

**NISTIR 7340**

**NIST Intercomparison Exercise  
Program for Organic Contaminants in  
the Marine Environment:  
Description and Results of 2005 Organic  
Intercomparison Exercises**

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## Table of Contents

Abstract.....	7
Introduction.....	8
Sources and Preparation of Materials Used in 2005 Intercomparison Exercises .....	9
Storage and Distribution of Materials.....	9
Evaluation of Exercise Results .....	10
Establishment of the Assigned Values.....	10
Reported Results .....	11
Performance Scores .....	12
Accuracy Assessment (z-score) .....	12
Precision Assessment (p-score) .....	13
Discussion.....	13
Acknowledgments.....	16
Disclaimer and References .....	16
Tables.....	18
Table 1. Target analytes in NIST Intercomparison Exercise Program for Organic Contaminants in the Marine Environment .....	20
Table 2. Mussel Tissue XII (QA05TIS12): Laboratory means of three replicates and exercise assigned values - TEO, and PAHs .....	22
Table 3. Mussel Tissue XII (QA05TIS12): Laboratory means of three replicates and exercise assigned values - Pesticides.....	23
Table 4. Mussel Tissue XII (QA05TIS12): Laboratory means of three replicates and exercise assigned values - PCBs.....	24
Table 5. Mussel Tissue XII (QA05TIS12): Laboratory means of three replicates and exercise assigned values - PBDEs.....	25

Table 6.	SRM 2977: Laboratory means of three replicates and target values - TEO and PAHs .....	26
Table 7.	SRM 2977: Laboratory means of three replicates and target values - Pesticides.....	27
Table 8.	SRM 2977: Laboratory means of three replicates and target values - PCBs .....	28
Table 9.	SRM 2977: Laboratory means of three replicates and target values - PBDEs.....	29
Table 10.	Marine Sediment XIII (QA05SED13): Laboratory means of three replicates and exercise assigned values - Water, TOC, and PAHs .....	30
Table 11.	Marine Sediment XIII (QA05SED13): Laboratory means of three replicates and exercise assigned values - Pesticides.....	31
Table 12.	Marine Sediment XIII (QA05SED13): Laboratory means of three replicates and exercise assigned values - PCBs.....	32
Table 13.	Marine Sediment XIII (QA05SED13): Laboratory means of three replicates and exercise assigned values - PBDEs .....	33
Table 14.	SRM 1941b: Laboratory means of three replicates and target values - Water, TOC, and PAHs .....	34
Table 15.	SRM 1941b: Laboratory means of three replicates and target values - Pesticides.....	35
Table 16.	SRM 1941b: Laboratory means of three replicates and target values - PCBs .....	36
Table 17.	SRM 1941b: Laboratory means of three replicates and target values - PBDEs.....	37
Table 18.	Mussel Tissue XII (QA05TIS12): z-scores (25 %) by laboratory -TEO and PAHs.....	38
Table 19.	Mussel Tissue XII (QA05TIS12): z-scores (25 %) by laboratory - Pesticides .....	39
Table 20.	Mussel Tissue XII (QA05TIS12): z-scores (25 %) by laboratory - PCBs .....	40
Table 21.	Mussel Tissue XII (QA05TIS12): z-scores (25 %) by laboratory - PBDEs .....	41

Table 22. Marine Sediment XIII (QA05SED13): z-scores (25 %) by laboratory - PAHs, Water, and TOC .....	42
Table 23. Marine Sediment XIII (QA05SED13): z-scores (25 %) by laboratory - Pesticides .....	43
Table 24. Marine Sediment XIII (QA05SED13): z-scores (25 %) by laboratory - PCBs .....	44
Table 25. Marine Sediment XIII (QA05SED13): z-scores (25 %) by laboratory - PBDEs .....	45
Table 26. Mussel Tissue XII (QA05TIS12) and SRM 2977: RSDs for three replicates - TEO and PAHs .....	46
Table 27. Mussel Tissue XII (QA05TIS12) and SRM 2977: RSDs for three replicates - Pesticides .....	48
Table 28. Mussel Tissue XII (QA05TIS12) and SRM 2977: RSDs for three replicates - PCBs .....	50
Table 29. Mussel Tissue XII (QA05TIS12) and SRM 2977: RSDs for three replicates - PBDEs .....	52
Table 30. Marine Sediment XIII (QA05SED13) and SRM 1941b: RSDs for three replicates - TEO and PAHs .....	54
Table 31. Marine Sediment XIII (QA05SED13) and SRM 1941b: RSDs for three replicates - Pesticides .....	56
Table 32. Marine Sediment XIII (QA05SED13) and SRM 1941b: RSDs for three replicates - PCBs .....	58
Table 33. Marine Sediment XIII (QA05SED13) and SRM 1941b: RSDs for three replicates - PBDEs .....	60
Table 34. Comparison of Concentrations for Marine Sediment XIII (QA05SED13) and SRM 1941b .....	62
Figure .....	65
Figure 1. Comparison of Concentrations for Mussel Tissue XII as determined in this study and in a CCQM pilot study for selected analytes .....	65

## **Appendices**

Appendix A: Description, Storage, Use, and Reporting Instructions for Mussel Tissue XII (QA05TIS12).....	66
Appendix B: Description, Storage, Use, and Reporting Instructions for Marine Sediment XIII (QA05SED13) .....	76
Appendix C: Laboratory Notes Accompanying Data, Mussel Tissue XII .....	86
Appendix D: Laboratory Notes Accompanying Data, Marine Sediment XIII .....	89
Appendix E: Laboratory Methods Used, Mussel Tissue XII.....	93
Appendix F: Laboratory Methods Used, Marine Sediment XIII.....	101
Appendix G: Charts of Mussel Tissue XII and SRM 2977, Results by Analyte.....	109
Appendix H: Charts of Marine Sediment XIII and SRM 1941b, Results by Analyte.....	193
Appendix I: Data Received after the first draft of this Report was Distributed .....	270
Appendix J: List of Laboratories Participating in 2005 Intercomparison Exercises .....	281

## **Abstract**

In support of marine monitoring measurement programs, the National Institute of Standards and Technology (NIST) conducts interlaboratory comparison exercises. The intercomparability of data after participation in these exercises provides one mechanism for participating laboratories/monitoring programs to evaluate the quality and comparability of their performance in measuring selected organic contaminants in environmental samples. In this report, results of the 2005 exercises of the NIST Intercomparison Exercise Program for Organic Contaminants in the Marine Environment are described in which selected polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyl (PCB) congeners, chlorinated pesticides, and polybrominated diphenyl ethers (PBDE) congeners were determined in Mussel Tissue XII and Marine Sediment XIII exercise materials. The analytical methods used by each participating laboratory in this performance-based program are also summarized.

## Introduction

The preparation and distribution of two materials, Mussel Tissue XII (QA05TIS12) and Marine Sediment XIII (QA05SED13), used in interlaboratory comparison exercises in 2005 for the National Institute of Standards and Technology (NIST) Intercomparison Exercise Program for Organic Contaminants in the Marine Environment, and the results of these exercises are described in this report. The analytical methods used by each participating laboratory are also summarized.

Tools and mechanisms for the assessment of data produced by laboratories providing environmental analyses are critical because decision-making based on inaccurate results or data of unknown quality can have significant economic and health consequences. NIST provides a variety of activities in support of environmental monitoring programs for organic contaminants. The largest of these programs was initiated and funded in part for 12 years (until 1999) by the National Oceanic and Atmospheric Administration (NOAA) National Status and Trends (NS&T) Marine Monitoring Program [1,2,3]. The Environmental Protection Agency (EPA) Environmental Monitoring and Assessment Program (EMAP) also participated in the NIST/NOAA NS&T effort for a number of years. Private sector and other laboratories that could not be accommodated under the NOAA, EPA, and NIST funding have reimbursed NIST for participation costs and have participated in these exercises and workshops as part of the NIST Intercomparison Exercise Program for Organic Contaminants in the Marine Environment. NIST is now continuing this program on a pay-to-participate basis. Through this program, NIST provides mechanisms for assessing the interlaboratory and temporal comparability of data with the goal of improving measurements for the monitoring of organic contaminants such as polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyl (PCB) congeners, chlorinated pesticides, and, as of the 2005 exercise, polybrominated diphenyl ethers (PBDE) congeners in bivalve, sediment, and fish samples. This program includes the development of improved analytical methods, production of needed NIST Standard Reference Materials (SRMs) and other control materials, conduct of annual interlaboratory comparison exercises, and the coordination of workshops to discuss the results of these exercises and to provide a forum for cooperative problem-solving efforts by participants. Current participants represent multi-laboratory monitoring programs as well as a number of individual programs, and include federal, state/municipal, university/college, private sector, and international laboratories. In this performance-based program, each participating laboratory uses its current methods for analysis of similar materials for its program customers.

For the annual intercomparison exercises, samples of two natural-matrix, homogeneous materials that are derived from the marine environment and that have not been fortified with any of the target analytes are analyzed by the participating laboratories. Typical materials, such as mussel or fish tissue homogenates or wetted marine sediment, have levels of target analytes in the 1 ng/g to 15000 ng/g range. The target analytes are listed in Table 1.

Numerical indices, z- and p-scores, are used to assess and track laboratory performance for accuracy and precision, respectively, and to provide a mechanism for assessing the comparability



of data being produced by the participating laboratories for over 75 target analytes, total organic carbon (TOC), percent total extractable organics (TEO), and percent moisture.

### **Sources and Preparation of Materials Used in 2005 Intercomparison Exercises**

Mussel Tissue XII. Mussel Tissue XII was prepared by freeze-drying approximately 5.5 kg of SRM 1974b Organics in Mussel Tissue (*Mytilus edulis*) [4]. Following freeze-drying, the bulk material (580 g) was radiation sterilized and then sieved through 25, 45, and 60 mesh sieves. The material that passed through the 60 mesh sieve (<250  $\mu\text{m}$ ) was then homogenized and bottled with approximately 8 g of freeze-dried tissue per bottle. As the Mussel Tissue XII material was a different sieved subset of the original SRM, it would not be expected to have the same concentrations of the analytes of interest as the original SRM. Each participant received one bottle. This freeze-dried mussel tissue homogenate material had not been enriched or spiked.

Marine Sediment XIII. Marine Sediment XIII was prepared from SRM 2702 Inorganics in Marine Sediment. SRM 2702 was prepared from bulk dried sediment remaining from the preparation of SRM 1941b Organics in Marine Sediment [6]. However, the sediment bottled for SRM 2702 was sieved at 70  $\mu\text{m}$  while the sediment bottled for SRM 1941b was sieved at 150  $\mu\text{m}$ . The Marine Sediment XIII material was issued as a wet sediment to more closely match the matrix of wet sediments routinely analyzed by the laboratories. A calibrated toploader balance (resolution of 0.01 g) was used for weighing the SRM 2702 sediment and water. For each sample, 11.00 g of SRM 2702 sediment (as received) was weighed into a tared 2-oz, wide-mouth bottle. The bottle was then capped and stored in the dark at room temperature. Approximately four days before samples were to be shipped to laboratories participating in the intercomparison exercise, 9.0 g of HPLC-grade water were added by pipet to each tared bottle of sediment. (Preliminary trials had shown that a minimum of 9 g of water would moisten 11 g of this sediment.) The mass of sediment and water in each bottle were recorded. Each sample was tilted by hand until no dry sediment was visible. Only a very small amount of water was observed on the top of the wet sediment. After being held 24 h at room temperature (in the dark), followed by approximately 4 h at -20 °C, each bottle of material was stored at -80 °C until shipped. The bottles were never inverted until the wet samples had been frozen in the bottom of the bottles. The material was not enriched or spiked with any of the analytes of interest in this intercomparison exercise.

### **Storage and Distribution of Materials**

Mussel Tissue XII material was stored at room temperature, and Marine Sediment XIII material was stored at -80 °C until shipped via overnight delivery to participating laboratories. Instructions for the storage and use of the exercise material and a diskette with files for electronic submission of data were included with each set of material shipped. These instructions are reproduced in Appendices A and B.

Each laboratory participating in these intercomparison exercises was sent the following by overnight delivery:

Exercise 1: Mussel Tissue XII (QA05TIS12)

One bottle of Mussel Tissue XII material (shipped on dry ice)  
Description of the materials and storage/use/reporting instructions for the exercise (see Appendix A.)  
Files for the reporting of results were sent as an e-mail attachment.

Exercise 2: Marine Sediment XIII (QA05SED13)

Three bottles of Marine Sediment XIII material (shipped on dry ice)  
Description of the materials and storage/use/reporting instructions for the exercise (see Appendix B.)  
Files for the reporting of results were sent as an e-mail attachment.

In the an e-mail message sent notifying the participants of the sample shipment, each participant was asked to analyze each of three replicate samples (three from one bottle for the mussel tissue and one from each jar for the sediment) to provide a more realistic assessment of laboratory precision and, if possible, to concurrently analyze the NIST SRM 2977 Mussel Tissue [7] with Mussel Tissue XII and NIST SRM 1941b Organics in Marine Sediment [6] with Marine Sediment XIII.

## **Evaluation of Exercise Results**

### Establishment of the Assigned Values

The following guidelines were used by the NIST exercise coordinators for the establishment of the exercise "Assigned Values" for these two exercises. Each laboratory's performance on concurrent Standard Reference Material (SRM) analyses was used to determine if that laboratory's results would be eligible for inclusion in the calculation of the exercise assigned value for the unknown material for a particular analyte. The results reported for the unknown materials from laboratories that did not report results for the SRMs were not used in these calculations. After the exercise assigned values, standard deviations, and 95% confidence limits had been calculated, all reported results for the Mussel Tissue XII and Marine Sediment XIII materials were evaluated relative to the exercise assigned values.

*Laboratory data submission:* Each participating laboratory was to submit data from three replicate determinations of the "unknown" materials (Mussel Tissue XII and Marine Sediment XIII) and was requested to report results of concurrent analyses of NIST SRM 2977, a freeze-dried mussel tissue SRM, and SRM 1941b, a marine sediment SRM. Laboratories were requested to report these results to three significant figures and to provide brief descriptions of their extraction, cleanup, and analytical procedures.

*Determination of laboratory analyte means:* For each laboratory, the laboratory analyte mean of the three sample results (S1, S2, and S3) was calculated for each analyte. Non-numerical data were treated as follows: A mean "<value" was used when three "<values" were reported; NA (not analyzed/determined) was used for three reported NA's; and, if the reported results were of mixed type, e.g., S1 and S2 were numerical values and S3 was reported as "<value", the two similar "types" were used to either determine the mean or to set a non-numerical descriptor.

*Determination of assigned values:* The assigned values are the means of the acceptable data as defined here. For a particular analyte, the performance on the reference material was deemed acceptable for the purpose of this exercise if the laboratory result was within 30 % of the upper and lower limits of the confidence interval for analytes listed in the Certificates of Analysis for SRM 2977 and SRM 1941b. For each analyte of interest for which a certified value is not provided in these materials, a “target” concentration and the associated uncertainty were calculated. The targets for SRM 2977 were based on reference concentrations for SRM 2977. The targets for SRM 1941b were based on results of the 1999 exercise in which SRM 1941b was used as the unknown material and for the PBDEs on an interlaboratory study coordinated in 2004 specifically for the determination of PBDE congeners in sediment [8]. Laboratory results within target upper and lower limits, typically 30 % to 40 %, of these concentrations were deemed acceptable for this exercise. If a laboratory demonstrated acceptable performance on a particular analyte in the reference material, that laboratory’s results for that analyte in the corresponding “unknown” exercise material was then used in the calculation of the analyte’s exercise assigned value, unless it was deemed an outlier. For evaluation of potential outliers, statistical tests and expert analyst judgement were used after viewing both normal and log normal plots of the data. This judgement utilized knowledge of potential coeluters based on the laboratory's reported methods. In instances in which the analyte concentration was below the detection limit of most participating laboratories, no exercise assigned value was calculated. In data sets where a number of laboratories report results as "not detected" at various detection limits, there is no consensus as to what numerical value should be assigned to these results in the computation of grand means, etc.; e.g., "0," half Detection Limit (DL), and the DL value itself have all been used and the choice is influenced by the particular data set.

## **Reported Results**

Laboratories were assigned numerical identification codes in order of receipt of data with the exception of NIST, which is Laboratory 1 in these exercises. A laboratory was assigned the same code for each material. There are two results from NIST reported: 1a generated in the NIST Gaithersburg laboratory and 1c generated in the NIST Charleston laboratory. The laboratory mean replicate data are shown in Tables 2 to 5 and Tables 6 to 9 for the Mussel Tissue XII and SRM 2977, respectively, and in Tables 10 to 13 and 14 to 17 for Marine Sediment XIII and SRM 1941b, respectively. Included in the means tables for Mussel Tissue XII and Marine Sediment XIII are the exercise assigned values, the standard deviation of the assigned value, the percent relative standard deviation (% RSD), and the calculated 95 % confidence limit of the assigned value for the percent water (sediment), percent total extractable organics, TEO (mussel tissue), total organic carbon, TOC (sediment), PAHs, chlorinated pesticides, PCB congeners, and PBDE congeners. Notes included by a laboratory with its data are listed in Appendices C (Mussel Tissue XII) and D (Marine Sediment XIII). Summaries of the methods used by each laboratory are in Appendices E (Mussel Tissue XII) and F (Marine Sediment XIII). Tables 6 through 9 and 14 through 17 summarize the data received from the participating laboratories for SRM 2977 and 1941b, respectively. The certified and target values for the analytes of interest are also shown in these tables.

In Appendices G (Mussel Tissue XII) and H (Marine Sediment XIII), charts of the mean numerical results reported by each laboratory for each analyte are shown for the exercise material and the corresponding reference material.

Three laboratories reported data after the first draft of this report was distributed to the participants. The data from these laboratories are summarized in Appendix I but are not presented in the charts (Appendices G and H) and are not included in the calculation of the assigned values.

## **Performance Scores**

The exercise coordinators recognize that different programs have different data quality needs. The acceptability of the results submitted by a particular laboratory will be decided by the individual program(s) for which the laboratory provides data. Typically, the program will use these exercise results in conjunction with the laboratory's performance in the analysis of certified reference materials and/or control materials, and of other quality assurance samples. These exercise results are exhibited in a number of ways in this report to facilitate their use by these programs in their acceptability assessments.

IUPAC guidelines [9] describe the use of z-scores and p-scores for assessment of accuracy and precision in intercomparison exercises such as those described in this report. These indices assess the difference between the result of the laboratory and the exercise assigned value and can be used, with caution, to compare performance on different analytes and on different materials.

### Accuracy Assessment (z-score)

$$\text{z-score} = (\text{bias estimate})/(\text{performance criterion}) = (x - X)/\sigma$$

where x is the individual laboratory result, X is the "Exercise Assigned Value," and  $\sigma$  is the target value for standard deviation.

As described in the IUPAC guidelines, the choice of  $\sigma$  is dependent upon data quality objectives of a particular program. It can be "fixed" and arrived at by perception, prescription, or reference to validated methodology (e.g.,  $\sigma = 0.025 X$ ; X is the exercise assigned value), or it can be an estimate of the actual variation (e.g., the calculated sample standard deviation, *s*, from the exercise data). The "fixed" performance criterion is more useful in the comparison of a laboratory's performance on different materials while the use of the actual variation may be more useful within a given exercise, for example, if the determination of a particular analyte is exceptionally problematic.

We have calculated and reported z-scores using the fixed performance criterion for each analyte for each laboratory. At a previous workshop, it was decided to use "25 % of the exercise assigned value" as the fixed target value for standard deviation for this program. The z-scores calculated for these exercises can thus be interpreted as shown in the following examples:

z-score (25 % X):

+1  $\Rightarrow$  laboratory result is 25 % higher than the assigned value

-2  $\Rightarrow$  laboratory result is 50 % lower than the assigned value.

From a scientific point of view, IUPAC does not recommend the classification of z-scores but allows that a common classification is:

$ z  \leq 2$	Satisfactory
$2 <  z  < 3$	Questionable
$ z  \geq 3$	Unsatisfactory.

Tables 18 through 21 summarize the z-scores (25 %) for each laboratory for each reported analyte in Mussel Tissue XII while Tables 22 through 25 summarize the z-scores (25 %) for each laboratory for each reported analyte in Marine Sediment XIII.

### Precision Assessment (p-score)

$$\text{p-score} = \sigma_{\text{lab}} / \sigma_{\text{target}}$$

Prior to the 1994 exercises, participating laboratories typically analyzed the three replicate samples for an exercise with the same sample set, i.e., one set of samples with the same blank, calibration curve, etc. applicable for each. Since the repeatability for replicates within a set generally shows better reproducibility than for replicates across different sets, this does not result in data that are very useful for realistic uncertainty assessment. Since 1994, laboratories have been requested to process each replicate in a different sample set for uncertainty assessment. For the calculation of p-scores for this program, the  $\sigma$  values used are coefficients of variation (CV calculated as relative standard deviations) with the current target  $\sigma$  (CV) for the three replicates being 15 %.

Tables 26 through 29 summarize the relative standard deviations (RSDs) calculated from the three concentrations reported by the laboratory for each analyte quantified in Mussel Tissue XII while Tables 30 through 33 summarize the RSDs calculated for each reported analyte by laboratory in Marine Sediment XIII. To calculate the p-scores (15 %), divide the RSDs reported in the tables by 15%. If a different criterion is chosen, follow the same procedure, and divide the RSD by that criterion.

### **Discussion**

Laboratories were requested to quantify 26 PAHs, 25 chlorinated pesticides, 25 PCB congeners, and 34 PBDE congeners in this year's exercise. A total of 12 sets of results were submitted for Mussel Tissue XII, and 11 sets of results were submitted for Marine Sediment XIII. In the mussel tissue exercise, one laboratory (12) reported data for SRM 2978 Mussel Tissue as the control material for the pesticides, and in the sediment exercise, one laboratory (2) reported data for SRM 1944 New York/New Jersey Waterway Sediment as the control material. Their data were evaluated based on the certified and target values for these SRMs (see Evaluation of Exercise Results above).

The concentrations of the PAHs of interest in Mussel Tissue XII range from 2 ng/g dry-mass basis to 200 ng/g dry-mass basis, the concentrations of the pesticides of interest range from < 1 ng/g dry-mass basis to 35 ng/g dry-mass basis, and the concentrations of the PCB congeners range from < 1 ng/g dry-mass basis to 90 ng/g dry-mass basis. For the chlorinated pesticides, 9 of the 25 compounds were above the detection limits for the majority of the laboratories reporting, while 22 of the 25 PCB congeners were above the detection limits for the majority of the laboratories. There was poor agreement among the laboratories for total extractable organics (TEO), ranging from 0.3 % to 15.0 % even though the laboratories are reporting using similar methods for determining the TEOs (Appendix E). TEO is sometimes referred to as percent lipid but is typically determined by taking a known portion of the extract and evaporating to dryness and then weighing the dried residue. As one can imagine, the TEO value is then dependent on the extraction method and solvent used and the drying method used. It is, therefore typical to see the TEO values vary greatly from lab to lab particularly for relatively lean (non-fatty) materials.

Some of the bottles prepared as Mussel Tissue XII were labeled for use in a separate interlaboratory study as part of the Organic Working Group of the Comité Consultative pour la Quantité de Matière (CCQM). Seven National Metrology Institutes (NMIs) or designated NMIs participated in this study for a limited number of analytes. The exercise means and standard deviations are shown in Figure 1 and compared to the exercise assigned means and standard deviations from this study. The means from the two studies agreed within the uncertainties of the data for this limited analyte set.

The z-scores for the PAHs, pesticides, PCB congeners, and PBDE congeners in Mussel Tissue XII based on 25 % of the exercise assigned value are summarized in Tables 18 to 21, respectively. The majority of the z-scores based on 25 % are within  $\pm 2$  ( $\pm 50$  % of the exercise assigned value). The RSDs for Mussel Tissue XII are summarized in Tables 26 to 29 for the PAHs, pesticides, PCB congeners, and PBDE congeners, respectively. Only five laboratories reported results for a limited number of PBDE congeners; however, for some of the congeners the agreement among the laboratories reporting is good particularly considering the low concentrations.

The PAH concentrations in Marine Sediment XIII range from 25 ng/g dry-mass basis to 800 ng/g dry-mass basis. The pesticide concentrations range from below the detection limits of the methods used to 4.5 ng/g dry-mass basis, while the PCB concentrations range from <1 ng/g dry-mass basis to 5 ng/g dry-mass basis. There was good agreement among the laboratories for percent water in the wet sediment. Only four laboratories returned data for the TOC with the values ranging from 1.8 % to 3.0 %.

As discussed above, the material used for Marine Sediment XIII, SRM 2702, was prepared from the same bulk sediment as SRM 1941b with the difference in the sieve fraction used. SRM 2702 used the material <70  $\mu\text{m}$  while SRM 1941b used the material <150  $\mu\text{m}$ . The concentrations determined in this study for Marine Sediment XIII are compared to the certified and reference concentrations for SRM 1941b in Table 34. For the majority of the analytes, the concentrations in Marine Sediment XIII (SRM 2702) are lower than those in SRM 1941b although the difference between the two materials is not consistent across all of the analytes even within the PAHs, PCBs, and pesticides.

The z-scores for the PAHs, pesticides, PCB congeners, and PBDE congeners based on 25 % of the exercise assigned value are summarized for Marine Sediment XIII in Tables 22 to 25, respectively. In general, the z-scores based on 25 % were within  $\pm 2$  ( $\pm 50$  % of the exercise assigned value) for Marine Sediment XIII. The RSDs for the Marine Sediment XIII are summarized in Tables 30 to 33 for the PAHs, pesticides, PCB congeners, and PBDE congeners, respectively. As for the Mussel Tissue XI, only five laboratories reported data for the PBDE congeners.

As in the past exercises, a variety of methods were used for extraction, extract cleanup, and analysis. These are summarized in Appendix E for the mussel tissue and Appendix F for the marine sediment. For the PAHs in the mussel tissue and marine sediment, all of the laboratories used gas chromatography with mass spectrometry (GC/MS). For the chlorinated analytes in the mussel tissue, laboratories 8, 11, and 12 specified the use of high-resolution MS, and laboratories 5, 9, and 10 used GC-ECD for the PCB congeners and 5, 6, 9, and 10 for the pesticides. For the PBDE congeners, laboratories 7, 8, and 12 used GC with high-resolution MS while laboratory 1c used GC with low-resolution MS in the negative chemical ionization mode and laboratory 4 used GC with low-resolution MS in the electron ionization mode. There was no obvious correlation between z-scores and method used.

For the 2005 exercises, the data provided in the various figures and tables of this report can be used for assessing the comparability of results of over 100 analytes of interest in this program and the performance of individual laboratories. In these exercises, interlaboratory variability is a greater contributor to measurement incomparability than intralaboratory variability.

Subgroups of the exercise participants have demonstrated comparability of results for many analytes within the 0 to 2 z-range based on use of 25 % of the exercise assigned concentration as the performance criterion. This implies that this subgroup can distinguish between two samples that have an analyte concentration difference of 100 %. The reported accuracy and reproducibility indices (z- and p-scores, respectively) can be easily converted to conform to the acceptability requirements of a particular program. For example, a z-score based on 25 % can be multiplied by two to convert to a z-score based on 12.5 % of the analyte concentration.

It is important to evaluate the non-quantitative results reported by each laboratory as well. Although these results are not easily presented or numerically evaluated, they are included in the various tables of this report that list the mean and individual results of the laboratories. The laboratory and its data users should closely examine these non-quantitative results. Decisions based on false negative or false positive results from a laboratory can lead to significant environmental and/or economic consequences. Some laboratories reported detection limits in these “real” matrix materials that may be too high for the data quality needs of their program(s), and these issues should be assessed as well.

Intercomparison exercises provide an important mechanism for assessing the comparability, accuracy, precision, and reproducibility of data being produced by the participating laboratories. Exercise materials similar in matrix, form, and analyte concentration to typical samples routinely

analyzed by the laboratories are most useful for demonstrating the level of comparability and for revealing potential problem areas.

For the determination of the target compounds in these complex marine matrices with relatively low concentrations of these analytes, the levels of bias and reproducibility of many of the participating laboratories meet their current acceptability requirements; however, there is certainly room for improvement. Minimizing the among-laboratory biases so that the analytical variability is significantly less than the field sampling variability should be an achievable goal.

## Acknowledgments

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## Disclaimer

Certain commercial equipment, instruments, or materials are identified in this report to specify adequately the experimental procedure. Such identification does not imply recommendation or endorsement by the National Institute of Standards and Technology, nor does it imply that the materials or equipment identified are the best available for the purpose.

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## List of Tables

- Table 1. Target Analytes in NIST Intercomparison Exercise Program for Organic Contaminants in the Marine Environment.
- Table 2. Mussel Tissue XII (QA05TIS12): Laboratory means of three replicates and exercise assigned values – TEO and PAHs
- Table 3. Mussel Tissue XII (QA05TIS12): Laboratory means of three replicates and exercise assigned values – Pesticides
- Table 4. Mussel Tissue XII (QA05TIS12): Laboratory means of three replicates and exercise assigned values – PCBs.
- Table 5. Mussel Tissue XII (QA05TIS12): Laboratory means of three replicates and exercise assigned values – PBDEs.
- Table 6. SRM 2977: Laboratory means of three replicates and target values – TEO and PAHs.
- Table 7. SRM 2977: Laboratory means of three replicates and target values – Pesticides.
- Table 8. SRM 2977: Laboratory means of three replicates and target values – PCBs.
- Table 9. SRM 2977: Laboratory means of three replicates and target values – PBDEs
- Table 10. Marine Sediment XIII (QA05SED13): Laboratory means of three replicates and exercise assigned values –Water, TOC, and PAHs
- Table 11. Marine Sediment XIII (QA05SED13): Laboratory means of three replicates and exercise assigned values – Pesticides
- Table 12. Marine Sediment XIII (QA05SED13): Laboratory means of three replicates and exercise assigned values – PCBs
- Table 13. Marine Sediment XIII (QA05SED13): Laboratory means of three replicates and exercise assigned values – PBDEs
- Table 14. SRM 1941b: Laboratory means of three replicates and target values – Water, TOC, and PAHs.
- Table 15. SRM 1941b: Laboratory means of three replicates and target values – Pesticides.
- Table 16. SRM 1941b: Laboratory means of three replicates and target values – PCBs.
- Table 17. SRM 1941b: Laboratory means of three replicates and target values – PBDEs.

- Table 18. Mussel Tissue XII (QA05TIS12): z-scores (25 %) by laboratory – TEO and PAHs
- Table 19. Mussel Tissue XII (QA05TIS12): z-scores (25 %) by laboratory – Pesticides
- Table 20. Mussel Tissue XII (QA05TIS12): z-scores (25 %) by laboratory – PCBs
- Table 21. Mussel Tissue XII (QA05TIS12): z-scores (25 %) by laboratory – PBDEs
- Table 22. Marine Sediment XIII (QA05SED13): z-scores (25 %) by laboratory – PAHs, Water, and TOC
- Table 23. Marine Sediment XIII (QA05SED13): z-scores (25 %) by laboratory – Pesticides
- Table 24. Marine Sediment XIII (QA05SED13): z-scores (25 %) by laboratory – PCBs
- Table 25. Marine Sediment XIII (QA05SED13): z-scores (25 %) by laboratory – PBDEs
- Table 26. Mussel Tissue XII and SRM 2977: RSDs for three replicates – TEO and PAHs
- Table 27. Mussel Tissue XII and SRM 2977: RSDs for three replicates – Pesticides
- Table 28. Mussel Tissue XII and SRM 2977: RSDs for three replicates – PCBs
- Table 29. Mussel Tissue XII and SRM 2977: RSDs for three replicates – PBDEs
- Table 30. Marine Sediment XIII and SRM 1941b: RSDs for three replicates – Water, TOC, and PAHs
- Table 31. Marine Sediment XIII and SRM 1941b: RSDs for three replicates – Pesticides
- Table 32. Marine Sediment XIII and SRM 1941b: RSDs for three replicates – PCBs
- Table 33. Marine Sediment XIII and SRM 1941b: RSDs for three replicates – PBDEs
- Table 34. Comparison of concentrations for Marine Sediment XIII and SRM 1941b

**Table 1. Target Analytes in NIST Intercomparison Exercise Program for Organic Contaminants in the Marine Environment**

Chlorinated Pesticides

hexachlorobenzene	2,4'-DDE
alpha-HCH (alpha-BHC)	4,4'-DDE
gamma-HCH (gamma-BHC, Lindane)	2,4'-DDD
beta-HCH	4,4'-DDD
heptachlor	2,4'-DDT
heptachlor epoxide	4,4'-DDT
<i>cis</i> -chlordane (alpha-chlordane)	aldrin
<i>trans</i> -chlordane (gamma-chlordane)	dieldrin
oxychlordane	endrin
<i>cis</i> -nonachlor	endosulfan sulfate
<i>trans</i> -nonachlor	endosulfan I
mirex	endosulfan II
chlorpyrifos	

Polychlorinated Biphenyl Congeners

<i>PCB No.</i>	<i>Compound Name</i>
8	2,4'-dichlorobiphenyl
18	2,2',5-trichlorobiphenyl
28	2,4,4'-trichlorobiphenyl
31	2,4',5-trichlorobiphenyl
44	2,2',3,5'-tetrachlorobiphenyl
49	2,2',4,5'-tetrachlorobiphenyl
52	2,2',5,5'-tetrachlorobiphenyl
66	2,3',4,4'-tetrachlorobiphenyl
95	2,2',3,5',6-pentachlorobiphenyl
99	2,2',4,4',5-pentachlorobiphenyl
101	2,2',4,5,5'-pentachlorobiphenyl
105	2,3,3',4,4'-pentachlorobiphenyl
118	2,3',4,4',5-pentachlorobiphenyl
128	2,2',3,3',4,4'-hexachlorobiphenyl
138	2,2',3,4,4',5'-hexachlorobiphenyl
149	2,2',3,4',5',6-hexachlorobiphenyl
153	2,2',4,4',5,5'-hexachlorobiphenyl
156	2,3,3',4,4',5-hexachlorobiphenyl
170	2,2',3,3',4,4',5-heptachlorobiphenyl
180	2,2',3,4,4',5,5'-heptachlorobiphenyl
187	2,2',3,4',5,5',6-heptachlorobiphenyl
194	2,2',3,3',4,4',5,5'-octachlorobiphenyl
195	2,2',3,3',4,4',5,6-octachlorobiphenyl
206	2,2',3,3',4,4',5,5',6-nonachlorobiphenyl
209	decachlorobiphenyl

**Table 1. (continued)**

### Polycyclic aromatic hydrocarbons (PAH)

naphthalene	benz[ <i>a</i> ]anthracene
2-methylnaphthalene	chrysene
1-methylnaphthalene	triphenylene
biphenyl	benzo[ <i>b</i> ]fluoranthene
2,6-dimethylnaphthalene	benzo[ <i>j</i> ]fluoranthene
acenaphthylene	benzo[ <i>k</i> ]fluoranthene
acenaphthene	benzo[ <i>e</i> ]pyrene
1,6,7-trimethylnaphthalene	benzo[ <i>a</i> ]pyrene
fluorene	perylene
phenanthrene	indeno[1,2,3- <i>cd</i> ]pyrene
anthracene	dibenz[ <i>a,h</i> ]anthracene
1-methylphenanthrene	benzo[ <i>ghi</i> ]perylene
fluoranthene	
pyrene	

### Polybrominated diphenyl ethers (PBDEs)

BDE 15 (4,4'-dibromo-)	BDE 138 (2,2',3,4,4',5'-hexabromo-)
BDE 17 (2,2',4-tribromo-)	BDE 153 (2,2',4,4',5,5'-hexabromo-)
BDE 25 (2,3',4-tribromo-)	BDE 154 (2,2',4,4',5,6'-hexabromo-)
BDE 28 (2,4,4'-tribromo-)	BDE 155 (2,2',4,4',6,6'-hexabromo-)
BDE 30 (2,4,6-tribromo-)	BDE 156 (2,3,3',4,4',5-hexabromo-)
BDE 33 (2',3,4-tribromo-)	BDE 181 (2,2',3,4,4',5,6-heptabromo-)
BDE 47 (2,2',4,4'-tetrabromo-)	BDE 183 (2,2',3,4,4',5',6-heptabromo-)
BDE 49 (2,2',4,5'-tetrabromo-)	BDE 190 (2,3,3',4,4',5,6-heptabromo-)
BDE 66 (2,3',4,4'-tetrabromo-)	BDE 191 (2,3,3',4,4',5,6'-heptabromo-)
BDE 71 (2,3',4',6-tetrabromo-)	BDE 196 (2,2',3,3',4,4',5,6'-octabromo-)
BDE 75 (2,4,4',6-tetrabromo-)	BDE 197 (2,2',3,3',4,4',6,6'-octabromo-)
BDE 85 (2,2',3,4,4'-pentabromo-)	BDE 203 (2,2',3,4,4',5,5',6-octabromo-)
BDE 99 (2,2',4,4',5-pentabromo-)	BDE 205 (2,3,3',4,4',5,5',6-octabromo-)
BDE 100 (2,2',4,4',6-pentabromo-)	BDE 206 (2,2',3,3',4,4',5,6,6'-nonabromo-)
BDE 116 (2,3,4,5,6-pentabromo-)	BDE 207 (2,2',3,3',4,4',5,6,6'-nonabromo-)
BDE 118 (2,3',4,4',5-pentabromo-)	BDE 208 (2,2',3,3',4,5,5',6,6'-nonabromo-)
BDE 119 (2,3',4,4',6-pentabromo-)	BDE 209 (decabromo-)

**Table 2. Mussel TissueXII (QA05TIS12): Laboratory means of three replicates and exercise assigned values - TEO and PAHs**  
(reported as if three figures were significant)

Laboratory No.	1a	1c	3	4	5	6	7	8	9	10	11	12	Value	s	%RSD	
TEO (percent)	NA	4.13	NA	NA	1.93	15.0	0.295	1.68	4.30	1.69	1.45	NA	3.81	4.73	124.1	
<b>PAHs (ng/g dry mass)</b>																
	Laboratory No.	1a	1c	3	4	5	6	7	8	9	10	11	12	Value	s	%RSD
naphthalene		9.87	8.18	8.76	5.61	12.5	<b>43.5</b>	<b>14.2</b>	21.6	2.52	<b>103</b>	NA	NA	9.86	6.07	61.5
2-methylnaphthalene		4.77	2.05	<b>3.19</b>	3.82	<10	14.1	13.3	9.88	<b>1.10</b>	NA	NA	NA	8.00	5.16	64.5
1-methylnaphthalene		4.47	0.763	4.28	1.81	<8	6.96	<b>4.15</b>	NA	<b>0.692</b>	NA	NA	NA	3.66	2.44	66.6
biphenyl		2.87	2.02	2.11	1.81	<7	<b>4.40</b>	<0.7	NA	0.745	<b>38.0</b>	NA	NA	1.91	0.77	40.0
2,6-dimethylnaphthalene		coelution	<5	5.55	1.78	<8	8.24	<0.8	NA	3.10	NA	NA	<3	4.67	2.85	61.0
acenaphthylene		<2	8.45	2.93	0.491	<11	3.64	3.75	<12.5	1.94	3.02	NA	5.50	3.72	2.40	64.6
acenaphthene		2.39	1.44	6.48	0.896	<8	<0.78	3.42	<12.5	<b>3.67</b>	<b>43.5</b>	NA	<2	2.93	2.21	75.4
1,6,7-trimethylnaphthalene		coelution	6.44	NA	4.21	NA	5.72	NA	2.74	NA	NA	coelution	4.78	1.65	34.5	
fluorene		3.90	<b>5.57</b>	3.54	2.44	<7	4.46	6.50	<12.5	1.25	<b>5.95</b>	NA	3.40	3.64	1.64	45.1
phenanthrene		101	105	78.5	107	88.5	82.8	92.1	<b>93.9</b>	48.3	<b>115</b>	NA	96.5	88.7	17.9	20.2
anthracene		4.75	9.72	7.78	2.87	<10	4.32	2.60	<12.5	3.39	<b>39.0</b>	NA	10.9	5.79	3.24	55.9
1-methylphenanthrene		111	113	78.5	122	104	73.9	79.6	NA	54.0	43.4	NA	118	89.7	27.7	30.9
fluoranthene		165	150	119	172	129	127	119	<b>146</b>	69.7	<b>253</b>	NA	144	133	30	22.9
pyrene		213	210	177	241	179	209	172	<b>210</b>	100	<b>352</b>	NA	207	190	40	21.1
benz[a]anthracene		35.9	29.6	19.8	31.5	23.8	21.4	22.6	<b>25.9</b>	11.9	NA	NA	26.1	24.7	7.1	28.6
chrysene		coelution	48.0	81.3	coelution	94.5	<b>106</b>	46.9	<b>110</b>	48.9	coelution	coelution	coelution	63.9	22.4	35.1
triphenylene		coelution	49.2	NA	NA	NA	NA	NA	NA	NA	coelution	coelution	coelution	no target		
benzo[b]fluoranthene		53.5	coelution	56.7	52.0	52.9	39.0	56.9	<b>64.6</b>	22.5	<b>162</b>	NA	coelution	47.6	12.6	26.5
benzo[j]fluoranthene		13.4	coelution	NA	NA	NA	NA	NA	NA	16.8	NA	coelution	coelution	no target		
benzo[k]fluoranthene		17.3	12.7	17.8	coelution	<b>31.3</b>	<b>33.1</b>	17.5	<b>37.3</b>	NA	NA	NA	30.7	16.3	2.4	15.0
benzo[e]pyrene		82.5	85.8	68.9	86.6	77.1	75.3	68.7	66.6	41.7	<b>166</b>	NA	94.0	74.7	14.6	19.6
benzo[a]pyrene		8.66	12.2	4.66	7.26	8.86	7.72	6.55	<12.5	2.94	<b>144</b>	NA	6.36	7.25	2.65	36.6
perylene		4.26	4.74	<14.0	3.57	<5	<b>17.1</b>	NA	NA	1.47	<b>26.2</b>	NA	NA	3.51	1.44	41.2
indeno[1,2,3-cd]pyrene		12.2	coelution	11.0	15.7	<b>19.5</b>	12.0	15.7	26.4	5.15	23.3	NA	14.8	15.1	6.4	42.4
dibenz[a,h]anthracene		coelution	coelution	3.35	coelution	<11	<0.78	<0.7	<12.5	2.08	<b>5.31</b>	coelution	coelution	no target		
benzo[ghi]perylene		23.3	25.9	<b>19.3</b>	28.5	23.9	23.1	34.9	<b>43.1</b>	11.5	21.9	NA	28.8	24.6	6.4	25.8

Note: Bolded values were not used in the calculation of the exercise assigned value; NA = not analyzed

**Table 3. Mussel Tissue XII (QA05TISI2): Laboratory means of three replicates and exercise assigned values - Pesticides**  
(reported as if three figures were significant)

Laboratory No.	1a	1c	3	4	5	6	7	8	9	10	11	12	Exercise Assigned	
													Value	%RSD
alpha-HCH (a-BHC)	<2	<1	NA	<1.05	<2.0	<1.8	<2.5	NA	<0.565	1.87	NA	0.247	no target	
hexachlorobenzene	<2	<1	1.51	<0.996	<2.5	<1.8	<2.5	NA	<0.355	NA	NA	0.131	no target	
gamma-HCH (g-BHC,lindane)	<2	<1	<2.72	4.08	<1.5	<1.8	<2.5	NA	<0.355	0.079	NA	0.094	no target	
beta-HCH (b-BHC)	<2	<1	NA	1.37	NA	2.50	<2.5	NA	<0.301	0.351	NA	<0.04	no target	
heptachlor	<2	<5	<2.72	<1.00	<2.0	<1.8	<2.5	NA	<0.419	2.36	NA	0.226	no target	
aldrin	<2	<1	<2.72	<1.00	1.63	<1.8	<4	NA	<0.428	0.658	NA	<0.03	no target	
heptachlor epoxide	<2	<1	<2.72	<1.00	<2.0	<1.8	<5	NA	<0.465	0.774	NA	0.297	no target	
oxychlorodane	<2	<1	40.8	4.15	NA	<1.8	<5	NA	<0.52	2.89	NA	0.41057	no target	
gamma-chlordane	8.47	<1	7.22	8.43	5.80	8.30	6.59	NA	7.97	6.32	NA	7.99	7.45	1.00
2,4'-DDE	<2	<1	<2.72	1.43	<1.0	<1.8	<0.5	NA	<1.28	8.42	NA	1.15	no target	
endosulfan I	<2	<1	<2.72	<2.63	<1.5	24.3	<5	NA	<1.35	0.112	NA	<0.2	no target	
cis-chlordane (alpha-chlordane)	16.8	17.8	9.39	11.0	8.43	11.0	12.1	NA	<b>5.98</b>	<b>5.40</b>	NA	10.5	12.1	3.4
trans-nonachlor	9.43	9.22	7.94	9.92	9.17	10.0	6.40	NA	<b>5.47</b>	<b>5.10</b>	NA	9.84	9.00	1.24
dieldrin	<5	<5	<2.72	3.51	7.23	14.2	9.09	NA	3.28	<b>1.37</b>	NA	2.94	6.70	4.42
4,4'-DDE	41.1	46.9	27.6	34.7	<b>23.0</b>	30.5	25.9	NA	<b>18.4</b>	<b>29.6</b>	NA	30.8	33.9	7.6
2,4'-DDD	5.61	10.8	7.11	14.4	7.70	8.12	6.05	NA	5.69	coelution	NA	6.93	8.04	2.86
endrin	<2	<1	<2.72	NA	<2.0	<1.8	<4	NA	<0.502	coelution	NA	<0.07	no target	
endosulfan II	<2	<1	<2.72	NA	<3.4	<1.8	<5	NA	<0.392	0.130	NA	<0.4	no target	
4,4'-DDD	16.4	<b>27.6</b>	<b>20.6</b>	42.8	18.3	<1.8	14.8	NA	14.5	15.1	NA	30.0	21.7	10.8
2,4'-DDT	<2	<1	<2.72	1.85	<3.0	<1.8	<2.5	NA	<0.547	<b>7.59</b>	NA	0.664	no target	
cis-nonachlor	5.31	4.59	3.11	4.33	NA	3.84	3.86	NA	3.72	5.47	NA	4.22	4.27	0.76
4,4'-DDT	<2	<1	<2.72	1.22	2.50	<b>10.2</b>	<2	NA	1.15	<b>4.58</b>	NA	1.85	1.68	0.63
mirex	<2	<1	<2.72	3.89	<1.5	<1.8	<1.5	NA	<0.31	NA	NA	0.421	no target	
endosulfan sulfate	<2	<1	NA	NA	NA	<1.8	<4	NA	<0.775	NA	NA	<0.2	no target	
chlorpyrifos	<2	NA	NA	NA	NA	<1.8	NA	NA	<0.401	NA	NA	NA	no target	

Note: Bolded values were not used in the calculation of the exercise assigned value; NA = not analyzed

**Table 4. Mussel Tissue XII (QA05TISI2): Laboratory means of three replicates and exercise assigned values - PCBs**  
(reported as if three figures were significant)  
ng/g dry mass

Laboratory No.	1a	1c	3	4	5	6	7	8	9	10	11	12	Exercise Assigned		
													Value	s	
PCB 8	2.22	2.76	1.74	NA	<2.8	<b>0.300</b>	2.15	3.54	<b>1.53</b>	<b>11.9</b>	<b>1.81</b>	2.14	2.56	0.60	23.5
PCB 18	8.38	8.78	4.29	7.84	4.00	<b>0.897</b>	5.46	4.40	4.05	<b>6.76</b>	4.93	5.03	5.71	1.87	32.8
PCB 28	30.0	27.6	19.8	24.3	20.4	<b>2.81</b>	21.0	24.8	14.2	coelution	23.1	26.9	23.2	4.6	19.7
PCB 31	22.1	26.2	NA	21.0	NA	<b>2.52</b>	16.7	21.3	NA	coelution	<b>16.6</b>	22.9	21.7	3.1	14.2
PCB 44	38.8	37.3	21.9	33.8	20.2	<b>3.73</b>	24.1	23.4	<b>16.8</b>	19.1	45.3	50.4	31.4	11.2	35.7
PCB 49	49.7	52.3	NA	47.1	NA	<b>5.53</b>	27.9	41.5	23.9	21.4	34.4	36.5	37.2	11.3	30.4
PCB 52	57.0	66.6	38.7	55.1	37.7	<b>6.32</b>	42.0	40.7	31.6	<b>22.3</b>	45.0	51.5	46.6	10.7	22.9
PCB 66	52.8	57.4	43.9	51.5	74.0	<b>6.82</b>	33.3	39.1	30.7	50.7	42.0	57.1	48.4	12.4	25.6
PCB 95	59.4	64.7	NA	54.4	NA	<b>4.68</b>	36.9	47.0	NA	<b>16.4</b>	46.4	51.4	51.5	9.2	17.8
PCB 99	47.6	43.7	NA	48.0	NA	<b>5.51</b>	32.9	49.1	NA	<b>14.9</b>	55.5	52.1	47.0	7.2	15.4
PCB 101	97.7	113	82.9	85.5	98.5	<b>13.1</b>	70.0	66.3	<b>52.2</b>	<b>26.1</b>	89.1	90.4	88.1	14.4	16.3
PCB 105	34.9	36.5	25.6	34.3	37.1	<b>4.39</b>	25.6	31.8	21.3	<b>9.80</b>	31.6	32.7	31.1	5.3	16.9
PCB 118	86.3	79.7	84.7	93.3	101	<b>12.0</b>	51.1	79.7	54.1	<b>28.5</b>	79.6	89.4	79.9	15.9	19.9
PCB 128	14.5	14.7	15.0	15.8	13.3	<b>2.24</b>	9.21	11.0	<b>8.36</b>	<b>4.57</b>	11.5	12.0	13.0	2.2	17.0
PCB 138	coelution	61.7	68.8	coelution	91.8	<b>11.3</b>	57.8	coelution	50.8	54.0	coelution	coelution	64.1	14.9	23.3
PCB 149	66.4	80.7	NA	57.6	NA	<b>6.28</b>	47.6	57.5	NA	<b>26.9</b>	<b>50.4</b>	59.3	61.5	11.2	18.2
PCB 153	coelution	147	72.3	123	86.3	<b>11.4</b>	52.1	60.6	63.9	71.9	82.6	97.3	85.7	29.6	34.5
PCB 156	6.80	5.19	NA	6.17	NA	<b>0.713</b>	4.07	4.03	NA	NA	6.04	7.17	5.64	1.25	22.2
PCB 170	1.82	1.46	1.38	1.69	2.20	<b>0.390</b>	<2	1.98	<0.729	2.53	1.63	1.50	1.80	0.38	21.0
PCB 180	8.23	7.10	6.88	10.3	6.90	<b>1.00</b>	9.28	6.64	15.7	12.7	coelution	coelution	9.29	3.11	33.5
PCB 187	19.9	19.3	15.9	21.9	17.9	<b>2.84</b>	15.2	14.0	12.6	14.2	24.9	22.0	18.0	4.0	22.0
PCB 194	<2	0.593	NA	0.535	NA	<0.5	<2	0.406	NA	0.553	<b>0.307</b>	0.417	0.501	0.084	16.8
PCB 195	<2	<1	<2.72	<1.01	<1.8	<0.5	<2	<0.400	<0.265	0.687	0.050	0.0686	no target		
PCB 206	<2	<1	<2.72	<1.02	<1.7	<0.5	<2.2	<0.400	<0.256	0.220	0.040	0.050	no target		
PCB 209	<2	<1	<2.72	<1.01	<1.7	<0.5	<2.2	<0.400	<0.419	0.111	0.054	0.060	no target		

Note: Bolded values were not used in the calculation of the exercise assigned value; NA = not analyzed



**Table 5. Mussel Tissue XII (QA05TISI2): Laboratory means of three replicates and exercise assigned values - PBDEs**  
(reported as if three figures were significant)  
ng/g dry mass

	1a	1c	3	4	5	6	7	8	9	10	11	12	Exercise Assigned		
													Value	s	
BDE 15	NA	<1	NA	NA	NA	NA	NA	<2.00	NA	NA	NA	0.160	no target		
BDE 17	NA	2.98	NA	NA	NA	NA	NA	4.26	NA	NA	NA	3.92	3.72	0.66	17.8
BDE 25	NA	<1	NA	NA	NA	NA	NA	4.26	NA	NA	NA	other	no target		
BDE 28	NA	5.47	NA	3.76	NA	NA	1.38	2.39	NA	NA	NA	2.40	3.08	1.58	51.4
BDE 30	NA	<1	NA	NA	NA	NA	NA	<2.00	NA	NA	NA	<0.03	no target		
BDE 33	NA	<1	NA	NA	NA	NA	NA	2.39	NA	NA	NA	other	no target		
BDE 47	NA	23.5	NA	28.9	NA	NA	14.4	24.5	NA	NA	NA	25.2	23.3	5.4	23.1
BDE 49	NA	<1	NA	8.99	NA	NA	NA	6.11	NA	NA	NA	5.15	6.75	2.00	29.6
BDE 66	NA	<1	NA	1.54	NA	NA	0.566	0.895	NA	NA	NA	0.941	0.984	0.403	41.0
BDE 71	NA	3.23	NA	NA	NA	NA	NA	<2.00	NA	NA	NA	NA	no target		
BDE 75	NA	<1	NA	NA	NA	NA	NA	<2.00	NA	NA	NA	0.102	no target		
BDE 85	NA	<1	NA	<2.40	NA	NA	0.333	0.473	NA	NA	NA	0.447	0.418	0.074	17.8
BDE 99	NA	inf	NA	16.2	NA	NA	8.377	11.0	NA	NA	NA	10.230	11.5	3.4	29.3
BDE 100	NA	7.26	NA	9.55	NA	NA	4.128	6.55	NA	NA	NA	6.749	6.85	1.93	28.3
BDE 116	NA	<1	NA	NA	NA	NA	NA	<2.00	NA	NA	NA	<0.04	no target		
BDE 118	NA	<1	NA	NA	NA	NA	NA	<2.00	NA	NA	NA	NA	no target		
BDE 119	NA	<1	NA	NA	NA	NA	NA	<2.00	NA	NA	NA	0.123	no target		
BDE 138	NA	<1	NA	NA	NA	NA	0.049	<2.00	NA	NA	NA	0.101	no target		
BDE 153	NA	0.382	NA	<2.39	NA	NA	0.601	0.5705	NA	NA	NA	0.508	0.515	0.097	18.8
BDE 154	NA	0.399	NA	<2.41	NA	NA	0.621	0.610	NA	NA	NA	0.570	0.550	0.103	18.7
BDE 155	NA	1.37	NA	NA	NA	NA	NA	<2.00	NA	NA	NA	0.232	no target		
BDE 156	NA	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		
BDE 181	NA	<10	NA	NA	NA	NA	NA	<2.00	NA	NA	NA	<0.024	no target		
BDE 183	NA	<10	NA	<2.42	NA	NA	NA	<0.200	NA	NA	NA	0.062	no target		
BDE 190	NA	<10	NA	NA	NA	NA	NA	<2.00	NA	NA	NA	<0.035	no target		
BDE 191	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		
BDE 196	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		
BDE 197	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		
BDE 203	NA	NA	NA	NA	NA	NA	NA	<2.00	NA	NA	NA	0.065	no target		
BDE 205	NA	NA	NA	NA	NA	NA	NA	<2.00	NA	NA	NA	NA	no target		
BDE 206	NA	NA	NA	NA	NA	NA	NA	<2.00	NA	NA	NA	<0.3	no target		
BDE 207	NA	NA	NA	NA	NA	NA	NA	<2.00	NA	NA	NA	<0.5	no target		
BDE 208	NA	NA	NA	NA	NA	NA	NA	<2.00	NA	NA	NA	<0.4	no target		
BDE 209	NA	NA	NA	NA	NA	NA	NA	<100	NA	NA	NA	<5	no target		

Note: Bolded values were not used in the calculation of the exercise assigned value; NA = not analyzed

**Table 6. SRM 2977: Laboratory means of three replicates and target values - TEO and PAHs**  
(reported as if three figures were significant)

Laboratory No.	1a	1c	3	4	5	6	7	8	9	10	11	12
TEO (percent)	NA	6.30	NA	NA	7.23	40.40	3.47	2.78	7.50	NA	1.31	NA
<b>PAHs (ng/g dry mass)</b>												
Laboratory No.	1a	1c	3	4	5	6	7	8	9	10	11	12
naphthalene	22.2	20.1	11.8	9.23	15.1	44.2	7.68	25.5	9.90	112	NA	NA
2-methylnaphthalene	16.3	17.6	6.43	11.5	11.0	14.2	8.59	17.4	6.76	NA	NA	NA
1-methylnaphthalene	16.0	14.9	7.82	7.05	<8	9.15	4.23	NA	5.81	NA	NA	NA
biphenyl	6.81	4.48	3.39	3.81	<7	0.630	<0.2	NA	3.27	163	NA	NA
2,6-dimethylnaphthalene	coelution	17.6	11.1	17.8	14.6	17.1	12.8	NA	14.3	NA	NA	18.4
acenaphthylene	<2	<5	1.58	<0.765	<11	4.44	1.38	<6.25	3.00	3.39	NA	2.06
acenaphthene	4.06	6.30	6.65	3.06	<8	<0.78	4.29	10.1	11.8	181	NA	3.76
1,6,7-trimethylnaphthalene	coelution	43.5	NA	33.1	NA	32.0	NA	NA	26.5	NA	NA	81.6
fluorene	10.2	22.7	7.02	10.5	8.43	8.37	7.15	16.9	7.86	18.4	NA	10.1
phenanthrene	34.4	39.1	29.6	44.0	31.6	33.6	34.9	70.8	26.3	59.1	NA	39.5
anthracene	6.18	9.91	3.46	1.79	<10	9.14	2.32	7.77	4.74	26.7	NA	5.18
1-methylphenanthrene	39.8	37.4	27.7	57.8	42.1	33.2	31.6	NA	34.0	39.9	NA	47.9
fluoranthene	38.7	39.3	25.2	46.3	30.3	35.4	38.0	70.2	27.2	95.3	NA	38.2
pyrene	78.7	75.3	52.5	95.8	57.5	82.6	59.5	143	53.5	170	NA	77.4
benz[a]anthracene	21.0	19.2	14.3	25.4	17.8	16.1	17.1	38.1	13.0	NA	NA	22.7
chrysene	coelution	38.9	58.7	86.6	67.0	78.6	41.4	172	54.2	coelution	NA	95.6
triphenylene	coelution	35.1	NA	NA	NA	NA	NA	NA	NA	coelution	NA	other
benzo[b]fluoranthene	11.4	coelution	37.4	14.1	14.1	10.9	14.7	39.4	10.2	88.7	NA	13.2
benzo[j]fluoranthene	4.53	coelution	NA	NA	NA	NA	NA	NA	8.33	NA	NA	other
benzo[k]fluoranthene	4.77	3.32	3.36	12.4	7.30	10.0	4.49	24.7	NA	27.4	NA	9.39
benzo[e]pyrene	13.0	13.9	12.2	18.5	15.0	16.0	13.4	<6.25	14.3	61.6	NA	19.5
benzo[a]pyrene	8.71	10.8	5.04	6.61	7.13	6.06	5.01	<6.25	4.83	37.9	NA	10.5
perylene	3.56	4.02	<12.7	3.01	<5	3.47	NA	NA	2.02	44.0	NA	NA
indeno[1,2,3-cd]pyrene	4.83	coelution	3.34	4.38	8.90	4.44	4.73	<6.25	4.22	7.01	NA	5.27
dibenz[a,h]anthracene	coelution	coelution	1.15	1.93	<11	4.45	<0.2	<6.25	1.95	3.28	NA	1.84
benzo[ghi]perylene	9.68	9.14	5.44	10.9	<15	9.67	12.1	25.1	9.59	5.99	NA	10.1

Certificate Values

conc.

95%CL

type

**Table 7. SRM 2977: Laboratory means of three replicates and target values - Pesticides**  
(reported as if three figures were significant)

Laboratory No.	1a	1c	3	4	5	6	7	8	9	10	11	12	Certificate Values	
													conc.	95%CL
alpha-HCH (a-BHC)	<2	<1	NA	<0.719	<2.0	<1.8	<1	NA	<0.565	0.203	NA	SRM 2978	no target	Target
hexachlorobenzene	<2	<1	1.72	<0.684	<2.5	<1.8	<1	NA	<0.355	NA	NA	SRM 2978	no target	Target
gamma-HCH (g-BHC,lindane)	<2	<1	<2.49	1.68	<1.5	<1.8	<1	NA	<0.355	0.381	NA	SRM 2978	no target	Target
beta-HCH (b-BHC)	<2	<1	NA	7.97	NA	9.94	<1	NA	<0.301	7.22	NA	SRM 2978	no target	Target
heptachlor	<2	<5	<2.49	<0.687	<2.0	<1.8	<1	NA	<0.419	1.10	NA	SRM 2978	no target	Target
aldrin	<2	<1	<2.49	<0.689	<1.5	<1.8	<1.5	NA	<0.428	0.872	NA	SRM 2978	no target	Target
heptachlor epoxide	<2	<1	<2.49	<0.687	<2.0	<1.8	<2	NA	<0.465	0.168	NA	SRM 2978	no target	Target
oxychlorodane	<2	<1	<2.49	4.90	NA	<1.8	<2	NA	<0.52	0.789	NA	SRM 2978	no target	Target
gamma-chlordane	2.20	<1	1.32	1.54	2.29	<1.8	<0.5	NA	<0.427	2.88	NA	SRM 2978	no target	Target
2,4'-DDE	<2	<1	<2.49	0.723	<1.0	<1.8	<0.2	NA	<1.3	1.04	NA	SRM 2978	no target	Target
endosulfan I	<2	<1	<2.49	<1.81	<1.5	2.45	<2	NA	<1.38	0.121	NA	SRM 2978	no target	Target
cis-chlordane (alpha-chlordane)	1.34	<2	0.648	0.673	1.10	<1.8	1.34	NA	<0.4	0.313	NA	SRM 2978	1.42	0.13 Certified
trans-nonachlor	1.23	<2	0.563	<0.690	<1.5	2.89	1.07	NA	0.744	0.365	NA	SRM 2978	1.43	0.10 Certified
dieldrin	<5	<5	<2.49	5.82	4.87	8.11	5.39	NA	4.20	2.05	NA	SRM 2978	6.04	0.52 Certified
4,4'-DDE	12.2	12.1	6.71	10.7	4.97	9.17	10.8	NA	6.73	6.66	NA	SRM 2978	12.5	1.6 Certified
2,4'-DDD	3.18	4.30	2.47	interference	<4.0	3.70	2.94	NA	2.48	coelution	NA	SRM 2978	3.32	0.29 Certified
endrin	<2	<1	<2.49	NA	<2.0	<1.8	<1.5	NA	<0.512	1/2,4'-DD	NA	SRM 2978	no target	Target
endosulfan II	<2	<1	<2.49	NA	<3.4	<1.8	<2	NA	<0.4	0.163	NA	SRM 2978	no target	Target
4,4'-DDD	4.22	11.8	1.25	interference	2.43	3.25	4.56	NA	2.61	2.53	NA	SRM 2978	4.30	0.38 Certified
2,4'-DDT	<2	<1	<2.49	<0.681	<3.0	<1.8	<1	NA	<0.558	13.8	NA	SRM 2978	no target	Target
cis-nonachlor	0.422	<2	<2.49	<0.703	NA	<1.8	<0.8	NA	<0.362	1.04	NA	SRM 2978	no target	Target
4,4'-DDT	<2	<1	<2.49	<0.683	<2.5	3.74	<0.7	NA	1.18	13.8	NA	SRM 2978	1.28	0.18 Certified
mirex	<2	<1	<2.49	2.08	<1.5	<1.8	<0.5	NA	<0.316	NA	NA	SRM 2978	no target	Target
endosulfan sulfate	<2	<1	NA	NA	NA	<1.8	<1.5	NA	<0.79	NA	NA	SRM 2978	no target	Target
chlorpyrifos	<2	NA	NA	NA	NA	<1.8	NA	NA	<0.408	NA	NA	SRM 2978	no target	Target

NA = not analyzed

**Table 8. SRM 2977: Laboratory means of three replicates and target values - PCBs**  
(reported as if three figures were significant)  
ng/g dry mass

Laboratory No.	1a	1c	3	4	5	6	7	8	9	10	11	12	Certificate Values		
													conc.	95%CL type	
PCB 8	2.05	2.05	0.961	NA	<2.8	1.33	0.844	1.83	3.38	3.29	0.536	0.973	<b>2.10</b>	<b>0.15</b>	Certified
PCB 18	2.74	2.43	1.16	2.64	<2.7	5.16	1.70	1.25	2.30	1.35	0.731	1.21	<b>2.65</b>	<b>0.30</b>	Certified
PCB 28	5.28	5.53	4.75	6.82	4.00	5.60	4.24	6.76	4.85	coelution	4.36	6.30	<b>5.37</b>	<b>0.44</b>	Certified
PCB 31	4.05	3.77	NA	4.30	NA	3.61	3.30	3.97	NA	w/ PCB 28	1.83	3.39	<b>3.92</b>	<b>0.24</b>	Certified
PCB 44	3.26	3.15	1.95	2.44	<2.4	2.70	3.35	2.05	1.37	1.68	3.17	4.57	<b>3.25</b>	<b>0.63</b>	Certified
PCB 49	2.59	1.16	NA	2.13	NA	2.90	1.97	2.62	<0.371	3.01	0.889	1.41	no target		Target
PCB 52	8.33	8.67	4.98	8.86	4.50	8.10	7.79	8.20	7.27	3.76	4.60	6.99	<b>8.37</b>	<b>0.54</b>	Certified
PCB 66	3.57	3.44	5.87	4.15	2.65	4.86	3.51	3.79	3.64	4.26	2.32	3.73	<b>3.64</b>	<b>0.32</b>	Certified
PCB 95	5.61	6.01	NA	6.01	NA	4.03	4.58	6.69	NA	1.87	3.81	4.53	<b>5.39</b>	<b>0.59</b>	Certified
PCB 99	1.66	3.09	NA	4.81	NA	4.89	1.53	6.47	NA	1.73	4.66	4.18	no target		Target
PCB 101	11.7	11.3	7.09	10.2	6.27	11.8	9.46	9.46	<0.4	3.50	8.60	8.77	<b>11.2</b>	<b>1.2</b>	Certified
PCB 105	3.42	3.33	2.19	4.68	2.53	3.73	3.03	4.10	2.37	1.57	2.78	3.17	<b>3.76</b>	<b>0.49</b>	Certified
PCB 118	10.8	9.04	13.7	12.7	6.27	11.3	10.3	11.1	9.97	4.34	8.08	9.57	<b>10.5</b>	<b>1.0</b>	Certified
PCB 128	2.60	2.37	2.06	2.45	<1.9	3.52	2.38	2.11	1.60	0.755	1.35	1.63	<b>2.49</b>	<b>0.28</b>	Certified
PCB 138	coelution	7.50	8.40	coelution	7.83	14.3	9.42	coelution	15.5	8.98	coelution	coelution	no target		Target
PCB 149	10.2	9.49	NA	8.11	NA	6.48	8.22	10.0	NA	3.71	5.17	6.47	<b>9.23</b>	<b>0.12</b>	Certified
PCB 153	coelution	15.6	7.40	18.1	6.83	12.8	13.4	10.4	9.71	11.5	10.0	11.5	<b>14.1</b>	<b>1.0</b>	Certified
PCB 156	0.972	0.945	NA	0.772	NA	0.967	0.956	0.591	NA	NA	0.597	0.847	<b>0.960</b>	<b>0.085</b>	Certified
PCB 170	3.03	2.82	1.99	2.87	<1.8	3.04	2.58	2.44	2.13	3.34	2.56	2.40	<b>2.95</b>	<b>0.23</b>	Certified
PCB 180	6.74	7.26	3.62	6.83	3.27	5.46	4.49	5.41	8.10	10.2	coelution	coelution	<b>6.79</b>	<b>0.67</b>	Certified
PCB 187	4.59	4.13	2.63	4.41	2.60	4.89	4.75	4.63	3.22	3.06	4.61	4.05	<b>4.76</b>	<b>0.38</b>	Certified
PCB 194	<2	0.889	NA	0.857	NA	0.990	<0.8	0.884	NA	0.604	0.361	0.680	<b>0.897</b>	<b>0.042</b>	Certified
PCB 195	<2	<1	<2.49	<0.696	<1.8	<0.5	<0.8	<200	<0.265	0.362	0.096	0.159	no target		Target
PCB 206	<2	<1	<2.49	<0.699	<1.7	<0.5	<1	<200	<0.256	0.095	0.033	0.044	no target		Target
PCB 209	<2	<1	<2.49	<0.694	<1.7	<0.5	<1	<200	<0.419	0.033	0.005	<0.010	no target		Target

NA = not analyzed

**Table 9. SRM 2977: Laboratory means of three replicates and target values - PBDEs**  
(reported as if three figures were significant)

Laboratory No.	Laboratory No.												Target Value	
	1a	1c	3	4	5	6	7	8	9	10	11	12	conc.	std dev
BDE 15	NA	<1	NA	NA	NA	NA	NA	<1.00	NA	NA	NA	0.121	no target	
BDE 17	NA	0.876	NA	NA	NA	NA	NA	1.89	NA	NA	NA	1.26	no target	
BDE 25	NA	<1	NA	NA	NA	NA	NA	1.89	NA	NA	NA	other	no target	
BDE 28	NA	5.58	NA	4.42	NA	NA	1.42	2.78	NA	NA	NA	2.79	no target	
BDE 30	NA	<1	NA	NA	NA	NA	NA	<1.00	NA	NA	NA	<0.024	no target	
BDE 33	NA	<1	NA	NA	NA	NA	NA	2.78	NA	NA	NA	other	no target	
BDE 47	NA	28.1	NA	47.8	NA	NA	18.9	38.2	NA	NA	NA	37.9	no target	
BDE 49	NA	<1	NA	1.95	NA	NA	NA	1.25	NA	NA	NA	1.05	1.02	0.03
BDE 66	NA	<1	NA	<1.65	NA	NA	0.310	0.552	NA	NA	NA	0.564	0.375	0.062
BDE 71	NA	0.780	NA	NA	NA	NA	NA	<1.00	NA	NA	NA	0.135	no target	
BDE 75	NA	<1	NA	NA	NA	NA	NA	<1.00	NA	NA	NA	0.092	0.166	0.013
BDE 85	NA	<1	NA	<1.65	NA	NA	0.075	0.473	NA	NA	NA	0.057	no target	
BDE 99	NA	inf	NA	7.90	NA	NA	3.33	5.10	NA	NA	NA	4.67	4.11	0.4
BDE 100	NA	5.30	NA	3.38	NA	NA	1.33	2.19	NA	NA	NA	2.15	1.06	0.18
BDE 116	NA	<1	NA	NA	NA	NA	NA	<1.00	NA	NA	NA	<0.072	no target	
BDE 118	NA	<1	NA	NA	NA	NA	NA	<1.00	NA	NA	NA	NA	no target	
BDE 119	NA	<1	NA	NA	NA	NA	NA	<1.00	NA	NA	NA	0.054	no target	
BDE 138	NA	<1	NA	NA	NA	NA	0.030	<1.00	NA	NA	NA	0.059	no target	
BDE 153	NA	<LOD	NA	<1.64	NA	NA	0.181	0.143	NA	NA	NA	0.147	no target	
BDE 154	NA	<LOD	NA	<1.66	NA	NA	0.161	0.165	NA	NA	NA	0.163	no target	
BDE 155	NA	<LOD	NA	NA	NA	NA	NA	<1.00	NA	NA	NA	0.032	no target	
BDE 156	NA	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target	
BDE 181	NA	<10	NA	NA	NA	NA	NA	<1.00	NA	NA	NA	0.026	no target	
BDE 183	NA	<10	NA	<1.67	NA	NA	NA	<0.100	NA	NA	NA	0.057	no target	
BDE 190	NA	<10	NA	NA	NA	NA	NA	<1.00	NA	NA	NA	0.028	no target	
BDE 191	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target	
BDE 196	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target	
BDE 197	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target	
BDE 203	NA	NA	NA	NA	NA	NA	NA	<1.00	NA	NA	NA	0.036	no target	
BDE 205	NA	NA	NA	NA	NA	NA	NA	<1.00	NA	NA	NA	NA	no target	
BDE 206	NA	NA	NA	NA	NA	NA	NA	<1.00	NA	NA	NA	<0.3	no target	
BDE 207	NA	NA	NA	NA	NA	NA	NA	1.43	NA	NA	NA	<0.5	no target	
BDE 208	NA	NA	NA	NA	NA	NA	NA	<1.00	NA	NA	NA	<0.4	no target	
BDE 209	NA	NA	NA	NA	NA	NA	NA	<50.0	NA	NA	NA	<5	no target	

NA = not analyzed

**Table 10. Marine Sediment XIII (QA05SED13): Laboratory means of three replicates and exercise assigned values - Water, TOC, and PAHs**  
(reported as if three figures were significant)

Laboratory No.	1a	1c	2	3	4	6	7	8	10	11	12	Value	s	%RSD
Water (percent)	45.8	46.8	49.6	46.2	46.5	NA	52.1	53.3	46.0	44.8	43.1	47.44	3.23	6.8
TOC (percent)	NA	NA	NA	2.83	NA	1.84	NA	3.07	3.04	NA	NA	2.70	0.58	21.5

Laboratory No.	1a	1c	2	3	4	6	7	8	10	11	12	Exercise Assigned		
												Value	s	%RSD
naphthalene	864	604	614	<b>174</b>	928	557	994	<b>1253</b>	<b>261</b>	NA	937	785	186	23.7
2-methylnaphthalene	244	136	157	<b>36.3</b>	323	174	255	<b>438</b>	NA	NA	244	219	66	30.1
1-methylnaphthalene	106	76.8	80.2	65.2	126	92.2	106	NA	NA	NA	133	98.2	24.0	24.4
biphenyl	77.1	45.1	33.1	<b>24.0</b>	84.2	46.0	83.6	NA	<b>27.6</b>	NA	91.5	65.8	23.6	35.8
2,6-dimethylnaphthalene	coelution	79.0	22.0	22.3	131	91.9	114	NA	NA	NA	109	81.3	43.6	53.7
acenaphthylene	55.6	<b>73.2</b>	22.6	28.8	47.7	40.1	57.3	<b>79.1</b>	61.3	NA	47.0	45.1	13.8	30.6
acenaphthene	36.6	inf	18.7	16.0	38.5	24.6	29.7	<b>47.7</b>	35.3	NA	32.1	28.9	8.4	29.0
1,6,7-trimethylnaphthalene	coelution	19.7	NA	NA	37.3	<b>51.2</b>	NA	NA	NA	NA	coelution	no target		
fluorene	66.0	52.0	46.3	<b>29.0</b>	67.4	52.3	56.6	<b>114</b>	83.4	NA	51.4	56.1	12.2	21.7
phenanthrene	332	289	178	<b>209</b>	452	248	425	<b>509</b>	298	NA	326	306	89	29.1
anthracene	167	99.4	78.4	<b>78.7</b>	204	98.0	178	<b>212</b>	189	NA	140	137	47	34.7
1-methylphenanthrene	58.0	51.1	28.7	<b>37.2</b>	85.6	<b>79.2</b>	54.0	NA	<b>43.4</b>	NA	54.7	55.4	18.2	32.8
fluoranthene	559	455	273	<b>370</b>	714	389	609	<b>669</b>	605	NA	489	496	140	28.2
pyrene	479	391	225	<b>301</b>	601	259	513	<b>588</b>	601	NA	424	421	142	33.6
benz[ <i>a</i> ]anthracene	277	235	126	207	371	155	308	<b>345</b>	NA	NA	247	241	80	33.2
chrysene	coelution	189	134	248	coelution	225	299	<b>498</b>	coelution	coelution	coelution	219	62	28.4
triphenylene	coelution	84.0	NA	NA	NA	NA	NA	NA	w/ chrysen	NA	other	no target		
benzo[ <i>b</i> ]fluoranthene	441	coelution	197	511	489	210	<b>661</b>	<b>579</b>	630	NA	coelution	413	174	42.1
benzo[ <i>j</i> ]fluoranthene	216	coelution	NA	NA	NA	NA	NA	NA	NA	NA	coelution	no target		
benzo[ <i>k</i> ]fluoranthene	228	130	91	144	coelution	203	228	<b>443</b>	167	NA	250	180	56	31.1
benzo[ <i>e</i> ]pyrene	326	234	121	235	353	181	341	<b>327</b>	399	NA	388	286	97	34.0
benzo[ <i>a</i> ]pyrene	362	<b>451</b>	113	<b>196</b>	317	144	351	<b>344</b>	441	NA	245	282	120	42.7
perylene	354	<b>327</b>	111	<b>171</b>	486	219	NA	NA	384	NA	314	311	131	42.2
indeno[1,2,3- <i>cd</i> ]pyrene	332	coelution	94.6	231	372	133	340	<b>331</b>	316	NA	243	258	101	39.3
dibenzo[ <i>a,h</i> ]anthracene	coelution	coelution	11.1	49.0	coelution	47.8	59.7	<b>97.2</b>	<b>96.7</b>	NA	NA	41.9	21.2	50.6
benzo[ <i>ghi</i> ]perylene	316	196	73.5	<b>136</b>	321	154	328	<b>301</b>	329	NA	234	244	96	39.5

Note: Bolded values were not used in the calculation of the exercise assigned values; NA = not analyzed

**Table 11. Marine Sediment XIII (QA05SED13): Laboratory means of three replicates and exercise assigned values - Pesticides**  
(reported as if three figures were significant)

Laboratory No.	Exercise Assigned												
	1a	1c	2	3	4	6	7	8	10	11	12	Value	%RSD
alpha-HCH (a-BHC)	<3	<1	NA	NA	<0.571	<0.15	<1	NA	0.555	NA	0.031	no target	
hexachlorobenzene	5.16	<b>4.86</b>	NA	4.12	7.01	2.40	7.48	NA	NA	NA	6.11	5.38	1.90
gamma-HCH (g-BHC), lindane	<3	<1	NA	<0.736	16.4	<0.15	<1	NA	0.775	NA	0.030	no target	
beta-HCH (b-BHC)	<3	<1	NA	NA	<0.566	<0.15	<1	NA	0.911	NA	0.019	no target	
heptachlor	<3	<1	NA	<0.736	<0.545	<0.15	<1	NA	4.26	NA	<0.006	no target	
aldrin	<3	<1	NA	<0.736	<0.547	<0.15	<1.5	NA	0.247	NA	0.013	no target	
heptachlor epoxide	<3	<1	NA	<0.736	<0.545	<0.15	<2	NA	0.671	NA	0.036	no target	
oxychlordan	<3	<1	NA	<0.736	3.99	<0.15	<2	NA	0.137	NA	<0.01	no target	
gamma-chlordane	0.589	<1	NA	0.658	0.583	0.341	<0.5	NA	0.775	NA	0.486	0.572	0.148
2,4'-DDE	0.328	<2	NA	<0.736	0.499	<0.15	<0.2	NA	<b>1.70</b>	NA	0.314	0.380	0.103
endosulfan I	<3	<1	NA	<0.736	<0.548	<0.15	<2	NA	0.088	NA	<0.032	no target	
cis-chlordane (alpha-chlordane)	0.542	<1	NA	0.451	0.54833	0.441	<0.25	NA	<b>2.20</b>	NA	0.430	0.482	0.058
trans-nonachlor	0.326	<1	NA	0.198	<0.548	0.383	0.19677	NA	0.382	NA	0.228	0.286	0.089
dieldrin	<3	<1	NA	<0.736	<0.544	0.424	<1	NA	0.360	NA	0.375	0.386	0.034
4,4'-DDE	3.38	3.61	NA	3.85	<b>6.57</b>	1.46	4.11	NA	4.88	NA	2.82	3.44	1.08
2,4'-DDD	<3	0.954	NA	<0.736	1.80	0.484	<0.5	NA	coelution	NA	0.471	0.927	0.624
endrin	<3	<1	NA	<0.736	NA	<0.15	<1.5	NA	coelution	NA	<0.016	no target	
endosulfan II	<3	<1	NA	<0.736	NA	<0.15	<2	NA	0.162	NA	<0.059	no target	
4,4'-DDD	4.46	4.07	NA	4.88	NA	1.86	<b>14.8</b>	NA	<b>2.76</b>	NA	5.64	4.18	1.42
2,4'-DDT	<3	<2	NA	<0.736	0.512	<0.15	<1	NA	3.10	NA	0.097	no target	
cis-nonachlor	<3	<1	NA	0.172	<0.558	<0.15	<b>3.86</b>	NA	1.02	NA	0.167	0.454	0.493
4,4'-DDT	<3	<2	NA	<0.736	0.504	0.725	<0.7	NA	<b>5.95</b>	NA	0.381	0.537	0.174
mirex	<3	<2	NA	<0.736	<b>4.63</b>	1.28	<0.7	NA	NA	NA	0.015	no target	
endosulfan sulfate	<3	<1	NA	NA	NA	<0.15	<0.5	NA	NA	NA	<0.018	no target	
chlorpyrifos	<3	NA	NA	NA	NA	<0.15	<1.5	NA	NA	NA	NA	no target	

Note: Bolded values were not used in the calculation of the exercise assigned values; NA = not analyzed

**Table 12. Marine Sediment XIII (QA05SED13): Laboratory means of three replicates and exercise assigned values - PCBs**  
(reported as if three figures were significant)

Laboratory No.	1a	1c	2	3	4	6	7	8	10	11	12	Exercise Assigned		
												Value	s	
PCB 8	1.48	1.76	NA	1.18	NA	0.820	1.90	<b>3.52</b>	<b>7.91</b>	0.874	1.53	1.36	0.42	30.7
PCB 18	2.22	2.43	NA	1.49	2.55	1.25	2.46	1.99	2.40	<b>0.447</b>	1.61	2.04	0.48	23.6
PCB 28	3.76	4.71	NA	3.24	4.69	2.24	4.61	<b>6.07</b>	coelution	2.69	4.37	3.79	0.97	25.6
PCB 31	3.34	3.65	NA	NA	3.43	1.69	3.35	<b>4.48</b>	coelution	1.28	3.07	2.83	0.94	33.2
PCB 44	3.65	3.85	NA	2.70	4.46	2.06	3.95	<b>4.88</b>	4.50	1.93	4.17	3.47	0.99	28.6
PCB 49	4.00	4.51	NA	NA	4.63	2.45	4.65	<b>6.81</b>	4.38	1.35	3.16	3.64	1.22	33.4
PCB 52	5.38	5.45	NA	3.75	6.16	2.95	5.88	<b>6.70</b>	4.15	2.04	4.59	4.48	1.39	31.1
PCB 66	4.97	5.42	NA	4.01	5.50	2.96	4.96	<b>6.11</b>	<b>9.44</b>	1.55	5.20	4.32	1.41	32.5
PCB 95	3.98	3.70	NA	NA	5.36	1.76	4.40	<b>5.52</b>	2.91	1.73	3.67	3.44	1.25	36.5
PCB 99	2.91	3.50	NA	NA	3.22	1.55	3.11	<b>4.08</b>	1.76	1.15	2.40	2.45	0.87	35.6
PCB 101	5.15	6.30	NA	4.93	5.98	3.83	6.11	5.23	<b>3.25</b>	1.97	4.29	4.86	1.36	28.0
PCB 105	1.48	1.53	NA	1.04	1.92	0.893	1.50	<b>1.77</b>	1.17	0.578	1.21	1.26	0.40	31.7
PCB 118	4.19	4.21	NA	3.33	5.57	2.48	4.76	<b>4.89</b>	2.30	1.69	3.77	3.59	1.26	35.0
PCB 128	0.663	0.662	NA	0.787	0.914	0.660	1.25	0.743	0.389	0.256	0.516	0.684	0.275	40.3
PCB 138	coelution	4.77	NA	3.69	coelution	2.86	3.55	coelution	5.86	2.08	3.96	3.83	1.23	32.2
PCB 149	4.39	5.54	NA	NA	5.55	2.37	5.88	<b>6.43</b>	3.69	2.12	3.94	4.18	1.44	34.4
PCB 153	coelution	coelution	NA	3.79	8.58	2.89	5.84	3.99	8.59	2.11	4.14	4.99	2.46	49.4
PCB 156	0.517	0.565	NA	NA	0.554	0.390	0.443	0.448	NA	0.165	0.473	0.444	0.128	28.7
PCB 170	1.37	1.40	NA	1.24	1.79	0.877	1.08	1.41	<b>3.05</b>	0.522	1.05	1.19	0.36	30.5
PCB 180	3.23	3.06	NA	2.44	4.41	1.52	3.11	3.08	5.04	1.23	2.61	2.97	1.15	38.8
PCB 187	2.15	2.13	NA	1.51	2.54	3.36	2.69	1.80	2.89	1.05	1.84	2.20	0.69	31.3
PCB 194	<2	1.74	NA	NA	1.18	0.567	<0.8	1.18	1.31	0.230	0.863	1.01	0.50	49.7
PCB 195	<2	0.350	NA	0.227	0.576	0.245	<0.8	<0.428	<b>4.49</b>	0.076	0.272	0.291	0.166	57.0
PCB 206	2.38	2.68	NA	1.64	2.53	1.49	1.90	<b>3.55</b>	<b>4.57</b>	0.638	2.03	1.91	0.66	34.7
PCB 209	4.63	5.49	NA	3.14	5.23	NA	4.35	<b>6.50</b>	<b>2.21</b>	1.19	4.11	4.02	1.47	36.5

Note: Bolded values were not used in the calculation of the exercise assigned values; NA = not analyzed



**Table 13. Marine Sediment XIII (QA05SED13): Laboratory means of three replicates and exercise assigned values - PBDEs**  
(reported as if three figures were significant)

Laboratory No.	1a	1c	Exercise Assigned												
			2	3	4	6	7	8	10	11	12	Value	s	%RSD	
BDE 15	NA	<1	NA	NA	NA	NA	NA	<2.14	NA	NA	NA	0.185	no target		
BDE 17	NA	<1	NA	NA	NA	NA	NA	<2.14	NA	NA	NA	0.099	no target		
BDE 25	NA	<1	NA	NA	NA	NA	NA	<2.14	NA	NA	NA	other	no target		
BDE 28	NA	<1	NA	NA	<2.1	NA	NA	0.053	<0.214	NA	NA	0.059	0.056	0.005	8.2
BDE 30	NA	<1	NA	NA	NA	NA	NA	NA	<2.14	NA	NA	<0.002	no target		
BDE 33	NA	<1	NA	NA	NA	NA	NA	NA	<2.14	NA	NA	other	no target		
BDE 47	NA	1.21	NA	NA	<2.1	NA	1.255	<10.7	NA	NA	NA	0.635	1.03	0.35	33.4
BDE 49	NA	<1	NA	NA	<2.1	NA	NA	NA	<2.14	NA	NA	0.154	no target		
BDE 66	NA	<1	NA	NA	<2.1	NA	0.044	<0.214	NA	NA	NA	0.032	0.038	0.009	22.7
BDE 71	NA	<1	NA	NA	NA	NA	NA	<2.14	NA	NA	NA	0.014	no target		
BDE 75	NA	<1	NA	NA	NA	NA	NA	<2.14	NA	NA	NA	<0.002	no target		
BDE 85	NA	<1	NA	NA	<2.1	NA	0.066	<0.257	NA	NA	NA	0.012	no target		
BDE 99	NA	<1	NA	NA	<2.1	NA	1.352	<10.7	NA	NA	NA	0.452	no target		
BDE 100	NA	<1	NA	NA	<2.1	NA	0.294	<2.14	NA	NA	NA	0.109	no target		
BDE 116	NA	<1	NA	NA	NA	NA	NA	<2.14	NA	NA	NA	<0.014	no target		
BDE 118	NA	<1	NA	NA	NA	NA	NA	<2.14	NA	NA	NA	NA	no target		
BDE 119	NA	<1	NA	NA	NA	NA	NA	<2.14	NA	NA	NA	0.004	no target		
BDE 138	NA	<1	NA	NA	NA	NA	0.034	<2.14	NA	NA	NA	0.008	no target		
BDE 153	NA	<1	NA	NA	<2.1	NA	0.177	<0.257	NA	NA	NA	0.064	no target		
BDE 154	NA	<1	NA	NA	<2.1	NA	0.137	<0.214	NA	NA	NA	0.069	no target		
BDE 155	NA	<1	NA	NA	NA	NA	NA	<2.14	NA	NA	NA	0.010	no target		
BDE 156	NA	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target	no target		
BDE 181	NA	<10	NA	NA	NA	NA	NA	<2.14	NA	NA	NA	<0.141	no target		
BDE 183	NA	<10	NA	NA	<2.1	NA	NA	<0.214	NA	NA	NA	<0.3	no target		
BDE 190	NA	<10	NA	NA	NA	NA	NA	<2.14	NA	NA	NA	<0.206	no target		
BDE 191	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		
BDE 196	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		
BDE 197	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		
BDE 203	NA	NA	NA	NA	NA	NA	NA	<2.14	NA	NA	NA	0.142	no target		
BDE 205	NA	NA	NA	NA	NA	NA	NA	<2.14	NA	NA	NA	NA	no target		
BDE 206	NA	NA	NA	NA	NA	NA	NA	<2.14	NA	NA	NA	NA	no target		
BDE 207	NA	NA	NA	NA	NA	NA	NA	<2.14	NA	NA	NA	NA	no target		
BDE 208	NA	NA	NA	NA	NA	NA	NA	<2.14	NA	NA	NA	NA	no target		
BDE 209	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	25.7	no target		

Note: Bolded values were not used in the calculation of the exercise assigned values; NA = not analyzed

**Table 14. SRM 1941b: Laboratory means of three replicates and target values - Water, TOC, and PAHs**  
(reported as if three figures were significant)

Laboratory No.	1a	1c	2	3	4	6	7	8	10	11	12
	Water (percent)	2.46	2.86	SRM 1944	NA	1.83	NA	92.70	36.20	NA	NA
TOC (percent)	NA	NA	SRM 1944	3.03	NA	0.94	NA	2.88	NA	NA	NA

Laboratory No.	1a	1c	2	3	4	6	7	8	10	11	12	Certificate Values		
												conc.	95%CL type	
naphthalene	866	971	SRM 1944	226	877	941	933	1680	170	NA	939	848	95	Certified
2-methylnaphthalene	267	219	SRM 1944	40.9	314	308	244	445	NA	NA	266	276	53	Reference
1-methylnaphthalene	136	111	SRM 1944	75.8	119	158	96.6	NA	NA	NA	138	127	14	Reference
biphenyl	75.8	72.5	SRM 1944	23.6	82.7	80.0	76.3	NA	26.2	NA	95.0	74.0	8.0	Reference
2,6-dimethylnaphthalene	coelution	128.2	SRM 1944	23.4	126	163	108	NA	NA	NA	122	75.9	4.5	Reference
acenaphthylene	54.4	117	SRM 1944	30.4	48.8	74.2	61.5	168	54.8	NA	55.9	53.3	6.4	Reference
acenaphthene	33.9	inf	SRM 1944	16.0	40.7	44.7	31.3	132	31.3	NA	36.9	38.4	5.2	Reference
1,6,7-trimethylnaphthalene	coelution	31.0	SRM 1944	NA	37.2	83.3	NA	NA	NA	NA	coelution	25.5	5.1	Reference
fluorene	87.1	73.6	SRM 1944	28.1	71.0	91.3	66.1	225	82.1	NA	67.8	85	15	Certified
phenanthrene	427	466	SRM 1944	207	452	469	409	743	229	NA	389	406	44	Certified
anthracene	179	179	SRM 1944	75.6	208	179	184	345	157	NA	165	184	18	Certified
1-methylphenanthrene	71.7	77.4	SRM 1944	36.8	87.8	135	50.1	NA	35.3	NA	63.4	73.2	5.9	Certified
fluoranthene	656	716	SRM 1944	392	726	747	565	1047	477	NA	615	651	50	Certified
pyrene	571	596	SRM 1944	307	607	480	493	924	508	NA	501	581	39	Certified
benz[a]anthracene	373	358	SRM 1944	221	370	280	296	562	NA	NA	296	335	25	Certified
chrysene	coelution	278	SRM 1944	267	coelution	407	303	748	coelution	NA	coelution	291	31	Certified
triphenylene	coelution	104	SRM 1944	NA	NA	NA	NA	NA	w/ chrysen	NA	other	108	5	Certified
benzo[b]fluoranthene	445	coelution	SRM 1944	561	493	380	649	935	505	NA	coelution	453	21	Certified
benzo[j]fluoranthene	218	coelution	SRM 1944	NA	NA	NA	NA	NA	NA	NA	other	217	5	Reference
benzo[k]fluoranthene	226	210	SRM 1944	168	coelution	367	233	690	123	NA	307	225	18	Certified
benzo[e]pyrene	337	373	SRM 1944	256	362	328	328	547	331	NA	440	325	25	Certified
benzo[a]pyrene	367	686	SRM 1944	197	303	241	329	535	276	NA	291	358	17	Certified
perylene	386	650	SRM 1944	148	453	305	NA	NA	259	NA	375	397	45	Certified
indeno[1,2,3-cd]pyrene	348	coelution	SRM 1944	259	369	222	350	562	178	NA	322	341	57	Certified
dibenz[a,h]anthracene	coelution	coelution	SRM 1944	53.4	coelution	80.9	57.2	113	95.7	NA	NA	53	10	Certified
benzo[ghi]perylene	312	353	SRM 1944	154	305	207	329	525	293	NA	308	307	45	Certified

NA = not analyzed

**Table 15. SRM 1941b: Laboratory means of three replicates and target values - Pesticides**  
(reported as if three figures were significant)

Laboratory No.	ng/g dry mass												Certificate Values	
	1a	1c	2	3	4	6	7	8	10	11	12	conc.	95%CL	type
alpha-HCH (a-BHC)	<3	<1	NA	NA	<0.679	<0.15	<0.5	NA	0.438	NA	0.027	no target		Target
hexachlorobenzene	5.94	10.3	NA	2.88	7.84	6.33	5.94	NA	NA	NA	8.59	<b>5.83</b>	<b>0.38</b>	Certified
gamma-HCH (g-BHC,lindane)	<3	<1	NA	<0.816	15.8	<0.15	<0.5	NA	NA	NA	0.024	no target		Target
beta-HCH (b-BHC)	<3	<1	NA	NA	<0.673	<0.15	<0.5	NA	0.323	NA	0.019	no target		Target
heptachlor	<3	<1	NA	<0.816	<0.648	<0.15	<0.5	NA	3.70	NA	<0.006	no target		Target
aldrin	<3	<1	NA	<0.816	<0.650	<0.15	<0.8	NA	0.122	NA	0.011	no target		Target
heptachlor epoxide	<3	<1	NA	<0.816	<0.648	<0.15	<1	NA	0.421	NA	0.045	no target		Target
oxychlorodane	<3	<1	NA	<0.816	3.85	<0.15	<1	NA	0.096	NA	<0.025	no target		Target
gamma-chlordane	0.688	<1	NA	0.488	0.586	0.674	0.543	NA	0.701	NA	0.514	<b>0.566</b>	<b>0.093</b>	Certified
2,4'-DDE	0.331	<2	NA	<0.816	0.526	<0.15	0.368	NA	1.48	NA	0.342	0.38	0.12	Reference
endosulfan I	<3	<1	NA	<0.816	0.833	<0.15	<1	NA	0.061	NA	<0.029	no target		Target
cis-chlordane (alpha-chlordan)	0.846	<1	NA	0.379	0.511	0.529	0.779	NA	1.84	NA	0.461	<b>0.85</b>	<b>0.11</b>	Certified
trans-nonachlor	0.436	<1	NA	0.191	<0.651	0.547	0.180	NA	0.291	NA	0.243	<b>0.438</b>	<b>0.073</b>	Certified
dieldrin	<3	<1	NA	<0.816	<0.647	<0.15	<0.5	NA	0.286	NA	0.403	no target		Target
4,4'-DDE	3.30	4.22	NA	3.35	5.72	2.83	2.52	NA	3.94	NA	3.16	<b>3.22</b>	<b>0.28</b>	Certified
2,4'-DDD	<3	1.57	NA	<0.816	1.88	<0.15	<0.3	NA	coelution	NA	0.506	no target		Target
endrin	<3	<1	NA	<0.816	NA	<0.15	<0.8	NA	/ 2,4'-DD	NA	<0.014	no target		Target
endosulfan II	<3	<1	NA	<0.816	NA	<0.15	<1	NA	0.044	NA	<0.022	no target		Target
4,4'-DDD	4.55	4.97	NA	3.53	NA	<0.15	4.58	NA	1.88	NA	4.74	<b>4.66</b>	<b>0.46</b>	Certified
2,4'-DDT	<3	<2	NA	<0.816	0.575	<0.15	<0.5	NA	1.10	NA	0.089	no target		Target
cis-nonachlor	<3	0.756	NA	0.139	<0.664	<0.15	<0.3	NA	0.846	NA	0.183	<b>0.378</b>	<b>0.053</b>	Certified
4,4'-DDT	<3	<2	NA	<0.816	<0.645	<0.15	0.743	NA	0.990	NA	0.278	1.12	0.42	Reference
mirex	<3	<2	NA	<0.816	4.69	<0.15	<0.3	NA	NA	NA	<0.02	no target		Target
endosulfan sulfate	<3	<1	NA	NA	NA	<0.15	<0.8	NA	NA	NA	<0.023	no target		Target
chlorpyrifos	<3	NA	NA	NA	NA	<0.15	NA	NA	NA	NA	NA	no target		Target

NA = not analyzed

**Table 16. SRM 1941b: Laboratory means of three replicates and target values - PCBs**  
(reported as if three figures were significant)

Laboratory No.	ng/g dry mass											Certificate Values		
	1a	1c	2	3	4	6	7	8	10	11	12	conc.	95%CL	type
PCB 8	1.56	1.25	NA	0.982	NA	1.27	1.75	4.32	4.78	1.17	1.56	1.65	0.19	Certified
PCB 18	2.31	1.90	NA	1.25	2.47	1.96	2.13	2.54	1.97	1.61	1.59	2.39	0.29	Certified
PCB 28	4.50	3.16	NA	2.93	4.72	3.65	4.01	8.17	coelution	4.72	4.56	4.52	0.57	Certified
PCB 31	3.22	2.73	NA	NA	3.30	2.59	2.87	5.48	coelution	2.34	3.09	3.18	0.41	Certified
PCB 44	3.69	3.10	NA	2.48	4.28	3.24	3.33	5.89	3.84	5.15	5.61	3.85	0.20	Certified
PCB 49	4.38	3.72	NA	NA	4.45	3.94	4.44	8.23	3.94	2.87	3.47	4.34	0.28	Certified
PCB 52	5.40	4.92	NA	3.24	5.68	4.48	4.98	7.78	3.60	4.34	4.86	5.24	0.28	Certified
PCB 66	4.97	4.35	NA	3.65	5.40	4.78	4.44	7.29	7.80	4.00	6.04	4.96	0.53	Certified
PCB 95	3.99	3.14	NA	NA	4.81	2.61	3.67	6.62	2.37	4.23	3.91	3.93	0.62	Certified
PCB 99	3.05	2.80	NA	NA	3.03	2.43	2.65	5.15	1.52	3.73	2.74	2.90	0.36	Certified
PCB 101	5.21	5.01	NA	4.19	5.43	5.87	5.30	6.46	2.69	5.91	5.29	5.11	0.34	Certified
PCB 105	1.42	1.17	NA	0.950	1.80	1.34	1.36	2.34	0.957	1.35	1.33	1.43	0.10	Certified
PCB 118	4.10	3.19	NA	2.90	5.17	3.84	3.77	6.33	2.20	3.94	4.08	4.23	0.19	Certified
PCB 128	0.669	0.452	NA	0.749	0.811	1.05	0.697	0.986	0.403	0.528	0.595	0.696	0.044	Certified
PCB 138	coelution	4.24	NA	3.26	coelution	4.47	3.41	coelution	4.99	4.74	4.36	3.6	0.28	Certified
PCB 149	4.42	4.22	NA	NA	4.90	3.59	5.25	8.37	3.32	4.38	4.30	4.35	0.26	Certified
PCB 153	coelution	coelution	NA	3.37	7.49	4.40	5.00	5.50	7.02	5.03	4.37	5.47	0.32	Certified
PCB 156	0.520	<LOD	NA	NA	0.485	0.533	0.402	0.575	NA	0.394	0.528	0.507	0.090	Certified
PCB 170	1.42	1.01	NA	1.07	1.44	1.41	1.44	1.81	2.76	1.33	1.24	1.35	0.09	Certified
PCB 180	3.37	2.62	NA	2.13	3.38	2.39	2.98	4.02	4.43	3.21	2.98	3.24	0.51	Certified
PCB 187	2.17	1.55	NA	1.34	2.07	2.04	2.09	3.20	2.16	2.58	2.04	2.17	0.22	Certified
PCB 194	<2	1.10	NA	NA	0.858	0.887	0.895	1.57	1.14	0.669	1.07	1.04	0.06	Certified
PCB 195	<2	<LOD	NA	0.207	<0.657	<.05	0.409	<0.627	3.83	0.213	0.348	0.645	0.060	Certified
PCB 206	2.55	1.83	NA	1.56	2.44	<.05	2.12	4.79	3.79	2.27	2.47	2.42	0.19	Certified
PCB 209	4.80	3.44	NA	3.08	4.95	NA	4.29	9.06	1.90	4.72	5.27	4.86	0.45	Certified

NA = not analyzed

**Table 17. SRM 1941b: Laboratory means of three replicates and target values - PBDEs**  
(reported as if three figures were significant)

Laboratory No.	ng/g dry mass												Target Values	
	1a	1c	2	3	4	6	7	8	10	11	12	conc.	std dev	type
BDE 15	NA	<1	NA	NA	NA	NA	NA	<3.13	NA	NA	0.211	no target		Target
BDE 17	NA	<1	NA	NA	NA	NA	NA	<3.13	NA	NA	0.161	no target		Target
BDE 25	NA	<1	NA	NA	NA	NA	NA	<3.13	NA	NA	other	no target		Target
BDE 28	NA	<1	NA	NA	<2.5	NA	0.106	<0.313	NA	NA	0.170	0.18	0.07	Target
BDE 30	NA	<1	NA	NA	NA	NA	NA	<3.13	NA	NA	<0.002	no target		Target
BDE 33	NA	<1	NA	NA	NA	NA	NA	<3.13	NA	NA	other	w/ BDE 28		Target
BDE 47	NA	0.255	NA	NA	<2.5	NA	1.59	<15.7	NA	NA	1.61	1.48	0.51	Target
BDE 49	NA	<1	NA	NA	<2.5	NA	NA	<3.13	NA	NA	0.190	no target		Target
BDE 66	NA	<1	NA	NA	<2.5	NA	0.038	<0.313	NA	NA	0.045	no target		Target
BDE 71	NA	<1	NA	NA	NA	NA	NA	<3.13	NA	NA	0.017	no target		Target
BDE 75	NA	<1	NA	NA	NA	NA	NA	<3.13	NA	NA	0.003	no target		Target
BDE 85	NA	<1	NA	NA	<2.4	NA	0.070	<0.376	NA	NA	0.014	no target		Target
BDE 99	NA	<1	NA	NA	<2.4	NA	1.54	<15.7	NA	NA	0.575	0.62	0.19	Target
BDE 100	NA	<1	NA	NA	<2.4	NA	0.322	<3.13	NA	NA	0.146	0.15	0.06	Target
BDE 116	NA	<1	NA	NA	NA	NA	NA	<3.13	NA	NA	<0.003	no target		Target
BDE 118	NA	<1	NA	NA	NA	NA	NA	<3.13	NA	NA	NA	no target		Target
BDE 119	NA	<1	NA	NA	NA	NA	NA	<3.13	NA	NA	0.003	no target		Target
BDE 138	NA	<1	NA	NA	NA	NA	0.028	<3.13	NA	NA	0.009	no target		Target
BDE 153	NA	<1	NA	NA	<2.4	NA	0.200	<0.376	NA	NA	0.079	0.09	0.04	Target
BDE 154	NA	<1	NA	NA	<2.5	NA	0.158	<0.313	NA	NA	0.080	0.09	0.02	Target
BDE 155	NA	<1	NA	NA	NA	NA	NA	<3.13	NA	NA	0.011	no target		Target
BDE 156	NA	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		Target
BDE 181	NA	<10	NA	NA	NA	NA	NA	<3.13	NA	NA	<0.055	no target		Target
BDE 183	NA	<10	NA	NA	<2.5	NA	NA	<0.313	NA	NA	<0.3	0.05	0.02	Target
BDE 190	NA	<10	NA	NA	NA	NA	NA	<3.13	NA	NA	<0.08	no target		Target
BDE 191	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		Target
BDE 196	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		Target
BDE 197	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		Target
BDE 203	NA	NA	NA	NA	NA	NA	NA	<3.13	NA	NA	0.157	no target		Target
BDE 205	NA	NA	NA	NA	NA	NA	NA	<3.13	NA	NA	NA	no target		Target
BDE 206	NA	NA	NA	NA	NA	NA	NA	<3.13	NA	NA	NA	no target		Target
BDE 207	NA	NA	NA	NA	NA	NA	NA	<3.13	NA	NA	NA	no target		Target
BDE 208	NA	NA	NA	NA	NA	NA	NA	<3.13	NA	NA	NA	no target		Target
BDE 209	NA	NA	NA	NA	NA	NA	NA	<157	NA	NA	27.6	24.1	15.0	Target

NA = not analyzed

**Table 18. Mussel TissueXII (QA05TIS12): z scores (25%) by laboratory - TEO and PAHs**

(z=+1 is 25% higher than the exercise assigned value; z=-1 is 25% lower than the exercise assigned value.)

Laboratory No.	1a	1c	3	4	5	6	7	8	9	10	11	12
TEO (percent)		0.3			-2.0	11.8	-3.7	-2.2	0.5	-2.2	-2.5	

**PAHs**

Laboratory No.	1a	1c	3	4	5	6	7	8	9	10	11	12
naphthalene	0.0	-0.7	-0.4	-1.7	1.1	13.7	1.7	4.8	-3.0	37.9		
2-methylnaphthalene	-1.6	-3.0	-2.4	-2.1		3.1	2.7	0.9	-3.4			
1-methylnaphthalene	0.9	-3.2	0.7	-2.0		3.6	0.5		-3.2			
biphenyl	2.0	0.2	0.4	-0.2		5.2			-2.4	75.5		
2,6-dimethylnaphthalene			0.8	-2.5		3.1			-1.3			
acenaphthylene		5.1	-0.8	-3.5		-0.1	0.0		-1.9	-0.8		1.9
acenaphthene	-0.7	-2.0	4.9	-2.8			0.7		1.0	55.4		
1,6,7-trimethylnaphthalene		1.4		-0.5		0.8			-1.7			
fluorene	0.3	2.1	-0.1	-1.3		0.9	3.1		-2.6	2.5		-0.3
phenanthrene	0.5	0.7	-0.5	0.8	0.0	-0.3	0.2	0.2	-1.8	1.2		0.3
anthracene	-0.7	2.7	1.4	-2.0		-1.0	-2.2		-1.7	22.9		3.5
1-methylphenanthrene	1.0	1.0	-0.5	1.4	0.6	-0.7	-0.4		-1.6	-2.1		1.3
fluoranthene	1.0	0.5	-0.4	1.2	-0.1	-0.2	-0.4	0.4	-1.9	3.6		0.3
pyrene	0.5	0.4	-0.3	1.1	-0.2	0.4	-0.4	0.4	-1.9	3.4		0.4
benz[a]anthracene	1.8	0.8	-0.8	1.1	-0.1	-0.5	-0.3	0.2	-2.1			0.2
chrysene		-1.0	1.1		1.9	2.6	-1.1	2.9	-0.9			
triphenylene												
benzo[b]fluoranthene	0.5		0.8	0.4	0.4	-0.7	0.8	1.4	-2.1	9.6		
benzo[j]fluoranthene												
benzo[k]fluoranthene	0.2	-0.9	0.4		3.7	4.1	0.3	5.1		6.6		3.5
benzo[e]pyrene	0.4	0.6	-0.3	0.6	0.1	0.0	-0.3	-0.4	-1.8	4.9		1.0
benzo[a]pyrene	0.8	2.8	-1.4	0.0	0.9	0.3	-0.4		-2.4	75.7		-0.5
perylene	0.9	1.4		0.1		15.5			-2.3	25.9		
indeno[1,2,3-cd]pyrene	-0.8		-1.1	0.2	1.1	-0.8	0.1	3.0	-2.6	2.2		-0.1
dibenz[a,h]anthracene												
benzo[ghi]perylene	-0.2	0.2	-0.9	0.6	-0.1	-0.3	1.7	3.0	-2.1	-0.4		0.7

**Table 19. Mussel TissueXII (QA05TIS12): z scores (25%) by laboratory - Pesticides**

(z=+1 is 25% higher than the exercise assigned value; z=-1 is 25% lower than the exercise assigned value.)

Laboratory No.	1a	1c	3	4	5	6	7	8	9	10	11	12
alpha-HCH (a-BHC)												
hexachlorobenzene												
gamma-HCH (g-BHC,lindane)												
beta-HCH (b-BHC)												
heptachlor												
aldrin												
heptachlor epoxide												
oxychlordane												
gamma-chlordane	0.5		-0.1	0.5	-0.9	0.5	-0.5		0.3	-0.6		0.3
2,4'-DDE												
endosulfan I												
cis-chlordane (alpha-chlordane)	1.5	1.9	-0.9	-0.4	-1.2	-0.4	0.0		-2.0	-2.2		-0.5
trans-nonachlor	0.2	0.1	-0.5	0.4	0.1	0.5	-1.2		-1.6	-1.7		0.4
dieldrin				-1.9	0.3	4.4	1.4		-2.0	-3.2		-2.2
4,4'-DDE	0.8	1.5	-0.7	0.1	-1.3	-0.4	-1.0		-1.8	-0.5		-0.4
2,4'-DDD	-1.2	1.4	-0.5	3.1	-0.2	0.0	-1.0		-1.2			-0.6
endrin												
endosulfan II												
4,4'-DDD	-1.0	1.1	-0.2	3.9	-0.6		-1.3		-1.3	-1.2		1.5
2,4'-DDT												
cis-nonachlor	1.0	0.3	-1.1	0.1		-0.4	-0.4		-0.5	1.1		0.0
4,4'-DDT				-1.1	2.0	20.4			-1.3	6.9		0.4
mirex												
endosulfan sulfate												
chlorpyrifos												

**Table 20 Mussel TissueXII (QA05TIS12): z scores (25%) by laboratory - PCBs**

(z=+1 is 25% higher than the exercise assigned value; z=-1 is 25% lower than the exercise assigned value.)

Laboratory No.	1a	1c	3	4	5	6	7	8	9	10	11	12
PCB 8	-0.5	0.3	-1.3			-3.5	-0.6	1.5	-1.6	14.5	-1.2	-0.7
PCB 18	1.9	2.1	-1.0	1.5	-1.2	-3.4	-0.2	-0.9	-1.2	0.7	-0.6	-0.5
PCB 28	1.2	0.8	-0.6	0.2	-0.5	-3.5	-0.4	0.3	-1.6		0.0	0.6
PCB 31	0.1	0.8		-0.1		-3.5	-0.9	-0.1			-0.9	0.2
PCB 44	0.9	0.7	-1.2	0.3	-1.4	-3.5	-0.9	-1.0	-1.9	-1.6	1.8	2.4
PCB 49	1.3	1.6		1.1		-3.4	-1.0	0.5	-1.4	-1.7	-0.3	-0.1
PCB 52	0.9	1.7	-0.7	0.7	-0.8	-3.5	-0.4	-0.5	-1.3	-2.1	-0.1	0.4
PCB 66	0.4	0.7	-0.4	0.3	2.1	-3.4	-1.3	-0.8	-1.5	0.2	-0.5	0.7
PCB 95	0.6	1.0		0.2		-3.6	-1.1	-0.3		-2.7	-0.4	0.0
PCB 99	0.0	-0.3		0.1		-3.5	-1.2	0.2		-2.7	0.7	0.4
PCB 101	0.4	1.1	-0.2	-0.1	0.5	-3.4	-0.8	-1.0	-1.6	-2.8	0.0	0.1
PCB 105	0.5	0.7	-0.7	0.4	0.8	-3.4	-0.7	0.1	-1.3	-2.7	0.1	0.2
PCB 118	0.3	0.0	0.2	0.7	1.1	-3.4	-1.4	0.0	-1.3	-2.6	0.0	0.5
PCB 128	0.5	0.5	0.6	0.9	0.1	-3.3	-1.2	-0.6	-1.4	-2.6	-0.5	-0.3
PCB 138		-0.2	0.3		1.7	-3.3	-0.4		-0.8	-0.6		
PCB 149	0.3	1.2		-0.3		-3.6	-0.9	-0.3		-2.3	-0.7	-0.1
PCB 153		2.8	-0.6	1.8	0.0	-3.5	-1.6	-1.2	-1.0	-0.6	-0.1	0.5
PCB 156	0.8	-0.3		0.4		-3.5	-1.1	-1.1			0.3	1.1
PCB 170	0.1	-0.7	-0.9	-0.2	0.9	-3.1		0.4		1.6	-0.4	-0.7
PCB 180	-0.5	-0.9	-1.0	0.4	-1.0	-3.6	0.0	-1.1	2.7	1.4		
PCB 187	0.4	0.3	-0.5	0.9	0.0	-3.4	-0.6	-0.9	-1.2	-0.8	1.5	0.9
PCB 194		0.7		0.3				-0.8		0.4	-1.5	-0.7
PCB 195												
PCB 206												
PCB 209												



**Table 21 Mussel TissueXII (QA05TIS12): z scores (25%) by laboratory - PBDEs**

(z=+1 is 25% higher than the exercise assigned value; z=-1 is 25% lower than the exercise assigned value.)

	1a	1c	3	4	5	6	7	8	9	10	11	12
BDE 15												
BDE 17		-0.8						0.6				0.2
BDE 25												
BDE 28		3.1		0.9			-2.2	-0.9				-0.9
BDE 30												
BDE 33												
BDE 47		0.0		1.0			-1.5	0.2				0.3
BDE 49				1.3				-0.4				-0.9
BDE 66				2.2			-1.7	-0.4				-0.2
BDE 71												
BDE 75												
BDE 85							-0.8	0.5				0.3
BDE 99				1.7			-1.1	-0.2				-0.4
BDE 100		0.2		1.6			-1.6	-0.2				-0.1
BDE 116												
BDE 118												
BDE 119												
BDE 138												
BDE 153		-1.0					0.7	0.4				-0.1
BDE 154		-1.1					0.5	0.4				0.1
BDE 155												
BDE 156												
BDE 181												
BDE 183												
BDE 190												
BDE 191												
BDE 196												
BDE 197												
BDE 203												
BDE 205												
BDE 206												
BDE 207												
BDE 208												
BDE 209												

**Table 22. Marine Sediment XIII (QA05SED13): z scores (25% by laboratory)- water, TOC, and PAHs**  
(z=+1 is 25% higher than the exercise assigned value; z=-1 is 25% lower than the exercise assigned value.)

Laboratory No.	1a	1c	2	3	4	6	7	8	10	11	12
Water (percent)	-0.1	-0.1	0.2	-0.1	-0.1		0.4	0.5	-0.1	-0.2	-0.4
TOC				0.2		-1.3		0.6	0.5		

**PAHs**

Laboratory No.	1a	1c	2	3	4	6	7	8	10	11	12
naphthalene	0.4	-0.9	-0.9	-3.1	0.7	-1.2	1.1	2.4	-2.7		0.8
2-methylnaphthalene	0.5	-1.5	-1.1	-3.3	1.9	-0.8	0.7				0.5
1-methylnaphthalene	0.3	-0.9	-0.7	-1.3	1.1	-0.2	0.3				1.4
biphenyl	0.7	-1.3	-2.0	-2.5	1.1	-1.2	1.1		-2.3		1.6
2,6-dimethylnaphthalene		-0.1	-2.9	-2.9	2.4	0.5	1.6				1.4
acenaphthylene	0.9	2.5	-2.0	-1.4	0.2	-0.4	1.1	3.0	1.4		0.2
acenaphthene	1.1		-1.4	-1.8	1.3	-0.6	0.1	2.6	0.9		0.4
1,6,7-trimethylnaphthalene											
fluorene	0.7	-0.3	-0.7	-1.9	0.8	-0.3	0.0	4.1	2.0		-0.3
phenanthrene	0.3	-0.2	-1.7	-1.3	1.9	-0.8	1.6	2.6	-0.1		0.3
anthracene	0.9	-1.1	-1.7	-1.7	2.0	-1.1	1.2	2.2	1.5		0.1
1-methylphenanthrene	0.2	-0.3	-1.9	-1.3	2.2	1.7	-0.1		-0.9		0.0
fluoranthene	0.5	-0.3	-1.8	-1.0	1.8	-0.9	0.9	1.4	0.9		-0.1
pyrene	0.5	-0.3	-1.9	-1.1	1.7	-1.5	0.9	1.6	1.7		0.0
benz[a]anthracene	0.6	-0.1	-1.9	-0.6	2.2	-1.4	1.1	1.7			0.1
chrysene		-0.6	-1.6	0.5		0.1	1.5	5.1			
triphenylene											
benzo[b]fluoranthene	0.3		-2.1	1.0	0.7	-2.0	2.4	1.6	2.1		
benzo[j]fluoranthene											
benzo[k]fluoranthene	1.1	-1.1	-2.0	-0.8		0.5	1.1	5.8	-0.3		1.6
benzo[e]pyrene	0.6	-0.7	-2.3	-0.7	0.9	-1.5	0.8	0.6	1.6		1.4
benzo[a]pyrene	1.1	2.4	-2.4	-1.2	0.5	-2.0	1.0	0.9	2.3		-0.5
perylene	0.5	0.2	-2.6	-1.8	2.2	-1.2			0.9		0.0
indeno[1,2,3-cd]pyrene	1.1		-2.5	-0.4	1.8	-1.9	1.3	1.1	0.9		-0.2
dibenz[a,h]anthracene			-2.9	0.7		0.6	1.7	5.3	5.2		
benzo[ghi]perylene	1.2	-0.8	-2.8	-1.8	1.3	-1.5	1.4	0.9	1.4		-0.2

**Table 23. Marine Sediment XIII (QA05SED13): z scores (25% by laboratory)- pesticides**  
(z=+1 is 25% higher than the exercise assigned value; z=-1 is 25% lower than the exercise assigned value.)

Laboratory No.	1a	1c	2	3	4	6	7	8	10	11	12
alpha-HCH (a-BHC)											
hexachlorobenzene	-0.2	-0.4		-0.9	1.2	-2.2	1.6				0.5
gamma-HCH (g-BHC,lindane)											
beta-HCH (b-BHC)											
heptachlor											
aldrin											
heptachlor epoxide											
oxychlordane											
gamma-chlordane	0.1			0.6	0.1	-1.6			1.4		-0.6
2,4'-DDE	-0.5				1.2				13.9		-0.7
endosulfan I											
cis-chlordane (alpha-chlordane)	0.5			-0.3	0.5	-0.3			14.2		-0.4
trans-nonachlor	0.6			-1.2		1.4	-1.2		1.3		-0.8
dieldrin						0.4			-0.3		-0.1
4,4'-DDE	-0.1	0.2		0.5	3.6	-2.3	0.8		1.7		-0.7
2,4'-DDD		0.1			3.8	-1.9					-2.0
endrin											
endosulfan II											
4,4'-DDD	0.3	-0.1		0.7		-2.2	10.2		-1.4		1.4
2,4'-DDT											
cis-nonachlor				-2.5			30.0		5.0		-2.5
4,4'-DDT					-0.2	1.4			40.3		-1.2
mirex											
endosulfan sulfate											
chlorpyrifos											

**Table 24. Marine Sediment XIII (QA05SED13): z scores (25% by laboratory)- PCBs**  
 (z=+1 is 25% higher than the exercise assigned value; z=-1 is 25% lower than the exercise assigned value.)

Laboratory No.	1a	1c	2	3	4	6	7	8	10	11	12
PCB 8	0.3	1.1		-0.5		-1.6	1.6	6.3	19.2	-1.4	0.5
PCB 18	0.3	0.8		-1.1	1.0	-1.6	0.8	-0.1	0.7	-3.1	-0.8
PCB 28	0.0	1.0		-0.6	0.9	-1.6	0.9	2.4		-1.2	0.6
PCB 31	0.7	1.2			0.9	-1.6	0.7	2.3		-2.2	0.3
PCB 44	0.2	0.4		-0.9	1.1	-1.6	0.5	1.6	1.2	-1.8	0.8
PCB 49	0.4	1.0			1.1	-1.3	1.1	3.5	0.8	-2.5	-0.5
PCB 52	0.8	0.9		-0.7	1.5	-1.4	1.2	2.0	-0.3	-2.2	0.1
PCB 66	0.6	1.0		-0.3	1.1	-1.3	0.6	1.7	4.7	-2.6	0.8
PCB 95	0.6	0.3			2.2	-1.9	1.1	2.4	-0.6	-2.0	0.3
PCB 99	0.8	1.7			1.3	-1.5	1.1	2.7	-1.1	-2.1	-0.1
PCB 101	0.2	1.2		0.1	0.9	-0.8	1.0	0.3	-1.3	-2.4	-0.5
PCB 105	0.7	0.8		-0.7	2.1	-1.2	0.8	1.6	-0.3	-2.2	-0.2
PCB 118	0.7	0.7		-0.3	2.2	-1.2	1.3	1.5	-1.4	-2.1	0.2
PCB 128	-0.1	-0.1		0.6	1.3	-0.1	3.3	0.3	-1.7	-2.5	-1.0
PCB 138		1.0		-0.1		-1.0	-0.3		2.1	-1.8	0.1
PCB 149	0.2	1.3			1.3	-1.7	1.6	2.2	-0.5	-2.0	-0.2
PCB 153				-1.0	2.9	-1.7	0.7	-0.8	2.9	-2.3	-0.7
PCB 156	0.7	1.1			1.0	-0.5	0.0	0.0		-2.5	0.3
PCB 170	0.6	0.7		0.2	2.0	-1.1	-0.4	0.7	6.2	-2.3	-0.5
PCB 180	0.3	0.1		-0.7	1.9	-2.0	0.2	0.1	2.8	-2.3	-0.5
PCB 187	-0.1	-0.1		-1.3	0.6	2.1	0.9	-0.7	1.3	-2.1	-0.7
PCB 194		2.9			0.7	-1.8		0.7	1.2	-3.1	-0.6
PCB 195		0.8		-0.9	3.9	-0.6			57.8	-3.0	-0.3
PCB 206	1.0	1.6		-0.6	1.3	-0.9	0.0	3.4	5.6	-2.7	0.3
PCB 209	0.6	1.5		-0.9	1.2		0.3	2.5	-1.8	-2.8	0.1

**Table 25. Marine Sediment XIII (QA05SED13): z scores (25% by laboratory)- PBDEs**  
 (z=+1 is 25% higher than the exercise assigned value; z=-1 is 25% lower than the exercise assigned value.)

Laboratory No.	1a	1c	2	3	4	6	7	8	10	11	12
BDE 15											
BDE 17											
BDE 25											
BDE 28							-0.2				0.2
BDE 30											
BDE 33											
BDE 47		0.7					0.9				-1.5
BDE 49											
BDE 66							0.6				-0.6
BDE 71											
BDE 75											
BDE 85											
BDE 99											
BDE 100											
BDE 116											
BDE 118											
BDE 119											
BDE 138											
BDE 153											
BDE 154											
BDE 155											
BDE 156											
BDE 181											
BDE 183											
BDE 190											
BDE 191											
BDE 196											
BDE 197											
BDE 203											
BDE 205											
BDE 206											
BDE 207											
BDE 208											
BDE 209											

	Table 26. Mussel Tissue XII (QA05TIS12): RSDs for three replicates - TEO and PAHs											
	Lab 1a		Lab 1c		Lab 3		Lab 4		Lab 5		Lab 6	
	Tissue XII rsd	SRM 2977 rsd	Tissue XII rsd	SRM 2977 rsd	Tissue XII rsd	SRM 2977 rsd	Tissue XII rsd	SRM 2977 rsd	Tissue XII rsd	SRM 2977 rsd	Tissue XII rsd	SRM 2977 rsd
TEO or lipid												
<b>PAH ANALYSES</b>												
naphthalene	1.7%	4.3%	7.5%	9.1%	10.3%	24.9%	0.9%	2.3%	23.8%	8.4%	26.1%	17.4%
2-methylnaphthalene	5.8%	2.2%	70.7%	4.5%	18.3%	8.4%	4.2%	1.3%			11.6%	2.5%
1-methylnaphthalene	4.8%	3.6%	89.8%	7.2%	12.5%	9.5%	7.9%	0.6%			6.0%	3.3%
biphenyl	1.3%	2.3%	7.9%	6.8%	17.2%	36.3%	5.1%	25.9%			7.6%	5.7%
2,6-dimethylnaphthalene				3.6%	7.0%	24.1%	4.7%	0.6%			19.8%	4.0%
acenaphthylene			8.7%		5.4%	8.7%	0.0%				6.0%	14.3%
acenaphthene	7.6%	1.0%	17.3%	2.6%	17.7%	14.5%	13.6%	4.2%				
1,6,7-trimethylnaphthalene			7.8%	2.5%			3.2%	5.1%			14.3%	24.7%
fluorene	3.2%	4.2%	7.3%	2.2%	18.1%	3.2%	1.4%	1.1%			10.9%	7.6%
phenanthrene	6.5%	3.3%	0.5%	1.9%	6.5%	15.8%	1.4%	1.0%			7.2%	20.0%
anthracene	4.3%	1.5%	5.4%	6.2%	55.4%	25.4%	8.6%	25.8%			18.2%	7.2%
1-methylphenanthrene	3.5%	2.0%	3.4%	2.2%	2.7%	11.7%	1.4%	1.1%			3.7%	14.1%
fluoranthene	1.1%	2.4%	0.6%	2.7%	9.2%	8.3%	2.0%	0.9%			9.2%	7.3%
pyrene	1.7%	1.2%	0.2%	3.5%	7.1%	8.8%	2.3%	0.4%			9.2%	8.3%
benz[a]anthracene	9.2%	3.8%	3.2%	0.7%	11.4%	4.9%	3.1%	1.9%			11.7%	0.9%
chrysene			2.4%	1.7%	7.1%	8.1%	2.0%	0.7%			10.5%	10.4%
triphenylene			1.4%	2.4%								
benzo[b]fluoranthene	1.7%	4.4%			8.7%	32.7%	5.7%	0.7%			12.3%	1.3%
benzo[j]fluoranthene	6.2%	1.1%										
benzo[k]fluoranthene	4.7%	2.4%	6.9%	4.3%	10.5%	16.7%	2.7%	1.2%			12.7%	6.0%
benzo[e]pyrene	3.2%	3.2%	1.8%	2.2%	9.3%	8.6%	2.0%	0.6%			10.0%	4.2%
benzo[a]pyrene	1.5%	2.2%	4.4%	8.0%	18.0%	6.4%	13.3%	1.9%			17.0%	12.8%
perylene	3.9%	3.9%	4.7%	5.6%			8.0%	2.7%			3.1%	8.8%
indeno[1,2,3-cd]pyrene	3.5%	1.7%			23.0%	14.5%	6.7%	0.8%			24.2%	19.5%
dibenz[a,h]anthracene					3.9%	38.2%	3.3%	1.5%				5.1%
benzo[ghi]perylene	4.3%	3.2%	3.6%	0.8%	8.9%	12.3%	1.1%	0.0%			13.8%	17.9%

Table 26 (cont). Mussel Tissue XII (QA05TIS12): RSDs for three replicates - TEO and PAHs											
	Lab 7	Lab 8	Lab 9	Lab 10	Lab 11	Lab 12					
	SRM 2977 Tissue XII rsd	SRM 2977 Tissue XII rsd	SRM 2977 Tissue XII rsd	SRM 2977 Tissue XII rsd	SRM 2977 Tissue XII rsd	SRM 2977 Tissue XII rsd					
TEO or lipid	2.4%	6.2%	0.0%	0.0%	16.8%	7.1%	11.9%	4.4%	0.0%		
<b>PAH ANALYSES</b>											
	Lab 7	Lab 8	Lab 9	Lab 10	Lab 11	Lab 12					
	SRM 2977 Tissue XII rsd	SRM 2977 Tissue XII rsd	SRM 2977 Tissue XII rsd	SRM 2977 Tissue XII rsd	SRM 2977 Tissue XII rsd	SRM 2977 Tissue XII rsd					
naphthalene	38.3%	28.9%	19.4%	16.7%	15.0%	18.2%	15.3%				
2-methylnaphthalene	15.8%	18.3%	14.7%	30.6%	10.0%	3.2%					
1-methylnaphthalene	32.6%	11.4%		7.0%	5.2%						
biphenyl				13.2%	4.9%	21.7%	9.0%				
2,6-dimethylnaphthalene	8.8%			19.1%	4.7%					5.8%	
acenaphthylene	54.1%	52.6%		1.3%	9.3%	17.4%	3.7%		25.2%	9.3%	
acenaphthene	62.4%	10.6%		26.6%	13.1%	23.1%	10.7%			13.7%	
1,6,7-trimethylnaphthalene				11.6%	38.9%				7.1%	14.1%	
fluorene	17.3%	6.5%		45.7%	19.3%	19.2%	2.1%		31.4%	3.7%	
phenanthrene	21.5%	19.8%	22.7%	58.3%	6.1%	16.3%	12.2%		0.8%	0.5%	
anthracene	67.9%	12.8%		0.0%	17.6%	10.1%	0.4%		22.7%	6.1%	
1-methylphenanthrene	8.2%	18.7%		4.4%	1.5%	29.0%	24.2%		1.0%	14.1%	
fluoranthene	9.5%	29.4%	23.2%	53.4%	6.1%	19.9%	8.4%		2.1%	3.4%	
pyrene	8.9%	8.6%	22.2%	53.0%	5.1%	19.7%	16.6%		2.0%	2.6%	
benz[a]anthracene	15.1%	13.6%	18.9%	55.7%	8.1%				0.9%	4.1%	
chrysene	10.0%	11.4%	19.3%	63.5%	2.2%	22.4%	6.1%		2.2%	1.5%	
triphenylene											
benzo[b]fluoranthene	7.6%	12.0%	33.3%	0.0%	6.4%	9.4%	11.1%		4.9%	10.2%	
benzo[k]fluoranthene					5.3%						
benzo[e]pyrene	22.2%	20.0%	14.4%	71.6%		8.2%	1.6%		5.2%	6.0%	
benzo[a]pyrene	9.4%	10.6%	18.0%		4.9%	18.0%	23.2%		5.5%	7.4%	
perylene	34.5%	20.9%			3.0%	52.6%	3.0%		6.0%	23.9%	
indeno[1,2,3-cd]pyrene					3.1%	24.7%	11.5%				
dibenzo[a,h]anthracene	24.2%	33.1%	5.9%		2.6%	38.2%	29.4%		3.6%	24.2%	
benzo[ghi]perylene	17.6%	17.3%	3.4%	37.7%	4.5%	43.8%	26.5%		3.7%	5.9%	
					6.4%	37.8%	12.7%		2.5%	2.5%	

Table 27. Mussel Tissue XII (QA05TISI2): RSDs for three replicates - Pesticides													
	Lab 1a		Lab 1c		Lab 3		Lab 4		Lab 5		Lab 6		
	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977	
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
alpha-HCH (a-BHC)													
hexachlorobenzene					44.7%	24.2%							
gamma-HCH (g-BHC,lindane)							3.7%	12.4%					
beta-HCH (b-BHC)							8.6%	0.6%				35.2%	1.9%
heptachlor													
aldrin									3.5%				
heptachlor epoxide													
oxychlorodane					12.1%		8.8%	8.1%					
gamma-chlordane	1.3%	2.8%			3.0%	5.4%	2.0%	0.6%				5.7%	3.9%
2,4'-DDE							10.6%	6.8%					
endosulfan I													7.7%
cis-chlordane (alpha-chlordane)	2.5%	5.6%	2.5%		8.1%	15.3%	2.1%	10.1%				0.0%	14.9%
trans-nonachlor	2.7%	5.8%	1.0%		9.5%	20.6%	1.6%					8.9%	11.6%
dieldrin												14.3%	0.5%
4,4'-DDE	2.2%	2.9%	0.6%		7.9%	15.6%	3.0%	0.0%				7.8%	9.2%
2,4'-DDD	5.4%	3.7%	0.5%		13.3%	17.0%	4.9%					13.7%	5.1%
endrin												1.8%	18.1%
endosulfan II													
4,4'-DDD	8.4%	3.7%	0.9%		9.1%	31.6%						5.7%	8.6%
2,4'-DDT												16.0%	
cis-nonachlor	3.5%	4.2%	3.3%		9.8%								
4,4'-DDT												0.0%	27.8%
mirex													14.7%
endosulfan sulfate													44.2%
chlorpyrifos													



	Table 27 (cont). Mussel Tissue XII (QA05TISI2): RSDs for three replicates - Pesticides											
	Lab 7		Lab 8		Lab 9		Lab 10		Lab 11		Lab 12	
	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
alpha-HCH (a-BHC)							6.3%	0.7%			13.8%	18.2%
hexachlorobenzene											7.4%	9.4%
gamma-HCH (g-BHC, lindane)							1.9%	44.8%			11.5%	12.3%
beta-HCH (b-BHC)							50.0%	0.6%				11.4%
heptachlor							52.9%	27.8%			21.4%	18.5%
aldrin							37.4%	19.3%				19.1%
heptachlor epoxide							10.2%	29.1%			1.7%	6.9%
oxychlorodane							2.4%	26.2%			4.2%	17.8%
gamma-chlordane	28.5%				22.7%		3.7%	24.0%			4.5%	1.1%
2,4'-DDE							8.7%	25.8%			6.6%	5.3%
endosulfan I							46.8%	40.5%				
cis-chlordane (alpha-chlordane)	22.7%	28.3%			3.3%		4.9%	11.3%			2.5%	0.1%
trans-nonachlor	31.8%	30.3%			3.9%	4.5%	12.3%	8.3%			1.9%	1.8%
dieldrin	5.1%	28.9%			8.6%	7.7%	10.3%	31.8%			3.8%	7.7%
4,4'-DDE	10.5%	11.2%			2.9%	1.8%	6.7%	21.8%			4.1%	1.9%
2,4'-DDD	4.7%	12.4%			8.2%	22.5%	10.8%	32.6%			17.4%	1.2%
endrin												
endosulfan II							100.8%	88.3%				
4,4'-DDD	12.0%	22.9%			6.2%	19.1%	5.8%	19.5%			10.4%	3.6%
2,4'-DDT							42.9%	57.9%			8.1%	10.5%
cis-nonachlor	23.3%				4.8%		6.2%	15.0%			4.5%	0.3%
4,4'-DDT					3.3%	10.3%	24.0%	7.7%			3.4%	1.8%
mirex											4.9%	2.7%
endosulfan sulfate												
chlorpyrifos												

	Table 28. Mussel Tissue XII (QA05TISI2): RSDs for three replicates - PCBs											
	Lab 1a		Lab 1c		Lab 3		Lab 4		Lab 5		Lab 6	
	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
PCB 8	6.2%	5.0%	4.8%	1.8%	11.0%	7.1%					11.5%	13.2%
PCB 18	3.7%	2.3%	3.3%	2.6%	9.4%	15.5%	1.2%	3.1%	2.5%		11.2%	28.4%
PCB 28	1.3%	2.3%	1.4%	1.7%	10.7%	9.8%	2.6%	6.1%	5.9%	18.0%	2.5%	10.5%
PCB 31	2.2%	1.8%	1.8%	1.9%			1.8%	2.0%			7.6%	5.4%
PCB 44	2.9%	1.4%	0.7%	6.0%	10.9%	20.0%	1.4%	2.3%	3.1%		4.5%	8.8%
PCB 49	5.8%	3.4%	6.4%	3.8%			1.4%	2.3%			5.2%	7.6%
PCB 52	2.9%	0.7%	0.4%	1.3%	11.3%	6.9%	1.5%	0.7%	4.6%	19.0%	4.9%	1.7%
PCB 66	4.2%	1.6%	2.5%	2.1%	10.6%	25.2%	2.0%	0.8%	5.4%	2.7%	6.1%	2.9%
PCB 95	6.4%	3.3%	1.8%	5.8%			1.3%	1.8%			6.3%	6.5%
PCB 99	1.8%	3.7%	1.8%	7.5%			1.5%	0.1%			4.8%	3.4%
PCB 101	3.5%	5.0%	0.7%	1.8%	12.2%	5.0%	1.3%	1.1%	3.0%	17.8%	6.1%	1.7%
PCB 105	7.3%	4.9%	0.2%	1.3%	13.4%	9.7%	1.8%	1.7%	3.1%	16.0%	5.1%	9.8%
PCB 118	2.5%	7.2%	0.1%	2.8%	12.8%	2.6%	1.0%	2.4%	4.0%	14.8%	5.4%	3.1%
PCB 128	1.0%	7.0%	0.9%	3.1%	13.0%	14.1%	0.6%	1.6%	2.6%		8.4%	5.4%
PCB 138			3.3%	7.6%	9.7%	12.4%	1.1%	0.8%	3.0%	16.0%	5.2%	2.4%
PCB 149	2.8%	5.8%	1.2%	6.4%			2.0%	2.0%			4.4%	4.1%
PCB 153			0.3%	4.2%	9.6%	14.1%	1.2%	1.1%	2.4%	16.4%	5.6%	0.3%
PCB 156	1.0%	3.9%	1.9%	8.6%			1.4%	3.7%			8.6%	12.4%
PCB 170	1.3%	3.9%	4.3%	3.2%	8.6%	11.6%	7.3%	1.8%	0.0%		9.2%	3.3%
PCB 180	7.4%	1.7%	1.1%	5.4%	10.6%	14.4%	1.5%	1.1%	6.6%	18.7%	1.0%	5.9%
PCB 187	2.8%	2.3%	1.4%	7.2%	12.5%	14.2%	0.9%	0.0%	8.1%	0.0%	5.2%	2.5%
PCB 194			14.6%	4.7%			0.0%	7.3%				32.9%
PCB 195												
PCB 206												
PCB 209												

Table 28 (cont). Mussel Tissue XII (QA05FIS12): RSDs for three replicates - PCBs														
	Lab 7		Lab 8		Lab 9		Lab 10		Lab 11		Lab 12			
	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977		SRM 2977
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
PCB 8	20.7%	22.2%	3.0%	30.9%	26.5%	27.1%	10.9%	26.0%	4.5%	50.0%	9.5%	10.6%		
PCB 18	38.2%	18.7%	0.3%	29.1%	7.1%	19.6%	8.2%	22.9%	10.3%	62.9%	9.8%	14.2%		
PCB 28	31.5%	15.4%	1.7%	26.4%	2.3%	10.2%	6.2%	23.1%	9.1%	14.9%	9.6%	9.3%		
PCB 31	7.7%	10.9%	6.6%	23.5%					17.5%	18.5%	12.9%	12.6%		
PCB 44	5.7%	25.5%	3.9%	41.1%	3.6%	19.1%	6.3%	28.3%	5.2%	25.9%	9.9%	10.8%		
PCB 49	41.7%	5.3%	11.1%	46.4%	4.0%		6.0%	23.2%	18.5%	27.3%	9.8%	10.3%		
PCB 52	4.4%	16.8%	5.6%	46.7%	4.7%	3.4%	5.6%	21.8%	9.5%	29.4%	9.8%	10.1%		
PCB 66	28.0%	16.8%	4.9%	32.7%	6.1%	11.0%	6.1%	23.0%	13.6%	8.9%	6.9%	8.2%		
PCB 95	13.3%	12.8%	8.7%	50.9%			7.3%	21.8%	11.3%	21.7%	9.2%	8.4%		
PCB 99	21.2%	24.8%	5.3%	48.3%			6.9%	22.9%	12.8%	5.6%	10.3%	5.8%		
PCB 101	10.4%	9.8%	10.0%	33.5%	4.5%		6.4%	21.7%	10.8%	6.4%	6.7%	9.0%		
PCB 105	16.9%	11.2%	2.4%	38.6%	3.1%	5.3%	6.6%	20.6%	8.0%	3.5%	1.4%	6.8%		
PCB 118	8.5%	2.9%	5.0%	36.5%	4.7%	7.5%	6.8%	22.2%	5.7%	3.6%	2.4%	6.1%		
PCB 128	7.2%	7.6%	3.2%	38.2%	2.9%	1.3%	9.0%	23.4%	12.2%	10.8%	4.3%	4.9%		
PCB 138	6.9%	29.4%	3.2%	39.0%	24.6%	28.8%	7.1%	22.6%	2.9%	1.0%	6.8%	5.2%		
PCB 149	6.7%	17.1%	16.5%	57.4%			6.3%	22.1%	3.9%	11.1%	13.2%	4.3%		
PCB 153	10.0%	7.2%	4.6%	37.6%	4.6%	4.8%	6.6%	20.6%	3.3%	2.2%	4.9%	5.3%		
PCB 156	16.7%	20.4%	3.5%	41.3%					4.0%	2.0%	3.3%	2.4%		
PCB 170		11.6%	4.7%	35.1%		3.4%	8.7%	24.4%	14.6%	3.1%	4.9%	5.1%		
PCB 180		19.2%	7.2%	36.6%	0.4%	15.3%	9.3%	24.2%	14.9%	1.9%	4.5%	6.5%		
PCB 187		6.9%	8.6%	12.1%	5.0%	9.3%	6.5%	17.9%	15.5%	10.2%	5.2%	2.4%		
PCB 194			3.8%	44.3%			6.5%	28.3%	27.4%	16.4%	13.9%	6.1%		
PCB 195							17.6%	24.6%	10.6%	5.2%	15.8%	10.0%		
PCB 206							44.3%	13.4%	15.1%	9.2%	6.5%	3.8%		
PCB 209							34.8%	51.4%	8.1%	65.5%	10.0%			

	Table 29. Mussel Tissue XII (QA05TISI2): RSDs for three replicates - PBDEs											
	Lab 1a		Lab 1c		Lab 3		Lab 4		Lab 5		Lab 6	
	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
BDE 15												
BDE 17			1.4%	14.9%								
BDE 25												
BDE 28			1.0%	8.8%			3.5%	2.5%				
BDE 30												
BDE 33												
BDE 47			8.2%	6.6%			4.4%	1.8%				
BDE 49							3.7%	1.1%				
BDE 66							4.1%					
BDE 71			6.4%	6.3%								
BDE 75												
BDE 85												
BDE 99							8.0%	3.8%				
BDE 100			3.8%	4.2%			3.7%	3.4%				
BDE 116												
BDE 118												
BDE 119												
BDE 138												
BDE 153			5.7%									
BDE 154			12.4%									
BDE 155			10.8%									
BDE 156												
BDE 181												
BDE 183												
BDE 190												
BDE 191												
BDE 196												
BDE 197												
BDE 203												
BDE 205												
BDE 206												
BDE 207												
BDE 208												
BDE 209												

Table 29 (cont). Mussel Tissue XII (QA05TISI2): RSDs for three replicates - PBDEs														
	Lab 7		Lab 8		Lab 9		Lab 10		Lab 11		Lab 12		SRM 2977 rsd	
	Tissue XII rsd	SRM 2977 rsd	Tissue XII rsd	SRM 2977 rsd	Tissue XII rsd	SRM 2977 rsd	Tissue XII rsd	SRM 2977 rsd	Tissue XII rsd	SRM 2977 rsd	Tissue XII rsd	SRM 2977 rsd		
BDE 15														
BDE 17			19.8%	33.4%									5.5%	10.7%
BDE 25			19.8%	33.4%									11.7%	7.6%
BDE 28	3.2%	3.7%	5.0%	14.8%									12.2%	7.3%
BDE 30														
BDE 33			5.0%	14.8%										
BDE 47	2.8%	0.4%	5.5%	17.2%									9.1%	9.6%
BDE 49			4.7%	1.7%									14.7%	9.4%
BDE 66	6.8%	8.2%	11.8%	11.9%									18.2%	19.1%
BDE 71														5.4%
BDE 75													14.7%	19.0%
BDE 85	8.2%	35.0%	23.3%										6.8%	32.8%
BDE 99	5.3%	11.0%	10.3%	12.9%									10.0%	8.7%
BDE 100	2.3%	6.3%	6.4%	17.4%									10.1%	8.9%
BDE 116														
BDE 118														
BDE 119														
BDE 138		57.0%											22.0%	61.9%
BDE 153	10.2%	37.8%	12.5%	14.4%									5.9%	7.9%
BDE 154	15.4%	16.7%	11.8%	16.3%									11.8%	4.8%
BDE 155													17.0%	45.0%
BDE 156														
BDE 181														
BDE 183														
BDE 190														
BDE 191														
BDE 196														
BDE 197														
BDE 203														
BDE 205													37.1%	25.5%
BDE 206														0.0%
BDE 207														
BDE 208				0.0%										
BDE 209													79.9%	71.5%

Table 30. Marine Sediment XIII (QA05SED13): RSDs for three replicates - Water, TOC, and PAHs													
Lab 1a		Lab 1c		Lab 2		Lab 3		Lab 4					
Sed XIII	SRM 1941b	Sed XIII	SRM 1941b	Sed XIII	SRM 1944	Sed XIII	SRM 1941b	Sed XIII	SRM 1941b				
rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd				
Water	1.5%	2.0%	6.2%	10.2%		1.2%	0.6%	0.4%	3.1%				
TOC						4.5%							
<b>PAH ANALYSES</b>													
Lab 1a		Lab 1c		Lab 2		Lab 3		Lab 4					
Sed XIII	SRM 1941b	Sed XIII	SRM 1941b	Sed XIII	SRM 1944	Sed XIII	SRM 1941b	Sed XIII	SRM 1941b				
rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd				
naphthalene	1.1%	28.7%	1.2%	8.7%	3.8%	29.5%	15.0%	2.1%	0.0%				
2-methylnaphthalene	2.5%	23.8%	19.0%	15.0%	3.7%	11.8%	8.6%	2.1%	0.0%				
1-methylnaphthalene	3.9%	18.0%	13.9%	13.0%	1.7%	14.9%	9.6%	0.5%	0.0%				
biphenyl	2.2%	24.1%	3.6%	14.1%	2.9%	7.8%	6.0%	3.0%	0.0%				
2,6-dimethylnaphthalene		23.9%	3.4%	32.5%	42.3%	16.1%	3.8%	4.3%	0.0%				
acenaphthylene	3.6%	16.1%	11.8%	8.3%	7.4%	6.4%	8.4%	5.2%	0.0%				
acenaphthene	3.3%			17.6%	0.8%	2.5%	8.9%	2.8%	0.0%				
1,6,7-trimethylnaphthalene		14.4%	4.2%					6.5%	0.0%				
fluorene	2.1%	38.8%	5.1%	20.9%	2.6%	5.5%	3.5%	5.2%	0.0%				
phenanthrene	4.0%	29.4%	1.7%	18.0%	3.2%	5.0%	6.8%	3.0%	0.0%				
anthracene	3.0%	24.8%	1.6%	19.5%	4.2%	12.0%	24.4%	3.1%	0.0%				
1-methylphenanthrene	1.8%	12.6%	3.8%	29.8%	1.5%	2.9%	7.2%	2.6%	0.0%				
fluoranthene	0.7%	21.4%	1.5%	16.1%	1.5%	5.9%	9.8%	5.1%	0.0%				
pyrene	2.0%	21.0%	1.6%	16.3%	5.3%	8.9%	8.8%	4.4%	0.0%				
benz[a]anthracene	2.8%	26.4%	2.4%	11.9%	3.3%	7.5%	15.4%	3.1%	0.0%				
chrysene		18.5%	2.1%	9.0%	1.5%	5.7%	12.0%	2.0%	0.0%				
triphenylene		17.3%	4.6%										
benzo[b]fluoranthene	1.3%			31.2%	25.5%	5.5%	11.5%	1.1%	0.0%				
benzo[j]fluoranthene	2.5%												
benzo[k]fluoranthene	3.9%	16.2%	0.7%	4.3%	11.0%	6.5%	15.5%	2.2%	0.0%				
benzo[e]pyrene	1.5%	17.9%	2.8%	32.4%	6.9%	5.9%	12.2%	1.7%	0.0%				
benzo[a]pyrene	1.6%	14.6%	5.6%	21.6%	10.9%	7.2%	25.3%	1.9%	0.0%				
perylene	1.1%	17.8%	3.3%	26.2%	5.5%	6.3%	21.2%	0.9%	0.0%				
indeno[1,2,3-cd]pyrene	1.5%			10.9%	11.0%	8.2%	16.0%	1.6%	0.0%				
dibenz[a,h]anthracene				11.3%	13.3%	17.5%	26.0%	1.9%	0.0%				
benzo[ghi]perylene	1.6%	8.3%	1.6%	6.4%	8.0%	13.4%	22.3%	1.6%	0.0%				

Table 30 (cont). Marine Sediment XIII (QA05SED13): RSDs for three replicates - Water, TOC, and PAHs																			
	Lab 6		Lab 7		Lab 8		Lab 10		Lab 11		Lab 12								
	Sed XIII	SRM 1941b	Sed XIII	SRM 1941b	Sed XIII	SRM 1941b	Sed XIII	SRM 1941b	Sed XIII	SRM 1941b	Sed XIII	SRM 1941b							
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd							
Water	8.7%	7.8%	1.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.1%		4.2%							
TOC																			
<b>PAH ANALYSES</b>																			
	Lab 6	Lab 7	Lab 8	Lab 10	Lab 11	Lab 12													
	Sed XIII	SRM 1941b	Sed XIII	SRM 1941b	Sed XIII	SRM 1941b	Sed XIII	SRM 1941b	Sed XIII	SRM 1941b	Sed XIII	SRM 1941b							
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd							
naphthalene	11.0%	1.8%	7.6%	19.8%	3.3%	0.8%	6.3%	3.5%			5.0%	9.1%							
2-methylnaphthalene	14.7%	2.9%	9.4%	16.6%	36.4%	8.4%					1.3%	5.8%							
1-methylnaphthalene	13.6%	4.0%	8.0%	10.5%							4.2%	6.4%							
biphenyl	11.2%	2.2%	7.4%	11.4%			7.1%	9.6%			9.3%	4.4%							
2,6-dimethylnaphthalene	15.4%	8.3%	6.6%	7.3%							3.7%	4.3%							
acenaphthylene	12.6%	7.7%	7.7%	4.0%	6.9%	40.4%	6.1%	2.7%			7.4%	4.3%							
acenaphthene	10.5%	3.6%	4.7%	0.0%	8.2%	65.5%	1.6%	3.9%			8.3%	8.4%							
1,6,7-trimethylnaphthalene	34.0%	18.8%									10.6%	6.3%							
fluorene	5.4%	4.9%	4.0%	7.2%	9.9%	33.4%	4.2%	8.5%			0.4%	4.4%							
phenanthrene	9.7%	3.7%	3.5%	3.7%	4.9%	8.1%	1.6%	3.4%			6.5%	5.3%							
anthracene	16.4%	4.8%	3.4%	8.5%	3.3%	3.4%	2.7%	1.1%			3.6%	1.8%							
1-methylphenanthrene	10.8%	4.1%	12.0%	10.6%			85.6%	0.5%			2.3%	1.5%							
fluoranthene	6.0%	1.1%	0.5%	3.5%	3.5%	23.0%	0.1%	3.9%			7.8%	1.0%							
pyrene	5.2%	1.8%	0.3%	4.7%	1.4%	25.7%	0.7%	3.0%			7.5%	6.2%							
benz[a]anthracene	6.1%	7.5%	3.3%	3.8%	6.7%	33.0%					7.6%	5.0%							
chrysene	6.1%	5.3%	1.5%	4.6%	3.3%	28.9%	2.3%	0.3%			6.1%	9.2%							
triphenylene																			
benzo[b]fluoranthene	5.4%	2.9%	1.5%	3.4%	14.6%	45.8%	0.9%	8.8%			7.4%	10.4%							
benzo[j]fluoranthene																			
benzo[k]fluoranthene	4.5%	6.1%	0.8%	4.3%	8.6%	8.3%	4.3%	2.3%			15.1%	10.3%							
benzo[e]pyrene	5.1%	2.6%	2.2%	4.3%	11.8%	23.9%	5.1%	2.5%			3.5%	7.5%							
benzo[a]pyrene	3.5%	17.1%	4.0%	2.5%	11.2%	33.1%	1.0%	3.8%			8.3%	5.7%							
perylene	5.0%	21.9%					1.9%	4.9%			6.6%	5.2%							
indeno[1,2,3-cd]pyrene	8.7%	23.2%	4.2%	8.9%	2.2%	32.0%	1.8%	71.6%			8.3%	6.8%							
dibenz[a,h]anthracene	7.1%	22.7%	3.0%	14.5%	30.8%	3.1%	5.4%	8.2%											
benzo[ghi]perylene	12.3%	25.3%	3.2%	6.3%	3.4%	21.8%	0.2%	5.0%			7.6%	5.3%							

Table 31. Marine Sediment XIII (QA05SED13): RSDs for three replicates - Pesticides													
	Lab 1a		Lab 1c		Lab 2		Lab 3		Lab 4				
	Sed XIII	SRM 1941b	Sed XIII	SRM 1941b	Sed XIII	SRM 1944	Sed XIII	SRM 1941b	Sed XIII	SRM 1941b			
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
alpha-HCH (a-BHC)													
hexachlorobenzene	0.4%	0.8%	7.0%	2.6%				7.5%		0.9%			6.0%
gamma-HCH (g-BHC,lindane)										4.3%			6.0%
beta-HCH (b-BHC)													
heptachlor													
aldrin													
heptachlor epoxide													
oxychlorodane										14.7%			18.4%
gamma-chlordane	0.5%	1.5%						50.4%		4.4%			0.1%
2,4'-DDE	4.1%	2.4%								0.0%			0.0%
endosulfan I													0.0%
cis-chlordane (alpha-chlordane)	2.4%	1.7%						24.9%		3.1%			4.4%
trans-nonachlor	1.1%	0.9%						3.5%					
dieldrin													
4,4'-DDE	4.1%	3.3%	3.7%	4.9%				1.1%		24.8%			8.5%
2,4'-DDD			3.9%	30.7%						11.1%			19.3%
endrin													
endosulfan II													
4,4'-DDD	1.9%	2.7%	6.5%	5.6%				12.9%		9.9%			
2,4'-DDT													0.0%
cis-nonachlor				14.3%				14.9%		2.1%			
4,4'-DDT													
mirex										0.0%			9.6%
endosulfan sulfate													
chlorpyrifos													



	Table 31(cont). Marine Sediment XIII (QA05SEDI3): RSDs for three replicates - Pesticides											
	Lab 6		Lab 7		Lab 8		Lab 10		Lab 11		Lab 12	
	Sed XIII	SRM 1941b	Sed XIII	SRM 1941b	Sed XIII	SRM 1941b	Sed XIII	SRM 1941b	Sed XIII	SRM 1941b	Sed XIII	SRM 1941b
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
alpha-HCH (a-BHC)												
hexachlorobenzene	40.4%	1.0%	9.7%	5.7%			2.8%	0.3%			16.4%	6.2%
gamma-HCH (γ-BHC,lindane)							5.1%				4.4%	3.4%
beta-HCH (β-BHC)							45.4%	2.4%			16.3%	9.6%
heptachlor							21.4%	2.3%			23.5%	5.9%
aldrin							6.6%	0.0%			0.0%	39.2%
heptachlor epoxide							14.0%	1.3%			13.9%	1.7%
oxychloridane							10.3%	18.5%				
gamma-chlordane	31.7%	52.0%		6.1%			5.1%	20.1%			6.1%	0.3%
2,4'-DDE				35.8%			0.8%	0.8%			0.6%	6.7%
endosulfan I							19.3%	20.9%				
cis-chlordane (alpha-chlordane)	18.0%	37.8%		4.6%			7.2%	5.6%			7.2%	4.1%
trans-nonachlor	23.8%	22.4%		0.0%			35.4%	10.5%			6.7%	4.9%
dieldrin	30.6%						10.4%	12.1%			2.7%	2.5%
4,4'-DDE	43.2%	6.8%		1.2%			8.9%	2.4%			2.1%	4.5%
2,4'-DDD	52.3%						141.3%	30.3%			33.5%	30.9%
endrin												
endosulfan II							8.7%	9.6%				
4,4'-DDD	24.8%			32.3%			1.7%	11.6%			15.1%	7.8%
2,4'-DDT							2.0%	33.9%			11.3%	11.5%
cis-nonachlor				23.3%			6.4%	41.7%			10.3%	3.2%
4,4'-DDT	43.8%			0.0%			46.5%	39.2%			9.8%	6.9%
mirex	32.4%										0.0%	
endosulfan sulfate												
chlorpyrifos												

Table 32. Marine Sediment XIII (QA05SED13): RSDs for three replicates - PCBs												
	Lab 1a		Lab 1c		Lab 2		Lab 3		Lab 4			
	Sed XIII rsd	SRM 1941b rsd	Sed XIII rsd	SRM 1941b rsd	Sed XIII rsd	SRM 1944 rsd	Sed XIII rsd	SRM 1941b rsd	Sed XIII rsd	SRM 1941b rsd		
PCB 8	3.8%	6.9%	2.3%	1.9%			17.6%	13.0%				
PCB 18	1.4%	4.1%	8.5%	6.1%			7.1%	4.7%	1.0%	6.4%		
PCB 28	1.1%	0.4%	6.1%	5.3%			13.1%	9.9%	0.6%	2.9%		
PCB 31	2.4%	1.3%	2.4%	7.2%					1.9%	8.7%		
PCB 44	5.7%	4.9%	2.0%	2.6%			8.0%	6.7%	1.4%	6.6%		
PCB 49	2.3%	3.8%	0.9%	3.8%					0.8%	7.2%		
PCB 52	2.6%	2.3%	5.1%	1.8%			10.3%	7.0%	1.8%	6.0%		
PCB 66	0.9%	1.3%	4.4%	7.2%			13.5%	9.0%	0.7%	6.5%		
PCB 95	2.1%	1.4%	9.0%	1.3%					4.0%	6.4%		
PCB 99	4.7%	3.9%	1.5%	3.7%					5.0%	7.1%		
PCB 101	2.8%	1.2%	7.0%	5.5%			11.9%	10.3%	4.7%	5.6%		
PCB 105	1.7%	3.9%	2.9%	7.5%			9.3%	15.1%	9.8%	5.4%		
PCB 118	0.9%	2.7%	3.2%	6.3%			13.6%	14.8%	6.1%	4.2%		
PCB 128	1.7%	2.4%	1.9%	9.7%			8.8%	21.6%	7.9%	4.5%		
PCB 138			7.6%	5.6%			4.5%	7.5%	2.6%	5.8%		
PCB 149	0.6%	1.7%	7.4%	4.0%					4.4%	7.5%		
PCB 153							5.1%	6.7%	4.0%	7.2%		
PCB 156	1.5%	1.5%	3.4%						10.3%			
PCB 170	2.5%	4.2%	1.3%	3.9%			7.0%	16.4%	24.9%	9.8%		
PCB 180	3.3%	2.4%	9.5%	9.5%			6.1%	7.3%	27.5%	7.8%		
PCB 187	2.8%	4.3%	3.9%	4.3%			3.0%	5.5%	21.9%	8.7%		
PCB 194			7.0%	6.5%					27.4%	10.5%		
PCB 195			14.4%				7.5%	15.9%	0.0%			
PCB 206	5.5%	3.1%	10.7%	7.4%			5.3%	6.7%	4.4%	11.1%		
PCB 209	4.8%	2.6%	4.1%	9.6%			3.1%	7.2%	0.1%	12.6%		

	Table 32 (cont). Marine Sediment XIII (QA05SED13): RSDs for three replicates - PCBs											
	Lab 6		Lab 7		Lab 8		Lab 10		Lab 11		Lab 12	
	Sed XIII	SRM 1941b	Sed XIII	SRM 1941b	Sed XIII	SRM 1941b	Sed XIII	SRM 1941b	Sed XIII	SRM 1941b	Sed XIII	SRM 1941b
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
PCB 8	23.4%	3.2%	9.5%	2.4%	5.2%	10.3%	0.1%	2.1%	17.6%	2.0%	11.3%	2.6%
PCB 18	20.1%	3.5%	7.1%	2.4%	0.2%	10.5%	0.7%	2.2%	23.5%	19.9%	11.2%	4.1%
PCB 28	23.3%	1.6%	6.0%	1.5%	5.7%	5.4%	0.1%	5.7%	5.8%	4.6%	6.4%	2.3%
PCB 31	24.8%	4.7%	4.9%	0.2%	0.9%	1.8%			12.4%	6.8%	5.4%	4.6%
PCB 44	22.3%	1.6%	2.9%	5.6%	22.3%	34.4%	0.5%	2.1%	13.5%	20.5%	6.0%	3.2%
PCB 49	25.6%	2.9%	7.0%	6.3%	34.5%	42.0%	0.2%	3.2%	16.0%	18.6%	7.5%	1.8%
PCB 52	24.1%	7.3%	4.4%	3.1%	22.2%	31.7%	0.5%	1.6%	17.1%	20.3%	6.4%	1.2%
PCB 66	23.7%	3.2%	8.1%	5.0%	10.6%	13.1%	5.9%	3.4%	2.7%	2.4%	6.1%	5.9%
PCB 95	26.7%	3.7%	7.4%	5.2%	8.4%	18.0%	8.7%	12.3%	6.2%	21.1%	9.6%	4.0%
PCB 99	25.4%	5.0%	5.6%	6.6%	8.9%	16.0%	0.0%	1.3%	3.1%	10.6%	7.9%	1.5%
PCB 101	26.6%	4.4%	4.7%	0.9%	10.6%	2.4%	0.1%	1.4%	0.8%	10.9%	19.6%	1.8%
PCB 105	27.9%	4.3%	3.2%	3.1%	2.9%	4.2%	0.4%	1.1%	8.7%	4.8%	4.6%	3.0%
PCB 118	26.0%	5.0%	6.6%	5.1%	0.2%	7.4%	0.5%	0.4%	7.9%	5.7%	4.0%	2.7%
PCB 128	31.3%	13.6%	20.8%	8.3%	0.9%	10.2%	1.3%	20.6%	11.8%	11.0%	4.9%	3.2%
PCB 138	25.9%	4.3%	4.7%	0.3%	3.7%	13.8%	0.5%	0.4%	14.8%	5.1%	4.4%	2.7%
PCB 149	26.3%	3.3%	8.3%	7.0%	24.8%	34.2%	1.6%	0.7%	17.5%	13.3%	3.4%	2.9%
PCB 153	25.9%	5.2%	2.9%	10.3%	16.3%	13.7%	0.4%	1.1%	15.5%	5.3%	7.8%	7.2%
PCB 156	26.8%	1.1%	18.4%	5.7%	2.7%	7.7%			10.5%	3.1%	5.1%	2.4%
PCB 170	23.9%	6.8%	9.8%	4.5%	9.0%	3.7%	0.7%	1.6%	13.7%	4.6%	2.9%	7.9%
PCB 180	26.3%	6.3%	9.5%	4.5%	7.8%	0.4%	0.2%	2.5%	12.0%	7.0%	2.5%	1.8%
PCB 187	109.5%	7.5%	6.3%	0.0%	6.9%	28.8%	0.2%	4.2%	15.7%	8.4%	4.9%	3.3%
PCB 194	27.0%	9.6%		2.8%	0.7%	6.5%	2.3%	3.2%	13.6%	7.1%	6.9%	1.1%
PCB 195	8.7%			0.0%			4.3%	3.5%	13.8%	6.8%	3.9%	5.7%
PCB 206	29.7%		7.1%	4.5%	37.3%	20.9%	7.9%	3.9%	12.9%	1.8%	2.7%	1.8%
PCB 209			3.4%	6.3%	3.4%	8.4%	0.7%	4.8%	13.5%	4.0%	2.9%	0.5%

**Table 33. Marine Sediment XIII (QA05SED13): RSDs for three replicates - PBDEs**

	Lab 1a		Lab 1c		Lab 2		Lab 3		Lab 4	
	Sed XIII	SRM 1941b	Sed XIII	SRM 1941b	Sed XIII	SRM 1944	Sed XIII	SRM 1941b	Sed XIII	SRM 1941b
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
BDE 15										
BDE 17										
BDE 25										
BDE 28										
BDE 30										
BDE 33										
BDE 47			3.4%	9.8%						
BDE 49										
BDE 66										
BDE 71										
BDE 75										
BDE 85										
BDE 99										
BDE 100										
BDE 116										
BDE 118										
BDE 119										
BDE 138										
BDE 153										
BDE 154										
BDE 155										
BDE 156										
BDE 181										
BDE 183										
BDE 190										
BDE 191										
BDE 196										
BDE 197										
BDE 203										
BDE 205										
BDE 206										
BDE 207										
BDE 208										
BDE 209										

	Lab 6		Lab 7		Lab 8		Lab 10		Lab 11		Lab 12	
	Sed XIII		Sed XIII		Sed XIII		Sed XIII		Sed XIII		Sed XIII	
	SRM 1941b	rsd	SRM 1941b	rsd	SRM 1941b	rsd	SRM 1941b	rsd	SRM 1941b	rsd	SRM 1941b	rsd
BDE 15												
BDE 17												0.5%
BDE 25												5.6%
BDE 28												1.9%
BDE 30				13.0%								8.1%
BDE 33												
BDE 47				32.8%								4.9%
BDE 49												1.1%
BDE 66				13.2%								8.3%
BDE 71												8.4%
BDE 75												5.9%
BDE 85				26.3%								0.0%
BDE 99				20.0%								9.4%
BDE 100				17.0%								2.1%
BDE 116												0.0%
BDE 118												
BDE 119												
BDE 138				56.0%								35.4%
BDE 153				7.0%								25.0%
BDE 154				14.9%								4.0%
BDE 155												6.5%
BDE 156												6.0%
BDE 181												
BDE 183												
BDE 190												
BDE 191												
BDE 196												
BDE 197												
BDE 203												
BDE 205												92.0%
BDE 206												85.7%
BDE 207												
BDE 208												
BDE 209												3.9%
												4.3%

**Table 34. Comparison of Concentrations for Marine Sediment XIII (QA05SED13) and SRM 1941b**

	Marine Sediment XIII		SRM 1941b		
	Exercise Assigned		from Certificate		
	Value	s	Value	95% CI	% difference
Water (percent)	47.4	3.2			
TOC (percent)	2.70	0.58			
PAHs (ng/g dry mass)	Marine Sediment XIII		SRM 1941b		
	Exercise Assigned		from Certificate		
	Value	s	Value	95% CI	% difference
naphthalene	785	186	<b>848</b>	<b>95</b>	-7.4%
2-methylnaphthalene	219	66	276	53	-20.7%
1-methylnaphthalene	98.2	24.0	127	14	-22.7%
biphenyl	65.8	23.6	74	8	-11.1%
2,6-dimethylnaphthalene	81.3	43.6	75.9	4.5	7.1%
acenaphthylene	45.1	13.8	53.3	6.4	-15.4%
acenaphthene	28.9	8.4	38.4	5.2	-24.6%
1,6,7-trimethylnaphthalene	no target		25.5	5.1	
fluorene	56.1	12.2	<b>85</b>	<b>15</b>	-34.1%
phenanthrene	306	89	<b>406</b>	<b>44</b>	-24.5%
anthracene	137	47	<b>184</b>	<b>18</b>	-25.5%
1-methylphenanthrene	55.4	18.2	<b>73.2</b>	<b>5.9</b>	-24.4%
fluoranthene	496	140	<b>651</b>	<b>50</b>	-23.8%
pyrene	421	142	<b>581</b>	<b>39</b>	-27.5%
benz[ <i>a</i> ]anthracene	241	80	<b>335</b>	<b>25</b>	-28.2%
chrysene	219	62	<b>291</b>	<b>31</b>	-24.7%
triphenylene	no target		<b>108</b>	<b>5</b>	
benzo[ <i>b</i> ]fluoranthene	413	174	<b>453</b>	<b>21</b>	-8.8%
benzo[ <i>j</i> ]fluoranthene	no target		217	5	
benzo[ <i>k</i> ]fluoranthene	180	56	<b>225</b>	<b>18</b>	-20.0%
benzo[ <i>e</i> ]pyrene	286	97	<b>325</b>	<b>25</b>	-11.9%
benzo[ <i>a</i> ]pyrene	282	120	<b>358</b>	<b>17</b>	-21.3%
perylene	311	131	<b>397</b>	<b>45</b>	-21.6%
indeno[1,2,3- <i>cd</i> ]pyrene	258	101	<b>341</b>	<b>57</b>	-24.4%
dibenz[ <i>a,h</i> ]anthracene	41.9	21.2	<b>53</b>	<b>10</b>	-20.9%
benzo[ <i>ghi</i> ]perylene	244	96	<b>307</b>	<b>45</b>	-20.5%

Note: Bolded values are certified concentrations while other values for SRM 1941b are reference values

**Table 34 (cont). Comparison of Concentrations for Marine Sediment XIII (QA05SED13) and SRM 1941b**

Pesticides (ng/g dry mass)	Marine Sediment XIII		SRM 1941b		
	Exercise Assigned	s	Value	95% CI	% difference
alpha-HCH (a-BHC)	no target		no target		
hexachlorobenzene	5.38	1.90	<b>5.83</b>	<b>0.38</b>	-7.8%
gamma-HCH (g-BHC,lindane)	no target		no target		
beta-HCH (b-BHC)	no target		no target		
heptachlor	no target		no target		
aldrin	no target		no target		
heptachlor epoxide	no target		no target		
oxychlordane	no target		no target		
gamma-chlordane	0.572	0.148	<b>0.566</b>	<b>0.093</b>	1.1%
2,4'-DDE	0.380	0.103	0.38	0.12	0.1%
endosulfan I	no target		no target		
cis-chlordane (alpha-chlordane)	0.482	0.058	<b>0.85</b>	<b>0.11</b>	-43.2%
trans-nonachlor	0.286	0.089	<b>0.438</b>	<b>0.073</b>	-34.8%
dieldrin	0.386	0.034	no target		
4,4'-DDE	3.44	1.08	<b>3.22</b>	<b>0.28</b>	7.0%
2,4'-DDD	0.927	0.624	no target		
endrin	no target		no target		
endosulfan II	no target		no target		
4,4'-DDD	4.18	1.42	<b>4.66</b>	<b>0.46</b>	-10.3%
2,4'-DDT	no target		no target		
cis-nonachlor	0.454	0.493	<b>0.378</b>	<b>0.053</b>	20.0%
4,4'-DDT	0.537	0.174	1.12	0.42	-52.1%
mirex	no target		no target		
endosulfan sulfate	no target		no target		
chlorpyrifos	no target		no target		

Note: Bolded values are certified concentrations while other values for SRM 1941b are reference values

**Table 34 (cont). Comparison of Concentrations for Marine Sediment XIII (QA05SED13) and SRM 1941b**

PCBs (ng/g dry mass)	Marine Sediment XIII		SRM 1941b		
	Exercise Assigned		from Certificate		
	Value	s	Value	95% CI	% difference
PCB 8	1.36	0.42	<b>1.65</b>	<b>0.19</b>	-17.3%
PCB 18	2.04	0.48	<b>2.39</b>	<b>0.29</b>	-14.5%
PCB 28	3.79	0.97	<b>4.52</b>	<b>0.57</b>	-16.1%
PCB 31	2.83	0.94	<b>3.18</b>	<b>0.41</b>	-11.0%
PCB 44	3.47	0.99	<b>3.85</b>	<b>0.2</b>	-9.8%
PCB 49	3.64	1.22	<b>4.34</b>	<b>0.28</b>	-16.1%
PCB 52	4.48	1.39	<b>5.24</b>	<b>0.28</b>	-14.5%
PCB 66	4.32	1.41	<b>4.96</b>	<b>0.53</b>	-12.9%
PCB 95	3.44	1.25	<b>3.93</b>	<b>0.62</b>	-12.5%
PCB 99	2.45	0.87	<b>2.9</b>	<b>0.36</b>	-15.5%
PCB 101	4.86	1.36	<b>5.11</b>	<b>0.34</b>	-4.8%
PCB 105	1.26	0.40	<b>1.43</b>	<b>0.1</b>	-12.0%
PCB 118	3.59	1.26	<b>4.23</b>	<b>0.19</b>	-15.1%
PCB 128	0.684	0.275	<b>0.696</b>	<b>0.044</b>	-1.8%
PCB 138	3.83	1.23	<b>3.6</b>	<b>0.28</b>	6.3%
PCB 149	4.18	1.44	<b>4.35</b>	<b>0.26</b>	-3.8%
PCB 153	4.99	2.46	<b>5.47</b>	<b>0.32</b>	-8.8%
PCB 156	0.444	0.128	<b>0.507</b>	<b>0.09</b>	-12.3%
PCB 170	1.19	0.36	<b>1.35</b>	<b>0.09</b>	-11.5%
PCB 180	2.97	1.15	<b>3.24</b>	<b>0.51</b>	-8.2%
PCB 187	2.20	0.69	<b>2.17</b>	<b>0.22</b>	1.2%
PCB 194	1.01	0.50	<b>1.04</b>	<b>0.06</b>	-2.8%
PCB 195	0.291	0.166	<b>0.645</b>	<b>0.06</b>	-54.9%
PCB 206	1.91	0.66	<b>2.42</b>	<b>0.19</b>	-21.1%
PCB 209	4.02	1.47	<b>4.86</b>	<b>0.45</b>	-17.3%

Note: Bolded values are certified concentrations while other values for SRM 1941b are reference values



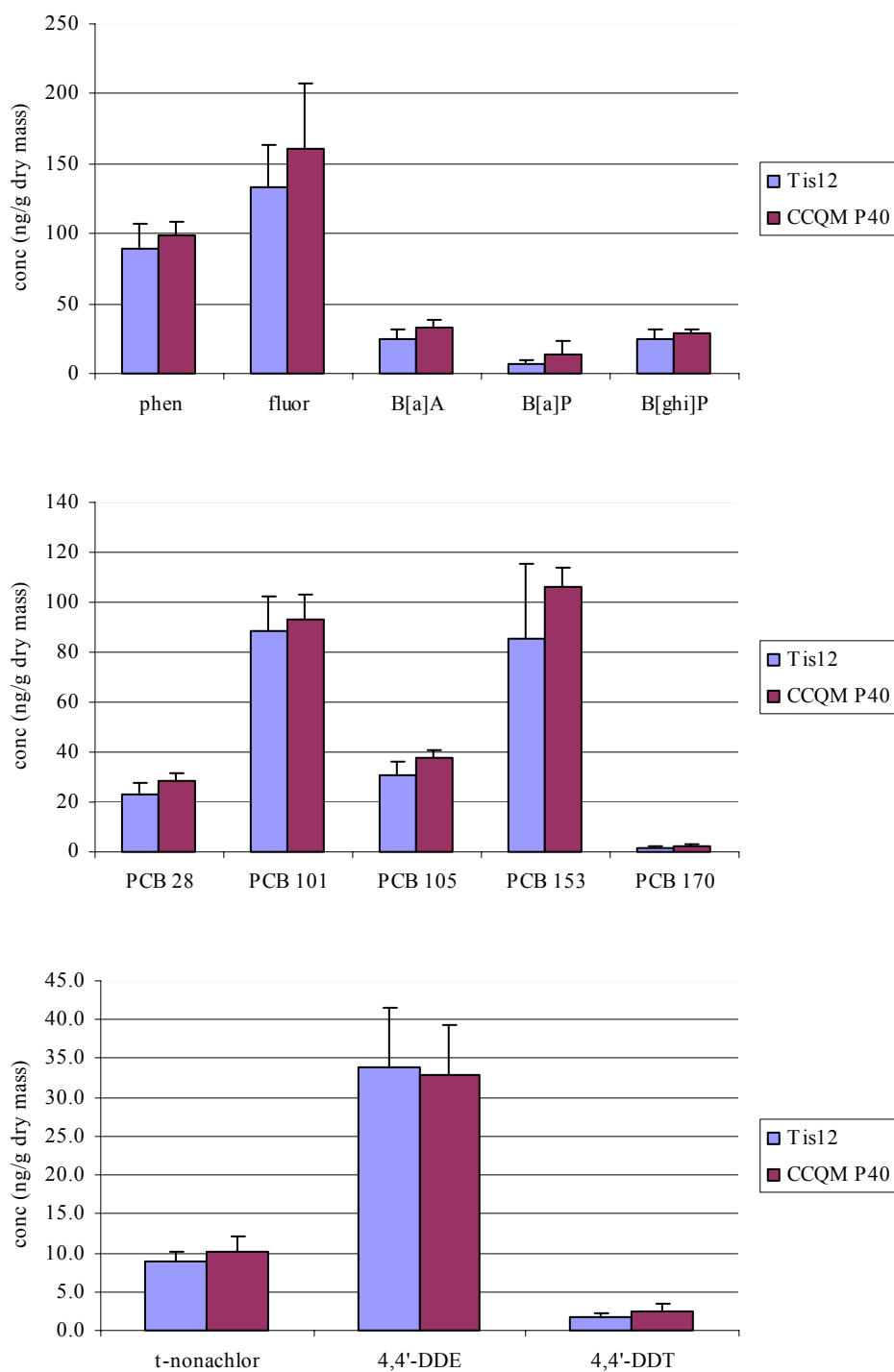


Figure 1. Comparison of Concentrations for Mussel Tissue XII as determined in this study and in a CCQM pilot study for selected analytes. Shown are the assigned values and associated uncertainties from each study.

**Appendix A: Description, Storage, Use, and Reporting Instructions  
for Mussel Tissue XII (QA05TIS12)**

**NIST Intercomparison Exercise Program for  
Organic Contaminants in the Marine Environment**

**NIST QA Program**

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**Intercomparison Exercise: Mussel Tissue XII  
Description of Materials and Instructions**

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**Intercomparison Exercise Materials:**

**QA05TIS12 (Mussel Tissue XII)**

The one jar contains approximately 8 g (dry-mass basis) of Mussel Tissue XII. This freeze-dried material was prepared from mussels collected from an urban area. This material has not been enriched or spiked. Each 30-mL amber jar has a Teflon-lined screw cap and is labeled with an individual jar number as well as the above name.

It is requested that three concurrent analyses of SRM 2977 Mussel Tissue (Organic Contaminants and Trace Elements) are also performed. This material can be obtained from the NIST Standard Reference Materials Program (\$502/10 g (dry-mass basis) (phone: 301/975-6776; fax: 301/948-3730). See the following link for information on ordering on-line: [https://srmors.nist.gov/view\\_detail.cfm?srm=2977](https://srmors.nist.gov/view_detail.cfm?srm=2977).

**Storage of Materials:**

Mussel Tissue Material. The tissue material should be stored in the dark at room temperature. If only a portion of the contents of a jar is used, the jar should be tightly closed immediately after removal of a subsample to preserve the integrity of the remaining material for later analysis.

**Instructions for Use:**

You are to analyze Mussel Tissue XII and SRM 2977, using **your** laboratory's and/or program's analytical protocols, for the concentrations (mass/mass [dry-mass basis]) of the 26 polycyclic aromatic hydrocarbon (PAH) compounds, 25 chlorinated pesticides, 25 polychlorinated biphenyl (PCB) congeners, and 34 polybrominated diphenyl ether (PBDE) congeners<sup>1</sup> of interest in the current NIST Intercomparison Exercise Program for Organic Contaminants in the Marine Environment. These compounds are listed in Table 1.

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<sup>1</sup>If your laboratory is not analyzing samples for all four chemical classes, you are expected to submit results only for those compounds currently being determined in your laboratory.

The percentage of total extractable organics (or lipid) in Mussel Tissue XII and SRM 2977 should also be determined. You should have received sufficient material for this purpose. The amount of material used for each analysis should correspond to the amount (dry-mass basis) of marine tissue that you would typically analyze as prescribed in your protocols.

You should analyze three samples of Mussel Tissue XII and at least one or more samples of SRM 2977 in three different batches using your protocol for tissue samples. Specifically, we are asking that you analyze one sample of Mussel Tissue XII and one sample of SRM 2977 with one batch of laboratory samples; analyze a second sample of each material with another batch; and the third sample with yet another batch. This will allow a more realistic assessment of laboratory precision over a longer term than the assessment obtained when a laboratory places all three samples in the same extraction and cleanup batch and the resulting extracts are analyzed using the same calibration curve, etc.

### Reporting of Results:

Please report one result, as if three figures were significant, for each of the requested analytes in each of the three replicates of the Mussel Tissue XII and of SRM 2977. Report results in units of ng/g **dry-mass** basis. Report the date of measurement of each sample in the requested m/d/y format.

We recognize that the reported concentrations for some of the requested determinands will probably include concentrations of compounds reported to coelute with the determinand of interest with methods commonly in use in environmental laboratories. Please note at the bottom of your table of reported results if any coelution qualifiers are applicable to your data. Please note that any changes you make to the column or row headings **within** the tables will **not** be seen by the coordinators because only the table entries and comments at the bottom of the tables are automatically transferred to the exercise database.

We prefer that concentration values be reported for each analyte determined. If the measured concentration is below your typical reporting concentration for an analyte in a particular matrix, you can report the number and list the appropriate detection limit, quantification limit, etc. at the bottom of the data table. However, if you need to report non-numerical data please use the following conventions:

NA	"Not analyzed", "not determined"
<"value"	"Less than specified concentration", e.g., <8 ng/g
Other	"Other"; add note of explanation at end of data table, e.g., interference
DL	"Below detection limit" may be used, however, <"value" is preferable

Do not use negative numbers or parentheses to indicate "less than detection limits".

The attached file is an EXCEL file, TIS12.xls. If you have any software/hardware conversion problems, please contact Michele Schantz. The data file templates also include places for you to list the surrogate/internal standards and type of calibration curve used, and to provide a brief description of the analyses. Please **do not** add spaces before entering numbers in the table cells and enter them as "numbers" not as "labels". Please **do not** insert any columns or rows **within** the table in the data file. If you wish to include additional data and/or other information or comments, you may add it to the bottom of the data table in the diskette file or send it in hard copy. A printout of the data file format is shown in Table 2.

Submit your results by **December 15, 2005** as an attached file via e-mail to:

E-mail: [michele.schantz@nist.gov](mailto:michele.schantz@nist.gov)

**Further Information:**

If you need further information, please contact Michele at the following address or phone numbers:

Michele M. Schantz  
NIST  
100 Bureau Drive Stop 8392  
Gaithersburg, MD 20899-8392

Phone: (301)975-3106  
FAX: (301)977-0685

**Table 1: Analytes of Interest in NIST Intercomparison Exercise Program for Organic Contaminants in the Marine Environment**

Chlorinated Pesticides

hexachlorobenzene	2,4'-DDE
alpha-HCH (alpha-BHC)	4,4'-DDE
beta-HCH (beta-BHC)	2,4'-DDD
gamma-HCH (gamma-BHC, Lindane)	4,4'-DDD
heptachlor	2,4'-DDT
heptachlor epoxide	4,4'-DDT
<i>cis</i> -chlordane (alpha-chlordane)	chlorpyrifos
<i>trans</i> -chlordane (gamma-chlordane)	aldrin
oxychlordane	dieldrin
<i>cis</i> -nonachlor	endrin
<i>trans</i> -nonachlor	endosulfan I
mirex	endosulfan II
	endosulfan sulfate

Polychlorinated Biphenyl Congeners

<i>PCB No.</i>	<i>Compound Name</i>
8	2,4'-dichlorobiphenyl
18	2,2',5-trichlorobiphenyl
28	2,4,4'-trichlorobiphenyl
31	2,4',5-trichlorobiphenyl
44	2,2',3,5'-tetrachlorobiphenyl
49	2,2',4,5'-tetrachlorobiphenyl
52	2,2',5,5'-tetrachlorobiphenyl
66	2,3',4,4'-tetrachlorobiphenyl
95	2,2',3,5',6-pentachlorobiphenyl
99	2,2',4,4',5-pentachlorobiphenyl
101	2,2',4,5,5'-pentachlorobiphenyl
105	2,3,3',4,4'-pentachlorobiphenyl
118	2,3',4,4',5-pentachlorobiphenyl
128	2,2',3,3',4,4'-hexachlorobiphenyl
138	2,2',3,4,4',5'-hexachlorobiphenyl
149	2,2',3,4',5',6-hexachlorobiphenyl
153	2,2',4,4',5,5'-hexachlorobiphenyl
156	2,3,3',4,4',5-hexachlorobiphenyl
170	2,2',3,3',4,4',5-heptachlorobiphenyl
180	2,2',3,4,4',5,5'-heptachlorobiphenyl
187	2,2',3,4',5,5',6-heptachlorobiphenyl
194	2,2',3,3',4,4',5,5'-octachlorobiphenyl
195	2,2',3,3',4,4',5,6-octachlorobiphenyl
206	2,2',3,3',4,4',5,5',6-nonachlorobiphenyl
209	decachlorobiphenyl

**Table 1. (continued)**

Polycyclic aromatic hydrocarbons (PAH)

naphthalene	benz[ <i>a</i> ]anthracene
2-methylnaphthalene	chrysene
1-methylnaphthalene	triphenylene
biphenyl	benzo[ <i>b</i> ]fluoranthene
2,6-dimethylnaphthalene	benzo[ <i>j</i> ]fluoranthene
acenaphthylene	benzo[ <i>k</i> ]fluoranthene
acenaphthene	benzo[ <i>e</i> ]pyrene
1,6,7-trimethylnaphthalene	benzo[ <i>a</i> ]pyrene
fluorene	perylene
phenanthrene	indeno[1,2,3- <i>cd</i> ]pyrene
anthracene	dibenz[ <i>a,h</i> ]anthracene
1-methylphenanthrene	benzo[ <i>ghi</i> ]perylene
fluoranthene	
pyrene	

Polybrominated diphenyl ethers (PBDEs)

BDE 15 (4,4'-dibromo-)	BDE 138 (2,2',3,4,4',5'-hexabromo-)
BDE 17 (2,2',4-tribromo-)	BDE 153 (2,2',4,4',5,5'-hexabromo-)
BDE 25 (2,3',4-tribromo-)	BDE 154 (2,2',4,4',5,6'-hexabromo-)
BDE 28 (2,4,4'-tribromo-)	BDE 155 (2,2',4,4',6,6'-hexabromo-)
BDE 30 (2,4,6-tribromo-)	BDE 156 (2,3,3',4,4',5-hexabromo-)
BDE 33 (2',3,4-tribromo-)	BDE 181 (2,2',3,4,4',5,6-heptabromo-)
BDE 47 (2,2',4,4'-tetrabromo-)	BDE 183 (2,2',3,4,4',5',6-heptabromo-)
BDE 49 (2,2',4,5'-tetrabromo-)	BDE 190 (2,3,3',4,4',5,6-heptabromo-)
BDE 66 (2,3',4,4'-tetrabromo-)	BDE 191 (2,3,3',4,4',5,6'-heptabromo-)
BDE 71 (2,3',4',6-tetrabromo-)	BDE 196 (2,2',3,3',4,4',5,6'-octabromo-)
BDE 75 (2,4,4',6-tetrabromo-)	BDE 197 (2,2',3,3',4,4',6,6'-octabromo-)
BDE 85 (2,2',3,4,4'-pentabromo-)	BDE 203 (2,2',3,4,4',5,5',6-octabromo-)
BDE 99 (2,2',4,4',5-pentabromo-)	BDE 205 (2,3,3',4,4',5,5',6-octabromo-)
BDE 100 (2,2',4,4',6-pentabromo-)	BDE 206 (2,2',3,3',4,4',5,6,6'-nonabromo-)
BDE 116 (2,3,4,5,6-pentabromo-)	BDE 207 (2,2',3,3',4,4',5,6,6'-nonabromo-)
BDE 118 (2,3',4,4',5-pentabromo-)	BDE 208 (2,2',3,3',4,5,5',6,6'-nonabromo-)
BDE 119 (2,3',4,4',6-pentabromo-)	BDE 209 (decabromo-)

Table 2. Diskette Data File Format (File: TIS12.\*)

**NIST Intercomparison Exercise Program for Organics in the Marine Environment**  
**NIST QA Program**  
**Sample: QA05TIS12 - Mussel Tissue XII**

Please fill in all blanks; Use requested units of concentration; Report results as if 3 figures were significant  
DO NOT INSERT ROWS OR COLUMNS WITHIN THIS TABLE. DO NOT MOVE CELLS.

- If necessary, add additional data/information at the end of the table.
- Use one of the following if no concentration is reported for an analyte:
  - NA = Not analyzed/determined; <"conc" = <detection limit conc.; Other = other, explain in a note at end of table (DL = "below detection limit" may be used, but <"conc", e.g., <8, is preferable.)
  - Do not use parentheses or negative numbers to indicate "less than detection limit".

Reporting Date (m/d/y): \_\_\_\_\_  
Laboratory: \_\_\_\_\_  
Submitted by: \_\_\_\_\_

**BRIEF DESCRIPTION OF PROCEDURES USED:**

Approximate amount of sample extracted:  
Mussel XII \_\_\_\_\_ g, dry basis; SRM 2977 \_\_\_\_\_ g, dry basis

Method used for determining percentage Total Extractable Organics (TEO) or lipid:  
\_\_\_\_\_  
\_\_\_\_\_

Extraction method: \_\_\_\_\_  
Extraction solvent: \_\_\_\_\_  
Extraction time: \_\_\_\_\_  
Extraction - other: \_\_\_\_\_

Sample extract cleanup method: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Analytical method used (e.g., GC-FID, GC-ECD):

	Analyt.	Instr.	Column Phase	Col. Length, m	Col. i.d., mm	Col. film thickness, µm
PAH	_____	_____	_____	_____	_____	_____
Pesticides	_____	_____	_____	_____	_____	_____
PCB Congeners	_____	_____	_____	_____	_____	_____
BDE Congeners	_____	_____	_____	_____	_____	_____

Method of quantitation (IS = internal standard, ES = external standard):

PAH \_\_\_\_\_  
Pesticides \_\_\_\_\_  
PCB Congeners \_\_\_\_\_  
BDE Congeners \_\_\_\_\_

IF internal standard method was used, please complete the following section:

Identity of internal standards/surrogates used that were:

Added PRIOR to extraction of sample:

PAH \_\_\_\_\_  
Pesticides \_\_\_\_\_  
PCB Congeners \_\_\_\_\_  
BDE Congeners \_\_\_\_\_

Added after extraction/cleanup and JUST PRIOR to chromatographic analysis:

PAH \_\_\_\_\_  
Pesticides \_\_\_\_\_  
PCB Congeners \_\_\_\_\_  
BDE Congeners \_\_\_\_\_

Any others? Added at what point in analyses \_\_\_\_\_

PAH \_\_\_\_\_  
Pesticides \_\_\_\_\_  
PCB Congeners \_\_\_\_\_  
BDE Congeners \_\_\_\_\_

IS/surrogate standards used for quantitation calculations were:

\_\_\_\_\_ those added prior to extraction  
\_\_\_\_\_ those added after extraction/cleanup and just prior to chromatographic analysis

If the IS/surrogates added after extraction/cleanup extraction were used for quantitation,  
were results corrected for percent recovery? \_\_\_\_\_



Percent recovery range: PAH \_\_\_\_\_  
Pesticides \_\_\_\_\_  
PCB Congeners \_\_\_\_\_  
BDE Congeners \_\_\_\_\_

Calibration Curve

	Points	Conc. Range	Analytes outside of calibration curve calibration range
PAH	_____	_____	_____
Pesticides	_____	_____	_____
PCB Congeners	_____	_____	_____
BDE Congeners	_____	_____	_____

Were PCB congeners separated from pesticides prior to GC? \_\_\_\_\_

Please note any differences in procedures used for SRM 2977 analyses from those for Mussel Tissue XII described above:

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**RESULTS:**

PERCENT Total Extractable Organics (TEO) or Lipid (List each result if determined more than once. Enter results as a number, for example 90.0. DO NOT change format of cell to percent.)

	Tissue XII (percent)	Tissue XII (percent)	Tissue XII (percent)	SRM 2977 (percent)	SRM 2977 (percent)	SRM 2977 (percent)
TEO or lipid	_____	_____	_____	_____	_____	_____
<b>PAH ANALYSES</b>	Tissue XII Batch A Sample 1	Tissue XII Batch B Sample 2	Tissue XII Batch C Sample 3	SRM 2977 Batch A Sample 1	SRM 2977 Batch B Sample 2	SRM 2977 Batch C Sample 3
Analyst (Initials)	_____	_____	_____	_____	_____	_____
Date(s) of measurements (m/d/y)	_____	_____	_____	_____	_____	_____
Sample Jar number	_____	_____	_____	_____	_____	_____

	Tissue XII Sample 1 (ng/g dry mass)	Tissue XII Sample 2 (ng/g dry mass)	Tissue XII Sample 3 (ng/g dry mass)	SRM 2977 Sample 1 (ng/g dry mass)	SRM 2977 Sample 2 (ng/g dry mass)	SRM 2977 Sample 3 (ng/g dry mass)
naphthalene	_____	_____	_____	_____	_____	_____
2-methylnaphthalene	_____	_____	_____	_____	_____	_____
1-methylnaphthalene	_____	_____	_____	_____	_____	_____
biphenyl	_____	_____	_____	_____	_____	_____
2,6-dimethylnaphthalene	_____	_____	_____	_____	_____	_____
acenaphthylene	_____	_____	_____	_____	_____	_____
acenaphthene	_____	_____	_____	_____	_____	_____
1,6,7-trimethylnaphthalene	_____	_____	_____	_____	_____	_____
fluorene	_____	_____	_____	_____	_____	_____
phenanthrene	_____	_____	_____	_____	_____	_____
anthracene	_____	_____	_____	_____	_____	_____
1-methylphenanthrene	_____	_____	_____	_____	_____	_____
fluoranthene	_____	_____	_____	_____	_____	_____
pyrene	_____	_____	_____	_____	_____	_____
benz[a]anthracene	_____	_____	_____	_____	_____	_____
chrysene	_____	_____	_____	_____	_____	_____
triphenylene	_____	_____	_____	_____	_____	_____
benzo[b]fluoranthene	_____	_____	_____	_____	_____	_____
benzo[j]fluoranthene	_____	_____	_____	_____	_____	_____
benzo[k]fluoranthene	_____	_____	_____	_____	_____	_____
benzo[e]pyrene	_____	_____	_____	_____	_____	_____
benzo[a]pyrene	_____	_____	_____	_____	_____	_____
perylene	_____	_____	_____	_____	_____	_____
indeno[1,2,3-cd]pyrene	_____	_____	_____	_____	_____	_____
dibenz[a,h]anthracene	_____	_____	_____	_____	_____	_____
benzo[ghi]perylene	_____	_____	_____	_____	_____	_____

**PESTICIDE ANALYSES**

	Tissue XII Batch A Sample 1	Tissue XII Batch B Sample 2	Tissue XII Batch C Sample 3	SRM 2977 Batch A Sample 1	SRM 2977 Batch B Sample 2	SRM 2977 Batch C Sample 3
Analyst (Initials)	_____	_____	_____	_____	_____	_____
Date(s) of measurements (m/d/y)	_____	_____	_____	_____	_____	_____
Sample Jar number	_____	_____	_____	_____	_____	_____
	Tissue XII Sample 1 (ng/g dry mass)	Tissue XII Sample 2 (ng/g dry mass)	Tissue XII Sample 3 (ng/g dry mass)	SRM 2977 Sample 1 (ng/g dry mass)	SRM 2977 Sample 2 (ng/g dry mass)	SRM 2977 Sample 3 (ng/g dry mass)
alpha-HCH (a-BHC)	_____	_____	_____	_____	_____	_____
hexachlorobenzene	_____	_____	_____	_____	_____	_____
gamma-HCH (g-BHC,lindane)	_____	_____	_____	_____	_____	_____
beta-HCH (b-BHC)	_____	_____	_____	_____	_____	_____
heptachlor	_____	_____	_____	_____	_____	_____
aldrin	_____	_____	_____	_____	_____	_____
heptachlor epoxide	_____	_____	_____	_____	_____	_____
oxychlordane	_____	_____	_____	_____	_____	_____
gamma-chlordane	_____	_____	_____	_____	_____	_____
2,4'-DDE	_____	_____	_____	_____	_____	_____
endosulfan I	_____	_____	_____	_____	_____	_____
cis-chlordane (alpha-chlordane)	_____	_____	_____	_____	_____	_____
trans-nonachlor	_____	_____	_____	_____	_____	_____
dieldrin	_____	_____	_____	_____	_____	_____
4,4'-DDE	_____	_____	_____	_____	_____	_____
2,4'-DDD	_____	_____	_____	_____	_____	_____
endrin	_____	_____	_____	_____	_____	_____
endosulfan II	_____	_____	_____	_____	_____	_____
4,4'-DDD	_____	_____	_____	_____	_____	_____
2,4'-DDT	_____	_____	_____	_____	_____	_____
cis-nonachlor	_____	_____	_____	_____	_____	_____
4,4'-DDT	_____	_____	_____	_____	_____	_____
mirex	_____	_____	_____	_____	_____	_____
endosulfan sulfate	_____	_____	_____	_____	_____	_____
chlorpyrifos	_____	_____	_____	_____	_____	_____

**PCB CONGENER ANALYSES**

	Tissue XII Batch A Sample 1	Tissue XII Batch B Sample 2	Tissue XII Batch C Sample 3	SRM 2977 Batch A Sample 1	SRM 2977 Batch B Sample 2	SRM 2977 Batch C Sample 3
Analyst (Initials)	_____	_____	_____	_____	_____	_____
Date(s) of measurements (m/d/y)	_____	_____	_____	_____	_____	_____
Sample Jar number	_____	_____	_____	_____	_____	_____
	Tissue XII Sample 1 (ng/g dry mass)	Tissue XII Sample 2 (ng/g dry mass)	Tissue XII Sample 3 (ng/g dry mass)	SRM 2977 Sample 1 (ng/g dry mass)	SRM 2977 Sample 2 (ng/g dry mass)	SRM 2977 Sample 3 (ng/g dry mass)
PCB 8	_____	_____	_____	_____	_____	_____
PCB 18	_____	_____	_____	_____	_____	_____
PCB 28	_____	_____	_____	_____	_____	_____
PCB 31	_____	_____	_____	_____	_____	_____
PCB 44	_____	_____	_____	_____	_____	_____
PCB 49	_____	_____	_____	_____	_____	_____
PCB 52	_____	_____	_____	_____	_____	_____
PCB 66	_____	_____	_____	_____	_____	_____
PCB 95	_____	_____	_____	_____	_____	_____
PCB 99	_____	_____	_____	_____	_____	_____
PCB 101	_____	_____	_____	_____	_____	_____
PCB 105	_____	_____	_____	_____	_____	_____
PCB 118	_____	_____	_____	_____	_____	_____
PCB 128	_____	_____	_____	_____	_____	_____
PCB 138	_____	_____	_____	_____	_____	_____
PCB 149	_____	_____	_____	_____	_____	_____
PCB 153	_____	_____	_____	_____	_____	_____
PCB 156	_____	_____	_____	_____	_____	_____
PCB 170	_____	_____	_____	_____	_____	_____
PCB 180	_____	_____	_____	_____	_____	_____
PCB 187	_____	_____	_____	_____	_____	_____
PCB 194	_____	_____	_____	_____	_____	_____
PCB 195	_____	_____	_____	_____	_____	_____
PCB 206	_____	_____	_____	_____	_____	_____
PCB 209	_____	_____	_____	_____	_____	_____

**BDE CONGENER ANALYSES**

	Tissue XII Batch A Sample 1	Tissue XII Batch B Sample 2	Tissue XII Batch C Sample 3	SRM 2977 Batch A Sample 1	SRM 2977 Batch B Sample 2	SRM 2977 Batch C Sample 3
Analyst (Initials)	_____	_____	_____	_____	_____	_____
Date(s) of measurements (m/d/y)	_____	_____	_____	_____	_____	_____
Sample Jar number	_____	_____	_____	_____	_____	_____
	Tissue XII Sample 1 (ng/g dry mass)	Tissue XII Sample 2 (ng/g dry mass)	Tissue XII Sample 3 (ng/g dry mass)	SRM 2977 Sample 1 (ng/g dry mass)	SRM 2977 Sample 2 (ng/g dry mass)	SRM 2977 Sample 3 (ng/g dry mass)
BDE 15	_____	_____	_____	_____	_____	_____
BDE 17	_____	_____	_____	_____	_____	_____
BDE 25	_____	_____	_____	_____	_____	_____
BDE 28	_____	_____	_____	_____	_____	_____
BDE 30	_____	_____	_____	_____	_____	_____
BDE 33	_____	_____	_____	_____	_____	_____
BDE 47	_____	_____	_____	_____	_____	_____
BDE 49	_____	_____	_____	_____	_____	_____
BDE 66	_____	_____	_____	_____	_____	_____
BDE 71	_____	_____	_____	_____	_____	_____
BDE 75	_____	_____	_____	_____	_____	_____
BDE 85	_____	_____	_____	_____	_____	_____
BDE 99	_____	_____	_____	_____	_____	_____
BDE 100	_____	_____	_____	_____	_____	_____
BDE 116	_____	_____	_____	_____	_____	_____
BDE 118	_____	_____	_____	_____	_____	_____
BDE 119	_____	_____	_____	_____	_____	_____
BDE 138	_____	_____	_____	_____	_____	_____
BDE 153	_____	_____	_____	_____	_____	_____
BDE 154	_____	_____	_____	_____	_____	_____
BDE 155	_____	_____	_____	_____	_____	_____
BDE 156	_____	_____	_____	_____	_____	_____
BDE 181	_____	_____	_____	_____	_____	_____
BDE 183	_____	_____	_____	_____	_____	_____
BDE 190	_____	_____	_____	_____	_____	_____
BDE 191	_____	_____	_____	_____	_____	_____
BDE 196	_____	_____	_____	_____	_____	_____
BDE 197	_____	_____	_____	_____	_____	_____
BDE 203	_____	_____	_____	_____	_____	_____
BDE 205	_____	_____	_____	_____	_____	_____
BDE 206	_____	_____	_____	_____	_____	_____
BDE 207	_____	_____	_____	_____	_____	_____
BDE 208	_____	_____	_____	_____	_____	_____
BDE 209	_____	_____	_____	_____	_____	_____

(Any additional data/information should be added here.)

**Appendix B: Description, Storage, Use, and Reporting Instructions  
for Marine Sediment XIII (QA05SED13)**

**NIST Intercomparison Exercise Program for  
Organic Contaminants in the Marine Environment**

**NIST QA Program**

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**Intercomparison Exercise: Marine Sediment XIII  
Description of Materials and Instructions**

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**Intercomparison Exercise Materials:**

**QA05SED13 (Marine Sediment XIII)**

Each of the three jars contains approximately 21 g (wet basis) of Marine Sediment XII. This wetted sediment was prepared from material that was collected from a harbor area in the northeastern section of the US coast and then freeze-dried, ground sieved, and radiation-sterilized. This material has not been enriched or spiked. Each 2-oz clear glass jar has a Teflon-lined screw cap and is labeled with an individual jar number as well as the above name.

It is requested that three concurrent analyses of SRM 1941b Organics in Marine Sediment are also performed. This material can be obtained from the NIST Standard Reference Materials Program (\$524/50 g (dry-mass basis) (phone: 301/975-6776; fax: 301/948-3730). See the following link for information on ordering on-line:  
[https://srmors.nist.gov/view\\_detail.cfm?srm=1941B](https://srmors.nist.gov/view_detail.cfm?srm=1941B).

**Storage of Materials:**

Marine Sediment Material. This Marine Sediment XIII material should be stored in the dark at temperatures of -15 °C or lower. If only a portion of the contents of a jar is used, that jar should be tightly closed immediately after removal of a subsample to preserve the integrity of the remaining material for later analysis.

**Instructions for Use:**

You are to analyze Marine Sediment XIII and SRM 1941b, using **your** laboratory's and/or program's analytical protocols, for the concentrations (mass/mass [dry-mass basis]) of the 26 polycyclic aromatic hydrocarbon (PAH) compounds, 25 chlorinated pesticides, 25 polychlorinated biphenyl (PCB) congeners, and 34 polybrominated diphenyl ether (PBDE) congeners<sup>2</sup> of interest in the current NIST Intercomparison Exercise Program for Organic Contaminants in the Marine Environment. These compounds are listed in Table 1.

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<sup>2</sup>If your laboratory is not analyzing samples for all chemical classes, you are expected to submit results only for those compounds currently being determined in your laboratory.

The percentage of water in Sediment XIII should be determined so that the results can be reported on a dry basis. You should have received sufficient material so that you can perform separate determinations for the water content if you do not dry your sediment samples prior to analysis. In addition, the percentage of total organic carbon should be determined in Sediment XIII and SRM 1941b.

The amount of material used for each analysis should correspond to the amount (wet basis) of marine sediment that you would typically analyze as prescribed in your protocols. Prior to removing an aliquot of Sediment XIII, you should thaw the sample in the jar and then **stir or otherwise mix it thoroughly**.

You should analyze three samples of Marine Sediment XIII and at least one or more samples of SRM 1941b in three different batches using your protocol for marine sediment samples. Specifically, we are asking that you analyze one sample of Sediment XIII and one sample of SRM 1941b with one batch of laboratory samples; analyze a second sample of each material with another batch; and the third sample with yet another batch. This will allow a more realistic assessment of laboratory precision over a longer term than the assessment obtained when a laboratory places all three samples in the same extraction and cleanup batch and the resulting extracts are analyzed using the same calibration curve, etc.

### **Reporting of Results:**

Please report one result, as if three figures were significant, for each of the requested analytes in each of the three replicates of the Marine Sediment XIII and of SRM 1941b. Report results in units of ng/g **dry-mass** basis. Report the date of measurement of each sample in the requested m/d/y format. Also, report the results of your percentage water determinations of Marine Sediment XIII.

We recognize that the reported concentrations for some of the requested determinands will probably include concentrations of compounds reported to coelute with the determinand of interest with methods commonly in use in environmental laboratories. Please note at the bottom of your table of reported results if any coelution qualifiers are applicable to your data. Please note that any changes you make to the column or row headings **within** the tables will **not** be seen by the coordinators because only the table entries and comments at the bottom of the tables are automatically transferred to the exercise database.

We prefer that concentration values be reported for each analyte determined. If the measured concentration is below your typical reporting concentration for an analyte in a particular matrix, you can report the number and list the appropriate detection limit, quantification limit, etc. at the bottom of the data table. However, if you need to report non-numerical data please use the following conventions:

NA	"Not analyzed", "not determined"
<"value"	"Less than specified concentration", e.g., <8 ng/g

Other "Other"; add note of explanation at end of data table, e.g., interference  
DL "Below detection limit" may be used, however, <"value" is preferable

Do not use negative numbers or parentheses to indicate "less than detection limits".

The attached file is an EXCEL file, SED13.xls. If you have any software/hardware conversion problems, please contact Michele Schantz. The data file templates also include places for you to list the surrogate/internal standards and type of calibration curve used, and to provide a brief description of the analyses. Please **do not** add spaces before entering numbers in the table cells and enter them as "numbers" not as "labels". Please **do not** insert any columns or rows **within** the table in the data file. If you wish to include additional data and/or other information or comments, you may add it to the bottom of the data table in the diskette file or send it in hard copy. A printout of the data file format is shown in Table 2.

Submit your results by **December 15, 2005** as an attached file via e-mail to:

E-mail:  
michele.schantz@nist.gov

**Further Information:**

If you need further information, please contact Michele at the following address or phone numbers:

Michele M. Schantz  
NIST  
100 Bureau Drive Stop 8392  
Gaithersburg, MD 20899-8392

Phone: (301)975-3106  
FAX: (301)977-0685

**Table 1: Analytes of Interest in NIST Intercomparison Exercise Program for Organic Contaminants in the Marine Environment**

Chlorinated Pesticides

hexachlorobenzene	2,4'-DDE
alpha-HCH (alpha-BHC)	4,4'-DDE
beta-HCH (beta-BHC)	2,4'-DDD
gamma-HCH (gamma-BHC, Lindane)	4,4'-DDD
heptachlor	2,4'-DDT
heptachlor epoxide	4,4'-DDT
<i>cis</i> -chlordane (alpha-chlordane)	chlorpyrifos
<i>trans</i> -chlordane (gamma-chlordane)	aldrin
oxychlordane	dieldrin
<i>cis</i> -nonachlor	endrin
<i>trans</i> -nonachlor	endosulfan I
mirex	endosulfan II
	endosulfan sulfate

Polychlorinated Biphenyl Congeners

<i>PCB No.</i>	<i>Compound Name</i>
8	2,4'-dichlorobiphenyl
18	2,2',5'-trichlorobiphenyl
28	2,4,4'-trichlorobiphenyl
31	2,4',5'-trichlorobiphenyl
44	2,2',3,5'-tetrachlorobiphenyl
49	2,2',4,5'-tetrachlorobiphenyl
52	2,2',5,5'-tetrachlorobiphenyl
66	2,3',4,4'-tetrachlorobiphenyl
95	2,2',3,5',6-pentachlorobiphenyl
99	2,2',4,4',5-pentachlorobiphenyl
101	2,2',4,5,5'-pentachlorobiphenyl
105	2,3,3',4,4'-pentachlorobiphenyl
118	2,3',4,4',5-pentachlorobiphenyl
128	2,2',3,3',4,4'-hexachlorobiphenyl
138	2,2',3,4,4',5'-hexachlorobiphenyl
149	2,2',3,4',5',6-hexachlorobiphenyl
153	2,2',4,4',5,5'-hexachlorobiphenyl
156	2,3,3',4,4',5-hexachlorobiphenyl
170	2,2',3,3',4,4',5-heptachlorobiphenyl
180	2,2',3,4,4',5,5'-heptachlorobiphenyl
187	2,2',3,4',5,5',6-heptachlorobiphenyl
194	2,2',3,3',4,4',5,5'-octachlorobiphenyl
195	2,2',3,3',4,4',5,6-octachlorobiphenyl
206	2,2',3,3',4,4',5,5',6-nonachlorobiphenyl
209	decachlorobiphenyl



**Table 1. (continued)**

Polycyclic aromatic hydrocarbons (PAH)

naphthalene	benz[ <i>a</i> ]anthracene
2-methylnaphthalene	chrysene
1-methylnaphthalene	triphenylene
biphenyl	benzo[ <i>b</i> ]fluoranthene
2,6-dimethylnaphthalene	benzo[ <i>j</i> ]fluoranthene
acenaphthylene	benzo[ <i>k</i> ]fluoranthene
acenaphthene	benzo[ <i>e</i> ]pyrene
1,6,7-trimethylnaphthalene	benzo[ <i>a</i> ]pyrene
fluorene	perylene
phenanthrene	indeno[1,2,3- <i>cd</i> ]pyrene
anthracene	dibenz[ <i>a,h</i> ]anthracene
1-methylphenanthrene	benzo[ <i>ghi</i> ]perylene
fluoranthene	
pyrene	

Polybrominated diphenyl ethers (PBDEs)

BDE 15 (4,4'-dibromo-)	BDE 138 (2,2',3,4,4',5'-hexabromo-)
BDE 17 (2,2',4-tribromo-)	BDE 153 (2,2',4,4',5,5'-hexabromo-)
BDE 25 (2,3',4-tribromo-)	BDE 154 (2,2',4,4',5,6'-hexabromo-)
BDE 28 (2,4,4'-tribromo-)	BDE 155 (2,2',4,4',6,6'-hexabromo-)
BDE 30 (2,4,6-tribromo-)	BDE 156 (2,3,3',4,4',5-hexabromo-)
BDE 33 (2',3,4-tribromo-)	BDE 181 (2,2',3,4,4',5,6-heptabromo-)
BDE 47 (2,2',4,4'-tetrabromo-)	BDE 183 (2,2',3,4,4',5',6-heptabromo-)
BDE 49 (2,2',4,5'-tetrabromo-)	BDE 190 (2,3,3',4,4',5,6-heptabromo-)
BDE 66 (2,3',4,4'-tetrabromo-)	BDE 191 (2,3,3',4,4',5,6'-heptabromo-)
BDE 71 (2,3',4',6-tetrabromo-)	BDE 196 (2,2',3,3',4,4',5,6'-octabromo-)
BDE 75 (2,4,4',6-tetrabromo-)	BDE 197 (2,2',3,3',4,4',6,6'-octabromo-)
BDE 85 (2,2',3,4,4'-pentabromo-)	BDE 203 (2,2',3,4,4',5,5',6-octabromo-)
BDE 99 (2,2',4,4',5-pentabromo-)	BDE 205 (2,3,3',4,4',5,5',6-octabromo-)
BDE 100 (2,2',4,4',6-pentabromo-)	BDE 206 (2,2',3,3',4,4',5,6,6'-nonabromo-)
BDE 116 (2,3,4,5,6-pentabromo-)	BDE 207 (2,2',3,3',4,4',5,6,6'-nonabromo-)
BDE 118 (2,3',4,4',5-pentabromo-)	BDE 208 (2,2',3,3',4,5,5',6,6'-nonabromo-)
BDE 119 (2,3',4,4',6-pentabromo-)	BDE 209 (decabromo-)

Table 2. Diskette Data File Format (File: SED13.\*)

**NIST Intercomparison Exercise Program for Organics in the Marine Environment**  
**NIST QA Program**  
**Sample: QA05SED13 - Marine Sediment XIII**

Please fill in all blanks; Use requested units of concentration; Report results as if 3 figures were significant  
DO NOT INSERT ROWS OR COLUMNS WITHIN THIS TABLE. DO NOT MOVE CELLS.

- If necessary, add additional data/information at the end of the table.
- Use one of the following if no concentration is reported for an analyte:
  - NA = Not analyzed/determined; <"conc" = <detection limit conc.; Other = other, explain in a note at end of table (DL = "below detection limit" may be used, but <"conc", e.g., <8, is preferable.)
  - Do not use parentheses or negative numbers to indicate "less than detection limit".

Reporting Date (m/d/y): \_\_\_\_\_  
Laboratory: \_\_\_\_\_  
Submitted by: \_\_\_\_\_

**BRIEF DESCRIPTION OF PROCEDURES USED:**

Approximate amount of sample extracted:  
Sediment XIII \_\_\_\_\_ g, wet basis; SRM 1941b \_\_\_\_\_ g, dry basis

Method used for determining percentage water: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Were "wet" or "dry" samples extracted?  
Sediment XIII \_\_\_\_\_ SRM 1941b \_\_\_\_\_

Extraction method: \_\_\_\_\_  
Extraction solvent: \_\_\_\_\_  
Extraction time: \_\_\_\_\_  
Extraction - other: \_\_\_\_\_

Sample extract cleanup method: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Analytical method used (e.g., GC-FID, GC-ECD):  
Analyt. Instr. Column Phase Col. Length, m Col. i.d., mm Col. film thickness, µm  
PAH \_\_\_\_\_  
Pesticides \_\_\_\_\_  
PCB Congeners \_\_\_\_\_  
BDE Congeners \_\_\_\_\_

Method of quantitation (IS = internal standard, ES = external standard):  
PAH \_\_\_\_\_  
Pesticides \_\_\_\_\_  
PCB Congeners \_\_\_\_\_  
BDE Congeners \_\_\_\_\_

IF internal standard method was used, please complete the following section:

Identity of internal standards/surrogates used that were:

Added PRIOR to extraction of sample:  
PAH \_\_\_\_\_  
Pesticides \_\_\_\_\_  
PCB Congeners \_\_\_\_\_  
BDE Congeners \_\_\_\_\_

Added after extraction/cleanup and JUST PRIOR to chromatographic analysis:  
PAH \_\_\_\_\_  
Pesticides \_\_\_\_\_  
PCB Congeners \_\_\_\_\_  
BDE Congeners \_\_\_\_\_

Any others? Added at what point in analyses \_\_\_\_\_  
PAH \_\_\_\_\_  
Pesticides \_\_\_\_\_  
PCB Congeners \_\_\_\_\_  
BDE Congeners \_\_\_\_\_

IS/surrogate standards used for quantitation calculations were:  
\_\_\_\_\_ those added prior to extraction  
\_\_\_\_\_ those added after extraction/cleanup and just prior to chromatographic analysis

If the IS/surrogates added after extraction/cleanup extraction were used for quantitation,  
were results corrected for percent recovery? \_\_\_\_\_

Percent recovery range: PAH \_\_\_\_\_  
Pesticides \_\_\_\_\_  
PCB Congeners \_\_\_\_\_  
BDE Congeners \_\_\_\_\_

Calibration Curve

	Points	Conc. Range	Analytes outside of calibration curve calibration range
PAH	_____	_____	_____
Pesticides	_____	_____	_____
PCB Congeners	_____	_____	_____
BDE Congeners	_____	_____	_____

Were PCB congeners separated from pesticides prior to GC? \_\_\_\_\_

Please note any differences in procedures used for SRM 1941b analyses from those for Marine Sediment XIII described above:

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**RESULTS:**

PERCENT WATER & total organic carbon, TOC (List each result if determined more than once. Enter results as a number, for example 90.0. DO NOT change format of cell to percent.)

	Sediment XIII (percent)	Sediment XIII (percent)	Sediment XIII (percent)	SRM 1941b (percent)	SRM 1941b (percent)	SRM 1941b (percent)
Water	_____	_____	_____	_____	_____	_____
TOC	_____	_____	_____	_____	_____	_____
<b>PAH ANALYSES</b>	Sediment XIII Batch A Sample 1	Sediment XIII Batch B Sample 2	Sediment XIII Batch C Sample 3	SRM 1941b Batch A Sample 1	SRM 1941b Batch B Sample 2	SRM 1941b Batch C Sample 3
Analyst (Initials)	_____	_____	_____	_____	_____	_____
Date(s) of measurements (m/d/y)	_____	_____	_____	_____	_____	_____
Sample Jar number	_____	_____	_____	_____	_____	_____

	Sediment XIII Sample 1 (ng/g dry mass)	Sediment XIII Sample 2 (ng/g dry mass)	Sediment XIII Sample 3 (ng/g dry mass)	SRM 1941b Sample 1 (ng/g dry mass)	SRM 1941b Sample 2 (ng/g dry mass)	SRM 1941b Sample 3 (ng/g dry mass)
naphthalene	_____	_____	_____	_____	_____	_____
2-methylnaphthalene	_____	_____	_____	_____	_____	_____
1-methylnaphthalene	_____	_____	_____	_____	_____	_____
biphenyl	_____	_____	_____	_____	_____	_____
2,6-dimethylnaphthalene	_____	_____	_____	_____	_____	_____
acenaphthylene	_____	_____	_____	_____	_____	_____
acenaphthene	_____	_____	_____	_____	_____	_____
1,6,7-trimethylnaphthalene	_____	_____	_____	_____	_____	_____
fluorene	_____	_____	_____	_____	_____	_____
phenanthrene	_____	_____	_____	_____	_____	_____
anthracene	_____	_____	_____	_____	_____	_____
1-methylphenanthrene	_____	_____	_____	_____	_____	_____
fluoranthene	_____	_____	_____	_____	_____	_____
pyrene	_____	_____	_____	_____	_____	_____
benz[a]anthracene	_____	_____	_____	_____	_____	_____
chrysene	_____	_____	_____	_____	_____	_____
triphenylene	_____	_____	_____	_____	_____	_____
benzo[b]fluoranthene	_____	_____	_____	_____	_____	_____
benzo[j]fluoranthene	_____	_____	_____	_____	_____	_____
benzo[k]fluoranthene	_____	_____	_____	_____	_____	_____
benzo[e]pyrene	_____	_____	_____	_____	_____	_____
benzo[a]pyrene	_____	_____	_____	_____	_____	_____
perylene	_____	_____	_____	_____	_____	_____
indeno[1,2,3-cd]pyrene	_____	_____	_____	_____	_____	_____
dibenz[a,h]anthracene	_____	_____	_____	_____	_____	_____
benzo[ghi]perylene	_____	_____	_____	_____	_____	_____

**PESTICIDE ANALYSES**

	Sediment XIII Batch A Sample 1	Sediment XIII Batch B Sample 2	Sediment XIII Batch C Sample 3	SRM 1941b Batch A Sample 1	SRM 1941b Batch B Sample 2	SRM 1941b Batch C Sample 3
Analyst (Initials)	_____	_____	_____	_____	_____	_____
Date(s) of measurements (m/d/y)	_____	_____	_____	_____	_____	_____
Sample Jar number	_____	_____	_____	_____	_____	_____

	Sediment XIII Sample 1 (ng/g dry mass)	Sediment XIII Sample 2 (ng/g dry mass)	Sediment XIII Sample 3 (ng/g dry mass)	SRM 1941b Sample 1 (ng/g dry mass)	SRM 1941b Sample 2 (ng/g dry mass)	SRM 1941b Sample 3 (ng/g dry mass)
alpha-HCH (a-BHC)	_____	_____	_____	_____	_____	_____
hexachlorobenzene	_____	_____	_____	_____	_____	_____
gamma-HCH (g-BHC,lindane)	_____	_____	_____	_____	_____	_____
beta-HCH (b-BHC)	_____	_____	_____	_____	_____	_____
heptachlor	_____	_____	_____	_____	_____	_____
aldrin	_____	_____	_____	_____	_____	_____
heptachlor epoxide	_____	_____	_____	_____	_____	_____
oxychlordane	_____	_____	_____	_____	_____	_____
gamma-chlordane	_____	_____	_____	_____	_____	_____
2,4'-DDE	_____	_____	_____	_____	_____	_____
endosulfan I	_____	_____	_____	_____	_____	_____
cis-chlordane (alpha-chlordane)	_____	_____	_____	_____	_____	_____
trans-nonachlor	_____	_____	_____	_____	_____	_____
dieldrin	_____	_____	_____	_____	_____	_____
4,4'-DDE	_____	_____	_____	_____	_____	_____
2,4'-DDD	_____	_____	_____	_____	_____	_____
endrin	_____	_____	_____	_____	_____	_____
endosulfan II	_____	_____	_____	_____	_____	_____
4,4'-DDD	_____	_____	_____	_____	_____	_____
2,4'-DDT	_____	_____	_____	_____	_____	_____
cis-nonachlor	_____	_____	_____	_____	_____	_____
4,4'-DDT	_____	_____	_____	_____	_____	_____
mirex	_____	_____	_____	_____	_____	_____
endosulfan sulfate	_____	_____	_____	_____	_____	_____
chlorpyrifos	_____	_____	_____	_____	_____	_____

**PCB CONGENER ANALYSES**

	Sediment XIII Batch A Sample 1	Sediment XIII Batch B Sample 2	Sediment XIII Batch C Sample 3	SRM 1941b Batch A Sample 1	SRM 1941b Batch B Sample 2	SRM 1941b Batch C Sample 3
Analyst (Initials)	_____	_____	_____	_____	_____	_____
Date(s) of measurements (m/d/y)	_____	_____	_____	_____	_____	_____
Sample Jar number	_____	_____	_____	_____	_____	_____

	Sediment XIII Sample 1 (ng/g dry mass)	Sediment XIII Sample 2 (ng/g dry mass)	Sediment XIII Sample 3 (ng/g dry mass)	SRM 1941b Sample 1 (ng/g dry mass)	SRM 1941b Sample 2 (ng/g dry mass)	SRM 1941b Sample 3 (ng/g dry mass)
PCB 8	_____	_____	_____	_____	_____	_____
PCB 18	_____	_____	_____	_____	_____	_____
PCB 28	_____	_____	_____	_____	_____	_____
PCB 31	_____	_____	_____	_____	_____	_____
PCB 44	_____	_____	_____	_____	_____	_____
PCB 49	_____	_____	_____	_____	_____	_____
PCB 52	_____	_____	_____	_____	_____	_____
PCB 66	_____	_____	_____	_____	_____	_____
PCB 95	_____	_____	_____	_____	_____	_____
PCB 99	_____	_____	_____	_____	_____	_____
PCB 101	_____	_____	_____	_____	_____	_____
PCB 105	_____	_____	_____	_____	_____	_____
PCB 118	_____	_____	_____	_____	_____	_____
PCB 128	_____	_____	_____	_____	_____	_____
PCB 138	_____	_____	_____	_____	_____	_____
PCB 149	_____	_____	_____	_____	_____	_____
PCB 153	_____	_____	_____	_____	_____	_____
PCB 156	_____	_____	_____	_____	_____	_____
PCB 170	_____	_____	_____	_____	_____	_____
PCB 180	_____	_____	_____	_____	_____	_____
PCB 187	_____	_____	_____	_____	_____	_____
PCB 194	_____	_____	_____	_____	_____	_____
PCB 195	_____	_____	_____	_____	_____	_____
PCB 206	_____	_____	_____	_____	_____	_____
PCB 209	_____	_____	_____	_____	_____	_____

**BDE CONGENER ANALYSES**

	Sediment XIII Batch A Sample 1	Sediment XIII Batch B Sample 2	Sediment XIII Batch C Sample 3	SRM 1941b Batch A Sample 1	SRM 1941b Batch B Sample 2	SRM 1941b Batch C Sample 3
Analyst (Initials)	_____	_____	_____	_____	_____	_____
Date(s) of measurements (m/d/y)	_____	_____	_____	_____	_____	_____
Sample Jar number	_____	_____	_____			
	Sediment XIII Sample 1 (ng/g dry mass)	Sediment XIII Sample 2 (ng/g dry mass)	Sediment XIII Sample 3 (ng/g dry mass)	SRM 1941b Sample 1 (ng/g dry mass)	SRM 1941b Sample 2 (ng/g dry mass)	SRM 1941b Sample 3 (ng/g dry mass)
BDE 15	_____	_____	_____	_____	_____	_____
BDE 17	_____	_____	_____	_____	_____	_____
BDE 25	_____	_____	_____	_____	_____	_____
BDE 28	_____	_____	_____	_____	_____	_____
BDE 30	_____	_____	_____	_____	_____	_____
BDE 33	_____	_____	_____	_____	_____	_____
BDE 47	_____	_____	_____	_____	_____	_____
BDE 49	_____	_____	_____	_____	_____	_____
BDE 66	_____	_____	_____	_____	_____	_____
BDE 71	_____	_____	_____	_____	_____	_____
BDE 75	_____	_____	_____	_____	_____	_____
BDE 85	_____	_____	_____	_____	_____	_____
BDE 99	_____	_____	_____	_____	_____	_____
BDE 100	_____	_____	_____	_____	_____	_____
BDE 116	_____	_____	_____	_____	_____	_____
BDE 118	_____	_____	_____	_____	_____	_____
BDE 119	_____	_____	_____	_____	_____	_____
BDE 138	_____	_____	_____	_____	_____	_____
BDE 153	_____	_____	_____	_____	_____	_____
BDE 154	_____	_____	_____	_____	_____	_____
BDE 155	_____	_____	_____	_____	_____	_____
BDE 156	_____	_____	_____	_____	_____	_____
BDE 181	_____	_____	_____	_____	_____	_____
BDE 183	_____	_____	_____	_____	_____	_____
BDE 190	_____	_____	_____	_____	_____	_____
BDE 191	_____	_____	_____	_____	_____	_____
BDE 196	_____	_____	_____	_____	_____	_____
BDE 197	_____	_____	_____	_____	_____	_____
BDE 203	_____	_____	_____	_____	_____	_____
BDE 205	_____	_____	_____	_____	_____	_____
BDE 206	_____	_____	_____	_____	_____	_____
BDE 207	_____	_____	_____	_____	_____	_____
BDE 208	_____	_____	_____	_____	_____	_____
BDE 209	_____	_____	_____	_____	_____	_____

(Any additional data/information should be added here.)

**Appendix C: Laboratory Notes Accompanying Data,  
Mussel Tissue XII**

Lab	Additional notes for Mussel Tissue XII					
1a	Tissue XII (percent)	Tissue XII (percent)	Tissue XII (percent)	SRM 2977 (percent)	SRM 2977 (percent)	SRM 2977 (percent)
% water	6.28	5.34	6.44	4.71	4.65	4.60
	Tissue XII Sample 1	Tissue XII Sample 2	Tissue XII Sample 3	SRM 2977 Sample 1	SRM 2977 Sample 2	SRM 2977 Sample 3
	(ng/g dry mas 1g/g dry mas 1g/g dry mas 1g/g dry mas 1g/g dry mas 1g/g dry mass)					
chrysene/triphenylene	131	124	129	88.7	84.4	87.6
dibenz[a,h + a,c]anthracene	6.33	6.59	6.61	2.25	2.13	2.07
PCB 138/163	84.9	82.5	81.3	11.9	12.5	12.9
PCB 153/132	121	119	119	13.8	14.7	15.1
1c	* BDEs determined by GC-MS NCL. 13C BDE was in sample as internal standard and interferes with determination of native.					
4	Tissue XII Sample 1	Tissue XII Sample 2	Tissue XII Sample 3	SRM 2977 Sample 1	SRM 2977 Sample 2	SRM 2977 Sample 3
Percent water	8.0	7.8	7.8	12.8	13.0	12.6
	Tissue XII Sample 1	Tissue XII Sample 2	Tissue XII Sample 3	SRM 2977 Sample 1	SRM 2977 Sample 2	SRM 2977 Sample 3
	(ng/g dry mas 1g/g dry mas 1g/g dry mas 1g/g dry mas 1g/g dry mas 1g/g dry mass)					
dibenzothiophene	34.3	33.1	32.9	30.5	30.3	30.3
retene	10.5	10.3	10.5	3.88	3.30	4.02
nonachlor III	<1.00	<0.397	<0.609	<0.690	<0.647	<0.618
PCB 17	8.66	7.94	8.37	2.15	2.23	1.85
PDB 33	5.95	6.21	6.27	1.77	1.64	1.74
PDB 70	62.0	60.2	59.6	3.57	3.40	3.56
PDB 74	31.7	30.6	30.9	2.73	2.62	2.62
PCB 82	10.4	9.94	10.0	0.667	0.542	0.586
PCB 87	39.9	37.9	37.8	1.89	1.56	1.82
PCB 110	81.7	80.0	79.3	6.65	6.24	6.52
PCB 151	15.8	15.8	15.5	3.17	3.16	3.15
PCB 158	9.47	9.10	9.15	<0.689	<0.646	<0.616
PCB 171	4.09	4.44	4.19	<0.692	<0.649	<0.620
PCB 177	9.71	9.87	9.72	1.95	1.97	2.00
PCB 183	11.3	11.2	11.1	0.703	0.678	0.700
PCB 191	<1.01	<0.400	<0.613	<0.695	<0.652	<0.622
PCB 199	<0.759	<0.300	<0.460	0.671	0.714	0.705
PCB 205	<1.01	<0.398	<0.611	<0.693	<0.650	<0.620
PCB 208	<1.01	<0.400	<0.613	<0.695	<0.652	<0.622
	Notes: I - cannot be reported due to analytical interference which is not apparent in Tissue XII. Chrysene includes triphenylene; BkF includes B[F]; dibenz[a,h]anthracene includes dibenz[a,c]anthracene. PCB 101 includes PCB 90; PCB 138 includes PCB 163 and PCB 164; PCB 153 includes PCB 132; PCB 187 includes PCB 159 and PCB 182.					
5	INT = interference					
7	1. For 3rd PT sample (Tissue XII), residue of Na2SO4 or water may be present in the extract. 2. PCB 101 and PCB 90 are coeluted.					

8	<p>All results are in wet weight as %moisture analysis was not performed on the tissue unknown sample or SRM.  Only a duplicate analysis was performed on the measurements for the unknown sample due to limited unknown sample volume for PAH, PCB and BDE analyses.  Only a duplicate analysis was performed on the SRM due to limited SRM volume for PAH, PCB and BDD analyses.  Reporting limit for BDE's are based on laboratory background levels and not calibration curve range.</p> <p><b>PCB Coelutions:</b>  PCB-8/PCB-5  PCB-43/PCB-49  PCB-52/PCB-73  PCB-66/PCB-80  PCB-89/PCB-90/PCB-101  PCB-93/PCB-95  PCB-105/PCB-127  PCB-106/PCB-118  PCB-138/PCB-163/PCB-164  PCB-139/PCB-149  PCB-170/PCB-190  PCB-182/PCB-187</p> <p><b>BDE Coelutions:</b>  BDE-17/BDE-25  BDE-28/BDE-33  BDE-119/BDE-120  BDE-198/BDE-203</p>
9	<p>The analyst notes that the following data are estimates due to chromatographic interferents:  SRM 1 - PCB 180  Tissue XII Sample 1 - PCB 138  SRM 2 - PCB 138 &amp; PCB 180  SRM 3 - PCB 180</p>
10	<p>PLEASE NOTE: Samples highlighted with color signify co-eluting congeners/compounds:  PCB : PCB 28+31  PAH : Chrysene + Triphenylene  PESTICIDE: 2,4' DDD + endrin</p> <p>Only completed duplicate of SRM 2977</p>
11	<p>PCB Co-eluters: PCB-18/30, PCB-28/20/21/33, PCB-44/47/65, PCB-49/69, PCB-52/43/73, PCB-99/83, PCB-101/90/113, PCB-128/166  PCB Co-eluters: PCB-138/163/129/160, PCB-149/147, PCB-153/168, PCB-156/157, PCB-180/193</p>
12	<p>NA = not analyzed  "other" = congener co-elutes as follows:  PCB co-elutions: PCB 18/30, 20/28, 44/47/65, 95/100/93/102/98, 99/83, 101/90/113, 128/166, 138/163/129/160, 149/147, 153/168, 156/157, 180/193  BDE co-elutions: BDE 17/25, 28/33, 119/120, 138/166  PAH co-elutions: triphenylene/chrysene, benzo[b]fluoranthene/benzo[j]fluoranthene, 1,2,6-trimethynaphthalene/1,2,7-trimethynaphthalene/1,6,7-trimethynaphthalene/2,3,5-trimethynaphthalene, dibenz[a,h]anthracene/dibenz[a,c]anthracene</p>



**Appendix D: Laboratory Notes Accompanying Data, Marine  
Sediment XIII**

Lab	Additional notes for Sediment XIII					
1a	Sediment XIII Sample 1 (ng/g dry mass)	Sediment XIII Sample 2 (ng/g dry mass)	Sediment XIII Sample 3 (ng/g dry mass)	SRM 1941b Sample 1 (ng/g dry mass)	SRM 1941b Sample 2 (ng/g dry mass)	SRM 1941b Sample 3 (ng/g dry mass)
	chrysene/triphenylene	409	406	416	445	441
	dibenz[a,h + a,c]anthracene	87.3	86.8	87.4	84.7	87.5
	PCB 138/163	4.89	4.89	4.96	4.91	4.74
	PCB 153/132	6.56	6.41	5.53	6.27	6.53
1c	* BDEs determined by GC-MS NCI. 13C BDE was in sample as internal standard and interferes with determination of native.					
2	The SRM we used for the sediment analysis was SRM 1944. The sample was extracted dry About 0.3 g were extracted					
	<b>RESULTS: (for SRM 1944)</b>			SRM 1944	SRM 1944	SRM 1944
	<b>PAH ANALYSES</b>			Batch A	Batch B	Batch C
				Sample 1	Sample 2	Sample 3
	Analyst (Initials)			JGL	JGL	JGL
	Date(s) of measurements (m/d/y)			7/15/2005	7/22/2005	7/29/2005
				(ng/g dry mass)	(ng/g dry mass)	(ng/g dry mass)
	naphthalene			1620	1605	1510
	2-methylnaphthalene			911	882	949
	1-methylnaphthalene			586	568	571
	biphenyl			257	259	271
	2,6-dimethylnaphthalene			285	339	610
	acenaphthylene			421	424	479
	acenaphthene			490	494	486
	1,6,7-trimethylnaphthalene			NA	NA	NA
	fluorene			987	963	937
	phenanthrene			5690	5870	6060
	anthracene			1550	1510	1640
	1-methylphenanthrene			1740	1690	1720
	fluoranthene			10300	10100	10000
	pyrene			9810	10900	10400
	benz[a]anthracene			5080	5170	5410
	chrysene			5590	5580	5440
	triphenylene			NA	NA	NA
	benzo[b]fluoranthene			5400	6350	3750
	benzo[j]fluoranthene			NA	NA	NA
	benzo[k]fluoranthene			2260	2080	2580
	benzo[e]pyrene			3750	3420	3280
	benzo[a]pyrene			4440	4560	3710
	perylene			1110	1220	1110
	indeno[1,2,3-cd]pyrene			2830	2510	3130
	dibenz[a,h]anthracene			458	359	456
	benzo[ghi]perylene			2930	2770	3240

4		Sediment XIII Batch A Sample 1 DarB	Sediment XIII Batch B Sample 2 DarB	Sediment XIII Batch C Sample 3 DarB	SRM 1941b Batch A Sample 1 DarB		
	Analyst (Initials)	7/19/2005	7/19/2005	7/19/2005	7/19/2005		
	Date(s) of measurements (m/d/y)	110	134	158			
	Sample Jar number	59.9	57.2	58.9	60.2		
	dibenzothiophene	23.7	20.5	21.5	25.0		
	retene						
		Sediment XIII Batch A Sample 1 RHB	Sediment XIII Batch B Sample 2 RHB	Sediment XIII Batch C Sample 3 RHB	SRM 1941b Batch A Sample 1 RHB	SRM 1941b Batch B Sample 2 RHB	SRM 1941b Batch C Sample 3 RHB
	Analyst (Initials)	12/5/2005	12/5/2005	12/5/2005	12/5/2005	12/5/2005	12/5/2005
	Date(s) of measurements (m/d/y)	110	134	158			
	Sample Jar number	<0.548	<0.479	<0.433	<0.474	<0.651	<0.505
	nonachlor III	1.31	1.34	1.31	1.37	1.19	1.36
	PCB 17	2.39	2.37	2.48	2.50	2.22	2.78
	PCB 33	5.77	5.66	5.80	5.69	5.17	5.56
	PCB 70	2.23	2.20	2.22	2.29	2.08	2.21
	PCB 74	0.551	0.515	0.547	0.520	0.479	0.567
	PCB 82	1.74	1.59	1.90	1.55	1.45	1.57
	PCB 87	6.72	6.48	7.11	6.51	5.88	6.40
	PCB 110	1.26	1.48	1.28	1.20	1.07	1.20
	PCB 151	<0.546	0.549	0.574	<0.472	<0.650	<0.504
	PCB 158	<0.549	0.575	<0.434	<0.475	<0.653	<0.507
	PCB 171	0.928	1.42	0.948	0.912	0.807	0.912
	PCB 177	0.902	1.40	0.916	0.862	0.760	0.877
	PCB 183	<0.551	<0.482	<0.436	<0.477	<0.656	<0.509
	PCB 191	1.50	2.06	1.45	1.49	1.33	1.50
	PCB 199	<0.549	<0.480	<0.434	<0.475	<0.654	<0.507
	PCB 205	1.15	1.21	1.16	1.21	0.950	1.15
	PCB 208						
	Notes:	Chrysene includes triphenylene; BkF includes BjF; dibenz[a,h]anthracene includes dibenz[a,c]anthracene. PCB 101 includes PCB 90; PCB 138 includes PCB 163 and PCB 164; PCB 153 includes PCB 132; PCB 187 includes PCB 159 and PCB 182					
7		1. PCB 101 and PCB 90 are coeluted. 2. The glassware containing the extract of the 2nd SRM sample was broken during operation and the sample was completely lost.					
8		Only a duplicate analysis was performed on the measurements for the unknown sample due laboratory oversight for PCB and BDE analyses. Only a duplicate analysis was performed on the SRM due to laboratory oversight for PAH, PCB and BDD analyses. Reporting limit for BDE's are based on laboratory background levels and not calibration curve range. BDE-209 could not be postively detected due to the loss of 13C-BDE-209 during analytical process possibly associated with matrix. <b>PCB Coelutions:</b> PCB-8/PCB-5 PCB-43/PCB-49 PCB-52/PCB-73 PCB-66/PCB-80 PCB-89/PCB-90/PCB-101 PCB-93/PCB-95 PCB-105/PCB-127 PCB-106/PCB-118 PCB-138/PCB-163/PCB-164 PCB-139/PCB-149 PCB-170/PCB-190 PCB-182/PCB-187 <b>BDE Coelutions:</b> BDE-17/BDE-25 BDE-28/BDE-33 BDE-119/BDE-120 BDE-198/BDE-203					

10	<p>PLEASE NOTE: Samples highlighted with color signify co-eluting congeners/compounds:  PCB : PCB 28+31  PAH : Chrysene + Triphenylene  PESTICIDE: 2,4' DDD + endrin  Only completed duplicate of SRM 1941b, and trial 1 of Marine Sediment XIII was LOST  due to evaporation at GCMS stage.  OTHER= LOST sample see note above</p>
11	<p>PCB Co-eluters: PCB-18/30, PCB-28/20/21/33, PCB-44/47/65, PCB-49/69, PCB-52/43/73, PCB-99/83, PCB-101/90/113, PCB-128/166,  PCB Co-eluters: PCB-138/163/129/160, B93PCB-149/147, PCB-153/168, PCB-156/157, PCB-180/193</p>
12	<p>NA = not analyzed  "other" = congener co-elutes as follows:  PCB co-elutions: PCB 18/30, 20/28, 44/47/65, 95/100/93/102/98, 99/83, 101/90/113, 128/166, 138/163/129/160, 149/147, 153/168, 156/157,  180/193  BDE co-elutions: BDE 17/25, 28/33, 119/120, 138/166  PAH co-elutions: triphenylene/chrysene, benzo[b]fluoranthene/benzo[j]fluoranthene,  1,2,6-trimethynaphthalene/1,2,7-trimethynaphthalene/1,6,7-trimethynaphthalene/2,3,5-trimethynaphthalene,  dibenz[a,h]anthracene/dibenz[a,c]anthracene</p>

## **Appendix E: Laboratory Methods Used, Mussel Tissue XII**

Lab #	Reported	g extracted QA05TIS12	g extracted SRM 2977	% TEO Determination	Extraction Method	Extraction Solvent	Extraction Time	Extraction other
1a	11/28/2005	1 dry	3 dry	gravimetric using 100 µL of extract	PFE	dichloromethane	3 cycles each 5 min	temp = 100 °C; pressure 2000 psi; 3 static cycles / sample
1c	2/22/2006	2 dry	2 dry	gravimetric using portion of extract	PFE	dichloromethane	3 cycles each 5 min	temp = 100 °C; pressure 2000 psi; 3 static cycles / sample
3	12/15/2005	2 dry	2 dry	not analyzed	Sonication	dichloromethane	3 x 2.0 min each	
4	1/4/2006	0.9 dry	0.9 dry	gravimetric	PFE	dichloromethane	approx. 16 min	temp = 100 °C; pressure 2000 psi
5	1/10/2006	1.2 dry	1.2 dry	gravimetric using 1/6 of extract	polytron	dichloromethane (3 x 100 mL)	3 x 2.0 min each	filtered on glass fiber-filters (1.2 µm pore size) during extraction
6	1/13/2006	1 dry	1 dry	gravimetric using 1/10 of extract	microscale extraction 3570	acetone: dichloromethane	24 h	solvent changes at specified time intervals
7	1/13/2006	1 dry	3 dry	gravimetric using 1/10 of extract	Soxhlet EPA 3540	acetone:hexane (1:1, volume fraction)	24 h	
8	1/16/2006	0.5 dry	1 dry		Soxhlet	dichloromethane for PAHs; toluene for PCBs and PBDEs	16 h	
9	1/17/2006	2 dry	2 dry	gravimetric using portion of extract	PFE	dichloromethane	2 x 2 min high speed extractions followed by 30 min on shaker table	
10	1/25/2006	1 dry	1 dry	gravimetric	Soxhlet	dichloromethane	18 h	
11	2/6/2006	1.5 dry	1.5 dry	gravimetric using portion of extract	PFE	dichloromethane		
12	2/6/2006	1 dry	1 dry	gravimetric	Soxhlet	dichloromethane	16 h	

Lab #	Sample extract cleanup method	PCBs and Pesticides Separated?	Method of quantitation
1a	size exclusion chromatography (SEC); silica solid phase extraction (SPE) column; condition and elute with 15 mL of 10 % dichloromethane in hexane	no	IS
1c	1.8 g alumina column (5% deactivated) with 9 mL 35 % dichloromethane in hexane; 0.5 g aminopropyl SPE column using 10 mL of 10% dichloromethane in hexane	yes	IS
3	silica gel; activated copper; sulfuric acid	no	IS
4	Gravity flow column with silica gel and neutral alumina, followed by HPLC-SEC to elute fraction containing analytes of interest	no	IS
5	SEC; fractionated on 7.4% deactivated silica gel	yes	IS
6	SEC; silica gel cartridges	no	IS
7	SEC for PAH, PCB, Pesticide, and PBDE; Florisil for PCB, Pesticide, and PBDE	no	IS
8	silica gel only for PAH; silica gel and acid alumina for PCB and PBDE	some	IS
9	alumina gravity column; HPLC-SEC fractionation	no	IS
10	alumina for PAHs; Florisil with petroleum ether for PCBs and with 1:1 dichloromethane:petroleum ether for pesticides	yes	IS
11	alumina added to PFE extraction cells prior to extraction; SEC; acid/base silica column	yes	IS/ES
12	PAHs - SEC, silica; pesticides - SEC, Florisil; PCBs and PBDEs - SEC, Florisil, acid/base silica, alumina	no	IS

Lab #	PAHs			Calibration Curve		
	Instrument	Phase	Dimensions	# points	range	
1a	GC/MS	HP-5MS	30m x 0.25 mm, 0.25µm film	5	5 ng - 1500 ng extracted	
1c	GC/MS	DB-XLB	30m x 0.18 mm, 0.18µm film	6	1.72 ng/g - 983 ng/g	
3	GC/MS	RTX-5 Sil MS	30m x 0.28 mm, 0.25µm film	5	5 ng/mL - 2000 ng/mL	
4	GC/MS	DB-5	60m x 0.25 mm, 0.25µm film	7	0.011 ng/µL - 1.1 ng/µL	
5	GC/MS	HP-5MS	30m x 0.25 mm, 0.25µm film	5	10 ng/mL - 500 ng/mL	
6	GC/MS	RTX-5	60m x 0.25 mm, 0.25µm film	7	10 ppb - 10000 ppb	
7	GC/MS	DB-XLB	60m x 0.25 mm, 0.25µm film	1	50 ppb	
8	GC/MS	DB-5MS	30m x 0.25 mm, 0.25µm film	5	25 µg - 2500 µg	
9	GC/MS	DB-5	60m x 0.25 mm, 0.25µm film	8	0.005 ng/µL - 10 ng/µL	
10	GC/MS	DB-5	30m x 0.25 mm, 0.25µm film	5	5 ng - 100 ng	
12	GC/MS	DB-5	30m x 0.25 mm, 0.25µm film	5	50 ng/mL - 5000 ng/mL	

Lab #	PBDEs			Calibration Curve		
	Instrument	Phase	Dimensions	# points	range	
1c	GC/MS NCI	DB-XLB	30m x 0.18 mm, 0.18µm film	5	0.07 ng/g - 386 ng/g	
4	GC/MS	DB-5	60m x 0.25 mm, 0.25µm film	4	0.0025 ng/µL - 1 ng/µL	
7	GC/HRMS	DB-5MS	30m x 0.25 mm, 0.25µm film	7	0.05 ppb - 100 ppb	
8	HRGC/MS	DB-5HT	30m x 0.25 mm, 0.1µm film	5	20 pg - 500000 pg	
12	GC/HRMS	DB-5HT	30m x 0.25 mm, 0.1µm film	5	1 ng/mL - 2500 ng/mL	



Lab #	PCBs			PESTICIDES		
	Instrument	Phase	Dimensions	Instrument	Phase	Dimensions
1a	GC/MS	HP-5MS	30m x 0.25 mm, 0.25um 30m x 0.18 mm, 0.18um	GC/MS	HP-5MS	30m x 0.25 mm, 0.25um 30m x 0.18 mm, 0.18um
1c	GC/MS	DB-XLB	60m x 0.25 mm, 0.25um	GC/MS	DB-XLB	60m x 0.25 mm, 0.25um
3	GC/MS	RTX-5	60m x 0.25 mm, 0.25um	GC/MS	RTX-5	60m x 0.25 mm, 0.25um
4	GC/MS	DB-5	60m x 0.25 mm, 0.25um	GC/MS	DB-5	60m x 0.25 mm, 0.25um
5	GC-ECD	HP-5MS/DB-XLB	30m x 0.25 mm, 0.25um	GC-ECD	HP-5MS/DB-XLB	30m x 0.25 mm, 0.25um
6	GC/MS	RTX-5	60m x 0.25 mm, 0.25um	GC-ECD	RTX-5	60m x 0.25 mm, 0.25um
7	GC/MS	DB-XLB	30m x 0.18 mm, 0.18um	GC/MS	DB-XLB	30m x 0.18 mm, 0.18um
8	HRGC/MS	DB-5	60m x 0.32 mm, 0.25um 60m x 0.25 mm, 0.25um	GC-ECD	DB-5	60m x 0.25 mm, 0.25um
9	GC-ECD	DB-5	60m x 0.25 mm, 0.25um	GC-ECD	DB-5	60m x 0.25 mm, 0.25um
10	GC-ECD	DB-5	30m x 0.25 mm, 0.25um	GC-ECD	DB-5	60m x 0.25 mm, 0.25um
11	GC/HRMS	SPB-Octyl				
12	GC/HRMS	SPB-Octyl	30m x 0.25 mm, 0.1um film	GC/HRMS	DB-5	60m x 0.25 mm, 0.1um film

Instrument	Phase	Dimensions	# points	range
GC/MS	HP-5MS	30m x 0.25 mm, 0.25um	5	5 ng - 300 ng extracted
GC/MS	DB-XLB	60m x 0.25 mm, 0.25um	6	0.65 ng/g - 244 ng/g
GC/MS	RTX-5	60m x 0.25 mm, 0.25um	5	2 ng/mL - 100 ng/mL
GC/MS	DB-5	60m x 0.25 mm, 0.25um	6	0.0012 ng/ $\mu$ L - 0.32 ng/ $\mu$ L
GC-ECD	HP-5MS/DB-XLB	30m x 0.25 mm, 0.25um	5	5 ng/mL - 50 ng/mL
GC-ECD	RTX-5	60m x 0.25 mm, 0.25um	7	0.2 ppb - 200 ppb
GC/MS	DB-XLB	30m x 0.18 mm, 0.18um	1	20 ppb
GC-ECD	DB-5	60m x 0.25 mm, 0.25um	7	0.001 ng/ $\mu$ L - 1 ng/ $\mu$ L
GC-ECD	DB-5	60m x 0.25 mm, 0.25um	5	1 ng - 10 ng
GC/HRMS	DB-5	60m x 0.25 mm, 0.1um film	5	10 ng/mL - 4000 ng/mL

Lab #	IS/surrogate added prior to extraction	PAHs		corrected for recovery?	others?
		Used?	added prior to analysis		
1a	deuterated naphthalene, biphenyl, acenaphthene, phenanthrene, fluoranthene, pyrene, B[a]A, B[a]P, perylene, B[ghi]P, DB[a,h]A	x			
1c	deuterated naphthalene, biphenyl, acenaphthene, phenanthrene, fluoranthene, pyrene, B[a]A, B[a]P, perylene, B[ghi]P, DB[a,h]A	x			
3	deuterated naphthalene, phenanthrene, and chrysene		deuterated fluorene, acenaphthene, B[a]P	x	n
4	deuterated naphthalene, acenaphthene, B[a]P	x	hexamethylbenzene		deuterated phenanthrene prior to clean-up
5	deuterated naphthalene, acenaphthene, phenanthrene, fluoranthene, chrysene, B[a]P		deuterated fluorene, pyrene, perylene	x	n
6	deuterated 2-methyl naphthalene, pyrene, B[b]F		deuterated naphthalene, acenaphthene, phenanthrene, chrysene, perylene	x	n
7	17 deuterated PAHs	x			
8	deuterated naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, pyrene, B[a]A, chrysene, B[b]F, B[k]F, B[a]P, perylene, I[1,2,3-cd]P, DB[a,h]A, B[ghi]P	x	deuterated 2-methylnaphthalene, anthracene, terphenyl, B[c]P		
9	deuterated naphthalene, acenaphthene, phenanthrene, B[a]P		deuterated acenaphthylene and chrysene	x	n
10	surrogates- deuterated naphthalene, acenaphthene, phenanthrene, chrysene, perylene		IS- deuterated fluorene, anthracene, fluoranthene, B[a]P	x	
12	deuterated naphthalene, 2-methylnaphthalene, biphenyl, 2,6-dimethylnaphthalene, acenaphthylene, phenanthrene, fluoranthene, B[a]A, chrysene, B[b,k]F, B[a]P, perylene, DB[a,h]A, I[1,2,3-cd]P, B[ghi]P	x	deuterated acenaphthene, pyrene, B[e]P, used to quantify labeled surrogates		

Lab #	IS/surrogate added prior to extraction	PBDEs		corrected for recovery?	others?
		Used?	added prior to analysis		
1c	IS/surrogate added prior to extraction 13C-PCB 194, 13C-1-chlordane, endosulfan-d4	x			
4	PCB 103	x	tetrachloro-o-xylene		tetrachloro-m-xylene prior to clean-up
7	13C-BDEs (3, 5, 28, 47, 99, 100, 118, 153, 183)	x			
8	13C-BDEs (28, 47, 99, 100, 153, 154, 183, 209)	x	13 C-PCBs (138, 202)		
12	13C BDEs (15, 28, 47, 77, 99, 100, 126, 153, 154, 183, 209)	x	13C PCBs (52, 138) used to quantify labeled surrogates		13C BDE 139 prior to clean-up

Lab #	IS/surrogate added prior to extraction	PCBs			corrected for	
		Used?	added prior to analysis	Used?	recovery?	others?
1a	PCB 103 and PCB 198	x				
1c	13C-PCB 28, 52, 118, 153, 180, 194, 206; deuterated 4,4'-DDE, 4,4'-DDD, 4,4'-DDT	x				
3	2',3,5'-Trichlorobiphenyl, 2,2',4,6,6'-Pentachlorobiphenyl, 2,3,3',4,5,5',6-Heptachlorobiphenyl		3-Chlorobiphenyl, 2,3,3',4,4',5,5',6-Octachlorobiphenyl (13C12 labelled)	x	n	tetrachloro-m-xylene prior to clean-up
4	PCB 103	x	tetrachloro-o-xylene			
5	g-chlordane, PCB 103, PCB 198		IS - 4,4'-dibromooctafluorobiphenyl	x	n	
6	13C-PCB 19 and 202		13C-PCB 15 and 180	x	n	
7	246/246-HBB	x	34/34-TBB			
8	13C-PCB 3, 15, 28, 77, 81, 105, 114, 118, 123, 126, 156, 157, 167, 169, 170, 180, 189, 194, 208, 209	x	13C-PCB 52, 101, 202			
9	Cl3(34); Cl6(152)		Cl5(96); Cl6(161)	x	n	
10	Surrogates - PCB 14, 64, 166 13C-PCB		IS - PCB 30 and 204	x		
11	1,3,4,19,15,54,104,37,155,81,77,123,118,188,114,105,126,202,156,157,169,208,189,205,206,209	x	13C-PCB 9,52,138, 194			13C-PCB 28, 111,178 prior to clean-up
12	13C-PCBs 4,15,19,37,54,77,81,104,105,114,118,123,126,155,156,157,167,169,170,180,188,189,202,205,206,208,209	x	13C-PCBs 9,52,101,138,194, used to quantify labelled surrogates only.			13C-PCBs 28,111,178, used as cleanup standards.

Lab #	IS/surrogate added prior to extraction	Pesticides			corrected for	
		Used?	added prior to analysis	Used?	recovery?	others?
1a	13C- lindane, trans-nonachlor, 4,4'-DDE, 4,4'-DDT	x				
1c	13C-PCB 52, trans-chlordane, PCB 118, PCB 153; deuterated endosulfan I	x				
3	13C-gamma-BHC and 4,4'-DDT		3-Chlorobiphenyl, 2,3,3',4,4',5,5',6-Octachlorobiphenyl (13C12 labelled)	x	n	tetrachloro-m-xylene prior to clean-up
4	PCB 103	x	tetrachloro-o-xylene			
5	g-chlordane, PCB 103, PCB 198		IS - 4,4'-dibromooctafluorobiphenyl	x	n	
6	TMX and DCB		PCB 192	x	n	
7	246/246-HBB	x	34/34-TBB			
8						
9	Cl3(34); Cl6(152)		CL5(96); Cl6(161)	x	n	
10			IS - PCB 30 and 204	x		
11						
12	13C-HCB, b-HCH, g-HCH, d-HCH, Heptachlor, Aldrin, Oxychlordane, t-Chlordane, t-Nonachlor, e-nonachlor, DDE, DDT, Mirex, Heptachlor-epoxide, Dieldrin, Endrin, Endosulfan-I, Endosulfan-II	x	13C-PCBs 52, 138, 153, used to quantify labelled surrogates only.			

## **Appendix F: Laboratory Methods Used, Marine Sediment XIII**

Lab #	Reported	g extracted QA05SEED13	g extracted SRM 1941b	% water Determination	Extraction Method	Extraction Solvent	Extraction Time	Extraction other
1a	11/28/2005	9 wet	3 dry	freeze-dry until constant mass	PFE	dichloromethane	3 cycles each 5 min	temp = 100 °C; pressure 2000 psi; 3 static cycles / sample
1c	2/22/2006	5 wet	5 dry	freeze-drying	PFE	dichloromethane	3 cycles each 5 min	temp = 100 °C; pressure 2000 psi; 3 static cycles / sample
2	12/14/2005	10 wet	SRM 1944	gravimetric - oven 100 °C for 24 h	PFE	dichloromethane	10 min	temp = 100 °C; pressure 2000 psi
3	12/15/2005	10 wet	5 dry	standard method 2540G	Sonication	dichloromethane	3 x 2.0 min each	
4	1/4/2006	1 wet	0.5 dry	oven 120 °C overnight	PFE	dichloromethane	approx. 16 min	temp = 100 °C; pressure 2000 psi
6	1/13/2006	3 wet	3 dry	assumed 100%	microscale extraction 3570	acetone: dichloromethane	24 h	solvent changes at specified time intervals
7	1/13/2006	5 wet	5 dry	oven 105 °C for 24 h	Soxhlet EPA 3540	acetone:hexane (1:1, volume fraction)	24 h	
8	1/16/2006	1 -2 wet	0.5 -1 dry	ASTM D2216-98	Soxhlet	dichloromethane for PAHs; toluene for PCBs and PBDEs	16 h	
10	1/25/2006	1 wet	1 dry	oven 100 °C for 24 h	Soxhlet	dichloromethane	18 h	
11	2/6/2006	10 wet	1 dry	oven overnight	PFE	dichloromethane		
12	2/6/2006	8.5 wet	5 dry	gravimetric	Soxhlet	dichloromethane	16 h	

Lab #	Sample extract cleanup method	PCBs and Pesticides Separated?	Method of quantitation
1a	silica solid phase extraction (SPE) column; condition and elute with 15 mL of 10 % dichloromethane in hexane	no	IS
1c	Size exclusion chromatography (SEC); 1.8 g alumina column (5% deactivated) with 9 mL 35 % dichloromethane in hexane	yes	IS
2	silica gel, alumina, copper chromatography; SEC HPLC cleanup	no	IS
3	silica gel; activated copper; sulfuric acid	no	IS
4	Gravity flow column with silica gel and neutral alumina, followed by HPLC-SEC to elute fraction containing analytes of interest	no	IS
6	silica cartridge; PCB wer acid cleaned post silica	no	IS
7	SEC for PAH, PCB, Pesticide, and PBDE; Florisil for PCB, Pesticide, and PBDE	no	IS
8	silica gel only for PAH; silica gel and acid alumina for PCB and PBDE	some	IS
9	alumina gravity column; HPLC-SEC fractionation	no	IS
10	alumina for PAHs; Florisil with petroleum ether for PCBs and with 1:1 dichloromethane:petroleum ether for pesticides	yes	IS
11	alumina added to PFE extraction cells prior to extraction; SEC; acid/base silica column	yes	IS/ES
12	PAHs -silica; pesticides - Florisil; PCBs and PBDEs - Florisil, acid/base silica, alumina	no	IS

Lab #	PAHs			Calibration Curve		
	Instrument	Phase	Dimensions	# points	range	
1a	GC/MS	HP-5MS	30m x 0.25 mm, 0.25µm film	5	5 ng - 1500 ng extracted	
1c	GC/MS	DB-XLB	30m x 0.18 mm, 0.18µm film	6	1.72 ng/g - 983 ng/g	
2	GC/MS	5% phenyl	25m x 0.2 mm, 0.33µm film	5	6 ng/mL - 1800 ng/mL	
3	GC/MS	RTX-5 Sil MS	30m x 0.28 mm, 0.25µm film	5	5 ng/mL - 2000 ng/mL	
4	GC/MS	DB-5	60m x 0.25 mm, 0.25µm film	7	0.015 ng/µL - 10 ng/µL	
6	GC/MS	RTX-5	60m x 0.25 mm, 0.25µm film	7	10 ppb - 10000 ppb	
7	GC/MS	DB-XLB	60m x 0.25 mm, 0.25µm film	1	50 ppb	
8	GC/MS	DB-5MS	30m x 0.25 mm, 0.25µm film	5	25 µg - 2500 µg	
10	GC/MS	DB-5	30m x 0.25 mm, 0.25µm film	5	5 ng - 100 ng	
12	GC/MS	DB-5	30m x 0.25 mm, 0.25µm film	5	50 ng/mL - 5000 ng/mL	

Lab #	PBDEs			Calibration Curve		
	Instrument	Phase	Dimensions	# points	range	
1c	GC/MS NCI	DB-XLB	30m x 0.18 mm, 0.18µm film	5	0.07 ng/g - 386 ng/g	
4	GC/MS	DB-5	60m x 0.25 mm, 0.25µm film	4	0.0025 ng/µL - 1 ng/µL	
7	GC/HRMS	DB-5MS	30m x 0.25 mm, 0.25µm film	7	0.05 ppb - 100 ppb	
8	HRGC/MS	DB-5HT	30m x 0.25 mm, 0.1µm film	5	20 pg - 500000 pg	
12	GC/HRMS	DB-5HT	30m x 0.25 mm, 0.1µm film	5	1 ng/mL - 2500 ng/mL	



Lab #	PCBs			PESTICIDES		
	Instrument	Phase	Dimensions	Instrument	Phase	Dimensions
1a	GC/MS	HP-5MS	30m x 0.25 mm, 0.25um 30m x 0.18 mm, 0.18um	GC/MS	HP-5MS	30m x 0.25 mm, 0.25um 30m x 0.18 mm, 0.18um
1c	GC/MS	DB-XLB	60m x 0.25 mm, 0.25um	GC/MS	DB-XLB	60m x 0.25 mm, 0.25um
3	GC/MS	RTX-5	60m x 0.25 mm, 0.25um	GC/MS	RTX-5	60m x 0.25 mm, 0.25um
4	GC/MS	DB-5	60m x 0.25 mm, 0.25um	GC/MS	DB-5	60m x 0.25 mm, 0.25um
6	GC/MS	RTX-5	60m x 0.25 mm, 0.25um	GC-ECD	RTX-5	60m x 0.25 mm, 0.25um
7	GC/MS	DB-XLB	30m x 0.18 mm, 0.18um	GC/MS	DB-XLB	30m x 0.18 mm, 0.18um
8	HRGC/MS	DB-5	60m x 0.52 mm, 0.25um			
10	GC-ECD	DB-5	60m x 0.25 mm, 0.25um	GC-ECD	DB-5	60m x 0.25 mm, 0.25um
11	GC/HRMS	SPB-Octyl	30m x 0.25 mm, 0.25um			
12	GC/HRMS	SPB-Octyl	30m x 0.25 mm, 0.1um film	GC/HRMS	DB-5	60m x 0.25 mm, 0.1um film

	Instrument	Phase	Dimensions	Calibration Curve # points	Calibration Curve range
	GC/MS	HP-5MS	30m x 0.25 mm, 0.25um	5	5 ng - 300 ng extracted
	GC/MS	DB-XLB	30m x 0.18 mm, 0.18um	6	0.29 ng/g - 3930 ng/g
	GC/MS	RTX-5	60m x 0.25 mm, 0.25um	5	2 ng/mL - 100 ng/mL
	GC/MS	DB-5	60m x 0.25 mm, 0.25um	6	0.0012 ng/ $\mu$ L - 0.32 ng/ $\mu$ L
	GC/MS	RTX-5	60m x 0.25 mm, 0.25um	8	0.25 ppb - 400 ppb
	GC/MS	DB-XLB	30m x 0.18 mm, 0.18um	1	20 ppb
	HRGC/MS	DB-5	60m x 0.52 mm, 0.25um	5	20 pg - 20000 pg
	GC-ECD	DB-5	60m x 0.25 mm, 0.25um	5	1 ng - 43 ng
	GC/HRMS	SPB-Octyl	30m x 0.25 mm, 0.25um	6	0.2 ng/mL - 2000 ng/mL
	GC/HRMS	SPB-Octyl	30m x 0.25 mm, 0.1um film	5	1 ng/mL - 2000 ng/mL
	GC/HRMS	DB-5	60m x 0.25 mm, 0.1um film	5	10 ng/mL - 4000 ng/mL

Lab #	IS/surrogate added prior to extraction	PAHs		
		Used?	added prior to analysis	corrected for recovery?
1a	deuterated naphthalene, biphenyl, acenaphthene, phenanthrene, fluoranthene, pyrene, B[a]A, B[a]P, perylene, B[ghi]P, DB[a,h]A	x		
1c	deuterated naphthalene, biphenyl, acenaphthene, phenanthrene, fluoranthene, pyrene, B[a]A, B[a]P, perylene, B[ghi]P, DB[a,h]A	x		
2	deuterated naphthalene, acenaphthene, phenanthrene, chrysene, B[a]P, perylene	x	HMB	
3	deuterated naphthalene, phenanthrene, and chrysene		deuterated fluorene, acenaphthene, B[a]P	n
4	deuterated naphthalene, acenaphthene, B[a]P	x	hexamethylbenzene	
6	deuterated 2-methyl naphthalene, pyrene, B[b]F	x	deuterated naphthalene, acenaphthene, phenanthrene, chrysene, perylene	n
7	17 deuterated PAHs	x		
8	deuterated naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, pyrene, B[a]A, chrysene, B[b]F, B[k]F, B[a]P, perylene, I[1,2,3-cd]P, DB[a,h]A, B[ghi]P	x	deuterated 2-methylnaphthalene, anthracene, terphenyl, B[c]P	
10	surrogates- deuterated naphthalene, acenaphthene, phenanthrene, chrysene, perylene		IS- deuterated fluorene, anthracene, fluoranthene, B[a]P	x
12	deuterated naphthalene, 2-methylnaphthalene, biphenyl, 2,6-dimethylnaphthalene, acenaphthylene, phenanthrene, B[a]A, chrysene, B[b]kF, B[a]P, perylene, DB[a,h]A, I[123-cd]P, B[ghi]P	x	deuterated acenaphthene, pyrene, B[c]P used to quantify labeled surrogates	

Lab #	IS/surrogate added prior to extraction	PBDEs		
		Used?	added prior to analysis	corrected for recovery?
1c	13C-PCB 194, 13C-t-chlordane, endosulfan-44	x		
4	PCB 103	x	tetrachloro-o-xylene	tetrachloro-m-xylene prior to clean-up
7	13C-BDEs (3, 5, 28, 47, 99, 100, 118, 153, 183)	x		
8	13C-BDEs (28, 47, 99, 100, 153, 154, 183, 209)	x	13 C-PCBs (138, 202)	
12	13C BDEs (15, 28, 47, 77, 99, 100, 126, 153, 154, 183, 209)	x	13C PCBs (52, 138) used to quantify labeled surrogates	13C BDE 139 prior to clean-up

Lab #	IS/surrogate added prior to extraction	PCBs			corrected for	
		Used?	added prior to analysis	Used?	recovery?	others?
1a	PCB 103 and PCB 198	x				
1c	13C-PCB 28, 52, 118, 153, 180, 194, 206; deuterated 4,4'-DDE, 4,4'-DDD, 4,4'-DDT	x				
3	2',3,5'-Trichlorobiphenyl, 2,2',4,6,6'-Pentachlorobiphenyl, 2,3,3',4,5,5',6'-Heptachlorobiphenyl		3-Chlorobiphenyl, 2,3,3',4,4',5,5',6-Octachlorobiphenyl (13C12 labelled)	x	n	tetrachloro-m-xylene prior to clean-up
4	PCB 103	x	tetrachloro-o-xylene			
6	13C-PCB 19 and 202	x	13C-PCB 15 and 180		n	
7	246/246-HBB	x	34/34-TBB			
8	13C-PCB 3, 15, 28, 77, 81, 105, 114, 118, 123, 126, 156, 157, 167, 169, 170, 180, 189, 194, 208, 209	x	13C-PCB 52, 101, 202			
10	Surrogates - PCB 14, 64, 166		IS - PCB 30 and 204	x		
11	13C-PCB 1,3,4,19,15,54,104,37,155,81,77,123,118,188,114,105,126,202,156,157,169,208,189,205,206,209	x	13C-PCB 9,52,138, 194			13C-PCB 28, 111,178 prior to clean-up
12	13C-PCBs 4,15,19,37,54,77,81,104,105,114,118,123,126,155,156,157,167,169,170,180,188,189,202,205,206,208,209	x	13C-PCBs 9,52,101,138,194, used to quantify labelled surrogates only.			13C-PCBs 28,111,178, used as cleanup standards.

Lab #	IS/surrogate added prior to extraction	Pesticides				corrected for	
		Used?	added prior to analysis	Used?	recovery?	others?	
1a	13C- lindane, trans-nonachlor, 4,4'-DDE, 4,4'-DDT	x					
1c	13C-PCB 52, trans-chlordane, PCB 118, PCB 153; deuterated endosulfan I	x					
3	13C-gamma-BHC and 4,4'-DDT		3-Chlorobiphenyl, 2,3,3',4,4',5,5',6-Octachlorobiphenyl (13C12 labelled)	x	n		tetrachloro-m-xylene prior to clean-up
4	PCB 103	x	tetrachloro-o-xylene				
6	TMX and DCB	x	PCB 192		n		
7	246/246-HBB	x	34/34-TBB				
8							
10			IS - PCB 30 and 204	x			
11							
12	13C-HCB, b-HCH, g-HCH, d-HCH, Heptachlor, Aldrin, Oxychlordane, t-Chlordane, t-Nonachlor, c-nonachlor, DDE, DDT, Mirex, Heptachlor-epoxide, Dieldrin, Endrin, Endosulfan-I, Endosulfan-II	x	13C-PCBs 52, 138, 153, used to quantify labelled surrogates only.				

## **Appendix G: Charts of Mussel Tissue XII and SRM 2977 Results by Analyte**

See Tables 2 through 9 for results reported as *<number*, detection limit, etc.

Charts for analytes with few reported numerical results are not included in this appendix.

Note: The numbers added to the charts are the values reported that are off the scale of the chart.

For Mussel Tissue XII plots:

Solid line: exercise assigned value

Dotted line:  $z = \pm 1$ , i. e., 25 % from assigned value

Dotted/dashed line:  $z = \pm 2$ , i. e., 50 % from assigned value

Dashed line:  $z = \pm 3$ , i. e., 75 % from assigned value

For SRM 2977 plots:

Solid line: material certified concentration or target value (see caption of each plot)

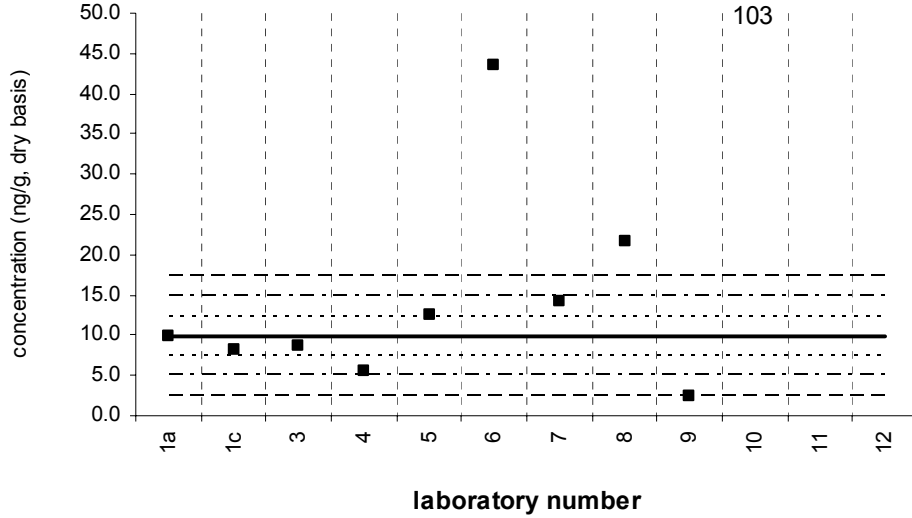
Dotted line: 95 % confidence interval (CI)

Dashed line: 30 % from 95 % confidence interval (CI)

**naphthalene**

**Tissue XII (QA05TIS12)**

Assigned value = 9.86 ng/g  $s = 6.07$  ng/g 95% CL = 5.61 ng/g (dry basis)  
Reported Results: 10 Quantitative Results: 10

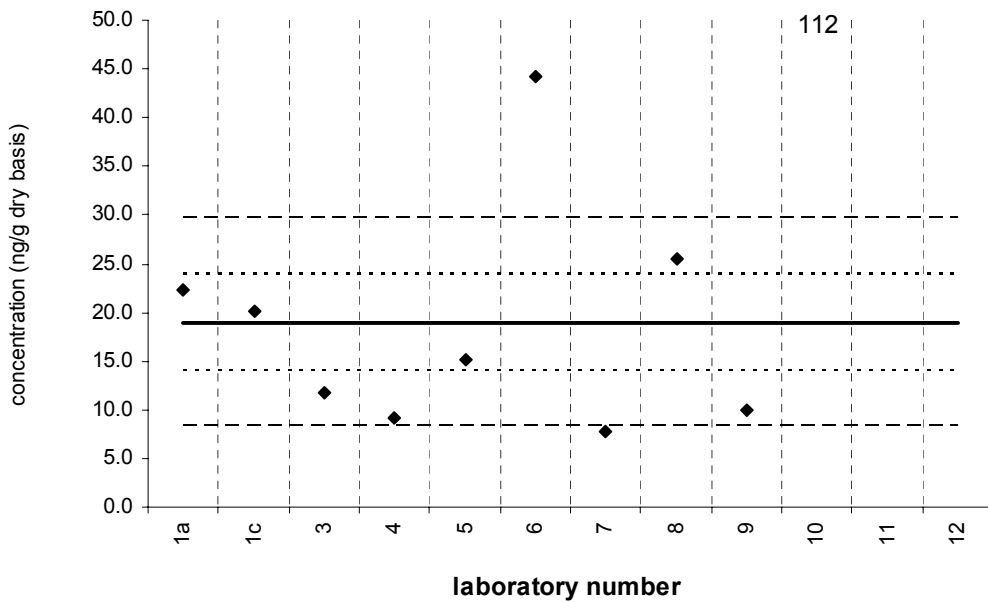


Solid line : exercise assigned value (EA V); dotted line:  $z=\pm 1$  (25% from EA V); dotted/dashed line:  $z=\pm 2$  (50% from EA V); dashed line:  $z=\pm 3$  (75% from EA V)

**naphthalene**

**SRM 2977**

Reference Value =  $19 \pm 5$  ng/g (dry basis)  
Reported Results: 10 Quantitative Results: 10



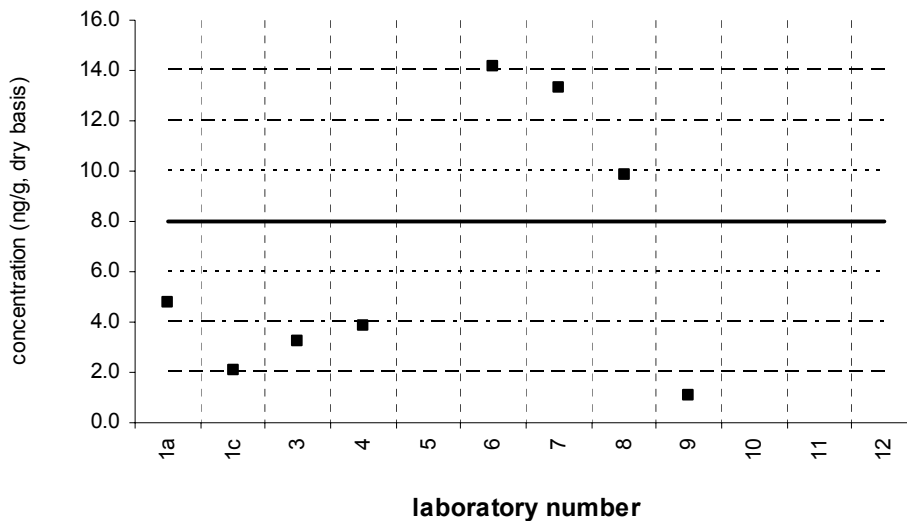
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

## 2-methylnaphthalene

Tissue XII (QA05TIS12)

Assigned value = 8.00 ng/g  $s = 5.16$  ng/g 95% CL = 5.42 ng/g (dry basis)

Reported Results: 9 Quantitative Results: 8



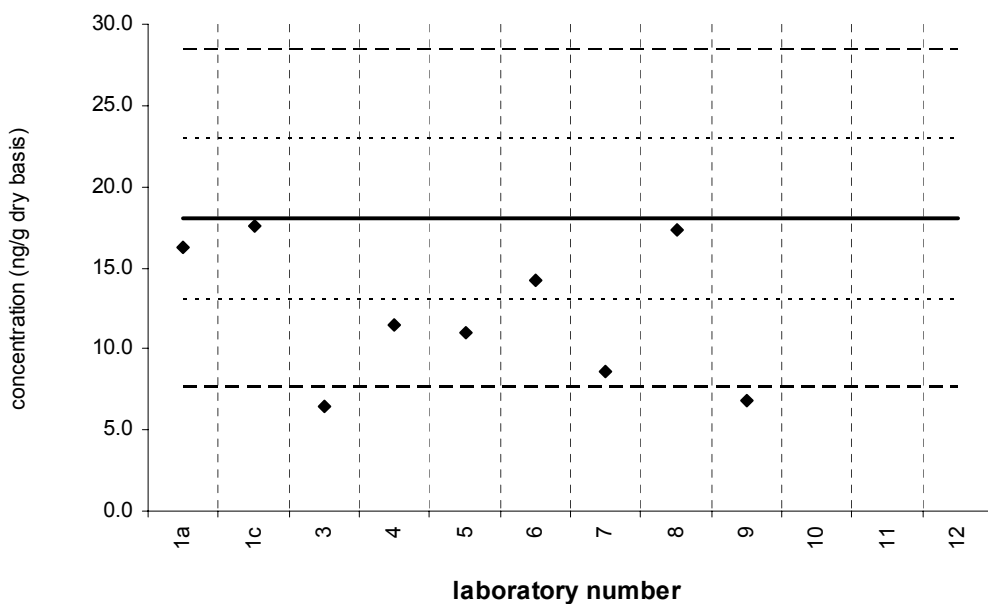
Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

## 2-methylnaphthalene

SRM 2977

Reference Value =  $18 \pm 5$  ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9



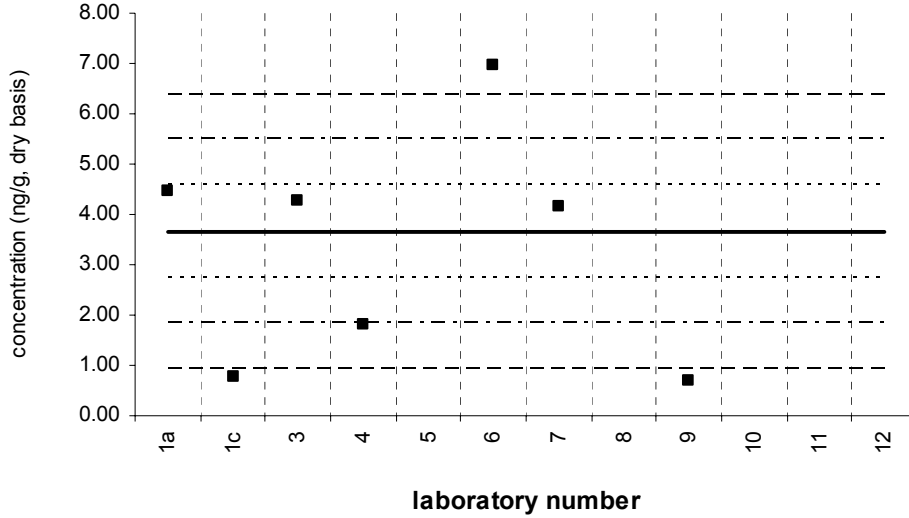
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

### 1-methylnaphthalene

Tissue XII (QA05TIS12)

Assigned value = 3.66 ng/g  $s = 2.44$  ng/g 95% CL = 3.02 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 7



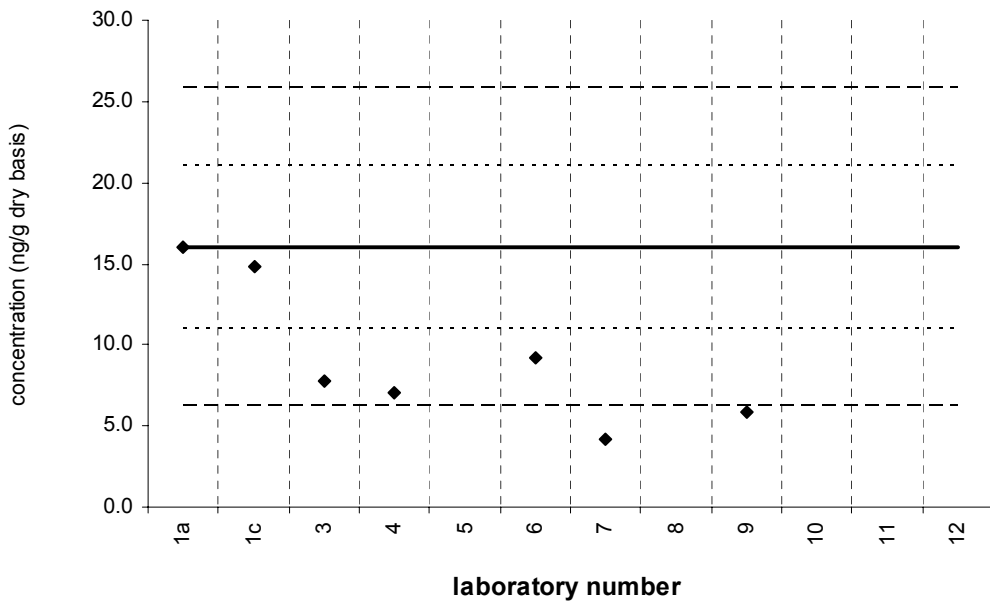
Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

### 1-methylnaphthalene

SRM 2977

Reference Value =  $16 \pm 5$  ng/g (dry basis)

Reported Results: 8 Quantitative Results: 7



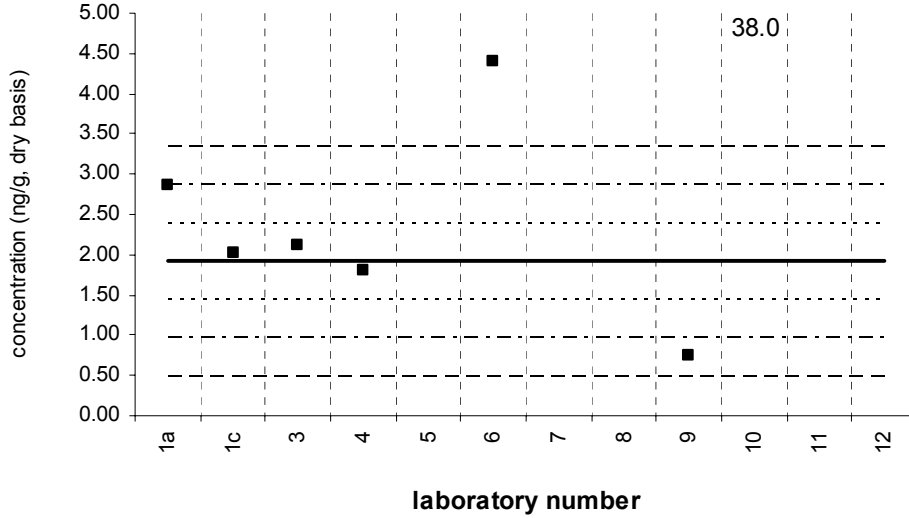
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits



**biphenyl**

**Tissue XII (QA05TIS12)**

Assigned value = 1.91 ng/g  $s = 0.77$  ng/g 95% CL = 0.95 ng/g (dry basis)  
Reported Results: 9 Quantitative Results: 7

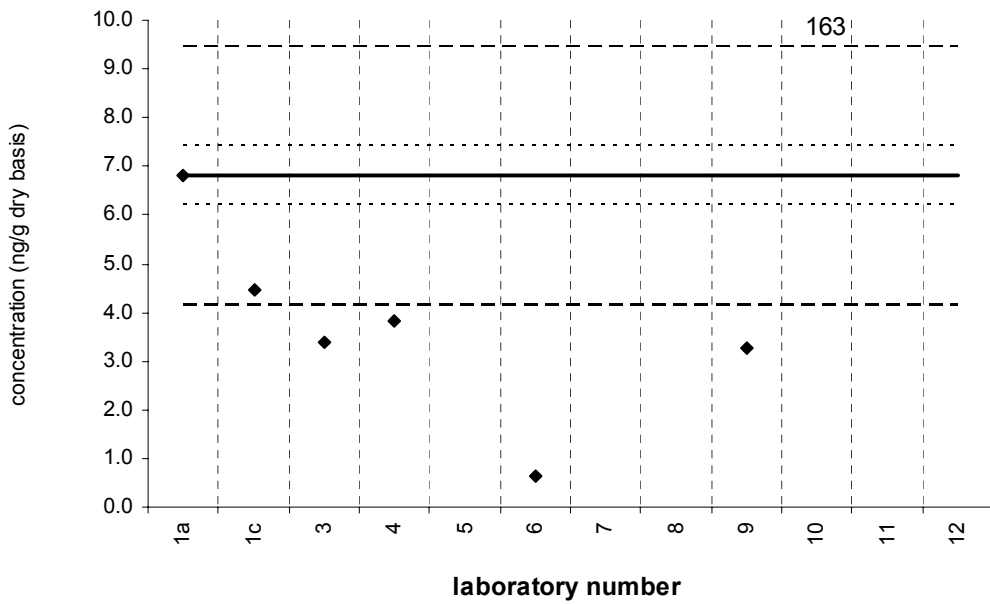


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**biphenyl**

**SRM 2977**

Reference Value =  $6.8 \pm 0.6$  ng/g (dry basis)  
Reported Results: 9 Quantitative Results: 7



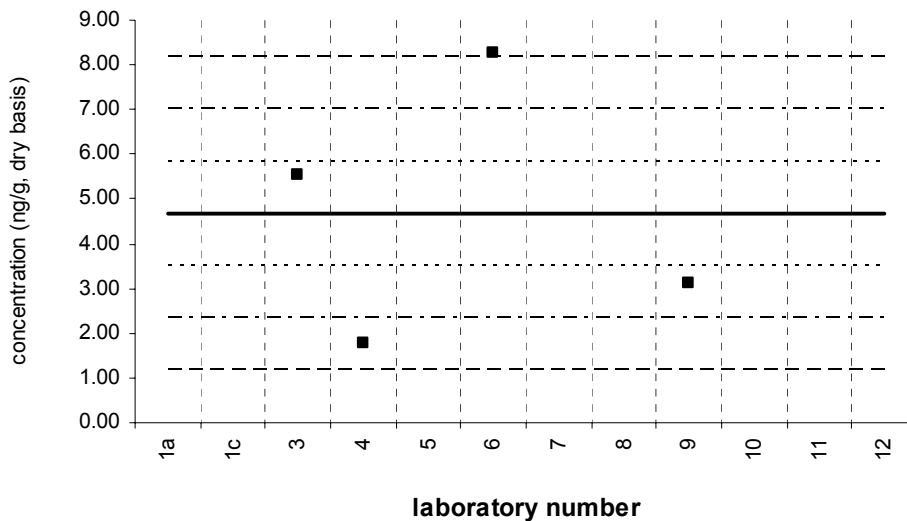
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

## 2,6-dimethylnaphthalene

Tissue XII (QA05TIS12)

Assigned value = 4.67 ng/g  $s = 2.85$  ng/g 95% CL = 4.54 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 4



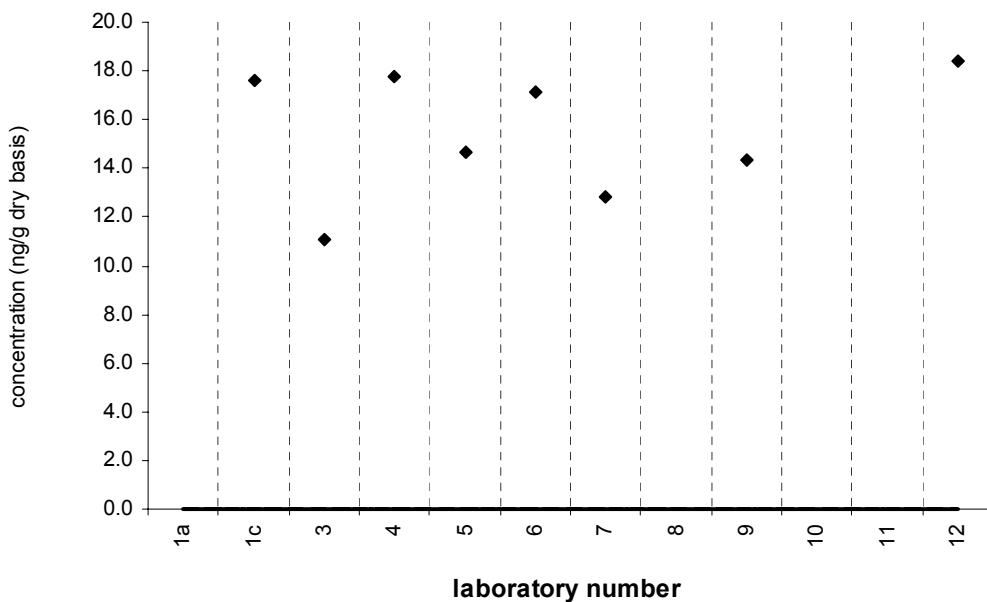
Solid line : exercise assigned value (EA V); dotted line:  $z=\pm 1$  (25% from EA V); dotted/dashed line:  $z=\pm 2$  (50% from EA V); dashed line:  $z=\pm 3$  (75% from EA V)

## 2,6-dimethylnaphthalene

SRM 2977

Target Value = no target ng/g (dry basis)

Reported Results: 8 Quantitative Results: 8



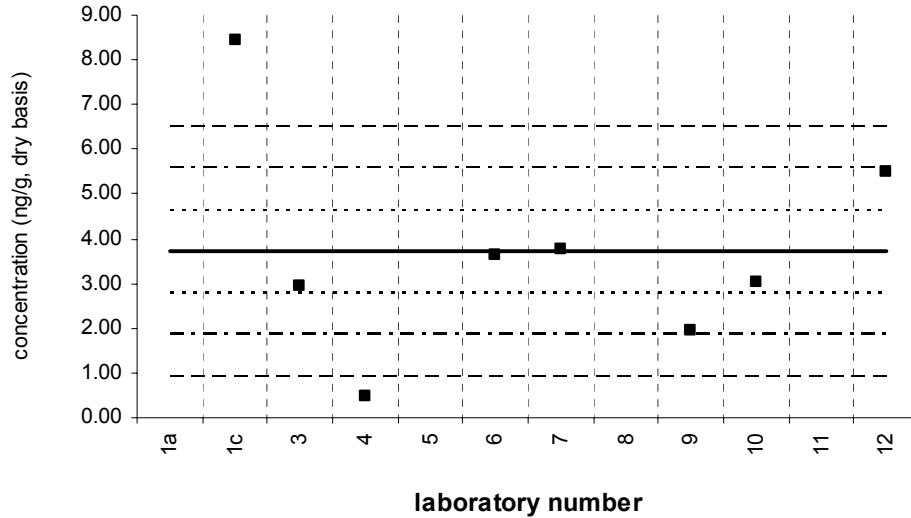
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

### acenaphthylene

### Tissue XII (QA05TIS12)

Assigned value = 3.72 ng/g  $s = 2.40$  ng/g 95% CL = 2.01 ng/g (dry basis)

Reported Results: 11 Quantitative Results: 8



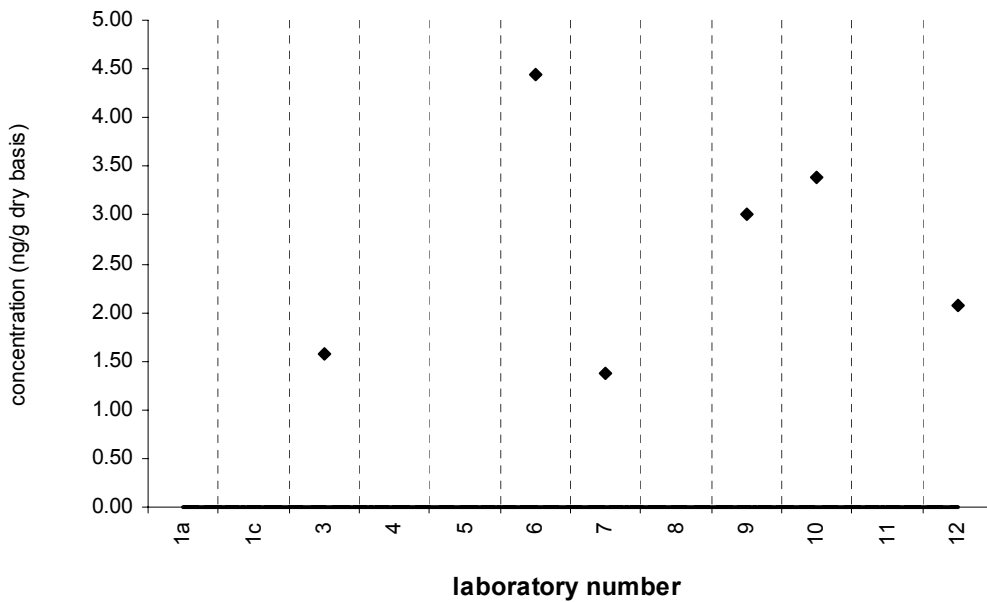
Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

### acenaphthylene

### SRM 2977

Target Value = no target ng/g (dry basis)

Reported Results: 11 Quantitative Results: 6



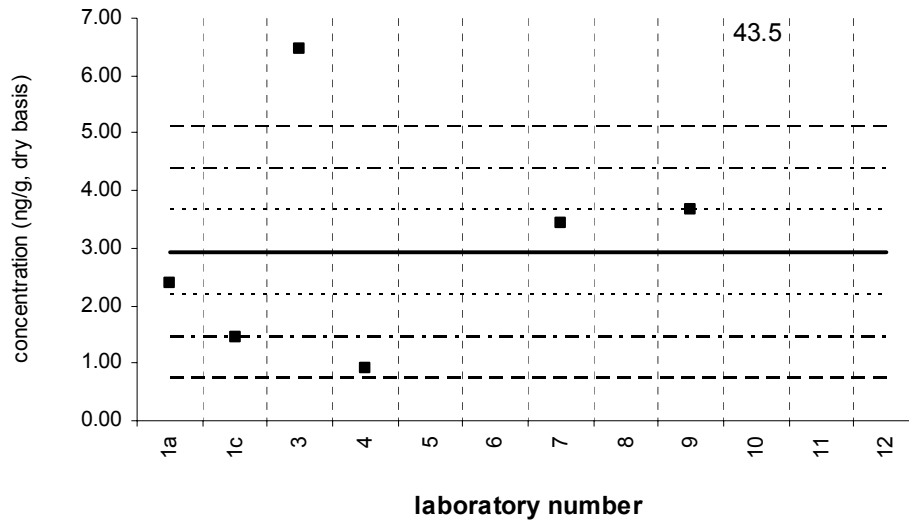
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

### acenaphthene

Tissue XII (QA05TIS12)

Assigned value = 2.93 ng/g  $s = 2.21$  ng/g 95% CL = 2.74 ng/g (dry basis)

Reported Results: 11 Quantitative Results: 7



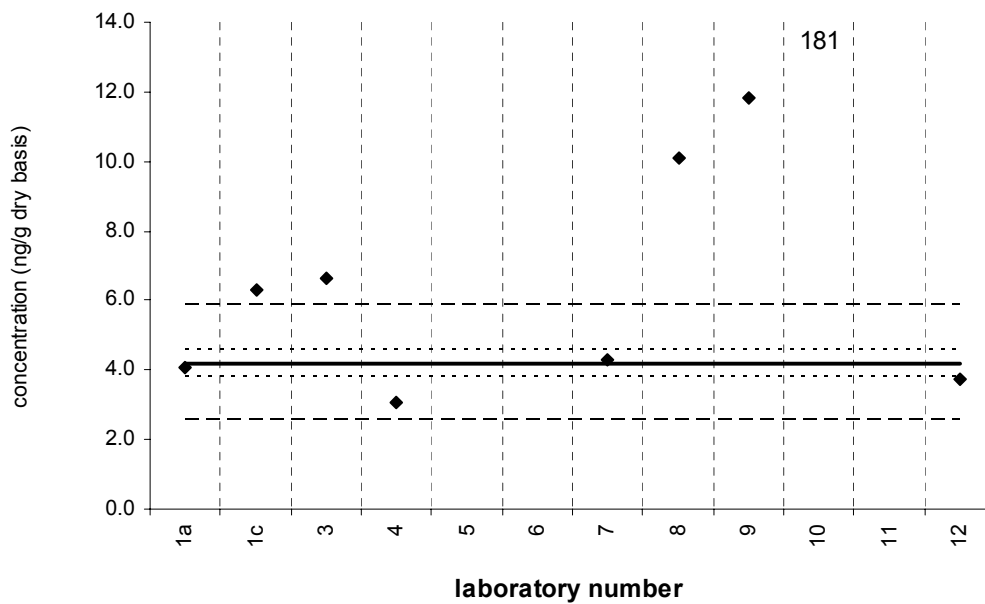
Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

### acenaphthene

SRM 2977

Reference Value =  $4.2 \pm 0.4$  ng/g (dry basis)

Reported Results: 11 Quantitative Results: 9



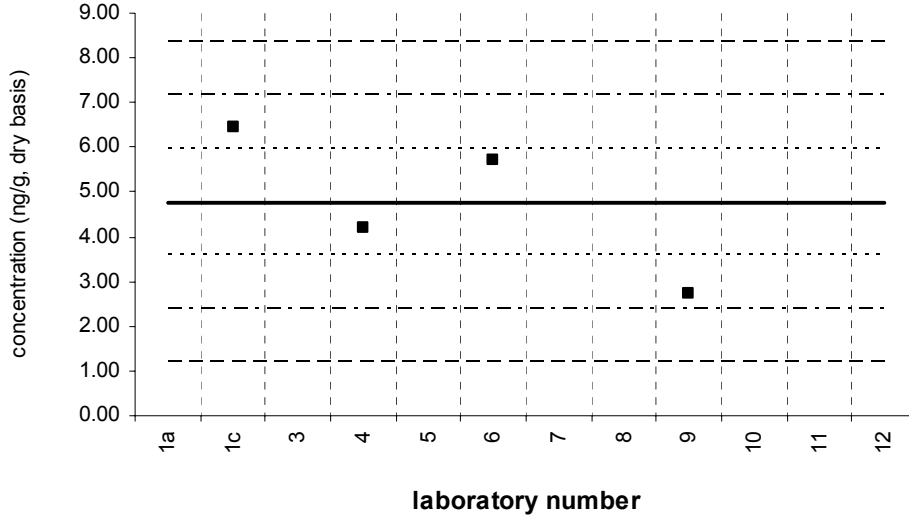
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

### 1,6,7-trimethylnaphthalene

Tissue XII (QA05TIS12)

Assigned value = 4.78 ng/g  $s = 1.65$  ng/g 95% CL = 2.62 ng/g (dry basis)

Reported Results: 4 Quantitative Results: 4



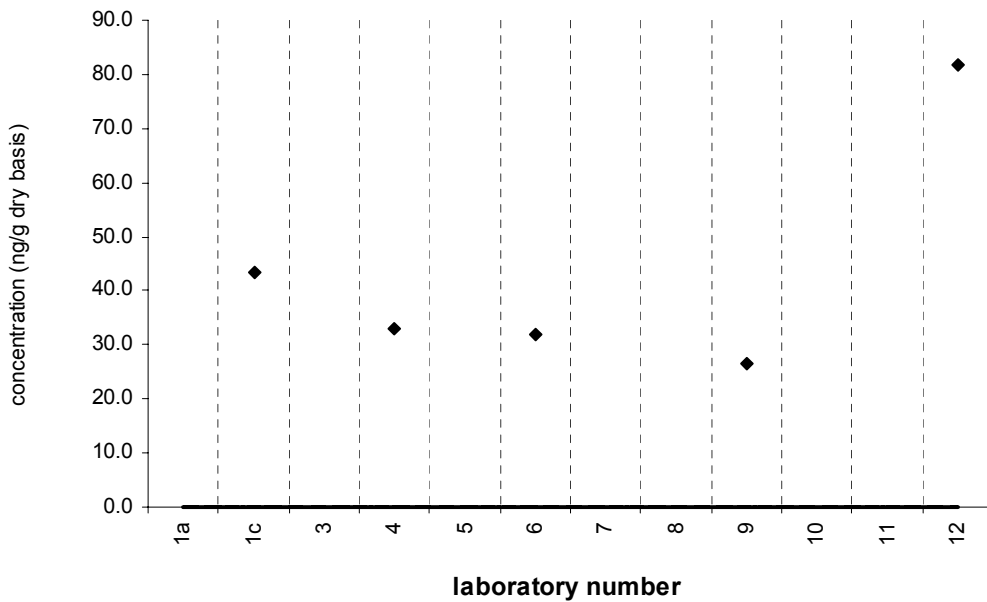
Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

### 1,6,7-trimethylnaphthalene

SRM 2977

Target Value = no target ng/g (dry basis)

Reported Results: 5 Quantitative Results: 5



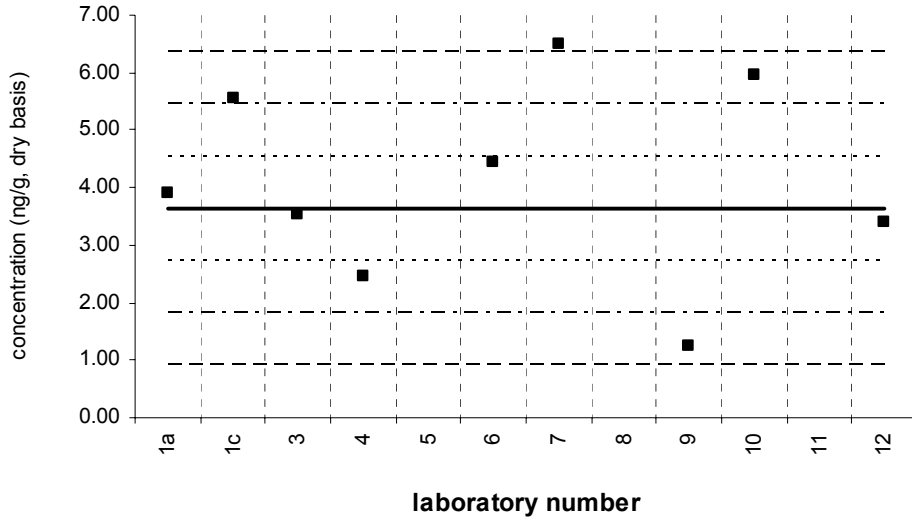
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**fluorene**

**Tissue XII (QA05TIS12)**

Assigned value = 3.64 ng/g  $s = 1.64$  ng/g 95% CL = 1.52 ng/g (dry basis)

Reported Results: 11 Quantitative Results: 9



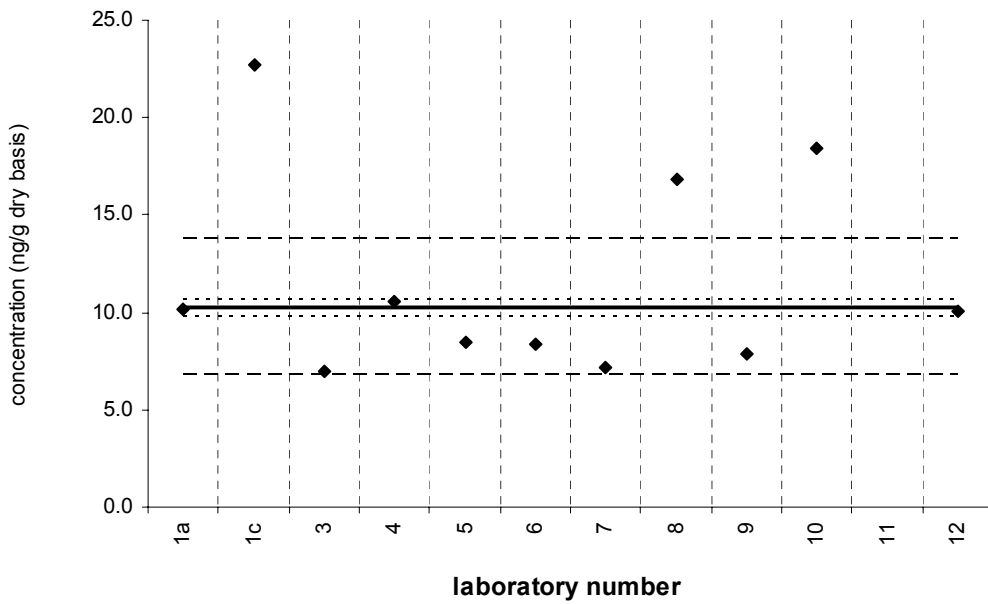
Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**fluorene**

**SRM 2977**

Certified Value = 10.24 ± 0.43 ng/g (dry basis)

Reported Results: 11 Quantitative Results: 11



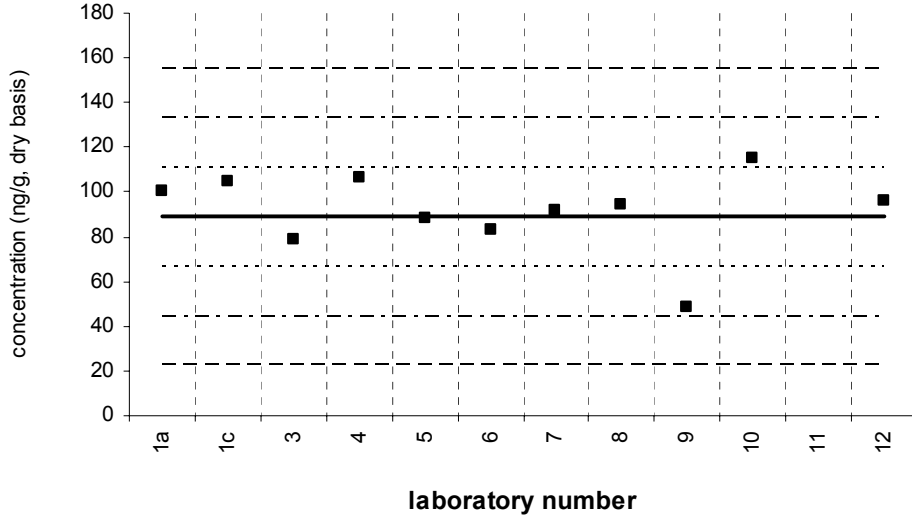
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**phenanthrene**

**Tissue XII (QA05TIS12)**

Assigned value = 88.7 ng/g  $s = 17.9$  ng/g 95% CL = 13.8 ng/g (dry basis)

Reported Results: 11 Quantitative Results: 11



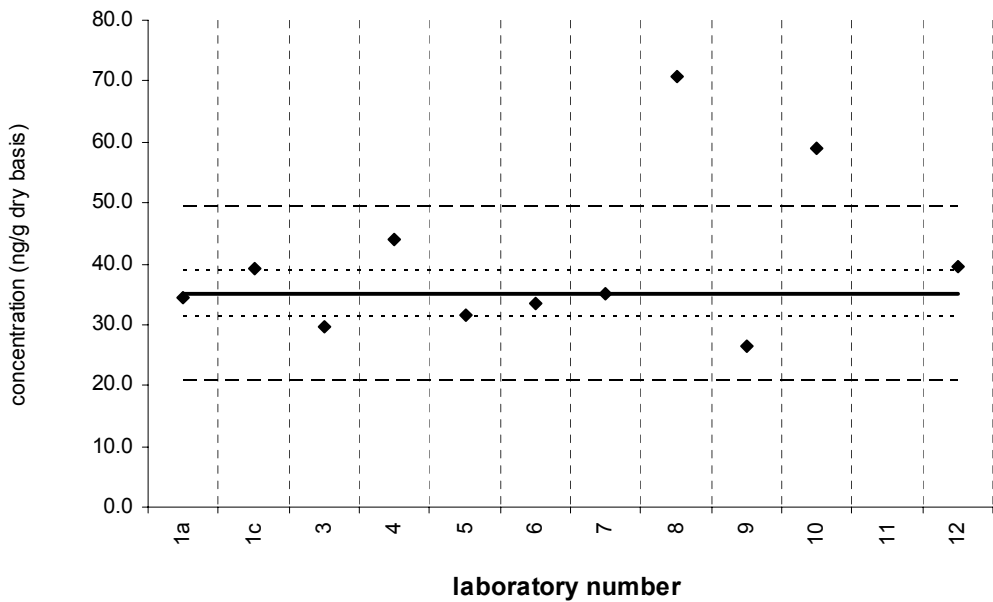
Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**phenanthrene**

**SRM 2977**

Certified Value = 35.1 ± 3.8 ng/g (dry basis)

Reported Results: 11 Quantitative Results: 11



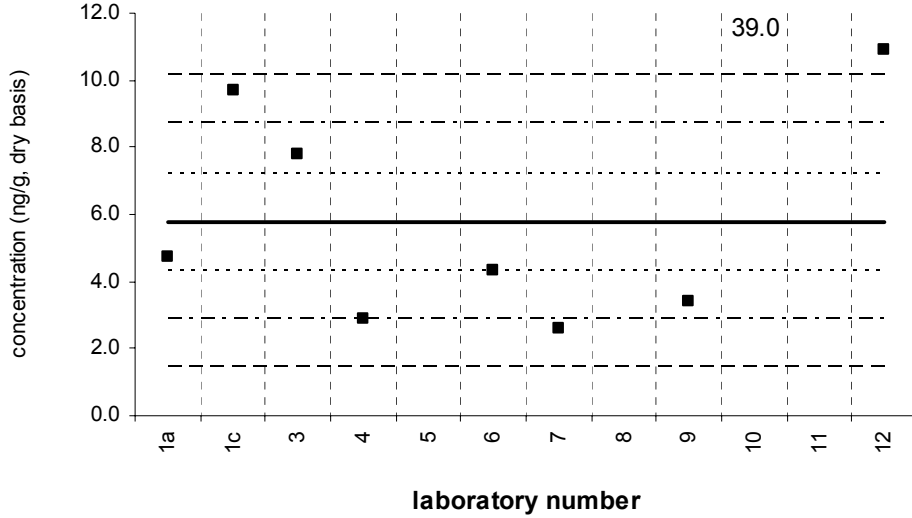
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**anthracene**

**Tissue XII (QA05TIS12)**

Assigned value = 5.79 ng/g s = 3.24 ng/g 95% CL = 2.70 ng/g (dry basis)

Reported Results: 11 Quantitative Results: 9



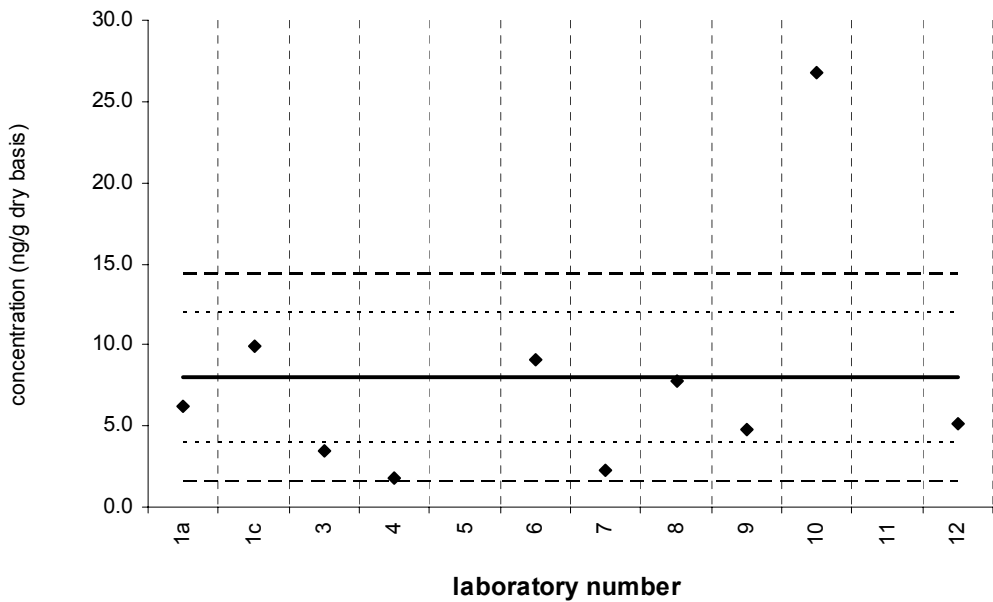
Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**anthracene**

**SRM 2977**

Reference Value =  $8 \pm 4$  ng/g (dry basis)

Reported Results: 11 Quantitative Results: 10



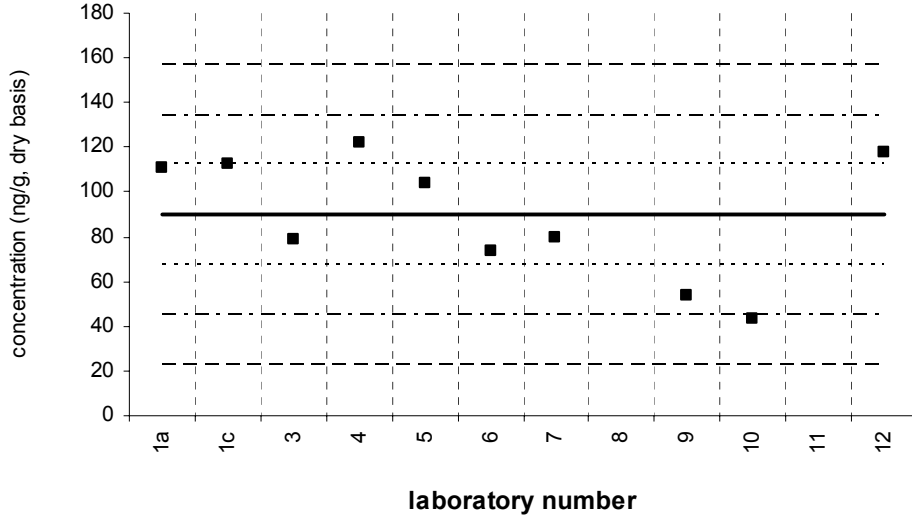
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits



### 1-methylphenanthrene

Tissue XII (QA05TIS12)

Assigned value = 89.7 ng/g  $s = 27.7$  ng/g 95% CL = 19.8 ng/g (dry basis)  
Reported Results: 10 Quantitative Results: 10

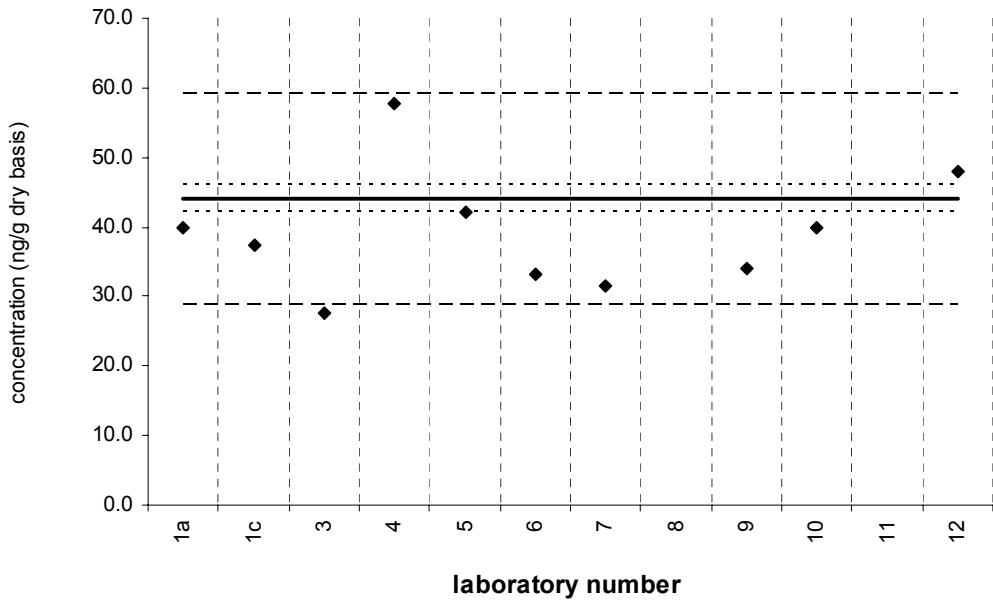


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

### 1-methylphenanthrene

SRM 2977

Reference Value = 44 ± 2 ng/g (dry basis)  
Reported Results: 10 Quantitative Results: 10



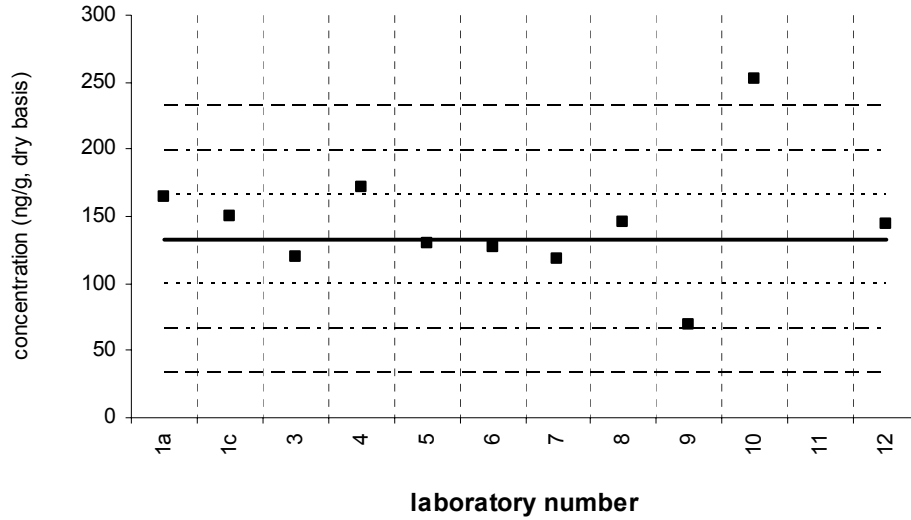
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

### fluoranthene

Tissue XII (QA05TIS12)

Assigned value = 133 ng/g  $s = 30$  ng/g 95% CL = 23 ng/g (dry basis)

Reported Results: 11 Quantitative Results: 11



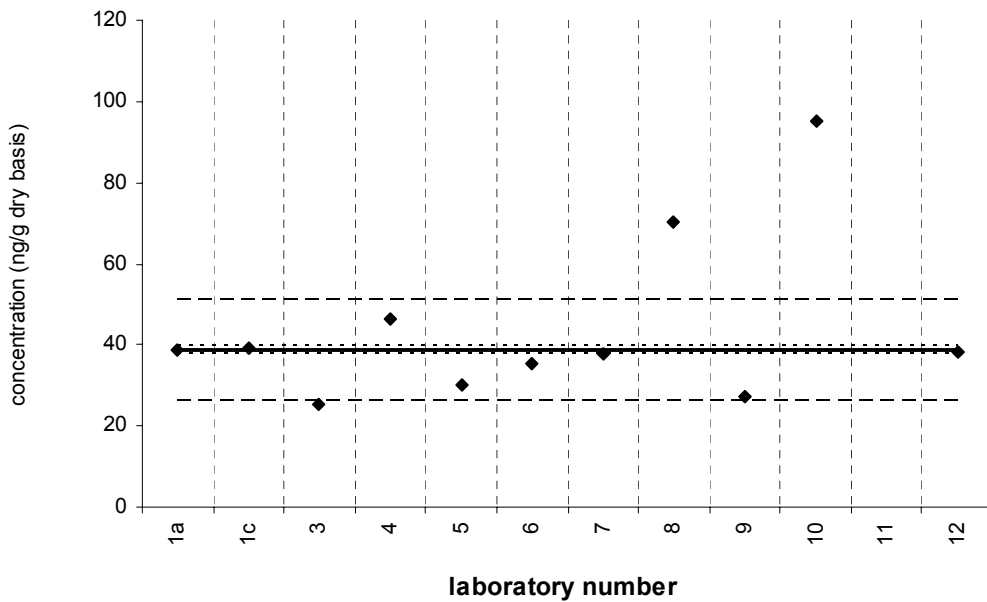
Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

### fluoranthene

SRM 2977

Certified Value =  $38.7 \pm 1.0$  ng/g (dry basis)

Reported Results: 11 Quantitative Results: 11

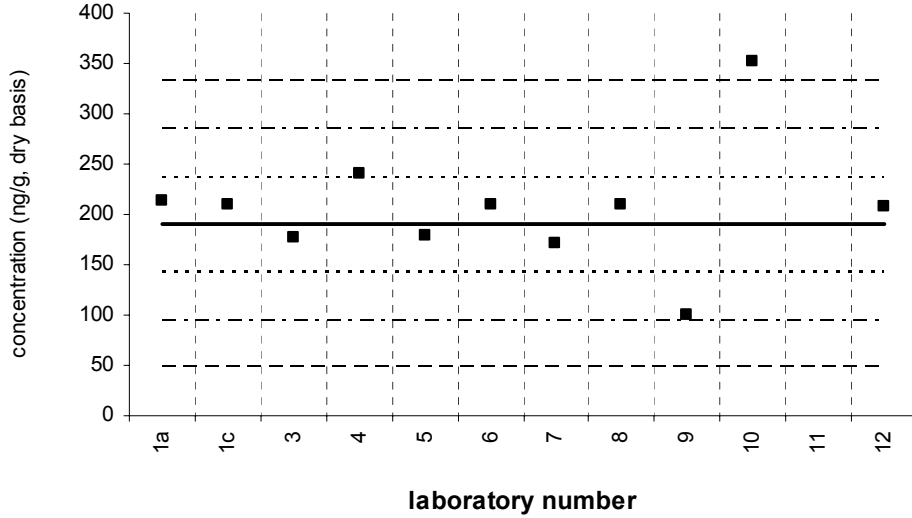


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**pyrene**

**Tissue XII (QA05TIS12)**

Assigned value = 190 ng/g  $s = 40$  ng/g 95% CL = 31 ng/g (dry basis)  
Reported Results: 11 Quantitative Results: 11

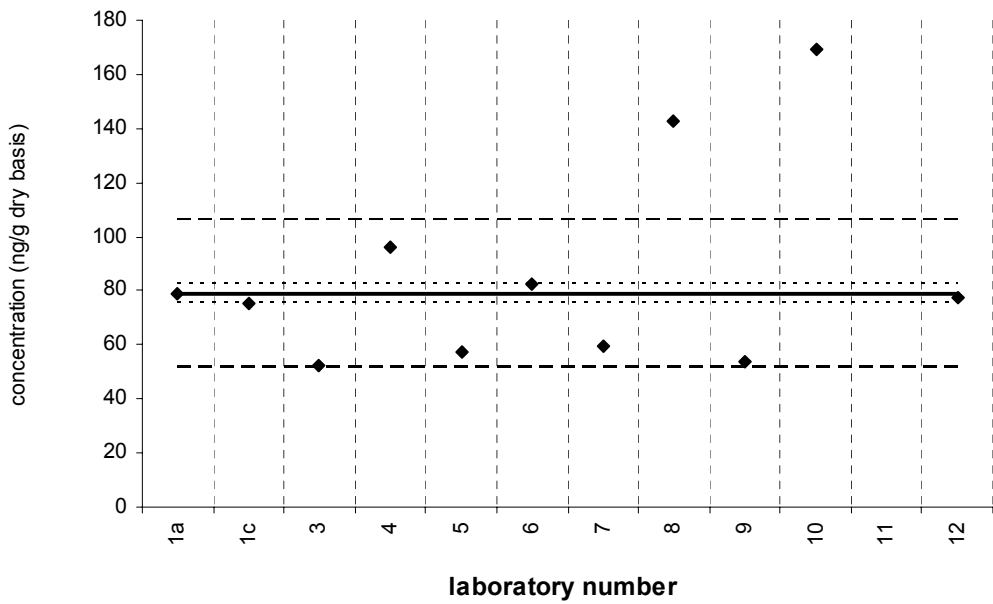


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**pyrene**

**SRM 2977**

Certified Value =  $78.9 \pm 3.5$  ng/g (dry basis)  
Reported Results: 11 Quantitative Results: 11

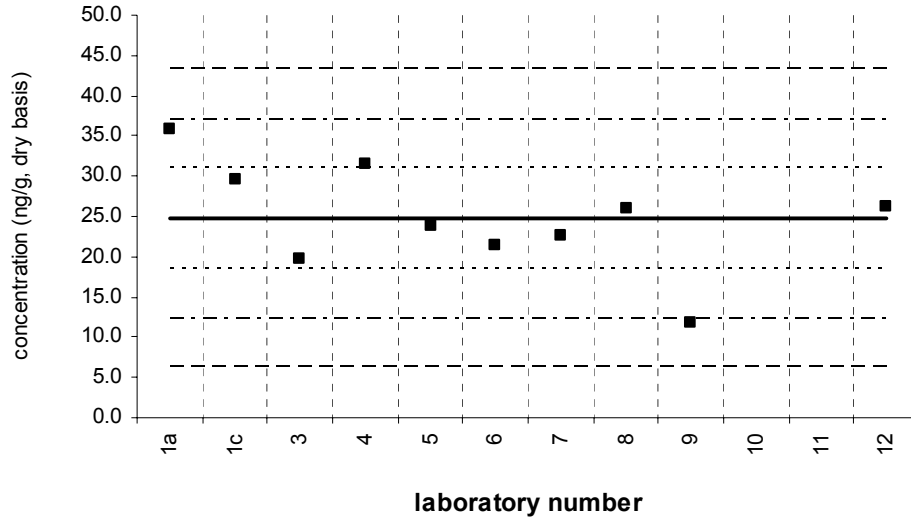


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**benz[a]anthracene**

**Tissue XII (QA05TIS12)**

Assigned value = 24.7 ng/g  $s = 7.1$  ng/g 95% CL = 5.4 ng/g (dry basis)  
Reported Results: 10 Quantitative Results: 10

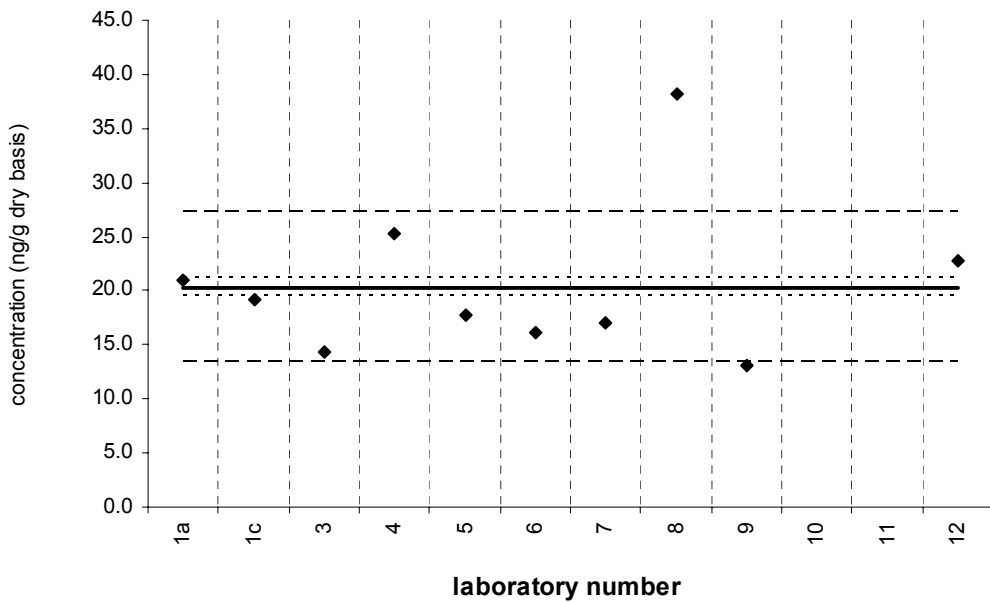


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**benz[a]anthracene**

**SRM 2977**

Certified Value = 20.3 ± 0.8 ng/g (dry basis)  
Reported Results: 10 Quantitative Results: 10

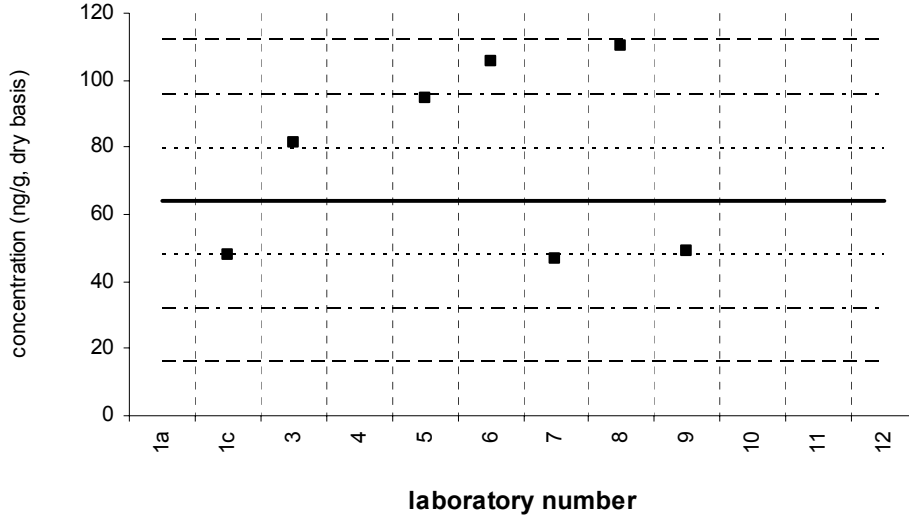


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**chrysene**

**Tissue XII (QA05TIS12)**

Assigned value = 63.9 ng/g  $s = 22.4$  ng/g 95% CL = 27.8 ng/g (dry basis)  
Reported Results: 7 Quantitative Results: 7

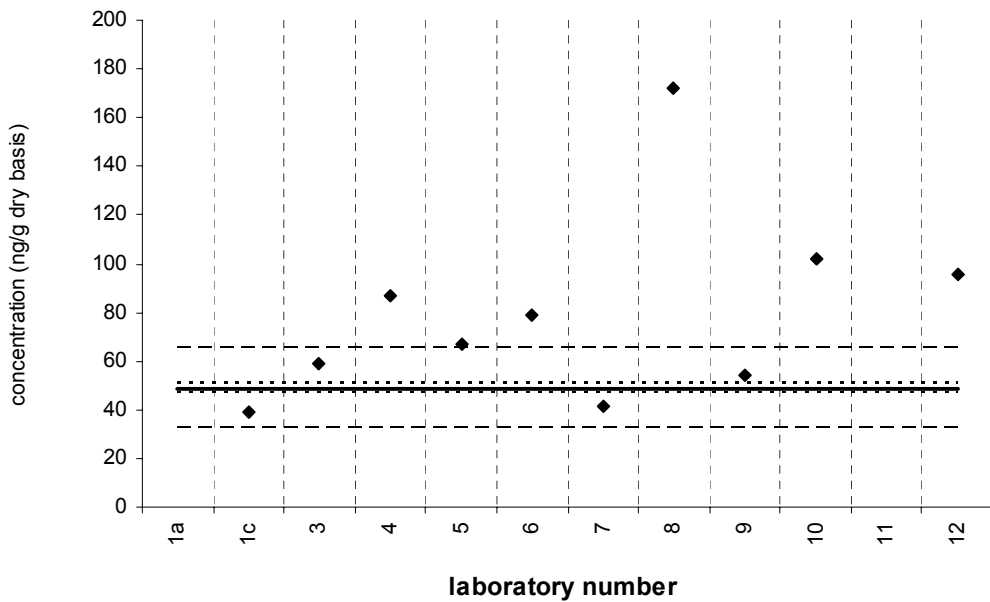


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**chrysene**

**SRM 2977**

Reference Value = 49 ± 2 ng/g (dry basis)  
Reported Results: 10 Quantitative Results: 10



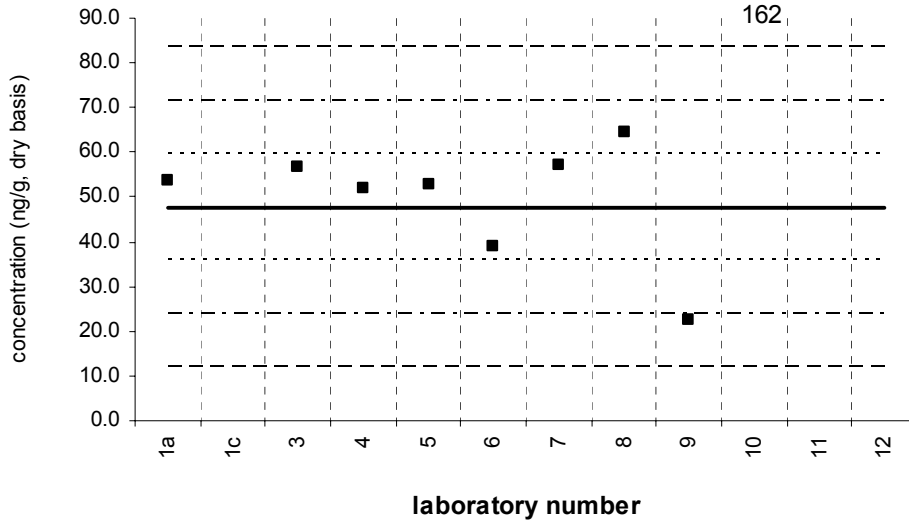
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**benzo[b]fluoranthene**

**Tissue XII (QA05TIS12)**

Assigned value = 47.6 ng/g  $s = 12.6$  ng/g 95% CL = 11.7 ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9



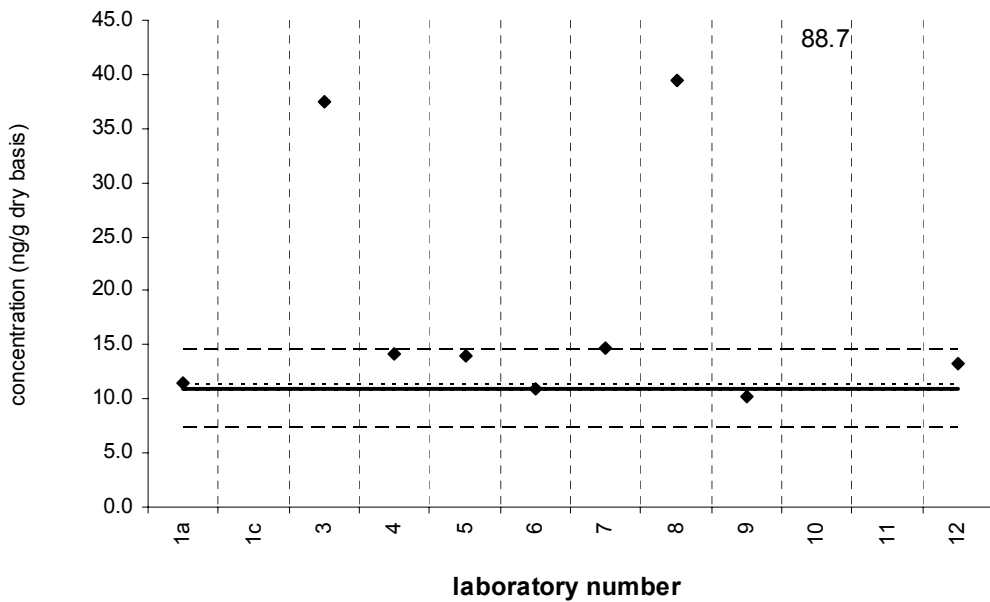
Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**benzo[b]fluoranthene**

**SRM 2977**

Certified Value = 11.01 ± 0.28 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10

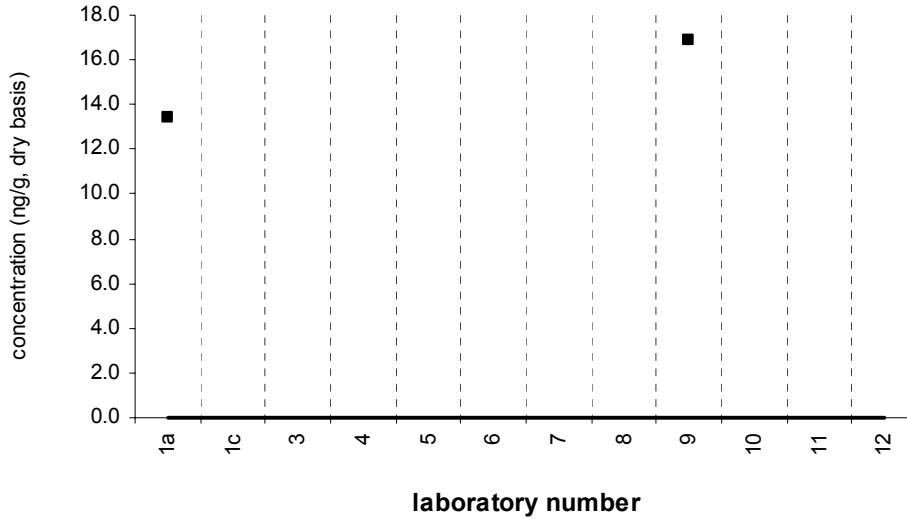


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**benzo[*j*]fluoranthene**

**Tissue XII (QA05TIS12)**

Assigned value = no target ng/g (dry basis)  
Reported Results: 2    Quantitative Results: 2

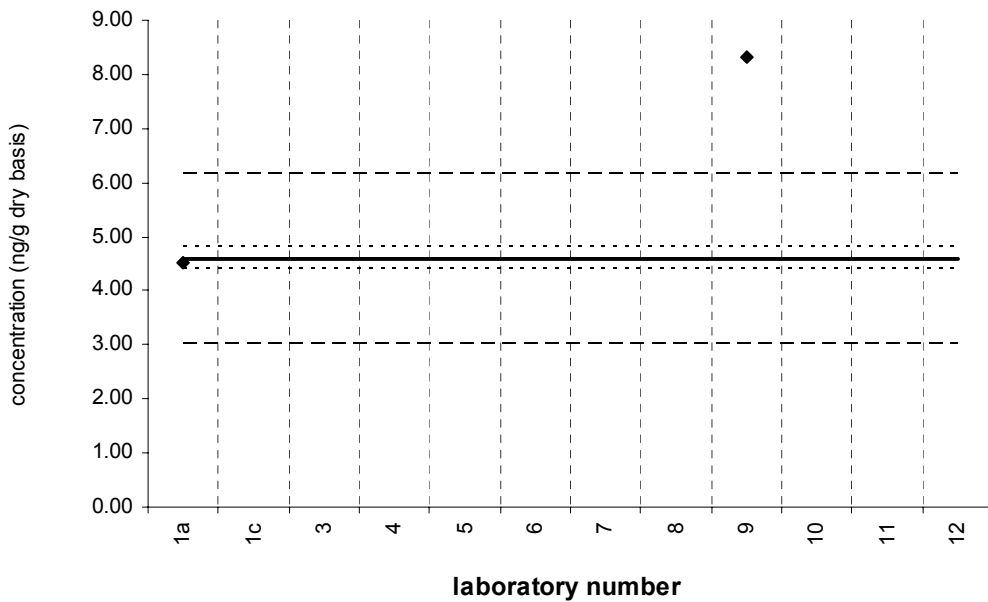


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**benzo[*j*]fluoranthene**

**SRM 2977**

Reference Value =  $4.6 \pm 0.2$  ng/g (dry basis)  
Reported Results: 2    Quantitative Results: 2



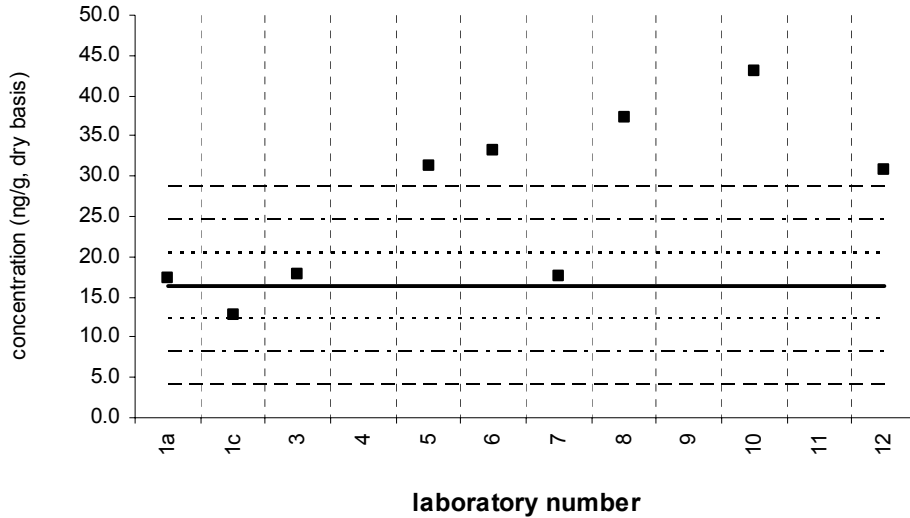
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

### benzo[k]fluoranthene

Tissue XII (QA05TIS12)

Assigned value = 16.3 ng/g  $s = 2.4$  ng/g 95% CL = 3.0 ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9



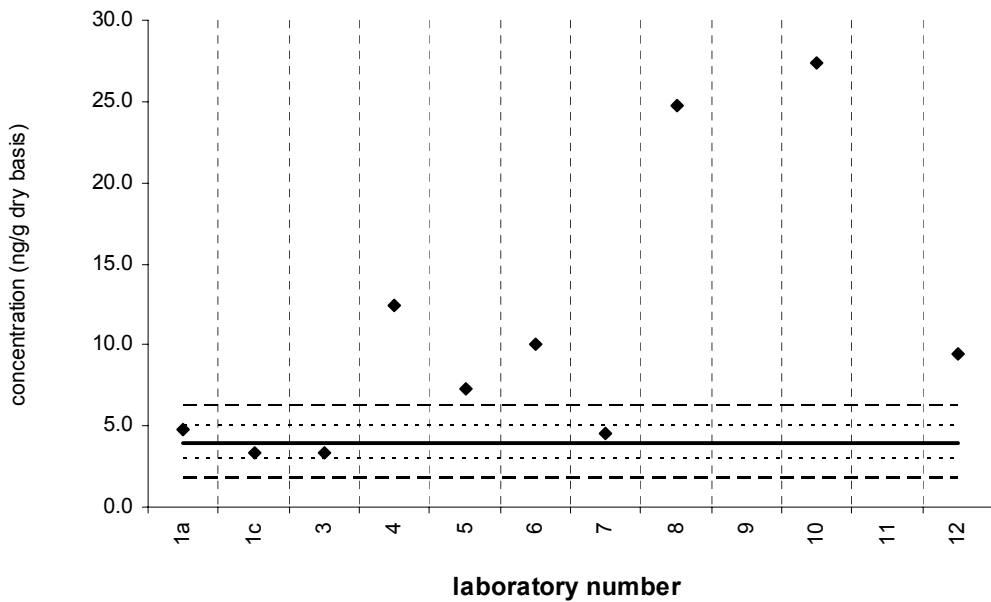
Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

### benzo[k]fluoranthene

SRM 2977

Reference Value =  $4 \pm 1$  ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

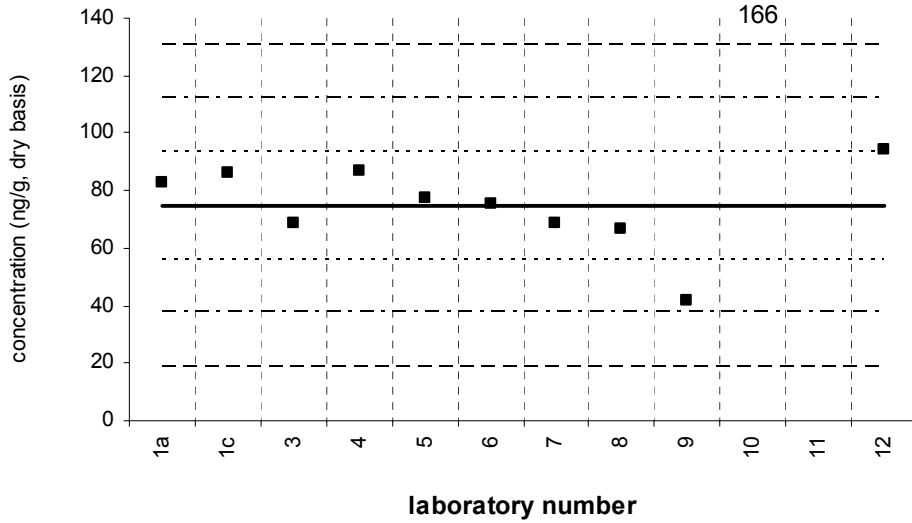


**benzo[e]pyrene**

**Tissue XII (QA05TIS12)**

Assigned value = 74.7 ng/g  $s = 14.6$  ng/g 95% CL = 10.5 ng/g (dry basis)

Reported Results: 11 Quantitative Results: 11



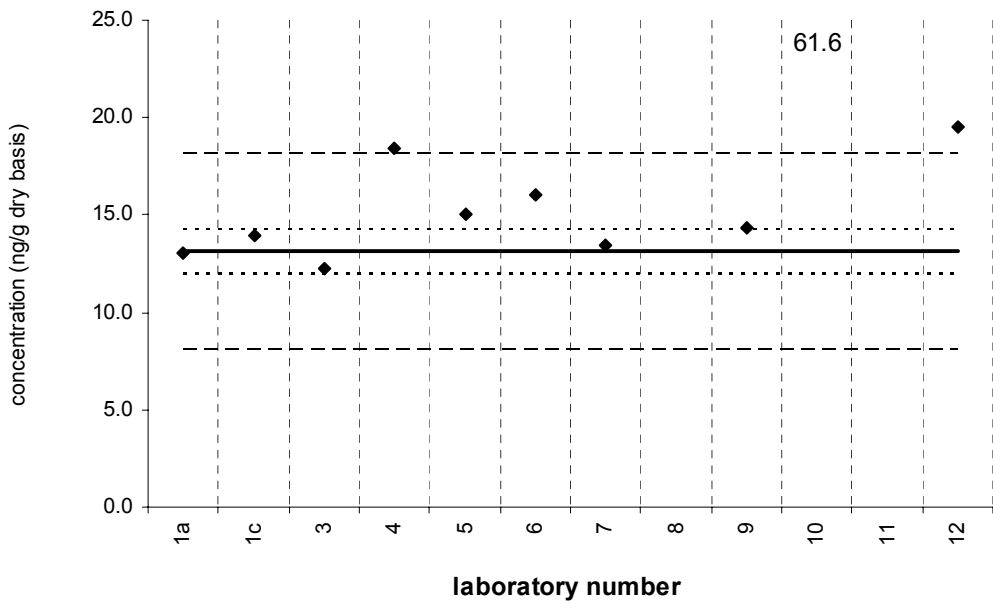
Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**benzo[e]pyrene**

**SRM 2977**

Certified Value = 13.1 ± 1.1 ng/g (dry basis)

Reported Results: 11 Quantitative Results: 10

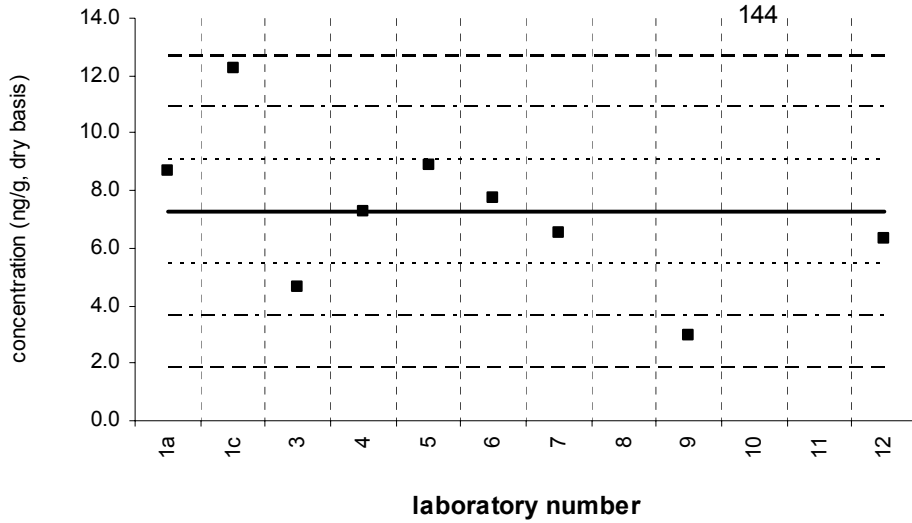


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**benzo[a]pyrene**

**Tissue XII (QA05TIS12)**

Assigned value = 7.25 ng/g  $s = 2.65$  ng/g 95% CL = 2.04 ng/g (dry basis)  
Reported Results: 11 Quantitative Results: 10

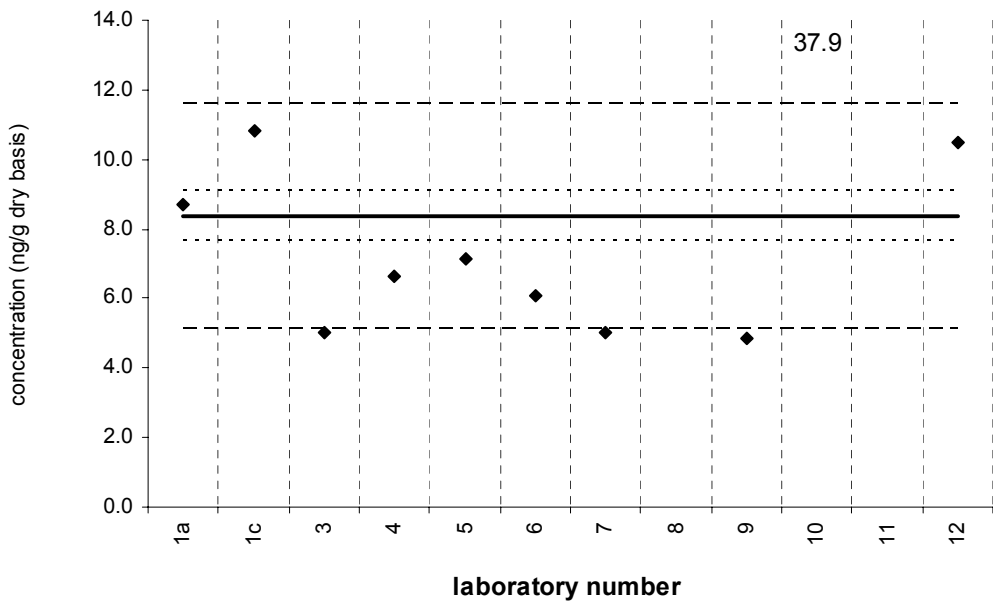


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**benzo[a]pyrene**

**SRM 2977**

Certified Value =  $8.35 \pm 0.72$  ng/g (dry basis)  
Reported Results: 11 Quantitative Results: 10



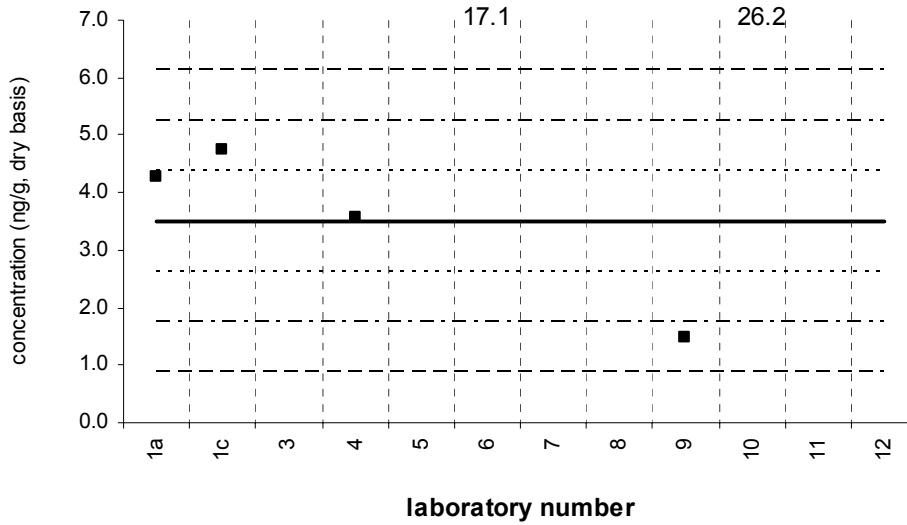
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**perylene**

**Tissue XII (QA05TIS12)**

Assigned value = 3.51 ng/g  $s = 1.44$  ng/g 95% CL = 2.30 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 6



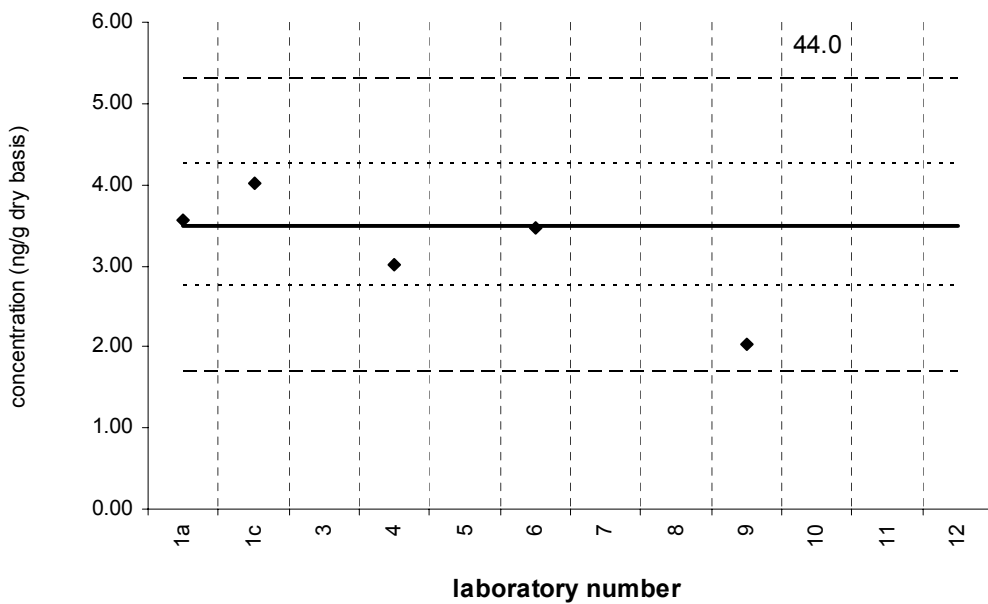
Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**perylene**

**SRM 2977**

Certified Value =  $3.50 \pm 0.76$  ng/g (dry basis)

Reported Results: 8 Quantitative Results: 6

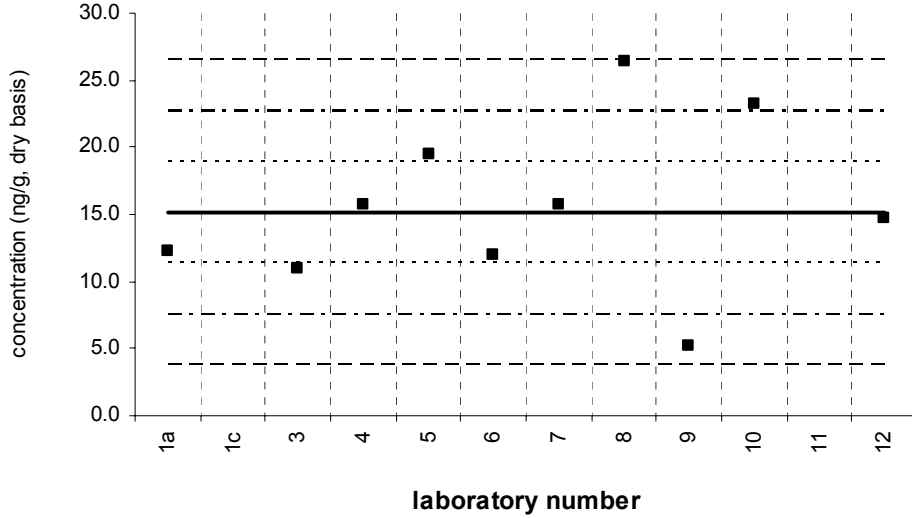


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**indeno[1,2,3-cd]pyrene**

**Tissue XII (QA05TIS12)**

Assigned value = 15.1 ng/g  $s = 6.4$  ng/g 95% CL = 4.9 ng/g (dry basis)  
Reported Results: 10 Quantitative Results: 10

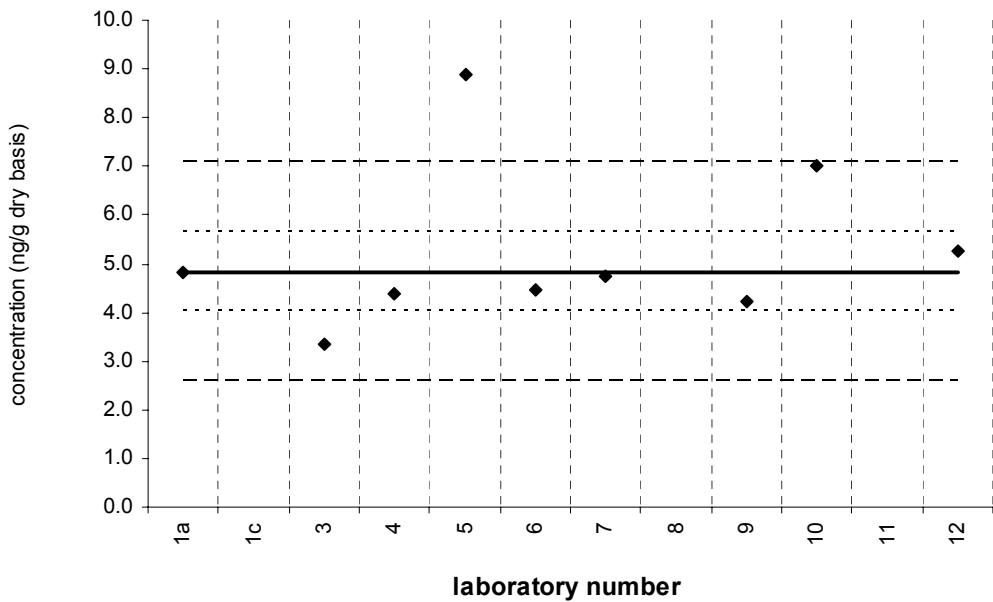


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**indeno[1,2,3-cd]pyrene**

**SRM 2977**

Certified Value =  $4.84 \pm 0.81$  ng/g (dry basis)  
Reported Results: 10 Quantitative Results: 9

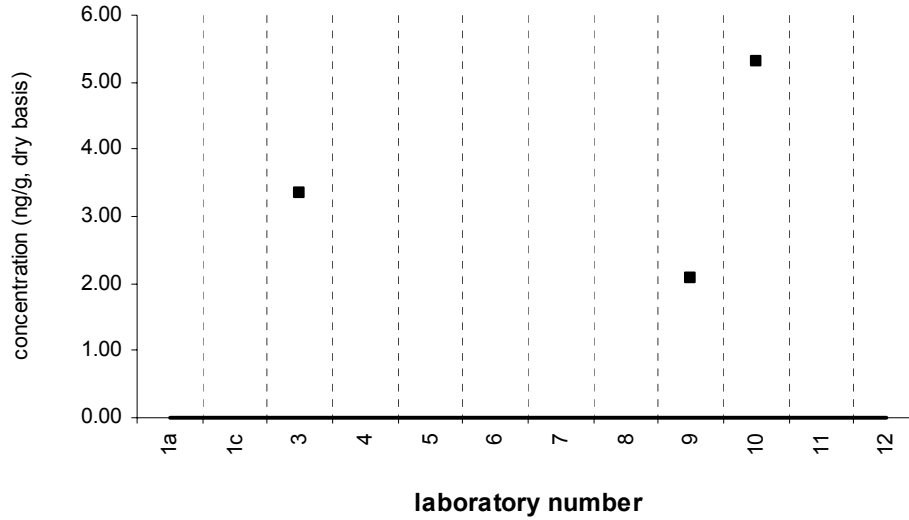


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

### dibenz[a,h]anthracene

Tissue XII (QA05TIS12)

Assigned value = no target ng/g (dry basis)  
Reported Results: 7    Quantitative Results: 3

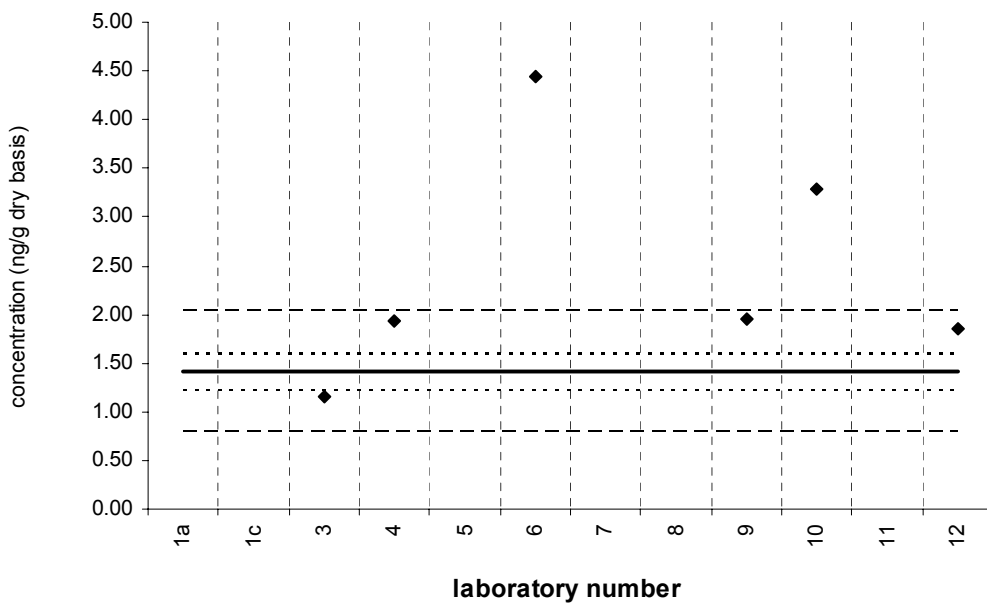


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

### dibenz[a,h]anthracene

SRM 2977

Certified Value =  $1.41 \pm 0.19$  ng/g (dry basis)  
Reported Results: 9    Quantitative Results: 6



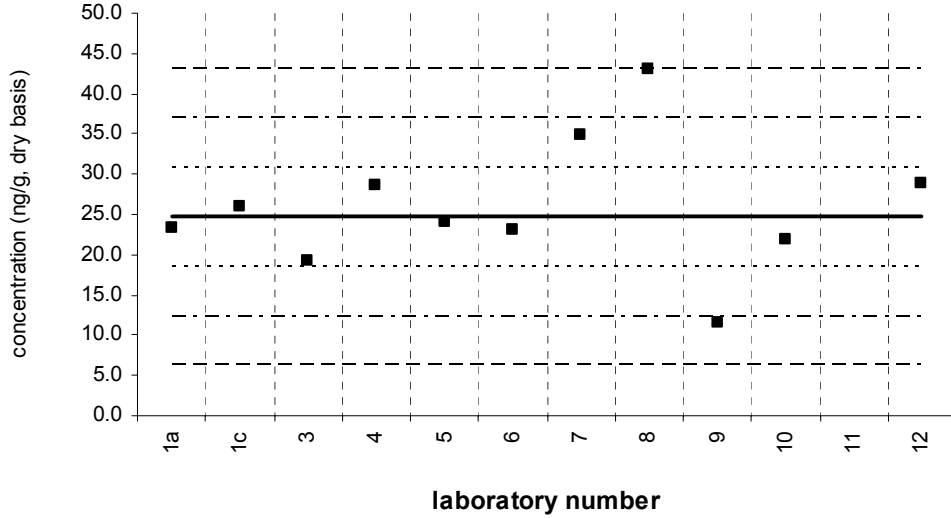
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**benzo[ghi]perylene**

**Tissue XII (QA05TIS12)**

Assigned value = 24.6 ng/g  $s = 6.4$  ng/g 95% CL = 4.9 ng/g (dry basis)

Reported Results: 11 Quantitative Results: 11



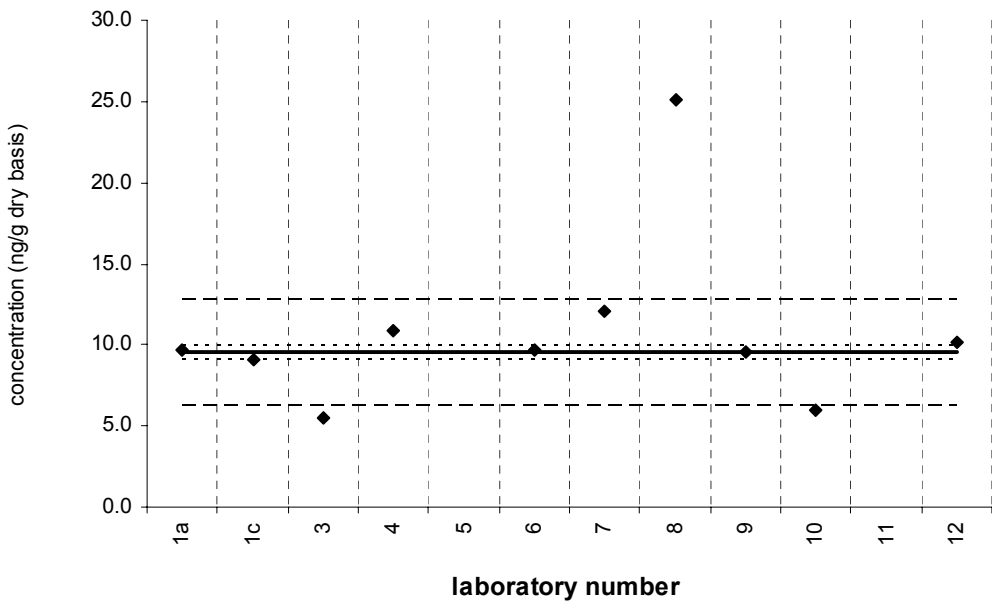
Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**benzo[ghi]perylene**

**SRM 2977**

Certified Value =  $9.53 \pm 0.43$  ng/g (dry basis)

Reported Results: 11 Quantitative Results: 10

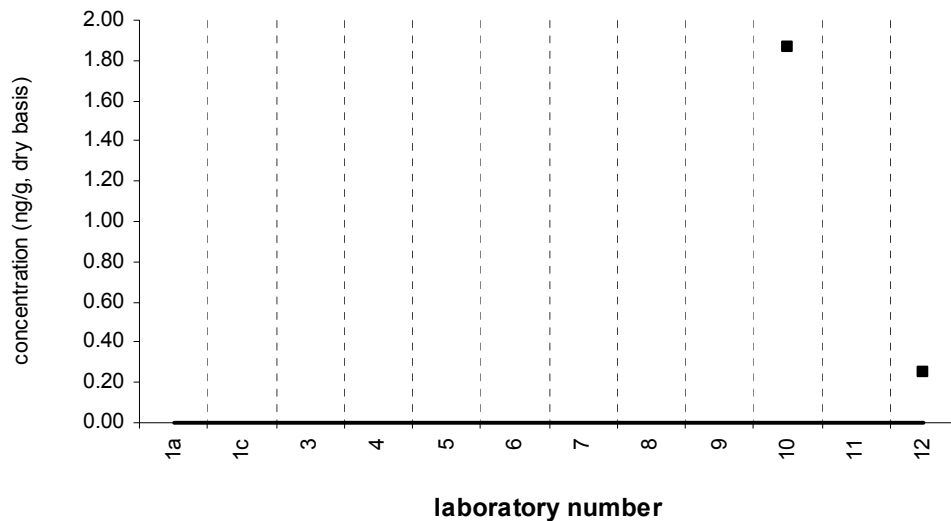


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

### alpha-HCH (a-BHC)

Tissue XII (QA05TIS12)

Assigned value = no target ng/g (dry basis)  
Reported Results: 9    Quantitative Results: 2

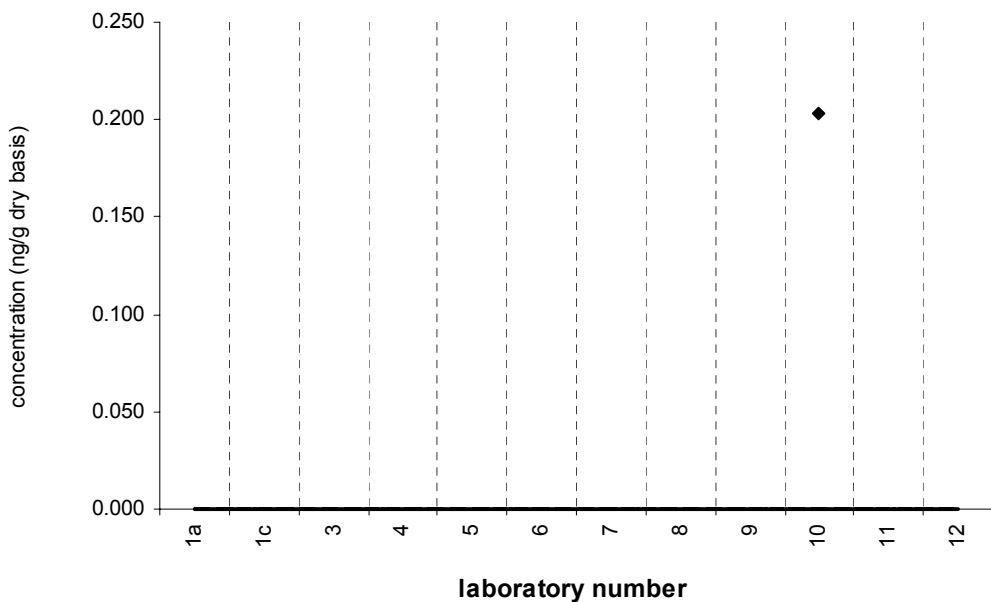


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

### alpha-HCH (a-BHC)

SRM 2977

Target Value = no target ng/g (dry basis)  
Reported Results: 8    Quantitative Results: 1

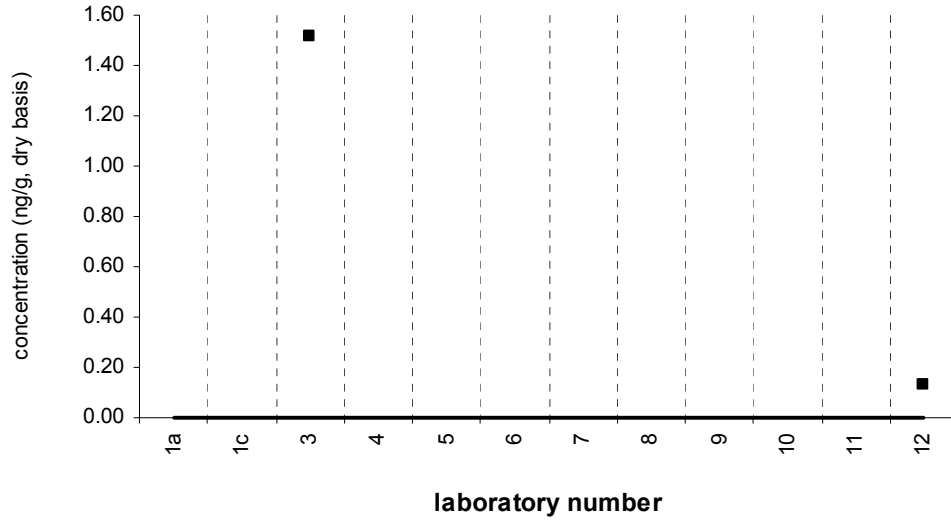


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

### hexachlorobenzene

Tissue XII (QA05TIS12)

Assigned value = no target ng/g (dry basis)  
Reported Results: 9    Quantitative Results: 2

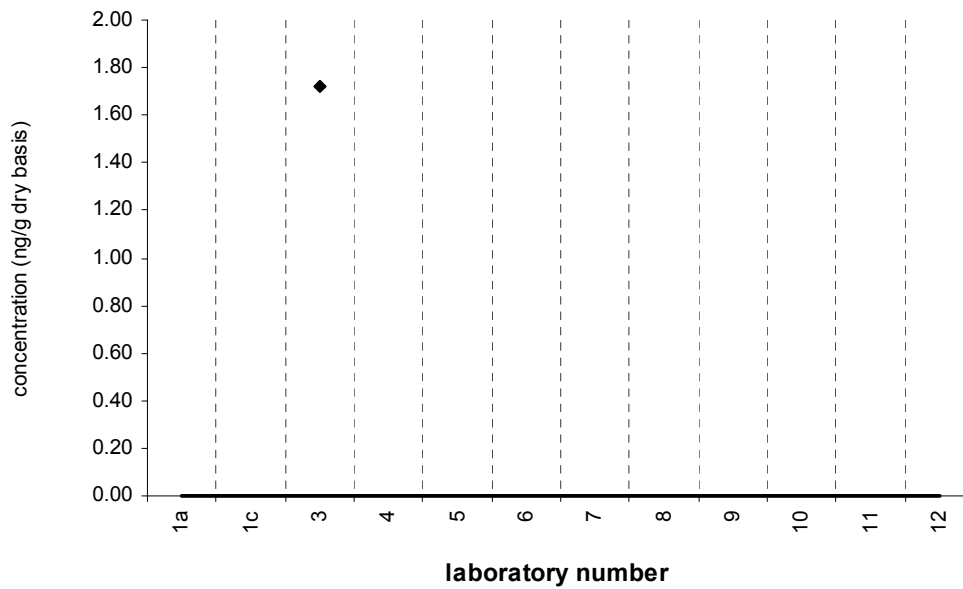


Solid line : exercise assigned value (EA V); dotted line:  $z=\pm 1$  (25% from EA V); dotted/dashed line:  $z=\pm 2$  (50% from EA V); dashed line:  $z=\pm 3$  (75% from EA V)

### hexachlorobenzene

SRM 2977

Target Value = no target ng/g (dry basis)  
Reported Results: 8    Quantitative Results: 1



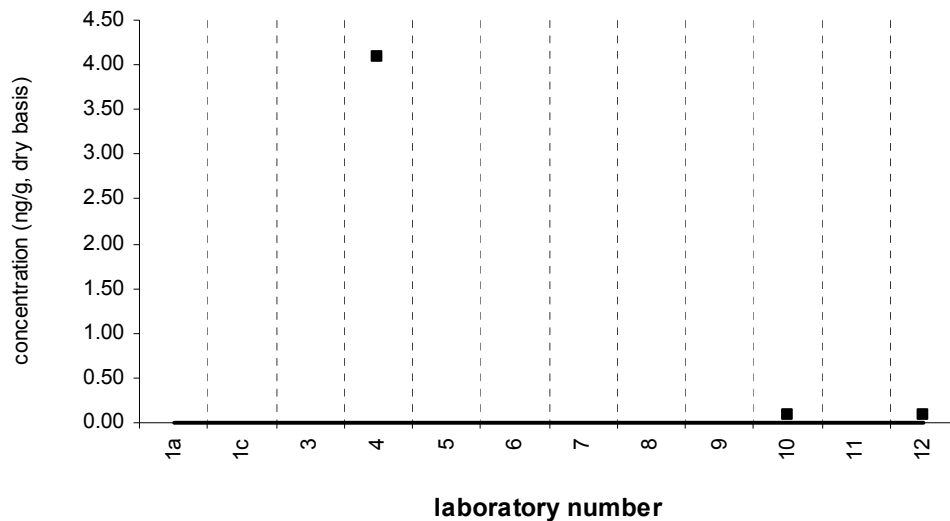
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits



### gamma-HCH (g-BHC,lindane)

Tissue XII (QA05TIS12)

Assigned value = no target ng/g (dry basis)  
Reported Results: 10    Quantitative Results: 3

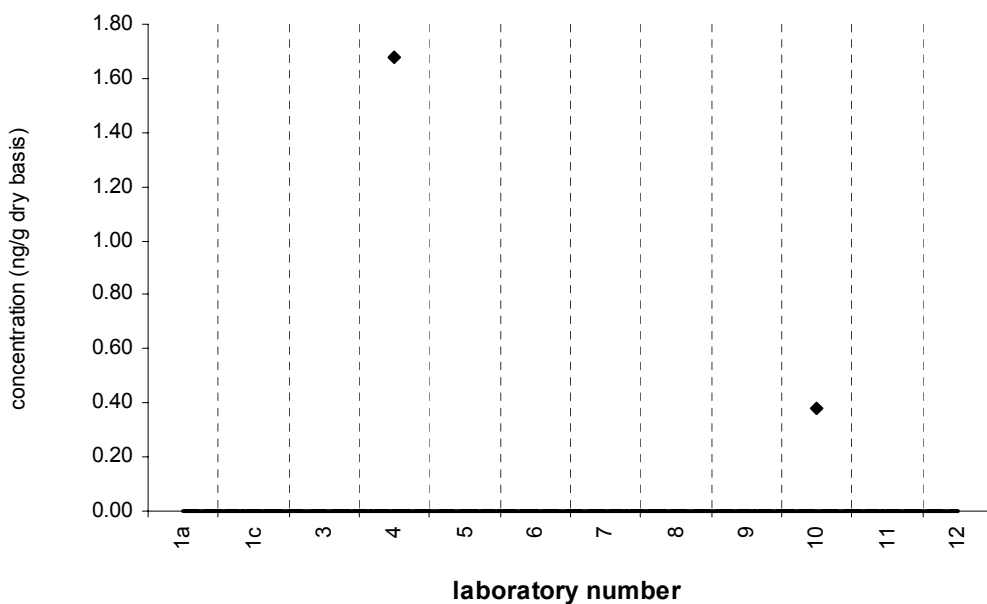


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

### gamma-HCH (g-BHC,lindane)

SRM 2977

Target Value = no target ng/g (dry basis)  
Reported Results: 9    Quantitative Results: 2

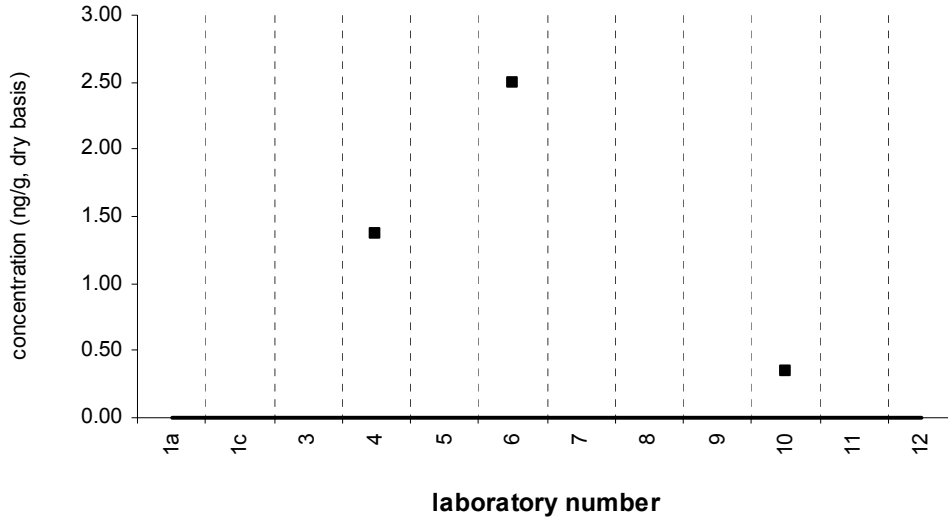


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**beta-HCH (b-BHC)**

**Tissue XII (QA05TIS12)**

Assigned value = no target ng/g (dry basis)  
Reported Results: 8    Quantitative Results: 3

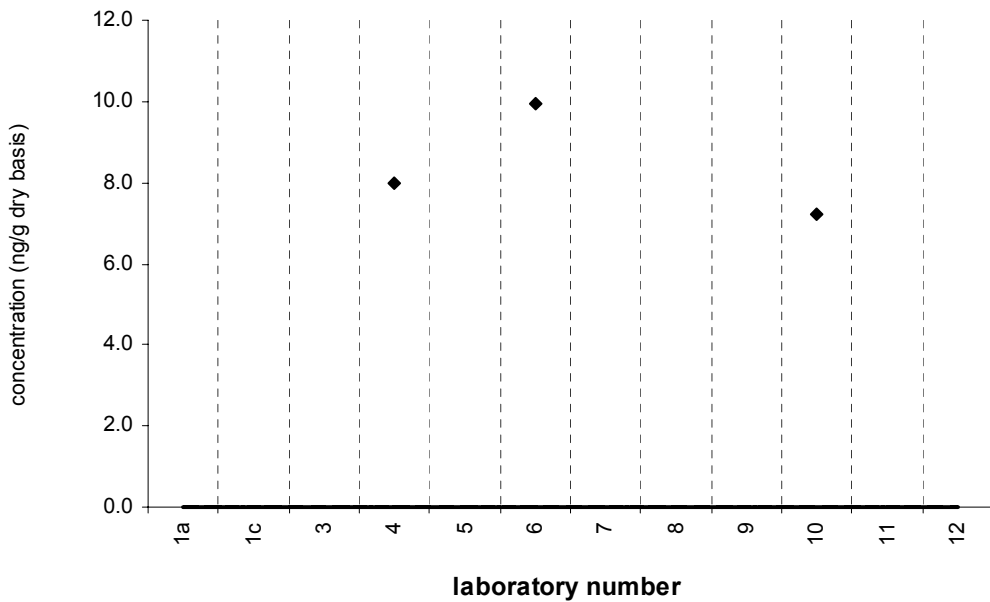


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**beta-HCH (b-BHC)**

**SRM 2977**

Target Value = no target ng/g (dry basis)  
Reported Results: 7    Quantitative Results: 3

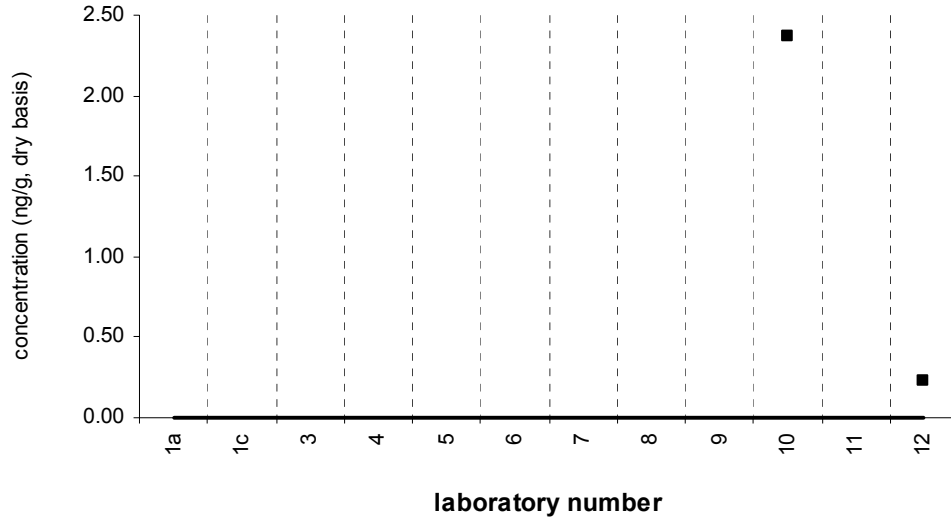


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

### heptachlor

### Tissue XII (QA05TIS12)

Assigned value = no target ng/g (dry basis)  
Reported Results: 10    Quantitative Results: 2

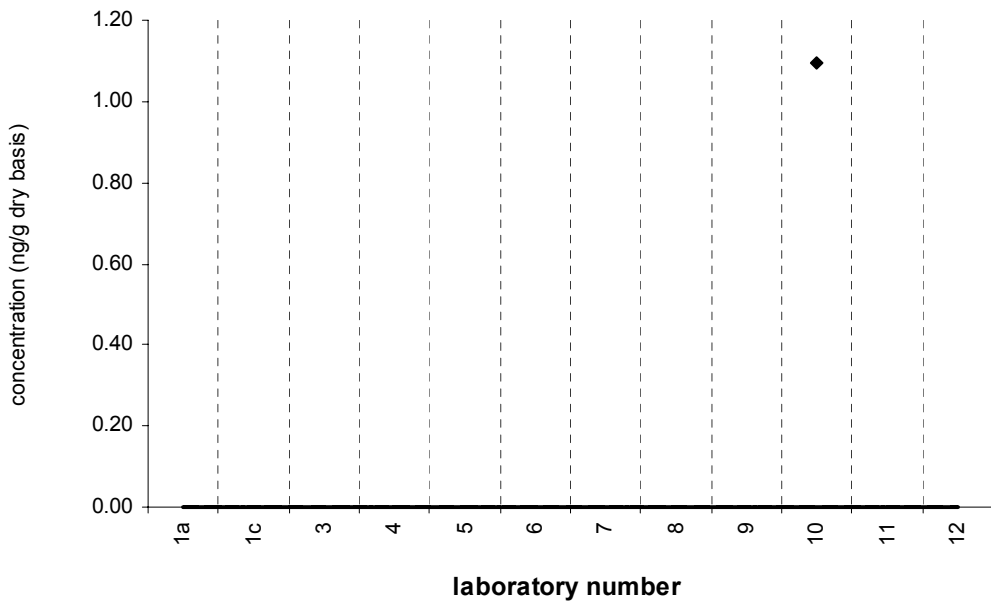


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

### heptachlor

### SRM 2977

Target Value = no target ng/g (dry basis)  
Reported Results: 9    Quantitative Results: 1

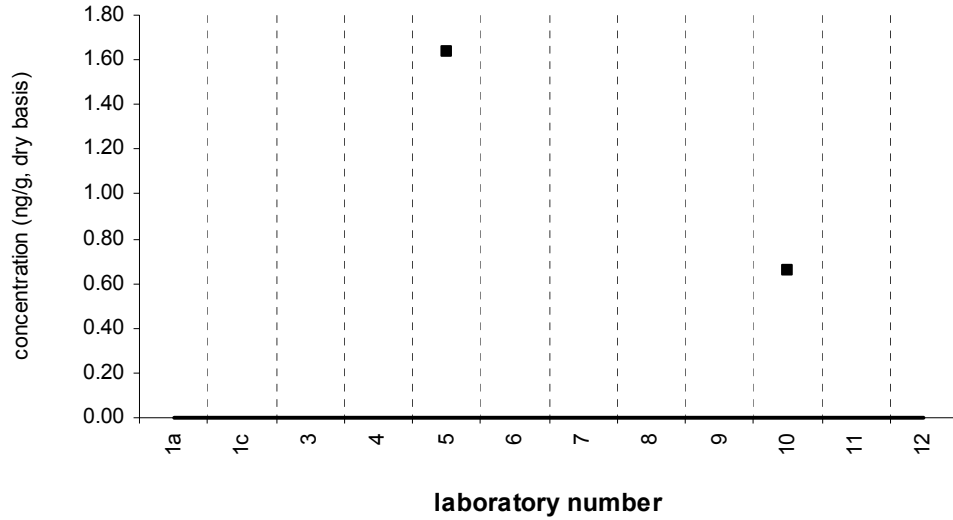


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**aldrin**

**Tissue XII (QA05TIS12)**

Assigned value = no target ng/g (dry basis)  
Reported Results: 10    Quantitative Results: 2

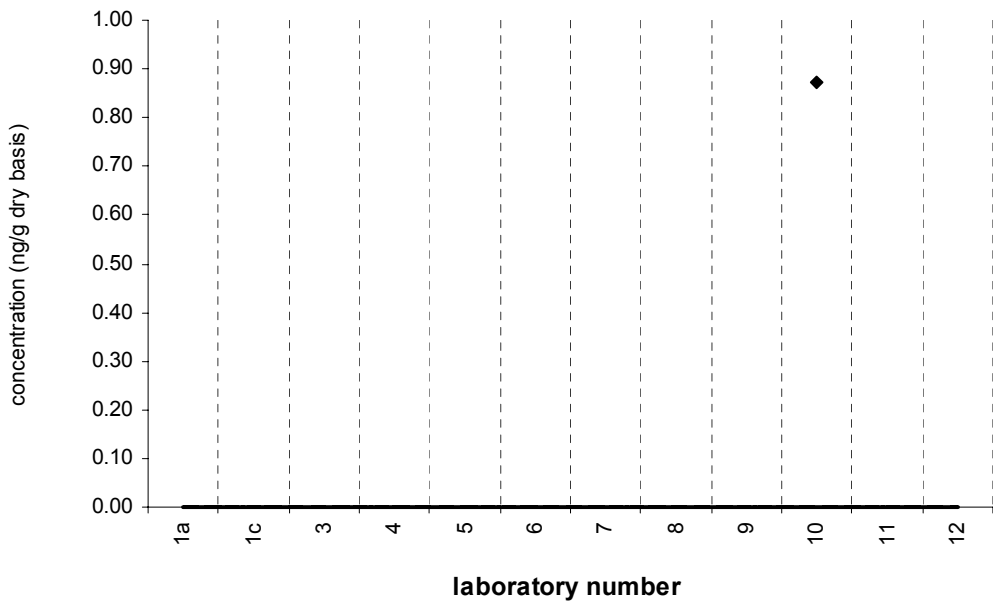


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**aldrin**

**SRM 2977**

Target Value = no target ng/g (dry basis)  
Reported Results: 9    Quantitative Results: 1

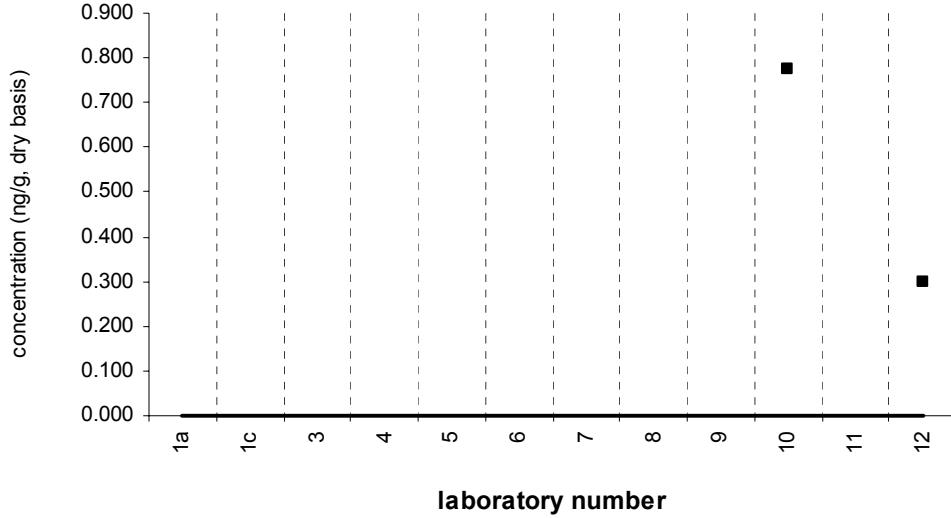


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**heptachlor epoxide**

**Tissue XII (QA05TIS12)**

Assigned value = no target ng/g (dry basis)  
Reported Results: 10    Quantitative Results: 2

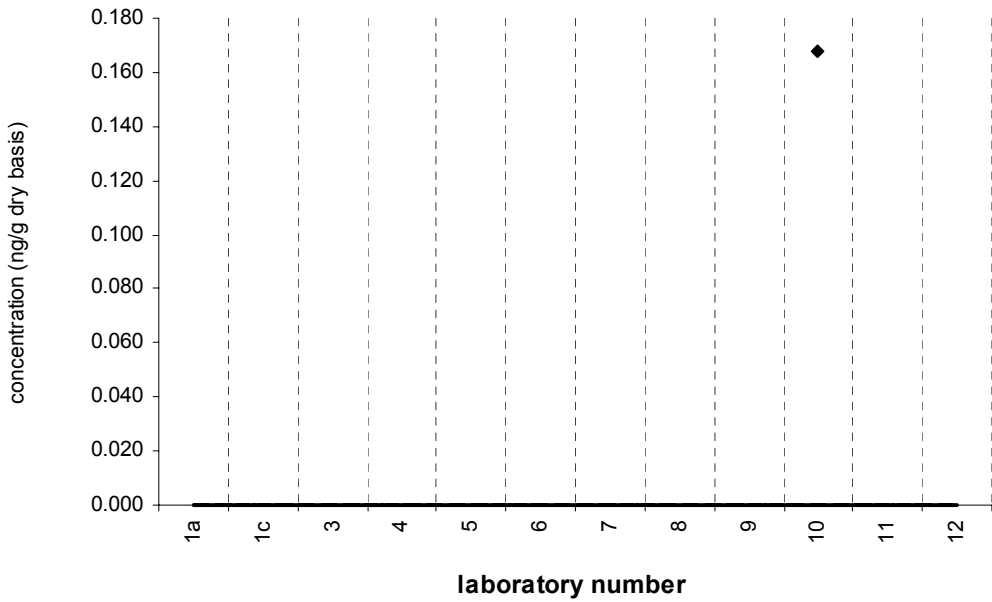


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**heptachlor epoxide**

**SRM 2977**

Target Value = no target ng/g (dry basis)  
Reported Results: 9    Quantitative Results: 1

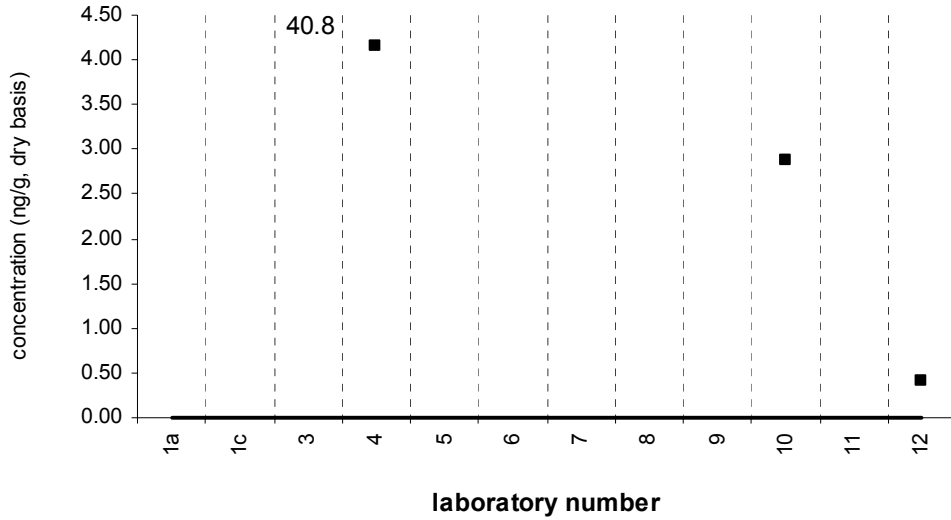


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**oxychlordan**

**Tissue XII (QA05TIS12)**

Assigned value = no target ng/g (dry basis)  
Reported Results: 9    Quantitative Results: 4

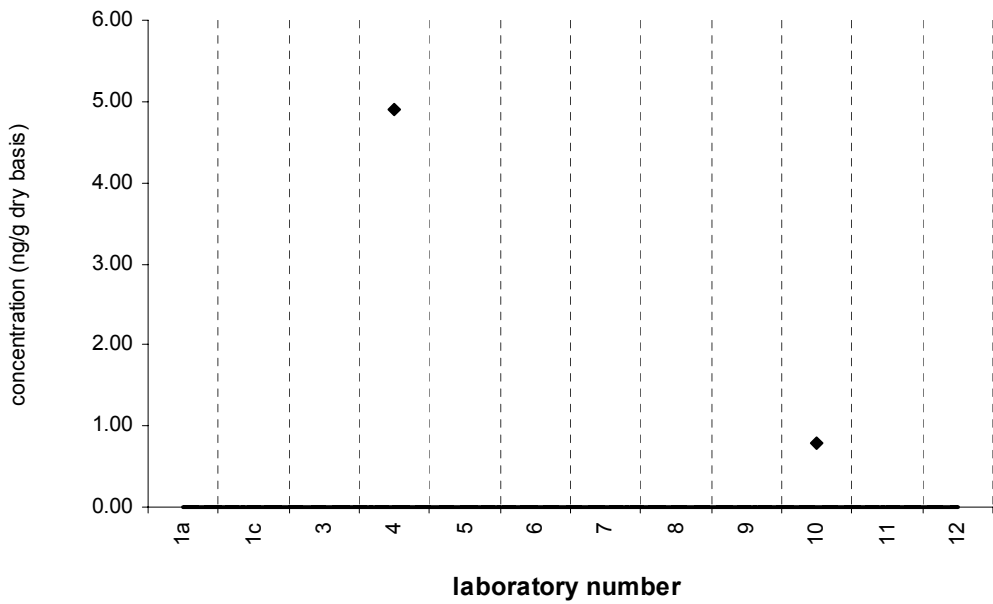


Solid line : exercise assigned value (EA V); dotted line:  $z=\pm 1$  (25% from EA V); dotted/dashed line:  $z=\pm 2$  (50% from EA V); dashed line:  $z=\pm 3$  (75% from EA V)

**oxychlordan**

**SRM 2977**

Target Value = no target ng/g (dry basis)  
Reported Results: 8    Quantitative Results: 2



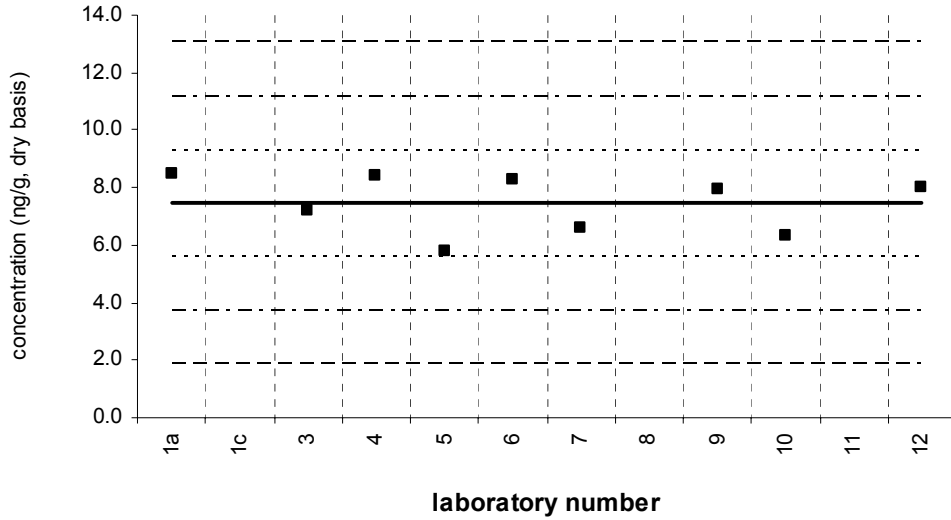
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**gamma-chlordane**

**Tissue XII (QA05TIS12)**

Assigned value = 7.45 ng/g  $s = 1.00$  ng/g 95% CL = 0.77 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 9



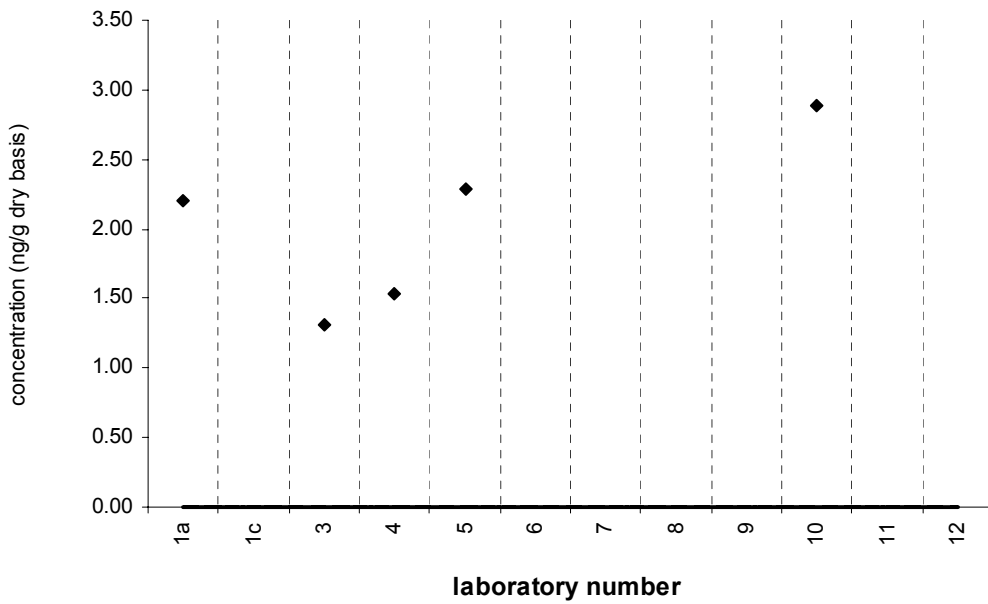
Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**gamma-chlordane**

**SRM 2977**

Target Value = no target ng/g (dry basis)

Reported Results: 9 Quantitative Results: 5

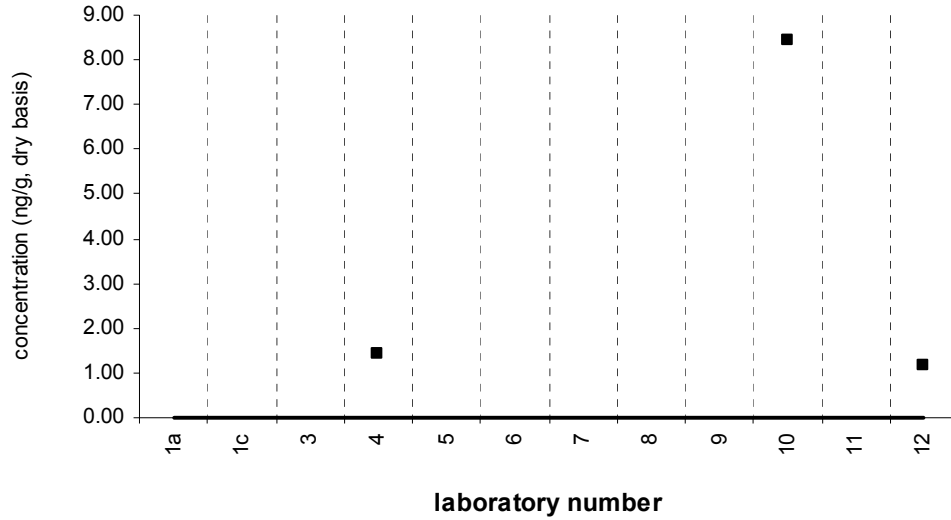


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

## 2,4'-DDE

Tissue XII (QA05TIS12)

Assigned value = no target ng/g (dry basis)  
Reported Results: 10    Quantitative Results: 3

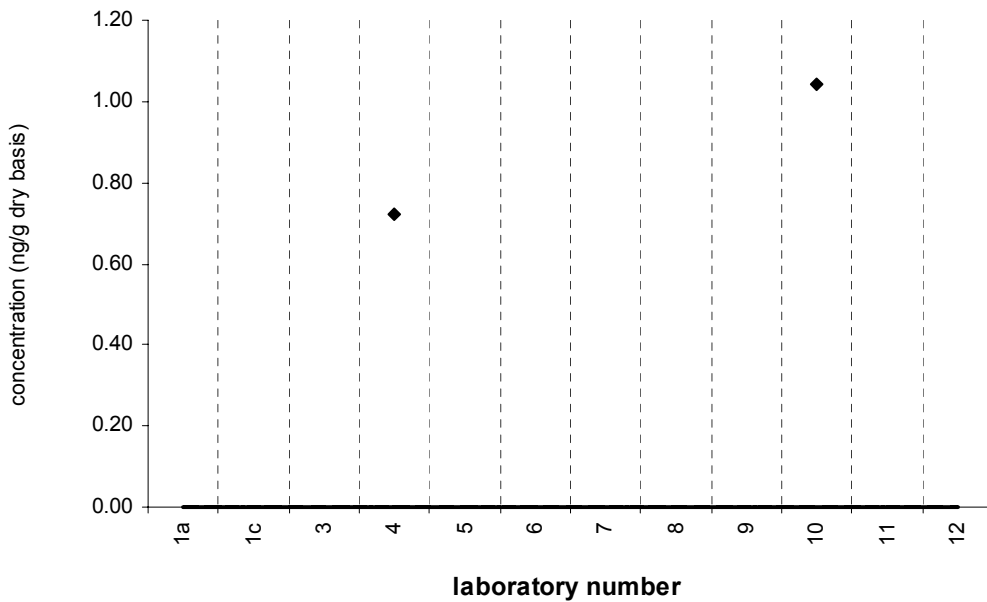


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

## 2,4'-DDE

SRM 2977

Target Value = no target ng/g (dry basis)  
Reported Results: 9    Quantitative Results: 2



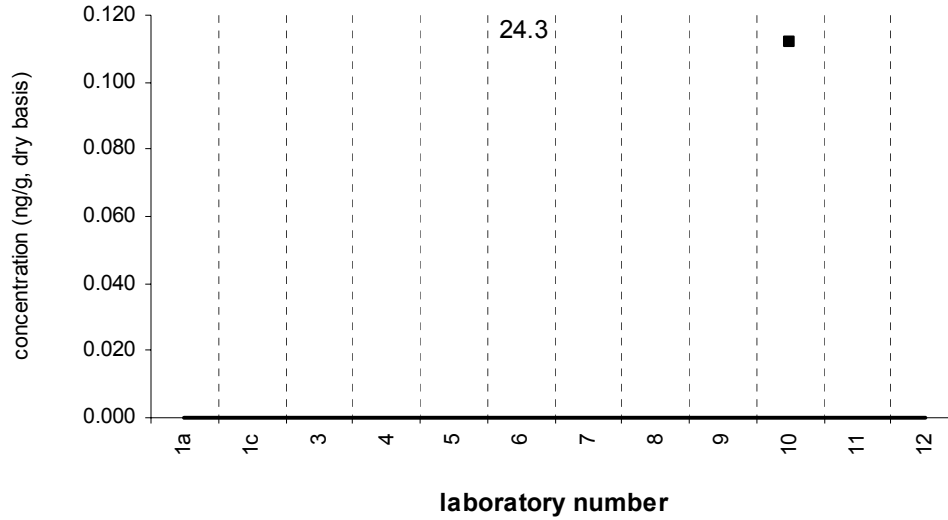
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits



### endosulfan I

Tissue XII (QA05TIS12)

Assigned value = no target ng/g (dry basis)  
Reported Results: 10    Quantitative Results: 2

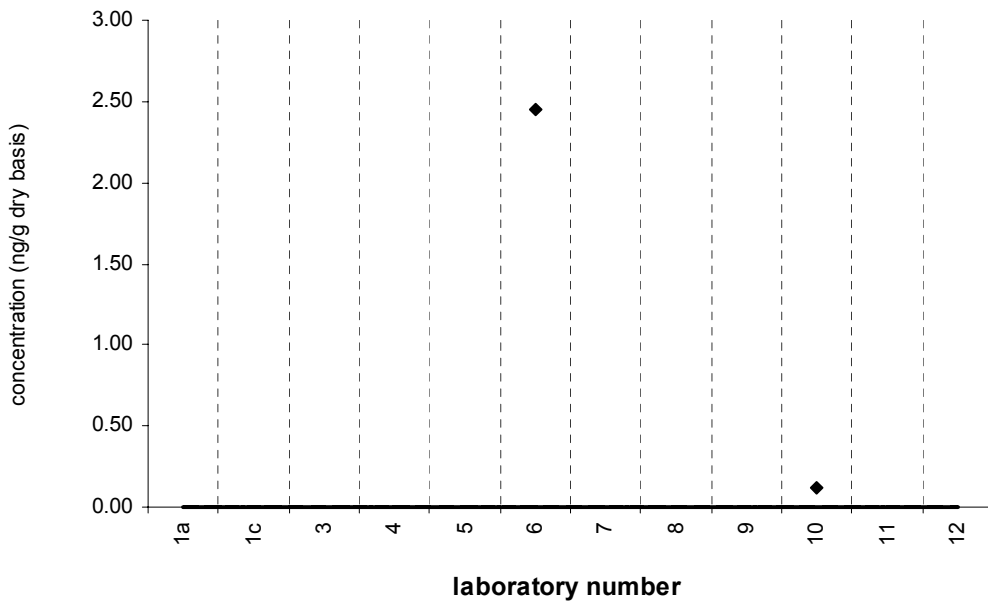


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

### endosulfan I

SRM 2977

Target Value = no target ng/g (dry basis)  
Reported Results: 9    Quantitative Results: 2

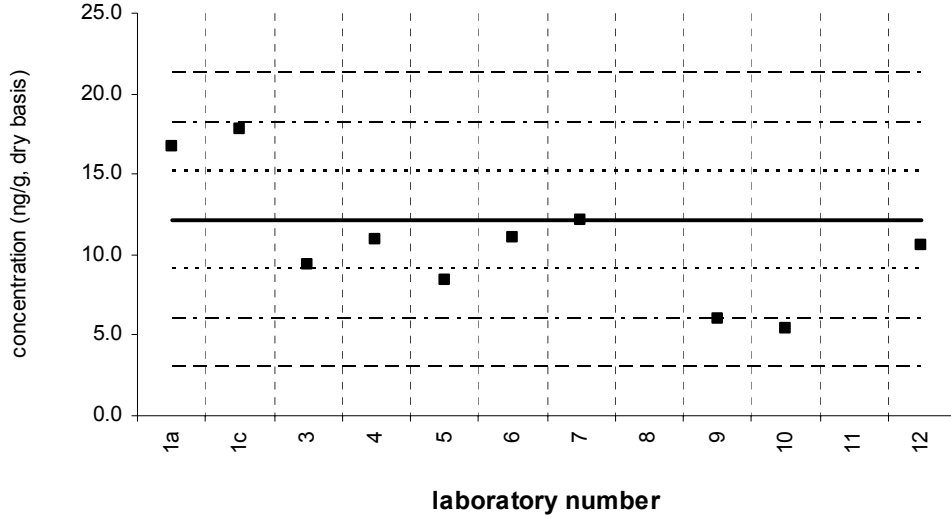


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**cis-chlordane (alpha-chlordane)**

**Tissue XII (QA05TIS12)**

Assigned value = 12.1 ng/g  $s = 3.4$  ng/g 95% CL = 2.8 ng/g (dry basis)  
Reported Results: 10 Quantitative Results: 10

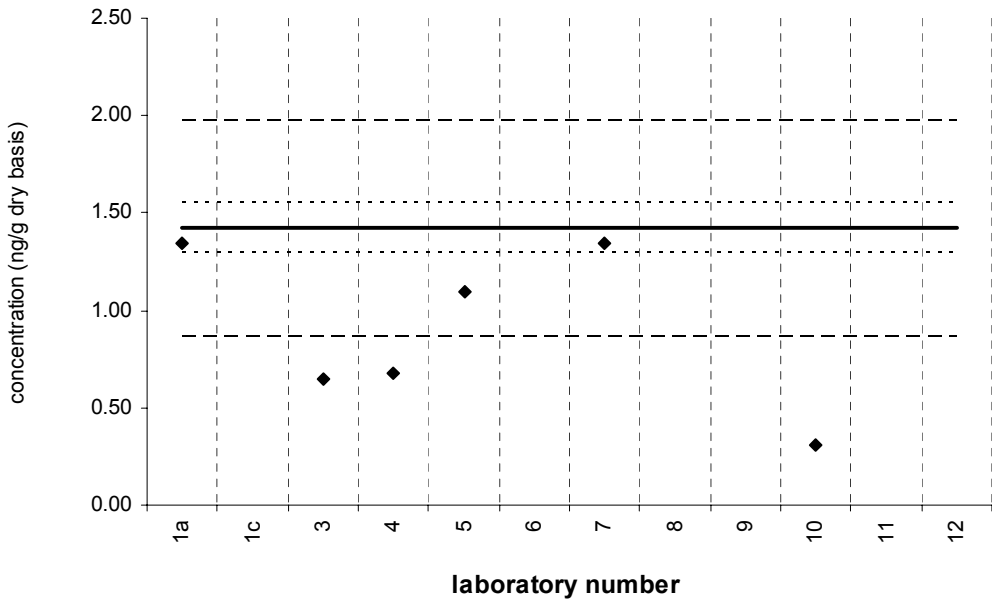


Solid line : exercise assigned value (EAV); dotted line:  $z = \pm 1$  (25% from EAV); dotted/dashed line:  $z = \pm 2$  (50% from EAV); dashed line:  $z = \pm 3$  (75% from EAV)

**cis-chlordane (alpha-chlordane)**

**SRM 2977**

Certified Value =  $1.42 \pm 0.13$  ng/g (dry basis)  
Reported Results: 9 Quantitative Results: 6

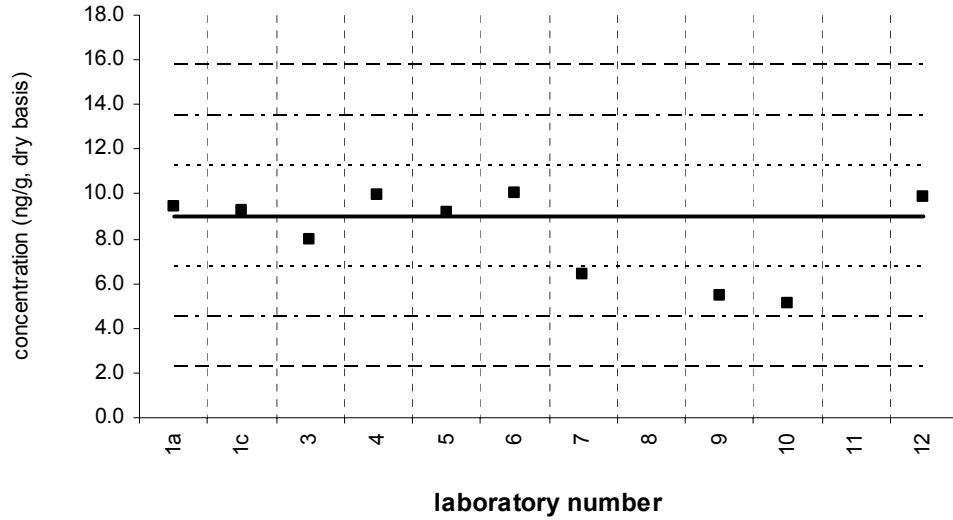


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**trans-nonachlor**

**Tissue XII (QA05TIS12)**

Assigned value = 9.00 ng/g  $s = 1.24$  ng/g 95% CL = 1.04 ng/g (dry basis)  
Reported Results: 10 Quantitative Results: 10

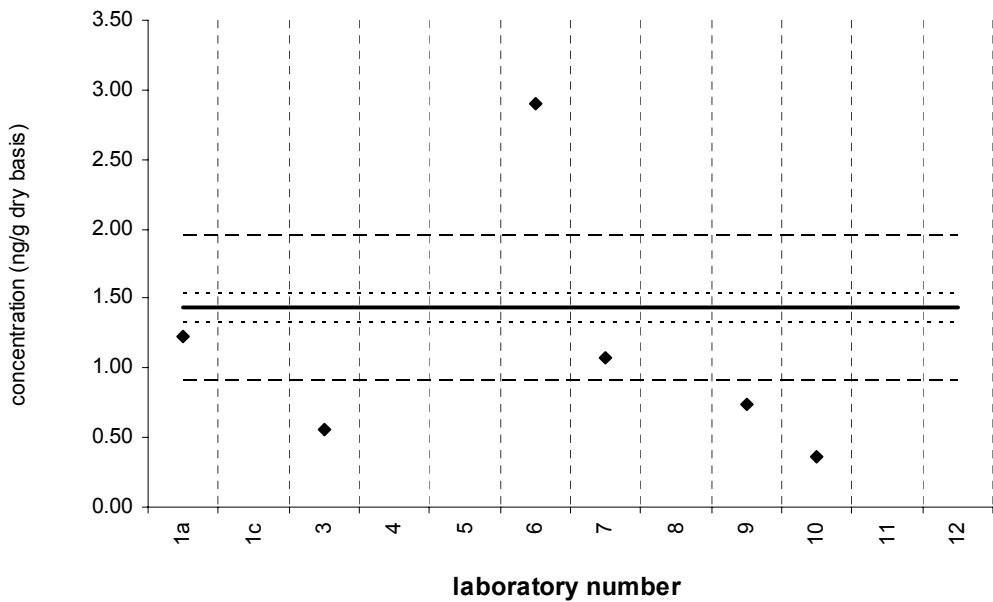


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**trans-nonachlor**

**SRM 2977**

Certified Value =  $1.43 \pm 0.10$  ng/g (dry basis)  
Reported Results: 9 Quantitative Results: 6



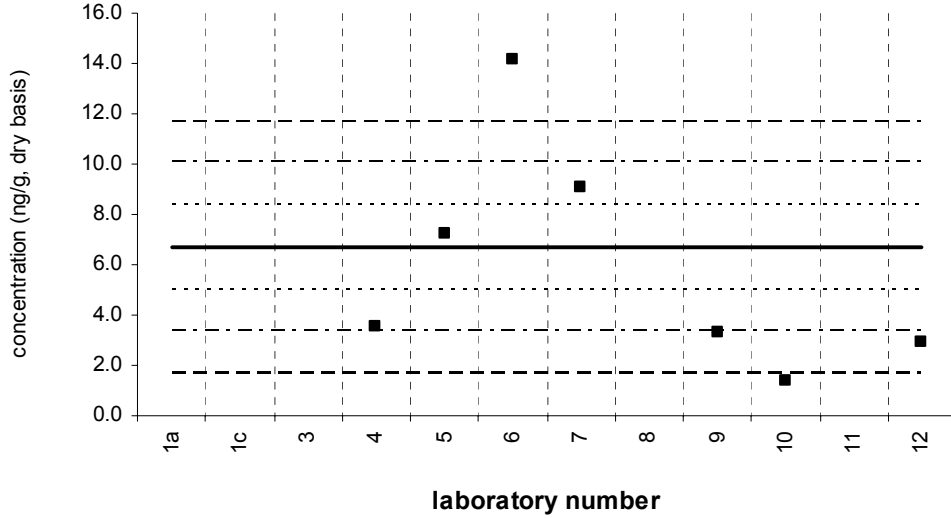
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**dieldrin**

**Tissue XII (QA05TIS12)**

Assigned value = 6.70 ng/g  $s = 4.42$  ng/g 95% CL = 4.64 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 7



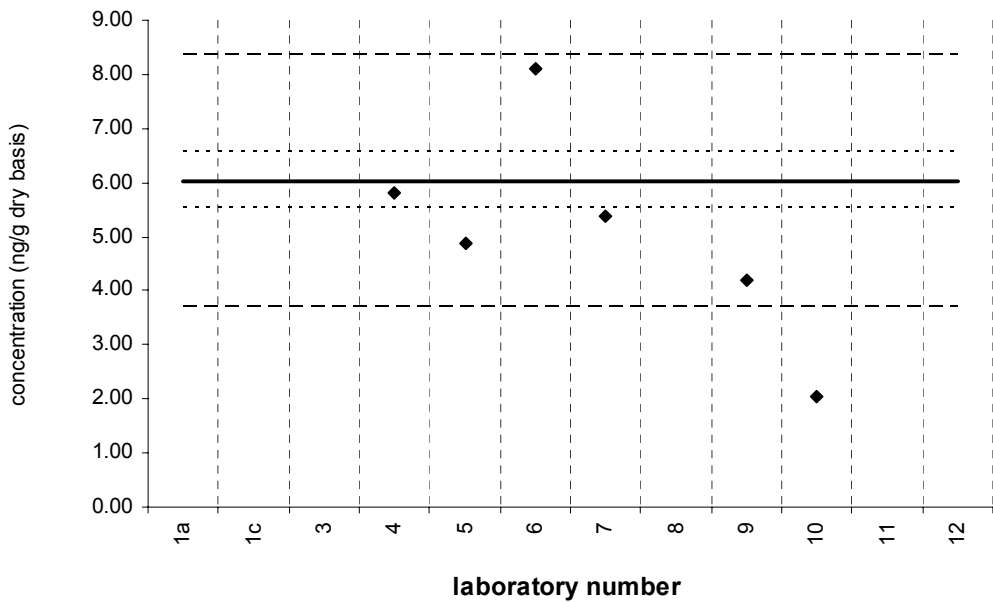
Solid line : exercise assigned value (EAV); dotted line:  $z \pm 1$  (25% from EAV); dotted/dashed line:  $z \pm 2$  (50% from EAV); dashed line:  $z \pm 3$  (75% from EAV)

**dieldrin**

**SRM 2977**

Certified Value =  $6.04 \pm 0.52$  ng/g (dry basis)

Reported Results: 9 Quantitative Results: 6

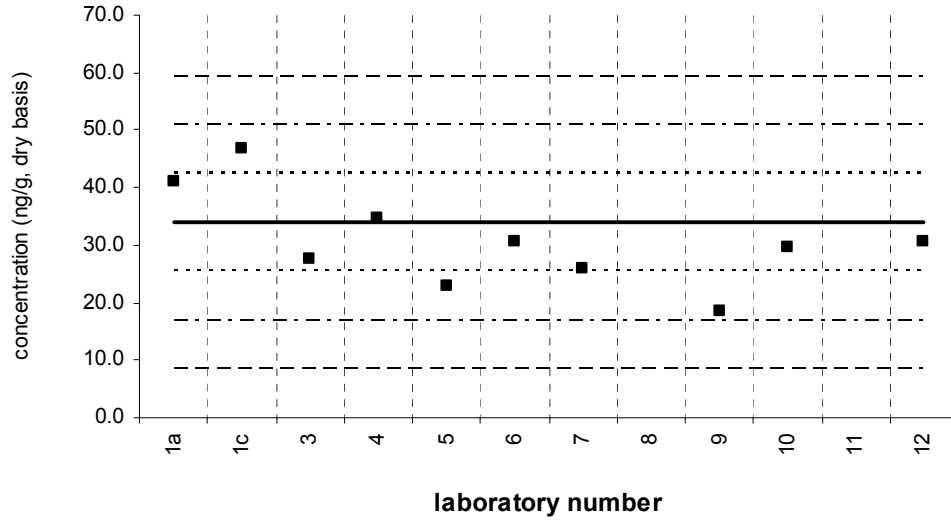


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

### 4,4'-DDE

Tissue XII (QA05TIS12)

Assigned value = 33.9 ng/g  $s = 7.6$  ng/g 95% CL = 7.0 ng/g (dry basis)  
Reported Results: 10 Quantitative Results: 10

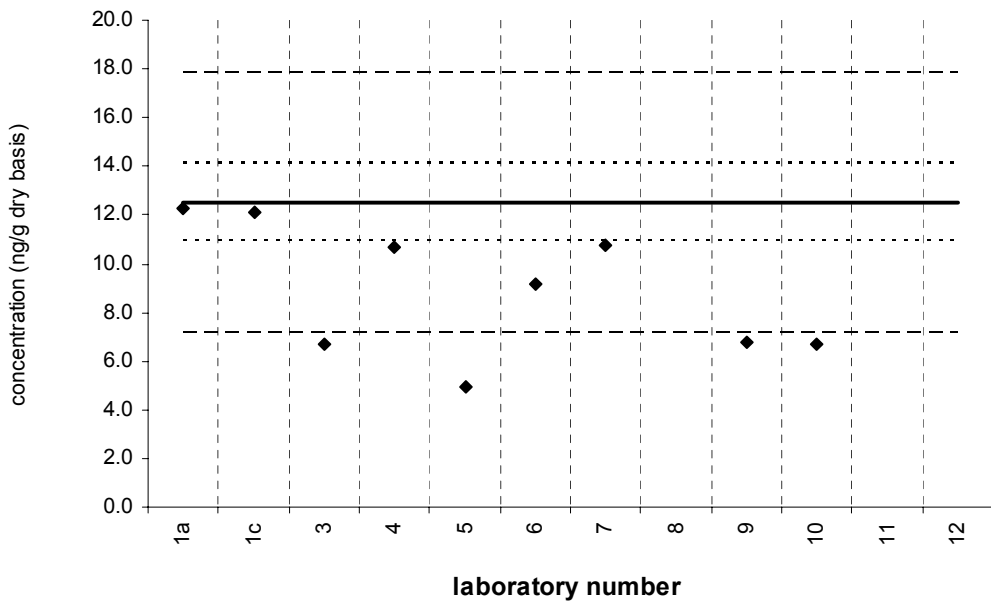


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

### 4,4'-DDE

SRM 2977

Certified Value = 12.5  $\pm$  1.6 ng/g (dry basis)  
Reported Results: 9 Quantitative Results: 9



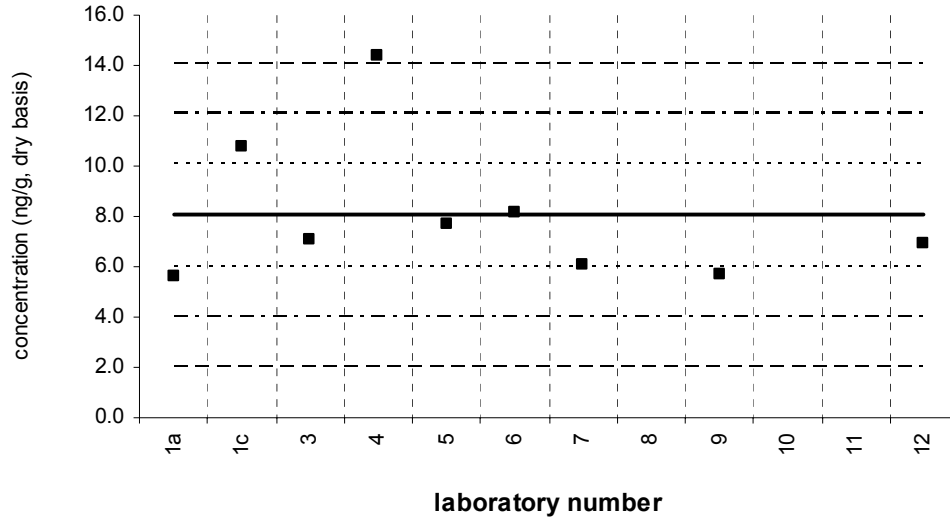
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

## 2,4'-DDD

Tissue XII (QA05TIS12)

Assigned value = 8.04 ng/g  $s = 2.86$  ng/g 95% CL = 2.20 ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9



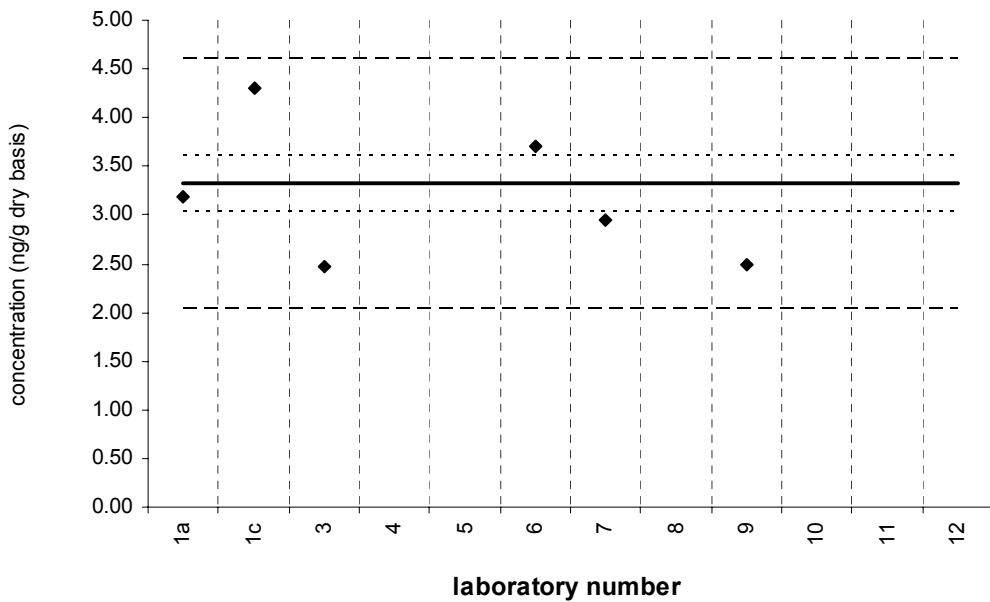
Solid line : exercise assigned value (EAV); dotted line:  $z \pm 1$  (25% from EAV); dotted/dashed line:  $z \pm 2$  (50% from EAV); dashed line:  $z \pm 3$  (75% from EAV)

## 2,4'-DDD

SRM 2977

Certified Value =  $3.32 \pm 0.29$  ng/g (dry basis)

Reported Results: 7 Quantitative Results: 6

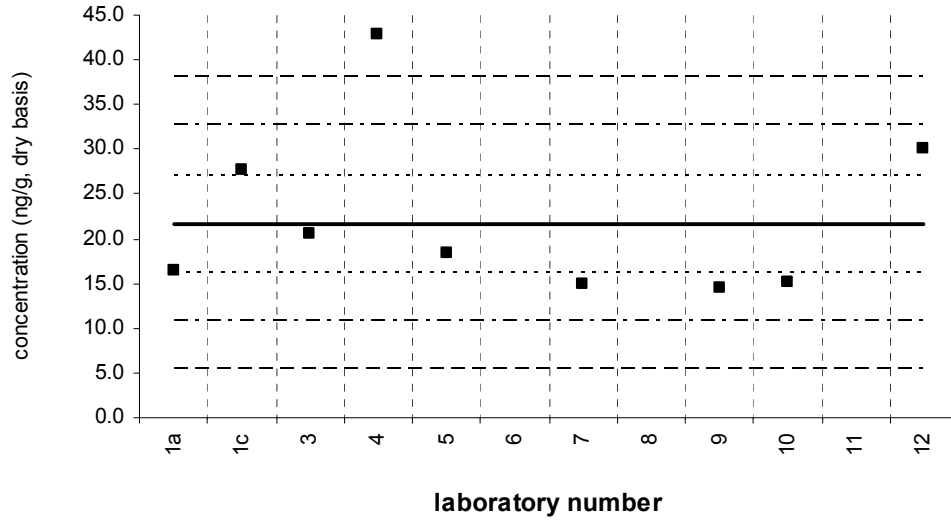


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

### 4,4'-DDD

### Tissue XII (QA05TIS12)

Assigned value = 21.7 ng/g  $s = 10.8$  ng/g 95% CL = 10.0 ng/g (dry basis)  
Reported Results: 10 Quantitative Results: 9

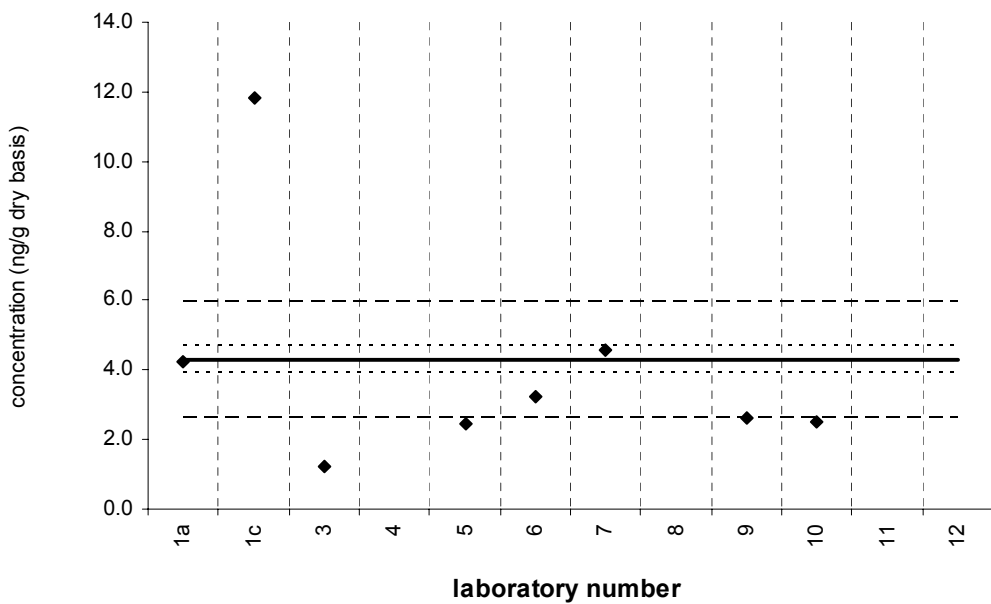


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

### 4,4'-DDD

### SRM 2977

Certified Value =  $4.30 \pm 0.38$  ng/g (dry basis)  
Reported Results: 8 Quantitative Results: 8

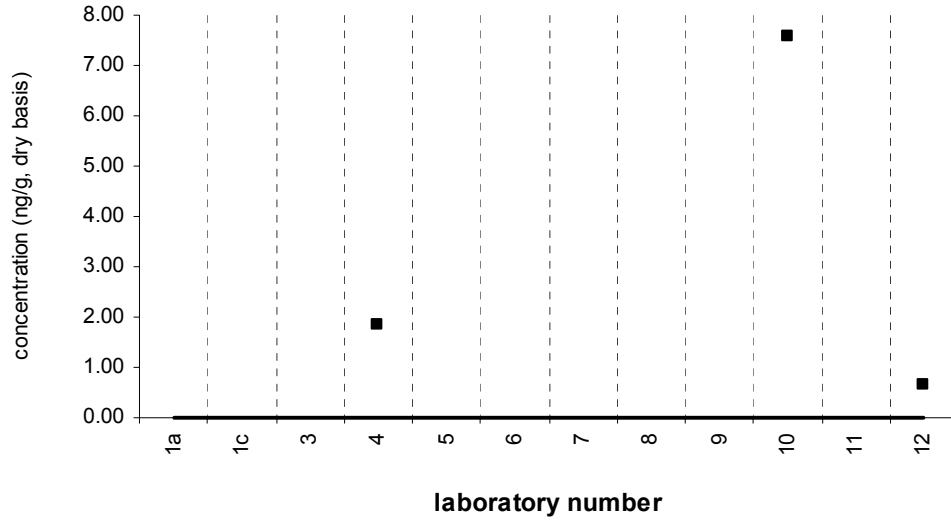


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

## 2,4'-DDT

Tissue XII (QA05TIS12)

Assigned value = no target ng/g (dry basis)  
Reported Results: 10    Quantitative Results: 3

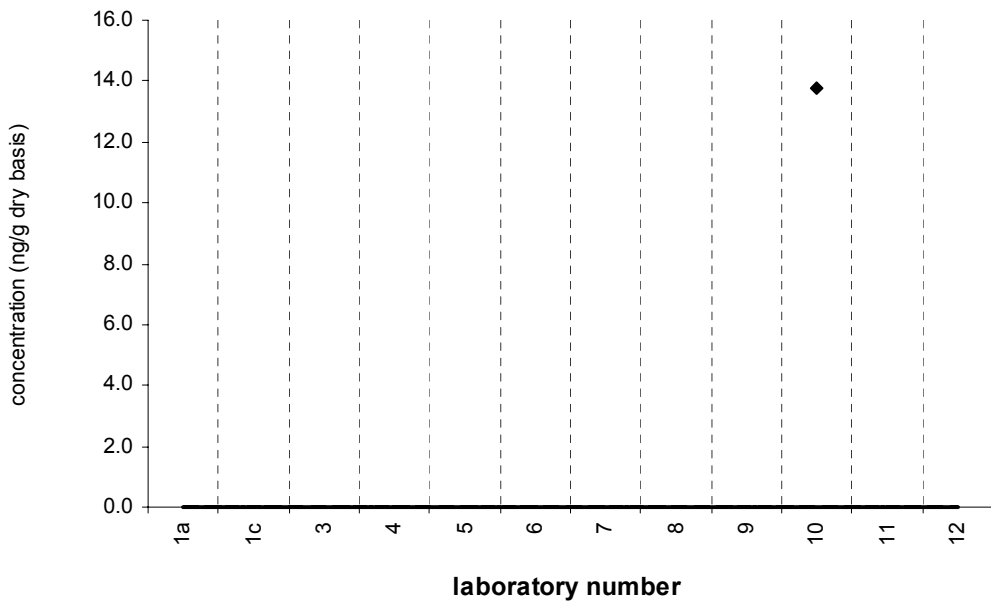


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

## 2,4'-DDT

SRM 2977

Target Value = no target ng/g (dry basis)  
Reported Results: 9    Quantitative Results: 1



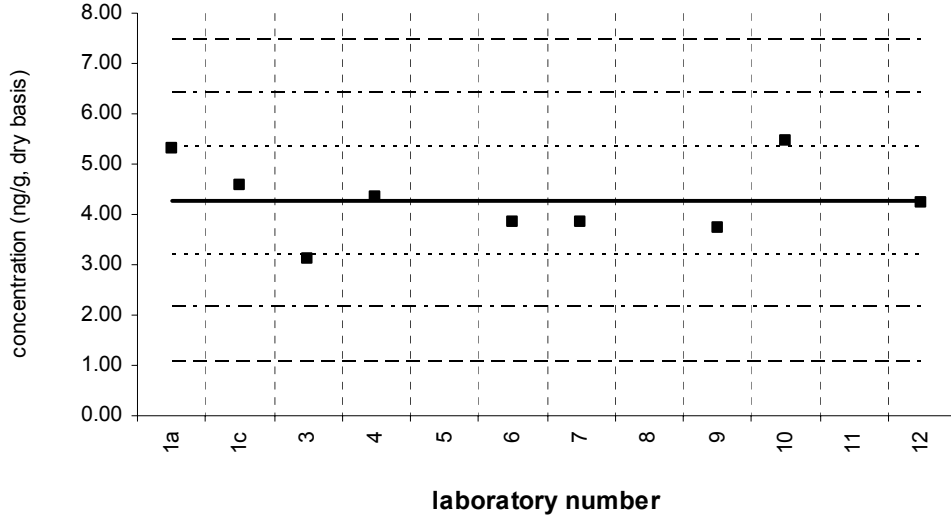
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits



**cis-nonachlor**

**Tissue XII (QA05TIS12)**

Assigned value = 4.27 ng/g  $s = 0.76$  ng/g 95% CL = 0.58 ng/g (dry basis)  
Reported Results: 9 Quantitative Results: 9

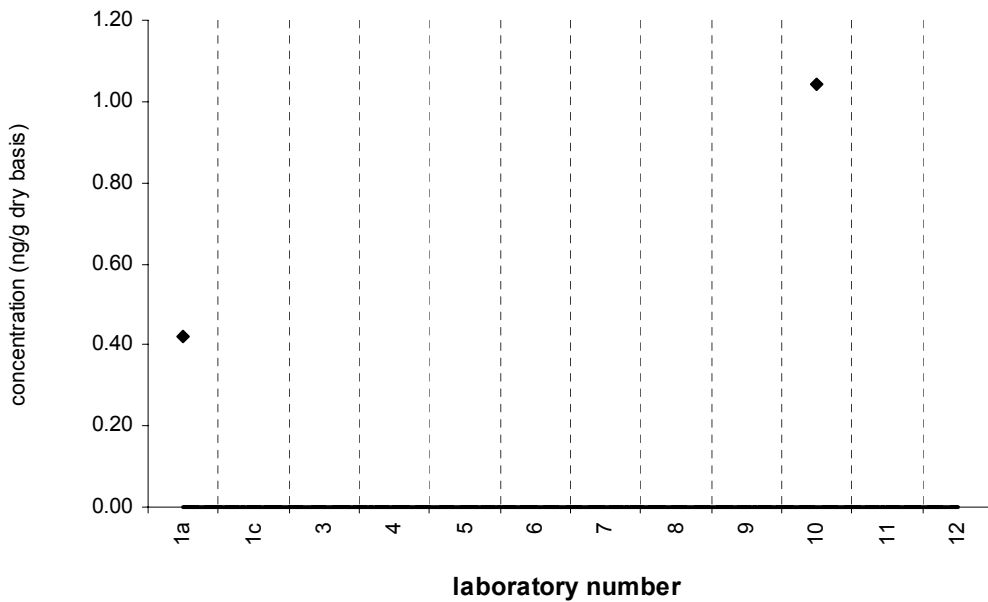


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**cis-nonachlor**

**SRM 2977**

Target Value = no target ng/g (dry basis)  
Reported Results: 8 Quantitative Results: 2



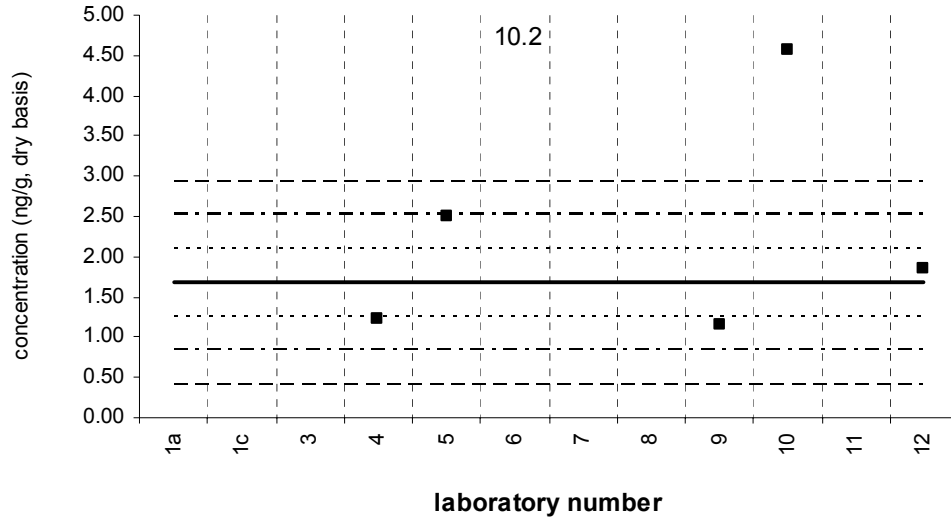
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

### 4,4'-DDT

Tissue XII (QA05TIS12)

Assigned value = 1.68 ng/g  $s = 0.63$  ng/g 95% CL = 1.00 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 6



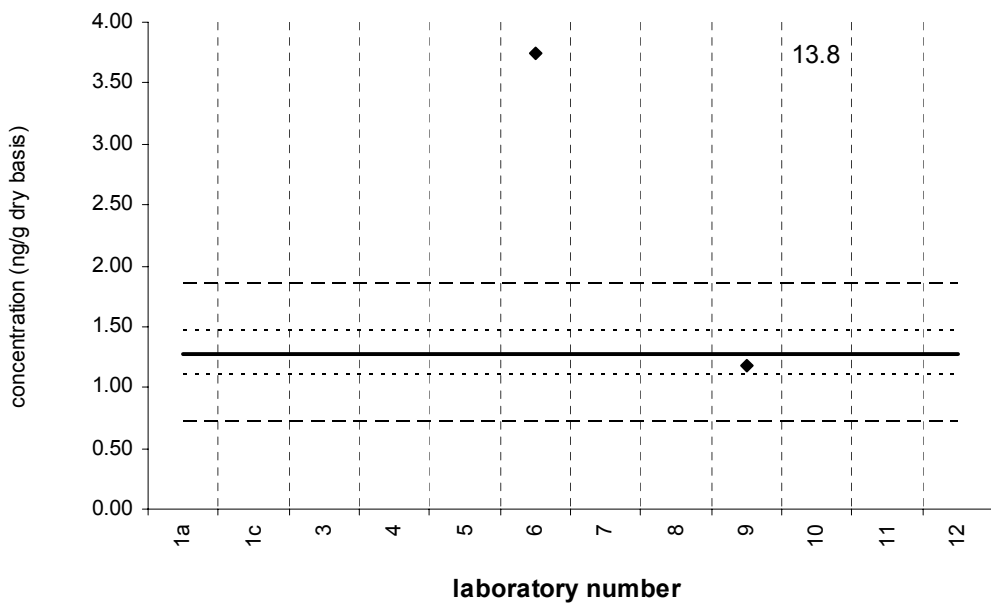
Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

### 4,4'-DDT

SRM 2977

Certified Value =  $1.28 \pm 0.18$  ng/g (dry basis)

Reported Results: 9 Quantitative Results: 3

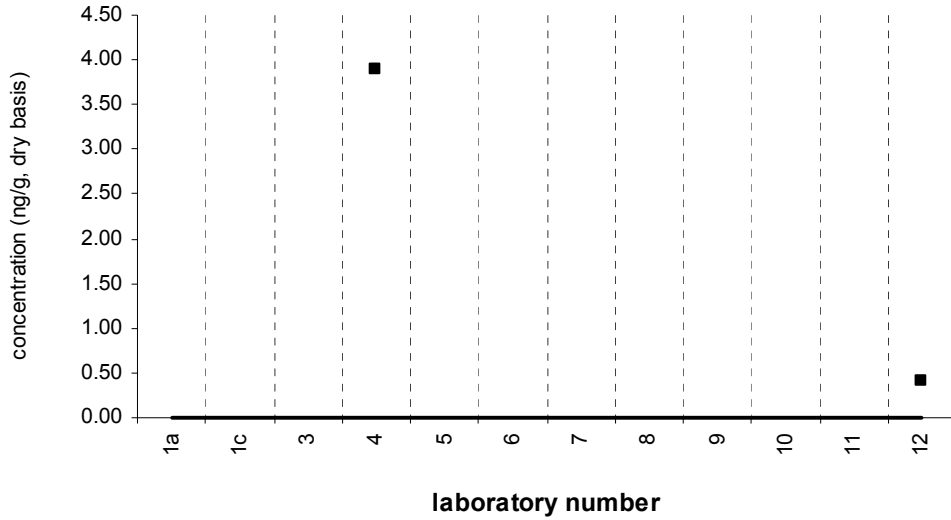


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**mirex**

**Tissue XII (QA05TIS12)**

Assigned value = no target ng/g (dry basis)  
Reported Results: 9    Quantitative Results: 2

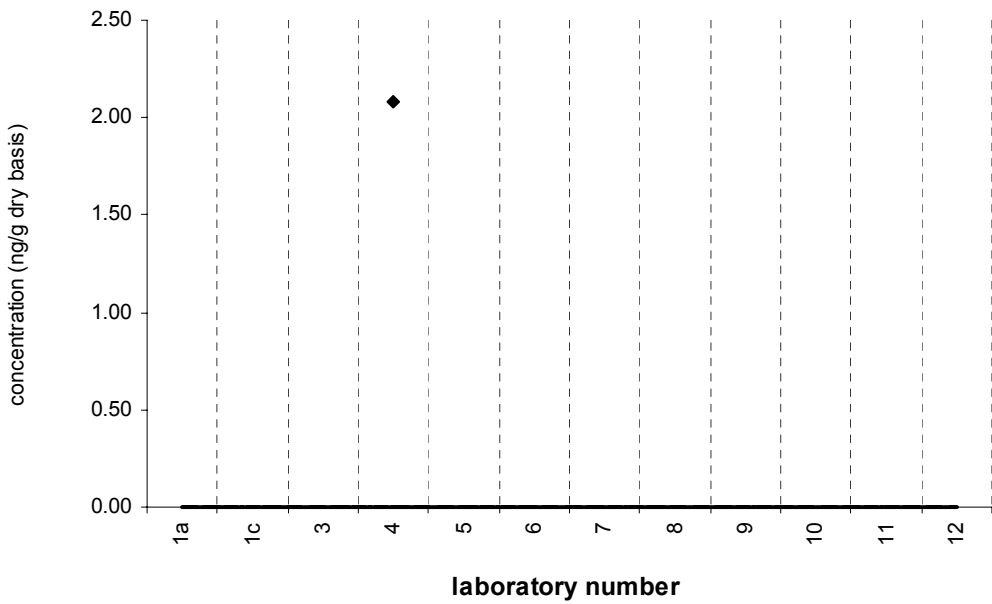


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**mirex**

**SRM 2977**

Target Value = no target ng/g (dry basis)  
Reported Results: 8    Quantitative Results: 1

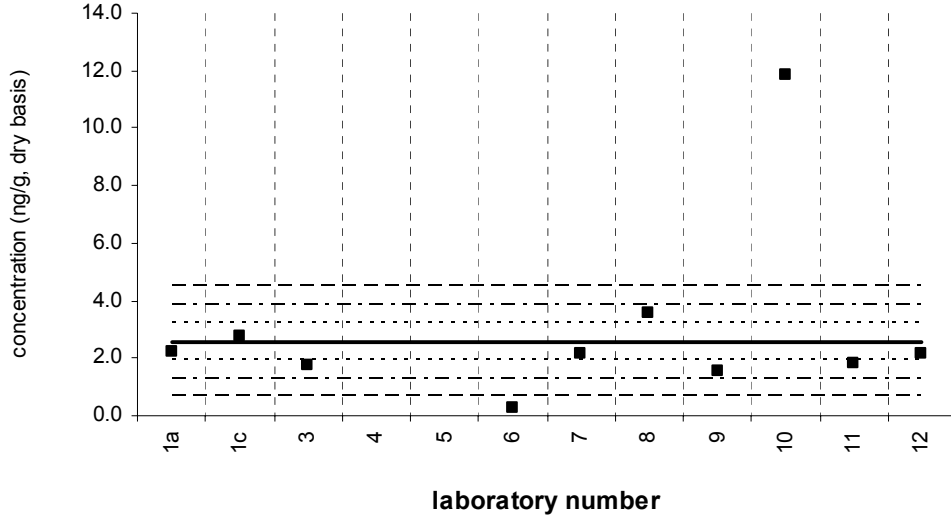


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 8**

**Tissue XII (QA05TIS12)**

Assigned value = 2.56 ng/g  $s = 0.60$  ng/g 95% CL = 0.75 ng/g (dry basis)  
Reported Results: 11 Quantitative Results: 10

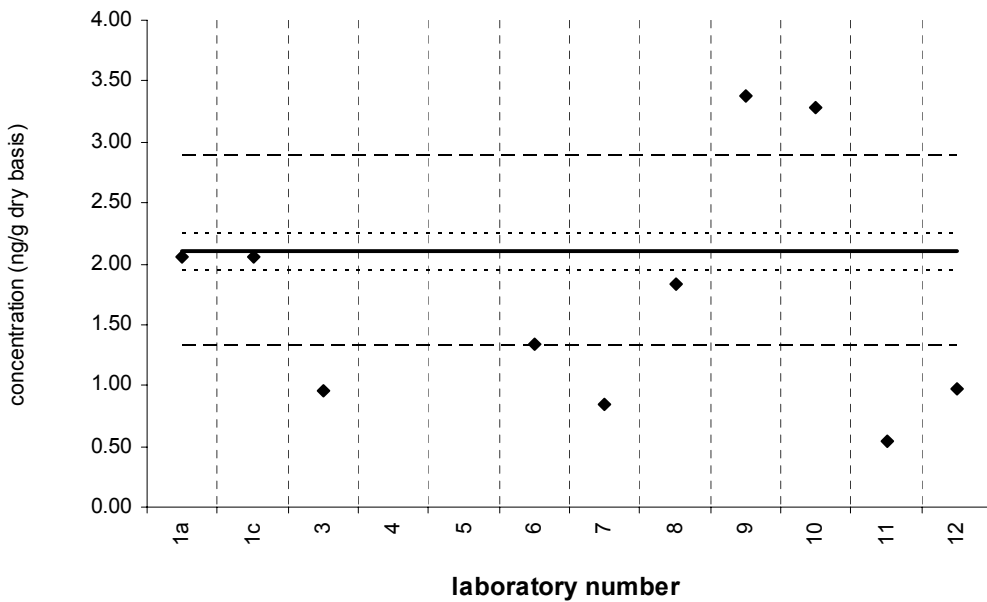


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**PCB 8**

**SRM 2977**

Certified Value =  $2.10 \pm 0.15$  ng/g (dry basis)  
Reported Results: 11 Quantitative Results: 10

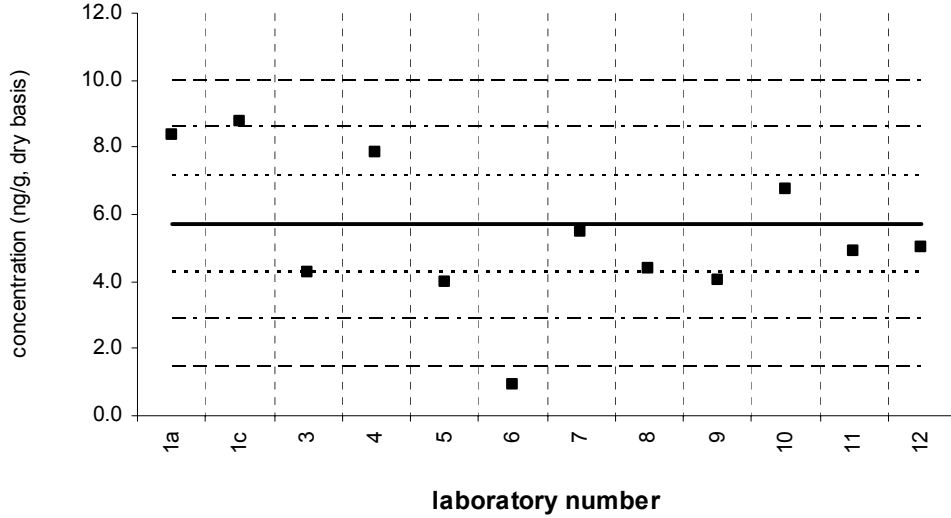


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 18**

**Tissue XII (QA05TIS12)**

Assigned value = 5.71 ng/g  $s = 1.87$  ng/g 95% CL = 1.34 ng/g (dry basis)  
Reported Results: 12 Quantitative Results: 12

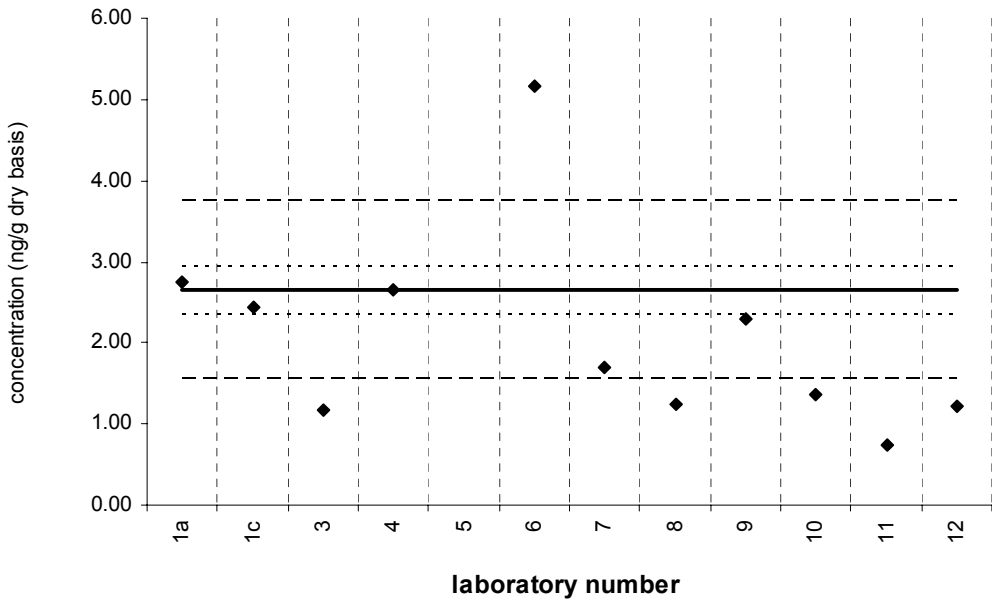


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**PCB 18**

**SRM 2977**

Certified Value =  $2.65 \pm 0.30$  ng/g (dry basis)  
Reported Results: 12 Quantitative Results: 11

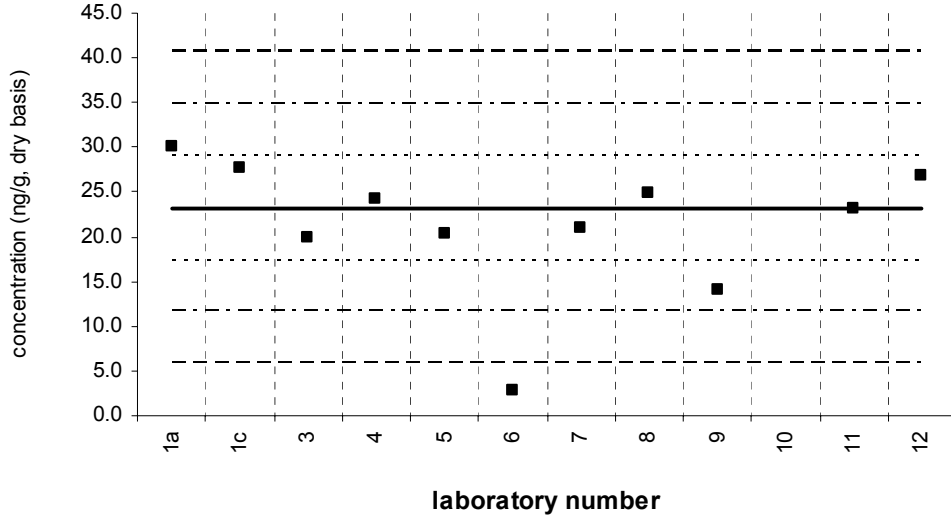


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 28**

**Tissue XII (QA05TIS12)**

Assigned value = 23.2 ng/g  $s = 4.6$  ng/g 95% CL = 3.3 ng/g (dry basis)  
Reported Results: 11 Quantitative Results: 11

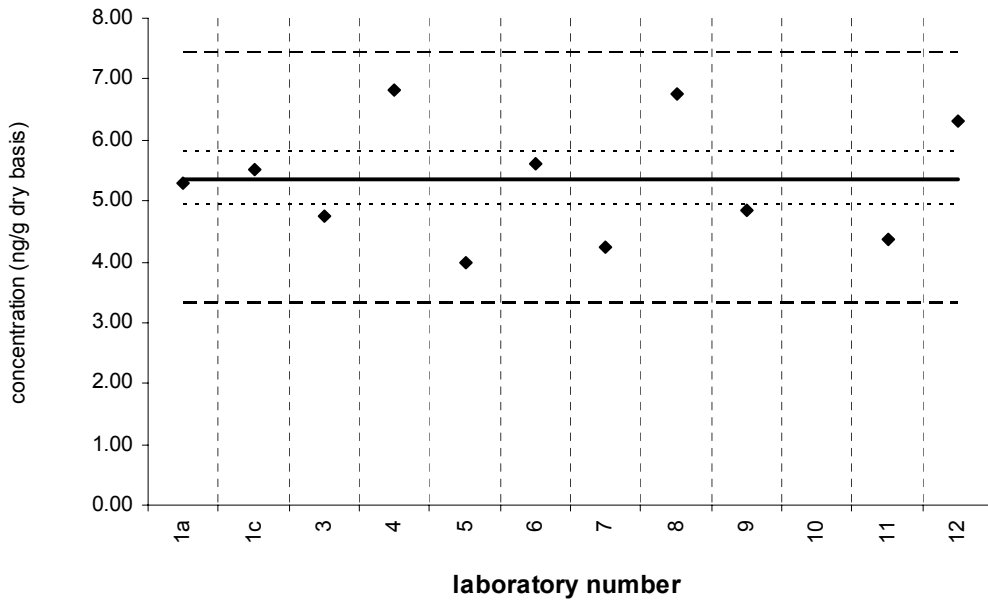


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**PCB 28**

**SRM 2977**

Certified Value =  $5.37 \pm 0.44$  ng/g (dry basis)  
Reported Results: 11 Quantitative Results: 11

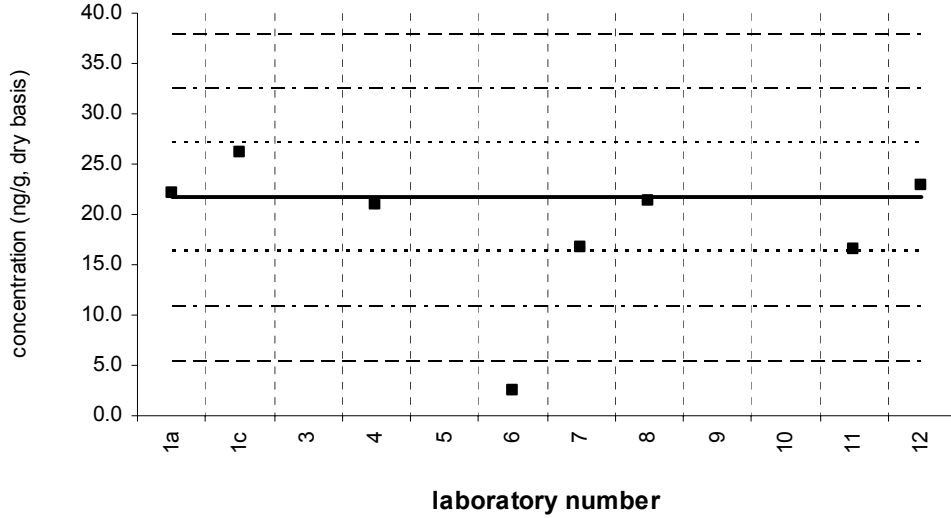


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 31**

**Tissue XII (QA05TIS12)**

Assigned value = 21.7 ng/g  $s = 3.1$  ng/g 95% CL = 3.2 ng/g (dry basis)  
Reported Results: 8 Quantitative Results: 8

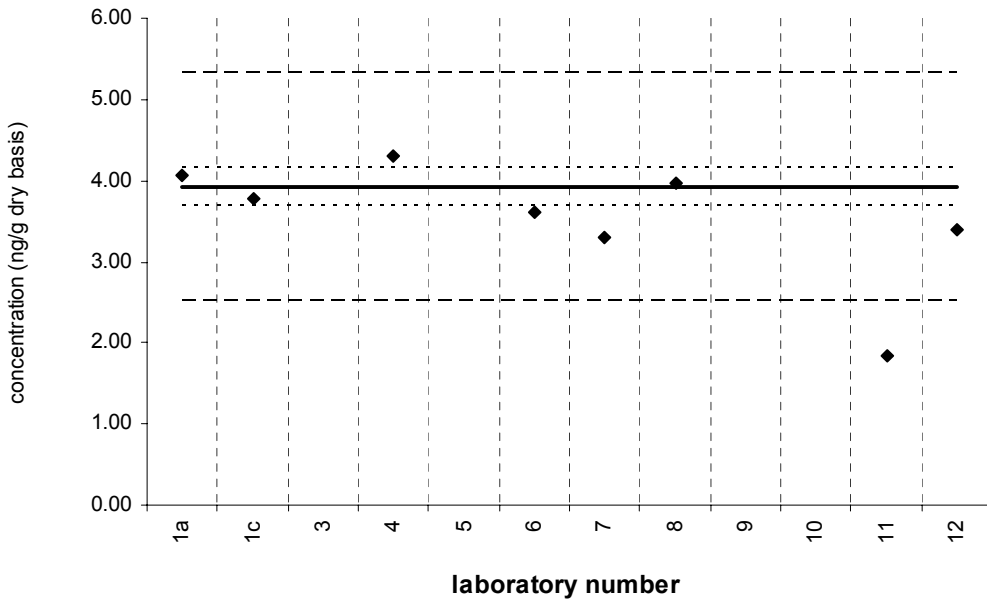


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**PCB 31**

**SRM 2977**

Certified Value =  $3.92 \pm 0.24$  ng/g (dry basis)  
Reported Results: 8 Quantitative Results: 8

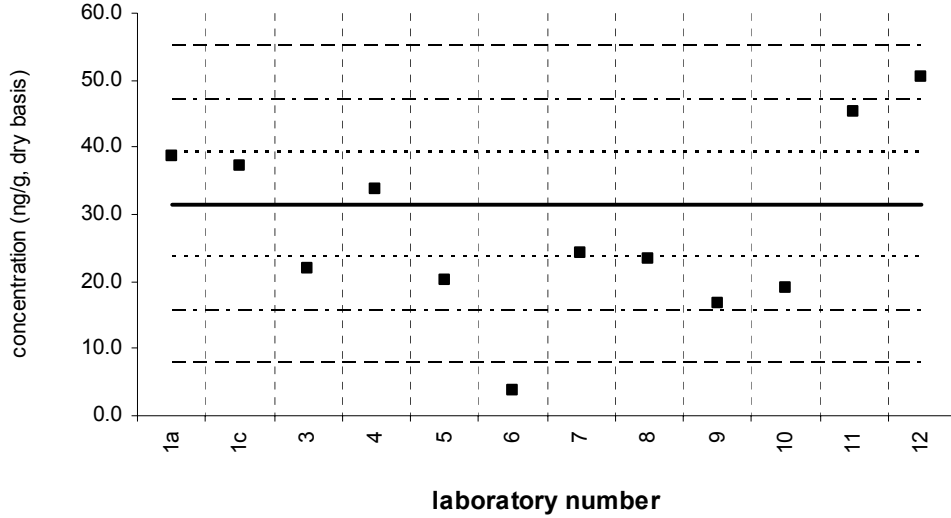


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 44**

**Tissue XII (QA05TIS12)**

Assigned value = 31.4 ng/g  $s = 11.2$  ng/g 95% CL = 8.0 ng/g (dry basis)  
Reported Results: 12 Quantitative Results: 12

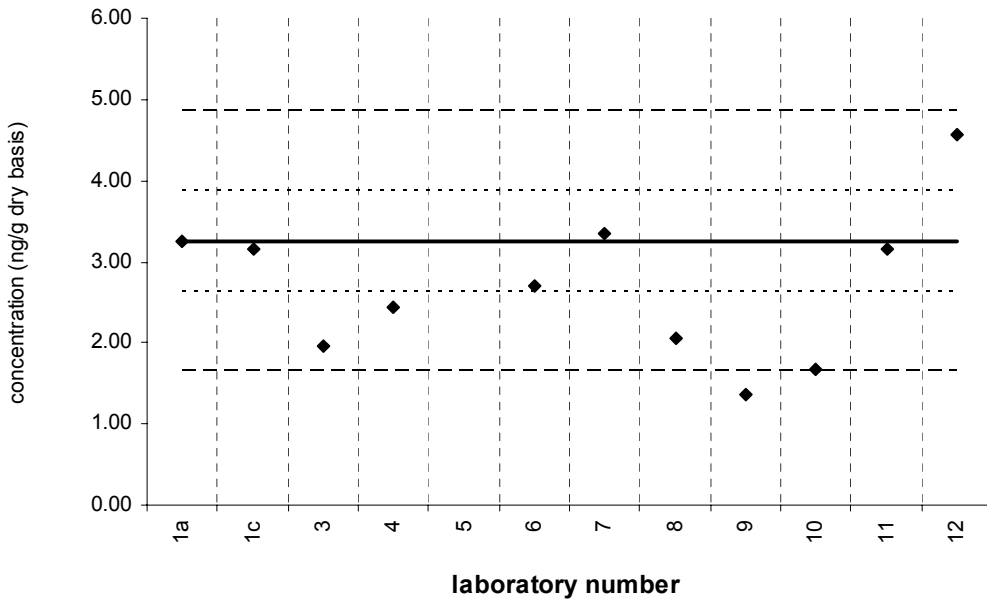


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**PCB 44**

**SRM 2977**

Certified Value =  $3.25 \pm 0.63$  ng/g (dry basis)  
Reported Results: 12 Quantitative Results: 11



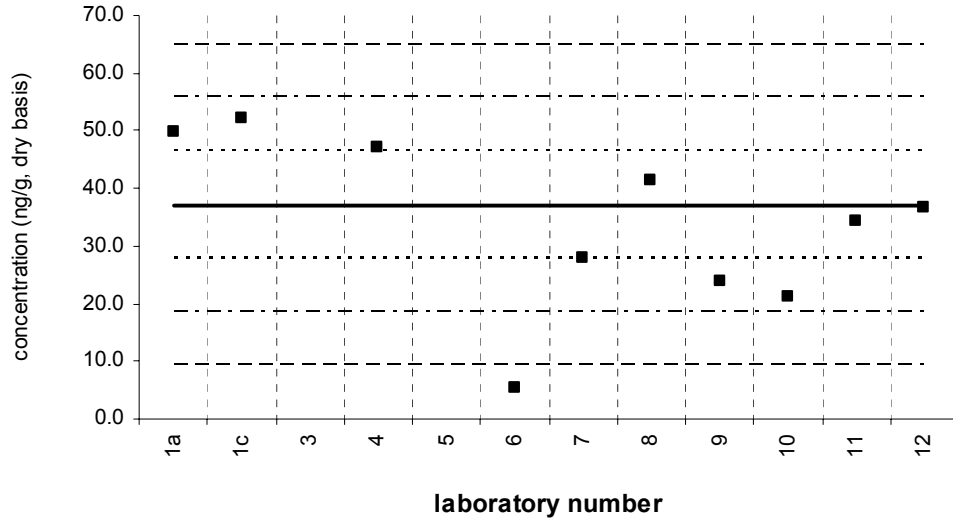
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits



**PCB 49**

**Tissue XII (QA05TIS12)**

Assigned value = 37.2 ng/g  $s = 11.3$  ng/g 95% CL = 8.7 ng/g (dry basis)  
Reported Results: 10 Quantitative Results: 10

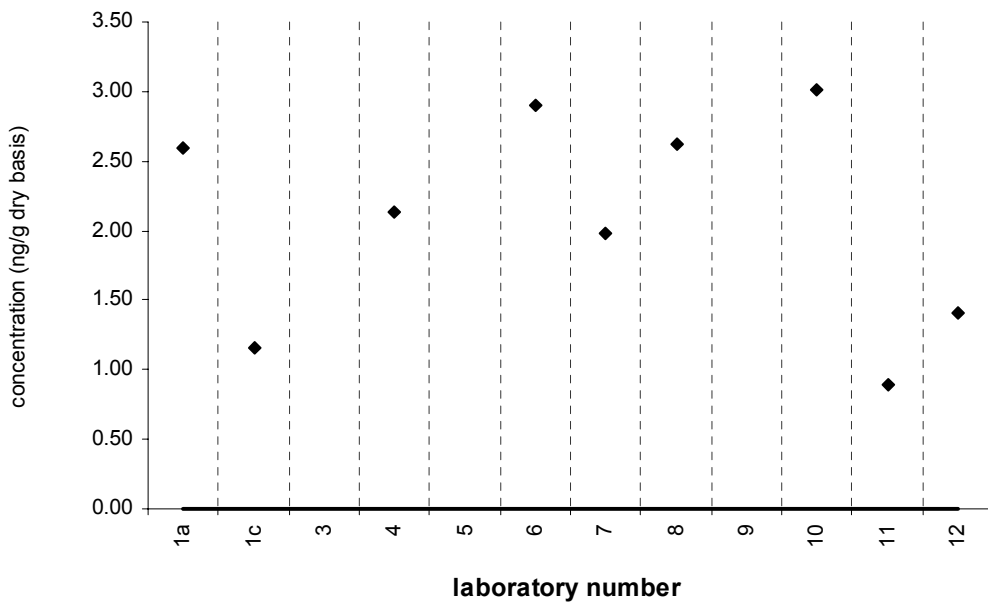


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**PCB 49**

**SRM 2977**

Target Value = no target ng/g (dry basis)  
Reported Results: 10 Quantitative Results: 9

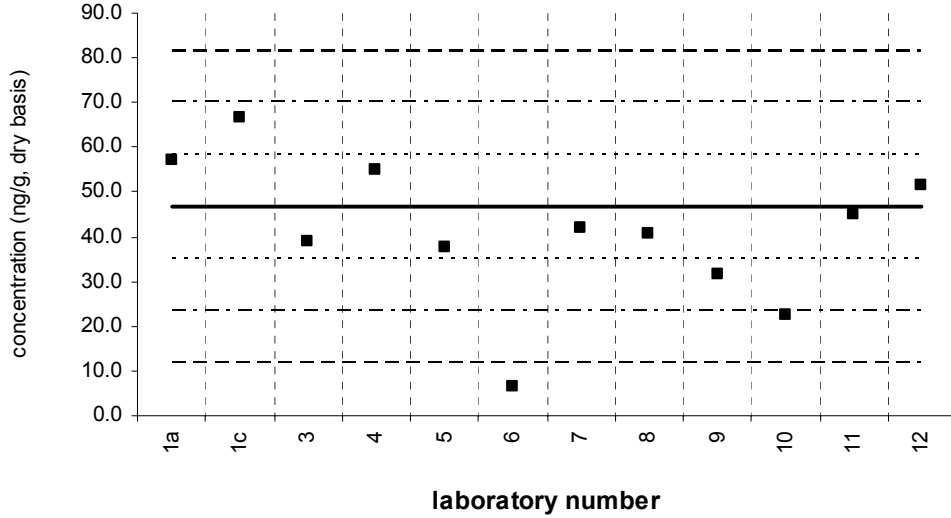


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 52**

**Tissue XII (QA05TIS12)**

Assigned value = 46.6 ng/g  $s = 10.7$  ng/g 95% CL = 7.6 ng/g (dry basis)  
Reported Results: 12 Quantitative Results: 12

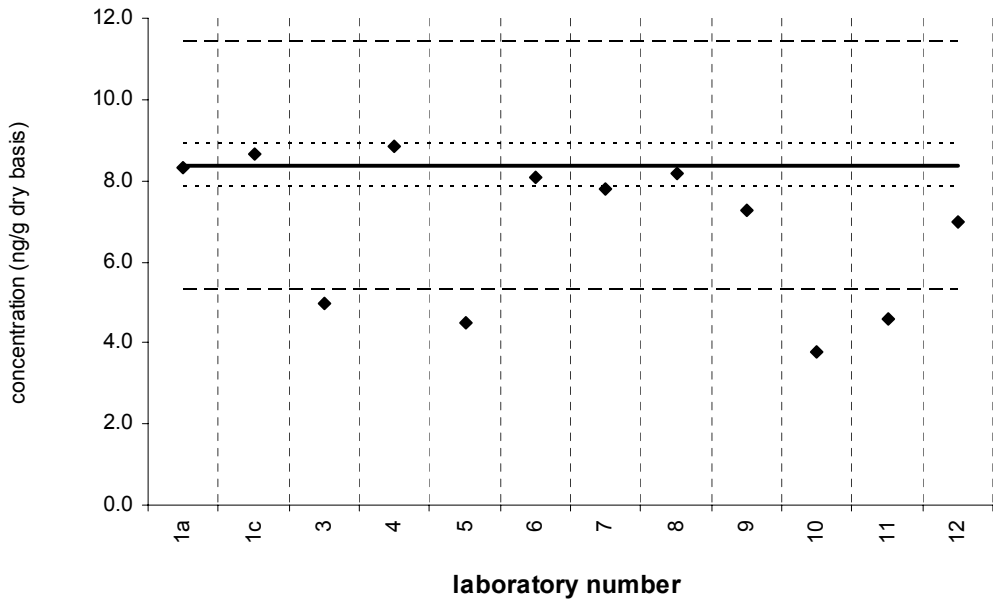


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**PCB 52**

**SRM 2977**

Certified Value =  $8.37 \pm 0.54$  ng/g (dry basis)  
Reported Results: 12 Quantitative Results: 12

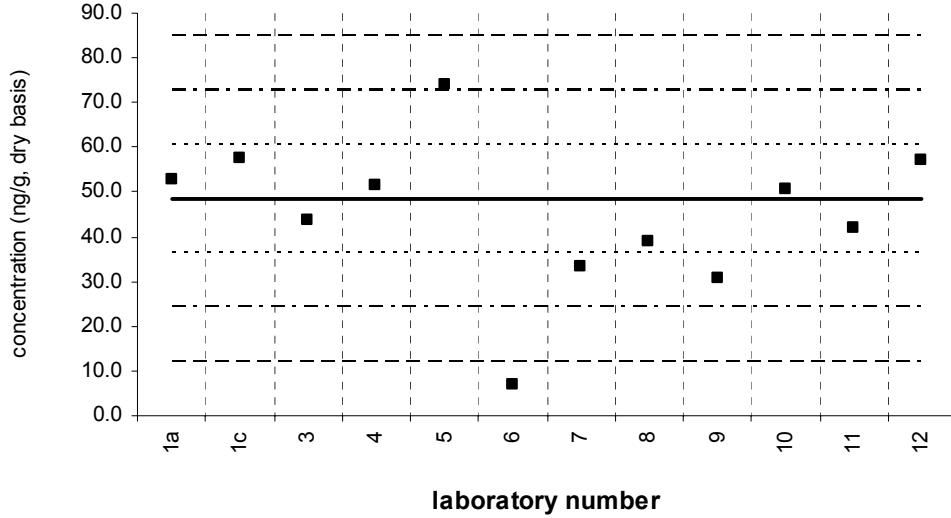


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 66**

**Tissue XII (QA05TIS12)**

Assigned value = 48.4 ng/g  $s = 12.4$  ng/g 95% CL = 8.3 ng/g (dry basis)  
Reported Results: 12 Quantitative Results: 12

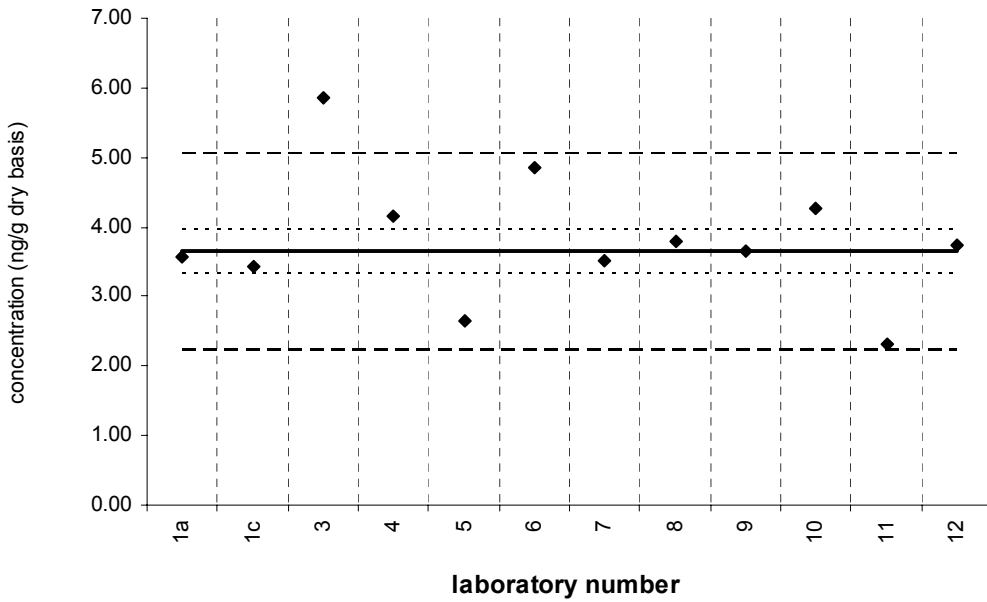


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**PCB 66**

**SRM 2977**

Certified Value =  $3.64 \pm 0.32$  ng/g (dry basis)  
Reported Results: 12 Quantitative Results: 12

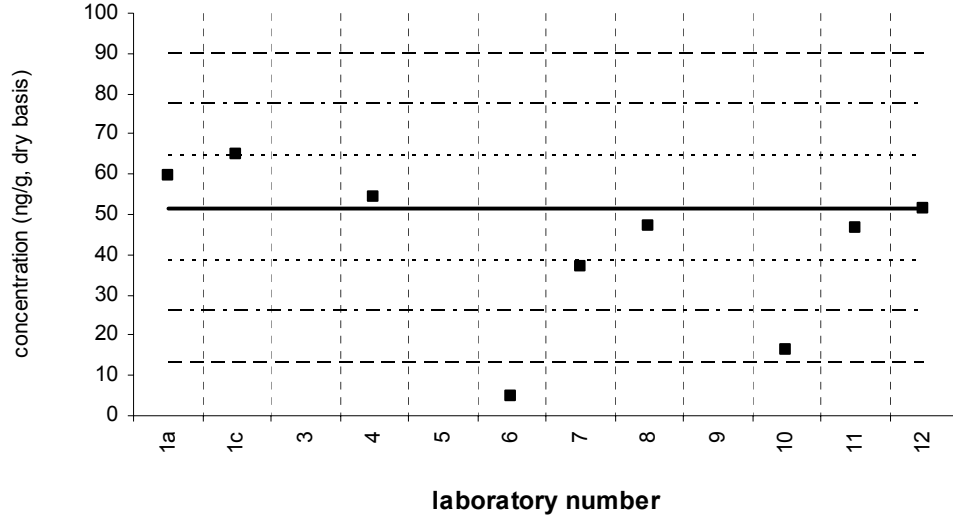


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 95**

**Tissue XII (QA05TIS12)**

Assigned value = 51.5 ng/g  $s = 9.2$  ng/g 95% CL = 8.5 ng/g (dry basis)  
Reported Results: 9 Quantitative Results: 9

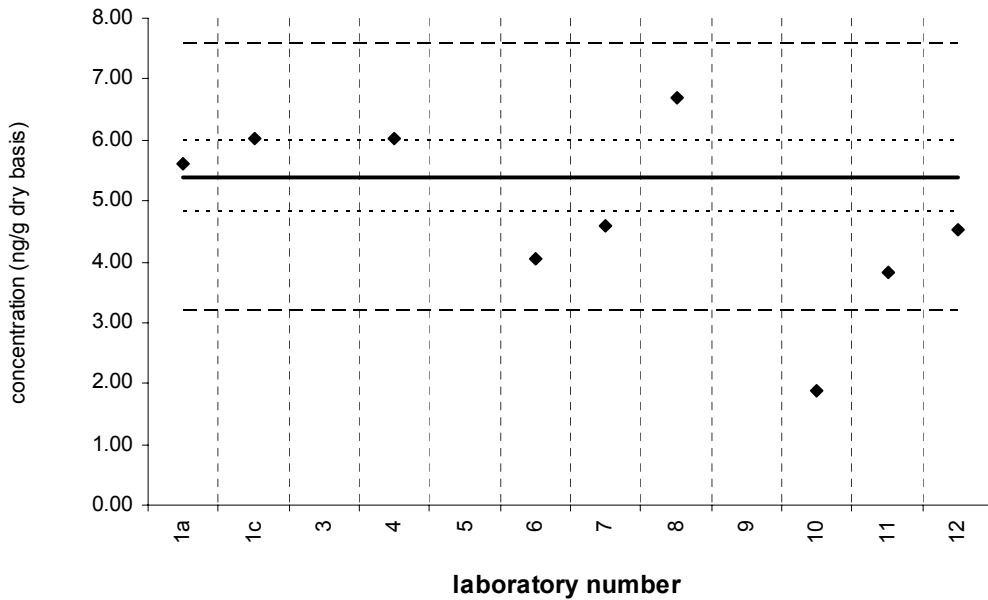


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**PCB 95**

**SRM 2977**

Certified Value =  $5.39 \pm 0.59$  ng/g (dry basis)  
Reported Results: 9 Quantitative Results: 9

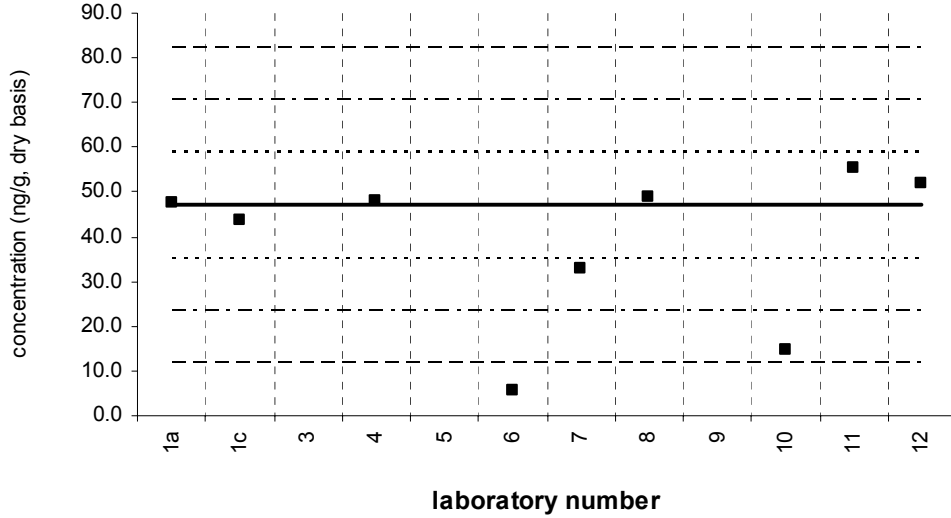


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 99**

**Tissue XII (QA05TIS12)**

Assigned value = 47.0 ng/g  $s = 7.2$  ng/g 95% CL = 6.7 ng/g (dry basis)  
Reported Results: 9 Quantitative Results: 9

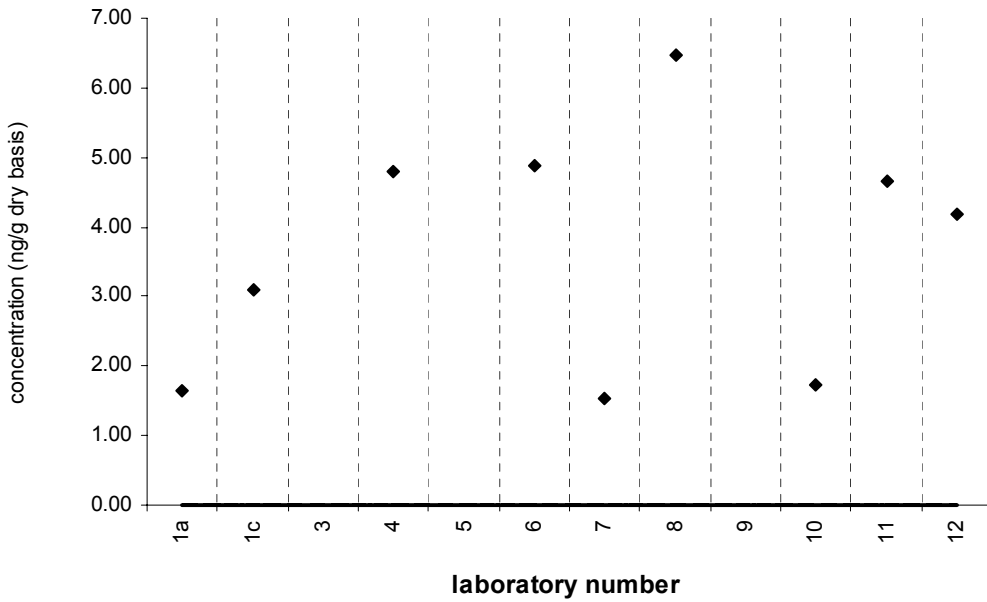


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**PCB 99**

**SRM 2977**

Target Value = no target ng/g (dry basis)  
Reported Results: 9 Quantitative Results: 9

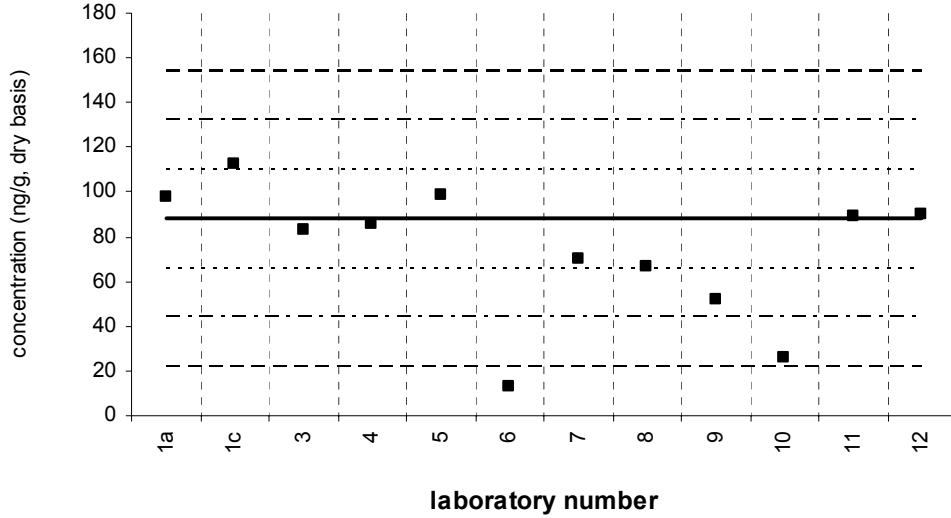


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 101**

**Tissue XII (QA05TIS12)**

Assigned value = 88.1 ng/g  $s = 14.4$  ng/g 95% CL = 11.1 ng/g (dry basis)  
Reported Results: 12 Quantitative Results: 12

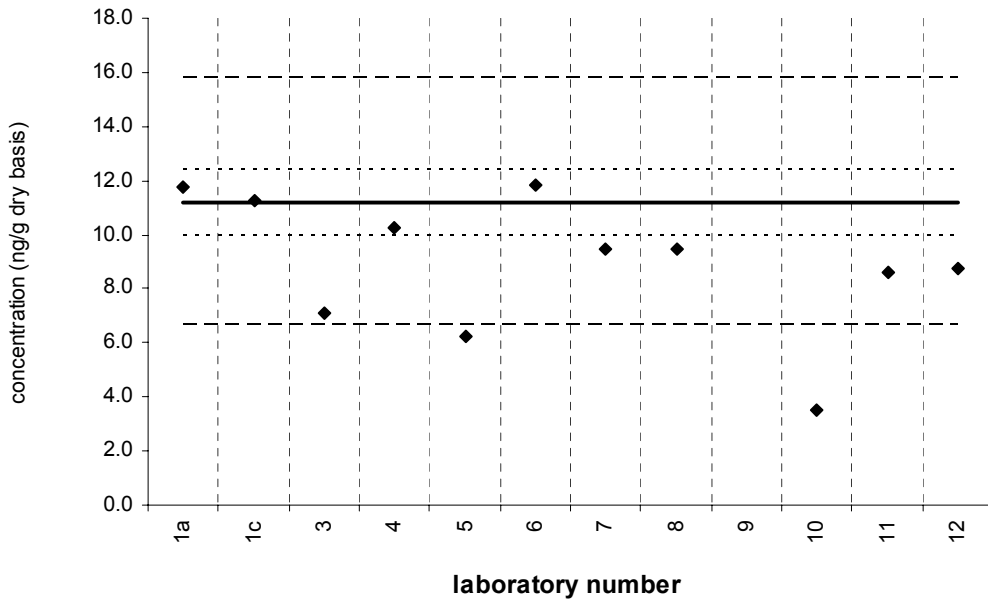


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**PCB 101**

**SRM 2977**

Certified Value = 11.2 ± 1.2 ng/g (dry basis)  
Reported Results: 12 Quantitative Results: 11

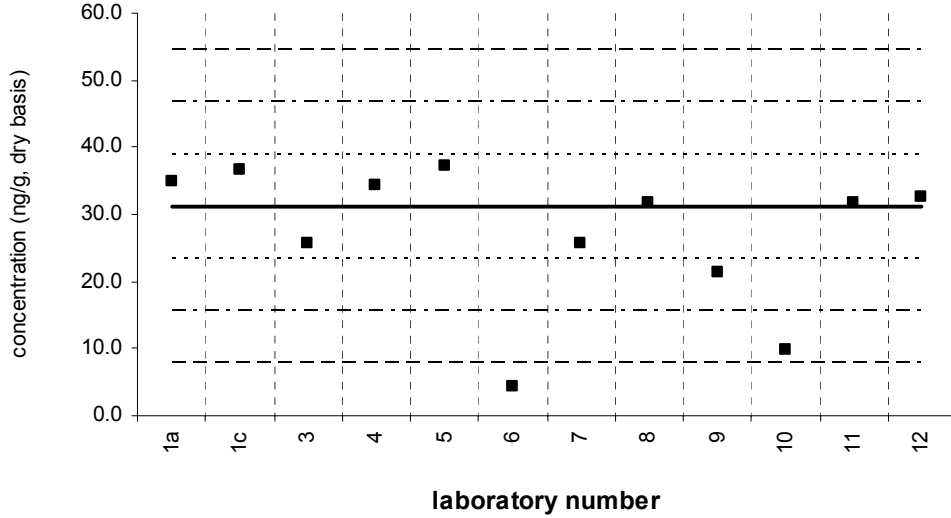


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 105**

**Tissue XII (QA05TIS12)**

Assigned value = 31.1 ng/g  $s = 5.3$  ng/g 95% CL = 3.8 ng/g (dry basis)  
Reported Results: 12 Quantitative Results: 12

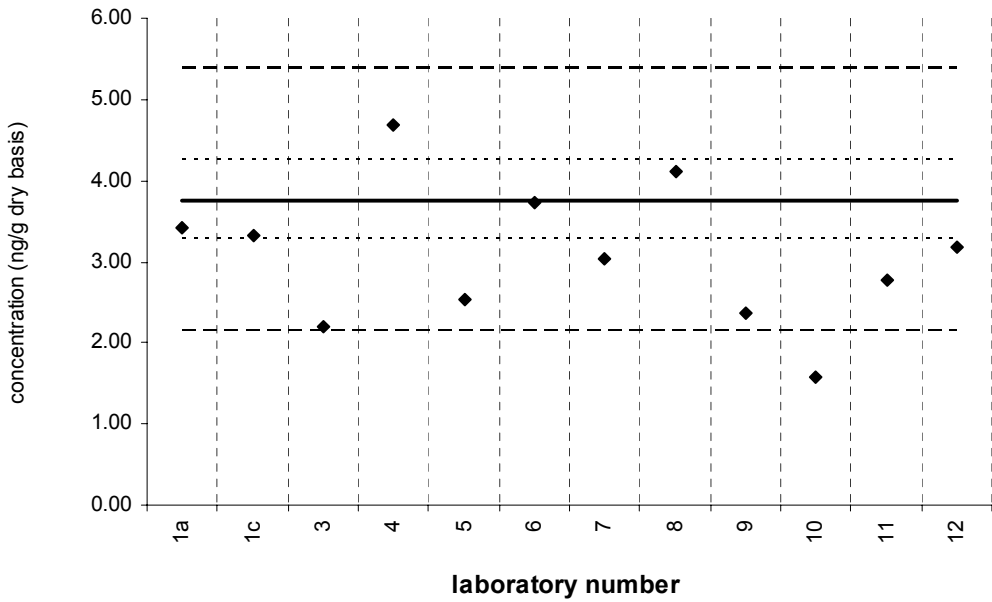


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**PCB 105**

**SRM 2977**

Certified Value =  $3.76 \pm 0.49$  ng/g (dry basis)  
Reported Results: 12 Quantitative Results: 12

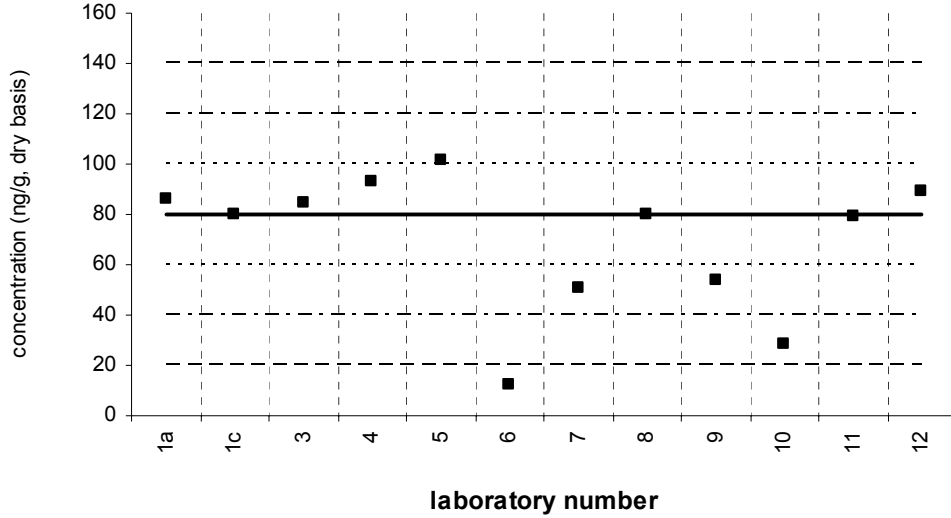


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 118**

**Tissue XII (QA05TIS12)**

Assigned value = 79.9 ng/g  $s = 15.9$  ng/g 95% CL = 11.4 ng/g (dry basis)  
Reported Results: 12 Quantitative Results: 12

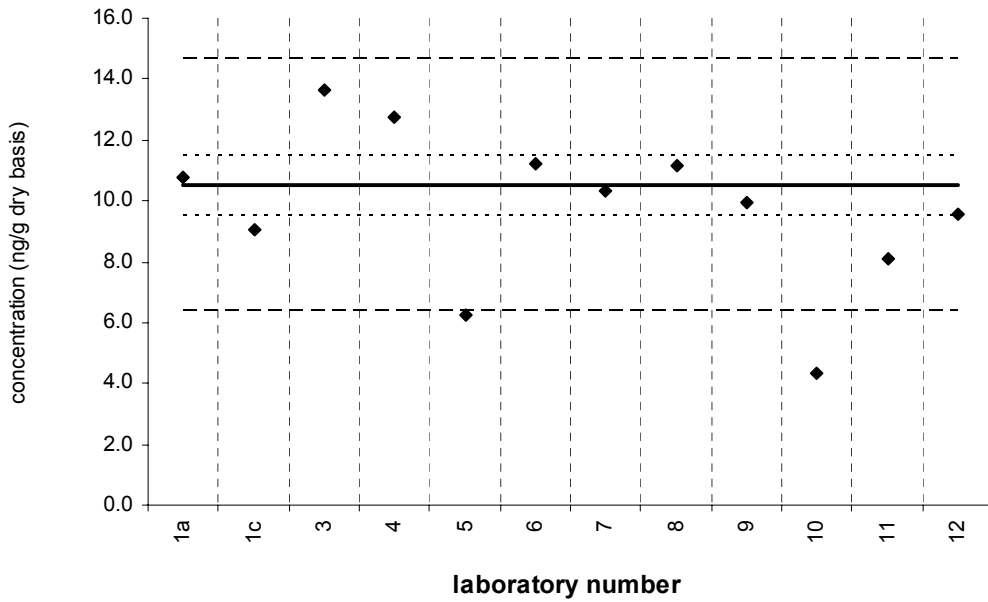


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**PCB 118**

**SRM 2977**

Certified Value =  $10.5 \pm 1.0$  ng/g (dry basis)  
Reported Results: 12 Quantitative Results: 12



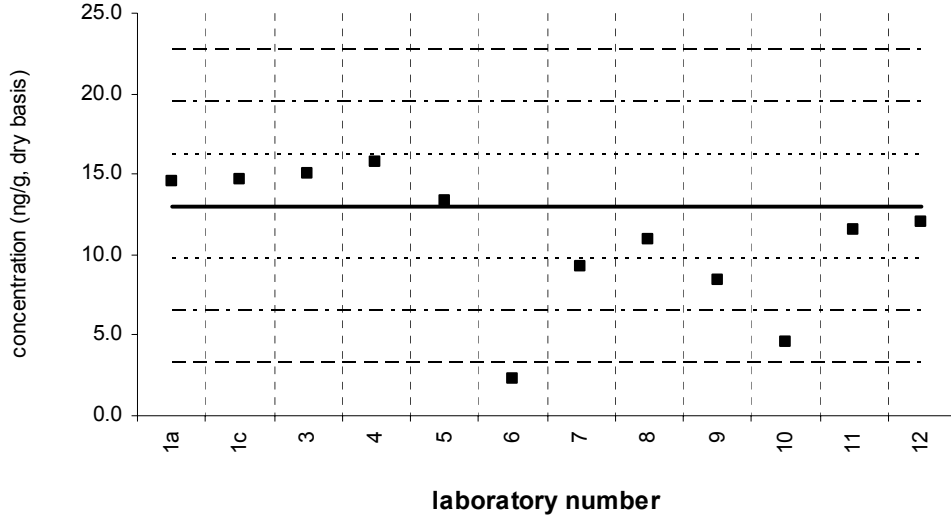
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits



**PCB 128**

**Tissue XII (QA05TIS12)**

Assigned value = 13.0 ng/g  $s = 2.2$  ng/g 95% CL = 1.7 ng/g (dry basis)  
Reported Results: 12 Quantitative Results: 12

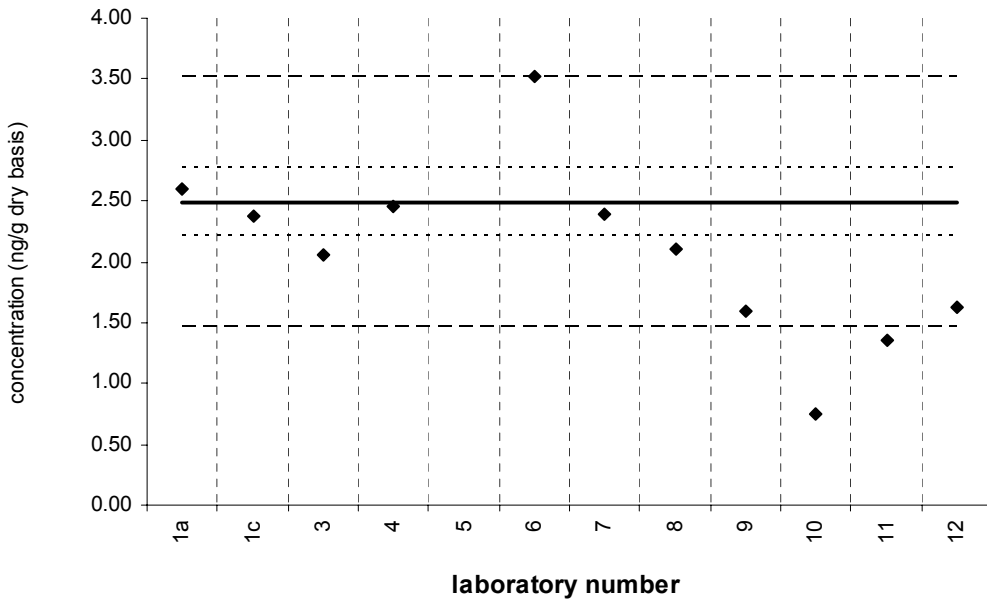


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**PCB 128**

**SRM 2977**

Certified Value =  $2.49 \pm 0.28$  ng/g (dry basis)  
Reported Results: 12 Quantitative Results: 11



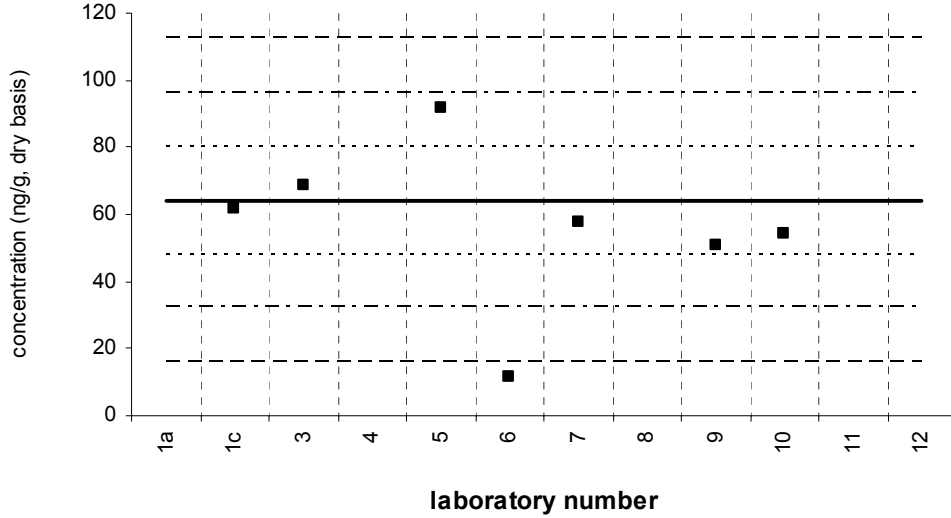
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 138**

**Tissue XII (QA05TIS12)**

Assigned value = 64.1 ng/g  $s = 14.9$  ng/g 95% CL = 15.7 ng/g (dry basis)

Reported Results: 7 Quantitative Results: 7



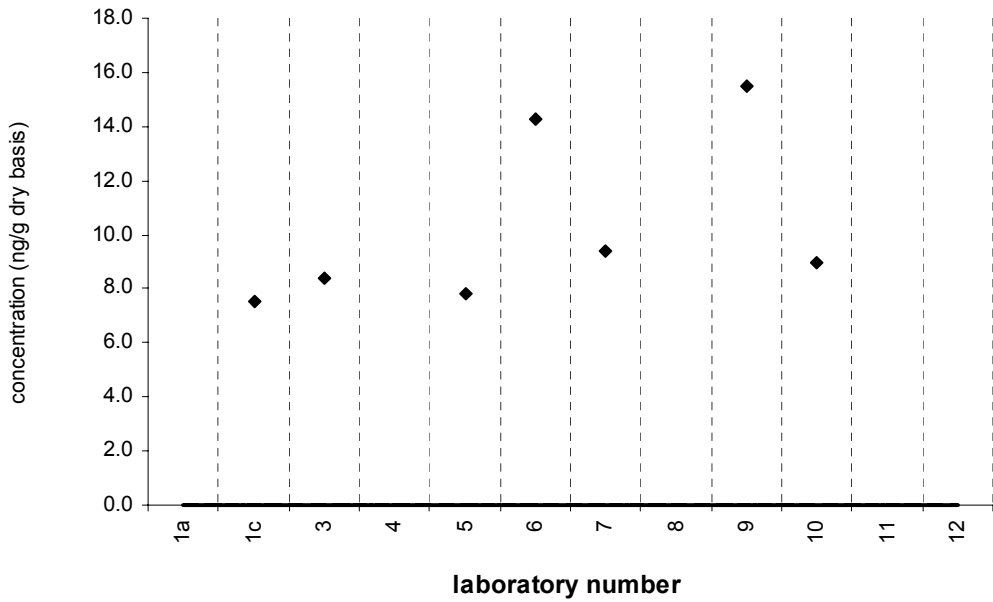
Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**PCB 138**

**SRM 2977**

Target Value = no target ng/g (dry basis)

Reported Results: 7 Quantitative Results: 7

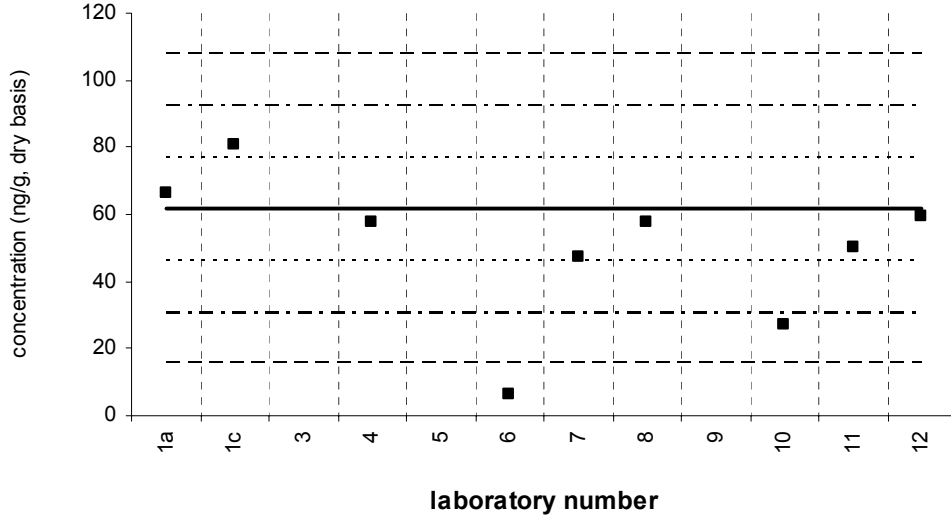


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 149**

**Tissue XII (QA05TIS12)**

Assigned value = 61.5 ng/g  $s = 11.2$  ng/g 95% CL = 11.7 ng/g (dry basis)  
Reported Results: 9 Quantitative Results: 9

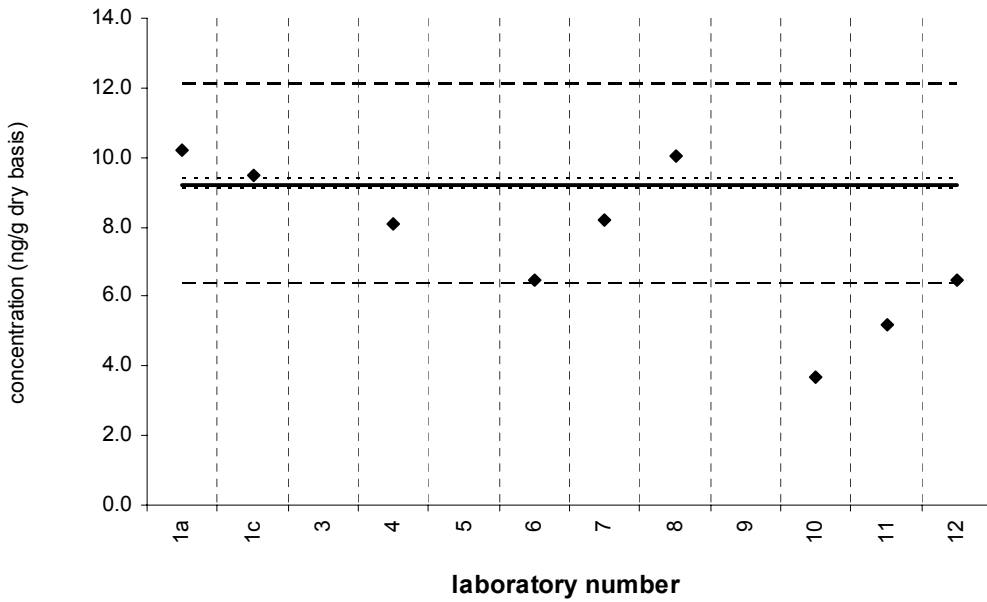


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**PCB 149**

**SRM 2977**

Certified Value =  $9.23 \pm 0.12$  ng/g (dry basis)  
Reported Results: 9 Quantitative Results: 9

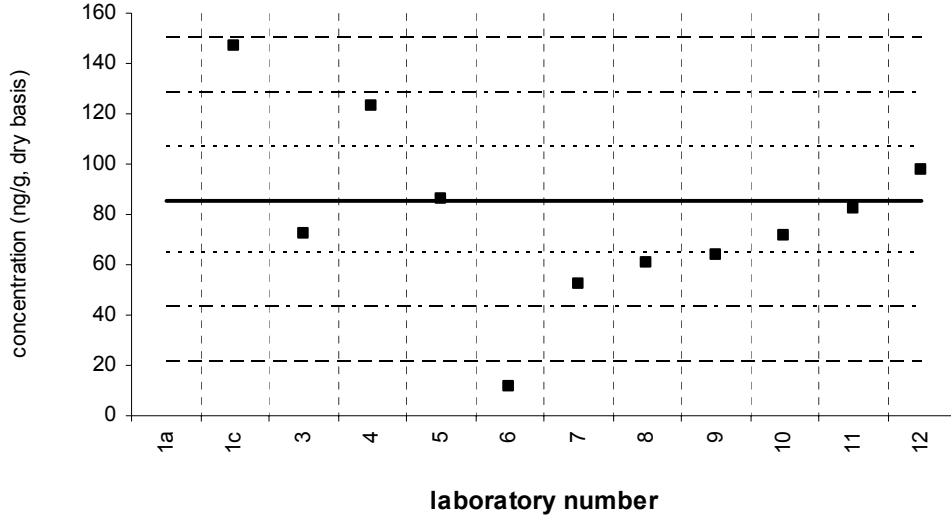


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 153**

**Tissue XII (QA05TIS12)**

Assigned value = 85.7 ng/g  $s = 29.6$  ng/g 95% CL = 21.2 ng/g (dry basis)  
Reported Results: 11 Quantitative Results: 11

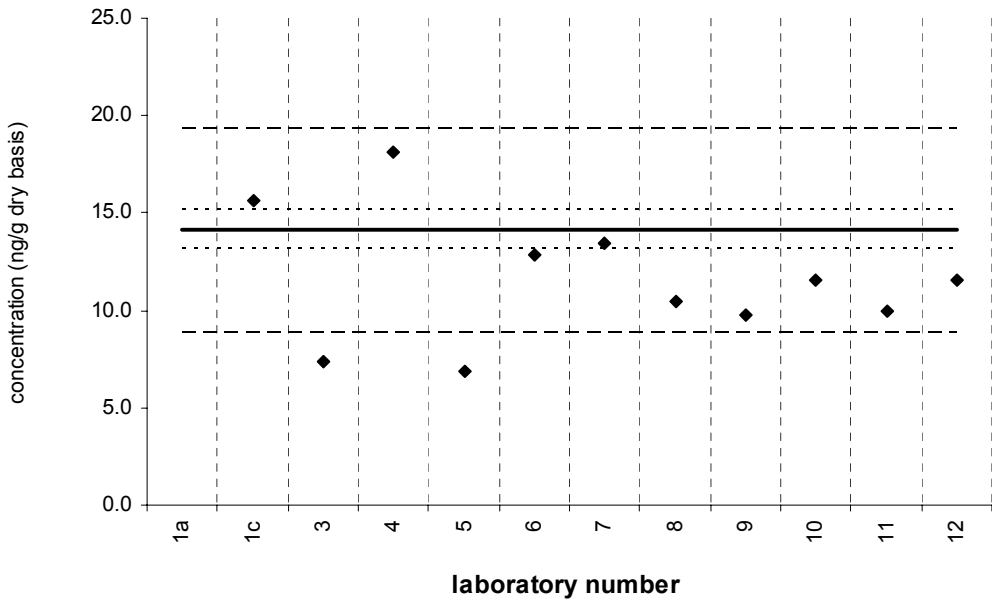


Solid line : exercise assigned value (EAV); dotted line:  $z = \pm 1$  (25% from EAV); dotted/dashed line:  $z = \pm 2$  (50% from EAV); dashed line:  $z = \pm 3$  (75% from EAV)

**PCB 153**

**SRM 2977**

Certified Value = 14.1 ± 1.0 ng/g (dry basis)  
Reported Results: 11 Quantitative Results: 11

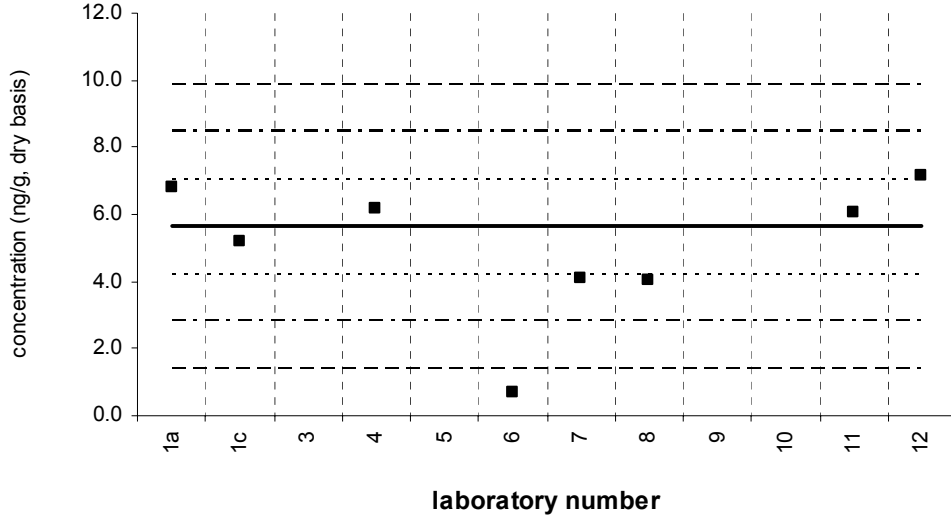


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 156**

**Tissue XII (QA05TIS12)**

Assigned value = 5.64 ng/g  $s = 1.25$  ng/g 95% CL = 1.16 ng/g (dry basis)  
Reported Results: 8 Quantitative Results: 8

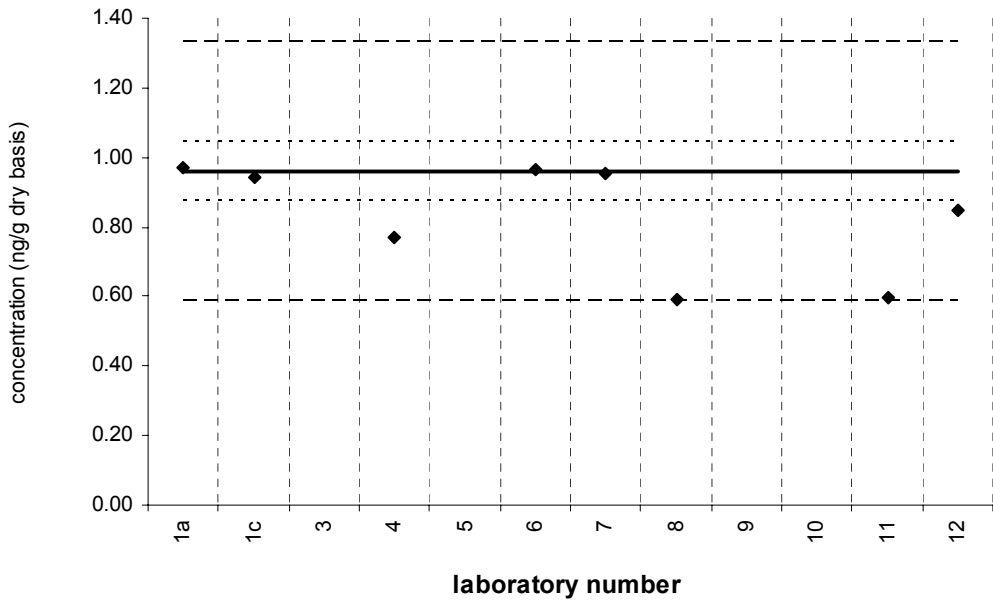


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**PCB 156**

**SRM 2977**

Certified Value =  $0.960 \pm 0.085$  ng/g (dry basis)  
Reported Results: 8 Quantitative Results: 8

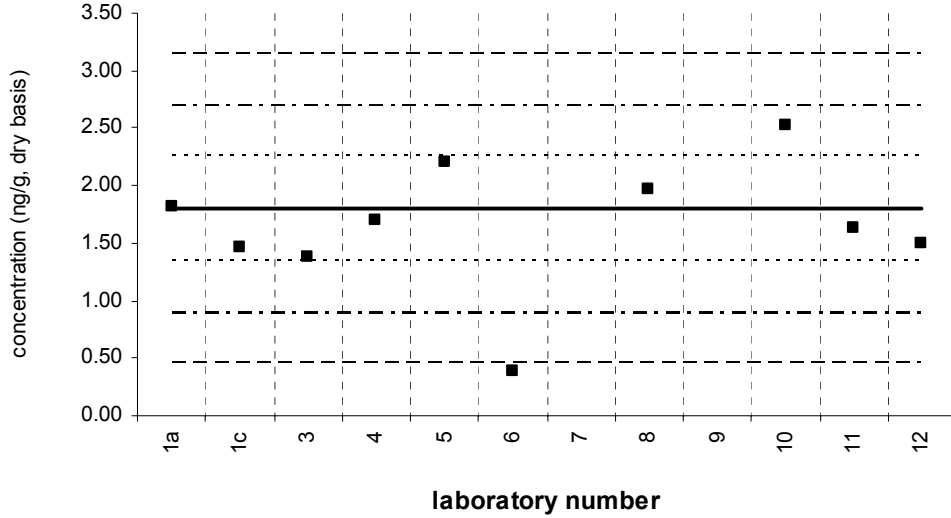


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 170**

**Tissue XII (QA05TIS12)**

Assigned value = 1.80 ng/g  $s = 0.38$  ng/g 95% CL = 0.29 ng/g (dry basis)  
Reported Results: 12 Quantitative Results: 10

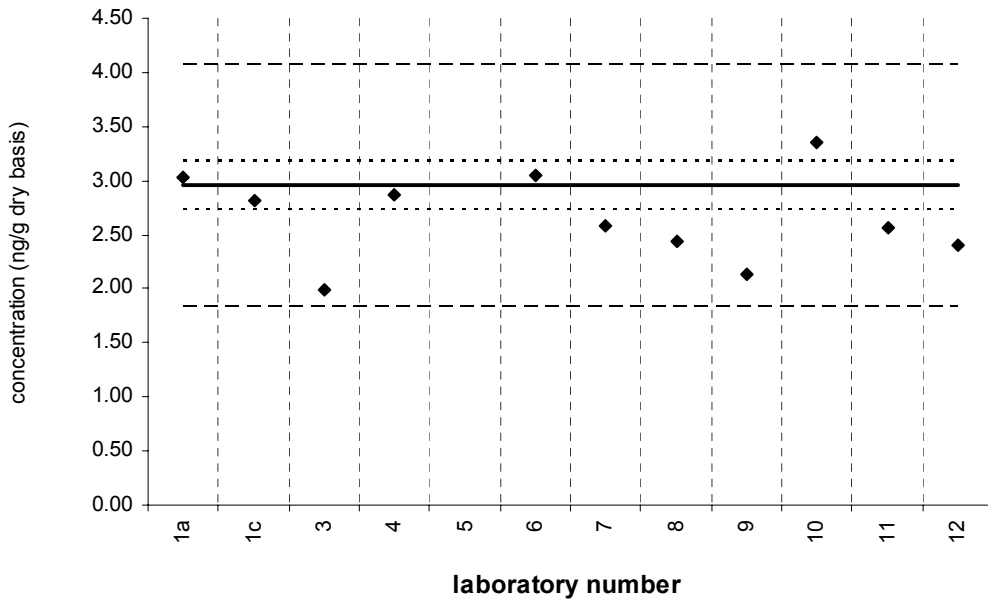


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**PCB 170**

**SRM 2977**

Certified Value =  $2.95 \pm 0.23$  ng/g (dry basis)  
Reported Results: 12 Quantitative Results: 11

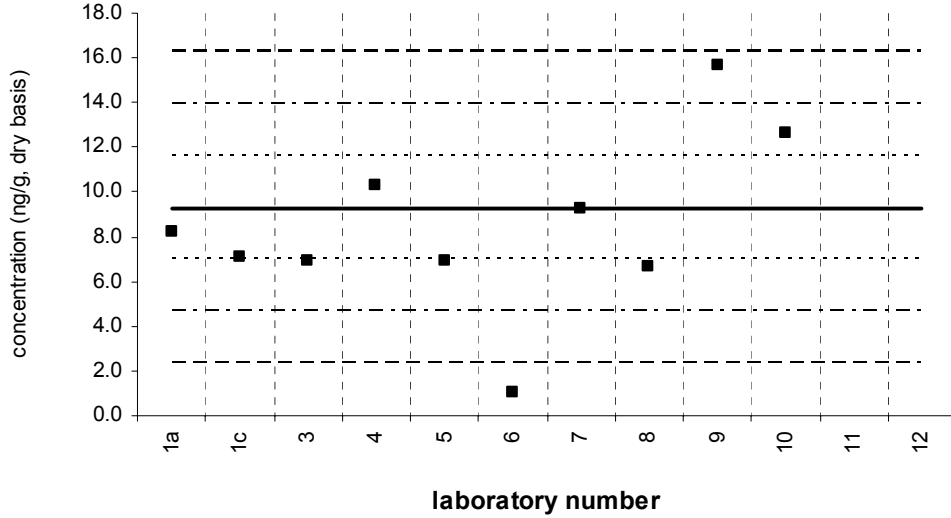


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 180**

**Tissue XII (QA05TIS12)**

Assigned value = 9.29 ng/g  $s = 3.11$  ng/g 95% CL = 2.39 ng/g (dry basis)  
Reported Results: 10 Quantitative Results: 10

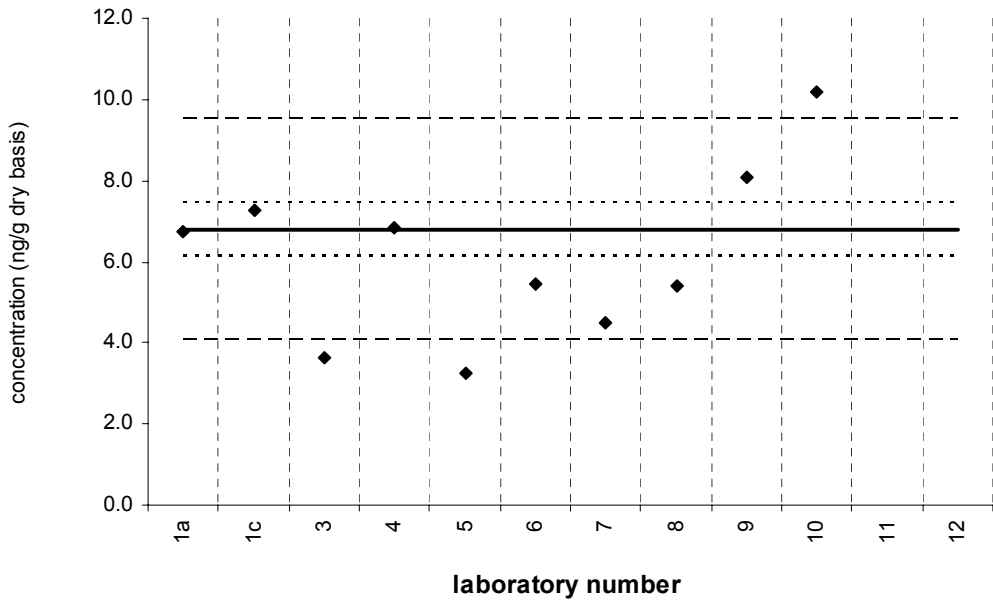


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**PCB 180**

**SRM 2977**

Certified Value =  $6.79 \pm 0.67$  ng/g (dry basis)  
Reported Results: 10 Quantitative Results: 10

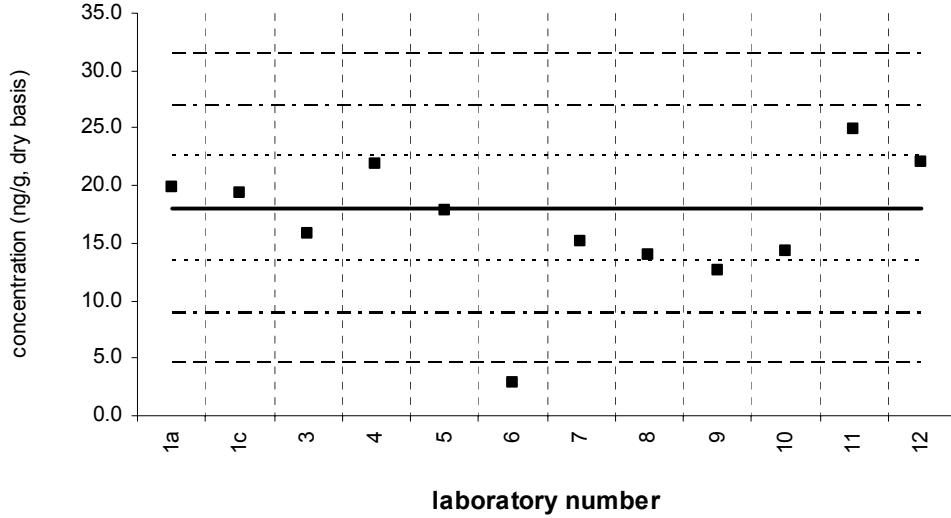


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 187**

**Tissue XII (QA05TIS12)**

Assigned value = 18.0 ng/g  $s = 4.0$  ng/g 95% CL = 2.7 ng/g (dry basis)  
Reported Results: 12 Quantitative Results: 12

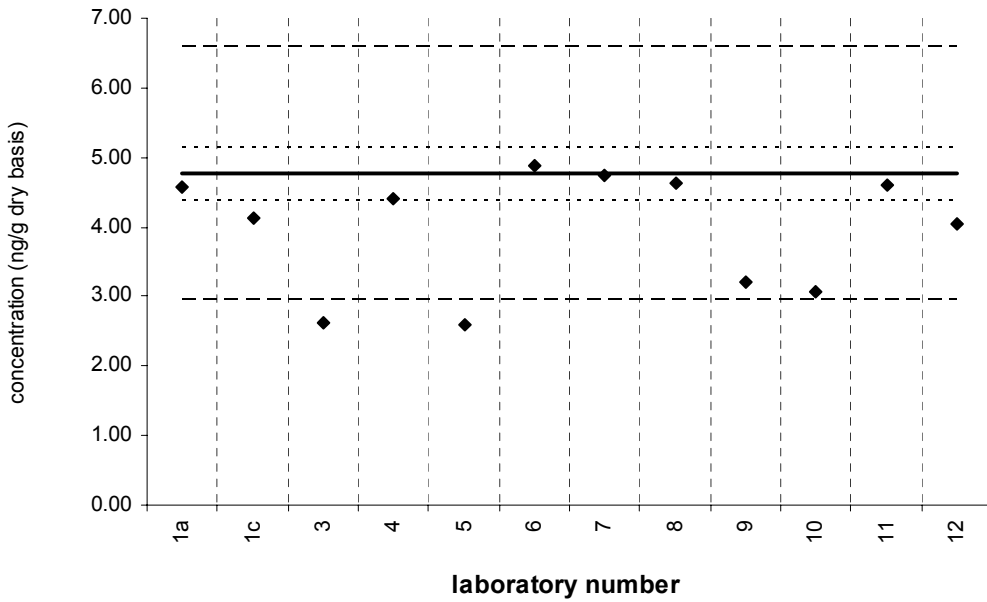


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**PCB 187**

**SRM 2977**

Certified Value =  $4.76 \pm 0.38$  ng/g (dry basis)  
Reported Results: 12 Quantitative Results: 12



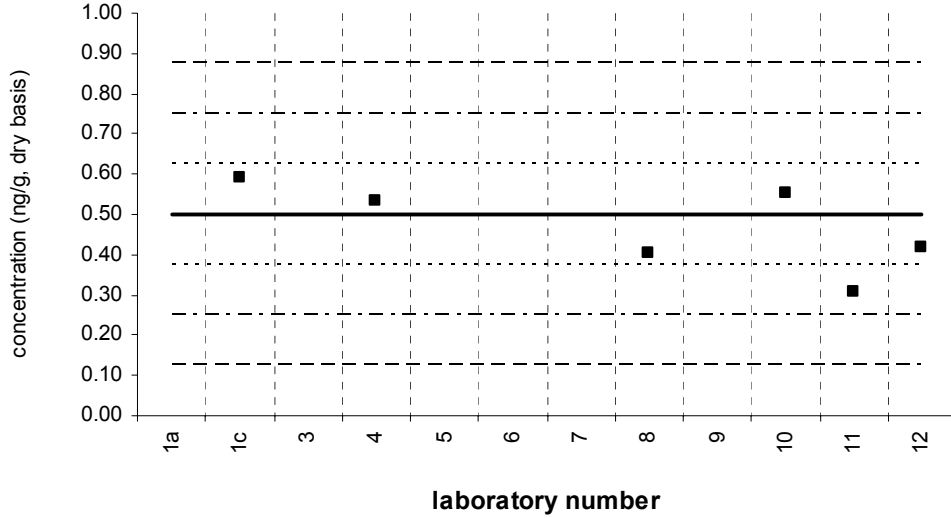
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits



**PCB 194**

**Tissue XII (QA05TIS12)**

Assigned value = 0.501 ng/g  $s = 0.084$  ng/g 95% CL = 0.105 ng/g (dry basis)  
Reported Results: 9 Quantitative Results: 6

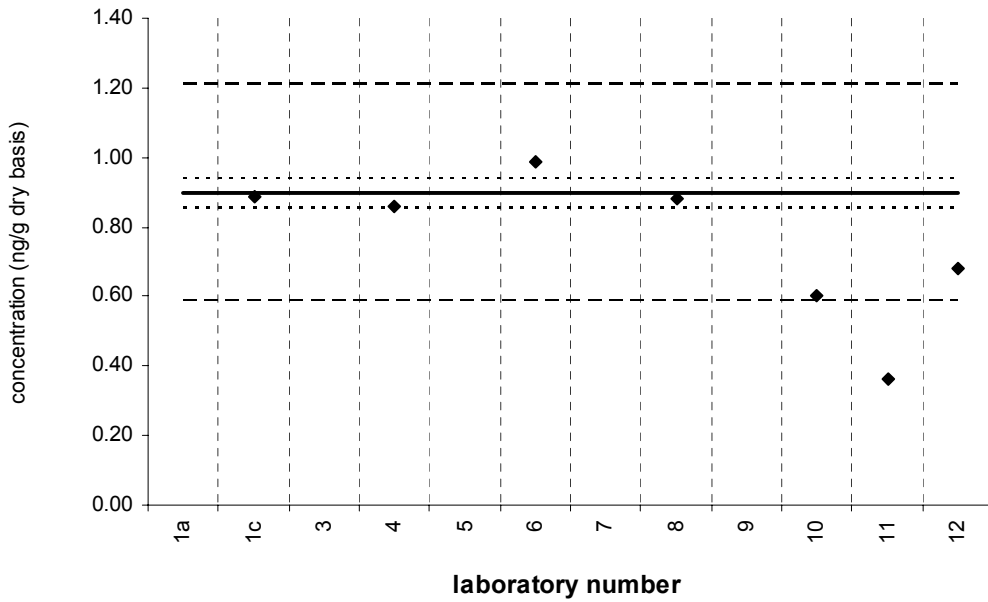


Solid line : exercise assigned value (EAV); dotted line:  $z = \pm 1$  (25% from EAV); dotted/dashed line:  $z = \pm 2$  (50% from EAV); dashed line:  $z = \pm 3$  (75% from EAV)

**PCB 194**

**SRM 2977**

Certified Value =  $0.897 \pm 0.042$  ng/g (dry basis)  
Reported Results: 9 Quantitative Results: 7

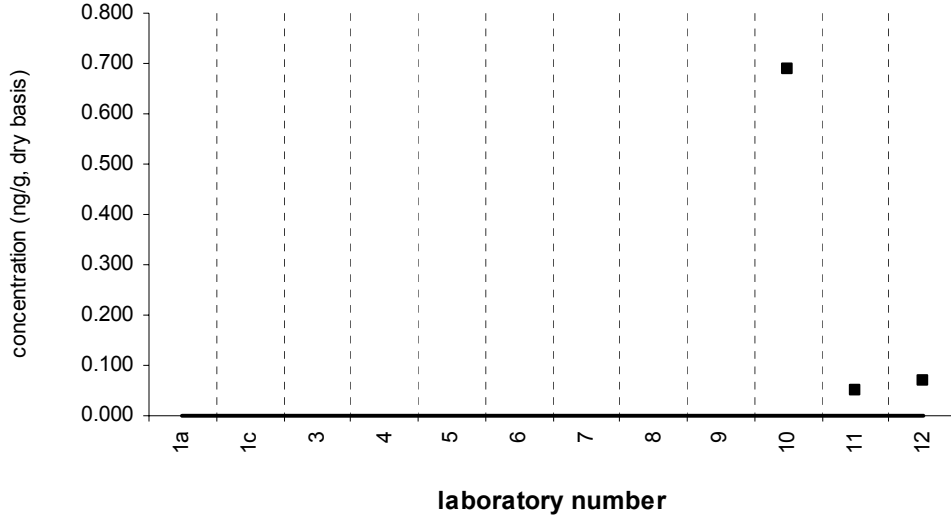


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 195**

**Tissue XII (QA05TIS12)**

Assigned value = no target ng/g (dry basis)  
Reported Results: 12    Quantitative Results: 3

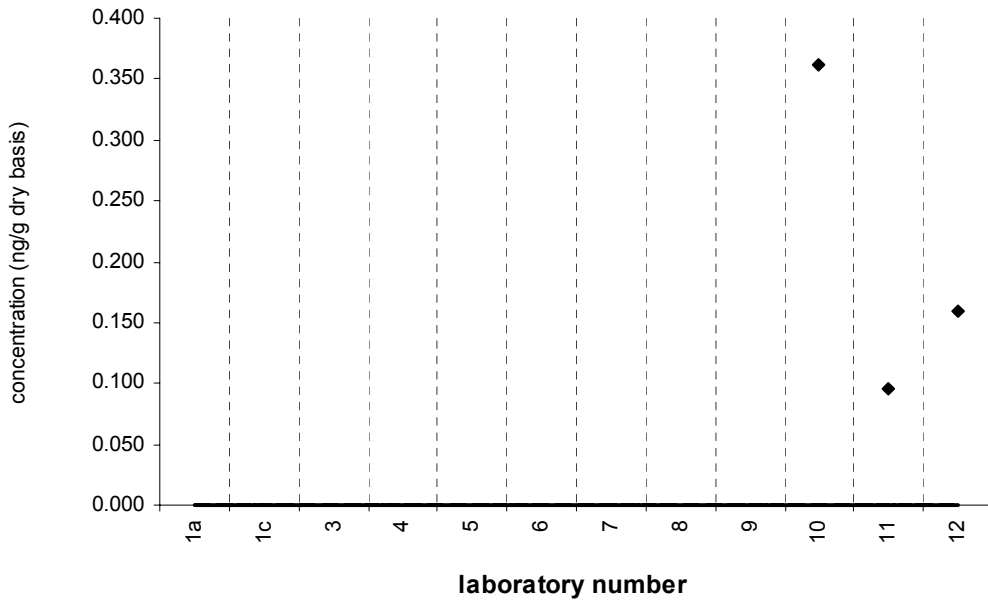


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**PCB 195**

**SRM 2977**

Target Value = no target ng/g (dry basis)  
Reported Results: 12    Quantitative Results: 3

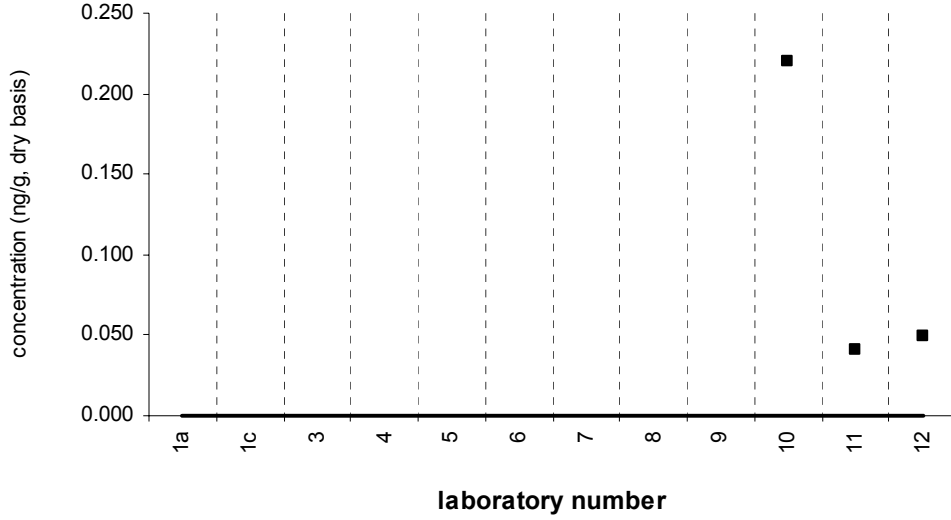


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 206**

**Tissue XII (QA05TIS12)**

Assigned value = no target ng/g (dry basis)  
Reported Results: 12    Quantitative Results: 3

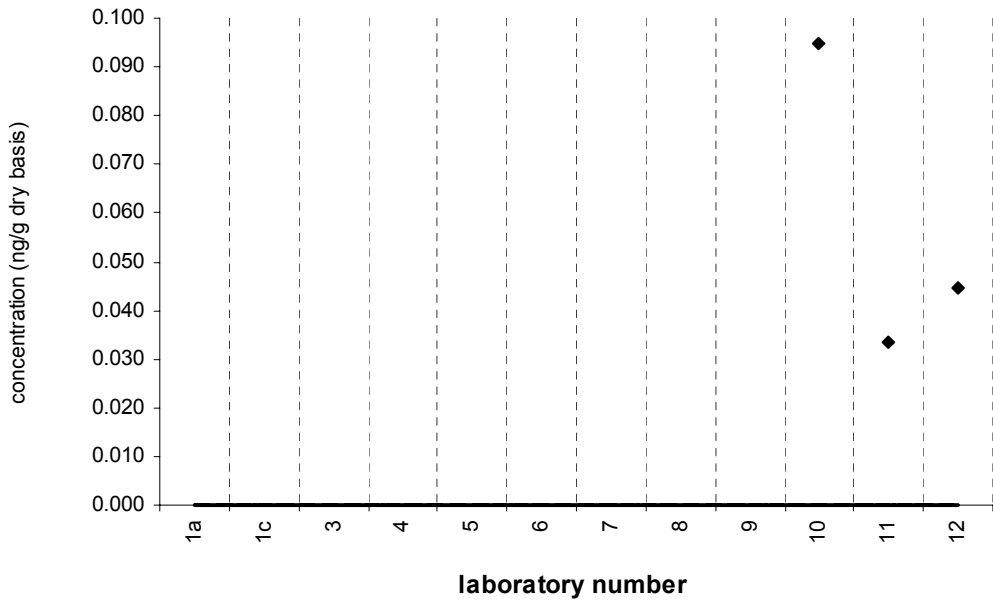


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**PCB 206**

**SRM 2977**

Target Value = no target ng/g (dry basis)  
Reported Results: 12    Quantitative Results: 3

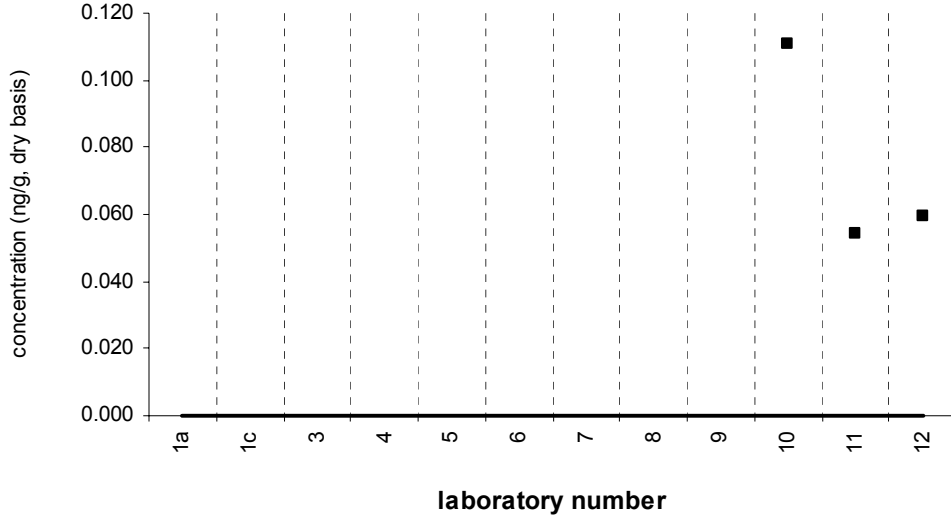


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 209**

**Tissue XII (QA05TIS12)**

Assigned value = no target ng/g (dry basis)  
Reported Results: 12    Quantitative Results: 3

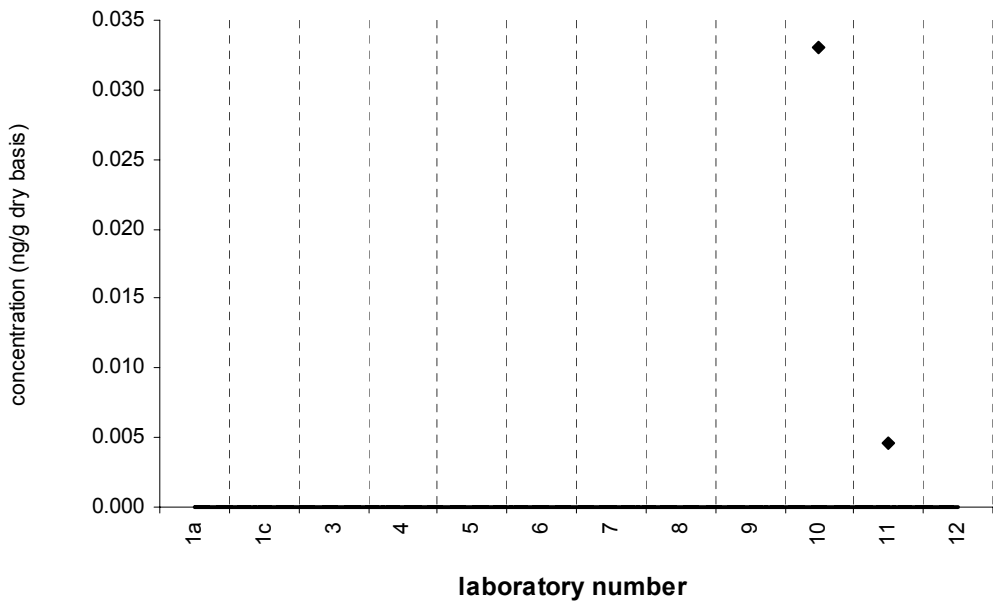


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**PCB 209**

**SRM 2977**

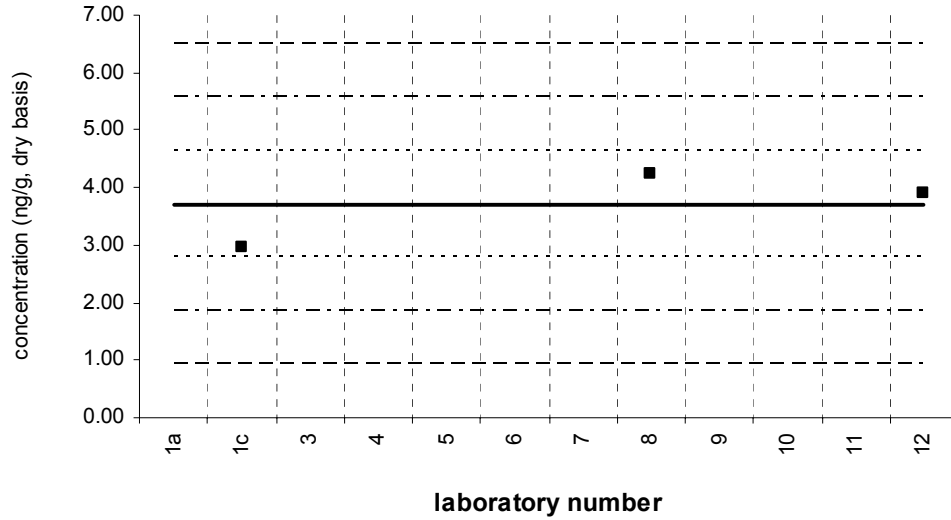
Target Value = no target ng/g (dry basis)  
Reported Results: 12    Quantitative Results: 2



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**BDE 17****Tissue XII (QA05TIS12)**Assigned value = 3.72 ng/g  $s = 0.66$  ng/g 95% CL = 1.64 ng/g (dry basis)

Reported Results: 3 Quantitative Results: 3

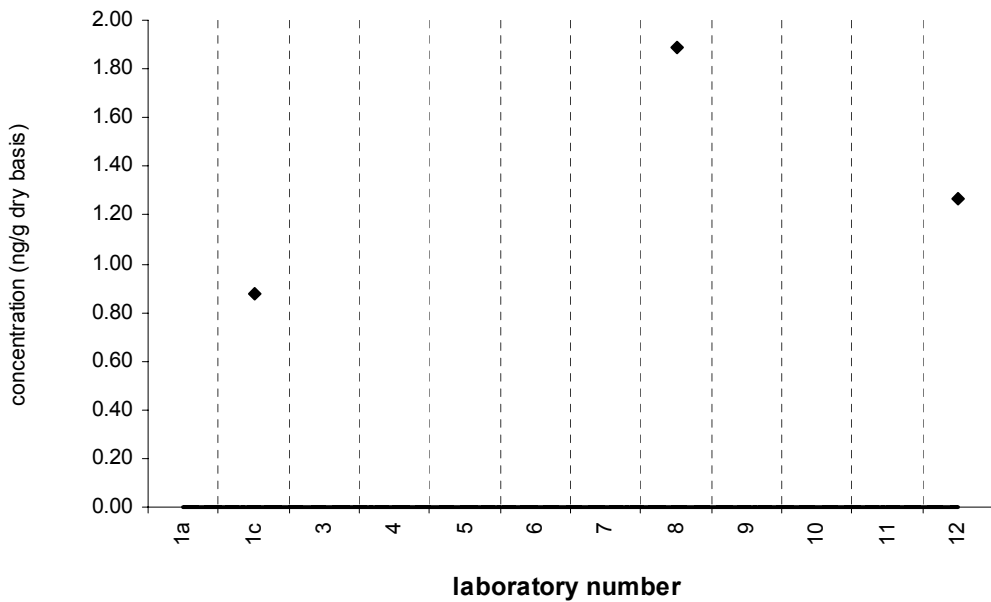


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**BDE 17****SRM 2977**

Target Value = no target ng/g (dry basis)

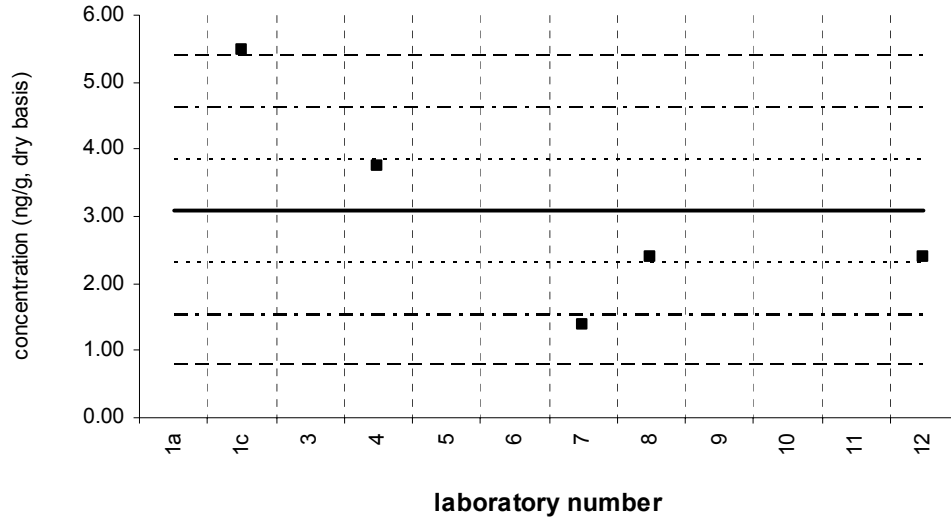
Reported Results: 3 Quantitative Results: 3



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**BDE 28****Tissue XII (QA05TIS12)**Assigned value = 3.08 ng/g  $s = 1.58$  ng/g 95% CL = 1.97 ng/g (dry basis)

Reported Results: 5 Quantitative Results: 5

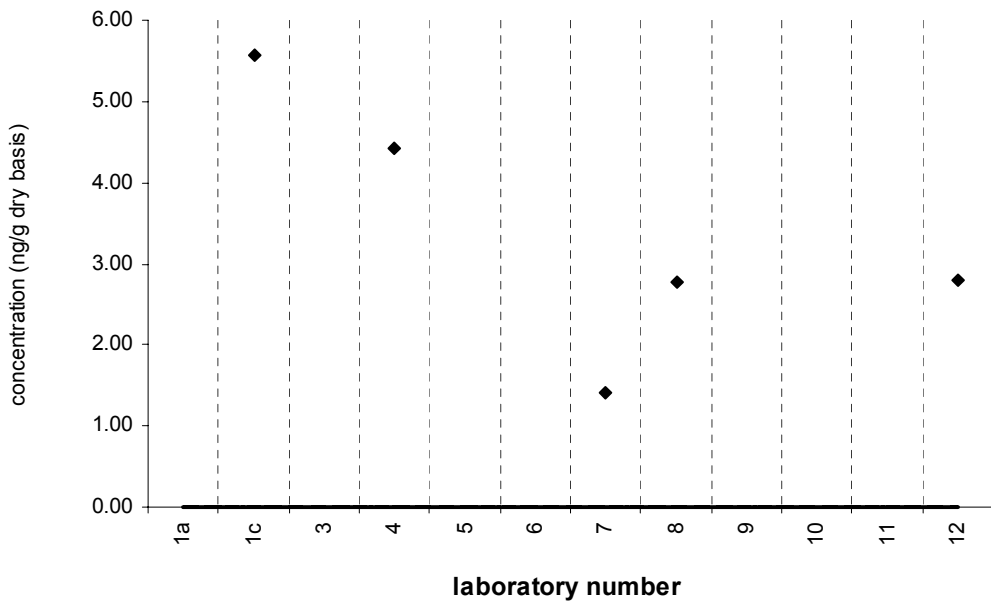


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**BDE 28****SRM 2977**

Target Value = no target ng/g (dry basis)

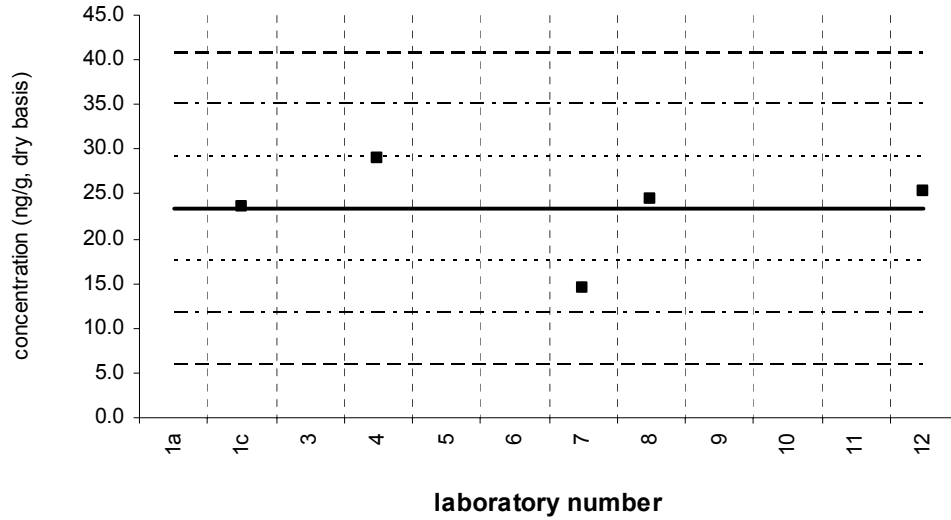
Reported Results: 5 Quantitative Results: 5



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**BDE 47****Tissue XII (QA05TIS12)**Assigned value = 23.3 ng/g  $s = 5.4$  ng/g 95% CL = 6.7 ng/g (dry basis)

Reported Results: 5 Quantitative Results: 5

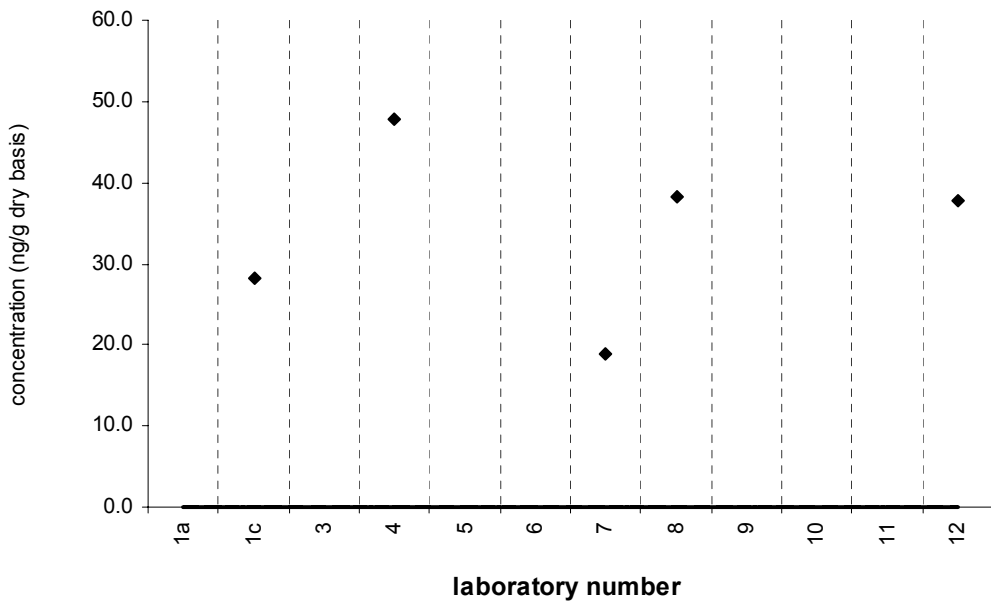


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**BDE 47****SRM 2977**

Target Value = no target ng/g (dry basis)

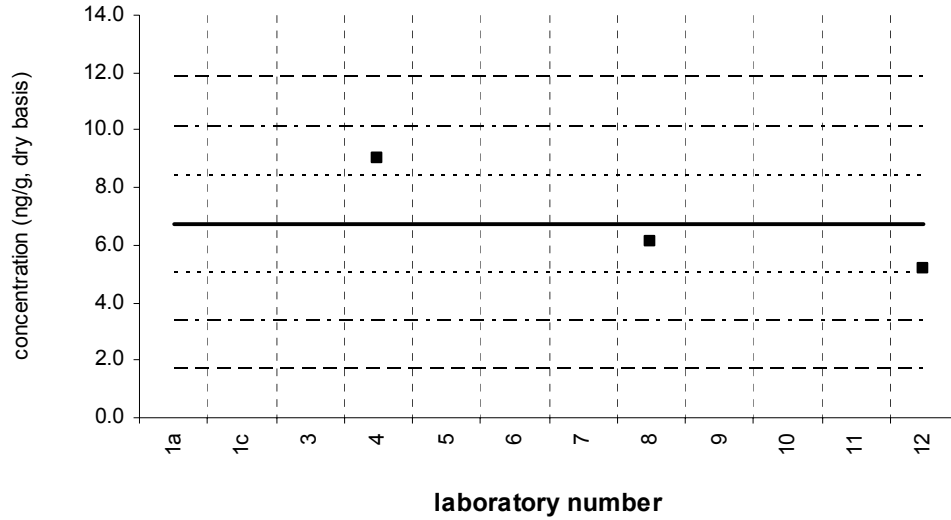
Reported Results: 5 Quantitative Results: 5



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**BDE 49****Tissue XII (QA05TIS12)**

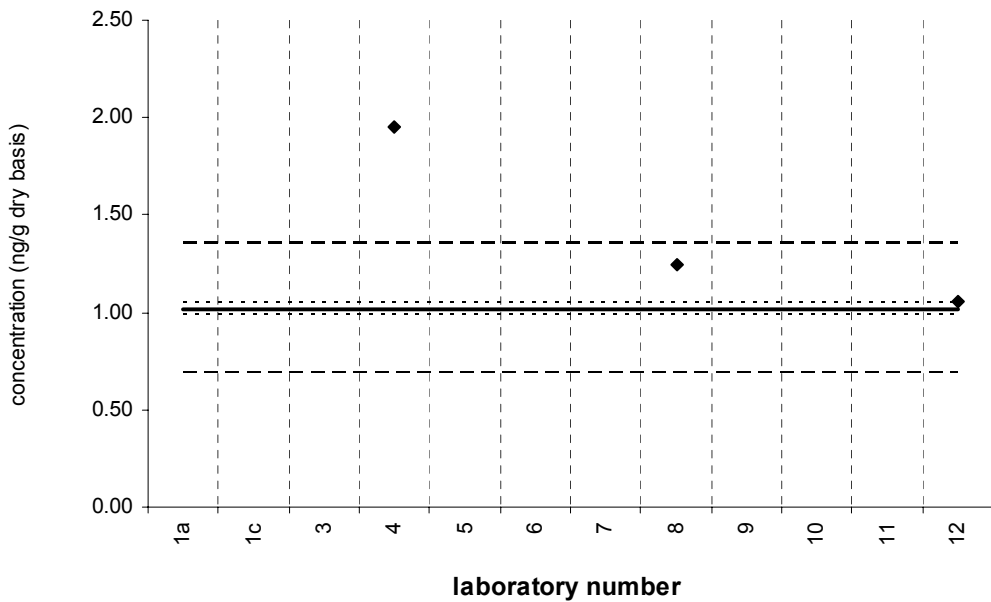
Assigned value = 6.75 ng/g  $s = 2.00$  ng/g 95% CL = 4.97 ng/g (dry basis)  
Reported Results: 4 Quantitative Results: 3



Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**BDE 49****SRM 2977**

Target Value = 1.02 ± 0.03 ng/g (dry basis)  
Reported Results: 4 Quantitative Results: 3

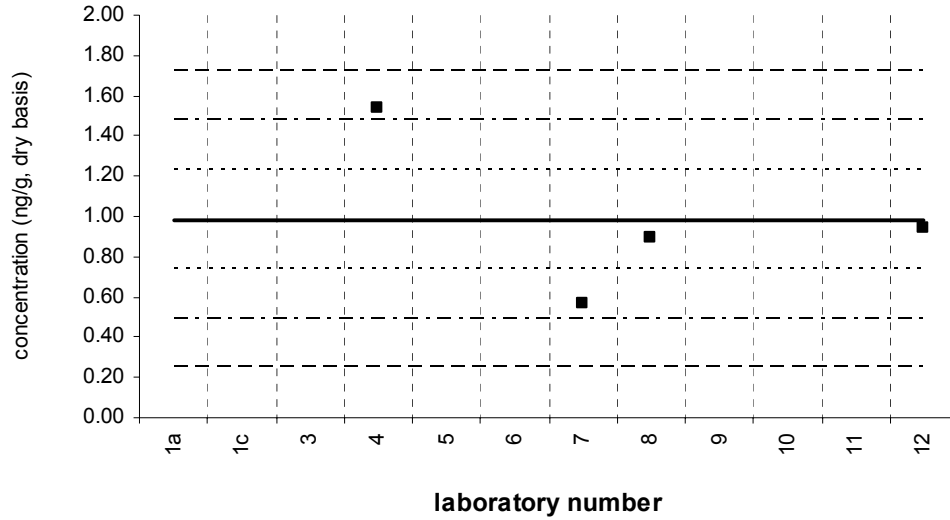


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits



**BDE 66****Tissue XII (QA05TIS12)**Assigned value = 0.984 ng/g  $s = 0.403$  ng/g 95% CL = 0.642 ng/g (dry basis)

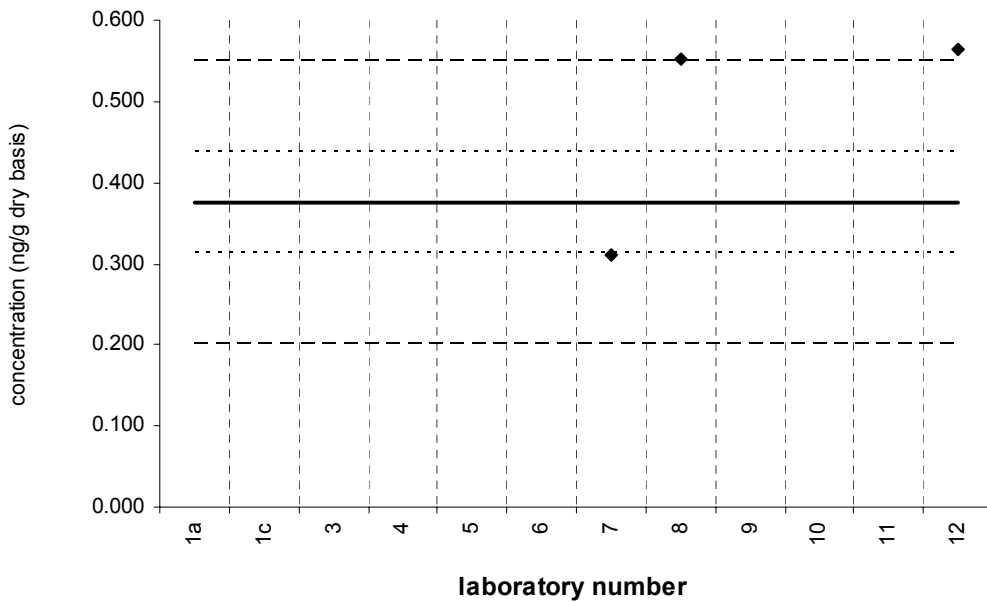
Reported Results: 5 Quantitative Results: 4



Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**BDE 66****SRM 2977**Target Value = 0.375  $\pm 0.062$  ng/g (dry basis)

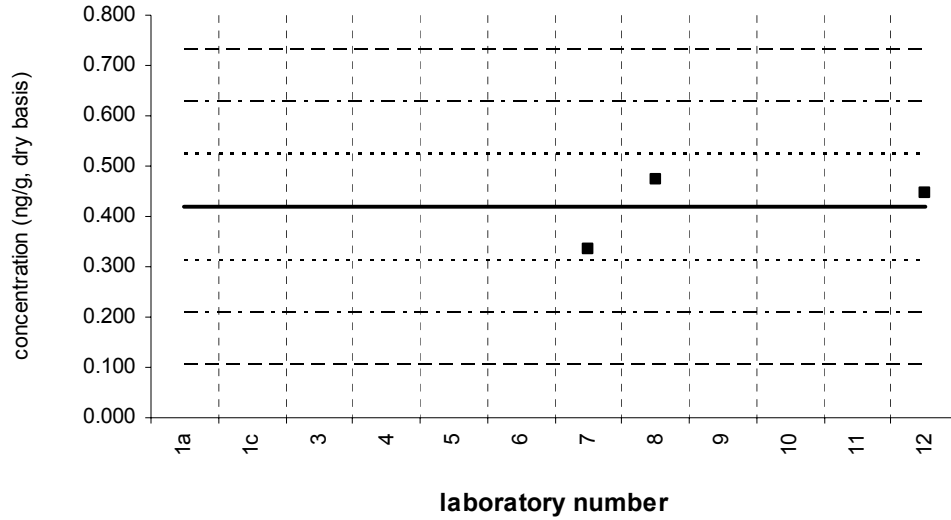
Reported Results: 5 Quantitative Results: 3



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**BDE 85****Tissue XII (QA05TIS12)**Assigned value = 0.418 ng/g  $s = 0.074$  ng/g 95% CL = 0.185 ng/g (dry basis)

Reported Results: 5 Quantitative Results: 3

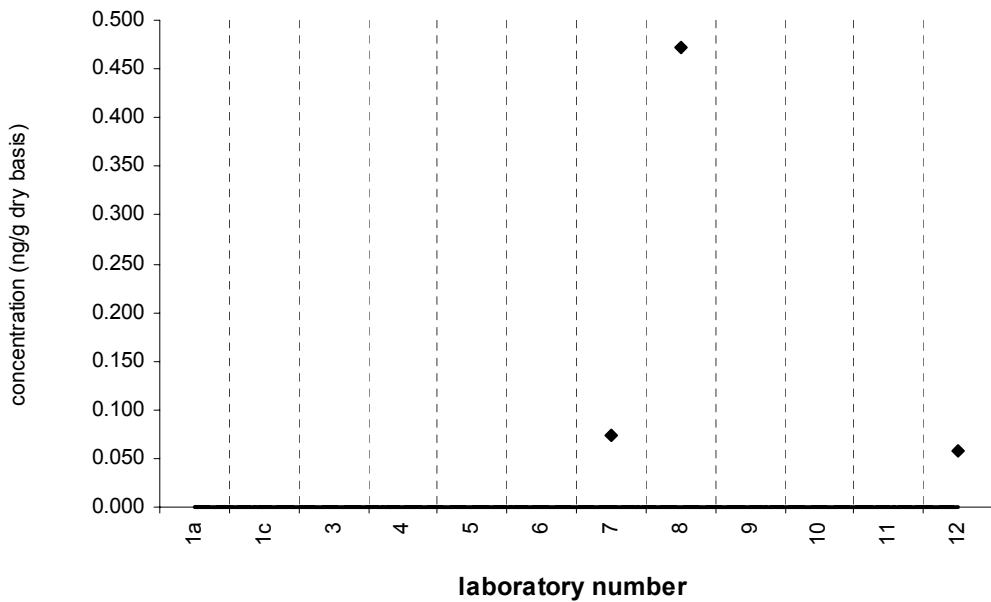


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**BDE 85****SRM 2977**

Target Value = no target ng/g (dry basis)

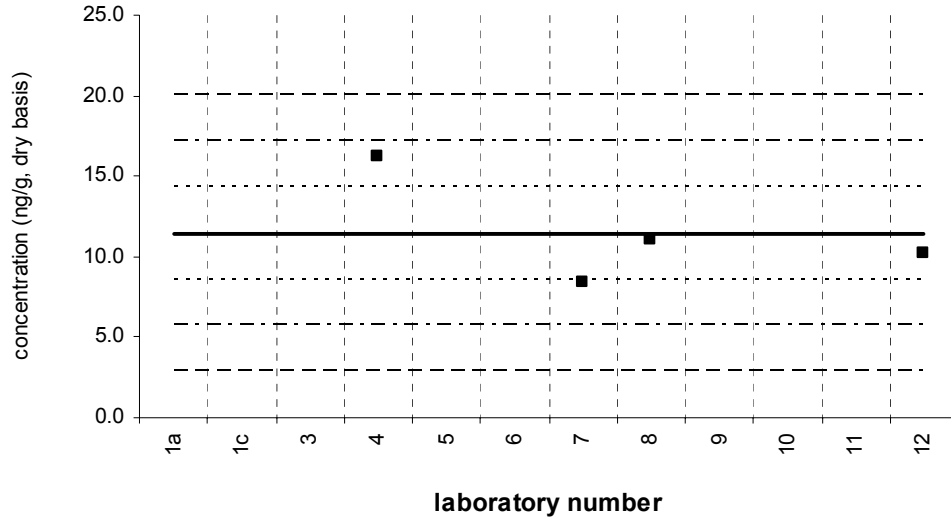
Reported Results: 5 Quantitative Results: 3



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**BDE 99****Tissue XII (QA05TIS12)**Assigned value = 11.5 ng/g  $s = 3.4$  ng/g 95% CL = 5.3 ng/g (dry basis)

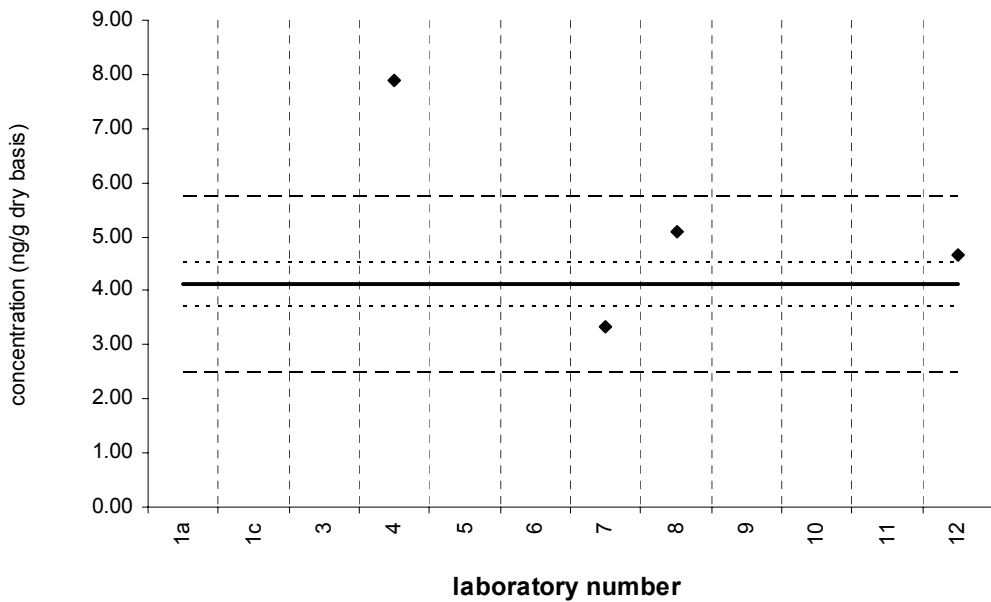
Reported Results: 4 Quantitative Results: 4



Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**BDE 99****SRM 2977**Target Value = 4.11  $\pm$  0.40 ng/g (dry basis)

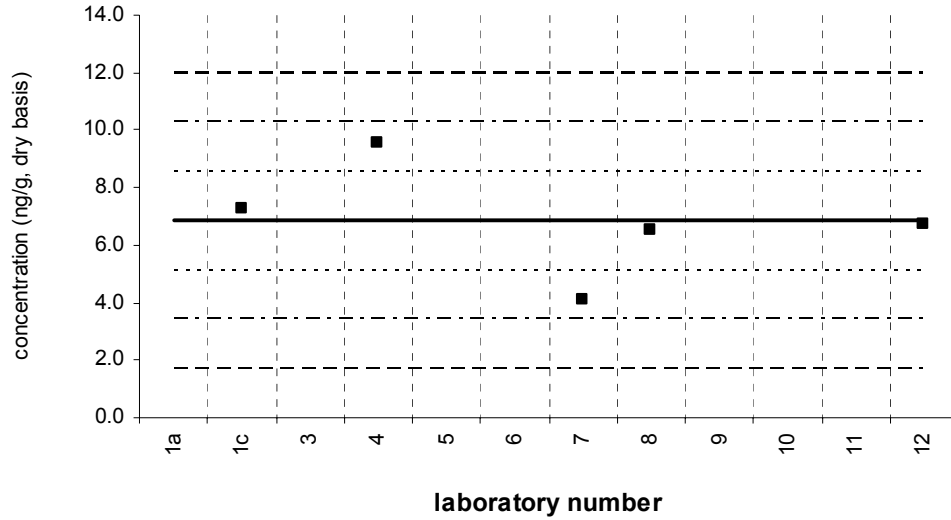
Reported Results: 4 Quantitative Results: 4



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**BDE 100****Tissue XII (QA05TIS12)**Assigned value = 6.85 ng/g  $s = 1.93$  ng/g 95% CL = 2.40 ng/g (dry basis)

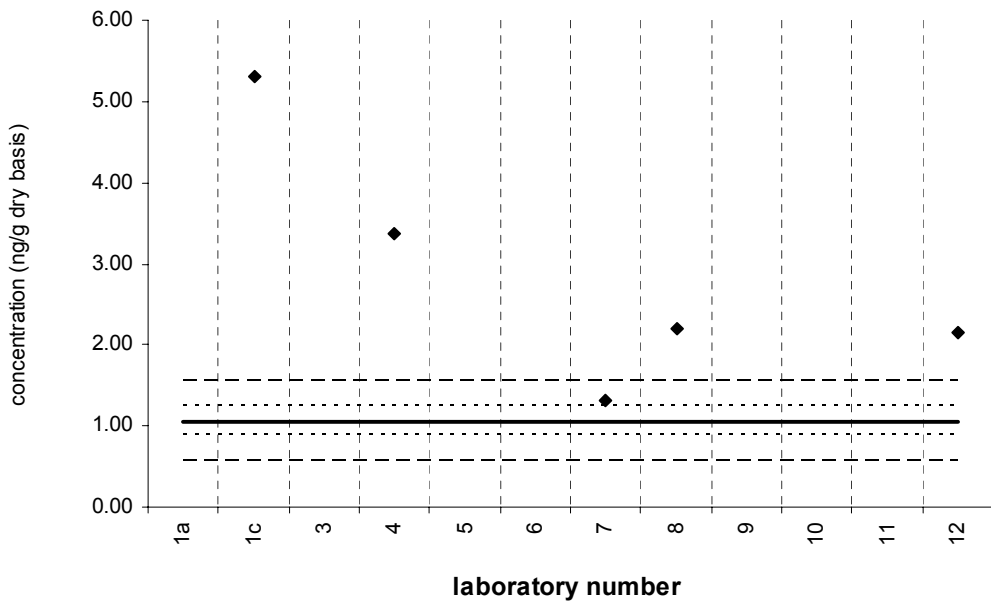
Reported Results: 5 Quantitative Results: 5



Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**BDE 100****SRM 2977**Target Value =  $1.06 \pm 0.18$  ng/g (dry basis)

Reported Results: 5 Quantitative Results: 5

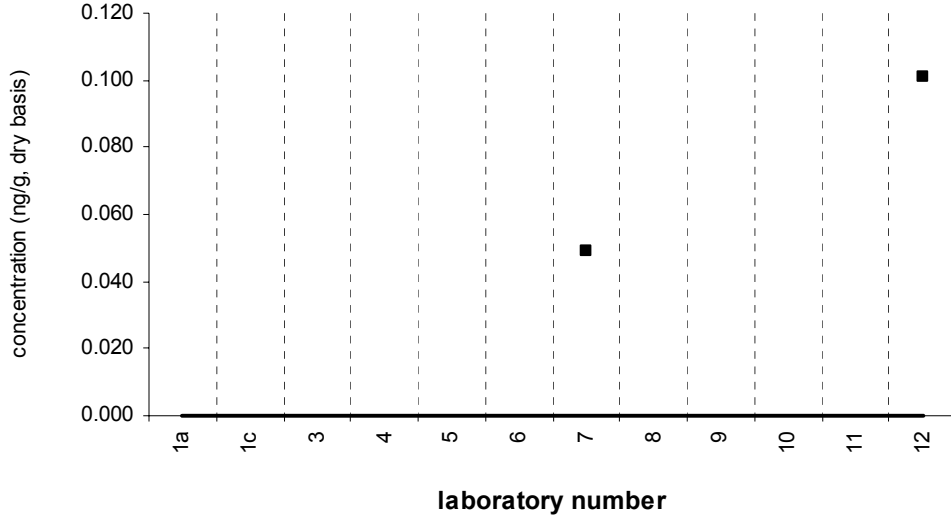


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**BDE 138**

**Tissue XII (QA05TIS12)**

Assigned value = no target ng/g (dry basis)  
Reported Results: 4    Quantitative Results: 2

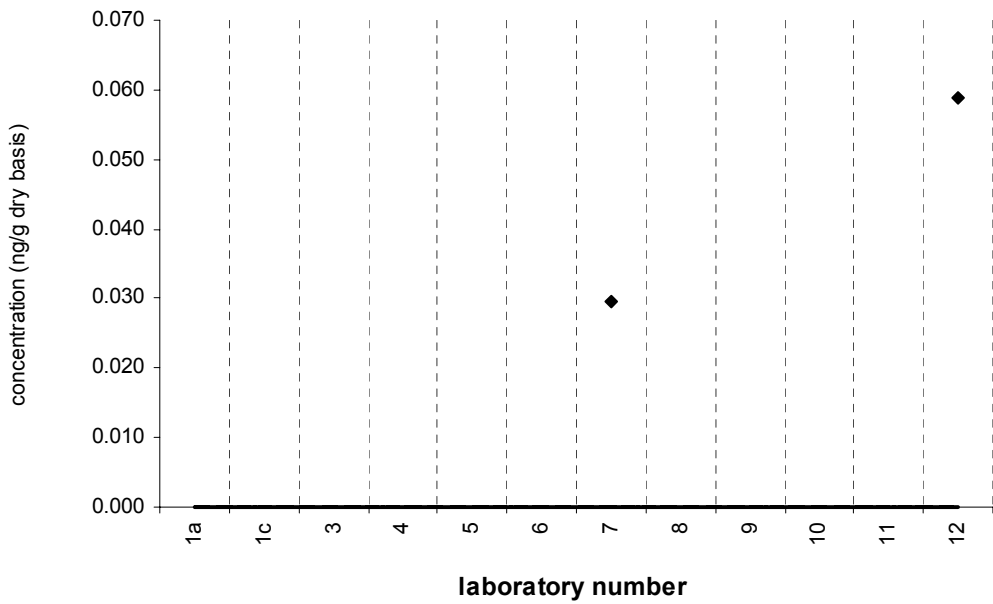


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**BDE 138**

**SRM 2977**

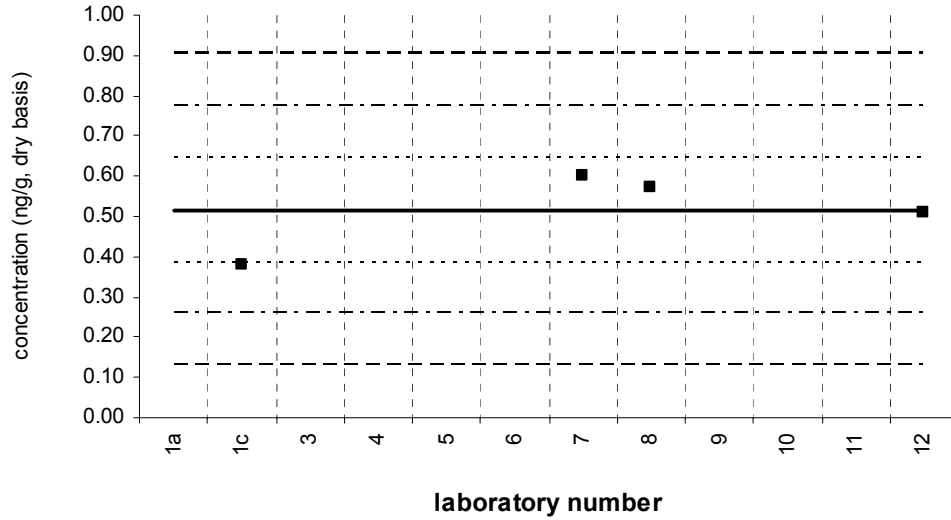
Target Value = no target ng/g (dry basis)  
Reported Results: 13    Quantitative Results: 2



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**BDE 153****Tissue XII (QA05TIS12)**Assigned value = 0.515 ng/g  $s = 0.097$  ng/g 95% CL = 0.155 ng/g (dry basis)

Reported Results: 5 Quantitative Results: 4

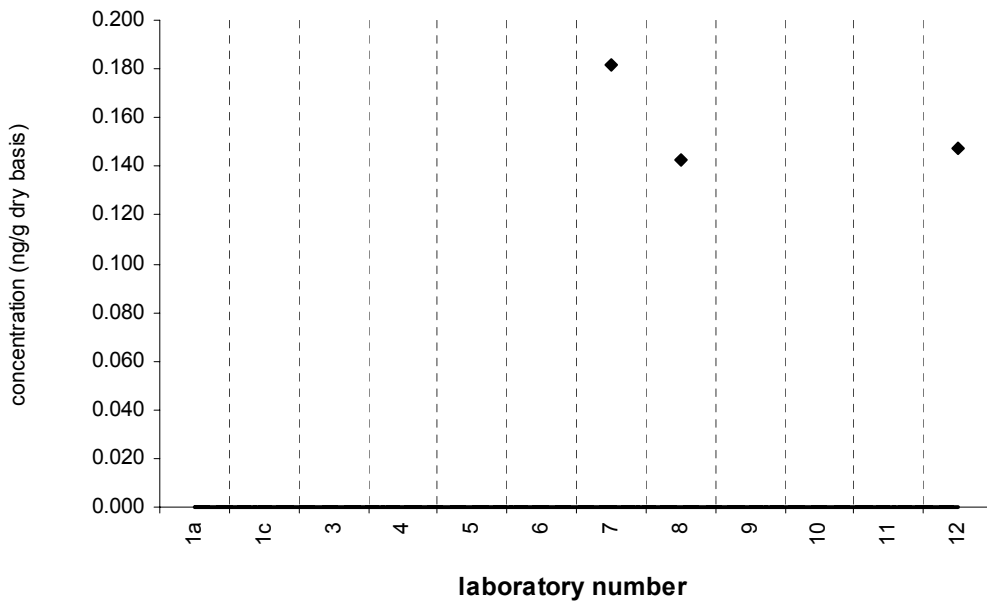


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**BDE 153****SRM 2977**

Target Value = no target ng/g (dry basis)

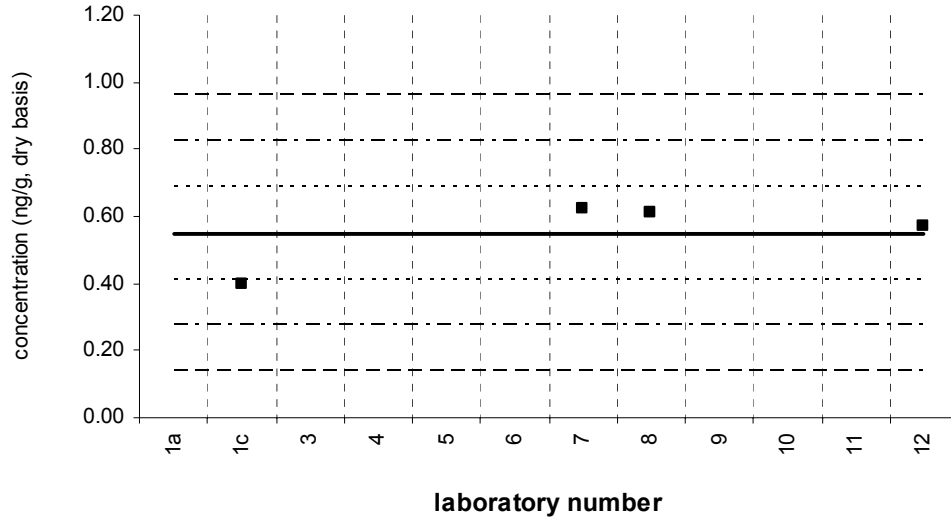
Reported Results: 5 Quantitative Results: 3



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**BDE 154****Tissue XII (QA05TIS12)**Assigned value = 0.550 ng/g  $s = 0.103$  ng/g 95% CL = 0.164 ng/g (dry basis)

Reported Results: 5 Quantitative Results: 4

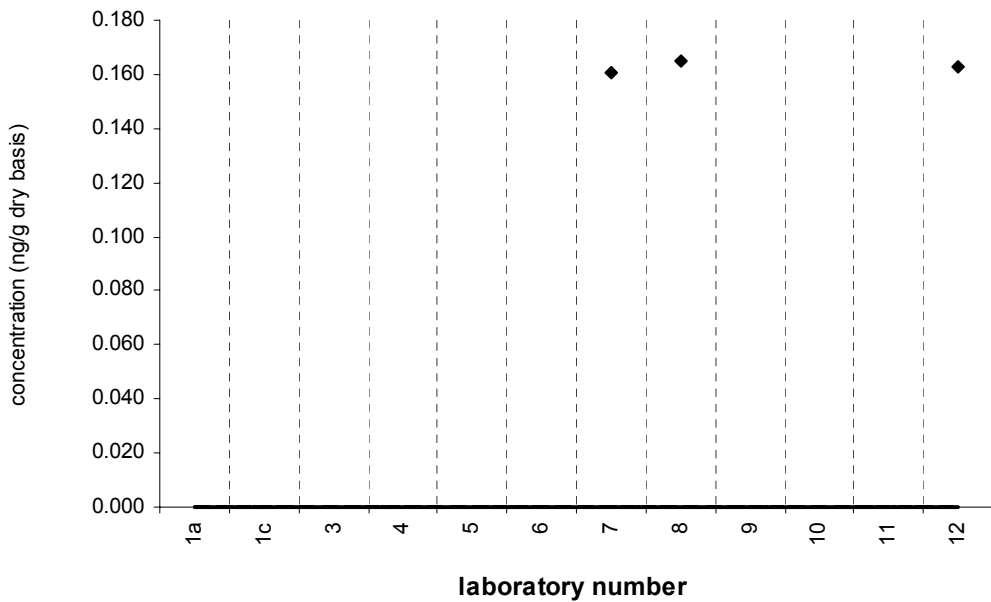


Solid line : exercise assigned value (EAV); dotted line:  $z = \pm 1$  (25% from EAV); dotted/dashed line:  $z = \pm 2$  (50% from EAV); dashed line:  $z = \pm 3$  (75% from EAV)

**BDE 154****SRM 2977**

Target Value = no target ng/g (dry basis)

Reported Results: 5 Quantitative Results: 3

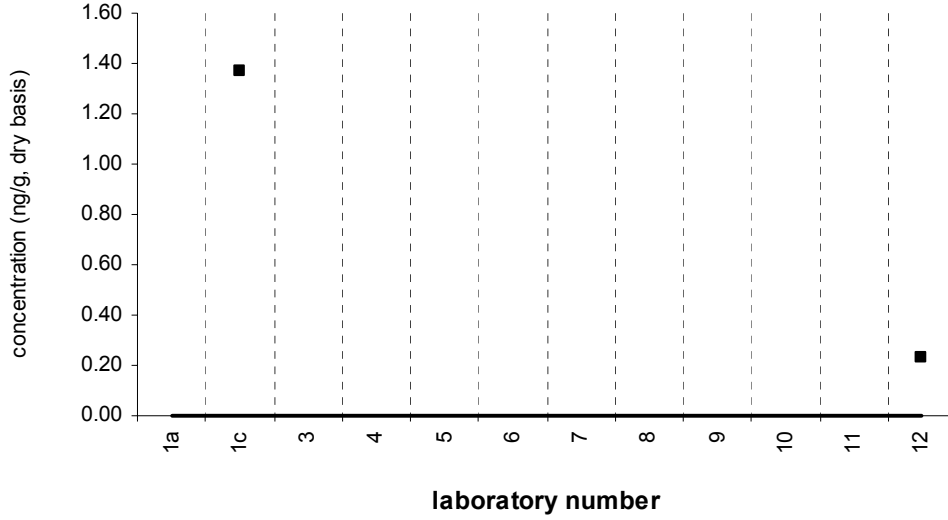


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**BDE 155**

**Tissue XII (QA05TIS12)**

Assigned value = no target ng/g (dry basis)  
Reported Results: 3    Quantitative Results: 2

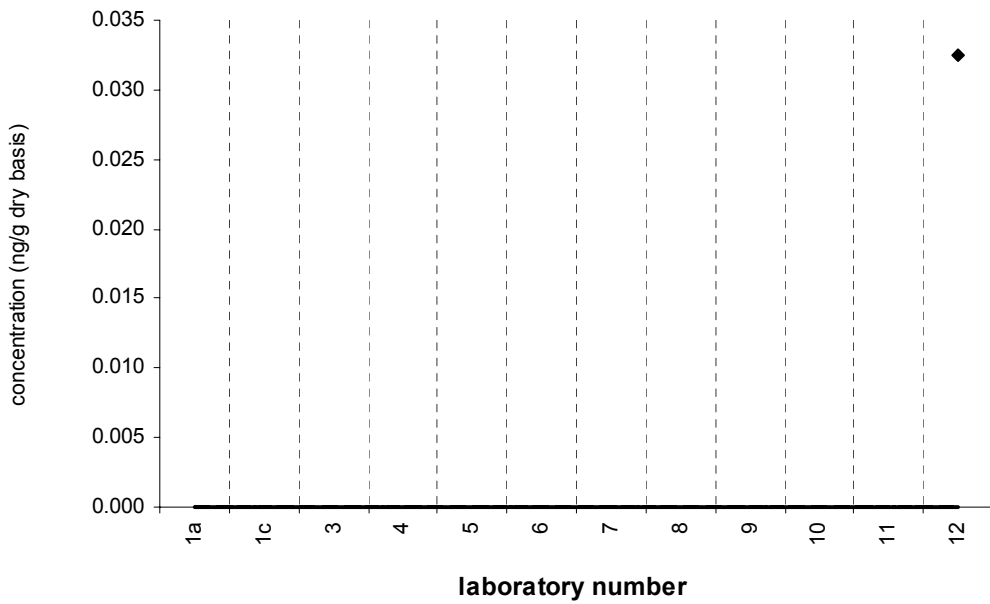


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**BDE 155**

**SRM 2977**

Target Value = no target ng/g (dry basis)  
Reported Results: 3    Quantitative Results: 1



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits



## **Appendix H: Charts of Marine Sediment XIII and SRM 1941b Results by Analyte**

See Tables 10 through 17 for results reported as *<number*, detection limit, etc.

Charts for analytes with few reported numerical results are not included in this appendix.

Note: The numbers added to the charts are the values reported that are off the scale of the chart.

For Marine Sediment XIII plots:

Solid line: exercise assigned value

Dotted line:  $z = \pm 1$ , i. e., 25 % from assigned value

Dotted/dashed line:  $z = \pm 2$ , i. e., 50 % from assigned value

Dashed line:  $z = \pm 3$ , i. e., 75 % from assigned value

For SRM 1941b plots:

Solid line: material certified concentration or target value (see caption of each plot)

Dotted line: 95 % confidence interval (CI)

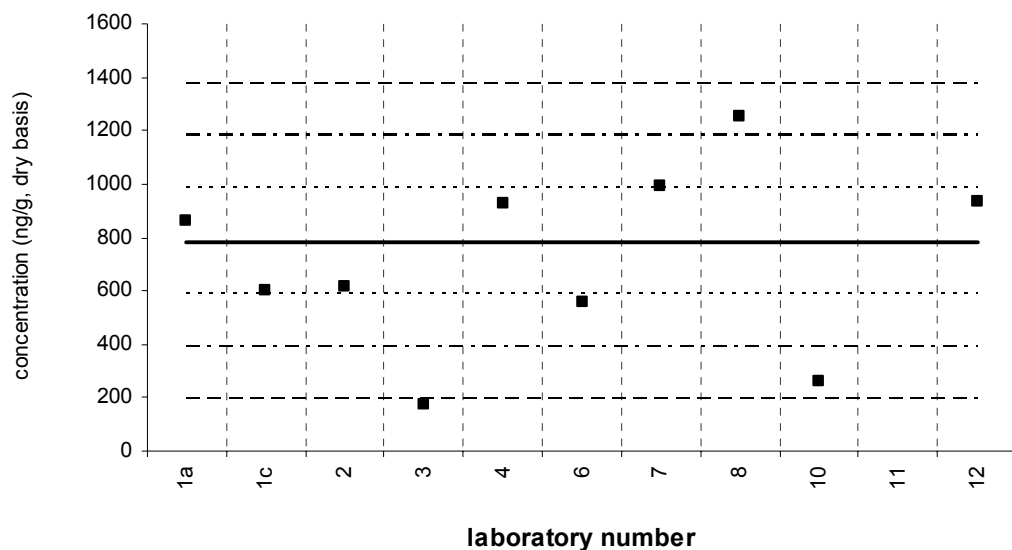
Dashed line: 30 % from 95 % confidence interval (CI)

### naphthalene

### Sediment XIII (QA05SED13)

Assigned value = 785 ng/g s = 186 ng/g 95% CL = 172 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10

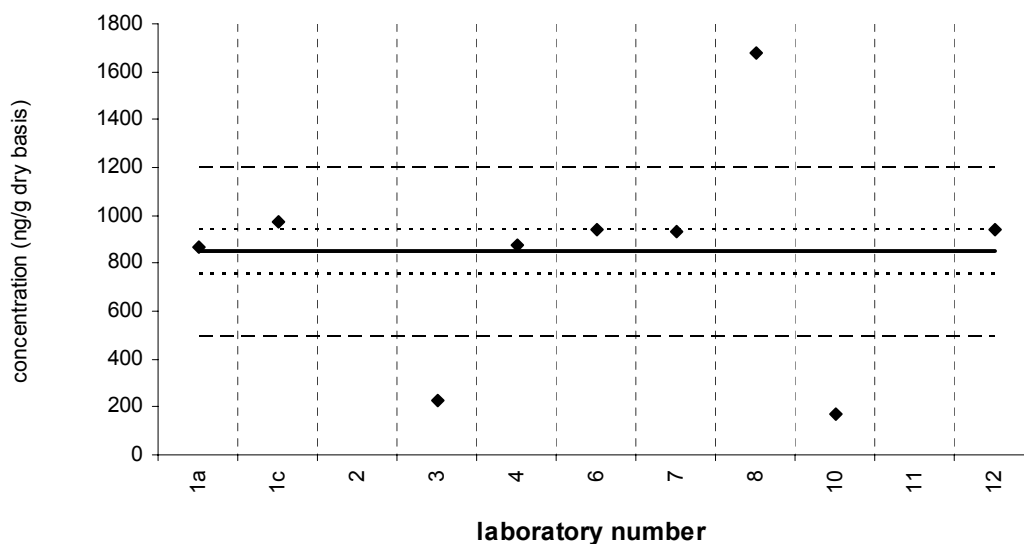


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

### naphthalene

### SRM 1941b

Certified Value = 848 ± 95 ng/g (dry basis)  
Reported Results: 9 Quantitative Results: 9



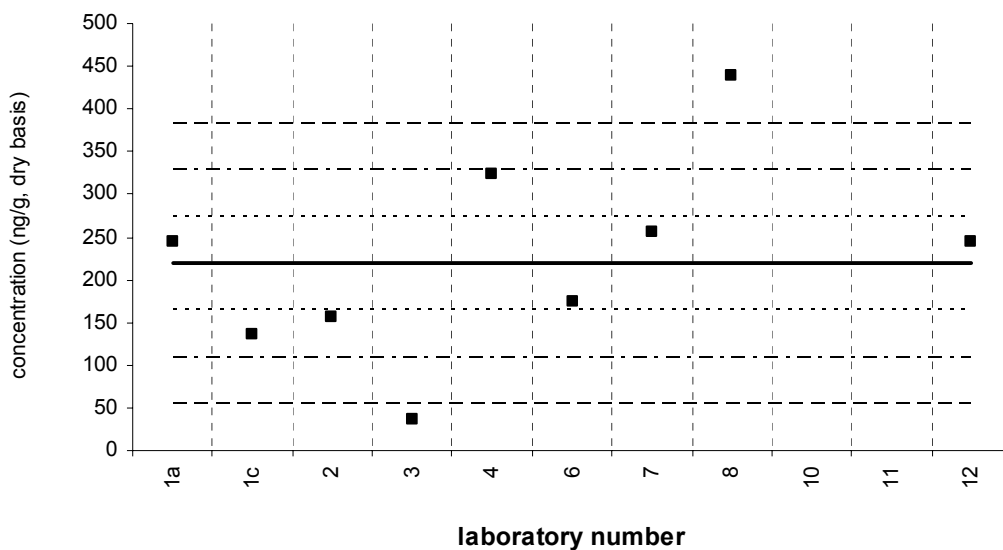
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

## 2-methylnaphthalene

## Sediment XIII (QA05SED13)

Assigned value = 219 ng/g  $s = 66$  ng/g 95% CL = 61 ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9

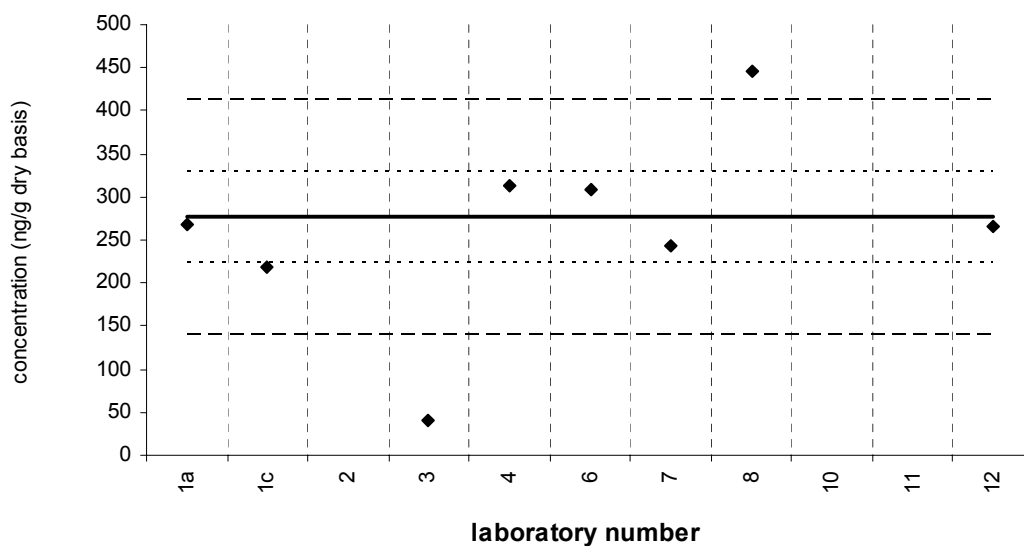


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

## 2-methylnaphthalene

## SRM 1941b

Reference Value =  $276 \pm 53$  ng/g (dry basis)  
Reported Results: 8 Quantitative Results: 8



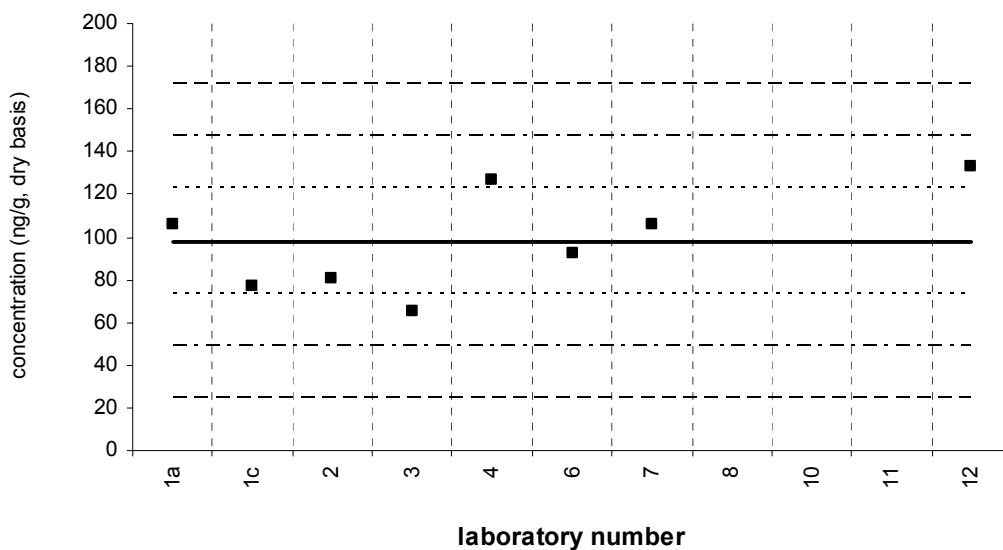
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

### 1-methylnaphthalene

### Sediment XIII (QA05SED13)

Assigned value = 98.2 ng/g s = 24.0 ng/g 95% CL = 20.0 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 8



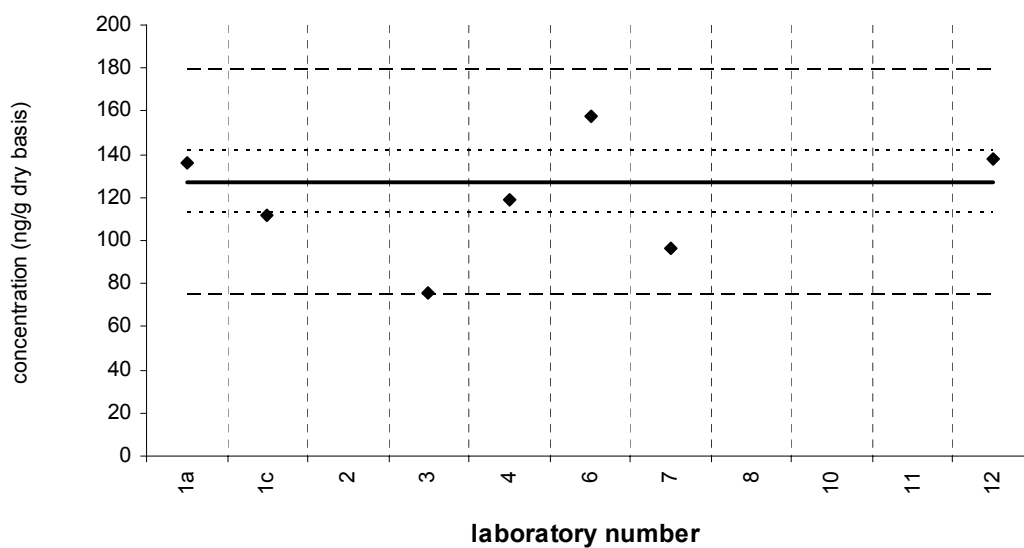
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

### 1-methylnaphthalene

### SRM 1941b

Reference Value = 127 ± 14 ng/g (dry basis)

Reported Results: 7 Quantitative Results: 7



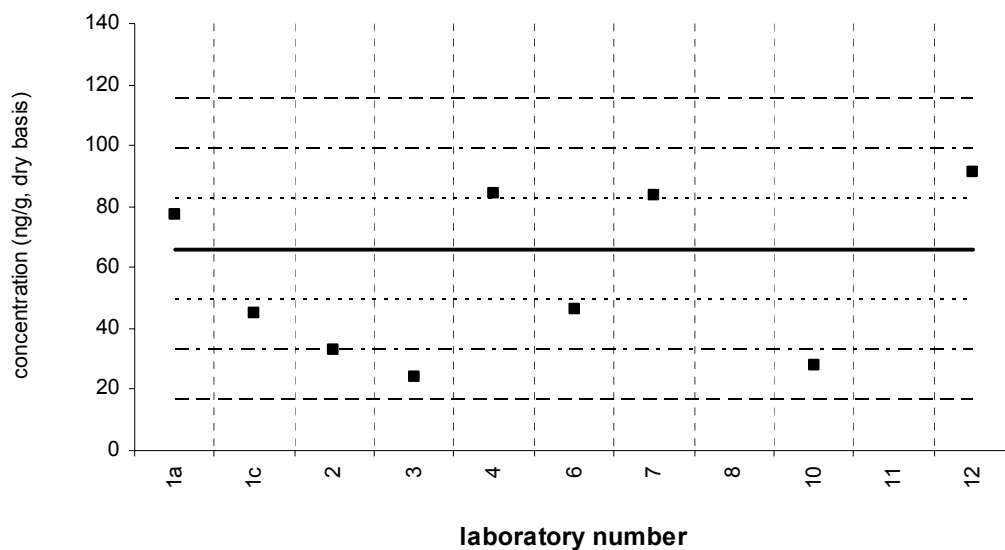
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

### biphenyl

### Sediment XIII (QA05SED13)

Assigned value = 65.8 ng/g s = 23.6 ng/g 95% CL = 21.8 ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9

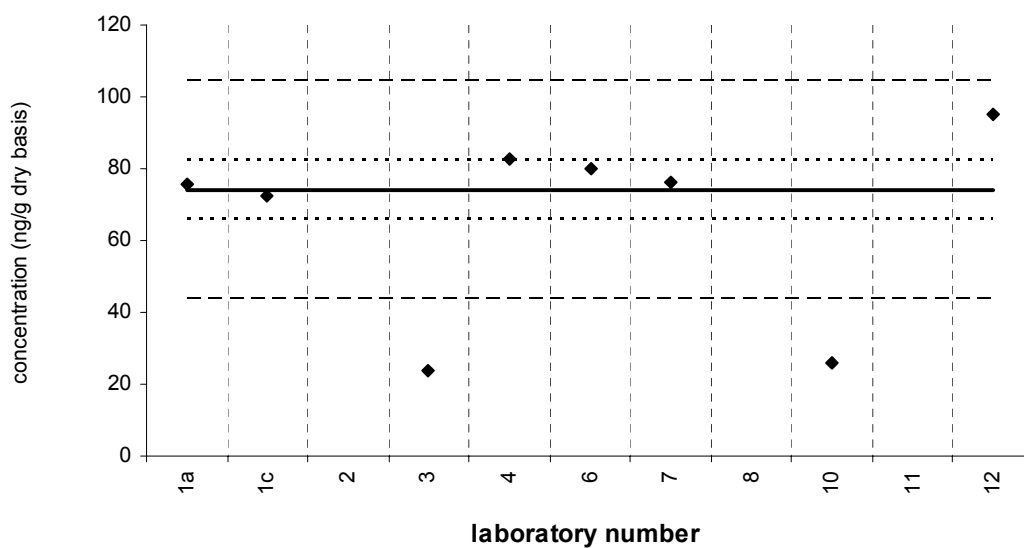


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

### biphenyl

### SRM 1941b

Reference Value = 74 ± 8 ng/g (dry basis)  
Reported Results: 8 Quantitative Results: 8



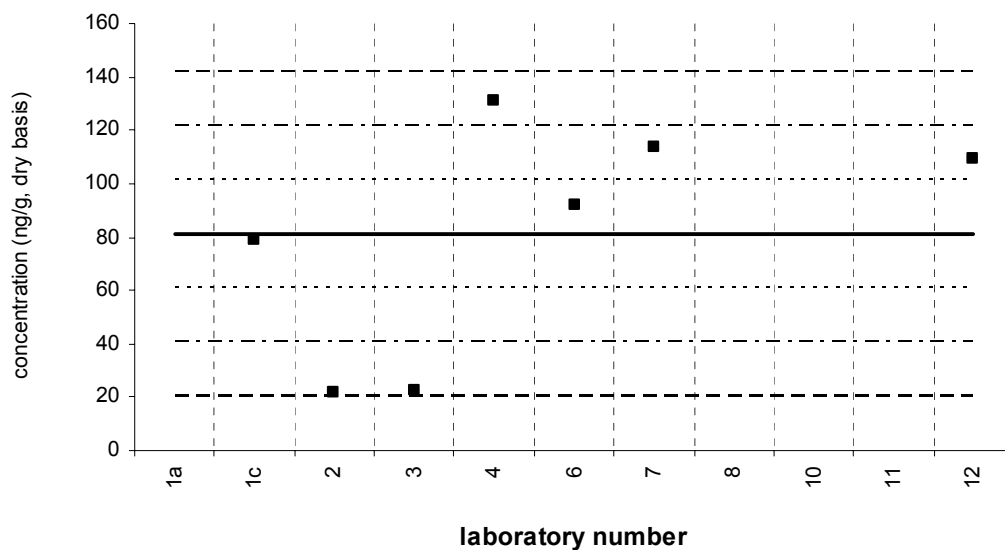
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

## 2,6-dimethylnaphthalene

## Sediment XIII (QA05SED13)

Assigned value = 81.3 ng/g s = 43.6 ng/g 95% CL = 40.3 ng/g (dry basis)

Reported Results: 7 Quantitative Results: 7



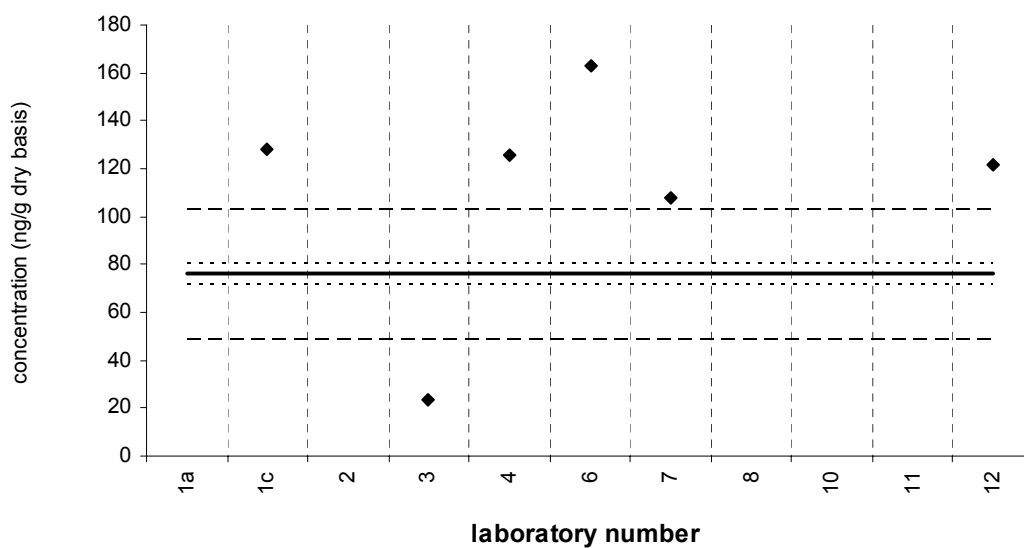
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

## 2,6-dimethylnaphthalene

## SRM 1941b

Reference Value = 75.9 ± 4.5 ng/g (dry basis)

Reported Results: 6 Quantitative Results: 6



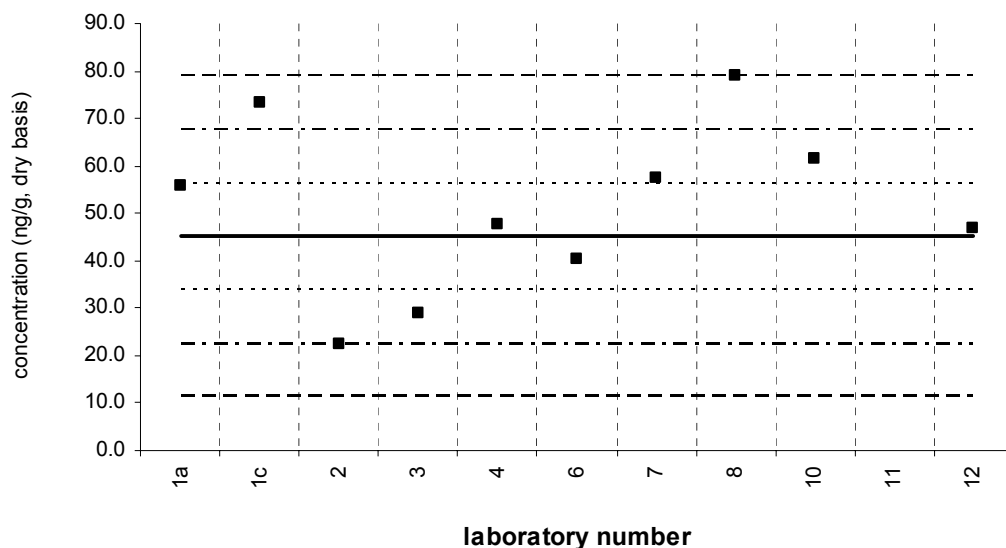
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

### acenaphthylene

### Sediment XIII (QA05SED13)

Assigned value = 45.1 ng/g s = 13.8 ng/g 95% CL = 11.5 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10



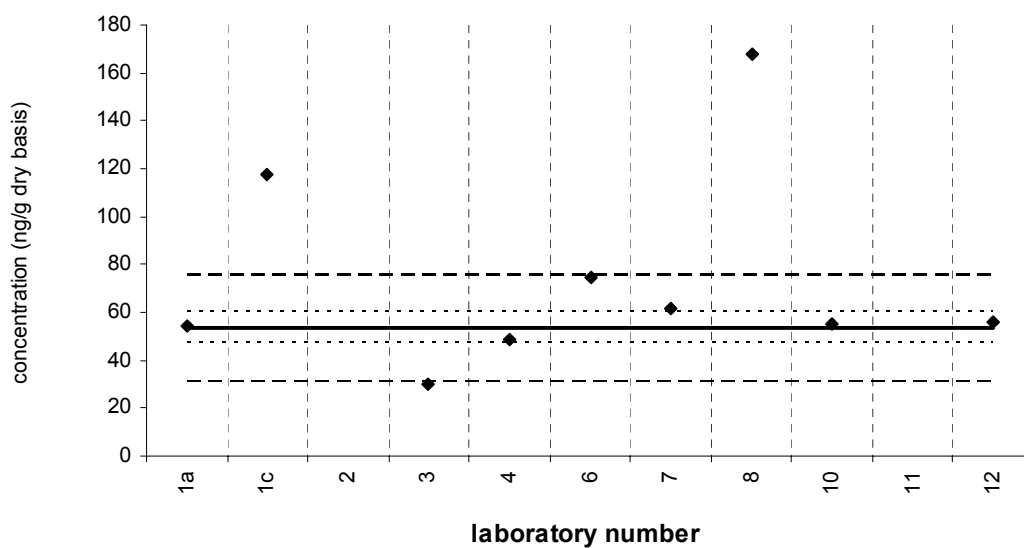
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

### acenaphthylene

### SRM 1941b

Reference Value = 53.3 ± 6.4 ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9



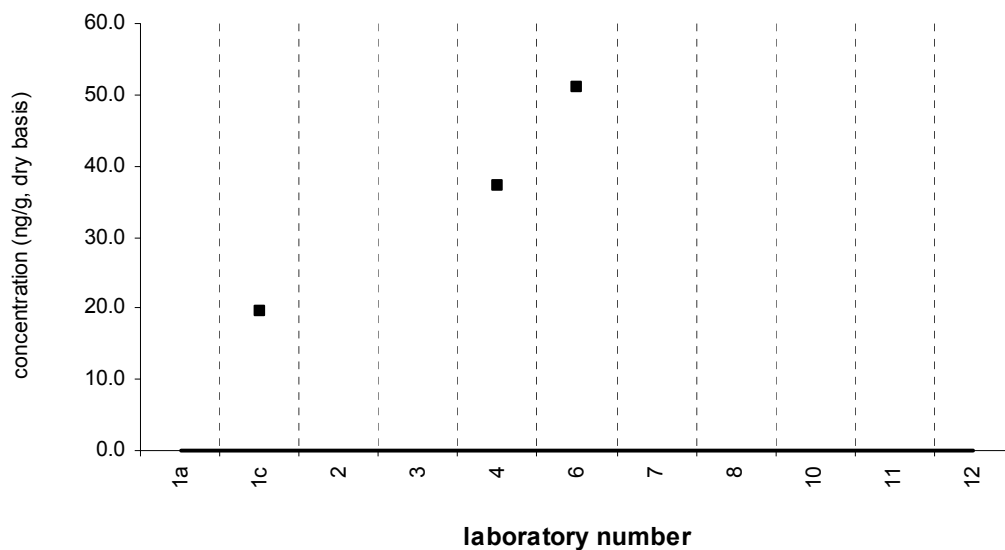
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

### 1,6,7-trimethylnaphthalene

Sediment XIII (QA05SED13)

Assigned value = no target ng/g (dry basis)

Reported Results: 3 Quantitative Results: 3



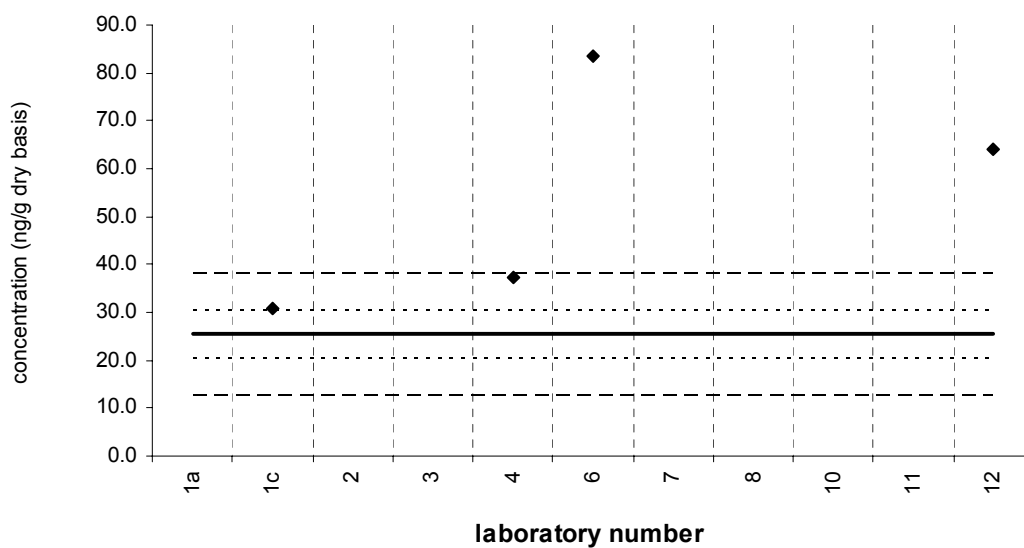
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

### 1,6,7-trimethylnaphthalene

SRM 1941b

Reference Value = 25.5 ± 5.1 ng/g (dry basis)

Reported Results: 4 Quantitative Results: 4



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

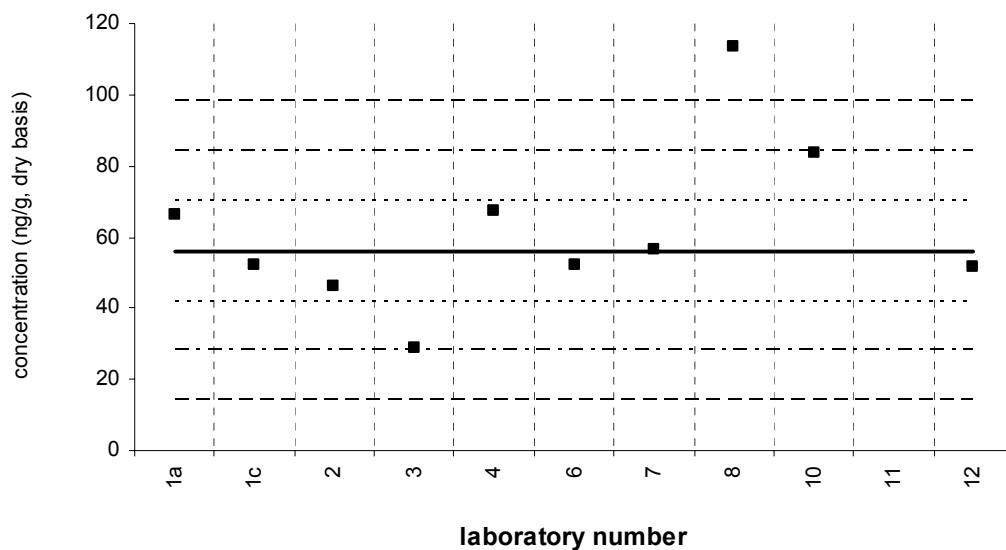


**fluorene**

**Sediment XIII (QA05SED13)**

Assigned value = 56.1 ng/g s = 12.2 ng/g 95% CL = 10.2 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10



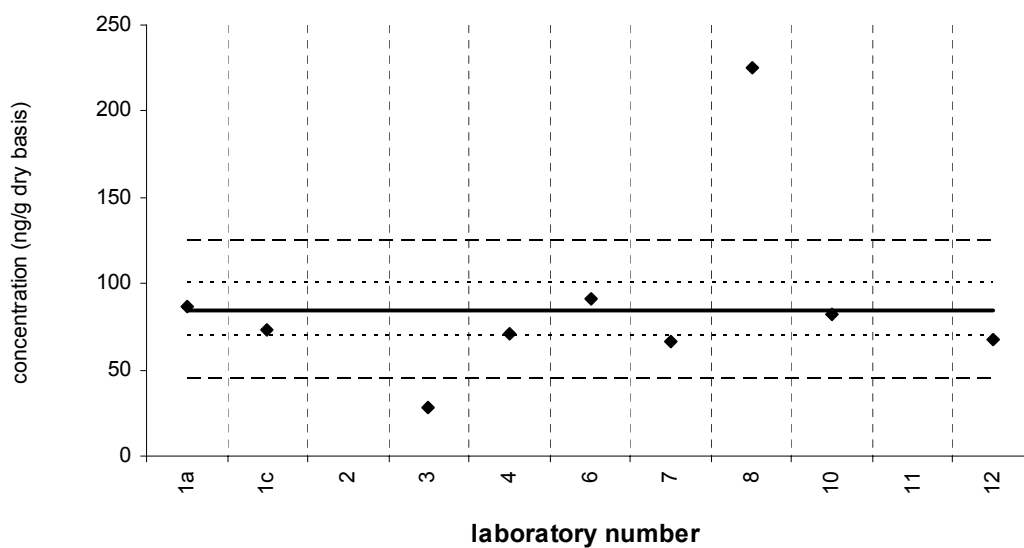
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

**fluorene**

**SRM 1941b**

Certified Value = 85.0 ± 15.0 ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9



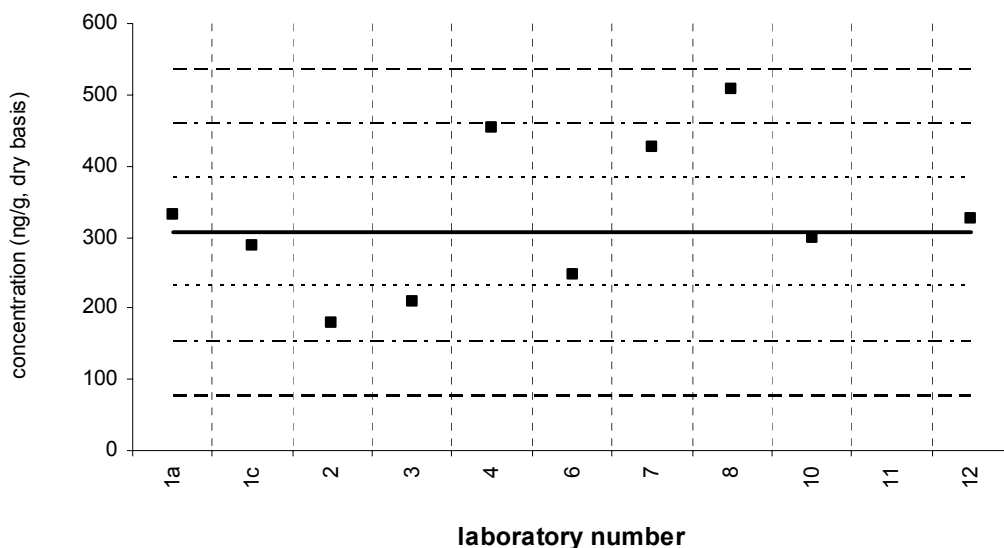
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**phenanthrene**

**Sediment XIII (QA05SED13)**

Assigned value = 306 ng/g  $s = 89$  ng/g 95% CL = 75 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10

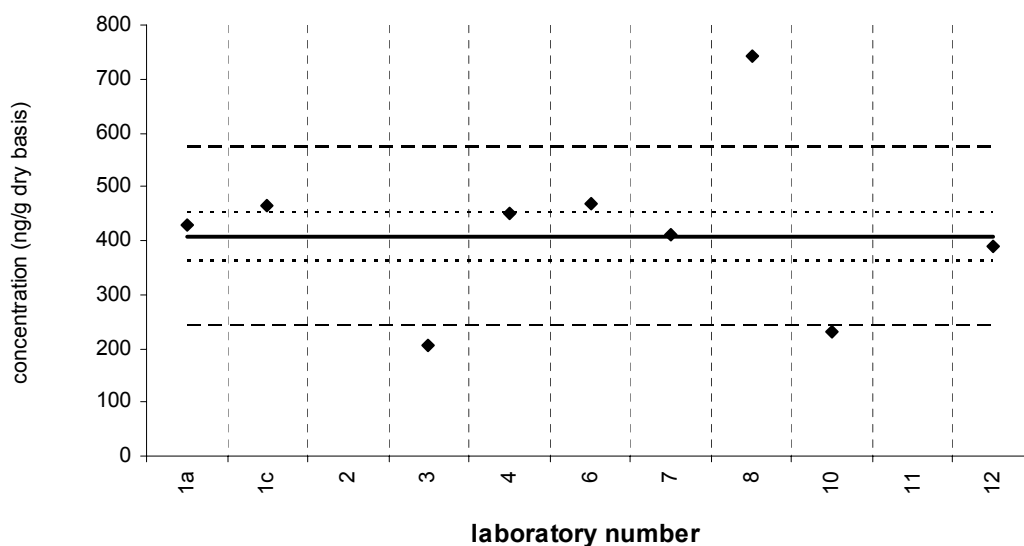


Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**phenanthrene**

**SRM 1941b**

Certified Value =  $406 \pm 44$  ng/g (dry basis)  
Reported Results: 9 Quantitative Results: 9



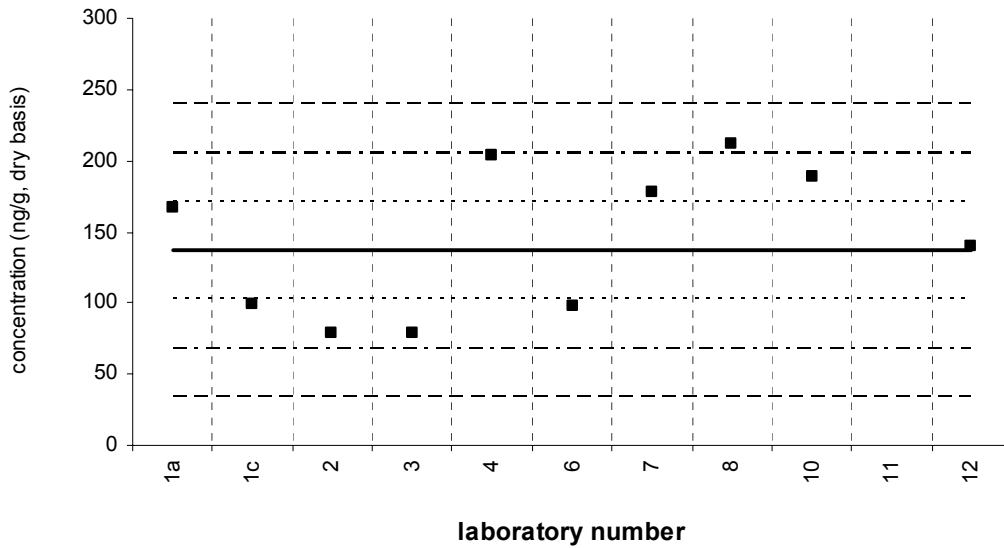
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**anthracene**

**Sediment XIII (QA05SED13)**

Assigned value = 137 ng/g  $s = 47$  ng/g 95% CL = 40 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10

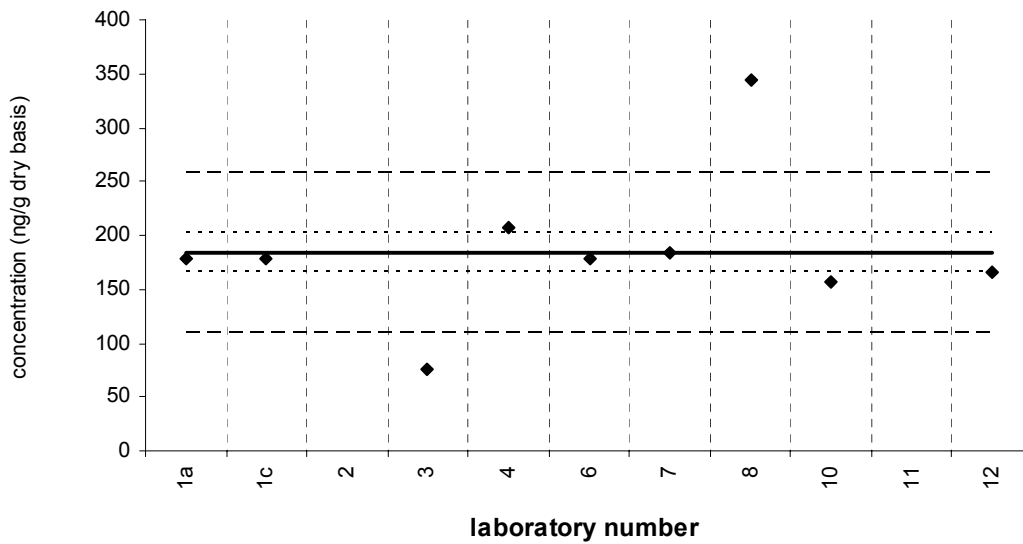


Solid line : exercise assigned value (EAV); dotted line:  $z = \pm 1$  (25% from EAV); dotted/dashed line:  $z = \pm 2$  (50% from EAV); dashed line:  $z = \pm 3$  (75% from EAV)

**anthracene**

**SRM 1941b**

Certified Value =  $184 \pm 18$  ng/g (dry basis)  
Reported Results: 9 Quantitative Results: 9



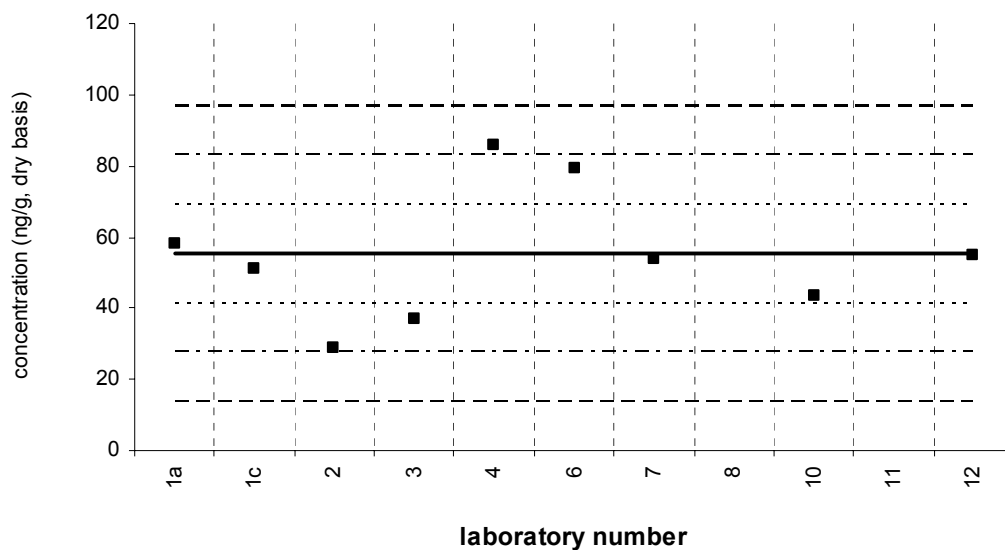
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

### 1-methylphenanthrene

### Sediment XIII (QA05SED13)

Assigned value = 55.4 ng/g s = 18.2 ng/g 95% CL = 19.1 ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9

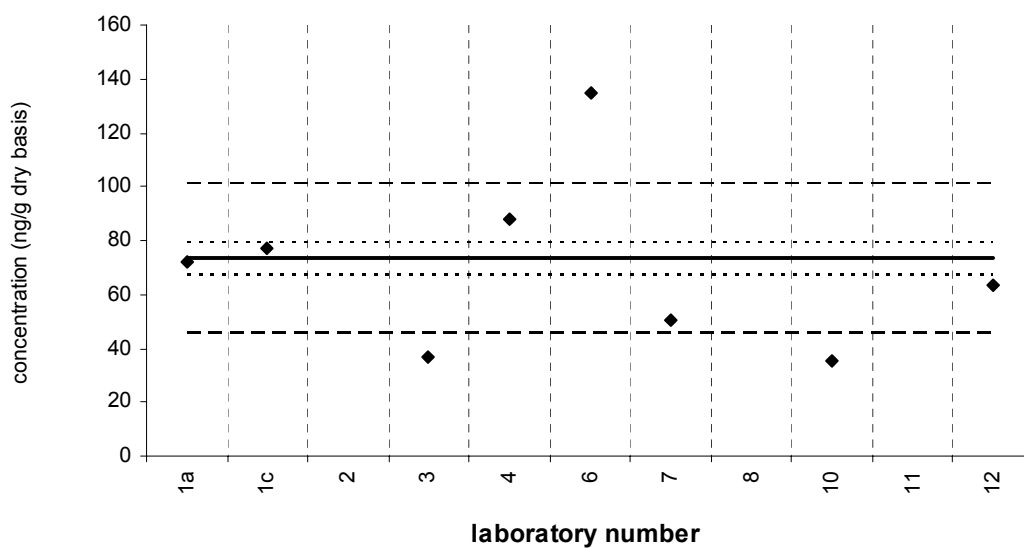


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

### 1-methylphenanthrene

### SRM 1941b

Certified Value = 73.2 ± 5.9 ng/g (dry basis)  
Reported Results: 8 Quantitative Results: 8



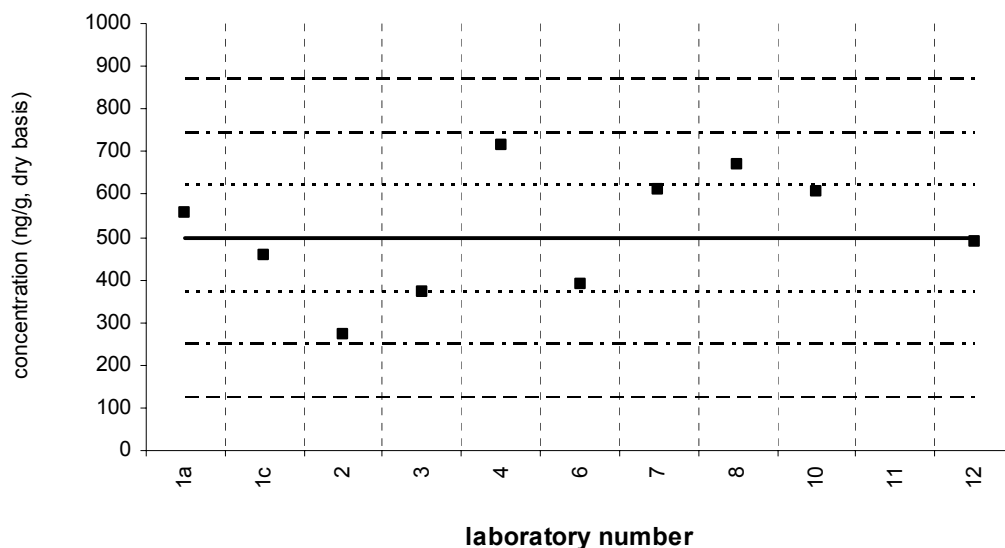
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

### fluoranthene

### Sediment XIII (QA05SED13)

Assigned value = 496 ng/g  $s = 140$  ng/g 95% CL = 117 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10



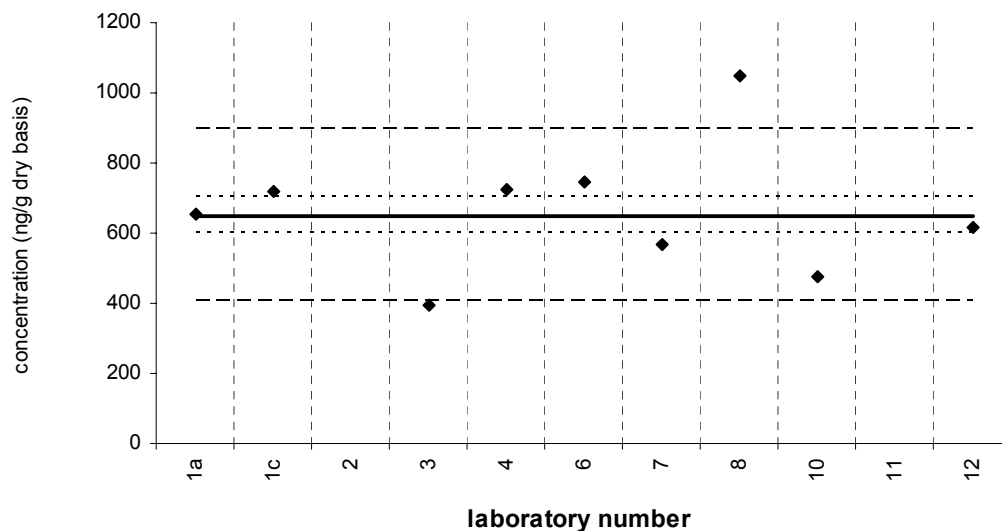
Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

### fluoranthene

### SRM 1941b

Certified Value =  $651 \pm 50$  ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9



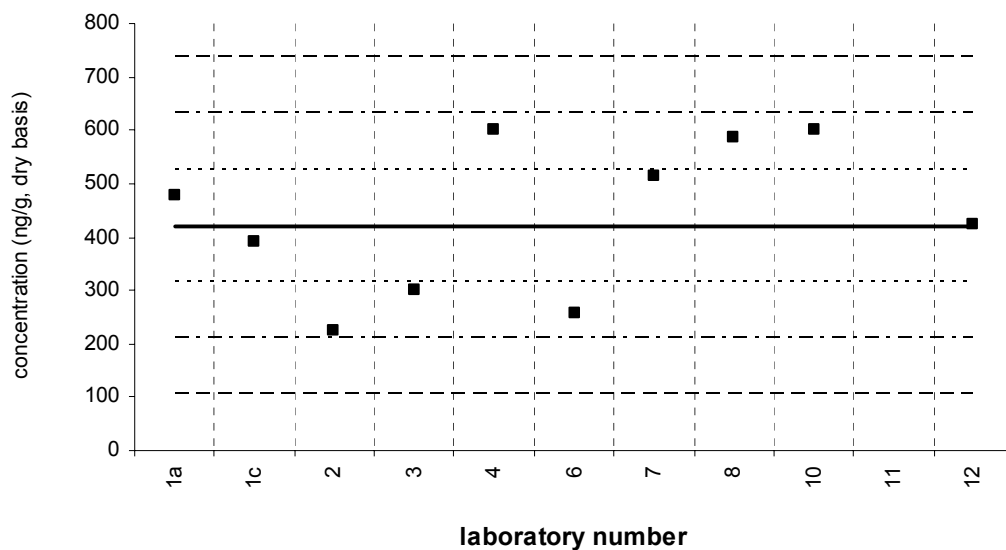
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**pyrene**

**Sediment XIII (QA05SED13)**

Assigned value = 421 ng/g s = 142 ng/g 95% CL = 118 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10



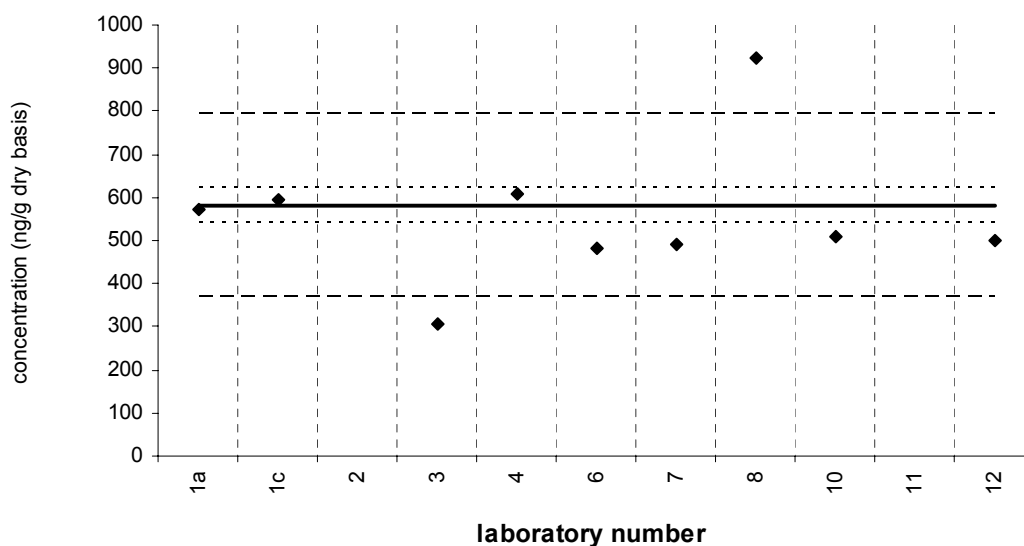
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

**pyrene**

**SRM 1941b**

Certified Value = 581 ± 39 ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9



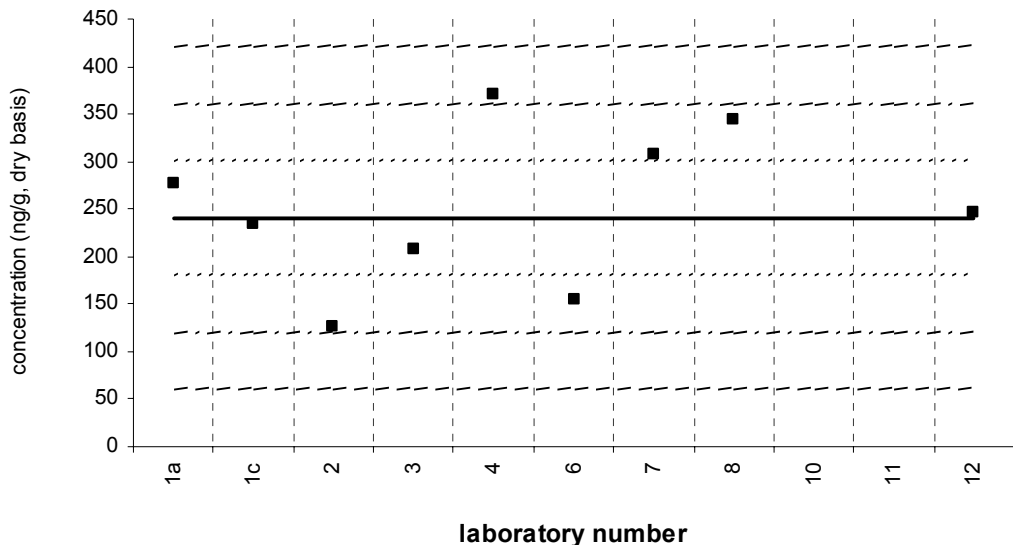
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**benz[a]anthracene**

**Sediment XIII (QA05SED13)**

Assigned value = 241 ng/g s = 80 ng/g 95% CL = 67 ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9



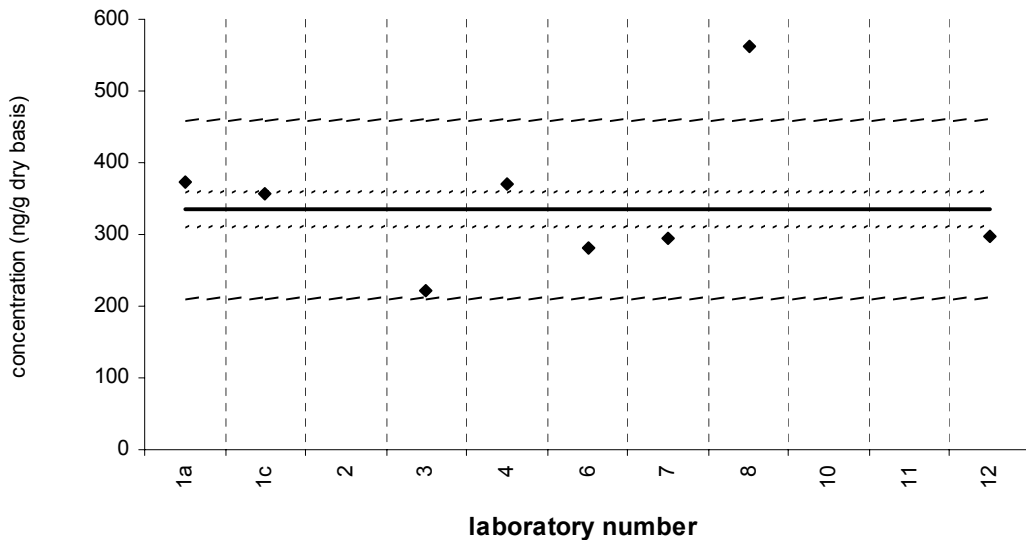
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

**benz[a]anthracene**

**SRM 1941b**

Certified Value = 335 ± 25 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 8



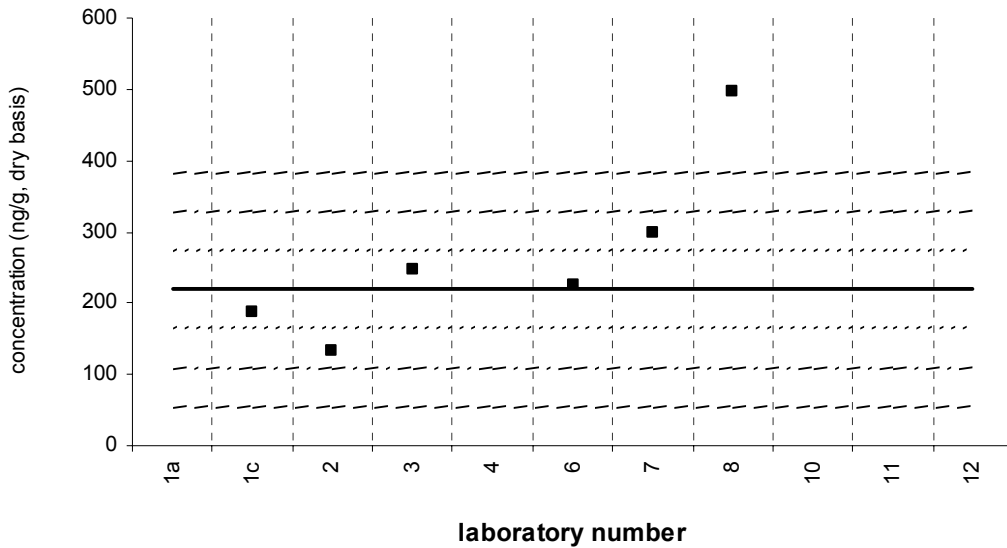
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**chrysene**

**Sediment XIII (QA05SED13)**

Assigned value = 219 ng/g  $s = 62$  ng/g 95% CL = 65 ng/g (dry basis)

Reported Results: 6 Quantitative Results: 6



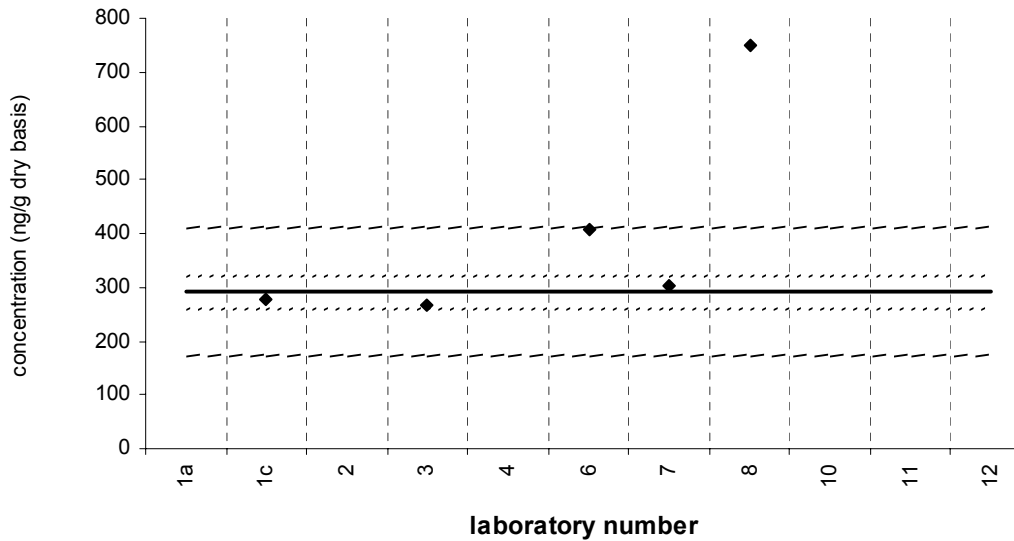
Solid line : exercise assigned value (EAV); dotted line:  $z = \pm 1$  (25% from EAV); dotted/dashed line:  $z = \pm 2$  (50% from EAV); dashed line:  $z = \pm 3$  (75% from EAV)

**chrysene**

**SRM 1941b**

Certified Value =  $291 \pm 31$  ng/g (dry basis)

Reported Results: 5 Quantitative Results: 5



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

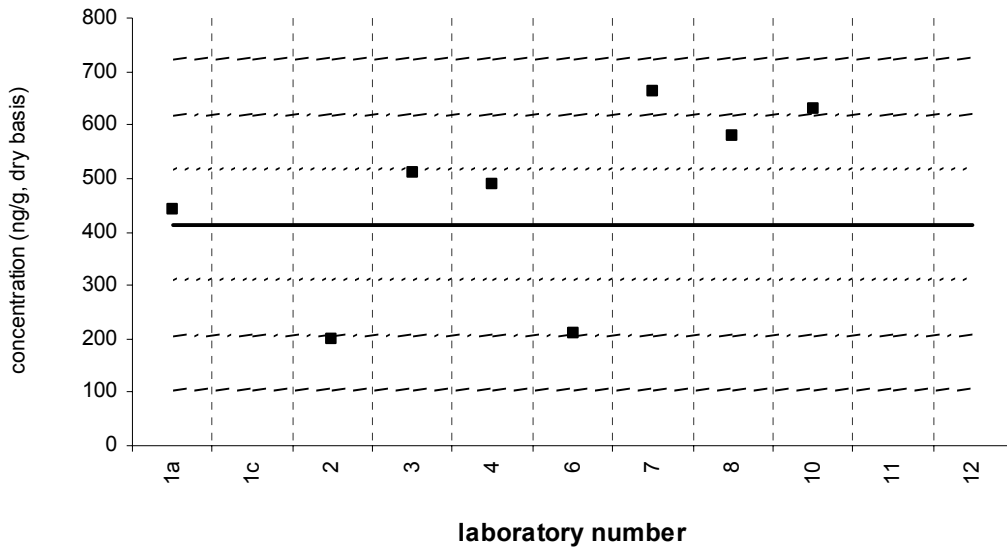


### benzo[b]fluoranthene

### Sediment XIII (QA05SED13)

Assigned value = 413 ng/g  $s = 174$  ng/g 95% CL = 183 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 8



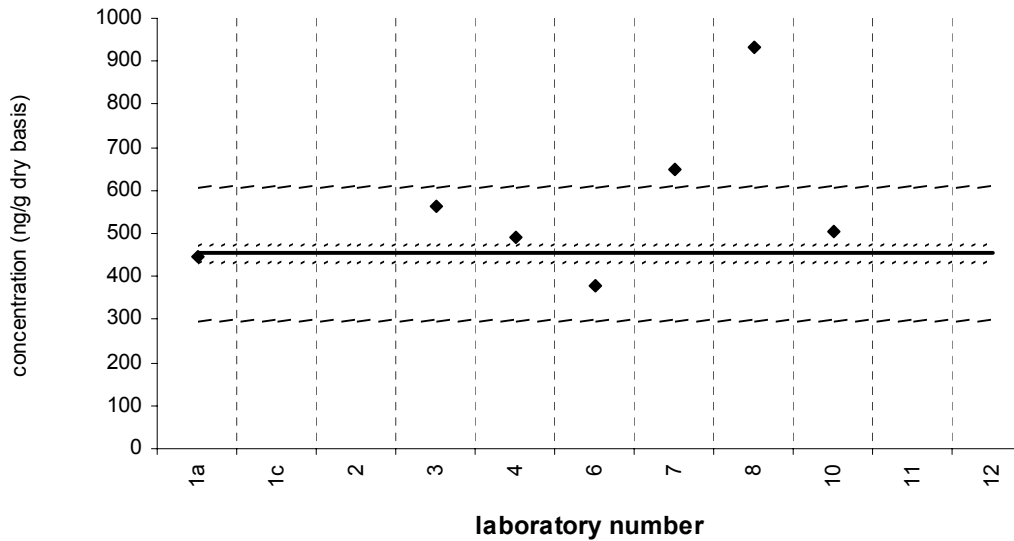
Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

### benzo[b]fluoranthene

### SRM 1941b

Certified Value =  $453 \pm 21$  ng/g (dry basis)

Reported Results: 7 Quantitative Results: 7



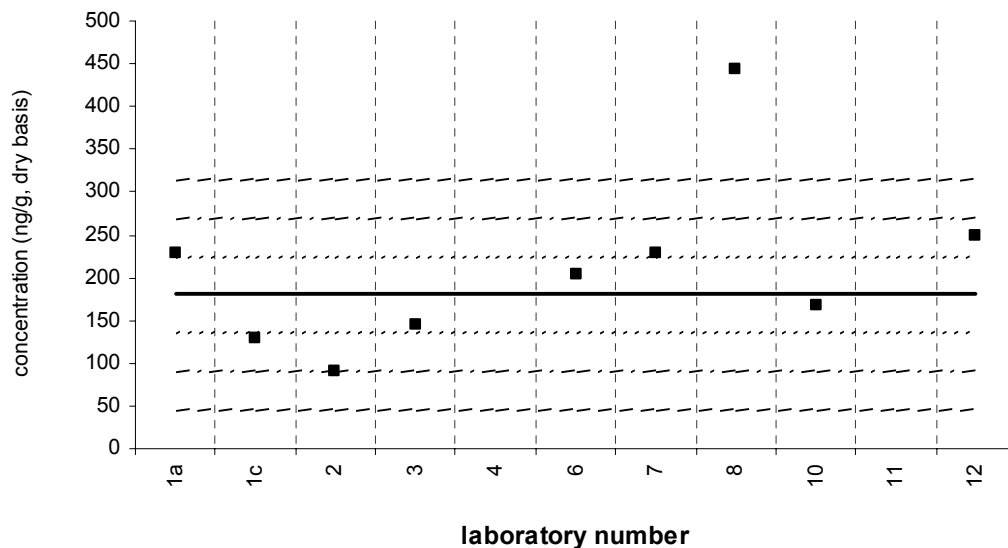
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

### benzo[k]fluoranthene

### Sediment XIII (QA05SED13)

Assigned value = 180 ng/g  $s = 56$  ng/g 95% CL = 47 ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9



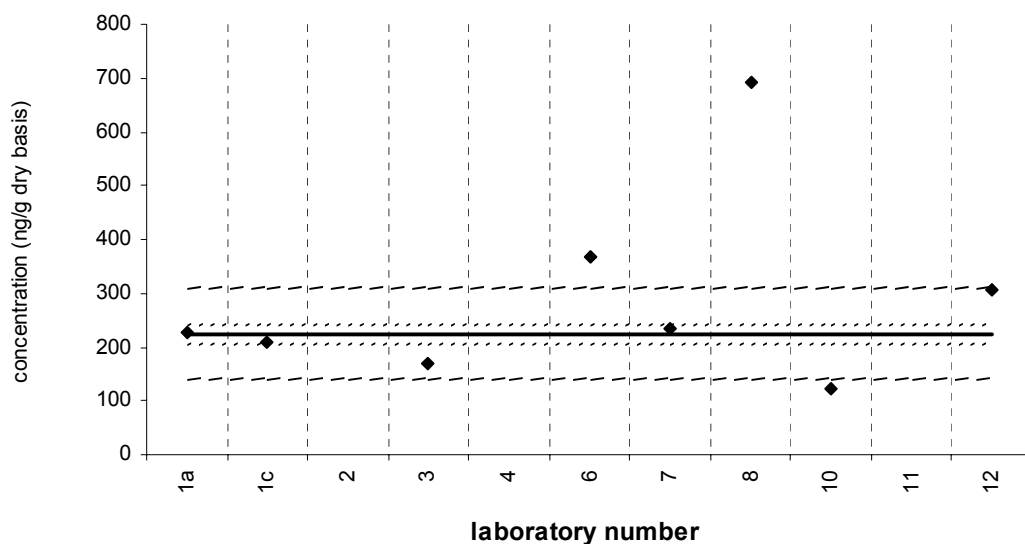
Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

### benzo[k]fluoranthene

### SRM 1941b

Certified Value =  $225 \pm 18$  ng/g (dry basis)

Reported Results: 8 Quantitative Results: 8



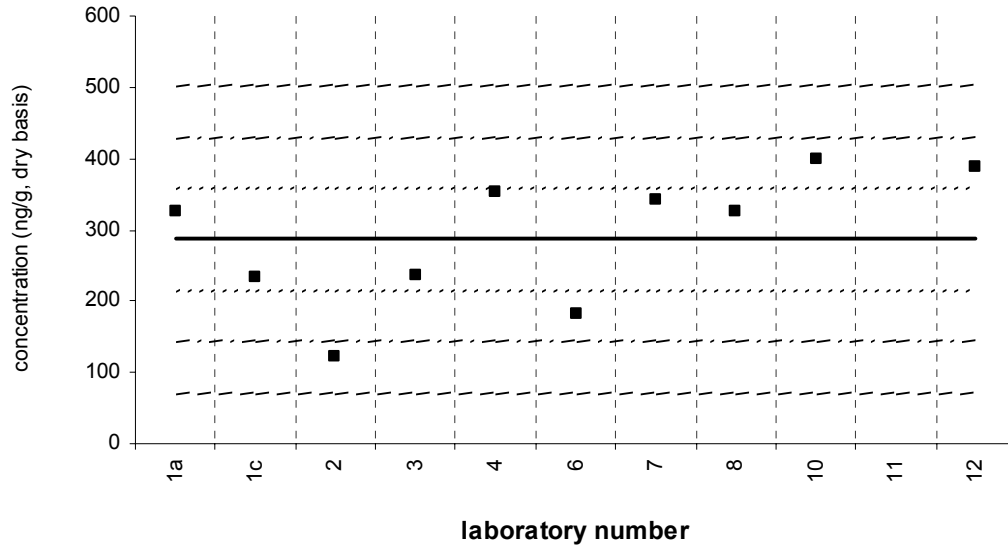
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**benzo[e]pyrene**

**Sediment XIII (QA05SED13)**

Assigned value = 286 ng/g  $s = 97$  ng/g 95% CL = 75 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10



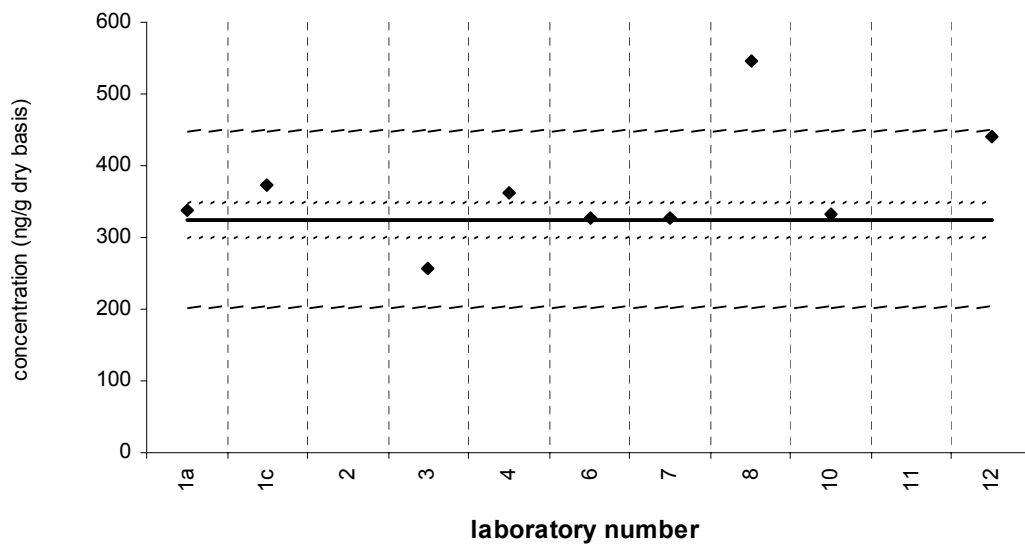
Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**benzo[e]pyrene**

**SRM 1941b**

Certified Value =  $325 \pm 25$  ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9



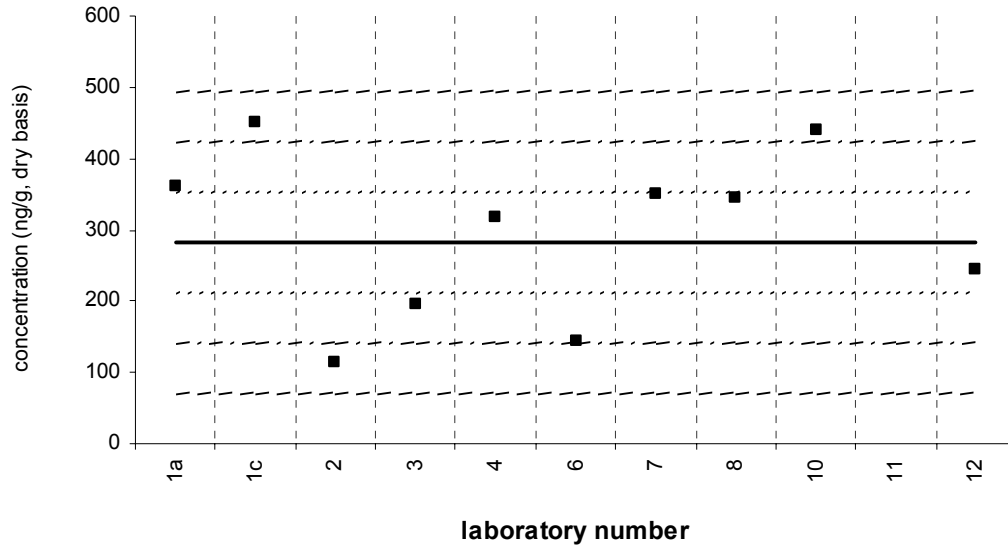
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

### benzo[a]pyrene

### Sediment XIII (QA05SED13)

Assigned value = 282 ng/g  $s = 120$  ng/g 95% CL = 111 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10



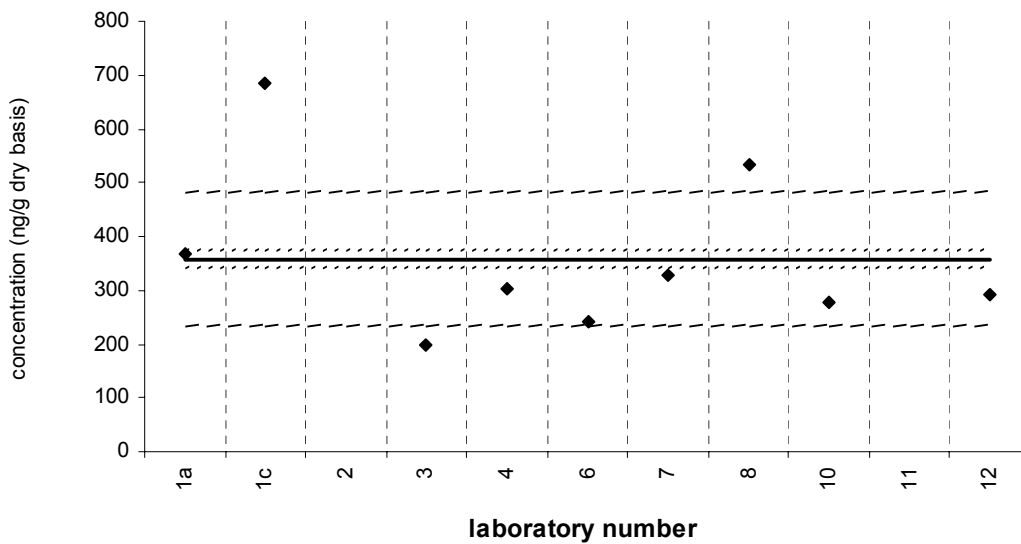
Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

### benzo[a]pyrene

### SRM 1941b

Certified Value =  $358 \pm 17$  ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9



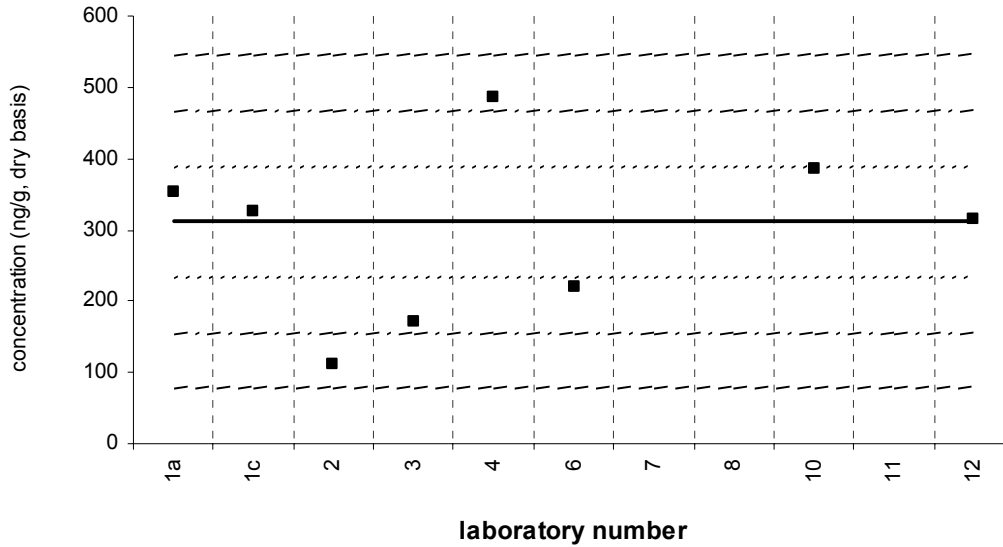
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**perylene**

**Sediment XIII (QA05SED13)**

Assigned value = 311 ng/g  $s = 131$  ng/g 95% CL = 138 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 8



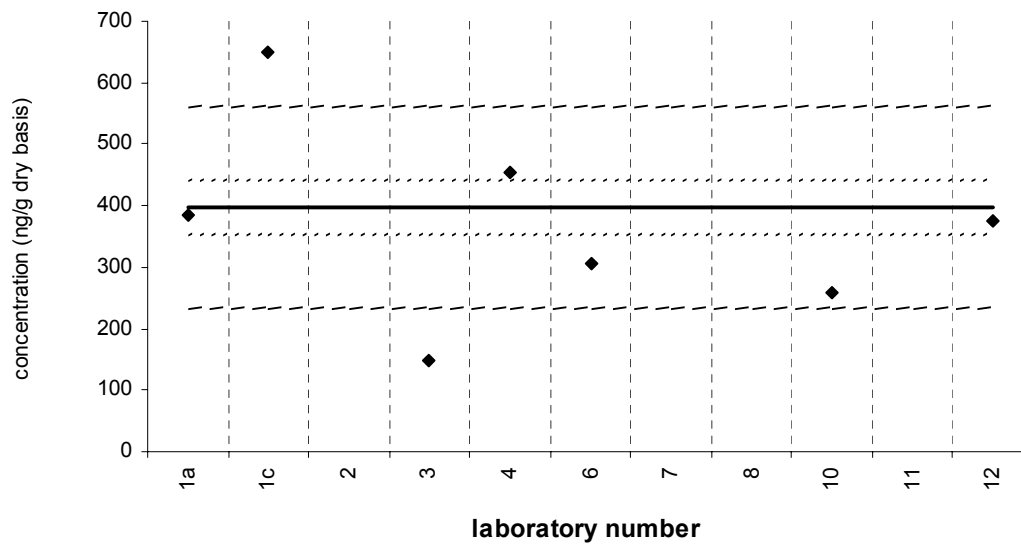
Solid line : exercise assigned value (EAV); dotted line:  $z = \pm 1$  (25% from EAV); dotted/dashed line:  $z = \pm 2$  (50% from EAV); dashed line:  $z = \pm 3$  (75% from EAV)

**perylene**

**SRM 1941b**

Certified Value =  $397 \pm 45$  ng/g (dry basis)

Reported Results: 7 Quantitative Results: 7



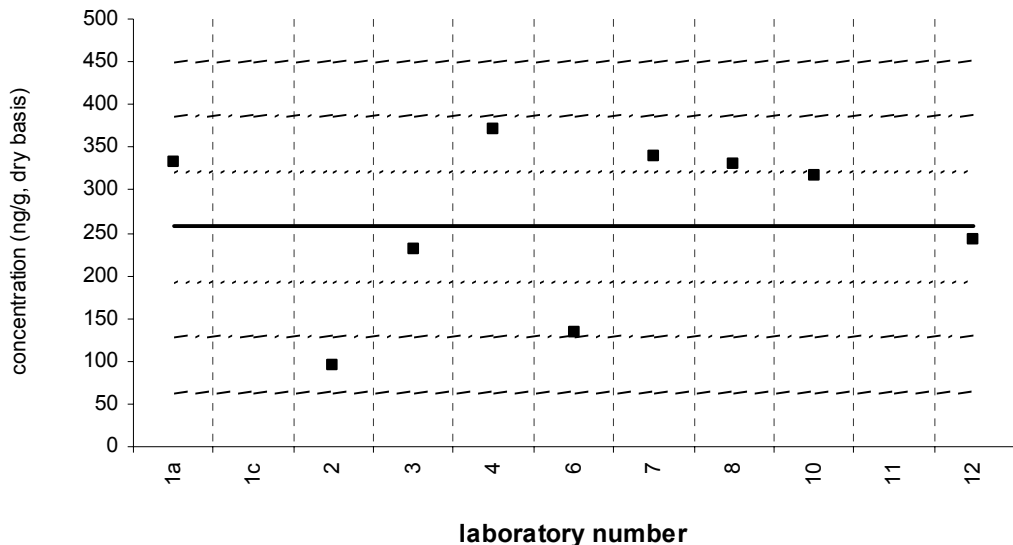
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**indeno[1,2,3-cd]pyrene**

**Sediment XIII (QA05SED13)**

Assigned value = 258 ng/g s = 101 ng/g 95% CL = 85 ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9



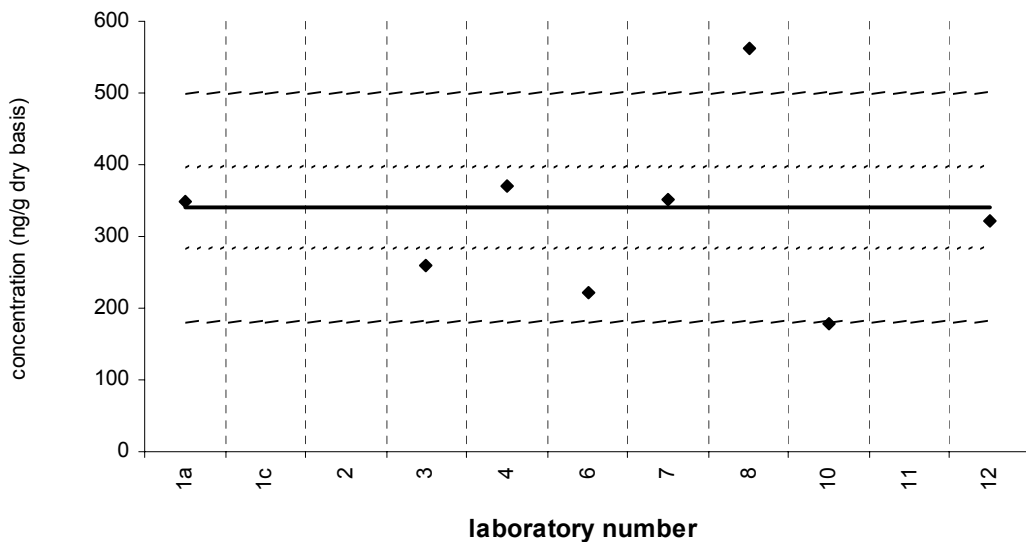
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

**indeno[1,2,3-cd]pyrene**

**SRM 1941b**

Certified Value = 341 ± 57 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 8



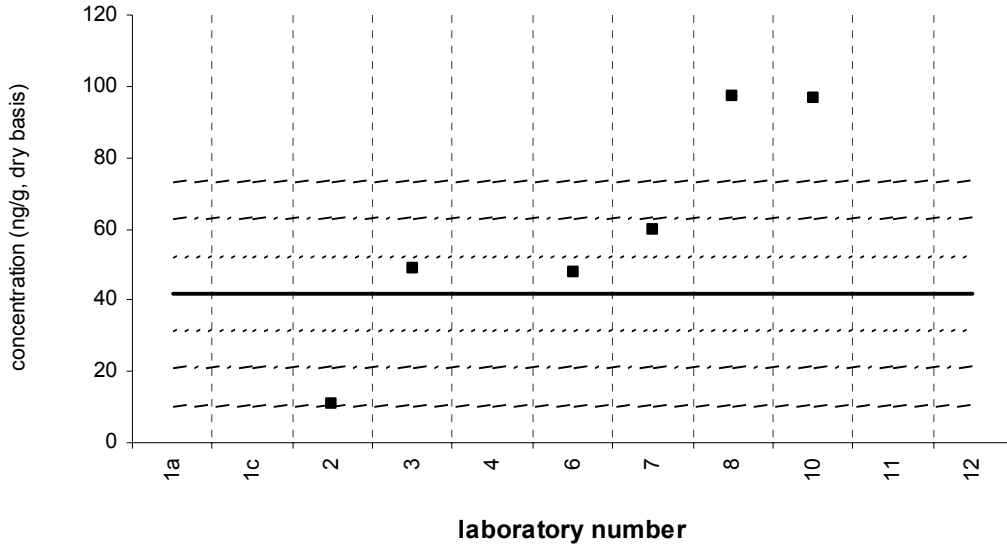
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**dibenz[a,h]anthracene**

**Sediment XIII (QA05SED13)**

Assigned value = 42 ng/g s = 21 ng/g 95% CL = 34 ng/g (dry basis)

Reported Results: 6 Quantitative Results: 6



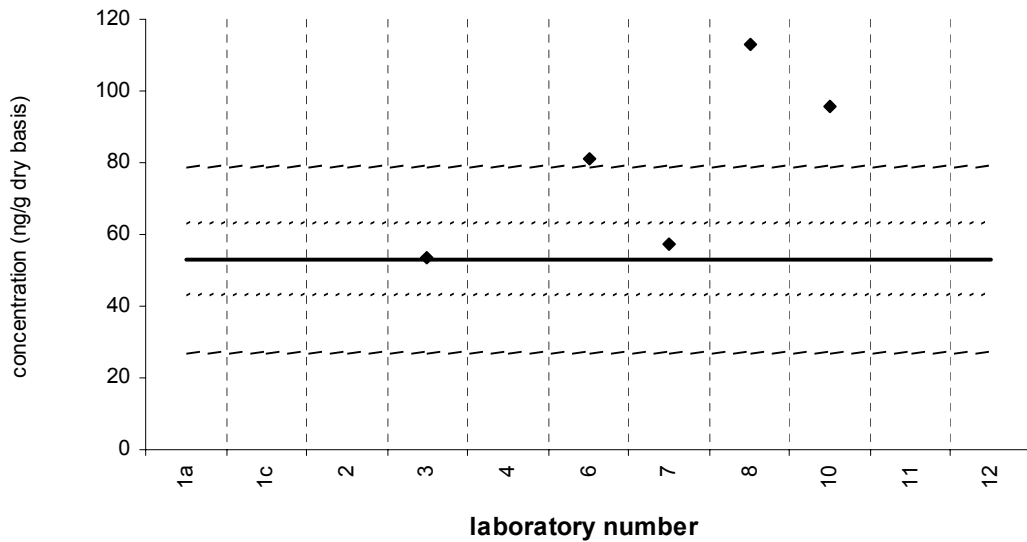
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

**dibenz[a,h]anthracene**

**SRM 1941b**

Certified Value = 53 ± 10 ng/g (dry basis)

Reported Results: 5 Quantitative Results: 5



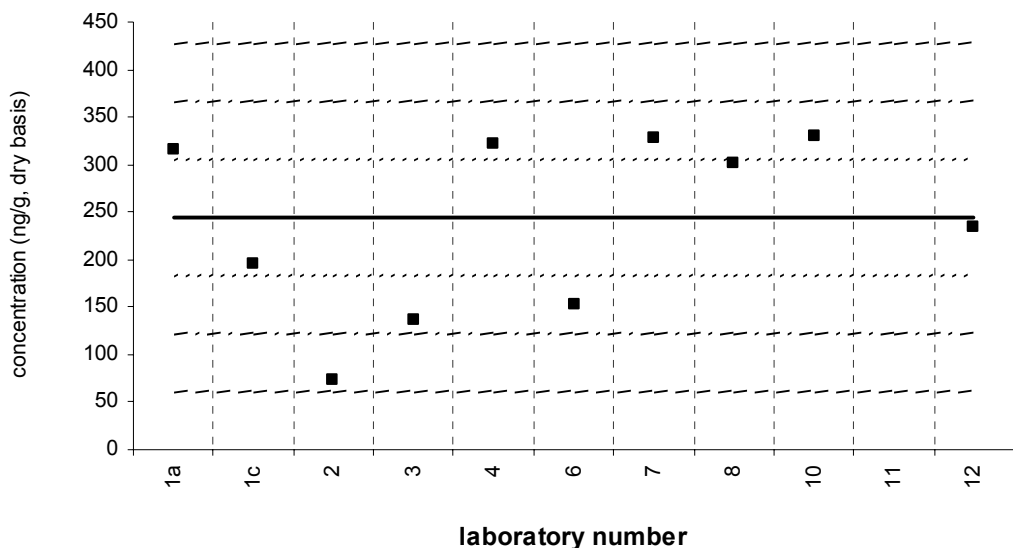
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

### benzo[ghi]perylene

### Sediment XIII (QA05SED13)

Assigned value = 244 ng/g s = 96 ng/g 95% CL = 81 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10



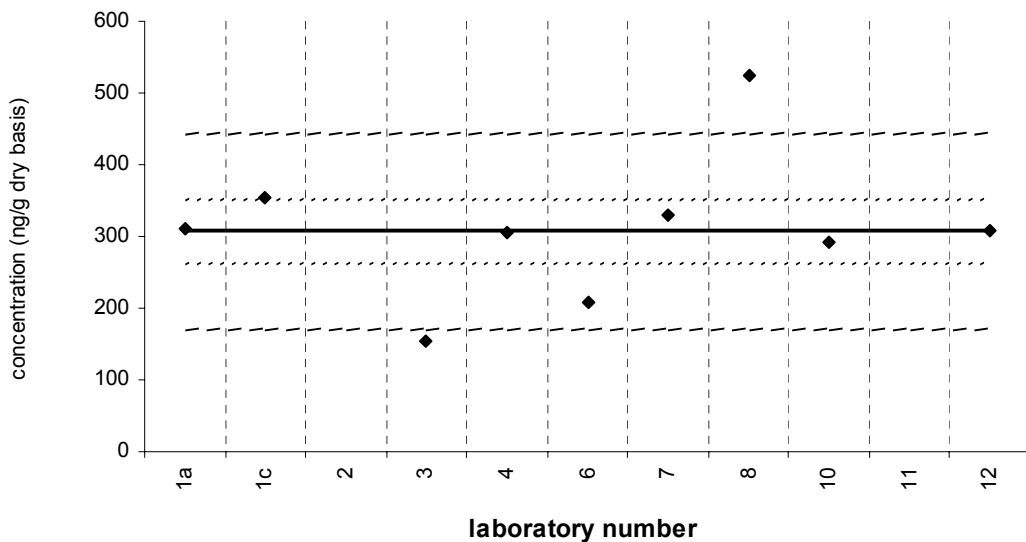
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

### benzo[ghi]perylene

### SRM 1941b

Certified Value = 307 ± 45 ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9



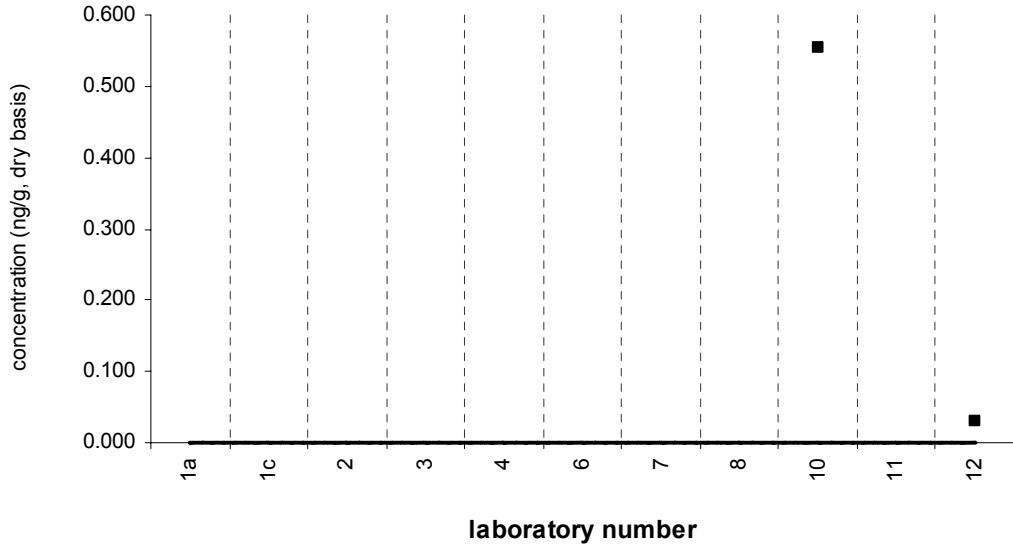
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits



**alpha-HCH (a-BHC)**

**Sediment XIII (QA05SED13)**

Assigned value = no target ng/g (dry basis)  
Reported Results: 7    Quantitative Results: 2

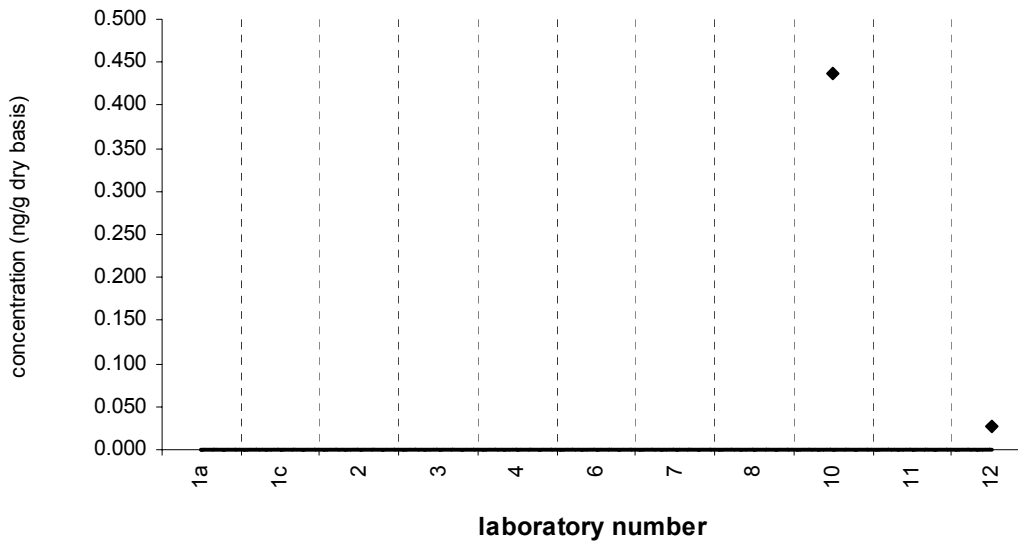


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

**alpha-HCH (a-BHC)**

**SRM 1941b**

Target Value = no target ng/g (dry basis)  
Reported Results: 7    Quantitative Results: 2



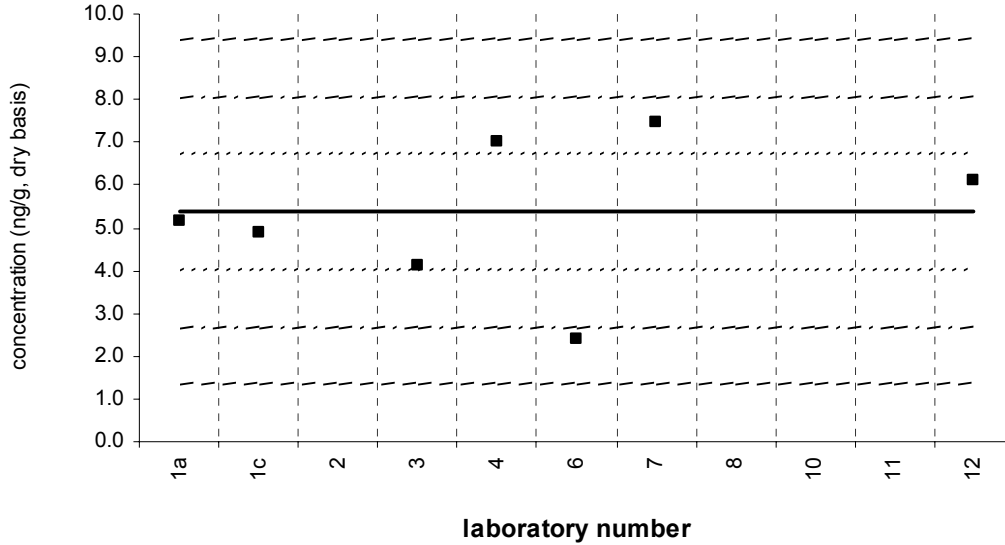
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

### hexachlorobenzene

### Sediment XIII (QA05SED13)

Assigned value = 5.38 ng/g  $s = 1.90$  ng/g 95% CL = 2.00 ng/g (dry basis)

Reported Results: 7 Quantitative Results: 7



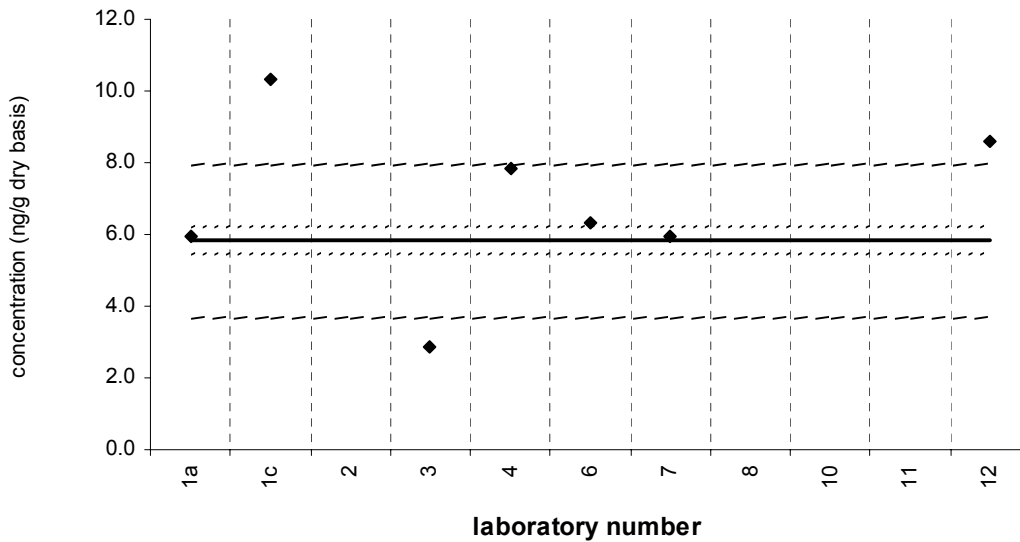
Solid line : exercise assigned value (EAV); dotted line:  $z = \pm 1$  (25% from EAV); dotted/dashed line:  $z = \pm 2$  (50% from EAV); dashed line:  $z = \pm 3$  (75% from EAV)

### hexachlorobenzene

### SRM 1941b

Certified Value =  $5.83 \pm 0.38$  ng/g (dry basis)

Reported Results: 7 Quantitative Results: 7

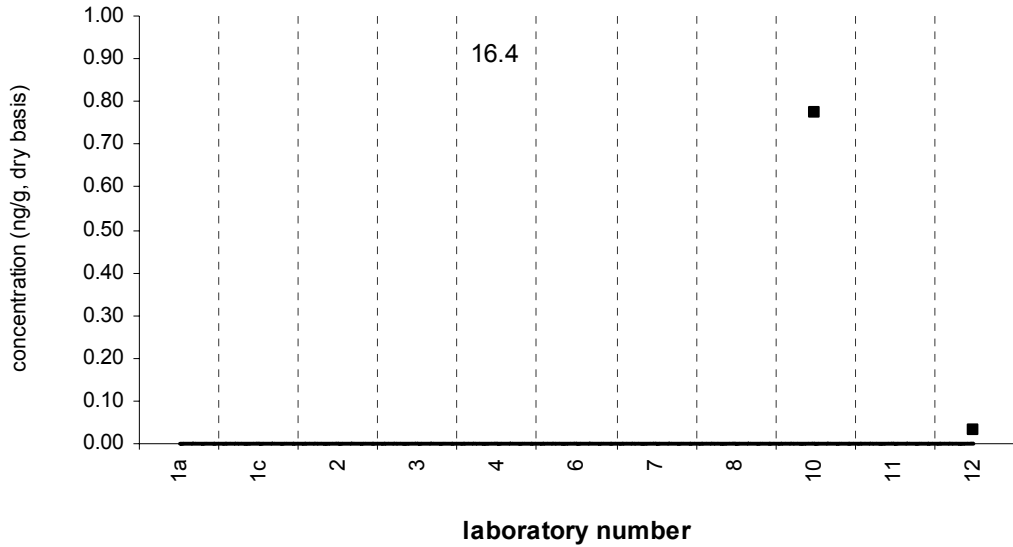


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**gamma-HCH (g-BHC,lindane)**

**Sediment XIII (QA05SED13)**

Assigned value = no target ng/g (dry basis)  
Reported Results: 8    Quantitative Results: 3

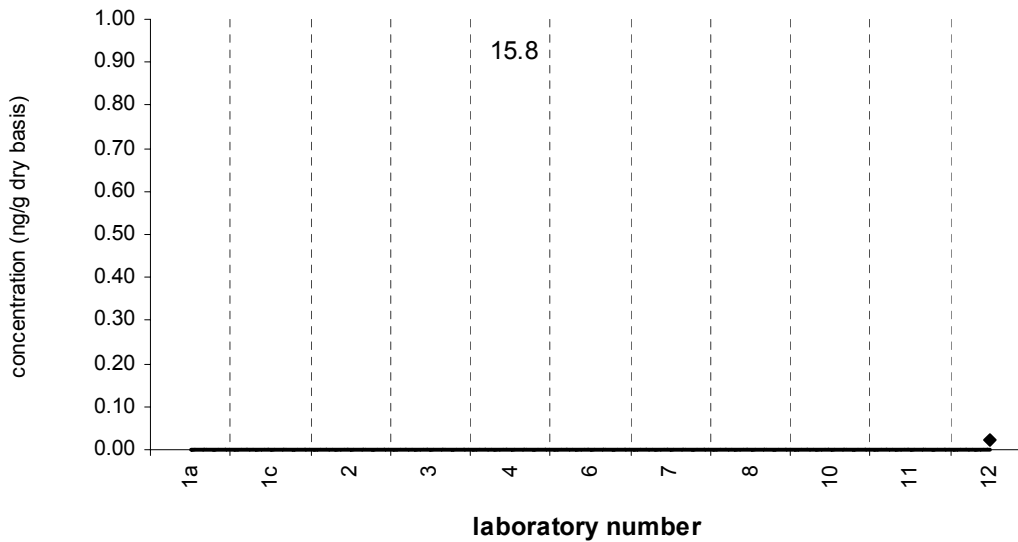


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

**gamma-HCH (g-BHC,lindane)**

**SRM 1941b**

Target Value = no target ng/g (dry basis)  
Reported Results: 7    Quantitative Results: 2

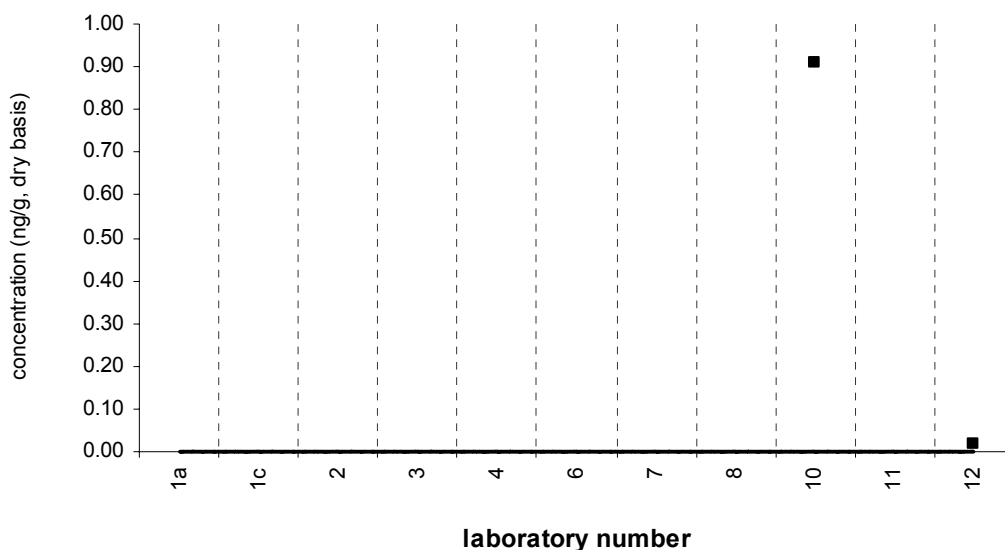


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

### beta-HCH (b-BHC)

### Sediment XIII (QA05SED13)

Assigned value = no target ng/g (dry basis)  
Reported Results: 7    Quantitative Results: 2

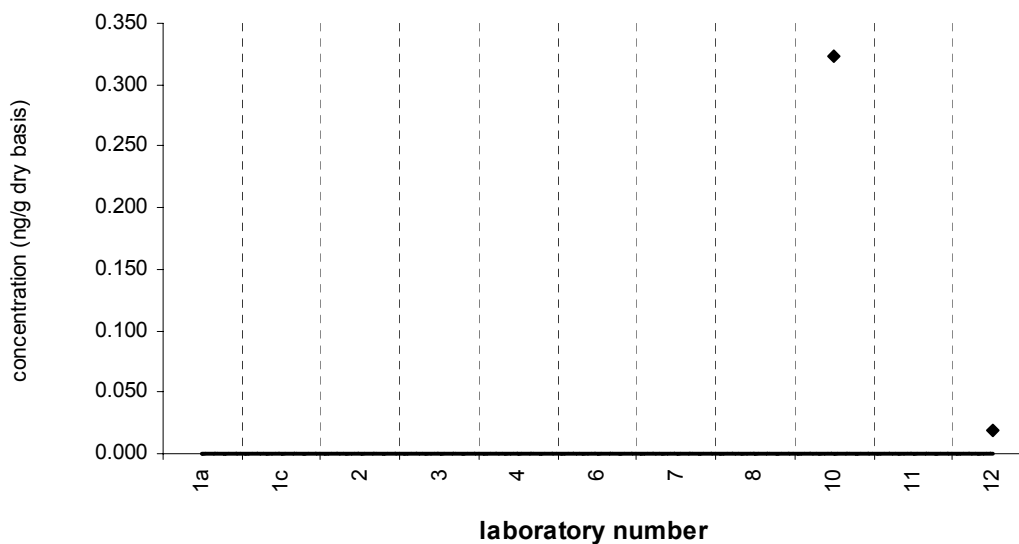


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

### beta-HCH (b-BHC)

### SRM 1941b

Target Value = no target ng/g (dry basis)  
Reported Results: 7    Quantitative Results: 2

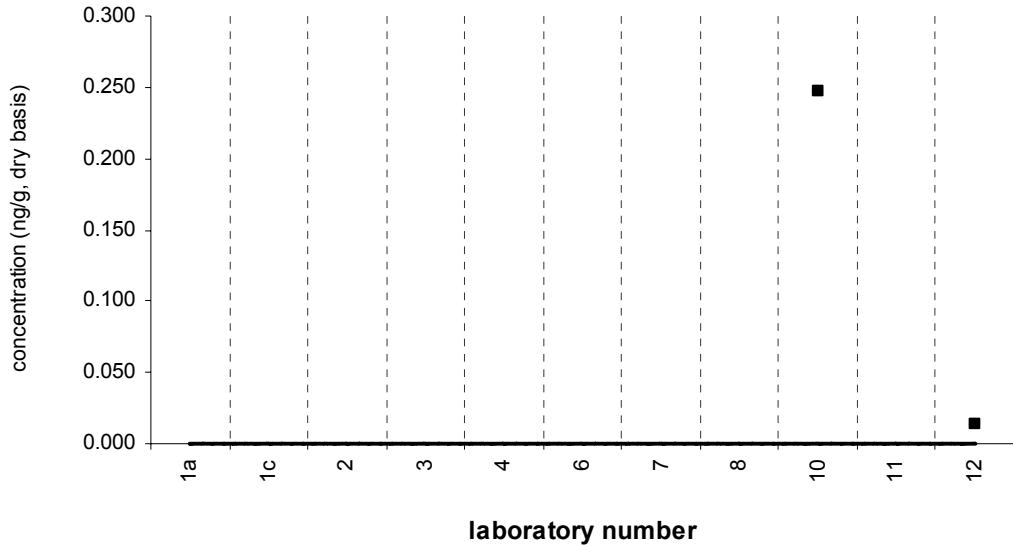


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**aldrin**

**Sediment XIII (QA05SED13)**

Assigned value = no target ng/g (dry basis)  
Reported Results: 8    Quantitative Results: 2

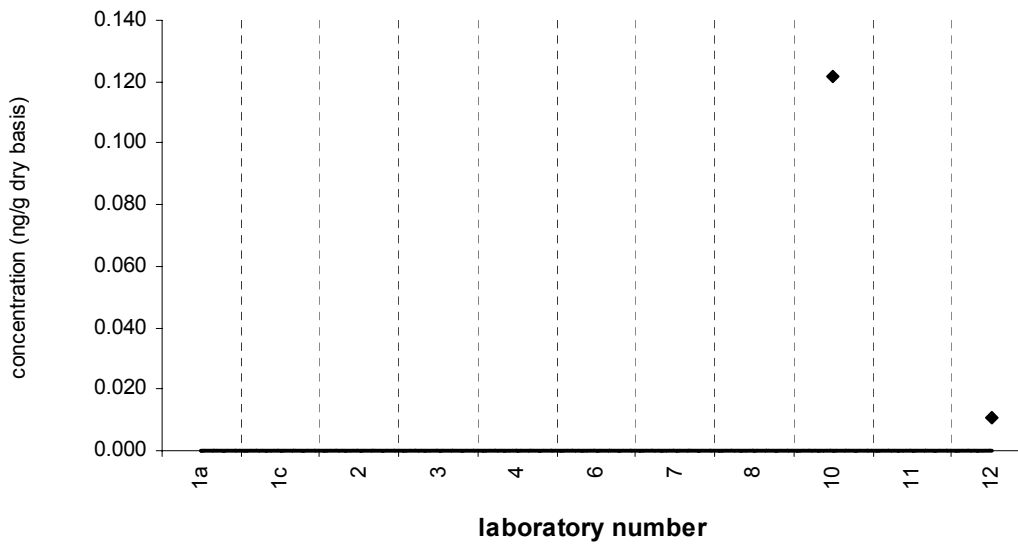


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

**aldrin**

**SRM 1941b**

Target Value = no target ng/g (dry basis)  
Reported Results: 8    Quantitative Results: 2

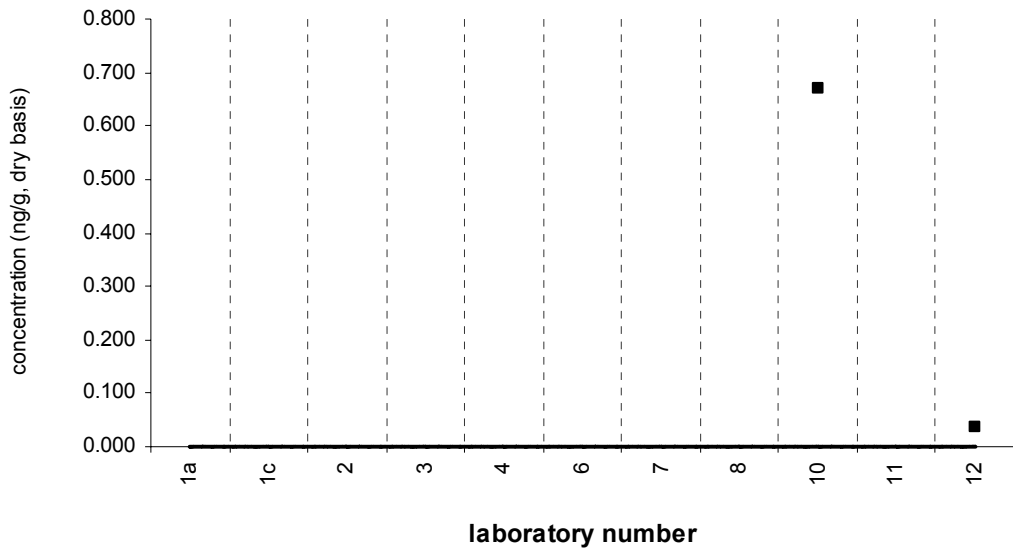


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**heptachlor epoxide**

**Sediment XIII (QA05SED13)**

Assigned value = no target ng/g (dry basis)  
Reported Results: 8    Quantitative Results: 2

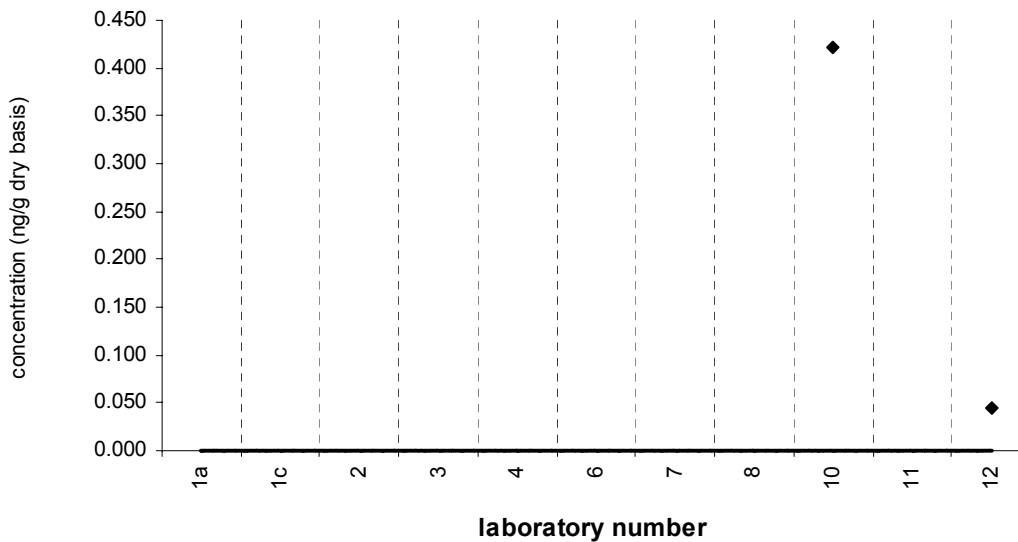


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

**heptachlor epoxide**

**SRM 1941b**

Target Value = no target ng/g (dry basis)  
Reported Results: 8    Quantitative Results: 2

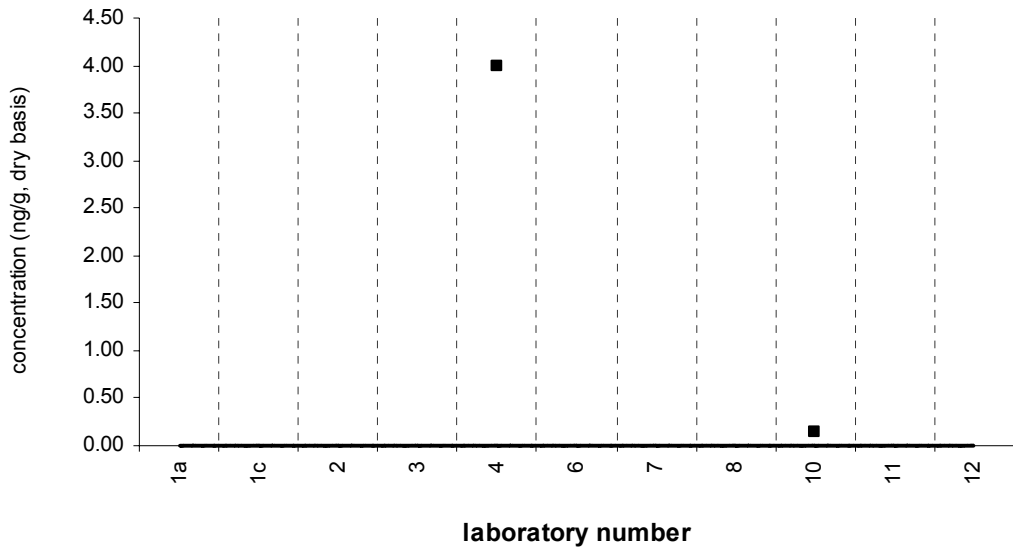


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**oxychlordan**

**Sediment XIII (QA05SED13)**

Assigned value = no target ng/g (dry basis)  
Reported Results: 8    Quantitative Results: 2

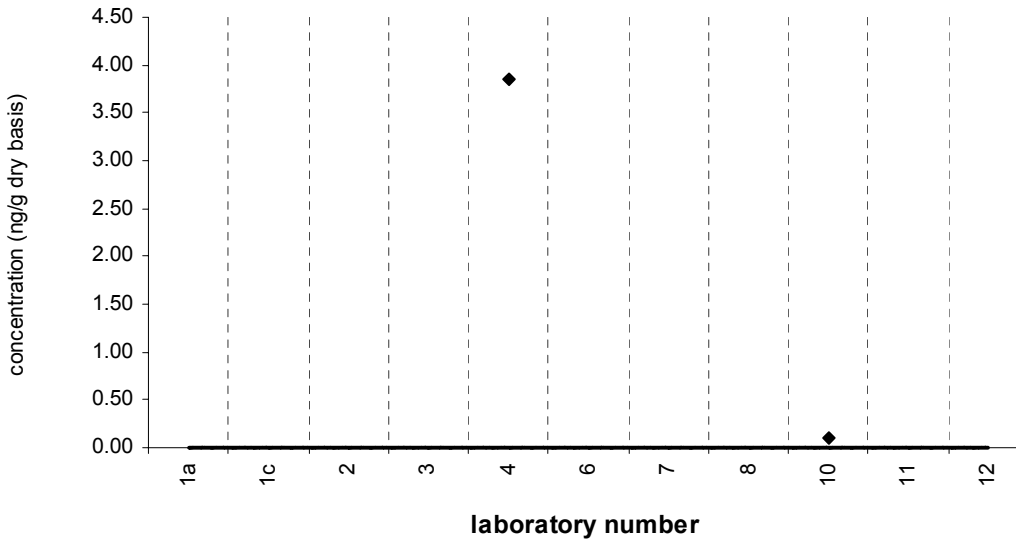


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

**oxychlordan**

**SRM 1941b**

Target Value = no target ng/g (dry basis)  
Reported Results: 8    Quantitative Results: 2



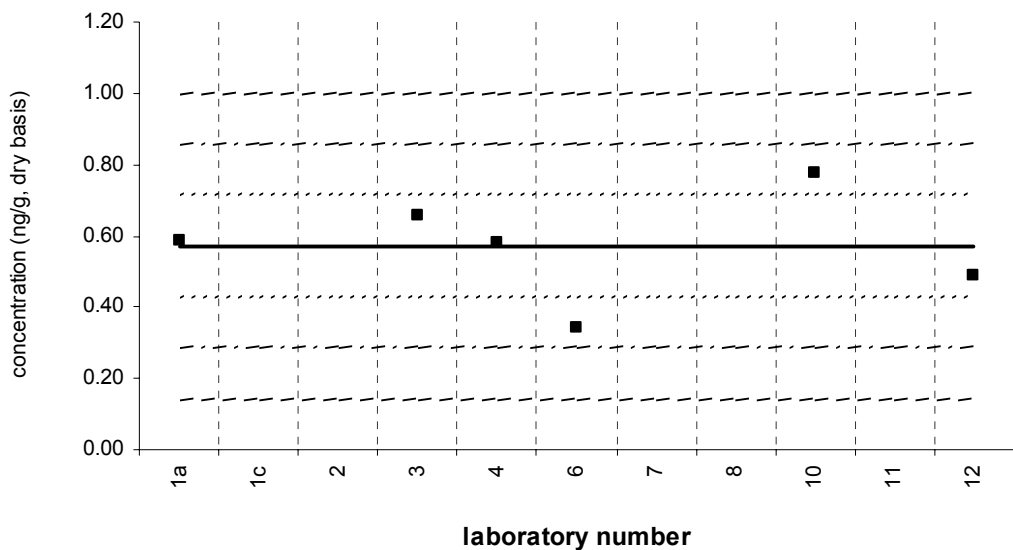
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**gamma-chlordane**

**Sediment XIII (QA05SED13)**

Assigned value = 0.572 ng/g s = 0.148 ng/g 95% CL = 0.155 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 6



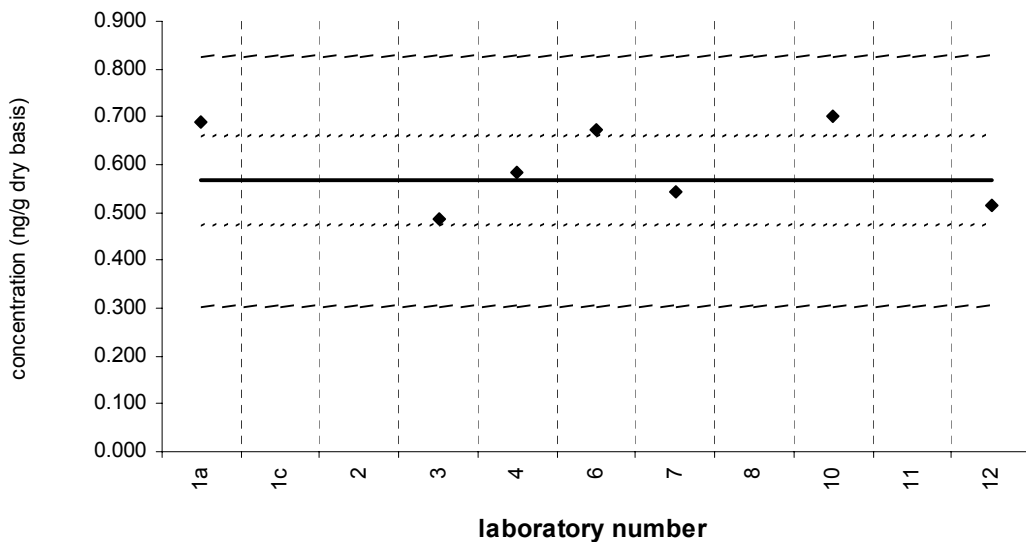
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

**gamma-chlordane**

**SRM 1941b**

Certified Value = 0.566 ± 0.093 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 7



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

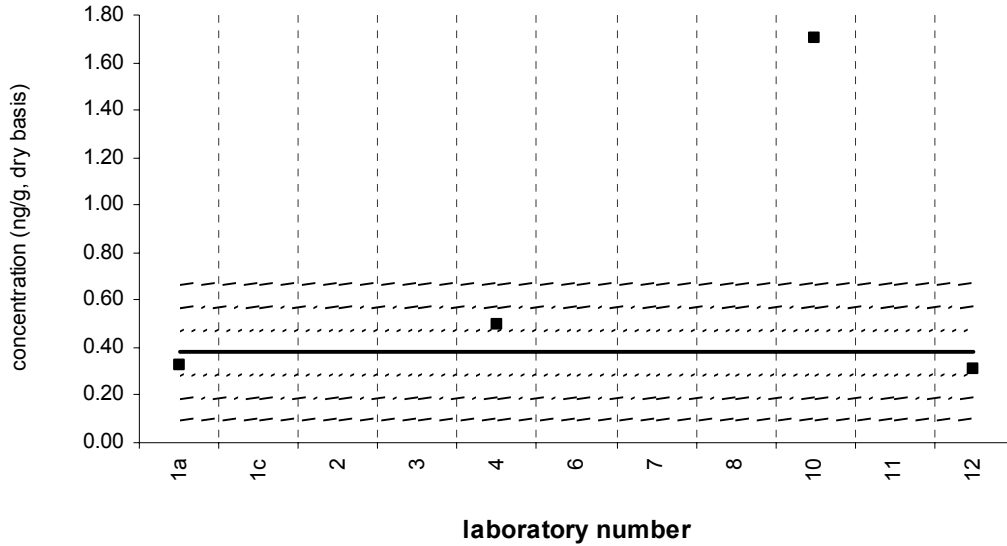


## 2,4'-DDE

## Sediment XIII (QA05SED13)

Assigned value = 0.380 ng/g  $s = 0.103$  ng/g 95% CL = 0.256 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 4



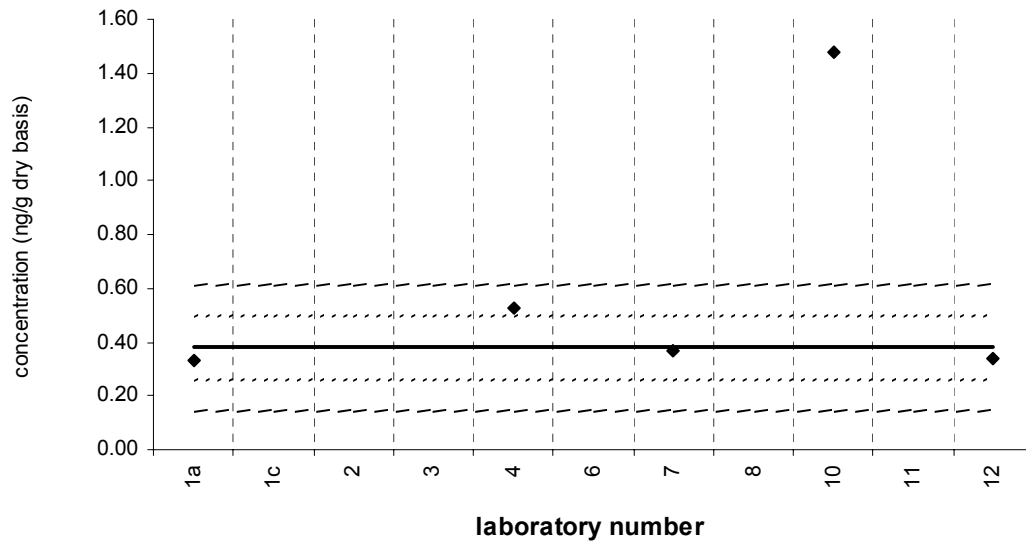
Solid line : exercise assigned value (EAV); dotted line:  $z = \pm 1$  (25% from EAV); dotted/dashed line:  $z = \pm 2$  (50% from EAV); dashed line:  $z = \pm 3$  (75% from EAV)

## 2,4'-DDE

## SRM 1941b

Reference Value =  $0.380 \pm 0.120$  ng/g (dry basis)

Reported Results: 8 Quantitative Results: 5



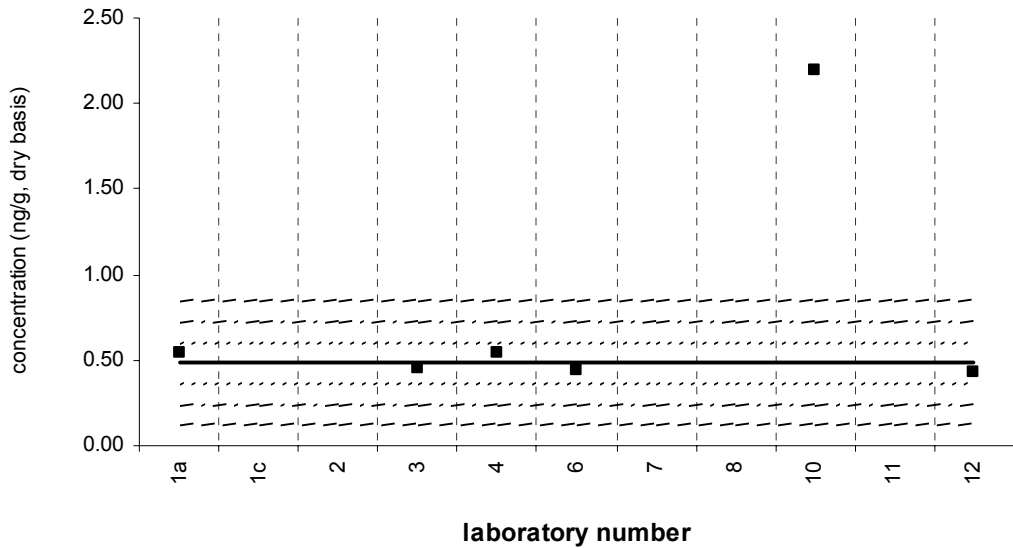
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**cis-chlordane (alpha-chlordane)**

**Sediment XIII (QA05SED13)**

Assigned value = 0.482 ng/g s = 0.058 ng/g 95% CL = 0.072 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 6



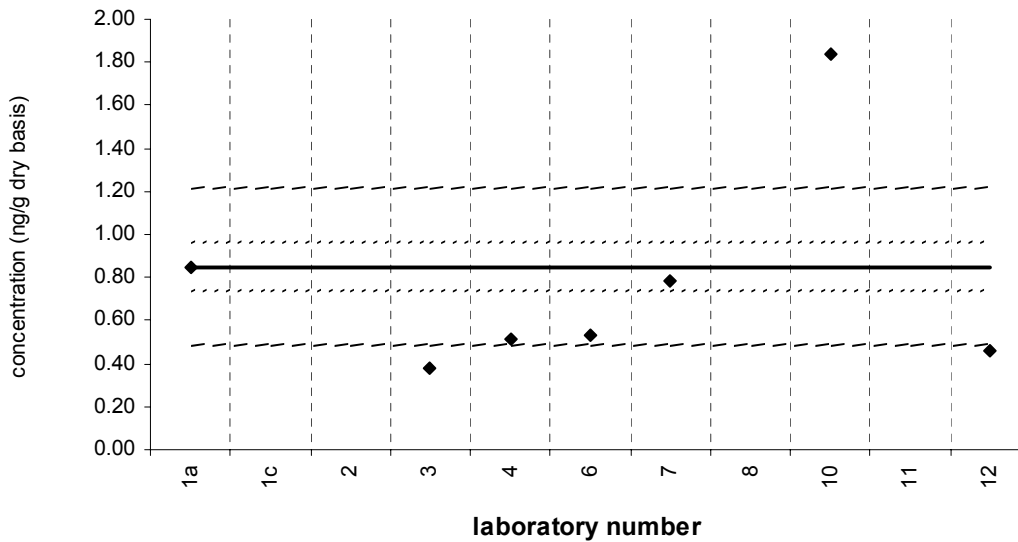
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

**cis-chlordane (alpha-chlordane)**

**SRM 1941b**

Certified Value = 0.85 ± 0.11 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 7



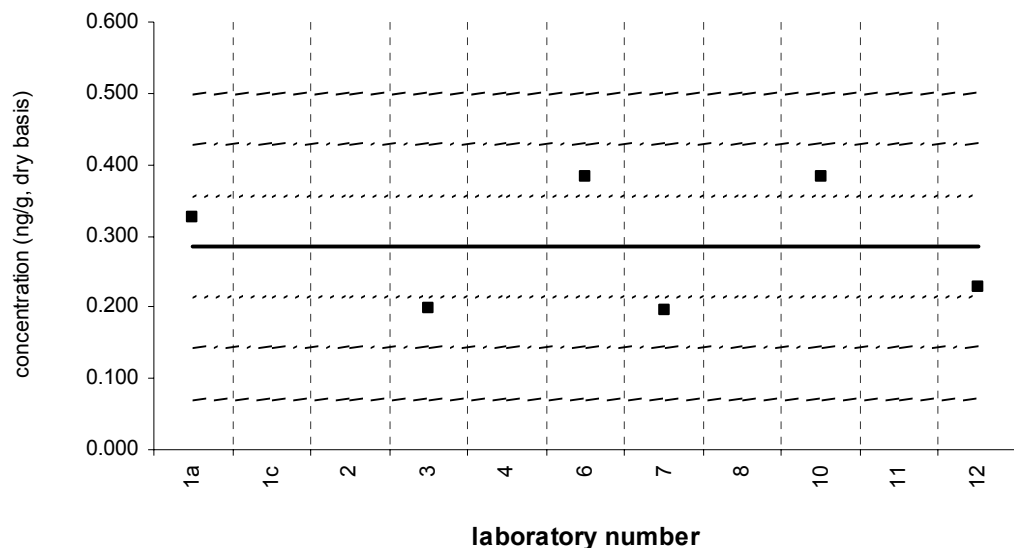
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**trans-nonachlor**

**Sediment XIII (QA05SED13)**

Assigned value = 0.286 ng/g s = 0.089 ng/g 95% CL = 0.093 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 6



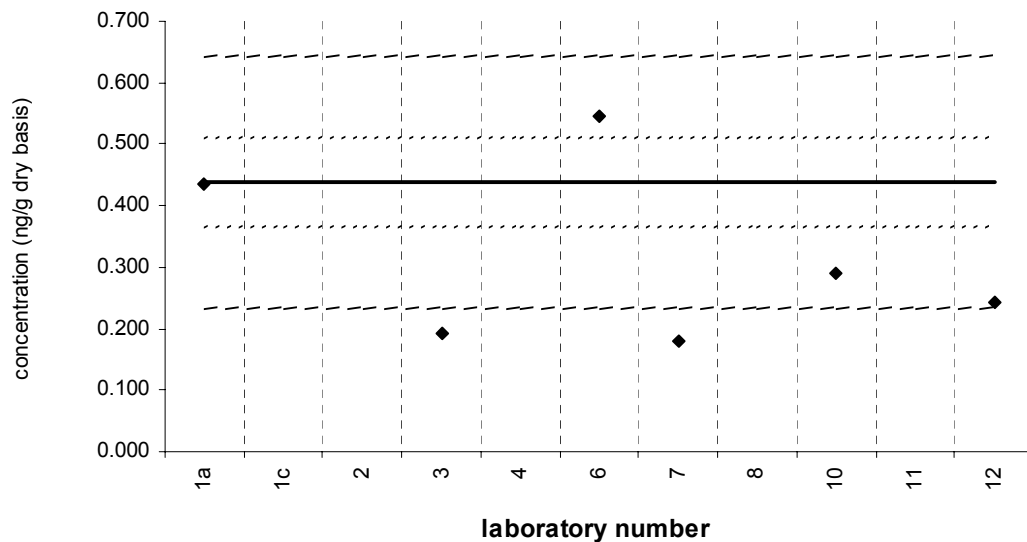
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

**trans-nonachlor**

**SRM 1941b**

Certified Value = 0.438 ± 0.073 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 6



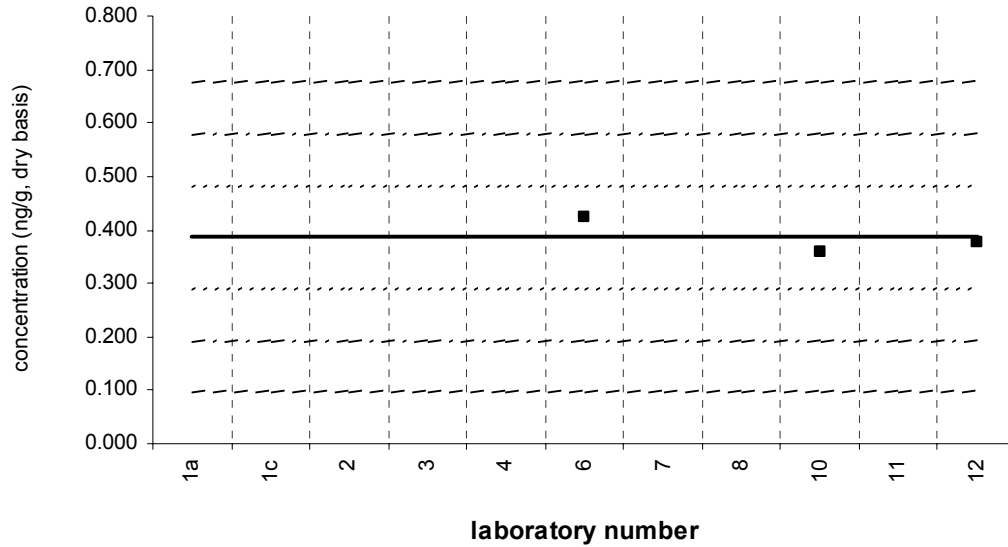
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**dieldrin**

**Sediment XIII (QA05SED13)**

Assigned value = 0.386 ng/g s = 0.034 ng/g 95% CL = 0.084 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 3



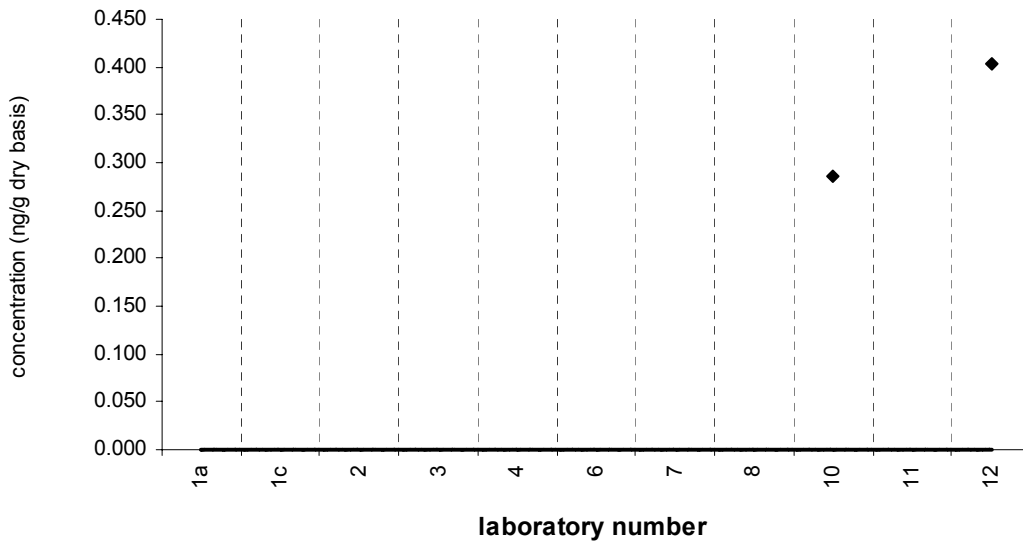
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

**dieldrin**

**SRM 1941b**

Target Value = no target ng/g (dry basis)

Reported Results: 8 Quantitative Results: 2



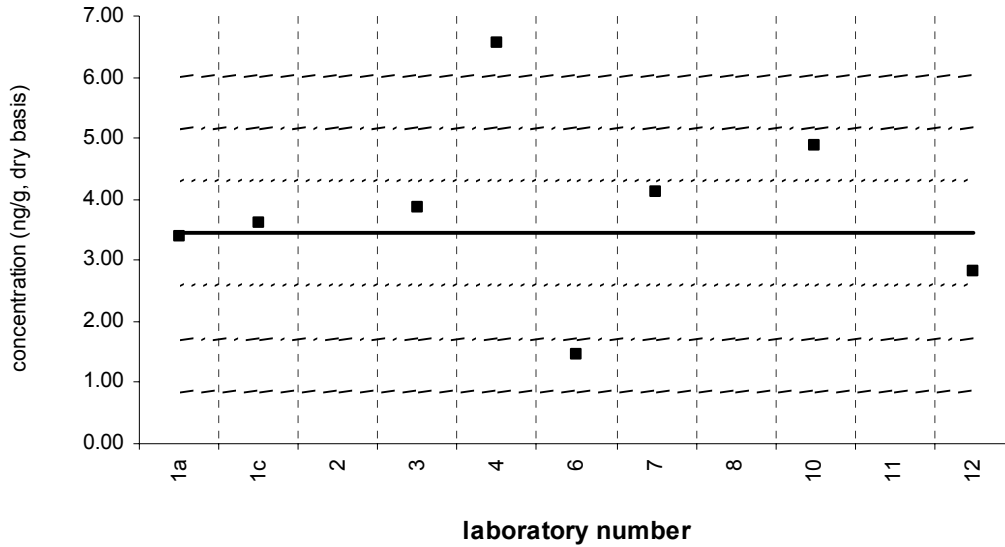
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

### 4,4'-DDE

### Sediment XIII (QA05SED13)

Assigned value = 3.44 ng/g  $s = 1.08$  ng/g 95% CL = 1.00 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 8



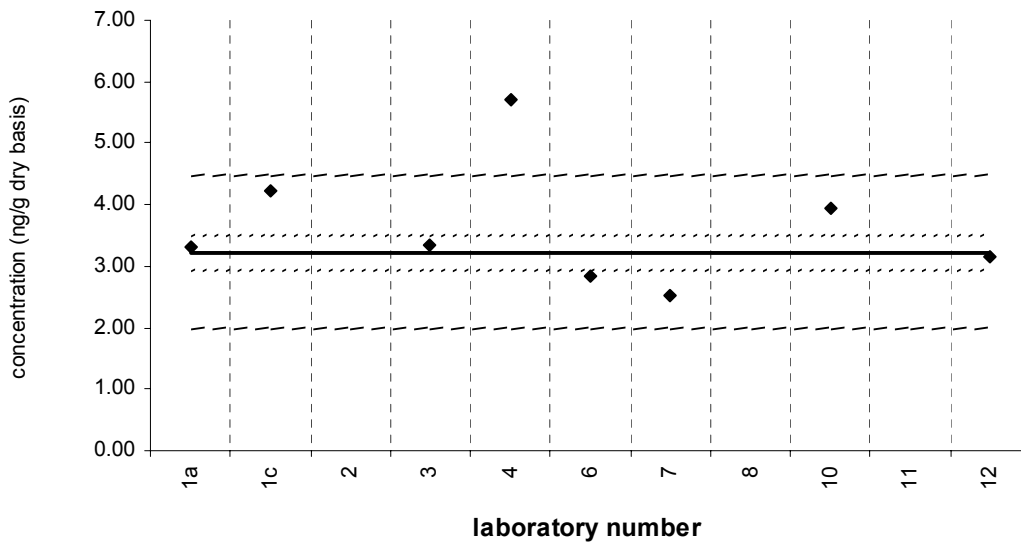
Solid line : exercise assigned value (EAV); dotted line:  $z = \pm 1$  (25% from EAV); dotted/dashed line:  $z = \pm 2$  (50% from EAV); dashed line:  $z = \pm 3$  (75% from EAV)

### 4,4'-DDE

### SRM 1941b

Certified Value =  $3.22 \pm 0.28$  ng/g (dry basis)

Reported Results: 8 Quantitative Results: 8



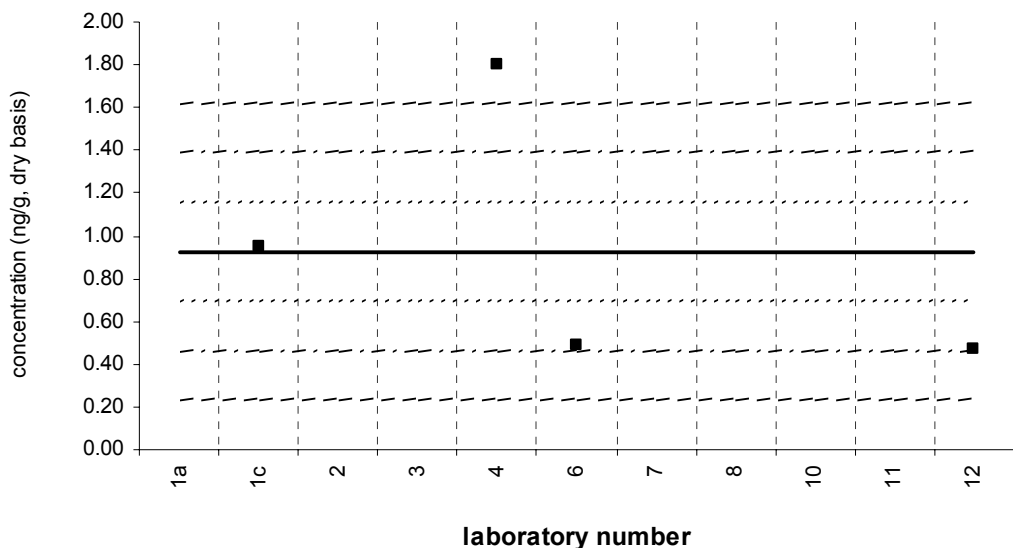
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

### 2,4'-DDD

### Sediment XIII (QA05SED13)

Assigned value = 0.927 ng/g  $s = 0.624$  ng/g 95% CL = 0.992 ng/g (dry basis)

Reported Results: 7 Quantitative Results: 4



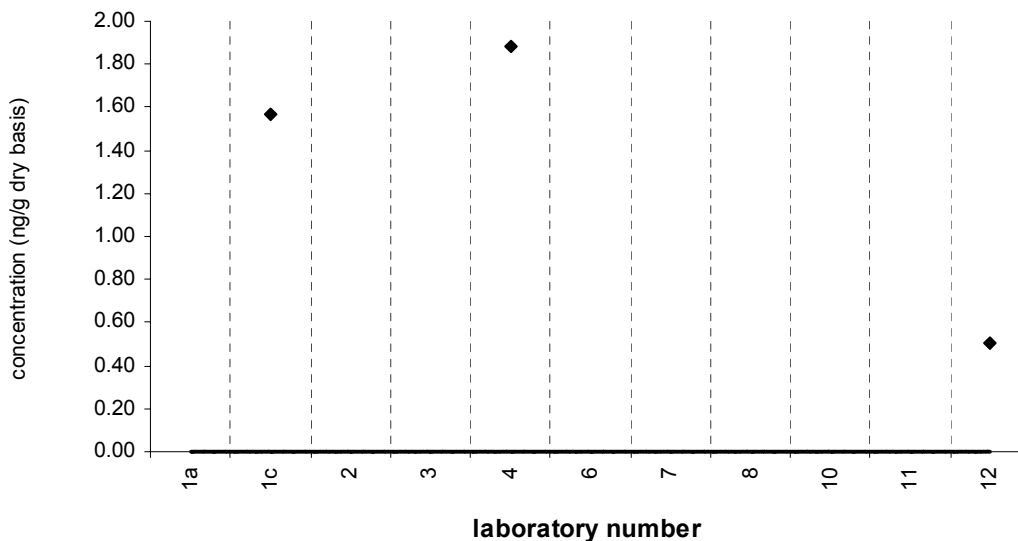
Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

### 2,4'-DDD

### SRM 1941b

Target Value = no target ng/g (dry basis)

Reported Results: 3 Quantitative Results: 3



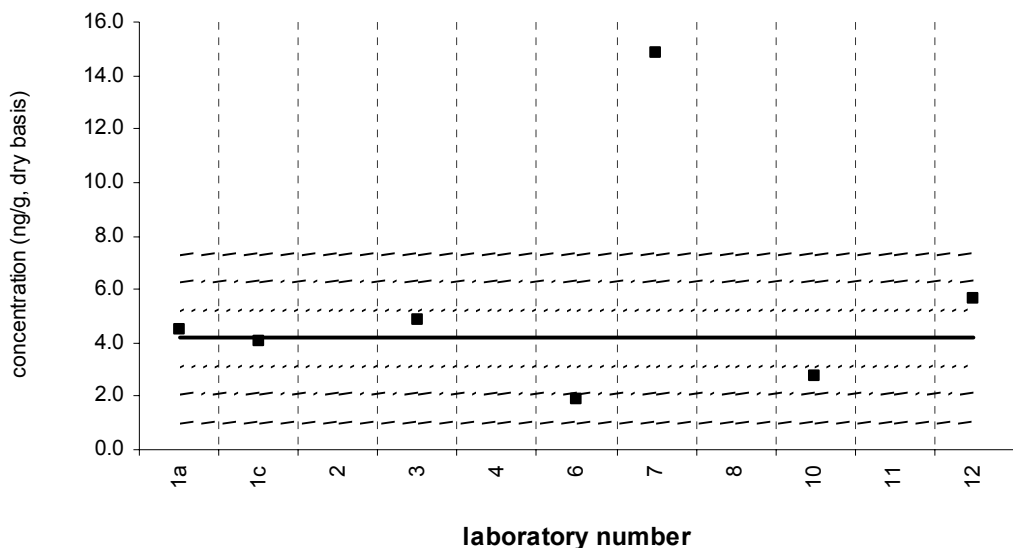
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

### 4,4'-DDD

### Sediment XIII (QA05SED13)

Assigned value = 4.18 ng/g  $s = 1.42$  ng/g 95% CL = 1.77 ng/g (dry basis)

Reported Results: 7 Quantitative Results: 7



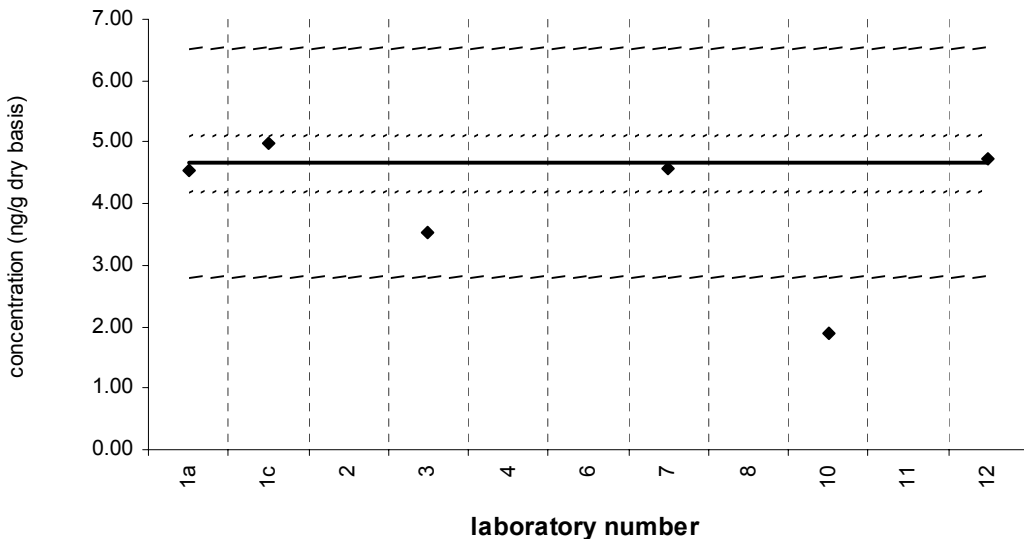
Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

### 4,4'-DDD

### SRM 1941b

Certified Value =  $4.66 \pm 0.46$  ng/g (dry basis)

Reported Results: 7 Quantitative Results: 6

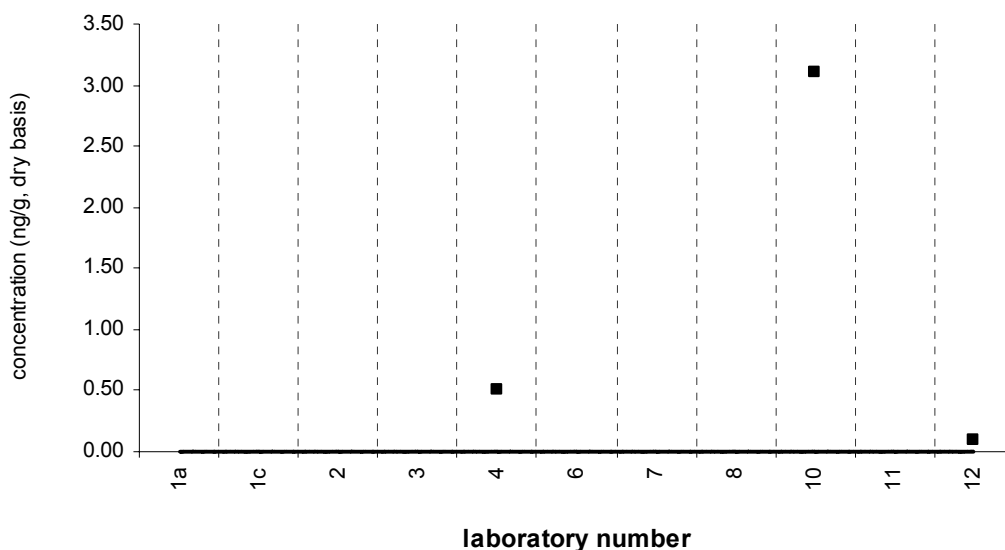


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

### 2,4'-DDT

### Sediment XIII (QA05SED13)

Assigned value = no target ng/g (dry basis)  
Reported Results: 8    Quantitative Results: 3

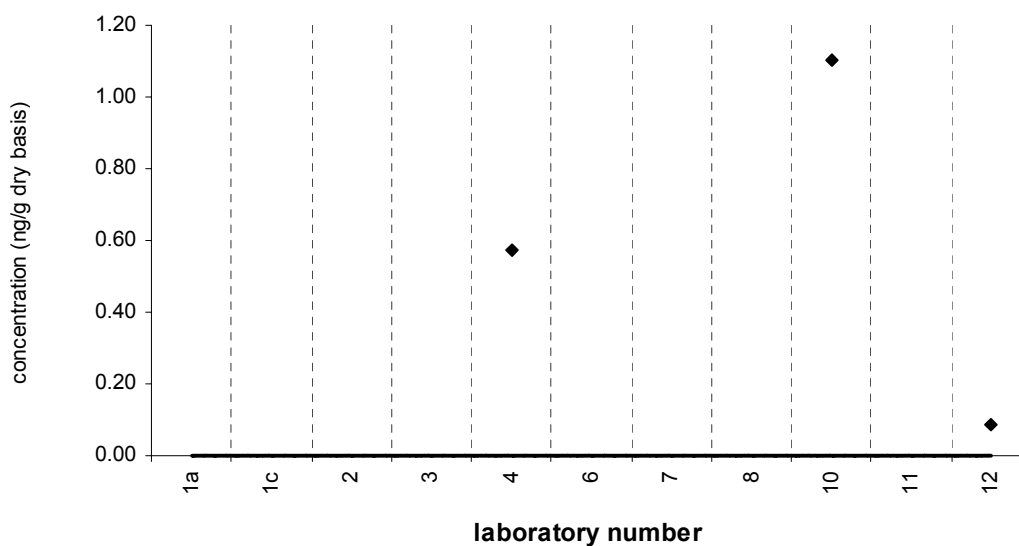


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

### 2,4'-DDT

### SRM 1941b

Target Value = no target ng/g (dry basis)  
Reported Results: 8    Quantitative Results: 3



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

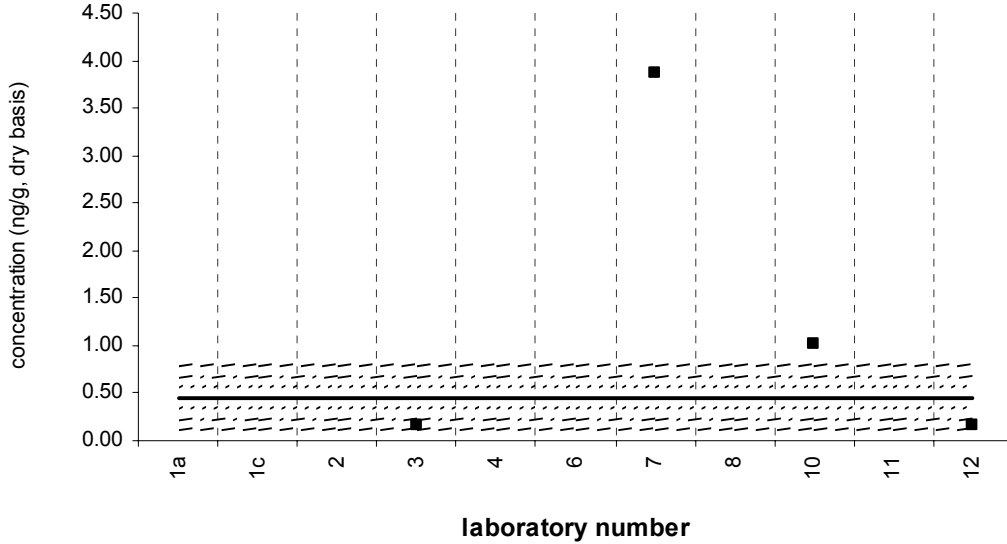


**cis-nonachlor**

**Sediment XIII (QA05SED13)**

Assigned value = 0.454 ng/g s = 0.493 ng/g 95% CL = 1.22 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 4



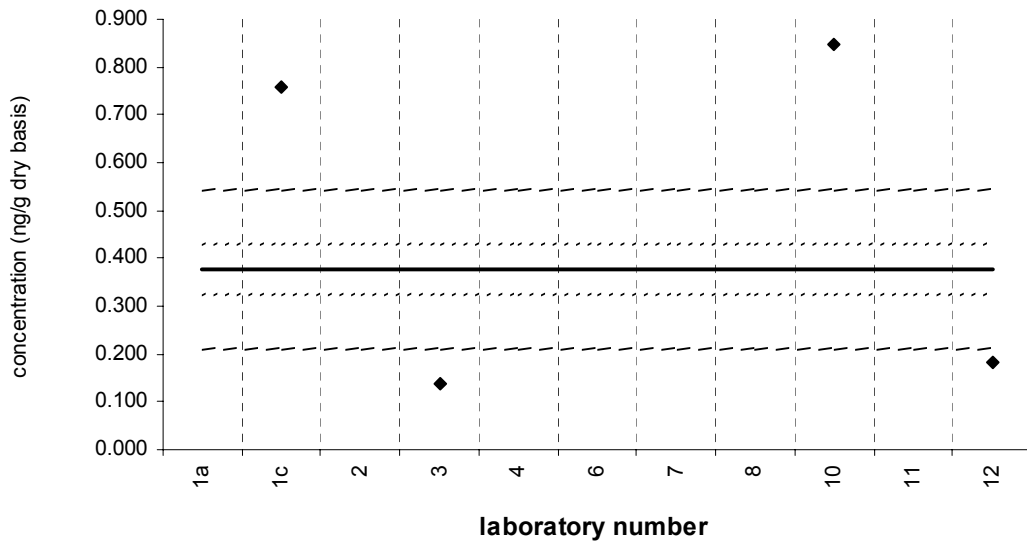
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

**cis-nonachlor**

**SRM 1941b**

Certified Value = 0.378 ± 0.053 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 4



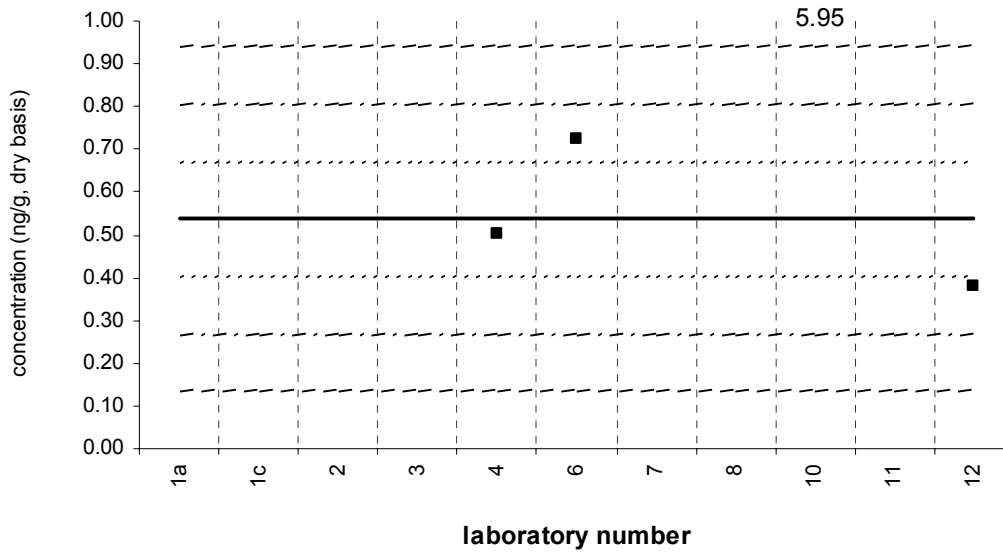
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

### 4,4'-DDT

### Sediment XIII (QA05SED13)

Assigned value = 0.537 ng/g  $s = 0.174$  ng/g 95% CL = 0.433 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 4



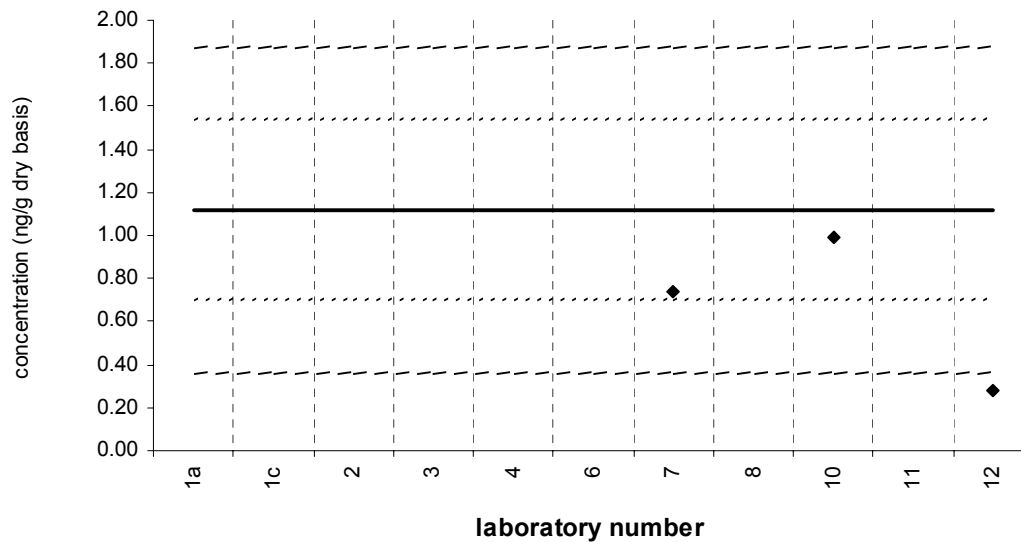
Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

### 4,4'-DDT

### SRM 1941b

Reference Value =  $1.12 \pm 0.42$  ng/g (dry basis)

Reported Results: 8 Quantitative Results: 3

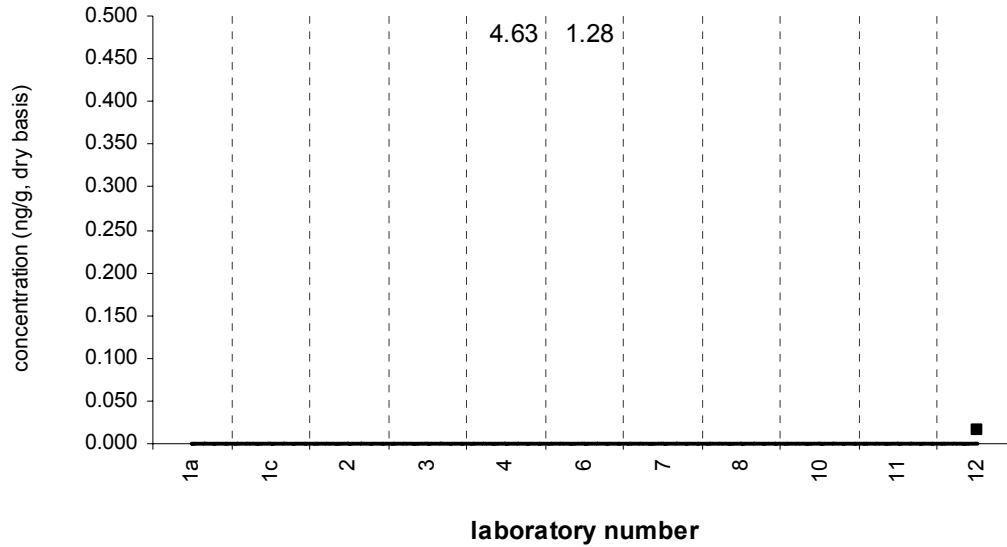


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**mirex**

**Sediment XIII (QA05SED13)**

Assigned value = no target ng/g (dry basis)  
Reported Results: 7    Quantitative Results: 3

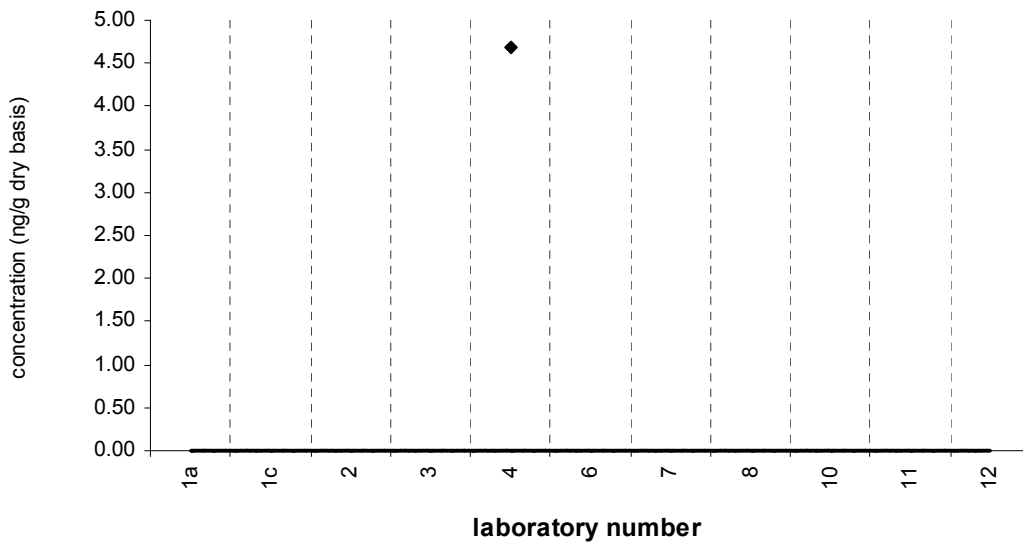


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

**mirex**

**SRM 1941b**

Target Value = no target ng/g (dry basis)  
Reported Results: 7    Quantitative Results: 1



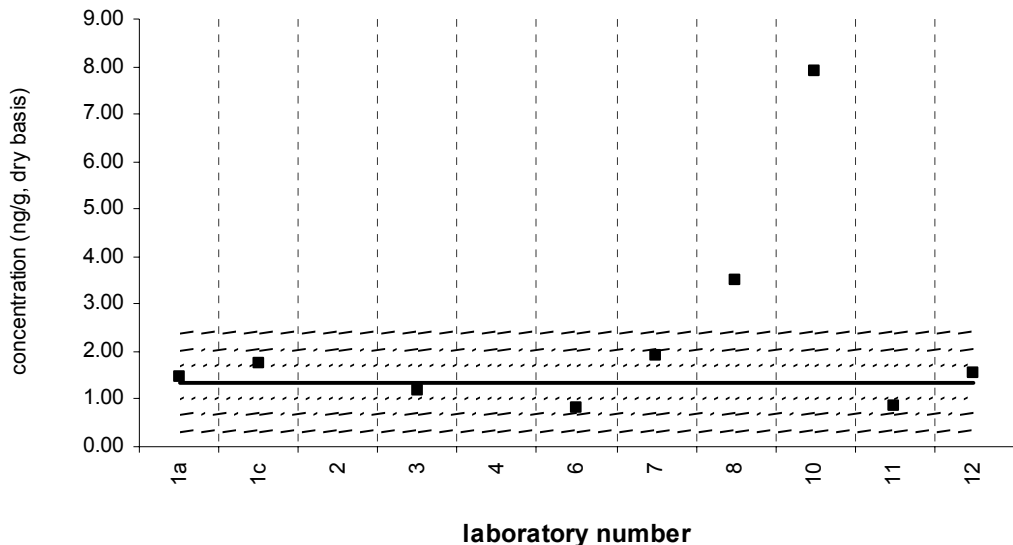
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 8**

**Sediment XIII (QA05SED13)**

Assigned value = 1.36 ng/g  $s = 0.42$  ng/g 95% CL = 0.39 ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9



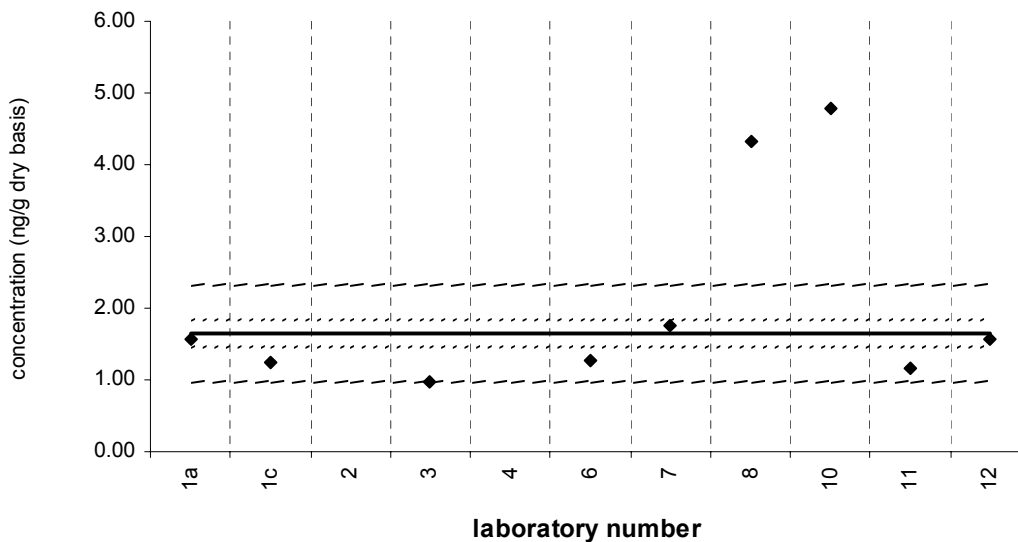
Solid line : exercise assigned value (EAV); dotted line:  $z = \pm 1$  (25% from EAV); dotted/dashed line:  $z = \pm 2$  (50% from EAV); dashed line:  $z = \pm 3$  (75% from EAV)

**PCB 8**

**SRM 1941b**

Certified Value =  $1.65 \pm 0.19$  ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9



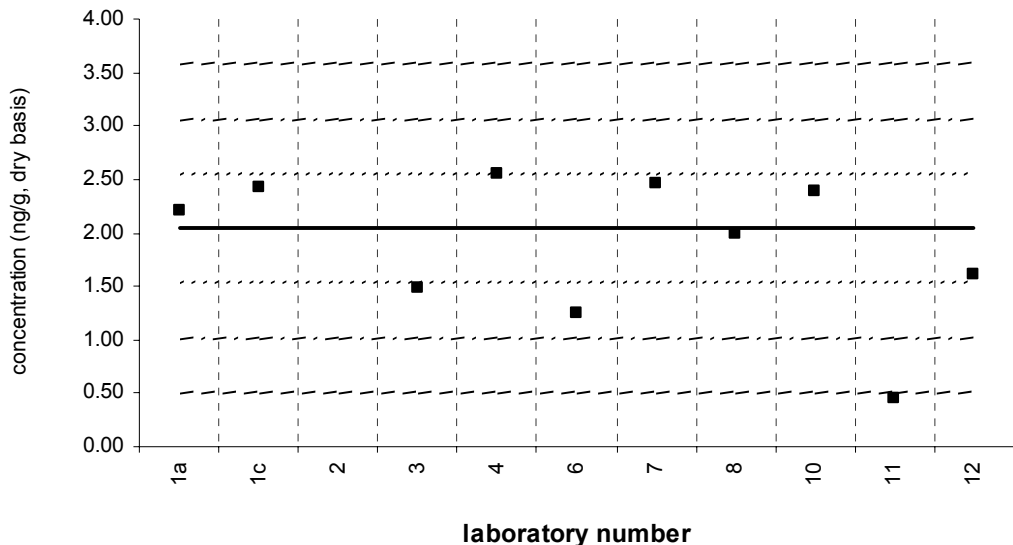
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 18**

**Sediment XIII (QA05SED13)**

Assigned value = 2.04 ng/g  $s = 0.48$  ng/g 95% CL = 0.37 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10



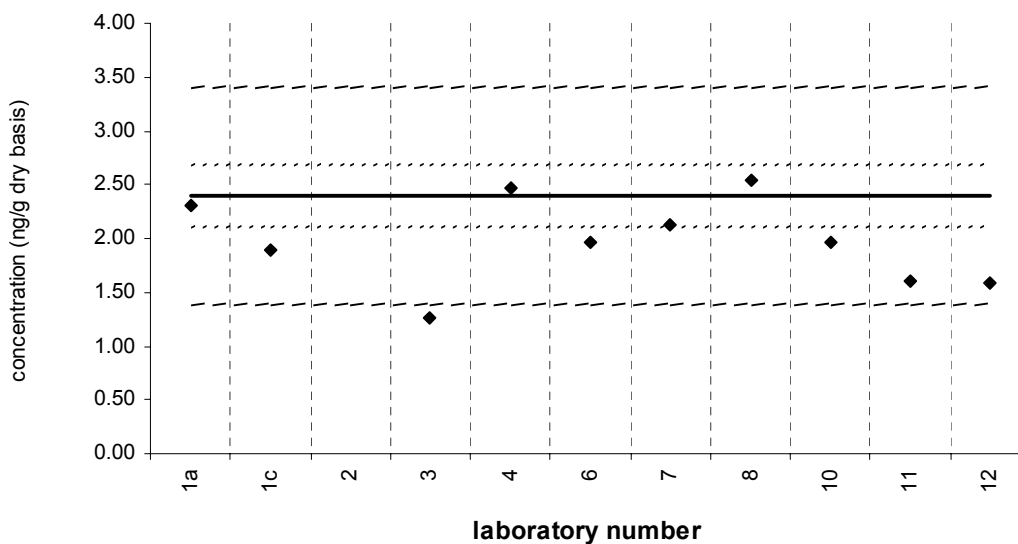
Solid line : exercise assigned value (EAV); dotted line:  $z = \pm 1$  (25% from EAV); dotted/dashed line:  $z = \pm 2$  (50% from EAV); dashed line:  $z = \pm 3$  (75% from EAV)

**PCB 18**

**SRM 1941b**

Certified Value =  $2.39 \pm 0.29$  ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10



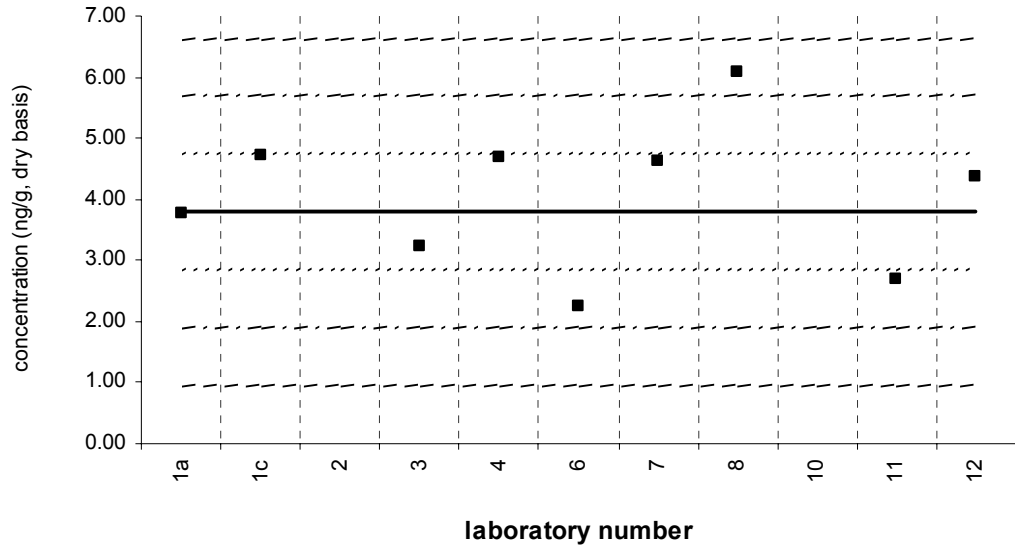
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 28**

**Sediment XIII (QA05SED13)**

Assigned value = 3.79 ng/g  $s = 0.97$  ng/g 95% CL = 0.81 ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9



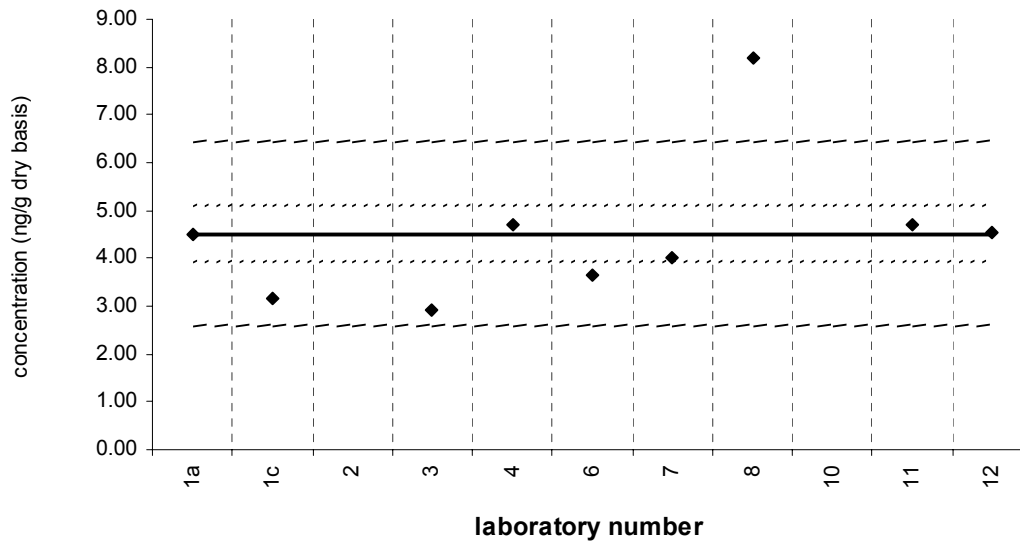
Solid line : exercise assigned value (EAV); dotted line:  $z = \pm 1$  (25% from EAV); dotted/dashed line:  $z = \pm 2$  (50% from EAV); dashed line:  $z = \pm 3$  (75% from EAV)

**PCB 28**

**SRM 1941b**

Certified Value =  $4.52 \pm 0.57$  ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9



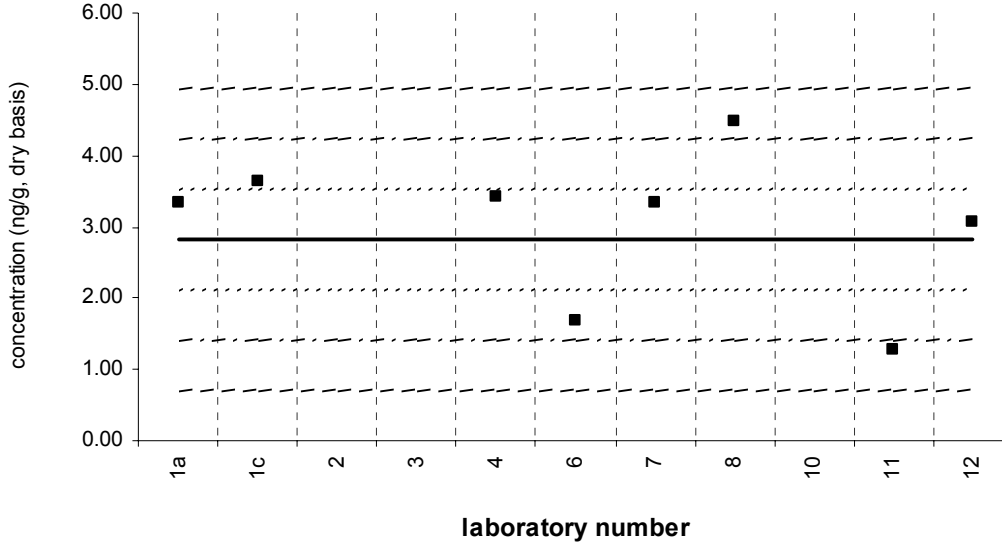
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 31**

**Sediment XIII (QA05SED13)**

Assigned value = 2.83 ng/g  $s = 0.94$  ng/g 95% CL = 0.87 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 8



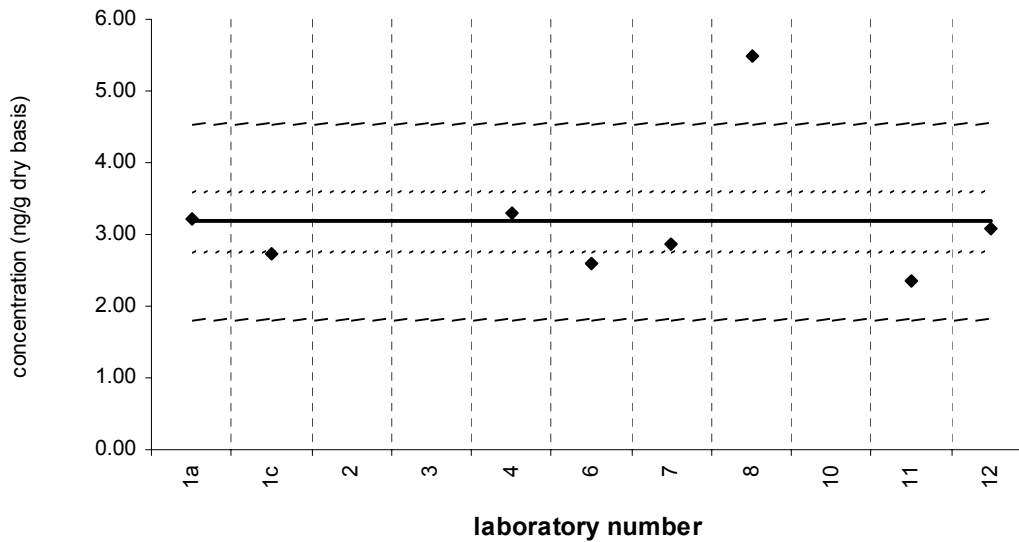
Solid line : exercise assigned value (EAV); dotted line:  $z = \pm 1$  (25% from EAV); dotted/dashed line:  $z = \pm 2$  (50% from EAV); dashed line:  $z = \pm 3$  (75% from EAV)

**PCB 31**

**SRM 1941b**

Certified Value =  $3.18 \pm 0.41$  ng/g (dry basis)

Reported Results: 8 Quantitative Results: 8



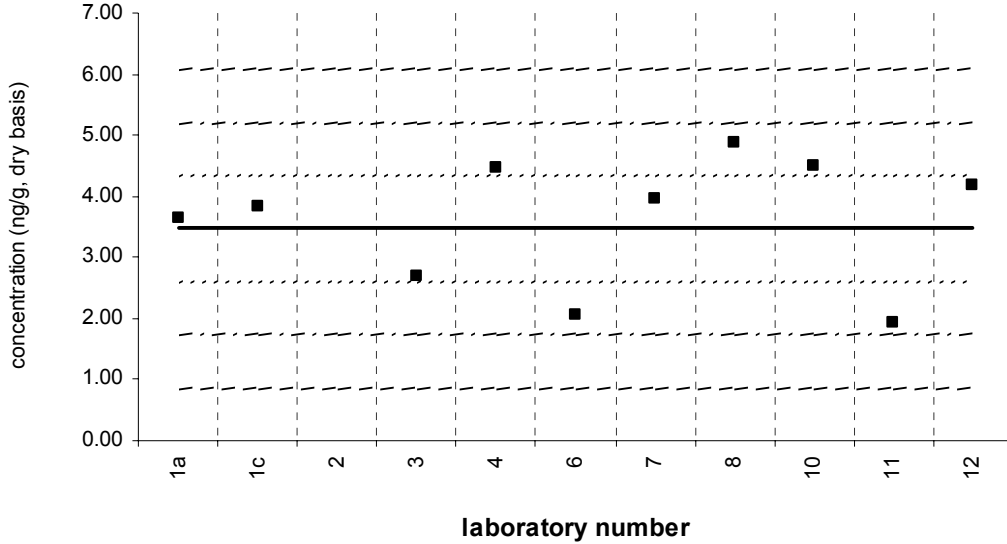
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 44**

**Sediment XIII (QA05SED13)**

Assigned value = 3.47 ng/g  $s = 0.99$  ng/g 95% CL = 0.76 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10



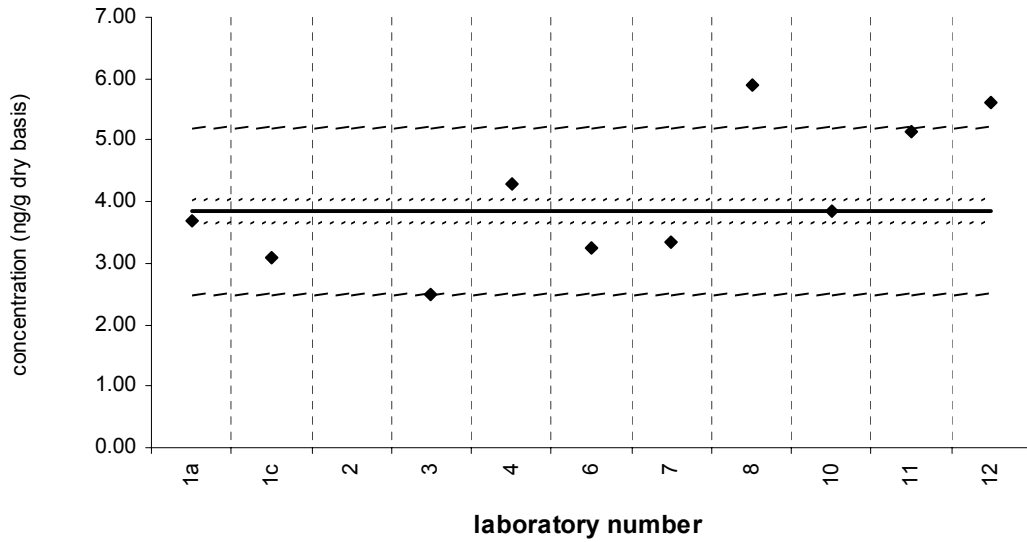
Solid line : exercise assigned value (EAV); dotted line:  $z = \pm 1$  (25% from EAV); dotted/dashed line:  $z = \pm 2$  (50% from EAV); dashed line:  $z = \pm 3$  (75% from EAV)

**PCB 44**

**SRM 1941b**

Certified Value =  $3.85 \pm 0.20$  ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

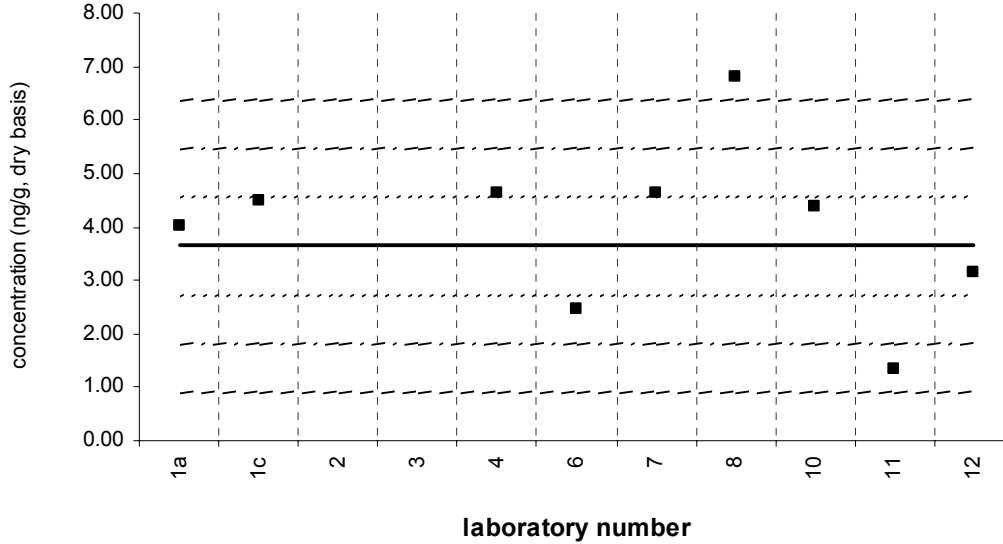


**PCB 49**

**Sediment XIII (QA05SED13)**

Assigned value = 3.64 ng/g  $s = 1.22$  ng/g 95% CL = 1.02 ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9



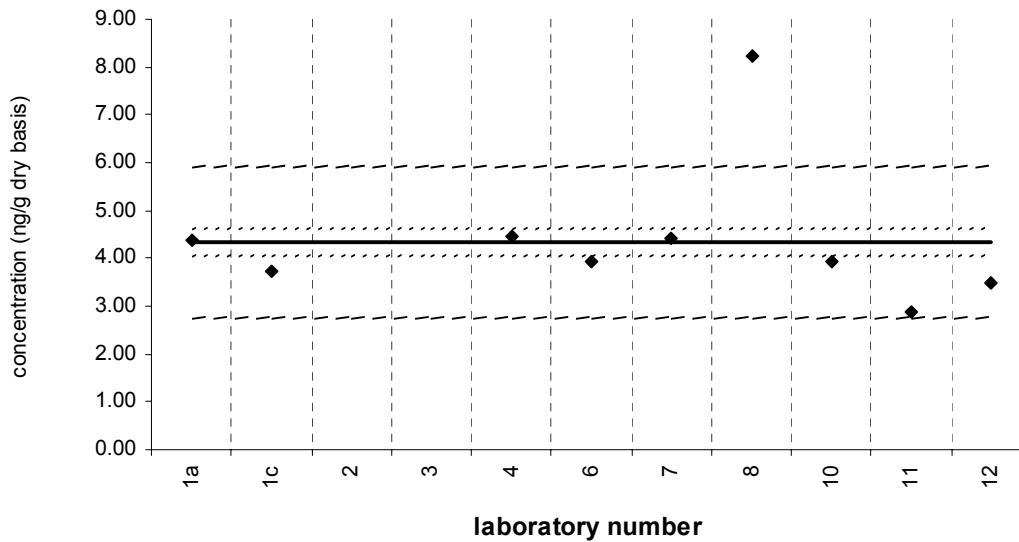
Solid line : exercise assigned value (EAV); dotted line:  $z = \pm 1$  (25% from EAV); dotted/dashed line:  $z = \pm 2$  (50% from EAV); dashed line:  $z = \pm 3$  (75% from EAV)

**PCB 49**

**SRM 1941b**

Certified Value =  $4.34 \pm 0.28$  ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9



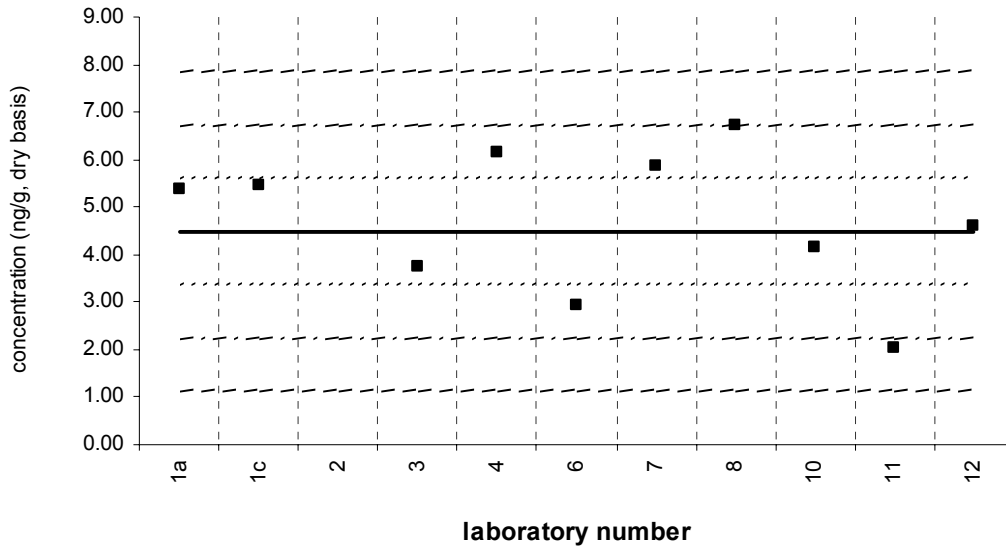
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 52**

**Sediment XIII (QA05SED13)**

Assigned value = 4.48 ng/g  $s = 1.39$  ng/g 95% CL = 1.07 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10



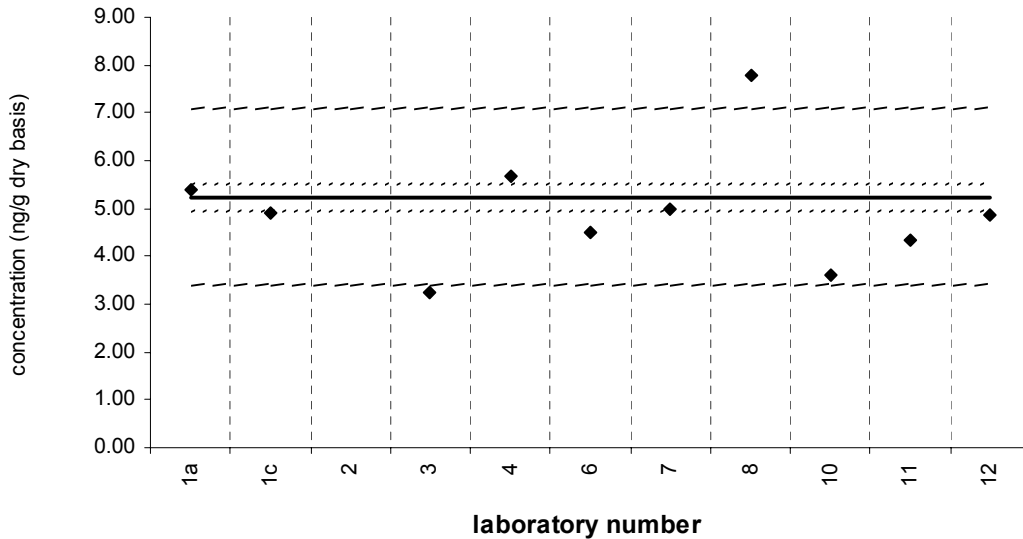
Solid line : exercise assigned value (EAV); dotted line:  $z = \pm 1$  (25% from EAV); dotted/dashed line:  $z = \pm 2$  (50% from EAV); dashed line:  $z = \pm 3$  (75% from EAV)

**PCB 52**

**SRM 1941b**

Certified Value =  $5.24 \pm 0.28$  ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10



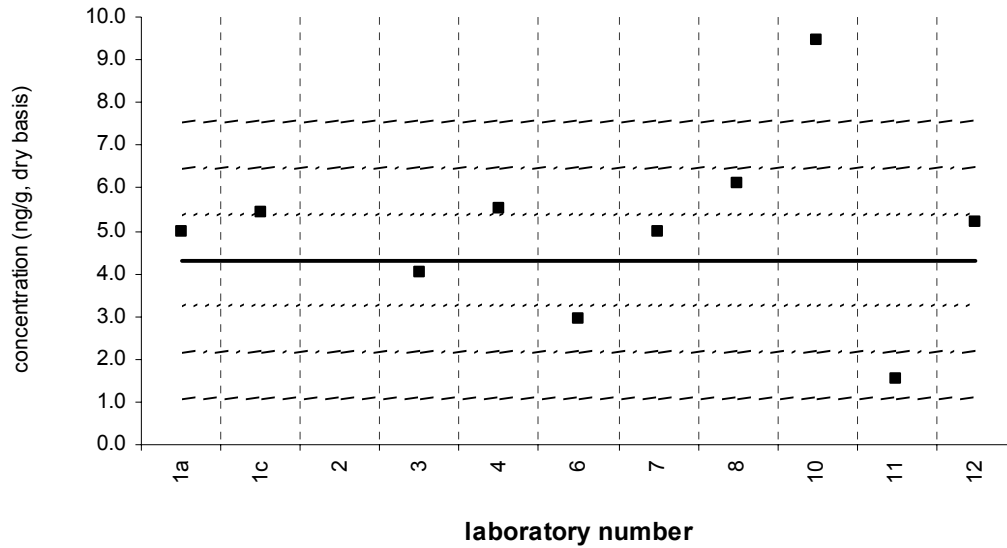
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 66**

**Sediment XIII (QA05SED13)**

Assigned value = 4.32 ng/g  $s = 1.41$  ng/g 95% CL = 1.18 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10



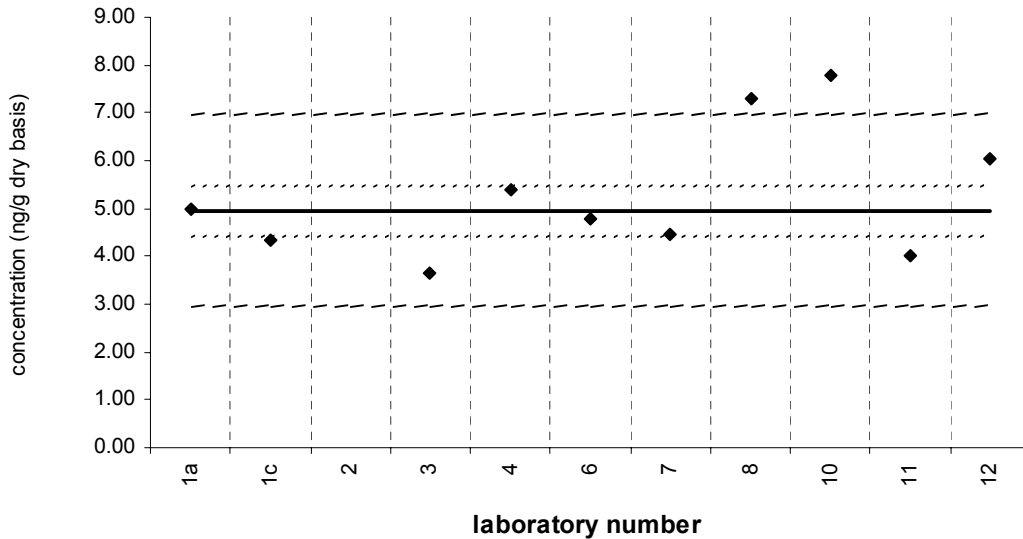
Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**PCB 66**

**SRM 1941b**

Certified Value =  $4.96 \pm 0.53$  ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10



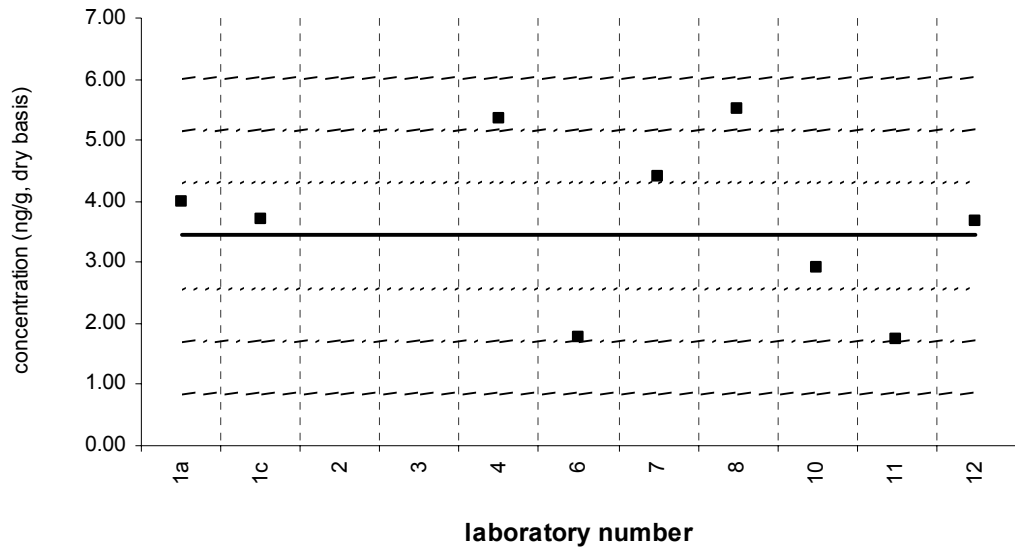
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 95**

**Sediment XIII (QA05SED13)**

Assigned value = 3.44 ng/g  $s = 1.25$  ng/g 95% CL = 1.05 ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9



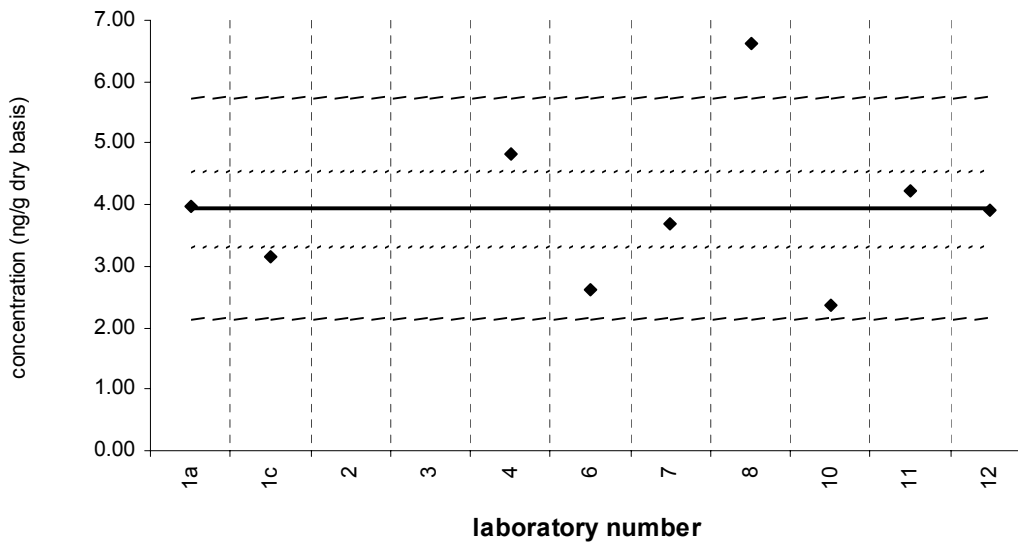
Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**PCB 95**

**SRM 1941b**

Certified Value =  $3.93 \pm 0.62$  ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9



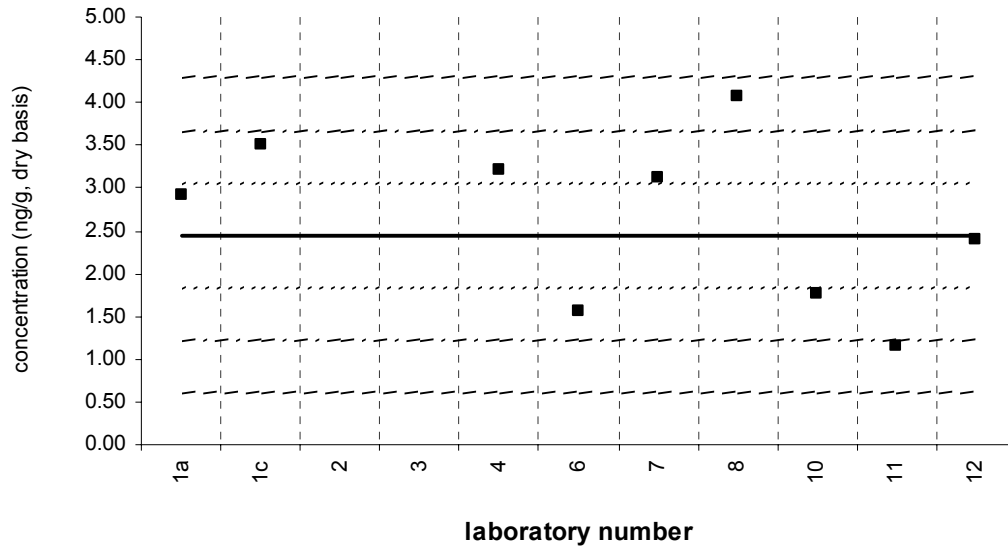
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 99**

**Sediment XIII (QA05SED13)**

Assigned value = 2.45 ng/g  $s = 0.87$  ng/g 95% CL = 0.73 ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9



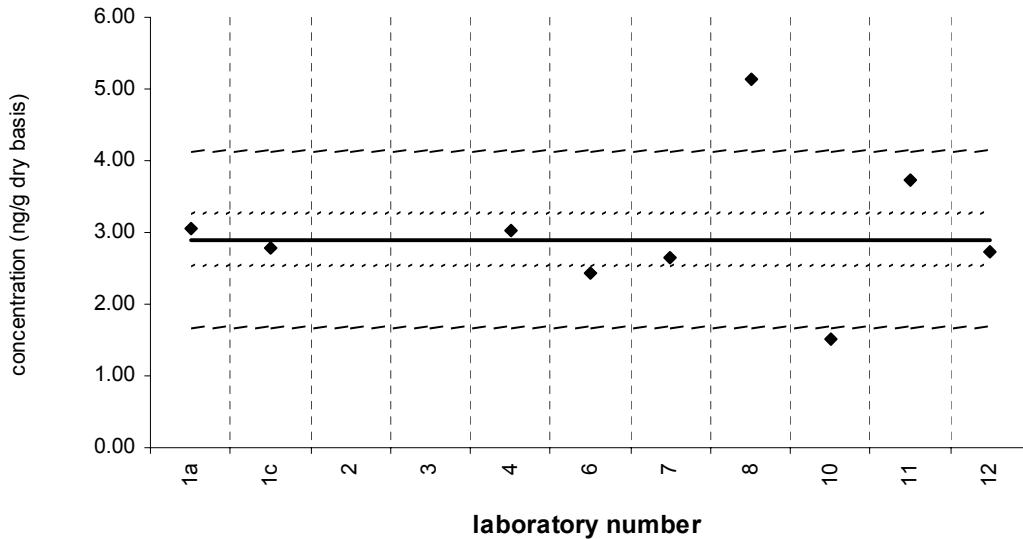
Solid line : exercise assigned value (EAV); dotted line:  $z = \pm 1$  (25% from EAV); dotted/dashed line:  $z = \pm 2$  (50% from EAV); dashed line:  $z = \pm 3$  (75% from EAV)

**PCB 99**

**SRM 1941b**

Certified Value =  $2.90 \pm 0.36$  ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9



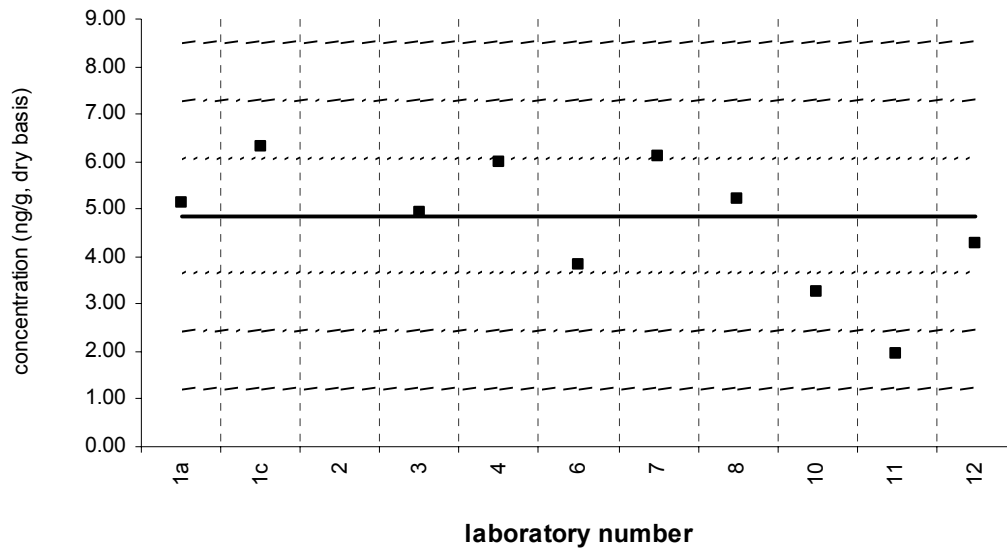
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 101**

**Sediment XIII (QA05SED13)**

Assigned value = 4.86 ng/g  $s = 1.36$  ng/g 95% CL = 1.05 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10



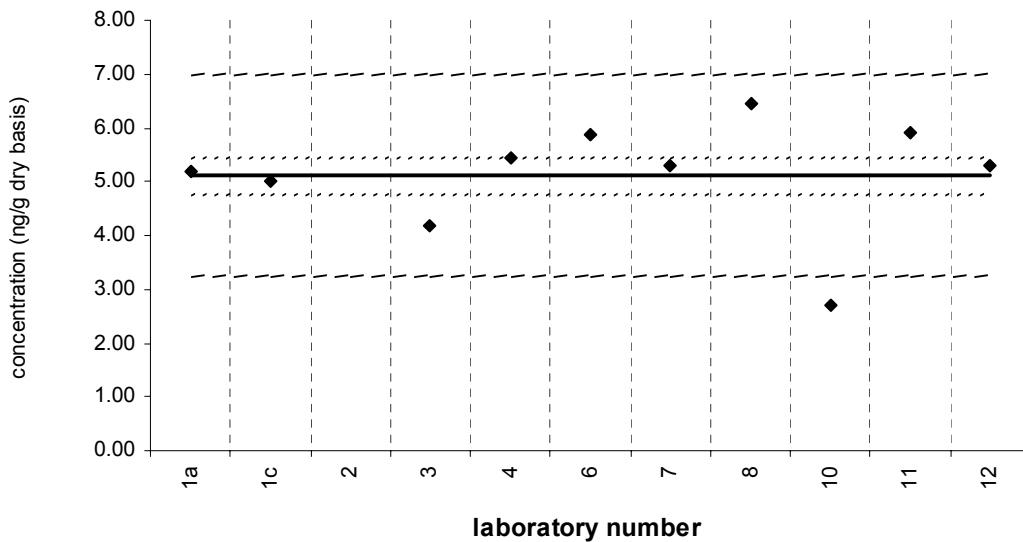
Solid line : exercise assigned value (EAV); dotted line:  $z = \pm 1$  (25% from EAV); dotted/dashed line:  $z = \pm 2$  (50% from EAV); dashed line:  $z = \pm 3$  (75% from EAV)

**PCB 101**

**SRM 1941b**

Certified Value =  $5.11 \pm 0.34$  ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10



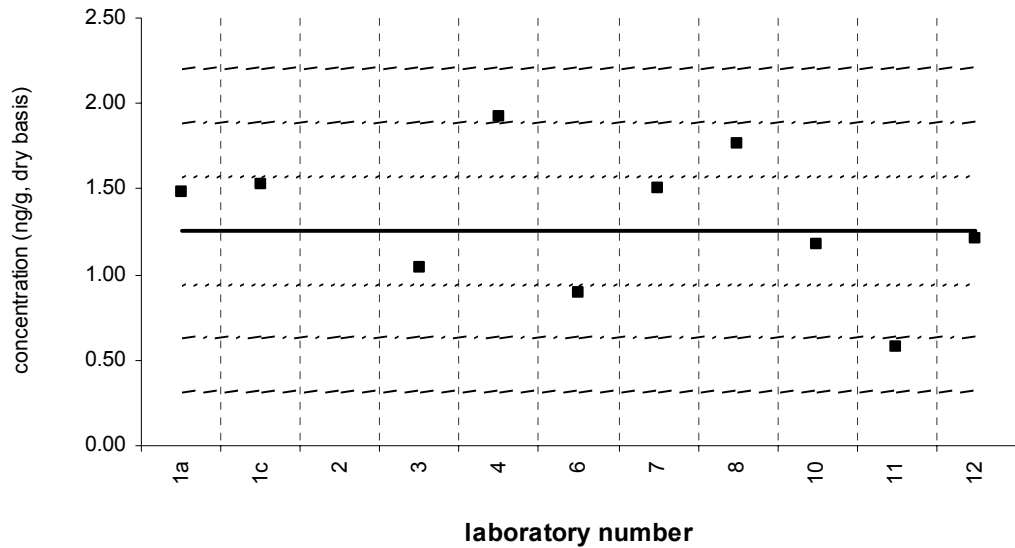
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 105**

**Sediment XIII (QA05SED13)**

Assigned value = 1.26 ng/g  $s = 0.40$  ng/g 95% CL = 0.31 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10



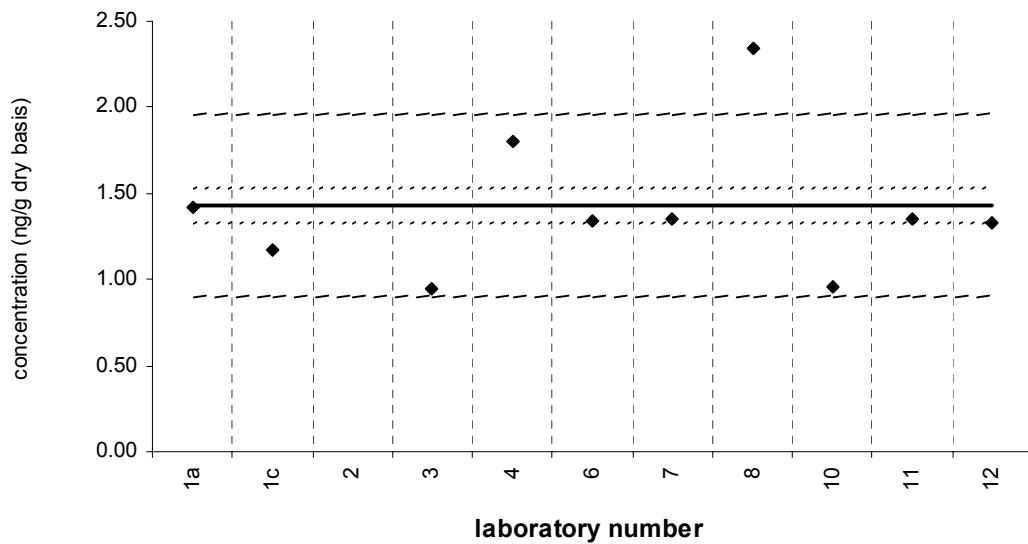
Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**PCB 105**

**SRM 1941b**

Certified Value =  $1.43 \pm 0.10$  ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10



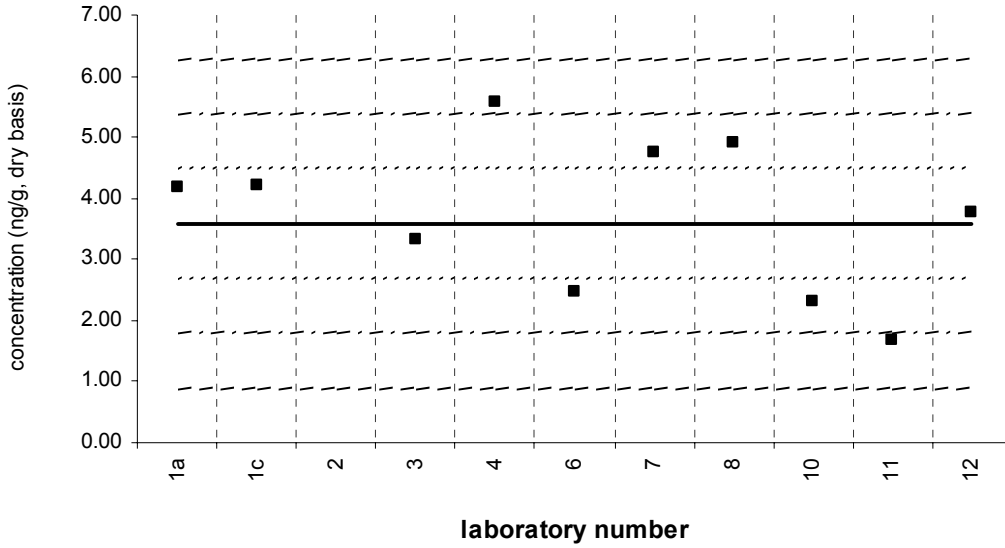
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 118**

**Sediment XIII (QA05SED13)**

Assigned value = 3.59 ng/g  $s = 1.26$  ng/g 95% CL = 0.96 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10



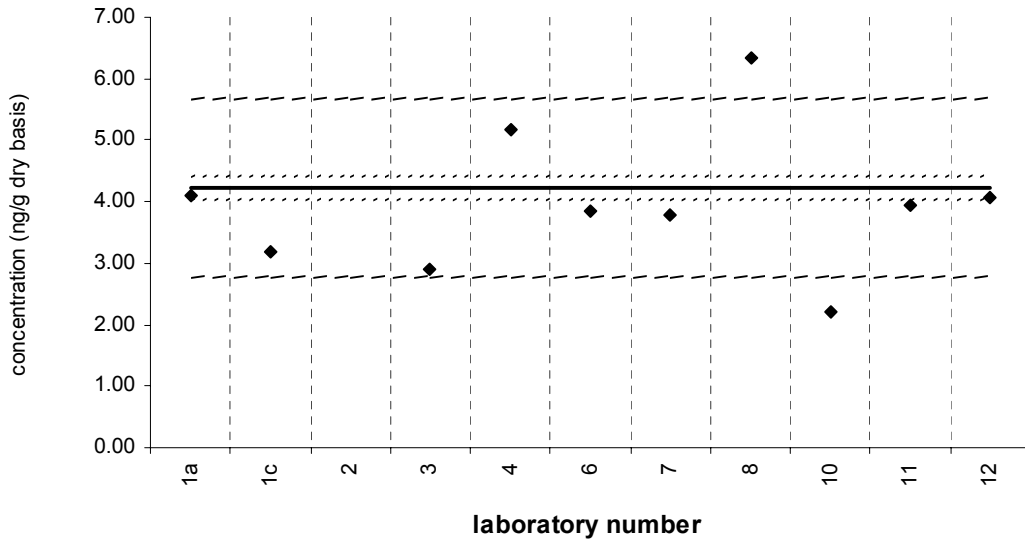
Solid line : exercise assigned value (EAV); dotted line:  $z = \pm 1$  (25% from EAV); dotted/dashed line:  $z = \pm 2$  (50% from EAV); dashed line:  $z = \pm 3$  (75% from EAV)

**PCB 118**

**SRM 1941b**

Certified Value =  $4.23 \pm 0.19$  ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

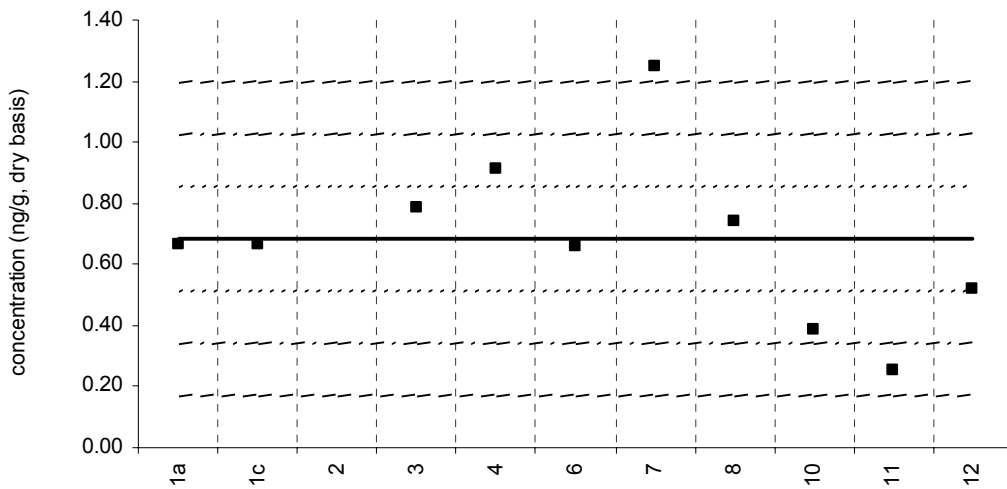


**PCB 128**

**Sediment XIII (QA05SED13)**

Assigned value = 0.684 ng/g  $s = 0.275$  ng/g 95% CL = 0.197 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10



laboratory number

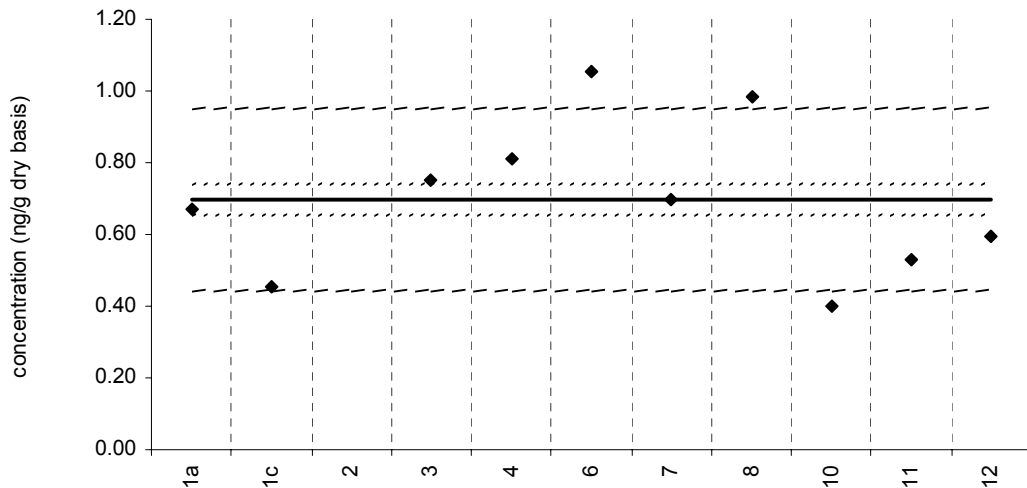
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

**PCB 128**

**SRM 1941b**

Certified Value = 0.696 ± 0.044 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10



laboratory number

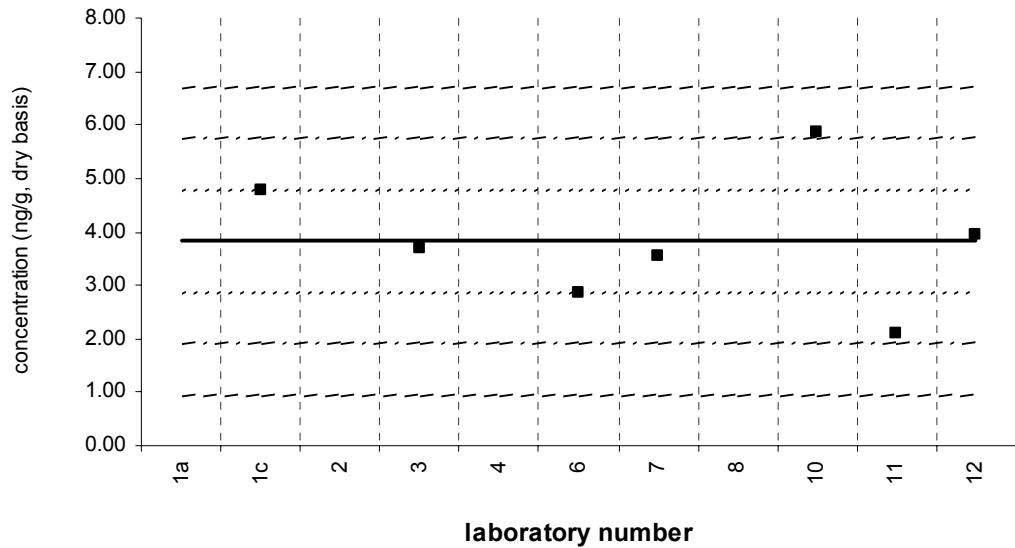
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 138**

**Sediment XIII (QA05SED13)**

Assigned value = 3.83 ng/g  $s = 1.23$  ng/g 95% CL = 1.14 ng/g (dry basis)

Reported Results: 7 Quantitative Results: 7



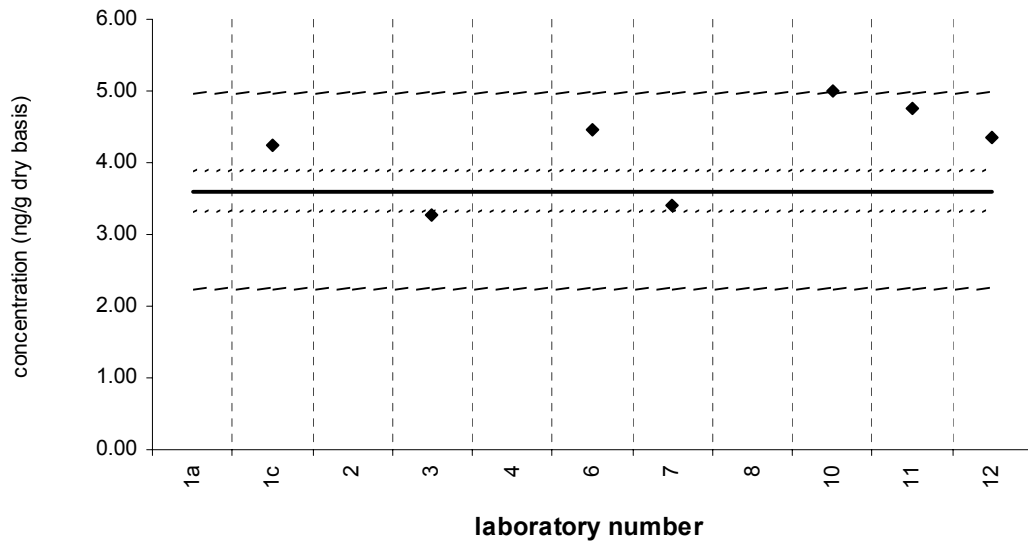
Solid line : exercise assigned value (EAV); dotted line:  $z = \pm 1$  (25% from EAV); dotted/dashed line:  $z = \pm 2$  (50% from EAV); dashed line:  $z = \pm 3$  (75% from EAV)

**PCB 138**

**SRM 1941b**

Certified Value =  $3.60 \pm 0.28$  ng/g (dry basis)

Reported Results: 7 Quantitative Results: 7



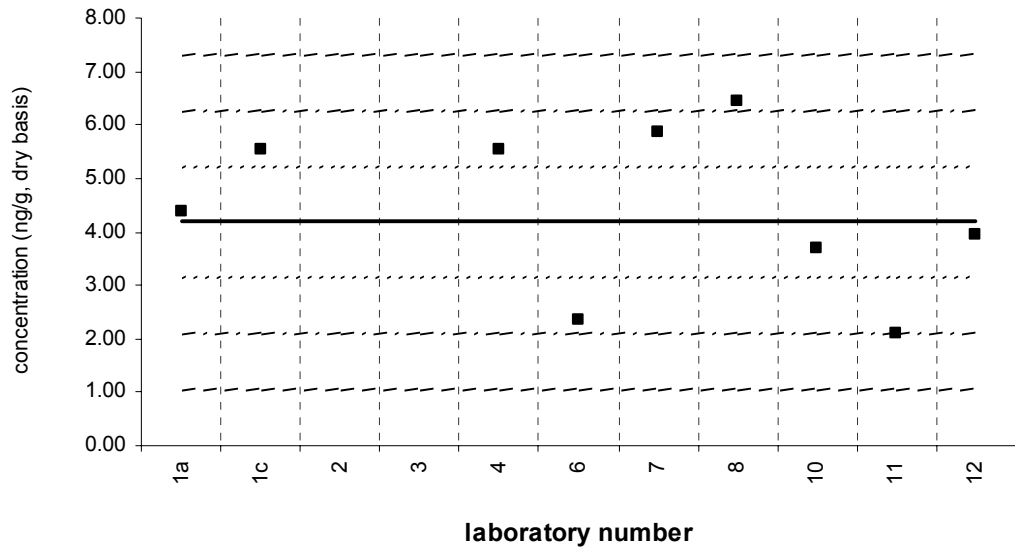
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 149**

**Sediment XIII (QA05SED13)**

Assigned value = 4.18 ng/g  $s = 1.44$  ng/g 95% CL = 1.20 ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9



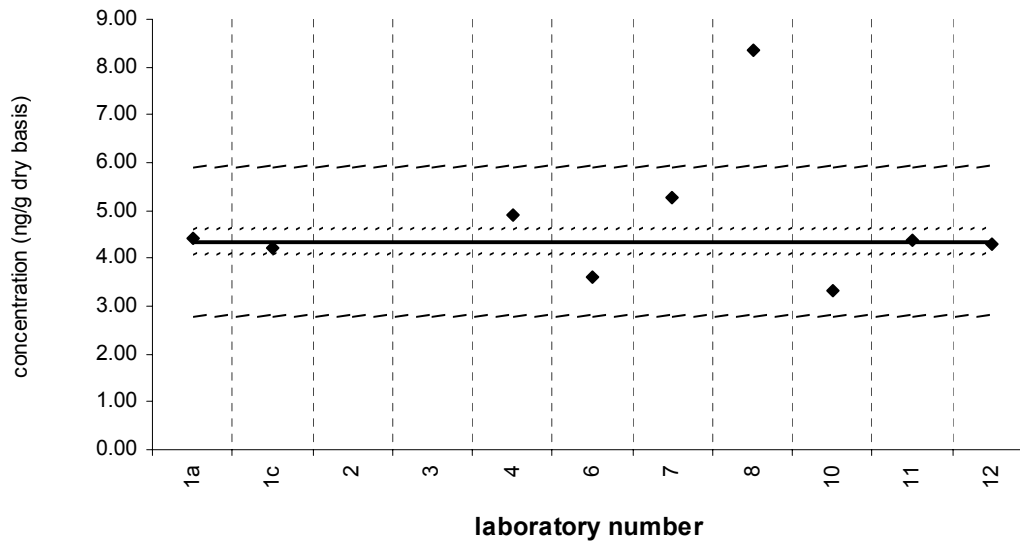
Solid line : exercise assigned value (EAV); dotted line:  $z = \pm 1$  (25% from EAV); dotted/dashed line:  $z = \pm 2$  (50% from EAV); dashed line:  $z = \pm 3$  (75% from EAV)

**PCB 149**

**SRM 1941b**

Certified Value =  $4.35 \pm 0.26$  ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9



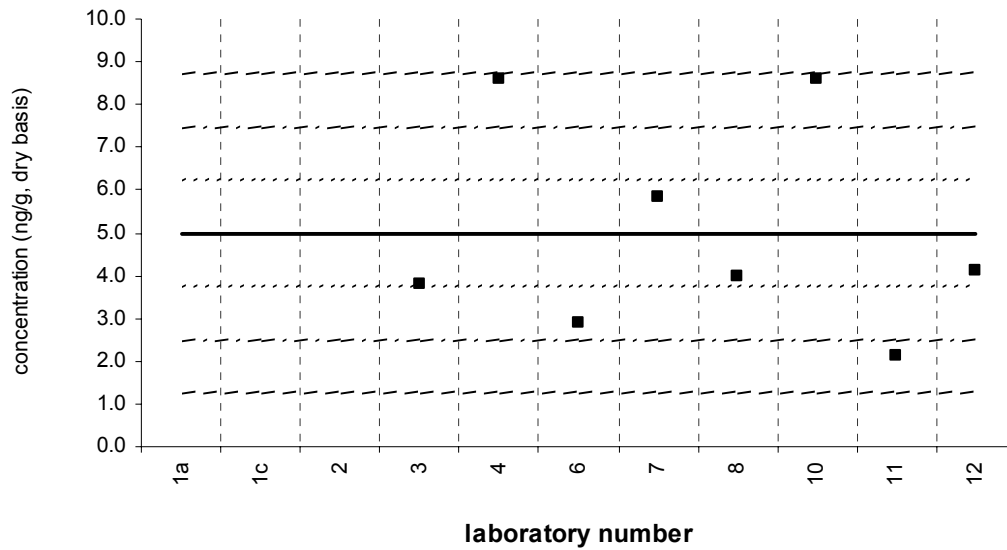
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 153**

**Sediment XIII (QA05SED13)**

Assigned value = 4.99 ng/g s = 2.46 ng/g 95% CL = 2.06 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 8



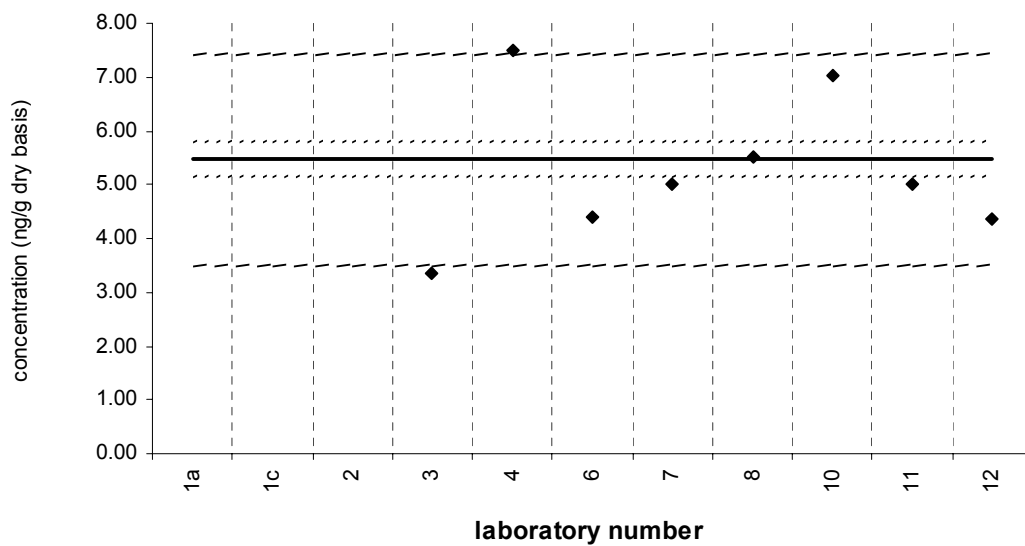
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

**PCB 153**

**SRM 1941b**

Certified Value = 5.47 ± 0.32 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 8



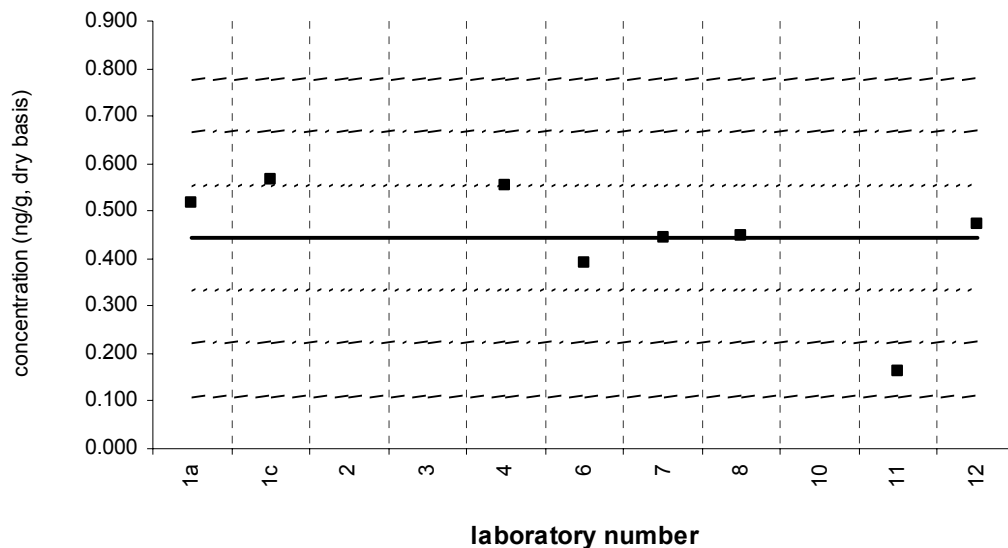
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 156**

**Sediment XIII (QA05SED13)**

Assigned value = 0.444 ng/g  $s = 0.128$  ng/g 95% CL = 0.107 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 8



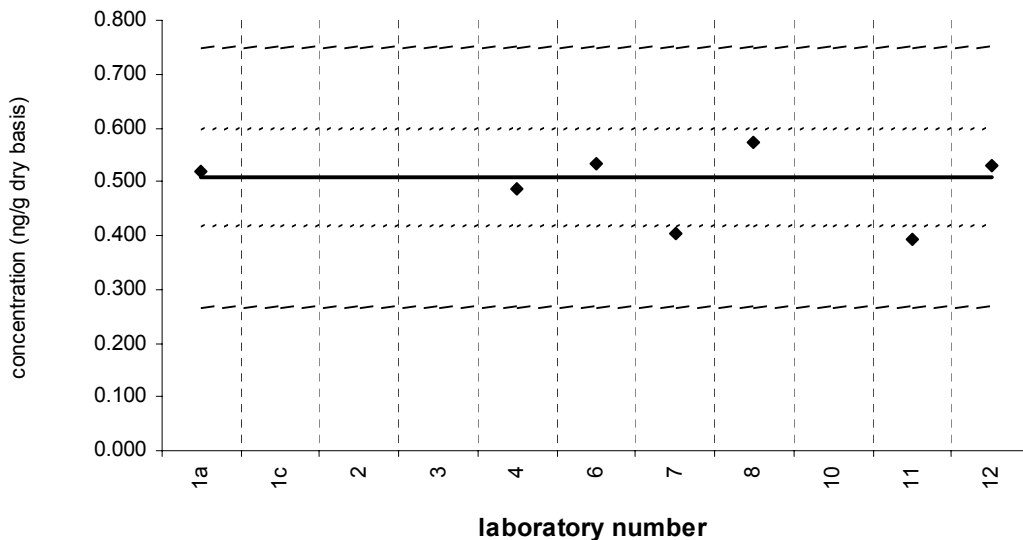
Solid line : exercise assigned value (EAV); dotted line:  $z = \pm 1$  (25% from EAV); dotted/dashed line:  $z = \pm 2$  (50% from EAV); dashed line:  $z = \pm 3$  (75% from EAV)

**PCB 156**

**SRM 1941b**

Certified Value =  $0.507 \pm 0.090$  ng/g (dry basis)

Reported Results: 7 Quantitative Results: 7



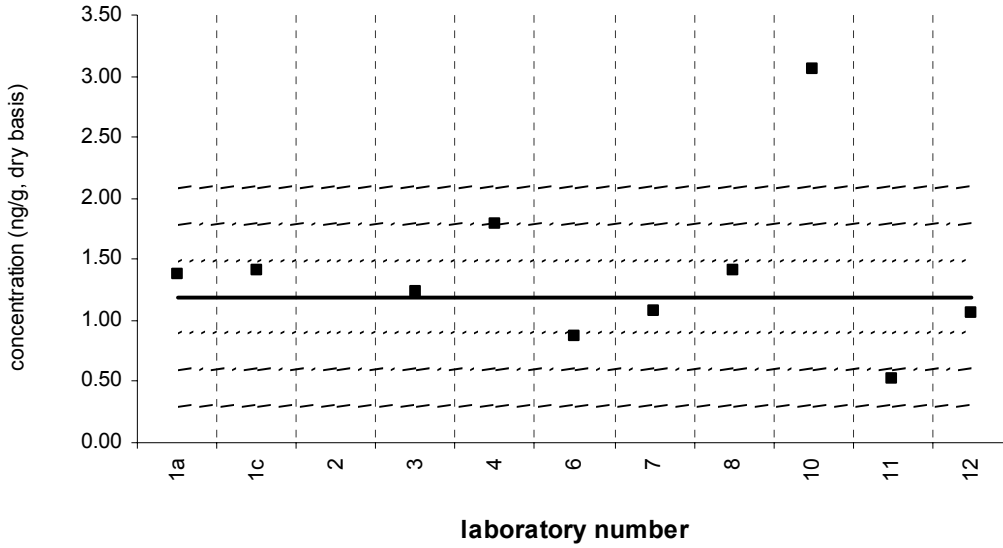
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 170**

**Sediment XIII (QA05SED13)**

Assigned value = 1.19 ng/g  $s = 0.36$  ng/g 95% CL = 0.28 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10



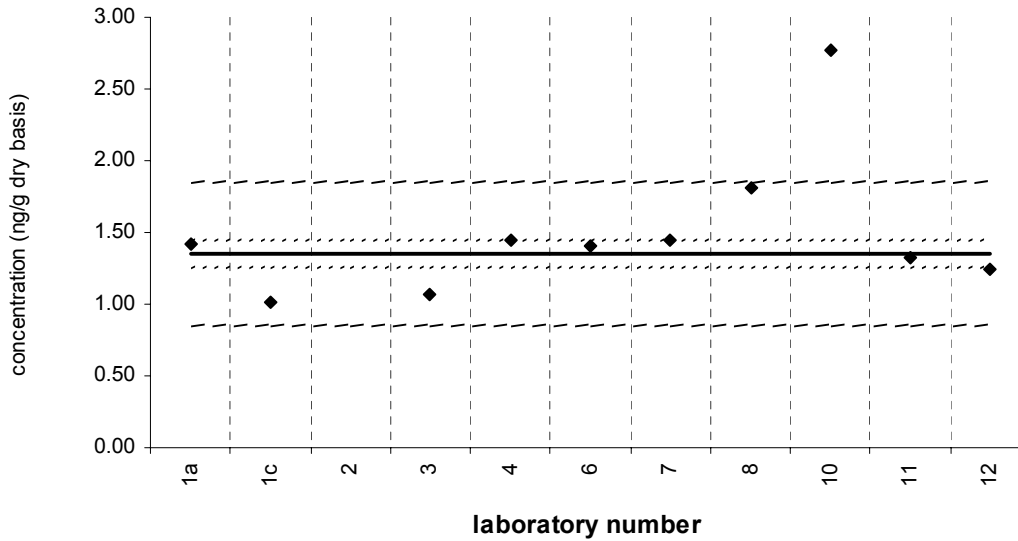
Solid line : exercise assigned value (EAV); dotted line:  $z = \pm 1$  (25% from EAV); dotted/dashed line:  $z = \pm 2$  (50% from EAV); dashed line:  $z = \pm 3$  (75% from EAV)

**PCB 170**

**SRM 1941b**

Certified Value =  $1.35 \pm 0.09$  ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10



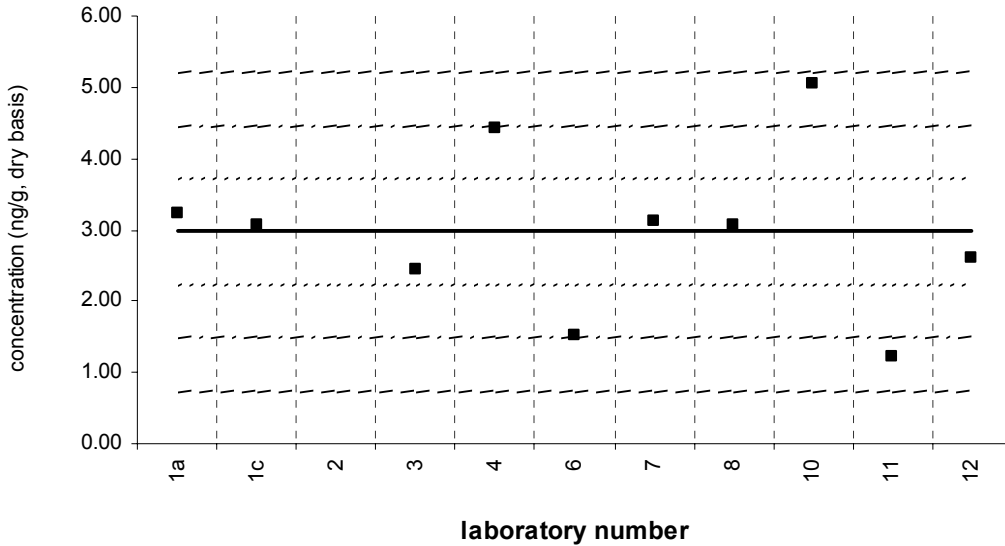
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 180**

**Sediment XIII (QA05SED13)**

Assigned value = 2.97 ng/g  $s = 1.15$  ng/g 95% CL = 0.83 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10



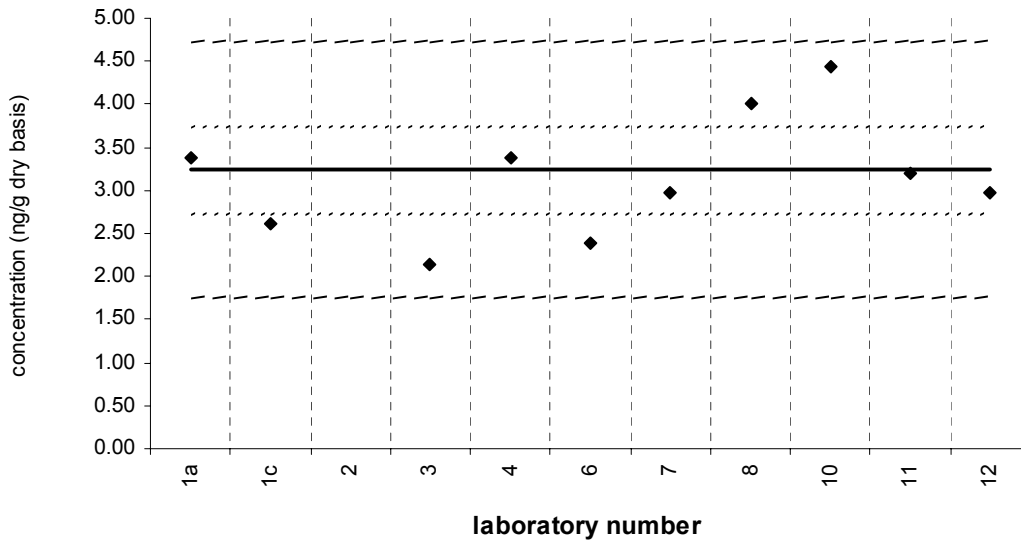
Solid line : exercise assigned value (EAV); dotted line:  $z = \pm 1$  (25% from EAV); dotted/dashed line:  $z = \pm 2$  (50% from EAV); dashed line:  $z = \pm 3$  (75% from EAV)

**PCB 180**

**SRM 1941b**

Certified Value =  $3.24 \pm 0.51$  ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10



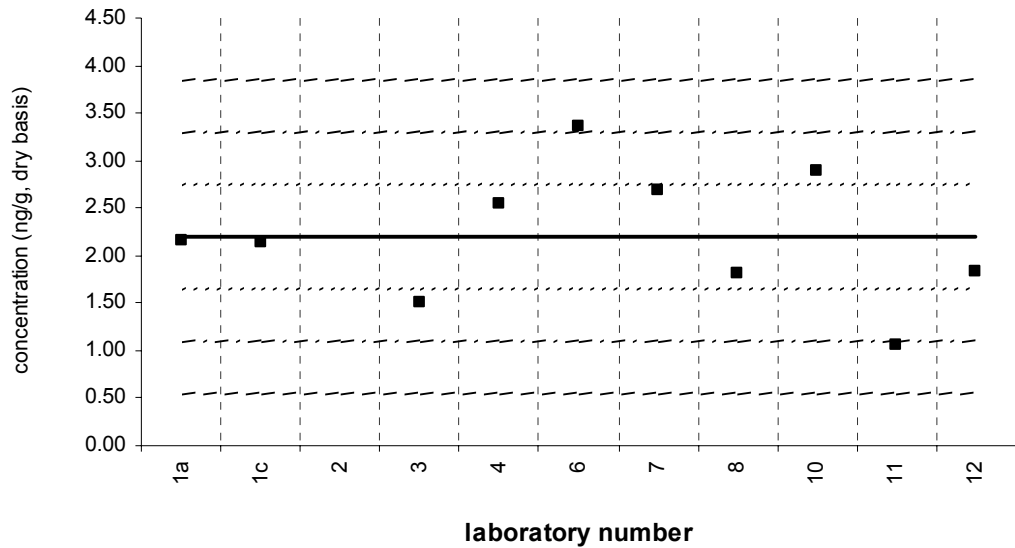
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 187**

**Sediment XIII (QA05SED13)**

Assigned value = 2.20 ng/g  $s = 0.69$  ng/g 95% CL = 0.49 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10



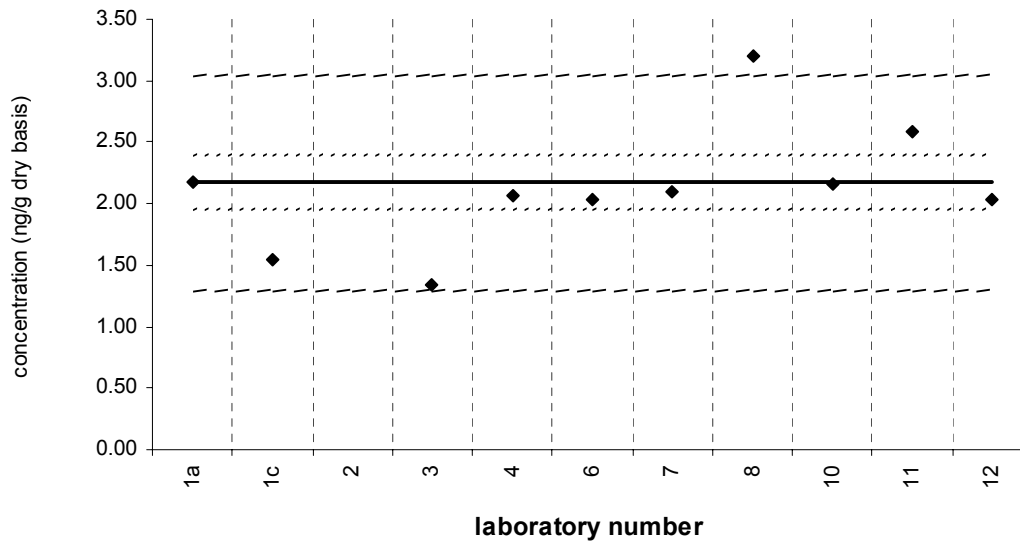
Solid line : exercise assigned value (EAV); dotted line:  $z = \pm 1$  (25% from EAV); dotted/dashed line:  $z = \pm 2$  (50% from EAV); dashed line:  $z = \pm 3$  (75% from EAV)

**PCB 187**

**SRM 1941b**

Certified Value =  $2.17 \pm 0.22$  ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

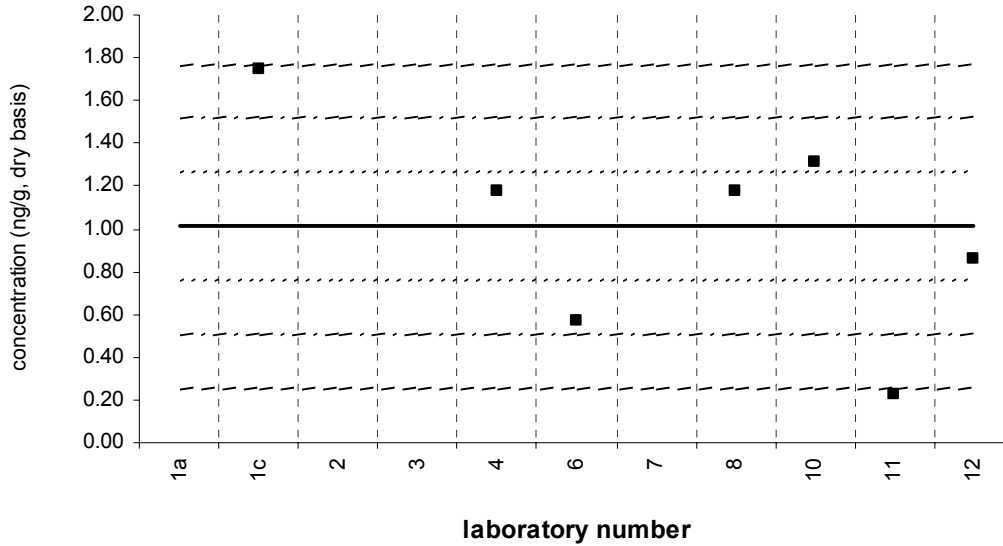


**PCB 194**

**Sediment XIII (QA05SED13)**

Assigned value = 1.01 ng/g  $s = 0.50$  ng/g 95% CL = 0.46 ng/g (dry basis)

Reported Results: 9 Quantitative Results: 7



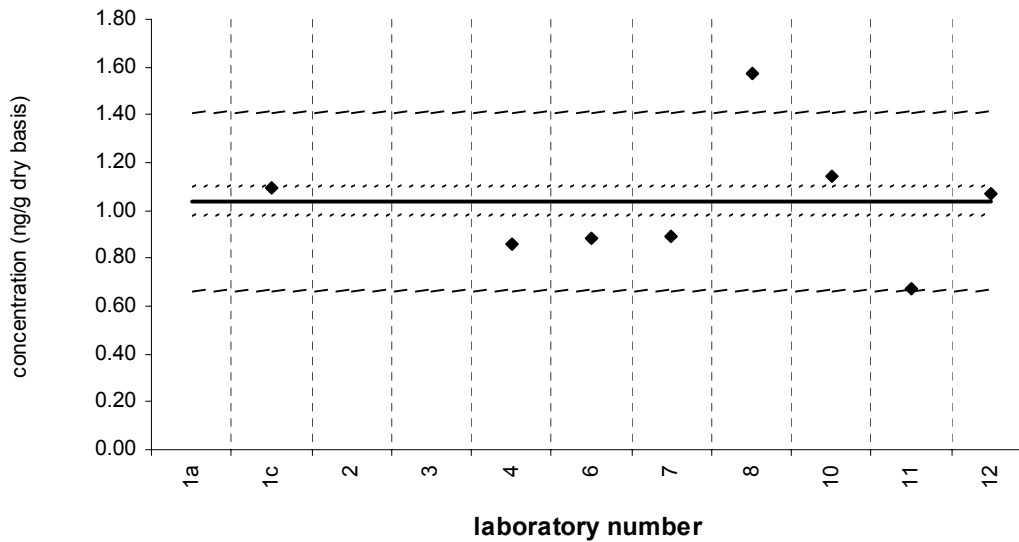
Solid line : exercise assigned value (EAV); dotted line:  $z = \pm 1$  (25% from EAV); dotted/dashed line:  $z = \pm 2$  (50% from EAV); dashed line:  $z = \pm 3$  (75% from EAV)

**PCB 194**

**SRM 1941b**

Certified Value =  $1.04 \pm 0.06$  ng/g (dry basis)

Reported Results: 9 Quantitative Results: 8



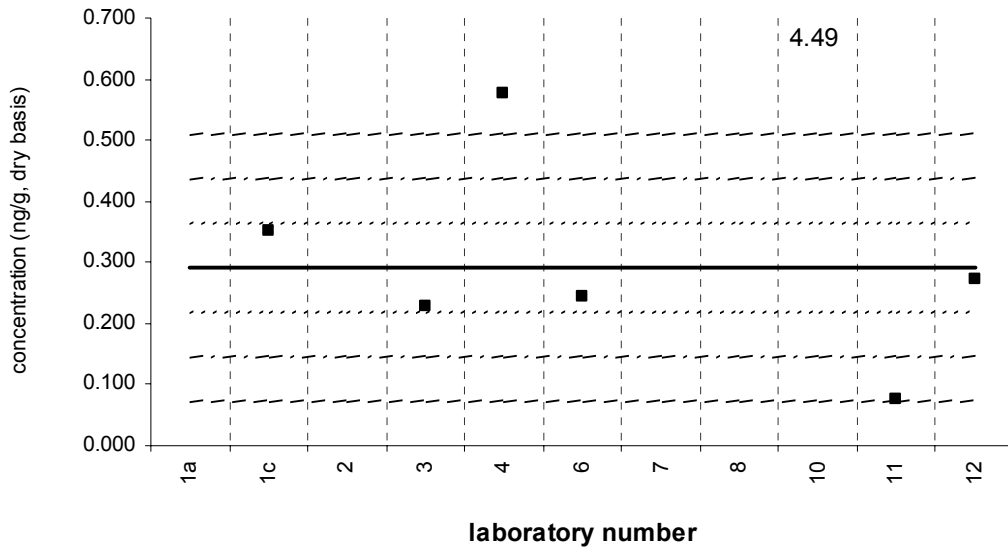
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

### PCB 195

### Sediment XIII (QA05SED13)

Assigned value = 0.291 ng/g  $s = 0.166$  ng/g 95% CL = 0.174 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 7



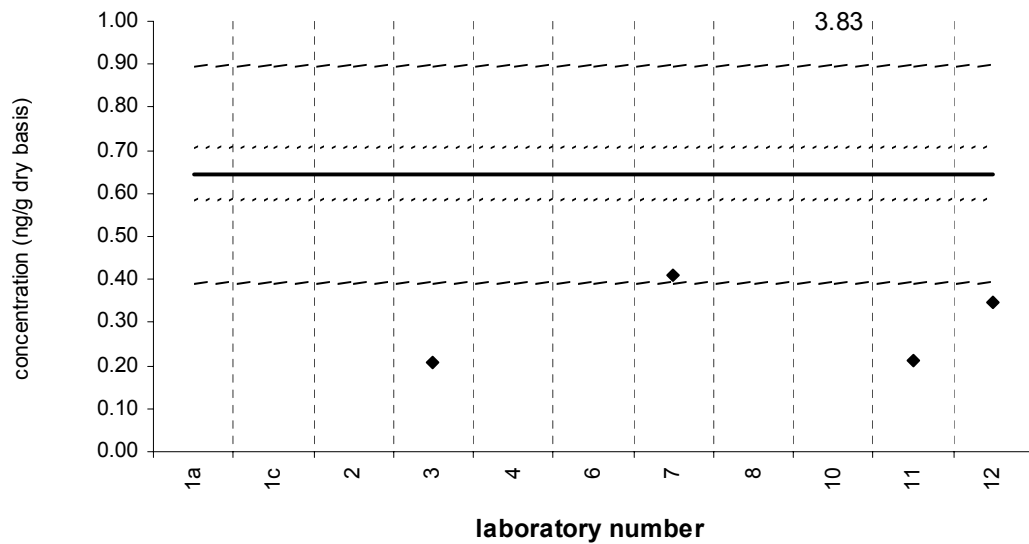
Solid line : exercise assigned value (EAV); dotted line:  $z = \pm 1$  (25% from EAV); dotted/dashed line:  $z = \pm 2$  (50% from EAV); dashed line:  $z = \pm 3$  (75% from EAV)

### PCB 195

### SRM 1941b

Certified Value =  $0.645 \pm 0.060$  ng/g (dry basis)

Reported Results: 10 Quantitative Results: 5



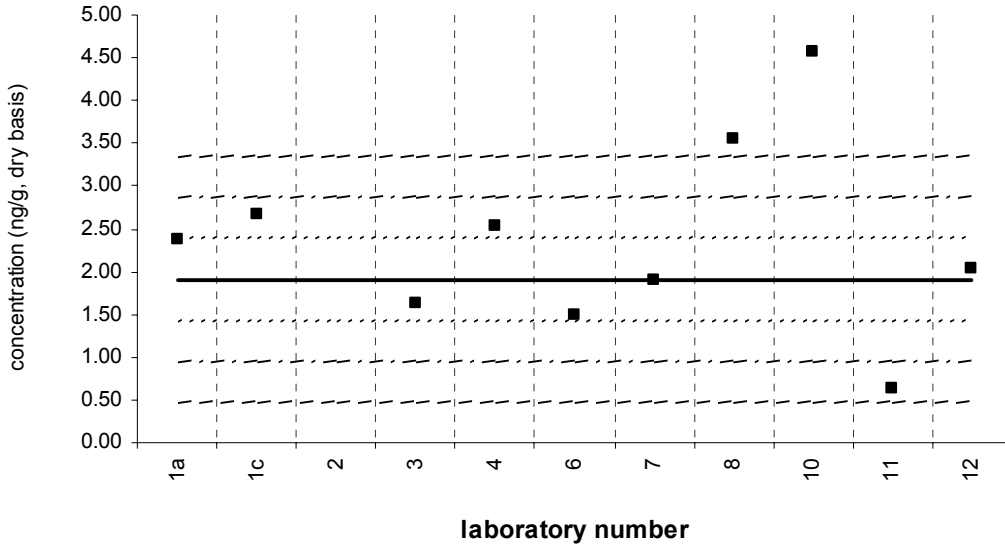
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 206**

**Sediment XIII (QA05SED13)**

Assigned value = 1.91 ng/g  $s = 0.66$  ng/g 95% CL = 0.55 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10



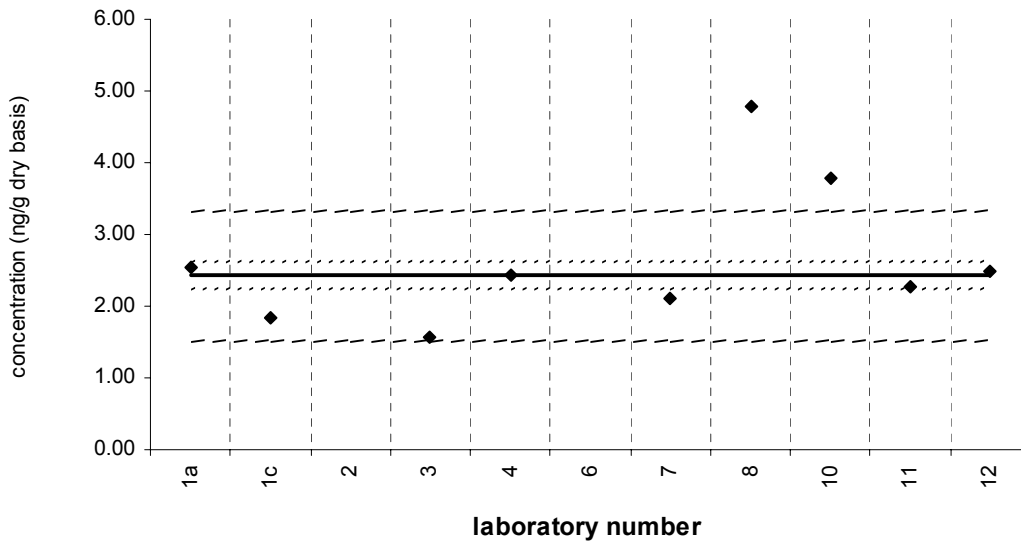
Solid line : exercise assigned value (EAV); dotted line:  $z = \pm 1$  (25% from EAV); dotted/dashed line:  $z = \pm 2$  (50% from EAV); dashed line:  $z = \pm 3$  (75% from EAV)

**PCB 206**

**SRM 1941b**

Certified Value =  $2.42 \pm 0.19$  ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9



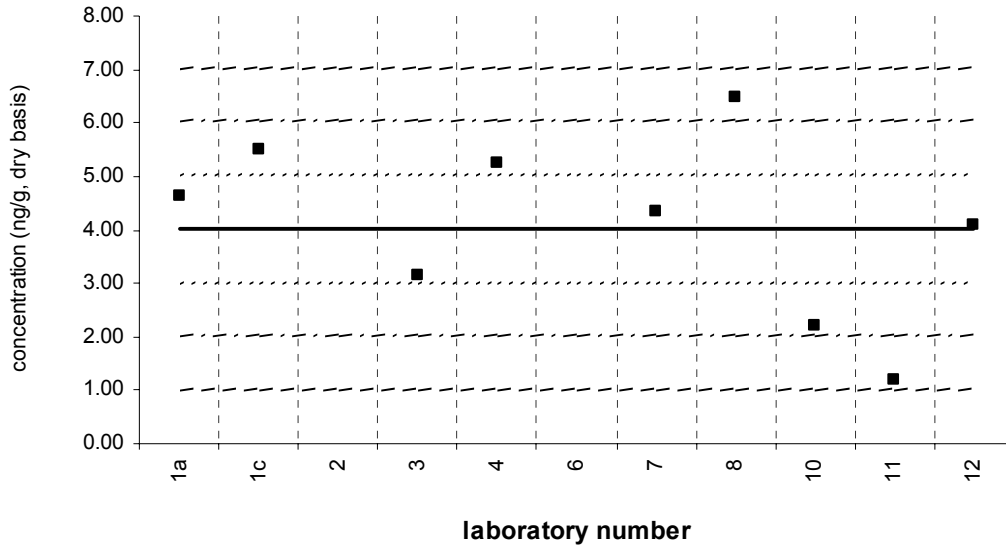
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**PCB 209**

**Sediment XIII (QA05SED13)**

Assigned value = 4.02 ng/g  $s = 1.47$  ng/g 95% CL = 1.36 ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9



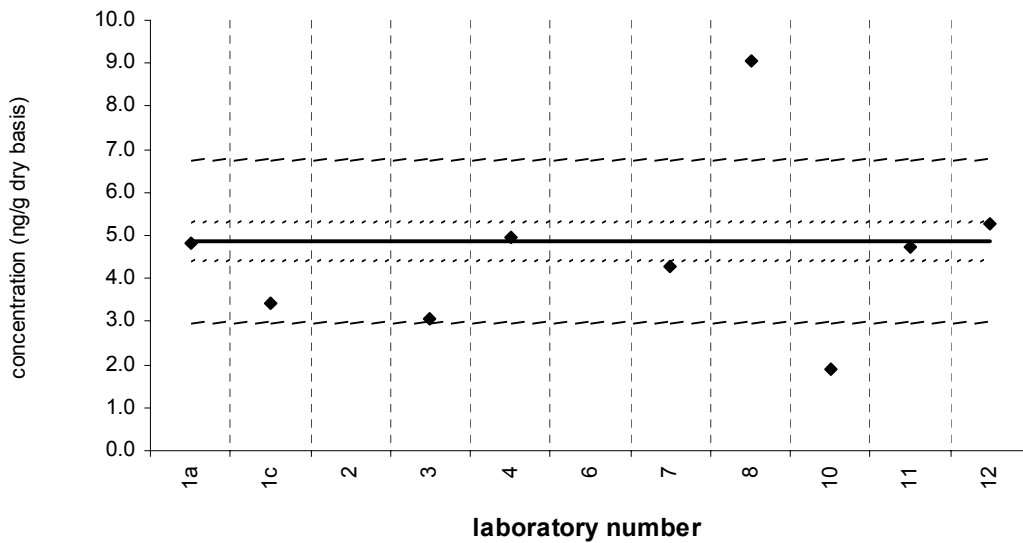
Solid line : exercise assigned value (EAV); dotted line:  $z = \pm 1$  (25% from EAV); dotted/dashed line:  $z = \pm 2$  (50% from EAV); dashed line:  $z = \pm 3$  (75% from EAV)

**PCB 209**

**SRM 1941b**

Certified Value =  $4.86 \pm 0.45$  ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9



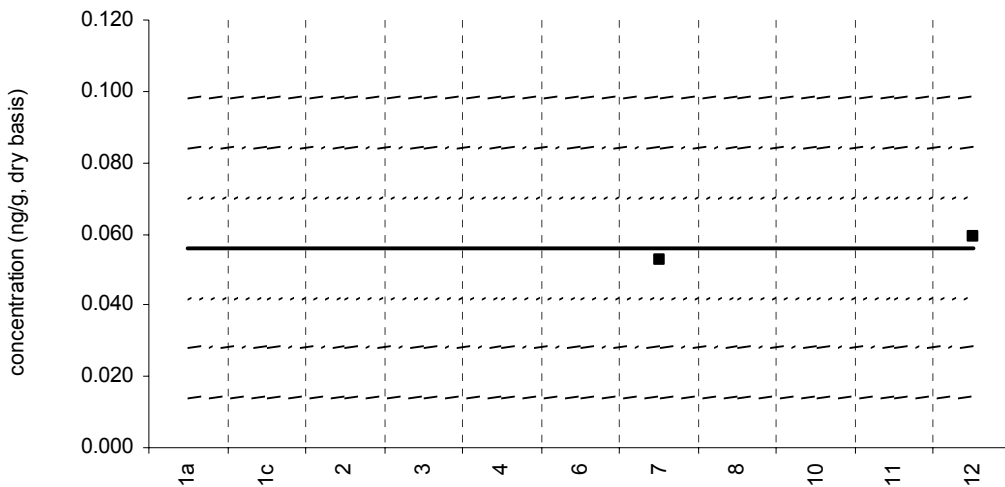
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**BDE 28**

**Sediment XIII (QA05SED13)**

Assigned value = 0.056 ng/g  $s = 0.005$  ng/g 95% CL = 0.042 ng/g (dry basis)

Reported Results: 5 Quantitative Results: 2



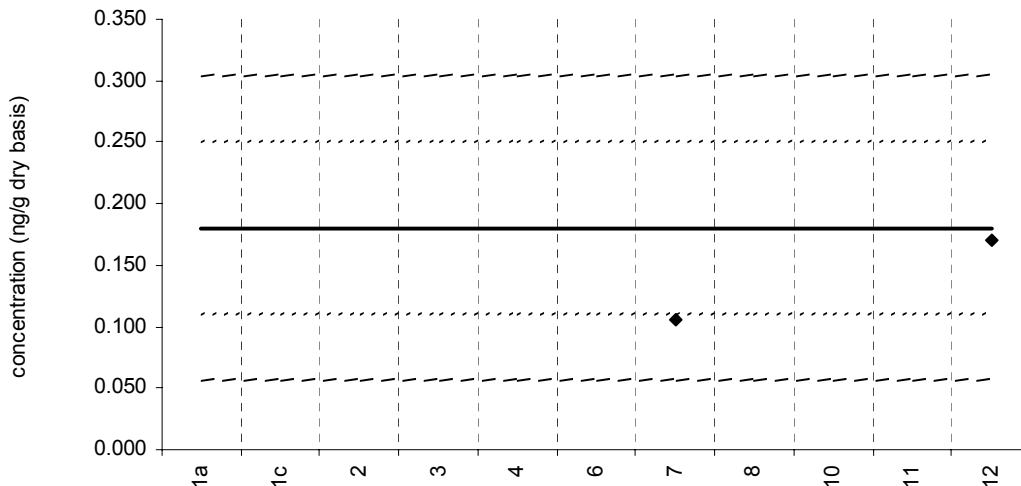
laboratory number

Solid line : exercise assigned value (EAV); dotted line:  $z = \pm 1$  (25% from EAV); dotted/dashed line:  $z = \pm 2$  (50% from EAV); dashed line:  $z = \pm 3$  (75% from EAV)

**BDE 28**

**SRM 1941b**

Target Value =  $0.18 \pm 0.07$  ng/g (dry basis)  
Reported Results: 5 Quantitative Results: 2

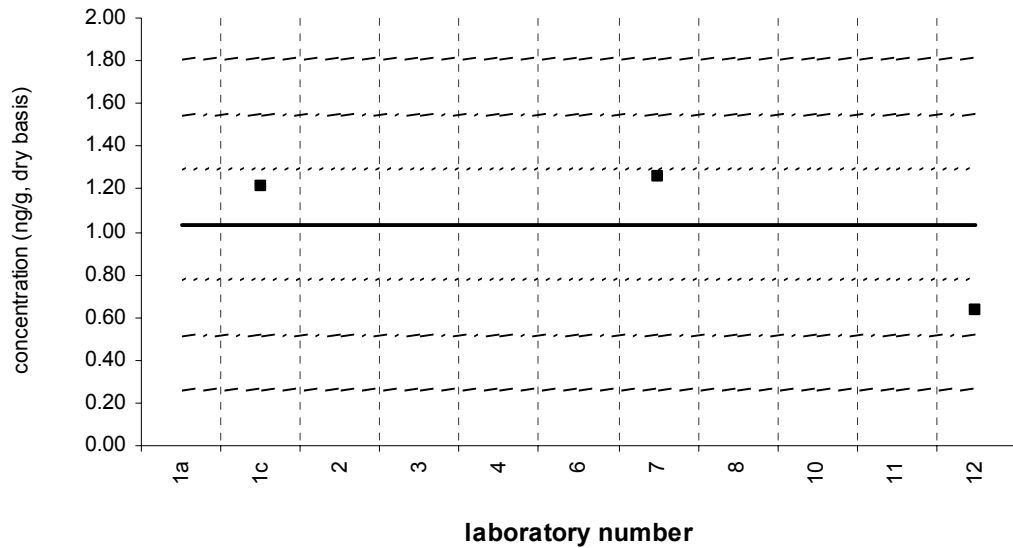


laboratory number

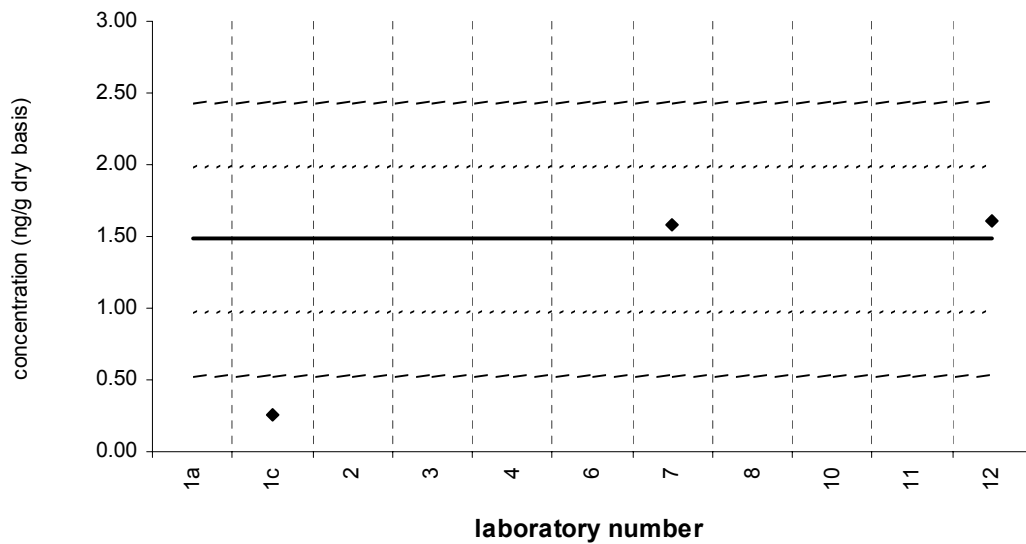
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**BDE 47****Sediment XIII (QA05SED13)**Assigned value = 1.03 ng/g  $s = 0.35$  ng/g 95% CL = 0.86 ng/g (dry basis)

Reported Results: 5 Quantitative Results: 3

Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)**BDE 47****SRM 1941b**Target Value =  $1.48 \pm 0.51$  ng/g (dry basis)

Reported Results: 5 Quantitative Results: 3



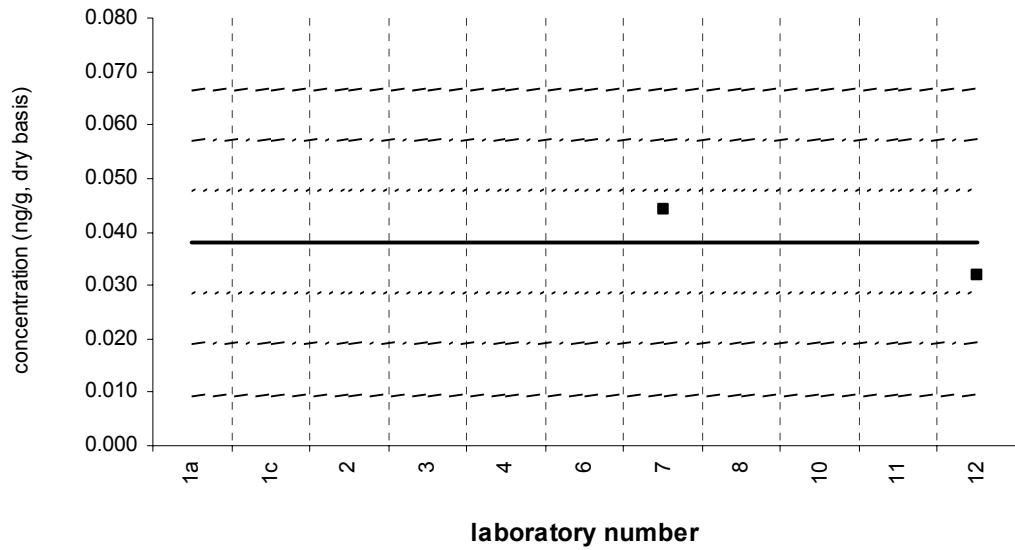
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**BDE 66**

**Sediment XIII (QA05SED13)**

Assigned value = 0.038 ng/g  $s = 0.009$  ng/g 95% CL = 0.078 ng/g (dry basis)

Reported Results: 5 Quantitative Results: 2



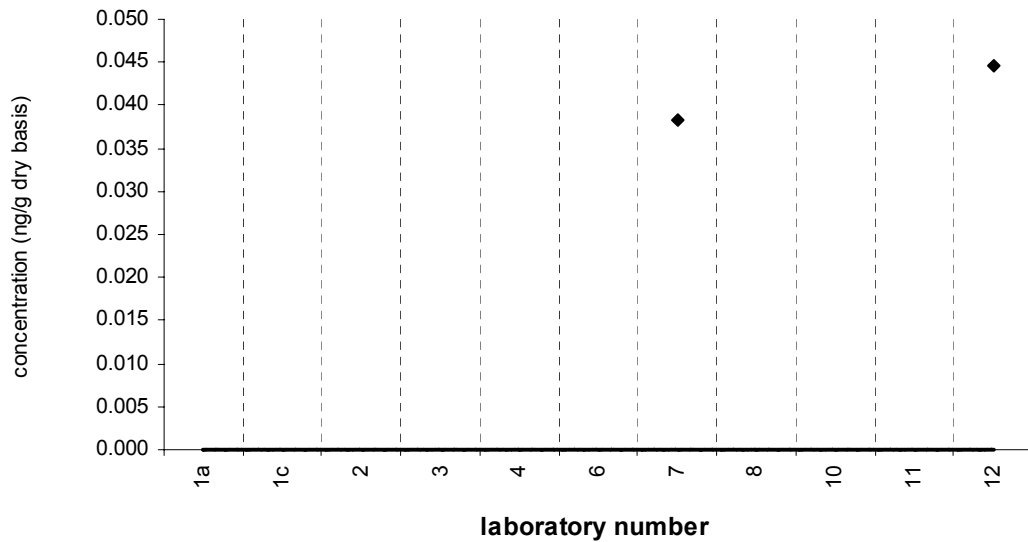
Solid line : exercise assigned value (EAV); dotted line:  $z=\pm 1$  (25% from EAV); dotted/dashed line:  $z=\pm 2$  (50% from EAV); dashed line:  $z=\pm 3$  (75% from EAV)

**BDE 66**

**SRM 1941b**

Target Value = no target ng/g (dry basis)

Reported Results: 5 Quantitative Results: 2

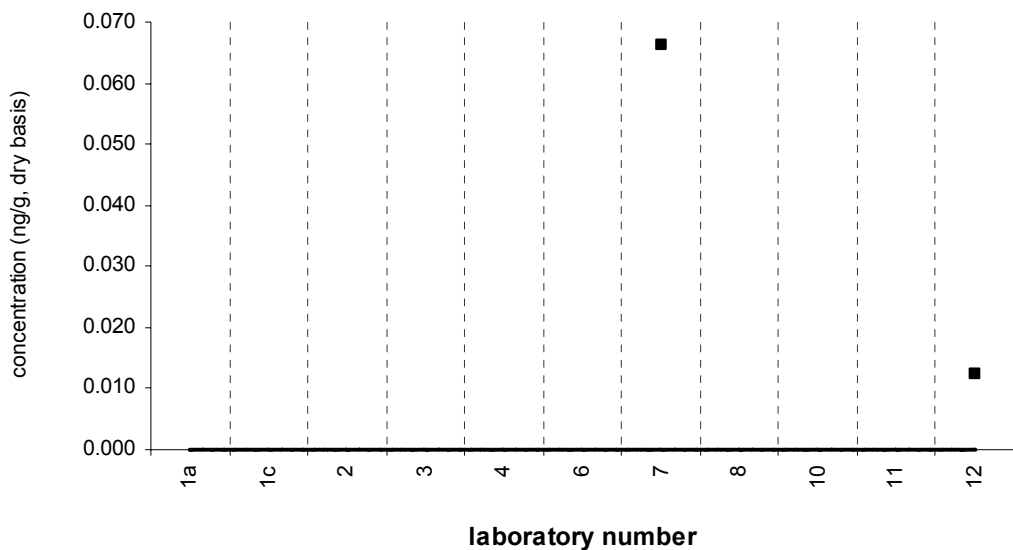


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**BDE 85**

**Sediment XIII (QA05SED13)**

Assigned value = no target ng/g (dry basis)  
Reported Results: 5    Quantitative Results: 2

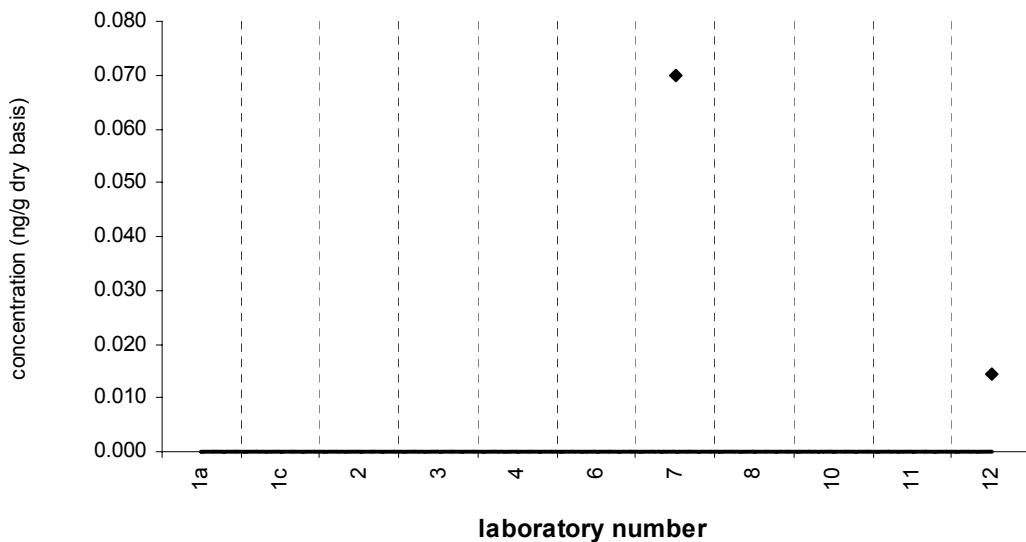


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

**BDE 85**

**SRM 1941b**

Target Value = no target ng/g (dry basis)  
Reported Results: 5    Quantitative Results: 2



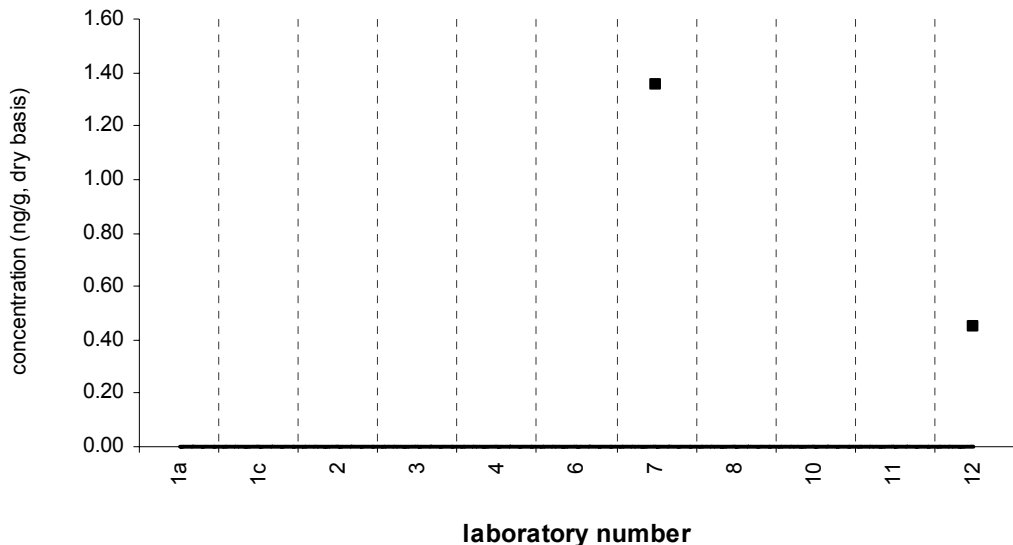
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits



**BDE 99**

**Sediment XIII (QA05SED13)**

Assigned value = no target ng/g (dry basis)  
Reported Results: 5    Quantitative Results: 2

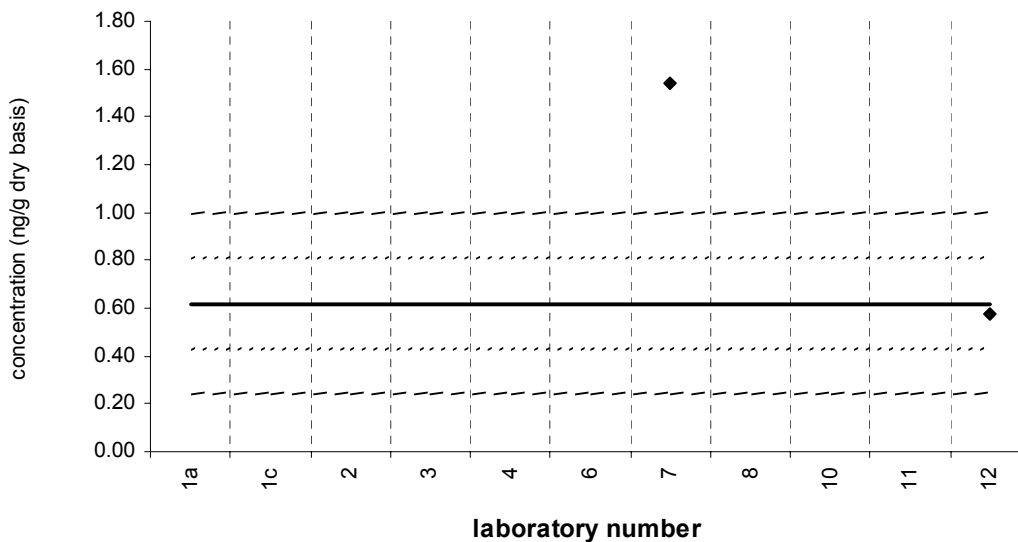


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

**BDE 99**

**SRM 1941b**

Target Value = 0.62 ± 0.19 ng/g (dry basis)  
Reported Results: 5    Quantitative Results: 2

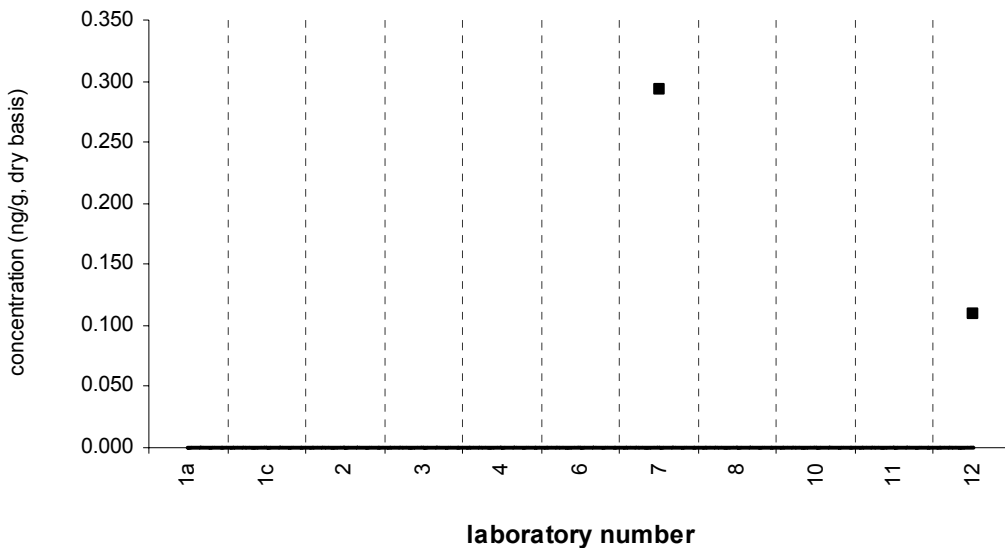


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**BDE 100**

**Sediment XIII (QA05SED13)**

Assigned value = no target ng/g (dry basis)  
Reported Results: 5    Quantitative Results: 2

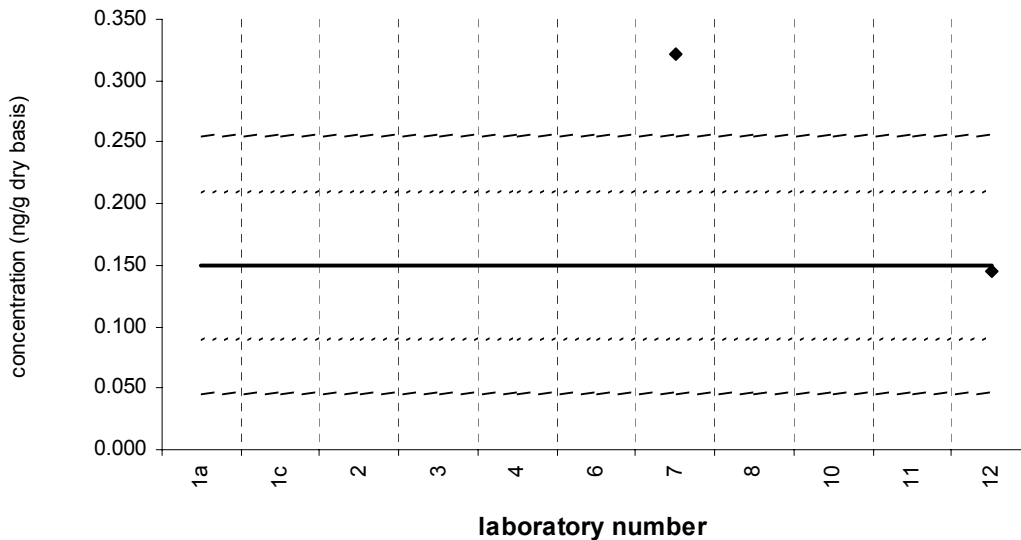


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

**BDE 100**

**SRM 1941b**

Target Value = 0.15 ± 0.06 ng/g (dry basis)  
Reported Results: 5    Quantitative Results: 2

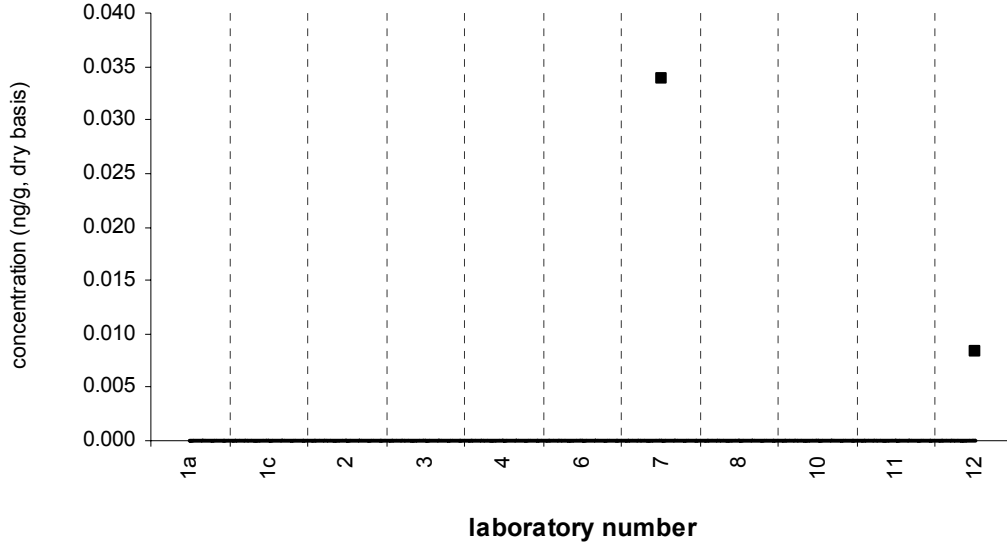


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**BDE 138**

**Sediment XIII (QA05SED13)**

Assigned value = no target ng/g (dry basis)  
Reported Results: 4    Quantitative Results: 2

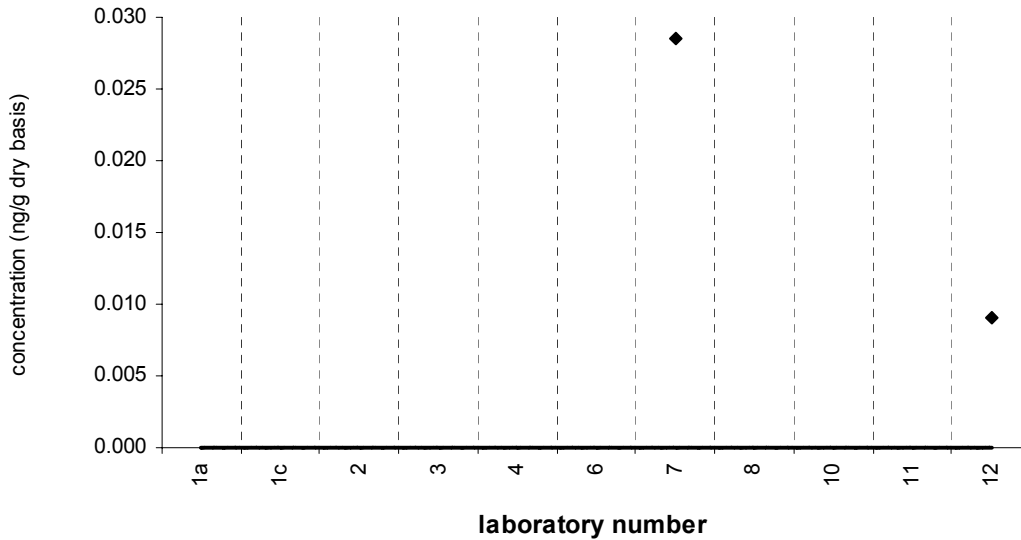


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

**BDE 138**

**SRM 1941b**

Target Value = no target ng/g (dry basis)  
Reported Results: 4    Quantitative Results: 2

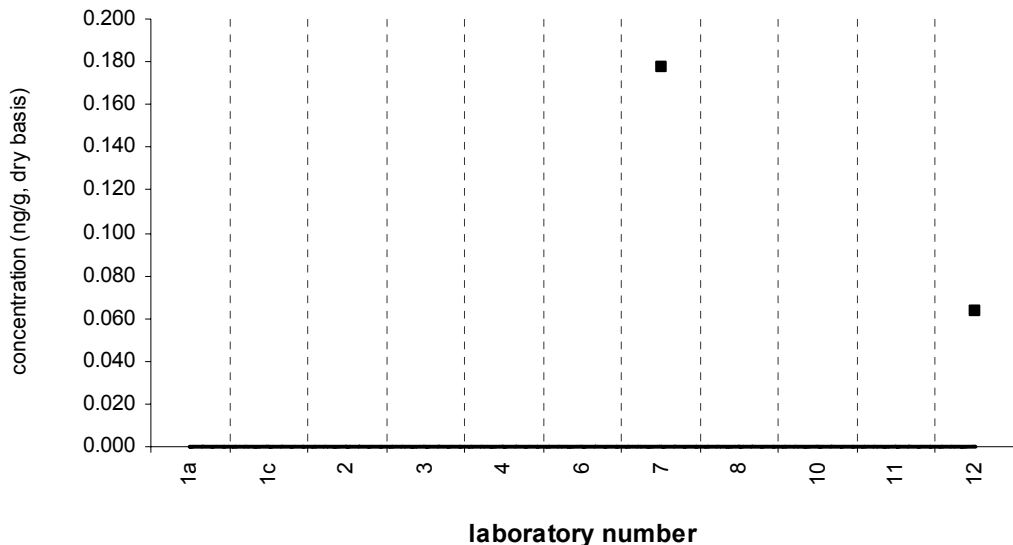


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**BDE 153**

**Sediment XIII (QA05SED13)**

Assigned value = no target ng/g (dry basis)  
Reported Results: 5    Quantitative Results: 2

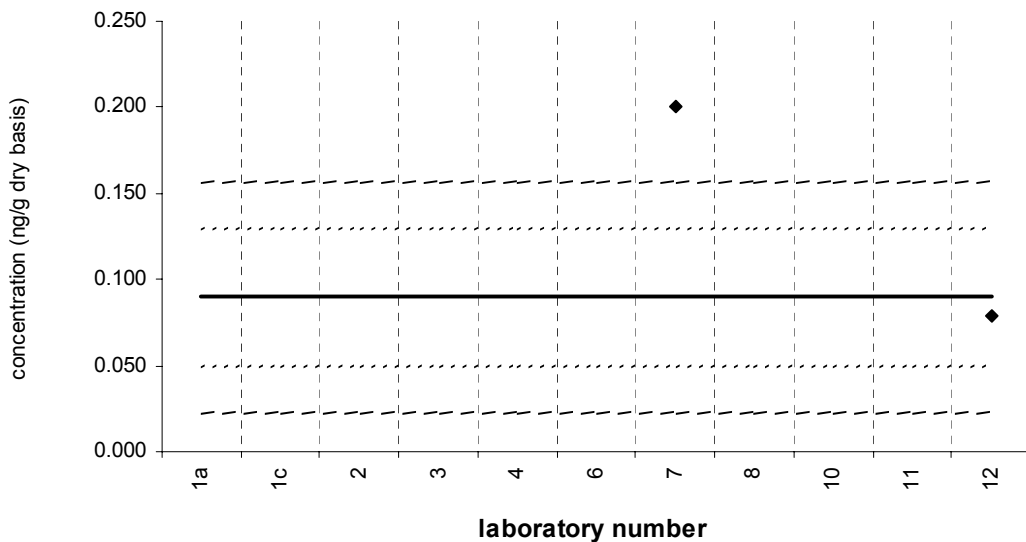


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

**BDE 153**

**SRM 1941b**

Target Value = 0.09 ± 0.04 ng/g (dry basis)  
Reported Results: 5    Quantitative Results: 2

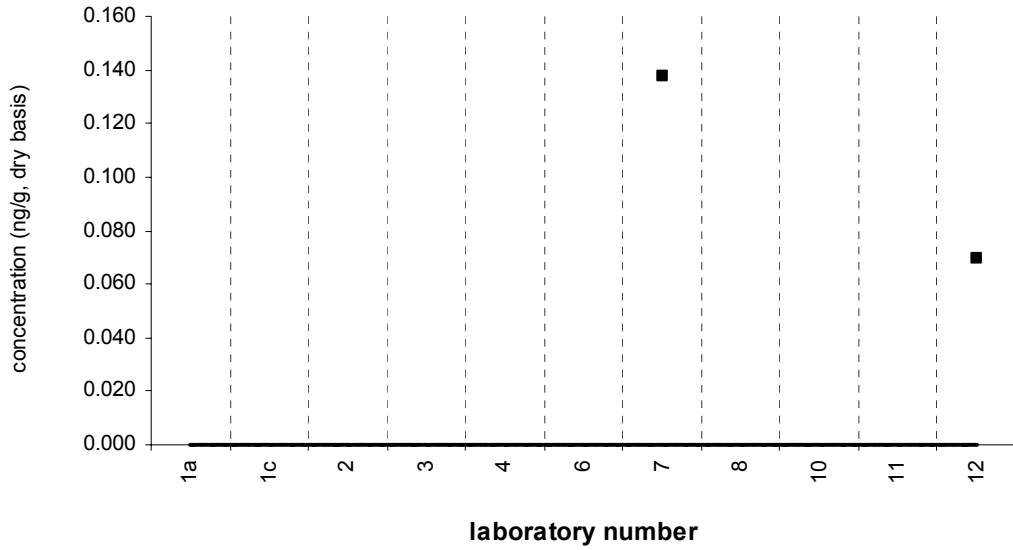


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**BDE 154**

**Sediment XIII (QA05SED13)**

Assigned value = no target ng/g (dry basis)  
Reported Results: 5    Quantitative Results: 2

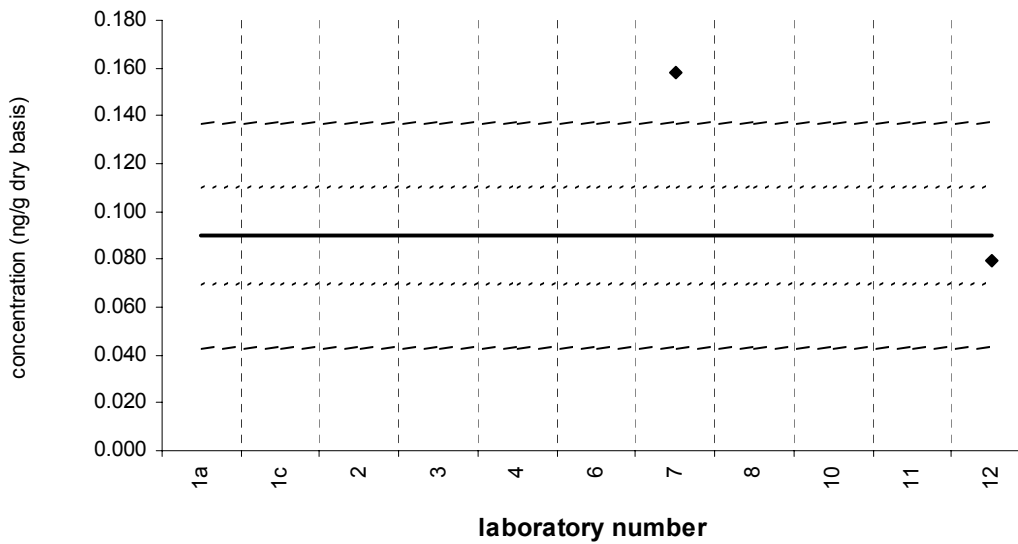


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

**BDE 154**

**SRM 1941b**

Target Value = 0.09 ± 0.02 ng/g (dry basis)  
Reported Results: 5    Quantitative Results: 2



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

**Appendix I: Data Submitted After the First Draft of this Report  
Was Distributed to the Participants**

Two Laboratories Submitted Data after the first draft of this report for Mussel TissueXII (QA05TIS12) and the associated control sample.

Laboratory No.	QA05TIS12		QA05TIS12		QA05TIS12		SRM 2977					
	Lab 14 mean	RSD	Lab 15 mean	RSD	Value	s	Lab 14 SRM 1974b	Lab 15 mean				
TEO (percent)	5.7		6.5	3.46%	3.81	4.73	6.51	3.46%				
PAHs (ng/g dry mass)												
naphthalene	23.0	15.65%	18.1	8.93%	9.86	6.07	SRM 1974b	11.8	70.85%	5	Reference	
2-methylnaphthalene	13.9	7.10%	9.51	0.15%	8.00	5.16	SRM 1974b	9.37	52.15%	5	Reference	
1-methylnaphthalene	6.42	11.95%	5.70	3.45%	3.66	2.44	SRM 1974b	7.43	42.91%	5	Reference	
biphenyl	6.71	14.00%	8.68	2.94%	1.91	0.77	SRM 1974b	5.78	69.96%	0.6	Reference	
2,6-dimethylnaphthalene	3.59	11.36%	4.07	3.96%	4.67	2.85	SRM 1974b	13.2	13.21%	no target	Target	
acenaphthylene	5.09	5.51%	0.605	8.61%	3.72	2.40	SRM 1974b	2.20	16.22%	no target	Target	
acenaphthene			1.11	6.18%	2.93	2.21	SRM 1974b	2.63	9.16%	4.2	Reference	
1,6,7-trimethylnaphthalene	7.21	15.51%	3.30	2.19%	4.78	1.65	SRM 1974b	16.9	0.90%	no target	Target	
fluorene	4.84	11.39%	2.95	2.94%	3.64	1.64	SRM 1974b	6.87	3.04%	10.24	0.43	Certified
phenanthrene	25.8	8.10%	74.8	7.90%	88.7	17.9	SRM 1974b	31.3	0.99%	35.1	3.8	Certified
anthracene	5.76	10.15%	0.981	13.03%	5.79	3.24	SRM 1974b	2.29	11.06%	8	Reference	
1-methylphenanthrene	10.4	25.88%	55.8	14.79%	89.7	27.7	SRM 1974b	44.6	10.42%	44	2	Reference
fluoranthene	167	17.79%	126	2.10%	133	30	SRM 1974b	28.8	4.71%	38.7	1	Certified
pyrene	198	4.51%	126	2.43%	190	40	SRM 1974b	58.1	11.54%	78.9	3.5	Certified
benz[a]anthracene	47.5	13.86%	27.3	12.41%	24.7	7.1	SRM 1974b	14.0	8.17%	20.34	0.78	Certified
chrysene	90.0	11.54%	104	4.73%	63.9	22.4	SRM 1974b	69.0	4.60%	49	2	Reference
triphenylene			NA		no target		SRM 1974b	NA		39	1	Reference
benzo[b]fluoranthene	70.4	4.26%	87.8	7.21%	47.6	12.6	SRM 1974b	17.8	6.33%	11.01	0.28	Certified
benzo[j]fluoranthene	52.5	3.36%	NA		no target		SRM 1974b	NA		4.6	0.2	Reference
benzo[k]fluoranthene			16.6	9.71%	16.3	2.4	SRM 1974b	5.39	12.47%	4	1	Reference
benzo[e]pyrene	95.3	1.82%	124	2.32%	74.7	14.6	SRM 1974b	17.4	6.15%	13.1	1.1	Certified
benzo[a]pyrene	28.9	25.18%	4.28	1.19%	7.25	2.65	SRM 1974b	5.08	5.94%	8.35	0.72	Certified
perylene	10.3	3.95%	3.08	10.77%	3.51	1.44	SRM 1974b	2.70	26.78%	3.5	0.76	Certified
indeno[1,2,3-cd]pyrene	24.1	8.27%	13.3	3.25%	15.1	6.4	SRM 1974b	2.78	14.08%	4.84	0.81	Certified
dibenz[a,h]anthracene			4.22	5.63%	no target		SRM 1974b	2.19	82.20%	1.41	0.19	Certified
benzo[ghi]perylene	33.2	12.18%	26.5	4.46%	24.6	6.4	SRM 1974b	8.17	11.64%	9.53	0.43	Certified

Pesticides (ng/g dry mass)	QA05TIS12			QA05TIS12			QA05TIS12			SRM 2977			
	Lab 14		Lab 15	Exercise Assigned		Value	RSD	Lab 15		Lab 14	Lab 15	From 2977 Certificate of Analysis	
	mean	RSD	mean	s	s	95% CL	mean	RSD	mean	RSD	no target	Certificate of Analysis	
alpha-HCH (a-BHC)	NA		<0.69		no target			SRM 1974b	<0.69		no target		
hexachlorobenzene	NA		0.093		no target	50.10%		SRM 1974b	0.266	28.08%	no target	Target	
gamma-HCH (g-BHC, lindane)	NA		<0.66		no target			SRM 1974b	<0.66		no target	Target	
beta-HCH (b-BHC)	NA		<0.68		no target			SRM 1974b	7.49	7.70%	no target	Target	
heptachlor	NA		<0.75		no target			SRM 1974b	<0.75		no target	Target	
aldrin	NA		<0.73		no target			SRM 1974b	<0.73		no target	Target	
heptachlor epoxide	NA		<0.68		no target			SRM 1974b	<0.68		no target	Target	
oxychlorodane	NA		<0.83		no target			SRM 1974b	<0.83		no target	Target	
gamma-chlordane	NA		6.13	1.00	7.45	12.15%	0.77	SRM 1974b	0.870	3.93%	no target	Target	
2,4'-DDE	7.89	13.43%	1.84		no target	2.44%		SRM 1974b	0.264	7.09%	no target	Target	
endosulfan I	NA		<0.74		no target			SRM 1974b	<0.74		no target	Target	
cis-chlordane (alpha-chlordane)	NA		8.42	3.4	12.1	5.58%	2.8	SRM 1974b	0.588	9.93%	1.42	0.13	
trans-nonachlor	NA		8.95	1.24	9.00	4.10%	1.04	SRM 1974b	1.04	10.11%	1.43	0.1	
dieldrin	NA		2.55	4.42	6.70	23.53%	4.64	SRM 1974b	5.33	3.71%	6.04	0.52	
4,4'-DDE	38.9	2.80%	33.3	7.6	33.9	1.22%	7.0	SRM 1974b	8.87	3.97%	12.5	1.6	
2,4'-DDD	7.33	12.68%	10.7	2.86	8.04	7.35%	2.20	SRM 1974b	2.96	3.91%	3.32	0.29	
endrin	NA		<0.61		no target			SRM 1974b	1.22	11.79%	no target	Certified	
endosulfan II	NA		<0.74		no target			SRM 1974b	<0.74		no target	Certified	
4,4'-DDD	21.6	4.75%	21.9	10.8	21.7	5.87%	10.0	SRM 1974b	3.04	14.56%	4.3	0.38	
2,4'-DDT	<2.98		4.31		no target	0.58%		SRM 1974b	1.44	38.58%	no target	Target	
cis-nonachlor	NA		6.03	0.76	4.27	2.07%	0.58	SRM 1974b	1.91	5.46%	no target	Certified	
4,4'-DDT	1.35	24.79%	2.55	0.63	1.68	36.81%	1.00	SRM 1974b	0.897	8.17%	1.28	0.18	
mirex	NA		0.345		no target	2.68%		SRM 1974b	0.363	43.50%	no target	Target	
endosulfan sulfate	NA		<0.81		no target			SRM 1974b	<0.81		no target	Target	
chlorpyrifos	NA		<0.74		no target			SRM 1974b	<0.74		no target	Target	



PCBs (ng/g dry mass)	QA05TIS12			QA05TIS12			QA05TIS12			SRM 2977		
	Lab 14		Lab 15		Exercise Assigned		Lab 14		Lab 15		From 2977 Certificate of Analysis	
	mean	RSD	mean	RSD	Value	s	95% CL	SRM 1974b	mean	RSD	no target	Certified
PCB 8	3.02	7.99%	3.10	5.65%	2.56	0.60	0.75	SRM 1974b	1.84	22.70%	2.1	0.15
PCB 18	8.22	17.05%	6.68	2.40%	5.71	1.87	1.34	SRM 1974b	2.81	24.14%	2.65	0.3
PCB 28	26.1	4.87%	30.4	8.21%	23.2	4.6	3.3	SRM 1974b	5.92	9.23%	5.37	0.44
PCB 31	19.8	3.86%	29.4	6.54%	21.7	3.1	3.2	SRM 1974b	3.47	12.17%	3.92	0.24
PCB 44	35.7	1.65%	36.8	6.00%	31.4	11.2	8.0	SRM 1974b	3.70	5.73%	3.25	0.63
PCB 49	NA		50.5	4.12%	37.2	11.3	8.7	SRM 1974b	<0.71		no target	Target
PCB 52	65.0	1.78%	58.7	4.24%	46.6	10.7	7.6	SRM 1974b	10.8	5.52%	8.37	0.54
PCB 66	58.4	1.96%	56.0	1.07%	48.4	12.4	8.3	SRM 1974b	2.79	11.27%	3.64	0.32
PCB 95	66.1	7.41%	49.9	7.38%	51.5	9.2	8.5	SRM 1974b	6.47	10.40%	5.39	0.59
PCB 99	59.5	5.30%	57.6	2.42%	47.0	7.2	6.7	SRM 1974b	2.31	9.50%	no target	Target
PCB 101	123	5.71%	102	1.73%	88.1	14.4	11.1	SRM 1974b	11.0	7.71%	11.2	1.2
PCB 105	39.1	2.31%	28.5	0.76%	31.1	5.3	3.8	SRM 1974b	2.69	7.09%	3.76	0.49
PCB 118	112	3.77%	106	1.03%	79.9	15.9	11.4	SRM 1974b	11.1	3.32%	10.5	1
PCB 128	17.2	3.07%	13.7	2.52%	13.0	2.2	1.7	SRM 1974b	1.71	14.94%	2.49	0.28
PCB 138	102	3.48%	106	2.17%	64.1	14.9	15.7	SRM 1974b	12.4	1.90%	no target	Target
PCB 149	65.3	5.05%	43.9	3.30%	61.5	11.2	11.7	SRM 1974b	5.94	8.94%	9.23	0.12
PCB 153	110	3.14%	152	2.03%	85.7	29.6	21.2	SRM 1974b	17.7	10.24%	14.1	1
PCB 156	5.45	2.86%	12.2	1.86%	5.64	1.25	1.16	SRM 1974b	1.11	13.01%	0.96	0.085
PCB 170	2.50	0.88%	2.13	42.55%	1.80	0.38	0.29	SRM 1974b	2.97	10.75%	2.95	0.23
PCB 180	9.57	0.86%	7.97	13.34%	9.29	3.11	2.39	SRM 1974b	5.70	10.45%	6.79	0.67
PCB 187	25.7	2.29%	24.8	3.51%	18.0	4.0	2.7	SRM 1974b	4.05	6.78%	4.76	0.38
PCB 194	<0.732		0.967	5.44%	0.501	0.084	0.105	SRM 1974b	0.657	3.16%	0.897	0.042
PCB 195	<2.13		<0.8		no target			SRM 1974b	<0.8		no target	Target
PCB 206	<0.866		<0.87		no target			SRM 1974b	<0.87		no target	Target
PCB 209	<0.973		<0.73		no target			SRM 1974b	<0.73		no target	Target

BDEs (ng/g dry mass)	QA05TIS12			QA05TIS12			QA05TIS12			SRM 2977		
	Lab 14		Lab 15	Exercise Assigned		Value	RSD	Lab 14	Lab 15	RSD	From 2977 Certificate of Analysis	
	mean	RSD	mean	s	s	95% CL	mean	mean	RSD	no target	type	
BDE 15	NA		0.433		no target		SRM 1974b	0.5		no target	no target	
BDE 17	6.23	22.63%	0.767	0.66	3.72	48.04%	SRM 1974b	0.2		no target	no target	
BDE 25	NA		3.93	1.58	no target	19.92%	SRM 1974b	1.5		no target	Target	
BDE 28	2.05	14.35%	0.500		3.08	5.87%	SRM 1974b	0.2		no target	Target	
BDE 30	NA		<8.1		no target	20.00%	SRM 1974b	<8.1		no target	Target	
BDE 33	NA		0.533	5.4	no target	75.78%	SRM 1974b	0.2		no target	Target	
BDE 47	30.4	2.64%	9.63	2.00	23.3	10.08%	SRM 1974b	1.7		no target	Target	
BDE 49	NA		0.500	0.403	6.75	34.64%	SRM 1974b	0.4		1.02	0.03	
BDE 66	<1.13		36.2		0.984	11.35%	SRM 1974b	48.6		0.375	0.062	
BDE 71	<1.18		NA		no target		SRM 1974b	NA		no target	Target	
BDE 75	NA		0.633		no target	32.87%	SRM 1974b	<8.5		0.166	0.013	
BDE 85	<6.15		1.03	0.074	0.418	11.17%	SRM 1974b	0.6		no target	Target	
BDE 99	9.66	5.49%	0.767	3.4	11.5	27.15%	SRM 1974b	0.5		4.11	0.4	
BDE 100	7.12	8.69%	0.400	1.93	6.85	25.00%	SRM 1974b	0.4		1.06	0.18	
BDE 116	NA		16.3		no target	17.30%	SRM 1974b	6.4		no target	Target	
BDE 118	NA		1.13		no target	51.70%	SRM 1974b	0.4		no target	Target	
BDE 119	NA		9.17		no target	40.82%	SRM 1974b	1.5		no target	Target	
BDE 138	<3.13		4.40		no target	47.73%	SRM 1974b	0.7		no target	Target	
BDE 153	<1.00		2.67	0.097	0.515	31.89%	SRM 1974b	0.6		no target	Target	
BDE 154	<5.75		3.57	0.103	0.550	41.62%	SRM 1974b	0.7		no target	Target	
BDE 155	NA		1.17		no target	40.51%	SRM 1974b	0.8		no target	Target	
BDE 156	NA		NA		no target	#DIV/0!	SRM 1974b	NA		no target	Target	
BDE 181	NA		1.47		no target	43.83%	SRM 1974b	0.6		no target	Target	
BDE 183	<1.48		2.90		no target	32.89%	SRM 1974b	0.7		no target	Target	
BDE 190	6.17	0.00%	1.53		no target	42.43%	SRM 1974b	0.8		no target	Target	
BDE 191	NA		NA		no target		SRM 1974b	NA		no target	Target	
BDE 196	NA		NA		no target		SRM 1974b	NA		no target	Target	
BDE 197	NA		NA		no target		SRM 1974b	NA		no target	Target	
BDE 203	NA		NA		no target		SRM 1974b	NA		no target	Target	
BDE 205	NA		NA		no target		SRM 1974b	NA		no target	Target	
BDE 206	NA		NA		no target		SRM 1974b	NA		no target	Target	
BDE 207	NA		NA		no target		SRM 1974b	NA		no target	Target	
BDE 208	NA		NA		no target		SRM 1974b	NA		no target	Target	
BDE 209	NA		NA		no target		SRM 1974b	NA		no target	Target	

Note only one sample of SRM 2977 analyzed by Lab 15 for BDE congeners

## LAB NOTES RECEIVED WITH THE MUSSEL TISSUE DATA:

### Lab 14 notes:

SRM 1974b analyzed instead of SRM 2977.

Chrysene and triphenylene co-elute

Benzo(j)fluoranthene and benzo(k)fluoranthene co-elute

PCB 8 was measured as cong 8+5.

PCB 101 was measured as 101+90+89.

PCB 118 measured as 118+106

PCB 128 measured as 128+167

PCB 138 measured as 164+163+138

PCB 170 measured as 170+190

### Lab 15 notes:

PCB101 coelutes with PCB90

PCB153 coelutes with PCB132 and 168

PCB170 coelutes with PCB190

PCB 8 coelutes with PCB 5

PCB 195 coelutes with PCB208

<symbol refers to values less than our MDL

the chrysene number is the sum of chrysene and triphenylene, we cannot resolve the two we do not analyze for benzo(j)fluoranthenes because it coelutes with benzo(b)fluoranthene

Tissue MDL values are high due to limited sample volume and reporting data on a wet weight basis.

Our MDLs are based on 13.0g wet weight of mussel. Therefore MDLs reported here are approximately 2X higher than those on 13 g wet. Additionally, sample PAH concentrations are low which is compounded by the small sample volume. BDE71 coelutes with BDE47

Three laboratories submitted data for QA05SED13 and the associated control sample after the first draft of this report

	QA05SED13		QA05SED13		QA05SED13		QA05SED13		QA05SED13	
	Lab 13 mean	RSD	Lab 14 mean	RSD	Lab 15 mean	RSD	Value	Exercise Assigned s	95% CL	95% CL
Water (percent)	35.0	21.57%	45.7		46.6	0.99%	47.4	3.2	2.3	2.3
[TOC (percent)]	NA				2.88	0.366%	2.70	0.58	0.92	0.92
PAHs										
mg/g dry mass										
naphthalene	609	22.15%	881	6.61%	709	18.02%	785	186	172	172
2-methylnaphthalene	203	24.73%	322	3.12%	210	19.24%	219	66	61	61
1-methylnaphthalene	82.6	19.68%	131	5.04%	104	17.61%	98.2	24.0	20.0	20.0
biphenyl	34.3	16.98%	82.7	2.22%	60.9	15.08%	65.8	23.6	21.8	21.8
2,6-dimethylnaphthalene	58.3	20.06%	87.4	11.83%	50.6	19.48%	81.3	43.6	40.3	40.3
acenaphthylene	42.1	19.26%	59.3	4.89%	52.9	17.09%	45.1	13.8	11.5	11.5
acenaphthene	20.5	17.33%	42.3	11.46%	25.8	12.36%	28.9	8.4	7.0	7.0
1,6,7-trimethylnaphthalene	NA		73.3	4.81%	16.8	20.24%	no target			
fluorene	41.4	27.33%	79.9	10.19%	53.8	16.71%	56.1	12.2	10.2	10.2
phenanthrene	262	22.42%	440	5.38%	350	13.34%	306	89	75	75
anthracene	125	17.46%	209	3.92%	141	17.75%	137	47	40	40
1-methylphenanthrene	55.5	26.51%	84.4	2.53%	53.8	10.19%	55.4	18.2	19.1	19.1
fluoranthene	521	12.10%	721	3.64%	560	8.24%	496	140	117	117
pyrene	445	18.36%	598	2.80%	451	9.97%	421	142	118	118
benzo[a]anthracene	198	14.48%	432	1.75%	295	9.58%	241	80	67	67
chrysene	267	19.16%	377	5.12%	410	9.68%	219	62	65	65
triphenylene	NA				NA		no target			
benzo[b]fluoranthene	279	14.07%	403	8.48%	567	8.38%	413	174	183	183
benzo[k]fluoranthene	NA		432	6.02%	NA		no target			
benzo[e]fluoranthene	265	12.82%	281	4.49%	213	7.48%	180	56	47	47
benzo[a]pyrene	205	13.71%	350	9.62%	301	6.20%	286	97	75	75
benzo[a]pyrene	188	14.32%	350	9.62%	287	8.66%	282	120	111	111
perylene	277	13.01%	416	3.30%	399	13.09%	311	131	138	138
indeno[1,2,3-cd]pyrene	153	9.90%	353	6.36%	342	15.22%	258	101	85	85
dibenz[a,h]anthracene	40.7	26.35%	78.5	18.14%	78.5	18.14%	41.9	21.2	33.8	33.8
benzo[ghi]perylene	167	10.15%	276	3.02%	277	12.41%	244	96	81	81

	SRM 1941b		SRM 1941b		SRM 1941b		SRM 1941b		SRM 1941b		From 1941b Certif. 95%CL	type
	Lab 13 mean	RSD	Lab 14 mean	RSD	Lab 15 mean	RSD	Lab 13 mean	RSD	Lab 14 mean	RSD		
NA	839	5.27%	1006	9.23%	811	9.23%	848	95	848	95	Certified	
NA	265	1.57%	282	9.63%	264	9.63%	276	53	276	53	Certified	
Reference	113	2.56%	134	12.41%	135	12.41%	127	14	127	14	Reference	
Reference	56.5	14.42%	83.5	2.76%	57.4	2.76%	74	8	74	8	Reference	
Reference	94.4	6.70%	96.6	18.81%	101	18.81%	75.9	4.5	75.9	4.5	Reference	
Reference	57.5	9.37%	59.0	11.86%	69.7	11.86%	53.3	6.4	53.3	6.4	Reference	
Reference	28.6	15.06%	43.2	3.94%	28.5	3.94%	38.4	5.2	38.4	5.2	Reference	
Reference	NA		62.2	3.22%	17.8	3.22%	25.5	5.1	25.5	5.1	Reference	
Reference	80.3	11.94%	76.5	11.50%	376	11.50%	85	15	85	15	Certified	
Certified	430	4.42%	458	7.45%	185	7.45%	406	44	406	44	Certified	
Certified	184	12.89%	209	3.65%	185	3.65%	184	18	184	18	Certified	
Certified	70.8	8.40%	83.9	4.43%	69.8	4.43%	73.2	5.9	73.2	5.9	Certified	
Certified	841	0.89%	711	8.35%	567	8.35%	651	50	651	50	Certified	
Certified	693	4.41%	585	9.61%	491	9.61%	581	39	581	39	Certified	
Certified	335	8.26%	454	1.60%	334	1.60%	335	25	335	25	Certified	
Certified	415	4.94%	368	9.12%	393	9.12%	291	31	291	31	Certified	
Certified	NA				NA		108	5	108	5	Certified	
Certified	488	2.38%	387	5.92%	444	5.92%	453	21	453	21	Certified	
Reference	NA		409	9.89%	NA		217	5	217	5	Reference	
Reference	378	3.21%	311	12.68%	204	12.68%	225	18	225	18	Certified	
Certified	330	3.74%	454	5.27%	336	5.27%	325	25	325	25	Certified	
Certified	278	5.89%	454	2.33%	339	2.33%	358	17	358	17	Certified	
Certified	364	2.53%	410	1.76%	345	1.76%	397	45	397	45	Certified	
Certified	241	13.62%	360	4.98%	436	4.98%	341	57	341	57	Certified	
Certified	47.9	10.74%	274	7.69%	312	7.69%	307	45	307	45	Certified	

Note: Only one sample of SRM 1941b was analyzed by Lab 15

Pesticides mg/g dry mass	QA05SED13		QA06SED13		QA05SED13		QA05SED13		Exercise Assigned	
	Lab 13 mean	RSD	Lab 14 mean	RSD	Lab 15 mean	RSD	Value	Exercise Assigned	95% CL	
alpha-HCH (α-BHC)	0.052	26.90%	NA	NA	<0.93	10.24%	no target	1.90	2.00	
hexachlorobenzene	4.42	14.33%	NA	NA	5.83	5.28%	5.38	1.90	2.00	
gamma-HCH (γ-BHC, lindane)	0.055	20.44%	NA	NA	1.08	5.28%	no target	1.90	2.00	
beta-HCH (β-BHC)	0.025	28.28%	NA	NA	<0.76	NA	no target	1.90	2.00	
heptachlor	0.014	57.08%	NA	NA	<0.68	NA	no target	1.90	2.00	
ldrin	0.033	18.48%	NA	NA	<0.54	NA	no target	1.90	2.00	
heptachlor epoxide	0.025	38.91%	NA	NA	<0.68	NA	no target	1.90	2.00	
oxychlorodane	0.003	4.68%	NA	NA	<0.91	NA	no target	1.90	2.00	
gamma-chlordane	0.321	19.14%	NA	NA	<0.5	19.03%	0.572	0.148	0.155	
2,4'-DDE	0.184	15.72%	<0.264	NA	0.064	19.03%	0.380	0.103	0.256	
endosulfan I	NA	NA	NA	NA	<1.06	NA	no target	0.624	0.992	
cis-chlordane (alpha-chlordane)	0.329	24.21%	NA	NA	0.252	19.53%	0.482	0.058	0.072	
trans-nonachlor	0.137	20.82%	NA	NA	0.175	6.47%	0.286	0.089	0.093	
dieldrin	0.266	19.62%	NA	NA	0.728	8.73%	0.386	0.034	0.084	
4,4'-DDE	1.76	18.86%	5.63	5.90%	3.71	9.26%	3.44	1.08	1.00	
2,4'-DDD	0.237	11.07%	<1.06	NA	1.31	16.57%	0.927	0.624	0.992	
endrin	0.037	NA	NA	NA	<2	NA	no target	0.624	0.992	
endosulfan II	NA	NA	NA	NA	<1.43	NA	no target	0.624	0.992	
4,4'-DDD	2.29	17.94%	3.10	4.17%	5.49	11.95%	4.18	1.42	1.77	
2,4'-DDT	0.082	17.25%	<1.19	NA	0.177	5.79%	no target	0.493	1.224	
cis-nonachlor	0.273	2.65%	<2.65	NA	0.825	7.43%	0.454	0.174	0.433	
4,4'-DDT	0.010	35.07%	NA	NA	0.063	6.48%	0.537	0.174	0.433	
mirex	NA	NA	NA	NA	<0.69	NA	no target	0.174	0.433	
endosulfan sulfate	NA	NA	NA	NA	0.461	26.44%	no target	0.174	0.433	
chlorpyrifos	NA	NA	NA	NA	0.461	26.44%	no target	0.174	0.433	

Pesticides mg/g dry mass	SRM 1941b Lab 13		SRM 1941b Lab 14		SRM 1941b Lab 15		From 1941b Certif	
	mean	RSD	mean	RSD	mean	RSD	conc.	95%CL
alpha-HCH (α-BHC)	9.80	1.89%	NA	NA	<0.33	NA	no target	0.38
hexachlorobenzene	0.042	NA	NA	NA	7.96	NA	no target	0.38
gamma-HCH (γ-BHC, lindane)	0.033	NA	NA	NA	<0.18	NA	no target	0.38
beta-HCH (β-BHC)	0.018	NA	NA	NA	<0.27	NA	no target	0.38
heptachlor	0.042	NA	NA	NA	<0.24	NA	no target	0.38
ldrin	0.041	NA	NA	NA	<0.19	NA	no target	0.38
heptachlor epoxide	0.009	NA	NA	NA	1.66	NA	no target	0.38
oxychlorodane	0.561	2.52%	NA	NA	0.458	NA	no target	0.38
gamma-chlordane	0.288	15.71%	<0.420	NA	<0.18	NA	0.566	0.093
2,4'-DDE	0.527	6.35%	NA	NA	0.247	NA	0.38	0.12
endosulfan I	0.238	1.99%	NA	NA	<0.37	NA	no target	0.12
cis-chlordane (alpha-chlordane)	0.408	10.71%	NA	NA	0.822	NA	0.85	0.11
trans-nonachlor	2.95	6.62%	4.84	17.28%	0.341	NA	0.438	0.073
dieldrin	0.412	2.81%	<0.786	NA	0.810	NA	no target	0.073
4,4'-DDE	<0.907	NA	NA	NA	3.45	NA	3.22	0.28
2,4'-DDD	3.51	6.35%	NA	NA	2.21	NA	no target	0.28
endrin	0.079	NA	NA	NA	<0.7	NA	no target	0.28
endosulfan II	0.166	11.36%	3.08	11.11%	0.401	NA	no target	0.28
4,4'-DDD	0.492	61.32%	<1.90	NA	0.223	NA	4.66	0.46
cis-nonachlor	0.037	68.01%	<4.22	NA	0.493	NA	no target	0.46
4,4'-DDT	NA	NA	NA	NA	1.69	NA	1.12	0.42
mirex	NA	NA	NA	NA	<0.27	NA	no target	0.42
endosulfan sulfate	NA	NA	NA	NA	<0.24	NA	no target	0.42
chlorpyrifos	NA	NA	NA	NA	2.07	NA	no target	0.42

Note: Only one sample of SRM 1941b was analyzed by Lab 15

PCBs mg/dry mass	QA05SED13		QA06SED13		QA05SED13		QA06SED13		Exercise Assigned	
	Lab 13 mean	RSD	Lab 14 mean	RSD	Lab 15 mean	RSD	Value	s	95% CL	
PCB 8	0.697	20.61%	2.34	11.16%	<1.09	15.71%	1.36	0.42	0.39	
PCB 18	1.18	18.55%	3.01	6.72%	2.00	9.36%	2.04	0.48	0.37	
PCB 28	2.30	32.13%	6.00	2.27%	5.40	10.91%	3.79	0.97	0.81	
PCB 31	2.04	35.01%	3.56	5.26%	2.96	6.34%	2.83	0.94	0.87	
PCB 44	2.75	16.23%	4.15	6.30%	3.75	0.32%	3.47	0.99	0.76	
PCB 49	1.87	19.11%	NA	NA	4.00	0.63%	3.64	1.22	1.02	
PCB 52	2.80	24.26%	7.28	4.99%	5.26	12.81%	4.48	1.39	1.07	
PCB 66	2.93	29.68%	4.10	2.13%	5.19	3.96%	4.32	1.41	1.18	
PCB 95	1.68	15.33%	5.61	7.03%	3.93	8.27%	3.44	1.25	1.05	
PCB 99	1.41	16.62%	3.59	13.44%	2.54	8.29%	2.45	0.87	0.73	
PCB 101	2.42	17.44%	7.12	6.18%	6.01	12.97%	4.86	1.36	1.05	
PCB 105	0.572	14.99%	1.37	2.48%	1.93	19.91%	1.26	0.40	0.31	
PCB 118	1.81	16.14%	4.32	10.86%	4.23	15.38%	3.59	1.26	0.96	
PCB 128	0.361	17.58%	0.832	14.73%	0.433	14.12%	0.684	0.275	0.197	
PCB 138	2.37	17.51%	5.47	4.67%	3.80	7.69%	3.83	1.23	1.14	
PCB 149	1.94	15.08%	5.32	5.55%	1.83	5.40%	4.18	1.44	1.20	
PCB 153	2.50	20.27%	6.04	4.34%	6.23	6.20%	4.99	2.46	2.06	
PCB 156	0.231	18.71%	0.421	11.59%	2.12	8.72%	0.444	0.128	0.107	
PCB 170	0.553	19.78%	1.35	6.57%	2.23	3.50%	1.19	0.36	0.28	
PCB 180	1.50	17.22%	3.43	7.54%	4.35	4.16%	2.97	1.15	0.83	
PCB 187	0.761	18.78%	2.51	3.62%	2.49	23.24%	2.20	0.69	0.49	
PCB 194	0.413	21.17%	0.972	8.30%	<0.43	20.14%	1.01	0.50	0.46	
PCB 195	0.141	22.97%	<0.850	NA	1.06	7.31%	0.291	0.166	0.174	
PCB 206	NA	NA	2.73	6.89%	2.95	6.77%	1.91	0.66	0.55	
PCB 209	NA	NA	5.92	7.59%	7.35	6.77%	4.02	1.47	1.36	

SRM 1941b	SRM 1941b		SRM 1941b		SRM 1941b		From 1941b Certif type
	Lab 13 mean	RSD	Lab 14 mean	RSD	Lab 15 mean	RSD	
SRM 1941b	0.920	2.78%	2.01	14.43%	1.23	1.65	0.19
SRM 1941b	1.64	6.93%	2.93	25.53%	3.37	2.39	0.29
SRM 1941b	3.15	2.40%	5.66	4.80%	5.85	4.52	0.57
SRM 1941b	2.71	2.16%	3.23	8.66%	3.86	3.18	0.41
SRM 1941b	5.51	2.46%	4.09	1.94%	4.65	3.85	0.2
SRM 1941b	3.01	2.53%	NA	NA	5.03	4.34	0.28
SRM 1941b	4.22	2.05%	6.23	10.97%	6.84	5.24	0.28
SRM 1941b	4.51	3.92%	4.27	5.47%	6.59	4.96	0.53
SRM 1941b	2.63	1.66%	5.28	5.12%	4.20	3.93	0.62
SRM 1941b	2.28	4.94%	3.62	3.33%	2.92	2.9	0.36
SRM 1941b	3.78	0.55%	6.83	6.55%	6.37	5.11	0.34
SRM 1941b	0.95	2.20%	1.39	9.80%	1.27	1.43	0.1
SRM 1941b	2.94	1.61%	4.59	12.89%	4.69	4.23	0.19
SRM 1941b	0.63	3.87%	0.776	14.46%	<0.47	0.696	0.044
SRM 1941b	4.01	4.64%	5.42	5.77%	4.79	3.6	0.28
SRM 1941b	3.20	1.90%	5.10	3.76%	5.23	4.35	0.26
SRM 1941b	4.05	2.34%	5.89	3.07%	7.19	5.47	0.32
SRM 1941b	0.374	0.77%	0.369	3.10%	1.20	0.507	0.09
SRM 1941b	0.926	3.09%	1.36	9.51%	1.49	1.35	0.09
SRM 1941b	2.57	2.72%	3.34	1.77%	4.73	3.24	0.51
SRM 1941b	1.33	4.39%	2.45	0.92%	3.02	2.17	0.22
SRM 1941b	0.693	1.52%	0.982	2.55%	1.30	1.04	0.06
SRM 1941b	0.244	8.13%	<1.36	NA	0.881	0.645	0.06
SRM 1941b	NA	NA	2.83	1.85%	3.36	2.42	0.19
SRM 1941b	NA	NA	6.05	1.82%	6.65	4.86	0.45

Note: Only one sample of SRM 1941b was analyzed by Lab 15

BDEs µg/g dry mass	QA05SED13			QA06SED13			QA05SED13			QA05SED13		
	Lab 13 mean	RSD	mean	Lab 14 mean	RSD	mean	Lab 15 mean	RSD	Value	Exercise Assigned	95% CL	
BDE 15	0.126	15.62%	NA	NA	11.66%	0.967	no target	no target	no target			
BDE 17	0.039	10.24%	<0.357	<0.44		<0.44	no target	no target	no target			
BDE 25	NA	NA	NA	<0.44		<0.44	no target	no target	no target			
BDE 28	0.036	8.83%	<0.532	<0.27		<0.27	0.056	0.005	0.042			
BDE 30	0.028	55.16%	NA	<0.44		<0.44	no target	no target	no target			
BDE 33	NA	NA	NA	<0.44		<0.44	no target	no target	no target			
BDE 47	0.380	23.61%	0.890	1.09	9.53%	0.967	1.03	0.35	0.86			
BDE 49	0.091	24.31%	NA	<0.74		<0.74	no target	no target	no target			
BDE 66	0.023	9.58%	<0.450	<1.41		<1.41	0.038	0.009	0.078			
BDE 71	0.008	1.34%	<0.471	NA		NA	no target	no target	no target			
BDE 75	0.012	13.92%	NA	<0.74		<0.74	no target	no target	no target			
BDE 85	0.011	94.73%	<2.46	<0.58		<0.58	no target	no target	no target			
BDE 99	0.252	26.15%	0.710	0.833	22.72%	0.833	no target	no target	no target			
BDE 100	0.060	23.85%	<0.418	<0.78		<0.78	no target	no target	no target			
BDE 116	<0.00291	NA	NA	<0.78		<0.78	no target	no target	no target			
BDE 118	NA	NA	NA	<0.78		<0.78	no target	no target	no target			
BDE 119	0.003	NA	NA	<0.78		<0.78	no target	no target	no target			
BDE 138	0.009	18.40%	<1.25	<0.65		<0.65	no target	no target	no target			
BDE 153	0.044	47.80%	0.121	19.78%		19.78%	no target	no target	no target			
BDE 154	0.034	19.85%	0.207	8.27%		8.27%	no target	no target	no target			
BDE 155	0.007	41.31%	NA	<0.95		<0.95	no target	no target	no target			
BDE 156	NA	NA	NA	NA		NA	no target	no target	no target			
BDE 181	<0.00961	NA	NA	NA		NA	no target	no target	no target			
BDE 183	0.064	132.57%	<0.384	<1.41		<1.41	no target	no target	no target			
BDE 190	0.011	62.39%	<2.47	<1.65		<1.65	no target	no target	no target			
BDE 191	NA	NA	NA	NA		NA	no target	no target	no target			
BDE 196	NA	NA	NA	NA		NA	no target	no target	no target			
BDE 197	NA	NA	NA	NA		NA	no target	no target	no target			
BDE 203	0.044	83.65%	NA	NA		NA	no target	no target	no target			
BDE 205	<0.0524	NA	NA	NA		NA	no target	no target	no target			
BDE 206	0.256	28.83%	NA	NA		NA	no target	no target	no target			
BDE 207	0.153	34.92%	NA	NA		NA	no target	no target	no target			
BDE 208	0.119	28.78%	NA	NA		NA	no target	no target	no target			
BDE 209	11.4	16.11%	NA	NA		NA	no target	no target	no target			

SRM 1941b Lab 13 mean	RSD	SRM 1941b Lab 14		SRM 1941b Lab 15		From 1941b Certif 95%CL	type
		mean	RSD	mean	RSD		
0.185	8.87%	NA	NA	NA	NA	no target	Target
0.069	34.37%	<0.586	NA	NA	NA	no target	Target
coelute (17/25)	NA	NA	NA	NA	NA	no target	Target
0.135	5.47%	<0.847	NA	NA	NA	0.18	Target
0.047	10.47%	NA	NA	NA	NA	no target	Target
coelute (28/33)	NA	NA	NA	NA	NA	w/ BDE 28	Target
1.34	7.79%	1.87	6.21%	NA	NA	1.48	Target
0.133	74.26%	NA	NA	NA	NA	no target	Target
0.045	4.56%	<0.716	NA	NA	NA	no target	Target
0.167	32.97%	<0.750	NA	NA	NA	no target	Target
0.019	30.29%	NA	NA	NA	NA	no target	Target
0.025	NA	<3.91	NA	NA	NA	no target	Target
0.398	12.88%	0.667	54.24%	NA	NA	0.62	Target
0.103	13.83%	<0.665	NA	NA	NA	0.15	Target
<0.00309	NA	NA	NA	NA	NA	no target	Target
NA	NA	NA	NA	NA	NA	no target	Target
0.035	79.52%	NA	NA	NA	NA	no target	Target
0.007	3.24%	<1.99	NA	NA	NA	no target	Target
0.064	9.30%	0.114	35.29%	NA	NA	0.09	Target
0.058	7.27%	0.199	11.19%	NA	NA	0.09	Target
0.009	NA	NA	NA	NA	NA	no target	Target
NA	NA	NA	NA	NA	NA	no target	Target
<0.00325	NA	NA	NA	NA	NA	no target	Target
0.026	20.98%	<0.943	NA	NA	NA	0.05	Target
0.002	NA	<3.93	NA	NA	NA	no target	Target
NA	NA	NA	NA	NA	NA	no target	Target
NA	NA	NA	NA	NA	NA	no target	Target
NA	NA	NA	NA	NA	NA	no target	Target
0.065	37.74%	NA	NA	NA	NA	no target	Target
<0.0236	NA	NA	NA	NA	NA	no target	Target
0.374	14.59%	NA	NA	NA	NA	no target	Target
0.215	26.25%	NA	NA	NA	NA	no target	Target
0.200	45.62%	NA	NA	NA	NA	no target	Target
21.2	14.24%	NA	NA	NA	NA	24.11	Target

Note: No data for Lab 15 on SRM 1941b

LAB NOTES SUBMITTED WITH THE SEDIMENT DATA

Lab 13 Notes:

other= ion ratio did not meet method criteria

other= coelution

for PBDEs, PCBs and pesticides, samples were concentrated down to 100 uL

	QA05SED13		SRM 1941b	
	Lab 13		Lab 13	
	mean	RSD	mean	RSD
C2-NAPHTHALENES	277	23.56%	246	49.62%
C1-NAPHTHALENES	290	24.87%	296	53.63%
2,3,5-TRIMETHYLNAPHTHALENE	22.0	21.66%	23.6	22.67%
C1-CHRYSENES	141	4.52%	188	14.71%
C1-DIBENZOTHIOPHENES	< 3.5		23.9	
C1-FLUORANTHENES/PYRENES	244	20.77%	312	2.72%
C1-FLUORENES	< 3.5		116	
C1-PHENANTHRENES/ANTHRACENES	308	1.95%	312	52.09%
C2-CHRYSENES	< 3.5		<10	
C2-DIBENZOTHIOPHENES	< 3.5		<10	
C2-FLUORENES	< 3.5		773	
C2-PHENANTHRENES/ANTHRACENES	327	9.88%	357	
C3-CHRYSENES	< 3.5		<10	
C3-DIBENZOTHIOPHENES	< 3.5		85.3	
C3-FLUORENES	< 3.5		<10	
C3-NAPHTHALENES	190	23.91%	94.6	61.75%
C3-PHENANTHRENES/ANTHRACENES	< 3.5		<10	
C4-CHRYSENES	< 3.5		10.9	
C4-NAPHTHALENES	< 3.5		110	
C4-PHENANTHRENES/ANTHRACENES	< 3.5		23.6	
DIBENZOTHIOPHENE	30.3	16.95%	45.8	26.25%
IUPAC# 33	0.975	35.52%	1.35	1.96%
IUPAC# 56	1.20	30.86%	1.76	2.56%
IUPAC# 60	0.264	34.31%	0.381	1.24%
IUPAC# 70/74	4.15	32.35%	6.06	3.07%
IUPAC# 87/97	1.27	13.59%	2.20	0.94%
IUPAC# 110	2.67	12.36%	4.53	1.96%
IUPAC# 132	0.588	16.54%	1.00	3.11%
IUPAC# 141	0.345	20.29%	0.588	7.43%
IUPAC# 151	0.896	15.68%	1.47	3.74%
IUPAC# 158	0.196	17.00%	0.322	3.11%
IUPAC# 174	0.657	20.50%	1.07	3.88%
IUPAC# 177	0.302	16.82%	0.536	3.17%
IUPAC# 183	0.442	18.51%	0.741	2.51%
IUPAC# 201	0.098	19.35%	0.174	2.07%
IUPAC# 203	0.344	18.72%	0.619	2.18%
DELTA BHC	0.016	63.46%	<0.44	
PBDE # 7	0.031	11.98%	0.043	3.93%
PBDE # 8/11	0.032	16.85%	0.043	15.20%
PBDE # 10	0.002	23.60%	0.002	12.86%
PBDE # 12/13	0.012	6.22%	0.015	1.72%
PBDE # 32	0.007	27.24%	0.046	5.58%
PBDE # 35	0.008	16.42%	0.103	154.61%
PBDE # 37	0.006	18.82%	0.007	22.39%
PBDE # 77	0.003	11.45%	0.001	
PBDE # 79	0.002		0.005	
PBDE # 105	< 0.00723		<0.00588	
PBDE # 126	< 0.00232		0.011	4.00%
PBDE # 128	0.004		<0.00543	
PBDE # 140	0.003		0.003	
PBDE # 204	0.056	124.34%	0.047	47.04%



Lab 14 notes:

Chrysene and triphenylene co-elute

Benzo(j)fluoranthene and benzo(k)fluoranthene co-elute

PCB 8 was measured as cong 8+5.

PCB 101 was measured as 101+90+89.

PCB 118 measured as 118+106

PCB 128 measured as 128+167

PCB 138 measured as 164+163+138

PCB 170 measured as 170+190

Lab 15 notes:

the chrysene number is the sum of chrysene and triphenylene, we cannot resolve the two

we can not separate benzo(j)fluoranthene because under our conditions it coelutes with

benzo(b)fluoranthene

<symbol refers to values less than our MDL

PCB101 coelutes with PCB90

PCB153 coelutes with PCB132 and 168

PCB170 coelutes with PCB190

PCB8 coelutes with PCB5

PCB195 coelutes with PCB208

Total carbon and total organic carbon are measured independently in oven-dried sediments

and soils using a LECO CR-412 Carbon Determinator

BDE71 coelutes with BDE47

## **Appendix J: List of Laboratories Participating in 2005 Intercomparison Exercises**

For this exercise, data were received from the following laboratories within the required timeframe. (This listing does NOT correspond to the laboratory number identification codes used in this report which were assigned in order of receipt of data with the exception of NIST which is Laboratory #1 in this exercise. The same code was used for both exercises.)

Academy of Natural Sciences  
1900 Benjamin Franklin Parkway  
Philadelphia, PA 19103  
Jeffrey Ashley, Linda Zaoudeh, and Mike Schafer

Alpha Woods Hole Laboratories  
375 Paramount Dr, Suite B  
Raynham, MA 02767  
Pete Kane and Elizabeth Porta

AXYS Analytical  
2045 Mills Rd West / PO Box 2219  
Sidney, BC V8L 3S8  
Canada  
Dale Hoover

Battelle Columbus  
505 King Ave  
Columbus, OH 43201  
Karen Tracy and Mary Schrock

Battelle Duxbury Operations  
397 Washington Street  
Duxbury, MA 02332  
Carole-Sue Peven McCarthy

East Bay Municipal Utility District  
2020 Wake Avenue  
Oakland, CA 94607  
Saskai van Bergen and Francois Rodigari

Environment Canada  
Environmental Science Center  
Corner Morton & Université Ave  
Moncton, NB E1A3E9 Canada  
Jamie Aubé

Massachusetts Water Resources Authority  
100 Tafts Ave.  
Winthrop, MA 02152  
Jennifer Prasse

NIST  
100 Bureau Drive, Stop 8392  
Gaithersburg, MD 20899-8392  
Michele Schantz

NIST-Charleston Laboratory  
331 Fort Johnson Road  
Charleston, SC 29412-9110  
John Kucklick, Stacy Vander Pol, and Aurore Guichard

NOAA Fisheries / ABL  
11305 Glacier Hwy  
Juneau, AK 99801  
Marie Larsen

NOAA-NMFS  
2725 Montlake Boulevard, East  
Seattle, WA 98112  
Donald Brown / Jennie Bolton

NOAA-NOS  
Hollings Marine Laboratory  
331 Fort Johnson Road  
Charleston, SC 29412  
Ed Wirth

STL Sacramento  
880 Riverside Pkwy  
West Sacramento, CA 95605  
Michael Flournoy

TDI-Brooks International  
B&B Laboratories  
1902 Pinon  
College Station, TX 77845  
Juan Ramirez

Wadsworth Center, NYSDOH  
Empire State Plaza  
P-1 North Dock (Rm D520)  
Albany, NY 12237  
Chia-Swee Hong