53	25	-	-	-	ML

CB-219 CP05-EAARS-CB-0317	14.0-15.5	94	77	70	64	52	23	"	"	"	"	ML
CB-219 CP05-EAARS-CB-0317	34.0-35.5	95	77	47	25	12	25	"	"	"	"	SP-SM
CB-228 CP05-EAARS-CB-0326	4.0-5.5	23	11	8	6	4	5	"	"	"	"	GP
CB-228 CP05-EAARS-CB-0326	14.0-15.5	74	44	32	24	11	23	"	"	"	"	SP-SM
CB-231 CP05-EAARS-CB-0329	8.5-10.0	61	32	25	20	14	17	"	"	"	"	SM
CB-231 CP05-EAARS-CB-0329	13.5-15.0	83	60	50	38	14	22	"	"	"	"	SM
CB-231 CP05-EAARS-CB-0329	18.5-20.0	54	38	32	22	12	13	"	"	"	"	SP-SM
CB-231 CP05-EAARS-CB-0329	23.5-25.0	87	69	54	18	6	26	"	"	"	"	SP-SM
CB-231 CP05-EAARS-CB-0329	33.5-35.0	65	60	58	40	8	16	"	"	"	"	SP-SM
CB-235 CP05-EAARS-CB-0333	8.5-10.0	63	38	32	29	24	24	"	"	"	"	SM
CB-248 CP05-EAARS-CB-0346	10.0-11.5	55	29	20	14	9	10	"	"	"	"	SP-SM
CB-260 CP05-EAARS-CB-0358	13.0-14.5	70	40	31	26	20	21	"	"	"	"	SM
CB-262 CP05-EAARS-CB-0360	8.5-10.0	38	21	15	11	8	26	"	"	"	"	GP-GM
CB-262 CP05-EAARS-CB-0360	13.5-15.0	82	59	53	49	46	31	"	"	"	"	SM
CB-262 CP05-EAARS-CB-0360	18.5-20.0	89	67	55	45	32	24	"	"	"	"	SM
CB-262 CP05-EAARS-CB-0360	23.5-25.0	69	46	38	29	15	22	"	"	"	"	SM
CB-268 CP05-EAARS-CB-0365	0.0-1.5	72	48	38	31	24	10	"	"	"	"	SM
CB-268 CP05-EAARS-CB-0365	1.5-3.0	60	41	35	30	24	13	"	"	"	"	SM
CB-268 CP05-EAARS-CB-0365	3.5-5.0	68	33	22	15	9	88	"	"	"	"	SP-SM
CB-268 CP05-EAARS-CB-0365	5.0-6.5	37	17	13	10	7	13	"	"	"	"	SP-SM
CB-268 CP05-EAARS-CB-0365	11.5-13.0	75	48	39	29	19	29	"	"	"	"	SM
CB-268 CP05-EAARS-CB-0365	18.5-20.0	96	82	71	59	41	23	"	"	"	"	SM



CB-268	23.5-25.0	90	68	57	48	36	23	"	"	"	"	SM
CP05-EAARS-CB-0365												
CB-268	28.5-30.0	86	63	55	46	31	21	"	"	"	"	SM
CP05-EAARS-CB-0365												
CB-268	33.5-35.0	53	30	26	20	11	13	"	"	"	"	SP-SM
CP05-EAARS-CB-0365												
CB-276	14.5-16.0	93	75	68	62	53	19	"	"	"	"	ML
CP05-EAARS-CB-0372												
CB-277	19.0-20.5	83	67	56	41	21	25	"	"	"	"	SM
CP05-EAARS-CB-0373												
CB-277	29.0-30.5	66	49	40	28	19	22	"	"	"	"	SM
CP05-EAARS-CB-0373												
CB-277	34.0-35.5	100	98	95	37	5	26	"	"	"	"	SP
CP05-EAARS-CB-0373												
CB-281	15.5-17.0	79	42	32	26	19	18	"	"	"	"	SM
CP05-EAARS-CB-0377												
CB-281	19.0-20.5	92	68	54	40	25	26	"	"	"	"	SM
CP05-EAARS-CB-0377												
CB-281	24.0-25.5	67	43	35	28	18	19	"	"	"	"	SM
CP05-EAARS-CB-0377												
CB-281	29.0-30.5	72	49	41	31	17	15	"	"	"	"	SM
CP05-EAARS-CB-0377												
CB-310	23.5-25.0	83	64	52	41	28	26	"	"	"	"	SM
CP05-EAARS-CB-0406												
CB-310	33.5-35.0	53	34	30	21	9	13	"	"	"	"	SP-SM
CP05-EAARS-CB-0406												

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	14	12	30	20	24	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			4.3800	1.0135	0.6025	0.1656				

	Material Description	USCS	AASHTO
○	Silty sand with gravel	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-157 Depth: 9.0' Sample Number: 4

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

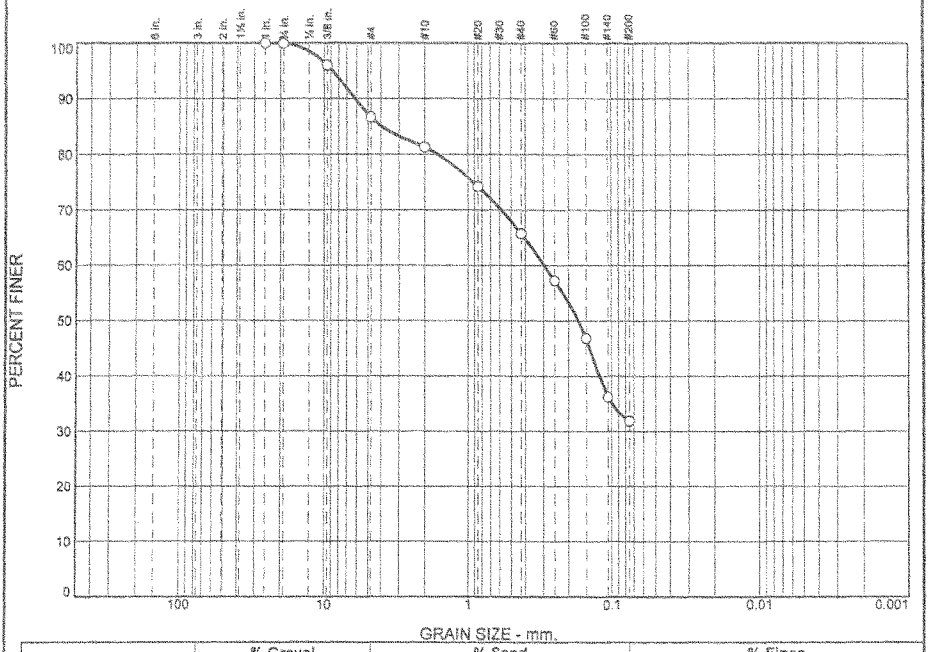
Remarks:

○ Moisture Content % 32.6 CP05-EAARS-CB-0255 @ 9.0'

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	13	6	15	34	32	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			3.9736	0.2950	0.1690					

	Material Description	USCS	AASHTO
○	Silty sand with gravel	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-157 Depth: 13.5' Sample Number: 5

Date: ○

Remarks:

○ Moisture Content % 27.1 CP05-EAARS-CB-0255 @ 13.5'

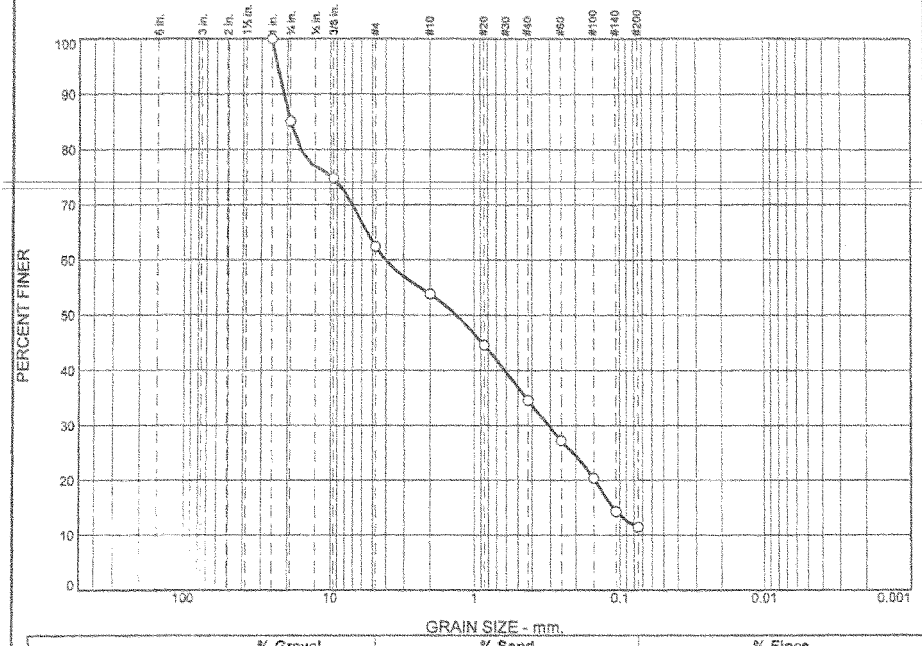
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Miami Lakes, FL

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	15	23	8	19	24	11	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			19.0162	4.0228	1.3320	0.3078	0.1113			

Material Description	USCS	AASHTO
○ Well graded sand with silt	SW-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-157 Depth: 18.5' Sample Number: 6

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

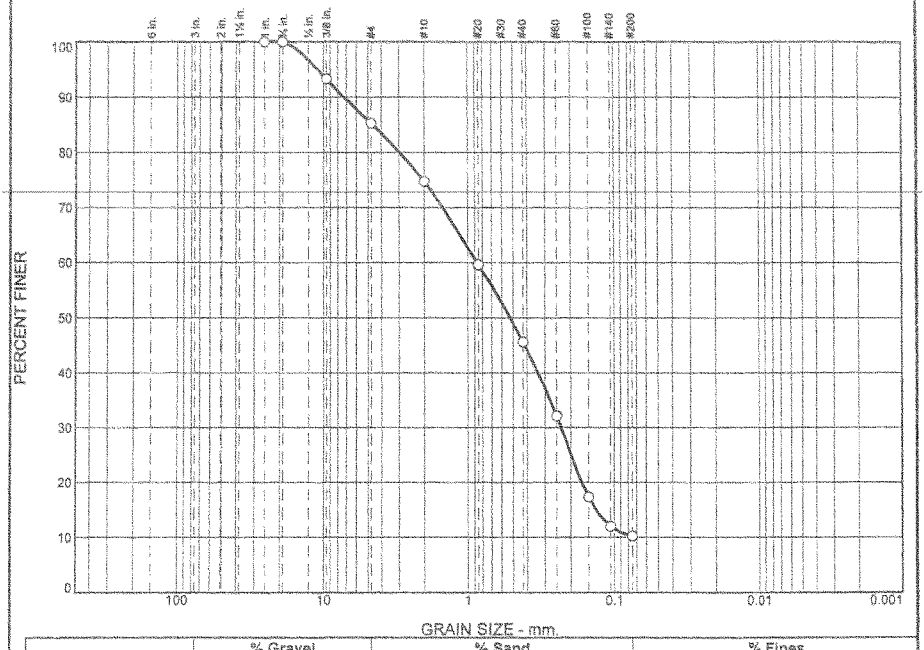
Remarks:

○ Moisture Content % 19.3 CP05-EAARS-CB-0255 @ 18.5'

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	15	10	29	36	10	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			4.6208	0.8654	0.5214	0.2327	0.1338			

Material Description	USCS	AASHTO
○ Well graded sand with silt	SW-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-158 Depth: 50.5' Sample Number: 32

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

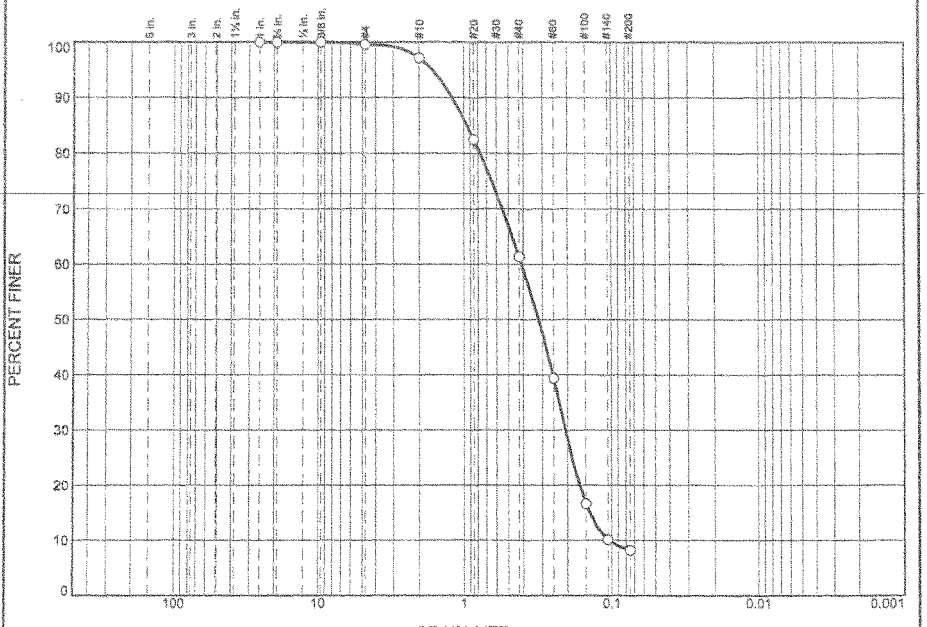
Remarks:

○ Moisture Content % 18.6 CP05-EAARS-CB-0256 @ 50.5'

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	0	3	36	53	8	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.9438	0.4093	0.3169	0.2063	0.1419	0.1048	0.99	3.91

Material Description	USCS	AASHTO
○ Poorly graded sand with silt	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-158 Depth: 55.0' Sample Number: 35

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

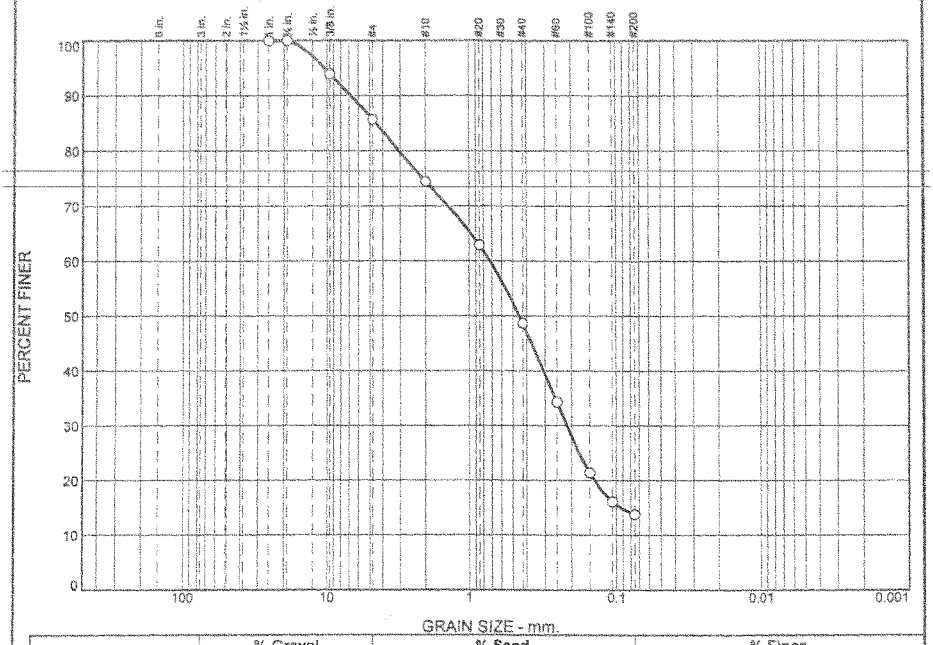
Remarks:

○ Moisture Content % 23.1 CP05-EAARS-CB-0256 @ 55.0'

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	14	12	25	35	14	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			4.4869	0.7184	0.4491	0.2138	0.0931			

Material Description	USCS	AASHTO
○ Well graded sand with silt	SW-SM	

Project No. 05-05-0013- **Client:** Black & Veatch
Project: E.A.A (Reservoir)
○ **Source of Sample:** CB-158 **Depth:** 65.5' **Sample Number:** 42

Date: ○

Nodarse & Associates, Inc.

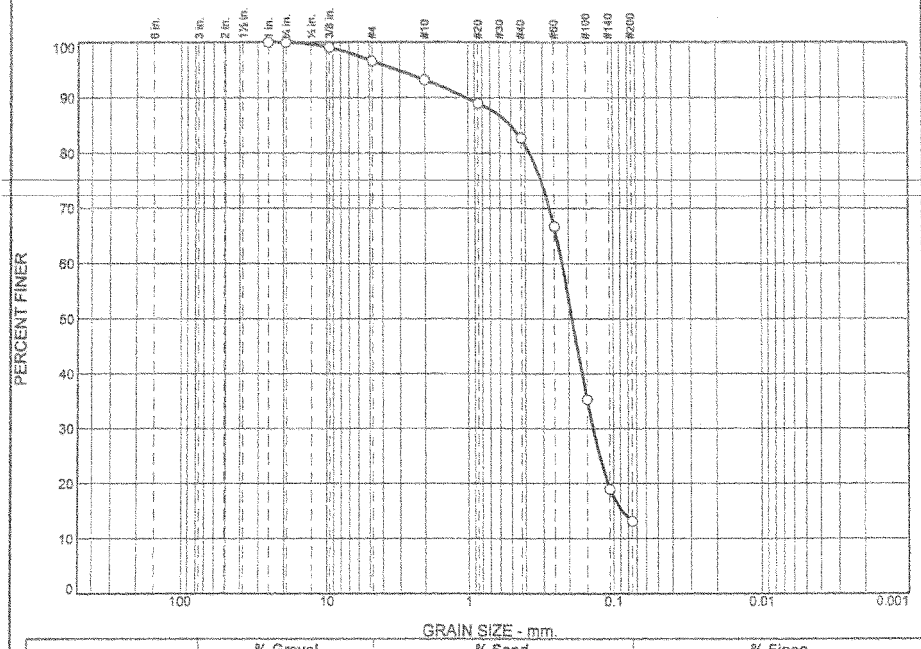
Miami Lakes, FL

Remarks:
○ Moisture Content % 21.2 CP05-EAARS-CB-0256 @ 65.5'

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	3	4	10	70	13	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			0.5005	0.2212	0.1887	0.1368	0.0883			

Material Description	USCS	AASHTO
○ Poorly graded sand with silt	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-158 Depth: 70.0' Sample Number: 45

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

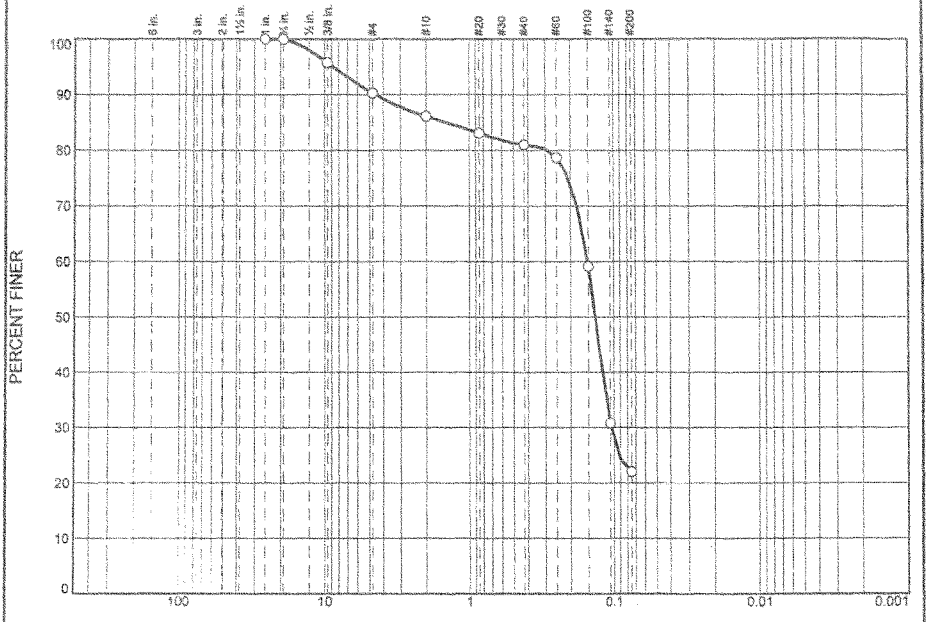
Remarks:

○ Moisture Content % 27.6 CP05-EAARS-CB-0256 @ 70.0'

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	10	4	5	59	22	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.4588	0.1516	0.1344	0.1044				

	Material Description	USCS	AASHTO
○	Silty sand	SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

○ **Source of Sample:** CB-158 **Depth:** 38.5' **Sample Number:** 24

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

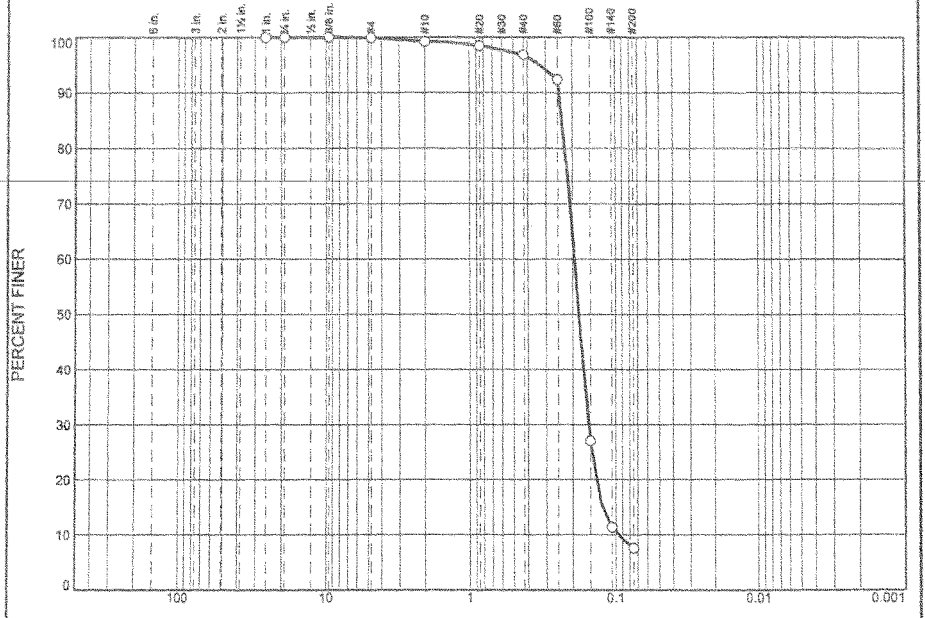
Remarks:

○ Moisture Content % 27.7 CP05-EAARS-CB-0256 @ 38.5'

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	0	1	2	89	8	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2321	0.1930	0.1802	0.1544	0.1237	0.0959	1.29	2.01

Material Description	USCS	AASHTO
○ Poorly graded sand with silt	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-158 Depth: 44.5' Sample Number: 28

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

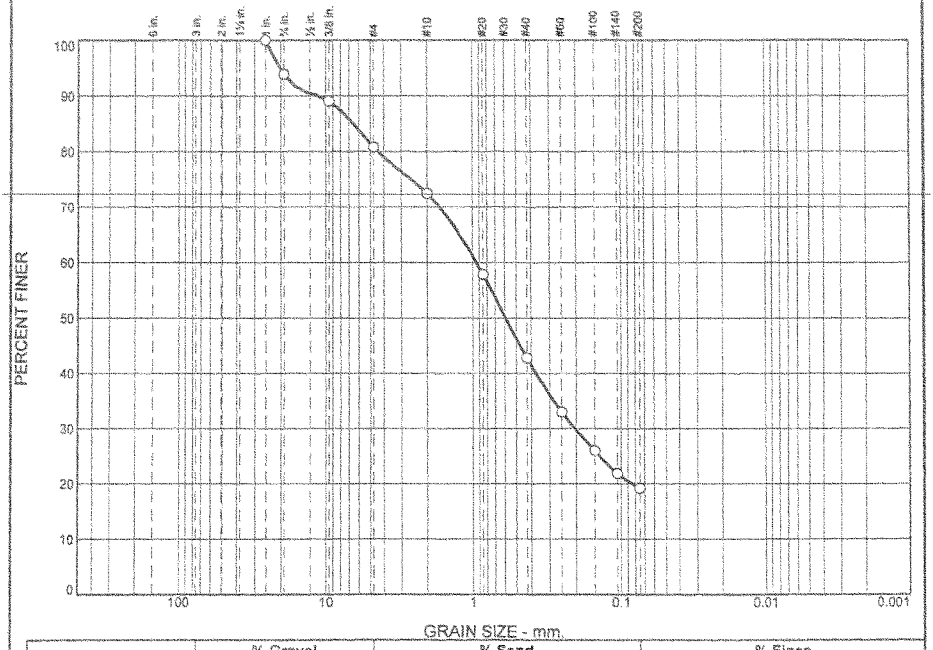
Remarks:

○ Moisture Content % 31.2 CP05-EAARS-CB-0256 @ 44.5'

Figure

Tested By: J. Garcia-Zarraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	6	13	9	29	24	19	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			6.5563	0.9411	0.5912	0.2037				

Material Description	USCS	AASHTO
○ Silty sand with gravel	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-158 Depth: 23.5' Sample Number: 14

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

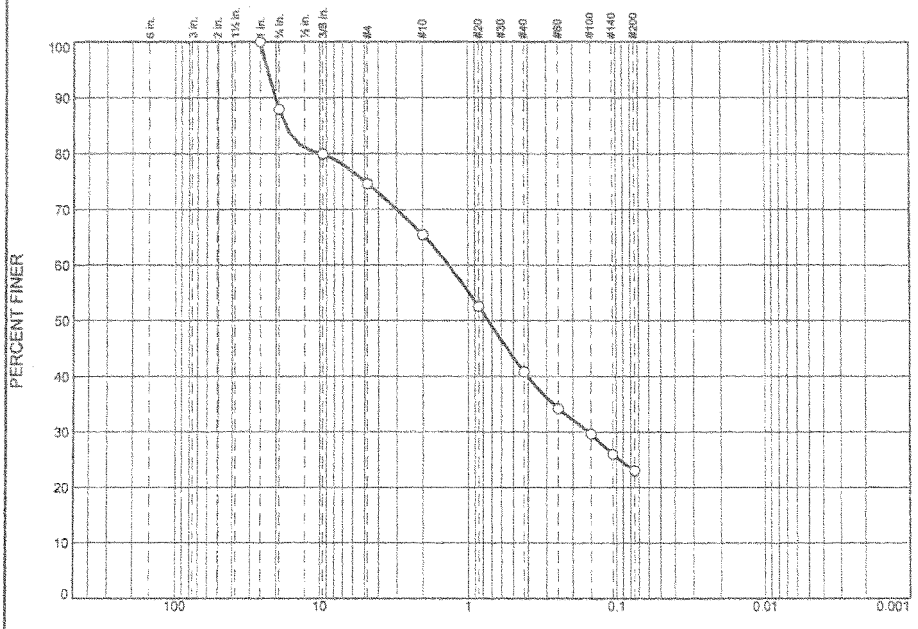
Remarks:

○ Moisture Content % 29.3 CP05-EAARS-CB-0256 @ 23.5'

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	12	13	10	24	18	23	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			17.0853	1.3499	0.7341	0.1557				

	Material Description	USCS	AASHTO
○	Silty sand with gravel	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-158 Depth: 21.5' Sample Number: 16

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

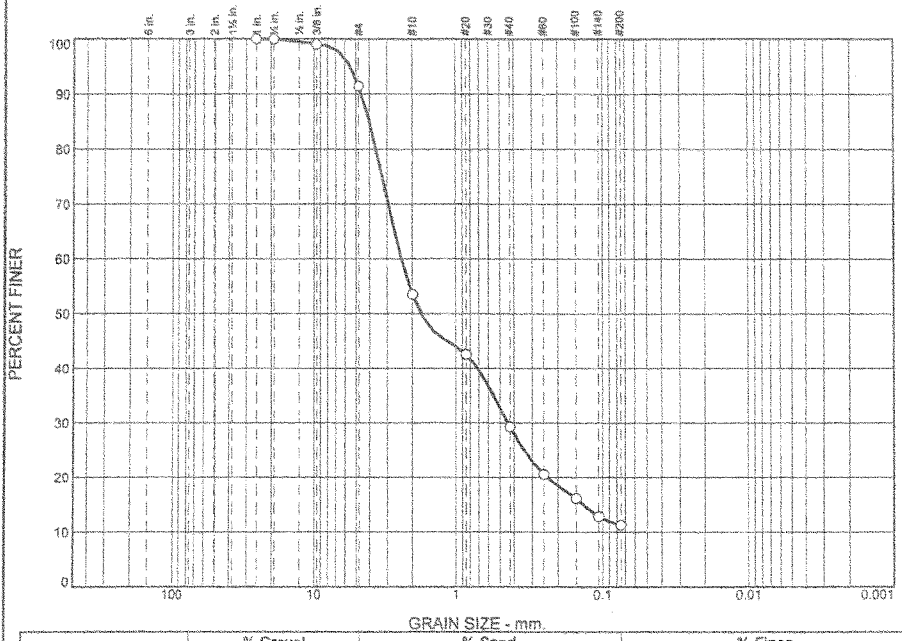
Remarks:

○ Moisture Content % 21.4 CP05-EAARS-CB-0256 @ 21.5'

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	9	38	24	18	11	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			3.9995	2.3726	1.7525	0.4401	0.1335			

Material Description	USCS	AASHTO
○ Poorly graded sand with silt	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-158 Depth: 76.0' Sample Number: 49

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

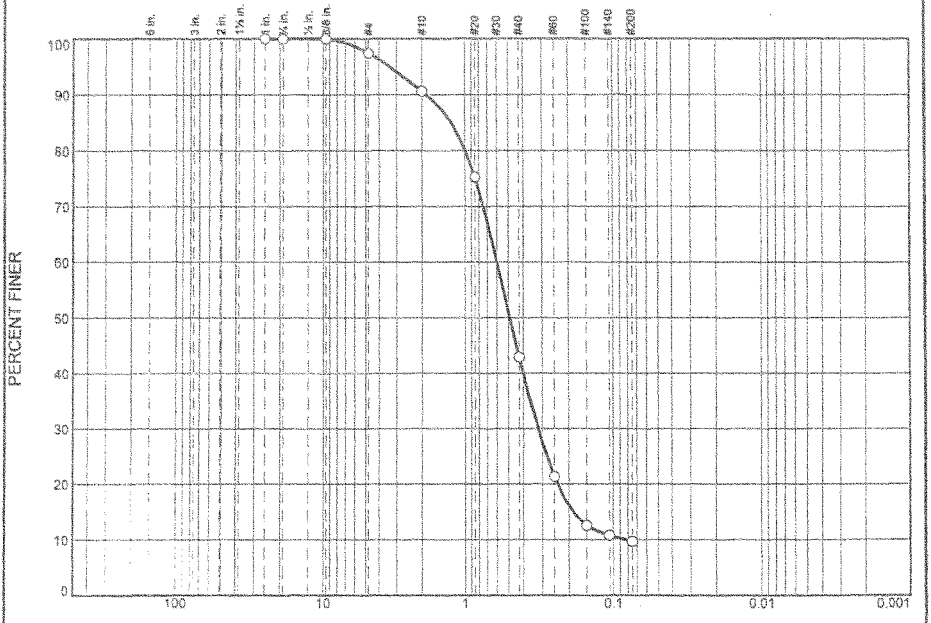
Remarks:

○ Moisture Content % 27.5 CP05-EAARS-CB-0256 @ 76.0'

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	3	6	48	33	10	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.2481	0.5969	0.4892	0.3196	0.1861	0.0836	2.05	7.14

Material Description	USCS	AASHTO
○ Poorly graded sand with silt	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-158 Depth: 80.5' Sample Number: 52

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

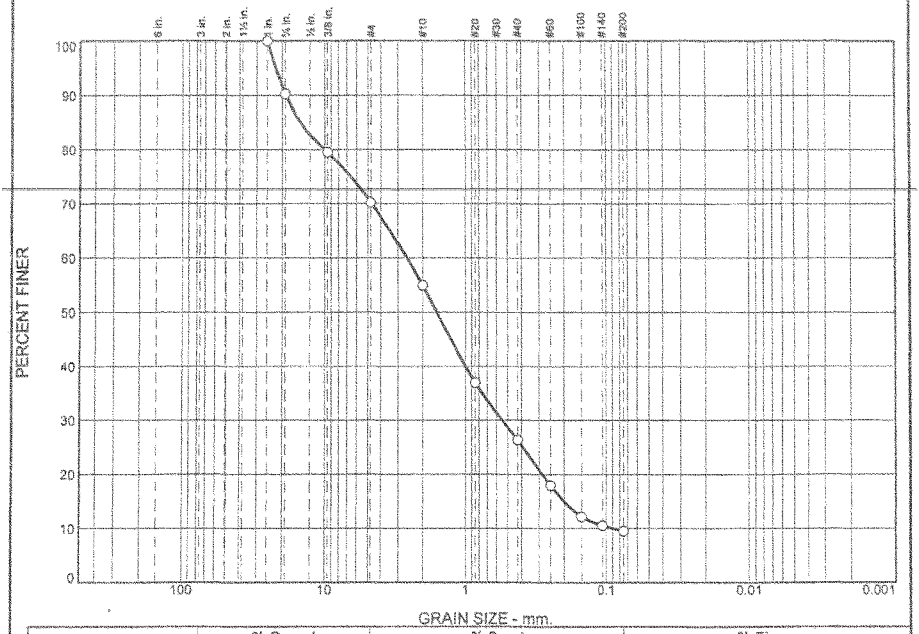
Remarks:

○ Moisture Content % 19.9 CP05-EAARS-CB-0256 @ 80.5'

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	10	20	15	29	17	9	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			14.9592	2.5838	1.5875	0.5455	0.2004	0.0896	1.29	28.85

Material Description	USCS	AASHTO
○ Well graded sand with silt	SW-SM	

Project No. 05-05-0013- Client: Black & Veatch
Project: E.A.A (Reservoir)
○ Source of Sample: CB-158 Depth: 85.0' Sample Number: 55

Date: ○

Nodarse & Associates, Inc.

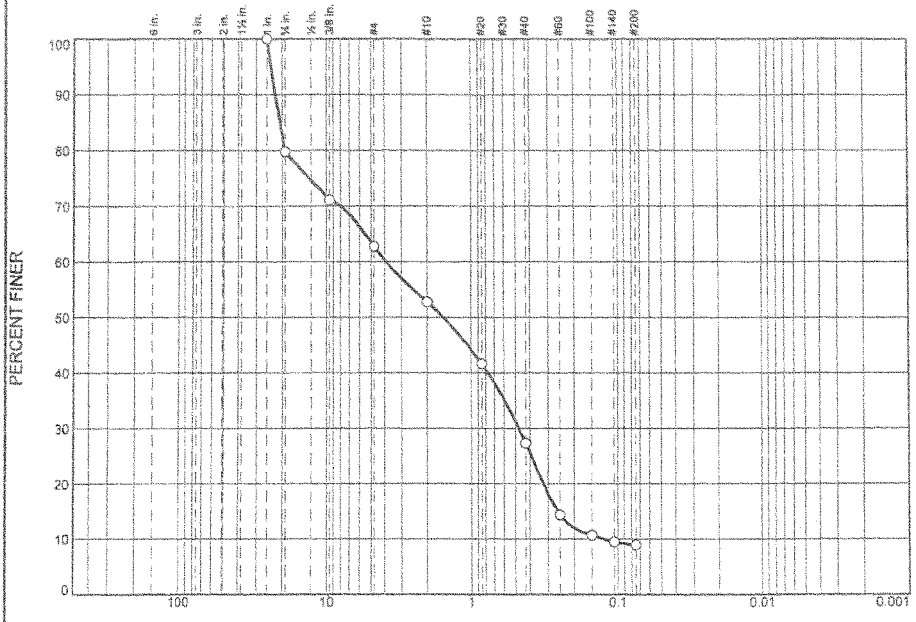
Miami Lakes, FL

Remarks:
○ Moisture Content % 26.2 CP05-EAARS-CB-0256 @ 85.0'

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	20	17	10	26	18	9	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			20.8086	3.8827	1.5585	0.4729	0.2594	0.1252	0.46	31.01

	Material Description	USCS	AASHTO
○	Well graded sand with silt	SW-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-158 Depth: 89.5' Sample Number: 58

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

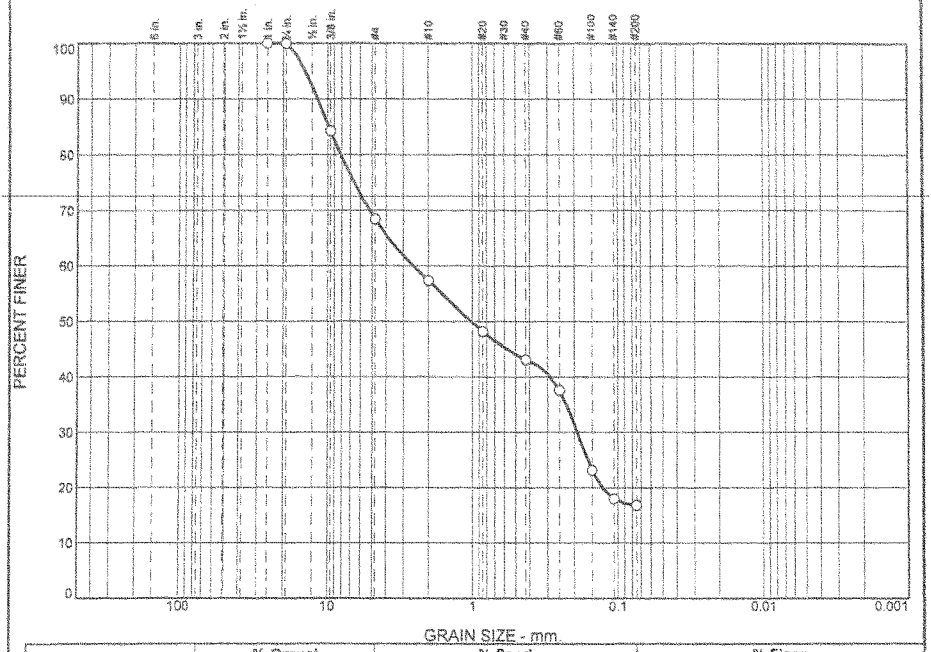
Remarks:

○Moisture Content % 26.2 CP05-EAARS-CB-0256 @ 85.0'

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	32	11	14	26	17	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			9.7706	2.5428	1.0211	0.1905				

Material Description	USCS	AASHTO
○ Silty sand with gravel	SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

○ **Source of Sample:** CB-158 **Depth:** 91.0' **Sample Number:** 59

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

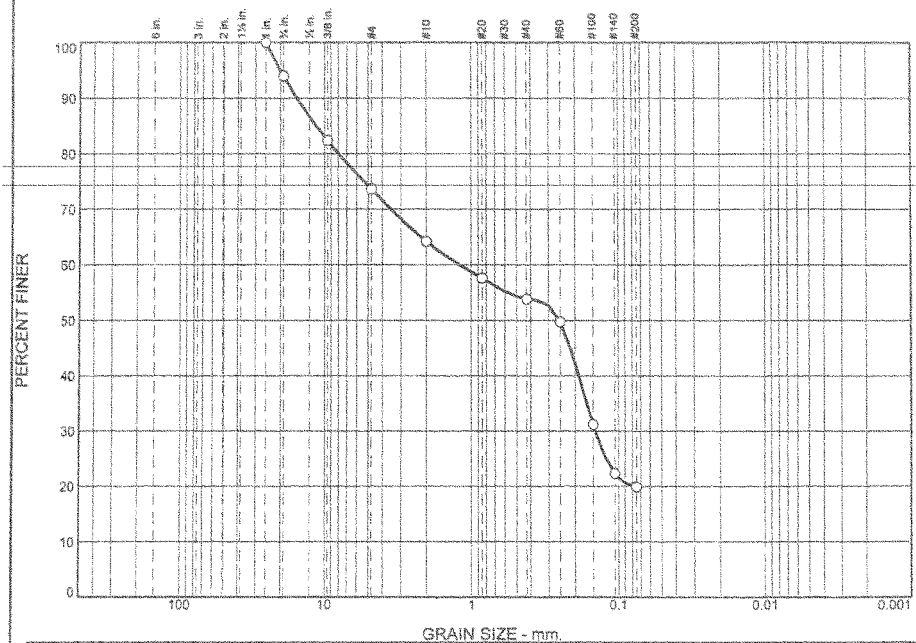
Remarks:

○Moisture Content % 21.1 CP05-EAARS-CB-0256 @ 91.0'

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○ 0	6	20	10	10	34	20	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			11.3755	1.1886	0.2525	0.1450				

Material Description	USCS	AASHTO
○ Silty sand with gravel	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-158 Depth: 95.5' Sample Number: 62

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

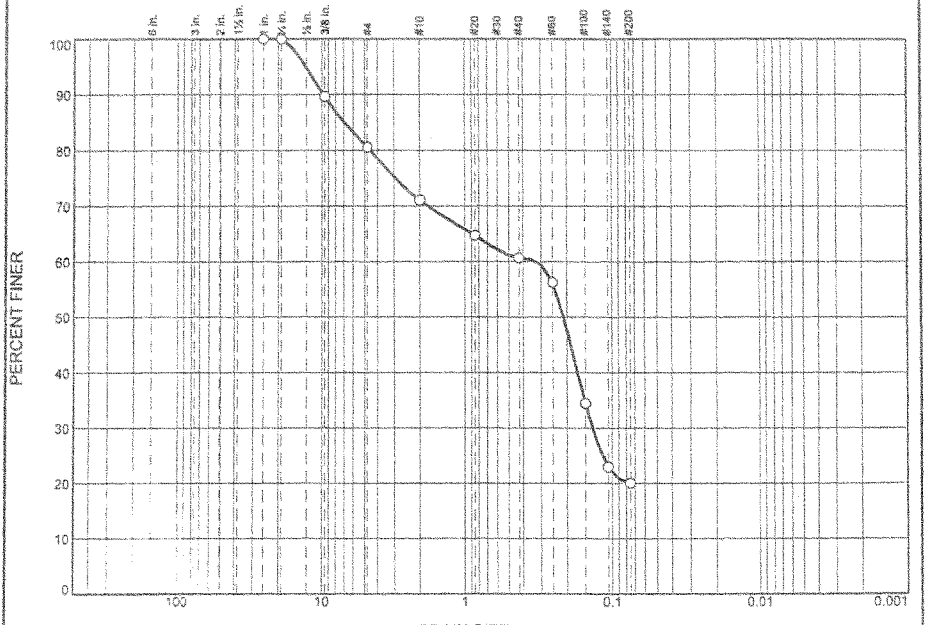
Remarks:

○ Moisture Content % 19.3 CP05-EAARS-CB-0256 @ 95.5'

Figure

Tested By: Tania Caraza Checked By: Michael Brown July 2014

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	19	10	10	41	20	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			6.9231	0.3181	0.2097	0.1346				

Material Description	USCS	AASHTO
○ Silty sand with gravel	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-158 Depth: 98.5' Sample Number: 69

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

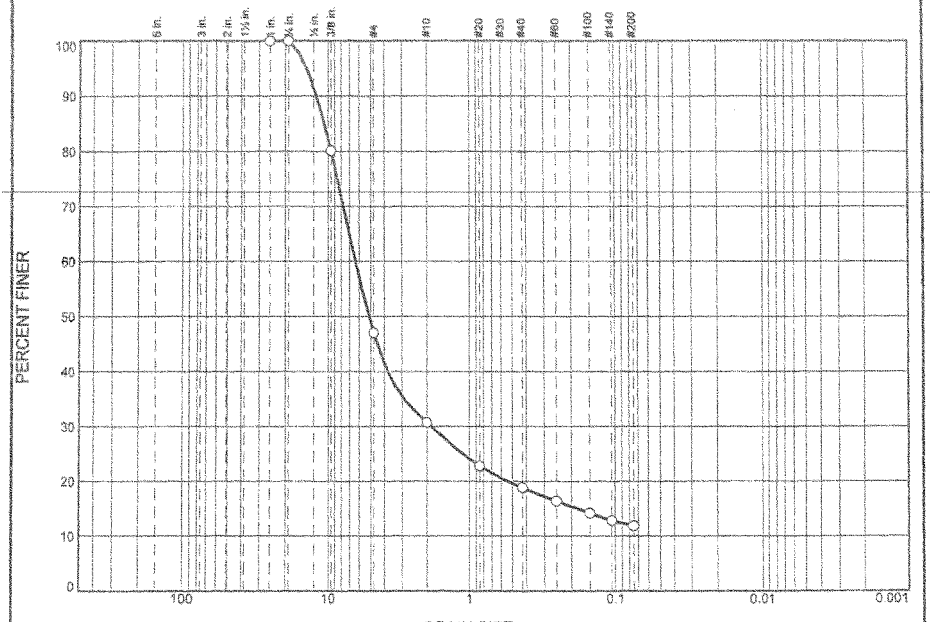
Remarks:

○ Moisture Content % 21.6 CP05-EAARS-CB-0256 @ 98.5'

Figure

Tested By: Pedro Casaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	53	16	12	7	12	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			10.6373	6.3584	5.1205	1.8548	0.1816			

Material Description	USCS	AASHTO
○ Poorly graded gravel with silt and sand	GP-GM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-158 Depth: 14.5' Sample Number: 8

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

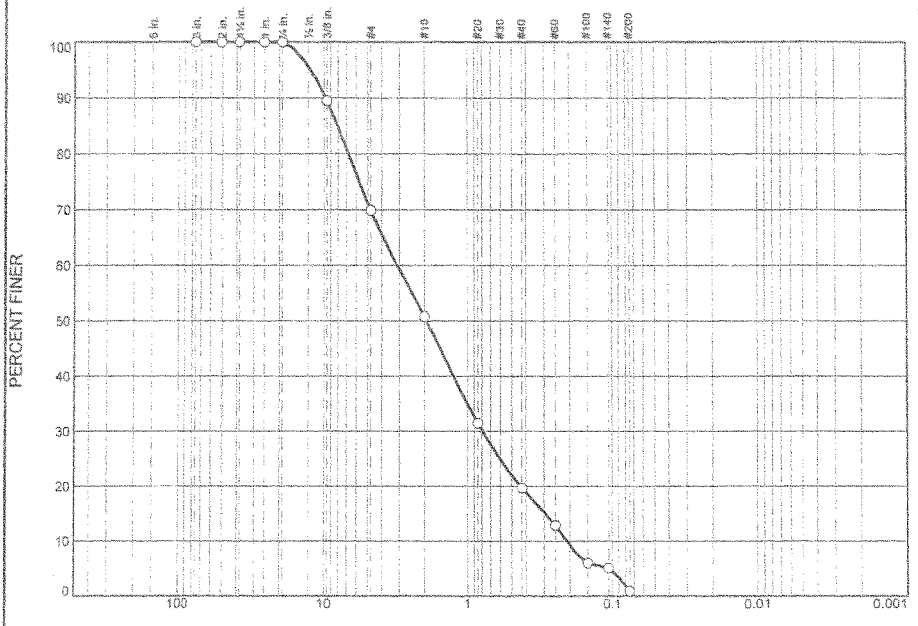
Remarks:

○ Moisture Content % 62.9 CP05-EAARS-CB-0256 @ 14.5'

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	30.1	19.1	31.1	18.8	0.9	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			8.0475	3.1055	1.9281	0.7896	0.2908	0.2084	0.96	14.90

	Material Description	USCS	AASHTO
○	WELL GRADED SAND WITH GRAVEL	SW	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A(Reservoir) W/O #4

○ Depth: 4.5-9.5' Sample Number: CB-0168

Remarks:

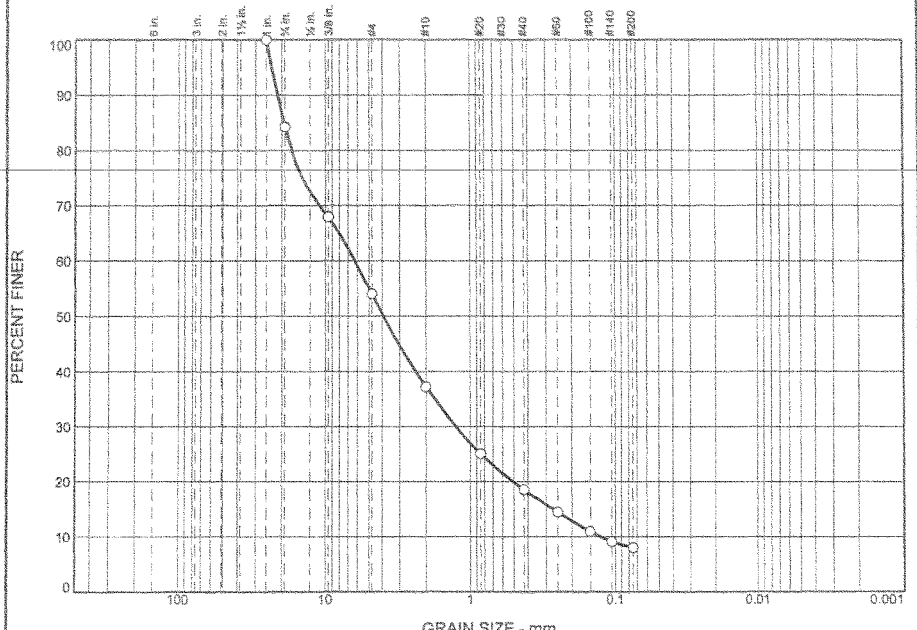
○ Moisture Content % 13 CP05-EAARS-CB-0256 @ 4.5'-9.5'

Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	16	30	17	18	11	8	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			19.3721	6.2672	3.9118	1.2546	0.2694	0.1274	1.97	49.20

Material Description	USCS	AASHTO
○ Well graded sand with silt	SW-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0169 Depth: 5.5' Sample Number: 3

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

Remarks:

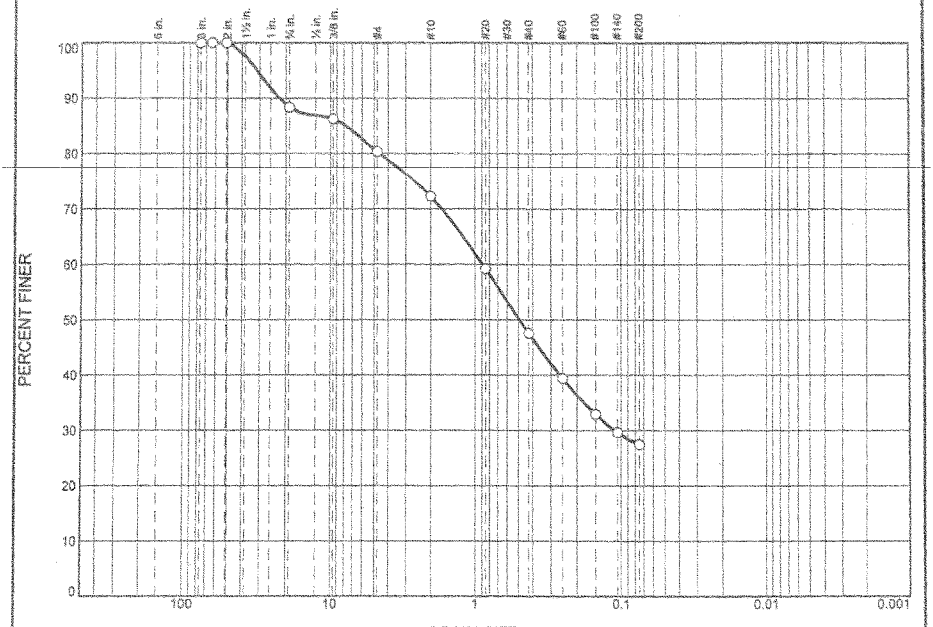
○ Moisture Content % 13.4

CP05-EAARS-CB-0266

Figure

Tested By: Hernan Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	12	8	8	24	21	27	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			7.7404	0.8895	0.4916	0.1110				

	Material Description	USCS	AASHTO
○	Silty sand with gravel	SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

○ **Source of Sample:** CB-0169 **Depth:** 11.5' **Sample Number:** 7

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

Remarks:

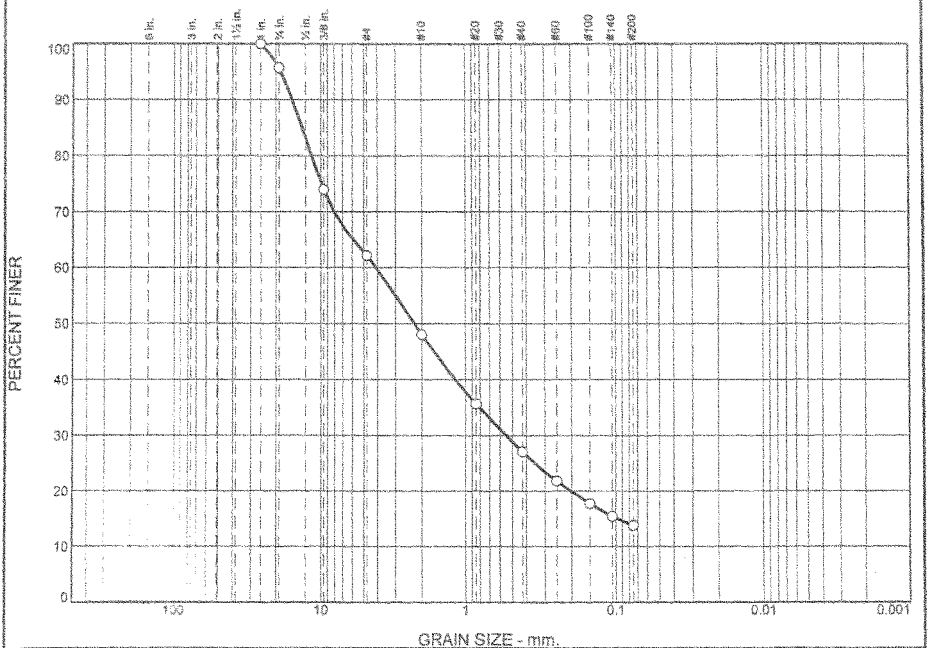
○ Moisture Content % 24.0

CP05-EAARS-CB-0266

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	4	34	14	21	13	14	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			13.3363	4.0871	2.2470	0.5460	0.0976			

Material Description	USCS	AASHTO
○ Well graded sand with silt gravel	SW-SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

○ **Source of Sample:** CB-0169 **Depth:** 14.5' **Sample Number:** 9

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

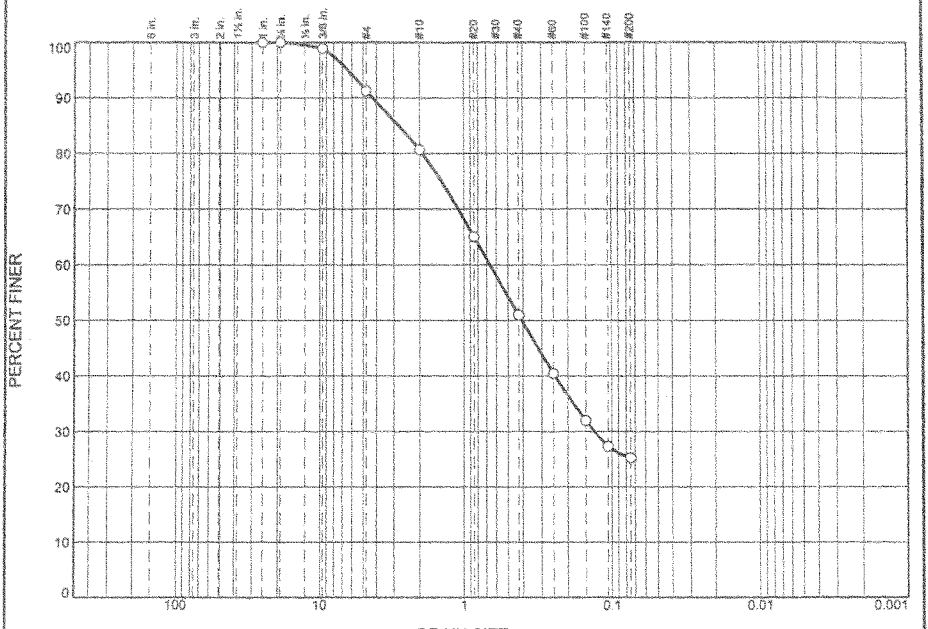
Remarks:

○ Moisture Content % 34.3 CP05-EAARS-CB-0266

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	9	10	30	26	25	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			2.7798	0.6608	0.4050	0.1312				

Material Description	USCS	AASHTO
○ Silty sand	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0169 Depth: 16.0' Sample Number: 10

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

Remarks:

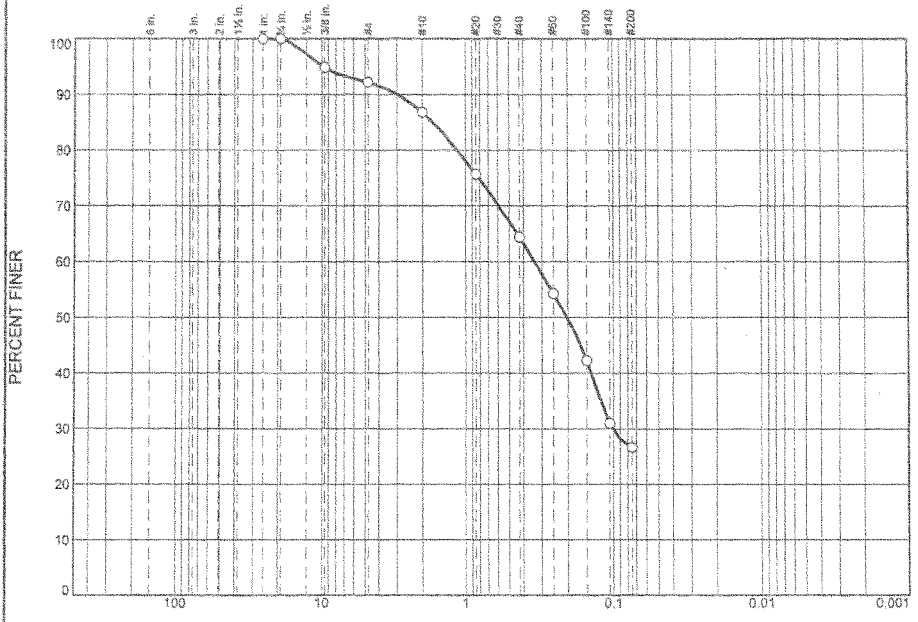
○ Moisture Content % 36.2

CP05-EAARS-CB-0266

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	8	5	23	37	27	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.6852	0.3360	0.2016	0.1011				

	Material Description	USCS	AASHTO
○	Silty sand	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0169 Depth: 20.5' Sample Number: 13

Date: ○

Nodarse & Associates, Inc.

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Remarks:

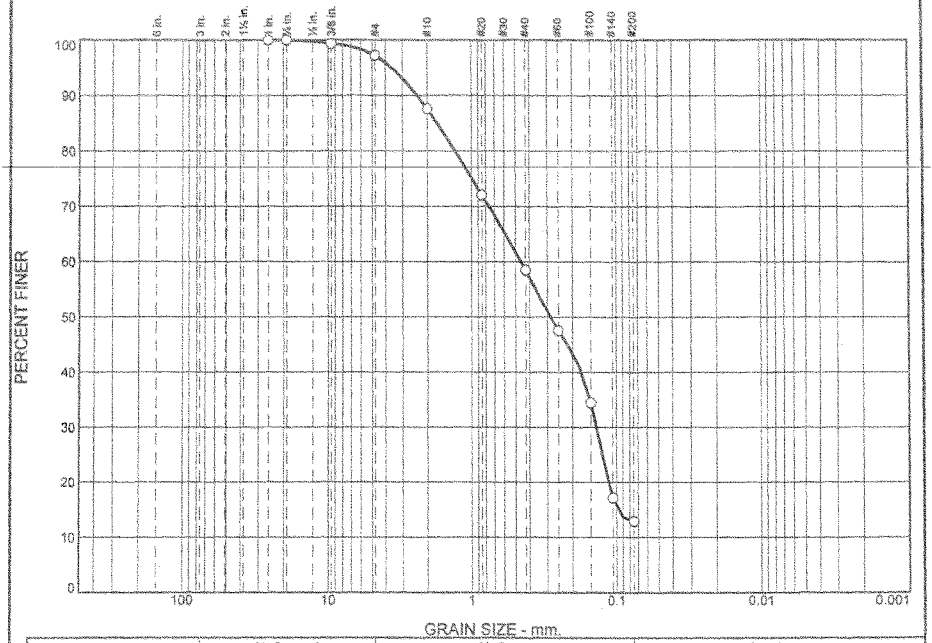
○ Moisture Content % 27.5

CP05-EAARS-CB-0266

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	3	9	29	46	13	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			1.7068	0.4558	0.2839	0.1373	0.0979			

Material Description	USCS	AASHTO
○ Well graded sand with silt	SW-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0169 Depth: 26.5' Sample Number: 17

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

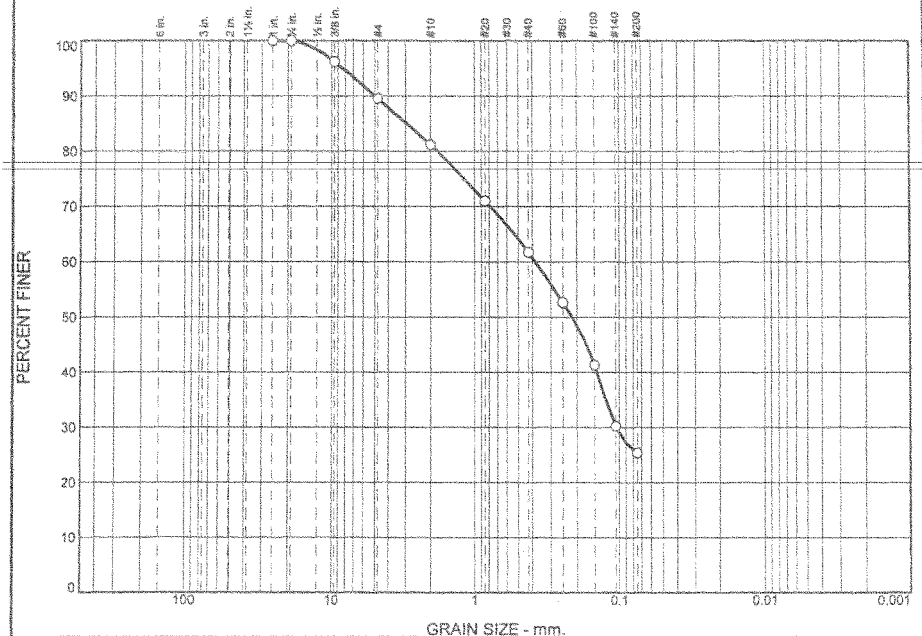
Remarks:

○ Moisture Content % 22.0 CP05-EAARS-CB-0266

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	10	9	19	37	25	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			2.9309	0.3809	0.2156	0.1050				

Material Description	USCS	AASHTO
○ Silty sand	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0169 Depth: 31.0' Sample Number: 20

Date: ○

Nodarse & Associates, Inc.

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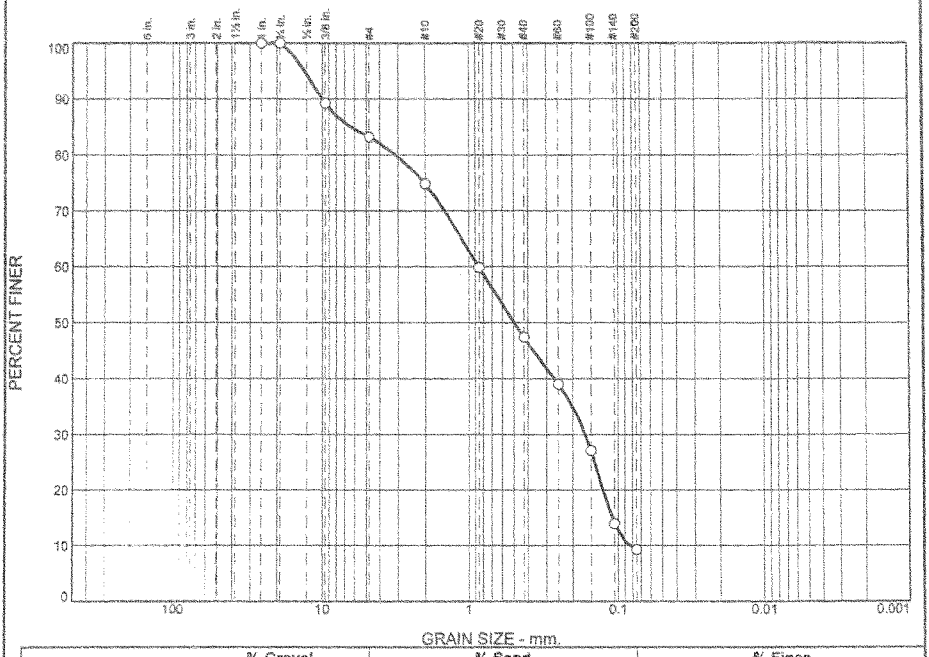
Remarks:

○ Moisture Content % 22.0 CP05-EAARS-CB-0266

Figure

Tested By: Pavel Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	17	8	28	38	9	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			6.3126	0.8590	0.4962	0.1634	0.1098	0.0835	0.37	10.28

Material Description	USCS	AASHTO
○ Well graded sand with silt	SW-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0169 Depth: 37.0' Sample Number: 24

Date: ○

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Miami Lakes, FL

Remarks:

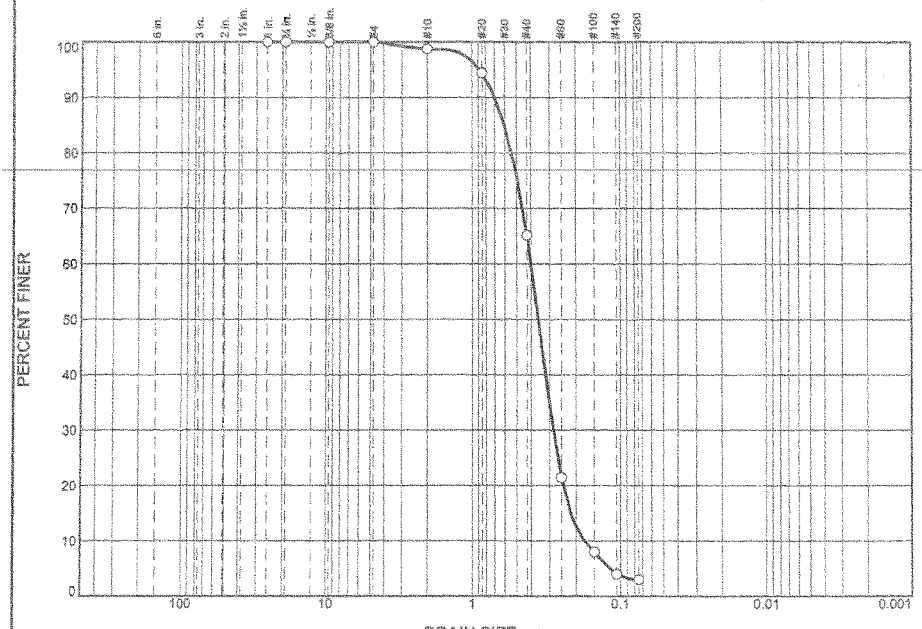
○ Moisture Content % 26.6

CP05-EAARS-CB-0266

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	0	1	34	62	3	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			0.6013	0.3988	0.3559	0.2827	0.2173	0.1756	1.14	2.27

Material Description	USCS	AASHTO
○ Poorly graded sand	SP	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0169 Depth: 44.5' Sample Number: 29

Date: ○

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Remarks:

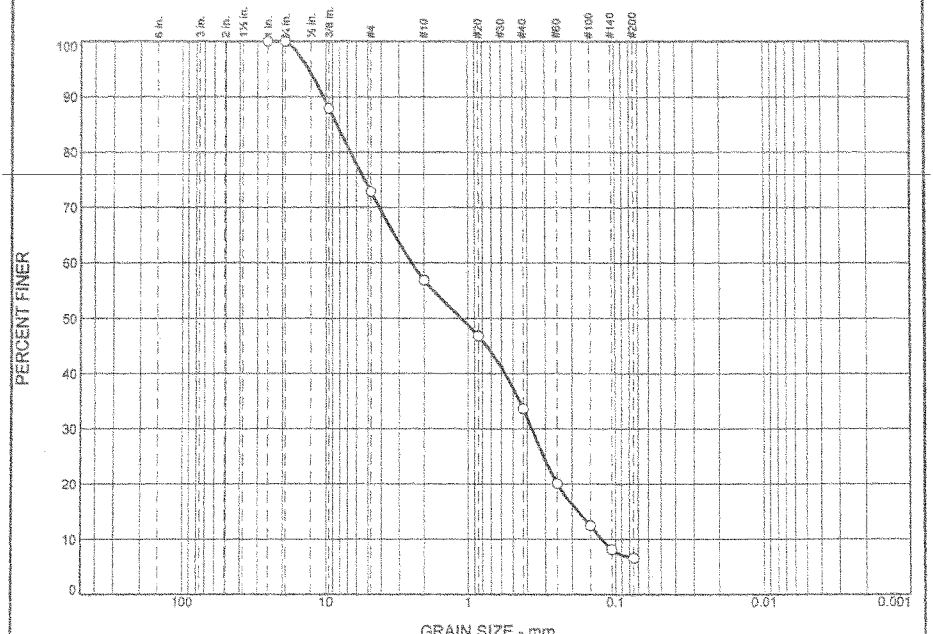
○ Moisture Content % 24.9

CP05-EAARS-CB-0266

Figure

Tested By: J. Gallo Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	27	16	23	27	7	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			8.3569	2.4481	1.1035	0.3709	0.1820	0.1251	0.45	19.58

Material Description	USCS	AASHTO
○ Well graded sand with silt and gravel	SW-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0169 Depth: 49.0' Sample Number: 32

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

Remarks:

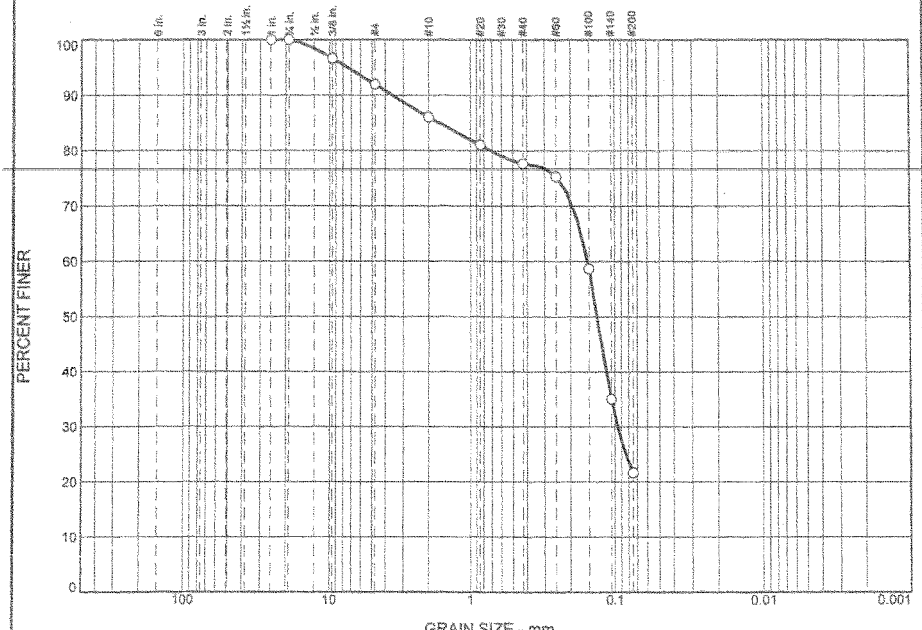
○ Moisture Content % 20.9

CP05-EAARS-CB-0266

Figure

Tested By: CEPS Final PIR and EIS araza Checked By: Michael Brown July 2014

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	8	6	8	56	22	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			1.6787	0.1533	0.1319	0.0959				

Material Description	USCS	AASHTO
○ Silty sand	SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

○ **Source of Sample:** CB-0169 **Depth:** 55.0' **Sample Number:** 36

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

Remarks:

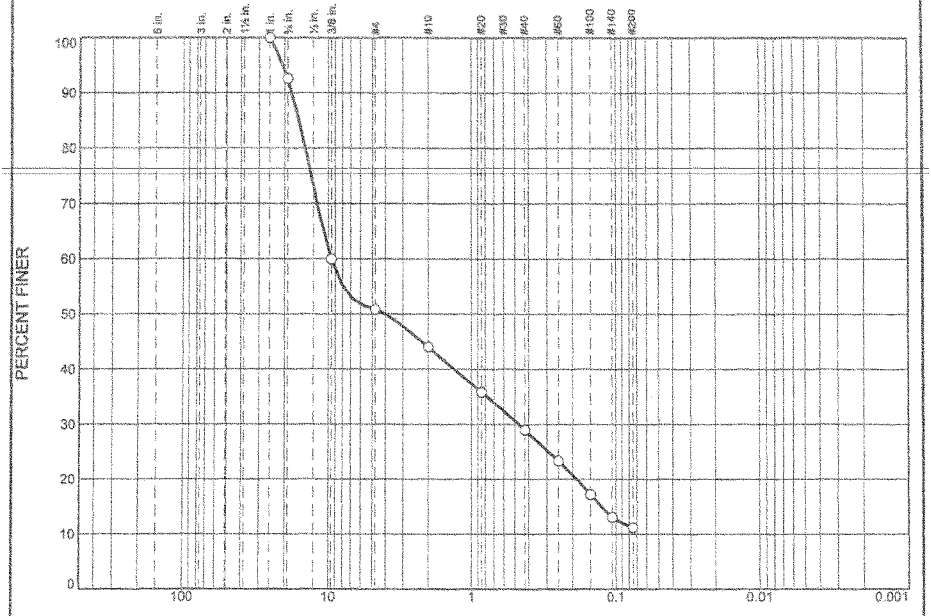
○ Moisture Content % 30.4

CP05-EAARS-CB-0266

Figure

Tested By: Ricardo Linaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	7	42	7	15	18	11	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			15.9470	9.5331	4.0274	0.4704	0.1263			

Material Description	USCS	AASHTO
○ Well graded sand with silt and gravel	SW-SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

○ **Source of Sample:** CB-0169 **Depth:** 61.0' **Sample Number:** 40

Date: ○

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Miami Lakes, FL

Remarks:

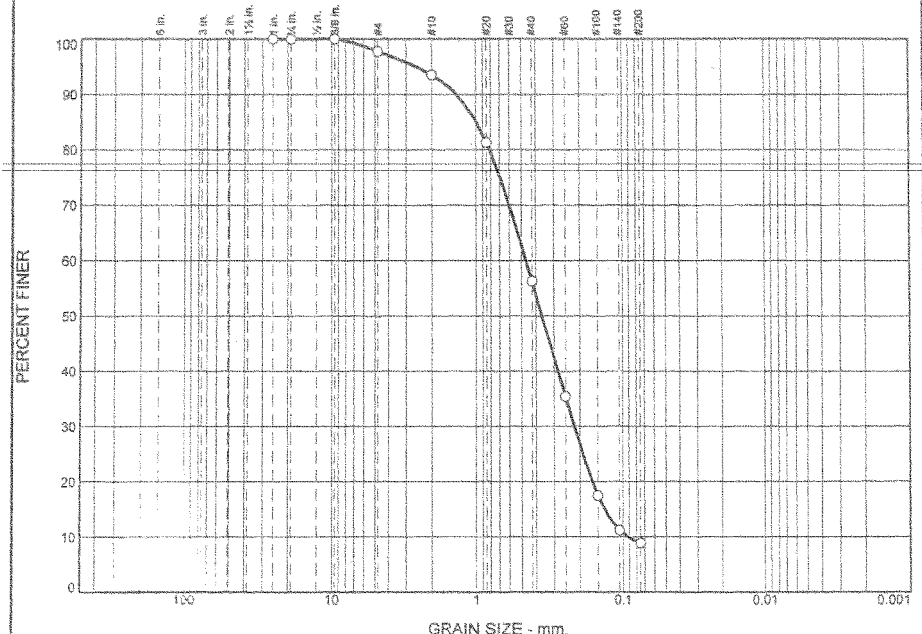
○ Moisture Content % 29.9

CP05-EAARS-CB-0266

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown July 2014

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	2	4	38	47	9	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			0.9915	0.4660	0.3624	0.2177	0.1352	0.0926	1.10	5.03

Material Description	USCS	AASHTO
○ Well graded sand with silt	SW-SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

○ **Source of Sample:** CB-0169 **Depth:** 65.5' **Sample Number:** 43

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

Remarks:

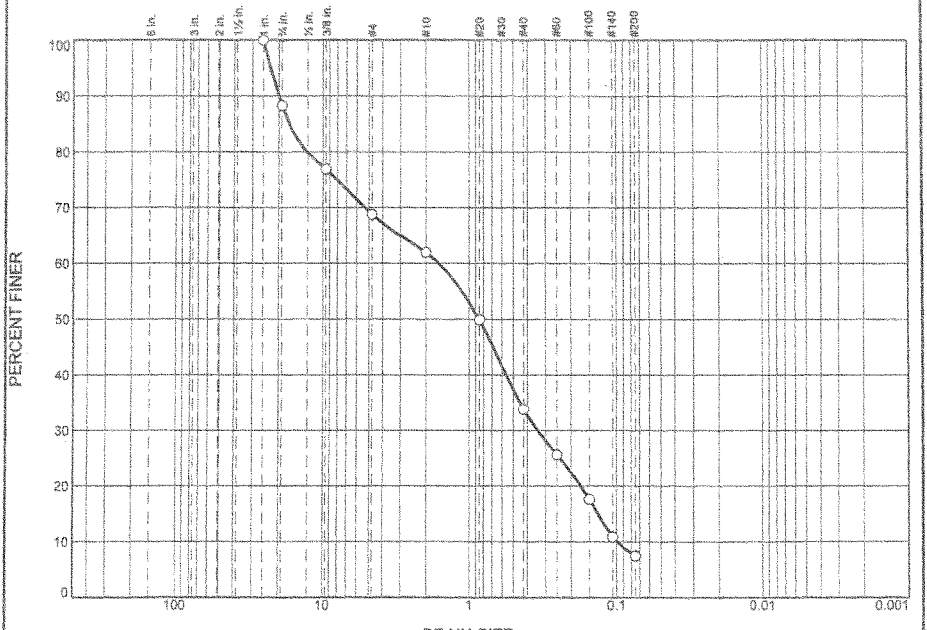
○ Moisture Content % 21.6

CP05-EAARS-CB-0266

Figure

Tested By: [illegible] Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	12	19	7	28	27	7	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			16.9881	1.6324	0.8528	0.3402	0.1320	0.0994	0.71	16.43

Material Description	USCS	AASHTO
○ Well graded sand with silt and gravel	SW-SM	

Project No. 05-05-0013- Client: Black & Veatch
Project: E.A.A (Reservoir)
○ Source of Sample: CB-0169 Depth: 68.5' Sample Number: 45

Date: ○

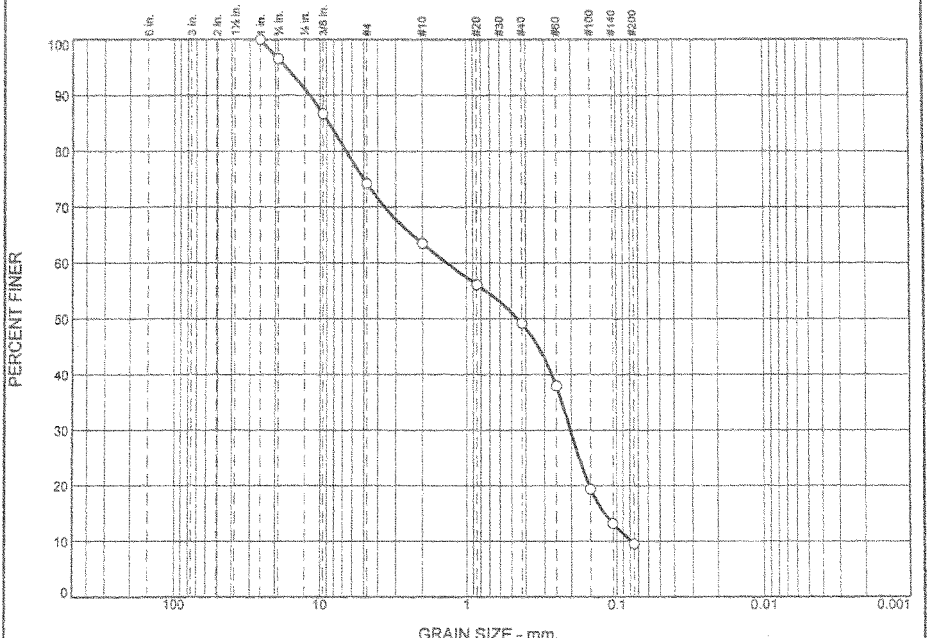
Nodarse & Associates, Inc.
Miami Lakes, FL

Remarks:
○ Moisture Content % 22.3
CP05-EAARS-CB-0266

Figure

Tested By: R. Salazar Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	3	23	11	14	40	9	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			8.6203	1.3627	0.4514	0.2021	0.1215	0.0788	0.38	17.29

Material Description	USCS	AASHTO
○ Well graded sand with silt and gravel	SW-SM	

Project No. 05-05-0013- Client: Black & Veatch
Project: E.A.A (Reservoir)
○ Source of Sample: CB-0169 Depth: 73.0' Sample Number: 48
Date: ○

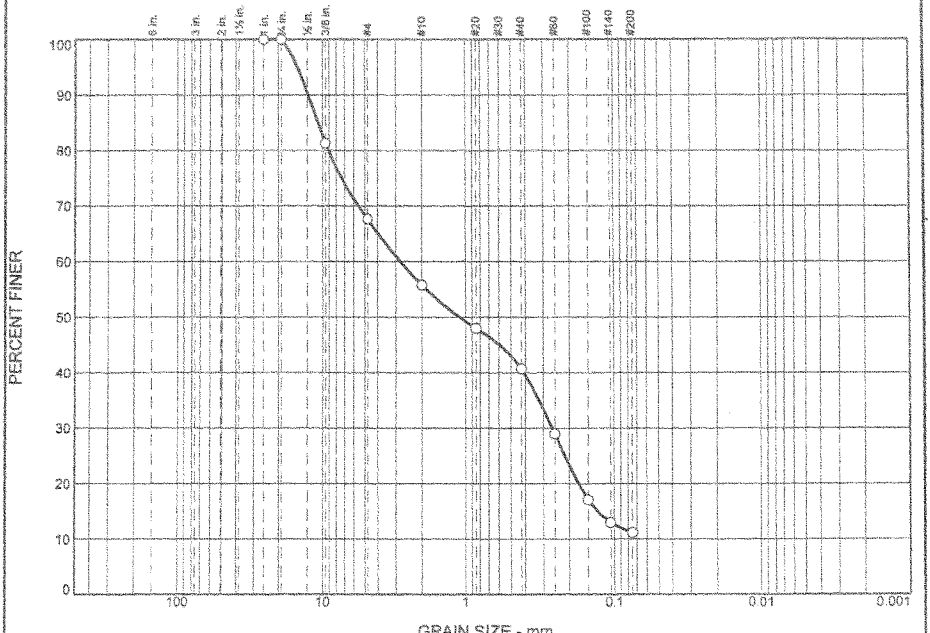
Remarks:
○ Moisture Content % 21.3
CP05-EAARS-CB-0266

Nodarse & Associates, Inc.
Miami Lakes, FL

Figure

Tested By: Carlos Olaraza Checked By: Michael Brown July 2014

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	32	12	15	30	11	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			10.7289	2.7914	1.0931	0.2603	0.1303			

Material Description	USCS	AASHTO
○ Well graded sand with silt and gravel	SW-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0169 Depth: 76.0' Sample Number: 50

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

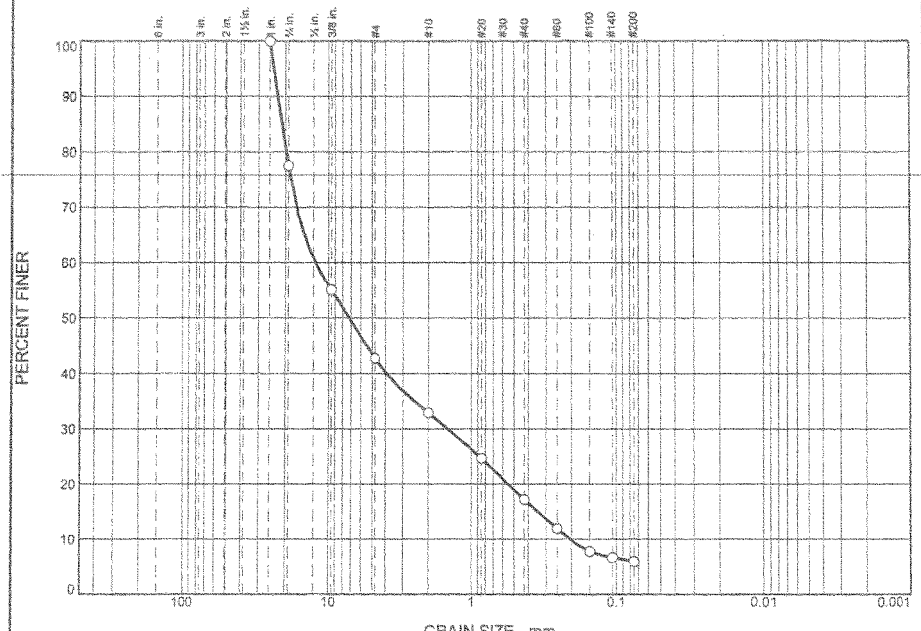
Remarks:

○ Moisture Content % 18.3 CP05-EAARS-CB-0266

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	23	34	10	16	11	6	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			21.1728	12.3387	7.2008	1.4580	0.3425	0.2034	0.85	60.65

Material Description	USCS	AASHTO
○ Well graded gravel with silt and sand	GW-GM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0169 Depth: 85.0' Sample Number: 56

Date: ○

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Miami Lakes, FL

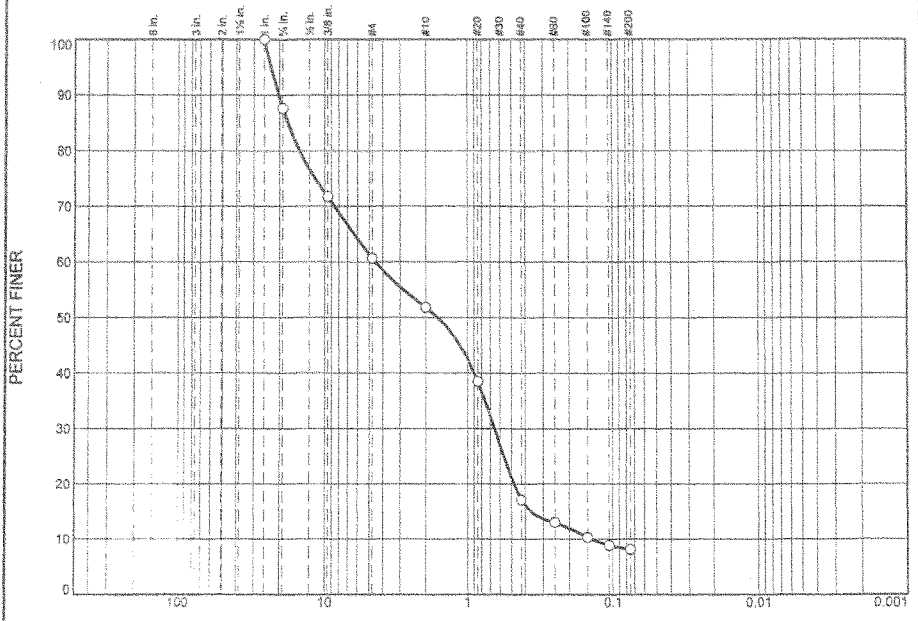
Remarks:

○ Moisture Content % 18.4 CP05-EAARS-CB-0266

Figure

Tested By: Paul Tamaraza Checked By: Michael Brown July 2014

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	12	27	9	35	9	8	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			17.6613	4.5220	1.6420	0.6544	0.3675	0.1408	0.67	32.11

Material Description	USCS	AASHTO
○ Well graded sand with silt and gravel	SW-SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

○ **Source of Sample:** CB-0169 **Depth:** 89.5' **Sample Number:** 59

Date: ○

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Miami Lakes, FL

Remarks:

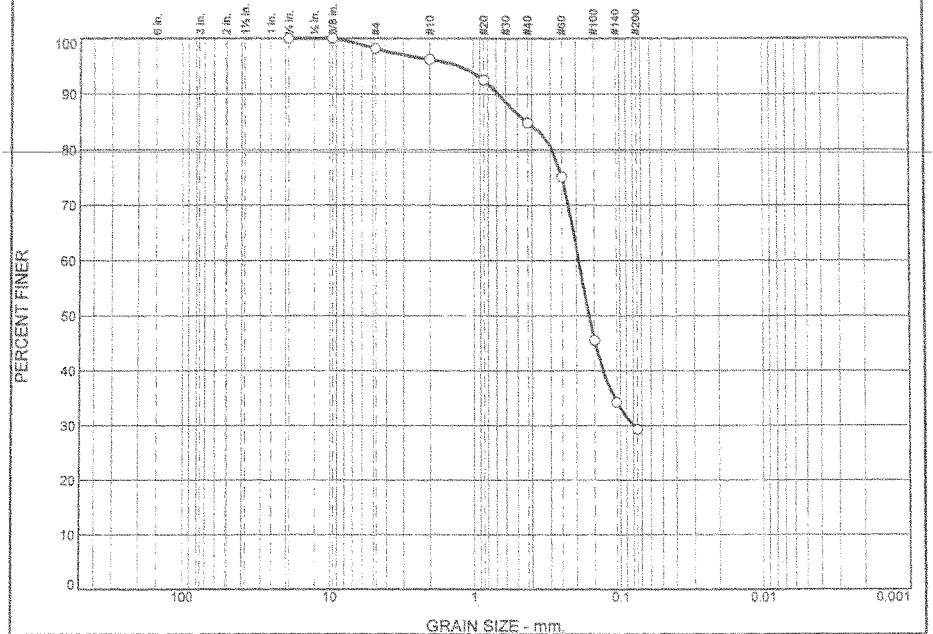
○ Moisture Content % 14.2

CP05-EAARS-CB-0266

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	1.9	1.9	11.4	55.5	29.3	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			0.4344	0.1915	0.1630	0.0796				

	Material Description	USCS	AASHTO
○	Silty Sand	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Source of Sample: CB170 Depth: 88.5'-90.0' Sample Number: CB170

Remarks:

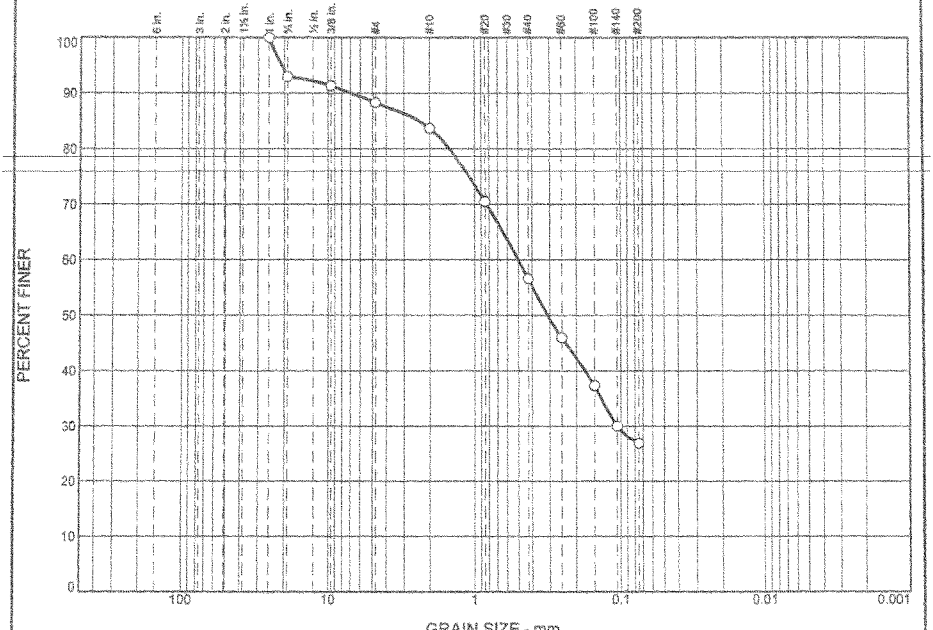
○ Moisture Content % 21.4 CP05-EAARS-CB-0267

Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	7	5	4	27	30	27	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			2.3383	0.5011	0.3099	0.1060				

Material Description	USCS	AASHTO
○ Silty sand	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0171 Depth: 13.5' Sample Number: 4

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

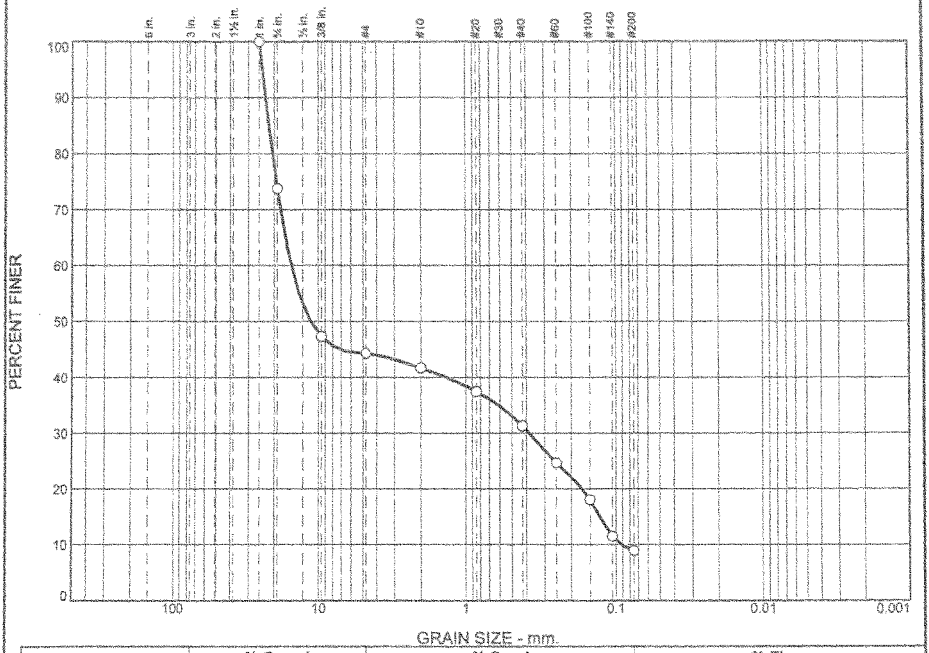
Remarks:

○ Moisture Content % 30.2 CP05-EAARS-CB-0268

Figure

Tested By: CEPP Final PIR and EIS araza Checked By: Michael Brown July 2014

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	26	30	2	11	22	9	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			21.7308	15.2316	11.2605	0.3823	0.1285	0.0919	0.10	165.72

Material Description	USCS	AASHTO
○ Poorly graded gravel with silt and sand	GP-GM	

Project No. 05-05-0013- Client: Black & Veatch
Project: E.A.A (Reservoir)
○ Source of Sample: CB-0171 Depth: 18.5' Sample Number: 5

Date: ○

Nodarse & Associates, Inc.

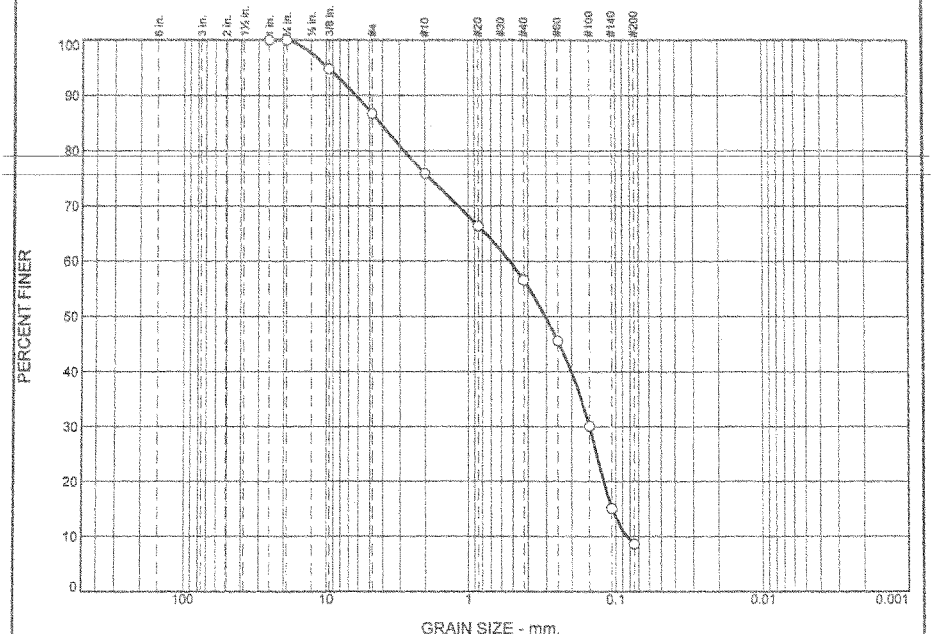
Miami Lakes, FL

Remarks:
○ Moisture Content % 21.5 CP05-EAARS-CB-0268

Figure

Tested By: Pedro Cagigaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	13	11	19	48	9	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			4.1445	0.5239	0.3043	0.1497	0.1058	0.0839	0.51	6.24

	Material Description	USCS	AASHTO
○	Well graded sand with silt and gravel	SW-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0171 Depth: 33.5' Sample Number: 8

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

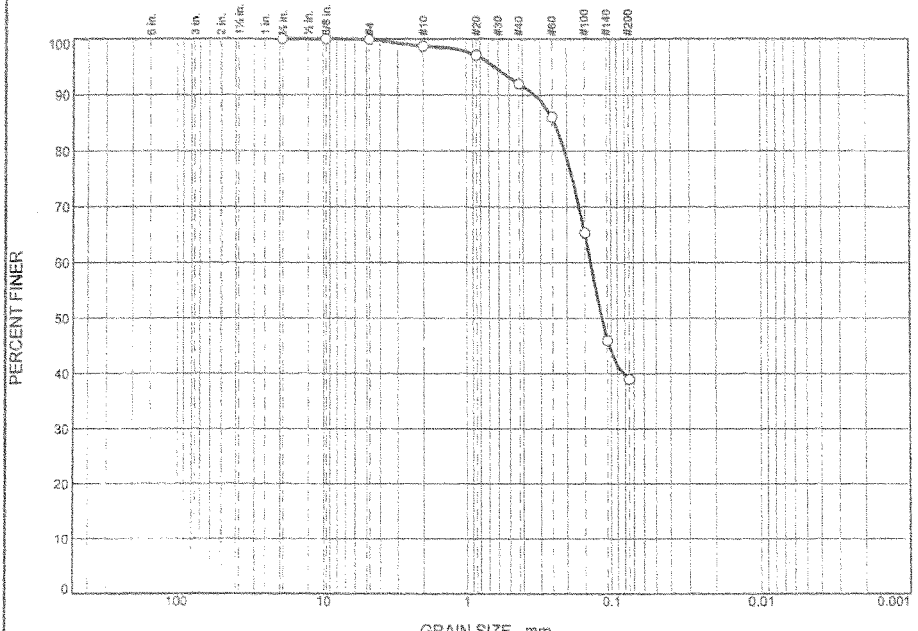
Remarks:

○ Moisture Content % 17.7 CP05-EAAR5-CB-0268

Figure

Tested By: Darla Cabaraza Checked By: Michael Brown July 2014

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.1	1.2	6.7	53.0	39.0	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			0.2395	0.1373	0.1157					

	Material Description	USCS	AASHTO
○	Silty sand	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Source of Sample: CB171 Depth: 78.5'-80.0 Sample Number: CB171

Remarks:

○ Moisture Content % 26.4 CP05-EAARS-CB-0268

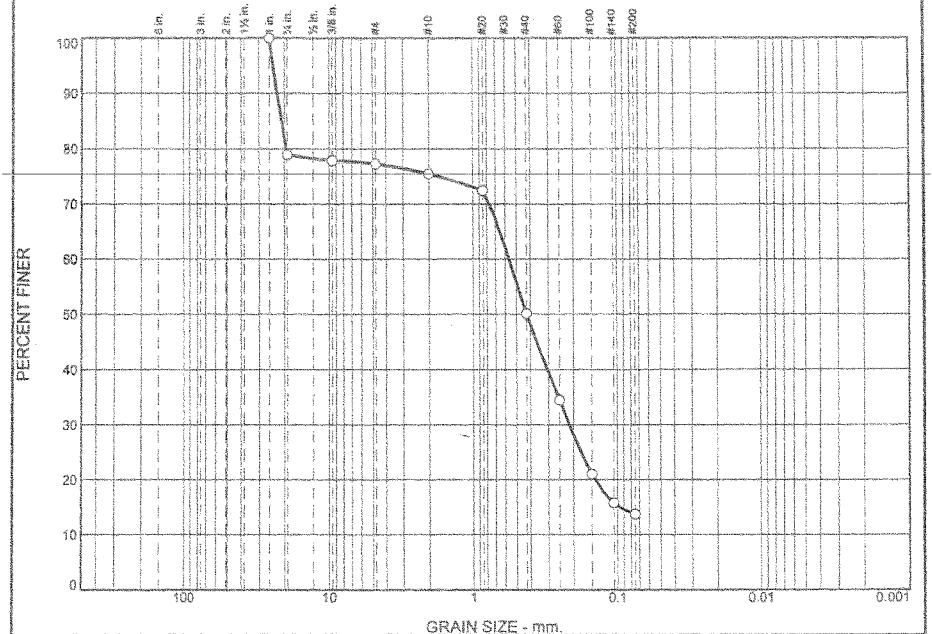
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: GEPP Checked By: K Leung July 2014

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	21	2	2	25	36	14	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			21.0463	0.5610	0.4232	0.2134	0.0963			

Material Description	USCS	AASHTO
○ Silty sand with gravel	SM	

Project No. 05-05-0013- Client: Black & Veatch
Project: E.A.A (Reservoir)
○ Source of Sample: CB-0172 Depth: 0.0' Sample Number: 1

Date: ○

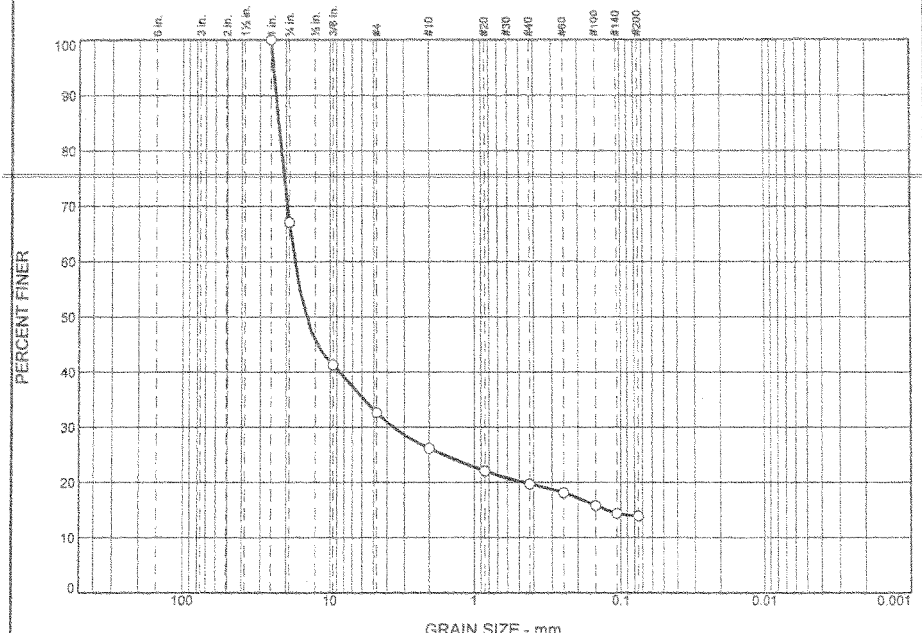
Nodarse & Associates, Inc.
Miami Lakes, FL

Remarks:
○ Moisture Content % 136.8 CP05-EAARS-CB-0269

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	33	34	7	6	6	14	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			22.5022	17.4618	14.5600	3.5945	0.1253			

Material Description	USCS	AASHTO
○ Silty gravel with sand	GM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0173 Depth: 3.5' Sample Number: 3

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

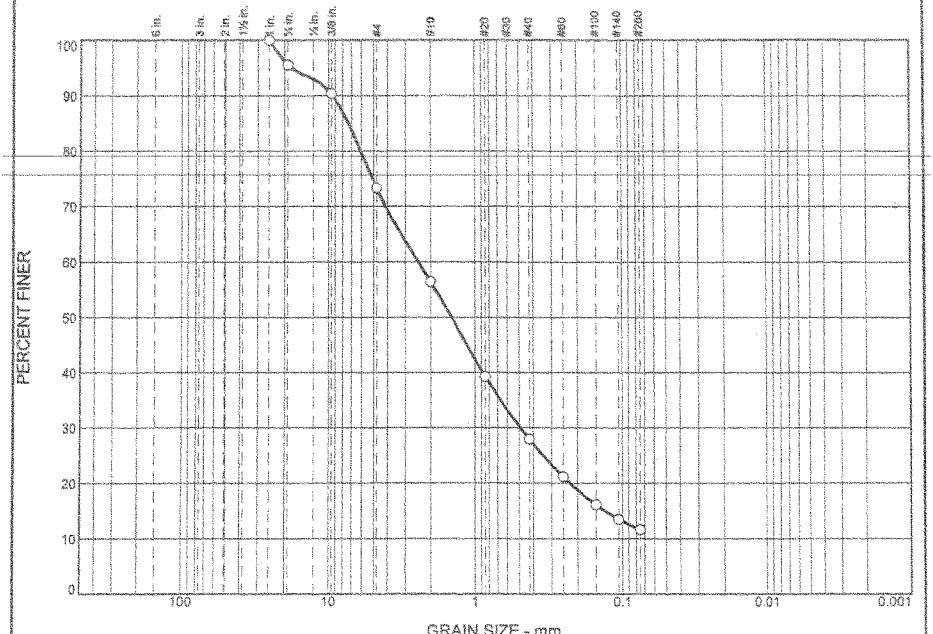
Remarks:

○ Moisture Content % 27 CP05-EAARS-CB-0269

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	4	23	17	28	16	12	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_u
○			7.3316	2.4333	1.4431	0.4882	0.1307			

Material Description	USCS	AASHTO
○ Well graded sand with silt and gravel	SW-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0172 Depth: 8.5' Sample Number: 3

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

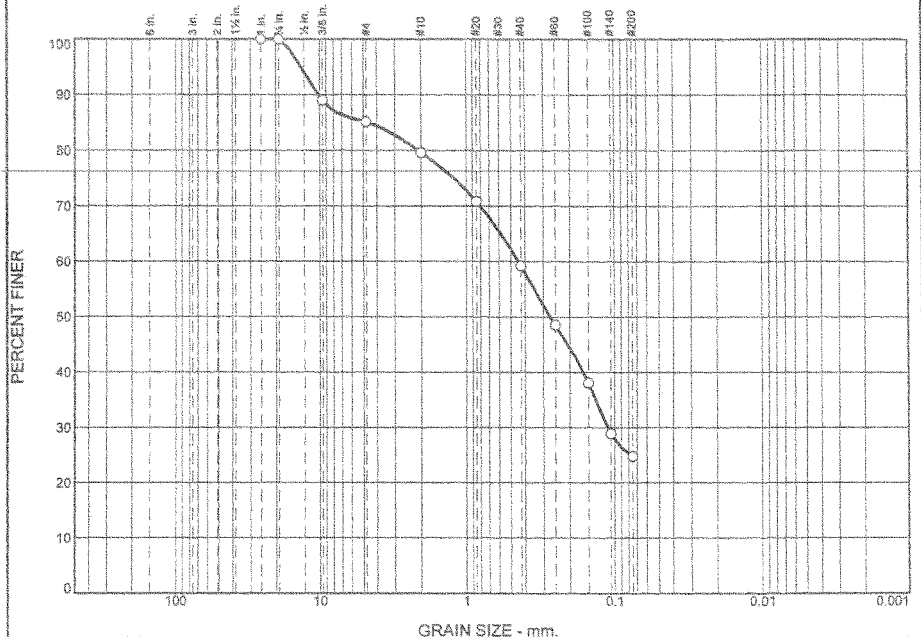
Remarks:

○ Moisture Content % 23.8 CP05-EAARS-CB-0269

Figure

Tested By: Pablo Zaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	15	5	21	34	25	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			4.5605	0.4425	0.2697	0.1114				

Material Description	USCS	AASHTO
○ Silty sand with gravel	SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

○ **Source of Sample:** CB-0172 **Depth:** 13.5' **Sample Number:** 4

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

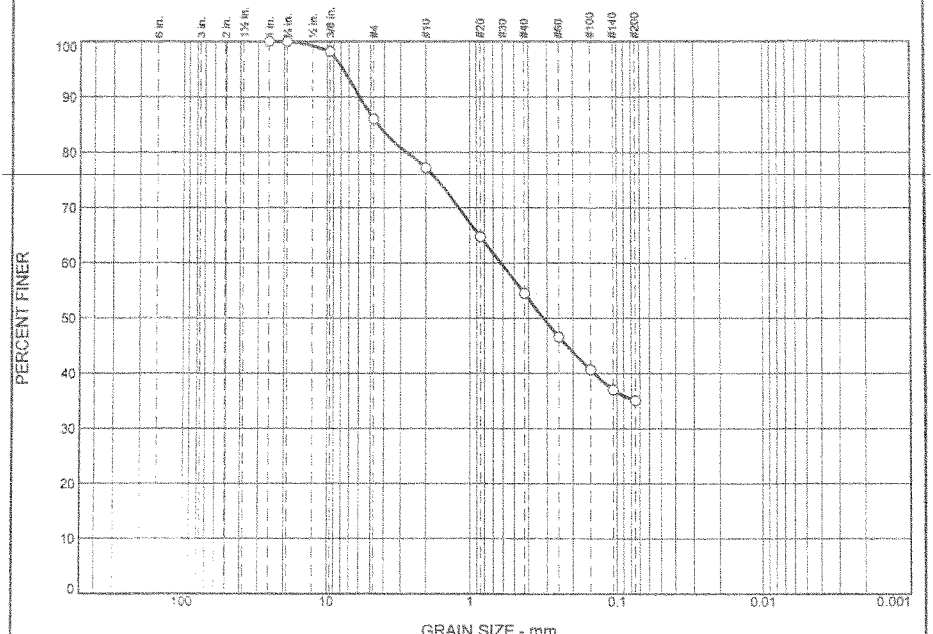
Remarks:

○ Moisture Content % 31.9 CP05-EAARS-CB-0269

Figure

Tested By: Ariel Saraza Checked By: Michael Brown July 2014

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	14	9	23	19	35	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			4.4426	0.6188	0.3170					

Material Description	USCS	AASHTO
○ Silty sand	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0173 Depth: 13.5' Sample Number: 5

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

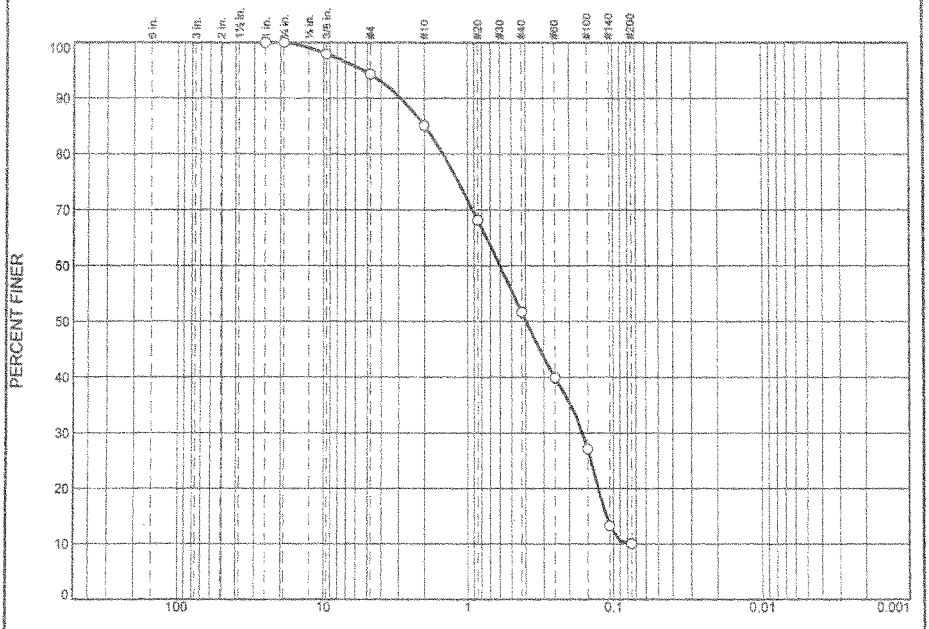
Remarks:

○ Moisture Content % 36.4 CP05-EAARS-CB-0269

Figure

Tested By: C. Maraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	6	9	33	42	10	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			1.9799	0.6016	0.3958	0.1623	0.1119			

Material Description	USCS	AASHTO
○ Well graded sand with silt	SW-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0172 Depth: 18.5' Sample Number: 5

Date: ○

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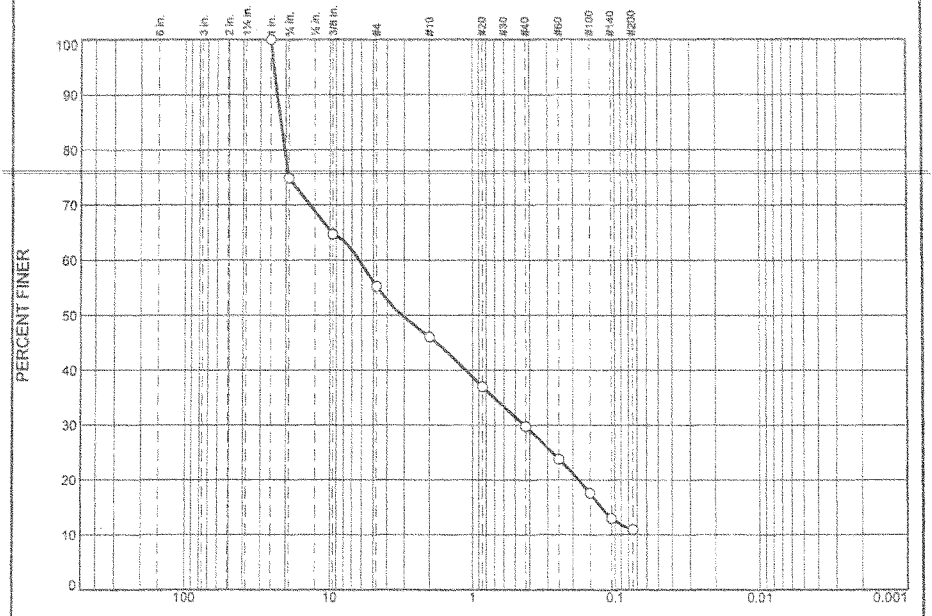
Remarks:

○ Moisture Content % 22.7 CP05-EAARS-CB-0269

Figure

Tested By: Rodolfo Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	25	20	9	16	19	11	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			21.7109	6.2377	3.1064	0.4346	0.1251			

Material Description	USCS	AASHTO
○ Well graded sand with silt and gravel	SW-SM	

Project No. 05-05-0013- **Client:** Black & Veatch
Project: E.A.A (Reservoir)
○ **Source of Sample:** CB-0173 **Depth:** 18.5' **Sample Number:** 6
Date: ○

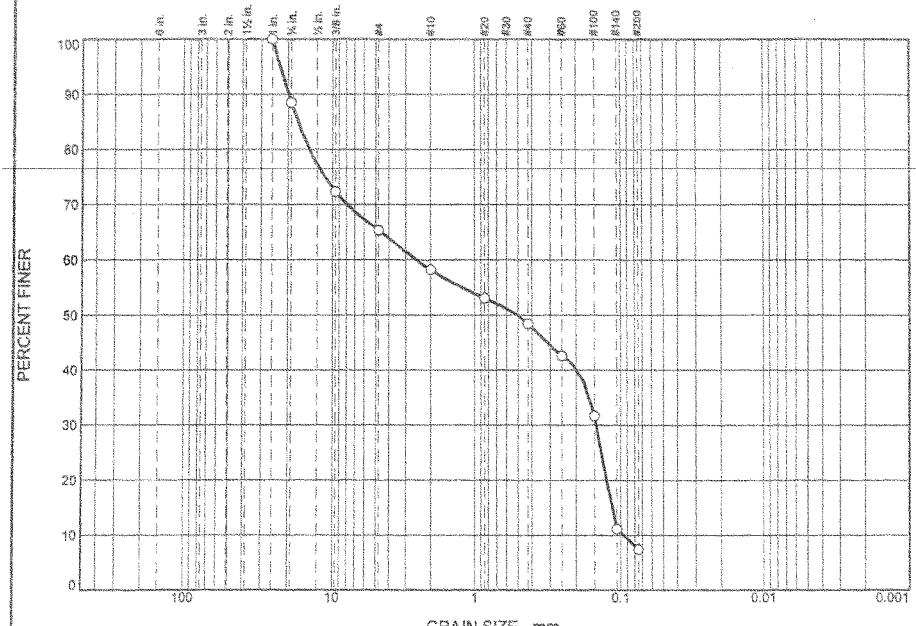
Nodarse & Associates, Inc.
Miami Lakes, FL

Remarks:
○ Moisture Content % 26.0 CP05-EAARS-CB-0269

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	11	24	7	10	41	7	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			17.1489	2.5176	0.5043	0.1455	0.1146	0.0952	0.09	26.45

Material Description	USCS	AASHTO
○ Poorly graded sand with gravel	SP	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0172 Depth: 33.5' Sample Number: 8

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

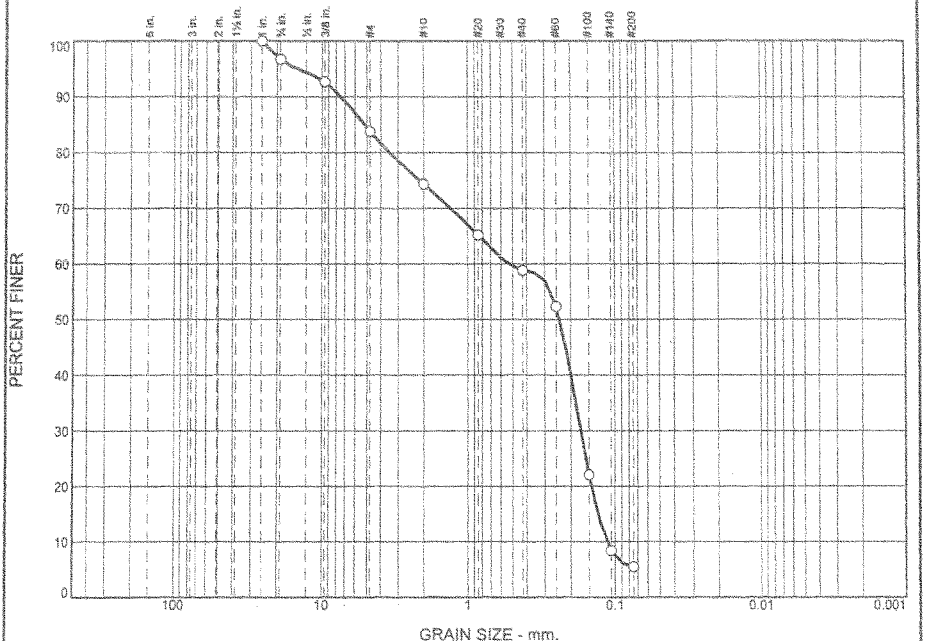
Remarks:

○ Moisture Content % 16.4 CP05-EAARS-CB-0269

Figure

Tested By: [illegible]raza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	3	13	10	15	54	5	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			5.1746	0.5272	0.2369	0.1706	0.1302	0.1130	0.49	4.66

Material Description	USCS	AASHTO
○ Well graded sand with silt and gravel	SW-SM	

Project No. 05-05-0013- Client: Black & Veatch
Project: E.A.A (Reservoir)
○ Source of Sample: CB-0172 Depth: 38.5' Sample Number: 9
Date: ○

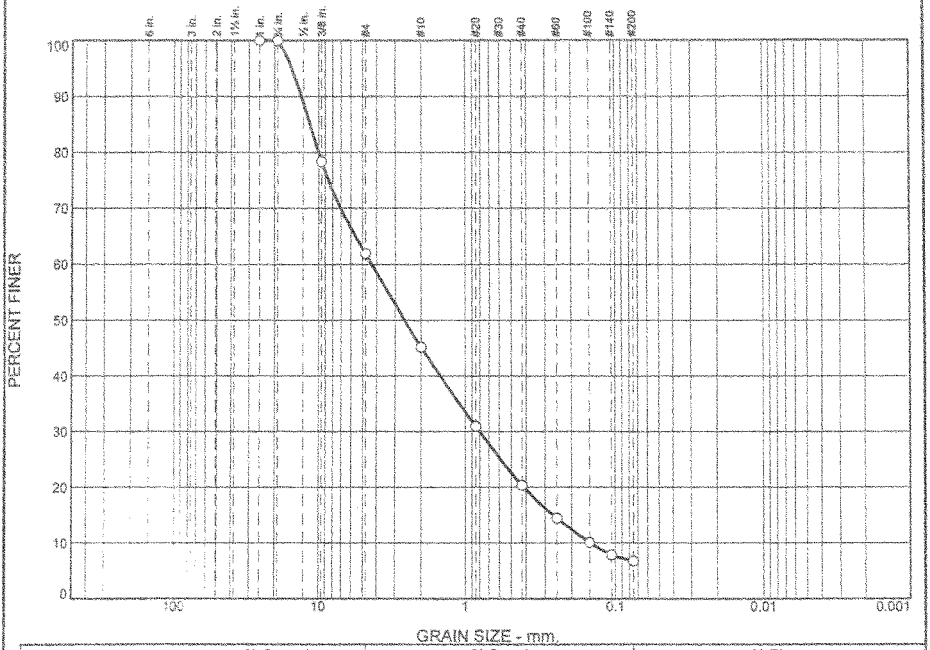
Remarks:
○ Moisture Content % 20.9 CP05-EAARS-CB-0269

Nodarse & Associates, Inc.
Miami Lakes, FL

Figure

Tested By: Eduardo Barraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	38	17	25	13	7	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			11.4156	4.3044	2.5799	0.8016	0.2641	0.1486	1.00	28.98

Material Description	USCS	AASHTO
○ Well graded sand with silt and gravel	SW-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0173 Depth: 1.5' Sample Number: 2

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

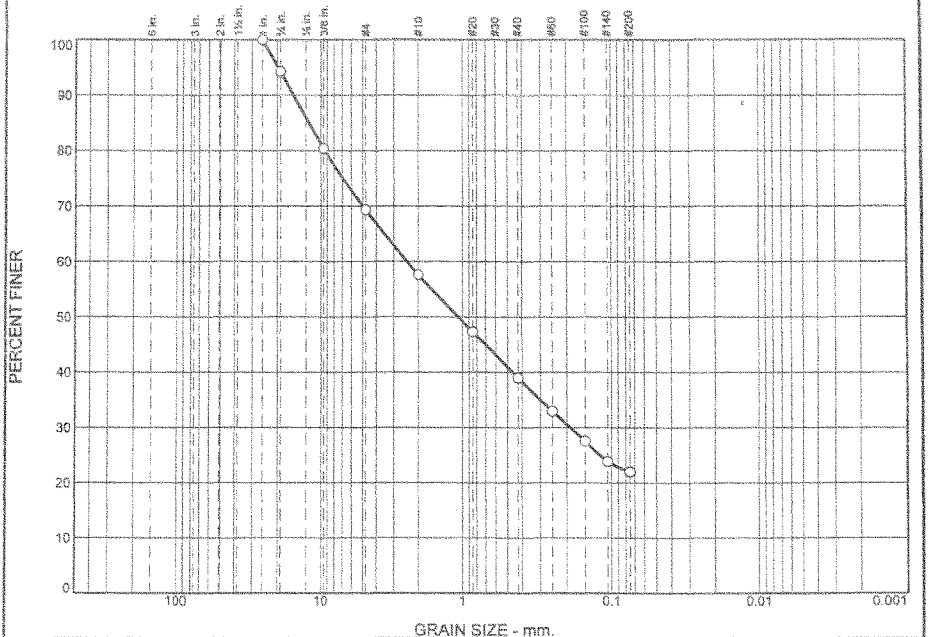
Remarks:

○ Moisture Content % 157.6 CP05-EAARS-CB-0270

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown July 2014

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	6	25	11	19	17	22	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			12.0906	2.4134	1.0653	0.1880				

Material Description	USCS	AASHTO
○ Silty sand with gravel	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0175 Depth: 0.0' Sample Number: 1

Date: ○

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Miami Lakes, FL

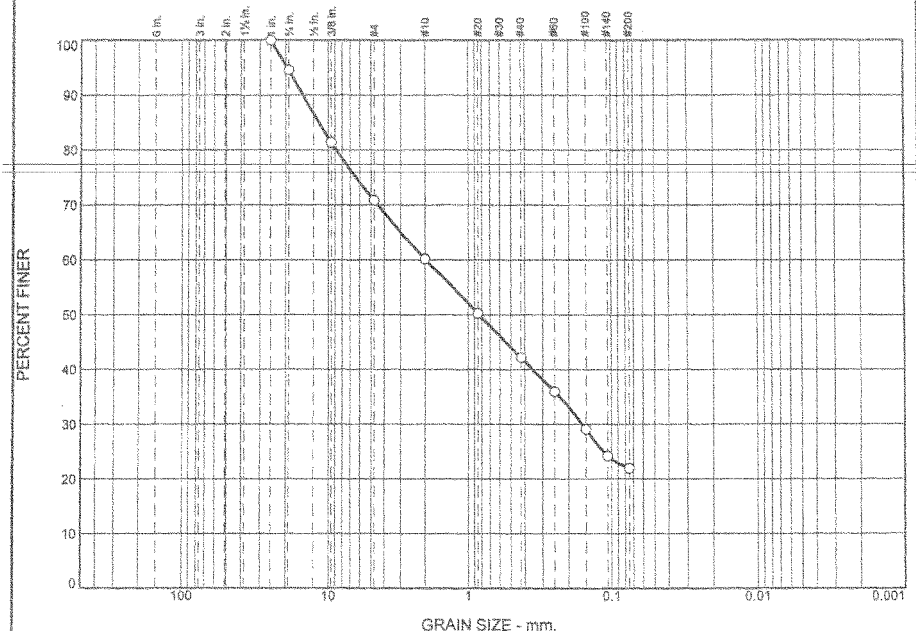
Remarks:

○ Moisture Content % 12.3 CP05-EAARS-CB-0271

Figure

Tested By: Ramaraza Checked By: Michael Brown July 2014

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	5	24	11	18	20	22	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			11.6299	1.9706	0.8308	0.1595				

	Material Description	USCS	AASHTO
○	Silty sand with gravel	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0175 Depth: 2.0' Sample Number: 2

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

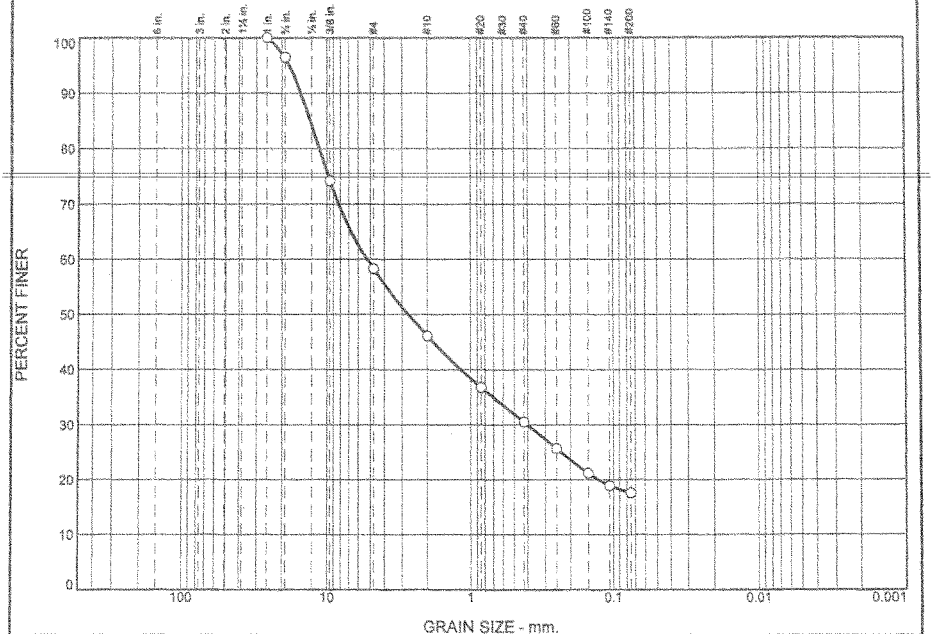
Remarks:

○ Moisture Content % 20.4 CP05-EAARS-CB-0271

Figure

Tested By: Heraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	4	38	12	15	13	18	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			12.9138	5.2460	2.7193	0.4005				

Material Description	USCS	AASHTO
○ Silty sand with gravel	SM	

Project No. 05-05-0013- **Client:** Black & Veatch
Project: E.A.A (Reservoir)
○ **Source of Sample:** CB-0175 **Depth:** 10.5' **Sample Number:** 4

Date: ○

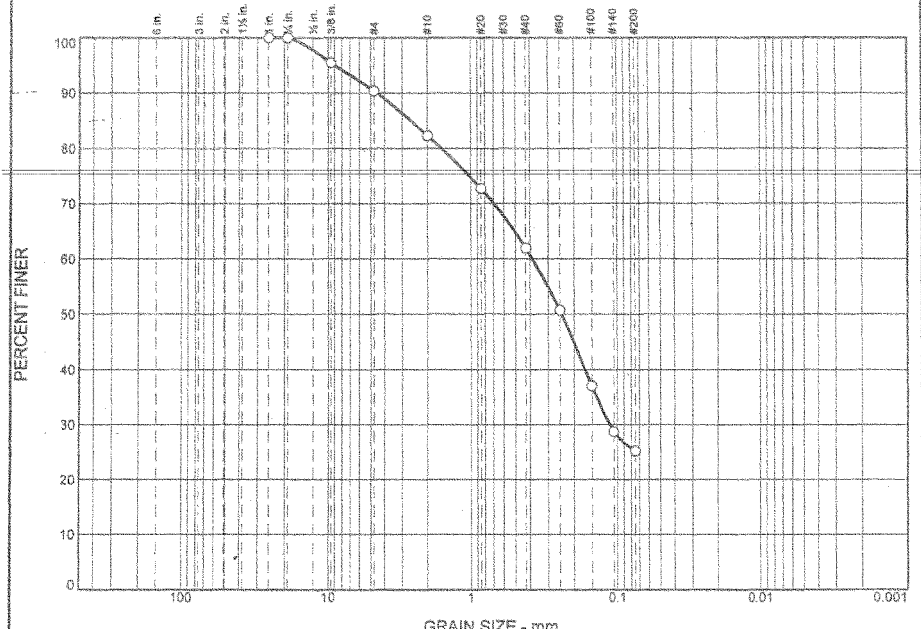
Nodarse & Associates, Inc.
Miami Lakes, FL

Remarks:
○ Moisture Content % 24.0 CP05-EAARS-CB-0271

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	10	8	20	37	25	

LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
		2.6123	0.3832	0.2430	0.1135				

Material Description	USCS	AASHTO
Silty sand	SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

Source of Sample: CB-0175 **Depth:** 18.5' **Sample Number:** 6

Date:

Nodarse & Associates, Inc.

Miami Lakes, FL

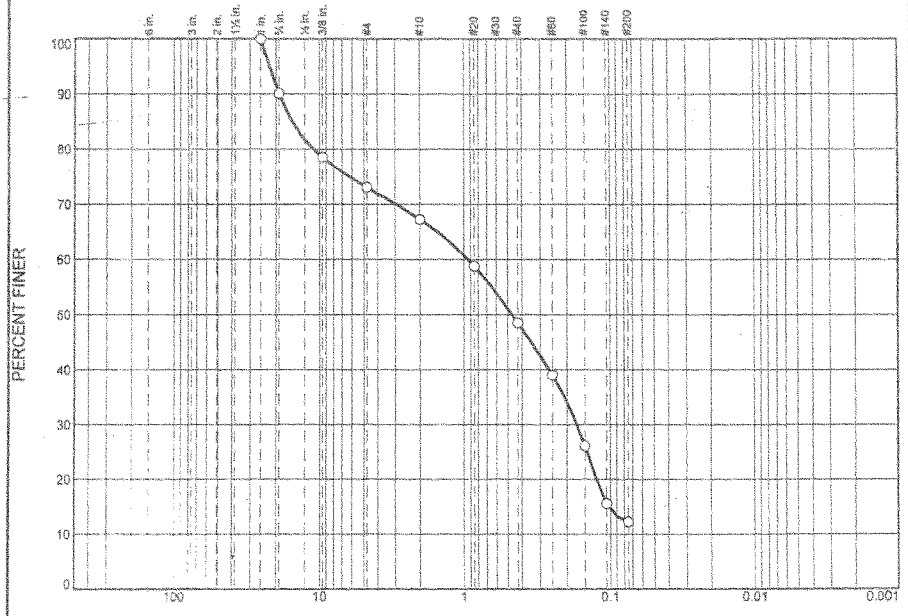
Remarks:

Moisture Content % 25.3 CP05-EAARS-CB-0271

Figure

Tested By: Pedro Carneraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	10	17	6	18	37	12	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			15.4527	0.9369	0.4658	0.1706	0.1028			

Material Description	USCS	AASHTO
○ Well graded sand with silt and gravel	SW-SM	

Project No. 05-05-0013- Client: Black & Veatch
Project: E.A.A (Reservoir)
○ Source of Sample: CB-0175 Depth: 23.5' Sample Number: 7

Date: ○

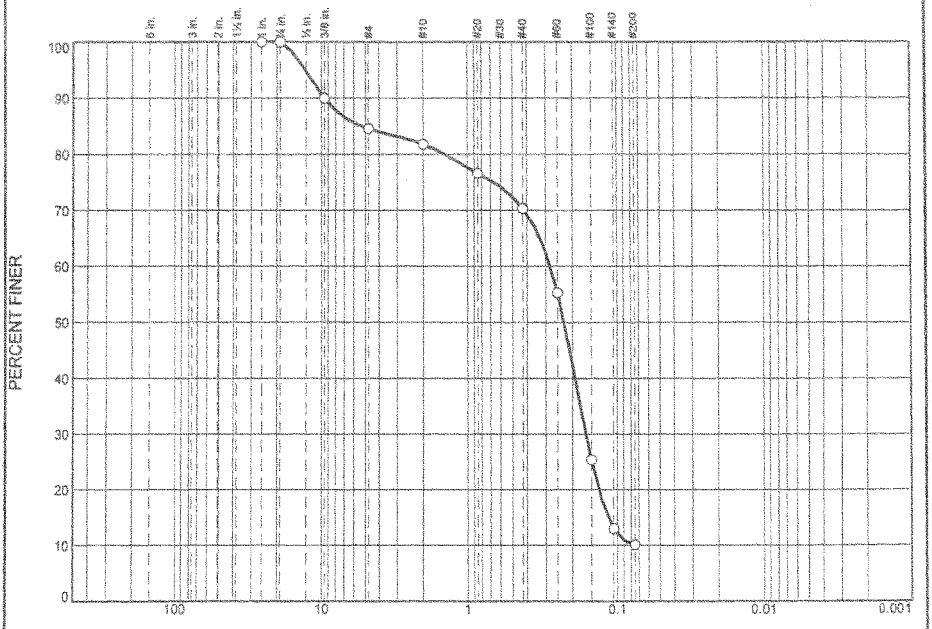
Nodarse & Associates, Inc.
Miami Lakes, FL

Remarks:
○ Moisture Content % 21.5 CP05-EAARS-CB-0271

Figure

Tested By: Daniel Carraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	15	3	12	60	10	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			5.2820	0.2788	0.2265	0.1632	0.1154			

Material Description	USCS	AASHTO
○ Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0175 Depth: 38.5' Sample Number: 10

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

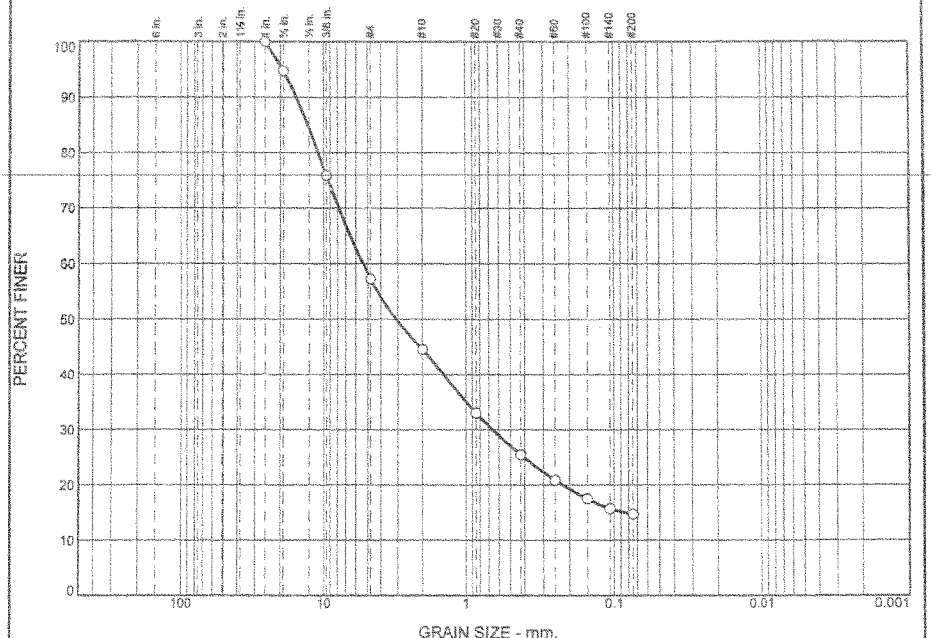
Remarks:

○Moisture Content % 24.3 CP05-EAARS-CB-0271

Figure

Tested By: Pablo Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	5	38	12	20	10	15	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			12.9561	5.3701	3.0774	0.6588	0.0847			

Material Description	USCS	AASHTO
○ Silty sand with gravel	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0176 Depth: 5.1' Sample Number: 2

Date: ○

Nodarse & Associates, Inc.

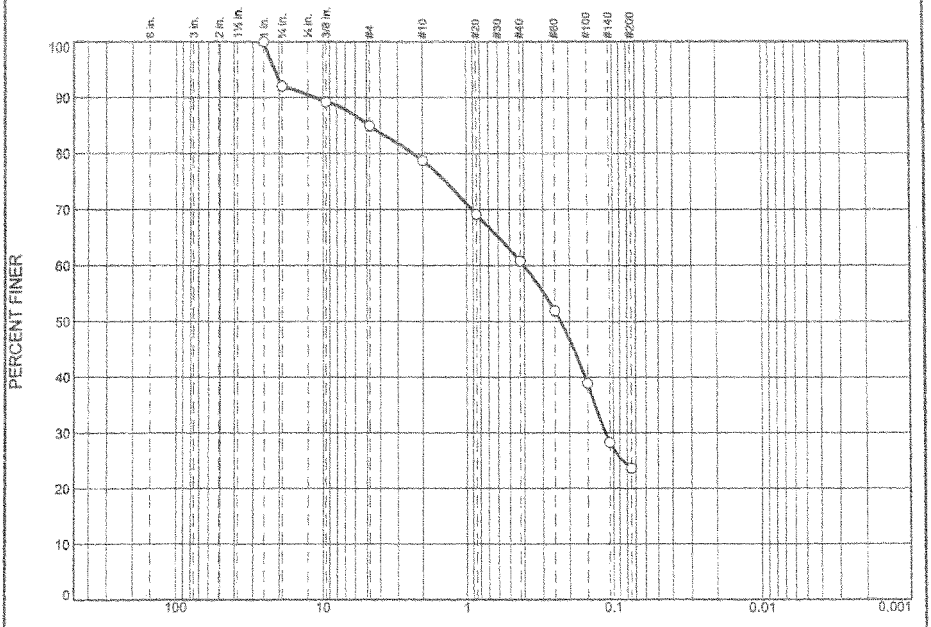
Miami Lakes, FL

Remarks:

○ Moisture Content % 19.0 CP05-EAARS-CB-0272

Figure

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	8	7	6	18	37	24	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			4.8044	0.4006	0.2281	0.1135				

	Material Description	USCS	AASHTO
○	Silty sand with gravel	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0176 Depth: 10.0' Sample Number: 4

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

Remarks:

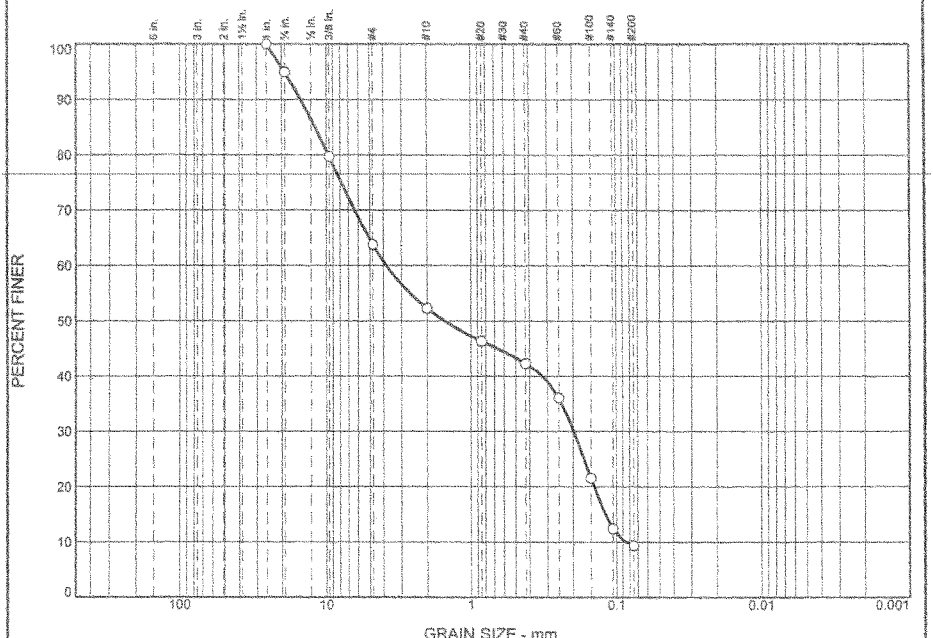
○ Moisture Content % 29.1

CP05-EAARS-CB-0272

Figure

Tested By: Eduardo Maraza Checked By: Michael Brown July 2014

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	5	31	12	10	33	9	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			11.9080	3.8204	1.5043	0.1970	0.1197	0.0851	0.12	44.89

Material Description	USCS	AASHTO
○ Well graded sand with silt and gravel	SW-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0176 Depth: 18.5' Sample Number: 6

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

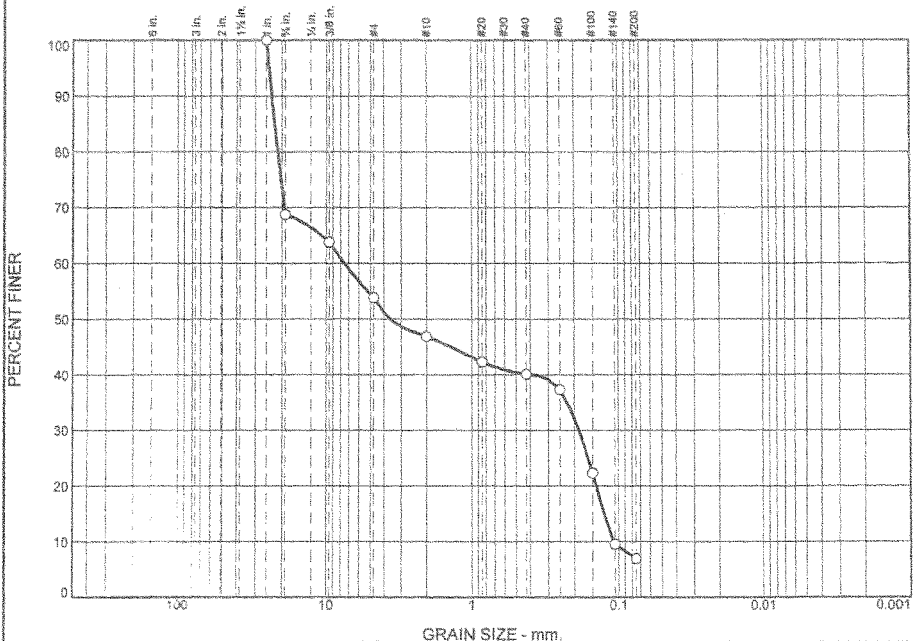
Remarks:

○ Moisture Content % 10.6

CP05-EAARS-CB-0272

Figure

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	31	15	7	7	33	7	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			22.4677	7.5320	3.5705	0.1851	0.1256	0.1081	0.04	69.67

Material Description	USCS	AASHTO
○ Well graded sand with silt and gravel	SW-SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

○ **Source of Sample:** CB-0176 **Depth:** 23.5' **Sample Number:** 7

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

Remarks:

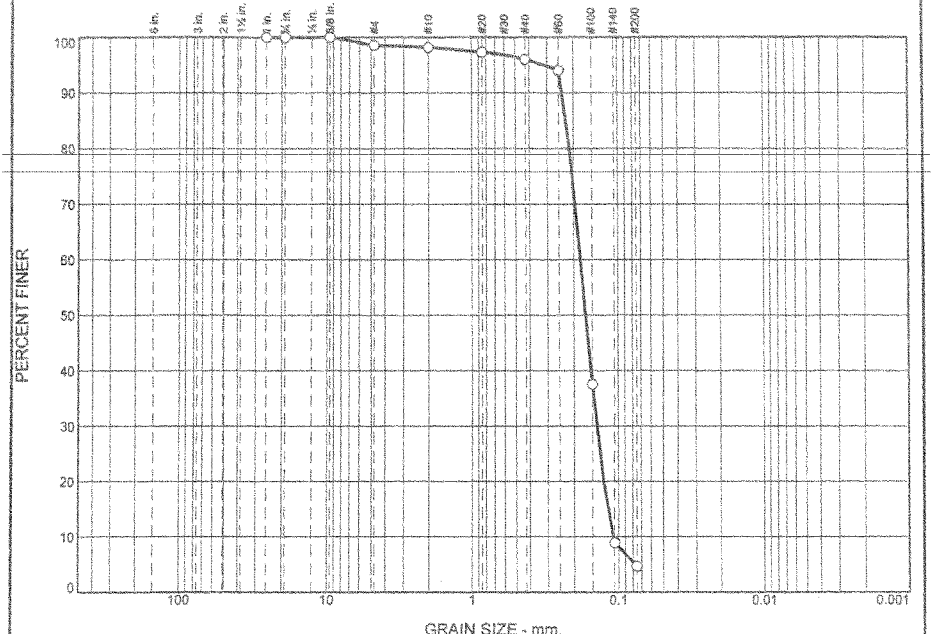
○ Moisture Content % 14.5

CP05-EAARS-CB-0272

Figure

Tested By: Carlos Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	1	1	2	91	5	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_u
○			0.2233	0.1798	0.1661	0.1400	0.1180	0.1085	1.01	1.66

Material Description	USCS	AASHTO
○ Poorly graded sand	SP	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0176 Depth: 28.5' Sample Number: 8

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

Remarks:

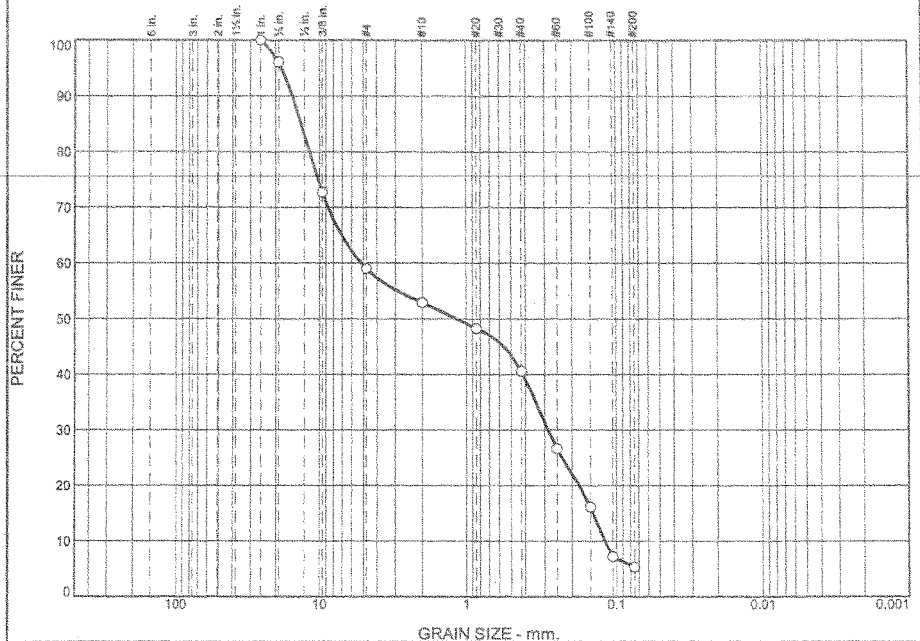
○ Moisture Content % 29.2

CP05-EAARS-CB-0272

Figure

Tested By: Araza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	4	37	6	12	36	5	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			13.3245	5.1638	1.1584	0.2854	0.1436	0.1202	0.13	42.96

Material Description	USCS	AASHTO
○ Well graded sand with silt and gravel	SW-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0176 Depth: 33.5' Sample Number: 9

Date: ○

Remarks:

○ Moisture Content % 15.6 CP05-EAARS-CB-0272

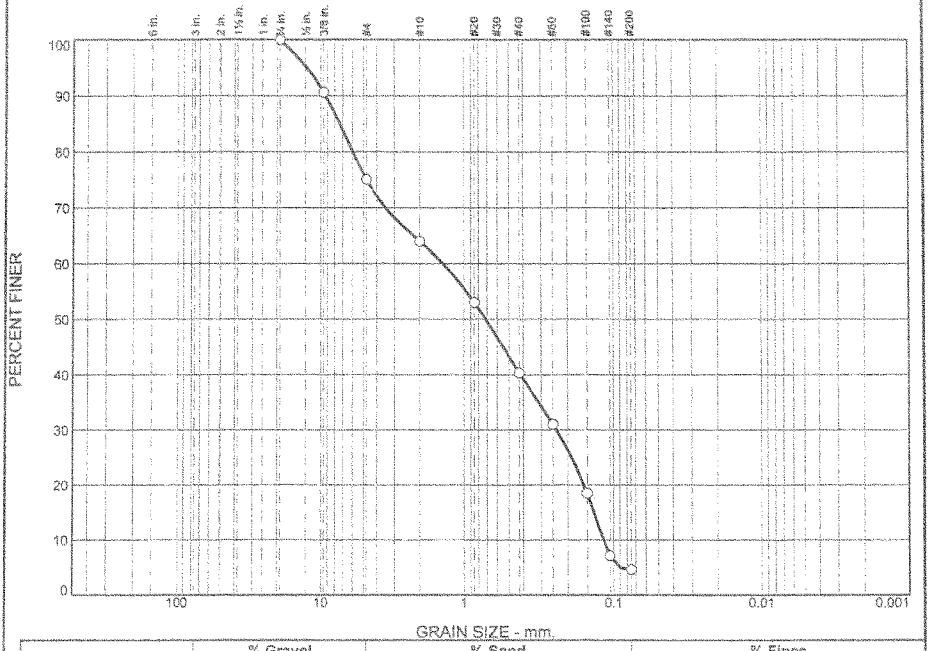
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: Ricardo Camaraza Checked By: Michael Brown July 2014

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	24.9	11.1	23.6	35.8	4.6	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			7.3567	1.3892	0.7137	0.2365	0.1360	0.1179	0.34	11.78

Material Description	USCS	AASHTO
○ Poorly graded sand with silt	SP-SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ **Source of Sample:** CB176 **Depth:** 58.5'-60.0 **Sample Number:** CB176

Remarks:

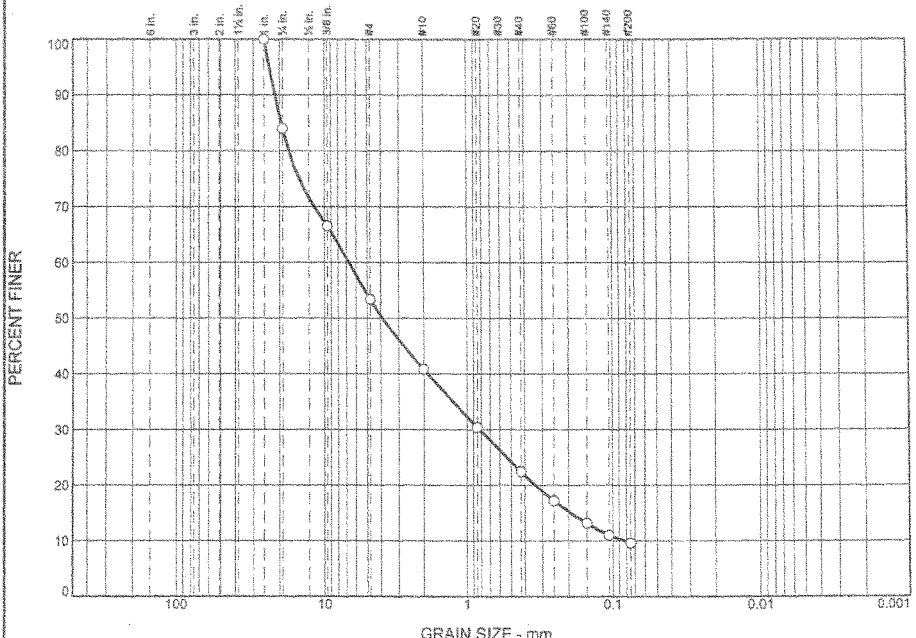
○ Moisture Content % 21.4 CP05-EAARS-CB-0272

Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	16	31	12	19	12	10	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			19.4681	6.7137	3.8994	0.8206	0.1921	0.0831	1.21	80.82

Material Description	USCS	AASHTO
○ Well graded sand with silt and gravel	SW-SM	

Project No. 05-05-0013- Client: Black & Veatch
Project: E.A.A (Reservoir)
○ Source of Sample: CB-0179 Depth: 5.5' Sample Number: 5

Date: ○

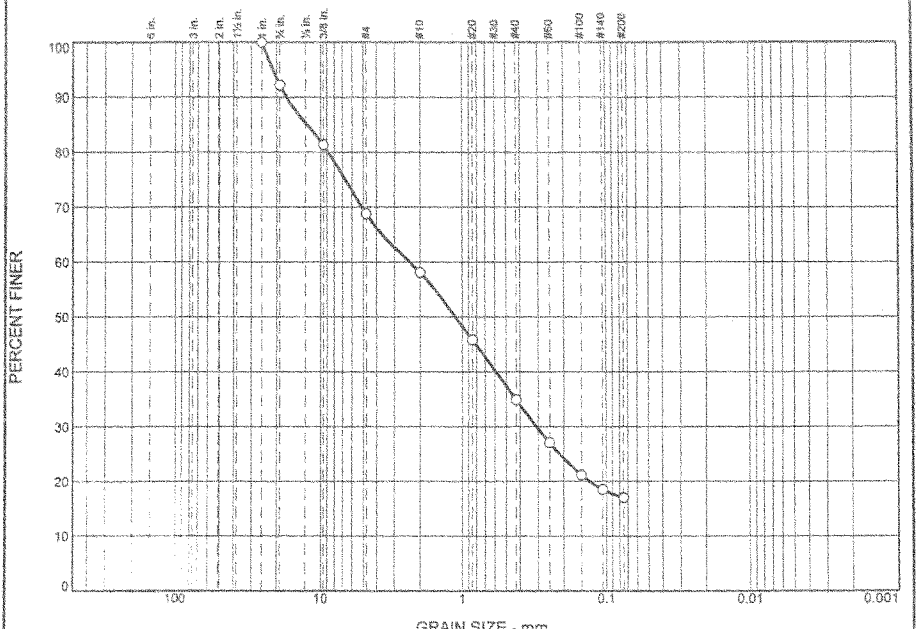
Nodarse & Associates, Inc.
Miami Lakes, FL

Remarks:
○ Moisture Content % 24.3 CP05-EAARS-CB-0275

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	8	23	11	23	18	17	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			12.3808	2.3590	1.1147	0.3071				

Material Description	USCS	AASHTO
○ Silty sand with gravel	SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

○ **Source of Sample:** CB-0179 **Depth:** 7.5' **Sample Number:** 3

Date: ○

Remarks:

○ Moisture Content % 25.0 CP05-EAARS-CB-0275

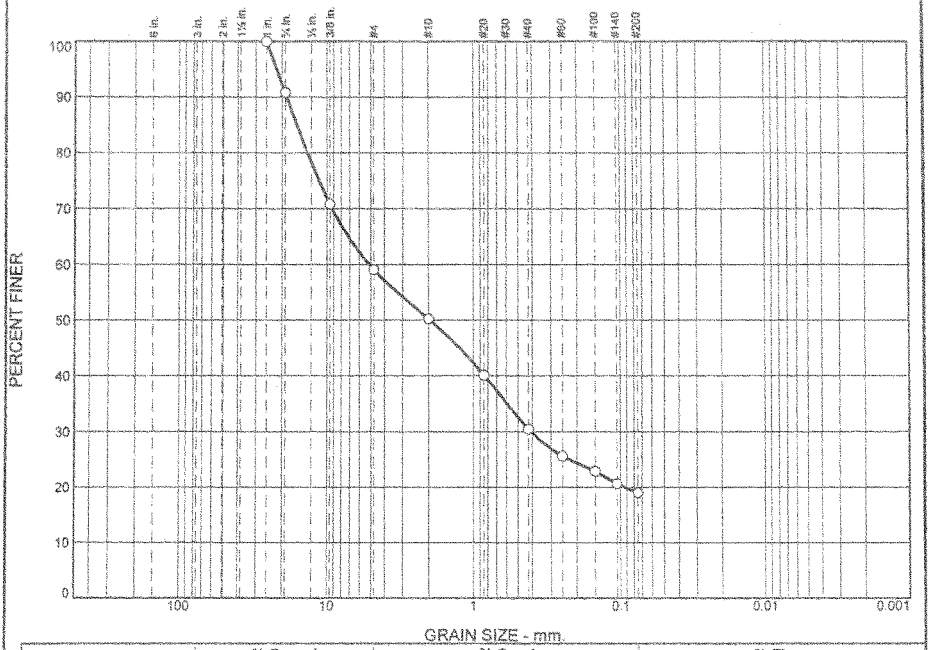
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: Ricardo Camaraza Checked By: Michael Brown July 2014

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	9	32	9	20	11	19	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			15.8645	5.1109	1.9488	0.4078				

Material Description	USCS	AASHTO
○ Silty sand with gravel	SM	

Project No. 05-05-0013- **Client:** Black & Veatch
Project: E.A.A (Reservoir)
○ **Source of Sample:** CB-0179 **Depth:** 13.5' **Sample Number:** 4

Date: ○

Nodarse & Associates, Inc.

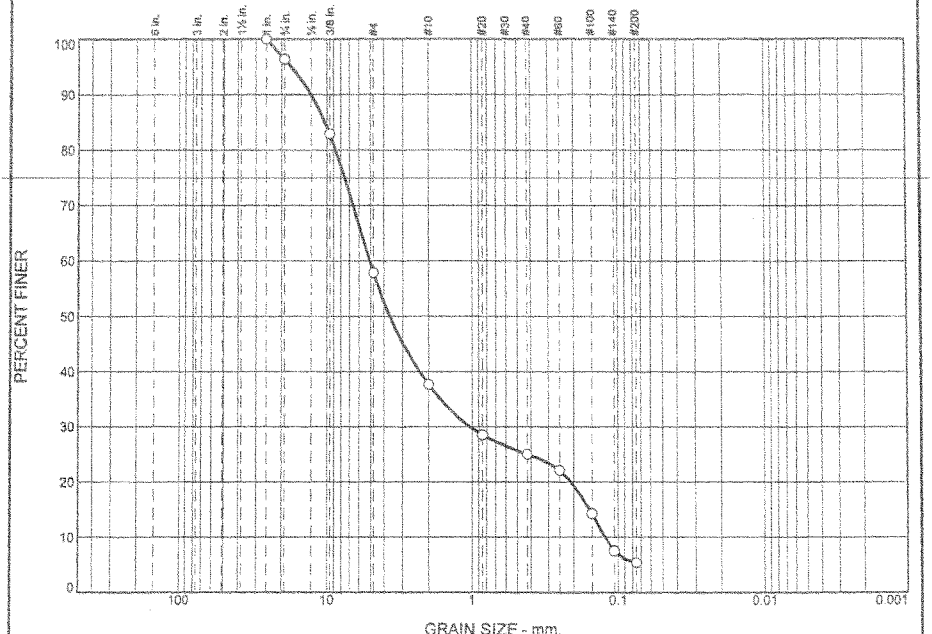
Miami Lakes, FL

Remarks:
○ Moisture Content % 17.7 CP05-EAARS-CB-0275

Figure

Tested By: Carlos Chiaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	4	38	20	13	20	5	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			10.2470	5.0457	3.6562	1.0304	0.1554	0.1226	1.72	41.14

Material Description	USCS	AASHTO
○ Well graded sand with gravel	SW	

Project No. 05-05-0013- Client: Black & Veatch
Project: E.A.A (Reservoir)
○ Source of Sample: CB-0179 Depth: 23.5' Sample Number: 6
Date: ○

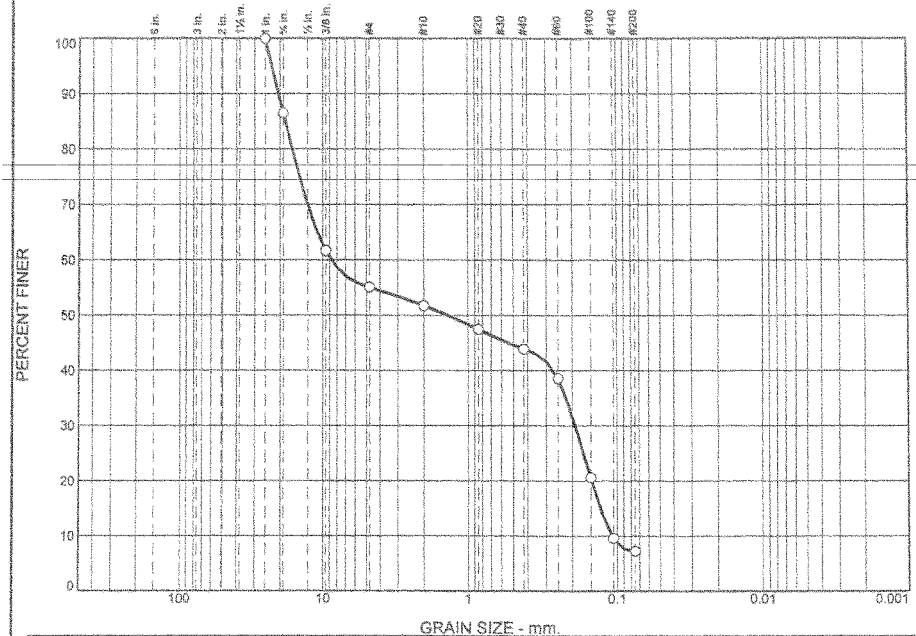
Nodarse & Associates, Inc.
Miami Lakes, FL

Remarks:
○Moisture Content % 14.2 CP05-EAARS-CB-0275

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	13	32	3	8	37	7	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			18.4152	8.7349	1.3774	0.1906	0.1291	0.1081	0.04	80.82

Material Description	USCS	AASHTO
○ Poorly graded sand with silt	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0179 Depth: 28.5' Sample Number: 7

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

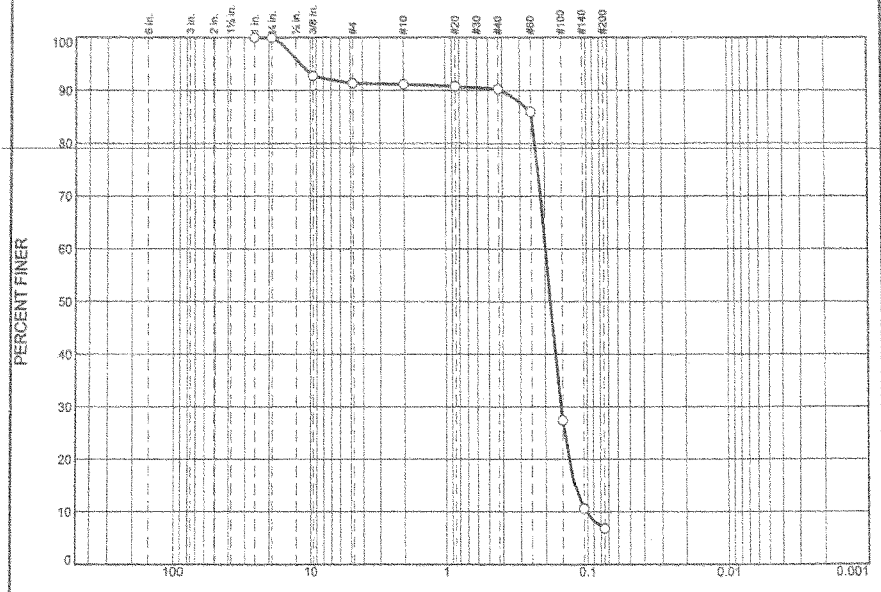
Remarks:

○ Moisture Content % 15.1 CP05-EAARS-CB-0275

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	9	0	1	83	7	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2469	0.1969	0.1824	0.1541	0.1236	0.1027	1.17	1.92

Material Description	USCS	AASHTO
○ Poorly graded sand with silt	SP-SM	

Project No. 03-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0179 Depth: 33.5' Sample Number: 8

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

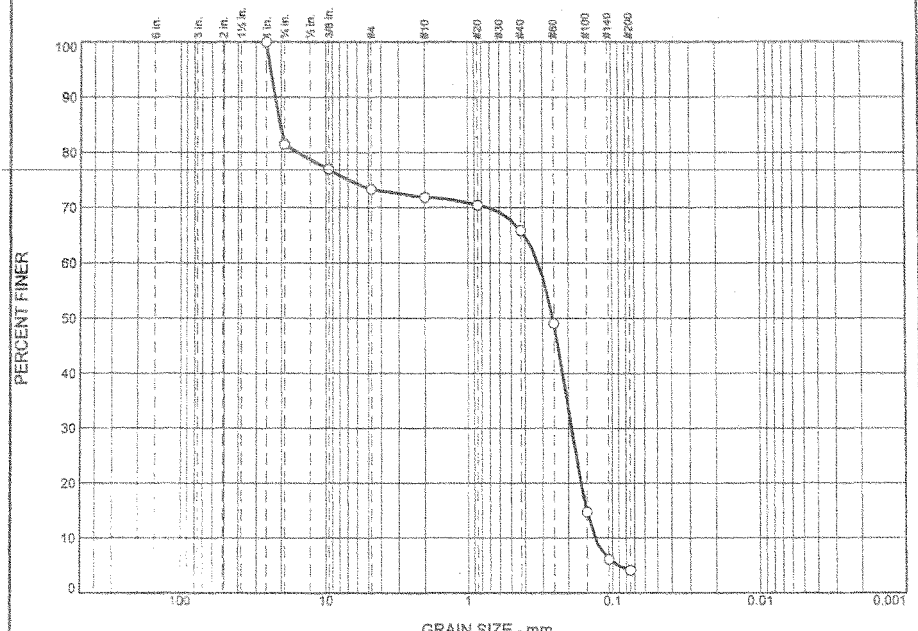
Remarks:

○ Moisture Content % 25.2 CP05-EAARS-CB-0275

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	19	8	1	6	62	4	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			20.3903	0.3211	0.2542	0.1906	0.1509	0.1325	0.85	2.42

Material Description	USCS	AASHTO
○ Poorly graded sand with gravel	SP	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0179 Depth: 38.5' Sample Number: 9

Date: ○

Nodarse & Associates, Inc.

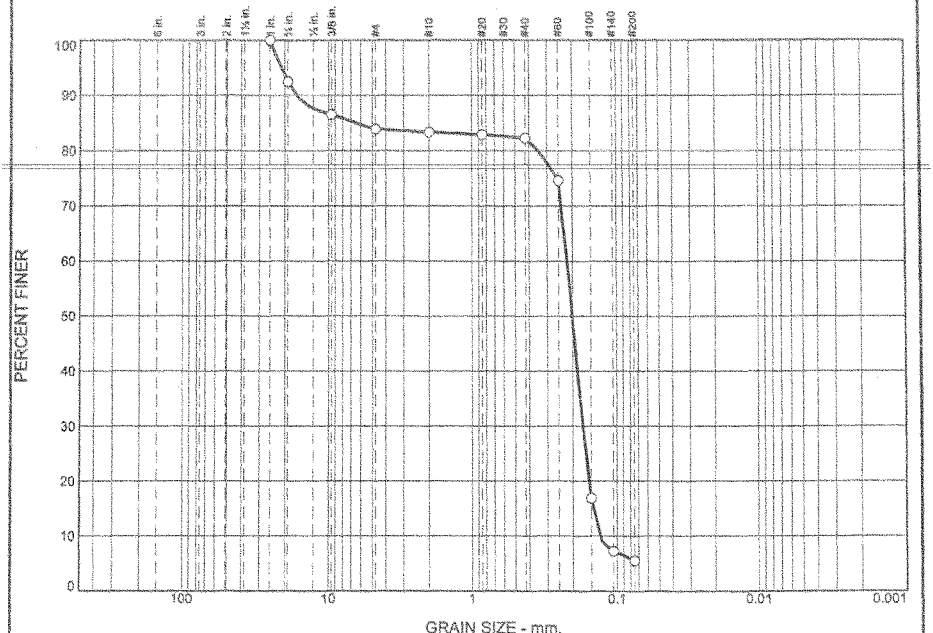
Miami Lakes, FL

Remarks:

○ Moisture Content % 20.9 CP05-EAARS-CB-0275

Figure

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	8	8	1	1	76	6	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_u
○			6.4523	0.2171	0.2006	0.1713	0.1460	0.1312	1.03	1.65

Material Description	USCS	AASHTO
○ Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0179 Depth: 48.5' Sample Number: 11

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

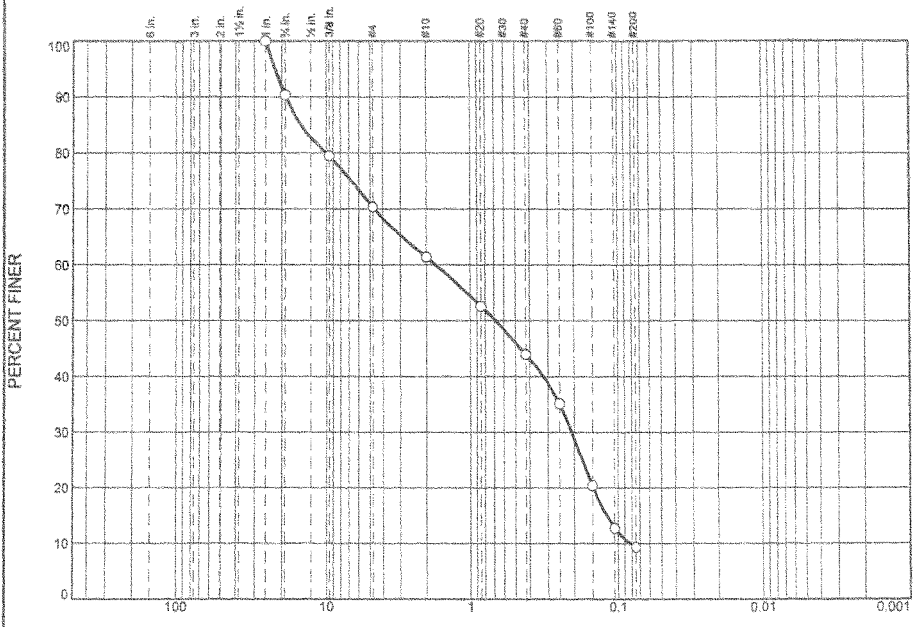
Remarks:

○ Moisture Content % 20.7 CP05-EAARS-CB-0275

Figure

Tested By: Angel Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	10	20	9	17	35	9	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			14.8821	1.7256	0.6803	0.2069	0.1204	0.0825	0.30	20.91

Material Description	USCS	AASHTO
○ Well graded sand with silt and gravel	SW-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0179 Depth: 58.5' Sample Number: 13

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

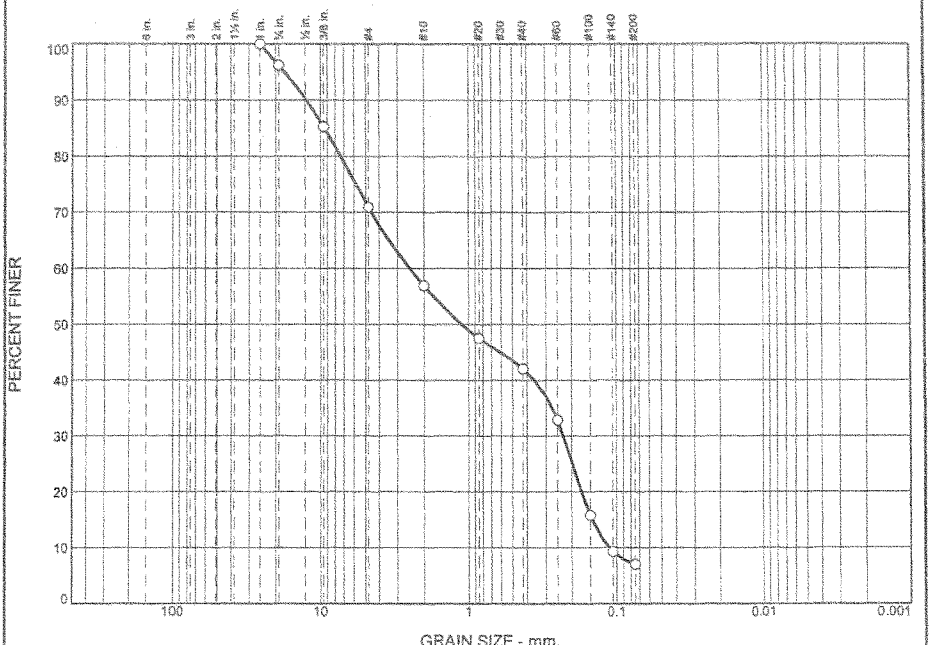
Remarks:

○ Moisture Content % 22.7 CP05-EAARS-CB-0275

Figure

Tested By: [illegible]naraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	4	25	14	15	35	7	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			9.3797	2.4919	1.1159	0.2280	0.1457	0.1125	0.19	22.16

Material Description	USCS	AASHTO
○ Well graded sand with silt and gravel	SW-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0179 Depth: 63.5' Sample Number: 14

Date: ○

Nodarse & Associates, Inc.

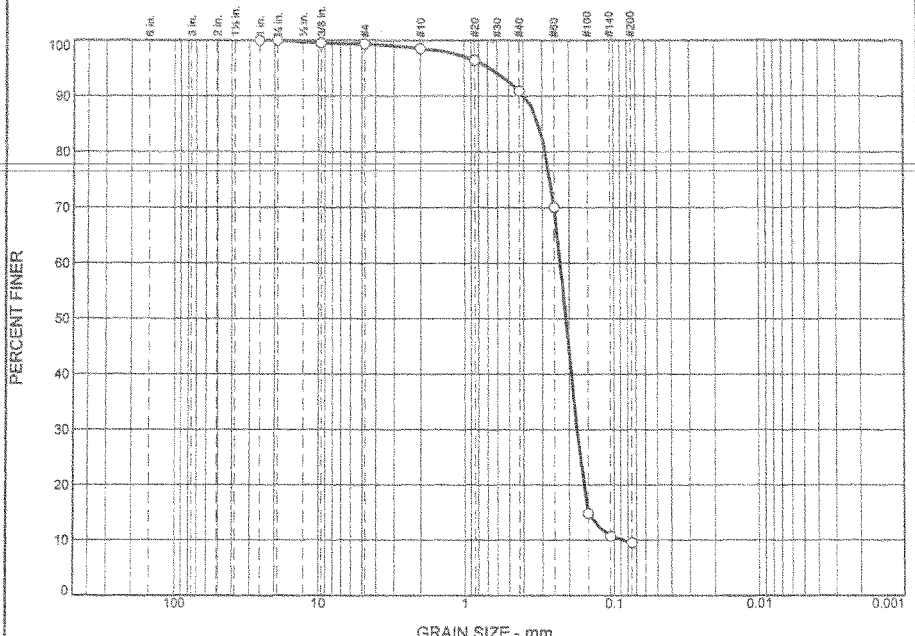
Miami Lakes, FL

Remarks:

○ Moisture Content % 28.1 CP05-EAARS-CB-0275

Figure

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	1	0	8	81	10	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			0.3171	0.2274	0.2094	0.1777	0.1504	0.0868	1.60	2.62

Material Description	USCS	AASHTO
○ Poorly graded sand with silt	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0179 Depth: 73.5' Sample Number: 16

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

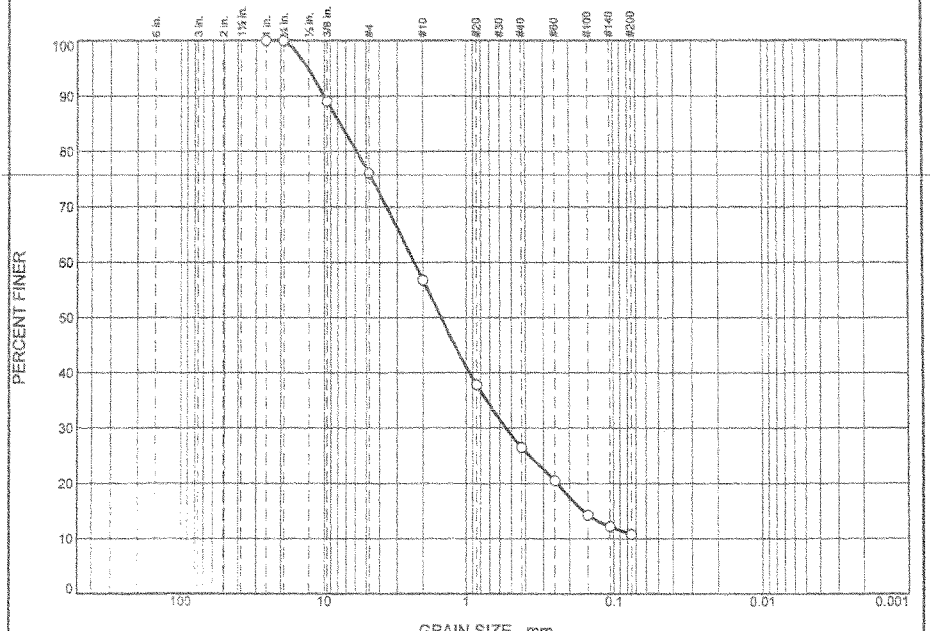
Remarks:

○ Moisture Content % 22.3 CP05-EAARS-CB-0275

Figure

Tested By: R. Gonzalez-Amaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	24	19	30	16	11	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			7.6741	2.2908	1.4926	0.5453	0.1619			

Material Description	USCS	AASHTO
○ Well graded sand with silt and gravel	SW-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0179 Depth: 83.5' Sample Number: 18

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

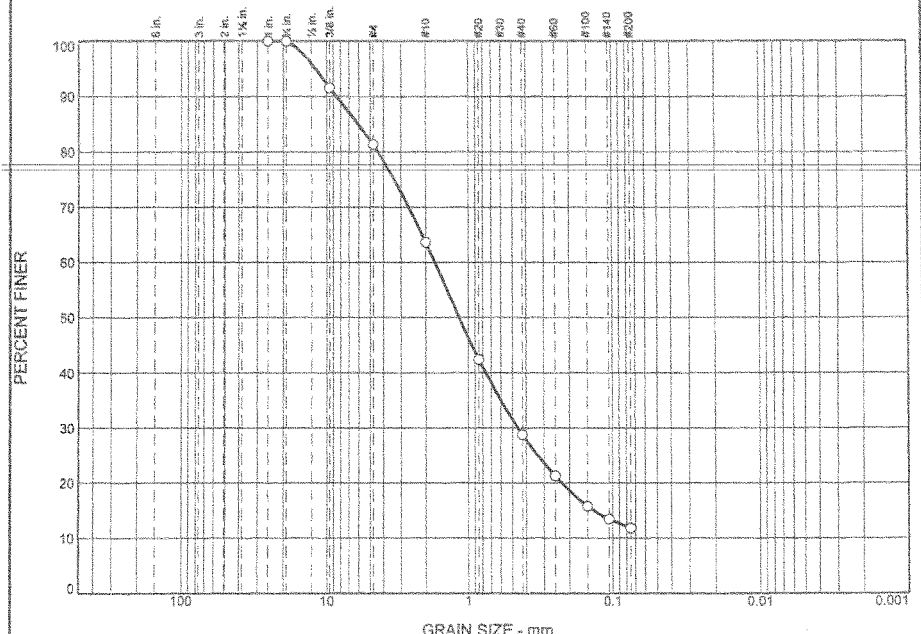
Remarks:

○ Moisture Content % 20.0 CP05-EAARS-CB-0275

Figure

Tested By: Eva Tamaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	19	17	35	17	12	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			6.0425	1.7226	1.1603	0.4570	0.1355			

Material Description	USCS	AASHTO
○ Well graded sand with silt	SW-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0179 Depth: 93.5' Sample Number: 20

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

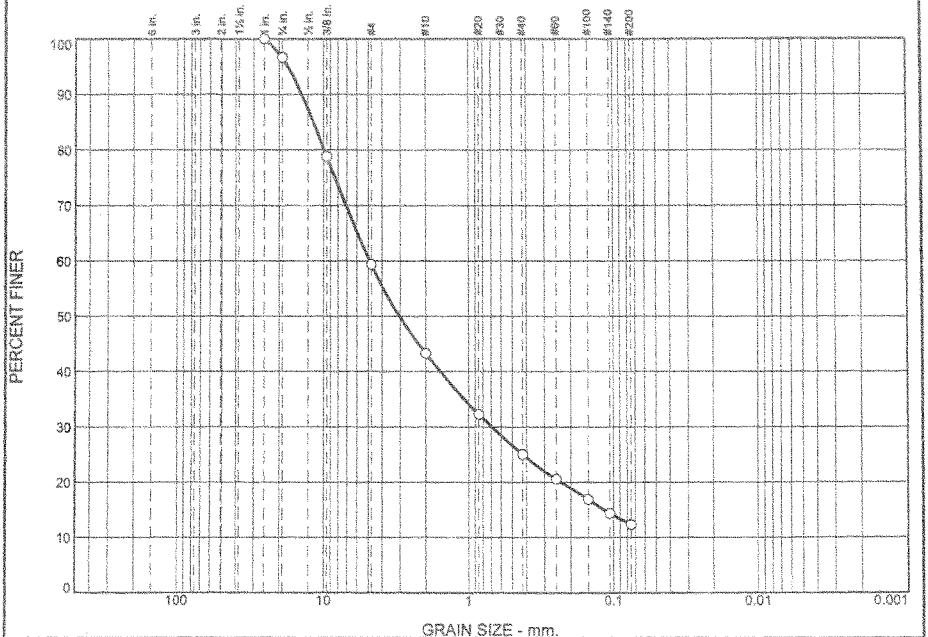
Remarks:

○ Moisture Content % 17.7 CP05-EAARS-CB-0275

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	3	38	16	18	13	12	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			11.6913	4.8791	3.0291	0.6926	0.1158			

Material Description	USCS	AASHTO
○ Well graded sand with silt and gravel	SW-SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

○ **Source of Sample:** CB-0180 **Depth:** 8.0' **Sample Number:** 3

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

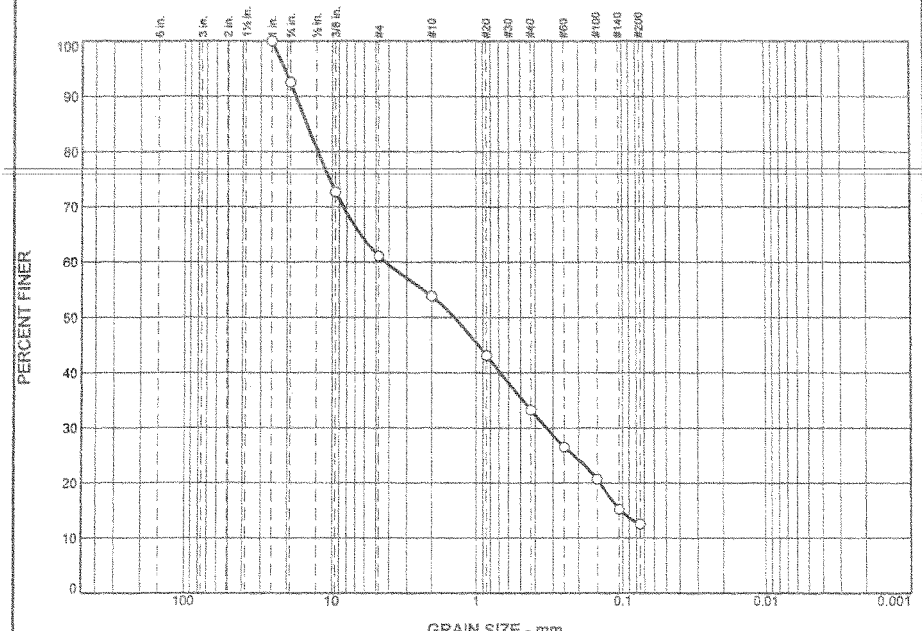
Remarks:

○ Moisture Content % 16.7 CP05-EAARS-CB-0276

Figure

Tested By: R. Camaraza Checked By: Michael Brown July 2014

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	7	32	7	21	20	13	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			14.6956	4.2654	1.4109	0.3341	0.1042			

Material Description	USCS	AASHTO
○ Well graded sand with silt	SW-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0180 Depth: 13.5' Sample Number: 5

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

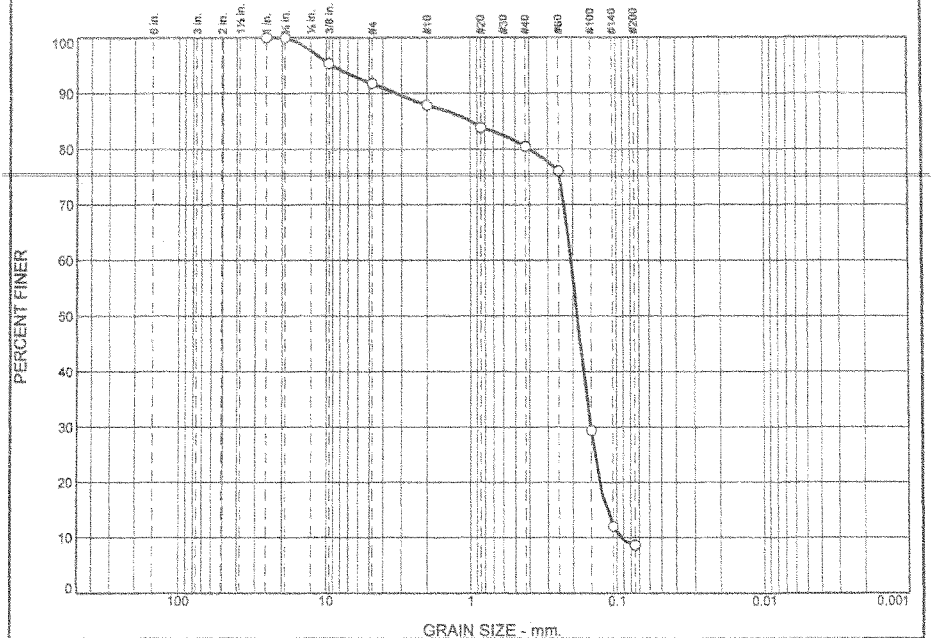
Remarks:

○ Moisture Content % 24.8 CP05-EAARS-CB-0276

Figure

Tested By: Ramon Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	8	4	8	71	9	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			0.9899	0.2050	0.1858	0.1511	0.1170	0.0946	1.18	2.17

Material Description	USCS	AASHTO
○ Poorly graded sand with silt	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0180 Depth: 18.5' Sample Number: 6

Date: ○

Remarks:

○ Moisture Content % 25.5 CP05-EAARS-CB-0276

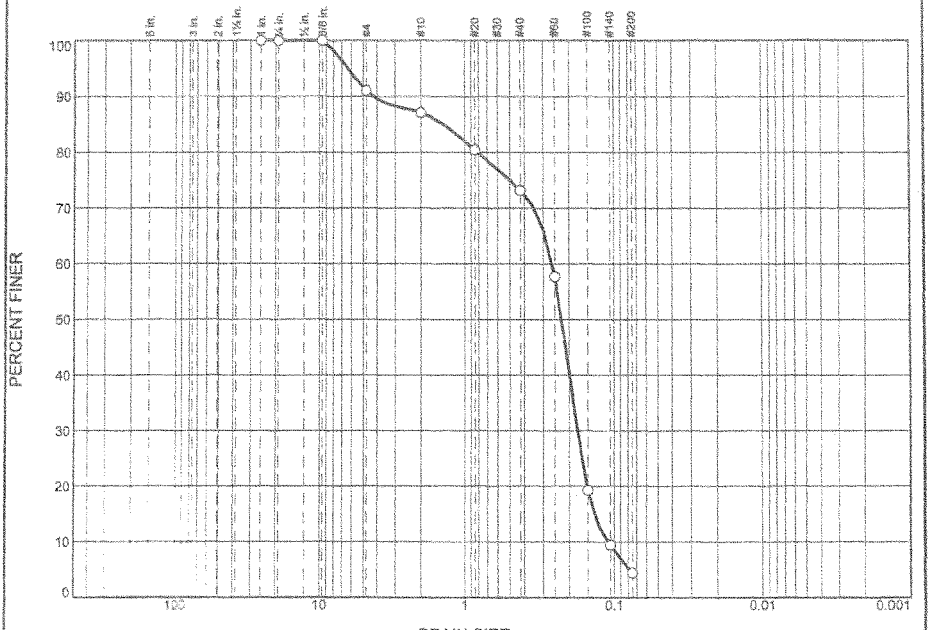
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	9	4	14	69	4	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			1.4049	0.2599	0.2242	0.1758	0.1363	0.1099	1.08	2.36

Material Description	USCS	AASHTO
○ Poorly graded sand	SP	

Project No. 05-05-0013- Client: Black & Veatch
Project: E.A.A (Reservoir)
○ Source of Sample: CB-0180 Depth: 23.5' Sample Number: 7

Date: ○

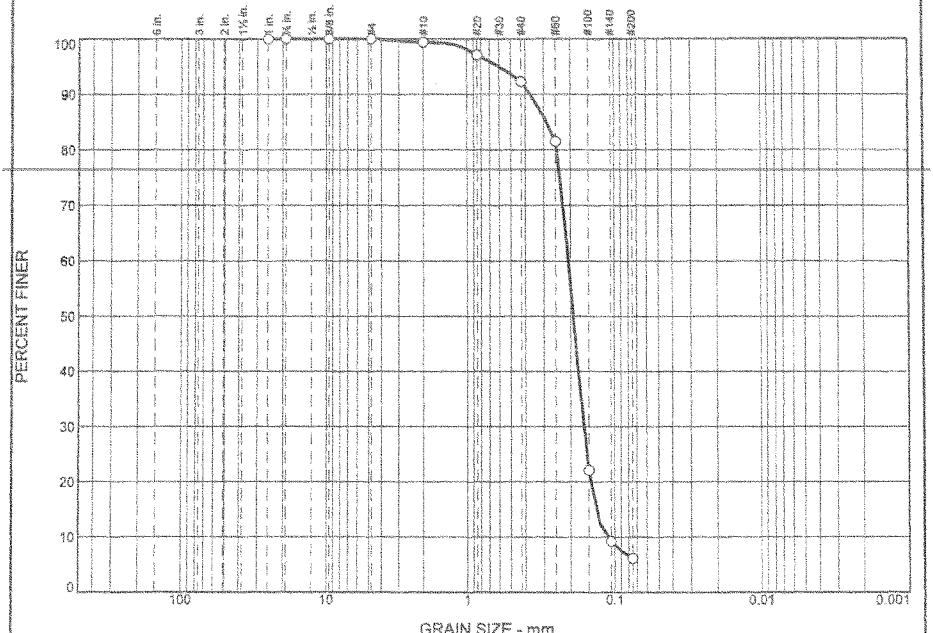
Nodarse & Associates, Inc.
Miami Lakes, FL

Remarks:
○ Moisture Content % 24.6
CP05-EAARS-CB-0276

Figure

Tested By: Ivan Saraza Checked By: Michael Brown July 2014

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	0	1	7	86	6	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			0.2876	0.2060	0.1910	0.1627	0.1343	0.1126	1.14	1.83

Material Description	USCS	AASHTO
○ Poorly graded sand with silt	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0180 Depth: 28.5' Sample Number: 8

Date: ○

Nodarse & Associates, inc.

Miami Lakes, FL

Remarks:

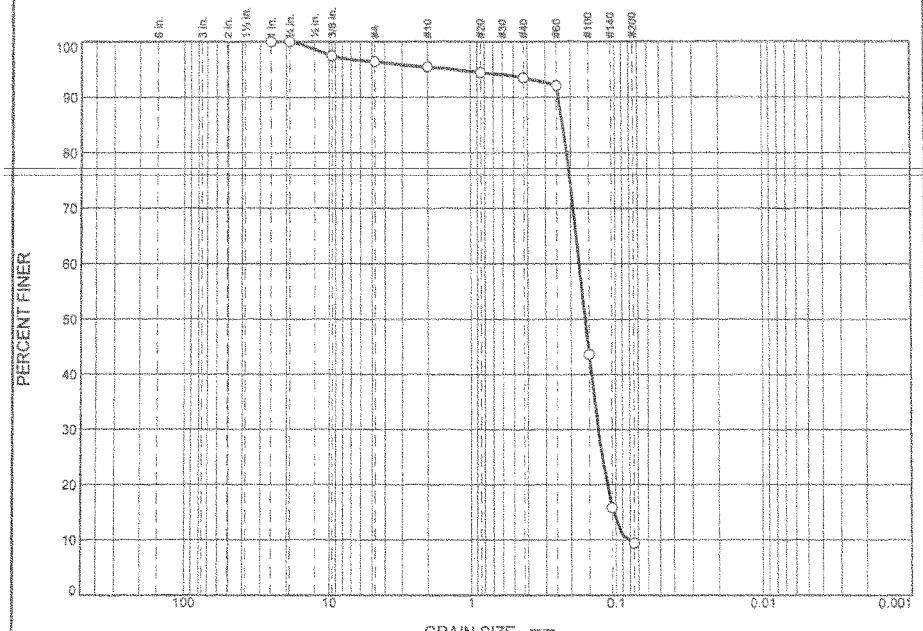
○ Moisture Content % 26.5

CP05-EAARS-CB-0276

Figure

Tested By: Maraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	4	1	2	84	9	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			0.2244	0.1743	0.1591	0.1303	0.1041	0.0835	1.17	2.09

Material Description	USCS	AASHTO
○ Poorly graded sand with silt	SP-SM	

Project No. 05-05-0033- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0180 Depth: 33.5' Sample Number: 9

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

Remarks:

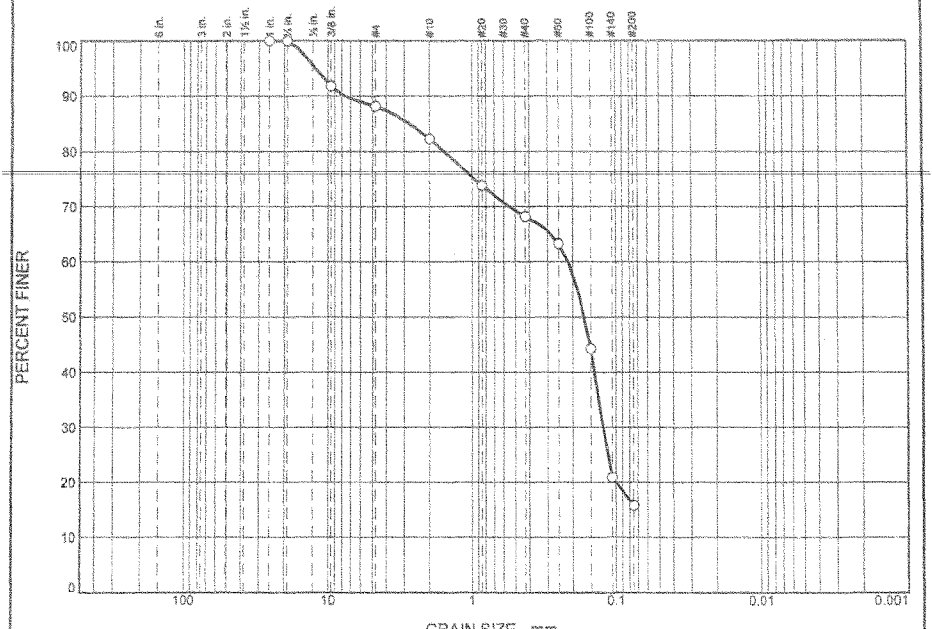
○ Moisture Content % 27.4

CP05-EAARS-CB-0276

Figure

Tested By: Maraza Checked By: Michael Brown July 2014

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	12	6	14	52	16	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			2.7524	0.2145	0.1653	0.1231				

Material Description	USCS	AASHTO
○ Silty sand	SP-SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

○ **Source of Sample:** CB-0181 **Depth:** 23.5' **Sample Number:** 7

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

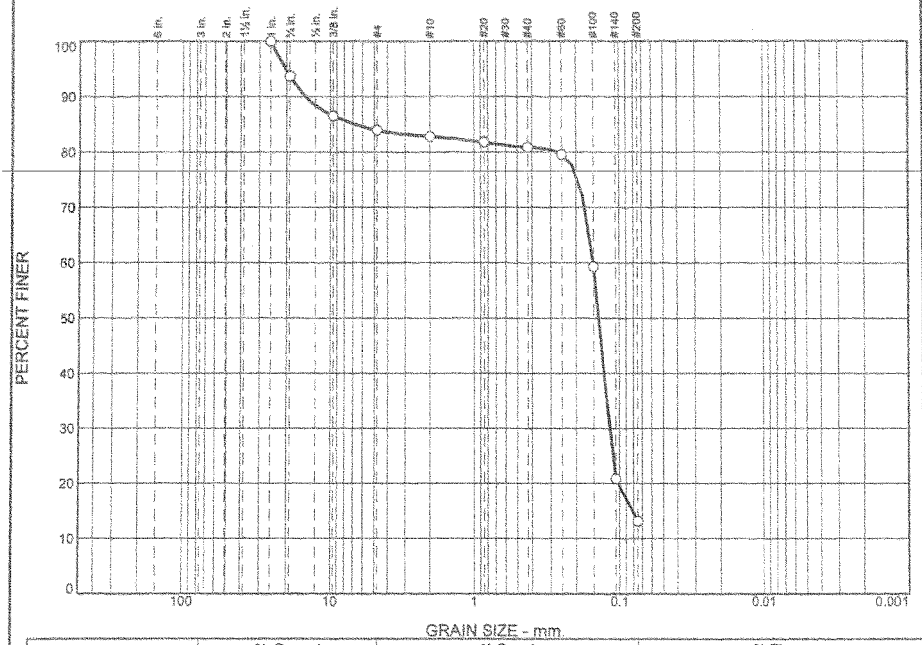
Remarks:

○ Moisture Content % 24.7 CP05-EAARS-CB-0277

Figure

Tested By: Oscar Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	6	10	1	2	68	13	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			6.7701	0.1510	0.1378	0.1167	0.0814			

Material Description	USCS	AASHTO
○ Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0181 Depth: 28.5' Sample Number: 8

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

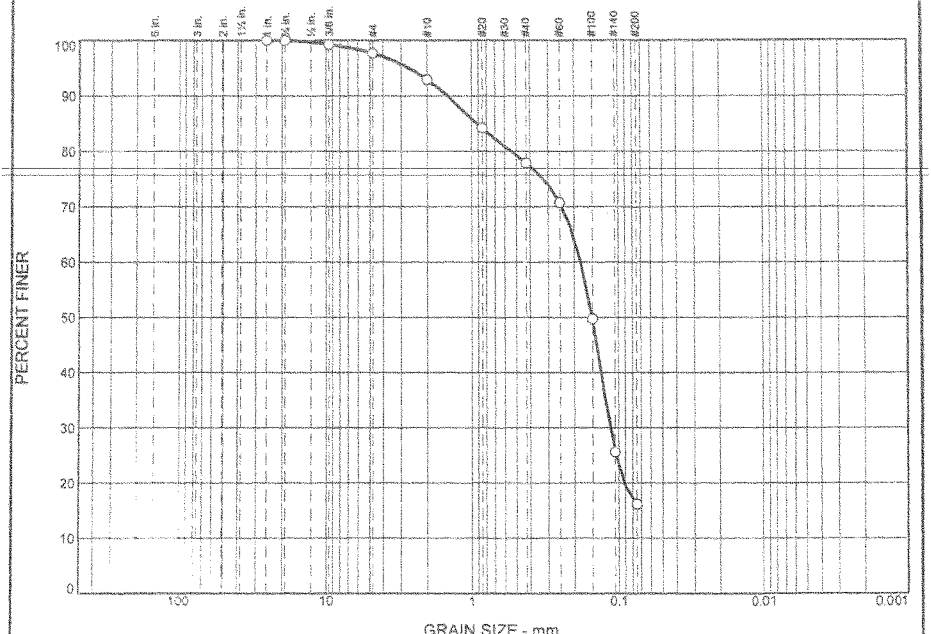
Remarks:

○ Moisture Content % 24.1 CP05-EAARS-CB-0277

Figure

Tested By: Ruben Echaraza Checked By: Michael Brown July 2014

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	2	5	15	62	16	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			0.9169	0.1799	0.1505	0.1141				

Material Description	USCS	AASHTO
○ Silty sand	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0181 Depth: 33.5' Sample Number: 9

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

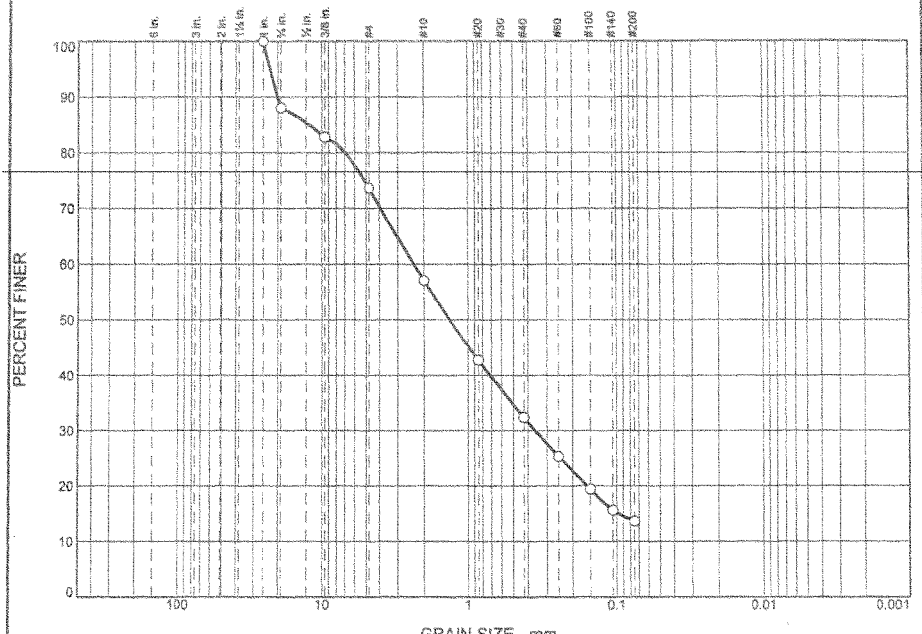
Remarks:

○ Moisture Content % 29.5 CP05-EAARS-CB-0277

Figure

Tested By: Carlos Casaraza Checked By: Michael Brown July 2014

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	12	14	17	25	18	14	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			12.0142	2.3406	1.3329	0.3577	0.0975			

Material Description	USCS	AASHTO
○ Well graded sand with silt and gravel	SW-SM	

Project No. 05-05-0013- **Client:** Black & Veatch
Project: E.A.A (Reservoir)
○ **Source of Sample:** CB-0183 **Depth:** 18.5' **Sample Number:** 5

Date: ○

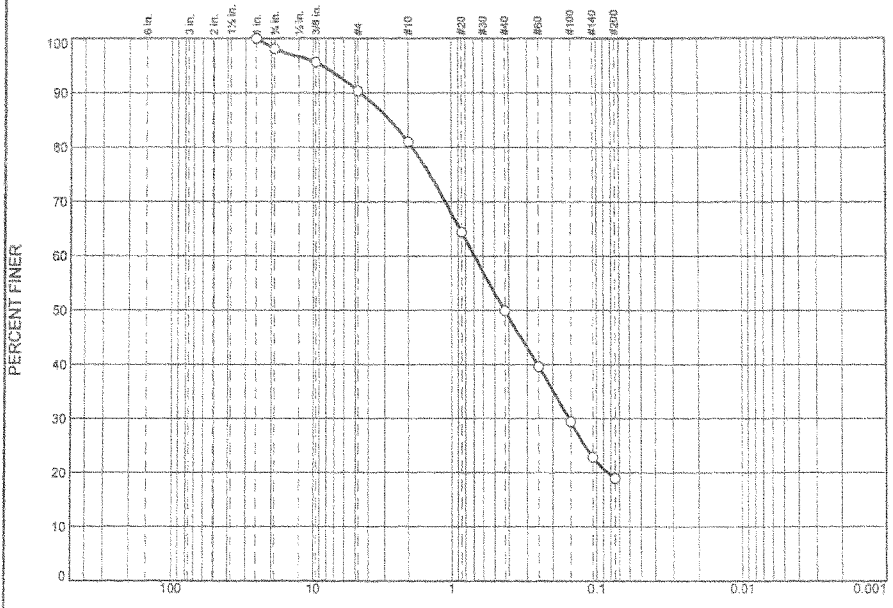
Nodarse & Associates, Inc.

Miami Lakes, FL

Remarks:
○ Moisture Content % 21.2 CP05-EAARS-CB-0278

Figure

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	2	8	9	31	31	19	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			2.7026	0.6923	0.4269	0.1541				

Material Description	USCS	AASHTO
○ Silty sand	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0183 Depth: 23.5' Sample Number: 6

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

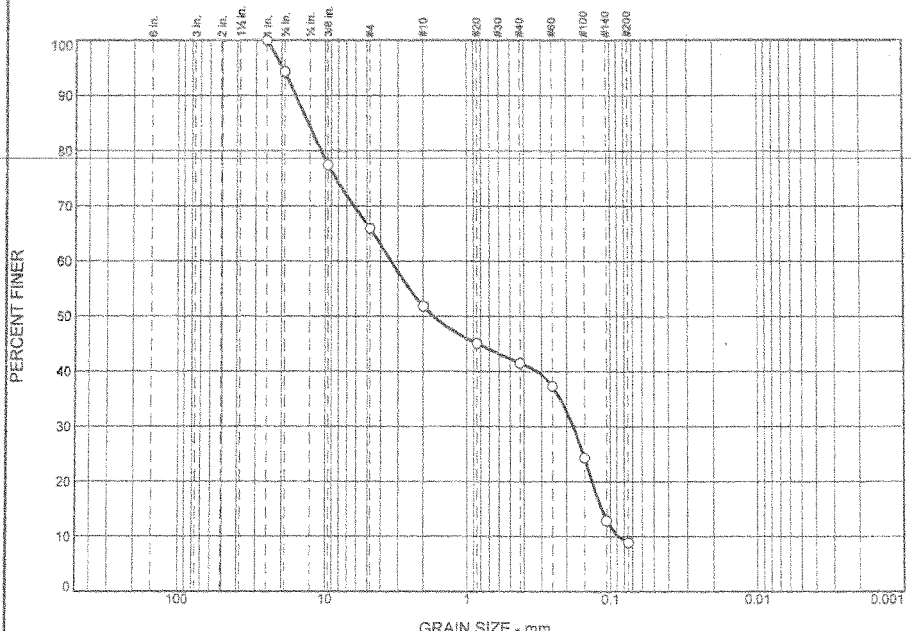
Remarks:

○ Moisture Content % 24.2 CP05-EAARS-CB-0278

Figure

Tested By: Carlos Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	6	28	14	10	33	9	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			13.0387	3.3463	1.7055	0.1794	0.1149	0.0883	0.11	37.90

Material Description	USCS	AASHTO
○ Well graded sand with silt and gravel	SW-SM	

Project No. 05-05-0013- Client: Black & Veatch
Project: E.A.A (Reservoir)
○ Source of Sample: CB-0183 Depth: 28.5' Sample Number: 7
Date: ○

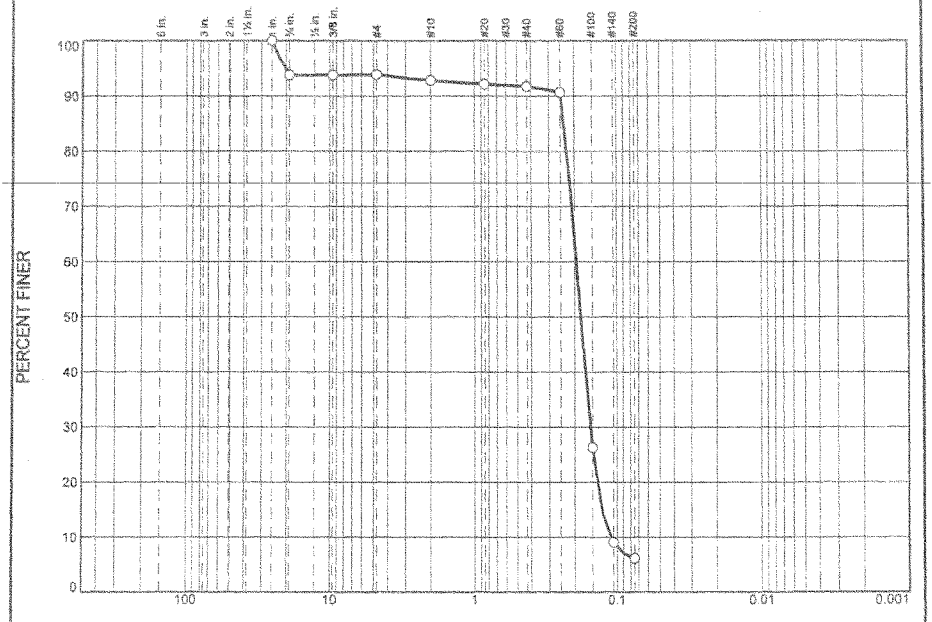
Nodarse & Associates, Inc.
Miami Lakes, FL

Remarks:
○ Moisture Content % 12.3 CP05-EAARS-CB-0278

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown July 2014

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	6	0	1	1	86	6	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2350	0.1937	0.1808	0.1552	0.1283	0.1110	1.12	1.75

Material Description	USCS	AASHTO
○ Poorly graded sand with silt	SP-SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

○ **Source of Sample:** CB-0183 **Depth:** 33.5' **Sample Number:** 8

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

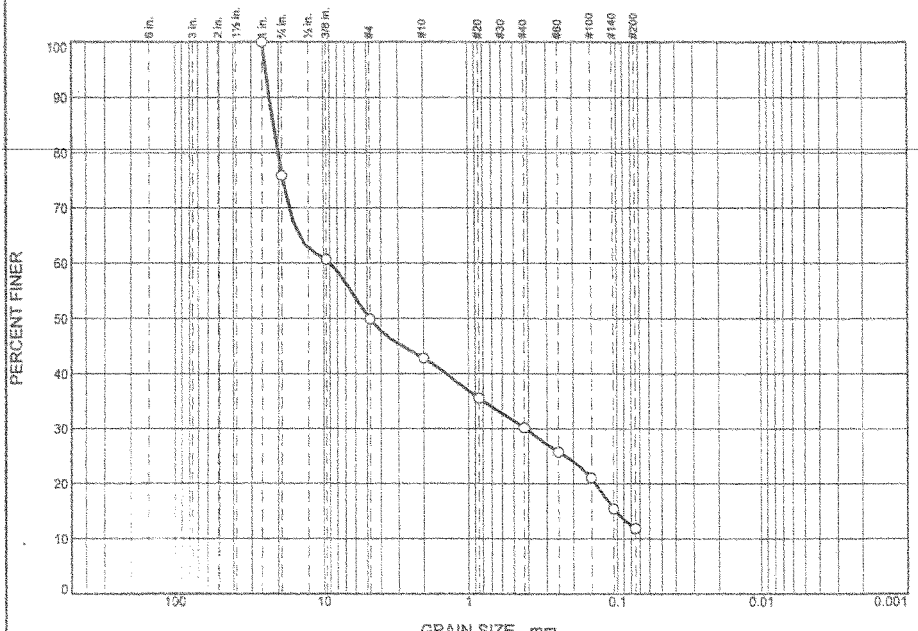
Remarks:

○ Moisture Content % 24.0 CP05-EAARS-CB-0278

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	24	26	7	13	18	12	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			21.5191	8.9225	4.7754	0.4160	0.1026			

Material Description	USCS	AASHTO
○ Poorly graded gravel with silt and sand	GP-GM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

○ **Source of Sample:** CB-0184 **Depth:** 0.0' **Sample Number:** 1

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

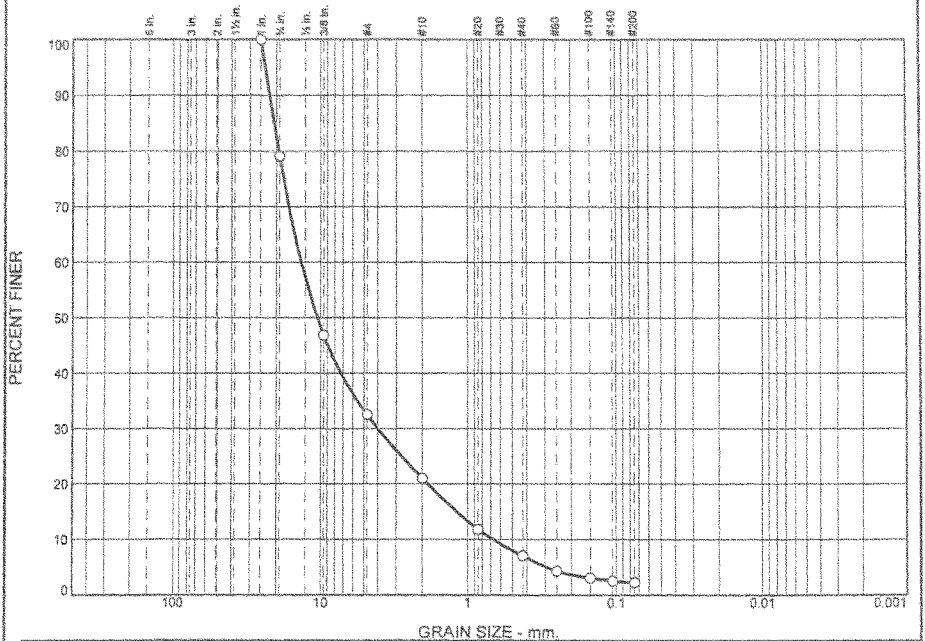
Remarks:

○ Moisture Content %11.0 CP05-EAARS-CB-0279 @ 0.0'

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	21	46	12	14	5	2	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			20.7582	13.5168	10.5011	3.9928	1.1866	0.6733	1.75	20.08

Material Description	USCS	AASHTO
○ Well graded gravel with sand	GW	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0185 Depth: 7.0' Sample Number: 3

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

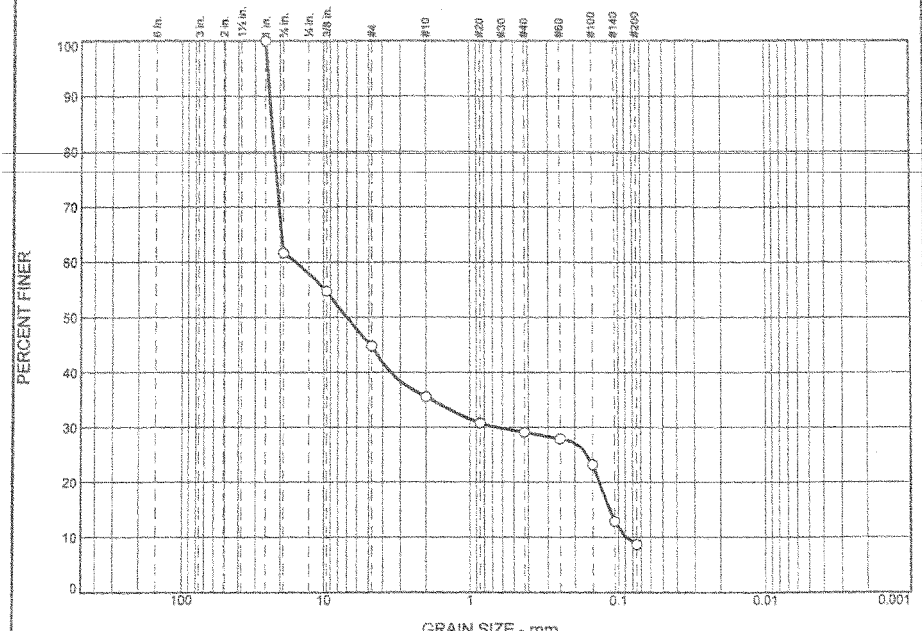
Remarks:

○ Moisture Content % 18.1 CP05-EAARS-CB-0280 @ 7.0'

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	38	17	9	7	20	9	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			22.9953	15.6024	6.9816	0.6584	0.1147	0.0888	0.31	175.63

Material Description	USCS	AASHTO
○ Poorly graded gravel with silt and sand	GP-GM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0185 Depth: 28.5' Sample Number: 7

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

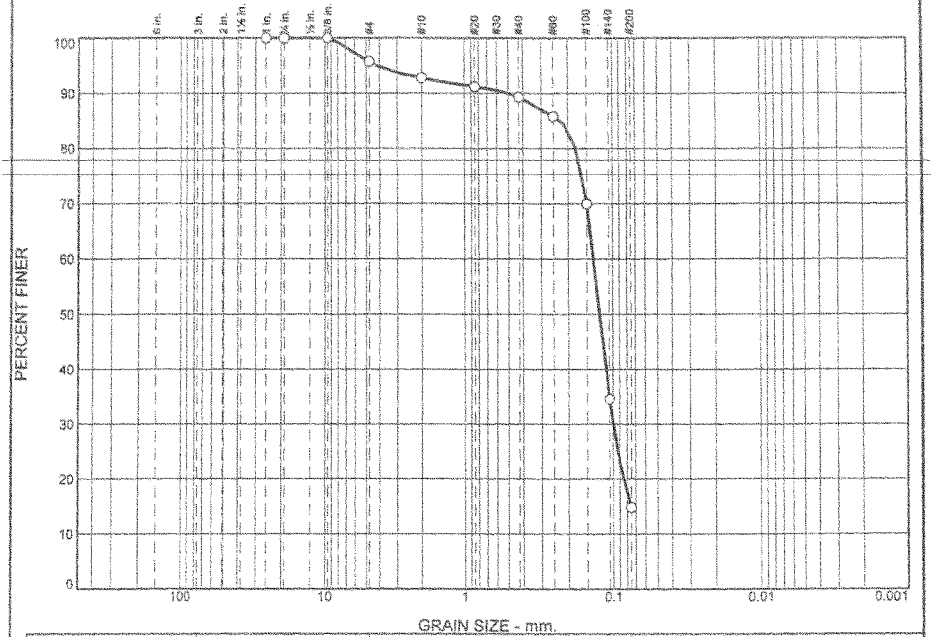
Remarks:

○ Moisture Content % 13.4 CP05-EAARS-CB-0280 @ 28.5'

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	4	3	4	74	15	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2232	0.1351	0.1232	0.1002	0.0753			

Material Description	USCS	AASHTO
○ Silty sand	SM	

Project No. 05-05-0013- Client: Black & Veatch
Project: E.A.A (Reservoir)
○ Source of Sample: CB-0185 Depth: 33.5' Sample Number: 8
Date: ○

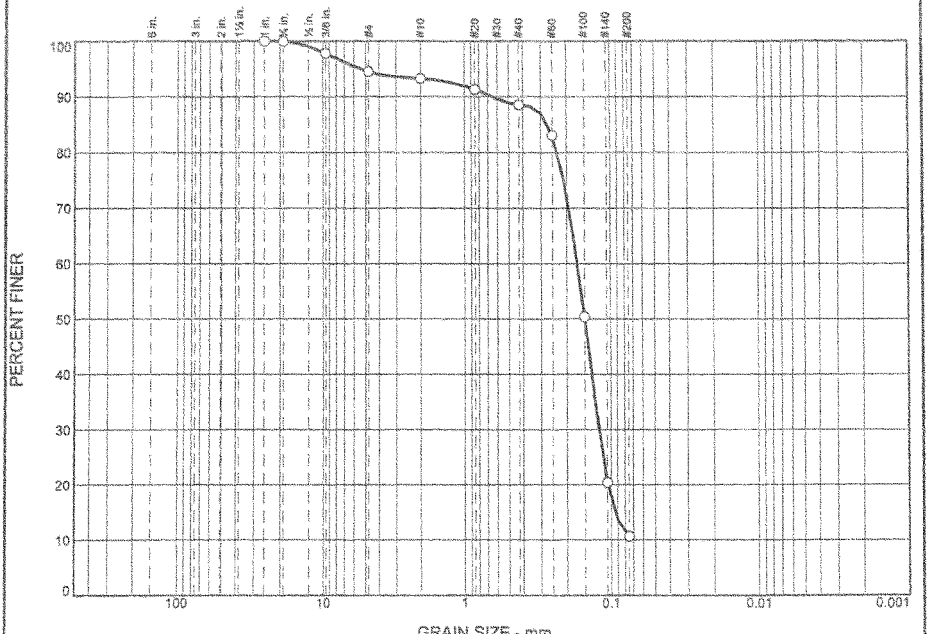
Nodarse & Associates, Inc.
Miami Lakes, FL

Remarks:
○ Moisture Content % 28.0 CP05-EAARS-CB-0280 @ 33.5'

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	5	2	4	78	11	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			0.2674	0.1677	0.1493	0.1205	0.0941			

Material Description	USCS	AASHTO
○ Poorly graded sand with silt	SP-SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

○ **Source of Sample:** CB-0185 **Depth:** 38.5' **Sample Number:** 9

Remarks:

○ Moisture Content % 24.3 CP05-EAARS-CB-0280 @ 38.5'

Date: ○

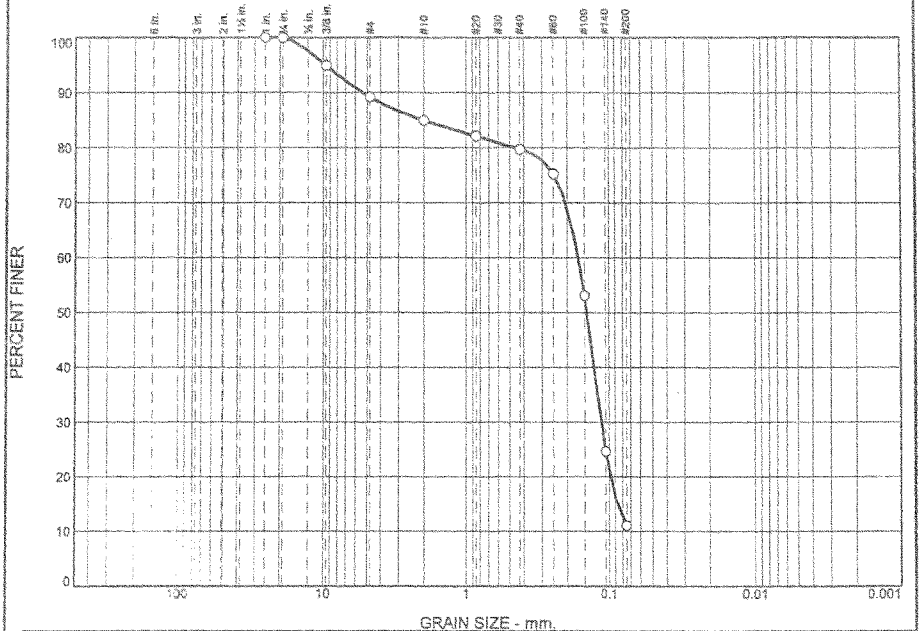
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	11	4	5	69	11	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			2.0119	0.1659	0.1442	0.1142	0.0862			

Material Description	USCS	AASHTO
○ Poorly graded sand with silt	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0185 Depth: 43.5' Sample Number: 10

Date: ○

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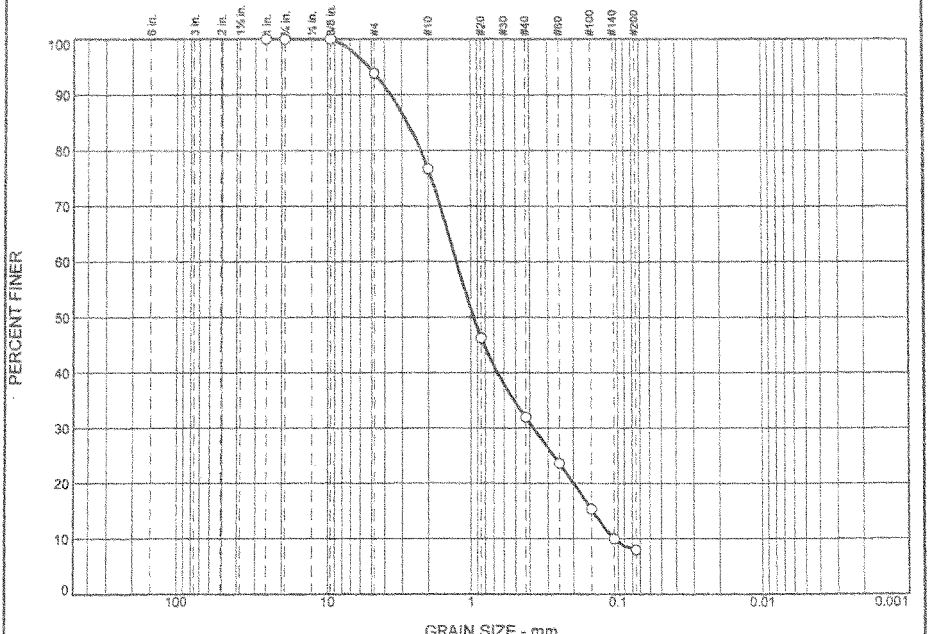
Remarks:

○ Moisture Content % 25.3 CP05-EAARS-CB-0280 @ 43.5'

Figure

Tested By: Leo J. Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	6	17	45	24	8	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			2.7478	1.2579	0.9556	0.3757	0.1471	0.1066	1.05	11.81

Material Description	USCS	AASHTO
○ Well graded sand with silt	SW-SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

○ **Source of Sample:** CB-0185 **Depth:** 48.5' **Sample Number:** 11

Date: ○

Nodarse & Associates, Inc.

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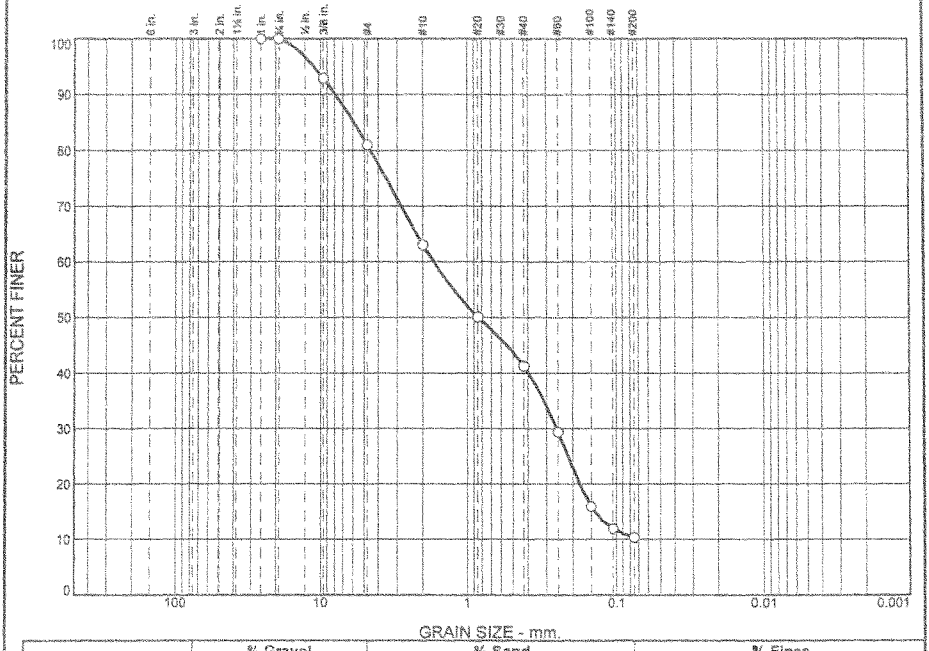
Remarks:

○ Moisture Content % 28.9 CP05-EAARS-CB-0280 @ 48.5'

Figure

Tested By: Pedro Echarraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	19	18	22	31	10	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			5.8773	1.6915	0.8432	0.2557	0.1419			

Material Description	USCS	AASHTO
○ Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch
Project: E.A.A (Reservoir)
○ Source of Sample: CB-0185 Depth: 68.5' Sample Number: 15
Date: ○

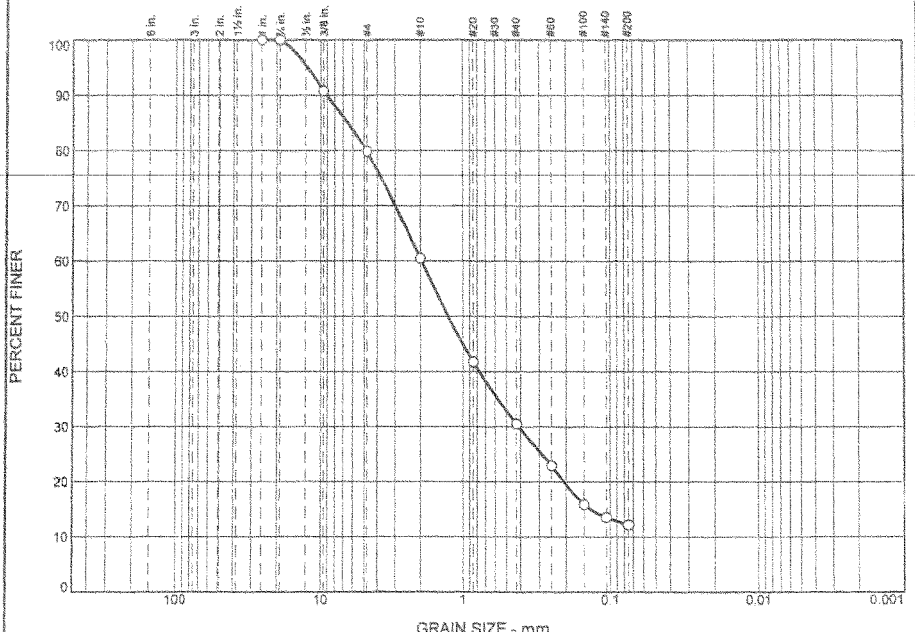
Remarks:
○ Moisture Content % 23.2 CP05-EAARS-CB-0280 @ 68.5'

Nodarse & Associates, Inc.
Miami Lakes, FL

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	20	20	29	19	12	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			6.4837	1.9618	1.2715	0.4095	0.1360			

Material Description	USCS	AASHTO
○ Well graded sand with silt and gravel	SW-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0185 Depth: 73.5' Sample Number: 16

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

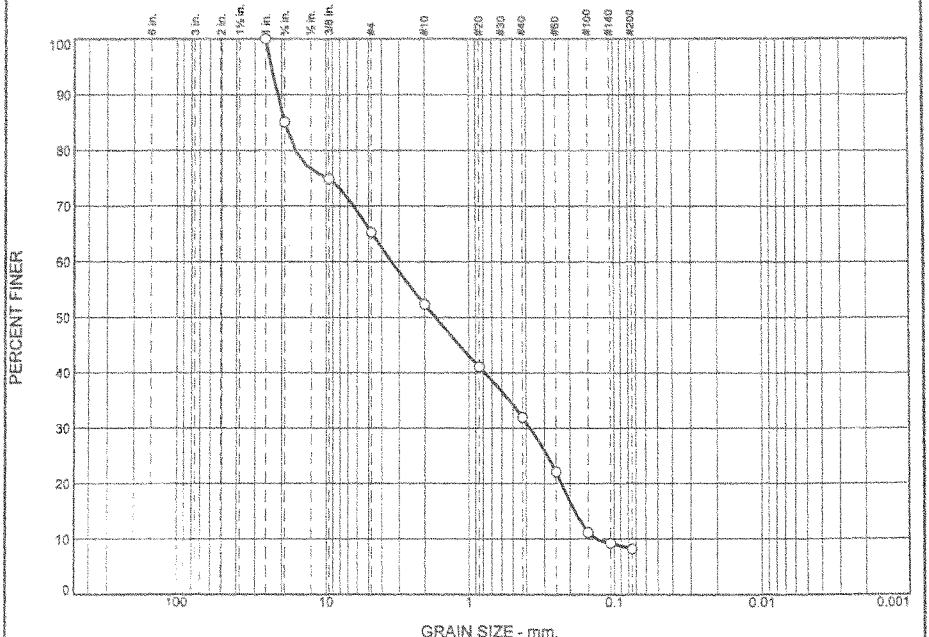
Remarks:

○ Moisture Content % 25.7 CP05-EAARS-CB-0280 @ 73.5'

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	15	20	13	20	24	8	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			18.9695	3.3903	1.6902	0.3753	0.1857	0.1322	0.31	25.64

Material Description	USCS	AASHTO
○ Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0185 Depth: 78.5' Sample Number: 17

Date: ○

Remarks:

○ Moisture Content % 19.4 CP05-EAARS-CB-0280 @ 78.5'

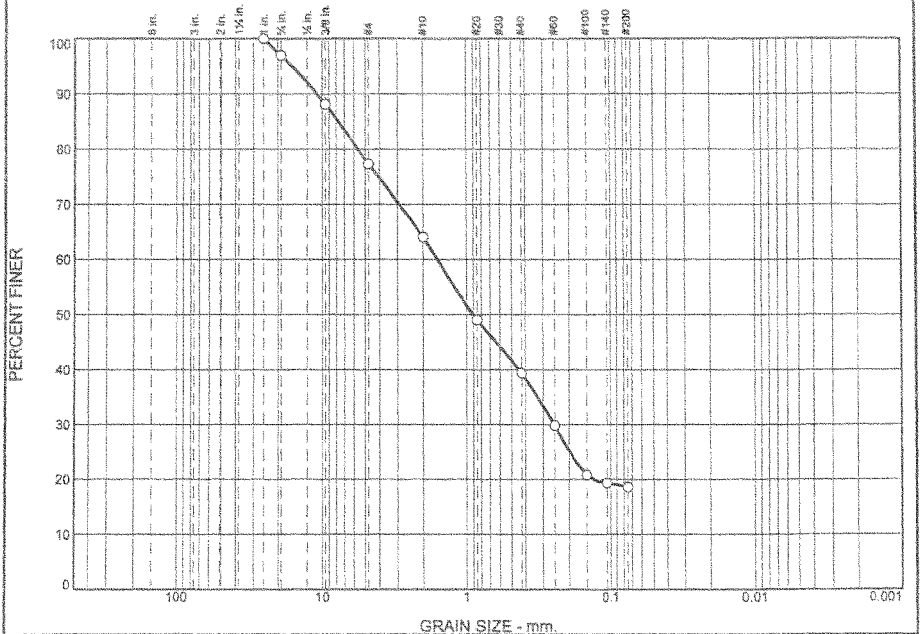
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	3	20	13	25	20	19	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			7.7115	1.5914	0.9036	0.2518				

Material Description	USCS	AASHTO
○ Silty sand with gravel	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0185 Depth: 83.5' Sample Number: 18

Date: ○

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Miami Lakes, FL

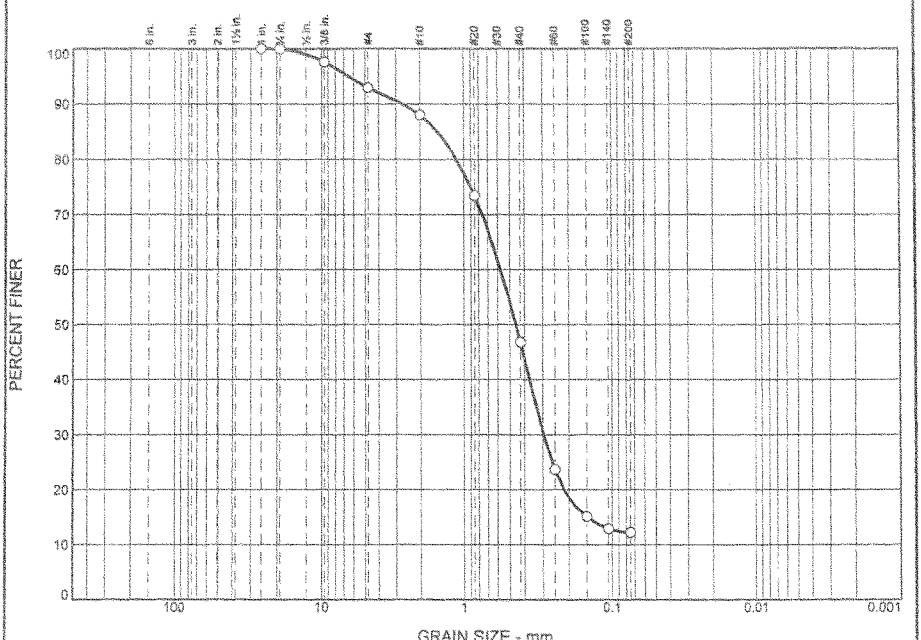
Remarks:

○ Moisture Content % 21.9 CP05-EAARS-CB-0280 @ 83.5'

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○ 0	0	7	5	41	35	12	

LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○		1.5091	0.5746	0.4550	0.2965	0.1471			

Material Description	USCS	AASHTO
○ Well graded sand with silt	SW-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0185 Depth: 88.5' Sample Number: 19

Date: ○

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Miami Lakes, FL

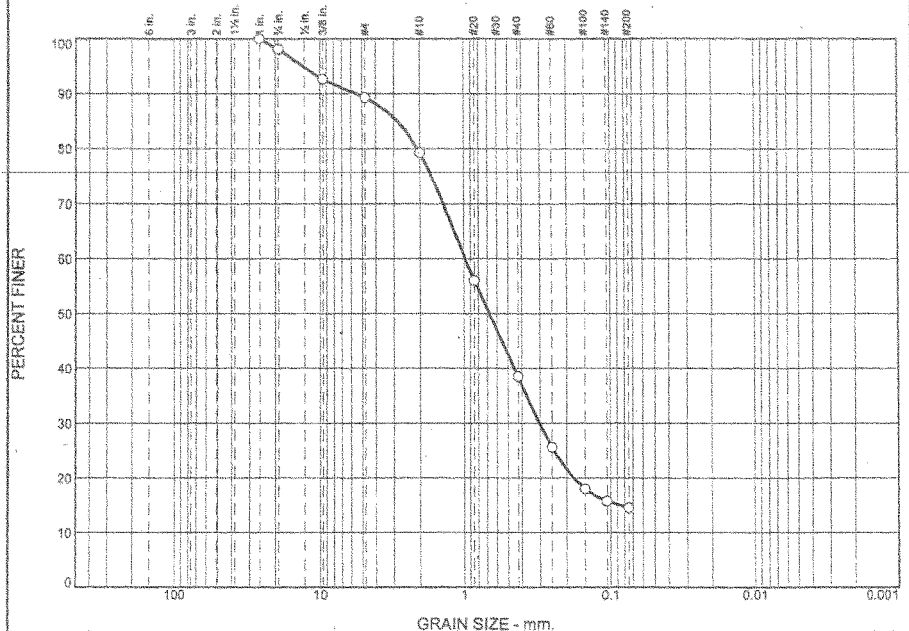
Remarks:

○ Moisture Content % 23.1 CP05-EAARS-CB-0280 @ 88.5'

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	2	9	10	40	24	15	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			2.8337	0.9776	0.6751	0.3031	0.0858			

Material Description	USCS	AASHTO
○ Silty sand	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0185 Depth: 93.5' Sample Number: 20

Date: ○

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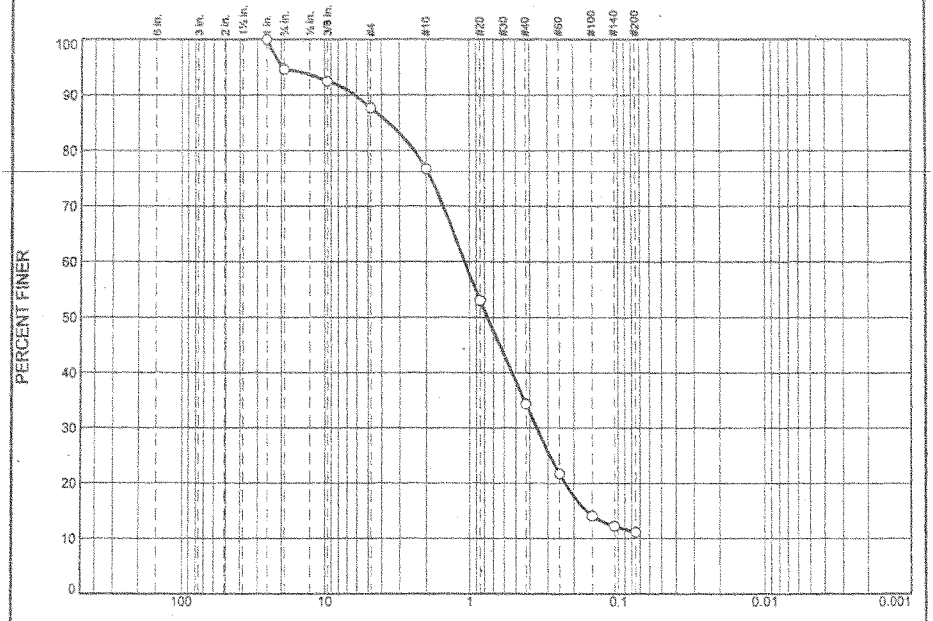
Remarks:

○ Moisture Content % 24.1 CP05-EAARS-CB-0280 @ 93.5'

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	5	7	11	43	23	11	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			3.5493	1.0734	0.7647	0.3575	0.1642			

Material Description	USCS	AASHTO
○ Poorly graded sand with silt	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0185 Depth: 98.5' Sample Number: 21

Date: ○

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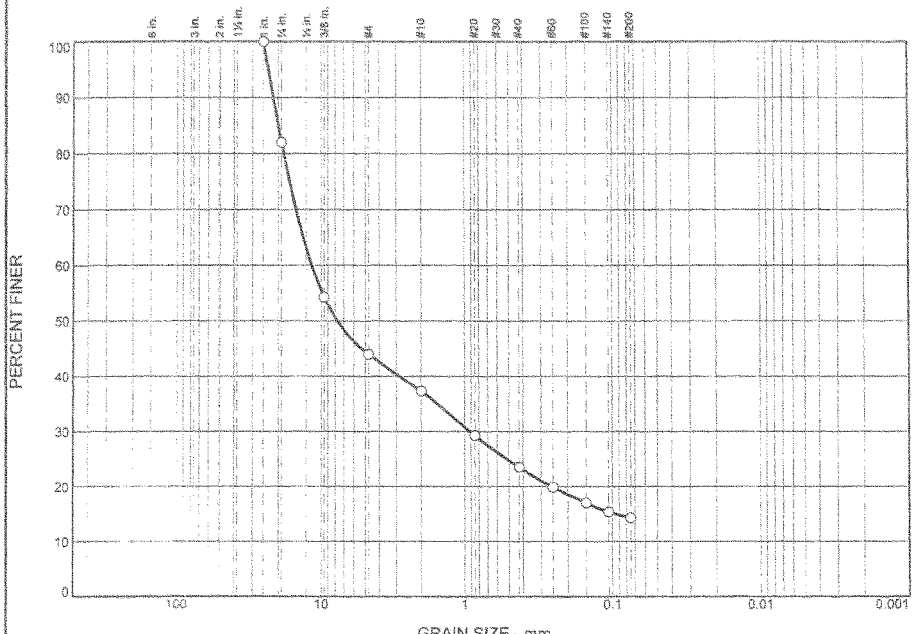
Remarks:

○ Moisture Content % 23.8 CP05-EAARS-CB-0280 @ 98.5'

Figure

Tested By: Maraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	18.0	38.0	6.7	13.8	9.2	14.3	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			20.0393	11.6207	7.7570	0.9163	0.0948			

Material Description	USCS	AASHTO
○ Silty gravel with sand	GM	

Project No. 05-05-0013- **Client:** Black & Veatch
Project: E.A.A (Reservoir)W/O#6

○ **Source of Sample:** CB164 **Depth:** 5.0'-10.0' **Sample Number:** CB164

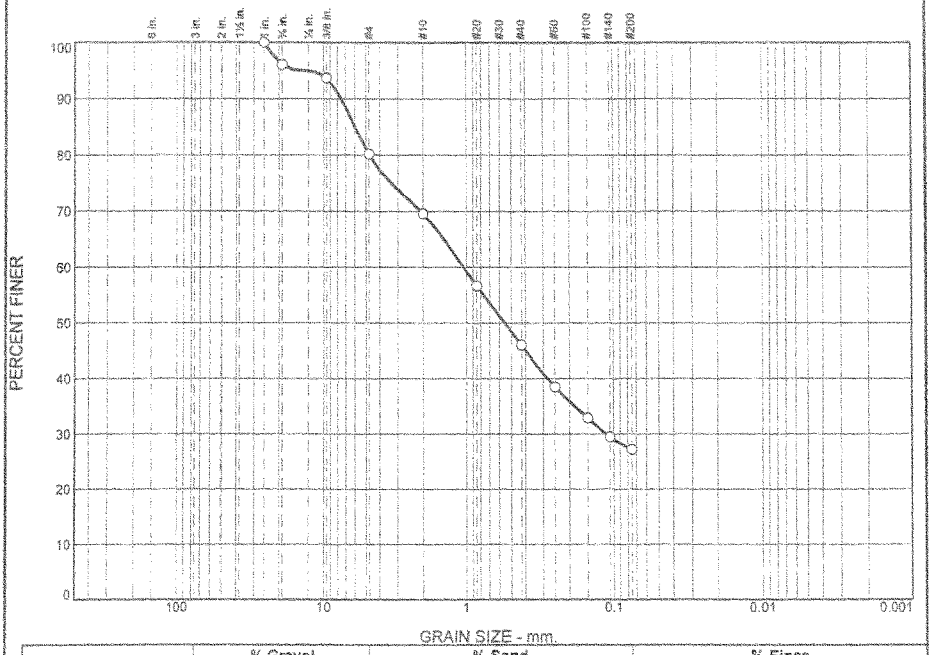
Nodarse & Associates, Inc.
Miami Lakes, FL

Remarks:
○ Moisture Content % 5.7 CP05-EAARS-VB-0282

Figure

Tested By: Ballard Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	3.9	15.9	10.6	23.5	18.9	27.2	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			5.9549	1.0430	0.5522	0.1128				

Material Description	USCS	AASHTO
○ Silty sand with gravel	SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ **Source of Sample:** CB164 **Depth:** 10.0'-15.0' **Sample Number:** CB164

Remarks:

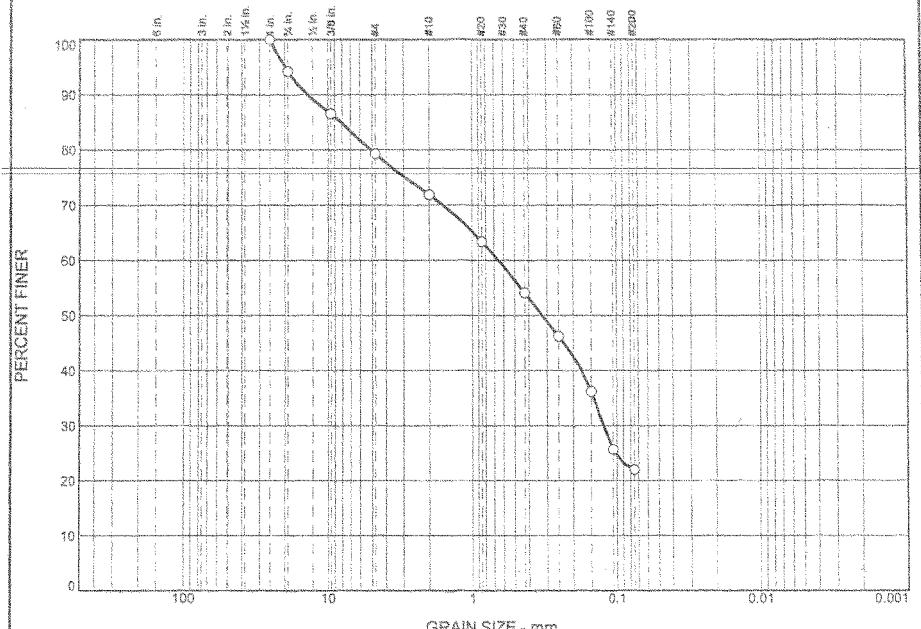
○Moisture Content % 21.4 CP05-EAARS-VB-0282

Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	6	15	7	18	32	22	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			8.1303	0.6480	0.3215	0.1237				

Material Description	USCS	AASHTO
○ Silty sand with gravel	SM	

Project No. 05-03-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0164 Depth: 15' to 30'

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

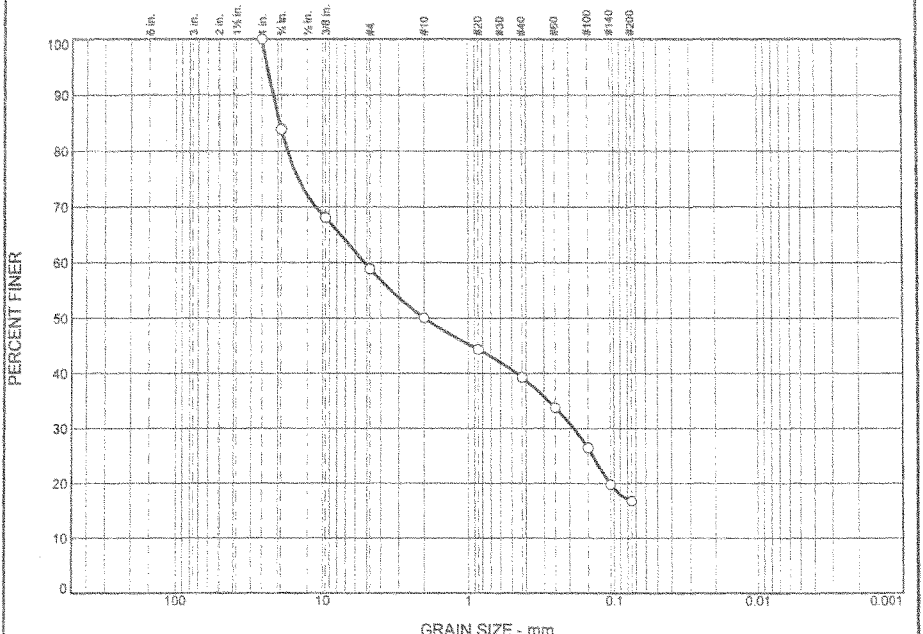
Remarks:

○Moisture Content %20.0 CP65-EAARS-VB-0282

Figure

Tested By: Jose Camaraza Checked By: Kevin Leung July 2014

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	16.1	25.0	8.9	10.7	22.5	16.8	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			19.4947	5.1674	1.9899	0.1850				

	Material Description	USCS	AASHTO
○	Silty sand with gravel	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Source of Sample: CB164 Depth: 30.0'-35.0 Sample Number: CB164

Remarks:

○ Moisture Content % 7.5 CP05-EAARS-VB-0282

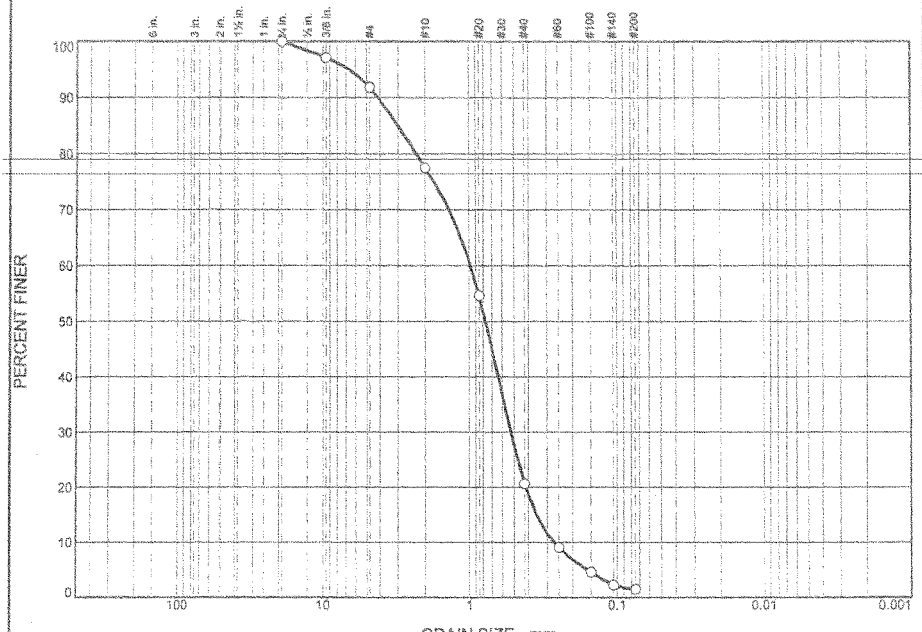
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: BKA Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	8.1	14.4	56.9	19.1	1.5	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			3.0098	0.9722	0.7703	0.5245	0.3541	0.2694	1.05	3.61

Material Description	USCS	AASHTO
○ Well graded sand	SW	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Source of Sample: CB164 Depth: 45.0'-50.0' Sample Number: CB164

Remarks:

○ Moisture Content % 14.0 CP05-EAARS-VB-0282

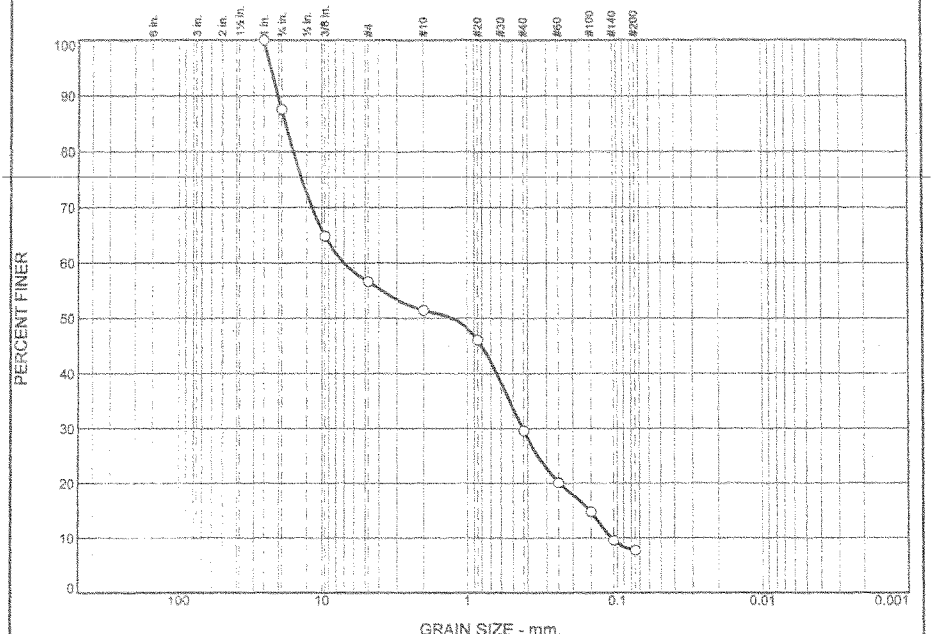
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: ESOSA Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	12.4	31.0	5.2	21.8	21.9	7.7	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			17.8777	7.0260	1.2499	0.4323	0.1524	0.1100	0.24	63.87

Material Description	USCS	AASHTO
○ Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Source of Sample: CB164 Depth: 55.0'-60.0' Sample Number: CB164

Remarks:

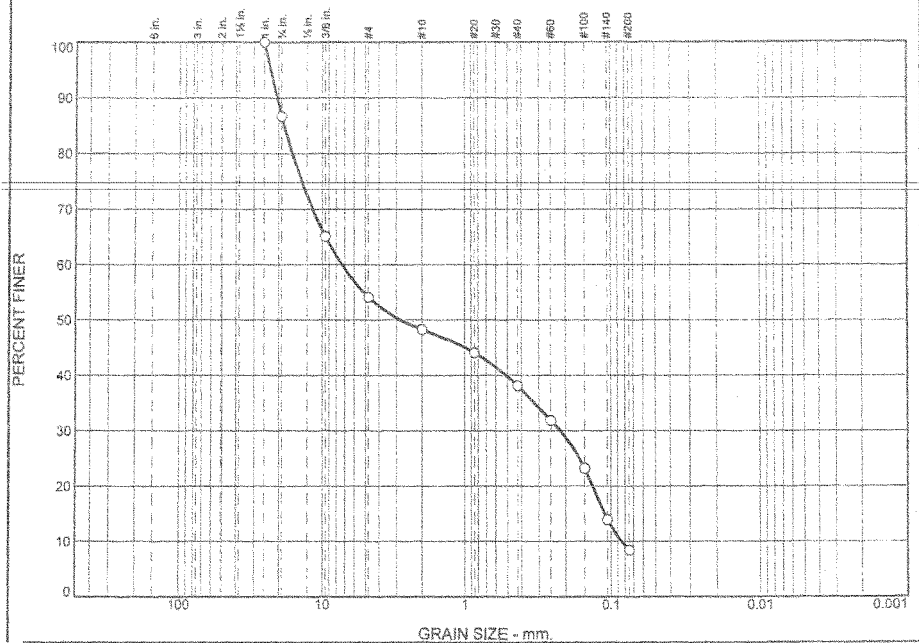
○ Moisture Content % 10.2 CP05-EAARS-VB-0282

Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	13	33	6	10	30	8	

LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
		18.2916	7.3217	2.8133	0.2167	0.1109	0.0847	0.08	86.41

Material Description	USCS	AASHTO
Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

Source of Sample: CB-0164 **Depth:** 60' to 65'

Date:

Nodarse & Associates, Inc.

Miami Lakes, FL

Remarks:

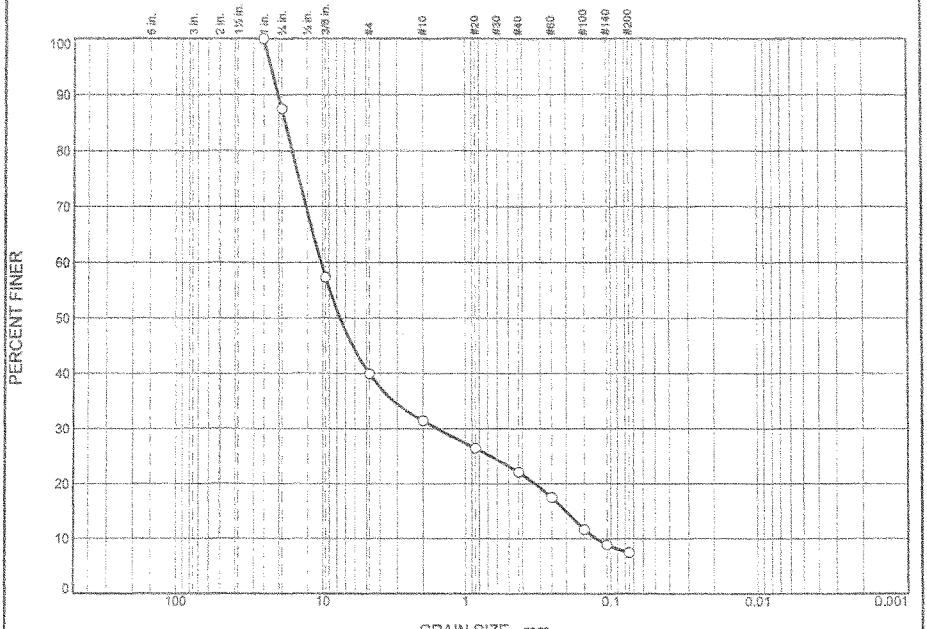
Moisture Content % 11.7

CP05-EAARS-VB-0282

Figure

Tested By: Pedro Camaraza Checked By: Kevin Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	12.4	47.6	8.6	9.3	14.7	7.4	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			18.0005	10.2300	7.5847	1.5879	0.2011	0.1252	1.97	81.68

Material Description	USCS	AASHTO
○ Poorly graded gravel with silt	GP-GM	

Project No. 05-05-0013- Client: Black & Veatch
Project: E.A.A (Reservoir)W/O#6

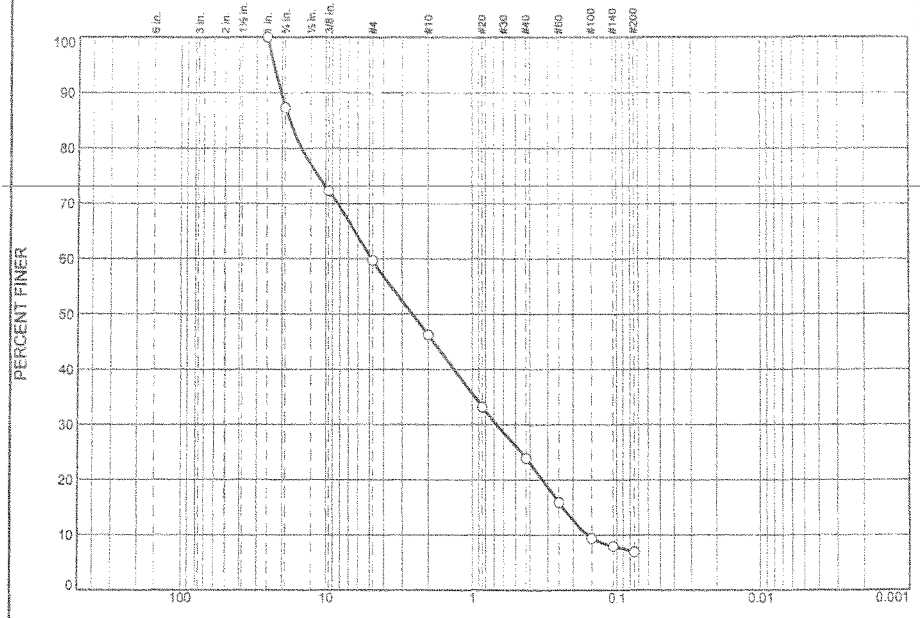
○ Source of Sample: CB164 Depth: 70.0'-75.0' Sample Number: CB164

Remarks:
○ Moisture Content % 7.0 CP05-EAARS-VB-0282

Nodarse & Associates, Inc.
Miami Lakes, FL

Figure

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	13	27	14	22	17	7	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			17.8046	4.8353	2.5699	0.6715	0.2356	0.1609	0.58	30.06

	Material Description	USCS	AASHTO
○	Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

○ **Source of Sample:** CB-0164 **Depth:** 80' to 85'

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

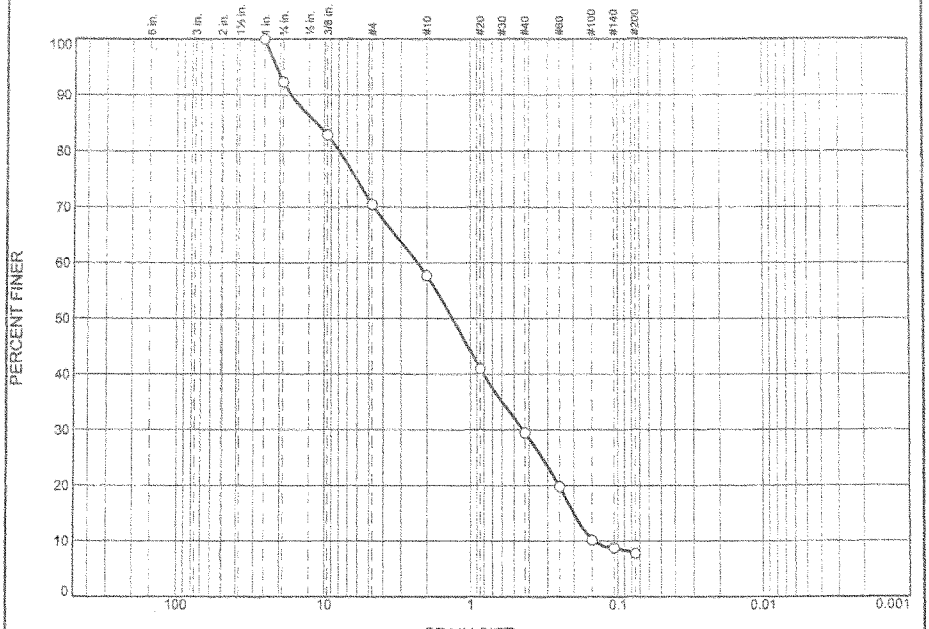
Remarks:

○Moisture Content % 11.0 CP05-EAARS-VB-0282

Figure

Tested By: Pedro Camaraza **Checked By:** Kevin Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	8	22	12	29	21	8	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			11.3124	2.3166	1.3336	0.4398	0.2004	0.1478	0.56	15.67

Material Description	USCS	AASHTO
○ Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

○ **Source of Sample:** CB-0164 **Depth:** 85' to 90'

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

Remarks:

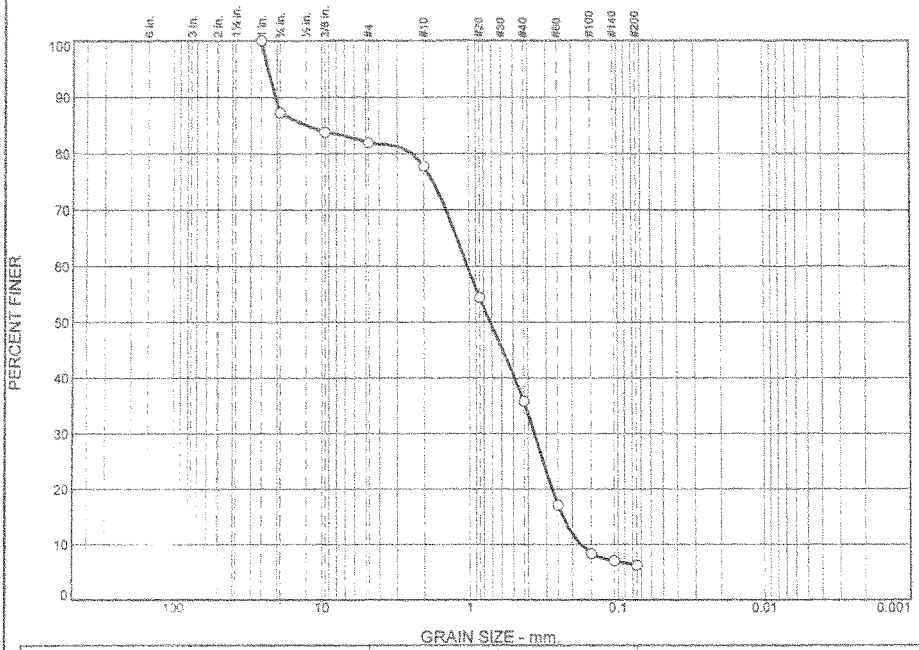
○ Moisture Content % 11.3

CP05-EAARS-VB-0282

Figure

Tested By: Pedro Camaraza Checked By: Kevin Leung

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	12.7	5.3	4.2	42.0	29.6	6.2	

LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
		12.4963	1.0282	0.7182	0.3608	0.2311	0.1767	0.72	5.82

Material Description	USCS	AASHTO
Poorly graded sand with silt	SP-SM	

Project No. 05-05-0015- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

Source of Sample: CB164 Depth: 95.0'-100.0' Sample Number: CB164

Remarks:

Moisture Content % 21.9 CP05-EAARS-VB-0282

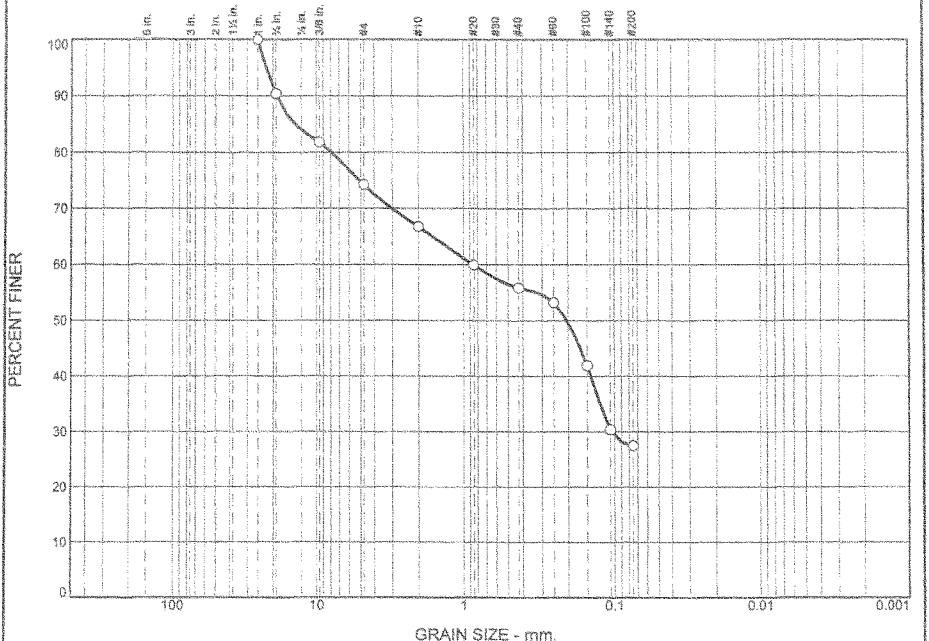
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	9.6	16.2	7.4	11.0	28.3	27.5	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			14.1219	0.8574	0.2026	0.1039				

Material Description	USCS	AASHTO
○ Silty sand with gravel	SM	

Project No. 05-05-0013- Client: Black & Veatch
Project: E.A.A (Reservoir)W/O#6

○ Sample Source: CB164 Depth: 115.0'-120.0' Sample No.: CB164

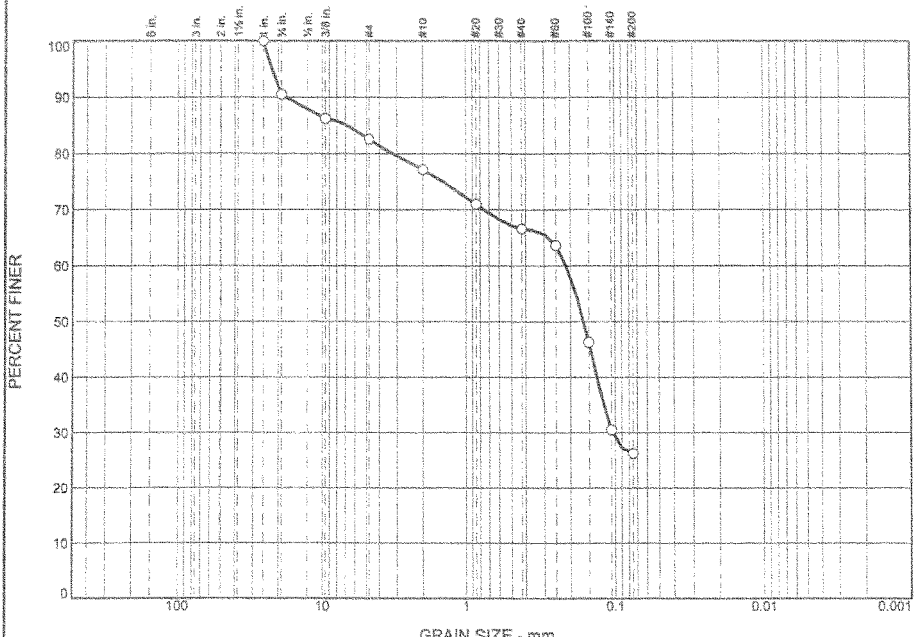
Remarks:
○ Moisture Content % 19.7 CP05-EAARS-VB-0282

Nodarse & Associates, Inc.
Miami Lakes, FL

Figure

Tested By: [illegible] Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	9.5	7.9	5.5	10.5	40.3	26.3	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			6.8095	0.2131	0.1623	0.1041				

Material Description	USCS	AASHTO
○ Silty sand with gravel	SM	

Project No. 03-05-0013- Client: Black & Veatch
Project: E.A.A (Reservoir)W/O#6

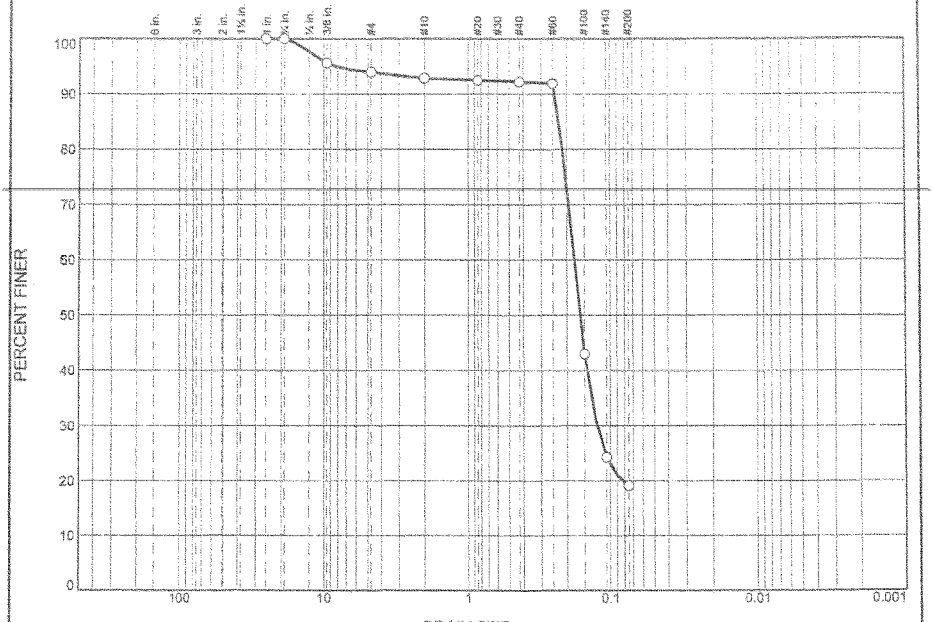
○ Sample Source: CB164 Depth: 120.0'-125.0' Sample No.: CB164

Remarks:
○ Moisture Content % 22.0 CP05-EAARS-VB-0282

Nodarse & Associates, Inc.
Miami Lakes, FL

Figure

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	6	1	1	73	19	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2266	0.1776	0.1616	0.1233				

Material Description	USCS	AASHTO
○ Silty sand	SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

○ **Source of Sample:** CB-0164 **Depth:** 125' to 130'

Date: ○

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Remarks:

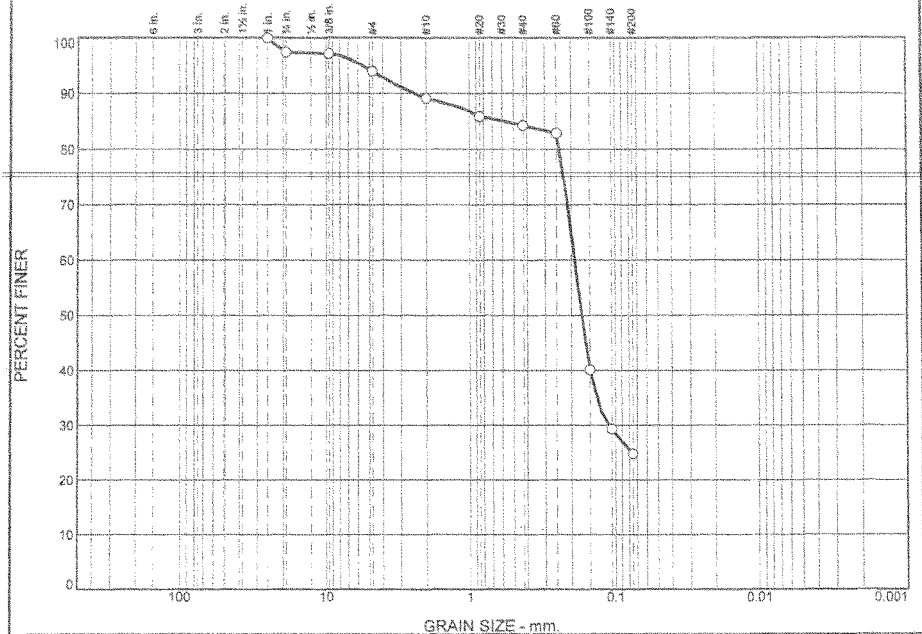
○ Moisture Content % 18.7

CP05-EAARS-VB-0282

Figure

Tested By: Pedro Camaraza **Checked By:** Kevin Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	2.6	3.4	4.8	4.9	59.5	24.8	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			0.5734	0.1893	0.1702	0.1111				

Material Description	USCS	AASHTO
○ Silty sand	SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ **Source of Sample:** CB164 **Depth:** 130'-135' **Sample Number:** CB164

Remarks:

○ Moisture Content % 21.1 CP05-EAARS-VB-0282

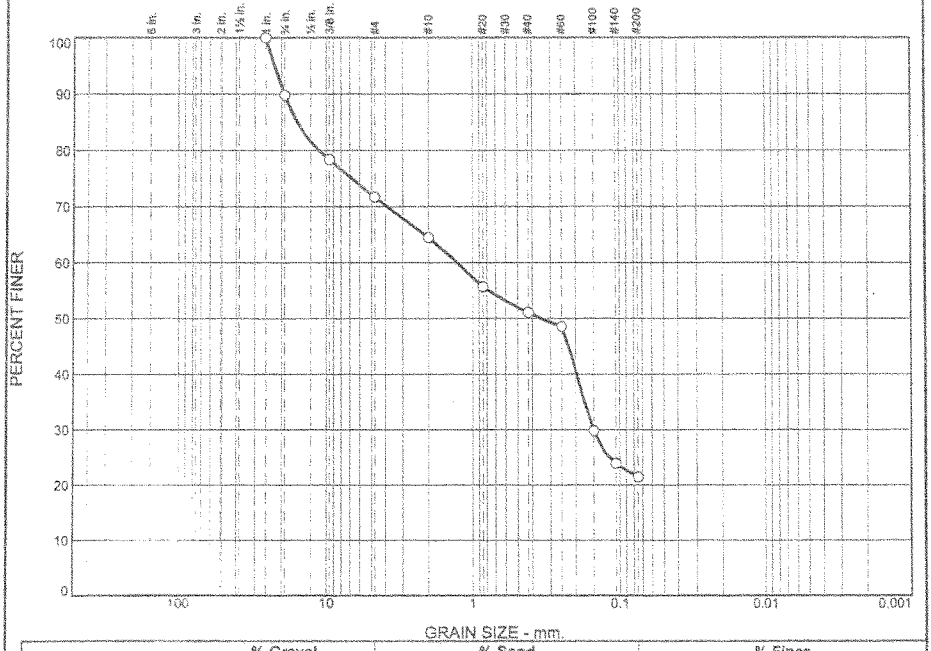
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: JP Rand Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	10.2	18.1	7.2	13.4	29.6	21.5	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			15.6596	1.2777	0.3461	0.1510				

Material Description	USCS	AASHTO
○ Silty sand with gravel	SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ **Sample Source:** CB164 **Depth:** 135.0'-140.0' **Sample No.:** CB164

Remarks:

○ Moisture Content % 20.9 CP05-EAARS-VB-0282

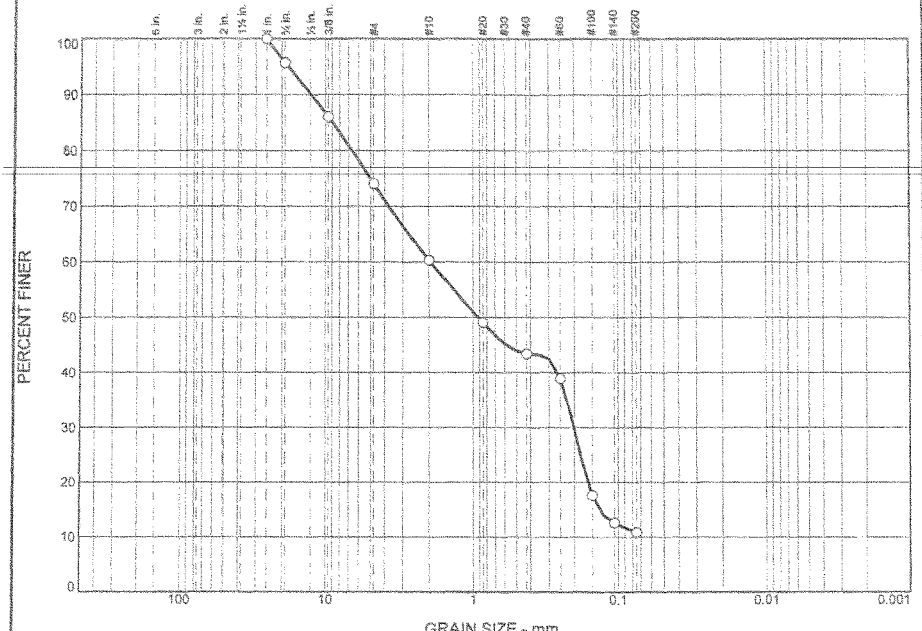
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: Dmoski Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	4.3	21.6	13.8	16.9	32.5	10.9	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			8.9081	1.9524	0.9175	0.2006	0.1342			

Material Description	USCS	AASHTO
○ Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- **Client:** Black & Veatch
Project: E.A.A (Reservoir)W/O#6

○ **Sample Source:** CB164 **Depth:** 145.0'-150.0' **Sample No.:** CB164

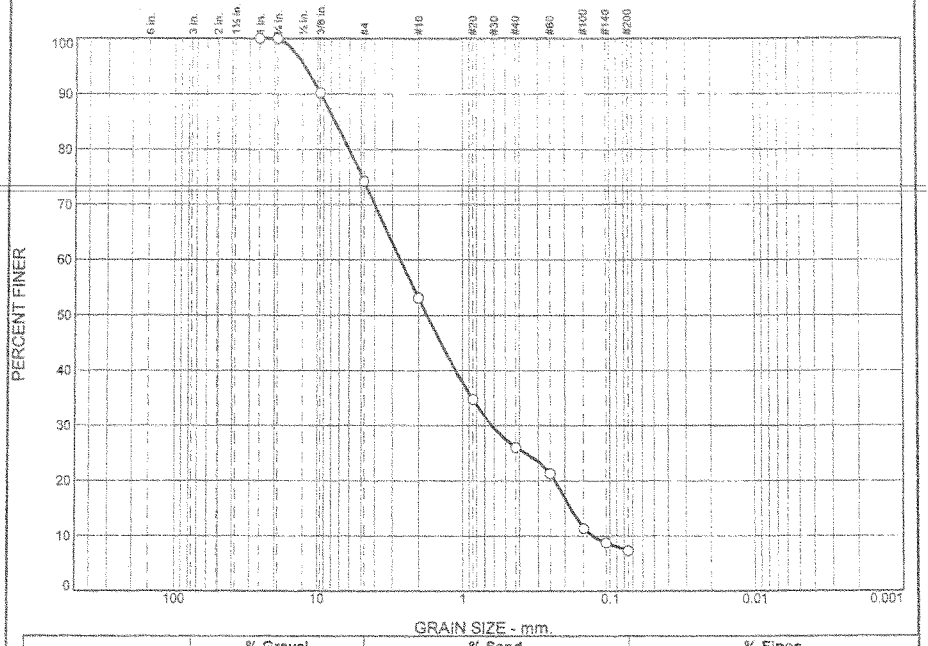
Remarks:
○ Moisture Content % 12.7 CP05-EAARS-VB-0282

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Miami Lakes, FL

Figure

Tested By: Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	26	21	27	19	7	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			7.5015	2.6549	1.7533	0.6233	0.1832	0.1324	1.10	20.04

Material Description	USCS	AASHTO
○ Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch
Project: E.A.A (Reservoir)
○ Source of Sample: CB-0164 Depth: 150' to 155'

Date: ○

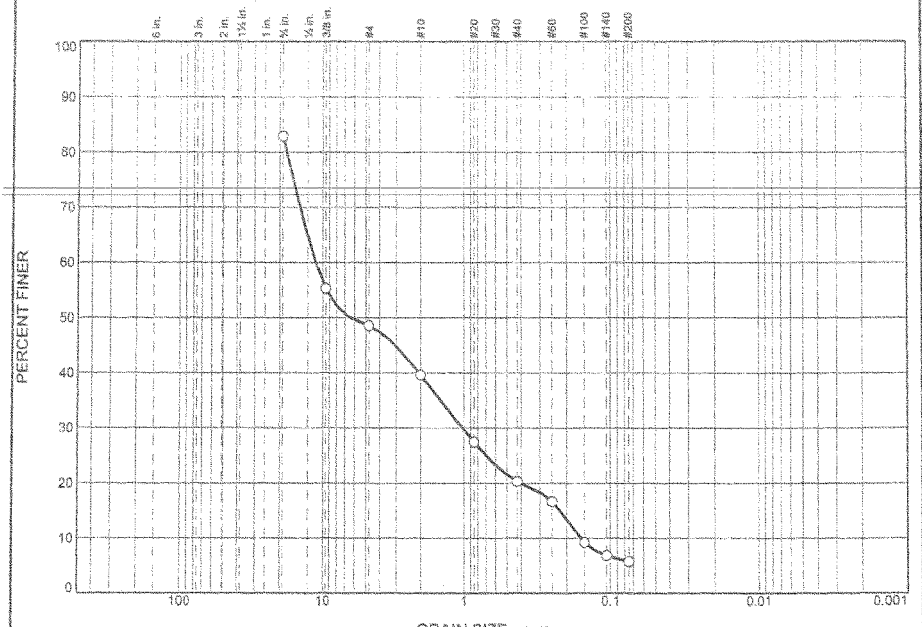
Nodarse & Associates, Inc.
Miami Lakes, FL

Remarks:
○ Moisture Content % 14.9
CP05-EAARS-VB-0282

Figure

Tested By: Pedro Camaraza Checked By: Kevin Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○			34	9	20	14	6	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○				11.1963	6.4125	1.0235	0.2215	0.1599	0.59	70.03

Material Description	USCS	AASHTO
○ Poorly graded gravel with silt and sand	GP-GM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0164 Depth: 155' to 160'

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

Remarks:

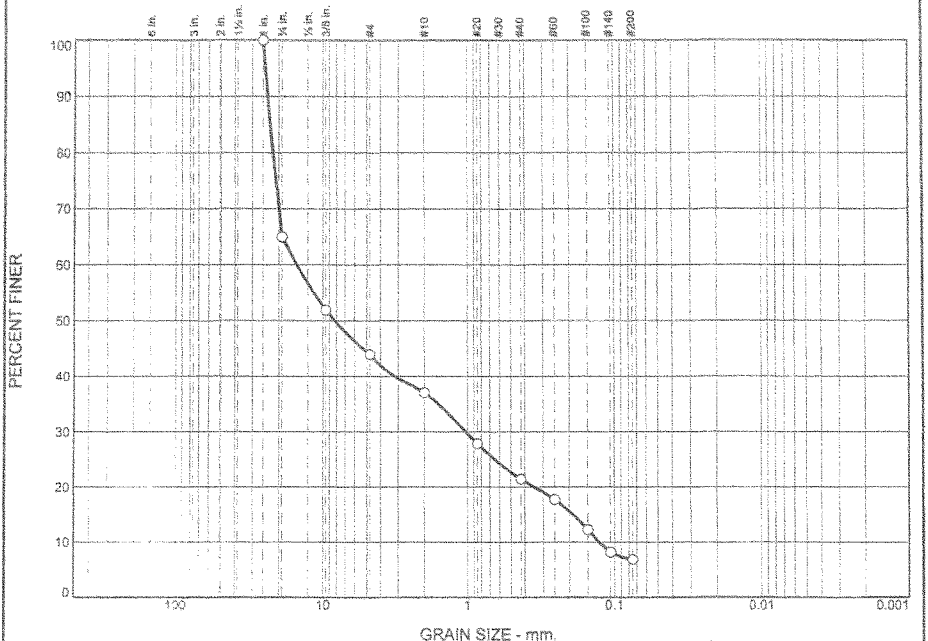
○ Moisture Content % 9.9

CP05-EAARS-VB-0282

Figure

Tested By: Pedro Camaraza Checked By: Kevin Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	35.0	21.1	6.8	15.6	14.7	6.8	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			22.7402	15.0819	8.2175	1.0253	0.1889	0.1262	0.55	119.52

Material Description	USCS	AASHTO
○ Poorly graded gravel with silt and sand	GP-GM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Sample Source: CB164 Depth: 165.0'-170.0' Sample No.: CB164

Remarks:

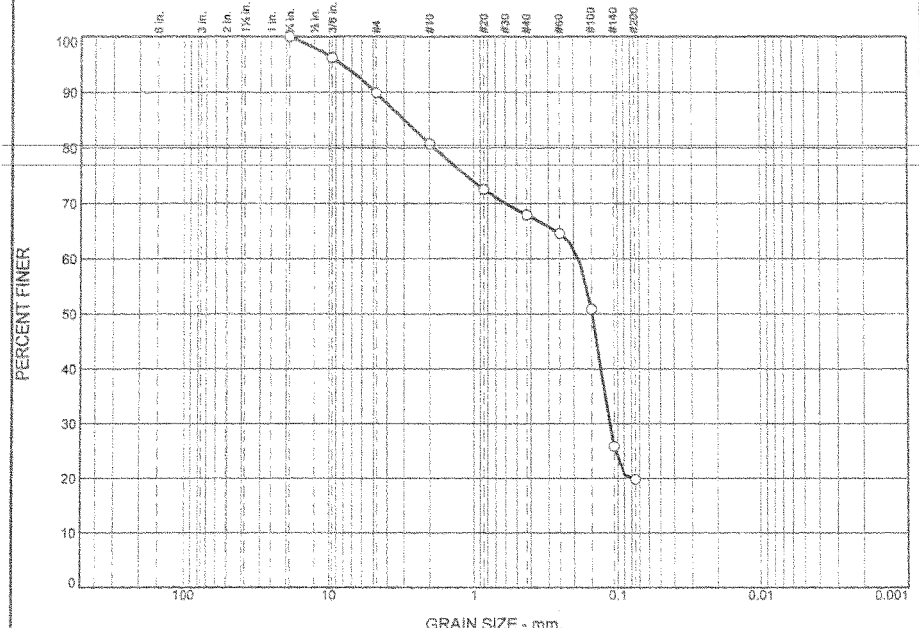
○ Moisture Content % 13.8 CP05-EAARS-VB-0282

Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	10.1	9.1	12.9	48.1	19.8	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			2.9826	0.1836	0.1480	0.1136				

Material Description	USCS	AASHTO
○ Silty sand with gravel	SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ **Sample Source:** CB164 **Depth:** 180.0'-185.0' **Sample No.:** CB164

Nodarse & Associates, Inc.

Miami Lakes, FL

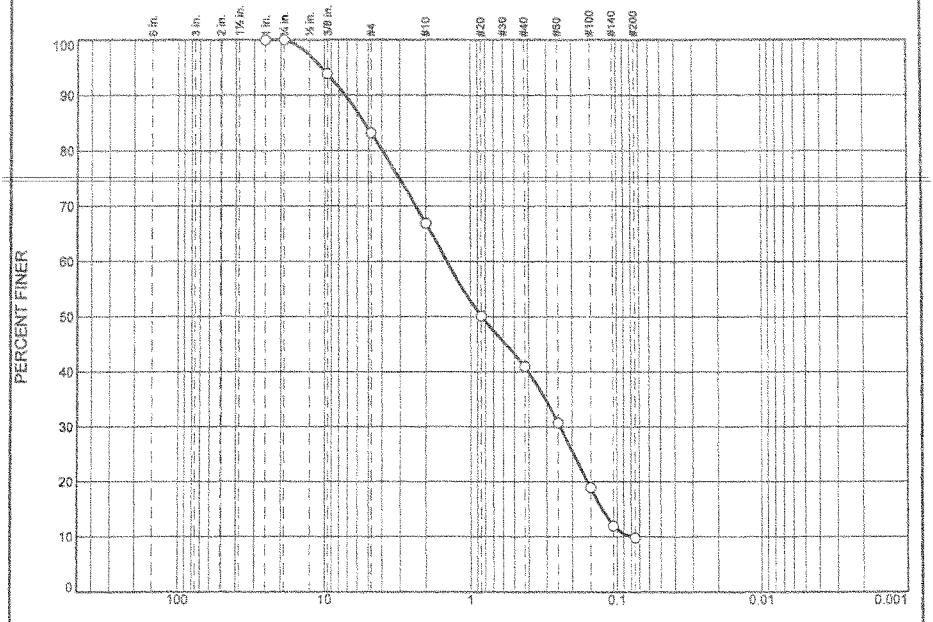
Remarks:

○Moisture Content % 19.6 CP05-EAARS-VB-0282

Figure

Tested By: BulGOK Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	17	16	26	31	10	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_u
○			5.2765	1.4443	0.8436	0.2419	0.1263	0.0804	0.50	17.96

Material Description	USCS	AASHTO
○ Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0185 Depth: 53.5' Sample Number: 12

Date: ○

Nodarse & Associates, Inc.

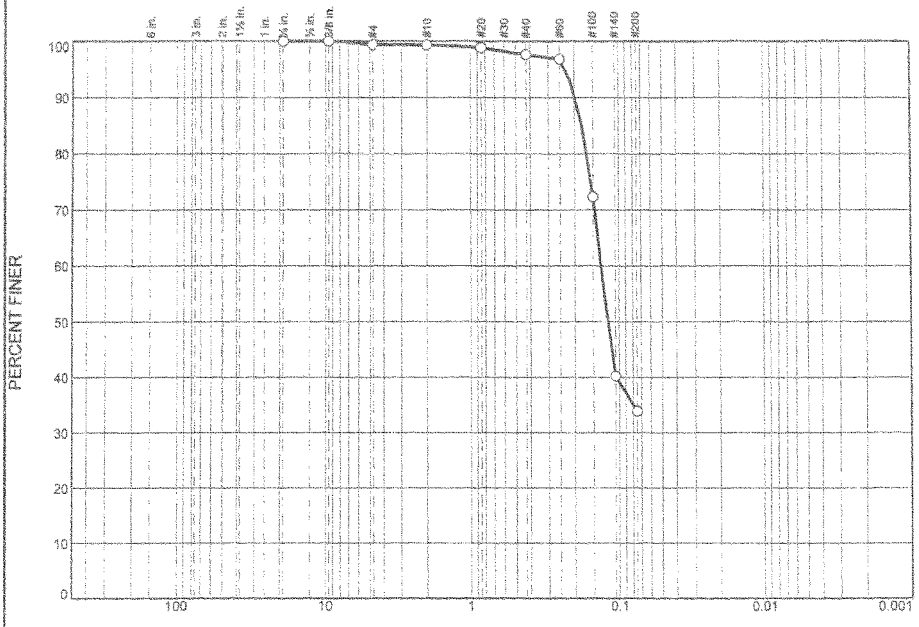
Miami Lakes, FL

Remarks:

○ Moisture Content % 22.6 CP05-EAARS-CB-0280 @ 53.5'

Figure

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.6	0.1	1.6	63.8	33.9	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			0.1781	0.1324	0.1198					

	Material Description	USCS	AASHTO
○	Sandy silt	ML	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Sample Source: CB164 Depth: 200.0'-205.0' Sample No.: CB164

Remarks:

○ Moisture Content % 20.2 CP05-EAARS-VB-0282

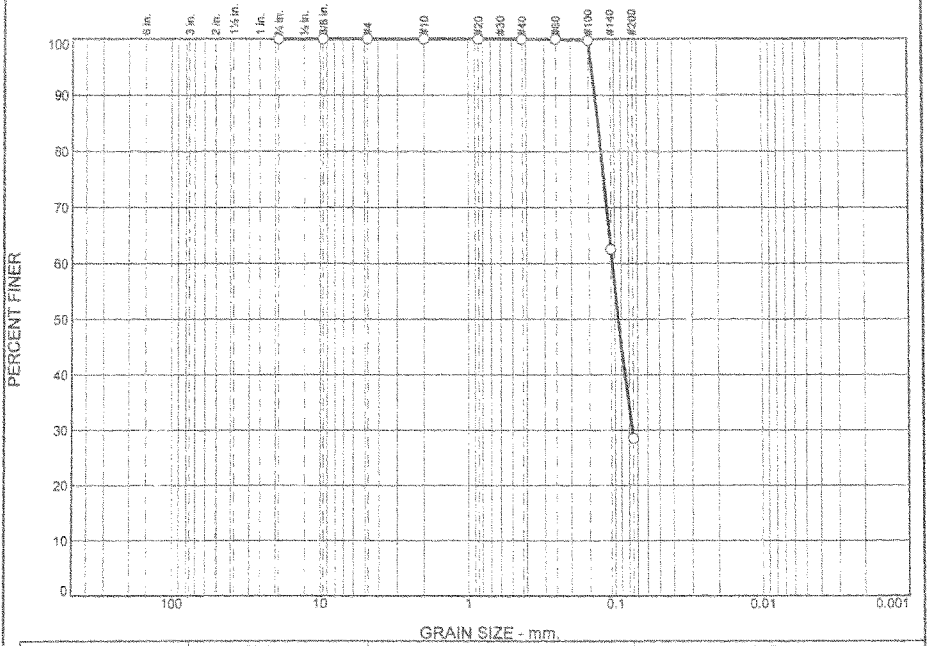
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: BOJOOKI Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	0.0	71.5	28.5	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			0.1280	0.1037	0.0943	0.0762				

	Material Description	USCS	AASHTO
○	Silty sand	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Sample Source: CB164 Depth: 215.0'-220.0' Sample No.: CB164

Remarks:

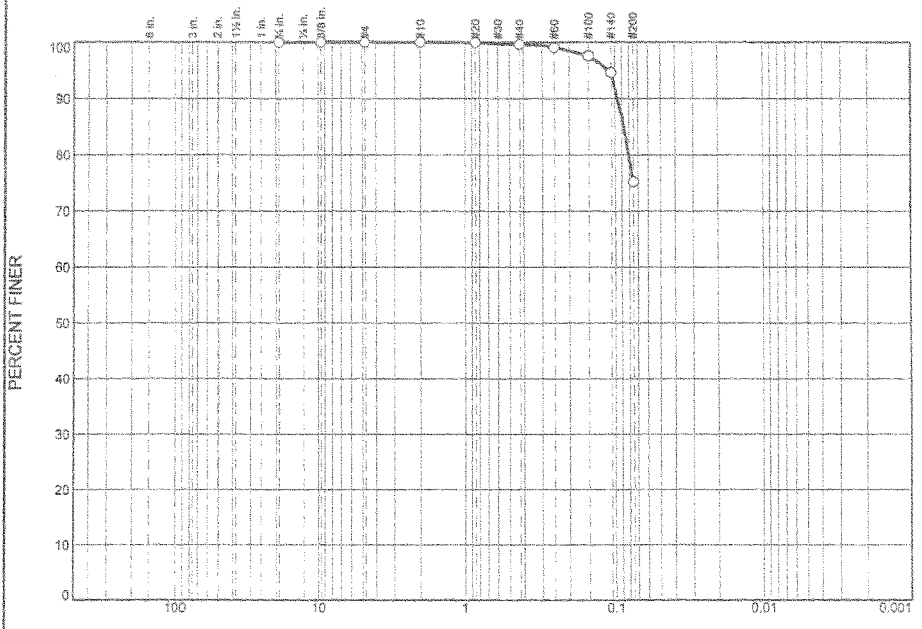
○ Moisture Content % 27.5 CP05-EAARS-VB-0282

Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	0.4	24.4	75.2	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			0.0870							

Material Description	USCS	AASHTO
○ Inorganic silts and very fine sand	ML	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ **Source of Sample:** CB164 **Depth:** 225.0'-230.0 **Sample Number:** CB164

Nodarse & Associates, Inc.

Miami Lakes, FL

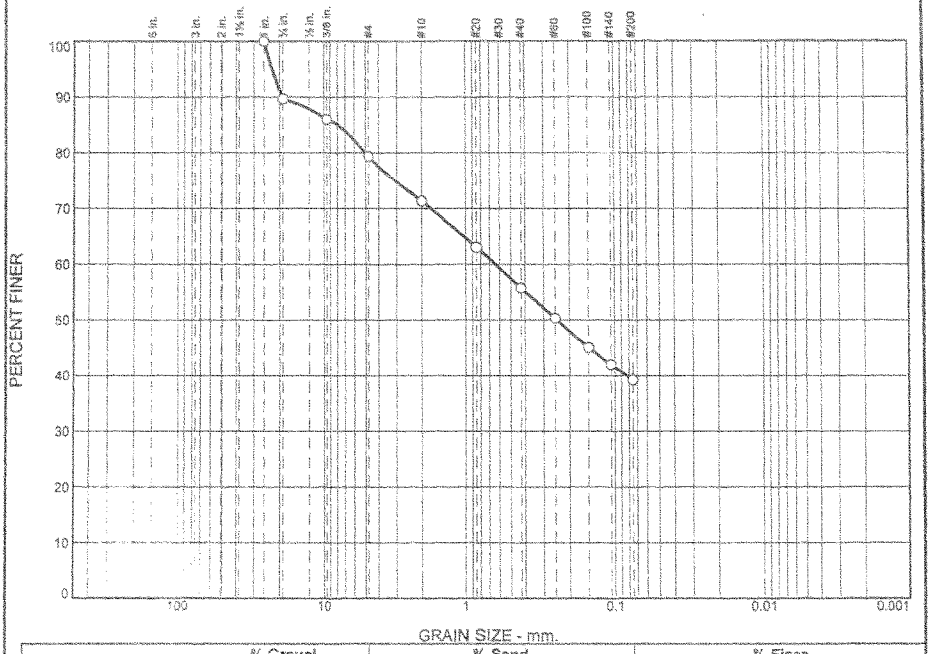
Remarks:

○ Moisture Content % 36.0 CP05-EAARS-VB-0282

Figure

Tested By: BURGOS Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	10	11	8	15	17	39	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			7.8183	0.6365	0.2417					

Material Description	USCS	AASHTO
○ Sandy silty clay with gravel	CL-ML	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0174 Depth: 5'-10'

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

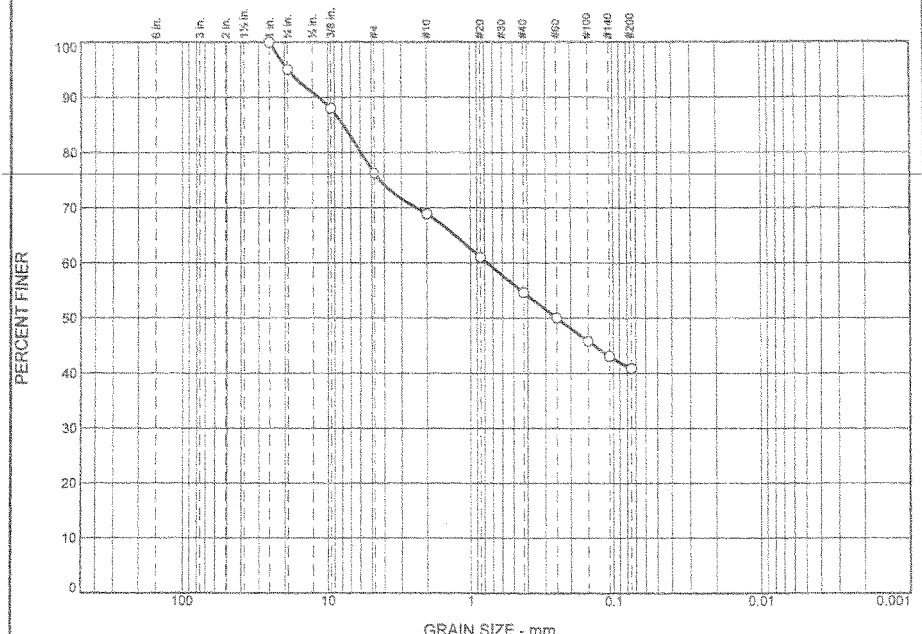
Remarks:

○ Moisture Content % 9.81 CP05-EAARS-VB-0283

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	5	19	7	14	14	41	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			7.8572	0.7648	0.2494					

Material Description	USCS	AASHTO
○ Sandy silty clay with gravel	CL-ML	

Project No. 05-05-0013- Client: Black & Veatch
Project: E.A.A (Reservoir)
○ Source of Sample: CB-0174 Depth: 10'-15'

Date: ○

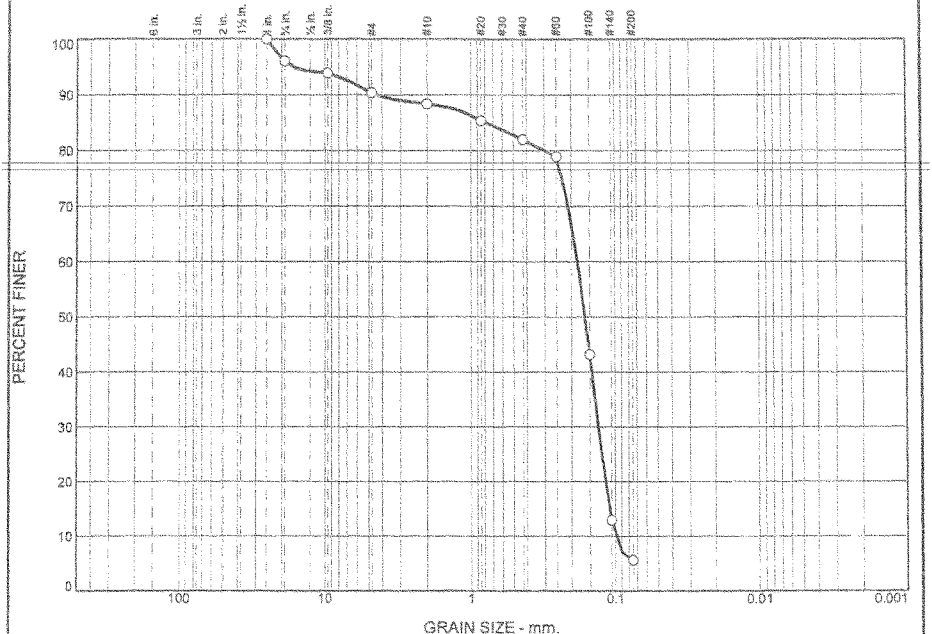
Nodarse & Associates, Inc.
Miami Lakes, FL

Remarks:
○ Moisture Content % 22.8 CP05-EAARS-VB-0283

Figure

Technician: Jose Chinaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	3.9	5.7	2.0	6.4	76.4	5.6	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.7798	0.1812	0.1613	0.1312	0.1097	0.0996	0.95	1.82

Material Description	USCS	AASHTO
○ Poorly graded sand with silt	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Source of Sample: CB174 Depth: 40.0'-45.0' Sample Number: CB174

Remarks:

○ Moisture content % 17.1 CP05-EAARS-VB-0283

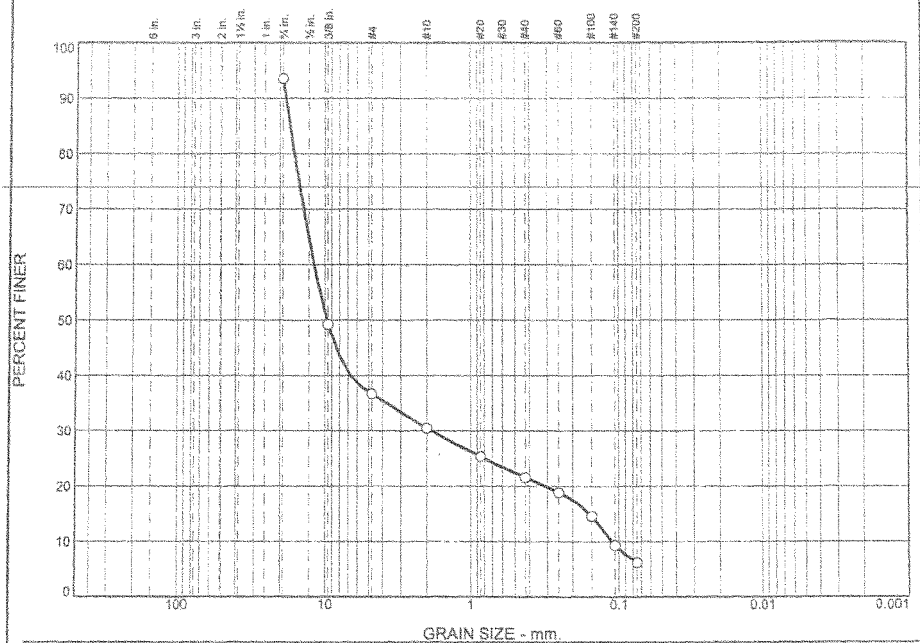
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: L Mazo Checked By: M Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○			57	7	8	16	6	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			17.0084	11.7946	9.7039	1.8617	0.1550	0.1113	2.64	105.93

Material Description	USCS	AASHTO
○ Poorly graded gravel with silt and sand	GP-GM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

○ **Source of Sample:** CB-0174 **Depth:** 45' to 50'

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

Remarks:

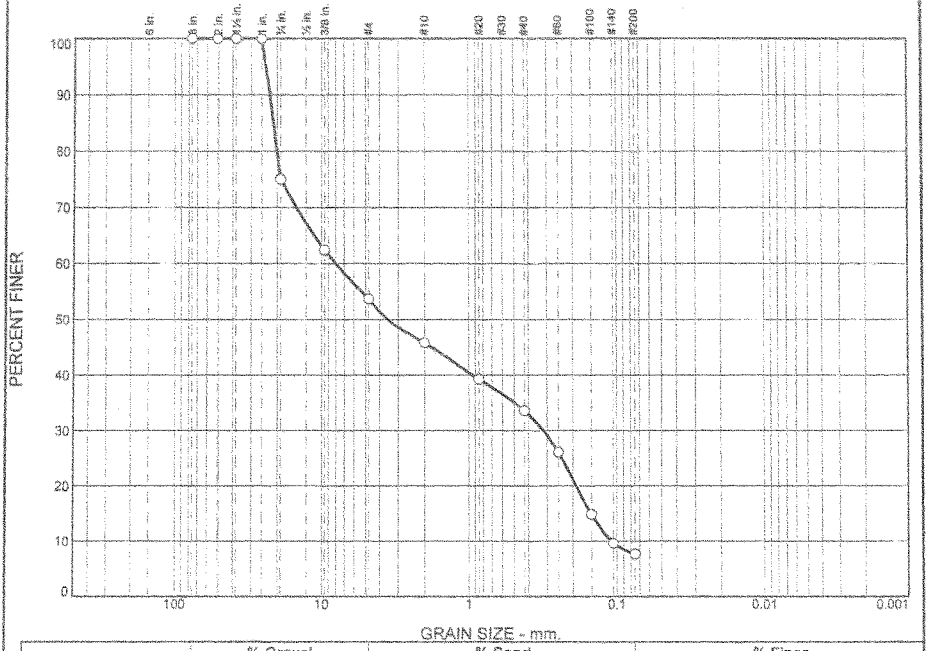
○ Moisture Content % 4.0

CP05-EAARS-VB-0283

Figure

Tested By: Pedro Camareza Checked By: Kevin Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	25.0	21.3	7.9	12.2	25.9	7.7	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			21.2325	7.9734	3.5183	0.3143	0.1510	0.1096	0.11	72.78

Material Description	USCS	AASHTO
○ Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Source of Sample: CB174 Depth: 60.0'-65.0' Sample Number: CB174

Remarks:

○ Moisture content % 7.6 CP05-EAARS-VB-0283

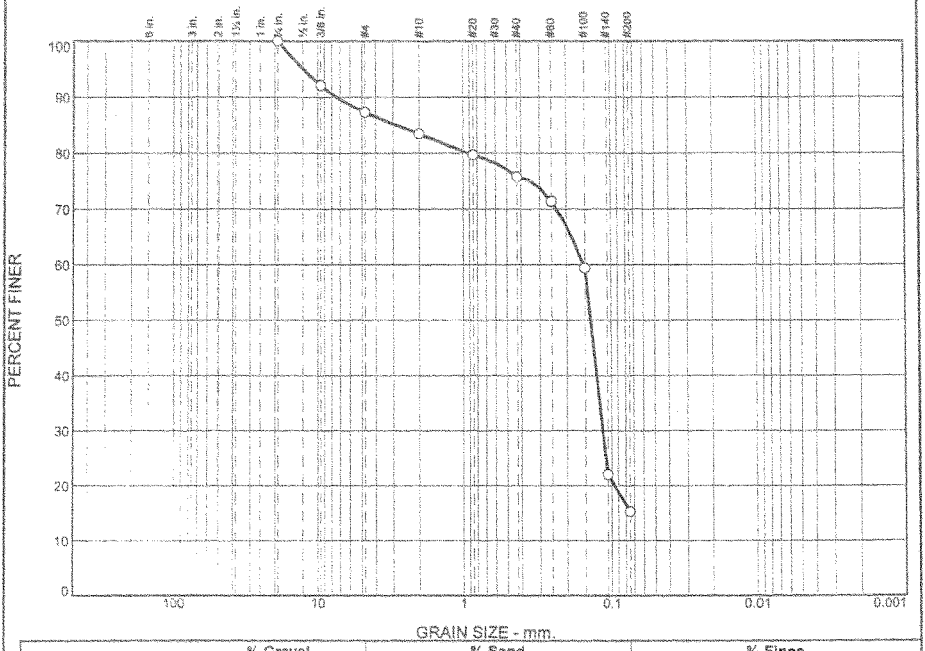
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: T Hales Checked By: M Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	12.7	3.8	7.7	60.5	15.3	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			2.8557	0.1528	0.1369	0.1154				

	Material Description	USCS	AASHTO
○	Silty sand	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Source of Sample: CB174 Depth: 70'-75.0' Sample Number: CB174

Nodarse & Associates, Inc.

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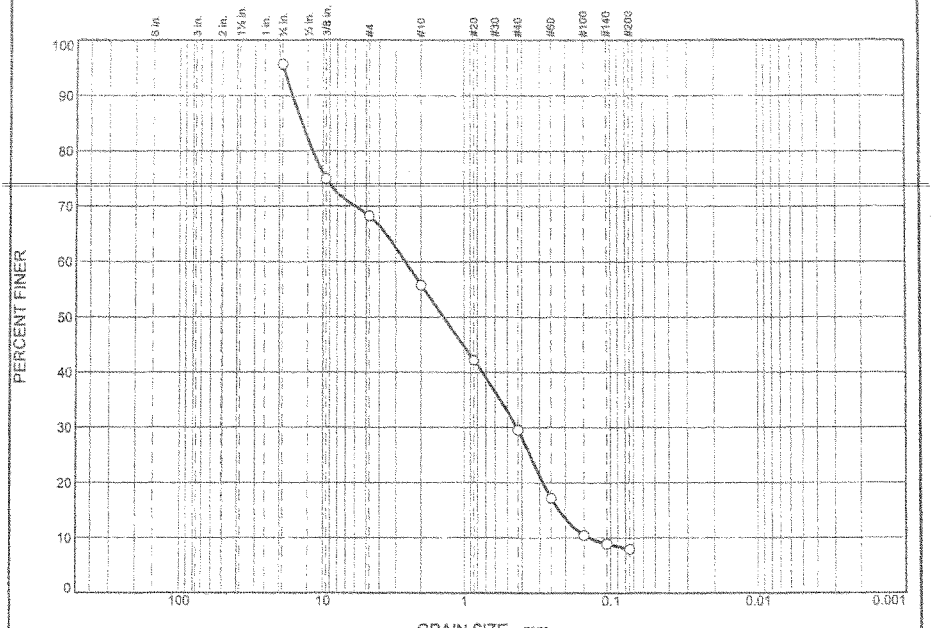
Remarks:

○ Moisture content % 14.82 CP05-EAARS-VB-0283

Figure

Tested By: E Mejia Checked By: M Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○			28	12	27	21	8	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			13.9640	2.5708	1.3924	0.4347	0.2217	0.1394	0.53	18.45

Material Description	USCS	AASHTO
○ Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

○ **Source of Sample:** CB-0174 **Depth:** 75' to 80'

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

Remarks:

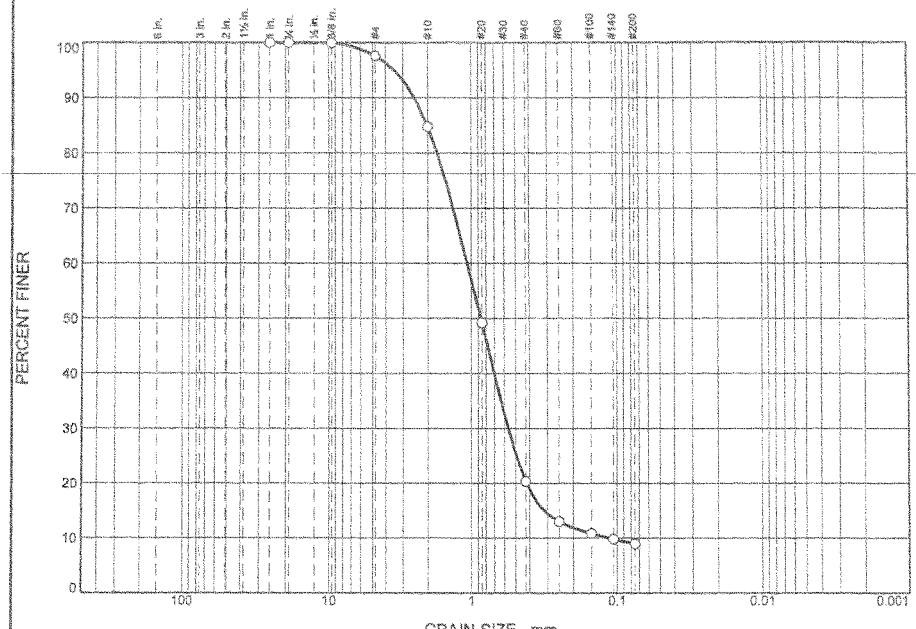
○ Moisture Content % 11.6

CP05-EAARS-VB-0283

Figure

Tested By: Pedro Camaraza **Checked By:** Kevin Leung

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	2	13	65	11	9	

LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
		2.0168	1.0644	0.8638	0.5621	0.3178	0.1144	2.59	9.30

Material Description	USCS	AASHTO
Poorly graded sand with silt	SP-SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

Source of Sample: CB-0174 **Depth:** 100'-105'

Date:

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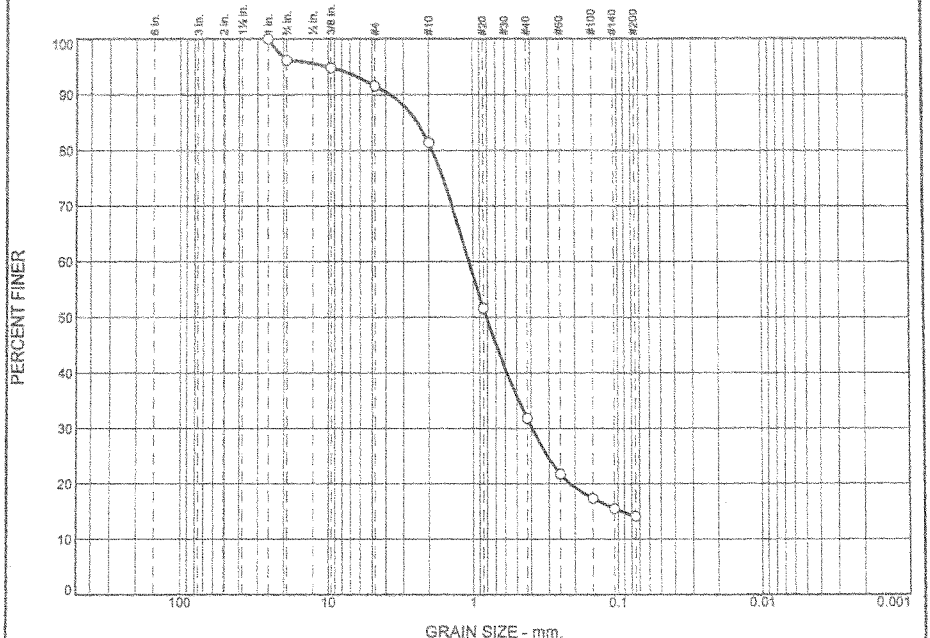
Remarks:

Moisture Content % 10.6 CP05-EAARS-VB-0283

Figure

Tested By: Mariaza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	4	4	11	49	18	14	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_u
○			2.3691	1.0654	0.8100	0.3921	0.0946			

Material Description	USCS	AASHTO
○ Silty sand with gravel	SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

○ **Source of Sample:** CB-0174 **Depth:** 110'-115'

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

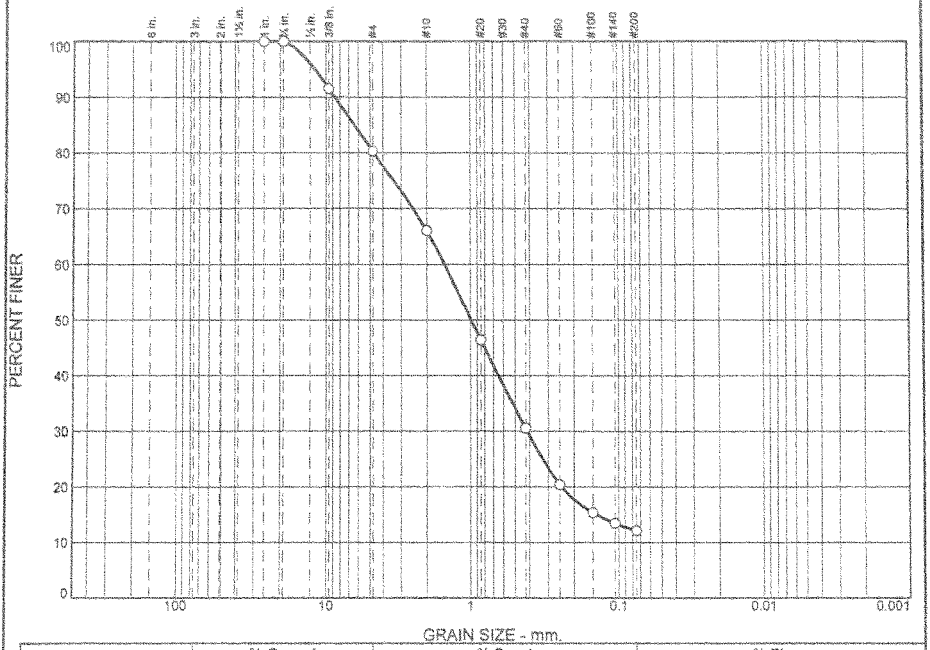
Remarks:

○ Moisture Content % 18.1 CP05-EAARS-VB-0283

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	20	14	35	19	12	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			6.3892	1.5030	0.9841	0.4144	0.1415			

Material Description	USCS	AASHTO
○ Well graded sand with silt and gravel	SW-SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

○ **Source of Sample:** CB-0174 **Depth:** 115'-120'

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

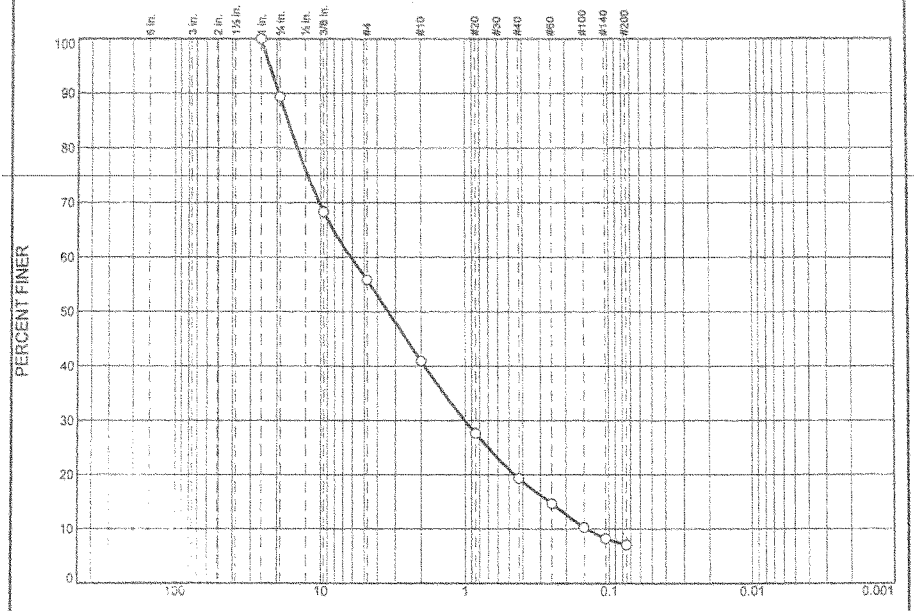
Remarks:

○ Moisture Content % 16.1 CP05-EAARS-VB-0283

Figure

Tested By: Daira Barraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	11	33	15	22	12	7	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			16.8310	6.1458	3.3574	1.0027	0.2585	0.1435	1.14	42.82

Material Description	USCS	AASHTO
○ Well graded sand with silt and gravel	SW-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0174 Depth: 125'-130'

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

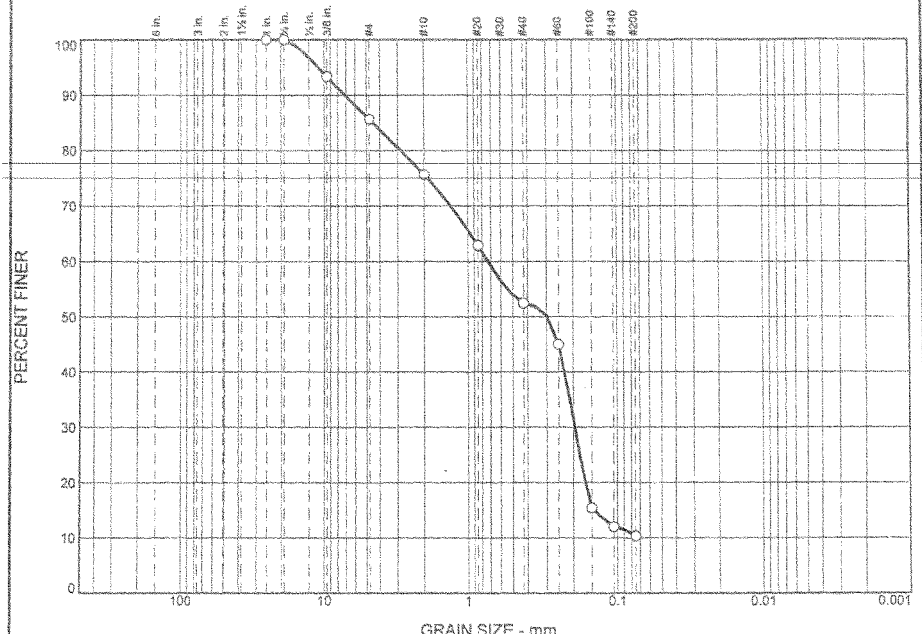
Remarks:

○ Moisture Content % 12.9 CP05-EAARS-VB-0283

Figure

Tested By: Pedro cameraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	14	10	23	43	10	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			4.4573	0.7266	0.2944	0.1949	0.1448			

Material Description	USCS	AASHTO
○ Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0174 Depth: 140'-145'

Date: ○

Nodarse & Associates, Inc.

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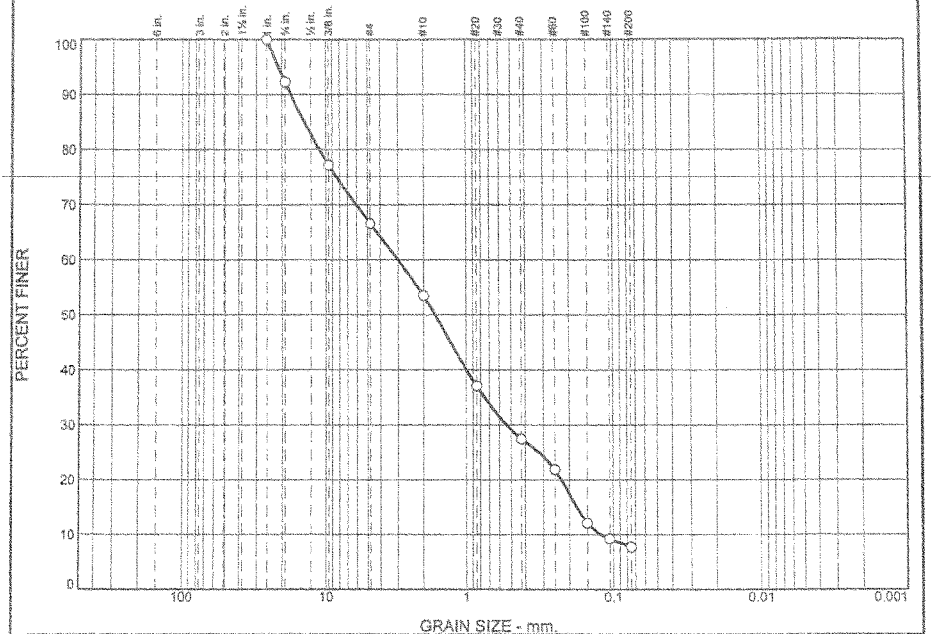
Remarks:

○ Moisture Content % 18.9 CP05-EAARS-VB-0283

Figure

Tested By: Pedro camaraza Checked By: Michael Brown July 2014

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	8	25	14	26	19	8	

LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
		14.0549	2.9872	1.6578	0.5359	0.1771	0.1213	0.79	24.63

Material Description	USCS	AASHTO
Well graded sand with silt and gravel	SW-SM	

Project No. 05-05-0013- Client: Black & Veatch
Project: E.A.A (Reservoir)
Source of Sample: CB-0174 Depth: 150'-155'

Date:

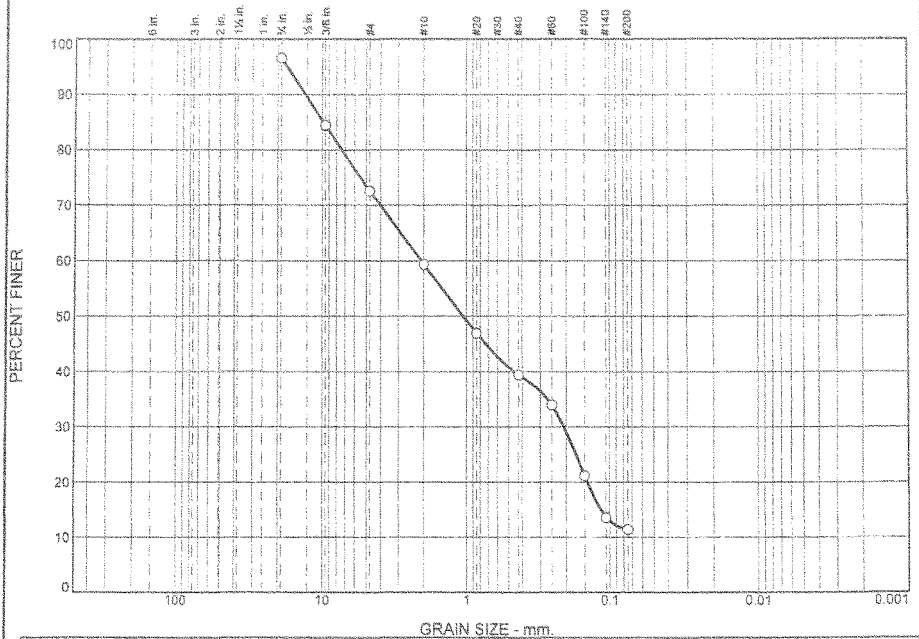
Nodarse & Associates, Inc.
Miami Lakes, FL

Remarks:
Moisture Content % 12.9 CP05-EAARS-VB-0283

Figure

Tested By: Pedro camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○			24	14	20	28	11	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			9.8196	2.0871	1.0603	0.2081	0.1157			

Material Description	USCS	AASHTO
○ Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0174 Depth: 155' to 160'

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

Remarks:

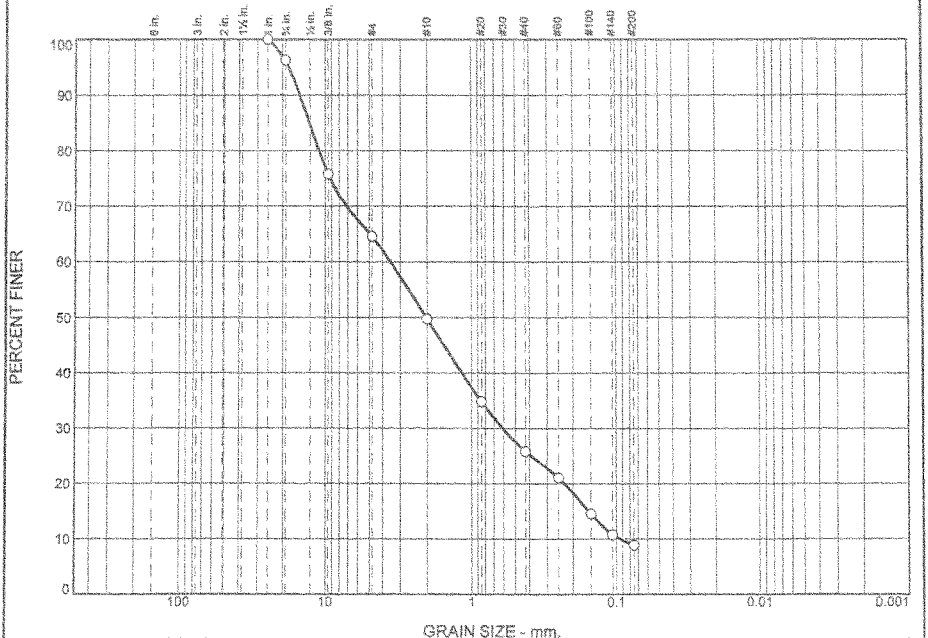
○ Moisture Content % 15.1

CP05-EAARS-VB-0283

Figure

Tested By: Pedro Camaraza Checked By: Kevin Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	4	31	15	24	17	9	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			12.8381	3.5135	2.0262	0.6095	0.1557	0.0949	1.11	37.04

Material Description	USCS	AASHTO
○ Well graded sand with silt and gravel	SW-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0174 Depth: 160'-165'

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

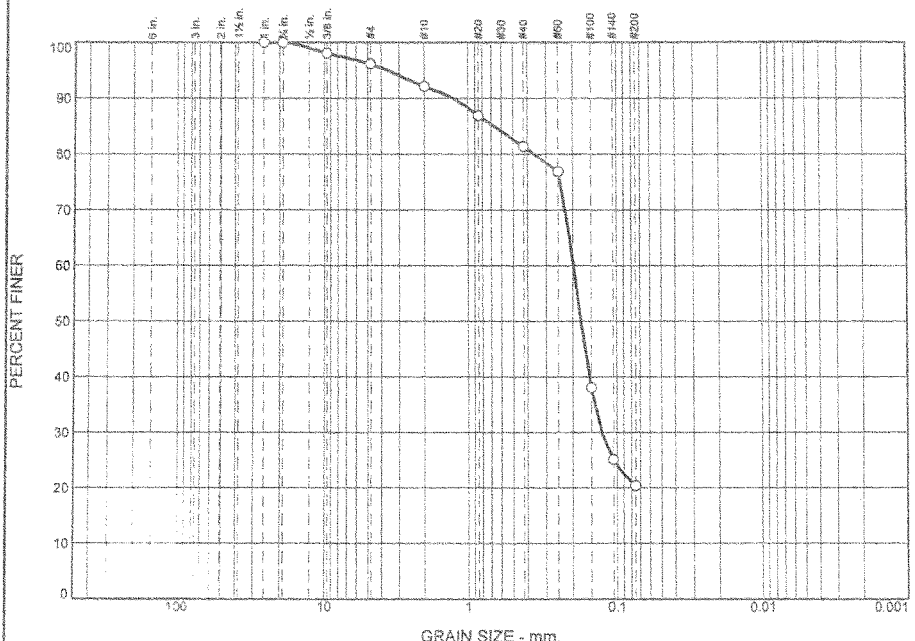
Remarks:

○ Moisture Content % 14.3 CP05-EAARS-VB-0283

Figure

Tested By: Pablo Estaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	4	4	11	61	20	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			0.6669	0.1972	0.1755	0.1272				

	Material Description	USCS	AASHTO
○	Silty sand	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0174 Depth: 165'-170'

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

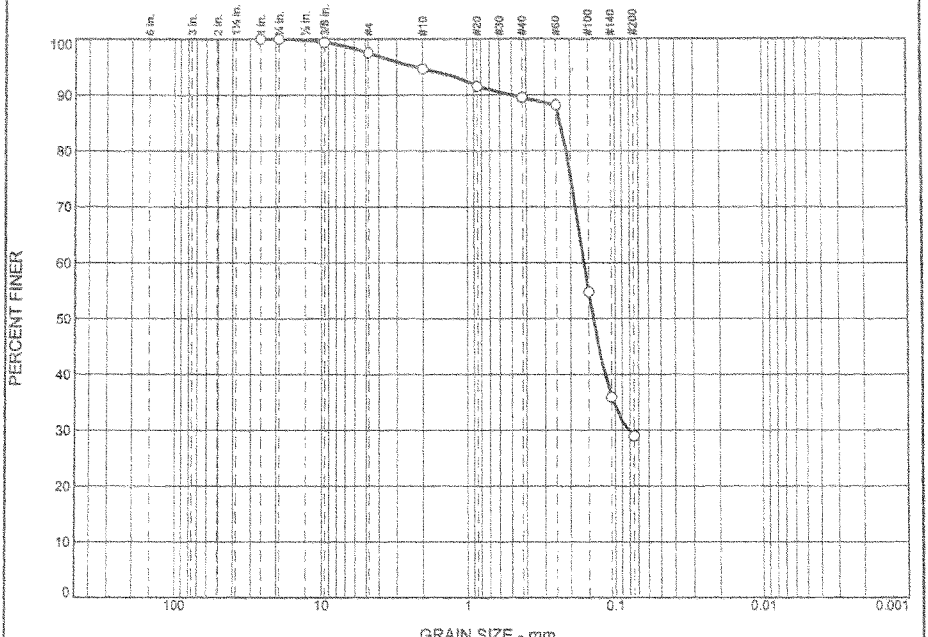
Remarks:

○ Moisture Content % 20.3 CP05-EAARS-VB-0283

Figure

Tested By: Fernando Saraza Checked By: Michael Brown July 2014

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	2	3	5	61	29	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2321	0.1611	0.1397	0.0812				

Material Description	USCS	AASHTO
○ Silty sand	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0174 Depth: 180'-185'

Date: ○

Remarks:

○ Moisture Content % 19.7 CP05-EAARS-VB-0283

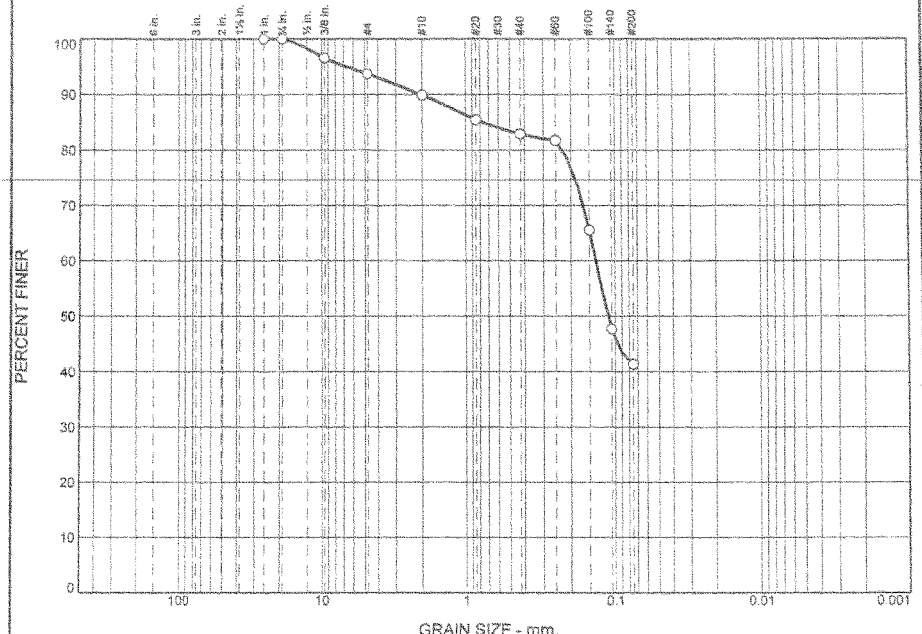
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: Pedro camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	6	4	7	42	41	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.7647	0.1355	0.1120					

Material Description	USCS	AASHTO
○ Silty sand with gravel	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0174 Depth: 185'-190'

Date: ○

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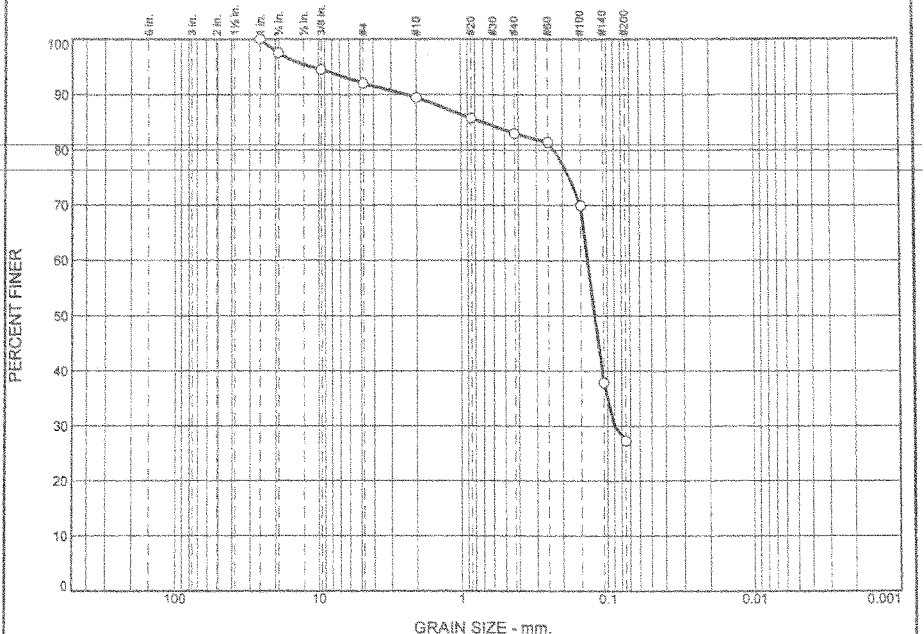
Remarks:

○ Moisture Content % 20.4 CP05-EAARS-VB-0283

Figure

Tested By: Pedro camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	2	6	3	6	56	27	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.7053	0.1341	0.1215	0.0892				

Material Description	USCS	AASHTO
○ Silty sand with gravel	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0174 Depth: 195'-200'

Date: ○

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Miami Lakes, FL

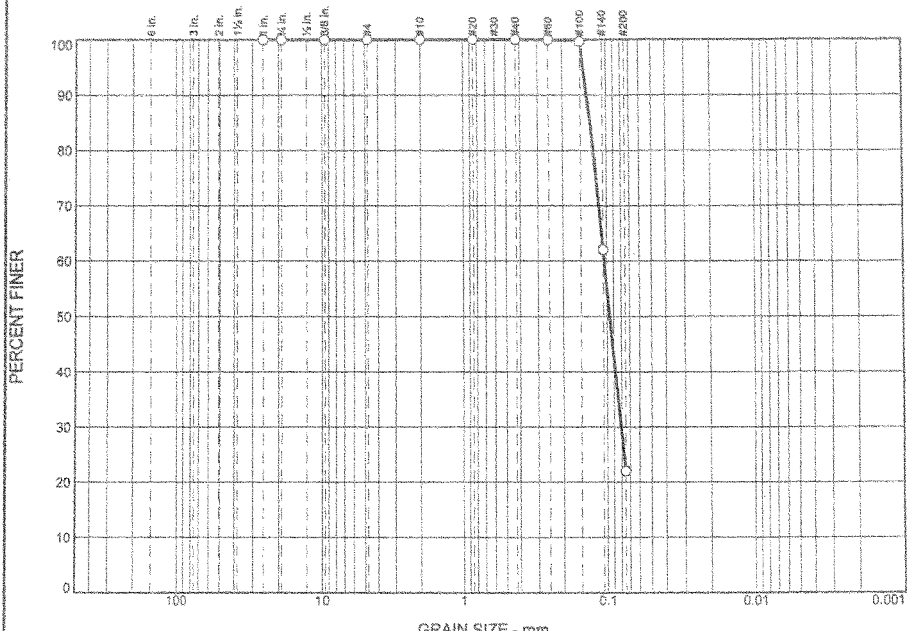
Remarks:

○ Moisture Content % 16.8 CP05-EAARS-VB-0283

Figure

Tested By: R. Barraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	0	0	0	78	22	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1278	0.1043	0.0960	0.0806				

Material Description	USCS	AASHTO
○ Silty sand	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0174 Depth: 200'-205'

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

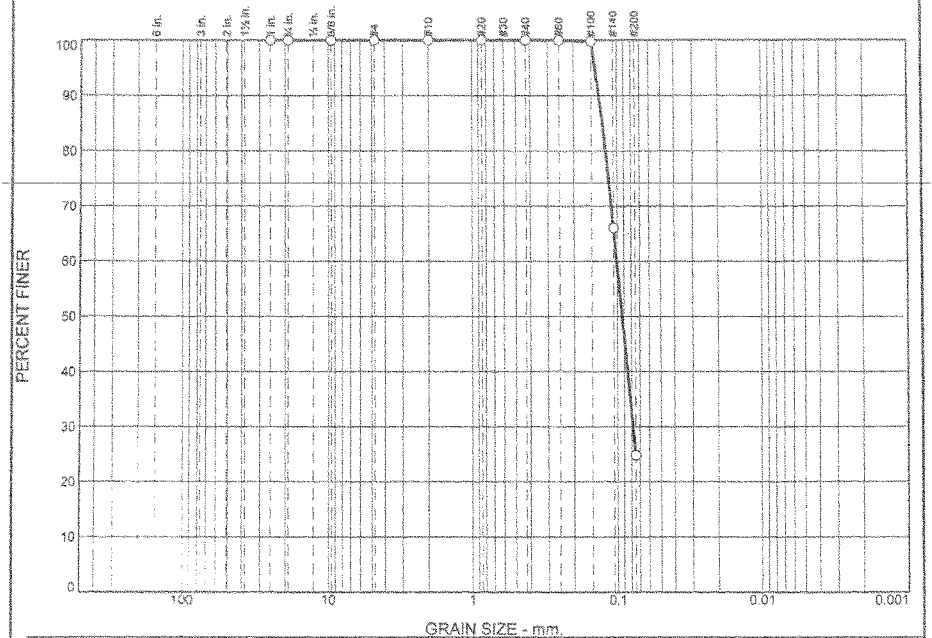
Remarks:

○ Moisture Content % 24.8 CP05-EAARS-VB-0283

Figure

Tested By: Pedro Maraza Checked By: Michael Brown July 2014

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	0	0	0	75	25	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			0.1253	0.1007	0.0926	0.0783				

Material Description	USCS	AASHTO
○ Silty sand	SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

○ **Source of Sample:** CB-0174 **Depth:** 205'-210'

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

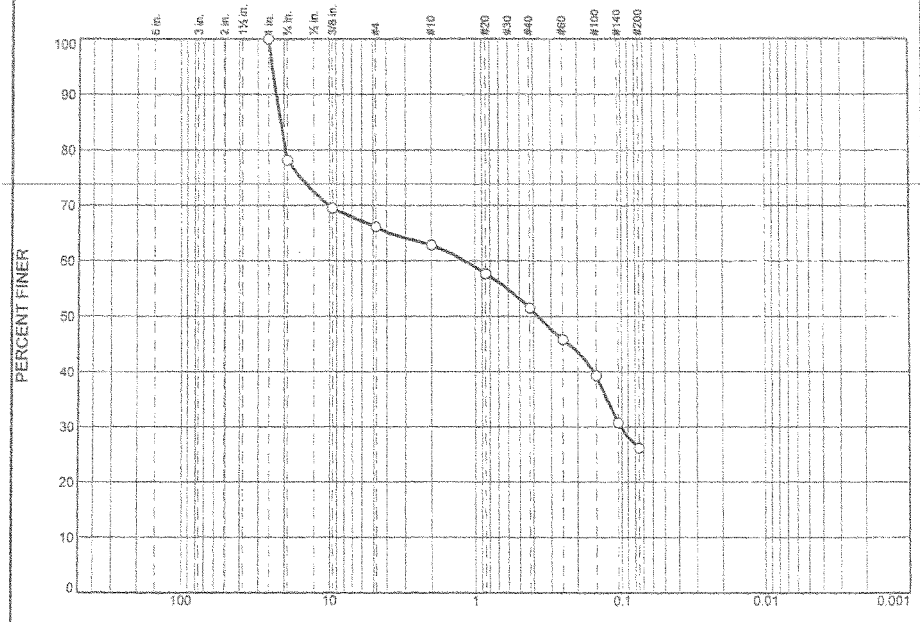
Remarks:

○ Moisture Content % 25.7 CP05-EAARS-VB-0283

Figure

Tested By: Pedro camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	22	12	3	11	26	26	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			21.1419	1.1763	0.3693	0.1020				

Material Description	USCS	AASHTO
○ Silty sand with gravel	SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

○ **Source of Sample:** CB-0182 **Depth:** 10' to 15'

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

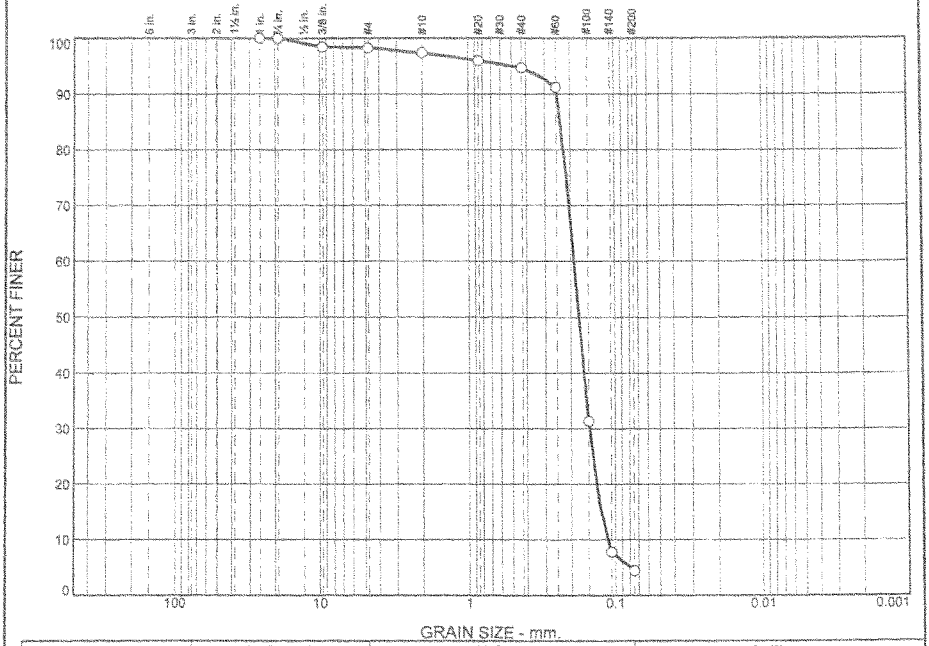
Remarks:

○ Moisture Content % 18.3 CP05-EAARS-VB-0284

Figure

Tested By: Pedro Camaraza **Checked By:** Kevin Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	2	1	2	91	4	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			0.2321	0.1883	0.1746	0.1481	0.1257	0.1125	1.04	1.67

Material Description	USCS	AASHTO
○ Poorly graded sand	SP	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

○ **Source of Sample:** CB-0182 **Depth:** 20' to 25'

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

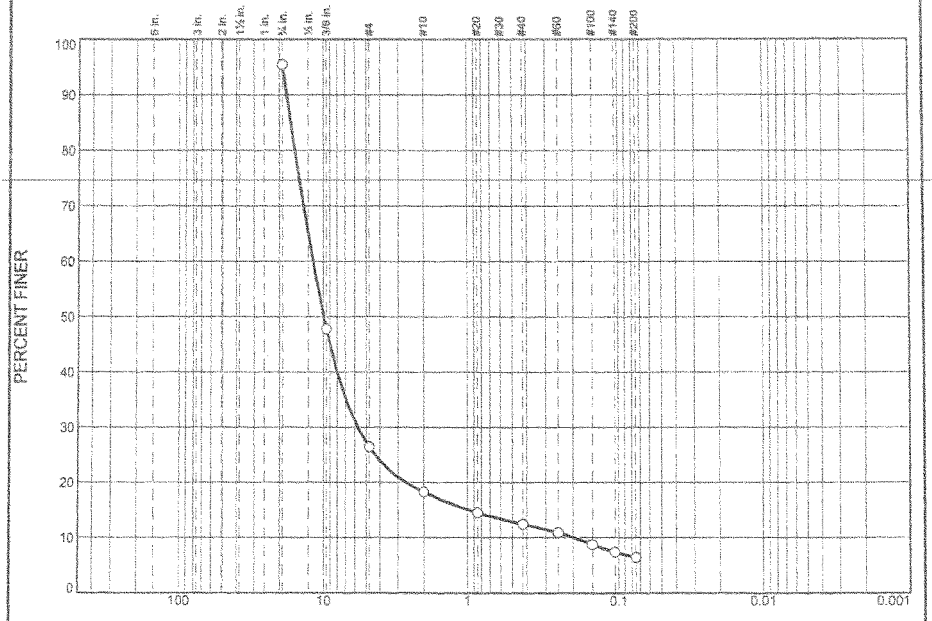
Remarks:

○ Moisture Content % 25.9 CP05-EAARS-VB-0284

Figure

Tested By: Pedro Camaraza **Checked By:** Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○			69	8	6	6	6	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			16.6441	11.7433	9.9304	5.7187	0.9693	0.1985	14.03	59.17

Material Description	USCS	AASHTO
○ Poorly graded gravel with silt and sand	GP-GM	

Project No. 05-05-0013- Client: Black & Veatch
Project: E.A.A (Reservoir)
○ Source of Sample: CB-0182 Depth: 45' to 50'

Date: ○

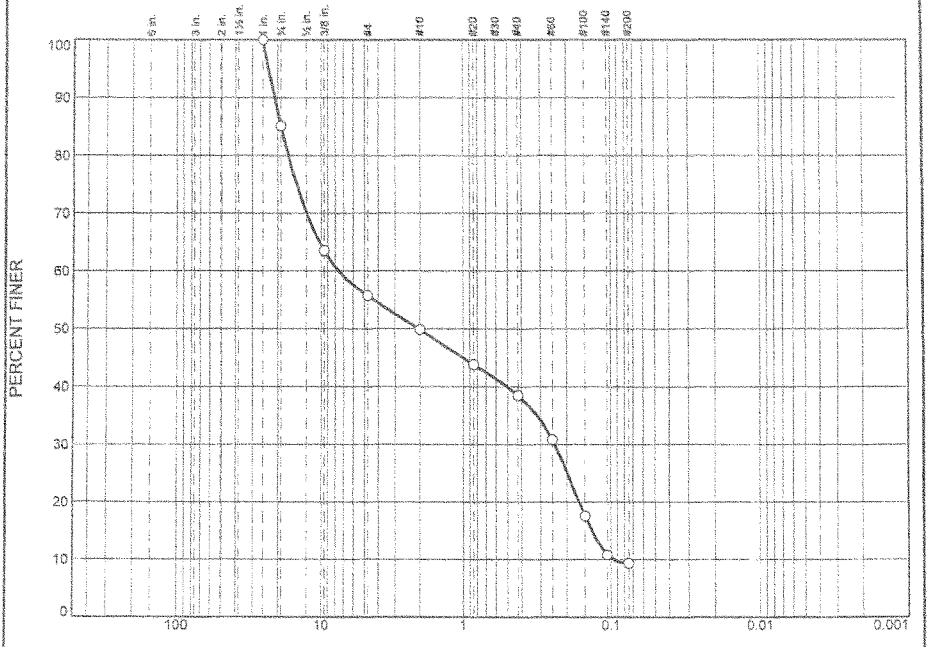
Nodarse & Associates, Inc.
Miami Lakes, FL

Remarks:
○ Moisture Content CP05-EAARS-VB-0284

Figure

Tested By: Pedro Camaraza Checked By: Kevin Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	15	29	6	11	30	9	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			18.9898	7.5526	2.0365	0.2402	0.1348	0.0972	0.08	77.72

Material Description	USCS	AASHTO
○ Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0182 Depth: 55' to 60'

Date: ○

Nodarse & Associates, Inc.

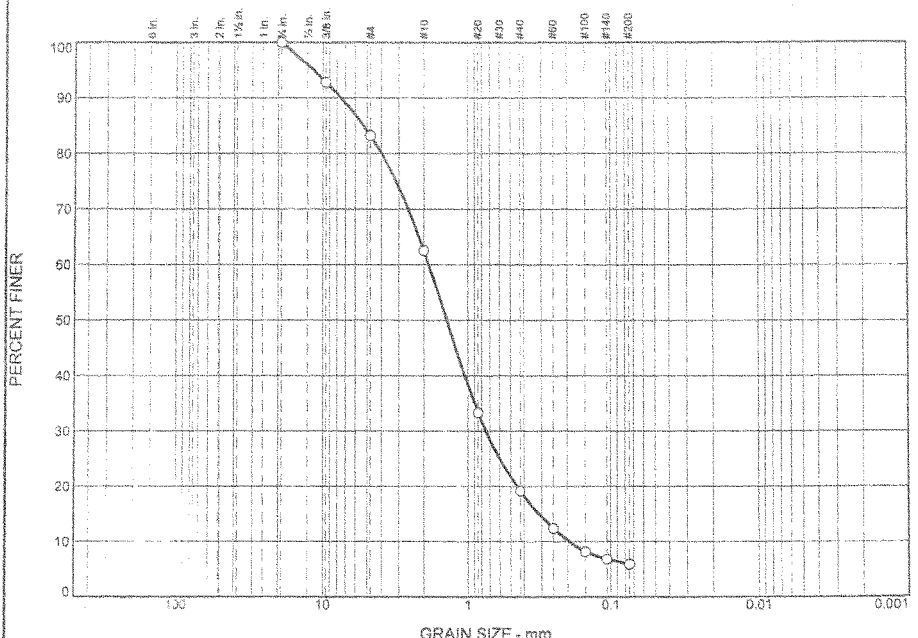
Miami Lakes, FL

Remarks:

○ Moisture Content % 16.2 CP05-EAARS-VB-0284

Figure

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	17	20	44	13	6	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			5.2877	1.8502	1.3945	0.7504	0.3130	0.1950	1.56	9.49

Material Description	USCS	AASHTO
○ Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

○ **Source of Sample:** CB-0182 **Depth:** 75' to 80'

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

Remarks:

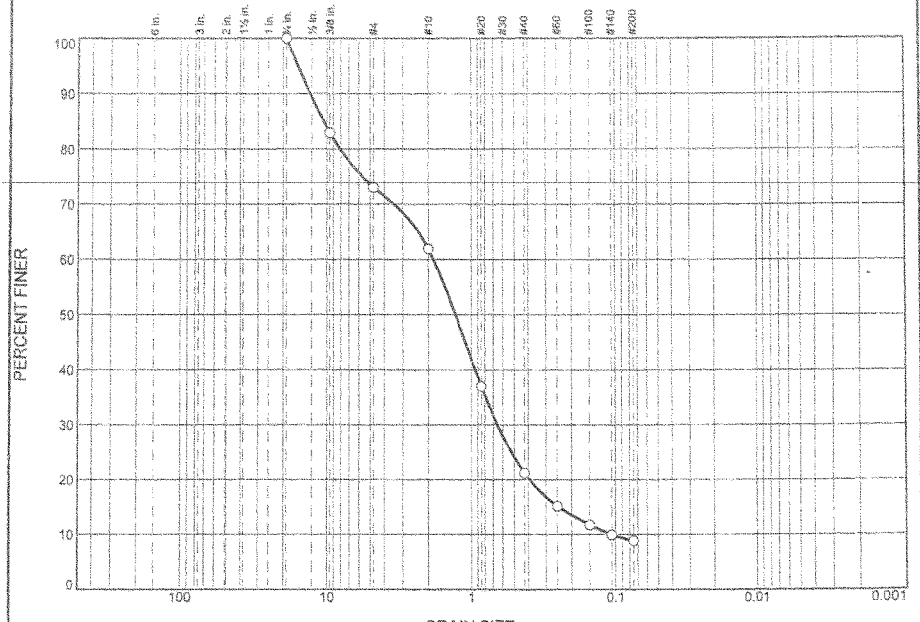
○ Moisture Content % 11.1

CP05-EAARS-VB-0284

Figure

Tested By: Pedro Camaraza **Checked By:** Kevin Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	27	11	41	12	9	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			10.5341	1.8396	1.2933	0.6557	0.2449	0.1083	2.16	16.98

Material Description	USCS	AASHTO
○ Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0182 Depth: 110' to 115'

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

Remarks:

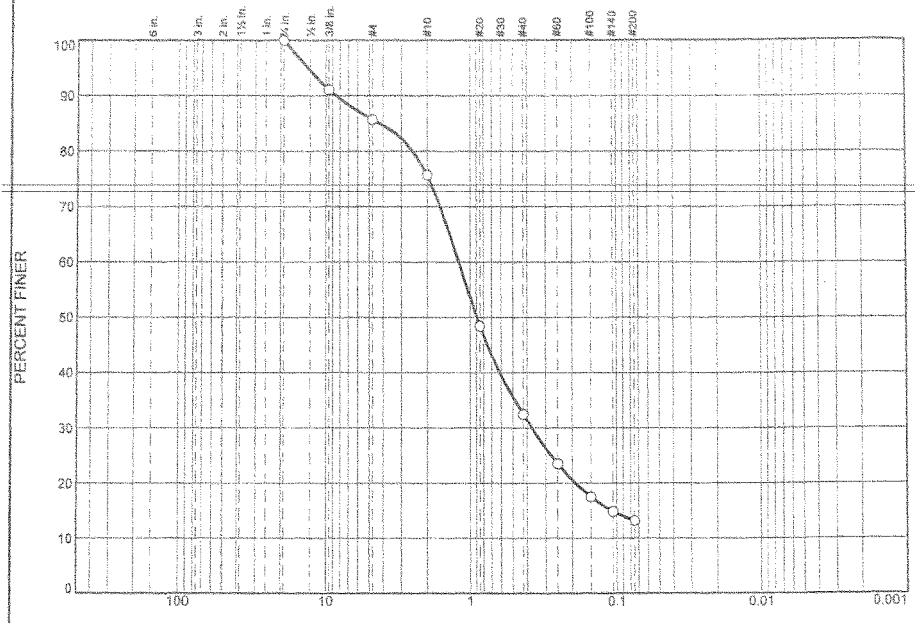
○ Moisture Content % 16.1

CP05-EAARS-VB-0284

Figure

Tested By: Pedro Camaraza Checked By: Kevin Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	14	10	44	19	13	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			4.2449	1.2042	0.8939	0.3714	0.1087			

	Material Description	USCS	AASHTO
○	Poorly graded sand with silt	SP-SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

○ **Source of Sample:** CB-0182 **Depth:** 115' to 120'

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

Remarks:

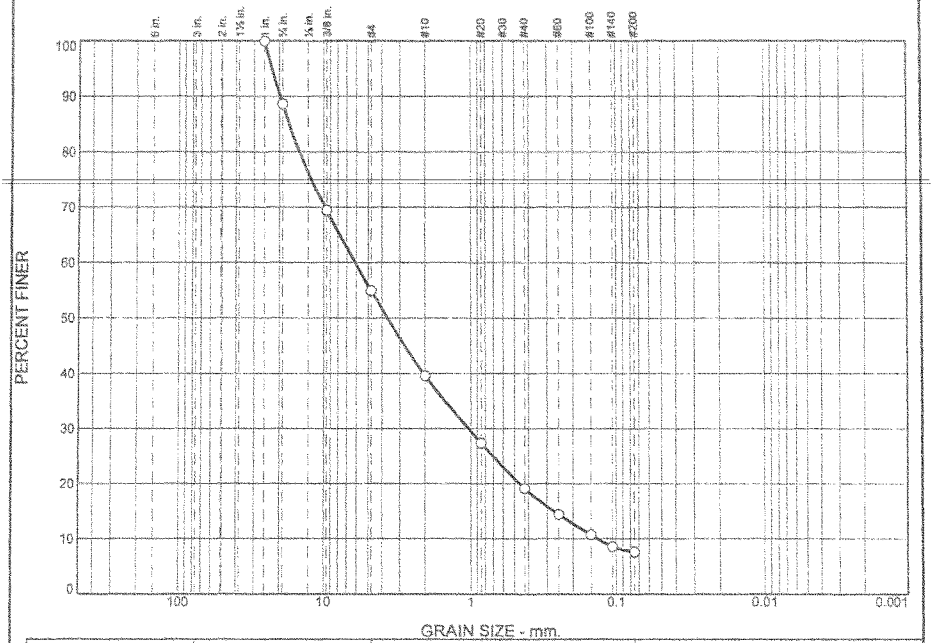
○ Moisture Content % 15.8

CP05-EAARS-VB-0284

Figure

Tested By: Pedro Camaraza **Checked By:** Kevin Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	11	34	15	21	11	8	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			17.1668	6.1287	3.6565	1.0348	0.2701	0.1350	1.29	45.40

Material Description	USCS	AASHTO
○ Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0182 Depth: 125' to 130'

Date: ○

Remarks:

○ Moisture Content % 9.5 CP05-EAARS-VB-0284

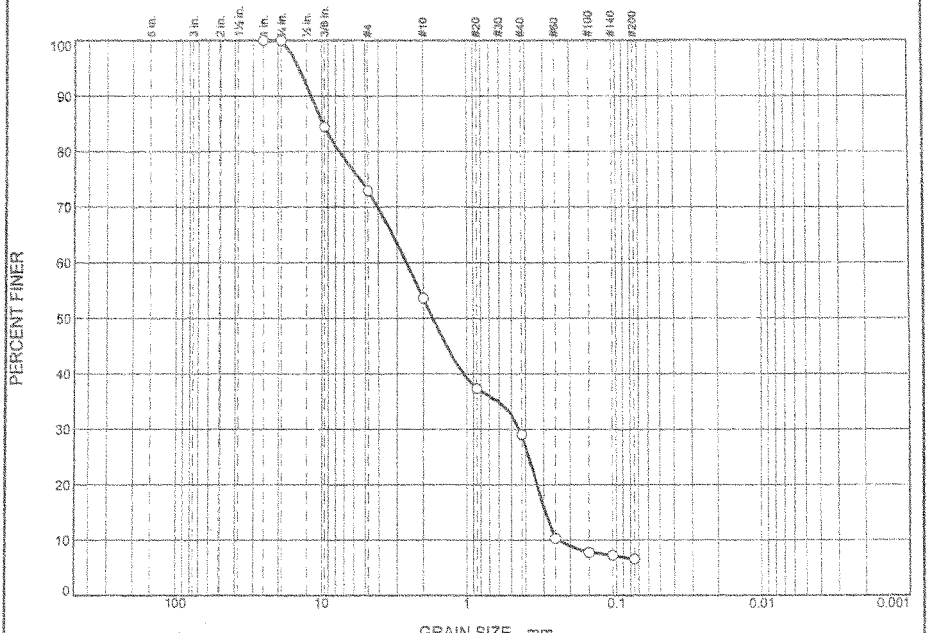
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	27	19	25	22	7	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			9.7354	2.5953	1.7240	0.4399	0.2916	0.2374	0.31	10.93

Material Description	USCS	AASHTO
○ Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0182 Depth: 140' to 145'

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

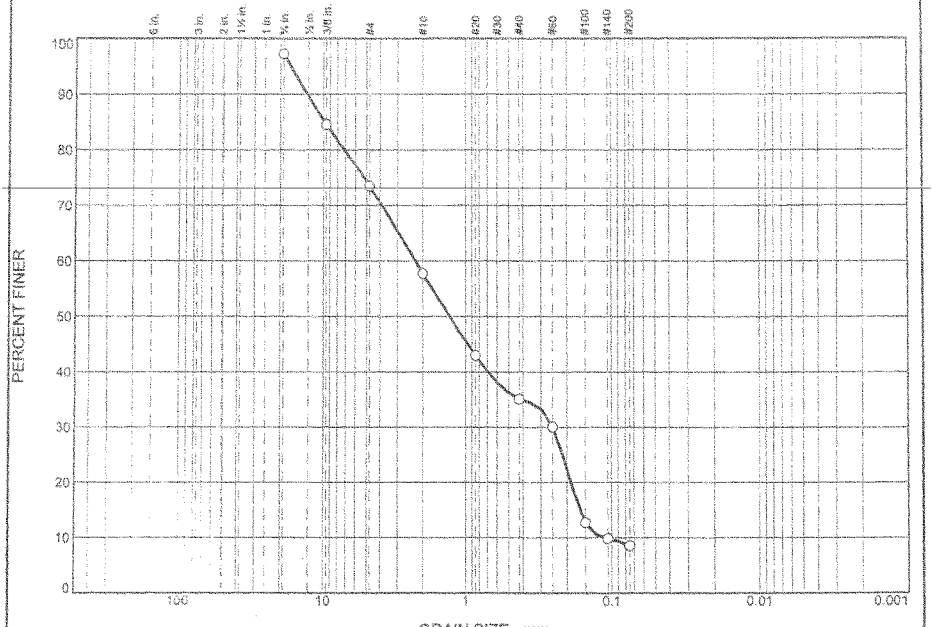
Remarks:

○ Moisture Content % 9.0 CP05-EAARS-VB-0284

Figure

Tested By: Jorge Carraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○			24	15	23	26	9	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			9.7852	2.2565	1.3000	0.2495	0.1632	0.1116	0.25	20.21

Material Description	USCS	AASHTO
○ Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

○ **Source of Sample:** CB-0182 **Depth:** 150' to 155'

Date: ○

Remarks:

○ Moisture Content % 10.0

CP05-EAARS-VB-0284

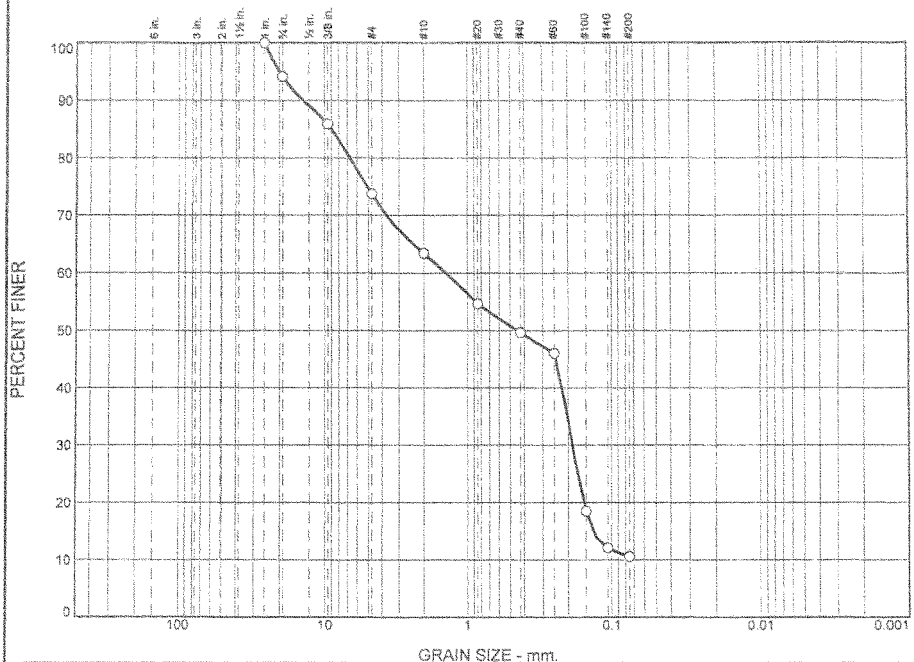
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: Pedro Camaraza **Checked By:** Kevin Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	6	20	11	13	39	11	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			8.9346	1.4083	0.4471	0.1859	0.1338			

Material Description	USCS	AASHTO
○ Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

○ **Source of Sample:** CB-0182 **Depth:** 155' to 160'

Date: ○

Nodarse & Associates, Inc.

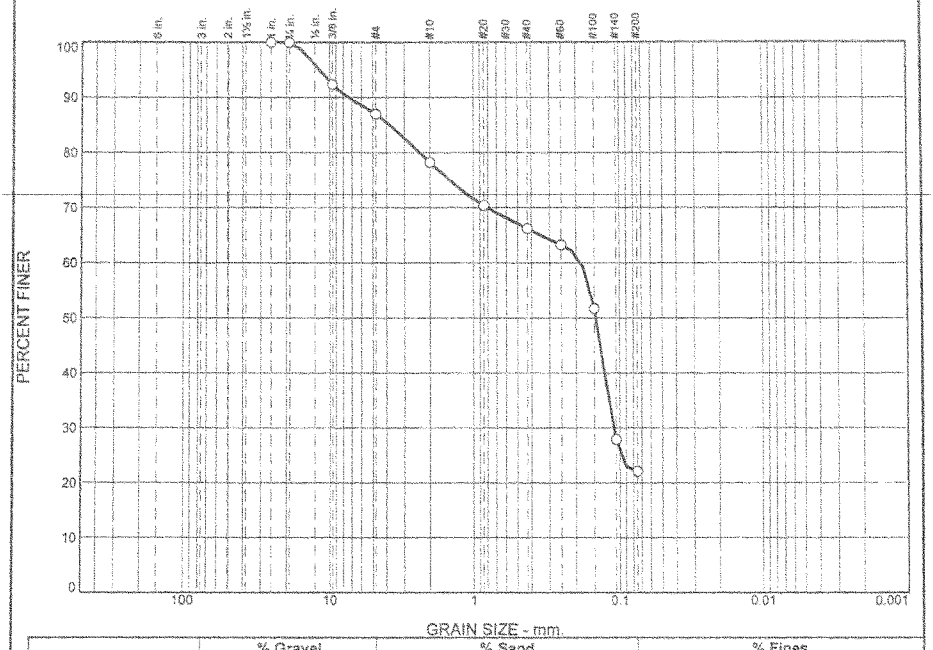
Miami Lakes, FL

Remarks:

○ Moisture Content % 12.0 CP05-EAARS-VB-0284

Figure

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	13	9	12	44	22	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			3.7710	0.1845	0.1459	0.1102				

Material Description	USCS	AASHTO
○ Silty sand with gravel	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0182 Depth: 175' to 180'

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

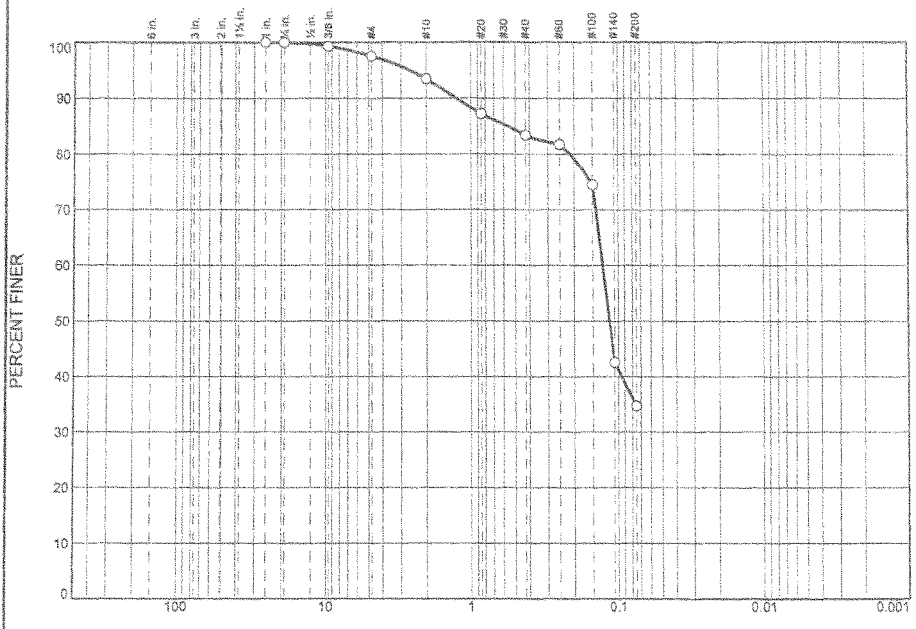
Remarks:

○Moisture Content % 16.5 CP05-EAARS-VB-0284

Figure

Tested By: Pedro Camaraza Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	2	5	10	48	35	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.5563	0.1281	0.1160					

	Material Description	USCS	AASHTO
○	Silty sand	SM	

Project No. 05-05-0013- Client: Black & Veatch
Project: E.A.A (Reservoir)
○ Source of Sample: CB-0182 Depth: 185' to 190'

Date: ○

Nodarse & Associates, Inc.

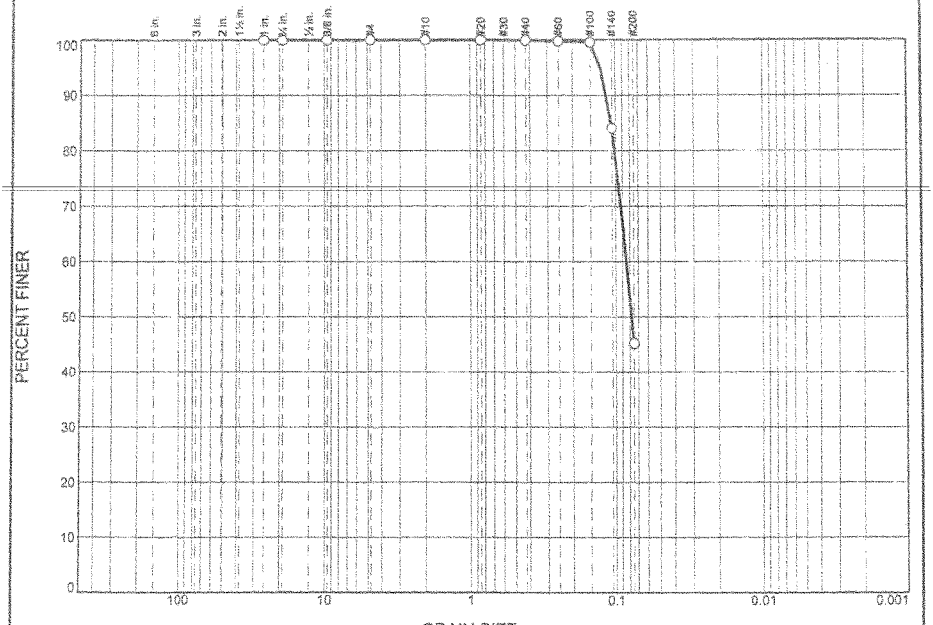
Miami Lakes, FL

Remarks:
○Moisture Content % 14.5 CP05-EAAR5-VB-0284

Figure

Tested By: Pedro Camaraza Checked By: Kevin Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	0	0	0	55	45	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1073	0.0844	0.0779					

Material Description	USCS	AASHTO
○ Sandy silt	ML	

Project No. 05-05-0013- Client: Black & Veatch
Project: E.A.A (Reservoir)
○ Source of Sample: CB-0182 Depth: 205' to 210'
Date: ○

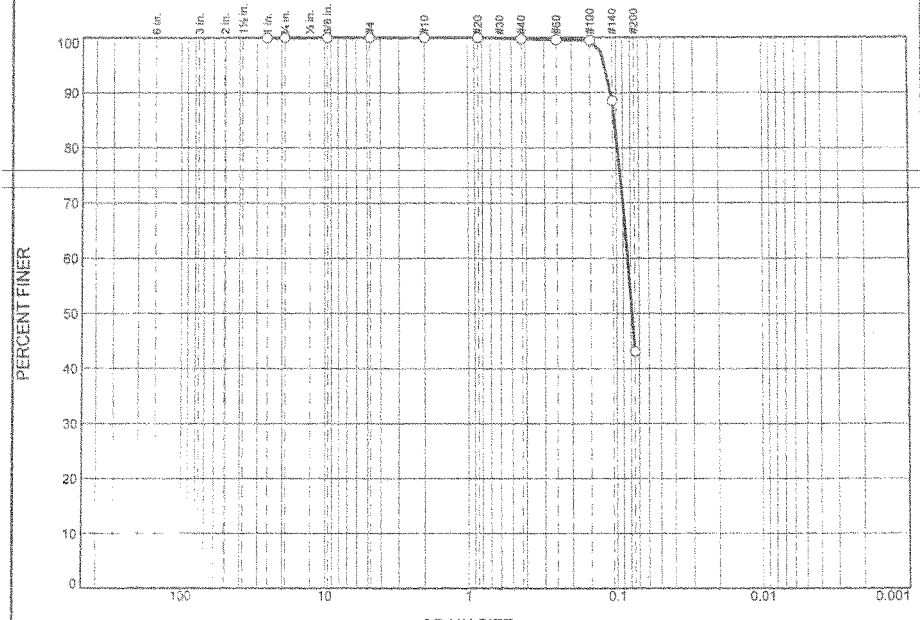
Nodarse & Associates, Inc.
Miami Lakes, FL

Remarks:
○ Moisture Content % 23.1 CP05-EAARS-VB-0284

Figure

Tested By: Pedro Camaraza Checked By: Kevin Leung

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	0	0	0	57	43	

LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
		0.1019	0.0837	0.0784					

Material Description	USCS	AASHTO
Sandy silt	ML	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

Source of Sample: CB-0182 Depth: 210' to 215'

Date:

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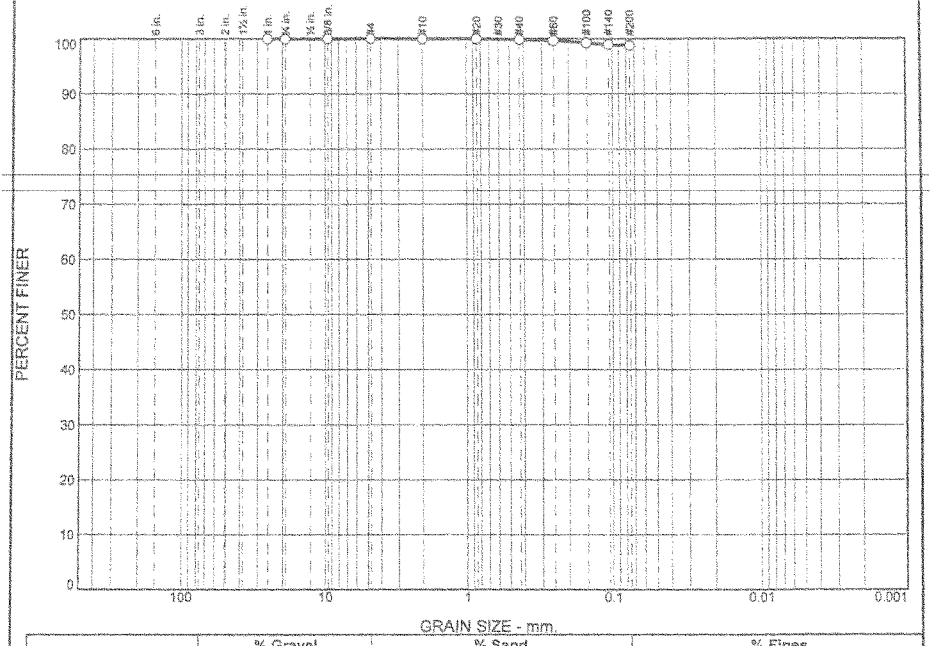
Remarks:

Moisture Content % 25.7 CP05-EAARS-VB-0284

Figure

Tested By: Pedro Camaraza Checked By: Kevin Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	0	0	0	1	99	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○										

Material Description	USCS	AASHTO
○ Sandy silt	ML	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0182 Depth: 225' to 230'

Date: ○

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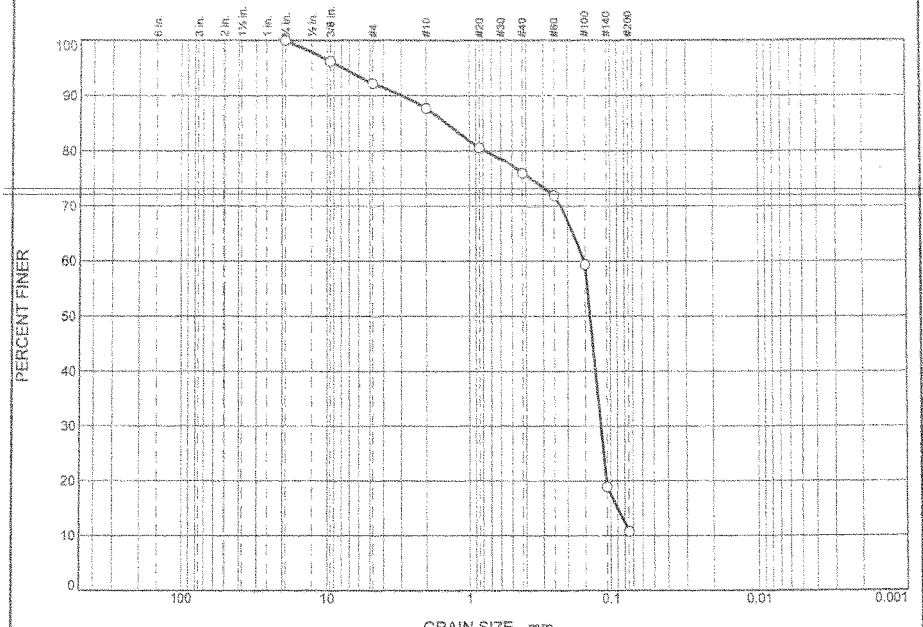
Remarks:

○ Moisture Content % 75.1 CP05-EAARS-VB-0284

Figure

Tested By: Pedro Camaraza Checked By: Kevin Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	8	4	12	65	11	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			1.4423	0.1530	0.1378	0.1178	0.0898			

Material Description	USCS	AASHTO
○ Poorly graded sand with silt	SP-SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

○ **Source of Sample:** CB-0190 **Depth:** 40' to 45'

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

Remarks:

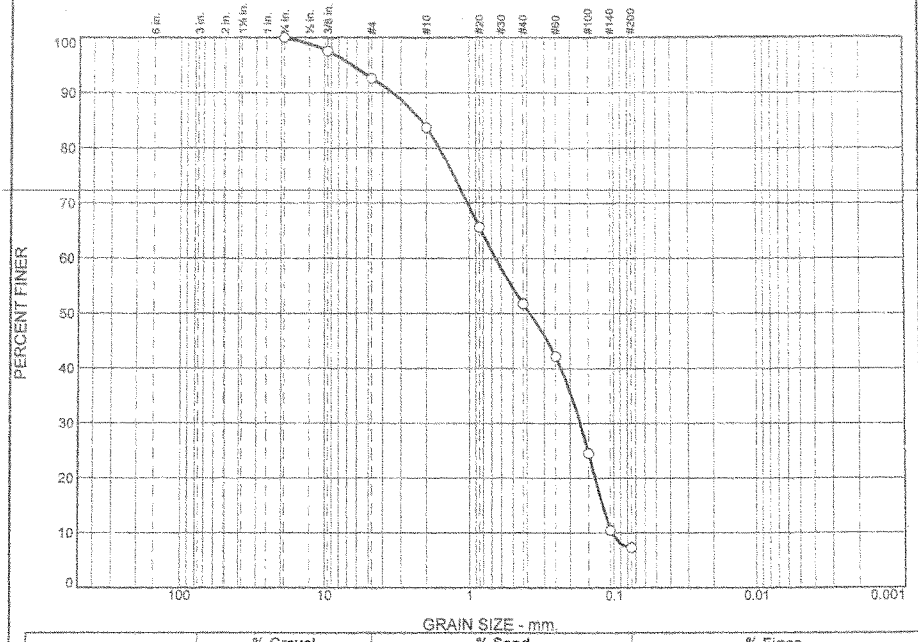
○ Moisture Content % 21.5

CP05-EAARS-VB-0285

Figure

Tested By: Pedro Camaraza **Checked By:** Kevin Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	7	9	32	45	7	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			2.1781	0.6560	0.3805	0.1708	0.1210	0.1039	0.43	6.32

Material Description	USCS	AASHTO
○ Poorly graded sand with silt	SP-SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

○ **Source of Sample:** CB-0190 **Depth:** 45' to 50'

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

Remarks:

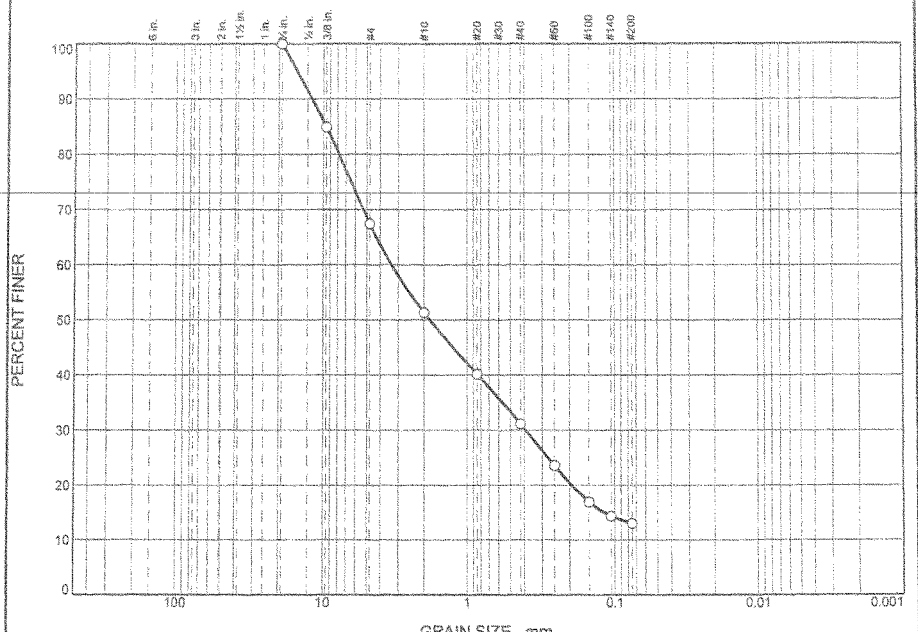
○ Moisture Content % 18.6

CP05-EAARS-VB-0285

Figure

Tested By: Pedro Camaraza Checked By: Kevin Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	33	16	20	18	13	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			9.5740	3.3432	1.8251	0.3909	0.1189			

Material Description	USCS	AASHTO
○ Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

○ **Source of Sample:** CB-0190 **Depth:** 70' to 75'

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

Remarks:

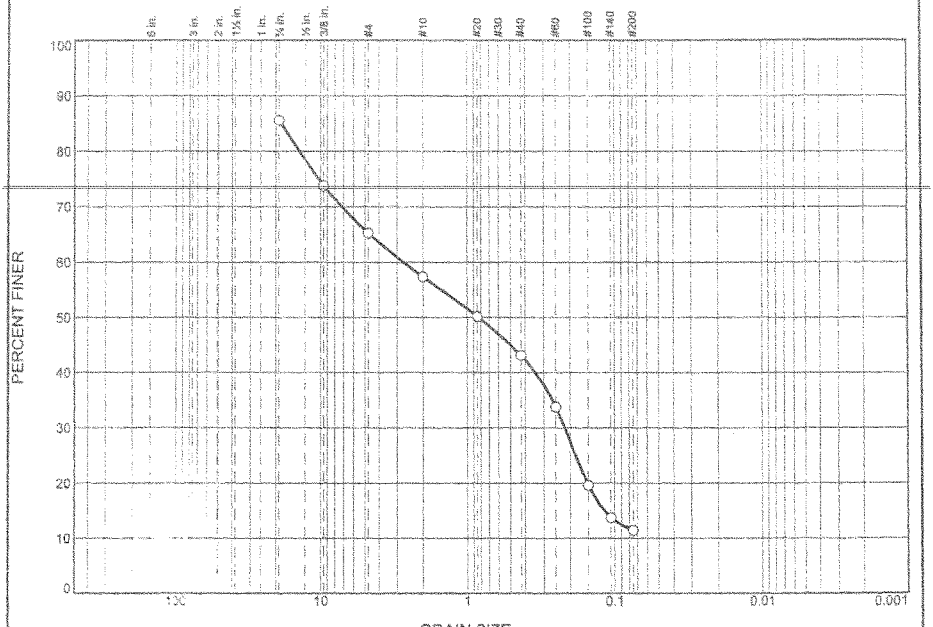
○ Moisture Content % 14.8

CP05-EAARS-VB-0285

Figure

Tested By: Pedro Camaraza **Checked By:** Kevin Leung

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○		21	8	14	32	11	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			18.4096	2.7228	0.8308	0.2172	0.1177			

Material Description	USCS	AASHTO
○ Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0190 Depth: 75' to 80'

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

Remarks:

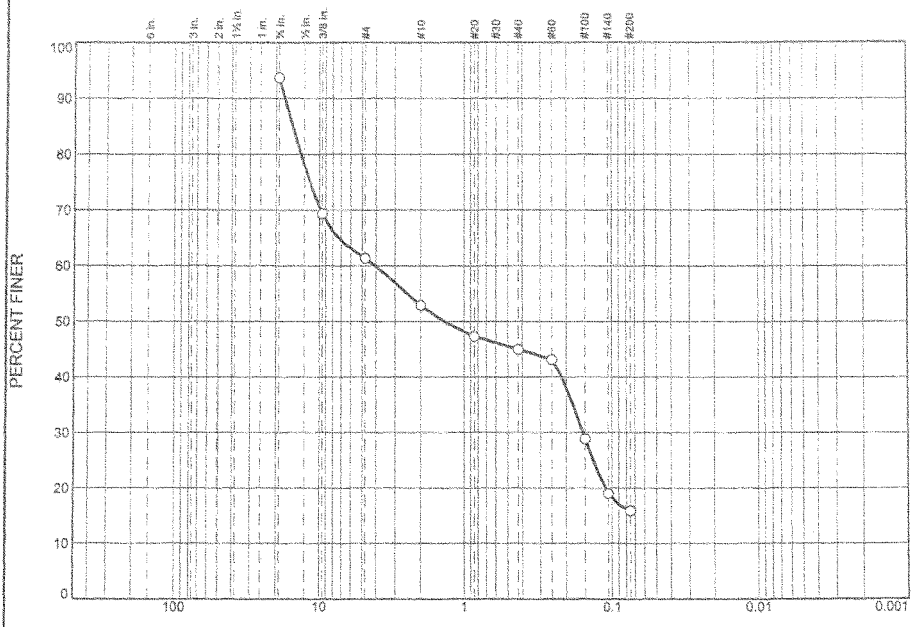
○ Moisture Content % 17.1

CP05-EAARS-VB-0285

Figure

Tested By: Pedro Camaraza Checked By: Kevin Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○			33	8	8	29	16	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			15.3817	4.0643	1.3624	0.1553				

Material Description	USCS	AASHTO
○ Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0190 Depth: 110' to 115'

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

Remarks:

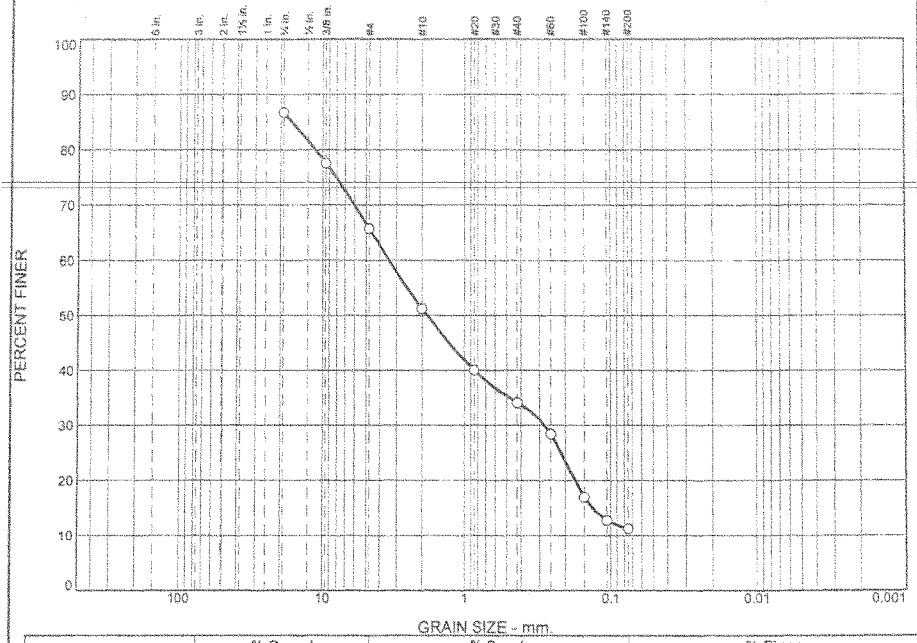
○ Moisture Content % 13.5

CP05-EAARS-VB-0285

Figure

Tested By: Pedro Camaraza Checked By: Kevin Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○			21	15	17	23	11	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			16.5258	3.4175	1.8409	0.2754	0.1326			

	Material Description	USCS	AASHTO
○	Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- **Client:** Black & Veatch
Project: E.A.A (Reservoir)
○ **Source of Sample:** CB-0190 **Depth:** 115' to 120'

Date: ○

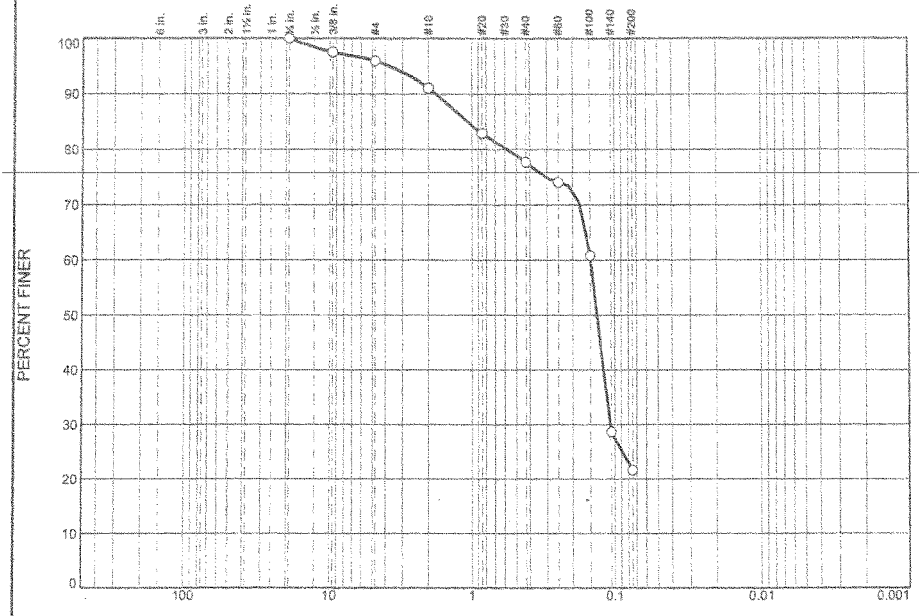
Nodarse & Associates, Inc.
Miami Lakes, FL

Remarks:
○ Moisture Content % 11.6
CP05-EAARS-VB-0285

Figure

Tested By: Pedro Camaraza Checked By: Kevin Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	4.0	4.9	13.4	56.0	21.7	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			1.0644	0.1485	0.1334	0.1081				

Material Description	USCS	AASHTO
○ Silty sand	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Sample Source: CB-0190 Depth: 150.0'-155.0' Sample No.: CB190

Nodarse & Associates, Inc.

Miami Lakes, FL

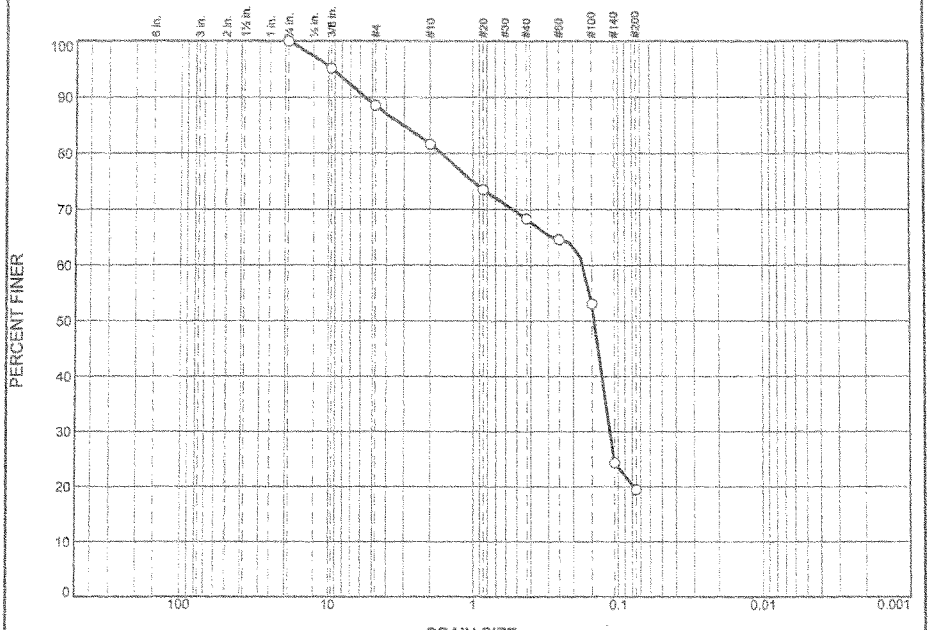
Remarks:

○ Moisture Content % 18.75 CP05-EAARS-VB-285

Figure

Tested By: Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	11.5	6.8	13.4	48.9	19.4	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			3.0457	0.1711	0.1440	0.1150				

	Material Description	USCS	AASHTO
○	Silty sand	SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ **Sample Source:** CB-0190 **Depth:** 155.0'-160.0' **Sample No.:** CB190

Nodarse & Associates, Inc.

Miami Lakes, FL

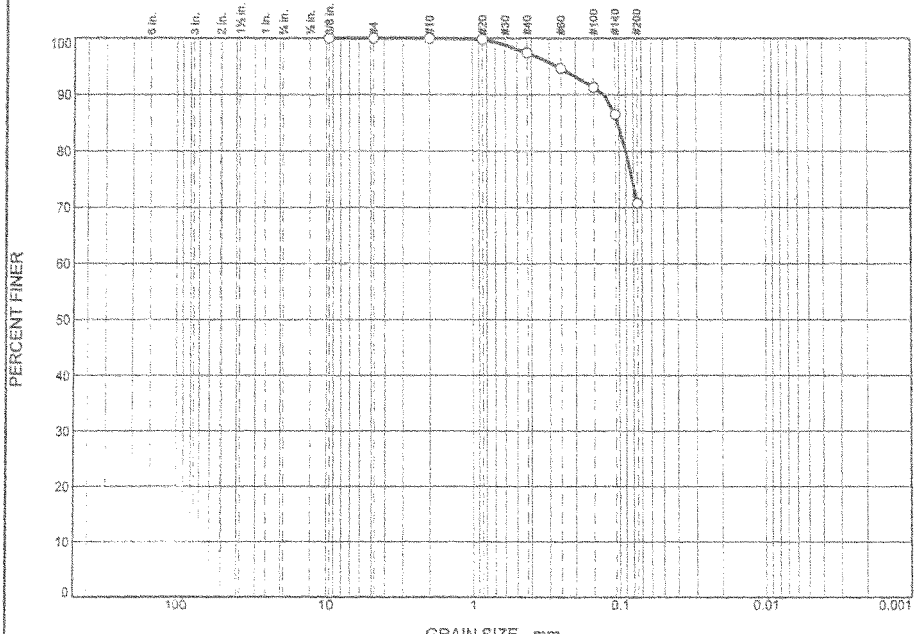
Remarks:

○ Moisture Content % 18.11 CP05-EAARS-VB-285

Figure

Tested By: LW/AC Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	2.6	26.6	70.8	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			0.1011							

Material Description	USCS	AASHTO
○ Silty sand	ML	

Project No. 05-05-0013- **Client:** Black & Veatch
Project: E.A.A (Reservoir)W/O#6

○ **Sample Source:** CB-0190 **Depth:** 215.0'-220.0' **Sample No.:** CB190

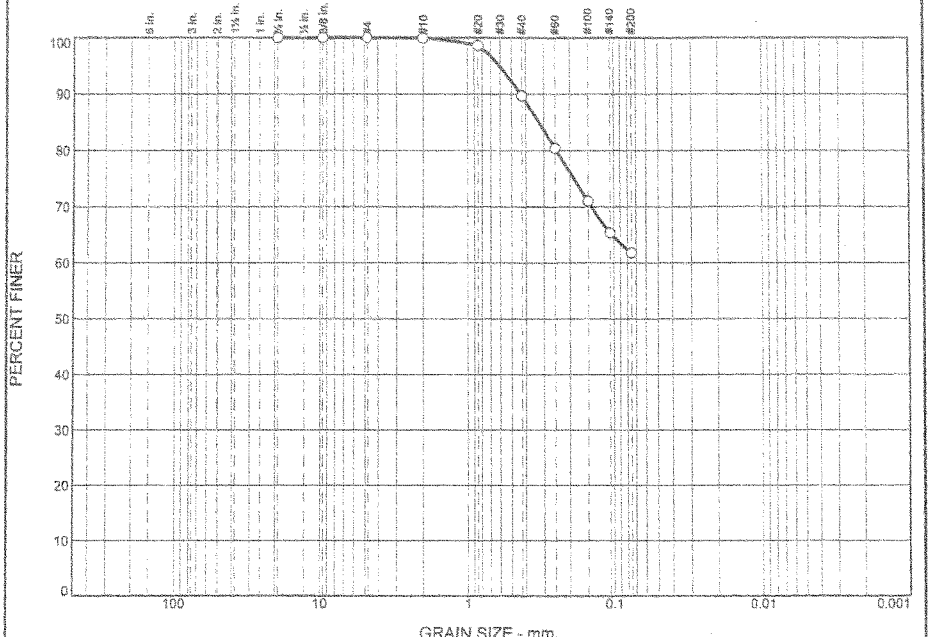
Remarks:
○ Moisture Content %43.4 CPO5-EAARS-VB-0285

Nodarse & Associates, Inc.
Miami Lakes, FL

Figure

Tested By: J.M.Z.Q. Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	10.2	28.0	61.8	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			0.3214							

Material Description	USCS	AASHTO
○ Silty sand	ML	

Project No. 05-05-0013- **Client:** Black & Veatch
Project: E.A.A (Reservoir)W/O#5

○ **Sample Source:** CB-0190 **Depth:** 220.0'-225.0' **Sample No.:** CB190

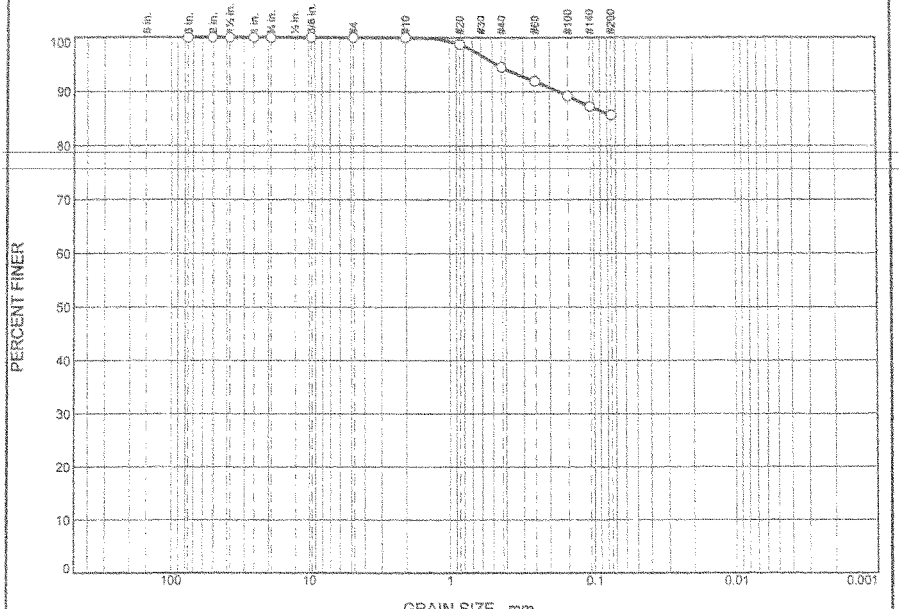
Remarks:
○ Moisture Content % 88.1 CP05-EAARS-VB-285

Nodarse & Associates, Inc.
Miami Lakes, FL

Figure

Tested By: MAZ Checked By: Michael Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	5.5	8.8	85.7	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	127	66								

Material Description	USCS	AASHTO
○ Silty sand	ML	

Project No. 05-05-0013- **Client:** Black & Veatch
Project: E.A.A (Reservoir)W/O#6

○ **Source of Sample:** CB-0190 **Depth:** 225'-230' **Sample Number:** CB190

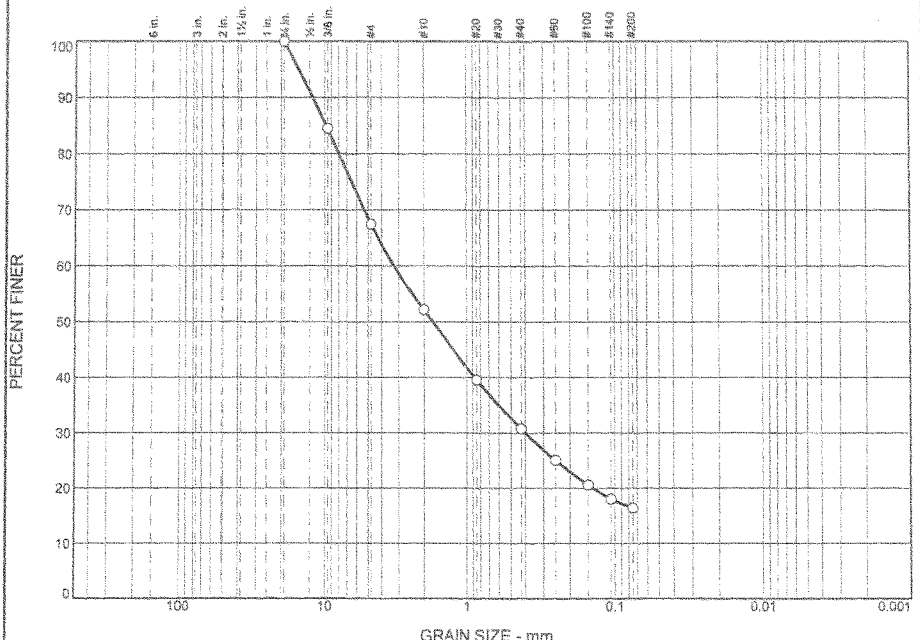
Nodarse & Associates, Inc.
Miami Lakes, FL

Remarks:
○ Moisture Content % 148.3 CP05-EAARS-VB0285

Figure

Tested By: CEPP Checked By: Michael Brown July 2014

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	32.5	15.3	21.4	14.4	16.4	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			9.7174	3.2447	1.7354	0.3970				

Material Description	USCS	AASHTO
○ Silty sand with gravel	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Source of Sample: CB205 Depth: 5.0'-10.0' Sample Number: CB205

Remarks:

○ Moisture Content %13.5 CP05-EAARS-VB-0286

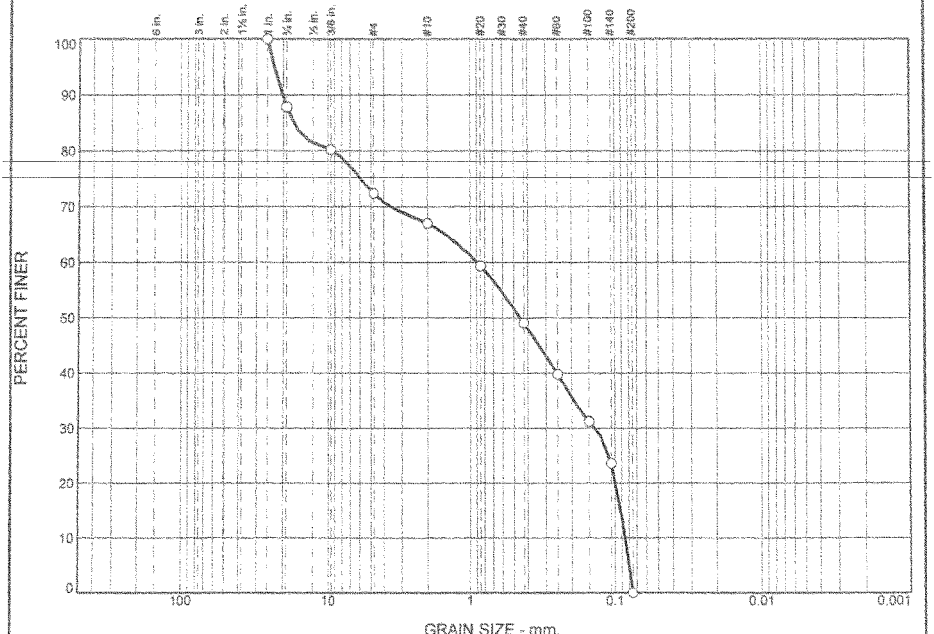
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: Polnicki Checked By: K Leung July 2014

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	12.2	15.4	5.4	17.9	49.1	0.0	0.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			17.1241	0.8955	0.4494	0.1364	0.0913	0.0852	0.24	10.51

	Material Description	USCS	AASHTO
○	Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Source of Sample: CB205 Depth: 15.0'-20.0' Sample Number: CB205

Remarks:

○ Moisture Content % 18.1 CP05-EAARS-VB-0286

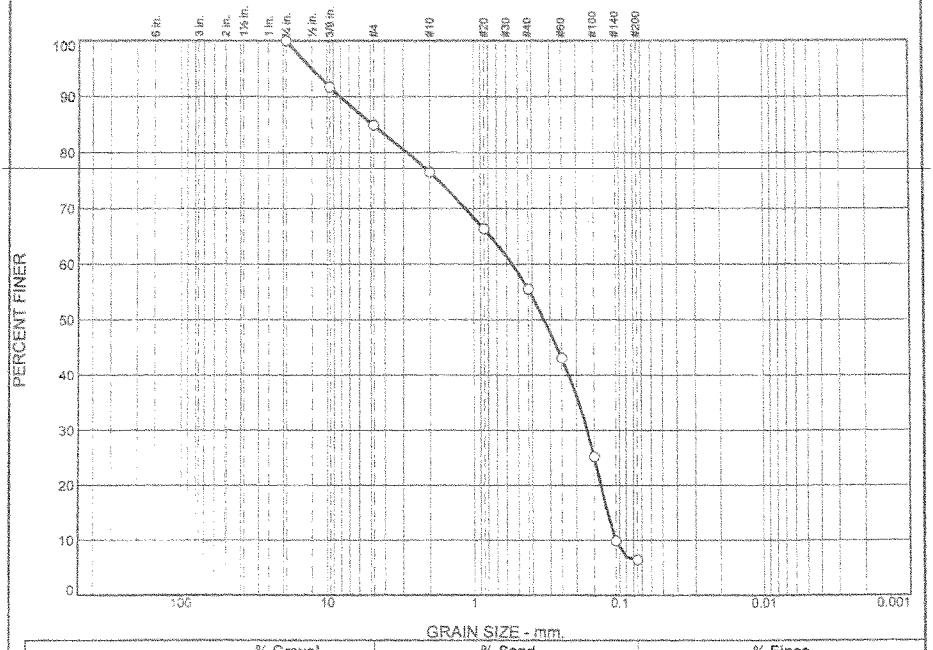
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: CEPP Final PIR and EIS Checked By: K Leung July 2014

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	15.1	8.4	21.0	49.1	6.4	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			4.7979	0.5468	0.3284	0.1675	0.1215	0.1066	0.48	5.13

Material Description	USCS	AASHTO
○ Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir) W/O#5

○ **Source of Sample:** CB205 **Depth:** 30.0'-35.0 **Sample Number:** CB205

Nodarse & Associates, Inc.

Miami Lakes, FL

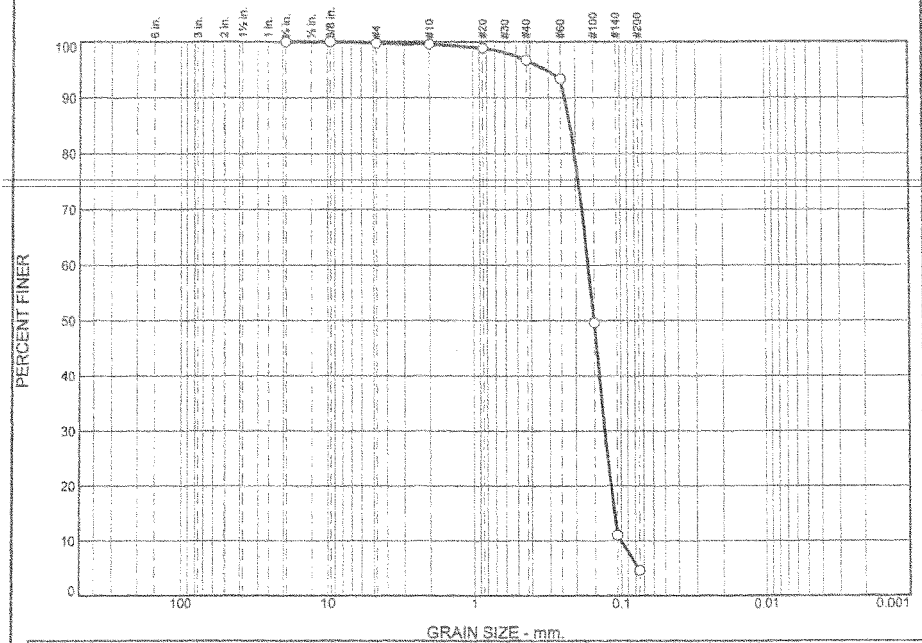
Remarks:

○ Moisture Content % 16.2 CP05-EAARS-VB-0286

Figure

Tested By: Pelenski Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.3	0.1	2.9	92.1	4.6	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2147	0.1638	0.1504	0.1282	0.1115	0.1002	1.00	1.64

Material Description	USCS	AASHTO
○ Poorly graded sand with silt	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch
Project: E.A.A (Reservoir)W/O#6

○ Source of Sample: CB205 Depth: 35.0'-40.0' Sample Number: CB205

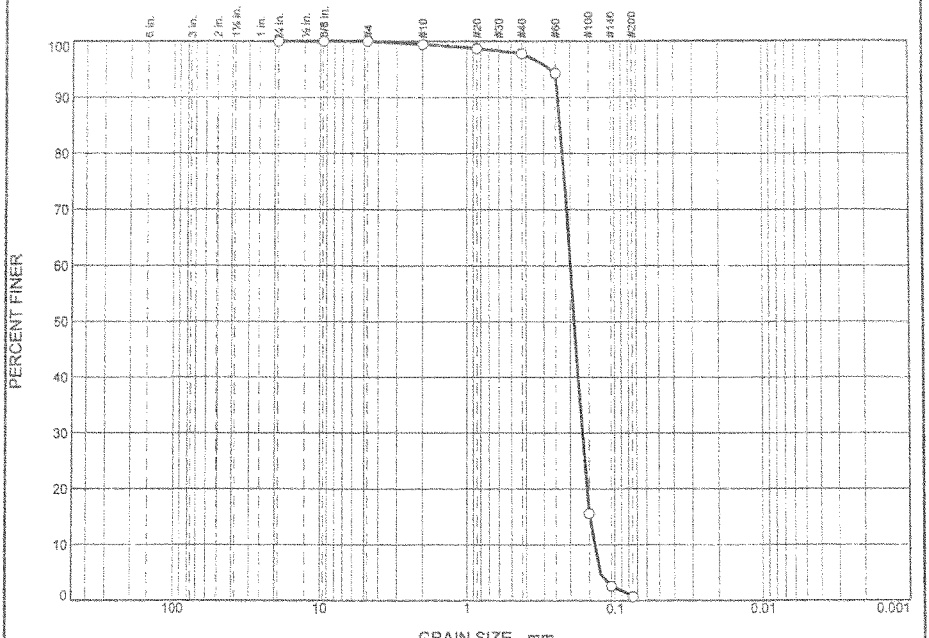
Remarks:
○ Moisture Content % 23.8 CP05-EAARS-VB-0286

Nodarse & Associates, Inc.
Miami Lakes, FL

Figure

Tested By: Rajook Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	0	1	1	97	1	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2317	0.1989	0.1881	0.1672	0.1492	0.1407	1.00	1.41

Material Description	USCS	AASHTO
○ Poorly graded sand	SP	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0205 Depth: 40' to 45'

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

Remarks:

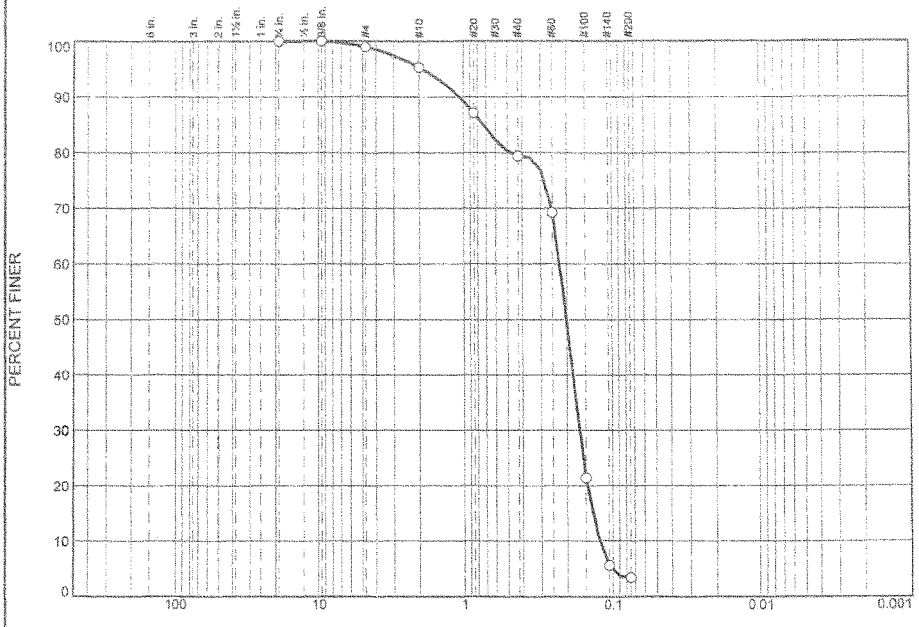
○ Moisture Content % 25.2

CP05-EAARS-VB-0286

Figure

Tested By: Pedro Camaraza Checked By: Kevin Leung

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	1	4	16	76	3	

LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
		0.7273	0.2225	0.2009	0.1653	0.1365	0.1232	1.00	1.81

Material Description	USCS	AASHTO
Poorly graded sand	SP	

Project No. 05-05-0013- **Client:** Black & Veatch
Project: E.A.A (Reservoir)
Source of Sample: CB-0205 **Depth:** 43' to 50'

Date:

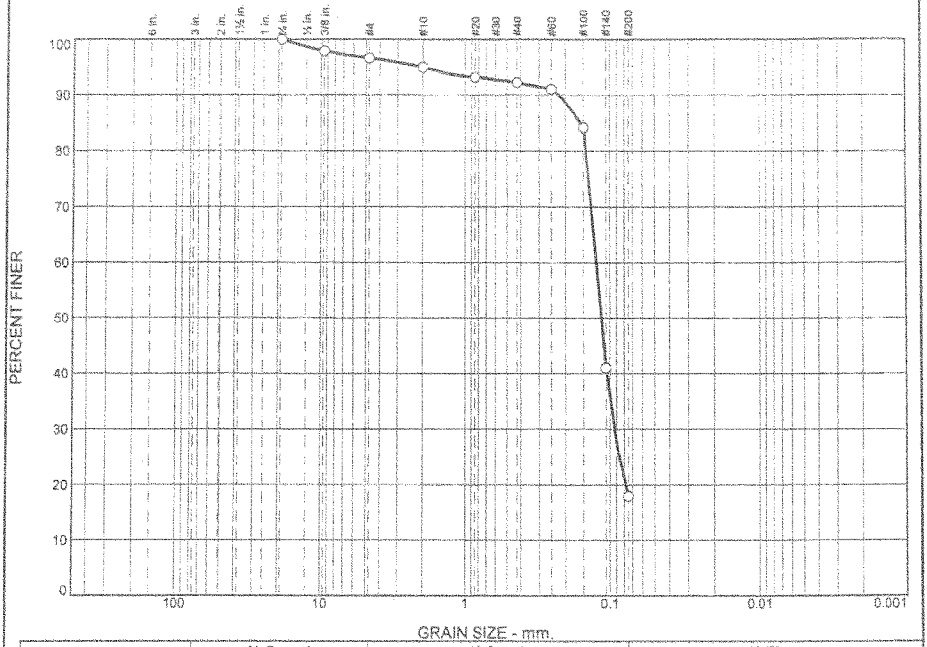
Nodarse & Associates, Inc.
Miami Lakes, FL

Remarks:
Moisture Content % 22.5
CP05-EAARS-VB-0286

Figure

Tested By: Pedro Camaraza Checked By: Kevin Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	3	2	3	74	18	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1566	0.1229	0.1141	0.0937				

Material Description	USCS	AASHTO
○ Silty sand	SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)

○ **Source of Sample:** CB-0205 **Depth:** 50' to 55'

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

Remarks:

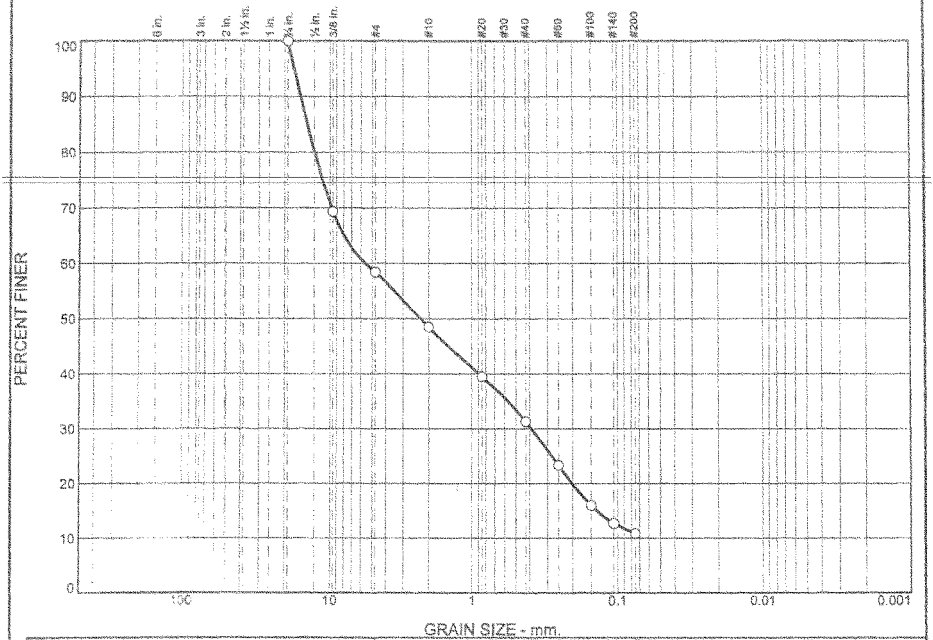
○ Moisture Content % 27.7

CP05-EAARS-VB-0286

Figure

Tested By: Pedro Camaraza Checked By: Kevin Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	41.5	10.0	17.2	20.5	10.8	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			14.1250	5.5497	2.2752	0.3869	0.1374			

	Material Description	USCS	AASHTO
○	Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Source of Sample: CB205 Depth: 60.0'-65.0' Sample Number: CB205

Remarks:

○ Moisture Content % 14.2 CP05-EAARS-VB-0286

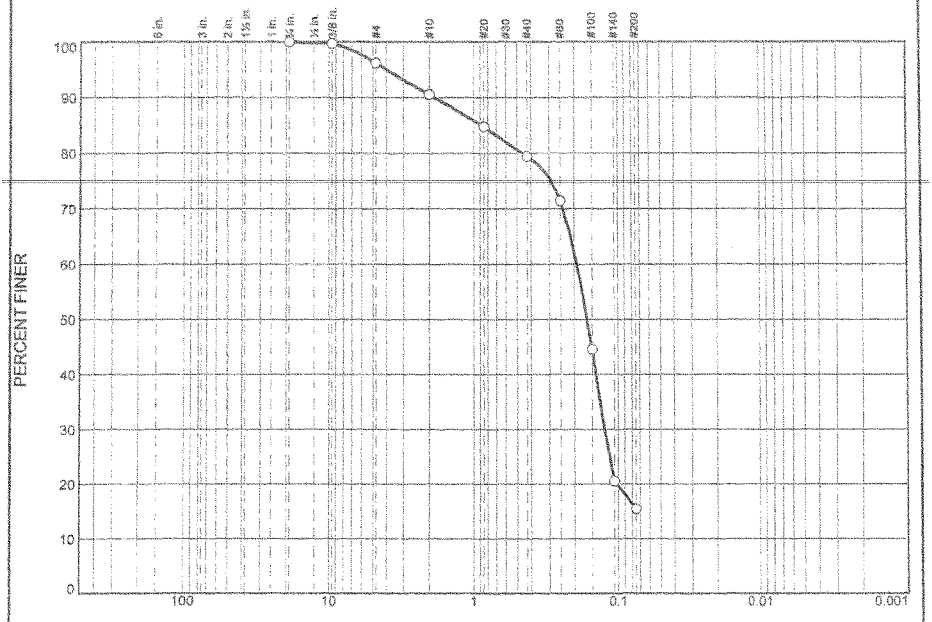
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: Rdiaz Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	3.8	5.7	11.1	63.9	15.5	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			0.8815	0.1907	0.1619	0.1239				

Material Description	USCS	AASHTO
○ Silty sand	SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ **Source of Sample:** CB205 **Depth:** 65.0'-70.0' **Sample Number:** CB205

Remarks:

○ Moisture Content % 20.6 CP05-EAARS-VB-0286

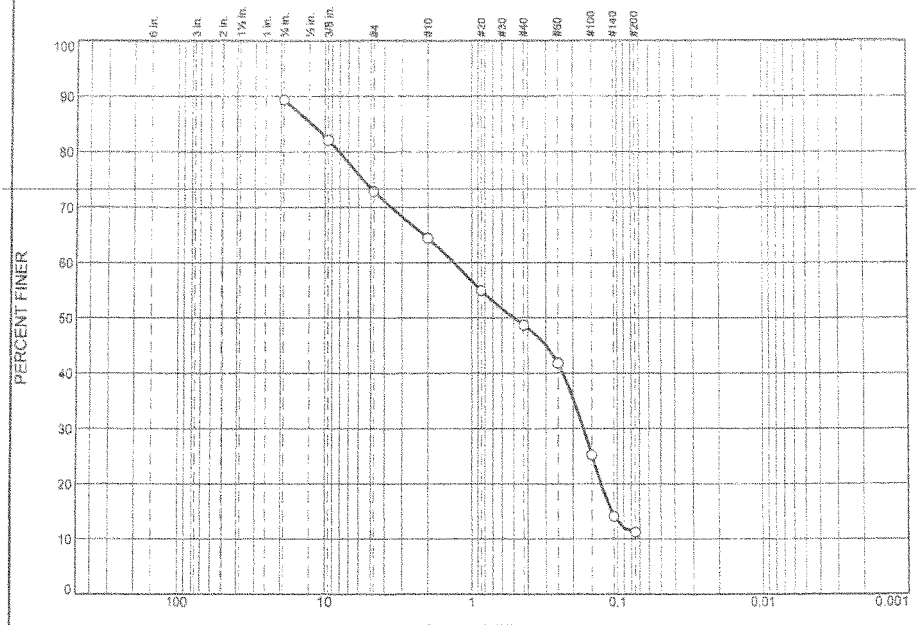
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: [illegible] Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○			16	9	15	38	11	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			12.2562	1.3364	0.4978	0.1704	0.1104			

Material Description	USCS	AASHTO
○ Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0205 Depth: 70' to 75'

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

Remarks:

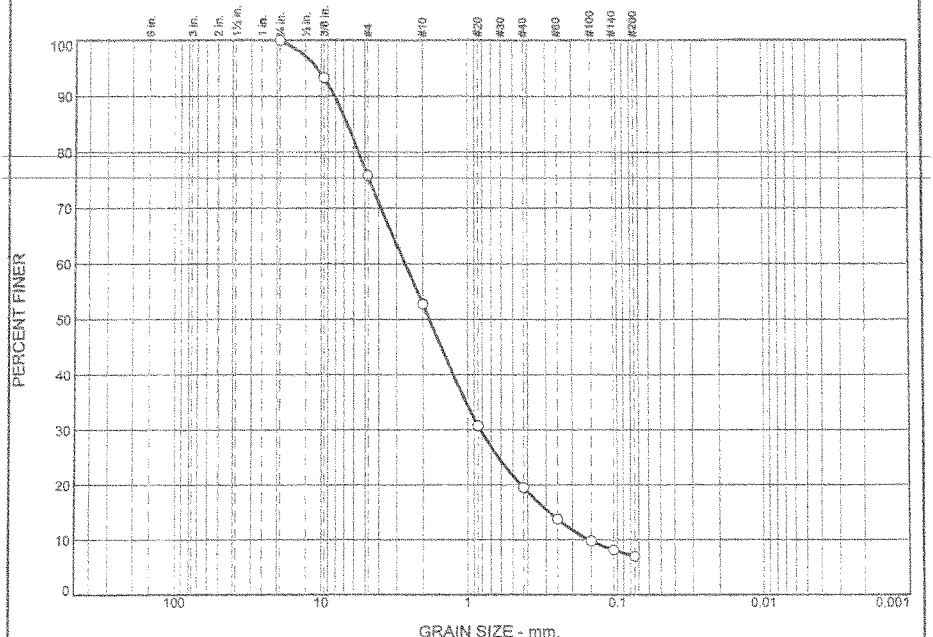
○ Moisture Content % 17.5

CP05-EAARS-VB-0286

Figure

Tested By: Pedro Camaraza Checked By: Kevin Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	24.2	23.0	33.3	12.5	7.0	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			6.6065	2.6252	1.8071	0.8197	0.2840	0.1554	1.65	16.89

Material Description	USCS	AASHTO
○ Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Source of Sample: CB205 Depth: 70.0'-75.0' Sample Number: CB205

Remarks:

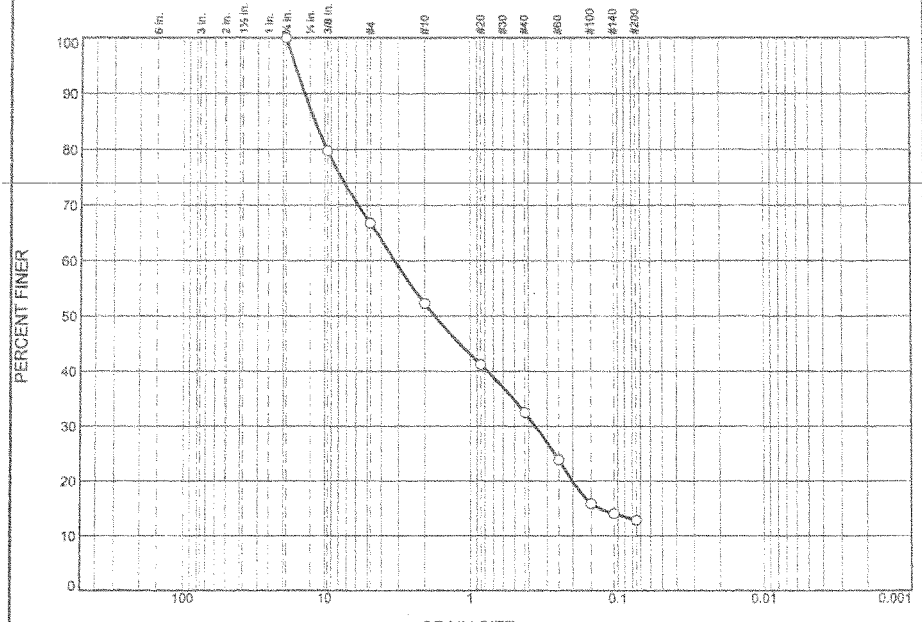
○ Moisture Content % 9.3 CP05-EAARS-VB-0286

Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	33.2	14.5	19.8	19.7	12.8	

LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
		11.6744	3.1951	1.7104	0.3590	0.1333			

Material Description	USCS	AASHTO
Well graded sand with silt and gravel	SW-SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)W/O#6

Source of Sample: CB205 **Depth:** 75.0'-80.0' **Sample Number:** CB205

Nodarse & Associates, Inc.

Miami Lakes, FL

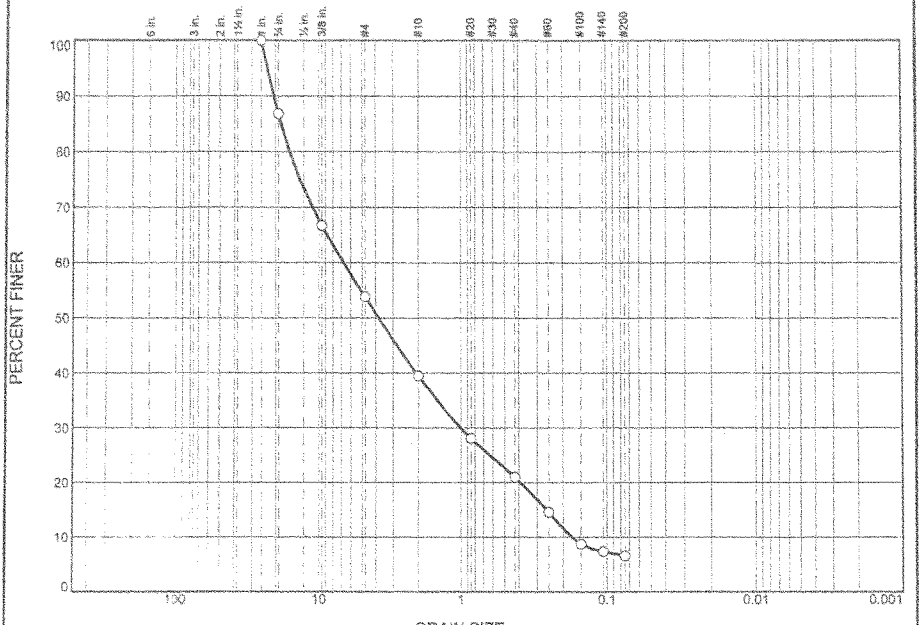
Remarks:

Moisture Content % 13.4 CP05-EAARS-VB-0286

Figure

Tested By: Bolocki Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	13.2	33.0	14.3	18.5	14.4	6.6	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			18.2007	6.7382	3.7962	1.0033	0.2582	0.1729	0.86	38.97

	Material Description	USCS	AASHTO
○	Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Source of Sample: CB205 Depth: 80.0'-85.0' Sample Number: CB205

Remarks:

○ Moisture Content % 11.7 CP05-EAARS-VB-0286

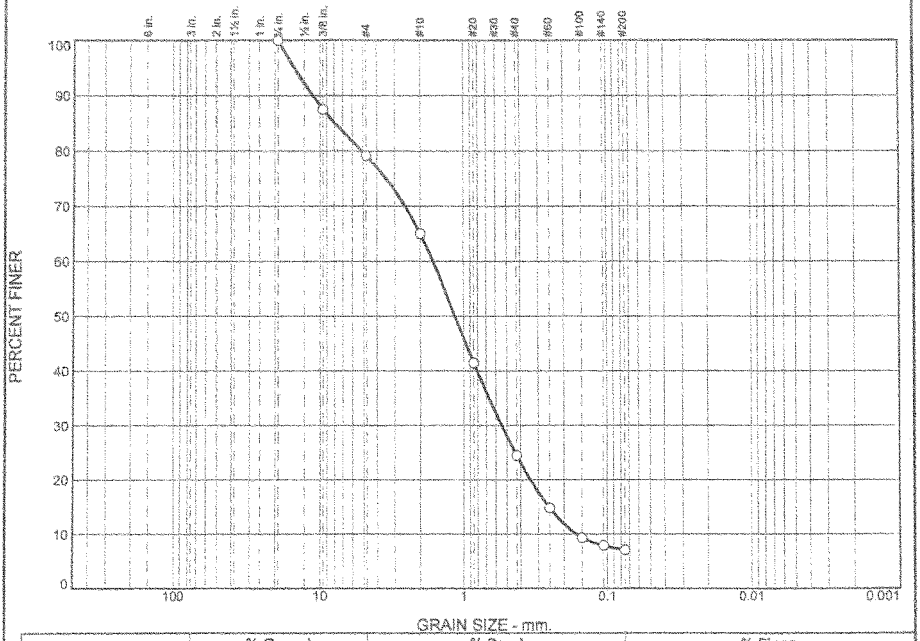
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: Rajnoki Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	20.8	14.1	40.6	17.4	7.1	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			7.9074	1.6310	1.1437	0.5431	0.2533	0.1649	1.10	9.89

Material Description	USCS	AASHTO
○ Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Source of Sample: CB205 Depth: 90.0'-95.0' Sample Number: CB205

Remarks:

○ Moisture Content % 15.1 CP05-EAARS-VB-0286

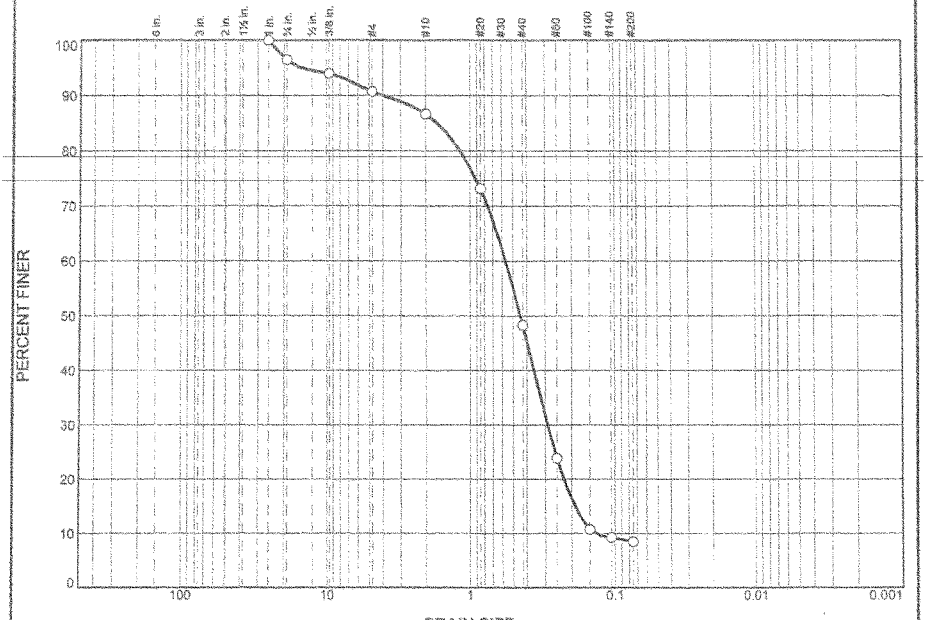
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	3.5	5.8	4.0	38.4	39.8	8.5	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.6646	0.5627	0.4413	0.2885	0.1900	0.1379	1.07	4.08

Material Description	USCS	AASHTO
○ Poorly graded sand with silt	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Source of Sample: CB205 Depth: 95.0'-100.0' Sample Number: CB205

Remarks:

○ Moisture Content % 16.8 CP05-EAARS-VB-0286

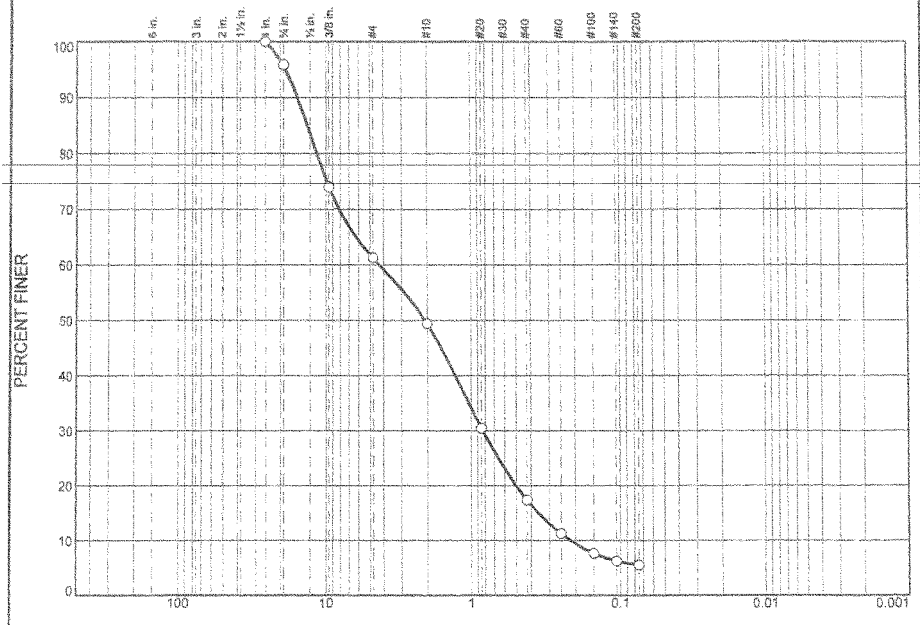
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: Pelaski Checked By: K Leung

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	4.1	34.6	11.9	32.0	11.9	5.5	

LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
		13.2217	4.2709	2.0650	0.8318	0.3563	0.2152	0.75	19.84

Material Description	USCS	AASHTO
well graded sand with silt and gravel	SW-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

Sample Source: CB205 Depth: 100.0'-105.0' Sample No.: CB205

Remarks:

Moisture Content % 10.9 CP05-EAARS-VB-0286

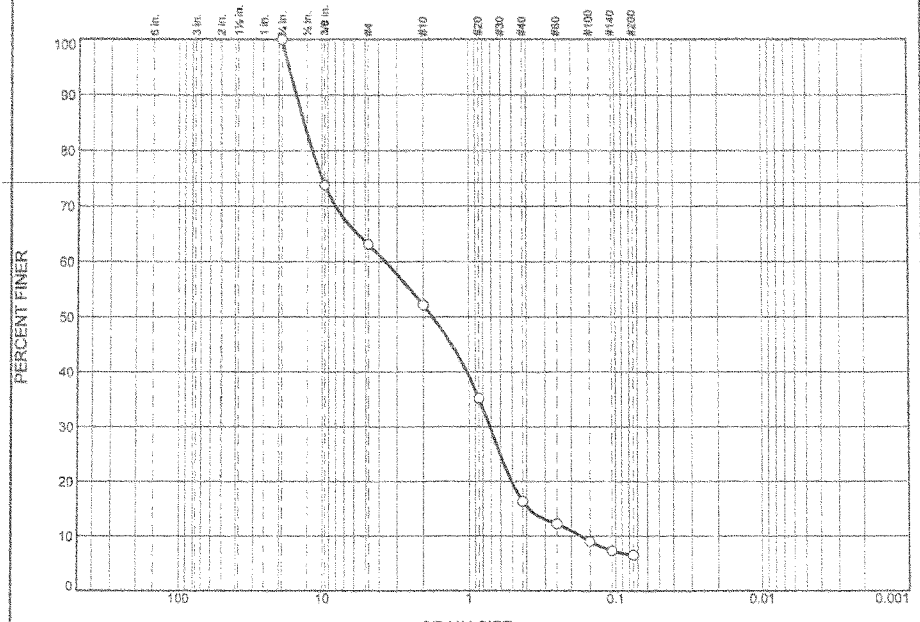
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: Bolecki Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	36.8	11.0	35.9	9.8	6.5	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			13.3199	3.5918	1.7351	0.7133	0.3870	0.1729	0.82	20.78

	Material Description	USCS	AASHTO
○	Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Sample Source: CB205 Depth: 105.0'-110.0' Sample No.: CB205

Remarks:

○ Moisture Content % 13.5 CP05-EAARS-VB-0286

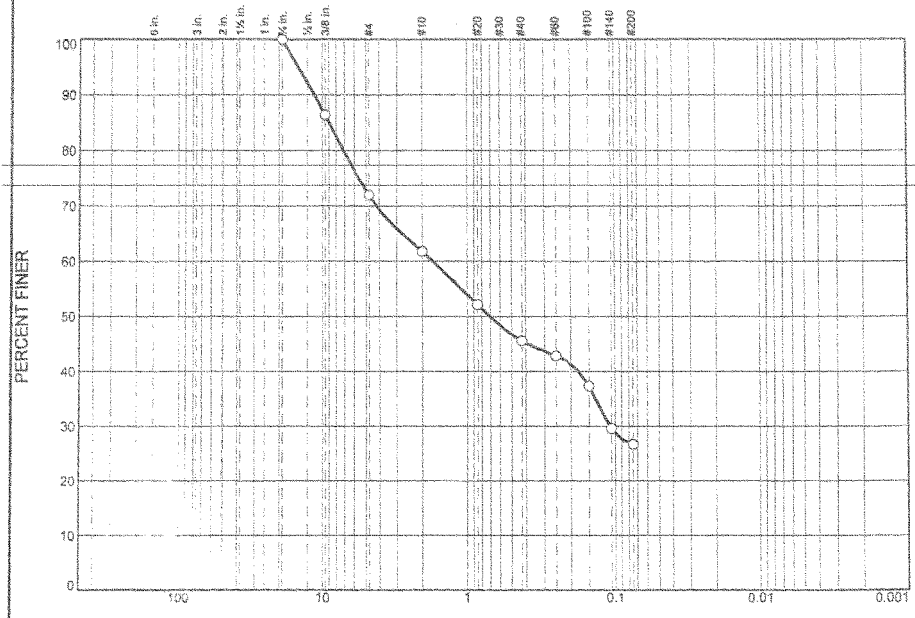
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: Poloski Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	28.0	10.2	16.2	18.9	26.7	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			8.9228	1.6878	0.7005	0.1086				

Material Description	USCS	AASHTO
○ Silty sand with gravel	SM	

Project No. 05-03-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Sample Source: CB205 Depth: 110.0'-115.0' Sample No.: CB205

Remarks:

○ Moisture Content % 19.8 CP05-EAARS-VB-0286

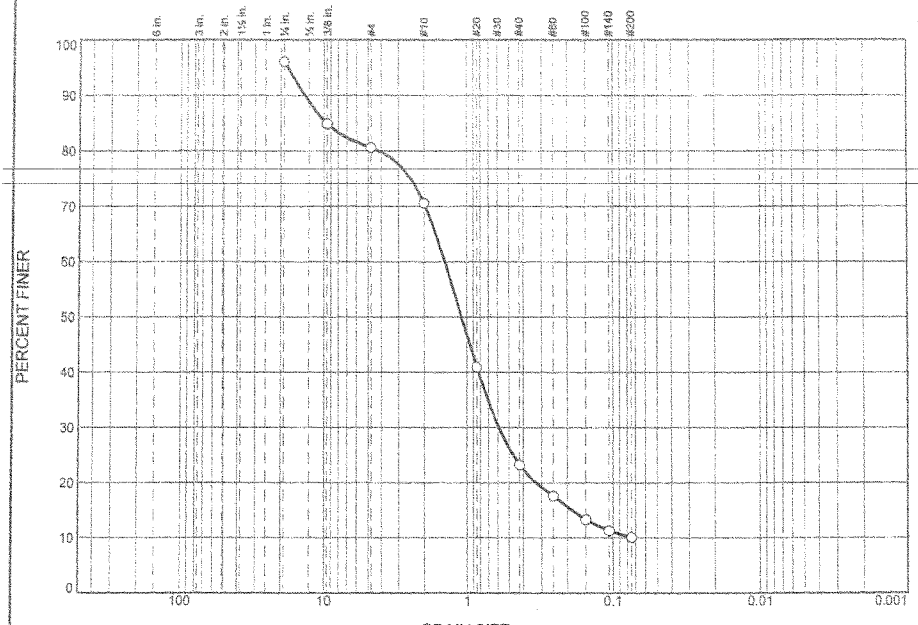
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: Bojnoki Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○			15	10	48	13	10	

X	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			9.6337	1.4233	1.0888	0.5903	0.1853			

Material Description	USCS	AASHTO
○ Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0205 Depth: 115' to 120'

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

Remarks:

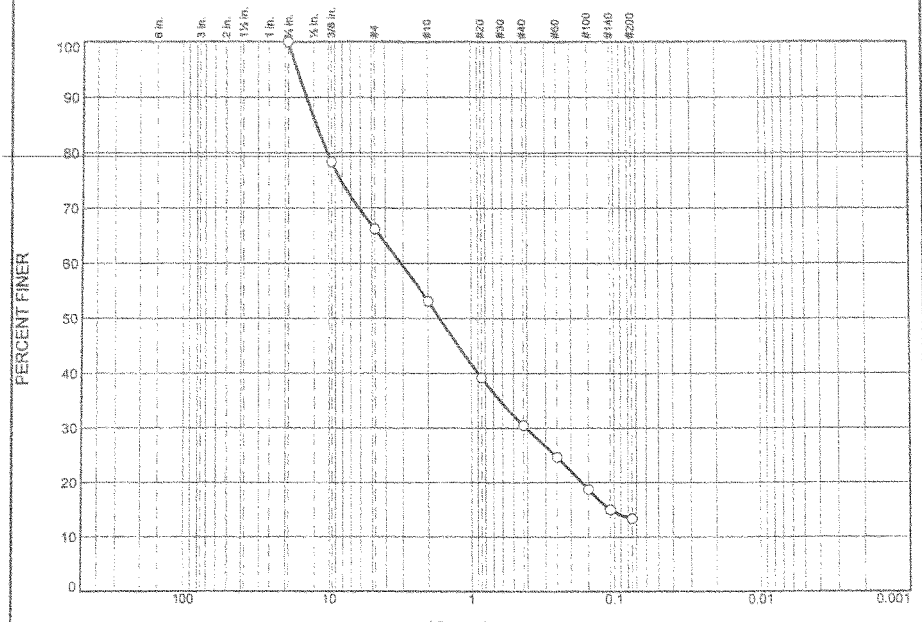
○ Moisture Content % 15.5

CP05-EAARS-VB-0286

Figure

Tested By: Pedro Camaraza Checked By: Kevin Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	33.8	13.0	22.7	17.1	13.4	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			12.1172	3.0958	1.6547	0.4065	0.1060			

Material Description	USCS	AASHTO
○ well graded sand with silt and gravel	SW-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Sample Source: CB205 Depth: 120.0'-125.0' Sample No.: CB205

Remarks:

○ Moisture Content % 13.4 CP05-EAARS-VB-0286

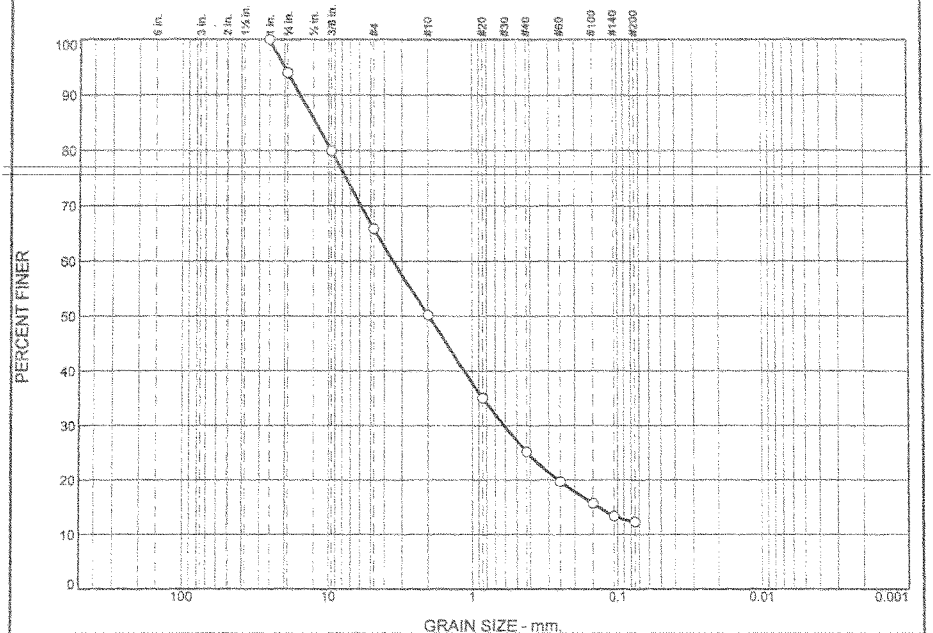
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: Dpowell Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	6.0	28.1	15.6	25.1	12.9	12.3	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			12.2356	3.4620	1.9692	0.6103	0.1357			

	Material Description	USCS	AASHTO
○	Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Source of Sample: CB205 Depth: 125'-130.0' Sample Number: CB205

Remarks:

○ Moisture Content % 16.6 CP05-EAARS-VB-0286

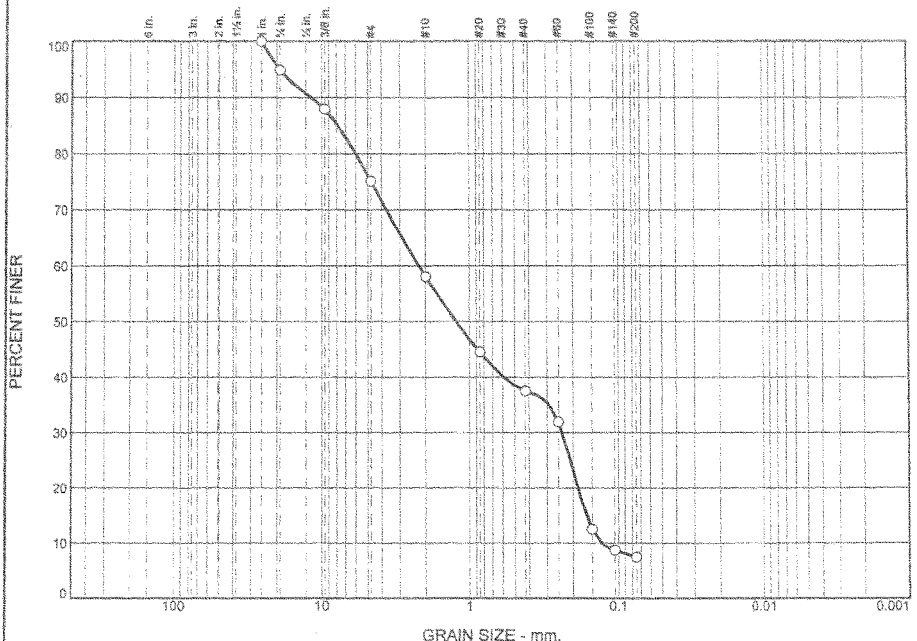
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: DBK Checked By: K Leung July 2014

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	5.1	19.7	17.1	20.6	30.0	7.5	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			7.8082	2.2231	1.2327	0.2356	0.1627	0.1304	0.19	17.05

Material Description	USCS	AASHTO
○ Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ **Sample Source:** CB205 **Depth:** 140.0'-145.0' **Sample No.:** CB205

Remarks:

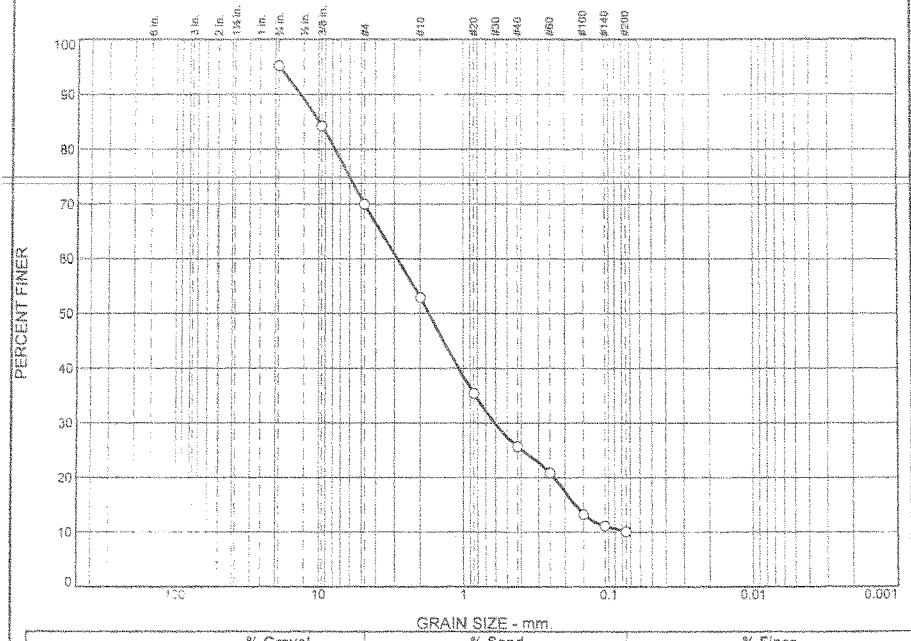
○ Moisture Content % 15.0 CP05-EAARS-VB-0286

Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○			25	17	27	16	10	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			9.9537	2.8667	1.7431	0.6109	0.1716			

Material Description	USCS	AASHTO
○ Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)

○ Source of Sample: CB-0205 Depth: 150' to 155'

Date: ○

Nodarse & Associates, Inc.

Miami Lakes, FL

Remarks:

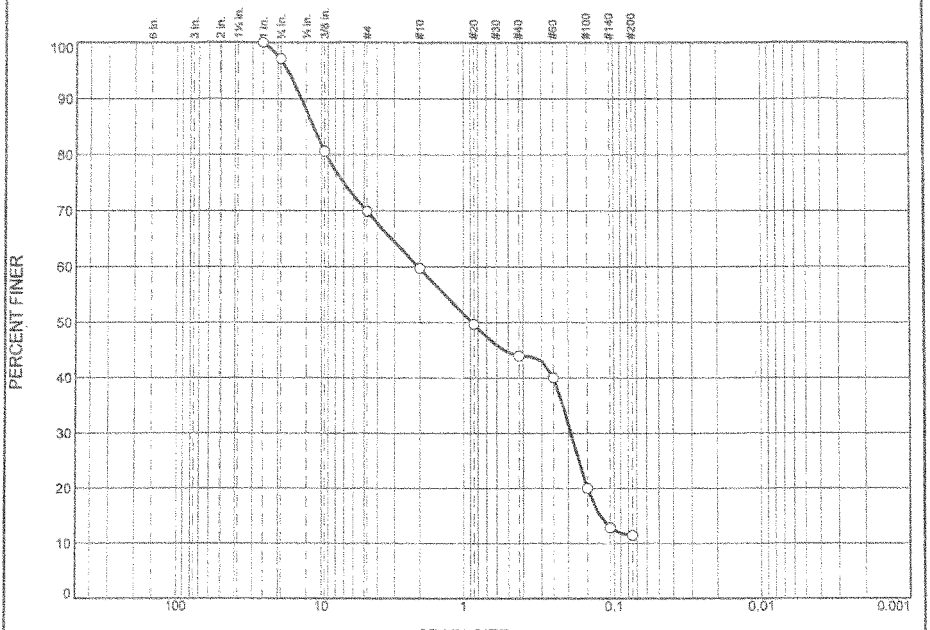
○ Moisture Content % 14.1

CP05-EAARS-VB-0286

Figure

Tested By: Pedro Camaraza Checked By: Kevin Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	2.9	27.2	10.2	15.7	32.5	11.5	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			11.3484	2.0447	0.8724	0.1915	0.1238			

Material Description	USCS	AASHTO
○ Poorly graded sand with silt and gravel	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Sample Source: CB205 Depth: 1565.0'-160.0' Sample No.: CB205

Nodarse & Associates, Inc.

Miami Lakes, FL

Remarks:

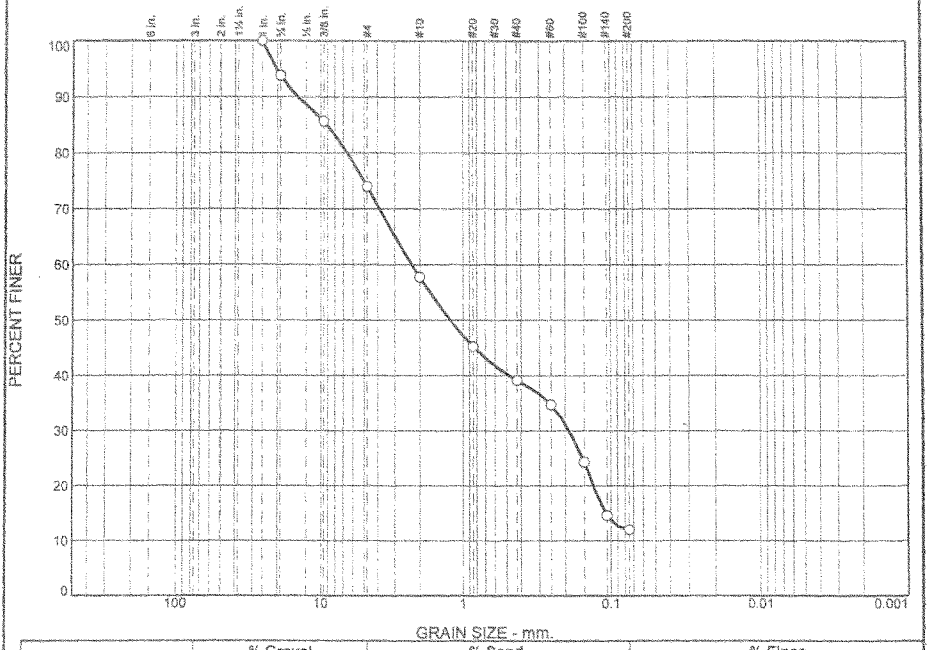
○ Moisture Content % 13.34

CP05-EAARS-VB-0286

Figure

Tested By: BURGOS Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	6.2	19.8	16.2	18.7	27.1	12.0	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			9.0486	2.2687	1.2245	0.1881	0.1081			

Material Description	USCS	AASHTO
○ Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ **Sample Source:** CB205 **Depth:** 160.0'-165.0' **Sample No.:** CB205

Nodarse & Associates, Inc.

Miami Lakes, FL

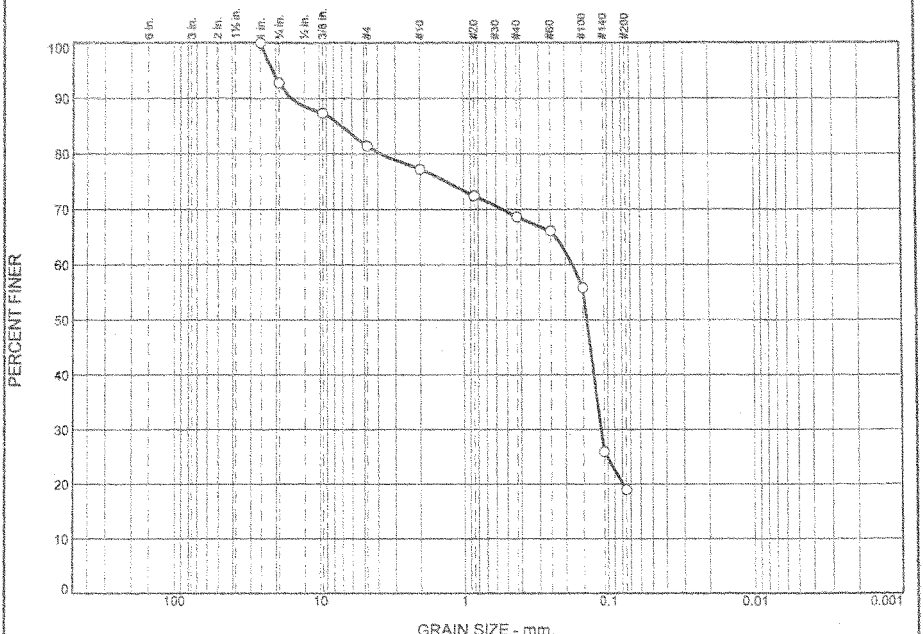
Remarks:

○ Moisture Content % 20.0 CP05-EAARS-VB-0286

Figure

Tested By: BOIGON Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	7.2	11.3	4.2	8.6	49.7	19.0	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			7.0278	0.1770	0.1395	0.1122				

Material Description	USCS	AASHTO
○ Silty sand with gravel	SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ **Sample Source:** CB205 **Depth:** 175.0'-180.0' **Sample No.:** CB205

Remarks:

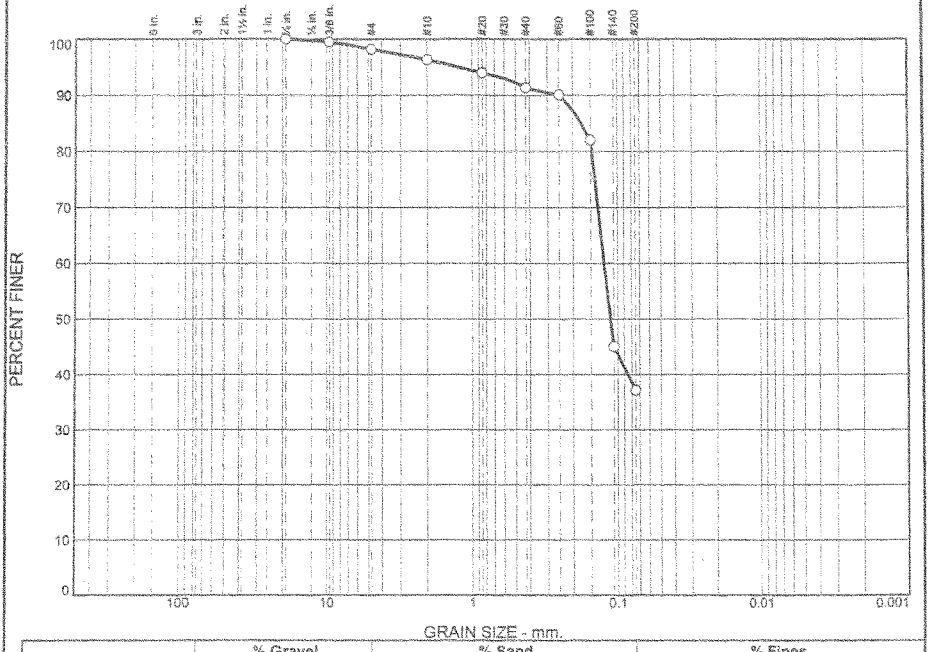
○ Moisture Content % 18.3 CP05-EAARS-VB-0286

Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	1.8	1.9	4.9	54.2	37.2	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1731	0.1227	0.1120					

Material Description	USCS	AASHTO
○ Silty sand	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Sample Source: CB205 Depth: 180.0'-185.0' Sample No.: CB205

Remarks:

○ Moisture Content % 20.7 CP05-EAARS-VB-0286

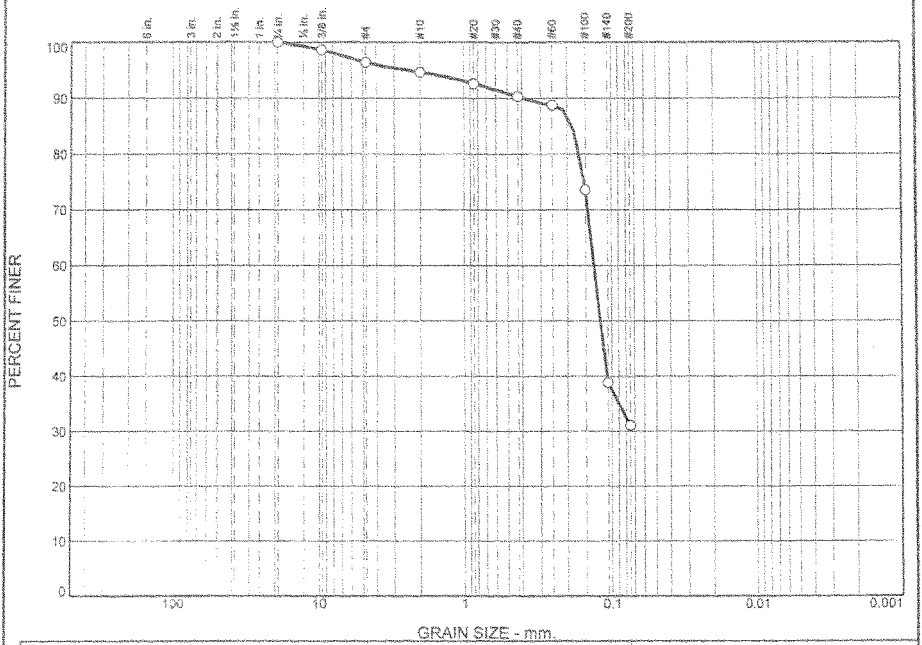
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: BOBBY Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	3.6	1.7	4.4	59.2	31.1	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.1832	0.1312	0.1198					

Material Description	USCS	AASHTO
○ Silty sand	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)WO#6

○ Sample Source: CB205 Depth: 195.0'-200.0' Sample No.: CB205

Remarks:

○ Moisture Content % 18.5 CP05-EAARS-VB-0286

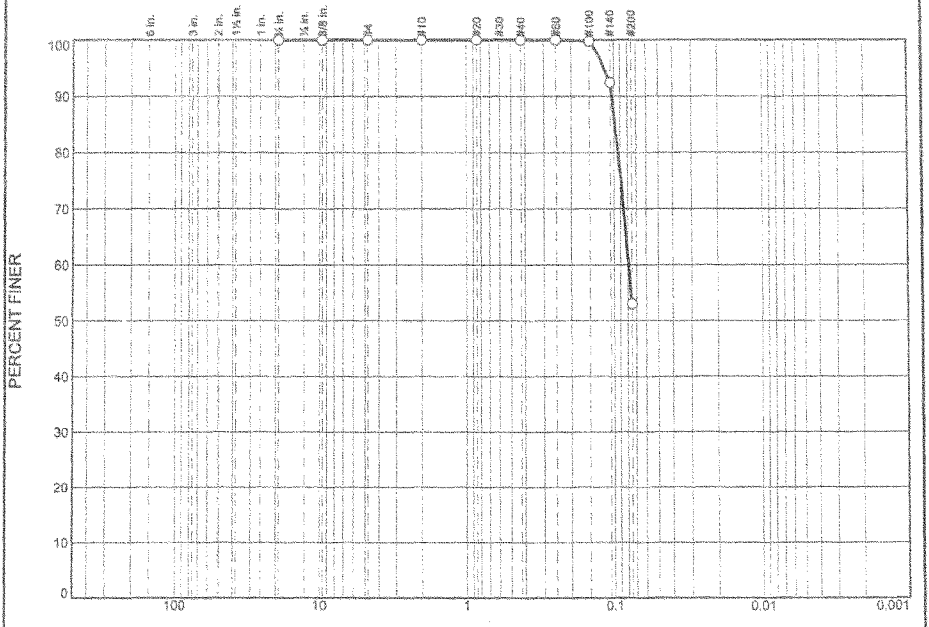
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: Bolooki Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	0.0	46.9	53.1	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.0970	0.0789						

	Material Description	USCS	AASHTO
○	Inorganic silts with very fine sand	SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ **Sample Source:** CB205 **Depth:** 215.0'-220.0' **Sample No.:** CB205

Nodarse & Associates, Inc.

Miami Lakes, FL

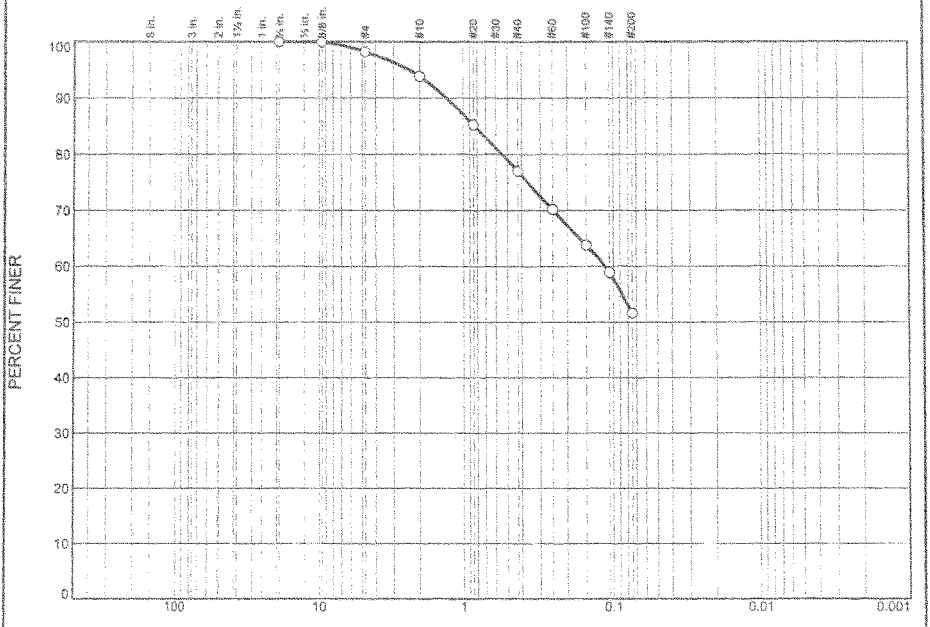
Remarks:

○ Moisture Content % 24.7 CP05-EAARS-VB-0286

Figure

Tested By: BOBOOM Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	1.8	4.3	16.9	25.3	51.7	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			0.8308	0.1129						

Material Description	USCS	AASHTO
○ Inorganic silts and very fine sands	ML	

Project No. 05-05-0013- **Client:** Black & Veatch
Project: E.A.A (Reservoir)W/O#6

○ **Source of Sample:** CB219 **Depth:** 14.0'-15.5 **Sample Number:** CB219

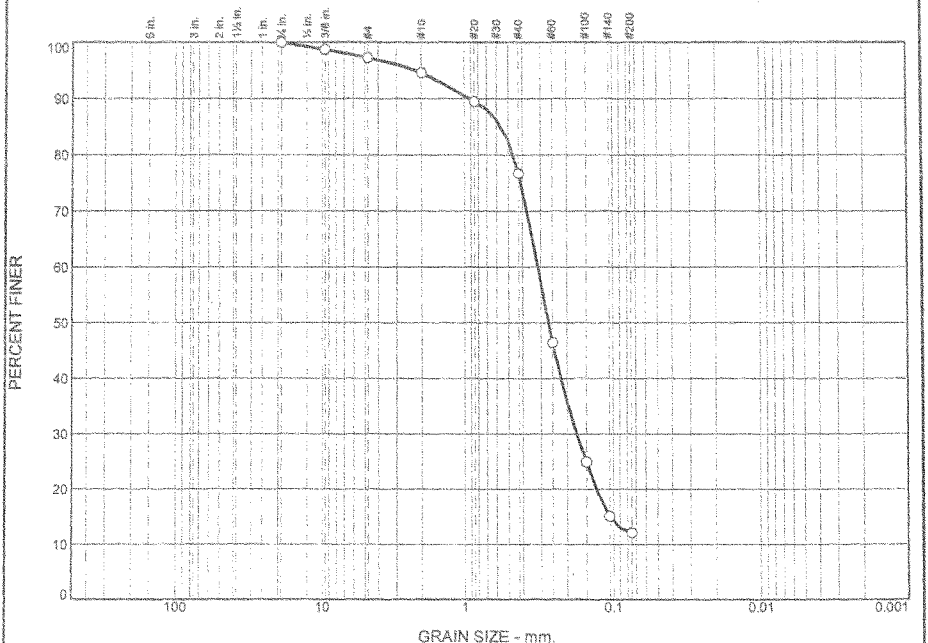
Nodarse & Associates, Inc.
Miami Lakes, FL

Remarks:
○ Moisture Content %22.8 CP05-EAARS-CB-0317

Figure

Tested By: L Mazo Checked By: M Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	2.7	2.7	17.9	64.6	12.1	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.5563	0.3138	0.2661	0.1729	0.1057			

Material Description	USCS	AASHTO
○ Poorly graded sand with silt	SP-SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ **Source of Sample:** CB219 **Depth:** 34.0-35.5 **Sample Number:** CB219

Remarks:

○ Moisture Content % 25.4 CP05-EAARS-CB-0317

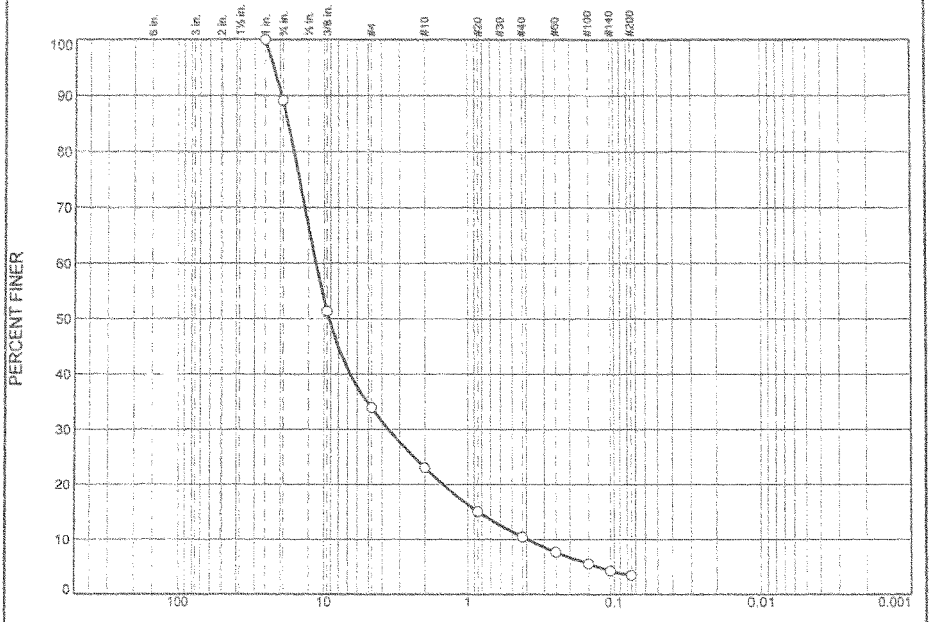
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: L Mazo Checked By: M Brown

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	10.8	55.3	10.9	12.5	7.0	3.5	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			17.4855	11.2897	9.2234	3.5693	0.8428	0.3896	2.90	28.98

	Material Description	USCS	AASHTO
○	Poorly graded gravel with sand	GP	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Source of Sample: CB0228 Depth: 4.0'-5.5 Sample Number: CB0228

Remarks:

○ Moisture Content % 5.2 CP05-EAARS-CB-0326

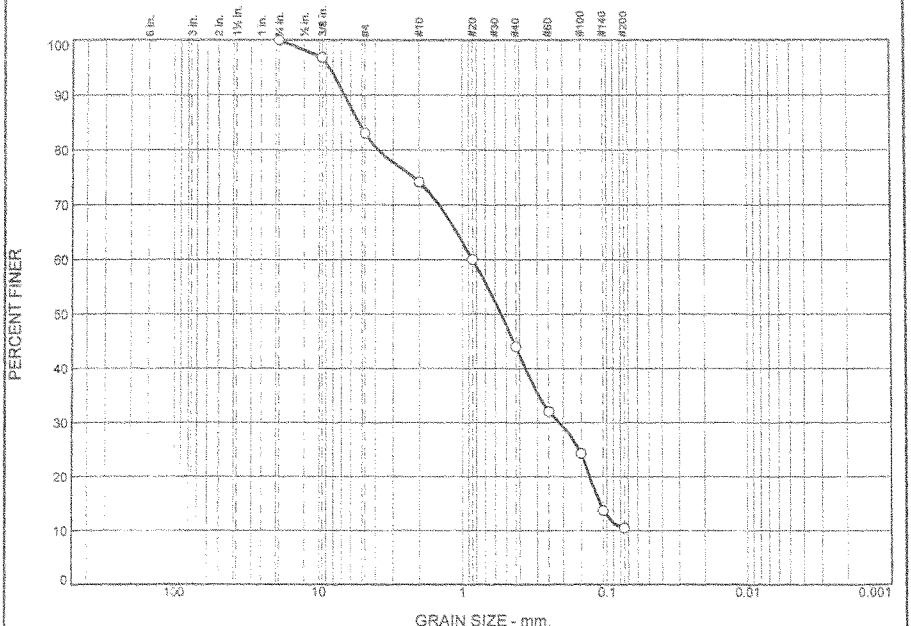
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: M Mazo Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	16.9	8.9	30.2	33.5	10.5	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			5.2567	0.8482	0.5416	0.2123	0.1115			

	Material Description	USCS	AASHTO
○	Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- **Client:** Black & Veatch
Project: E.A.A (Reservoir)W/O#6

○ **Source of Sample:** CB0228 **Depth:** 14.0'-15.5 **Sample Number:** CB0228

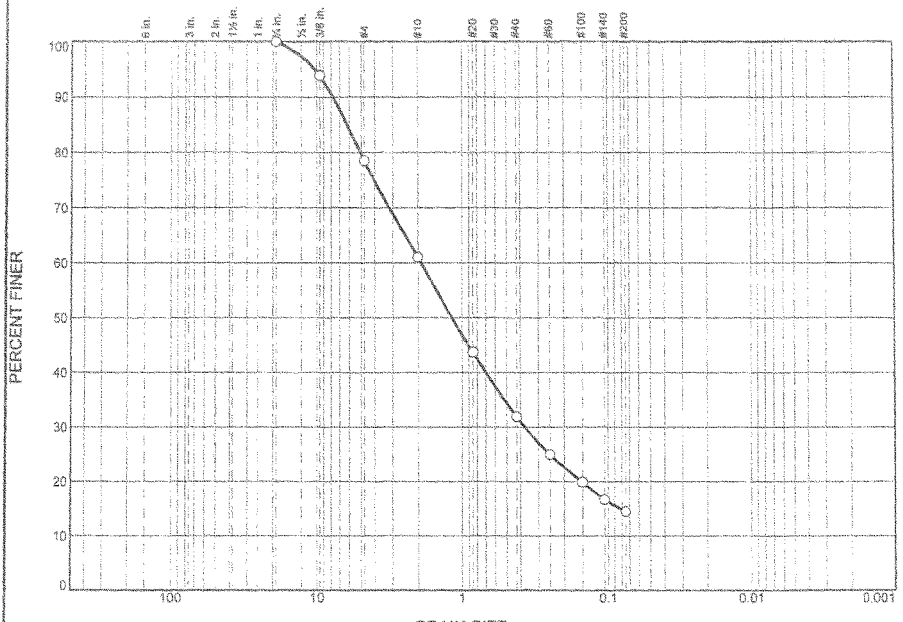
Remarks:
○Moisture Content % 22.6 CP05-EAARS-CB-0326

Nodarse & Associates, Inc.
Miami Lakes, FL

Figure

Tested By: bolooki Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	21.5	17.5	29.1	17.4	14.5	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			6.2268	1.8989	1.1658	0.3721	0.0819			

Material Description	USCS	AASHTO
○ Silty sand with gravel	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

Remarks:

○Moisture Content % 16.8 CP05-EAARS-CB-0329

○ Source of Sample: CB231 Depth: 8.5'-10.0' Sample Number: CB231

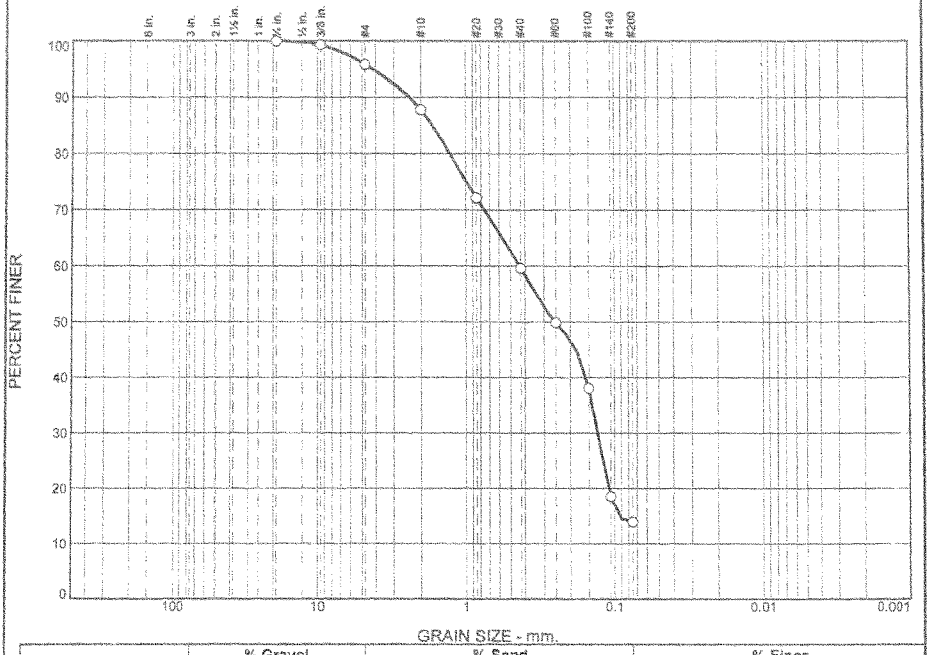
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: Bolooki Checked By: K Leung

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	4.2	8.0	28.1	45.7	14.0	

LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
		1.6785	0.4322	0.2521	0.1305	0.0926			

Material Description	USCS	AASHTO
Poorly graded sand with silt	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

Source of Sample: CB231 Depth: 13.5'-15.0' Sample Number: CB231

Remarks:

Moisture Content % 22.0 CP05-EAARS-CB-0329

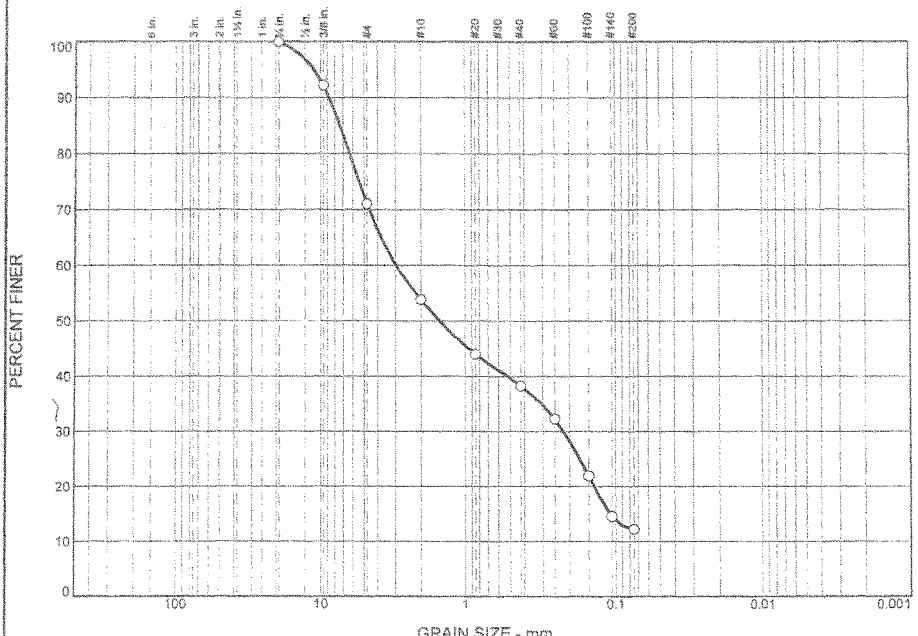
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	28.9	17.3	15.5	26.0	12.3	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			7.3318	2.9564	1.4925	0.2181	0.1089			

	Material Description	USCS	AASHTO
○	Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ **Source of Sample:** CB231 **Depth:** 18.5'-20.0 **Sample Number:** CB231

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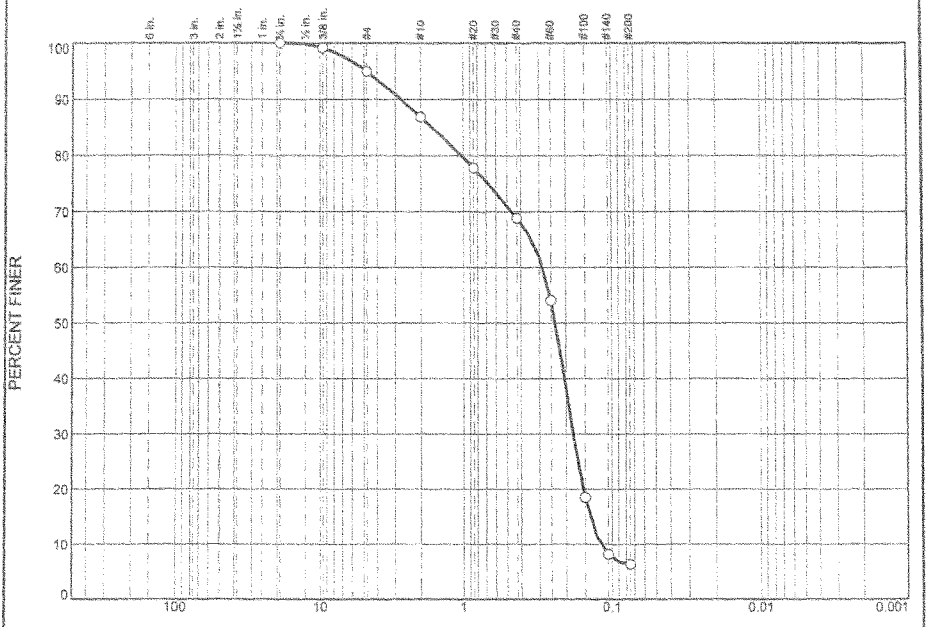
Remarks:

○ Moisture Content % 13.0 CP05-EAARS-CB-0329

Figure

Tested By: BoloOKI Checked By: K Leung

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	5.0	8.1	18.1	62.5	6.3	

LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
		1.6571	0.2831	0.2339	0.1787	0.1394	0.1185	0.95	2.39

Material Description	USCS	AASHTO
Poorly graded sand with silt	SP-SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)W/O#6

Source of Sample: CB231 **Depth:** 23.5'-25.0 **Sample Number:** CB231

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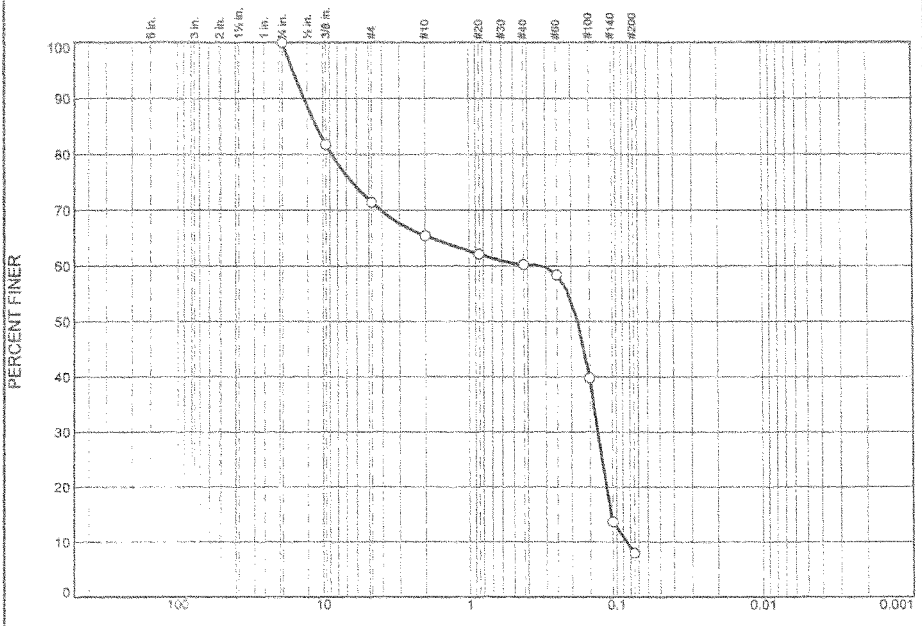
Remarks:

Moisture Content % 25.6 CP05-EAARS-CB-0329

Figure

Tested By: Bolooki Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	28.6	6.0	5.2	52.2	8.0	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			10.9857	0.3136	0.1797	0.1326	0.1086	0.0846	0.66	3.70

Material Description	USCS	AASHTO
○ Poorly graded fine sand with silt and gravel	SP-SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ **Source of Sample:** CB231 **Depth:** 33.5'-35.0 **Sample Number:** CB231

Remarks:

○ Moisture Content % 15.7 CP05-EAARS-CB-0329

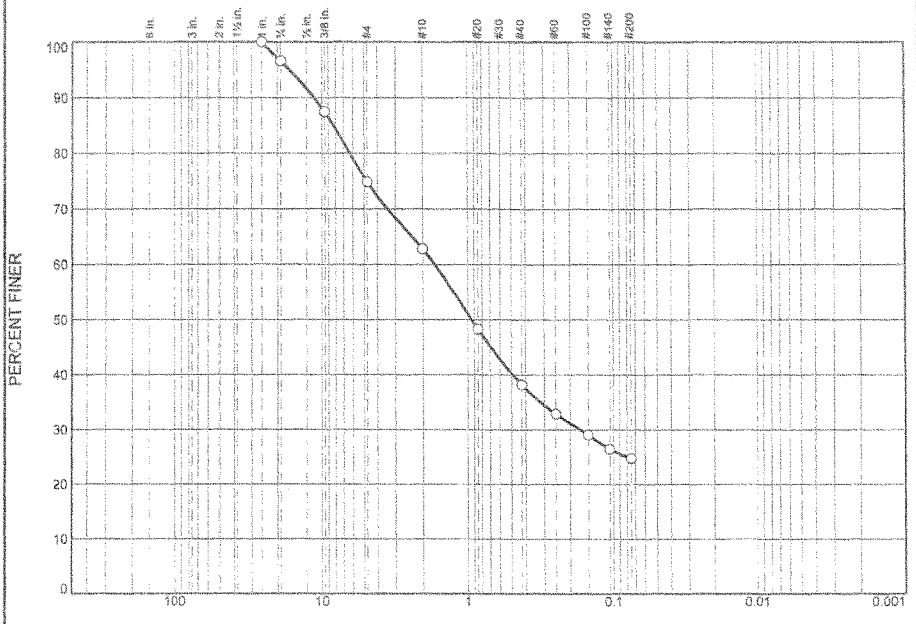
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: BOJOOKI Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	3.4	21.7	12.1	24.6	13.4	24.8	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			8.2515	1.6704	0.9373	0.1693				

Material Description	USCS	AASHTO
○ Silty sand with gravel	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Source of Sample: CB235 Depth: 8.5'-10.0 Sample Number: CB235

Remarks:

○ Moisture Content % 24.4 CP05-EAARS-CB-0333

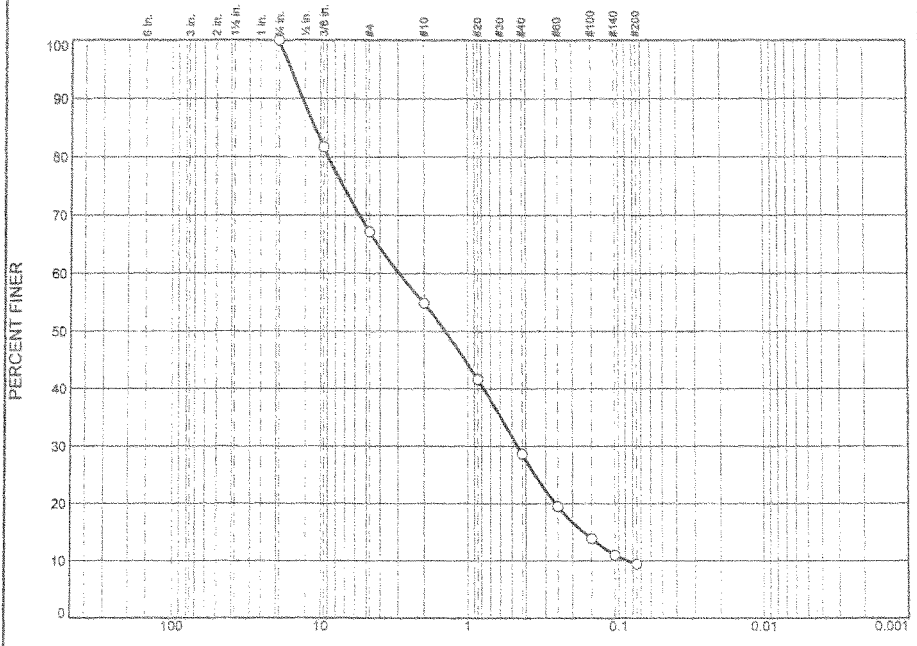
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: Bolooki Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	32.8	12.4	26.1	19.3	9.4	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			10.8848	2.9453	1.4254	0.4559	0.1689	0.0866	0.81	33.99

Material Description	USCS	AASHTO
○ Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)W/O#6

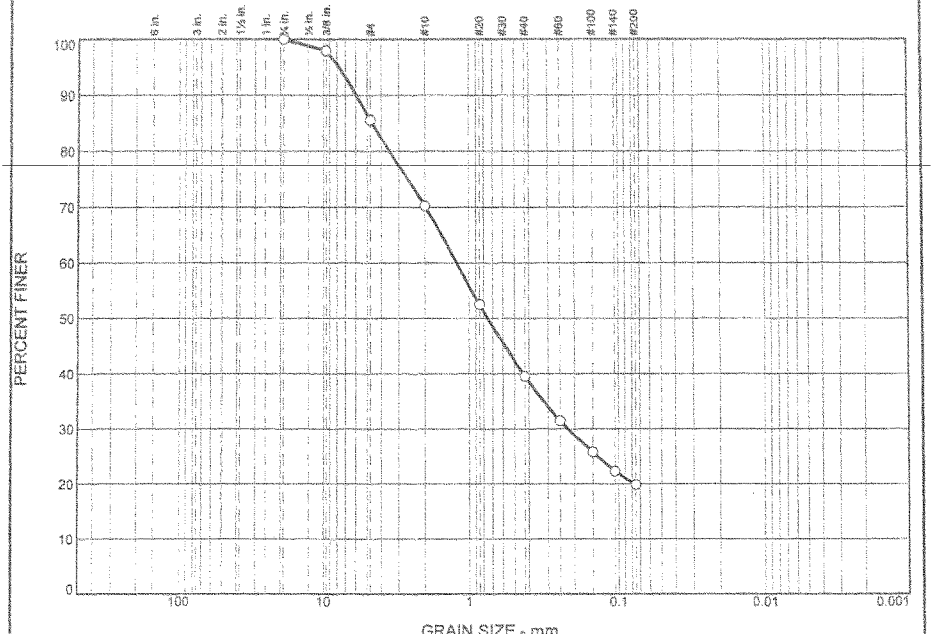
○ **Source of Sample:** CB248 **Depth:** 10.0'-11.5 **Sample Number:** CB248

Remarks:

○ Moisture Content %10.1 CP05-EAARS-CB-0346

Nodarse & Associates, Inc.

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	14.4	15.3	30.7	19.7	19.9	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			4.6041	1.2124	0.7504	0.2212				

Material Description	USCS	AASHTO
○ Silty sand with gravel	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Source of Sample: CB260 Depth: 13.0'-13.5 Sample Number: CB260

Remarks:

○ Moisture Content % 20.6 CP05-EAARS-CB-0358

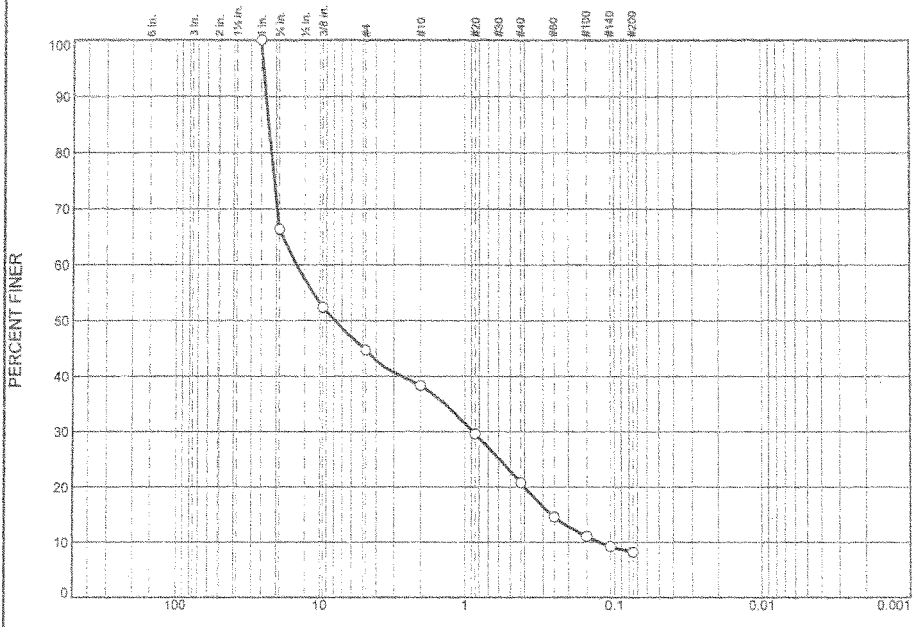
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: BOISON Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	33.6	21.7	6.4	17.5	12.6	8.2	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			22.6245	14.3998	7.8074	0.8766	0.2614	0.1242	0.43	115.97

Material Description	USCS	AASHTO
○ Poorly graded gravel with silt and sand	GP-GM	

Project No. 05-05-0013- **Client:** Black & Veatch
Project: E.A.A (Reservoir)W/O#6

○ **Source of Sample:** CB262 **Depth:** 8.5'-10.0 **Sample Number:** CB262

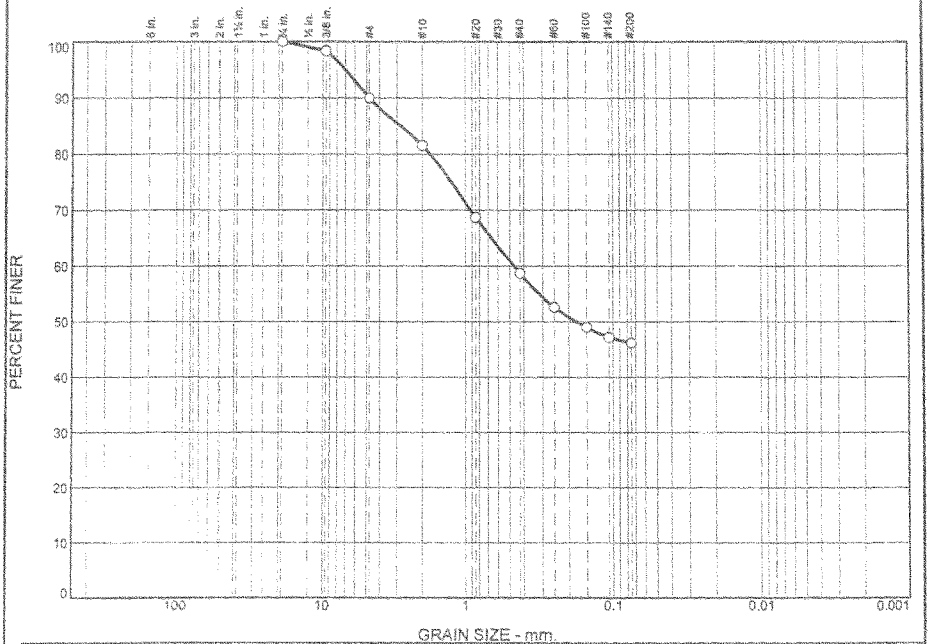
Nodarse & Associates, Inc.
Miami Lakes, FL

Remarks:
○ Moisture Content % 25.6 CP05-EAARS-CB-0360

Figure

Tested By: Bolooki Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	10.0	8.4	22.8	12.6	46.2	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			2.8203	0.4664	0.1766					

	Material Description	USCS	AASHTO
○	Silty sand with gravel	SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)W.O#6

Remarks:

○ Moisture Content % 31.4 CP05-EAARS-CB-0360

○ **Source of Sample:** CB262 **Depth:** 13.5'-15.0' **Sample Number:** CB262

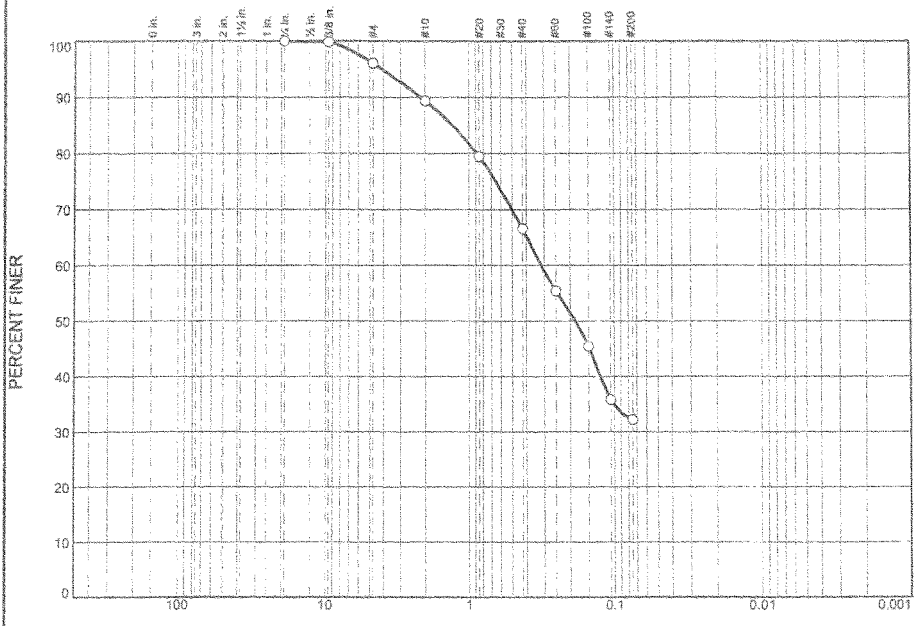
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: Bolooki Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	3.9	6.7	22.8	34.4	32.2	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			1.2941	0.3140	0.1833					

Material Description	USCS	AASHTO
○ Silty sand	SM	

Project No. 05-05-0013- **Client:** Black & Veatch
Project: E.A.A (Reservoir)W/O#6

○ **Source of Sample:** CB262 **Depth:** 18.5'-20.0 **Sample Number:** CB262

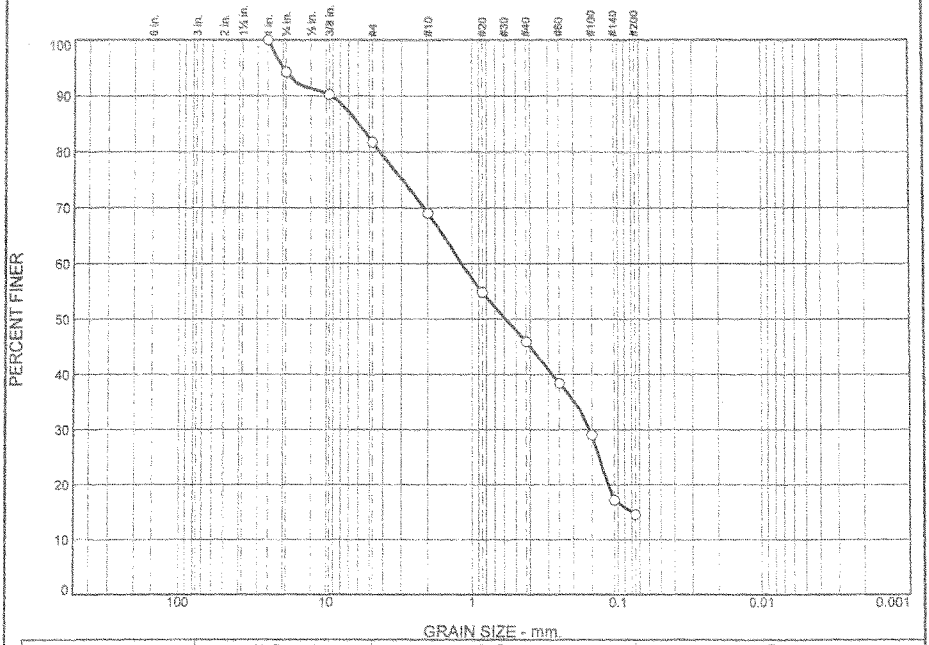
Remarks:
○ Moisture Content % 24.2 CP05-EAARS-CB-0360

Nodarse & Associates, Inc.
Miami Lakes, FL

Figure

Tested By: Bolooki Checked By: K Lovegg

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	5.7	12.5	12.7	23.2	31.4	14.5	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			5.9210	1.1761	0.5855	0.1547	0.0796			

Material Description	USCS	AASHTO
○ Silty sand with gravel	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Source of Sample: CB262 Depth: 23.5'-25.0 Sample Number: CB262

Remarks:

○ Moisture Content % 21.9 CP05-EAARS-CB-0360

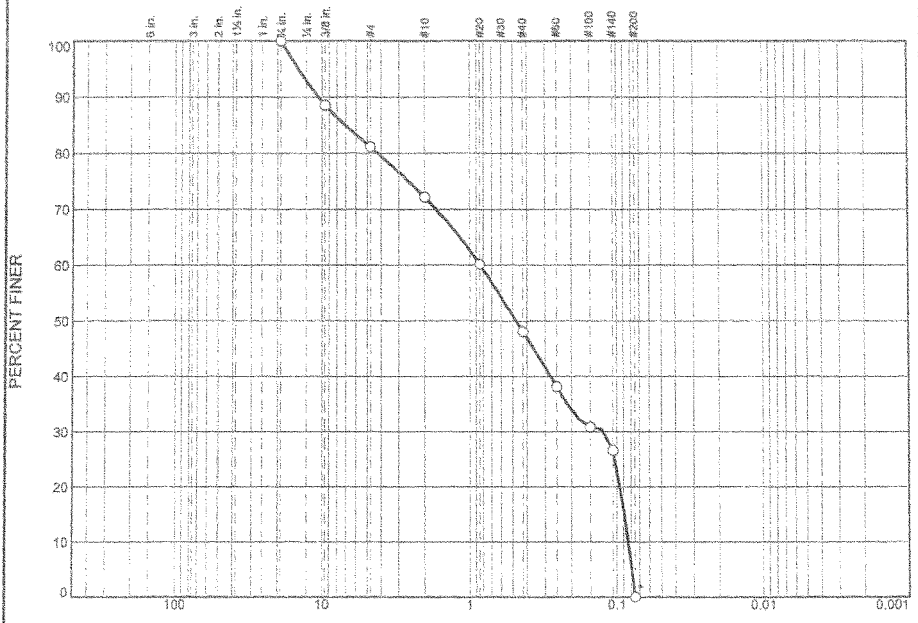
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: Bolooki Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	18.8	9.0	24.1	48.1	0.0	0.0

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			7.0631	0.8402	0.4709	0.1204	0.0886	0.0836	0.21	10.06

	Material Description	USCS	AASHTO
○	Poorly graded sand with gravel	SP	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Source of Sample: CB268 Depth: 0.0'-1.5' Sample Number: CB268

Remarks:

○ Moisture Content % 10.1 CP05-EAARS-CB-0365

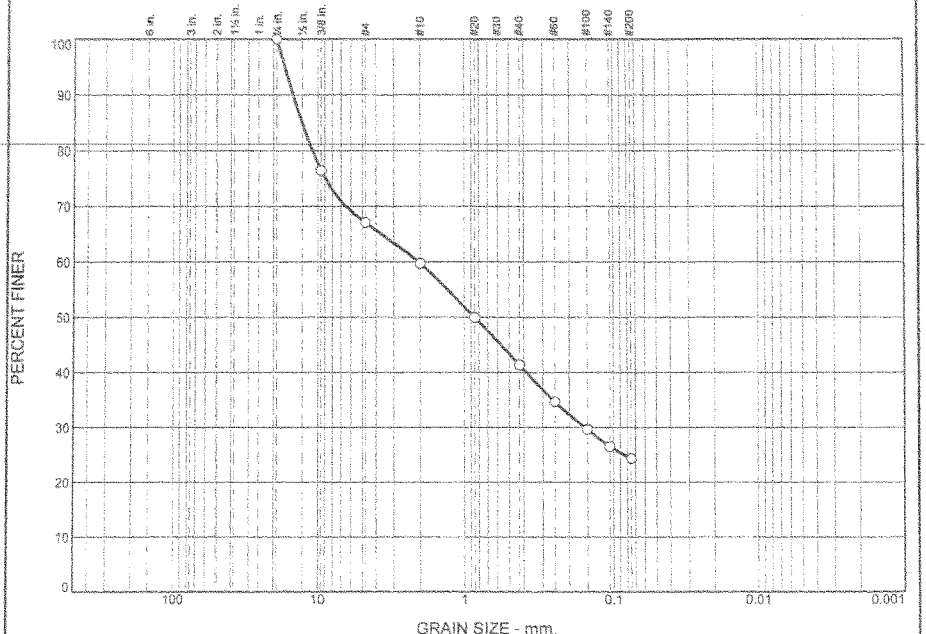
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: Bolooki Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	32.9	7.3	18.4	17.1	24.3	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			12.7439	2.0512	0.8540	0.1557				

Material Description	USCS	AASHTO
○ Silty sand with gravel	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Source of Sample: CB268 Depth: 1.5'-3.0' Sample Number: CB268

Remarks:

○ Moisture Content % 12.9 CP05-EAARS-CB-0365

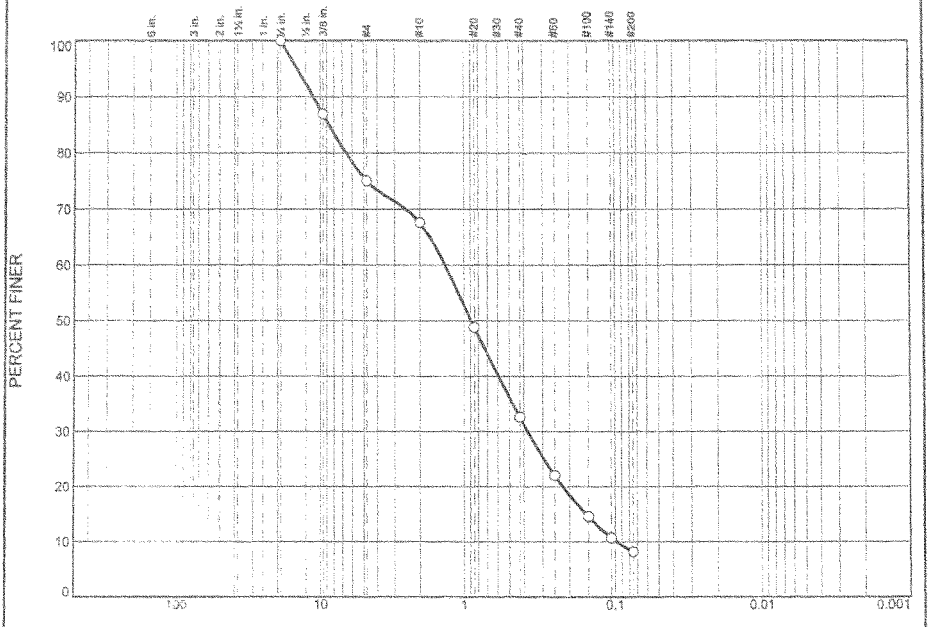
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: BOJOOKI Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	24.9	7.5	35.0	24.4	8.2	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			8.6202	1.3374	0.8908	0.3760	0.1545	0.0975	1.08	13.71

Material Description	USCS	AASHTO
○ Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Source of Sample: CB268 Depth: 3.5'-5.0 Sample Number: CB268

Remarks:

○Moisture Content % 87.5 CP05-EAARS-CB-0365

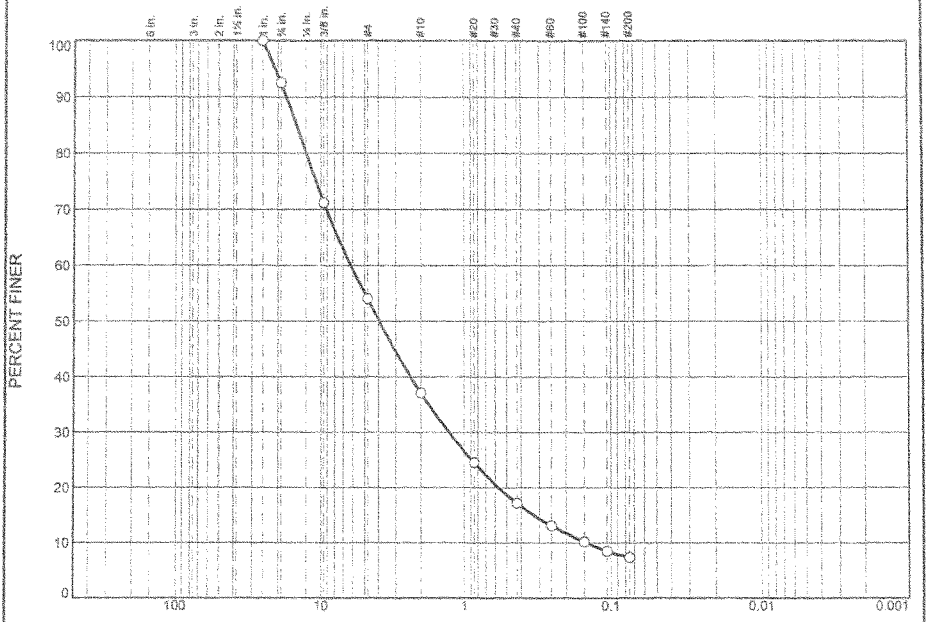
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: BR/JOR Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	7.4	38.5	17.0	19.9	9.8	7.4	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			14.8118	6.1887	3.9230	1.2769	0.3276	0.1446	1.82	42.80

	Material Description	USCS	AASHTO
○	Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch
Project: E.A.A (Reservoir)W/O#6

○ Source of Sample: CB268 Depth: 5.0'-6.5 Sample Number: CB268

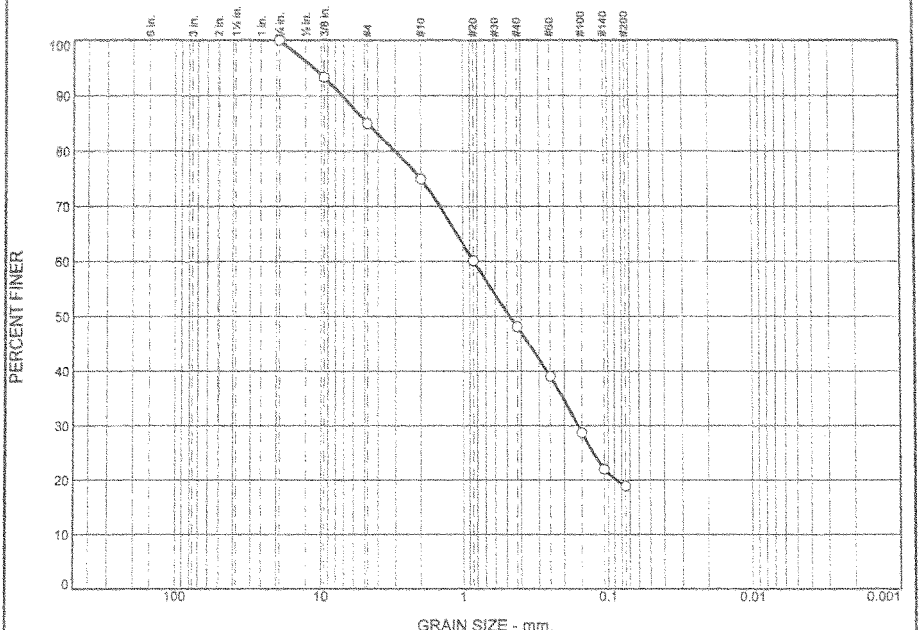
Remarks:
○ Moisture Content % 12.8 CP05-EAARS-CB-0365

Nodarse & Associates, Inc.
Miami Lakes, FL

Figure

Tested By: Bolooki Checked By: K Lewis

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	15.0	10.0	26.9	29.2	18.9	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			4.7460	0.8429	0.4759	0.1589				

	Material Description	USCS	AASHTO
○	Silty sand with gravel	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

Remarks:

○ Moisture Content % 29.3 CP05-EAARS-CB-0365

○ Source of Sample: CB268 Depth: 11.5'-13.0 Sample Number: CB268

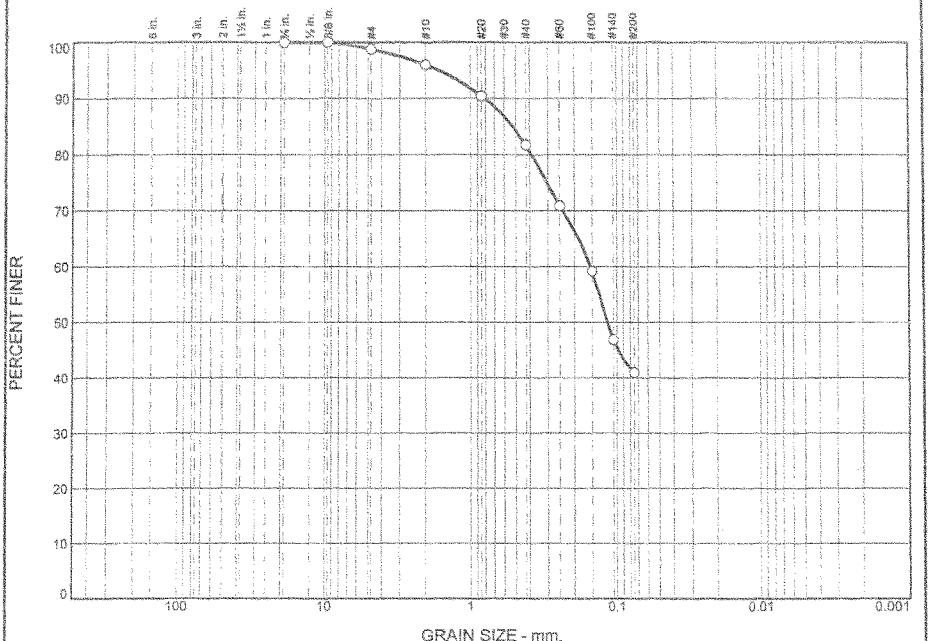
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: BSloom Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	1.2	2.8	14.2	40.8	41.0	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.5194	0.1536	0.1167					

	Material Description	USCS	AASHTO
○	Silty sand	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Source of Sample: CB268 Depth: 18.5'-22.0' Sample Number: CB268

Remarks:

○ Moisture Content % 23.0 CP05-EAARS-CB-0365

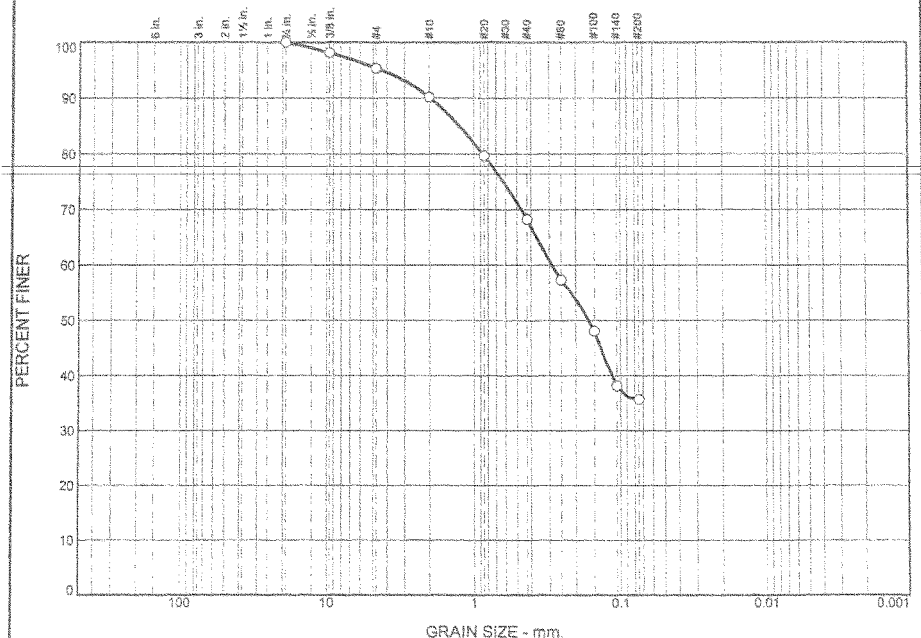
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: ECorbin Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	4.6	5.2	21.9	32.6	35.7	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			1.2520	0.2875	0.1620					

Material Description	USCS	AASHTO
○ Silty sand	SM	

Project No. 05-05-0013- Client: Black & Veatch
Project: E.A.A (Reservoir)W/O#6

○ Source of Sample: CB268 Depth: 23.5'-25.0 Sample Number: CB268

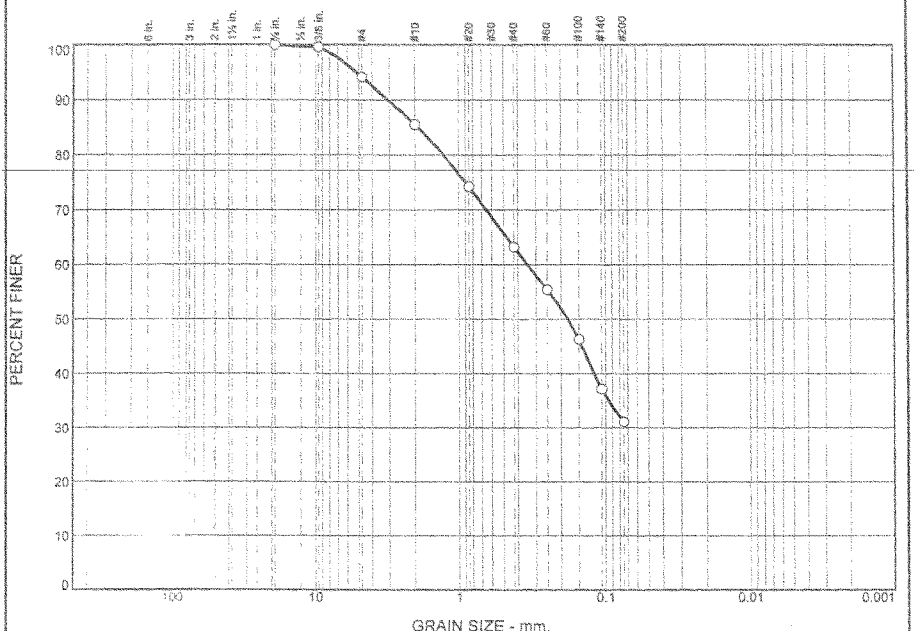
Remarks:
○ Moisture Content % 22.5 CP05-EAARS-CB-0365

Nodarse & Associates, Inc.
Miami Lakes, FL

Figure

Tested By: [illegible] Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	5.8	8.7	22.3	32.1	31.1	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			1.9072	0.3429	0.1781					

Material Description	USCS	AASHTO
○ Silty sand	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Source of Sample: CB268 Depth: 28.5'-30.0 Sample Number: CB268

Remarks:

○ Moisture Content % 20.5 CP05-EAARS-CB-0365

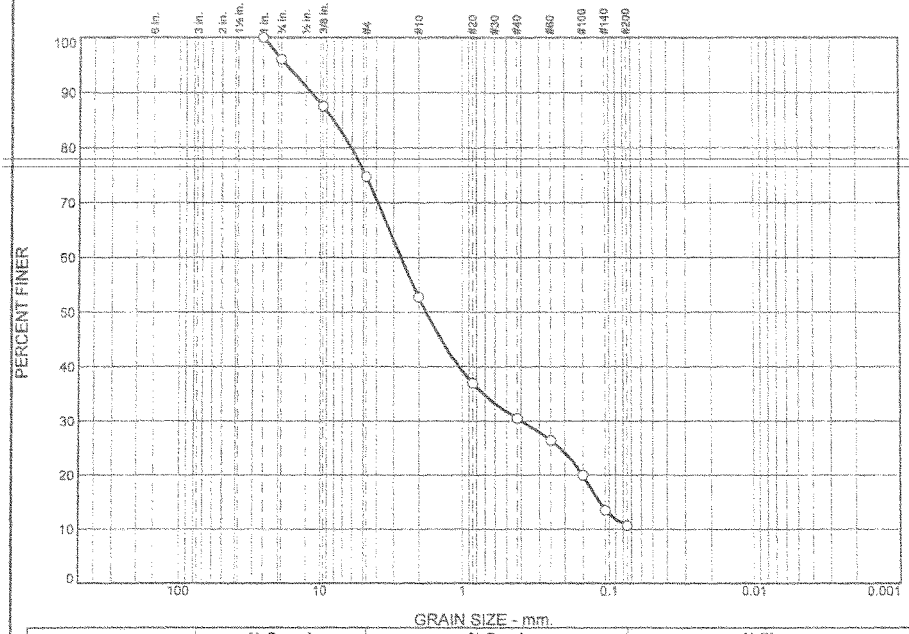
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: BOROKI Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	3.9	21.3	22.0	22.3	19.8	10.7	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			8.0526	2.6581	1.7733	0.3977	0.1161			

	Material Description	USCS	AASHTO
○	Poorly graded sand with silt and gravel	SP-sm	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ **Source of Sample:** CB268 **Depth:** 33.5'-35.0' **Sample Number:** CB268

Nodarse & Associates, Inc.

Miami Lakes, FL

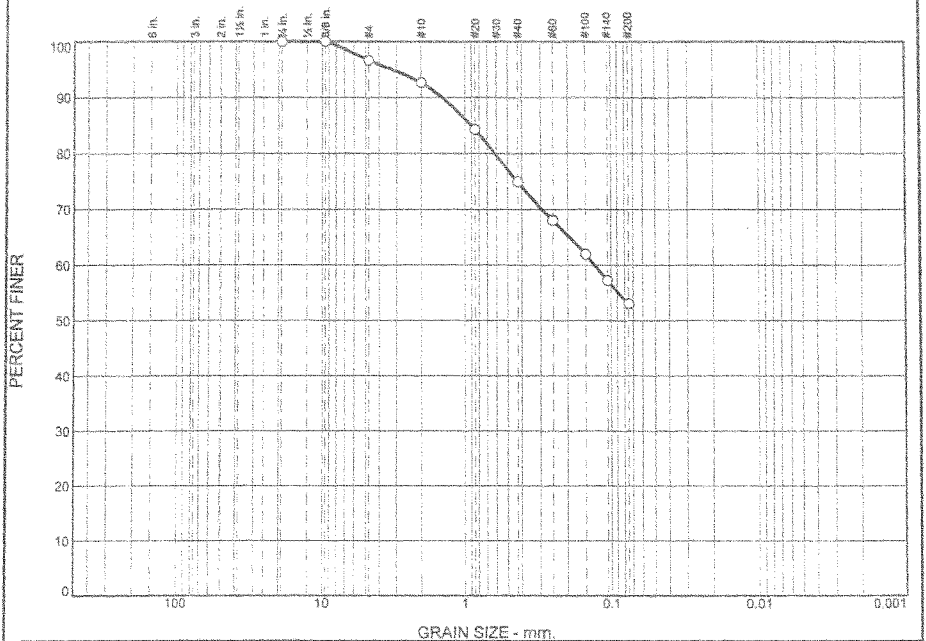
Remarks:

○ Moisture Content % 12.9 CP05-EAARS-CB-0365

Figure

Tested By: Gordon Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	3.3	4.1	17.6	21.9	53.1	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			0.9016	0.1296						

Material Description	USCS	AASHTO
○ Sandy silt	ML	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ **Source of Sample:** CB276 **Depth:** 14.5'-16.0' **Sample Number:** CB276

Remarks:

○Moisture Content % 19.0 CP05-EAARS-CB-0372

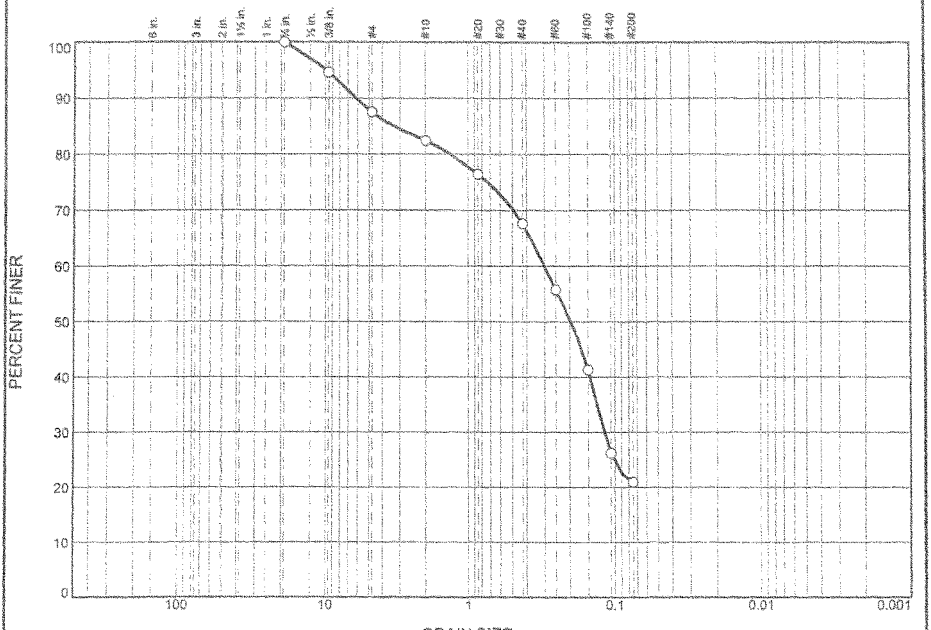
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: Duncan Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	12.5	5.0	14.9	46.7	20.9	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			3.2918	0.3002	0.1954	0.1170				

Material Description	USCS	AASHTO
○ Silty sand with gravel	SM	

Project No. 65-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ **Source of Sample:** CB277 **Depth:** 19.0'-20.5' **Sample Number:** CB277

Remarks:

○ Moisture Content % 24.7 CP05-EAARS-CB-0373

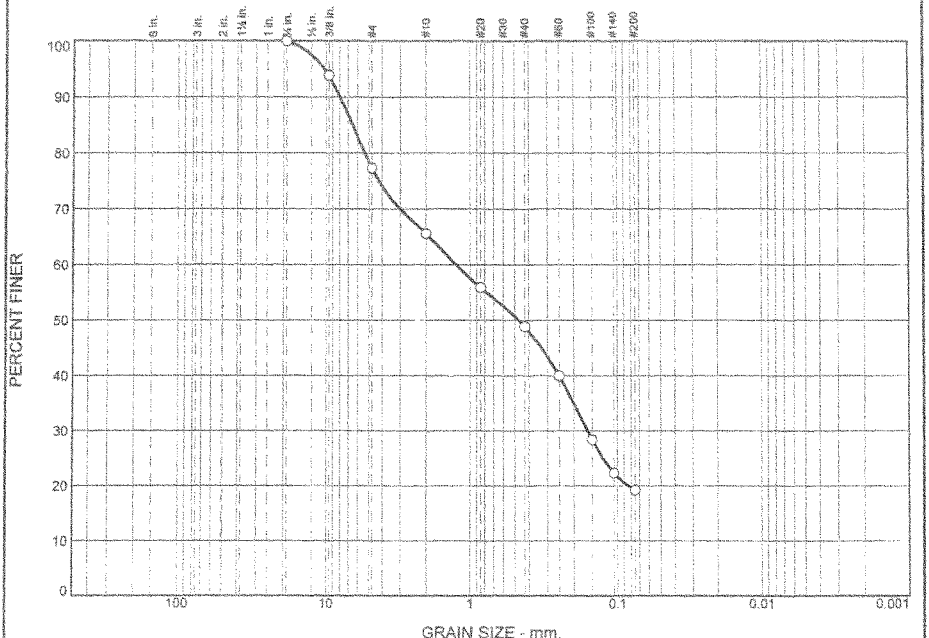
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: BOLOOM Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	22.7	11.7	16.7	29.7	19.2	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			6.5031	1.2320	0.4654	0.1611				

Material Description	USCS	AASHTO
○ Silty sand with gravel	SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ **Source of Sample:** CB277 **Depth:** 29.0'-30.5' **Sample Number:** CB277

Remarks:

○ Moisture Content % 21.6 CP05-EAARS-CB-0373

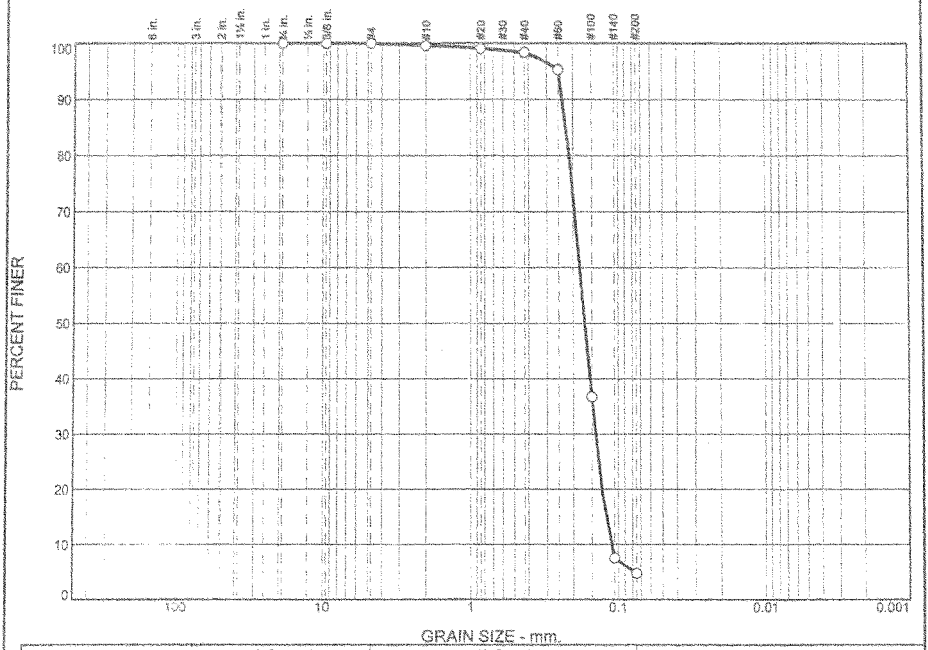
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: DuBosk Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.4	1.2	93.6	4.8	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			0.2214	0.1799	0.1667	0.1414	0.1204	0.1116	1.00	1.61

Material Description	USCS	AASHTO
○ Poorly graded sand	sp	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ **Source of Sample:** CB277 **Depth:** 34.0'-35.5' **Sample Number:** CB277

Remarks:

○ Moisture Content % 25.5 CP05-EAARS-CB-0373

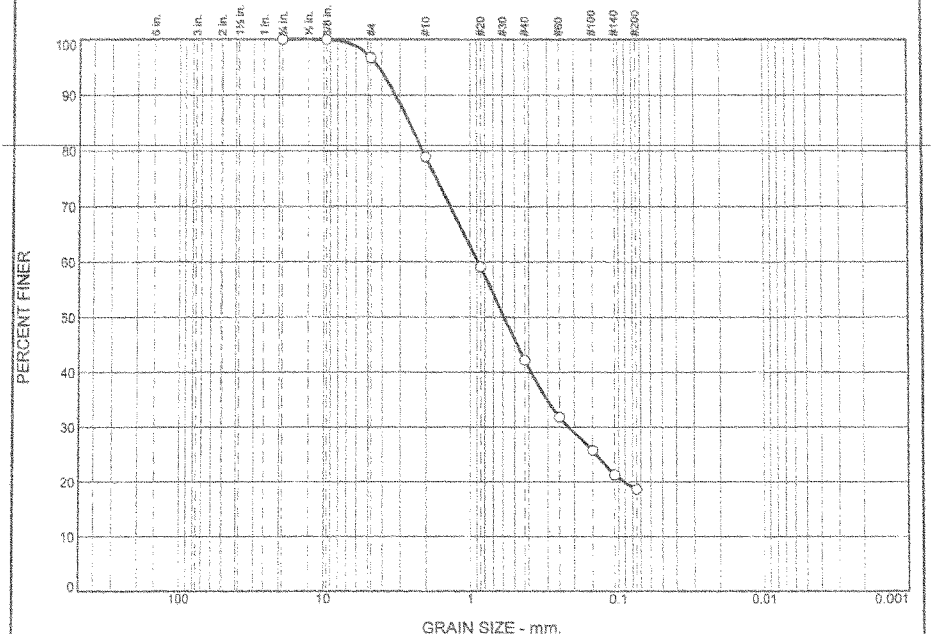
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: DeKeon Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	3.2	17.8	36.8	23.6	18.6	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			2.5756	0.8822	0.5869	0.2173				

Material Description	USCS	AASHTO
○ Silty sand with gravel	SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ **Source of Sample:** CB281 **Depth:** 15.5'-17.0' **Sample Number:** CB281

Remarks:

○ Moisture Content %18.2 CB05-EAARS-CB-0377

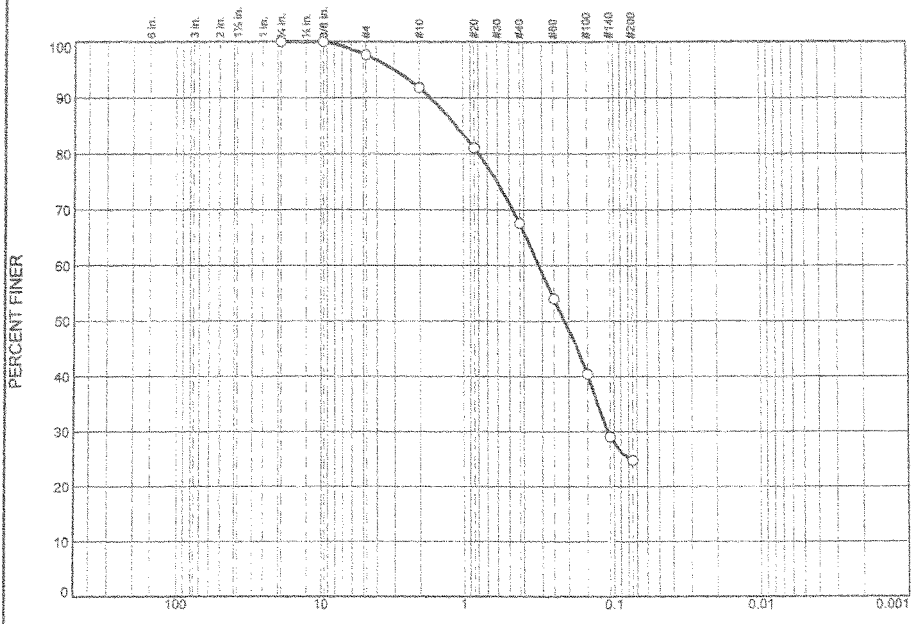
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: BOBOK Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	2.3	5.9	24.2	42.8	24.8	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			1.1108	0.3153	0.2118	0.1100				

	Material Description	USCS	AASHTO
○	Silty sand	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Source of Sample: CB281 Depth: 19'-20.5' Sample Number: CB281

Remarks:

○ Moisture Content % 26.1 CB05-EAARS-CB-0377

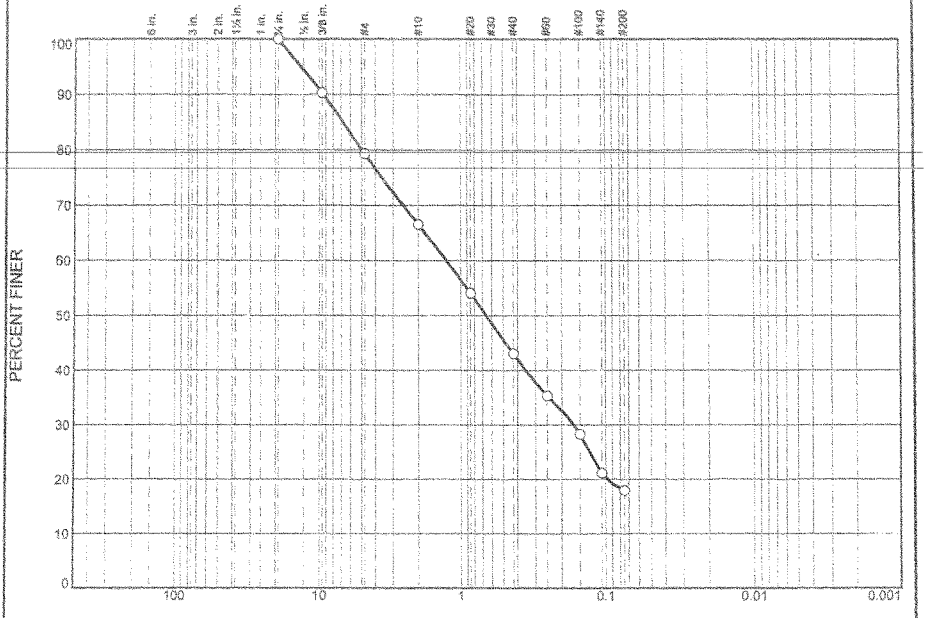
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: Bolooki Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	20.7	12.8	23.5	25.0	18.0	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			6.7792	1.2674	0.6570	0.1652				

	Material Description	USCS	AASHTO
○	Silty sand with gravel	SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ **Source of Sample:** CB281 **Depth:** 24.0'-25.5' **Sample Number:** CB281

Remarks:

○ Moisture Content % 19.3 CB05-EAARS-CB-0377

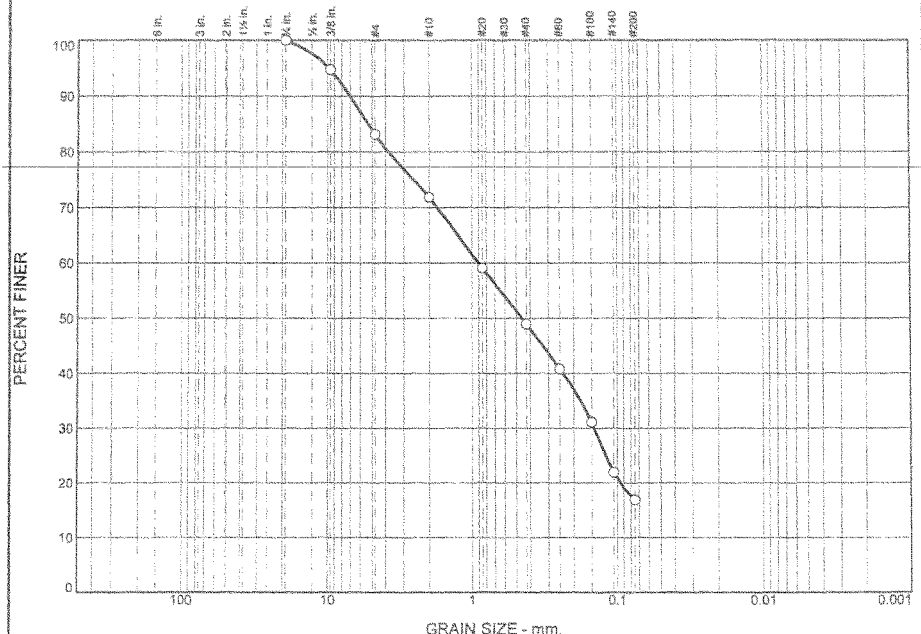
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: BOUOUI Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	16.8	11.3	22.9	32.1	16.9	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			5.2904	0.9019	0.4549	0.1437				

Material Description	USCS	AASHTO
○ Silty sand with gravel	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Source of Sample: CB281 Depth: 29.0'-30.5' Sample Number: CB281

Remarks:

○ Moisture Content % 14.7 CB05-EAARS-CB-0377

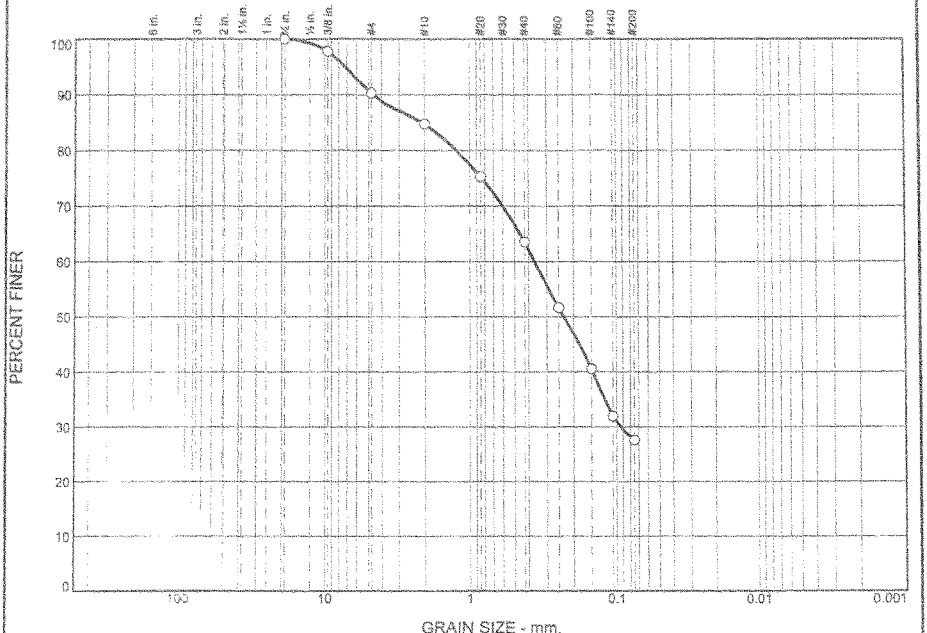
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: Escalona Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	9.7	5.5	21.2	36.0	27.6	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			2.0697	0.3611	0.2308	0.0940				

Material Description	USCS	AASHTO
○ Silty sand with gravel	SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ **Source of Sample:** CB310 **Depth:** 23.5'-25.0' **Sample Number:** CB310

Remarks:

○ Moisture Content % 25.8 CP05-EAARS-CB-0406

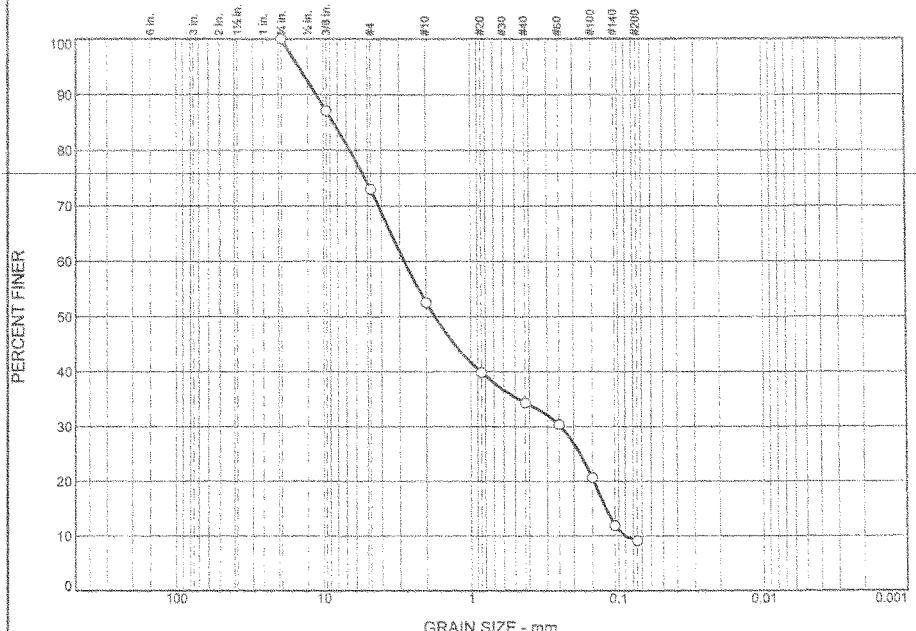
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: BOUDRI Checked By: K Leung

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	27.0	20.4	18.3	25.2	9.1	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			8.5204	2.7741	1.7491	0.2417	0.1218	0.0902	0.23	30.74

Material Description	USCS	AASHTO
○ Poorly graded sand with silt and gravel	SP-SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Source of Sample: CB310 Depth: 33.5'-35.0' Sample Number: CB310

Remarks:

○Moisture Content % 12.8 CP05-EAARS-CB-0406

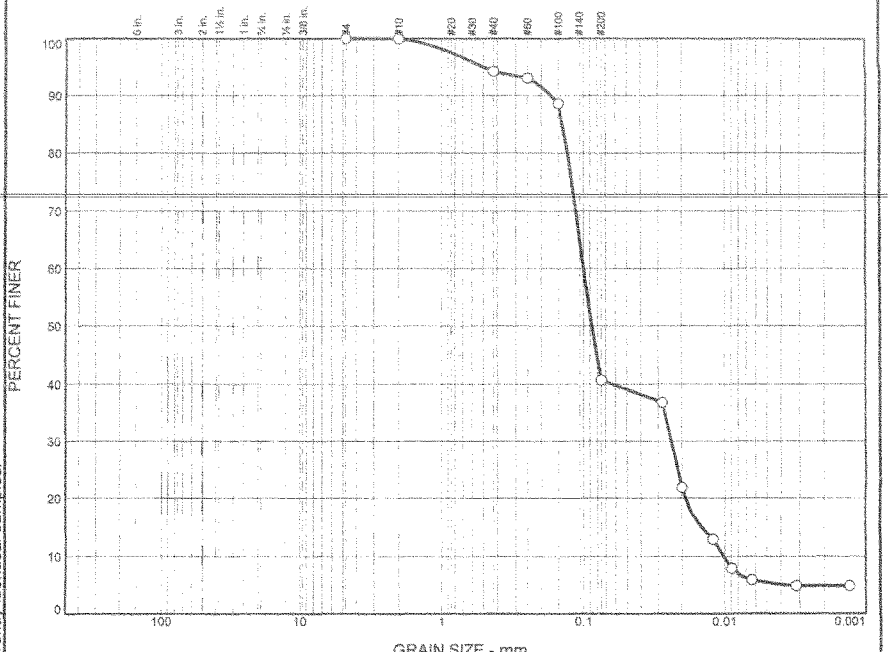
Nodarse & Associates, Inc.

Miami Lakes, FL

Figure

Tested By: Checked By: K Leung

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	0	0	6	53	36	5

LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
	NP	0.1397	0.1001	0.0878	0.0238	0.0146	0.0102	0.55	9.81

Material Description	USCS	AASHTO
SILTY SAND	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

Sample Source: CB190 HYD Depth: 175'-180' Sample No.: 36

Remarks:
HYGROSCOPYC MOISTURE .4 % -NATURAL MOISTURE 17.6 % -CP05-EAARS-VB-0285

Nodarse & Associates, Inc.

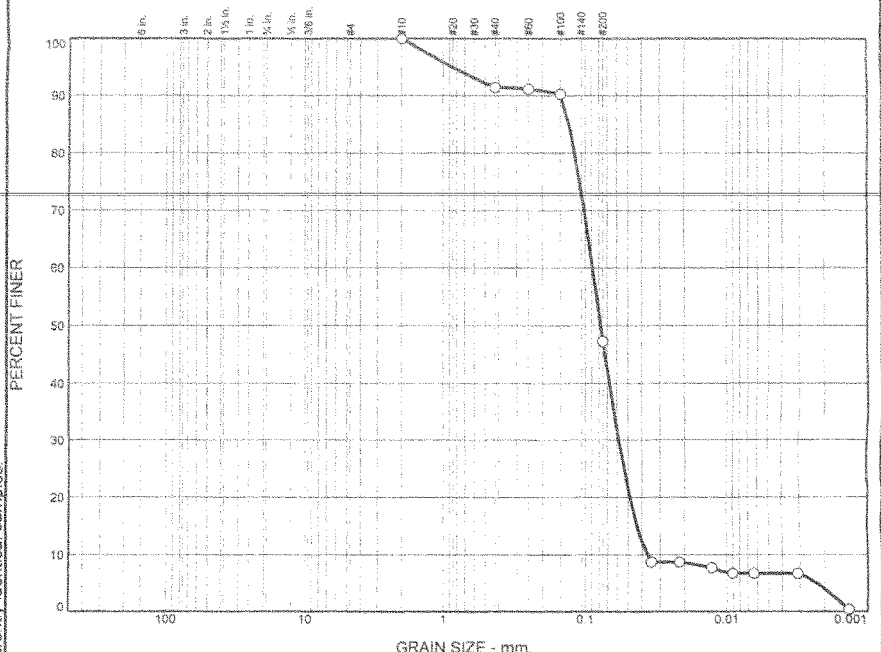
Miami Lakes, FL

Figure HYDROMETE

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicitive of apparently identical samples.

Tested By: CAMARAZA Checked By: MAZO

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	0	0	9	44	40	7

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○	NL	NP	0.1304	0.0888	0.0777	0.0581	0.0433	0.0369	1.03	2.40

	Material Description	USCS	AASHTO
○	SILTY SAND	SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ **Sample Source:** CB190 HYD **Depth:** 190'-195' **Sample No.:** 39

Remarks:

○ HYGROSCOPIC MOISTURE 2.63 % - NATURAL MOISTURE 27.7 % - CP05-EAARS VB 0285

Nodarse & Associates, Inc.

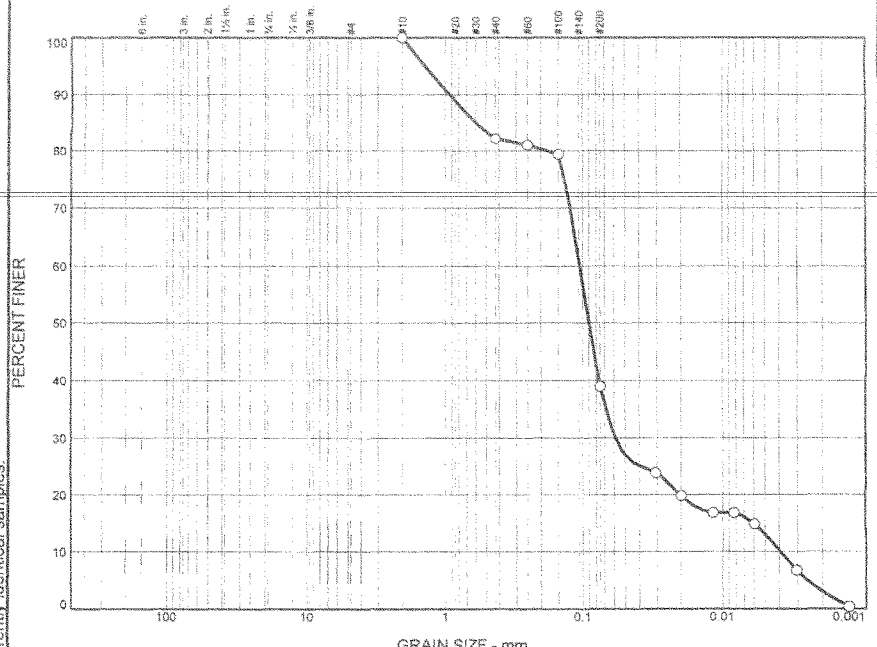
Miami Lakes, FL

Figure HYDROMETE

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicitive of apparently identical samples.

Tested By: CAMARAZA **Checked By:** MAZO

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	0	0	18	43	26	13

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○		NP	0.5911	0.1047	0.0903	0.0587	0.0061	0.0040	8.30	26.43

Material Description	USCS	AASHTO
○ SILTY SAND	SM	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ **Sample Source:** CB190 HYD **Depth:** 205'-210' **Sample No.:** 44

Remarks:

○ HYGROSCOPYC MOISTURE 4.0 % -NATURAL MOISTURE 31.8 % -CP05-EAARS-VB-0285.

Nodarse & Associates, Inc.

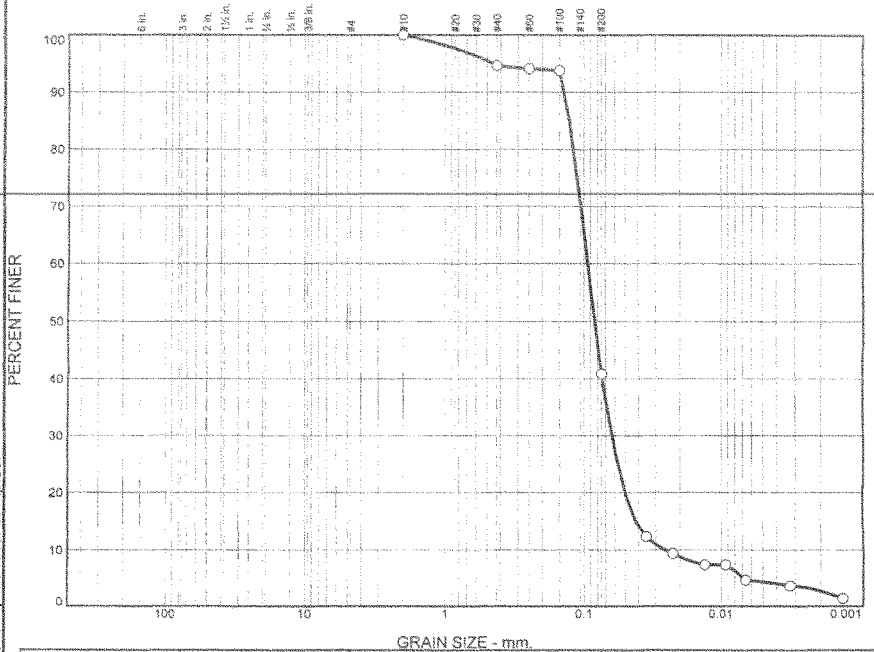
Miami Lakes, FL

Figure HYDROMETE

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicitive of apparently identical samples.

Tested By: CAMARAZA **Checked By:** MAZO

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	0	0	5	54	37	4

LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
NL	NP	0.1272	0.0941	0.0840	0.0634	0.0415	0.0255	1.67	3.69

Material Description	USCS	AASHTO
SILTY SAND	SM	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

Sample Source: CB190 HYD Depth: 210'-215' Sample No.: 43

Remarks:

HYGROSCOPYC MOISTURE .6 % -NATURAL MOISTURE 34.4 % -CP05-EAARS-VB-0285.

Nodarse & Associates, Inc.

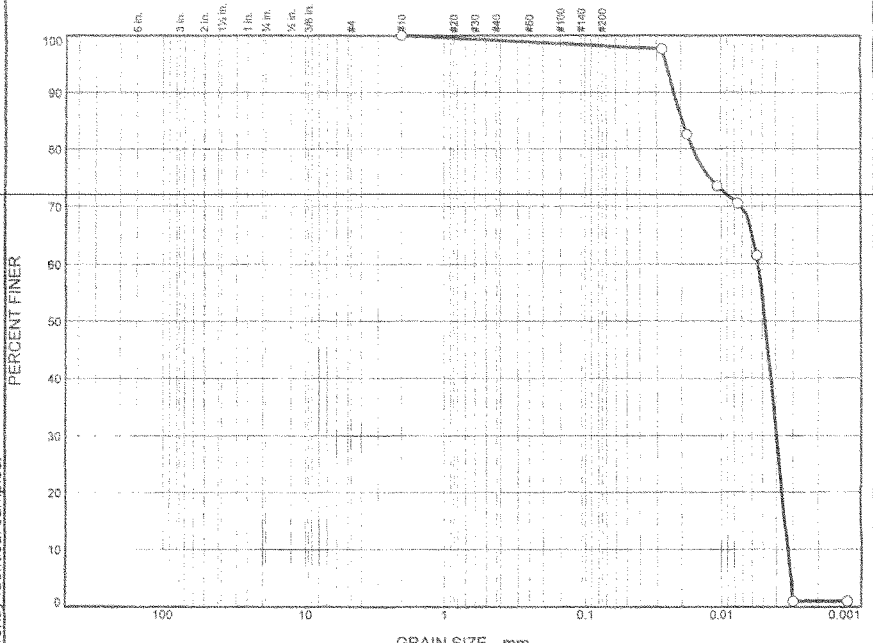
Miami Lakes, FL

Figure

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicitive of apparently identical samples.

Tested By: CAMARAZA Checked By: MAZO

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	0	0	1	1	43	55

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○	65	24	0.0195	0.0053	0.0048	0.0040	0.0035	0.0033	0.89	1.61

	Material Description	USCS	AASHTO
○	SANDY ELASTIC SILT	MH	

Project No. 05-05-0013- Client: Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ Sample Source: CB190 HYD Depth: 215'-220' Sample No.: 44

Remarks:

○ HYGROSCOPYC MOISTURE 7.7 -NATURAL MOISTURE 43. 3 % -CP05-EAARS-VB-0285

Nodarse & Associates, Inc.

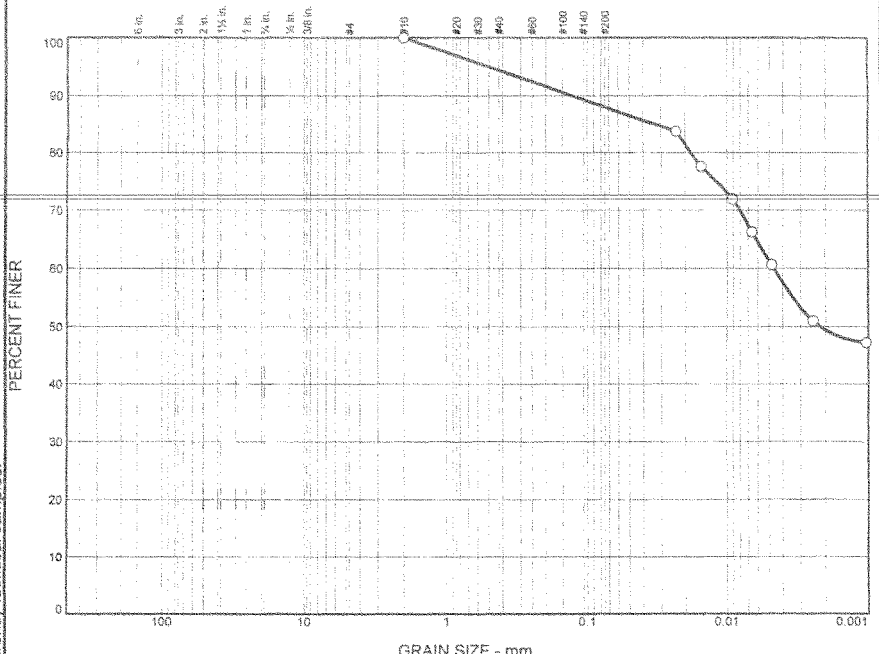
Miami Lakes, FL

Figure HYDROMETE

Tested By: CAMARAZA Checked By: MAZO

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicitive of apparently identical samples.

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	0	0	6	6	27	61

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_U
○			0.0324	0.0046	0.0022					

Material Description	USCS	AASHTO
○ SANDY ELASTIC SILT -With green glauconite colour	MH	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ **Source of Sample:** CB190 HYD **Depth:** 225' **Sample Number:** 15E

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Miami Lakes, FL

Remarks:

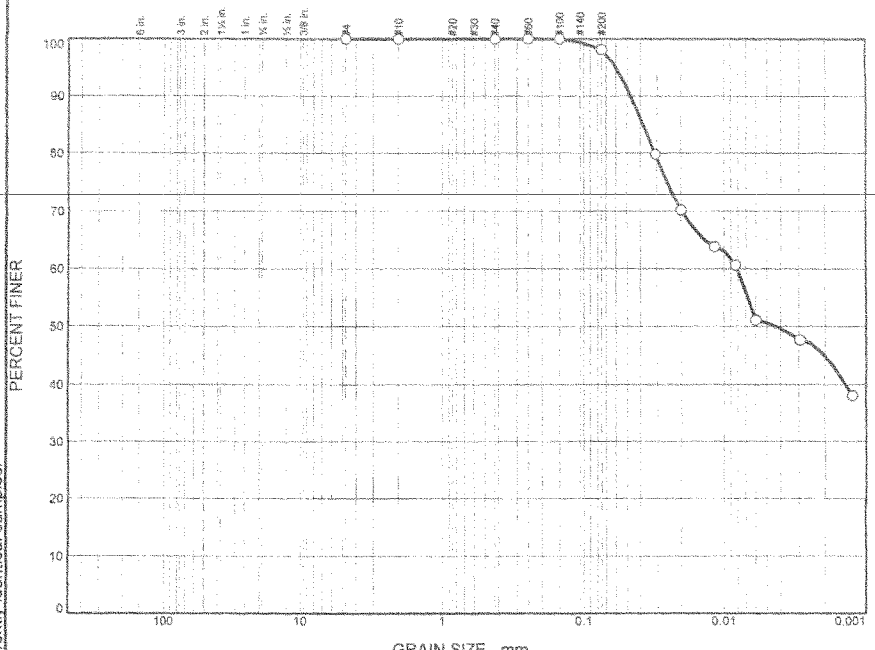
○HYGROSCOPIC MOISTURE 9.6% - NATURAL MOISTURE CONTENT 101.4 % -CP05-EAARS-VB-0285-Insufficient sample for Atteberg limits.

Figure HYDROMETE

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicitive of apparently identical samples.

Tested By: CAMARAZA **Checked By:** MAZO

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	0	0	0	2	47	51

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	126	62	0.0381	0.0081	0.0043					

Material Description	USCS	AASHTO
○ SANDY ELASTIC SILT. With green glauconite colour	MH	

Project No. 05-05-0013- **Client:** Black & Veatch

Project: E.A.A (Reservoir)W/O#6

○ **Sample Source:** CB190 HYD **Depth:** 245'-250' **Sample No.:** 50

Nodarse & Associates, Inc.

Miami Lakes, FL

Remarks:

○ HYGROSCOPYC MOISTURE 2.3 % -NATURAL MOISTURE 151.2 % -CP05-EAARS-VB-0285

Figure HYDROMETE

These results are for the exclusive use of the client for whom they were obtained. They apply only to the samples tested and are not indicitive of apparently identical samples.

Tested By: CAMARAZA **Checked By:** MAZO

FOR CONTINUATION OF HOUSE DOCUMENT 114-65

COMPREHENSIVE EVERGLADES RESTORATION PLAN, CENTRAL EVERGLADES PLANNING PROJECT, INTEGRATED PROJECT IMPLEMENTATION REPORT AND ENVIRONMENTAL IMPACT STATEMENT: FINAL JULY 2014, REVISED DECEMBER 2014

SEE PART 3