NISTIR 7340

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

Michele M. Schantz
John R. Kucklick
Reenie M. Parris
Dianne L. Poster
Stephen A. Wise

National Institute of Standards and Technology
Technology Administration, U.S. Department of Commerce

NISTIR 7340

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

Michele M. Schantz, John R. Kucklick,[1] Reenie M. Parris,
Dianne L. Poster, and Stephen A. Wise
Analytical Chemistry Division
National Institute of Standards and Technology
Gaithersburg, MD 20899-8392 and
[1]Charleston, SC 29412

September 2006

U.S. DEPARTMENT OF COMMERCE
Carlos M. Gutierrez, Secretary
TECHNOLOGY ADMINISTRATION
Robert Cresanti, Under Secretary of Commerce for Technology
NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY
William A. Jeffrey, Director

Table of Contents

Appendices

Abstract

In support of marine monitoring measurement programs, the National Institute of Standards and Technology (NIST) conducts interlaboratory comparison exercises. The intercomparibility 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 μm) 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 μm while the sediment bottled for SRM 1941b was sieved at 150 μm. 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 σ is the target value for standard deviation.

As described in the IUPAC guidelines, the choice of σ 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:

$\lvert z \rvert \leq 2$	Satisfactory
$2 < \lvert z \rvert < 3$	Questionable
$\lvert z \rvert \geq 3$	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)

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

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 σ values used are coefficients of variation (CV calculated as relative standard deviations) with the current target σ (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 know 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 ± 2 (± 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 µm while SRM 1941b used the material <150 µm. 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 ± 2 (± 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

The time and effort of the analysts and management of the participating laboratories and the assistance of the NIST Standard Reference Materials Program with the procurement and preparation of the exercise materials are gratefully acknowledged.

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.

References

1. A. Y. Cantillo and R. M. Parris, "Evaluation of Trace Organic NOAA Status and Trends Quality Assurance Project Performance," in Quality Assurance for Analytical Laboratories, M. Parkany (ed.), Royal Society of Chemistry, Spec. Publ. No. 130 (1993).

2. A. Y. Cantillo and R. M. Parris, National Status and Trends Program Quality Assurance Project: Trace Organic Intercomparison Exercise Results 1986-1990, NOAA Tech. Memo. NOS/ORCA 69, Silver Spring, MD (1994).

3. A. Y. Cantillo, NS&T Quality Assurance Project Intercomparison Exercise Results 1991-1993, NOAA Tech. Memo. NOS/ORCA 79, Silver Spring, MD (1995).

4. Certificate of Analysis for Standard Reference Material (SRM) 1974b Organics in Mussel Tissue (*Mytilus edulis*), National Institute of Standards and Technology (NIST), Gaithersburg, MD, 2003. https://srmors.nist.gov/view_detail.cfm?srm=1974B

5. Certificate of Analysis for Standard Reference Material (SRM) 2702 Inorganics in Marine Sediment, National Institute of Standards and Technology (NIST), Gaithersburg, MD, 2004. https://srmors.nist.gov/view_detail.cfm?srm=2702

6. Certificate of Analysis for Standard Reference Material (SRM) 1941b Organics in Marine Sediment, National Institute of Standards and Technology (NIST), Gaithersburg, MD, 2002. https://srmors.nist.gov/view_detail.cfm?srm=1941B

7. Certificate of Analysis for Standard Reference Material (SRM) 2977 Mussel Tissue (Organic Contaminants and Trace Elements), National Institute of Standards and Technology (NIST), Gaithersburg, MD, 2000. https://srmors.nist.gov/view_detail.cfm?srm=2977

8. Stapleton, H.M., Keller, J.M., Schantz, M.M., Kucklick, J.R., and Wise, S.A., NIST Intercomparison Exercise Program for Polybrominated Diphenyl Ethers (PBDEs) in Marine Sediment: Description and Results of the 2004 Intercomparison Exercise, NISTIR 7278, Gaithersburg, MD (2005).

9. IUPAC "The International Harmonized Protocol for the Proficiency Testing of (Chemical) Analytical Laboratories," Pure Appl. Chem. 65 (9), 2123-2144 (1993).

List of Tables

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
cis-chlordane (alpha-chlordane)	aldrin
trans-chlordane (gamma-chlordane)	dieldrin
oxychlordane	endrin
cis-nonachlor	endosulfan sulfate
trans-nonachlor	endosulfan I
mirex	endosulfan II
chlorpyrifos	

Polychlorinated Biphenyl Congeners

PCB No.	*Compound Name*
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
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

Polybrominated diphenyl ethers (PBDEs)

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

PAHs (ng/g dry mass)

Laboratory No.	1a	1c	3	4	5	6	7	8	9	10	11	12	Exercise Assigned Value	s	%RSD
naphthalene	9.87	8.18	8.76	5.61	12.5	**43.5**	**14.2**	21.6	2.52	**103**	NA	NA	9.86	6.07	61.5
2-methylnaphthalene	4.77	2.05	**3.19**	3.82	<10	14.1	13.3	9.88	**1.10**	NA	NA	NA	8.00	5.16	64.5
1-methylnaphthalene	4.47	0.763	4.28	1.81	<8	6.96	**4.15**	NA	**0.692**	NA	NA	NA	3.66	2.44	66.6
biphenyl	2.87	2.02	2.11	1.81	<7	**4.40**	<0.7	NA	0.745	**38.0**	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	**3.67**	**43.5**	NA	<2	2.93	2.21	75.4
1,6,7-trimethylnaphthalene	coelution	6.44	NA	4.21	NA	5.72	NA	NA	2.74	NA	NA	coelution	4.78	1.65	34.5
fluorene	3.90	**5.57**	3.54	2.44	<7	4.46	6.50	<12.5	1.25	**5.95**	NA	3.40	3.64	1.64	45.1
phenanthrene	101	105	78.5	107	88.5	82.8	92.1	**93.9**	48.3	**115**	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	**39.0**	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	**146**	69.7	**253**	NA	144	133	30	22.9
pyrene	213	210	177	241	179	209	172	**210**	100	**352**	NA	207	190	40	21.1
benz[a]anthracene	35.9	29.6	19.8	31.5	23.8	21.4	22.6	**25.9**	11.9	NA	NA	26.1	24.7	7.1	28.6
chrysene	coelution	48.0	81.3	coelution	94.5	**106**	46.9	**110**	48.9	coelution	NA	coelution	63.9	22.4	35.1
triphenylene	coelution	49.2	NA	NA	NA	NA	NA	NA	NA	coelution	NA	coelution	no target		
benzo[*b*]fluoranthene	53.5	coelution	56.7	52.0	52.9	39.0	56.9	**64.6**	22.5	**162**	NA	coelution	47.6	12.6	26.5
benzo[*j*]fluoranthene	13.4	coelution	NA	NA	NA	NA	NA	NA	16.8	NA	NA	coelution	no target		
benzo[*k*]fluoranthene	17.3	12.7	17.8	coelution	**31.3**	**33.1**	17.5	**37.3**	NA	**43.1**	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	**166**	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	**144**	NA	6.36	7.25	2.65	36.6
perylene	4.26	4.74	<14.0	3.57	<5	**17.1**	NA	NA	1.47	**26.2**	NA	NA	3.51	1.44	41.2
indeno[1,2,3-cd]pyrene	12.2	coelution	11.0	15.7	**19.5**	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	**5.31**	NA	coelution	no target		
benzo[ghi]perylene	23.3	25.9	**19.3**	28.5	23.9	23.1	34.9	**43.1**	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 (QA05TIS12): Laboratory means of three replicates and exercise assigned values - Pesticides

(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	%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		
oxychlordane	<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	13.5
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	**5.98**	**5.40**	NA	10.5	12.1	3.4	27.9
trans-nonachlor	9.43	9.22	7.94	9.92	9.17	10.0	6.40	NA	**5.47**	**5.10**	NA	9.84	9.00	1.24	13.8
dieldrin	<5	<5	<2.72	3.51	7.23	14.2	9.09	NA	3.28	**1.37**	NA	2.94	6.70	4.42	65.9
4,4'-DDE	41.1	46.9	27.6	34.7	**23.0**	30.5	25.9	NA	**18.4**	**29.6**	NA	30.8	33.9	7.6	22.4
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	35.5
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	**27.6**	**20.6**	42.8	18.3	<1.8	14.8	NA	14.5	15.1	NA	30.0	21.7	10.8	49.6
2,4'-DDT	<2	<1	<2.72	1.85	<3.0	<1.8	<2.5	NA	<0.547	**7.59**	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	17.8
4,4'-DDT	<2	<1	<2.72	1.22	2.50	**10.2**	<2	NA	1.15	**4.58**	NA	1.85	1.68	0.63	37.6
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 (QA05TIS12): 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	%RSD
PCB 8	2.22	2.76	**1.74**	NA	<2.8	**0.300**	2.15	3.54	**1.53**	**11.9**	**1.81**	2.14	2.56	0.60	23.5
PCB 18	8.38	8.78	4.29	7.84	4.00	**0.897**	5.46	4.40	4.05	**6.76**	4.93	5.03	5.71	1.87	32.8
PCB 28	30.0	27.6	19.8	24.3	20.4	**2.81**	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	**2.52**	16.7	21.3	NA	coelution	**16.6**	22.9	21.7	3.1	14.2
PCB 44	38.8	37.3	21.9	33.8	20.2	**3.73**	24.1	23.4	**16.8**	19.1	45.3	50.4	31.4	11.2	35.7
PCB 49	49.7	52.3	NA	47.1	NA	**5.53**	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	**6.32**	42.0	40.7	31.6	**22.3**	45.0	51.5	46.6	10.7	22.9
PCB 66	52.8	57.4	43.9	51.5	74.0	**6.82**	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	**4.68**	36.9	47.0	NA	**16.4**	46.4	51.4	51.5	9.2	17.8
PCB 99	47.6	43.7	NA	48.0	NA	**5.51**	32.9	49.1	NA	**14.9**	55.5	52.1	47.0	7.2	15.4
PCB 101	97.7	113	82.9	85.5	98.5	**13.1**	70.0	66.3	**52.2**	**26.1**	89.1	90.4	88.1	14.4	16.3
PCB 105	34.9	36.5	25.6	34.3	37.1	**4.39**	25.6	31.8	21.3	**9.80**	31.6	32.7	31.1	5.3	16.9
PCB 118	86.3	79.7	84.7	93.3	101	**12.0**	51.1	79.7	54.1	**28.5**	79.6	89.4	79.9	15.9	19.9
PCB 128	14.5	14.7	15.0	15.8	13.3	**2.24**	9.21	11.0	**8.36**	**4.57**	11.5	12.0	13.0	2.2	17.0
PCB 138	coelution	61.7	68.8	coelution	91.8	**11.3**	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	**6.28**	47.6	57.5	NA	**26.9**	**50.4**	59.3	61.5	11.2	18.2
PCB 153	coelution	147	72.3	123	86.3	**11.4**	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	**0.713**	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	**0.390**	<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	**1.00**	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	**2.84**	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	**0.307**	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 (QA05TIS12): 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	%RSD
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

PAHs (ng/g dry mass)

													Certificate Values		
Laboratory No.	1a	1c	3	4	5	6	7	8	9	10	11	12	conc.	95%CL	type
naphthalene	22.2	20.1	11.8	9.23	15.1	44.2	7.68	25.5	9.90	112	NA	NA	19	5	Reference
2-methylnaphthalene	16.3	17.6	6.43	11.5	11.0	14.2	8.59	17.4	6.76	NA	NA	NA	18	5	Reference
1-methylnaphthalene	16.0	14.9	7.82	7.05	<8	9.15	4.23	NA	5.81	NA	NA	NA	16	5	Reference
biphenyl	6.81	4.48	3.39	3.81	<7	0.630	<0.2	NA	3.27	163	NA	NA	6.8	0.6	Reference
2,6-dimethylnaphthalene	coelution	17.6	11.1	17.8	14.6	17.1	12.8	NA	14.3	NA	NA	18.4	no target		Target
acenaphthylene	<2	<5	1.58	<0.765	<11	4.44	1.38	<6.25	3.00	3.39	NA	2.06	no target		Target
acenaphthene	4.06	6.30	6.65	3.06	<8	<0.78	4.29	10.1	11.8	181	NA	3.76	4.2	0.4	Reference
1,6,7-trimethylnaphthalene	coelution	43.5	NA	33.1	NA	32.0	NA	NA	26.5	NA	NA	81.6	no target		Target
fluorene	10.2	22.7	7.02	10.5	8.43	8.37	7.15	16.9	7.86	18.4	NA	10.1	**10.24**	**0.43**	Certified
phenanthrene	34.4	39.1	29.6	44.0	31.6	33.6	34.9	70.8	26.3	59.1	NA	39.5	**35.1**	**3.8**	Certified
anthracene	6.18	9.91	3.46	1.79	<10	9.14	2.32	7.77	4.74	26.7	NA	5.18	8	4	Reference
1-methylphenanthrene	39.8	37.4	27.7	57.8	42.1	33.2	31.6	NA	34.0	39.9	NA	47.9	44	2	Reference
fluoranthene	38.7	39.3	25.2	46.3	30.3	35.4	38.0	70.2	27.2	95.3	NA	38.2	**38.7**	**1.0**	Certified
pyrene	78.7	75.3	52.5	95.8	57.5	82.6	59.5	143	53.5	170	NA	77.4	**78.9**	**3.5**	Certified
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	**20.34**	**0.78**	Certified
chrysene	coelution	38.9	58.7	86.6	67.0	78.6	41.4	172	54.2	coelution	NA	95.6	49	2	Reference
triphenylene	coelution	35.1	NA	NA	NA	NA	NA	NA	NA	coelution	NA	other	39	1	Reference
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	**11.01**	**0.28**	Certified
benzo[*j*]fluoranthene	4.53	coelution	NA	NA	NA	NA	NA	NA	8.33	NA	NA	other	4.6	0.2	Reference
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	**4**	**1**	Reference
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	**13.1**	**1.1**	Certified
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	**8.35**	**0.72**	Certified
perylene	3.56	4.02	<12.7	3.01	<5	3.47	NA	NA	2.02	44.0	NA	NA	**3.50**	**0.76**	Certified
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	**4.84**	**0.81**	Certified
dibenz[a,h]anthracene	coelution	coelution	1.15	1.93	<11	4.45	<0.2	<6.25	1.95	3.28	NA	1.84	**1.41**	**0.19**	Certified
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	**9.53**	**0.43**	Certified

Table 7. SRM 2977: Laboratory means of three replicates and target values - Pesticides

(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
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
oxychlordane	<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	nterferenc	<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	v/ 2,4'-DDI	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	nterferenc	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	**2.10**	**0.15**	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	**2.65**	**0.30**	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	**5.37**	**0.44**	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	**3.92**	**0.24**	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	**3.25**	**0.63**	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	**8.37**	**0.54**	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	**3.64**	**0.32**	Certified
PCB 95	5.61	6.01	NA	6.01	NA	4.03	4.58	6.69	NA	1.87	3.81	4.53	**5.39**	**0.59**	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	**11.2**	**1.2**	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	**3.76**	**0.49**	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	**10.5**	**1.0**	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	**2.49**	**0.28**	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	**9.23**	**0.12**	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	**14.1**	**1.0**	Certified
PCB 156	0.972	0.945	NA	0.772	NA	0.967	0.956	0.591	NA	NA	0.597	0.847	**0.960**	**0.085**	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	**2.95**	**0.23**	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	**6.79**	**0.67**	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	**4.76**	**0.38**	Certified
PCB 194	<2	0.889	NA	0.857	NA	0.990	<0.8	0.884	NA	0.604	0.361	0.680	**0.897**	**0.042**	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)

ng/g dry mass

Laboratory No.	1a	1c	3	4	5	6	7	8	9	10	11	12	Target Value conc.	Target Value 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

PAHs (ng/g dry mass)

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

ng/g dry mass

Laboratory No.	1a	1c	2	3	4	6	7	8	10	11	12	Exercise Assigned Value	s	%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	**4.86**	NA	4.12	7.01	2.40	7.48	NA	NA	NA	6.11	5.38	1.90	35.4
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		
oxychlordane	<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	25.9
2,4'-DDE	0.328	<2	NA	<0.736	0.499	<0.15	<0.2	NA	**1.70**	NA	0.314	0.380	0.103	27.1
endosulfan I	<3	<1	NA	<0.736	<0.548	<0.15	<2	NA	0.088	NA	<0.032	no target		
cis-chlordane (alpha-chlordan	0.542	<1	NA	0.451	0.54833	0.441	<0.25	NA	**2.20**	NA	0.430	0.482	0.058	12.0
trans-nonachlor	0.326	<1	NA	0.198	<0.548	0.383	0.19677	NA	0.382	NA	0.228	0.286	0.089	31.1
dieldrin	<3	<1	NA	<0.736	<0.544	0.424	<1	NA	0.360	NA	0.375	0.386	0.034	8.7
4,4'-DDE	3.38	3.61	NA	3.85	**6.57**	1.46	4.11	NA	4.88	NA	2.82	3.44	1.08	31.4
2,4'-DDD	<3	0.954	NA	<0.736	1.80	0.484	<0.5	NA	coelution	NA	0.471	0.927	0.624	67.2
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	**14.8**	NA	**2.76**	NA	5.64	4.18	1.42	34.0
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	**3.86**	NA	1.02	NA	0.167	0.454	0.493	109
4,4'-DDT	<3	<2	NA	<0.736	0.504	0.725	<0.7	NA	**5.95**	NA	0.381	0.537	0.174	32.5
mirex	<3	<2	NA	<0.736	**4.63**	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)

ng/g dry mass

Laboratory No.	1a	1c	2	3	4	6	7	8	10	11	12	Exercise Assigned Value	s	%RSD
PCB 8	1.48	1.76	NA	1.18	NA	0.820	1.90	**3.52**	**7.91**	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	**0.447**	1.61	2.04	0.48	23.6
PCB 28	3.76	4.71	NA	3.24	4.69	2.24	4.61	**6.07**	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	**4.48**	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	**4.88**	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	**6.81**	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	**6.70**	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	**6.11**	**9.44**	1.55	5.20	4.32	1.41	32.5
PCB 95	3.98	3.70	NA	NA	5.36	1.76	4.40	**5.52**	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	**4.08**	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	**3.25**	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	**1.77**	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	**4.89**	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	**6.43**	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	**3.05**	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	**4.49**	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	**3.55**	**4.57**	0.638	2.03	1.91	0.66	34.7
PCB 209	4.63	5.49	NA	3.14	5.23	NA	4.35	**6.50**	**2.21**	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)

ng/g dry mass

												Exercise Assigned		
Laboratory No.	1a	1c	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	0.185	no target		
BDE 17	NA	<1	NA	NA	NA	NA	NA	<2.14	NA	NA	0.099	no target		
BDE 25	NA	<1	NA	NA	NA	NA	NA	<2.14	NA	NA	other	no target		
BDE 28	NA	<1	NA	NA	<2.1	NA	0.053	<0.214	NA	NA	0.059	0.056	0.005	8.2
BDE 30	NA	<1	NA	NA	NA	NA	NA	<2.14	NA	NA	<0.002	no target		
BDE 33	NA	<1	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	0.635	1.03	0.35	33.4
BDE 49	NA	<1	NA	NA	<2.1	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	0.032	0.038	0.009	22.7
BDE 71	NA	<1	NA	NA	NA	NA	NA	<2.14	NA	NA	0.014	no target		
BDE 75	NA	<1	NA	NA	NA	NA	NA	<2.14	NA	NA	<0.002	no target		
BDE 85	NA	<1	NA	NA	<2.1	NA	0.066	<0.257	NA	NA	0.012	no target		
BDE 99	NA	<1	NA	NA	<2.1	NA	1.352	<10.7	NA	NA	0.452	no target		
BDE 100	NA	<1	NA	NA	<2.1	NA	0.294	<2.14	NA	NA	0.109	no target		
BDE 116	NA	<1	NA	NA	NA	NA	NA	<2.14	NA	NA	<0.014	no target		
BDE 118	NA	<1	NA	NA	NA	NA	NA	<2.14	NA	NA	NA	no target		
BDE 119	NA	<1	NA	NA	NA	NA	NA	<2.14	NA	NA	0.004	no target		
BDE 138	NA	<1	NA	NA	NA	NA	0.034	<2.14	NA	NA	0.008	no target		
BDE 153	NA	<1	NA	NA	<2.1	NA	0.177	<0.257	NA	NA	0.064	no target		
BDE 154	NA	<1	NA	NA	<2.1	NA	0.137	<0.214	NA	NA	0.069	no target		
BDE 155	NA	<1	NA	NA	NA	NA	NA	<2.14	NA	NA	0.010	no target		
BDE 156	NA	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		
BDE 181	NA	<10	NA	NA	NA	NA	NA	<2.14	NA	NA	<0.141	no target		
BDE 183	NA	<10	NA	NA	<2.1	NA	NA	<0.214	NA	NA	<0.3	no target		
BDE 190	NA	<10	NA	NA	NA	NA	NA	<2.14	NA	NA	<0.206	no target		
BDE 191	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	no target		
BDE 197	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	0.142	no target		
BDE 205	NA	NA	NA	NA	NA	NA	NA	<2.14	NA	NA	NA	no target		
BDE 206	NA	NA	NA	NA	NA	NA	NA	<2.14	NA	NA	NA	no target		
BDE 207	NA	NA	NA	NA	NA	NA	NA	<2.14	NA	NA	NA	no target		
BDE 208	NA	NA	NA	NA	NA	NA	NA	<2.14	NA	NA	NA	no target		
BDE 209	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	NA
TOC (percent)	NA	NA	SRM 1944	3.03	NA	0.94	NA	2.88	NA	NA	NA

PAHs (ng/g dry mass)

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)

ng/g dry mass

Laboratory No.	1a	1c	2	3	4	6	7	8	10	11	12	Certificate Values 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	**5.83**	**0.38**	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
oxychlordane	<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	**0.566**	**0.093**	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	**0.85**	**0.11**	Certified
trans-nonachlor	0.436	<1	NA	0.191	<0.651	0.547	0.180	NA	0.291	NA	0.243	**0.438**	**0.073**	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	**3.22**	**0.28**	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	w/ 2,4'-DDI	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	**4.66**	**0.46**	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	**0.378**	**0.053**	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)

ng/g dry mass

												Certificate Values		
Laboratory No.	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)

ng/g dry mass

Laboratory No.	1a	1c	2	3	4	6	7	8	10	11	12	Target Values 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	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
TEO or lipid			7.9%	1.9%					15.8%	4.9%	10.2%	28.6%
PAH ANALYSES	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
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%	52.8%	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%		7.2%	10.9%	7.6%
phenanthrene	6.5%	3.3%	0.5%	1.9%	6.5%	15.8%	1.4%	1.0%	10.5%	6.0%	7.7%	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%	5.0%	10.7%	14.1%
fluoranthene	1.1%	2.4%	0.6%	2.7%	9.2%	8.3%	2.0%	0.9%	9.2%	4.7%	8.0%	7.3%
pyrene	1.7%	1.2%	0.2%	3.5%	7.1%	8.8%	2.3%	0.4%	9.2%	5.7%	12.2%	8.3%
benz[a]anthracene	9.2%	3.8%	3.2%	0.7%	11.4%	4.9%	3.1%	1.9%	11.7%	5.1%	5.8%	0.9%
chrysene			2.4%	1.7%	7.1%	8.1%	2.0%	0.7%	10.5%	5.5%	7.4%	10.4%
triphenylene			1.4%	2.4%								
benzo[*b*]fluoranthene	1.7%	4.4%			8.7%	32.7%	5.7%	0.7%	12.3%	8.9%	4.6%	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%	3.6%	10.6%	6.0%
benzo[e]pyrene	3.2%	3.2%	1.8%	2.2%	9.3%	8.6%	2.0%	0.6%	10.0%	4.8%	6.3%	4.2%
benzo[a]pyrene	1.5%	2.2%	4.4%	8.0%	18.0%	6.4%	13.3%	1.9%	17.0%	4.3%	1.7%	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%	9.8%	4.1%	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%	10.0%		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		
	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 2978
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
TEO or lipid	2.4%	6.2%	0.0%	0.0%	16.8%	7.1%	11.9%		4.4%	0.0%			
PAH ANALYSES	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 2978
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
naphthalene	38.3%	28.9%	6.5%	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%		0.0%	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%	1.5%	19.2%	2.1%			31.4%	3.7%	
phenanthrene	21.5%	19.8%	22.7%	58.3%	6.1%	3.6%	16.3%	12.2%			0.8%	0.5%	
anthracene	67.9%	12.8%		0.0%	17.6%	21.1%	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%	2.5%	19.9%	8.4%			2.1%	3.4%	
pyrene	8.9%	8.6%	22.2%	53.0%	5.1%	3.8%	19.7%	16.6%			2.0%	2.6%	
benz[a]anthracene	15.1%	13.6%	18.9%	55.7%	5.7%	8.1%					0.9%	4.1%	
chrysene	10.0%	11.4%	19.3%	63.5%	5.6%	2.2%	22.4%	6.1%			2.2%	1.5%	
triphenylene													
benzo[*b*]fluoranthene	7.6%	12.0%	33.3%	0.0%	8.2%	6.4%	9.4%	11.1%			4.9%	10.2%	
benzo[*j*]fluoranthene					9.2%	5.3%							
benzo[*k*]fluoranthene	22.2%	20.0%	14.4%	71.6%			8.2%	1.6%			5.2%	6.0%	
benzo[e]pyrene	9.4%	10.6%	18.0%		10.1%	4.9%	18.0%	23.2%			5.5%	7.4%	
benzo[a]pyrene	34.5%	20.9%			3.0%	9.2%	52.6%	3.0%			6.0%	23.9%	
perylene					3.1%	10.4%	24.7%	11.5%					
indeno[1,2,3-cd]pyrene	24.2%	33.1%	5.9%		2.6%	4.4%	38.2%	29.4%			3.6%	24.2%	
dibenz[a,h]anthracene					7.7%	3.9%	43.8%	26.5%			3.7%	5.9%	
benzo[ghi]perylene	17.6%	17.3%	3.4%	37.7%	4.5%	6.4%	37.8%	12.7%			2.5%	2.5%	

Table 27. Mussel Tissue XII (QA05TIS12): 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
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												
oxychlordane					12.1%		8.8%	8.1%				
gamma-chlordane	1.3%	2.8%			3.0%	5.4%	2.0%	0.6%	6.2%	5.7%	3.9%	
2,4'-DDE							10.6%	6.8%				
endosulfan I											7.7%	7.6%
cis-chlordane (alpha-chlordane)	2.5%	5.6%	2.5%		8.1%	15.3%	2.1%	10.1%	9.5%	0.0%	14.9%	
trans-nonachlor	2.7%	5.8%	1.0%		9.5%	20.6%	1.6%		8.9%		11.6%	9.4%
dieldrin							14.3%	0.5%	13.8%	7.8%	9.2%	3.3%
4,4'-DDE	2.2%	2.9%	0.6%	7.7%	7.9%	15.6%	3.0%	0.0%	2.3%	13.7%	5.1%	11.0%
2,4'-DDD	5.4%	3.7%	0.5%	5.8%	13.3%	17.0%	4.9%		1.8%		18.1%	13.6%
endrin												
endosulfan II												
4,4'-DDD	8.4%	3.7%	0.9%	2.5%	9.1%	31.6%	11.9%		5.7%	8.6%		13.3%
2,4'-DDT							16.0%					
cis-nonachlor	3.5%	4.2%	3.3%		9.8%		4.3%				27.8%	
4,4'-DDT							11.1%		0.0%		14.7%	44.2%
mirex							7.2%	6.3%				
endosulfan sulfate												
chlorpyrifos												

Table 27 (cont). Mussel Tissue XII (QA05TIS12): 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	SRM 2978
	rsd	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%
oxychlordane							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 (QA05TIS12): 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 (QA05TIS12): 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 2978
	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	5.9%	19.2%	7.2%	36.6%	0.4%	15.3%	9.3%	24.2%	14.9%	1.9%	4.5%	6.5%	
PCB 187	5.1%	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 (QA05TIS12): 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 (QA05TIS12): RSDs for three replicates - PBDEs													
	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 2978
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
BDE 15											5.5%	10.7%	
BDE 17			19.8%	33.4%							11.7%	7.6%	
BDE 25			19.8%	33.4%									
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											22.0%	61.9%	
BDE 138		57.0%									22.8%		
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												0.0%	
BDE 183											37.1%	25.5%	
BDE 190												0.0%	
BDE 191													
BDE 196													
BDE 197													
BDE 203											79.9%	71.5%	
BDE 205													
BDE 206													
BDE 207				0.0%									
BDE 208													
BDE 209													

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%	1.7%	2.0%	6.2%	10.2%		1.2%		0.4%	3.1%
TOC							4.5%	0.6%		
PAH ANALYSES	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%	2.9%	28.7%	1.2%	8.7%	3.8%	29.5%	15.0%	2.1%	0.0%
2-methylnaphthalene	2.5%	4.1%	23.8%	19.0%	15.0%	3.7%	11.8%	8.6%	2.1%	0.0%
1-methylnaphthalene	3.9%	4.7%	18.0%	13.9%	13.0%	1.7%	14.9%	9.6%	0.5%	0.0%
biphenyl	2.2%	1.2%	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%	5.5%	16.1%	11.8%	8.3%	7.4%	6.4%	8.4%	5.2%	0.0%
acenaphthene	3.3%	7.4%			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%	1.8%	38.8%	5.1%	20.9%	2.6%	5.5%	3.5%	5.2%	0.0%
phenanthrene	4.0%	0.8%	29.4%	1.7%	18.0%	3.2%	5.0%	6.8%	3.0%	0.0%
anthracene	3.0%	4.7%	24.8%	1.6%	19.5%	4.2%	12.0%	24.4%	3.1%	0.0%
1-methylphenanthrene	1.8%	1.9%	12.6%	3.8%	29.8%	1.5%	2.9%	7.2%	2.6%	0.0%
fluoranthene	0.7%	2.0%	21.4%	1.5%	16.1%	1.5%	5.9%	9.8%	5.1%	0.0%
pyrene	2.0%	2.3%	21.0%	1.6%	16.3%	5.3%	8.9%	8.8%	4.4%	0.0%
benz[a]anthracene	2.8%	6.2%	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%	1.5%			31.2%	25.5%	5.5%	11.5%	1.1%	0.0%
benzo[*j*]fluoranthene	2.5%	1.6%								
benzo[*k*]fluoranthene	3.9%	3.2%	16.2%	0.7%	4.3%	11.0%	6.5%	15.5%	2.2%	0.0%
benzo[e]pyrene	1.5%	2.5%	17.9%	2.8%	32.4%	6.9%	5.9%	12.2%	1.7%	0.0%
benzo[a]pyrene	1.6%	3.3%	14.6%	5.6%	21.6%	10.9%	7.2%	25.3%	1.9%	0.0%
perylene	1.1%	2.5%	17.8%	3.3%	26.2%	5.5%	6.3%	21.2%	0.9%	0.0%
indeno[1,2,3-cd]pyrene	1.5%	3.9%			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%	1.8%	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			1.8%	0.0%	0.0%	0.0%	0.0%		2.1%		4.2%	
TOC	8.7%	7.8%			1.0%	0.9%	0.0%					
PAH ANALYSES	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
alpha-HCH (a-BHC)										
hexachlorobenzene	0.4%	0.8%	7.0%	2.6%			7.5%	74.2%	0.9%	6.0%
gamma-HCH (g-BHC,lindane)									4.3%	6.0%
beta-HCH (b-BHC)										
heptachlor										
aldrin										
heptachlor epoxide										
oxychlordane									14.7%	18.4%
gamma-chlordane	0.5%	1.5%					50.4%	20.0%	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%	5.2%	3.1%	4.4%
trans-nonachlor	1.1%	0.9%					3.5%	16.9%		
dieldrin										
4,4'-DDE	4.1%	3.3%	3.7%	4.9%			1.1%	2.4%	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									20.6%	0.0%
cis-nonachlor				14.3%			14.9%	2.1%		
4,4'-DDT									0.0%	
mirex									5.0%	9.6%
endosulfan sulfate										
chlorpyrifos										

Table 31(cont). Marine Sediment XIII (QA05SED13): 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)							2.8%	0.3%			16.4%	6.2%
hexachlorobenzene	40.4%	1.0%	9.7%	5.7%							4.4%	3.4%
gamma-HCH (g-BHC,lindane)							5.1%				16.3%	9.6%
beta-HCH (b-BHC)							45.4%	2.4%			23.5%	5.9%
heptachlor							21.4%	2.3%				
aldrin							6.6%	0.0%			0.0%	39.2%
heptachlor epoxide							14.0%	1.3%			13.9%	1.7%
oxychlordane							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%	7.9%	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%	10.5%	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%		12.0%	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	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
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										

Table 33 (cont). Marine Sediment XIII (QA05SED13): RSDs for three replicates - PBDEs												
	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
BDE 15											0.5%	9.3%
BDE 17											5.6%	11.0%
BDE 25												
BDE 28			13.0%	6.9%							1.9%	8.1%
BDE 30												
BDE 33												
BDE 47			32.8%	19.3%							4.9%	11.9%
BDE 49											1.1%	6.8%
BDE 66			13.2%	17.5%							8.3%	12.7%
BDE 71											8.4%	5.9%
BDE 75												0.0%
BDE 85			26.3%	76.8%							9.4%	14.5%
BDE 99			20.0%	47.4%							2.1%	5.1%
BDE 100			17.0%	27.6%							0.0%	3.2%
BDE 116												
BDE 118												
BDE 119											35.4%	0.0%
BDE 138			56.0%	0.0%							25.0%	29.4%
BDE 153			7.0%	55.0%							4.0%	0.7%
BDE 154			14.9%	62.6%							6.5%	2.9%
BDE 155											6.0%	9.1%
BDE 156												
BDE 181												
BDE 183												
BDE 190												
BDE 191												
BDE 196												
BDE 197												
BDE 203											92.0%	85.7%
BDE 205												
BDE 206												
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 Exercise Assigned		SRM 1941b from Certificate		
	Value	s	Value	95% CI	% difference
Water (percent)	47.4	3.2			
TOC (percent)	2.70	0.58			
	Marine Sediment XIII Exercise Assigned		SRM 1941b from Certificate		
PAHs (ng/g dry mass)	Value	s	Value	95% CI	% difference
naphthalene	785	186	**848**	**95**	-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	**85**	**15**	-34.1%
phenanthrene	306	89	**406**	**44**	-24.5%
anthracene	137	47	**184**	**18**	-25.5%
1-methylphenanthrene	55.4	18.2	**73.2**	**5.9**	-24.4%
fluoranthene	496	140	**651**	**50**	-23.8%
pyrene	421	142	**581**	**39**	-27.5%
benz[*a*]anthracene	241	80	**335**	**25**	-28.2%
chrysene	219	62	**291**	**31**	-24.7%
triphenylene	no target		**108**	**5**	
benzo[*b*]fluoranthene	413	174	**453**	**21**	-8.8%
benzo[*j*]fluoranthene	no target		217	5	
benzo[*k*]fluoranthene	180	56	**225**	**18**	-20.0%
benzo[e]pyrene	286	97	**325**	**25**	-11.9%
benzo[a]pyrene	282	120	**358**	**17**	-21.3%
perylene	311	131	**397**	**45**	-21.6%
indeno[1,2,3-cd]pyrene	258	101	**341**	**57**	-24.4%
dibenz[a,h]anthracene	41.9	21.2	**53**	**10**	-20.9%
benzo[ghi]perylene	244	96	**307**	**45**	-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 Exercise Assigned		SRM 1941b from Certificate		
	Value	s	Value	95% CI	% difference
alpha-HCH (a-BHC)	no target		no target		
hexachlorobenzene	5.38	1.90	**5.83**	**0.38**	-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	**0.566**	**0.093**	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	**0.85**	**0.11**	-43.2%
trans-nonachlor	0.286	0.089	**0.438**	**0.073**	-34.8%
dieldrin	0.386	0.034	no target		
4,4'-DDE	3.44	1.08	**3.22**	**0.28**	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	**4.66**	**0.46**	-10.3%
2,4'-DDT	no target		no target		
cis-nonachlor	0.454	0.493	**0.378**	**0.053**	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

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

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

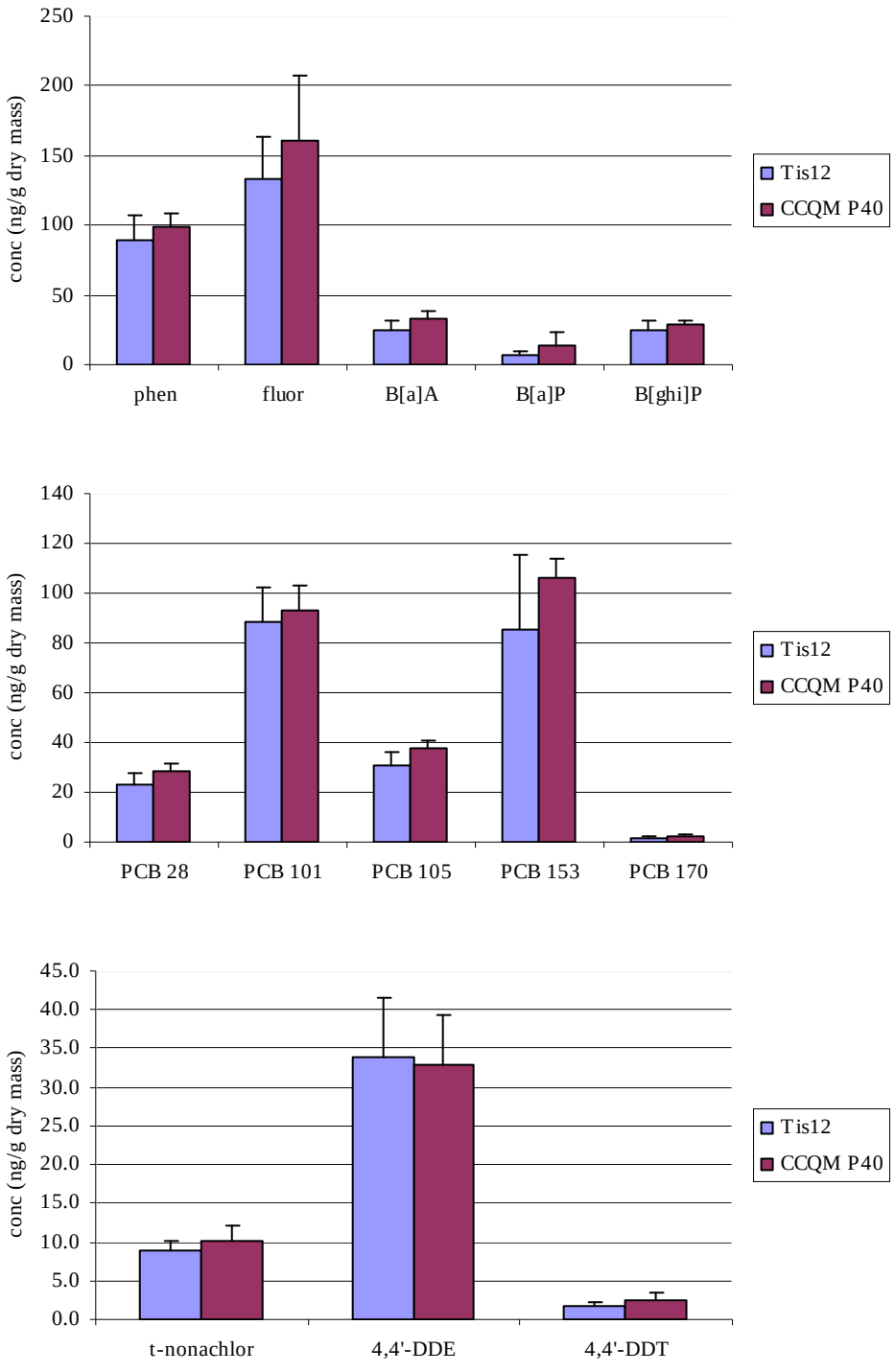


Figure 1. Comparison of Concentrations for Mussel Tissue XII as determined in this study and in a CCQM pilot study for selected analytes. Shown are the assigned values and associated uncertainties from each study.

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

Intercomparison Exercise: Mussel Tissue XII
Description of Materials and Instructions

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.

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[1] of interest in the current NIST Intercomparison Exercise Program for Organic Contaminants in the Marine Environment. These compounds are listed in Table 1.

[1]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

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
cis-chlordane (alpha-chlordane)	chlorpyrifos
trans-chlordane (gamma-chlordane)	aldrin
oxychlordane	dieldrin
cis-nonachlor	endrin
trans-nonachlor	endosulfan I
mirex	endosulfan II
	endosulfan sulfate

Polychlorinated Biphenyl Congeners

PCB No.	*Compound Name*
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
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

Polybrominated diphenyl ethers (PBDEs)

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

_____
_____
_____
_____
_____

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	_____	_____	_____	_____	_____	_____

PAH 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)
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

Intercomparison Exercise: Marine Sediment XIII
Description of Materials and Instructions

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.

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[2] of interest in the current NIST Intercomparison Exercise Program for Organic Contaminants in the Marine Environment. These compounds are listed in Table 1.

[2]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
cis-chlordane (alpha-chlordane)	chlorpyrifos
trans-chlordane (gamma-chlordane)	aldrin
oxychlordane	dieldrin
cis-nonachlor	endrin
trans-nonachlor	endosulfan I
mirex	endosulfan II
	endosulfan sulfate

Polychlorinated Biphenyl Congeners

PCB No.	*Compound Name*
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
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

Polybrominated diphenyl ethers (PBDEs)

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

_____
_____
_____
_____
_____

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	_____	_____	_____	_____	_____	_____
PAH 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)
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	ng/g dry mas	ng/g dry mas	ng/g dry mas	ng/g dry mas	ng/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 NCI. 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	ng/g dry mas	ng/g dry mas	ng/g dry mas	ng/g dry mas	ng/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 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.						
5	INT = interference						
7	1. For 3nd PT sample (Tissue XII), residue of Na2SO4 or water may be present in the extract. 2. PCB 101 and PCB 90 are coeluted.						

8	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. **PCB Coelutions:** 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 **BDE Coelutions:** BDE-17/BDE-25 BDE-28/BDE-33 BDE-119/BDE-120 BDE-198/BDE-203
9	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 & PCB 180 SRM 3 - PCB 180
10	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 2977
11	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-128/16 PCB Co-eluters: PCB-138/163/129/160, PCB-149/147, PCB-153/168, PCB-156/157, PCB-180/193
12	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-trimethylnaphthalene/2,3,5-trimethynaphthalene, dibenz[a,h]anthracene/dibenz[a,c]anthracene

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	417
	dibenz[a,h + a,c]anthracene	87.3	86.8	87.4	84.7	87.5	86.3
	PCB 138/163	4.89	4.89	4.96	4.91	4.74	4.73
	PCB 153/132	6.56	6.41	5.53	6.27	6.53	6.56
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						
	RESULTS: (for SRM 1944)						
	PAH ANALYSES				SRM 1944 Batch A Sample 1	SRM 1944 Batch B Sample 2	SRM 1944 Batch C 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 mas	ng/g dry mas	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	Sediment XIII Batch B Sample 2	Sediment XIII Batch C Sample 3	SRM 1941b Batch A Sample 1
Analyst (Initials)	DarB	DarB	DarB	DarB
Date(s) of measurements (m/d/y)	7/19/2005	7/19/2005	7/19/2005	7/19/2005
Sample Jar number	110	134	158	
dibenzothiophene	59.9	57.2	58.9	60.2
retene	23.7	20.5	21.5	25.0

	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)	RHB	RHB	RHB	RHB	RHB	RHB
Date(s) of measurements (m/d/y)	12/5/2005	12/5/2005	12/5/2005	12/5/2005	12/5/2005	12/5/2005
Sample Jar number	110	134	158			
nonachlor III	<0.548	<0.479	<0.433	<0.474	<0.651	<0.505
PCB 17	1.31	1.34	1.31	1.37	1.19	1.36
PCB 33	2.39	2.37	2.48	2.50	2.22	2.78
PCB 70	5.77	5.66	5.80	5.69	5.17	5.56
PCB 74	2.23	2.20	2.22	2.29	2.08	2.21
PCB 82	0.551	0.515	0.547	0.520	0.479	0.567
PCB 87	1.74	1.59	1.90	1.55	1.45	1.57
PCB 110	6.72	6.48	7.11	6.51	5.88	6.40
PCB 151	1.26	1.48	1.28	1.20	1.07	1.20
PCB 158	<0.546	0.549	0.574	<0.472	<0.650	<0.504
PCB 171	<0.549	0.575	<0.434	<0.475	<0.653	<0.507
PCB 177	0.928	1.42	0.948	0.912	0.807	0.912
PCB 183	0.902	1.40	0.916	0.862	0.760	0.877
PCB 191	<0.551	<0.482	<0.436	<0.477	<0.656	<0.509
PCB 199	1.50	2.06	1.45	1.49	1.33	1.50
PCB 205	<0.549	<0.480	<0.434	<0.475	<0.654	<0.507
PCB 208	1.15	1.21	1.16	1.21	0.950	1.15

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.

PCB Coelutions:

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

BDE Coelutions:

BDE-17/BDE-25
BDE-28/BDE-33
BDE-119/BDE-120
BDE-198/BDE-203

10	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
11	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
12	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-trimethylnaphthalene/2,3,5-trimethynaphthalene, dibenz[a,h]anthracene/dibenz[a,c]anthracene

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

Lab #	PBDEs Instrument	Phase	Dimensions	Calibration Curve # 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			Calibration Curve		PESTICIDES			Calibration Curve	
	Instrument	Phase	Dimensions	# points	range	Instrument	Phase	Dimensions	# points	range
1a	GC/MS	HP-5MS	30m x 0.25 mm, 0.25um	5	5 ng - 300 ng extracted	GC/MS	HP-5MS	30m x 0.25 mm, 0.25um	5	5 ng - 300 ng extracted
1c	GC/MS	DB-XLB	30m x 0.18 mm, 0.18um film	6	0.29 ng/g - 3930 ng/g	GC/MS	DB-XLB	30m x 0.18 mm, 0.18um film	6	0.65 ng/g - 244 ng/g
3	GC/MS	RTX-5	60m x 0.25 mm, 0.25um film	5	2 ng/mL - 100 ng/mL	GC/MS	RTX-5	60m x 0.25 mm, 0.25um film	5	2 ng/mL - 100 ng/mL
4	GC/MS	DB-5	60m x 0.25 mm, 0.25um film	6	0.0012 ng/µL - 0.32 ng/µL	GC/MS	DB-5	60m x 0.25 mm, 0.25um film	6	0.0012 ng/µL - 0.32 ng/µL
5	GC-ECD	HP-5MS/ DB-XLB	30m x 0.25 mm, 0.25um film	5	5 ng/mL - 50 ng/mL	GC-ECD	HP-5MS/ DB-XLB	30m x 0.25 mm, 0.25um film	5	5 ng/mL - 50 ng/mL
6	GC/MS	RTX-5	60m x 0.25 mm, 0.25um film	8	0.25 ppb - 400 ppb	GC-ECD	RTX-5	60m x 0.25 mm, 0.25um film	7	0.2 ppb - 200 ppb
7	GC/MS	DB-XLB	30m x 0.18 mm, 0.18um film	1	20 ppb	GC/MS	DB-XLB	30m x 0.18 mm, 0.18um film	1	20 ppb
8	HRGC/MS	DB-5	60m x 0.32 mm, 0.25um	5	20 pg - 20000 pg					
9	GC-ECD	DB-5	60m x 0.25 mm, 0.25um film	7	0.001 ng/µL - 1 ng/µL	GC-ECD	DB-5	60m x 0.25 mm, 0.25um film	7	0.001 ng/µL - 1 ng/µL
10	GC-ECD	DB-5	60m x 0.25 mm, 0.25um film	5	1 ng - 43 ng	GC-ECD	DB-5	60m x 0.25 mm, 0.25um film	5	1 ng - 10 ng
11	GC/HRMS	SPB-Octyl	30m x 0.25 mm, 0.25um film	6	0.2 ng/mL - 2000 ng/mL					
12	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

PAHs

Lab #	IS/surrogate added prior to extraction	Used?	added prior to analysis	Used?	corrected for recovery?	others?
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 napthalene, phenanthrene, and chrysene		deuterated fluorene, acenaphthene, B[a]P	x	n	
4	deuterated naphthalene, acenaphthene, B[a]P	x	hexamethylbenzene			deuterated phenanathrene prior to clean-up
5	deuterated naphthalene, acenaphthene, phenanthrene, fluoranthene, chrysene, B[a]P		deuterated fluorene, pyrene, peryleen	x	n	
6	deuterated 2-methyl naphthalene, pyrene, B[b]F		deuterated naphthalene, acenphthene, phenanthrene, chrysene, perylene	x	n	
7	17 deuterated PAHs	x				
8	deuterated naphthalene, acenaphthylene, acenaphthene, fluorene, phenathrene, 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[e]P			
9	deuterated naphthalene, acenaphthene, phneanthrene, 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[123-cd]P, B[ghi]P	x	deuterated acenaphthene, pyrene, B[e]P used to quantify labeled surrogates			

PBDEs

Lab #	IS/surrogate added prior to extraction	Used?	added prior to analysis	Used?	corrected for recovery?	others?
1c	13C-PCB194,13C-t-chlodane,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	Used?	**PCBs** added prior to analysis	Used?	corrected for 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	
4	PCB 103	x	tetrachloro-o-xylene			tetrachloro-m-xylene prior to clean-up
5	g-chlordene, 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		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	Used?	**Pesticides** added prior to analysis	Used?	corrected for 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	
4	PCB 103	x	tetrachloro-o-xylene			tetrachloro-m-xylene prior to clean-up
5	g-chlordene, 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, 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 F: Laboratory Methods Used, Marine Sediment XIII

Lab #	Reported	g extracted QA05SED13	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 Instrument	Phase	Dimensions	Calibration Curve # points	range
1a	GC/MS	HP-5MS	30m x 0.25 mm, 0.25µm filr	5	5 ng - 1500 ng extracted
1c	GC/MS	DB-XLB	30m x 0.18 mm, 0.18µm filr	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 filr	5	5 ng/mL - 2000 ng/mL
4	GC/MS	DB-5	60m x 0.25 mm, 0.25µm filr	7	0.015 ng/µL - 10 ng/µL
6	GC/MS	RTX-5	60m x 0.25 mm, 0.25µm filr	7	10 ppb - 10000 ppb
7	GC/MS	DB-XLB	60m x 0.25 mm, 0.25µm filr	1	50 ppb
8	GC/MS	DB-5MS	30m x 0.25 mm, 0.25µm filr	5	25 µg - 2500 µg
10	GC/MS	DB-5	30m x 0.25 mm, 0.25µm filr	5	5 ng - 100 ng
12	GC/MS	DB-5	30m x 0.25 mm, 0.25µm filr	5	50 ng/mL - 5000 ng/mL

Lab #	PBDEs Instrument	Phase	Dimensions	Calibration Curve # 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			Calibration Curve		PESTICIDES			Calibration Curve	
	Instrument	Phase	Dimensions	# points	range	Instrument	Phase	Dimensions	# points	range
1a	GC/MS	HP-5MS	30m x 0.25 mm, 0.25um	5	5 ng - 300 ng extracted	GC/MS	HP-5MS	30m x 0.25 mm, 0.25um	5	5 ng - 300 ng extracted
1c	GC/MS	DB-XLB	30m x 0.18 mm, 0.18um film	6	0.29 ng/g - 3930 ng/g	GC/MS	DB-XLB	30m x 0.18 mm, 0.18um film	6	0.65 ng/g - 244 ng/g
3	GC/MS	RTX-5	60m x 0.25 mm, 0.25um film	5	2 ng/mL - 100 ng/mL	GC/MS	RTX-5	60m x 0.25 mm, 0.25um film	5	2 ng/mL - 100 ng/mL
4	GC/MS	DB-5	60m x 0.25 mm, 0.25um film	6	0.0012 ng/µL - 0.32 ng/µL	GC/MS	DB-5	60m x 0.25 mm, 0.25um film	6	0.0012 ng/µL - 0.32 ng/µL
6	GC/MS	RTX-5	60m x 0.25 mm, 0.25um film	8	0.25 ppb - 400 ppb	GC-ECD	RTX-5	60m x 0.25 mm, 0.25um film	7	0.2 ppb - 200 ppb
7	GC/MS	DB-XLB	30m x 0.18 mm, 0.18um film	1	20 ppb	GC/MS	DB-XLB	30m x 0.18 mm, 0.18um film	1	20 ppb
8	HRGC/MS	DB-5	60m x 0.32 mm, 0.25um film	5	20 pg - 20000 pg					
10	GC-ECD	DB-5	60m x 0.25 mm, 0.25um film	5	1 ng - 43 ng	GC-ECD	DB-5	60m x 0.25 mm, 0.25um film	5	1 ng - 10 ng
11	GC/HRMS	SPB-Octyl	30m x 0.25 mm, 0.25um film	6	0.2 ng/mL - 2000 ng/mL					
12	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

PAHs

Lab #	IS/surrogate added prior to extraction	Used?	added prior to analysis	Used?	corrected for recovery?	others?
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 napthalene, phenanthrene, and chrysene		deuterated fluorene, acenaphthene, B[a]P	x	n	
4	deuterated naphthalene, acenaphthene, B[a]P	x	hexamethylbenzene			deuterated phenanathrene prior to clean-up
6	deuterated 2-methyl naphthalene, pyrene, B[b]F	x	deuterated naphthalene, acenphthene, phenanthrene, chrysene, perylene		n	
7	17 deuterated PAHs	x				
8	deuterated naphthalene, acenaphthylene, acenaphthene, fluorene, phenathrene, 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[e]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, fluoranthene, B[a]A, chrysene, B[b,k]F, B[a]P, perylene, DB[a,h]A, I[123-cd]P, B[ghi]P	x	deuterated acenaphthene, pyrene, B[e]P used to quantify labeled surrogates			

PBDEs

Lab #	IS/surrogate added prior to extraction	Used?	added prior to analysis	Used?	corrected for recovery?	others?
1c	13C-PCB194,13C-t-chlodane,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	Used?	**PCBs** added prior to analysis	Used?	corrected for 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	
4	PCB 103	x	tetrachloro-o-xylene			tetrachloro-m-xylene prior to clean-up
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	Used?	**Pesticides** added prior to analysis	Used?	corrected for 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	
4	PCB 103	x	tetrachloro-o-xylene			tetrachloro-m-xylene prior to clean-up
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 = ± 1, i. e., 25 % from assigned value

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

Dashed line: z = ± 3, i. e., 75 % from assigned value

For SRM 2977 plots:

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

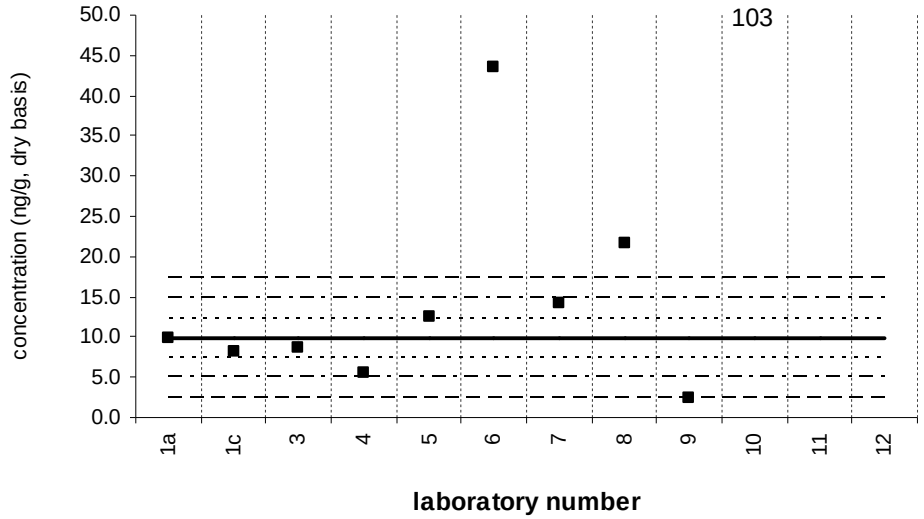
Dotted line: 95 % confidence interval (CI)

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

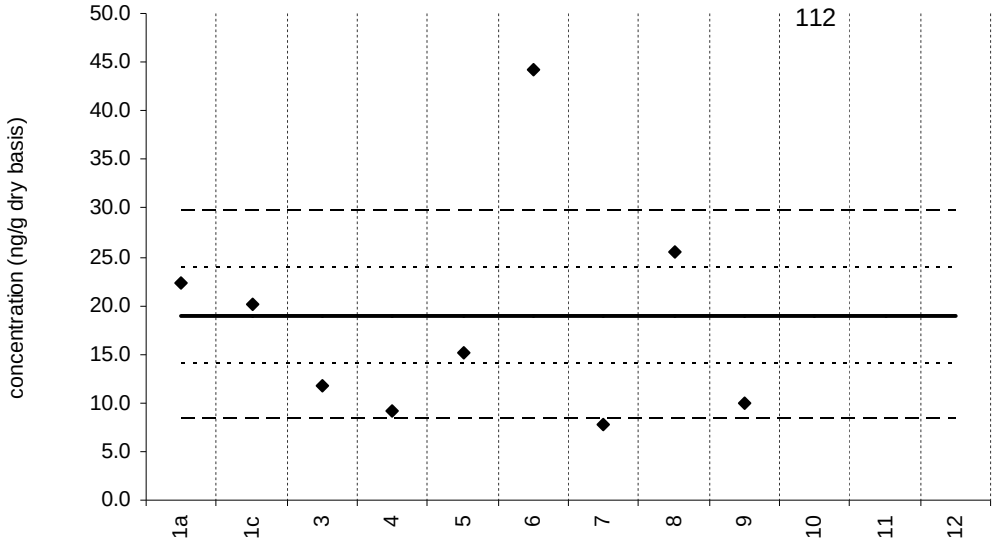


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

naphthalene

SRM 2977

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

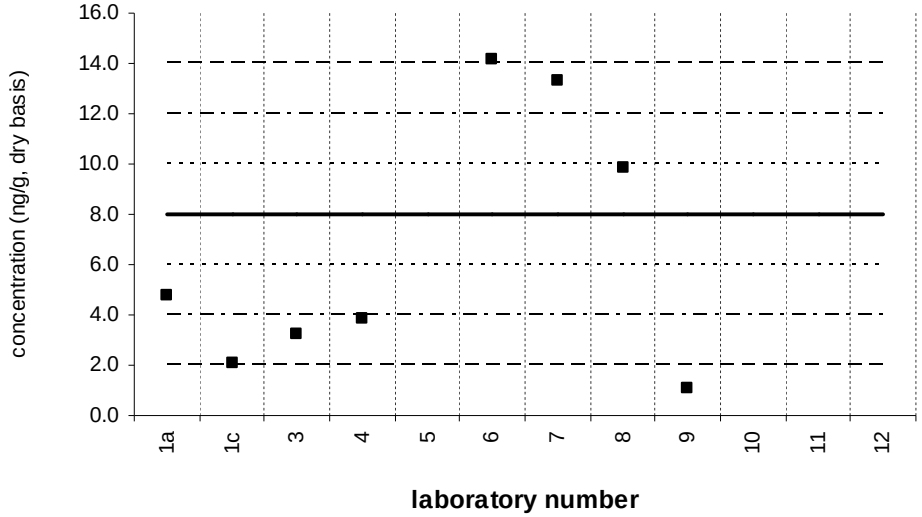


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

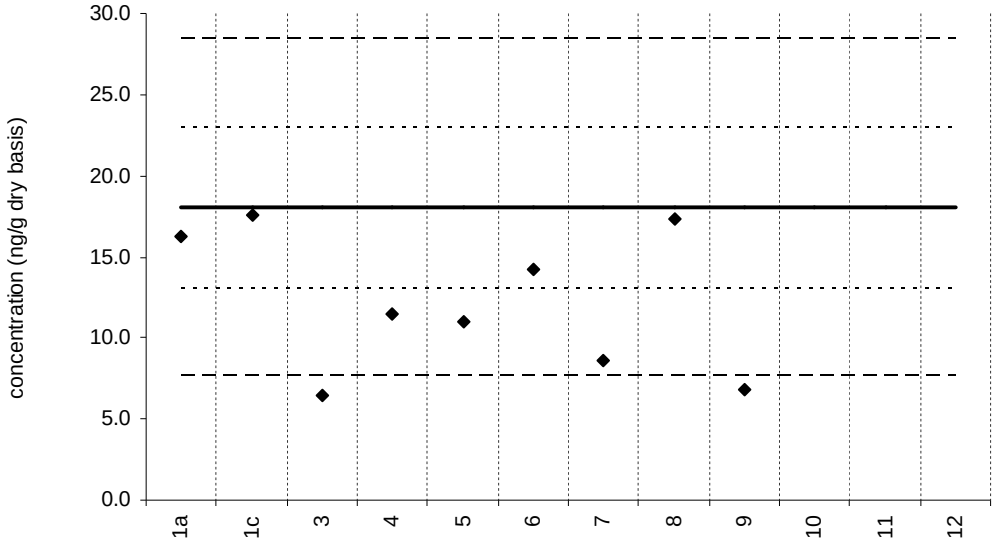


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

2-methylnaphthalene

SRM 2977

Reference Value = 18 ± 5 ng/g (dry basis)
Reported Results: 9 Quantitative Results: 9

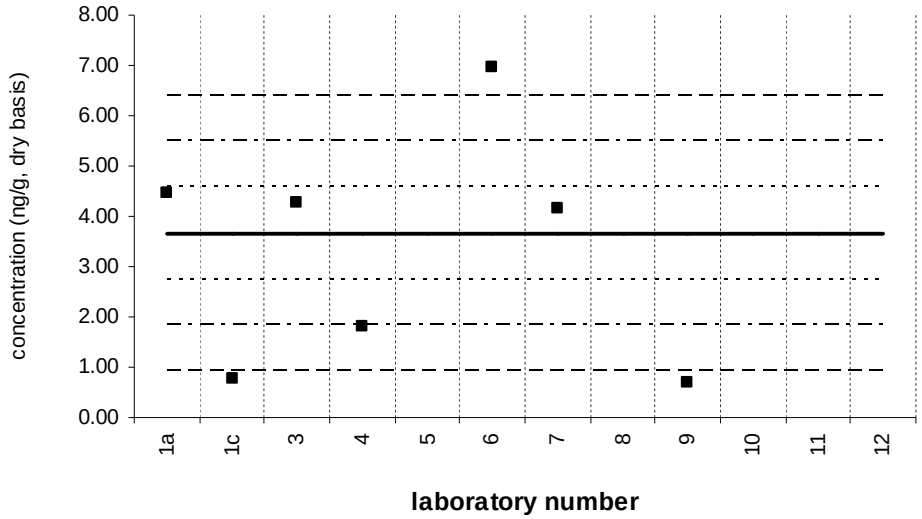


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

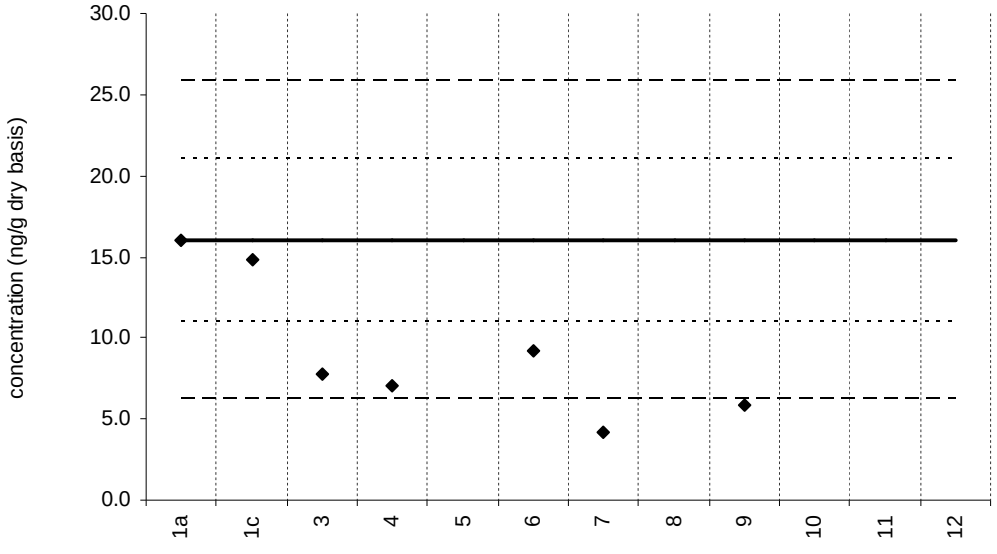


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

1-methylnaphthalene

SRM 2977

Reference Value = 16 ± 5 ng/g (dry basis)
Reported Results: 8 Quantitative Results: 7

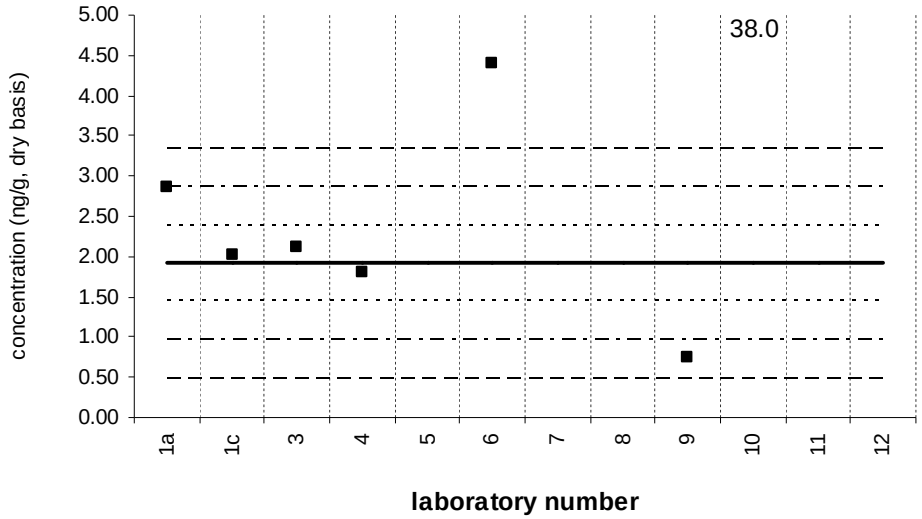


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

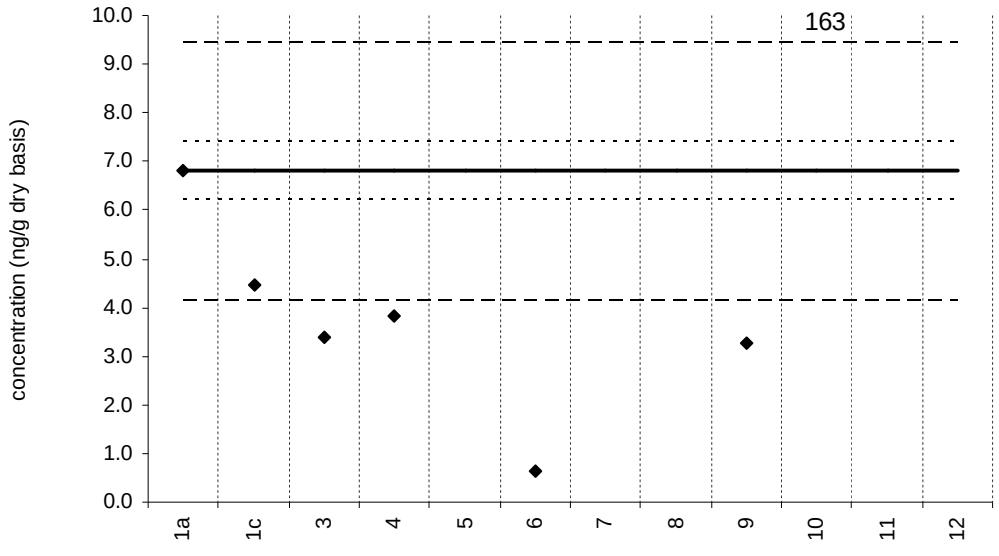


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

biphenyl

SRM 2977

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

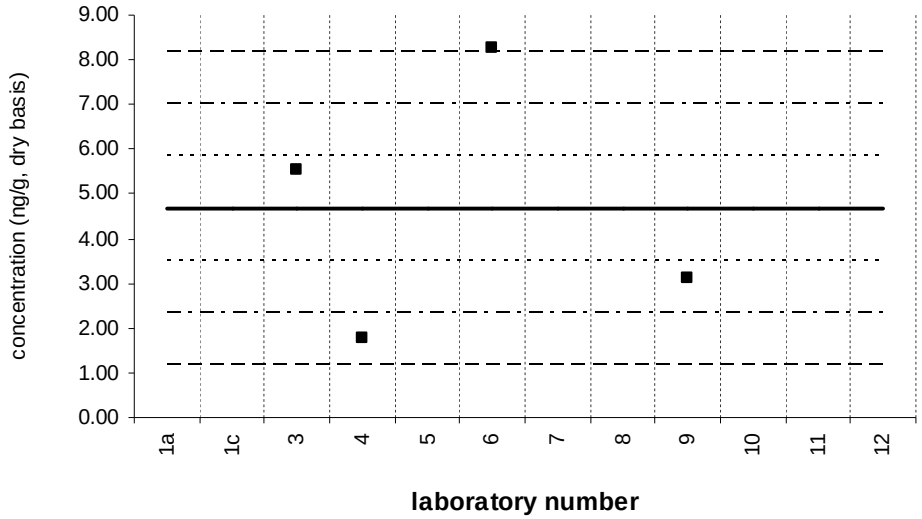


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

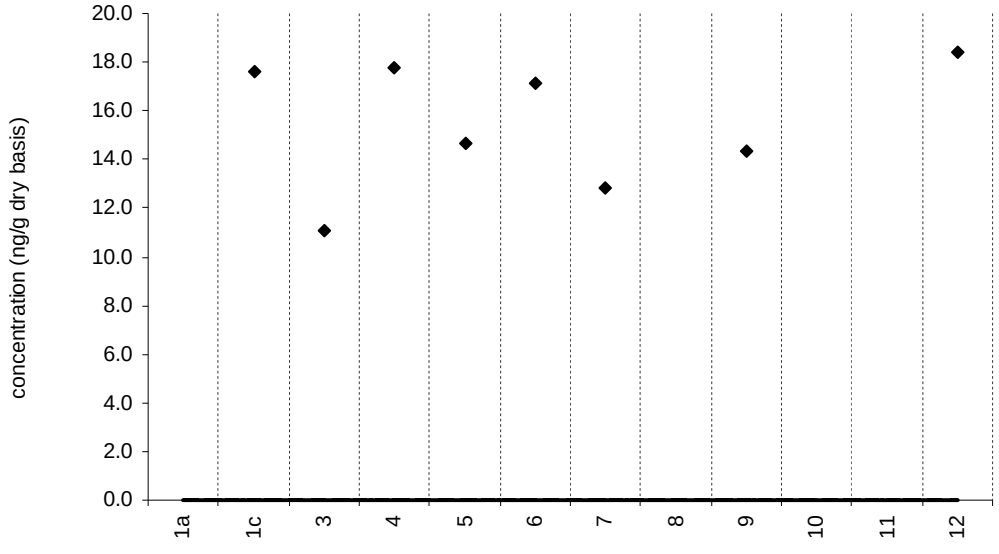


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

2,6-dimethylnaphthalene

SRM 2977

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

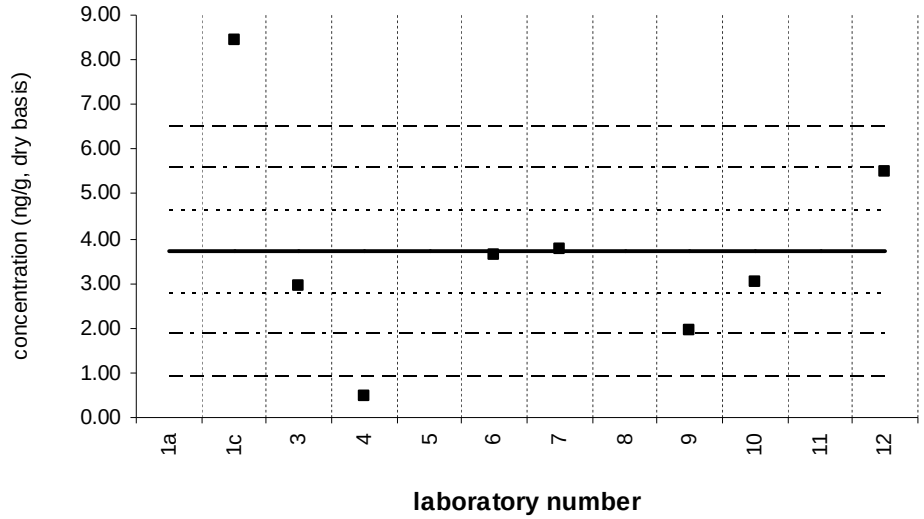


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

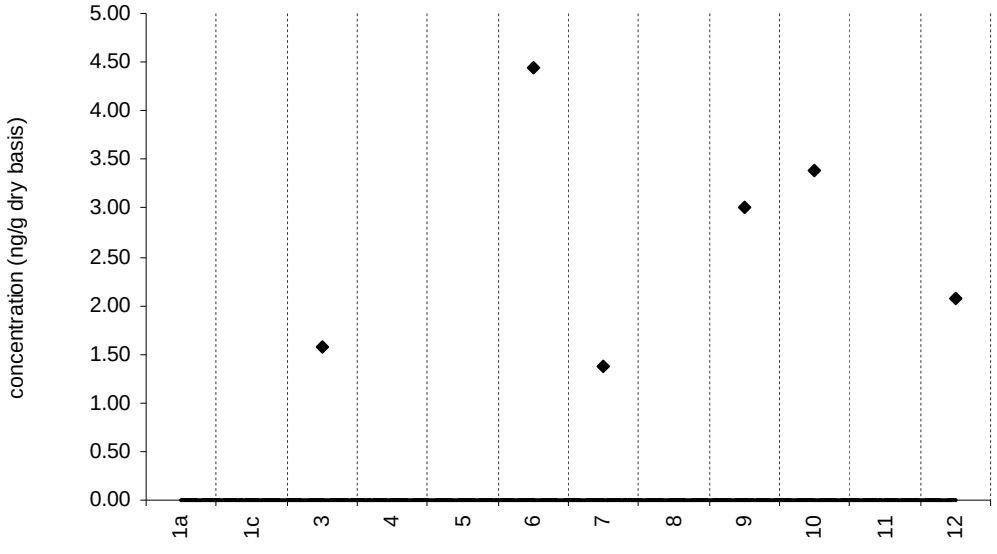


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

acenaphthylene

SRM 2977

Target Value = no target ng/g (dry basis)
Reported Results: 11 Quantitative Results: 6

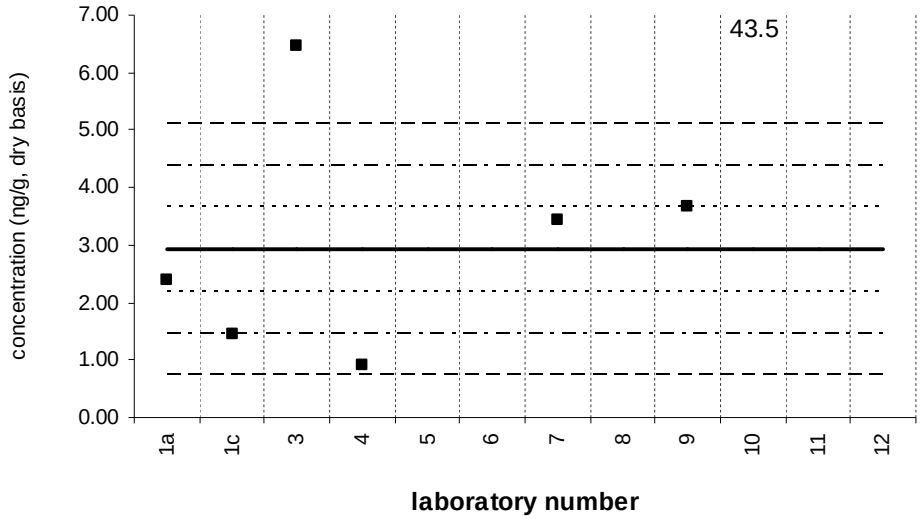


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

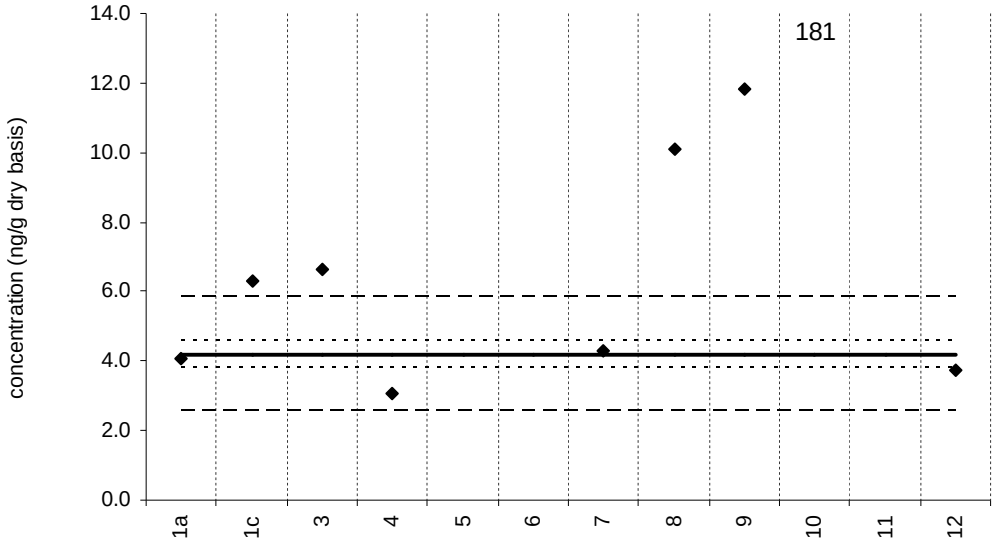


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

acenaphthene

SRM 2977

Reference Value = 4.2 ± 0.4 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 9

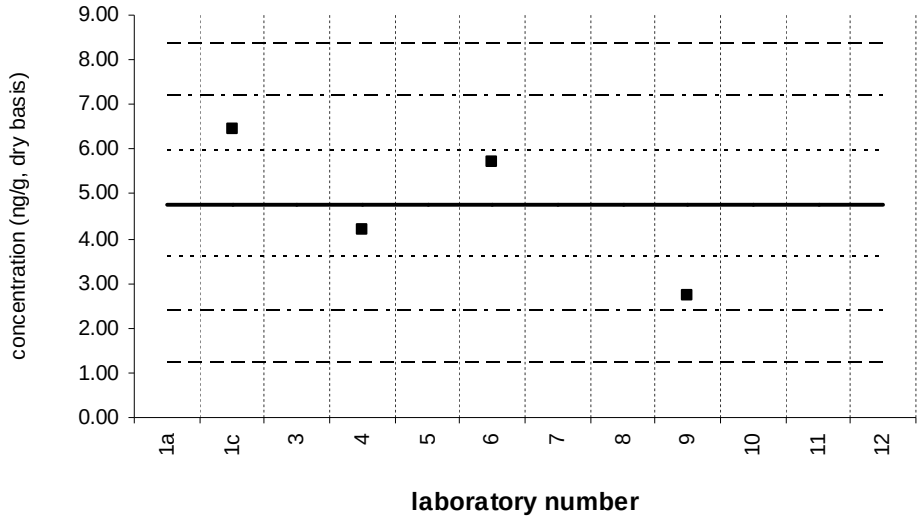


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

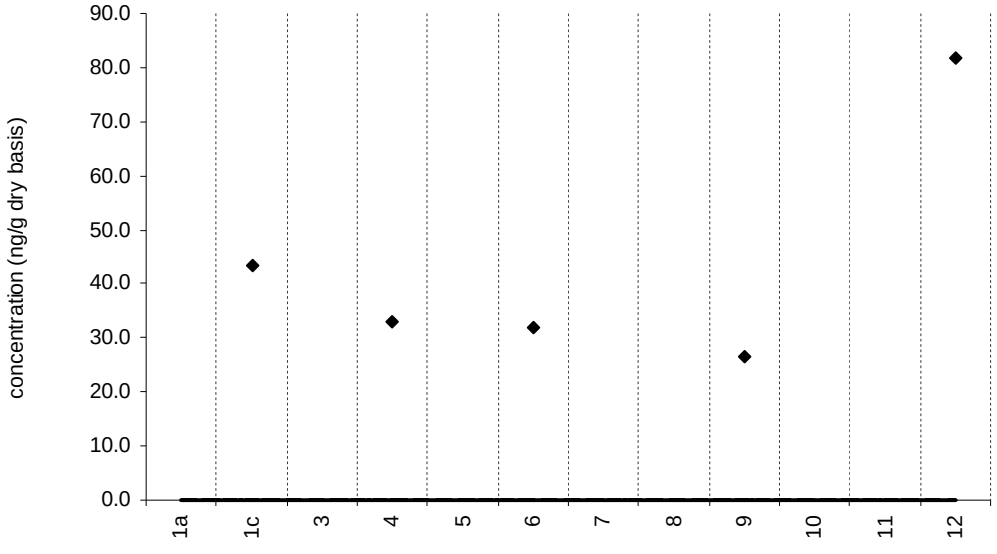


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

1,6,7-trimethylnaphthalene

SRM 2977

Target Value = no target ng/g (dry basis)
Reported Results: 5 Quantitative Results: 5

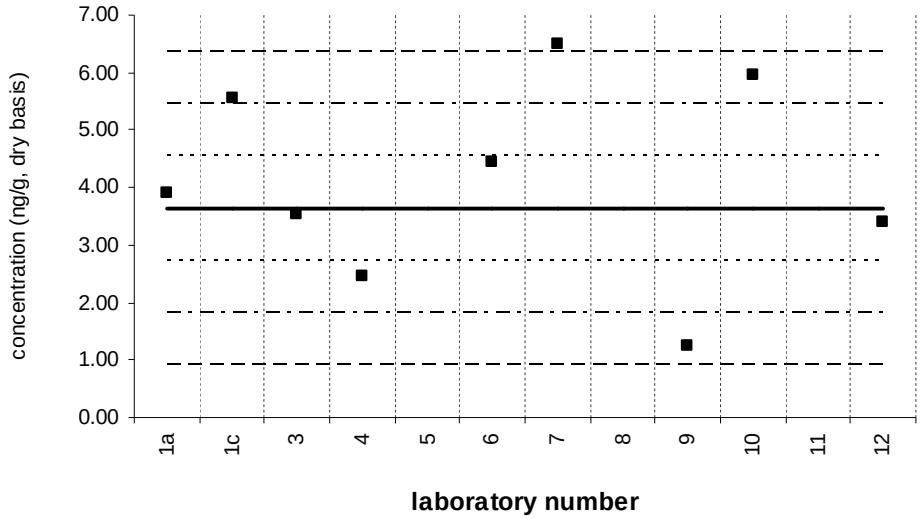


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

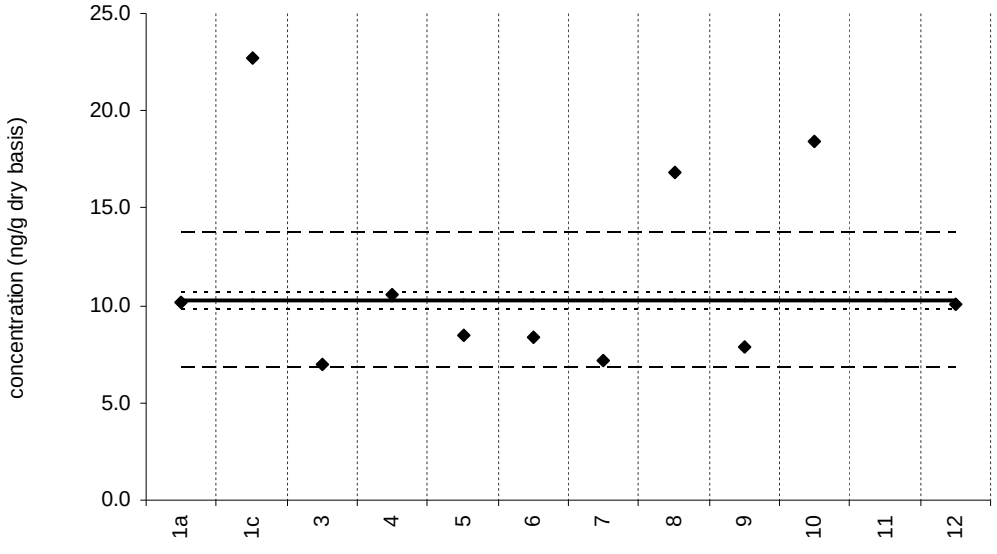


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

fluorene

SRM 2977

Certified Value = 10.24 ± 0.43 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 11

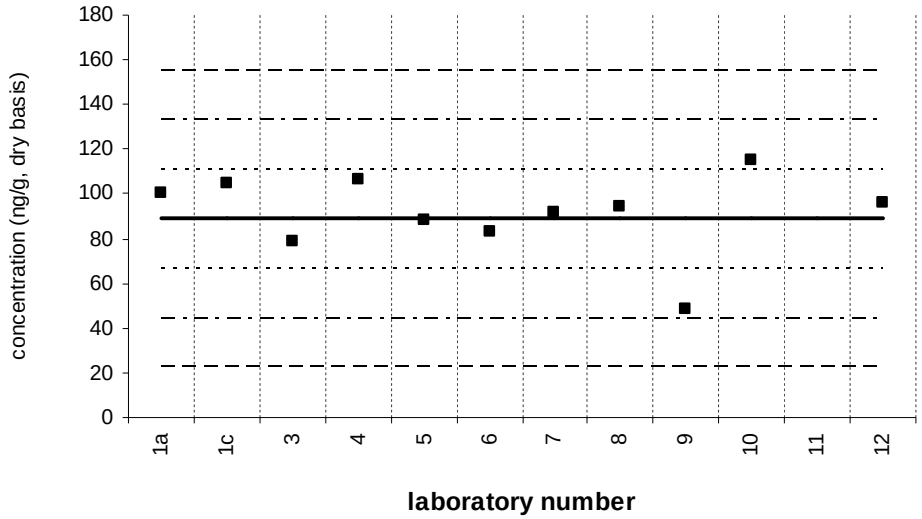


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

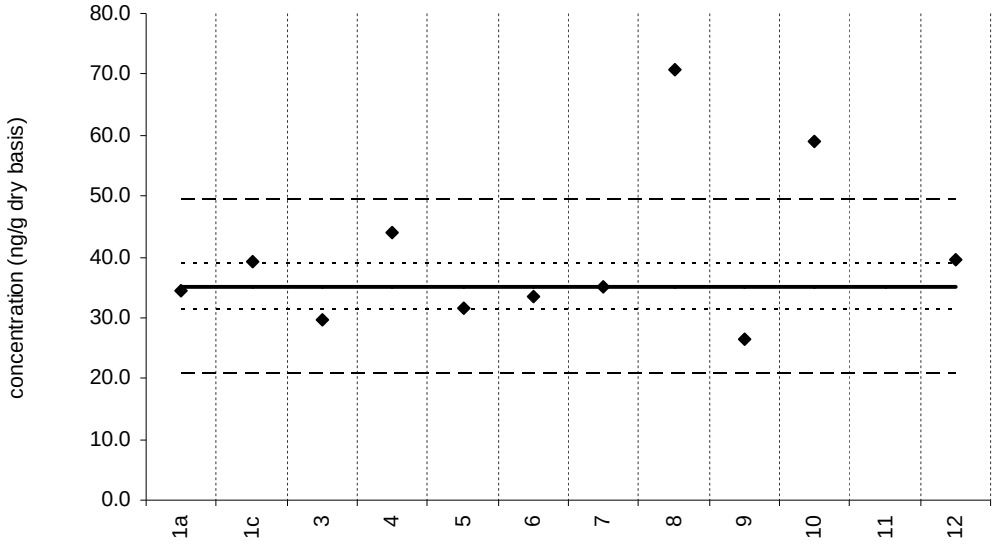


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

phenanthrene

SRM 2977

Certified Value = 35.1 ± 3.8 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 11

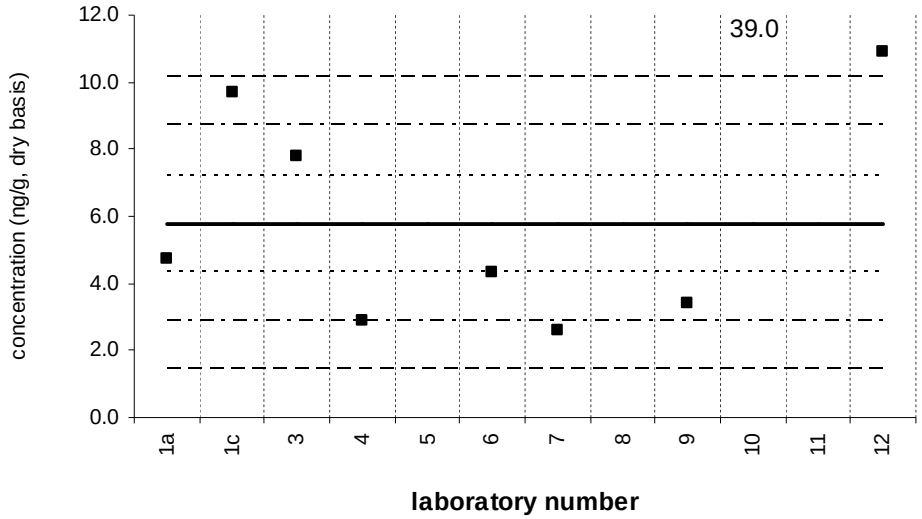


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

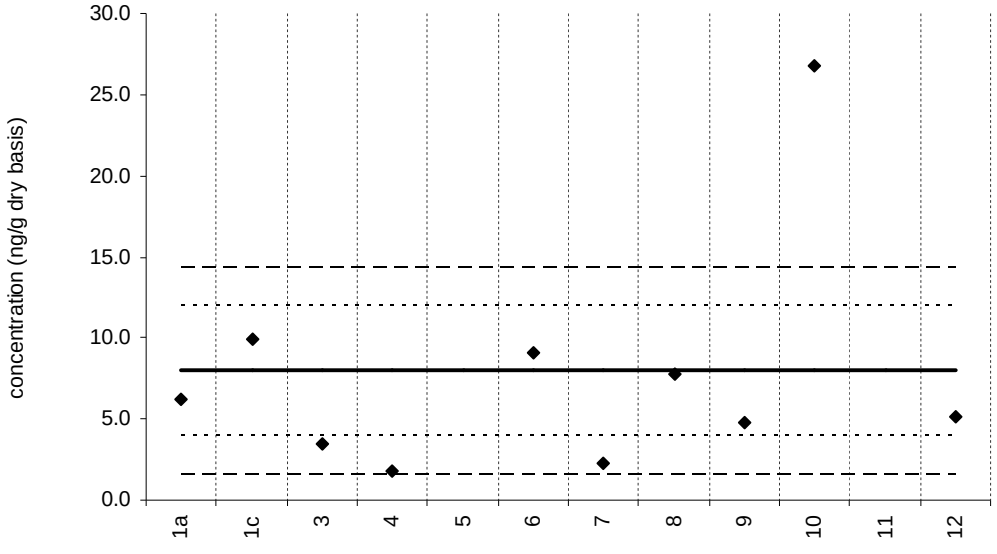


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

anthracene

SRM 2977

Reference Value = 8 ± 4 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 10

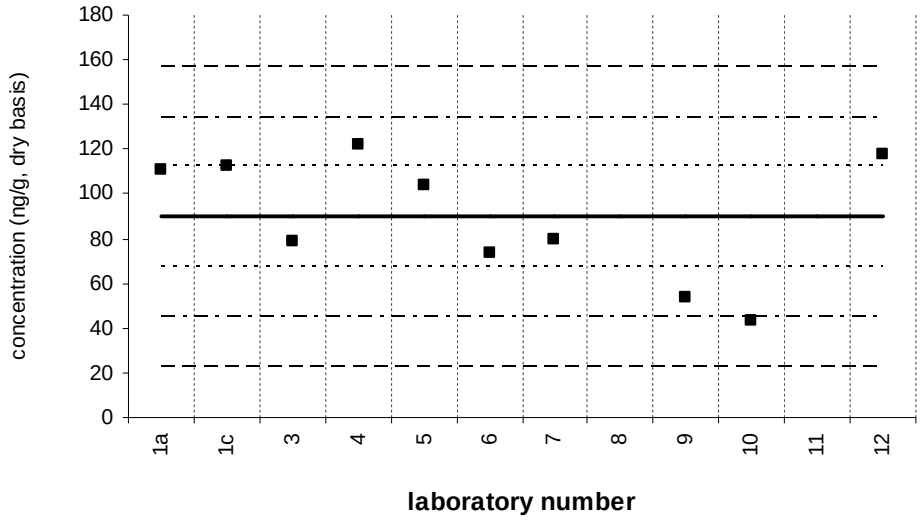


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

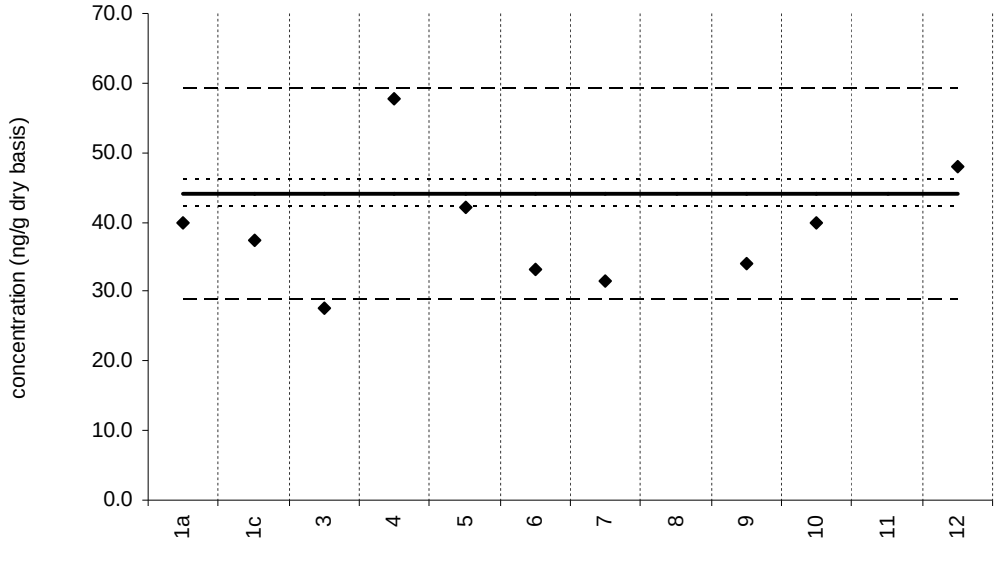


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

1-methylphenanthrene

SRM 2977

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

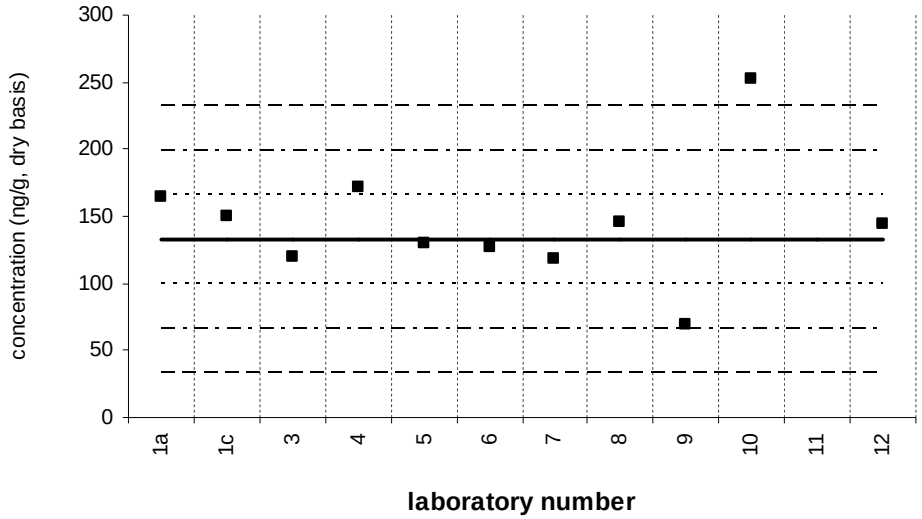


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

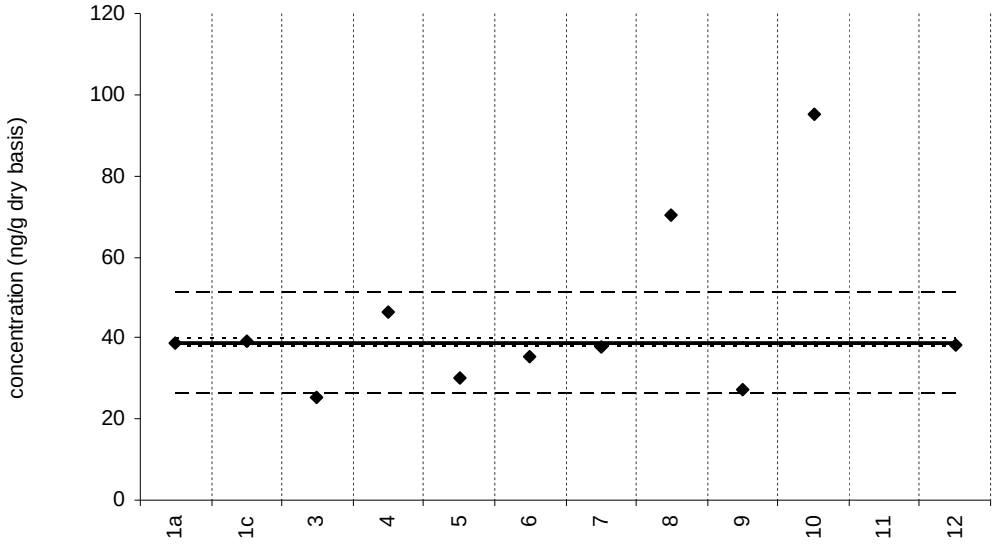


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

fluoranthene

SRM 2977

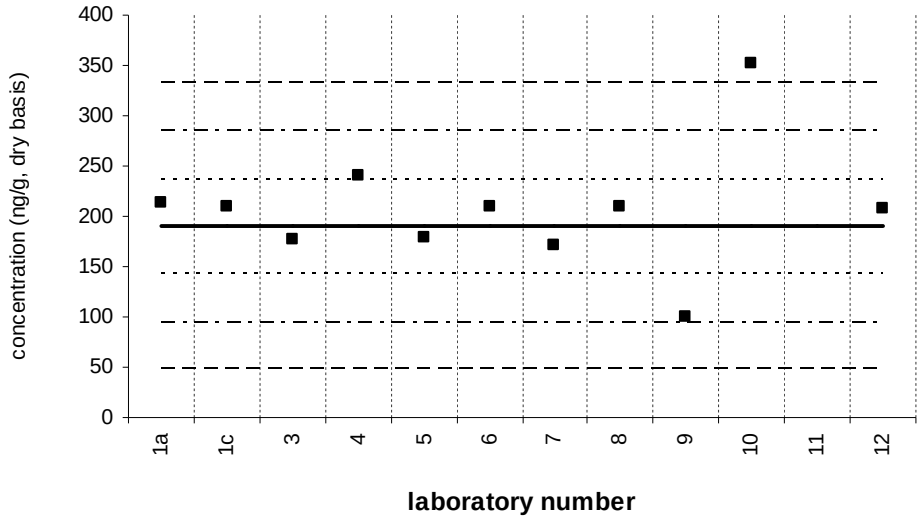
Certified Value = 38.7 ± 1.0 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 11



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

pyrene **Tissue XII (QA05TIS12)**

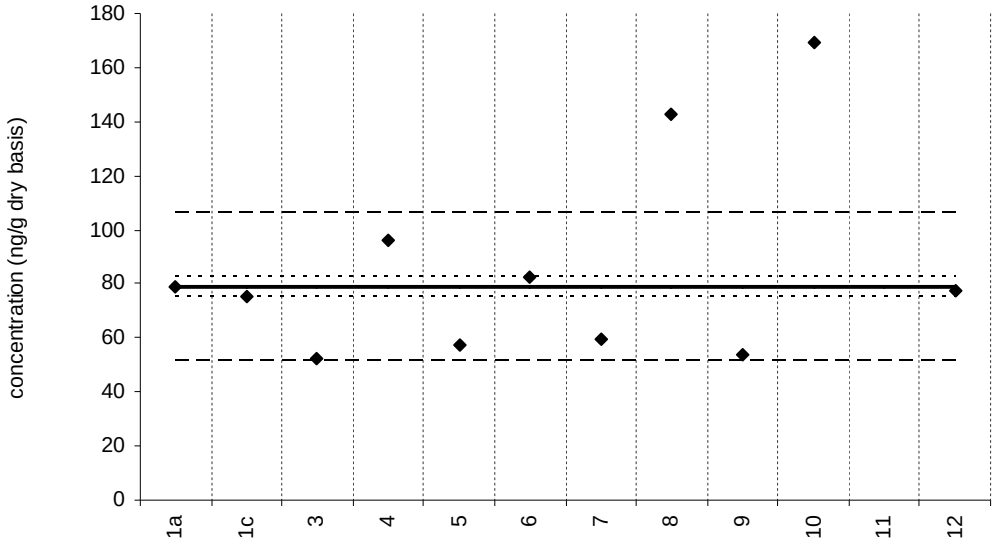
Assigned value = 190 ng/g s = 40 ng/g 95% CL = 31 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 11



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

pyrene **SRM 2977**

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

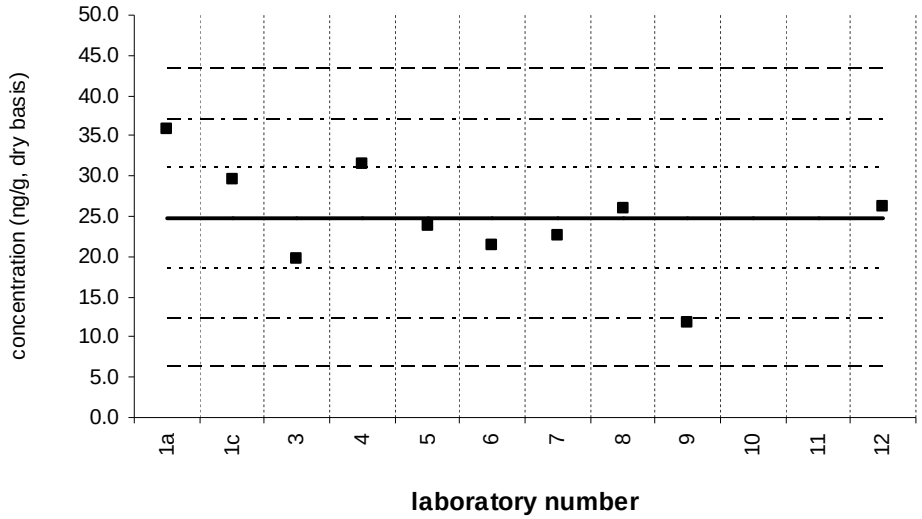


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

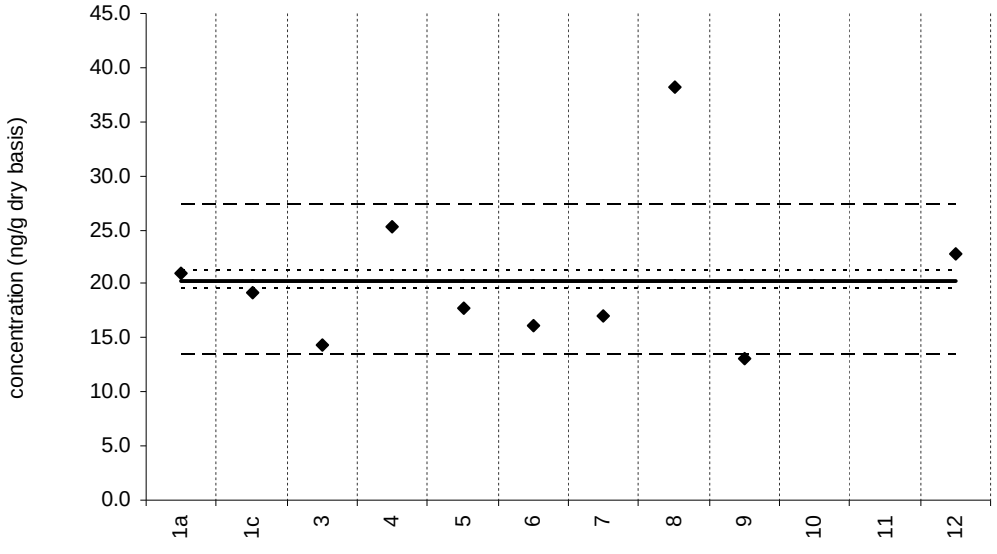


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

benz[a]anthracene

SRM 2977

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

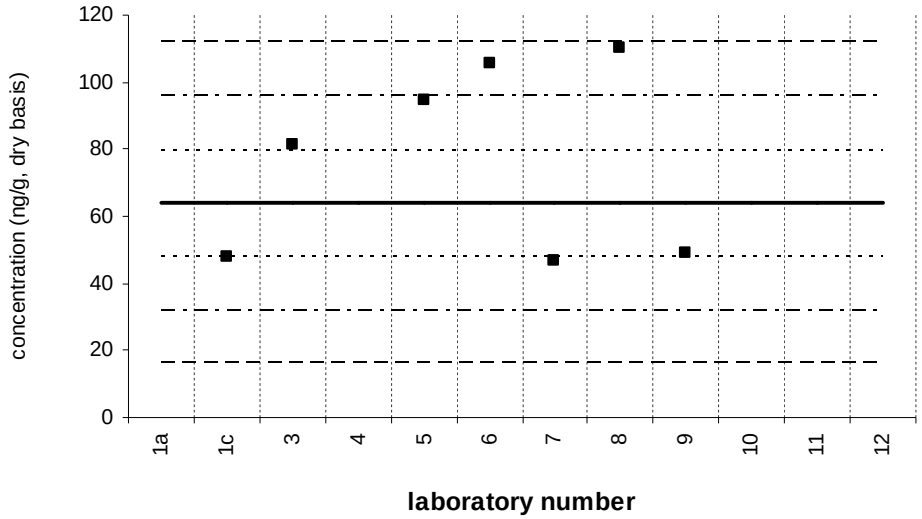


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

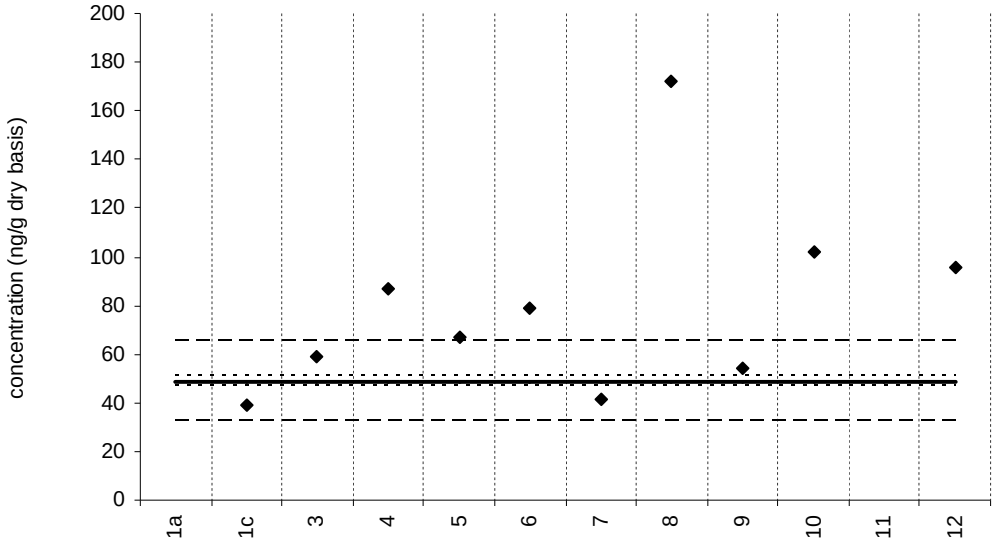


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

chrysene

SRM 2977

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

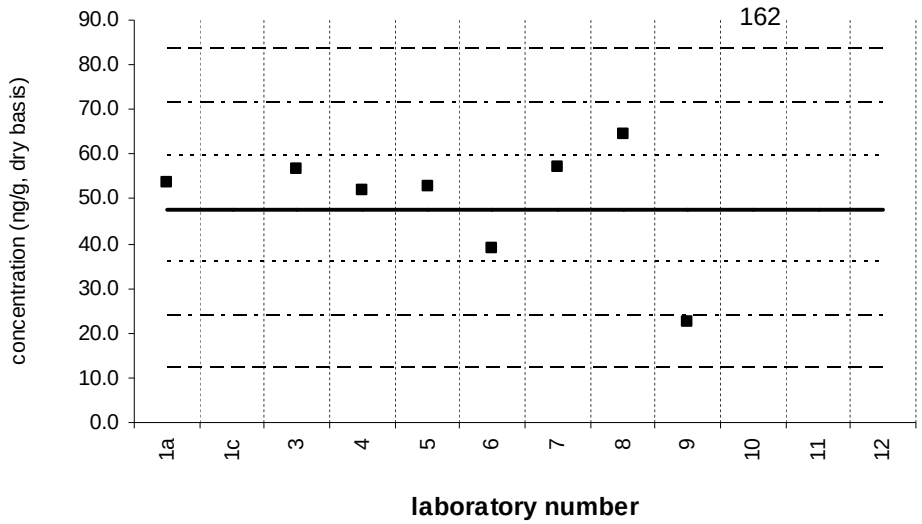


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

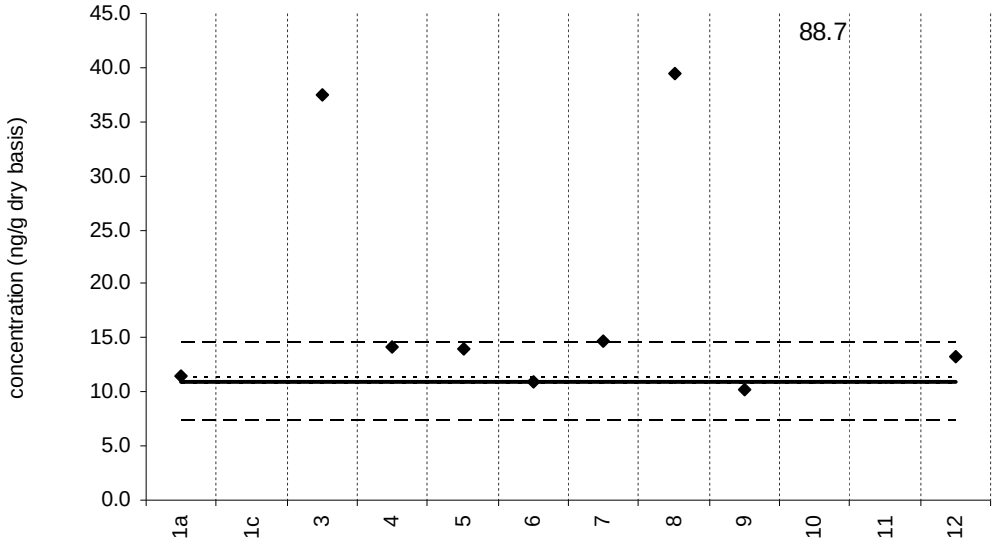


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

benzo[b]fluoranthene

SRM 2977

Certified Value = 11.01 ± 0.28 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 10

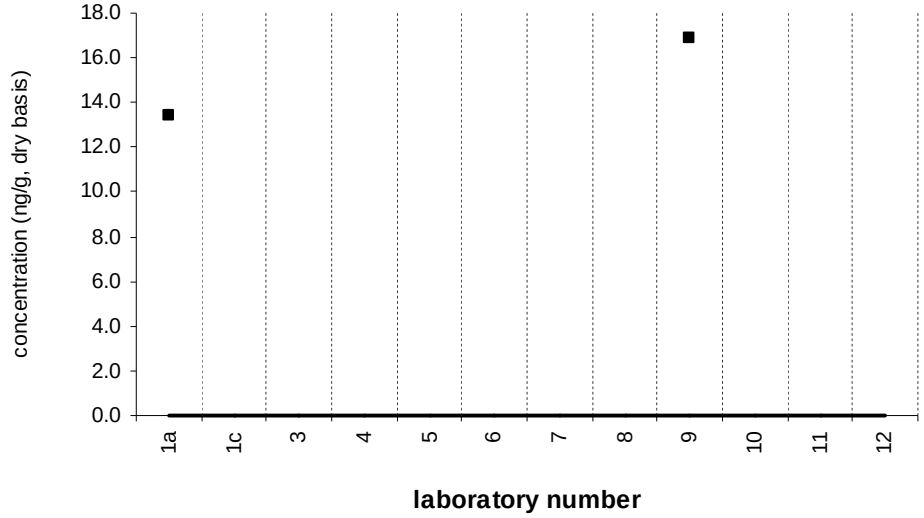


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

benzo[j]fluoranthene

Tissue XII (QA05TIS12)

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

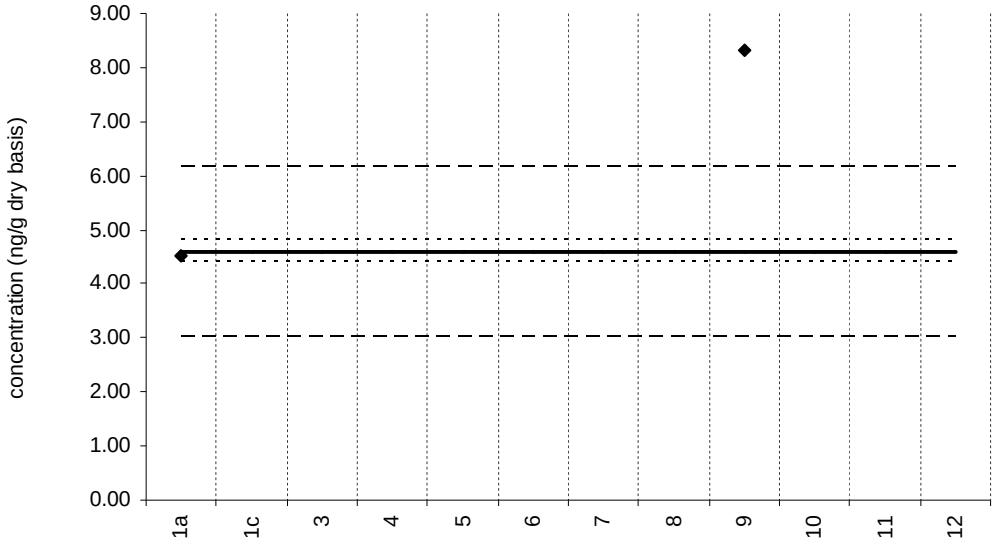


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

benzo[j]fluoranthene

SRM 2977

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

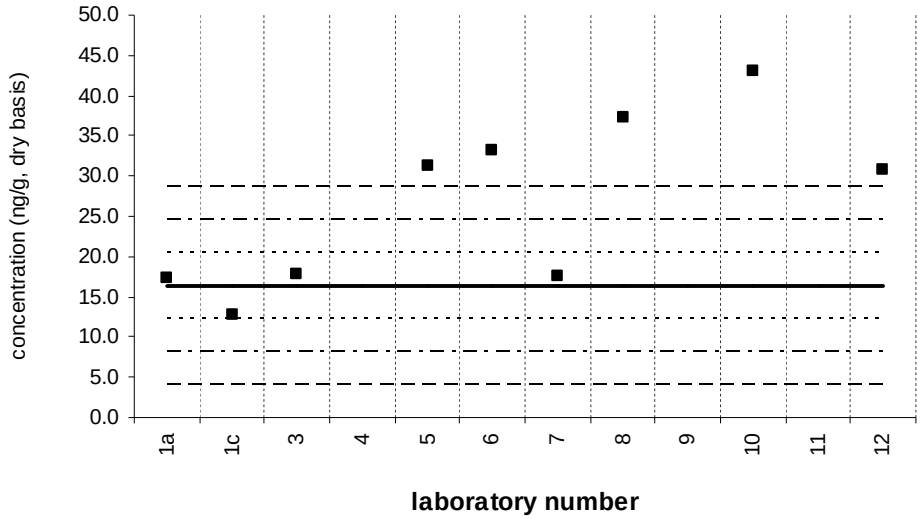


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

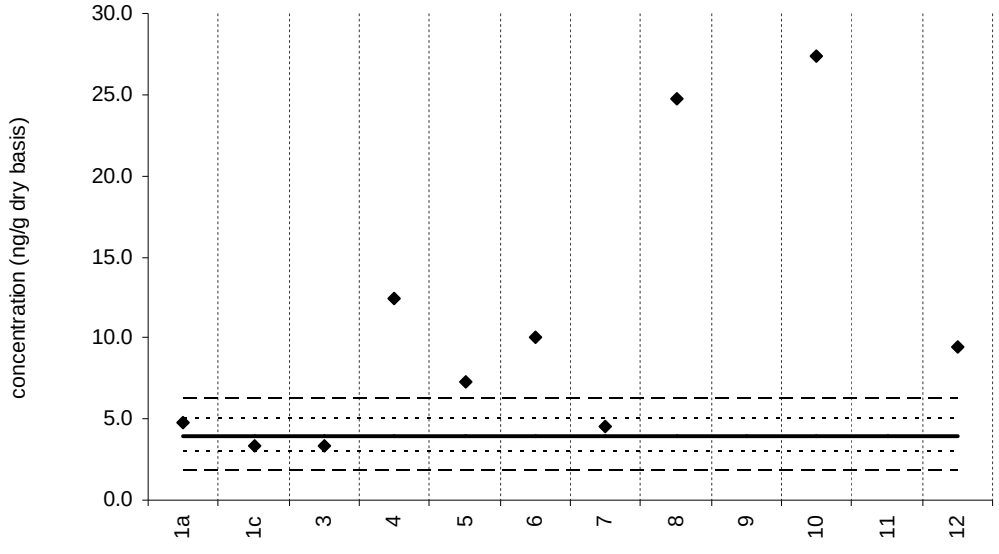


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

benzo[k]fluoranthene

SRM 2977

Reference Value = 4 ± 1 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 10

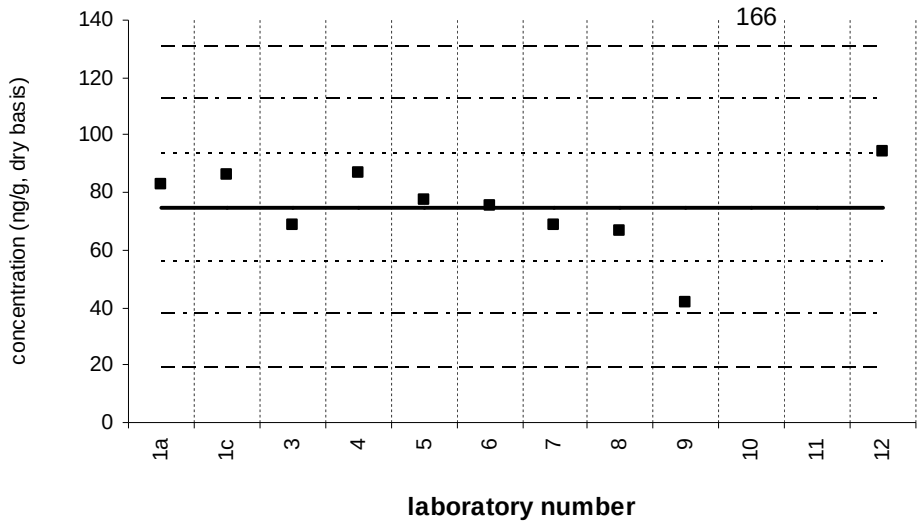


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

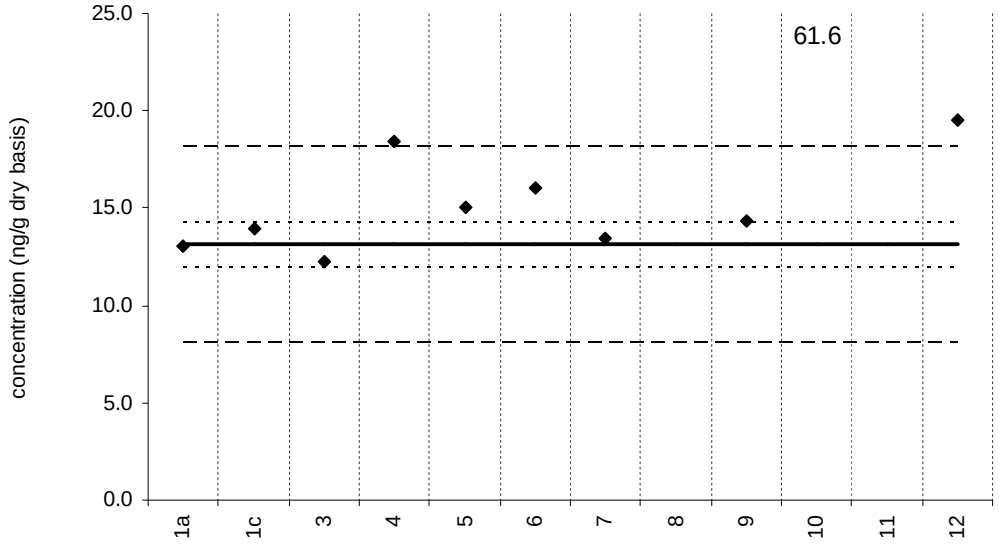


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

benzo[e]pyrene

SRM 2977

Certified Value = 13.1 ± 1.1 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 10

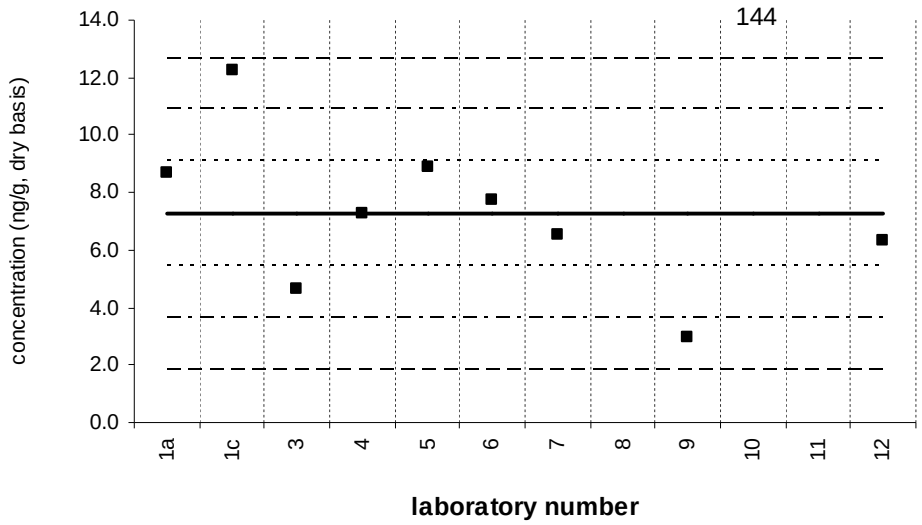


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

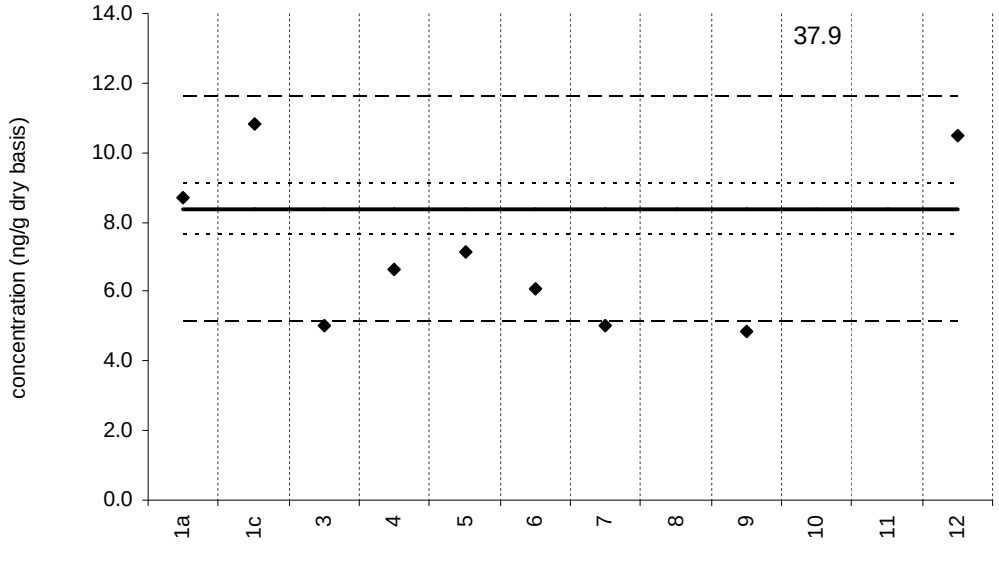


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

benzo[a]pyrene

SRM 2977

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

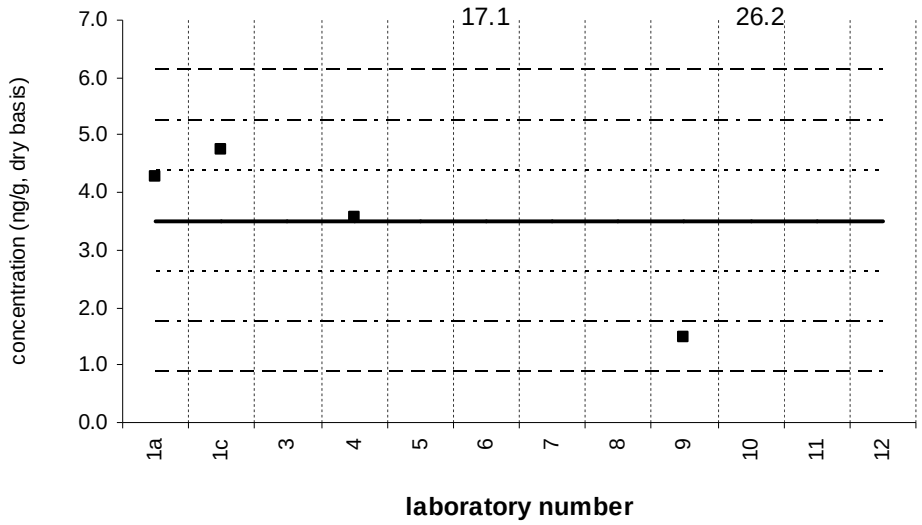


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

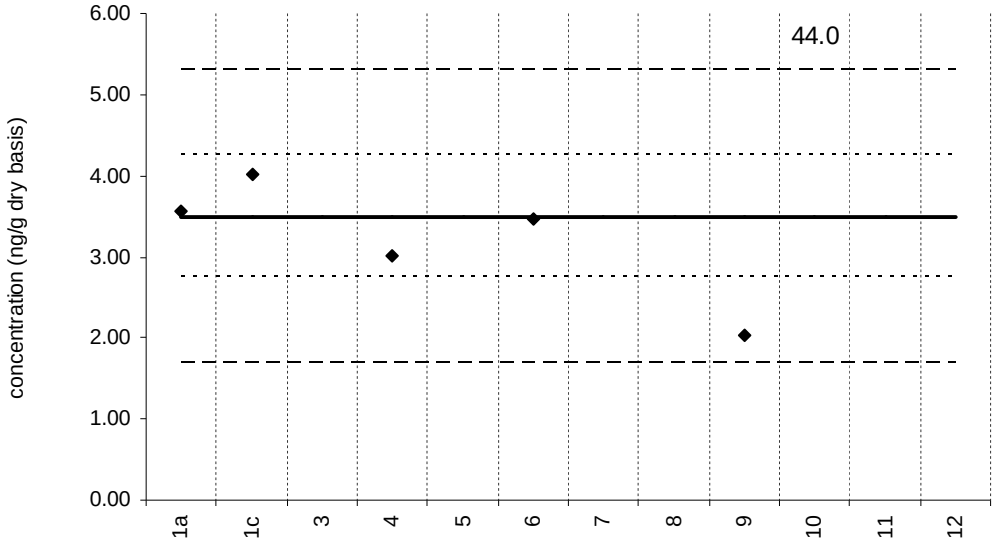


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

perylene

SRM 2977

Certified Value = 3.50 ± 0.76 ng/g (dry basis)
Reported Results: 8 Quantitative Results: 6

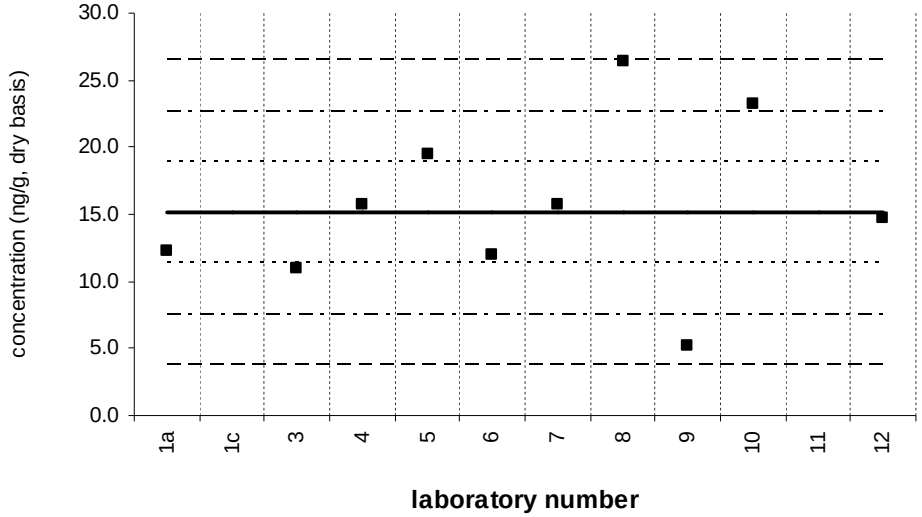


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

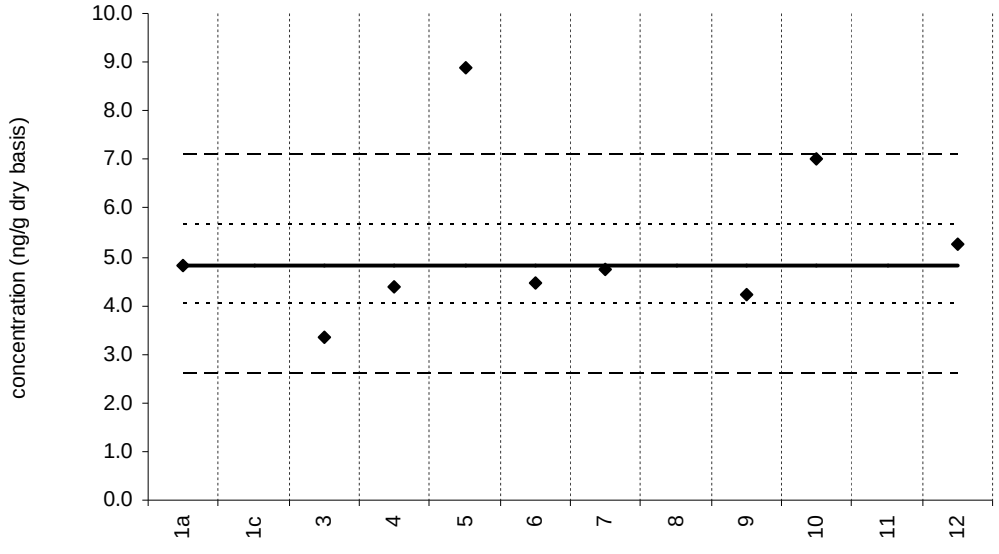


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

indeno[1,2,3-cd]pyrene

SRM 2977

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

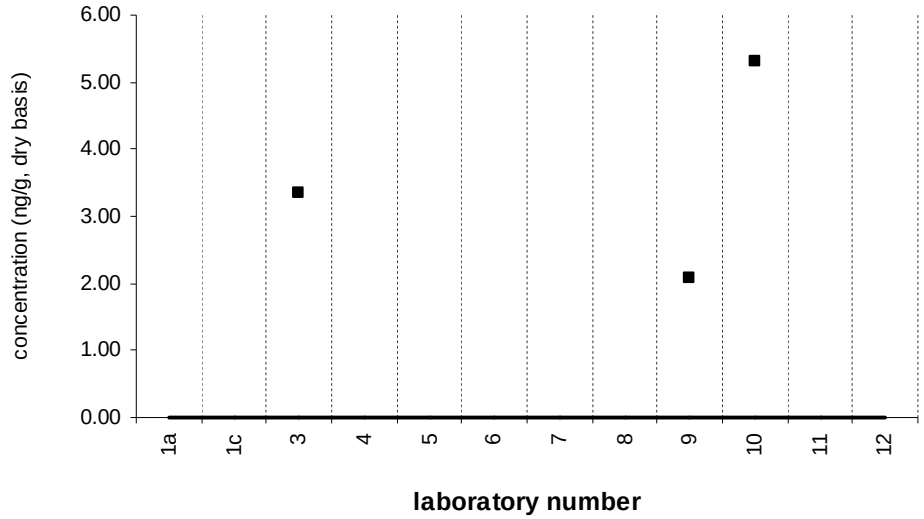


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

dibenz[a,h]anthracene

Tissue XII (QA05TIS12)

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

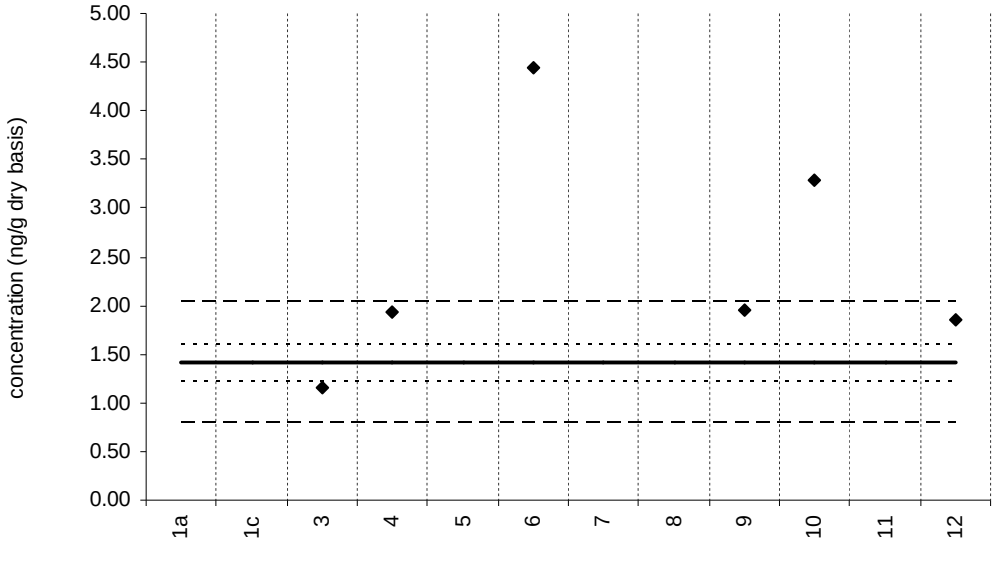


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

dibenz[a,h]anthracene

SRM 2977

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

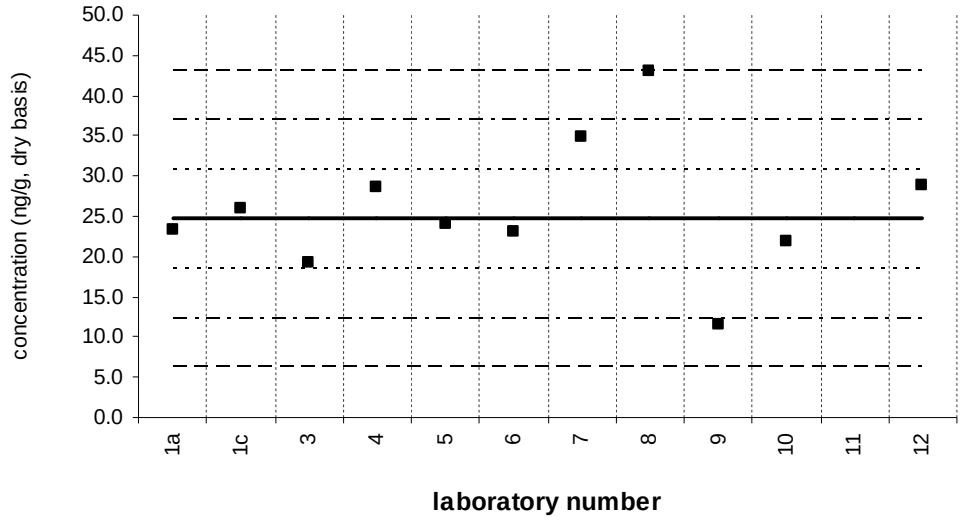


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

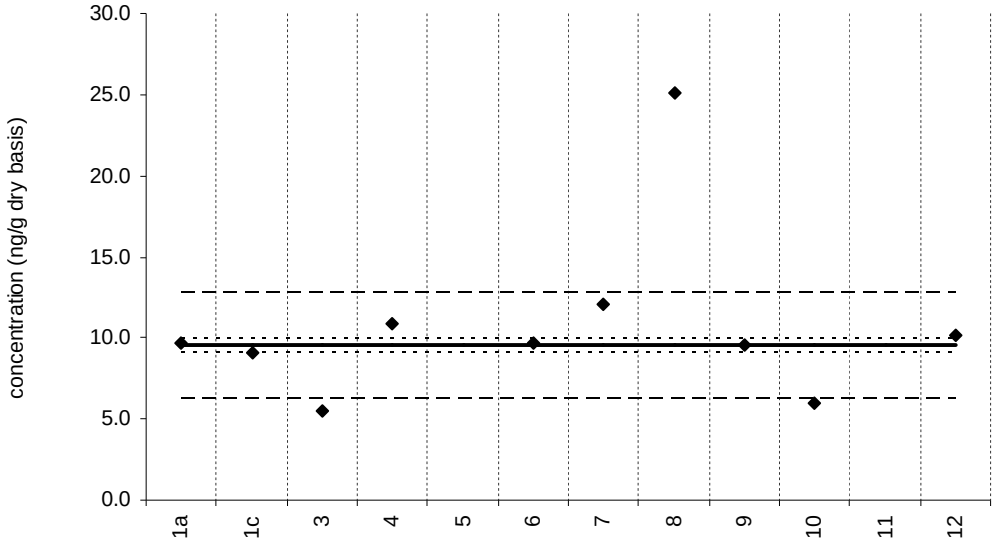


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

benzo[ghi]perylene

SRM 2977

Certified Value = 9.53 ± 0.43 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 10

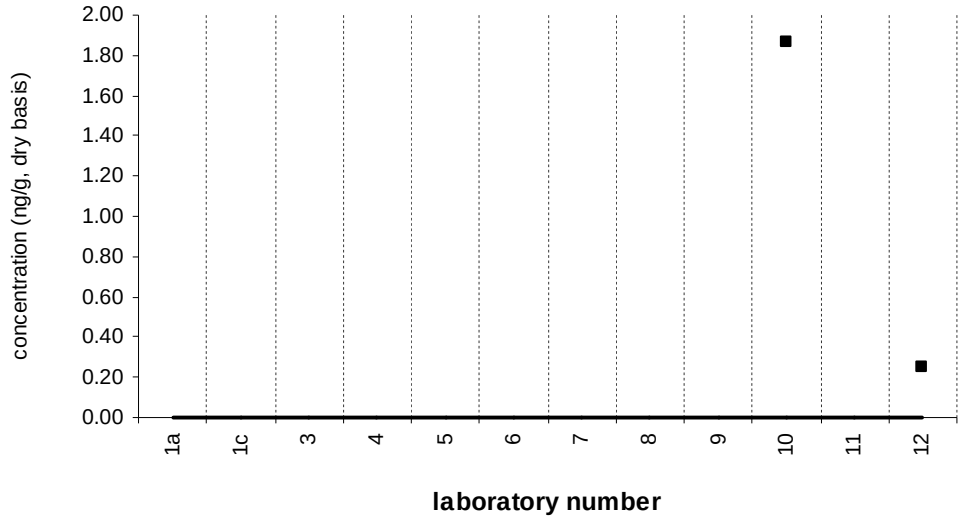


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

alpha-HCH (a-BHC)

Tissue XII (QA05TIS12)

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

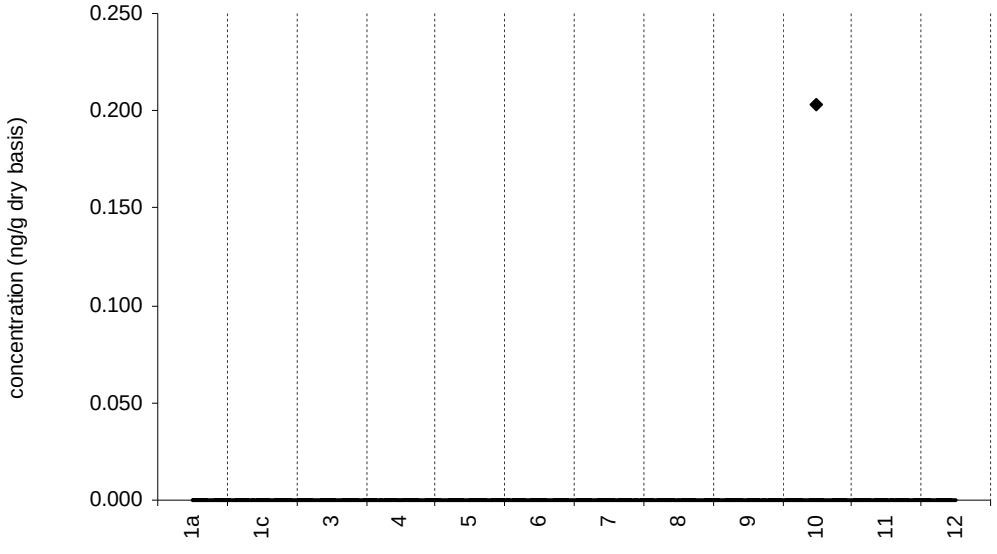


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

alpha-HCH (a-BHC)

SRM 2977

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

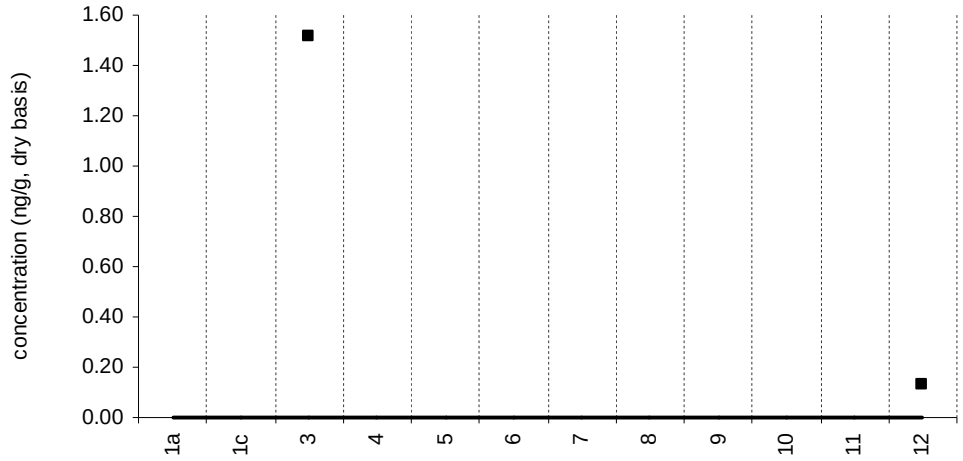


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

hexachlorobenzene

Tissue XII (QA05TIS12)

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

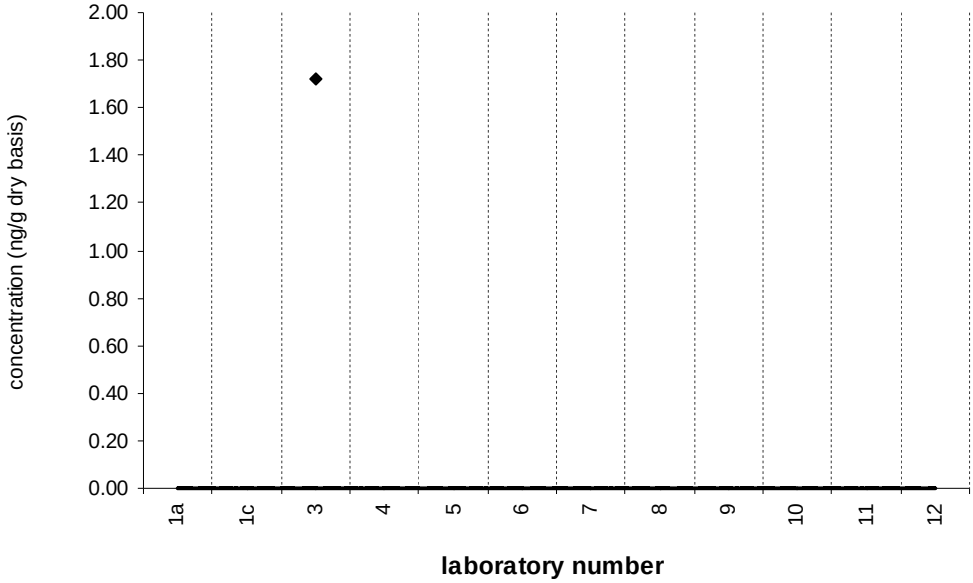


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

hexachlorobenzene

SRM 2977

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

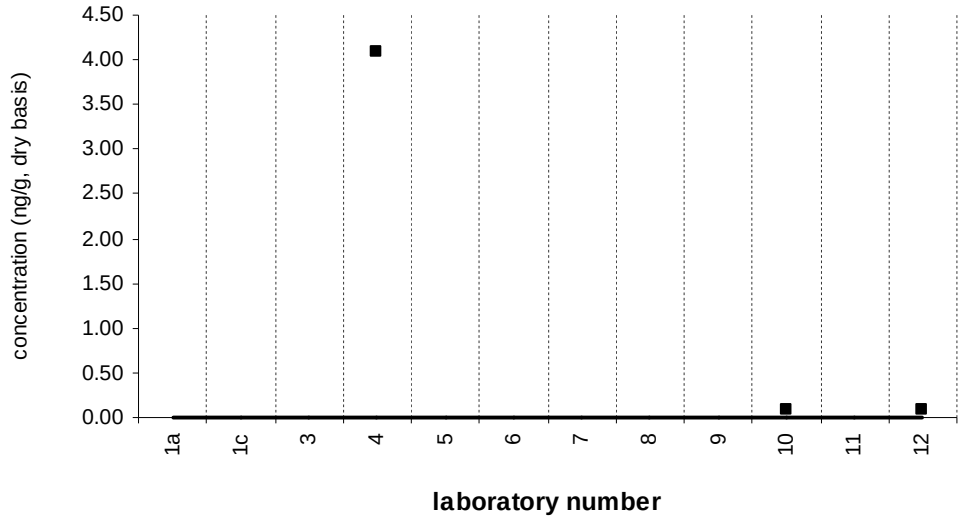


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

gamma-HCH (g-BHC,lindane)

Tissue XII (QA05TIS12)

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

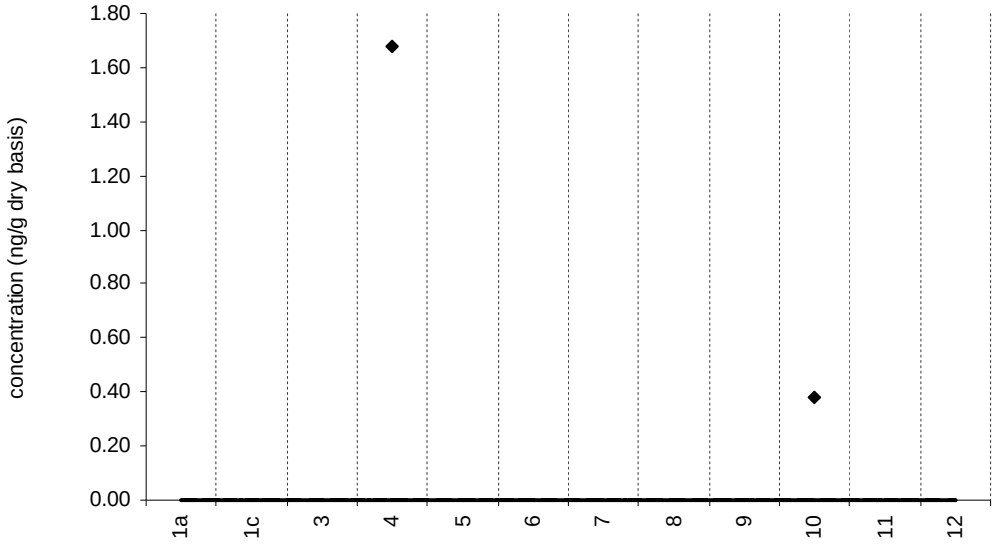


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

gamma-HCH (g-BHC,lindane)

SRM 2977

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

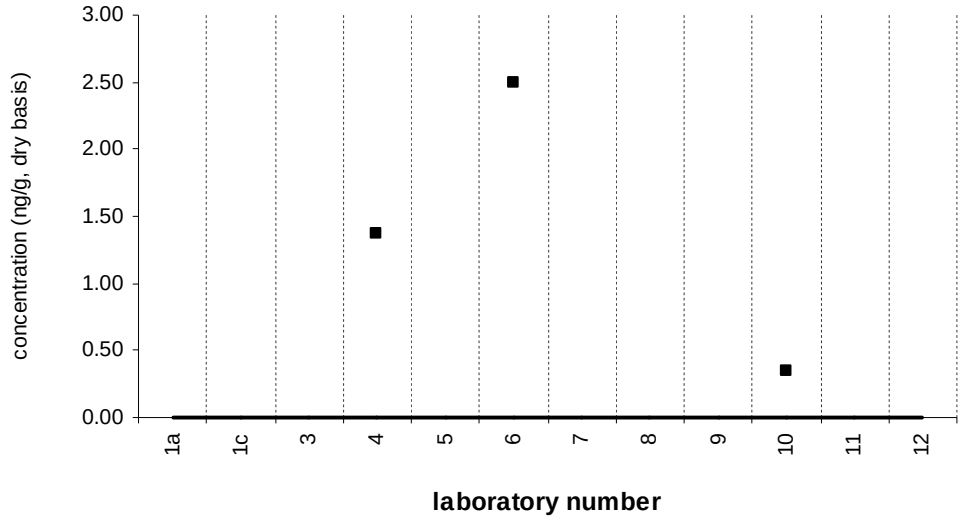


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

beta-HCH (b-BHC)

Tissue XII (QA05TIS12)

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

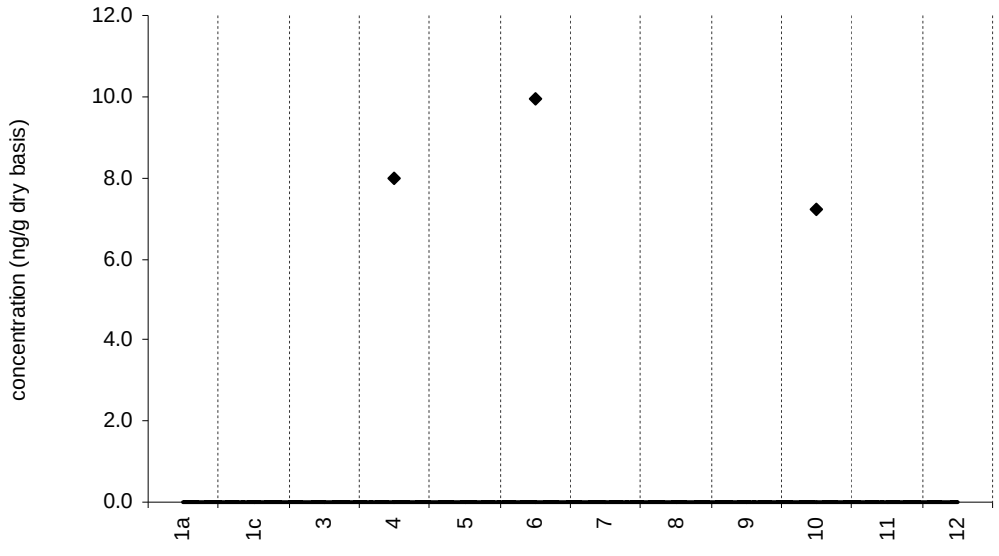


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

beta-HCH (b-BHC)

SRM 2977

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

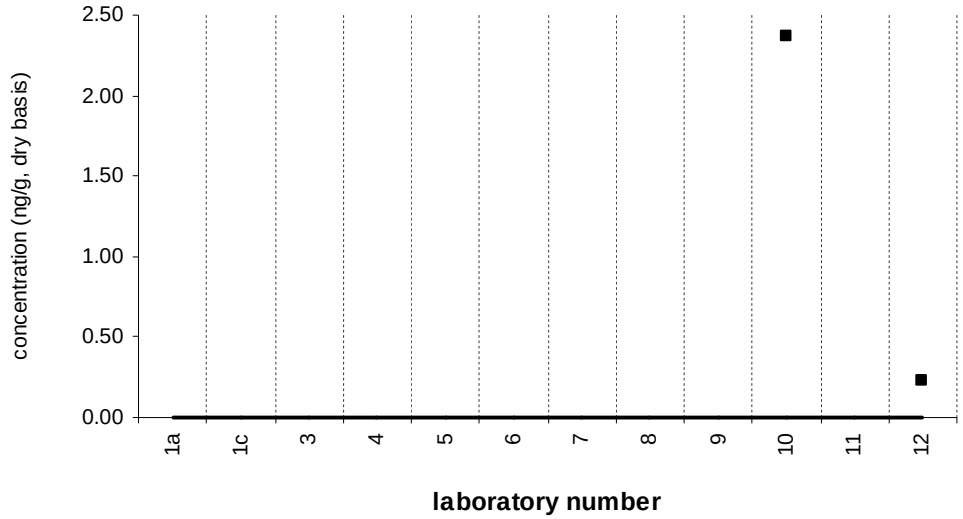


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

heptachlor

Tissue XII (QA05TIS12)

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

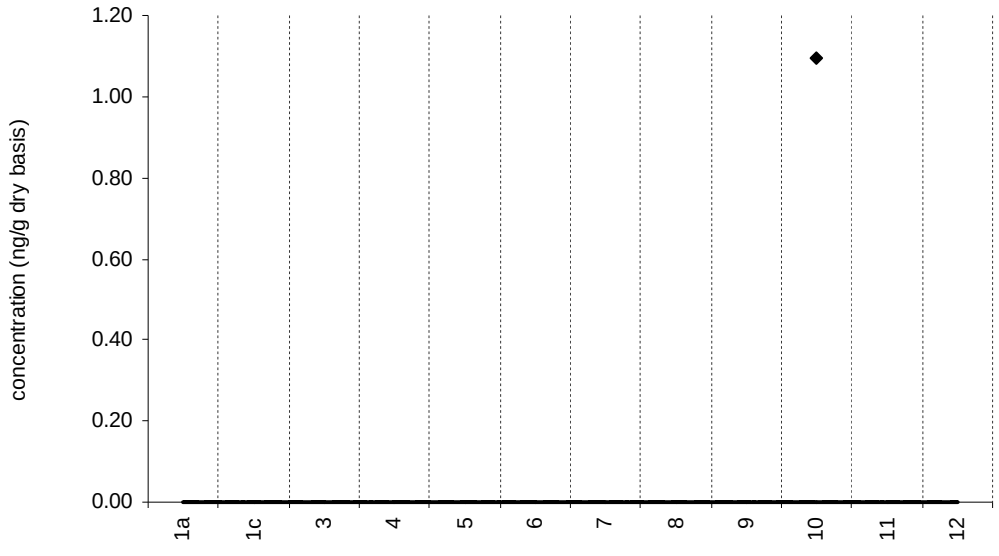


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

heptachlor

SRM 2977

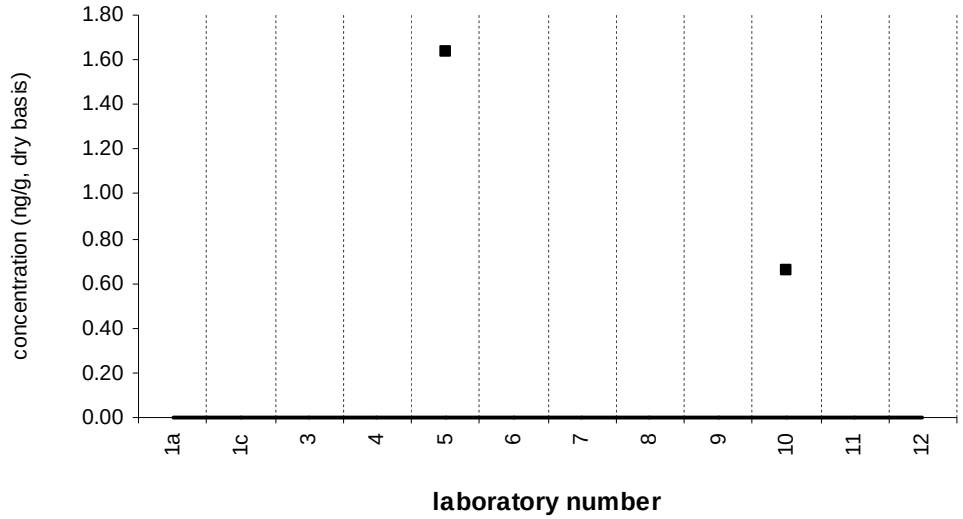
Target Value = no target ng/g (dry basis)
Reported Results: 9 Quantitative Results: 1



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

aldrin **Tissue XII (QA05TIS12)**

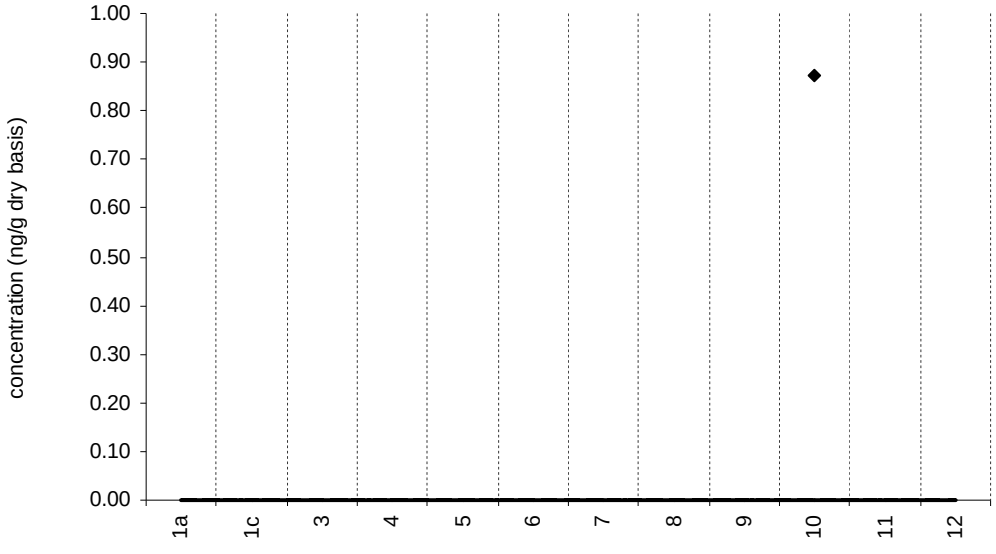
Assigned value = no target ng/g (dry basis)
Reported Results: 10 Quantitative Results: 2



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

aldrin **SRM 2977**

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

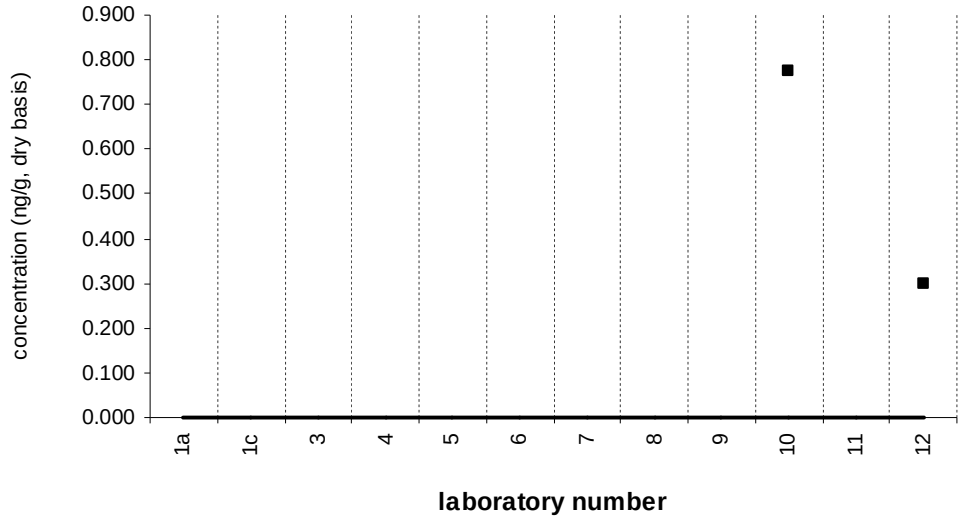


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

heptachlor epoxide

Tissue XII (QA05TIS12)

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

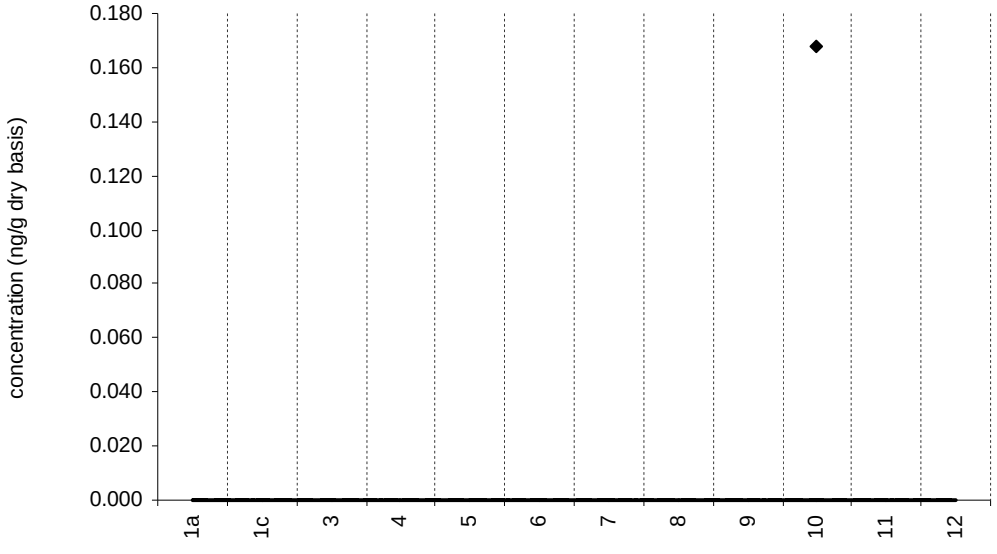


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

heptachlor epoxide

SRM 2977

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

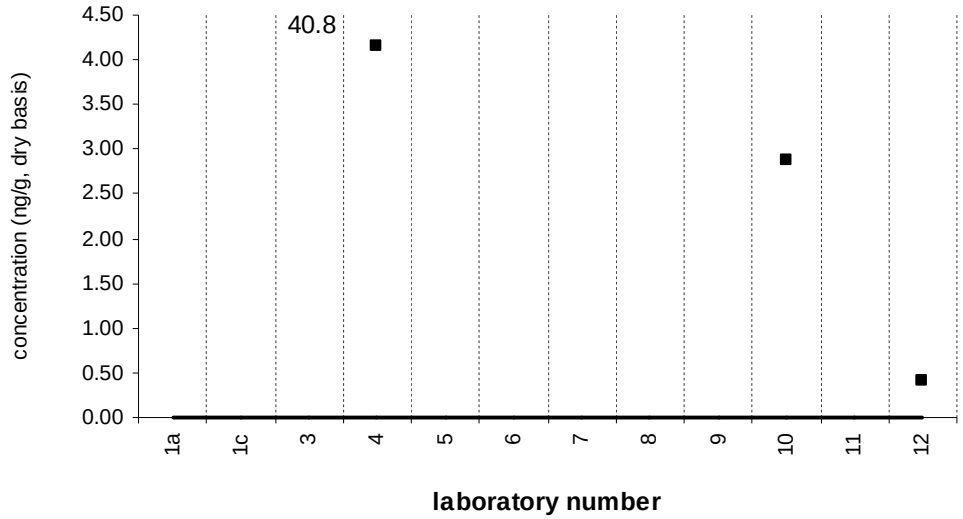


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

oxychlordane

Tissue XII (QA05TIS12)

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

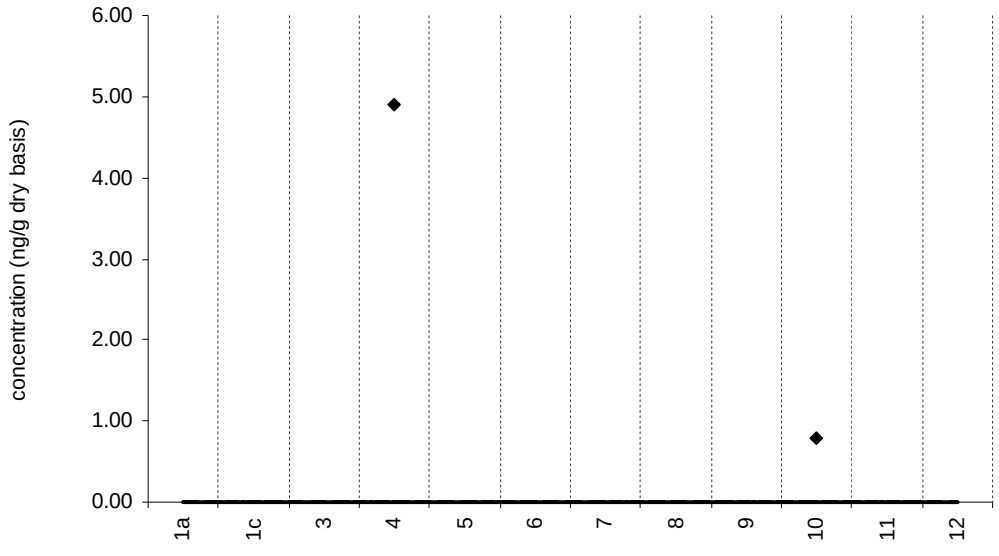


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

oxychlordane

SRM 2977

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

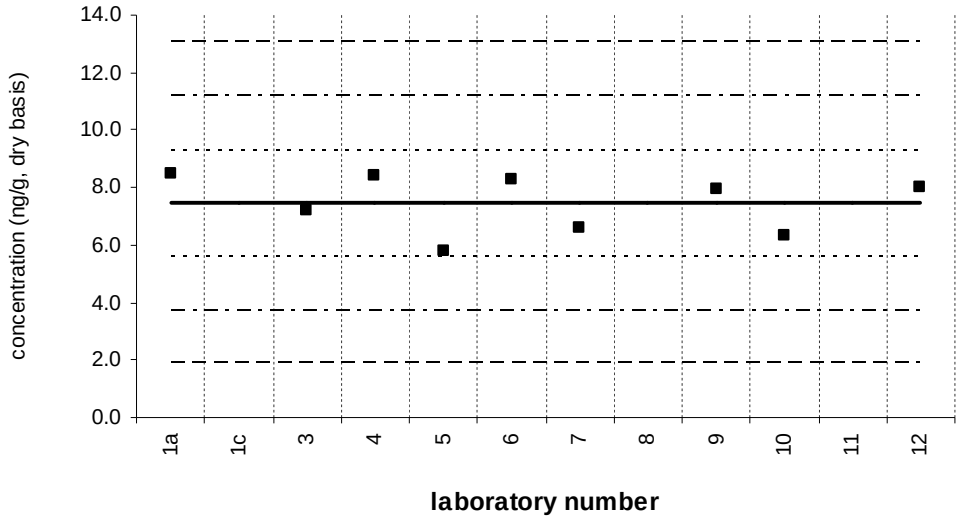


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

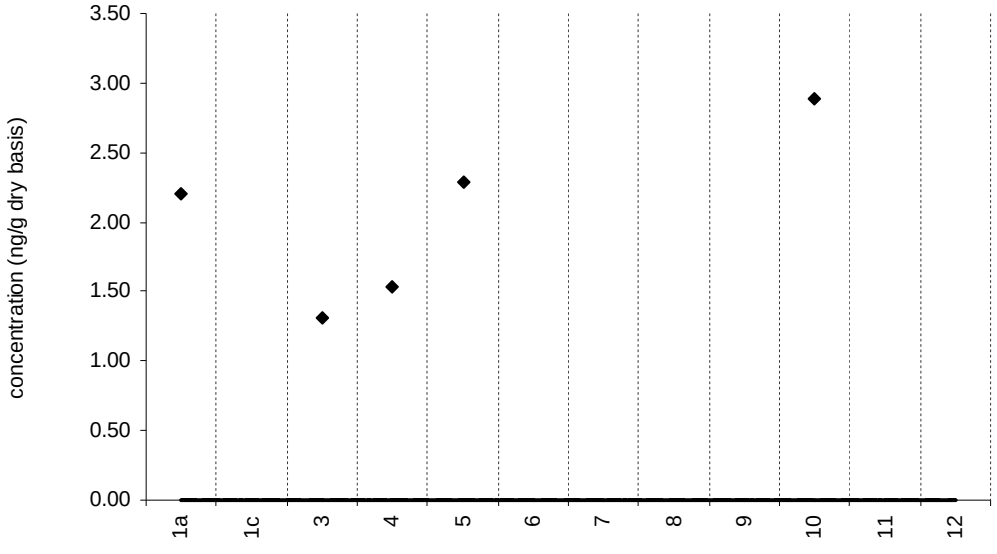


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

gamma-chlordane

SRM 2977

Target Value = no target ng/g (dry basis)
Reported Results: 9 Quantitative Results: 5

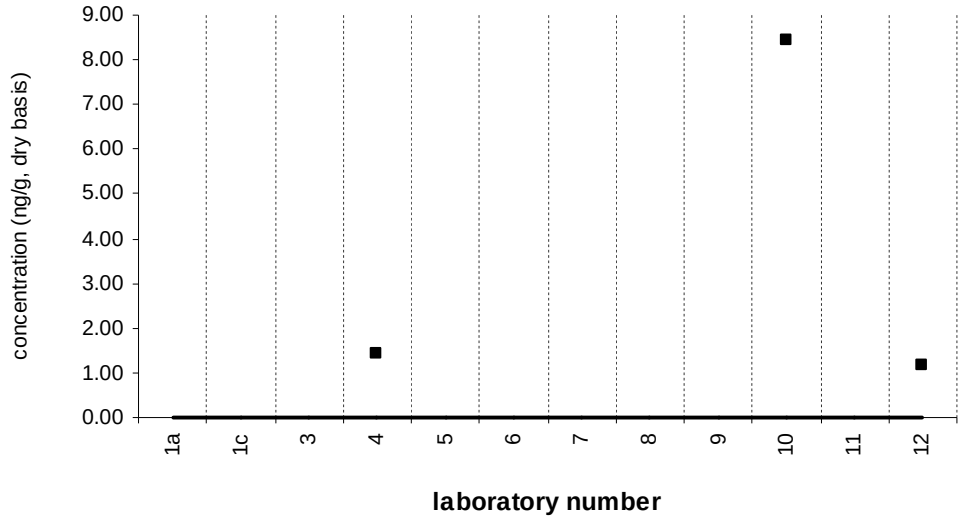


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

2,4'-DDE

Tissue XII (QA05TIS12)

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

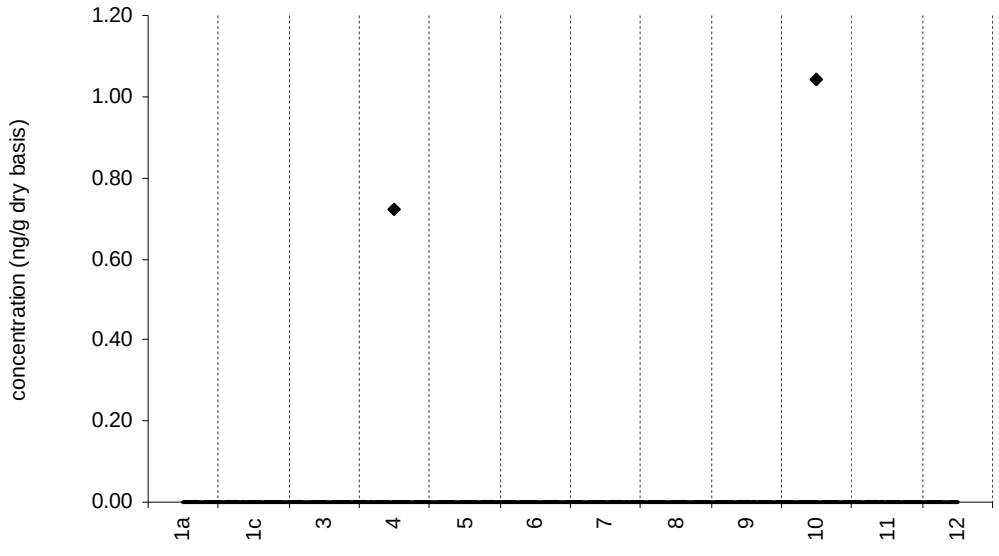


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

2,4'-DDE

SRM 2977

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

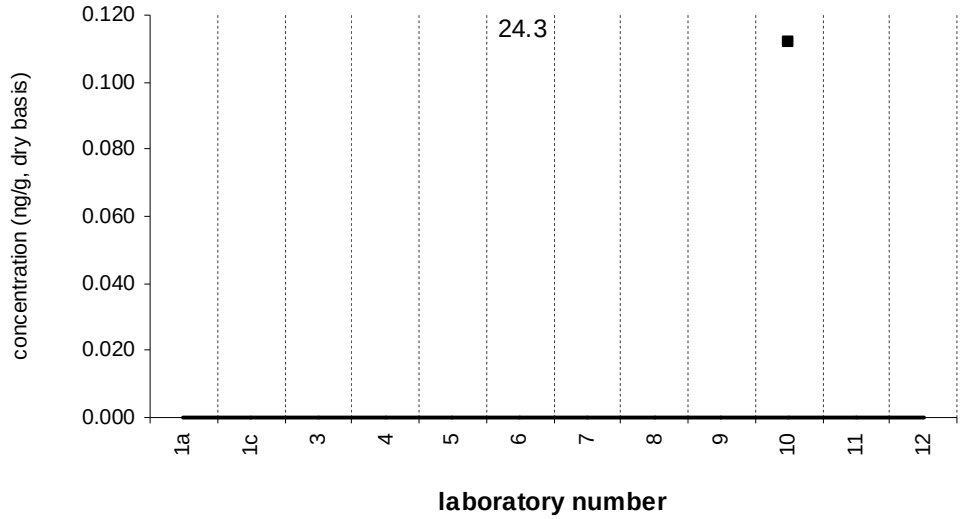


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

endosulfan I

Tissue XII (QA05TIS12)

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

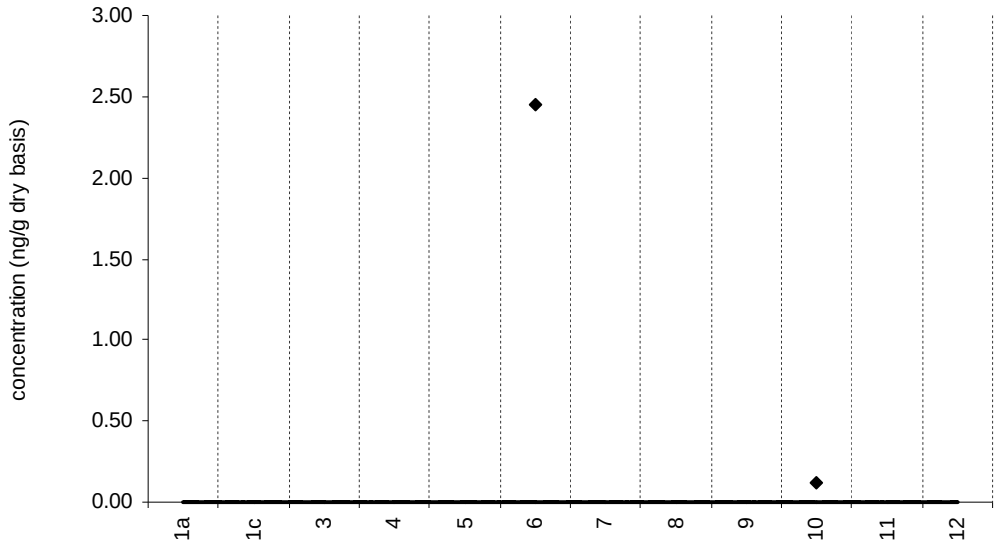


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

endosulfan I

SRM 2977

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

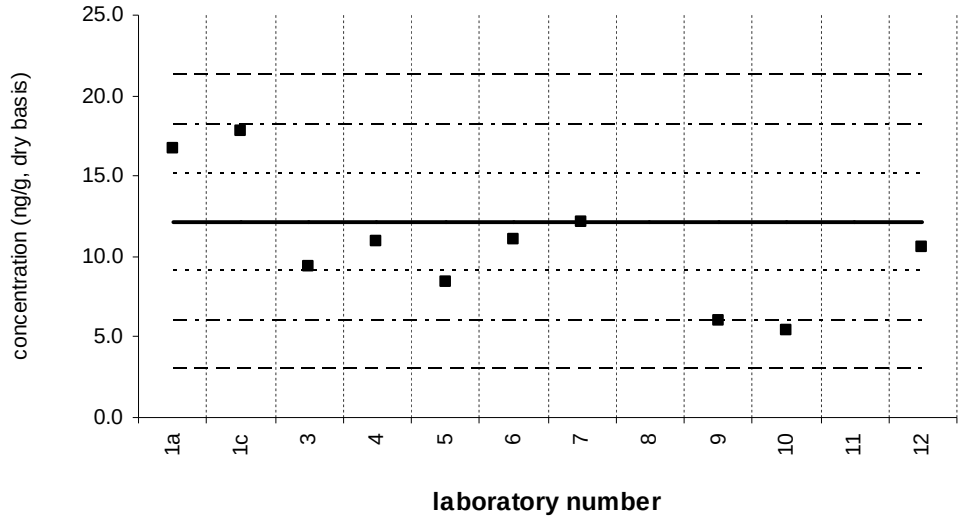


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

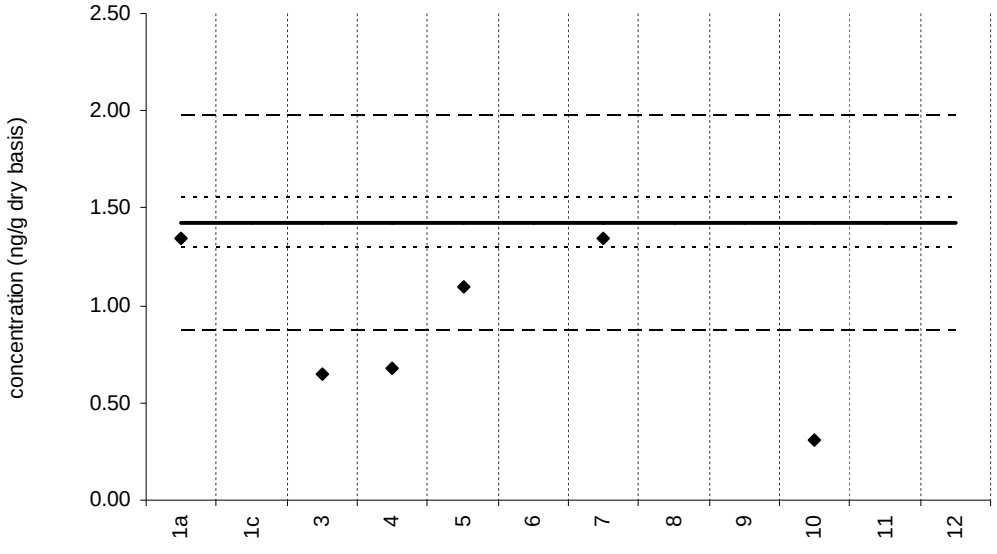


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

cis-chlordane (alpha-chlordane)

SRM 2977

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

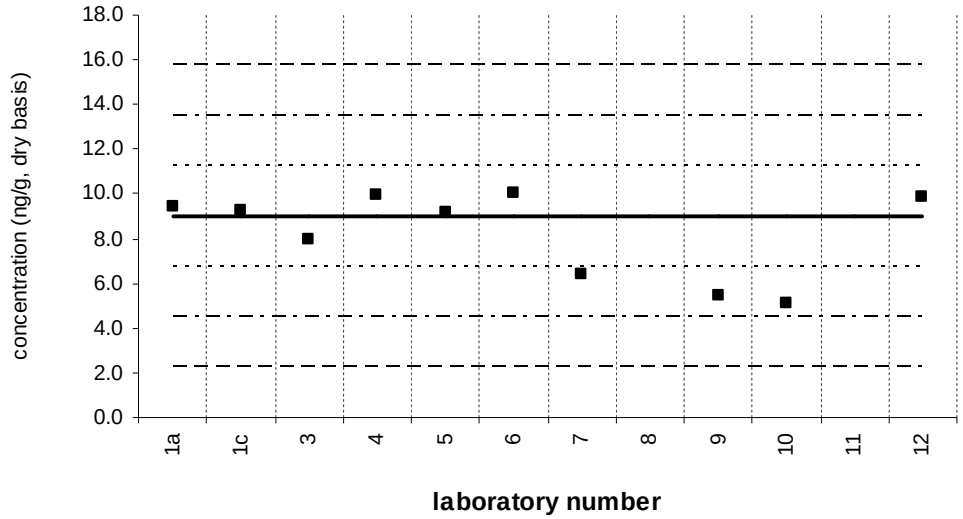


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

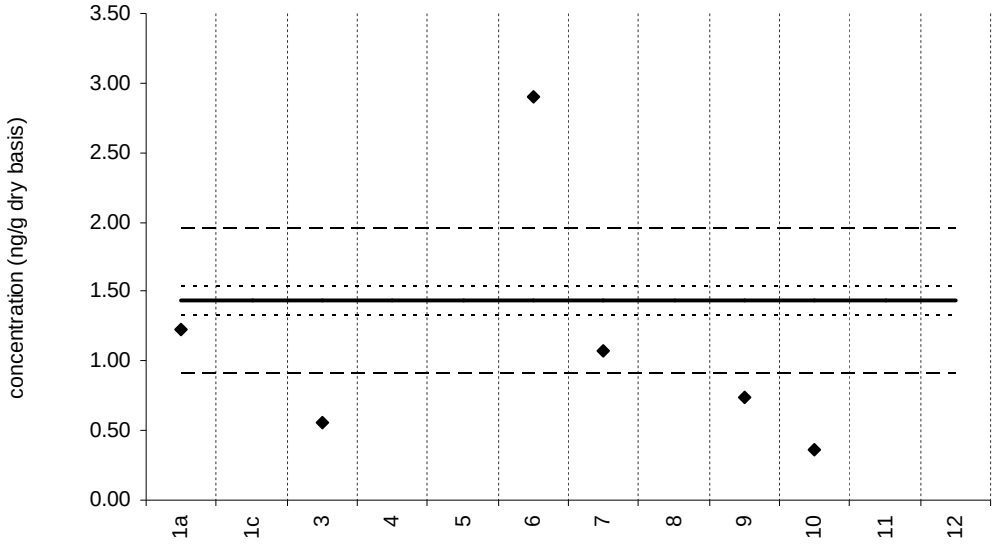


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

trans-nonachlor

SRM 2977

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

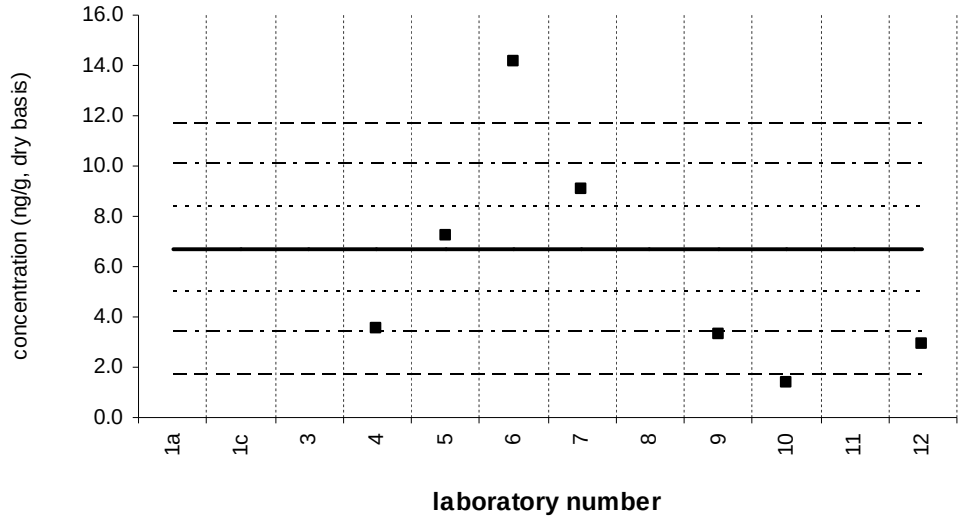


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

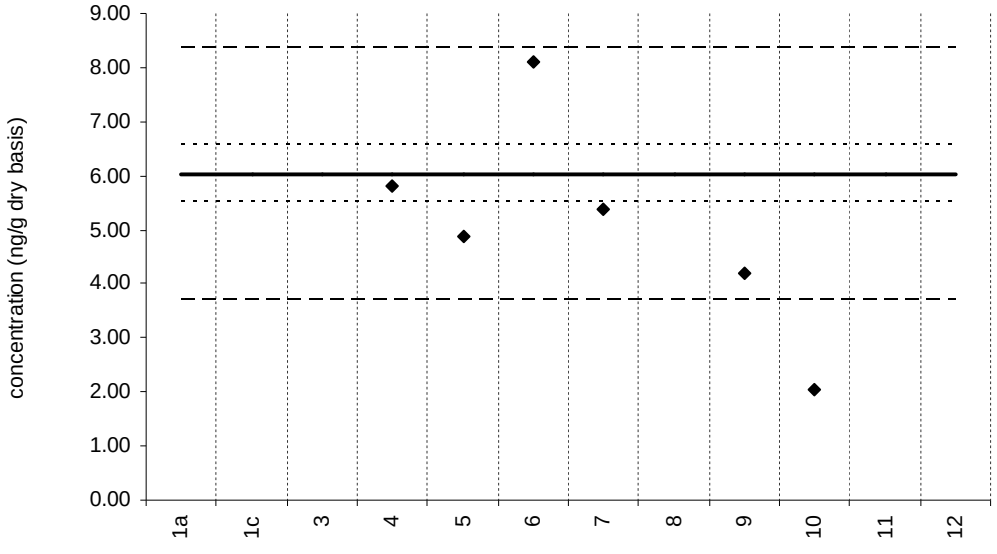


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

dieldrin

SRM 2977

Certified Value = 6.04 ± 0.52 ng/g (dry basis)
Reported Results: 9 Quantitative Results: 6

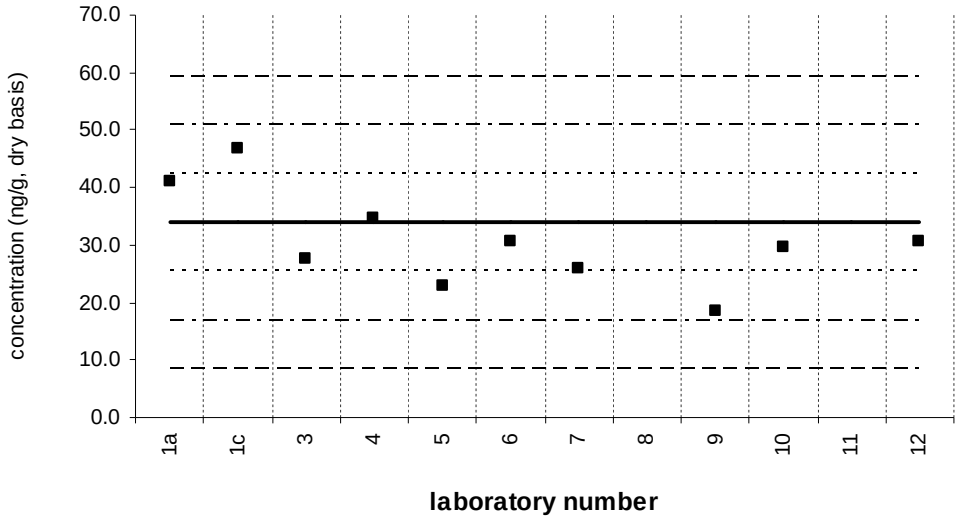


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

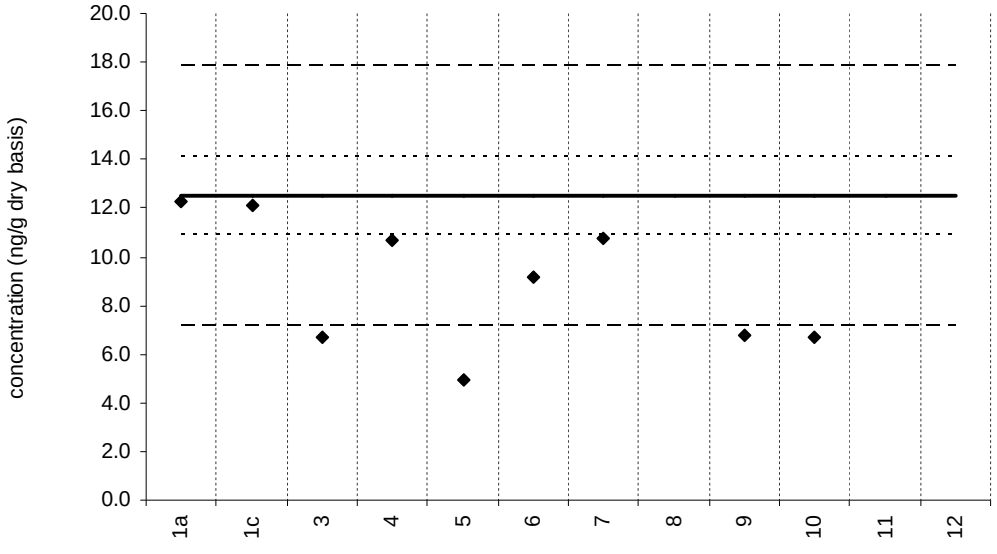


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

4,4'-DDE

SRM 2977

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

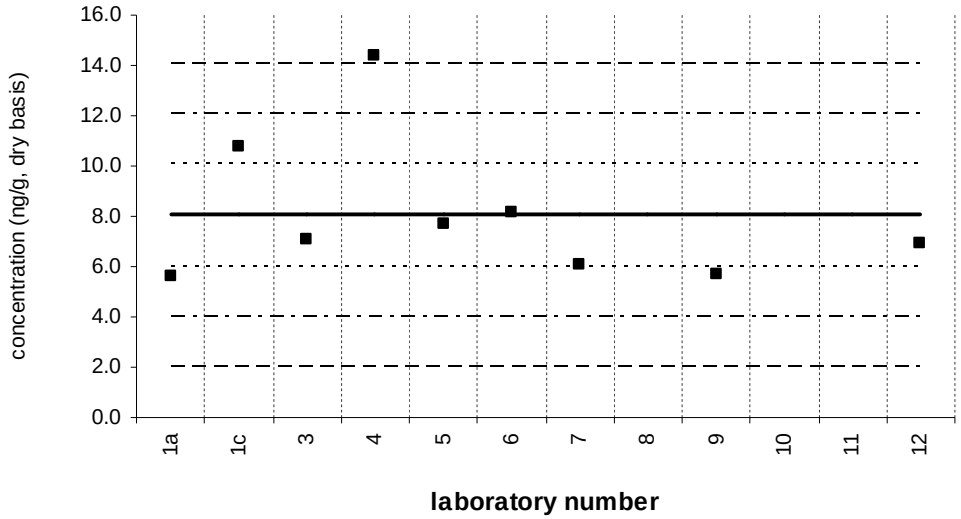


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

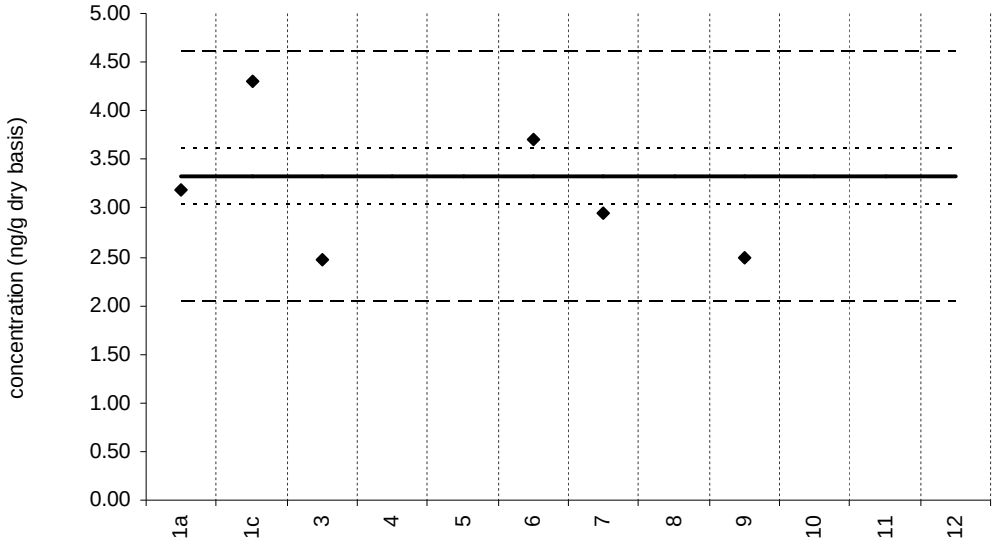


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

2,4'-DDD

SRM 2977

Certified Value = 3.32 ± 0.29 ng/g (dry basis)
Reported Results: 7 Quantitative Results: 6

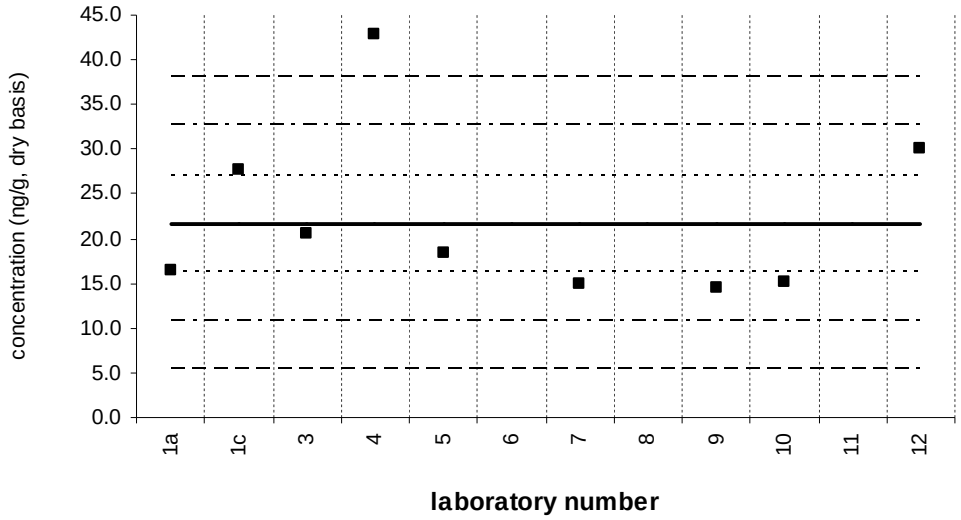


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

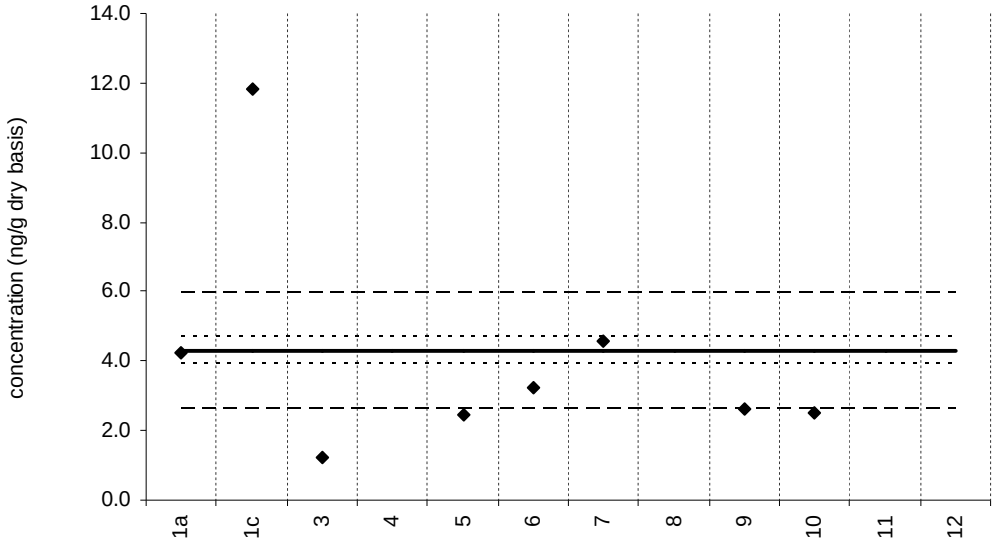


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

4,4'-DDD

SRM 2977

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

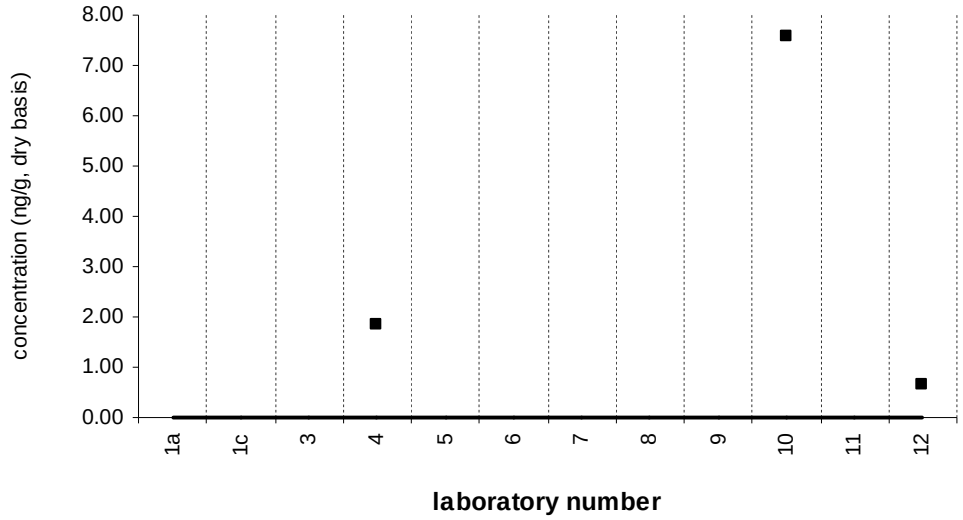


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

2,4'-DDT

Tissue XII (QA05TIS12)

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

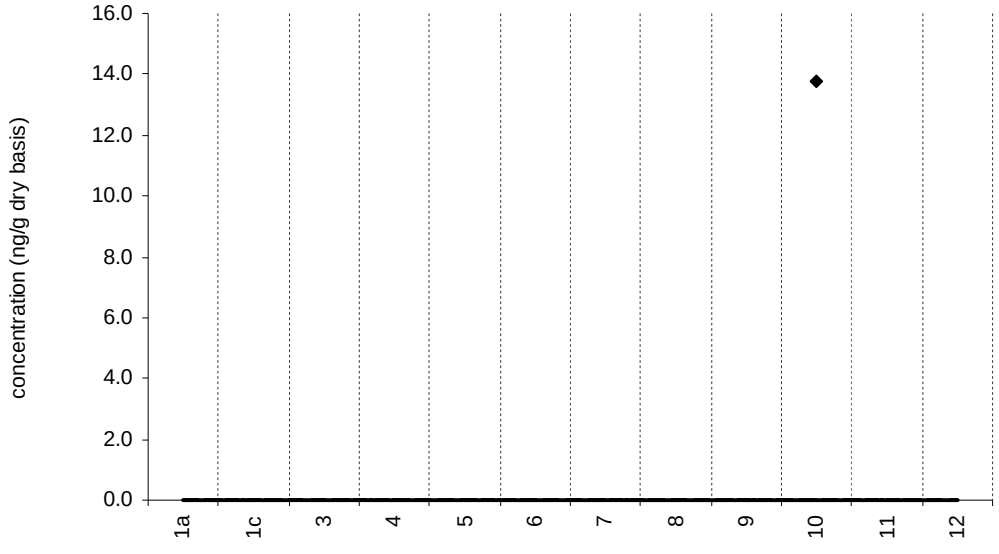


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

2,4'-DDT

SRM 2977

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

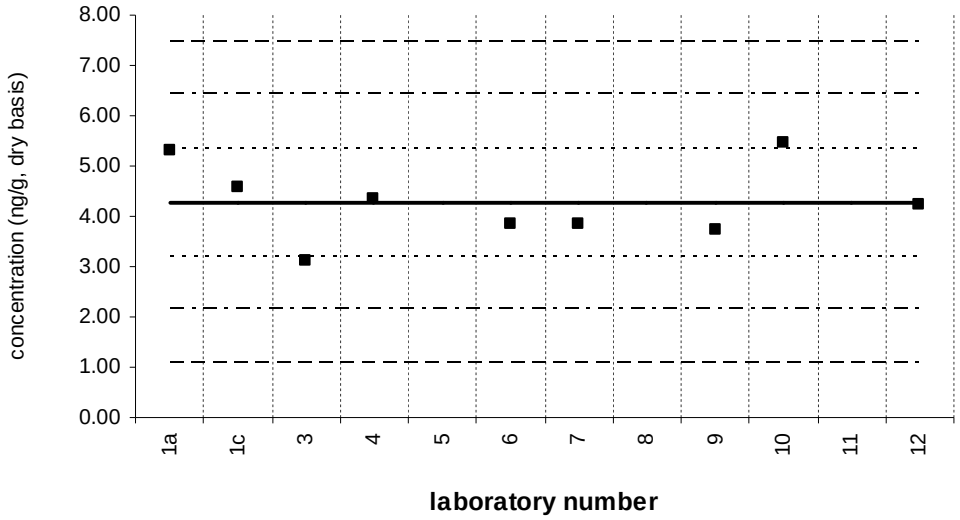


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

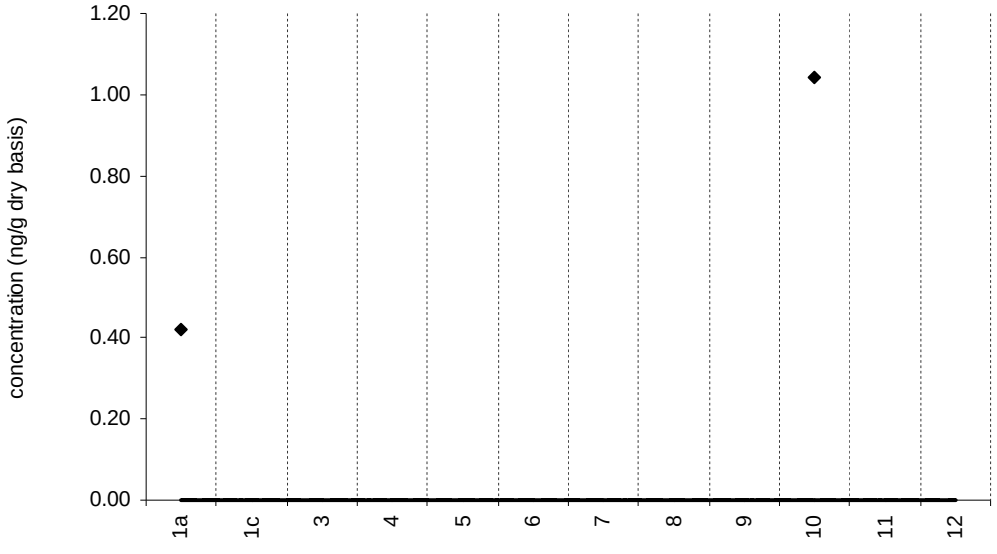


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

cis-nonachlor

SRM 2977

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

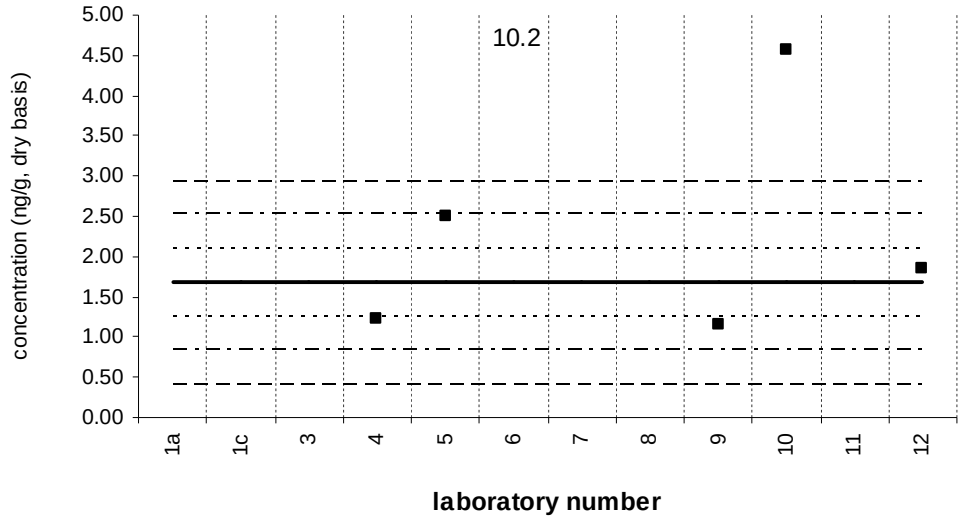


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

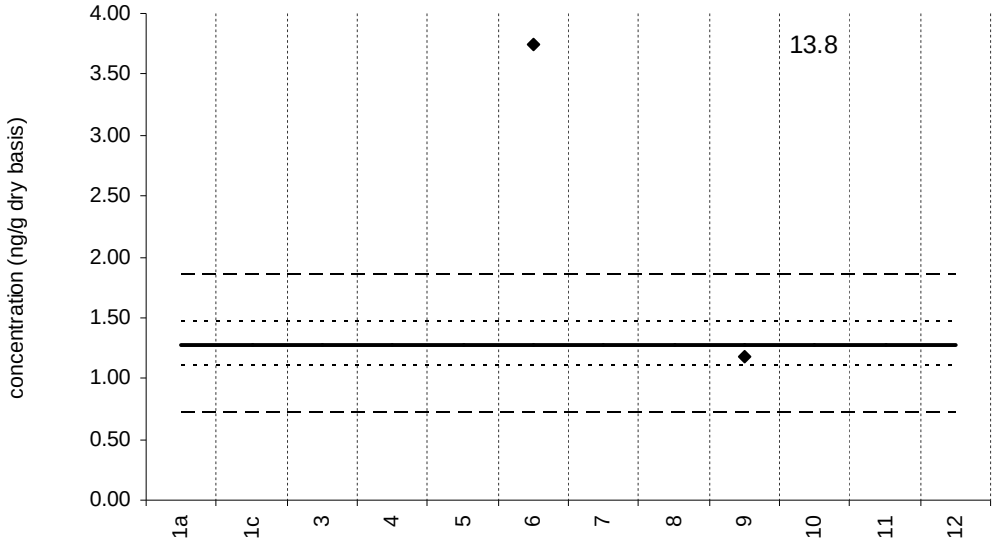


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

4,4'-DDT

SRM 2977

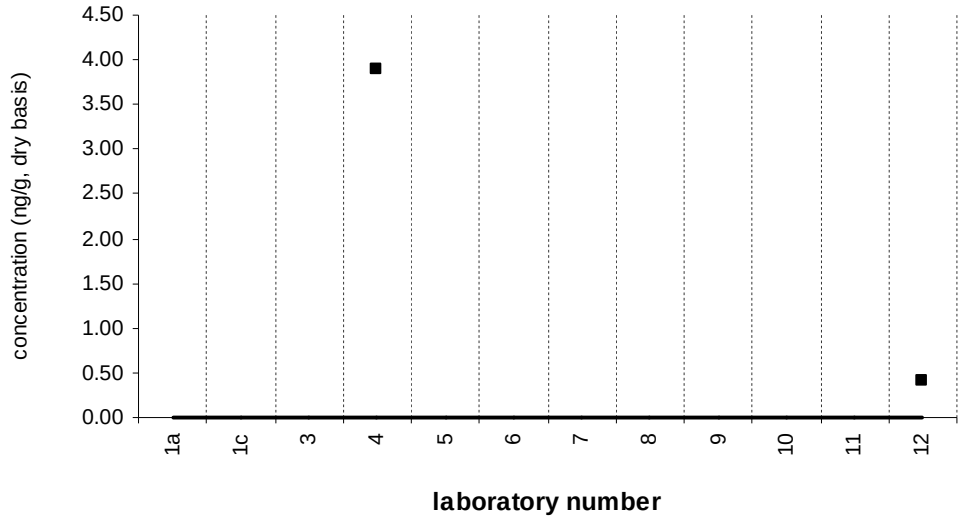
Certified Value = 1.28 ± 0.18 ng/g (dry basis)
Reported Results: 9 Quantitative Results: 3



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

mirex **Tissue XII (QA05TIS12)**

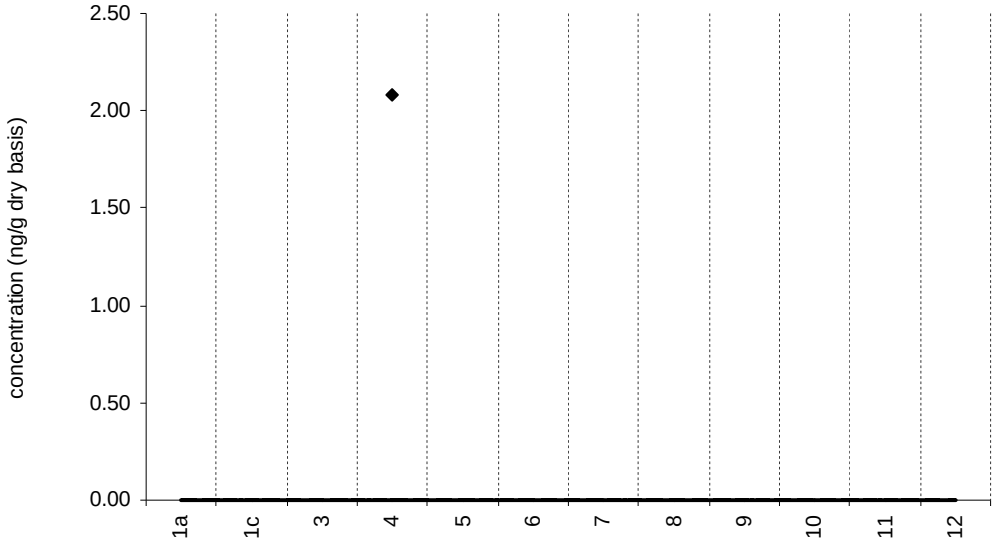
Assigned value = no target ng/g (dry basis)
Reported Results: 9 Quantitative Results: 2



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

mirex **SRM 2977**

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

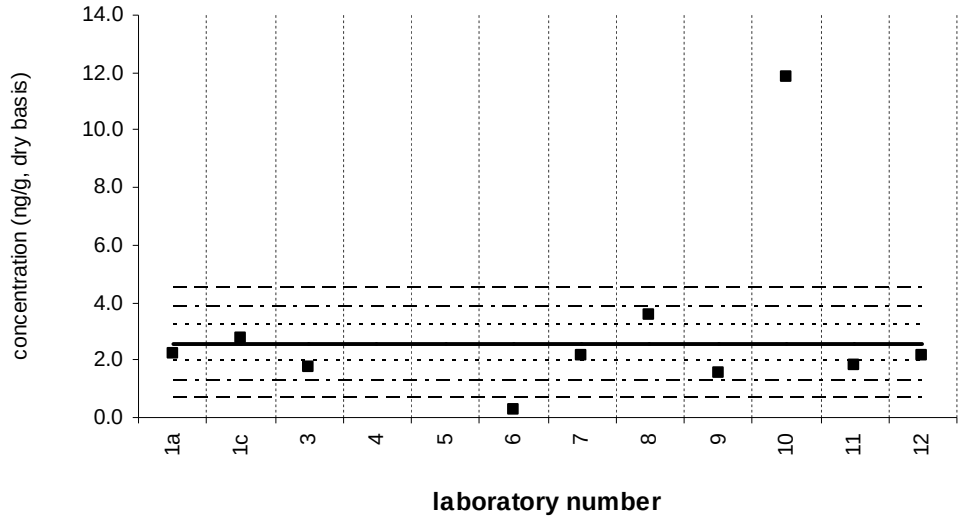


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

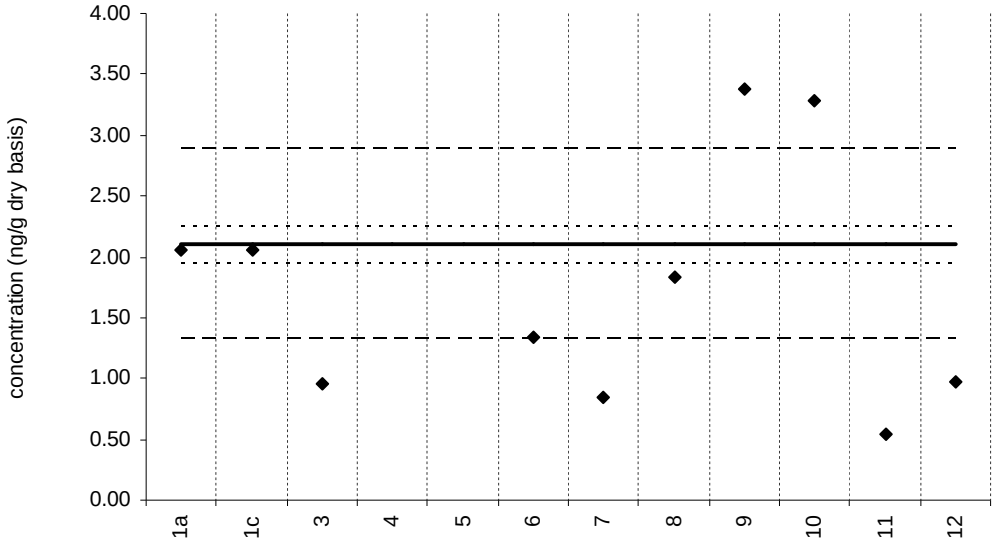


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 8

SRM 2977

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

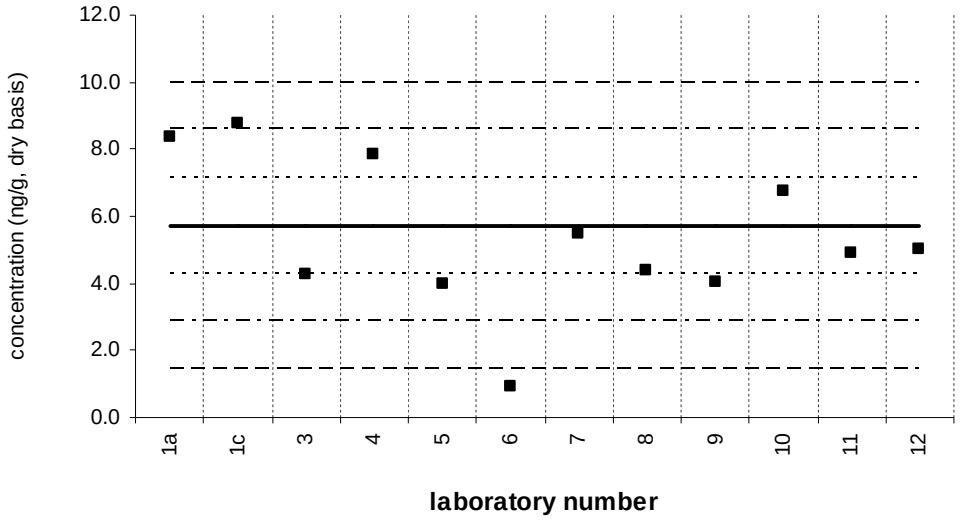


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

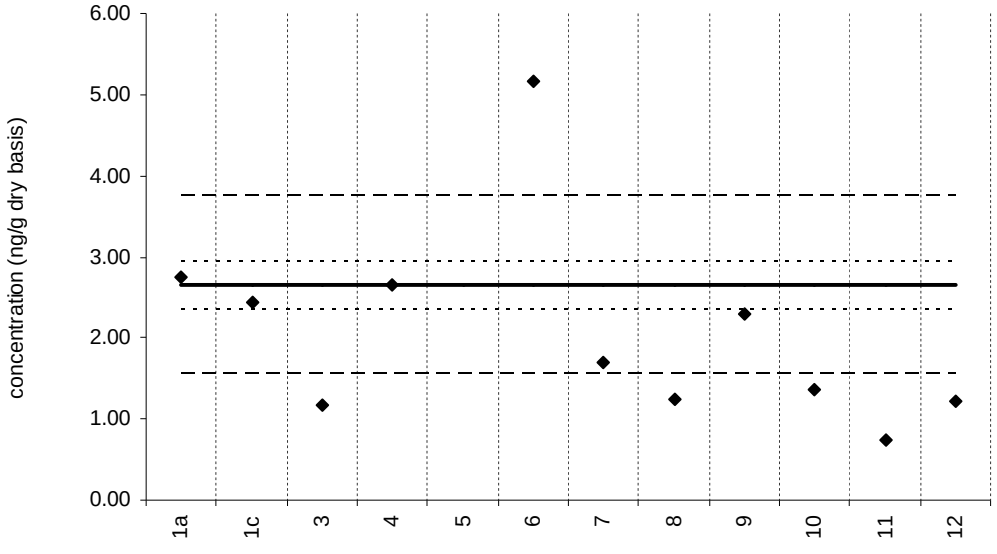


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 18

SRM 2977

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

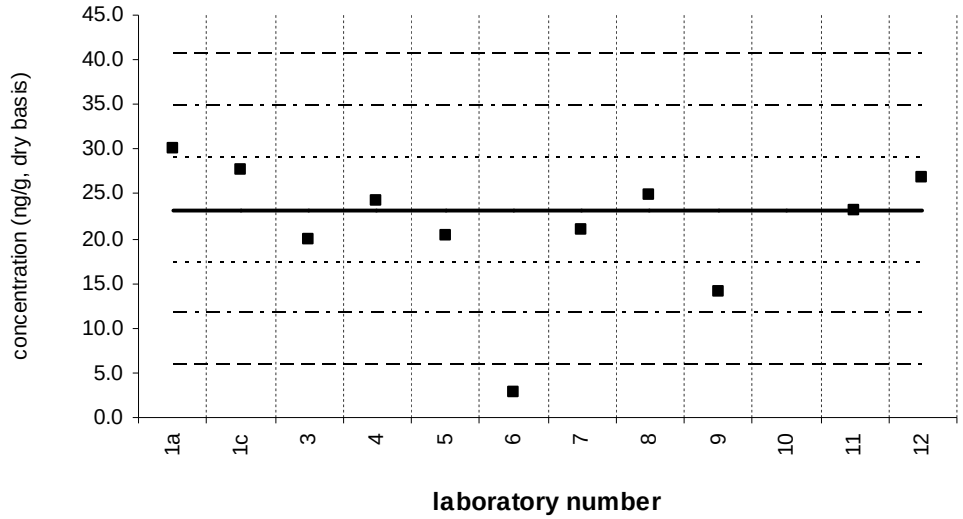


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

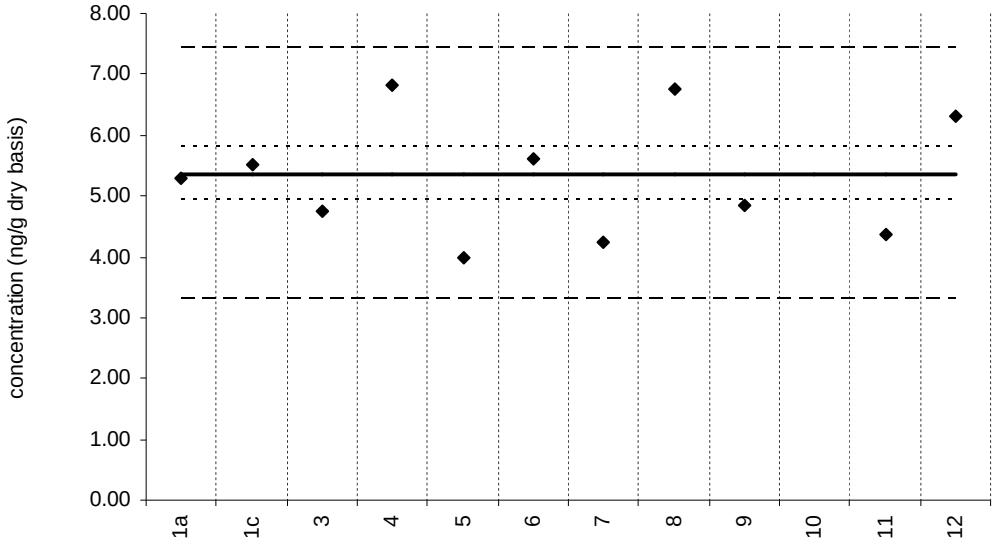


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 28

SRM 2977

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

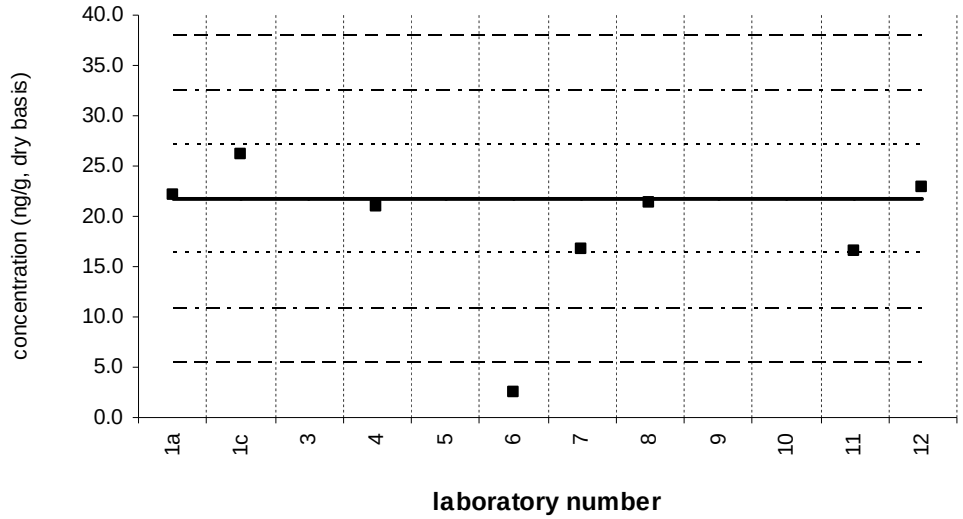


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

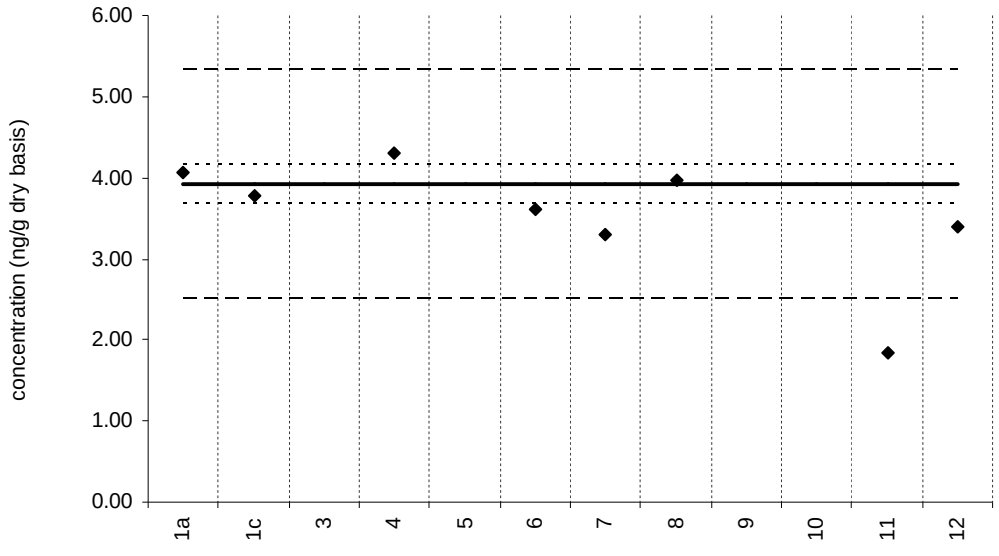


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 31

SRM 2977

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

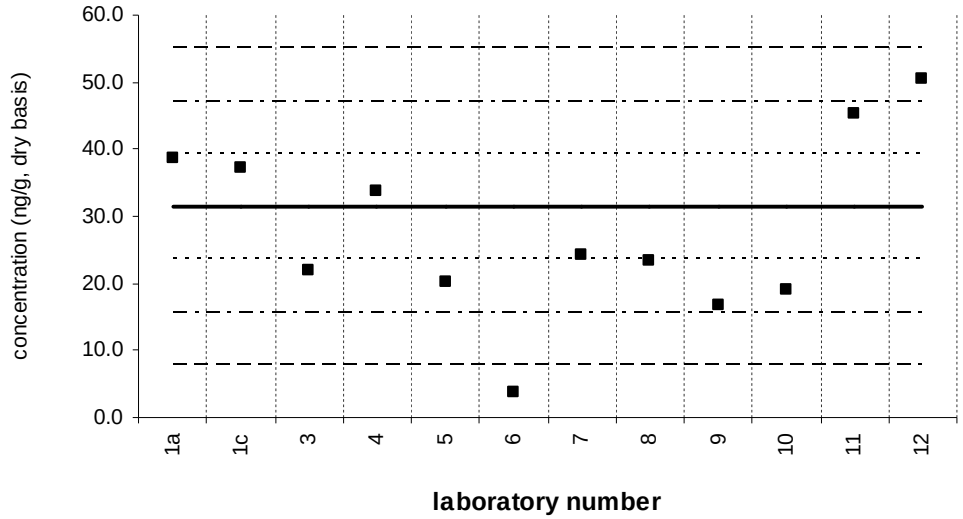


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

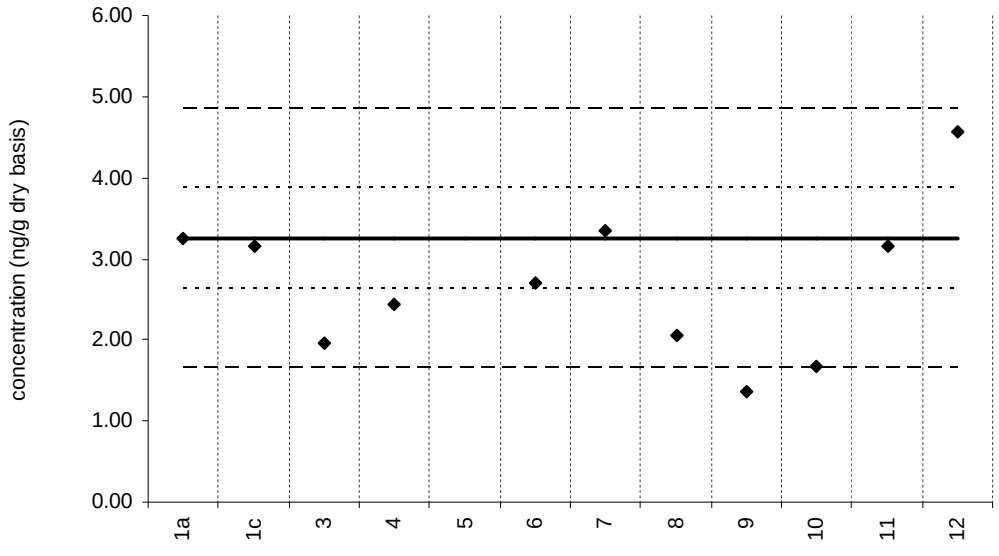


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 44

SRM 2977

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

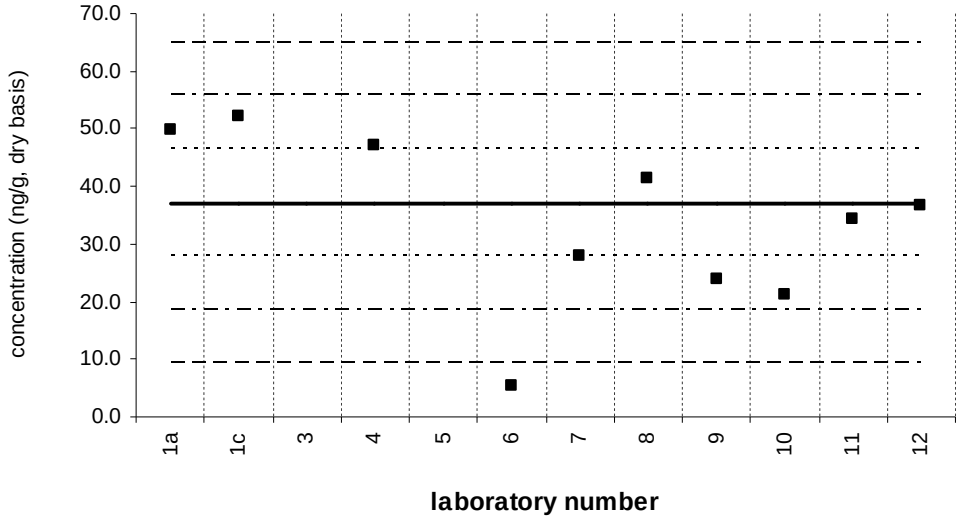


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

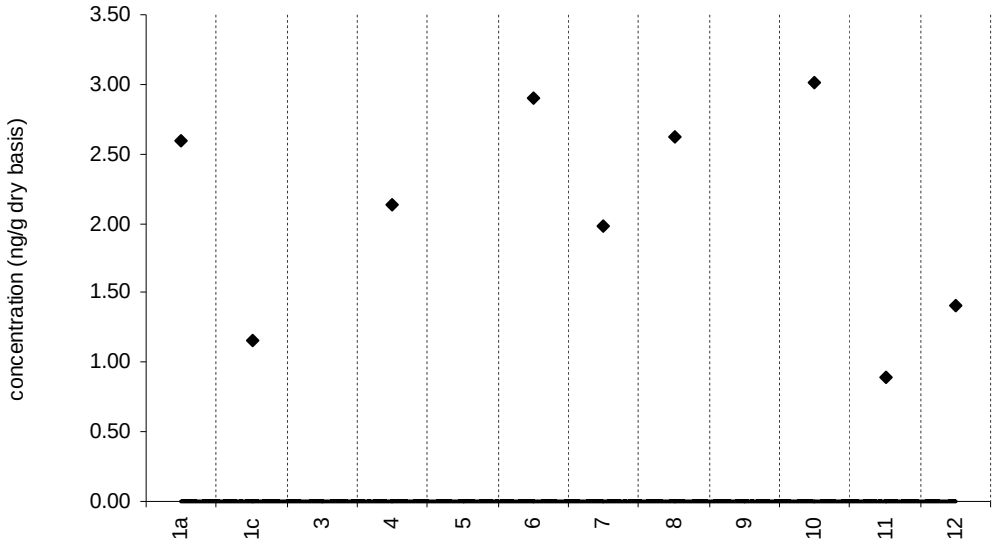


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 49

SRM 2977

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

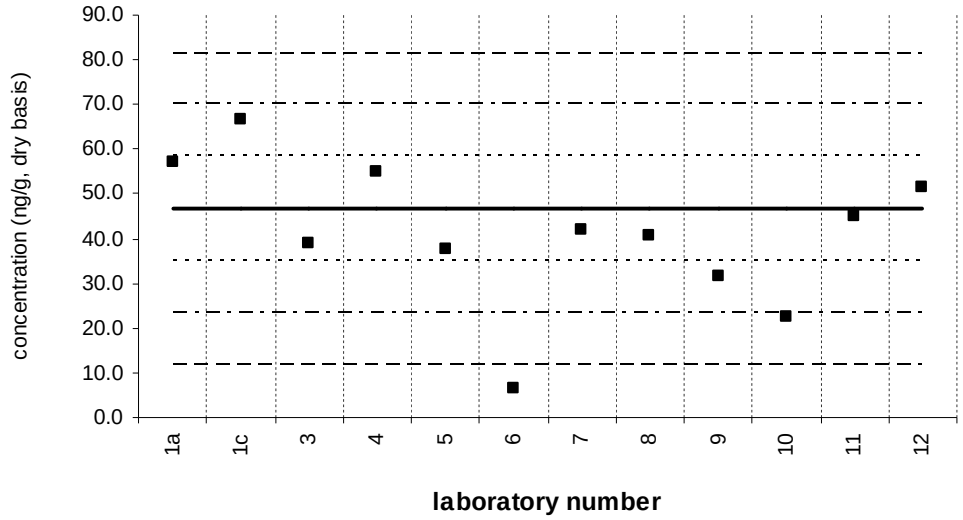


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

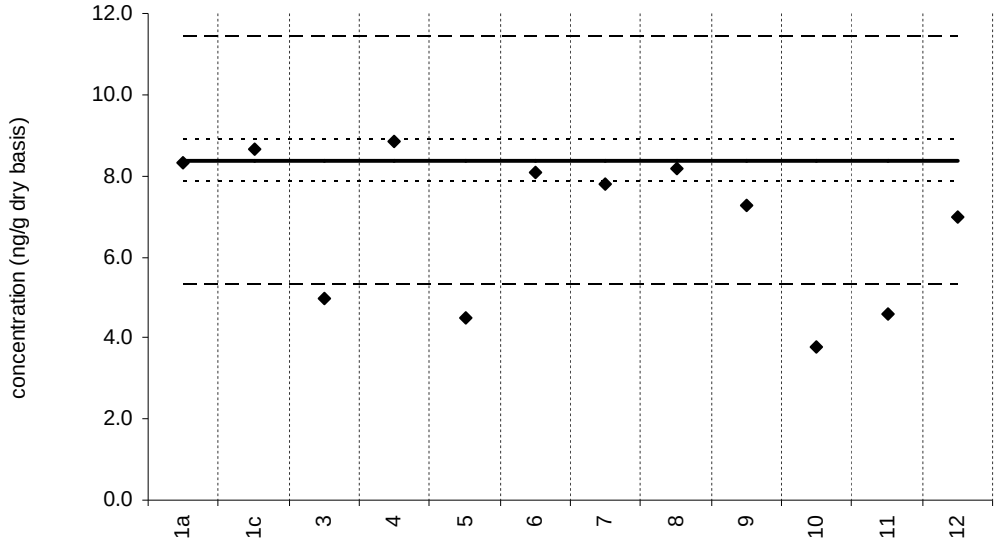


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 52

SRM 2977

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

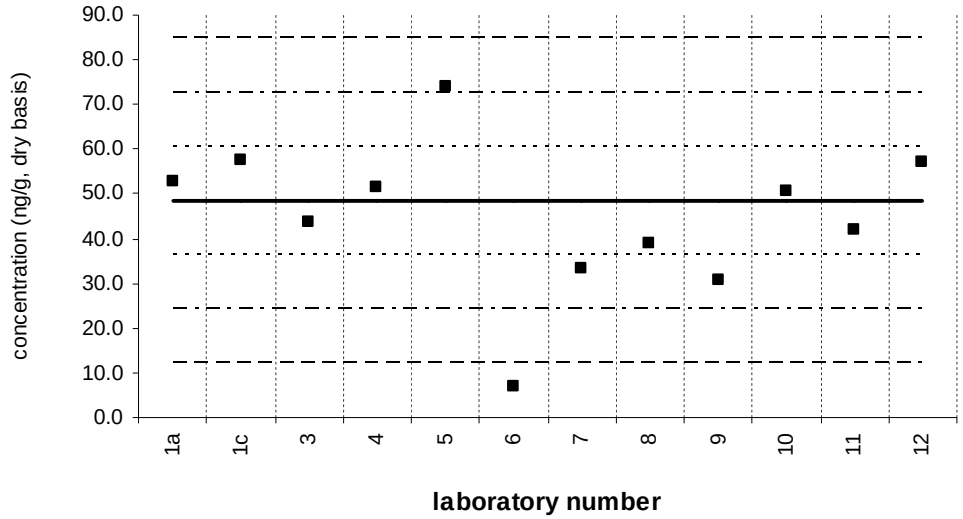


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

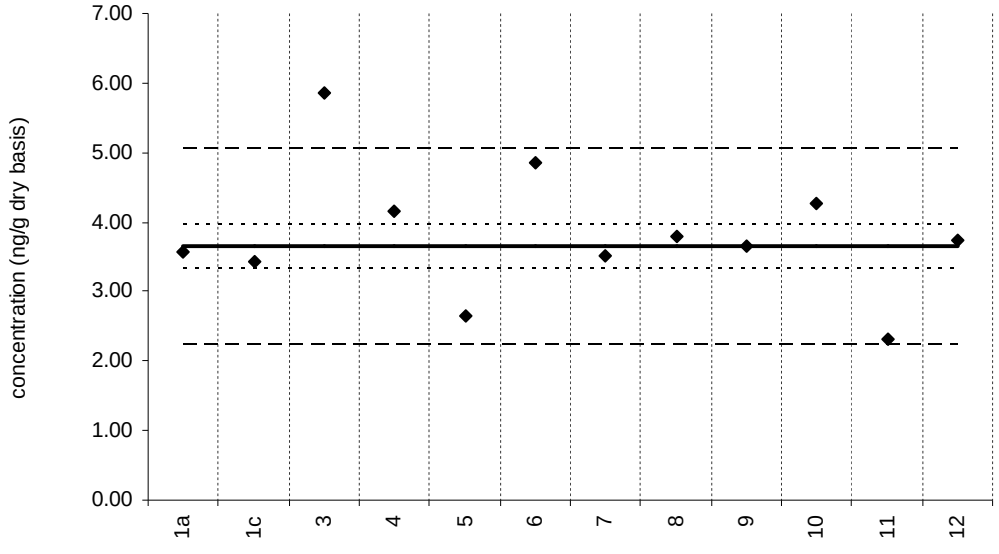


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 66

SRM 2977

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

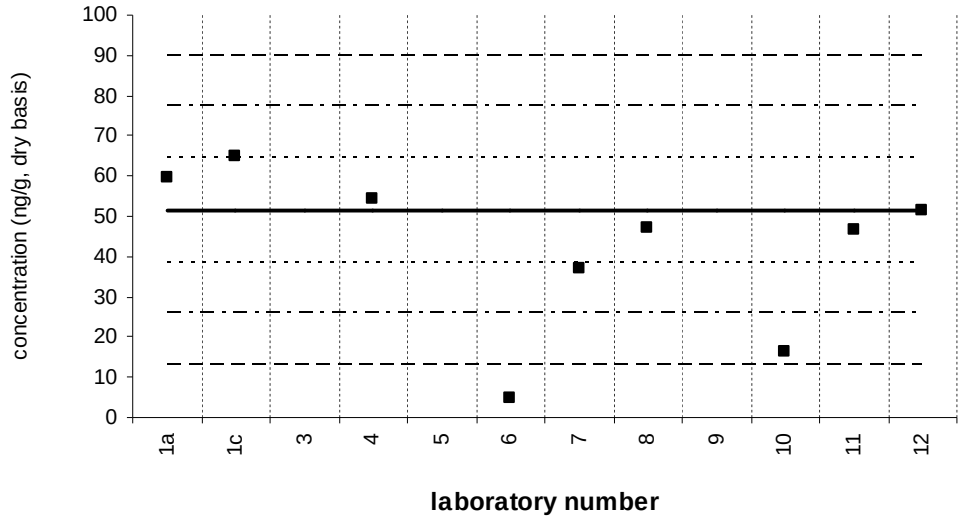


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

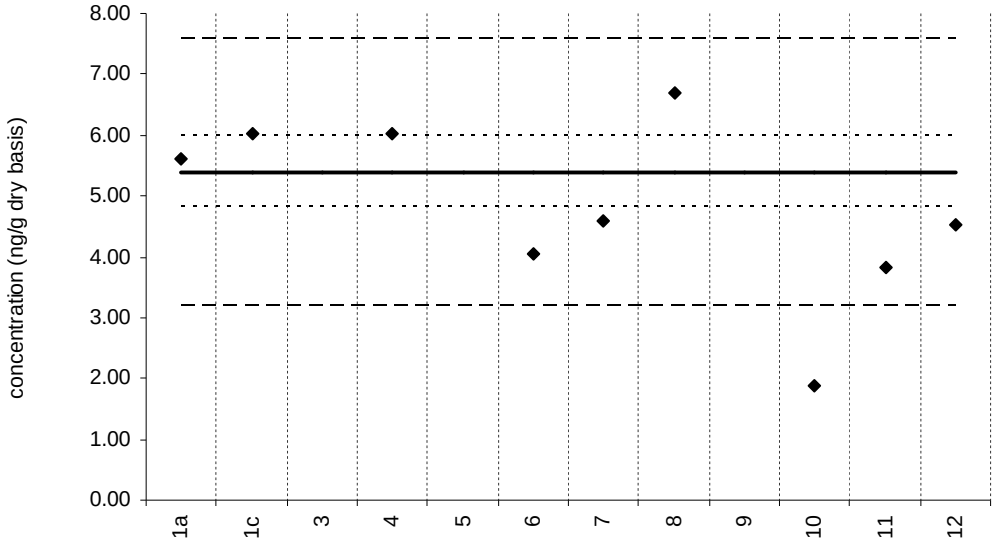


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 95

SRM 2977

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

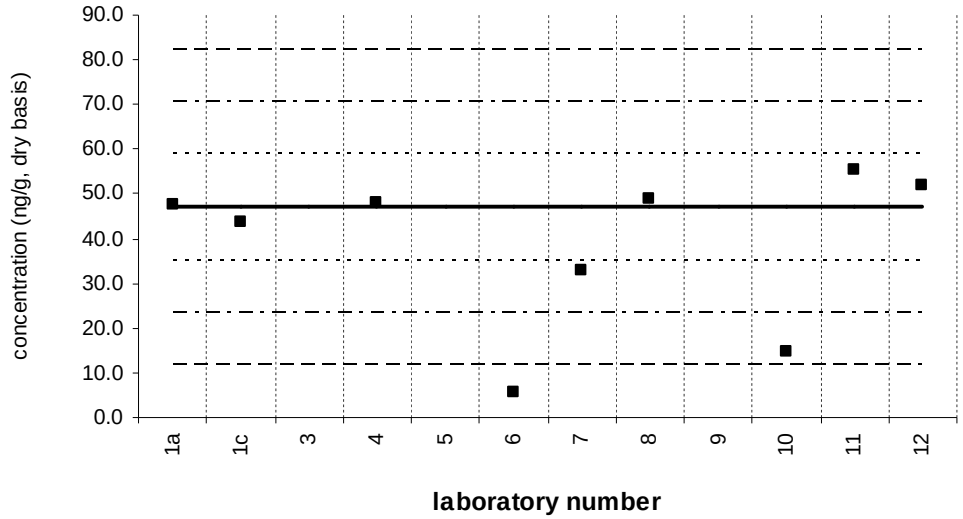


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

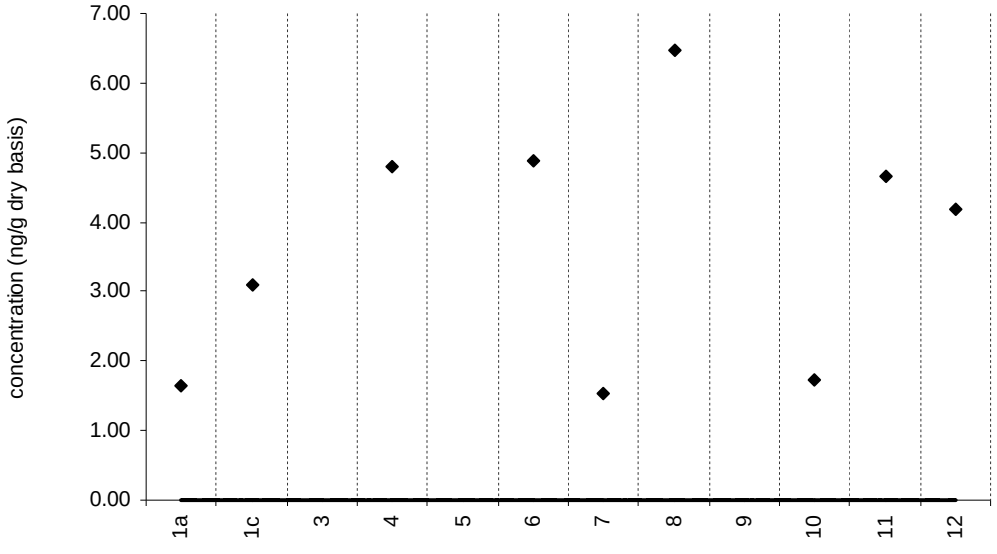


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 99

SRM 2977

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

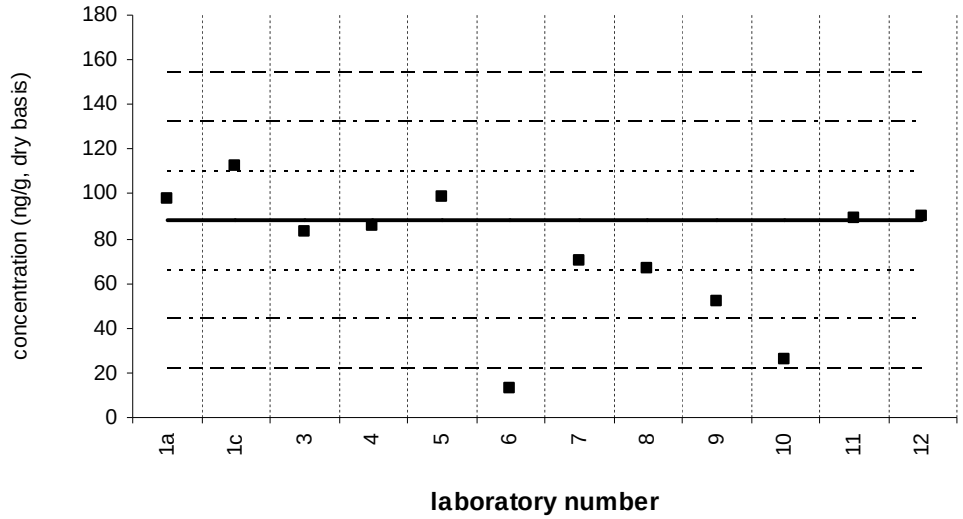


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

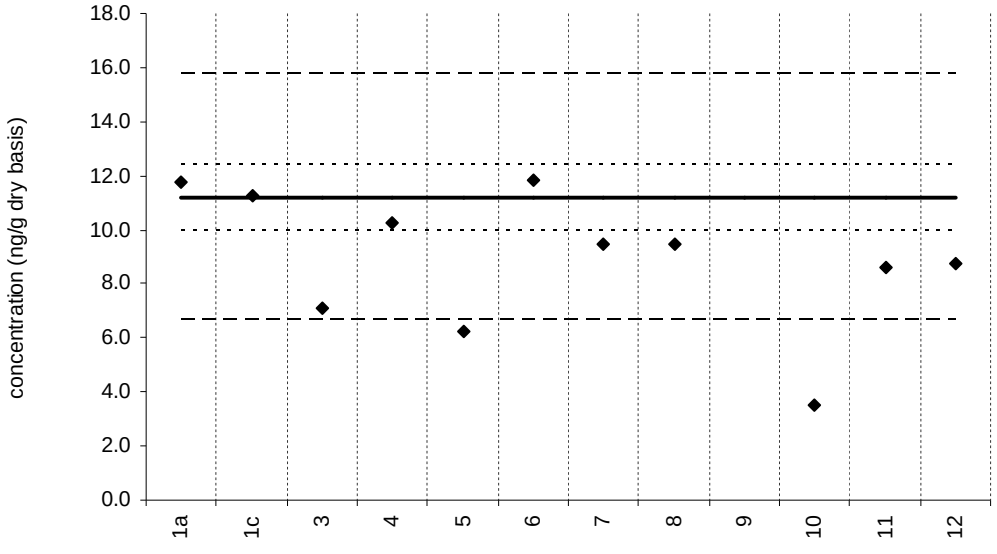


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 101

SRM 2977

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

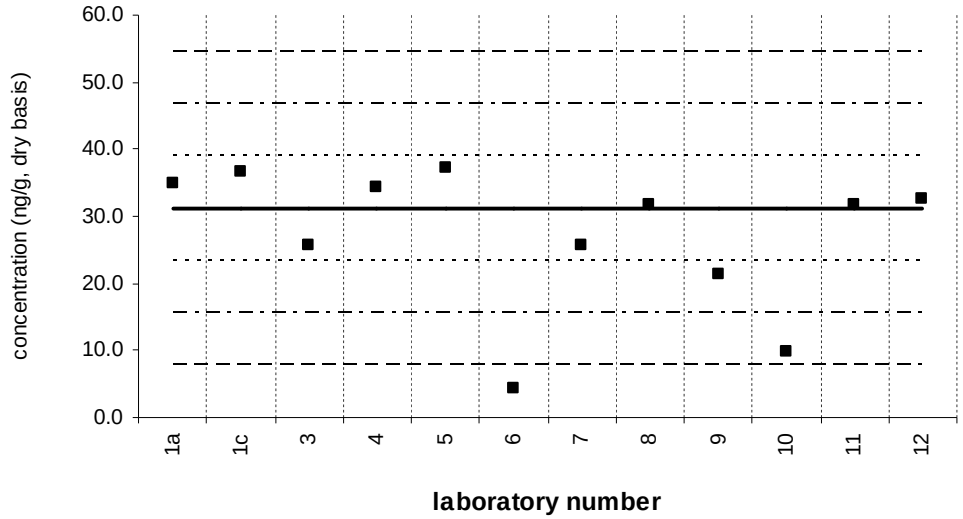


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

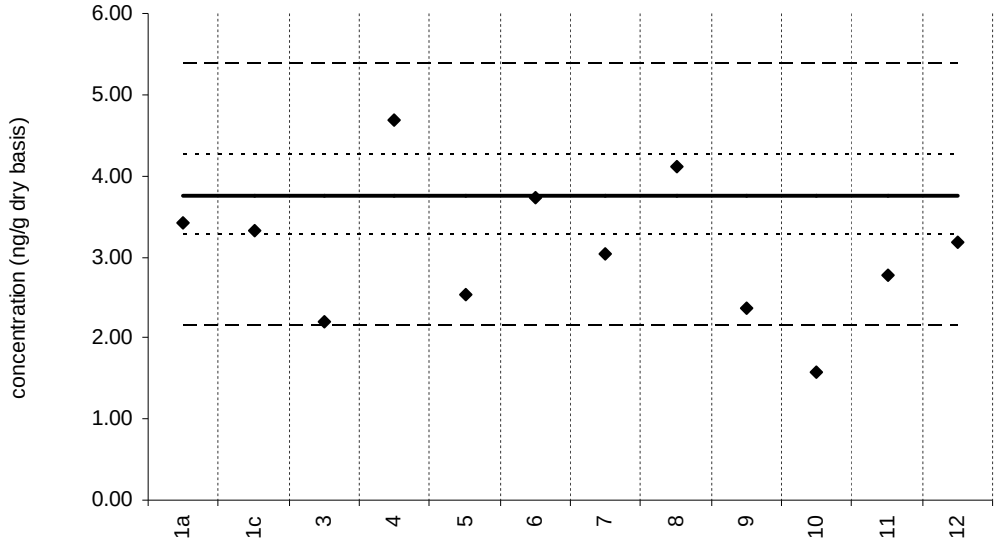


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 105

SRM 2977

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

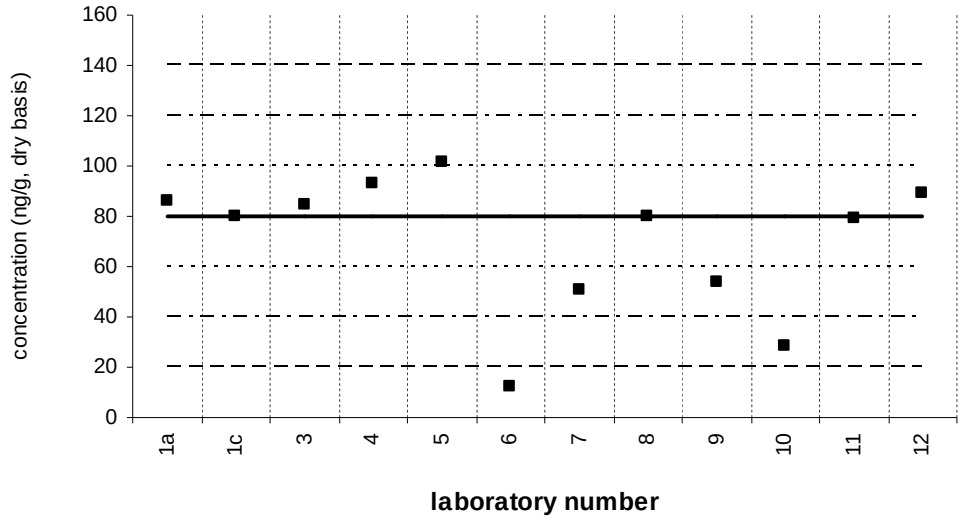


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

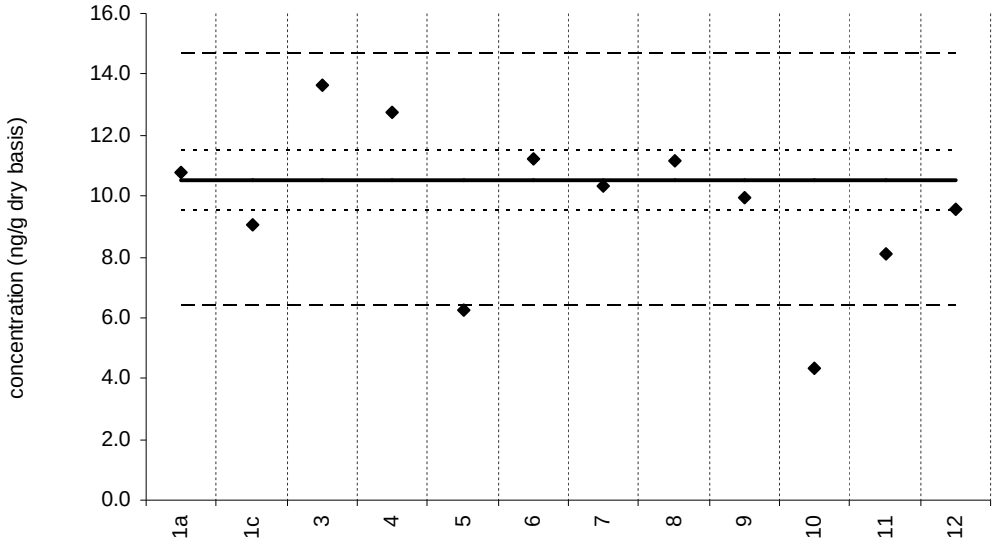


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 118

SRM 2977

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

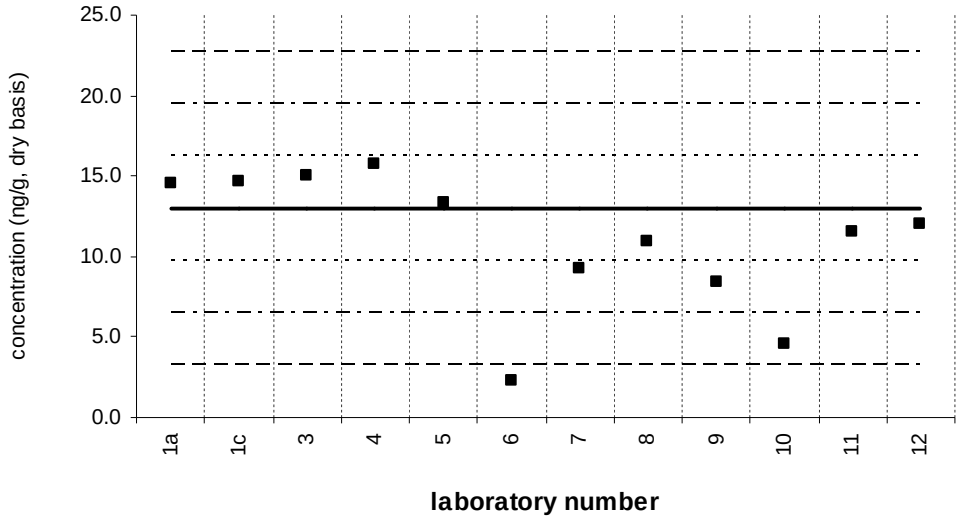


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

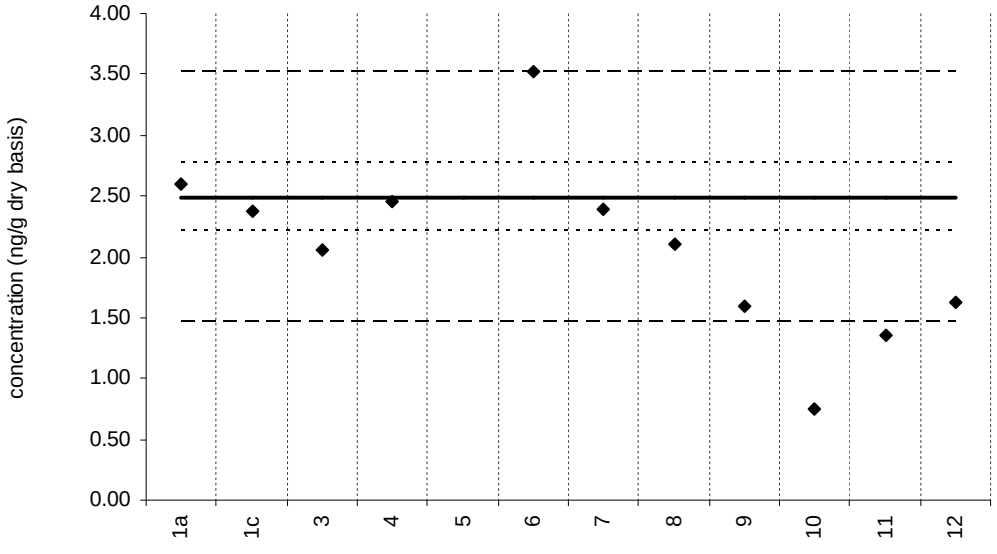


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 128

SRM 2977

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

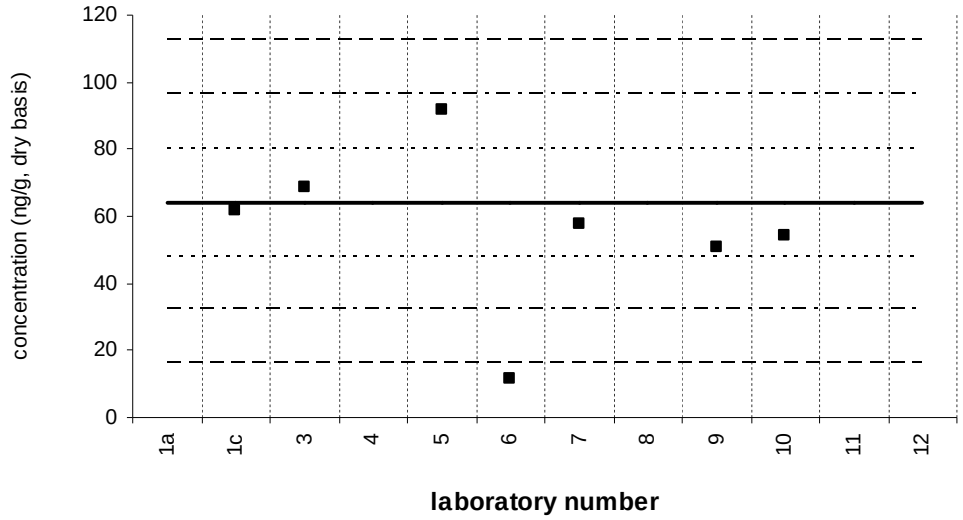


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

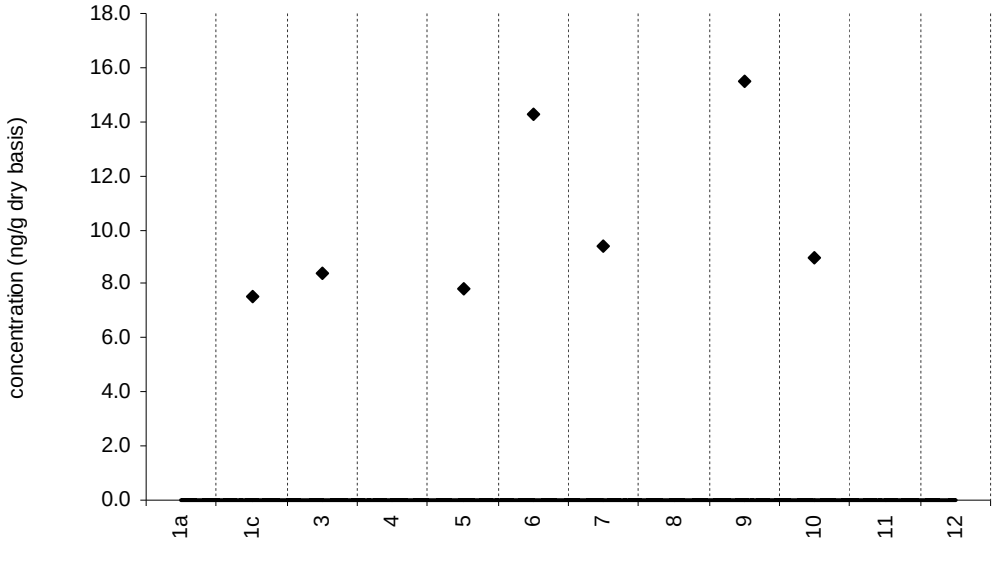


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 138

SRM 2977

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

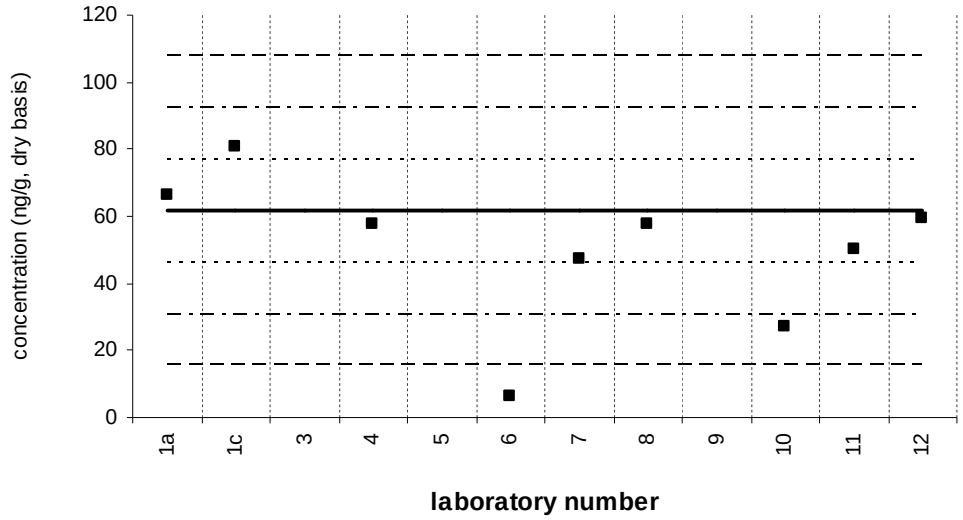


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

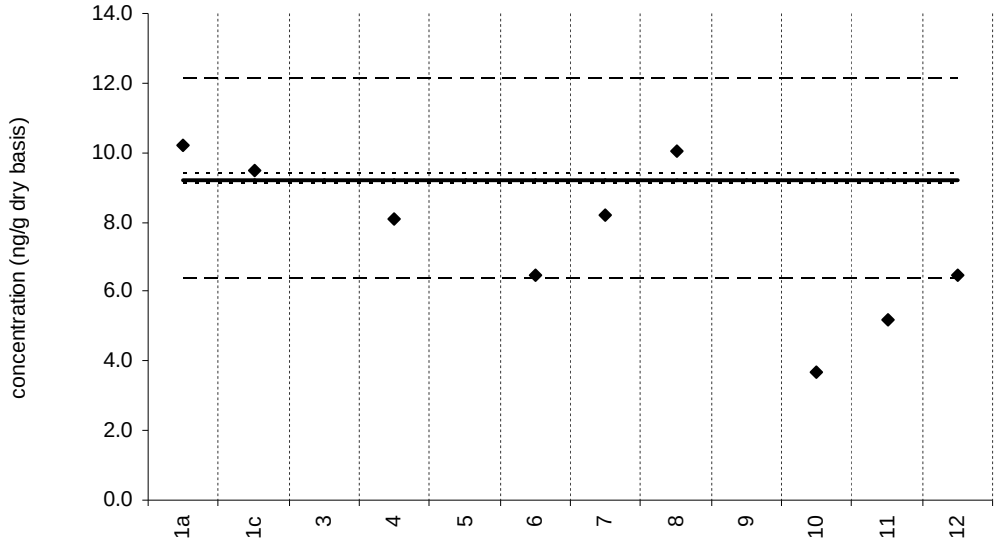


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 149

SRM 2977

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

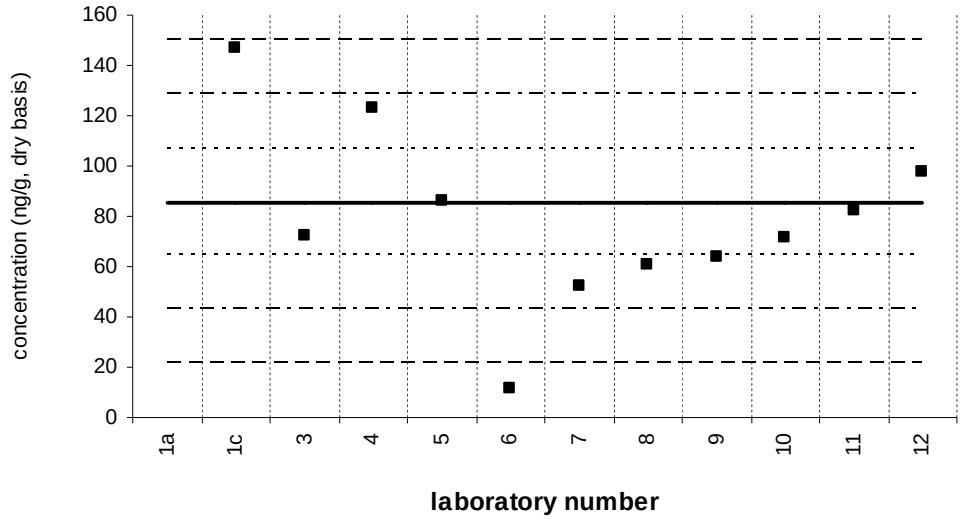


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

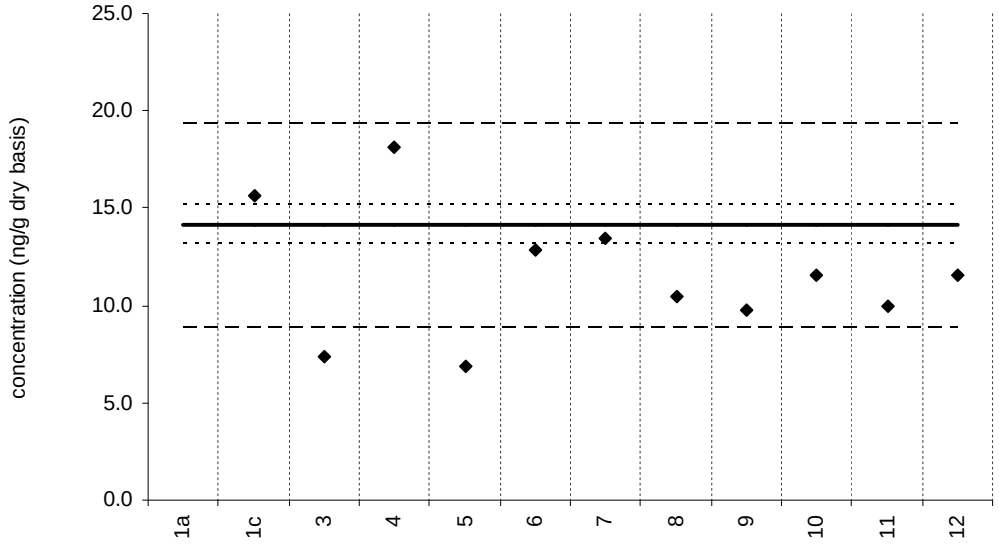


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 153

SRM 2977

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

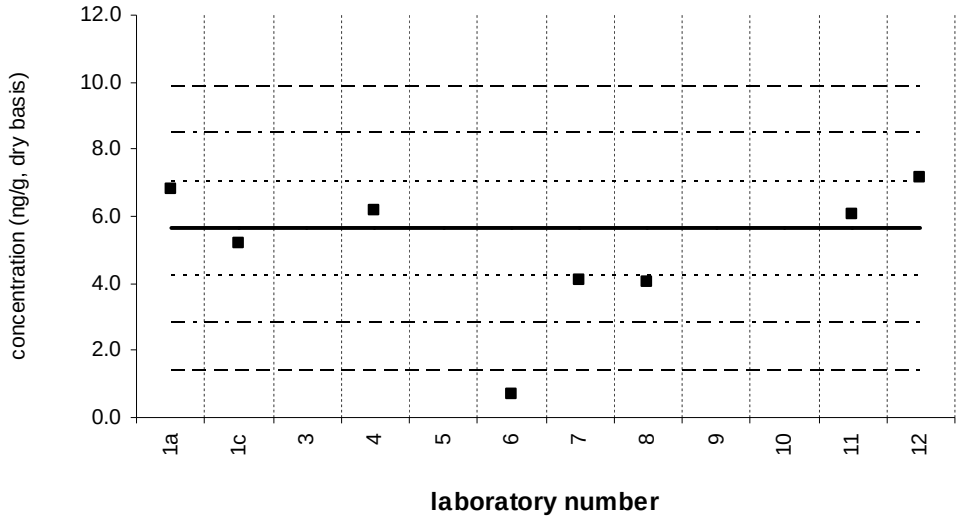


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

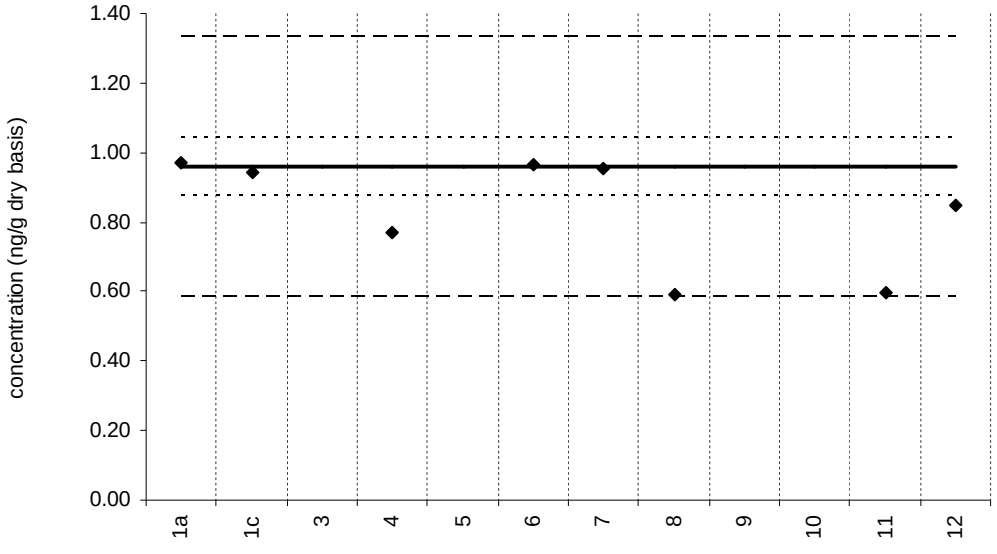


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 156

SRM 2977

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

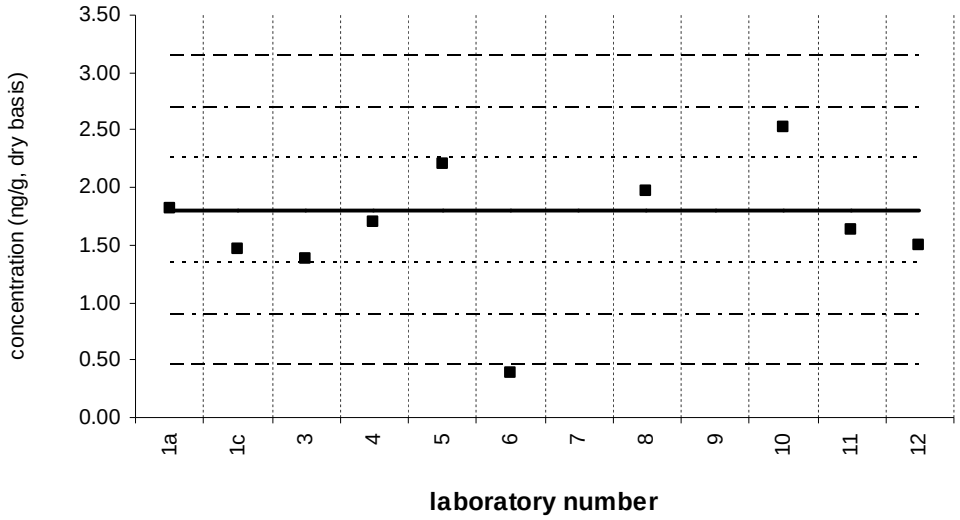


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

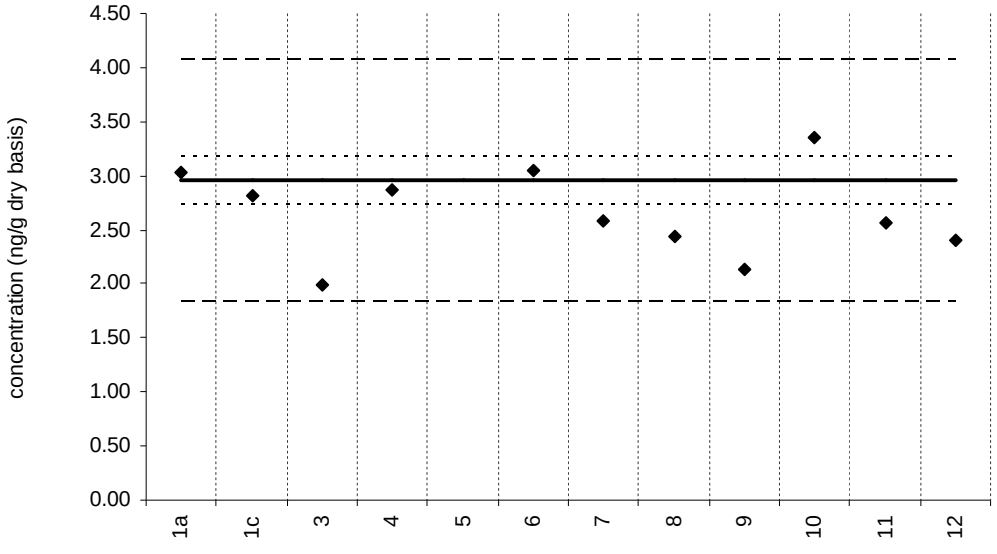


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 170

SRM 2977

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

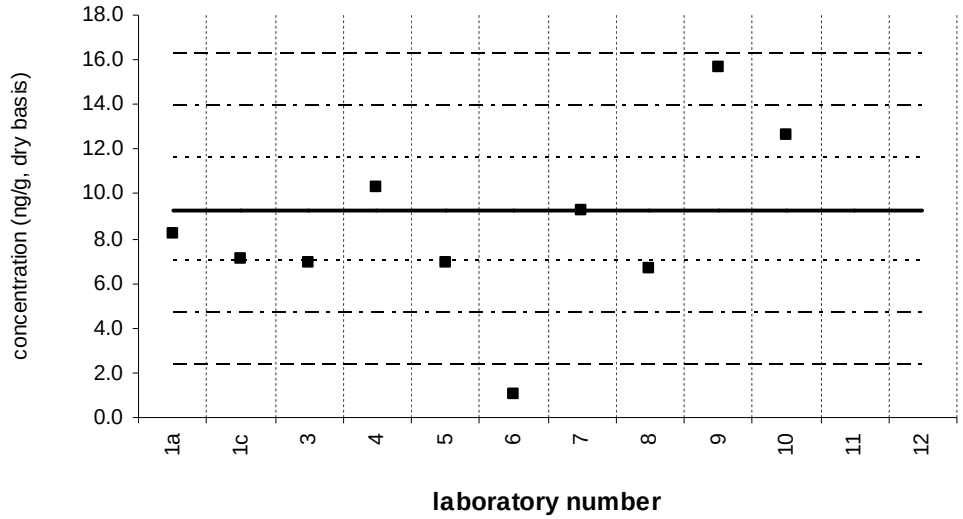


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

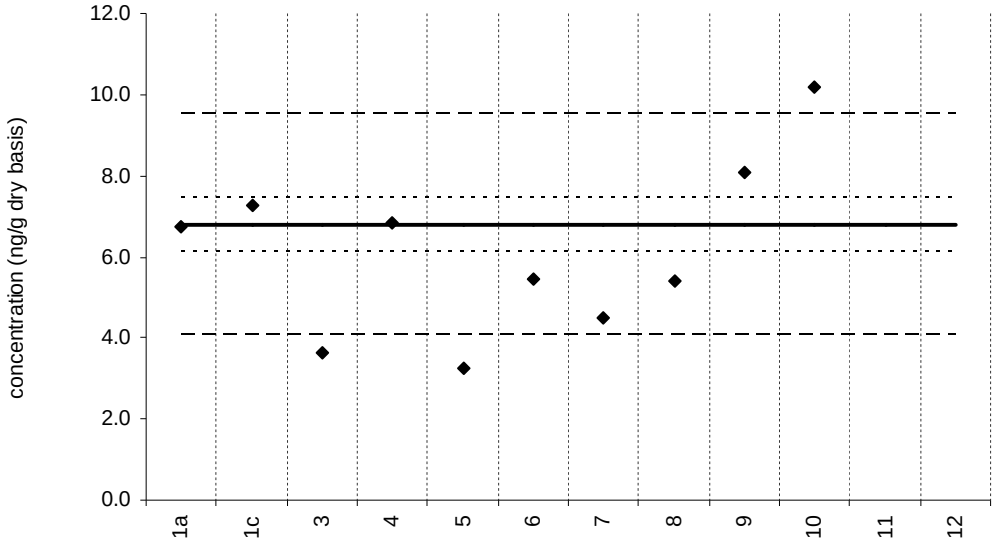


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 180

SRM 2977

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

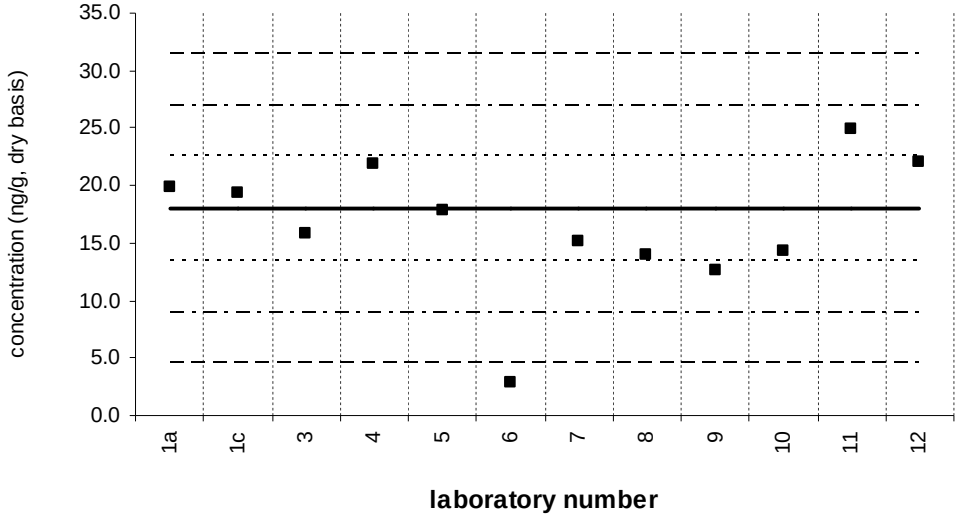


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

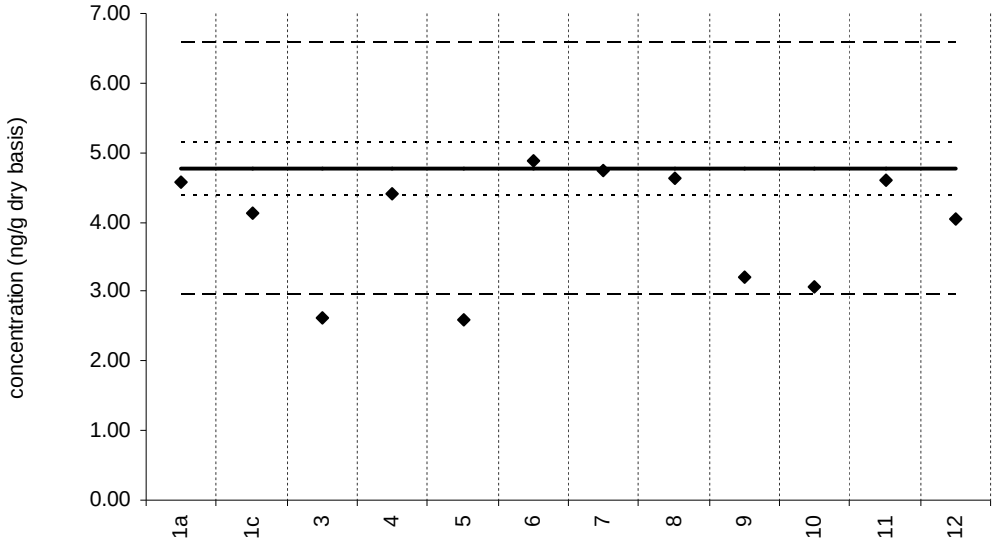


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 187

SRM 2977

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

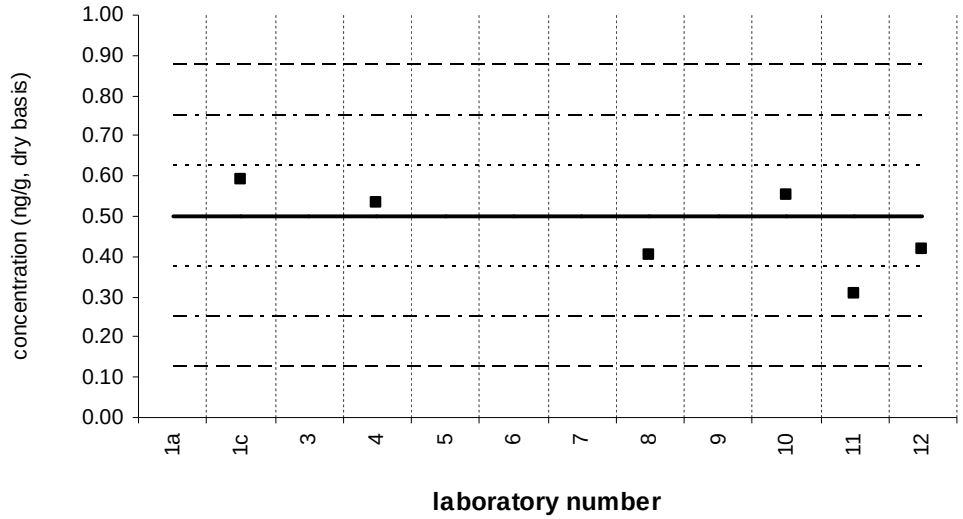


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

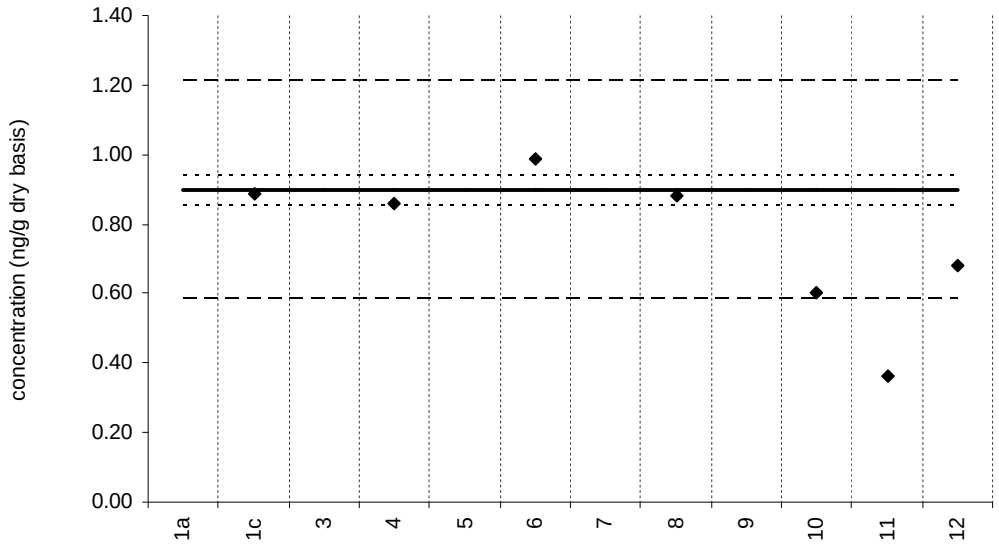


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 194

SRM 2977

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

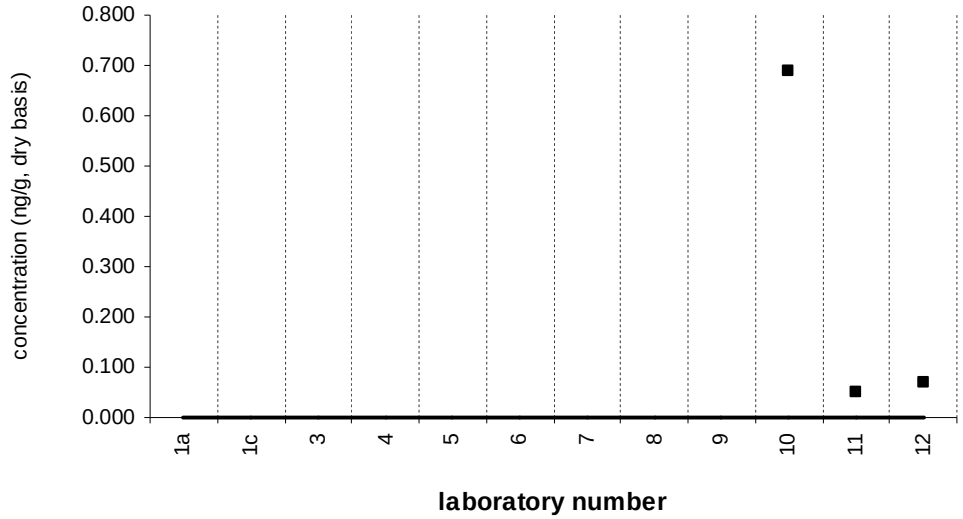


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

PCB 195

Tissue XII (QA05TIS12)

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

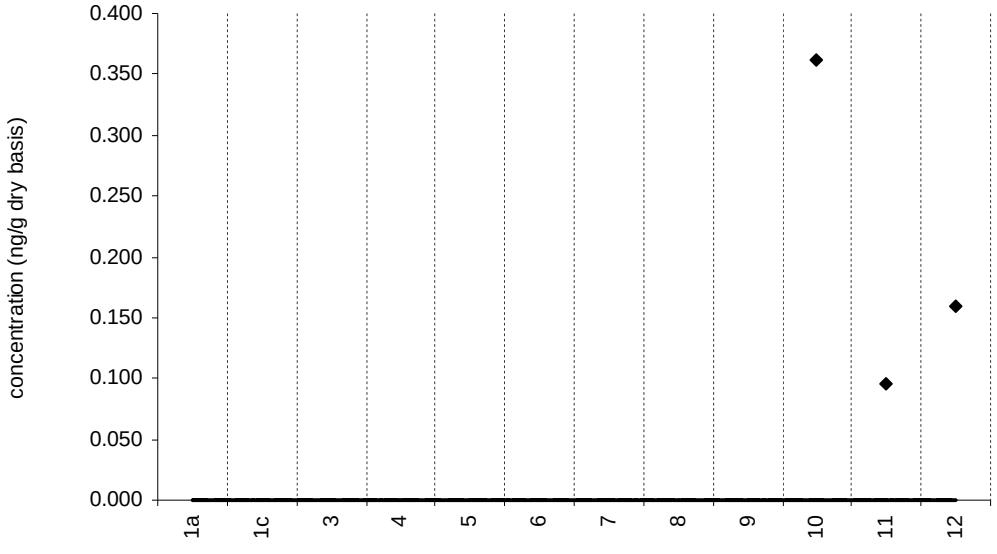


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 195

SRM 2977

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

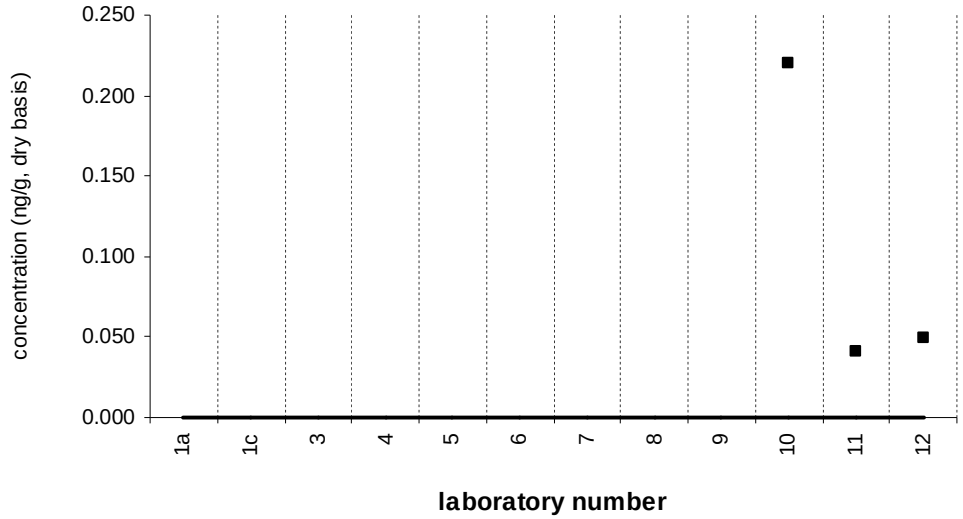


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

PCB 206

Tissue XII (QA05TIS12)

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

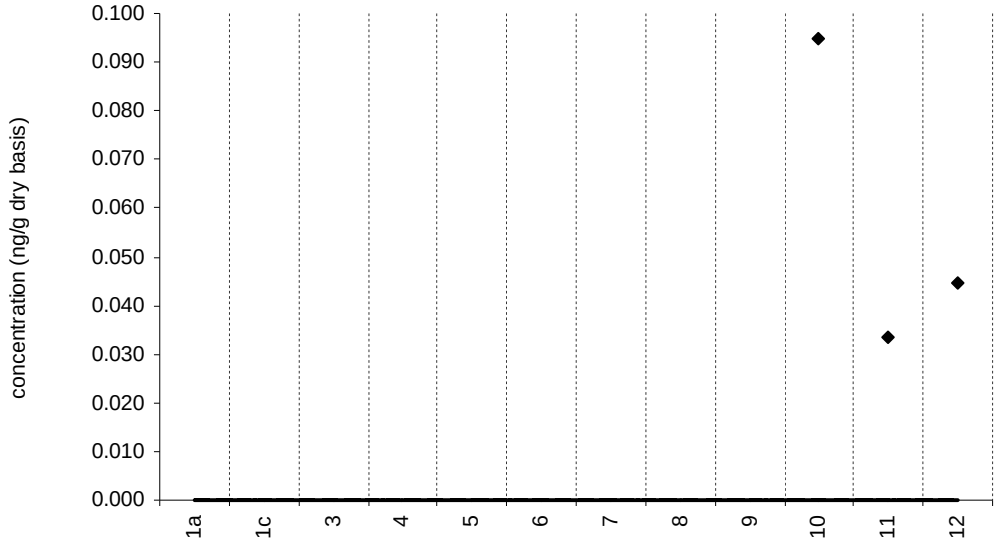


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 206

SRM 2977

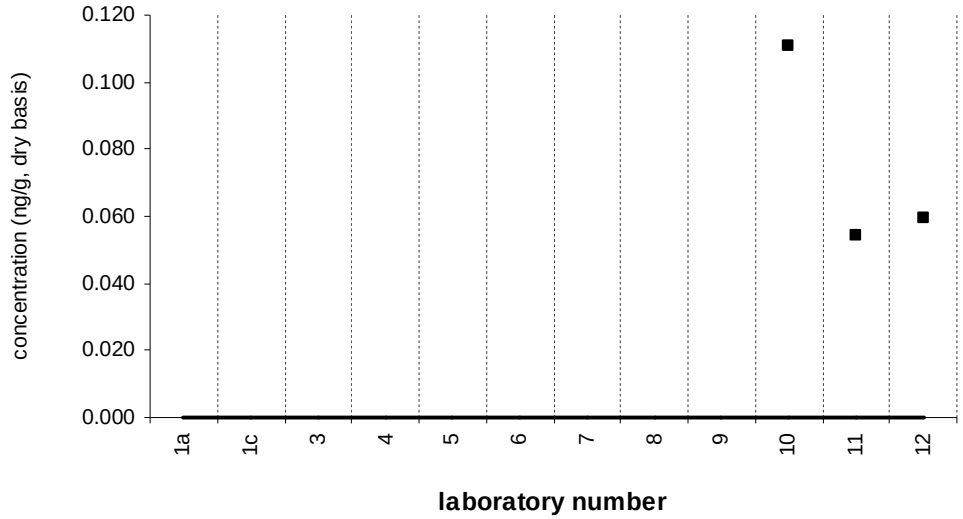
Target Value = no target ng/g (dry basis)
Reported Results: 12 Quantitative Results: 3



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

PCB 209 **Tissue XII (QA05TIS12)**

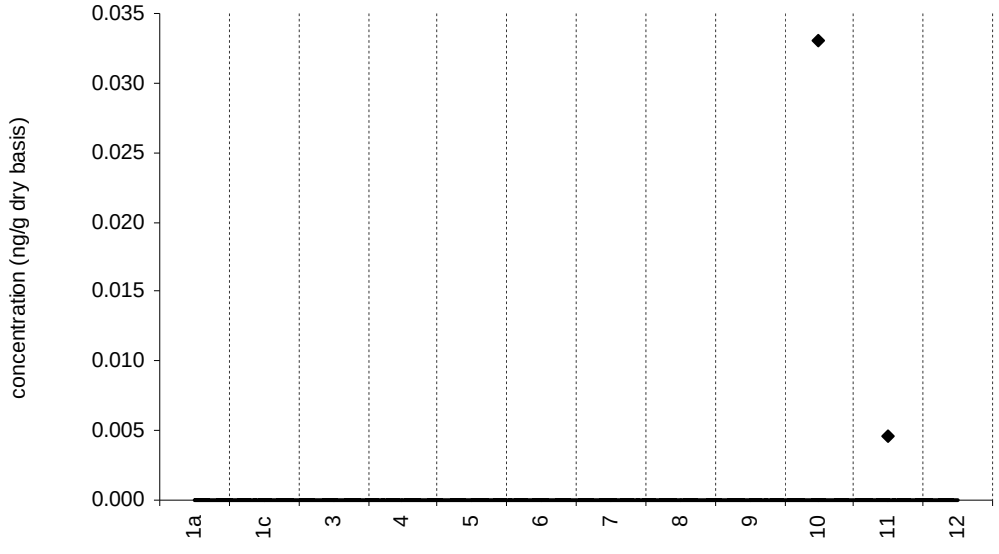
Assigned value = no target ng/g (dry basis)
Reported Results: 12 Quantitative Results: 3



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

PCB 209 **SRM 2977**

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

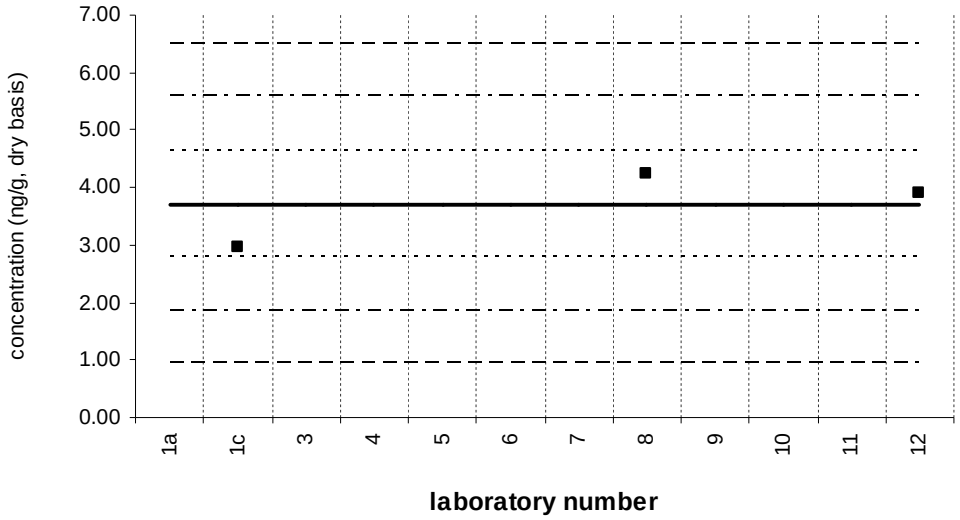


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

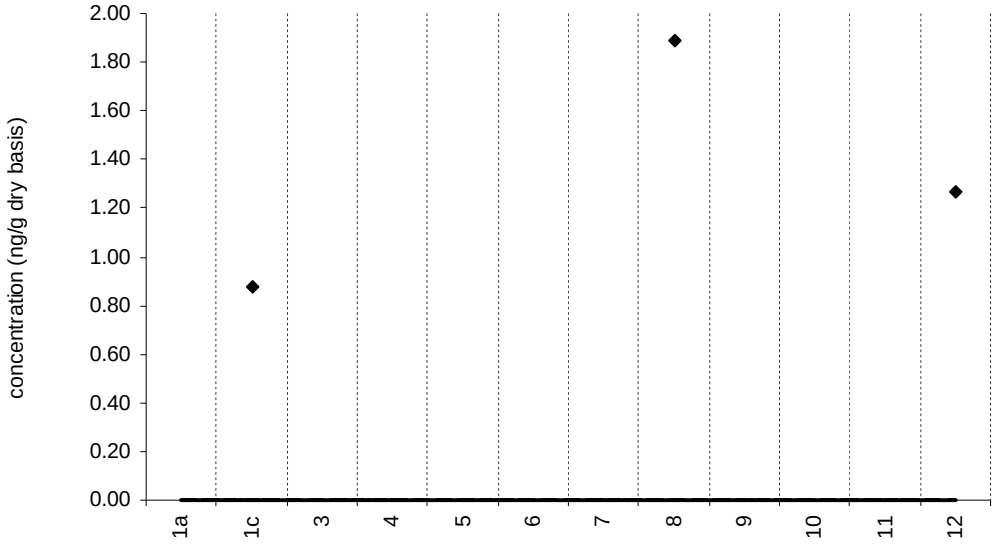


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 17

SRM 2977

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

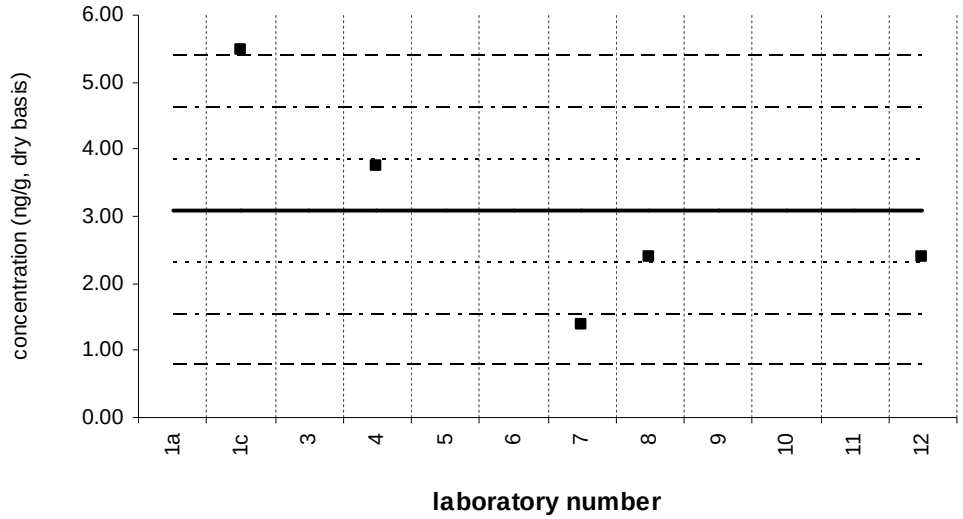


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

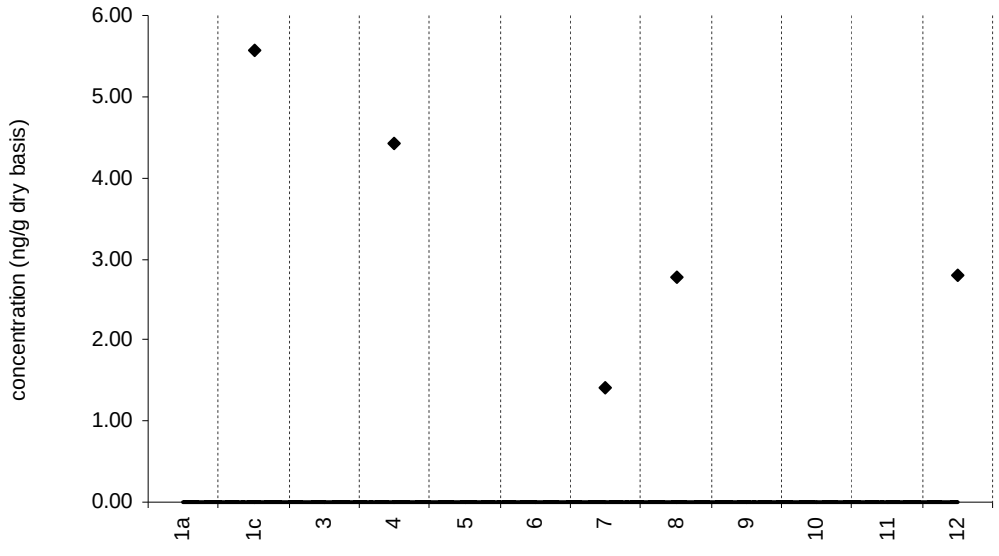


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 28

SRM 2977

Target Value = no target ng/g (dry basis)
Reported Results: 5 Quantitative Results: 5

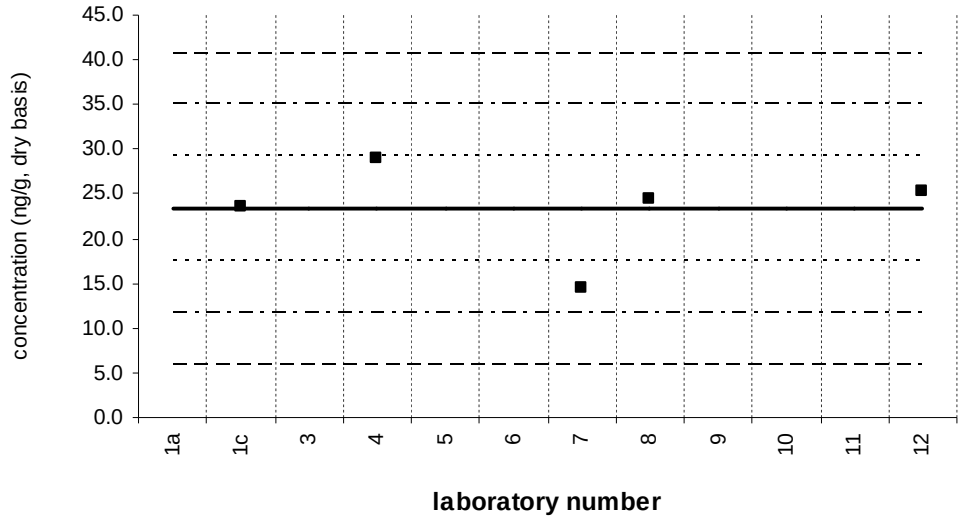


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

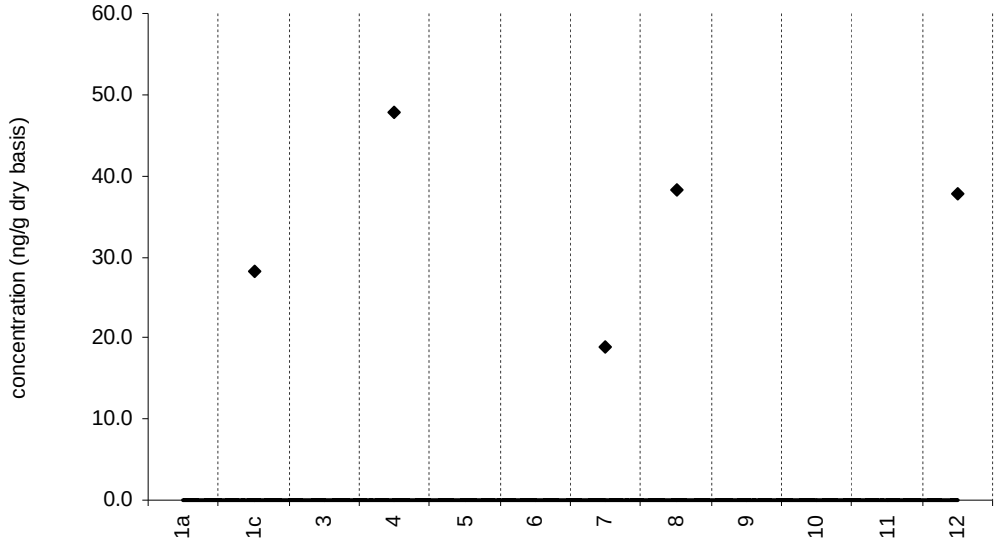


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 47

SRM 2977

Target Value = no target ng/g (dry basis)
Reported Results: 5 Quantitative Results: 5

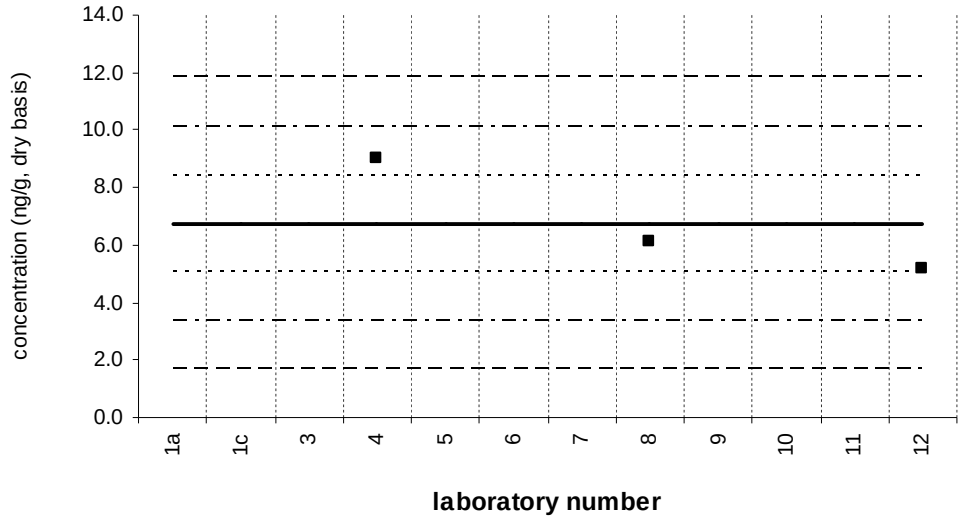


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

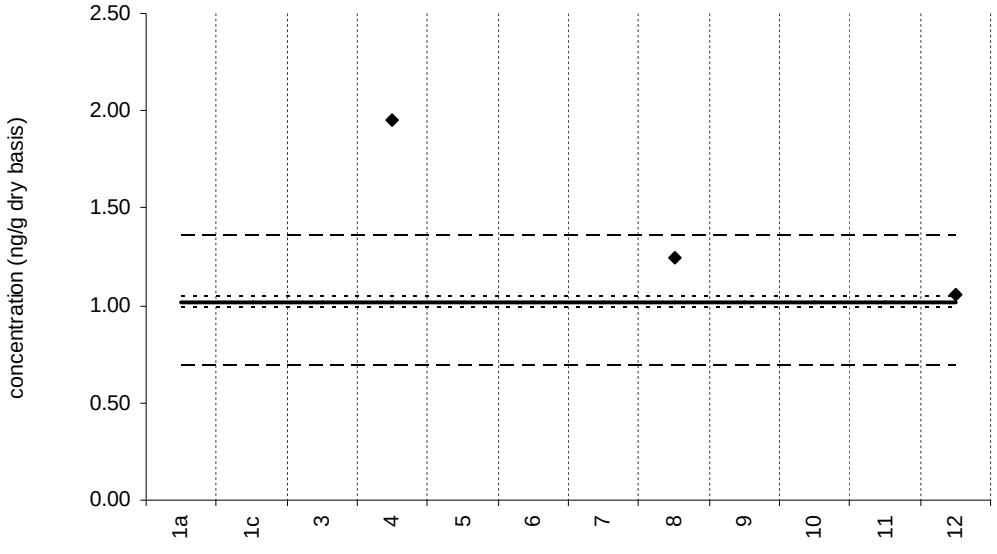


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 49

SRM 2977

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

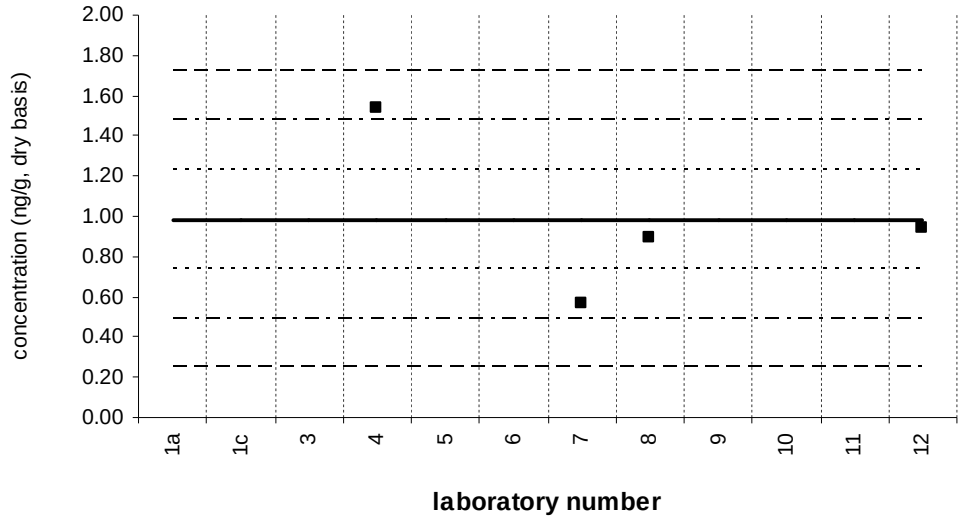


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

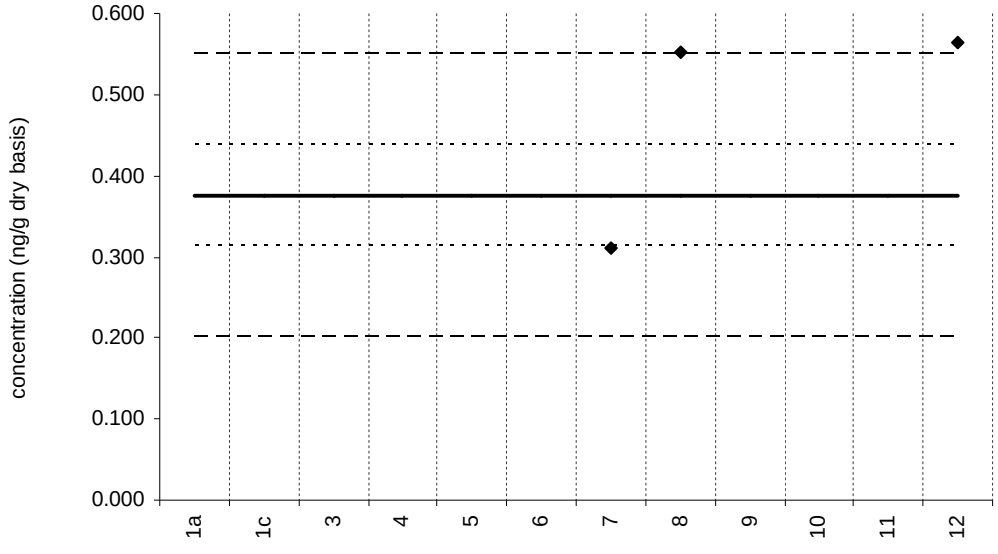


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 66

SRM 2977

Target Value = 0.375 ± 0.062 ng/g (dry basis)
Reported Results: 5 Quantitative Results: 3

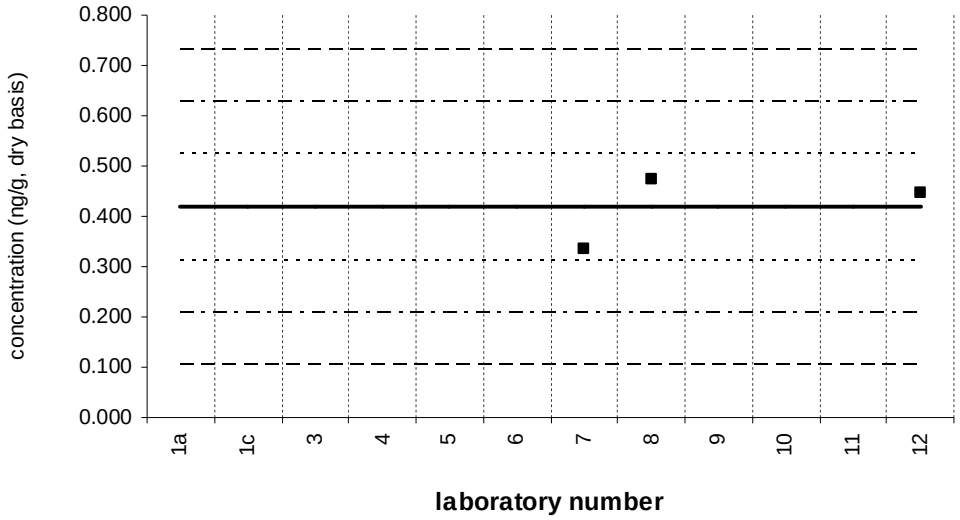


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

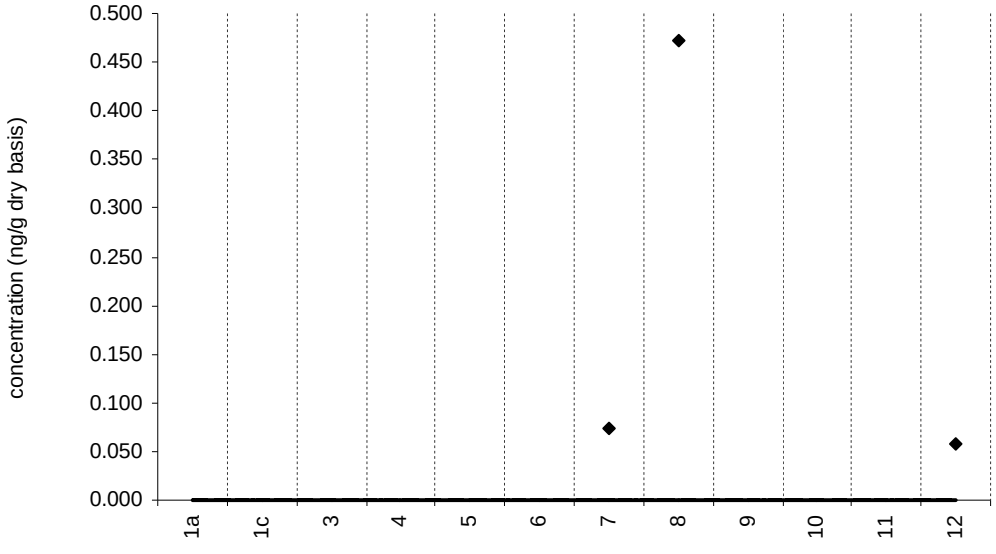


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 85

SRM 2977

Target Value = no target ng/g (dry basis)
Reported Results: 5 Quantitative Results: 3

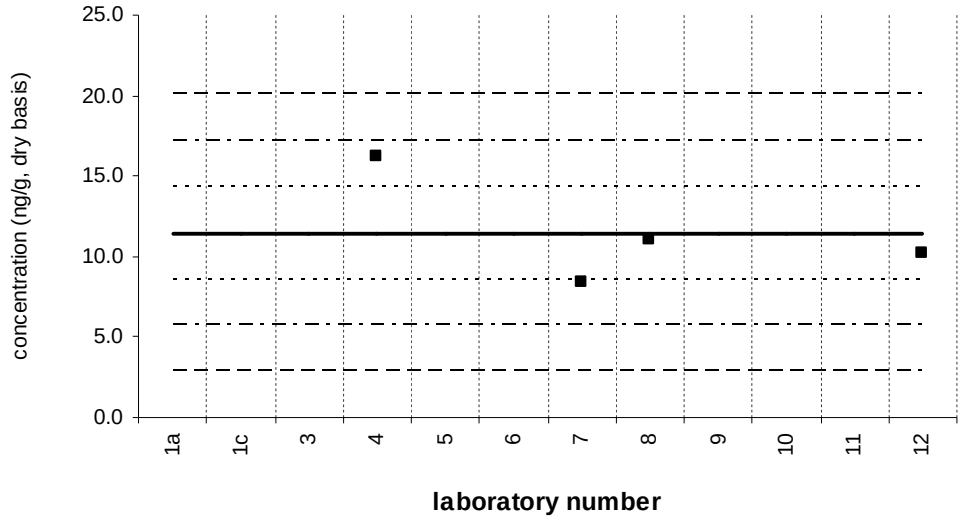


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

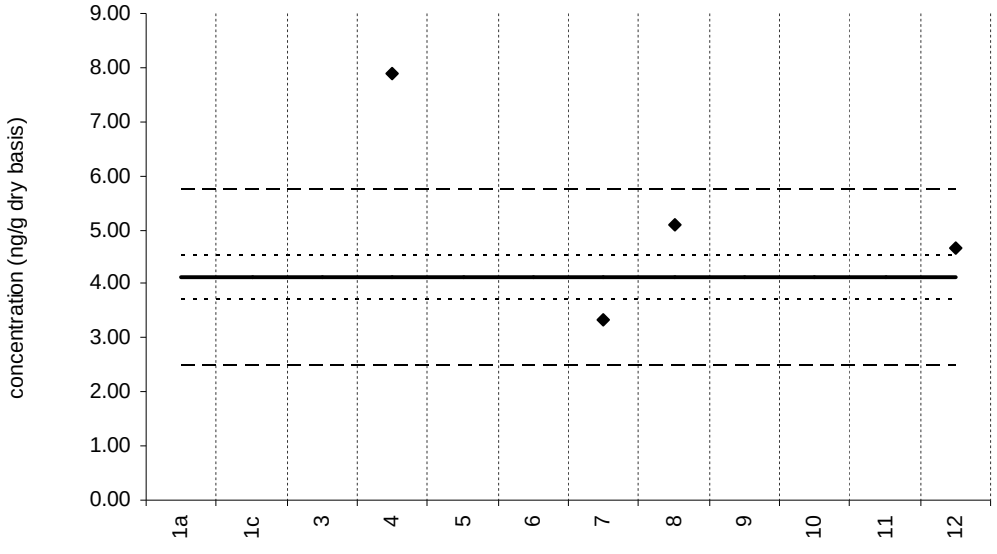


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 99

SRM 2977

Target Value = 4.11 ± 0.40 ng/g (dry basis)
Reported Results: 4 Quantitative Results: 4

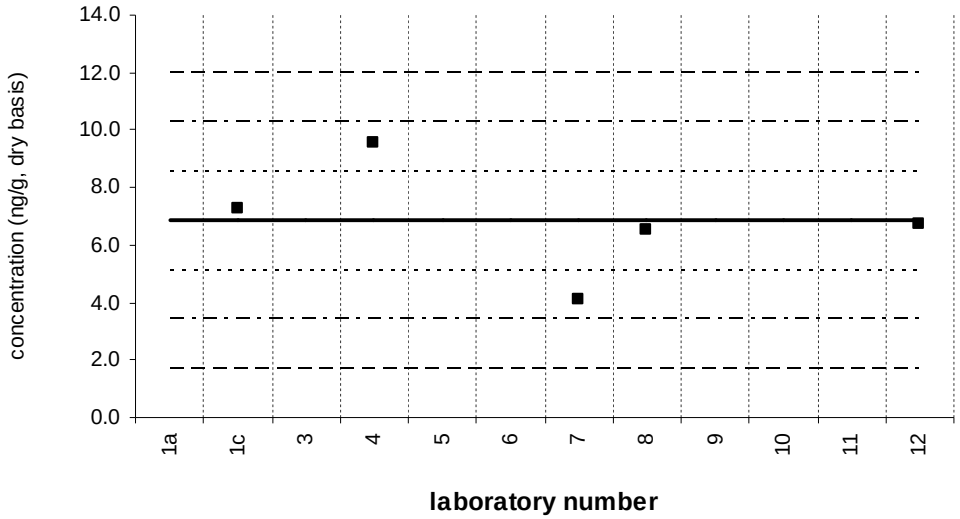


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

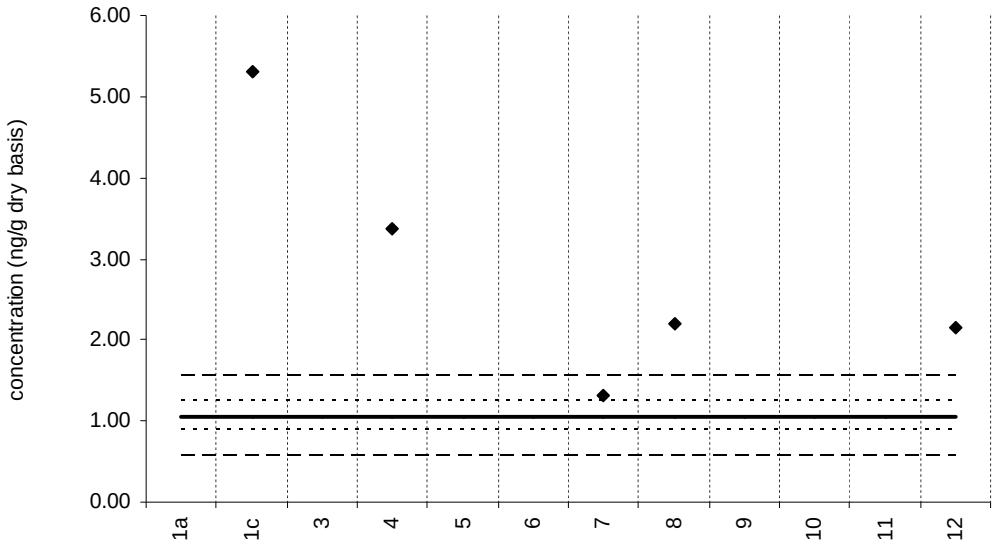


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 100

SRM 2977

Target Value = 1.06 ± 0.18 ng/g (dry basis)
Reported Results: 5 Quantitative Results: 5

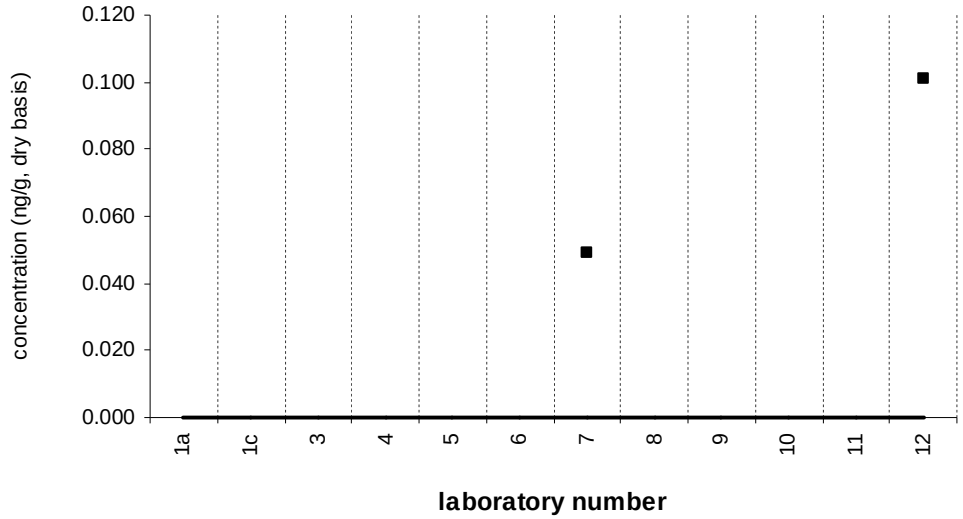


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

BDE 138

Tissue XII (QA05TIS12)

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

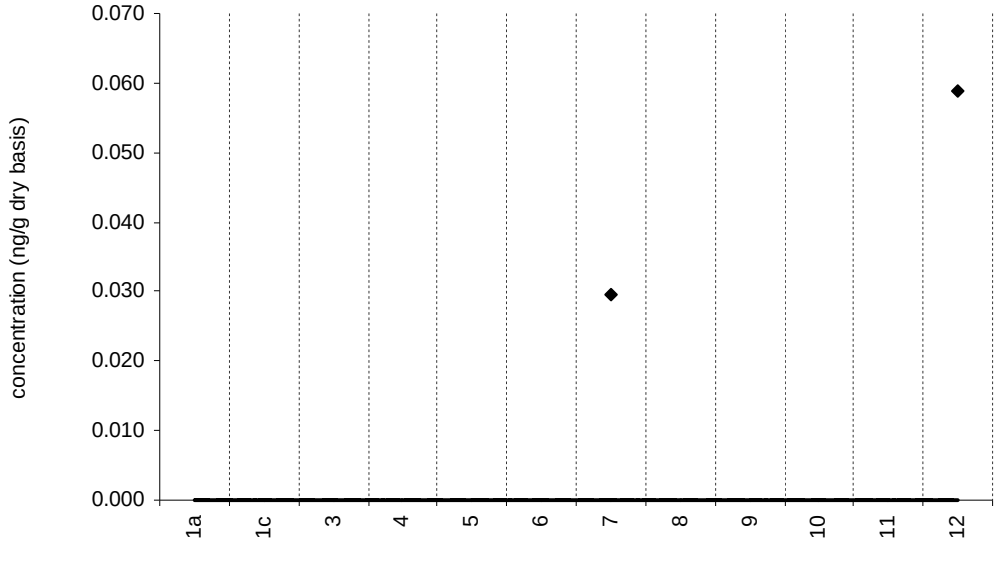


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 138

SRM 2977

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

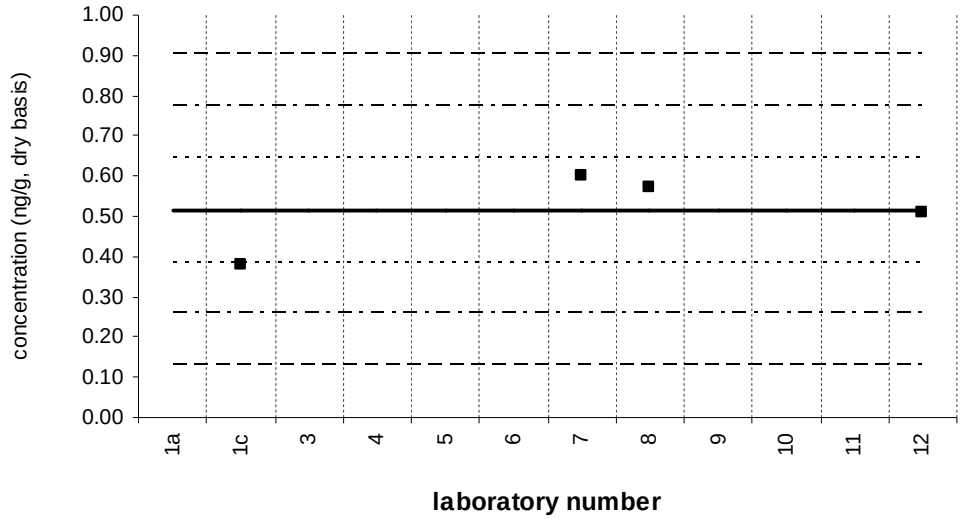


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

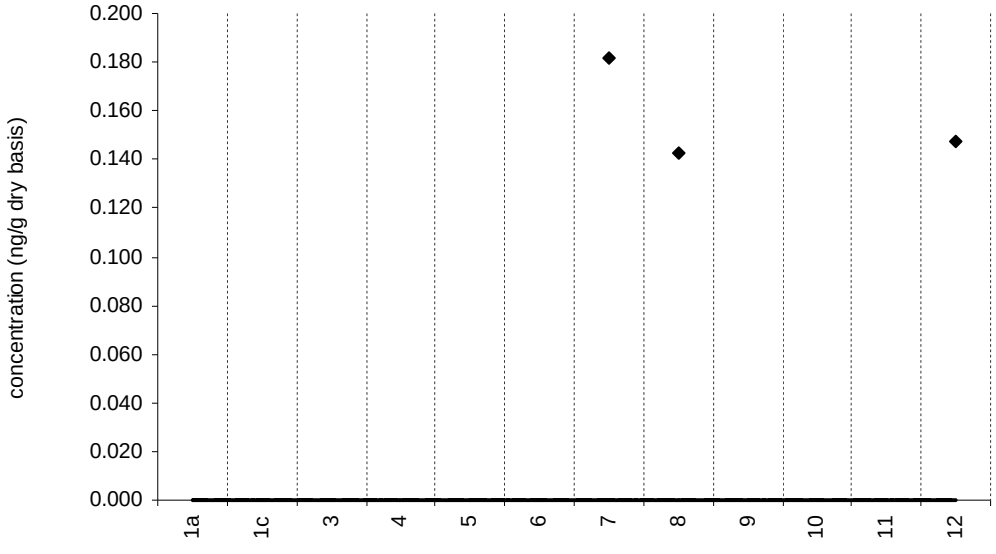


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 153

SRM 2977

Target Value = no target ng/g (dry basis)
Reported Results: 5 Quantitative Results: 3

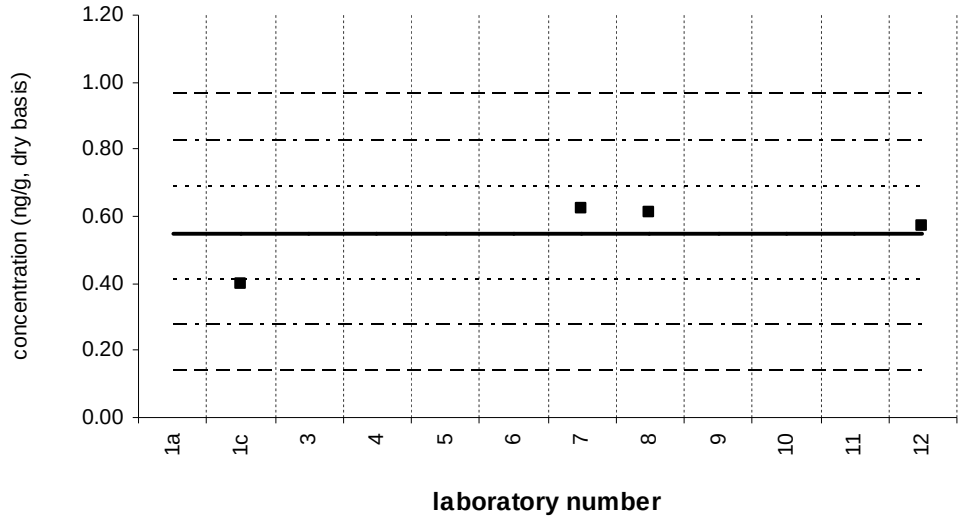


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

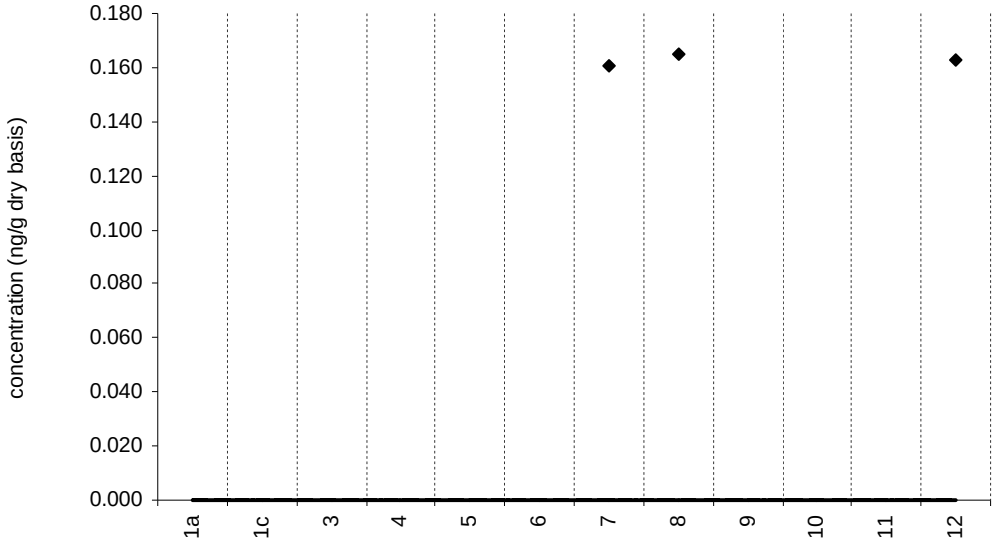


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 154

SRM 2977

Target Value = no target ng/g (dry basis)
Reported Results: 5 Quantitative Results: 3

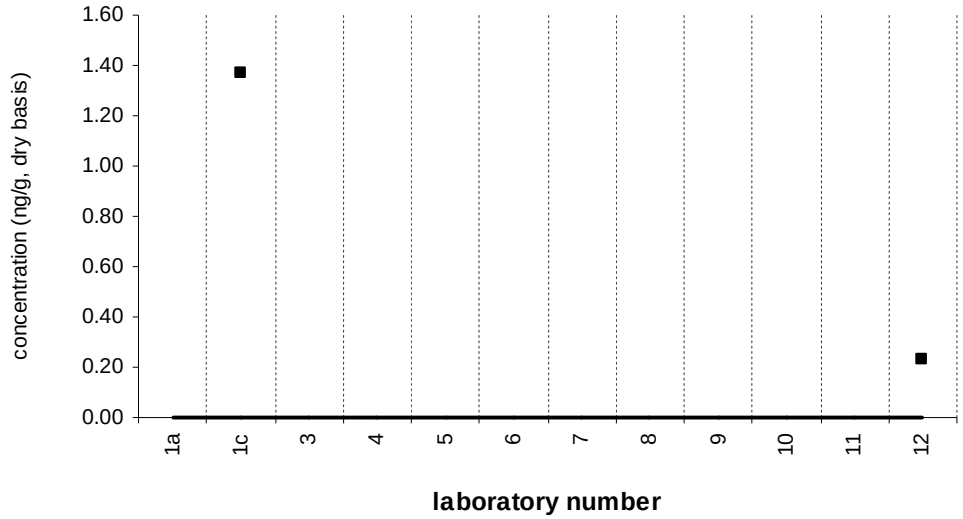


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

BDE 155

Tissue XII (QA05TIS12)

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

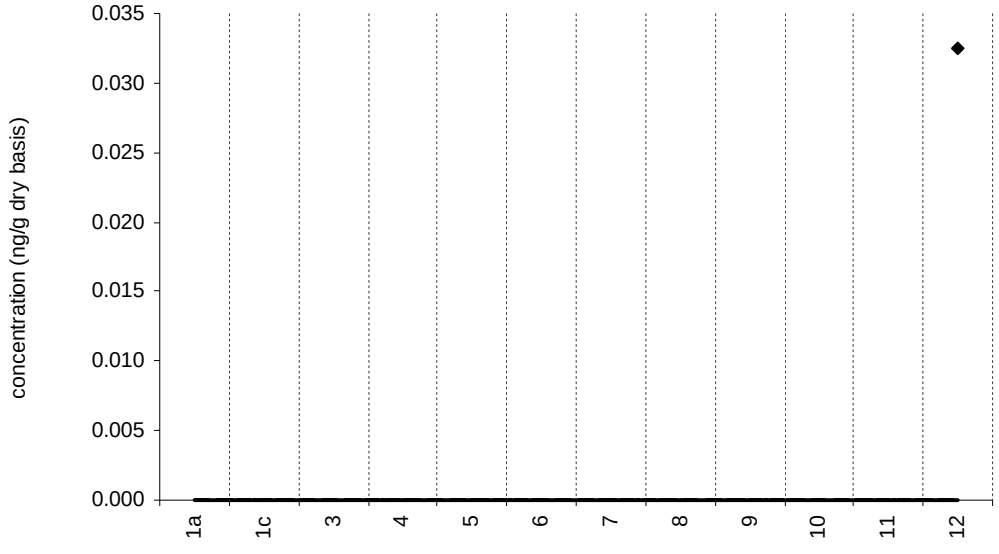


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

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 = ± 1, i. e., 25 % from assigned value

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

Dashed line: z = ± 3, i. e., 75 % from assigned value

For SRM 1941b plots:

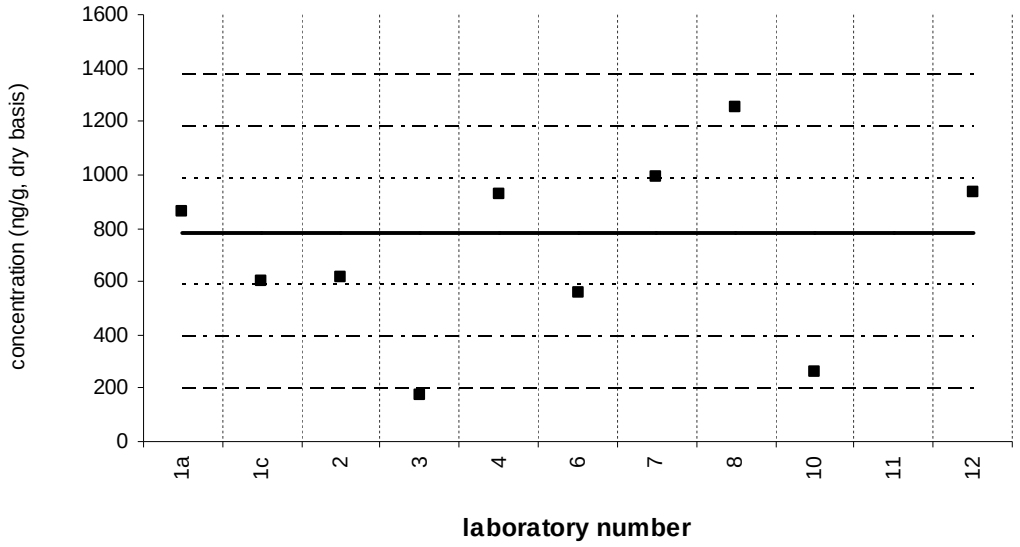
Solid line: material certified concentration or target value (see caption of each plot)

Dotted line: 95 % confidence interval (CI)

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

naphthalene **Sediment XIII (QA05SED13)**

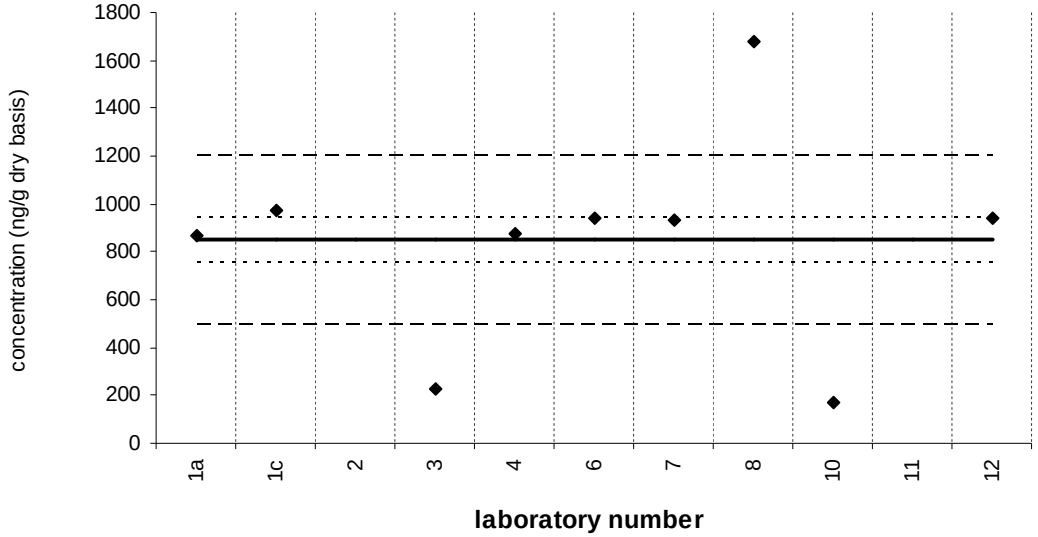
Assigned value = 785 ng/g s = 186 ng/g 95% CL = 172 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 10



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



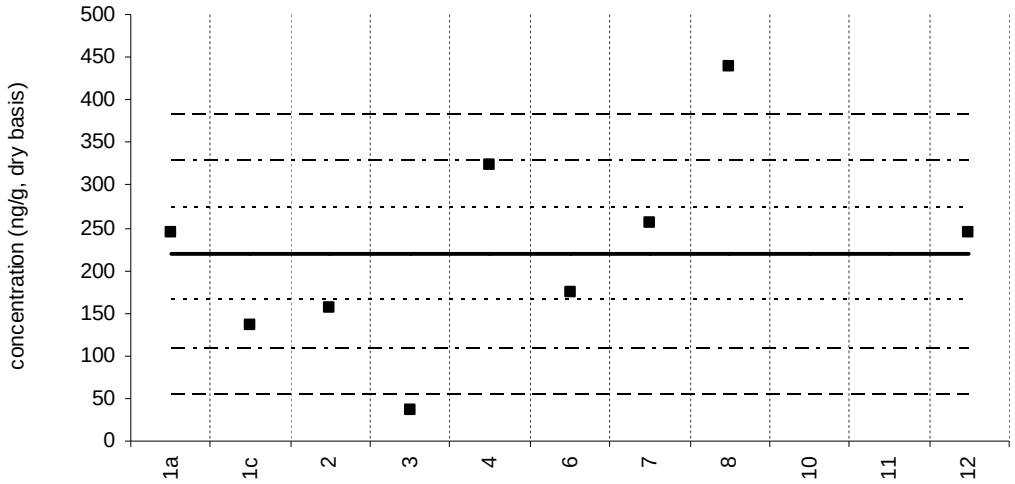
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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



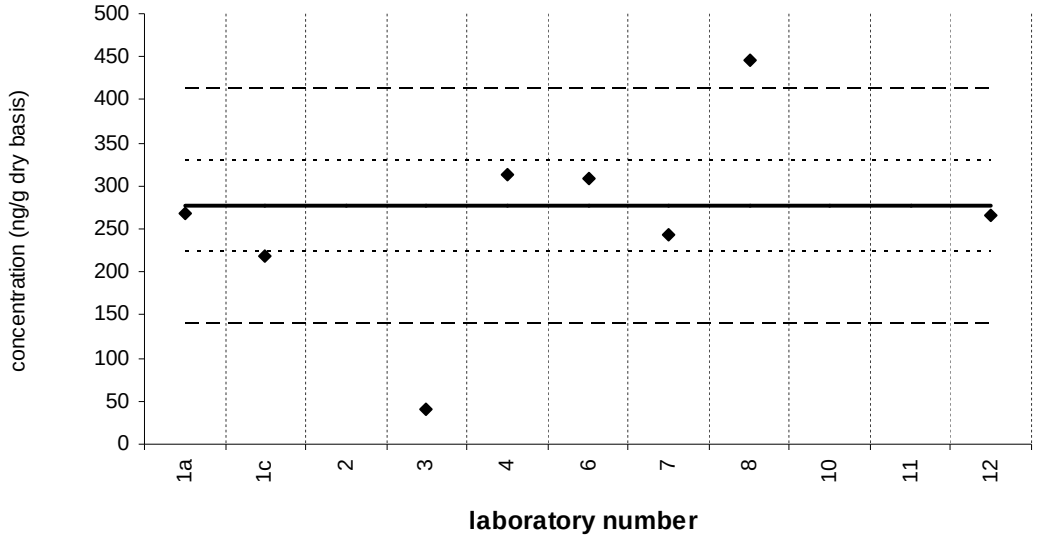
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

2-methylnaphthalene

SRM 1941b

Reference Value = 276 ± 53 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 8



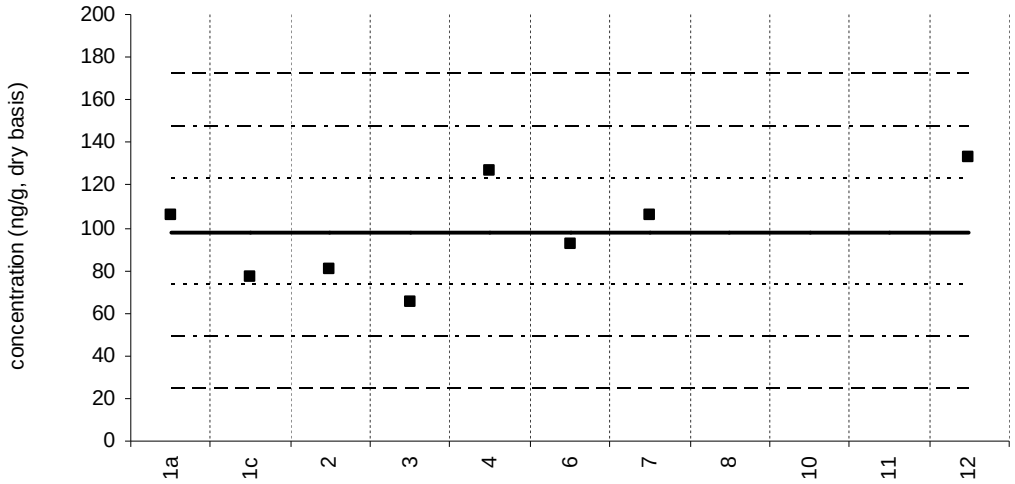
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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



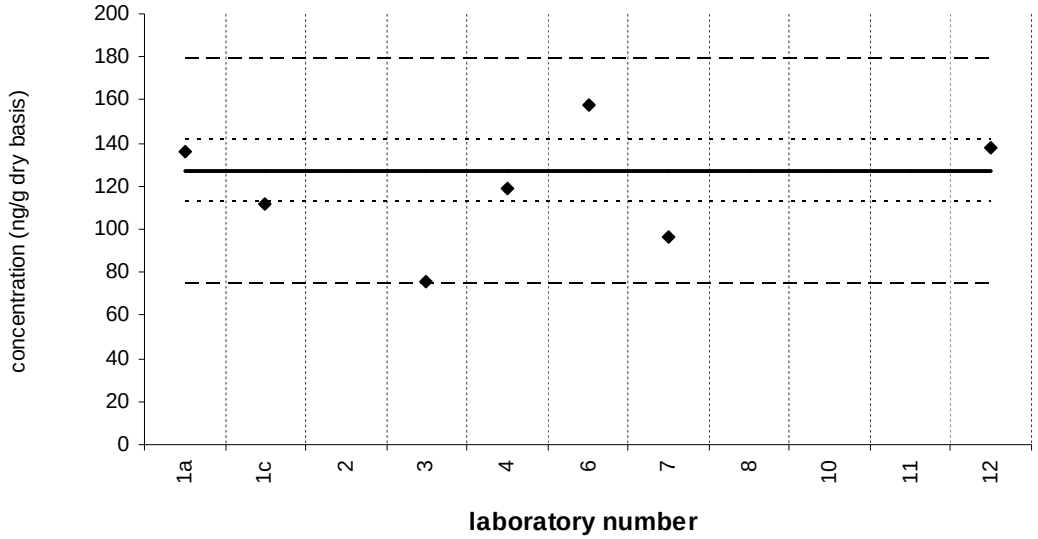
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

1-methylnaphthalene

SRM 1941b

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

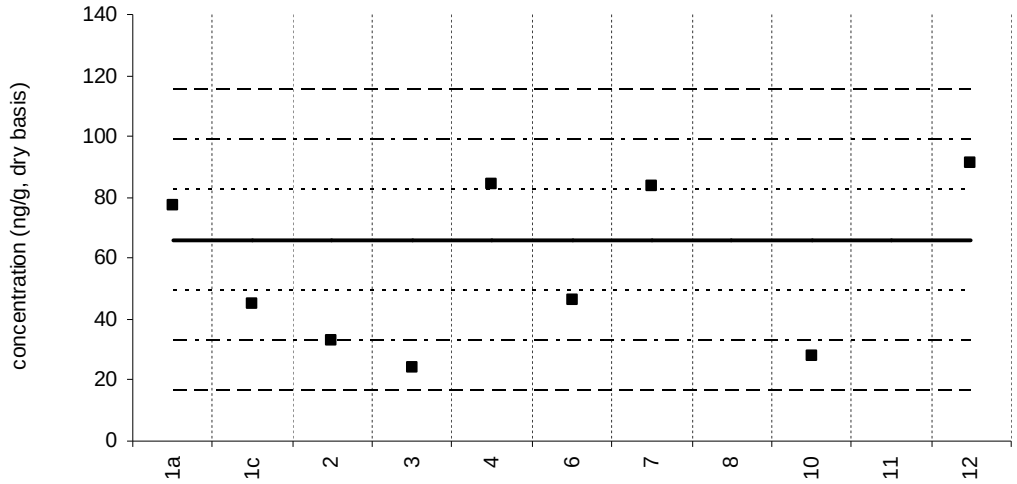
Reported Results: 7 Quantitative Results: 7



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

biphenyl **Sediment XIII (QA05SED13)**

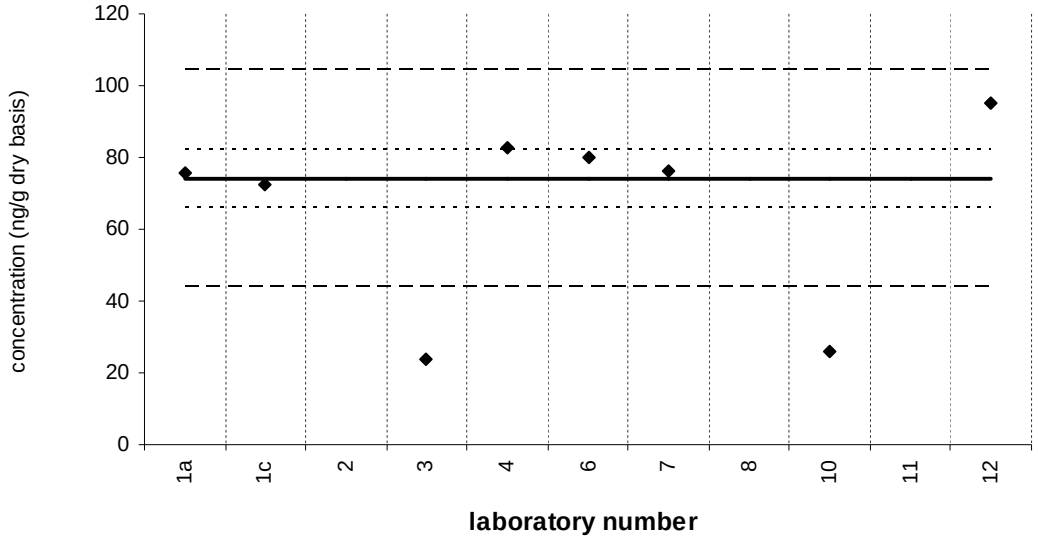
Assigned value = 65.8 ng/g s = 23.6 ng/g 95% CL = 21.8 ng/g (dry basis)
Reported Results: 9 Quantitative Results: 9



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



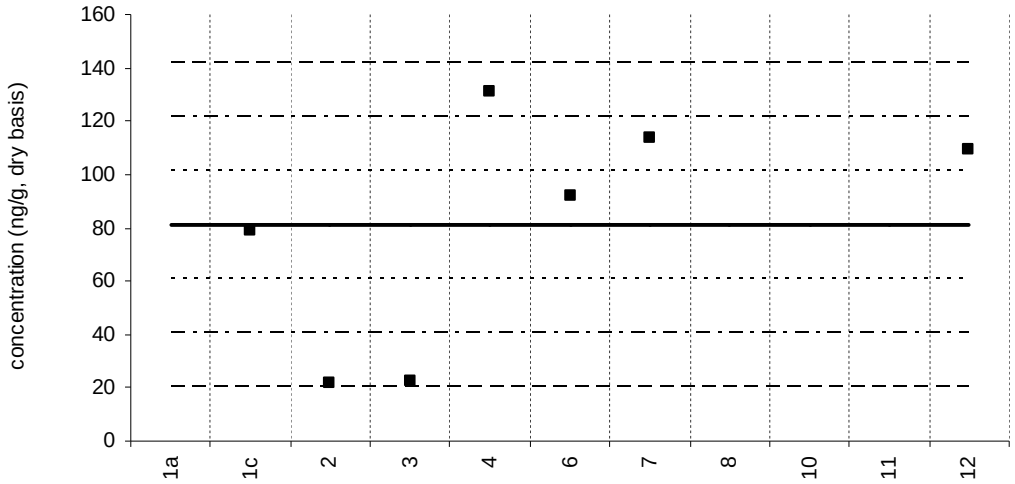
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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



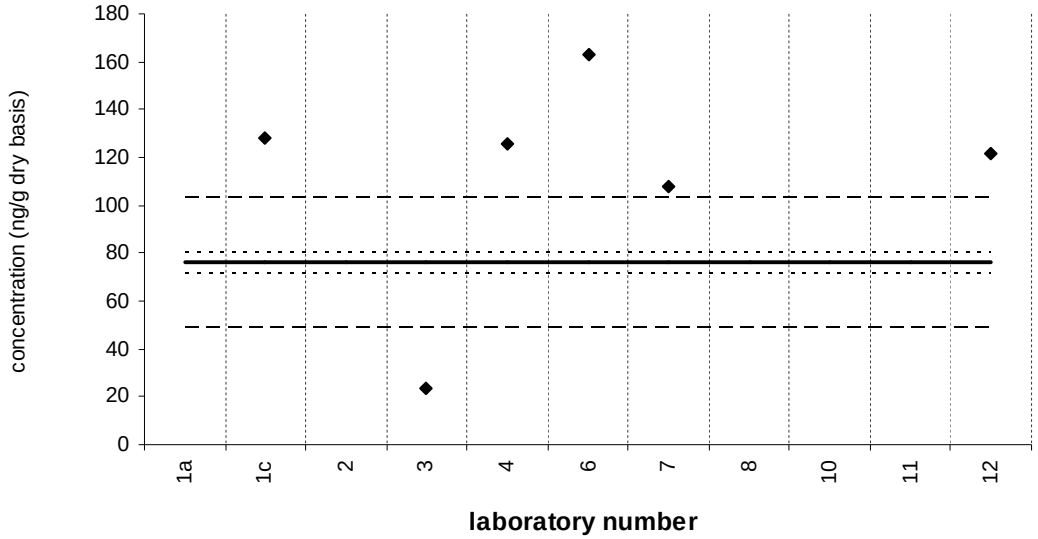
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

2,6-dimethylnaphthalene

SRM 1941b

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

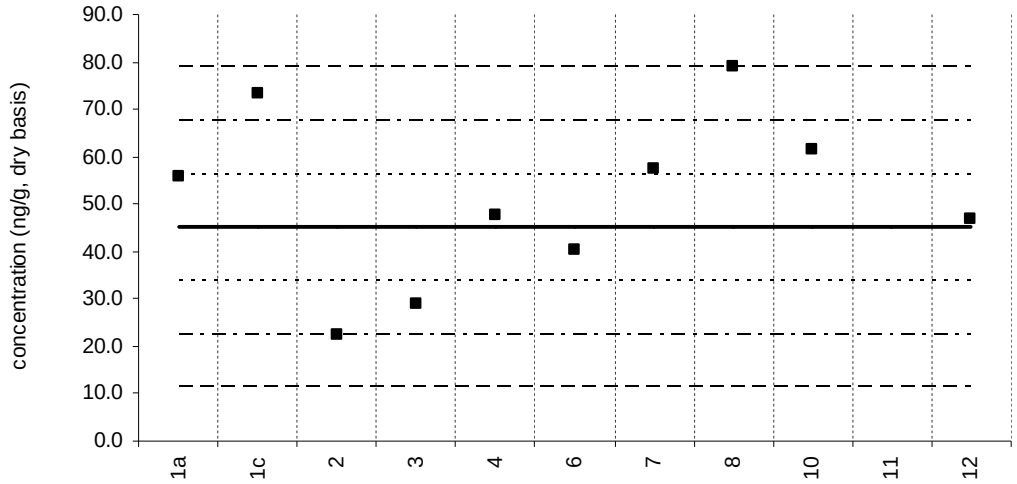
Reported Results: 6 Quantitative Results: 6



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

acenaphthylene **Sediment XIII (QA05SED13)**

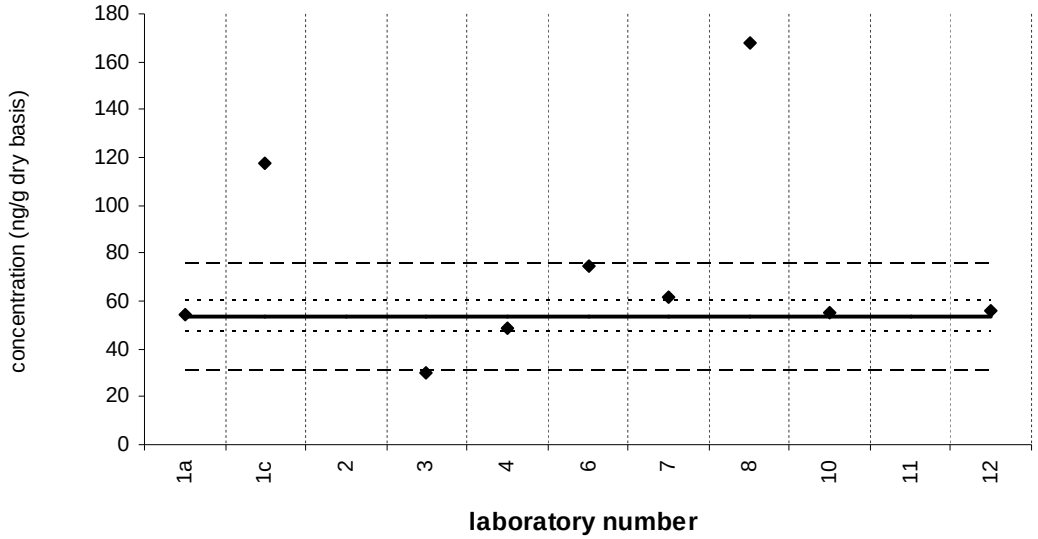
Assigned value = 45.1 ng/g s = 13.8 ng/g 95% CL = 11.5 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 10



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



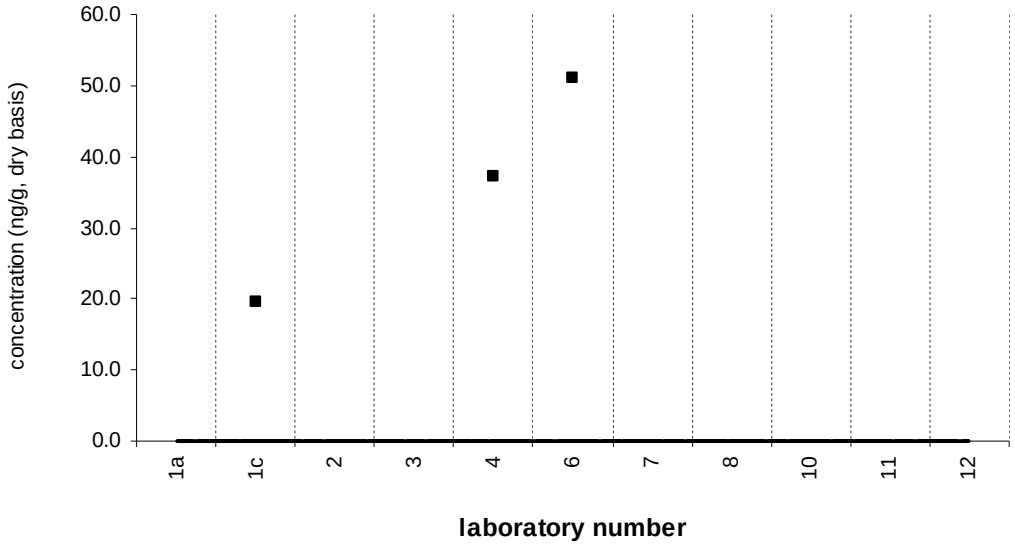
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

1,6,7-trimethylnaphthalene

Sediment XIII (QA05SED13)

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

Reported Results: 3 Quantitative Results: 3



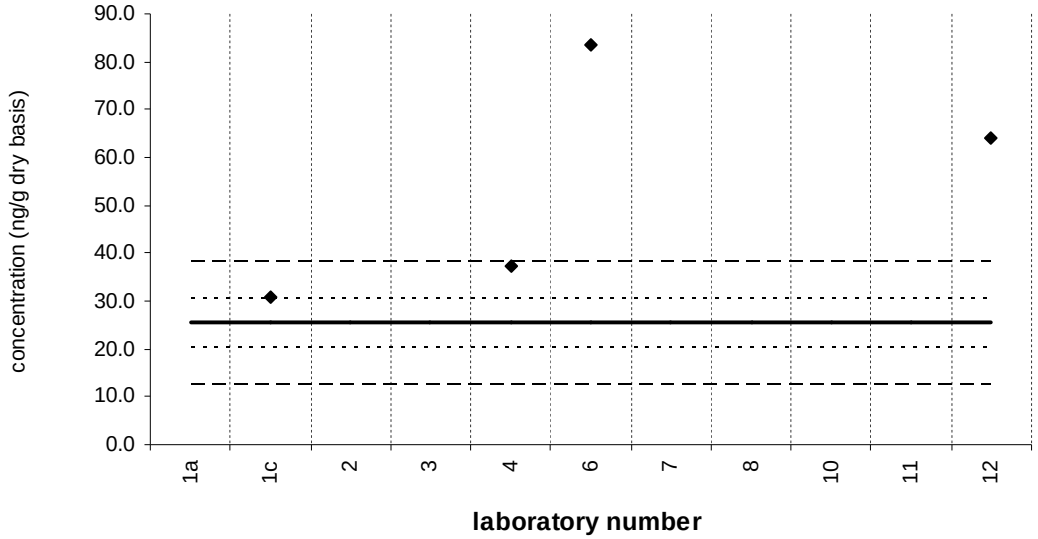
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

1,6,7-trimethylnaphthalene

SRM 1941b

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

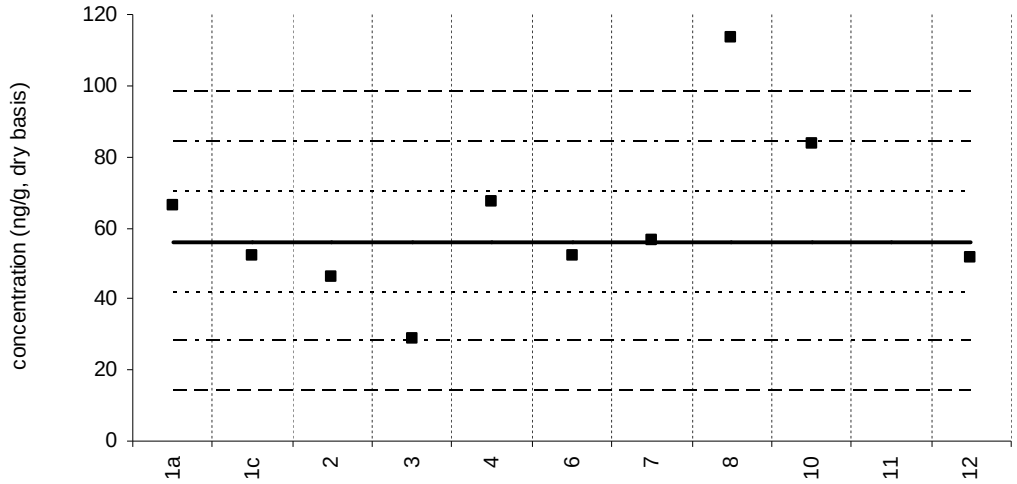
Reported Results: 4 Quantitative Results: 4



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

fluorene **Sediment XIII (QA05SED13)**

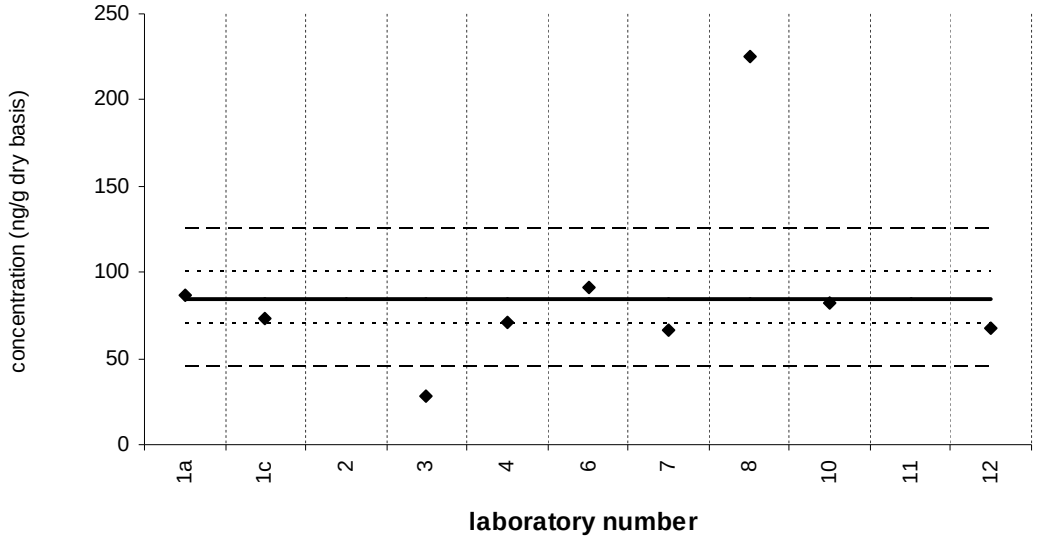
Assigned value = 56.1 ng/g s = 12.2 ng/g 95% CL = 10.2 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 10



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**

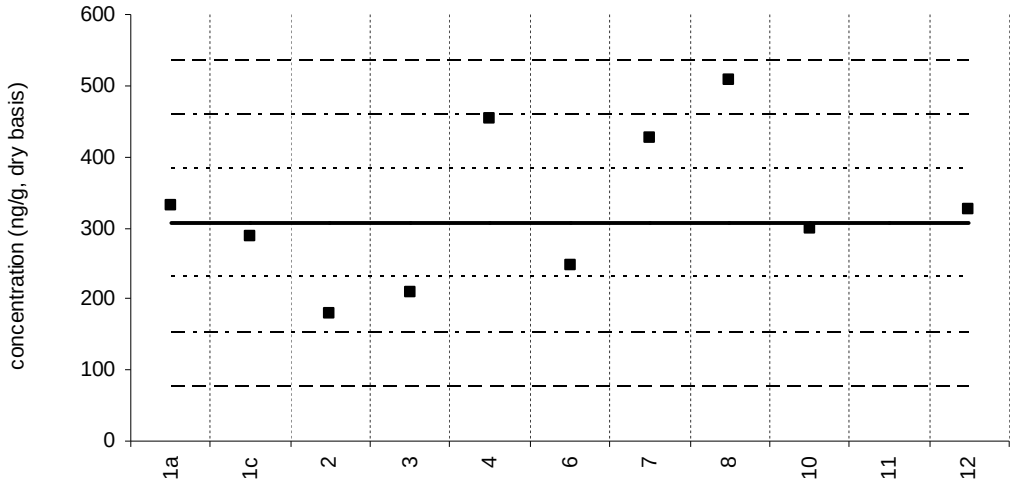
Certified Value = 85.0 ± 15.0 ng/g (dry basis)
Reported Results: 9 Quantitative Results: 9



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

phenanthrene **Sediment XIII (QA05SED13)**

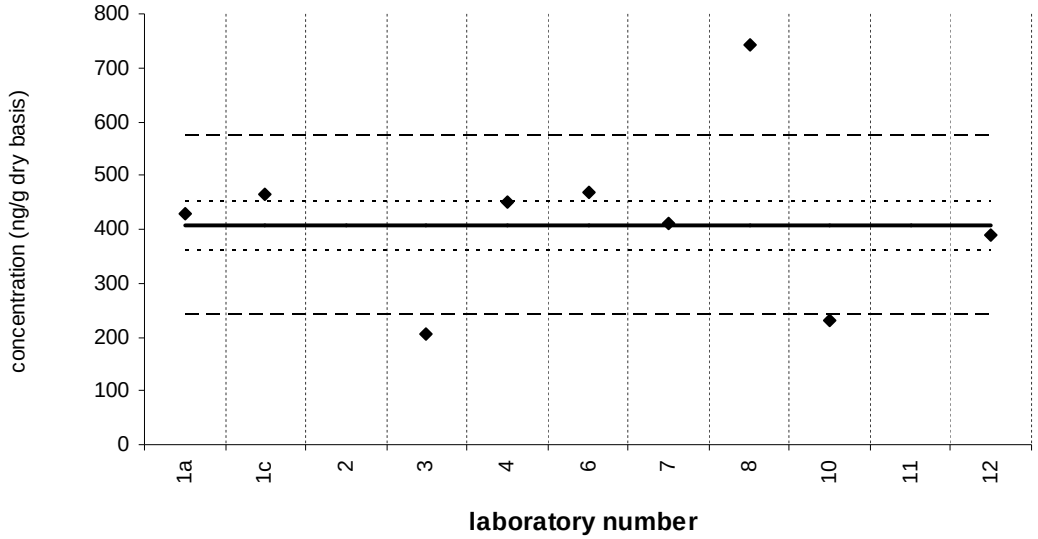
Assigned value = 306 ng/g s = 89 ng/g 95% CL = 75 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 10



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

phenanthrene **SRM 1941b**

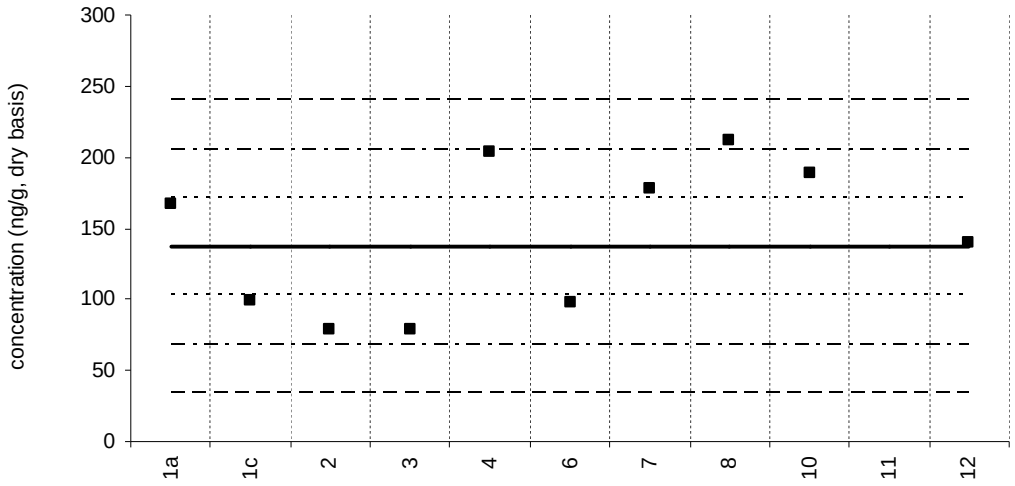
Certified Value = 406 ± 44 ng/g (dry basis)
Reported Results: 9 Quantitative Results: 9



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

anthracene **Sediment XIII (QA05SED13)**

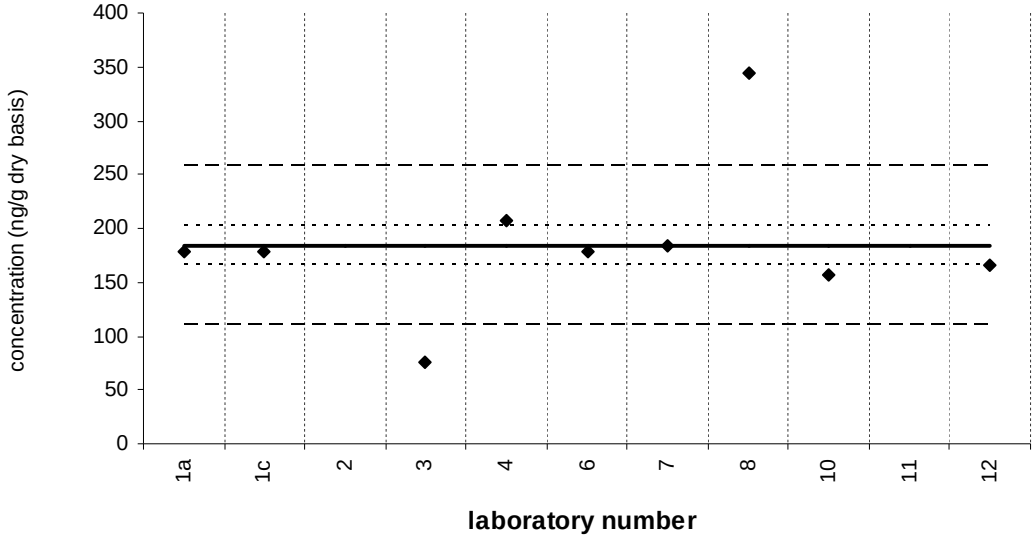
Assigned value = 137 ng/g s = 47 ng/g 95% CL = 40 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 10



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

anthracene **SRM 1941b**

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

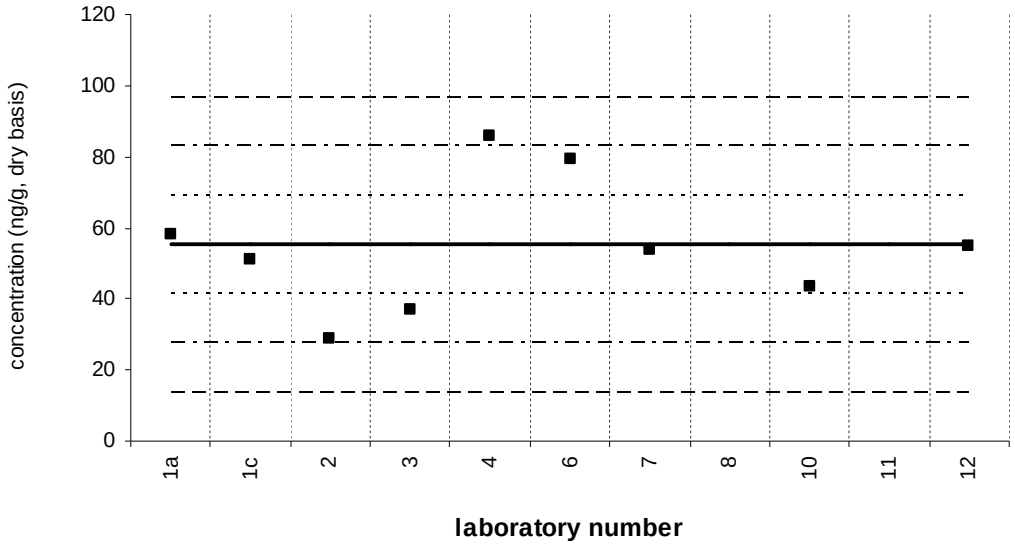


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

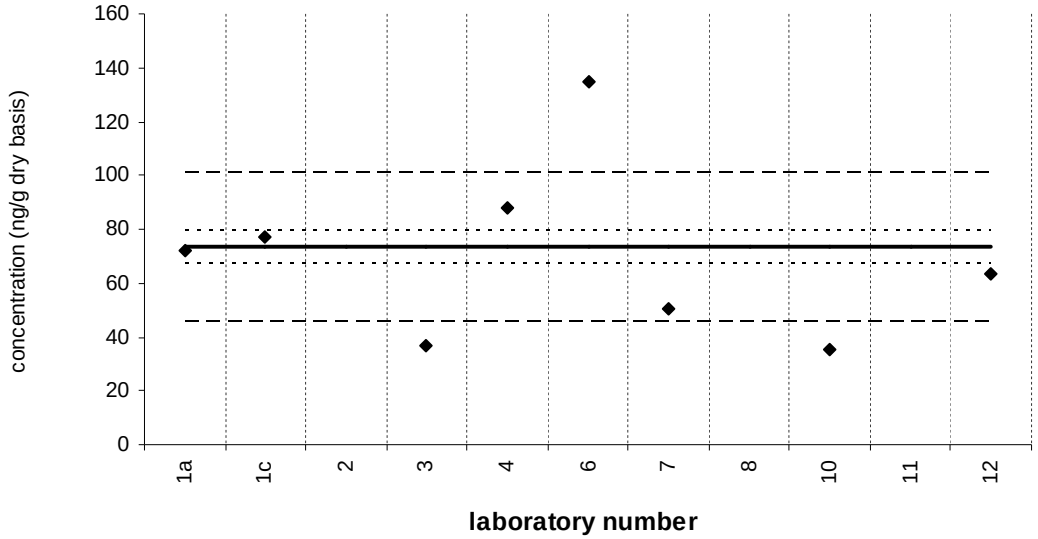


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

1-methylphenanthrene **SRM 1941b**

Certified Value = 73.2 ± 5.9 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 8

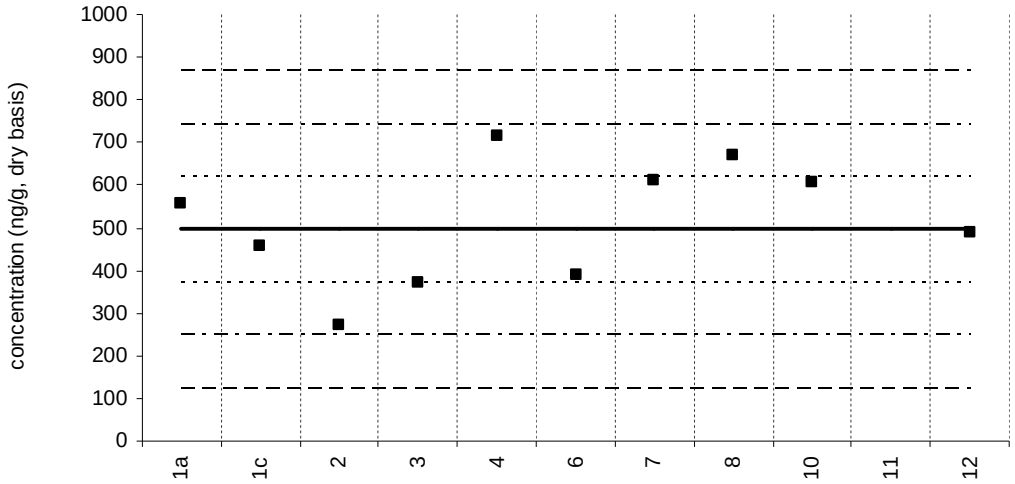


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

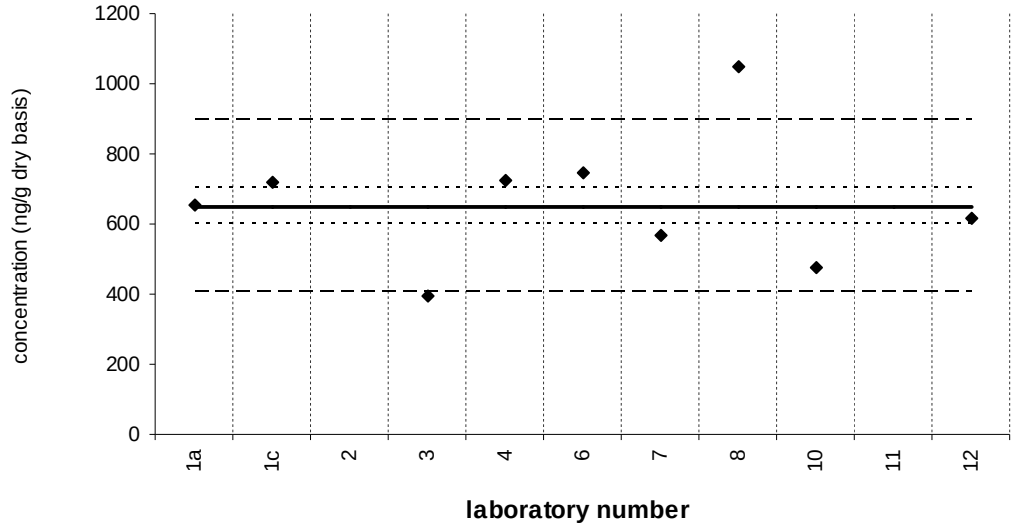


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

fluoranthene **SRM 1941b**

Certified Value = 651 ± 50 ng/g (dry basis)

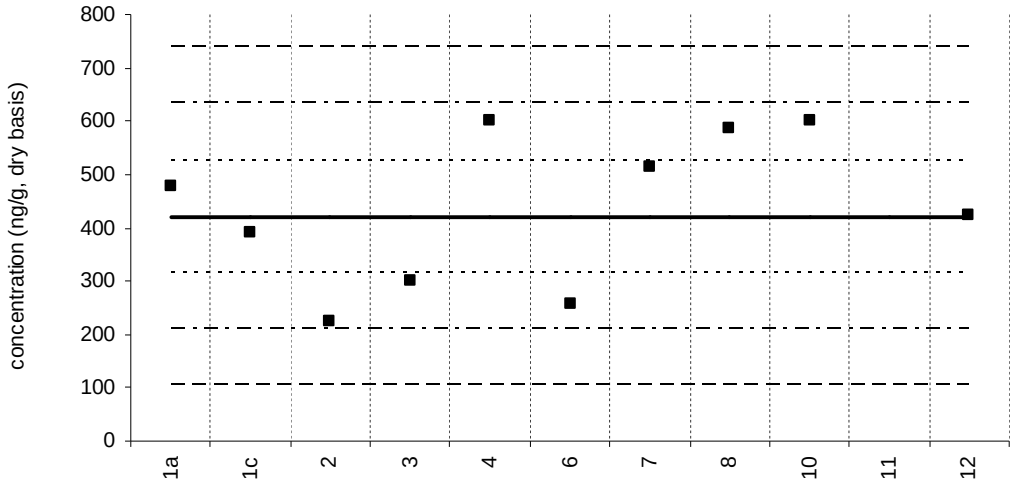
Reported Results: 9 Quantitative Results: 9



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

pyrene **Sediment XIII (QA05SED13)**

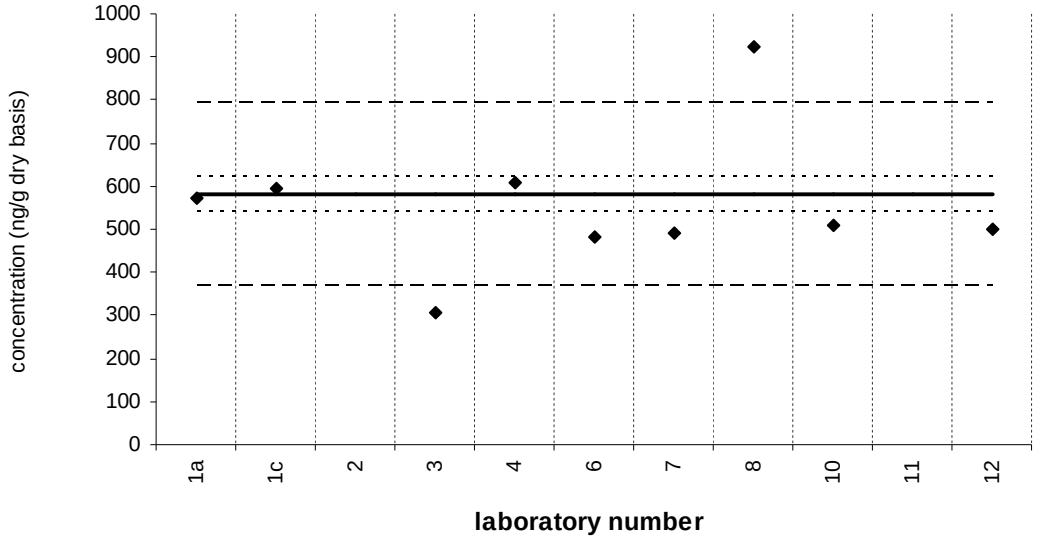
Assigned value = 421 ng/g s = 142 ng/g 95% CL = 118 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 10



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

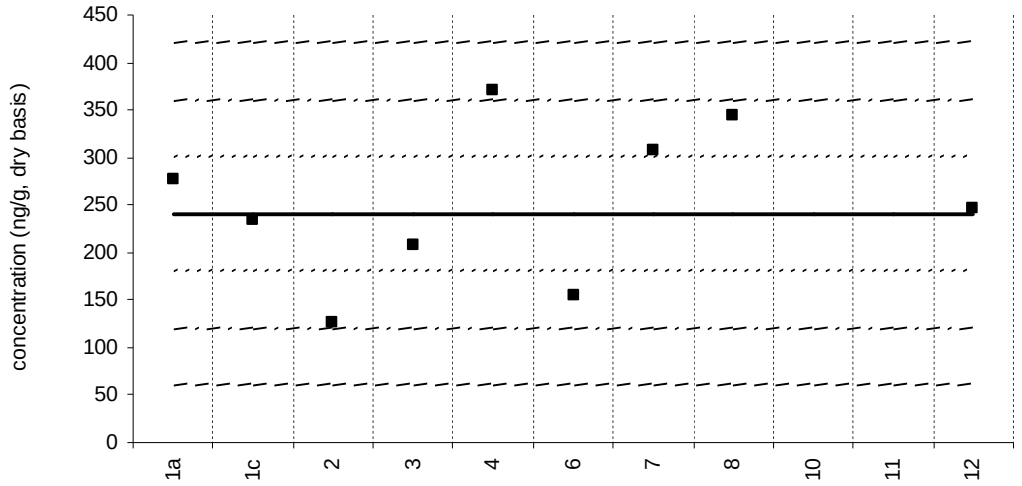


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

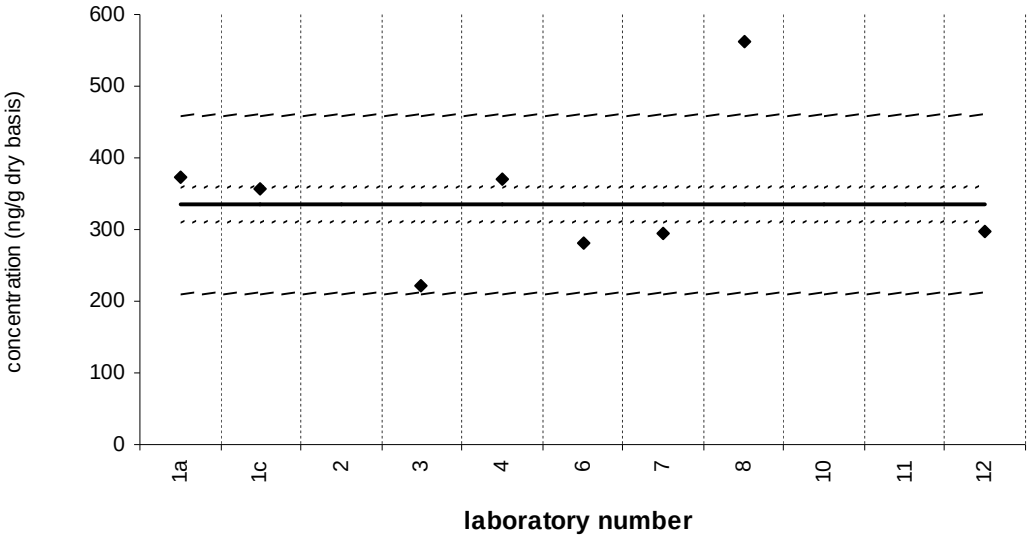


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

benz[a]anthracene **SRM 1941b**

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

Reported Results: 8 Quantitative Results: 8

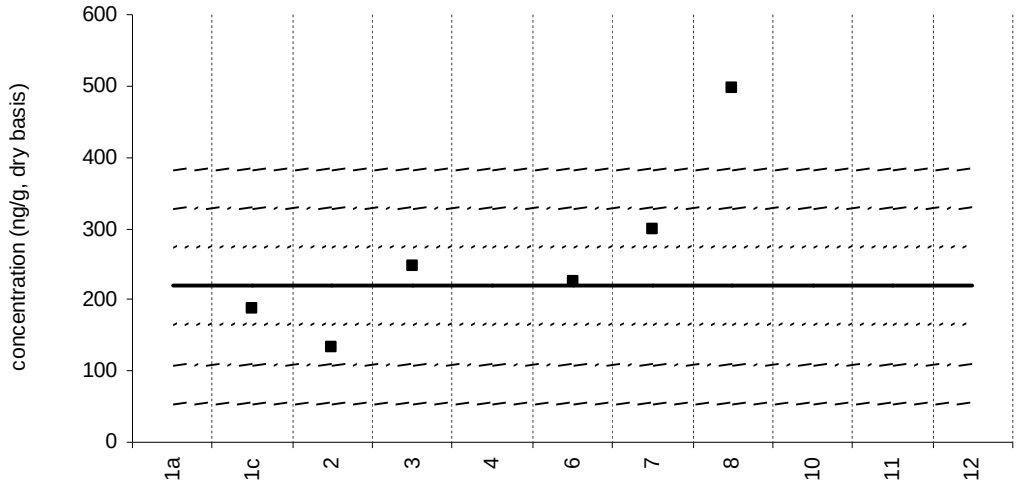


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

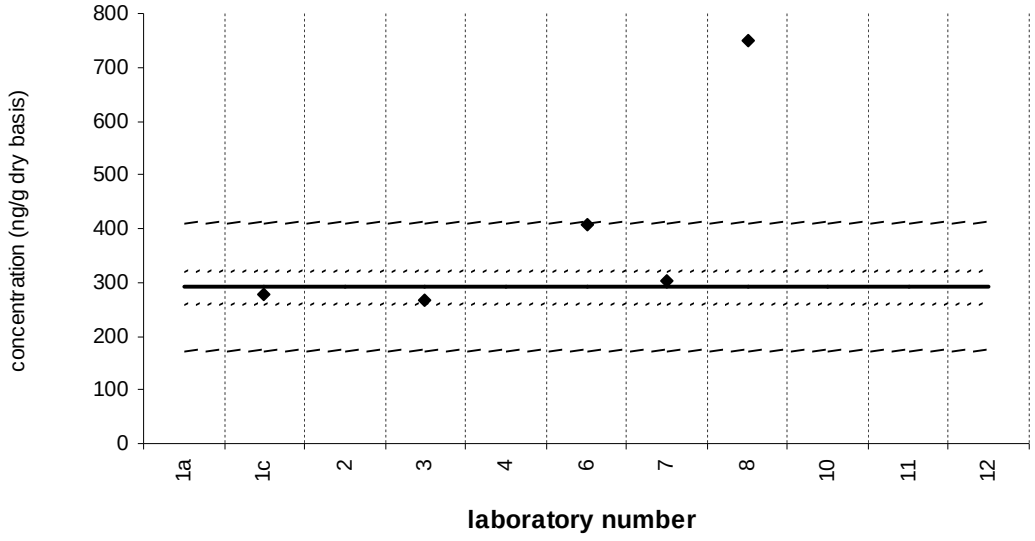


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

chrysene **SRM 1941b**

Certified Value = 291 ± 31 ng/g (dry basis)

Reported Results: 5 Quantitative Results: 5



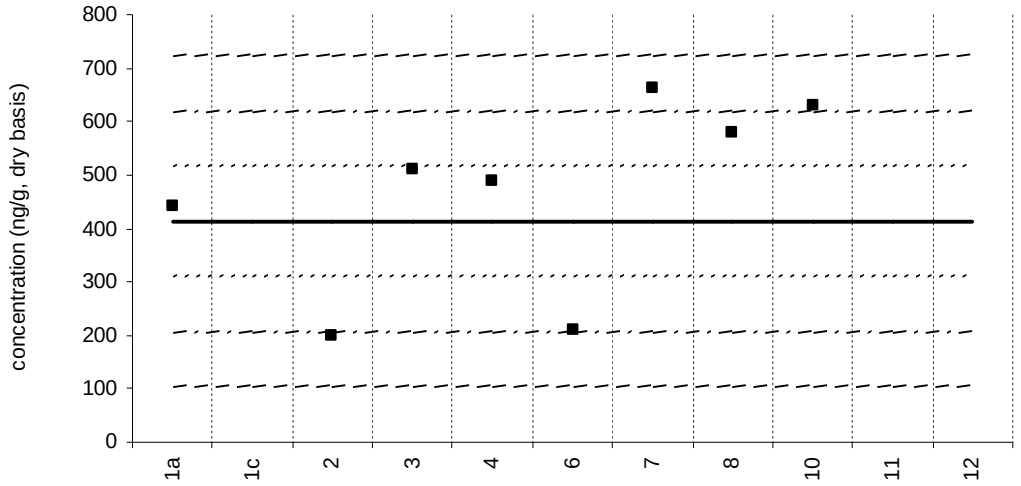
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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



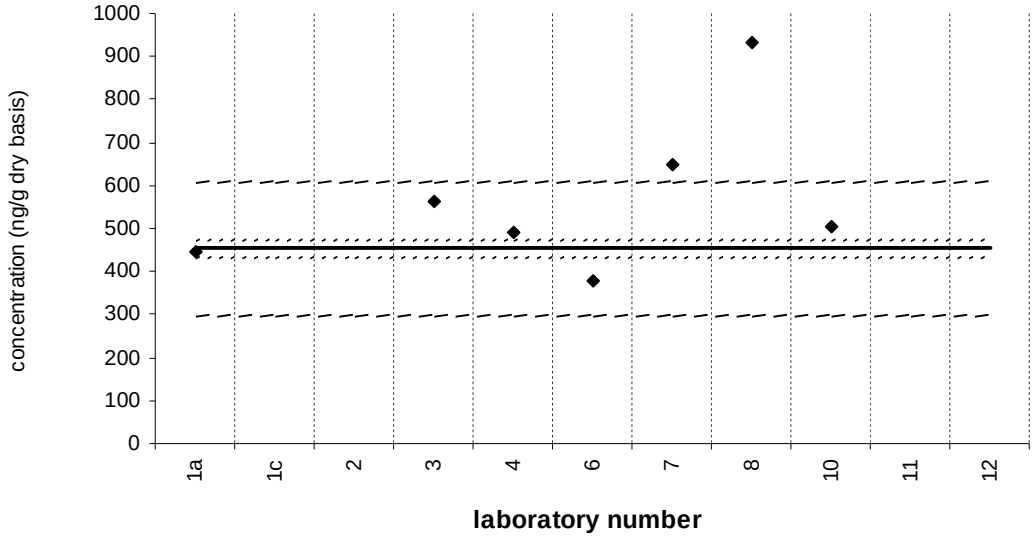
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

benzo[b]fluoranthene

SRM 1941b

Certified Value = 453 ± 21 ng/g (dry basis)

Reported Results: 7 Quantitative Results: 7

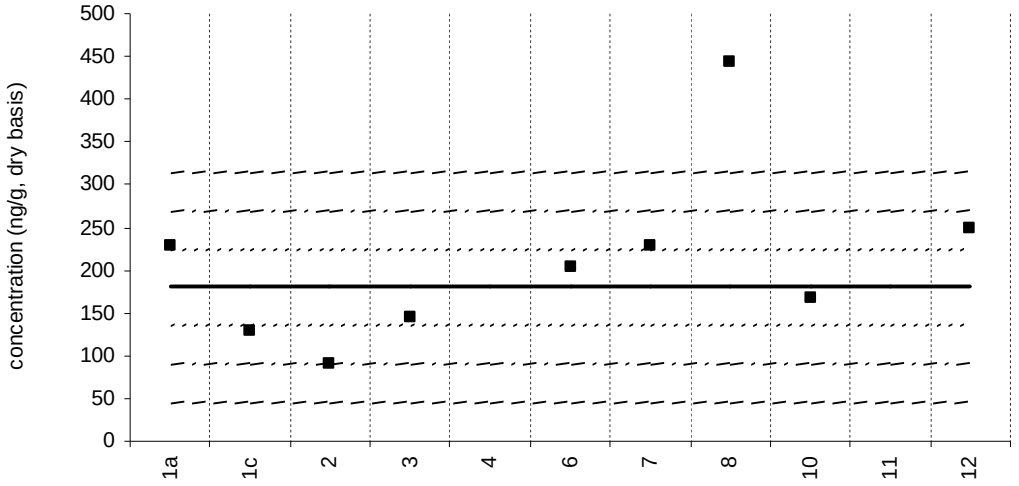


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

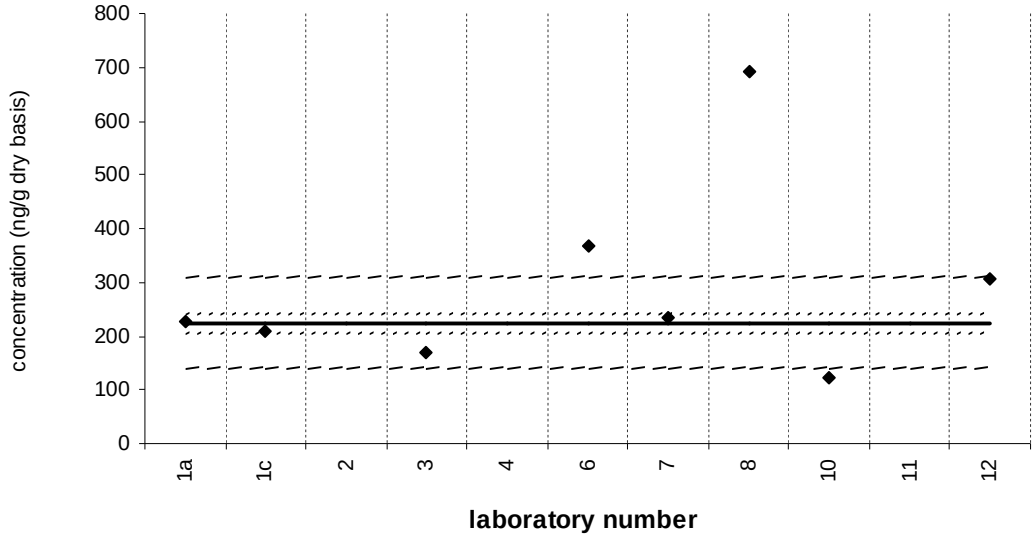


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

benzo[k]fluoranthene **SRM 1941b**

Certified Value = 225 ± 18 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 8

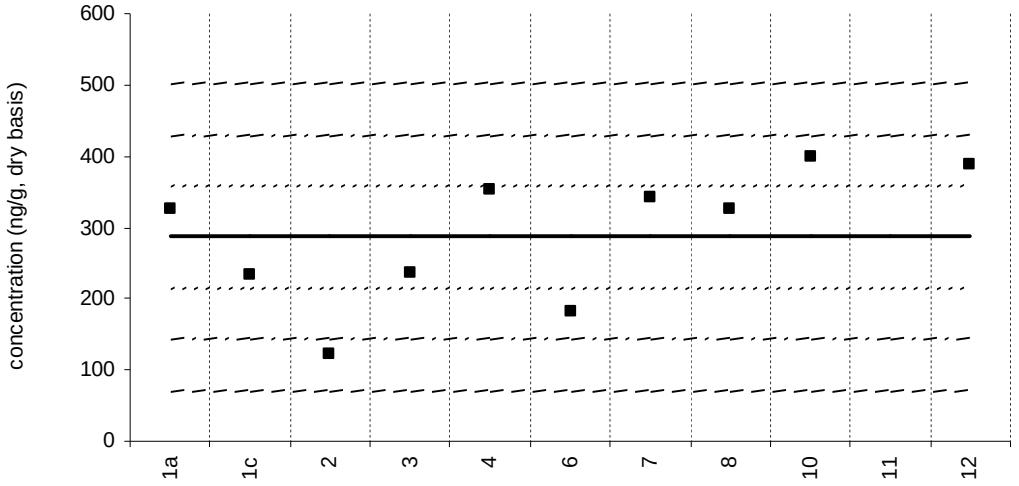


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

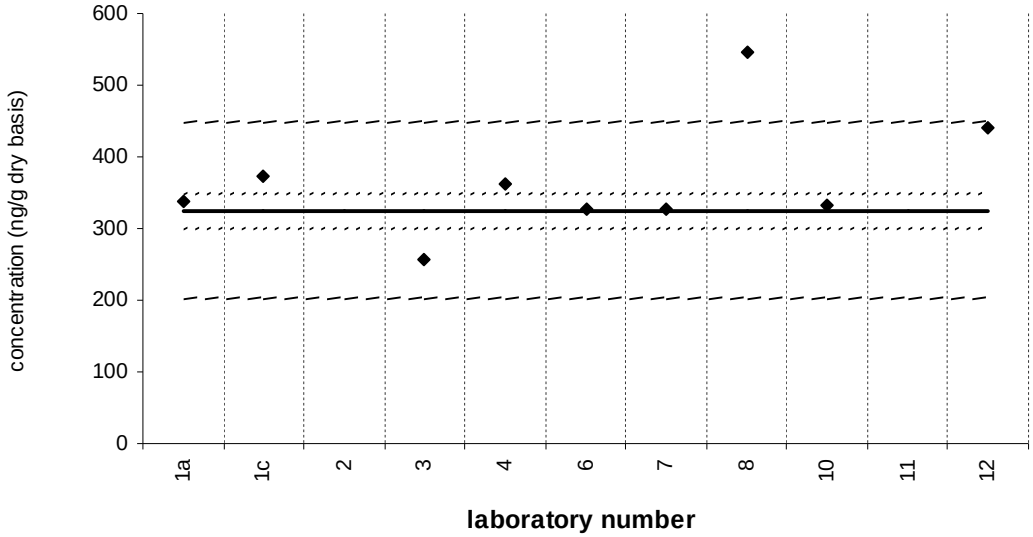


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

benzo[e]pyrene **SRM 1941b**

Certified Value = 325 ± 25 ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9

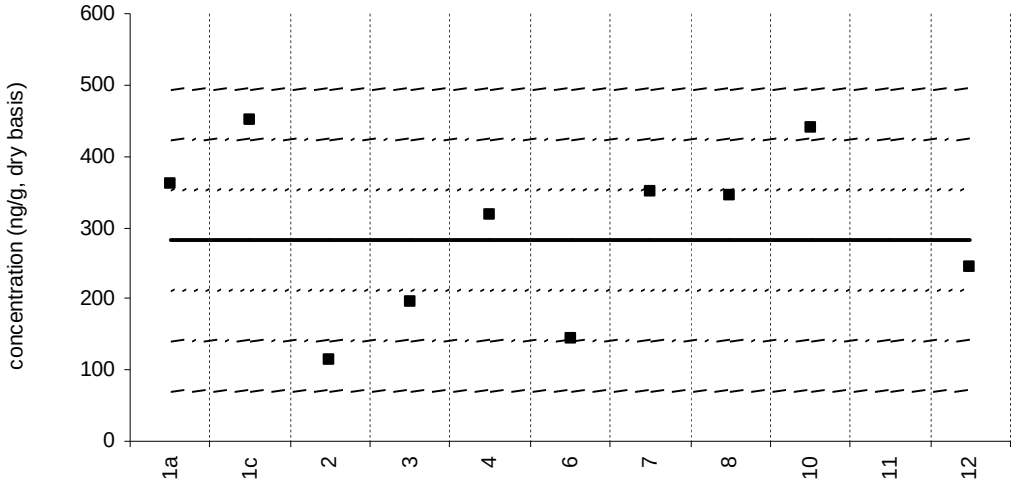


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

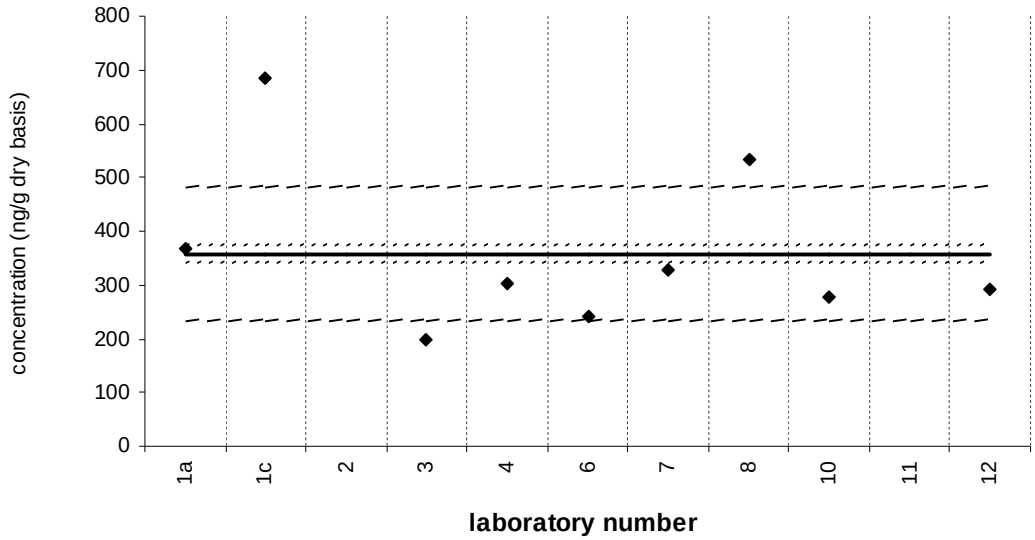


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

benzo[a]pyrene **SRM 1941b**

Certified Value = 358 ± 17 ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9

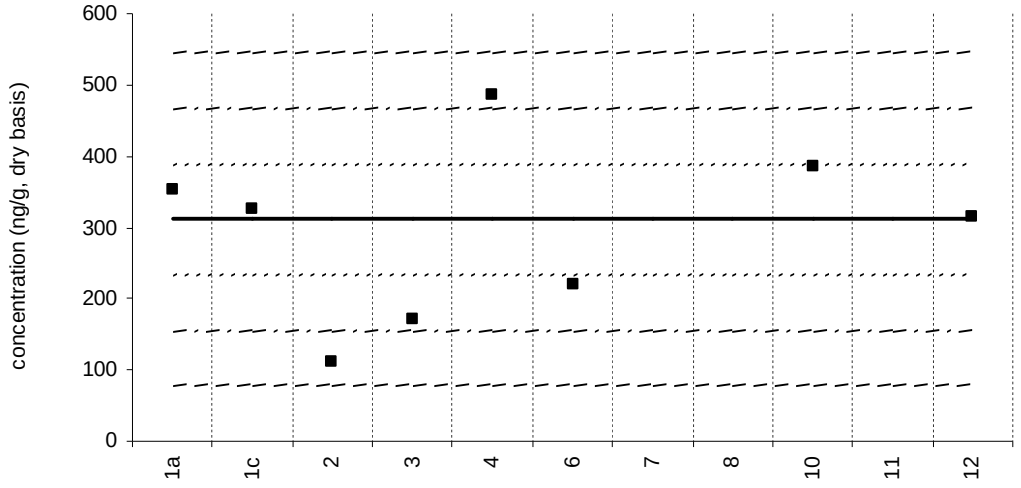


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

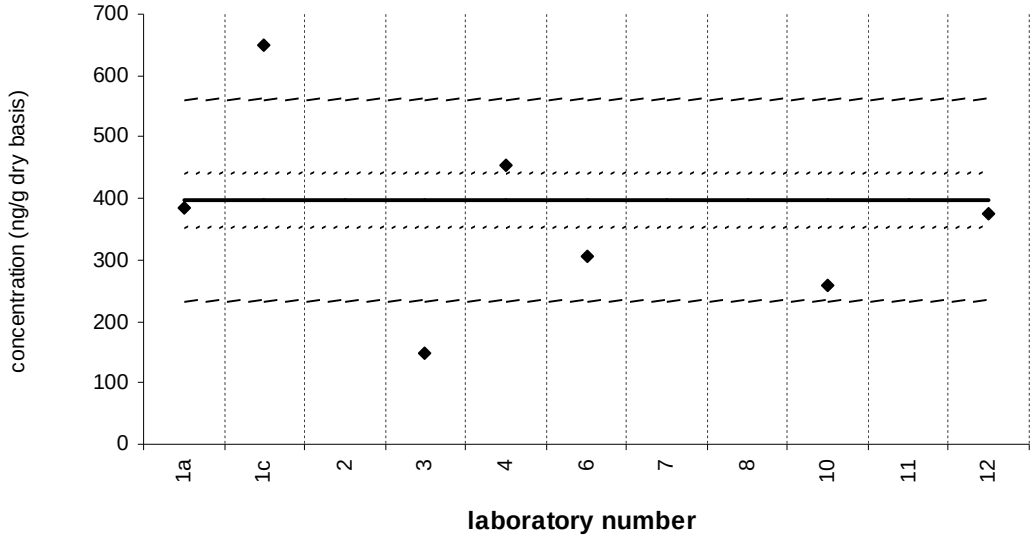


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

perylene **SRM 1941b**

Certified Value = 397 ± 45 ng/g (dry basis)

Reported Results: 7 Quantitative Results: 7

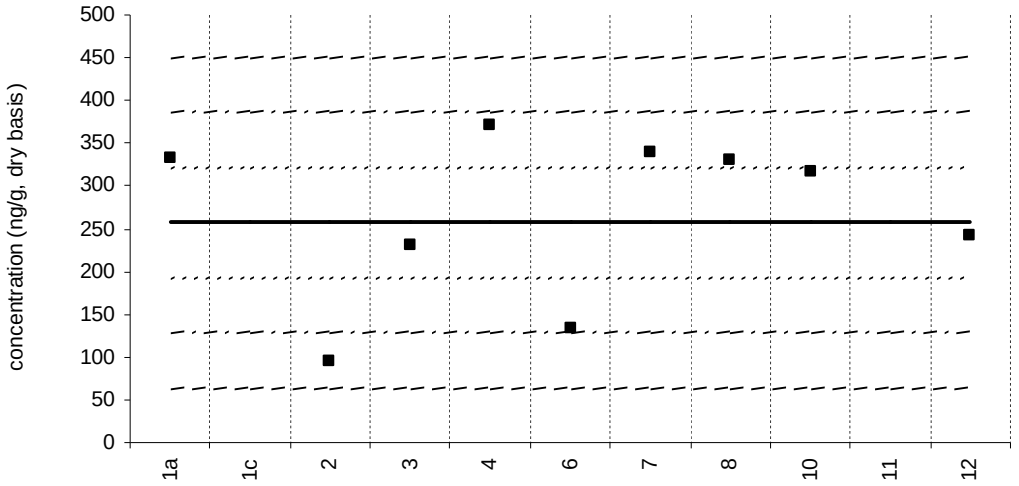


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

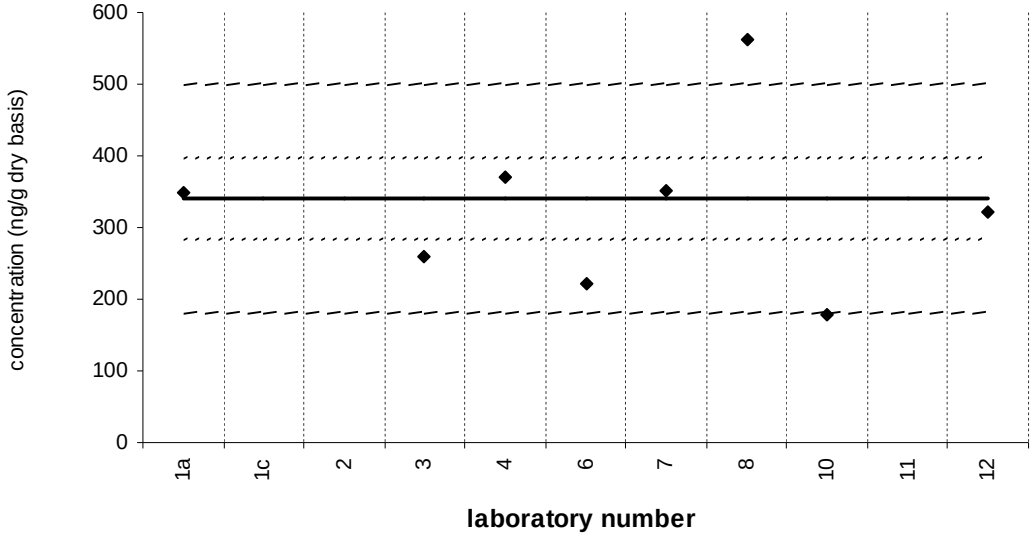


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

indeno[1,2,3-cd]pyrene **SRM 1941b**

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

Reported Results: 8 Quantitative Results: 8

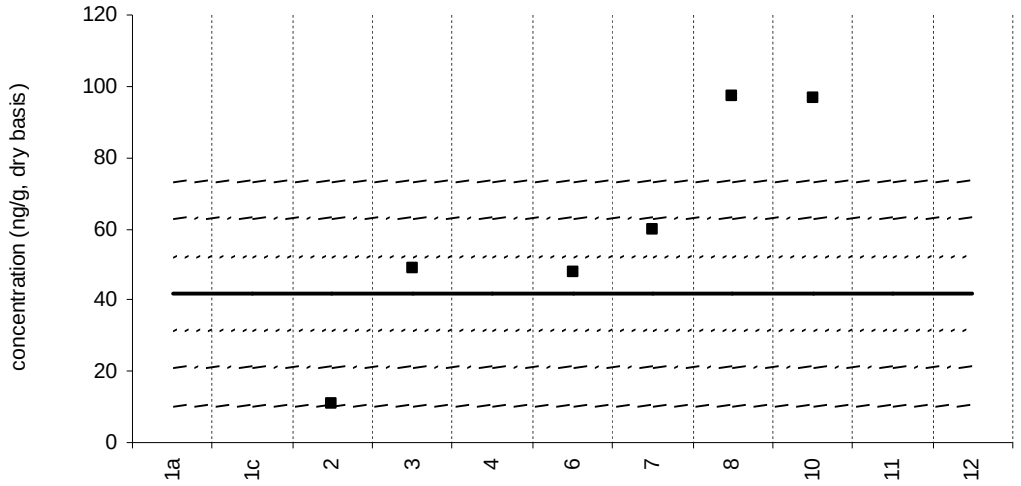


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

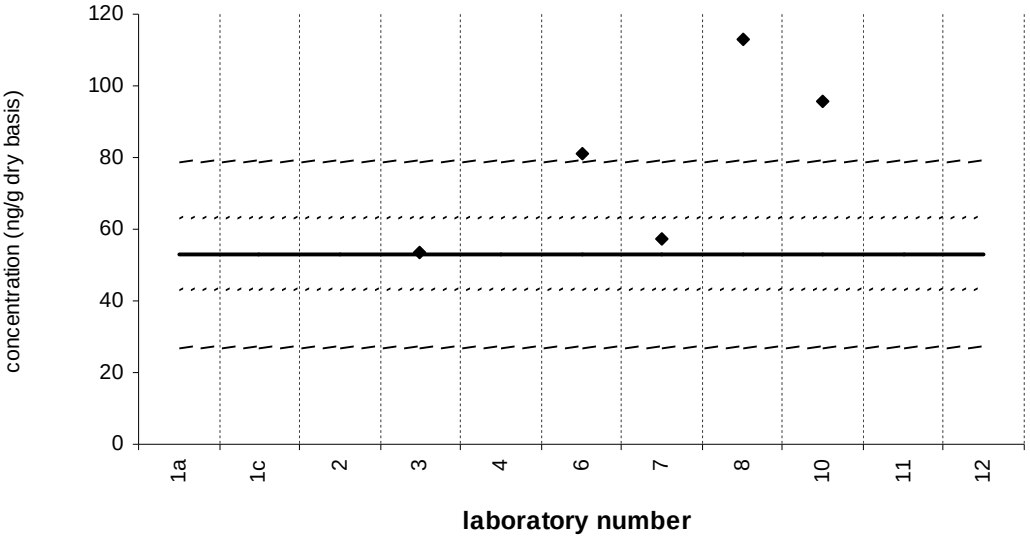


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

dibenz[a,h]anthracene **SRM 1941b**

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

Reported Results: 5 Quantitative Results: 5

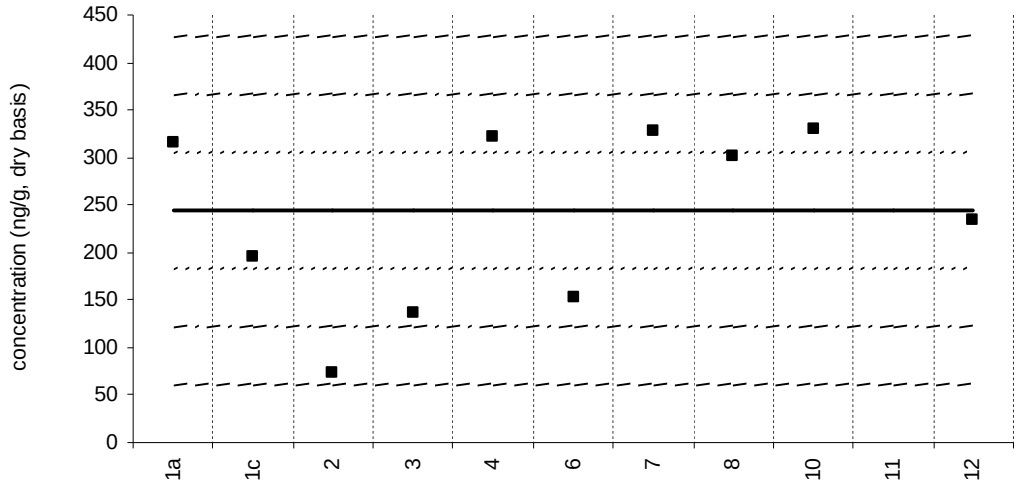


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

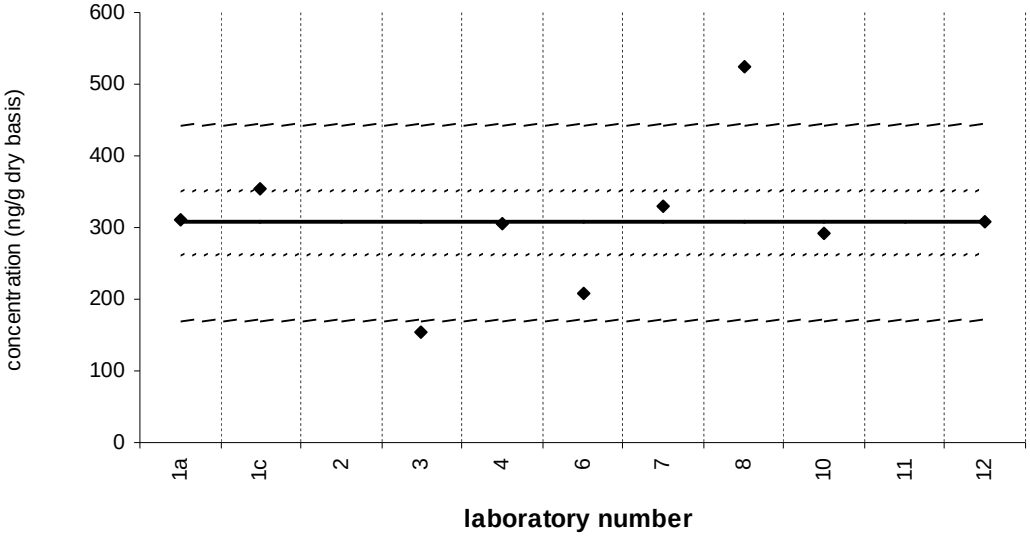


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

benzo[ghi]perylene **SRM 1941b**

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

Reported Results: 9 Quantitative Results: 9



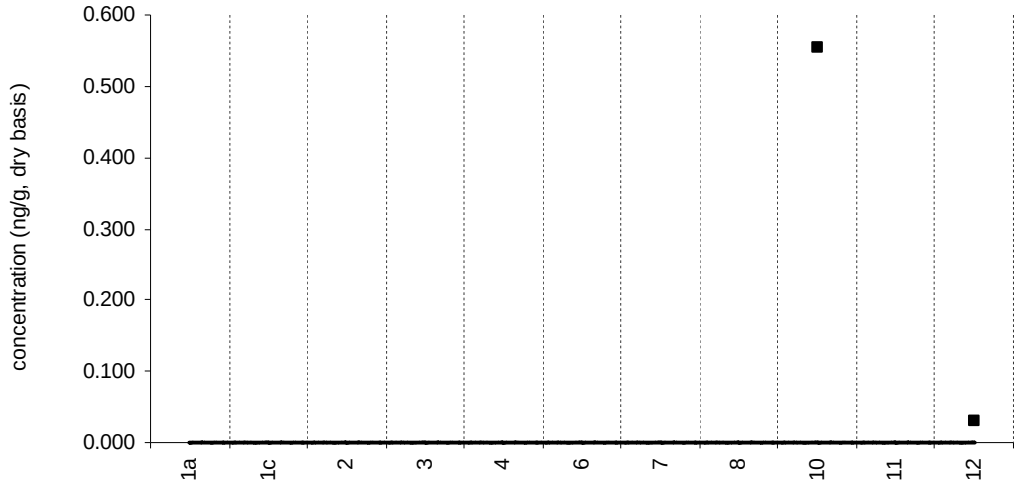
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

alpha-HCH (a-BHC)

Sediment XIII (QA05SED13)

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

Reported Results: 7 Quantitative Results: 2



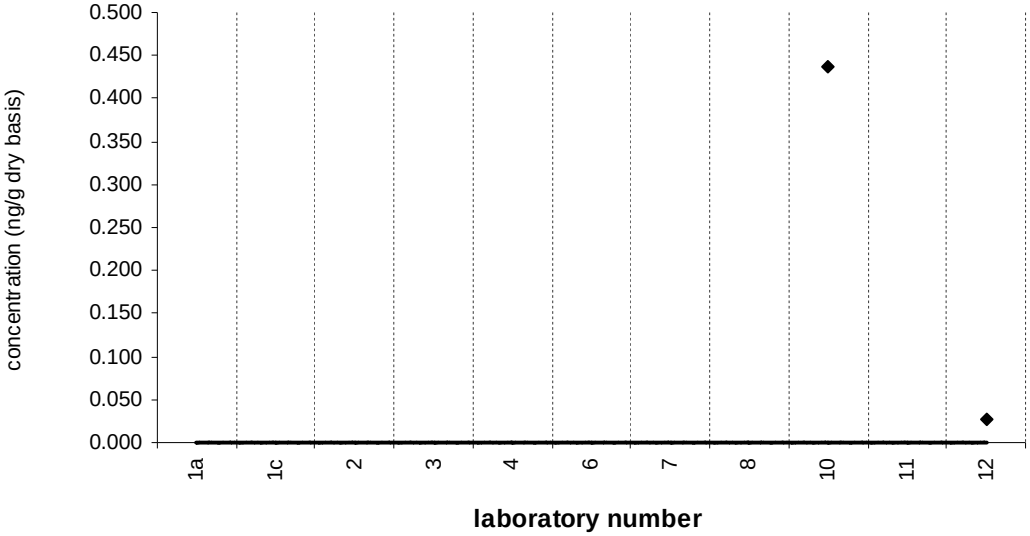
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

alpha-HCH (a-BHC)

SRM 1941b

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

Reported Results: 7 Quantitative Results: 2



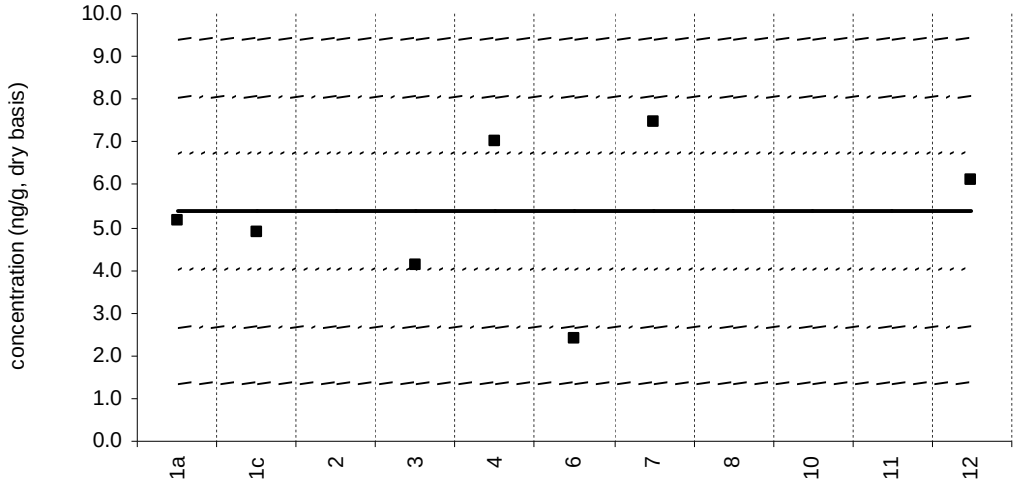
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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



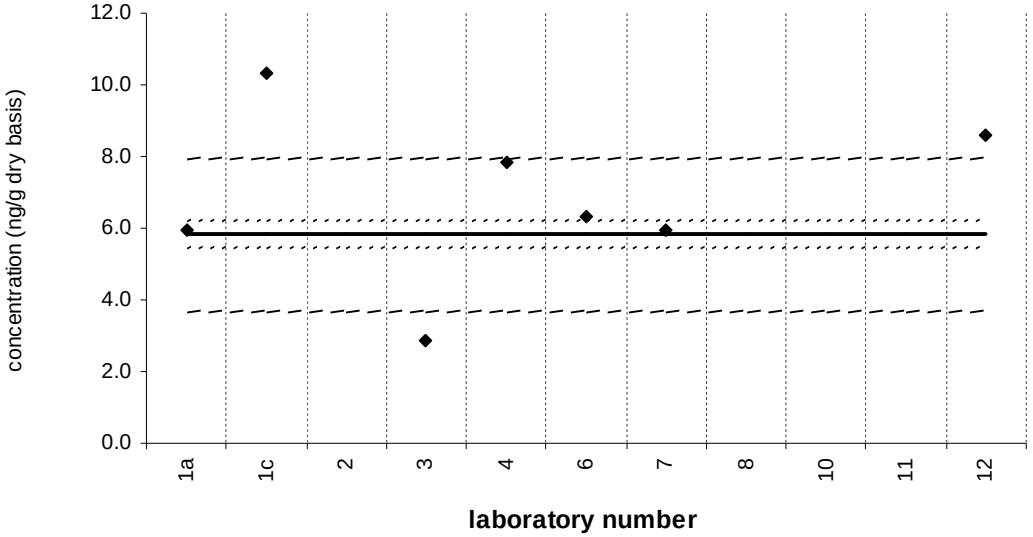
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

hexachlorobenzene

SRM 1941b

Certified Value = 5.83 ± 0.38 ng/g (dry basis)

Reported Results: 7 Quantitative Results: 7



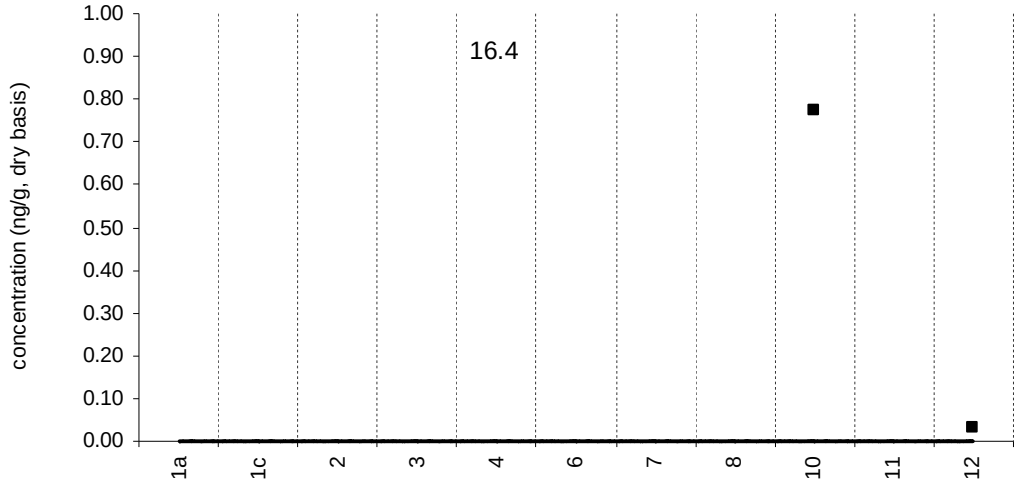
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

gamma-HCH (g-BHC,lindane)

Sediment XIII (QA05SED13)

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

Reported Results: 8 Quantitative Results: 3



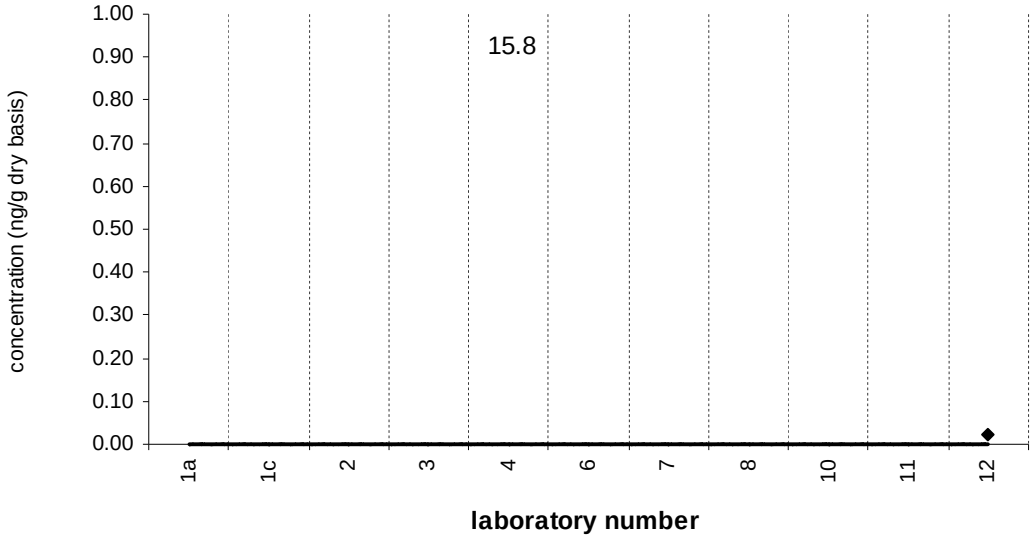
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

gamma-HCH (g-BHC,lindane)

SRM 1941b

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

Reported Results: 7 Quantitative Results: 2



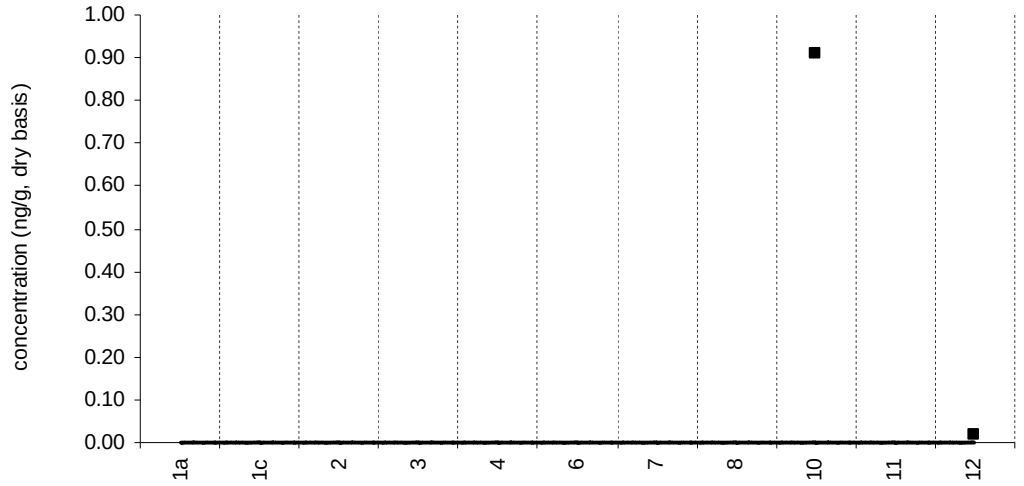
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

beta-HCH (b-BHC)

Sediment XIII (QA05SED13)

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

Reported Results: 7 Quantitative Results: 2



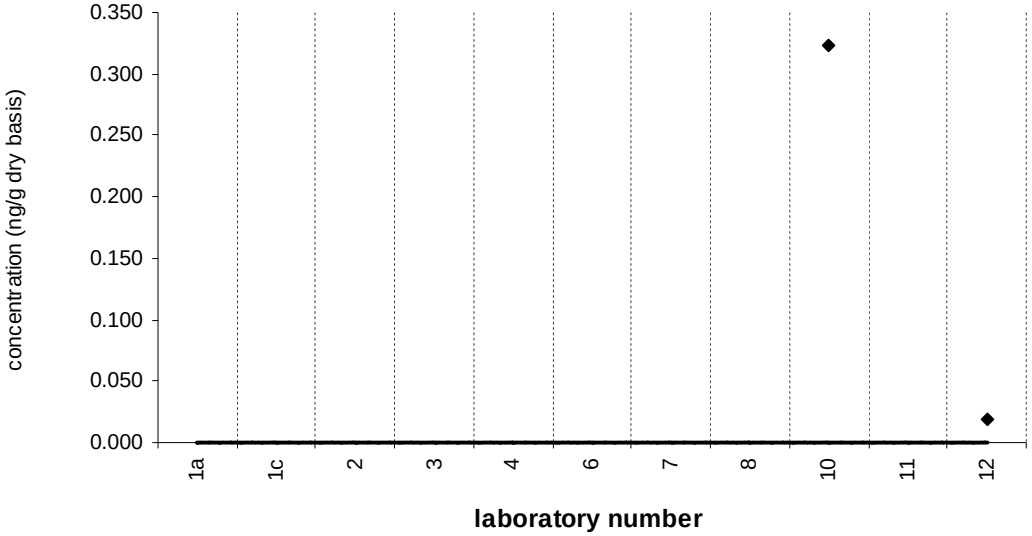
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

beta-HCH (b-BHC)

SRM 1941b

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

Reported Results: 7 Quantitative Results: 2

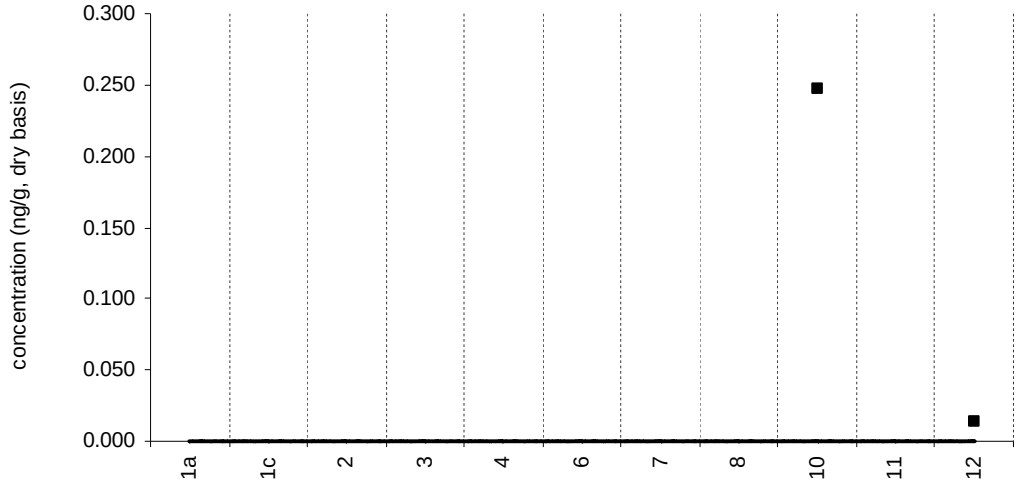


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

aldrin **Sediment XIII (QA05SED13)**

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

Reported Results: 8 Quantitative Results: 2

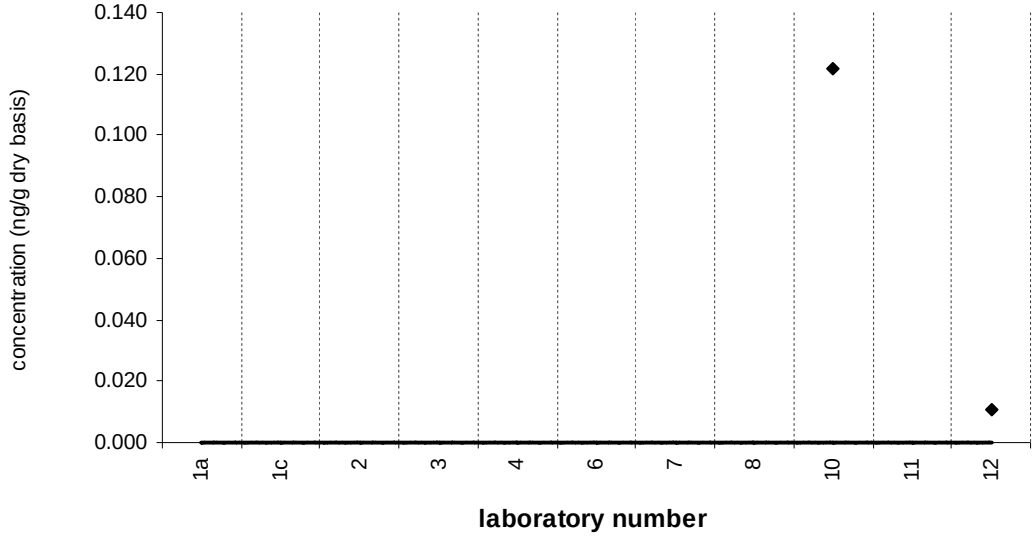


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

aldrin **SRM 1941b**

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

Reported Results: 8 Quantitative Results: 2

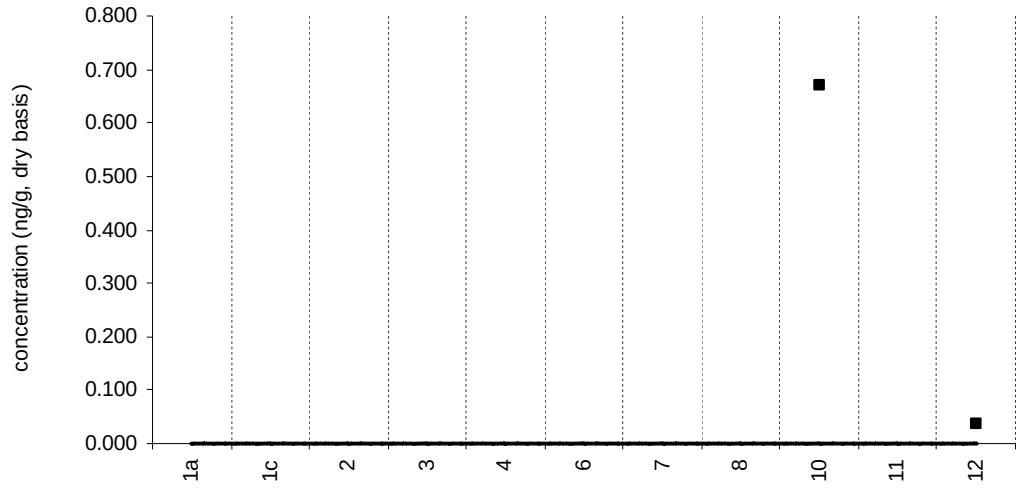


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

heptachlor epoxide **Sediment XIII (QA05SED13)**

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

Reported Results: 8 Quantitative Results: 2

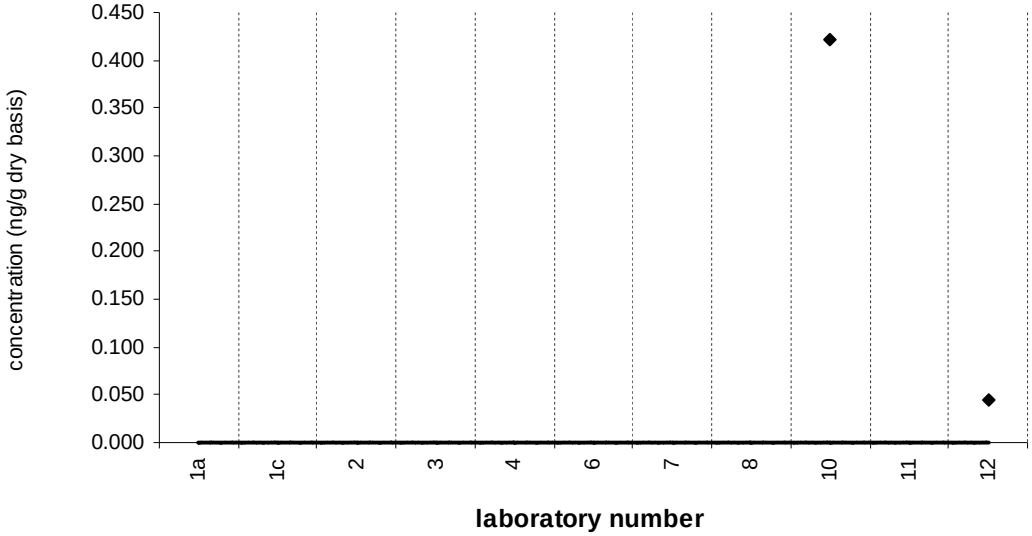


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

heptachlor epoxide **SRM 1941b**

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

Reported Results: 8 Quantitative Results: 2



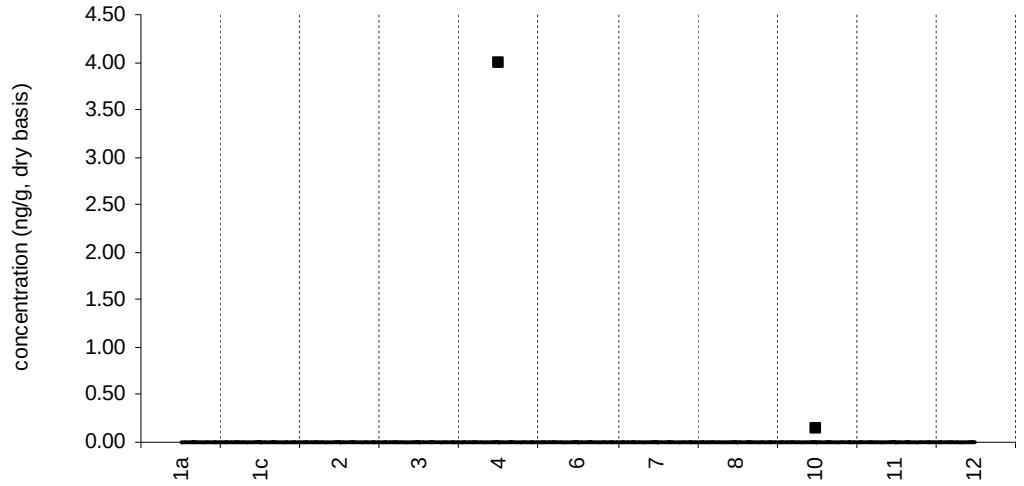
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

oxychlordane

Sediment XIII (QA05SED13)

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

Reported Results: 8 Quantitative Results: 2



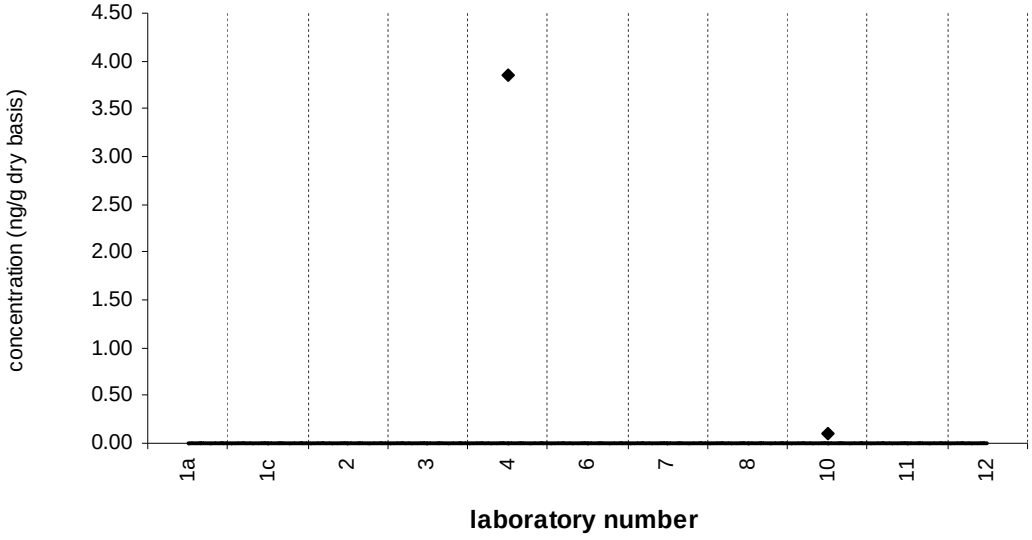
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

oxychlordane

SRM 1941b

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

Reported Results: 8 Quantitative Results: 2

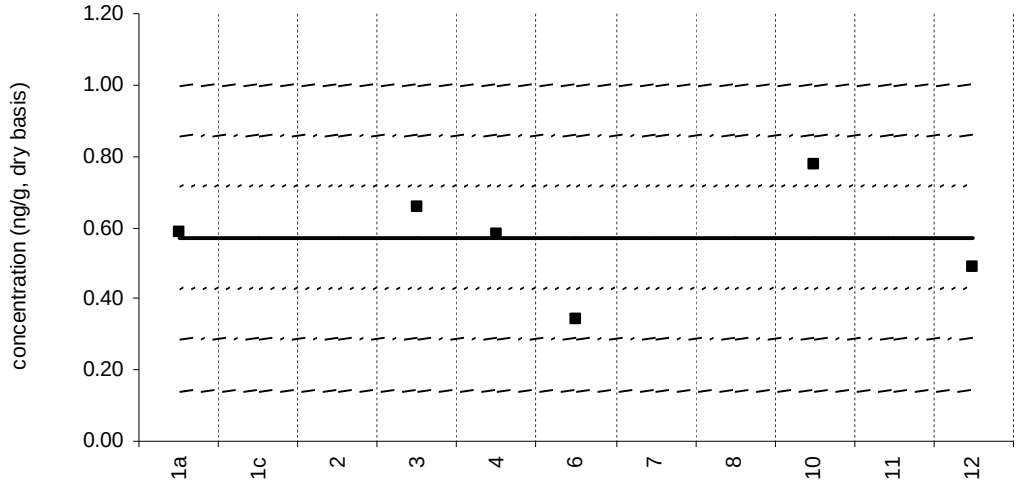


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

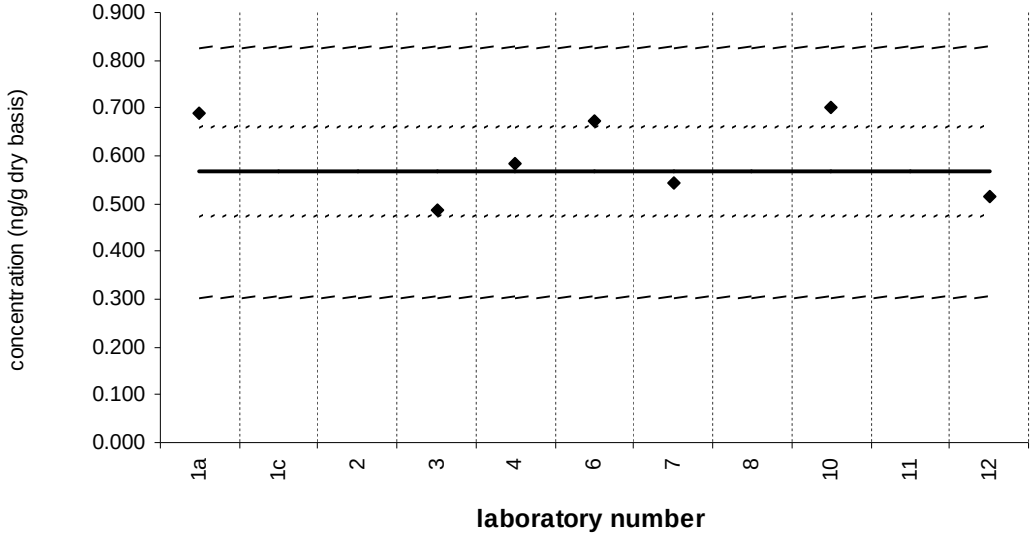


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

gamma-chlordane **SRM 1941b**

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

Reported Results: 8 Quantitative Results: 7



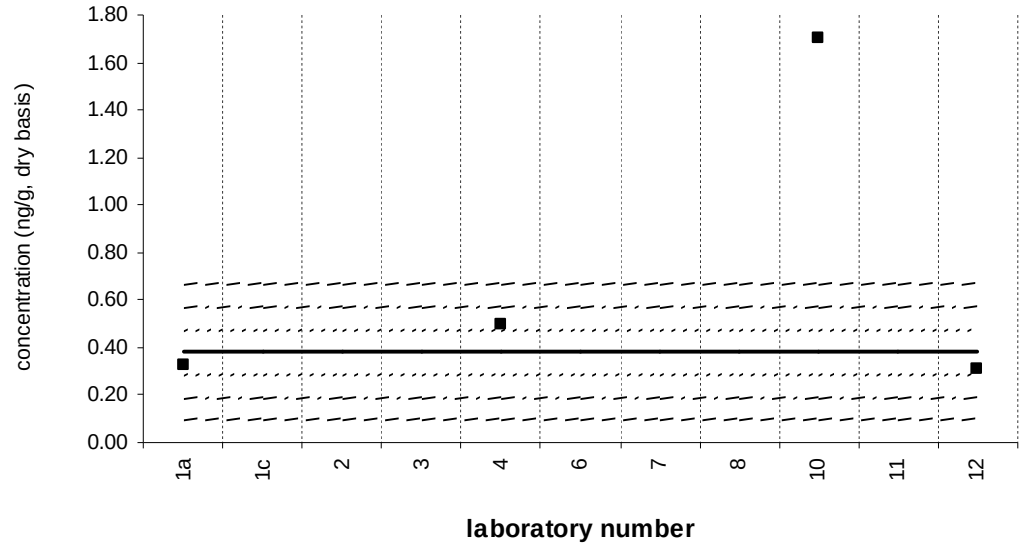
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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



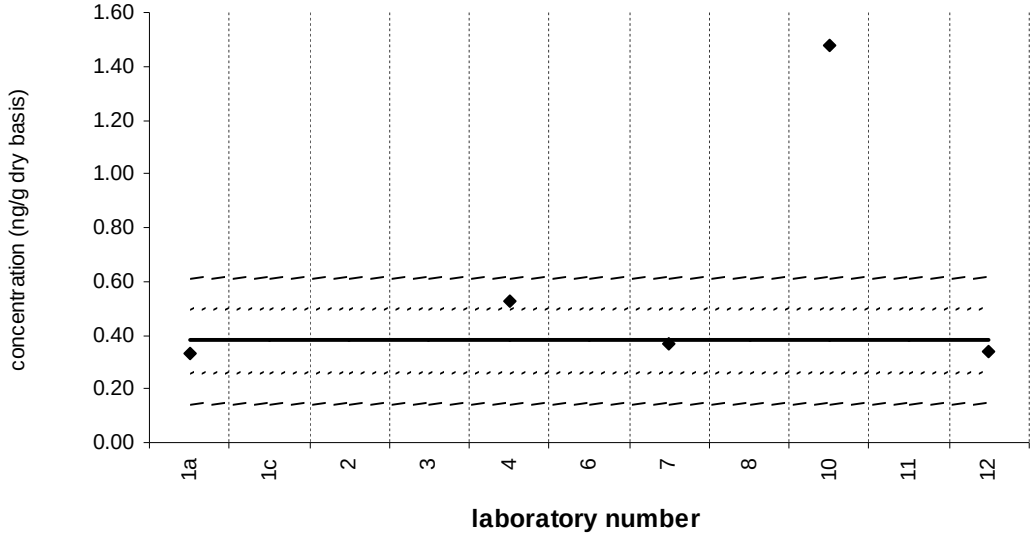
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

2,4'-DDE

SRM 1941b

Reference Value = 0.380 ± 0.120 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 5



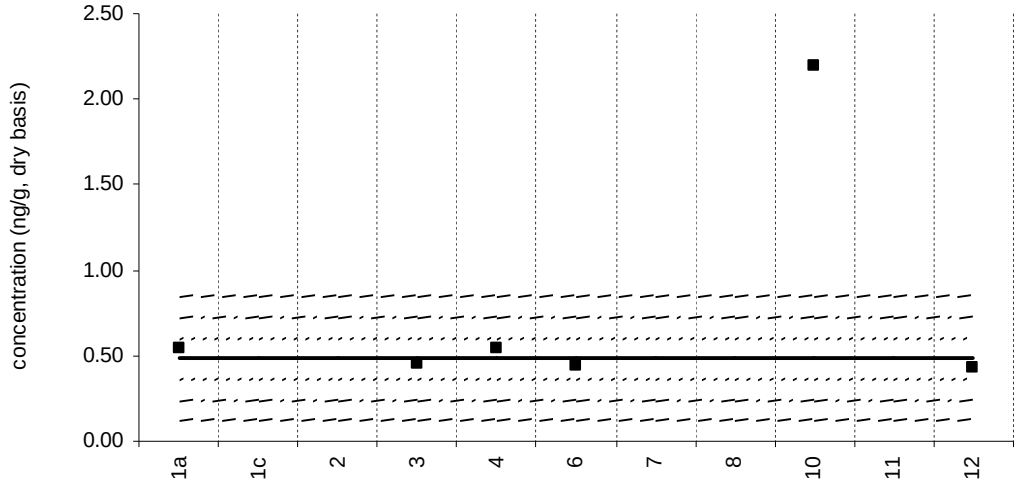
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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



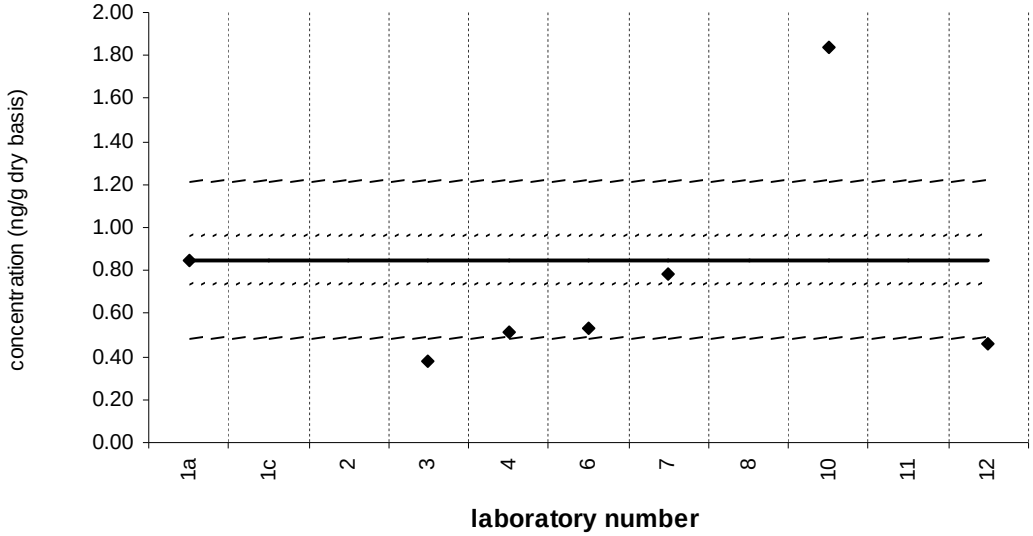
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

cis-chlordane (alpha-chlordane)

SRM 1941b

Certified Value = 0.85 ± 0.11 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 7

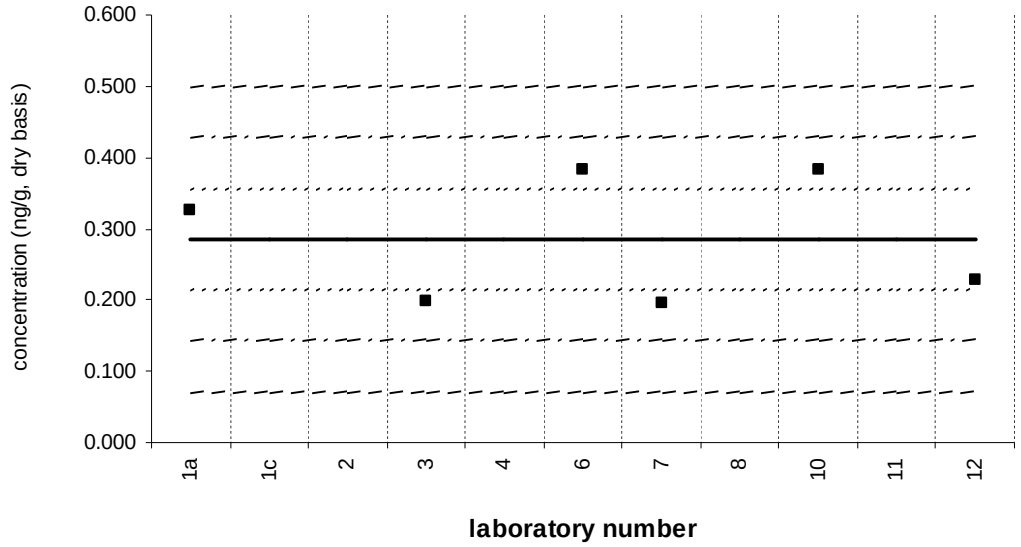


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

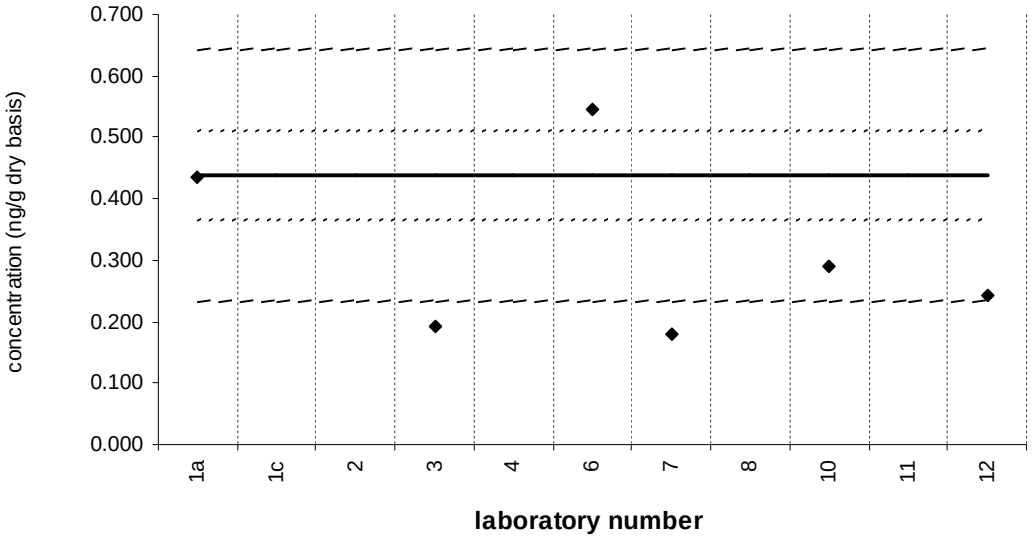


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

trans-nonachlor **SRM 1941b**

Certified Value = 0.438 ± 0.073 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 6



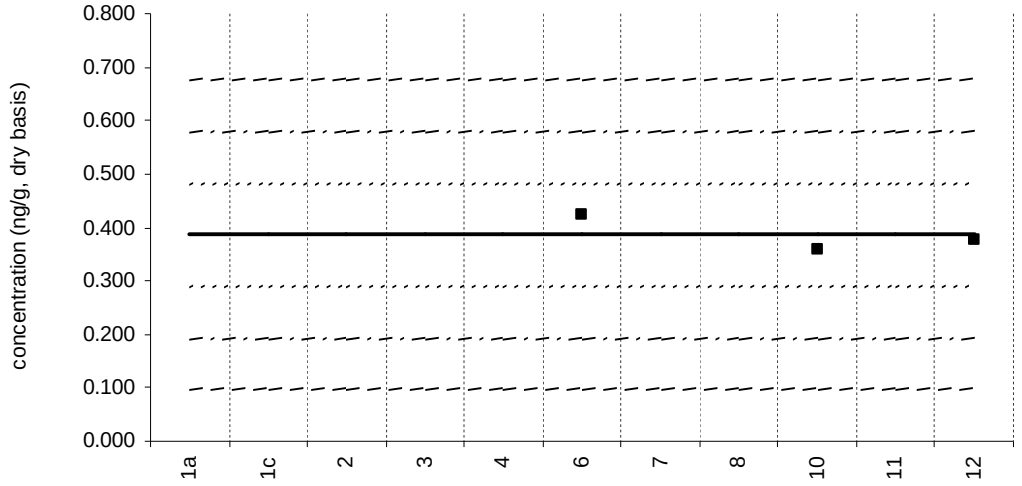
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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



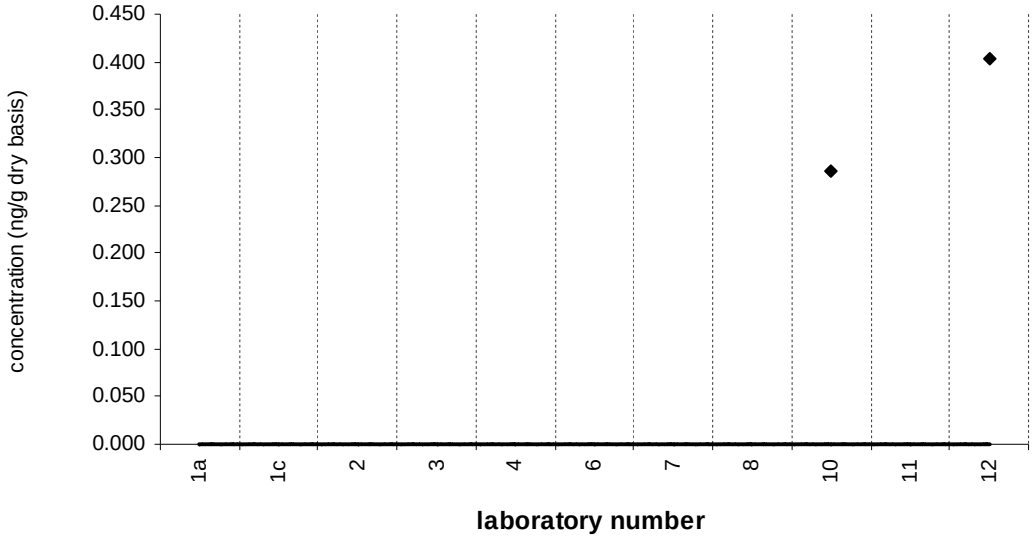
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

dieldrin

SRM 1941b

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

Reported Results: 8 Quantitative Results: 2

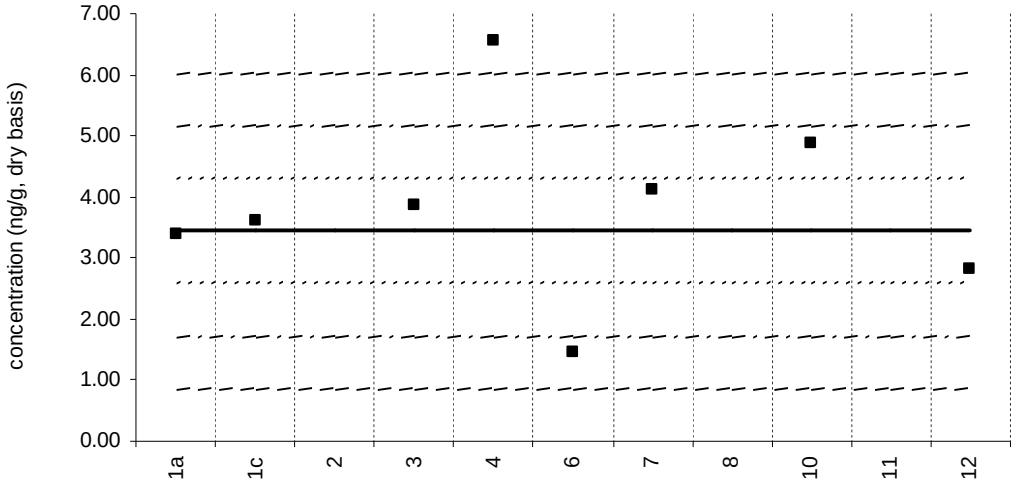


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

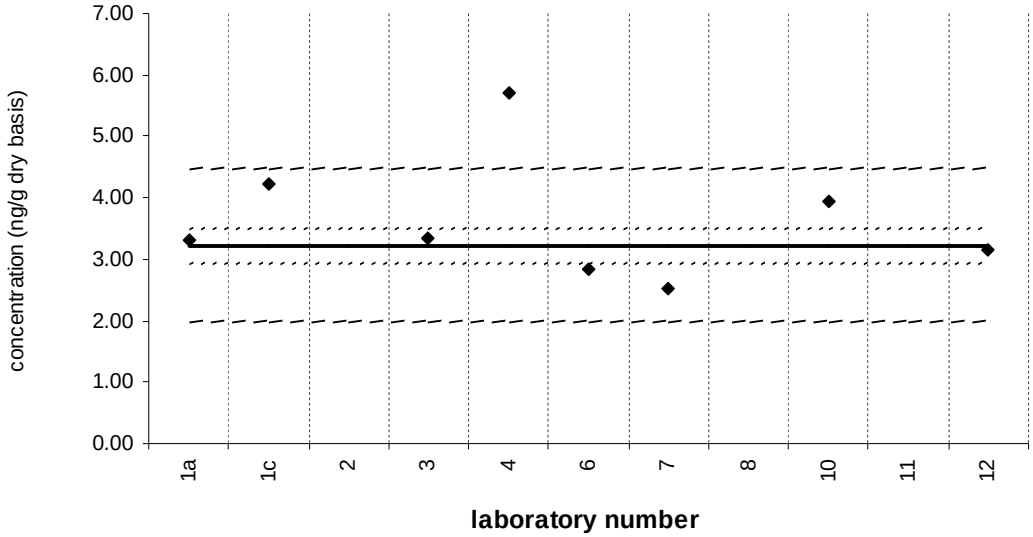


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

4,4'-DDE **SRM 1941b**

Certified Value = 3.22 ± 0.28 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 8



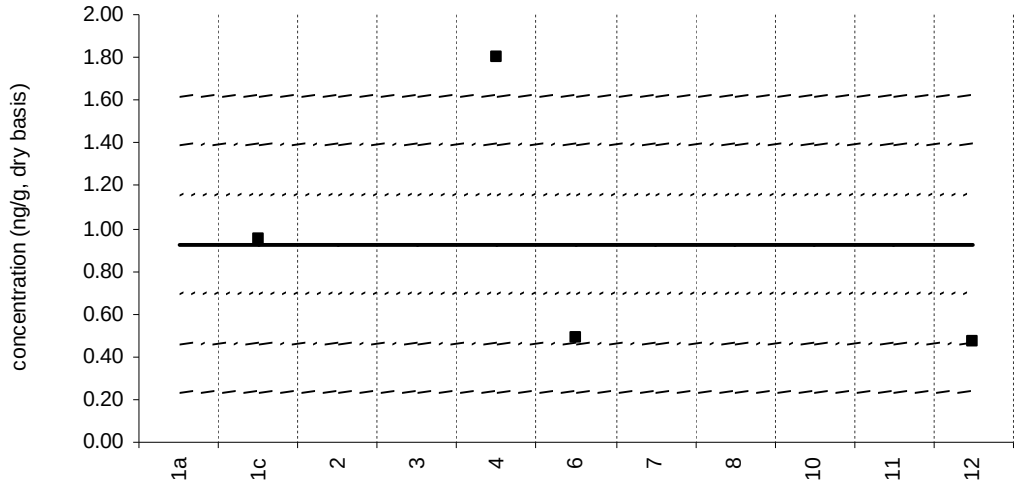
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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



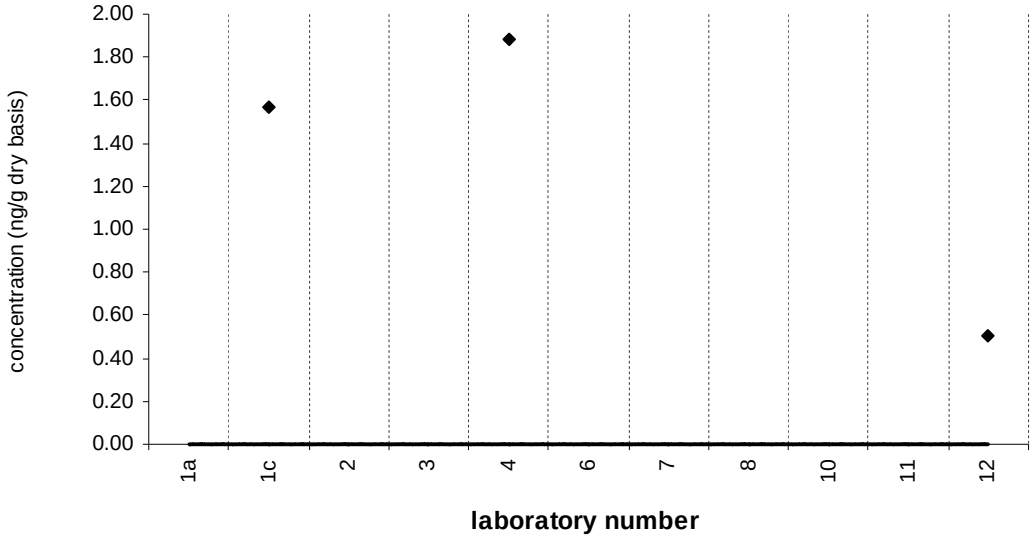
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

2,4'-DDD

SRM 1941b

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

Reported Results: 3 Quantitative Results: 3



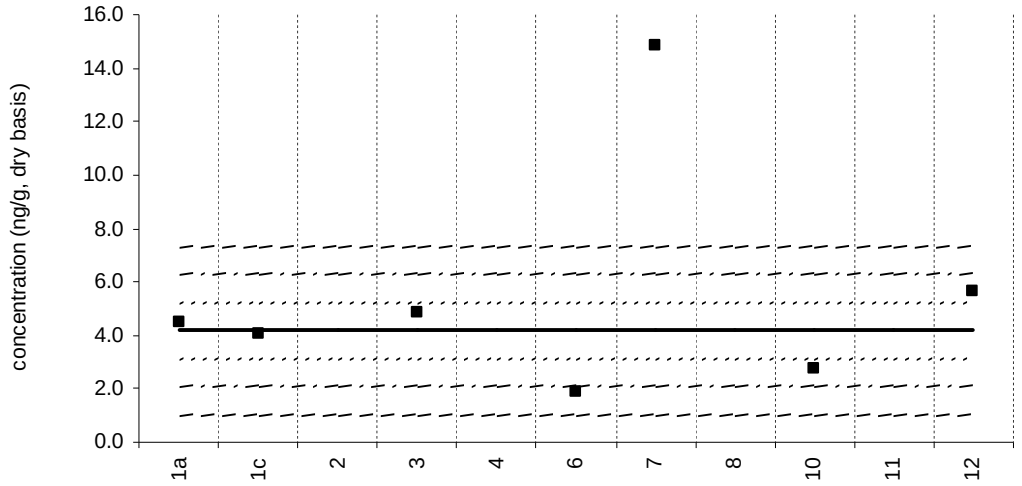
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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



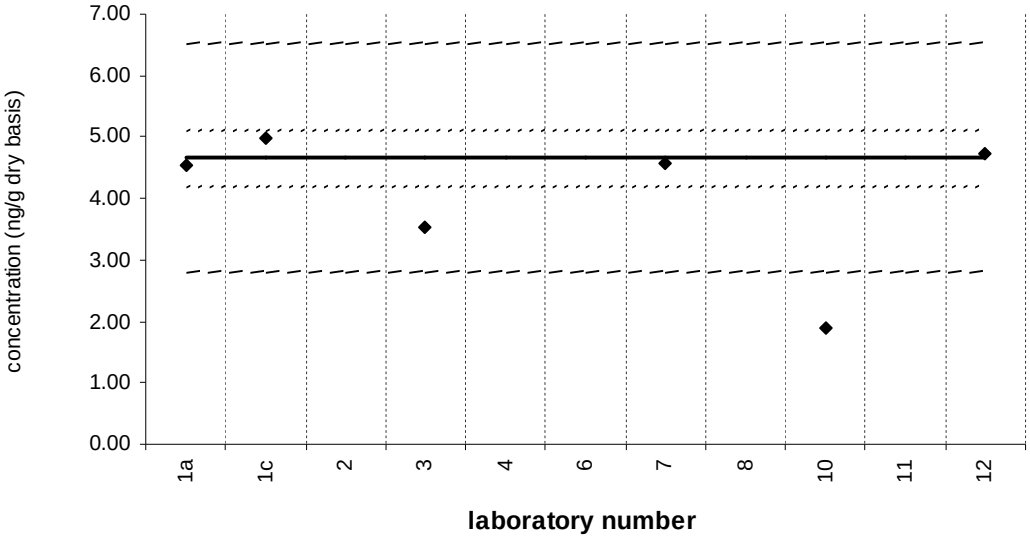
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

4,4'-DDD

SRM 1941b

Certified Value = 4.66 ± 0.46 ng/g (dry basis)

Reported Results: 7 Quantitative Results: 6

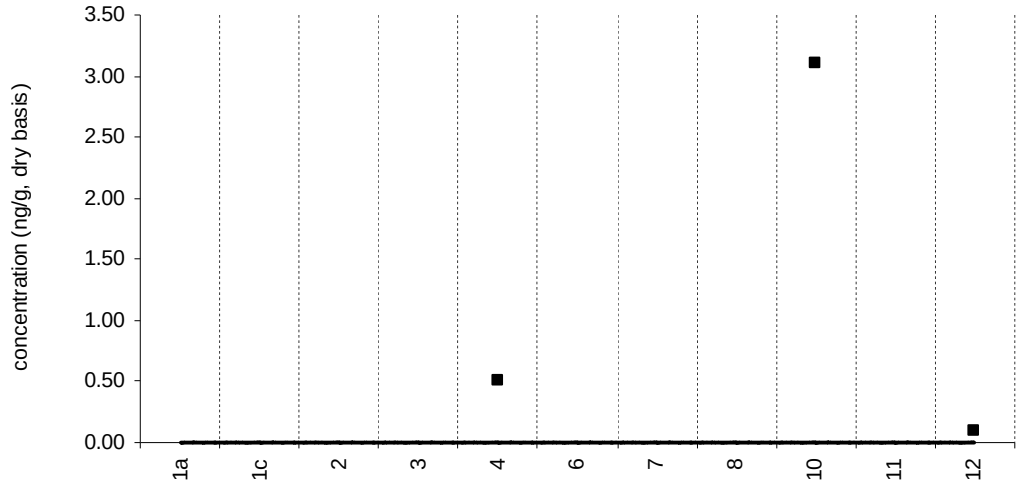


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

2,4'-DDT **Sediment XIII (QA05SED13)**

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

Reported Results: 8 Quantitative Results: 3

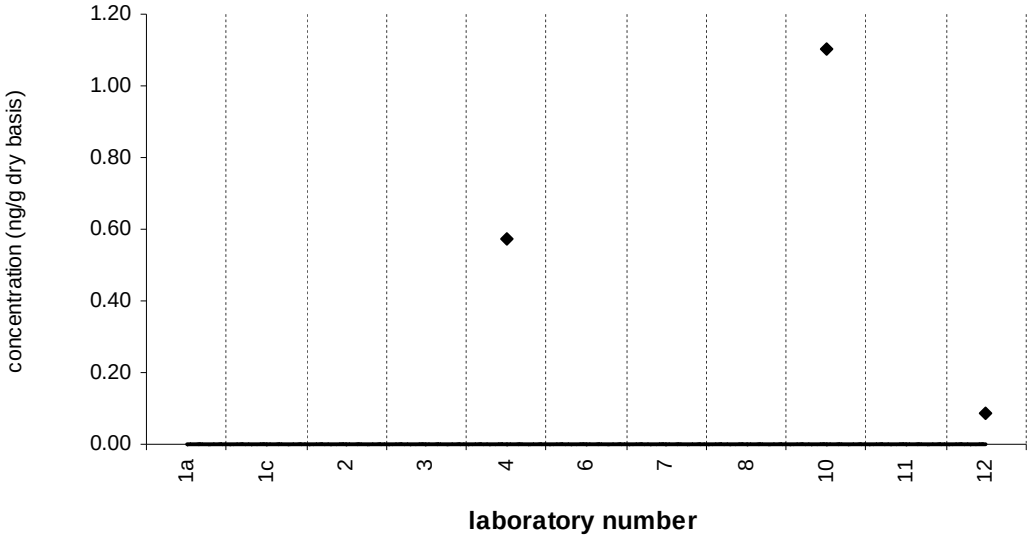


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

2,4'-DDT **SRM 1941b**

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

Reported Results: 8 Quantitative Results: 3

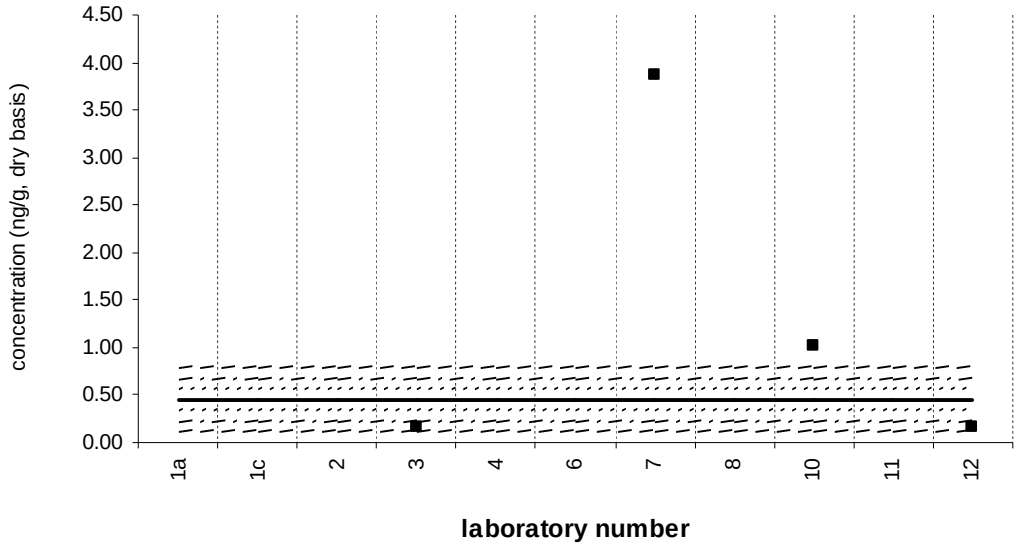


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

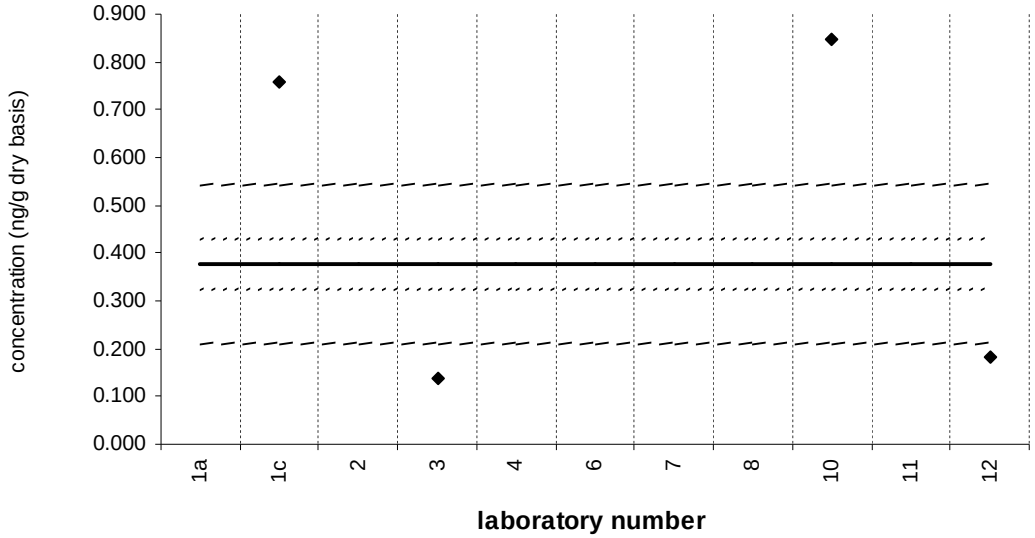


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

cis-nonachlor **SRM 1941b**

Certified Value = 0.378 ± 0.053 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 4

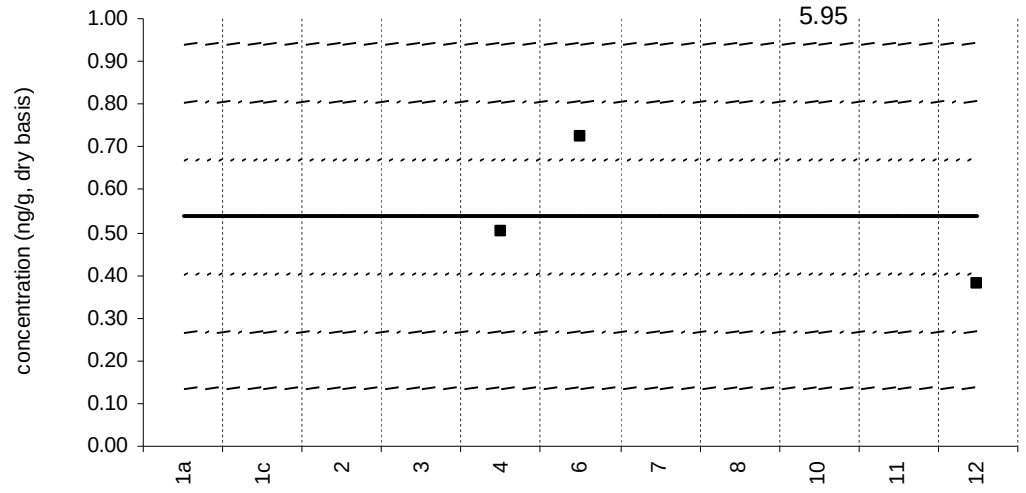


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

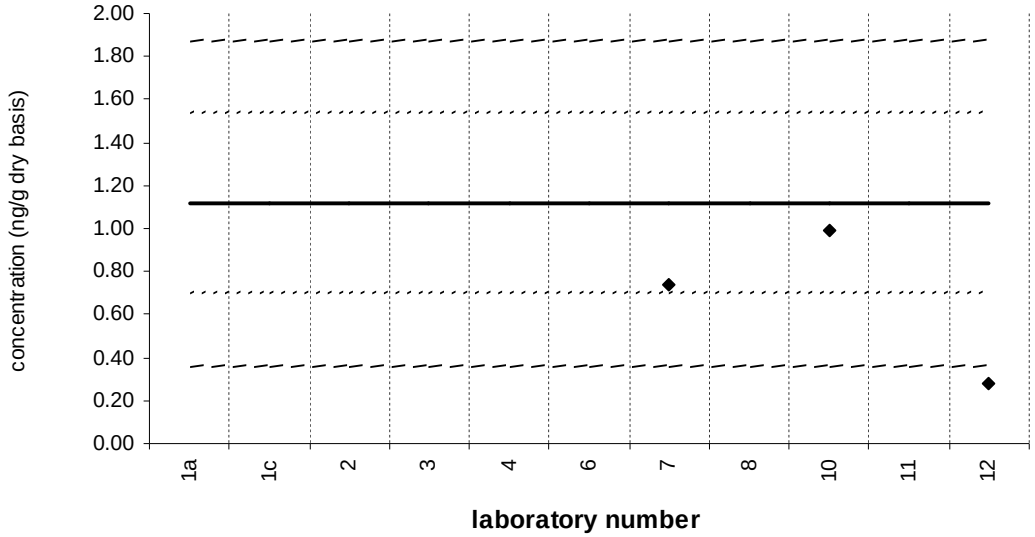


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

4,4'-DDT **SRM 1941b**

Reference Value = 1.12 ± 0.42 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 3



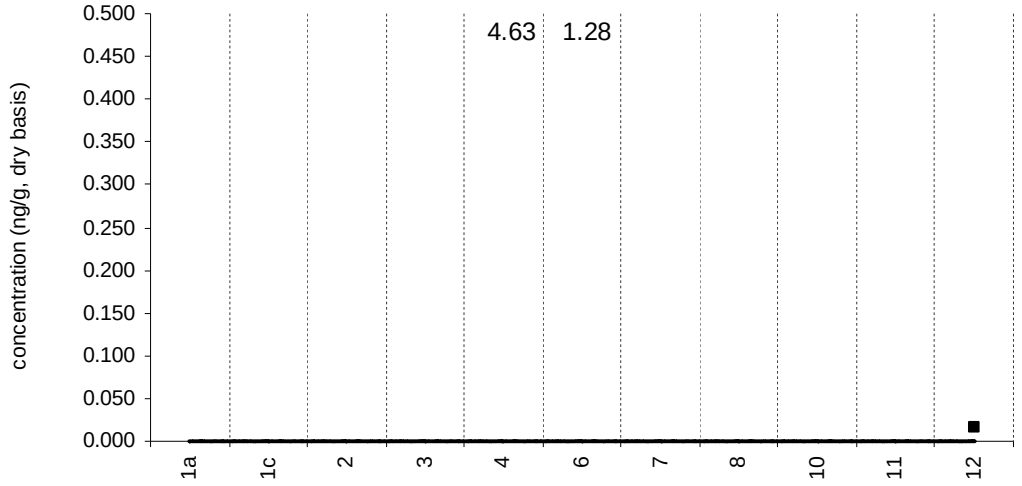
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

mirex

Sediment XIII (QA05SED13)

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

Reported Results: 7 Quantitative Results: 3



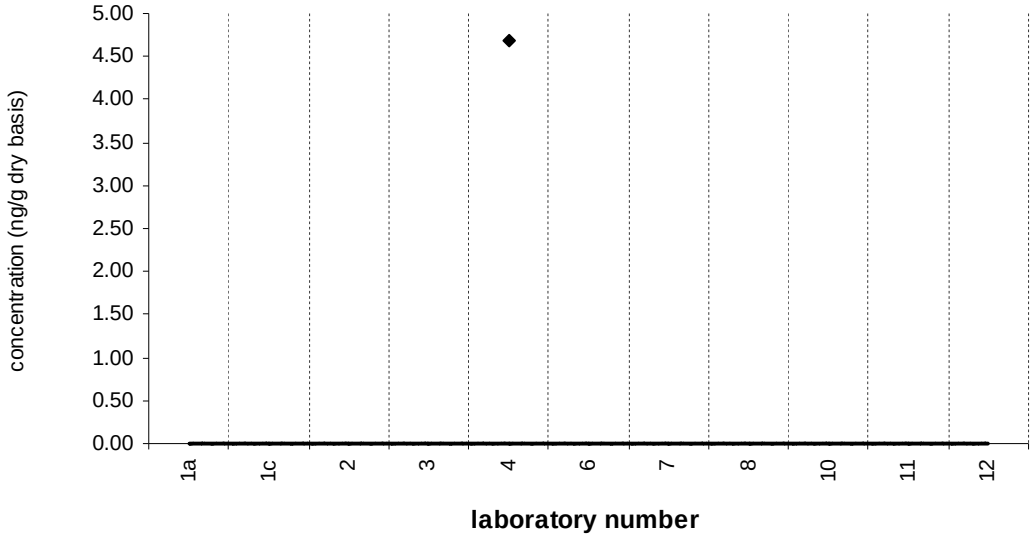
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

mirex

SRM 1941b

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

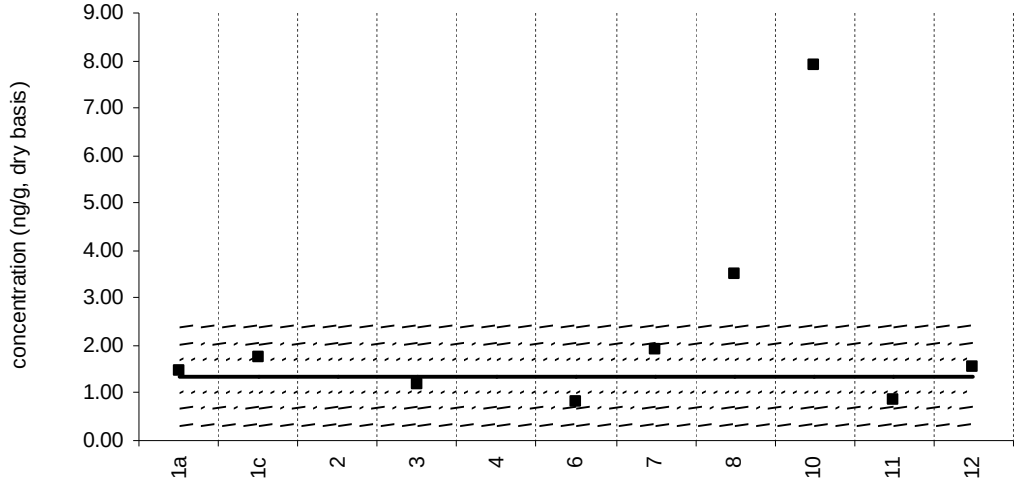
Reported Results: 7 Quantitative Results: 1



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

PCB 8 **Sediment XIII (QA05SED13)**

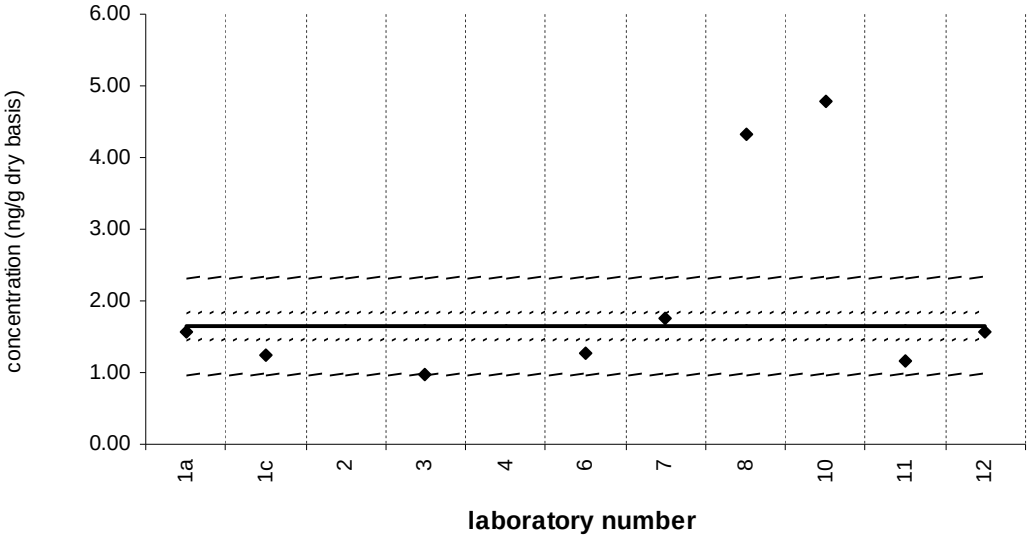
Assigned value = 1.36 ng/g s = 0.42 ng/g 95% CL = 0.39 ng/g (dry basis)
Reported Results: 9 Quantitative Results: 9



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

PCB 8 **SRM 1941b**

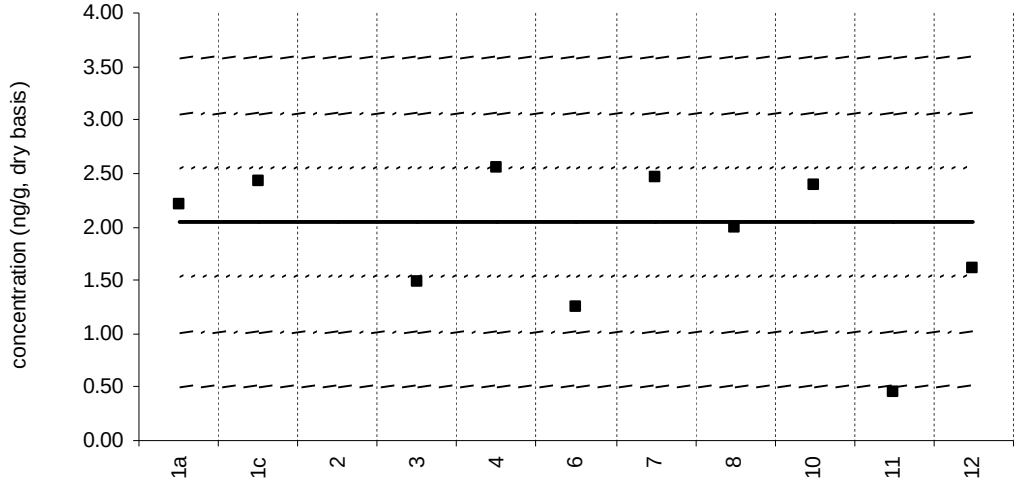
Certified Value = 1.65 ± 0.19 ng/g (dry basis)
Reported Results: 9 Quantitative Results: 9



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

PCB 18 **Sediment XIII (QA05SED13)**

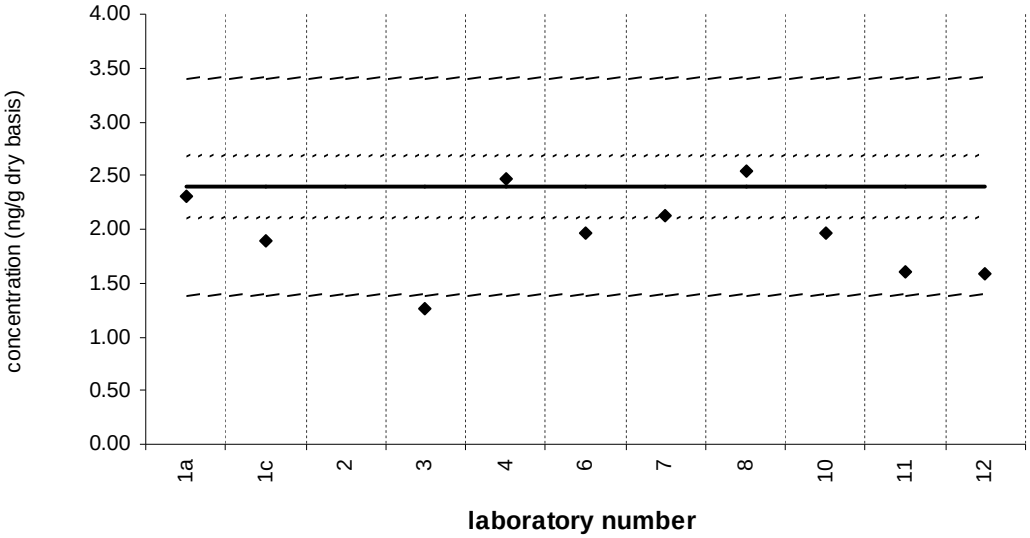
Assigned value = 2.04 ng/g s = 0.48 ng/g 95% CL = 0.37 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 10



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

PCB 18 **SRM 1941b**

Certified Value = 2.39 ± 0.29 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 10

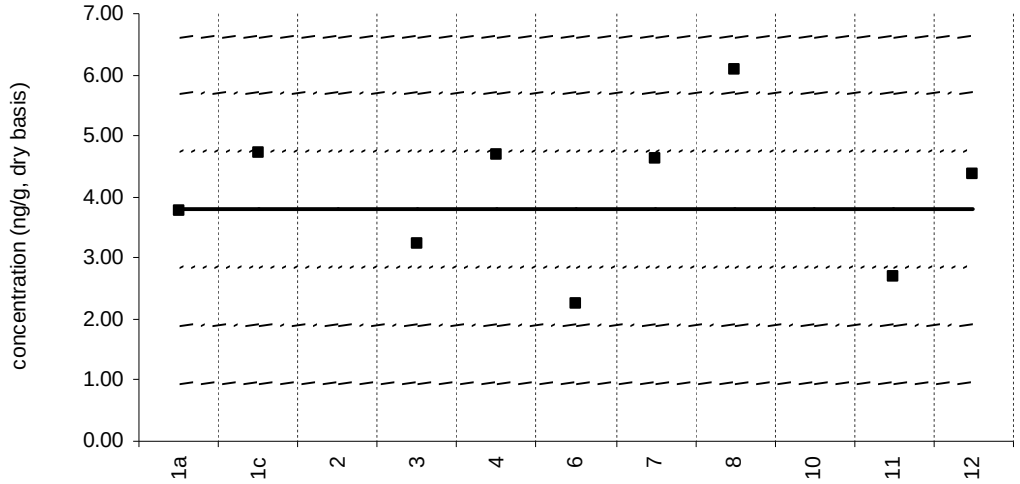


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

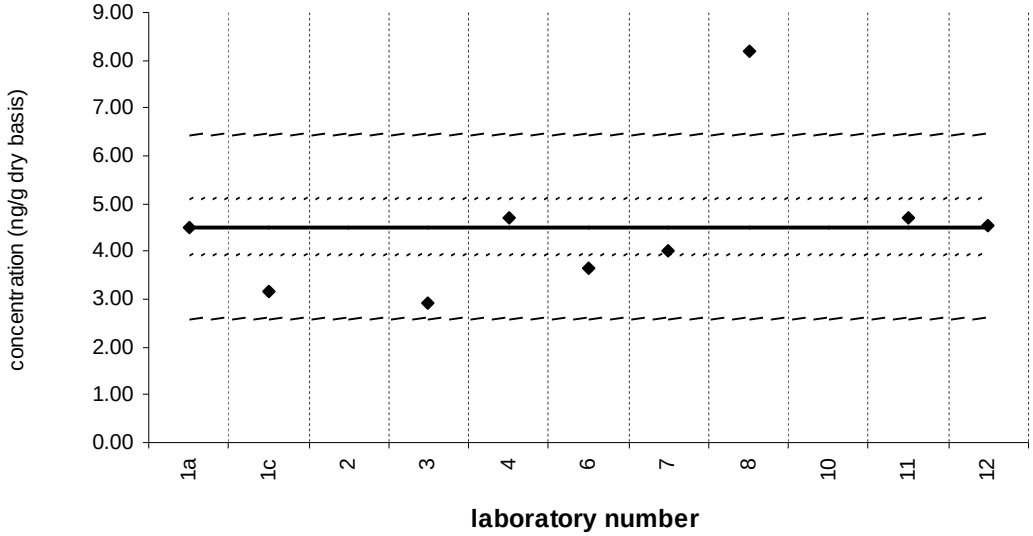


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 28 **SRM 1941b**

Certified Value = 4.52 ± 0.57 ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9

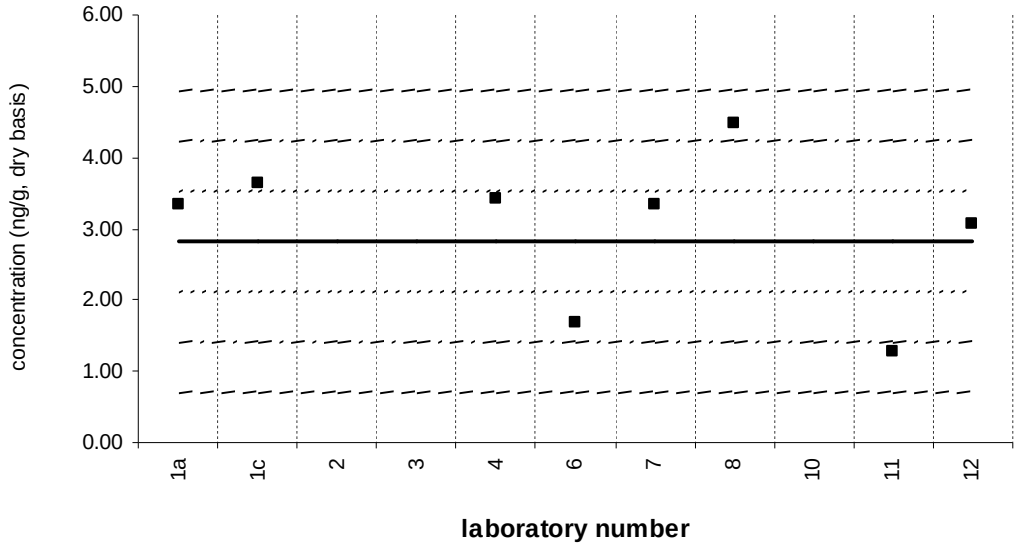


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

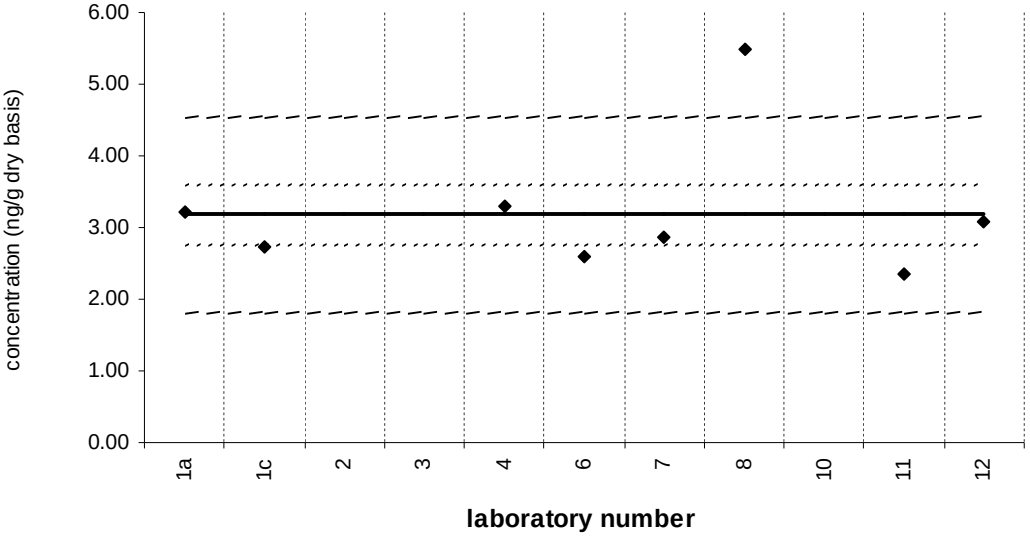


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 31 **SRM 1941b**

Certified Value = 3.18 ± 0.41 ng/g (dry basis)

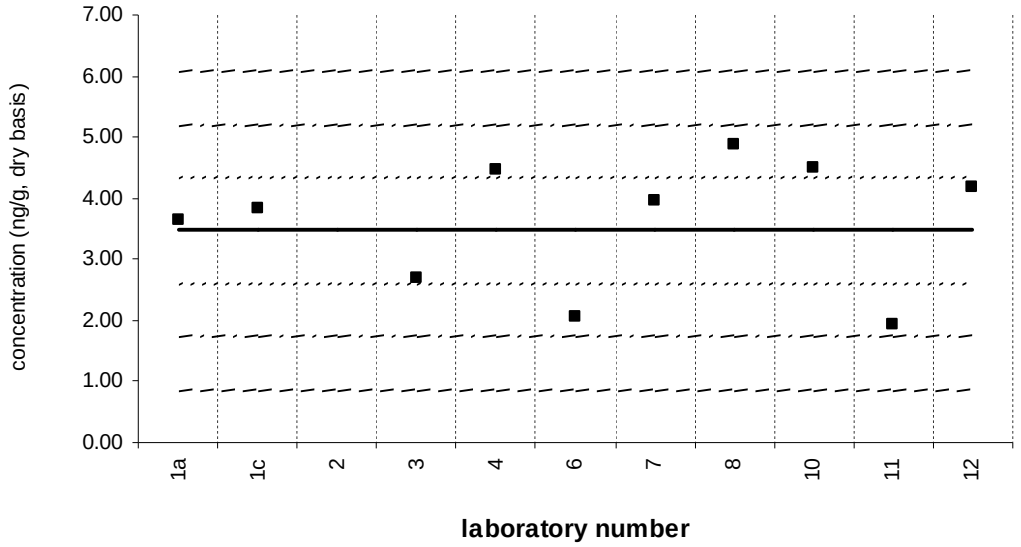
Reported Results: 8 Quantitative Results: 8



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

PCB 44 **Sediment XIII (QA05SED13)**

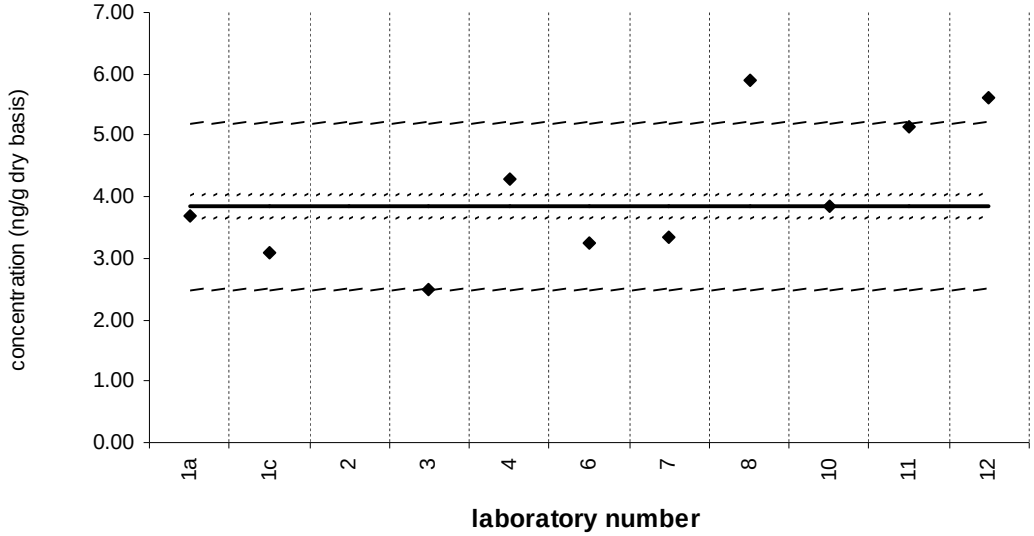
Assigned value = 3.47 ng/g s = 0.99 ng/g 95% CL = 0.76 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 10



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

PCB 44 **SRM 1941b**

Certified Value = 3.85 ± 0.20 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 10

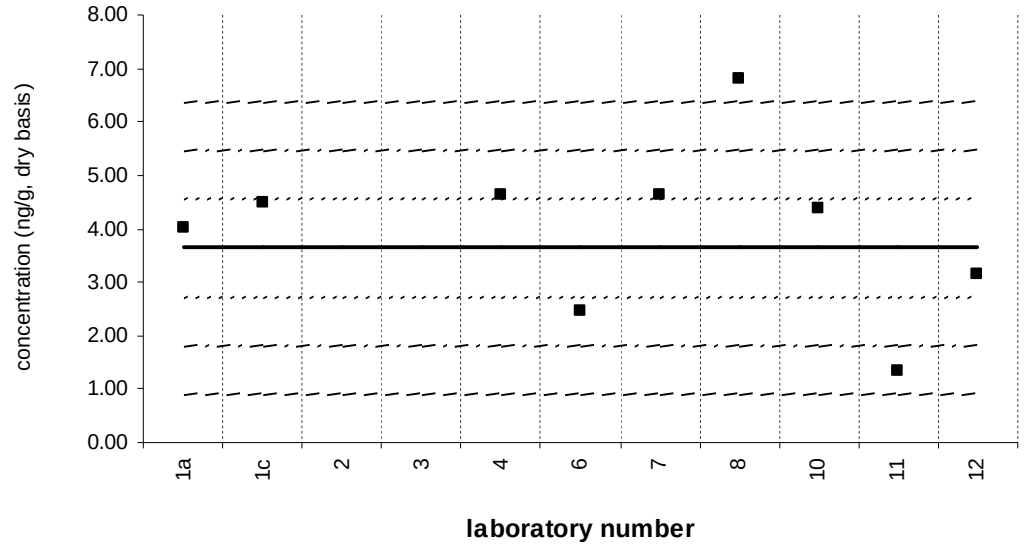


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

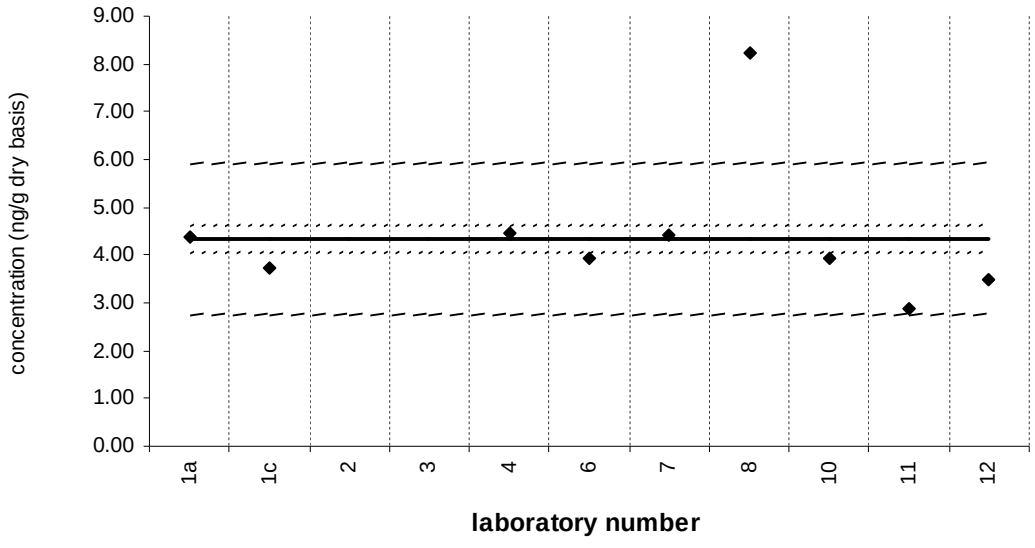


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 49 **SRM 1941b**

Certified Value = 4.34 ± 0.28 ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9

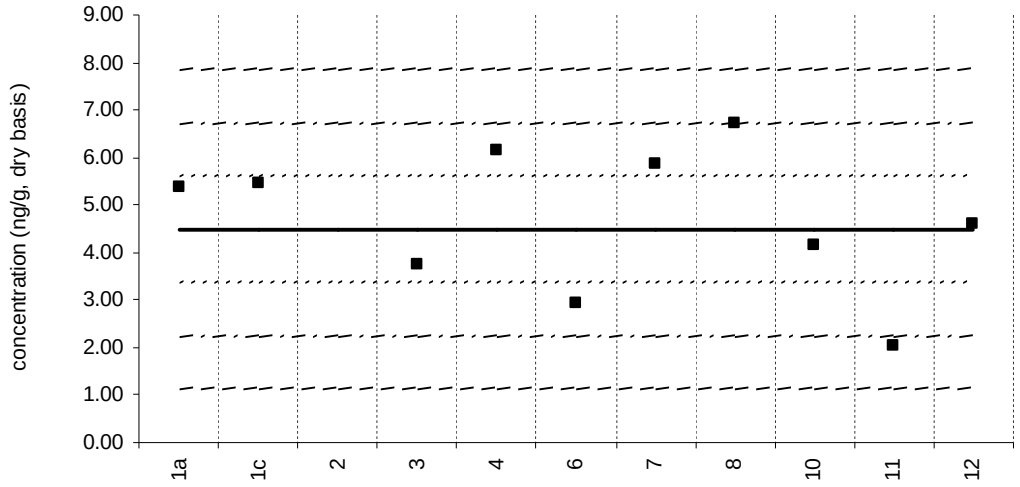


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

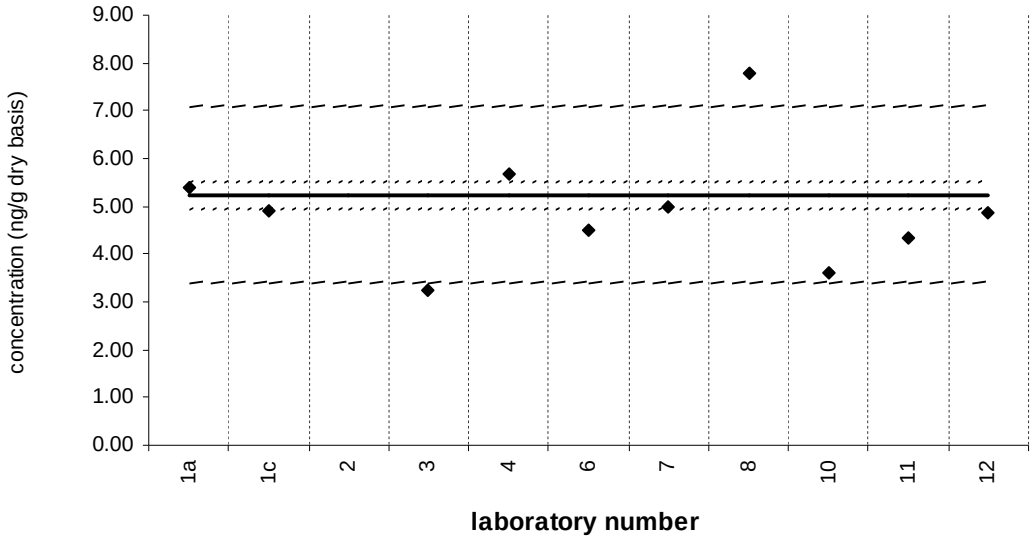


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 52 **SRM 1941b**

Certified Value = 5.24 ± 0.28 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10

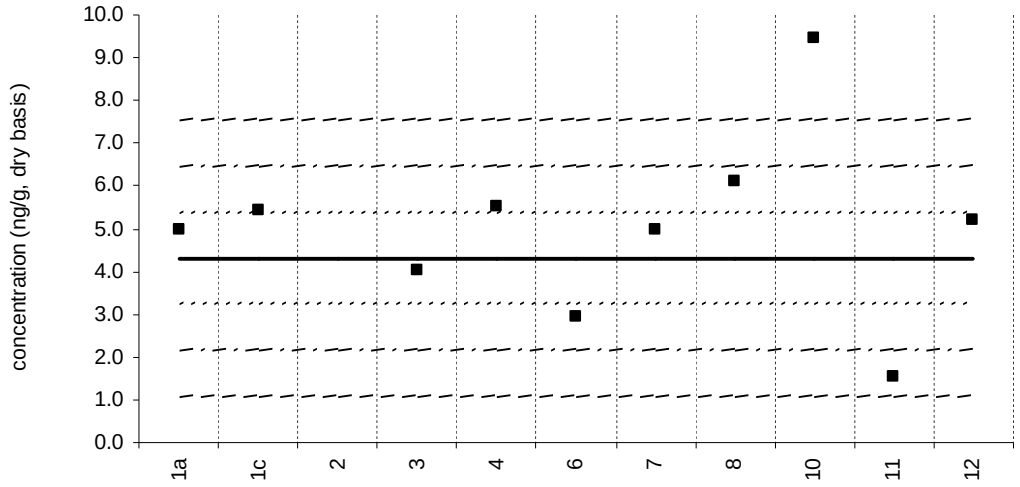


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

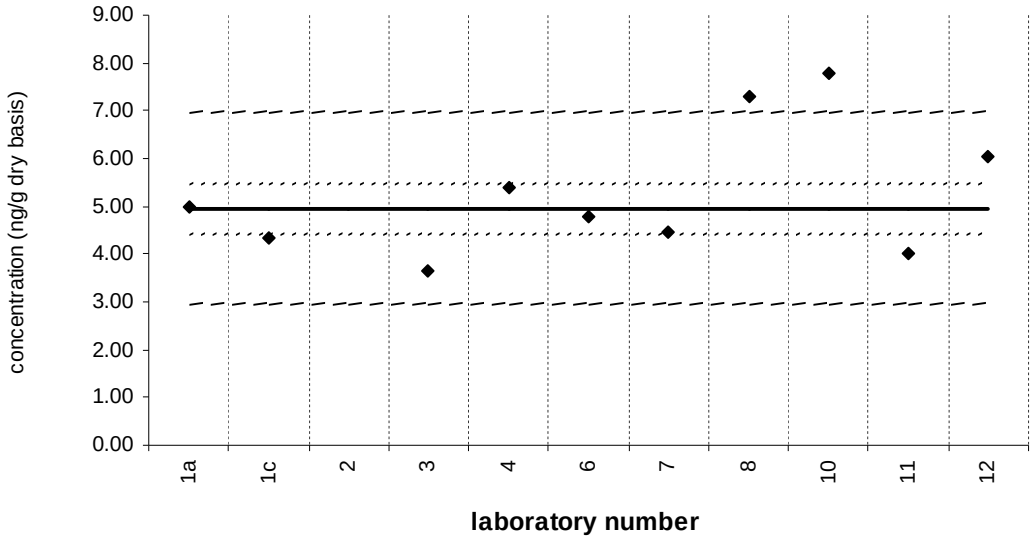


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 66 **SRM 1941b**

Certified Value = 4.96 ± 0.53 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10



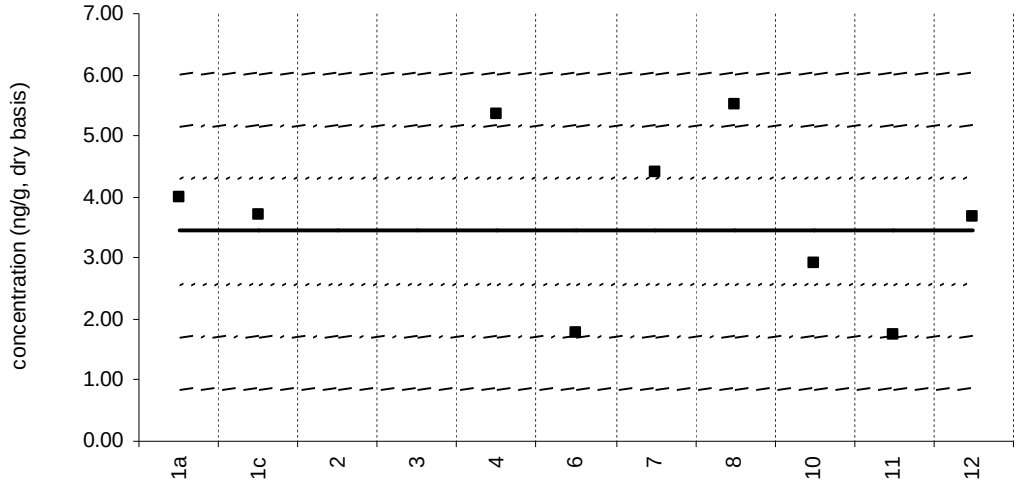
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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



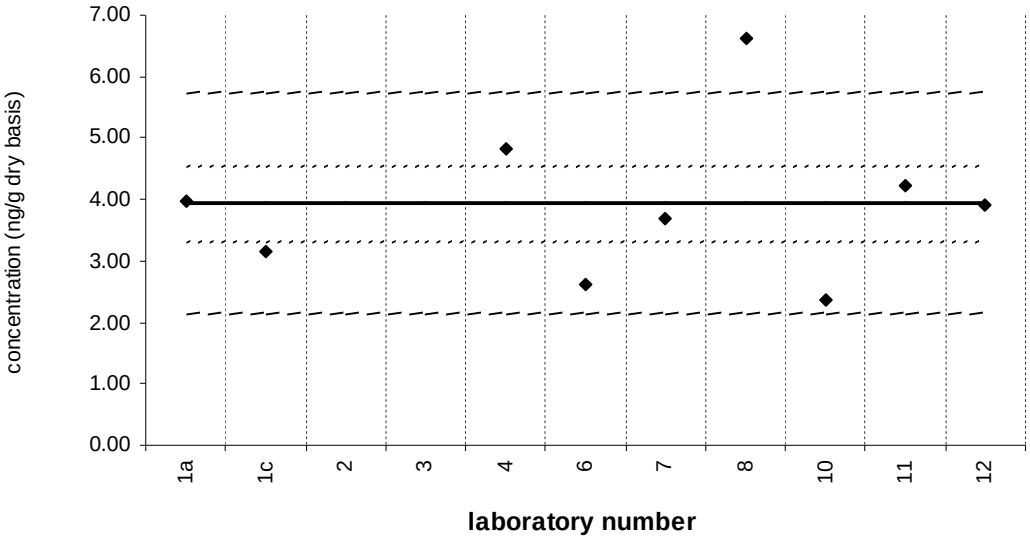
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 95

SRM 1941b

Certified Value = 3.93 ± 0.62 ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9

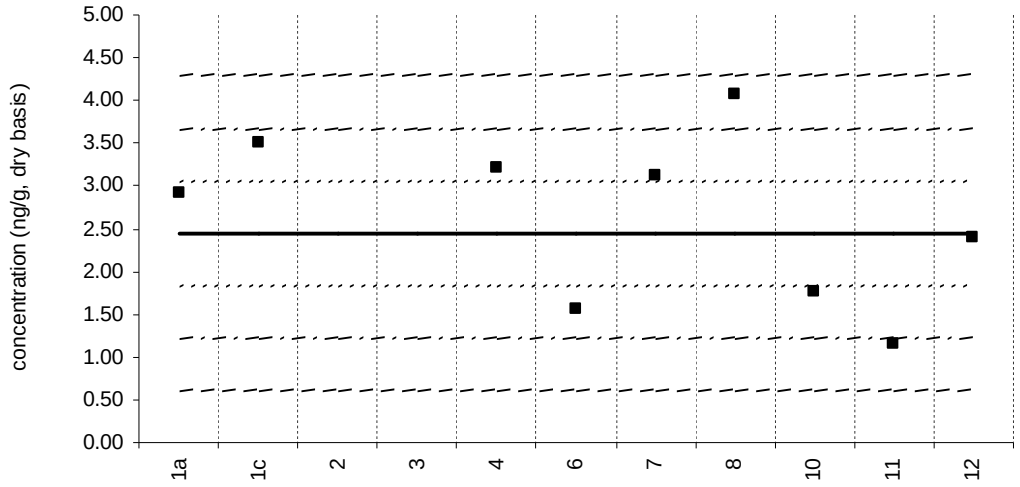


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

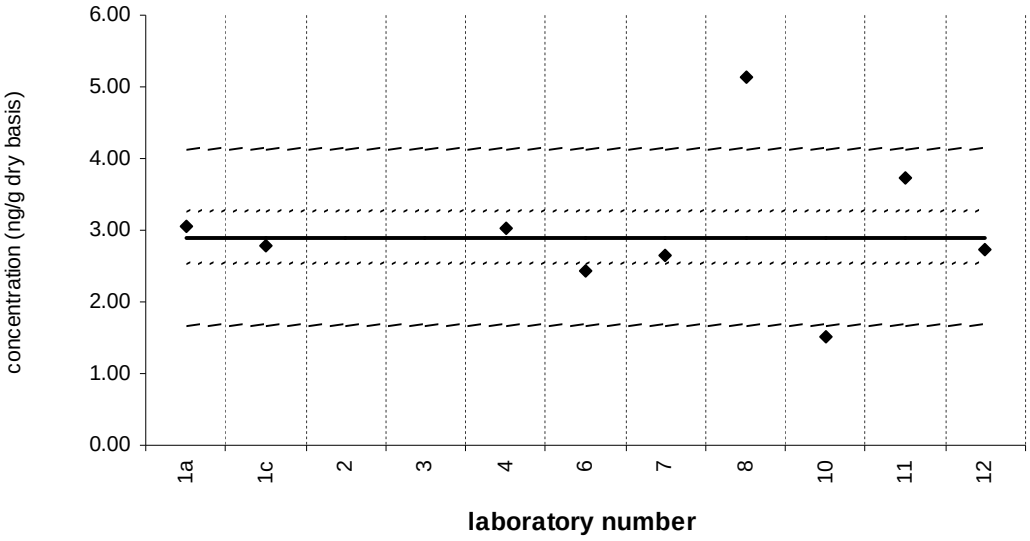


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 99 **SRM 1941b**

Certified Value = 2.90 ± 0.36 ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9

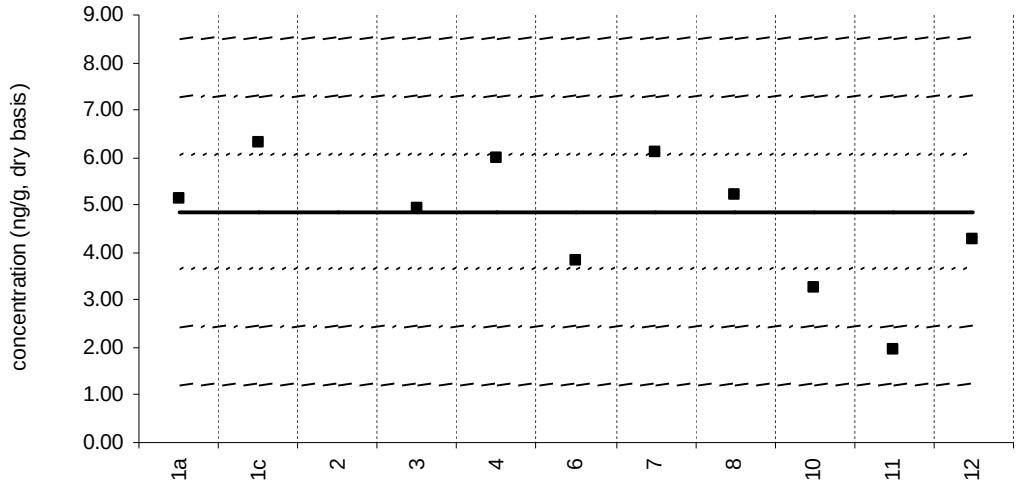


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

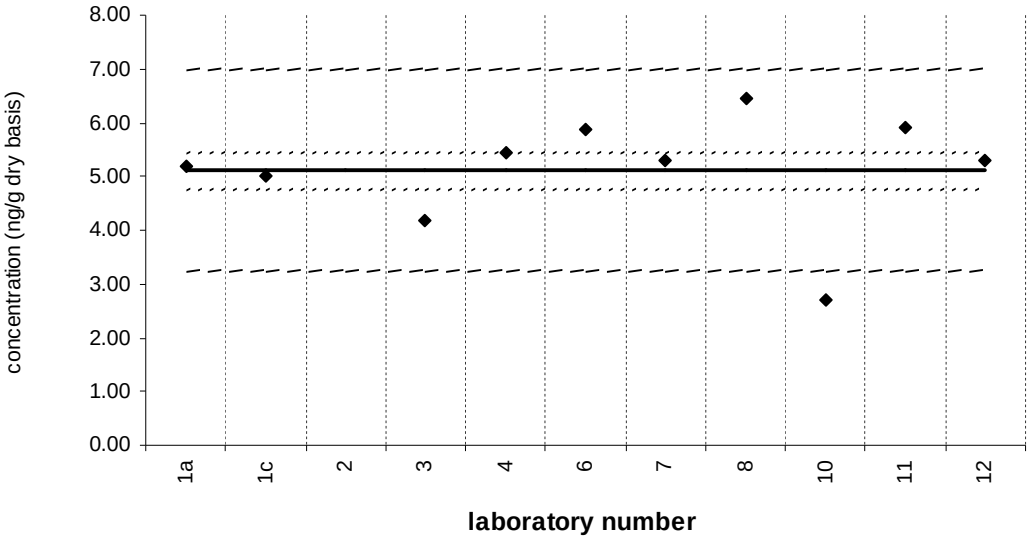


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 101 **SRM 1941b**

Certified Value = 5.11 ± 0.34 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10

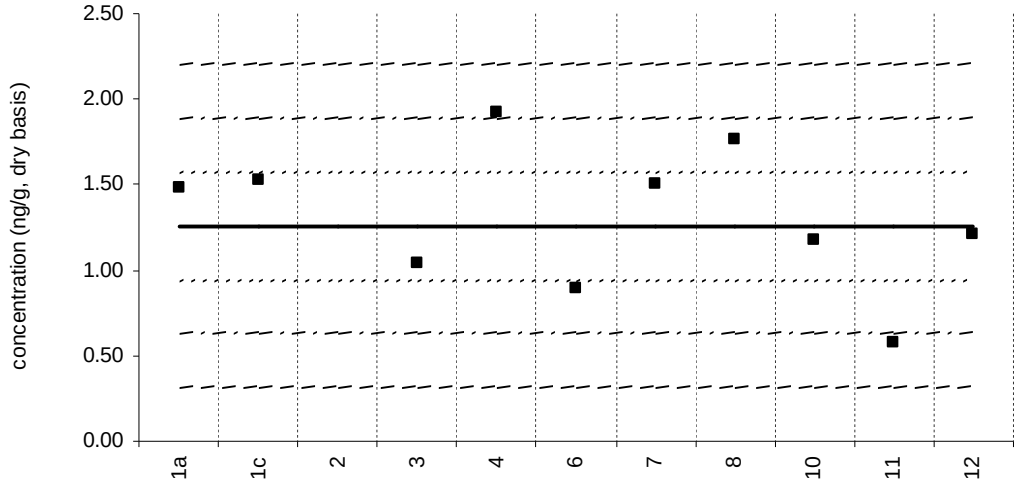


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

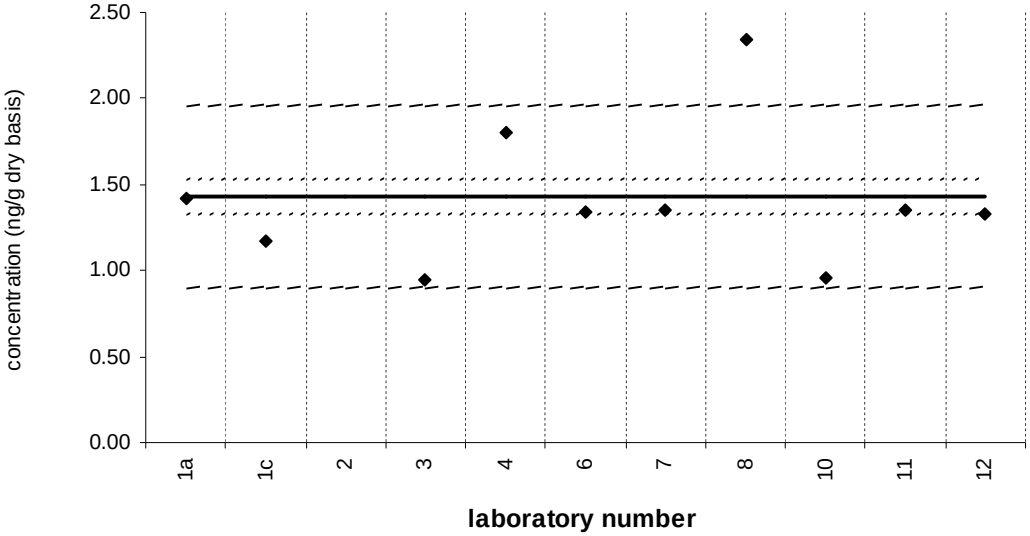


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 105 **SRM 1941b**

Certified Value = 1.43 ± 0.10 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10

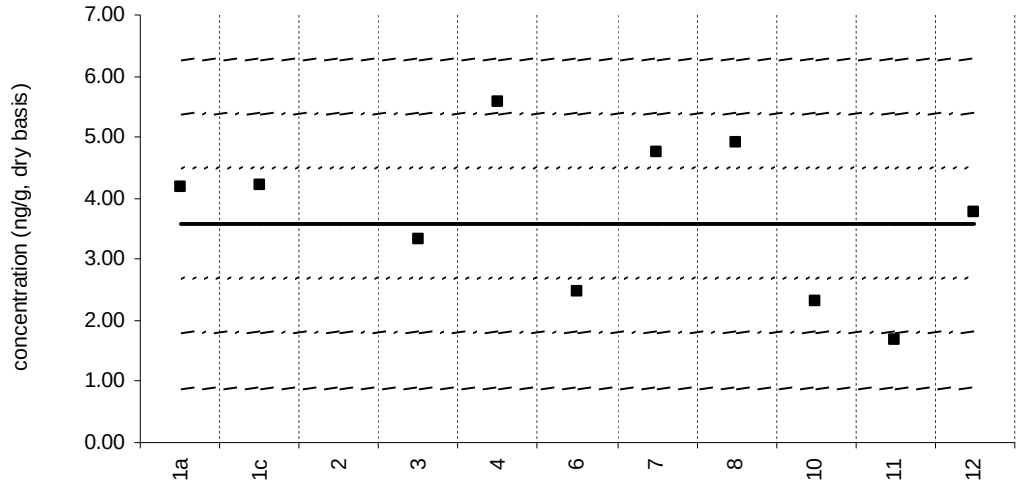


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

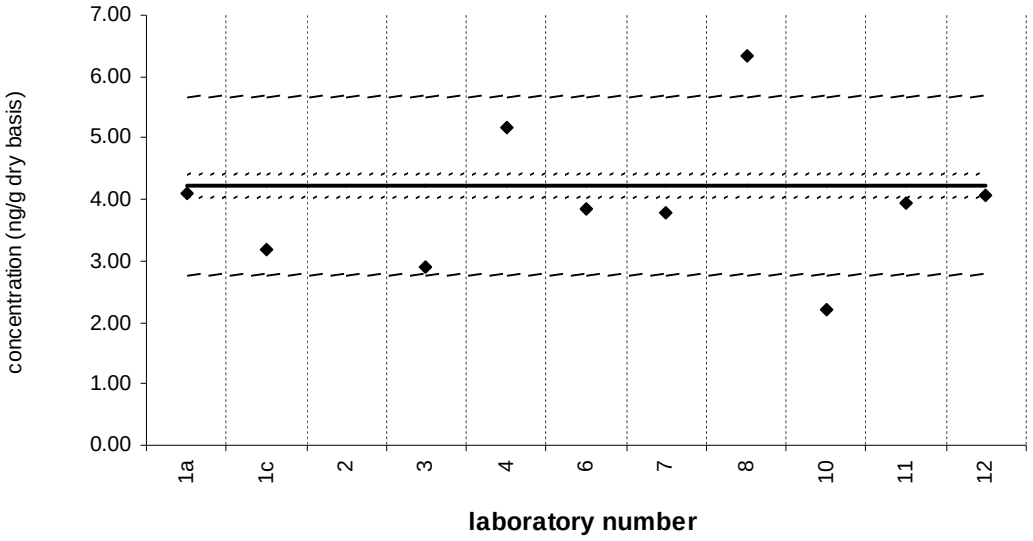


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 118 **SRM 1941b**

Certified Value = 4.23 ± 0.19 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10

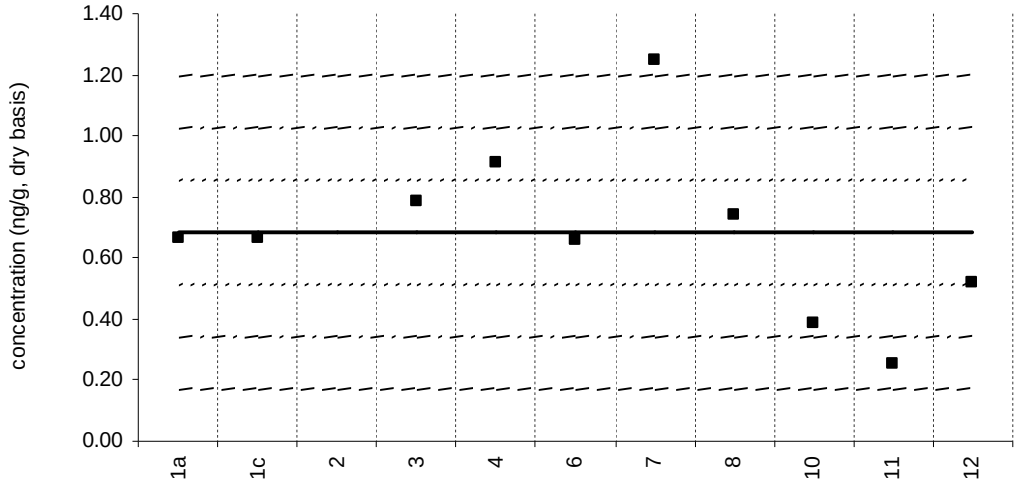


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

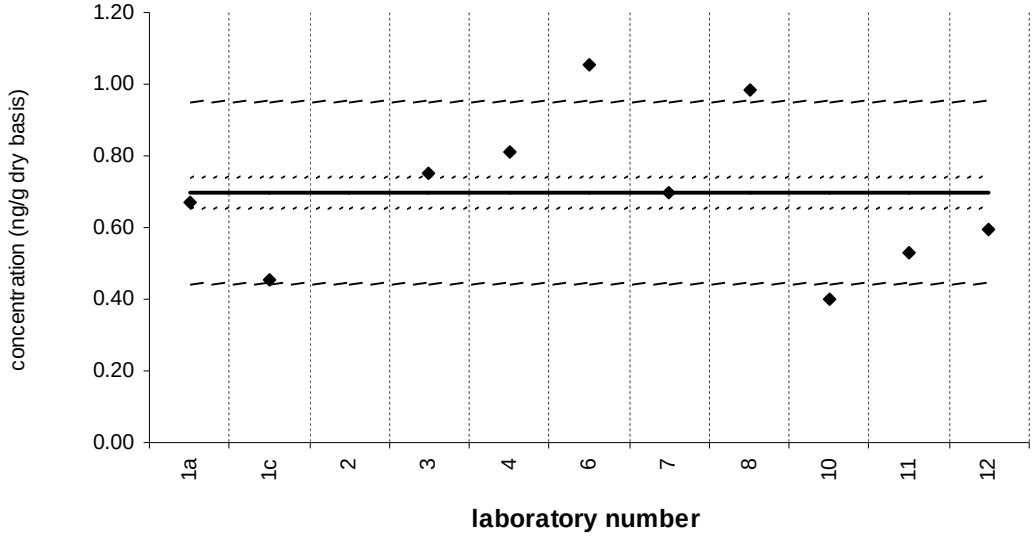


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 128 **SRM 1941b**

Certified Value = 0.696 ± 0.044 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10

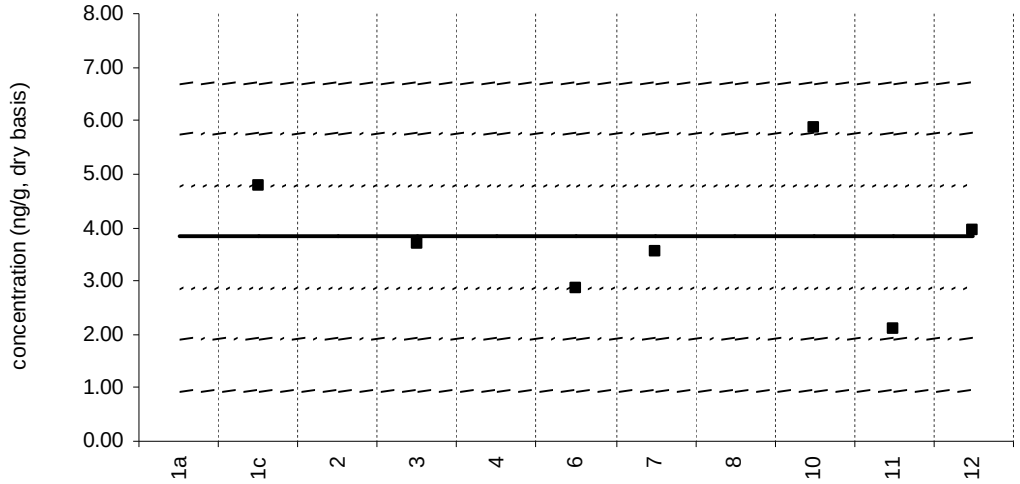


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

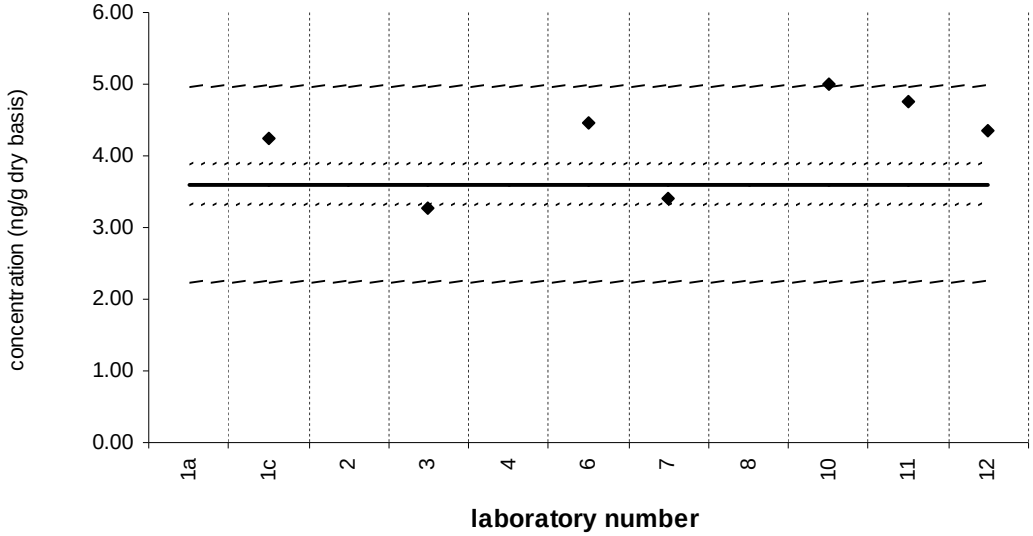


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 138 **SRM 1941b**

Certified Value = 3.60 ± 0.28 ng/g (dry basis)

Reported Results: 7 Quantitative Results: 7

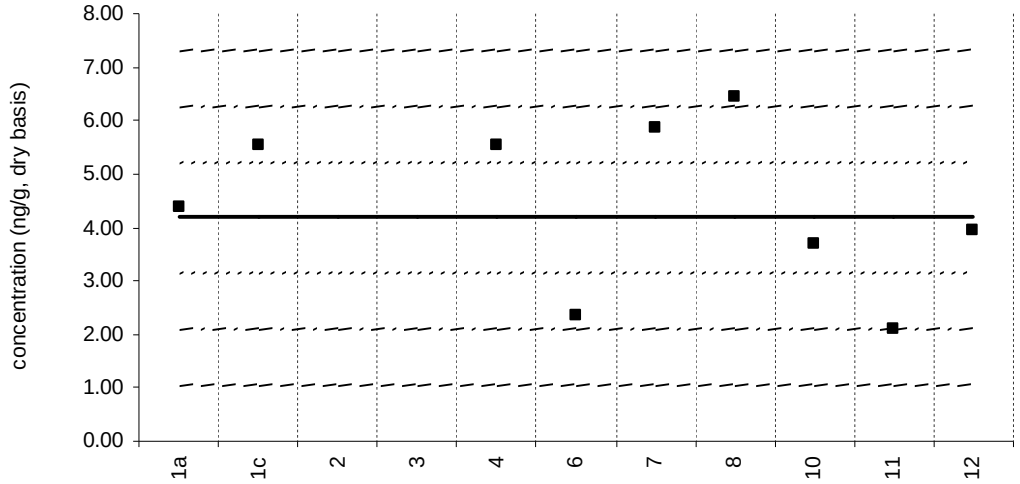


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

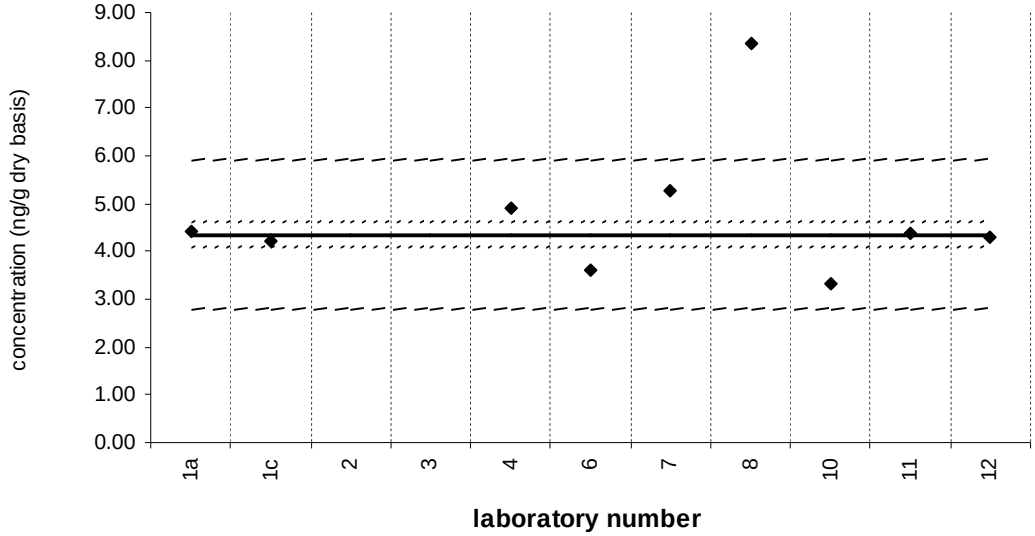


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 149 **SRM 1941b**

Certified Value = 4.35 ± 0.26 ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9

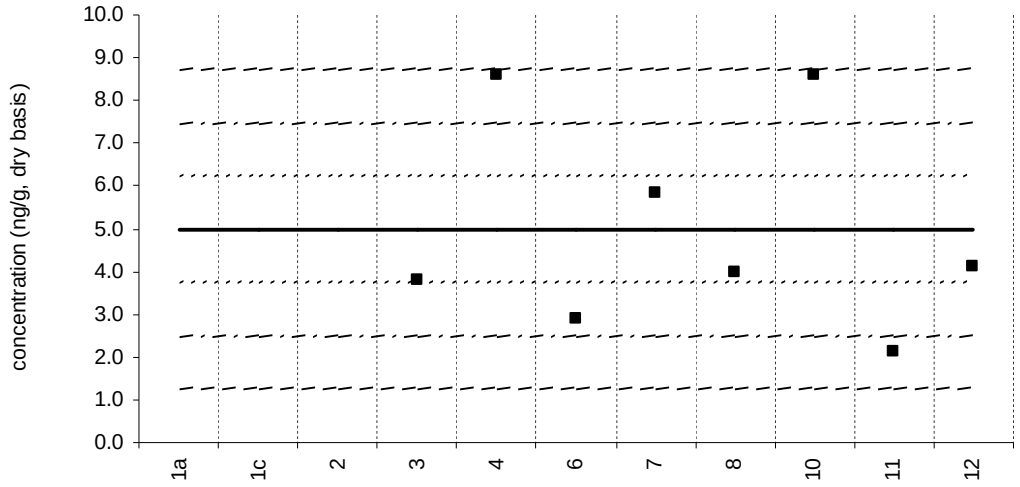


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

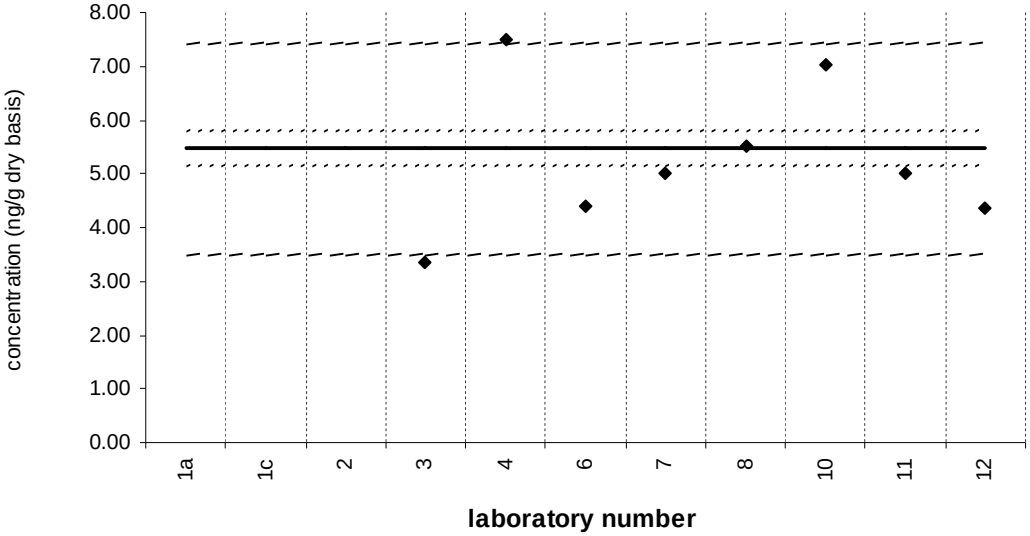


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 153 **SRM 1941b**

Certified Value = 5.47 ± 0.32 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 8

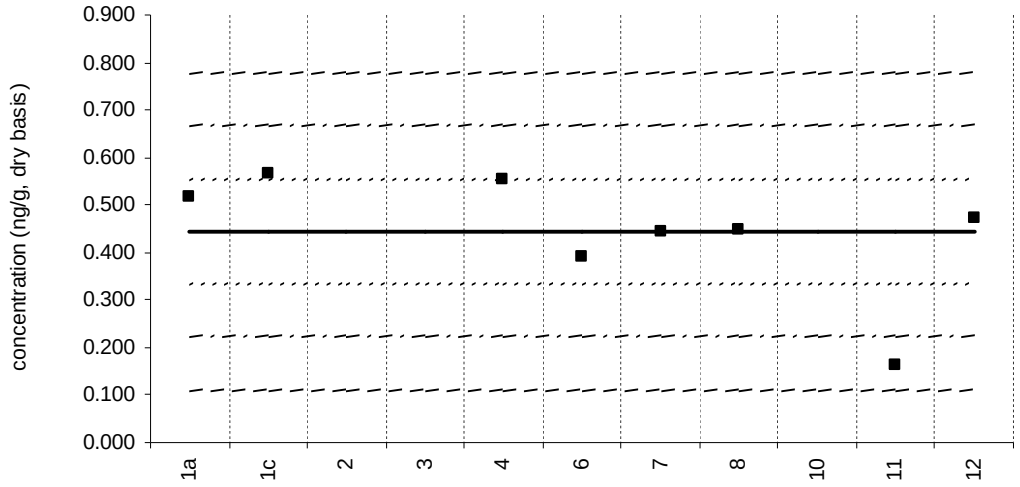


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

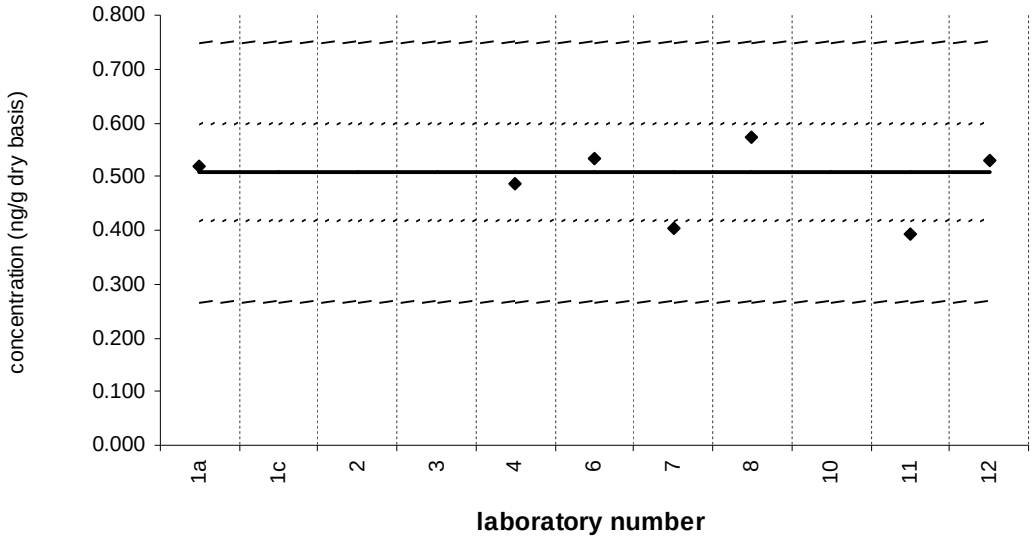


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 156 **SRM 1941b**

Certified Value = 0.507 ± 0.090 ng/g (dry basis)

Reported Results: 7 Quantitative Results: 7

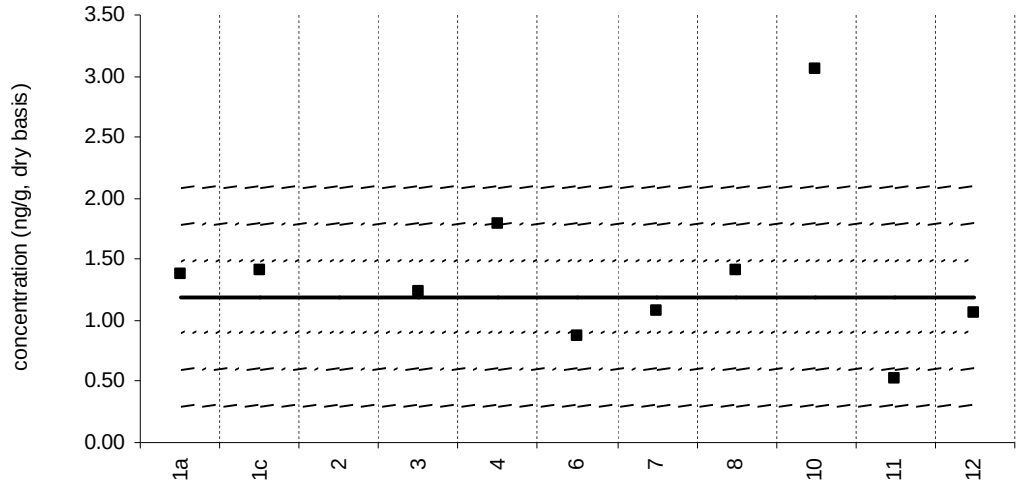


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

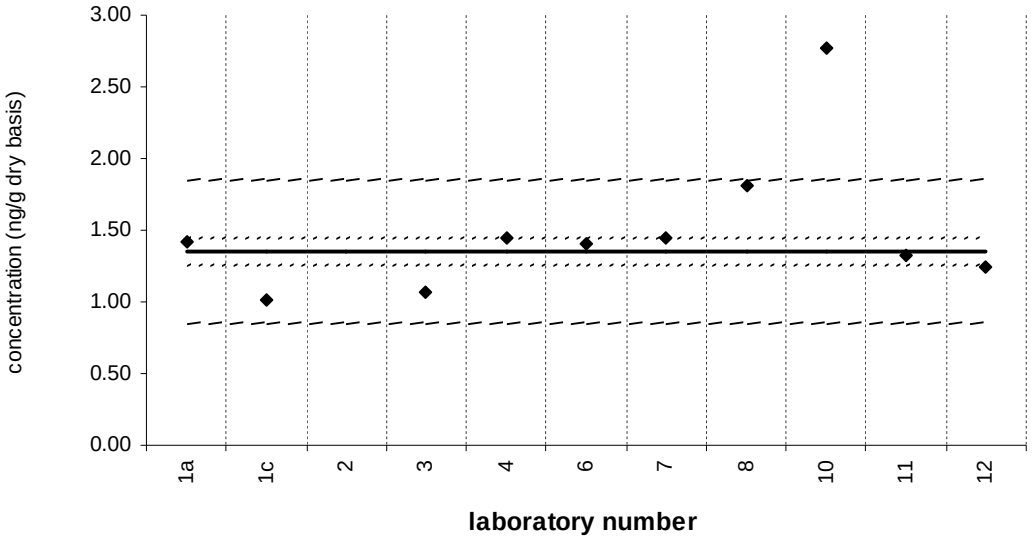


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 170 **SRM 1941b**

Certified Value = 1.35 ± 0.09 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10

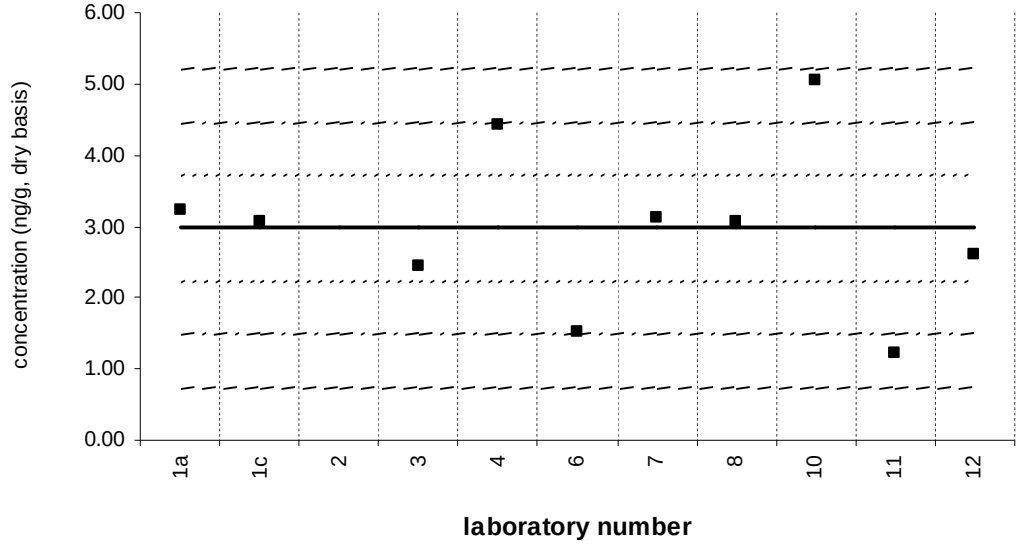


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

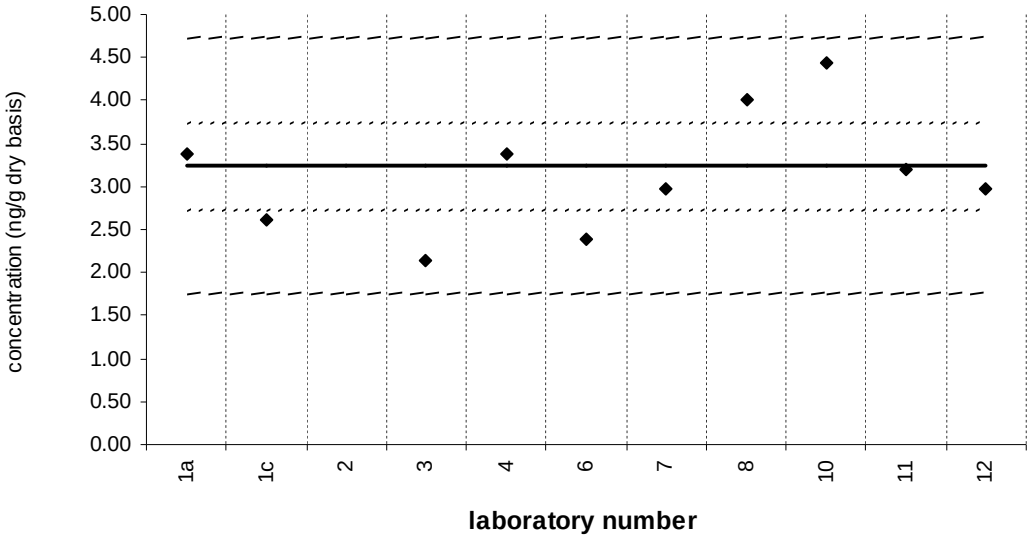


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 180 **SRM 1941b**

Certified Value = 3.24 ± 0.51 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10

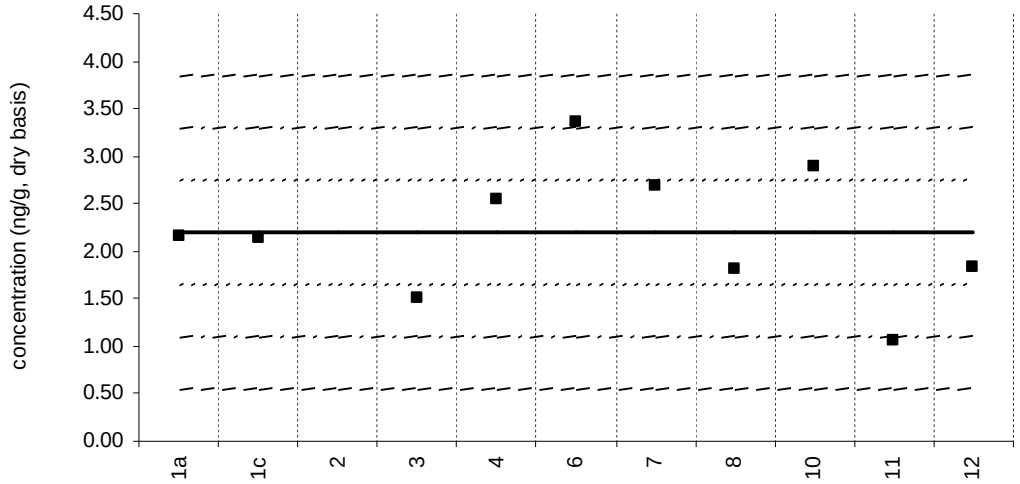


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

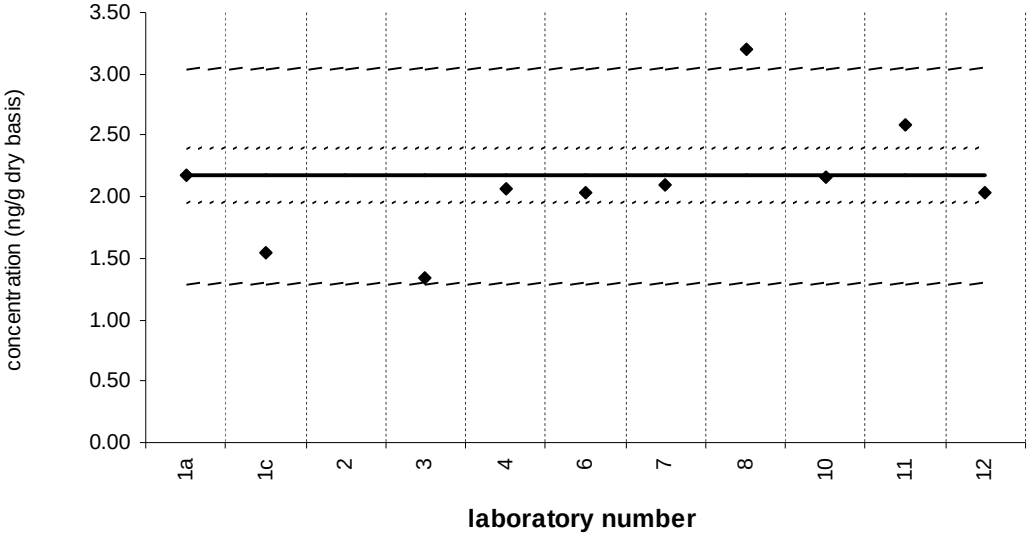


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 187 **SRM 1941b**

Certified Value = 2.17 ± 0.22 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10

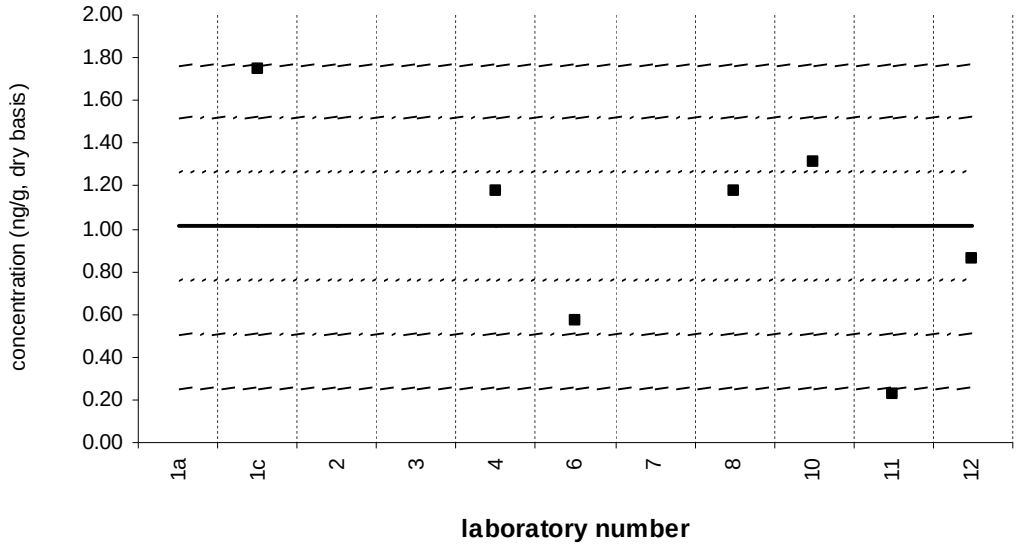


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

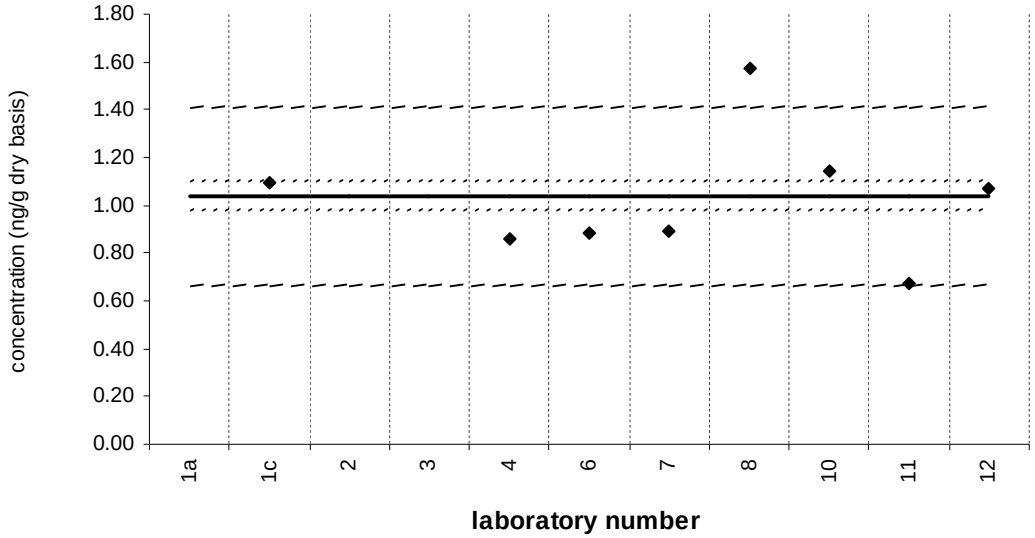


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 194 **SRM 1941b**

Certified Value = 1.04 ± 0.06 ng/g (dry basis)

Reported Results: 9 Quantitative Results: 8

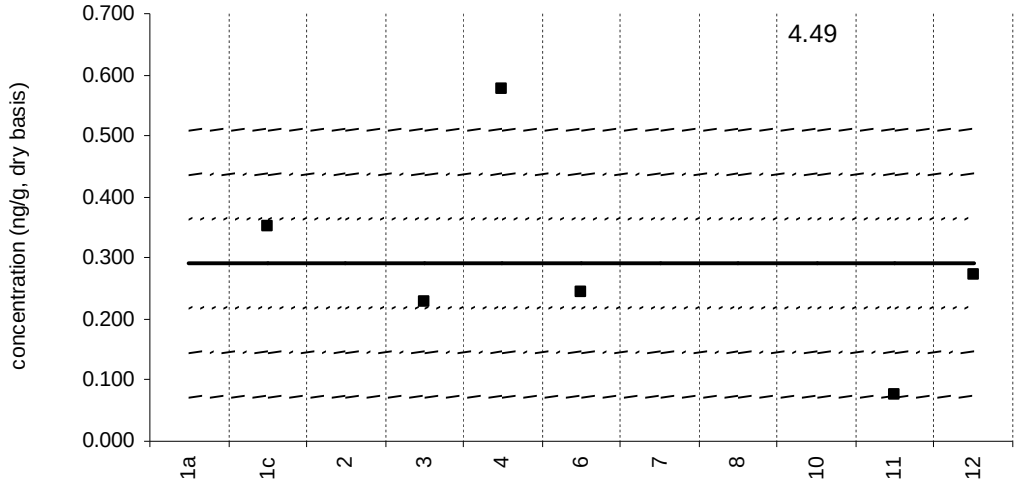


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

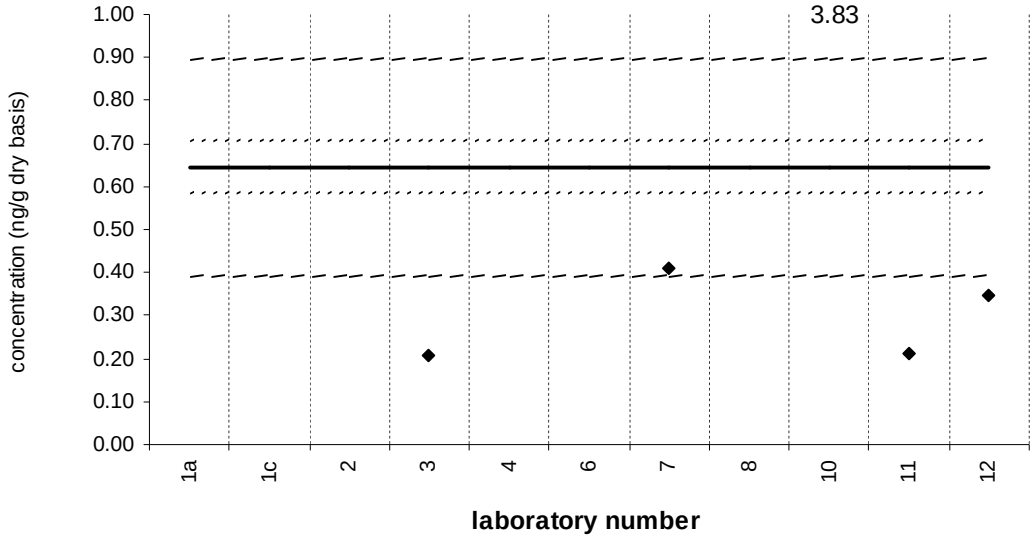


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 195 **SRM 1941b**

Certified Value = 0.645 ± 0.060 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 5

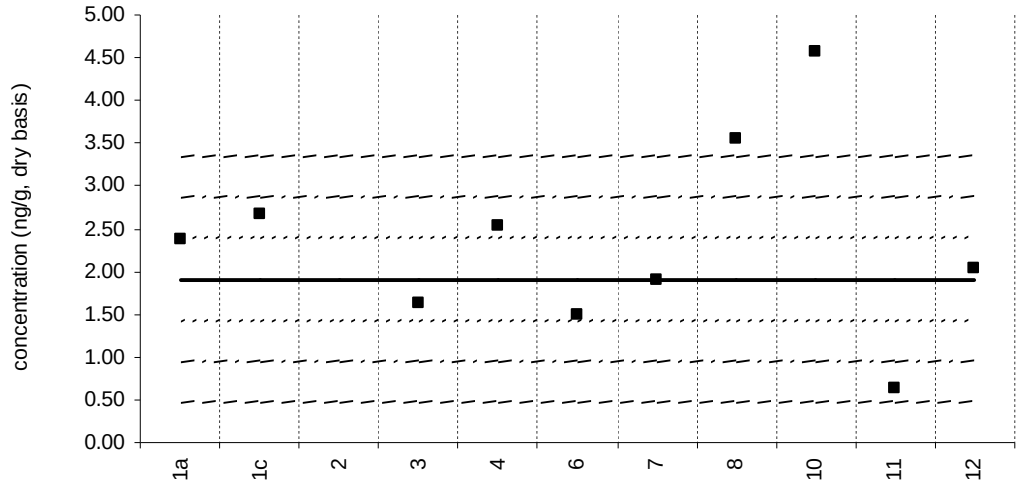


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

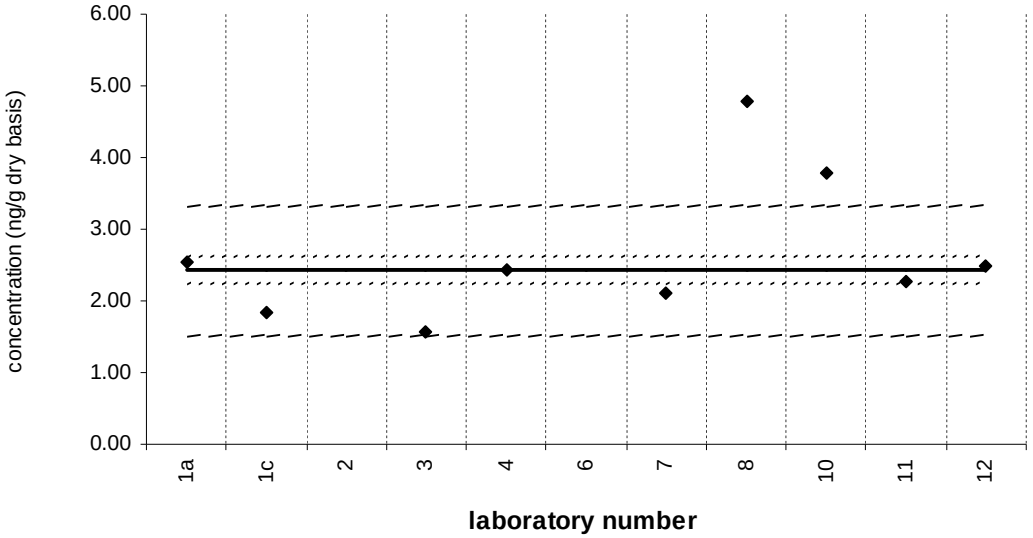


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 206 **SRM 1941b**

Certified Value = 2.42 ± 0.19 ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9

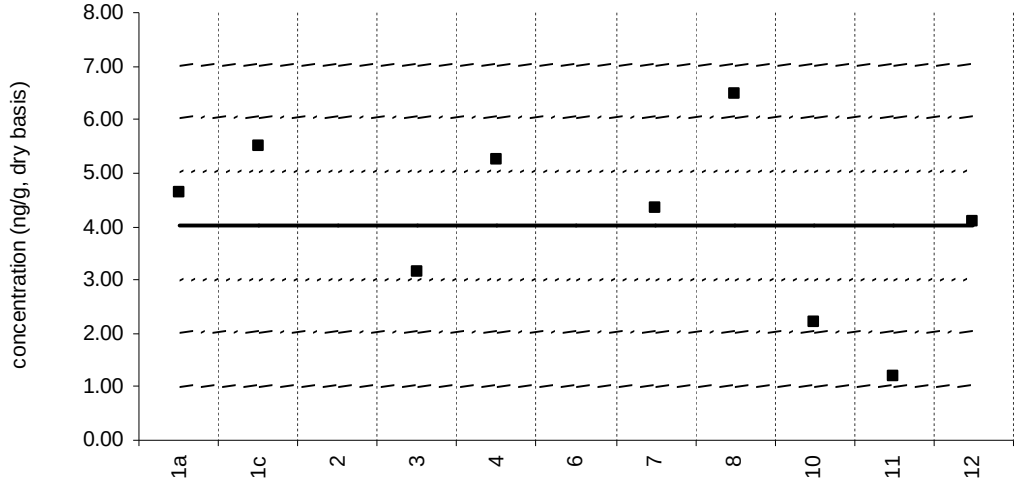


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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

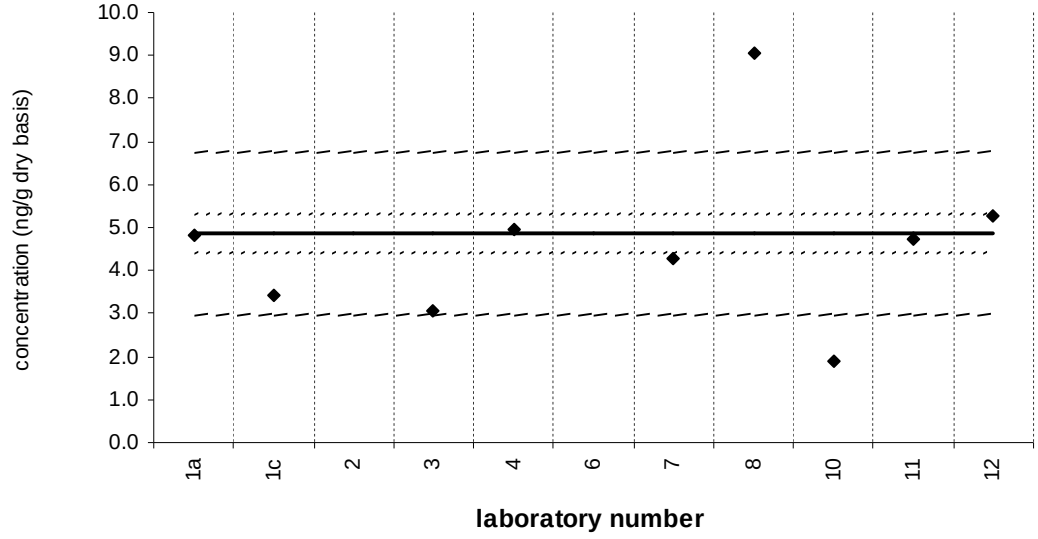


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 209 **SRM 1941b**

Certified Value = 4.86 ± 0.45 ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9



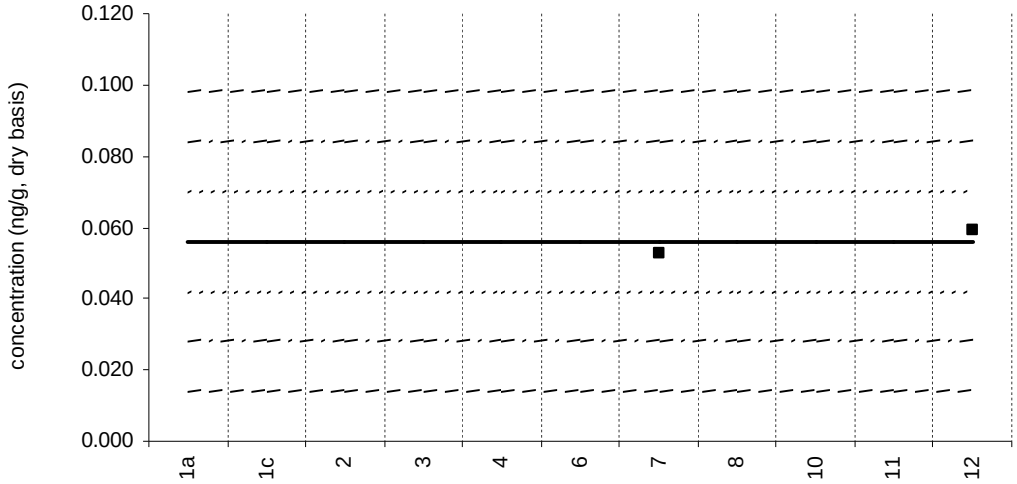
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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



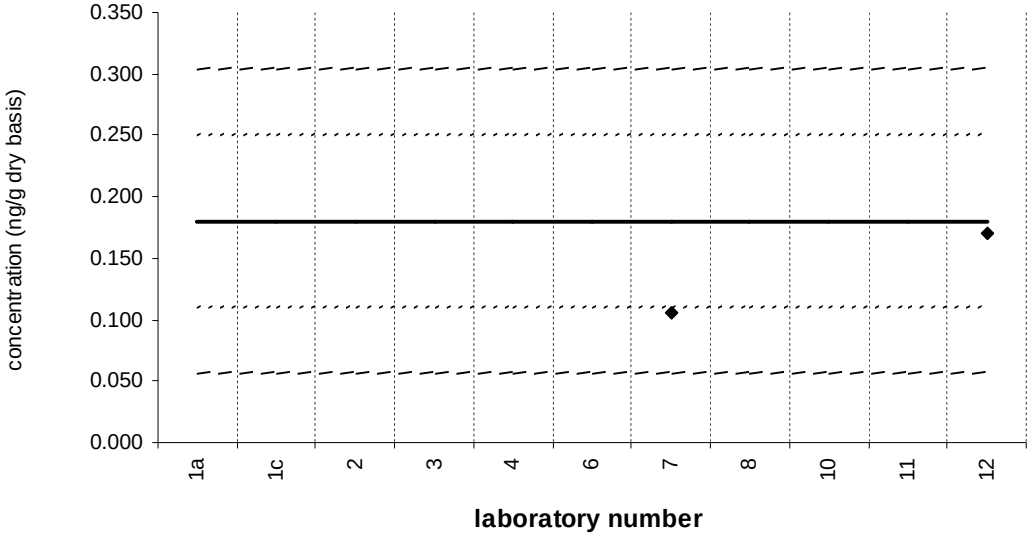
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 28

SRM 1941b

Target Value = 0.18 ± 0.07 ng/g (dry basis)

Reported Results: 5 Quantitative Results: 2



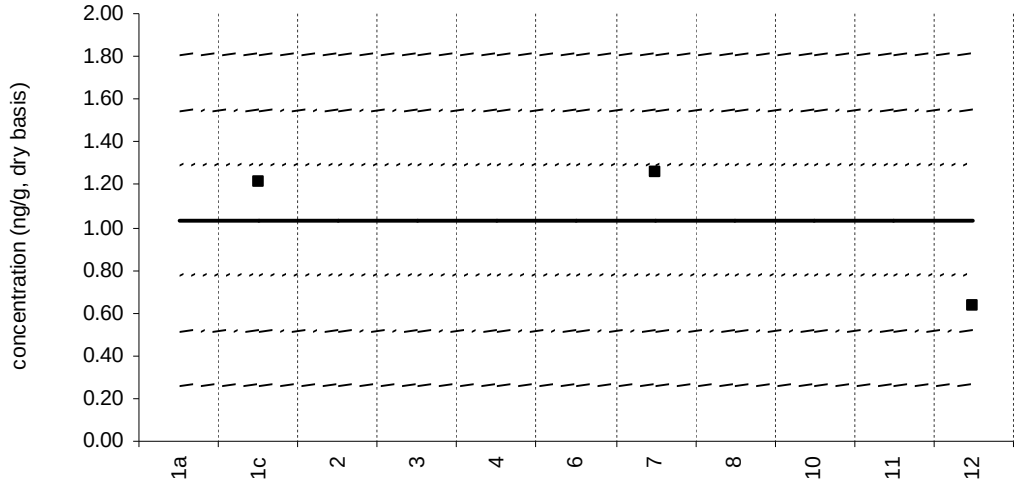
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

BDE 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



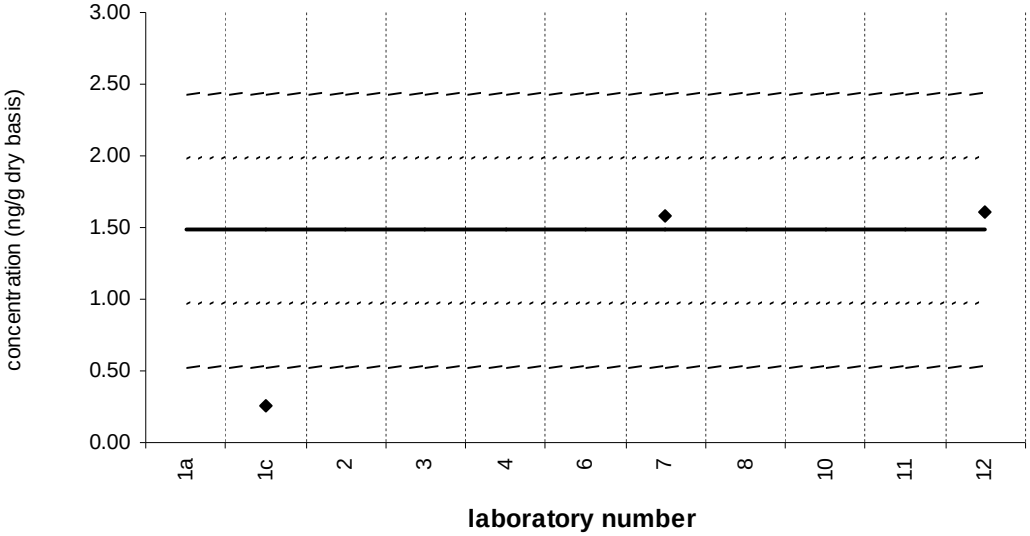
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 47

SRM 1941b

Target Value = 1.48 ± 0.51 ng/g (dry basis)

Reported Results: 5 Quantitative Results: 3



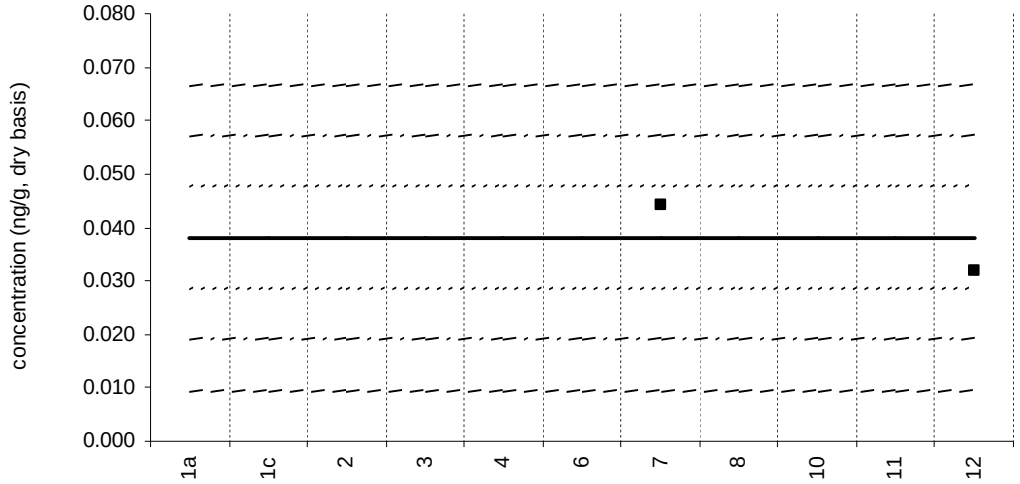
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

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



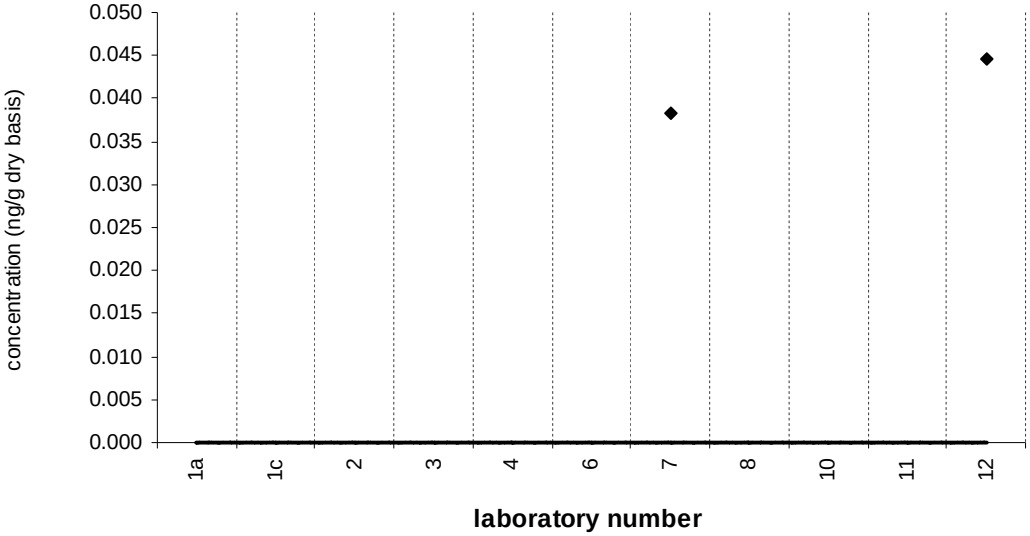
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 66

SRM 1941b

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

Reported Results: 5 Quantitative Results: 2



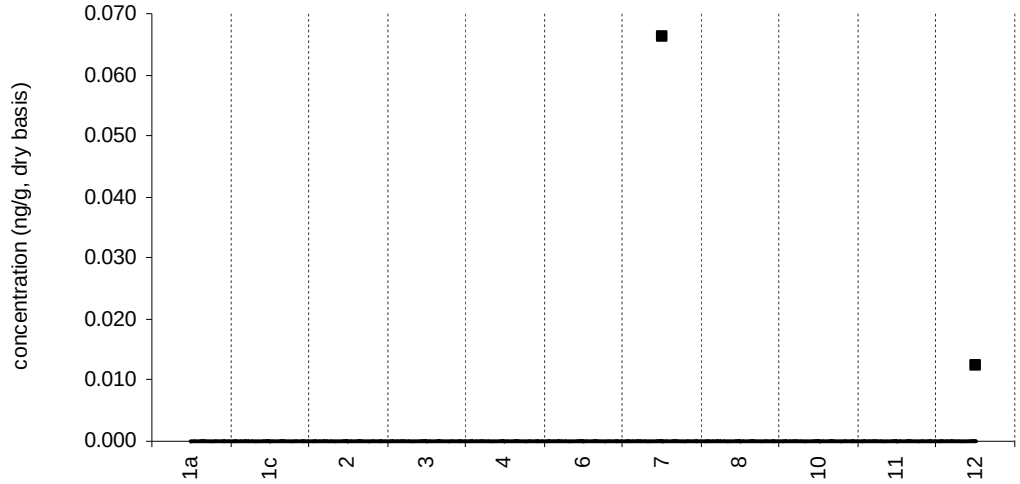
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

BDE 85

Sediment XIII (QA05SED13)

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

Reported Results: 5 Quantitative Results: 2



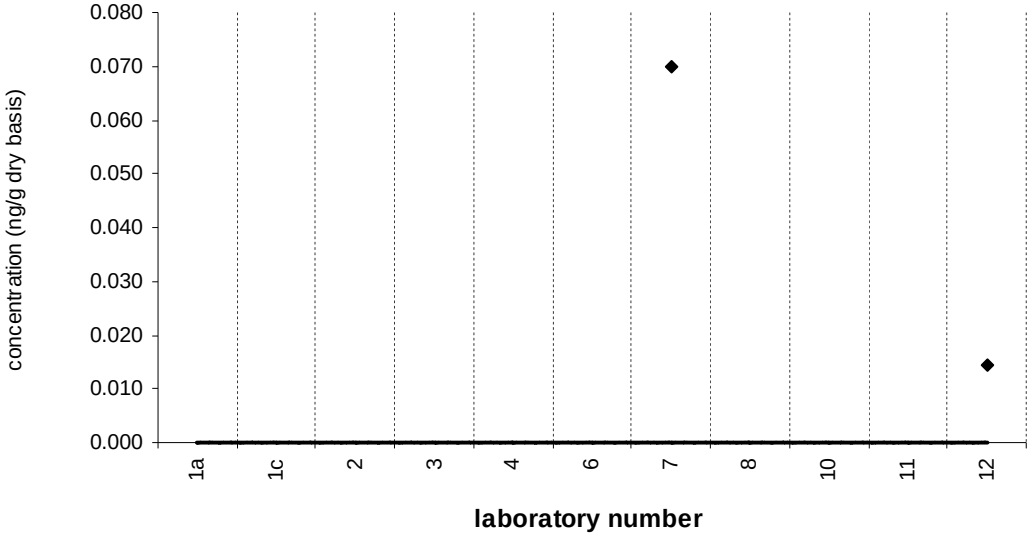
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 85

SRM 1941b

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

Reported Results: 5 Quantitative Results: 2



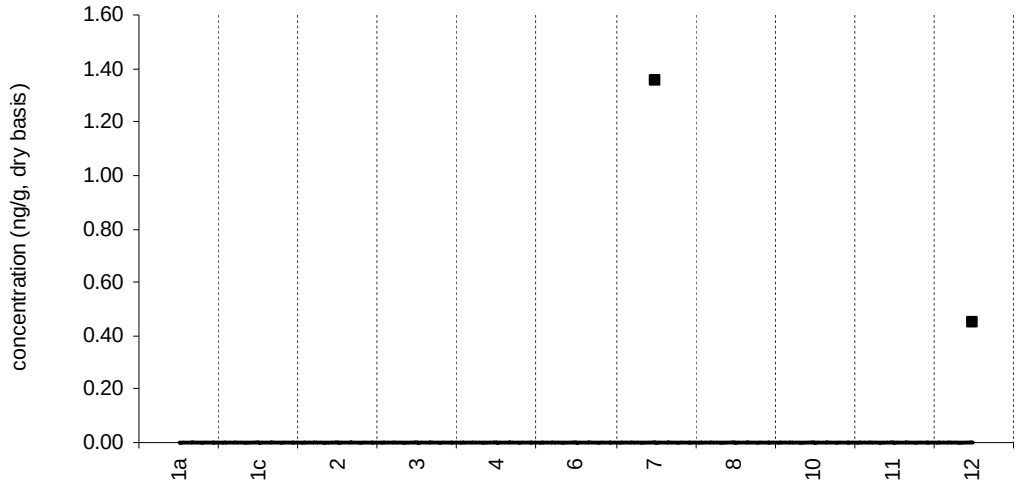
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

BDE 99

Sediment XIII (QA05SED13)

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

Reported Results: 5 Quantitative Results: 2



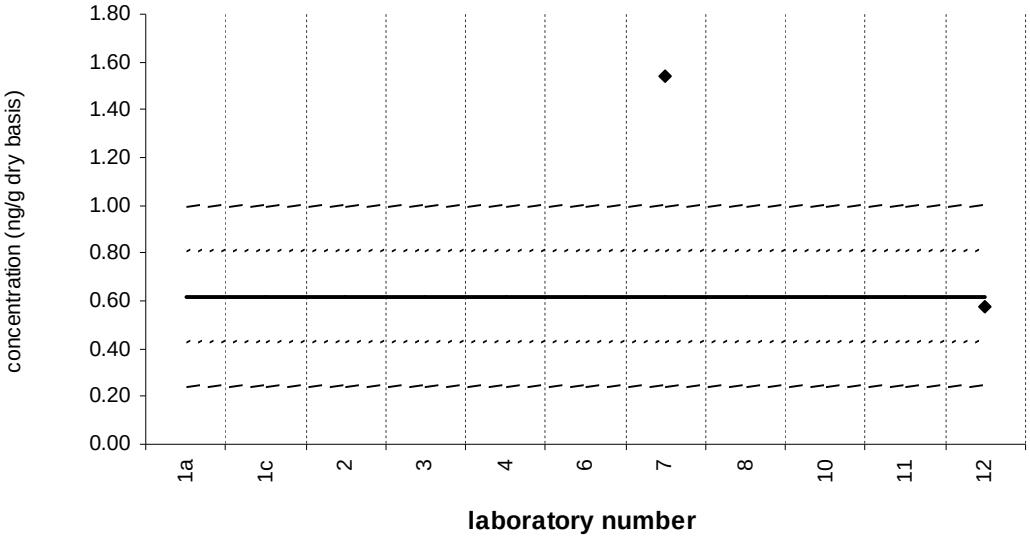
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 99

SRM 1941b

Target Value = 0.62 ± 0.19 ng/g (dry basis)

Reported Results: 5 Quantitative Results: 2



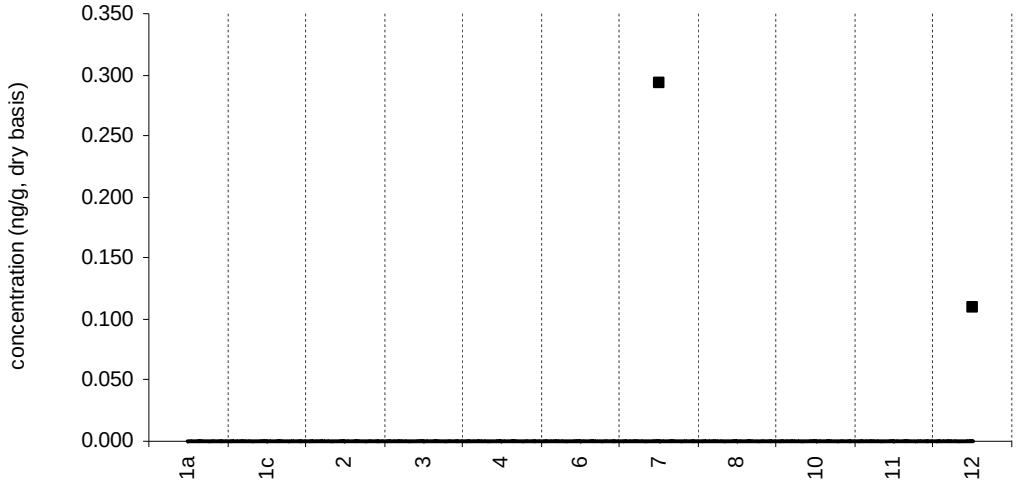
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

BDE 100

Sediment XIII (QA05SED13)

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

Reported Results: 5 Quantitative Results: 2



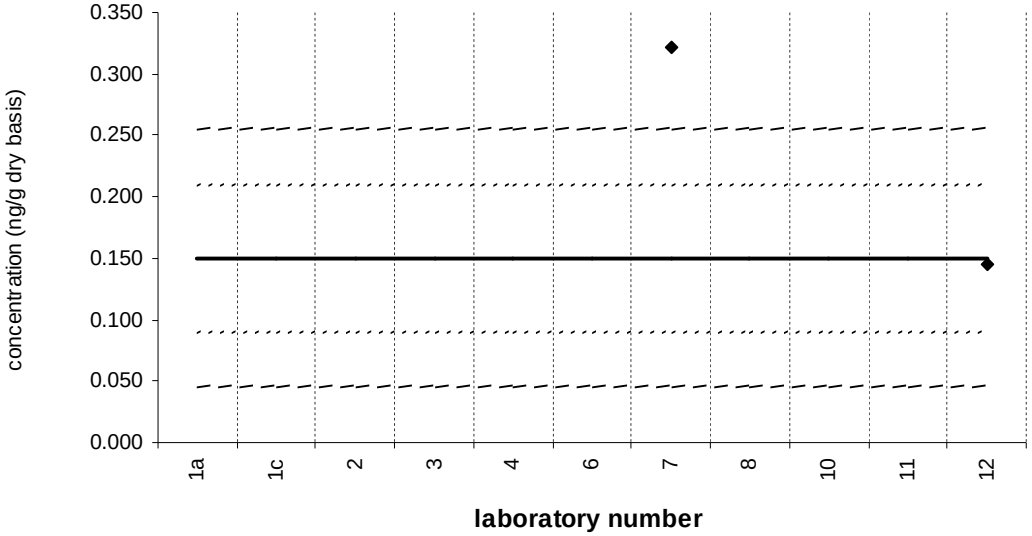
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 100

SRM 1941b

Target Value = 0.15 ± 0.06 ng/g (dry basis)

Reported Results: 5 Quantitative Results: 2



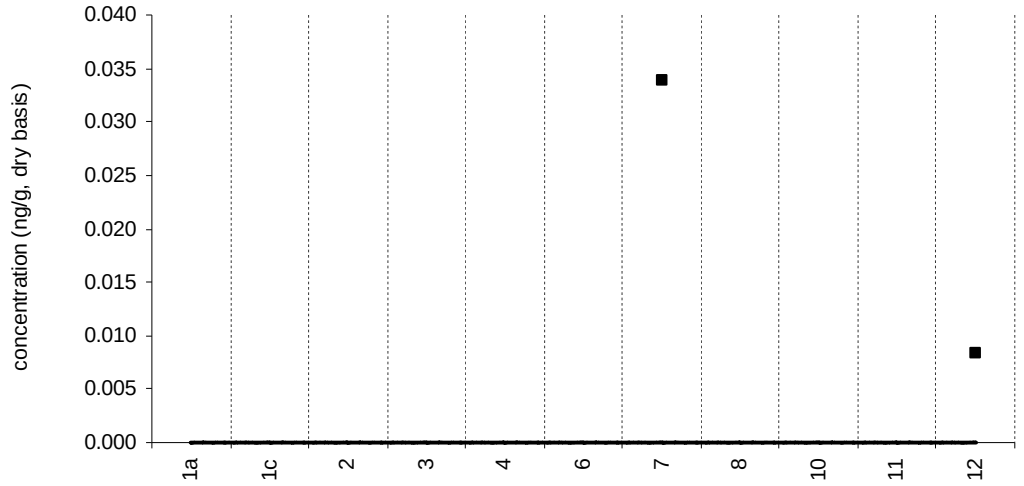
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

BDE 138

Sediment XIII (QA05SED13)

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

Reported Results: 4 Quantitative Results: 2



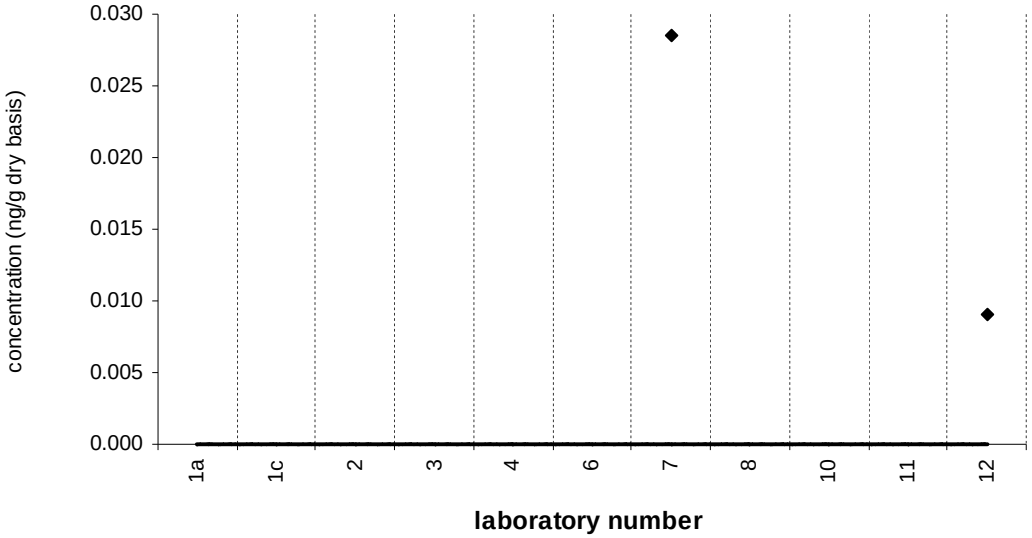
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 138

SRM 1941b

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

Reported Results: 4 Quantitative Results: 2

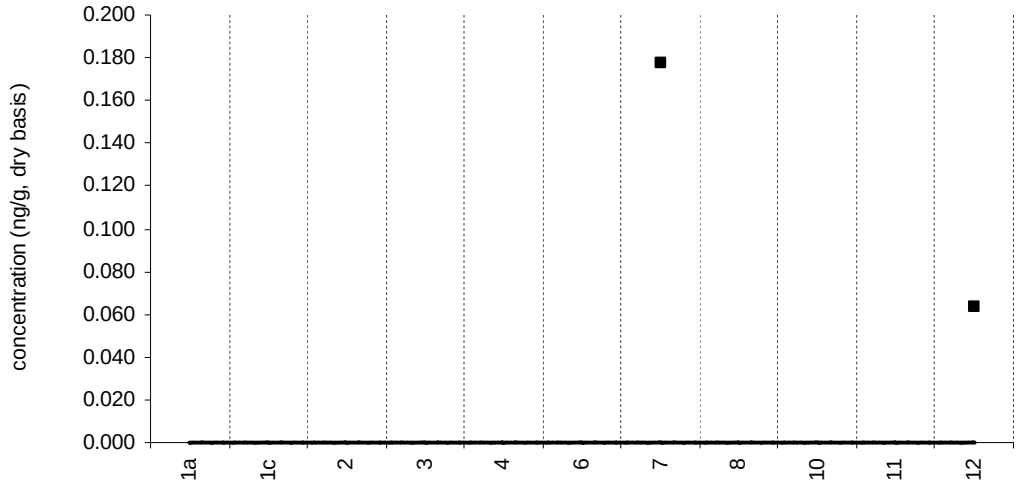


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

BDE 153 **Sediment XIII (QA05SED13)**

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

Reported Results: 5 Quantitative Results: 2

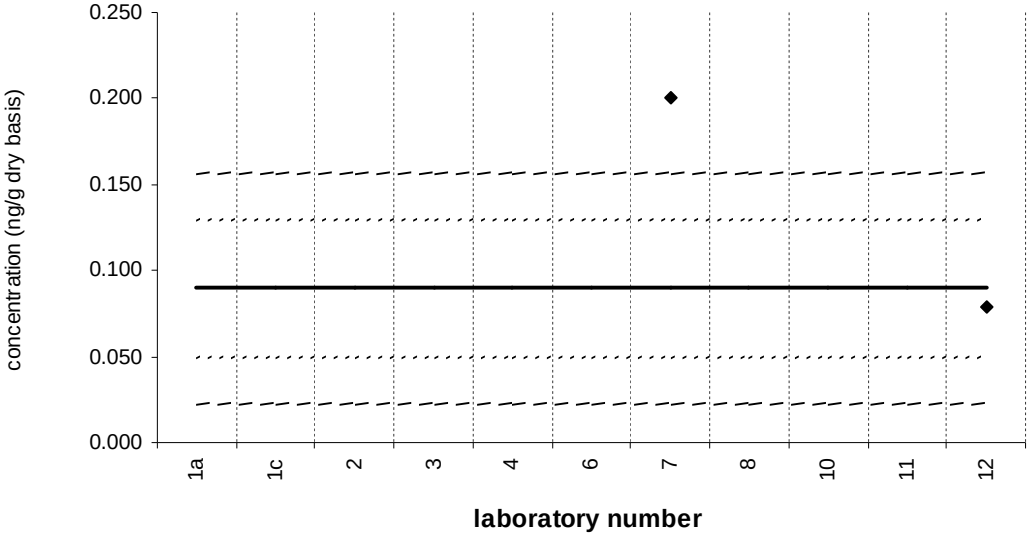


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 153 **SRM 1941b**

Target Value = 0.09 ± 0.04 ng/g (dry basis)

Reported Results: 5 Quantitative Results: 2



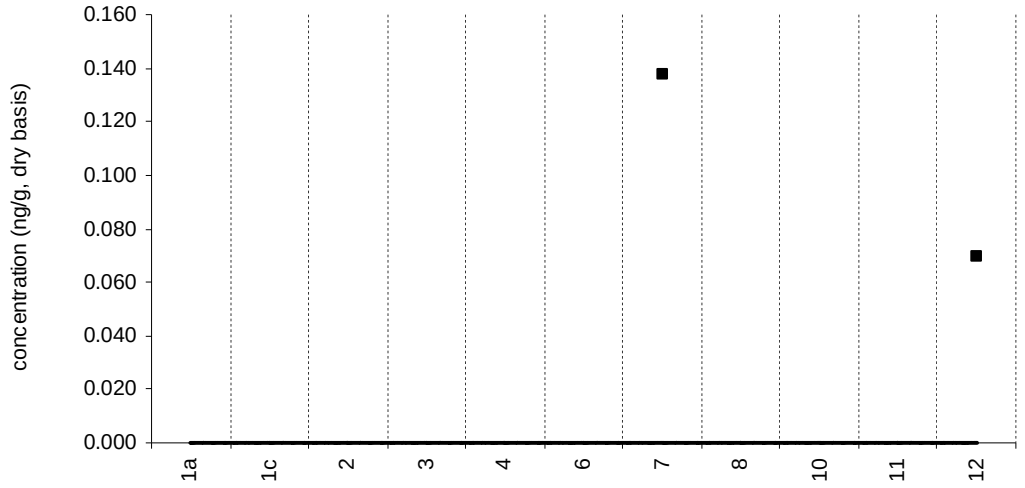
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

BDE 154

Sediment XIII (QA05SED13)

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

Reported Results: 5 Quantitative Results: 2



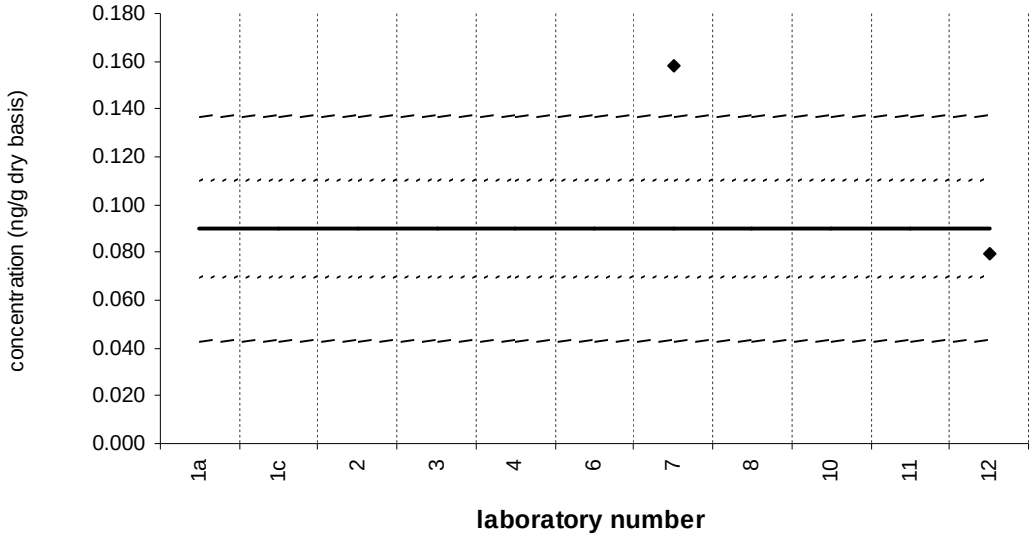
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

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.

	QA05TIS12		QA05TIS12		QA05TIS12			SRM 2977					
Laboratory No.	Lab 14		Lab 15		Exercise Assigned			Lab 14	Lab 15				
	mean	RSD	mean	RSD	Value	s	95% CL		mean	RSD			
TEO (percent)	5.7		6.5	3.46%	3.81	4.73	3.96	SRM 1974b	6.51	3.46%			
	Lab 14		Lab 15		Exercise Assigned			Lab 14	Lab 15				
PAHs (ng/g dry mass)	mean	RSD	mean	RSD	Value	s	95% CL		mean	RSD	From 2977 Certificate of Analysis		
naphthalene	23.0	15.65%	18.1	8.93%	9.86	6.07	5.61	SRM 1974b	11.8	70.85%	19	5	Reference
2-methylnaphthalene	13.9	7.10%	9.51	0.15%	8.00	5.16	5.42	SRM 1974b	9.37	52.15%	18	5	Reference
1-methylnaphthalene	6.42	11.95%	5.70	3.45%	3.66	2.44	3.02	SRM 1974b	7.43	42.91%	16	5	Reference
biphenyl	6.71	14.00%	8.68	2.94%	1.91	0.77	0.95	SRM 1974b	5.78	69.96%	6.8	0.6	Reference
2,6-dimethylnaphthalene	3.59	11.36%	4.07	3.96%	4.67	2.85	4.54	SRM 1974b	13.2	13.21%	no target		Target
acenaphthylene	5.09	5.51%	0.605	8.61%	3.72	2.40	2.01	SRM 1974b	2.20	16.22%	no target		Target
acenaphthene			1.11	6.18%	2.93	2.21	2.74	SRM 1974b	2.63	9.16%	4.2	0.4	Reference
1,6,7-trimethylnaphthalene	7.21	15.51%	3.30	2.19%	4.78	1.65	2.62	SRM 1974b	16.9	0.90%	no target		Target
fluorene	4.84	11.39%	2.95	2.94%	3.64	1.64	1.52	SRM 1974b	6.87	3.04%	10.24	0.43	Certified
phenanthrene	25.8	8.10%	74.8	7.90%	88.7	17.9	13.8	SRM 1974b	31.3	0.99%	35.1	3.8	Certified
anthracene	5.76	10.15%	0.981	13.03%	5.79	3.24	2.70	SRM 1974b	2.29	11.06%	8	4	Reference
1-methylphenanthrene	10.4	25.88%	55.8	14.79%	89.7	27.7	19.8	SRM 1974b	44.6	10.42%	44	2	Reference
fluoranthene	167	17.79%	126	2.10%	133	30	23	SRM 1974b	28.8	4.71%	38.7	1	Certified
pyrene	198	4.51%	126	2.43%	190	40	31	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	5.4	SRM 1974b	14.0	8.17%	20.34	0.78	Certified
chrysene	90.0	11.54%	104	4.73%	63.9	22.4	27.8	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	11.7	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	3.0	SRM 1974b	5.39	12.47%	4	1	Reference
benzo[e]pyrene	95.3	1.82%	124	2.32%	74.7	14.6	10.5	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	2.04	SRM 1974b	5.08	5.94%	8.35	0.72	Certified
perylene	10.3	3.95%	3.08	10.77%	3.51	1.44	2.30	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	4.9	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	4.9	SRM 1974b	8.17	11.64%	9.53	0.43	Certified

	QA05TIS12		QA05TIS12		QA05TIS12			SRM 2977					
Pesticides	Lab 14		Lab 15		Exercise Assigned			Lab 14	Lab 15				
(ng/g dry mass)	mean	RSD	mean	RSD	Value	s	95% CL		mean	RSD	From 2977 Certificate of Analysis		
alpha-HCH (a-BHC)	NA		<0.69		no target			SRM 1974b	<0.69		no target		
hexachlorobenzene	NA		0.093	50.10%	no target			SRM 1974b	0.266	28.08%	no 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
oxychlordane	NA		<0.83		no target			SRM 1974b	<0.83		no target		Target
gamma-chlordane	NA		6.13	12.15%	7.45	1.00	0.77	SRM 1974b	0.870	3.93%	no target		Target
2,4'-DDE	7.89	13.43%	1.84	2.44%	no target			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	5.58%	12.1	3.4	2.8	SRM 1974b	0.588	9.93%	1.42	0.13	Target
trans-nonachlor	NA		8.95	4.10%	9.00	1.24	1.04	SRM 1974b	1.04	10.11%	1.43	0.1	Target
dieldrin	NA		2.55	23.53%	6.70	4.42	4.64	SRM 1974b	5.33	3.71%	6.04	0.52	Certified
4,4'-DDE	38.9	2.80%	33.3	1.22%	33.9	7.6	7.0	SRM 1974b	8.87	3.97%	12.5	1.6	Certified
2,4'-DDD	7.33	12.68%	10.7	7.35%	8.04	2.86	2.20	SRM 1974b	2.96	3.91%	3.32	0.29	Certified
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	5.87%	21.7	10.8	10.0	SRM 1974b	3.04	14.56%	4.3	0.38	Target
2,4'-DDT	<2.98		4.31	0.58%	no target			SRM 1974b	1.44	38.58%	no target		Target
cis-nonachlor	NA		6.03	2.07%	4.27	0.76	0.58	SRM 1974b	1.91	5.46%	no target		Certified
4,4'-DDT	1.35	24.79%	2.55	36.81%	1.68	0.63	1.00	SRM 1974b	0.897	8.17%	1.28	0.18	Target
mirex	NA		0.345	2.68%	no target			SRM 1974b	0.363	43.50%	no target		Target
endosulfan sulfate	NA		<0.81		no target			SRM 1974b	<0.81		no target		Certified
chlorpyrifos	NA		<0.74		no target			SRM 1974b	<0.74		no target		Target

	QA05TIS12		QA05TIS12		QA05TIS12			SRM 2977					
PCBs	Lab 14		Lab 15		Exercise Assigned			Lab 14	Lab 15				
(ng/g dry mass)	mean	RSD	mean	RSD	Value	s	95% CL		mean	RSD	From 2977 Certificate of Analysis		
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	Certified
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	Certified
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	Certified
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	Certified
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	Certified
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	Certified
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	Certified
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	Certified
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	Certified
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	Certified
PCB 118	112	3.77%	106	1.03%	79.9	15.9	11.4	SRM 1974b	11.1	3.32%	10.5	1	Certified
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	Certified
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	Certified
PCB 153	110	3.14%	152	2.03%	85.7	29.6	21.2	SRM 1974b	17.7	10.24%	14.1	1	Certified
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	Certified
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	Certified
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	Certified
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	Certified
PCB 194	<0.732		0.967	5.44%	0.501	0.084	0.105	SRM 1974b	0.657	3.16%	0.897	0.042	Certified
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

	QA05TIS12		QA05TIS12		QA05TIS12			SRM 2977				
BDEs	Lab 14		Lab 15		Exercise Assigned			Lab 14	Lab 15			
(ng/g dry mass)	mean	RSD	mean	RSD	Value	s	95% CL		mean	RSD	From 2977 Certificate of Analysis	
BDE 15	NA		0.433	48.04%	no target			SRM 1974b	0.5		no target	
BDE 17	6.23	22.63%	0.767	19.92%	3.72	0.66	1.64	SRM 1974b	0.2		no target	type
BDE 25	NA		3.93	5.87%	no target			SRM 1974b	1.5		no target	Target
BDE 28	2.05	14.35%	0.500	20.00%	3.08	1.58	1.97	SRM 1974b	0.2		no target	Target
BDE 30	NA		<8.1		no target			SRM 1974b	<8.1		no target	Target
BDE 33	NA		0.533	75.78%	no target			SRM 1974b	0.2		no target	Target
BDE 47	30.4	2.64%	9.63	10.08%	23.3	5.4	6.7	SRM 1974b	1.7		no target	Target
BDE 49	NA		0.500	34.64%	6.75	2.00	4.97	SRM 1974b	0.4		1.02	0.03 Target
BDE 66	<1.13		36.2	11.35%	0.984	0.403	0.642	SRM 1974b	48.6		0.375	0.062 Target
BDE 71	<1.18		NA		no target			SRM 1974b	NA		no target	Target
BDE 75	NA		0.633	32.87%	no target			SRM 1974b	<8.5		0.166	0.013 Target
BDE 85	<6.15		1.03	11.17%	0.418	0.074	0.185	SRM 1974b	0.6		no target	Target
BDE 99	9.66	5.49%	0.767	27.15%	11.5	3.4	5.3	SRM 1974b	0.5		4.11	0.4 Target
BDE 100	7.12	8.69%	0.400	25.00%	6.85	1.93	2.40	SRM 1974b	0.4		1.06	0.18 Target
BDE 116	NA		16.3	17.30%	no target			SRM 1974b	6.4		no target	Target
BDE 118	NA		1.13	51.70%	no target			SRM 1974b	0.4		no target	Target
BDE 119	NA		9.17	40.82%	no target			SRM 1974b	1.5		no target	Target
BDE 138	<3.13		4.40	47.73%	no target			SRM 1974b	0.7		no target	Target
BDE 153	<1.00		2.67	31.89%	0.515	0.097	0.155	SRM 1974b	0.6		no target	Target
BDE 154	<5.75		3.57	41.62%	0.550	0.103	0.164	SRM 1974b	0.7		no target	Target
BDE 155	NA		1.17	40.51%	no target			SRM 1974b	0.8		no target	Target
BDE 156	NA		NA	#DIV/0!	no target			SRM 1974b	NA		no target	Target
BDE 181	NA		1.47	43.83%	no target			SRM 1974b	0.6		no target	Target
BDE 183	<1.48		2.90	32.89%	no target			SRM 1974b	0.7		no target	Target
BDE 190	6.17	0.00%	1.53	42.43%	no target			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 101was meaured 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)fluoranthes 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. Therfore 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 Lab 13		QA05SED13 Lab 14		QA05SED13 Lab 15		QA05SED13 Exercise Assigned		
	mean	RSD	mean	RSD	mean	RSD	Value	s	95% CL
Water (percent)	35.0	21.57%	45.7		46.6	0.99%	47.4	3.2	2.3
TOC (percent)	NA				2.88	0.36%	2.70	0.58	0.92
PAHs ng/g dry mass	QA05SED13 Lab 13 mean	RSD	QA05SED13 Lab 14 mean	RSD	QA05SED13 Lab 15 mean	RSD	QA05SED13 Exercise Assigned Value	s	95% CL
naphthalene	609	22.15%	881	6.61%	709	18.02%	785	186	172
2-methylnaphthalene	203	24.73%	322	3.12%	210	19.24%	219	66	61
1-methylnaphthalene	82.6	19.68%	131	5.04%	104	17.61%	98.2	24.0	20.0
biphenyl	34.3	16.98%	82.7	2.22%	60.9	15.08%	65.8	23.6	21.8
2,6-dimethylnaphthalene	58.3	20.06%	87.4	11.83%	50.6	19.48%	81.3	43.6	40.3
acenaphthylene	42.1	19.26%	59.3	4.89%	52.9	17.09%	45.1	13.8	11.5
acenaphthene	20.5	17.33%	42.3	11.46%	25.8	12.36%	28.9	8.4	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
phenanthrene	262	22.42%	440	5.38%	350	13.34%	306	89	75
anthracene	125	17.46%	209	3.92%	141	17.75%	137	47	40
1-methylphenanthrene	55.5	26.51%	84.4	2.53%	53.8	10.19%	55.4	18.2	19.1
fluoranthene	521	12.10%	721	3.64%	560	8.24%	496	140	117
pyrene	445	18.36%	598	2.80%	451	9.97%	421	142	118
benz[a]anthracene	198	14.48%	432	1.75%	295	9.58%	241	80	67
chrysene	267	19.16%	377	5.12%	410	9.68%	219	62	65
triphenylene	NA				NA		no target		
benzo[b]fluoranthene	279	14.07%	403	8.48%	567	8.38%	413	174	183
benzo[j]fluoranthene	NA		432	6.02%	NA		no target		
benzo[k]fluoranthene	265	12.82%			213	7.48%	180	56	47
benzo[e]pyrene	205	13.71%	281	4.49%	301	6.20%	286	97	75
benzo[a]pyrene	188	14.32%	350	9.62%	287	8.66%	282	120	111
perylene	277	13.01%	416	3.30%	399	13.09%	311	131	138
indeno[1,2,3-cd]pyrene	153	9.90%	353	6.36%	342	15.22%	258	101	85
dibenz[a,h]anthracene	40.7	26.35%			78.5	18.14%	41.9	21.2	33.8
benzo[ghi]perylene	167	10.15%	276	3.02%	277	12.41%	244	96	81

	SRM 1941b Lab 13		SRM 1941b Lab 14		SRM 1941b Lab 15				
	mean	RSD	mean	RSD	mean	RSD			
Water (percent)	NA		0.0239						
TOC (percent)	NA								
PAHs ng/g dry mass	SRM 1941b Lab 13 mean	RSD	SRM 1941b Lab 14 mean	RSD	SRM 1941b Lab 15 mean	RSD	From 1941b Certif. conc.	95%CL	type
naphthalene	859	5.27%	1006	9.23%	811		848	95	Certified
2-methylnaphthalene	265	1.57%	282	9.63%	264		276	53	Reference
1-methylnaphthalene	113	2.56%	134	12.41%	135		127	14	Reference
biphenyl	56.5	14.42%	83.5	2.76%	57.4		74	8	Reference
2,6-dimethylnaphthalene	94.4	6.70%	96.6	18.81%	101		75.9	4.5	Reference
acenaphthylene	57.5	9.37%	59.0	11.86%	69.7		53.3	6.4	Reference
acenaphthene	28.6	15.06%	43.2	3.94%	28.5		38.4	5.2	Reference
1,6,7-trimethylnaphthalene	NA		62.2	3.22%	17.8		25.5	5.1	Reference
fluorene	80.3	11.94%	76.5	11.50%	61.4		85	15	Certified
phenanthrene	430	4.42%	458	7.45%	376		406	44	Certified
anthracene	184	12.89%	209	3.65%	185		184	18	Certified
1-methylphenanthrene	70.8	8.40%	83.9	4.43%	69.8		73.2	5.9	Certified
fluoranthene	841	0.89%	711	8.35%	567		651	50	Certified
pyrene	693	4.41%	585	9.61%	491		581	39	Certified
benz[a]anthracene	287	8.26%	454	1.60%	334		335	25	Certified
chrysene	415	4.94%	368	9.12%	393		291	31	Certified
triphenylene	NA				NA		108	5	Certified
benzo[b]fluoranthene	488	2.38%	387	5.92%	444		453	21	Certified
benzo[j]fluoranthene	NA		409	9.89%	NA		217	5	Reference
benzo[k]fluoranthene	378	3.21%			204		225	18	Certified
benzo[e]pyrene	330	3.74%	311	12.68%	336		325	25	Certified
benzo[a]pyrene	278	5.89%	454	5.27%	339		358	17	Certified
perylene	364	2.33%	410	1.76%	345		397	45	Certified
indeno[1,2,3-cd]pyrene	241	13.62%	360	4.98%	436		341	57	Certified
dibenz[a,h]anthracene	47.9	10.74%			76.9		53	10	Certified
benzo[ghi]perylene	278	10.38%	274	7.69%	312		307	45	Certified

Note: Only one sample of SRM 1941b was analyzed by Lab 15

	QA05SED13		QA05SED13		QA05SED13		QA05SED13		
Pesticides	Lab 13		Lab 14		Lab 15		Exercise Assigned		
ng/g dry mass	mean	RSD	mean	RSD	mean	RSD	Value	s	95% CL
alpha-HCH (a-BHC)	0.032	26.90%	NA		<0.93		no target		
hexachlorobenzene	4.42	14.33%	NA		5.83	10.24%	5.38	1.90	2.00
gamma-HCH (g-BHC,lindane)	0.035	20.44%	NA		1.08	5.28%	no target		
beta-HCH (b-BHC)	0.025	28.28%	NA		<0.76		no target		
heptachlor	0.014	57.08%	NA		<0.68		no target		
aldrin	0.033	18.48%	NA		<0.54		no target		
heptachlor epoxide	0.025	38.91%	NA		<0.68		no target		
oxychlordane	0.003	4.68%	NA		<0.91		no target		
gamma-chlordane	0.321	19.14%	NA		<0.5		0.572	0.148	0.155
2,4'-DDE	0.184	15.72%	<0.264		0.064	19.03%	0.380	0.103	0.256
endosulfan I	NA		NA		<1.06		no target		
cis-chlordane (alpha-chlordane)	0.329	24.21%	NA		0.252	19.53%	0.482	0.058	0.072
trans-nonachlor	0.137	20.82%	NA		0.175	6.47%	0.286	0.089	0.093
dieldrin	0.266	19.62%	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		1.31	16.57%	0.927	0.624	0.992
endrin	0.037		NA		<2		no target		
endosulfan II	NA		NA		<1.43		no target		
4,4'-DDD	2.29	17.94%	3.10	4.17%	5.49	11.95%	4.18	1.42	1.77
2,4'-DDT	0.052	17.25%	<1.19				no target		
cis-nonachlor	0.082	21.26%	NA		0.177	5.79%	0.454	0.493	1.224
4,4'-DDT	0.273	2.65%	<2.65		0.825	7.43%	0.537	0.174	0.433
mirex	0.010	35.07%	NA		0.063	6.48%	no target		
endosulfan sulfate	NA		NA		<0.69		no target		
chlorpyrifos	NA		NA		0.461	26.44%	no target		

SRM 1941b		SRM 1941b		SRM 1941b				
Lab 13		Lab 14		Lab 15		From 1941b Certif.		
mean	RSD	mean	RSD	mean	RSD	conc.	95%CL	type
0.036		NA		<0.33		no target		Target
9.80	1.89%	NA		7.96		5.83	0.38	Certified
0.042		NA		<0.18		no target		Target
0.033		NA		<0.27		no target		Target
0.018		NA		<0.24		no target		Target
0.042		NA		<0.19		no target		Target
0.041		NA		1.66		no target		Target
0.009		NA		0.458		no target		Target
0.561	2.52%	NA		<0.18		0.566	0.093	Certified
0.288	15.71%	<0.420		0.247		0.38	0.12	Reference
		NA		<0.37		no target		Target
0.527	6.35%	NA		0.822		0.85	0.11	Certified
0.238	1.99%	NA		0.341		0.438	0.073	Certified
0.408	10.71%	NA		0.810		no target		Target
2.95	6.62%	4.84	17.28%	3.45		3.22	0.28	Certified
0.412	2.81%	<0.786		2.21		no target		Target
<0.907		NA		<0.7		no target		Target
		NA		<0.5		no target		Target
3.51	6.35%	3.08	11.11%	4.01		4.66	0.46	Certified
0.079		<1.90		0.223		no target		Target
0.166	11.36%	NA		0.493		0.378	0.053	Certified
0.492	61.32%	<4.22		1.69		1.12	0.42	Reference
0.037	68.01%	NA		<0.27		no target		Target
NA		NA		<0.24		no target		Target
NA		NA		2.07		no target		Target

Note: Only one sample of SRM 1941b was analyzed by Lab 15

	QA05SED13		QA05SED13		QA05SED13		QA05SED13		
PCBs	Lab 13		Lab 14		Lab 15		Exercise Assigned		
ng/g dry mass	mean	RSD	mean	RSD	mean	RSD	Value	s	95% CL
PCB 8	0.697	20.61%	2.34	11.16%	<1.09		1.36	0.42	0.39
PCB 18	1.18	18.55%	3.01	6.72%	2.00	15.71%	2.04	0.48	0.37
PCB 28	2.30	32.13%	6.00	2.27%	5.40	9.36%	3.79	0.97	0.81
PCB 31	2.04	35.01%	3.56	5.26%	2.96	10.91%	2.83	0.94	0.87
PCB 44	2.75	16.23%	4.15	6.30%	3.75	6.34%	3.47	0.99	0.76
PCB 49	1.87	19.11%	NA		4.00	0.32%	3.64	1.22	1.02
PCB 52	2.80	24.26%	7.28	4.99%	5.26	0.63%	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	12.81%	3.44	1.25	1.05
PCB 99	1.41	16.62%	3.59	13.44%	2.54	8.27%	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%	4.52	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		1.01	0.50	0.46
PCB 195	0.141	22.97%	<0.850		1.06	20.14%	0.291	0.166	0.174
PCB 206	NA		2.73	6.89%	2.95	7.31%	1.91	0.66	0.55
PCB 209	NA		5.92	7.59%	7.35	6.77%	4.02	1.47	1.36

SRM 1941b		SRM 1941b		SRM 1941b				
Lab 13		Lab 14		Lab 15		From 1941b Certif.		
mean	RSD	mean	RSD	mean	RSD	conc.	95%CL	type
0.920	2.78%	2.01	14.43%	1.23		1.65	0.19	Certified
1.64	6.93%	2.93	25.53%	3.37		2.39	0.29	Certified
3.15	2.40%	5.66	4.80%	5.85		4.52	0.57	Certified
2.71	2.16%	3.23	8.66%	3.86		3.18	0.41	Certified
5.51	2.46%	4.09	1.94%	4.65		3.85	0.2	Certified
3.01	2.53%	NA		5.03		4.34	0.28	Certified
4.22	2.05%	6.23	10.97%	6.84		5.24	0.28	Certified
4.51	3.92%	4.27	5.47%	6.59		4.96	0.53	Certified
2.63	1.66%	5.28	5.12%	4.20		3.93	0.62	Certified
2.28	4.94%	3.62	3.33%	2.92		2.9	0.36	Certified
3.78	0.55%	6.83	6.55%	6.37		5.11	0.34	Certified
0.95	2.20%	1.39	9.80%	1.27		1.43	0.1	Certified
2.94	1.61%	4.59	12.89%	4.69		4.23	0.19	Certified
0.63	3.87%	0.776	14.46%	<0.47		0.696	0.044	Certified
4.01	4.64%	5.42	5.77%	4.79		3.6	0.28	Certified
3.20	1.90%	5.10	3.76%	5.23		4.35	0.26	Certified
4.05	2.34%	5.89	3.07%	7.19		5.47	0.32	Certified
0.374	0.77%	0.369	3.10%	1.20		0.507	0.09	Certified
0.926	3.09%	1.36	9.51%	1.49		1.35	0.09	Certified
2.57	2.72%	3.34	1.77%	4.73		3.24	0.51	Certified
1.33	4.39%	2.45	0.92%	3.02		2.17	0.22	Certified
0.693	1.52%	0.982	2.55%	1.30		1.04	0.06	Certified
0.244	8.13%	<1.36		0.881		0.645	0.06	Certified
NA		2.83	1.85%	3.36		2.42	0.19	Certified
NA		6.05	1.82%	6.65		4.86	0.45	Certified

Note: Only one sample of SRM 1941b was analyzed by Lab 15

	QA05SED13		QA05SED13		QA05SED13		QA05SED13		
BDEs	Lab 13		Lab 14		Lab 15		Exercise Assigned		
ng/g dry mass	mean	RSD	mean	RSD	mean	RSD	Value	s	95% CL
BDE 15	0.126	15.62%	NA		0.967	11.66%	no target		
BDE 17	0.039	10.24%	<0.357		<0.44		no target		
BDE 25	pelute (17/25)		NA		<0.44		no target		
BDE 28	0.036	8.83%	<0.532		<0.27		0.056	0.005	0.042
BDE 30	0.028	55.16%	NA		<0.44		no target		
BDE 33	pelute (28/33)		NA		<0.44		no target		
BDE 47	0.380	23.61%	0.890	2.44%	1.09	9.53%	1.03	0.35	0.86
BDE 49	0.091	24.31%	NA		<0.74		no target		
BDE 66	0.023	9.58%	<0.450		<1.41		0.038	0.009	0.078
BDE 71	0.008	1.34%	<0.471		NA		no target		
BDE 75	0.012	13.92%	NA		<0.74		no target		
BDE 85	0.011	94.73%	<2.46		<0.58		no target		
BDE 99	0.252	26.15%	0.710	20.83%	0.833	22.72%	no target		
BDE 100	0.060	23.85%	<0.418		<0.78		no target		
BDE 116	<0.00291		NA		<0.78		no target		
BDE 118	NA		NA		<0.78		no target		
BDE 119	0.003		NA		<0.78		no target		
BDE 138	0.009	18.40%	<1.25		<0.65		no target		
BDE 153	0.044	47.80%	0.121	19.78%	<1.93		no target		
BDE 154	0.034	19.85%	0.207	8.27%	<0.95		no target		
BDE 155	0.007	41.31%	NA		<0.95		no target		
BDE 156	NA		NA		NA		no target		
BDE 181	< 0.00961		NA		<1.41		no target		
BDE 183	0.064	132.57%	<0.384		<1.41		no target		
BDE 190	0.011	62.39%	<2.47		<1.65		no target		
BDE 191	NA		NA		NA		no target		
BDE 196	NA		NA		NA		no target		
BDE 197	NA		NA		NA		no target		
BDE 203	0.044	83.65%	NA		NA		no target		
BDE 205	<0.0524		NA		NA		no target		
BDE 206	0.256	28.83%	NA		NA		no target		
BDE 207	0.153	34.92%	NA		NA		no target		
BDE 208	0.119	28.78%	NA		NA		no target		
BDE 209	11.4	16.11%	NA		NA		no target		

SRM 1941b		SRM 1941b		SRM 1941b				
Lab 13		Lab 14		Lab 15		From 1941b Certif.		
mean	RSD	mean	RSD	mean	RSD	conc.	95%CL	type
0.185	8.87%	NA		NA		no target		Target
0.069	34.37%	<0.586		NA		no target		Target
coelute (17/25)		NA		NA		no target		Target
0.135	5.47%	<0.847		NA		0.18	0.07	Target
0.047	10.47%	NA		NA		no target		Target
coelute (28/33)		NA		NA		w/ BDE 28		Target
1.34	7.79%	1.87	6.21%	NA		1.48	0.51	Target
0.133	74.26%	NA		NA		no target		Target
0.045	4.56%	<0.716		NA		no target		Target
0.167	32.97%	<0.750		NA		no target		Target
0.019	30.29%	NA		NA		no target		Target
0.025		<3.91		NA		no target		Target
0.398	12.88%	0.667	54.24%	NA		0.62	0.19	Target
0.103	13.83%	<0.665		NA		0.15	0.06	Target
<0.00309		NA		NA		no target		Target
NA		NA		NA		no target		Target
0.035	79.52%	NA		NA		no target		Target
0.007	3.24%	<1.99		NA		no target		Target
0.064	9.30%	0.114	35.29%	NA		0.09	0.04	Target
0.058	7.27%	0.199	11.19%	NA		0.09	0.02	Target
0.009		NA		NA		no target		Target
NA		NA		NA		no target		Target
<0.00325		NA		NA		no target		Target
0.026	20.98%	<0.943		NA		0.05	0.02	Target
0.002		<3.93		NA		no target		Target
NA		NA		NA		no target		Target
NA		NA		NA		no target		Target
NA		NA		NA		no target		Target
0.065	37.74%	NA		NA		no target		Target
<0.0236		NA		NA		no target		Target
0.374	14.59%	NA		NA		no target		Target
0.215	26.25%	NA		NA		no target		Target
0.200	45.62%	NA		NA		no target		Target
21.2	14.24%	NA		NA		24.11	14.97	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 Lab 13		SRM 1941b 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 101was meaured 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 crysene 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 Authourity
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