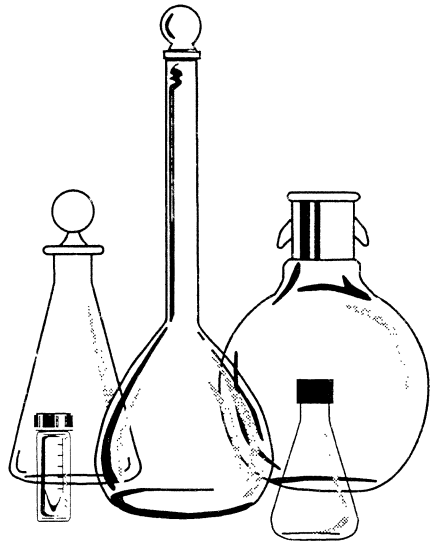
NOAA Technical Memorandum NOS NCCOS CCMA 146

National Status and Trends Program
for Marine Environmental Quality

NIST/NOAA NS&T Intercomparison Exercise Program for Organic Contaminents in the Marine Environment

Description and Results of 1999 Organic Intercomparison Exercises



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1305 East-West Highway
Silver Spring, MD 20910

Notice

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Description and Results of 1999 Organic Intercomparison Exercises

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Silver Spring, Maryland
Augst 2000

NIST/NOAA NS&T
Intercomparison Exercise Program
for Organic Contaminants in the Marine Environment

Description and Results of 1999 Organic Intercomparison Exercises

Exercise Materials: Fish Homogenate IV (QA99FSH4)
Marine Sediment IX (QA99SED9)

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Abstract

In support of marine monitoring measurement programs, the National Institute of Standards and Technology (NIST), in cooperation with the National Oceanic and Atmospheric Administration (NOAA) National Status and Trends Program (NS&T), conducts yearly interlaboratory comparison exercises to provide 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 1999 exercises of the NIST/NOAA NS&T Intercomparison Exercise Program for Organic Contaminants in the Marine Environment are described in which selected polychlorinated biphenyl (PCB) congeners and chlorinated pesticides were determined in Fish Homogenate IV and selected PCB congeners, chlorinated pesticides, and polycyclic aromatic hydrocarbons (PAHs) were determined in Marine Sediment IX exercise materials. The analytical methods used by each participating laboratory in this performance-based program are summarized.

Introduction

The preparation and distribution of two materials, Fish Homogenate IV (QA99FSH4) and Marine Sediment IX (QA99SED9), used in interlaboratory comparison exercises of 1999 for the National Institute of Standards and Technology (NIST)/ National Oceanic and Atmospheric Administration (NOAA) National Status and Trends (NS&T) Organics Quality Assurance Program and the 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 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 the past twelve years by the NOAA NS&T Marine Monitoring Program [1,2,3]. The EPA Environmental Monitoring and Assessment Program (EMAP) participated in the existing NIST/NOAA NS&T effort for a number of years. For this program, NIST provides mechanisms for assessing the interlaboratory and temporal comparability of data, and on improving measurements for the monitoring of organic contaminants such as polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyl (PCB) congeners, and chlorinated pesticides 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. Since 1993, private sector and other laboratories that cannot 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. 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 their current methods for analysis of similar materials for its program customers. The target analytes are listed in Table 1.

For the annual intercomparison exercises, samples of two natural-matrix, homogeneous materials derived from the marine environment 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.

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 60 target analytes and percent moisture.

Sources and Preparation of Materials used in 1999 Intercomparison Exercises

The Fish Homogenate IV was a subset of candidate NIST SRM 1946 (Lake Superior Fish Tissue), and the Marine Sediment IX was prepared from candidate NIST SRM 1941b (Organics in Marine Sediment). These candidate SRMs were true unknowns at the time of the exercise. The use of candidate CRMs enables eventual comparisons for accuracy-based evaluations of the exercise assigned values and the results of the individual laboratories with certified concentrations for these reference materials. Since PAHs are metabolized in the livers of fish, laboratories participating in this exercise were not requested to analyze the fish tissue for PAHs. The sediment material was issued as a wet sediment to more closely match the matrix of wet sediments typically analyzed by the laboratories.

Marine Sediment IX. Sediment used in the preparation of this material was collected on May 12, 1998 near the Francis Scott Key Bridge at approximately the same location as SRM 1941 and SRM 1941a. The sampler was a Kynar-coated modified Van Veen-type grab sampler. The material was freeze-dried, granularized, and then sieved. The material passing through a 100 mesh sieve (< 150 μm) was blended, radiation-sterilized, and homogenized. During the bottling sequence of SRM 1941b, 50 of the 3300 bottles were pulled for use in preparing Marine Sediment IX.

Clear, 2-oz, wide-mouth, glass bottles were rinsed with deionized water, thermally cleaned at 500 °C for 18 h in a ventilated oven, cooled, capped, and labeled. Each label contained the material's name and code (Marine Sediment IX, QA99SED9) as well as an individual bottle number. The Teflon liners of the phenolic screw caps had been removed from the caps, cleaned with hexane, dried, and reinserted in the caps. A calibrated toploader balance (resolution of 0.01 g) was used for weighing the sediment and water. For each sample, approximately 11 g (exact weight known) of candidate SRM 1941b sediment (as received) was weighed into a tared 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, approximately 9 g (exact weight known) 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 masses 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 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.

Summary statistics of preparation of Marine Sediment IX:

	SRM 1941b	HPLC water
mean, g	11.01	9.06
median, g	11.01	9.02
number	147	147
standard deviation, g	0.01	0.15
95% confidence level, g	0.02	0.02
minimum, g	11.00	9.00
maximum, g	11.07	9.17

Fish Homgenate IV. Fish Homgenate IV was a subset of SRM 1946. During the bottling of SRM 1946, 144 clear, 2-oz, wide-mouth, glass bottles that had been labeled as Fish Homogenate IV, QA99FSH4), each with individual bottle numbers were filled with 10 g of fish homogenate. The bottles had been precleaned in the same manner as those used for the sediment. This sample is a cryogenically homogenized "fresh" material prepared from adult lake trout (*Salvelinus namaycush*) collected from Lake Superior during the 1997 fall spawning stock assesment cruises done by the states' Departments of Natural Resources.

Each of the three bottles sent to each participant contained approximately 10 g (wet basis) of Fish Homogenate IV. This frozen fish homogenate material had not been enriched or spiked. Each 2-oz glass bottle had a Teflon-lined screw cap and was labeled with an individual bottle number as well as the material's name and code (Fish Homogenate IV, QA99FSH4).

Percent Moisture Determinations

Marine Sediment IX. Each bottle of Marine Sediment IX, as prepared, contained 11.01 g of SRM 1941b sediment plus 9.06 g (see preparation statistics above) of HPLC water. For the purposes of this exercise, the calculated value for the percent water in the Marine Sediment IX samples is based on the mean of 9.06 g of water added to each bottle because the variability of the water mass added is much smaller than the expected analytical variability. For evaluation of exercise results, the NIST assigned value for moisture content in Marine Sediment IX (with the uncertainty expressed as the 95% confidence interval) is:

$$NIST_{assigned\ value} = 45.13\% \pm 0.06\%\ \text{moisture.}$$

Laboratories reported results on a dry basis so the uncertainty in the $NIST_{assigned\ value}$ is not a factor in the results for the other analytes.

Storage and Distribution of Materials

Each bottle of Marine Sediment IX and Fish Homogenate IV 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 shown in Appendices A and B. Samples of each of these materials have been archived in the National Biomonitoring Specimen Bank at NIST.

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

Exercise 1: Fish Homogenate IV (QA99FSH4)
- Three bottles of Fish Homogenate IV material (shipped on dry ice)
- Description of the materials and storage/use/reporting instructions for the exercise (See Appendix A.)
- Data diskette with files for the reporting of results

Exercise 2: Marine Sediment IX (QA99SED9)
- Three bottles of Marine Sediment IX material (shipped on dry ice)
- Description of the materials and storage/use/reporting instructions for the exercise (See Appendix B.)
- Data diskette with files for the reporting of results

In the letter accompanying each shipment each participant was asked to analyze each of three replicate samples in a separate batch/set/string/catalog in order to provide a more realistic assessment of laboratory precision and, if possible, to concurrently analyze the National Research Council of Canada (NRC) certified reference material (CRM) CARP-1 [4] with Fish Homogenate IV and NIST SRM 1941a, Organics in Marine Sediment, [5] with Marine Sediment IX. Samples were sent to the laboratories the week of July 12, 1999. Laboratories were requested to submit results for these exercises by February 1, 2000. Laboratories that joined the program later than July 12, 1999 were sent samples as soon as possible after the paperwork was received.

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. In essence, the laboratory's performance on concurrent reference material analyses was used to determine if that laboratory's results would be included 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 reference materials 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 Fish Homogenate IV and Marine Sediment IX materials were evaluated relative to these exercise "assigned values."

Laboratory data submission: Each participating laboratory was to submit data from three replicate determinations of the "unknown" materials (Fish IV and Sediment IX) and were requested to report results of concurrent analyses of CRM CARP-1, a fish slurry reference material, and SRM 1941a, a marine sediment reference material. Laboratories were requested to report these results to three significant figures, and 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, etc.; 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: 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 1941a and CRM CARP-1. For each analyte of interest not certified in these materials, a "target" concentration and the associated uncertainty were calculated. The targets for SRM 1941a were based on noncertified concentrations in SRM 1941a, results of the 1992 Sediment III exercise in which SRM 1941a was used as the "unknown material," and exercise results when SRM 1941a was used as a control. Similarly, the targets for CARP-1 were based on results of the 1993 Fish Homogenate I exercise in which CARP-1 was used as the "unknown material," and exercise results from 1995 when CARP-1 was used as a control. 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 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 such as this with a number of laboratories reporting 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," ½ Detection Limit (DL), and the DL value itself have all been used and the choice is influenced by the use of the particular data set.

Reported Results

Laboratories were assigned numerical identification codes in order of receipt of data with the exception of NIST-Gaithersburg, which is Laboratory 1 in these exercises. A laboratory was assigned the same code for each material. In this report, the triplicate results as reported by the laboratories for both the exercise materials and the two CRMs are shown in Appendix C (Fish Homogenate IV) and Appendix D (Marine Sediment IX) along with reference values for each of the materials and performance scores [numerical indicators of accuracy (bias) and precision (reproducibility)]. The laboratory mean replicate data are shown in Tables 2 and 3 and Tables 4 to 6 for the Fish Homogenate IV and Marine Sediment IX materials, respectively. Included in the means tables 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, PAHs, chlorinated pesticides, and PCB congeners as applicable. Notes included by a laboratory with its data are listed in Appendices E (Fish Homogenate IV) and F (Sediment IX). Summaries of the methods used by each laboratory are in Appendices G (Fish Homogenate IV) and H (Sediment IX).

In Appendices I (Fish Homogenate IV) and J (Sediment IX), charts of the mean reported numerical results by laboratory for **each analyte** are shown for the exercise material and the corresponding reference material.

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 particular 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 shown in a number of ways in this report to facilitate their use by these programs in their acceptability assessments.

IUPAC guidelines [6] 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)

$$\text{z-score} = \frac{\text{bias estimate}}{\text{performance criterion}}$$

$$z = \frac{(x - \overline{X})}{\sigma}$$

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., $\sigma = 0.125$ X, X is the analyte concentration), or it can be an estimate of the actual variation (e.g., the calculated 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 more problematic than usual.

We have calculated and reported z-scores using both approaches 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, at least for a few years. We also calculated z-scores based on "one assigned-value standard deviation." The z-scores calculated for these exercises can thus be interpreted as shown in the following examples:

z-score (25% X):

+1 ⇒ laboratory result is 25% higher than the assigned value
-2 ⇒ laboratory result is 50% lower than the assigned value

z-score (s):

+1 ⇒ laboratory result is one "exercise standard deviation" higher than the assigned value
-2 ⇒ laboratory result is "two exercise standard deviations" lower than the assigned value

From a scientific point of view, IUPAC does not recommend the classification of z-scores but allows that it is possible to classify scores, e.g.:

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

The Tables in Appendices C (Fish IV) and D (Sediment IX) show the calculated z-scores for each

laboratory for each reported analyte. These tables of the results and performance include a summary of the number of reported analytes that fall within each category for each laboratory.

Precision Assessment (p-score)

$$p = \frac{\sigma_{lab}}{\sigma_{target}} = \frac{CV_{lab}}{CV_{target}}$$

Prior to the 1994 exercises, participating laboratories typically analyzed the three replicate samples for an exercise with the same sample set, i.e., within one set of samples with the same blank, calibration curve, etc. applicable for each. Since the repeatability for replicates within a set is generally better than for replicates in different sets, this does not result in data that are very useful for precision (repeatability) assessment. Since 1994, laboratories have been requested to process each replicate in a different sample set for precision assessment. For the calculation of p-scores for this program, the current target CV for the three replicates is 15%.

The Tables in Appendices C (Fish IV) and D (Sediment IX) show the calculated p-scores for each laboratory for each reported analyte.

Discussion

These results were discussed at the QA workshop that was held April 10, 2000 in Gaithersburg, MD. Laboratories were requested to quantify two new pesticides this year, chlorpyrifos and endosulfan sulfate. For these two pesticides, four labs returned data for Fish IV, and five labs returned data for Sediment IX. Only lab 41 found measurable levels (0.3 ng/g wet basis and 23 ng/g wet basis for chlorpyrifos and endosulfan sulfate, respectively, in the fish tissue and 1.9 ng/g dry basis and 1.6 ng/g dry basis for chlorpyrifos and endosulfan sulfate, respectively, in the sediment). The other labs reported results as being below laboratory detection limits. Since these data were requested after the samples, instructions, and data reporting formats were sent out, the labs submitted the results as part of the laboratory notes, Appendix E for Fish Homogenate IV and Appendix F for Marine Sediment IX.

The concentrations of the pesticides of interest in Fish Homogenate IV range from <1 ng/g wet basis to 91.2 ng/g wet basis while those of the PCB congeners range from <2 ng/g wet basis to 136 ng/g wet basis. Laboratories were also requested to determine the total extractable organics (TEO) in Fish Homogenate IV, but since no units were specified for reporting, the results are not comparable. The reported values of TEO are summarized in Table 3 with accompanying information submitted by laboratories summarized in Appendix G.

The z-scores based on 25 % of the exercise assigned value are summarized for Fish Homogenate IV in Tables 7 and 8 for the pesticides and PCB congeners, respectively. For the pesticides in Fish Homogenate IV, 80% of the reported concentrations were within ± 50% of the exercise assigned value (satisfactory) while 9% were between ± 50% and ± 75% of the exercise assigned value (questionable) and 11% were more than ± 75% (unsatisfactory) from the exercise assigned value. For the PCB congeners in Fish Homogenate IV, 83% of the reported concentrations were within ± 50% of the exercise assigned value (satisfactory) while 6% were between ± 50% and ± 75% of the exercise assigned value (questionable) and 10% were more than ± 75% (unsatisfactory) from the exercise assigned value. Lab 9 reported values that were more than 75% higher than the exercise assigned value for both classes of compounds and reported no values for CARP-1. Lab 40 also had a high percentage of unsatisfactory results for the PCB congeners in Fish IV. This lab did report values for CARP-1 that were low for a majority of the congeners.

Fish IV had higher concentrations than CARP-1 for all of the measurable pesticides, except 2,4'-DDE, 2,4'-DDD, and 4,4'-DDD. The PCB distribution is different in the Fish IV than in the CARP-1 with the lower chlorinated analogues, through pentachloro, present at higher concentrations in the CARP-1 while the hexa through octa chlorinated congeners are present at higher concentrations in Fish IV.

For the analytes of interest, the PAH concentrations in Marine Sediment IX range from 27.7 ng/g dry basis to 756 ng/g dry basis. The pesticide concentrations range from below the detection limits of the methods used to 5.88 ng/g dry basis while the PCB concentrations range from 0.8 ng/g dry basis to 8.6 ng/g dry basis.

The z-scores based on 25% of the exercise assigned value are summarized for Marine Sediment IX in Tables 9, 10, and 11 for the PAHs, pesticides, and PCB congeners, respectively. For the PAHs in Marine Sediment IX, 93% of the reported concentrations were within ± 50% of the exercise assigned value (satisfactory) while 11% were between ± 50% and ± 75% of the exercise assigned value (questionable) and 5% were more than ± 75% (unsatisfactory) from the exercise assigned value. For the pesticides in Marine Sediment IX, 64% of the reported concentrations were within ± 50% of the exercise assigned value (satisfactory) while 19% were between ± 50% and ± 75% of the exercise assigned value (questionable) and 18% were more than ± 75% (unsatisfactory) from the exercise assigned value. For the PCB congeners in Marine Sediment IX, 84% of the reported concentrations were within ± 50% of the exercise assigned value (satisfactory) while 10% were between ± 50% and ± 75% of the exercise assigned value (questionable) and 6% were more than ± 75% (unsatisfactory) from the exercise assigned value. Lab 4 reported values that were more than 50% lower than the exercise assigned value for the PAHs; however, the values that Lab 4 reported for SRM 1941a were in good agreement with the target concentrations. This lab did not report values for the chlorinated compounds. There was a larger percent of unsatisfactory values for the pesticides in Marine Sediment IX than in Fish Homogenate IV, but this is not unexpected considering the low levels of pesticides in this sediment. Lab 27 reported a majority of low values (>50% lower than the exercise assigned value) for both the PAHs and and all values > 50% lower than the exercise assigned value for the

PCB congeners. No values were reported by that lab for the pesticides. The values that Lab 27 reported for SRM 1941a were generally lower than the target values for the PAHs with no trends for the PCB congeners. Lab 1 (NIST Gaithersburg) reported a majority of compounds that were low compared to the assigned values for Sediment IX: 50% of the PAH values were between 25% and 50% lower, 33% of the pesticides were between 25% and 50% lower while 33% were between 50% and 75% lower, and 79% of the PCB congeners were between 25% and 50% lower with one congener (PCB 180) 51% lower than the assigned value. After careful examination of the data, there is no obvious reason for these low values. This will be investigated carefully during the certification analyses of SRM 1941b from which Sediment IX was prepared.

The concentration range for the majority of PAHs in Marine Sediment IX is between 50% and 70% lower than that in SRM 1941a. Hexachlorobenzene is much lower in Marine Sediment IX (5.0 ng/g dry basis) than in SRM 1941a (70 ng/g dry basis) with the rest of the measurable pesticides approximately 50% lower in Marine Sediment IX except for 4,4'-DDT, which is approximately the same concentration in the two sediments. The PCB congeners are generally 30% to 60% lower in Marine Sediment IX compared to SRM 1941a.

No correlation could be seen between years of participation and z-scores for either Fish IV or Sediment IX. There were five new participants, as well four labs that have been involved from the beginning of the program. These nine laboratories performed approximately the same. As in the past exercises, a variety of methods were used for extraction, extract cleanup, and analysis. These are summarized in Appendix G for the fish and Appendix H for the sediment. For the PAHs in the sediment, two labs (23 and 42) used ion trap mass spectrometry (MS) while for the chlorinated analytes, Lab 19 used ion trap MS; Labs 27, 31, 34, 35, and 39 used high resolution MS; and Lab 40 used negative chemical ionization MS for the pesticides in the fish. There was also no obvious correlation between z-scores and method used.

For the 1999 exercises, the data provided in the various figures and tables of this report can be used for assessing the comparability of results of over 60 analytes of interest in this program and the performance of an individual laboratory. The z-scores and the p-scores for the individual laboratories are summarized by lab in Appendices C and D for the fish and sediment, respectively. For both materials, the highest percentage of z-scores and p-scores that were in the unsatisfactory category were for the chlorinated pesticides. The chlorinated pesticides were typically present at lower concentrations in both of these materials than the concentrations of the PAHs and PCB congeners. In these exercises, interlaboratory variability is a greater contributor to measurement incomparability than is the intralaboratory variability. Laboratories reporting results of concurrent reference material analyses typically showed better performance than those laboratories that did not analyze the reference materials.

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 analyte 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 provided in the various tables of this report that list the mean and individual results of the laboratories. The laboratory and its data users should look closely at 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 should be assessed as well.

Intercomparison exercises provide an important mechanism for assessing the comparability, accuracy, 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 levels 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 between-laboratory bias such that the analytical variability is significantly less than the sampling variability should be an achievable goal.

Acknowledgments

The time and efforts of the analysts and management of the participating laboratories, the partial support of the NOAA National Status and Trends Program (NS&T), and the assistance of the NIST Standard Reference Materials Program and National Research Council of Canada 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.

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List of Tables

Table 1. Analytes[a] 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
gamma-HCH (gamma-BHC, Lindane)	2,4'-DDD
heptachlor	4,4'-DDD
heptachlor epoxide	2,4'-DDT
cis-chlordane (alpha-chlordane)	4,4'-DDT
trans-chlordane (gamma-chlordane)	aldrin
oxychlordane	dieldrin
cis-nonachlor	endrin
trans-nonachlor	endosulfan I
mirex	endosulfan II

*Chlorpyrifos and endosulfan sulfate were added via an e-mail request on September 10, 1999.

Polychlorinated Biphenyl Congeners

PCB No.	*Compound Name*
8	2,4'-dichlorobiphenyl
18	2,2',5-trichlorobiphenyl
28	2,4,4'-trichlorobiphenyl
44	2,2',3,5'-tetrachlorobiphenyl
52	2,2',5,5'-tetrachlorobiphenyl
66	2,3',4,4'-tetrachlorobiphenyl
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
153	2,2',4,4',5,5'-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
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 (PAHs)

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
benzofluoranthenes [*b*+*j*+*k*]
benzo[*e*]pyrene
benzo[*a*]pyrene
perylene
indeno[1,2,3-*cd*]pyrene
dibenz[*a,h*]anthracene
benzo[*ghi*]perylene

[a] Please note that the following are typically reported by participants as the sums of the indicated components:

PAH
chrysene + triphenylene
benzo[*b*]- + benzo[*j*]- + benzo[*k*]fluoranthene
dibenz[*a,h*]anthracene + dibenz[*a,c*]anthracene

PCB congeners
PCB 66 + PCB 95[b]
PCB 101 + PCB 90
PCB 138 + PCB 163 + PCB 164
PCB 187 + PCB 182 + PCB 159
PCB 170 + PCB 190

[b] Because PCB 66 and PCB 95 can now be separated by a significant number of participants, we have changed the table for reporting results so that participants may report these as two separate concentrations or as the sum of PCB 66 and PCB 95.

Table 2. **Fish Homogenate IV (QA99FSH4): Laboratory means of three replicates and exercise assigned values**

Pesticides (reported as if three figures were significant; bolded values were not used in the calculation of the exercise assigned vaules)

ng/g wet basis

Laboratory No.	1	2	3	6	7	8	9	11	12	13	14	15	16	17	19	20	22	23
alpha-HCH	5.61	**NA**	5.92	NA	4.45	**0.767**	**12.1**	5.33	5.46	5.54	NA	4.63	5.56	7.38	**NA**	NA	5.67	3.44
hexachlorobenzene	8.17	**<2**	8.94	NA	NA	**NA**	**NA**	5.48	6.52	NA	3.34	6.13	7.96	**19.0**	**NA**	6.66	7.66	6.54
gamma-HCH	1.39	**1.10**	1.68	NA	0.816	**<0.05**	**<0.051**	1.80	1.19	0.985	0.800	0.810	0.753	<0.18	**NA**	1.10	2.86	<1.0
heptachlor	<1	**<2**	NA	NA	DL	**1.50**	**<0.063**	<1.0	< 2.0	2.25	NA	<0.056	0.113	<0.20	**NA**	<0.4	<2.0	<2.0
aldrin	<1	**<2**	NA	NA	DL	**0.800**	**<0.034**	<1.0	< 2.0	2.39	NA	<0.014	<0.10	<0.26	**NA**	<0.6	<2.0	<1.0
heptachlor epoxide	5.57	**<2**	NA	NA	4.62	**6.07**	**14.10**	5.62	< 2.0	5.80	NA	**5.79**	**12.4**	<0.14	**NA**	6.64	7.10	3.32
oxychlordane	17.5	**20.2**	NA	NA	20.8	**4.70**	**NA**	16.4	NA	NA	NA	15.0	19.1	NA	**NA**	NA	20.2	11.5
trans-chlordane	7.49	**5.52**	10.6	NA	DL	**3.43**	**25.5**	5.92	10.3	5.63	NA	**8.04**	8.52	**9.74**	**NA**	NA	10.6	4.91
2,4'-DDE	0.544	**2.82**	NA	NA	1.33	**3.57**	**NA**	<5.0	1.62	**9.56**	NA	**0.676**	0.910	**17.8**	**<1.4**	0.869	<22	<2.0
endosulfan I	<1	**<2**	NA	NA	DL	**NA**	**<0.043**	NA	< 2.0	0.197	NA	1.57	<0.30	<0.15	**NA**	<0.48	<2.0	<2.0
cis-chlordane	42.1	**13.0**	36.1	NA	44.3	**14.9**	**70.5**	**17.5**	31.1	10.6	34.2	24.2	32.5	**40.0**	**15.2**	24.0	**30.9**	16.5
trans-nonachlor	93.7	**90.3**	111	NA	91.0	**42.2**	**NA**	**61.4**	95.8	74.8	112	83.9	105	**84.0**	**53.9**	70.1	83.6	80.9
dieldrin	31.8	**10.7**	**5.64**	NA	DL	**16.2**	**114**	22.7	**33.3**	**9.32**	NA	**30.2**	37.9	**37.4**	**NA**	29.4	53.3	49.0
4,4'-DDE	333	**296**	**520**	NA	286	**90.0**	**1213**	275	383	Other	268	344	313	264	**275**	307	**335**	287
2,4'-DDD	1.87	**10.2**	NA	NA	DL	**1.37**	**NA**	**3.14**	1.46	1.95	NA	2.75	1.31	<0.18	**NA**	3.04	<2.0	<2.0
endrin	<2	**27.9**	NA	NA	DL	**2.20**	**<0.133**	4.66	< 2.0	5.82	NA	4.84	6.02	<0.59	**NA**	NA	<10	4.01
endosulfan II	<2	**<2**	NA	NA	DL	**15.7**	**<0.115**	NA	< 2.0	5.30	NA	<0.053	5.84	<0.27	**NA**	<0.8	<67	<2.0
4,4'-DDD	18.8	**17.9**	15.7	NA	DL	**8.90**	**<0.089**	14.3	11.5	12.6	**132**	22.1	7.34	13.5	**36.7**	16.4	18.8	7.95
2,4'-DDT	24.2	**<2**	31.6	NA	12.4	**39.2**	**NA**	18.0	**18.0**	**75.1**	NA	20.1	30.8	<0.24	**NA**	16.1	15.6	17.5
cis-nonachlor	54.1	**55.5**	66.7	NA	49.4	**6.87**	**NA**	**38.9**	63.8	**149**	NA	49.2	63.7	76.1	**NA**	NA	87.4	36.0
4,4'-DDT	37.6	**27.8**	32.6	NA	**101**	**34.6**	**139**	20.8	57.4	**24.0**	**85.4**	**30.5**	**29.4**	<0.35	**NA**	30.0	39.1	24.8
mirex	5.55	**6.51**	NA	NA	DL	**5.83**	**NA**	5.77	6.85	NA	NA	6.24	6.36	<0.15	**NA**	5.11	6.87	3.89

Table 2. **Fish Homogenate IV (QA99FSH4): Continued**

Pesticides
ng/g wet basis

Laboratory No.	24	26	27	28	29	32	33	34	36	37	39	40	41	42	Exercise Assigned Value	s	%RSD	95% CL
alpha-HCH	5.87	5.57	NA	5.59	6.13	5.23	4.87	6.04	<0.40	NA	3.71	2.09	Other	NA	5.20	1.13	21.7	0.53
hexachlorobenzene	8.13	8.01	NA	4.81	7.93	6.81	6.74	7.60	6.13	6.93	7.82	4.75	6.40	2.69	6.62	1.57	23.7	0.68
gamma-HCH	1.46	<2	NA	0.959	0.757	1.95	1.05	0.991	<0.40	1.57	0.805	0.569	0.787	0.288	1.15	0.56	49.0	0.25
heptachlor	0.507	<2	NA	0.234	<2	0.34	0.486	0.006	<0.40	0.300	DL	0.537	0.128	<0.0399	<1			
aldrin	0.060	<2	NA	<0.13	<2	0.34	<0.503	0.0050	<0.40	0.800	DL	0.240	0.279	<0.0128	<1			
heptachlor epoxide	**11.2**	4.57	NA	4.12	**11.3**	4.22	=0.05	5.65	**4.29**	**7.50**	5.25	**0.105**	4.99	< 0.102	5.19	1.04	20.1	0.63
oxychlordane	18.4	18.6	NA	15.4	NA	11.5	21.2	16.03	14.2	NA	26.5	NA	16.4	NA	17.4	3.8	21.7	2.02
trans-chlordane	8.22	7.14	NA	12.9	8.97	6.04	11.9	5.90	**<0.40**	NA	6.31	5.05	8.72	NA	8.06	2.43	30.1	1.21
2,4'-DDE	1.49	<2	NA	0.58	<2	1.23	**7.45**	0.622	<0.8	**4.93**	0.697	NA	**21.5**	<0.0575	0.99	0.40	40.2	0.28
endosulfan I	<2.00	<2	NA	16.4	2.40	<1.08	1.24	0.077	<0.40	NA	DL	0.059	Other	NA	<2			
cis-chlordane	38.7	21.7	NA	**4.35**	29.0	27.5	52.4	38.4	<0.40	41.8	24.5	18.9	Other	**5.55**	31.0	10.6	34.4	5.1
trans-nonachlor	88.1	100	NA	**22.3**	102	107	90.0	100	**93.8**	113	90.9	61.4	93.3	57.8	91.2	15.4	16.9	6.8
dieldrin	37.4	28.9	NA	20.7	35.3	27.4	33.8	21.2	**24.1**	other	31.1	16.6	**33.4**	**11.1**	32.9	9.5	29.0	5.3
4,4'-DDE	342	407	NA	275	333	472	307	311	**105**	475	391	NA	**392**	**119**	335	64	19.0	31
2,4'-DDD	5.18	<2	NA	1.15	<2	1.40	4.61	**0.577**	<0.8	other	1.10	NA	4.95	<0.0605	2.56	1.54	60.1	0.98
endrin	8.89	<2	NA	3.15	6.77	NA	**20.6**	3.90	<0.8	NA	4.30	7.71	**10.5**	NA	5.46	1.77	32.4	1.19
endosulfan II	<2	<2	NA	<0.89	**10.0**	1.93	**13.5**	0.068	<0.8	NA	DL	NA	**66.9**	NA	<5			
4,4'-DDD	21.2	11.4	NA	9.62	22.7	9.20	29.9	6.38	26.9	**other**	10.8	NA	16.6	**<0.243**	15.4	6.5	42.0	2.9
2,4'-DDT	41.4	<2	NA	13.6	**19.0**	**11.8**	48.8	**11.4**	**<0.8**	**74.0**	14.1	NA	17.2	**8.20**	23.0	11.2	48.6	6.4
cis-nonachlor	50.1	54.4	NA	38.6	76.0	64.7	69.3	**55.2**	**<0.8**	NA	**46.3**	34.4	**22.6**	NA	58.4	15.3	26.1	8.5
4,4'-DDT	**36.6**	inf	NA	**26.9**	**30.7**	**35.4**	**108**	**30.1**	**49.9**	69.0	**35.8**	NA	58.4	**13.1**	41.1	16.7	40.7	12.8
mirex	7.05	5.50	NA	**12.5**	11.3	6.02	8.20	3.73	<0.8	8.00	4.33	NA	5.38	2.83	6.06	1.94	32.1	0.97

Table 3 **Fish Homogenate IV (QA99FSH4): Laboratory means of three replicates and exercise assigned values**

PCBs (reported as if three figures were significant)

ng/g wet basis

Laboratory No.	1	2	3	6	7	8	9	11	12	13	14	15	16	17	19	20	22	23
PCB 8	<1	**1.67**	NA	0.878	NA	**NA**	**39.0**	NA	< 1.0	**13.2**	1.52	**1.85**	<0.2	**8.81**	NA	<0.8	<2.0	<1.0
PCB 18	<2	**3.04**	NA	0.825	2.23	**0.067**	**<4**	NA	0.757	0.575	**1.12**	<0.028	0.520	<0.58	NA	<0.8	<2.0	<1.0
PCB 28	2.17	**2.43**	1.92	4.14	1.33	**0.900**	**NA**	NA	2.59	**5.00**	1.46	1.44	2.20	4.29	NA	2.24	<2.0	1.46
PCB 52	7.83	**17.9**	8.79	8.80	6.28	**7.50**	**13.9**	NA	7.20	4.96	4.71	6.52	8.28	12.0	5.06	7.06	9.21	5.45
PCB 44	4.31	**10.4**	15.3	4.56	3.03	**4.47**	**<4**	NA	4.56	5.59	2.65	3.38	3.88	4.74	6.62	3.63	6.12	2.86
PCB 66/95	NA	**19.8**	NA	NA	NA	**12.7**	**NA**	NA	19.1	26.8	**6.58**	NA	NA	14.8	NA	6.63	10.9	NA
PCB 101/90	34.5	**33.8**	49.0	38.9	42.0	**29.7**	**79.9**	NA	42.4	**17.4**	21.1	27.1	36.8	45.6	48.8	38.3	36.7	33.8
PCB 118	50.0	**50.0**	52.0	58.8	26.3	**52.4**	**143**	NA	62.7	20.6	37.7	47.9	48.7	60.1	52.7	58.1	87.7	54.5
PCB 153	152	**148**	161	183	103	**198**	**531**	NA	164	121	117	153	141	129	170	170	150	146
PCB 105	19.4	**24.0**	36.6	22.1	12.9	**179**	**64.5**	NA	24.7	e bel	20.1	19.6	23.6	32.2	26.0	20.7	29.2	16.0
PCB 138/163/164	156	**136**	127	138	111	**489**	**497**	NA	165	94.6	102	163	118	114	132	121	169	126
PCB 187/182	56.0	**56.9**	36.9	58.1	37.4	**148**	**121**	NA	59.9	26.6	45.8	62.4	65.4	60.6	NA	56.9	69.6	46.0
PCB 128	21.9	**25.1**	NA	22.8	20.0	**61.2**	**50.4**	NA	20.6	**65.0**	18.7	59.0	25.7	36.7	17.7	29.3	30.3	16.7
PCB 180	64.2	**81.1**	108	87.5	43.2	**238**	**168**	NA	81.2	44.8	70.2	64.1	79.4	58.4	71.9	66.7	83.9	62.6
PCB 170/190	21.7	**34.9**	47.5	34.6	16.3	**36.8**	**105**	NA	36.5	30.2	22.6	22.3	26.6	<0.42	21.9	31.9	35.5	19.1
PCB 195	4.88	**8.19**	6.37	4.19	NA	**5.17**	**13.9**	NA	5.26	**9.09**	4.55	4.53	6.91	8.58	NA	4.72	6.72	3.28
PCB 206	5.92	**7.05**	**10.2**	4.93	**1.70**	**4.23**	**NA**	NA	5.97	5.04	4.45	2.87	5.60	<0.50	5.65	5.08	7.94	3.84
PCB 209	1.81	**2.23**	2.38	0.986	DL	**0.800**	**NA**	NA	NA	**0.483**	0.973	0.557	1.33	1.23	2.13	1.28	<2.0	<1.0
PCB 66	9.92	**NA**	10.9	10.9	6.90	**NA**	**36.9**	NA	NA	NA	NA	6.13	8.19	14.83	8.70	NA	NA	**32.1**
PCB 95	13.9	**NA**	**25.6**	13.9	NA	**NA**	**<4**	NA	NA	NA	NA	NA	12.3	NA	NA	NA	NA	9.25
TEO*	9.87	**NA**	NA	6.29	NA	**100**	**NA**	NA	NA	NA	NA	0.117	0.117	0.101	NA	97.7	11.6	NA

*Total Extractable Organic

Table 3 **Fish Homogenate IV (QA99FSH4): Continued**

PCBs

ng/g wet basis

Laboratory No.	24	26	27	28	29	32	33	34	36	37	39	40	41	42	Exercise Assigned Value	s	%RSD	95% CL
PCB 8	<0.2	<2	**0.77**	**0.077**	0.620	NA	<0.484	0.01	<0.40	<0.3	0.048	NA	Other	<0.128	<2			
PCB 18	4.02	<2	**0.127**	**0.107**	0.510	0.807	<0.464	0.20	1.81	3.40	0.292	**0.443**	0.333	<0.150	<2			
PCB 28	3.49	1.96	**2.17**	1.16	2.70	1.90	3.20	1.79	**1.22**	2.43	1.65	**10.2**	1.55	**0.53**	2.24	0.89	39.7	0.41
PCB 52	9.28	8.74	**8.92**	6.00	8.63	6.76	6.60	5.19	5.71	9.27	5.04	**21.8**	6.28	4.95	7.10	1.85	26.0	0.75
PCB 44	11.4	3.71	**6.28**	3.33	5.97	3.11	4.79	**4.05**	**11.5**	11.1	**3.91**	9.12	3.76	**2.18**	5.54	3.23	58.3	1.40
PCB 66/95	18.1	e bel	**8.19**	NA	25.7	NA	14.9	NA	<0.40	18.7	19.7	**64.3**	20.3	NA	17.8	5.9	33.0	3.9
PCB 101/90	37.1	47.7	**28.6**	21.9	52.3	41.8	34.7	27.0	67.8	30.6	35.8	**81.3**	Other	23.8	38.1	10.7	28.0	4.5
PCB 118	59.2	56.0	**55.8**	43.8	51.3	52.1	48.9	60.7	58.1	51.7	40.9	62.4	47.1	24.7	50.9	13.4	26.3	5.3
PCB 153	228	172	**315**	123	177	218	139	240	121	168	140	**363**	128	**57**	157	34	22.0	14
PCB 105	20.7	21.1	**22.7**	14.1	24.0	23.8	20.3	19.2	20.6	12.7	15.9	38.3	19.8	10.7	21.7	6.7	31.1	2.7
PCB 138/163/164	168	158	**179**	107	120	175	151	156	133	128	136	**317**	142	**48**	136	23	16.8	9
PCB 187/182	60.7	62.2	**48.2**	54.7	49.7	58.6	55.0	56.9	59.6	60.9	48.9	**102**	51.1	**26.2**	54.2	10.0	18.4	4.2
PCB 128	21.7	23.9	**34.9**	14.4	<2	23.1	**192**	19.3	37.6	67.6	19.8	**41.3**	**153.4**	17.2	26.9	13.6	50.7	6.2
PCB 180	80.0	83.8	**88.6**	106	103	81.3	93.7	78.1	72.7	62.1	66.9	**178**	60.7	**36.0**	75.0	16.8	22.4	6.9
PCB 170/190	23.8	25.7	**32.9**	40.7	32.3	31.5	32.8	22.0	53.7	25.9	29.7	**120**	21.6	20.0	29.1	9.0	31.1	3.7
PCB 195	6.78	5.40	**4.91**	2.94	6.93	4.17	7.50	3.74	3.72	5.87	4.37	**37.1**	4.58	3.38	5.19	1.51	29.0	0.65
PCB 206	6.05	6.27	**6.20**	3.98	5.60	4.58	6.32	4.54	3.45	4.60	5.42	**20.8**	4.83	3.39	5.06	1.15	22.7	0.50
PCB 209	1.57	1.95	**1.13**	1.02	1.17	1.35	2.24	0.72	1.13	1.00	0.935	NA	1.19	0.91	1.33	0.50	38.1	0.23
PCB 66	6.96	13.4	**8.19**	9.24	NA	NA	NA	**8.92**	NA	NA	7.67	NA	NA	6.02	9.16	2.84	31.0	1.72
PCB 95	11.1	13.8	**15.0**	9.46	NA	12.0	NA	9.2	NA	NA	12.1	NA	NA	NA	11.7	1.9	16.2	1.4
TEO*	10.1	10.6	**NA**	8.69	88867	NA	NA	0.00	2.E+08	NA	NA	0.063	NA	NA				

*Total Extractable Organic

Table 4. **Marine Sediment IX (QA99SED9): Laboratory means of three replicates and exercise assigned values**

Water and PAHs (reported as if three figures were significant;bolded values were not used in the calculation of the exercise assigned values)

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	14	15	16
Water (%)	45.1	46.5	46.0	43.0	46.0	45.5	43.8	45.3	46.3	45.7	49.1	46.4	54.0	46.1	NA
PAHs ng/g dry basis															
Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	14	15	16
naphthalene	804	NA	NA	266	NA	368	924	NA	**572**	894	522	609	NA	911	892
2-methylnaphthalene	236	NA	NA	**62.3**	NA	136	256	NA	**NA**	288	NA	194	NA	302	297
1-methylnaphthalene	97.6	NA	NA	**29.1**	NA	63.2	113	NA	**NA**	132	NA	89.8	NA	140	124
biphenyl	48.0	NA	NA	**16.3**	NA	34.1	103	NA	**NA**	73.5	NA	48.6	NA	60.4	70.2
2,6-dimethylnaphthalene	93.3	NA	NA	**20.1**	NA	55.4	**129**	NA	**NA**	105	106	81.2	NA	106	136
acenaphthylene	38.6	NA	NA	**22.3**	NA	23.1	**109**	NA	**<94**	47.8	85.4	92.7	NA	67.0	74.5
acenaphthene	37.0	NA	NA	11.3	NA	18.5	50.3	NA	**<94**	44.2	**<50**	27.5	NA	43.0	40.0
1,6,7-trimethylnaphthalene	18.5	NA	NA	**6.20**	NA	NA	**71.2**	NA	**NA**	35.3	NA	25.5	NA	25.4	26.9
fluorene	97.4	NA	NA	**17.6**	NA	53.5	126	NA	**94.0**	121	62.4	72.1	**58.7**	**100**	101
phenanthrene	315	NA	NA	**76.9**	NA	209	**572**	NA	**354**	406	**330**	328	**324**	442	472
anthracene	144	NA	NA	**36.2**	NA	92.9	**278**	NA	**162**	193	**150**	159	**138**	192	221
1-methylphenanthrene	52.6	NA	NA	**10.5**	NA	39.8	**<52**	NA	**NA**	65.9	**<50**	61.6	NA	80.1	88.8
fluoranthene	465	NA	NA	**138**	NA	302	762	NA	**553**	563	**538**	569	662	753	723
pyrene	405	NA	NA	**133**	NA	267	651	NA	**510**	567	**495**	488	610	688	621
benz[a]anthracene	219	NA	NA	**79.3**	NA	185	339	NA	**336**	402	**271**	302	371	370	425
chrysene + triphenylene	305	NA	NA	**88.2**	NA	**168**	408	NA	**411**	513	NA	346	447	452	447
benzofluoranthenes [b+j+k]	592	NA	NA	**187**	NA	484	824	NA	**827**	1029	NA	676	1009	989	848
benzo[e]pyrene	236	NA	NA	**65.2**	NA	194	323	NA	**NA**	403	NA	282	409	391	324
benzo[a]pyrene	253	NA	NA	**89.4**	NA	182	302	NA	**317**	463	**270**	281	**321**	399	345
perylene	247	NA	NA	**68.6**	NA	253	372	NA	**NA**	425	NA	322	513	497	546
indeno[1,2,3-cd]pyrene	176	NA	NA	**68.6**	NA	152	227	NA	**236**	499	254	219	**169**	372	328
dibenz[a,h]anthracene + [a,c]	61.5	NA	NA	**14.3**	NA	40.4	<62	NA	**112**	112	60.6	59.3	**55.1**	88.2	80.0
benzo[ghi]perylene	186	NA	NA	**60.9**	NA	153	193	NA	**268**	306	**210**	211	**159**	296	208

Table 4. **Marine Sediment IX (QA99SED9): Continued**

Water and PAHs

Laboratory No.	17	18	19	21	22	23	24	25	26	27	28	29	30	31	32
Water (%)	46.0	54.0	NA	**80.7**	46.2	52.1	53.9	44.7	45.9	NA	45.4	46.7	47.7	45.8	46.2

PAHs

ng/g dry basis

Laboratory No.	17	18	19	21	22	23	24	25	26	27	28	29	30	31	32
naphthalene	365	1130	NA	NA	**273**	885	644	705	650	491	266	**627**	1269	NA	1173
2-methylnaphthalene	101	348	NA	NA	128	295	202	159	198	168	127	175	306	NA	338
1-methylnaphthalene	43.0	169	NA	NA	49.5	143	103	**221**	90.8	73.9	**339**	89.9	**inf**	NA	167
biphenyl	31.7	97.3	NA	NA	35.5	80.3	42.3	NA	54.8	93.3	103	53.3	126	NA	92.0
2,6-dimethylnaphthalene	44.3	101	NA	NA	55.3	113	73.5	51.0	49.5	45.5	**224**	**48.5**	**inf**	NA	156
acenaphthylene	25.7	**95.3**	NA	NA	27.9	70.3	66.5	54.9	37.4	**44.8**	43.2	65.5	**<20**	NA	65.5
acenaphthene	19.3	**65.7**	NA	NA	22.5	49.7	30.6	**58.7**	38.3	33.9	38.1	36.7	38.4	NA	55.0
1,6,7-trimethylnaphthalene	**187**	40.7	NA	NA	16.2	**66.3**	28.7	**17.9**	29.5	NA	**45.2**	21.6	**7.77**	NA	**46.5**
fluorene	49.3	119	NA	NA	**57.9**	118	68.9	105	72.8	**48.5**	82.1	**89.2**	144	NA	135
phenanthrene	240	477	NA	NA	287	581	241	432	257	**196**	**583**	365	487	NA	603
anthracene	93.3	238	NA	NA	127	219	118	196	136	**71.5**	**301**	165	237	NA	263
1-methylphenanthrene	**283**	62.7	NA	NA	53.7	**166**	52.7	**OTHE**	55.9	**other**	128	73.1	114	NA	105
fluoranthene	284	675	NA	NA	496	751	419	836	424	**273**	**1003**	680	751	NA	970
pyrene	722	726	NA	NA	**411**	671	385	737	397	**244**	**1079**	625	722	NA	864
benz[a]anthracene	346	339	NA	NA	264	452	270	391	231	**124**	428	363	426	NA	478
chrysene + triphenylene	321	446	NA	NA	300	337	322	456	280	**151**	**564**	397	463	NA	554
benzofluoranthenes [b+j+k]	594	849	NA	NA	627	522	584	**OTHE**	595	**163**	905	983	1024	NA	1161
benzo[e]pyrene	234	327	NA	NA	228	291	228	403	226	127	406	379	397	NA	448
benzo[a]pyrene	219	417	NA	NA	**263**	311	288	535	272	161	391	373	526	NA	463
perylene	284	792	NA	NA	**261**	545	204	354	256	158	581	467	525	NA	538
indeno[1,2,3-cd]pyrene	138	307	NA	NA	243	277	236	356	271	108	300	300	357	NA	394
dibenz[a,h]anthracene + [a,c]	78.3	97.3	NA	NA	56.0	**78.3**	55.7	OTHER	67.5	39.4	134	67.6	199	NA	86.1
benzo[ghi]perylene	239	319	NA	NA	202	276	212	384	209	116	330	290	361	NA	392

Table 4. **Marine Sediment IX (QA99SED9): Continued**

Water and PAHs											Exercise Assigned			
Laboratory No.	33	34	35	36	37	38	39	40	41	42	value	s	%RSD	95% CL
Water (%)	46.0	44.0	47.0	45.9	46.4	45.7	46.3	44.8	46.1	47.1	46.7	2.7	5.7	0.9
PAHs														
ng/g dry basis											Exercise Assigned			
Laboratory No.	33	34	35	36	37	38	39	40	41	42	Value	s	%RSD	95% CL
naphthalene	833	880	NA	**464**	892	761	678	NA	Other1	1077	756	273	36.2	113
2-methylnaphthalene	267	291	NA	NA	379	253	197	NA	**115**	379	241	81	33.8	33.6
1-methylnaphthalene	108	139	NA	NA	180	110	79.1	NA	62.0	179	111	41	36.6	17.5
biphenyl	71.4	115	NA	NA	120	54.6	42.5	NA	Other1	109	73.3	29.7	40.5	12.5
2,6-dimethylnaphthalene	102	104	NA	NA	**217**	84.6	59.4	NA	47.7	108	85.4	31.6	36.9	14.0
acenaphthylene	35.4	60.6	NA	54.9	86.3	51.6	43.5	NA	28.1	40.0	53.6	20.1	37.5	8.48
acenaphthene	26.9	39.3	NA	53.9	45.5	43.4	20.9	NA	23.3	41.6	35.7	11.6	32.4	4.68
1,6,7-trimethylnaphthalene	17.5	50.0	NA	NA	**18.8**	NA	NA	NA	24.6	27.1	27.7	9.2	33.3	5.33
fluorene	72.0	139	NA	111	113	91.8	53.8	89.4	83.2	91.5	79.2	27.9	35.2	11.5
phenanthrene	367	376	NA	460	391	345	256	483	364	388	383	104	27.2	43.0
anthracene	154	164	NA	206	206	148	111	203	188	167	174	46	26.4	19.0
1-methylphenanthrene	68.6	77.4	NA	NA	81.8	123	<100	57.6	89.4	63.3	76.0	24.5	32.2	11.1
fluoranthene	788	646	NA	783	761	478	378	751	875	596	635	179	28.1	70.6
pyrene	648	591	NA	682	705	363	331	709	768	513	594	154	26.0	62.4
benz[a]anthracene	327	341	NA	394	427	284	198	384	377	277	343	79	22.9	30.5
chrysene + triphenylene	323	465	NA	563	470	318	244	401	578	348	404	92	22.8	37.2
benzofluoranthenes [b+j+k]	955	936	NA	880	1343	823	553	873	624	735	815	215	26.3	85.0
benzo[e]pyrene	417	350	NA	325	504	267	249	313	Other1	280	320	88	27.5	34.1
benzo[a]pyrene	384	367	NA	**234**	479	343	212	420	479	331	354	103	29.3	41.8
perylene	475	380	NA	NA	730	409	254	359	**377**	322	416	157	37.7	63.3
indeno[1,2,3-cd]pyrene	270	373	NA	298	341	197	181	429	461	270	287	95	33.2	36.3
dibenz[a,h]anthracene + [a,c]	84.9	88.6	NA	90.7	**114**	59.0	43.3	67.3	**Other1**	56.7	78.1	34.3	43.9	14.2
benzo[ghi]perylene	305	273	NA	264	257	217	166	344	303	245	259	71	27.2	27.3

Table 5. **Marine Sediment IX (QA99SED9): Laboratory means of three replicates and exercise assigned values**

Pesticides (reported as if three figures were significant)

ng/g dry basis

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	14	15	16
alpha-HCH	<1	NA	NA	NA	NA	NA	DL	<0.05	**<0.025**	NA	1.02	NA	NA	<0.047	<0.60
hexachlorobenzene	4.57	5.95	3.49	NA	NA	NA	DL	**0.367**	**NA**	NA	4.02	NA	4.32	6.18	7.83
gamma-HCH	<1	<2	NA	NA	NA	NA	DL	0.333	**<0.025**	NA	<1.0	NA	<0.85	<0.017	<0.40
heptachlor	<1	<2	NA	NA	NA	NA	DL	0.900	**<0.029**	NA	<1.0	NA	NA	<0.035	<0.45
aldrin	<1	<2	NA	NA	NA	NA	DL	0.700	**<0.025**	NA	<1.0	NA	NA	<0.014	<0.40
heptachlor epoxide	<1	<2	NA	NA	NA	NA	DL	0.233	**<0.025**	NA	<1.0	NA	NA	<0.021	<0.50
oxychlordane	<2	<2	NA	NA	NA	NA	DL	0.967	**NA**	NA	<1.0	NA	NA	<0.017	<0.50
trans-chlordane	0.242	<2	NA	NA	NA	NA	DL	0.933	**<0.025**	NA	0.829	NA	NA	<0.019	0.400
2,4'-DDE	0.198	<2	NA	NA	NA	NA	**2.79**	**0.833**	**NA**	NA	<5.2	NA	NA	0.448	<0.40
endosulfan I	<1	<2	NA	NA	NA	NA	DL	NA	**<0.025**	NA	<1.0	NA	NA	<0.042	<0.30
cis-chlordane	0.536	1.42	0.332	NA	NA	NA	**2.59**	1.27	**<0.025**	NA	0.766	NA	<0.97	0.469	0.843
trans-nonachlor	0.438	<2	NA	NA	NA	NA	0.36	0.233	**NA**	NA	0.761	NA	<0.97	0.364	<0.40
dieldrin	<1	1.33	NA	NA	NA	NA	DL	0.900	**<0.050**	NA	0.841	NA	NA	**1.62**	0.493
4,4'-DDE	2.27	2.81	3.24	NA	NA	NA	2.60	3.07	**3.50**	NA	**2.71**	NA	3.35	3.02	3.01
2,4'-DDD	<1	3.06	NA	NA	NA	NA	DL	0.433	**NA**	NA	1.66	NA	NA	0.648	1.64
endrin	<1	<2	NA	NA	NA	NA	DL	0.233	**<0.062**	NA	<2.0	NA	NA	<0.049	<0.30
endosulfan II	<1	<2	NA	NA	NA	NA	DL	0.400	**<0.054**	NA	NA	NA	NA	<0.013	<0.30
4,4'-DDD	3.23	4.54	3.33	NA	NA	NA	DL	**1.43**	**3.12**	NA	3.57	NA	4.68	4.15	3.92
2,4'-DDT	<1	<2	NA	NA	NA	NA	DL	0.333	**NA**	NA	<2.0	NA	NA	<0.097	<0.65
cis-nonachlor	0.127	<2	**2.75**	NA	NA	NA	DL	0.200	**NA**	NA	<1.0	NA	NA	<0.007	0.437
4,4'-DDT	0.724	1.39	**0.794**	NA	NA	NA	**1.73**	0.433	**3.50**	NA	0.768	NA	1.00	3.59	<0.40
mirex	<1	<2	NA	NA	NA	NA	DL	<0.05	**NA**	NA	<1.0	NA	NA	<0.015	<0.40

Table 5. **Marine Sediment IX (QA99SED9): Continued**

Pesticides
ng/g dry basis

Laboratory No.	17	18	19	21	22	23	24	25	26	27	28	29	30	31	32
alpha-HCH	<0.08	<3.5	NA	ND	<2.0	<1.0	0.253	NA	<1	NA	<0.035	<2	NA	NA	NA
hexachlorobenzene	10.6	7.30	<0.3	NA	5.48	2.38	5.67	4.97	3.59	NA	5.46	9.30	**18.6**	NA	8.47
gamma-HCH	<0.05	<9	NA	ND	<2.0	<0.8	0.090	1.37	<1	NA	<0.033	<2	<1	NA	0.743
heptachlor	<0.06	<3.5	NA	NA	<2.0	<1.0	0.417	DL	<1	NA	<0.660	0.450	<2	NA	<0.263
aldrin	<0.06	<3.5	NA	NA	<2.0	<1.0	<0.06	NA	<1	NA	<0.450	<2	0.718	NA	<0.26
heptachlor epoxide	<0.13	<7.7	NA	NA	<2.0	<1.0	**0.570**	DL	<1	NA	<0.120	<2	<1	NA	<0.135
oxychlordane	NA	<5	NA	ND	<2.0	<1.0	<0.03	NA	<1	NA	<0.410	NA	NA	NA	<0.162
trans-chlordane	1.39	<10	NA	<3.50	<2.0	1.01	0.250	NA	<1	NA	0.277	<2	NA	NA	0.725
2,4'-DDE	0.503	<6.3	<0.3	NA	<2.0	<3.0	0.230	0.461	<1	NA	0.461	<2	<0.5	NA	0.299
endosulfan I	<0.08	<3.5	NA	<3.50	<2.0	<1.0	<0.25	NA	<1	NA	<0.620	<2	NA	NA	NA
cis-chlordane	1.95	<3.5	2.57	<3.50	<2.0	<1.0	**0.750**	0.638	<1	NA	0.472	<2	1.60	NA	0.332
trans-nonachlor	0.638	**2.60**	**5.31**	<3.50	<2.0	<1.0	0.100	0.351	<1	NA	<0.310	<2	<1	NA	**0.221**
dieldrin	<0.36	<3.8	NA	NA	0.767	<1.0	**0.817**	NA	<1	NA	0.516	<2	<0.5	NA	**1.00**
4,4'-DDE	4.07	3.72	3.29	8.01	3.69	3.45	2.80	2.68	2.68	NA	3.35	4.47	4.99	NA	2.42
2,4'-DDD	<0.08	<3.5	NA	NA	<2.0	<5.0	<0.04	1.64	<1	NA	**0.785**	1.27	0.781	NA	NR
endrin	<0.17	<3.5	NA	NA	<2.0	<6.0	<0.30	NA	<1	NA	<1.190	<2	<3	NA	NA
endosulfan II	<0.18	<3.5	NA	<3.50	<2.0	<25	1.32	NA	<1	NA	<0.560	<2	NA	NA	NA
4,4'-DDD	6.91	3.03	4.66	NA	3.83	4.63	3.17	OTHER	3.24	NA	**5.16**	7.07	5.10	NA	4.39
2,4'-DDT	<0.07	<6.6	NA	NA	<2.0	<4.0	0.237	OTHER	<1	NA	<0.046	5.30	<1	NA	<0.347
cis-nonachlor	0.287	<3.5	NA	NA	<2.0	<1.0	0.240	NA	<1	NA	<0.210	<2	NA	NA	0.196
4,4'-DDT	<0.08	<4.2	NA	ND	<2.0	<4.0	0.593	DL	<1	NA	0.506	1.37	**2.30**	NA	<0.365
mirex	<0.05	<4.4	NA	NA	<2.0	<3.0	<0.05	**5.02**	<1	NA	<0.500	<2	<2	NA	<0.319

Table 5. **Marine Sediment IX (QA99SED9): Continued**

Pesticides
ng/g dry basis

Laboratory No.	33	34	35	36	37	38	39	40	41	42	Exercise Assigned Value	s	%RSD	95% CL
alpha-HCH	<=0.22	0.029	<2	<0.21	NA	1.72	DL	0.238	Other1	NA	<1			
hexachlorobenzene	5.28	6.58	5.82	4.52	6.44	5.71	7.31	5.84	5.69	NA	5.88	1.83	31.1	0.738
gamma-HCH	<0.422	0.028	<2	<0.21	0.790	<0.094	DL	0.094	0.040	NA	<1			
heptachlor	0.850	<0.010	<2	<0.21	1.59	1.91	0.051	**22.4**	0.198	NA	0.796	0.662	83.2	0.553
aldrin	<=0.53	<0.014	<2	<0.21	<0.7	0.177	DL	0.312	0.285	NA	0.438	0.252	57.5	0.313
heptachlor epoxide	<=0.24	0.044	<2	<0.21	<0.5	<0.042	0.029	0.124	0.194	NA	0.125	0.090	71.8	0.111
oxychlordane	0.630	<0.043	<1.3	<.42	NA	<0.044	DL	NA	0.485	NA	0.694	0.247	35.6	0.613
trans-chlordane	1.28	0.538	<2	<0.21	NA	<0.074	0.116	0.292	0.448	NA	0.624	0.409	65.6	0.236
2,4'-DDE	0.855	0.438	0.330	**2.39**	<0.8	0.994	0.191	NA	Other1	NA	0.451	0.249	55.1	0.150
endosulfan I	<0.294	<0.057	<2	<0.21	NA	NA	DL	0.047	Other1	NA	<1			
cis-chlordane	2.29	0.454	<2	1.76	0.970	0.325	0.103	0.443	Other1	NA	0.977	0.724	74.1	0.339
trans-nonachlor	0.459	0.234	<2	0.493	<0.8	0.536	**0.100**	**0.238**	0.28	NA	0.404	0.179	44.3	0.108
dieldrin	1.95	0.255	<2	0.797	other	<0.318	0.197	0.526	**1.59**	NA	0.779	0.502	64.4	0.337
4,4'-DDE	4.63	2.98	2.70	**1.16**	3.57	1.40	2.16	NA	2.86	NA	3.34	1.17	35.2	0.447
2,4'-DDD	1.24	0.335	0.537	<.42	other	<0.079	0.222	NA	**1.02**	NA	1.12	0.78	69.6	0.496
endrin	<0.564	<0.069	NA	<.42	NA	<0.319	DL	NA	0.174	NA	<1			
endosulfan II	<0.595	<0.083	NA	<.42	NA	NA	DL	0.037	2.18	NA	<2			
4,4'-DDD	6.4	2.97	5.06	3.02	**5.74**	2.21	2.33	NA	3.81	NA	4.10	1.29	31.4	0.531
2,4'-DDT	<0.420	0.100	<2	<.42	1.66	0.614	DL	NA	0.528	NA	<2			
cis-nonachlor	1.01	0.149	0.093	<.42	NA	<0.064	DL	0.213	**1.24**	NA	0.296	0.270	91.3	0.193
4,4'-DDT	<0.422	0.287	**0.447**	<0.21	<0.6	**9.51**	**0.987**	NA	**2.80**	NA	1.29	1.17	91.0	0.787
mirex	<0.426	0.040	<2	<.42	<0.6	<0.131	DL	NA	0.28	NA	<1			

Table 6. **Marine Sediment IX (QA99SED9): Laboratory means of three replicates and exercise assigned values**

PCBs (reported as if three figures were significant)

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	14	15	16
PCB 8	1.26	2.09	1.28	NA	1.90	**3.40**	NA	NA	**<1.87**	NA	NA	NA	0.827	<0.145	0.843
PCB 18	1.78	1.10	1.78	NA	1.63	3.03	3.30	0.833	**2.35**	NA	NA	NA	1.90	2.89	3.19
PCB 28	3.19	5.21	3.21	NA	4.07	9.76	3.47	6.20	**NA**	NA	NA	NA	3.82	8.41	5.67
PCB 52	3.66	5.21	4.34	NA	5.13	**6.52**	**5.34**	**4.60**	**4.53**	NA	NA	NA	4.87	4.47	6.74
PCB 44	2.73	**5.36**	3.31	NA	6.83	4.67	**3.15**	2.27	**4.79**	NA	NA	NA	3.30	3.05	4.67
PCB 66/95	NA	10.3	NA	NA	NA	NA	NA	**6.40**	**NA**	NA	NA	NA	**5.14**	NA	NA
PCB 101/90	3.53	7.30	5.26	NA	NA	5.60	**5.87**	6.20	**5.36**	NA	NA	NA	6.34	4.68	7.13
PCB 118	3.41	4.65	**3.67**	NA	6.97	4.78	3.12	2.53	**5.77**	NA	NA	NA	4.45	4.07	4.48
PCB 153	3.80	5.81	**4.66**	NA	10.5	7.46	3.54	**8.30**	**4.87**	NA	NA	NA	5.80	**4.43**	7.51
PCB 105	0.906	2.89	**1.23**	NA	**9.20**	1.65	0.980	**1.33**	**<1.87**	NA	NA	NA	1.89	1.21	1.74
PCB 138/163/164	3.09	5.38	4.21	NA	NA	5.21	3.59	**6.67**	**4.34**	NA	NA	NA	4.98	6.73	5.52
PCB 187/182	1.23	2.70	2.34	NA	NA	2.35	1.00	2.43	**1.91**	NA	NA	NA	2.90	2.89	3.76
PCB 128	0.464	0.880	NA	NA	3.03	0.854	0.525	0.433	**1.62**	NA	NA	NA	0.770	0.423	0.617
PCB 180	1.62	3.81	3.26	NA	4.50	3.99	DL	2.53	**3.13**	NA	NA	NA	3.41	3.35	4.37
PCB 170/190	1.02	1.74	1.55	NA	NA	1.71	1.20	**4.20**	**1.49**	NA	NA	NA	1.27	**11.1**	3.51
PCB 195	<1	<2	0.664	NA	2.90	0.335	DL	1.20	**<1.87**	NA	NA	NA	1.63	1.06	1.76
PCB 206	1.59	**2.10**	3.70	NA	2.60	2.05	DL	2.00	**NA**	NA	NA	NA	3.27	**1.70**	3.01
PCB 209	3.07	6.15	5.88	NA	3.93	4.61	**1.09**	NA	**NA**	NA	NA	NA	6.07	**2.94**	7.26
PCB 66	3.45	NA	4.41	NA	8.30	5.81	3.80	NA	**5.61**	NA	NA	NA	NA	4.57	5.66
PCB 95	2.69	NA	3.09	NA	NA	4.31	NA	NA	**<1.87**	NA	NA	NA	NA	NA	4.55

Table 6. **Marine Sediment IX (QA99SED9): Continued**

PCBs

Laboratory No.	17	18	19	21	22	23	24	25	26	27	28	29	30	31	32
PCB 8	2.99	2.06	NA	NA	**3.52**	1.27	**3.08**	OTHER	1.05	<0.213	0.524	1.60	2.73	1.80	NA
PCB 18	4.29	2.97	NA	NA	2.67	2.37	1.81	0.357	1.84	0.135	0.364	2.33	4.02	2.32	NA
PCB 28	4.47	4.44	NA	NA	4.35	5.68	4.50	OTHER	3.23	1.14	2.40	5.83	6.58	5.37	5.41
PCB 52	5.53	5.33	3.02	NA	5.89	5.80	4.57	3.34	3.64	**1.37**	3.02	7.20	7.23	6.17	**6.72**
PCB 44	3.38	3.83	3.27	NA	4.52	4.36	3.15	1.75	2.78	**1.23**	2.27	5.53	6.31	**5.65**	4.82
PCB 66/95	**5.71**	NA	NA	NA	NA	NA	8.48	OTHER	NA	**0.933**	NA	6.60	11.8	NA	NA
PCB 101/90	5.20	5.07	2.67	NA	5.25	7.22	**4.91**	OTHER	3.68	**0.885**	2.61	9.20	9.85	5.63	7.76
PCB 118	4.19	3.55	3.33	NA	5.30	5.61	4.44	OTHER	3.00	**0.796**	2.26	5.83	6.18	4.64	4.68
PCB 153	5.51	4.80	4.54	NA	5.52	5.54	4.49	OTHER	3.79	1.69	2.08	8.50	10.6	4.52	6.56
PCB 105	1.48	**1.20**	1.70	NA	**2.49**	1.54	**1.75**	OTHER	0.976	0.278	**0.622**	1.20	1.72	1.55	0.918
PCB 138/163/164	8.26	**3.33**	4.06	NA	6.09	5.59	4.61	OTHER	3.46	1.07	2.04	5.37	7.46	4.53	5.37
PCB 187/182	2.40	2.53	NA	NA	**4.54**	2.33	3.41	OTHER	1.24	0.412	1.20	3.30	2.97	2.40	**5.99**
PCB 128	1.15	<3.5	1.20	NA	**1.18**	<1.0	0.920	0.248	<1	0.199	0.260	0.687	1.10	0.630	0.882
PCB 180	3.56	3.67	2.82	NA	4.40	3.37	2.72	OTHER	1.84	0.646	**2.73**	4.60	4.66	3.75	NA
PCB 170/190	3.20	1.60	1.61	NA	1.91	1.43	**2.64**	1.59	<1	0.204	1.33	7.37	4.45	1.40	1.66
PCB 195	<0.07	<3.5	NA	NA	<2.0	<1.0	1.17	0.269	<1	0.055	0.112	2.03	2.19	< 0.500	1.59
PCB 206	3.69	2.60	1.47	NA	3.46	2.66	1.88	3.12	1.42	0.389	1.12	3.13	4.23	2.84	2.88
PCB 209	4.50	5.23	2.64	NA	**6.73**	5.90	**3.69**	6.14	2.90	0.786	3.01	7.17	NA	5.81	6.08
PCB 66	5.71	4.53	3.02	NA	4.94	6.21	4.74	OTHER	3.70	0.933	2.78	NA	NA	6.02	6.15
PCB 95	NA	NA	NA	NA	NA	4.78	3.74	OTHER	2.46	0.880	1.95	NA	NA	4.33	NA

Table 6. **Marine Sediment IX (QA99SED9): Continued**

PCBs

Laboratory No.	33	34	35	36	37	38	39	40	41	42	Exercise Assigned Value	s	%RSD	95% CL
PCB 8	1.11	1.95	0.980	<0.21	**2.14**	4.69	1.74	**2.81**	Other4	NA	1.72	0.97	56.1	0.466
PCB 18	1.48	2.08	1.91	3.27	3.46	2.84	2.25	1.80	2.07	NA	2.20	1.00	45.5	0.361
PCB 28	8.03	6.43	3.99	**4.98**	7.38	2.58	5.32	8.99	3.60	NA	5.09	2.02	39.8	0.756
PCB 52	7.68	5.26	5.03	3.59	**7.67**	4.02	4.47	6.55	4.57	NA	5.03	1.28	25.5	0.498
PCB 44	4.27	**5.06**	4.00	2.17	4.81	2.29	**4.43**	3.42	3.62	NA	3.79	1.25	33.0	0.485
PCB 66/95	8.90	NA	NA	**3.70**	9.24	NA	8.13	10.6	7.90	NA	8.63	1.59	18.4	1.222
PCB 101/90	7.95	6.18	4.71	4.05	6.67	2.66	6.42	5.48	Other4	NA	5.62	1.82	32.3	0.704
PCB 118	6.75	5.04	3.33	3.84	4.47	3.32	3.79	4.25	4.08	NA	4.39	1.16	26.3	0.424
PCB 153	8.48	5.80	4.38	**3.31**	7.24	2.14	6.01	6.21	4.52	NA	5.59	2.20	39.3	0.807
PCB 105	3.34	1.50	1.16	2.76	1.25	1.07	1.27	1.83	1.32	NA	1.52	0.67	43.8	0.275
PCB 138/163/164	11.0	5.34	2.92	3.84	5.90	4.73	6.49	4.95	4.07	NA	5.01	1.90	38.0	0.711
PCB 187/182	3.65	2.47	1.78	2.55	4.23	0.674	2.86	1.96	2.28	NA	2.27	1.05	46.1	0.399
PCB 128	1.20	0.660	0.727	1.05	0.937	0.356	0.814	0.587	0.644	NA	0.823	0.537	65.3	0.204
PCB 180	5.05	3.85	2.76	1.88	4.06	1.30	3.99	3.73	Other4	NA	3.33	1.08	32.4	0.410
PCB 170/190	2.25	1.60	0.990	1.52	1.12	<0.084	2.27	2.28	1.06	NA	1.94	1.35	69.7	0.525
PCB 195	<0.399	0.291	0.337	0.437	1.92	<0.059	0.384	3.10	1.51	NA	1.19	0.91	76.9	0.416
PCB 206	2.86	2.67	2.14	1.27	3.18	NA	2.83	3.54	2.43	NA	2.55	0.89	35.0	0.340
PCB 209	4.75	5.05	3.75	2.44	**6.29**	NA	5.60	NA	4.55	NA	4.72	1.63	34.5	0.687
PCB 66	NA	6.32	5.13	NA	NA	3.35	3.25	NA	NA	NA	4.71	1.57	33.3	0.678
PCB 95	NA	4.45	NA	NA	NA	1.24	4.88	NA	NA	NA	3.34	1.38	41.4	0.834

Table 7 **Fish Homogenate IV: z scores (25%) by laboratory - Pesticides**

z (25%)

Laboratory No.	1	2	3	6	7	8	9	11	12	13	14	15	16	17	19	20	22	23	24	26	27	28
alpha-HCH	0.3		0.6		-0.6	-3.4	5.3	0.1	0.2	0.3		-0.4	0.3	1.7			0.4	-1.4	0.5	0.3		0.3
hexachlorobenzene	0.9		1.4					-0.7	-0.1		-2.0	-0.3	0.8	7.5		0.0	0.6	0.0	0.9	0.8		-1.1
gamma-HCH	0.8	-0.2	1.8		-1.2			2.2	0.1	-0.6	-1.2	-1.2	-1.4			-0.2	5.9		1.1			-0.7
heptachlor																						
aldrin																						
heptachlor epoxide	0.3				-0.4	0.7	6.9	0.3		0.5		0.5	5.5			1.1	1.5	-1.4	4.6	-0.5		-0.8
oxychlordane	0.0	0.6			0.8	-2.9		-0.2				-0.6	0.4				0.6	-1.4	0.2	0.3		-0.5
trans-chlordane	-0.3	-1.3	1.2			-2.3	8.6	-1.1	1.1	-1.2		0.0	0.2	0.8			1.3	-1.6	0.1	-0.5		2.4
2,4'-DDE	-1.8	7.4			1.4	10.4			2.6	34.7		-1.3	-0.3	68.0		-0.5			2.0			-1.6
endosulfan I																						
cis-chlordane	1.4	-2.3	0.7		1.7	-2.1	5.1	-1.7	0.0	-2.6	0.4	-0.9	0.2	1.2	-2.0	-0.9	0.0	-1.9	1.0	-1.2		-3.4
trans-nonachlor	0.1	0.0	0.9		0.0	-2.1		-1.3	0.2	-0.7	0.9	-0.3	0.6	-0.3	-1.6	-0.9	-0.3	-0.4	-0.1	0.4		-3.0
dieldrin	-0.1	-2.7	-3.3			-2.0	9.8	-1.2	0.1	-2.9		-0.3	0.6	0.6		-0.4	2.5	2.0	0.6	-0.5		-1.5
4,4'-DDE	0.0	-0.5	2.2		-0.6	-2.9	10.5	-0.7	0.6		-0.8	0.1	-0.3	-0.9	-0.7	-0.3	0.0	-0.6	0.1	0.9		-0.7
2,4'-DDD	-1.1	11.9				-1.9		0.9	-1.7	-1.0		0.3	-2.0			0.7			4.1			-2.2
endrin		16.4				-2.4		-0.6		0.3		-0.5	0.4					-1.1	2.5			-1.7
endosulfan II																						
4,4'-DDD	0.9	0.6	0.1			-1.7		-0.3	-1.0	-0.7	30.2	1.7	-2.1	-0.5	5.5	0.3	0.9	-1.9	1.5	-1.0		-1.5
2,4'-DDT	0.2		1.5		-1.8	2.8		-0.9	-0.9	9.1		-0.5	1.4			-1.2	-1.3	-0.9	3.2			-1.6
cis-nonachlor	-0.3	-0.2	0.6		-0.6	-3.5		-1.3	0.4	6.2		-0.6	0.4	1.2			2.0	-1.5	-0.6	-0.3		-1.4
4,4'-DDT	-0.3	-1.3	-0.8		5.9	-0.6	9.6	-2.0	1.6	-1.7	4.3	-1.0	-1.1			-1.1	-0.2	-1.6	-0.4			-1.4
mirex	-0.3	0.3				-0.1		-0.2	0.5			0.1	0.2			-0.6	0.5	-1.4	0.7	-0.4		4.3
total 0% to 25%	9	4	5		2	1		3	8	3	2	5	10	2		3	7	1	8	5		1
total 0% to -25%	5	3	1		4	2		7	3	4	1	10	2	3	1	7	2	3	3	6		5
total 25% to 50%	1		4		2				2			1	1	3		1	3	1	3			
total -25% to -50%	2	2			2	3		6	1	2	2	2	3		2	2	1	10		1		8
total 50% to 75%			1			1		1	1								1		1			1
total -50% to -75%		2				6				2			1									1
total > I75%I		3	1		1	3	7			3	2		1	2	1		1		3			2

Table 7 **Fish Homogenate IV: Continued**

z (25%)

Laboratory No.	29	32	33	34	36	37	39	40	41	42
alpha-HCH	0.7	0.0	-0.3	0.6			-1.2	-2.4		
hexachlorobenzene	0.8	0.1	0.1	0.6	-0.3	0.2	0.7	-1.1	-0.1	-2.4
gamma-HCH	-1.4	2.8	-0.4	-0.6		1.4	-1.2	-2.0	-1.3	-3.0
heptachlor										
aldrin										
heptachlor epoxide	4.7	-0.7		0.4	-0.7	1.8	0.0	-3.9	-0.2	
oxychlordane		-1.4	0.9	-0.3	-0.7		2.1		-0.2	
trans-chlordane	0.4	-1.0	1.9	-1.1			-0.9	-1.5	0.3	
2,4'-DDE		1.0	26.1	-1.5		15.9	-1.2		82.9	
endosulfan I										
cis-chlordane	-0.3	-0.4	2.8	1.0		1.4	-0.8	-1.6		-3.3
trans-nonachlor	0.5	0.7	0.0	0.4	0.1	0.9	0.0	-1.3	0.1	-1.5
dieldrin	0.3	-0.7	0.1	-1.4	-1.1		-0.2	-2.0	0.1	-2.6
4,4'-DDE	0.0	1.6	-0.3	-0.3	-2.7	1.7	0.7		0.7	-2.6
2,4'-DDD		-1.8	3.2	-3.1			-2.3		3.7	
endrin	1.0		11.1	-1.1			-0.9	1.6	3.7	
endosulfan II										
4,4'-DDD	1.9	-1.6	3.8	-2.3	3.0		-1.2		0.3	
2,4'-DDT	-0.7	-1.9	4.5	-2.0		8.9	-1.5		-1.0	-2.6
cis-nonachlor	1.2	0.4	0.8	-0.2			-0.8	-1.6	-2.4	
4,4'-DDT	-1.0	-0.6	6.5	-1.1	0.9	2.7	-0.5		1.7	-2.7
mirex	3.5	0.0	1.4	-1.5		1.3	-1.1		-0.4	-2.1
total 0% to 25%	7	6	5	5	2	2	4		5	
total 0% to -25%	3	5	3	4	3		6		5	
total 25% to 50%	2	1	2			5		1	1	
total -25% to -50%	1	4		7	1		6	7	1	1
total 50% to 75%		1	1		1	1	1			
total -50% to -75%				1	1		1	1	1	7
total > I75%I	2		6	1		2		1	3	1

Table 8 **Fish Homogenate IV: z scores (25%) by laboratory - PCBs**

z (25%)

Laboratory No.	1	2	3	6	7	8	9	11	12	13	14	15	16	17	19	20	22	23	24	26	27	28
PCB 8																						
PCB 18																						
PCB 28	-0.1	0.3	-0.6	3.4	-1.6	-2.4			0.6	4.9	-1.4	-1.4	-0.1	3.7		0.0		-1.4	2.2	-0.5	-0.1	-1.9
PCB 52	0.4	6.1	1.0	1.0	-0.5	0.2	3.9		0.1	-1.2	-1.3	-0.3	0.7	2.7	-1.1	0.0	1.2	-0.9	1.2	0.9	1.0	-0.6
PCB 44	-0.9	3.5	7.0	-0.7	-1.8	-0.8			-0.7	0.0	-2.1	-1.6	-1.2	-0.6	0.8	-1.4	0.4	-1.9	4.2	-1.3	0.5	-1.6
PCB 66/95		0.5				-1.1			0.3	2.0	-2.5			-0.7		-2.5	-1.5		0.1		-2.2	
PCB 101/90	-0.4	-0.5	1.1	0.1	0.4	-0.9	4.4		0.4	-2.2	-1.8	-1.2	-0.1	0.8	1.1	0.0	-0.2	-0.5	-0.1	1.0	-1.0	-1.7
PCB 118	-0.1	-0.1	0.1	0.6	-1.9	0.1	7.2		0.9	-2.4	-1.0	-0.2	-0.2	0.7	0.1	0.6	2.9	0.3	0.7	0.4	0.4	-0.6
PCB 153	-0.1	-0.2	0.1	0.7	-1.4	1.1	9.6		0.2	-0.9	-1.0	-0.1	-0.4	-0.7	0.3	0.3	-0.2	-0.3	1.8	0.4	4.0	-0.9
PCB 105	-0.4	0.4	2.7	0.1	-1.6	29.0	7.9		0.6		-0.3	-0.4	0.3	1.9	0.8	-0.2	1.4	-1.1	-0.2	-0.1	0.2	-1.4
PCB 138/163/164	0.6	0.0	-0.3	0.1	-0.7	10.4	10.6		0.8	-1.2	-1.0	0.8	-0.5	-0.6	-0.1	-0.5	0.9	-0.3	0.9	0.6	1.3	-0.9
PCB 187/182	0.1	0.2	-1.3	0.3	-1.2	6.9	4.9		0.4	-2.0	-0.6	0.6	0.8	0.5		0.2	1.1	-0.6	0.5	0.6	-0.4	0.0
PCB 128	-0.7	-0.3		-0.6	-1.0	5.1	3.5		-0.9	5.7	-1.2	4.8	-0.2	1.5	-1.4	0.4	0.5	-1.5	-0.8	-0.4	1.2	-1.9
PCB 180	-0.6	0.3	1.7	0.7	-1.7	8.7	5.0		0.3	-1.6	-0.3	-0.6	0.2	-0.9	-0.2	-0.4	0.5	-0.7	0.3	0.5	0.7	1.7
PCB 170/190	-1.0	0.8	2.5	0.8	-1.8	1.1	10.5		1.0	0.2	-0.9	-0.9	-0.3		-1.0	0.4	0.9	-1.4	-0.7	-0.5	0.5	1.6
PCB 195	-0.2	2.3	0.9	-0.8		0.0	6.7		0.1	3.0	-0.5	-0.5	1.3	2.6		-0.4	1.2	-1.5	1.2	0.2	-0.2	-1.7
PCB 206	0.7	1.6	4.0	-0.1	-2.7	-0.7			0.7	0.0	-0.5	-1.7	0.4		0.5	0.0	2.3	-1.0	0.8	1.0	0.9	-0.8
PCB 209	1.5	2.7	3.2	-1.0		-1.6				-2.5	-1.1	-2.3	0.0	-0.3	2.4	-0.2			0.7	1.9	-0.6	-0.9
PCB 66	0.3		0.8	0.8	-1.0		12.1					-1.3	-0.4	2.5	-0.2			10.0	-1.0	1.9	-0.4	0.0
PCB 95	0.7		4.7	0.8									0.2					-0.8	-0.2	0.7	1.1	-0.8
total 0% to 25%	6	7	5	11	1	3			13	3		2	7	3	5	9	5	1	7	10	7	2
total 0% to -25%	10	4	2	5	4	3			2	1	9	7	8	6	4	5	2	8	6	4	6	7
total 25% to 50%	1	1	2			2				1			1	2	1		4		3	1	3	2
total -25% to -50%			1		8	2				4	5	5	1		2	1	1	6		1		6
total 50% to 75%		2	2							1				3	1		2		1		1	
total -50% to -75%					1	1				3	2	1				1						
total > I75%I		2	4	1		5	12			2		1		1				1	1		1	

Table 8 **Fish Homogenate IV: Continued**

z (25%)

Laboratory No.	29	32	33	34	36	37	39	40	41	42
PCB 8										
PCB 18										
PCB 28	0.8	-0.6	1.7	-0.8	-1.8	0.3	-1.1	14.2	-1.2	-3.1
PCB 52	0.9	-0.2	-0.3	-1.1	-0.8	1.2	-1.2	8.3	-0.5	-1.2
PCB 44	0.3	-1.8	-0.5	-1.1	4.3	4.0	-1.2	2.6	-1.3	-2.4
PCB 66/95	1.8		-0.6			0.2	0.4	10.5	0.6	
PCB 101/90	1.5	0.4	-0.4	-1.2	3.1	-0.8	-0.2	4.5		-1.5
PCB 118	0.0	0.1	-0.2	0.8	0.6	0.1	-0.8	0.9	-0.3	-2.1
PCB 153	0.5	1.6	-0.5	2.1	-0.9	0.3	-0.4	5.3	-0.7	-2.6
PCB 105	0.4	0.4	-0.3	-0.5	-0.2	-1.7	-1.1	3.1	-0.4	-2.0
PCB 138/163/164	-0.5	1.1	0.4	0.6	-0.1	-0.3	0.0	5.3	0.2	-2.6
PCB 187/182	-0.3	0.3	0.1	0.2	0.4	0.5	-0.4	3.5	-0.2	-2.1
PCB 128		-0.6	24.5	-1.1	1.6	6.1	-1.0	2.1	18.8	-1.4
PCB 180	1.5	0.3	1.0	0.2	-0.1	-0.7	-0.4	5.5	-0.8	-2.1
PCB 170/190	0.5	0.3	0.5	-1.0	3.4	-0.4	0.1	12.6	-1.0	-1.3
PCB 195	1.3	-0.8	1.8	-1.1	-1.1	0.5	-0.6	24.6	-0.5	-1.4
PCB 206	0.4	-0.4	1.0	-0.4	-1.3	-0.4	0.3	12.5	-0.2	-1.3
PCB 209	-0.5	0.1	2.7	-1.8	-0.6	-1.0	-1.2		-0.4	-1.3
PCB 66				-0.1			-0.7			-1.4
PCB 95		0.1		-0.9			0.1			
total 0% to 25%	8	8	5	6	2	6	5	1	2	
total 0% to -25%	3	5	7	4	6	6	8		10	
total 25% to 50%	4	2	2		1	1		2		
total -25% to -50%		1		6	3	1	5		2	9
total 50% to 75%			1	1						
total -50% to -75%										6
total > |75%|			1		3	2		12	1	1

Table 9 **Sediment IX: z scores (25%) by laboratory - PAHs**

z(25%)

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	14	15	16	17	18	19	21	22
naphthalene	0.3			-2.6		-2.1	0.9		-1.0	0.7	-1.2	-0.8		0.8	0.7	-2.1	2.0			-2.6
2-methylnaphthalene	-0.1			-3.0		-1.7	0.3			0.8		-0.8		1.0	0.9	-2.3	1.8			-1.9
1-methylnaphthalene	-0.5			-2.9		-1.7	0.1			0.8		-0.8		1.1	0.5	-2.4	2.1			-2.2
biphenyl	-1.4			-3.1		-2.1	1.6			0.0		-1.3		-0.7	-0.2	-2.3	1.3			-2.1
2,6-dimethylnaphthalene	0.4			-3.1		-1.4	2.1			0.9	1.0	-0.2		1.0	2.4	-1.9	0.7			-1.4
acenaphthylene	-1.1			-2.3		-2.3	4.1			-0.4	2.4	2.9		1.0	1.6	-2.1	3.1			-1.9
acenaphthene	0.1			-2.7		-1.9	1.6			0.9		-0.9		0.8	0.5	-1.8	3.3			-1.5
1,6,7-trimethylnaphthalene	-1.3			-3.1			6.3			1.1		-0.3		-0.3	-0.1	23.0	1.9			-1.7
fluorene	0.9			-3.1		-1.3	2.4		0.8	2.2	-0.8	-0.3	-1.0	1.1	1.1	-1.5	2.1			-1.1
phenanthrene	-0.7			-3.2		-1.8	2.0		-0.3	0.2	-0.5	-0.6	-0.6	0.6	0.9	-1.5	1.0			-1.0
anthracene	-0.7			-3.2		-1.9	2.4		-0.3	0.4	-0.6	-0.3	-0.8	0.4	1.1	-1.9	1.5			-1.1
1-methylphenanthrene	-1.4			-3.5		-2.0				-0.7		-0.9		0.0	0.4	10.1	-0.9			-1.3
fluoranthene	-1.1			-3.1		-2.1	0.8		-0.5	-0.5	-0.6	-0.4	0.2	0.7	0.6	-2.2	0.3			-0.9
pyrene	-1.3			-3.1		-2.2	0.4		-0.6	-0.2	-0.7	-0.7	0.1	0.6	0.2	0.9	0.9			-1.2
benz[a]anthracene	-1.5			-3.1		-1.8	0.0		-0.1	0.7	-0.8	-0.5	0.3	0.3	1.0	0.0	0.0			-0.9
chrysene + triphenylene	-1.0			-3.1		-2.3	0.0		0.1	1.1		-0.6	0.4	0.5	0.4	-0.8	0.4			-1.0
benzofluoranthenes [b+j+k]	-1.1			-3.1		-1.6	0.0		0.1	1.0		-0.7	1.0	0.8	0.2	-1.1	0.2			-0.9
benzo[e]pyrene	-1.1			-3.2		-1.6	0.0			1.0		-0.5	1.1	0.9	0.0	-1.1	0.1			-1.1
benzo[a]pyrene	-1.1			-3.0		-1.9	-0.6		-0.4	1.2	-0.9	-0.8	-0.4	0.5	-0.1	-1.5	0.7			-1.0
perylene	-1.6			-3.3		-1.6	-0.4			0.1		-0.9	0.9	0.8	1.3	-1.3	3.6			-1.5
indeno[1,2,3-cd]pyrene	-1.6			-3.0		-1.9	-0.8		-0.7	2.9	-0.5	-1.0	-1.7	1.2	0.6	-2.1	0.3			-0.6
dibenz[a,h]anthracene + [a,c]	-0.8			-3.3		-1.9			1.7	1.8	-0.9	-1.0	-1.2	0.5	0.1	0.0	1.0			-1.1
benzo[ghi]perylene	-1.1			-3.1		-1.6	-1.0		0.1	0.7	-0.8	-0.7	-1.5	0.6	-0.8	-0.3	0.9			-0.9
total 0% to 25%	4						9		4	13	1		6	18	14	3	12			
total 0% to -25%	6						4		8	4	10	21	4	2	4	2	1			8
total 25% to 50%							3		1	4			1	3	4		5			
total -25% to -50%	13					16					1	1	3			9				12
total 50% to 75%							3			2	1	1			1		2			
total -50% to -75%				7		6										7				3
total > I75%I				16			2									2	3			

Table 9 **Sediment IX: Continued**

z(25%)

Laboratory No.	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
naphthalene	0.7	-0.6	-0.3	-0.6	-1.4	-2.6	-0.7	2.7		2.2	0.4	0.7		-1.5	0.7	0.0	-0.4			1.7
2-methylnaphthalene	0.9	-0.7	-1.4	-0.7	-1.2	-1.9	-1.1	1.1		1.6	0.4	0.8			2.3	0.2	-0.7		-2.1	2.3
1-methylnaphthalene	1.2	-0.3	4.0	-0.7	-1.3	8.2	-0.8	1.8		2.0	-0.1	1.0			2.5	0.0	-1.1		-1.8	2.5
biphenyl	0.4	-1.7		-1.0	1.1	1.6	-1.1	2.9		1.0	-0.1	2.3			2.5	-1.0	-1.7			2.0
2,6-dimethylnaphthalene	1.3	-0.6	-1.6	-1.7	-1.9	6.5	-1.7			3.3	0.8	0.9			6.1	0.0	-1.2		-1.8	1.0
acenaphthylene	1.2	1.0	0.1	-1.2	-0.7	-0.8	0.9			0.9	-1.4	0.5		0.1	2.4	-0.1	-0.8		-1.9	-1.0
acenaphthene	1.6	-0.6	2.6	0.3	-0.2	0.3	0.1	0.3		2.2	-1.0	0.4		2.0	1.1	0.9	-1.7		-1.4	0.7
1,6,7-trimethylnaphthalene	5.6	0.1	-1.4	0.3		2.5	-0.9	-2.9		2.7	-1.5	3.2			-1.3				-0.4	-0.1
fluorene	2.0	-0.5	1.3	-0.3	-1.5	0.2	0.5	3.3		2.9	-0.3	3.0		1.6	1.7	0.7	-1.3	0.5	0.2	0.6
phenanthrene	2.1	-1.5	0.5	-1.3	-2.0	2.1	-0.2	1.1		2.3	-0.2	-0.1		0.8	0.1	-0.4	-1.3	1.0	-0.2	0.0
anthracene	1.0	-1.3	0.5	-0.9	-2.4	2.9	-0.2	1.5		2.1	-0.4	-0.2		0.7	0.7	-0.6	-1.4	0.7	0.3	-0.1
1-methylphenanthrene	4.3	-1.4		-1.2		2.4	-0.3	1.7		1.3	-0.6	-0.1			0.1	2.2		-1.1	0.5	-0.8
fluoranthene	0.7	-1.4	1.3	-1.3	-2.3	2.3	0.3	0.7		2.1	1.0	0.1		0.9	0.8	-1.0	-1.6	0.7	1.5	-0.2
pyrene	0.5	-1.4	1.0	-1.3	-2.4	3.3	0.2	0.9		1.8	0.4	0.0		0.6	0.7	-1.6	-1.8	0.8	1.2	-0.5
benz[a]anthracene	1.3	-0.8	0.6	-1.3	-2.6	1.0	0.2	1.0		1.6	-0.2	0.0		0.6	1.0	-0.7	-1.7	0.5	0.4	-0.8
chrysene + triphenylene	-0.7	-0.8	0.5	-1.2	-2.5	1.6	-0.1	0.6		1.5	-0.8	0.6		1.6	0.7	-0.8	-1.6	0.0	1.7	-0.6
benzofluoranthenes [b+j+k]	-1.4	-1.1		-1.1	-3.2	0.4	0.8	1.0		1.7	0.7	0.6		0.3	2.6	0.0	-1.3	0.3	-0.9	-0.4
benzo[e]pyrene	-0.4	-1.2	1.0	-1.2	-2.4	1.1	0.7	1.0		1.6	1.2	0.4		0.1	2.3	-0.7	-0.9	-0.1		-0.5
benzo[a]pyrene	-0.5	-0.7	2.0	-0.9	-2.2	0.4	0.2	1.9		1.2	0.3	0.2		-1.4	1.4	-0.1	-1.6	0.8	1.4	-0.3
perylene	1.2	-2.0	-0.6	-1.5	-2.5	1.6	0.5	1.1		1.2	0.6	-0.3			3.0	-0.1	-1.6	-0.5	-0.4	-0.9
indeno[1,2,3-cd]pyrene	-0.1	-0.7	1.0	-0.2	-2.5	0.2	0.2	1.0		1.5	-0.2	1.2		0.1	0.7	-1.3	-1.5	2.0	2.4	-0.2
dibenz[a,h]anthracene + [a,c	0.0	-1.1		-0.5	-2.0	2.9	-0.5	6.2		0.4	0.3	0.5		0.6	1.9	-1.0	-1.8	-0.6		-1.1
benzo[ghi]perylene	0.3	-0.7	1.9	-0.8	-2.2	1.1	0.5	1.6		2.1	0.7	0.2		0.1	0.0	-0.7	-1.4	1.3	0.7	-0.2
total 0% to 25%	8	2	8	2		6	12	8		3	10	15		11	10	7		9	4	4
total 0% to -25%	4	11	2	10	2	1	8				10	4				12	4	3	4	14
total 25% to 50%	7		4		1	5		8		11	1	1		3	4			1	4	2
total -25% to -50%	1	10	3	11	7	1	3				2			2	1	2	17	1	4	1
total 50% to 75%	1		1			6		2		8		2			7	1			1	2
total -50% to -75%					10	1		1											1	
total > I75%I	2		1		1	3		2		1		1			1					

Table 10 **Sediment IX: z scores (25%) by laboratory - Pesticides**

z(25%)

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	14	15	16	17	18	19	21	22
alpha-HCH																				
hexachlorobenzene	-0.9	0.1	-1.6					-3.8			-1.3		-1.1	0.2	1.3	3.2	1.0			-0.3
gamma-HCH																				
heptachlor								0.5												
aldrin								2.4												
heptachlor epoxide								3.5												
oxychlordane								1.6												
trans-chlordane	-2.4							2.0			1.3				-1.4	4.9				
2,4'-DDE	-2.2						20.8	3.4						0.0		0.5				
endosulfan I																				
cis-chlordane	-1.8	1.8	-2.6				6.6	1.2			-0.9			-2.1	-0.5	4.0		6.5		
trans-nonachlor	0.3						-0.5	-1.7			3.5			-0.4		2.3	21.8	48.7		
dieldrin		2.8						0.6			0.3			4.3	-1.5					-0.1
4,4'-DDE	-1.3	-0.6	-0.1				-0.9	-0.3	0.2		-0.8		0.0	-0.4	-0.4	0.9	0.5	-0.1	5.6	0.4
2,4'-DDD		6.9						-2.5			1.9			-1.7	1.8					
endrin																				
endosulfan II																				
4,4'-DDD	-0.8	0.4	-0.7					-2.6	-1.0		-0.5		0.6	0.1	-0.2	2.7	-1.0	0.6		-0.3
2,4'-DDT																				
cis-nonachlor	-2.3		33.2					-1.3							1.9	-0.1				
4,4'-DDT	-1.7	0.3	-1.5				1.4	-2.7	6.9		-1.6		-0.9	7.2						
mirex																				
total 0% to 25%	1	3						2	1		1		2	3		2	2	1		1
total 0% to -25%	2	1	2				2	1	1		3		1	2	4	1	1	1		3
total 25% to 50%		1					1	3			2				3					
total -25% to -50%	3		2					2			2		1	1	1					
total 50% to 75%		1						1								2				
total -50% to -75%	3		1					3						1						
total > |75%|		1	1				2	3	1		1			2		3	1	2	1	

Table 10 **Sediment IX: Continued**

z(25%)

Laboratory No.	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
alpha-HCH																				
hexachlorobenzene	-2.4	-0.1	-0.6	-1.6		-0.3	2.3	8.6		1.8	-0.4	0.5	0.0	-0.9	0.4	-0.1	1.0	0.0	-0.1	
gamma-HCH																				
heptachlor		-1.9					-1.7				0.3				4.0	5.6	-3.7	109	-3.0	
aldrin								2.6								-2.4		-1.2	-1.4	
heptachlor epoxide		14.3										-2.6					-3.1	0.0	2.2	
oxychlordane											-0.4								-1.2	
trans-chlordane	2.5	-2.4				-2.2				0.6	4.2	-0.5					-3.3	-2.1	-1.1	
2,4'-DDE			0.1			0.1				-1.3	3.6	-0.1	-1.1	17.2		4.8	-2.3			
endosulfan I																				
cis-chlordane		-0.9	-1.4			-2.1		2.5		-2.6	5.4	-2.1		3.2	0.0	-2.7	-3.6	-2.2		
trans-nonachlor		-3.0	-0.5							-1.8	0.5	-1.7		0.9		1.3	-3.0	-1.6	-1.2	
dieldrin		0.2				-1.4				1.1	6.0	-2.7		0.1			-3.0	-1.3	4.2	
4,4'-DDE	0.1	-0.6	-0.8	-0.8		0.0	1.4	2.0		-1.1	1.6	-0.4	-0.8	-2.6	0.3	-2.3	-1.4		-0.6	
2,4'-DDD			1.8			-1.2	0.5	-1.2			0.4	-2.8	-2.1				-3.2		-0.4	
endrin																				
endosulfan II																				
4,4'-DDD	0.5	-0.9		-0.8		1.0	2.9	1.0		0.3	2.2	-1.1	0.9	-1.1	1.6	-1.8	-1.7		-0.3	
2,4'-DDT																				
cis-nonachlor		-0.8								-1.3	9.7	-2.0	-2.7					-1.1	12.7	
4,4'-DDT		-2.2				-2.4	0.2	3.2				-3.1	-2.6			25.5	-0.9		4.7	
mirex																				
total 0% to 25%	2	1	1			3	2	1		2	3	1	2	2	3		1	2		
total 0% to -25%		5	3	2		1					2	3	1	1		1	1		4	
total 25% to 50%			1				1	1		2	1				1	1				
total -25% to -50%		1	1	1		2	1	1		4		3	1	1		1	2	4	4	
total 50% to 75%	1						2	2			1								1	
total -50% to -75%	1	3				3				1		4	3	1		3	3	2	1	
total > I75%I		1						2			5	1		2	1	3	5	1	3	

Table 11 **Sediment IX: z scores (25%) by laboratory - PCBs**

z(25%)

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	14	15	16	17	18	19	21	22
PCB 8	-1.1	0.9	-1.0		0.4	3.9							-2.1		-2.0	2.9	0.8			4.2
PCB 18	-0.8	-2.0	-0.8		-1.0	1.5	2.0	-2.5	0.3				-0.5	1.3	1.8	3.8	1.4			0.8
PCB 28	-1.5	0.1	-1.5		-0.8	3.7	-1.3	0.9					-1.0	2.6	0.5	-0.5	-0.5			-0.6
PCB 52	-1.1	0.1	-0.6		0.1	1.2	0.2	-0.3	-0.4				-0.1	-0.4	1.4	0.4	0.2	-1.6		0.7
PCB 44	-1.1	1.7	-0.5		3.2	0.9	-0.7	-1.6	1.1				-0.5	-0.8	0.9	-0.4	0.0	-0.5		0.8
PCB 66/95		0.8						-1.0					-1.6			-1.4				
PCB 101/90	-1.5	1.2	-0.3			0.0	0.2	0.4	-0.2				0.5	-0.7	1.1	-0.3	-0.4	-2.1		-0.3
PCB 118	-0.9	0.2	-0.7		2.3	0.4	-1.2	-1.7	1.3				0.1	-0.3	0.1	-0.2	-0.8	-1.0		0.8
PCB 153	-1.3	0.2	-0.7		3.5	1.3	-1.5	1.9	-0.5				0.1	-0.8	1.4	-0.1	-0.6	-0.8		-0.1
PCB 105	-1.6	3.6	-0.8		20.1	0.3	-1.4	-0.5					1.0	-0.8	0.6	-0.1	-0.9	0.5		2.5
PCB 138/163/164	-1.5	0.3	-0.6			0.2	-1.1	1.3	-0.5				0.0	1.4	0.4	2.6	-1.3	-0.8		0.9
PCB 187/182	-1.8	0.8	0.1			0.1	-2.2	0.3	-0.6				1.1	1.1	2.6	0.2	0.5			4.0
PCB 128	-1.7	0.3			10.7	0.2	-1.5	-1.9	3.9				-0.3	-1.9	-1.0	1.6		1.8		1.7
PCB 180	-2.1	0.6	-0.1		1.4	0.8		-1.0	-0.2				0.1	0.0	1.2	0.3	0.4	-0.6		1.3
PCB 170/190	-1.4	1.2	1.0		-0.7	-0.1	-3.1						1.1	-1.5	2.2	-0.2	0.4	-1.8		1.7
PCB 195	-1.1		-0.3		3.0	0.9	-0.8		0.8					-0.1	0.8	0.8	-0.2	-1.4		0.2
PCB 206	-1.5	-0.7	1.8		0.1	-0.8		-0.9					1.1	-1.3	0.7	1.8	0.1	-1.7		1.4
PCB 209	-1.4	1.2	1.0		-0.7	-0.1	-3.1						1.1	-1.5	2.2	-0.2	0.4	-1.8		1.7
PCB 66	-1.1		-0.3		3.0	0.9	-0.8		0.8					-0.1	0.8	0.8	-0.2	-1.4		0.2
PCB 95	-0.8		-0.3			1.2									1.5					
total 0% to 25%		10	3		3	10	2	3	3				6	1	8	5	8	1		7
total 0% to -25%	3	1	13		4	3	3	5	6				3	8	1	8	7	5		3
total 25% to 50%		4	1		1	4	1	2	2				4	3	6	2	1	1		5
total -25% to -50%	15	1	1				6	3					1	4	1	1	1	6		
total 50% to 75%					3									1	3	2				1
total -50% to -75%	1						1	1					1					1		
total > I75%I					4	2	2		1							1				2

Table 11 **Sediment IX: Continued**

z(25%)

Laboratory No.	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
PCB 8	-1.0	3.2		-1.6		-2.8	-0.3	2.3	0.2		-1.4	0.5	-1.7		1.0	6.9	0.0	2.5		
PCB 18	0.3	-0.7	-3.4	-0.7	-3.8	-3.3	0.2	3.3	0.2		-1.3	-0.2	-0.5	2.0	2.3	1.2	0.1	-0.7	-0.2	
PCB 28	0.5	-0.5		-1.5	-3.1	-2.1	0.6	1.2	0.2	0.3	2.3	1.1	-0.9	-0.1	1.8	-2.0	0.2	3.1	-1.2	
PCB 52	0.6	-0.4	-1.3	-1.1	-2.9	-1.6	1.7	1.7	0.9	1.3	2.1	0.2	0.0	-1.1	2.1	-0.8	-0.4	1.2	-0.4	
PCB 44	0.6	-0.7	-2.2	-1.1	-2.7	-1.6	1.8	2.7	2.0	1.1	0.5	1.3	0.2	-1.7	1.1	-1.6	0.7	-0.4	-0.2	
PCB 66/95		-0.1			-3.6		-0.9	1.5			0.1			-2.3	0.3		-0.2	0.9	-0.3	
PCB 101/90	1.1	-0.5			-3.4	-2.1	2.5	3.0	0.0	1.5	1.7	0.4	-0.6	-1.1	0.7	-2.1	0.6	-0.1		
PCB 118	1.1	0.0		-1.3	-3.3	-1.9	1.3	1.6	0.2	0.3	2.1	0.6	-1.0	-0.5	0.1	-1.0	-0.5	-0.1	-0.3	
PCB 153	0.0	-0.8		-1.3	-2.8	-2.5	2.1	3.6	-0.8	0.7	2.1	0.1	-0.9	-1.6	1.2	-2.5	0.3	0.4	-0.8	
PCB 105	0.0	0.6		-1.4	-3.3	-2.4	-0.9	0.5	0.1	-1.6	4.8	-0.1	-1.0	3.3	-0.7	-1.2	-0.7	0.8	-0.5	
PCB 138/163/164	0.5	-0.3		-1.2	-3.1	-2.4	0.3	2.0	-0.4	0.3	4.8	0.3	-1.7	-0.9	0.7	-0.2	1.2	-0.1	-0.8	
PCB 187/182	0.1	2.0		-1.8	-3.3	-1.9	1.8	1.2	0.2	6.5	2.4	0.4	-0.9	0.5	3.4	-2.8	1.0	-0.5	0.0	
PCB 128		0.5	-2.8		-3.0	-2.7	-0.7	1.3	-0.9	0.3	1.8	-0.8	-0.5	1.1	0.6	-2.3	0.0	-1.1	-0.9	
PCB 180	0.0	-0.7		-1.8	-3.2	-0.7	1.5	1.6	0.5		2.1	0.6	-0.7	-1.7	0.9	-2.4	0.8	0.5		
PCB 170/190	1.0	-0.9	1.2	-1.5	-3.3	-1.5	2.1		0.9	1.1	0.0	0.3	-0.8	-1.9	1.3		0.7		-0.1	
PCB 195	1.3	0.0		-0.9	-3.2	-1.6			1.1	1.2		1.4	0.4			-1.2	-1.2			
PCB 206	0.2	-1.1	0.9	-1.8	-3.4	-2.2	0.9	2.6	0.4	0.5	0.5	0.2	-0.6	-2.0	1.0		0.4	1.6	-0.2	
PCB 209	1.0	-0.9	1.2	-1.5	-3.3	-1.5	2.1		0.9	1.1	0.0	0.3	-0.8	-1.9	1.3		0.7		-0.1	
PCB 66	1.3	0.0		-0.9	-3.2	-1.6			1.1	1.2		1.4	0.4			-1.2	-1.2			
PCB 95	1.7	0.5		-1.0	-2.9	-1.7			1.2			1.3				-2.5	1.9			
total 0% to 25%	12	6	1				4	1	12	6	5	11	4	1	8		12	4	1	
total 0% to -25%	1	11		4		1	4		1			3	12	3		3	4	6	12	
total 25% to 50%	5	1	2				5	8	4	7	2	5		2	5	1	2	2		
total -25% to -50%		1	1	13		9				1	2		2	8		5	2	1	1	
total 50% to 75%							4	4			6				2			1		
total -50% to -75%			2		5	8								1		6				
total > I75%I		1	1		14	1		2		1				1	1	1		1		

Appendix A: Description, Storage, Use, and Reporting Instructions for Fish Homogenate IV

NIST Intercomparison Exercise Program for
Organic Contaminants in the Marine Environment

NIST/NOAA-NS&T QA Program

Intercomparison Exercise: Fish Homogenate IV Description of Materials and Instructions

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Intercomparison Exercise Materials:

QA99FSH4 (Fish Homgenate IV)

Each of the three bottles contains approximately 10 g (wet basis) of Fish Homogenate IV, a frozen fish tissue homogenate material collected from the Great Lakes. The tissue is a cryogenically homogenized "fresh" material still containing its endogenous water. (It has not been freeze-dried.) The 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 bottle number as well as the above name.

In addition, three concurrent analyses of CARP-1 certified reference material (CRM) are recommended. This material is ground whole carp to which a small amount of water was added to raise the moisture content to 85% and 0.02 % ethoxyquin was added as an antioxidant. Each ampoule contains approximately 9 g (wet basis) of fish. The price for six ampoules is $495 Canadian plus shipping charges. More information can be obtained from the web site http://www.cm.inms.nrc.ca/ or by contacting NRC by any method listed below:

Institute for National Measurement Standards
National Research Council of Canada
Montreal Rd., Bldg. M-12
Ottawa, Ontario
Canada K1A 0R6
fax 613-993-2451
phone 613-993-2359
email crm.inms@nrc.ca

Storage of Materials:

Fish Homogenate IV. The tissue material should be stored in the dark at temperatures of -20 °C or lower. If allowed to thaw or if stored for extended periods at temperatures higher than -40°C, it will lose its powder-like form. This material has been stored at NIST at -80 °C and was shipped to you on dry ice. 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 Fish Homogenate IV and CRM CARP-1, using **your** laboratory's and/or program's analytical protocols, for the concentrations (wt/**wet** wt) of the 22 chlorinated pesticides and 18 polychlorinated biphenyl (PCB) 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. Concentrations of these analytes in samples collected near the site of this collection were in the 1 to 200 ng/g **wet** weight range.

It is best if the Fish Homogenate IV material is not allowed to thaw prior to the taking of samples for analysis; however, if the material has been even partially thawed, you should use the contents of the entire jar as a single sample as it is difficult to take representative samples from a jar once the material has thawed. After removing the material for analysis from the jars, the samples should be used without delay.

The total extractable organics (TEO) in the fish materials should be determined. You should have received enough material so that you can perform separate determinations for the TEO if you typically do this determination on a separate aliquot.

The amount of material used for each analysis should correspond to the amount of fish tissue (wet basis) you would typically analyze as prescribed in your protocols. You should analyze three replicate samples of Fish Homogenate IV and at least one, and more if possible, of CRM CARP-1 in three different batches/sets/strings/catalogs using your protocol for fish tissue samples. Specifically, we are asking that you analyze one sample of Fish Homogenate IV and one sample of CRM CARP-1 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 Fish Homogenate IV and of the CRM CARP-1. Report results in units of ng/g **wet** basis. Report the date of measurement of each sample in the requested m/d/y format. Also, report the results of your TEO determinations of Fish Homogenate IV and CRM CARP-1.

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[1]If your laboratory is not analyzing samples for both chemical classes, you are expected to submit results only for those compounds in classes currently being determined in your laboratory.

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. The more common of these coelutions have been listed in Table 1 and in the data table format shown in Table 2. Please note at the bottom of your table of reported results if any of these listed coelutions are not applicable to the data being reported by your laboratory and/or if other coelution qualifiers not listed 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 concentrations 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 enclosed floppy diskette (DOS format) contains an EXCEL file, TIS9.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. 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 either via diskette file or as an attached file via e-mail to:

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

E-mail:
michele.schantz@nist.gov

Further Information:

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

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
gamma-HCH (gamma-BHC, Lindane)	2,4'-DDD
heptachlor	4,4'-DDD
heptachlor epoxide	2,4'-DDT
cis-chlordane (alpha-chlordane)	4,4'-DDT
trans-chlordane (gamma-chlordane)	aldrin
oxychlordane	dieldrin
cis-nonachlor	endrin
trans-nonachlor	endosulfan I
mirex	endosulfan II

Polychlorinated Biphenyl Congeners

PCB No.	*Compound Name*
8	2,4'-dichlorobiphenyl
18	2,2',5-trichlorobiphenyl
28	2,4,4'-trichlorobiphenyl
44	2,2',3,5'-tetrachlorobiphenyl
52	2,2',5,5'-tetrachlorobiphenyl
66	2,3',4,4'-tetrachlorobiphenyl
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
153	2,2',4,4',5,5'-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
195	2,2',3,3',4,4',5,6-octachlorobiphenyl
206	2,2',3,3',4,4',5,5',6-nonachlorobiphenyl
209	decachlorobiphenyl

[a] Please note that the following are typically reported by exercise participants as the sums of the indicated components:

PCB congeners

PCB 66 + PCB 95[b]

PCB 101 + PCB 90

PCB 138 + PCB 163 + PCB 164

PCB 187 + PCB 182 + PCB 159

PCB 170 + PCB 190

[b] Because PCB 66 and PCB 95 can now be separated by a significant number of participants, participants may report these as two separate concentrations or as the sum of PCBs 66 and 95.

Table 2. Diskette Data File Format (File: FSH4.*)

NIST Intercomparison Exercise Program for Organics in the Marine Environment
NIST/NOAA-NS&T QA Program
Sample: QA99FSH4 - Fish Homogenate IV

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.

- 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: FISH IV _____ CARP-1 _____ g, wet weight

Brief description of method used to remove sample from jar (FISH IV) and ampoule (CARP-1) and to determine the total extractable organics (TEO):

_____
_____
_____

Were "wet" or "dry" samples extracted? FISH IV: _____ CRM CARP-1: _____

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
PESTICIDES					
PCB CONGENERS					

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

Pesticides _____
PCB 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:

Pesticides _____

PCB Congeners _____

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

Pesticides _____

PCB Congeners _____

Any others? Added at what point in analyses: _____

Pesticides _____

PCB 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? _____

Calibration Curve

	Points	Conc. Range
PESTICIDES	_____	_____
PCB CONGENERS	_____	_____

Were PCB congeners separated from pesticides prior to GC? _____

Using your method, does PCB 132 coelute with PCB 153; or, with PCB 105; or, is it separated from both? _____

RESULTS:

PESTICIDE ANALYSES	FISH IV Batch A Sample 1	FISH IV Batch B Sample 2	FISH IV Batch C Sample 3	CRM Carp-1 Batch A Sample 1	CRM Carp-1 Batch B Sample 2	CRM Carp-1 Batch C Sample 3
Analyst (Initials)						
Date(s) of measurements (m/d/y)						
	FISH IV Sample 1 (ng/g wet wt)	FISH IV Sample 2 (ng/g wet wt)	FISH IV Sample 3 (ng/g wet wt)	CRM Carp-1 Sample 1 (ng/g wet wt)	CRM Carp-1 Sample 2 (ng/g wet wt)	CRM Carp-1 Sample 3 (ng/g wet wt)
alpha-HCH (a-BHC)						
hexachlorobenzene						
gamma-HCH (g-BHC,lindane)						
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						
PCB CONGENER ANALYSES	FISH IV Batch A Sample 1	FISH IV Batch B Sample 2	FISH IV Batch C Sample 3	CRM Carp-1 Batch A Sample 1	CRM Carp-1 Batch B Sample 2	CRM Carp-1 Batch C Sample 3
Analyst (Initials)						
Date(s) of measurements (m/d/y)						
	FISH IV Sample 1 (ng/g wet wt)	FISH IV Sample 2 (ng/g wet wt)	FISH IV Sample 3 (ng/g wet wt)	CRM Carp-1 Sample 1 (ng/g wet wt)	CRM Carp-1 Sample 2 (ng/g wet wt)	CRM Carp-1 Sample 3 (ng/g wet wt)
PCB 8						
PCB 18						
PCB 28						
PCB 52						
PCB 44						
*PCB 66/95						
PCB 101/90						
PCB 118						
PCB 153						
PCB 105						
PCB 138/163/164						
PCB 187/182						
PCB 128						
PCB 180						
PCB 170/190						

PCB 195						
PCB 206						
PCB 209						
*PCB 66						
*PCB 95						
Total extractable organics (TEO)						

*You may report PCB 66/PCB 95 as a sum and/or as individual congeners.

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

Appendix B: Description, Storage, Use, and Reporting Instructions for Marine Sediment IX

Intercomparison Exercise: Marine Sediment IX Description of Materials and Instructions

Intercomparison Exercise Materials:

QA99SED9 (Marine Sediment IX)

Each of the three jars contains 21 g (wet basis) of Marine Sediment IX. This wetted sediment was prepared from material that was collected from a site in Baltimore Harbor and then freeze-dried, 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.

In addition, three concurrent analyses of SRM 1941a, Organics in Marine Sediment, are recommended. This material can be obtained from the NIST Standard Reference Materials Program ($402/50 g (dry basis) (phone: 301/975-6776; fax: 301-975-948-3730).

Storage of Materials:

Marine Sediment Material. This Marine Sediment IX 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 IX and SRM 1941a, using **your** laboratory's and/or program's analytical protocols, for the concentrations (mass/mass [dry basis]) of the 23 polycyclic aromatic hydrocarbon (PAH) compounds, 22 chlorinated pesticides, and 18 polychlorinated biphenyl (PCB) 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.

The percentage of water in the Sediment IX material 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.

[1]If your laboratory is not analyzing samples for all three chemical classes, you are expected to submit results only for those compounds currently being determined in your laboratory.

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 IX, you should thaw the sample in the jar and then **stir or otherwise mix it thoroughly**.

You should analyze three samples of Marine Sediment IX and at least one, and more if possible, of SRM 1941a in three different batches/sets/strings/catalogs using your protocol for marine sediment samples. Specifically, we are asking that you analyze one sample of Sediment IX and one sample of SRM 1941a 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 IX and of SRM 1941a. Report results in units of ng/g **dry** 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 IX.

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. The more common of these coelutions have been listed in Table 1 and in the data table format as shown in Table 2. Please note at the bottom of your table of reported results if any of these listed coelutions are not applicable to the data being reported by your laboratory and/or if other coelution qualifiers not listed 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 enclosed floppy diskette (DOS format) contains an EXCEL file, SED9.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 either via diskette file or as an attached file via e-mail to:

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

E-mail:
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Further Information:

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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
gamma-HCH (gamma-BHC, Lindane)	2,4'-DDD
heptachlor	4,4'-DDD
heptachlor epoxide	2,4'-DDT
cis-chlordane (alpha-chlordane)	4,4'-DDT
trans-chlordane (gamma-chlordane)	aldrin
oxychlordane	dieldrin
cis-nonachlor	endrin
trans-nonachlor	endosulfan I
mirex	endosulfan II

Polychlorinated Biphenyl Congeners

PCB No.	*Compound Name*
8	2,4'-dichlorobiphenyl
18	2,2',5-trichlorobiphenyl
28	2,4,4'-trichlorobiphenyl
44	2,2',3,5'-tetrachlorobiphenyl
52	2,2',5,5'-tetrachlorobiphenyl
66	2,3',4,4'-tetrachlorobiphenyl
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
153	2,2',4,4',5,5'-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
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
benzofluoranthenes [*b*+*j*+*k*]
benzo[*e*]pyrene
benzo[*a*]pyrene
perylene
indeno[1,2,3-*cd*]pyrene
dibenz[*a,h*]anthracene
benzo[*ghi*]perylene

[a] Please note that the following are typically reported by exercise participants as the sums of the indicated components:

PAH
chrysene + triphenylene
benzo[*b*]- + benzo[*j*]- + benzo[*k*]fluoranthene
dibenz[*a,h*]anthracene + dibenz[*a,c*]anthracene

PCB congeners
PCB 66 + PCB 95[b]
PCB 101 + PCB 90
PCB 138 + PCB 163 + PCB 164
PCB 187 + PCB 182 + PCB 159
PCB 170 + PCB 190

[b] Because PCB 66 and PCB 95 can now be separated by a significant number of participants, participants may report these as two separate concentrations or as the sum of PCBs 66 and 95.

Table 2. Diskette Data File Format (File: SED9.*)

NIST Intercomparison Exercise Program for Organics in the Marine Environment
NIST/NOAA-NS&T QA Program
Sample: QA99SED9 - Marine Sediment IX

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: Sedi _____ g, wet basis; SRM 1941a _____ g, dry basis

Method used for determining percentage water: _____

Were "wet" or "dry" samples extracted? Sedi _____ SRM 1941a _____
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	ol. Length,	Col. i.d., mm	Col. film thickness, µm
PAH	_____	_____	_____	_____	_____
Pesticides	_____	_____	_____	_____	_____
PCB Congeners	_____	_____	_____	_____	_____

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

PAH _____
Pesticides _____
PCB 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 _____

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

PAH _____
Pesticides _____
PCB Congeners _____

Any others? Added at what point in analy _____

PAH _____
Pesticides _____
PCB 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 _____

Calibration Curve

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

Were PCB congeners separated from pesticides prior to GC? _____

Using your method, does PCB 132 coelute with PCB 153; or, with PCB 105; or, is it separated _____

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

_____

_____

_____

_____

_____

B-9

RESULTS:

PERCENT WATER (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 IX (percent)	Sediment IX (percent)	Sediment IX (percent)
Water			

PAH ANALYSES	Sediment IX Batch A Sample 1	Sediment IX Batch B Sample 2	Sediment IX Batch C Sample 3	SRM 1941a Batch A Sample 1	SRM 1941a Batch B Sample 2	SRM 1941a Batch C Sample 3
Analyst (Initials)						
Date(s) of measurements (m/d/y)						
Sample Jar number						

	Sediment IX Sample 1 (ng/g dry wt)	Sediment IX Sample 2 (ng/g dry wt)	Sediment IX Sample 3 (ng/g dry wt)	SRM 1941a Sample 1 (ng/g dry wt)	SRM 1941a Sample 2 (ng/g dry wt)	SRM 1941a Sample 3 (ng/g dry wt)
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						
benzofluoranthenes [b+j+k]						
benzo[e]pyrene						
benzo[a]pyrene						
perylene						
indeno[1,2,3-cd]pyrene						
dibenz[a,h]anthracene + [a,c]						
benzo[ghi]perylene						

PESTICIDE ANALYSES	Sediment IX Batch A Sample 1	Sediment IX Batch B Sample 2	Sediment IX Batch C Sample 3	SRM 1941a Batch A Sample 1	SRM 1941a Batch B Sample 2	SRM 1941a Batch C Sample 3
Analyst (Initials)						
Date(s) of measurements (m/d/y)						
Sample Jar number						

	Sediment IX Sample 1 (ng/g dry wt)	Sediment IX Sample 2 (ng/g dry wt)	Sediment IX Sample 3 (ng/g dry wt)	SRM 1941a Sample 1 (ng/g dry wt)	SRM 1941a Sample 2 (ng/g dry wt)	SRM 1941a Sample 3 (ng/g dry wt)
alpha-HCH (a-BHC)						
hexachlorobenzene						
gamma-HCH (g-BHC,lindane)						
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						

PCB CONGENER ANALYSES	Sediment IX Batch A Sample 1	Sediment IX Batch B Sample 2	Sediment IX Batch C Sample 3	SRM 1941a Batch A Sample 1	SRM 1941a Batch B Sample 2	SRM 1941a Batch C Sample 3
Analyst (Initials)						
Date(s) of measurements (m/d/y)						
Sample Jar number						

	Sediment IX Sample 1 (ng/g dry wt)	Sediment IX Sample 2 (ng/g dry wt)	Sediment IX Sample 3 (ng/g dry wt)	SRM 1941a Sample 1 (ng/g dry wt)	SRM 1941a Sample 2 (ng/g dry wt)	SRM 1941a Sample 3 (ng/g dry wt)
PCB 8						
PCB 18						
PCB 28						
PCB 52						
PCB 44						
***PCB 66/95**						
PCB 101/90						
PCB 118						
PCB 153						
PCB 105						
PCB 138/163/164						
PCB 187/182/159						
PCB 128						
PCB 180						
PCB 170/190						
PCB 195						
PCB 206						
PCB 209						
***PCB 66**						
***PCB 95**						

*** You may report PCB 66/PCB 95 as a sum and/or as individual congeners.**

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

Appendix C: Results by Laboratory, Fish Homogenate IV

FY99 NIST Intercomparison Exercise **Laboratory No.: 1**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 3/2/00

PESTICIDES

Analysis date	Data as submitted by laboratory: Fish IV, ng/g wet 1/6/00 S 1	Fish IV, ng/g wet 1/6/00 S 2	Fish IV, ng/g wet 1/6/00 S 3	Carp-I, ng/g wet 1/6/00 S 1	Carp-I, ng/g wet 1/6/00 S 2	Carp-I, ng/g wet 1/6/00 S 3	Fish IV lab mean ng/g wet	Fish IV lab %RSD	Carp-I lab mean ng/g wet	Carp-I lab %RSD	Material reference values: Fish IV, ng/g wet assigned value	Fish IV 95% CL	Carp-I, ng/g wet target value[b]	Carp-I 95% CL	Performance scores[a] Fish IV z-score (25%)	Fish IV z-score (s)	Fish IV p-score (15%)
alpha-HCH	5.61	5.66	5.55	3.59	3.44	3.31	5.61	1.0	3.45	4.1	5.20	0.53	<4		0.3	0.4	0.1
hexachlorobenzene	8.23	8.05	8.24	3.33	3.03	3.28	8.17	1.3	3.21	5.0	6.62	0.68	3.28	0.33	0.9	1.0	0.1
gamma-HCH	1.33	1.44	1.41	1.23	1.24	1.22	1.39	4.1	1.23	0.8	1.15	0.25	<2		0.8	0.4	0.3
heptachlor	<1	<1	<1	<1	<1	<1	<1	NA	<1	NA	<1		<5				
aldrin	<1	<1	<1	<1	<1	<1	<1	NA	<1	NA	<1		<4				
heptachlor epoxide	5.27	5.89	5.56	1.48	1.39	1.39	5.57	5.6	1.42	3.7	5.19	0.63	2.30	0.88	0.3	0.4	0.4
oxychlordane	17.5	17.6	17.5	0.936	0.925	0.924	17.5	0.3	0.928	0.7	17.4	2.0	<3		0.0	0.0	0.0
trans-chlordane	7.61	7.49	7.36	4.01	3.76	3.93	7.49	1.7	3.90	3.3	8.06	1.21	5.20	1.60	-0.3	-0.2	0.1
2,4'-DDE	0.498	0.576	0.557	2.11	2.24	2.22	0.544	7.5	2.19	3.2	0.989	0.285	2.80	1.00	-1.8	-1.1	0.5
endosulfan I	<1	<1	<1	<1	<1	<1	<1	NA	<1	NA	<2		<5				
cis-chlordane	41.6	41.8	42.8	9.57	9.01	9.93	42.1	1.5	9.50	4.9	31.0	5.1	8.40	1.40	1.4	1.0	0.1
trans-nonachlor	94.5	93.5	93.1	10.7	9.22	9.73	93.7	0.8	9.88	7.6	91.2	6.8	9.80	1.40	0.1	0.2	0.1
dieldrin	33.7	30.9	30.7	6.88	6.67	6.78	31.8	5.3	6.78	1.6	32.9	5.3	7.20	3.10	-0.1	-0.1	0.4
4,4'-DDE	325	321	352	163	166	163	333	5.1	164	1.1	335	31	146	13	0.0	0.0	0.3
2,4'-DDD	1.68	2.12	1.82	21.0	20.5	20.2	1.87	12.0	20.6	2.0	2.56	0.98	21.6	2.4	-1.1	-0.4	0.8
endrin	<2	<2	<2	<2	<2	<2	<2	NA	<2	NA	5.46	1.19	<8				
endosulfan II	<2	<2	<2	<2	<2	<2	<2	NA	<2	NA	<5		<4				
4,4'-DDD	18.5	18.4	19.4	83.6	85.8	85.8	18.8	2.9	85.1	1.5	15.4	2.9	70.0	15.0	0.9	0.5	0.2
2,4'-DDT	24.6	23.2	24.8	4.34	4.33	4.67	24.2	3.6	4.45	4.4	23.0	6.4	6.40	1.00	0.2	0.1	0.2
cis-nonachlor	52.3	52.9	57.2	3.10	3.63	3.77	54.1	4.9	3.50	10.1	58.4	8.1	5.30	1.30	-0.3	-0.3	0.3
4,4'-DDT	38.8	36.2	37.7	6.80	6.64	6.81	37.6	3.5	6.75	1.4	41.1	12.8	10.0	4.0	-0.3	-0.2	0.2
mirex	5.46	5.27	5.91	0.723	0.669	0.697	5.55	5.9	0.696	3.9	6.06	0.97	<6		-0.3	-0.3	0.4

Laboratory: 1
Pesticides in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	17	77.3
Qualitative	5	22.7
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	17	17	17
2 to 3	0	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 1

Sample: QA99FSH4 - Fish Homogenate IV

(data reported as if three figures were significant)

Reporting Date: 3/2/00

PCBs

Analysis date	Data as submitted by laboratory: Fish IV, ng/g wet 1/6/00 S 1	Fish IV, ng/g wet 1/6/00 S 2	Fish IV, ng/g wet 1/6/00 S 3	Carp-I, ng/g wet 1/6/00 S 1	Carp-I, ng/g wet 1/6/00 S 2	Carp-I, ng/g wet 1/6/00 S 3	Fish IV lab mean ng/g wet	Fish IV lab %RSD	Carp-I lab mean ng/g wet	Carp-I lab %RSD	Material reference values: Fish IV, ng/g wet assigned value	Fish IV 95% CL	Carp-I, ng/g wet target value[b]	Carp-I 95% CL	Performance scores[a]: Fish IV z-score (25%)	Fish IV z-score (s)	Fish IV p-score (15%)
PCB 8	<1	<1	<1	1.03	1.07	1.06	<1	NA	1.05	2.0	<2		1.70	0.70			
PCB 18	<2	<2	<2	18.5	18.1	18.9	<2	NA	18.5	2.2	<2		21.7	1.6			
PCB 28	1.92	2.33	2.25	23.7	25.5	25.1	2.17	10.0	24.8	3.8	2.24	0.41	27.7	2.9	-0.1	-0.1	0.7
PCB 52	7.48	7.99	8.02	120	124	122	7.83	3.9	122	1.6	7.10	0.75	**124**	**32**	0.4	0.4	0.3
PCB 44	3.87	4.62	4.44	75.1	73.7	75.8	4.31	9.1	74.9	1.4	5.54	1.40	75.0	6.0	-0.9	-0.4	0.6
PCB 66/95	___	___	___	___	___	___	NA	NA	NA	NA	17.8	3.9	156	12			
PCB 101/90	34.2	34.5	34.8	111	104	107	34.5	0.9	107	3.3	38.1	4.5	**124**	**37**	-0.4	-0.3	0.1
PCB 118	50.2	48.5	51.3	146	141	147	50.0	2.8	145	2.2	50.9	5.3	**132**	**60**	-0.1	-0.1	0.2
PCB 153	147	154	156	96.9	93.7	96.2	152	3.1	95.6	1.8	157	14	**83.0**	**39.0**	-0.1	-0.1	0.2
PCB 105	19.5	18.9	19.8	53.6	52.2	55.2	19.4	2.4	53.7	2.8	21.7	2.7	**54.0**	**24.0**	-0.4	-0.3	0.2
PCB 138/163/164	157	157	154	92.5	95.5	97.5	156	1.1	95.2	2.6	136	9	**102**	**23**	0.6	0.9	0.1
PCB 187/182	55.3	54.5	58.1	31.7	31.5	30.6	56.0	3.4	31.3	1.9	54.2	4.2	**36.0**	**16.0**	0.1	0.2	0.2
PCB 128	22.3	20.9	22.5	17.4	17.6	17.2	21.9	4.0	17.4	1.1	26.9	6.2	17.7	1.4	-0.7	-0.4	0.3
PCB 180	64.1	62.3	66.3	43.3	42.9	43.9	64.2	3.1	43.4	1.2	75.0	6.9	**46.0**	**14.0**	-0.6	-0.6	0.2
PCB 170/190	22.0	20.2	22.9	16.9	17.1	17.2	21.7	6.3	17.1	0.9	29.1	3.7	**22.0**	**8.0**	-1.0	-0.8	0.4
PCB 195	4.74	5.02	4.88	3.86	4.05	3.86	4.88	2.9	3.92	2.8	5.19	0.65	4.38	0.90	-0.2	-0.2	0.2
PCB 206	5.99	5.87	5.91	4.88	4.91	4.87	5.92	1.0	4.89	0.4	5.06	0.50	4.50	0.90	0.7	0.8	0.1
PCB 209	1.77	1.84	1.82	4.78	4.88	4.81	1.81	2.0	4.82	1.1	1.33	0.23	4.40	0.90	1.5	1.0	0.1
PCB 66	9.84	9.81	10.1	110	109	113	9.92	1.6	111	1.9	9.16	1.72	125	10	0.3	0.3	0.1
PCB 95	13.8	14.0	13.9	50.6	49.3	51.0	13.9	0.7	50.3	1.8	11.7	1.4	50.0	7.0	0.7	1.2	0.0

Laboratory: 1

PCBs in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	15	83.3
Qualitative	4	22.2
Not Determined	1	5.6

Category	Number by Category: z (25%)	z (s)	p (15%)
≤ 2	15	15	15
2 to 3	0	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant)

Laboratory No.: 2

Reporting Date: 8/19/99

PESTICIDES

	Data as submitted by laboratory									Material reference values				Performance scores[a]		
	Fish IV, ng/g wet			Carp-I, ng/g wet			Fish IV		Carp-I		Fish IV, ng/g wet		Carp-I, ng/g wet		Fish IV		
Analysis date	8/4/99	8/4/99	8/11/99				lab mean	lab	lab mean	lab	assigned		target		z-score	z-score	p-score
	S 1	S 2	S 3	S 1	S 2	S 3	ng/g wet	%RSD	ng/g wet	%RSD	value	95% CL	value[b]	95% CL	(25%)	(s)	(15%)
alpha-HCH	NA	NA	NA				NA	NA	NA	NA	5.20	0.53	<4				
hexachlorobenzene	<2	<2	<2				<2	NA	NA	NA	6.62	0.68	3.28	0.33			
gamma-HCH	0.920	1.16	1.21				1.10	14.1	NA	NA	1.15	0.25	<2		-0.2	-0.1	0.9
heptachlor	<2	<2	<2				<2	NA	NA	NA	<1		<5				
aldrin	<2	<2	<2				<2	NA	NA	NA	<1		<4				
heptachlor epoxide	<2	<2	<2				<2	NA	NA	NA	5.19	0.63	2.30	0.88			
oxychlordane	20.0	19.2	21.4				20.2	5.6	NA	NA	17.4	2.0	<3		0.6	0.7	0.4
trans-chlordane	5.52	4.86	6.17				5.52	11.9	NA	NA	8.06	1.21	5.20	1.60	-1.3	-1.0	0.8
2,4'-DDE	3.07	1.94	3.45				2.82	27.9	NA	NA	0.989	0.285	2.80	1.00	**7.4**	**4.6**	1.9
endosulfan I	<2	<2	<2				<2	NA	NA	NA	<2		<5				
cis-chlordane	14.7	12.0	12.3				13.0	11.6	NA	NA	31.0	5.1	8.40	1.40	-2.3	-1.7	0.8
trans-nonachlor	94.6	85.4	90.8				90.3	5.1	NA	NA	91.2	6.8	9.80	1.40	0.0	-0.1	0.3
dieldrin	10.0	9.90	12.1				10.7	11.4	NA	NA	32.9	5.3	7.20	3.10	-2.7	-2.3	0.8
4,4'-DDE	307	284	296				296	3.9	NA	NA	335	31	146	13	-0.5	-0.6	0.3
2,4'-DDD	11.3	8.09	11.3				10.2	18.0	NA	NA	2.56	0.98	21.6	2.4	**11.9**	**5.0**	1.2
endrin	23.3	27.6	32.7				27.9	16.8	NA	NA	5.46	1.19	<8		**16.4**	**12.7**	1.1
endosulfan II	<2	<2	<2				<2	NA	NA	NA	<5		<4				
4,4'-DDD	18.2	17.1	18.4				17.9	3.8	NA	NA	15.4	2.9	70.0	15.0	0.6	0.4	0.3
2,4'-DDT	<2	<2	<2				<2	NA	NA	NA	23.0	6.4	6.40	1.00			
cis-nonachlor	59.3	50.6	56.7				55.5	8.0	NA	NA	58.4	8.1	5.30	1.30	-0.2	-0.2	0.5
4,4'-DDT	29.2	31.0	23.2				27.8	14.8	NA	NA	41.1	12.8	10.0	4.0	-1.3	-0.8	1.0
mirex	5.92	7.68	5.92				6.51	15.6	NA	NA	6.06	0.97	<6		0.3	0.2	1.0

Laboratory: 2

Pesticides in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	14	64
Qualitative	7	32
Not Determined	1	5

Category	Number by Category		
	z (25%)	z (s)	p (15%)
≤ 2	9	10	14
2 to 3	2	1	0
≥ 3	3	3	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 2**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 8/19/99

PCBs

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Fish IV, ng/g wet			Carp-I, ng/g wet			Fish IV		Carp-I		Fish IV, ng/g wet		Carp-I, ng/g wet		Fish IV		
Analysis date	8/4/99 S 1	8/4/99 S 2	8/11/99 S 3	____ S 1	____ S 2	____ S 3	lab mean ng/g wet	lab %RSD	lab mean ng/g wet	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
PCB 8	1.79	1.62	1.61	____	____	____	1.67	6.0	NA	NA	<2		1.70	0.70			0.4
PCB 18	3.06	3.96	2.10	____	____	____	3.04	30.6	NA	NA	<2		21.7	1.6			2.0
PCB 28	2.61	2.35	2.32	____	____	____	2.43	6.6	NA	NA	2.24	0.41	27.7	2.9	0.3	0.2	0.4
PCB 52	19.1	17.5	17.2	____	____	____	17.9	5.5	NA	NA	7.10	0.75	**124**	**32**	**6.1**	**5.9**	0.4
PCB 44	11.1	10.2	10.1	____	____	____	10.4	5.3	NA	NA	5.54	1.40	75.0	6.0	**3.5**	1.5	0.4
PCB 66/95	21.0	19.4	19.1	____	____	____	19.8	5.2	NA	NA	17.8	3.9	156	12	0.5	0.3	0.3
PCB 101/90	34.5	33.6	33.4	____	____	____	33.8	1.8	NA	NA	38.1	4.5	**124**	**37**	-0.5	-0.4	0.1
PCB 118	53.0	48.9	48.1	____	____	____	50.0	5.3	NA	NA	50.9	5.3	**132**	**60**	-0.1	-0.1	0.4
PCB 153	157	145	142	____	____	____	148	5.4	NA	NA	157	14	**83.0**	**39.0**	-0.2	-0.2	0.4
PCB 105	25.5	23.4	23.1	____	____	____	24.0	5.6	NA	NA	21.7	2.7	**54.0**	**24.0**	0.4	0.3	0.4
PCB 138/163/164	144	133	131	____	____	____	136	5.1	NA	NA	136	9	**102**	**23**	0.0	0.0	0.3
PCB 187/182	60.2	55.8	54.7	____	____	____	56.9	5.1	NA	NA	54.2	4.2	**36.0**	**16.0**	0.2	0.3	0.3
PCB 128	26.4	24.3	24.5	____	____	____	25.1	4.6	NA	NA	26.9	6.2	17.7	1.4	-0.3	-0.1	0.3
PCB 180	80.1	79.4	83.9	____	____	____	81.1	3.0	NA	NA	75.0	6.9	**46.0**	**14.0**	0.3	0.4	0.2
PCB 170/190	36.9	34.0	33.6	____	____	____	34.9	5.2	NA	NA	29.1	3.7	**22.0**	**8.0**	0.8	0.6	0.3
PCB 195	8.70	8.11	7.77	____	____	____	8.19	5.7	NA	NA	5.19	0.65	4.38	0.90	2.3	2.0	0.4
PCB 206	7.20	7.26	6.70	____	____	____	7.05	4.4	NA	NA	5.06	0.50	4.50	0.90	1.6	1.7	0.3
PCB 209	2.27	2.32	2.10	____	____	____	2.23	5.2	NA	NA	1.33	0.23	4.40	0.90	2.7	1.8	0.3
PCB 66	____	____	____	____	____	____	NA	NA	NA	NA	9.16	1.72	125	10			
PCB 95	____	____	____	____	____	____	NA	NA	NA	NA	11.7	1.4	50.0	7.0			

Laboratory: 2
PCBs in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	18	100
Qualitative	0	0
Not Determined	0	0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	12	15	17
2 to 3	2	0	1
≥ 3	2	1	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 3**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 11/22/99

PESTICIDES

Analysis date	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Fish IV, ng/g wet			Carp-I, ng/g wet			Fish IV		Carp-I		Fish IV, ng/g wet		Carp-I, ng/g wet		Fish IV		
	11/12/99 S 1	11/12/99 S 2	11/12/99 S 3	11/12/99 S 1	11/12/99 S 2	11/12/99 S 3	lab mean ng/g wet	lab %RSD	lab mean ng/g wet	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	6.94	5.95	4.88	1.06	1.13	1.26	5.92	17.4	1.15	8.8	5.20	0.53	<4		0.6	0.6	1.2
hexachlorobenzene	10.0	9.01	7.79	4.74	2.61	2.26	8.94	12.5	3.20	41.9	6.62	0.68	3.28	0.33	1.4	1.5	0.8
gamma-HCH	1.02	2.44	1.57	0.630	0.406	0.568	1.68	42.7	0.535	21.6	1.15	0.25	<2		1.8	0.9	2.8
heptachlor	___	___	___	___	___	___	NA	NA	NA	NA	<1		<5				
aldrin	___	___	___	___	___	___	NA	NA	NA	NA	<1		<4				
heptachlor epoxide	___	___	___	___	___	___	NA	NA	NA	NA	5.19	0.63	2.30	0.88			
oxychlordane	___	___	___	___	___	___	NA	NA	NA	NA	17.4	2.0	<3				
trans-chlordane	11.2	11.5	9.04	___	___	___	10.6	12.5	NA	NA	8.06	1.21	5.20	1.60	1.2	1.0	0.8
2,4'-DDE	___	___	___	___	___	___	NA	NA	NA	NA	0.989	0.285	2.80	1.00			
endosulfan I	___	___	___	___	___	___	NA	NA	NA	NA	<2		<5				
cis-chlordane	40.7	36.1	31.6	___	___	___	36.1	12.7	NA	NA	31.0	5.1	8.40	1.40	0.7	0.5	0.8
trans-nonachlor	126	113	93.4	8.50	5.66	6.44	111	14.6	6.87	21.4	91.2	6.8	9.80	1.40	0.9	1.3	1.0
dieldrin	5.64	___	___	___	___	___	5.64	NA	NA	NA	32.9	5.3	7.20	3.10	**-3.3**	-2.9	
4,4'-DDE	566	473	520	283	190	245	520	9.0	239	19.4	335	31	146	13	2.2	2.9	0.6
2,4'-DDD	___	___	___	19.8	___	18.8	NA	NA	19.3	3.8	2.56	0.98	21.6	2.4			
endrin	___	___	___	___	___	___	NA	NA	NA	NA	5.46	1.19	<8				
endosulfan II	___	___	___	___	___	___	NA	NA	NA	NA	<5		<4				
4,4'-DDD	11.0	20.3	15.9	116.8	78.5	96.0	15.7	29.4	97.1	19.7	15.4	2.9	70.0	15.0	0.1	0.0	2.0
2,4'-DDT	36.6	31.4	26.9	___	___	___	31.6	15.4	NA	NA	23.0	6.4	6.40	1.00	1.5	0.8	1.0
cis-nonachlor	60.1	78.5	61.6	5.23	3.70	5.69	66.7	15.3	4.87	21.4	58.4	8.1	5.30	1.30	0.6	0.5	1.0
4,4'-DDT	37.0	31.7	29.0	3.81	___	2.14	32.6	12.5	2.98	39.7	41.1	12.8	10.0	4.0	-0.8	-0.5	0.8
mirex	___	___	___	___	___	___	NA	NA	NA	NA	6.06	0.97	<6				

Laboratory: 3
Pesticides in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	12	54.5
Qualitative	0	0.0
Not Determined	10	45.5

Category	Number by Category		
	z (25%)	z (s)	p (15%)
≤ 2	10	10	10
2 to 3	1	2	1
≥ 3	1	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 3**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 11/22/99

PCBs	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Fish IV, ng/g wet			Carp-I, ng/g wet			Fish IV		Carp-I		Fish IV, ng/g wet		Carp-I, ng/g wet		Fish IV		
Analysis date	11/12/99 S 1	11/12/99 S 2	11/12/99 S 3	11/12/99 S 1	11/12/99 S 2	11/12/99 S 3	lab mean ng/g wet	lab %RSD	lab mean ng/g wet	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
PCB 8	____	____	____	____	____	____	NA	NA	NA	NA	<2		1.70	0.70			
PCB 18		____	____	11.9	12.4	11.5	NA	NA	11.9	3.9	<2		21.7	1.6			
PCB 28	1.53	2.32	1.92	25.3	20.2	23.4	1.92	20.5	23.0	11.2	2.24	0.41	27.7	2.9	-0.6	-0.4	1.4
PCB 52	8.68	8.10	9.58	111	108	120	8.79	8.5	113	5.6	7.10	0.75	**124**	**32**	1.0	0.9	0.6
PCB 44	14.5	21.0	10.3	88.0	67.2	80.0	15.3	35.3	78.4	13.4	5.54	1.40	75.0	6.0	**7.0**	**3.0**	2.4
PCB 66/95		____	____	____	____	____	NA	NA	NA	NA	17.8	3.9	156	12			
PCB 101/90	49.8	48.7	48.5	132	105	102	49.0	1.4	113	14.6	38.1	4.5	**124**	**37**	1.1	1.0	0.1
PCB 118	50.8	59.7	45.5	111	118	102	52.0	13.8	111	7.1	50.9	5.3	**132**	**60**	0.1	0.1	0.9
PCB 153	181	166	137	81.2	79.2	72.8	161	13.9	77.7	5.6	157	14	**83.0**	**39.0**	0.1	0.1	0.9
PCB 105	37.3	38.1	34.4	55.4	51.0	49.8	36.6	5.4	52.1	5.6	21.7	2.7	**54.0**	**24.0**	2.7	2.2	0.4
PCB 138/163/164	142	130	108	79.3	106.3	71.0	127	13.4	85.5	21.6	136	9	**102**	**23**	-0.3	-0.4	0.9
PCB 187/182	40.0	36.9	33.8	23.8	37.3	22.0	36.9	8.4	27.7	30.1	54.2	4.2	**36.0**	**16.0**	-1.3	-1.7	0.6
PCB 128	____	____	____	8.84	6.94	7.92	NA	NA	7.90	12.0	26.9	6.2	17.7	1.4			
PCB 180	109	107	107	50.3	52.5	40.1	108	0.8	47.6	13.9	75.0	6.9	**46.0**	**14.0**	1.7	2.0	0.1
PCB 170/190	49.2	51.9	41.5	28.5	20.4	25.3	47.5	11.4	24.7	16.5	29.1	3.7	**22.0**	**8.0**	2.5	2.0	0.8
PCB 195	6.89	6.94	5.27	6.53	4.90	6.20	6.37	14.9	5.88	14.7	5.19	0.65	4.38	0.90	0.9	0.8	1.0
PCB 206	10.7	10.9	8.90	6.17	7.25	8.81	10.2	10.8	7.41	17.9	5.06	0.50	4.50	0.90	**4.0**	**4.4**	0.7
PCB 209	2.64	2.53	1.98	7.27	5.37	6.65	2.38	14.8	6.43	15.1	1.33	0.23	4.40	0.90	3.2	2.1	1.0
PCB 66	12.0	11.2	9.53	119	90.1	108	10.9	11.5	105	13.6	9.16	1.72	125	10	0.8	0.6	0.8
PCB 95	24.6	27.9	24.2	____	____	____	25.6	8.0	NA	NA	11.7	1.4	50.0	7.0	**4.7**	**7.3**	0.5

Laboratory: 3

PCBs in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	14	77.8
Qualitative	0	0.0
Not Determined	4	22.2

	Number by Category		
Category	z (25%)	z (s)	p (15%)
≤ 2	9	9	13
2 to 3	2	2	1
≥ 3	3	3	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 6

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant)

Reporting Date: 1/19/00

PESTICIDES

Analysis date	Data as submitted by laboratory: Fish IV, ng/g wet			Carp-I, ng/g wet			Fish IV		Carp-I		Material reference values: Fish IV, ng/g wet		Carp-I, ng/g wet		Performance scores[a]: Fish IV		
	NA S 1	NA S 2	NA S 3	NA S 1	NA S 2	NA S 3	lab mean ng/g wet	lab %RSD	lab mean ng/g wet	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.20	0.53	<4				
hexachlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.62	0.68	3.28	0.33			
gamma-HCH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.15	0.25	<2				
heptachlor	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1		<5				
aldrin	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1		<4				
heptachlor epoxide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.19	0.63	2.30	0.88			
oxychlordane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17.4	2.0	<3				
trans-chlordane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.06	1.21	5.20	1.60			
2,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.989	0.285	2.80	1.00			
endosulfan I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2		<5				
cis-chlordane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	31.0	5.1	8.40	1.40			
trans-nonachlor	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	91.2	6.8	9.80	1.40			
dieldrin	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	32.9	5.3	7.20	3.10			
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	335	31	146	13			
2,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.56	0.98	21.6	2.4			
endrin	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.46	1.19	<8				
endosulfan II	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5		<4				
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15.4	2.9	70.0	15.0			
2,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	23.0	6.4	6.40	1.00			
cis-nonachlor	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	58.4	8.1	5.30	1.30			
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	41.1	12.8	10.0	4.0			
mirex	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.06	0.97	<6				

Laboratory: 6

Pesticides in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	0	0.0
Qualitative	0	0.0
Not Determined	22	100.0

Category	Number by Category: z (25%)	z (s)	p (15%)
≤ 2	0	0	0
2 to 3	0	0	0
≥ 3	0	0	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant)

Laboratory No.: 6

Reporting Date: 1/19/00

PCBs

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Fish IV, ng/g wet			Carp-I, ng/g wet			Fish IV		Carp-I		Fish IV, ng/g wet		Carp-I, ng/g wet		Fish IV		
Analysis date	9/1/99 S 1	9/1/99 S 2	9/9/99 S 3	9/1/99 S 1	9/1/99 S 2	9/9/99 S 3	lab mean ng/g wet	lab %RSD	lab mean ng/g wet	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
PCB 8	0.680	0.713	1.24	NA	NA	NA	0.878	35.8	NA	NA	<2		1.70	0.70			2.4
PCB 18	0.749	0.686	1.04	NA	NA	NA	0.825	22.9	NA	NA	<2		21.7	1.6			1.5
PCB 28	4.15	3.97	4.31	NA	NA	NA	4.14	4.1	NA	NA	2.24	0.41	27.7	2.9	**3.4**	2.1	0.3
PCB 52	9.22	8.46	8.72	178	182	191	8.80	4.4	184	3.6	7.10	0.75	**124**	**32**	1.0	0.9	0.3
PCB 44	4.48	4.65	4.54	NA	NA	NA	4.56	1.9	NA	NA	5.54	1.40	75.0	6.0	-0.7	-0.3	0.1
PCB 66/95	*	*	*	NA	NA	NA	NA	NA	NA	NA	17.8	3.9	156	12			
PCB 101/90	40.4	39.2	37.1	155	161	160	38.9	4.3	159	2.0	38.1	4.5	**124**	**37**	0.1	0.1	0.3
PCB 118	61.6	59.0	55.8	156	162	161	58.8	4.9	160	2.0	50.9	5.3	**132**	**60**	0.6	0.6	0.3
PCB 153	188	185	175	108	109	107	183	3.7	108	0.9	157	14	**83.0**	**39.0**	0.7	0.8	0.2
PCB 105	23.2	23.0	20.1	58.7	60.0	59.7	22.1	7.9	59.5	1.1	21.7	2.7	**54.0**	**24.0**	0.1	0.1	0.5
PCB 138/163/164	141	137	137	88.7	88.0	90.3	138	1.7	89.0	1.3	136	9	**102**	**23**	0.1	0.1	0.1
PCB 187/182	58.7	60.0	55.5	34.5	33.4	31.7	58.1	4.0	33.2	4.2	54.2	4.2	**36.0**	**16.0**	0.3	0.4	0.3
PCB 128	24.3	23.0	21.2	NA	NA	NA	22.8	6.8	NA	NA	26.9	6.2	17.7	1.4	-0.6	-0.3	0.5
PCB 180	89.6	89.7	83.1	54.4	53.2	52.0	87.5	4.3	53.2	2.3	75.0	6.9	**46.0**	**14.0**	0.7	0.7	0.3
PCB 170/190	35.1	34.3	34.3	24.6	23.5	24.3	34.6	1.3	24.1	2.4	29.1	3.7	**22.0**	**8.0**	0.8	0.6	0.1
PCB 195	4.31	4.24	4.03	NA	NA	NA	4.19	3.5	NA	NA	5.19	0.65	4.38	0.90	-0.8	-0.7	0.2
PCB 206	4.95	4.96	4.88	NA	NA	NA	4.93	0.9	NA	NA	5.06	0.50	4.50	0.90	-0.1	-0.1	0.1
PCB 209	1.04	1.00	0.92	NA	NA	NA	0.986	6.3	NA	NA	1.33	0.23	4.40	0.90	-1.0	-0.7	0.4
PCB 66	10.5	10.8	11.5	NA	NA	NA	10.9	4.7	NA	NA	9.16	1.72	125	10	0.8	0.6	0.3
PCB 95	14.6	13.7	13.5	NA	NA	NA	13.9	4.2	NA	NA	11.7	1.4	50.0	7.0	0.8	1.2	0.3

Laboratory: 6

PCBs in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	17	94.4
Qualitative	0	0.0
Not Determined	1	5.6

Category	Number by Category		
	z (25%)	z (s)	p (15%)
≤ 2	14	14	16
2 to 3	0	1	1
≥ 3	1	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 7**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 1/18/00

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Fish IV, ng/g wet			Carp-I, ng/g wet			Fish IV		Carp-I		Fish IV, ng/g wet		Carp-I, ng/g wet		Fish IV		
Analysis date	11/15/99 S 1	11/15/99 S 2	11/15/99 S 3	11/15/99 S 1	11/15/99 S 2	11/15/99 S 3	lab mean ng/g wet	lab %RSD	lab mean ng/g wet	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	4.74	4.76	3.84	0.854	0.851	0.887	4.45	11.8	0.864	2.3	5.20	0.53	<4		-0.6	-0.7	0.8
hexachlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.62	0.68	3.28	0.33			
gamma-HCH	0.863	0.776	0.808	DL	DL	DL	0.816	5.4	DL	DL	1.15	0.25	<2		-1.2	-0.6	0.4
heptachlor	DL	DL	DL	1.85	1.68	1.83	DL	DL	1.79	5.2	<1		<5				
aldrin	DL	DL	DL	DL	DL	DL	DL	DL	DL	DL	<1		<4				
heptachlor epoxide	4.72	4.84	4.30	DL	DL	DL	4.62	6.1	DL	DL	5.19	0.63	2.30	0.88	-0.4	-0.5	0.4
oxychlordane	23.6	20.3	18.6	DL	DL	DL	20.8	12.2	DL	DL	17.4	2.0	<3		0.8	0.9	0.8
trans-chlordane	DL	DL	DL	DL	DL	DL	DL	DL	DL	DL	8.06	1.21	5.20	1.60			
2,4'-DDE	DL	1.33	DL	DL	DL	DL	1.33	NA	DL	DL	0.989	0.285	2.80	1.00	1.4	0.9	
endosulfan I	DL	DL	DL	DL	DL	DL	DL	DL	DL	DL	<2		<5				
cis-chlordane	47.2	41.4	44.4	DL	DL	DL	44.3	6.5	DL	DL	31.0	5.1	8.40	1.40	1.7	1.3	0.4
trans-nonachlor	91.0	82.8	72.2	7.69	8.31	7.87	91.0	91.0	7.96	4.0	91.2	6.8	9.80	1.40	0.0	0.0	6.1
dieldrin	DL	DL	DL	DL	DL	DL	DL	DL	DL	DL	32.9	5.3	7.20	3.10			
4,4'-DDE	302	252	303	151	164	133	286	10.2	149	10.4	335	31	146	13	-0.6	-0.8	0.7
2,4'-DDD	DL	DL	DL	DL	DL	DL	DL	DL	DL	DL	2.56	0.98	21.6	2.4			
endrin	DL	DL	DL	DL	DL	DL	DL	DL	DL	DL	5.46	1.19	<8				
endosulfan II	DL	DL	DL	DL	DL	DL	DL	DL	DL	DL	<5		<4				
4,4'-DDD	DL	DL	DL	DL	DL	DL	DL	DL	DL	DL	15.4	2.9	70.0	15.0			
2,4'-DDT	14.7	10.5	12.0	DL	DL	DL	12.4	17.2	DL	DL	23.0	6.4	6.40	1.00	-1.8	-0.9	1.1
cis-nonachlor	54.1	49.6	44.4	6.02	7.01	6.42	49.4	9.8	6.48	7.7	58.4	8.1	5.30	1.30	-0.6	-0.6	0.7
4,4'-DDT	106	86.1	112	DL	DL	DL	101	13.4	DL	DL	41.1	12.8	10.0	4.0	**5.9**	**3.6**	0.9
mirex	DL	DL	DL	DL	DL	DL	DL	DL	DL	DL	6.06	0.97	<6				

Laboratory: 7
Pesticides in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	11	50.0
Qualitative	10	45.5
Not Determined	1	4.5

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	10	10	9
2 to 3	0	0	0
≥ 3	1	1	1

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 7**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 1/18/00

PCBs

Analysis date	Data as submitted by laboratory: Fish IV, ng/g wet 11/15/99 S 1	Fish IV, ng/g wet 11/15/99 S 2	Fish IV, ng/g wet 11/15/99 S 3	Carp-I, ng/g wet 11/15/99 S 1	Carp-I, ng/g wet 11/15/99 S 2	Carp-I, ng/g wet 11/15/99 S 3	Fish IV lab mean ng/g wet	Fish IV lab %RSD	Carp-I lab mean ng/g wet	Carp-I lab %RSD	Material reference values: Fish IV, ng/g wet assigned value	Fish IV 95% CL	Carp-I, ng/g wet target value[b]	Carp-I 95% CL	Performance scores[a] Fish IV z-score (25%)	z-score (s)	p-score (15%)
PCB 8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2		2.60	0.70			
PCB 18	DL	DL	2.23	21.0	19.0	21.5	2.23	DL	20.5	6.5	<2		21.7	1.6			
PCB 28	1.85	1.16	0.981	22.0	20.4	24.1	1.33	34.5	22.2	8.4	2.24	0.41	27.7	2.9	-1.6	-1.0	2.3
PCB 52	6.48	5.42	6.95	100	92.7	107	6.28	12.5	100	7.2	7.10	0.75	**124**	**32**	-0.5	-0.4	0.8
PCB 44	3.29	2.86	2.94	61.6	60.2	68.3	3.03	7.5	63.4	6.8	5.54	1.40	75.0	6.0	-1.8	-0.8	0.5
PCB 66/95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17.8	3.9	156	12			
PCB 101/90	44.9	39.8	41.4	104	108	127	42.0	6.2	113	10.9	38.1	4.5	**124**	**37**	0.4	0.4	0.4
PCB 118	26.8	23.4	28.7	88.0	86.2	104	26.3	10.2	92.7	10.6	50.9	5.3	**132**	**60**	-1.9	-1.8	0.7
PCB 153	102	90.3	117	65.8	64.0	78.7	103	13.0	69.5	11.5	157	14	**83.0**	**39.0**	-1.4	-1.6	0.9
PCB 105	12.9	12.4	13.5	30.1	41.9	50.3	12.9	4.3	40.8	24.9	21.7	2.7	**54.0**	**24.0**	-1.6	-1.3	0.3
PCB 138/163/164	112	106	115	48.6	47.0	57.7	111	4.1	51.1	11.3	136	9	**102**	**23**	-0.7	-1.1	0.3
PCB 187/182	36.2	36.9	39.1	23.2	22.1	28.0	37.4	4.0	24.4	12.8	54.2	4.2	**36.0**	**16.0**	-1.2	-1.7	0.3
PCB 128	20.7	19.6	19.7	11.7	13.0	15.8	20.0	3.0	13.5	15.5	26.9	6.2	17.7	1.4	-1.0	-0.5	0.2
PCB 180	46.3	34.2	49.1	23.7	23.2	29.7	43.2	18.3	25.5	14.2	75.0	6.9	**46.0**	**14.0**	-1.7	-1.9	1.2
PCB 170/190	16.4	15.4	17.2	11.2	11.3	13.8	16.3	5.5	12.1	12.2	29.1	3.7	**22.0**	**8.0**	-1.8	-1.4	0.4
PCB 195	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.19	0.65	4.38	0.90			
PCB 206	DL	1.70	DL	2.06	1.87	DL	1.70	DL	1.97	6.8	5.06	0.50	4.50	0.90	-2.7	-2.9	
PCB 209	DL	DL	DL	DL	DL	2.12	DL	DL	2.12	DL	1.33	0.23	4.40	0.90			
PCB 66	7.75	6.54	6.4	90.5	83.8	103	6.90	10.8	92.4	10.5	9.16	1.72	125	10	-1.0	-0.8	0.7
PCB 95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11.7	1.4	50.0	7.0			

Laboratory: 7
PCBs in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	14	77.8
Qualitative	1	5.6
Not Determined	3	16.7

Category	Number by Category: z (25%)	z (s)	p (15%)
≤ 2	12	12	11
2 to 3	1	1	1
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 8**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 01/21/2000

PESTICIDES

Analysis date	Data as submitted by laboratory: Fish IV, ng/g wet 11/16/99 S 1	10/1/00 S 2	01/17/00 S 3	Carp-I, ng/g wet ____ S 1	____ S 2	____ S 3	Fish IV lab mean ng/g wet	Fish IV lab %RSD	Carp-I lab mean ng/g wet	Carp-I lab %RSD	Material reference values: Fish IV, ng/g wet assigned value	95% CL	Carp-I, ng/g wet target value[b]	95% CL	Performance scores[a] Fish IV z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	0.900	1.00	0.400	(*)	(*)	(*)	0.767	41.9	NA	NA	5.20	0.53	<4		**-3.4**	**-3.9**	2.8
hexachlorobenzene	N.A.(**)	N.A.(**)	N.A.(**)	____	____	____	NA	NA	NA	NA	6.62	0.68	3.28	0.33			
gamma-HCH	< 0.05	< 0.05	< 0.05	____	____	____	<0.05	NA	NA	NA	1.15	0.25	<2				
heptachlor	1.90	1.20	1.40	____	____	____	1.50	24.0	NA	NA	<1		<5				1.6
aldrin	1.20	0.30	0.90	____	____	____	0.800	57.3	NA	NA	<1		<4				**3.8**
heptachlor epoxide	5.80	5.80	6.60	____	____	____	6.07	7.6	NA	NA	5.19	0.63	2.30	0.88	0.7	0.8	0.5
oxychlordane	4.00	5.40	1.2	____	____	____	4.70	21.1	NA	NA	17.4	2.0	<3		-2.9	**-3.4**	1.4
trans-chlordane	2.90	4.30	3.10	____	____	____	3.43	22.1	NA	NA	8.06	1.21	5.20	1.60	-2.3	-1.9	1.5
2,4'-DDE	3.50	3.30	3.90	____	____	____	3.57	8.6	NA	NA	0.989	0.285	2.80	1.00	**10.4**	**6.5**	0.6
endosulfan I	N.A.	N.A.	N.A.	____	____	____	NA	NA	NA	NA	<2		<5				
cis-chlordane	11.3	17.8	15.6	____	____	____	14.9	22.2	NA	NA	31.0	5.1	8.40	1.40	-2.1	-1.5	1.5
trans-nonachlor	32.9	56.7	37.0	____	____	____	42.2	30.2	NA	NA	91.2	6.8	9.80	1.40	-2.1	**-3.2**	2.0
dieldrin	11.6	21.6	15.4	____	____	____	16.2	31.2	NA	NA	32.9	5.3	7.20	3.10	-2.0	-1.7	2.1
4,4'-DDE	80.3	100	89.5	____	____	____	90.0	11.1	NA	NA	335	31	146	13	-2.9	**-3.8**	0.7
2,4'-DDD	1.50	1.80	0.800	____	____	____	1.37	37.5	NA	NA	2.56	0.98	21.6	2.4	-1.9	-0.8	2.5
endrin	2.60	2.30	1.70	____	____	____	2.20	20.8	NA	NA	5.46	1.19	<8		-2.4	-1.8	1.4
endosulfan II	13.8	21.0	12.4	____	____	____	15.7	29.3	NA	NA	<5		<4				2.0
4,4'-DDD	5.60	12.8	8.30	____	____	____	8.90	40.9	NA	NA	15.4	2.9	70.0	15.0	-1.7	-1.0	2.7
2,4'-DDT	29.6	55.0	33.0	____	____	____	39.2	35.2	NA	NA	23.0	6.4	6.40	1.00	2.8	1.5	2.3
cis-nonachlor	9.10	4.70	6.80	____	____	____	6.87	32.0	NA	NA	58.4	8.1	5.30	1.30	**-3.5**	**-3.4**	2.1
4,4'-DDT	24.2	51.3	28.2	____	____	____	34.6	42.3	NA	NA	41.1	12.8	10.0	4.0	-0.6	-0.4	2.8
mirex	3.70	7.90	5.90	____	____	____	5.83	36.0	NA	NA	6.06	0.97	<6		-0.1	-0.1	2.4

Laboratory: 8
Pesticides in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	19	86.4
Qualitative	1	4.5
Not Determined	2	9.1

Category	Number by Category: z (25%)	z (s)	p (15%)
≤ 2	5	10	9
2 to 3	8	0	9
≥ 3	3	6	1

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 8**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 01/21/2000

PCBs

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Fish IV, ng/g wet			Carp-I, ng/g wet			Fish IV		Carp-I		Fish IV, ng/g wet		Carp-I, ng/g wet		Fish IV		
Analysis date	11/18/99 S 1	10/1/00 S 2	01/17/00 S 3	..... S 1	..... S 2	..... S 3	lab mean ng/g wet	lab %RSD	lab mean ng/g wet	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
PCB 8	N.A.	N.A.	N.A.	(*)	(*)	(*)	NA	NA	NA	NA	<2		2.60	0.70			
PCB 18	0.100	0.050	0.050	____	____	____	0.067	43.3	NA	NA	<2		21.7	1.6			2.9
PCB 28	0.400	1.60	0.700	____	____	____	0.900	69.4	NA	NA	2.24	0.41	27.7	2.9	-2.4	-1.5	**4.6**
PCB 52	11.8	3.50	7.20	____	____	____	7.50	55.4	NA	NA	7.10	0.75	**124**	**32**	0.2	0.2	**3.7**
PCB 44	2.40	6.30	4.70	____	____	____	4.47	43.9	NA	NA	5.54	1.40	75.0	6.0	-0.8	-0.3	2.9
PCB 66/95	10.7	12.4	15.0	____	____	____	12.7	17.1	NA	NA	17.8	3.9	156	12	-1.1	-0.9	1.1
PCB 101/90	18.7	40.7	29.6	____	____	____	29.7	37.1	NA	NA	38.1	4.5	**124**	**37**	-0.9	-0.8	2.5
PCB 118	33.4	70.5	53.2	____	____	____	52.4	35.5	NA	NA	50.9	5.3	**132**	**60**	0.1	0.1	2.4
PCB 153	198	175	222	____	____	____	198	11.8	NA	NA	157	14	**83.0**	**39.0**	1.1	1.2	0.8
PCB 105	172	94.8	270	____	____	____	179	49.1	NA	NA	21.7	2.7	**54.0**	**24.0**	**29.0**	**23.3**	**3.3**
PCB 138/163/164	518	368	582	____	____	____	489	22.4	NA	NA	136	9	**102**	**23**	**10.4**	**15.4**	1.5
PCB 187/182	165	207	70.9	____	____	____	148	47.2	NA	NA	54.2	4.2	**36.0**	**16.0**	**6.9**	**9.4**	**3.1**
PCB 128	61.7	50.3	71.5	____	____	____	61.2	17.3	NA	NA	26.9	6.2	17.7	1.4	**5.1**	2.5	1.2
PCB 180	235	192	288	____	____	____	238	20.2	NA	NA	75.0	6.9	**46.0**	**14.0**	**8.7**	**9.7**	1.3
PCB 170/190	36.8	43.5	30.1	____	____	____	36.8	18.2	NA	NA	29.1	3.7	**22.0**	**8.0**	1.1	0.9	1.2
PCB 195	4.00	7.40	4.10	____	____	____	5.17	37.4	NA	NA	5.19	0.65	4.38	0.90	0.0	0.0	2.5
PCB 206	5.90	2.90	3.90	____	____	____	4.23	36.1	NA	NA	5.06	0.50	4.50	0.90	-0.7	-0.7	2.4
PCB 209	0.600	1.40	0.400	____	____	____	0.800	66.1	NA	NA	1.33	0.23	4.40	0.90	-1.6	-1.0	**4.4**
PCB 66	____	____	____	____	____	____	NA	NA	NA	NA	9.16	1.72	125	10			
PCB 95	____	____	____	____	____	____	NA	NA	NA	NA	11.7	1.4	50.0	7.0			

Laboratory: 8
PCBs in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	17	94.4
Qualitative	0	0.0
Not Determined	1	5.6

Category	Number by Category		
	z (25%)	z (s)	p (15%)
≤ 2	10	11	6
2 to 3	1	1	6
≥ 3	5	4	5

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 9**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 9/22/99

PESTICIDES

	Data as submitted by laboratory									Material reference values				Performance scores[a]		
	Fish IV, ng/g wet			Carp-I, ng/g wet			Fish IV		Carp-I	Fish IV, ng/g wet		Carp-I, ng/g wet		Fish IV		
Analysis date	9/9/99 S 1	9/9/99 S 2	9/9/99 S 3	____ S 1	____ S 2	____ S 3	lab mean ng/g wet	lab %RSD	lab mean ng/g wet	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	9.77	10.6	16.0	____	____	____	12.1	27.9	NA	NA	5.20	0.53	<4		**5.3**	**6.1**	1.9
hexachlorobenzene	NA	NA	NA	____	____	____	NA	NA	NA	NA	6.62	0.68	3.28	0.33			
gamma-HCH	<0.051	<0.042	<0.042	____	____	____	<0.051	NA	NA	NA	1.15	0.25	<2				
heptachlor	<0.063	<0.052	<0.052	____	____	____	<0.063	NA	NA	NA	<1		<5				
aldrin	<0.034	<0.029	<0.028	____	____	____	<0.034	NA	NA	NA	<1		<4				
heptachlor epoxide	14.3	11.9	16.1	____	____	____	14.1	14.9	NA	NA	5.19	0.63	2.30	0.88	**6.9**	**8.6**	1.0
oxychlordane	NA	NA	NA	____	____	____	NA	NA	NA	NA	17.4	2.0	<3				
trans-chlordane	24.3	20.8	31.3	____	____	____	25.5	21.0	NA	NA	8.06	1.21	5.20	1.60	**8.6**	**7.2**	1.4
2,4'-DDE	NA	NA	NA	____	____	____	NA	NA	NA	NA	0.989	0.285	2.80	1.00			
endosulfan I	<0.043	<0.036	<0.035	____	____	____	<0.043	NA	NA	NA	<2		<5				
cis-chlordane	67.1	61.1	83.4	____	____	____	70.5	16.4	NA	NA	31.0	5.1	8.40	1.40	**5.1**	**3.7**	1.1
trans-nonachlor	NA	NA	NA	____	____	____	NA	NA	NA	NA	91.2	6.8	9.80	1.40			
dieldrin	103	106	132	____	____	____	114	14.0	NA	NA	32.9	5.3	7.20	3.10	**9.8**	**8.5**	0.9
4,4'-DDE	1092	1267	1281	____	____	____	1213	8.7	NA	NA	335	31	146	13	**10.5**	**13.7**	0.6
2,4'-DDD	NA	NA	NA	____	____	____	NA	NA	NA	NA	2.56	0.98	21.6	2.4			
endrin	<0.133	<0.111	<0.110	____	____	____	<0.133	NA	NA	NA	5.46	1.19	<8				
endosulfan II	<0.115	<0.096	<0.095	____	____	____	<0.115	NA	NA	NA	<5		<4				
4,4'-DDD	<0.089	<0.074	<0.073	____	____	____	<0.089	NA	NA	NA	15.4	2.9	70.0	15.0			
2,4'-DDT	NA	NA	NA	____	____	____	NA	NA	NA	NA	23.0	6.4	6.40	1.00			
cis-nonachlor	NA	NA	NA	____	____	____	NA	NA	NA	NA	58.4	8.1	5.30	1.30			
4,4'-DDT	137	127	154	____	____	____	139	9.8	NA	NA	41.1	12.8	10.0	4.0	**9.6**	**5.9**	0.7
mirex	NA	NA	NA	____	____	____	NA	NA	NA	NA	6.06	0.97	<6				

Laboratory: 9
Pesticides in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	7	31.8
Qualitative	7	31.8
Not Determined	8	36.4

	Number by Category		
Category	z (25%)	z (s)	p (15%)
≤ 2	0	0	7
2 to 3	0	0	0
≥ 3	7	7	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 9**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 9/22/99

PCBs

Analysis date	Data as submitted by laboratory: Fish IV, ng/g wet Sample 1 S 1	Fish IV, ng/g wet Sample 2 S 2	Fish IV, ng/g wet Sample 3 S 3	Carp-I, ng/g wet Sample 1 S 1	Carp-I, ng/g wet Sample 2 S 2	Carp-I, ng/g wet Sample 3 S 3	Fish IV lab mean ng/g wet	Fish IV lab %RSD	Carp-I lab mean ng/g wet	Carp-I lab %RSD	Material reference values: Fish IV, ng/g wet assigned value	Fish IV 95% CL	Carp-I, ng/g wet target value[b]	Carp-I 95% CL	Performance scores[a] Fish IV z-score (25%)	Fish IV z-score (s)	Fish IV p-score (15%)
PCB 8	30.9	37.3	48.7	____	____	____	39.0	23.1	NA	NA	<2		2.60	0.70			1.5
PCB 18	<4	<3.33	<3.31	____	____	____	<4	NA	NA	NA	<2		21.7	1.6			
PCB 28	NA	NA	NA	____	____	____	NA	NA	NA	NA	2.24	0.41	27.7	2.9			
PCB 52	14.8	10.0	17.0	____	____	____	13.9	25.7	NA	NA	7.10	0.75	**124**	**32**	**3.9**	**3.7**	1.7
PCB 44	<4	<3.33	<3.31	____	____	____	<4	NA	NA	NA	5.54	1.40	75.0	6.0			
PCB 66/95	NA	NA	NA	____	____	____	NA	NA	NA	NA	17.8	3.9	156	12			
PCB 101/90	80.3	71.0	88.5	____	____	____	79.9	11.0	NA	NA	38.1	4.5	**124**	**37**	**4.4**	**3.9**	0.7
PCB 118	148	137	144	____	____	____	143	3.9	NA	NA	50.9	5.3	**132**	**60**	**7.2**	**6.9**	0.3
PCB 153	488	573	533	____	____	____	531	8.0	NA	NA	157	14	**83.0**	**39.0**	**9.6**	**10.9**	0.5
PCB 105	69.3	58.2	66.0	____	____	____	64.5	8.8	NA	NA	21.7	2.7	**54.0**	**24.0**	**7.9**	**6.3**	0.6
PCB 138/163/164	424	542	526	____	____	____	497	12.9	NA	NA	136	9	**102**	**23**	**10.6**	**15.8**	0.9
PCB 187/182	123	114	126	____	____	____	121	5.2	NA	NA	54.2	4.2	**36.0**	**16.0**	**4.9**	**6.7**	0.3
PCB 128	51.2	50.2	49.9	____	____	____	50.4	1.3	NA	NA	26.9	6.2	17.7	1.4	**3.5**	1.7	0.1
PCB 180	159	169	177	____	____	____	168	5.4	NA	NA	75.0	6.9	**46.0**	**14.0**	**5.0**	**5.6**	0.4
PCB 170/190	104	106	105	____	____	____	105	1.0	NA	NA	29.1	3.7	**22.0**	**8.0**	**10.5**	**8.4**	0.1
PCB 195	13.4	13.6	14.7	____	____	____	13.9	5.0	NA	NA	5.19	0.65	4.38	0.90	**6.7**	**5.8**	0.3
PCB 206	NA	NA	NA	____	____	____	NA	NA	NA	NA	5.06	0.50	4.50	0.90			
PCB 209	NA	NA	NA	____	____	____	NA	NA	NA	NA	1.33	0.23	4.40	0.90			
PCB 66	40.3	33.3	37.2	____	____	____	36.9	9.5	NA	NA	9.16	1.72	125	10	**12.1**	**9.8**	0.6
PCB 95	<4	<3.33	<3.31	____	____	____	<4	NA	NA	NA	11.7	1.4	50.0	7.0			

Laboratory: 9
PCBs in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	12	66.7
Qualitative	2	11.1
Not Determined	4	22.2

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	0	1	12
2 to 3	0	0	0
≥ 3	11	10	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 11**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 10/26/99

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Fish IV, ng/g wet			Carp-I, ng/g wet			Fish IV		Carp-I		Fish IV, ng/g wet		Carp-I, ng/g wet		Fish IV		
Analysis date	8/27/99	used in pre	10/8/99	8/27/99	used in pre	10/8/99	lab mean	lab	lab mean	lab	assigned		target		z-score	z-score	p-score
	S 1	S 2	S 3	S 1	S 2	S 3	ng/g wet	%RSD	ng/g wet	%RSD	value	95% CL	value[b]	95% CL	(25%)	(s)	(15%)
alpha-HCH	5.23	Other ^	5.43	1.78	ther ^	<1.0	5.33	2.7	1.78	NA	5.20	0.53	<4		0.1	0.1	0.2
hexachlorobenzene	5.60	Other ^	5.36	2.17	ther ^	2.43	5.48	3.1	2.30	8.0	6.62	0.68	3.28	0.33	-0.7	-0.7	0.2
gamma-HCH	2.25	Other ^	1.34	1.08	ther ^	<1.0	1.80	35.8	1.08	NA	1.15	0.25	<2		2.2	1.1	2.4
heptachlor	<1.0	Other ^	<1.0	<1.0	ther ^	<1.0	<1.0	NA	<1.0	NA	<1		<5				
aldrin	<1.0	Other ^	<1.0	<1.0	ther ^	<1.0	<1.0	NA	<1.0	NA	<1		<4				
heptachlor epoxide	5.62	Other ^	<1.0	<5.0	ther ^	<5.0	5.62	NA	<5.0	NA	5.19	0.63	2.30	0.88	0.3	0.4	
oxychlordane	19.8	Other ^	12.9	<5.0	ther ^	<5.0	16.4	29.8	<5.0	NA	17.4	2.0	<3		-0.2	-0.3	2.0
trans-chlordane	7.18	Other ^	4.66	<5.0	ther ^	<5.0	5.92	30.1	<5.0	NA	8.06	1.21	5.20	1.60	-1.1	-0.9	2.0
2,4'-DDE	<5.0	Other ^	<5.0	<5.0	ther ^	<5.0	<5.0	NA	<5.0	NA	0.989	0.285	2.80	1.00			
endosulfan I	NA	Other ^	NA	NA	ther ^	NA	NA	NA	NA	NA	<2		<5				
cis-chlordane	21.1	Other ^	13.9	4.18	ther ^	3.43	17.5	29.1	3.81	13.9	31.0	5.1	8.40	1.40	-1.7	-1.3	1.9
trans-nonachlor	66.1	Other ^	56.6	6.06	ther ^	4.06	61.4	10.9	5.06	27.9	91.2	6.8	9.80	1.40	-1.3	-1.9	0.7
dieldrin	27.5	Other ^	17.9	3.84	ther ^	3.04	22.7	29.9	3.44	16.4	32.9	5.3	7.20	3.10	-1.2	-1.1	2.0
4,4'-DDE	258	Other ^	291	111	ther ^	135	275	8.5	123	13.8	335	31	146	13	-0.7	-1.0	0.6
2,4'-DDD	4.86	Other ^	1.42	10.6	ther ^	9.55	3.14	77.5	10.1	7.4	2.56	0.98	21.6	2.4	0.9	0.4	**5.2**
endrin	7.54	Other ^	1.77	<5.0	ther ^	<5.0	4.66	87.6	<5.0	NA	5.46	1.19	<8		-0.6	-0.5	**5.8**
endosulfan II	NA	Other ^	NA	NA	ther ^	NA	NA	NA	NA	NA	<5		<4				
4,4'-DDD	20.5	Other ^	8.10	51.7	ther ^	38.4	14.3	61.3	45.1	20.9	15.4	2.9	70.0	15.0	-0.3	-0.2	**4.1**
2,4'-DDT	22.5	Other ^	13.5	<5.0	ther ^	<5.0	18.0	35.4	<5.0	NA	23.0	6.4	6.40	1.00	-0.9	-0.4	2.4
cis-nonachlor	44.0	Other ^	33.7	2.24	ther ^	1.96	38.9	18.7	2.10	9.4	58.4	8.1	5.30	1.30	-1.3	-1.3	1.2
4,4'-DDT	26.5	Other ^	15.1	<5.0	ther ^	<5.0	20.8	38.8	<5.0	NA	41.1	12.8	10.0	4.0	-2.0	-1.2	2.6
mirex	5.57	Other ^	5.96	<5.0	ther ^	<5.0	5.77	4.8	<5.0	NA	6.06	0.97	<6		-0.2	-0.1	0.3

Laboratory: 11
Pesticides in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	17	77.3
Qualitative	3	13.6
Not Determined	2	9.1

Category	Number by Category		
	z (25%)	z (s)	p (15%)
≤ 2	16	17	9
2 to 3	1	0	4
≥ 3	0	0	3

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 11**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 10/26/99

PCBs	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Fish IV, ng/g wet			Carp-I, ng/g wet			Fish IV		Carp-I		Fish IV, ng/g wet		Carp-I, ng/g wet		Fish IV		
Analysis date	NA S 1	NA S 2	NA S 3	NA S 1	NA S 2	NA S 3	lab mean ng/g wet	lab %RSD	lab mean ng/g wet	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
PCB 8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2		2.60	0.70			
PCB 18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2		21.7	1.6			
PCB 28	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.24	0.41	27.7	2.9			
PCB 52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.10	0.75	**124**	**32**			
PCB 44	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.54	1.40	75.0	6.0			
PCB 66/95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17.8	3.9	156	12			
PCB 101/90	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	38.1	4.5	**124**	**37**			
PCB 118	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	50.9	5.3	**132**	**60**			
PCB 153	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	157	14	**83.0**	**39.0**			
PCB 105	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	21.7	2.7	**54.0**	**24.0**			
PCB 138/163/164	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	136	9	**102**	**23**			
PCB 187/182	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	54.2	4.2	**36.0**	**16.0**			
PCB 128	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	26.9	6.2	17.7	1.4			
PCB 180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	75.0	6.9	**46.0**	**14.0**			
PCB 170/190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	29.1	3.7	**22.0**	**8.0**			
PCB 195	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.19	0.65	4.38	0.90			
PCB 206	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.06	0.50	4.50	0.90			
PCB 209	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.33	0.23	4.40	0.90			
PCB 66	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.16	1.72	125	10			
PCB 95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11.7	1.4	50.0	7.0			

Laboratory: 11
PCBs in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	0	0.0
Qualitative	0	0.0
Not Determined	18	100.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	0	0	0
2 to 3	0	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 12**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 1/24/00

PESTICIDES

Analysis date	Data as submitted by laboratory: Fish IV, ng/g wet 2/9/99;1/7/0 S 1	Fish IV, ng/g wet 2/9/99;1/7/0 S 2	Fish IV, ng/g wet 2/9/99;1/7/0 S 3	Carp-I, ng/g wet 2/9/99;1/7/0 S 1	Carp-I, ng/g wet 2/9/99;1/7/0 S 2	Carp-I, ng/g wet 2/9/99;1/7/0 S 3	Fish IV lab mean ng/g wet	Fish IV lab %RSD	Carp-I lab mean ng/g wet	Carp-I lab %RSD	Material reference values: Fish IV, ng/g wet assigned value	Fish IV 95% CL	Carp-I, ng/g wet target value[b]	Carp-I 95% CL	Performance scores[a] Fish IV z-score (25%)	Fish IV z-score (s)	Fish IV p-score (15%)
alpha-HCH	5.91	5.20	5.26	1.21	1.29	1.42	5.46	7.2	1.31	8.1	5.20	0.53	<4		0.2	0.2	0.5
hexachlorobenzene	6.62	6.47	6.48	4.16	3.59	3.98	6.52	1.3	3.91	7.5	6.62	0.68	3.28	0.33	-0.1	-0.1	0.1
gamma-HCH	1.23	1.18	1.15	0.460	0.530	0.560	1.19	3.4	0.517	9.9	1.15	0.25	<2		0.1	0.1	0.2
heptachlor	< 2.0	< 2.0	< 2.0	4.91	3.97	4.68	< 2.0	NA	4.52	10.8	<1		<5				
aldrin	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	NA	< 2.0	NA	<1		<4				
heptachlor epoxide	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	NA	< 2.0	NA	5.19	0.63	2.30	0.88			
oxychlordane	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	NA	NA	NA	NA	17.4	2.0	<3				
trans-chlordane	10.4	9.88	10.6	4.81	4.65	5.19	10.3	3.6	4.88	5.7	8.06	1.21	5.20	1.60	1.1	0.9	0.2
2,4'-DDE	1.82	1.60	1.45	1.04	1.50	1.54	1.62	11.5	1.36	20.4	0.989	0.285	2.80	1.00	2.6	1.6	0.8
endosulfan I	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	NA	< 2.0	NA	<2		<5				
cis-chlordane	32.9	30.7	29.6	7.99	8.66	9.46	31.1	5.4	8.70	8.5	31.0	5.1	8.40	1.40	0.0	0.0	0.4
trans-nonachlor	101	95.1	90.9	9.04	9.93	10.7	95.8	5.5	9.89	8.4	91.2	6.8	9.80	1.40	0.2	0.3	0.4
dieldrin	34.4	33.2	32.3	< 2.0	< 2.0	< 2.0	33.3	3.2	< 2.0	NA	32.9	5.3	7.20	3.10	0.1	0.0	0.2
4,4'-DDE	387	412	351	164	144	162	383	7.9	157	7.0	335	31	146	13	0.6	0.8	0.5
2,4'-DDD	1.35	1.44	1.58	19.6	21.3	22.7	1.46	8.0	21.2	7.3	2.56	0.98	21.6	2.4	-1.7	-0.7	0.5
endrin	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	NA	< 2.0	NA	5.46	1.19	<8				
endosulfan II	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	NA	< 2.0	NA	<5		<4				
4,4'-DDD	10.0	12.2	12.3	69.0	81.9	89.7	11.5	11.4	80.2	13.0	15.4	2.9	70.0	15.0	-1.0	-0.6	0.8
2,4'-DDT	12.9	19.0	22.1	2.41	2.51	2.74	18.0	26.0	2.55	6.6	23.0	6.4	6.40	1.00	-0.9	-0.4	1.7
cis-nonachlor	65.6	66.3	59.4	4.19	4.63	4.86	63.8	6.0	4.56	7.5	58.4	8.1	5.30	1.30	0.4	0.4	0.4
4,4'-DDT	63.9	55.1	53.2	2.88	2.71	3.48	57.4	9.9	3.02	13.4	41.1	12.8	10.0	4.0	1.6	1.0	0.7
mirex	6.95	7.16	6.45	0.870	0.700	0.950	6.85	5.3	0.840	15.2	6.06	0.97	<6		0.5	0.4	0.4

Laboratory: 12
Pesticides in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	15	68.2
Qualitative	6	27.3
Not Determined	1	4.5

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	14	15	15
2 to 3	1	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 12**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 1/24/00

PCBs

Analysis date	Data as submitted by laboratory: Fish IV, ng/g wet 2/9/99;1/7/0 S 1	Fish IV, ng/g wet 2/9/99;1/7/0 S 2	Fish IV, ng/g wet 2/9/99;1/7/0 S 3	Carp-I, ng/g wet 2/9/99;1/7/0 S 1	Carp-I, ng/g wet 2/9/99;1/7/0 S 2	Carp-I, ng/g wet 2/9/99;1/7/0 S 3	Fish IV lab mean ng/g wet	Fish IV lab %RSD	Carp-I lab mean ng/g wet	Carp-I lab %RSD	Material reference values: Fish IV, ng/g wet assigned value	Fish IV 95% CL	Carp-I, ng/g wet target value[b]	Carp-I 95% CL	Performance scores[a] Fish IV z-score (25%)	z-score (s)	p-score (15%)
PCB 8	< 1.0	< 1.0	< 1.0	2.58	2.31	2.53	< 1.0	NA	2.47	5.8	<2		2.60	0.70			
PCB 18	0.760	0.760	0.750	24.0	21.1	23.4	0.757	0.8	22.8	6.7	<2		21.7	1.6			0.1
PCB 28	2.57	2.68	2.53	28.1	26.7	29.1	2.59	3.0	28.0	4.3	2.24	0.41	27.7	2.9	0.6	0.4	0.2
PCB 52	7.30	7.13	7.16	146	138	147	7.20	1.3	144	3.7	7.10	0.75	**124**	**32**	0.1	0.1	0.1
PCB 44	4.71	4.79	4.19	99.8	92.3	100	4.56	7.1	97.4	4.5	5.54	1.40	75.0	6.0	-0.7	-0.3	0.5
PCB 66/95	21.4	18.4	17.4	192	176	189	19.1	10.9	186	4.5	17.8	3.9	156	12	0.3	0.2	0.7
PCB 101/90	43.5	44.2	39.6	134	125	133	42.4	5.8	131	4.0	38.1	4.5	**124**	**37**	0.4	0.4	0.4
PCB 118	65.7	63.8	58.7	153	142	153	62.7	5.8	150	4.1	50.9	5.3	**132**	**60**	0.9	0.9	0.4
PCB 153	170	169	154	98.1	94.1	99.8	164	5.3	97.3	3.0	157	14	**83.0**	**39.0**	0.2	0.2	0.4
PCB 105	22.7	26.9	24.5	63.4	55.1	59.9	24.7	8.5	59.5	7.0	21.7	2.7	**54.0**	**24.0**	0.6	0.4	0.6
PCB 138/163/164	169	171	154	123	110	120	165	5.7	118	5.7	136	9	**102**	**23**	0.8	1.2	0.4
PCB 187/182	61.6	61.9	56.2	43.7	38.2	42.4	59.9	5.4	41.4	6.9	54.2	4.2	**36.0**	**16.0**	0.4	0.6	0.4
PCB 128	21.5	20.6	19.8	10.7	16.0	17.6	20.6	4.1	14.8	24.5	26.9	6.2	17.7	1.4	-0.9	-0.5	0.3
PCB 180	83.2	84.6	75.7	56.2	50.2	54.5	81.2	5.9	53.6	5.8	75.0	6.9	**46.0**	**14.0**	0.3	0.4	0.4
PCB 170/190	38.0	37.3	34.1	21.8	20.7	22.6	36.5	5.7	21.7	4.4	29.1	3.7	**22.0**	**8.0**	1.0	0.8	0.4
PCB 195	5.46	5.26	5.05	5.57	5.23	5.62	5.26	3.9	5.47	3.9	5.19	0.65	4.38	0.90	0.1	0.0	0.3
PCB 206	6.20	5.94	5.76	5.53	5.21	5.64	5.97	3.7	5.46	4.1	5.06	0.50	4.50	0.90	0.7	0.8	0.2
PCB 209	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	NA	NA	NA	NA	1.33	0.23	4.40	0.90			
PCB 66	____	____	____	____	____	____	NA	NA	NA	NA	9.16	1.72	125	10			
PCB 95	____	____	____	____	____	____	NA	NA	NA	NA	11.7	1.4	50.0	7.0			

Laboratory: 12
PCBs in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	16	88.9
Qualitative	1	5.6
Not Determined	1	5.6

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	15	15	16
2 to 3	0	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 13**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 1/30/00

PESTICIDES

Analysis date	Data as submitted by laboratory: Fish IV, ng/g wet 1/27/00 S 1	Fish IV, ng/g wet 1/27/00 S 2	Fish IV, ng/g wet 1/27/00 S 3	Carp-I, ng/g wet 1/30/00 S 1	Carp-I, ng/g wet 1/30/00 S 2	Carp-I, ng/g wet 1/30/00 S 3	Fish IV lab mean ng/g wet	Fish IV lab %RSD	Carp-I lab mean ng/g wet	Carp-I lab %RSD	Material reference values: Fish IV, ng/g wet assigned value	Fish IV 95% CL	Carp-I, ng/g wet target value[b]	Carp-I 95% CL	Performance scores[a] Fish IV z-score (25%)	Fish IV z-score (s)	Fish IV p-score (15%)
alpha-HCH	3.44	7.34	5.83	2.56	2.17	2.20	5.54	35.6	2.31	9.4	5.20	0.53	<4		0.3	0.3	2.4
hexachlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.62	0.68	3.28	0.33			
gamma-HCH	0.607	1.29	1.06	0.478	0.395	0.441	0.985	35.2	0.438	9.5	1.15	0.25	<2		-0.6	-0.3	2.3
heptachlor	1.10	2.83	2.83	4.80	4.04	4.98	2.25	44.5	4.61	10.9	<1		<5				**3.0**
aldrin	2.71	1.84	2.62	0.350	0.354	0.408	2.39	20.0	0.371	8.7	<1		<4				1.3
heptachlor epoxide	5.91	5.43	6.07	1.23	1.05	1.23	5.80	5.7	1.17	8.8	5.19	0.63	2.30	0.88	0.5	0.6	0.4
oxychlordane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17.4	2.0	<3				
trans-chlordane	NA	5.81	5.46	4.30	3.60	4.10	5.63	4.4	4.00	9.0	8.06	1.21	5.20	1.60	-1.2	-1.0	0.3
2,4'-DDE	9.46	10.9	8.28	17.9	15.9	20.1	9.56	13.9	18.0	11.7	0.989	0.285	2.80	1.00	**34.7**	**21.5**	0.9
endosulfan I	0.146	0.107	0.339	0.891	0.742	0.767	0.197	63.0	0.800	10.0	<2		<5				**4.2**
cis-chlordane	7.00	13.1	11.8	6.72	6.54	7.85	10.6	30.1	7.04	10.1	31.0	5.1	8.40	1.40	-2.6	-1.9	2.0
trans-nonachlor	79.8	72.3	72.3	12.0	11.5	14.1	74.8	5.8	12.5	11.1	91.2	6.8	9.80	1.40	-0.7	-1.1	0.4
dieldrin	9.09	9.37	9.50	2.18	1.82	1.78	9.32	2.3	1.93	11.3	32.9	5.3	7.20	3.10	-2.9	-2.5	0.2
4,4'-DDE	Other	Other	Other	Other	Other	Other	Other	Other	Other	Other	335	31	146	13			
2,4'-DDD	1.04	2.67	2.15	24.6	23.0	19.5	1.95	42.6	22.3	11.6	2.56	0.98	21.6	2.4	-1.0	-0.4	2.8
endrin	5.40	6.49	5.58	0.594	0.370	0.372	5.82	10.0	0.445	28.9	5.46	1.19	<8		0.3	0.2	0.7
endosulfan II	4.44	6.29	5.18	0.225	0.636	0.365	5.30	17.5	0.409	51.1	<5		<4				1.2
4,4'-DDD	8.64	15.6	13.5	67.8	60.0	76.9	12.6	28.3	68.2	12.4	15.4	2.9	70.0	15.0	-0.7	-0.4	1.9
2,4'-DDT	47.4	92.2	85.7	7.75	7.05	7.64	75.1	32.3	7.48	5.0	23.0	6.4	6.40	1.00	**9.1**	**4.7**	2.2
cis-nonachlor	207	114	125	32.0	31.9	38.2	149	33.9	34.0	10.6	58.4	8.1	5.30	1.30	**6.2**	**5.9**	2.3
4,4'-DDT	14.4	31.4	26.1	1.25	1.76	1.81	24.0	36.2	1.60	19.4	41.1	12.8	10.0	4.0	-1.7	-1.0	2.4
mirex	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.06	0.97	<6				

Laboratory: 13
Pesticides in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	18	81.8
Qualitative	1	4.5
Not Determined	3	13.6

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	9	10	9
2 to 3	2	1	7
≥ 3	3	3	2

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 13**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 1/30/00

PCBs

Analysis date	Data as submitted by laboratory: Fish IV, ng/g wet 1/27/00 S 1	1/27/00 S 2	1/27/00 S 3	Carp-I, ng/g wet 1/30/00 S 1	1/30/00 S 2	1/30/00 S 3	Fish IV lab mean ng/g wet	Fish IV lab %RSD	Carp-I lab mean ng/g wet	Carp-I lab %RSD	Material reference values: Fish IV, ng/g wet assigned value	95% CL	Carp-I, ng/g wet target value[b]	95% CL	Performance scores[a] Fish IV z-score (25%)	z-score (s)	p-score (15%)
PCB 8	14.6	11.0	14.0	13.1	9.95	12.0	13.2	14.5	11.7	13.7	<2		2.60	0.70			1.0
PCB 18	0.523	0.439	0.763	15.6	12.8	15.0	0.575	29.2	14.5	10.3	<2		21.7	1.6			1.9
PCB 28	2.74	6.23	6.04	55.1	53.2	63.5	5.00	39.2	57.3	9.6	2.24	0.41	27.7	2.9	**4.9**	**3.1**	2.6
PCB 52	5.36	4.42	5.12	57.5	49.7	57.9	4.96	9.9	55.0	8.5	7.10	0.75	**124**	**32**	-1.2	-1.2	0.7
PCB 44	6.28	5.16	5.34	58.7	52.0	61.5	5.59	10.7	57.4	8.5	5.54	1.40	75.0	6.0	0.0	0.0	0.7
PCB 66/95	26.6	25.0	28.8	170	156	182	26.8	7.0	169	7.8	17.8	3.9	156	12	2.0	1.5	0.5
PCB 101/90	18.5	16.3	17.4	46.9	41.3	48.3	17.4	6.3	45.5	8.1	38.1	4.5	**124**	**37**	-2.2	-1.9	0.4
PCB 118	21.2	20.8	19.8	59.0	54.4	63.0	20.6	3.5	58.8	7.3	50.9	5.3	**132**	**60**	-2.4	-2.3	0.2
PCB 153	125	122	117	86.2	76.6	88.3	121	3.1	83.7	7.5	157	14	**83.0**	**39.0**	-0.9	-1.0	0.2
PCB 105	ee belo	ee belo	ee belo	ee belo	ee belo	ee belo	see below	ee belo	see below	ee belo	21.7	2.7	**54.0**	**24.0**			
PCB 138/163/164	100	93.4	90.3	80.8	74.4	85.9	94.6	5.3	80.4	7.2	136	9	**102**	**23**	-1.2	-1.8	0.4
PCB 187/182	27.4	26.5	25.7	21.8	19.9	23.1	26.6	3.2	21.6	7.4	54.2	4.2	**36.0**	**16.0**	-2.0	-2.8	0.2
PCB 128	72.4	63.3	59.3	5.39	5.25	6.75	65.0	10.3	5.80	14.3	26.9	6.2	17.7	1.4	**5.7**	2.8	0.7
PCB 180	46.4	44.6	43.2	36.3	34.2	38.5	44.8	3.6	36.3	6.0	75.0	6.9	**46.0**	**14.0**	-1.6	-1.8	0.2
PCB 170/190	31.3	29.9	29.2	26.4	25.2	28.7	30.2	3.5	26.8	6.7	29.1	3.7	**22.0**	**8.0**	0.2	0.1	0.2
PCB 195	9.17	9.08	9.01	10.2	9.30	10.2	9.09	0.9	9.90	5.3	5.19	0.65	4.38	0.90	**3.0**	2.6	0.1
PCB 206	5.11	5.07	4.94	5.63	5.07	5.41	5.04	1.8	5.37	5.3	5.06	0.50	4.50	0.90	0.0	0.0	0.1
PCB 209	0.428	0.479	0.543	1.06	0.946	0.974	0.483	11.9	0.994	6.1	1.33	0.23	4.40	0.90	-2.5	-1.7	0.8
PCB 66	___	___	___	___	___	___	NA	NA	NA	NA	9.16	1.72	125	10			
PCB 95	___	___	___	___	___	___	NA	NA	NA	NA	11.7	1.4	50.0	7.0			

Laboratory: 13
PCBs in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	17	94.4
Qualitative	1	5.6
Not Determined	0	0.0

Category	Number by Category: z (25%)	z (s)	p (15%)
≤ 2	7	10	16
2 to 3	5	4	1
≥ 3	3	1	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 14**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 1/25/00

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Fish IV, ng/g wet			Carp-I, ng/g wet			Fish IV		Carp-I		Fish IV, ng/g wet		Carp-I, ng/g wet		Fish IV		
Analysis date	1/10/00 S 1	1/10/00 S 2	1/10/00 S 3	1/10/00 S 1	1/10/00 S 2	S 3	lab mean ng/g wet	lab %RSD	lab mean ng/g wet	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	NA	NA	NA	NA	NA	____	NA	NA	NA	NA	5.20	0.53	<4				
hexachlorobenzene	3.64	3.53	2.85	2.80	1.82	____	3.34	12.8	2.31	30.0	6.62	0.68	3.28	0.33	-2.0	-2.1	0.9
gamma-HCH	0.780	0.860	0.760	0.660	0.530	____	0.800	6.6	0.595	15.4	1.15	0.25	<2		-1.2	-0.6	0.4
heptachlor	NA	NA	NA	NA	NA	____	NA	NA	NA	NA	<1		<5				
aldrin	NA	NA	NA	NA	NA	____	NA	NA	NA	NA	<1		<4				
heptachlor epoxide	NA	NA	NA	NA	NA	____	NA	NA	NA	NA	5.19	0.63	2.30	0.88			
oxychlordane	NA	NA	NA	NA	NA	____	NA	NA	NA	NA	17.4	2.0	<3				
trans-chlordane	NA	NA	NA	NA	NA	____	NA	NA	NA	NA	8.06	1.21	5.20	1.60			
2,4'-DDE	NA	NA	NA	NA	NA	____	NA	NA	NA	NA	0.989	0.285	2.80	1.00			
endosulfan I	NA	NA	NA	NA	NA	____	NA	NA	NA	NA	<2		<5				
cis-chlordane	35.9	33.1	33.6	9.47	10.6	____	34.2	4.4	10.0	8.0	31.0	5.1	8.40	1.40	0.4	0.3	0.3
trans-nonachlor	114	111	111	11.4	12.4	____	112	1.5	11.9	5.9	91.2	6.8	9.80	1.40	0.9	1.4	0.1
dieldrin	NA	NA	NA	NA	NA	____	NA	NA	NA	NA	32.9	5.3	7.20	3.10			
4,4'-DDE	290	264	249	170	169	____	268	7.8	170	0.4	335	31	146	13	-0.8	-1.1	0.5
2,4'-DDD	NA	NA	NA	NA	NA	____	NA	NA	NA	NA	2.56	0.98	21.6	2.4			
endrin	NA	NA	NA	NA	NA	____	NA	NA	NA	NA	5.46	1.19	<8				
endosulfan II	NA	NA	NA	NA	NA	____	NA	NA	NA	NA	<5		<4				
4,4'-DDD	136	130	129	124	133	____	132	2.9	129	5.0	15.4	2.9	70.0	15.0	**30.2**	**18.0**	0.2
2,4'-DDT	NA	NA	NA	NA	NA	____	NA	NA	NA	NA	23.0	6.4	6.40	1.00			
cis-nonachlor	NA	NA	NA	NA	NA	____	NA	NA	NA	NA	58.4	8.1	5.30	1.30			
4,4'-DDT	87.7	84.1	84.5	<1	<1	____	85.4	2.3	<1	NA	41.1	12.8	10.0	4.0	**4.3**	2.7	0.2
mirex	NA	NA	NA	NA	NA	____	NA	NA	NA	NA	6.06	0.97	<6				

Laboratory: 14
Pesticides in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	7	31.8
Qualitative	0	0.0
Not Determined	15	68.2

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	5	4	7
2 to 3	0	2	0
≥ 3	2	1	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 14**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 1/25/00

PCBs

Analysis date	Data as submitted by laboratory: Fish IV, ng/g wet 1/10/00 S 1	Fish IV 1/10/00 S 2	Fish IV 1/10/00 S 3	Carp-I, ng/g wet 1/10/00 S 1	Carp-I 1/10/00 S 2	Carp-I _____ S 3	Fish IV lab mean ng/g wet	Fish IV lab %RSD	Carp-I lab mean ng/g wet	Carp-I lab %RSD	Material reference values: Fish IV, ng/g wet assigned value	Fish IV 95% CL	Carp-I, ng/g wet target value[b]	Carp-I 95% CL	Performance scores[a] Fish IV z-score (25%)	Fish IV z-score (s)	Fish IV p-score (15%)
PCB 8	1.85	1.60	1.12	2.08	1.66	____	1.52	24.4	1.87	15.9	<2		2.60	0.70			1.6
PCB 18	1.20	1.21	0.960	12.1	10.7	____	1.12	12.6	11.4	8.7	<2		21.7	1.6			0.8
PCB 28	1.69	1.47	1.21	16.9	16.8	____	1.46	16.5	16.9	0.4	2.24	0.41	27.7	2.9	-1.4	-0.9	1.1
PCB 52	5.37	4.62	4.13	65.3	65.4	____	4.71	13.3	65.4	0.1	7.10	0.75	**124**	**32**	-1.3	-1.3	0.9
PCB 44	2.97	2.61	2.37	50.8	51.4	____	2.65	11.4	51.1	0.8	5.54	1.40	75.0	6.0	-2.1	-0.9	0.8
PCB 66/95	7.14	6.39	6.21	85.9	86.7	____	6.58	7.5	86.3	0.7	17.8	3.9	156	12	-2.5	-1.9	0.5
PCB 101/90	22.7	20.8	19.8	81.8	80.8	____	21.1	7.0	81.3	0.9	38.1	4.5	**124**	**37**	-1.8	-1.6	0.5
PCB 118	39.9	37.3	36.0	105	103	____	37.7	5.3	104	1.4	50.9	5.3	**132**	**60**	-1.0	-1.0	0.4
PCB 153	125	116	109	75.9	73.5	____	117	6.9	74.7	2.3	157	14	**83.0**	**39.0**	-1.0	-1.2	0.5
PCB 105	20.2	20.3	19.7	48.2	47.9	____	20.1	1.6	48.1	0.4	21.7	2.7	**54.0**	**24.0**	-0.3	-0.2	0.1
PCB 138/163/164	109	101	97.2	81.4	79.8	____	102	5.9	80.6	1.4	136	9	**102**	**23**	-1.0	-1.5	0.4
PCB 187/182	48.2	45.5	43.8	30.6	30.1	____	45.8	4.8	30.4	1.2	54.2	4.2	**36.0**	**16.0**	-0.6	-0.8	0.3
PCB 128	19.3	18.5	18.3	15.4	15.2	____	18.7	2.8	15.3	0.9	26.9	6.2	17.7	1.4	-1.2	-0.6	0.2
PCB 180	72.3	69.9	68.4	47.4	47.7	____	70.2	2.8	47.6	0.4	75.0	6.9	**46.0**	**14.0**	-0.3	-0.3	0.2
PCB 170/190	22.7	22.7	22.4	17.7	17.6	____	22.6	0.8	17.7	0.4	29.1	3.7	**22.0**	**8.0**	-0.9	-0.7	0.1
PCB 195	4.54	4.50	4.60	4.84	4.76	____	4.55	1.1	4.80	1.2	5.19	0.65	4.38	0.90	-0.5	-0.4	0.1
PCB 206	4.48	4.38	4.48	5.51	5.50	____	4.45	1.3	5.51	0.1	5.06	0.50	4.50	0.90	-0.5	-0.5	0.1
PCB 209	0.970	0.970	0.980	4.66	4.57	____	0.973	0.6	4.62	1.4	1.33	0.23	4.40	0.90	-1.1	-0.7	0.0
PCB 66	____	____	____	____	____	____	NA	NA	NA	NA	9.16	1.72	125	10			
PCB 95	____	____	____	____	____	____	NA	NA	NA	NA	11.7	1.4	50.0	7.0			

Laboratory: 14
PCBs in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	18	100.0
Qualitative	0	0.0
Not Determined	0	0.0

Category	Number by Category: z (25%)	z (s)	p (15%)
≤ 2	14	16	18
2 to 3	2	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 15**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 1/28/00

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Fish IV, ng/g wet			Carp-I, ng/g wet			Fish IV		Carp-I		Fish IV, ng/g wet		Carp-I, ng/g wet		Fish IV		
Analysis date	12/26/99	12/29/99	1/27/00	1/27/00	1/0/00	1/0/00	lab mean	lab	lab mean	lab	assigned		target		z-score	z-score	p-score
	S 1	S 2	S 3	S 1	S 2	S 3	ng/g wet	%RSD	ng/g wet	%RSD	value	95% CL	value[b]	95% CL	(25%)	(s)	(15%)
alpha-HCH	3.82	<0.024	5.44	<0.024	NA	NA	4.63	24.7	<0.024	NA	5.20	0.53	<4		-0.4	-0.5	1.6
hexachlorobenzene	5.74	7.16	5.49	3.13	NA	NA	6.13	14.7	3.13	NA	6.62	0.68	3.28	0.33	-0.3	-0.3	1.0
gamma-HCH	0.799	<0.014	0.820	<0.014	NA	NA	0.810	1.8	<0.014	NA	1.15	0.25	<2		-1.2	-0.6	0.1
heptachlor	<0.056	<0.056	<0.056	<0.056	NA	NA	<0.056	NA	<0.056	NA	<1		<5				
aldrin	<0.014	<0.014	<0.014	<0.014	NA	NA	<0.014	NA	<0.014	NA	<1		<4				
heptachlor epoxide	5.12	6.76	5.49	<0.022	NA	NA	5.79	14.9	<0.022	NA	5.19	0.63	2.30	0.88	0.5	0.6	1.0
oxychlordane	14.4	16.5	14.1	<0.020	NA	NA	15.0	8.7	<0.020	NA	17.4	2.0	<3		-0.6	-0.6	0.6
trans-chlordane	7.58	9.50	7.03	<0.018	NA	NA	8.04	16.1	<0.018	NA	8.06	1.21	5.20	1.60	0.0	0.0	1.1
2,4'-DDE	0.812	<0.100	0.540	<0.100	NA	NA	0.676	28.5	<0.100	NA	0.989	0.285	2.80	1.00	-1.3	-0.8	1.9
endosulfan I	1.54	<0.045	1.59	<0.045	NA	NA	1.57	2.3	<0.045	NA	<2		<5				0.2
cis-chlordane	23.5	27.6	21.5	6.71	NA	NA	24.2	12.8	6.71	NA	31.0	5.1	8.40	1.40	-0.9	-0.6	0.9
trans-nonachlor	84.1	93.3	74.4	8.66	NA	NA	83.9	11.3	8.66	NA	91.2	6.8	9.80	1.40	-0.3	-0.5	0.8
dieldrin	28.2	33.8	28.6	15.0	NA	NA	30.2	10.3	15.0	NA	32.9	5.3	7.20	3.10	-0.3	-0.3	0.7
4,4'-DDE	318	377	336	158	NA	NA	344	8.8	158	NA	335	31	146	13	0.1	0.1	0.6
2,4'-DDD	2.29	2.73	3.23	19.9	NA	NA	2.75	17.1	19.9	NA	2.56	0.98	21.6	2.4	0.3	0.1	1.1
endrin	4.84	<0.061	<0.061	<0.061	NA	NA	4.84	NA	<0.061	NA	5.46	1.19	<8		-0.5	-0.4	
endosulfan II	<0.053	<0.053	<0.053	<0.053	NA	NA	<0.053	NA	<0.053	NA	<5		<4				
4,4'-DDD	20.7	24.6	20.9	72.0	NA	NA	22.1	10.0	72.0	NA	15.4	2.9	70.0	15.0	1.7	1.0	0.7
2,4'-DDT	21.9	18.7	19.7	4.99	NA	NA	20.1	8.1	4.99	NA	23.0	6.4	6.40	1.00	-0.5	-0.3	0.5
cis-nonachlor	47.7	54.3	45.5	5.36	NA	NA	49.2	9.3	5.36	NA	58.4	8.1	5.30	1.30	-0.6	-0.6	0.6
4,4'-DDT	29.6	34.3	27.7	<0.079	NA	NA	30.5	11.1	<0.079	NA	41.1	12.8	10.0	4.0	-1.0	-0.6	0.7
mirex	5.77	7.14	5.82	<0.027	NA	NA	6.24	12.4	<0.027	NA	6.06	0.97	<6		0.1	0.1	0.8

Laboratory: 15
Pesticides in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	19	86.4
Qualitative	3	13.6
Not Determined	0	0.0

Category	Number by Category		
	z (25%)	z (s)	p (15%)
≤ 2	18	18	18
2 to 3	0	0	0
≥ 3	0	0	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 15

Sample: QA99FSH4 - Fish Homogenate IV

(data reported as if three figures were significant)

Reporting Date: 1/28/00

PCBs

Analysis date	Data as submitted by laboratory: Fish IV, ng/g wet			Carp-I, ng/g wet			Fish IV		Carp-I		Material reference values: Fish IV, ng/g wet		Carp-I, ng/g wet		Performance scores[a]: Fish IV		
	12/25/99 S 1	12/29/99 S 2	1/27/00 S 3	1/27/00 S 1	1/0/00 S 2	1/0/00 S 3	lab mean ng/g wet	lab %RSD	lab mean ng/g wet	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
PCB 8	1.85	<0.113	<0.113	<0.113	<0.113	<0.113	1.85	NA	<0.113	NA	<2		2.60	0.70			
PCB 18	<0.028	<0.028	<0.028	18.5	26.7	26.3	<0.028	NA	23.8	19.4	<2		21.7	1.6			
PCB 28	1.48	<0.019	1.40	26.5	34.4	32.9	1.44	3.9	31.3	13.4	2.24	0.41	27.7	2.9	-1.4	-0.9	0.3
PCB 52	6.45	7.91	5.21	113	171	167	6.52	20.7	150	21.5	7.10	0.75	**124**	**32**	-0.3	-0.3	1.4
PCB 44	3.42	3.77	2.95	76.7	110	104	3.38	12.2	96.8	18.2	5.54	1.40	75.0	6.0	-1.6	-0.7	0.8
PCB 66/95							NA	NA	NA	NA	17.8	3.9	156	12			
PCB 101/90	25.4	33.2	22.6	109	161	158	27.1	20.3	142	20.3	38.1	4.5	**124**	**37**	-1.2	-1.0	1.4
PCB 118	46.7	55.5	41.6	129	181	165	47.9	14.7	158	16.8	50.9	5.3	**132**	**60**	-0.2	-0.2	1.0
PCB 153	148	199	113	81.2	106	94.7	153	28.2	93.9	13.2	157	14	**83.0**	**39.0**	-0.1	-0.1	1.9
PCB 105	18.0	21.1	19.8	47.7	60.8	53.5	19.6	7.9	54.0	12.2	21.7	2.7	**54.0**	**24.0**	-0.4	-0.3	0.5
PCB 138/163/164	169	196	123	93.9	137	120	163	22.7	117	18.6	136	9	**102**	**23**	0.8	1.2	1.5
PCB 187/182	61.2	75.0	51.1	32.8	37.3	36.5	62.4	19.2	35.5	6.8	54.2	4.2	**36.0**	**16.0**	0.6	0.8	1.3
PCB 128	75.7	85.7	15.5	17.3	21.2	18.2	59.0	64.4	18.9	10.8	26.9	6.2	17.7	1.4	**4.8**	2.4	**4.3**
PCB 180	60.6	73.6	58.2	43.9	50.4	48.7	64.1	12.9	47.7	7.1	75.0	6.9	**46.0**	**14.0**	-0.6	-0.6	0.9
PCB 170/190	20.5	24.8	21.5	22.0	19.8	21.4	22.3	10.1	21.1	5.4	29.1	3.7	**22.0**	**8.0**	-0.9	-0.8	0.7
PCB 195	3.97	4.71	4.92	6.38	5.09	5.38	4.53	11.0	5.62	12.1	5.19	0.65	4.38	0.90	-0.5	-0.4	0.7
PCB 206	2.49	2.76	3.36	4.72	5.29	4.61	2.87	15.5	4.87	7.5	5.06	0.50	4.50	0.90	-1.7	-1.9	1.0
PCB 209	0.455	0.567	0.648	4.45	5.66	4.08	0.557	17.4	4.73	17.4	1.33	0.23	4.40	0.90	-2.3	-1.5	1.2
PCB 66	6.96	6.40	5.0	98.9	153	148	6.13	16.2	133	22.4	9.16	1.72	125	10	-1.3	-1.1	1.1
PCB 95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11.7	1.4	50.0	7.0			

Laboratory: 15

PCBs in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	16	88.9
Qualitative	1	5.6
Not Determined	1	5.6

Category	Number by Category: z (25%)	z (s)	p (15%)
≤ 2	13	14	14
2 to 3	1	1	0
≥ 3	1	0	1

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 16**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 1/28/00

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Fish IV, ng/g wet			Carp-I, ng/g wet			Fish IV		Carp-I		Fish IV, ng/g wet		Carp-I, ng/g wet		Fish IV		
Analysis date	1/15/00 S 1	1/15/00 S 2	1/15/00 S 3	1/15/00 S 1	1/15/00 S 2	1/15/00 S 3	lab mean ng/g wet	lab %RSD	lab mean ng/g wet	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	5.33	5.59	5.77	<0.20	<0.20	<0.20	5.56	4.0	<0.20	NA	5.20	0.53	<4		0.3	0.3	0.3
hexachlorobenzene	8.19	7.64	8.04	3.66	3.67	3.83	7.96	3.6	3.72	2.6	6.62	0.68	3.28	0.33	0.8	0.9	0.2
gamma-HCH	0.780	0.680	0.800	<0.20	<0.20	<0.20	0.753	8.5	<0.20	NA	1.15	0.25	<2		-1.4	-0.7	0.6
heptachlor	0.100	0.150	0.090	<0.10	<0.10	<0.10	0.113	28.4	<0.10	NA	<1		<5				1.9
aldrin	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.10	NA	<0.20	NA	<1		<4				
heptachlor epoxide	12.5	11.9	12.8	15.4	15.1	16.0	12.4	3.7	15.5	2.9	5.19	0.63	2.30	0.88	**5.5**	**6.9**	0.2
oxychlordane	19.6	18.9	19.0	9.75	7.20	8.18	19.1	1.9	8.38	15.4	17.4	2.0	<3		0.4	0.5	0.1
trans-chlordane	8.76	8.04	8.77	3.31	3.15	3.51	8.52	4.9	3.32	5.4	8.06	1.21	5.20	1.60	0.2	0.2	0.3
2,4'-DDE	1.19	0.770	0.770	1.07	1.58	0.880	0.910	26.6	1.18	30.8	0.989	0.285	2.80	1.00	-0.3	-0.2	1.8
endosulfan I	<0.30	<0.30	<0.30	<0.60	<0.60	<0.60	<0.30	NA	<0.60	NA	<2		<5				
cis-chlordane	35.0	30.0	32.6	5.35	5.63	5.41	32.5	7.7	5.46	2.7	31.0	5.1	8.40	1.40	0.2	0.1	0.5
trans-nonachlor	109	101	104	7.33	7.21	7.54	105	4.1	7.36	2.3	91.2	6.8	9.80	1.40	0.6	0.9	0.3
dieldrin	35.5	36.1	42.2	12.8	11.7	12.7	37.9	9.7	12.4	4.6	32.9	5.3	7.20	3.10	0.6	0.5	0.6
4,4'-DDE	347	299	292	173	164	168	313	9.7	168	2.5	335	31	146	13	-0.3	-0.4	0.6
2,4'-DDD	1.03	1.53	1.36	19.5	19.6	19.9	1.31	19.5	19.7	0.9	2.56	0.98	21.6	2.4	-2.0	-0.8	1.3
endrin	6.03	5.96	6.08	<0.50	<0.50	<0.50	6.02	1.0	<0.50	NA	5.46	1.19	<8		0.4	0.3	0.1
endosulfan II	5.97	6.04	5.50	4.91	2.66	4.33	5.84	5.0	3.97	29.4	<5		<4				0.3
4,4'-DDD	7.21	7.09	7.71	75.7	82.1	86.7	7.34	4.5	81.5	6.8	15.4	2.9	70.0	15.0	-2.1	-1.2	0.3
2,4'-DDT	30.3	30.6	31.7	5.61	4.25	4.99	30.8	2.3	4.95	13.8	23.0	6.4	6.40	1.00	1.4	0.7	0.2
cis-nonachlor	66.6	62.2	62.3	5.16	5.40	4.94	63.7	3.9	5.17	4.5	58.4	8.1	5.30	1.30	0.4	0.4	0.3
4,4'-DDT	30.3	28.2	29.7	1.36	2.05	2.11	29.4	3.8	1.84	22.7	41.1	12.8	10.0	4.0	-1.1	-0.7	0.3
mirex	6.60	6.18	6.29	0.520	0.450	0.420	6.36	3.4	0.463	11.1	6.06	0.97	<6		0.2	0.2	0.2

Laboratory: 16
Pesticides in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	20	90.9
Qualitative	2	9.1
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	16	17	20
2 to 3	1	0	0
≥ 3	1	1	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 16

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant)

Reporting Date: 1/28/00

PCBs

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Fish IV, ng/g wet			Carp-I, ng/g wet			Fish IV		Carp-I		Fish IV, ng/g wet		Carp-I, ng/g wet		Fish IV		
Analysis date	1/15/00 S 1	1/15/00 S 2	1/15/00 S 3	1/15/00 S 1	1/15/00 S 2	1/15/00 S 3	lab mean ng/g wet	lab %RSD	lab mean ng/g wet	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
PCB 8	<0.2	<0.2	<0.2	1.75	1.93	2.06	<0.2	NA	1.91	8.1	<2		2.60	0.70			
PCB 18	0.510	0.560	0.490	23.0	21.0	21.7	0.520	6.9	21.9	4.8	<2		21.7	1.6			0.5
PCB 28	2.25	2.10	2.26	30.3	26.0	29.2	2.20	4.1	28.5	7.8	2.24	0.41	27.7	2.9	-0.1	0.0	0.3
PCB 52	8.67	8.15	8.01	150	131	144	8.28	4.2	142	6.8	7.10	0.75	**124**	**32**	0.7	0.6	0.3
PCB 44	4.54	3.45	3.64	84.0	76.5	81.9	3.88	15.0	80.8	4.8	5.54	1.40	75.0	6.0	-1.2	-0.5	1.0
PCB 66/95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17.8	3.9	156	12			
PCB 101/90	36.9	37.0	36.5	141	126	142	36.8	0.6	136	6.5	38.1	4.5	**124**	**37**	-0.1	-0.1	0.0
PCB 118	42.6	50.7	52.6	136	139	145	48.7	10.9	140	3.3	50.9	5.3	**132**	**60**	-0.2	-0.2	0.7
PCB 153	138	142	144	118	113	108	141	2.3	113	4.3	157	14	**83.0**	**39.0**	-0.4	-0.4	0.2
PCB 105	22.7	24.8	23.3	46.3	49.2	47.1	23.6	4.5	47.5	3.1	21.7	2.7	**54.0**	**24.0**	0.3	0.3	0.3
PCB 138/163/164	113	130	110	99.7	98.0	106	118	8.9	101	4.1	136	9	**102**	**23**	-0.5	-0.8	0.6
PCB 187/182	64.6	63.7	67.9	32.7	32.8	33.4	65.4	3.4	33.0	1.2	54.2	4.2	**36.0**	**16.0**	0.8	1.1	0.2
PCB 128	27.5	24.1	25.5	15.7	15.5	16.9	25.7	6.7	16.0	4.8	26.9	6.2	17.7	1.4	-0.2	-0.1	0.4
PCB 180	77.5	79.8	80.9	45.7	45.6	48.6	79.4	2.2	46.6	3.6	75.0	6.9	**46.0**	**14.0**	0.2	0.3	0.1
PCB 170/190	27.4	25.1	27.2	18.7	19.3	19.8	26.6	4.7	19.2	2.9	29.1	3.7	**22.0**	**8.0**	-0.3	-0.3	0.3
PCB 195	7.03	6.84	6.86	6.49	6.37	7.01	6.91	1.5	6.62	5.1	5.19	0.65	4.38	0.90	1.3	1.1	0.1
PCB 206	5.63	5.67	5.51	5.94	5.41	6.16	5.60	1.5	5.84	6.6	5.06	0.50	4.50	0.90	0.4	0.5	0.1
PCB 209	1.38	1.36	1.26	6.48	5.63	6.03	1.33	4.8	6.05	7.0	1.33	0.23	4.40	0.90	0.0	0.0	0.3
PCB 66	8.54	7.91	8.1	128	128	135	8.19	3.9	130	3.2	9.16	1.72	125	10	-0.4	-0.3	0.3
PCB 95	11.9	12.8	12.2	50.7	48.7	51.1	12.3	3.7	50.1	2.6	11.7	1.4	50.0	7.0	0.2	0.3	0.2

Laboratory: 16

PCBs in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	16	88.9
Qualitative	1	5.6
Not Determined	1	5.6

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	15	15	16
2 to 3	0	0	0
≥ 3	0	0	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 17**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 1/31/00

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Fish IV, ng/g wet			Carp-I, ng/g wet			Fish IV		Carp-I		Fish IV, ng/g wet		Carp-I, ng/g wet		Fish IV		
Analysis date	9/5/99	9/16/99	9/30/99	9/8/99	9/16/99	9/30/99	lab mean	lab	lab mean	lab	assigned		target		z-score	z-score	p-score
	S 1	S 2	S 3	S 1	S 2	S 3	ng/g wet	%RSD	ng/g wet	%RSD	value	95% CL	value[b]	95% CL	(25%)	(s)	(15%)
alpha-HCH	7.04	7.62	7.47	<0.18	<0.18	<0.18	7.38	4.1	<0.18	NA	5.20	0.53	<4		1.7	1.9	0.3
hexachlorobenzene	18.4	21.0	17.5	<0.22	<0.22	4.90	19.0	9.6	4.90	NA	6.62	0.68	3.28	0.33	**7.5**	**7.9**	0.6
gamma-HCH	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	NA	<0.18	NA	1.15	0.25	<2				
heptachlor	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	<0.20	NA	<1		<5				
aldrin	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	NA	<0.26	NA	<1		<4				
heptachlor epoxide	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	NA	<0.14	NA	5.19	0.63	2.30	0.88			
oxychlordane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17.4	2.0	<3				
trans-chlordane	9.35	9.36	10.5	49.7	55.7	23.1	9.74	6.8	42.8	40.5	8.06	1.21	5.20	1.60	0.8	0.7	0.5
2,4'-DDE	16.6	17.7	19.1	OTHE	OTHE	3.15	17.8	7.0	3.15	NA	0.989	0.285	2.80	1.00	**68.0**	**42.2**	0.5
endosulfan I	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	NA	<0.15	NA	<2		<5				
cis-chlordane	37.1	42.5	40.4	22.2	21.0	4.97	40.0	6.8	16.1	59.9	31.0	5.1	8.40	1.40	1.2	0.8	0.5
trans-nonachlor	76.8	88.7	86.4	32.9	12.6	13.1	84.0	7.5	19.5	59.3	91.2	6.8	9.80	1.40	-0.3	-0.5	0.5
dieldrin	29.7	46.6	35.9	<0.56	<0.56	<0.56	37.4	22.9	<0.56	NA	32.9	5.3	7.20	3.10	0.6	0.5	1.5
4,4'-DDE	262	252	277	133	116	124	264	4.8	124	6.8	335	31	146	13	-0.9	-1.1	0.3
2,4'-DDD	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	NA	<0.18	NA	2.56	0.98	21.6	2.4			
endrin	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	NA	<0.59	NA	5.46	1.19	<8				
endosulfan II	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	NA	<0.27	NA	<5		<4				
4,4'-DDD	13.4	13.1	14.1	72.7	69.5	65.5	13.5	3.8	69.2	5.2	15.4	2.9	70.0	15.0	-0.5	-0.3	0.3
2,4'-DDT	<0.24	<0.24	<0.24	5.67	6.50	5.21	<0.24	NA	5.79	11.3	23.0	6.4	6.40	1.00			
cis-nonachlor	76.2	77.6	74.4	8.38	12.3	3.80	76.1	2.1	8.16	52.1	58.4	8.1	5.30	1.30	1.2	1.2	0.1
4,4'-DDT	<0.35	<0.35	<0.35	7.05	OTHE	5.21	<0.35	NA	6.13	21.2	41.1	12.8	10.0	4.0			
mirex	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	NA	<0.15	NA	6.06	0.97	<6				

Laboratory: 17
Pesticides in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	10	45.5
Qualitative	11	50.0
Not Determined	1	4.5

Category	Number by Category		
	z (25%)	z (s)	p (15%)
≤ 2	8	8	10
2 to 3	0	0	0
≥ 3	2	2	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 17

Sample: QA99FSH4 - Fish Homogenate IV

(data reported as if three figures were significant)

Reporting Date: 1/31/00

PCBs

Analysis date	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Fish IV, ng/g wet			Carp-I, ng/g wet			Fish IV		Carp-I		Fish IV, ng/g wet		Carp-I, ng/g wet		Fish IV		
	8/8/99 S 1	8/16/99 S 2	8/30/99 S 3	8/8/99 S 1	8/16/99 S 2	8/30/99 S 3	lab mean ng/g wet	lab %RSD	lab mean ng/g wet	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
PCB 8	8.98	11.2	6.24	<0.49	<0.49	<0.49	8.81	28.2	<0.49	NA	<2		1.70	0.70			1.9
PCB 18	<0.58	<0.58	<0.58	33.2	31.6	24.7	<0.58	NA	29.8	15.1	<2		21.7	1.6			
PCB 28	3.77	6.53	2.57	38.6	35.3	29.4	4.29	47.3	34.4	13.5	2.24	0.41	27.7	2.9	**3.7**	2.3	**3.2**
PCB 52	10.5	14.3	11.1	120	126	126	12.0	17.1	124	2.8	7.10	0.75	**124**	**32**	2.7	2.6	1.1
PCB 44	4.90	5.09	4.22	94.3	115	72.2	4.74	9.7	93.8	22.8	5.54	1.40	75.0	6.0	-0.6	-0.3	0.6
PCB 66/95	15.5	16.2	12.8	188	178	132	14.8	12.1	166	18.0	17.8	3.9	156	12	-0.7	-0.5	0.8
PCB 101/90	46.6	46.2	44.0	106	104	121	45.6	3.1	110	8.4	38.1	4.5	**124**	**37**	0.8	0.7	0.2
PCB 118	42.5	58.8	79.1	103	91.9	137	60.1	30.5	111	21.2	50.9	5.3	**132**	**60**	0.7	0.7	2.0
PCB 153	107	130	151	71.9	63.0	85.5	129	17.0	73.5	15.4	157	14	**83.0**	**39.0**	-0.7	-0.8	1.1
PCB 105	21.8	36.6	38.2	50.5	54.8	60.3	32.2	28.1	55.2	8.9	21.7	2.7	**54.0**	**24.0**	1.9	1.6	1.9
PCB 138/163/164	109	120	114	111	86.8	94.9	114	4.8	97.6	12.6	136	9	**102**	**23**	-0.6	-1.0	0.3
PCB 187/182	52.1	51.6	78.1	27.2	30.6	34.9	60.6	25.0	30.9	12.5	54.2	4.2	**36.0**	**16.0**	0.5	0.6	1.7
PCB 128	30.3	34.0	45.8	20.1	21.6	23.6	36.7	22.1	21.8	8.1	26.9	6.2	17.7	1.4	1.5	0.7	1.5
PCB 180	49.5	54.6	71.0	50.2	51.9	46.4	58.4	19.2	49.5	5.7	75.0	6.9	**46.0**	**14.0**	-0.9	-1.0	1.3
PCB 170/190	<0.42	<0.42	<0.42	19.9	24.1	23.8	<0.42	NA	22.6	10.4	29.1	3.7	**22.0**	**8.0**			
PCB 195	7.11	9.86	8.76	4.00	5.05	2.78	8.58	16.1	3.94	28.8	5.19	0.65	4.38	0.90	2.6	2.2	1.1
PCB 206	<0.50	<0.50	<0.50	5.54	7.63	10.2	<0.50	NA	7.79	30.0	5.06	0.50	4.50	0.90			
PCB 209	1.17	<0.70	1.29	5.73	7.66	4.94	1.23	6.9	6.11	22.9	1.33	0.23	4.40	0.90	-0.3	-0.2	0.5
PCB 66	15.5	16.2	12.8	188	178	132	14.8	12.1	166	18.0	9.16	1.72	125	10	2.5	2.0	0.8
PCB 95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11.7	1.4	50.0	7.0			

Laboratory: 17

PCBs in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	15	83.3
Qualitative	3	16.7
Not Determined	0	0.0

Category	Number by Category		
	z (25%)	z (s)	p (15%)
≤ 2	11	11	13
2 to 3	2	3	1
≥ 3	1	0	1

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 19**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 1/31/00

PESTICIDES

Analysis date	Data as submitted by laboratory: Fish IV, ng/g wet 1/1/00 S 1	S 2	S 3	Carp-I, ng/g wet 1/1/00 S 1	S 2	S 3	Fish IV lab mean ng/g wet	Fish IV lab %RSD	Carp-I lab mean ng/g wet	Carp-I lab %RSD	Material reference values: Fish IV, ng/g wet assigned value	95% CL	Carp-I, ng/g wet target value[b]	95% CL	Performance scores[a] Fish IV z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	NA			NA			NA	NA	NA	NA	5.20	0.53	<4				
hexachlorobenzene	NA			NA			NA	NA	NA	NA	6.62	0.68	3.28	0.33			
gamma-HCH	NA			NA			NA	NA	NA	NA	1.15	0.25	<2				
heptachlor	NA			NA			NA	NA	NA	NA	<1		<5				
aldrin	NA			NA			NA	NA	NA	NA	<1		<4				
heptachlor epoxide	NA			NA			NA	NA	NA	NA	5.19	0.63	2.30	0.88			
oxychlordane	NA			NA			NA	NA	NA	NA	17.4	2.0	<3				
trans-chlordane	NA			NA			NA	NA	NA	NA	8.06	1.21	5.20	1.60			
2,4'-DDE	<1.4			NA			<1.4	NA	NA	NA	0.989	0.285	2.80	1.00			
endosulfan I	NA			NA			NA	NA	NA	NA	<2		<5				
cis-chlordane	15.2			NA			15.2	NA	NA	NA	31.0	5.1	8.40	1.40	-2.0	-1.5	
trans-nonachlor	53.9			NA			53.9	NA	NA	NA	91.2	6.8	9.80	1.40	-1.6	-2.4	
dieldrin	NA			NA			NA	NA	NA	NA	32.9	5.3	7.20	3.10			
4,4'-DDE	275			NA			275	NA	NA	NA	335	31	146	13	-0.7	-0.9	
2,4'-DDD	NA			NA			NA	NA	NA	NA	2.56	0.98	21.6	2.4			
endrin	NA			NA			NA	NA	NA	NA	5.46	1.19	<8				
endosulfan II	NA			NA			NA	NA	NA	NA	<5		<4				
4,4'-DDD	36.7			NA			36.7	NA	NA	NA	15.4	2.9	70.0	15.0	**5.5**	**3.3**	
2,4'-DDT	NA			NA			NA	NA	NA	NA	23.0	6.4	6.40	1.00			
cis-nonachlor	NA			NA			NA	NA	NA	NA	58.4	8.1	5.30	1.30			
4,4'-DDT	NA			NA			NA	NA	NA	NA	41.1	12.8	10.0	4.0			
mirex	NA			NA			NA	NA	NA	NA	6.06	0.97	<6				

Laboratory: 19
Pesticides in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	4	18.2
Qualitative	1	4.5
Not Determined	17	77.3

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	2	2	0
2 to 3	1	1	0
≥ 3	1	1	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant)

Laboratory No.: 19

Reporting Date: 1/31/00

PCBs

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Fish IV, ng/g wet			Carp-I, ng/g wet			Fish IV		Carp-I		Fish IV, ng/g wet		Carp-I, ng/g wet		Fish IV		
Analysis date	1/1/00			1/1/00			lab mean	lab	lab mean	lab	assigned		target		z-score	z-score	p-score
	S 1	S 2	S 3	S 1	S 2	S 3	ng/g wet	%RSD	ng/g wet	%RSD	value	95% CL	value[b]	95% CL	(25%)	(s)	(15%)
PCB 8	NA			NA			NA	NA	NA	NA	<2		2.60	0.70			
PCB 18	NA			NA			NA	NA	NA	NA	<2		21.7	1.6			
PCB 28	NA			NA			NA	NA	NA	NA	2.24	0.41	27.7	2.9			
PCB 52	5.06			115			5.06	NA	115	NA	7.10	0.75	**124**	**32**	-1.1	-1.1	
PCB 44	6.62			NA			6.62	NA	NA	NA	5.54	1.40	75.0	6.0	0.8	0.3	
PCB 66/95	NA			NA			NA	NA	NA	NA	17.8	3.9	156	12			
PCB 101/90	48.8			136			48.8	NA	136	NA	38.1	4.5	**124**	**37**	1.1	1.0	
PCB 118	52.7			124			52.7	NA	124	NA	50.9	5.3	**132**	**60**	0.1	0.1	
PCB 153	170			85.0			170	NA	85.0	NA	157	14	**83.0**	**39.0**	0.3	0.4	
PCB 105	26.0			54.0			26.0	NA	54.0	NA	21.7	2.7	**54.0**	**24.0**	0.8	0.6	
PCB 138/163/164	132			91.2			132	NA	91.2	NA	136	9	**102**	**23**	-0.1	-0.2	
PCB 187/182	NA			NA			NA	NA	NA	NA	54.2	4.2	**36.0**	**16.0**			
PCB 128	17.7			NA			17.7	NA	NA	NA	26.9	6.2	17.7	1.4	-1.4	-0.7	
PCB 180	71.9			52.0			71.9	NA	52.0	NA	75.0	6.9	**46.0**	**14.0**	-0.2	-0.2	
PCB 170/190	21.9			25.8			21.9	NA	25.8	NA	29.1	3.7	**22.0**	**8.0**	-1.0	-0.8	
PCB 195	NA			NA			NA	NA	NA	NA	5.19	0.65	4.38	0.90			
PCB 206	5.65			NA			5.65	NA	NA	NA	5.06	0.50	4.50	0.90	0.5	0.5	
PCB 209	2.13			NA			2.13	NA	NA	NA	1.33	0.23	4.40	0.90	2.4	1.6	
PCB 66	8.70			NA			8.70	NA	NA	NA	9.16	1.72	125	10	-0.2	-0.2	
PCB 95	NA			NA			NA	NA	NA	NA	11.7	1.4	50.0	7.0			

Laboratory: 19

PCBs in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	12	66.7
Qualitative	0	0.0
Not Determined	6	33.3

Category	Number by Category		
	z (25%)	z (s)	p (15%)
≤ 2	11	12	0
2 to 3	1	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 20**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 02/01/2000

PESTICIDES

Analysis date	Data as submitted by laboratory: Fish IV, ng/g wet 01/20/2000 S 1	Fish IV, ng/g wet 01/20/2000 S 2	Fish IV, ng/g wet 01/20/2000 S 3	Carp-I, ng/g wet 01/20/2000 S 1	Carp-I, ng/g wet 06/29/1999 S 2	Carp-I, ng/g wet _____ S 3	Fish IV lab mean ng/g wet	Fish IV lab %RSD	Carp-I lab mean ng/g wet	Carp-I lab %RSD	Material reference values: Fish IV, ng/g wet assigned value	Fish IV 95% CL	Carp-I, ng/g wet target value[b]	Carp-I 95% CL	Performance scores[a] Fish IV z-score (25%)	Fish IV z-score (s)	Fish IV p-score (15%)
alpha-HCH	NA	NA	NA	NA	NA	____	NA	NA	NA	NA	5.20	0.53	<4				
hexachlorobenzene	6.21	7.09	6.68	NA	NA	____	6.66	6.6	NA	NA	6.62	0.68	3.28	0.33	0.0	0.0	0.4
gamma-HCH	1.11	1.07	1.11	NA	NA	____	1.10	2.1	NA	NA	1.15	0.25	<2		-0.2	-0.1	0.1
heptachlor	<0.4	<0.4	<0.4	NA	NA	____	<0.4	NA	NA	NA	<1		<5				
aldrin	<0.6	<0.6	<0.6	NA	NA	____	<0.6	NA	NA	NA	<1		<4				
heptachlor epoxide	6.61	6.47	6.85	NA	NA	____	6.64	2.9	NA	NA	5.19	0.63	2.30	0.88	1.1	1.4	0.2
oxychlordane	NA	NA	NA	NA	NA	____	NA	NA	NA	NA	17.4	2.0	<3				
trans-chlordane	NA	NA	NA	NA	NA	____	NA	NA	NA	NA	8.06	1.21	5.20	1.60			
2,4'-DDE	1.01	0.971	0.626	<1.2	4.52	____	0.869	24.3	4.52	NA	0.989	0.285	2.80	1.00	-0.5	-0.3	1.6
endosulfan I	<0.48	<0.48	<0.48	NA	NA	____	<0.48	NA	NA	NA	<2		<5				
cis-chlordane	23.2	23.9	25.0	21.2	16.5	____	24.0	3.8	18.9	17.6	31.0	5.1	8.40	1.40	-0.9	-0.7	0.3
trans-nonachlor	65.9	70.0	74.4	19.5	15.5	____	70.1	6.1	17.5	16.2	91.2	6.8	9.80	1.40	-0.9	-1.4	0.4
dieldrin	28.3	28.7	31.1	7.97	8.30	____	29.4	5.2	8.14	2.9	32.9	5.3	7.20	3.10	-0.4	-0.4	0.3
4,4'-DDE	291	321	308	56.4	48.7	____	307	4.9	52.6	10.4	335	31	146	13	-0.3	-0.4	0.3
2,4'-DDD	2.47	3.17	3.48	18.3	18.3	____	3.04	17.0	18.3	0.0	2.56	0.98	21.6	2.4	0.7	0.3	1.1
endrin	NA	NA	NA	NA	NA	____	NA	NA	NA	NA	5.46	1.19	<8				
endosulfan II	<0.8	<0.8	<0.8	NA	NA	____	<0.8	NA	NA	NA	<5		<4				
4,4'-DDD	16.4	16.1	16.8	45.1	49.4	____	16.4	2.1	47.3	6.4	15.4	2.9	70.0	15.0	0.3	0.2	0.1
2,4'-DDT	14.9	16.6	16.9	5.78	9.75	____	16.1	6.7	7.77	36.2	23.0	6.4	6.40	1.00	-1.2	-0.6	0.4
cis-nonachlor	NA	NA	NA	NA	NA	____	NA	NA	NA	NA	58.4	8.1	5.30	1.30			
4,4'-DDT	29.7	29.4	31.0	3.24	4.44	____	30.0	2.8	3.84	22.1	41.1	12.8	10.0	4.0	-1.1	-0.7	0.2
mirex	5.07	5.14	5.12	NA	NA	____	5.11	0.7	NA	NA	6.06	0.97	<6		-0.6	-0.5	0.0

Laboratory: 20
Pesticides in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	13	59.1
Qualitative	4	18.2
Not Determined	5	22.7

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	13	13	13
2 to 3	0	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 20**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 02/01/2000

PCBs

Analysis date	Data as submitted by laboratory: Fish IV, ng/g wet 01/20/2000 S 1	Fish IV, ng/g wet 01/20/2000 S 2	Fish IV, ng/g wet 01/20/2000 S 3	Carp-I, ng/g wet 01/20/2000 S 1	Carp-I, ng/g wet 08/29/1999 S 2	Carp-I, ng/g wet ____ S 3	Fish IV lab mean ng/g wet	Fish IV lab %RSD	Carp-I lab mean ng/g wet	Carp-I lab %RSD	Material reference values: Fish IV, ng/g wet assigned value	Fish IV 95% CL	Carp-I, ng/g wet target value[b]	Carp-I 95% CL	Performance scores[a] Fish IV z-score (25%)	z-score (s)	p-score (15%)
PCB 8	<0.8	<0.8	<0.8	2.85	2.77	____	<0.8	NA	2.81	2.0	<2		1.70	0.70			
PCB 18	<0.8	<0.8	<0.8	30.7	26.0	____	<0.8	NA	28.4	11.7	<2		21.7	1.6			
PCB 28	2.13	2.33	2.27	106	82.5	____	2.24	4.6	94.3	17.6	2.24	0.41	27.7	2.9	0.0	0.0	0.3
PCB 52	6.16	7.58	7.43	128	109	____	7.06	11.1	119	11.3	7.10	0.75	**124**	**32**	0.0	0.0	0.7
PCB 44	3.68	3.56	3.66	83.6	56.6	____	3.63	1.8	70.1	27.2	5.54	1.40	75.0	6.0	-1.4	-0.6	0.1
PCB 66/95	6.17	7.11	6.62	155	157	____	6.63	7.1	156	0.9	17.8	3.9	156	12	-2.5	-1.9	0.5
PCB 101/90	35.9	40.6	38.4	146	148	____	38.3	6.1	147	1.0	38.1	4.5	**124**	**37**	0.0	0.0	0.4
PCB 118	56.9	58.3	59.2	148	108	____	58.1	2.0	128	22.1	50.9	5.3	**132**	**60**	0.6	0.5	0.1
PCB 153	167	170	172	156	116	____	170	1.5	136	20.8	157	14	**83.0**	**39.0**	0.3	0.4	0.1
PCB 105	17.7	22.5	21.9	64.2	50.5	____	20.7	12.6	57.4	16.9	21.7	2.7	**54.0**	**24.0**	-0.2	-0.1	0.8
PCB 138/163/164	111	129	122	140	131	____	121	7.5	136	4.7	136	9	**102**	**23**	-0.5	-0.7	0.5
PCB 187/182	55.6	57.2	57.9	40.4	31.9	____	56.9	2.1	36.2	16.6	54.2	4.2	**36.0**	**16.0**	0.2	0.3	0.1
PCB 128	27.2	30.0	30.7	26.2	21.5	____	29.3	6.3	23.9	13.9	26.9	6.2	17.7	1.4	0.4	0.2	0.4
PCB 180	65.5	67.0	67.6	15.9	17.1	____	66.7	1.6	16.5	5.1	75.0	6.9	**46.0**	**14.0**	-0.4	-0.5	0.1
PCB 170/190	31.0	32.2	32.6	3.3	4.3	____	31.9	2.6	3.81	17.3	29.1	3.7	**22.0**	**8.0**	0.4	0.3	0.2
PCB 195	4.46	4.61	5.10	<1.5	<1.5	____	4.72	7.1	<1.5	NA	5.19	0.65	4.38	0.90	-0.4	-0.3	0.5
PCB 206	4.66	4.95	5.63	<1.5	<1.5	____	5.08	9.8	<1.5	NA	5.06	0.50	4.50	0.90	0.0	0.0	0.7
PCB 209	1.20	1.24	1.39	<1.5	<1.5	____	1.28	7.8	<1.5	NA	1.33	0.23	4.40	0.90	-0.2	-0.1	0.5
PCB 66	____	____	____	____	____	____	NA	NA	NA	NA	9.16	1.72	125	10			
PCB 95	____	____	____	____	____	____	NA	NA	NA	NA	11.7	1.4	50.0	7.0			

Laboratory: 20
PCBs in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	16	88.9
Qualitative	2	11.1
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	15	16	16
2 to 3	1	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 22**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 1/31/00

PESTICIDES

Analysis date	Data as submitted by laboratory: Fish IV, ng/g wet 11/20/99 S 1	Fish IV, ng/g wet 1/6-15/00 S 2	Fish IV, ng/g wet 1/11-12/00 S 3	Carp-I, ng/g wet 11/20/99 S 1	Carp-I, ng/g wet 1/6/00 S 2	Carp-I, ng/g wet 1/11-12/00 S 3	Fish IV lab mean ng/g wet	Fish IV lab %RSD	Carp-I lab mean ng/g wet	Carp-I lab %RSD	Material reference values: Fish IV, ng/g wet assigned value	Fish IV 95% CL	Carp-I, ng/g wet target value[b]	Carp-I 95% CL	Performance scores[a] Fish IV z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	4.20	7.25	5.56	<2.0	<4.0	<4.0	5.67	26.9	<4.0	NA	5.20	0.53	<4		0.4	0.4	1.8
hexachlorobenzene	8.44	8.06	6.48	3.85	3.29	2.75	7.66	13.6	3.30	16.7	6.62	0.68	3.28	0.33	0.6	0.7	0.9
gamma-HCH	1.68	3.63	3.27	<2.0	<2.0	<2.0	2.86	36.3	<2.0	NA	1.15	0.25	<2		**5.9**	**3.0**	2.4
heptachlor	<2.0	<2.0	<2.0	<3.0	<2.0	<2.0	<2.0	NA	<3.0	NA	<1		<5				
aldrin	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	NA	<2.0	NA	<1		<4				
heptachlor epoxide	5.81	8.57	6.93	NA	<2.0	<2.0	7.10	19.5	<2.0	NA	5.19	0.63	2.30	0.88	1.5	1.8	1.3
oxychlordane	14.5	26.3	19.9	<5.0	<2.0	<2.0	20.2	29.2	<5.0	NA	17.4	2.0	<3		0.6	0.7	1.9
trans-chlordane	12.7	10.6	8.64	13.3	3.98	3.48	10.6	19.1	6.92	79.9	8.06	1.21	5.20	1.60	1.3	1.1	1.3
2,4'-DDE	<22	<21	<15	NA	<12	<16	<22	NA	<16	NA	0.989	0.285	2.80	1.00			
endosulfan I	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	NA	<2.0	NA	<2		<5				
cis-chlordane	25.5	36.6	30.7	3.58	NA	3.20	30.9	18.0	3.39	7.9	31.0	5.1	8.40	1.40	0.0	0.0	1.2
trans-nonachlor	78.1	86.8	85.9	7.93	8.85	7.17	83.6	5.7	7.98	10.5	91.2	6.8	9.80	1.40	-0.3	-0.5	0.4
dieldrin	42.1	64.1	53.8	<11	<2.0	<6.0	53.3	20.6	<11	NA	32.9	5.3	7.20	3.10	2.5	2.1	1.4
4,4'-DDE	343	330	333	228	202	217	335	2.0	216	6.1	335	31	146	13	0.0	0.0	0.1
2,4'-DDD	<2.0	<2.0	<2.0	23.4	NA	11.9	<2.0	NA	17.7	46.1	2.56	0.98	21.6	2.4			
endrin	<2.0	<10	<2.0	<2.0	<2.0	<2.0	<10	NA	<2.0	NA	5.46	1.19	<8				
endosulfan II	<67	<52	<45	<2.0	<2.0	<2.0	<67	NA	<2.0	NA	<5		<4				
4,4'-DDD	18.0	18.5	19.8	67.1	73.9	72.2	18.8	5.0	71.1	5.0	15.4	2.9	70.0	15.0	0.9	0.5	0.3
2,4'-DDT	21.7	13.8	11.3	<11	<10	<10	15.6	34.8	<11	NA	23.0	6.4	6.40	1.00	-1.3	-0.7	2.3
cis-nonachlor	114	72.2	76.1	<21	<10	<7.0	87.4	26.4	<21	NA	58.4	8.1	5.30	1.30	2.0	1.9	1.8
4,4'-DDT	38.3	43.9	35.2	13.5	12.6	9.98	39.1	11.3	12.0	15.2	41.1	12.8	10.0	4.0	-0.2	-0.1	0.8
mirex	8.85	6.50	5.25	NA	<2.0	<2.0	6.87	26.6	<2.0	NA	6.06	0.97	<6		0.5	0.4	1.8

Laboratory: 22
Pesticides in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	15	68.2
Qualitative	7	31.8
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	13	13	13
2 to 3	1	1	2
≥ 3	1	1	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 22**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 1/31/00

PCBs

Analysis date	Data as submitted by laboratory: Fish IV, ng/g wet S 1 (12/5/99)	S 2 (1/14/00)	S 3 (1/15/00)	Carp-I, ng/g wet S 1 (12/5/99)	S 2 (1/13/00)	S 3 (1/15/00)	Fish IV lab mean ng/g wet	Fish IV lab %RSD	Carp-I lab mean ng/g wet	Carp-I lab %RSD	Material reference values: Fish IV, ng/g wet assigned value	95% CL	Carp-I, ng/g wet target value[b]	95% CL	Performance scores[a] Fish IV z-score (25%)	z-score (s)	p-score (15%)
PCB 8	<2.0	<2.0	<2.0	2.97	4.13	4.26	<2.0	NA	3.79	18.8	<2		2.60	0.70			
PCB 18	<2.0	<2.0	<2.0	26.9	34.5	23.4	<2.0	NA	28.3	20.1	<2		21.7	1.6			
PCB 28	<2.0	<2.0	<2.0	33.3	41.1	35.1	<2.0	NA	36.5	11.2	2.24	0.41	27.7	2.9			
PCB 52	8.38	11.0	8.26	140	158	123	9.21	16.8	140	12.5	7.10	0.75	**124**	**32**	1.2	1.1	1.1
PCB 44	7.26	5.77	5.34	107	111	82.9	6.12	16.5	100	15.2	5.54	1.40	75.0	6.0	0.4	0.2	1.1
PCB 66/95	9.54	13.3	10.0	137	144	102	10.9	18.7	128	17.6	17.8	3.9	156	12	-1.5	-1.2	1.2
PCB 101/90	34.7	44.1	31.3	133	153	124	36.7	18.1	137	10.9	38.1	4.5	**124**	**37**	-0.2	-0.1	1.2
PCB 118	78.5	102	82.6	161	227	128	87.7	14.3	172	29.3	50.9	5.3	**132**	**60**	2.9	2.7	1.0
PCB 153	137	145	168	106	98.7	80.9	150	10.7	95.2	13.6	157	14	**83.0**	**39.0**	-0.2	-0.2	0.7
PCB 105	24.5	37.6	25.6	71.8	78.2	54.2	29.2	24.9	68.1	18.3	21.7	2.7	**54.0**	**24.0**	1.4	1.1	1.7
PCB 138/163/164	166	158	182	131	121	87.6	169	7.2	113	20.1	136	9	**102**	**23**	0.9	1.4	0.5
PCB 187/182	65.2	84.0	59.7	42.1	46.2	40.3	69.6	18.3	42.9	7.1	54.2	4.2	**36.0**	**16.0**	1.1	1.6	1.2
PCB 128	31.6	34.4	25.0	21.2	24.2	17.6	30.3	15.9	21.0	15.7	26.9	6.2	17.7	1.4	0.5	0.3	1.1
PCB 180	85.6	93.3	72.7	58.4	58.1	48.0	83.9	12.4	54.8	10.8	75.0	6.9	**46.0**	**14.0**	0.5	0.5	0.8
PCB 170/190	31.5	41.4	33.7	27.3	28.0	21.0	35.5	14.6	25.4	15.2	29.1	3.7	**22.0**	**8.0**	0.9	0.7	1.0
PCB 195	6.21	7.49	6.45	5.47	6.17	5.81	6.72	10.1	5.82	6.0	5.19	0.65	4.38	0.90	1.2	1.0	0.7
PCB 206	6.95	9.70	7.16	7.32	7.31	5.77	7.94	19.3	6.80	13.1	5.06	0.50	4.50	0.90	2.3	2.5	1.3
PCB 209	<2.0	<2.0	<2.0	7.86	9.16	7.29	<2.0	NA	8.10	11.8	1.33	0.23	4.40	0.90			
PCB 66	___	___	___	___	___	___	NA	NA	NA	NA	9.16	1.72	125	10			
PCB 95	___	___	___	___	___	___	NA	NA	NA	NA	11.7	1.4	50.0	7.0			

Laboratory: 22
PCBs in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	14	77.8
Qualitative	4	22.2
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	12	12	14
2 to 3	2	2	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant)

Laboratory No.: 23

Reporting Date: 2/1/00

PESTICIDES

Analysis date	Data as submitted by laboratory: Fish IV, ng/g wet 12/28/99 S 1	Fish IV, ng/g wet 12/28/99 S 2	Fish IV, ng/g wet 12/28/99 S 3	Carp-I, ng/g wet 12/28/99 S 1	Carp-I, ng/g wet 12/28/99 S 2	Carp-I, ng/g wet 12/28/99 S 3	Fish IV lab mean ng/g wet	Fish IV lab %RSD	Carp-I lab mean ng/g wet	Carp-I lab %RSD	Material reference values: Fish IV, ng/g wet assigned value	Fish IV 95% CL	Carp-I, ng/g wet target value[b]	Carp-I 95% CL	Performance scores[a] Fish IV z-score (25%)	Fish IV z-score (s)	Fish IV p-score (15%)
alpha-HCH	4.01	2.90	3.42	1.06	1.18	1.15	3.44	16.1	1.13	5.5	5.20	0.53	<4		-1.4	-1.6	1.1
hexachlorobenzene	6.62	6.41	6.60	3.53	3.40	3.34	6.54	1.8	3.42	2.8	6.62	0.68	3.28	0.33	0.0	0.0	0.1
gamma-HCH	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0	NA	1.15	0.25	<2				
heptachlor	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	NA	<2.0	NA	<1		<5				
aldrin	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0	NA	<1		<4				
heptachlor epoxide	3.85	2.77	3.34	1.45	1.26	1.20	3.32	16.3	1.30	10.0	5.19	0.63	2.30	0.88	-1.4	-1.8	1.1
oxychlordane	13.4	9.6	11.6	<1.0	<1.0	<1.0	11.5	16.7	<1.0	NA	17.4	2.0	<3		-1.4	-1.6	1.1
trans-chlordane	5.74	4.13	4.85	4.10	3.46	3.35	4.91	16.4	3.64	11.1	8.06	1.21	5.20	1.60	-1.6	-1.3	1.1
2,4'-DDE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	NA	<2.0	NA	0.989	0.285	2.80	1.00			
endosulfan I	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	NA	<2.0	NA	<2		<5				
cis-chlordane	19.1	13.8	16.6	7.27	7.02	6.61	16.5	16.1	6.97	4.8	31.0	5.1	8.40	1.40	-1.9	-1.4	1.1
trans-nonachlor	85.5	83.8	73.5	7.94	7.32	7.56	80.9	8.0	7.61	4.1	91.2	6.8	9.80	1.40	-0.4	-0.7	0.5
dieldrin	49.2	51.6	46.3	7.40	6.80	6.50	49.0	5.4	6.90	6.6	32.9	5.3	7.20	3.10	2.0	1.7	0.4
4,4'-DDE	304	298	260	166	161	161	287	8.3	163	1.8	335	31	146	13	-0.6	-0.8	0.6
2,4'-DDD	<2.0	<2.0	<2.0	23.4	19.7	18.8	<2.0	NA	20.6	11.8	2.56	0.98	21.6	2.4			
endrin	4.65	4.53	2.84	2.06	2.86	1.91	4.01	25.3	2.28	22.4	5.46	1.19	<8		-1.1	-0.8	1.7
endosulfan II	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	NA	<2.0	NA	<5		<4				
4,4'-DDD	8.39	8.13	7.34	75.5	67.4	64.8	7.95	6.9	69.2	8.1	15.4	2.9	70.0	15.0	-1.9	-1.2	0.5
2,4'-DDT	19.4	16.4	16.8	<3.0	<3.0	<3.0	17.5	9.3	<3.0	NA	23.0	6.4	6.40	1.00	-0.9	-0.5	0.6
cis-nonachlor	40.6	30.0	37.3	3.63	3.19	3.11	36.0	15.1	3.31	8.5	58.4	8.1	5.30	1.30	-1.5	-1.5	1.0
4,4'-DDT	28.5	21.4	24.4	<5.0	<5.0	<5.0	24.8	14.4	<5.0	NA	41.1	12.8	10.0	4.0	-1.6	-1.0	1.0
mirex	4.01	3.86	3.81	<3.0	<3.0	<3.0	3.89	2.7	<3.0	NA	6.06	0.97	<6		-1.4	-1.1	0.2

Laboratory: 23

Pesticides in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	15	68.2
Qualitative	7	31.8
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	15	15	15
2 to 3	0	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 23**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 2/1/00

PCBs

Analysis date	Data as submitted by laboratory: Fish IV, ng/g wet 1/21/00 S 1	Fish IV 1/21/00 S 2	Fish IV 1/21/00 S 3	Carp-I, ng/g wet 1/21/00 S 1	Carp-I 1/21/00 S 2	Carp-I 1/21/00 S 3	Fish IV lab mean ng/g wet	Fish IV lab %RSD	Carp-I lab mean ng/g wet	Carp-I lab %RSD	Material reference values: Fish IV, ng/g wet assigned value	Fish IV 95% CL	Carp-I, ng/g wet target value[b]	Carp-I 95% CL	Performance scores[a] Fish IV z-score (25%)	Fish IV z-score (s)	Fish IV p-score (15%)
PCB 8	<1.0	<1.0	<1.0	1.23	<1.0	1.19	<1.0	NA	1.21	2.3	<2		2.60	0.70			
PCB 18	<1.0	<1.0	<1.0	18.2	17.0	18.3	<1.0	NA	17.8	4.1	<2		21.7	1.6			
PCB 28	1.54	1.47	1.38	30.4	30.3	29.4	1.46	5.5	30.0	1.8	2.24	0.41	27.7	2.9	-1.4	-0.9	0.4
PCB 52	5.65	5.49	5.20	130	132	126	5.45	4.2	129	2.4	7.10	0.75	**124**	**32**	-0.9	-0.9	0.3
PCB 44	3.03	2.92	2.64	88.0	87.9	85.5	2.86	7.0	87.1	1.6	5.54	1.40	75.0	6.0	-1.9	-0.8	0.5
PCB 66/95	___	___	___	___	___	___	NA	NA	NA	NA	17.8	3.9	156	12			
PCB 101/90	35.6	35.0	30.7	175	171	172	33.8	7.9	173	1.2	38.1	4.5	**124**	**37**	-0.5	-0.4	0.5
PCB 118	56.7	58.0	48.8	158	157	151	54.5	9.1	155	2.4	50.9	5.3	**132**	**60**	0.3	0.3	0.6
PCB 153	153	153	131	90.6	87.6	86.6	146	8.7	88.3	2.4	157	14	**83.0**	**39.0**	-0.3	-0.3	0.6
PCB 105	20.1	15.1	12.7	58.6	25.1	62.1	16.0	23.6	48.6	42.0	21.7	2.7	**54.0**	**24.0**	-1.1	-0.9	1.6
PCB 138/163/164	133	132	112	109	105	104	126	9.4	106	2.5	136	9	**102**	**23**	-0.3	-0.5	0.6
PCB 187/182	48.6	48.7	40.6	34.3	32.4	32.1	46.0	10.1	32.9	3.6	54.2	4.2	**36.0**	**16.0**	-0.6	-0.8	0.7
PCB 128	18.1	16.6	15.4	17.4	14.1	15.3	16.7	8.1	15.6	10.7	26.9	6.2	17.7	1.4	-1.5	-0.7	0.5
PCB 180	65.7	66.7	55.3	47.9	46.0	45.7	62.6	10.1	46.5	2.6	75.0	6.9	**46.0**	**14.0**	-0.7	-0.7	0.7
PCB 170/190	19.5	18.7	19.0	18.9	15.8	16.2	19.1	2.1	17.0	9.9	29.1	3.7	**22.0**	**8.0**	-1.4	-1.1	0.1
PCB 195	3.17	3.35	3.32	3.84	3.31	3.39	3.28	2.9	3.51	8.1	5.19	0.65	4.38	0.90	-1.5	-1.3	0.2
PCB 206	3.87	3.84	3.81	4.37	3.70	3.74	3.84	0.8	3.94	9.5	5.06	0.50	4.50	0.90	-1.0	-1.1	0.1
PCB 209	<1.0	<1.0	<1.0	5.23	4.16	4.28	<1.0	NA	4.56	12.9	1.33	0.23	4.40	0.90			
PCB 66	33.9	33.1	29.4	142	137	136	32.1	7.5	138	2.3	9.16	1.72	125	10	**10.0**	**8.1**	0.5
PCB 95	9.75	9.30	8.71	62.4	59.0	61.2	9.25	5.6	60.9	2.8	11.7	1.4	50.0	7.0	-0.8	-1.3	0.4

Laboratory: 23
PCBs in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	14	77.8
Qualitative	3	16.7
Not Determined	1	5.6

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	14	14	14
2 to 3	0	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded. [b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 24**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 2/1/00

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Fish IV, ng/g wet			Carp-I, ng/g wet			Fish IV		Carp-I		Fish IV, ng/g wet		Carp-I, ng/g wet		Fish IV		
Analysis date	8/6/98 S 1	8/7/98 S 2	8/8/98 S 3	8/6/98 S 1	8/7/98 S 2	8/8/98 S 3	lab mean ng/g wet	lab %RSD	lab mean ng/g wet	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	5.56	5.52	6.53	1.19	1.13	1.13	5.87	9.7	1.15	3.0	5.20	0.53	<4		0.5	0.6	0.6
hexachlorobenzene	7.79	7.65	8.96	4.04	3.89	3.79	8.13	8.8	3.91	3.2	6.62	0.68	3.28	0.33	0.9	1.0	0.6
gamma-HCH	1.46	1.47	1.44	0.180	0.180	0.190	1.46	1.0	0.18	3.1	1.15	0.25	<2		1.1	0.5	0.1
heptachlor	0.510	0.510	0.500	0.190	0.180	0.180	0.507	1.1	0.183	3.1	<1		<5				0.1
aldrin	0.060	0.040	0.080	0.210	0.290	0.270	0.060	33.3	0.257	16.2	<1		<4				2.2
heptachlor epoxide	10.4	10.2	12.9	14.6	13.4	13.4	11.2	13.5	13.8	5.0	5.19	0.63	2.30	0.88	**4.6**	**5.7**	0.9
oxychlordane	17.4	17.6	20.1	3.36	4.24	3.70	18.4	8.2	3.77	11.8	17.4	2.0	<3		0.2	0.2	0.5
trans-chlordane	7.67	7.93	9.07	3.48	3.45	3.37	8.22	9.1	3.43	1.7	8.06	1.21	5.20	1.60	0.1	0.1	0.6
2,4'-DDE	1.17	1.47	1.82	1.76	2.25	2.06	1.49	21.9	2.02	12.2	0.989	0.285	2.80	1.00	2.0	1.2	1.5
endosulfan I	<1.97	<2.00	<1.98	<1.97	<2.00	<1.94	<2.00	NA	<2.00	NA	<2		<5				
cis-chlordane	36.1	35.8	44.2	6.33	6.28	6.13	38.7	12.3	6.25	1.7	31.0	5.1	8.40	1.40	1.0	0.7	0.8
trans-nonachlor	82.5	82.2	99.5	6.5	6.40	6.20	88.1	11.2	6.37	2.5	91.2	6.8	9.80	1.40	-0.1	-0.2	0.7
dieldrin	35.3	34.7	42.2	11.7	11.6	11.5	37.4	11.1	11.6	0.9	32.9	5.3	7.20	3.10	0.6	0.5	0.7
4,4'-DDE	319	324	382	122	103	121	342	10.2	115	9.3	335	31	146	13	0.1	0.1	0.7
2,4'-DDD	4.78	4.88	5.87	15.4	15.1	14.9	5.18	11.6	15.1	1.7	2.56	0.98	21.6	2.4	**4.1**	1.7	0.8
endrin	8.86	8.78	9.02	0.670	0.710	0.620	8.89	1.4	0.667	6.8	5.46	1.19	<8		2.5	1.9	0.1
endosulfan II	<2	<2	<2	3.06	3.54	2.94	<2	NA	3.18	10.0	<5		<4				
4,4'-DDD	20.2	19.1	24.4	72.6	62.8	71.1	21.2	13.2	68.8	7.7	15.4	2.9	70.0	15.0	1.5	0.9	0.9
2,4'-DDT	39.2	39.6	45.3	6.32	6.29	6.08	41.4	8.2	6.23	2.1	23.0	6.4	6.40	1.00	**3.2**	1.7	0.5
cis-nonachlor	45.1	46.5	58.7	3.69	3.66	3.64	50.1	14.9	3.66	0.7	58.4	8.1	5.30	1.30	-0.6	-0.5	1.0
4,4'-DDT	34.6	36.1	39.0	1.26	1.12	1.08	36.6	6.1	1.15	8.2	41.1	12.8	10.0	4.0	-0.4	-0.3	0.4
mirex	6.70	6.98	7.47	1.30	1.30	1.25	7.05	5.5	1.28	2.2	6.06	0.97	<6		0.7	0.5	0.4

Laboratory: 24
Pesticides in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	20	90.9
Qualitative	2	9.1
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	13	17	19
2 to 3	2	0	1
≥ 3	3	1	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 24**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 2/1/00

PCBs

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Fish IV, ng/g wet			Carp-I, ng/g wet			Fish IV		Carp-I		Fish IV, ng/g wet		Carp-I, ng/g wet		Fish IV		
Analysis date	6/6/00 S 1	6/7/00 S 2	6/8/00 S 3	6/6/00 S 1	6/7/00 S 2	6/8/00 S 3	lab mean ng/g wet	lab %RSD	lab mean ng/g wet	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
PCB 8	<0.2	<0.2	<0.2	1.38	1.10	1.30	<0.2	NA	1.26	11.4	<2		2.60	0.70			
PCB 18	3.65	3.76	4.65	19.9	19.6	19.6	4.02	13.6	19.7	0.9	<2		21.7	1.6			0.9
PCB 28	3.42	3.37	3.68	28.8	29.4	28.1	3.49	4.8	28.8	2.3	2.24	0.41	27.7	2.9	2.2	1.4	0.3
PCB 52	8.72	8.81	10.3	108	95.9	107	9.28	9.6	104	6.5	7.10	0.75	**124**	**32**	1.2	1.2	0.6
PCB 44	10.5	10.5	13.3	64.9	57.5	64.2	11.4	14.1	62.2	6.6	5.54	1.40	75.0	6.0	**4.2**	1.8	0.9
PCB 66/95	17.4	17.6	19.2	151	132	147	18.1	5.5	143	7.0	17.8	3.9	156	12	0.1	0.0	0.4
PCB 101/90	33.5	35.1	42.6	115	101	112	37.1	13.1	109	6.7	38.1	4.5	**124**	**37**	-0.1	-0.1	0.9
PCB 118	54.5	55.0	68.2	111	96.5	106	59.2	13.1	105	7.0	50.9	5.3	**132**	**60**	0.7	0.6	0.9
PCB 153	211	213	259	83.9	73.2	81.6	228	11.9	79.6	7.1	157	14	**83.0**	**39.0**	1.8	2.1	0.8
PCB 105	19.5	20.2	22.4	40.7	35.3	38.8	20.7	7.3	38.3	7.2	21.7	2.7	**54.0**	**24.0**	-0.2	-0.1	0.5
PCB 138/163/164	156	158	191	78.2	67.7	75.3	168	11.7	73.7	7.4	136	9	**102**	**23**	0.9	1.4	0.8
PCB 187/182	54.9	60.1	67.0	29.4	29.3	28.2	60.7	10.0	29.0	2.3	54.2	4.2	**36.0**	**16.0**	0.5	0.7	0.7
PCB 128	20.5	22.0	22.5	16.2	16.1	15.5	21.7	4.8	15.9	2.4	26.9	6.2	17.7	1.4	-0.8	-0.4	0.3
PCB 180	74.4	75.9	89.6	35.3	30.6	34.0	80.0	10.5	33.3	7.3	75.0	6.9	**46.0**	**14.0**	0.3	0.3	0.7
PCB 170/190	22.3	23.1	26.0	16.8	16.9	16.2	23.8	8.2	16.6	2.3	29.1	3.7	**22.0**	**8.0**	-0.7	-0.6	0.5
PCB 195	6.39	6.67	7.27	6.23	6.17	5.95	6.78	6.6	6.12	2.4	5.19	0.65	4.38	0.90	1.2	1.1	0.4
PCB 206	5.70	6.01	6.43	5.81	5.68	5.48	6.05	6.1	5.66	2.9	5.06	0.50	4.50	0.90	0.8	0.9	0.4
PCB 209	1.45	1.39	1.86	6.10	5.65	5.46	1.57	16.3	5.74	5.7	1.33	0.23	4.40	0.90	0.7	0.5	1.1
PCB 66	6.74	6.82	7.32	100	87.1	97.2	6.96	4.5	94.6	7.0	9.16	1.72	125	10	-1.0	-0.8	0.3
PCB 95	10.7	10.8	11.9	51.0	44.8	50.0	11.1	6.0	48.6	6.8	11.7	1.4	50.0	7.0	-0.2	-0.3	0.4

Laboratory: 24
PCBs in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	17	94.4
Qualitative	3	16.7
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	14	15	17
2 to 3	1	1	0
≥ 3	1	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 26**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 1/31/00

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Fish IV, ng/g wet			Carp-I, ng/g wet			Fish IV		Carp-I		Fish IV, ng/g wet		Carp-I, ng/g wet		Fish IV		
Analysis date	1/15/00 S 1	1/15/00 S 2	1/15/00 S 3	1/15/00 S 1	1/15/00 S 2	1/15/00 S 3	lab mean ng/g wet	lab %RSD	lab mean ng/g wet	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	5.40	5.63	5.68	1.18	1.25	1.39	5.57	2.7	1.27	8.2	5.20	0.53	<4		0.3	0.3	0.2
hexachlorobenzene	8.00	7.63	8.40	3.65	3.64	3.62	8.01	4.8	3.63	0.4	6.62	0.68	3.28	0.33	0.8	0.9	0.3
gamma-HCH	<2	<2	<2	<2	<2	<2	<2	NA	<2	NA	1.15	0.25	<2				
heptachlor	<2	<2	<2	<2	<2	<2	<2	NA	<2	NA	<1		<5				
aldrin	<2	<2	<2	<2	<2	<2	<2	NA	<2	NA	<1		<4				
heptachlor epoxide	4.60	4.41	4.70	<2	<2	<2	4.57	3.3	<2	NA	5.19	0.63	2.30	0.88	-0.5	-0.6	0.2
oxychlordane	17.9	18.3	19.5	3.86	4.08	3.73	18.6	4.5	3.89	4.5	17.4	2.0	<3		0.3	0.3	0.3
trans-chlordane	7.36	6.99	7.08	3.61	3.58	3.94	7.14	2.8	3.71	5.4	8.06	1.21	5.20	1.60	-0.5	-0.4	0.2
2,4'-DDE	<2	<2	<2	2.42	2.46	2.54	<2	NA	2.47	2.6	0.989	0.285	2.80	1.00			
endosulfan I	<2	<2	<2	<2	<2	<2	<2	NA	<2	NA	<2		<5				
cis-chlordane	20.7	20.3	23.9	4.76	6.71	7.35	21.7	9.1	6.28	21.5	31.0	5.1	8.40	1.40	-1.2	-0.9	0.6
trans-nonachlor	104	98.7	97.3	7.98	8.38	9.30	100	3.6	8.55	7.9	91.2	6.8	9.80	1.40	0.4	0.6	0.2
dieldrin	28.6	28.3	29.9	4.92	4.99	5.41	28.9	2.9	5.10	5.2	32.9	5.3	7.20	3.10	-0.5	-0.4	0.2
4,4'-DDE	406	394	422	150	158	159	407	3.4	156	3.1	335	31	146	13	0.9	1.1	0.2
2,4'-DDD	<2	<2	<2	19.7	18.7	19.9	<2	NA	19.4	3.4	2.56	0.98	21.6	2.4			
endrin	<2	<2	<2	<2	<2	<2	<2	NA	<2	NA	5.46	1.19	<8				
endosulfan II	<2	<2	<2	<2	<2	<2	<2	NA	<2	NA	<5		<4				
4,4'-DDD	11.2	11.4	11.5	84.5	82.3	86.2	11.4	1.3	84.3	2.3	15.4	2.9	70.0	15.0	-1.0	-0.6	0.1
2,4'-DDT	<2	<2	<2	8.61	8.74	8.69	<2	NA	8.68	0.7	23.0	6.4	6.40	1.00			
cis-nonachlor	56.7	54.2	52.5	3.63	3.42	3.81	54.4	3.9	3.62	5.3	58.4	8.1	5.30	1.30	-0.3	-0.3	0.3
4,4'-DDT	inf	inf	inf	<5	<5	<5	inf	NA	<5	NA	41.1	12.8	10.0	4.0			
mirex	5.49	5.08	5.92	<2	<2	<2	5.50	7.7	<2	NA	6.06	0.97	<6		-0.4	-0.3	0.5

Laboratory: 26
Pesticides in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	12	54.5
Qualitative	10	45.5
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	12	12	12
2 to 3	0	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 26

Sample: QA99FSH4 - Fish Homogenate IV

(data reported as if three figures were significant)

Reporting Date: 1/31/00

PCBs

Analysis date	Data as submitted by laboratory: Fish IV, ng/g wet 1/15/00 S 1	1/15/00 S 2	1/15/00 S 3	Carp-I, ng/g wet 1/15/00 S 1	1/15/00 S 2	1/15/00 S 3	Fish IV lab mean ng/g wet	Fish IV lab %RSD	Carp-I lab mean ng/g wet	Carp-I lab %RSD	Material reference values: Fish IV, ng/g wet assigned value	95% CL	Carp-I, ng/g wet target value[b]	95% CL	Performance scores[a] Fish IV z-score (25%)	z-score (s)	p-score (15%)
PCB 8	<2	<2	<2	2.33	2.23	2.11	<2	NA	2.22	4.8	<2		2.60	0.70			
PCB 18	<2	<2	<2	26.3	25.2	26.1	<2	NA	25.8	2.3	<2		21.7	1.6			
PCB 28	2.02	1.97	1.90	29.3	29.1	30.2	1.96	3.3	29.5	2.1	2.24	0.41	27.7	2.9	-0.5	-0.3	0.2
PCB 52	8.67	8.38	9.16	141	140	141	8.74	4.5	141	0.5	7.10	0.75	**124**	**32**	0.9	0.9	0.3
PCB 44	3.79	3.61	3.74	89.9	89.1	90.9	3.71	2.6	89.9	1.0	5.54	1.40	75.0	6.0	-1.3	-0.6	0.2
PCB 66/95	ee belo	ee belo	ee belo	ee belo	ee belo	ee belo	see below	NA	see below	NA	17.8	3.9	156	12			
PCB 101/90	47.7	51.9	43.3	144	141	144	47.7	9.0	143	1.3	38.1	4.5	**124**	**37**	1.0	0.9	0.6
PCB 118	55.9	54.2	58.1	133	135	138	56.0	3.4	135	1.8	50.9	5.3	**132**	**60**	0.4	0.4	0.2
PCB 153	171	166	180	89.7	91.3	92.3	172	4.0	91.1	1.4	157	14	**83.0**	**39.0**	0.4	0.5	0.3
PCB 105	21.4	20.8	21.2	48.0	48.8	49.3	21.1	1.4	48.7	1.3	21.7	2.7	**54.0**	**24.0**	-0.1	-0.1	0.1
PCB 138/163/164	156	155	162	102	105	106	158	2.4	104	1.7	136	9	**102**	**23**	0.6	0.9	0.2
PCB 187/182	60.4	61.0	65.2	33.9	34.4	35.0	62.2	4.2	34.4	1.5	54.2	4.2	**36.0**	**16.0**	0.6	0.8	0.3
PCB 128	24.0	23.4	24.4	17.3	17.3	17.8	23.9	1.9	17.5	1.5	26.9	6.2	17.7	1.4	-0.4	-0.2	0.1
PCB 180	83.3	82.1	86.1	49.1	50.0	50.4	83.8	2.4	49.8	1.4	75.0	6.9	**46.0**	**14.0**	0.5	0.5	0.2
PCB 170/190	25.4	25.2	26.4	17.9	18.0	18.0	25.7	2.5	18.0	0.2	29.1	3.7	**22.0**	**8.0**	-0.5	-0.4	0.2
PCB 195	5.39	5.31	5.52	5.00	5.05	5.13	5.40	2.0	5.06	1.3	5.19	0.65	4.38	0.90	0.2	0.1	0.1
PCB 206	6.24	6.21	6.36	5.50	5.54	5.38	6.27	1.2	5.48	1.6	5.06	0.50	4.50	0.90	1.0	1.1	0.1
PCB 209	1.98	1.94	1.94	6.20	6.57	6.46	1.95	1.3	6.41	3.0	1.33	0.23	4.40	0.90	1.9	1.2	0.1
PCB 66	13.20	13.15	13.9	152	152	152	13.4	3.2	152	0.2	9.16	1.72	125	10	1.9	1.5	0.2
PCB 95	13.8	13.4	14.4	62.7	62.1	63.7	13.8	3.6	62.8	1.3	11.7	1.4	50.0	7.0	0.7	1.1	0.2

Laboratory: 26

PCBs in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	15	83.3
Qualitative	5	27.8
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	15	15	15
2 to 3	0	0	0
≥ 3	0	0	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise
Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant)

Laboratory No.: 27
Reporting Date: 2/11/00

PESTICIDES

Analysis date	Data as submitted by laboratory: Fish IV, ng/g wet S 1	S 2	S 3	Carp-I, ng/g wet S 1	S 2	S 3	Fish IV lab mean ng/g wet	Fish IV lab %RSD	Carp-I lab mean ng/g wet	Carp-I lab %RSD	Material reference values: Fish IV, ng/g wet assigned value	95% CL	Carp-I, ng/g wet target value[b]	95% CL	Performance scores[a] Fish IV z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	___	___	___	___	___	___	NA	NA	NA	NA	5.20	0.53	<4				
hexachlorobenzene	___	___	___	___	___	___	NA	NA	NA	NA	6.62	0.68	3.28	0.33			
gamma-HCH	___	___	___	___	___	___	NA	NA	NA	NA	1.15	0.25	<2				
heptachlor	___	___	___	___	___	___	NA	NA	NA	NA	<1		<5				
aldrin	___	___	___	___	___	___	NA	NA	NA	NA	<1		<4				
heptachlor epoxide	___	___	___	___	___	___	NA	NA	NA	NA	5.19	0.63	2.30	0.88			
oxychlordane	___	___	___	___	___	___	NA	NA	NA	NA	17.4	2.0	<3				
trans-chlordane	___	___	___	___	___	___	NA	NA	NA	NA	8.06	1.21	5.20	1.60			
2,4'-DDE	___	___	___	___	___	___	NA	NA	NA	NA	0.989	0.285	2.80	1.00			
endosulfan I	___	___	___	___	___	___	NA	NA	NA	NA	<2		<5				
cis-chlordane	___	___	___	___	___	___	NA	NA	NA	NA	31.0	5.1	8.40	1.40			
trans-nonachlor	___	___	___	___	___	___	NA	NA	NA	NA	91.2	6.8	9.80	1.40			
dieldrin	___	___	___	___	___	___	NA	NA	NA	NA	32.9	5.3	7.20	3.10			
4,4'-DDE	___	___	___	___	___	___	NA	NA	NA	NA	335	31	146	13			
2,4'-DDD	___	___	___	___	___	___	NA	NA	NA	NA	2.56	0.98	21.6	2.4			
endrin	___	___	___	___	___	___	NA	NA	NA	NA	5.46	1.19	<8				
endosulfan II	___	___	___	___	___	___	NA	NA	NA	NA	<5		<4				
4,4'-DDD	___	___	___	___	___	___	NA	NA	NA	NA	15.4	2.9	70.0	15.0			
2,4'-DDT	___	___	___	___	___	___	NA	NA	NA	NA	23.0	6.4	6.40	1.00			
cis-nonachlor	___	___	___	___	___	___	NA	NA	NA	NA	58.4	8.1	5.30	1.30			
4,4'-DDT	___	___	___	___	___	___	NA	NA	NA	NA	41.1	12.8	10.0	4.0			
mirex	___	___	___	___	___	___	NA	NA	NA	NA	6.06	0.97	<6				

Laboratory: 27
Pesticides in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	0	0.0
Qualitative	0	0.0
Not Determined	22	100.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	0	0	0
2 to 3	0	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 27**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 2/11/00

PCBs

	Data as submitted by laboratory									Material reference values				Performance scores[a]		
	Fish IV, ng/g wet			Carp-I, ng/g wet			Fish IV		Carp-I		Fish IV, ng/g wet		Carp-I, ng/g wet		Fish IV		
Analysis date	1/18/00 S 1	1/19/00 S 2	1/20/00 S 3	S 1	S 2	S 3	lab mean ng/g wet	lab %RSD	lab mean ng/g wet	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
PCB 8	<0.395	<0.778	<0.739				<0.778	NA	NA	NA	<2		2.60	0.70			
PCB 18	0.129	0.141	0.111				0.127	11.9	NA	NA	<2		21.7	1.6			0.8
PCB 28	2.08	2.29	2.14				2.17	5.0	NA	NA	2.24	0.41	27.7	2.9	-0.1	-0.1	0.3
PCB 52	8.09	9.66	9.01				8.92	8.8	NA	NA	7.10	0.75	**124**	**32**	1.0	1.0	0.6
PCB 44	5.75	6.69	6.41				6.28	7.7	NA	NA	5.54	1.40	75.0	6.0	0.5	0.2	0.5
PCB 66/95	7.85	8.34	8.37				8.19	3.6	NA	NA	17.8	3.9	156	12	-2.2	-1.6	0.2
PCB 101/90	26.9	29.3	29.7				28.6	5.3	NA	NA	38.1	4.5	**124**	**37**	-1.0	-0.9	0.4
PCB 118	56.5	55.8	55.2				55.8	1.2	NA	NA	50.9	5.3	**132**	**60**	0.4	0.4	0.1
PCB 153	303	320	322				315	3.3	NA	NA	157	14	**83.0**	**39.0**	**4.0**	**4.6**	0.2
PCB 105	22.6	23.1	22.4				22.7	1.6	NA	NA	21.7	2.7	**54.0**	**24.0**	0.2	0.1	0.1
PCB 138/163/164	168	185	184				179	5.3	NA	NA	136	9	**102**	**23**	1.3	1.9	0.4
PCB 187/182	46.9	49.6	48.1				48.2	2.8	NA	NA	54.2	4.2	**36.0**	**16.0**	-0.4	-0.6	0.2
PCB 128	33.5	35.1	36.2				34.9	3.9	NA	NA	26.9	6.2	17.7	1.4	1.2	0.6	0.3
PCB 180	90.5	89.6	85.8				88.6	2.8	NA	NA	75.0	6.9	**46.0**	**14.0**	0.7	0.8	0.2
PCB 170/190	32.9	34.2	31.6				32.9	4.0	NA	NA	29.1	3.7	**22.0**	**8.0**	0.5	0.4	0.3
PCB 195	5.03	4.92	4.78				4.91	2.6	NA	NA	5.19	0.65	4.38	0.90	-0.2	-0.2	0.2
PCB 206	6.12	6.43	6.06				6.20	3.2	NA	NA	5.06	0.50	4.50	0.90	0.9	1.0	0.2
PCB 209	1.18	1.16	1.05				1.13	6.2	NA	NA	1.33	0.23	4.40	0.90	-0.6	-0.4	0.4
PCB 66	7.85	8.34	8.4				8.19	3.6	NA	NA	9.16	1.72	125	10	-0.4	-0.3	0.2
PCB 95	14.1	15.9	14.9				15.0	6.2	NA	NA	11.7	1.4	50.0	7.0	1.1	1.7	0.4

Laboratory: 27
PCBs in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	17	94.4
Qualitative	3	16.7
Not Determined	0	0.0

Category	Number by Category		
	z (25%)	z (s)	p (15%)
≤ 2	14	15	17
2 to 3	1	0	0
≥ 3	1	1	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 28**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 2/2/00

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Fish IV, ng/g wet			Carp-I, ng/g wet			Fish IV		Carp-I		Fish IV, ng/g wet		Carp-I, ng/g wet		Fish IV		
Analysis date	1/28/00 S 1	2/1/00 S 2	2/1/00 S 3	2/1/00 S 1	2/1/00 S 2	2/1/00 S 3	lab mean ng/g wet	lab %RSD	lab mean ng/g wet	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	5.86	5.54	5.36	1.37	1.49	1.33	5.59	4.5	1.40	6.0	5.20	0.53	<4		0.3	0.3	0.3
hexachlorobenzene	5.37	4.98	4.07	2.43	2.77	2.23	4.81	13.9	2.48	11.0	6.62	0.68	3.28	0.33	-1.1	-1.2	0.9
gamma-HCH	1.00	0.960	0.920	0.360	0.344	0.345	0.959	4.1	0.350	2.6	1.15	0.25	<2		-0.7	-0.3	0.3
heptachlor	0.234	<0.11	<0.099	<0.028	<0.087	<0.12	0.234	NA	<0.12	NA	<1		<5				
aldrin	<0.048	<0.13	<0.11	<0.10	<0.13	<0.14	<0.13	NA	<0.14	NA	<1		<4				
heptachlor epoxide	3.05	4.66	4.66	0.635	1.01	1.01	4.12	22.5	0.885	24.5	5.19	0.63	2.30	0.88	-0.8	-1.0	1.5
oxychlordane	12.0	19.9	14.4	0.565	0.716	0.686	15.4	26.2	0.656	12.2	17.4	2.0	<3		-0.5	-0.5	1.7
trans-chlordane	10.9	13.8	14.0	3.42	4.35	4.75	12.9	13.4	4.17	16.4	8.06	1.21	5.20	1.60	2.4	2.0	0.9
2,4'-DDE	0.467	0.639	0.645	1.28	1.79	1.82	0.584	17.3	1.63	18.6	0.989	0.285	2.80	1.00	-1.6	-1.0	1.2
endosulfan I	11.5	18.4	19.4	<0.11	<0.41	<0.56	16.4	26.2	<0.56	NA	<2		<5				1.7
cis-chlordane	3.17	5.03	4.86	2.32	3.08	2.93	4.35	23.6	2.78	14.5	31.0	5.1	8.40	1.40	**-3.4**	-2.5	1.6
trans-nonachlor	13.3	26.9	26.7	2.03	2.43	2.37	22.3	35.0	2.28	9.5	91.2	6.8	9.80	1.40	**-3.0**	**-4.5**	2.3
dieldrin	21.9	19.8	20.3	4.65	5.37	5.67	20.7	5.3	5.23	10.0	32.9	5.3	7.20	3.10	-1.5	-1.3	0.4
4,4'-DDE	241	293	292	140	171	167	275	10.8	169	1.7	335	31	146	13	-0.7	-0.9	0.7
2,4'-DDD	0.992	1.24	1.22	14.8	22.5	19.6	1.15	12.0	19.0	20.5	2.56	0.98	21.6	2.4	-2.2	-0.9	0.8
endrin	3.55	2.93	2.98	<0.27	<0.87	<1.21	3.15	10.9	<1.21	NA	5.46	1.19	<8		-1.7	-1.3	0.7
endosulfan II	<0.15	<0.81	<0.89	<0.21	<0.72	<0.95	<0.89	NA	<0.95	NA	<5		<4				
4,4'-DDD	10.8	9.36	8.69	73.3	90.4	77.9	9.62	11.2	80.5	11.0	15.4	2.9	70.0	15.0	-1.5	-0.9	0.7
2,4'-DDT	13.5	14.3	13.0	<0.026	<2.12	<2.22	13.6	4.8	<2.22	NA	23.0	6.4	6.40	1.00	-1.6	-0.8	0.3
cis-nonachlor	28.3	44.3	43.1	4.83	6.26	6.19	38.6	23.1	5.76	14.0	58.4	8.1	5.30	1.30	-1.4	-1.3	1.5
4,4'-DDT	25.9	27.0	27.7	<0.050	<0.049	0.20	26.9	3.4	0.201	NA	41.1	12.8	10.0	4.0	-1.4	-0.9	0.2
mirex	16.0	13.0	8.63	10.2	7.17	8.13	12.5	29.5	8.50	18.2	6.06	0.97	<6		**4.3**	**3.3**	2.0

Laboratory: 28
Pesticides in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	20	90.9
Qualitative	2	9.1
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	13	15	18
2 to 3	2	1	1
≥ 3	3	2	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 28**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 2/2/00

PCBs

Analysis date	Data as submitted by laboratory: Fish IV, ng/g wet S 1	S 2	S 3	Carp-I, ng/g wet S 1	S 2	S 3	Fish IV lab mean ng/g wet	Fish IV lab %RSD	Carp-I lab mean ng/g wet	Carp-I lab %RSD	Material reference values: Fish IV, ng/g wet assigned value	95% CL	Carp-I, ng/g wet target value[b]	95% CL	Performance scores[a] Fish IV z-score (25%)	z-score (s)	p-score (15%)
PCB 8	0.068	0.070	0.093	0.654	0.660	0.621	0.077	17.8	0.645	3.3	<2		2.60	0.70			1.2
PCB 18	0.102	0.122	0.097	5.46	4.14	4.79	0.107	12.2	4.80	13.8	<2		21.7	1.6			0.8
PCB 28	1.15	1.17	1.17	19.2	15.5	18.8	1.16	1.0	17.8	11.4	2.24	0.41	27.7	2.9	-1.9	-1.2	0.1
PCB 52	5.92	5.97	6.11	130	121	116	6.00	1.6	122	5.8	7.10	0.75	**124**	**32**	-0.6	-0.6	0.1
PCB 44	3.24	3.23	3.53	91.9	87.0	82.3	3.33	5.1	87.1	5.5	5.54	1.40	75.0	6.0	-1.6	-0.7	0.3
PCB 66/95	___	___	___	___	___	___	NA	NA	NA	NA	17.8	3.9	156	12			
PCB 101/90	21.4	22.2	22.2	106	109	101	21.9	2.1	105	3.8	38.1	4.5	**124**	**37**	-1.7	-1.5	0.1
PCB 118	44.6	44.1	42.8	132	129	133	43.8	2.1	131	1.6	50.9	5.3	**132**	**60**	-0.6	-0.5	0.1
PCB 153	124	122	122	67.9	62.2	63.0	123	0.9	64.4	4.8	157	14	**83.0**	**39.0**	-0.9	-1.0	0.1
PCB 105	13.6	14.5	14.3	36.6	35.7	35.3	14.1	3.3	35.9	1.9	21.7	2.7	**54.0**	**24.0**	-1.4	-1.1	0.2
PCB 138/163/164	108	107	106	80.3	73.5	75.2	107	1.1	76.4	4.6	136	9	**102**	**23**	-0.9	-1.3	0.1
PCB 187/182	53.9	58.0	52.3	34.0	31.8	33.1	54.7	5.4	33.0	3.4	54.2	4.2	**36.0**	**16.0**	0.0	0.1	0.4
PCB 128	13.9	15.2	14.0	12.8	12.3	12.1	14.4	5.0	12.4	2.9	26.9	6.2	17.7	1.4	-1.9	-0.9	0.3
PCB 180	104	113	102	69.4	71.1	68.2	106	5.5	69.6	2.1	75.0	6.9	**46.0**	**14.0**	1.7	1.9	0.4
PCB 170/190	38.5	45.4	38.3	32.9	35.1	32.9	40.7	9.9	33.6	3.8	29.1	3.7	**22.0**	**8.0**	1.6	1.3	0.7
PCB 195	2.87	2.92	3.04	2.70	2.73	2.80	2.94	3.0	2.74	1.9	5.19	0.65	4.38	0.90	-1.7	-1.5	0.2
PCB 206	3.87	3.93	4.15	3.99	3.87	3.96	3.98	3.7	3.94	1.6	5.06	0.50	4.50	0.90	-0.8	-0.9	0.2
PCB 209	1.04	0.97	1.05	5.37	5.07	5.02	1.02	4.4	5.15	3.7	1.33	0.23	4.40	0.90	-0.9	-0.6	0.3
PCB 66	8.31	9.65	9.77	144	130	139	9.24	8.8	138	5.2	9.16	1.72	125	10	0.0	0.0	0.6
PCB 95	8.98	9.94	10.0	53.5	51.3	47.6	9.46	7.2	50.8	5.9	11.7	1.4	50.0	7.0	-0.8	-1.2	0.5

Laboratory: 28
PCBs in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	17	94.4
Qualitative	2	11.1
Not Determined	1	5.6

Category	Number by Category: z (25%)	z (s)	p (15%)
≤ 2	15	15	17
2 to 3	0	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 29**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 2/15/00

PESTICIDES

Analysis date	Data as submitted by laboratory: Fish IV, ng/g wet 1/27/00 S 1	Fish IV, ng/g wet 1/27/00 S 2	Fish IV, ng/g wet 1/27/00 S 3	Carp-I, ng/g wet 1/27/00 S 1	Carp-I, ng/g wet 1/27/00 S 2	Carp-I, ng/g wet 1/27/00 S 3	Fish IV lab mean ng/g wet	Fish IV lab %RSD	Carp-I lab mean ng/g wet	Carp-I lab %RSD	Material reference values: Fish IV, ng/g wet assigned value	Fish IV 95% CL	Carp-I, ng/g wet target value[b]	Carp-I 95% CL	Performance scores[a] Fish IV z-score (25%)	Fish IV z-score (s)	Fish IV p-score (15%)
alpha-HCH	6.30	6.10	6.00	0.720	0.760	0.740	6.13	2.5	0.740	2.7	5.20	0.53	<4		0.7	0.8	0.2
hexachlorobenzene	8.20	7.80	7.80	2.50	2.80	2.70	7.93	2.9	2.67	5.7	6.62	0.68	3.28	0.33	0.8	0.8	0.2
gamma-HCH	0.820	0.740	0.710	0.150	0.210	0.220	0.757	7.5	0.193	19.6	1.15	0.25	<2		-1.4	-0.7	0.5
heptachlor	<2	<2	<2	<2	<2	<2	<2	NA	<2	NA	<1		<5				
aldrin	<2	<2	<2	<2	<2	<2	<2	NA	<2	NA	<1		<4				
heptachlor epoxide	12.0	12.0	10.0	<2	<2	<2	11.3	10.2	<2	NA	5.19	0.63	2.30	0.88	**4.7**	**5.9**	0.7
oxychlordane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17.4	2.0	<3				
trans-chlordane	9.40	9.70	7.80	2.40	2.50	2.70	8.97	11.4	2.53	6.0	8.06	1.21	5.20	1.60	0.4	0.4	0.8
2,4'-DDE	<2	<2	<2	<2	<2	<2	<2	NA	<2	NA	0.989	0.285	2.80	1.00			
endosulfan I	2.60	2.40	2.20	<2	<2	<2	2.40	8.3	<2	NA	<2		<5				0.6
cis-chlordane	31.0	31.0	25.0	5.40	6.30	5.00	29.0	11.9	5.57	12.0	31.0	5.1	8.40	1.40	-0.3	-0.2	0.8
trans-nonachlor	110	110	86.0	5.80	6.90	6.90	102	13.6	6.53	9.7	91.2	6.8	9.80	1.40	0.5	0.7	0.9
dieldrin	35.0	36.0	35.0	12.0	12.0	11.0	35.3	1.6	11.7	4.9	32.9	5.3	7.20	3.10	0.3	0.3	0.1
4,4'-DDE	380	320	300	150	150	140	333	12.5	147	3.9	335	31	146	13	0.0	0.0	0.8
2,4'-DDD	<2	<2	<2	14.0	15.0	15.0	<2	NA	14.7	3.9	2.56	0.98	21.6	2.4			
endrin	7.20	6.80	6.30	<2	<2	<2	6.77	6.7	<2	NA	5.46	1.19	<8		1.0	0.7	0.4
endosulfan II	10.0	11.0	9.10	7.50	9.00	8.60	10.0	9.5	8.37	9.3	<5		<4				0.6
4,4'-DDD	24.0	22.0	22.0	69.0	84.0	84.0	22.7	5.1	79.0	11.0	15.4	2.9	70.0	15.0	1.9	1.1	0.3
2,4'-DDT	20.0	21.0	16.0	<2	<2	<2	19.0	13.9	<2	NA	23.0	6.4	6.40	1.00	-0.7	-0.4	0.9
cis-nonachlor	79.0	81.0	68.0	4.30	4.90	5.00	76.0	9.2	4.73	8.0	58.4	8.1	5.30	1.30	1.2	1.2	0.6
4,4'-DDT	32.0	32.0	28.0	<2	<2	<2	30.7	7.5	<2	NA	41.1	12.8	10.0	4.0	-1.0	-0.6	0.5
mirex***	*12.0*	*12.0*	*10.0*	*1.30*	*1.40*	*1.40*	11.3	10.2	1.37	4.2	6.06	0.97	<6		**3.5**	2.7	0.7

Laboratory: 29
Pesticides in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	17	77.3
Qualitative	4	18.2
Not Determined	1	4.5

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	13	13	17
2 to 3	0	1	0
≥ 3	2	1	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

****NOTE: on 4/424/00 Mirex in FSH IV reported as 7.6, 6.8, and 7.3 for three samples and Mirex in CARP-1 reported as 0.57, 0.58, and 0.48 for three samples.*

FY99 NIST Intercomparison Exercise **Laboratory No.: 29**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 2/15/00

PCBs

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Fish IV, ng/g wet			Carp-I, ng/g wet			Fish IV		Carp-I		Fish IV, ng/g wet		Carp-I, ng/g wet		Fish IV		
Analysis date	1/27/00 S 1	1/27/00 S 2	1/27/00 S 3	1/27/00 S 1	1/27/00 S 2	1/27/00 S 3	lab mean ng/g wet	lab %RSD	lab mean ng/g wet	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
PCB 8	0.630	0.650	0.580	1.90	2.40	2.40	0.62	5.8	2.23	12.9	<2		2.60	0.70			0.4
PCB 18	0.570	0.480	0.480	15.0	16.0	16.0	0.51	10.2	15.7	3.7	<2		21.7	1.6			0.7
PCB 28	3.00	2.70	2.40	19.0	22.0	21.0	2.70	11.1	20.7	7.4	2.24	0.41	27.7	2.9	0.8	0.5	0.7
PCB 52	9.40	8.70	7.80	93.0	100	95.0	8.63	9.3	96	3.8	7.10	0.75	**124**	**32**	0.9	0.8	0.6
PCB 44	6.30	5.80	5.80	46.0	51.0	51.0	5.97	4.8	49.3	5.9	5.54	1.40	75.0	6.0	0.3	0.1	0.3
PCB 66/95	26.0	26.0	25.0	93.0	100	120	25.67	2.2	104.33	13.4	17.8	3.9	156	12	1.8	1.3	0.1
PCB 101/90	57.0	55.0	45.0	82.0	91.0	96.0	52.3	12.3	90	7.9	38.1	4.5	**124**	**37**	1.5	1.3	0.8
PCB 118	57.0	52.0	45.0	100	110	100	51.3	11.7	103	5.6	50.9	5.3	**132**	**60**	0.0	0.0	0.8
PCB 153	190	180	160	75.0	93.0	90.0	177	8.6	86.0	11.2	157	14	**83.0**	**39.0**	0.5	0.6	0.6
PCB 105	25.0	26.0	21.0	37.0	46.0	45.0	24.0	11.0	42.7	11.6	21.7	2.7	**54.0**	**24.0**	0.4	0.3	0.7
PCB 138/163/164	140	120	100	79.0	81.0	77.0	120	16.7	79.0	2.5	136	9	**102**	**23**	-0.5	-0.7	1.1
PCB 187/182	54.0	52.0	43.0	22.0	27.0	27.0	49.7	11.8	25.3	11.4	54.2	4.2	**36.0**	**16.0**	-0.3	-0.5	0.8
PCB 128***	<2	<2	<2	15.0	16.0	16.0	<2	NA	15.7	3.7	26.9	6.2	17.7	1.4			
PCB 180	110	110	88.0	33.0	39.0	39.0	102.7	12.4	37.0	9.4	75.0	6.9	**46.0**	**14.0**	1.5	1.7	0.8
PCB 170/190	32.0	32.0	33.0	18.0	21.0	21.0	32.3	1.8	20.0	8.7	29.1	3.7	**22.0**	**8.0**	0.5	0.4	0.1
PCB 195	6.90	7.10	6.80	4.20	5.50	6.00	6.93	2.2	5.23	17.8	5.19	0.65	4.38	0.90	1.3	1.2	0.1
PCB 206	5.70	5.80	5.30	3.70	4.20	4.50	5.60	4.7	4.13	9.8	5.06	0.50	4.50	0.90	0.4	0.5	0.3
PCB 209	1.30	1.20	1.00	3.70	4.50	4.80	1.17	13.1	4.33	13.1	1.33	0.23	4.40	0.90	-0.5	-0.3	0.9
PCB 66	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.16	1.72	125	10			
PCB 95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11.7	1.4	50.0	7.0			

Laboratory: 29

PCBs in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	17	94.4
Qualitative	3	16.7
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	15	15	17
2 to 3	0	0	0
≥ 3	0	0	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

****NOTE: on 4/424/00 PCB 128 in FSH IV reported as 15, 15, and 16 for three samples with a noted interference*

FY99 NIST Intercomparison Exercise **Laboratory No.: 32**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 2/18/00

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Fish IV, ng/g wet			Carp-I, ng/g wet			Fish IV		Carp-I		Fish IV, ng/g wet		Carp-I, ng/g wet		Fish IV		
Analysis date	1/5/00 S 1	1/6/00 S 2	1/5/00 S 3	1/6/00 S 1	1/5/00 S 2	1/5/00 S 3	lab mean ng/g wet	lab %RSD	lab mean ng/g wet	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	5.16	5.18	5.36	1.67	1.51	1.63	5.23	2.1	1.60	5.2	5.20	0.53	<4		0.0	0.0	0.1
hexachlorobenzene	6.73	6.84	6.87	2.89	2.93	3.04	6.81	1.1	2.95	2.6	6.62	0.68	3.28	0.33	0.1	0.1	0.1
gamma-HCH	1.91	1.91	2.04	<0.461	<0.342	<0.302	1.95	3.8	<0.461	NA	1.15	0.25	<2		2.8	1.4	0.3
heptachlor	<0.299	<0.335	<0.341	<0.422	<0.313	<0.276	<0.341	NA	<0.422	NA	<1		<5				
aldrin	<0.300	<0.336	<0.342	<0.423	<0.314	<0.277	<0.342	NA	<0.423	NA	<1		<4				
heptachlor epoxide	3.76	4.24	4.66	2.03	2.00	2.06	4.22	10.7	2.03	1.5	5.19	0.63	2.30	0.88	-0.7	-0.9	0.7
oxychlordane	9.70	11.2	13.5	<1.34	<0.996	<0.88	11.5	16.7	<1.34	NA	17.4	2.0	<3		-1.4	-1.6	1.1
trans-chlordane	5.81	5.99	6.31	3.26	3.36	3.56	6.04	4.2	3.39	4.5	8.06	1.21	5.20	1.60	-1.0	-0.8	0.3
2,4'-DDE	1.30	1.19	1.19	2.21	2.31	2.36	1.23	5.2	2.29	3.3	0.989	0.285	2.80	1.00	1.0	0.6	0.3
endosulfan I	<0.943	<1.06	<1.08	<1.33	<0.987	<0.873	<1.08	NA	<1.33	NA	<2		<5				
cis-chlordane	27.2	27.4	28.0	5.87	6.15	6.64	27.5	1.5	6.22	6.3	31.0	5.1	8.40	1.40	-0.4	-0.3	0.1
trans-nonachlor	104	105	113	6.86	7.30	7.88	107	4.6	7.35	7.0	91.2	6.8	9.80	1.40	0.7	1.1	0.3
dieldrin	27.3	25.8	29.0	9.57	13.7	11.2	27.4	5.9	11.5	18.1	32.9	5.3	7.20	3.10	-0.7	-0.6	0.4
4,4'-DDE	507	460	449	209	199	201	472	6.5	203	2.6	335	31	146	13	1.6	2.1	0.4
2,4'-DDD	1.40	1.32	1.48	19.0	19.5	20.9	1.40	5.7	19.8	5.0	2.56	0.98	21.6	2.4	-1.8	-0.8	0.4
endrin	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.46	1.19	<8				
endosulfan II	1.43	2.66	1.69	<1.35	<1	<0.886	1.93	33.6	<1.35	NA	<5		<4				2.2
4,4'-DDD	8.93	9.00	9.68	93.0	93.4	99.1	9.20	4.5	95.2	3.6	15.4	2.9	70.0	15.0	-1.6	-1.0	0.3
2,4'-DDT	11.1	11.5	12.8	<0.418	0.79	<0.274	11.8	7.5	0.788	NA	23.0	6.4	6.40	1.00	-1.9	-1.0	0.5
cis-nonachlor	60.9	65.0	68.3	3.58	3.50	3.53	64.7	5.7	3.54	1.1	58.4	8.1	5.30	1.30	0.4	0.4	0.4
4,4'-DDT	33.0	34.7	38.5	<0.42	<0.311	<0.275	35.4	8.0	<0.42	NA	41.1	12.8	10.0	4.0	-0.6	-0.3	0.5
mirex	5.76	5.97	6.32	1.07	1.05	1.09	6.02	4.7	1.07	1.9	6.06	0.97	<6		0.0	0.0	0.3

Laboratory: 32
Pesticides in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	18	81.8
Qualitative	3	13.6
Not Determined	1	4.5

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	16	16	17
2 to 3	1	1	1
≥ 3	0	0	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 32**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 2/18/00

PCBs

Analysis date	Data as submitted by laboratory: Fish IV, ng/g wet 1/5/00 S 1	Fish IV, ng/g wet 1/5/00 S 2	Fish IV, ng/g wet 1/5/00 S 3	Carp-I, ng/g wet 1/5/00 S 1	Carp-I, ng/g wet 1/5/00 S 2	Carp-I, ng/g wet 1/5/00 S 3	Fish IV lab mean ng/g wet	Fish IV lab %RSD	Carp-I lab mean ng/g wet	Carp-I lab %RSD	Material reference values: Fish IV, ng/g wet assigned value	Fish IV 95% CL	Carp-I, ng/g wet target value[b]	Carp-I 95% CL	Performance scores[a] Fish IV z-score (25%)	Fish IV z-score (s)	Fish IV p-score (15%)
PCB 8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2		2.60	0.70			
PCB 18	0.816	0.795	0.810	21.8	21.7	22.4	0.807	1.3	22.0	1.7	<2		21.7	1.6			0.1
PCB 28	1.92	1.87	1.91	27.9	26.7	27.5	1.90	1.4	27.4	2.2	2.24	0.41	27.7	2.9	-0.6	-0.4	0.1
PCB 52	6.76	6.82	6.69	152	146	148	6.76	1.0	149	2.1	7.10	0.75	**124**	**32**	-0.2	-0.2	0.1
PCB 44	3.12	3.13	3.07	91.8	88.6	90.6	3.11	1.0	90.3	1.8	5.54	1.40	75.0	6.0	-1.8	-0.8	0.1
PCB 66/95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17.8	3.9	156	12			
PCB 101/90	46.9	39.7	38.9	158	153	153	41.8	10.5	155	1.9	38.1	4.5	**124**	**37**	0.4	0.3	0.7
PCB 118	53.6	51.2	51.4	147	139	141	52.1	2.6	142	2.9	50.9	5.3	**132**	**60**	0.1	0.1	0.2
PCB 153	218	215	220	130	121	122	218	1.2	124	4.0	157	14	**83.0**	**39.0**	1.6	1.8	0.1
PCB 105	23.9	23.4	24.0	65.4	60.7	61.0	23.8	1.4	62.4	4.2	21.7	2.7	**54.0**	**24.0**	0.4	0.3	0.1
PCB 138/163/164	176	177	171	120	116	122	175	1.8	119	2.6	136	9	**102**	**23**	1.1	1.7	0.1
PCB 187/182	58.6	59.7	57.6	36.7	35.4	35.5	58.6	1.8	35.9	2.0	54.2	4.2	**36.0**	**16.0**	0.3	0.4	0.1
PCB 128	23.5	23.3	22.6	18.4	17.4	17.8	23.1	2.0	17.9	2.8	26.9	6.2	17.7	1.4	-0.6	-0.3	0.1
PCB 180	80.0	84.2	79.6	53.3	51.5	50.9	81.3	3.1	51.9	2.4	75.0	6.9	**46.0**	**14.0**	0.3	0.4	0.2
PCB 170/190	28.8	32.5	33.1	22.6	21.5	22.7	31.5	7.4	22.3	3.0	29.1	3.7	**22.0**	**8.0**	0.3	0.3	0.5
PCB 195	4.21	4.14	4.17	3.79	3.76	4.06	4.17	0.8	3.87	4.3	5.19	0.65	4.38	0.90	-0.8	-0.7	0.1
PCB 206	4.53	4.83	4.38	4.16	4.36	4.52	4.58	5.0	4.35	4.1	5.06	0.50	4.50	0.90	-0.4	-0.4	0.3
PCB 209	1.36	1.36	1.34	3.88	3.94	4.19	1.35	0.9	4.00	4.1	1.33	0.23	4.40	0.90	0.1	0.1	0.1
PCB 66	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.16	1.72	125	10			
PCB 95	11.6	12.4	12.1	72.6	70.1	71.9	12.0	3.4	71.5	1.8	11.7	1.4	50.0	7.0	0.1	0.2	0.2

Laboratory: 32
PCBs in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	16	88.9
Qualitative	2	11.1
Not Determined	2	11.1

Category	Number by Category: z (25%)	z (s)	p (15%)
≤ 2	15	15	16
2 to 3	0	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 33**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 2/14/00

PESTICIDES

Analysis date	Data as submitted by laboratory: Fish IV, ng/g wet 12/15/99 S 1	S 2	S 3	Carp-I, ng/g wet S 1	S 2	S 3	Fish IV lab mean ng/g wet	Fish IV lab %RSD	Carp-I lab mean ng/g wet	Carp-I lab %RSD	Material reference values: Fish IV, ng/g wet assigned value	95% CL	Carp-I, ng/g wet target value[b]	95% CL	Performance scores[a] Fish IV z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	5.04	5.24	4.32				4.87	10.0	NA	NA	5.20	0.53	<4		-0.3	-0.3	0.7
hexachlorobenzene	7.07	7.33	5.82				6.74	12.0	NA	NA	6.62	0.68	3.28	0.33	0.1	0.1	0.8
gamma-HCH	0.766	1.06	1.32				1.05	26.3	NA	NA	1.15	0.25	<2		-0.4	-0.2	1.8
heptachlor	0.636	0.449	0.373				0.486	27.9	NA	NA	<1		<5				1.9
aldrin	<0.503	<0.275	<0.215				<0.503	NA	NA	NA	<1		<4				
heptachlor epoxide	=0.05	=0.03	=0.01				<=0.050	NA	NA	NA	5.19	0.63	2.30	0.88			
oxychlordane	13.8	28.2	21.5				21.2	34.2	NA	NA	17.4	2.0	<3		0.9	1.0	2.3
trans-chlordane	8.94	16.0	10.8				11.9	30.8	NA	NA	8.06	1.21	5.20	1.60	1.9	1.6	2.1
2,4'-DDE	2.87	11.2	8.27				7.45	56.8	NA	NA	0.989	0.285	2.80	1.00	**26.1**	**16.2**	**3.8**
endosulfan I	<0.347	1.24	=0.01				1.24	NA	NA	NA	<2		<5				
cis-chlordane	42.5	64.6	50.2				52.4	21.4	NA	NA	31.0	5.1	8.40	1.40	2.8	2.0	1.4
trans-nonachlor	73.5	110	87.0				90.0	20.3	NA	NA	91.2	6.8	9.80	1.40	0.0	-0.1	1.4
dieldrin	24.2	43.0	34.3				33.8	27.7	NA	NA	32.9	5.3	7.20	3.10	0.1	0.1	1.8
4,4'-DDE	282	335	303				307	8.6	NA	NA	335	31	146	13	-0.3	-0.5	0.6
2,4'-DDD	3.74	4.94	5.14				4.61	16.4	NA	NA	2.56	0.98	21.6	2.4	**3.2**	1.3	1.1
endrin	13.8	27.5	20.6				20.6	33.2	NA	NA	5.46	1.19	<8		**11.1**	**8.6**	2.2
endosulfan II	11.7	16.4	12.6				13.5	18.4	NA	NA	<5		<4				1.2
4,4'-DDD	24.0	36.9	28.9				29.9	21.7	NA	NA	15.4	2.9	70.0	15.0	**3.8**	2.2	1.4
2,4'-DDT	35.6	60.8	49.9				48.8	25.9	NA	NA	23.0	6.4	6.40	1.00	**4.5**	2.3	1.7
cis-nonachlor	47.1	87.8	73.1				69.3	29.7	NA	NA	58.4	8.1	5.30	1.30	0.8	0.7	2.0
4,4'-DDT	75.7	136	112				108	28.0	NA	NA	41.1	12.8	10.0	4.0	**6.5**	**4.0**	1.9
mirex	6.33	10.3	7.98				8.20	24.3	NA	NA	6.06	0.97	<6		1.4	1.1	1.6

Laboratory: 33
Pesticides in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	20	90.9
Qualitative	2	9.1
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	10	11	15
2 to 3	1	3	3
≥ 3	6	3	1

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 33**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 2/14/00

PCBs

Analysis date	Data as submitted by laboratory: Fish IV, ng/g wet 12/21/99 S 1	S 2	S 3	Carp-I, ng/g wet S 1	S 2	S 3	Fish IV lab mean ng/g wet	Fish IV lab %RSD	Carp-I lab mean ng/g wet	Carp-I lab %RSD	Material reference values: Fish IV, ng/g wet assigned value	95% CL	Carp-I, ng/g wet target value[b]	95% CL	Performance scores[a] Fish IV z-score (25%)	z-score (s)	p-score (15%)
PCB 8	<0.484	<0.269	<0.211				<0.484	NA	NA	NA	<2		2.60	0.70			
PCB 18	<0.464	<0.258	<0.202				<0.464	NA	NA	NA	<2		21.7	1.6			
PCB 28	2.16	4.04	3.41				3.20	29.9	NA	NA	2.24	0.41	27.7	2.9	1.7	1.1	2.0
PCB 52	6.53	7.57	5.71				6.60	14.1	NA	NA	7.10	0.75	**124**	**32**	-0.3	-0.3	0.9
PCB 44	4.31	5.75	4.30				4.79	17.5	NA	NA	5.54	1.40	75.0	6.0	-0.5	-0.2	1.2
PCB 66/95	14.5	16.8	13.5				14.9	11.4	NA	NA	17.8	3.9	156	12	-0.6	-0.5	0.8
PCB 101/90	33.5	39.4	31.4				34.7	11.9	NA	NA	38.1	4.5	**124**	**37**	-0.4	-0.3	0.8
PCB 118	40.4	59.6	46.6				48.9	20.0	NA	NA	50.9	5.3	**132**	**60**	-0.2	-0.2	1.3
PCB 153	119	167	131				139	18.1	NA	NA	157	14	**83.0**	**39.0**	-0.5	-0.5	1.2
PCB 105	18.1	23.8	19.0				20.3	14.9	NA	NA	21.7	2.7	**54.0**	**24.0**	-0.3	-0.2	1.0
PCB 138/163/164	109	191	152				151	27.0	NA	NA	136	9	**102**	**23**	0.4	0.6	1.8
PCB 187/182	44.9	71.6	48.5				55.0	26.4	NA	NA	54.2	4.2	**36.0**	**16.0**	0.1	0.1	1.8
PCB 128	148	237	190				192	23.0	NA	NA	26.9	6.2	17.7	1.4	**24.5**	**12.1**	1.5
PCB 180	71.7	120	89.8				93.7	25.8	NA	NA	75.0	6.9	**46.0**	**14.0**	1.0	1.1	1.7
PCB 170/190	27.2	40.6	30.7				32.8	21.3	NA	NA	29.1	3.7	**22.0**	**8.0**	0.5	0.4	1.4
PCB 195	6.51	9.09	6.90				7.50	18.6	NA	NA	5.19	0.65	4.38	0.90	1.8	1.5	1.2
PCB 206	5.44	7.56	5.97				6.32	17.4	NA	NA	5.06	0.50	4.50	0.90	1.0	1.1	1.2
PCB 209	1.88	2.68	2.15				2.24	18.4	NA	NA	1.33	0.23	4.40	0.90	2.7	1.8	1.2
PCB 66							NA	NA	NA	NA	9.16	1.72	125	10			
PCB 95							NA	NA	NA	NA	11.7	1.4	50.0	7.0			

Laboratory: 33
PCBs in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	16	88.9
Qualitative	4	22.2
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	14	15	16
2 to 3	1	0	0
≥ 3	1	1	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant)

Laboratory No.: 34

Reporting Date: 2/22/00

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Fish IV, ng/g wet			Carp-I, ng/g wet			Fish IV		Carp-I		Fish IV, ng/g wet		Carp-I, ng/g wet		Fish IV		
Analysis date	1/15/2000 S 1	1/17/2000 S 2	1/27/2000 S 3	1/15/2000 S 1	1/17/2000 S 2	1/27/2000 S 3	lab mean ng/g wet	lab %RSD	lab mean ng/g wet	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	6.08	6.08	5.96	1.29	1.19	1.22	6.04	1.2	1.23	3.9	5.20	0.53	<4		0.6	0.7	0.1
hexachlorobenzene	7.70	7.63	7.46	3.62	3.60	3.69	7.60	1.6	3.64	1.3	6.62	0.68	3.28	0.33	0.6	0.6	0.1
gamma-HCH	1.00	1.02	0.948	0.315	0.323	0.285	0.991	3.9	0.308	6.5	1.15	0.25	<2		-0.6	-0.3	0.3
heptachlor	0.009	0.005	0.004	0.006	0.006	0.003	0.006	44.1	0.005	34.6	<1		<5				2.9
aldrin	0.0050	0.0010	0.0028	0.035	0.049	0.034	<0.00500	NA	0.039	21.3	<1		<4				
heptachlor epoxide	5.65	5.93	5.37	0.736	0.761	0.852	5.65	5.0	0.783	7.8	5.19	0.63	2.30	0.88	0.4	0.4	0.3
oxychlordane	15.6	16.6	15.9	0.384	0.414	0.363	16.0	3.4	0.387	6.6	17.4	2.0	<3		-0.3	-0.4	0.2
trans-chlordane	5.68	5.82	6.20	2.19	2.26	2.28	5.90	4.6	2.24	2.2	8.06	1.21	5.20	1.60	-1.1	-0.9	0.3
2,4'-DDE	0.579	0.572	0.715	1.74	1.89	1.74	0.622	13.0	1.79	4.8	0.989	0.285	2.80	1.00	-1.5	-0.9	0.9
endosulfan I	0.066	0.082	0.083	0.236	0.233	0.263	0.077	12.4	0.244	6.8	<2		<5				0.8
cis-chlordane	40.3	42.1	32.9	4.70	4.84	4.98	38.4	12.7	4.84	2.9	31.0	5.1	8.40	1.40	1.0	0.7	0.8
trans-nonachlor	105	114	82.4	5.79	6.01	6.01	100	16.2	5.94	2.1	91.2	6.8	9.80	1.40	0.4	0.6	1.1
dieldrin	22.9	23.4	17.4	3.03	3.10	3.04	21.2	15.7	3.06	1.2	32.9	5.3	7.20	3.10	-1.4	-1.2	1.0
4,4'-DDE	301	316	316	139	139	134	311	2.8	137	2.2	335	31	146	13	-0.3	-0.4	0.2
2,4'-DDD	0.585	0.586	0.559	11.1	10.6	10.1	0.577	2.7	10.6	4.9	2.56	0.98	21.6	2.4	**-3.1**	-1.3	0.2
endrin	3.78	3.46	4.45	0.072	0.064	0.076	3.90	13.0	0.071	8.6	5.46	1.19	<8		-1.1	-0.9	0.9
endosulfan II	0.068	0.060	0.015	0.181	0.188	0.186	<0.0680	NA	0.185	1.9	<5		<4				
4,4'-DDD	6.12	6.32	6.71	48.2	46.9	48.7	6.38	4.7	47.9	1.9	15.4	2.9	70.0	15.0	-2.3	-1.4	0.3
2,4'-DDT	11.4	11.5	11.2	0.010	0.033	0.028	11.4	1.5	<0.0330	NA	23.0	6.4	6.40	1.00	-2.0	-1.0	0.1
cis-nonachlor	59.6	58.5	47.6	1.98	1.97	2.46	55.2	12.0	2.14	13.1	58.4	8.1	5.30	1.30	-0.2	-0.2	0.8
4,4'-DDT	30.4	31.1	28.9	0.011	0.020	0.032	30.1	3.7	<0.0320	NA	41.1	12.8	10.0	4.0	-1.1	-0.7	0.2
mirex	3.48	3.61	4.11	0.285	0.267	0.323	3.73	8.9	0.292	9.8	6.06	0.97	<6		-1.5	-1.2	0.6

Laboratory: 34
Pesticides in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	20	90.9
Qualitative	2	9.1
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	15	18	19
2 to 3	2	0	1
≥ 3	1	0	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 34**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 2/22/00

PCBs

Analysis date	Data as submitted by laboratory: Fish IV, ng/g wet 1/16/2000 S 1	Fish IV, ng/g wet 1/17/2000 S 2	Fish IV, ng/g wet 1/27/2000 S 3	Carp-I, ng/g wet 1/15/2000 S 1	Carp-I, ng/g wet 1/17/2000 S 2	Carp-I, ng/g wet 01/27/2000 S 3	Fish IV lab mean ng/g wet	Fish IV lab %RSD	Carp-I lab mean ng/g wet	Carp-I lab %RSD	Material reference values: Fish IV, ng/g wet assigned value	Fish IV 95% CL	Carp-I, ng/g wet target value[b]	Carp-I 95% CL	Performance scores[a] Fish IV z-score (25%)	Fish IV z-score (s)	Fish IV p-score (15%)
PCB 8	0.007	0.008	0.013	1.15	1.16	1.39	0.009	34.5	1.23	10.7	<2		2.60	0.70			2.3
PCB 18	0.216	0.235	0.140	17.2	15.1	18.3	0.197	25.5	16.9	9.4	<2		21.7	1.6			1.7
PCB 28	1.69	1.96	1.70	40.5	38.9	38.1	1.79	8.5	39.2	3.1	2.24	0.41	27.7	2.9	-0.8	-0.5	0.6
PCB 52	5.29	4.92	5.37	137	136	164	5.19	4.7	146	10.9	7.10	0.75	**124**	**32**	-1.1	-1.0	0.3
PCB 44	4.09	3.82	4.26	138	135	179	4.05	5.5	151	16.4	5.54	1.40	75.0	6.0	-1.1	-0.5	0.4
PCB 66/95							NA	NA	NA	NA	17.8	3.9	156	12			
PCB 101/90	28.9	27.8	24.4	127	111	112	27.0	8.7	117	7.6	38.1	4.5	**124**	**37**	-1.2	-1.0	0.6
PCB 118	66.0	63.4	52.7	154	148	165	60.7	11.6	156	5.4	50.9	5.3	**132**	**60**	0.8	0.7	0.8
PCB 153	224	222	274	93.6	96.0	123	240	12.2	104	15.5	157	14	**83.0**	**39.0**	2.1	2.4	0.8
PCB 105	20.6	19.8	17.1	44.4	45.5	53.0	19.2	9.7	47.7	9.8	21.7	2.7	**54.0**	**24.0**	-0.5	-0.4	0.6
PCB 138/163/164	141	137	191	99.0	102	129	156	19.2	110	15.1	136	9	**102**	**23**	0.6	0.9	1.3
PCB 187/182	64.3	62.1	44.4	34.1	32.7	37.9	56.9	19.2	34.9	7.7	54.2	4.2	**36.0**	**16.0**	0.2	0.3	1.3
PCB 128	18.4	22.2	17.4	15.0	16.1	16.2	19.3	13.0	15.8	4.1	26.9	6.2	17.7	1.4	-1.1	-0.6	0.9
PCB 180	83.0	81.3	70.0	50.2	49.1	56.5	78.1	9.0	51.9	7.7	75.0	6.9	**46.0**	**14.0**	0.2	0.2	0.6
PCB 170/190	22.9	22.8	20.5	17.7	16.8	17.9	22.0	6.2	17.5	3.4	29.1	3.7	**22.0**	**8.0**	-1.0	-0.8	0.4
PCB 195	3.63	3.65	3.93	3.14	3.29	3.83	3.74	4.5	3.42	10.6	5.19	0.65	4.38	0.90	-1.1	-1.0	0.3
PCB 206	4.47	4.21	4.93	3.60	3.12	3.71	4.54	8.0	3.48	9.0	5.06	0.50	4.50	0.90	-0.4	-0.5	0.5
PCB 209	0.753	0.744	0.659	4.27	3.87	3.13	0.719	7.2	3.76	15.3	1.33	0.23	4.40	0.90	-1.8	-1.2	0.5
PCB 66	8.94	8.65	9.18	173	165	219	8.92	3.0	186	15.5	9.16	1.72	125	10	-0.1	-0.1	0.2
PCB 95	8.84	9.18	9.61	53.8	47.1	51.2	9.21	4.2	50.7	6.7	11.7	1.4	50.0	7.0	-0.9	-1.3	0.3

Laboratory: 34
PCBs in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	17	94.4
Qualitative	2	11.1
Not Determined	1	5.6

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	14	14	16
2 to 3	1	1	1
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 36**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 2/28/00

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Fish IV, ng/g wet			Carp-I, ng/g wet			Fish IV		Carp-I		Fish IV, ng/g wet		Carp-I, ng/g wet		Fish IV		
Analysis date	2/16/00 S 1	2/17/00 S 2	2/23/00 S 3	2/16/00 S 1	2/17/00 S 2	2/23/00 S 3	lab mean ng/g wet	lab %RSD	lab mean ng/g wet	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	<0.37	<0.40	<0.38	<0.39	<0.39	<0.39	<0.40	NA	<0.39	NA	5.20	0.53	<4				
hexachlorobenzene	6.66	6.49	5.24	3.97	4.19	4.94	6.13	12.6	4.37	11.6	6.62	0.68	3.28	0.33	-0.3	-0.3	0.8
gamma-HCH	<0.37	<0.40	<0.38	<0.39	<0.39	<0.39	<0.40	NA	<0.39	NA	1.15	0.25	<2				
heptachlor	<0.37	<0.40	<0.38	<0.39	<0.39	<0.39	<0.40	NA	<0.39	NA	<1		<5				
aldrin	<0.37	<0.40	<0.38	<0.39	<0.39	<0.39	<0.40	NA	<0.39	NA	<1		<4				
heptachlor epoxide	4.40	4.50	3.96	<0.39	<0.39	<0.39	4.29	6.7	<0.39	NA	5.19	0.63	2.30	0.88	-0.7	-0.9	0.4
oxychlordane	15.5	14.8	12.4	<0.78	<0.78	<0.78	14.2	11.4	<0.78	NA	17.4	2.0	<3		-0.7	-0.8	0.8
trans-chlordane	<0.37	<0.40	<0.38	<0.39	<0.39	<0.39	<0.40	NA	<0.39	NA	8.06	1.21	5.20	1.60			
2,4'-DDE	<0.74	<0.8	<0.76	<0.78	<0.78	<0.78	<0.8	NA	<0.78	NA	0.989	0.285	2.80	1.00			
endosulfan I	<0.37	<0.40	<0.38	<0.39	<0.39	<0.39	<0.40	NA	<0.39	NA	<2		<5				
cis-chlordane	<0.37	<0.40	<0.38	6.21	6.45	6.03	<0.40	NA	6.23	3.4	31.0	5.1	8.40	1.40			
trans-nonachlor	91.9	101	88.4	<0.39	<0.39	<0.39	93.8	6.9	<0.39	NA	91.2	6.8	9.80	1.40	0.1	0.2	0.5
dieldrin	23.8	25.0	23.5	<0.39	<0.39	<0.39	24.1	3.3	<0.39	NA	32.9	5.3	7.20	3.10	-1.1	-0.9	0.2
4,4'-DDE	119	114	82.2	69.9	70.7	74.1	105	19.0	71.6	3.1	335	31	146	13	-2.7	**-3.6**	1.3
2,4'-DDD	<0.74	<0.8	<0.76	<0.78	<0.78	<0.78	<0.8	NA	<0.78	NA	2.56	0.98	21.6	2.4			
endrin	<0.74	<0.8	<0.76	<0.78	<0.78	<0.78	<0.8	NA	<0.78	NA	5.46	1.19	<8				
endosulfan II	<0.74	<0.8	<0.76	<0.78	<0.78	<0.78	<0.8	NA	<0.78	NA	<5		<4				
4,4'-DDD	27.2	29.5	23.9	62.4	65.7	66.0	26.9	10.5	64.7	3.1	15.4	2.9	70.0	15.0	**3.0**	1.8	0.7
2,4'-DDT	<0.74	<0.8	<0.76	<0.78	<0.78	<0.78	<0.8	NA	<0.78	NA	23.0	6.4	6.40	1.00			
cis-nonachlor	<0.74	<0.8	<0.76	<0.78	<0.78	<0.78	<0.8	NA	<0.78	NA	58.4	8.1	5.30	1.30			
4,4'-DDT	52.9	47.2	49.5	<0.39	<0.39	<0.39	49.9	5.8	<0.39	NA	41.1	12.8	10.0	4.0	0.9	0.5	0.4
mirex	<0.74	<0.8	<0.76	<0.78	<0.78	<0.78	<0.8	NA	<0.78	NA	6.06	0.97	<6				

Laboratory: 36
Pesticides in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	8	36.4
Qualitative	14	63.6
Not Determined	0	0.0

	Number by Category		
Category	z (25%)	z (s)	p (15%)
≤ 2	6	7	8
2 to 3	2	0	0
≥ 3	0	1	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 36**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 2/28/00

PCBs

Analysis date	Data as submitted by laboratory: Fish IV, ng/g wet 2/16/00 S 1	Fish IV 2/17/00 S 2	Fish IV 2/23/00 S 3	Carp-I, ng/g wet 2/16/00 S 1	Carp-I 2/17/00 S 2	Carp-I 2/23/00 S 3	Fish IV lab mean ng/g wet	Fish IV lab %RSD	Carp-I lab mean ng/g wet	Carp-I lab %RSD	Material reference values: Fish IV, ng/g wet assigned value	Fish IV 95% CL	Carp-I, ng/g wet target value[b]	Carp-I 95% CL	Performance scores[a] Fish IV z-score (25%)	Fish IV z-score (s)	Fish IV p-score (15%)
PCB 8	<0.37	<0.40	<0.38	<0.39	<0.39	<0.39	<0.40	NA	<0.39	NA	<2		2.60	0.70			
PCB 18	1.52	2.24	1.68	31.3	28.2	28.1	1.81	20.8	29.2	6.2	<2		21.7	1.6			1.4
PCB 28	1.81	1.19	0.660	42.0	38.1	42.6	1.22	47.2	40.9	6.0	2.24	0.41	27.7	2.9	-1.8	-1.1	**3.1**
PCB 52	5.52	6.68	4.92	96.9	115	113	5.71	15.7	108	9.2	7.10	0.75	**124**	**32**	-0.8	-0.8	1.0
PCB 44	13.5	10.6	10.3	98.5	106	112	11.5	15.4	106	6.4	5.54	1.40	75.0	6.0	**4.3**	1.8	1.0
PCB 66/95	<0.37	<0.40	<0.38	107	118	116	<0.40	NA	114	5.2	17.8	3.9	156	12			
PCB 101/90	66.2	69.5	67.6	108	122	119	67.8	2.4	116	6.3	38.1	4.5	**124**	**37**	**3.1**	2.8	0.2
PCB 118	59.3	56.5	58.5	105	109	103	58.1	2.5	106	2.9	50.9	5.3	**132**	**60**	0.6	0.5	0.2
PCB 153	122	124	117	76.4	78.4	80.9	121	3.0	78.6	2.9	157	14	**83.0**	**39.0**	-0.9	-1.0	0.2
PCB 105	23.4	17.6	20.8	47.3	47.1	45.0	20.6	14.1	46.5	2.7	21.7	2.7	**54.0**	**24.0**	-0.2	-0.2	0.9
PCB 138/163/164	133	132	133	99.3	101	105	133	0.4	102	2.9	136	9	**102**	**23**	-0.1	-0.2	0.0
PCB 187/182	59.6	59.3	59.9	32.8	32.9	33.6	59.6	0.5	33.1	1.3	54.2	4.2	**36.0**	**16.0**	0.4	0.5	0.0
PCB 128	40.1	41.1	31.5	19.4	19.2	20.4	37.6	14.0	19.7	3.3	26.9	6.2	17.7	1.4	1.6	0.8	0.9
PCB 180	71.6	78.1	68.3	42.8	42.2	39.1	72.7	6.9	41.4	4.8	75.0	6.9	**46.0**	**14.0**	-0.1	-0.1	0.5
PCB 170/190	55.1	56.9	49.2	26.1	27.1	24.3	53.7	7.5	25.8	5.5	29.1	3.7	**22.0**	**8.0**	**3.4**	2.7	0.5
PCB 195	3.28	4.32	3.57	3.41	3.25	3.67	3.72	14.4	3.44	6.2	5.19	0.65	4.38	0.90	-1.1	-1.0	1.0
PCB 206	3.32	3.87	3.15	3.50	3.38	3.34	3.45	10.9	3.41	2.4	5.06	0.50	4.50	0.90	-1.3	-1.4	0.7
PCB 209	1.02	1.35	1.03	6.32	5.86	6.15	1.13	16.6	6.11	3.8	1.33	0.23	4.40	0.90	-0.6	-0.4	1.1
PCB 66	___	___	___	___	___	___	NA	NA	NA	NA	9.16	1.72	125	10			
PCB 95	___	___	___	___	___	___	NA	NA	NA	NA	11.7	1.4	50.0	7.0			

Laboratory: 36
PCBs in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	16	88.9
Qualitative	4	22.2
Not Determined	0	0.0

Category	Number by Category: z (25%)	z (s)	p (15%)
≤ 2	12	13	15
2 to 3	0	2	0
≥ 3	3	0	1

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 37**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 3/9/00

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Fish IV, ng/g wet			Carp-I, ng/g wet			Fish IV		Carp-I		Fish IV, ng/g wet		Carp-I, ng/g wet		Fish IV		
Analysis date	2/28/00 S 1	2/28/00 S 2	2/28/00 S 3	2/28/00 S 1	S 2	S 3	lab mean ng/g wet	lab %RSD	lab mean ng/g wet	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	NA	NA	NA	NA			NA	NA	NA	NA	5.20	0.53	<4				
hexachlorobenzene	7.10	6.70	7.00	2.90			6.93	3.0	2.90	NA	6.62	0.68	3.28	0.33	0.2	0.2	0.2
gamma-HCH	1.40	1.70	1.60	0.700			1.57	9.8	0.700	NA	1.15	0.25	<2		1.4	0.7	0.7
heptachlor	0.300	0.300	<0.5	<0.5			0.30	0.0	<0.5	NA	<1		<5				0.0
aldrin	0.800	0.800	<0.7	<0.7			0.80	0.0	<0.7	NA	<1		<4				0.0
heptachlor epoxide	7.10	7.70	7.70	13.6			7.50	4.6	13.6	NA	5.19	0.63	2.30	0.88	1.8	2.2	0.3
oxychlordane	NA	NA	NA	NA			NA	NA	NA	NA	17.4	2.0	<3				
trans-chlordane	NA	NA	NA	NA			NA	NA	NA	NA	8.06	1.21	5.20	1.60			
2,4'-DDE	4.90	5.10	4.80	<0.8			4.93	3.1	<0.8	NA	0.989	0.285	2.80	1.00	**15.9**	**9.9**	0.2
endosulfan I	NA	NA	NA	NA			NA	NA	NA	NA	<2		<5				
cis-chlordane	39.3	41.6	44.4	7.60			41.8	6.1	7.60	NA	31.0	5.1	8.40	1.40	1.4	1.0	0.4
trans-nonachlor	108	117	113	9.50			113	4.0	9.50	NA	91.2	6.8	9.80	1.40	0.9	1.4	0.3
dieldrin	other	other	other	other			other	NA	other	NA	32.9	5.3	7.20	3.10			
4,4'-DDE	467	476	482	193			475	1.6	193	NA	335	31	146	13	1.7	2.2	0.1
2,4'-DDD	other	other	other	other			other	NA	other	NA	2.56	0.98	21.6	2.4			
endrin	NA	NA	NA	NA			NA	NA	NA	NA	5.46	1.19	<8				
endosulfan II	NA	NA	NA	NA			NA	NA	NA	NA	<5		<4				
4,4'-DDD	other	other	other	122			other	NA	122	NA	15.4	2.9	70.0	15.0			
2,4'-DDT	72.9	75.7	73.4	8.50			74.0	2.0	8.50	NA	23.0	6.4	6.40	1.00	**8.9**	**4.6**	0.1
cis-nonachlor	NA	NA	NA	NA			NA	NA	NA	NA	58.4	8.1	5.30	1.30			
4,4'-DDT	67.3	71.2	68.5	3.90			69.0	2.9	3.90	NA	41.1	12.8	10.0	4.0	2.7	1.7	0.2
mirex	8.50	7.80	7.70	2.30			8.00	5.4	2.30	NA	6.06	0.97	<6		1.3	1.0	0.4

Laboratory: 37
Pesticides in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	12	54.5
Qualitative	3	13.6
Not Determined	7	31.8

	Number by Category		
Category	z (25%)	z (s)	p (15%)
≤ 2	7	6	12
2 to 3	1	2	0
≥ 3	2	2	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 37**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 3/9/00

PCBs

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Fish IV, ng/g wet			Carp-I, ng/g wet			Fish IV		Carp-I		Fish IV, ng/g wet		Carp-I, ng/g wet		Fish IV		
Analysis date	2/24/00 S 1	2/24/00 S 2	2/24/00 S 3	2/24/00 S 1	____ S 2	____ S 3	lab mean ng/g wet	lab %RSD	lab mean ng/g wet	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
PCB 8	<0.3	<0.3	<0.3	1.20	____	____	<0.3	NA	1.20	NA	<2		2.60	0.70			
PCB 18	3.40	other	other	20.2	____	____	3.40	NA	20.2	NA	<2		21.7	1.6			
PCB 28	3.00	2.00	2.30	27.2	____	____	2.43	21.1	27.2	NA	2.24	0.41	27.7	2.9	0.3	0.2	1.4
PCB 52	9.50	9.10	9.20	84	____	____	9.27	2.2	83.5	NA	7.10	0.75	**124**	**32**	1.2	1.2	0.1
PCB 44	10.9	12.1	10.3	48.0	____	____	11.1	8.3	48.0	NA	5.54	1.40	75.0	6.0	**4.0**	1.7	0.6
PCB 66/95	18.6	18.7	18.9	116	____	____	18.7	0.8	116	NA	17.8	3.9	156	12	0.2	0.2	0.1
PCB 101/90	30.1	30.7	30.9	76.9	____	____	30.6	1.4	76.9	NA	38.1	4.5	**124**	**37**	-0.8	-0.7	0.1
PCB 118	51.7	51.3	52.2	86.8	____	____	51.7	0.9	86.8	NA	50.9	5.3	**132**	**60**	0.1	0.1	0.1
PCB 153	165	169	171	62.9	____	____	168	1.8	62.9	NA	157	14	**83.0**	**39.0**	0.3	0.3	0.1
PCB 105	13.3	11.5	13.2	42.3	____	____	12.7	8.0	42.3	NA	21.7	2.7	**54.0**	**24.0**	-1.7	-1.3	0.5
PCB 138/163/164	130	124	129	72.1	____	____	128	2.5	72.1	NA	136	9	**102**	**23**	-0.3	-0.4	0.2
PCB 187/182	61.9	59.8	60.9	30.9	____	____	60.9	1.7	30.9	NA	54.2	4.2	**36.0**	**16.0**	0.5	0.7	0.1
PCB 128	67.9	66.2	68.7	18.4	____	____	67.6	1.9	18.4	NA	26.9	6.2	17.7	1.4	**6.1**	**3.0**	0.1
PCB 180	63.3	60.8	62.1	33.9	____	____	62.1	2.0	33.9	NA	75.0	6.9	**46.0**	**14.0**	-0.7	-0.8	0.1
PCB 170/190	27.5	23.8	26.3	20.4	____	____	25.9	7.3	20.4	NA	29.1	3.7	**22.0**	**8.0**	-0.4	-0.4	0.5
PCB 195	6.10	5.60	5.90	6.50	____	____	5.87	4.3	6.50	NA	5.19	0.65	4.38	0.90	0.5	0.4	0.3
PCB 206	4.90	4.30	4.60	4.90	____	____	4.60	6.5	4.90	NA	5.06	0.50	4.50	0.90	-0.4	-0.4	0.4
PCB 209	1.10	0.900	1.00	4.90	____	____	1.00	10.0	4.90	NA	1.33	0.23	4.40	0.90	-1.0	-0.6	0.7
PCB 66	____	____	____	____	____	____	NA	NA	NA	NA	9.16	1.72	125	10			
PCB 95	____	____	____	____	____	____	NA	NA	NA	NA	11.7	1.4	50.0	7.0			

Laboratory: 37
PCBs in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	17	94.4
Qualitative	3	16.7
Not Determined	0	0.0

Category	Number by Category		
	z (25%)	z (s)	p (15%)
≤ 2	14	15	16
2 to 3	0	0	0
≥ 3	2	1	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 39

Sample: QA99FSH4 - Fish Homogenate IV

(data reported as if three figures were significant)

Reporting Date: March 6th, 2000

PESTICIDES

Analysis date	Data as submitted by laboratory: Fish IV, ng/g wet			Carp-I, ng/g wet			Fish IV		Carp-I		Material reference values: Fish IV, ng/g wet		Carp-I, ng/g wet		Performance scores[a]: Fish IV		
	FISH IV S 1	FISH IV S 2	FISH IV S 3	CRM Carp-I S 1	CRM Carp-I S 2	CRM Carp-I S 3	lab mean ng/g wet	lab %RSD	lab mean ng/g wet	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	3.80	2.61**	3.61	0.610	____	____	3.71	3.6	0.610	NA	5.20	0.53	<4		**-1.2**	**-1.3**	0.2
hexachlorobenzene	8.49	22.0**	7.14	3.65	____	____	7.82	12.2	3.65	NA	6.62	0.68	3.28	0.33			
gamma-HCH	0.828	DL	0.781	0.235	____	____	0.805	4.1	0.235	NA	1.15	0.25	<2				
heptachlor	DL	DL	DL	DL	____	____	DL	NA	DL	NA	<1		<5				
aldrin	DL	DL	DL	DL	____	____	DL	NA	DL	NA	<1		<4				
heptachlor epoxide	5.60	5.40	4.74	0.715	____	____	5.25	8.6	0.715	NA	5.19	0.63	2.30	0.88	0.0	0.1	0.6
oxychlordane	25.8	24.4	29.2	1.16	____	____	26.5	9.3	1.16	NA	17.4	2.0	<3		**2.1**	**2.4**	0.6
trans-chlordane	6.26	5.90	6.76	3.43	____	____	6.31	6.8	3.43	NA	8.06	1.21	5.20	1.60			
2,4'-DDE	0.734	0.708	0.649	2.04	____	____	0.697	6.2	2.04	NA	0.989	0.285	2.80	1.00	**-1.2**	**-0.7**	0.4
endosulfan I	DL	DL	DL	DL	____	____	DL	NA	DL	NA	<2		<5				
cis-chlordane	23.8	23.9	25.9	6.96	____	____	24.5	4.8	6.96	NA	31.0	5.1	8.40	1.40	-0.8	-0.6	0.3
trans-nonachlor	92.7	83.4	96.6	7.91	____	____	90.9	7.5	7.91	NA	91.2	6.8	9.80	1.40	**0.0**	**0.0**	0.5
dieldrin	28.0	31.4	33.9	6.32	____	____	31.1	9.5	6.32	NA	32.9	5.3	7.20	3.10	**-0.2**	**-0.2**	0.6
4,4'-DDE	383	410	381	190	____	____	391	4.1	190	NA	335	31	146	13	**0.7**	**0.9**	0.3
2,4'-DDD	0.646	1.380	1.270	15.9	____	____	1.10	36.0	15.9	NA	2.56	0.98	21.6	2.4			
endrin	3.890	4.300	4.700	DL	____	____	4.30	9.4	DL	NA	5.46	1.19	<8		**-0.9**	**-0.7**	0.6
endosulfan II	DL	DL	DL	DL	____	____	DL	NA	DL	NA	<5		<4				
4,4'-DDD	8.58	12.4	11.5	77.8	____	____	10.8	18.4	77.8	NA	15.4	2.9	70.0	15.0	**-1.2**	**-0.7**	1.2
2,4'-DDT	13.8	14.3	14.1	DL	____	____	14.1	1.8	DL	NA	23.0	6.4	6.40	1.00	-1.5	-0.8	0.1
cis-nonachlor	47.3	45.3	46.3	2.16	____	____	46.3	2.2	2.16	NA	58.4	8.1	5.30	1.30	**-0.8**	**-0.8**	0.1
4,4'-DDT	35.0	38.6	33.7	0.477	____	____	35.8	7.1	0.477	NA	41.1	12.8	10.0	4.0	**-0.5**	-0.3	0.5
mirex	4.75	4.14	4.10	0.328	____	____	4.33	8.4	0.328	NA	6.06	0.97	<6		**-1.1**	**-0.9**	0.6

Laboratory: 39

Pesticides in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	18	81.8
Qualitative	4	18.2
Not Determined	0	0.0

Category	Number by Category: z (25%)	z (s)	p (15%)
≤ 2	13	13	14
2 to 3	1	1	0
≥ 3	0	0	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 39**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: March 6th, 2000

PCBs

Analysis date	Data as submitted by laboratory: Fish IV, ng/g wet			Carp-I, ng/g wet			Fish IV		Carp-I		Material reference values: Fish IV, ng/g wet		Carp-I, ng/g wet		Performance scores[a]: Fish IV		
	FISH IV S 1	FISH IV S 2	FISH IV S 3	CRM Carp-1 S 1	CRM Carp-1 S 2	CRM Carp-1 S 3	lab mean ng/g wet	lab %RSD	lab mean ng/g wet	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
PCB 8	0.044	<0.25**	0.053	1.16	____	____	0.048	13.0	1.16	NA	<2		2.60	0.70			0.9
PCB 18	0.268	0.503**	0.315	16.6	____	____	0.292	11.4	16.6	NA	<2		21.7	1.6			0.8
PCB 28	1.59	1.70	1.67	29.2	____	____	1.65	3.4	29.2	NA	2.24	0.41	27.7	2.9	-1.1	-0.7	0.2
PCB 52	5.10	4.66	5.36	87.1	____	____	5.04	7.0	87.1	NA	7.10	0.75	**124**	**32**	-1.2	-1.1	0.5
PCB 44	3.98	3.57	4.18	119	____	____	3.91	8.0	119	NA	5.54	1.40	75.0	6.0	-1.2	-0.5	0.5
PCB 66/95	20.2	18.2	20.8	212	____	____	19.7	6.9	212	NA	17.8	3.9	156	12	0.4	0.3	0.5
PCB 101/90	35.3	35.4	36.8	146	____	____	35.8	2.3	146	NA	38.1	4.5	**124**	**37**	-0.2	-0.2	0.2
PCB 118	40.4	38.3	44.0	115	____	____	40.9	7.0	115	NA	50.9	5.3	**132**	**60**	-0.8	-0.7	0.5
PCB 153	117	156	148	81.7	____	____	140	14.7	81.7	NA	157	14	**83.0**	**39.0**	-0.4	-0.5	1.0
PCB 105	16.7	13.7	17.4	41.9	____	____	15.9	12.3	41.9	NA	21.7	2.7	**54.0**	**24.0**	-1.1	-0.9	0.8
PCB 138/163/164	125	143	140	104	____	____	136	7.1	104	NA	136	9	**102**	**23**	0.0	0.0	0.5
PCB 187/182	48.6	46.5	51.7	34.2	____	____	48.9	5.3	34.2	NA	54.2	4.2	**36.0**	**16.0**	-0.4	-0.5	0.4
PCB 128	19.2	20.6	19.7	15.5	____	____	19.8	3.6	15.5	NA	26.9	6.2	17.7	1.4	-1.0	-0.5	0.2
PCB 180	67.0	67.2	66.4	44.3	____	____	66.9	0.6	44.3	NA	75.0	6.9	**46.0**	**14.0**	-0.4	-0.5	0.0
PCB 170/190	30.0	29.4	29.8	22.6	____	____	29.7	1.0	22.6	NA	29.1	3.7	**22.0**	**8.0**	0.1	0.1	0.1
PCB 195	4.56	4.09	4.46	3.96	____	____	4.37	5.7	3.96	NA	5.19	0.65	4.38	0.90	-0.6	-0.5	0.4
PCB 206	5.42	5.48	5.36	4.84	____	____	5.42	1.1	4.84	NA	5.06	0.50	4.50	0.90	0.3	0.3	0.1
PCB 209	0.967	0.892	0.945	4.75	____	____	0.935	4.1	4.75	NA	1.33	0.23	4.40	0.90	-1.2	-0.8	0.3
PCB 66	8.30	6.66	8.04	142	____	____	7.67	11.5	142	NA	9.16	1.72	125	10	-0.7	-0.5	0.8
PCB 95	11.9	11.5	12.8	69.9	____	____	12	5.5	70	NA	11.7	1.4	50.0	7.0	0.1	0.2	0.4

Laboratory: 39
PCBs in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	18	100.0
Qualitative	2	11.1
Not Determined	0	0.0

Category	Number by Category: z (25%)	z (s)	p (15%)
≤ 2	16	16	18
2 to 3	0	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 40**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 1/28/00

PESTICIDES

Analysis date	Data as submitted by laboratory: Fish IV, ng/g wet S 1	S 2	S 3	Carp-I, ng/g wet S 1	S 2	S 3	Fish IV lab mean ng/g wet	Fish IV lab %RSD	Carp-I lab mean ng/g wet	Carp-I lab %RSD	Material reference values: Fish IV, ng/g wet assigned value	95% CL	Carp-I, ng/g wet target value[b]	95% CL	Performance scores[a] Fish IV z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	1.95	2.44	1.87	1.03	1.00	1.27	2.09	14.7	1.10	13.2	5.20	0.53	<4		-2.4	-2.8	1.0
hexachlorobenzene	4.50	4.98	4.75	2.80	2.93	3.18	4.75	5.0	2.97	6.5	6.62	0.68	3.28	0.33	-1.1	-1.2	0.3
gamma-HCH	0.525	0.675	0.506	0.321	0.265	0.272	0.569	16.2	0.286	10.7	1.15	0.25	<2		-2.0	-1.0	1.1
heptachlor	0.567	0.570	0.475	0.781	0.910	0.672	0.537	10.1	0.788	15.1	<1		<5				0.7
aldrin	0.322	0.116	0.280	0.632	0.656	0.442	0.240	45.4	0.577	20.4	<1		<4				**3.0**
heptachlor epoxide	0.098	0.156	0.061	0.075	0.108	0.172	0.105	45.6	0.119	41.5	5.19	0.63	2.30	0.88	**-3.9**	**-4.9**	**3.0**
oxychlordane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17.4	2.0	<3				
trans-chlordane	4.97	5.38	4.79	2.82	2.87	3.09	5.05	6.1	2.93	5.0	8.06	1.21	5.20	1.60	-1.5	-1.2	0.4
2,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.989	0.285	2.80	1.00			
endosulfan I	0.055	0.062	0.060	0.193	0.273	0.229	0.059	6.2	0.232	17.3	<2		<5				0.4
cis-chlordane	18.7	19.9	18.0	5.81	5.89	6.25	18.9	5.0	5.99	3.9	31.0	5.1	8.40	1.40	-1.6	-1.1	0.3
trans-nonachlor	58.6	63.7	62.0	7.04	7.04	7.60	61.4	4.2	7.22	4.5	91.2	6.8	9.80	1.40	-1.3	-1.9	0.3
dieldrin	16.7	17.0	16.0	3.72	4.58	3.74	16.6	3.1	4.01	12.2	32.9	5.3	7.20	3.10	-2.0	-1.7	0.2
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	335	31	146	13			
2,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.56	0.98	21.6	2.4			
endrin	6.42	8.63	8.07	1.16	1.14	1.04	7.71	14.9	1.11	5.8	5.46	1.19	<8		1.6	1.3	1.0
endosulfan II	NA	NA	NA	0.104	0.178	0.127	NA	NA	0.14	27.6	<5		<4				
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15.4	2.9	70.0	15.0			
2,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	23.0	6.4	6.40	1.00			
cis-nonachlor	34.9	35.8	32.5	2.69	2.79	2.95	34.4	5.0	2.81	4.6	58.4	8.1	5.30	1.30	-1.6	-1.6	0.3
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	41.1	12.8	10.0	4.0			
mirex	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.06	0.97	<6				

Laboratory: 40
Pesticides in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	13	59.1
Qualitative	0	0.0
Not Determined	9	40.9

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	7	8	11
2 to 3	2	1	0
≥ 3	1	1	2

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 40

Sample: QA99FSH4 - Fish Homogenate IV

(data reported as if three figures were significant)

Reporting Date: 1/28/00

PCBs

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Fish IV, ng/g wet			Carp-I, ng/g wet			Fish IV		Carp-I		Fish IV, ng/g wet		Carp-I, ng/g wet		Fish IV		
Analysis date	12/7/99 S 1	12/7/99 S 2	12/7/99 S 3	12/7/99 S 1	12/7/99 S 2	12/7/99 S 3	lab mean ng/g wet	lab %RSD	lab mean ng/g wet	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
PCB 8	NA	NA	NA	1.39	1.72	2.06	NA	NA	1.72	19.4	<2		2.60	0.70			
PCB 18	0.427	0.434	0.469	12.2	12.8	13.0	0.443	5.1	12.7	3.3	<2		21.7	1.6			0.3
PCB 28	9.06	10.4	11.1	53.8	54.9	55.4	10.2	10.2	54.7	1.5	2.24	0.41	27.7	2.9	**14.2**	**8.9**	0.7
PCB 52	20.3	22.8	22.3	98.8	103	105	21.8	6.1	102	3.1	7.10	0.75	**124**	**32**	**8.3**	**8.0**	0.4
PCB 44	8.24	9.98	9.13	55.5	57.0	57.8	9.12	9.5	56.8	2.1	5.54	1.40	75.0	6.0	2.6	1.1	0.6
PCB 66/95	58.7	68.1	66.1	162	167	169	64.3	7.7	166	2.2	17.8	3.9	156	12	**10.5**	**7.9**	0.5
PCB 101/90	74.5	85.8	83.6	92.7	95.8	96.9	81.3	7.4	95.1	2.3	38.1	4.5	**124**	**37**	**4.5**	**4.0**	0.5
PCB 118	54.3	60.3	72.7	50.0	52.8	50.2	62.4	15.0	51.0	3.1	50.9	5.3	**132**	**60**	0.9	0.9	1.0
PCB 153	334	382	374	79.3	81.6	82.0	363	7.1	81.0	1.8	157	14	**83.0**	**39.0**	**5.3**	**6.0**	0.5
PCB 105	35.9	40.0	39.0	36.4	36.5	36.4	38.3	5.6	36.4	0.2	21.7	2.7	**54.0**	**24.0**	**3.1**	2.5	0.4
PCB 138/163/164	293	336	323	87.6	89.6	89.5	317	6.9	88.9	1.3	136	9	**102**	**23**	**5.3**	**7.9**	0.5
PCB 187/182	94.3	108	104	26.7	27.3	27.2	102	6.9	27.1	1.2	54.2	4.2	**36.0**	**16.0**	**3.5**	**4.8**	0.5
PCB 128	36.2	41.9	45.7	10.8	10.2	10.2	41.3	11.6	10.4	3.3	26.9	6.2	17.7	1.4	2.1	1.1	0.8
PCB 180	164	189	182	44.2	44.7	44.3	178	7.2	44.4	0.6	75.0	6.9	**46.0**	**14.0**	**5.5**	**6.2**	0.5
PCB 170/190	112	128	121	34.6	34.4	34.5	120	6.7	34.5	0.3	29.1	3.7	**22.0**	**8.0**	**12.6**	**10.1**	0.4
PCB 195	34.5	40.2	36.5	13.8	14.6	13.9	37.1	7.8	14.1	3.1	5.19	0.65	4.38	0.90	**24.6**	**21.1**	0.5
PCB 206	19.6	22.0	20.8	7.33	7.57	7.12	20.8	5.8	7.34	3.1	5.06	0.50	4.50	0.90	**12.5**	**13.7**	0.4
PCB 209	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.33	0.23	4.40	0.90			
PCB 66	___	___	___	___	___	___	NA	NA	NA	NA	9.16	1.72	125	10			
PCB 95	___	___	___	___	___	___	NA	NA	NA	NA	11.7	1.4	50.0	7.0			

Laboratory: 40

PCBs in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	16	88.9
Qualitative	2	11.1
Not Determined	2	11.1

Category	Number by Category		
	z (25%)	z (s)	p (15%)
≤ 2	1	3	16
2 to 3	2	1	0
≥ 3	12	11	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 41**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 3/10/00

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Fish IV, ng/g wet			Carp-I, ng/g wet			Fish IV		Carp-I		Fish IV, ng/g wet		Carp-I, ng/g wet		Fish IV		
Analysis date	2/17/00 S 1	2/17/00 S 2	2/17/00 S 3	2/16/00 S 1	2/17/00 S 2	S 3	lab mea g/g we	lab %RSD	lab mea g/g we	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	Other1	Other1	Other1	Other1	Other1		Other1	NA	Other1	NA	5.20	0.53	<4				
hexachlorobenzene	6.60	6.25	6.36	3.63	3.57		6.40	2.8	3.60	1.1	6.62	0.68	3.28	0.33	-0.1	-0.1	0.2
gamma-HCH	0.820	0.729	0.813	0.303	0.270		0.787	6.4	0.286	8.1	1.15	0.25	<2		-1.3	-0.6	0.4
heptachlor	0.176	0.110	0.099	2.69	2.54		0.128	32.5	2.62	4.2	<1		<5				2.2
aldrin	0.325	0.228	0.283	0.723	0.564		0.279	17.4	0.643	17.4	<1		<4				1.2
heptachlor epoxide	5.39	4.69	4.88	1.05	1.21		4.99	7.2	1.13	9.9	5.19	0.63	2.30	0.88	-0.2	-0.2	0.5
oxychlordane	17.3	15.2	16.8	Other4	Other4		16.4	6.5	Other1	NA	17.4	2.0	<3		-0.2	-0.3	0.4
trans-chlordane	9.75	7.81	8.62	3.77	3.70		8.72	11.2	3.73	1.3	8.06	1.21	5.20	1.60	0.3	0.3	0.7
2,4'-DDE	23.3	20.2	21.0	28.8	28.4		21.5	7.6	28.6	0.9	0.989	0.285	2.80	1.00	**82.9**	**51.5**	0.5
endosulfan I	Other2	Other2	Other2	Other2	Other2		Other1	NA	Other1	NA	<2		<5				
cis-chlordane	Other3	Other3	Other3	Other3	Other3		Other1	NA	Other1	NA	31.0	5.1	8.40	1.40			
trans-nonachlor	102	88.1	90.3	8.51	8.40		93.3	7.8	8.46	0.9	91.2	6.8	9.80	1.40	0.1	0.1	0.5
dieldrin	36.0	30.5	33.7	72.1	72.2		33.4	8.2	72.1	0.2	32.9	5.3	7.20	3.10	0.1	0.1	0.5
4,4'-DDE	428	368	379	236	235		392	8.2	235	0.2	335	31	146	13	0.7	0.9	0.5
2,4'-DDD	5.50	4.63	4.71	20.5	20.3		4.95	9.8	20.4	0.9	2.56	0.98	21.6	2.4	**3.7**	1.5	0.7
endrin	12.1	9.24	10.3	24.8	24.8		10.5	13.9	24.8	0.1	5.46	1.19	<8		**3.7**	2.9	0.9
endosulfan II	71.8	61.5	67.2	10.4	10.4		66.9	7.7	10.4	0.3	<5		<4				0.5
4,4'-DDD	18.5	15.3	16.1	101	102		16.6	9.8	101	0.7	15.4	2.9	70.0	15.0	0.3	0.2	0.7
2,4'-DDT	19.0	16.1	16.6	3.81	3.75		17.2	8.9	3.78	1.1	23.0	6.4	6.40	1.00	-1.0	-0.5	0.6
cis-nonachlor	24.9	20.5	22.5	1.37	0.582		22.6	9.7	0.977	57.2	58.4	8.1	5.30	1.30	-2.4	-2.3	0.6
4,4'-DDT	65.0	54.8	55.3	14.8	14.1		58.4	9.9	14.4	3.4	41.1	12.8	10.0	4.0	1.7	1.0	0.7
mirex	5.89	5.11	5.12	0.840	0.986		5.38	8.3	0.913	11.3	6.06	0.97	<6		-0.4	-0.3	0.6

Laboratory: 41
Pesticides in Fish Homogenate IV

Reported Results	No. of Analyte	%
Quantitative	19	86.4
Qualitative	3	13.6
Not Determined	0	0.0

	Number by Category		
Category	z (25%)	z (s)	p (15%)
≤ 2	12	13	18
2 to 3	1	2	1
≥ 3	3	1	0

[a]z- and p-scores ≥ 3 are bolded. [b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 41**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 3/10/00

PCBs

Analysis date	Data as submitted by laboratory: Fish IV, ng/g wet 2/17/00 S 1	Fish IV 2/17/00 S 2	Fish IV 2/17/00 S 3	Carp-I, ng/g wet 2/16/00 S 1	Carp-I 2/17/00 S 2	Carp-I S 3	Fish IV lab mea ng/g we	Fish IV lab %RSD	Carp-I lab mea ng/g we	Carp-I lab %RSD	Material reference values: Fish IV, ng/g wet assigned value	Fish IV 95% CL	Carp-I, ng/g wet target value[b]	Carp-I 95% CL	Performance scores[a] Fish IV z-score (25%)	Fish IV z-score (s)	Fish IV p-score (15%)
PCB 8	Other1	Other1	Other1	Other1	Other1	____	Other1	NA	Other1	NA	<2		2.60	0.70			
PCB 18	0.374	0.331	0.294	16.8	16.4	____	0.333	12.0	16.6	1.8	<2		21.7	1.6			0.8
PCB 28	1.71	1.25	1.68	26.3	26.4	____	1.55	16.8	26.4	0.3	2.24	0.41	27.7	2.9	-1.2	-0.8	1.1
PCB 52	6.35	5.64	6.86	85.6	82.1	____	6.28	9.8	83.8	2.9	7.10	0.75	**124**	**32**	-0.5	-0.4	0.7
PCB 44	4.14	3.56	3.59	61.9	60.0	____	3.76	8.7	61.0	2.2	5.54	1.40	75.0	6.0	-1.3	-0.6	0.6
PCB 66/95	21.4	19.0	20.6	153	149	____	20.3	6.0	151	1.7	17.8	3.9	156	12	0.6	0.4	0.4
PCB 101/90	Other2	Other2	Other2	Other2	Other2	____	Other2	NA	Other2	NA	38.1	4.5	**124**	**37**			
PCB 118	51.3	44.7	45.3	139	140	____	47.1	7.8	140	0.4	50.9	5.3	**132**	**60**	-0.3	-0.3	0.5
PCB 153	140	120	123	73.9	74.0	____	128	8.5	73.9	0.1	157	14	**83.0**	**39.0**	-0.7	-0.8	0.6
PCB 105	22.0	18.8	18.5	61.8	66.0	____	19.8	9.7	63.9	4.6	21.7	2.7	**54.0**	**24.0**	-0.4	-0.3	0.6
PCB 138/163/164	155	133	136	94.0	94.2	____	142	8.5	94.1	0.1	136	9	**102**	**23**	0.2	0.2	0.6
PCB 187/182	55.4	48.6	49.3	32.1	32.0	____	51.1	7.3	32.1	0.2	54.2	4.2	**36.0**	**16.0**	-0.2	-0.3	0.5
PCB 128	169	144	147	18.2	18.3	____	153	9.0	18.3	0.6	26.9	6.2	17.7	1.4	**18.8**	**9.3**	0.6
PCB 180	66.9	56.9	58.2	49.1	49.6	____	60.7	9.0	49.4	0.8	75.0	6.9	**46.0**	**14.0**	-0.8	-0.9	0.6
PCB 170/190	23.7	20.3	20.8	21.8	22.5	____	21.6	8.5	22.2	2.3	29.1	3.7	**22.0**	**8.0**	-1.0	-0.8	0.6
PCB 195	4.97	4.48	4.29	5.63	5.71	____	4.58	7.6	5.67	1.0	5.19	0.65	4.38	0.90	-0.5	-0.4	0.5
PCB 206	5.36	4.54	4.60	5.58	5.76	____	4.83	9.4	5.67	2.2	5.06	0.50	4.50	0.90	-0.2	-0.2	0.6
PCB 209	1.34	1.12	1.11	6.58	6.65	____	1.19	10.7	6.62	0.8	1.33	0.23	4.40	0.90	-0.4	-0.3	0.7
PCB 66	____	____	____	____	____	____	NA	NA	NA	NA	9.16	1.72	125	10			
PCB 95	____	____	____	____	____	____	NA	NA	NA	NA	11.7	1.4	50.0	7.0			

Laboratory: 41
PCBs in Fish Homogenate IV

Reported Results	No. of Analyte	%
Quantitative	16	88.9
Qualitative	4	22.2
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	14	14	16
2 to 3	0	0	0
≥ 3	1	1	0

[a]z- and p-scores ≥ 3 are bolded. [b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 42**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 3/12/00

PESTICIDES

Analysis date	Data as submitted by laboratory: Fish IV, ng/g wet 3/11/00 S 1	Fish IV, ng/g wet 3/11/00 S 2	Fish IV, ng/g wet 3/11/00 S 3	Carp-I, ng/g wet 3/11/00 S 1	Carp-I, ng/g wet 3/11/00 S 2	Carp-I, ng/g wet 3/11/00 S 3	Fish IV ab mea ng/g wet	Fish IV lab %RSD	Carp-I ab mea ng/g wet	Carp-I lab %RSD	Material reference values: Fish IV, ng/g wet assigned value	Fish IV 95% CL	Carp-I, ng/g wet target value[b]	Carp-I 95% CL	Performance scores[a] Fish IV z-score (25%)	Fish IV z-score (s)	Fish IV p-score (15%)
alpha-HCH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.20	0.53	<4				
hexachlorobenzene	2.46	2.50	3.10	0.062	0.062	0.062	2.69	13.2	<0.0622	NA	6.62	0.68	3.28	0.33	-2.4	-2.5	0.9
gamma-HCH	0.328	0.277	0.259	0.076	0.076	0.076	0.288	12.5	<0.0760	NA	1.15	0.25	<2		**-3.0**	-1.5	0.8
heptachlor	0.039	0.039	0.039	0.039	0.039	0.039	<0.0399	NA	<0.0399	NA	<1		<5				
aldrin	0.012	0.012	0.012	0.012	0.012	0.012	<0.0128	NA	<0.0128	NA	<1		<4				
heptachlor epoxide	< 0.102	< 0.102	< 0.102	< 0.102	< 0.102	< 0.102	< 0.102	NA	< 0.102	NA	5.19	0.63	2.30	0.88			
oxychlordane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17.4	2.0	<3				
trans-chlordane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.06	1.21	5.20	1.60			
2,4'-DDE	0.057	0.057	0.057	0.057	1.32	0.057	<0.0575	NA	1.32	NA	0.989	0.285	2.80	1.00			
endosulfan I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2		<5				
cis-chlordane	5.41	5.17	6.08	0.160	0.790	1.05	5.55	8.5	0.667	68.7	31.0	5.1	8.40	1.40	**-3.3**	-2.4	0.6
trans-nonachlor	54.4	49.4	69.5	1.52	1.13	1.65	57.8	18.1	1.43	18.9	91.2	6.8	9.80	1.40	-1.5	-2.2	1.2
dieldrin	12.2	11.0	10.2	0.716	0.718	0.558	11.1	9.2	0.664	13.8	32.9	5.3	7.20	3.10	-2.6	-2.3	0.6
4,4'-DDE	110	110	137	5.08	5.75	5.19	119	13.0	5.34	6.8	335	31	146	13	-2.6	**-3.4**	0.9
2,4'-DDD	0.060	0.060	0.060	1.59	2.44	4.55	<0.0605	NA	2.86	53.2	2.56	0.98	21.6	2.4			
endrin	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.46	1.19	<8				
endosulfan II	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5		<4				
4,4'-DDD	<0.243	<0.243	<0.243	3.87	4.62	4.90	<0.243	NA	4.46	12.0	15.4	2.9	70.0	15.0			
2,4'-DDT	7.93	7.89	8.77	<0.144	<0.144	<0.144	8.20	6.1	<0.144	NA	23.0	6.4	6.40	1.00	-2.6	-1.3	0.4
cis-nonachlor	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	58.4	8.1	5.30	1.30			
4,4'-DDT	12.7	12.2	14.2	0.282	0.658	0.285	13.1	8.0	0.408	52.8	41.1	12.8	10.0	4.0	-2.7	-1.7	0.5
mirex	2.71	2.77	3.01	<0.160	<0.160	<0.160	2.83	5.6	<0.160	NA	6.06	0.97	<6		-2.1	-1.7	0.4

Laboratory: 42
Pesticides in Fish Homogenate IV

Reported Results	No. of Analyte	%
Quantitative	9	40.9
Qualitative	6	27.3
Not Determined	7	31.8

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	1	4	9
2 to 3	6	4	0
≥ 3	2	1	0

[a]z- and p-scores ≥ 3 are bolded. [b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 42**

Sample: QA99FSH4 - Fish Homogenate IV (data reported as if three figures were significant) Reporting Date: 3/12/00

PCBs

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Fish IV, ng/g wet			Carp-I, ng/g wet			Fish IV		Carp-I		Fish IV, ng/g wet		Carp-I, ng/g wet		Fish IV		
Analysis date	3/11/00 S 1	3/11/00 S 2	3/11/00 S 3	3/11/00 S 1	3/11/00 S 2	3/11/00 S 3	lab mea ng/g wet	lab %RSD	lab mea ng/g wet	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
PCB 8	<0.128	<0.128	<0.128	<0.128	<0.128	<0.128	<0.128	NA	<0.128	NA	<2		2.60	0.70			
PCB 18	<0.150	<0.150	<0.150	1.46	1.24	1.09	<0.150	NA	1.26	14.5	<2		21.7	1.6			
PCB 28	0.538	0.531	0.523	NA	NA	3.7	0.531	1.4	3.68	NA	2.24	0.41	27.7	2.9	**-3.1**	-1.9	0.1
PCB 52	4.80	4.90	5.14	10.6	8.77	8.20	4.95	3.5	9.18	13.4	7.10	0.75	**124**	**32**	-1.2	-1.2	0.2
PCB 44	2.13	2.19	2.22	7.80	6.26	5.64	2.18	2.2	6.57	16.9	5.54	1.40	75.0	6.0	-2.4	-1.0	0.1
PCB 66/95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17.8	3.9	156	12			
PCB 101/90	23.3	23.3	24.8	13.7	11.9	11.3	23.8	3.7	12.3	10.4	38.1	4.5	**124**	**37**	-1.5	-1.3	0.2
PCB 118	24.2	24.4	25.4	12.4	10.6	10.4	24.7	2.6	11.1	10.0	50.9	5.3	**132**	**60**	-2.1	-2.0	0.2
PCB 153	56.5	56.3	57.1	12.3	11.1	11.1	56.6	0.8	11.5	5.9	157	14	**83.0**	**39.0**	-2.6	-2.9	0.1
PCB 105	10.5	10.6	10.9	6.59	5.30	5.08	10.7	2.4	5.65	14.4	21.7	2.7	**54.0**	**24.0**	-2.0	-1.6	0.2
PCB 138/163/164	46.8	47.0	49.5	13.9	11.5	11.2	47.8	3.1	12.2	12.1	136	9	**102**	**23**	-2.6	**-3.9**	0.2
PCB 187/182	26.2	25.8	26.7	3.47	3.15	2.99	26.2	1.6	3.20	7.7	54.2	4.2	**36.0**	**16.0**	-2.1	-2.8	0.1
PCB 128	17.3	17.0	17.2	2.78	2.25	2.09	17.2	0.9	2.37	15.3	26.9	6.2	17.7	1.4	-1.4	-0.7	0.1
PCB 180	36.0	36.3	35.8	1.60	1.47	1.41	36.0	0.8	1.49	6.5	75.0	6.9	**46.0**	**14.0**	-2.1	-2.3	0.1
PCB 170/190	24.3	19.3	16.3	0.854	0.741	0.662	20.0	20.5	0.752	12.8	29.1	3.7	**22.0**	**8.0**	-1.3	-1.0	1.4
PCB 195	3.40	3.44	3.29	<0.120	<0.120	<0.120	3.38	2.3	<0.120	NA	5.19	0.65	4.38	0.90	-1.4	-1.2	0.2
PCB 206	3.37	3.32	3.47	<0.098	<0.098	<0.098	3.39	2.4	<0.0980	NA	5.06	0.50	4.50	0.90	-1.3	-1.5	0.2
PCB 209	0.906	0.890	0.934	<0.100	<0.100	<0.100	0.910	2.5	<0.100	NA	1.33	0.23	4.40	0.90	-1.3	-0.8	0.2
PCB 66	6.00	5.90	6.16	13.3	10.7	9.19	6.02	2.2	11.1	18.8	9.16	1.72	125	10	-1.4	-1.1	0.1
PCB 95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11.7	1.4	50.0	7.0			

Laboratory: 42
PCBs in Fish Homogenate IV

Reported Results	No. of Analytes	%
Quantitative	15	83.3
Qualitative	4	22.2
Not Determined	1	5.6

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	7	11	15
2 to 3	7	3	0
≥ 3	1	1	0

[a]z- and p-scores ≥ 3 are bolded. [b]Certified material reference values are bolded.

Appendix D: Results by Laboratory, Sediment IX

FY99 NIST Intercomparison Exercise

Laboratory No.: 1

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant)

Reporting Date: 3/3/00

PAH

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry 1/6/00 S 1	Sediment IX 1/6/00 S 2	Sediment IX 1/6/00 S 3	SRM 1941a, ng/g dry 1/6/00 S 1	SRM 1941a 1/6/00 S 2	SRM 1941a 1/6/00 S 3	Sediment IX lab mean ng/g dry	Sediment IX lab %RSD	SRM 1941a lab mean ng/g dry	SRM 1941a lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	Sediment IX 95% CL	SRM 1941a, ng/g dry target value[b]	SRM 1941a 95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
naphthalene	794	811	807	989	992	1000	804	1.1	994	0.6	756	113	**1010**	**140**	0.3	0.2	0.1
2-methylnaphthalene	233	236	239	298	297	297	236	1.3	297	0.2	241	34	325	60	-0.1	-0.1	0.1
1-methylnaphthalene	95.8	101	95.9	141	144	141	97.6	3.0	142	1.2	111	18	150	30	-0.5	-0.3	0.2
biphenyl	48.5	47.5	47.9	70.2	72.7	76.8	48.0	1.0	73.2	4.6	73.3	12.5	100	36	-1.4	-0.9	0.1
2,6-dimethylnaphthalene	91.7	92.6	95.6	131	130	131	93.3	2.2	131	0.4	85.4	14.0	120	24	0.4	0.2	0.1
acenaphthylene	39.7	39.4	36.6	39.8	41.1	40.1	38.6	4.4	40.3	1.7	53.6	8.5	60.0	28.0	-1.1	-0.7	0.3
acenaphthene	37.8	37.3	36.0	36.2	35.5	38.7	37.0	2.5	36.8	4.6	35.7	4.7	41.0	10.0	0.1	0.1	0.2
1,6,7-trimethylnaphthalene	18.8	18.1	18.5	31.7	28.3	28.0	18.5	1.9	29.3	7.0	27.7	5.3	48.0	10.0	-1.3	-1.0	0.1
fluorene	97.0	98.9	96.2	95.8	98.4	98.4	97.4	1.4	97.5	1.5	78.8	11.5	**97.3**	**8.6**	0.9	0.7	0.1
phenanthrene	309	328	308	496	498	478	315	3.6	491	2.2	383	43	**489**	**23**	-0.7	-0.7	0.2
anthracene	145	149	139	188	182	177	144	3.5	182	3.0	174	19	**184**	**14**	-0.7	-0.6	0.2
1-methylphenanthrene	50.9	54.3	52.7	93.9	92.6	89.7	52.6	3.2	92.1	2.3	76.0	11.1	101	27	-1.2	-1.0	0.2
fluoranthene	456	466	472	971	989	956	465	1.7	972	1.7	635	71	**981**	**78**	-1.1	-1.0	0.1
pyrene	400	406	409	819	809	810	405	1.1	813	0.7	594	62	**811**	**24**	-1.3	-1.2	0.1
benz[a]anthracene	213	226	217	395	388	396	219	3.0	393	1.1	343	30	**427**	**25**	-1.5	-1.6	0.2
chrysene + triphenylene	310	305	299	556	560	559	305	1.8	558	0.4	404	37	577	35	-1.0	-1.1	0.1
benzofluoranthenes [b+j+k]	579	595	601	1449	1390	1397	592	1.9	1412	2.3	815	85	1441	150	-1.1	-1.0	0.1
benzo[e]pyrene	241	238	229	554	559	560	236	2.6	558	0.6	320	34	**553**	**59**	-1.1	-1.0	0.2
benzo[a]pyrene	261	251	248	596	618	604	253	2.7	606	1.8	354	42	**628**	**52**	-1.1	-1.0	0.2
perylene	252	248	240	405	388	391	247	2.5	395	2.3	416	63	**452**	**58**	-1.6	-1.1	0.2
indeno[1,2,3-cd]pyrene	172	177	178	503	517	503	176	1.8	508	1.6	287	36	**501**	**72**	-1.6	-1.2	0.1
dibenz[a,h]anthracene + [a,c]	62.9	61.7	59.9	73.7	79.5	74.0	61.5	2.5	75.7	4.3	78.1	14.2	**117**	**14**	-0.8	-0.5	0.2
benzo[ghi]perylene	181	189	187	507	522	527	186	2.2	519	2.0	259	27	**525**	**67**	-1.1	-1.0	0.1

Laboratory: 1

PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	23	100.0
Qualitative	0	0.0
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	23	23	23
2 to 3	0	0	0
≥ 3	0	0	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 1**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 3/3/00

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/5/00 S 1	1/6/00 S 2	1/6/00 S 3	1/6/00 S 1	1/6/00 S 2	1/6/00 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	<1	<1	<1	<1	<1	<1	<1	NA	<1	NA	<1		<2				
hexachlorobenzene	4.71	4.42	4.59	61.8	65.3	57.8	4.57	3.2	61.6	6.1	5.88	0.74	**70.0**	**25.0**	-0.9	-0.7	0.2
gamma-HCH	<1	<1	<1	<1	<1	<1	<1	NA	<1	NA	<1		<2				
heptachlor	<1	<1	<1	<1	<1	<1	<1	NA	<1	NA	0.796	0.553	<2				
aldrin	<1	<1	<1	<1	<1	<1	<1	NA	<1	NA	0.438	0.313	<2				
heptachlor epoxide	<1	<1	<1	<1	<1	<1	<1	NA	<1	NA	0.125	0.111	<2				
oxychlordane	<2	<2	<2	<2	<2	<2	<2	NA	<2	NA	0.694	0.613	<3				
trans-chlordane	0.279	0.213	0.235	2.13	1.96	1.90	0.242	13.9	2.00	6.0	0.624	0.236	<2		-2.4	-0.2	0.9
2,4'-DDE	0.204	0.194	0.196	0.673	0.648	0.643	0.198	2.7	0.655	2.5	0.451	0.150	**0.73**	**0.11**	-2.2	-0.1	0.2
endosulfan I	<1	<1	<1	<1	<1	<1	<1	NA	<1	NA	<1	0.0	<2				
cis-chlordane	0.536	0.534	0.539	2.13	1.96	1.98	0.536	0.5	2.02	4.6	0.977	0.339	**2.33**	**0.56**	-1.8	-0.2	0.0
trans-nonachlor	0.431	0.407	0.477	1.17	1.08	1.13	0.438	8.1	1.13	4.0	0.404	0.108	**1.26**	**0.13**	0.3	0.0	0.5
dieldrin	<1	<1	<1	1.22	1.21	1.26	<1	NA	1.23	2.2	0.779	0.337	1.26	0.37			
4,4'-DDE	2.26	2.29	2.27	6.00	5.99	6.24	2.27	0.7	6.08	2.3	3.34	0.45	**6.59**	**0.56**	-1.3	-0.6	0.0
2,4'-DDD	<1	<1	<1	<1	<1	<1	<1	NA	<1	NA	1.12	0.50	<2				
endrin	<1	<1	<1	<1	<1	<1	<1	NA	<1	NA	<1		<2				
endosulfan II	<1	<1	<1	<1	<1	<1	<1	NA	<1	NA	<2		<2				
4,4'-DDD	3.36	3.32	3.02	4.85	5.91	5.93	3.23	5.7	5.56	11.1	4.10	0.53	**5.06**	**0.56**	-0.8	-0.5	0.4
2,4'-DDT	<1	<1	<1	<1	<1	<1	<1	NA	<1	NA	<2		<2				
cis-nonachlor	0.135	0.133	0.113	0.856	0.829	0.856	0.127	9.6	0.847	1.8	0.296	0.193	<2		-2.3	-0.1	0.6
4,4'-DDT	0.739	0.699	0.735	1.56	1.34	1.55	0.724	3.0	1.48	8.4	1.29	0.79	1.25	0.10	-1.7	-0.3	0.2
mirex	<1	<1	<1	<1	<1	<1	<1	NA	<1	NA	<1		<2				

Laboratory: 1
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	9	40.9
Qualitative	13	59.1
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	6	9	9
2 to 3	3	0	0
≥ 3	0	0	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 1

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant)

Reporting Date: 3/3/00

PCBs

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry 1/6/00 S 1	S 2	S 3	SRM 1941a, ng/g dry 1/6/00 S 1	S 2	S 3	Sediment IX lab mean ng/g dry	lab %RSD	SRM 1941a lab mean ng/g dry	lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	95% CL	SRM 1941a, ng/g dry target value[b]	95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
PCB 8	1.35	1.38	1.06	1.58	1.52	1.68	1.26	14.0	1.59	5.1	1.72	0.47	1.69	0.38	-1.1	-0.5	0.9
PCB 18	1.79	1.86	1.69	3.30	2.82	2.81	1.78	4.8	2.98	9.4	2.20	0.36	3.86	2.25	-0.8	-0.4	0.3
PCB 28	2.92	3.37	3.28	6.15	6.10	6.32	3.19	7.5	6.19	1.9	5.09	0.76	9.80	3.70	-1.5	-2.0	0.5
PCB 52	3.44	3.72	3.81	7.14	6.81	7.19	3.66	5.3	7.05	2.9	5.03	0.50	**6.89**	**0.56**	-1.1	-1.4	0.4
PCB 44	2.74	2.72	2.74	4.92	4.65	4.73	2.73	0.4	4.77	2.9	3.79	0.49	**4.80**	**0.62**	-1.1	-1.1	0.0
PCB 66/95							NA	NA	NA	NA	8.63	1.22	**14.3**	**2.5**			
PCB 101/90	3.64	3.61	3.34	10.6	10.3	10.4	3.53	4.7	10.4	1.5	5.62	0.70	**11.0**	**1.6**	-1.5	-2.2	0.3
PCB 118	3.43	3.42	3.37	9.72	9.79	9.56	3.41	0.9	9.69	1.2	4.39	0.42	**10.0**	**1.1**	-0.9	-1.0	0.1
PCB 153	3.73	3.94	3.72	14.2	14.7	14.3	3.80	3.3	14.4	1.8	5.59	0.81	**17.6**	**1.9**	-1.3	-1.9	0.2
PCB 105	0.979	0.851	0.887	3.10	3.00	3.27	0.906	7.3	3.12	4.4	1.52	0.28	**3.65**	**0.27**	-1.6	-0.6	0.5
PCB 138/163/164	3.07	3.02	3.18	12.1	12.8	12.7	3.09	2.6	12.5	3.0	5.01	0.71	**13.4**	**1.0**	-1.5	-2.0	0.2
PCB 187/182	1.28	1.28	1.12	5.59	5.51	5.41	1.23	7.5	5.50	1.6	2.27	0.40	7.00	2.60	-1.8	-1.1	0.5
PCB 128	0.490	0.456	0.445	1.83	1.80	1.81	0.464	5.1	1.81	0.8	0.823	0.204	**1.87**	**0.32**	-1.7	-0.4	0.3
PCB 180	1.59	1.64	1.64	7.56	8.15	7.78	1.62	1.8	7.83	3.8	3.33	0.41	8.00	2.00	-2.1	-1.8	0.1
PCB 170/190	1.06	0.99	1.02	3.45	3.25	3.49	1.02	3.7	3.40	3.8	1.94	0.52	4.00	1.00	-1.9	-1.0	0.2
PCB 195	<1	<1	<1	<1	<1	<1	<1		<1		1.19	0.42	<3				
PCB 206	1.56	1.55	1.67	3.66	3.71	3.68	1.59	4.2	3.68	0.7	2.55	0.34	**3.67**	**0.87**	-1.5	-1.0	0.3
PCB 209	2.99	3.15	3.08	8.56	8.66	8.67	3.07	2.6	8.63	0.7	4.72	0.69	**8.34**	**0.49**	-1.4	-1.7	0.2
PCB 66	3.39	3.53	3.42	6.71	6.65	6.55	3.45	2.1	6.64	1.2	4.71	0.68	**6.80**	**1.40**	-1.1	-1.3	0.1
PCB 95	2.54	2.79	2.75	6.86	6.81	6.63	2.69	5.0	6.77	1.8	3.34	0.83	**7.50**	**1.10**	-0.8	-0.7	0.3

Laboratory: 1
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	16	88.9
Qualitative	1	5.6
Not Determined	1	5.6

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	15	15	16
2 to 3	1	1	0
≥ 3	0	0	0

Water in Sediment IX

	SedimentIX, % S 1	S 2	S 3	lab mean, %	lab %RSD	Sediment IX, % assigned	95% CL	exercise, % mean	95% CL	Sediment IX z (25%)	z (s)	p (15%)
water	45.1	45.2	45.1	45.1	0.1	46.2	3.3	46.2	3.3	-0.1	-0.1	0.0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 2**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 8/19/99

PAH

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	S 1	S 2	S 3	S 1	S 2	S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
naphthalene							NA	NA	NA	NA	756	113	**1010**	**140**			
2-methylnaphthalene							NA	NA	NA	NA	241	34	325	60			
1-methylnaphthalene							NA	NA	NA	NA	111	18	150	30			
biphenyl							NA	NA	NA	NA	73.3	12.5	100	36			
2,6-dimethylnaphthalene							NA	NA	NA	NA	85.4	14.0	120	24			
acenaphthylene							NA	NA	NA	NA	53.6	8.5	60.0	28.0			
acenaphthene							NA	NA	NA	NA	35.7	4.7	41.0	10.0			
1,6,7-trimethylnaphthalene							NA	NA	NA	NA	27.7	5.3	48.0	10.0			
fluorene							NA	NA	NA	NA	78.8	11.5	**97.3**	**8.6**			
phenanthrene							NA	NA	NA	NA	383	43	**489**	**23**			
anthracene							NA	NA	NA	NA	174	19	**184**	**14**			
1-methylphenanthrene							NA	NA	NA	NA	76.0	11.1	101	27			
fluoranthene							NA	NA	NA	NA	635	71	**981**	**78**			
pyrene							NA	NA	NA	NA	594	62	**811**	**24**			
benz[a]anthracene							NA	NA	NA	NA	343	30	**427**	**25**			
chrysene + triphenylene							NA	NA	NA	NA	404	37	577	35			
benzofluoranthenes [b+j+k]							NA	NA	NA	NA	815	85	1441	150			
benzo[e]pyrene							NA	NA	NA	NA	320	34	**553**	**59**			
benzo[a]pyrene							NA	NA	NA	NA	354	42	**628**	**52**			
perylene							NA	NA	NA	NA	416	63	**452**	**58**			
indeno[1,2,3-cd]pyrene							NA	NA	NA	NA	287	36	**501**	**72**			
dibenz[a,h]anthracene + [a,c]							NA	NA	NA	NA	78.1	14.2	**117**	**14**			
benzo[ghi]perylene							NA	NA	NA	NA	259	27	**525**	**67**			

Laboratory: 2
PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	0	0.0
Qualitative	0	0.0
Not Determined	23	100.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	0	0	0
2 to 3	0	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 2**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 8/19/99

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/5/00 S 1	7/26/99 S 2	8/2/99 S 3	8/2/99 S 1	S 2	S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	NA	NA	NA	NA	____	____	NA	NA	NA	NA	<1		<2				
hexachlorobenzene	6.09	5.96	5.81	57.7	____	____	5.95	2.4	57.7	NA	5.88	0.74	**70.0**	**25.0**	0.1	0.0	0.2
gamma-HCH	<2	<2	<2	1.73	____	____	<2	NA	1.73	NA	<1		<2				
heptachlor	<2	<2	<2	<2	____	____	<2	NA	<2	NA	0.796	0.553	<2				
aldrin	<2	<2	<2	<2	____	____	<2	NA	<2	NA	0.438	0.313	<2				
heptachlor epoxide	<2	<2	<2	<2	____	____	<2	NA	<2	NA	0.125	0.111	<2				
oxychlordane	<2	<2	<2	1.60	____	____	<2	NA	1.60	NA	0.694	0.613	<3				
trans-chlordane	<2	<2	<2	<2	____	____	<2	NA	<2	NA	0.624	0.236	<2				
2,4'-DDE	<2	<2	<2	<2	____	____	<2	NA	<2	NA	0.451	0.150	**0.73**	**0.11**			
endosulfan I	<2	<2	<2	<2	____	____	<2	NA	<2	NA	<1	0.0	<2				
cis-chlordane	1.49	1.32	1.44	2.62	____	____	1.42	6.2	2.62	NA	0.977	0.339	**2.33**	**0.56**	1.8	0.2	0.4
trans-nonachlor	<2	<2	<2	1.48	____	____	<2	NA	1.48	NA	0.404	0.108	**1.26**	**0.13**			
dieldrin	1.29	1.39	1.30	1.31	____	____	1.33	4.2	1.31	NA	0.779	0.337	1.26	0.37	2.8	0.3	0.3
4,4'-DDE	2.95	2.80	2.69	6.32	____	____	2.81	4.6	6.32	NA	3.34	0.45	**6.59**	**0.56**	-0.6	-0.3	0.3
2,4'-DDD	3.60	2.86	2.72	2.31	____	____	3.06	15.5	2.31	NA	1.12	0.50	<2		**6.9**	1.1	1.0
endrin	<2	<2	<2	<2	____	____	<2	NA	<2	NA	<1		<2				
endosulfan II	<2	<2	<2	<2	____	____	<2	NA	<2	NA	<2		<2				
4,4'-DDD	4.98	4.39	4.25	5.87	____	____	4.54	8.5	5.87	NA	4.10	0.53	**5.06**	**0.56**	0.4	0.2	0.6
2,4'-DDT	<2	<2	<2	<2	____	____	<2	NA	<2	NA	<2		<2				
cis-nonachlor	<2	<2	<2	<2	____	____	<2	NA	<2	NA	0.296	0.193	<2				
4,4'-DDT	1.12	1.44	1.62	1.47	____	____	1.39	18.2	1.47	NA	1.29	0.79	1.25	0.10	0.3	0.1	1.2
mirex	<2	<2	<2	<2	____	____	<2	NA	<2	NA	<1		<2				

Laboratory: 2
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	7	31.8
Qualitative	14	63.6
Not Determined	1	4.5

Category	Number by Category		
	z (25%)	z (s)	p (15%)
≤ 2	5	7	7
2 to 3	1	0	0
≥ 3	1	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 2**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 8/19/99

PCBs

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	7/26/99 S 1	7/26/99 S 2	7/26/99 S 3	7/26/99 S 1	7/26/99 S 2	7/26/99 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
PCB 8	2.09	2.17	2.02	2.00	____	____	2.09	3.6	2.00	NA	1.72	0.47	1.69	0.38	0.9	0.4	0.2
PCB 18	1.09	1.13	1.08	2.02	____	____	1.10	2.4	2.02	NA	2.20	0.36	3.86	2.25	-2.0	-1.1	0.2
PCB 28	5.31	5.34	4.97	7.03	____	____	5.21	3.9	7.03	NA	5.09	0.76	9.80	3.70	0.1	0.1	0.3
PCB 52	5.31	5.28	5.04	5.59	____	____	5.21	2.8	5.59	NA	5.03	0.50	**6.89**	**0.56**	0.1	0.2	0.2
PCB 44	5.55	5.39	5.14	7.12	____	____	5.36	3.9	7.12	NA	3.79	0.49	**4.80**	**0.62**	1.7	1.6	0.3
PCB 66/95	10.6	10.3	9.93	16.23	____	____	10.3	3.1	16.2	NA	8.63	1.22	**14.3**	**2.5**	0.8	1.7	0.2
PCB 101/90	7.48	7.38	7.05	15.0	____	____	7.30	3.1	15.0	NA	5.62	0.70	**11.0**	**1.6**	1.2	1.7	0.2
PCB 118	4.69	4.60	4.65	10.5	____	____	4.65	1.0	10.5	NA	4.39	0.42	**10.0**	**1.1**	0.2	0.3	0.1
PCB 153	6.10	5.68	5.64	14.5	____	____	5.81	4.4	14.5	NA	5.59	0.81	**17.6**	**1.9**	0.2	0.2	0.3
PCB 105	2.89	2.83	2.95	3.93	____	____	2.89	2.1	3.93	NA	1.52	0.28	**3.65**	**0.27**	**3.6**	1.4	0.1
PCB 138/163/164	5.55	5.27	5.32	13.1	____	____	5.38	2.8	13.1	NA	5.01	0.71	**13.4**	**1.0**	0.3	0.4	0.2
PCB 187/182	2.83	2.67	2.61	6.80	____	____	2.70	4.2	6.80	NA	2.27	0.40	7.00	2.60	0.8	0.4	0.3
PCB 128	0.880	0.850	0.910	1.98	____	____	0.880	3.4	1.98	NA	0.823	0.204	**1.87**	**0.32**	0.3	0.1	0.2
PCB 180	3.91	3.98	3.53	9.73	____	____	3.81	6.4	9.73	NA	3.33	0.41	8.00	2.00	0.6	0.5	0.4
PCB 170/190	1.80	1.75	1.68	4.22	____	____	1.74	3.5	4.22	NA	1.94	0.52	4.00	1.00	-0.4	-0.2	0.2
PCB 195	<2	<2	<2	2.72	____	____	<2		2.72	NA	1.19	0.42	<3				
PCB 206	2.19	2.13	1.98	6.46	____	____	2.10	5.2	6.46	NA	2.55	0.34	**3.67**	**0.87**	-0.7	-0.5	0.3
PCB 209	6.45	6.08	5.93	10.8	____	____	6.15	4.3	10.8	NA	4.72	0.69	**8.34**	**0.49**	1.2	1.5	0.3
PCB 66	____	____	____	____	____	____	NA	NA	NA	NA	4.71	0.68	**6.80**	**1.40**			
PCB 95	____	____	____	____	____	____	NA	NA	NA	NA	3.34	0.83	**7.50**	**1.10**			

Laboratory: 2
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	17	94.4
Qualitative	1	5.6
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	16	17	17
2 to 3	0	0	0
≥ 3	1	0	0

Water in Sediment IX

	SedimentIX, %			lab		Sediment IX, %		exercise, %		Sediment IX		
	S 1	S 2	S 3	mean, %	%RSD	assigned	95% CL	mean	95% CL	z (25%)	z (s)	p (15%)
water	46.5	46.0	47.1	46.5	1.2	46.2	3.3	46.2	3.3	0.0	0.0	0.1

[a]z- and p-scores ≥ 3 are bolded. [b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 3**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 10/28/99

PAH

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	S 1	S 2	S 3	S 1	S 2	S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
naphthalene							NA	NA	NA	NA	756	113	**1010**	**140**			
2-methylnaphthalene							NA	NA	NA	NA	241	34	325	60			
1-methylnaphthalene							NA	NA	NA	NA	111	18	150	30			
biphenyl							NA	NA	NA	NA	73.3	12.5	100	36			
2,6-dimethylnaphthalene							NA	NA	NA	NA	85.4	14.0	120	24			
acenaphthylene							NA	NA	NA	NA	53.6	8.5	60.0	28.0			
acenaphthene							NA	NA	NA	NA	35.7	4.7	41.0	10.0			
1,6,7-trimethylnaphthalene							NA	NA	NA	NA	27.7	5.3	48.0	10.0			
fluorene							NA	NA	NA	NA	78.8	11.5	**97.3**	**8.6**			
phenanthrene							NA	NA	NA	NA	383	43	**489**	**23**			
anthracene							NA	NA	NA	NA	174	19	**184**	**14**			
1-methylphenanthrene							NA	NA	NA	NA	76.0	11.1	101	27			
fluoranthene							NA	NA	NA	NA	635	71	**981**	**78**			
pyrene							NA	NA	NA	NA	594	62	**811**	**24**			
benz[a]anthracene							NA	NA	NA	NA	343	30	**427**	**25**			
chrysene + triphenylene							NA	NA	NA	NA	404	37	577	35			
benzofluoranthenes [b+j+k]							NA	NA	NA	NA	815	85	1441	150			
benzo[e]pyrene							NA	NA	NA	NA	320	34	**553**	**59**			
benzo[a]pyrene							NA	NA	NA	NA	354	42	**628**	**52**			
perylene							NA	NA	NA	NA	416	63	**452**	**58**			
indeno[1,2,3-cd]pyrene							NA	NA	NA	NA	287	36	**501**	**72**			
dibenz[a,h]anthracene + [a,c]							NA	NA	NA	NA	78.1	14.2	**117**	**14**			
benzo[ghi]perylene							NA	NA	NA	NA	259	27	**525**	**67**			

Laboratory: 3
PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	0	0.0
Qualitative	0	0.0
Not Determined	23	100.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	0	0	0
2 to 3	0	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 3**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 10/28/99

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/5/00 S 1	10/28/99 S 2	10/28/99 S 3	10/28/99 S 1	10/28/99 S 2	10/28/99 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	0.00						NA	NA	NA	NA	<1		<2				
hexachlorobenzene	3.11	3.79	3.57	24.6	24.4	29.6	3.49	9.9	26.2	11.4	5.88	0.74	**70.0**	**25.0**	-1.6	-1.3	0.7
gamma-HCH							NA	NA	NA	NA	<1		<2				
heptachlor							NA	NA	NA	NA	0.796	0.553	<2				
aldrin							NA	NA	NA	NA	0.438	0.313	<2				
heptachlor epoxide							NA	NA	NA	NA	0.125	0.111	<2				
oxychlordane							NA	NA	NA	NA	0.694	0.613	<3				
trans-chlordane				2.19	2.38	2.60	NA	NA	2.39	8.6	0.624	0.236	<2				
2,4'-DDE							NA	NA	NA	NA	0.451	0.150	**0.73**	**0.11**			
endosulfan I							NA	NA	NA	NA	<1	0.0	<2				
cis-chlordane	0.313	0.289	0.394	1.28	0.94	1.32	0.332	16.6	1.18	17.5	0.977	0.339	**2.33**	**0.56**	-2.6	-0.4	1.1
trans-nonachlor				0.800	0.480	0.940	NA	NA	0.740	31.9	0.404	0.108	**1.26**	**0.13**			
dieldrin							NA	NA	NA	NA	0.779	0.337	1.26	0.37			
4,4'-DDE	2.71	3.79	3.21	4.77	5.11	5.03	3.24	16.7	4.97	3.6	3.34	0.45	**6.59**	**0.56**	-0.1	-0.1	1.1
2,4'-DDD							NA	NA	NA	NA	1.12	0.50	<2				
endrin							NA	NA	NA	NA	<1		<2				
endosulfan II							NA	NA	NA	NA	<2		<2				
4,4'-DDD	2.85	3.55	3.60	3.45	3.82	4.11	3.33	12.6	3.79	8.7	4.10	0.53	**5.06**	**0.56**	-0.7	-0.4	0.8
2,4'-DDT							NA	NA	NA	NA	<2		<2				
cis-nonachlor	2.39	2.96	2.91	2.67	3.03	3.08	2.75	11.5	2.93	7.6	0.296	0.193	<2		**33.2**	1.3	0.8
4,4'-DDT	0.693	0.792	0.898	1.35	2.78	1.47	0.794	12.9	1.87	42.5	1.29	0.79	1.25	0.10	-1.5	-0.3	0.9
mirex							NA	NA	NA	NA	<1		<2				

Laboratory: 3
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	6	27.3
Qualitative	0	0.0
Not Determined	16	72.7

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	4	6	6
2 to 3	1	0	0
≥ 3	1	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 3

Sample: QA99SED9 - Marine Sediment IX

(data reported as if three figures were significant)

Reporting Date: 10/28/99

PCBs

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	10/28/99 S 1	10/28/99 S 2	10/28/99 S 3	10/28/99 S 1	10/28/99 S 2	10/28/99 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
PCB 8	0.615	1.56	1.66	1.27	1.32	1.60	1.28	45.1	1.40	12.7	1.72	0.47	1.69	0.38	-1.0	-0.5	3.0
PCB 18	1.35	2.08	1.91	1.27	0.780	0.977	1.78	21.5	1.01	24.4	2.20	0.36	3.86	2.25	-0.8	-0.4	1.4
PCB 28	3.13	3.34	3.16	5.98	4.26	5.26	3.21	3.5	5.17	16.7	5.09	0.76	9.80	3.70	-1.5	-1.9	0.2
PCB 52	3.59	5.06	4.36	5.51	3.98	4.86	4.34	17.0	4.78	16.1	5.03	0.50	**6.89**	**0.56**	-0.6	-0.7	1.1
PCB 44	2.78	3.64	3.51	4.36	3..59	4.26	3.31	14.0	4.31	1.6	3.79	0.49	**4.80**	**0.62**	-0.5	-0.5	0.9
PCB 66/95							NA	NA	NA	NA	8.63	1.22	**14.3**	**2.5**			
PCB 101/90	5.20	5.61	4.98	11.0	10.6	12.1	5.26	6.1	11.2	6.8	5.62	0.70	**11.0**	**1.6**	-0.3	-0.4	0.4
PCB 118	3.05	3.81	4.15	5.74	4.96	6.15	3.67	15.3	5.62	10.8	4.39	0.42	**10.0**	**1.1**	-0.7	-0.7	1.0
PCB 153	4.13	5.01	4.83	9.2	8.1	10.0	4.66	10.0	9.1	10.4	5.59	0.81	**17.6**	**1.9**	-0.7	-1.0	0.7
PCB 105	0.968	1.45	1.26	2.10	1.69	2.14	1.23	19.8	1.98	12.6	1.52	0.28	**3.65**	**0.27**	-0.8	-0.3	1.3
PCB 138/163/164	3.13	4.84	4.67	9.33	8.07	10.4	4.21	22.4	9.3	12.7	5.01	0.71	**13.4**	**1.0**	-0.6	-0.8	1.5
PCB 187/182	1.89	2.81	2.32	2.85	3.86	5.05	2.34	19.7	3.92	28.1	2.27	0.40	7.00	2.60	0.1	0.1	1.3
PCB 128	____	____	____	____	____	____	NA	NA	NA	NA	0.823	0.204	**1.87**	**0.32**			
PCB 180	3.06	2.55	4.16	6.69	5.60	7.24	3.26	25.3	6.51	12.8	3.33	0.41	8.00	2.00	-0.1	-0.1	1.7
PCB 170/190	1.28	1.64	1.72	2.60	2.73	3.20	1.55	15.2	2.84	11.1	1.94	0.52	4.00	1.00	-0.8	-0.4	1.0
PCB 195	0.535	0.740	0.717	0.660	0.560	0.806	0.664	16.9	0.675	18.3	1.19	0.42	<3		-1.8	-0.5	1.1
PCB 206	3.20	4.23	3.68	2.67	2.70	2.92	3.70	13.9	2.76	4.9	2.55	0.34	**3.67**	**0.87**	1.8	1.2	0.9
PCB 209	5.18	6.08	6.39	7.24	5.59	8.00	5.88	10.7	6.94	17.7	4.72	0.69	**8.34**	**0.49**	1.0	1.2	0.7
PCB 66	3.79	4.50	4.93	9.44	12.68	7.12	4.41	13.1	9.75	28.7	4.71	0.68	**6.80**	**1.40**	-0.3	-0.3	0.9
PCB 95	2.84	3.25	3.17	4.51	4.01	4.83	3.09	7.0	4.45	9.3	3.34	0.83	**7.50**	**1.10**	-0.3	-0.3	0.5

Laboratory: 3
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	16	88.9
Qualitative	0	0.0
Not Determined	2	11.1

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	16	16	15
2 to 3	0	0	0
≥ 3	0	0	1

Water in Sediment IX

	SedimentIX, %			lab		Sediment IX, %		exercise, %		Sediment IX		
	S 1	S 2	S 3	mean, %	%RSD	assigned	95% CL	mean	95% CL	z (25%)	z (s)	p (15%)
water	46.3	46.4	45.4	46.0	1.2	46.2	3.3	46.2	3.3	0.0	0.0	0.1

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 4**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 10/22/99

PAH

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	8/5/99 S 1	8/5/99 S 2	8/5/99 S 3	8/5/99 S 1	8/5/99 S 2	8/5/99 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
naphthalene	256	282	261	774	654	798	266	5.2	742	10.4	756	113	**1010**	**140**	-2.6	-1.8	0.3
2-methylnaphthalene	60.7	64.9	61.2	310	263	319	62.3	3.7	297	10.1	241	34	325	60	**-3.0**	-2.2	0.2
1-methylnaphthalene	27.7	31.1	28.5	151	124	149	29.1	6.1	141	10.6	111	18	150	30	-2.9	-2.0	0.4
biphenyl	15.4	16.7	16.7	102	87.7	101	16.3	4.6	96.9	8.2	73.3	12.5	100	36	-3.1	-1.9	0.3
2,6-dimethylnaphthalene	19.9	20.5	20.0	144	126	152	20.1	1.6	141	9.5	85.4	14.0	120	24	-3.1	-2.1	0.1
acenaphthylene	21.2	22.1	23.7	123	108	105	22.3	5.7	112	8.6	53.6	8.5	60.0	28.0	-2.3	-1.6	0.4
acenaphthene	11.1	10.7	12.2	46.4	41.0	40.2	11.3	6.9	42.5	7.9	35.7	4.7	41.0	10.0	-2.7	-2.1	0.5
1,6,7-trimethylnaphthalene	5.61	5.92	7.06	48.9	40.5	42.6	6.20	12.3	44.0	9.9	27.7	5.3	48.0	10.0	-3.1	-2.3	0.8
fluorene	17.9	17.4	17.5	64.9	59.8	66.5	17.6	1.5	63.7	5.5	78.8	11.5	**97.3**	**8.6**	-3.1	-2.2	0.1
phenanthrene	78.0	76.3	76.3	461	415	472	76.9	1.3	449	6.7	383	43	**489**	**23**	-3.2	-2.9	0.1
anthracene	36.6	36.4	35.7	208	195	223	36.2	1.3	209	6.7	174	19	**184**	**14**	-3.2	-3.0	0.1
1-methylphenanthrene	12.1	10.2	9.15	78.1	74.6	72.0	10.5	14.3	74.9	4.1	76.0	11.1	101	27	-3.4	-2.7	1.0
fluoranthene	155	135	124	888	825	902	138	11.4	872	4.7	635	71	**981**	**78**	-3.1	-2.8	0.8
pyrene	143	128	127	692	682	787	133	6.8	720	8.0	594	62	**811**	**24**	-3.1	-3.0	0.5
benz[a]anthracene	91.2	77.8	68.8	442	406	513	79.3	14.2	454	12.0	343	30	**427**	**25**	-3.1	-3.4	0.9
chrysene + triphenylene	100	84.0	80.7	590	555	590	88.2	11.7	578	3.5	404	37	577	35	-3.1	-3.4	0.8
benzofluoranthenes [b+j+k]	209	189	162	1480	1390	1600	187	12.6	1490	7.1	815	85	1441	150	-3.1	-2.9	0.8
benzo[e]pyrene	69.7	63.8	62.1	537	561	640	65.2	6.1	579	9.3	320	34	**553**	**59**	-3.2	-2.9	0.4
benzo[a]pyrene	102	91	76	540	492	619	89.4	14.9	550	11.7	354	42	**628**	**52**	-3.0	-2.6	1.0
perylene	74.4	71.0	60.5	392	362	414	68.6	10.6	389	6.7	416	63	**452**	**58**	-3.3	-2.2	0.7
indeno[1,2,3-cd]pyrene	78.2	69.4	58.1	593	581	666	68.6	14.7	613	7.5	287	36	**501**	**72**	-3.0	-2.3	1.0
dibenz[a,h]anthracene + [a,c]	15.9	14.7	12.4	118	106	121	14.3	12.4	115	6.9	78.1	14.2	**117**	**14**	-3.3	-1.9	0.8
benzo[ghi]perylene	69.0	61.0	52.7	529	516	594	60.9	13.4	546	7.6	259	27	**525**	**67**	-3.1	-2.8	0.9

Laboratory: 4
PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	23	100.0
Qualitative	0	0.0
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	0	5	23
2 to 3	4	14	0
≥ 3	19	4	0

[a]z- and p-scores ≥ 3 are bolded. [b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 4**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 10/22/99

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	ng/g dry						lab mean	lab	lab mean	lab	assigned		target		z-score	z-score	p-score
	S 1	S 2	S 3	S 1	S 2	S 3	ng/g dry	%RSD	ng/g dry	%RSD	value	95% CL	value[b]	95% CL	(25%)	(s)	(15%)
alpha-HCH							NA	NA	NA	NA	<1		<2				
hexachlorobenzene							NA	NA	NA	NA	5.88	0.74	**70.0**	**25.0**			
gamma-HCH							NA	NA	NA	NA	<1		<2				
heptachlor							NA	NA	NA	NA	0.796	0.553	<2				
aldrin							NA	NA	NA	NA	0.438	0.313	<2				
heptachlor epoxide							NA	NA	NA	NA	0.125	0.111	<2				
oxychlordane							NA	NA	NA	NA	0.694	0.613	<3				
trans-chlordane							NA	NA	NA	NA	0.624	0.236	<2				
2,4'-DDE							NA	NA	NA	NA	0.451	0.150	**0.73**	**0.11**			
endosulfan I							NA	NA	NA	NA	<1	0.0	<2				
cis-chlordane							NA	NA	NA	NA	0.977	0.339	**2.33**	**0.56**			
trans-nonachlor							NA	NA	NA	NA	0.404	0.108	**1.26**	**0.13**			
dieldrin							NA	NA	NA	NA	0.779	0.337	1.26	0.37			
4,4'-DDE							NA	NA	NA	NA	3.34	0.45	**6.59**	**0.56**			
2,4'-DDD							NA	NA	NA	NA	1.12	0.50	<2				
endrin							NA	NA	NA	NA	<1		<2				
endosulfan II							NA	NA	NA	NA	<2		<2				
4,4'-DDD							NA	NA	NA	NA	4.10	0.53	**5.06**	**0.56**			
2,4'-DDT							NA	NA	NA	NA	<2		<2				
cis-nonachlor							NA	NA	NA	NA	0.296	0.193	<2				
4,4'-DDT							NA	NA	NA	NA	1.29	0.79	1.25	0.10			
mirex							NA	NA	NA	NA	<1		<2				

Laboratory: 4
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	0	0.0
Qualitative	0	0.0
Not Determined	22	100.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	0	0	0
2 to 3	0	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 4**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 10/22/99

PCBs

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry S 1	S 2	S 3	SRM 1941a, ng/g dry S 1	S 2	S 3	Sediment IX lab mean ng/g dry	Sediment IX lab %RSD	SRM 1941a lab mean ng/g dry	SRM 1941a lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	95% CL	SRM 1941a, ng/g dry target value[b]	95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
PCB 8	___	___	___	___	___	___	NA	NA	NA	NA	1.72	0.47	1.69	0.38			
PCB 18	___	___	___	___	___	___	NA	NA	NA	NA	2.20	0.36	3.86	2.25			
PCB 28	___	___	___	___	___	___	NA	NA	NA	NA	5.09	0.76	9.80	3.70			
PCB 52	___	___	___	___	___	___	NA	NA	NA	NA	5.03	0.50	**6.89**	**0.56**			
PCB 44	___	___	___	___	___	___	NA	NA	NA	NA	3.79	0.49	**4.80**	**0.62**			
PCB 66/95	___	___	___	___	___	___	NA	NA	NA	NA	8.63	1.22	**14.3**	**2.5**			
PCB 101/90	___	___	___	___	___	___	NA	NA	NA	NA	5.62	0.70	**11.0**	**1.6**			
PCB 118	___	___	___	___	___	___	NA	NA	NA	NA	4.39	0.42	**10.0**	**1.1**			
PCB 153	___	___	___	___	___	___	NA	NA	NA	NA	5.59	0.81	**17.6**	**1.9**			
PCB 105	___	___	___	___	___	___	NA	NA	NA	NA	1.52	0.28	**3.65**	**0.27**			
PCB 138/163/164	___	___	___	___	___	___	NA	NA	NA	NA	5.01	0.71	**13.4**	**1.0**			
PCB 187/182	___	___	___	___	___	___	NA	NA	NA	NA	2.27	0.40	7.00	2.60			
PCB 128	___	___	___	___	___	___	NA	NA	NA	NA	0.823	0.204	**1.87**	**0.32**			
PCB 180	___	___	___	___	___	___	NA	NA	NA	NA	3.33	0.41	8.00	2.00			
PCB 170/190	___	___	___	___	___	___	NA	NA	NA	NA	1.94	0.52	4.00	1.00			
PCB 195	___	___	___	___	___	___	NA	NA	NA	NA	1.19	0.42	<3				
PCB 206	___	___	___	___	___	___	NA	NA	NA	NA	2.55	0.34	**3.67**	**0.87**			
PCB 209	___	___	___	___	___	___	NA	NA	NA	NA	4.72	0.69	**8.34**	**0.49**			
PCB 66	___	___	___	___	___	___	NA	NA	NA	NA	4.71	0.68	**6.80**	**1.40**			
PCB 95	___	___	___	___	___	___	NA	NA	NA	NA	3.34	0.83	**7.50**	**1.10**			

Laboratory: 4
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	0	0.0
Qualitative	0	0.0
Not Determined	18	100.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	0	0	0
2 to 3	0	0	0
≥ 3	0	0	0

Water in Sediment IX

	Sediment IX, % S 1	S 2	S 3	lab mean, %	lab %RSD	Sediment IX, % assigned	95% CL	exercise, % mean	95% CL	Sediment IX z (25%)	z (s)	p (15%)
water	43.0	43.0	43.0	43.0	0.0	46.2	3.3	46.2	3.3	-0.3	-0.3	0.0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 5**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 10/1/00

PAH

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	S 1	S 2	S 3	S 1	S 2	S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
naphthalene	___	___	___	___	___	___	NA	NA	NA	NA	756	113	**1010**	**140**			
2-methylnaphthalene	___	___	___	___	___	___	NA	NA	NA	NA	241	34	325	60			
1-methylnaphthalene	___	___	___	___	___	___	NA	NA	NA	NA	111	18	150	30			
biphenyl	___	___	___	___	___	___	NA	NA	NA	NA	73.3	12.5	100	36			
2,6-dimethylnaphthalene	___	___	___	___	___	___	NA	NA	NA	NA	85.4	14.0	120	24			
acenaphthylene	___	___	___	___	___	___	NA	NA	NA	NA	53.6	8.5	60.0	28.0			
acenaphthene	___	___	___	___	___	___	NA	NA	NA	NA	35.7	4.7	41.0	10.0			
1,6,7-trimethylnaphthalene	___	___	___	___	___	___	NA	NA	NA	NA	27.7	5.3	48.0	10.0			
fluorene	___	___	___	___	___	___	NA	NA	NA	NA	78.8	11.5	**97.3**	**8.6**			
phenanthrene	___	___	___	___	___	___	NA	NA	NA	NA	383	43	**489**	**23**			
anthracene	___	___	___	___	___	___	NA	NA	NA	NA	174	19	**184**	**14**			
1-methylphenanthrene	___	___	___	___	___	___	NA	NA	NA	NA	76.0	11.1	101	27			
fluoranthene	___	___	___	___	___	___	NA	NA	NA	NA	635	71	**981**	**78**			
pyrene	___	___	___	___	___	___	NA	NA	NA	NA	594	62	**811**	**24**			
benz[a]anthracene	___	___	___	___	___	___	NA	NA	NA	NA	343	30	**427**	**25**			
chrysene + triphenylene	___	___	___	___	___	___	NA	NA	NA	NA	404	37	577	35			
benzofluoranthenes [b+j+k]	___	___	___	___	___	___	NA	NA	NA	NA	815	85	1441	150			
benzo[e]pyrene	___	___	___	___	___	___	NA	NA	NA	NA	320	34	**553**	**59**			
benzo[a]pyrene	___	___	___	___	___	___	NA	NA	NA	NA	354	42	**628**	**52**			
perylene	___	___	___	___	___	___	NA	NA	NA	NA	416	63	**452**	**58**			
indeno[1,2,3-cd]pyrene	___	___	___	___	___	___	NA	NA	NA	NA	287	36	**501**	**72**			
dibenz[a,h]anthracene + [a,c]	___	___	___	___	___	___	NA	NA	NA	NA	78.1	14.2	**117**	**14**			
benzo[ghi]perylene	___	___	___	___	___	___	NA	NA	NA	NA	259	27	**525**	**67**			

Laboratory: 5
PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	0	0.0
Qualitative	0	0.0
Not Determined	23	100.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	0	0	0
2 to 3	0	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 5**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 10/1/00

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/5/00 S 1	S 2	S 3	S 1	S 2	S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH							NA	NA	NA	NA	<1		<2				
hexachlorobenzene							NA	NA	NA	NA	5.88	0.74	**70.0**	**25.0**			
gamma-HCH							NA	NA	NA	NA	<1		<2				
heptachlor							NA	NA	NA	NA	0.796	0.553	<2				
aldrin							NA	NA	NA	NA	0.438	0.313	<2				
heptachlor epoxide							NA	NA	NA	NA	0.125	0.111	<2				
oxychlordane							NA	NA	NA	NA	0.694	0.613	<3				
trans-chlordane							NA	NA	NA	NA	0.624	0.236	<2				
2,4'-DDE							NA	NA	NA	NA	0.451	0.150	**0.73**	**0.11**			
endosulfan I							NA	NA	NA	NA	<1	0.0	<2				
cis-chlordane							NA	NA	NA	NA	0.977	0.339	**2.33**	**0.56**			
trans-nonachlor							NA	NA	NA	NA	0.404	0.108	**1.26**	**0.13**			
dieldrin							NA	NA	NA	NA	0.779	0.337	1.26	0.37			
4,4'-DDE							NA	NA	NA	NA	3.34	0.45	**6.59**	**0.56**			
2,4'-DDD							NA	NA	NA	NA	1.12	0.50	<2				
endrin							NA	NA	NA	NA	<1		<2				
endosulfan II							NA	NA	NA	NA	<2		<2				
4,4'-DDD							NA	NA	NA	NA	4.10	0.53	**5.06**	**0.56**			
2,4'-DDT							NA	NA	NA	NA	<2		<2				
cis-nonachlor							NA	NA	NA	NA	0.296	0.193	<2				
4,4'-DDT							NA	NA	NA	NA	1.29	0.79	1.25	0.10			
mirex							NA	NA	NA	NA	<1		<2				

Laboratory: 5
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	0	0.0
Qualitative	0	0.0
Not Determined	22	100.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	0	0	0
2 to 3	0	0	0
≥ 3	0	0	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 5**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 10/1/00

PCBs

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry 10/26/99 S 1	S 2	S 3	SRM 1941a, ng/g dry 10/26/99 S 1	S 2	S 3	Sediment IX lab mean ng/g dry	lab %RSD	SRM 1941a lab mean ng/g dry	lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	95% CL	SRM 1941a, ng/g dry target value[b]	95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
PCB 8	2.30	1.30	2.10	1.90	1.20	3.90	1.90	27.9	2.33	60.1	1.72	0.47	1.69	0.38	0.4	0.2	1.9
PCB 18	2.00	1.90	1.00	3.40	3.00	4.20	1.63	33.7	3.53	17.3	2.20	0.36	3.86	2.25	-1.0	-0.6	2.2
PCB 28	5.10	3.40	3.70	7.70	4.50	11.2	4.07	22.3	7.80	43.0	5.09	0.76	9.80	3.70	-0.8	-1.1	1.5
PCB 52	5.80	4.80	4.80	6.20	5.80	5.20	5.13	11.2	5.73	8.8	5.03	0.50	**6.89**	**0.56**	0.1	0.1	0.7
PCB 44	7.80	7.10	5.60	4.90	5.10	7.20	6.83	16.4	5.73	22.2	3.79	0.49	**4.80**	**0.62**	**3.2**	**3.1**	1.1
PCB 66/95	___	___	___	___	___	___	NA	NA	NA	NA	8.63	1.22	**14.3**	**2.5**			
PCB 101/90	___	___	___	___	___	___	NA	NA	NA	NA	5.62	0.70	**11.0**	**1.6**			
PCB 118	7.90	5.10	7.90	8.80	6.50	9.50	6.97	23.2	8.27	19.0	4.39	0.42	**10.0**	**1.1**	2.3	2.7	1.5
PCB 153	11.5	10.7	9.40	11.5	7.90	13.0	10.5	10.1	10.8	24.3	5.59	0.81	**17.6**	**1.9**	**3.5**	**5.1**	0.7
PCB 105	7.60	8.90	11.10	7.30	3.00	1.60	9.20	19.2	3.97	74.9	1.52	0.28	**3.65**	**0.27**	**20.1**	**7.9**	1.3
PCB 138/163/164	___	___	___	___	___	___	NA	NA	NA	NA	5.01	0.71	**13.4**	**1.0**			
PCB 187/182	___	___	___	___	___	___	NA	NA	NA	NA	2.27	0.40	7.00	2.60			
PCB 128	3.10	3.30	2.70	3.30	1.80	3.20	3.03	10.1	2.77	30.3	0.823	0.204	**1.87**	**0.32**	**10.7**	2.3	0.7
PCB 180	4.50	3.80	5.20	9.00	6.70	8.70	4.50	15.6	8.13	15.4	3.33	0.41	8.00	2.00	1.4	1.2	1.0
PCB 170/190	___	___	___	___	___	___	NA	NA	NA	NA	1.94	0.52	4.00	1.00			
PCB 195	3.30	2.50	<2,0	4.20	<2,0	2.50	2.90	19.5	3.35	35.9	1.19	0.42	<3		**5.8**	1.8	1.3
PCB 206	<2,0	<2,0	2.60	5.30	4.10	3.20	2.60	NA	4.20	25.1	2.55	0.34	**3.67**	**0.87**	0.1	0.0	
PCB 209	3.10	4.70	4.00	9.10	8.10	6.60	3.93	20.4	7.93	15.9	4.72	0.69	**8.34**	**0.49**	-0.7	-0.8	1.4
PCB 66	9.20	9.10	6.60	7.30	6.30	11.9	8.30	17.7	8.50	35.1	4.71	0.68	**6.80**	**1.40**	**3.0**	**3.7**	1.2
PCB 95	___	___	___	___	___	___	NA	NA	NA	NA	3.34	0.83	**7.50**	**1.10**			

Laboratory: 5
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	13	72.2
Qualitative	0	0.0
Not Determined	5	27.8

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	7	8	11
2 to 3	0	2	1
≥ 3	6	4	0

Water in Sediment IX

	Sediment IX, % S 1	S 2	S 3	lab mean, %	lab %RSD	Sediment IX, % assigned	95% CL	exercise, % mean	95% CL	Sediment IX z (25%)	z (s)	p (15%)
water	45.8	46.2	46.0	46.0	0.4	46.2	3.3	46.2	3.3	0.0	0.0	0.0

[a]z- and p-scores ≥ 3 are bolded. [b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 6**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 1/19/00

PAH

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	8/30/99 S 1	8/30/99 S 2	8/30/99 S 3	8/30/99 S 1	8/30/99 S 2	8/30/99 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
naphthalene	376	NA	360	603	NA	877	368	3.1	740	26.2	756	113	**1010**	**140**	-2.1	-1.4	0.2
2-methylnaphthalene	142	NA	130	NA	NA	NA	136	6.2	NA	NA	241	34	325	60	-1.7	-1.3	0.4
1-methylnaphthalene	62.5	NA	63.9	NA	NA	NA	63.2	1.6	NA	NA	111	18	150	30	-1.7	-1.2	0.1
biphenyl	35.4	NA	32.7	66.2	NA	92.7	34.1	5.6	79.5	23.6	73.3	12.5	100	36	-2.1	-1.3	0.4
2,6-dimethylnaphthalene	57.9	NA	52.8	NA	NA	NA	55.4	6.5	NA	NA	85.4	14.0	120	24	-1.4	-1.0	0.4
acenaphthylene	24.3	NA	21.9	33.5	NA	46.3	23.1	7.3	39.9	22.7	53.6	8.5	60.0	28.0	-2.3	-1.5	0.5
acenaphthene	18.9	NA	18.1	27.4	NA	52.7	18.5	3.1	40.1	44.7	35.7	4.7	41.0	10.0	-1.9	-1.5	0.2
1,6,7-trimethylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27.7	5.3	48.0	10.0			
fluorene	57.9	NA	49.1	60.9	NA	78.9	53.5	11.6	69.9	18.2	78.8	11.5	**97.3**	**8.6**	-1.3	-0.9	0.8
phenanthrene	211	NA	206	368	NA	552	209	1.7	460	28.3	383	43	**489**	**23**	-1.8	-1.7	0.1
anthracene	95.2	NA	90.6	146	NA	217	92.9	3.5	182	27.7	174	19	**184**	**14**	-1.9	-1.8	0.2
1-methylphenanthrene	41.2	NA	38.4	70.5	NA	134	39.8	5.0	102	43.9	76.0	11.1	101	27	-1.9	-1.5	0.3
fluoranthene	299	NA	305	620	NA	915	302	1.4	768	27.2	635	71	**981**	**78**	-2.1	-1.9	0.1
pyrene	269	NA	265	490	NA	734	267	1.1	612	28.2	594	62	**811**	**24**	-2.2	-2.1	0.1
benz[a]anthracene	194	NA	175	460	NA	555	185	7.3	508	13.2	343	30	**427**	**25**	-1.8	-2.0	0.5
chrysene + triphenylene	182	NA	153	353	NA	376	168	12.2	365	4.5	404	37	577	35	-2.3	-2.6	0.8
benzofluoranthenes [b+j+k]	480	NA	487	1340	NA	1560	484	1.0	1450	10.7	815	85	1441	150	-1.6	-1.5	0.1
benzo[e]pyrene	202	NA	185	597	NA	713	194	6.2	655	12.5	320	34	**553**	**59**	-1.6	-1.4	0.4
benzo[a]pyrene	192	NA	172	519	NA	601	182	7.8	560	10.4	354	42	**628**	**52**	-1.9	-1.7	0.5
perylene	265	NA	241	367	NA	442	253	6.7	405	13.1	416	63	**452**	**58**	-1.6	-1.0	0.4
indeno[1,2,3-cd]pyrene	159	NA	144	421	NA	461	152	7.0	441	6.4	287	36	**501**	**72**	-1.9	-1.4	0.5
dibenz[a,h]anthracene + [a,c]	43.0	NA	37.8	107	NA	112	40.4	9.1	110	3.2	78.1	14.2	**117**	**14**	-1.9	-1.1	0.6
benzo[ghi]perylene	156	NA	149	437	NA	483	153	3.2	460	7.1	259	27	**525**	**67**	-1.6	-1.5	0.2

Laboratory: 6
PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	22	95.7
Qualitative	0	0.0
Not Determined	1	4.3

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	16	20	22
2 to 3	6	2	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 6**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 1/19/00

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/5/00 S 1	NA S 2	NA S 3	NA S 1	NA S 2	NA S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1		<2				
hexachlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.88	0.74	**70.0**	**25.0**			
gamma-HCH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1		<2				
heptachlor	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.796	0.553	<2				
aldrin	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.438	0.313	<2				
heptachlor epoxide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.125	0.111	<2				
oxychlordane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.694	0.613	<3				
trans-chlordane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.624	0.236	<2				
2,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.451	0.150	**0.73**	**0.11**			
endosulfan I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	0.0	<2				
cis-chlordane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.977	0.339	**2.33**	**0.56**			
trans-nonachlor	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.404	0.108	**1.26**	**0.13**			
dieldrin	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.779	0.337	1.26	0.37			
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.34	0.45	**6.59**	**0.56**			
2,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.12	0.50	<2				
endrin	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1		<2				
endosulfan II	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2		<2				
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.10	0.53	**5.06**	**0.56**			
2,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2		<2				
cis-nonachlor	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.296	0.193	<2				
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.29	0.79	1.25	0.10			
mirex	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1		<2				

Laboratory: 6
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	0	0.0
Qualitative	0	0.0
Not Determined	22	100.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	0	0	0
2 to 3	0	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 6**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 1/19/00

PCBs

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry 8/30/99 S 1	S 2	S 3	SRM 1941a, ng/g dry 8/30/99 S 1	S 2	S 3	Sediment IX lab mean ng/g dry	lab %RSD	SRM 1941a lab mean ng/g dry	lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	95% CL	SRM 1941a, ng/g dry target value[b]	95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
PCB 8	3.10	NA	3.70	4.00	NA	4.25	3.40	12.5	4.13	4.3	1.72	0.47	1.69	0.38	**3.9**	1.7	0.8
PCB 18	3.09	NA	2.97	4.06	NA	3.79	3.03	2.8	3.93	4.9	2.20	0.36	3.86	2.25	1.5	0.9	0.2
PCB 28	9.60	NA	9.92	13.0	NA	12.7	9.76	2.3	12.9	1.7	5.09	0.76	9.80	3.70	**3.7**	**4.8**	0.2
PCB 52	6.65	NA	6.38	11.3	NA	9.41	6.52	2.9	10.4	12.9	5.03	0.50	**6.89**	**0.56**	1.2	1.5	0.2
PCB 44	4.75	NA	4.58	7.28	NA	6.02	4.67	2.6	6.65	13.4	3.79	0.49	**4.80**	**0.62**	0.9	0.9	0.2
PCB 66/95	*	NA	*	*	NA	*	NA	NA	NA	NA	8.63	1.22	**14.3**	**2.5**			
PCB 101/90	5.75	NA	5.45	12.8	NA	11.5	5.60	3.8	12.2	7.6	5.62	0.70	**11.0**	**1.6**	0.0	0.0	0.3
PCB 118	5.03	NA	4.52	10.7	NA	9.52	4.78	7.6	10.1	8.3	4.39	0.42	**10.0**	**1.1**	0.4	0.4	0.5
PCB 153	8.47	NA	6.44	16.1	NA	18.2	7.46	19.3	17.2	8.7	5.59	0.81	**17.6**	**1.9**	1.3	1.9	1.3
PCB 105	1.85	NA	1.44	4.15	NA	3.68	1.65	17.6	3.92	8.5	1.52	0.28	**3.65**	**0.27**	0.3	0.1	1.2
PCB 138/163/164	6.39	NA	4.03	11.6	NA	12.2	5.21	32.0	11.9	3.6	5.01	0.71	**13.4**	**1.0**	0.2	0.2	2.1
PCB 187/182	2.70	NA	2.00	5.79	NA	6.45	2.35	21.1	6.12	7.6	2.27	0.40	7.00	2.60	0.1	0.1	1.4
PCB 128	0.902	NA	0.806	1.61	NA	1.81	0.854	7.9	1.71	8.3	0.823	0.204	**1.87**	**0.32**	0.2	0.0	0.5
PCB 180	4.59	NA	3.38	9.57	NA	10.9	3.99	21.5	10.2	9.2	3.33	0.41	8.00	2.00	0.8	0.7	1.4
PCB 170/190	1.96	NA	1.45	4.38	NA	4.77	1.71	21.2	4.58	6.0	1.94	0.52	4.00	1.00	-0.5	-0.2	1.4
PCB 195	0.325	NA	0.344	NA	NA	NA	0.335	4.0	NA	NA	1.19	0.42	<3		-2.9	-0.9	0.3
PCB 206	2.06	NA	2.03	3.27	NA	3.18	2.05	1.0	3.23	2.0	2.55	0.34	**3.67**	**0.87**	-0.8	-0.5	0.1
PCB 209	4.64	NA	4.58	8.71	NA	8.91	4.61	0.9	8.81	1.6	4.72	0.69	**8.34**	**0.49**	-0.1	-0.1	0.1
PCB 66	6.32	NA	5.30	10.2	NA	6.95	5.81	12.4	8.58	26.8	4.71	0.68	**6.80**	**1.40**	0.9	1.1	0.8
PCB 95	4.61	NA	4.00	9.10	NA	8.63	4.31	10.0	8.87	3.7	3.34	0.83	**7.50**	**1.10**	1.2	1.0	0.7

Laboratory: 6
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	17	94.4
Qualitative	0	0.0
Not Determined	1	5.6

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	14	16	16
2 to 3	1	0	1
≥ 3	2	1	0

Water in Sediment IX

	Sediment IX, % S 1	S 2	S 3	lab mean, %	lab %RSD	Sediment IX, % assigned	95% CL	exercise, % mean	95% CL	Sediment IX z (25%)	z (s)	p (15%)
water	46.3	NA	44.7	45.5	2.5	46.2	3.3	46.2	3.3	-0.1	-0.1	0.2

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 7

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant)

Reporting Date: 1/18/00

PAH

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry 11/17/99 S 1	S 2	S 3	SRM 1941a, ng/g dry 11/17/99 S 1	S 2	S 3	Sediment IX lab mean ng/g dry	lab %RSD	SRM 1941a lab mean ng/g dry	lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	95% CL	SRM 1941a, ng/g dry target value[b]	95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
naphthalene	634	1195	943	1160	763	1110	924	30.4	1011	21.4	756	113	**1010**	**140**	0.9	0.6	2.0
2-methylnaphthalene	225	308	236	364	300	391	256	17.6	352	13.3	241	34	325	60	0.3	0.2	1.2
1-methylnaphthalene	90.0	142	107	181	160	193	113	23.5	178	9.4	111	18	150	30	0.1	0.1	1.6
biphenyl	102	90.0	117	137	100	157	103	13.1	131	22.0	73.3	12.5	100	36	1.6	1.0	0.9
2,6-dimethylnaphthalene	108	156	124	187	175	196	129	18.9	186	5.7	85.4	14.0	120	24	2.1	1.4	1.3
acenaphthylene	89.0	130	108	134	134	149	109	18.8	139	6.2	53.6	8.5	60.0	28.0	**4.1**	2.8	1.3
acenaphthene	42.6	63.4	44.9	61.0	50.0	64.7	50.3	22.7	58.6	13.1	35.7	4.7	41.0	10.0	1.6	1.3	1.5
1,6,7-trimethylnaphthalene	55.7	87.2	70.6	115	123	130	71.2	22.1	123	6.1	27.7	5.3	48.0	10.0	**6.3**	**4.7**	1.5
fluorene	98.7	156	124	112	109	121	126	22.7	114	5.5	78.8	11.5	**97.3**	**8.6**	2.4	1.7	1.5
phenanthrene	475	667	574	776	701	810	572	16.8	762	7.3	383	43	**489**	**23**	2.0	1.8	1.1
anthracene	295	290	249	333	245	281	278	9.1	286	15.5	174	19	**184**	**14**	2.4	2.3	0.6
1-methylphenanthrene	<52	<52	<52	<52	<52	<52	<52	NA	<52	NA	76.0	11.1	101	27			
fluoranthene	712	864	709	1040	885	967	762	11.6	964	8.0	635	71	**981**	**78**	0.8	0.7	0.8
pyrene	619	751	583	779	767	953	651	13.6	833	12.5	594	62	**811**	**24**	0.4	0.4	0.9
benz[a]anthracene	316	388	313	413	405	498	339	12.5	439	11.7	343	30	**427**	**25**	0.0	-0.1	0.8
chrysene + triphenylene	388	485	350	585	627	646	408	17.1	619	5.0	404	37	577	35	0.0	0.0	1.1
benzofluoranthenes [b+j+k]	740	1020	712	1345	1672	1537	824	20.7	1518	10.8	815	85	1441	150	0.0	0.0	1.4
benzo[e]pyrene	297	403	270	554	670	603	323	21.7	609	9.6	320	34	**553**	**59**	0.0	0.0	1.4
benzo[a]pyrene	275	379	252	495	572	562	302	22.4	543	7.7	354	42	**628**	**52**	-0.6	-0.5	1.5
perylene	371	442	304	350	369	388	372	18.5	369	5.1	416	63	**452**	**58**	-0.4	-0.3	1.2
indeno[1,2,3-cd]pyrene	239	273	168	426	496	430	227	23.6	451	8.7	287	36	**501**	**72**	-0.8	-0.6	1.6
dibenz[a,h]anthracene + [a,c]	<62	<62	<62	113.0	<62	130.0	<62	NA	122	9.9	78.1	14.2	**117**	**14**			
benzo[ghi]perylene	220	221	137	392	440	371	193	25.0	401	8.8	259	27	**525**	**67**	-1.0	-0.9	1.7

Laboratory: 7

PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	21	91.3
Qualitative	2	8.7
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	16	18	21
2 to 3	3	2	0
≥ 3	2	1	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 7**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 1/18/00

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/5/00	11/15/99	11/15/99	11/15/99	11/15/99	11/15/99	lab mean	lab	lab mean	lab	assigned		target		z-score	z-score	p-score
	S 1	S 2	S 3	S 1	S 2	S 3	ng/g dry	%RSD	ng/g dry	%RSD	value	95% CL	value[b]	95% CL	(25%)	(s)	(15%)
alpha-HCH	0.00	DL	DL	0.00	DL	DL	DL	DL	DL	DL	<1		<2				
hexachlorobenzene	0.00	DL	DL	0.0	DL	DL	DL	DL	DL	DL	5.88	0.74	**70.0**	**25.0**			
gamma-HCH	0.00	DL	DL	0.00	DL	DL	DL	DL	DL	DL	<1		<2				
heptachlor	0.00	DL	DL	0.00	DL	DL	DL	DL	DL	DL	0.796	0.553	<2				
aldrin	0.00	DL	DL	0.00	DL	DL	DL	DL	DL	DL	0.438	0.313	<2				
heptachlor epoxide	0.00	DL	DL	0.00	DL	DL	DL	DL	DL	DL	0.125	0.111	<2				
oxychlordane	0.00	DL	DL	0.00	DL	DL	DL	DL	DL	DL	0.694	0.613	<3				
trans-chlordane	0.000	DL	DL	0.00	DL	DL	DL	DL	DL	DL	0.624	0.236	<2				
2,4'-DDE	0.000	DL	2.79	0.000	2.58	2.88	2.79	DL	2.73	7.8	0.451	0.150	**0.73**	**0.11**	**20.8**	1.3	
endosulfan I	0.00	DL	DL	0.00	DL	DL	DL	DL	DL	DL	<1	0.0	<2				
cis-chlordane	0.000	DL	2.59	0.00	4.96	5.63	2.59	DL	5.30	8.9	0.977	0.339	**2.33**	**0.56**	**6.6**	0.9	
trans-nonachlor	0.000	DL	0.357	0.00	1.18	0.992	0.357	DL	1.09	12.2	0.404	0.108	**1.26**	**0.13**	-0.5	0.0	
dieldrin	0.00	DL	DL	0.00	DL	DL	DL	DL	DL	DL	0.779	0.337	1.26	0.37			
4,4'-DDE	0.00	2.07	3.13	0.00	7.75	5.68	2.60	28.8	6.72	21.8	3.34	0.45	**6.59**	**0.56**	-0.9	-0.4	1.9
2,4'-DDD	0.00	DL	DL	0.00	DL	DL	DL	DL	DL	DL	1.12	0.50	<2				
endrin	0.00	DL	DL	0.00	DL	DL	DL	DL	DL	DL	<1		<2				
endosulfan II	0.00	DL	DL	0.00	DL	DL	DL	DL	DL	DL	<2		<2				
4,4'-DDD	0.00	DL	DL	0.00	DL	DL	DL	DL	DL	DL	4.10	0.53	**5.06**	**0.56**			
2,4'-DDT	0.00	DL	DL	0.00	DL	DL	DL	DL	DL	DL	<2		<2				
cis-nonachlor	0.000	DL	DL	0.000	DL	DL	DL	DL	DL	DL	0.296	0.193	<2				
4,4'-DDT	0.000	DL	1.73	0.00	4.19	4.77	1.73	DL	4.48	9.2	1.29	0.79	1.25	0.10	1.4	0.2	
mirex	0.00	DL	DL	0.00	DL	DL	DL	DL	DL	DL	<1		<2				

Laboratory: 7
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	5	22.7
Qualitative	17	77.3
Not Determined	0	0.0

Category	Number by Category		
	z (25%)	z (s)	p (15%)
≤ 2	3	5	1
2 to 3	0	0	0
≥ 3	2	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 7

Sample: QA99SED9 - Marine Sediment IX

(data reported as if three figures were significant)

Reporting Date: 1/18/00

PCBs

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	11/15/99 S 1	11/15/99 S 2	11/15/99 S 3	11/15/99 S 1	11/15/99 S 2	11/15/99 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
PCB 8	0.00	NA	NA	0.00	NA	NA	NA	NA	NA	NA	1.72	0.47	1.69	0.38			
PCB 18	0.00	2.42	4.18	0.00	6.71	5.84	3.30	37.7	6.28	9.8	2.20	0.36	3.86	2.25	2.0	1.1	2.5
PCB 28	0.00	2.14	4.80	0.00	8.74	8.53	3.47	54.2	8.64	1.7	5.09	0.76	9.80	3.70	-1.3	-1.7	**3.6**
PCB 52	0.00	3.14	7.54	0.00	11.6	11.5	5.34	58.3	11.6	0.6	5.03	0.50	**6.89**	**0.56**	0.2	0.3	**3.9**
PCB 44	0.00	1.89	4.40	0.00	7.16	7.75	3.15	56.4	7.46	5.6	3.79	0.49	**4.80**	**0.62**	-0.7	-0.7	**3.8**
PCB 66/95	0.0	NA	NA	0.00	NA	NA	NA	NA	NA	NA	8.63	1.22	**14.3**	**2.5**			
PCB 101/90	0.00	3.32	8.41	0.0	22.2	23.1	5.87	61.4	22.7	2.8	5.62	0.70	**11.0**	**1.6**	0.2	0.3	**4.1**
PCB 118	0.00	1.86	4.37	0.00	8.51	9.75	3.12	57.0	9.13	9.6	4.39	0.42	**10.0**	**1.1**	-1.2	-1.3	**3.8**
PCB 153	0.00	1.98	5.10	0.0	13.0	13.8	3.54	62.3	13.4	4.2	5.59	0.81	**17.6**	**1.9**	-1.5	-2.1	**4.2**
PCB 105	0.000	0.569	1.39	0.00	3.42	3.41	0.980	59.3	3.42	0.2	1.52	0.28	**3.65**	**0.27**	-1.4	-0.6	**4.0**
PCB 138/163/164	0.00	DL	3.59	0.0	8.68	10.1	3.59	DL	9.39	10.7	5.01	0.71	**13.4**	**1.0**	-1.1	-1.5	
PCB 187/182	0.00	0.530	1.47	0.00	4.86	5.64	1.00	66.5	5.25	10.5	2.27	0.40	7.00	2.60	-2.2	-1.3	**4.4**
PCB 128	0.000	0.506	0.543	0.00	1.73	3.60	0.525	5.0	2.67	49.6	0.823	0.204	**1.87**	**0.32**	-1.5	-0.3	0.3
PCB 180	0.00	DL	DL	0.00	DL	8.09	DL	DL	8.09	DL	3.33	0.41	8.00	2.00			
PCB 170/190	0.00	DL	1.20	0.00	3.63	3.93	1.20	DL	3.78	5.6	1.94	0.52	4.00	1.00	-1.5	-0.8	
PCB 195	0.00	NA	NA	0.00	NA	NA	DL	DL	NA	NA	1.19	0.42	<3				
PCB 206	0.00	DL	DL	0.00	DL	DL	DL	DL	DL	DL	2.55	0.34	**3.67**	**0.87**			
PCB 209	0.00	1.09	DL	0.00	4.80	DL	1.09	DL	4.80	DL	4.72	0.69	**8.34**	**0.49**	**-3.1**	**-3.8**	
PCB 66	0.00	1.93	5.67	0.00	9.36	10.2	3.80	69.6	9.78	6.1	4.71	0.68	**6.80**	**1.40**	-0.8	-0.9	**4.6**
PCB 95	0.00	NA	NA	0.00	NA	NA	NA	NA	NA	NA	3.34	0.83	**7.50**	**1.10**			

Laboratory: 7
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	13	72.2
Qualitative	3	16.7
Not Determined	2	11.1

	Number by Category		
Category	z (25%)	z (s)	p (15%)
≤ 2	11	11	1
2 to 3	1	1	1
≥ 3	1	1	8

Water in Sediment IX

	SedimentIX, %			lab		Sediment IX, %		exercise, %		Sediment IX		
	S 1	S 2	S 3	mean, %	%RSD	assigned	95% CL	mean	95% CL	z (25%)	z (s)	p (15%)
water	47.2	46.2	38.1	43.8	11.4	46.2	3.3	46.2	3.3	-0.2	-0.2	0.8

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 8**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 01/21/2000

PAH

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	11/18/99 S 1	11/18/99 S 2	11/18/99 S 3	11/18/99 S 1	11/18/99 S 2	11/18/99 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
naphthalene	(**)	(**)	(**)	____	____	____	NA	NA	NA	NA	756	113	**1010**	**140**			
2-methylnaphthalene	(**)	(**)	(**)	____	____	____	NA	NA	NA	NA	241	34	325	60			
1-methylnaphthalene	(**)	(**)	(**)	____	____	____	NA	NA	NA	NA	111	18	150	30			
biphenyl	(**)	(**)	(**)	____	____	____	NA	NA	NA	NA	73.3	12.5	100	36			
2,6-dimethylnaphthalene	(**)	(**)	(**)	____	____	____	NA	NA	NA	NA	85.4	14.0	120	24			
acenaphthylene	(**)	(**)	(**)	____	____	____	NA	NA	NA	NA	53.6	8.5	60.0	28.0			
acenaphthene	(**)	(**)	(**)	____	____	____	NA	NA	NA	NA	35.7	4.7	41.0	10.0			
1,6,7-trimethylnaphthalene	(**)	(**)	(**)	____	____	____	NA	NA	NA	NA	27.7	5.3	48.0	10.0			
fluorene	(**)	(**)	(**)	____	____	____	NA	NA	NA	NA	78.8	11.5	**97.3**	**8.6**			
phenanthrene	(**)	(**)	(**)	____	____	____	NA	NA	NA	NA	383	43	**489**	**23**			
anthracene	(**)	(**)	(**)	____	____	____	NA	NA	NA	NA	174	19	**184**	**14**			
1-methylphenanthrene	(**)	(**)	(**)	____	____	____	NA	NA	NA	NA	76.0	11.1	101	27			
fluoranthene	(**)	(**)	(**)	____	____	____	NA	NA	NA	NA	635	71	**981**	**78**			
pyrene	(**)	(**)	(**)	____	____	____	NA	NA	NA	NA	594	62	**811**	**24**			
benz[a]anthracene	(**)	(**)	(**)	____	____	____	NA	NA	NA	NA	343	30	**427**	**25**			
chrysene + triphenylene	(**)	(**)	(**)	____	____	____	NA	NA	NA	NA	404	37	577	35			
benzofluoranthenes [b+j+k]	(**)	(**)	(**)	____	____	____	NA	NA	NA	NA	815	85	1441	150			
benzo[e]pyrene	(**)	(**)	(**)	____	____	____	NA	NA	NA	NA	320	34	**553**	**59**			
benzo[a]pyrene	(**)	(**)	(**)	____	____	____	NA	NA	NA	NA	354	42	**628**	**52**			
perylene	(**)	(**)	(**)	____	____	____	NA	NA	NA	NA	416	63	**452**	**58**			
indeno[1,2,3-cd]pyrene	(**)	(**)	(**)	____	____	____	NA	NA	NA	NA	287	36	**501**	**72**			
dibenz[a,h]anthracene + [a,c]	(**)	(**)	(**)	____	____	____	NA	NA	NA	NA	78.1	14.2	**117**	**14**			
benzo[ghi]perylene	(**)	(**)	(**)	____	____	____	NA	NA	NA	NA	259	27	**525**	**67**			

Laboratory: 8
PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	0	0.0
Qualitative	0	0.0
Not Determined	23	100.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	0	0	0
2 to 3	0	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 8

Sample: QA99SED9 - Marine Sediment IX

(data reported as if three figures were significant)

Reporting Date: 01/21/2000

PESTICIDES

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry 1/5/00 S 1	Sediment IX, ng/g dry 10/1/00 S 2	Sediment IX, ng/g dry 01/17/00 S 3	SRM 1941a, ng/g dry _____ S 1	SRM 1941a, ng/g dry 10/1/00 S 2	SRM 1941a, ng/g dry 01/17/00 S 3	Sediment IX lab mean ng/g dry	Sediment IX lab %RSD	SRM 1941a lab mean ng/g dry	SRM 1941a lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	95% CL	SRM 1941a, ng/g dry target value[b]	95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	< 0.05	< 0.05	< 0.05	____	____	(***)	<0.05	NA	NA	NA	<1		<2				
hexachlorobenzene	0.500	0.300	0.300	____	30.0	28.5	0.367	31.5	29.3	3.6	5.88	0.74	**70.0**	**25.0**	**-3.8**	**-3.0**	2.1
gamma-HCH	0.400	0.300	0.300	____	____	____	0.333	17.3	NA	NA	<1		<2				1.2
heptachlor	1.00	0.900	0.800	____	____	____	0.900	11.1	NA	NA	0.796	0.553	<2		0.5	0.1	0.7
aldrin	0.800	0.400	0.900	____	____	____	0.700	37.8	NA	NA	0.438	0.313	<2		2.4	0.1	2.5
heptachlor epoxide	0.200	0.300	0.200	____	____	____	0.233	24.7	NA	NA	0.125	0.111	<2		**3.5**	0.1	1.6
oxychlordane	0.900	1.20	0.80	____	____	____	0.967	21.5	NA	NA	0.694	0.613	<3		1.6	0.1	1.4
trans-chlordane	1.000	1.000	0.800	____	____	____	0.933	12.4	NA	NA	0.624	0.236	<2		2.0	0.2	0.8
2,4'-DDE	0.600	1.20	0.700	____	0.500	0.200	0.833	38.6	0.350	60.6	0.451	0.150	**0.73**	**0.11**	**3.4**	0.2	2.6
endosulfan I	N.A.	N.A.	N.A.	____	____	____	NA	NA	NA	NA	<1	0.0	<2				
cis-chlordane	1.70	1.00	1.10	____	2.30	1.00	1.27	29.9	1.65	55.7	0.977	0.339	**2.33**	**0.56**	1.2	0.2	2.0
trans-nonachlor	0.200	0.400	0.100	____	1.80	0.50	0.233	65.5	1.15	79.9	0.404	0.108	**1.26**	**0.13**	-1.7	-0.1	**4.4**
dieldrin	0.800	1.00	0.900	____	____	____	0.900	11.1	NA	NA	0.779	0.337	1.26	0.37	0.6	0.1	0.7
4,4'-DDE	3.00	3.20	3.00	____	7.60	7.00	3.07	3.8	7.30	5.8	3.34	0.45	**6.59**	**0.56**	-0.3	-0.1	0.3
2,4'-DDD	0.400	0.500	0.400	____	____	____	0.433	13.3	NA	NA	1.12	0.50	<2		-2.5	-0.4	0.9
endrin	0.200	0.200	0.300	____	____	____	0.233	24.7	NA	NA	<1		<2				1.6
endosulfan II	0.400	0.600	0.200	____	____	____	0.400	50.0	NA	NA	<2		<2				**3.3**
4,4'-DDD	1.60	1.30	1.40	____	0.900	3.00	1.43	10.7	1.95	76.1	4.10	0.53	**5.06**	**0.56**	-2.6	-1.5	0.7
2,4'-DDT	0.300	0.300	0.400	____	____	____	0.333	17.3	NA	NA	<2		<2				1.2
cis-nonachlor	0.200	0.100	0.300	____	____	____	0.200	50.0	NA	NA	0.296	0.193	<2		-1.3	-0.1	**3.3**
4,4'-DDT	0.300	0.600	0.400	____	____	____	0.433	35.3	NA	NA	1.29	0.79	1.25	0.10	-2.7	-0.5	2.4
mirex	<0.05	<0.05	<0.05	____	____	____	<0.05	NA	NA	NA	<1		<2				

Laboratory: 8
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	19	86.4
Qualitative	2	9.1
Not Determined	1	4.5

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	8	14	12
2 to 3	4	0	4
≥ 3	3	1	3

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 8**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 01/21/2000

PCBs

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry S 1	S 2	S 3	SRM 1941a, ng/g dry S 1	S 2	S 3	Sediment IX lab mean ng/g dry	Sediment IX lab %RSD	SRM 1941a lab mean ng/g dry	SRM 1941a lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	95% CL	SRM 1941a, ng/g dry target value[b]	95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
PCB 8	N.A.	N.A.	N.A.	____	____	____	NA	NA	NA	NA	1.72	0.47	1.69	0.38			
PCB 18	0.800	0.900	0.800	____	____	____	0.833	6.9	NA	NA	2.20	0.36	3.86	2.25	-2.5	-1.4	0.5
PCB 28	7.50	3.00	8.10	____	____	____	6.20	45.0	NA	NA	5.09	0.76	9.80	3.70	0.9	1.1	**3.0**
PCB 52	4.10	6.30	3.40	____	14.10	8.10	4.60	32.9	11.10	38.2	5.03	0.50	**6.89**	**0.56**	-0.3	-0.4	2.2
PCB 44	1.40	2.30	3.10	____	4.90	5.50	2.27	37.5	5.20	8.2	3.79	0.49	**4.80**	**0.62**	-1.6	-1.6	2.5
PCB 66/95	5.80	6.40	7.00	____	5.50	5.00	6.40	9.4	5.25	6.7	8.63	1.22	**14.3**	**2.5**	-1.0	-2.3	0.6
PCB 101/90	6.20	6.60	5.80	____	20.1	18.5	6.20	6.5	19.3	5.9	5.62	0.70	**11.0**	**1.6**	0.4	0.6	0.4
PCB 118	3.20	1.80	2.60	____	7.90	9.10	2.53	27.7	8.50	10.0	4.39	0.42	**10.0**	**1.1**	-1.7	-1.9	1.8
PCB 153	10.0	6.10	8.80	____	30.2	25.4	8.30	24.1	27.8	12.2	5.59	0.81	**17.6**	**1.9**	1.9	2.8	1.6
PCB 105	2.00	1.10	0.900	____	8.10	7.00	1.33	43.9	7.55	10.3	1.52	0.28	**3.65**	**0.27**	-0.5	-0.2	2.9
PCB 138/163/164	7.20	6.60	6.20	____	21.0	17.6	6.67	7.5	19.3	12.5	5.01	0.71	**13.4**	**1.0**	1.3	1.7	0.5
PCB 187/182	3.00	2.40	1.90	____	____	____	2.43	22.6	NA	NA	2.27	0.40	7.00	2.60	0.3	0.2	1.5
PCB 128	0.400	0.400	0.500	____	1.50	1.80	0.433	13.3	1.65	12.9	0.823	0.204	**1.87**	**0.32**	-1.9	-0.4	0.9
PCB 180	2.50	2.40	2.70	____	10.80	9.00	2.53	6.0	9.90	12.9	3.33	0.41	8.00	2.00	-1.0	-0.8	0.4
PCB 170/190	3.80	4.30	4.50	____	9.00	8.10	4.20	8.6	8.55	7.4	1.94	0.52	4.00	1.00	**4.7**	2.3	0.6
PCB 195	1.10	1.20	1.30	____	____	____	1.20	8.3	NA	NA	1.19	0.42	<3		0.0	0.0	0.6
PCB 206	2.00	2.40	1.60	____	3.10	3.30	2.00	20.0	3.20	4.4	2.55	0.34	**3.67**	**0.87**	-0.9	-0.6	1.3
PCB 209	____	____	____	____	13.30	11.50	NA	NA	12.40	10.3	4.72	0.69	**8.34**	**0.49**			
PCB 66	____	____	____	____	____	____	NA	NA	NA	NA	4.71	0.68	**6.80**	**1.40**			
PCB 95	____	____	____	____	____	____	NA	NA	NA	NA	3.34	0.83	**7.50**	**1.10**			

Laboratory: 8
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	16	88.9
Qualitative	0	0.0
Not Determined	2	11.1

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	14	13	12
2 to 3	1	3	3
≥ 3	1	0	1

Water in Sediment IX

	SedimentIX, % S 1	S 2	S 3	lab mean, %	lab %RSD	Sediment IX, % assigned	95% CL	exercise, % mean	95% CL	Performance scores[a] Sediment IX z (25%)	z (s)	p (15%)
water	45.9	45.5	44.6	45.3	1.5	46.2	3.3	46.2	3.3	-0.1	-0.1	0.1

[a]z- and p-scores ≥ 3 are bolded. [b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 9

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant)

Reporting Date: 9/22/99

PAH

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Material reference values: Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Performance scores[a] Sediment IX		
	9/16/99 S 1	9/16/99 S 2	9/16/99 S 3	9/16/99 S 1	9/16/99 S 2	9/15/99 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
naphthalene	636	633	447	___	___	___	572	18.9	NA	NA	756	113	**1010**	**140**	-1.0	-0.7	1.3
2-methylnaphthalene	NA	NA	NA	___	___	___	NA	NA	NA	NA	241	34	325	60			
1-methylnaphthalene	NA	NA	NA	___	___	___	NA	NA	NA	NA	111	18	150	30			
biphenyl	NA	NA	NA	___	___	___	NA	NA	NA	NA	73.3	12.5	100	36			
2,6-dimethylnaphthalene	NA	NA	NA	___	___	___	NA	NA	NA	NA	85.4	14.0	120	24			
acenaphthylene	<94	<93	<93	___	___	___	<94	NA	NA	NA	53.6	8.5	60.0	28.0			
acenaphthene	<94	<93	<93	___	___	___	<94	NA	NA	NA	35.7	4.7	41.0	10.0			
1,6,7-trimethylnaphthalene	NA	NA	NA	___	___	___	NA	NA	NA	NA	27.7	5.3	48.0	10.0			
fluorene	94.0	<93	<93	___	___	___	94.0	NA	NA	NA	78.8	11.5	**97.3**	**8.6**	0.8	0.5	
phenanthrene	374	372	317	___	___	___	354	9.1	NA	NA	383	43	**489**	**23**	-0.3	-0.3	0.6
anthracene	168	168	149	___	___	___	162	6.8	NA	NA	174	19	**184**	**14**	-0.3	-0.3	0.5
1-methylphenanthrene	NA	NA	NA	___	___	___	NA	NA	NA	NA	76.0	11.1	101	27			
fluoranthene	561	559	540	___	___	___	553	2.1	NA	NA	635	71	**981**	**78**	-0.5	-0.5	0.1
pyrene	524	503	503	___	___	___	510	2.4	NA	NA	594	62	**811**	**24**	-0.6	-0.5	0.2
benz[a]anthracene	337	335	335	___	___	___	336	0.3	NA	NA	343	30	**427**	**25**	-0.1	-0.1	0.0
chrysene + triphenylene	412	410	410	___	___	___	411	0.3	NA	NA	404	37	577	35	0.1	0.1	0.0
benzofluoranthenes [b+]+k]	842	800	838	___	___	___	827	2.8	NA	NA	815	85	1441	150	0.1	0.1	0.2
benzo[e]pyrene	NA	NA	NA	___	___	___	NA	NA	NA	NA	320	34	**553**	**59**			
benzo[a]pyrene	356	279	317	___	___	___	317	12.1	NA	NA	354	42	**628**	**52**	-0.4	-0.4	0.8
perylene	NA	NA	NA	___	___	___	NA	NA	NA	NA	416	63	**452**	**58**			
indeno[1,2,3-cd]pyrene	225	242	242	___	___	___	236	4.2	NA	NA	287	36	**501**	**72**	-0.7	-0.5	0.3
dibenz[a,h]anthracene + [a,c]	<94	112	112	___	___	___	112	0.0	NA	NA	78.1	14.2	**117**	**14**	1.7	1.0	0.0
benzo[ghi]perylene	281	261	261	___	___	___	268	4.3	NA	NA	259	27	**525**	**67**	0.1	0.1	0.3

Laboratory: 9
PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	13	56.5
Qualitative	2	8.7
Not Determined	8	34.8

Category	Number by Category: z (25%)	z (s)	p (15%)
≤ 2	13	13	12
2 to 3	0	0	0
≥ 3	0	0	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 9**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 9/22/99

PESTICIDES

	Data as submitted by laboratory									Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/5/00 S 1	6/30/99 S 2	6/30/99 S 3	S 1	S 2	S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	<0.025	<0.025	<0.025				<0.025	NA	NA	NA	<1		<2				
hexachlorobenzene	NA	NA	NA				NA	NA	NA	NA	5.88	0.74	**70.0**	**25.0**			
gamma-HCH	<0.025	<0.025	<0.025				<0.025	NA	NA	NA	<1		<2				
heptachlor	<0.029	<0.029	<0.029				<0.029	NA	NA	NA	0.796	0.553	<2				
aldrin	<0.025	<0.025	<0.025				<0.025	NA	NA	NA	0.438	0.313	<2				
heptachlor epoxide	<0.025	<0.025	<0.025				<0.025	NA	NA	NA	0.125	0.111	<2				
oxychlordane	NA	NA	NA				NA	NA	NA	NA	0.694	0.613	<3				
trans-chlordane	<0.025	<0.025	<0.025				<0.025	NA	NA	NA	0.624	0.236	<2				
2,4'-DDE	NA	NA	NA				NA	NA	NA	NA	0.451	0.150	**0.73**	**0.11**			
endosulfan I	<0.025	<0.025	<0.025				<0.025	NA	NA	NA	<1	0.0	<2				
cis-chlordane	<0.025	<0.025	<0.025				<0.025	NA	NA	NA	0.977	0.339	**2.33**	**0.56**			
trans-nonachlor	NA	NA	NA				NA	NA	NA	NA	0.404	0.108	**1.26**	**0.13**			
dieldrin	<0.050	<0.050	<0.050				<0.050	NA	NA	NA	0.779	0.337	1.26	0.37			
4,4'-DDE	3.23	3.44	3.84				3.50	8.8	NA	NA	3.34	0.45	**6.59**	**0.56**	0.2	0.1	0.6
2,4'-DDD	NA	NA	NA				NA	NA	NA	NA	1.12	0.50	<2				
endrin	<0.062	<0.062	<0.062				<0.062	NA	NA	NA	<1		<2				
endosulfan II	<0.054	<0.054	<0.054				<0.054	NA	NA	NA	<2		<2				
4,4'-DDD	2.88	3.44	3.03				3.12	9.3	NA	NA	4.10	0.53	**5.06**	**0.56**	-1.0	-0.5	0.6
2,4'-DDT	NA	NA	NA				NA	NA	NA	NA	<2		<2				
cis-nonachlor	NA	NA	NA				NA	NA	NA	NA	0.296	0.193	<2				
4,4'-DDT	3.20	3.51	3.79				3.50	8.5	NA	NA	1.29	0.79	1.25	0.10	**6.9**	1.2	0.6
mirex	NA	NA	NA				NA	NA	NA	NA	<1		<2				

Laboratory: 9
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	3	13.6
Qualitative	11	50.0
Not Determined	8	36.4

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	2	3	3
2 to 3	0	0	0
≥ 3	1	0	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 9**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 9/22/99

PCBs

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry 9/9/99 S 1	S 2	S 3	SRM 1941a, ng/g dry 9/9/99 S 1	S 2	S 3	Sediment IX lab mean ng/g dry	lab %RSD	SRM 1941a lab mean ng/g dry	lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	95% CL	SRM 1941a, ng/g dry target value[b]	95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
PCB 8	<1.87	<1.86	<1.86	____	____	____	<1.87	NA	NA	NA	1.72	0.47	1.69	0.38			
PCB 18	2.30	2.50	2.24	____	____	____	2.35	5.8	NA	NA	2.20	0.36	3.86	2.25	0.3	0.2	0.4
PCB 28	NA	NA	NA	____	____	____	NA	NA	NA	NA	5.09	0.76	9.80	3.70			
PCB 52	4.84	4.80	3.95	____	____	____	4.53	11.1	NA	NA	5.03	0.50	**6.89**	**0.56**	-0.4	-0.5	0.7
PCB 44	4.60	4.86	4.91	____	____	____	4.79	3.5	NA	NA	3.79	0.49	**4.80**	**0.62**	1.1	1.0	0.2
PCB 66/95	NA	NA	NA	____	____	____	NA	NA	NA	NA	8.63	1.22	**14.3**	**2.5**			
PCB 101/90	5.87	5.49	4.71	____	____	____	5.36	11.0	NA	NA	5.62	0.70	**11.0**	**1.6**	-0.2	-0.3	0.7
PCB 118	5.76	5.80	5.76	____	____	____	5.77	0.4	NA	NA	4.39	0.42	**10.0**	**1.1**	1.3	1.4	0.0
PCB 153	5.20	4.86	4.56	____	____	____	4.87	6.6	NA	NA	5.59	0.81	**17.6**	**1.9**	-0.5	-0.7	0.4
PCB 105	<1.87	<1.86	<1.86	____	____	____	<1.87	NA	NA	NA	1.52	0.28	**3.65**	**0.27**			
PCB 138/163/164	4.34	4.25	4.43	____	____	____	4.34	2.1	NA	NA	5.01	0.71	**13.4**	**1.0**	-0.5	-0.7	0.1
PCB 187/182	2.04	1.74	1.94	____	____	____	1.91	8.0	NA	NA	2.27	0.40	7.00	2.60	-0.6	-0.4	0.5
PCB 128	1.65	1.59	1.63	____	____	____	1.62	1.9	NA	NA	0.823	0.204	**1.87**	**0.32**	**3.9**	0.8	0.1
PCB 180	3.29	2.78	3.32	____	____	____	3.13	9.7	NA	NA	3.33	0.41	8.00	2.00	-0.2	-0.2	0.6
PCB 170/190	1.48	1.61	1.39	____	____	____	1.49	7.4	NA	NA	1.94	0.52	4.00	1.00	-0.9	-0.5	0.5
PCB 195	<1.87	<1.86	<1.86	____	____	____	<1.87	NA	NA	NA	1.19	0.42	<3				
PCB 206	NA	NA	NA	____	____	____	NA	NA	NA	NA	2.55	0.34	**3.67**	**0.87**			
PCB 209	NA	NA	NA	____	____	____	NA	NA	NA	NA	4.72	0.69	**8.34**	**0.49**			
PCB 66	6.49	4.94	5.41	____	____	____	5.61	14.2	NA	NA	4.71	0.68	**6.80**	**1.40**	0.8	0.9	0.9
PCB 95	<1.87	<1.86	<1.86	____	____	____	<1.87	NA	NA	NA	3.34	0.83	**7.50**	**1.10**			

Laboratory: 9
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	11	61.1
Qualitative	3	16.7
Not Determined	4	22.2

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	10	11	11
2 to 3	0	0	0
≥ 3	1	0	0

Water in Sediment IX

	Sediment IX, % S 1	S 2	S 3	lab mean, %	lab %RSD	Sediment IX, % assigned	95% CL	exercise, % mean	95% CL	Sediment IX z (25%)	z (s)	p (15%)
water	46.3	46.3	46.3	46.3	0.0	46.2	3.3	46.2	3.3	0.0	0.0	0.0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 10**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 1/24/00

PAH

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	10/20/99 S 1	10/20/99 S 2	10/20/99 S 3	10/20/99 S 1	10/20/99 S 2	10/20/99 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
naphthalene	927	918	837	886	800	891	894	5.5	859	6.0	756	113	**1010**	**140**	0.7	0.5	0.4
2-methylnaphthalene	263	286	314	265	268	318	288	8.9	284	10.5	241	34	325	60	0.8	0.6	0.6
1-methylnaphthalene	122	131	144	137	140	170	132	8.4	149	12.2	111	18	150	30	0.8	0.5	0.6
biphenyl	78.4	74.7	67.5	89.5	70.3	76.1	73.5	7.5	78.6	12.5	73.3	12.5	100	36	0.0	0.0	0.5
2,6-dimethylnaphthalene	97.4	124	95.0	105	113	96.9	105	15.3	105	7.7	85.4	14.0	120	24	0.9	0.6	1.0
acenaphthylene	51.5	43.4	48.4	39.4	47.9	41.1	47.8	8.6	42.8	10.5	53.6	8.5	60.0	28.0	-0.4	-0.3	0.6
acenaphthene	42.4	47.2	42.9	30.7	45.4	39.2	44.2	6.0	38.4	19.2	35.7	4.7	41.0	10.0	0.9	0.7	0.4
1,6,7-trimethylnaphthalene	31.6	37.3	36.9	37.9	30.4	36.1	35.3	9.0	34.8	11.3	27.7	5.3	48.0	10.0	1.1	0.8	0.6
fluorene	126	128	110	98.8	87.8	118	121	8.1	102	15.1	78.8	11.5	**97.3**	**8.6**	2.2	1.5	0.5
phenanthrene	394	414	411	436	462	434	406	2.7	444	3.5	383	43	**489**	**23**	0.2	0.2	0.2
anthracene	212	190	177	172	131	152	193	9.2	152	13.5	174	19	**184**	**14**	0.4	0.4	0.6
1-methylphenanthrene	66.9	61.8	69.1	69.2	60.5	63.0	65.9	5.7	64.2	7.0	76.0	11.1	101	27	-0.5	-0.4	0.4
fluoranthene	593	626	471	855	1026	753	563	14.5	878	15.7	635	71	**981**	**78**	-0.5	-0.4	1.0
pyrene	558	585	558	636	805	591	567	2.7	677	16.7	594	62	**811**	**24**	-0.2	-0.2	0.2
benz[a]anthracene	386	427	394	375	382	352	402	5.4	370	4.2	343	30	**427**	**25**	0.7	0.8	0.4
chrysene + triphenylene	530	536	473	499	646	586	513	6.8	577	12.8	404	37	577	35	1.1	1.2	0.5
benzofluoranthenes [b+j+k]	1040	1110	936	1170	1110	1170	1029	8.5	1150	3.0	815	85	1441	150	1.0	1.0	0.6
benzo[e]pyrene	356	465	388	485	503	527	403	13.9	505	4.2	320	34	**553**	**59**	1.0	0.9	0.9
benzo[a]pyrene	452	488	450	518	551	520	463	4.6	530	3.5	354	42	**628**	**52**	1.2	1.1	0.3
perylene	422	501	351	360	302	340	425	17.7	334	8.8	416	63	**452**	**58**	0.1	0.1	1.2
indeno[1,2,3-cd]pyrene	520	504	472	535	488	550	499	4.9	524	6.2	287	36	**501**	**72**	2.9	2.2	0.3
dibenz[a,h]anthracene + [a,c]	118	111	108	118	97.7	103	112	4.6	106	9.9	78.1	14.2	**117**	**14**	1.8	1.0	0.3
benzo[ghi]perylene	296	292	329	283	415	431	306	6.6	376	21.6	259	27	**525**	**67**	0.7	0.7	0.4

Laboratory: 10
PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	23	100.0
Qualitative	0	0.0
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	21	22	23
2 to 3	2	1	0
≥ 3	0	0	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 10**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 1/24/00

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	11/x/00						lab mean	lab	lab mean	lab	assigned		target		z-score	z-score	p-score
	S 1	S 2	S 3	S 1	S 2	S 3	ng/g dry	%RSD	ng/g dry	%RSD	value	95% CL	value[b]	95% CL	(25%)	(s)	(15%)
alpha-HCH							NA	NA	NA	NA	<1		<2				
hexachlorobenzene							NA	NA	NA	NA	5.88	0.74	**70.0**	**25.0**			
gamma-HCH							NA	NA	NA	NA	<1		<2				
heptachlor							NA	NA	NA	NA	0.796	0.553	<2				
aldrin							NA	NA	NA	NA	0.438	0.313	<2				
heptachlor epoxide							NA	NA	NA	NA	0.125	0.111	<2				
oxychlordane							NA	NA	NA	NA	0.694	0.613	<3				
trans-chlordane							NA	NA	NA	NA	0.624	0.236	<2				
2,4'-DDE							NA	NA	NA	NA	0.451	0.150	**0.73**	**0.11**			
endosulfan I							NA	NA	NA	NA	<1	0.0	<2				
cis-chlordane							NA	NA	NA	NA	0.977	0.339	**2.33**	**0.56**			
trans-nonachlor							NA	NA	NA	NA	0.404	0.108	**1.26**	**0.13**			
dieldrin							NA	NA	NA	NA	0.779	0.337	1.26	0.37			
4,4'-DDE							NA	NA	NA	NA	3.34	0.45	**6.59**	**0.56**			
2,4'-DDD							NA	NA	NA	NA	1.12	0.50	<2				
endrin							NA	NA	NA	NA	<1		<2				
endosulfan II							NA	NA	NA	NA	<2		<2				
4,4'-DDD							NA	NA	NA	NA	4.10	0.53	**5.06**	**0.56**			
2,4'-DDT							NA	NA	NA	NA	<2		<2				
cis-nonachlor							NA	NA	NA	NA	0.296	0.193	<2				
4,4'-DDT							NA	NA	NA	NA	1.29	0.79	1.25	0.10			
mirex							NA	NA	NA	NA	<1		<2				

Laboratory: 10
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	0	0.0
Qualitative	0	0.0
Not Determined	22	100.0

Category	Number by Category		
	z (25%)	z (s)	p (15%)
≤ 2	0	0	0
2 to 3	0	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 10**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 1/24/00

PCBs

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry S 1	S 2	S 3	SRM 1941a, ng/g dry S 1	S 2	S 3	Sediment IX lab mean ng/g dry	Sediment IX lab %RSD	SRM 1941a lab mean ng/g dry	SRM 1941a lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	95% CL	SRM 1941a, ng/g dry target value[b]	95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
PCB 8							NA	NA	NA	NA	1.72	0.47	1.69	0.38			
PCB 18							NA	NA	NA	NA	2.20	0.36	3.86	2.25			
PCB 28							NA	NA	NA	NA	5.09	0.76	9.80	3.70			
PCB 52							NA	NA	NA	NA	5.03	0.50	**6.89**	**0.56**			
PCB 44							NA	NA	NA	NA	3.79	0.49	**4.80**	**0.62**			
PCB 66/95							NA	NA	NA	NA	8.63	1.22	**14.3**	**2.5**			
PCB 101/90							NA	NA	NA	NA	5.62	0.70	**11.0**	**1.6**			
PCB 118							NA	NA	NA	NA	4.39	0.42	**10.0**	**1.1**			
PCB 153							NA	NA	NA	NA	5.59	0.81	**17.6**	**1.9**			
PCB 105							NA	NA	NA	NA	1.52	0.28	**3.65**	**0.27**			
PCB 138/163/164							NA	NA	NA	NA	5.01	0.71	**13.4**	**1.0**			
PCB 187/182							NA	NA	NA	NA	2.27	0.40	7.00	2.60			
PCB 128							NA	NA	NA	NA	0.823	0.204	**1.87**	**0.32**			
PCB 180							NA	NA	NA	NA	3.33	0.41	8.00	2.00			
PCB 170/190							NA	NA	NA	NA	1.94	0.52	4.00	1.00			
PCB 195							NA	NA	NA	NA	1.19	0.42	<3				
PCB 206							NA	NA	NA	NA	2.55	0.34	**3.67**	**0.87**			
PCB 209							NA	NA	NA	NA	4.72	0.69	**8.34**	**0.49**			
PCB 66							NA	NA	NA	NA	4.71	0.68	**6.80**	**1.40**			
PCB 95							NA	NA	NA	NA	3.34	0.83	**7.50**	**1.10**			

Laboratory: 10
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	0	0.0
Qualitative	0	0.0
Not Determined	18	100.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	0	0	0
2 to 3	0	0	0
≥ 3	0	0	0

Water in Sediment IX

	Sediment IX, % S 1	S 2	S 3	lab mean, %	lab %RSD	Sediment IX, % assigned	95% CL	exercise, % mean	95% CL	Sediment IX z (25%)	z (s)	p (15%)
water	45.9	45.4	45.7	45.7	0.6	46.2	3.3	46.2	3.3	0.0	-0.1	0.0

[a]z- and p-scores ≥ 3 are bolded. [b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 11

Sample: QA99SED9 - Marine Sediment IX

(data reported as if three figures were significant)

Reporting Date: 10/29/99

PAH

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry 9/7/99 S 1	S 2	S 3	SRM 1941a, ng/g dry 9/7/99 S 1	S 2	S 3	Sediment IX lab mean ng/g dry	lab %RSD	SRM 1941a lab mean ng/g dry	lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	95% CL	SRM 1941a, ng/g dry target value[b]	95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
naphthalene	464	473	628	342	341		522	17.7	342	0.2	756	113	**1010**	**140**	-1.2	-0.9	1.2
2-methylnaphthalene	NA	NA	NA	NA	NA		NA	NA	NA	NA	241	34	325	60			
1-methylnaphthalene	NA	NA	NA	NA	NA		NA	NA	NA	NA	111	18	150	30			
biphenyl	NA	NA	NA	NA	NA		NA	NA	NA	NA	73.3	12.5	100	36			
2,6-dimethylnaphthalene	106	104	109	101	84.2		106	2.4	92.6	12.8	85.4	14.0	120	24	1.0	0.7	0.2
acenaphthylene	78.7	87.2	90.3	69.2	88.9		85.4	7.0	79.1	17.6	53.6	8.5	60.0	28.0	2.4	1.6	0.5
acenaphthene	<50	<50	<50	<50	<50		<50	NA	<50	NA	35.7	4.7	41.0	10.0			
1,6,7-trimethylnaphthalene	NA	NA	NA	NA	NA		NA	NA	NA	NA	27.7	5.3	48.0	10.0			
fluorene	<50	<50	62.4	<50	<50		62.4	NA	<50	NA	78.8	11.5	**97.3**	**8.6**	-0.8	-0.6	
phenanthrene	331	319	341	262	226		330	3.3	244	10.4	383	43	**489**	**23**	-0.5	-0.5	0.2
anthracene	144	131	174	108	<50		150	14.7	108		174	19	**184**	**14**	-0.6	-0.5	1.0
1-methylphenanthrene	<50	<50	<50	<50	<50		<50	NA	<50	NA	76.0	11.1	101	27			
fluoranthene	501	554	560	455	475		538	6.0	465	3.0	635	71	**981**	**78**	-0.6	-0.5	0.4
pyrene	462	508	516	371	381		495	5.9	376	1.9	594	62	**811**	**24**	-0.7	-0.6	0.4
benz[a]anthracene	242	270	301	208	183		271	10.9	196	9.0	343	30	**427**	**25**	-0.8	-0.9	0.7
chrysene + triphenylene	NA	NA	NA	NA	NA		NA	NA	NA	NA	404	37	577	35			
benzofluoranthenes [b+j+k]	NA	NA	NA	NA	NA		NA	NA	NA	NA	815	85	1441	150			
benzo[e]pyrene	NA	NA	NA	NA	NA		NA	NA	NA	NA	320	34	**553**	**59**			
benzo[a]pyrene	236	281	292	306	283		270	11.0	295	5.5	354	42	**628**	**52**	-0.9	-0.8	0.7
perylene	NA	NA	NA	NA	NA		NA	NA	NA	NA	416	63	**452**	**58**			
indeno[1,2,3-cd]pyrene	238	262	262	303	304		254	5.5	304	0.2	287	36	**501**	**72**	-0.5	-0.3	0.4
dibenz[a,h]anthracene + [a,c]	<50	<50	60.6	<50	72.1		60.6	NA	72.1	NA	78.1	14.2	**117**	**14**	-0.9	-0.5	
benzo[ghi]perylene	180	220	230	231	261		210	12.6	246	8.6	259	27	**525**	**67**	-0.8	-0.7	0.8

Laboratory: 11

PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	13	56.5
Qualitative	2	8.7
Not Determined	8	34.8

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	12	13	11
2 to 3	1	0	0
≥ 3	0	0	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 11**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 10/29/99

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/5/00 S 1	9/3/99 S 2	10/18/99 S 3	9/3/99 S 1	9/20/99 S 2	NA S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	1.42	0.837	0.805	<1.0	<1.0	NA	1.02	33.9	<1.0	NA	<1		<2				2.3
hexachlorobenzene	4.96	4.14	2.95	25.5	29.9	NA	4.02	25.2	27.7	11.2	5.88	0.74	**70.0**	**25.0**	-1.3	-1.0	1.7
gamma-HCH	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0	NA	<1.0	NA	<1		<2				
heptachlor	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0	NA	<1.0	NA	0.796	0.553	<2				
aldrin	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0	NA	<1.0	NA	0.438	0.313	<2				
heptachlor epoxide	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0	NA	<1.0	NA	0.125	0.111	<2				
oxychlordane	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0	NA	<1.0	NA	0.694	0.613	<3				
trans-chlordane	1.09	0.833	0.565	1.19	1.20	NA	0.829	31.7	1.20	0.6	0.624	0.236	<2		1.3	0.1	2.1
2,4'-DDE	<5.2	<3.9	<3.4	<1.4	<6.1	NA	<5.2	NA	<6.1	NA	0.451	0.150	**0.73**	**0.11**			
endosulfan I	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0	NA	<1.0	NA	<1	0.0	<2				
cis-chlordane	1.16	0.649	0.489	1.04	1.53	NA	0.766	45.8	1.29	27.0	0.977	0.339	**2.33**	**0.56**	-0.9	-0.1	**3.1**
trans-nonachlor	1.08	0.854	0.350	0.682	0.753	NA	0.761	49.1	0.718	7.0	0.404	0.108	**1.26**	**0.13**	**3.5**	0.2	**3.3**
dieldrin	1.00	0.829	0.694	<1.0	1.25	NA	0.841	18.2	1.25	NA	0.779	0.337	1.26	0.37	0.3	0.0	1.2
4,4'-DDE	3.69	2.57	1.87	3.26	3.68	NA	2.71	33.9	3.47	8.6	3.34	0.45	**6.59**	**0.56**	-0.8	-0.3	2.3
2,4'-DDD	3.00	1.02	0.955	<1.0	<1.0	NA	1.66	70.1	<1.0	NA	1.12	0.50	<2		1.9	0.3	**4.7**
endrin	<2.0	<2.0	<2.0	<2.0	<2.0	NA	<2.0	NA	<2.0	NA	<1		<2				
endosulfan II	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2		<2				
4,4'-DDD	4.22	3.58	2.92	2.72	3.81	NA	3.57	18.2	3.27	23.6	4.10	0.53	**5.06**	**0.56**	-0.5	-0.3	1.2
2,4'-DDT	<2.0	<2.0	<2.0	<1.0	<1.0	NA	<2.0	NA	<1.0	NA	<2		<2				
cis-nonachlor	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0	NA	<1.0	NA	0.296	0.193	<2				
4,4'-DDT	0.881	0.815	0.607	<2.0	<2.0	NA	0.768	18.6	<2.0	NA	1.29	0.79	1.25	0.10	-1.6	-0.3	1.2
mirex	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0	NA	<1.0	NA	<1		<2				

Laboratory: 11
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	10	45.5
Qualitative	11	50.0
Not Determined	1	4.5

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	8	9	4
2 to 3	0	0	3
≥ 3	1	0	3

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 11**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 10/29/99

PCBs

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	S 1	S 2	S 3	S 1	S 2	S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
PCB 8							NA	NA	NA	NA	1.72	0.47	1.69	0.38			
PCB 18							NA	NA	NA	NA	2.20	0.36	3.86	2.25			
PCB 28							NA	NA	NA	NA	5.09	0.76	9.80	3.70			
PCB 52							NA	NA	NA	NA	5.03	0.50	**6.89**	**0.56**			
PCB 44							NA	NA	NA	NA	3.79	0.49	**4.80**	**0.62**			
PCB 66/95							NA	NA	NA	NA	8.63	1.22	**14.3**	**2.5**			
PCB 101/90							NA	NA	NA	NA	5.62	0.70	**11.0**	**1.6**			
PCB 118							NA	NA	NA	NA	4.39	0.42	**10.0**	**1.1**			
PCB 153							NA	NA	NA	NA	5.59	0.81	**17.6**	**1.9**			
PCB 105							NA	NA	NA	NA	1.52	0.28	**3.65**	**0.27**			
PCB 138/163/164							NA	NA	NA	NA	5.01	0.71	**13.4**	**1.0**			
PCB 187/182							NA	NA	NA	NA	2.27	0.40	7.00	2.60			
PCB 128							NA	NA	NA	NA	0.823	0.204	**1.87**	**0.32**			
PCB 180							NA	NA	NA	NA	3.33	0.41	8.00	2.00			
PCB 170/190							NA	NA	NA	NA	1.94	0.52	4.00	1.00			
PCB 195							NA	NA	NA	NA	1.19	0.42	<3				
PCB 206							NA	NA	NA	NA	2.55	0.34	**3.67**	**0.87**			
PCB 209							NA	NA	NA	NA	4.72	0.69	**8.34**	**0.49**			
PCB 66							NA	NA	NA	NA	4.71	0.68	**6.80**	**1.40**			
PCB 95							NA	NA	NA	NA	3.34	0.83	**7.50**	**1.10**			

Laboratory: 11
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	0	0.0
Qualitative	0	0.0
Not Determined	18	100.0

	Number by Category		
Category	z (25%)	z (s)	p (15%)
≤ 2	0	0	0
2 to 3	0	0	0
≥ 3	0	0	0

Water in Sediment IX

	SedimentIX, %				lab			Sediment IX, %		exercise, %		Sediment IX		
	S 1	S 2	S 3		mean, %	%RSD		assigned	95% CL	mean	95% CL	z (25%)	z (s)	p (15%)
water	49.1	49.1	49.1		49.1	0.0		46.2	3.3	46.2	3.3	0.2	0.3	0.0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 12**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 12/20/99

PAH

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	12/9/99 S 1	12/9/99 S 2	12/9/99 S 3	12/9/99 S 1	12/9/99 S 2	12/9/99 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
naphthalene	671	669	486	659	610	630	609	17.5	633	3.9	756	113	**1010**	**140**	-0.8	-0.5	1.2
2-methylnaphthalene	210	211	161	245	230	250	194	14.7	242	4.3	241	34	325	60	-0.8	-0.6	1.0
1-methylnaphthalene	97.2	96.9	75.2	119	110	120	89.8	14.1	116	4.7	111	18	150	30	-0.8	-0.5	0.9
biphenyl	52.1	52.6	41.1	67.6	62.6	65.1	48.6	13.4	65.1	3.8	73.3	12.5	100	36	-1.3	-0.8	0.9
2,6-dimethylnaphthalene	86.9	87.8	68.9	110	100	110	81.2	13.1	107	5.4	85.4	14.0	120	24	-0.2	-0.1	0.9
acenaphthylene	94.6	99.2	84.2	100	95.1	100	92.7	8.3	98.4	2.9	53.6	8.5	60.0	28.0	2.9	1.9	0.6
acenaphthene	29.2	29.3	24.0	26.6	24.4	25.1	27.5	11.0	25.4	4.4	35.7	4.7	41.0	10.0	-0.9	-0.7	0.7
1,6,7-trimethylnaphthalene	28.0	26.6	21.9	34.9	33.2	33.0	25.5	12.5	33.7	3.1	27.7	5.3	48.0	10.0	-0.3	-0.2	0.8
fluorene	76.8	76.2	63.2	61.1	55.0	59.3	72.1	10.7	58.5	5.4	78.8	11.5	**97.3**	**8.6**	-0.3	-0.2	0.7
phenanthrene	345	345	293	450	380	410	328	9.2	413	8.5	383	43	**489**	**23**	-0.6	-0.5	0.6
anthracene	168	169	141	179	160	160	159	10.0	166	6.6	174	19	**184**	**14**	-0.3	-0.3	0.7
1-methylphenanthrene	64.0	64.4	56.5	78.6	71.0	75.9	61.6	7.2	75.2	5.1	76.0	11.1	101	27	-0.8	-0.6	0.5
fluoranthene	562	607	538	804	770	780	569	6.2	785	2.2	635	71	**981**	**78**	-0.4	-0.4	0.4
pyrene	502	513	448	654	580	620	488	7.1	618	6.0	594	62	**811**	**24**	-0.7	-0.7	0.5
benz[a]anthracene	309	316	282	393	330	370	302	5.9	364	8.8	343	30	**427**	**25**	-0.5	-0.5	0.4
chrysene + triphenylene	356	362	320	557	500	500	346	6.6	519	6.3	404	37	577	35	-0.6	-0.6	0.4
benzofluoranthenes [b+j+k]	688	720	621	1200	1050	1100	676	7.5	1117	6.8	815	85	1441	150	-0.7	-0.6	0.5
benzo[e]pyrene	289	296	262	519	460	470	282	6.4	483	6.5	320	34	**553**	**59**	-0.5	-0.4	0.4
benzo[a]pyrene	286	296	260	452	390	420	281	6.6	421	7.4	354	42	**628**	**52**	-0.8	-0.7	0.4
perylene	327	344	294	300	270	280	322	7.9	283	5.4	416	63	**452**	**58**	-0.9	-0.6	0.5
indeno[1,2,3-cd]pyrene	215	238	203	466	370	430	219	8.1	422	11.5	287	36	**501**	**72**	-1.0	-0.7	0.5
dibenz[a,h]anthracene + [a,c]	61.4	60.1	56.5	103	87.5	95.4	59.3	4.3	95.3	8.1	78.1	14.2	**117**	**14**	-1.0	-0.5	0.3
benzo[ghi]perylene	213	222	197	430	390	400	211	6.0	407	5.1	259	27	**525**	**67**	-0.7	-0.7	0.4

Laboratory: 12
PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	23	100.0
Qualitative	0	0.0
Not Determined	0	0.0

	Number by Category		
Category	z (25%)	z (s)	p (15%)
≤ 2	22	23	23
2 to 3	1	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 12**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 12/20/99

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/5/00						lab mean	lab	lab mean	lab	assigned		target		z-score	z-score	p-score
	S 1	S 2	S 3	S 1	S 2	S 3	ng/g dry	%RSD	ng/g dry	%RSD	value	95% CL	value[b]	95% CL	(25%)	(s)	(15%)
alpha-HCH							NA	NA	NA	NA	<1		<2				
hexachlorobenzene							NA	NA	NA	NA	5.88	0.74	**70.0**	**25.0**			
gamma-HCH							NA	NA	NA	NA	<1		<2				
heptachlor							NA	NA	NA	NA	0.796	0.553	<2				
aldrin							NA	NA	NA	NA	0.438	0.313	<2				
heptachlor epoxide							NA	NA	NA	NA	0.125	0.111	<2				
oxychlordane							NA	NA	NA	NA	0.694	0.613	<3				
trans-chlordane							NA	NA	NA	NA	0.624	0.236	<2				
2,4'-DDE							NA	NA	NA	NA	0.451	0.150	**0.73**	**0.11**			
endosulfan I							NA	NA	NA	NA	<1	0.0	<2				
cis-chlordane							NA	NA	NA	NA	0.977	0.339	**2.33**	**0.56**			
trans-nonachlor							NA	NA	NA	NA	0.404	0.108	**1.26**	**0.13**			
dieldrin							NA	NA	NA	NA	0.779	0.337	1.26	0.37			
4,4'-DDE							NA	NA	NA	NA	3.34	0.45	**6.59**	**0.56**			
2,4'-DDD							NA	NA	NA	NA	1.12	0.50	<2				
endrin							NA	NA	NA	NA	<1		<2				
endosulfan II							NA	NA	NA	NA	<2		<2				
4,4'-DDD							NA	NA	NA	NA	4.10	0.53	**5.06**	**0.56**			
2,4'-DDT							NA	NA	NA	NA	<2		<2				
cis-nonachlor							NA	NA	NA	NA	0.296	0.193	<2				
4,4'-DDT							NA	NA	NA	NA	1.29	0.79	1.25	0.10			
mirex							NA	NA	NA	NA	<1		<2				

Laboratory: 12
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	0	0.0
Qualitative	0	0.0
Not Determined	22	100.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	0	0	0
2 to 3	0	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 12**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 12/20/99

PCBs

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry S 1	S 2	S 3	SRM 1941a, ng/g dry S 1	S 2	S 3	Sediment IX lab mean ng/g dry	Sediment IX lab %RSD	SRM 1941a lab mean ng/g dry	SRM 1941a lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	95% CL	SRM 1941a, ng/g dry target value[b]	95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
PCB 8							NA	NA	NA	NA	1.72	0.47	1.69	0.38			
PCB 18							NA	NA	NA	NA	2.20	0.36	3.86	2.25			
PCB 28							NA	NA	NA	NA	5.09	0.76	9.80	3.70			
PCB 52							NA	NA	NA	NA	5.03	0.50	**6.89**	**0.56**			
PCB 44							NA	NA	NA	NA	3.79	0.49	**4.80**	**0.62**			
PCB 66/95							NA	NA	NA	NA	8.63	1.22	**14.3**	**2.5**			
PCB 101/90							NA	NA	NA	NA	5.62	0.70	**11.0**	**1.6**			
PCB 118							NA	NA	NA	NA	4.39	0.42	**10.0**	**1.1**			
PCB 153							NA	NA	NA	NA	5.59	0.81	**17.6**	**1.9**			
PCB 105							NA	NA	NA	NA	1.52	0.28	**3.65**	**0.27**			
PCB 138/163/164							NA	NA	NA	NA	5.01	0.71	**13.4**	**1.0**			
PCB 187/182							NA	NA	NA	NA	2.27	0.40	7.00	2.60			
PCB 128							NA	NA	NA	NA	0.823	0.204	**1.87**	**0.32**			
PCB 180							NA	NA	NA	NA	3.33	0.41	8.00	2.00			
PCB 170/190							NA	NA	NA	NA	1.94	0.52	4.00	1.00			
PCB 195							NA	NA	NA	NA	1.19	0.42	<3				
PCB 206							NA	NA	NA	NA	2.55	0.34	**3.67**	**0.87**			
PCB 209							NA	NA	NA	NA	4.72	0.69	**8.34**	**0.49**			
PCB 66							NA	NA	NA	NA	4.71	0.68	**6.80**	**1.40**			
PCB 95							NA	NA	NA	NA	3.34	0.83	**7.50**	**1.10**			

Laboratory: 12
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	0	0.0
Qualitative	0	0.0
Not Determined	18	100.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	0	0	0
2 to 3	0	0	0
≥ 3	0	0	0

Water in Sediment IX

	Sediment IX, % S 1	S 2	S 3	lab mean, %	lab %RSD	Sediment IX, % assigned	95% CL	exercise, % mean	95% CL	Sediment IX z (25%)	z (s)	p (15%)
water	46.3	46.5	46.4	46.4	0.2	46.2	3.3	46.2	3.3	0.0	0.0	0.0

[a]z- and p-scores ≥ 3 are bolded. [b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 14

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant)

Reporting Date: 1/25/00

PAH

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry 10/27/99 S 1	S 2	S 3	SRM 1941a, ng/g dry 10/27/99 S 1	S 2	S 3	Sediment IX lab mean ng/g dry	lab %RSD	SRM 1941a lab mean ng/g dry	lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	95% CL	SRM 1941a, ng/g dry target value[b]	95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	756	113	**1010**	**140**			
2-methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	241	34	325	60			
1-methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	111	18	150	30			
biphenyl	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	73.3	12.5	100	36			
2,6-dimethylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	85.4	14.0	120	24			
acenaphthylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	53.6	8.5	60.0	28.0			
acenaphthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	35.7	4.7	41.0	10.0			
1,6,7-trimethylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27.7	5.3	48.0	10.0			
fluorene	56.5	62.0	57.7	30.4	38.7	31.1	58.7	4.9	33.4	13.8	78.8	11.5	**97.3**	**8.6**	-1.0	-0.7	0.3
phenanthrene	343	325	303	275	324	292	324	6.2	297	8.4	383	43	**489**	**23**	-0.6	-0.6	0.4
anthracene	136	140	138	106	114	111	138	1.4	110	3.7	174	19	**184**	**14**	-0.8	-0.8	0.1
1-methylphenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	76.0	11.1	101	27			
fluoranthene	709	666	611	627	762	676	662	7.4	688	9.9	635	71	**981**	**78**	0.2	0.2	0.5
pyrene	663	604	562	501	616	541	610	8.3	553	10.6	594	62	**811**	**24**	0.1	0.1	0.6
benz[a]anthracene	387	370	355	301	372	316	371	4.3	330	11.4	343	30	**427**	**25**	0.3	0.4	0.3
chrysene + triphenylene	474	445	422	452	549	472	447	5.8	491	10.4	404	37	577	35	0.4	0.5	0.4
benzofluoranthenes [b+j+k]	1100	962	966	1050	1320	1090	1009	7.8	1153	12.6	815	85	1441	150	1.0	0.9	0.5
benzo[e]pyrene	441	405	382	463	574	491	409	7.3	509	11.3	320	34	**553**	**59**	1.1	1.0	0.5
benzo[a]pyrene	325	317	320	330	397	351	321	1.3	359	9.5	354	42	**628**	**52**	-0.4	-0.3	0.1
perylene	547	522	469	257	307	276	513	7.8	280	9.0	416	63	**452**	**58**	0.9	0.6	0.5
indeno[1,2,3-cd]pyrene	204	181	121	201	245	214	169	25.4	220	10.3	287	36	**501**	**72**	-1.7	-1.2	1.7
dibenz[a,h]anthracene + [a,c]	65.2	60.4	39.7	59.4	73.0	63.5	55.1	24.6	65.3	10.7	78.1	14.2	**117**	**14**	-1.2	-0.7	1.6
benzo[ghi]perylene	196	172	109	200	238	207	159	28.3	215	9.4	259	27	**525**	**67**	-1.5	-1.4	1.9

Laboratory: 14
PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	14	60.9
Qualitative	0	0.0
Not Determined	9	39.1

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	14	14	14
2 to 3	0	0	0
≥ 3	0	0	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 14**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 1/25/00

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/5/00 S 1	11/2/99 S 2	11/15/99 S 3	10/27/99 S 1	11/2/99 S 2	11/15/99 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1		<2				
hexachlorobenzene	4.33	4.28	4.36	43.1	42.5	43.2	4.32	0.9	42.9	0.9	5.88	0.74	**70.0**	**25.0**	-1.1	-0.8	0.1
gamma-HCH	<0.85	<0.85	<0.85	<0.85	<0.85	<0.85	<0.85	NA	<0.85	NA	<1		<2				
heptachlor	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.796	0.553	<2				
aldrin	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.438	0.313	<2				
heptachlor epoxide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.125	0.111	<2				
oxychlordane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.694	0.613	<3				
trans-chlordane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.624	0.236	<2				
2,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.451	0.150	**0.73**	**0.11**			
endosulfan I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	0.0	<2				
cis-chlordane	<0.97	<0.97	<0.97	1.59	1.64	1.52	<0.97	NA	1.58	3.8	0.977	0.339	**2.33**	**0.56**			
trans-nonachlor	<0.97	<0.97	<0.97	0.97	1.11	0.89	<0.97	NA	0.990	11.2	0.404	0.108	**1.26**	**0.13**			
dieldrin	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.779	0.337	1.26	0.37			
4,4'-DDE	3.43	3.35	3.26	5.54	5.72	5.46	3.35	2.5	5.57	2.4	3.34	0.45	**6.59**	**0.56**	0.0	0.0	0.2
2,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.12	0.50	<2				
endrin	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1		<2				
endosulfan II	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2		<2				
4,4'-DDD	5.64	4.48	3.91	5.76	6.42	5.60	4.68	18.9	5.93	7.3	4.10	0.53	**5.06**	**0.56**	0.6	0.3	1.3
2,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2		<2				
cis-nonachlor	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.296	0.193	<2				
4,4'-DDT	1.36	0.930	0.710	0.700	0.770	0.630	1.00	33.1	0.700	10.0	1.29	0.79	1.25	0.10	-0.9	-0.2	2.2
mirex	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1		<2				

Laboratory: 14
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	4	18.2
Qualitative	3	13.6
Not Determined	15	68.2

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	4	4	3
2 to 3	0	0	1
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 14

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant)

Reporting Date: 1/25/00

PCBs

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	10/27/99 S 1	10/27/99 S 2	10/27/99 S 3	10/27/99 S 1	10/27/99 S 2	10/27/99 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
PCB 8	0.920	0.770	0.790	1.41	1.72	1.61	0.827	9.9	1.58	9.9	1.72	0.47	1.69	0.38	-2.1	-0.9	0.7
PCB 18	1.97	1.82	1.92	2.58	2.39	3.65	1.90	4.0	2.87	23.6	2.20	0.36	3.86	2.25	-0.5	-0.3	0.3
PCB 28	3.96	3.84	3.66	5.74	5.87	5.48	3.82	4.0	5.70	3.5	5.09	0.76	9.80	3.70	-1.0	-1.3	0.3
PCB 52	5.07	4.98	4.56	7.18	7.42	6.02	4.87	5.6	6.87	10.9	5.03	0.50	**6.89**	**0.56**	-0.1	-0.2	0.4
PCB 44	3.45	3.36	3.10	4.46	4.64	4.09	3.30	5.5	4.40	6.4	3.79	0.49	**4.80**	**0.62**	-0.5	-0.5	0.4
PCB 66/95	5.43	5.23	4.77	7.46	7.57	6.65	5.14	6.6	7.23	7.0	8.63	1.22	**14.3**	**2.5**	-1.6	**-3.6**	0.4
PCB 101/90	6.55	6.43	6.05	12.9	13.3	12.3	6.34	4.1	12.8	3.9	5.62	0.70	**11.0**	**1.6**	0.5	0.7	0.3
PCB 118	4.62	4.59	4.13	8.91	9.06	8.13	4.45	6.2	8.70	5.7	4.39	0.42	**10.0**	**1.1**	0.1	0.1	0.4
PCB 153	5.95	5.93	5.52	13.7	14.1	13.2	5.80	4.2	13.7	3.3	5.59	0.81	**17.6**	**1.9**	0.1	0.2	0.3
PCB 105	1.95	1.99	1.74	4.14	4.26	3.89	1.89	7.1	4.10	4.6	1.52	0.28	**3.65**	**0.27**	1.0	0.4	0.5
PCB 138/163/164	5.15	5.04	4.75	12.4	12.5	11.9	4.98	4.1	12.3	2.6	5.01	0.71	**13.4**	**1.0**	0.0	0.0	0.3
PCB 187/182	3.01	2.93	2.77	7.70	7.79	7.50	2.90	4.2	7.66	1.9	2.27	0.40	7.00	2.60	1.1	0.7	0.3
PCB 128	0.810	0.780	0.720	1.71	1.74	1.57	0.770	6.0	1.67	5.4	0.823	0.204	**1.87**	**0.32**	-0.3	-0.1	0.4
PCB 180	3.63	3.53	3.08	9.64	9.39	8.44	3.41	8.6	9.16	6.9	3.33	0.41	8.00	2.00	0.1	0.1	0.6
PCB 170/190	1.50	1.23	1.07	4.49	4.36	2.70	1.27	17.2	3.85	25.9	1.94	0.52	4.00	1.00	-1.4	-0.7	1.1
PCB 195	1.74	1.65	1.49	2.63	2.57	2.51	1.63	7.8	2.57	2.3	1.19	0.42	<3		1.5	0.5	0.5
PCB 206	3.52	3.28	3.00	4.63	4.49	4.36	3.27	8.0	4.49	3.0	2.55	0.34	**3.67**	**0.87**	1.1	0.7	0.5
PCB 209	6.34	6.20	5.67	11.40	11.40	10.10	6.07	5.8	11.0	6.8	4.72	0.69	**8.34**	**0.49**	1.1	1.4	0.4
PCB 66	___	___	___	___	___	___	NA	NA	NA	NA	4.71	0.68	**6.80**	**1.40**			
PCB 95	___	___	___	___	___	___	NA	NA	NA	NA	3.34	0.83	**7.50**	**1.10**			

Laboratory: 14
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	18	100.0
Qualitative	0	0.0
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	17	17	18
2 to 3	1	0	0
≥ 3	0	1	0

Water in Sediment IX

	Sediment IX, %				lab			Sediment IX, %		exercise, %		Sediment IX		
	S 1	S 2	S 3		mean, %	%RSD		assigned	95% CL	mean	95% CL	z (25%)	z (s)	p (15%)
water	0.5	0.5	0.5		0.5	0.0		46.2	3.3	46.2	3.3	-4.0	-4.7	0.0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 15**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 1/28/00

PAH

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	10/2/99 S 1	10/2/99 S 2	10/2/99 S 3	10/2/99 S 1	10/2/99 S 2	10/2/99 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
naphthalene	872	954	906	721	782	725	911	4.5	742	4.6	756	113	**1010**	**140**	0.8	0.6	0.3
2-methylnaphthalene	292	311	304	259	282	243	302	3.1	261	7.5	241	34	325	60	1.0	0.8	0.2
1-methylnaphthalene	136	142	143	132	143	123	140	2.5	133	7.6	111	18	150	30	1.1	0.7	0.2
biphenyl	61.6	67.3	52.4	64.8	71.4	61.8	60.4	12.5	66.0	7.5	73.3	12.5	100	36	-0.7	-0.4	0.8
2,6-dimethylnaphthalene	108	117	93.4	109	122	105	106	11.4	112	8.0	85.4	14.0	120	24	1.0	0.7	0.8
acenaphthylene	68.6	71.6	60.7	63.2	66.2	54.7	67.0	8.4	61.4	9.7	53.6	8.5	60.0	28.0	1.0	0.7	0.6
acenaphthene	43.4	46.3	39.2	34.0	34.5	29.7	43.0	8.3	32.8	8.2	35.7	4.7	41.0	10.0	0.8	0.6	0.6
1,6,7-trimethylnaphthalene	23.7	28.1	24.3	25.4	27.5	26.5	25.4	9.4	26.5	3.9	27.7	5.3	48.0	10.0	-0.3	-0.3	0.6
fluorene	102	107	92.0	54.7	59.5	49.5	100	7.6	54.6	9.1	78.8	11.5	**97.3**	**8.6**	1.1	0.8	0.5
phenanthrene	436	462	429	428	445	393	442	3.9	422	6.3	383	43	**489**	**23**	0.6	0.6	0.3
anthracene	188	194	192	157	171	148	192	1.7	159	7.3	174	19	**184**	**14**	0.4	0.4	0.1
1-methylphenanthrene	78.2	84.0	78.1	77.5	84.6	74.9	80.1	4.2	79.0	6.4	76.0	11.1	101	27	0.2	0.2	0.3
fluoranthene	740	761	757	901	919	830	753	1.5	883	5.4	635	71	**981**	**78**	0.7	0.7	0.1
pyrene	675	696	692	718	748	670	688	1.6	712	5.5	594	62	**811**	**24**	0.6	0.6	0.1
benz[a]anthracene	368	372	369	383	387	346	370	0.6	372	6.1	343	30	**427**	**25**	0.3	0.3	0.0
chrysene + triphenylene	455	460	441	566	578	519	452	2.1	554	5.6	404	37	577	35	0.5	0.5	0.1
benzofluoranthenes [b+j+k]	997	996	973	1340	1360	1250	989	1.4	1317	4.5	815	85	1441	150	0.8	0.8	0.1
benzo[e]pyrene	392	394	387	564	576	538	391	0.9	559	3.5	320	34	**553**	**59**	0.9	0.8	0.1
benzo[a]pyrene	399	401	396	502	502	446	399	0.6	483	6.7	354	42	**628**	**52**	0.5	0.4	0.0
perylene	514	510	468	315	348	290	497	5.2	317	9.2	416	63	**452**	**58**	0.8	0.5	0.3
indeno[1,2,3-cd]pyrene	369	360	387	519	521	513	372	3.7	518	0.7	287	36	**501**	**72**	1.2	0.9	0.2
dibenz[a,h]anthracene + [a,c]	88.2	86.1	90.2	116	117	112	88.2	2.3	115	2.5	78.1	14.2	**117**	**14**	0.5	0.3	0.2
benzo[ghi]perylene	265	289	335	423	482	488	296	12.1	464	7.7	259	27	**525**	**67**	0.6	0.5	0.8

Laboratory: 15
PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	23	100.0
Qualitative	0	0.0
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	23	23	23
2 to 3	0	0	0
≥ 3	0	0	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 15**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 1/28/00

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/5/00 S 1	10/10/98 S 2	10/17/98 S 3	10/7/98 S 1	10/10/98 S 2	10/17/98 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	<0.047	<0.047	<0.047	<0.047	<0.047	<0.047	<0.047	NA	<0.047	NA	<1		<2				
hexachlorobenzene	6.42	7.76	4.35	44.6	54.4	27.5	6.18	27.8	42.2	32.3	5.88	0.74	**70.0**	**25.0**	0.2	0.2	1.9
gamma-HCH	<0.017	<0.017	<0.017	1.65	2.04	0.913	<0.017	NA	1.53	37.3	<1		<2				
heptachlor	<0.035	<0.035	<0.035	0.554	<0.035	<0.035	<0.035	NA	0.554	NA	0.796	0.553	<2				
aldrin	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	NA	<0.014	NA	0.438	0.313	<2				
heptachlor epoxide	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	NA	<0.021	NA	0.125	0.111	<2				
oxychlordane	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	NA	<0.017	NA	0.694	0.613	<3				
trans-chlordane	<0.019	<0.019	<0.019	1.25	1.58	0.988	<0.019	NA	1.27	23.3	0.624	0.236	<2				
2,4'-DDE	0.553	0.434	0.358	0.565	0.695	0.354	0.448	21.9	0.538	32.0	0.451	0.150	**0.73**	**0.11**	0.0	0.0	1.5
endosulfan I	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	NA	<0.042	NA	<1	0.0	<2				
cis-chlordane	0.494	0.571	0.343	2.19	2.52	1.15	0.469	24.7	1.95	36.6	0.977	0.339	**2.33**	**0.56**	-2.1	-0.3	1.6
trans-nonachlor	0.531	0.333	0.229	0.975	1.04	0.562	0.364	42.1	0.859	30.2	0.404	0.108	**1.26**	**0.13**	-0.4	0.0	2.8
dieldrin	1.87	1.65	1.33	2.62	2.80	1.80	1.62	16.8	2.41	22.1	0.779	0.337	1.26	0.37	**4.3**	0.5	1.1
4,4'-DDE	3.42	3.43	2.21	5.06	5.30	2.45	3.02	23.2	4.27	37.0	3.34	0.45	**6.59**	**0.56**	-0.4	-0.2	1.5
2,4'-DDD	0.809	0.795	0.340	1.35	0.975	0.748	0.648	41.2	1.02	29.7	1.12	0.50	<2		-1.7	-0.3	2.7
endrin	<0.049	<0.049	<0.049	0.343	<0.049	0.355	<0.049	NA	0.349	2.4	<1		<2				
endosulfan II	<0.013	<0.013	<0.013	<0.013	<0.013	2.06	<0.013	NA	2.06	NA	<2		<2				
4,4'-DDD	5.18	4.00	3.27	4.02	4.54	2.64	4.15	23.2	3.73	26.3	4.10	0.53	**5.06**	**0.56**	0.1	0.0	1.5
2,4'-DDT	<0.097	<0.097	<0.097	0.527	0.786	0.322	<0.097	NA	0.545	42.7	<2		<2				
cis-nonachlor	<0.007	<0.007	<0.007	0.905	1.27	0.586	<0.007	NA	0.920	37.2	0.296	0.193	<2				
4,4'-DDT	4.17	4.08	2.52	0.854	0.456	0.591	3.59	25.8	0.634	31.9	1.29	0.79	1.25	0.10	**7.2**	1.3	1.7
mirex	<0.015	<0.015	<0.015	0.248	0.182	<0.015	<0.015	NA	0.215	21.7	<1		<2				

Laboratory: 15
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	9	40.9
Qualitative	13	59.1
Not Determined	0	0.0

Category	Number by Category		
	z (25%)	z (s)	p (15%)
≤ 2	6	9	7
2 to 3	1	0	2
≥ 3	2	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 15

Sample: QA99SED9 - Marine Sediment IX

(data reported as if three figures were significant)

Reporting Date: 1/28/00

PCBs

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	10/7/99 S 1	10/7/99 S 2	10/7/99 S 3	10/7/99 S 1	10/7/99 S 2	10/7/99 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
PCB 8	<0.145	<0.145	<0.145	18.3	24.1	3.17	<0.145	NA	15.2	71.1	1.72	0.47	1.69	0.38			
PCB 18	2.22	3.70	2.75	3.26	3.79	2.23	2.89	25.9	3.09	25.6	2.20	0.36	3.86	2.25	1.3	0.7	1.7
PCB 28	8.99	12.6	3.65	0.00	0.00	3.68	8.41	53.5	3.68	NA	5.09	0.76	9.80	3.70	2.6	**3.4**	**3.6**
PCB 52	4.98	4.79	3.65	6.00	7.16	4.13	4.47	16.1	5.76	26.5	5.03	0.50	**6.89**	**0.56**	-0.4	-0.6	1.1
PCB 44	3.07	3.51	2.58	4.03	4.72	2.70	3.05	15.2	3.82	26.9	3.79	0.49	**4.80**	**0.62**	-0.8	-0.8	1.0
PCB 66/95	___	___	___	___	___	___	NA	NA	NA	NA	8.63	1.22	**14.3**	**2.5**			
PCB 101/90	4.56	5.28	4.19	9.01	10.4	6.21	4.68	11.9	8.54	25.0	5.62	0.70	**11.0**	**1.6**	-0.7	-1.0	0.8
PCB 118	4.70	4.35	3.16	6.36	7.66	4.43	4.07	19.8	6.15	26.4	4.39	0.42	**10.0**	**1.1**	-0.3	-0.3	1.3
PCB 153	5.98	3.91	3.40	8.09	9.45	5.62	4.43	30.8	7.72	25.2	5.59	0.81	**17.6**	**1.9**	-0.8	-1.2	2.1
PCB 105	1.39	1.25	0.999	2.08	3.14	1.68	1.21	16.3	2.30	32.8	1.52	0.28	**3.65**	**0.27**	-0.8	-0.3	1.1
PCB 138/163/164	7.91	7.62	4.66	13.4	16.7	7.16	6.73	26.7	12.4	39.0	5.01	0.71	**13.4**	**1.0**	1.4	1.8	1.8
PCB 187/182	3.06	2.76	2.86	7.05	8.27	4.79	2.89	5.3	6.70	26.3	2.27	0.40	7.00	2.60	1.1	0.6	0.4
PCB 128	0.384	0.611	0.273	1.19	1.27	0.905	0.423	40.8	1.12	17.1	0.823	0.204	**1.87**	**0.32**	-1.9	-0.4	2.7
PCB 180	4.06	3.02	2.97	6.58	7.38	4.63	3.35	18.4	6.20	22.8	3.33	0.41	8.00	2.00	0.0	0.0	1.2
PCB 170/190	21.5	5.65	6.03	14.8	12.3	9.97	11.1	81.8	12.4	19.5	1.94	0.52	4.00	1.00	**18.8**	**9.4**	**5.5**
PCB 195	1.46	0.842	0.870	0.978	1.14	0.788	1.06	33.0	0.969	18.2	1.19	0.42	<3		-0.4	-0.1	2.2
PCB 206	1.58	1.60	1.93	6.10	6.28	7.12	1.70	11.5	6.50	8.4	2.55	0.34	**3.67**	**0.87**	-1.3	-0.9	0.8
PCB 209	2.98	2.43	3.41	4.68	4.31	3.60	2.94	16.7	4.20	13.1	4.72	0.69	**8.34**	**0.49**	-1.5	-1.8	1.1
PCB 66	4.62	5.10	3.98	5.88	6.99	3.88	4.57	12.3	5.58	28.2	4.71	0.68	**6.80**	**1.40**	-0.1	-0.2	0.8
PCB 95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.34	0.83	**7.50**	**1.10**			

Laboratory: 15
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	16	88.9
Qualitative	1	5.6
Not Determined	1	5.6

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	14	14	11
2 to 3	1	0	3
≥ 3	1	2	2

Water in Sediment IX

	SedimentIX, %			lab		Sediment IX, %		exercise, %		Sediment IX		
	S 1	S 2	S 3	mean, %	%RSD	assigned	95% CL	mean	95% CL	z (25%)	z (s)	p (15%)
water	45.4	46.4	46.5	46.1	1.3	46.2	3.3	46.2	3.3	0.0	0.0	0.1

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 16**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 1/28/00

PAH

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry 12/30/99 S 1	S 2	S 3	SRM 1941a, ng/g dry 12/30/99 S 1	S 2	S 3	Sediment IX lab mean ng/g dry	lab %RSD	SRM 1941a lab mean ng/g dry	lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	95% CL	SRM 1941a, ng/g dry target value[b]	95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
naphthalene	868	935	872	916	816	___	892	4.2	866	8.2	756	113	**1010**	**140**	0.7	0.5	0.3
2-methylnaphthalene	297	309	287	349	291	___	297	3.7	320	12.8	241	34	325	60	0.9	0.7	0.2
1-methylnaphthalene	124	129	119	157	132	___	124	4.1	145	12.2	111	18	150	30	0.5	0.3	0.3
biphenyl	69.4	71.7	69.5	86.0	78.7	___	70.2	1.9	82.4	6.3	73.3	12.5	100	36	-0.2	-0.1	0.1
2,6-dimethylnaphthalene	138	139	130	166	127	___	136	3.6	147	18.7	85.4	14.0	120	24	2.4	1.6	0.2
acenaphthylene	72.1	78.7	72.8	89.3	74.5	___	74.5	4.9	81.9	12.8	53.6	8.5	60.0	28.0	1.6	1.0	0.3
acenaphthene	39.0	41.5	39.6	37.8	36.3	___	40.0	3.3	37.1	2.9	35.7	4.7	41.0	10.0	0.5	0.4	0.2
1,6,7-trimethylnaphthalene	27.2	26.1	27.3	38.7	29.8	___	26.9	2.6	34.3	18.4	27.7	5.3	48.0	10.0	-0.1	-0.1	0.2
fluorene	97.3	104	102	68.8	63.4	___	101	3.3	66.1	5.8	78.8	11.5	**97.3**	**8.6**	1.1	0.8	0.2
phenanthrene	459	494	463	446	491	___	472	4.1	469	6.8	383	43	**489**	**23**	0.9	0.9	0.3
anthracene	220	226	219	186	204	___	221	1.7	195	6.5	174	19	**184**	**14**	1.1	1.0	0.1
1-methylphenanthrene	81.3	95.7	89.3	70.6	99.4	___	88.8	8.2	85.0	24.0	76.0	11.1	101	27	0.7	0.5	0.5
fluoranthene	682	760	727	754	930	___	723	5.5	842	14.8	635	71	**981**	**78**	0.6	0.5	0.4
pyrene	601	649	614	572	761	___	621	4.0	667	20.1	594	62	**811**	**24**	0.2	0.2	0.3
benz[a]anthracene	387	442	446	440	483	___	425	7.7	462	6.6	343	30	**427**	**25**	1.0	1.0	0.5
chrysene + triphenylene	451	462	428	578	613	___	447	3.9	596	4.2	404	37	577	35	0.4	0.5	0.3
benzofluoranthenes [b+j+k]	863	861	820	941	1190	___	848	2.9	1066	16.5	815	85	1441	150	0.2	0.2	0.2
benzo[e]pyrene	315	343	315	360	473	___	324	5.0	417	19.2	320	34	**553**	**59**	0.0	0.0	0.3
benzo[a]pyrene	352	353	332	388	468	___	345	3.5	428	13.2	354	42	**628**	**52**	-0.1	-0.1	0.2
perylene	525	557	557	360	346	___	546	3.4	353	2.8	416	63	**452**	**58**	1.3	0.8	0.2
indeno[1,2,3-cd]pyrene	335	336	314	429	584	___	328	3.9	507	21.6	287	36	**501**	**72**	0.6	0.4	0.3
dibenz[a,h]anthracene + [a,c]	82.5	82.5	74.9	109	108	___	80.0	5.5	109	0.7	78.1	14.2	**117**	**14**	0.1	0.1	0.4
benzo[ghi]perylene	206	204	213	424	456	___	208	2.2	440	5.1	259	27	**525**	**67**	-0.8	-0.7	0.1

Laboratory: 16
PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	23	100.0
Qualitative	0	0.0
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	22	23	23
2 to 3	1	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 16**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 1/28/00

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/5/00 S 1	1/7/00 S 2	1/7/00 S 3	1/7/00 S 1	1/7/00 S 2	1/0/00 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	<0.60	<0.60	<0.60	<0.60	<0.60		<0.60	NA	<0.60	NA	<1		<2				
hexachlorobenzene	7.75	7.95	7.80	64.6	68.6		7.83	1.3	66.6	4.2	5.88	0.74	**70.0**	**25.0**	1.3	1.1	0.1
gamma-HCH	<0.40	<0.40	<0.40	<0.40	<0.40		<0.40	NA	<0.40	NA	<1		<2				
heptachlor	<0.45	<0.45	<0.45	0.76	0.55		<0.45	NA	0.655	22.7	0.796	0.553	<2				
aldrin	<0.40	<0.40	<0.40	<0.40	<0.40		<0.40	NA	<0.40	NA	0.438	0.313	<2				
heptachlor epoxide	<0.50	<0.50	<0.50	4.15	4.56		<0.50	NA	4.36	6.7	0.125	0.111	<2				
oxychlordane	<0.50	<0.50	<0.50	<0.50	<0.50		<0.50	NA	<0.50	NA	0.694	0.613	<3				
trans-chlordane	0.350	0.450	0.400	1.79	1.62		0.400	12.5	1.71	7.1	0.624	0.236	<2		-1.4	-0.1	0.8
2,4'-DDE	<0.40	<0.40	<0.40	0.550	0.510		<0.40	NA	0.530	5.3	0.451	0.150	**0.73**	**0.11**			
endosulfan I	<0.30	<0.30	<0.30	<0.30	<0.30		<0.30	NA	<0.30	NA	<1	0.0	<2				
cis-chlordane	0.890	0.890	0.750	2.52	2.78		0.843	9.6	2.65	6.9	0.977	0.339	**2.33**	**0.56**	-0.5	-0.1	0.6
trans-nonachlor	<0.40	<0.40	<0.40	0.810	0.760		<0.40	NA	0.785	4.5	0.404	0.108	**1.26**	**0.13**			
dieldrin	0.540	0.580	0.360	1.17	1.35		0.493	23.8	1.26	10.1	0.779	0.337	1.26	0.37	-1.5	-0.2	1.6
4,4'-DDE	2.87	3.08	3.07	5.57	4.38		3.01	3.9	4.98	16.9	3.34	0.45	**6.59**	**0.56**	-0.4	-0.2	0.3
2,4'-DDD	1.82	1.60	1.50	2.42	1.86		1.64	10.0	2.14	18.5	1.12	0.50	<2		1.8	0.3	0.7
endrin	<0.30	<0.30	<0.30	<0.30	<0.30		<0.30	NA	<0.30	NA	<1		<2				
endosulfan II	<0.30	<0.30	<0.30	2.60	2.16		<0.30	NA	2.38	13.1	<2		<2				
4,4'-DDD	3.61	4.07	4.09	5.60	4.51		3.92	6.9	5.06	15.2	4.10	0.53	**5.06**	**0.56**	-0.2	-0.1	0.5
2,4'-DDT	<0.65	<0.65	<0.65	0.650	0.760		<0.65	NA	0.705	11.0	<2		<2				
cis-nonachlor	0.500	0.430	0.380	1.00	1.37		0.437	13.8	1.185	22.1	0.296	0.193	<2		1.9	0.1	0.9
4,4'-DDT	<0.40	<0.40	<0.40	<0.40	<0.40		<0.40	NA	<0.40	NA	1.29	0.79	1.25	0.10			
mirex	<0.40	<0.40	<0.40	<0.40	<0.40		<0.40	NA	<0.40	NA	<1		<2				

Laboratory: 16
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	8	36.4
Qualitative	14	63.6
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	8	8	8
2 to 3	0	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 16

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant)

Reporting Date: 1/28/00

PCBs

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/7/00 S 1	1/7/00 S 2	1/7/00 S 3	1/7/00 S 1	1/7/00 S 2	1/7/00 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
PCB 8	0.780	0.820	0.930	1.04	1.20	____	0.843	9.2	1.12	10.1	1.72	0.47	1.69	0.38	-2.0	-0.9	0.6
PCB 18	3.09	3.31	3.16	4.15	4.98	____	3.19	3.5	4.57	12.9	2.20	0.36	3.86	2.25	1.8	1.0	0.2
PCB 28	5.78	5.77	5.47	7.78	7.61	____	5.67	3.1	7.70	1.6	5.09	0.76	9.80	3.70	0.5	0.6	0.2
PCB 52	6.94	6.65	6.62	8.04	8.45	____	6.74	2.6	8.25	3.5	5.03	0.50	**6.89**	**0.56**	1.4	1.8	0.2
PCB 44	4.49	5.30	4.22	6.01	6.12	____	4.67	12.0	6.07	1.3	3.79	0.49	**4.80**	**0.62**	0.9	0.9	0.8
PCB 66/95	NA	NA	NA	NA	NA	____	NA	NA	NA	NA	8.63	1.22	**14.3**	**2.5**			
PCB 101/90	7.41	6.91	7.06	13.8	12.7	____	7.13	3.6	13.2	6.3	5.62	0.70	**11.0**	**1.6**	1.1	1.6	0.2
PCB 118	4.62	4.28	4.54	9.47	7.20	____	4.48	4.0	8.34	19.3	4.39	0.42	**10.0**	**1.1**	0.1	0.1	0.3
PCB 153	7.76	7.58	7.18	18.6	15.8	____	7.51	4.0	17.2	11.5	5.59	0.81	**17.6**	**1.9**	1.4	2.0	0.3
PCB 105	1.63	1.76	1.82	4.96	3.49	____	1.74	5.6	4.23	24.6	1.52	0.28	**3.65**	**0.27**	0.6	0.2	0.4
PCB 138/163/164	5.65	5.41	5.49	13.5	12.1	____	5.52	2.2	12.8	7.8	5.01	0.71	**13.4**	**1.0**	0.4	0.5	0.1
PCB 187/182	3.54	3.55	4.20	8.90	8.22	____	3.76	10.0	8.56	5.6	2.27	0.40	7.00	2.60	2.6	1.5	0.7
PCB 128	0.690	0.620	0.540	1.43	1.25	____	0.617	12.2	1.34	9.5	0.823	0.204	**1.87**	**0.32**	-1.0	-0.2	0.8
PCB 180	4.12	4.33	4.65	9.67	8.42	____	4.37	6.1	9.05	9.8	3.33	0.41	8.00	2.00	1.2	1.1	0.4
PCB 170/190	3.81	3.38	3.34	5.44	4.43	____	3.51	7.4	4.94	14.5	1.94	0.52	4.00	1.00	**3.2**	1.6	0.5
PCB 195	1.59	1.73	1.96	3.13	2.17	____	1.76	10.6	2.65	25.6	1.19	0.42	<3		1.9	0.6	0.7
PCB 206	2.86	3.10	3.07	4.03	3.65	____	3.01	4.3	3.84	7.0	2.55	0.34	**3.67**	**0.87**	0.7	0.5	0.3
PCB 209	7.16	7.49	7.14	10.9	11.6	____	7.26	2.7	11.2	4.5	4.72	0.69	**8.34**	**0.49**	2.2	2.6	0.2
PCB 66	5.61	5.62	5.75	7.96	6.60	____	5.66	1.4	7.28	13.2	4.71	0.68	**6.80**	**1.40**	0.8	1.0	0.1
PCB 95	4.73	4.46	4.47	8.16	7.39	____	4.55	3.4	7.78	7.0	3.34	0.83	**7.50**	**1.10**	1.5	1.3	0.2

Laboratory: 16
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	17	94.4
Qualitative	0	0.0
Not Determined	1	5.6

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	14	16	17
2 to 3	2	1	0
≥ 3	1	0	0

Water in Sediment IX

	SedimentIX, %			lab		Sediment IX, %		exercise, %		Sediment IX		
	S 1	S 2	S 3	mean, %	%RSD	assigned	95% CL	mean	95% CL	z (25%)	z (s)	p (15%)
water	NA	NA	NA	NA	NA	46.2	3.3	46.2	3.3			

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 17**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 1/28/00

PAH

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry 1/10/00 S 1	S 2	S 3	SRM 1941a, ng/g dry 1/10/00 S 1	S 2	S 3	Sediment IX lab mean ng/g dry	lab %RSD	SRM 1941a lab mean ng/g dry	lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	95% CL	SRM 1941a, ng/g dry target value[b]	95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
naphthalene	332	387	377	____	____	____	365	8.0	NA	NA	756	113	**1010**	**140**	-2.1	-1.4	0.5
2-methylnaphthalene	97	105	100	____	____	____	101	4.0	NA	NA	241	34	325	60	-2.3	-1.7	0.3
1-methylnaphthalene	39.0	46.0	44.0	____	____	____	43.0	8.4	NA	NA	111	18	150	30	-2.4	-1.7	0.6
biphenyl	30.0	33.0	32.0	____	____	____	31.7	4.8	NA	NA	73.3	12.5	100	36	-2.3	-1.4	0.3
2,6-dimethylnaphthalene	41.0	47.0	45.0	____	____	____	44.3	6.9	NA	NA	85.4	14.0	120	24	-1.9	-1.3	0.5
acenaphthylene	26.0	26.0	25.0	____	____	____	25.7	2.2	NA	NA	53.6	8.5	60.0	28.0	-2.1	-1.4	0.1
acenaphthene	19.0	20.0	19.0	____	____	____	19.3	3.0	NA	NA	35.7	4.7	41.0	10.0	-1.8	-1.4	0.2
1,6,7-trimethylnaphthalene	177	195	189	____	____	____	187	4.9	NA	NA	27.7	5.3	48.0	10.0	**23.0**	**17.3**	0.3
fluorene	42.0	54.0	52.0	____	____	____	49.3	13.0	NA	NA	78.8	11.5	**97.3**	**8.6**	-1.5	-1.1	0.9
phenanthrene	265	234	222	____	____	____	240	9.2	NA	NA	383	43	**489**	**23**	-1.5	-1.4	0.6
anthracene	93.0	95.0	92.0	____	____	____	93	1.6	NA	NA	174	19	**184**	**14**	-1.9	-1.8	0.1
1-methylphenanthrene	283	OTHE	OTHE	____	____	____	283	NA	NA	NA	76.0	11.1	101	27	**10.9**	**8.5**	
fluoranthene	440	219	194	____	____	____	284	47.6	NA	NA	635	71	**981**	**78**	-2.2	-2.0	**3.2**
pyrene	1019	662	486	____	____	____	722	37.6	NA	NA	594	62	**811**	**24**	0.9	0.8	2.5
benz[a]anthracene	426	321	291	____	____	____	346	20.5	NA	NA	343	30	**427**	**25**	0.0	0.0	1.4
chrysene + triphenylene	409	293	260	____	____	____	321	24.4	NA	NA	404	37	577	35	-0.8	-0.9	1.6
benzofluoranthenes [b+j+k]	665	604	512	____	____	____	594	13.0	NA	NA	815	85	1441	150	-1.1	-1.0	0.9
benzo[e]pyrene	273	223	206	____	____	____	234	14.9	NA	NA	320	34	**553**	**59**	-1.1	-1.0	1.0
benzo[a]pyrene	245	220	191	____	____	____	219	12.4	NA	NA	354	42	**628**	**52**	-1.5	-1.3	0.8
perylene	285	287	281	____	____	____	284	1.1	NA	NA	416	63	**452**	**58**	-1.3	-0.8	0.1
indeno[1,2,3-cd]pyrene	152	155	108	____	____	____	138	19.0	NA	NA	287	36	**501**	**72**	-2.1	-1.6	1.3
dibenz[a,h]anthracene + [a,c]	87.0	86.0	62.0	____	____	____	78.3	18.1	NA	NA	78.1	14.2	**117**	**14**	0.0	0.0	1.2
benzo[ghi]perylene	233	255	229	____	____	____	239	5.9	NA	NA	259	27	**525**	**67**	-0.3	-0.3	0.4

Laboratory: 17
PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	23	100.0
Qualitative	0	0.0
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	14	21	20
2 to 3	7	0	1
≥ 3	2	2	1

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 17**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 1/28/00

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/5/00 S 1	9/17/99 S 2	9/30/99 S 3	9/2/99 S 1	9/17/99 S 2	9/30/99 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	NA	<0.08	NA	<1		<2				
hexachlorobenzene	9.92	10.9	10.9	52.4	50.5	48.2	10.6	5.4	50.4	4.2	5.88	0.74	**70.0**	**25.0**	**3.2**	2.6	0.4
gamma-HCH	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NA	<0.05	NA	<1		<2				
heptachlor	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	NA	<0.06	NA	0.796	0.553	<2				
aldrin	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	NA	<0.06	NA	0.438	0.313	<2				
heptachlor epoxide	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	NA	<0.13	NA	0.125	0.111	<2				
oxychlordane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.694	0.613	<3				
trans-chlordane	1.21	1.87	1.08	3.36	2.80	2.09	1.39	30.5	2.75	23.1	0.624	0.236	<2		**4.9**	0.4	2.0
2,4'-DDE	0.427	0.645	0.438	0.717	0.724	0.777	0.503	24.4	0.739	4.4	0.451	0.150	**0.73**	**0.11**	0.5	0.0	1.6
endosulfan I	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	NA	<0.08	NA	<1	0.0	<2				
cis-chlordane	1.82	1.89	2.15	2.10	2.11	2.22	1.95	8.9	2.14	3.1	0.977	0.339	**2.33**	**0.56**	**4.0**	0.5	0.6
trans-nonachlor	0.526	0.400	0.988	1.21	1.28	1.23	0.638	48.5	1.24	2.9	0.404	0.108	**1.26**	**0.13**	2.3	0.1	**3.2**
dieldrin	<0.36	<0.36	<0.36	0.90	1.05	0.94	<0.36	NA	0.963	8.0	0.779	0.337	1.26	0.37			
4,4'-DDE	4.09	4.05	4.08	6.19	6.10	6.46	4.07	0.5	6.25	3.0	3.34	0.45	**6.59**	**0.56**	0.9	0.4	0.0
2,4'-DDD	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	NA	<0.08	NA	1.12	0.50	<2				
endrin	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	NA	<0.17	NA	<1		<2				
endosulfan II	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	NA	<0.18	NA	<2		<2				
4,4'-DDD	7.01	6.16	7.56	4.92	4.89	5.05	6.91	10.2	4.95	1.7	4.10	0.53	**5.06**	**0.56**	2.7	1.5	0.7
2,4'-DDT	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	NA	<0.07	NA	<2		<2				
cis-nonachlor	0.415	0.329	0.118	0.756	0.604	0.453	0.287	53.2	0.604	25.1	0.296	0.193	<2		-0.1	0.0	**3.5**
4,4'-DDT	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	NA	<0.08	NA	1.29	0.79	1.25	0.10			
mirex	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NA	<0.05	NA	<1		<2				

Laboratory: 17
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	8	36.4
Qualitative	13	59.1
Not Determined	1	4.5

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	3	7	6
2 to 3	2	1	0
≥ 3	3	0	2

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 17**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 1/28/00

PCBs

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	8/3/99 S 1	8/3/99 S 2	8/3/99 S 3	8/3/99 S 1	8/3/99 S 2	8/3/99 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
PCB 8	4.15	2.27	2.55	1.35	1.50	1.58	2.99	33.9	1.48	7.9	1.72	0.47	1.69	0.38	2.9	1.3	2.3
PCB 18	4.52	4.16	4.19	1.02	1.11	1.31	4.29	4.7	1.15	12.9	2.20	0.36	3.86	2.25	**3.8**	2.2	0.3
PCB 28	4.20	4.31	4.91	6.81	6.24	6.45	4.47	8.5	6.50	4.4	5.09	0.76	9.80	3.70	-0.5	-0.6	0.6
PCB 52	5.78	5.58	5.23	6.70	6.70	6.60	5.53	5.0	6.67	0.9	5.03	0.50	**6.89**	**0.56**	0.4	0.5	0.3
PCB 44	3.48	3.64	3.01	4.40	4.26	5.08	3.38	9.7	4.58	9.6	3.79	0.49	**4.80**	**0.62**	-0.4	-0.4	0.6
PCB 66/95	5.84	5.61	5.67	7.78	5.68	6.45	5.71	2.1	6.64	16.0	8.63	1.22	**14.3**	**2.5**	-1.4	**-3.0**	0.1
PCB 101/90	5.41	4.87	5.33	10.4	9.67	10.0	5.20	5.6	10.0	3.6	5.62	0.70	**11.0**	**1.6**	-0.3	-0.4	0.4
PCB 118	4.66	3.49	4.43	9.77	9.89	11.0	4.19	14.8	10.2	6.6	4.39	0.42	**10.0**	**1.1**	-0.2	-0.2	1.0
PCB 153	5.58	5.61	5.33	16.9	6.30	16.4	5.51	2.8	13.2	45.3	5.59	0.81	**17.6**	**1.9**	-0.1	-0.1	0.2
PCB 105	1.74	1.40	1.30	3.78	3.88	3.69	1.48	15.6	3.78	2.5	1.52	0.28	**3.65**	**0.27**	-0.1	0.0	1.0
PCB 138/163/164	7.15	8.80	8.82	13.6	12.6	13.9	8.26	11.6	13.4	5.1	5.01	0.71	**13.4**	**1.0**	2.6	**3.4**	0.8
PCB 187/182	2.85	2.55	1.79	4.80	5.42	4.86	2.40	22.8	5.03	6.8	2.27	0.40	7.00	2.60	0.2	0.1	1.5
PCB 128	1.21	1.06	1.17	2.06	1.79	2.03	1.15	6.8	1.96	7.6	0.823	0.204	**1.87**	**0.32**	1.6	0.3	0.5
PCB 180	3.71	3.47	3.50	6.10	5.68	6.32	3.56	3.7	6.03	5.4	3.33	0.41	8.00	2.00	0.3	0.2	0.2
PCB 170/190	4.11	3.34	2.14	3.06	2.86	2.59	3.20	31.1	2.84	8.3	1.94	0.52	4.00	1.00	2.6	1.3	2.1
PCB 195	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	NA	<0.07	NA	1.19	0.42	<3				
PCB 206	3.31	3.30	4.46	3.86	3.33	3.20	3.69	18.1	3.46	10.1	2.55	0.34	**3.67**	**0.87**	1.8	1.2	1.2
PCB 209	4.40	4.49	4.60	8.27	8.58	7.86	4.50	2.2	8.24	4.4	4.72	0.69	**8.34**	**0.49**	-0.2	-0.2	0.1
PCB 66	5.84	5.61	5.67	7.78	5.68	6.45	5.71	2.1	6.64	16.0	4.71	0.68	**6.80**	**1.40**	0.8	1.0	0.1
PCB 95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.34	0.83	**7.50**	**1.10**			

Laboratory: 17
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	17	94.4
Qualitative	1	5.6
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	13	14	15
2 to 3	3	1	2
≥ 3	1	2	0

Water in Sediment IX

	SedimentIX, %				lab			exercise, %		Sediment IX		
	S 1	S 2	S 3		mean, %	%RSD	Sediment IX, % assigned	95% CL	mean	95% CL	z (25%)	z (s)	p (15%)
water	45.7	46.1	46.1		46.0	0.5	46.2	3.3	46.2	3.3	0.0	0.0	0.0

[a] z- and p-scores ≥ 3 are bolded. [b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 18

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant)

Reporting Date: 2/1/00

PAH

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry 10/6/99 S 1	Sediment IX 10/6/99 S 2	Sediment IX 10/6/99 S 3	SRM 1941a, ng/g dry 10/6/99 S 1	SRM 1941a 10/6/99 S 2	SRM 1941a 10/6/99 S 3	Sediment IX lab mean ng/g dry	Sediment IX lab %RSD	SRM 1941a lab mean ng/g dry	SRM 1941a lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	Sediment IX 95% CL	SRM 1941a, ng/g dry target value[b]	SRM 1941a 95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
naphthalene	1010	1240	1140	1070	1100	1050	1130	10.2	1073	2.3	756	113	**1010**	**140**	2.0	1.4	0.7
2-methylnaphthalene	311	378	354	404	401	396	348	9.8	400	1.0	241	34	325	60	1.8	1.3	0.7
1-methylnaphthalene	138	195	173	201	200	118	169	17.0	173	27.5	111	18	150	30	2.1	1.4	1.1
biphenyl	73.0	93.0	126	104	104	206	97.3	27.5	138	42.7	73.3	12.5	100	36	1.3	0.8	1.8
2,6-dimethylnaphthalene	89.0	112	103	118	116	118	101	11.4	117	1.0	85.4	14.0	120	24	0.7	0.5	0.8
acenaphthylene	71.0	91.0	124	88.0	93.1	155	95.3	28.1	112	33.3	53.6	8.5	60.0	28.0	**3.1**	2.1	1.9
acenaphthene	65.0	84.0	48.0	97.0	87.0	40.1	65.7	27.4	74.7	40.7	35.7	4.7	41.0	10.0	**3.3**	2.6	1.8
1,6,7-trimethylnaphthalene	32.0	46.0	44.0	51.0	54.0	50.0	40.7	18.6	51.7	4.0	27.7	5.3	48.0	10.0	1.9	1.4	1.2
fluorene	101	131	126	79.0	79.0	81.0	119	13.5	79.7	1.4	78.8	11.5	**97.3**	**8.6**	2.1	1.5	0.9
phenanthrene	395	523	514	534	536	523	477	15.0	531	1.3	383	43	**489**	**23**	1.0	0.9	1.0
anthracene	267	236	211	206	200	186	238	11.8	197	5.2	174	19	**184**	**14**	1.5	1.4	0.8
1-methylphenanthrene	53.0	70.0	65.0	82.0	79.0	82.0	62.7	13.9	81.0	2.1	76.0	11.1	101	27	-0.7	-0.5	0.9
fluoranthene	650	751	623	848	905	1280	675	10.0	1011	23.2	635	71	**981**	**78**	0.3	0.2	0.7
pyrene	NA	818	633	866	922	662	726	18.0	817	16.8	594	62	**811**	**24**	0.9	0.8	1.2
benz[a]anthracene	320	370	328	388	383	355	339	7.9	375	4.7	343	30	**427**	**25**	0.0	0.0	0.5
chrysene + triphenylene	409	455	474	571	544	608	446	7.5	574	5.6	404	37	577	35	0.4	0.5	0.5
benzofluoranthenes [b+j+k]	784	964	799	1212	979	1172	849	11.8	1121	11.1	815	85	1441	150	0.2	0.2	0.8
benzo[e]pyrene	325	322	334	478	410	432	327	1.9	440	7.9	320	34	**553**	**59**	0.1	0.1	0.1
benzo[a]pyrene	445	404	401	535	389	516	417	5.9	480	16.5	354	42	**628**	**52**	0.7	0.6	0.4
perylene	931	720	724	450	303	441	792	15.2	398	20.7	416	63	**452**	**58**	**3.6**	2.4	1.0
indeno[1,2,3-cd]pyrene	302	244	375	381	356	511	307	21.4	416	20.0	287	36	**501**	**72**	0.3	0.2	1.4
dibenz[a,h]anthracene + [a,c]	94.0	99.0	99.0	133	116	100	97.3	3.0	116	14.2	78.1	14.2	**117**	**14**	1.0	0.6	0.2
benzo[ghi]perylene	329	300	328	510	415	473	319	5.2	466	10.3	259	27	**525**	**67**	0.9	0.8	0.3

Laboratory: 18

PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	23	100.0
Qualitative	0	0.0
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	18	20	23
2 to 3	2	3	0
≥ 3	3	0	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 18**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 2/1/00

PESTICIDES

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry 1/5/00 S 1	Sediment IX, ng/g dry 10/16/99 S 2	Sediment IX, ng/g dry 1/5/99 S 3	SRM 1941a, ng/g dry 10/7/99 S 1	SRM 1941a, ng/g dry 10/18/99 S 2	SRM 1941a, ng/g dry 12/30/99 S 3	Sediment IX lab mean ng/g dry	Sediment IX lab %RSD	SRM 1941a lab mean ng/g dry	SRM 1941a lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	Sediment IX 95% CL	SRM 1941a, ng/g dry target value[b]	SRM 1941a 95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	<2.4	<1.8	<3.5	<1	<1.1	<2	<3.5	NA	<2	NA	<1		<2				
hexachlorobenzene	7.40	6.90	7.60	50.0	48.0	41.0	7.30	4.9	46.3	10.2	5.88	0.74	**70.0**	**25.0**	1.0	0.8	0.3
gamma-HCH	<1.4	<4.8	<9	<1	<1.1	<2	<9	NA	<2	NA	<1		<2				
heptachlor	<1.4	<1.1	<3.5	<1	<1.1	<2	<3.5	NA	<2	NA	0.796	0.553	<2				
aldrin	<2.2	<1.5	<3.5	<2.1	<2.1	<2	<3.5	NA	<2.1	NA	0.438	0.313	<2				
heptachlor epoxide	<7.2	<7.7	<6.9	<8.2	<2.2	<4	<7.7	NA	<8.2	NA	0.125	0.111	<2				
oxychlordane	<3.6	<5	<4.1	<2	<2	<2	<5	NA	<2	NA	0.694	0.613	<3				
trans-chlordane	<3.8	<10	<3.5	1.60	1.20	2.70	<10	NA	1.83	42.4	0.624	0.236	<2				
2,4'-DDE	<6.3	<6.3	<3.5	<2	<1.3	<2	<6.3	NA	<2	NA	0.451	0.150	**0.73**	**0.11**			
endosulfan I	<1.4	<2.2	<3.5	<1	<1.1	<2	<3.5	NA	<2	NA	<1	0.0	<2				
cis-chlordane	<1.4	<1.1	<3.5	2.00	1.80	2.00	<3.5	NA	1.93	6.0	0.977	0.339	**2.33**	**0.56**			
trans-nonachlor	<1.4	<1.1	2.60	<1	<1.1	<2	2.60	NA	<2	NA	0.404	0.108	**1.26**	**0.13**	**21.8**	1.2	
dieldrin	<3.8	<1.1	<3.5	1.00	0.800	1.50	<3.8	NA	1.10	32.8	0.779	0.337	1.26	0.37			
4,4'-DDE	4.20	4.30	2.65	5.70	5.30	4.20	3.72	24.9	5.07	15.3	3.34	0.45	**6.59**	**0.56**	0.5	0.2	1.7
2,4'-DDD	<1.4	<2.4	<3.5	<1	<1.8	<2	<3.5	NA	<2	NA	1.12	0.50	<2				
endrin	<3.4	<1.3	<3.5	<1	<1.1	<2	<3.5	NA	<2	NA	<1		<2				
endosulfan II	<3	<3.2	<3.5	<1	<1.1	<2	<3.5	NA	<2	NA	<2		<2				
4,4'-DDD	3.30	3.10	2.70	3.70	4.10	3.50	3.03	10.1	3.77	8.1	4.10	0.53	**5.06**	**0.56**	-1.0	-0.6	0.7
2,4'-DDT	<6.2	<6.6	<6.2	<1	<1.1	<2	<6.6	NA	<2	NA	<2		<2				
cis-nonachlor	<2.2	<1.3	<3.5	<2	<1.1	<2	<3.5	NA	<2	NA	0.296	0.193	<2				
4,4'-DDT	<4.2	<4	<3.5	<4	<7.6	<2	<4.2	NA	<7.6	NA	1.29	0.79	1.25	0.10			
mirex	<1.4	<4.4	<3.5	<1	<1.1	<2	<4.4	NA	<2	NA	<1		<2				

Laboratory: 18
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	4	18.2
Qualitative	18	81.8
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	3	4	3
2 to 3	0	0	0
≥ 3	1	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 18

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant)

Reporting Date: 2/1/00

PCBs

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry 10/7/99 S 1	Sediment IX, ng/g dry 10/7/99 S 2	Sediment IX, ng/g dry 10/7/99 S 3	SRM 1941a, ng/g dry 10/7/99 S 1	SRM 1941a, ng/g dry 10/7/99 S 2	SRM 1941a, ng/g dry 10/7/99 S 3	Sediment IX lab mean ng/g dry	Sediment IX lab %RSD	SRM 1941a lab mean ng/g dry	SRM 1941a lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	Sediment IX, ng/g dry 95% CL	SRM 1941a, ng/g dry target value[b]	SRM 1941a, ng/g dry 95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
PCB 8	2.22	1.90	<3.5	<2	<1.1	<2	2.06	11.0	<2	NA	1.72	0.47	1.69	0.38	0.8	0.4	0.7
PCB 18	3.03	2.90	<3.5	2.80	2.80	<2	2.97	3.1	2.80	0.0	2.20	0.36	3.86	2.25	1.4	0.8	0.2
PCB 28	4.90	4.90	3.52	5.30	5.00	5.30	4.44	17.9	5.20	3.3	5.09	0.76	9.80	3.70	-0.5	-0.7	1.2
PCB 52	5.50	5.50	5.00	6.30	5.80	7.20	5.33	5.4	6.43	11.0	5.03	0.50	**6.89**	**0.56**	0.2	0.3	0.4
PCB 44	4.20	4.10	3.20	4.20	3.90	4.00	3.83	14.4	4.03	3.8	3.79	0.49	**4.80**	**0.62**	0.0	0.0	1.0
PCB 66/95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.63	1.22	**14.3**	**2.5**			
PCB 101/90	5.40	5.60	4.20	8.70	7.80	9.20	5.07	14.9	8.6	8.3	5.62	0.70	**11.0**	**1.6**	-0.4	-0.6	1.0
PCB 118	4.04	4.00	2.60	6.60	6.10	6.30	3.55	23.1	6.33	4.0	4.39	0.42	**10.0**	**1.1**	-0.8	-0.9	1.5
PCB 153	5.00	5.10	4.30	9.70	9.30	11.0	4.80	9.1	10.0	8.9	5.59	0.81	**17.6**	**1.9**	-0.6	-0.8	0.6
PCB 105	<1.4	1.20	<3.5	2.00	1.90	<2	1.20	NA	1.95	3.6	1.52	0.28	**3.65**	**0.27**	-0.9	-0.3	
PCB 138/163/164	3.60	3.70	2.70	7.50	6.90	9.10	3.33	16.5	7.83	14.5	5.01	0.71	**13.4**	**1.0**	-1.3	-1.7	1.1
PCB 187/182	2.40	2.70	2.50	4.90	5.10	5.60	2.53	6.0	5.20	6.9	2.27	0.40	7.00	2.60	0.5	0.3	0.4
PCB 128	<1.4	<1.1	<3.5	1.30	1.10	<2	<3.5	NA	1.20	11.8	0.823	0.204	**1.87**	**0.32**			
PCB 180	3.50	3.90	3.60	6.80	6.90	8.30	3.67	5.7	7.33	11.4	3.33	0.41	8.00	2.00	0.4	0.3	0.4
PCB 170/190	1.50	1.70	<3.5	3.20	3.20	3.20	1.60	8.8	3.20	0.0	1.94	0.52	4.00	1.00	-0.7	-0.4	0.6
PCB 195	<1.4	<1.1	<3.5	<1.3	<1.1	<2	<3.5	NA	<2	NA	1.19	0.42	<3				
PCB 206	2.80	2.50	2.50	3.10	2.80	4.00	2.60	6.7	3.30	18.9	2.55	0.34	**3.67**	**0.87**	0.1	0.0	0.4
PCB 209	5.80	5.30	4.60	8.50	8.40	10.0	5.23	11.5	8.97	10.0	4.72	0.69	**8.34**	**0.49**	0.4	0.5	0.8
PCB 66	5.10	5.00	3.50	5.40	5.10	5.20	4.53	19.8	5.23	2.9	4.71	0.68	**6.80**	**1.40**	-0.2	-0.2	1.3
PCB 95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.34	0.83	**7.50**	**1.10**			

Laboratory: 18

PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	15	83.3
Qualitative	2	11.1
Not Determined	1	5.6

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	15	15	14
2 to 3	0	0	0
≥ 3	0	0	0

Water in Sediment IX

	SedimentIX, % S 1	S 2	S 3	lab mean, %	lab %RSD	Sediment IX, % assigned	95% CL	exercise, % mean	95% CL	Sediment IX z (25%)	z (s)	p (15%)
water	54.1	53.9	53.9	54.0	0.2	46.2	3.3	46.2	3.3	0.7	0.8	0.0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 19**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 1/31/00

PAH

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/1/00 S 1	1/1/00 S 2	1/1/00 S 3	1/1/00 S 1	1/1/00 S 2	1/1/00 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
naphthalene	NA			NA			NA	NA	NA	NA	756	113	**1010**	**140**			
2-methylnaphthalene	NA			NA			NA	NA	NA	NA	241	34	325	60			
1-methylnaphthalene	NA			NA			NA	NA	NA	NA	111	18	150	30			
biphenyl	NA			NA			NA	NA	NA	NA	73.3	12.5	100	36			
2,6-dimethylnaphthalene	NA			NA			NA	NA	NA	NA	85.4	14.0	120	24			
acenaphthylene	NA			NA			NA	NA	NA	NA	53.6	8.5	60.0	28.0			
acenaphthene	NA			NA			NA	NA	NA	NA	35.7	4.7	41.0	10.0			
1,6,7-trimethylnaphthalene	NA			NA			NA	NA	NA	NA	27.7	5.3	48.0	10.0			
fluorene	NA			NA			NA	NA	NA	NA	78.8	11.5	**97.3**	**8.6**			
phenanthrene	NA			NA			NA	NA	NA	NA	383	43	**489**	**23**			
anthracene	NA			NA			NA	NA	NA	NA	174	19	**184**	**14**			
1-methylphenanthrene	NA			NA			NA	NA	NA	NA	76.0	11.1	101	27			
fluoranthene	NA			NA			NA	NA	NA	NA	635	71	**981**	**78**			
pyrene	NA			NA			NA	NA	NA	NA	594	62	**811**	**24**			
benz[a]anthracene	NA			NA			NA	NA	NA	NA	343	30	**427**	**25**			
chrysene + triphenylene	NA			NA			NA	NA	NA	NA	404	37	577	35			
benzofluoranthenes [b+j+k]	NA			NA			NA	NA	NA	NA	815	85	1441	150			
benzo[e]pyrene	NA			NA			NA	NA	NA	NA	320	34	**553**	**59**			
benzo[a]pyrene	NA			NA			NA	NA	NA	NA	354	42	**628**	**52**			
perylene	NA			NA			NA	NA	NA	NA	416	63	**452**	**58**			
indeno[1,2,3-cd]pyrene	NA			NA			NA	NA	NA	NA	287	36	**501**	**72**			
dibenz[a,h]anthracene + [a,c]	NA			NA			NA	NA	NA	NA	78.1	14.2	**117**	**14**			
benzo[ghi]perylene	NA			NA			NA	NA	NA	NA	259	27	**525**	**67**			

Laboratory: 19
PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	0	0.0
Qualitative	0	0.0
Not Determined	23	100.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	0	0	0
2 to 3	0	0	0
≥ 3	0	0	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 19**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 1/31/00

PESTICIDES

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Material reference values: Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Performance scores[a]: Sediment IX		
	1/1/00			1/1/00			lab mean	lab	lab mean	lab	assigned		target		z-score	z-score	p-score
	S 1	S 2	S 3	S 1	S 2	S 3	ng/g dry	%RSD	ng/g dry	%RSD	value	95% CL	value[b]	95% CL	(25%)	(s)	(15%)
alpha-HCH	NA			NA			NA	NA	NA	NA	<1		<2				
hexachlorobenzene	<0.3			57.7			<0.3	NA	57.7	NA	5.88	0.74	**70.0**	**25.0**			
gamma-HCH	NA			NA			NA	NA	NA	NA	<1		<2				
heptachlor	NA			NA			NA	NA	NA	NA	0.796	0.553	<2				
aldrin	NA			NA			NA	NA	NA	NA	0.438	0.313	<2				
heptachlor epoxide	NA			NA			NA	NA	NA	NA	0.125	0.111	<2				
oxychlordane	NA			NA			NA	NA	NA	NA	0.694	0.613	<3				
trans-chlordane	NA			NA			NA	NA	NA	NA	0.624	0.236	<2				
2,4'-DDE	<0.3			0.738			<0.3	NA	0.738	NA	0.451	0.150	**0.73**	**0.11**			
endosulfan I	NA			NA			NA	NA	NA	NA	<1	0.0	<2				
cis-chlordane	2.57			2.07			2.57	NA	2.07	NA	0.977	0.339	**2.33**	**0.56**	**6.5**	0.9	
trans-nonachlor	5.31			1.56			5.31	NA	1.56	NA	0.404	0.108	**1.26**	**0.13**	**48.7**	2.7	
dieldrin	NA			NA			NA	NA	NA	NA	0.779	0.337	1.26	0.37			
4,4'-DDE	3.29			6.56			3.29	NA	6.56	NA	3.34	0.45	**6.59**	**0.56**	-0.1	0.0	
2,4'-DDD	NA			NA			NA	NA	NA	NA	1.12	0.50	<2				
endrin	NA			NA			NA	NA	NA	NA	<1		<2				
endosulfan II	NA			NA			NA	NA	NA	NA	<2		<2				
4,4'-DDD	4.66			4.98			4.66	NA	4.98	NA	4.10	0.53	**5.06**	**0.56**	0.6	0.3	
2,4'-DDT	NA			NA			NA	NA	NA	NA	<2		<2				
cis-nonachlor	NA			NA			NA	NA	NA	NA	0.296	0.193	<2				
4,4'-DDT	NA			NA			NA	NA	NA	NA	1.29	0.79	1.25	0.10			
mirex	NA			NA			NA	NA	NA	NA	<1		<2				

Laboratory: 19
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	4	18.2
Qualitative	2	9.1
Not Determined	16	72.7

Category	Number by Category: z (25%)	z (s)	p (15%)
≤ 2	2	3	0
2 to 3	0	1	0
≥ 3	2	0	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 19

Sample: QA99SED9 - Marine Sediment IX

(data reported as if three figures were significant)

Reporting Date: 1/31/00

PCBs

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry 1/1/00 S 1	S 2	S 3	SRM 1941a, ng/g dry 1/1/00 S 1	S 2	S 3	Sediment IX lab mean ng/g dry	lab %RSD	SRM 1941a lab mean ng/g dry	lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	95% CL	SRM 1941a, ng/g dry target value[b]	95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
PCB 8	NA			NA			NA	NA	NA	NA	1.72	0.47	1.69	0.38			
PCB 18	NA			NA			NA	NA	NA	NA	2.20	0.36	3.86	2.25			
PCB 28	NA			NA			NA	NA	NA	NA	5.09	0.76	9.80	3.70			
PCB 52	3.02			6.73			3.02	NA	6.73	NA	5.03	0.50	**6.89**	**0.56**	-1.6	-2.1	
PCB 44	3.27			4.68			3.27	NA	4.68	NA	3.79	0.49	**4.80**	**0.62**	-0.5	-0.5	
PCB 66/95	NA			NA			NA	NA	NA	NA	8.63	1.22	**14.3**	**2.5**			
PCB 101/90	2.67			10.8			2.67	NA	10.8	NA	5.62	0.70	**11.0**	**1.6**	-2.1	**-3.1**	
PCB 118	3.33			9.79			3.33	NA	9.79	NA	4.39	0.42	**10.0**	**1.1**	-1.0	-1.1	
PCB 153	4.54			16.3			4.54	NA	16.3	NA	5.59	0.81	**17.6**	**1.9**	-0.8	-1.1	
PCB 105	1.70			3.65			1.70	NA	3.65	NA	1.52	0.28	**3.65**	**0.27**	0.5	0.2	
PCB 138/163/164	4.06			13.3			4.06	NA	13.3	NA	5.01	0.71	**13.4**	**1.0**	-0.8	-1.0	
PCB 187/182	NA			NA			NA	NA	NA	NA	2.27	0.40	7.00	2.60			
PCB 128	1.20			1.73			1.20	NA	1.73	NA	0.823	0.204	**1.87**	**0.32**	1.8	0.4	
PCB 180	2.82			7.83			2.82	NA	7.83	NA	3.33	0.41	8.00	2.00	-0.6	-0.5	
PCB 170/190	1.61			5.61			1.61	NA	5.61	NA	1.94	0.52	4.00	1.00	-0.7	-0.3	
PCB 195	NA			NA			NA	NA	NA	NA	1.19	0.42	<3				
PCB 206	1.47			3.43			1.47	NA	3.43	NA	2.55	0.34	**3.67**	**0.87**	-1.7	-1.1	
PCB 209	2.64			8.09			2.64	NA	8.09	NA	4.72	0.69	**8.34**	**0.49**	-1.8	-2.2	
PCB 66	3.02			6.28			3.02	NA	6.28	NA	4.71	0.68	**6.80**	**1.40**	-1.4	-1.8	
PCB 95	NA			NA			NA	NA	NA	NA	3.34	0.83	**7.50**	**1.10**			

Laboratory: 19

PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	12	66.7
Qualitative	0	0.0
Not Determined	6	33.3

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	11	9	0
2 to 3	1	2	0
≥ 3	0	1	0

Water in Sediment IX

	Sediment IX, % S 1	S 2	S 3	lab mean, %	%RSD	Sediment IX, % assigned	95% CL	exercise, % mean	95% CL	Sediment IX z (25%)	z (s)	p (15%)
water	NA			NA	NA	46.2	3.3	46.2	3.3			

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 21**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 1/31/00

PAH

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry 1/0/00 S 1	S 2	S 3	SRM 1941a, ng/g dry 1/0/00 S 1	S 2	S 3	Sediment IX lab mean ng/g dry	Sediment IX lab %RSD	SRM 1941a lab mean ng/g dry	SRM 1941a lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	95% CL	SRM 1941a, ng/g dry target value[b]	95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
naphthalene							NA	NA	NA	NA	756	113	**1010**	**140**			
2-methylnaphthalene							NA	NA	NA	NA	241	34	325	60			
1-methylnaphthalene							NA	NA	NA	NA	111	18	150	30			
biphenyl							NA	NA	NA	NA	73.3	12.5	100	36			
2,6-dimethylnaphthalene							NA	NA	NA	NA	85.4	14.0	120	24			
acenaphthylene							NA	NA	NA	NA	53.6	8.5	60.0	28.0			
acenaphthene							NA	NA	NA	NA	35.7	4.7	41.0	10.0			
1,6,7-trimethylnaphthalene							NA	NA	NA	NA	27.7	5.3	48.0	10.0			
fluorene							NA	NA	NA	NA	78.8	11.5	**97.3**	**8.6**			
phenanthrene							NA	NA	NA	NA	383	43	**489**	**23**			
anthracene							NA	NA	NA	NA	174	19	**184**	**14**			
1-methylphenanthrene							NA	NA	NA	NA	76.0	11.1	101	27			
fluoranthene							NA	NA	NA	NA	635	71	**981**	**78**			
pyrene							NA	NA	NA	NA	594	62	**811**	**24**			
benz[a]anthracene							NA	NA	NA	NA	343	30	**427**	**25**			
chrysene + triphenylene							NA	NA	NA	NA	404	37	577	35			
benzofluoranthenes [b+j+k]							NA	NA	NA	NA	815	85	1441	150			
benzo[e]pyrene							NA	NA	NA	NA	320	34	**553**	**59**			
benzo[a]pyrene							NA	NA	NA	NA	354	42	**628**	**52**			
perylene							NA	NA	NA	NA	416	63	**452**	**58**			
indeno[1,2,3-cd]pyrene							NA	NA	NA	NA	287	36	**501**	**72**			
dibenz[a,h]anthracene + [a,c]							NA	NA	NA	NA	78.1	14.2	**117**	**14**			
benzo[ghi]perylene							NA	NA	NA	NA	259	27	**525**	**67**			

Laboratory: 21
PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	0	0.0
Qualitative	0	0.0
Not Determined	23	100.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	0	0	0
2 to 3	0	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 21**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 1/31/00

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/5/00 S 1	1/18/00 S 2	1/18/00 S 3	1/18/00 S 1	1/18/00 S 2	S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	ND	ND	ND	ND	ND		ND	ND	ND	ND	<1		<2				
hexachlorobenzene	NA	NA	NA	NA	NA		NA	NA	NA	NA	5.88	0.74	**70.0**	**25.0**			
gamma-HCH	ND	ND	ND	ND	ND		ND	ND	ND	ND	<1		<2				
heptachlor	NA	NA	NA	NA	NA		NA	NA	NA	NA	0.796	0.553	<2				
aldrin	NA	NA	NA	NA	NA		NA	NA	NA	NA	0.438	0.313	<2				
heptachlor epoxide	NA	NA	NA	NA	NA		NA	NA	NA	NA	0.125	0.111	<2				
oxychlordane	ND	ND	ND	ND	ND		ND	ND	ND	ND	0.694	0.613	<3				
trans-chlordane	<2.95	<3.48	<3.50	1.75	2.34		<3.50	NA	2.05	20.4	0.624	0.236	<2				
2,4'-DDE	NA	NA	NA	NA	NA		NA	NA	NA	NA	0.451	0.150	**0.73**	**0.11**			
endosulfan I	<2.95	<3.48	<3.50	<0.643	<0.625		<3.50	NA	<0.643	NA	<1	0.0	<2				
cis-chlordane	<2.95	<3.48	<3.50	1.23	1.70		<3.50	NA	1.47	22.7	0.977	0.339	**2.33**	**0.56**			
trans-nonachlor	<2.95	<3.48	<3.50	0.76	1.15		<3.50	NA	0.95	29.3	0.404	0.108	**1.26**	**0.13**			
dieldrin	NA	NA	NA	NA	NA		NA	NA	NA	NA	0.779	0.337	1.26	0.37			
4,4'-DDE	7.49	7.43	9.12	4.11	5.72		8.01	12.0	4.92	23.2	3.34	0.45	**6.59**	**0.56**	**5.6**	2.6	0.8
2,4'-DDD	NA	NA	NA	NA	NA		NA	NA	NA	NA	1.12	0.50	<2				
endrin	NA	NA	NA	NA	NA		NA	NA	NA	NA	<1		<2				
endosulfan II	<2.95	<3.48	<3.50	<0.643	<0.625		<3.50	NA	<3.50	NA	<2		<2				
4,4'-DDD	NA	NA	NA	NA	NA		NA	NA	NA	NA	4.10	0.53	**5.06**	**0.56**			
2,4'-DDT	NA	NA	NA	NA	NA		NA	NA	NA	NA	<2		<2				
cis-nonachlor	NA	NA	NA	NA	NA		NA	NA	NA	NA	0.296	0.193	<2				
4,4'-DDT	ND	ND	ND	ND	ND		ND	ND	ND	ND	1.29	0.79	1.25	0.10			
mirex	NA	NA	NA	NA	NA		NA	NA	NA	NA	<1		<2				

Laboratory: 21
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	1	4.5
Qualitative	9	40.9
Not Determined	12	54.5

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	0	0	1
2 to 3	0	1	0
≥ 3	1	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 21**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 1/31/00

PCBs

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry S 1	S 2	S 3	SRM 1941a, ng/g dry S 1	S 2	S 3	Sediment IX lab mean ng/g dry	Sediment IX lab %RSD	SRM 1941a lab mean ng/g dry	SRM 1941a lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	95% CL	SRM 1941a, ng/g dry target value[b]	95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
PCB 8	___	___	___	___	___	___	NA	NA	NA	NA	1.72	0.47	1.69	0.38			
PCB 18	___	___	___	___	___	___	NA	NA	NA	NA	2.20	0.36	3.86	2.25			
PCB 28	___	___	___	___	___	___	NA	NA	NA	NA	5.09	0.76	9.80	3.70			
PCB 52	___	___	___	___	___	___	NA	NA	NA	NA	5.03	0.50	**6.89**	**0.56**			
PCB 44	___	___	___	___	___	___	NA	NA	NA	NA	3.79	0.49	**4.80**	**0.62**			
PCB 66/95	___	___	___	___	___	___	NA	NA	NA	NA	8.63	1.22	**14.3**	**2.5**			
PCB 101/90	___	___	___	___	___	___	NA	NA	NA	NA	5.62	0.70	**11.0**	**1.6**			
PCB 118	___	___	___	___	___	___	NA	NA	NA	NA	4.39	0.42	**10.0**	**1.1**			
PCB 153	___	___	___	___	___	___	NA	NA	NA	NA	5.59	0.81	**17.6**	**1.9**			
PCB 105	___	___	___	___	___	___	NA	NA	NA	NA	1.52	0.28	**3.65**	**0.27**			
PCB 138/163/164	___	___	___	___	___	___	NA	NA	NA	NA	5.01	0.71	**13.4**	**1.0**			
PCB 187/182	___	___	___	___	___	___	NA	NA	NA	NA	2.27	0.40	7.00	2.60			
PCB 128	___	___	___	___	___	___	NA	NA	NA	NA	0.823	0.204	**1.87**	**0.32**			
PCB 180	___	___	___	___	___	___	NA	NA	NA	NA	3.33	0.41	8.00	2.00			
PCB 170/190	___	___	___	___	___	___	NA	NA	NA	NA	1.94	0.52	4.00	1.00			
PCB 195	___	___	___	___	___	___	NA	NA	NA	NA	1.19	0.42	<3				
PCB 206	___	___	___	___	___	___	NA	NA	NA	NA	2.55	0.34	**3.67**	**0.87**			
PCB 209	___	___	___	___	___	___	NA	NA	NA	NA	4.72	0.69	**8.34**	**0.49**			
PCB 66	___	___	___	___	___	___	NA	NA	NA	NA	4.71	0.68	**6.80**	**1.40**			
PCB 95	___	___	___	___	___	___	NA	NA	NA	NA	3.34	0.83	**7.50**	**1.10**			

Laboratory: 21
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	0	0.0
Qualitative	0	0.0
Not Determined	18	100.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	0	0	0
2 to 3	0	0	0
≥ 3	0	0	0

Water in Sediment IX

	SedimentIX, % S 1	S 2	S 3	lab mean, %	lab %RSD	Sediment IX, % assigned	95% CL	exercise, % mean	95% CL	Sediment IX z (25%)	z (s)	p (15%)
water	79.7	80.9	81.4	80.7	1.1	46.2	3.3	46.2	3.3	**3.0**	**3.5**	0.1

[a]z- and p-scores ≥ 3 are bolded. [b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 22**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 1/31/00

PAH

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry 11/15/99 S 1	S 2	S 3	SRM 1941a, ng/g dry 11/15/99 S 1	S 2	S 3	Sediment IX lab mean ng/g dry	lab %RSD	SRM 1941a lab mean ng/g dry	lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	95% CL	SRM 1941a, ng/g dry target value[b]	95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
naphthalene	277	157	385	490	484	476	273	41.8	483	1.5	756	113	**1010**	**140**	-2.6	-1.8	2.8
2-methylnaphthalene	112	123	150	NA	NA	NA	128	15.2	NA	NA	241	34	325	60	-1.9	-1.4	1.0
1-methylnaphthalene	42.5	48.1	57.9	NA	NA	NA	49.5	15.7	NA	NA	111	18	150	30	-2.2	-1.5	1.0
biphenyl	32.9	36.4	37.1	58.9	54.5	62.5	35.5	6.3	58.6	6.8	73.3	12.5	100	36	-2.1	-1.3	0.4
2,6-dimethylnaphthalene	49.0	59.3	57.5	NA	NA	NA	55.3	10.0	NA	NA	85.4	14.0	120	24	-1.4	-1.0	0.7
acenaphthylene	25.6	30.4	27.8	28.0	29.9	24.6	27.9	8.6	27.5	9.8	53.6	8.5	60.0	28.0	-1.9	-1.3	0.6
acenaphthene	20.4	24.9	22.3	23.6	21.0	19.0	22.5	10.0	21.2	10.9	35.7	4.7	41.0	10.0	-1.5	-1.1	0.7
1,6,7-trimethylnaphthalene	16.8	17.3	14.6	NA	NA	NA	16.2	8.8	NA	NA	27.7	5.3	48.0	10.0	-1.7	-1.2	0.6
fluorene	57.7	66.9	49.1	43.1	36.9	34.1	57.9	15.4	38.0	12.1	78.8	11.5	**97.3**	**8.6**	-1.1	-0.8	1.0
phenanthrene	298	305	258	343	326	303	287	8.8	324	6.2	383	43	**489**	**23**	-1.0	-0.9	0.6
anthracene	120	147	114	113	130	120	127	13.8	121	7.1	174	19	**184**	**14**	-1.1	-1.0	0.9
1-methylphenanthrene	53.0	59.6	48.5	61.9	65.1	59.3	53.7	10.4	62.1	4.7	76.0	11.1	101	27	-1.2	-0.9	0.7
fluoranthene	534	512	441	732	671	535	496	9.8	646	15.6	635	71	**981**	**78**	-0.9	-0.8	0.7
pyrene	394	436	404	490	497	533	411	5.3	507	4.6	594	62	**811**	**24**	-1.2	-1.2	0.4
benz[a]anthracene	263	281	249	309	314	290	264	6.1	304	4.2	343	30	**427**	**25**	-0.9	-1.0	0.4
chrysene + triphenylene	315	308	276	459	423	390	300	6.9	424	8.1	404	37	577	35	-1.0	-1.1	0.5
benzofluoranthenes [b+j+k]	643	646	592	1060	1000	923	627	4.8	994	6.9	815	85	1441	150	-0.9	-0.9	0.3
benzo[e]pyrene	242	229	214	410	365	346	228	6.1	374	8.8	320	34	**553**	**59**	-1.1	-1.0	0.4
benzo[a]pyrene	266	274	250	383	379	359	263	4.6	374	3.4	354	42	**628**	**52**	-1.0	-0.9	0.3
perylene	276	277	230	241	221	215	261	10.3	226	6.0	416	63	**452**	**58**	-1.5	-1.0	0.7
indeno[1,2,3-cd]pyrene	215	266	248	355	461	419	243	10.6	412	13.0	287	36	**501**	**72**	-0.6	-0.5	0.7
dibenz[a,h]anthracene + [a,c]	52.3	61.1	54.5	81.0	96.2	80.6	56.0	8.2	85.9	10.3	78.1	14.2	**117**	**14**	-1.1	-0.6	0.5
benzo[ghi]perylene	185	222	200	324	391	346	202	9.2	354	9.7	259	27	**525**	**67**	-0.9	-0.8	0.6

Laboratory: 22
PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	23	100.0
Qualitative	0	0.0
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	20	23	22
2 to 3	3	0	1
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 22**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 1/31/00

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/5/00	1/6-15/00	1/11/00	11/20/99	1/6/00	1/10-11/00	lab mean	lab	lab mean	lab	assigned		target		z-score	z-score	p-score
	S 1	S 2	S 3	S 1	S 2	S 3	ng/g dry	%RSD	ng/g dry	%RSD	value	95% CL	value[b]	95% CL	(25%)	(s)	(15%)
alpha-HCH	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	NA	<2.0	NA	<1		<2				
hexachlorobenzene	5.92	5.60	4.91	51.4	60.1	47.6	5.48	9.4	53.0	12.1	5.88	0.74	**70.0**	**25.0**	-0.3	-0.2	0.6
gamma-HCH	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	NA	<2.0	NA	<1		<2				
heptachlor	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	NA	<2.0	NA	0.796	0.553	<2				
aldrin	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	NA	<2.0	NA	0.438	0.313	<2				
heptachlor epoxide	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	NA	<2.0	NA	0.125	0.111	<2				
oxychlordane	<2.0	<2.0	<2.0	<2.0	<3.0	<3.0	<2.0	NA	<2.0	NA	0.694	0.613	<3				
trans-chlordane	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	NA	<2.0	NA	0.624	0.236	<2				
2,4'-DDE	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	NA	<2.0	NA	0.451	0.150	**0.73**	**0.11**			
endosulfan I	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	NA	<2.0	NA	<1	0.0	<2				
cis-chlordane	<2.0	<2.0	<2.0	1.75	NA	1.97	<2.0	NA	1.86	8.4	0.977	0.339	**2.33**	**0.56**			
trans-nonachlor	<2.0	<3.0	<2.0	1.37	2.06	1.42	<2.0	NA	1.62	23.8	0.404	0.108	**1.26**	**0.13**			
dieldrin	1.03	0.722	0.548	1.62	NA	1.49	0.767	31.8	1.56	5.9	0.779	0.337	1.26	0.37	-0.1	0.0	2.1
4,4'-DDE	4.09	4.69	2.29	7.25	3.30	5.57	3.69	33.8	5.37	36.9	3.34	0.45	**6.59**	**0.56**	0.4	0.2	2.3
2,4'-DDD	<2.0	<2.0	<3.0	<2.0	<2.0	<2.0	<2.0	NA	<2.0	NA	1.12	0.50	<2				
endrin	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	NA	<2.0	NA	<1		<2				
endosulfan II	<2.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	NA	<2.0	NA	<2		<2				
4,4'-DDD	2.89	4.77	3.83	3.70	NA	4.96	3.83	24.5	4.33	20.6	4.10	0.53	**5.06**	**0.56**	-0.3	-0.1	1.6
2,4'-DDT	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	NA	<2.0	NA	<2		<2				
cis-nonachlor	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	NA	<2.0	NA	0.296	0.193	<2				
4,4'-DDT	<2.0	<2.0	<2.0	<2.0	NA	<2.0	<2.0	NA	<2.0	NA	1.29	0.79	1.25	0.10			
mirex	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	NA	<2.0	NA	<1		<2				

Laboratory: 22
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	4	18.2
Qualitative	18	81.8
Not Determined	0	0.0

Category	Number by Category		
	z (25%)	z (s)	p (15%)
≤ 2	4	4	2
2 to 3	0	0	2
≥ 3	0	0	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 22

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant)

Reporting Date: 1/31/00

PCBs

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry 12/5/99 S 1	S 2	S 3	SRM 1941a, ng/g dry 12/5/99 S 1	S 2	S 3	Sediment IX lab mean ng/g dry	lab %RSD	SRM 1941a lab mean ng/g dry	lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	95% CL	SRM 1941a, ng/g dry target value[b]	95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
PCB 8	5.20	3.06	2.31	NA	7.52	4.40	3.52	42.6	5.96	37.0	1.72	0.47	1.69	0.38	**4.2**	1.9	2.8
PCB 18	1.53	2.93	3.54	2.76	5.10	4.09	2.67	38.6	3.98	29.5	2.20	0.36	3.86	2.25	0.8	0.5	2.6
PCB 28	5.26	4.59	3.20	8.97	11.9	5.81	4.35	24.2	8.89	34.2	5.09	0.76	9.80	3.70	-0.6	-0.8	1.6
PCB 52	6.06	5.89	5.72	8.76	4.61	7.97	5.89	2.9	7.11	31.0	5.03	0.50	**6.89**	**0.56**	0.7	0.9	0.2
PCB 44	4.14	5.32	4.09	6.50	6.16	5.68	4.52	15.4	6.11	6.7	3.79	0.49	**4.80**	**0.62**	0.8	0.7	1.0
PCB 66/95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.63	1.22	**14.3**	**2.5**			
PCB 101/90	5.71	5.42	4.63	11.7	11.2	10.2	5.25	10.6	11.0	6.9	5.62	0.70	**11.0**	**1.6**	-0.3	-0.4	0.7
PCB 118	6.28	5.17	4.46	8.00	10.1	9.29	5.30	17.3	9.13	11.6	4.39	0.42	**10.0**	**1.1**	0.8	0.9	1.2
PCB 153	5.75	4.75	6.06	16.1	13.2	14.2	5.52	12.4	14.5	10.2	5.59	0.81	**17.6**	**1.9**	-0.1	-0.1	0.8
PCB 105	2.77	2.71	2.00	5.27	7.60	4.54	2.49	17.2	5.80	27.5	1.52	0.28	**3.65**	**0.27**	2.5	1.0	1.1
PCB 138/163/164	5.11	6.75	6.42	16.1	15.0	15.1	6.09	14.2	15.4	3.9	5.01	0.71	**13.4**	**1.0**	0.9	1.1	0.9
PCB 187/182	2.84	6.25	4.53	7.58	20.6	14.2	4.54	37.6	14.1	46.1	2.27	0.40	7.00	2.60	**4.0**	2.3	2.5
PCB 128	0.980	1.41	1.15	2.34	4.00	3.54	1.18	18.4	3.29	26.0	0.823	0.204	**1.87**	**0.32**	1.7	0.4	1.2
PCB 180	4.21	4.26	4.74	11.0	10.7	10.3	4.40	6.6	10.7	3.3	3.33	0.41	8.00	2.00	1.3	1.1	0.4
PCB 170/190	1.99	1.80	1.95	5.78	4.70	4.86	1.91	5.2	5.11	11.4	1.94	0.52	4.00	1.00	-0.1	0.0	0.3
PCB 195	<2.0	<2.0	<2.0	1.37	1.85	1.68	<2.0	NA	1.63	14.9	1.19	0.42	<3				
PCB 206	2.97	3.86	3.56	5.40	5.02	5.34	3.46	13.1	5.25	3.9	2.55	0.34	**3.67**	**0.87**	1.4	0.9	0.9
PCB 209	6.36	7.26	6.58	17.7	15.0	14.5	6.73	7.0	15.7	10.9	4.72	0.69	**8.34**	**0.49**	1.7	2.1	0.5
PCB 66	4.79	4.99	5.04	9.55	7.57	8.31	4.94	2.7	8.48	11.8	4.71	0.68	**6.80**	**1.40**	0.2	0.2	0.2
PCB 95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.34	0.83	**7.50**	**1.10**			

Laboratory: 22
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	16	88.9
Qualitative	1	5.6
Not Determined	1	5.6

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	13	14	13
2 to 3	1	2	3
≥ 3	2	0	0

Water in Sediment IX

	SedimentIX, % S 1	S 2	S 3	lab mean, %	lab %RSD	Sediment IX, % assigned	95% CL	exercise, % mean	95% CL	Sediment IX z (25%)	z (s)	p (15%)
water	46.1	46.1	46.4	46.2	0.4	46.2	3.3	46.2	3.3	0.0	0.0	0.0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 23**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 2/1/00

PAH

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/28/00 S 1	1/28/00 S 2	1/28/00 S 3	1/28/00 S 1	1/28/00 S 2	1/28/00 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
naphthalene	937	868	850	675	755	802	885	5.2	744	8.6	756	113	**1010**	**140**	0.7	0.5	0.3
2-methylnaphthalene	334	279	272	305	295	313	295	11.5	304	3.0	241	34	325	60	0.9	0.7	0.8
1-methylnaphthalene	160.0	140	130.0	148	145	173	143.3	10.7	155	9.9	111	18	150	30	1.2	0.8	0.7
biphenyl	91.0	72.0	78.0	97.0	87.0	98.0	80.3	12.1	94.0	6.5	73.3	12.5	100	36	0.4	0.2	0.8
2,6-dimethylnaphthalene	122	109	109	133	131	131	113	6.6	132	0.9	85.4	14.0	120	24	1.3	0.9	0.4
acenaphthylene	81.0	65.0	65.0	72.0	63.0	72.0	70.3	13.1	69.0	7.5	53.6	8.5	60.0	28.0	1.2	0.8	0.9
acenaphthene	57.0	46.0	46.0	50.0	50.0	51.0	49.7	12.8	50.3	1.1	35.7	4.7	41.0	10.0	1.6	1.2	0.9
1,6,7-trimethylnaphthalene	74.0	63.0	62.0	78.0	71.0	80.0	66.3	10.0	76.3	6.2	27.7	5.3	48.0	10.0	**5.6**	**4.2**	0.7
fluorene	129	111	115	80.0	75.0	80.0	118	8.0	78.3	3.7	78.8	11.5	**97.3**	**8.6**	2.0	1.4	0.5
phenanthrene	620	515	608	575	517	611	581	9.9	568	8.4	383	43	**489**	**23**	2.1	1.9	0.7
anthracene	228	209	219	213	172	208	219	4.3	198	11.3	174	19	**184**	**14**	1.0	1.0	0.3
1-methylphenanthrene	185	133	179	162	156	193	166	17.2	170	11.7	76.0	11.1	101	27	**4.7**	3.7	1.1
fluoranthene	770	732	751	835	919	830	751	2.5	861	5.8	635	71	**981**	**78**	0.7	0.7	0.2
pyrene	687	645	681	684	744	672	671	3.4	700	5.5	594	62	**811**	**24**	0.5	0.5	0.2
benz[a]anthracene	540	410	405	420	424	411	452	16.9	418	1.6	343	30	**427**	**25**	1.3	1.4	1.1
chrysene + triphenylene	401	320	290	375	423	386	337	17.0	395	6.4	404	37	577	35	-0.7	-0.7	1.1
benzofluoranthenes [b+j+k]	525	450	590	1190	1360	1180	522	13.4	1243	8.1	815	85	1441	150	-1.4	-1.4	0.9
benzo[e]pyrene	355	243	276	481	457	433	291	19.8	457	5.3	320	34	**553**	**59**	-0.4	-0.3	1.3
benzo[a]pyrene	332	300	300	588	562	512	311	5.9	554	7.0	354	42	**628**	**52**	-0.5	-0.4	0.4
perylene	562	571	502	382	355	478	545	6.9	405	16.0	416	63	**452**	**58**	1.2	0.8	0.5
indeno[1,2,3-cd]pyrene	287	278	266	328	408	439	277	3.8	392	14.6	287	36	**501**	**72**	-0.1	-0.1	0.3
dibenz[a,h]anthracene + [a,c]	82.0	78.0	75.0	57.0	61.0	65.0	78.3	4.5	61.0	6.6	78.1	14.2	**117**	**14**	0.0	0.0	0.3
benzo[ghi]perylene	262	308	257	367	460	342	276	10.2	390	16.0	259	27	**525**	**67**	0.3	0.2	0.7

Laboratory: 23
PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	23	100.0
Qualitative	0	0.0
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	19	21	23
2 to 3	2	0	0
≥ 3	2	2	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 23**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 2/1/00

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/5/00 S 1	1/10/00 S 2	1/10/00 S 3	1/10/00 S 1	1/10/00 S 2	1/10/00 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0	NA	<1		<2				
hexachlorobenzene	2.54	2.27	2.34	24.0	39.0	36.1	2.38	5.9	33.0	24.1	5.88	0.74	**70.0**	**25.0**	-2.4	-1.9	0.4
gamma-HCH	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	NA	<0.8	NA	<1		<2				
heptachlor	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0	NA	0.796	0.553	<2				
aldrin	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0	NA	0.438	0.313	<2				
heptachlor epoxide	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0	NA	0.125	0.111	<2				
oxychlordane	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0	NA	0.694	0.613	<3				
trans-chlordane	1.01	<1.0	<1.0	1.95	2.20	2.03	1.01	NA	2.06	6.2	0.624	0.236	<2		2.5	0.2	
2,4'-DDE	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	NA	<3.0	NA	0.451	0.150	**0.73**	**0.11**			
endosulfan I	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0	NA	<1	0.0	<2				
cis-chlordane	<1.0	<1.0	<1.0	1.76	2.04	2.01	<1.0	NA	1.94	7.9	0.977	0.339	**2.33**	**0.56**			
trans-nonachlor	<1.0	<1.0	<1.0	1.08	1.18	1.46	<1.0	NA	1.24	15.9	0.404	0.108	**1.26**	**0.13**			
dieldrin	<1.0	<1.0	<1.0	<1.0	1.31	1.25	<1.0	NA	1.28	3.3	0.779	0.337	1.26	0.37			
4,4'-DDE	4.35	3.06	2.94	5.62	6.03	5.72	3.45	22.7	5.79	3.7	3.34	0.45	**6.59**	**0.56**	0.1	0.1	1.5
2,4'-DDD	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	NA	<5.0	NA	1.12	0.50	<2				
endrin	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	NA	<6.0	NA	<1		<2				
endosulfan II	<25	<25	<25	<25	<25	<25	<25	NA	<25	NA	<2		<2				
4,4'-DDD	5.87	4.13	3.89	5.28	5.59	5.63	4.63	23.3	5.50	3.5	4.10	0.53	**5.06**	**0.56**	0.5	0.3	1.6
2,4'-DDT	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	NA	<4.0	NA	<2		<2				
cis-nonachlor	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0	NA	0.296	0.193	<2				
4,4'-DDT	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	NA	<4.0	NA	1.29	0.79	1.25	0.10			
mirex	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	NA	<3.0	NA	<1		<2				

Laboratory: 23
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	4	18.2
Qualitative	18	81.8
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	2	4	3
2 to 3	2	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 23**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 2/1/00

PCBs

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/10/00 S 1	1/10/00 S 2	1/10/00 S 3	1/10/00 S 1	1/10/00 S 2	1/10/00 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
PCB 8	<1.0	<1.0	1.27	<1.0	<1.0	<1.0	1.27	NA	<1.0	NA	1.72	0.47	1.69	0.38	-1.0	-0.5	
PCB 18	2.76	1.95	2.39	2.79	1.21	1.25	2.37	17.1	1.75	51.5	2.20	0.36	3.86	2.25	0.3	0.2	1.1
PCB 28	6.83	5.42	4.79	7.19	7.23	6.87	5.68	18.4	7.10	2.8	5.09	0.76	9.80	3.70	0.5	0.6	1.2
PCB 52	7.10	5.66	4.65	7.01	7.53	7.23	5.80	21.2	7.26	3.6	5.03	0.50	**6.89**	**0.56**	0.6	0.8	1.4
PCB 44	5.34	3.99	3.76	4.95	3.69	3.62	4.36	19.6	4.09	18.3	3.79	0.49	**4.80**	**0.62**	0.6	0.6	1.3
PCB 66/95							NA	NA	NA	NA	8.63	1.22	**14.3**	**2.5**			
PCB 101/90	8.62	6.91	6.13	12.6	12.3	12.1	7.22	17.6	12.3	2.0	5.62	0.70	**11.0**	**1.6**	1.1	1.7	1.2
PCB 118	6.91	5.47	4.46	9.25	8.88	8.89	5.61	21.9	9.01	2.3	4.39	0.42	**10.0**	**1.1**	1.1	1.3	1.5
PCB 153	6.76	5.36	4.49	12.0	12.8	12.3	5.54	20.7	12.4	3.3	5.59	0.81	**17.6**	**1.9**	0.0	-0.1	1.4
PCB 105	1.93	1.47	1.22	3.16	3.17	3.22	1.54	23.4	3.18	1.0	1.52	0.28	**3.65**	**0.27**	0.0	0.0	1.6
PCB 138/163/164	6.93	5.28	4.57	12.5	12.1	11.9	5.59	21.6	12.2	2.5	5.01	0.71	**13.4**	**1.0**	0.5	0.6	1.4
PCB 187/182	2.89	2.22	1.87	5.41	5.82	5.47	2.33	22.3	5.57	4.0	2.27	0.40	7.00	2.60	0.1	0.1	1.5
PCB 128	<1.0	<1.0	<1.0	1.46	<1.0	<1.0	<1.0	NA	1.46	NA	0.823	0.204	**1.87**	**0.32**			
PCB 180	4.13	3.21	2.78	8.44	9.13	8.55	3.37	20.4	8.71	4.3	3.33	0.41	8.00	2.00	0.0	0.0	1.4
PCB 170/190	1.79	1.36	1.13	3.33	3.58	3.37	1.43	23.5	3.43	3.9	1.94	0.52	4.00	1.00	-1.1	-0.5	1.6
PCB 195	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0	NA	1.19	0.42	<3				
PCB 206	3.25	2.57	2.17	3.47	3.88	3.71	2.66	20.5	3.69	5.6	2.55	0.34	**3.67**	**0.87**	0.2	0.1	1.4
PCB 209	7.29	5.72	4.69	10.1	11.1	10.5	5.90	22.2	10.6	4.8	4.72	0.69	**8.34**	**0.49**	1.0	1.2	1.5
PCB 66	7.32	6.13	5.19	7.84	7.96	7.56	6.21	17.2	7.79	2.6	4.71	0.68	**6.80**	**1.40**	1.3	1.6	1.1
PCB 95	5.77	4.64	3.94	7.61	7.95	7.94	4.78	19.3	7.83	2.5	3.34	0.83	**7.50**	**1.10**	1.7	1.5	1.3

Laboratory: 23
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	15	83.3
Qualitative	2	11.1
Not Determined	1	5.6

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	15	15	14
2 to 3	0	0	0
≥ 3	0	0	0

Water in Sediment IX

	SedimentIX, %			lab		Sediment IX, %		exercise, %		Sediment IX		
	S 1	S 2	S 3	mean, %	%RSD	assigned	95% CL	mean	95% CL	z (25%)	z (s)	p (15%)
water	46.0	44.9	65.5	52.1	22.2	46.2	3.3	46.2	3.3	0.5	0.6	1.5

[a]z- and p-scores ≥ 3 are bolded. [b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 24

Sample: QA99SED9 - Marine Sediment IX

(data reported as if three figures were significant)

Reporting Date: 1/31/00

PAH

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry 9/2/99 S 1	9/2/99 S 2	9/2/99 S 3	SRM 1941a, ng/g dry 9/2/99 S 1	9/2/99 S 2	9/2/99 S 3	Sediment IX lab mean ng/g dry	Sediment IX lab %RSD	SRM 1941a lab mean ng/g dry	SRM 1941a lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	95% CL	SRM 1941a, ng/g dry target value[b]	95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
naphthalene	681	668	583	742	706	741	644	8.3	730	2.8	756	113	**1010**	**140**	-0.6	-0.4	0.6
2-methylnaphthalene	218	209	178	268	250	258	202	10.4	259	3.5	241	34	325	60	-0.7	-0.5	0.7
1-methylnaphthalene	109	109	91.5	143	134	139	103	9.8	139	3.3	111	18	150	30	-0.3	-0.2	0.7
biphenyl	43.5	44.2	39.2	78.2	81.5	76.9	42.3	6.4	78.9	3.0	73.3	12.5	100	36	-1.7	-1.0	0.4
2,6-dimethylnaphthalene	75.4	77.1	67.9	130	126	125	73.5	6.7	127	2.1	85.4	14.0	120	24	-0.6	-0.4	0.4
acenaphthylene	68.0	67.9	63.6	100	99.6	95.7	66.5	3.8	98.4	2.4	53.6	8.5	60.0	28.0	1.0	0.6	0.3
acenaphthene	31.1	31.7	28.9	41.0	34.8	33.5	30.6	4.8	36.4	11.0	35.7	4.7	41.0	10.0	-0.6	-0.4	0.3
1,6,7-trimethylnaphthalene	29.5	29.7	26.8	52.2	49.9	50.5	28.7	5.7	50.9	2.3	27.7	5.3	48.0	10.0	0.1	0.1	0.4
fluorene	71.1	71.6	64.0	63.1	60.0	60.2	68.9	6.2	61.1	2.8	78.8	11.5	**97.3**	**8.6**	-0.5	-0.4	0.4
phenanthrene	253	244	226	346	334	325	241	5.7	335	3.1	383	43	**489**	**23**	-1.5	-1.4	0.4
anthracene	120	117	117	138	134	133	118	1.5	135	2.0	174	19	**184**	**14**	-1.3	-1.2	0.1
1-methylphenanthrene	55.5	52.0	50.7	71.1	67.7	65.7	52.7	4.7	68.2	4.0	76.0	11.1	101	27	-1.2	-0.9	0.3
fluoranthene	442	416	399	744	729	666	419	5.2	713	5.8	635	71	**981**	**78**	-1.4	-1.2	0.3
pyrene	404	386	365	611	584	552	385	5.1	582	5.1	594	62	**811**	**24**	-1.4	-1.4	0.3
benz[a]anthracene	279	278	254	366	386	348	270	5.2	367	5.2	343	30	**427**	**25**	-0.8	-0.9	0.3
chrysene + triphenylene	330	330	305	538	582	534	322	4.5	551	4.8	404	37	577	35	-0.8	-0.9	0.3
benzofluoranthenes [b+j+k]	616	601	535	1130	1250	1160	584	7.4	1180	5.3	815	85	1441	150	-1.1	-1.1	0.5
benzo[e]pyrene	236	231	216	501	509	478	228	4.6	496	3.2	320	34	**553**	**59**	-1.2	-1.0	0.3
benzo[a]pyrene	301	288	274	469	497	438	288	4.7	468	6.3	354	42	**628**	**52**	-0.7	-0.6	0.3
perylene	213	215	183	283	410	301	204	8.8	331	20.7	416	63	**452**	**58**	-2.0	-1.4	0.6
indeno[1,2,3-cd]pyrene	261	231	217	520	538	505	236	9.5	521	3.2	287	36	**501**	**72**	-0.7	-0.5	0.6
dibenz[a,h]anthracene + [a,c]	57.0	57.6	52.5	92.4	97.2	89.0	55.7	5.0	92.9	4.4	78.1	14.2	**117**	**14**	-1.1	-0.7	0.3
benzo[ghi]perylene	221	213	201	464	483	450	212	4.8	466	3.6	259	27	**525**	**67**	-0.7	-0.7	0.3

Laboratory: 24

PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	23	100.0
Qualitative	0	0.0
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	22	23	23
2 to 3	1	0	0
≥ 3	0	0	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 24**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 1/31/00

PESTICIDES

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Material reference values: Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Performance scores[a]: Sediment IX		
	1/5/00 S 1	10/5/99 S 2	10/5/99 S 3	10/4/99 S 1	10/5/99 S 2	10/6/99 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	0.240	0.270	0.250	0.790	0.740	0.740	0.253	6.0	0.757	3.8	<1		<2				0.4
hexachlorobenzene	5.99	5.99	5.04	69.9	70.7	69.5	5.67	9.7	70.0	0.9	5.88	0.74	**70.0**	**25.0**	-0.1	-0.1	0.6
gamma-HCH	0.100	0.100	0.070	<0.20	<0.20	<0.20	0.090	19.2	<0.20	NA	<1		<2				1.3
heptachlor	0.410	0.470	0.370	2.14	2.38	1.93	0.417	12.1	2.15	10.5	0.796	0.553	<2		-1.9	-0.2	0.8
aldrin	<0.06	<0.06	<0.06	<0.40	<0.40	<0.40	<0.06	NA	<0.40	NA	0.438	0.313	<2				
heptachlor epoxide	0.550	0.670	0.490	5.62	5.74	5.60	0.570	16.1	5.65	1.3	0.125	0.111	<2		**14.3**	0.2	1.1
oxychlordane	<0.03	<0.03	<0.03	<0.20	<0.20	<0.20	<0.03	NA	<0.20	NA	0.694	0.613	<3				
trans-chlordane	0.240	0.280	0.230	1.78	1.88	1.84	0.250	10.6	1.83	2.7	0.624	0.236	<2		-2.4	-0.2	0.7
2,4'-DDE	0.240	0.230	0.220	0.380	0.540	0.410	0.230	4.3	0.443	19.2	0.451	0.150	**0.73**	**0.11**	-2.0	-0.1	0.3
endosulfan I	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	NA	<0.25	NA	<1	0.0	<2				
cis-chlordane	0.790	0.770	0.690	3.96	4.05	4.16	0.750	7.1	4.06	2.5	0.977	0.339	**2.33**	**0.56**	-0.9	-0.1	0.5
trans-nonachlor	0.090	0.130	0.080	1.02	1.06	1.03	0.100	26.5	1.04	2.0	0.404	0.108	**1.26**	**0.13**	**-3.0**	-0.2	1.8
dieldrin	0.860	0.850	0.740	3.05	3.24	3.27	0.817	8.2	3.19	3.7	0.779	0.337	1.26	0.37	0.2	0.0	0.5
4,4'-DDE	2.93	2.99	2.47	6.58	6.79	7.04	2.80	10.2	6.80	3.4	3.34	0.45	**6.59**	**0.56**	-0.6	-0.3	0.7
2,4'-DDD	<0.04	<0.04	<0.04	<0.30	<0.30	<0.30	<0.04	NA	<0.30	NA	1.12	0.50	<2				
endrin	<0.29	<0.31	<0.30	<2.00	<1.98	<2.00	<0.30	NA	<2.00	NA	<1		<2				
endosulfan II	1.59	1.24	1.12	0.840	2.40	2.50	1.32	18.5	1.91	48.7	<2		<2				1.2
4,4'-DDD	3.34	3.28	2.89	5.41	5.69	5.70	3.17	7.7	5.60	2.9	4.10	0.53	**5.06**	**0.56**	-0.9	-0.5	0.5
2,4'-DDT	0.270	0.220	0.220	0.760	0.800	0.790	0.24	12.2	0.783	2.7	<2		<2				0.8
cis-nonachlor	0.280	0.240	0.200	1.340	1.210	1.420	0.240	16.7	1.32	8.0	0.296	0.193	<2		-0.8	0.0	1.1
4,4'-DDT	0.610	0.660	0.510	0.920	1.00	0.450	0.593	12.9	0.790	37.6	1.29	0.79	1.25	0.10	-2.2	-0.4	0.9
mirex	<0.04	<0.05	<0.04	<0.30	<0.30	<0.30	<0.05	NA	<0.30	NA	<1		<2				

Laboratory: 24
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	16	72.7
Qualitative	6	27.3
Not Determined	0	0.0

Category	Number by Category: z (25%)	z (s)	p (15%)
≤ 2	8	12	16
2 to 3	2	0	0
≥ 3	2	0	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 24

Sample: QA99SED9 - Marine Sediment IX

(data reported as if three figures were significant)

Reporting Date: 1/31/00

PCBs

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	10/4/99 S 1	10/4/99 S 2	10/4/99 S 3	10/4/99 S 1	10/4/99 S 2	10/4/99 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
PCB 8	3.40	2.95	2.89	3.83	3.78	3.92	3.08	9.1	3.84	1.8	1.72	0.47	1.69	0.38	**3.2**	1.4	0.6
PCB 18	1.75	2.15	1.52	3.78	4.14	4.34	1.81	17.6	4.09	6.9	2.20	0.36	3.86	2.25	-0.7	-0.4	1.2
PCB 28	4.85	4.70	3.96	9.85	10.2	10.4	4.50	10.6	10.2	2.7	5.09	0.76	9.80	3.70	-0.5	-0.6	0.7
PCB 52	4.74	4.84	4.14	8.79	10.2	9.09	4.57	8.3	9.36	7.9	5.03	0.50	**6.89**	**0.56**	-0.4	-0.5	0.6
PCB 44	3.37	3.32	2.77	5.95	6.41	6.30	3.15	10.6	6.22	3.9	3.79	0.49	**4.80**	**0.62**	-0.7	-0.7	0.7
PCB 66/95	8.9	8.9	7.7	20.9	21.2	20.8	8.5	8.1	21.0	1.0	8.63	1.22	**14.3**	**2.5**	-0.1	-0.2	0.5
PCB 101/90	5.13	5.19	4.41	16.2	16.5	16.5	4.91	8.8	16.4	1.1	5.62	0.70	**11.0**	**1.6**	-0.5	-0.7	0.6
PCB 118	4.69	4.62	4.01	11.2	11.1	11.1	4.44	8.4	11.1	0.5	4.39	0.42	**10.0**	**1.1**	0.0	0.1	0.6
PCB 153	4.79	4.75	3.92	17.1	18.1	17.6	4.49	10.9	17.6	2.8	5.59	0.81	**17.6**	**1.9**	-0.8	-1.1	0.7
PCB 105	1.78	1.88	1.59	7.12	6.28	7.04	1.75	8.4	6.81	6.8	1.52	0.28	**3.65**	**0.27**	0.6	0.2	0.6
PCB 138/163/164	5.05	4.77	4.02	16.0	16.0	16.5	4.61	11.5	16.2	1.8	5.01	0.71	**13.4**	**1.0**	-0.3	-0.4	0.8
PCB 187/182	3.69	3.29	3.26	10.8	11.4	12.3	3.41	7.0	11.5	6.6	2.27	0.40	7.00	2.60	2.0	1.2	0.5
PCB 128	0.990	0.920	0.850	2.18	2.38	2.65	0.920	7.6	2.40	9.8	0.823	0.204	**1.87**	**0.32**	0.5	0.1	0.5
PCB 180	2.90	2.88	2.38	8.99	9.66	9.76	2.72	10.8	9.47	4.4	3.33	0.41	8.00	2.00	-0.7	-0.6	0.7
PCB 170/190	2.87	2.63	2.41	7.66	7.72	7.65	2.64	8.7	7.68	0.5	1.94	0.52	4.00	1.00	1.4	0.7	0.6
PCB 195	1.26	1.23	1.01	3.32	3.19	3.38	1.17	11.7	3.30	2.9	1.19	0.42	<3		-0.1	0.0	0.8
PCB 206	2.02	1.99	1.63	5.11	5.26	5.21	1.88	11.5	5.19	1.5	2.55	0.34	**3.67**	**0.87**	-1.1	-0.7	0.8
PCB 209	4.07	3.88	3.11	13.8	13.9	14.2	3.69	13.8	14.0	1.5	4.72	0.69	**8.34**	**0.49**	-0.9	-1.1	0.9
PCB 66	4.98	4.99	4.26	9.44	9.71	9.61	4.74	8.8	9.59	1.4	4.71	0.68	**6.80**	**1.40**	0.0	0.0	0.6
PCB 95	3.90	3.88	3.43	11.4	11.4	11.2	3.74	7.1	11.3	1.0	3.34	0.83	**7.50**	**1.10**	0.5	0.4	0.5

Laboratory: 24
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	18	100.0
Qualitative	0	0.0
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	16	18	18
2 to 3	1	0	0
≥ 3	1	0	0

Water in Sediment IX

	SedimentIX, %				lab			Sediment IX, %		exercise, %		Sediment IX		
	S 1	S 2	S 3		mean, %	%RSD		assigned	95% CL	mean	95% CL	z (25%)	z (s)	p (15%)
water	54.0	53.9	53.7		53.9	0.3		46.2	3.3	46.2	3.3	0.7	0.8	0.0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 25

Sample: QA99SED9 - Marine Sediment IX

(data reported as if three figures were significant)

Reporting Date: 2/2/00

PAH

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry 1/24/00 S 1	S 2	S 3	SRM 1941a, ng/g dry 1/24/00 S 1	S 2	S 3	Sediment IX lab mean ng/g dry	lab %RSD	SRM 1941a lab mean ng/g dry	lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	95% CL	SRM 1941a, ng/g dry target value[b]	95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
naphthalene	720	710	685	614	635	612	705	2.6	620	2.1	756	113	**1010**	**140**	-0.3	-0.2	0.2
2-methylnaphthalene	159	161	156	234	260	260	159	1.6	251	6.0	241	34	325	60	-1.4	-1.0	0.1
1-methylnaphthalene	229	219	215	258	277	260	221	3.3	265	3.9	111	18	150	30	**4.0**	2.7	0.2
biphenyl	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	73.3	12.5	100	36			
2,6-dimethylnaphthalene	50.7	50.9	51.5	109	108	98	51.0	0.8	105	5.6	85.4	14.0	120	24	-1.6	-1.1	0.1
acenaphthylene	56.9	54.6	53.2	95.3	104	97.2	54.9	3.4	98.9	4.7	53.6	8.5	60.0	28.0	0.1	0.1	0.2
acenaphthene	59.9	57.6	58.5	89.2	95.3	87.5	58.7	2.0	90.7	4.5	35.7	4.7	41.0	10.0	2.6	2.0	0.1
1,6,7-trimethylnaphthalene	16.9	17.7	19.2	11.0	11.0	11.9	17.9	6.5	11.3	4.6	27.7	5.3	48.0	10.0	-1.4	-1.1	0.4
fluorene	106	106	104	96.0	96.5	105.0	105	1.1	99.2	5.1	78.8	11.5	**97.3**	**8.6**	1.3	1.0	0.1
phenanthrene	435	439	422	437	453	405	432	2.1	432	5.7	383	43	**489**	**23**	0.5	0.5	0.1
anthracene	192	201	196	195	197	188	196	2.3	193	2.4	174	19	**184**	**14**	0.5	0.5	0.2
1-methylphenanthrene	OTHE	OTHE	OTHE	OTHE	OTHER	OTHE	OTHER	OTHER	OTHER	OTHER	76.0	11.1	101	27			
fluoranthene	828	842	839	979	1007	895	836	0.9	960	6.1	635	71	**981**	**78**	1.3	1.1	0.1
pyrene	735	732	745	768	772	705	737	0.9	748	5.0	594	62	**811**	**24**	1.0	0.9	0.1
benz[a]anthracene	398	384	391	392	429	357	391	1.8	393	9.2	343	30	**427**	**25**	0.6	0.6	0.1
chrysene + triphenylene	459	461	449	572	596	520	456	1.4	563	6.9	404	37	577	35	0.5	0.6	0.1
benzofluoranthenes [b+j+k]	OTHE	OTHE	OTHE	OTHE	OTHER	OTHE	OTHER	OTHER	OTHER	OTHER	815	85	1441	150			
benzo[e]pyrene	427	402	380	527	595	450	403	5.8	524	13.8	320	34	**553**	**59**	1.0	0.9	0.4
benzo[a]pyrene	568	543	493	584	549	586	535	7.1	573	3.6	354	42	**628**	**52**	2.0	1.8	0.5
perylene	453	346	263	324	242	285	354	26.9	284	14.5	416	63	**452**	**58**	-0.6	-0.4	1.8
indeno[1,2,3-cd]pyrene	369	337	362	484	563	434	356	4.7	494	13.2	287	36	**501**	**72**	1.0	0.7	0.3
dibenz[a,h]anthracene + [a,c]	OTHE	OTHE	OTHE	OTHE	OTHER	OTHE	OTHER	OTHER	OTHER	OTHER	78.1	14.2	**117**	**14**			
benzo[ghi]perylene	384	OTHE	OTHE	509	OTHER	OTHE	384	NA	509	NA	259	27	**525**	**67**	1.9	1.8	

Laboratory: 25

PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	19	82.6
Qualitative	3	13.0
Not Determined	1	4.3

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	16	18	18
2 to 3	2	1	0
≥ 3	1	0	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 25**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 2/2/00

PESTICIDES

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry 1/5/00 S 1	Sediment IX 2/1/00 S 2	Sediment IX 2/1/00 S 3	SRM 1941a, ng/g dry 2/1/00 S 1	SRM 1941a 2/1/00 S 2	SRM 1941a 2/1/00 S 3	Sediment IX lab mean ng/g dry	Sediment IX lab %RSD	SRM 1941a lab mean ng/g dry	SRM 1941a lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	Sediment IX 95% CL	SRM 1941a, ng/g dry target value[b]	SRM 1941a 95% CL	Performance scores[a] Sediment IX z-score (25%)	Sediment IX z-score (s)	Sediment IX p-score (15%)
alpha-HCH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1		<2				
hexachlorobenzene	4.98	5.12	4.82	52.0	53.6	50.0	4.97	3.0	51.9	3.5	5.88	0.74	**70.0**	**25.0**	-0.6	-0.5	0.2
gamma-HCH	1.17	1.67	1.28	0.560	0.578	0.621	1.37	19.1	0.586	5.3	<1		<2				1.3
heptachlor	DL	DL	DL	DL	DL	DL	DL	DL	DL	DL	0.796	0.553	<2				
aldrin	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.438	0.313	<2				
heptachlor epoxide	DL	DL	DL	DL	DL	DL	DL	DL	DL	DL	0.125	0.111	<2				
oxychlordane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.694	0.613	<3				
trans-chlordane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.624	0.236	<2				
2,4'-DDE	0.499	0.487	0.398	0.929	0.849	0.884	0.461	12.0	0.887	4.5	0.451	0.150	**0.73**	**0.11**	0.1	0.0	0.8
endosulfan I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	0.0	<2				
cis-chlordane	0.607	0.747	0.561	2.60	2.27	2.68	0.638	15.2	2.52	8.6	0.977	0.339	**2.33**	**0.56**	-1.4	-0.2	1.0
trans-nonachlor	0.351	0.389	0.314	1.43	1.37	1.31	0.351	10.7	1.37	4.4	0.404	0.108	**1.26**	**0.13**	-0.5	0.0	0.7
dieldrin	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.779	0.337	1.26	0.37			
4,4'-DDE	2.76	2.68	2.61	6.07	6.01	6.15	2.68	2.8	6.08	1.2	3.34	0.45	**6.59**	**0.56**	-0.8	-0.4	0.2
2,4'-DDD	1.56	1.94	1.42	1.82	1.92	2.15	1.64	16.4	1.96	8.6	1.12	0.50	<2		1.8	0.3	1.1
endrin	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1		<2				
endosulfan II	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2		<2				
4,4'-DDD	OTHE	OTHE	OTHE	OTHE	OTHER	OTHE	OTHER	OTHER	OTHER	OTHER	4.10	0.53	**5.06**	**0.56**			
2,4'-DDT	OTHE	OTHE	OTHE	OTHE	OTHER	OTHE	OTHER	OTHER	OTHER	OTHER	<2		<2				
cis-nonachlor	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.296	0.193	<2				
4,4'-DDT	DL	DL	DL	DL	DL	DL	DL	DL	DL	DL	1.29	0.79	1.25	0.10			
mirex	5.04	5.24	4.78	6.99	6.97	6.79	5.02	4.6	6.92	1.6	<1		<2				0.3

Laboratory: 25
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	8	36.4
Qualitative	5	22.7
Not Determined	9	40.9

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	6	6	8
2 to 3	0	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 25**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 2/2/00

PCBs

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry 1/28/00 S 1	1/28/00 S 2	1/28/00 S 3	SRM 1941a, ng/g dry 1/28/00 S 1	1/28/00 S 2	1/28/00 S 3	Sediment IX lab mean ng/g dry	Sediment IX lab %RSD	SRM 1941a lab mean ng/g dry	SRM 1941a lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	95% CL	SRM 1941a, ng/g dry target value[b]	95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
PCB 8	OTHE	OTHE	OTHE	OTHE	OTHER	OTHE	OTHER	OTHER	OTHER	OTHER	1.72	0.47	1.69	0.38			
PCB 18	0.352	0.334	0.384	1.25	1.37	1.24	0.357	7.1	1.29	5.6	2.20	0.36	3.86	2.25	**-3.4**	-1.9	0.5
PCB 28	OTHE	OTHE	OTHE	OTHE	OTHER	OTHE	OTHER	OTHER	OTHER	OTHER	5.09	0.76	9.80	3.70			
PCB 52	3.46	3.29	3.26	6.89	7.54	8.50	3.34	3.2	7.64	10.6	5.03	0.50	**6.89**	**0.56**	-1.3	-1.8	0.2
PCB 44	1.77	1.79	1.69	4.81	4.85	5.53	1.75	3.0	5.06	8.0	3.79	0.49	**4.80**	**0.62**	-2.2	-2.1	0.2
PCB 66/95	OTHE	OTHE	OTHE	OTHE	OTHER	OTHE	OTHER	OTHER	OTHER	OTHER	8.63	1.22	**14.3**	**2.5**			
PCB 101/90	OTHE	OTHE	OTHE	OTHE	OTHER	OTHE	OTHER	OTHER	OTHER	OTHER	5.62	0.70	**11.0**	**1.6**			
PCB 118	OTHE	OTHE	OTHE	OTHE	OTHER	OTHE	OTHER	OTHER	OTHER	OTHER	4.39	0.42	**10.0**	**1.1**			
PCB 153	OTHE	OTHE	OTHE	OTHE	OTHER	OTHE	OTHER	OTHER	OTHER	OTHER	5.59	0.81	**17.6**	**1.9**			
PCB 105	OTHE	OTHE	OTHE	OTHE	OTHER	OTHE	OTHER	OTHER	OTHER	OTHER	1.52	0.28	**3.65**	**0.27**			
PCB 138/163/164	OTHE	OTHE	OTHE	OTHE	OTHER	OTHE	OTHER	OTHER	OTHER	OTHER	5.01	0.71	**13.4**	**1.0**			
PCB 187/182	OTHE	OTHE	OTHE	OTHE	OTHER	OTHE	OTHER	OTHER	OTHER	OTHER	2.27	0.40	7.00	2.60			
PCB 128	0.279	0.243	0.222	1.86	1.06	3.00	0.248	11.6	1.97	49.4	0.823	0.204	**1.87**	**0.32**	-2.8	-0.6	0.8
PCB 180	OTHE	OTHE	OTHE	OTHE	OTHER	OTHE	OTHER	OTHER	OTHER	OTHER	3.33	0.41	8.00	2.00			
PCB 170/190	1.63	1.51	1.62	3.30	3.76	3.79	1.59	4.2	3.62	7.6	1.94	0.52	4.00	1.00	-0.7	-0.4	0.3
PCB 195	0.263	0.268	0.276	DL	DL	DL	0.269	2.4	OTHER	OTHER	1.19	0.42	<3		**-3.1**	-1.0	0.2
PCB 206	3.09	3.19	3.08	4.15	4.19	4.54	3.12	1.9	4.29	5.0	2.55	0.34	**3.67**	**0.87**	0.9	0.6	0.1
PCB 209	5.94	6.30	6.19	10.4	10.7	12.0	6.14	3.0	11.0	7.7	4.72	0.69	**8.34**	**0.49**	1.2	1.5	0.2
PCB 66	OTHE	OTHE	OTHE	OTHE	OTHER	OTHE	OTHER	OTHER	OTHER	OTHER	4.71	0.68	**6.80**	**1.40**			
PCB 95	OTHE	OTHE	OTHE	OTHE	OTHER	OTHE	OTHER	OTHER	OTHER	OTHER	3.34	0.83	**7.50**	**1.10**			

Laboratory: 25
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	8	44.4
Qualitative	10	55.6
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	4	7	8
2 to 3	2	1	0
≥ 3	2	0	0

Water in Sediment IX

	SedimentIX, % S 1	S 2	S 3	lab mean, %	lab %RSD	Sediment IX, % assigned	95% CL	exercise, % mean	95% CL	Sediment IX z (25%)	z (s)	p (15%)
water	44.8	44.8	44.4	44.7	0.5	46.2	3.3	46.2	3.3	-0.1	-0.2	0.0

[a]z- and p-scores ≥ 3 are bolded. [b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 26**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 1/31/00

PAH

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/17/00 S 1	1/17/00 S 2	1/17/00 S 3	1/17/00 S 1	1/17/00 S 2	1/17/00 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
naphthalene	632	671	646	883	906	892	650	3.1	894	1.3	756	113	**1010**	**140**	-0.6	-0.4	0.2
2-methylnaphthalene	197	200	197	333	346	339	198	1.1	339	2.0	241	34	325	60	-0.7	-0.5	0.1
1-methylnaphthalene	91.3	91.3	90.0	154	160	157	90.8	0.8	157	1.7	111	18	150	30	-0.7	-0.5	0.1
biphenyl	52.3	56.4	55.8	99.8	102	101	54.8	4.0	101	1.0	73.3	12.5	100	36	-1.0	-0.6	0.3
2,6-dimethylnaphthalene	49.8	50.9	47.8	91.0	91.3	92.4	49.5	3.1	91.6	0.8	85.4	14.0	120	24	-1.7	-1.1	0.2
acenaphthylene	37.9	37.6	36.6	53.2	52.2	55.0	37.4	1.8	53.5	2.7	53.6	8.5	60.0	28.0	-1.2	-0.8	0.1
acenaphthene	38.2	39.6	37.0	47.1	47.9	47.4	38.3	3.3	47.5	0.9	35.7	4.7	41.0	10.0	0.3	0.2	0.2
1,6,7-trimethylnaphthalene	29.7	30.1	28.7	54.0	49.6	52.5	29.5	2.4	52.0	4.3	27.7	5.3	48.0	10.0	0.3	0.2	0.2
fluorene	74.3	72.0	72.0	78.0	80.9	80.1	72.8	1.9	79.7	1.9	78.8	11.5	**97.3**	**8.6**	-0.3	-0.2	0.1
phenanthrene	259	259	252	451	443	446	257	1.5	447	0.9	383	43	**489**	**23**	-1.3	-1.2	0.1
anthracene	140	138	131	198	198	203	136	3.6	199	1.4	174	19	**184**	**14**	-0.9	-0.8	0.2
1-methylphenanthrene	56.1	57.2	54.4	99.3	97.1	98.0	55.9	2.5	98.1	1.1	76.0	11.1	101	27	-1.1	-0.8	0.2
fluoranthene	437	429	406	847	837	837	424	3.9	840	0.7	635	71	**981**	**78**	-1.3	-1.2	0.3
pyrene	412	400	378	700	691	697	397	4.4	696	0.6	594	62	**811**	**24**	-1.3	-1.3	0.3
benz[a]anthracene	235	235	223	397	383	393	231	3.0	391	1.9	343	30	**427**	**25**	-1.3	-1.4	0.2
chrysene + triphenylene	280	278	281	546	519	532	280	0.6	533	2.5	404	37	577	35	-1.2	-1.3	0.0
benzofluoranthenes [b+j+k]	609	601	574	1416	1330	1351	595	3.1	1366	3.3	815	85	1441	150	-1.1	-1.0	0.2
benzo[e]pyrene	231	227	219	547	516	524	226	2.6	529	3.0	320	34	**553**	**59**	-1.2	-1.1	0.2
benzo[a]pyrene	278	274	264	541	521	538	272	2.6	533	2.0	354	42	**628**	**52**	-0.9	-0.8	0.2
perylene	265	257	246	368	359	368	256	3.7	365	1.4	416	63	**452**	**58**	-1.5	-1.0	0.2
indeno[1,2,3-cd]pyrene	267	285	262	654	623	615	271	4.5	631	3.3	287	36	**501**	**72**	-0.2	-0.2	0.3
dibenz[a,h]anthracene + [a,c]	67.7	70.1	64.9	125	127	129	67.5	3.8	127	1.4	78.1	14.2	**117**	**14**	-0.5	-0.3	0.3
benzo[ghi]perylene	208	210	207	499	498	500	209	0.7	499	0.2	259	27	**525**	**67**	-0.8	-0.7	0.0

Laboratory: 26
PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	23	100.0
Qualitative	0	0.0
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	23	23	23
2 to 3	0	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 26**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 1/31/00

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/5/00 S 1	1/15/00 S 2	1/15/00 S 3	1/15/00 S 1	1/15/00 S 2	1/15/00 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	<1	<1	<1	<1	<1	<1	<1	NA	<1	NA	<1		<2				
hexachlorobenzene	3.67	3.53	3.58	74.9	79.1	80.6	3.59	1.9	78.2	3.8	5.88	0.74	**70.0**	**25.0**	-1.6	-1.2	0.1
gamma-HCH	<1	<1	<1	<1	<1	<1	<1	NA	<1	NA	<1		<2				
heptachlor	<1	<1	<1	<1	<1	<1	<1	NA	<1	NA	0.796	0.553	<2				
aldrin	<1	<1	<1	<1	<1	<1	<1	NA	<1	NA	0.438	0.313	<2				
heptachlor epoxide	<1	<1	<1	<1	<1	<1	<1	NA	<1	NA	0.125	0.111	<2				
oxychlordane	<1	<1	<1	<1	<1	<1	<1	NA	<1	NA	0.694	0.613	<3				
trans-chlordane	<1	<1	<1	1.79	1.85	1.62	<1	NA	1.75	6.7	0.624	0.236	<2				
2,4'-DDE	<1	<1	<1	0.673	0.676	0.692	<1	NA	0.680	1.5	0.451	0.150	**0.73**	**0.11**			
endosulfan I	<1	<1	<1	<1	<1	<1	<1	NA	<1	NA	<1	0.0	<2				
cis-chlordane	<1	<1	<1	1.85	1.85	1.46	<1	NA	1.72	13.2	0.977	0.339	**2.33**	**0.56**			
trans-nonachlor	<1	<1	<1	1.06	1.11	1.05	<1	NA	1.07	2.9	0.404	0.108	**1.26**	**0.13**			
dieldrin	<1	<1	<1	<1	<1	<1	<1	NA	<1	NA	0.779	0.337	1.26	0.37			
4,4'-DDE	2.66	2.70	2.68	6.88	6.51	6.57	2.68	0.7	6.65	3.0	3.34	0.45	**6.59**	**0.56**	-0.8	-0.4	0.0
2,4'-DDD	<1	<1	<1	<1	<1	<1	<1	NA	<1	NA	1.12	0.50	<2				
endrin	<1	<1	<1	<1	<1	0.00	<1	NA	<1	NA	<1		<2				
endosulfan II	<1	<1	<1	<1	<1	<1	<1	NA	<1	NA	<2		<2				
4,4'-DDD	3.24	3.18	3.29	6.51	6.60	6.53	3.24	1.8	6.55	0.7	4.10	0.53	**5.06**	**0.56**	-0.8	-0.5	0.1
2,4'-DDT	<1	<1	<1	<1	<1	<1	<1	NA	<1	NA	<2		<2				
cis-nonachlor	<1	<1	<1	<1	<1	<1	<1	NA	<1	NA	0.296	0.193	<2				
4,4'-DDT	<1	<1	<1	0.947	0.890	1.08	<1	NA	0.973	10.1	1.29	0.79	1.25	0.10			
mirex	<1	<1	<1	<1	<1	<1	<1	NA	<1	NA	<1		<2				

Laboratory: 26
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	3	13.6
Qualitative	19	86.4
Not Determined	0	0.0

Category	Number by Category		
	z (25%)	z (s)	p (15%)
≤ 2	3	3	3
2 to 3	0	0	0
≥ 3	0	0	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 26**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 1/31/00

PCBs

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry 1/15/00 S 1	Sediment IX 1/15/00 S 2	Sediment IX 1/15/00 S 3	SRM 1941a, ng/g dry 1/15/00 S 1	SRM 1941a 1/15/00 S 2	SRM 1941a 1/15/00 S 3	Sediment IX lab mean ng/g dry	Sediment IX lab %RSD	SRM 1941a lab mean ng/g dry	SRM 1941a lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	Sediment IX 95% CL	SRM 1941a, ng/g dry target value[b]	SRM 1941a 95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
PCB 8	1.02	1.10	1.03	2.09	2.04	2.07	1.05	4.2	2.07	1.1	1.72	0.47	1.69	0.38	-1.6	-0.7	0.3
PCB 18	1.80	1.90	1.81	2.76	2.76	2.47	1.84	3.1	2.66	6.3	2.20	0.36	3.86	2.25	-0.7	-0.4	0.2
PCB 28	3.25	3.18	3.27	7.90	7.52	7.42	3.23	1.6	7.61	3.3	5.09	0.76	9.80	3.70	-1.5	-1.9	0.1
PCB 52	3.59	3.66	3.67	8.09	8.80	8.61	3.64	1.1	8.50	4.4	5.03	0.50	**6.89**	**0.56**	-1.1	-1.4	0.1
PCB 44	2.80	2.80	2.75	5.31	5.92	5.77	2.78	1.0	5.67	5.6	3.79	0.49	**4.80**	**0.62**	-1.1	-1.0	0.1
PCB 66/95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.63	1.22	**14.3**	**2.5**			
PCB 101/90	3.47	3.81	3.75	10.5	10.8	11.7	3.68	5.0	11.0	5.9	5.62	0.70	**11.0**	**1.6**	-1.4	-2.0	0.3
PCB 118	2.94	3.12	2.94	9.81	10.1	9.80	3.00	3.5	9.90	1.6	4.39	0.42	**10.0**	**1.1**	-1.3	-1.4	0.2
PCB 153	3.61	3.95	3.80	15.0	15.6	15.6	3.79	4.4	15.4	2.4	5.59	0.81	**17.6**	**1.9**	-1.3	-1.9	0.3
PCB 105	1.04	0.933	0.952	3.59	3.59	3.56	0.976	6.0	3.58	0.4	1.52	0.28	**3.65**	**0.27**	-1.4	-0.6	0.4
PCB 138/163/164	3.24	3.67	3.48	13.4	12.4	12.8	3.46	6.3	12.9	3.8	5.01	0.71	**13.4**	**1.0**	-1.2	-1.6	0.4
PCB 187/182	1.21	1.27	1.24	5.76	5.90	5.82	1.24	2.4	5.83	1.2	2.27	0.40	7.00	2.60	-1.8	-1.1	0.2
PCB 128	<1	<1	<1	1.97	1.95	2.15	<1	NA	2.02	5.4	0.823	0.204	**1.87**	**0.32**			
PCB 180	1.84	1.84	1.85	8.89	8.37	8.77	1.84	0.3	8.68	3.1	3.33	0.41	8.00	2.00	-1.8	-1.5	0.0
PCB 170/190	<1	<1	<1	2.57	2.54	2.56	<1	NA	2.56	0.7	1.94	0.52	4.00	1.00			
PCB 195	<1	<1	<1	1.68	1.54	1.55	<1	NA	1.59	4.8	1.19	0.42	<3				
PCB 206	1.48	1.37	1.42	4.36	4.03	3.97	1.42	4.1	4.12	5.2	2.55	0.34	**3.67**	**0.87**	-1.8	-1.2	0.3
PCB 209	2.99	2.87	2.83	11.4	12.5	11.4	2.90	2.9	11.7	5.6	4.72	0.69	**8.34**	**0.49**	-1.5	-1.9	0.2
PCB 66	3.42	3.88	3.82	9.74	10.1	9.73	3.70	6.7	9.85	2.0	4.71	0.68	**6.80**	**1.40**	-0.9	-1.0	0.4
PCB 95	2.36	2.50	2.54	7.41	7.84	7.80	2.46	3.8	7.68	3.1	3.34	0.83	**7.50**	**1.10**	-1.0	-0.9	0.3

Laboratory: 26
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	14	77.8
Qualitative	3	16.7
Not Determined	1	5.6

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	14	13	14
2 to 3	0	1	0
≥ 3	0	0	0

Water in Sediment IX

	Sediment IX, % S 1	S 2	S 3	lab mean, %	lab %RSD	Sediment IX, % assigned	95% CL	exercise, % mean	95% CL	Sediment IX z (25%)	z (s)	p (15%)
water	45.9	45.7	46.1	45.9	0.4	46.2	3.3	46.2	3.3	0.0	0.0	0.0

[a]z- and p-scores ≥ 3 are bolded. [b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 27

Sample: QA99SED9 - Marine Sediment IX

(data reported as if three figures were significant)

Reporting Date: FEB 11,2000

PAH

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry 1/26/00 S 1	S 2	S 3	SRM 1941a, ng/g dry 1/26/00 S 1	S 2	S 3	Sediment IX lab mean ng/g dry	lab %RSD	SRM 1941a lab mean ng/g dry	lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	95% CL	SRM 1941a, ng/g dry target value[b]	95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
naphthalene	290	350	170	740	760	680	491	33.9	727	5.7	756	113	**1010**	**140**	-1.4	-1.0	2.3
2-methylnaphthalene	110	110	58.0	310	320	320	168	32.4	317	1.8	241	34	325	60	-1.2	-0.9	2.2
1-methylnaphthalene	45.0	52.0	25.0	160	170	140	73.9	34.5	157	9.8	111	18	150	30	-1.3	-0.9	2.3
biphenyl	46.0	65.0	43.0	99.0	100	100	93.3	23.2	99.7	0.6	73.3	12.5	100	36	1.1	0.7	1.5
2,6-dimethylnaphthalene	35.0	23.0	17.0	130	86.0	110	45.5	36.7	109	20.3	85.4	14.0	120	24	-1.9	-1.3	2.4
acenaphthylene	26.0	33.0	15.0	78.0	170	130	44.8	36.8	126	36.6	53.6	8.5	60.0	28.0	-0.7	-0.4	2.5
acenaphthene	18.0	24.0	14.0	35.0	43.0	49.0	33.9	27.0	42.3	16.6	35.7	4.7	41.0	10.0	-0.2	-0.2	1.8
1,6,7-trimethylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27.7	5.3	48.0	10.0			
fluorene	29.0	34.0	17.0	54.0	47.0	41.0	48.5	32.8	47.3	13.7	78.8	11.5	**97.3**	**8.6**	-1.5	-1.1	2.2
phenanthrene	120	140	63.0	49.0	330	240	196	37.1	206	69.5	383	43	**489**	**23**	-2.0	-1.8	2.5
anthracene	50.0	48.0	20.0	160	180	170	71.5	42.6	170	5.9	174	19	**184**	**14**	-2.4	-2.2	2.8
1-methylphenanthrene	other	other	other	other	other	other	other	NA	other	NA	76.0	11.1	101	27			
fluoranthene	190	180	81.0	780	820	850	273	40.1	817	4.3	635	71	**981**	**78**	-2.3	-2.0	2.7
pyrene	170	160	72.0	600	620	720	244	40.2	647	9.9	594	62	**811**	**24**	-2.4	-2.3	2.7
benz[a]anthracene	81.0	79.0	44.0	260	340	330	124	30.6	310	14.1	343	30	**427**	**25**	-2.6	-2.8	2.0
chrysene + triphenylene	80.0	110	59.0	340	570	380	151	30.9	430	28.6	404	37	577	35	-2.5	-2.7	2.1
benzofluoranthenes [b+j+k]	120	96.0	53.0	560	240	570	163	37.9	457	41.1	815	85	1441	150	**-3.2**	**-3.0**	2.5
benzo[e]pyrene	93.0	77.0	40.0	480	490	540	127	38.8	503	6.4	320	34	**553**	**59**	-2.4	-2.2	2.6
benzo[a]pyrene	120	93.0	52.0	530	490	460	161	38.8	493	7.1	354	42	**628**	**52**	-2.2	-1.9	2.6
perylene	140	80.0	41.0	330	360	220	158	57.3	303	24.3	416	63	**452**	**58**	-2.5	-1.6	**3.8**
indeno[1,2,3-cd]pyrene	70.0	68.0	40.0	370	460	480	108	28.3	437	13.4	287	36	**501**	**72**	-2.5	-1.9	1.9
dibenz[a,h]anthracene + [a,c]	31.0	24.0	10.0	120	110	110	39.4	49.4	113	5.1	78.1	14.2	**117**	**14**	-2.0	-1.1	**3.3**
benzo[ghi]perylene	87.0	66.0	38.0	450	430	470	116	38.6	450	4.4	259	27	**525**	**67**	-2.2	-2.0	2.6

Laboratory: 27

PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	21	91.3
Qualitative	1	4.3
Not Determined	1	4.3

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	10	13	3
2 to 3	10	7	16
≥ 3	1	1	2

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 27**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: FEB 11,2000

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	11/00 S 1	S 2	S 3	S 1	S 2	S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	___	___	___	___	___	___	NA	NA	NA	NA	<1		<2				
hexachlorobenzene	___	___	___	___	___	___	NA	NA	NA	NA	5.88	0.74	**70.0**	**25.0**			
gamma-HCH	___	___	___	___	___	___	NA	NA	NA	NA	<1		<2				
heptachlor	___	___	___	___	___	___	NA	NA	NA	NA	0.796	0.553	<2				
aldrin	___	___	___	___	___	___	NA	NA	NA	NA	0.438	0.313	<2				
heptachlor epoxide	___	___	___	___	___	___	NA	NA	NA	NA	0.125	0.111	<2				
oxychlordane	___	___	___	___	___	___	NA	NA	NA	NA	0.694	0.613	<3				
trans-chlordane	___	___	___	___	___	___	NA	NA	NA	NA	0.624	0.236	<2				
2,4'-DDE	___	___	___	___	___	___	NA	NA	NA	NA	0.451	0.150	**0.73**	**0.11**			
endosulfan I	___	___	___	___	___	___	NA	NA	NA	NA	<1	0.0	<2				
cis-chlordane	___	___	___	___	___	___	NA	NA	NA	NA	0.977	0.339	**2.33**	**0.56**			
trans-nonachlor	___	___	___	___	___	___	NA	NA	NA	NA	0.404	0.108	**1.26**	**0.13**			
dieldrin	___	___	___	___	___	___	NA	NA	NA	NA	0.779	0.337	1.26	0.37			
4,4'-DDE	___	___	___	___	___	___	NA	NA	NA	NA	3.34	0.45	**6.59**	**0.56**			
2,4'-DDD	___	___	___	___	___	___	NA	NA	NA	NA	1.12	0.50	<2				
endrin	___	___	___	___	___	___	NA	NA	NA	NA	<1		<2				
endosulfan II	___	___	___	___	___	___	NA	NA	NA	NA	<2		<2				
4,4'-DDD	___	___	___	___	___	___	NA	NA	NA	NA	4.10	0.53	**5.06**	**0.56**			
2,4'-DDT	___	___	___	___	___	___	NA	NA	NA	NA	<2		<2				
cis-nonachlor	___	___	___	___	___	___	NA	NA	NA	NA	0.296	0.193	<2				
4,4'-DDT	___	___	___	___	___	___	NA	NA	NA	NA	1.29	0.79	1.25	0.10			
mirex	___	___	___	___	___	___	NA	NA	NA	NA	<1		<2				

Laboratory: 27
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	0	0.0
Qualitative	0	0.0
Not Determined	22	100.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	0	0	0
2 to 3	0	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 27**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: FEB 11,2000

PCBs

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry 1/15/00 S 1	S 2	S 3	SRM 1941a, ng/g dry 1/15/00 S 1	S 2	S 3	Sediment IX lab mean ng/g dry	lab %RSD	SRM 1941a lab mean ng/g dry	lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	95% CL	SRM 1941a, ng/g dry target value[b]	95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
PCB 8	<0.113	<0.213	<0.169	1.26	2.07	1.37	<0.213	NA	1.57	28.0	1.72	0.47	1.69	0.38			
PCB 18	0.044	0.076	0.102	0.839	1.09	0.838	0.135	39.3	0.922	15.7	2.20	0.36	3.86	2.25	**-3.8**	-2.1	2.6
PCB 28	0.417	0.580	0.890	7.32	10.1	7.99	1.14	38.2	8.46	17.0	5.09	0.76	9.80	3.70	**-3.1**	**-4.1**	2.5
PCB 52	0.427	0.779	1.06	8.87	12.1	10.2	1.37	42.0	10.4	15.5	5.03	0.50	**6.89**	**0.56**	-2.9	**-3.8**	2.8
PCB 44	0.369	0.723	0.935	9.33	13.6	11.3	1.23	42.3	11.4	18.7	3.79	0.49	**4.80**	**0.62**	-2.7	-2.7	2.8
PCB 66/95	0.294	0.509	0.737	5.99	8.38	6.84	0.933	43.2	7.07	17.1	8.63	1.22	**14.3**	**2.5**	**-3.6**	**-8.0**	2.9
PCB 101/90	0.291	0.494	0.675	9.32	12.5	9.33	0.885	39.5	10.4	17.7	5.62	0.70	**11.0**	**1.6**	**-3.4**	**-4.9**	2.6
PCB 118	0.269	0.430	0.615	8.52	10.3	8.59	0.796	39.5	9.14	11.0	4.39	0.42	**10.0**	**1.1**	**-3.3**	**-3.7**	2.6
PCB 153	0.525	0.961	1.31	20.9	28.2	23.4	1.69	42.2	24.2	15.4	5.59	0.81	**17.6**	**1.9**	-2.8	**-4.0**	2.8
PCB 105	0.094	0.144	0.221	3.20	3.94	3.26	0.278	41.8	3.47	11.9	1.52	0.28	**3.65**	**0.27**	**-3.3**	-1.3	2.8
PCB 138/163/164	0.325	0.589	0.847	13.0	17.7	13.9	1.07	44.5	14.9	16.8	5.01	0.71	**13.4**	**1.0**	**-3.1**	**-4.1**	**3.0**
PCB 187/182	<0.09	0.194	0.259	4.64	6.29	5.11	0.412	20.3	5.35	15.9	2.27	0.40	7.00	2.60	**-3.3**	-1.9	1.4
PCB 128	0.061	0.102	0.166	2.39	3.29	2.54	0.199	48.3	2.74	17.6	0.823	0.204	**1.87**	**0.32**	**-3.0**	-0.6	3.2
PCB 180	0.198	0.360	0.508	9.56	11.8	9.74	0.646	43.6	10.4	12.0	3.33	0.41	8.00	2.00	**-3.2**	-2.8	2.9
PCB 170/190	0.066	0.108	0.162	3.28	4.06	3.42	0.204	43.0	3.59	11.6	1.94	0.52	4.00	1.00	**-3.6**	-1.8	2.9
PCB 195	<0.012	<0.022	0.030	0.926	1.04	0.805	0.055	NA	0.924	12.7	1.19	0.42	<3		**-3.8**	-1.2	
PCB 206	0.136	0.221	0.285	3.83	4.92	4.05	0.389	34.9	4.27	13.5	2.55	0.34	**3.67**	**0.87**	**-3.4**	-2.2	2.3
PCB 209	0.309	0.426	0.562	11.1	13.9	10.9	0.786	29.3	12.0	14.0	4.72	0.69	**8.34**	**0.49**	**-3.3**	**-4.1**	2.0
PCB 66	0.294	0.509	0.737	5.99	8.37	6.86	0.933	43.2	7.07	17.0	4.71	0.68	**6.80**	**1.40**	**-3.2**	**-3.9**	2.9
PCB 95	0.281	0.555	0.616	7.72	10.6	7.49	0.880	36.9	8.60	20.1	3.34	0.83	**7.50**	**1.10**	-2.9	-2.5	2.5

Laboratory: 27
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	17	94.4
Qualitative	1	5.6
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	0	5	2
2 to 3	4	4	13
≥ 3	14	9	1

Water in Sediment IX

	SedimentIX, % S 1	S 2	S 3	lab mean, %	%RSD	Sediment IX, % assigned	95% CL	exercise, % mean	95% CL	Sediment IX z (25%)	z (s)	p (15%)
water	NA	NA	NA	NA	NA	46.2	3.3	46.2	3.3			

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 28

Sample: QA99SED9 - Marine Sediment IX

(data reported as if three figures were significant)

Reporting Date: 2/2/00

PAH

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/25/00 S 1	1/25/00 S 2	1/25/00 S 3	1/25/00 S 1	1/25/00 S 2	1/25/00 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
naphthalene	189	378	232	899	934	880	266	37.2	904	3.0	756	113	**1010**	**140**	-2.6	-1.8	2.5
2-methylnaphthalene	111	103	167	224	284	429	127	27.5	312	33.7	241	34	325	60	-1.9	-1.4	1.8
1-methylnaphthalene	266	314	437	609	777	1190	339	26.0	859	34.8	111	18	150	30	**8.2**	**5.6**	1.7
biphenyl	81.4	83.5	143	108	140	183	103	34.1	143.7	26.2	73.3	12.5	100	36	1.6	1.0	2.3
2,6-dimethylnaphthalene	203	164	304	190	319	405	224	32.3	305	35.5	85.4	14.0	120	24	**6.5**	**4.4**	2.2
acenaphthylene	49.7	39.7	40.2	64.0	63.9	66.6	43.2	13.0	64.8	2.4	53.6	8.5	60.0	28.0	-0.8	-0.5	0.9
acenaphthene	30.9	41.9	41.6	37.6	48.2	46.2	38.1	16.4	44.0	12.8	35.7	4.7	41.0	10.0	0.3	0.2	1.1
1,6,7-trimethylnaphthalene	33.0	35.6	67.0	83.7	168	94.0	45.2	41.9	115.2	39.9	27.7	5.3	48.0	10.0	2.5	1.9	2.8
fluorene	58.1	72.1	116	92.6	116	82.8	82.1	36.8	97.1	17.6	78.8	11.5	**97.3**	**8.6**	0.2	0.1	2.5
phenanthrene	604	520	624	560	854	640	583	9.5	685	22.2	383	43	**489**	**23**	2.1	1.9	0.6
anthracene	294	320	288	278	309	266	301	5.7	284	7.8	174	19	**184**	**14**	2.9	2.8	0.4
1-methylphenanthrene	141	104	139	136	159	138	128	16.3	144.3	8.8	76.0	11.1	101	27	2.7	2.1	1.1
fluoranthene	1058	867	1085	1259	1351	955	1003	11.8	1188	17.4	635	71	**981**	**78**	2.3	2.1	0.8
pyrene	1146	954	1138	1071	1214	845	1079	10.1	1043	17.8	594	62	**811**	**24**	**3.3**	**3.1**	0.7
benz[a]anthracene	445	379	459	557	659	508	428	10.0	575	13.4	343	30	**427**	**25**	1.0	1.1	0.7
chrysene + triphenylene	551	522	618	835	961	646	564	8.7	814	19.5	404	37	577	35	1.6	1.7	0.6
benzofluoranthenes [b+j+k]	864	871	981	1065	1422	997	905	7.2	1161	19.7	815	85	1441	150	0.4	0.4	0.5
benzo[e]pyrene	401	406	411	436	553	405	406	1.2	465	16.8	320	34	**553**	**59**	1.1	1.0	0.1
benzo[a]pyrene	377	393	402	468	562	434	391	3.2	488	13.6	354	42	**628**	**52**	0.4	0.4	0.2
perylene	606	575	563	346	386	319	581	3.8	350	9.6	416	63	**452**	**58**	1.6	1.1	0.3
indeno[1,2,3-cd]pyrene	287	294	319	399	460	365	300	5.6	408	11.8	287	36	**501**	**72**	0.2	0.1	0.4
dibenz[a,h]anthracene + [a,c]	135	132	136	136	154	132	134	1.5	140.7	8.3	78.1	14.2	**117**	**14**	2.9	1.6	0.1
benzo[ghi]perylene	310	320	360	493	529	436	330	8.0	486	9.6	259	27	**525**	**67**	1.1	1.0	0.5

Laboratory: 28

PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	23	100.0
Qualitative	0	0.0
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	13	17	18
2 to 3	7	3	5
≥ 3	3	3	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 28**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 2/2/00

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/5/00 S 1	1/31/00 S 2	1/31/00 S 3	1/31/00 S 1	1/31/00 S 2	1/31/00 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	<0.027	<0.035	<0.029	<0.097	<0.038	<0.049	<0.035	NA	<0.097	NA	<1		<2				
hexachlorobenzene	4.62	5.40	6.37	51.7	72.2	60.4	5.46	16.0	61.4	16.7	5.88	0.74	**70.0**	**25.0**	-0.3	-0.2	1.1
gamma-HCH	<0.033	<0.024	<0.018	<0.043	<0.024	<0.031	<0.033	NA	<0.043	NA	<1		<2				
heptachlor	<0.660	<0.320	<0.290	<0.077	<0.086	<0.080	<0.660	NA	<0.086	NA	0.796	0.553	<2				
aldrin	<0.450	<0.370	<0.340	0.172	0.151	0.105	<0.450	NA	0.143	24.0	0.438	0.313	<2				
heptachlor epoxide	<0.097	<0.120	<0.070	0.057	0.059	0.060	<0.120	NA	0.059	2.8	0.125	0.111	<2				
oxychlordane	<0.270	<0.410	<0.300	<0.130	<0.190	0.17	<0.410	NA	0.170	NA	0.694	0.613	<3				
trans-chlordane	0.309	0.308	0.215	1.05	0.821	0.591	0.277	19.5	0.821	28.0	0.624	0.236	<2		-2.2	-0.2	1.3
2,4'-DDE	0.464	0.476	0.442	0.587	0.544	0.471	0.461	3.7	0.534	11.0	0.451	0.150	**0.73**	**0.11**	0.1	0.0	0.2
endosulfan I	<0.230	<0.620	<0.290	<0.260	<0.270	<0.240	<0.620	NA	<0.270	NA	<1	0.0	<2				
cis-chlordane	0.447	0.422	0.548	1.38	1.18	0.974	0.472	14.1	1.18	17.2	0.977	0.339	**2.33**	**0.56**	-2.1	-0.3	0.9
trans-nonachlor	<0.260	<0.310	<0.280	0.623	0.389	0.390	<0.310	NA	0.506	32.7	0.404	0.108	**1.26**	**0.13**			
dieldrin	0.484	0.555	0.508	0.806	0.940	0.784	0.516	7.0	0.795	2.0	0.779	0.337	1.26	0.37	-1.4	-0.1	0.5
4,4'-DDE	3.29	3.52	3.25	5.06	4.27	3.78	3.35	4.3	4.37	14.8	3.34	0.45	**6.59**	**0.56**	0.0	0.0	0.3
2,4'-DDD	0.898	0.660	0.798	2.01	4.33	4.83	0.785	15.2	3.72	40.4	1.12	0.50	<2		-1.2	-0.2	1.0
endrin	<0.560	<0.850	<1.190	<0.550	<0.570	<0.520	<1.190	NA	<0.570	NA	<1		<2				
endosulfan II	<0.560	<0.170	<0.150	<0.620	<0.240	<2.11	<0.560	NA	<2.11	NA	<2		<2				
4,4'-DDD	5.54	4.56	5.39	7.87	8.17	7.35	5.16	10.2	7.80	5.3	4.10	0.53	**5.06**	**0.56**	1.0	0.6	0.7
2,4'-DDT	<0.031	<0.046	<0.040	<0.200	<0.250	<0.290	<0.046	NA	<0.290	NA	<2		<2				
cis-nonachlor	<0.150	<0.210	<0.190	0.594	0.464	0.600	<0.210	NA	0.553	13.9	0.296	0.193	<2				
4,4'-DDT	0.564	0.467	0.488	0.565	0.711	0.883	0.506	10.1	0.720	22.1	1.29	0.79	1.25	0.10	-2.4	-0.4	0.7
mirex	<0.380	<0.290	<0.500	3.53	2.99	3.94	<0.500	NA	3.49	13.7	<1		<2				

Laboratory: 28
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	9	40.9
Qualitative	13	59.1
Not Determined	0	0.0

Category	Number by Category		
	z (25%)	z (s)	p (15%)
≤ 2	6	9	9
2 to 3	3	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 28**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 2/2/00

PCBs

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/20/00 S 1	1/20/00 S 2	1/20/00 S 3	1/20/00 S 1	1/20/00 S 2	1/20/00 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
PCB 8	0.507	0.542	0.523	1.02	1.08	0.992	0.524	3.3	1.03	4.4	1.72	0.47	1.69	0.38	-2.8	-1.2	0.2
PCB 18	0.255	0.363	0.474	0.717	1.34	1.23	0.364	30.1	1.10	30.3	2.20	0.36	3.86	2.25	**-3.3**	-1.9	2.0
PCB 28	2.30	2.67	2.22	4.54	4.01	4.56	2.40	10.0	4.37	7.1	5.09	0.76	9.80	3.70	-2.1	-2.8	0.7
PCB 52	3.41	3.00	2.65	6.10	7.28	6.36	3.02	12.6	6.58	9.4	5.03	0.50	**6.89**	**0.56**	-1.6	-2.1	0.8
PCB 44	2.71	2.23	1.87	4.23	5.17	4.05	2.27	18.6	4.48	13.4	3.79	0.49	**4.80**	**0.62**	-1.6	-1.6	1.2
PCB 66/95	____	____	____	____	____	____	NA	NA	NA	NA	8.63	1.22	**14.3**	**2.5**			
PCB 101/90	2.43	2.84	2.57	8.42	9.05	8.78	2.61	8.0	8.75	3.6	5.62	0.70	**11.0**	**1.6**	-2.1	**-3.1**	0.5
PCB 118	2.29	2.32	2.18	7.21	7.88	7.05	2.26	3.3	7.38	6.0	4.39	0.42	**10.0**	**1.1**	-1.9	-2.2	0.2
PCB 153	1.81	2.31	2.12	10.5	11.6	11.1	2.08	12.1	11.1	5.0	5.59	0.81	**17.6**	**1.9**	-2.5	**-3.6**	0.8
PCB 105	0.651	0.653	0.563	1.96	2.28	1.95	0.622	8.3	2.06	9.1	1.52	0.28	**3.65**	**0.27**	-2.4	-0.9	0.6
PCB 138/163/164	1.86	2.21	1.980	9.51	10.5	10.3	2.04	12.1	10.1	5.0	5.01	0.71	**13.4**	**1.0**	-2.4	**-3.1**	0.8
PCB 187/182	1.02	1.32	1.25	5.79	7.31	6.50	1.20	13.1	6.53	11.6	2.27	0.40	7.00	2.60	-1.9	-1.1	0.9
PCB 128	0.238	0.287	0.255	1.28	1.47	1.36	0.260	9.6	1.37	7.0	0.823	0.204	**1.87**	**0.32**	-2.7	-0.6	0.6
PCB 180	2.71	2.78	2.69	12.1	13.6	12.5	2.73	1.7	12.7	6.1	3.33	0.41	8.00	2.00	-0.7	-0.6	0.1
PCB 170/190	1.33	1.39	1.27	5.77	7.00	5.81	1.33	4.5	6.19	11.3	1.94	0.52	4.00	1.00	-1.3	-0.6	0.3
PCB 195	0.102	0.118	0.117	0.648	0.706	0.624	0.112	8.0	0.659	6.4	1.19	0.42	<3		**-3.6**	-1.1	0.5
PCB 206	1.08	1.13	1.15	2.90	3.79	3.10	1.12	3.2	3.26	14.3	2.55	0.34	**3.67**	**0.87**	-2.2	-1.5	0.2
PCB 209	3.04	3.00	2.98	8.16	9.40	9.14	3.01	1.0	8.90	7.3	4.72	0.69	**8.34**	**0.49**	-1.5	-1.8	0.1
PCB 66	3.00	2.79	2.77	6.23	6.55	6.07	2.78	0.5	6.28	3.9	4.71	0.68	**6.80**	**1.40**	-1.6	-2.0	0.0
PCB 95	2.04	2.02	1.80	5.49	6.50	5.82	1.95	6.8	5.94	8.7	3.34	0.83	**7.50**	**1.10**	-1.7	-1.4	0.5

Laboratory: 28
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	17	94.4
Qualitative	0	0.0
Not Determined	1	5.6

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	7	11	16
2 to 3	8	3	1
≥ 3	2	3	0

Water in Sediment IX

	Sediment IX, %				lab			Sediment IX, %		exercise, %		Sediment IX		
	S 1	S 2	S 3		mean, %	%RSD		assigned	95% CL	mean	95% CL	z (25%)	z (s)	p (15%)
water	45.3	46.0	44.8		45.4	1.3		46.2	3.3	46.2	3.3	-0.1	-0.1	0.1

[a]z- and p-scores ≥ 3 are bolded. [b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 29**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 2/15/00

PAH

Analysis date	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
	1/25/00 S 1	1/25/00 S 2	1/25/00 S 3	1/25/00 S 1	1/25/00 S 2	1/25/00 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
naphthalene	633	628	619	383	387	400	627	1.1	390	2.3	756	113	**1010**	**140**	-0.7	-0.5	0.1
2-methylnaphthalene	175	175	174	179	181	183	175	0.3	181	1.1	241	34	325	60	-1.1	-0.8	0.0
1-methylnaphthalene	94.0	89.4	86.2	101	102	108	89.9	4.4	104	3.7	111	18	150	30	-0.8	-0.5	0.3
biphenyl	53.6	53.7	52.6	64.6	65.5	64.8	53.3	1.1	65.0	0.7	73.3	12.5	100	36	-1.1	-0.7	0.1
2,6-dimethylnaphthalene	53.0	45.9	46.6	59.0	58.7	58.8	48.5	8.1	58.8	0.3	85.4	14.0	120	24	-1.7	-1.2	0.5
acenaphthylene	66.2	65.6	64.8	70.6	68.5	70.8	65.5	1.1	70.0	1.8	53.6	8.5	60.0	28.0	0.9	0.6	0.1
acenaphthene	36.8	37.4	35.8	36.4	35.3	32.4	36.7	2.2	34.7	6.0	35.7	4.7	41.0	10.0	0.1	0.1	0.1
1,6,7-trimethylnaphthalene	24.3	17.7	22.8	28.5	28.9	28.2	21.6	16.0	28.5	1.2	27.7	5.3	48.0	10.0	-0.9	-0.7	1.1
fluorene	88.7	90.9	88.0	58.8	58.5	58.0	89.2	1.7	58.4	0.7	78.8	11.5	**97.3**	**8.6**	0.5	0.4	0.1
phenanthrene	368	364	364	352	342	344	365	0.6	346	1.5	383	43	**489**	**23**	-0.2	-0.2	0.0
anthracene	172	158	164	120	124	121	165	4.3	122	1.7	174	19	**184**	**14**	-0.2	-0.2	0.3
1-methylphenanthrene	78.7	71.9	68.6	65.6	64.7	68.8	73.1	7.0	66.4	3.2	76.0	11.1	101	27	-0.2	-0.1	0.5
fluoranthene	679	671	691	892	886	865	680	1.5	881	1.6	635	71	**981**	**78**	0.3	0.3	0.1
pyrene	624	617	634	722	722	696	625	1.4	713	2.1	594	62	**811**	**24**	0.2	0.2	0.1
benz[a]anthracene	353	365	371	364	366	358	363	2.5	363	1.1	343	30	**427**	**25**	0.2	0.3	0.2
chrysene + triphenylene	416	385	390	558	551	555	397	4.2	555	0.6	404	37	577	35	-0.1	-0.1	0.3
benzofluoranthenes [b+j+k]	972	996	982	1413	1424	1409	983	1.2	1415	0.5	815	85	1441	150	0.8	0.8	0.1
benzo[e]pyrene	374	381	381	585	579	573	379	1.1	579	1.0	320	34	**553**	**59**	0.7	0.7	0.1
benzo[a]pyrene	376	369	375	505	497	500	373	1.0	501	0.8	354	42	**628**	**52**	0.2	0.2	0.1
perylene	463	463	475	322	318	316	467	1.5	319	1.0	416	63	**452**	**58**	0.5	0.3	0.1
indeno[1,2,3-cd]pyrene	304	302	294	513	494	488	300	1.8	498	2.6	287	36	**501**	**72**	0.2	0.1	0.1
dibenz[a,h]anthracene + [a,c]	68.6	69.0	65.1	118	115	114	67.6	3.2	116	1.8	78.1	14.2	**117**	**14**	-0.5	-0.3	0.2
benzo[ghi]perylene	287	292	292	522	510	502	290	1.0	511	2.0	259	27	**525**	**67**	0.5	0.4	0.1

Laboratory: 29
PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	23	100.0
Qualitative	0	0.0
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	23	23	23
2 to 3	0	0	0
≥ 3	0	0	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 29**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 2/15/00

PESTICIDES

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry 1/5/00 S 1	Sediment IX 1/26/00 S 2	Sediment IX 1/26/00 S 3	SRM 1941a, ng/g dry 1/25/00 S 1	SRM 1941a 1/26/00 S 2	SRM 1941a 1/25/00 S 3	Sediment IX lab mean ng/g dry	Sediment IX lab %RSD	SRM 1941a lab mean ng/g dry	SRM 1941a lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	Sediment IX 95% CL	SRM 1941a, ng/g dry target value[b]	SRM 1941a 95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	<2	<2	<2	<2	<2	<2	<2	NA	<2	NA	<1		<2				
hexachlorobenzene	9.40	9.30	9.20	83.0	70.0	65.0	9.30	1.1	72.7	12.8	5.88	0.74	**70.0**	**25.0**	2.3	1.9	0.1
gamma-HCH	<2	<2	<2	<2	<2	<2	<2	NA	<2	NA	<1		<2				
heptachlor	0.450	0.470	0.430	<2	<2	<2	0.450	4.4	<2	NA	0.796	0.553	<2		-1.7	-0.2	0.3
aldrin	<2	<2	<2	<2	<2	<2	<2	NA	<2	NA	0.438	0.313	<2				
heptachlor epoxide	<2	<2	<2	<2	<2	<2	<2	NA	<2	NA	0.125	0.111	<2				
oxychlordane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.694	0.613	<3				
trans-chlordane	<2	<2	<2	1.30	1.20	1.10	<2	NA	1.20	8.3	0.624	0.236	<2				
2,4'-DDE	<2	<2	<2	0.720	0.890	0.880	<2	NA	0.830	11.5	0.451	0.150	**0.73**	**0.11**			
endosulfan I	<2	<2	<2	<2	<2	<2	<2	NA	<2	NA	<1	0.0	<2				
cis-chlordane	<2	<2	<2	2.40	2.70	2.70	<2	NA	2.60	6.7	0.977	0.339	**2.33**	**0.56**			
trans-nonachlor	<2	<2	<2	1.30	1.40	1.40	<2	NA	1.37	4.2	0.404	0.108	**1.26**	**0.13**			
dieldrin	<2	<2	<2	1.60	1.40	1.40	<2	NA	1.47	7.9	0.779	0.337	1.26	0.37			
4,4'-DDE	4.50	4.40	4.50	6.50	6.90	7.40	4.47	1.3	6.93	6.5	3.34	0.45	**6.59**	**0.56**	1.4	0.6	0.1
2,4'-DDD	1.20	1.30	1.30	1.50	1.70	1.70	1.27	4.6	1.63	7.1	1.12	0.50	<2		0.5	0.1	0.3
endrin	<2	<2	<2	<2	<2	<2	<2	NA	<2	NA	<1		<2				
endosulfan II	<2	<2	<2	<2	<2	<2	<2	NA	<2	NA	<2		<2				
4,4'-DDD	7.10	7.10	7.00	4.90	5.20	5.40	7.07	0.8	5.17	4.9	4.10	0.53	**5.06**	**0.56**	2.9	1.6	0.1
2,4'-DDT	5.20	5.40	5.30	<2	<2	<2	5.30	1.9	<2	NA	<2		<2				0.1
cis-nonachlor	<2	<2	<2	0.760	0.890	0.930	<2	NA	0.860	10.3	0.296	0.193	<2				
4,4'-DDT	1.40	1.40	1.30	<2	<2	<2	1.37	4.2	<2	NA	1.29	0.79	1.25	0.10	0.2	0.0	0.3
mirex	<2	<2	<2	<2	<2	<2	<2	NA	<2	NA	<1		<2				

Laboratory: 29
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	7	31.8
Qualitative	14	63.6
Not Determined	1	4.5

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	4	6	7
2 to 3	2	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 29

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant)

Reporting Date: 2/15/00

PCBs

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/25/00 S 1	1/25/00 S 2	1/25/00 S 3	1/25/00 S 1	1/25/00 S 2	1/25/00 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
PCB 8	1.80	1.60	1.40	1.30	1.40	1.40	1.60	12.5	1.37	4.2	1.72	0.47	1.69	0.38	-0.3	-0.1	0.8
PCB 18	2.30	2.40	2.30	3.30	3.00	3.20	2.33	2.5	3.17	4.8	2.20	0.36	3.86	2.25	0.2	0.1	0.2
PCB 28	5.80	5.90	5.80	7.80	6.70	6.90	5.83	1.0	7.13	8.2	5.09	0.76	9.80	3.70	0.6	0.8	0.1
PCB 52	7.10	7.30	7.20	7.40	6.90	7.80	7.20	1.4	7.37	6.1	5.03	0.50	**6.89**	**0.56**	1.7	2.2	0.1
PCB 44	5.30	5.70	5.60	5.80	6.10	5.80	5.53	3.8	5.90	2.9	3.79	0.49	**4.80**	**0.62**	1.8	1.8	0.3
PCB 66/95	6.60	6.60	6.60	12.0	13.0	14.0	6.6	0.0	13.0	7.7	8.63	1.22	**14.3**	**2.5**	-0.9	-2.1	0.0
PCB 101/90	9.00	9.40	9.20	13.0	13.0	13.0	9.20	2.2	13.0	0.0	5.62	0.70	**11.0**	**1.6**	2.5	**3.7**	0.1
PCB 118	5.70	5.90	5.90	9.80	9.80	10.0	5.83	2.0	9.87	1.2	4.39	0.42	**10.0**	**1.1**	1.3	1.5	0.1
PCB 153	8.50	8.50	8.50	17.0	18.0	19.0	8.50	0.0	18.0	5.6	5.59	0.81	**17.6**	**1.9**	2.1	**3.0**	0.0
PCB 105	1.20	1.20	1.20	3.50	3.70	4.00	1.20	0.0	3.73	6.7	1.52	0.28	**3.65**	**0.27**	-0.9	-0.3	0.0
PCB 138/163/164	5.40	5.30	5.40	14.0	14.0	15.0	5.37	1.1	14.3	4.0	5.01	0.71	**13.4**	**1.0**	0.3	0.4	0.1
PCB 187/182	3.40	3.20	3.30	7.80	8.20	8.50	3.30	3.0	8.17	4.3	2.27	0.40	7.00	2.60	1.8	1.1	0.2
PCB 128	0.710	0.720	0.630	1.80	1.80	2.00	0.687	7.2	1.87	6.2	0.823	0.204	**1.87**	**0.32**	-0.7	-0.1	0.5
PCB 180	4.70	4.60	4.50	6.80	6.90	6.90	4.60	2.2	6.87	0.8	3.33	0.41	8.00	2.00	1.5	1.3	0.1
PCB 170/190***	*7.40*	*7.20*	*7.50*	3.30	3.70	3.40	7.37	2.1	3.47	6.0	1.94	0.52	4.00	1.00	**11.2**	**5.6**	0.1
PCB 195	2.00	2.00	2.10	2.90	3.20	3.20	2.03	2.8	3.10	5.6	1.19	0.42	<3		2.8	0.9	0.2
PCB 206	3.00	3.10	3.30	3.70	3.40	3.70	3.13	4.9	3.60	4.8	2.55	0.34	**3.67**	**0.87**	0.9	0.6	0.3
PCB 209	7.00	7.00	7.50	9.60	9.80	10.0	7.17	4.0	9.80	2.0	4.72	0.69	**8.34**	**0.49**	2.1	2.5	0.3
PCB 66	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.71	0.68	**6.80**	**1.40**			
PCB 95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.34	0.83	**7.50**	**1.10**			

Laboratory: 29
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	18	100.0
Qualitative	0	0.0
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	13	12	18
2 to 3	4	3	0
≥ 3	1	3	0

Water in Sediment IX

	SedimentIX, %			lab		Sediment IX, %		exercise, %		Sediment IX		
	S 1	S 2	S 3	mean, %	%RSD	assigned	95% CL	mean	95% CL	z (25%)	z (s)	p (15%)
water	46.8	46.9	46.5	46.7	0.4	46.2	3.3	46.2	3.3	0.0	0.1	0.0

[a] z- and p-scores ≥ 3 are bolded. [b] Certified material reference values are bolded. ***NOTE: on 4/24/00 PCB 170/190 in SED IX reported as 1.7,1.3, 1.39 for three samples

FY99 NIST Intercomparison Exercise **Laboratory No.: 30**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 2/11/00

PAH

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry 10/18/99 S 1	S 2	S 3	SRM 1941a, ng/g dry 10/18/99 S 1	S 2	S 3	Sediment IX lab mean ng/g dry	lab %RSD	SRM 1941a lab mean ng/g dry	lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	95% CL	SRM 1941a, ng/g dry target value[b]	95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
naphthalene	1129	1346	1331	885	858	938	1269	9.6	894	4.6	756	113	**1010**	**140**	2.7	1.9	0.6
2-methylnaphthalene	356	291	271	426	402	459	306	14.5	429	6.7	241	34	325	60	1.1	0.8	1.0
1-methylnaphthalene	151	223	111	252	272	294	161	35.1	273	7.7	111	18	150	30	1.8	1.2	2.3
biphenyl	118	134	125	141	140	133	126	6.4	138	3.2	73.3	12.5	100	36	2.9	1.8	0.4
2,6-dimethylnaphthalene	175	152	120	311	290	266	inf	NA	inf	NA	85.4	14.0	120	24			
acenaphthylene	<20	<20	<20	<20	<20	<20	<20	NA	<20	NA	53.6	8.5	60.0	28.0			
acenaphthene	44.6	39.0	31.5	47.1	41.7	38.3	38.4	17.2	42.4	10.5	35.7	4.7	41.0	10.0	0.3	0.2	1.1
1,6,7-trimethylnaphthalene	8.66	6.74	7.91	19.1	15.7	25.9	7.77	12.4	20.2	25.6	27.7	5.3	48.0	10.0	-2.9	-2.2	0.8
fluorene	151	144	139	93.1	82.8	90.7	144	4.1	88.9	6.1	78.8	11.5	**97.3**	**8.6**	**3.3**	2.3	0.3
phenanthrene	532	453	477	584	519	484	487	8.3	529	9.6	383	43	**489**	**23**	1.1	1.0	0.6
anthracene	255	230	225	212	197	185	237	6.8	198	7.1	174	19	**184**	**14**	1.5	1.4	0.5
1-methylphenanthrene	135	108	98.5	146	134	111	114	16.6	130	13.8	76.0	11.1	101	27	2.0	1.6	1.1
fluoranthene	781	699	771	929	859	920	751	6.0	902	4.2	635	71	**981**	**78**	0.7	0.6	0.4
pyrene	768	674	723	830	766	771	722	6.5	789	4.4	594	62	**811**	**24**	0.9	0.8	0.4
benz[a]anthracene	428	416	434	415	376	383	426	2.1	391	5.3	343	30	**427**	**25**	1.0	1.1	0.1
chrysene + triphenylene	480	409	499	597	529	544	463	10.2	557	6.4	404	37	577	35	0.6	0.6	0.7
benzofluoranthenes [b+j+k]	963	995	1113	1106	953	1075	1024	7.7	1045	7.8	815	85	1441	150	1.0	1.0	0.5
benzo[e]pyrene	415	386	392	492	435	479	397	3.9	468	6.4	320	34	**553**	**59**	1.0	0.9	0.3
benzo[a]pyrene	540	547	490	541	568	595	526	5.9	568	4.8	354	42	**628**	**52**	1.9	1.7	0.4
perylene	519	577	480	408	424	497	525	9.2	443	10.7	416	63	**452**	**58**	1.1	0.7	0.6
indeno[1,2,3-cd]pyrene	383	330	358	431	388	411	357	7.4	410	5.3	287	36	**501**	**72**	1.0	0.7	0.5
dibenz[a,h]anthracene + [a,c]	201	210	186	177	154	163	199	6.1	164	7.0	78.1	14.2	**117**	**14**	**6.2**	**3.5**	0.4
benzo[ghi]perylene	321	402	361	417	423	432	361	11.3	424	1.7	259	27	**525**	**67**	1.6	1.4	0.8

Laboratory: 30
PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	21	91.3
Qualitative	2	8.7
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	15	18	20
2 to 3	4	2	1
≥ 3	2	1	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 30**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 2/11/00

PESTICIDES

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Material reference values: Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Performance scores[a] Sediment IX		
	1/5/00 S 1	10/5/99 S 2	2/3/00 S 3	9/6/99 S 1	10/5/99 S 2	2/3/00 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1		<2				
hexachlorobenzene	17.7	19.7	18.3	79.5	76.2	60.1	18.6	5.5	71.9	14.4	5.88	0.74	**70.0**	**25.0**	**8.6**	**6.9**	0.4
gamma-HCH	<1	<1	<1	<1	<1	<1	<1	NA	<1	NA	<1		<2				
heptachlor	<2	<2	<2	<2	<2	<2	<2	NA	<2	NA	0.796	0.553	<2				
aldrin	0.721	0.669	0.765	1.98	2.54	2.19	0.718	6.7	2.23	12.9	0.438	0.313	<2		2.6	0.2	0.4
heptachlor epoxide	<1	<1	<1	1.21	1.74	1.79	<1	NA	1.58	20.3	0.125	0.111	<2				
oxychlordane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.694	0.613	<3				
trans-chlordane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.624	0.236	<2				
2,4'-DDE	<0.5	<0.5	<0.5	0.663	0.818	1.03	<0.5	NA	0.838	22.1	0.451	0.150	**0.73**	**0.11**			
endosulfan I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	0.0	<2				
cis-chlordane	1.90	1.33	1.57	3.10	2.87	2.33	1.599	17.9	2.77	14.3	0.977	0.339	**2.33**	**0.56**	2.5	0.3	1.2
trans-nonachlor	<1	<1	<1	1.43	1.49	1.34	<1	NA	1.42	5.6	0.404	0.108	**1.26**	**0.13**			
dieldrin	<0.5	<0.5	<0.5	0.773	0.707	1.07	<0.5	NA	0.849	22.6	0.779	0.337	1.26	0.37			
4,4'-DDE	4.60	4.95	5.42	7.45	7.43	6.34	4.99	8.3	7.07	9.0	3.34	0.45	**6.59**	**0.56**	2.0	0.9	0.6
2,4'-DDD	0.495	1.16	0.688	3.15	2.81	1.99	0.781	43.9	2.65	22.4	1.12	0.50	<2		-1.2	-0.2	2.9
endrin	<3	<3	<3	<3	<3	<3	<3	NA	<3	NA	<1		<2				
endosulfan II	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2		<2				
4,4'-DDD	5.06	4.68	5.56	5.93	5.17	4.87	5.10	8.7	5.32	10.2	4.10	0.53	**5.06**	**0.56**	1.0	0.6	0.6
2,4'-DDT	<1	<1	<1	<1	<1	<1	<1	NA	<1	NA	<2		<2				
cis-nonachlor	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.296	0.193	<2				
4,4'-DDT	1.24	2.59	3.08	2.20	2.61	2.21	2.303	41.3	2.34	10.1	1.29	0.79	1.25	0.10	**3.2**	0.6	2.8
mirex	<2	<2	<2	<2	<2	<2	<2	NA	<2	NA	<1		<2				

Laboratory: 30
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	7	31.8
Qualitative	13	59.1
Not Determined	2	9.1

Category	Number by Category: z (25%)	z (s)	p (15%)
≤ 2	3	6	5
2 to 3	2	0	2
≥ 3	2	1	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 30

Sample: QA99SED9 - Marine Sediment IX

(data reported as if three figures were significant)

Reporting Date: 2/11/00

PCBs

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	9/9/99 S 1	9/9/99 S 2	9/9/99 S 3	9/9/99 S 1	9/9/99 S 2	9/9/99 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
PCB 8	2.89	2.66	2.64	1.67	2.06	3.17	2.73	5.1	2.30	33.9	1.72	0.47	1.69	0.38	2.3	1.0	0.3
PCB 18	4.85	3.53	3.69	2.96	2.49	2.57	4.02	17.9	2.67	9.5	2.20	0.36	3.86	2.25	**3.3**	1.9	1.2
PCB 28	6.40	6.75	6.58	7.78	7.69	8.51	6.58	2.7	7.99	5.6	5.09	0.76	9.80	3.70	1.2	1.5	0.2
PCB 52	7.25	6.92	7.52	7.54	6.66	8.06	7.23	4.1	7.42	9.6	5.03	0.50	**6.89**	**0.56**	1.7	2.3	0.3
PCB 44	6.03	6.35	6.53	6.30	5.33	6.64	6.31	4.0	6.09	11.1	3.79	0.49	**4.80**	**0.62**	2.7	2.6	0.3
PCB 66/95	11.4	11.9	12.3	14.4	16.6	12.5	11.8	3.9	14.5	14.0	8.63	1.22	**14.3**	**2.5**	1.5	**3.3**	0.3
PCB 101/90	10.0	10.1	9.48	13.4	10.9	14.9	9.85	3.2	13.1	15.8	5.62	0.70	**11.0**	**1.6**	**3.0**	**4.4**	0.2
PCB 118	6.36	5.98	6.20	9.16	9.28	8.40	6.18	3.1	8.94	5.3	4.39	0.42	**10.0**	**1.1**	1.6	1.9	0.2
PCB 153	10.3	10.8	10.9	18.0	18.6	18.3	10.6	3.0	18.3	1.5	5.59	0.81	**17.6**	**1.9**	**3.6**	**5.2**	0.2
PCB 105	1.54	1.75	1.88	3.44	3.57	3.05	1.72	9.8	3.35	8.1	1.52	0.28	**3.65**	**0.27**	0.5	0.2	0.7
PCB 138/163/164	7.75	7.32	7.33	11.6	14.3	13.7	7.46	3.3	13.2	10.8	5.01	0.71	**13.4**	**1.0**	2.0	2.5	0.2
PCB 187/182	3.01	2.79	3.10	4.90	4.63	6.27	2.97	5.4	5.27	16.7	2.27	0.40	7.00	2.60	1.2	0.7	0.4
PCB 128	<1	1.100	<1	2.33	2.21	1.11	1.10	NA	1.89	35.7	0.823	0.204	**1.87**	**0.32**	1.3	0.3	
PCB 180	5.25	4.56	4.17	7.48	6.71	7.51	4.66	11.7	7.23	6.3	3.33	0.41	8.00	2.00	1.6	1.4	0.8
PCB 170/190	4.30	4.65	4.41	3.33	4.23	4.70	4.45	4.0	4.09	17.0	1.94	0.52	4.00	1.00	**5.2**	2.6	0.3
PCB 195	1.93	2.57	2.07	3.09	3.48	4.03	2.19	15.5	3.53	13.3	1.19	0.42	<3		**3.4**	1.0	1.0
PCB 206	3.87	4.37	4.47	4.75	5.18	4.76	4.23	7.6	4.89	5.0	2.55	0.34	**3.67**	**0.87**	2.6	1.7	0.5
PCB 209	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.72	0.69	**8.34**	**0.49**			
PCB 66							NA	NA	NA	NA	4.71	0.68	**6.80**	**1.40**			
PCB 95							NA	NA	NA	NA	3.34	0.83	**7.50**	**1.10**			

Laboratory: 30
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	17	94.4
Qualitative	1	5.6
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	9	10	16
2 to 3	3	4	0
≥ 3	5	3	0

Water in Sediment IX

	Sediment IX, %				lab			Sediment IX, %		exercise, %		Sediment IX		
	S 1	S 2	S 3		mean, %	%RSD		assigned	95% CL	mean	95% CL	z (25%)	z (s)	p (15%)
water	45.9	46.02.	49.5		47.7	5.3		46.2	3.3	46.2	3.3	0.1	0.2	0.4

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 31**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 2/17/00

PAH

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry S 1	S 2	S 3	SRM 1941a, ng/g dry S 1	S 2	S 3	Sediment IX lab mean ng/g dry	Sediment IX lab %RSD	SRM 1941a lab mean ng/g dry	SRM 1941a lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	95% CL	SRM 1941a, ng/g dry target value[b]	95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	756	113	**1010**	**140**			
2-methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	241	34	325	60			
1-methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	111	18	150	30			
biphenyl	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	73.3	12.5	100	36			
2,6-dimethylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	85.4	14.0	120	24			
acenaphthylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	53.6	8.5	60.0	28.0			
acenaphthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	35.7	4.7	41.0	10.0			
1,6,7-trimethylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27.7	5.3	48.0	10.0			
fluorene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	78.8	11.5	**97.3**	**8.6**			
phenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	383	43	**489**	**23**			
anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	174	19	**184**	**14**			
1-methylphenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	76.0	11.1	101	27			
fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	635	71	**981**	**78**			
pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	594	62	**811**	**24**			
benz[a]anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	343	30	**427**	**25**			
chrysene + triphenylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	404	37	577	35			
benzofluoranthenes [b+j+k]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	815	85	1441	150			
benzo[e]pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	320	34	**553**	**59**			
benzo[a]pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	354	42	**628**	**52**			
perylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	416	63	**452**	**58**			
indeno[1,2,3-cd]pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	287	36	**501**	**72**			
dibenz[a,h]anthracene + [a,c]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	78.1	14.2	**117**	**14**			
benzo[ghi]perylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	259	27	**525**	**67**			

Laboratory: 31
PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	0	0.0
Qualitative	0	0.0
Not Determined	23	100.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	0	0	0
2 to 3	0	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 31**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 2/17/00

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/5/00						lab mean	lab	lab mean	lab	assigned		target		z-score	z-score	p-score
	S 1	S 2	S 3	S 1	S 2	S 3	ng/g dry	%RSD	ng/g dry	%RSD	value	95% CL	value[b]	95% CL	(25%)	(s)	(15%)
alpha-HCH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1		<2				
hexachlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.88	0.74	**70.0**	**25.0**			
gamma-HCH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1		<2				
heptachlor	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.796	0.553	<2				
aldrin	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.438	0.313	<2				
heptachlor epoxide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.125	0.111	<2				
oxychlordane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.694	0.613	<3				
trans-chlordane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.624	0.236	<2				
2,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.451	0.150	**0.73**	**0.11**			
endosulfan I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	0.0	<2				
cis-chlordane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.977	0.339	**2.33**	**0.56**			
trans-nonachlor	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.404	0.108	**1.26**	**0.13**			
dieldrin	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.779	0.337	1.26	0.37			
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.34	0.45	**6.59**	**0.56**			
2,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.12	0.50	<2				
endrin	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1		<2				
endosulfan II	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2		<2				
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.10	0.53	**5.06**	**0.56**			
2,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2		<2				
cis-nonachlor	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.296	0.193	<2				
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.29	0.79	1.25	0.10			
mirex	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1		<2				

Laboratory: 31
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	0	0.0
Qualitative	0	0.0
Not Determined	22	100.0

	Number by Category		
Category	z (25%)	z (s)	p (15%)
≤ 2	0	0	0
2 to 3	0	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 31**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 2/17/00

PCBs

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/25/00 S 1	1/25/00 S 2	1/25/00 S 3	1/25/00 S 1	1/25/00 S 2	1/25/00 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
PCB 8	1.96	0.00	1.64	2.26	____	____	1.80	12.6	2.26	NA	1.72	0.47	1.69	0.38	0.2	0.1	0.8
PCB 18	2.38	0.00	2.25	2.71	____	____	2.32	4.0	2.71	NA	2.20	0.36	3.86	2.25	0.2	0.1	0.3
PCB 28	5.43	0.00	5.30	7.16	____	____	5.37	1.7	7.16	NA	5.09	0.76	9.80	3.70	0.2	0.3	0.1
PCB 52	6.54	0.00	5.80	7.85	____	____	6.17	8.5	7.85	NA	5.03	0.50	**6.89**	**0.56**	0.9	1.2	0.6
PCB 44	5.92	0.00	5.37	8.13	____	____	5.65	6.9	8.13	NA	3.79	0.49	**4.80**	**0.62**	2.0	1.9	0.5
PCB 66/95	NA	0.0	NA	NA	____	____	NA	NA	NA	NA	8.63	1.22	**14.3**	**2.5**			
PCB 101/90	5.87	0.00	5.39	11.1	____	____	5.63	6.0	11.1	NA	5.62	0.70	**11.0**	**1.6**	0.0	0.0	0.4
PCB 118	4.74	0.00	4.54	8.99	____	____	4.64	3.0	8.99	NA	4.39	0.42	**10.0**	**1.1**	0.2	0.3	0.2
PCB 153	4.60	0.00	4.43	10.6	____	____	4.52	2.7	10.6	NA	5.59	0.81	**17.6**	**1.9**	-0.8	-1.1	0.2
PCB 105	1.58	0.00	1.52	3.22	____	____	1.55	2.7	3.22	NA	1.52	0.28	**3.65**	**0.27**	0.1	0.0	0.2
PCB 138/163/164	4.54	0.00	4.51	10.7	____	____	4.53	0.5	10.7	NA	5.01	0.71	**13.4**	**1.0**	-0.4	-0.5	0.0
PCB 187/182	2.48	0.00	2.31	6.17	____	____	2.40	5.0	6.17	NA	2.27	0.40	7.00	2.60	0.2	0.1	0.3
PCB 128	0.645	0.000	0.614	1.37	____	____	0.630	3.5	1.37	NA	0.823	0.204	**1.87**	**0.32**	-0.9	-0.2	0.2
PCB 180	3.90	0.00	3.59	10.2	____	____	3.75	5.9	10.2	NA	3.33	0.41	8.00	2.00	0.5	0.4	0.4
PCB 170/190	1.42	0.00	1.38	3.50	____	____	1.40	2.0	3.50	NA	1.94	0.52	4.00	1.00	-1.1	-0.6	0.1
PCB 195	< 0.50	0.00	< 0.50	0.859	____	____	< 0.500	NA	0.859	NA	1.19	0.42	<3				
PCB 206	2.94	0.00	2.74	4.01	____	____	2.84	5.0	4.01	NA	2.55	0.34	**3.67**	**0.87**	0.4	0.3	0.3
PCB 209	5.98	0.00	5.64	10.7	____	____	5.81	4.1	10.7	NA	4.72	0.69	**8.34**	**0.49**	0.9	1.1	0.3
PCB 66	6.36	0.00	5.67	7.10	____	____	6.02	8.1	7.10	NA	4.71	0.68	**6.80**	**1.40**	1.1	1.3	0.5
PCB 95	4.42	0.00	4.23	7.71	____	____	4.33	3.1	7.71	NA	3.34	0.83	**7.50**	**1.10**	1.2	1.0	0.2

Laboratory: 31
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	16	88.9
Qualitative	1	5.6
Not Determined	1	5.6

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	16	16	16
2 to 3	0	0	0
≥ 3	0	0	0

Water in Sediment IX

	SedimentIX, %			lab		Sediment IX, %		exercise, %		Sediment IX		
	S 1	S 2	S 3	mean, %	%RSD	assigned	95% CL	mean	95% CL	z (25%)	z (s)	p (15%)
water	45.7	45.9	45.9	45.8	0.3	46.2	3.3	46.2	3.3	0.0	0.0	0.0

[a]z- and p-scores ≥ 3 are bolded. [b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 32**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 2/18/00

PAH	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	8/25/99 S 1	8/25/99 S 2	8/25/99 S 3	8/25/99 S 1	8/25/99 S 2	8/25/99 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
naphthalene	1170	1160	1190	1090	1090	____	1173	1.3	1090	0.0	756	113	**1010**	**140**	2.2	1.5	0.1
2-methylnaphthalene	337	333	343	363	356	____	338	1.5	360	1.4	241	34	325	60	1.6	1.2	0.1
1-methylnaphthalene	169	166	167	198	202	____	167	0.9	200	1.4	111	18	150	30	2.0	1.4	0.1
biphenyl	92.1	92.0	91.9	103	104	____	92.0	0.1	104	0.7	73.3	12.5	100	36	1.0	0.6	0.0
2,6-dimethylnaphthalene	155	154	160	182	170	____	156	2.1	176	4.8	85.4	14.0	120	24	**3.3**	2.2	0.1
acenaphthylene	64.9	65.5	66.0	58.9	53.4	____	65.5	0.8	56.2	6.9	53.6	8.5	60.0	28.0	0.9	0.6	0.1
acenaphthene	52.9	55.7	56.5	53.1	44.7	____	55.0	3.4	48.9	12.1	35.7	4.7	41.0	10.0	2.2	1.7	0.2
1,6,7-trimethylnaphthalene	49.1	40.3	50.0	72.5	91.0	____	46.5	11.5	81.8	16.0	27.7	5.3	48.0	10.0	2.7	2.0	0.8
fluorene	137	134	135	97.5	97.8	____	135	1.1	97.7	0.2	78.8	11.5	**97.3**	**8.6**	2.9	2.0	0.1
phenanthrene	598	594	616	642	615	____	603	1.9	629	3.0	383	43	**489**	**23**	2.3	2.1	0.1
anthracene	255	262	272	224	220	____	263	3.2	222	1.3	174	19	**184**	**14**	2.1	1.9	0.2
1-methylphenanthrene	103	102	111	117	119	____	105	4.7	118	1.2	76.0	11.1	101	27	1.5	1.2	0.3
fluoranthene	950	959	1000	1260	1250	____	970	2.7	1255	0.6	635	71	**981**	**78**	2.1	1.9	0.2
pyrene	842	858	893	1060	1020	____	864	3.0	1040	2.7	594	62	**811**	**24**	1.8	1.7	0.2
benz[a]anthracene	475	473	485	573	526	____	478	1.3	550	6.0	343	30	**427**	**25**	1.6	1.7	0.1
chrysene + triphenylene	547	553	563	760	732	____	554	1.5	746	2.7	404	37	577	35	1.5	1.6	0.1
benzofluoranthenes [b+j+k]	1145	1153	1186	1700	1616	____	1161	1.9	1658	3.6	815	85	1441	150	1.7	1.6	0.1
benzo[e]pyrene	436	449	458	702	627	____	448	2.5	665	8.0	320	34	**553**	**59**	1.6	1.4	0.2
benzo[a]pyrene	461	459	470	699	654	____	463	1.3	677	4.7	354	42	**628**	**52**	1.2	1.1	0.1
perylene	531	530	552	453	438	____	538	2.3	446	2.4	416	63	**452**	**58**	1.2	0.8	0.2
indeno[1,2,3-cd]pyrene	384	394	403	605	537	____	394	2.4	571	8.4	287	36	**501**	**72**	1.5	1.1	0.2
dibenz[a,h]anthracene + [a,c]	83.9	87.1	87.2	111	102	____	86.1	2.2	107	6.0	78.1	14.2	**117**	**14**	0.4	0.2	0.1
benzo[ghi]perylene	385	392	399	619	598	____	392	1.8	609	2.4	259	27	**525**	**67**	2.1	1.9	0.1

Laboratory: 32
PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	23	100.0
Qualitative	0	0.0
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	13	19	23
2 to 3	9	4	0
≥ 3	1	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 32**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 2/18/00

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/5/00 S 1	8/26/99 S 2	8/26/99 S 3	8/26/99 S 1	8/26/99 S 2	S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	NA	NA	NA	NA	NA	____	NA	NA	NA	NA	<1		<2				
hexachlorobenzene	8.05	8.44	8.93	70.7	74.6	____	8.47	5.2	72.7	3.8	5.88	0.74	**70.0**	**25.0**	1.8	1.4	0.3
gamma-HCH	0.694	0.757	0.779	1.36	1.36	____	0.743	5.9	1.36	0.0	<1		<2				0.4
heptachlor	<0.191	<0.23	<0.263	<0.639	<0.788	____	<0.263	NA	<0.788	NA	0.796	0.553	<2				
aldrin	<0.189	<0.228	<0.26	<0.633	<0.78	____	<0.26	NA	<0.78	NA	0.438	0.313	<2				
heptachlor epoxide	0.097	<0.118	<0.135	<0.328	<0.404	____	<0.135	NA	<0.404	NA	0.125	0.111	<2				
oxychlordane	<0.118	<0.142	<0.162	<0.395	<0.487	____	<0.162	NA	<0.487	NA	0.694	0.613	<3				
trans-chlordane	0.403	1.16	0.611	2.27	2.27	____	0.725	54.0	2.27	0.0	0.624	0.236	<2		0.6	0.1	**3.6**
2,4'-DDE	0.321	0.271	0.306	0.834	0.812	____	0.299	8.6	0.823	1.9	0.451	0.150	**0.73**	**0.11**	-1.3	-0.1	0.6
endosulfan I	NA	NA	NA	NA	NA	____	NA	NA	NA	NA	<1	0.0	<2				
cis-chlordane	0.318	<0.186	0.345	1.84	2.07	____	0.332	5.8	1.96	8.3	0.977	0.339	**2.33**	**0.56**	-2.6	-0.4	0.4
trans-nonachlor	0.181	0.233	0.250	0.56	0.76	____	0.221		0.661	21.8	0.404	0.108	**1.26**	**0.13**	-1.8	-0.1	0.0
dieldrin	1.02	0.946	1.04	2.13	2.15	____	1.00	4.9	2.14	0.7	0.779	0.337	1.26	0.37	1.1	0.1	0.3
4,4'-DDE	2.33	2.36	2.57	4.27	4.64	____	2.42	5.4	4.46	5.9	3.34	0.45	**6.59**	**0.56**	-1.1	-0.5	0.4
2,4'-DDD	NR	NR	NR	<0.124	<0.152	____	NR	NR	<0.152	NA	1.12	0.50	<2				
endrin	NA	NA	NA	NA	NA	____	NA	NA	NA	NA	<1		<2				
endosulfan II	NA	NA	NA	NA	NA	____	NA	NA	NA	NA	<2		<2				
4,4'-DDD	4.21	4.39	4.57	5.73	6.29	____	4.39	4.1	6.01	6.6	4.10	0.53	**5.06**	**0.56**	0.3	0.2	0.3
2,4'-DDT	<0.242	<0.305	<0.347	<0.845	<1.04	____	<0.347	NA	<1.04	NA	<2		<2				
cis-nonachlor	0.163	0.229	<0.208	0.530	0.866	____	0.196		0.698		0.296	0.193	<2		-1.3	-0.1	0.0
4,4'-DDT	<0.265	<0.32	<0.365	<0.888	<1.09	____	<0.365	NA	<1.09	NA	1.29	0.79	1.25	0.10			
mirex	<0.232	<0.28	<0.319	<0.777	<0.957	____	<0.319	NA	<0.957	NA	<1		<2				

Laboratory: 32
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	10	45.5
Qualitative	8	36.4
Not Determined	4	18.2

	Number by Category		
Category	z (25%)	z (s)	p (15%)
≤ 2	8	9	9
2 to 3	1	0	0
≥ 3	0	0	1

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 32

Sample: QA99SED9 - Marine Sediment IX

(data reported as if three figures were significant)

Reporting Date: 2/18/00

PCBs

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	9/25/99 S 1	9/25/99 S 2	9/25/99 S 3	9/25/99 S 1	9/25/99 S 2	9/25/99 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
PCB 8	NA	NA	NA	NA	NA	____	NA	NA	NA	NA	1.72	0.47	1.69	0.38			
PCB 18	NA	NA	NA	NA	NA	____	NA	NA	NA	NA	2.20	0.36	3.86	2.25			
PCB 28	5.18	5.38	5.68	8.35	9.70	____	5.41	4.6	9.03	10.6	5.09	0.76	9.80	3.70	0.3	0.3	0.3
PCB 52	6.56	6.39	7.21	10.2	11.6	____	6.72	6.4	10.9	9.1	5.03	0.50	**6.89**	**0.56**	1.3	1.7	0.4
PCB 44	4.62	4.76	5.09	6.47	6.68	____	4.82	5.0	6.58	2.3	3.79	0.49	**4.80**	**0.62**	1.1	1.1	0.3
PCB 66/95	____	____	____	____	____	____	NA	NA	NA	NA	8.63	1.22	**14.3**	**2.5**			
PCB 101/90	7.24	7.52	8.53	17.1	18.7	____	7.76	8.7	17.9	6.3	5.62	0.70	**11.0**	**1.6**	1.5	2.2	0.6
PCB 118	3.66	6.36	4.03	8.28	9.50	____	4.68	31.3	8.89	9.7	4.39	0.42	**10.0**	**1.1**	0.3	0.3	2.1
PCB 153	6.11	6.66	6.90	16.7	19.0	____	6.56	6.2	17.9	9.1	5.59	0.81	**17.6**	**1.9**	0.7	1.0	0.4
PCB 105	0.879	0.923	0.951	2.05	2.54	____	0.918	4.0	2.30	15.1	1.52	0.28	**3.65**	**0.27**	-1.6	-0.6	0.3
PCB 138/163/164	5.12	5.22	5.78	14.0	15.8	____	5.37	6.6	14.9	8.5	5.01	0.71	**13.4**	**1.0**	0.3	0.4	0.4
PCB 187/182	5.83	5.77	6.37	13.1	13.4	____	5.99	5.5	13.3	1.6	2.27	0.40	7.00	2.60	**6.5**	**3.8**	0.4
PCB 128	0.818	0.903	0.926	1.71	1.98	____	0.882	6.4	1.85	10.3	0.823	0.204	**1.87**	**0.32**	0.3	0.1	0.4
PCB 180	NA	NA	NA	NA	NA	____	NA	NA	NA	NA	3.33	0.41	8.00	2.00			
PCB 170/190	1.57	1.62	1.80	4.16	4.56	____	1.66	7.3	4.36	6.5	1.94	0.52	4.00	1.00	-0.6	-0.3	0.5
PCB 195	1.50	1.58	1.70	2.44	2.44	____	1.59	6.3	2.44	0.0	1.19	0.42	<3		1.4	0.4	0.4
PCB 206	2.74	2.92	2.97	4.01	4.29	____	2.88	4.2	4.15	4.8	2.55	0.34	**3.67**	**0.87**	0.5	0.3	0.3
PCB 209	5.70	6.12	6.41	10.2	10.5	____	6.08	5.9	10.4	2.0	4.72	0.69	**8.34**	**0.49**	1.1	1.4	0.4
PCB 66	5.88	6.15	6.43	9.19	10.1	____	6.15	4.5	9.65	6.7	4.71	0.68	**6.80**	**1.40**	1.2	1.5	0.3
PCB 95	____	____	____	____	____	____	NA	NA	NA	NA	3.34	0.83	**7.50**	**1.10**			

Laboratory: 32
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	14	77.8
Qualitative	0	0.0
Not Determined	4	22.2

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	13	12	13
2 to 3	0	1	1
≥ 3	1	1	0

Water in Sediment IX

	SedimentIX, %				lab			Sediment IX, %		exercise, %		Sediment IX		
	S 1	S 2	S 3		mean, %	%RSD		assigned	95% CL	mean	95% CL	z (25%)	z (s)	p (15%)
water	46.4	46.1	46.0		46.2	0.5		46.2	3.3	46.2	3.3	0.0	0.0	0.0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant)

Laboratory No.: 33

Reporting Date: 2/15/00

PAH

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/7/00 S 1	1/7/00 S 2	1/7/00 S 3	1/7/00 S 1	1/7/00 S 2	1/7/00 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
naphthalene	871	798	831	872	921	____	833	4.4	896	3.9	756	113	**1010**	**140**	0.4	0.3	0.3
2-methylnaphthalene	276	264	262	294	333	____	267	2.8	314	8.7	241	34	325	60	0.4	0.3	0.2
1-methylnaphthalene	101	111	112	144	157	____	108	5.4	151	6.4	111	18	150	30	-0.1	-0.1	0.4
biphenyl	77.3	68.3	68.7	85.3	91.4	____	71.4	7.1	88.4	4.9	73.3	12.5	100	36	-0.1	-0.1	0.5
2,6-dimethylnaphthalene	88.0	112.9	105.1	126	142	____	102	12.5	134	8.9	85.4	14.0	120	24	0.8	0.5	0.8
acenaphthylene	39.0	34.7	32.5	38.1	38.1	____	35.4	9.4	38.1	0.1	53.6	8.5	60.0	28.0	-1.4	-0.9	0.6
acenaphthene	29.7	27.0	23.8	37.4	35.6	____	26.9	11.0	36.5	3.5	35.7	4.7	41.0	10.0	-1.0	-0.8	0.7
1,6,7-trimethylnaphthalene	16.9	17.6	18.1	25.6	24.8	____	17.5	3.4	25.2	2.2	27.7	5.3	48.0	10.0	-1.5	-1.1	0.2
fluorene	69.4	73.8	72.8	65.7	66.8	____	72.0	3.2	66.3	1.1	78.8	11.5	**97.3**	**8.6**	-0.3	-0.2	0.2
phenanthrene	360	367	372	497	501	____	367	1.7	499	0.6	383	43	**489**	**23**	-0.2	-0.2	0.1
anthracene	155	158	151	187	189	____	154	2.3	188	0.7	174	19	**184**	**14**	-0.4	-0.4	0.2
1-methylphenanthrene	65.1	72.3	68.3	83.3	81.6	____	68.6	5.2	82.4	1.5	76.0	11.1	101	27	-0.4	-0.3	0.3
fluoranthene	689	867	810	1130	1120	____	788	11.5	1125	0.6	635	71	**981**	**78**	1.0	0.9	0.8
pyrene	533	753	657	937	895	____	648	17.1	916	3.3	594	62	**811**	**24**	0.4	0.3	1.1
benz[a]anthracene	356	299	326	367	303	____	327	8.7	335	13.4	343	30	**427**	**25**	-0.2	-0.2	0.6
chrysene + triphenylene	319	364	286	416	372	____	323	12.1	394	8.0	404	37	577	35	-0.8	-0.9	0.8
benzofluoranthenes [b+j+k]	932	1090	843	1120	1390	____	955	13.1	1255	15.2	815	85	1441	150	0.7	0.6	0.9
benzo[e]pyrene	415	476	359	587	542	____	417	14.1	564	5.6	320	34	**553**	**59**	1.2	1.1	0.9
benzo[a]pyrene	380	455	316	492	478	____	384	18.1	485	2.0	354	42	**628**	**52**	0.3	0.3	1.2
perylene	489	563	374	355	329	____	475	20.1	342	5.5	416	63	**452**	**58**	0.6	0.4	1.3
indeno[1,2,3-cd]pyrene	260	314	235	368	353	____	270	15.0	361	2.9	287	36	**501**	**72**	-0.2	-0.2	1.0
dibenz[a,h]anthracene + [a,c]	83.3	97.3	74.1	84.8	101	____	84.9	13.8	92.9	12.4	78.1	14.2	**117**	**14**	0.3	0.2	0.9
benzo[ghi]perylene	288	361	267	362	361	____	305	16.3	361	0.1	259	27	**525**	**67**	0.7	0.7	1.1

Laboratory: 33
PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	23	100.0
Qualitative	0	0.0
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	23	23	23
2 to 3	0	0	0
≥ 3	0	0	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 33**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 2/15/00

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/5/00	12/20/99	12/20/99	12/17/99	12/20/99		lab mean	lab	lab mean	lab	assigned		target		z-score	z-score	p-score
	S 1	S 2	S 3	S 1	S 2	S 3	ng/g dry	%RSD	ng/g dry	%RSD	value	95% CL	value[b]	95% CL	(25%)	(s)	(15%)
alpha-HCH	=0.22	<0.140	=0.11	=0.23	0.367	0.000	<=0.227	NA	0.367	NA	<1		<2				
hexachlorobenzene	5.40	5.33	5.12	41.6	33.3	0.0	5.28	2.8	37.5	15.7	5.88	0.74	**70.0**	**25.0**	-0.4	-0.3	0.2
gamma-HCH	<0.422	<0.214	<0.213	=0.37	<0.423	0.00	<0.422	NA	<0.423	NA	<1		<2				
heptachlor	0.877	0.704	0.967	<0.396	1.42	0.00	0.850	15.7	1.42	NA	0.796	0.553	<2		0.3	0.0	1.0
aldrin	=0.53	<0.215	<0.214	<0.397	<=0.17	0.00	<=0.536	NA	<0.397	NA	0.438	0.313	<2				
heptachlor epoxide	=0.22	=0.24	=0.24	<0.396	<=0.27	0.00	<=0.247	NA	<0.396	NA	0.125	0.111	<2				
oxychlordane	=0.24	0.771	0.489	0.733	0.809	0.000	0.630	31.6	0.771	7.0	0.694	0.613	<3		-0.4	0.0	2.1
trans-chlordane	1.23	1.17	1.46	3.13	1.91	0.00	1.28	11.7	2.52	34.2	0.624	0.236	<2		**4.2**	0.4	0.8
2,4'-DDE	1.05	0.740	0.773	1.06	0.747	0.000	0.855	20.0	0.904	24.5	0.451	0.150	**0.73**	**0.11**	**3.6**	0.2	1.3
endosulfan I	<0.294	<0.149	<0.148	<0.274	<0.294	0.00	<0.294	NA	<0.294	NA	<1	0.0	<2				
cis-chlordane	2.43	2.02	2.44	2.83	2.67	0.00	2.29	10.5	2.75	4.0	0.977	0.339	**2.33**	**0.56**	**5.4**	0.7	0.7
trans-nonachlor	0.519	0.418	0.438	1.68	1.53	0.00	0.459	11.7	1.61	6.4	0.404	0.108	**1.26**	**0.13**	0.5	0.0	0.8
dieldrin	2.06	1.93	1.85	1.69	0.874	0.000	1.95	5.5	1.28	45.1	0.779	0.337	1.26	0.37	**6.0**	0.6	0.4
4,4'-DDE	4.09	4.68	5.13	6.72	6.42	0.00	4.63	11.2	6.57	3.2	3.34	0.45	**6.59**	**0.56**	1.6	0.7	0.7
2,4'-DDD	1.18	1.40	1.13	1.45	0.862	0.000	1.24	11.2	1.16	36.1	1.12	0.50	<2		0.4	0.1	0.7
endrin	<0.564	<0.286	<0.284	<0.527	<0.565	0.00	<0.564	NA	<0.565	NA	<1		<2				
endosulfan II	<0.595	=0.12	=0.16	<0.557	<=0.20	0.00	<0.595	NA	<0.557	NA	<2		<2				
4,4'-DDD	6.25	6.45	6.46	4.20	5.44	0.00	6.39	1.9	4.82	18.1	4.10	0.53	**5.06**	**0.56**	2.2	1.3	0.1
2,4'-DDT	<0.420	<0.213	<0.212	0.458	<0.420	0.000	<0.420	NA	0.458	NA	<2		<2				
cis-nonachlor	1.03	0.677	1.33	1.54	1.31	0.00	1.01	32.3	1.43	11.2	0.296	0.193	<2		**9.7**	0.4	2.2
4,4'-DDT	<0.422	<0.214	<0.212	0.619	0.657	0.000	<0.422	NA	0.64	4.1	1.29	0.79	1.25	0.10			
mirex	<0.426	<0.216	<0.215	<0.399	<0.427	0.00	<0.426	NA	<0.427	NA	<1		<2				

Laboratory: 33
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	12	54.5
Qualitative	10	45.5
Not Determined	0	0.0

Category	Number by Category		
	z (25%)	z (s)	p (15%)
≤ 2	6	12	10
2 to 3	1	0	2
≥ 3	5	0	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant)

Laboratory No.: 33

Reporting Date: 2/15/00

PCBs

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	12/17/99 S 1	12/17/99 S 2	12/17/99 S 3	12/17/99 S 1	12/17/99 S 2	12/17/99 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
PCB 8	1.23	1.22	0.87	1.30	1.27	____	1.11	18.3	1.28	1.8	1.72	0.47	1.69	0.38	-1.4	-0.6	1.2
PCB 18	1.75	1.40	1.29	2.27	1.24	____	1.48	16.3	1.75	41.6	2.20	0.36	3.86	2.25	-1.3	-0.7	1.1
PCB 28	8.25	7.66	8.17	7.38	5.21	____	8.03	4.0	6.30	24.4	5.09	0.76	9.80	3.70	2.3	3.0	0.3
PCB 52	5.16	8.85	9.05	8.61	4.26	____	7.68	28.5	6.44	47.9	5.03	0.50	**6.89**	**0.56**	2.1	2.7	1.9
PCB 44	4.39	4.27	4.14	5.07	3.85	____	4.27	3.0	4.46	19.4	3.79	0.49	**4.80**	**0.62**	0.5	0.5	0.2
PCB 66/95	9.20	8.67	8.83	9.43	8.37	____	8.90	3.1	8.90	8.5	8.63	1.22	**14.3**	**2.5**	0.1	0.3	0.2
PCB 101/90	8.62	7.55	7.68	10.8	9.90	____	7.95	7.4	10.3	6.1	5.62	0.70	**11.0**	**1.6**	1.7	2.4	0.5
PCB 118	7.14	6.38	6.72	8.95	8.02	____	6.75	5.6	8.49	7.7	4.39	0.42	**10.0**	**1.1**	2.1	2.4	0.4
PCB 153	9.52	7.79	8.12	12.7	12.0	____	8.48	10.8	12.4	3.9	5.59	0.81	**17.6**	**1.9**	2.1	**3.0**	0.7
PCB 105	3.55	3.11	3.35	5.41	4.68	____	3.34	6.7	5.05	10.2	1.52	0.28	**3.65**	**0.27**	**4.8**	1.9	0.4
PCB 138/163/164	12.1	10.1	10.7	19.2	17.4	____	11.0	9.5	18.3	6.7	5.01	0.71	**13.4**	**1.0**	**4.8**	**6.2**	0.6
PCB 187/182	3.92	3.42	3.60	6.22	5.93	____	3.65	7.0	6.08	3.3	2.27	0.40	7.00	2.60	2.4	1.4	0.5
PCB 128	1.34	1.07	1.18	1.80	1.58	____	1.20	11.5	1.69	9.3	0.823	0.204	**1.87**	**0.32**	1.8	0.4	0.8
PCB 180	6.15	4.42	4.59	8.55	7.39	____	5.05	18.9	7.97	10.3	3.33	0.41	8.00	2.00	2.1	1.8	1.3
PCB 170/190	2.64	1.97	2.14	3.73	3.28	____	2.25	15.4	3.51	9.2	1.94	0.52	4.00	1.00	0.6	0.3	1.0
PCB 195	<0.399	<0.202	<0.201	<0.375	<0.400	____	<0.399	NA	<0.400	NA	1.19	0.42	<3				
PCB 206	3.34	2.68	2.57	2.39	2.26	____	2.86	14.6	2.32	4.1	2.55	0.34	**3.67**	**0.87**	0.5	0.3	1.0
PCB 209	5.62	4.35	4.29	5.28	5.20	____	4.75	15.8	5.24	1.2	4.72	0.69	**8.34**	**0.49**	0.0	0.0	1.1
PCB 66	____	____	____	____	____	____	NA	NA	NA	NA	4.71	0.68	**6.80**	**1.40**			
PCB 95	____	____	____	____	____	____	NA	NA	NA	NA	3.34	0.83	**7.50**	**1.10**			

Laboratory: 33
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	17	94.4
Qualitative	1	5.6
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	9	11	17
2 to 3	6	4	0
≥ 3	2	2	0

Water in Sediment IX

	SedimentIX, %				lab			exercise, %				Sediment IX		
	S 1	S 2	S 3		mean, %	%RSD		assigned	95% CL	mean	95% CL	z (25%)	z (s)	p (15%)
water	45.9	46.1	45.9		46.0	0.3		46.2	3.3	46.2	3.3	0.0	0.0	0.0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 34**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 02/22/2000

PAH

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/27/2000 S 1	1/27/2000 S 2	1/27/2000 S 3	1/27/2000 S 1	1/27/2000 S 2	1/27/2000 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CI.	target value[b]	95% CI.	z-score (25%)	z-score (s)	p-score (15%)
naphthalene	871	825	944	901	875	965	880	6.8	914	5.1	756	113	**1010**	**140**	0.7	0.5	0.5
2-methylnaphthalene	284	272	318	359	354	382	291	8.1	365	4.0	241	34	325	60	0.8	0.6	0.5
1-methylnaphthalene	142	124	150	184	161	181	139	9.6	175	7.1	111	18	150	30	1.0	0.7	0.6
biphenyl	108	116	121	148.4	163.0	154.6	115	5.5	155	4.7	73.3	12.5	100	36	2.3	1.4	0.4
2,6-dimethylnaphthalene	102	98.2	112	137	131	143	104	6.8	137	4.5	85.4	14.0	120	24	0.9	0.6	0.5
acenaphthylene	59.0	51.6	71.2	43.5	49.4	62.5	60.6	16.3	51.8	18.8	53.6	8.5	60.0	28.0	0.5	0.3	1.1
acenaphthene	38.6	39.4	39.9	34.8	34.9	37.1	39.3	1.7	35.6	3.6	35.7	4.7	41.0	10.0	0.4	0.3	0.1
1,6,7-trimethylnaphthalene	47.1	50.6	52.4	67.5	68.1	72.6	50.0	5.4	69.4	4.0	27.7	5.3	48.0	10.0	**3.2**	2.4	0.4
fluorene	135	141	140	89.4	92.3	100.4	139	2.3	94.0	6.0	78.8	11.5	**97.3**	**8.6**	**3.0**	2.1	0.2
phenanthrene	375	355	399	436	453	456	376	5.9	448	2.4	383	43	**489**	**23**	-0.1	-0.1	0.4
anthracene	165	161	165	150	164	165	164	1.2	160	5.2	174	19	**184**	**14**	-0.2	-0.2	0.1
1-methylphenanthrene	86.4	71.7	74.0	89.9	87.2	79.4	77.4	10.2	85.5	6.4	76.0	11.1	101	27	0.1	0.1	0.7
fluoranthene	652	639	647	837	886	890	646	1.0	871	3.4	635	71	**981**	**78**	0.1	0.1	0.1
pyrene	581	588	605	691	728	739	591	2.1	719	3.5	594	62	**811**	**24**	0.0	0.0	0.1
benz[a]anthracene	337	360	325	372	404	390	341	5.2	389	4.2	343	30	**427**	**25**	0.0	0.0	0.3
chrysene + triphenylene	459	471	466	648	635	641	465	1.3	641	1.0	404	37	577	35	0.6	0.7	0.1
benzofluoranthenes [b+]+k]	925	863	1020	1509	1298	1380	936	8.5	1396	7.6	815	85	1441	150	0.6	0.6	0.6
benzo[e]pyrene	345	314	392	601	510	555	350	11.2	555	8.2	320	34	**553**	**59**	0.4	0.3	0.7
benzo[a]pyrene	380	340	382	545	508	557	367	6.4	536	4.7	354	42	**628**	**52**	0.2	0.1	0.4
perylene	393	353	393	354	327	362	380	6.1	348	5.3	416	63	**452**	**58**	-0.3	-0.2	0.4
indeno[1,2,3-cd]pyrene	330	350	440	560	531	562	373	15.8	551	3.2	287	36	**501**	**72**	1.2	0.9	1.1
dibenz[a,h]anthracene + [a,c]	80.1	85.8	100	131	125	129	88.6	11.6	128	2.2	78.1	14.2	**117**	**14**	0.5	0.3	0.8
benzo[ghi]perylene	269	259	292	499	506	518	273	6.2	508	1.9	259	27	**525**	**67**	0.2	0.2	0.4

Laboratory: 34
PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	23	100.0
Qualitative	0	0.0
Not Determined	0	0.0

	Number by Category		
Category	z (25%)	z (s)	p (15%)
≤ 2	20	21	23
2 to 3	1	2	0
≥ 3	2	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 34**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 02/22/2000

PESTICIDES

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry 1/5/00 S 1	Sediment IX 1/25/2000 S 2	Sediment IX 1/25/2000 S 3	SRM 1941a, ng/g dry 1/20/2000 S 1	SRM 1941a 1/25/2000 S 2	SRM 1941a 1/26/2000 S 3	Sediment IX lab mean ng/g dry	Sediment IX lab %RSD	SRM 1941a lab mean ng/g dry	SRM 1941a lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	Sediment IX 95% CL	SRM 1941a, ng/g dry target value[b]	SRM 1941a 95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	0.032	0.027	0.029	0.060	0.064	0.076	0.029	8.6	0.067	12.5	<1		<2				0.6
hexachlorobenzene	6.56	6.70	6.49	75.6	72.6	72.5	6.58	1.6	73.6	2.4	5.88	0.74	**70.0**	**25.0**	0.5	0.4	0.1
gamma-HCH	0.031	0.026	0.028	0.049	0.050	0.039	0.028	8.9	0.046	13.2	<1		<2				0.6
heptachlor	0.010	0.0014	0.0095	0.020	0.017	0.017	<0.0109	NA	0.018	9.6	0.796	0.553	<2				
aldrin	0.014	0.0073	0.0061	0.076	0.061	0.041	<0.0140	NA	0.059	29.6	0.438	0.313	<2				
heptachlor epoxide	0.041	0.045	0.046	0.069	0.072	0.096	0.044	6.0	0.079	18.7	0.125	0.111	<2		-2.6	0.0	0.4
oxychlordane	0.043	0.0038	0.018	0.054	<0.026	0.040	<0.0430	NA	<0.0547	NA	0.694	0.613	<3				
trans-chlordane	0.551	0.529	0.535	2.40	2.64	2.02	0.538	2.1	2.35	13.3	0.624	0.236	<2		-0.5	0.0	0.1
2,4'-DDE	0.449	0.420	0.446	0.660	0.565	0.560	0.438	3.6	0.595	9.5	0.451	0.150	**0.73**	**0.11**	-0.1	0.0	0.2
endosulfan I	0.036	0.038	0.057	0.082	<0.053	0.061	<0.0576	NA	<0.0820	NA	<1	0.0	<2				
cis-chlordane	0.464	0.428	0.469	2.34	1.81	1.79	0.454	4.9	1.98	15.8	0.977	0.339	**2.33**	**0.56**	-2.1	-0.3	0.3
trans-nonachlor	0.232	0.215	0.254	1.04	0.896	0.880	0.234	8.4	0.939	9.4	0.404	0.108	**1.26**	**0.13**	-1.7	-0.1	0.6
dieldrin	0.262	0.253	0.250	0.612	0.638	0.600	0.255	2.4	0.617	3.2	0.779	0.337	1.26	0.37	-2.7	-0.3	0.2
4,4'-DDE	3.29	2.76	2.89	6.33	5.51	5.52	2.98	9.3	5.79	8.1	3.34	0.45	**6.59**	**0.56**	-0.4	-0.2	0.6
2,4'-DDD	0.356	0.337	0.311	0.922	0.810	0.770	0.335	6.8	0.834	9.4	1.12	0.50	<2		-2.8	-0.4	0.5
endrin	0.025	0.044	0.069	0.054	<0.063	<0.179	<0.0694	NA	<0.179	NA	<1		<2				
endosulfan II	0.083	0.039	0.050	<0.127	<0.086	0.058	<0.0839	NA	<0.127	NA	<2		<2				
4,4'-DDD	3.26	2.96	2.69	4.39	4.56	4.44	2.97	9.6	4.46	2.0	4.10	0.53	**5.06**	**0.56**	-1.1	-0.6	0.6
2,4'-DDT	0.112	0.103	0.084	0.147	0.153	0.200	0.100	14.3	0.167	17.4	<2		<2				1.0
cis-nonachlor	0.150	0.167	0.131	0.826	0.748	0.680	0.149	12.1	0.751	9.7	0.296	0.193	<2		-2.0	-0.1	0.8
4,4'-DDT	0.294	0.283	0.284	0.564	0.441	0.618	0.287	2.1	0.541	16.8	1.29	0.79	1.25	0.10	**-3.1**	-0.5	0.1
mirex	0.100	0.009	0.010	0.036	0.039	0.037	0.040	131.7	0.037	4.1	<1		<2				**8.8**

Laboratory: 34
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	16	72.7
Qualitative	6	27.3
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	7	12	15
2 to 3	4	0	0
≥ 3	1	0	1

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 34**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 02/22/2000

PCBs

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry 1/18/2000 S 1	S 2	S 3	SRM 1941a, ng/g dry 1/18/2000 S 1	S 2	S 3	Sediment IX lab mean ng/g dry	lab %RSD	SRM 1941a lab mean ng/g dry	lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	95% CL	SRM 1941a, ng/g dry target value[b]	95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
PCB 8	2.44	1.86	1.56	2.25	2.26	2.09	1.95	22.8	2.20	4.3	1.72	0.47	1.69	0.38	0.5	0.2	1.5
PCB 18	2.07	2.26	1.90	2.62	2.83	3.08	2.08	8.7	2.84	8.0	2.20	0.36	3.86	2.25	-0.2	-0.1	0.6
PCB 28	6.66	6.63	6.00	9.02	8.16	8.38	6.43	5.8	8.52	5.3	5.09	0.76	9.80	3.70	1.1	1.4	0.4
PCB 52	4.86	6.50	4.42	5.86	6.94	6.87	5.26	20.8	6.56	9.2	5.03	0.50	**6.89**	**0.56**	0.2	0.2	1.4
PCB 44	4.55	6.19	4.44	8.34	9.73	9.48	5.06	19.3	9.18	8.1	3.79	0.49	**4.80**	**0.62**	1.3	1.3	1.3
PCB 66/95	0.0	0.0	0.0	0.00	0.00		NA	NA	NA	NA	8.63	1.22	**14.3**	**2.5**			
PCB 101/90	6.54	7.40	4.60	11.5	12.3	9.93	6.18	23.2	11.2	10.5	5.62	0.70	**11.0**	**1.6**	0.4	0.6	1.5
PCB 118	5.27	5.09	4.75	9.87	8.37	10.2	5.04	5.3	9.47	10.2	4.39	0.42	**10.0**	**1.1**	0.6	0.7	0.4
PCB 153	5.74	6.23	5.44	14.4	13.7	15.1	5.80	6.8	14.4	4.6	5.59	0.81	**17.6**	**1.9**	0.1	0.2	0.5
PCB 105	1.62	1.50	1.36	3.09	2.69	3.24	1.50	8.6	3.01	9.3	1.52	0.28	**3.65**	**0.27**	-0.1	0.0	0.6
PCB 138/163/164	5.17	6.10	4.74	13.0	13.1	13.1	5.34	13.0	13.1	0.4	5.01	0.71	**13.4**	**1.0**	0.3	0.3	0.9
PCB 187/182	2.37	2.90	2.16	6.35	6.86	6.59	2.47	15.4	6.60	3.8	2.27	0.40	7.00	2.60	0.4	0.2	1.0
PCB 128	0.757	0.670	0.553	1.50	1.33	1.43	0.660	15.6	1.42	6.1	0.823	0.204	**1.87**	**0.32**	-0.8	-0.2	1.0
PCB 180	3.70	4.47	3.39	10.3	11.0	10.4	3.85	14.4	10.6	3.8	3.33	0.41	8.00	2.00	0.6	0.5	1.0
PCB 170/190	1.61	1.96	1.24	3.57	4.64	3.62	1.60	22.4	3.94	15.3	1.94	0.52	4.00	1.00	-0.7	-0.3	1.5
PCB 195	0.279	0.329	0.264	0.808	0.858	0.995	0.291	11.7	0.887	10.9	1.19	0.42	<3		**-3.0**	-0.9	0.8
PCB 206	2.39	3.07	2.55	3.51	3.92	4.16	2.67	13.4	3.86	8.5	2.55	0.34	**3.67**	**0.87**	0.2	0.1	0.9
PCB 209	5.18	6.23	3.75	10.3	11.2	8.69	5.05	24.7	10.1	12.6	4.72	0.69	**8.34**	**0.49**	0.3	0.3	1.6
PCB 66	6.24	6.94	5.77	7.71	7.35	8.95	6.32	9.3	8.00	10.5	4.71	0.68	**6.80**	**1.40**	1.4	1.7	0.6
PCB 95	4.67	5.05	3.63	7.44	7.80	7.83	4.45	16.5	7.69	2.8	3.34	0.83	**7.50**	**1.10**	1.3	1.2	1.1

Laboratory: 34
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	17	94.4
Qualitative	0	0.0
Not Determined	1	5.6

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	16	17	17
2 to 3	0	0	0
≥ 3	1	0	0

Water in Sediment IX

	SedimentIX, % S 1	S 2	S 3	lab mean, %	lab %RSD	Sediment IX, % assigned	95% CL	exercise, % mean	95% CL	Sediment IX z (25%)	z (s)	p (15%)
water	43.0	44.8	44.1	44.0	2.1	46.2	3.3	46.2	3.3	-0.2	-0.2	0.1

[a]z- and p-scores ≥ 3 are bolded. [b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 35**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 2/17/00

PAH

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date							lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
	S 1	S 2	S 3	S 1	S 2	S 3											
naphthalene							NA	NA	NA	NA	756	113	**1010**	**140**			
2-methylnaphthalene							NA	NA	NA	NA	241	34	325	60			
1-methylnaphthalene							NA	NA	NA	NA	111	18	150	30			
biphenyl							NA	NA	NA	NA	73.3	12.5	100	36			
2,6-dimethylnaphthalene							NA	NA	NA	NA	85.4	14.0	120	24			
acenaphthylene							NA	NA	NA	NA	53.6	8.5	60.0	28.0			
acenaphthene							NA	NA	NA	NA	35.7	4.7	41.0	10.0			
1,6,7-trimethylnaphthalene							NA	NA	NA	NA	27.7	5.3	48.0	10.0			
fluorene							NA	NA	NA	NA	78.8	11.5	**97.3**	**8.6**			
phenanthrene							NA	NA	NA	NA	383	43	**489**	**23**			
anthracene							NA	NA	NA	NA	174	19	**184**	**14**			
1-methylphenanthrene							NA	NA	NA	NA	76.0	11.1	101	27			
fluoranthene							NA	NA	NA	NA	635	71	**981**	**78**			
pyrene							NA	NA	NA	NA	594	62	**811**	**24**			
benz[a]anthracene							NA	NA	NA	NA	343	30	**427**	**25**			
chrysene + triphenylene							NA	NA	NA	NA	404	37	577	35			
benzofluoranthenes [b+j+k]							NA	NA	NA	NA	815	85	1441	150			
benzo[e]pyrene							NA	NA	NA	NA	320	34	**553**	**59**			
benzo[a]pyrene							NA	NA	NA	NA	354	42	**628**	**52**			
perylene							NA	NA	NA	NA	416	63	**452**	**58**			
indeno[1,2,3-cd]pyrene							NA	NA	NA	NA	287	36	**501**	**72**			
dibenz[a,h]anthracene + [a,c]							NA	NA	NA	NA	78.1	14.2	**117**	**14**			
benzo[ghi]perylene							NA	NA	NA	NA	259	27	**525**	**67**			

Laboratory: 35
PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	0	0.0
Qualitative	0	0.0
Not Determined	23	100.0

	Number by Category		
Category	z (25%)	z (s)	p (15%)
≤ 2	0	0	0
2 to 3	0	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 35**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 2/17/00

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/5/00 S 1	2/1/00 S 2	2/1/00 S 3	1/13/00 S 1	1/28/00 S 2	1/28/00 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	<2	<2	<2	<2	<2	<2	<2	NA	<2	NA	<1		<2				
hexachlorobenzene	6.02	5.82	5.61	74.6	72.9	71.4	5.82	3.5	73.0	2.2	5.88	0.74	**70.0**	**25.0**	0.0	0.0	0.2
gamma-HCH	<2	<2	<2	<2	<2	<2	<2	NA	<2	NA	<1		<2				
heptachlor	<2	<2	<2	<2	<2	<2	<2	NA	<2	NA	0.796	0.553	<2				
aldrin	<2	<2	<2	<2	<2	<2	<2	NA	<2	NA	0.438	0.313	<2				
heptachlor epoxide	<2	<2	<2	<2	<2	<2	<2	NA	<2	NA	0.125	0.111	<2				
oxychlordane	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	NA	<1.3	NA	0.694	0.613	<3				
trans-chlordane	<2	<2	<2	<2	<2	<2	<2	NA	<2	NA	0.624	0.236	<2				
2,4'-DDE	0.360	0.300	0.330	0.520	0.410	0.430	0.330	9.1	0.453	12.9	0.451	0.150	**0.73**	**0.11**	-1.1	-0.1	0.6
endosulfan I	<2	<2	<2	<2	<2	<2	<2	NA	<2	NA	<1	0.0	<2				
cis-chlordane	<2	<2	<2	2.04	2.04	1.88	<2	NA	1.99	4.6	0.977	0.339	**2.33**	**0.56**			
trans-nonachlor	<2	<2	<2	1.19	1.15	1.07	<2	NA	1.14	5.4	0.404	0.108	**1.26**	**0.13**			
dieldrin	<2	<2	<2	0.730	0.930	0.950	<2	NA	0.870	14.0	0.779	0.337	1.26	0.37			
4,4'-DDE	2.75	2.58	2.77	5.88	5.14	4.95	2.70	3.9	5.32	9.2	3.34	0.45	**6.59**	**0.56**	-0.8	-0.3	0.3
2,4'-DDD	0.490	0.530	0.590	1.21	1.00	0.97	0.537	9.4	1.06	12.3	1.12	0.50	<2		-2.1	-0.3	0.6
endrin	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1		<2				
endosulfan II	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2		<2				
4,4'-DDD	5.94	4.34	4.91	7.65	5.07	4.95	5.06	16.0	5.89	25.9	4.10	0.53	**5.06**	**0.56**	0.9	0.5	1.1
2,4'-DDT	<2	<2	<2	<2	<2	<2	<2	NA	<2	NA	<2		<2				
cis-nonachlor	0.120	0.080	0.080	0.540	0.420	0.380	0.093	24.7	0.447	18.6	0.296	0.193	<2		-2.7	-0.1	1.6
4,4'-DDT	0.540	0.330	0.470	0.520	0.440	0.340	0.447	23.9	0.433	20.8	1.29	0.79	1.25	0.10	-2.6	-0.5	1.6
mirex	<2	<2	<2	<2	<2	<2	<2	NA	<2	NA	<1		<2				

Laboratory: 35
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	7	31.8
Qualitative	13	59.1
Not Determined	2	9.1

Category	Number by Category		
	z (25%)	z (s)	p (15%)
≤ 2	4	7	7
2 to 3	3	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 35

Sample: QA99SED9 - Marine Sediment IX

(data reported as if three figures were significant)

Reporting Date: 2/17/00

PCBs

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	2/2/00 S 1	2/2/00 S 2	2/2/00 S 3	2/2/00 S 1	2/2/00 S 2	2/2/00 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
PCB 8	1.44	1.28	0.220	2.58	2.58	2.50	0.980	67.7	2.55	1.8	1.72	0.47	1.69	0.38	-1.7	-0.8	**4.5**
PCB 18	2.29	2.19	1.26	3.20	3.33	3.26	1.91	29.7	3.26	2.0	2.20	0.36	3.86	2.25	-0.5	-0.3	2.0
PCB 28	3.81	3.93	4.24	6.71	7.14	6.88	3.99	5.6	6.91	3.1	5.09	0.76	9.80	3.70	-0.9	-1.1	0.4
PCB 52	4.72	5.11	5.27	8.50	8.52	8.30	5.03	5.6	8.44	1.4	5.03	0.50	**6.89**	**0.56**	0.0	0.0	0.4
PCB 44	3.76	3.86	4.38	5.79	5.62	5.50	4.00	8.3	5.64	2.6	3.79	0.49	**4.80**	**0.62**	0.2	0.2	0.6
PCB 66/95	___	___	___	___	___	___	NA	NA	NA	NA	8.63	1.22	**14.3**	**2.5**			
PCB 101/90	4.18	4.75	5.21	11.5	11.9	11.7	4.71	10.9	11.7	1.7	5.62	0.70	**11.0**	**1.6**	-0.6	-0.9	0.7
PCB 118	3.16	3.19	3.63	8.84	8.89	8.90	3.33	7.9	8.88	0.4	4.39	0.42	**10.0**	**1.1**	-1.0	-1.1	0.5
PCB 153	4.21	4.15	4.78	13.5	13.6	13.4	4.38	7.9	13.5	0.7	5.59	0.81	**17.6**	**1.9**	-0.9	-1.3	0.5
PCB 105	1.04	1.07	1.37	3.14	3.33	3.30	1.16	15.7	3.26	3.1	1.52	0.28	**3.65**	**0.27**	-1.0	-0.4	1.0
PCB 138/163/164	2.82	2.85	3.10	9.28	9.07	8.89	2.92	5.3	9.08	2.1	5.01	0.71	**13.4**	**1.0**	-1.7	-2.2	0.4
PCB 187/182	1.67	1.81	1.87	6.31	7.16	7.11	1.78	5.8	6.86	7.0	2.27	0.40	7.00	2.60	-0.9	-0.5	0.4
PCB 128	0.620	0.700	0.860	2.07	2.02	2.06	0.727	16.8	2.05	1.3	0.823	0.204	**1.87**	**0.32**	-0.5	-0.1	1.1
PCB 180	2.61	2.67	3.01	9.25	10.4	10.0	2.76	7.8	9.88	5.9	3.33	0.41	8.00	2.00	-0.7	-0.6	0.5
PCB 170/190	0.920	0.940	1.11	3.37	3.53	3.46	0.990	10.5	3.45	2.3	1.94	0.52	4.00	1.00	-2.0	-1.0	0.7
PCB 195	0.360	0.310	0.340	1.07	1.31	1.30	0.337	7.5	1.23	11.1	1.19	0.42	<3		-2.9	-0.9	0.5
PCB 206	1.95	2.21	2.27	3.80	4.72	4.64	2.14	7.9	4.39	11.6	2.55	0.34	**3.67**	**0.87**	-0.6	-0.4	0.5
PCB 209	3.19	3.88	4.18	9.03	11.0	10.8	3.75	13.5	10.3	10.6	4.72	0.69	**8.34**	**0.49**	-0.8	-1.0	0.9
PCB 66	4.50	4.76	6.12	8.09	8.36	8.18	5.13	17.0	8.21	1.7	4.71	0.68	**6.80**	**1.40**	0.4	0.4	1.1
PCB 95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.34	0.83	**7.50**	**1.10**			

Laboratory: 35

PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	17	94.4
Qualitative	0	0.0
Not Determined	1	5.6

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	16	16	16
2 to 3	1	1	0
≥ 3	0	0	1

Water in Sediment IX

	SedimentIX, %			lab		Sediment IX, %		exercise, %		Sediment IX		
	S 1	S 2	S 3	mean, %	%RSD	assigned	95% CL	mean	95% CL	z (25%)	z (s)	p (15%)
water	46.4	47.5	47.2	47.0	1.2	46.2	3.3	46.2	3.3	0.1	0.1	0.1

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 36

Sample: QA99SED9 - Marine Sediment IX

(data reported as if three figures were significant)

Reporting Date: 2/28/00

PAH

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry 2/23/00 S 1	2/23/00 S 2	2/23/00 S 3	SRM 1941a, ng/g dry 2/23/00 S 1	2/23/00 S 2	2/23/00 S 3	Sediment IX lab mean ng/g dry	Sediment IX lab %RSD	SRM 1941a lab mean ng/g dry	SRM 1941a lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	95% CL	SRM 1941a, ng/g dry target value[b]	95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
naphthalene	419	540	432	292	261	274	464	14.3	276	5.6	756	113	**1010**	**140**	-1.5	-1.1	1.0
2-methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	241	34	325	60			
1-methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	111	18	150	30			
biphenyl	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	73.3	12.5	100	36			
2,6-dimethylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	85.4	14.0	120	24			
acenaphthylene	56.0	58.3	50.5	43.9	45.2	49.1	54.9	7.3	46.1	5.9	53.6	8.5	60.0	28.0	0.1	0.1	0.5
acenaphthene	55.8	56.7	49.3	42.2	42.6	45.1	53.9	7.5	43.3	3.6	35.7	4.7	41.0	10.0	2.0	1.6	0.5
1,6,7-trimethylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27.7	5.3	48.0	10.0			
fluorene	117	114	101	62.6	69.4	70.9	111	7.7	67.6	6.5	78.8	11.5	**97.3**	**8.6**	1.6	1.1	0.5
phenanthrene	468	461	452	397	421	495	460	1.7	438	11.7	383	43	**489**	**23**	0.8	0.7	0.1
anthracene	229	192	196	160	178	210	206	9.9	183	13.9	174	19	**184**	**14**	0.7	0.7	0.7
1-methylphenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	76.0	11.1	101	27			
fluoranthene	797	791	761	854	865	1001	783	2.5	907	9.0	635	71	**981**	**78**	0.9	0.8	0.2
pyrene	718	684	645	679	699	776	682	5.4	718	7.1	594	62	**811**	**24**	0.6	0.6	0.4
benz[a]anthracene	416	396	371	381	393	442	394	5.7	405	8.0	343	30	**427**	**25**	0.6	0.7	0.4
chrysene + triphenylene	596	549	543	649	647	655	563	5.2	650	0.6	404	37	577	35	1.6	1.7	0.3
benzofluoranthenes [b+j+k]	907	881	851	1173	1218	1290	880	3.2	1227	4.8	815	85	1441	150	0.3	0.3	0.2
benzo[e]pyrene	338	323	314	440	459	497	325	3.7	465	6.2	320	34	**553**	**59**	0.1	0.1	0.2
benzo[a]pyrene	296	160	245	246	260	393	234	29.4	300	27.1	354	42	**628**	**52**	-1.4	-1.2	2.0
perylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	416	63	**452**	**58**			
indeno[1,2,3-cd]pyrene	311	296	286	394	386	477	298	4.2	419	12.0	287	36	**501**	**72**	0.1	0.1	0.3
dibenz[a,h]anthracene + [a,c]	94.8	92.0	85.2	113	121	126	90.7	5.4	120	5.5	78.1	14.2	**117**	**14**	0.6	0.4	0.4
benzo[ghi]perylene	298	245	249	346	403	461	264	11.2	403	14.3	259	27	**525**	**67**	0.1	0.1	0.7

Laboratory: 36

PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	16	69.6
Qualitative	0	0.0
Not Determined	7	30.4

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	15	16	16
2 to 3	1	0	0
≥ 3	0	0	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant)

Laboratory No.: 36

Reporting Date: 2/28/00

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/5/00 S 1	2/17/00 S 2	2/23/00 S 3	2/16/00 S 1	2/17/00 S 2	2/23/00 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	<0.21	<0.21	<0.21	<0.28	<0.28	<0.28	<0.21	NA	<0.28	NA	<1		<2				
hexachlorobenzene	4.27	4.66	4.62	32.3	33.6	25.1	4.52	4.8	30.3	15.1	5.88	0.74	**70.0**	**25.0**	-0.9	-0.7	0.3
gamma-HCH	<0.21	<0.21	<0.21	<0.28	<0.28	<0.28	<0.21	NA	<0.28	NA	<1		<2				
heptachlor	<0.21	<0.21	<0.21	<0.28	<0.28	<0.28	<0.21	NA	<0.28	NA	0.796	0.553	<2				
aldrin	<0.21	<0.21	<0.21	<0.28	<0.28	<0.28	<0.21	NA	<0.28	NA	0.438	0.313	<2				
heptachlor epoxide	<0.21	<0.21	<0.21	<0.28	<0.28	<0.28	<0.21	NA	<0.28	NA	0.125	0.111	<2				
oxychlordane	<.42	<.42	<.42	<0.56	<0.56	<0.56	<.42	NA	<0.56	NA	0.694	0.613	<3				
trans-chlordane	<0.21	<0.21	<0.21	<0.28	<0.28	<0.28	<0.21	NA	<0.28	NA	0.624	0.236	<2				
2,4'-DDE	2.25	2.62	2.29	2.00	2.21	1.51	2.39	8.5	1.91	18.8	0.451	0.150	**0.73**	**0.11**	**17.2**	1.1	0.6
endosulfan I	<0.21	<0.21	<0.21	<0.28	<0.28	<0.28	<0.21	NA	<0.28	NA	<1	0.0	<2				
cis-chlordane	0.420	4.440	0.430	1.29	1.23	1.12	1.76	131.5	1.21	7.1	0.977	0.339	**2.33**	**0.56**	**3.2**	0.4	**8.8**
trans-nonachlor	0.540	0.470	0.470	1.26	1.07	0.98	0.493	8.2	1.10	13.0	0.404	0.108	**1.26**	**0.13**	0.9	0.0	0.5
dieldrin	0.800	0.810	0.780	<0.28	<0.28	<0.28	0.797	1.9	<0.28	NA	0.779	0.337	1.26	0.37	0.1	0.0	0.1
4,4'-DDE	1.19	1.20	1.09	1.63	1.85	1.30	1.16	5.2	1.59	17.4	3.34	0.45	**6.59**	**0.56**	-2.6	-1.2	0.3
2,4'-DDD	<.42	<.42	<.42	<0.56	<0.56	<0.56	<.42	NA	<0.56	NA	1.12	0.50	<2				
endrin	<.42	<.42	<.42	<0.56	<0.56	<0.56	<.42	NA	<0.56	NA	<1		<2				
endosulfan II	<.42	<.42	<.42	<0.56	<0.56	<0.56	<.42	NA	<0.56	NA	<2		<2				
4,4'-DDD	3.00	3.17	2.88	3.18	3.83	3.40	3.02	4.8	3.47	9.5	4.10	0.53	**5.06**	**0.56**	-1.1	-0.6	0.3
2,4'-DDT	<.42	<.42	<.42	<0.56	<0.56	<0.56	<.42	NA	<0.56	NA	<2		<2				
cis-nonachlor	<.42	<.42	<.42	<0.56	<0.56	<0.56	<.42	NA	<0.56	NA	0.296	0.193	<2				
4,4'-DDT	<0.21	<0.21	<0.21	<0.28	<0.28	<0.28	<0.21	NA	<0.28	NA	1.29	0.79	1.25	0.10			
mirex	<.42	<.42	<.42	<0.56	<0.56	<0.56	<.42	NA	<0.56	NA	<1		<2				

Laboratory: 36
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	7	31.8
Qualitative	15	68.2
Not Determined	0	0.0

Category	Number by Category		
	z (25%)	z (s)	p (15%)
≤ 2	4	7	6
2 to 3	1	0	0
≥ 3	2	0	1

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 36**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 2/28/00

PCBs

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry 2/15/00 S 1	S 2	S 3	SRM 1941a, ng/g dry 2/16/00 S 1	S 2	S 3	Sediment IX lab mean ng/g dry	lab %RSD	SRM 1941a lab mean ng/g dry	lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	95% CL	SRM 1941a, ng/g dry target value[b]	95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
PCB 8	<0.21	<0.21	<0.21	<0.28	<0.28	<0.28	<0.21	NA	<0.28	NA	1.72	0.47	1.69	0.38			
PCB 18	3.32	3.30	3.20	2.35	2.06	1.91	3.27	2.0	2.11	10.6	2.20	0.36	3.86	2.25	2.0	1.1	0.1
PCB 28	4.67	5.19	5.08	1.15	1.23	1.15	4.98	5.5	1.18	3.9	5.09	0.76	9.80	3.70	-0.1	-0.1	0.4
PCB 52	3.50	3.67	3.60	5.76	4.16	4.41	3.59	2.4	4.78	18.1	5.03	0.50	**6.89**	**0.56**	-1.1	-1.5	0.2
PCB 44	2.17	2.13	2.21	5.14	5.94	4.50	2.17	1.8	5.19	13.9	3.79	0.49	**4.80**	**0.62**	-1.7	-1.7	0.1
PCB 66/95	3.32	4.03	3.76	5.24	5.78	3.99	3.70	9.7	5.00	18.4	8.63	1.22	**14.3**	**2.5**	-2.3	**-5.1**	0.6
PCB 101/90	4.07	4.01	4.06	8.1	8.6	6.0	4.05	0.8	7.56	18.1	5.62	0.70	**11.0**	**1.6**	-1.1	-1.6	0.1
PCB 118	3.70	4.11	3.71	8.42	7.23	5.77	3.84	6.1	7.14	18.6	4.39	0.42	**10.0**	**1.1**	-0.5	-0.6	0.4
PCB 153	3.28	3.43	3.23	6.7	7.3	5.7	3.31	3.1	6.57	12.9	5.59	0.81	**17.6**	**1.9**	-1.6	-2.4	0.2
PCB 105	2.67	2.90	2.72	2.03	2.39	2.10	2.76	4.4	2.17	8.8	1.52	0.28	**3.65**	**0.27**	**3.3**	1.3	0.3
PCB 138/163/164	3.83	4.03	3.67	8.55	9.91	8.21	3.84	4.7	8.89	10.1	5.01	0.71	**13.4**	**1.0**	-0.9	-1.2	0.3
PCB 187/182	2.35	2.67	2.62	3.26	3.97	3.42	2.55	6.8	3.55	10.5	2.27	0.40	7.00	2.60	0.5	0.3	0.5
PCB 128	1.08	1.04	1.02	2.00	2.17	1.51	1.05	2.9	1.89	18.1	0.823	0.204	**1.87**	**0.32**	1.1	0.2	0.2
PCB 180	1.83	1.97	1.84	5.15	5.46	3.38	1.88	4.2	4.66	24.1	3.33	0.41	8.00	2.00	-1.7	-1.5	0.3
PCB 170/190	1.55	1.47	1.53	2.97	3.23	2.98	1.52	2.7	3.06	4.8	1.94	0.52	4.00	1.00	-0.9	-0.4	0.2
PCB 195	0.460	0.430	0.420	0.700	0.640	0.520	0.437	4.8	0.620	14.8	1.19	0.42	<3		-2.5	-0.8	0.3
PCB 206	1.36	1.17	1.27	2.17	2.55	1.64	1.27	7.5	2.12	21.6	2.55	0.34	**3.67**	**0.87**	-2.0	-1.3	0.5
PCB 209	2.51	2.34	2.46	5.35	5.26	6.77	2.44	3.6	5.79	14.6	4.72	0.69	**8.34**	**0.49**	-1.9	-2.4	0.2
PCB 66	___	___	___	___	___	___	NA	NA	NA	NA	4.71	0.68	**6.80**	**1.40**			
PCB 95	___	___	___	___	___	___	NA	NA	NA	NA	3.34	0.83	**7.50**	**1.10**			

Laboratory: 36
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	17	94.4
Qualitative	1	5.6
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	13	14	17
2 to 3	3	2	0
≥ 3	1	1	0

Water in Sediment IX

	Sediment IX, % S 1	S 2	S 3	lab mean, %	lab %RSD	Sediment IX, % assigned	95% CL	exercise, % mean	95% CL	Sediment IX z (25%)	z (s)	p (15%)
water	46.3	46.0	45.4	45.9	0.9	46.2	3.3	46.2	3.3	0.0	0.0	0.1

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 37

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant)

Reporting Date: 2/29/00

PAH

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry 1/20/00 S 1	S 2	S 3	SRM 1941a, ng/g dry 1/20/00 S 1	S 2	S 3	Sediment IX lab mean ng/g dry	lab %RSD	SRM 1941a lab mean ng/g dry	lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	95% CL	SRM 1941a, ng/g dry target value[b]	95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
naphthalene	931	845	901	659	608	___	892	4.9	634	5.7	756	113	**1010**	**140**	0.7	0.5	0.3
2-methylnaphthalene	326	385	426	303	291	___	379	13.3	297	2.9	241	34	325	60	2.3	1.7	0.9
1-methylnaphthalene	156	189	195	147	137	___	180	11.7	142	5.0	111	18	150	30	2.5	1.7	0.8
biphenyl	97.0	132	130	105	97.3	___	120	16.4	101	5.4	73.3	12.5	100	36	2.5	1.6	1.1
2,6-dimethylnaphthalene	169	242	239	194	179	___	217	19.1	187	5.7	85.4	14.0	120	24	**6.1**	**4.2**	1.3
acenaphthylene	108	75.1	75.7	102	81.2	___	86.3	21.8	91.6	16.1	53.6	8.5	60.0	28.0	2.4	1.6	1.5
acenaphthene	47.2	43.3	46.0	33.6	30.2	___	45.5	4.4	31.9	7.5	35.7	4.7	41.0	10.0	1.1	0.8	0.3
1,6,7-trimethylnaphthalene	20.6	14.2	21.6	20.0	20.6	___	18.8	21.4	20.3	2.1	27.7	5.3	48.0	10.0	-1.3	-1.0	1.4
fluorene	111	105	123	62.7	60.2	___	113	8.1	61.5	2.9	78.8	11.5	**97.3**	**8.6**	1.7	1.2	0.5
phenanthrene	380	385	407	366	345	___	391	3.7	356	4.2	383	43	**489**	**23**	0.1	0.1	0.2
anthracene	198	200	219	189	182	___	206	5.6	186	2.7	174	19	**184**	**14**	0.7	0.7	0.4
1-methylphenanthrene	87.1	83.7	74.5	58.0	53.0	___	81.8	8.0	55.5	6.4	76.0	11.1	101	27	0.3	0.2	0.5
fluoranthene	685	791	807	875	887	___	761	8.7	881	1.0	635	71	**981**	**78**	0.8	0.7	0.6
pyrene	593	770	752	716	744	___	705	13.8	730	2.7	594	62	**811**	**24**	0.7	0.7	0.9
benz[a]anthracene	346	425	511	452	420	___	427	19.3	436	5.2	343	30	**427**	**25**	1.0	1.1	1.3
chrysene + triphenylene	380	522	509	554	655	___	470	16.7	605	11.8	404	37	577	35	0.7	0.7	1.1
benzofluoranthenes [b+j+k]	1240	1400	1390	1670	1670	___	1343	6.7	1670	0.0	815	85	1441	150	2.6	2.5	0.4
benzo[e]pyrene	479	516	516	664	662	___	504	4.2	663	0.2	320	34	**553**	**59**	2.3	2.1	0.3
benzo[a]pyrene	479	468	490	587	577	___	479	2.3	582	1.2	354	42	**628**	**52**	1.4	1.2	0.2
perylene	731	737	722	428	447	___	730	1.0	438	3.1	416	63	**452**	**58**	**3.0**	2.0	0.1
indeno[1,2,3-cd]pyrene	349	316	358	501	546	___	341	6.5	524	6.1	287	36	**501**	**72**	0.7	0.6	0.4
dibenz[a,h]anthracene + [a,c]	120	103	120	158	182	___	114	8.6	170	10.0	78.1	14.2	**117**	**14**	1.9	1.1	0.6
benzo[ghi]perylene	321	196	254	545	593	___	257	24.3	569	6.0	259	27	**525**	**67**	0.0	0.0	1.6

Laboratory: 37
PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	23	100.0
Qualitative	0	0.0
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	15	19	23
2 to 3	6	3	0
≥ 3	2	1	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 37**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 2/29/00

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/5/00 S 1	2/4/00 S 2	2/4/00 S 3	1/20/00 S 1	2/4/00 S 2	____ S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	NA	NA	NA	NA	NA	____	NA	NA	NA	NA	<1		<2				
hexachlorobenzene	6.68	6.30	6.33	49.6	54.4	____	6.44	3.3	52.0	6.5	5.88	0.74	**70.0**	**25.0**	0.4	0.3	0.2
gamma-HCH	<0.6	0.79	<0.6	1.59	4.12	____	0.790	NA	2.86	62.7	<1		<2				
heptachlor	1.72	1.46	<0.5	4.43	4.14	____	1.59	11.6	4.29	4.8	0.796	0.553	<2		**4.0**	0.4	0.8
aldrin	<0.7	<0.7	<0.7	<0.7	<0.7	____	<0.7	NA	<0.7	NA	0.438	0.313	<2				
heptachlor epoxide	<0.5	<0.5	<0.5	<0.5	<0.5	____	<0.5	NA	<0.5	NA	0.125	0.111	<2				
oxychlordane	NA	NA	NA	NA	NA	____	NA	NA	NA	NA	0.694	0.613	<3				
trans-chlordane	NA	NA	NA	NA	NA	____	NA	NA	NA	NA	0.624	0.236	<2				
2,4'-DDE	<0.8	<0.8	<0.8	2.07	1.31	____	<0.8	NA	1.69	31.8	0.451	0.150	**0.73**	**0.11**			
endosulfan I	NA	NA	NA	NA	NA	____	NA	NA	NA	NA	<1	0.0	<2				
cis-chlordane	0.970	<0.8	<0.8	2.94	3.02	____	0.970	NA	2.98	1.9	0.977	0.339	**2.33**	**0.56**	0.0	0.0	
trans-nonachlor	<0.8	<0.8	<0.8	1.06	1.04	____	<0.8	NA	1.05	1.3	0.404	0.108	**1.26**	**0.13**			
dieldrin	other	other	other	other	other	____	other	NA	other	NA	0.779	0.337	1.26	0.37			
4,4'-DDE	3.40	3.56	3.75	6.75	6.32	____	3.57	4.9	6.54	4.7	3.34	0.45	**6.59**	**0.56**	0.3	0.1	0.3
2,4'-DDD	other	other	other	other	other	____	other	NA	other	NA	1.12	0.50	<2				
endrin	NA	NA	NA	NA	NA	____	NA	NA	NA	NA	<1		<2				
endosulfan II	NA	NA	NA	NA	NA	____	NA	NA	NA	NA	<2		<2				
4,4'-DDD	5.47	5.51	6.23	8.26	8.94	____	5.74	7.5	8.60	5.6	4.10	0.53	**5.06**	**0.56**	1.6	0.9	0.5
2,4'-DDT	1.68	1.78	1.51	2.74	2.94	____	1.66	8.2	2.84	5.0	<2		<2				0.5
cis-nonachlor	NA	NA	NA	NA	NA	____	NA	NA	NA	NA	0.296	0.193	<2				
4,4'-DDT	<0.6	<0.6	<0.6	<0.6	<0.6	____	<0.6	NA	<0.6	NA	1.29	0.79	1.25	0.10			
mirex	<0.6	<0.6	<0.6	0.660	0.770	____	<0.6	NA	0.715	10.9	<1		<2				

Laboratory: 37
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	7	31.8
Qualitative	8	36.4
Not Determined	7	31.8

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	4	5	5
2 to 3	0	0	0
≥ 3	1	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 37

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant)

Reporting Date: 2/29/00

PCBs

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry 1/20/00 S 1	S 2	S 3	SRM 1941a, ng/g dry 1/20/00 S 1	S 2	S 3	Sediment IX lab mean ng/g dry	lab %RSD	SRM 1941a lab mean ng/g dry	lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	95% CL	SRM 1941a, ng/g dry target value[b]	95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
PCB 8	2.45	1.92	2.05	4.01	3.72	____	2.14	12.9	3.87	5.3	1.72	0.47	1.69	0.38	1.0	0.4	0.9
PCB 18	3.72	3.26	3.39	4.53	5.10	____	3.46	6.9	4.82	8.4	2.20	0.36	3.86	2.25	2.3	1.3	0.5
PCB 28	8.13	7.06	6.96	9.20	9.08	____	7.38	8.8	9.14	0.9	5.09	0.76	9.80	3.70	1.8	2.4	0.6
PCB 52	8.04	7.54	7.43	10.5	9.67	____	7.67	4.2	10.1	5.8	5.03	0.50	**6.89**	**0.56**	2.1	2.7	0.3
PCB 44	3.87	4.21	6.36	6.91	other	____	4.81	28.1	6.91	NA	3.79	0.49	**4.80**	**0.62**	1.1	1.1	1.9
PCB 66/95	9.24	9.01	9.46	15.1	14.0	____	9.24	2.4	14.6	5.3	8.63	1.22	**14.3**	**2.5**	0.3	0.6	0.2
PCB 101/90	6.70	6.51	6.81	13.7	13.6	____	6.67	2.3	13.7	0.5	5.62	0.70	**11.0**	**1.6**	0.7	1.1	0.2
PCB 118	4.35	4.39	4.67	9.25	8.96	____	4.47	3.9	9.11	2.3	4.39	0.42	**10.0**	**1.1**	0.1	0.1	0.3
PCB 153	7.23	7.15	7.33	17.3	17.8	____	7.24	1.2	17.6	2.0	5.59	0.81	**17.6**	**1.9**	1.2	1.7	0.1
PCB 105	1.35	1.25	1.15	3.05	3.09	____	1.25	8.0	3.07	0.9	1.52	0.28	**3.65**	**0.27**	-0.7	-0.3	0.5
PCB 138/163/164	6.61	5.57	5.52	14.8	14.1	____	5.90	10.4	14.5	3.4	5.01	0.71	**13.4**	**1.0**	0.7	0.9	0.7
PCB 187/182	4.20	3.30	5.19	8.49	8.43	____	4.23	22.3	8.46	0.5	2.27	0.40	7.00	2.60	**3.4**	2.0	1.5
PCB 128	1.04	0.820	0.950	2.01	1.89	____	0.937	11.8	1.95	4.4	0.823	0.204	**1.87**	**0.32**	0.6	0.1	0.8
PCB 180	4.38	3.81	3.99	10.4	10.6	____	4.06	7.2	10.5	1.3	3.33	0.41	8.00	2.00	0.9	0.8	0.5
PCB 170/190	0.960	1.27	other	3.96	other	____	1.12	19.7	3.96	NA	1.94	0.52	4.00	1.00	-1.7	-0.9	1.3
PCB 195	2.03	1.81	1.92	3.22	3.26	____	1.92	5.7	3.24	0.9	1.19	0.42	<3		2.5	0.8	0.4
PCB 206	3.13	3.22	3.18	4.33	4.61	____	3.18	1.4	4.47	4.4	2.55	0.34	**3.67**	**0.87**	1.0	0.6	0.1
PCB 209	5.37	6.57	6.92	11.5	12.7	____	6.29	12.9	12.1	7.0	4.72	0.69	**8.34**	**0.49**	1.3	1.6	0.9
PCB 66	____	____	____	____	____	____	NA	NA	NA	NA	4.71	0.68	**6.80**	**1.40**			
PCB 95	____	____	____	____	____	____	NA	NA	NA	NA	3.34	0.83	**7.50**	**1.10**			

Laboratory: 37
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	18	100.0
Qualitative	0	0.0
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	14	15	18
2 to 3	3	3	0
≥ 3	1	0	0

Water in Sediment IX

	SedimentIX, % S 1	S 2	S 3	lab mean, %	lab %RSD	Sediment IX, % assigned	95% CL	exercise, % mean	95% CL	Sediment IX z (25%)	z (s)	p (15%)
water	46.1	46.6	46.5	46.4	0.6	46.2	3.3	46.2	3.3	0.0	0.0	0.0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 38

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant)

Reporting Date: 3/2/00

PAH

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry 10/26/99 S 1	Sediment IX, ng/g dry 10/26/99 S 2	Sediment IX, ng/g dry 10/26/99 S 3	SRM 1941a, ng/g dry 10/26/99 S 1	SRM 1941a, ng/g dry 10/26/99 S 2	SRM 1941a, ng/g dry 10/26/99 S 3	Sediment IX lab mean ng/g dry	Sediment IX lab %RSD	SRM 1941a lab mean ng/g dry	SRM 1941a lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	Sediment IX 95% CL	SRM 1941a, ng/g dry target value[b]	SRM 1941a 95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
naphthalene	736	752	794	721	712	733	761	3.9	722	1.5	756	113	**1010**	**140**	0.0	0.0	0.3
2-methylnaphthalene	227	254	279	321	284	321	253	10.3	309	6.9	241	34	325	60	0.2	0.2	0.7
1-methylnaphthalene	103	108	120	174	134	150	110	7.9	153	13.2	111	18	150	30	0.0	0.0	0.5
biphenyl	54.0	56.3	53.4	72.2	75.7	77.8	54.6	2.8	75.2	3.8	73.3	12.5	100	36	-1.0	-0.6	0.2
2,6-dimethylnaphthalene	84.1	85.3	84.3	130	118	127	84.6	0.8	125	5.0	85.4	14.0	120	24	0.0	0.0	0.1
acenaphthylene	52.8	50.0	52.0	63.5	61.1	68.3	51.6	2.8	64.3	5.7	53.6	8.5	60.0	28.0	-0.1	-0.1	0.2
acenaphthene	41.4	42.4	46.5	50.6	38.6	45.9	43.4	6.2	45.0	13.4	35.7	4.7	41.0	10.0	0.9	0.7	0.4
1,6,7-trimethylnaphthalene	___	___	___	___	___	___	NA	NA	NA	NA	27.7	5.3	48.0	10.0			
fluorene	81.9	95.5	98.1	75.3	66.9	76.9	91.8	9.5	73.0	7.4	78.8	11.5	**97.3**	**8.6**	0.7	0.5	0.6
phenanthrene	326	352	358	454	396	489	345	4.9	446	10.5	383	43	**489**	**23**	-0.4	-0.4	0.3
anthracene	132	155	158	166	146	185	148	9.6	166	11.8	174	19	**184**	**14**	-0.6	-0.6	0.6
1-methylphenanthrene	<1.28	42.5	204	174	77.6	42.8	123	92.7	98.1	69.3	76.0	11.1	101	27	2.5	1.9	**6.2**
fluoranthene	251	593	589	844	915	1119	478	41.1	959	14.9	635	71	**981**	**78**	-1.0	-0.9	2.7
pyrene	44.6	514	530	764	720	848	363	76.0	777	8.4	594	62	**811**	**24**	-1.6	-1.5	**5.1**
benz[a]anthracene	224	318	309	368	362	436	284	18.3	389	10.6	343	30	**427**	**25**	-0.7	-0.8	1.2
chrysene + triphenylene	261	360	334	517	499	572	318	16.1	529	7.2	404	37	577	35	-0.8	-0.9	1.1
benzofluoranthenes [b+j+k]	623	874	971	1255	1309	1615	823	21.8	1393	13.9	815	85	1441	150	0.0	0.0	1.5
benzo[e]pyrene	236	272	293	484	433	499	267	10.8	472	7.3	320	34	**553**	**59**	-0.7	-0.6	0.7
benzo[a]pyrene	310	348	370	505	437	517	343	8.9	486	8.9	354	42	**628**	**52**	-0.1	-0.1	0.6
perylene	363	427	438	366	355	384	409	9.9	368	4.0	416	63	**452**	**58**	-0.1	0.0	0.7
indeno[1,2,3-cd]pyrene	232	172	188	531	315	352	197	15.7	399	28.9	287	36	**501**	**72**	-1.3	-0.9	1.0
dibenz[a,h]anthracene + [a,c]	68.8	46.0	62.2	150	76.0	90.7	59.0	19.9	106	37.1	78.1	14.2	**117**	**14**	-1.0	-0.6	1.3
benzo[ghi]perylene	250	200	201	562	331	369	217	13.2	421	29.4	259	27	**525**	**67**	-0.7	-0.6	0.9

Laboratory: 38
PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	22	95.7
Qualitative	0	0.0
Not Determined	1	4.3

Category	Number by Category: z (25%)	z (s)	p (15%)
≤ 2	21	22	19
2 to 3	1	0	1
≥ 3	0	0	2

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 38**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 3/2/00

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/5/00 S 1	10/25/99 S 2	11/10/99 S 3	10/17/99 S 1	10/25/99 S 2	11/10/99 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	4.70	0.08	0.39	0.27	0.16	0.04	1.72	149.7	0.154	75.1	<1		<2				**10.0**
hexachlorobenzene	6.09	5.47	5.56	52.2	47.8	43.4	5.71	5.9	47.8	9.2	5.88	0.74	**70.0**	**25.0**	-0.1	-0.1	0.4
gamma-HCH	0.094	0.094	0.094	0.094	<0.094	0.094	<0.0942	NA	<0.0942	NA	<1		<2				
heptachlor	3.52	0.305	<0.079	<0.079	<0.079	<0.079	1.91	118.9	<0.079	NA	0.796	0.553	<2		**5.6**	0.6	**7.9**
aldrin	0.202	0.134	0.196	0.051	<0.051	0.051	0.177	21.2	<0.0512	NA	0.438	0.313	<2		-2.4	-0.1	1.4
heptachlor epoxide	0.042	0.042	0.042	0.042	<0.042	0.042	<0.0422	NA	<0.0422	NA	0.125	0.111	<2				
oxychlordane	0.044	0.044	0.044	1.00	1.15	0.91	<0.0442	NA	1.02	11.8	0.694	0.613	<3				
trans-chlordane	0.074	0.074	0.074	1.42	1.68	1.56	<0.0748	NA	1.55	8.4	0.624	0.236	<2				
2,4'-DDE	1.68	0.460	0.843	0.919	0.608	0.687	0.994	62.7	0.738	21.9	0.451	0.150	**0.73**	**0.11**	**4.8**	0.3	**4.2**
endosulfan I	____	____	____	____	____	____	NA	NA	NA	NA	<1	0.0	<2				
cis-chlordane	0.328	<0.202	0.321	1.82	2.02	1.70	0.325	1.5	1.85	8.8	0.977	0.339	**2.33**	**0.56**	-2.7	-0.4	0.1
trans-nonachlor	0.575	0.559	0.474	1.96	1.91	1.27	0.536	10.2	1.71	22.5	0.404	0.108	**1.26**	**0.13**	1.3	0.1	0.7
dieldrin	<0.318	<0.318	<0.318	1.59	1.56	0.69	<0.318	NA	1.28	40.1	0.779	0.337	1.26	0.37			
4,4'-DDE	1.27	1.26	1.67	4.88	4.93	4.67	1.40	16.7	4.83	2.9	3.34	0.45	**6.59**	**0.56**	-2.3	-1.1	1.1
2,4'-DDD	<0.079	<0.079	<0.079	<0.079	<0.079	<0.079	<0.079	NA	<0.079	NA	1.12	0.50	<2				
endrin	<0.319	<0.319	<0.319	<0.319	<0.319	<0.319	<0.319	NA	<0.319	NA	<1		<2				
endosulfan II	____	____	____	____	____	____	NA	NA	NA	NA	<2		<2				
4,4'-DDD	1.94	1.76	2.93	4.73	5.58	5.57	2.21	28.5	5.29	9.2	4.10	0.53	**5.06**	**0.56**	-1.8	-1.0	1.9
2,4'-DDT	0.466	0.507	0.869	1.01	1.18	0.866	0.614	36.1	1.02	15.4	<2		<2				2.4
cis-nonachlor	0.064	0.064	0.064	0.255	0.695	0.763	<0.0647	NA	0.571	48.3	0.296	0.193	<2				
4,4'-DDT	12.0	9.93	6.59	21.9	22.7	15.5	9.507	28.7	20.0	19.7	1.29	0.79	1.25	0.10	**25.5**	**4.5**	1.9
mirex	<0.131	<0.131	<0.131	<0.131	<0.131	<0.131	<0.131	NA	<0.131	NA	<1		<2				

Laboratory: 38
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	11	50.0
Qualitative	9	40.9
Not Determined	2	9.1

	Number by Category		
Category	z (25%)	z (s)	p (15%)
≤ 2	3	8	7
2 to 3	3	0	1
≥ 3	3	1	3

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 38**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 3/2/00

PCBs

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	10/17/99 S 1	10/17/99 S 2	10/17/99 S 3	10/17/99 S 1	10/17/99 S 2	10/17/99 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
PCB 8	12.0	1.15	0.928	4.10	1.65	1.67	4.69	134.9	2.47	57.0	1.72	0.47	1.69	0.38	**6.9**	**3.1**	**9.0**
PCB 18	<0.16	<0.16	2.84	1.04	1.68	2.51	2.84	NA	1.74	42.3	2.20	0.36	3.86	2.25	1.2	0.7	
PCB 28	2.90	1.65	3.20	5.23	9.62	5.79	2.58	31.8	6.88	34.7	5.09	0.76	9.80	3.70	-2.0	-2.6	2.1
PCB 52	<0.176	2.88	5.15	9.16	7.57	8.37	4.02	40.0	8.37	9.5	5.03	0.50	**6.89**	**0.56**	-0.8	-1.1	2.7
PCB 44	2.05	1.84	2.97	4.11	4.38	4.15	2.29	26.3	4.21	3.5	3.79	0.49	**4.80**	**0.62**	-1.6	-1.6	1.8
PCB 66/95							NA	NA	NA	NA	8.63	1.22	**14.3**	**2.5**			
PCB 101/90	2.26	2.41	3.30	9.16	9.58	8.54	2.66	21.2	9.09	5.8	5.62	0.70	**11.0**	**1.6**	-2.1	**-3.1**	1.4
PCB 118	4.73	3.34	1.89	9.48	8.84	5.55	3.32	42.8	7.96	26.5	4.39	0.42	**10.0**	**1.1**	-1.0	-1.1	2.9
PCB 153	2.71	1.95	1.75	9.94	10.2	12.9	2.14	23.7	11.0	14.9	5.59	0.81	**17.6**	**1.9**	-2.5	**-3.6**	1.6
PCB 105	1.57	1.06	0.574	3.41	4.22	2.25	1.07	46.6	3.29	30.1	1.52	0.28	**3.65**	**0.27**	-1.2	-0.5	**3.1**
PCB 138/163/164	8.92	2.52	2.74	13.4	13.1	9.92	4.73	76.9	12.1	15.9	5.01	0.71	**13.4**	**1.0**	-0.2	-0.3	**5.1**
PCB 187/182	0.172	0.883	0.966	4.95	4.92	4.58	0.674	64.8	4.82	4.3	2.27	0.40	7.00	2.60	-2.8	-1.7	**4.3**
PCB 128	0.317	0.279	0.473	1.48	1.64	1.67	0.356	28.9	1.60	6.4	0.823	0.204	**1.87**	**0.32**	-2.3	-0.5	1.9
PCB 180	0.981	1.05	1.87	7.03	7.58	7.98	1.30	38.0	7.53	6.3	3.33	0.41	8.00	2.00	-2.4	-2.1	2.5
PCB 170/190	0.084	0.084	0.084	2.83	2.91	4.83	<0.0846	NA	3.52	32.1	1.94	0.52	4.00	1.00			
PCB 195	0.059	0.059	0.059	0.059	<0.059	0.059	<0.0599	NA	<0.0599	NA	1.19	0.42	<3				
PCB 206							NA	NA	NA	NA	2.55	0.34	**3.67**	**0.87**			
PCB 209							NA	NA	NA	NA	4.72	0.69	**8.34**	**0.49**			
PCB 66	3.38	2.88	3.78	7.27	7.34	6.16	3.35	13.5	6.92	9.6	4.71	0.68	**6.80**	**1.40**	-1.2	-1.4	0.9
PCB 95	0.811	0.431	2.48	4.48	5.76	6.07	1.24	87.9	5.44	15.5	3.34	0.83	**7.50**	**1.10**	-2.5	-2.2	**5.9**

Laboratory: 38
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	13	72.2
Qualitative	2	11.1
Not Determined	3	16.7

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	7	8	4
2 to 3	5	2	4
≥ 3	1	3	4

Water in Sediment IX

	Sediment IX, %			lab		Sediment IX, %		exercise, %		Sediment IX		
	S 1	S 2	S 3	mean, %	%RSD	assigned	95% CL	mean	95% CL	z (25%)	z (s)	p (15%)
water	46.0	45.0	46.0	45.7	1.3	46.2	3.3	46.2	3.3	0.0	-0.1	0.1

[a]z- and p-scores ≥ 3 are bolded. [b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 39

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant)

Reporting Date: 3/6/00

PAH

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Material reference values: Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Performance scores[a]: Sediment IX		
	2/3/00 S 1	2/3/00 S 2	2/3/00 S 3	2/3/00 S 1	2/3/00 S 2	2/3/00 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
naphthalene	672	688	673	1160	____	____	678	1.3	1160	NA	756	113	**1010**	**140**	-0.4	-0.3	0.1
2-methylnaphthalene	203	199	188	433	____	____	197	3.9	433	NA	241	34	325	60	-0.7	-0.5	0.3
1-methylnaphthalene	81.2	78.8	77.4	200	____	____	79.1	2.4	200	NA	111	18	150	30	-1.1	-0.8	0.2
biphenyl	43.0	43.4	41.0	105	____	____	42.5	3.0	105	NA	73.3	12.5	100	36	-1.7	-1.0	0.2
2,6-dimethylnaphthalene	58.1	61.0	59.1	142	____	____	59.4	2.5	142	NA	85.4	14.0	120	24	-1.2	-0.8	0.2
acenaphthylene	44.0	44.5	42.0	85.9	____	____	43.5	3.0	85.9	NA	53.6	8.5	60.0	28.0	-0.8	-0.5	0.2
acenaphthene	21.2	22.0	19.6	37.5	____	____	20.9	5.8	37.5	NA	35.7	4.7	41.0	10.0	-1.7	-1.3	0.4
1,6,7-trimethylnaphthalene	NA	NA	NA	NA	____	____	NA	NA	NA	NA	27.7	5.3	48.0	10.0			
fluorene	52.9	54.3	54.1	66.6	____	____	53.8	1.4	66.6	NA	78.8	11.5	**97.3**	**8.6**	-1.3	-0.9	0.1
phenanthrene	260	259	248	507	____	____	256	2.6	507	NA	383	43	**489**	**23**	-1.3	-1.2	0.2
anthracene	113	113	107	190	____	____	111	3.1	190	NA	174	19	**184**	**14**	-1.4	-1.4	0.2
1-methylphenanthrene	<100	<100	<100	<100	____	____	<100	NA	NA	NA	76.0	11.1	101	27			
fluoranthene	396	375	364	888	____	____	378	4.3	888	NA	635	71	**981**	**78**	-1.6	-1.4	0.3
pyrene	335	339	319	707	____	____	331	3.2	707	NA	594	62	**811**	**24**	-1.8	-1.7	0.2
benz[a]anthracene	196	191	206	416	____	____	198	3.9	416	NA	343	30	**427**	**25**	-1.7	-1.9	0.3
chrysene + triphenylene	251	242	239	646	____	____	244	2.6	646	NA	404	37	577	35	-1.6	-1.7	0.2
benzofluoranthenes [b+j+k]	533	553	573	1550	____	____	553	3.6	1550	NA	815	85	1441	150	-1.3	-1.2	0.2
benzo[e]pyrene	248	256	243	710	____	____	249	2.6	710	NA	320	34	**553**	**59**	-0.9	-0.8	0.2
benzo[a]pyrene	208	221	208	579	____	____	212	3.5	579	NA	354	42	**628**	**52**	-1.6	-1.4	0.2
perylene	265	240	256	382	____	____	254	5.0	382	NA	416	63	**452**	**58**	-1.6	-1.0	0.3
indeno[1,2,3-cd]pyrene	178	171	195	513	____	____	181	6.8	513	NA	287	36	**501**	**72**	-1.5	-1.1	0.5
dibenz[a,h]anthracene + [a,c]	43.2	42.0	44.7	143	____	____	43.3	3.1	143	NA	78.1	14.2	**117**	**14**	-1.8	-1.0	0.2
benzo[ghi]perylene	173	160	166	563	____	____	166	3.9	563	NA	259	27	**525**	**67**	-1.4	-1.3	0.3

Laboratory: 39
PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	21	91.3
Qualitative	1	4.3
Not Determined	1	4.3

Category	Number by Category: z (25%)	z (s)	p (15%)
≤ 2	21	21	21
2 to 3	0	0	0
≥ 3	0	0	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 39**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 3/6/00

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/5/00 S 1	2/7/00 S 2	2/7/00 S 3	2/7/00 S 1	S 2	S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	DL	DL	DL	DL			DL	NA	DL	NA	<1		<2				
hexachlorobenzene	5.50	9.61	6.81	64.7			7.31	28.7	64.7	NA	5.88	0.74	**70.0**	**25.0**	1.0	0.8	1.9
gamma-HCH	DL	DL	DL	DL			DL	NA	DL	NA	<1		<2				
heptachlor	0.051	DL	DL	DL			0.051	NA	DL	NA	0.796	0.553	<2		**-3.7**	-0.4	
aldrin	DL	DL	DL	DL			DL	NA	DL	NA	0.438	0.313	<2				
heptachlor epoxide	0.025	DL	0.034	0.091			0.029	23.8	0.091	NA	0.125	0.111	<2		**-3.1**	-0.1	1.6
oxychlordane	DL	DL	DL	DL			DL	NA	DL	NA	0.694	0.613	<3				
trans-chlordane	0.107	0.125	0.105	1.61			0.116	11.0	1.61	NA	0.624	0.236	<2		**-3.3**	-0.3	0.7
2,4'-DDE	0.191	0.259	0.190	0.393			0.191	0.4	0.393	NA	0.451	0.150	**0.73**	**0.11**	-2.3	-0.1	0.0
endosulfan I	DL	DL	DL	DL			DL	NA	DL	NA	<1	0.0	<2				
cis-chlordane	0.103	0.130	0.0849	1.44			0.103	NA	1.44	NA	0.977	0.339	**2.33**	**0.56**	**-3.6**	-0.5	
trans-nonachlor	0.094	0.107	0.099	0.654			0.100	6.5	0.654	NA	0.404	0.108	**1.26**	**0.13**	**-3.0**	-0.2	0.4
dieldrin	0.174	0.232	0.186	0.948			0.197	15.5	0.948	NA	0.779	0.337	1.26	0.37	**-3.0**	-0.3	1.0
4,4'-DDE	2.10	2.24	2.13	6.19			2.16	3.4	6.19	NA	3.34	0.45	**6.59**	**0.56**	-1.4	-0.6	0.2
2,4'-DDD	0.219	0.260	0.186	0.754			0.222	16.7	0.754	NA	1.12	0.50	<2		**-3.2**	-0.5	1.1
endrin	DL	DL	DL	DL			DL	NA	DL	NA	<1		<2				
endosulfan II	DL	DL	DL	DL			DL	NA	DL	NA	<2		<2				
4,4'-DDD	2.29	2.46	2.25	5.07			2.33	4.8	5.07	NA	4.10	0.53	**5.06**	**0.56**	-1.7	-1.0	0.3
2,4'-DDT	DL	DL	DL	DL			DL	NA	DL	NA	<2		<2				
cis-nonachlor	DL	DL	DL	0.577			DL	NA	0.577	NA	0.296	0.193	<2				
4,4'-DDT	0.779	1.380	0.802	0.675			0.987	34.5	0.675	NA	1.29	0.79	1.25	0.10	-0.9	-0.2	2.3
mirex	DL	DL	DL	0.06			DL	NA	0.061	NA	<1		<2				

Laboratory: 39
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	12	54.5
Qualitative	10	45.5
Not Determined	0	0.0

	Number by Category		
Category	z (25%)	z (s)	p (15%)
≤ 2	4	12	9
2 to 3	1	0	1
≥ 3	7	0	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 39**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 3/6/00

PCBs

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	2/7/00 S 1	2/7/00 S 2	2/7/00 S 3	2/7/00 S 1	2/7/00 S 2	2/7/00 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
PCB 8	1.73	1.77	1.72	1.98	____	____	1.74	1.5	1.98	NA	1.72	0.47	1.69	0.38	0.0	0.0	0.1
PCB 18	2.22	2.24	2.28	2.44	____	____	2.25	1.4	2.44	NA	2.20	0.36	3.86	2.25	0.1	0.0	0.1
PCB 28	5.58	5.18	5.20	7.23	____	____	5.32	4.2	7.23	NA	5.09	0.76	9.80	3.70	0.2	0.2	0.3
PCB 52	4.11	4.60	4.71	6.10	____	____	4.47	7.1	6.10	NA	5.03	0.50	**6.89**	**0.56**	-0.4	-0.6	0.5
PCB 44	4.40	4.29	4.59	7.12	____	____	4.43	3.4	7.12	NA	3.79	0.49	**4.80**	**0.62**	0.7	0.7	0.2
PCB 66/95	7.8	8.8	7.8	13.7	____	____	8.13	7.2	13.7	NA	8.63	1.22	**14.3**	**2.5**	-0.2	-0.5	0.5
PCB 101/90	6.28	6.62	6.37	11.3	____	____	6.42	2.7	11.3	NA	5.62	0.70	**11.0**	**1.6**	0.6	0.8	0.2
PCB 118	3.86	3.91	3.60	7.08	____	____	3.79	4.4	7.08	NA	4.39	0.42	**10.0**	**1.1**	-0.5	-0.6	0.3
PCB 153	6.19	5.76	6.07	12.3	____	____	6.01	3.7	12.3	NA	5.59	0.81	**17.6**	**1.9**	0.3	0.4	0.2
PCB 105	1.32	1.23	1.25	2.62	____	____	1.27	3.7	2.62	NA	1.52	0.28	**3.65**	**0.27**	-0.7	-0.3	0.2
PCB 138/163/164	6.69	6.21	6.57	12.7	____	____	6.49	3.8	12.7	NA	5.01	0.71	**13.4**	**1.0**	1.2	1.5	0.3
PCB 187/182	2.99	2.93	2.66	5.79	____	____	2.86	6.1	5.79	NA	2.27	0.40	7.00	2.60	1.0	0.6	0.4
PCB 128	0.848	0.788	0.806	1.61	____	____	0.814	3.8	1.61	NA	0.823	0.204	**1.87**	**0.32**	0.0	0.0	0.3
PCB 180	3.97	4.16	3.85	8.63	____	____	3.99	3.9	8.63	NA	3.33	0.41	8.00	2.00	0.8	0.7	0.3
PCB 170/190	2.27	2.37	2.18	4.43	____	____	2.27	4.2	4.43	NA	1.94	0.52	4.00	1.00	0.7	0.3	0.3
PCB 195	0.388	0.399	0.365	0.913	____	____	0.384	4.5	0.913	NA	1.19	0.42	<3		-2.7	-0.8	0.3
PCB 206	2.79	2.86	2.83	4.06	____	____	2.83	1.2	4.06	NA	2.55	0.34	**3.67**	**0.87**	0.4	0.3	0.1
PCB 209	5.62	5.60	5.59	10.70	____	____	5.60	0.3	10.70	NA	4.72	0.69	**8.34**	**0.49**	0.7	0.9	0.0
PCB 66	3.01	3.78	2.96	5.93	____	____	3.25	14.1	5.93	NA	4.71	0.68	**6.80**	**1.40**	-1.2	-1.5	0.9
PCB 95	4.82	5.03	4.80	7.78	____	____	4.88	2.6	7.78	NA	3.34	0.83	**7.50**	**1.10**	1.9	1.6	0.2

Laboratory: 39
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	18	100.0
Qualitative	0	0.0
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	17	18	18
2 to 3	1	0	0
≥ 3	0	0	0

Water in Sediment IX

	SedimentIX, %				lab			Sediment IX, %		exercise, %		Sediment IX		
	S 1	S 2	S 3		mean, %	%RSD		assigned	95% CL	mean	95% CL	z (25%)	z (s)	p (15%)
water	47.0	46.0	46.0		46.3	1.2		46.2	3.3	46.2	3.3	0.0	0.0	0.1

[a]z- and p-scores ≥ 3 are bolded. [b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant)

Laboratory No.: 40

Reporting Date: 2/1/2000

PAH

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	7/16/99 S 1	7/16/99 S 2	7/16/99 S 3	7/16/99 S 1	7/16/99 S 2	7/16/99 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	756	113	**1010**	**140**			
2-methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	241	34	325	60			
1-methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	111	18	150	30			
biphenyl	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	73.3	12.5	100	36			
2,6-dimethylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	85.4	14.0	120	24			
acenaphthylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	53.6	8.5	60.0	28.0			
acenaphthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	35.7	4.7	41.0	10.0			
1,6,7-trimethylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27.7	5.3	48.0	10.0			
fluorene	78.3	82.0	108	60.8	76.1	67.3	89.4	18.1	68.1	11.3	78.8	11.5	**97.3**	**8.6**	0.5	0.4	1.2
phenanthrene	410	525	514	465	522	523	483	13.1	503	6.6	383	43	**489**	**23**	1.0	1.0	0.9
anthracene	166	215	228	164	188	199	203	16.1	184	9.7	174	19	**184**	**14**	0.7	0.6	1.1
1-methylphenanthrene	49.0	62.7	61.1	62.8	71.3	NA	57.6	13.0	67.1	9.0	76.0	11.1	101	27	-1.0	-0.8	0.9
fluoranthene	693	806	753	859	980	997	751	7.5	945	8.0	635	71	**981**	**78**	0.7	0.6	0.5
pyrene	649	766	712	720	837	825	709	8.3	794	8.1	594	62	**811**	**24**	0.8	0.7	0.6
benz[a]anthracene	299	440	412	357	443	423	384	19.5	408	11.0	343	30	**427**	**25**	0.5	0.5	1.3
chrysene + triphenylene	346	429	427	459	569	547	401	11.8	525	11.1	404	37	577	35	0.0	0.0	0.8
benzofluoranthenes [b+j+k]	723	975	920	1160	1480	1410	873	15.2	1350	12.5	815	85	1441	150	0.3	0.3	1.0
benzo[e]pyrene	256	356	328	420	504	502	313	16.5	475	10.1	320	34	**553**	**59**	-0.1	-0.1	1.1
benzo[a]pyrene	304	497	459	501	624	621	420	24.3	582	12.1	354	42	**628**	**52**	0.8	0.6	1.6
perylene	221	457	400	246	314	303	359	34.3	288	12.7	416	63	**452**	**58**	-0.5	-0.4	2.3
indeno[1,2,3-cd]pyrene	NA	453	404	NA	676	676	429	8.1	676	0.0	287	36	**501**	**72**	2.0	1.5	0.5
dibenz[a,h]anthracene + [a,c]	NA	66.1	68.5	NA	77.8	90.5	67.3	2.5	84.2	10.7	78.1	14.2	**117**	**14**	-0.6	-0.3	0.2
benzo[ghi]perylene	NA	372	316	NA	568	528	344	11.5	548	5.2	259	27	**525**	**67**	1.3	1.2	0.8

Laboratory: 40
PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	15	65.2
Qualitative	0	0.0
Not Determined	8	34.8

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	15	15	14
2 to 3	0	0	1
≥ 3	0	0	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 40

Sample: QA99SED9 - Marine Sediment IX

(data reported as if three figures were significant)

Reporting Date: 2/1/2000

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/5/00 S 1	1/0/00 S 2	1/0/00 S 3	1/0/00 S 1	1/0/00 S 2	1/0/00 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	0.254	0.291	0.167	0.433	0.054	0.051	0.238	26.8	0.179	122.5	<1		<2				1.8
hexachlorobenzene	5.45	5.59	6.49	49.4	44.7	44.7	5.84	9.7	46.3	5.9	5.88	0.74	**70.0**	**25.0**	0.0	0.0	0.6
gamma-HCH	0.096	0.095	0.090	0.291	0.036	4.09	0.094	3.5	1.47	154.2	<1		<2				0.2
heptachlor	21.2	23.9	22.1	62.4	74.3	69.6	22.4	6.3	68.8	8.7	0.796	0.553	<2		**109**	**11.8**	0.4
aldrin	0.433	0.228	0.274	0.186	0.414	0.435	0.312	34.6	0.345	40.0	0.438	0.313	<2		-1.2	-0.1	2.3
heptachlor epoxide	0.089	0.190	0.093	0.127	0.053	0.053	0.124	46.3	0.078	55.3	0.125	0.111	<2		0.0	0.0	**3.1**
oxychlordane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.694	0.613	<3				
trans-chlordane	0.207	0.278	0.391	1.36	1.64	1.72	0.292	31.8	1.57	11.8	0.624	0.236	<2		-2.1	-0.2	2.1
2,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.451	0.150	**0.73**	**0.11**			
endosulfan I	0.025	0.062	0.054	0.038	0.040	0.064	0.047	41.2	0.047	31.2	<1	0.0	<2				2.7
cis-chlordane	0.439	0.475	0.414	1.09	1.35	1.57	0.443	6.9	1.34	17.7	0.977	0.339	**2.33**	**0.56**	-2.2	-0.3	0.5
trans-nonachlor	0.401	0.263	0.050	0.490	0.647	0.873	0.238	74.2	0.670	28.7	0.404	0.108	**1.26**	**0.13**	-1.6	-0.1	**4.9**
dieldrin	0.476	0.618	0.482	0.892	0.912	0.886	0.526	15.3	0.897	1.5	0.779	0.337	1.26	0.37	-1.3	-0.1	1.0
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.34	0.45	**6.59**	**0.56**			
2,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.12	0.50	<2				
endrin	NA	NA	NA	0.289	0.050	0.032	NA	NA	0.12	116.1	<1		<2				
endosulfan II	0.033	0.024	0.053	0.019	0.004	0.113	0.037	39.4	0.046	128.9	<2		<2				2.6
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.10	0.53	**5.06**	**0.56**			
2,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2		<2				
cis-nonachlor	0.251	0.214	0.174	0.383	0.579	0.789	0.213	18.1	0.584	34.8	0.296	0.193	<2		-1.1	0.0	1.2
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.29	0.79	1.25	0.10			
mirex	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1		<2				

Laboratory: 40
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	13	59.1
Qualitative	0	0.0
Not Determined	9	40.9

Category	Number by Category		
	z (25%)	z (s)	p (15%)
≤ 2	6	8	7
2 to 3	2	0	4
≥ 3	1	1	2

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 40**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 2/1/2000

PCBs

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry 12/03/99 S 1	S 2	S 3	SRM 1941a, ng/g dry 12/03/99 S 1	S 2	S 3	Sediment IX lab mean ng/g dry	lab %RSD	SRM 1941a lab mean ng/g dry	lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	95% CL	SRM 1941a, ng/g dry target value[b]	95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
PCB 8	2.39	2.92	3.12	3.66	4.22	3.87	2.81	13.4	3.92	7.2	1.72	0.47	1.69	0.38	2.5	1.1	0.9
PCB 18	1.60	1.91	1.88	2.40	2.72	2.23	1.80	9.5	2.45	10.2	2.20	0.36	3.86	2.25	-0.7	-0.4	0.6
PCB 28	8.06	9.69	9.23	11.4	13.0	12.3	8.99	9.3	12.2	6.6	5.09	0.76	9.80	3.70	**3.1**	**4.0**	0.6
PCB 52	5.94	7.20	6.51	8.23	9.56	10.1	6.55	9.6	9.30	10.4	5.03	0.50	**6.89**	**0.56**	1.2	1.6	0.6
PCB 44	3.07	3.71	3.47	4.22	4.91	5.11	3.42	9.5	4.75	9.8	3.79	0.49	**4.80**	**0.62**	-0.4	-0.4	0.6
PCB 66/95	9.5	11.7	10.6	18.3	18.0	15.6	10.6	10.2	17.3	8.6	8.63	1.22	**14.3**	**2.5**	0.9	2.1	0.7
PCB 101/90	5.00	5.99	5.44	9.60	11.1	10.0	5.48	9.1	10.2	7.7	5.62	0.70	**11.0**	**1.6**	-0.1	-0.1	0.6
PCB 118	3.91	4.59	4.26	7.60	8.93	7.73	4.25	8.0	8.09	9.1	4.39	0.42	**10.0**	**1.1**	-0.1	-0.1	0.5
PCB 153	5.92	6.62	6.09	12.9	14.7	13.3	6.21	5.9	13.6	6.9	5.59	0.81	**17.6**	**1.9**	0.4	0.6	0.4
PCB 105	1.82	1.89	1.77	3.86	4.29	3.70	1.83	3.3	3.95	7.7	1.52	0.28	**3.65**	**0.27**	0.8	0.3	0.2
PCB 138/163/164	4.74	5.19	4.91	10.9	12.3	11.1	4.95	4.6	11.4	6.6	5.01	0.71	**13.4**	**1.0**	-0.1	-0.1	0.3
PCB 187/182	1.78	2.16	1.95	4.71	5.32	4.48	1.96	9.7	4.84	9.0	2.27	0.40	7.00	2.60	-0.5	-0.3	0.6
PCB 128	0.527	0.616	0.618	0.929	1.07	0.886	0.587	8.9	0.962	10.0	0.823	0.204	**1.87**	**0.32**	-1.1	-0.2	0.6
PCB 180	3.13	4.19	3.87	8.59	9.84	8.37	3.73	14.6	8.93	8.9	3.33	0.41	8.00	2.00	0.5	0.4	1.0
PCB 170/190	2.05	2.43	2.35	6.04	6.49	5.34	2.28	8.8	5.96	9.7	1.94	0.52	4.00	1.00	0.7	0.3	0.6
PCB 195	2.71	3.43	3.17	5.53	6.25	4.78	3.10	11.7	5.52	13.3	1.19	0.42	<3		**6.4**	2.0	0.8
PCB 206	3.07	3.98	3.58	5.61	6.21	4.99	3.54	12.9	5.60	10.9	2.55	0.34	**3.67**	**0.87**	1.6	1.0	0.9
PCB 209	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.72	0.69	**8.34**	**0.49**			
PCB 66							NA	NA	NA	NA	4.71	0.68	**6.80**	**1.40**			
PCB 95							NA	NA	NA	NA	3.34	0.83	**7.50**	**1.10**			

Laboratory: 40
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	17	94.4
Qualitative	0	0.0
Not Determined	1	5.6

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	14	15	17
2 to 3	1	1	0
≥ 3	2	1	0

Water in Sediment IX

	SedimentIX, % S 1	S 2	S 3	lab mean, %	lab %RSD	Sediment IX, % assigned	95% CL	exercise, % mean	95% CL	Sediment IX z (25%)	z (s)	p (15%)
water	45.2	44.4	44.9	44.8	0.9	46.2	3.3	46.2	3.3	-0.1	-0.1	0.1

[a] z- and p-scores ≥ 3 are bolded. [b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 41

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant)

Reporting Date: 3/10/00

PAH

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	2/25/00 S 1	2/25/00 S 2	2/25/00 S 3	2/25/00 S 1	2/25/00 S 2	2/25/00 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
naphthalene	Other1	Other1	Other1	244	186	____	Other1	NA	215	19.0	756	113	**1010**	**140**			
2-methylnaphthalene	113	115	116	158	133	____	115	1.4	146	12.0	241	34	325	60	-2.1	-1.5	0.1
1-methylnaphthalene	60.2	65	60.8	98.0	75.9	____	62.0	4.3	86.9	18.0	111	18	150	30	-1.8	-1.2	0.3
biphenyl	Other1	Other1	Other1	45.7	45.3	____	Other1	NA	45.5	0.6	73.3	12.5	100	36			
2,6-dimethylnaphthalene	42.8	55.6	44.6	96.5	68.3	____	47.7	14.5	82.4	24.2	85.4	14.0	120	24	-1.8	-1.2	1.0
acenaphthylene	25.1	30.0	29.3	24.0	35.5	____	28.1	9.4	29.7	27.3	53.6	8.5	60.0	28.0	-1.9	-1.3	0.6
acenaphthene	21.8	21.7	26.5	24.1	21.6	____	23.3	11.8	22.8	7.9	35.7	4.7	41.0	10.0	-1.4	-1.1	0.8
1,6,7-trimethylnaphthalene	24.1	Other2	25.1	88.0	51.1	____	24.6	3.1	69.5	37.5	27.7	5.3	48.0	10.0	-0.4	-0.3	0.2
fluorene	74.6	82.7	92.3	84.1	66.6	____	83.2	10.7	75.3	16.4	78.8	11.5	**97.3**	**8.6**	0.2	0.2	0.7
phenanthrene	319	378	396	423	388	____	364	11.1	405	6.2	383	43	**489**	**23**	-0.2	-0.2	0.7
anthracene	166	196	203	164	171	____	188	10.5	167	2.9	174	19	**184**	**14**	0.3	0.3	0.7
1-methylphenanthrene	74.8	102	91.6	126	105	____	89.4	15.2	116	12.5	76.0	11.1	101	27	0.7	0.5	1.0
fluoranthene	747	931	949	1046	1162	____	875	12.8	1104	7.4	635	71	**981**	**78**	1.5	1.3	0.9
pyrene	648	827	827	825	938	____	768	13.5	882	9.1	594	62	**811**	**24**	1.2	1.1	0.9
benz[a]anthracene	327	390	414	322	419	____	377	11.9	371	18.6	343	30	**427**	**25**	0.4	0.4	0.8
chrysene + triphenylene	461	631	643	552	713	____	578	17.7	632	18.1	404	37	577	35	1.7	1.9	1.2
benzofluoranthenes [b+j+k]	535	597	739	1648	1915	____	624	16.8	1781	10.6	815	85	1441	150	-0.9	-0.9	1.1
benzo[e]pyrene	Other3	Other3	Other3	491	581	____	Other1	NA	536	11.9	320	34	**553**	**59**			
benzo[a]pyrene	376	483	577	497	621	____	479	21.0	559	15.7	354	42	**628**	**52**	1.4	1.2	1.4
perylene	265	387	479	164	233	____	377	28.6	198	24.5	416	63	**452**	**58**	-0.4	-0.2	1.9
indeno[1,2,3-cd]pyrene	430	497	455	645	683	____	461	7.4	664	4.1	287	36	**501**	**72**	2.4	1.8	0.5
dibenz[a,h]anthracene + [a,c]	Other3	Other3	Other3	267	269	____	Other1	NA	268	0.5	78.1	14.2	**117**	**14**			
benzo[ghi]perylene	280	293	336	541	547	____	303	9.8	544	0.7	259	27	**525**	**67**	0.7	0.6	0.7

Laboratory: 41
PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	19	82.6
Qualitative	4	17.4
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	17	19	19
2 to 3	2	0	0
≥ 3	0	0	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 41

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant)

Reporting Date: 3/10/00

PESTICIDES

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Material reference values: Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Performance scores[a]: Sediment IX		
	1/5/00 S 1	2/17/00 S 2	2/17/00 S 3	2/16/00 S 1	2/17/00 S 2	____ S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
alpha-HCH	Other4	Other4	Other4	Other4	Other4	____	Other1	NA	Other1	NA	<1		<2				
hexachlorobenzene	5.25	5.46	6.37	50.3	45.3	____	5.69	10.5	47.8	7.4	5.88	0.74	**70.0**	**25.0**	-0.1	-0.1	0.7
gamma-HCH	0.031	0.044	0.046	0.281	0.408	____	0.040	19.5	0.345	26.1	<1		<2				1.3
heptachlor	0.190	0.192	0.213	2.03	0.86	____	0.198	6.4	1.45	57.1	0.796	0.553	<2		**-3.0**	-0.3	0.4
aldrin	0.252	0.272	0.331	0.214	0.814	____	0.285	14.4	0.514	82.5	0.438	0.313	<2		-1.4	-0.1	1.0
heptachlor epoxide	0.131	0.201	0.249	4.64	4.83	____	0.194	30.6	4.73	2.9	0.125	0.111	<2		2.2	0.0	2.0
oxychlordane	0.406	0.553	0.497	0.912	0.889	____	0.485	15.3	0.901	1.8	0.694	0.613	<3		-1.2	-0.1	1.0
trans-chlordane	0.401	0.490	0.454	1.72	1.86	____	0.448	10.0	1.79	5.6	0.624	0.236	<2		-1.1	-0.1	0.7
2,4'-DDE	Other5	Other5	Other5	Other5	Other5	____	Other1	NA	Other1	NA	0.451	0.150	**0.73**	**0.11**			
endosulfan I	Other6	Other6	Other6	Other6	Other6	____	Other1	NA	Other1	NA	<1	0.0	<2				
cis-chlordane	Other7	Other7	Other7	Other7	Other7	____	Other1	NA	Other1	NA	0.977	0.339	**2.33**	**0.56**			
trans-nonachlor	0.229	0.301	0.312	0.933	1.01	____	0.281	16.1	0.969	5.3	0.404	0.108	**1.26**	**0.13**	-1.2	-0.1	1.1
dieldrin	1.40	1.69	1.68	4.19	4.54	____	1.59	10.2	4.37	5.7	0.779	0.337	1.26	0.37	**4.2**	0.4	0.7
4,4'-DDE	2.46	3.10	3.03	5.57	5.82	____	2.86	12.2	5.69	3.1	3.34	0.45	**6.59**	**0.56**	-0.6	-0.3	0.8
2,4'-DDD	0.859	1.11	1.09	2.95	3.07	____	1.02	13.7	3.01	2.8	1.12	0.50	<2		-0.4	-0.1	0.9
endrin	0.159	0.190	0.174	0.736	0.236	____	0.174	8.9	0.486	72.7	<1		<2				0.6
endosulfan II	1.80	2.40	2.33	4.12	3.73	____	2.18	15.0	3.93	7.0	<2		<2				1.0
4,4'-DDD	3.18	4.21	4.05	7.09	7.45	____	3.81	14.6	7.27	3.6	4.10	0.53	**5.06**	**0.56**	-0.3	-0.2	1.0
2,4'-DDT	0.439	0.552	0.592	1.05	1.13	____	0.528	15.0	1.09	5.1	<2		<2				1.0
cis-nonachlor	1.10	1.34	1.27	4.00	4.07	____	1.24	10.1	4.03	1.2	0.296	0.193	<2		**12.7**	0.5	0.7
4,4'-DDT	2.49	2.88	3.03	8.79	9.69	____	2.80	10.0	9.24	6.9	1.29	0.79	1.25	0.10	**4.7**	0.8	0.7
mirex	0.189	0.350	0.299	0.161	0.212	____	0.279	29.5	0.187	19.3	<1		<2				2.0

Laboratory: 41
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	18	81.8
Qualitative	4	18.2
Not Determined	0	0.0

Category	Number by Category: z (25%)	z (s)	p (15%)
≤ 2	8	13	17
2 to 3	1	0	1
≥ 3	4	0	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 41**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 3/10/00

PCBs

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry 2/17/00 S 1	S 2	S 3	SRM 1941a, ng/g dry 2/17/00 S 1	S 2	S 3	Sediment IX lab mean ng/g dry	lab %RSD	SRM 1941a lab mean ng/g dry	lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	95% CL	SRM 1941a, ng/g dry target value[b]	95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
PCB 8	Other4	Other4	Other4	Other4	Other4	___	Other4	NA	Other4	NA	1.72	0.47	1.69	0.38			
PCB 18	1.89	2.08	2.24	3.55	3.32	___	2.07	8.4	3.44	4.6	2.20	0.36	3.86	2.25	-0.2	-0.1	0.6
PCB 28	3.22	3.77	3.80	6.09	6.11	___	3.60	9.2	6.10	0.3	5.09	0.76	9.80	3.70	-1.2	-1.5	0.6
PCB 52	4.12	4.74	4.84	7.51	7.90	___	4.57	8.5	7.71	3.6	5.03	0.50	**6.89**	**0.56**	-0.4	-0.5	0.6
PCB 44	3.22	3.82	3.81	5.01	5.51	___	3.62	9.6	5.26	6.7	3.79	0.49	**4.80**	**0.62**	-0.2	-0.2	0.6
PCB 66/95	7.07	8.37	8.26	15.6	16.0	___	7.90	9.1	15.8	1.6	8.63	1.22	**14.3**	**2.5**	-0.3	-0.8	0.6
PCB 101/90	Other6	Other6	Other6	Other6	Other6	___	Other4	NA	Other4	NA	5.62	0.70	**11.0**	**1.6**			
PCB 118	3.60	4.37	4.29	11.4	12.1	___	4.08	10.4	11.8	3.9	4.39	0.42	**10.0**	**1.1**	-0.3	-0.3	0.7
PCB 153	3.99	4.84	4.74	12.3	13.0	___	4.52	10.3	12.7	3.9	5.59	0.81	**17.6**	**1.9**	-0.8	-1.1	0.7
PCB 105	1.12	1.44	1.40	4.18	4.55	___	1.32	13.2	4.36	5.9	1.52	0.28	**3.65**	**0.27**	-0.5	-0.2	0.9
PCB 138/163/164	3.58	4.35	4.28	11.4	11.8	___	4.07	10.4	11.6	2.3	5.01	0.71	**13.4**	**1.0**	-0.8	-1.0	0.7
PCB 187/182	2.04	2.45	2.35	6.18	6.28	___	2.28	9.4	6.23	1.2	2.27	0.40	7.00	2.60	0.0	0.0	0.6
PCB 128	0.546	0.695	0.692	1.75	1.84	___	0.644	13.2	1.80	3.3	0.823	0.204	**1.87**	**0.32**	-0.9	-0.2	0.9
PCB 180	Other5	Other5	Other5	Other5	Other5	___	Other4	NA	Other4	NA	3.33	0.41	8.00	2.00			
PCB 170/190	0.920	1.14	1.12	3.50	3.53	___	1.06	11.3	3.52	0.5	1.94	0.52	4.00	1.00	-1.8	-0.9	0.8
PCB 195	1.28	1.69	1.57	0.90	1.00	___	1.51	14.0	0.949	7.1	1.19	0.42	<3		1.1	0.3	0.9
PCB 206	2.04	2.67	2.58	3.87	4.55	___	2.43	14.0	4.21	11.4	2.55	0.34	**3.67**	**0.87**	-0.2	-0.1	0.9
PCB 209	4.15	4.93	4.56	9.17	9.50	___	4.55	8.6	9.34	2.5	4.72	0.69	**8.34**	**0.49**	-0.1	-0.2	0.6
PCB 66	___	___	___	___	___	___	NA	NA	NA	NA	4.71	0.68	**6.80**	**1.40**			
PCB 95	___	___	___	___	___	___	NA	NA	NA	NA	3.34	0.83	**7.50**	**1.10**			

Laboratory: 41
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	15	83.3
Qualitative	3	16.7
Not Determined	0	0.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	15	15	15
2 to 3	0	0	0
≥ 3	0	0	0

Water in Sediment IX

	Sediment IX, % S 1	S 2	S 3	lab mean, %	lab %RSD	Sediment IX, % assigned	95% CL	exercise, % mean	95% CL	Sediment IX z (25%)	z (s)	p (15%)
water	46.2	46.2	45.8	46.1	0.5	46.2	3.3	46.2	3.3	0.0	0.0	0.0

[a]z- and p-scores ≥ 3 are bolded. [b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Laboratory No.: 42

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant)

Reporting Date: 3/7/00

PAH

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Material reference values: Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Performance scores[a]: Sediment IX		
	2/25/00 S 1	2/25/00 S 2	2/25/00 S 3	2/25/00 S 1	2/25/00 S 2	2/25/00 S 3	lab mean ng/g dry	lab %RSD	lab mean ng/g dry	lab %RSD	assigned value	95% CL	target value[b]	95% CL	z-score (25%)	z-score (s)	p-score (15%)
naphthalene	1040	1070	1120	993	1020	961	1077	3.8	991	3.0	756	113	**1010**	**140**	1.7	1.2	0.3
2-methylnaphthalene	326	406	405	379	394	349	379	12.1	374	6.1	241	34	325	60	2.3	1.7	0.8
1-methylnaphthalene	150	196	191	184	192	165	179	14.1	180	7.7	111	18	150	30	2.5	1.7	0.9
biphenyl	89.8	124	114	124	124	110	109	16.1	119	6.8	73.3	12.5	100	36	2.0	1.2	1.1
2,6-dimethylnaphthalene	87.5	118	118	153	159	164	108	16.3	159	3.5	85.4	14.0	120	24	1.0	0.7	1.1
acenaphthylene	34.4	42.8	42.8	36.9	41.4	43.1	40.0	12.1	40.5	7.9	53.6	8.5	60.0	28.0	-1.0	-0.7	0.8
acenaphthene	36.0	46.1	42.8	35.2	37.9	38.2	41.6	12.4	37.1	4.5	35.7	4.7	41.0	10.0	0.7	0.5	0.8
1,6,7-trimethylnaphthalene	21.6	31.0	28.8	33.2	33.6	35.3	27.1	18.1	34.0	3.3	27.7	5.3	48.0	10.0	-0.1	-0.1	1.2
fluorene	75.7	97.7	101	60.6	60.5	69.3	91.5	15.0	63.5	8.0	78.8	11.5	**97.3**	**8.6**	0.6	0.5	1.0
phenanthrene	321	417	425	467	474	547	388	14.9	496	8.9	383	43	**489**	**23**	0.0	0.0	1.0
anthracene	137	183	182	180	177	189	167	15.7	182	3.4	174	19	**184**	**14**	-0.1	-0.1	1.0
1-methylphenanthrene	49.8	71.2	69.0	83.8	82.1	93.7	63.3	18.6	86.5	7.2	76.0	11.1	101	27	-0.7	-0.5	1.2
fluoranthene	477	659	652	928	877	1040	596	17.3	948	8.8	635	71	**981**	**78**	-0.2	-0.2	1.2
pyrene	409	580	551	709	659	779	513	17.8	716	8.4	594	62	**811**	**24**	-0.5	-0.5	1.2
benz[a]anthracene	237	299	295	382	345	382	277	12.5	370	5.8	343	30	**427**	**25**	-0.8	-0.8	0.8
chrysene + triphenylene	288	371	385	572	550	607	348	15.1	576	5.0	404	37	577	35	-0.6	-0.6	1.0
benzofluoranthenes [b+j+k]	606	802	798	1420	1390	1500	735	15.2	1437	4.0	815	85	1441	150	-0.4	-0.4	1.0
benzo[e]pyrene	228	305	308	552	515	567	280	16.2	545	4.9	320	34	**553**	**59**	-0.5	-0.5	1.1
benzo[a]pyrene	270	360	362	550	536	577	331	15.9	554	3.8	354	42	**628**	**52**	-0.3	-0.2	1.1
perylene	244	369	354	395	385	409	322	21.2	396	3.0	416	63	**452**	**58**	-0.9	-0.6	1.4
indeno[1,2,3-cd]pyrene	230	292	289	544	587	591	270	12.9	574	4.5	287	36	**501**	**72**	-0.2	-0.2	0.9
dibenz[a,h]anthracene + [a,c]	44.7	60.0	65.5	107	103	108	56.7	19.0	106	2.5	78.1	14.2	**117**	**14**	-1.1	-0.6	1.3
benzo[ghi]perylene	207	261	268	526	506	562	245	13.6	531	5.3	259	27	**525**	**67**	-0.2	-0.2	0.9

Laboratory: 42
PAH in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	23	100.0
Qualitative	0	0.0
Not Determined	0	0.0

Category	Number by Category: z (25%)	z (s)	p (15%)
≤ 2	21	23	23
2 to 3	2	0	0
≥ 3	0	0	0

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise **Laboratory No.: 42**

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant) Reporting Date: 3/7/00

PESTICIDES

	Data as submitted by laboratory										Material reference values				Performance scores[a]		
	Sediment IX, ng/g dry			SRM 1941a, ng/g dry			Sediment IX		SRM 1941a		Sediment IX, ng/g dry		SRM 1941a, ng/g dry		Sediment IX		
Analysis date	1/500						lab mean	lab	lab mean	lab	assigned		target		z-score	z-score	p-score
	S 1	S 2	S 3	S 1	S 2	S 3	ng/g dry	%RSD	ng/g dry	%RSD	value	95% CL	value[b]	95% CL	(25%)	(s)	(15%)
alpha-HCH							NA	NA	NA	NA	<1		<2				
hexachlorobenzene							NA	NA	NA	NA	5.88	0.74	**70.0**	**25.0**			
gamma-HCH							NA	NA	NA	NA	<1		<2				
heptachlor							NA	NA	NA	NA	0.796	0.553	<2				
aldrin							NA	NA	NA	NA	0.438	0.313	<2				
heptachlor epoxide							NA	NA	NA	NA	0.125	0.111	<2				
oxychlordane							NA	NA	NA	NA	0.694	0.613	<3				
trans-chlordane							NA	NA	NA	NA	0.624	0.236	<2				
2,4'-DDE							NA	NA	NA	NA	0.451	0.150	**0.73**	**0.11**			
endosulfan I							NA	NA	NA	NA	<1	0.0	<2				
cis-chlordane							NA	NA	NA	NA	0.977	0.339	**2.33**	**0.56**			
trans-nonachlor							NA	NA	NA	NA	0.404	0.108	**1.26**	**0.13**			
dieldrin							NA	NA	NA	NA	0.779	0.337	1.26	0.37			
4,4'-DDE							NA	NA	NA	NA	3.34	0.45	**6.59**	**0.56**			
2,4'-DDD							NA	NA	NA	NA	1.12	0.50	<2				
endrin							NA	NA	NA	NA	<1		<2				
endosulfan II							NA	NA	NA	NA	<2		<2				
4,4'-DDD							NA	NA	NA	NA	4.10	0.53	**5.06**	**0.56**			
2,4'-DDT							NA	NA	NA	NA	<2		<2				
cis-nonachlor							NA	NA	NA	NA	0.296	0.193	<2				
4,4'-DDT							NA	NA	NA	NA	1.29	0.79	1.25	0.10			
mirex							NA	NA	NA	NA	<1		<2				

Laboratory: 42
Pesticides in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	0	0.0
Qualitative	0	0.0
Not Determined	22	100.0

	Number by Category		
Category	z (25%)	z (s)	p (15%)
≤ 2	0	0	0
2 to 3	0	0	0
≥ 3	0	0	0

[a]z- and p-scores ≥ 3 are bolded.

[b]Certified material reference values are bolded.

FY99 NIST Intercomparison Exercise

Sample: QA99SED9 - Marine Sediment IX (data reported as if three figures were significant)

Laboratory No.: 42

Reporting Date: 3/7/00

PCBs

Analysis date	Data as submitted by laboratory: Sediment IX, ng/g dry S 1	S 2	S 3	SRM 1941a, ng/g dry S 1	S 2	S 3	Sediment IX lab mean ng/g dry	Sediment IX lab %RSD	SRM 1941a lab mean ng/g dry	SRM 1941a lab %RSD	Material reference values: Sediment IX, ng/g dry assigned value	95% CL	SRM 1941a, ng/g dry target value[b]	95% CL	Performance scores[a] Sediment IX z-score (25%)	z-score (s)	p-score (15%)
PCB 8							NA	NA	NA	NA	1.72	0.47	1.69	0.38			
PCB 18							NA	NA	NA	NA	2.20	0.36	3.86	2.25			
PCB 28							NA	NA	NA	NA	5.09	0.76	9.80	3.70			
PCB 52							NA	NA	NA	NA	5.03	0.50	**6.89**	**0.56**			
PCB 44							NA	NA	NA	NA	3.79	0.49	**4.80**	**0.62**			
PCB 66/95							NA	NA	NA	NA	8.63	1.22	**14.3**	**2.5**			
PCB 101/90							NA	NA	NA	NA	5.62	0.70	**11.0**	**1.6**			
PCB 118							NA	NA	NA	NA	4.39	0.42	**10.0**	**1.1**			
PCB 153							NA	NA	NA	NA	5.59	0.81	**17.6**	**1.9**			
PCB 105							NA	NA	NA	NA	1.52	0.28	**3.65**	**0.27**			
PCB 138/163/164							NA	NA	NA	NA	5.01	0.71	**13.4**	**1.0**			
PCB 187/182							NA	NA	NA	NA	2.27	0.40	7.00	2.60			
PCB 128							NA	NA	NA	NA	0.823	0.204	**1.87**	**0.32**			
PCB 180							NA	NA	NA	NA	3.33	0.41	8.00	2.00			
PCB 170/190							NA	NA	NA	NA	1.94	0.52	4.00	1.00			
PCB 195							NA	NA	NA	NA	1.19	0.42	<3				
PCB 206							NA	NA	NA	NA	2.55	0.34	**3.67**	**0.87**			
PCB 209							NA	NA	NA	NA	4.72	0.69	**8.34**	**0.49**			
PCB 66							NA	NA	NA	NA	4.71	0.68	**6.80**	**1.40**			
PCB 95							NA	NA	NA	NA	3.34	0.83	**7.50**	**1.10**			

Laboratory: 42
PCBs in Sediment IX

Reported Results	No. of Analytes	%
Quantitative	0	0.0
Qualitative	0	0.0
Not Determined	18	100.0

Category	Number by Category z (25%)	z (s)	p (15%)
≤ 2	0	0	0
2 to 3	0	0	0
≥ 3	0	0	0

Water in Sediment IX

	SedimentIX, % S 1	S 2	S 3	lab mean, %	lab %RSD	Sediment IX, % assigned	95% CL	exercise, % mean	95% CL	Sediment IX z (25%)	z (s)	p (15%)
water	46.6	46.6	48.0	47.1	1.7	46.2	3.3	46.2	3.3	0.1	0.1	0.1

[a] z- and p-scores ≥ 3 are bolded.

[b] Certified material reference values are bolded.

Appendix E: Laboratory Notes Accompanying Data, Fish Homogenate IV

Lab	Additional data (ng/g wet weight) submitted for Fish Homogenate IV						
		FISH IV Sample 1	FISH IV Sample 2	FISH IV Sample 3	CRM Carp-1 Sample 1	CRM Carp-1 Sample 2	CRM Carp-1 Sample 3
1	PCB 31	1.43	1.41	1.44	18.2	18.1	18.2
	PCB 49	3.84	4.08	3.95	110	116	114
	PCB 99	24.5	25.3	25.8	78.9	80.7	78.4
	PCB 87	10	9.3	9.98	61.2	63.8	67.3
	PCB 110	23.5	22.5	24.7	119	120	118
	PCB 151	1.95	1.96	1.96	1.67	1.65	1.51
	PCB 149	24.9	24.8	26.3	42.9	41 7	43.4
	PCB 156	9.43	8.75	8.74	8.59	8.52	8.26
	PCB 183	18.9	18.7	18.6	10 8	10.9	11
3	PCB 99	16.48	22.65	18.9			
	PCB110	39.09	36.63	27.44			
	PCB149	45.97	55.99	43.27			
	PCB194	23.04	22.1	17.14			
	PCB85	15.95	15.18	14.29			
	PCB141	9.1	8.78	7.1			
9	chlorpyrifos	<0.100	<0.083	<0.083			
	endosulfan sulfate	<0.115	<0.096	<0.095			
17	PCB 49	3.16	1.94	3.04	116	142	115
	PCB 37	<0.76	<0.76	<0.76	<0.76	<0.76	<0.76
	PCB 74	<0.57	<0.57	<0.57	103	98.8	72.0
	PCB 70	14.8	15.2	13.9	53.9	49.4	38.1
	PCB 99	<0.36	<0.36	<0.36	127	102	88.2
	PCB 119	<0.82	<0.82	<0.82	<0.82	<0.82	<0.82
	PCB 87	<0.91	<0.91	<0.91	81.9	72.9	58.8
	PCB 110	21.3	22.4	35.3	87.7	104	126
	PCB 81	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48
	PCB 151	10.2	11.6	12.8	10.4	11.8	16.1
	PCB 77	<0.77	<0.77	<0.77	4.32	7.59	6.73
	PCB 149	37.4	38.6	36.6	38.3	43.1	53.7
	PCB 123	6.13	8.29	9.68	16.1	17.3	21.2
	PCB 114	<0.51	<0.51	<0.51	6.98	2.54	<0.51
	PCB 168	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50
	PCB 158	6.74	9.06	10.7	8.67	9.26	7.53
	PCB 183	17.3	23.0	26.7	12.2	12.5	13.2
	PCB 126	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74
	PCB 167	10.1	11.9	14.6	<0.58	<0.58	<0.58
	PCB 177	12.1	13.3	17.9	9.87	9.73	16.5
	PCB 200	10.5	12.9	24.6	<0.73	<0.73	<0.73
	PCB 156	<0.65	<0.65	<0.65	7.72	8.71	10.5
	PCB 157	5.88	<0.39	7.69	<0.39	<0.39	<0.39
	PCB 201	12.7	13.6	13.6	11.2	16.1	14.7
	PCB 169	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66
	PCB 189	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47
	PCB 194	23.1	18.2	26.4	14.1	12.8	11.7
26	PCB 29	<2	<2	<2	<2	<2	<2
	PCB 31	<2	<2	<2	26.9	26	25.9
	PCB 49	3.48	3.51	3.62	120	120	122
	PCB 99	30	29.1	32.2	96.3	98.6	98.3
	PCB 87	5	4.85	5.29	63.4	62.1	64.4
	PCB 154	21	21.1	22.7	66.7	67.4	69.1
	PCB 110	27.4	26.6	28.5	118	119	121
	PCB 151	10.9	11.5	12	39.9	40.5	42.1
	PCB 149	26.2	24.6	26.9	41.9	41.5	43.1
	PCB 183	21.6	21.1	22	13.4	14.2	14.5
	PCB 201	11.8	11.1	11.7	8.31	8.61	9.02
	PCB 156	9.29	9.19	9.71	8.88	9.14	9.14
	PCB 194	15.1	15	15.5	10.6	10.9	11
39	PCB 138/163	121	139	136	101		
	PCB 164	4.03	4.3	4.26	3.02		
	PCB 182	0.415	0.392	0.459	0.17		
	PCB 187	48.2	46.1	51.2	33.6		
	PCB 159	<0.32	<0.38	<0.42	0.387		
	PCB 170	24	23.3	23.9	18.6		
	PCB 190	6.02	6.1	5.92	4.01		
41	b-BHC	0.28	0.26	0.36	0.18	0.18	
	Chlorpyrifos	0.36	0.25	0.26	70.1	68.2	
	Endosulfan Sulfate	26.5	20.4	22	12.2	11.7	
	PCB 31	1.27	1.04	1.48	22	21	
	PCB 49	3.88	3.4	4.18	93.6	89.5	
	PCB 99	Other3	Other3	Other3	Other3	Other3	
	PCB 77	Other5	Other5	Other5	Other5	Other5	
	PCB 110	Other5	Other5	Other5	Other5	Other5	
	PCB 151	57	49.3	54.1	14.9	14.9	
	PCB 149	29.7	25.5	27.8	43.9	43.8	
	PCB 126	21.8	17.6	17.9	15.8	15.7	
	PCB 183	38.1	31.7	35	14.2	14.2	
	PCB 156	14.6	12.3	13.2	13.9	14.3	
	PCB 169	1.83	1.5	1.62	6.78	7.59	
	PCB 194	15.9	13.7	14.8	14.8	14.6	

Other5 : Since PCB 77and PCB 110 coelute from our column and the response of each congener vary from each other, the relative ratios of the two congeners can not be determined. We do not report the concentrations of either PCB 77 or PCB 110.

Lab	Additional notes for Fish Homogenate IV						
7	PESTICIDE ANALYSES	FISH IV	FISH IV	FISH IV	CRM Carp-1	CRM Carp-1	CRM Carp-1
		Batch A	Batch B	Batch C	Batch A	Batch B	Batch C
		Sample 1	Sample 2	Sample 3	Sample 1	Sample 2	Sample 3
	Extraction Date	9/9/99	26-Oct-99	10-Nov-99	9/9/99	26-Oct-99	10-Nov-99
	PCB CONGENER ANALYSES	FISH IV	FISH IV	FISH IV	CRM Carp-1	CRM Carp-1	CRM Carp-1
		Batch A	Batch B	Batch C	Batch A	Batch B	Batch C
		Sample 1	Sample 2	Sample 3	Sample 1	Sample 2	Sample 3
	Extraction Date	9/9/99	26-Oct-99	10-Nov-99	9/9/99	26-Oct-99	10-Nov-99
	Congeners 90, 95, 163, 164, 182, 190 are not analyzed (Not present in standard)						
8	(*) Because we have received CARP-1 a few days before sending results, it was impossible to analyze this CRM.-						
	(**) Not analyzed in fish homogenate because of interferences.-						
11	* See note.....No data were corrected for percent moisture.						
	Other ^ Fish IV, Batch B, sample 2 — the sample was ruined during prep. No data for this sample were reported.						
	Other ^^ CRM Carp-1 Batch B, sample 2 --- the sample was ruined during prep. No data for this sample were reported.						
13	Following Reported as Coeluting						
	Congener 8 reported as	Congeners 8+5					
	Congener 28 reported as	Congeners 28+31					
	Congeners 101/90 reported as	Congener 101 (based on Mullins '610' Method where mass of 90 is not supplied)					
	Congener 153 reported as	Congeners 132+105+153					
	Congeners138/163/164 reported as	Congeners 138+163					
	Congener 195 reported as	Congeners 195+208					
	ppDDE...suspect that there is interference therefore not reported						
15	Detection limits reported are based on a 7-point MDL study -- the concentrations reported are directly from the study -- not sample specific for these samples.						
	(not adjusted for sample size or dilution factors)						
	Two aliquots of the CRM were only quantified for the PCB congeners, therefore the pesticides are reported as NA.						
19	FSH-4 was extracted once. The two other portions were lost. Results for PCB153,138 and 180 exceeded the calibration range and reported as estimated.						
	Carp-1 was extracted once. Results for PCB 52,101,118,153 and 138 exceeded the calibration range and reported as estimated.						
20	CRM 1974a was used in place of CRM Carp-1. The results for CRM 1974a are reported in ng/g dry weight.						
22	TEO reported as % lipids.						
24	PCB 8 includes PCB 5 coelution (PCB8/5) PCB 18 includes PCB 17 coelution (PCB18/17)						
	PCB 95 includes PCB 80 coelution (PCB95/80) PCB153 includes PCB132 coelution (PCB153/132)						
	PCB 138 includes PCB 160 coelution (PCB138/160)						
	endosulfan I coelutes with 2,4'-DDE						
27	FOLLOWING PCB's WERE COELUTED						
	PCB 18-30; PCB 20-28; PCB 44-47-65; PCB 95-98; PCB 90-101-113; PCB 153-168; PCB 138-163-129; PCB 128-166; PCB 193-180.						
	PCB 187,182,159 were separated, values were reported for PCB 187; PCB 170,190 wrer separated, values were reported combined.						
28	Attachment A: Internal Standards for Pesticides						
	13C4-Aldrin						
	13C6-alpha-BHC						
	13C6-beta-BHC						
	13C6-delta-BHC						
	13C6-gamma-BHC (Lindane)						
	13C4-Dieldrin						
	13C12-4,4'-DDE						
	13C12-4,4'-DDT						
	13C4-Heptachlor						
	13C8-Mirex						
	Attachment B: Internal Standards for PCB Congeners						
	15 13C12-4,4'-Dichlorobiphenyl						
	31 13C12-2,4'5-Trichlorobiphenyl						
	37 13C12-3',4,4'-Trichlorobiphenyl						
	47 13C12-2,2'4,4'-Tetrachlorobiphenyl						
	95 13C12-2,2',3,5',6-Pentachlorobiphenyl						
	194 13C12-2,2',3,3',4,4',5,5'-Octachlorobiphenyl						
	206 13C12-2,2',3,3',4,4',5,5'6-Nonachlorobiphenyl						
	77 13C12-3,3',4,4'-Tetrachlorobiphenyl						
	105 13C12-2,3,3',4,4'-Pentachlorobiphenyl						
	118 13C12-2,3',4,4'5-Pentachlorobiphenyl						
	126 13C12-3,3',4,4'5-Pentachlorobiphenyl						
	156 13C12-2,3,3',4,4'5,-Hexachlorobiphenyl						
	157 13C12-2,3,3',4,4',5'-Hexachlorobiphenyl						
	169 13C12-3,3',4,4'5,5'-Hexachlorobiphenyl						
	180 13C12-2,2',3,4,4'5,5'-Heptachlorobiphenyl						
	189 13C12-2,3,3',4,4',5,5'-Heptachlorobiphenyl						
	209 13C12-Decachlorobiphenyl						

28 cont.	Attachment C: Standards added after extraction/cleanup and JUST PRIOR to Pesticide chromatographic analysis: d8-acenaphthylene d12-perylene d14-p-terphenyl d12-benzo(e)pyrene Attachment D: Standards added after extraction/cleanup and JUST PRIOR to PCB chromatographic analysis: 52 13C12-2,2',5,5'-Tetrachlorobiphenyl 101 13C12-2,2',4,5,5'-Pentachlorobiphenyl 138 13C12-2,2',3,4,4',5'-Hexachlorobiphenyl 178 13C12-2,2',3,3',5,5',6-Heptachlorobiphenyl
32	Dry weight determination: FSH4 28.5% dry weight; CARP-1 13.3% dry weight. Lipid percent determination: FSH4 10.1% lipid; CARP-1 5.1% lipid.
33	<= denoted detected but at a concentration less than the reported MDL < not detected (reported as "less than the MDL") CARP-1 not analyzed (ampoule was broken inside foil pouch so no analysis was performed) SRM1974a analyzed instead of CARP-1 Sample#211 split into duplicate (~4 g each) samples; mean values reported
34	Coelutions not shown on Table List PCB 30*/18 PCB 28/20* PCB 95/100*/93*/102*/98* PCB 113*/90/101 PCB 153/168* PBC 138/163*/129/160* PCB 128/166* PCB 180/193* PCB 44/47/65* Congeners flagged with a "*" would not be expected to contribute significantly to value reported and are shown for completeness ONLY. Co-elutions on Table List that are not applicable to Data PCB 138/163/164 PCB 187/182/159 PCB 170/190
37	other: dieldrin: sulfuric acid treatment removes analyte. 2,4'-DDD: co-elutes with PCB154 and is not measured. 4,4'-DDD: big unknown interference overwhelms this analyte. PCB 18: unknown interference causes this analyte to be corrupted.
39	** Estimated values based on poor internal standard recoveries. A major portion of Sample 2 was lost via a GPC run failure. The early eluting pesticides and PCB had especially poor recoveries. List A Pesticide Internal Standards b-BHC 4,4'-DDD-2H8 4,4'-DDE-13C12 4,4'-DDT-13C12 a-Endosulfan hexachlorobenzene methoxychlor List B PCB Internal Standards C13 labelled PCB-3;15;28;77;105;114; 118;123;126;156/157;167;169;170;180; 189;194;206;209
40	** 28 coelutes with 31. ** 132 coelutes with 153. ** 208 coelutes with 195. *** TEO is reported as percent. The corresponding ng/g measurements would be ~6.2*10^7 and ~10.5*10^8ng/g.
41	We extracted and analyzed all three FISH IV and the two CARP-1samples in one batch. For the analyses of PCBs and pesticides, 1 microliter of sample was injected into GC-ECD. We used supplemental pesticide (SRM 2274) and PCB (SRM2275) mixtures obtained from NIST for our sample analyses. We also analyzed the pesticide, chlorpyrifos, obtained from Ultra Scientific, North Kingstown, RI. Other: We found that the following pairs of analytes coeluted from our DB-5 column: Other1 : PCB 8 and alpha-HCH; Other2 : endosulfan I and PCB 101; Other3 : alpha-chlordane and PCB 99 Other4 : oxychlordane replicate values for CARP-1 SRM were inconsistent (4.94 ng/g and 1.21 ng/g).
42	NIST SRM 1974a was used in place of CRM Carp-1

LAB 17	DUPLICATE ANALYSIS RESULTS						
		FISH IV Batch A Sample 1DUP	FISH IV Batch B Sample 2 DUP	FISH IV Batch C Sample 3 DUP	CRM Carp-1 Batch A Sample 1DUP	CRM Carp-1 Batch B Sample 2 DUP	CRM Carp-1 Batch C Sample 3 DUP
	Analyst (Initials)	KCC	KCC	KCC	KCC	KCC	KCC
	Date(s) of measurements	9/9/99	9/16/99	9/30/99	9/9/99	9/16/99	9/30/99
	Jar #	198	214	219			
		FISH IV Sample 1DUP (ng/g wet wt)	FISH IV Sample 2 DUP (ng/g wet wt)	FISH IV Sample 3 DUP (ng/g wet wt)	CRM Carp-1 Sample 1DUP (ng/g wet wt)	CRM Carp-1 Sample 2 DUP (ng/g wet wt)	CRM Carp-1 Sample 3 DUP (ng/g wet wt)
	alpha-HCH (a-BHC)	7.34	7.7	7.22	<0.18	<0.18	<0.18
	hexachlorobenzene	19.4	21.6	19.3	<0.22	<0.22	<0.22
	gamma-HCH (g-BHC,lin	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
	heptachlor	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
	aldrin	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26
	heptachlor epoxide	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14
	oxychlordane	NA	NA	NA	NA	NA	NA
	gamma-chlordane	10.6	10.6	13.9	25.3	60	31.3
	2,4'-DDE	17.9	16.3	20	OTHER	OTHER	3.02
	endosulfan I	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
	cis-chlordane (alpha-chl	36.8	33	33.8	24.3	6.65	9.35
	trans-nonachlor	73.7	84.9	95	10.7	12	15.3
	dieldrin	30.2	32.9	41.9	<0.56	<0.56	<0.56
	4,4'-DDE	271	237	337	149	106	136
	2,4'-DDD	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18
	endrin	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
	endosulfan II	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
	4,4'-DDD	12.9	12.4	10.2	73.2	64.6	82.2
	2,4'-DDT	<0.24	<0.24	<0.24	5.64	6.03	6.41
	cis-nonachlor	72.4	58.5	58.7	8.31	11.3	13.7
	4,4'-DDT	<0.35	<0.35	<0.35	OTHER	6.39	6.77
	mirex	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
	PCB 8	8.58	10.4	5.95	<0.49	<0.49	<0.49
	PCB 18	<0.58	<0.58	<0.58	32.4	31.7	25.1
	PCB 28	4.37	3.82	4.49	37.7	37	33.8
	PCB 52	12.7	9.52	10	123	127	138
	PCB 44	5.26	4.22	3.63	113	117	81.4
	*PCB 66/95	12.2	12.4	11.3	184	184	136
	PCB 101/90	52.4	46.8	38	128	108	130
	PCB 118	54.6	45.7	54.4	104	94.5	143
	PCB 153	111	107	136	60	63.5	110
	PCB 105	23.1	23.1	43.5	45.2	50.6	61.3
	PCB 138/163/164	97.6	114	109	91.7	87.7	89.5
	PCB 187/182	51.7	57.1	63.7	27.6	28.9	32.1
	PCB 128	34.7	35.6	33.4	20.4	20.7	23.4
	PCB 180	47.4	48.9	67.2	51	50.4	50.3
	PCB 170/190	<0.42	<0.42	<0.42	19.9	22.7	25.4
	PCB 195	5.4	7.83	11.7	3.77	1.86	3.29
	PCB 206	<0.50	<0.50	<0.50	5.45	10.4	11.3
	PCB 209	1.5	<0.70	<0.70	6.81	7 46	4.98
	*PCB 66	12.2	12.4	11.3	184	184	136
	*PCB 95	NA	NA	NA	NA	NA	NA
	Total extractable organic	9.97	10.6	9.46	5.69	5.17	5.52
	PCB 49	4.16	3.38	2.94	116	159	124
	PCB 37	<0.76	<0.76	<0.76	<0.76	<0.76	<0.76
	PCB 74	<0.57	<0.57	<0.57	101	104	75.4
	PCB 70	14.5	13.9	12.1	52.2	52.1	38.4
	PCB 99	<0.36	<0.36	<0.36	21	35.5	59.5
	PCB 119	<0.82	<0.82	<0.82	<0.82	<0.82	<0.82
	PCB 87	<0.91	<0.91	<0.91	78.5	77.3	60.6
	PCB 110	18.9	19.6	28.5	87.2	94.1	129
	PCB 81	<0.48	<0.48	<0.48	<0.48	<0.48	<0.48
	PCB 151	7.26	8.78	9.5	9.75	10	15.3
	PCB 77	<0.77	<0.77	<0.77	4.36	6.03	6.31
	PCB 149	24.7	26.6	27.2	37.7	39.7	54.2
	PCB 123	6.88	12.4	8.29	15.7	16.5	22.1
	PCB 114	<0.51	<0 51	<0.51	<0.51	2.98	10.6
	PCB 168	<1.50	<1 50	<1.50	<1.50	<1.50	<1.50
	PCB 158	4.22	5.46	8.46	8.64	9.15	8.15
	PCB 183	18.2	19.1	20.5	14.4	14.4	13.5
	PCB 126	<0.74	<0.74	<0.74	<0.74	<0 74	<0 74
	PCB 167	11 7	10.4	10.9	<0.58	<0.58	<0.58
	PCB 177	13	13.1	15	9 17	9.42	15.9
	PCB 200	12.7	15	23 4	<0 73	<0 73	<0.73
	PCB 156	<0.65	<0.65	<0.65	9.15	6.9	8.8
	PCB 157	5.84	5.3	8.53	<0.39	<0.39	<0.39
	PCB 201	14.3	17.7	18.2	11.1	14	15.1
	PCB 169	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66
	PCB 189	<0.47	<0.47	<0.47	0.784	<0.47	<0.47
	PCB 194	20.4	22.1	16.4	14.1	19.5	12.1

Appendix F: Laboratory Notes Accompanying Data, Sediment IX

Lab	Additional data (ng/g wet weight) submitted for Marine Sediment IX						
		Sediment I Sample 1	Sediment I Sample 2	Sediment I Sample 3	SRM 1941a Sample 1	SRM 1941a Sample 2	SRM 1941a Sample 3
1	PCB 31	2.01	2.26	2.17	5.3	4.82	4.81
	PCB 49	3.22	3.15	3.24	6.72	6.64	6.5
	PCB 99	1.73	1.77	1.8	4.58	4.57	4.79
	PCB 87	0.829	0.813	0.798	5.51	5.67	5.67
	PCB 110	3.03	3.13	3.2	8.97	8.88	9.3
	PCB 149	2.55	2.36	2.48	9.47	9.44	9.24
	PCB 151	0.188	0.179	0.18	1.68	1.6	1.65
	PCB 156	0.307	0.291	0.365	0.872	0.898	0.891
	PCB 183	0.436	0.409	0.44	1.99	2.09	1.89
3	PCB 16	1.28	1.95	1.77			
	PCB 33	1 49	2.53	2.15			
	PCB 47	1.31	1.84	1.71			
	PCB 71	0.861	1.19	1.17			
	PCB 31	2.14	2.45	2.52	3.12	2.6	3.07
	PCB 49	2.8	3.16	3.24	4.27	3.89	4.5
	PCB 99	2.43	2.58	3.75	3.48	2.84	4.62
	PCB 110	4.14	4.97	4.99	7.4	6.45	8
	PCB 149	3.28	3.8	3.75	6.61	5.74	7.53
9	chlorpyrifos	<0.100	<0.100	<0.100			
	endosulfan sulfate	<0.054	<0.054	<0.054			
17	PCB 49	5.01	4.39	4.06	9.25	8.67	9.92
	PCB 37	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
	PCB 74	3.04	2.87	2.58	4.8	4.48	5.13
	PCB 70	5.33	4.13	4.67	4.6	5.02	5.35
	PCB 99	2.73	2.56	2.42	4.46	4.67	4.38
	PCB 119	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14
	PCB 87	1.15	1.19	0.861	6.52	3.29	6.82
	PCB 110	4.88	5.13	4.75	9.2	9.85	9.32
	PCB 81	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
	PCB 151	1.61	1.2	1.42	2.65	2.7	2.77
	PCB 77	1.31	0.954	0.986	2.1	1.8	2.11
	PCB 149	6.83	8.82	6.96	9.81	9.29	9.32
	PCB 123	<0.19	<0.19	<0.19	<0.19	<0 19	<0.19
	PCB 114	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14
	PCB 168	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	PCB 158	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
	PCB 183	0.772	0.839	0.851	1.53	1.57	1.53
	PCB 126	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14
	PCB 167	1.34	1 56	2.06	<0.18	<0.18	<0.18
	PCB 177	1.1	1.21	1.18	2.16	1.67	1.93
	PCB 200	<0.07	<0.07	<0.07	<0.07	<0 07	<0.07
	PCB 156	<0.12	<0.12	<0.12	0.899	0.994	0.934
	PCB 157	<0.15	<0.15	<0.15	<0.15	<0.15	<0 15
	PCB 201	3.03	3.57	4.9	2 67	2.77	2.59
	PCB 169	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
	PCB 189	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11
	PCB 194	1.88	0.887	2.11	1.57	1.71	1.8
21	Chlorpyrifos	<2 95-6.32	3.5	<3.50	<0.643	<0.625	
	endosulfan sulfate	<2 95	<3.48	<3.50	<0.643	<0.625	
	Malathuon	<5.90	<7.66	<6.99	<1.25	<1.29	
	Diazinon	<5.90	<7.66	<6.99	<1.25	<1.29	
	Trifluralin	<2.95	<3.48	<3.50	<0.643	<0.625	
26	PCB 29	<1	<1	<1	1.07	1.11	1.18
	PCB 31	2.7	2.56	2.6	6.34	6.5	6.67
	PCB 49	2.51	2.52	2.57	7.37	8.1	7.53
	PCB 99	1.97	1.94	1.97	5.53	5.73	5.85
	PCB 87	<1	<1	<1	3.07	2.85	2.92
	PCB 154	<1	<1	<1	2.49	2.54	2.5
	PCB 110	3.72	3.76	3.76	11	11.3	11.3
	PCB 151	<1	<1	<1	3.33	3.26	3.11
	PCB 149	2.68	2.81	2.78	10.8	11	11.1
	PCB 183	<1	<1	<1	1.34	1.23	1.31
	PCB 201	<1	<1	<1	2.06	1.99	2.04
	PCB 156	<1	<1	<1	1.16	1.22	1.03
	PCB 194	<1	<1	<1	2.87	2.63	2.66
41	b-BHC	0.183	0.206	0.202	0.616	0.639	
	Chlorpyrifos	1.66	1.96	2.34	Other8	Other8	
	Endosulfan Sulfate	1.58	2.06	1.04	0.961	1.22	
	PCB 31	2.84	3.35	3.35	5.49	5.55	
	PCB 49	3.63	4.24	4.23	6 46	6.87	
	PCB 99	Other7	Other7	Other7	Other7	Other7	
	PCB 77	Other9	Other9	Other9	Other9	Other9	
	PCB 110	Other9	Other9	Other9	Other9	Other9	
	PCB 151	1.66	2.12	2.05	5 01	5.32	
	PCB 149	3.71	4.5	4 38	11.6	11.7	
	PCB 126	0.434	0.427	0.303	1.48	1.92	
	PCB 183	0.828	0.982	0.928	2 68	2.68	
	PCB 156	1.46	0.748	0.741	2 27	1.52	
	PCB 169	0.32	0.378	0.399	1.79	1.56	
	PCB 194	1	1.33	1.14	3.75	3.49	
	Other8 : replicate values for chlorpyrifos were inconsistent for SRM1941a (0.958, 4.40 ng/g)						
	Other9 : PCB 77 and PCB 110 coelute from our column. Since the responses of each congener vary from each other, the relative ratios of the two congeners in each sample can not be determined. We do not report the concentrations of either PCB 77 or PCB 110.						
	Since these two congeners coelute from our column, our value for the sum of the concentrations for both congeners in SRM1941a was higher than the certified value for PCB 110. Since certified values for PCB 77 were not available, we can not judge the significance of our numbers.						

Lab	Additional notes for Marine Sediment IX						
7	PAH ANALYSES	Sediment IX	Sediment IX	Sediment IX	SRM 1941a	SRM 1941a	SRM 1941a
		Batch A	Batch B	Batch C	Batch A	Batch B	Batch C
		Sample 1	Sample 2	Sample 3	Sample 1	Sample 2	Sample 3
	Extraction Date	9/14/99	16-Sep-99	9-Nov-99	9/14/99	16-Sep-99	9-Nov-99
	Triphenylene, benzofluoranthene[j], dibenz[a,c] are not analyzed (not present in standard)						
	PESTICIDE ANALYSES	Sediment IX	Sediment IX	Sediment IX	SRM 1941a	SRM 1941a	SRM 1941a
		Batch A	Batch B	Batch C	Batch A	Batch B	Batch C
		Sample 1	Sample 2	Sample 3	Sample 1	Sample 2	Sample 3
	Extraction Date	9/9/99	10/26/00	11/8/99	9/9/99	10/26/00	11/8/99
	Three sets of sediments were analyzed, the result of first analysis is not reported (suspected contamination during extraction).						
	PCB CONGENER ANALYSES	Sediment IX	Sediment IX	Sediment IX	SRM 1941a	SRM 1941a	SRM 1941a
		Batch A	Batch B	Batch C	Batch A	Batch B	Batch C
		Sample 1	Sample 2	Sample 3	Sample 1	Sample 2	Sample 3
	Extraction Date	9/9/99	10/26/00	11/8/99	9/9/99	10/26/00	11/8/99
	Congeners 95, 163, 164, 182, 159, 190 are not analyzed (Not present in standard)						
	Three sets of sediments were analyzed, the result of first analysis is not reported (suspected contamination during extraction).						
8	(*) DB-5 = 5% phenyl, 95% methyl silicone; DB-1= 100% methyl silicone						
	(**) Finally we could not report any results. Next time (If there is another time).						
	(***) Only comparisons with certified concentrations. Many other chlorinated compounds have been detected.-						
15	Detection limits reported are based on a 7-point MDL study -- the concentrations reported are directly from the study --						
	not sample specific for these samples (not adjusted for sample size or dilution factors)						
	PCB 170 in sediment sample 1 -- possibly elevated due to phthalate contamination.						
17	NOTE: For PAH analysis : triphenylene was not analyzed, dibenz[a,c]anthracene was not analyzed, results for 1-methylphenanthrene						
	were quantified as a total of C1-phenanthrene. OTHER = INTERFERENCE						
		SRM 1944a	SRM 1944a				
	SRM 1944 was used instead of	Batch A	Batch B				
	SRM 1941	Sample 1	Sample 2				
		NQC	NQC				
		1/10/00	1/10/00				
		(ng/g dry wt)	(ng/g dry wt)				
	Naphthalene	728	777				
	2-Methylnapthalene	367	382				
	1-Methylnapthalene	188	196				
	Biphenyl	103	109				
	2,6-Dimethylnaphthalene	322	323				
	Acenaphthylene	227	233				
	Acenaphthene	222	232				
	1,6,7-Trimethylnaphthalene	2361	2326				
	Fluorene	331	378				
	Dibenzothiophene	467	519				
	Phenanthrene	3109	3406				
	Anthracene	571	615				
	1-Methylphenanthrene	773	806				
	Fluoranthene	5235	5506				
	Pyrene	4799	6167				
	Benz[a]anthracene	2336	2847				
	Chrysene	2905	3570				
	Benzo[b]fluoranthene	1550	2008				
	Benzo[k]fluoranthene	508	759				
	Benzo[a]pyrene	954	1270				
	Benzo[e]pyrene	1157	1593				
	Perylene	348	467				
	Dibenz[a,h]anthracene	410	514				
	Indeno(1,2,3-c,d)pyrene	874	1110				
	Benzo[g,h,i]perylene	1325	1744				

18 We only had half the amount of sediment for the third aliquot

19 SED-9 was extracted once. The two other portions were lost.
1941a SRM was extracted once.

21 Spike Recovery Samples were extracted with the samples using a wet sand at 2.5% water
Spikes were carried out at two levels, one at the high level and duplicates at the low level

	0.2-0.4 PPM	0.01-0.02 PPM	
Trifluralin	106	170	
alpha-HCH (a-BHC)	73	110	
gamma-HCH (g-BHC,lindane)	93	150	
Diazinon	94	130	
Malathion	92	102.5	
Chlorpyrifos	84	87.5	
oxychlordane	59	77	
gamma-chlordane	75	79	
endosulfan I	78	89	
cis-chlordane (alpha-chlordane)	72	77.5	
trans-nonachlor	78	80.5	
4,4'-DDE	71	72	
2,4'-DDT	72	71.5	
endosulfan II	91	103.5	
4,4'-DDT	54	0	(peak at low level is very poor)
endosulfan sulfate	92	94.5	

The Percent Water calculated for the SRM was 4.14 which varied from the information in the certificate (2.21).
The 4.14 value was used to calculate the concentration data.

23 1,6,7-trimethylnaphthelene was analyzed as 2,3,5-trimethylnaphthelene

24 PCB 8 includes PCB 5 coelution (PCB8/5) PCB 18 includes PCB 17 coelution (PCB18/17)
PCB 95 includes PCB 80 coelution (PCB95/80) PCB 153 includes PCB 132 coelution (PCB153/132)
PCB 138 includes PCB 160 coelution (PCB138/160) PCB 195 includes PCB 208 coelution (PCB195/208)
endosulfan I coelutes with 2,4'-DDE on the DB-5 column No endosulfan I was detected on the DB-17 column
PCB 170 has an interferance with a phthalate (di 2-ethylhexyl phthalate) on the DB-5 column data are reported from DB-17
PCB 180 has an interferance on the DB-5 column data are reported from DB-17

25 General Comments
-due to time constraints, all samples were analyzed in the same batch
-although results are reported to 3 significant figures as requested, results from our methods are usually expressed to one decimal place at best
PAH Information
-benzo[ghi]perylene recoveries are not listed in some samples, as recoveries for benzo[ghi]perylene were too low in these instances
-further PAH listed as "other" had differing co-eluting compounds from those listed; these are summarized below:

	Sediment IX Sample 1 (ng/g dry wt)	Sediment IX Sample 2 (ng/g dry wt)	Sediment IX Sample 3 (ng/g dry wt)	SRM 1941a Sample 1 (ng/g dry wt)	SRM 1941a Sample 2 (ng/g dry wt)	SRM 1941a Sample 3 (ng/g dry wt)
dibenz[a,h]anthracene	97.4	83.9	91	125	126	117
1-methylphenanthrene/1-methylanthracen	99.3	103	90.9	176	181	164
benzo[b/a]fluoranthene	784	787	766	968	946	975
benzo[k]fluoranthene	233	233	228	368	359	312

Pesticide Information
-further pesticides listed as "other" had differing co-eluting compounds from those listed; these are summarized below:

	Sediment IX Sample 1 (ng/g dry wt)	Sediment IX Sample 2 (ng/g dry wt)	Sediment IX Sample 3 (ng/g dry wt)	SRM 1941a Sample 1 (ng/g dry wt)	SRM 1941a Sample 2 (ng/g dry wt)	SRM 1941a Sample 3 (ng/g dry wt)
2,4'-DDT & 4,4'-DDD	10.2	10.4	9.98	12.2	11.5	12.1

PCB Information
IUPAC#180 had a recovery nearly double that of the expected value for 1941a, possibly due to background interference
or an unknown co-eluting compound
-further congeners listed as "other" had differing co-eluting compounds from those listed; these are summarized below

	Sediment IX Sample 1 (ng/g dry wt)	Sediment IX Sample 2 (ng/g dry wt)	Sediment IX Sample 3 (ng/g dry wt)	SRM 1941a Sample 1 (ng/g dry wt)	SRM 1941a Sample 2 (ng/g dry wt)	SRM 1941a Sample 3 (ng/g dry wt)
IUPAC No. 8/5	1.94	2.15	1.86	5.7	11.4	6.99
IUPAC No. 28/31	2.17	2.37	2.24	16.3	11	18.7
IUPAC No. 66/80	5.43	5.01	5.24	11.9	12.6	13.7
IUPAC No. 95/121/88	3.44	3.4	3.26	8.61	9.55	9.9
IUPAC No. 101	4.26	4.22	4.3	11.9	13.2	13.1
IUPAC No. 118/106	4.97	4.49	4.34	10.4	10.7	10.6
IUPAC No. 105/127	1.52	1.24	1.19	2.92	3.96	3.38
IUPAC No. 153/132	5.74	5.88	5.84	17	18.3	19.6
IUPAC No. 138/160/163/158	6.8	6.19	6.25	20.2	21.7	23.2
IUPAC No. 159	0.676	0.697	0.546	2.21	1.68	2.54
IUPAC No. 187/182	2.61	2.51	2.63	8.38	9.11	9.64
IUPAC No. 180	4.17	4.01	3.93	12.7	12.9	12

27	PAH analyses: (1) There was insufficient sample sent to do a percent moisture evaluation for the sediment samples. (2) other = The sample analyses for 1-methylphanthanrene had a major problem. The scan intensity for this compound was maximized from the beginning of this scan time to the end of the scan time. There was either a major interference for 1-methylphanthanrene or the concentration in the sediment samples and the SRMs for 1-methylphanthanrene was to high to be measured by this method. This problem was not encountered in our extraction blank or laboratory control spike and duplicates analyzed with each extraction set. The control spike and duplicate had recoverise for this compound ranging from 54% to 108% over the three day extraction period with RPDs ranging from 4% to 14%. Therefore no concentration could be reported for 1-methylphanthanrene in these samples. PCB analysis following PCB congeners coeluted PCB 18-30; PCB 20-28; PCB 44-47-65; PCB 95-98; PCB 90-101-113; PCB 153-168; PCB 138-163-129; PCB 128-166; PCB 19 PCB 187,182,159 were separated, values were reported for PCB 187; PCB 170,190 were separated, values were reported for PCB 170
28	Attachment A: Internal Standards for PAHs d10-acenapthene d10-anthracene d12-benzo(a)anthracene d12-benzo(a)pyrene d12-benzo(b)fluoranthene d12-benzo(k)fluoranthene d12-benzo(g,h,i)perylene d12-chrysene d14-dibenzo(a,h)anthracene d10-fluoranthene d10-fluorene d12-indeno(1,2,3-cd)pyrene d8-naphthalene d10-phenanthrene d10-pyrene Attachment B: Internal Standards for Pesticides 13C4-Aldrin 13C6-alpha-BHC 13C6-beta-BHC 13C6-delta-BHC 13C6-gamma-BHC (Lindane) 13C4-Dieldrin 13C12-4,4'-DDE 13C12-4,4'-DDT 13C4-Heptachlor 13C8-Mirex Attachment C: Internal Standards for PCB Congeners 15 13C12-4,4'-Dichlorobiphenyl 31 13C12-2,4'5-Trichlorobiphenyl 37 13C12-3',4,4'-Trichlorobiphenyl 47 13C12-2,2'4,4'-Tetrachlorobiphenyl 95 13C12-2,2',3,5',6-Pentachlorobiphenyl 194 13C12-2,2',3,3',4,4',5,5'-Octachlorobiphenyl 206 13C12-2,2',3,3',4,4',5,5'6-Nonachlorobiphenyl 77 13C12-3,3',4,4'-Tetrachlorobiphenyl 105 13C12-2,3,3',4,4'-Pentachlorobiphenyl 118 13C12-2,3',4,4'5-Pentachlorobiphenyl 126 13C12-3,3',4,4'5-Pentachlorobiphenyl 156 13C12-2,3,3',4,4'5,-Hexachlorobiphenyl 157 13C12-2,3,3',4,4',5'-Hexachlorobiphenyl 169 13C12-3,3',4,4'5,5'-Hexachlorobiphenyl 180 13C12-2,2',3,4,4'5,5'-Heptachlorobiphenyl 189 13C12-2,3,3',4,4',5,5'-Heptachlorobiphenyl 209 13C12-Decachlorobiphenyl Attachment D: Standards added after extraction/cleanup and JUST PRIOR to Pesticide/PAH chromatographic analysis: d8-acenaphthylene d12-perylene d14-p-terphenyl d12-benzo(e)pyrene Attachment E: Standards added after extraction/cleanup and JUST PRIOR to PCB chromatographic analysis: 52 13C12-2,2',5,5'-Tetrachlorobiphenyl 101 13C12-2,2',4,5,5'-Pentachlorobiphenyl 138 13C12-2,2',3,4,4',5'-Hexachlorobiphenyl 178 13C12-2,2',3,3',5,5',6-Heptachlorobiphenyl

30	2,6-dimethylnaphthalene may be coeluting with another isomer of approximately equal concentration. Resolution and integration from chrysene/triphenylene onwards not as good because of problems with SPI injector. Cis-chlordane closely elutes with BZ 87; 4,4-DDT coelutes with BZ 159; 2,4-DDD coelutes with BZ 104. Aldrin, 2,4-DDD (some samples) - outside calibration range in QA sediments. <1= much less than 5 pg in the GC/ECD run. Possible coelution of BZ 90 with BZ 101 was not tested. BZ 153 coelutes with BZ 132. Neither BZ 159 nor BZ 182 coelutes with BZ 187. See page 3 for other details.
31	Coelutions not observed on the SPB-Octyl column 66/95 138/163/164 187/182/159 170/190 Coelutions observed on the SPB-Octyl column 18/30 28/20 44/47/65 90/101/113 153/168 138/163/129
32	o,p'-DDD could not be reported in the Sed9 material due to an analytical interference.
33	<= denotes detected but at a concentration less than the reported MDL < denotes not detected (reported as "less than the MDL") Sample #110 was split into two 5g aliquots - results reported are the mean values for the duplicate analyses
34	REPORTED SEPARATELY Coelutions not shown on table list: PCB 30*/18 PCB 28/20* PCB 95/100*/93*/102*/98* PCB 113*/90/101 PCB 153/168* PBC 138/163*/129/160* PCB 128/166* PCB 180/193* PCB 44/47/65* Congeners flagged with a "*" would not be expected to contribute significantly to value reported and are shown for completeness ONLY. Co-elutions on the Table List that are not applicable to Data PCB 138/163/164 PCB 187/182/159 PCB 170/190

SRM 1944	SRM 1944 Batch A	SRM 1944 Batch B	SRM 1944 Batch C
PCB CONGENER ANALYSES	Sample 1	Sample 2	Sample 3
Analyst (Initials)	SC	TI	MD
Date(s) of measurements (m/d/y)	1/16/200	1/16/00	1/26/00
Sample Jar number			
	SRM 1944 Sample 1	SRM 1944 Sample 2	SRM 1944 Sample 3
	(ng/g dry w	(ng/g dry w	(ng/g dry wt)
PCB 8	24	21.7	21.1
PCB 18	41.5	42.7	40
PCB 44	55.3	62.4	59.2
PCB 187/182/159	24.3	25.6	27.5
PCB 180	40.9	11	47.4

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PCB INFORMATION

SAMPLE	Sediment I Batch A	Sediment I Batch B	Sediment I Batch C	SRM 1941 Batch A	SRM 1941 Batch B	SRM 1941a Batch C
EXTRACTION DATE	1/10/00	1/31/00	1/31/00	1/10/00	1/27/00	1/27/00

NIST SRM 2262 used as source for native PCB compounds for calibration
66 is completely resolved from 95 on this column

PESTICIDE INFORMATION

SAMPLE	Sediment I Batch A	Sediment I Batch B	Sediment I Batch C	SRM 1941 Batch A	SRM 1941 Batch B	SRM 1941a Batch C
EXTRACTION DATE	1/10/00	1/31/00	1/31/00	1/10/00	1/27/00	1/27/00

NIST SRM 2261 used as source for native Pesticide compounds for calibration as well as 7 other individual pesticides from single solutions
Labelled Pesticides were used as internal standards for the following compounds :
A-HCH,G-HCH, Heptachlor, G-Chlordane, Aldrin, Endosulfan -I, Ensosulfan-II, Dieldrin,4,4'-DDE, 4,4'-DDT, Mirex and Heptachlor Epoxide
Endosulfan-II was completely lost during the cleanup and hence was not measured
We observed very poor sensitivity and/or breakdown of Endrin and hence it was not measured.
Conversely we had excellent sensitivity for cis-nonachlor and obtained correct ion ratios at the low levels observed in the unknown sediment
On the GC column used, oxychlordane elutes as a completely resolved peak just ahead of Heptachlor epoxide.
We could easily see our lowest standard (1.26). We did not observe any peaks for this compound in the SRM.
(Aside we observe it in one of the tissue samples). Either it is truly not there or is not extracted. The correct approach to solving this problem would be to spike the SRM with labelled oxychlordane.
CIL is now selling labelled oxychlordane, and we hope to carry out this experiment in the near future

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dieldrin:	sulfuric acid treatment removes analyte.
2,4-DDD:	co-elutes with BZ154 an is not measured.
PCB 44:	unknown interference with peak.
PCB 170/190:	unknown interference with peak, probably diethylhexylphthlate.

39

** Peak observed, m/z ion ratio outside +/- 15% of theoretical

PCB 138/163	6.24	5.78	6.13	11.9
PCB 164	0.447	0.425	0.441	0.833
PCB 182	<0.02	<0.02	<0.02	0.032
PCB 187	2.93	2.87	2.61	5.79
PCB 159	0.064	0.06	0.046	0.115
PCB 170	1.9	1.97	1.83	3.68
PCB 180	0.371	0.4	0.351	0.754

List A
PAH Internal Standards
naphthalene
2-methylnaphthalene
acenaphthalene
phenanthrene
fluoranthene
benz(a)anthracene
chrysene
benzo(b)fluoranthene
benzo(k)fluoranthene
benzo(a)pyrene
perylene
indeno (1,2,3-c,d)pyrene
dibenzo(a,h)anthracene
benzo(g,h,i)perylene
2,6-dimethylnaphthalene

39 cont	List B Pesticide Internal Standards b-BHC 4,4'-DDD-2H8 4,4'-DDE-13C12 4,4'-DDT-13C12 a-Endosulfan hexachlorobenzene methoxychlor List C PCB Internal Standards C13 labelled PCB-3;15;28;77;105;114; 118;123;126;156/157;167;169;170;180; 189;194;206;209
40	** 8 and 5 reported as sum of both. ** 28 and 31 reported as sum of both. ** 101 reported alone, w/o 90. ** 153 reported as sum of 132 and 153. ** 164 not included w/ 163 and 138. ** 159 not included w/187 and 182. ** 195 reported as sum of 195 and 208. Note: A PCB 610 standard was used to quantify PCBs in the samples. Concentrations of some of the congeners were adjusted using a separate standard made from individual congeners. The adjusted congeners include 101, 118, 153/132, and 105.
41	We extracted and analyzed all three Sediment IX and the two SRM 1941a samples in one batch. For the analysis of the pesticides and PCBs, 1 microliter of extract was injected into GC-ECD, while 2 microliters were injected into GC-MSD. Other1 : low recoveries of these analytes were obtained for Sediment SRM1941a (naphthalene 215 ng/g, biphenyl 45 ng/g) Other2 : the value of 39.9 ng/g appears to be an outlier in the Grubbs outlier test Other3 : replicate values varied considerably for these compounds : benzo(e)pyrene 326,140, 210 ng/g; dibenz(a,h)anthracene 190, 219, 384 ng/g) We found that the following pairs of analytes coeluted from our DB-5 column: Other4 : PCB 8 and alpha-HCH; other6 endosulfan I and PCB 101; other7 alpha-chlordane and PCB 99 Other5 : our values were higher than certified values for SRM 1941a : 2,4'-DDE (3.33, 3.27 ng/g) and PCB 180 (8.01, 12.72 ng/g) replicate values for Sediment IX were : 2,4'-DDE (1.68, 2.01, 1.98 ng/g) and PCB 180 (3.59, 4.32, 4.25 ng/g) Since our values for these analytes in SRM1941a were consistantly higher than the consensus values, we believe our concentration values for Sediment IX will also be high..
42	GC-MS ion interfences in: 1,6,7 trimethylnaphthalene, acenaphthylene and acenaphthene.

Appendix G: Laboratory Methods Used, Fish Homogenate IV

Lab #	Reported	g extracted QA99FSH4	g extracted Carp-1	g extracted SRM 1974a	TEO Determination	Extraction Method	Extraction Solvent	Extraction Time	Extraction other
1	3/2/00	1.5 wet	8.5 wet		Gravimetric difference	Soxhlet	dichloromethane	16 h	
2	8/19/99	2.9 dry	Not Used		Not Analyzed	Soxhlet	dichloromethane:acetone(3:1)	16 h	
3	11/24/99	9 wet	2 wet		Not Analyzed	sonication	dichloromethane:acetone(1:1)	3x each 2 min	
6	1/20/00	9.2 wet	9 wet		Gravimetric difference	tumbler	dichloromethane	3x: 16 h, 6 h, 16 h	rotated @40 rpm;fresh solvent
7	1/20/00	10 wet	5 wet		Not Analyzed	Soxhlet	dichloromethane:acetone(2:1)	18 h - 20 h	acetonitrile for PCBs and pest.
8	1/21/00	10 wet	Not Used		Not Described	Soxhlet	dichloromethane:hexane(1:1)	12 h - 14 h	
9	1/21/00	3 dry	Not Used		Not Analyzed	Soxhlet	dichloromethane:acetone(1:1)	24 h	
11	1/28/00	10 wet	9 wet		Not Analyzed	Soxhlet	dichloromethane	min 12 h	
12	1/28/00	10 wet	9 wet		Not Analyzed	Soxhlet	dichloromethane	18 h	
13	1/30/00	1 wet	1.5 wet		Not Described	Soxhlet	dichloromethane	24 h	
14	1/31/00	5 wet	4 wet		Not Analyzed	Microwave	acetone:hexane(4:1)	15 min	
15	1/31/00	2 wet	2 wet		Gravimetric difference	tissumizer	dichloromethane	2x each 2 min	1 shake
16	1/31/00	4 wet	2 wet		Gravimetric difference	ASE	dichloromethane	13 min	2000 psi, 100 °C, 2 cycles
17	1/31/00	1 wet	1 wet		Gravimetric difference	Polytron	dichloromethane	10 min	
19	2/1/00	9 wet	9 wet		Not Analyzed	shake	dichloromethane	3x each 1 h	100 g sodium sulfate prior
20	2/1/00	5 wet		6 wet	Gravimetric difference	Polytron	dichloromethane	3x each 2 min	60 g sodium sulfate prior
22	2/1/00	9 wet	9 wet		Gravimetric difference	Soxhlet	dichloromethane	18 h	
23	2/1/00	9 wet	8 wet		Not Analyzed	ASE	dichloromethane	40 min	
24	2/2/00	5 wet	5 wet		Gravimetric difference	tissumizer	dichloromethane	3x each 3 min	
26	2/8/00	5 wet	5 wet		Gravimetric difference	ASE	dichloromethane	3 cycles each 5 min	2000 psi, 100 °C, 3 cycles
27	2/11/00	2 wet	Not Used		Not Analyzed	Soxhlet	dichloromethane	18 h	
28	2/11/00	9 wet	9 wet		Not Described	Soxhlet	dichloromethane/hexane	16 h	
29	2/15/00	2.5 wet	1.2 wet		Gravimetric difference	sonication+shaker	dichloromethane:hexane(1:1)	3x each 3 min + 4 h shake	
32	2/18/00	5 wet	5 wet		Not Analyzed	NOAA tech memo	dichloromethane		sodium sulfate added prior
33	2/18/00	8 wet		?	Not Analyzed	Soxhlet	dichloromethane	> 16 h	
34	2/22/00	10 wet	10 wet		Not Analyzed	Soxhlet	dichloromethane	16 h	
36	2/29/00	8 wet	8 wet		Not Described	sonication	dichloromethane	3x each 6 min	sodium sulfate; 50% duty cycle
37	3/2/00	8.7 wet	8.9 wet		Not Analyzed	shaker	acetonitrile:hexane(3:2)	1 h	repeat with hexane 2 x
39	3/7/00	8 wet	8 wet		Not Analyzed	Dean-Stark	toluene	16 h	
40	3/8/00	3 wet	3 wet		Gravimetric difference	Soxhlet	dichloromethane	24 h	sodium sulfate added prior
41	3/13/00	10 wet-dried	8 wet-dried		Not Analyzed	Soxhlet	dichloromethane	18 h	
42	3/14/00	2.5 wet		2.5 wet	Not Analyzed	ASE	dichloromethane	3 cycles each 5 min	sodium sulfate added prior

Lab #	Sample extract cleanup method	PCBs and Pesticides Separated?	Method of quantitation
1	SEC; maxi-silica SPE	no	IS
2	Florisil dry column; silica gel column; conc sulfuric acid for PCBs	yes	ES
3	acid	yes	IS
6	alumina-silica gel; GPC	no	IS
7	Florisil and copper	no	IS
8	silica over alumnina column both 5% deactivated with H20	no	IS
9	GPC and Florisil column	no	ES
11	GPC; sodium sulfate filtration column; alumina-silica column	yes	ES
12	GPC/aminopropylsilane solumn; sulfuric acid	yes	ES
13	GPC; Florisil	yes	IS
14	silica gel column	yes	IS
15	alumina (2% deactivated); HPLC/GPC	no	IS
16	silica/aluminacolumn; HPLC (Phenogel 100A)	no	IS
17	decanted through sodium sulfate and glasswool; Florisil column	no	IS
19	GPC	no	IS
20	GPC; 7% deactivated silica gel	yes	IS
22	silica gel and alumina; GPC	no	IS for PCB; ES for pest
23	GPC; Florisil	no	ES
24	Silica gel/alumina column; GPC by HPLC on Phenogel	no	IS
26	SEC; HPLC/aminopropylsilane	yes	IS
27	acid/base followed by silica gel	no	IS
28	PCBs method 1668 acid, silica gel, alumina; pesticides GPC method 3540A silia gel method 3630C	no	IS
29	alumina/silica gel; GPC-HPLC	no	IS
32	silica/alumina and HPLC-SEC	no	IS
33	18 g Florisil (1% H2O deactivated) - 3 fractions	yes	ES
34	pesticides-Florisil; PCBs 5X-3 Biobeads column, Florisil column	no	IS
36	20 g Florisil eluted with 30% dichloromethane in hexane	no	IS
37	Silica gel column; concentrated sulfuric acid	no	IS
39	PCB- GPC, acid, silica gel, florisil, 3% silica gel; pesticides-GPC, florisil	yes	IS (isotope dilution)
40	GPC	yes	IS
41	Florisil/silica/alumina; HPLC-2 Phenogel columns in series	no	IS
42	SEC; silica SPE	yes	IS

	PCBs			Calibration Curve		PESTICIDES			Calibration Curve	
Lab #	Instrument	Phase	Dimensions	# points	range	Instrument	Phase	Dimensions	# points	range
1	GC/MS	DB-XLB	60m x 0.25 mm, 0.25um fil	5	2 - 1000 ng/mL	GC/MS	DB-XLB	0m x 0.25 mm, 0.25um fil	5	2 - 1000 ng/mL
2	GC-ECD	DB-5	30m x 0.25 mm, 0.25um fil	4	40, 80, 120, & 160 pg	GC-ECD	DB-5	30m x 0.25 mm, 0.25um fil	4	40, 80, 120, & 160 pg
3	HP6890	RTX-5/RTX-35	60m x 0.25 mm, 0.25um fil	5	1 - 50 ng/mL	HP6890	RTX-5/RTX-35	60m x 0.25 mm, 0.25um fil	5	1 - 50 ng/mL
6	GC/MS SI	DB-5ms	30m x 0.32 mm, 0.25um fil	5	20 - 1000 ng/mL	NA	NA	NA	NA	NA
7	GC-ECD	DB-XLB	60m x 0.32 mm, 0.25um fil	6	10 - 100 ppb	GC-ECD	DB-5	0m x 0.32 mm, 0.25um fil	6	10 - 100 ppb
8	GC-ECD	DB-5	30m x 0.25 mm, 0.25um fil	4	6 - 200 ng/mL	GC-ECD	DB-5	30m x 0.25 mm, 0.25um fil	4	6 - 200 ng/mL
9	GC-ECD	50%phenyl	30m x 0.32 mm, 0.25um fil	5	1 - 50 ppb	GC-ECD	50%phenyl	30m x 0.32 mm, 0.25um fil	6	0.4 - 40 ppb
11	NA	NA	NA	NA	NA	HP/PE	RTX5/DB1701	30m x 0.25 mm, 0.25um fil	6	5 - 200 pg/uL
12	HP5890	DB-5/DB-1701	60m x 0.25 mm, 0.25um fil	4	5 -100 ppb	HP5890	DB-5/DB-1701	60m x 0.25 mm, 0.25um fil	4	5 -100 ppb
13	GC-ECD	DB-5	60m x 0.25 mm, 0.25um film			GC-ECD	DB-5	60m x 0.25 mm, 0.25um film		
14	GC-ECD	DB-5	30m x 0.25 mm, 0.25um fil	5	3.3 - 30 pg/uL	GC-ECD	DB-5	30m x 0.25 mm, 0.25um fil	5	3.3 - 30 pg/uL
15	HP6890	DB-5	60m x 0.25 mm, 0.25um fil	5	0.008 - 0.13 ng/uL	HP6890	DB-5	60m x 0.25 mm, 0.25um fil	5	0.008 - 0.13 ng/uL
16	GC-ECD	SP-5/DB-17	30m x 0.25 mm, 0.25um fil	5	5,20,40,80,200 ng/mL	GC-ECD	SP-5/DB-17	30m x 0.25 mm, 0.25um fil	5	5,20,40,80,200 ng/mL
17	GC-ECD	DB-XLB/DB-5	60m x 0.32 mm, 0.25um fil	5 +	1.0 - 250 ng/mL	GC-ECD	DB-XLB/DB-5	60m x 0.32 mm, 0.25um fil	5 +	1.0 - 250 ng/mL
19	GC/MS IT	5% phenyl	60m x 0.32 mm, 0.25um fil	3	5 - 250 ng/mL	GC/MS IT	5% phenyl	60m x 0.32 mm, 0.25um fil	3	5 - 250 ng/mL
20	GC-ECD	DB-5/DB-17	30m x 0.25 mm, 0.25um fil	4	5 - 100 ng/mL	GC-ECD	DB-5/DB-17	30m x 0.25 mm, 0.25um fil	4	5 - 100 ng/mL
22	GC-ECD	RTX-5	105m x 0.25 mm, 0.25um fi	6	5 - 400 ng/mL	GC-ECD	RTX-5	0m x 0.32mm, 0.50um fil	6	2-200 ng/mL
23	GC-ECD	DB-5/DB-17	60m x 0.25 mm, 0.25um fil	7	0.5 - 50 ppb	GC-ECD	DB-5/DB-17	60m x 0.25 mm, 0.25um fil	7	0.5 -100 ppb
24	GC-ECD	DB-5	30m x 0.25 mm, 0.25um fil	4	5 - 200	GC-ECD	DB-5	30m x 0.25 mm, 0.25um fil	4	5 - 200
26	GC-ECD	DB-5/DB-XLB	60m x 0.25 mm, 0.25um fil	5	0.001 - 0.4 ng/uL	GC-ECD	DB-5	60m x 0.25 mm, 0.25um fil	5	0.001 - 0.4 ng/uL
27	VG70S	SPB-octyl	60m x 0.32 mm, 0.25um fil	5	0.5 - 4000 ng/uL	NA	NA	NA	NA	NA
28	GC/MS	SPB-octyl	30m x 0.25 mm, 0.25um fil	5	10 ng - 1.5 ng/uL	GC/MS	XTI-5	30m x 0.32 mm, 0.5um fil	5	50 pg - 10 ng/uL
29	GC-ECD	RTX-5/DB-17	30m x 0.25 mm, 0.25um fil	5	5 - 200 ng/mL	GC-ECD	RTX-5/DB-17	30m x 0.25 mm, 0.25um fil	5	5 - 200 ng/mL
32	GC/MS	DB-5	60m x 0.25 mm, 0.25um fil	8	0.003 - 10 ng/uL	GC/MS	DB-5	60m x 0.25 mm, 0.25um fil	5 to 10	0.003 - 100 ng/uL
33	GC-ECD	DB-5	30m x 0.25 mm, 0.25um fil	6	2 - 100 pg	GC-ECD	DB-5	30m x 0.25 mm, 0.25um fil	6	2.1 - 107 pg
34	GC/HRMS	SPB-octyl	30m x 0.25 mm, 0.25um fil	5	.5,5-1000,2000 ng/m	GC/HRMS	DB-5	60m x 0.25 mm, 0.10um fil	5	10 - 2500 ng/mL
36	GC-ECD	RTX1701/RTX5	30m x 0.25 mm, 0.50um fil	6	2.5 - 180	GC-ECD	RTX1701/RTX50	30m x 0.25 mm, 0.50um fil	6	2.5 - 180
37	GC-ECD	DB-5	45m x 0.25 mm, 0.25um fil	3	8 - 100 pg	GC-ECD	DB-5	45m x 0.25 mm, 0.25um fil	3	8 - 100 pg
39	AutospecX	SPB-octyl	30m x 0.25 mm, 0.25um fil	5	0.5 - 1000 pg/uL	Ultima III	DB-5	60m x 0.25 mm, 0.25um fil	5	20 - 1000 pg/uL
40	GC-ECD	?	60m x 0.25 mm, 0.25um fil	1		GC/NCIMS	?	30m x ?	5	
41	GC/MS	DB-5	60m x 0.25 mm, 0.25um fil	1	100 ng/mL	GC/MS	DB-5	60m x 0.25 mm, 0.25um fil	1	100 ng/mL
42	GC-ECD	RTX5/RTX50	30m x 0.25 mm, 0.25um fil	1	50 ng	GC-ECD	DB1701p/RTX50	30m x 0.25 mm, 0.25um fil	1	50 ng

	PCBs						Pesticides					
Lab #	IS/surrogate added prior to extraction	Used?	added prior to analysis	Used?	corrected for recovery?	others?	IS/surrogate added prior to extraction	Used?	added prior to analysis	Used?	corrected for recovery?	others?
1	PCB 103 & PCB 198	x					4,4'-DDT-d8	x				
2							4,4'-dibromooctafluorobiphenyl					
3	tetra chloro-*m*-xylene	x					tetra chloro-m-xylene	x				
6	PCB 28 $^{13}C_{12}$, 4,4'-dibromooctafluorobihenyl	x										
7	TCMX, dibutyl chlorendate		4,4'-dibromooctafluorobiphenyl	x			TCMX, DBC		4,4'-dibromooctafluorobiphenyl	x		
8	DBOFB, PCB 103, PCB 198, OCN	x					DBOFB, PCB 103, PCB 198, OCN	x				
9	TCMX, DBC						TCMX, DBC					
11												
12												
13	PCB 14,65, & 166 as surrogates	x	PCB 30 & 204 as IS	x					PCB 30 & 204 as IS	x		
14	PCB 198	x					2,5-dichloro-m-terphenyl	x				
15	PCB Cl3(34), Cl3(103), Cl5(112)	x	PCB Cl3(29), Cl6(166)				PCB Cl3(34), Cl3(103), Cl5(112)	x	PCB Cl3(29), Cl6(166)			
16	DBOFB, PCB 103, PCB 198 as surrogates		TCMX	x	yes		DBOFB, PCB 103, PCB 198 as surrogates		TCMX	x	yes	
17	TCMX, PCB 65, PCB 191 as surrogates		PCB 30 and PCB 205	x			TCMX, PCB 65, PCB 191 as surrogates		PCB 30 and PCB 205	x		
19	PCB 14 as surrogate		d-12 chrysene as IS	x			alpha-BHC-d6 as surrogate		d12-chrysene as IS	x		
20	PCB 103 & PCB 198		DBOFB	x			g-chlordane		DBOFB	x		
22	hexabromobiphenyl		2,4-dibromobiphenyl	x								
23												
24	PCB 103, PCB 198, DBOFB	x	TCMX				PCB 103, PCB 198, DBOFB	x	TCMX			
26	PCB 103, PCB 198	x					4,4'-DDEd_4, 4,4'-DDT-d_8, 4,4'-DDD-d_8,endosulfan-d_4	x				
27	3L,15L,28L,77L,123L,118L,114L,105L,126L, 167L,157L,157L,169L,180L,170L,189L,194L,206L,209L	x	52L,101L,138L,178L			81L,111L - CLEANUP						
28	see Appendix E	x	see Appendix E				see Appendix E	x	see Appendix E			
29	DBOFB, PCB 103, PCB 198		TCMX	x	yes		DBOFB, PCB 103, PCB 198		TCMX	x	yes	
32	PCB 103	x	tetramethyl-o-xylene			TCMX -prior SEC	PCB 103	x	tetramethyl-o-xylene			TCMX -prior SEC
33					yes						yes	
34	13C-labelled PCB 15, 28, 77, 123, 118, 114, 105 126, 167, 156, 157, 169, 180, 170, 189 and 209	x	13C-labelled 52, 138 and 178 are used to quantify labelled surrogates ONLY.	noted		13C-labelled PCB 81 & 111 - prior cleanup	13C-labelled HCB, g-HCH, DDE, DDT, PCB 101 and d4-endosulphan I	x	13C-PCB 153 used to quantify hept. epoxide, dieldrin, endrin and d4-endosulphan I	noted		
36			2-bromo-2-nitrobenzene	x					2-bromo-2-nitrobenzene	x		
37	DBOFB, PCB 103, PCB 198	x	PCB 100 as ES				DBOFB, PCB 103, PCB 198	x	PCB 100 as ES			
39	see Appendix E	x	13C12-PCB 52,101, 138, 178	x		d10-anthracene, 13C-PCB 81, 111- prior cleanup	see Appendix E	x	13C12- PCB 52, 101, 178	x	selected	
40	PCB 14, 65, 166		PCB 30, 204	x			PCB 14, 65, 166		PCB 30, 204	x		
41	DBOFB, PCB 198		PCB 103	x		PCB 192 - prior cleanup	Ronnel		TCMX	x		1,2,3-TCB
42	PCB 103, 198	x	d-HCH				4,4'-DDT-d8, endosulfan-II-d4	x	d-HCH			

G-5

Appendix H: Laboratory Methods Used, Sediment IX

Lab #	Reported	g extracted QA99SED9	g extracted SRM 1941a	% water Determination	Extraction Method	Extraction Solvent	Extraction Time	Extraction other
1	3/2/00	19 wet	7 dry	freeze-drying	Soxhlet	dichloromethane	16 h	
2	8/19/99	20.36 wet	6.01 dry	freeze-drying	Soxhlet	dichloromethane:acetone(3:1)	16 h	extracted dry
3	11/9/99	6 wet	3 dry	104 C oven	sonication	dichloromethane:acetone(1:1)	3x each 2 min	
4	11/15/99	17 wet	10 dry	105 C oven	automated Soxhet	dichloromethane	15 min	
5	1/10/00	8 wet	6 dry	weighing	Soxhlet	hexane:acetone (1:1)	8 h	extracted dry
6	1/20/00	8.3 wet	5.3 dry	105 C oven	tumbler	dichloromethane	3x: 16 h, 6 h, 16 h	rotated @40 rpm;fresh solvent
7	1/20/00	7-10 wet	7-10 dry	103 C oven	Soxhlet	dichloromethane:acetone(2:1)	18 h - 20 h	acetonitrile for PCBs and pest.
8	1/21/00	10 wet	4 dry	105 - 110 C oven	Soxhlet	dichloromethane:hexane(1:1)	12 h - 14 h	
9	1/21/00	10 wet	Not Used	oven	Soxhlet	dichloromethane:acetone(1:1)	24 h	
10	1/24/00	15 wet	1 dry	oven	agitation	dichloromethane	32 h	3 increments; fresh solvent
11	1/28/00	18 wet	10 dry	dry balance	Soxhlet	dichloromethane	12 h	
12	1/28/00	19 wet	2 dry	100 C oven	Soxhlet	dichloromethane	18 h	
14	1/31/00	5 wet	2.51 dry	120 C oven	Microwave	acetone:hexane(1:1)	15 min	
15	1/31/00	9 wet	5 dry	105 C oven	shaker table	dichloromethane	3x - 12 h + 4 h + 1 h	
16	1/31/00	3 dry	2 dry	Not Analyzed	ASE	dichloromethane	13 min	2000 psi, 100 °C, 2 cycles
17	1/31/00	9 wet	10 dry	105 C oven	rollers	dichloromethane	36 h	
18	2/1/00	20 wet	10 dry	105 C oven	ASE	dichloromethane	20 min	2 cycles
19	2/1/00	17 wet	10 dry	Not Analyzed	shake	dichloromethane	3x each 1 h	100 g sodium sulfate prior
21	2/1/00	8 wet	8 dry	130 C oven	shake/sonic disruptor	dichloromethane:acetone(1:1)	2x shake each 10 min	5 min sonic disruptor
22	2/1/00	17 wet	10 dry	130 C oven	Soxhlet	dichloromethane	16 - 17 h	
23	2/1/00	5 wet	5 dry	70 C oven	ASE	dichloromethane	40 min	
24	2/2/00	12.5 wet	1 dry	oven	Soxhlet	dichloromethane	at least 8 h	extracted dry
25	2/3/00	14.5 wet	1 dry	air dry	Sonication w/ probe	dichloromethane	3x each 3 min	8 x the mass to volume solvent
26	2/8/00	3.2 wet	1.2 dry	90 C oven	ASE	dichloromethane	3 cycles each 5 min	2000 psi, 100 °C, 3 cycles
27	2/11/00	5 wet	5 as is	Not Analyzed	Soxhlet	dichloromethane	18 h	
28	2/11/00	10 wet	10 dry	dry to constant wt	Soxhlet	dichloromethane/hexane	16 h	
29	2/15/00	10 wet	5 dry	105 C oven	ultrasonication/shake	dichloromethane:acetone(1:1)	3x each 3 min + 4 h shake	
30	2/16/00	6 wet	4 dry	90 C oven 18-20 h	homogenization	methanol 1x; dichloromethane 3 x	15 min each time	
31	2/17/00	1.85 wet	1 dry	gravimetric	Soxhlet	dichloromethane	18 h	
32	2/18/00	7.5 wet	1.25 dry	120 C oven	NOAA tech memo	dichloromethane		sodium sulfate added prior
33	2/18/00	10 wet	5 dry	88 C oven	Soxhlet	dichloromethane	> 16 h	
34	2/22/00	4 to 6 wet	4 dry	gravimetric	Soxhlet	toluene:acetone(5:1)	16.5 h	
35	2/28/00	1.6 wet	1.5 dry	105 C oven	ASE	acetone:hexane(1:9)	2 cycles each 5 min	sodium sulfate and copper prior
36	2/29/00	16.5 wet	12 dry	100 C oven	sonication	dichloromethane	4x each 6 min	50% duty cycle
37	3/2/00	8.9 wet	2.2 dry	110-120 C oven	shaker	acetonitrile:hexane(3:2)	1 h	repeat with hexane 2 x
38	3/2/00	10 wet	1 dry	EPA 160.3	ASE	dichloromethane	5 min	2000 psi, 100 °C
39	3/7/00	8 wet	10 dry	105 C oven	Dean-Stark; PAH-Soxhlet	chlor-toluene;PAH-dichloromethane	16 h	
40	3/8/00	2 wet	1 dry	60 C oven	Soxhlet	dichloromethane	24 h	sodium sulfate added prior
41	3/13/00	10.8 wet	4.9 dry	freeze-drying	Soxhlet	dichloromethane	18 h	extracted dry
42	3/14/00	5 wet	2.5 dry	120 C oven	ASE	dichloromethane	3 cycles each 5 min	sodium sulfate added prior

Lab #	Sample extract cleanup method	PCBs and Pesticides Separated?	Method of quantitation
1	add activated copper; silica Maxi SPE column 2x with concentration in between	no	IS
2	silica gel column; activated copper; conc sulfuric acid for PCBs	yes	ES
3	acid and sulfur clean	yes	IS
4	GPC; extracted on 7/21/99, 7/22/99, and 7/23/99	only PAH data	IS
5	copper added during Soxhlet extraction; Florisil	only PCB data	IS
6	alumina-silica gel; GPC	no	IS
7	Florisil and copper for chlorinated; Florisil for PAHs	no	IS
8	silica over alumnina column both 5% deactivated with H20	no	IS for chlor; ES for PAH
9	GPC and Florisil column	no	ES for chlor; IS for PAH
10	silica gel and alumina; GPC/HPLC to further isolate aromatic fraction	only PAH data	IS
11	GPC	no	IS for PAH; ES for pest
12	GPC	only PAH data	IS
14	silica gel column	yes	IS
15	alumina (2% deactivated); HPLC/GPC, copper to extract	no	IS
16	silica/aluminacolumn; copper granules	no	IS
17	For PAH, add copper; for chlorinated, Florisil cartridge and addition of copper	no	IS
18	50% for PAH-silica gel column; 50% for chlorinated-Hg vortex then Florisil	no	ES for chlor; IS for PAH
19		no	IS
21	column of glass wool and MgSO4; copper; SPE-LC Alumina-N and ENVI-Carb in series	only pesticide data	IS
22	silica gel and alumina; GPC followed by silica gel for PAHs	no	IS for PCB&PAH; ES for pest
23	GPC & Florisil for pesticides; GPC and alumina/silica gel for PAHs	no	ES
24	Silica gel/alumina column; copper	no	IS
25	GPC (Envirobeads), activated copper pellets	no	IS
26	aminopropyl SPE; chlorinated - separate extracts - copper; GPC; HPLC-aminopropyl column	yes	IS
27	none for PAHs; silica gel for PCBs	no	IS
28	PCBs-acid, silica gel, alumin; PAHs & pesticides-silica gel Method 3630C, sulphur method 3660B	no	IS
29	alumina/silica gel; granulated copper	no	IS
30	asphaltene and sulfur removal; alumina/silica column-pentane, pentane+dichloromethane elution	no	IS
31	florisil; mercury	no	IS
32	silica/alumina and HPLC-SEC	no	IS
33	2 g silica gel (activated) - 3 fractions	yes	ES
34	PAHs- neutral silica; pesticides-Florisil; PCBs-Florisil, copper, alumina, acid/base silica	no	IS
35	Florisil solid phase glass extraction tube	no	IS
36	20 g Florisil eluted with 30% dichloromethane in hexane	no	IS
37	Copper; silica gel column; treat portion for PCB and pest analysis with concentrated sulfuric acid	no	IS
38	PAHs-alumina/activated copper; chlorinated-alumina/activated with exhange to hexane	no	IS
39	PAH- GPC, alumina; PCB- GPC, acid, silica gel, florisil, 3% silica gel; pesticides-GPC, florisil	yes	IS (isotope dilution)
40	PAH-alumina; PCBs and pesticides-Florisil; copper wool for all	yes	IS
41	Florisil/silica/alumina; copper; HPLC-2 Phenogel columns in series	no	IS
42	SEC; cyanopropyl SPE w/ hexane eluant	only PAH data	IS

	PAHs			Calibration Curve	
Lab #	Instrument	Phase	Dimensions	# points	range
1	GC/MS	DB-XLB	60m x 0.25 mm, 0.25um fil	5	20 - 3000 ng/mL
2	NA	NA	NA	NA	NA
3	NA	NA	NA	NA	NA
4	GC/MS	RTX-5	30m x 0.25 mm, 0.25um fil	6	10 - 5000 ng/mL
5	NA	NA	NA	NA	NA
6	GC/MS SIM	DB-5ms	30m x 0.32 mm, 0.25um fil	5	50 - 2000 ng/mL
7	GC/MS	DB-5	30m x 0.25 mm, 0.25um fil	5	2 - 30 ppm
8	GC-FID	DB-1	30m x 0.32 mm, 0.25um fil	2	4 - 40 ng/uL
9	GC/MS	5% diphenyl	30m x 0.25 mm, 0.25um fil	6	0.5 - 40 ppb
10	GC/MS	5% phenyl	25m x 0.2 mm, 0.33um fil	5	6-1800 ng/g
11	GC/MS	5% phenyl	25m x 0.2 mm, 0.33um fil	7	25 - 1000 ng/g
12	GC/MS	DB-5MS	30m x 0.25 mm, 0.25um fil	7	20 - 2000 ppb
14	GC/MS	DB-5	30m x 0.25 mm, 0.25um fil	5	0.5 - 20 pg/uL
15	GC/MS	DB-5	30m x 0.25 mm, 0.25um fil	8	0.01 - 10 ng/uL
16	GC/MS	DB-5MS	60m x 0.32 mm, 0.25um fil	5	20, 100, 250, 500, 1000 ng/mL
17	GC/MS	DB-XLB	30m x 0.25 mm, 0.25um fil	5	0.5 - 25 ug
18	GC/MS	DB-5	30m x 0.25 mm, 0.25um fil	9	0.01 - 2.4 ug/mL
19	NA	NA	NA	NA	NA
21	NA	NA	NA	NA	NA
22	GC/MS SIM	RTX-5MS	30m x 0.25 mm, 0.25um fil	8	0.02 - 10 ug/mL
23	ion trap	DB-5MS	60m x 0.25 mm, 0.25um fil	7	25 - 5000 ppb
24	GC/MS	DB-5MS	30m x 0.32 mm, 0.25um fil	5	2.5 - 100 ng/uL
25	5890/5971a	bond & crosslink	30m x 0.25 mm, 0.25um fil	7	10 - 250 ppb
26	6890/5973	DB-17	60m x 0.25 mm, 0.25um fil	6	0.005 - 1.5 ng/uL
27	HP 5972	5% phenyl	30m x 0.25 mm, 0.25um fil	5	0.5 - 1.0 ng/uL injected
28	GC/MS	XTI-5	30m x 0.32 mm, 0.5um fil	5	10 pg - 2 ng/uL
29	GC/MS SIM	DB-5	30m x 0.25 mm, 0.25um fil	5	25 - 2000 ng/mL
30	GC/MS	DB-5	30m x 0.25 mm, 0.25um fil	5	1 - 50 ng
31	NA	NA	NA	NA	NA
32	GC/MS	DB-5	60m x 0.25 mm, 0.25um fil	5	0.003 - 3.3 ng/uL
33	GC/MS	DB-XLB	30m x 0.25 mm, 0.25um fil	5	0.08 - 7 ng
34	GC/MS	DB-5	30m x 0.25 mm, 0.25um fil	5	50 - 5000 ng/mL
35	NA	NA	NA	NA	NA
36	GC/MS	DB-XLB	30m x 0.25 mm, 0.50um fil	6	1.9 - 60
37	GC/MS	DB-XLB	30m x 0.25 mm, 0.25um fil	4	1.0 - 20 ng
38	GC/MS	DB-5MS	30m x 0.32 mm, 0.25um fil	6	100 - 4000 ng/nL
39	HP 5972	HP-5MS	30m x 0.25 mm, 0.25um fil	5	50 - 5000 pg/uL
40	GC/MS	5% phenyl	30m x 0.2 mm, 0.33um film		
41	GC/MS	DB-5MS	60m x 0.25 mm, 0.25um fil	1	260 ng
42	GC-ITMS	RTX-5MS	30m x 0.25 mm, 0.25um fil	6	30 pg - 6.6 ng

	PCBs			Calibration Curve		PESTICIDES			Calibration Curve	
Lab #	Instrument	Phase	Dimensions	# points	range	Instrument	Phase	Dimensions	# points	range
1	GC/MS	DB-XLB	60m x 0.25 mm, 0.25um fil	5	2 - 1000 ng/mL	GC/MS	DB-XLB	0m x 0.25 mm, 0.25um fil	5	2 - 1000 ng/mL
2	GC-ECD	DB-5	30m x 0.25 mm, 0.25um fil	4	40, 80, 120, & 160 pg	GC-ECD	DB-5	30m x 0.25 mm, 0.25um fil	4	40, 80, 120, & 160 pg
3	HP6890	RTX-5/RTX-35	60m x 0.25 mm, 0.25um fil	5	1 - 50 ng/mL	HP6890	RTX-5/RTX-35	60m x 0.25 mm, 0.25um fil	5	2 - 30 ng/mL
4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5	Fisons8160	DB-5	30m x 0.25 mm, 0.25um fil	6	5-190 ng/mL	NA	NA	NA	NA	NA
6	GC/MS SI	DB-5ms	30m x 0.32 mm, 0.25um fil	5	20 - 1000 ng/mL	NA	NA	NA	NA	NA
7	GC-ECD	DB-XLB	60m x 0.32 mm, 0.25um fil	5	10 - 100 ppb	GC-ECD	DB-5	0m x 0.32 mm, 0.25um fil	5	10 - 100 ppb
8	GC-ECD	DB-5	30m x 0.25 mm, 0.25um fil	4	6 - 200 ng/mL	GC-ECD	DB-5	30m x 0.25 mm, 0.25um fil	4	6 - 200 ng/mL
9	GC-ECD	50%phenyl	30m x 0.32 mm, 0.25um fil	5	1 - 50 ppb	GC-ECD	50%phenyl	30m x 0.32 mm, 0.25um fil	6	0.4 - 40 ppb
10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11	NA	NA	NA	NA	NA	GC-ECD	RTX5/DB1701	30m x 0.25 mm, 0.25um fil	5	5 - 100 pg/uL
12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14	GC-ECD	DB-5	30m x 0.25 mm, 0.25um fil	5	3.3 - 30 pg/uL	GC-ECD	DB-5	30m x 0.25 mm, 0.25um fil	5	3.3 - 30 pg/uL
15	GC-ECD	DB-5	60m x 0.25 mm, 0.25um fil	5	0.008 - 0.13 ng/uL	GC-ECD	DB-5	60m x 0.25 mm, 0.25um fil	5	0.008 - 0.13 ng/uL
16	GC-ECD	SP-5/DB-17	30m x 0.25 mm, 0.25um fil	5	5,20,40,80,200 ng/mL	GC-ECD	SP-5/DB-17	30m x 0.25 mm, 0.25um fil	5	5,20,40,80,200 ng/mL
17	GC-ECD	DB-XLB/DB-5	60m x 0.32 mm, 0.25um fil	5 +	1.0 - 200 ng/mL	GC-ECD	DB-XLB/DB-5	60m x 0.32 mm, 0.25um fil	5 +	1.0 - 250 ng/mL
18	GC-ECD	DB-5	30m x 0.32 mm, 0.25um fil	7	2-200ng/mL	GC-ECD	DB-5	30m x 0.32 mm, 0.25um fil	6	2-100ng/mL
		RTX-35	30m x 0.32 mm, 0.5um film				RTX-35	30m x 0.32 mm, 0.5um film		
19	GC/MS IT	5% phenyl	60m x 0.32 mm, 0.25um fil	3	5 - 250 ng/mL	GC/MS IT	5% phenyl	60m x 0.32 mm, 0.25um fil	3	5 - 250 ng/mL
21	NA	NA	NA	NA	NA	GC/MS	DB-17MS	30m x 0.25 mm, 0.25um fil	5	0.005-0.5 ppm
22	GC-ECD	RTX-5	105m x 0.25 mm, 0.25um fi	6	5 - 400 ng/mL	GC-ECD	RTX-5	0m x 0.32mm, 0.50um fil	6	2-200 ng/mL
23	GC-ECD	DB-5/DB-17	60m x 0.25 mm, 0.25um fil	7	0.5 - 50 ppb	GC-ECD	DB-5/DB-17	60m x 0.25 mm, 0.25um fil	7	0.5 -100 ppb
24	GC-ECD	DB-5	30m x 0.25 mm, 0.25um fil	5	5 - 200 pg/uL	GC-ECD	DB-5	30m x 0.25 mm, 0.25um fil	5	5 - 200 pg/uL
25	5890/5971a	bond & crosslink	30m x 0.25 mm, 0.25um fil	8	5-85ppb	5890/5971	bond & crosslink	30m x 0.25 mm, 0.25um fil	6	5-80ppb
26	GC-ECD	DB-5/DB-XLB	60m x 0.25 mm, 0.25um fil	5	0.001 - 0.4 ng/uL	GC-ECD	DB-5	60m x 0.25 mm, 0.25um fil	5	0.001 - 0.4 ng/uL
27	VG70S	SPB-octyl	60m x 0.32 mm, 0.25um fil	5	0.5 - 4000 ng/uL	NA	NA	NA	NA	NA
28	GC/MS	SPB-octyl	30m x 0.25 mm, 0.25um fil	5	10 pg - 1.5 ng/uL	GC/MS	XTI-5	30m x 0.32 mm, 0.5um fil	5	50 pg - 10 ng/uL
29	GC-ECD	RTX-5/DB-17	30m x 0.25 mm, 0.25um fil	5	5 - 200 ng/mL	GC-ECD	RTX-5/DB-17	30m x 0.25 mm, 0.25um fil	5	5 - 200 ng/mL
30	GC-ECD	DB-5/DB-1701	30m x 0.25 mm, 0.25um fil	4	5-200 pg	GC-ECD	DB-5/DB-1701	30m x 0.25 mm, 0.25um fil	4	5-200 pg
31	GC/HRMS	SPB-octyl	30m x 0.25 mm, 0.25um fil	6	0.5-1000pg/uL	NA	NA	NA	NA	NA
32	GC-ECD	DB-5	60m x 0.25 mm, 0.25um fil	6	0.001 - 0.5 ng/uL	GC-ECD	DB-5	60m x 0.25 mm, 0.25um fil	6-Jan	0.001 - 0.5 ng/uL
33	GC-ECD	DB-5	30m x 0.25 mm, 0.25um fil	6	2 - 100 pg	GC-ECD	DB-5	30m x 0.25 mm, 0.25um fil	6	2.1 - 107 pg
34	GC/HRMS	SPB-octyl	30m x 0.25 mm, 0.25um fil	5	.5,5-1000,2000 ng/m	GC/HRMS	DB-5	60m x 0.25 mm, 0.10um fil	5	10 - 2500 ng/mL
35	GC/HRMS	HT-8	50m x 0.22 mm, 0.25um fil	4	2,20,80,120	GC/HRMS	HT-8	50m x 0.22 mm, 0.25um fil	4	2,20,80,120
36	GC-ECD	RTX1701/RTX5	15m x 0.25 mm, 0.50um fil	6	2.5 - 180	GC-ECD	RTX1701/RTX50	15m x 0.25 mm, 0.50um fil	6	2.5 - 180
37	GC-ECD	DB-5	45m x 0.25 mm, 0.25um fil	3	8 - 100 pg	GC-ECD	DB-5	45m x 0.25 mm, 0.25um fil	3	8 - 100 pg
38	GC-ECD	DB-5MS/DB-17	60m x 0.25 mm, 0.25um fil	5	5-200 ng/mL	GC-ECD	DB-5MS/DB-17	60m x 0.25 mm, 0.25um fil	5	5-200 ng/mL
39	AutospecX	SPB-octyl	30m x 0.25 mm, 0.25um fil	5	0.5 - 1000 pg/uL	Ultima III	DB-5	60m x 0.25 mm, 0.25um fil	5	20 - 1000 pg/uL
40	GC-ECD	5% phenyl	60m x 0.25 mm, 0.25um film			GC/MS	5% phenyl			
41	GC-ECD	DB-5	60m x 0.25 mm, 0.25um fil	1	100 ng	GC-ECD	DB-5	60m x 0.25 mm, 0.25um fil	1	100 ng
42	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Lab #	IS/surrogate added prior to extraction	Used?	PAHs added prior to analysis	Used?	corrected for recovery?	others?
1	naphthalene-d8, acenaphthene-d10, biphenyl-d10, phenanthrene-d10, fluoranthene-d10, pyrene-d10, b[a]a-d12, b[a]p-d12, perylene-d12,b[ghi]p-d12,	x				
2	NA	NA	NA	NA	NA	NA
3	NA	NA	NA	NA	NA	NA
4	Naphthalene-d8, Acenaphthene-d10, Phenanthrene-d10, Chrysene-d12	x	fluroene-d10, B[a]P-d12	x	yes 62-90%	
5	NA	NA	NA	NA	NA	NA
6	IS-naphthalene-13C6 & B[ghi]P-13C12; surrogate- fluoranthene-d10	x				
7	none		Phenantherene-D10, Chrysene-D12,Perylene-D12, Acenaphthene-D10, Naphthalene-D8, 1,2-Dichlorobenzene-D4	x		
8	Surrogates: 9,10 dihydroantracene (PAH), n-octadequene (Aliphatics)	x				
9				x		
10	deuterated naphthalene, acenaphthene, phenanthrene, chrysene, B[a]P, perylene	x	hexamethylbenzene		50-100%	
11	nitrobenzene-d5, 2-fluorobiphenyl, terphenyl-d14		1,4 dichlorobenzene-d4, naphthalene-d8, acenaphthene-d10, phenanthrene-d10, chrysene-d12, perylene-d12	x	no 40-100%	
12	biphenyl0d10, pyrene-d10, b[ghi]p-d12		naphthalene-d8, acenaphthene-d10, phenanthrene-d10, chrysene-d12, perylene-d12	x		
14	d10-phenanthrene, d12-b[a]a, d12-perylene	x				
15	naphthalene-d8, phenanthrene-d10, chrysene-d12	x	acenaphthene-d10, fluorene-d10, b[a]p-d12			
16	SU - Naphthalene-d8, Acenaphthene-d10, Phenanthrene-d10, Chrysene-d12, Perylene-d12.		IS - Fluorene-d10, Pyrene-d10, Benzo(a)pyrene-d12.	x	yes 71-118%	
17	nitrobenzene-d5, 2-fluorobiphenyl, p-terphenyl-d14		naphthalene-d8, acenaphthene-d10, phenanthrene-d10, chrysene-d12, perylene-d12	x	no 30-90%	
18	IS- Naphthalene-d8, 2-Methylnaphthalene-d10, 1-Methylnaphthalenee-d10, Biphenyl-d10, 2,6-Dimethylnaphthalene-d12, Acenaphthylene-d8, Acenaphthene-d10, Fluorene-d10, DBT-d8, Phenanthrene-d10, Anthracene-d10, Fluoranthene-d10, Pyrene-d10, B(a)A-d12,Chrysene-d12, B(b)&(k)F-d12 B(e),(a)P-d12,Perylene-d12, Indeno(123,cd)pyrene-d12,Dibenzo(ah)anthracene-d14 and B(ghi)P-d12	x	2,2'-difluorobiphenyl prior to injection			
19	NA	NA	NA	NA	NA	NA
21	NA	NA	NA	NA	NA	NA
22	fluorene-d10, fluoranthene-d10, terphenyl-d14		naphthalene-d8, acenaphthene-d10, phenanthrene-d10, chrysene-d12, perylene-d12	x	no 60-104%	
23						
24	naphthalene-d8, acenaphthene-d10, phenanthrene-d10, chrysene-d12, perylene-d12	x	fluorene-d10, B[a]P-d12		65.5-119	
25	d10-anthracene, d12-b[a]p-d12, d14-dibenz[a,h]anthracene, d12-b[a]a	x	d10-acenaphthene, d12-perylene, d10-phenanthrene, d12-chrysene	x	yes 80-91%	
26	naphthalene-de, biphenyl-d10, acenaphthene-d10, phenanthrene-d10, fluoranthene-d10, pyrene-d12, benz[a]anthracene-d12, benzo[a]pyrene-d12, perylene-d12, dibenenz[a,h]anthracene-d14, benzo[ghi]perylene-d12	x				
27	All Labeled Analog Standards as per Draft method(CARB429) : PAHs by isotope dilution using low resolution.	x	Acenaphthene-d10, Pyrene-d10 and Benzo(e)pyrene-d12(as per Draft methodPAHs by isotope dilution low res.			
28	see Appendix F	x	see Appendix F		25 - 135%	
29	d8-naphthalene, d10-phenanthrene, d10-acenaphthene, d12-b[a]p		d10-fluorene, d12-chrysene	x	yes 61-94%	
30	hexamethylbenzene, dodecyl benzene, terphenyl		deuterated acenaphthene, phenanthrene, chrysene & perylene	x	yes20-95%	
31	NA	NA	NA	NA	NA	NA
32	d8-naphthalene, d10-acenaphthene, d12-b[a]p	x	hexamethylbenzene			d10-phenanthrene prior to SEC
33	naphthalene-d8, acenaphthene-d10, phenanthrene-d10, chrysene-d12, perylene-d12				46 - 135%	
34	d8-naphthalene, d10-acenaphthene, d10-phenanthrene, d10-pyrene, d12-chrysene, d12-benzo[a]pyrene, d12-perylene	x	d10-fluoranthene & d12-benzo(b)fluoranthene used to quantify labelled surrogates ONLY.	noted	no 20-120%	d14-dibenz[a,h]anthracene, d12-benzo[g,h,i]perylene and d10-2-menaphthalene (prior to extraction)
35	NA	NA	NA	NA	NA	NA
36	p-terphenyl		EPA Method 8270 internal std	x	no 60-100%	
37	nap-d8, act-d10, ant-d10, bap-d12	x	o-terphenyl as ES			
38	d8-naphthalene	x	d10-fluorene	x	yes 50-150%	
39	see Appendix F	x	d10-acenaphthene, d10-pyrene, d10-benzo[e]pyrene	x		d10-anthracene prior to cleanup
40	d8-naphthalene, d10-fluorene, d10-fluoranthene, d12-perylene		d10-acenaphthene, d10-phenanthrene, d12-b[a]a, d12-b[a]p, d12-b[ghi]p	x	no 74-104%	
41	Naphthalene-d8 (NAd8), Acenaphthene-d10 (ACNd10), Benzo[a]pyrene-d12 (BaPd12), and Perylene-d12 (PEd12)		acenaphthylene-d18, phenanthrene-d10, b[e]p-d12	x	no	chrysene-d12 - prior cleanup
					NAd8 23 1(±3.58), ACNd10 40.98 (±5.48), BaPd12 150.29 (±67.81), PEd12 68.24 (±21.7)	
42	18 perdeuterated PAH (d8-naphthalene, d8-acenaphthylene, d10-acenaphthene, d10-fluorene, d10-phenanthrene, d10-anthracene, d10-fluoranthene, d10-pyrene, d12-B(a)A, d12-chrysene, d12-B(k)F, d12-benzo(e)pyrene, d12-benzo(a)pyrene,	x	p-terphenyl-d14			

Lab #	PCBs: IS/surrogate added prior to extraction	Used?	PCBs: added prior to analysis	Used?	PCBs: corrected for recovery?	PCBs: others?	Pesticides: IS/surrogate added prior to extraction	Used?	Pesticides: added prior to analysis	Used?	Pesticides: corrected for recovery?	Pesticides: others?
1	PCB 103 & PCB 198	x					4,4'-DDT-d8	x				
2					no 100+/-30%		4,4'-dibromooctafluorobiphenyl				no 100+/-30%	
3	tetra chloro-*m*-xylene as surrogate				40 - 60 %		tetra chloro-m-xylene as surrogate				40 - 60 %	
4												
5	PCB 30, PCB 204	x										
6	PCB 28 $^{13}C_{12}$, 4,4'-dibromooctafluorobihenyl	x										
7	TCMX, dibutyl chlorendate		4,4'-dibromooctafluorobiphenyl	x			TCMX, DBC		4,4'-dibromooctafluorobiphenyl	x		
8	DBOFB, PCB 103, PCB 198, OCN	x					DBOFB, PCB 103, PCB 198, OCN	x				
9												
10												
11												
12												
14	PCB 198	x					2,5-dichloro-m-terphenyl	x				
15	PCB Cl3(34), Cl3(103), Cl5(112)	x	PCB Cl3(29), Cl6(166)				PCB Cl3(34), Cl3(103), Cl5(112)	x	PCB Cl3(29), Cl6(166)			
16	DBOFB, PCB 103, PCB 198 as surrogates		TCMX	x	yes 79-105%		DBOFB, PCB 103, PCB 198 as surrogates		TCMX	x	yes 79-105%	
17	TCMX, PCB 65, PCB 191 as surrogates		PCB 30 and PCB 205	x	no 80-120%		TCMX, PCB 65, PCB 191 as surrogates		PCB 30 and PCB 205	x	no 80-120 %	
18	DBOFB; 2,2',4,4',5,5'-br6biphenyl	x					dibutylchlorendate; tetrachloro-m-xylene	x				
19	PCB 14 as surrogate		d-12 chrysene as IS	x			alpha-BHC-d6 as surrogate		d12-chrysene as IS	x		
21							diazinon-d10 as surrogate		antracene-d10 as IS	x	no 83 -127%	
22	hexabromobiphenyl		2,4-dibromobiphenyl	x	no 91 -133%							
23												
24	PCB 103, PCB 198, DBOFB	x	TCMX		78 8 - 89.7%		PCB 103, PCB 198, DBOFB	x	TCMX		78.8 - 89.7%	
25	13C-IUPAC#194,13C-IUPAC#153	x	13C-IUPAC#138	x	yes 69-86%		d4-DDE	x	d4-DDT	x	87-99%	
26	PCB 103, PCB 198	x					4,4'-DDEd_4, 4,4'-DDT-d_4, 4,4'-DDD-d_4,endosulfan-d_4	x				
27	3L,15L,28L,77L,123L,118L,114L,105L,126L, 167L,157L,157L,169L,180L,170L,189L,194L,206L,209L	x	52L,101L,138L,178L			81L,111L - CLEANUP						
28	see Appendix F	x	see Appendix F		43 - 115%		see Appendix F	x	see Appendix F		23 - 137%	
29	DBOFB, PCB 103, PCB 198		TCMX	x	yes 101-124%		DBOFB, PCB 103, PCB 198		TCMX	x	yes101-124%	
30	BZ 155		PCNB as IS; BZ209 for ret time	x	yes 60-106%		DBOFB		PCNB as IS; BZ209 for ret.time	x	yes 44-122%	
31	13C-Labeled - 3 (13C6),15,28,77,105,114,118, 123,126,156,157,167,169,170,180,189,194,206,209	x	13C-Labeled - 3(13C12),12, 8,37,52,101,138,178,202,208			13C-labeled 81,111-cleanup						
32	DBOFB	x	TCMX			TC-o-xylene prior SEC	DBOFB	x	TCMX			TC-o-xylene prior SEC
33	DBOFB				51 - 72%		DBOFB				51 - 72%	
34	13C-labelled PCB 15, 28, 77, 123, 118, 114, 105 126, 167, 156, 157, 169, 180, 170, 189 and 209	x	13C-labelled 52, 138 and 178 are used to quantify labelled surrogates ONLY.	noted	no 60-115%	13C-labelled PCB 81 & 111 - prior cleanup	13C-labelled HCB, g-HCH, DDE, DDT, PCB 101 and d4-endosulphan I	x	13C-PCB 153 used to quantify hept. epoxide, dieldrin, endrin and d4-endosulphan I	noted	no 20-120%	13C-labelled PCB 81 & 111 - prior cleanup
35	C-13labelled- 28,52,101,118,105, 153,138,128,180,170,209	x	PCB 100	x	yes 60%+; 209 33-42%		see Appendix F	x	PCB 100	x	yes 60% +; ES-II 0%	
36			1-bromo-2-nitrobenzene	x					1-bromo-2-nitrobenzene	x		
37	DBOFB, PCB 103, PCB 198	x	PCB 100 as ES				DBOFB, PCB 103, PCB 198	x	PCB 100 as ES			
38	PCB 103 & PCB 198	x	TCMX	x	yes 50-150%		none		TCMX	x	yes 50-150%	
39	see Appendix F	x	13C12-PCB 52,101, 138, 178	x		d10-anthracene, 13C-PCB 81, 111- prior cleanup	see Appendix F	x	13C12- PCB 52, 101, 178	x	selected	
40	PCB 14, 65, 166		PCB 30, 204	x	no 62-109%		PCB 14, 65, 166			x		
41	DBOFB, PCB 198		PCB 103	x	no	PCB 192 - prior cleanup	Ronnel		TCMX	x	no	1,2,3-TCB
					DOB 69.63 (±5.39), PCB 198 107.52 (±18.77)						ronnel 19 18 (±19 38)	
42												

Appendix I: Charts of Fish Homogenate IV and CARP-1 Results by Analyte

See Tables 2 and 3 and Appendix C for results reported as *<number*, DL, etc.
Charts for analytes with few reported numerical results are not included in this appendix.

For Fish Homogenate IV plots:

Solid line: exercise assigned value

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

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

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

For CARP-1 plots:

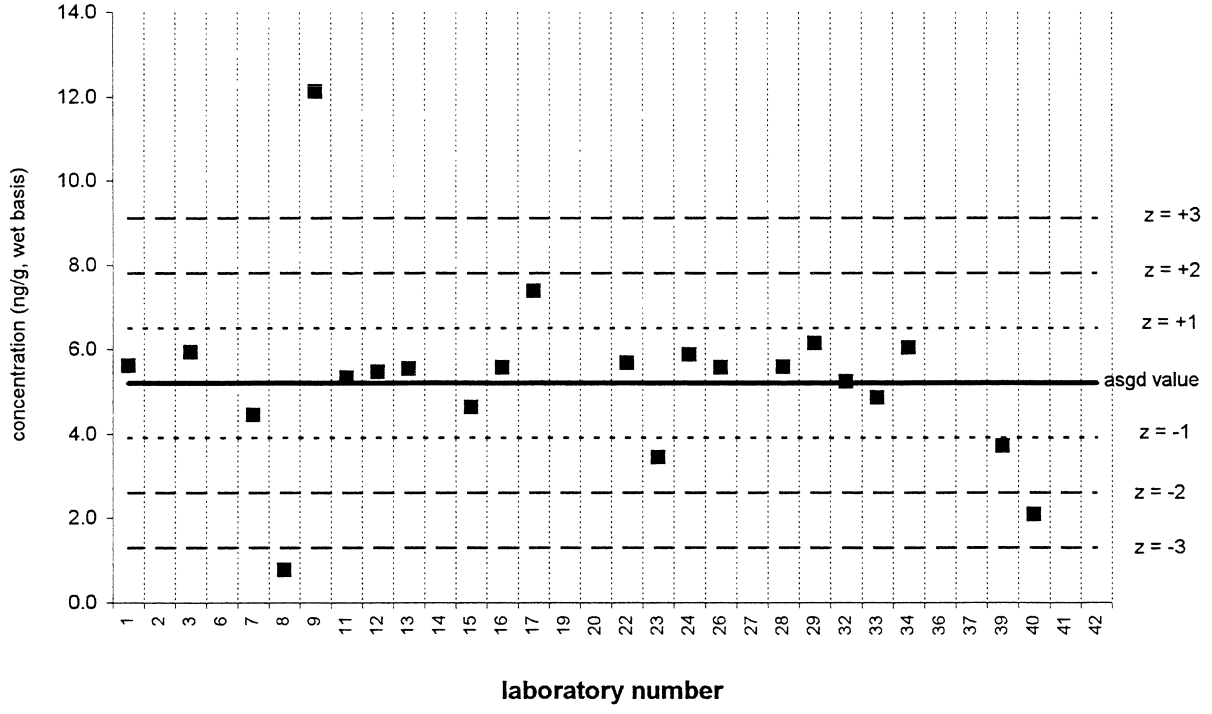
Solid line: material certified concentration or target value (see caption of each plot)

Dotted line: 95% confidence limits

Dashed line: 30% from 95% confidence limits

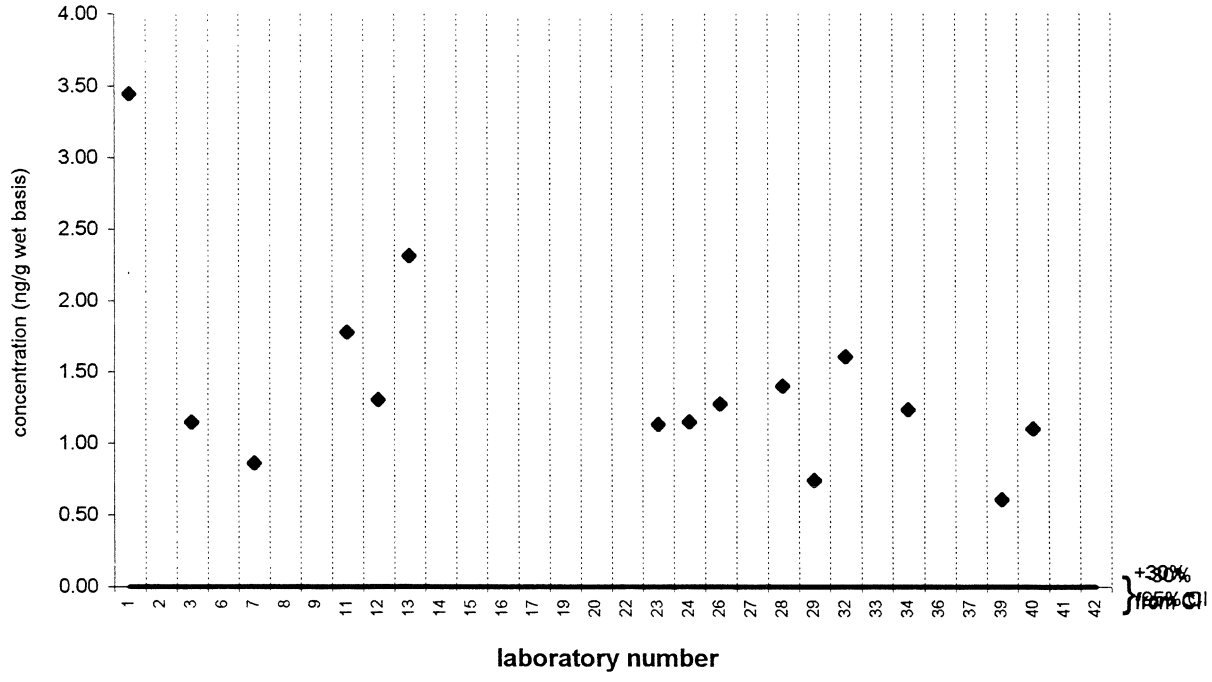
alpha-HCH **Fish Homogenate IV (QA99FSH4)**

Assigned value = 5.20 ng/g s = 1.13 ng/g 95% CL = 0.53 ng/g (wet basis)
Reported Results: 24 Quantitative Results: 22



alpha-HCH **CARP-1**

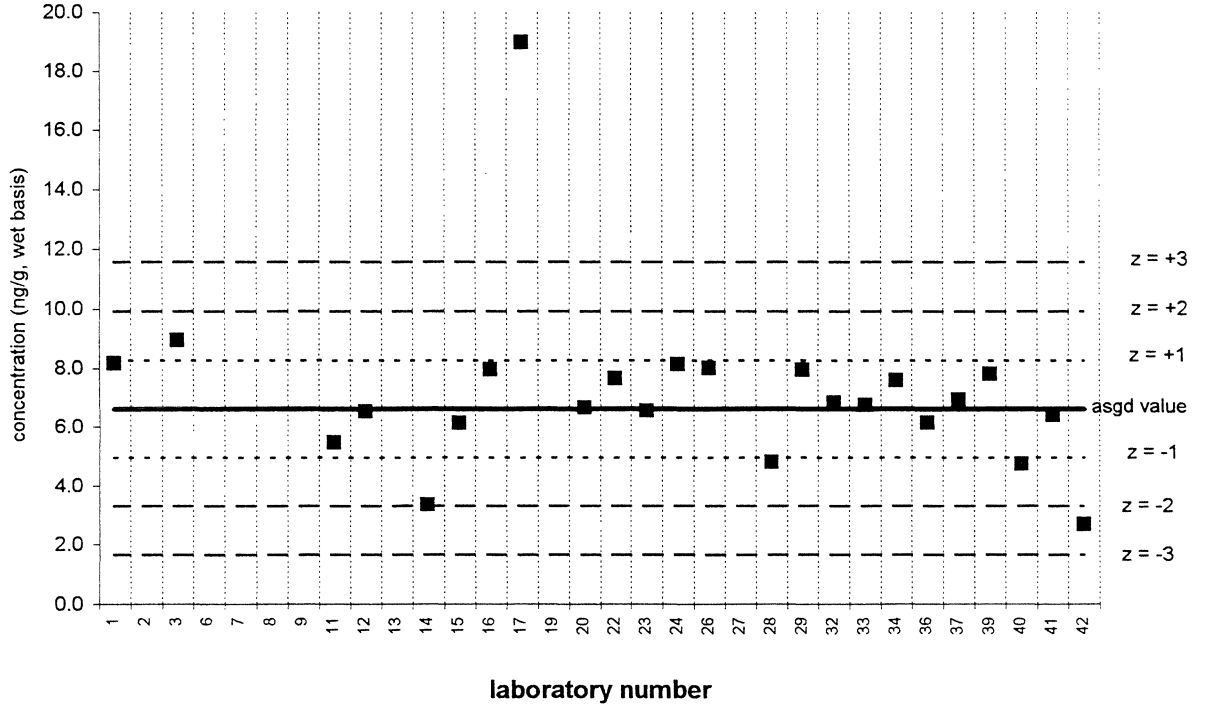
Target Value = <4 ng/g (wet basis)
Reported Results: 21 Quantitative Results: 15



hexachlorobenzene **Fish Homogenate IV (QA99FSH4)**

Assigned value = 6.62 ng/g s = 1.57 ng/g 95% CL = 0.68 ng/g (wet basis)

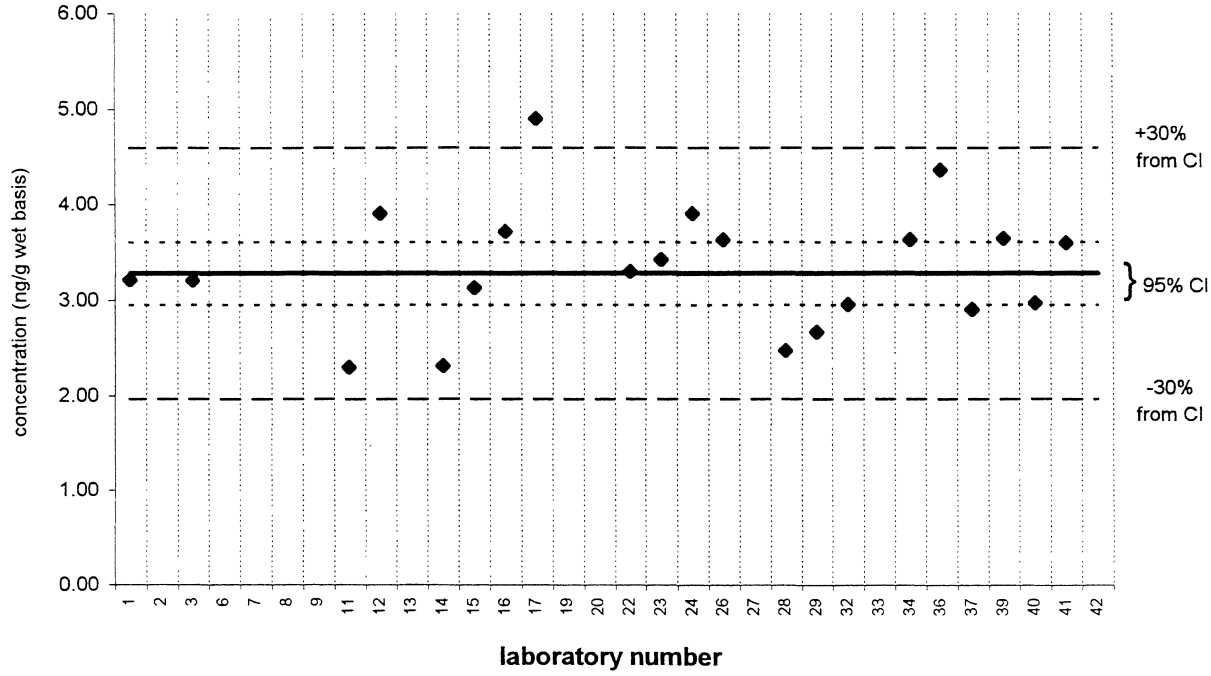
Reported Results: 25 Quantitative Results: 24



hexachlorobenzene **CARP-1**

Target Value = 3.28 ± 0.33 ng/g (wet basis)

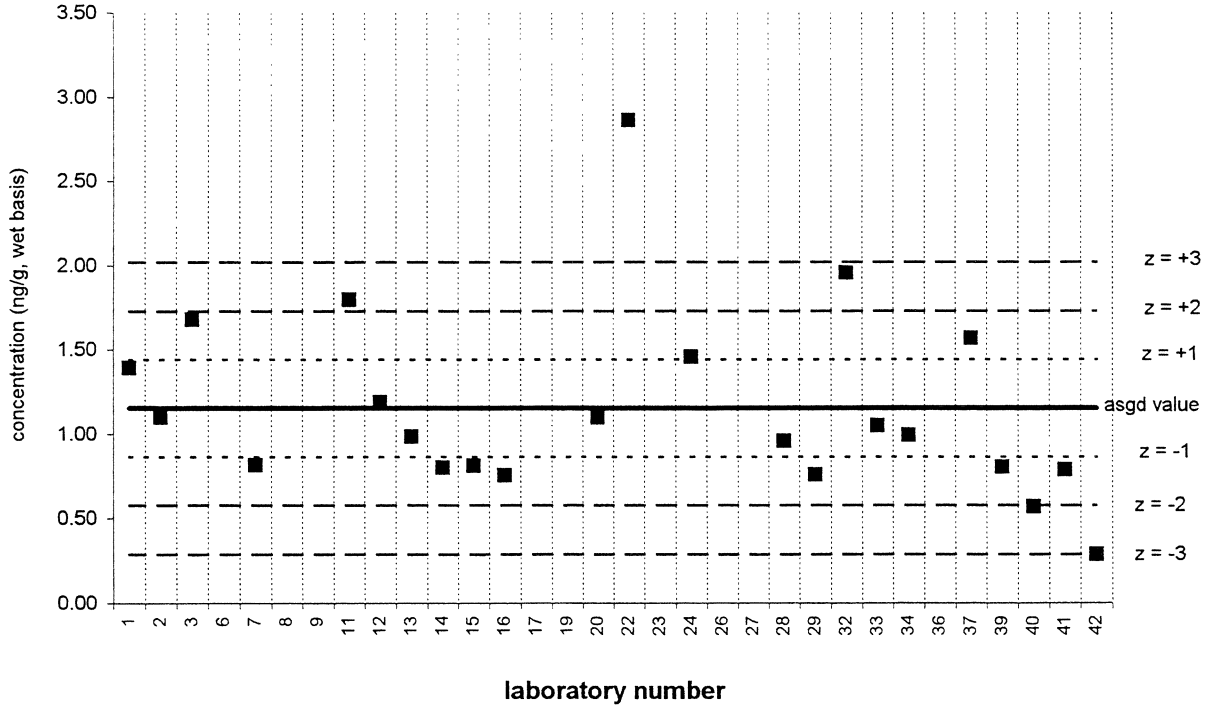
Reported Results: 22 Quantitative Results: 21



gamma-HCH **Fish Homogenate IV (QA99FSH4)**

Assigned value = 1.15 ng/g s = 0.56 ng/g 95% CL = 0.25 ng/g (wet basis)

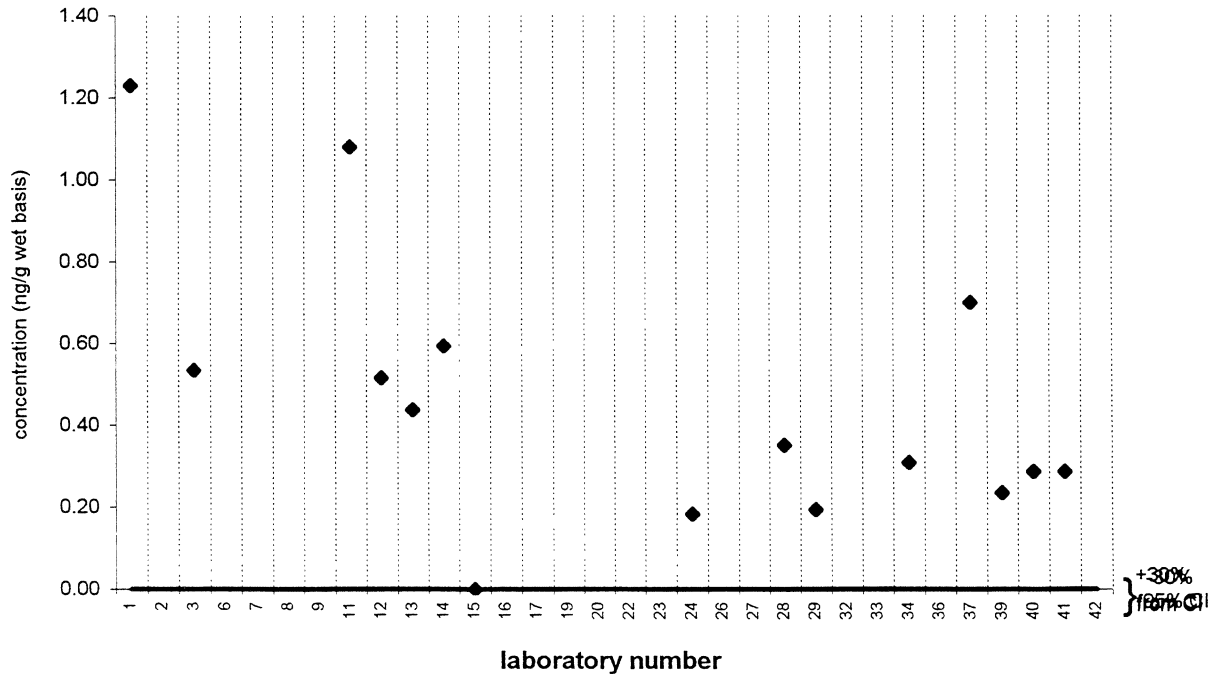
Reported Results: 29 Quantitative Results: 23



gamma-HCH **CARP-1**

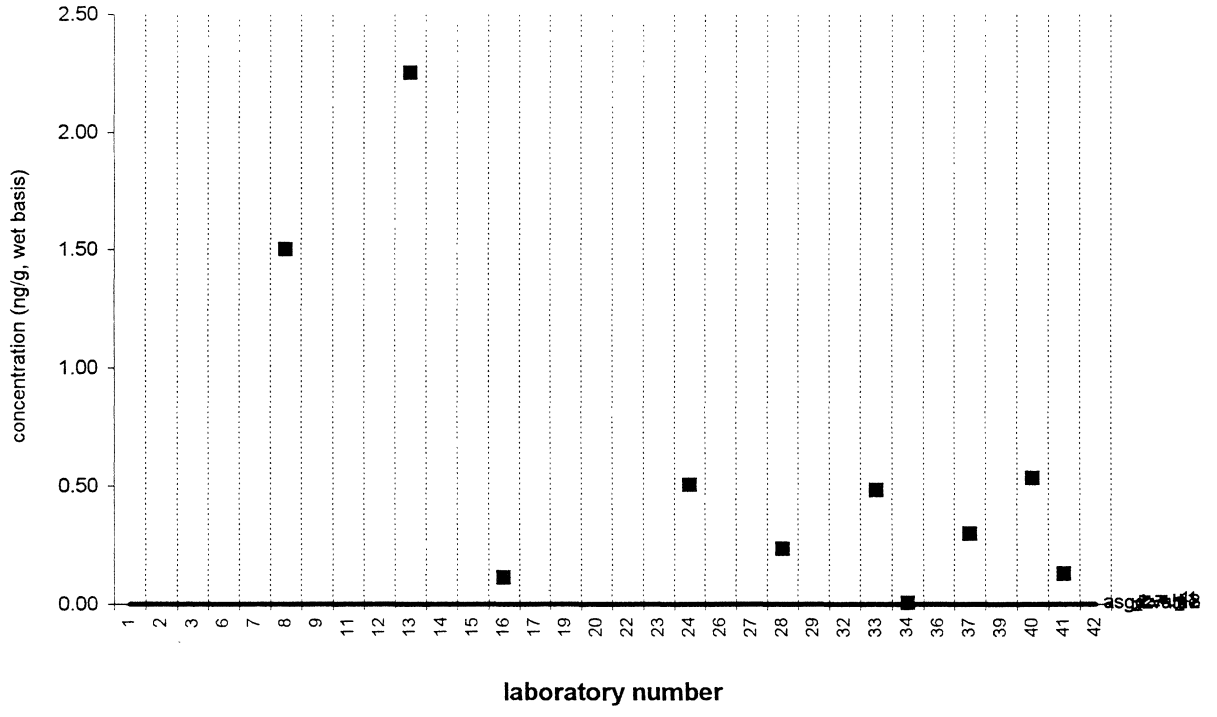
Target Value = <2 ng/g (wet basis)

Reported Results: 24 Quantitative Results: 14



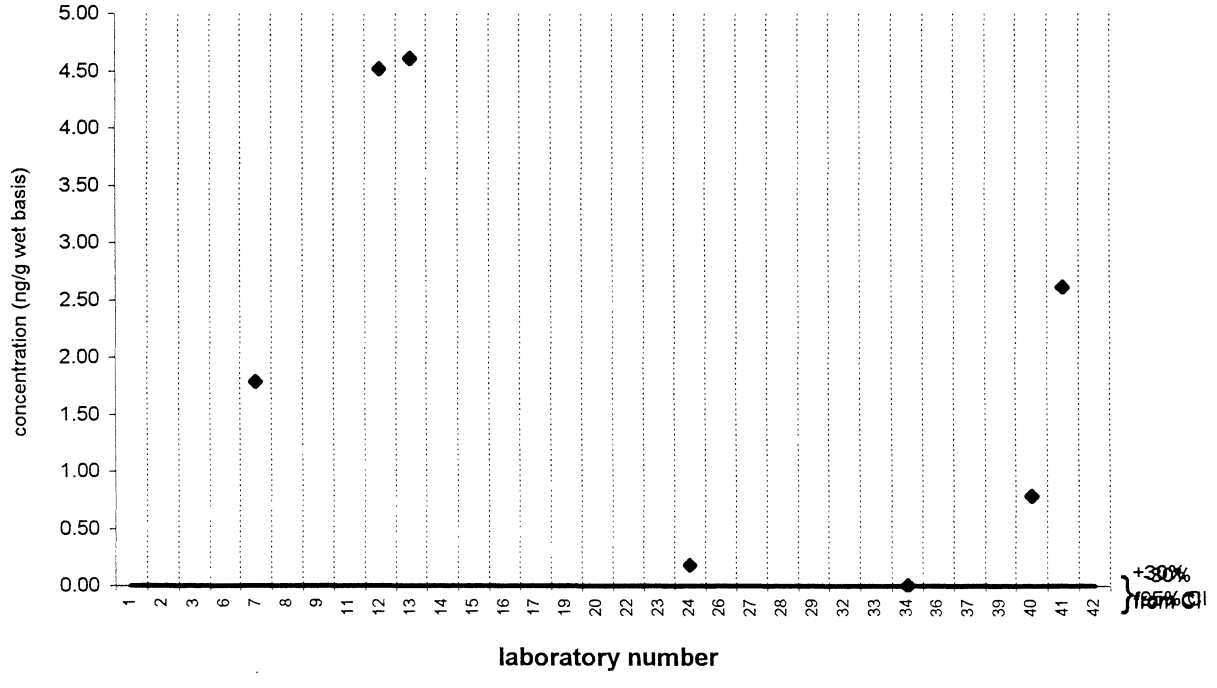
heptachlor **Fish Homogenate IV (QA99FSH4)**

Assigned value = <1 ng/g (wet basis)
Reported Results: 27 Quantitative Results: 10



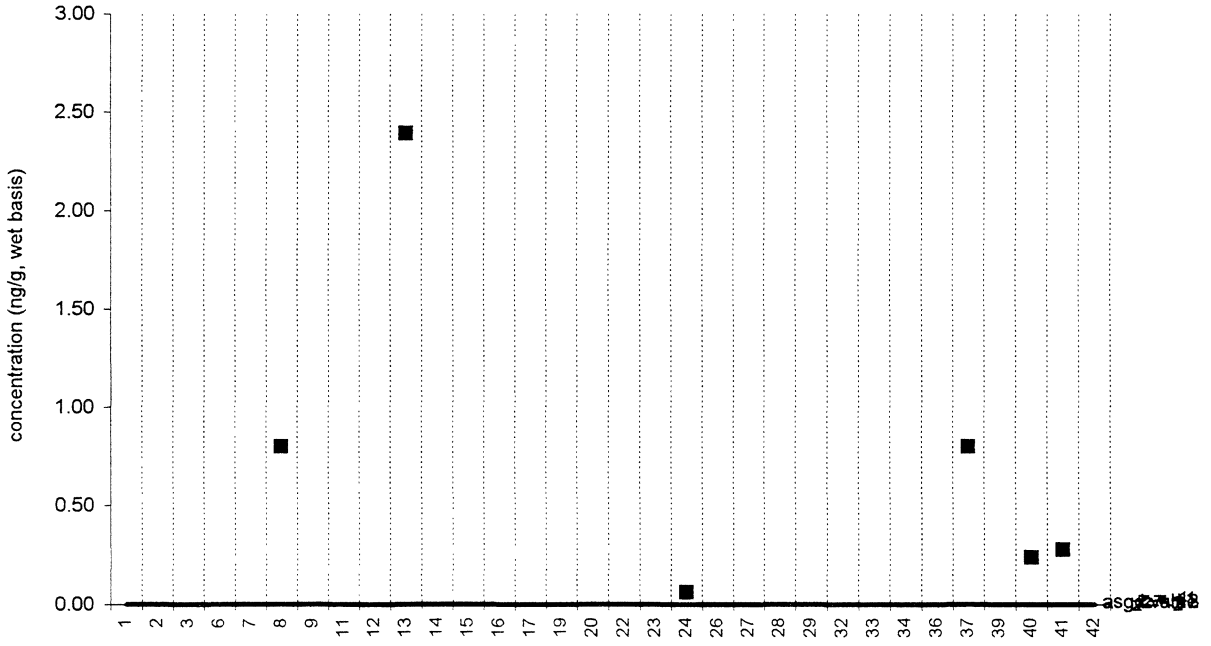
heptachlor **CARP-1**

Target Value = <5 ng/g (wet basis)
Reported Results: 22 Quantitative Results: 7



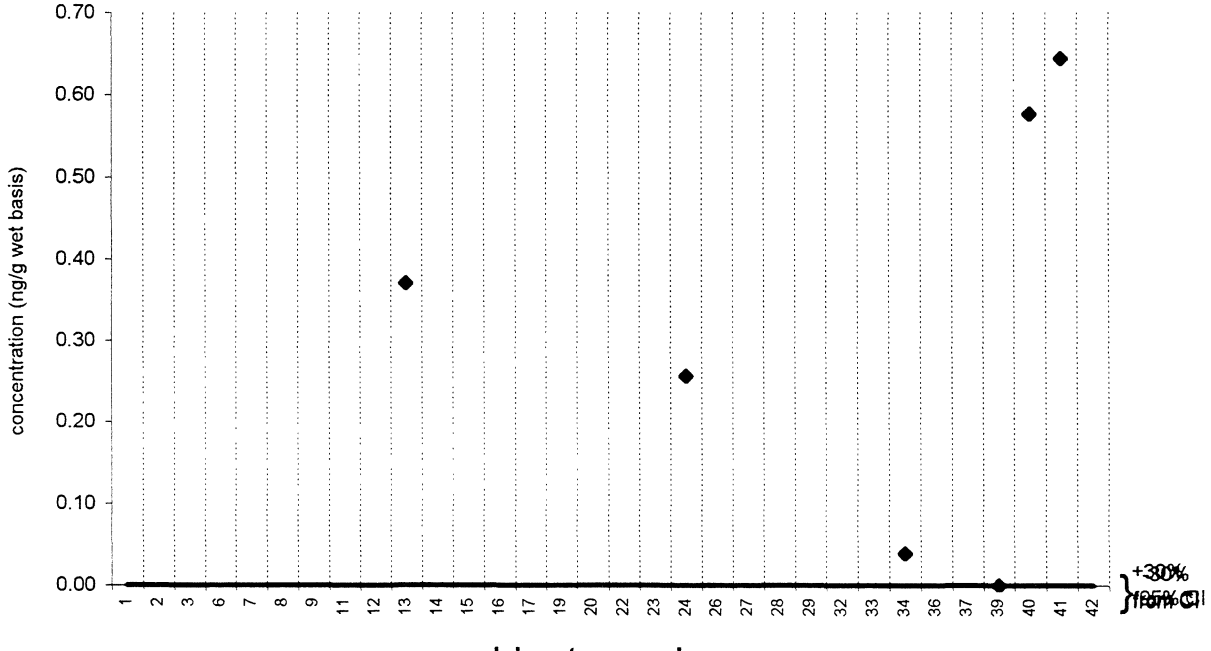
aldrin **Fish Homogenate IV (QA99FSH4)**

Assigned value = <1 ng/g (wet basis)
Reported Results: 27 Quantitative Results: 6



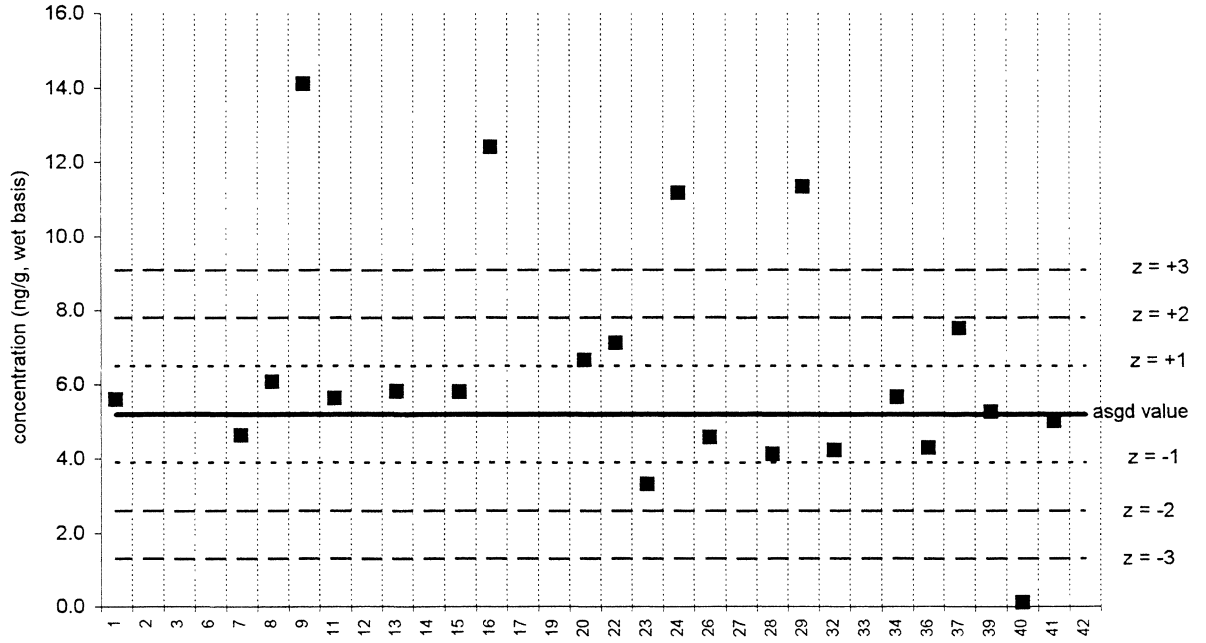
aldrin **CARP-1**

Target Value = <4 ng/g (wet basis)
Reported Results: 22 Quantitative Results: 5



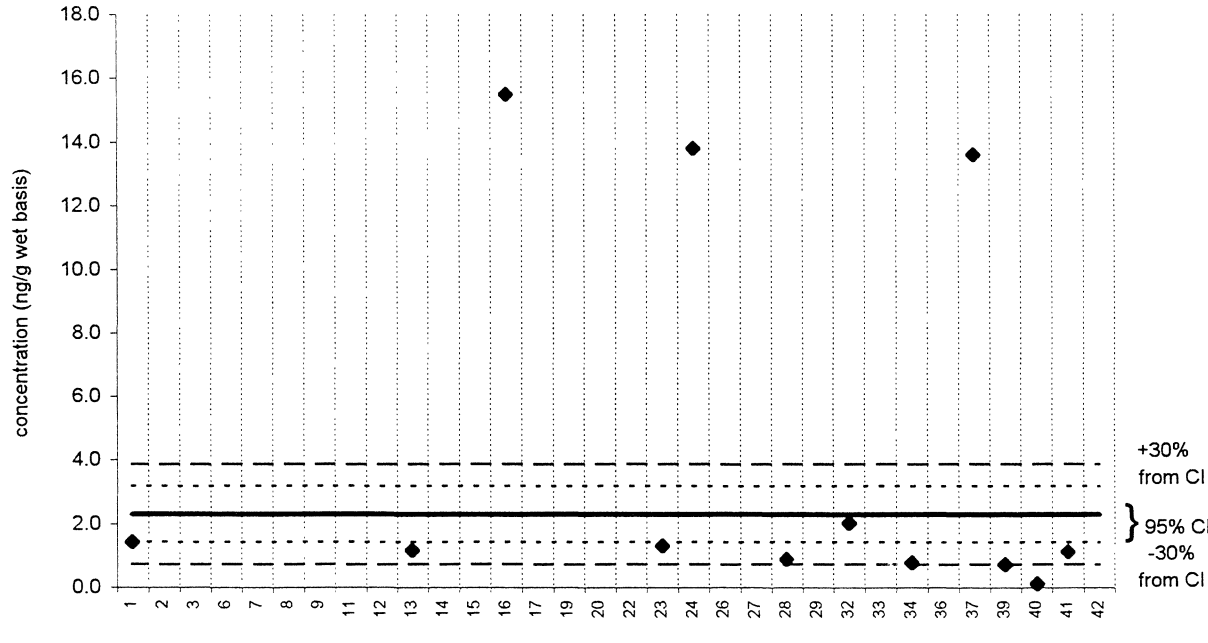
heptachlor epoxide — Fish Homogenate IV (QA99FSH4)

Assigned value = 5.19 ng/g s = 1.04 ng/g 95% CL = 0.63 ng/g (wet basis)
Reported Results: 27 Quantitative Results: 22



heptachlor epoxide — CARP-1

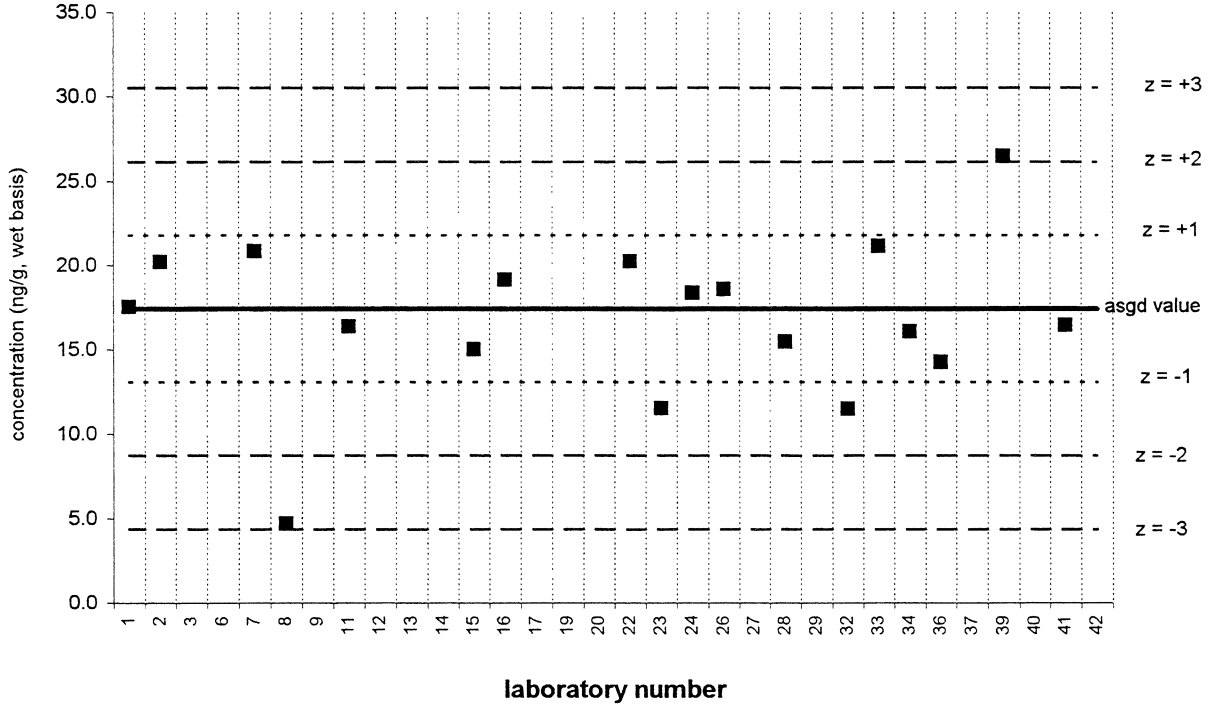
Target Value = 2.30 ± 0.88 ng/g (wet basis)
Reported Results: 22 Quantitative Results: 12



oxychlordane **Fish Homogenate IV (QA99FSH4)**

Assigned value = 17.4 ng/g s = 3.8 ng/g 95% CL = 2.0 ng/g (wet basis)

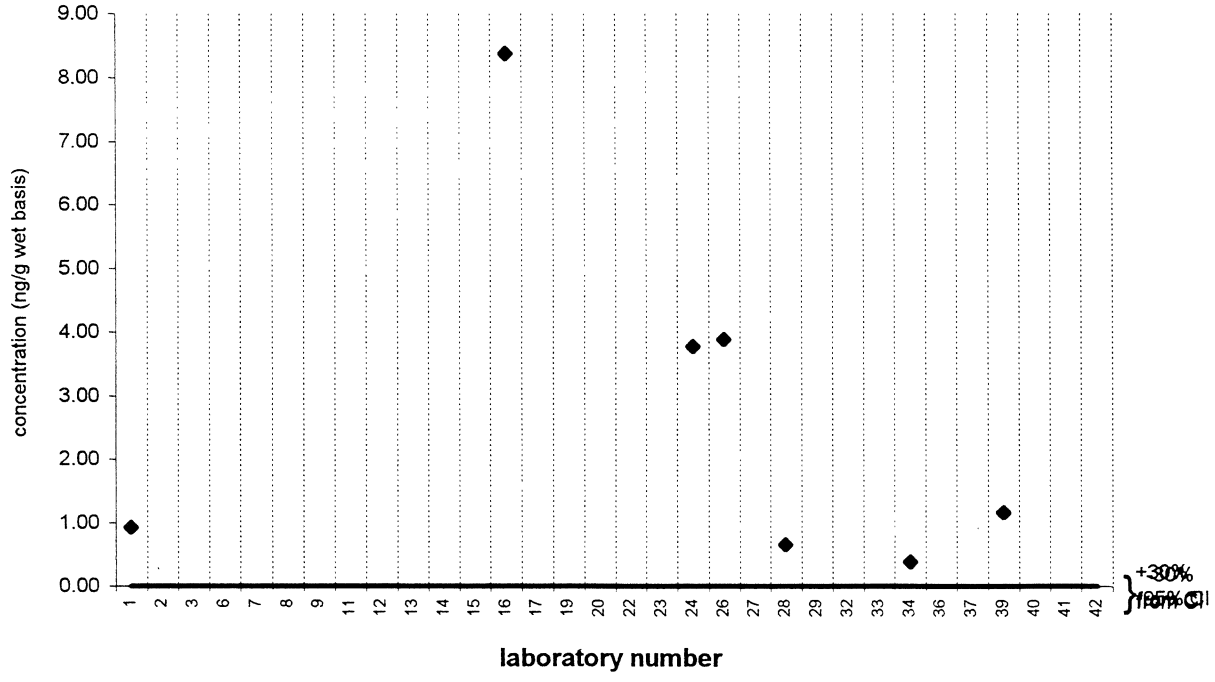
Reported Results: 20 Quantitative Results: 18



oxychlordane **CARP-1**

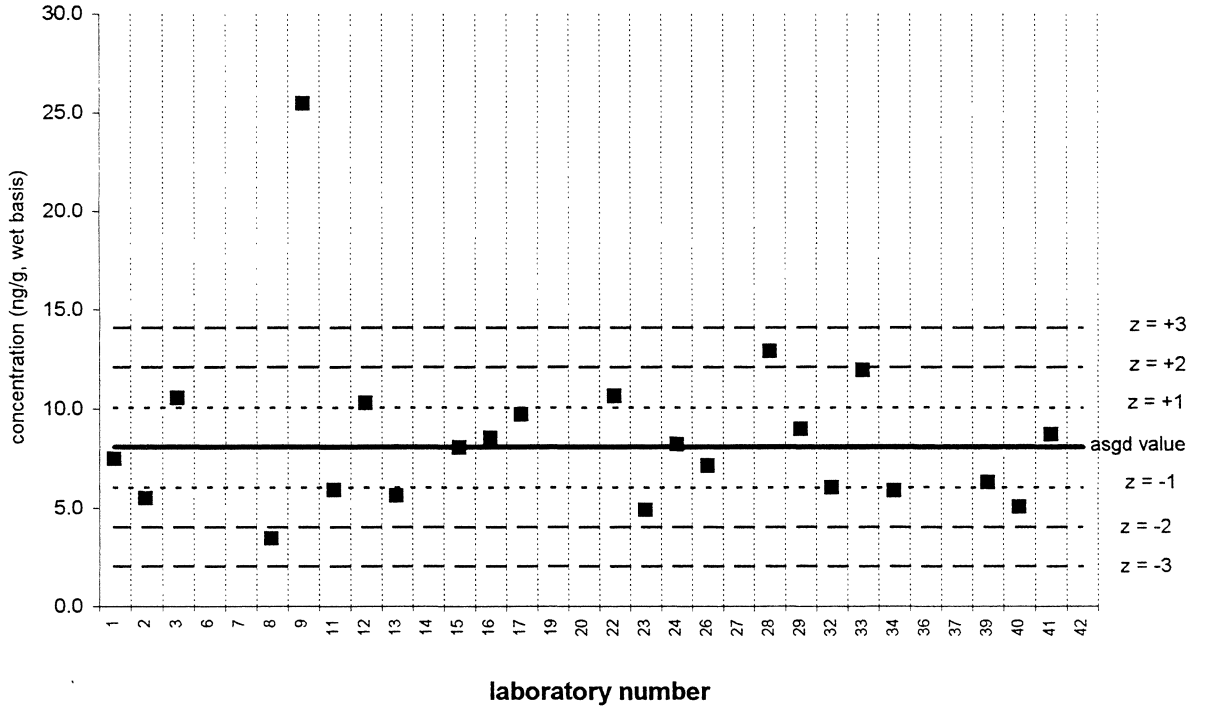
Target Value = <3 ng/g (wet basis)

Reported Results: 17 Quantitative Results: 7



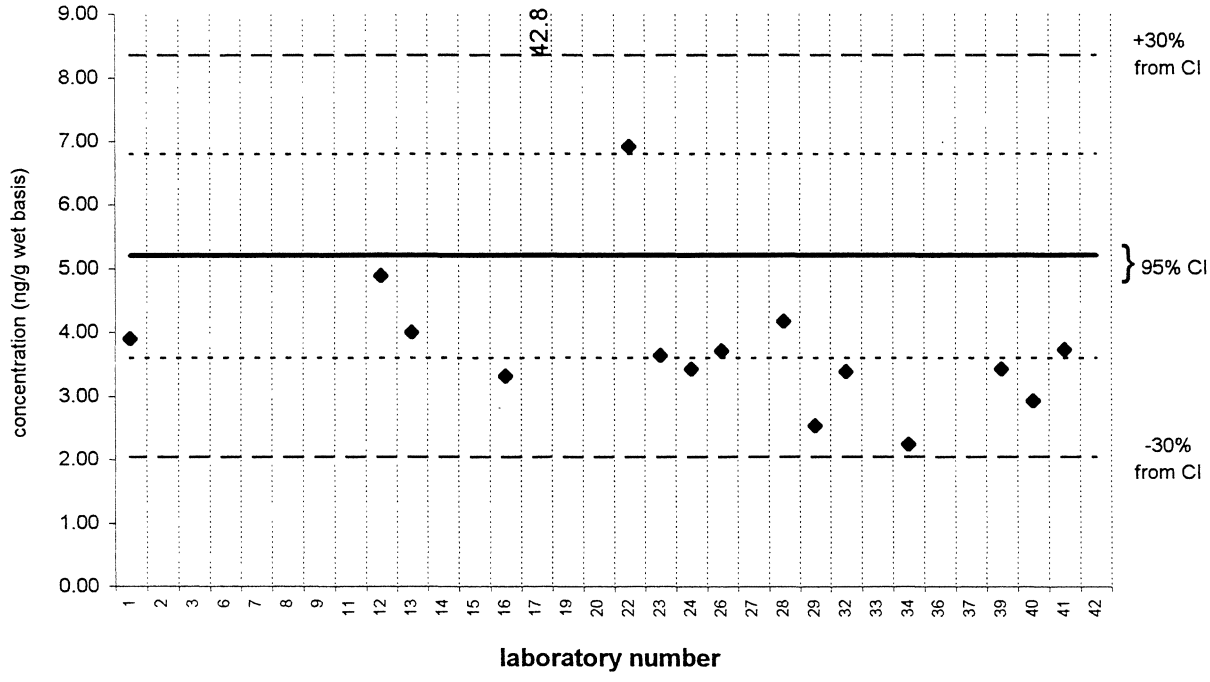
trans-chlordane **Fish Homogenate IV (QA99FSH4)**

Assigned value = 8.06 ng/g s = 2.43 ng/g 95% CL = 1.21 ng/g (wet basis)
Reported Results: 25 Quantitative Results: 23



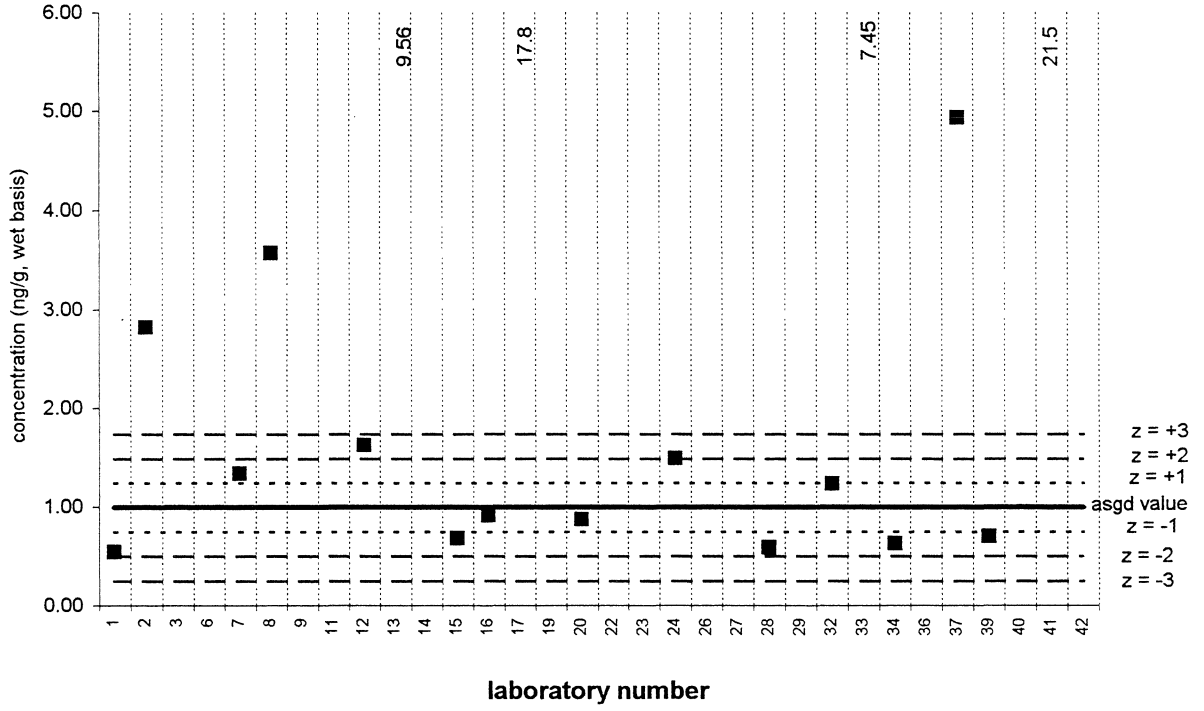
trans-chlordane **CARP-1**

Target Value = 5.20 ± 1.60 ng/g (wet basis)
Reported Results: 20 Quantitative Results: 16



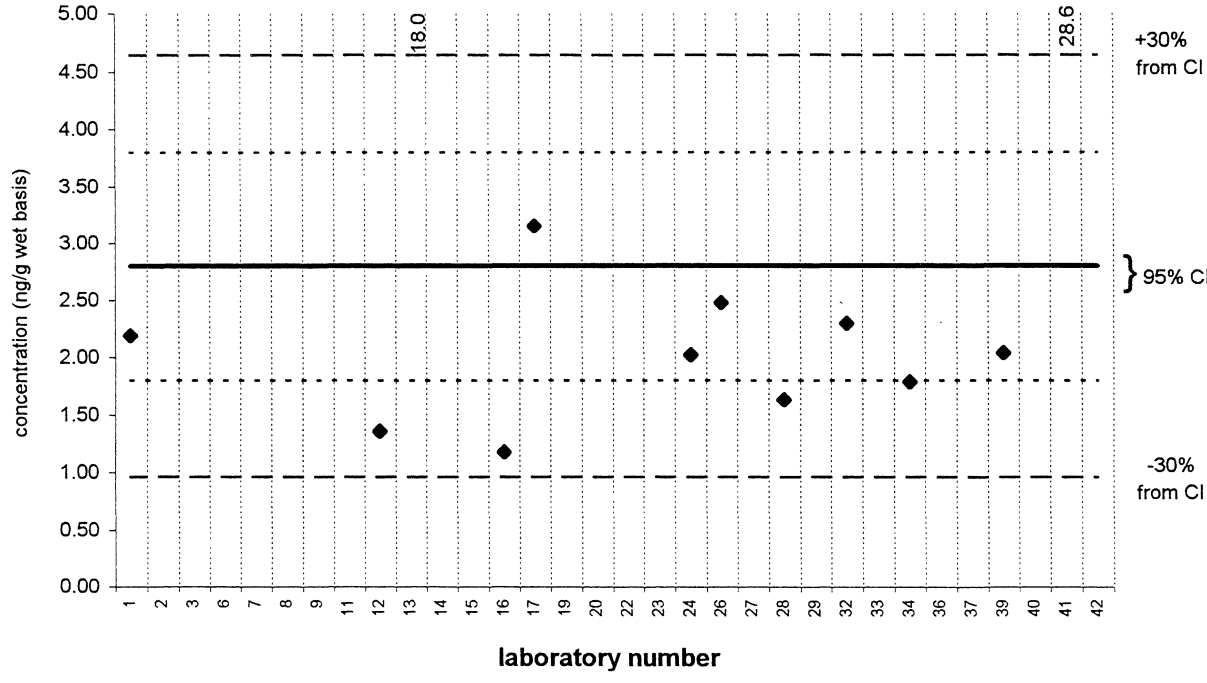
2,4'-DDE — Fish Homogenate IV (QA99FSH4)

Assigned value = 0.99 ng/g s = 0.40 ng/g 95% CL = 0.28 ng/g (wet basis)
Reported Results: 26 Quantitative Results: 18



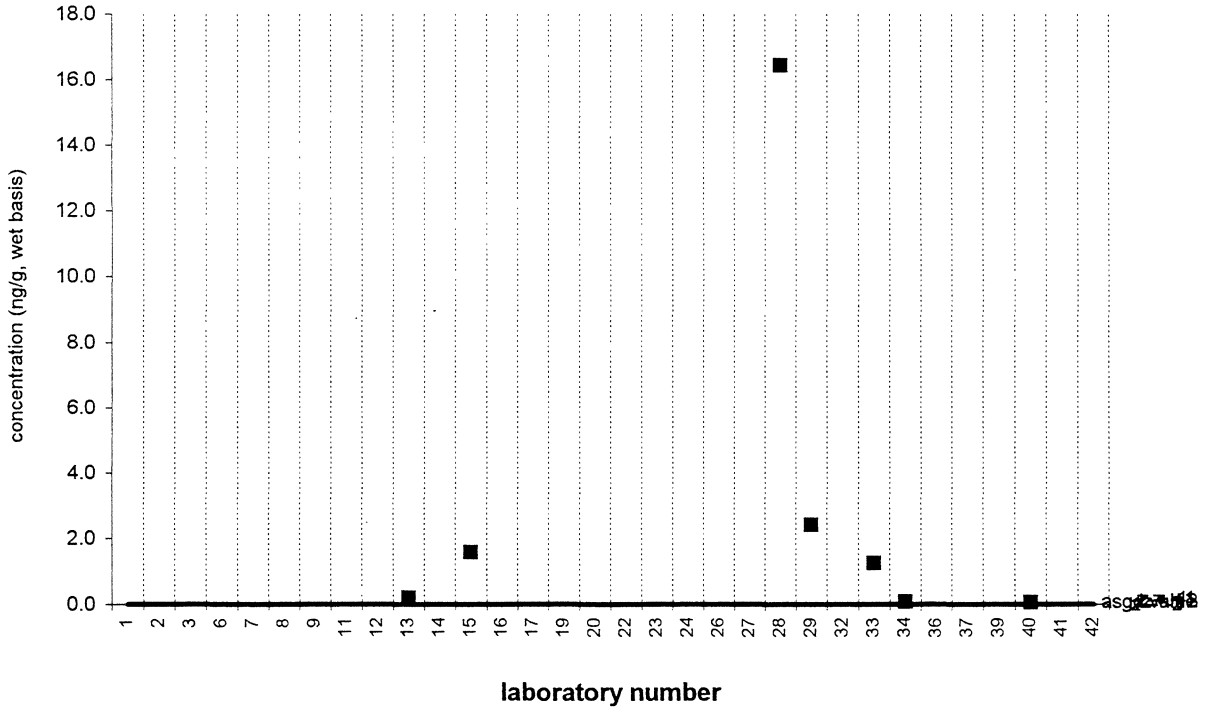
2,4'-DDE — CARP-1

Target Value = 2.80 ± 1.00 ng/g (wet basis)
Reported Results: 22 Quantitative Results: 12



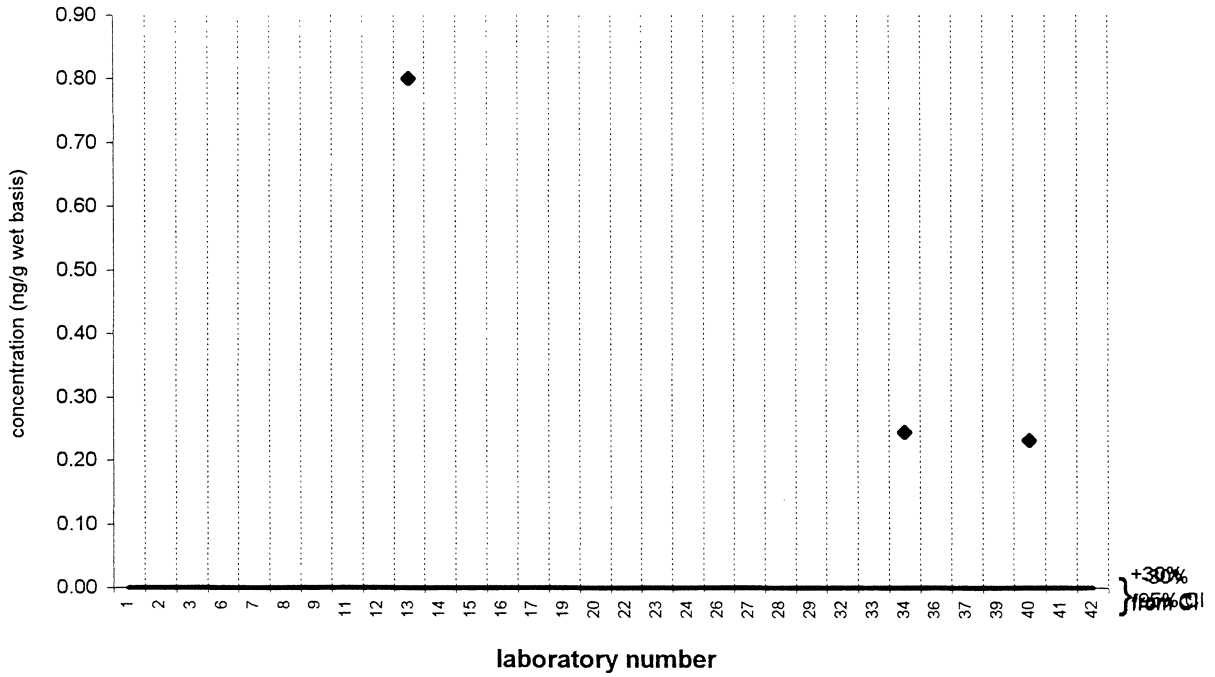
endosulfan I **Fish Homogenate IV (QA99FSH4)**

Assigned value = <2 ng/g (wet basis)
Reported Results: 25 Quantitative Results: 7



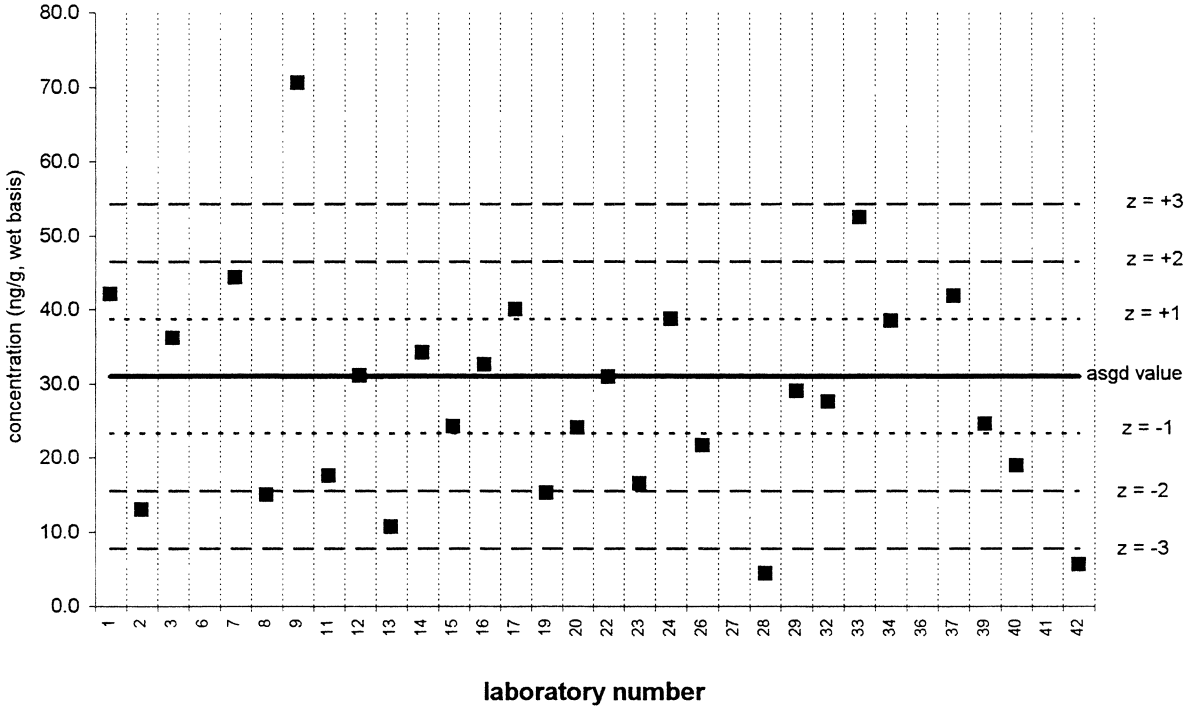
endosulfan I **CARP-1**

Target Value = <5 ng/g (wet basis)
Reported Results: 21 Quantitative Results: 3



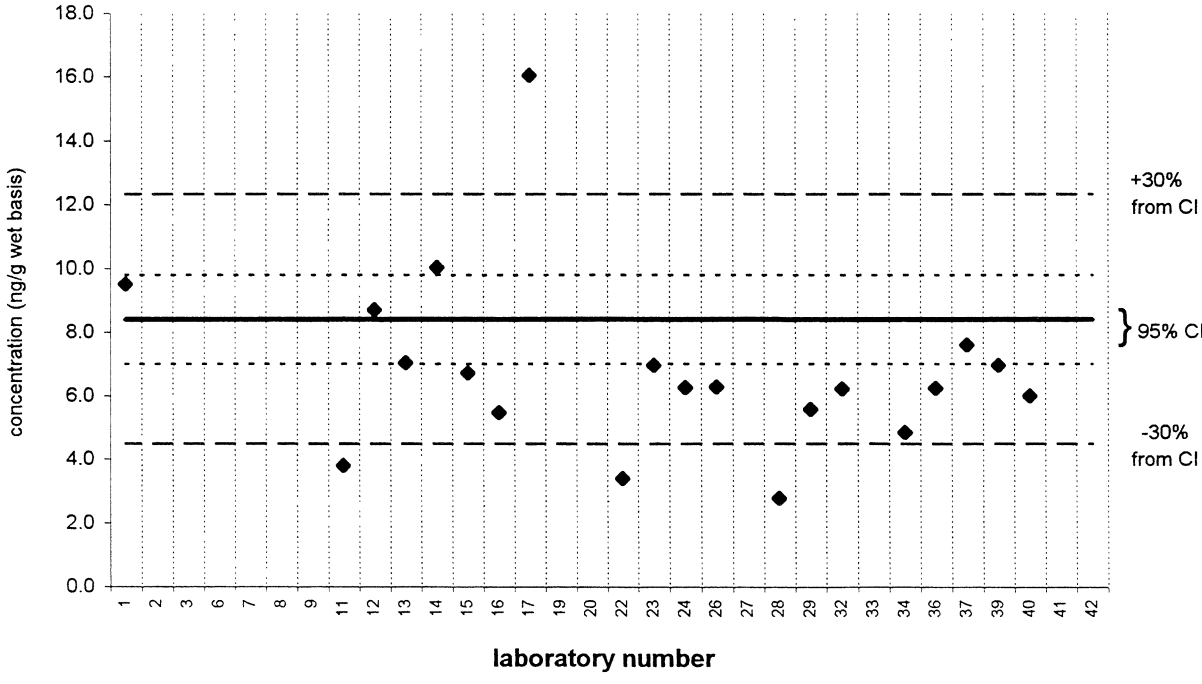
cis-chlordane **Fish Homogenate IV (QA99FSH4)**

Assigned value = 31.0 ng/g s = 10.6 ng/g 95% CL = 5.1 ng/g (wet basis)
Reported Results: 30 Quantitative Results: 28



cis-chlordane **CARP-1**

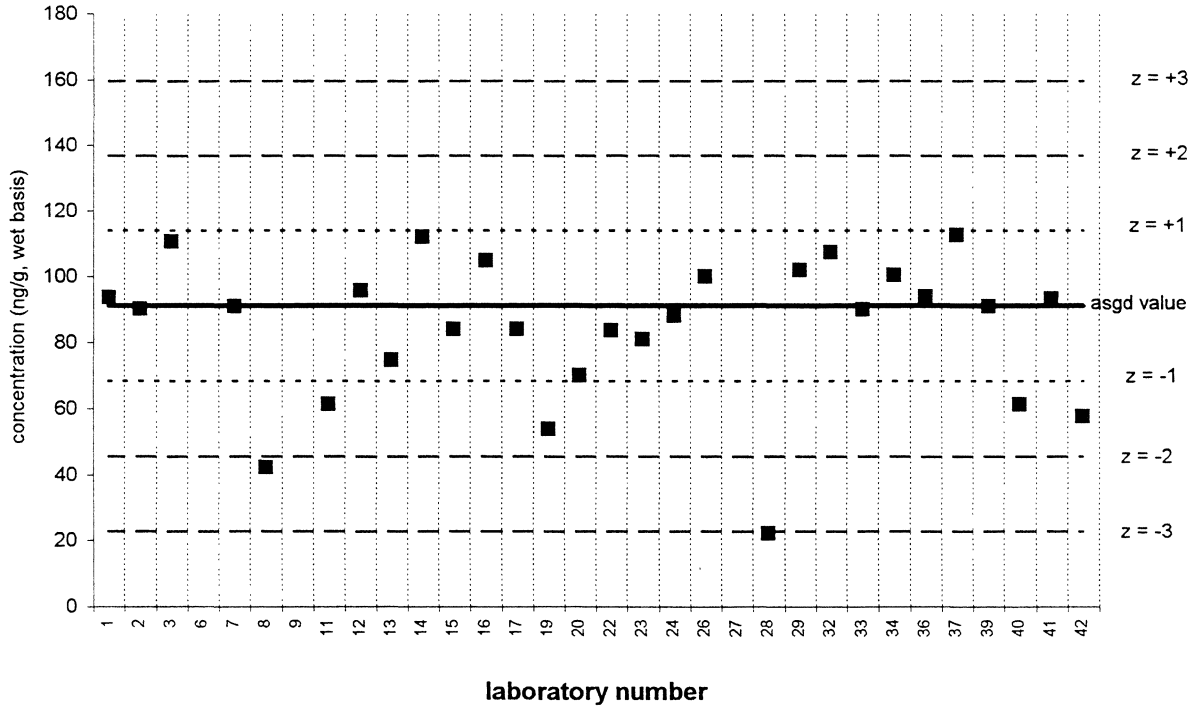
Target Value = 8.40 ± 1.40 ng/g (wet basis)
Reported Results: 24 Quantitative Results: 20



trans-nonachlor **Fish Homogenate IV (QA99FSH4)**

Assigned value = 91.2 ng/g s = 15.4 ng/g 95% CL = 6.8 ng/g (wet basis)

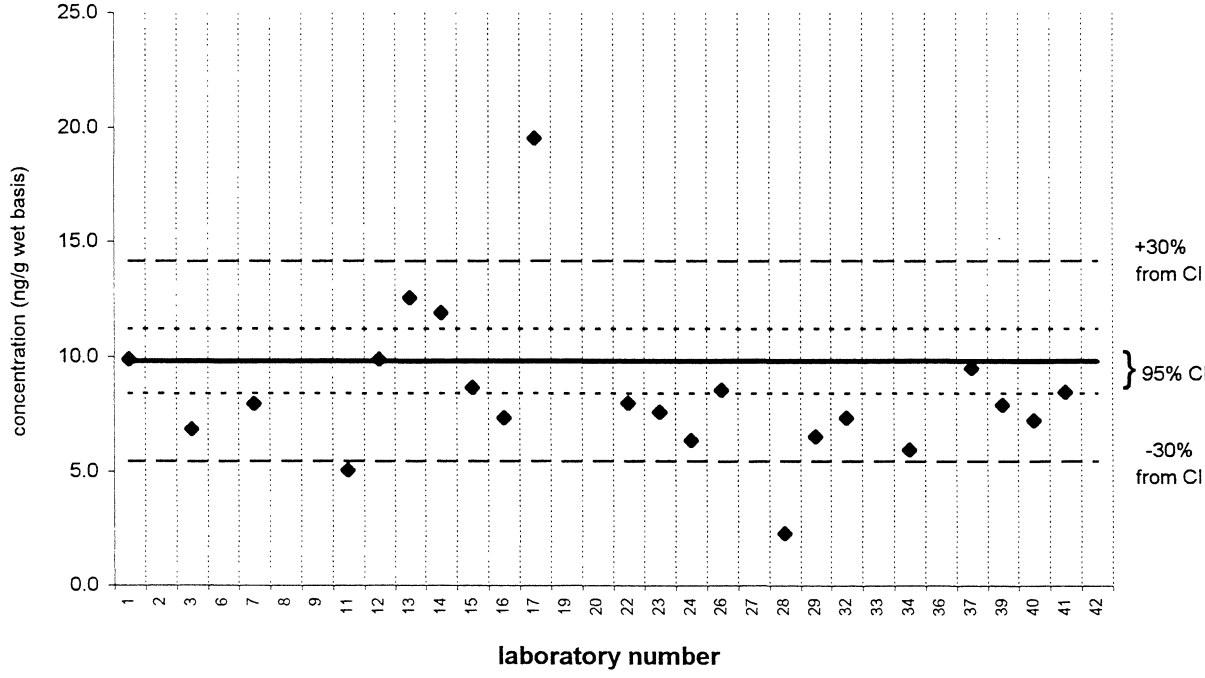
Reported Results: 29 Quantitative Results: 29



trans-nonachlor **CARP-1**

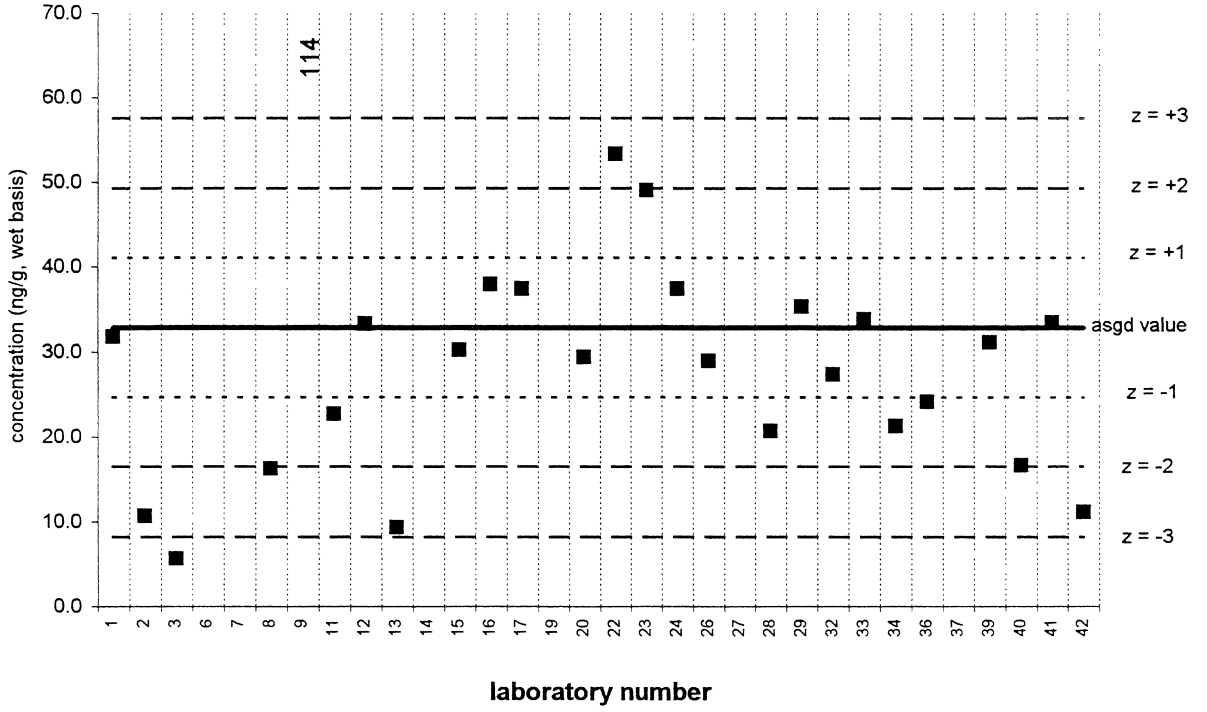
Target Value = 9.80 ± 1.40 ng/g (wet basis)

Reported Results: 25 Quantitative Results: 22



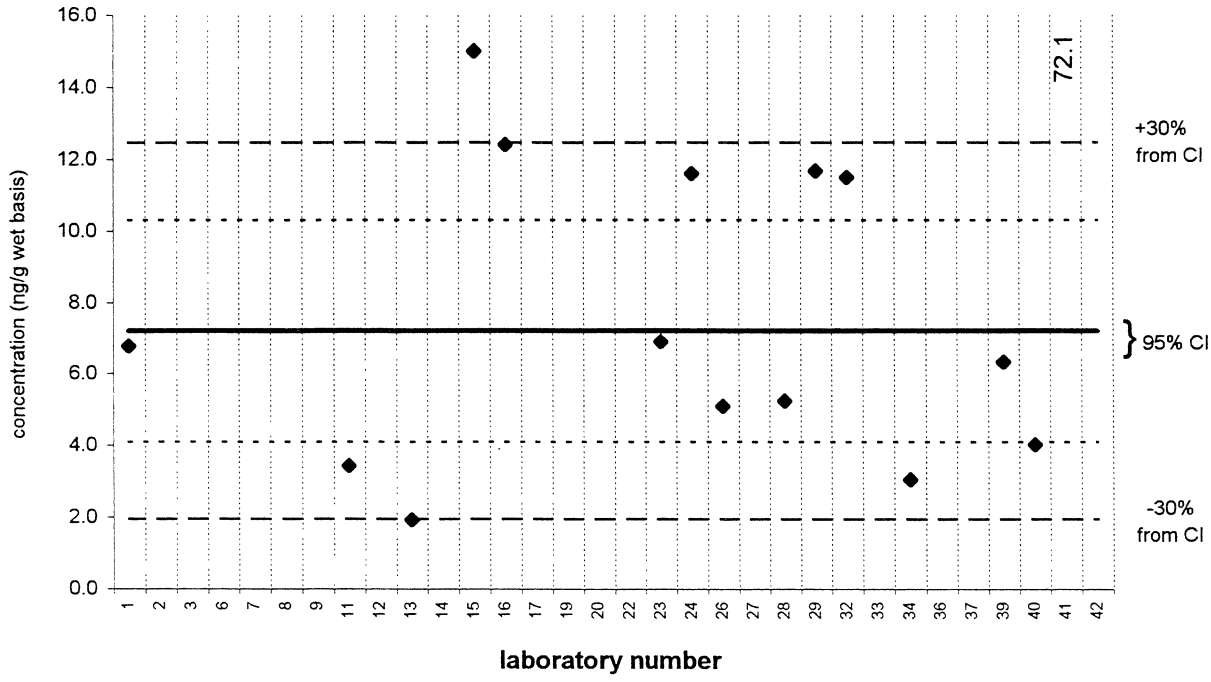
dieldrin **Fish Homogenate IV (QA99FSH4)**

Assigned value = 32.9 ng/g s = 9.5 ng/g 95% CL = 5.3 ng/g (wet basis)
Reported Results: 28 Quantitative Results: 26



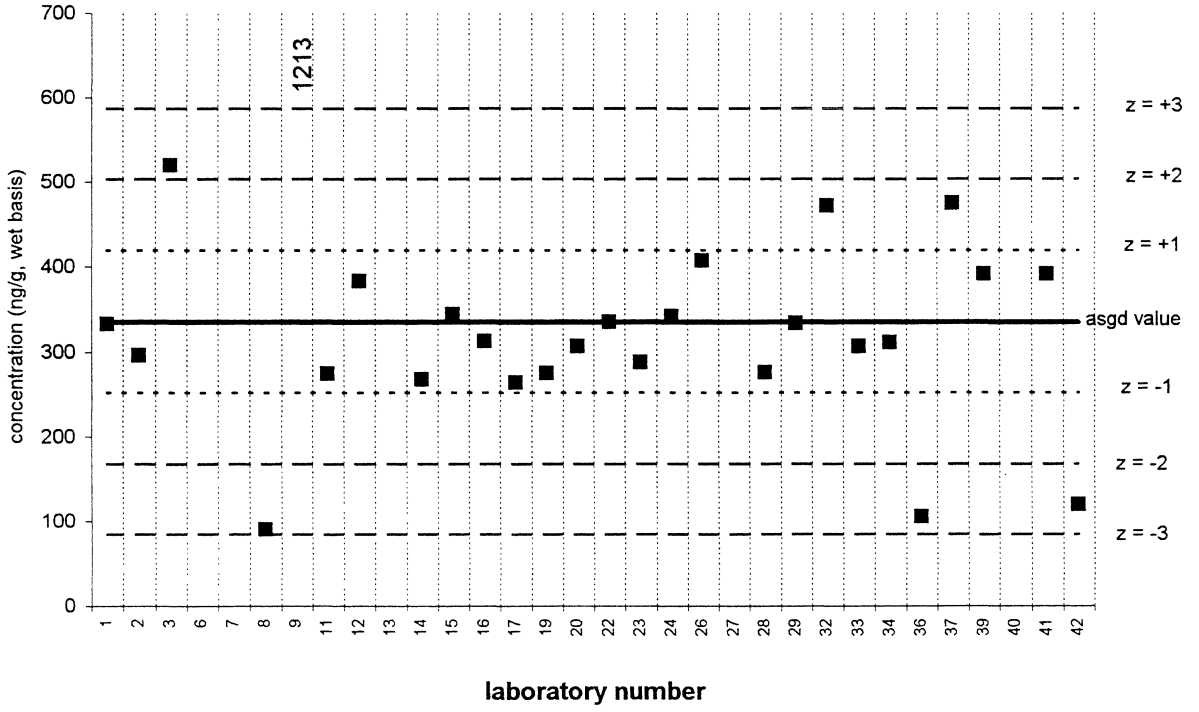
dieldrin **CARP-1**

Target Value = 7.20 ± 3.10 ng/g (wet basis)
Reported Results: 23 Quantitative Results: 15



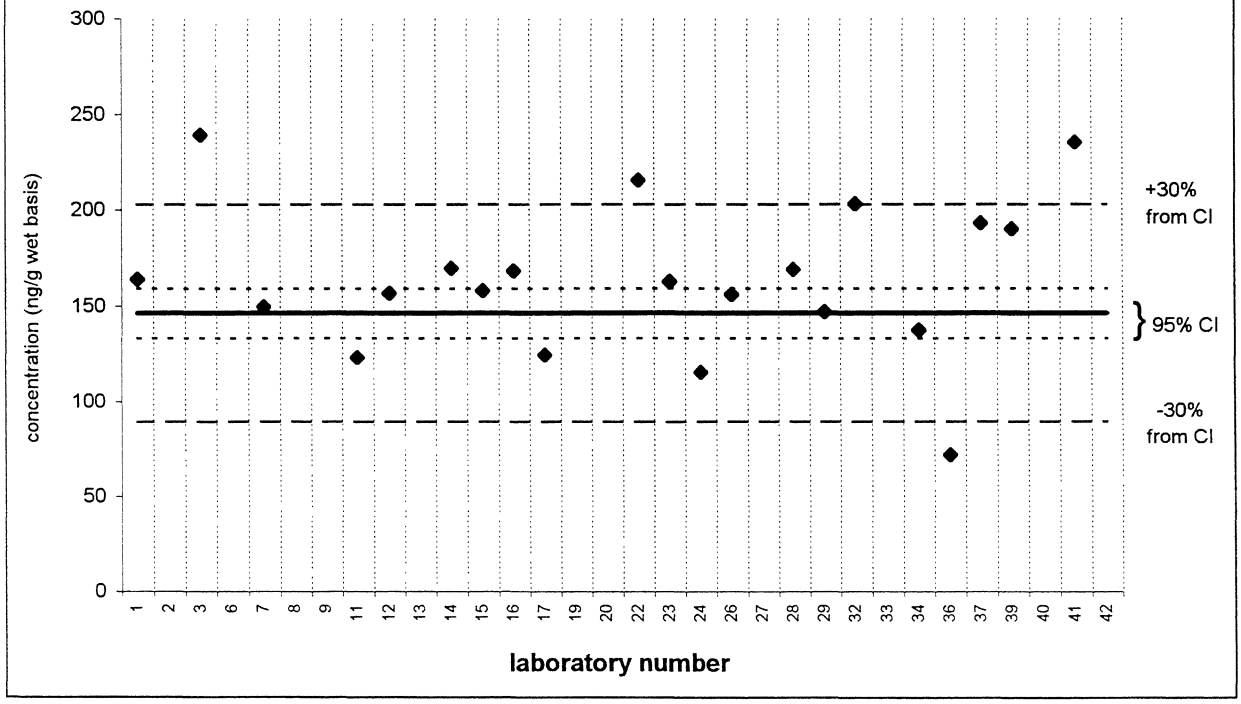
4,4'-DDE — Fish Homogenate IV (QA99FSH4)

Assigned value = 335 ng/g s = 64 ng/g 95% CL = 31 ng/g (wet basis)
Reported Results: 29 Quantitative Results: 28



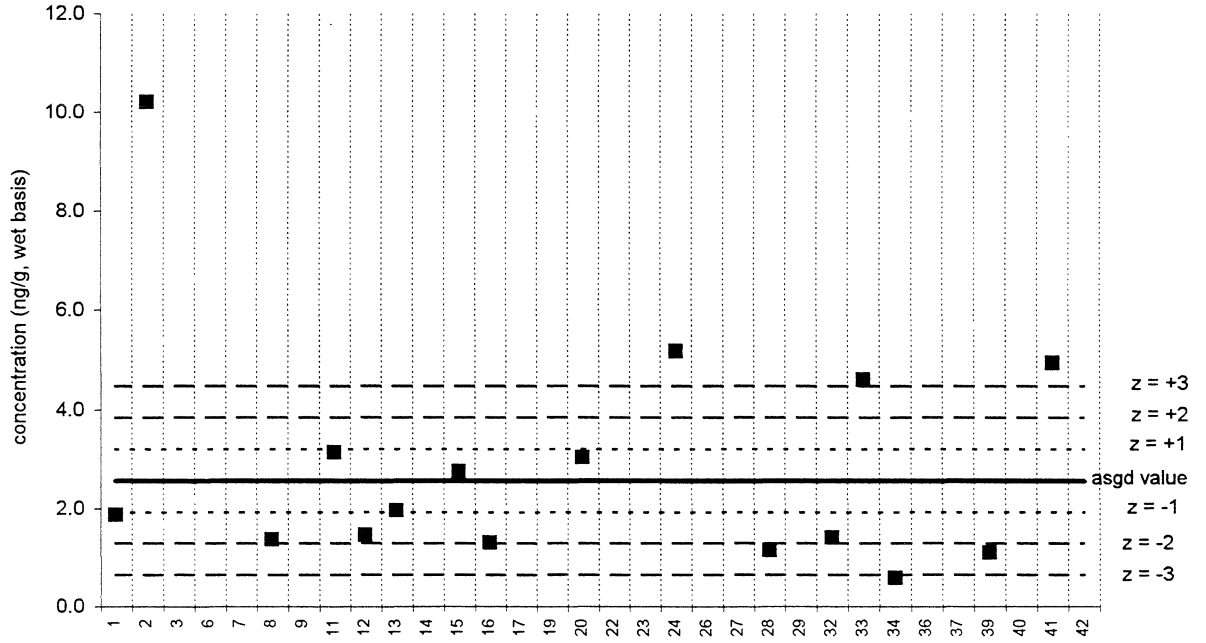
4,4'-DDE — CARP-1

Target Value = 146 ± 13 ng/g (wet basis)
Reported Results: 24 Quantitative Results: 21



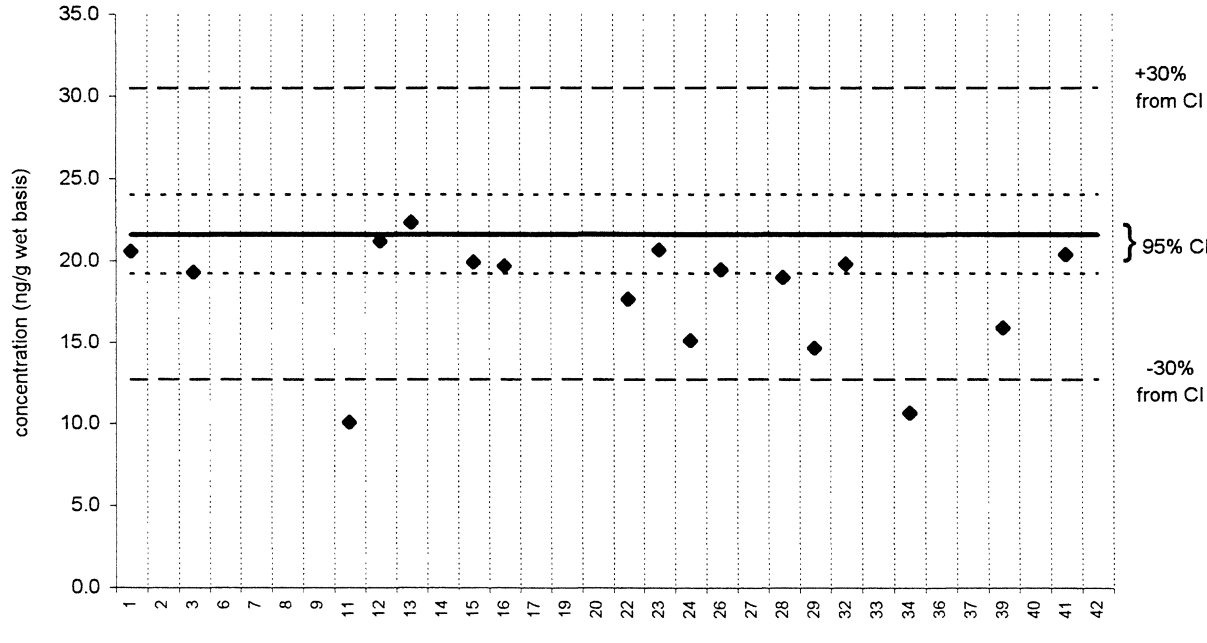
2,4'-DDD — Fish Homogenate IV (QA99FSH4)

Assigned value = 2.56 ng/g s = 1.54 ng/g 95% CL = 0.98 ng/g (wet basis)
Reported Results: 25 Quantitative Results: 16



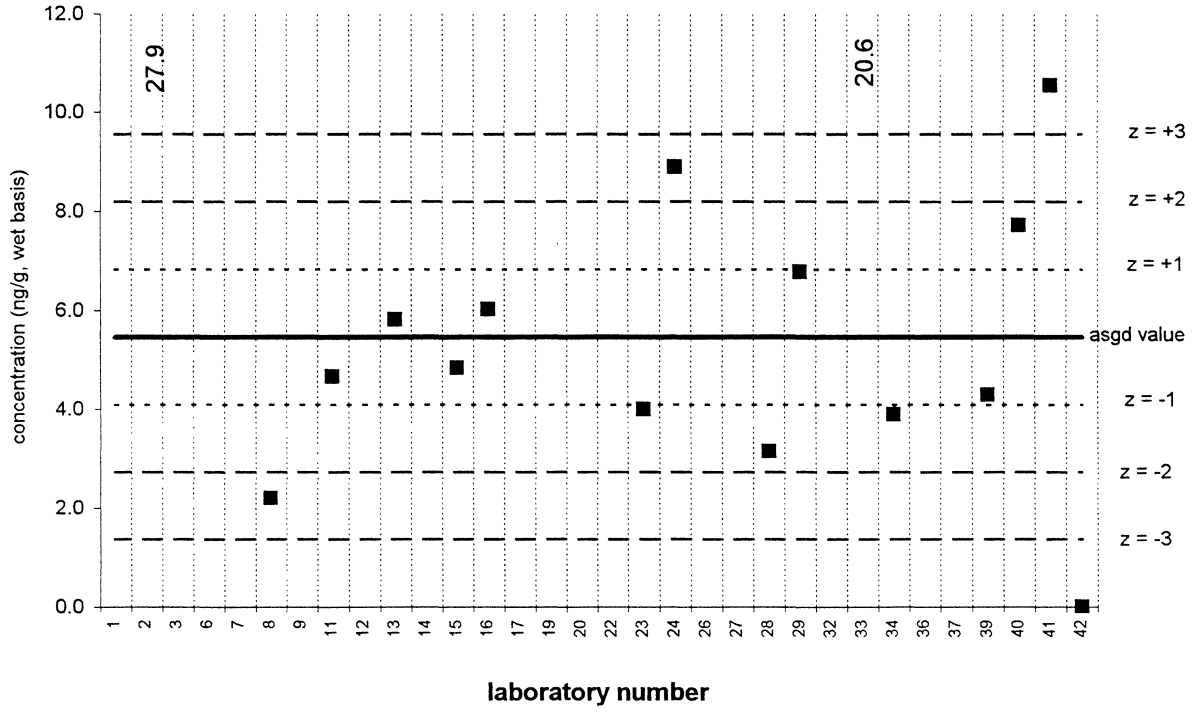
2,4'-DDD — CARP-1

Target Value = 21.6 ± 2.4 ng/g (wet basis)
Reported Results: 23 Quantitative Results: 17



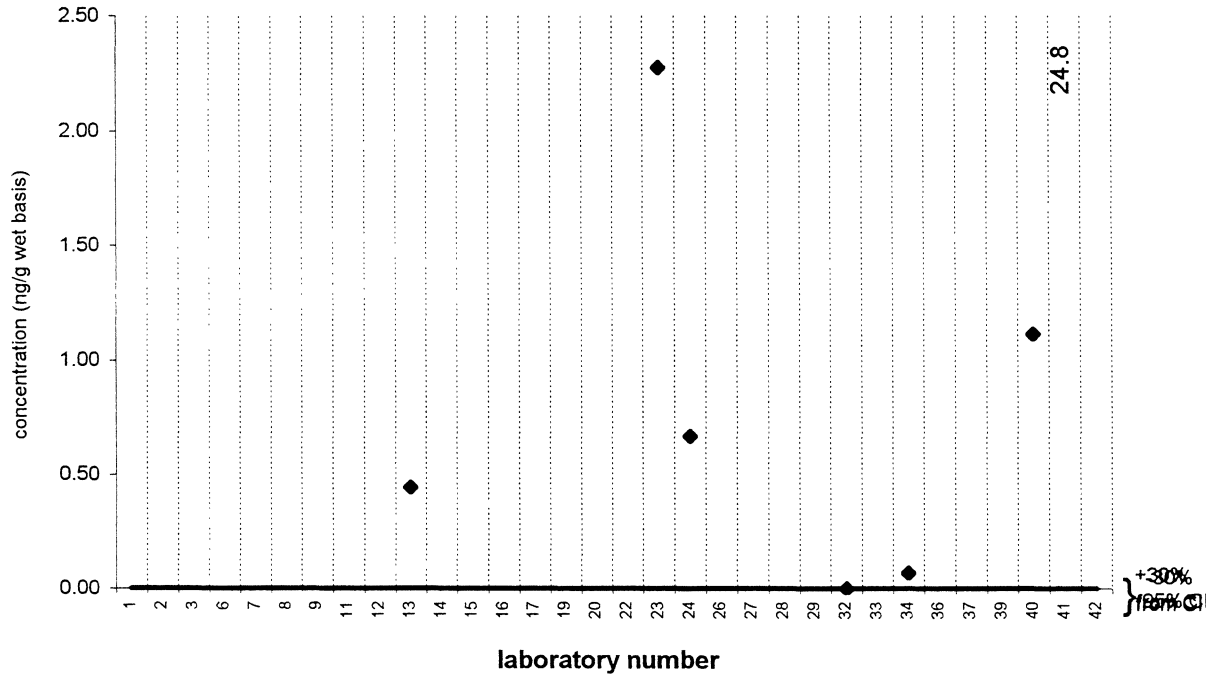
endrin **Fish Homogenate IV (QA99FSH4)**

Assigned value = 5.46 ng/g s = 1.77 ng/g 95% CL = 1.19 ng/g (wet basis)
Reported Results: 23 Quantitative Results: 15



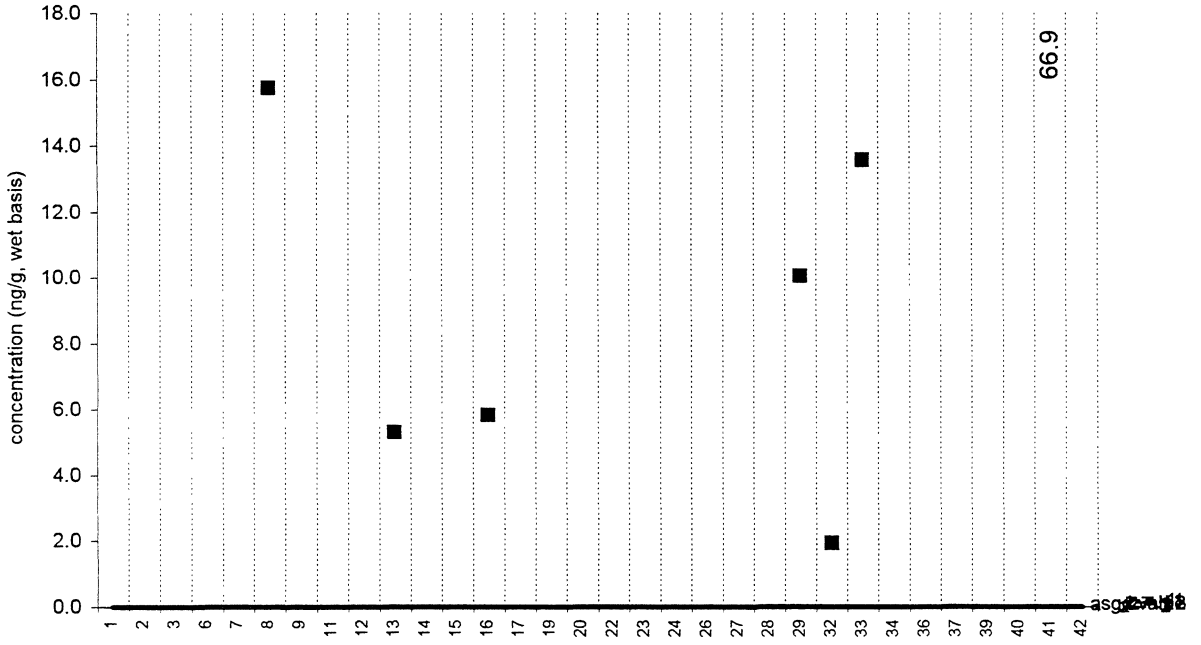
endrin **CARP-1**

Target Value = <8 ng/g (wet basis)
Reported Results: 20 Quantitative Results: 6



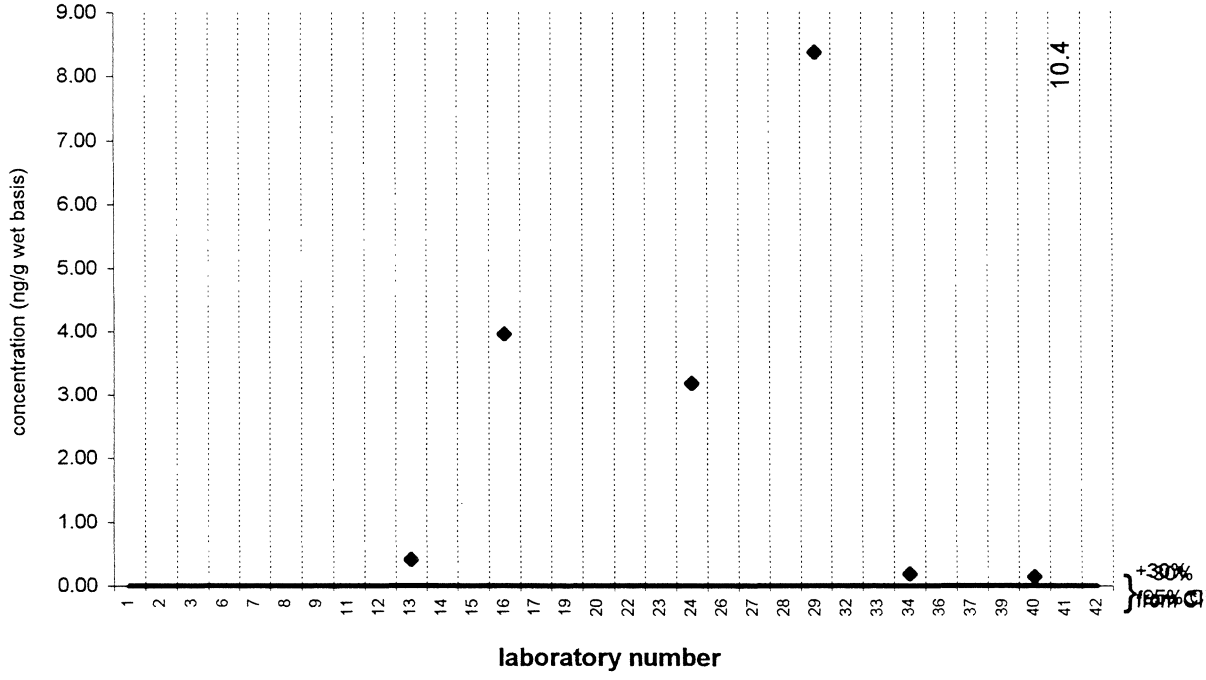
endosulfan II **Fish Homogenate IV (QA99FSH4)**

Assigned value = <5 ng/g (wet basis)
Reported Results: 24 Quantitative Results: 7



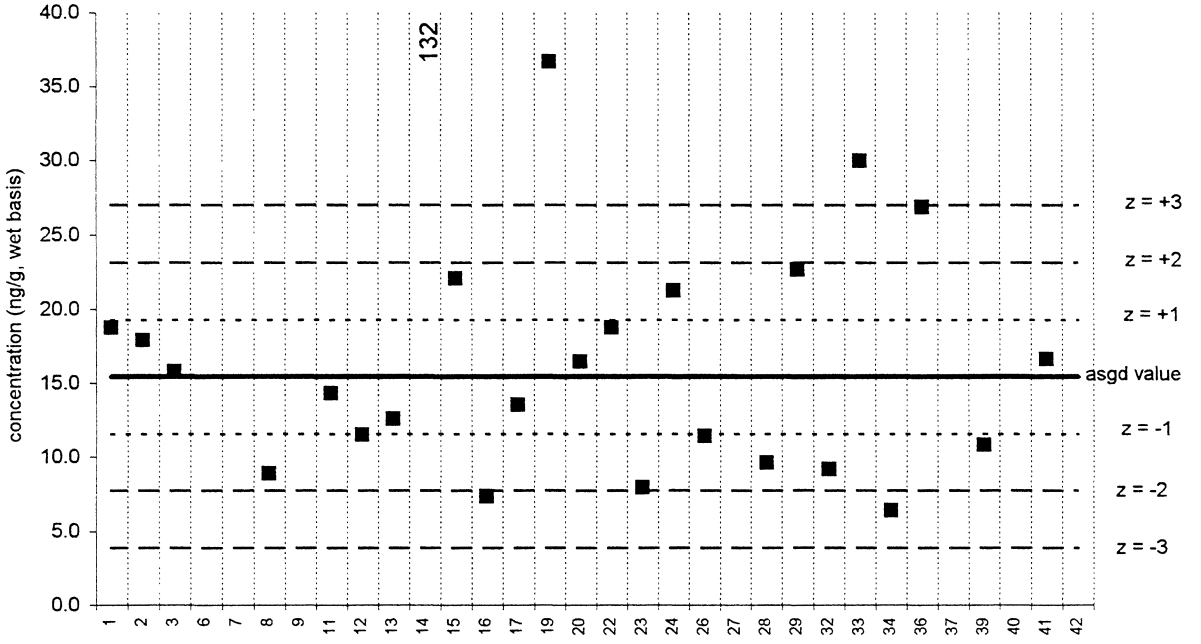
endosulfan II **CARP-1**

Target Value = <4 ng/g (wet basis)
Reported Results: 20 Quantitative Results: 7



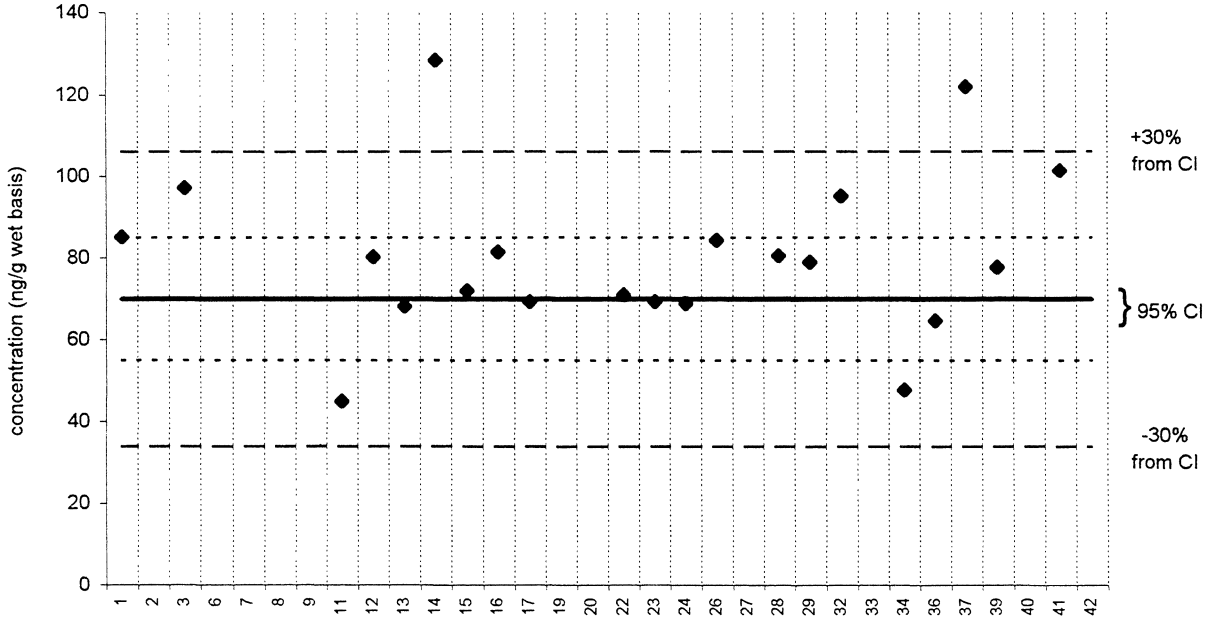
4,4'-DDD — Fish Homogenate IV (QA99FSH4)

Assigned value = 15.4 ng/g s = 6.5 ng/g 95% CL = 2.9 ng/g (wet basis)
Reported Results: 29 Quantitative Results: 25



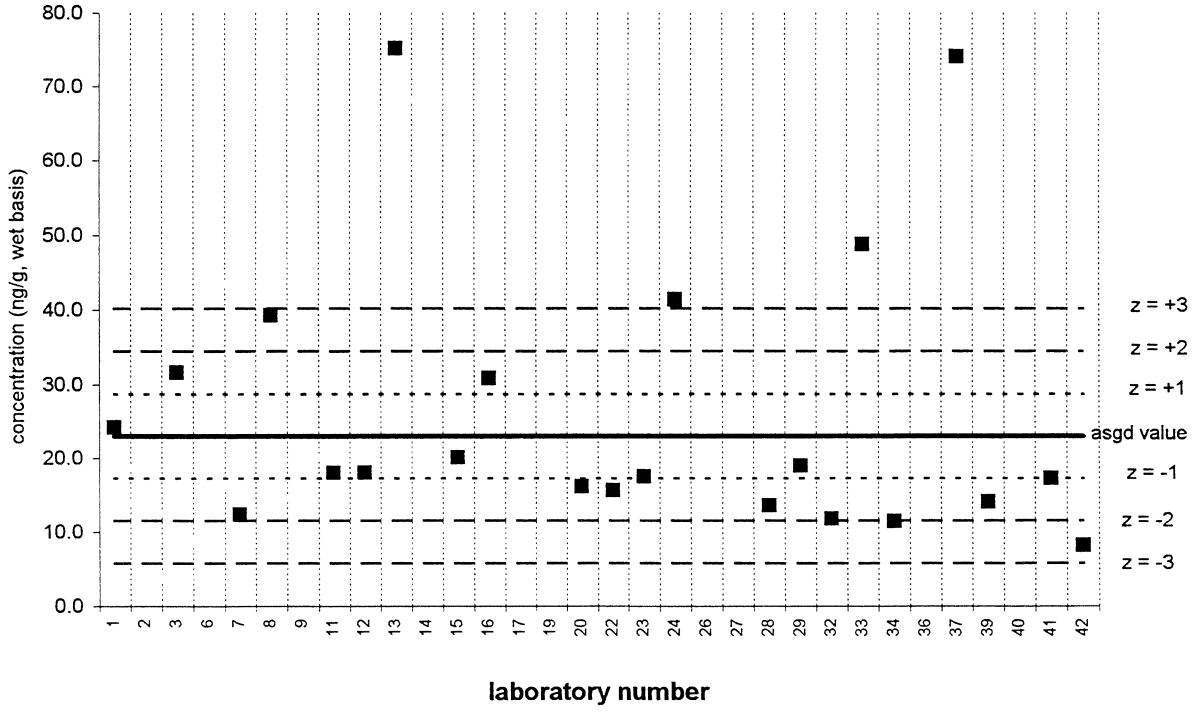
4,4'-DDD — CARP-1

Target Value = 70.0 ± 15.0 ng/g (wet basis)
Reported Results: 24 Quantitative Results: 21



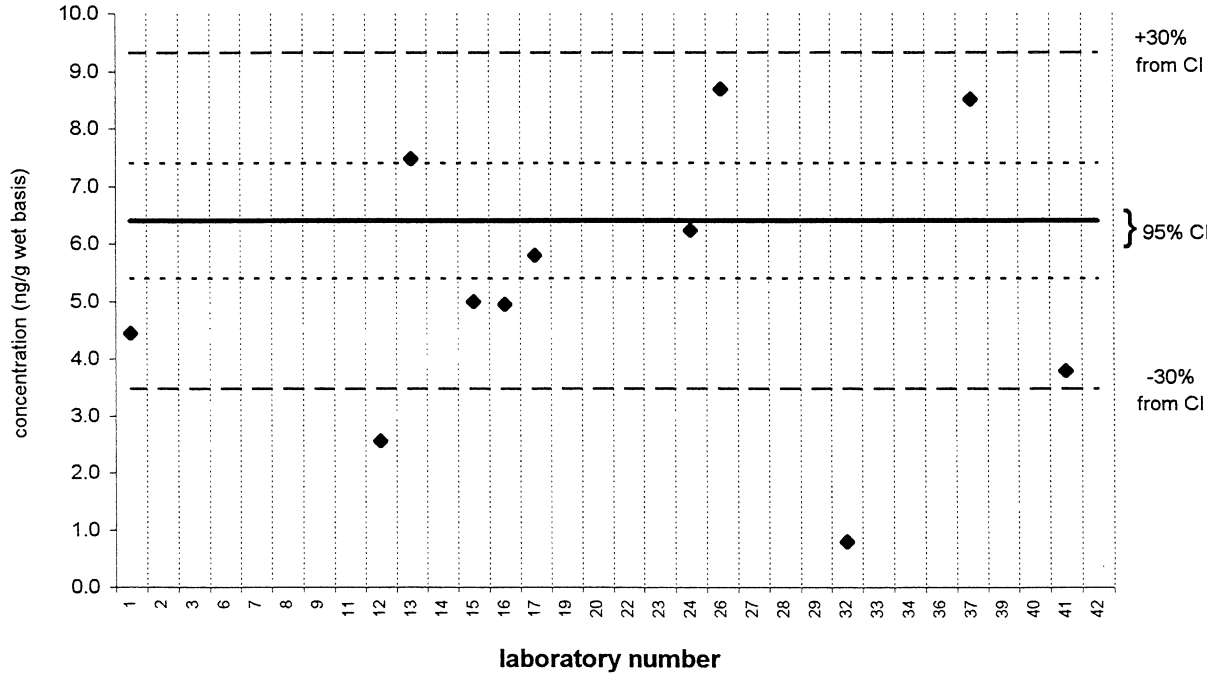
2,4'-DDT — Fish Homogenate IV (QA99FSH4)

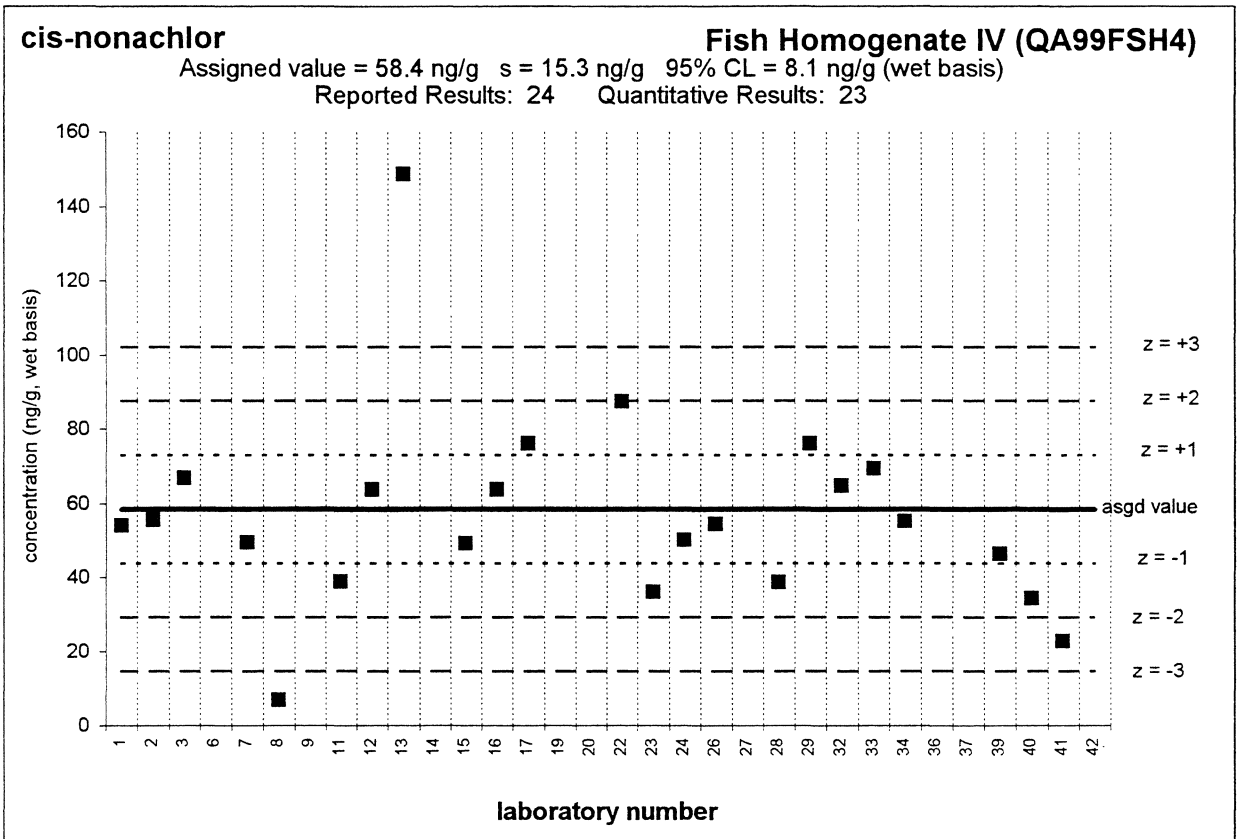
Assigned value = 23.0 ng/g s = 11.2 ng/g 95% CL = 6.4 ng/g (wet basis)
Reported Results: 26 Quantitative Results: 22

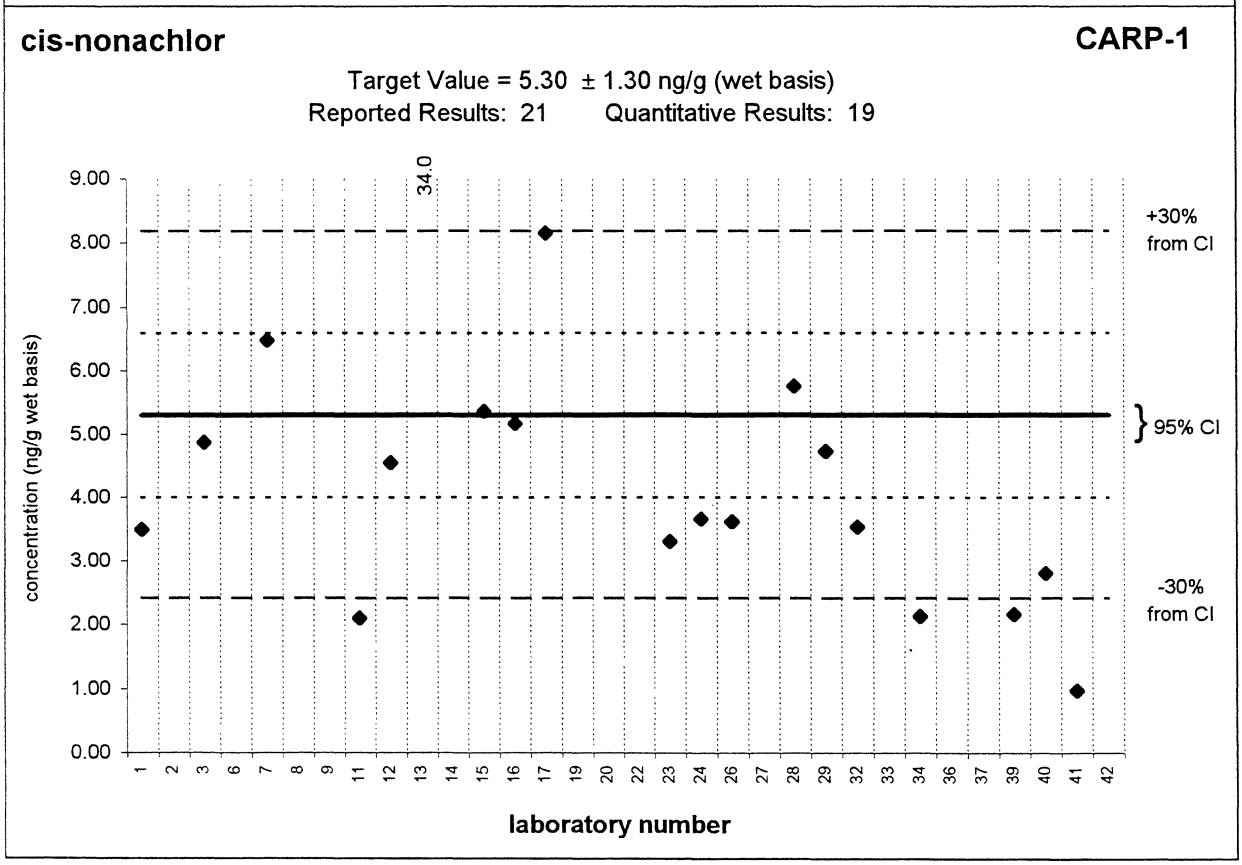


2,4'-DDT — CARP-1

Target Value = 6.40 ± 1.00 ng/g (wet basis)
Reported Results: 22 Quantitative Results: 11

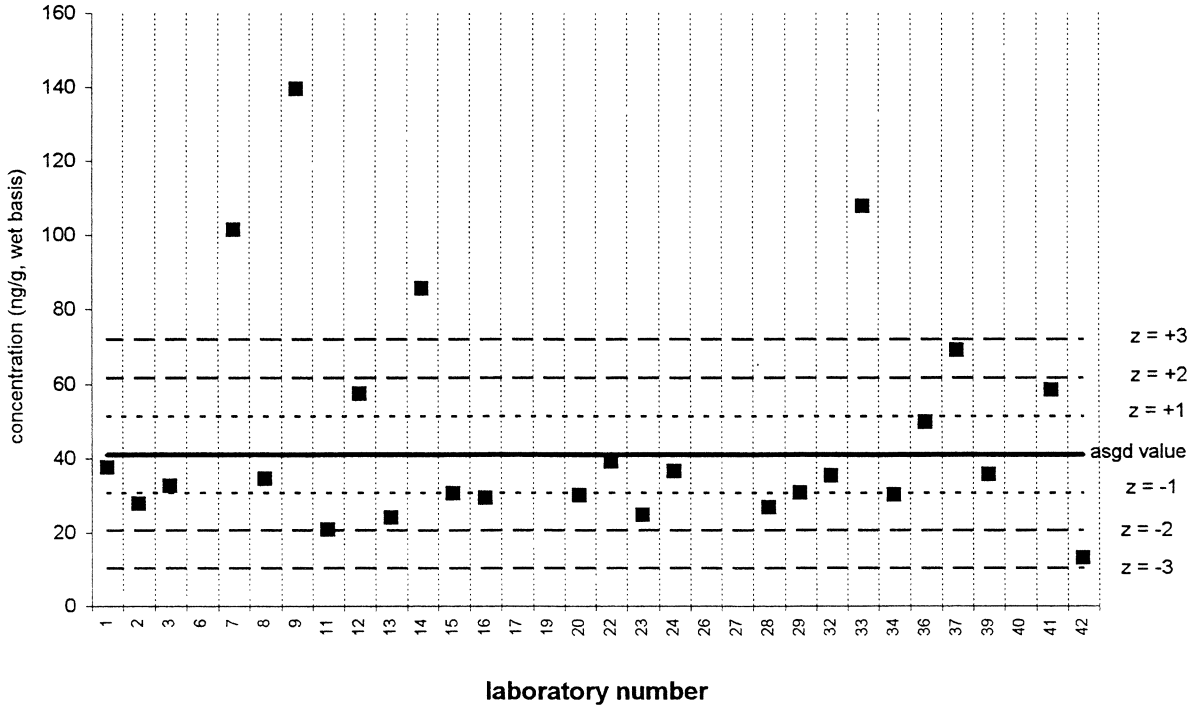



cis-nonachlor
Fish Homogenate IV (QA99FSH4)
Assigned value = 58.4 ng/g s = 15.3 ng/g 95% CL = 8.1 ng/g (wet basis)
Reported Results: 24 Quantitative Results: 23
concentration (ng/g, wet basis)
160
140
120
100
80
60
40
20
0
z = +3
z = +2
z = +1
asgd value
z = -1
z = -2
z = -3
1 2 3 6 7 8 9 11 12 13 14 15 16 17 19 20 22 23 24 26 27 28 29 32 33 34 36 37 39 40 41 42
laboratory number


cis-nonachlor
CARP-1
Target Value = 5.30 ± 1.30 ng/g (wet basis)
Reported Results: 21 Quantitative Results: 19
34.0
concentration (ng/g wet basis)
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
+30% from CI
95% CI
-30% from CI
1 2 3 6 7 8 9 11 12 13 14 15 16 17 19 20 22 23 24 26 27 28 29 32 33 34 36 37 39 40 41 42
laboratory number

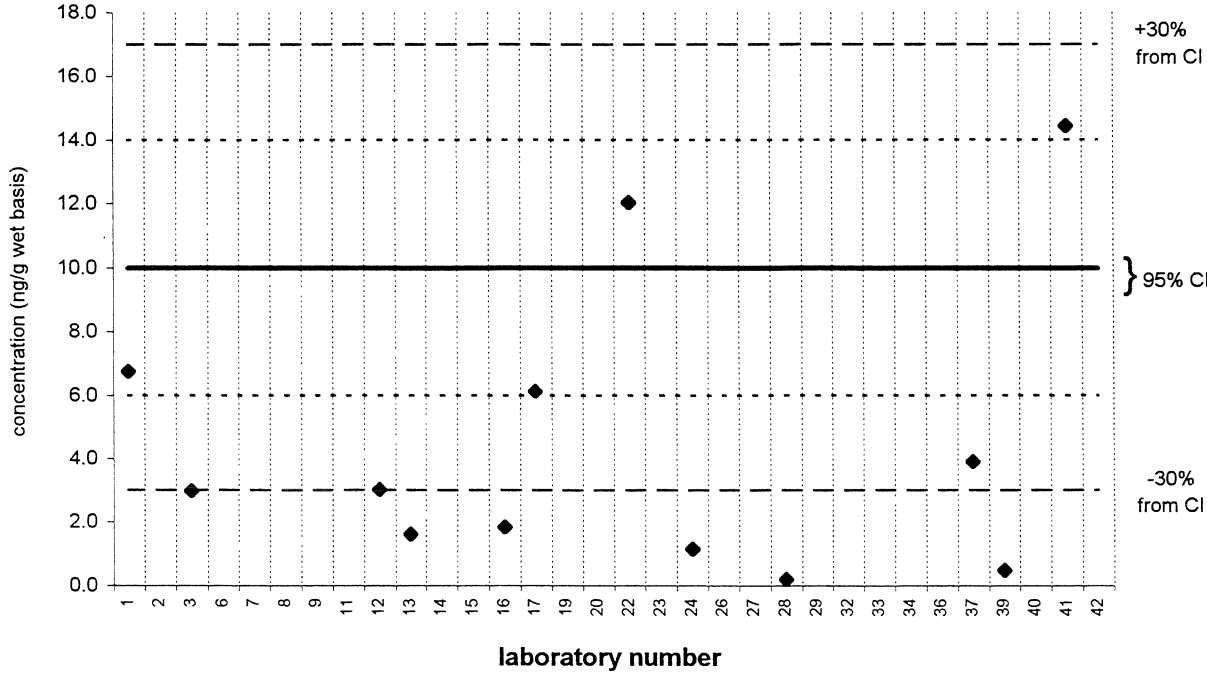
4,4'-DDT — Fish Homogenate IV (QA99FSH4)

Assigned value = 41.1 ng/g s = 16.7 ng/g 95% CL = 12.8 ng/g (wet basis)
Reported Results: 28 Quantitative Results: 26



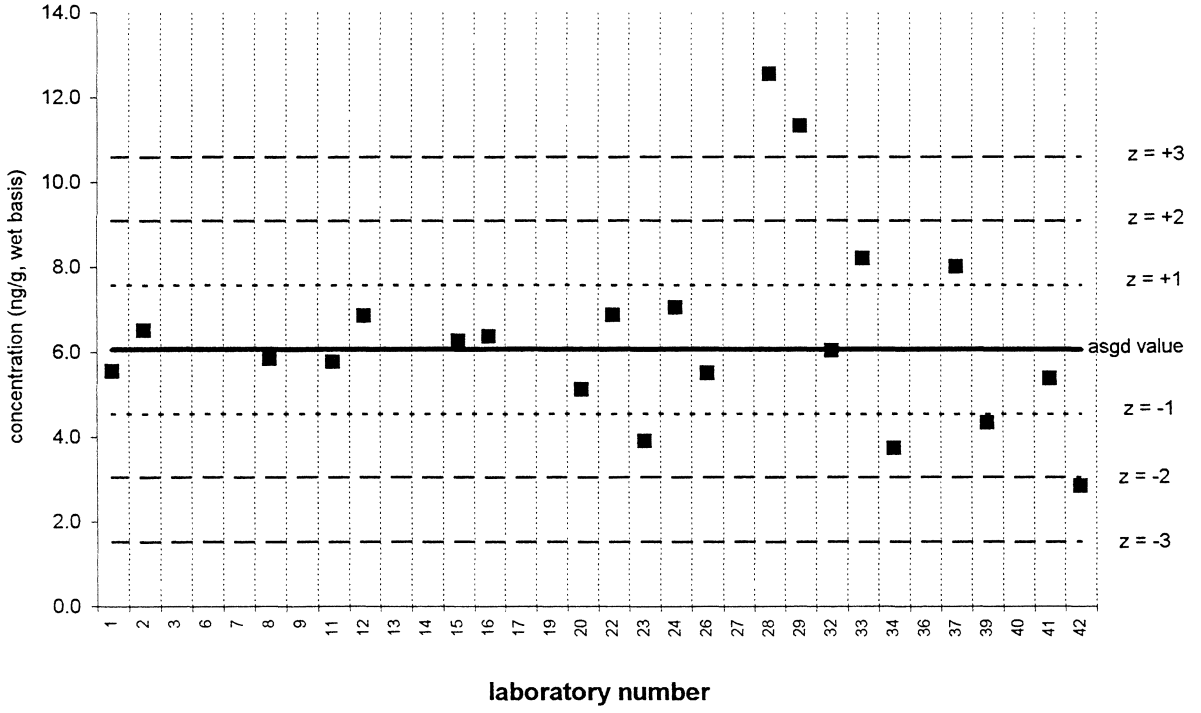
4,4'-DDT — CARP-1

Target Value = 10.0 ± 4.0 ng/g (wet basis)
Reported Results: 24 Quantitative Results: 12



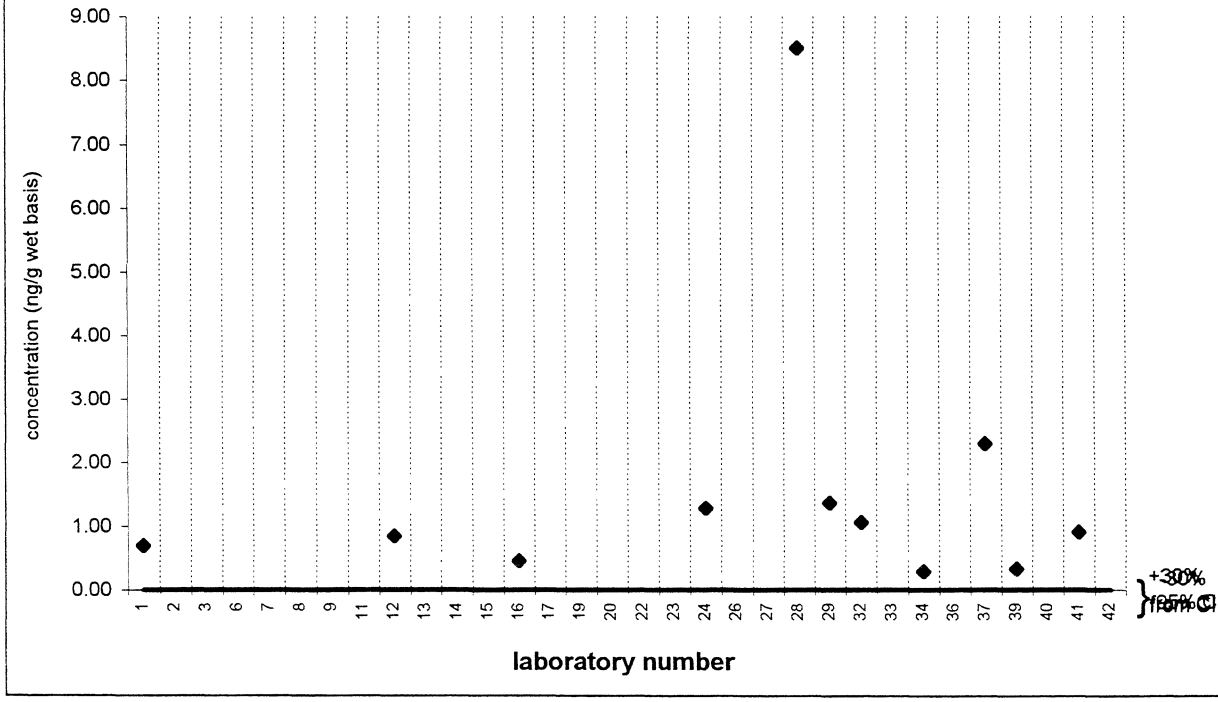
mirex **Fish Homogenate IV (QA99FSH4)**

Assigned value = 6.06 ng/g s = 1.94 ng/g 95% CL = 0.97 ng/g (wet basis)
Reported Results: 24 Quantitative Results: 21



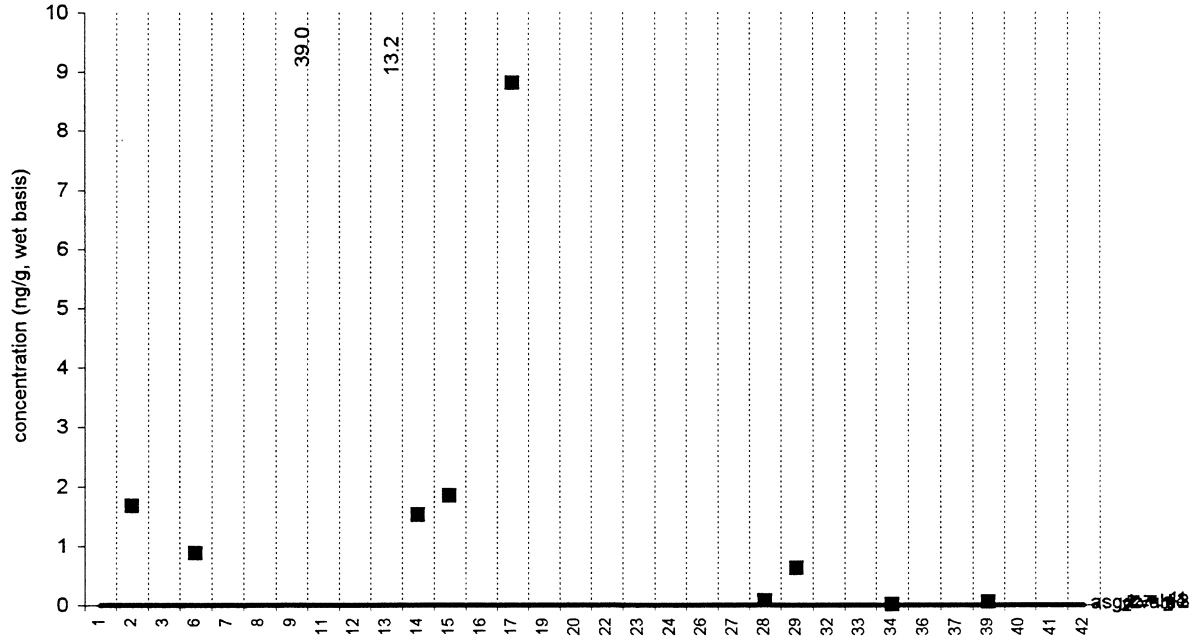
mirex **CARP-1**

Target Value = <6 ng/g (wet basis)
Reported Results: 20 Quantitative Results: 11



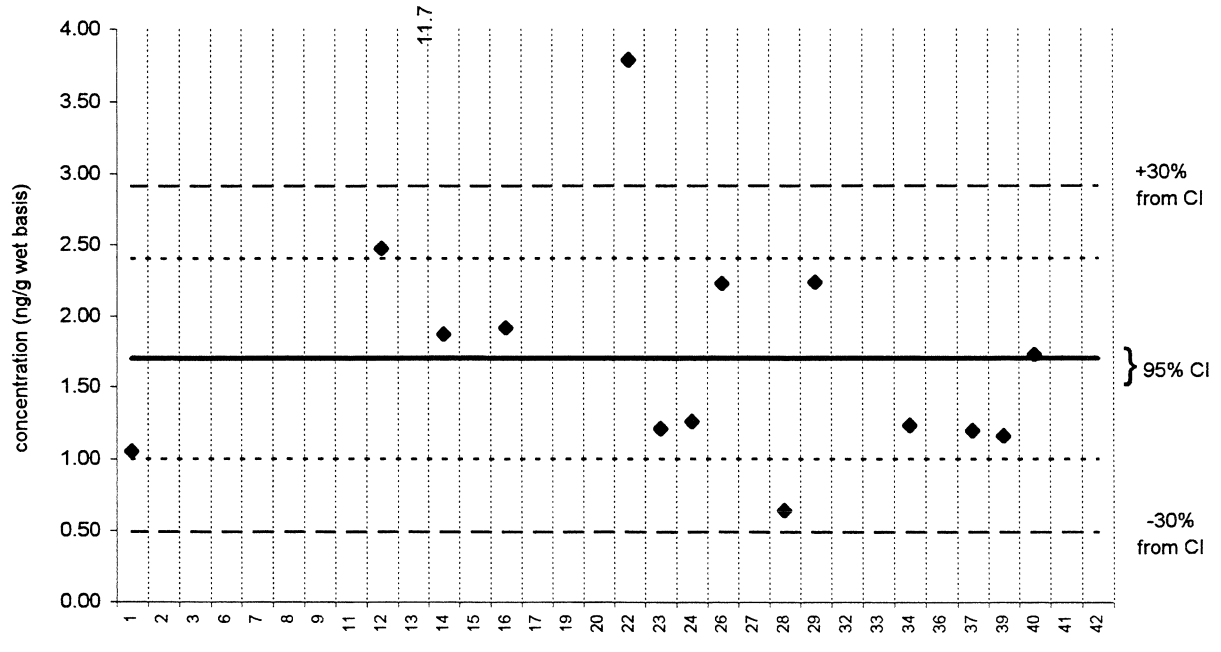
PCB 8 **Fish Homogenate IV (QA99FSH4)**

Assigned value = <2 ng/g (wet basis)
Reported Results: 25 Quantitative Results: 11



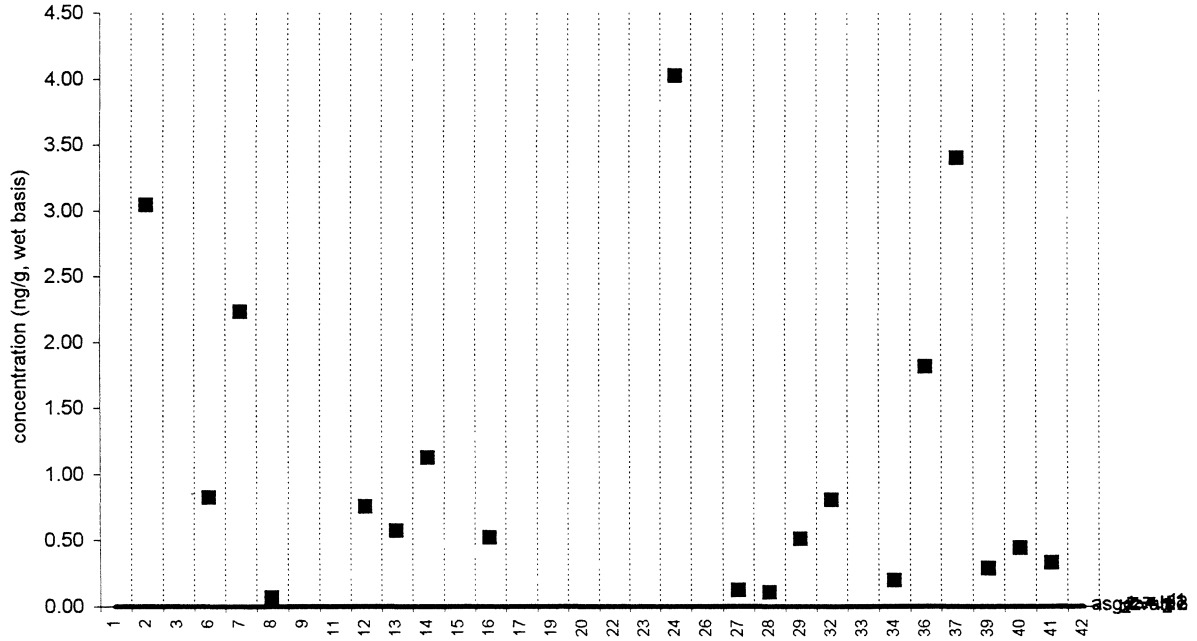
PCB 8 **CARP-1**

Target Value = 1.70 ± 0.70 ng/g (wet basis)
Reported Results: 21 Quantitative Results: 15



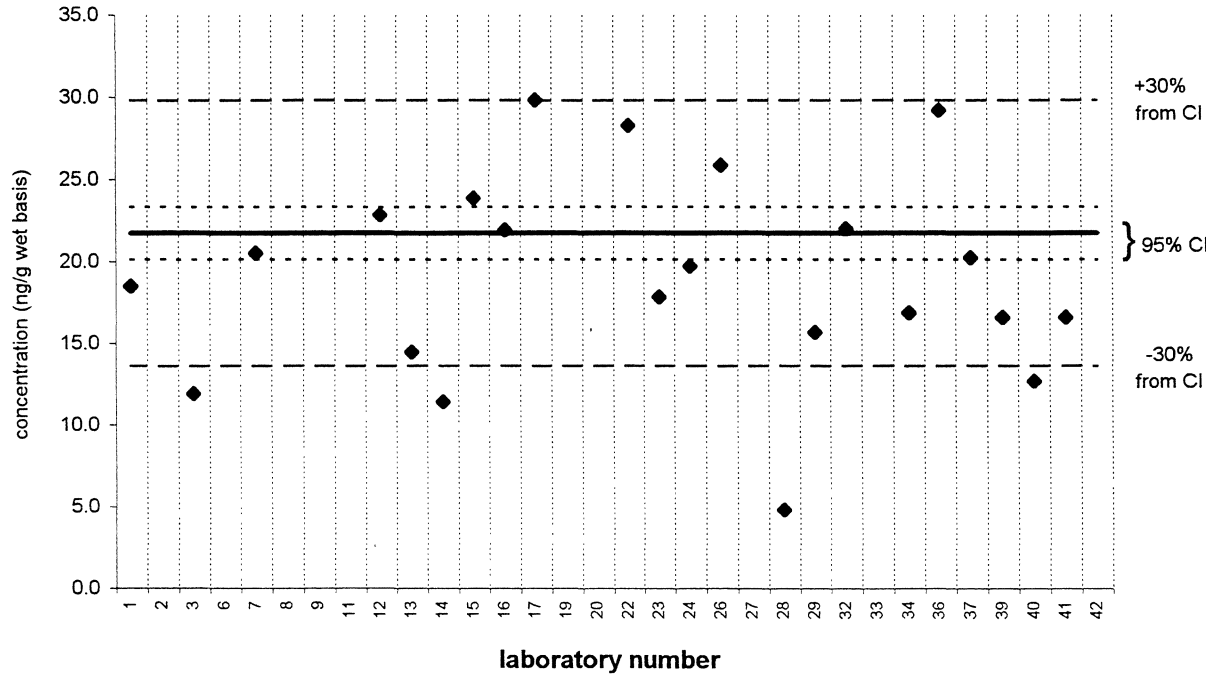
PCB 18 **Fish Homogenate IV (QA99FSH4)**

Assigned value = <2 ng/g (wet basis)
Reported Results: 29 Quantitative Results: 19



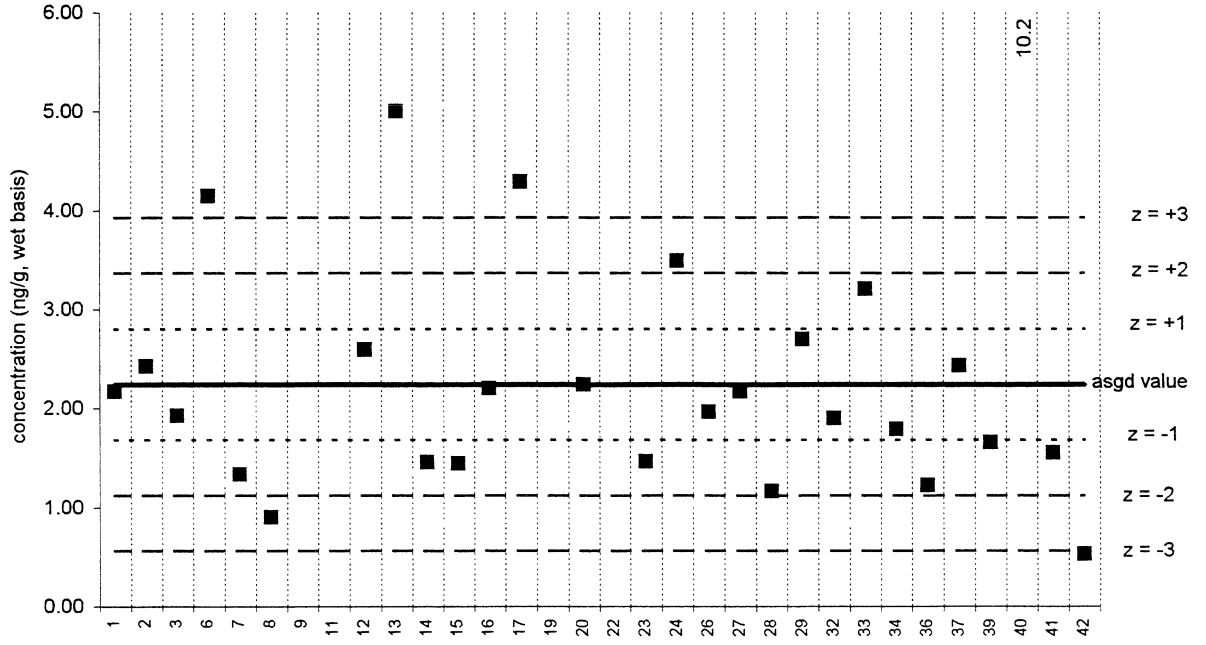
PCB 18 **CARP-1**

Target Value = 21.7 ± 1.6 ng/g (wet basis)
Reported Results: 24 Quantitative Results: 22



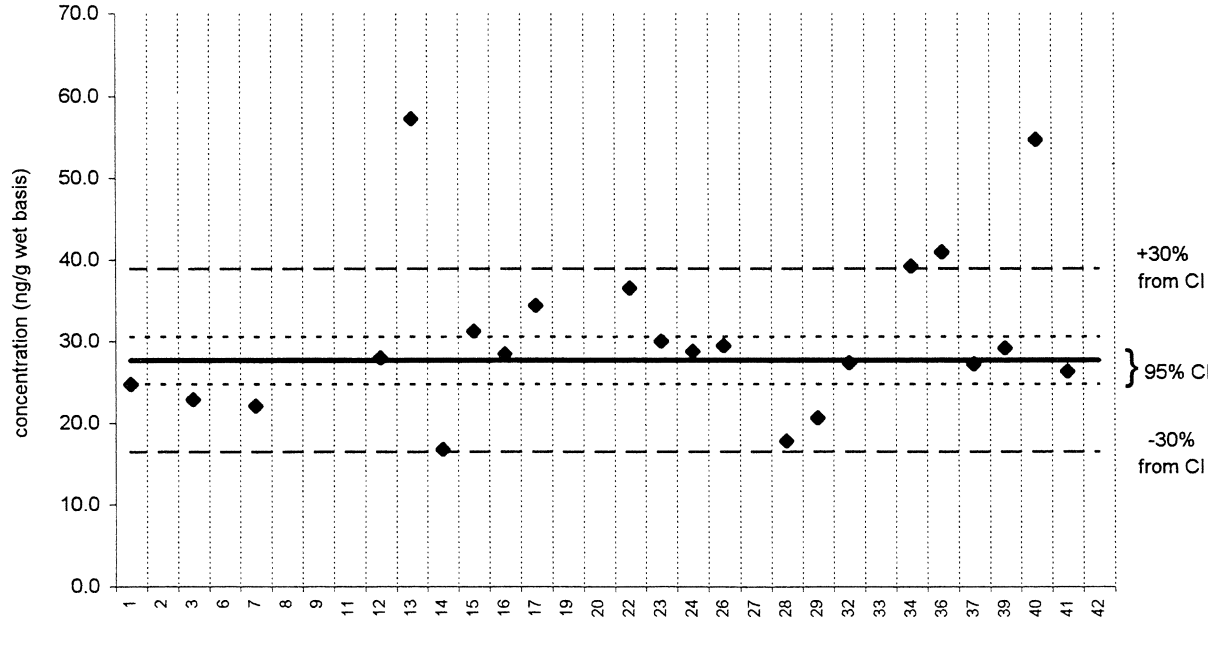
PCB 28 **Fish Homogenate IV (QA99FSH4)**

Assigned value = 2.24 ng/g s = 0.89 ng/g 95% CL = 0.41 ng/g (wet basis)
Reported Results: 29 Quantitative Results: 28



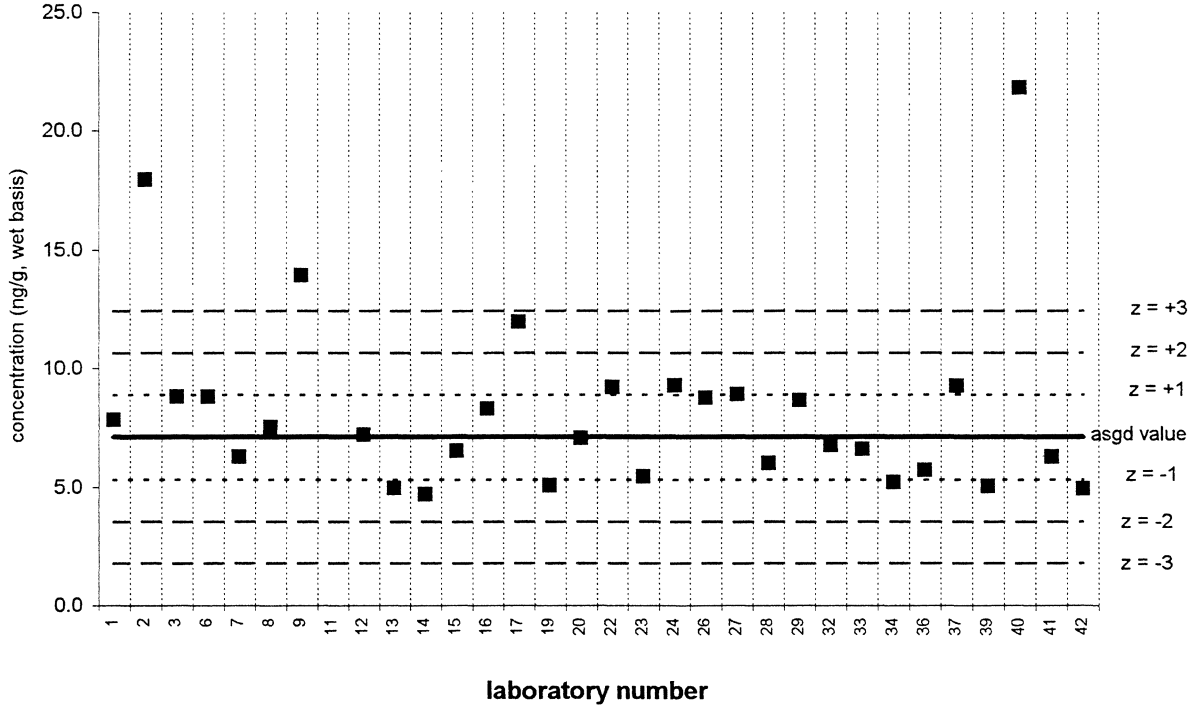
PCB 28 **CARP-1**

Target Value = 27.7 ± 2.9 ng/g (wet basis)
Reported Results: 24 Quantitative Results: 22



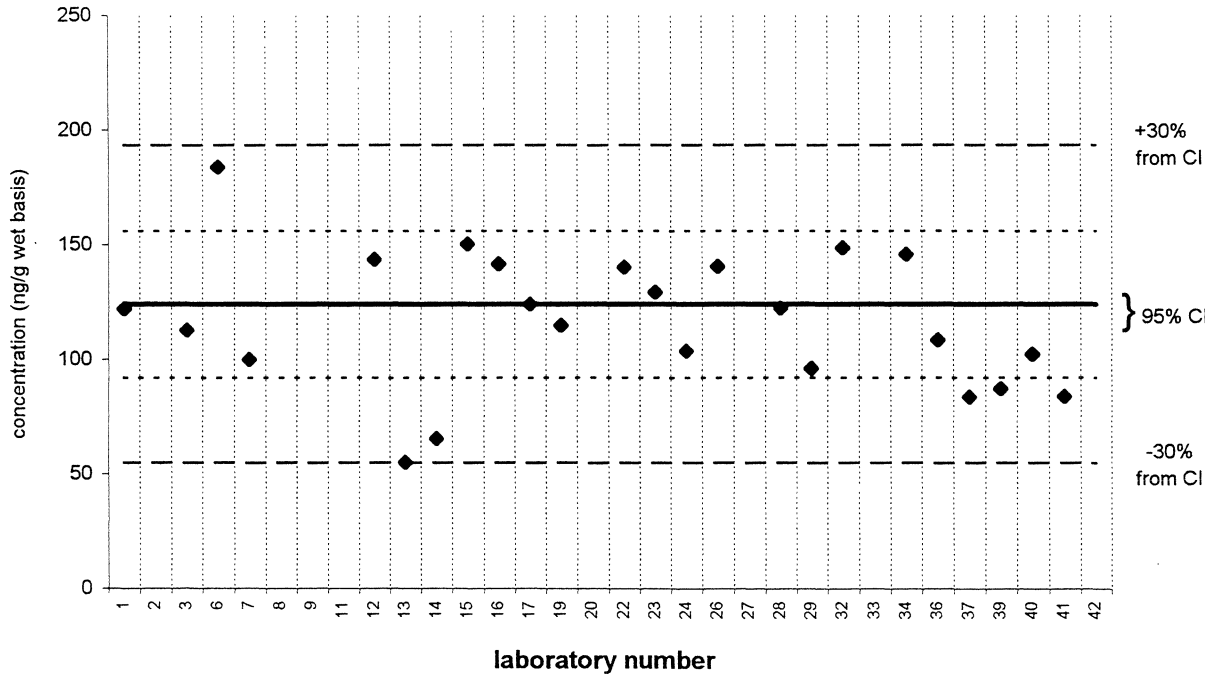
PCB 52 **Fish Homogenate IV (QA99FSH4)**

Assigned value = 7.10 ng/g s = 1.85 ng/g 95% CL = 0.75 ng/g (wet basis)
Reported Results: 31 Quantitative Results: 31



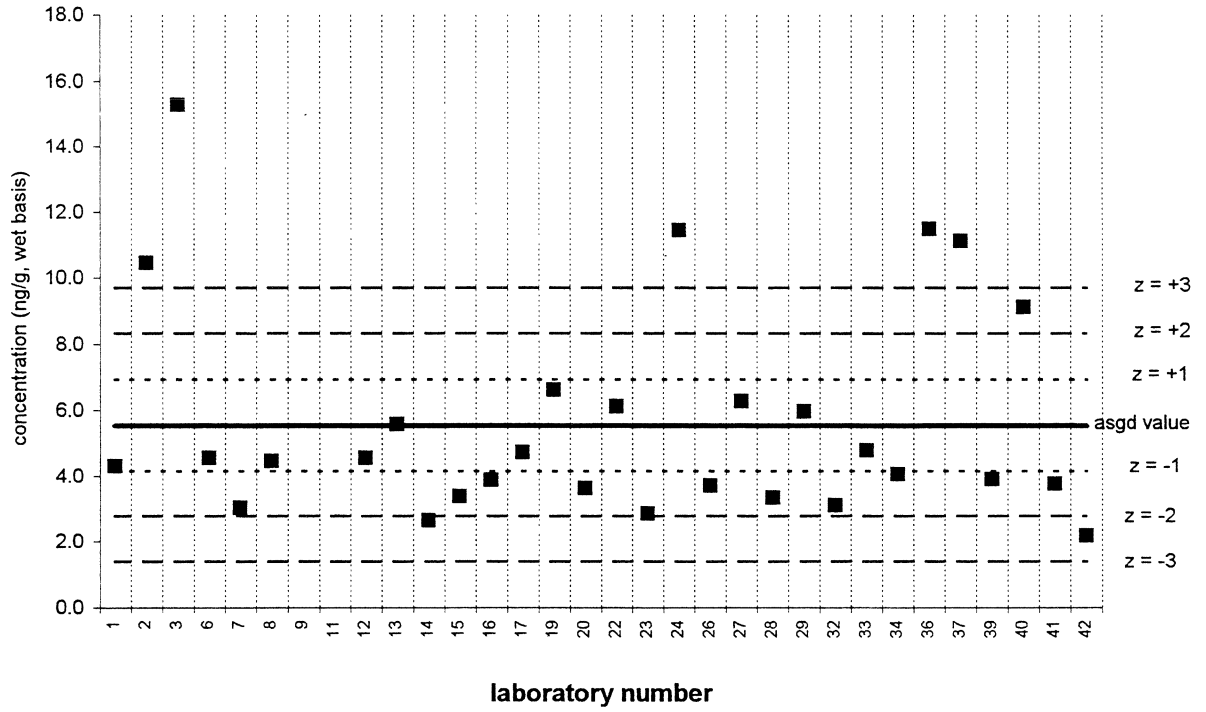
PCB 52 **CARP-1**

Certified Value = 124 ± 32 ng/g (wet basis)
Reported Results: 26 Quantitative Results: 24



PCB 44 **Fish Homogenate IV (QA99FSH4)**

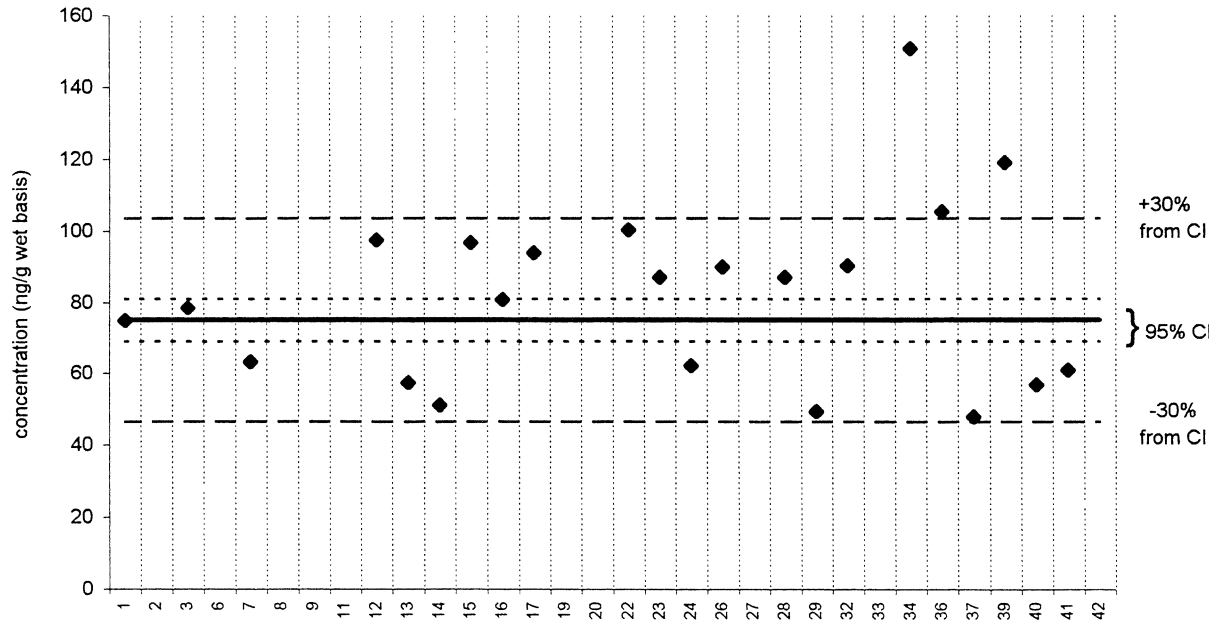
Assigned value = 5.54 ng/g s = 3.23 ng/g 95% CL = 1.40 ng/g (wet basis)
Reported Results: 31 Quantitative Results: 30



laboratory number

PCB 44 **CARP-1**

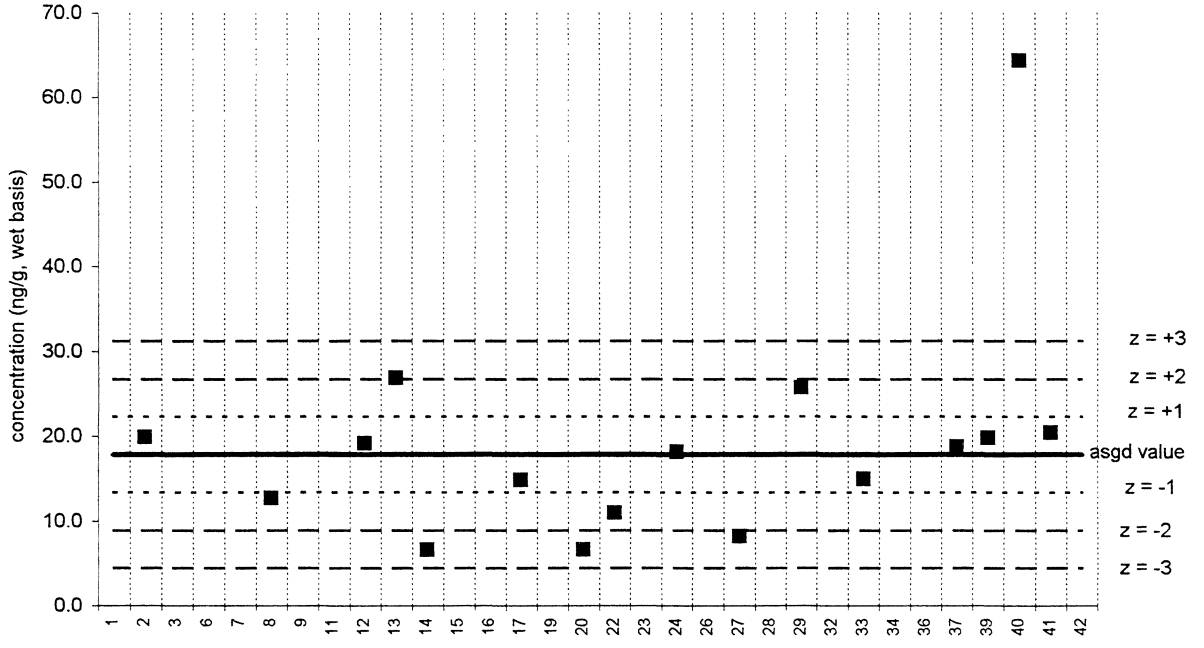
Target Value = 75.0 ± 6.0 ng/g (wet basis)
Reported Results: 24 Quantitative Results: 22



laboratory number

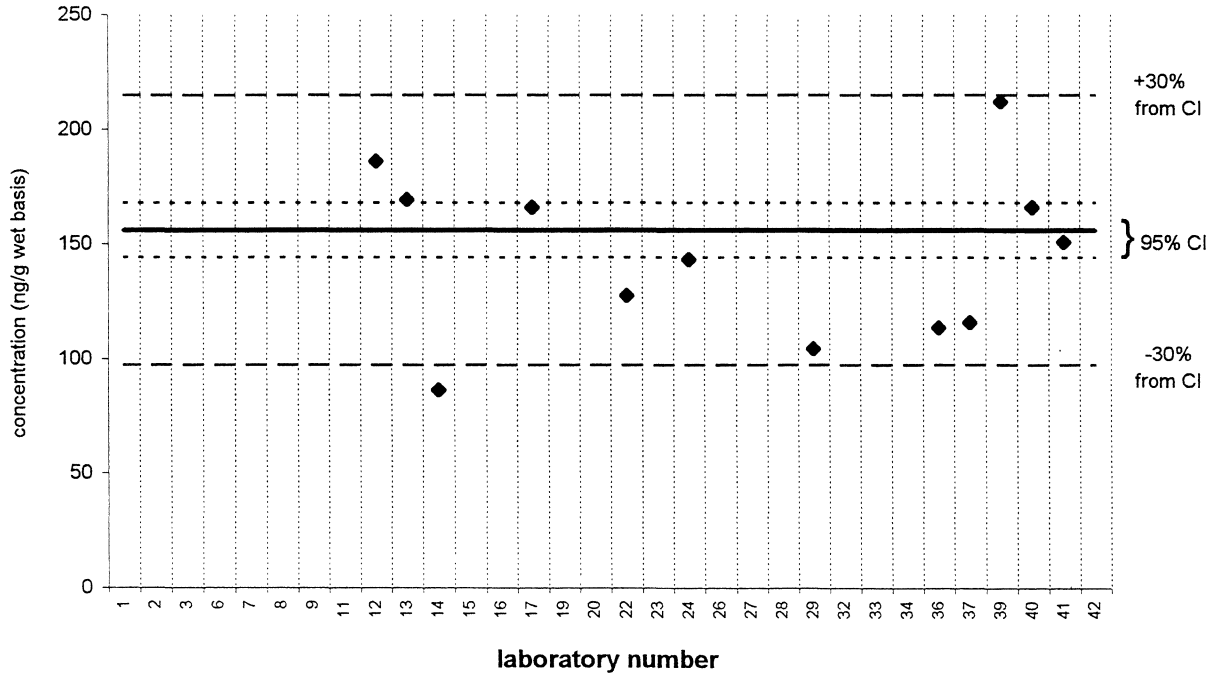
PCB 66/95 **Fish Homogenate IV (QA99FSH4)**

Assigned value = 17.8 ng/g s = 5.9 ng/g 95% CL = 3.9 ng/g (wet basis)
Reported Results: 21 Quantitative Results: 16



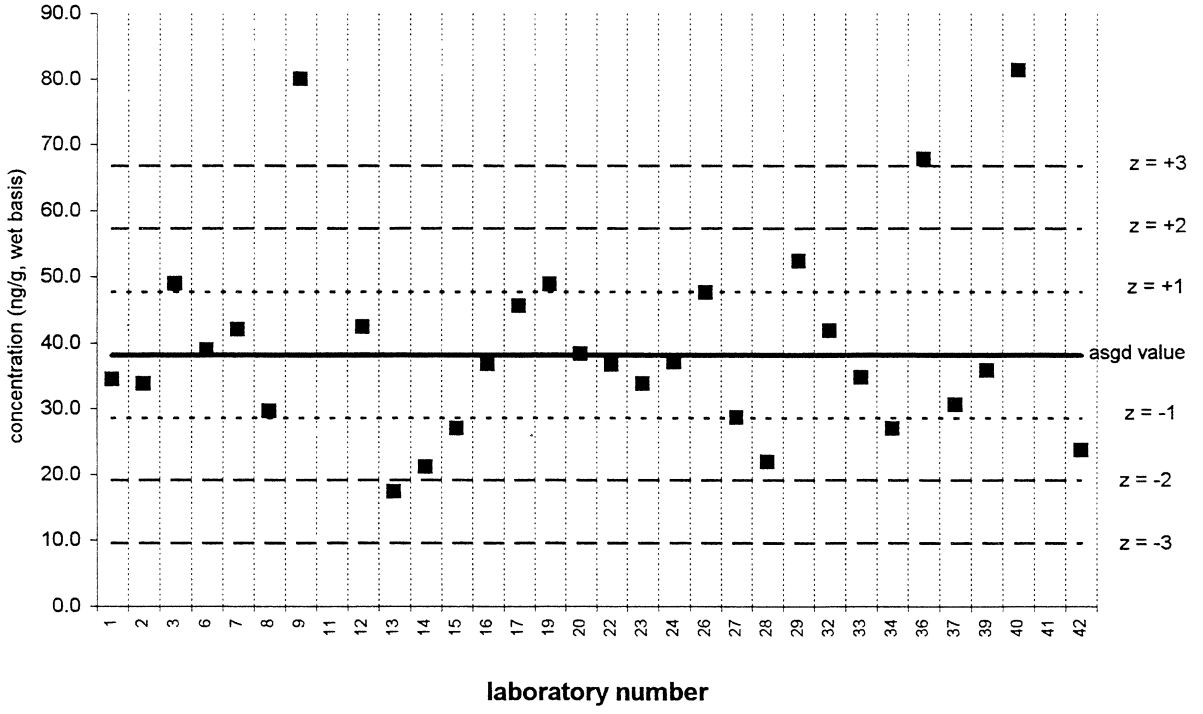
PCB 66/95 **CARP-1**

Target Value = 156 ± 12 ng/g (wet basis)
Reported Results: 14 Quantitative Results: 12



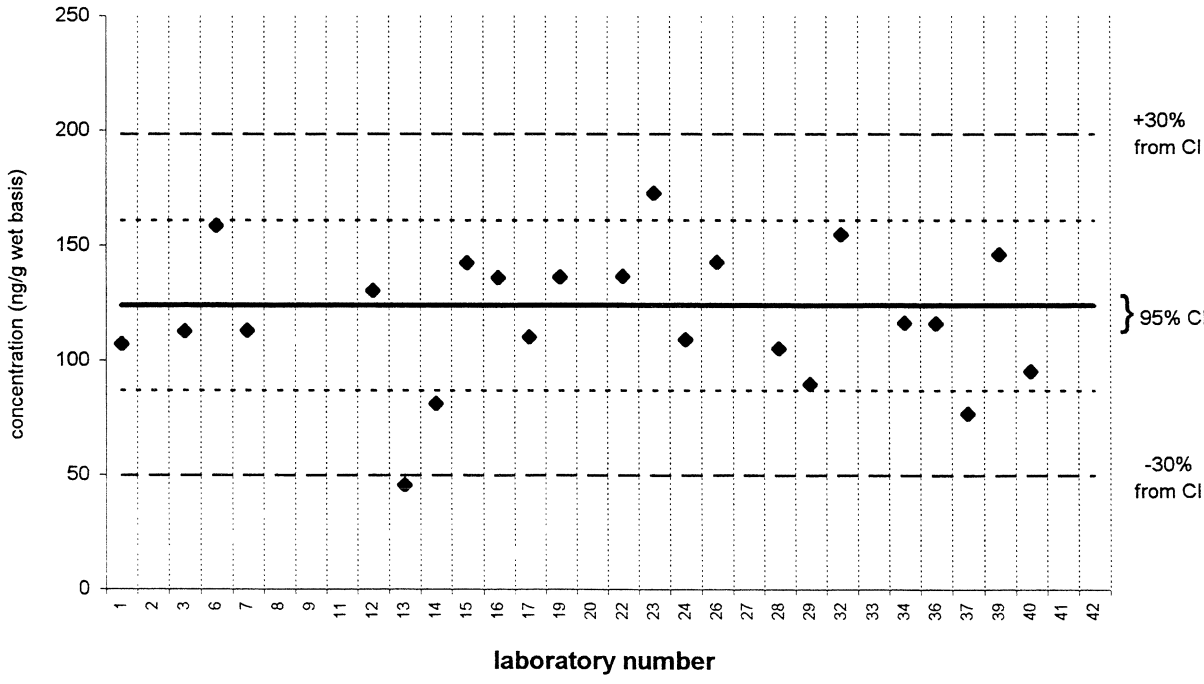
PCB 101/90 **Fish Homogenate IV (QA99FSH4)**

Assigned value = 38.1 ng/g s = 10.7 ng/g 95% CL = 4.5 ng/g (wet basis)
Reported Results: 31 Quantitative Results: 30



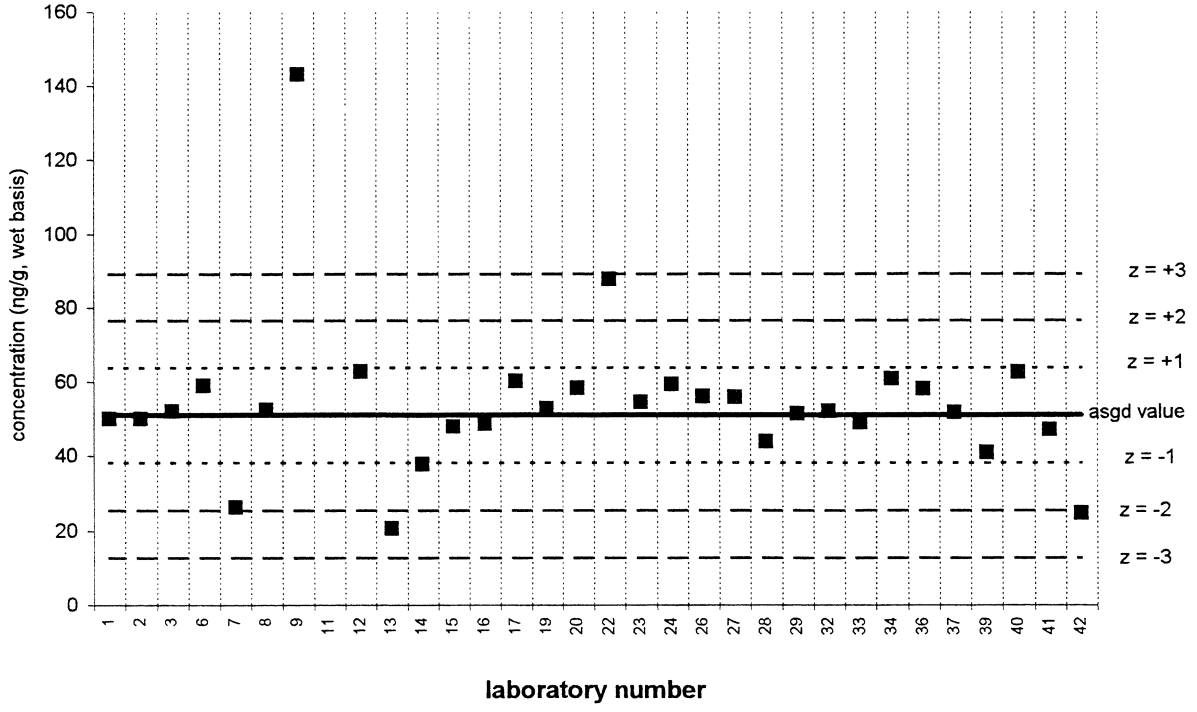
PCB 101/90 **CARP-1**

Certified Value = 124 ± 37 ng/g (wet basis)
Reported Results: 26 Quantitative Results: 23



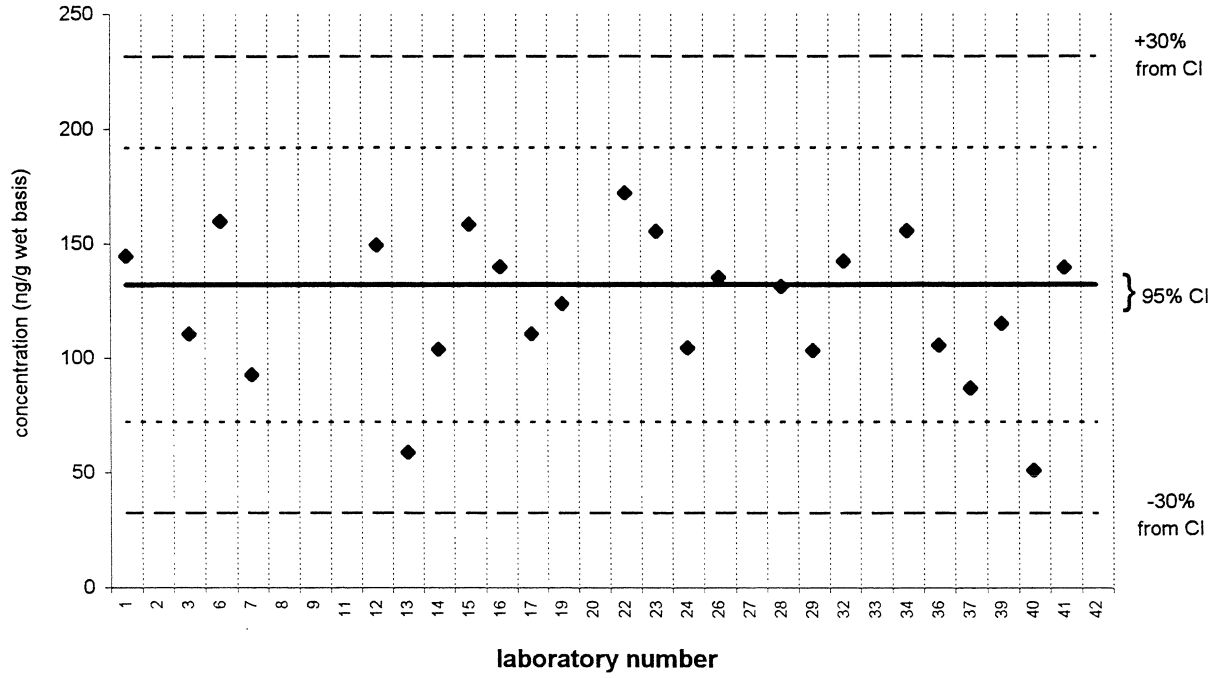
PCB 118 **Fish Homogenate IV (QA99FSH4)**

Assigned value = 50.9 ng/g s = 13.4 ng/g 95% CL = 5.3 ng/g (wet basis)
Reported Results: 31 Quantitative Results: 31



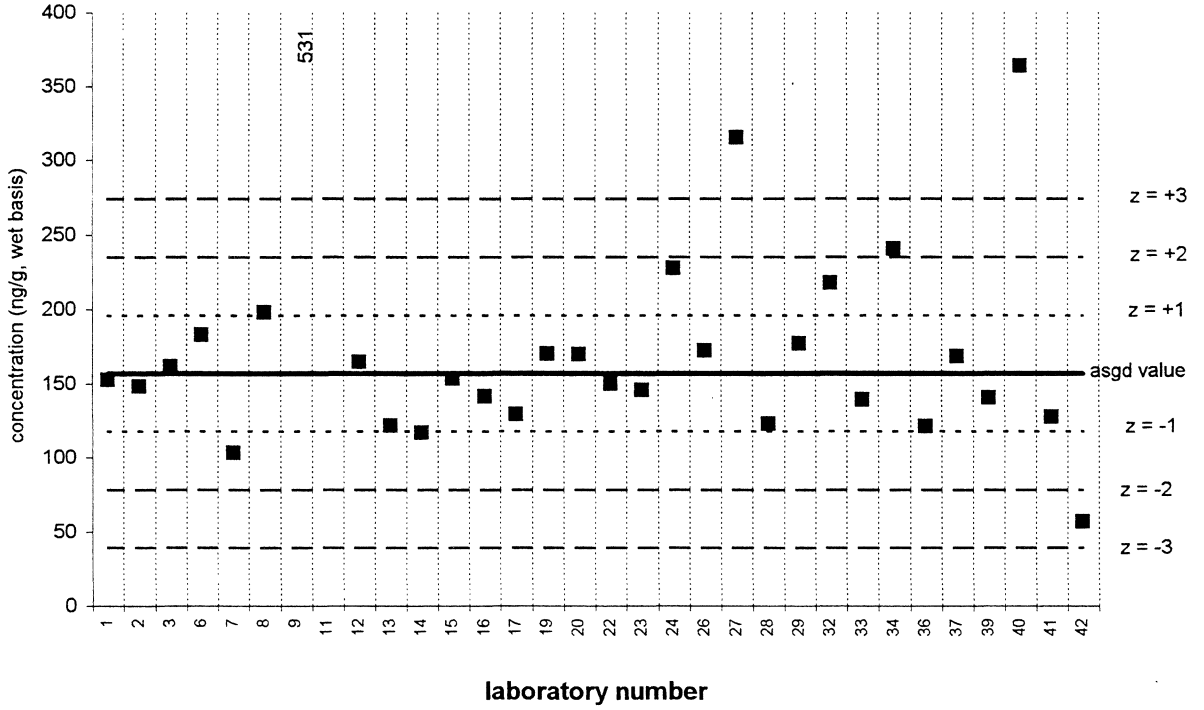
PCB 118 **CARP-1**

Certified Value = 132 ± 60 ng/g (wet basis)
Reported Results: 26 Quantitative Results: 24



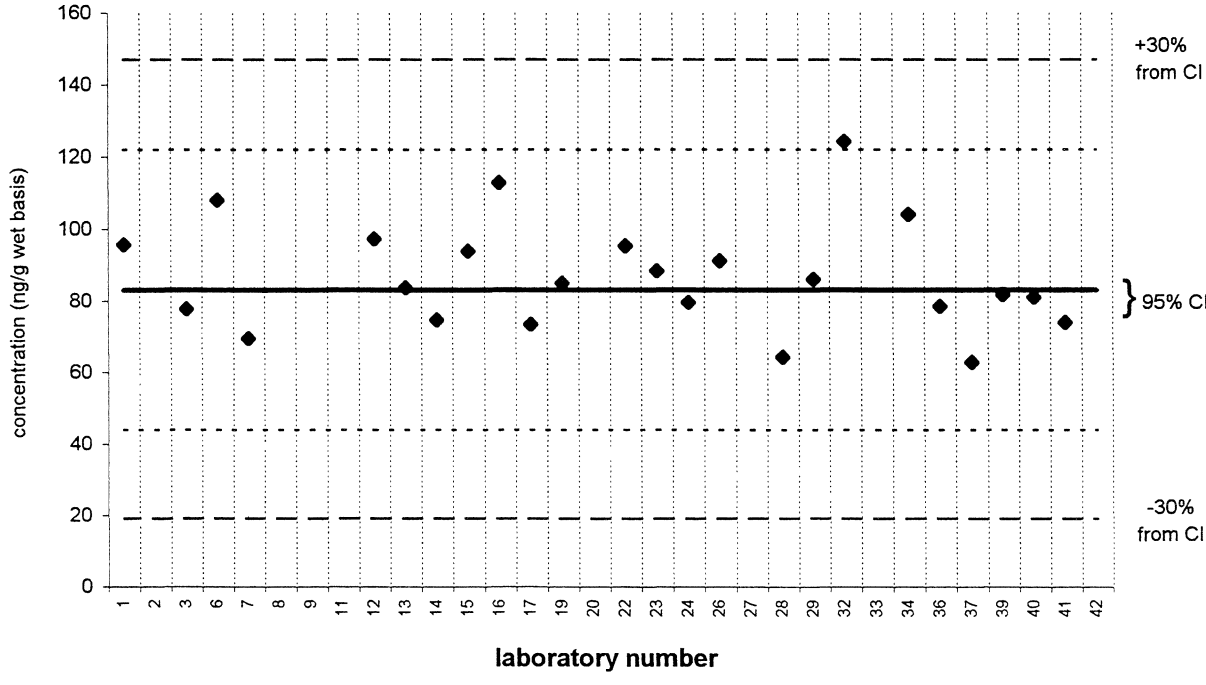
PCB 153 **Fish Homogenate IV (QA99FSH4)**

Assigned value = 157 ng/g s = 34 ng/g 95% CL = 14 ng/g (wet basis)
Reported Results: 31 Quantitative Results: 31



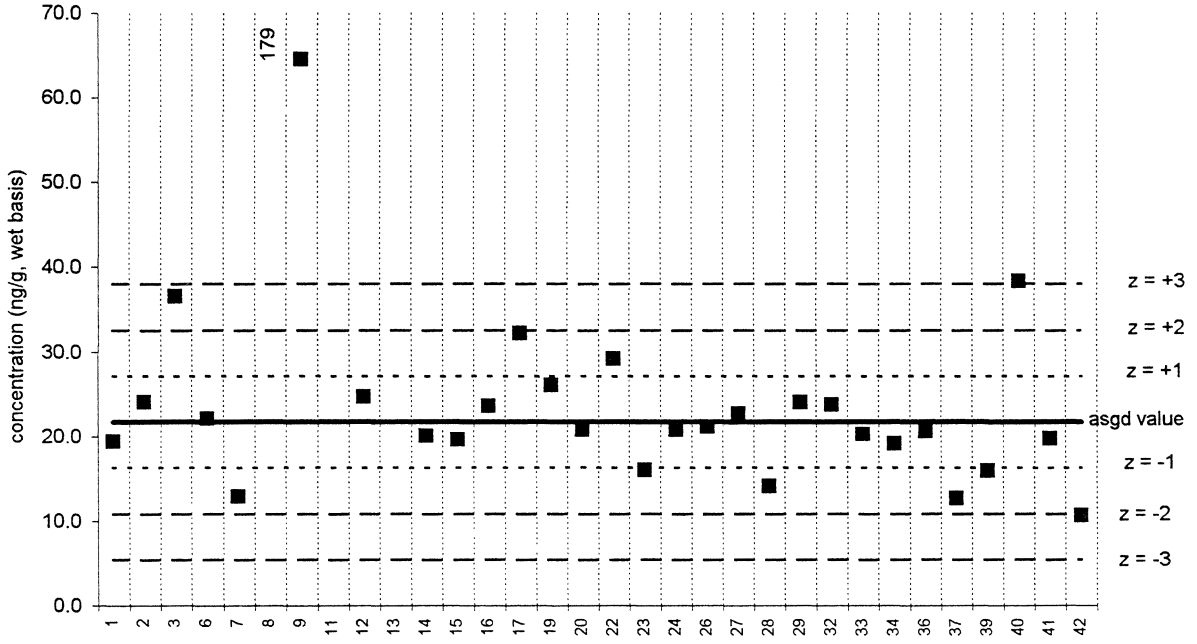
PCB 153 **CARP-1**

Certified Value = 83.0 ± 39.0 ng/g (wet basis)
Reported Results: 26 Quantitative Results: 24



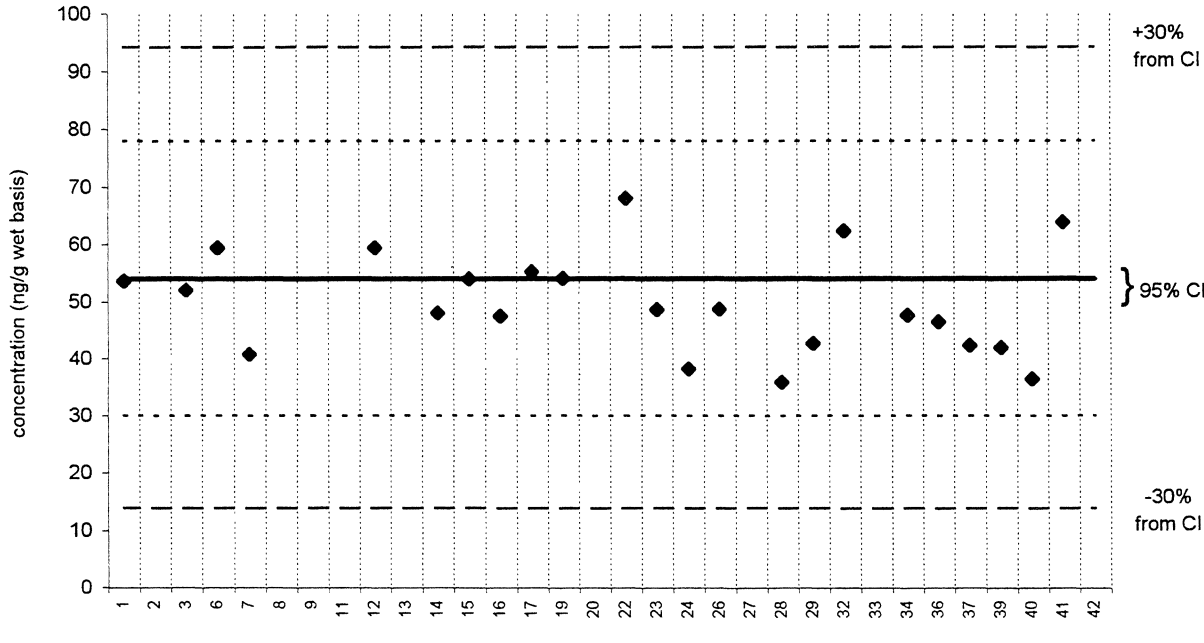
PCB 105 **Fish Homogenate IV (QA99FSH4)**

Assigned value = 21.7 ng/g s = 6.7 ng/g 95% CL = 2.7 ng/g (wet basis)
Reported Results: 31 Quantitative Results: 30



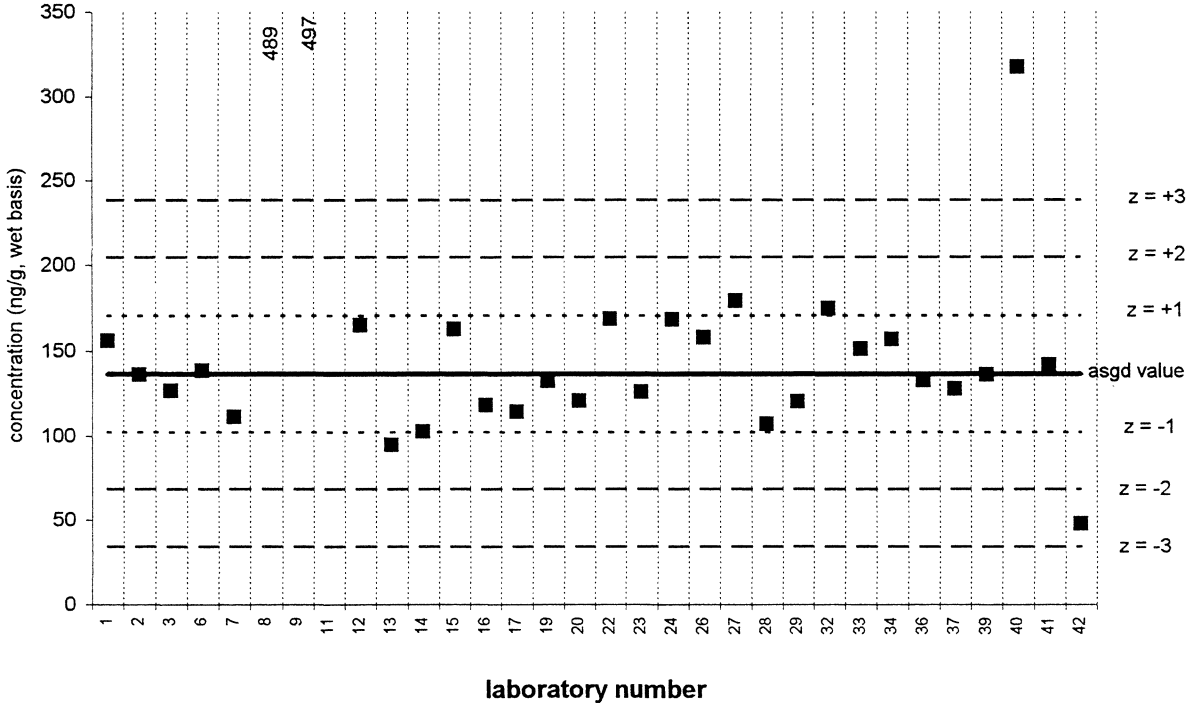
PCB 105 **CARP-1**

Certified Value = 54.0 ± 24.0 ng/g (wet basis)
Reported Results: 26 Quantitative Results: 23



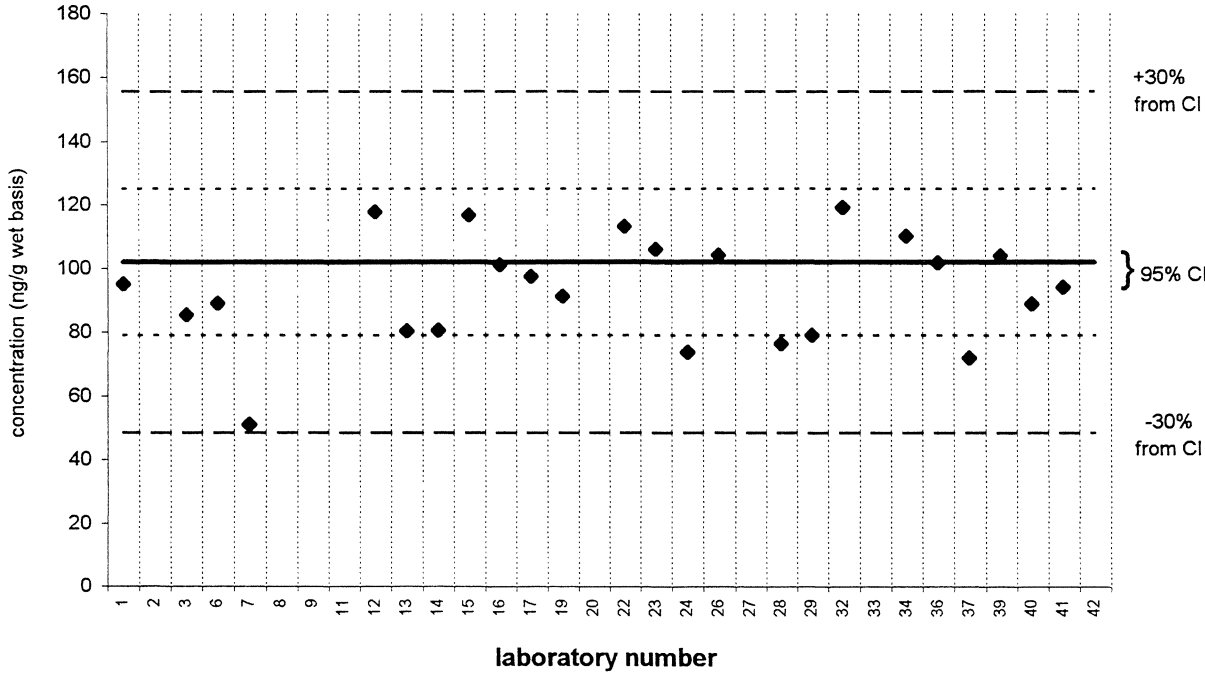
PCB 138/163/164 **Fish Homogenate IV (QA99FSH4)**

Assigned value = 136 ng/g s = 23 ng/g 95% CL = 9 ng/g (wet basis)
Reported Results: 31 Quantitative Results: 31



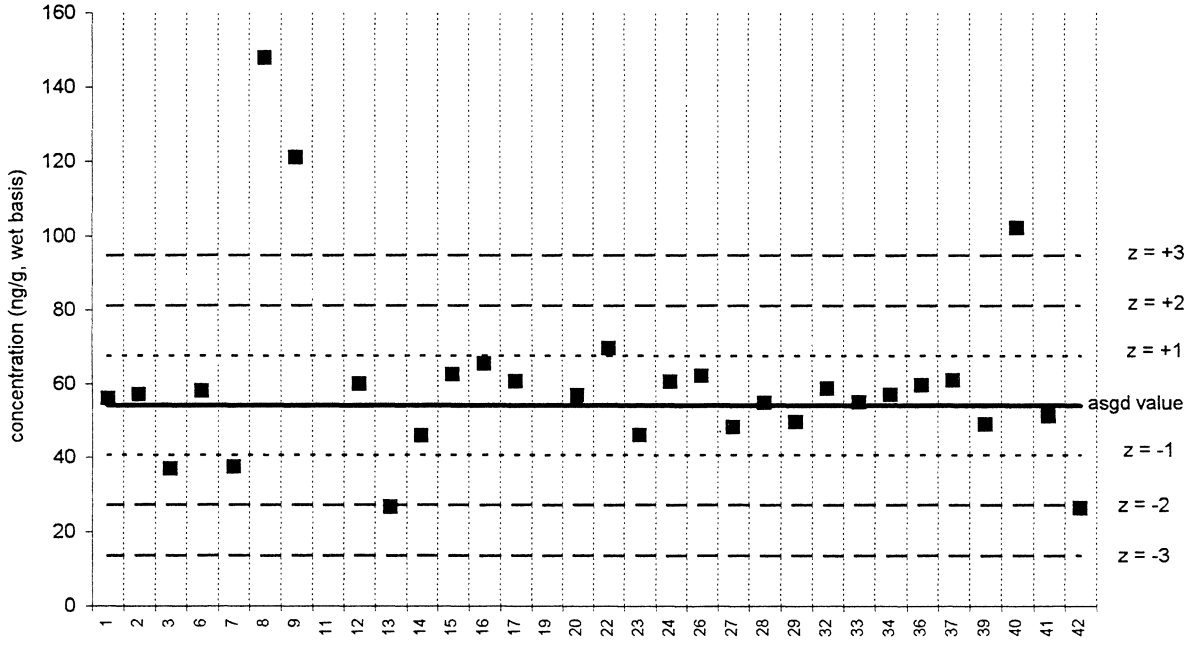
PCB 138/163/164 **CARP-1**

Certified Value = 102 ± 23 ng/g (wet basis)
Reported Results: 26 Quantitative Results: 24



PCB 187/182 **Fish Homogenate IV (QA99FSH4)**

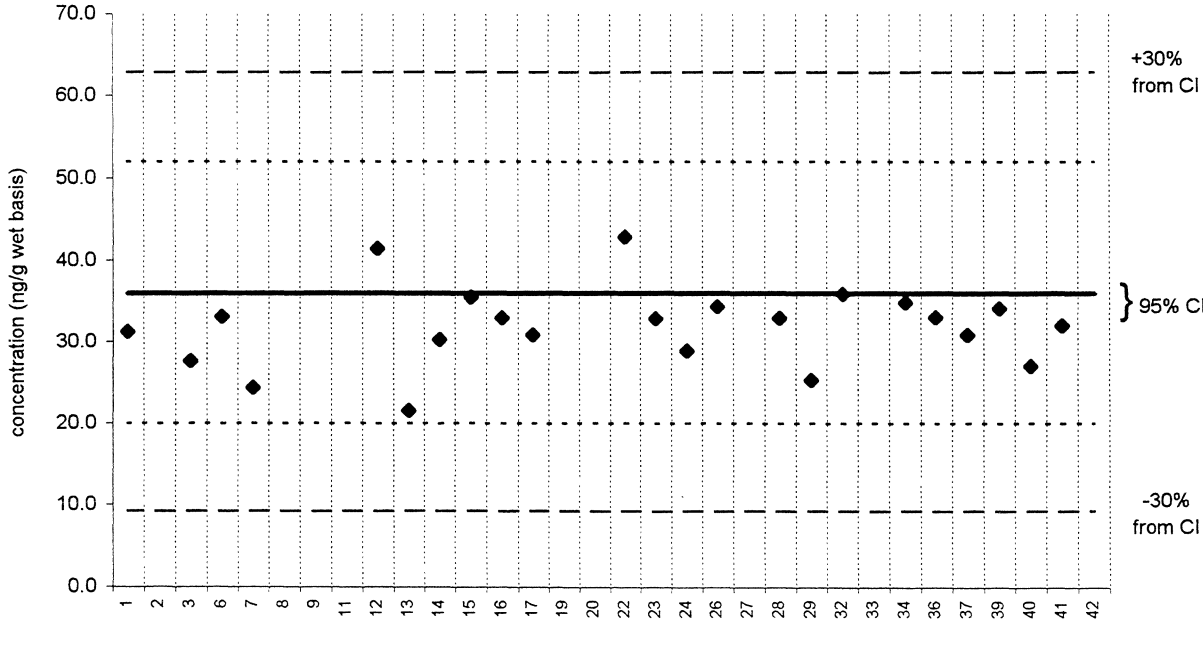
Assigned value = 54.2 ng/g s = 10.0 ng/g 95% CL = 4.2 ng/g (wet basis)
Reported Results: 30 Quantitative Results: 30



laboratory number

PCB 187/182 **CARP-1**

Certified Value = 36.0 ± 16.0 ng/g (wet basis)
Reported Results: 25 Quantitative Results: 23

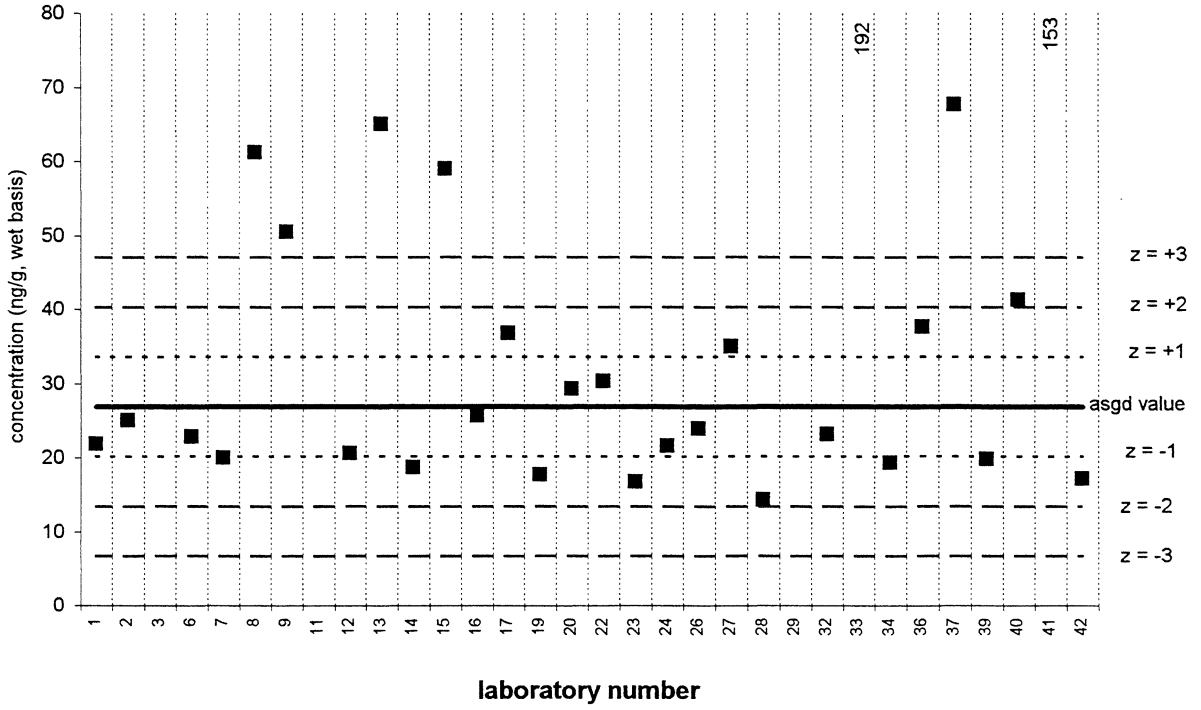


laboratory number

PCB 128

Fish Homogenate IV (QA99FSH4)

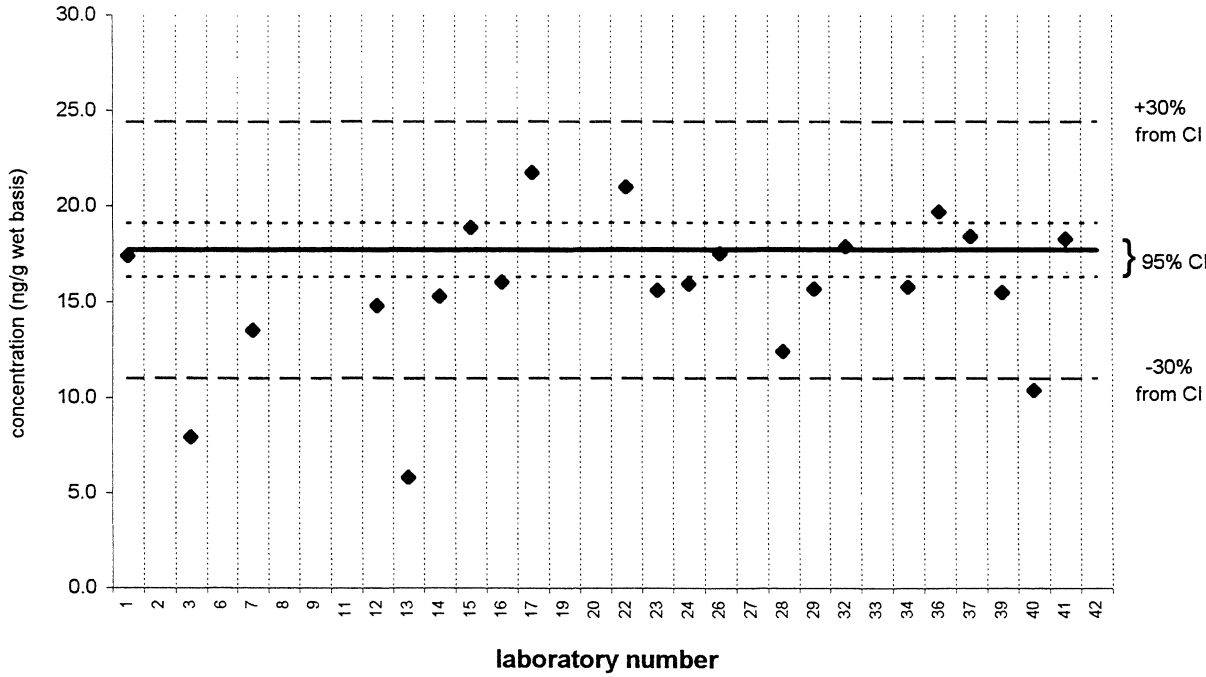
Assigned value = 26.9 ng/g s = 13.6 ng/g 95% CL = 6.2 ng/g (wet basis)
Reported Results: 30 Quantitative Results: 29



PCB 128

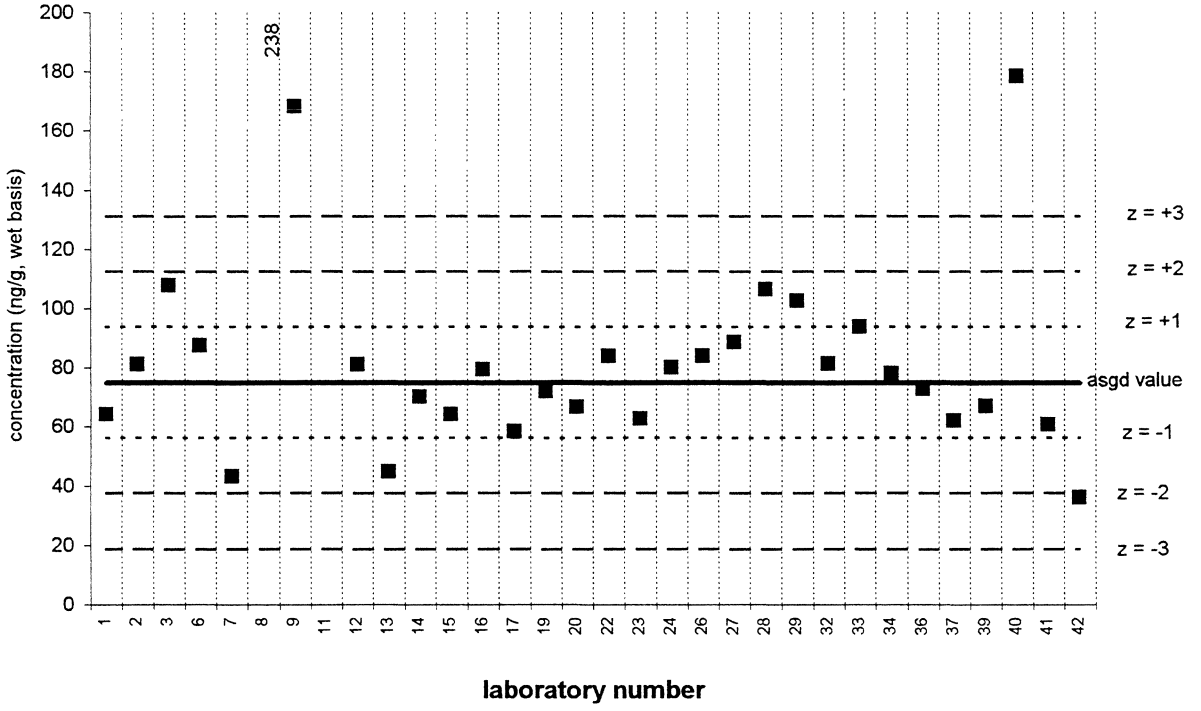
CARP-1

Target Value = 17.7 ± 1.4 ng/g (wet basis)
Reported Results: 24 Quantitative Results: 22



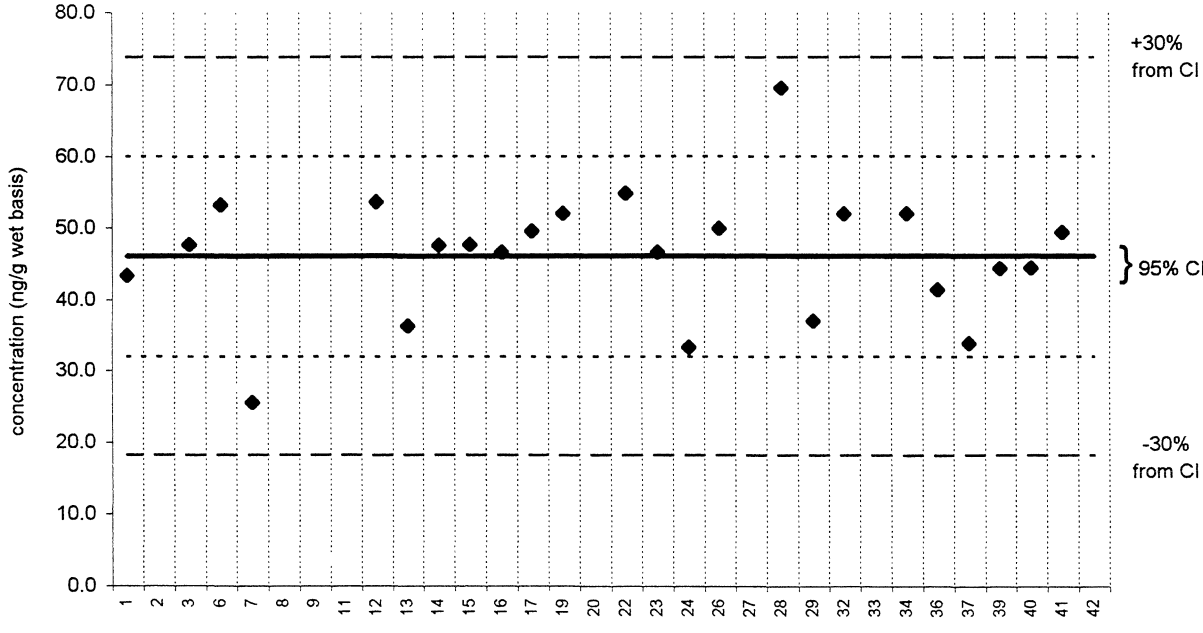
PCB 180 **Fish Homogenate IV (QA99FSH4)**

Assigned value = 75.0 ng/g s = 16.8 ng/g 95% CL = 6.9 ng/g (wet basis)
Reported Results: 31 Quantitative Results: 31



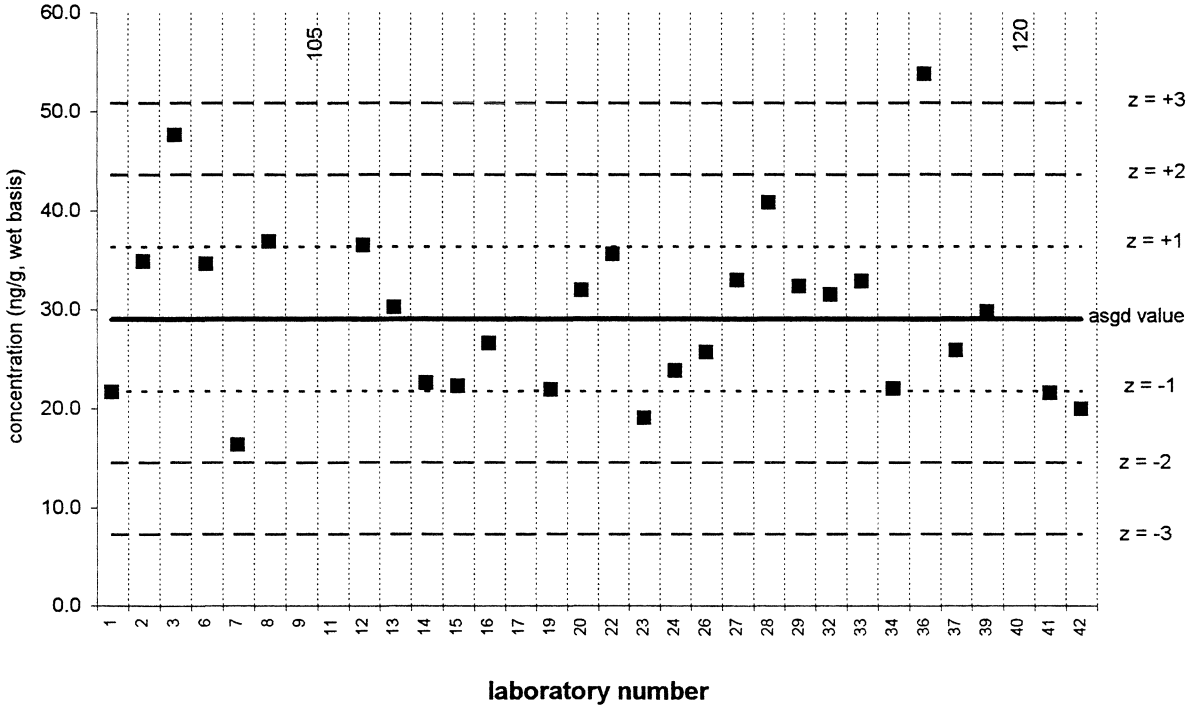
PCB 180 **CARP-1**

Certified Value = 46.0 ± 14.0 ng/g (wet basis)
Reported Results: 26 Quantitative Results: 24



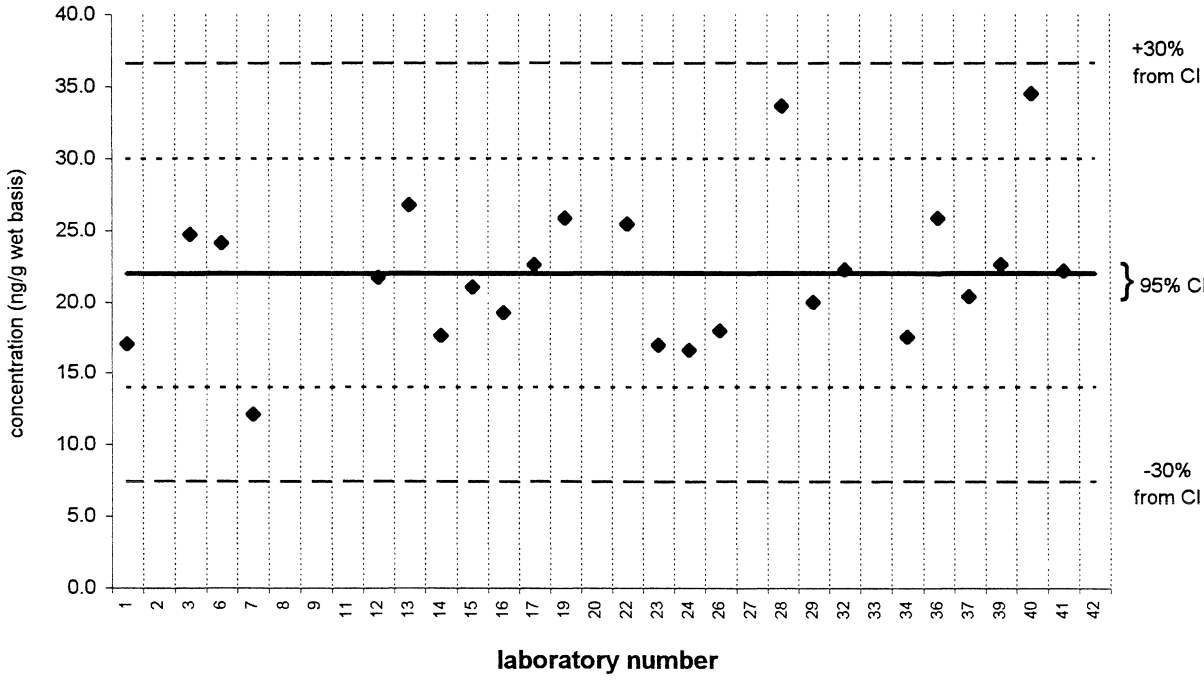
PCB 170/190 **Fish Homogenate IV (QA99FSH4)**

Assigned value = 29.1 ng/g s = 9.0 ng/g 95% CL = 3.7 ng/g (wet basis)
Reported Results: 31 Quantitative Results: 30



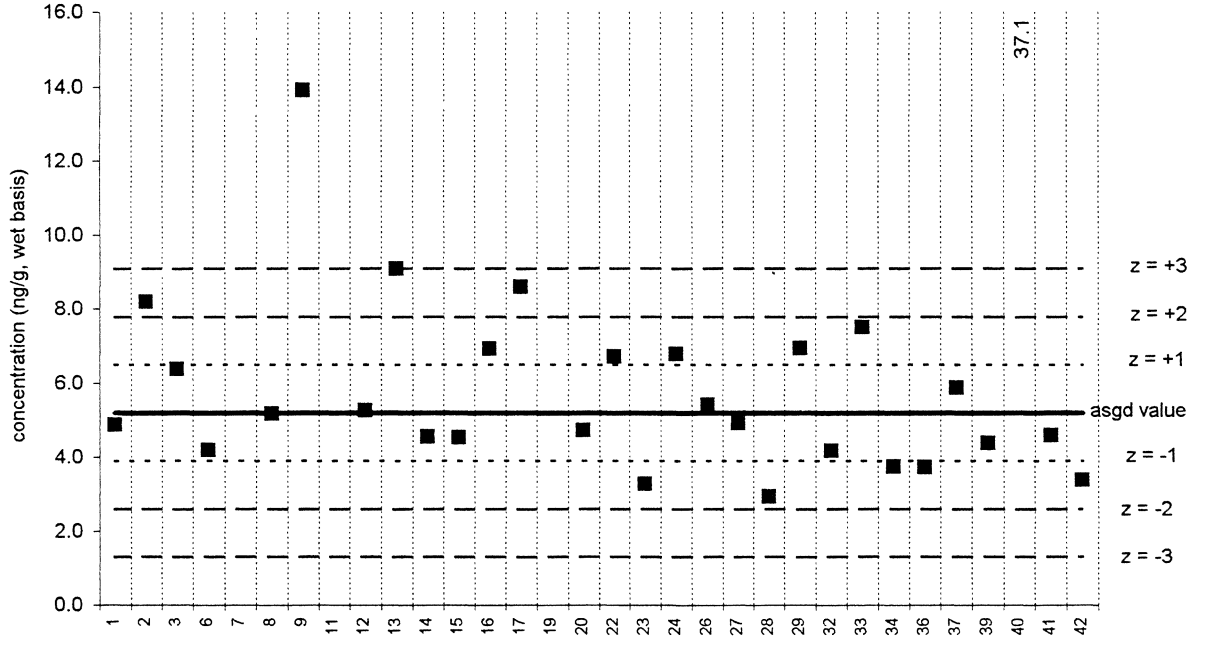
PCB 170/190 **CARP-1**

Certified Value = 22.0 ± 8.0 ng/g (wet basis)
Reported Results: 26 Quantitative Results: 24



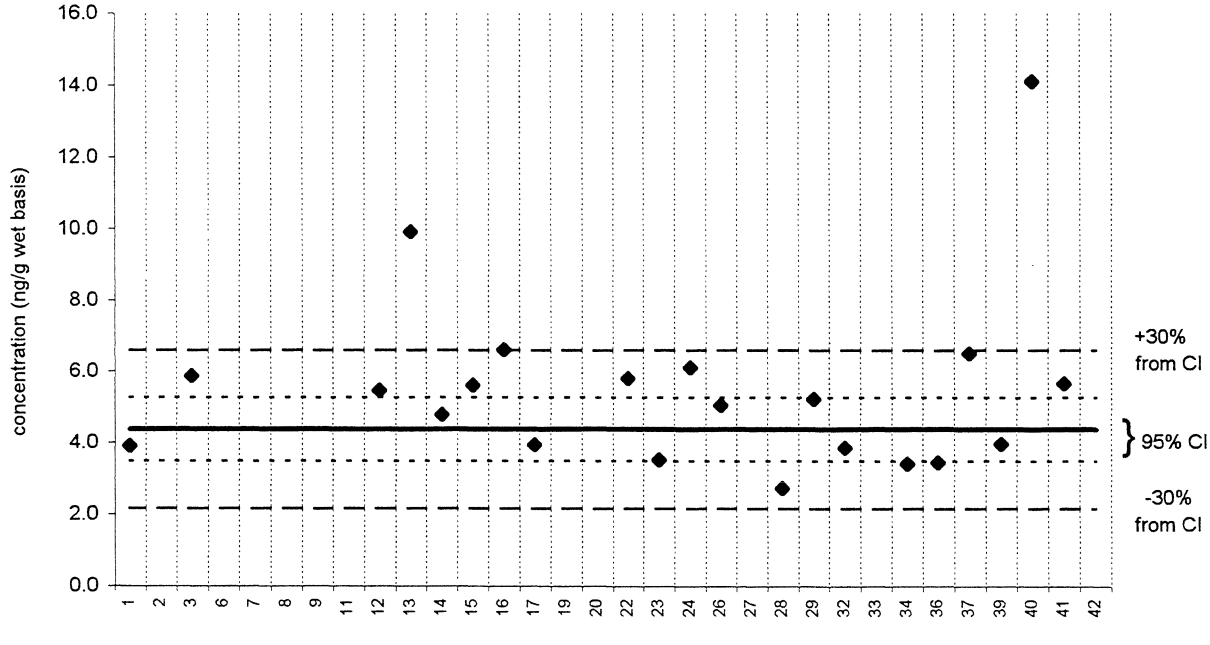
PCB 195 **Fish Homogenate IV (QA99FSH4)**

Assigned value = 5.19 ng/g s = 1.51 ng/g 95% CL = 0.65 ng/g (wet basis)
Reported Results: 30 Quantitative Results: 29



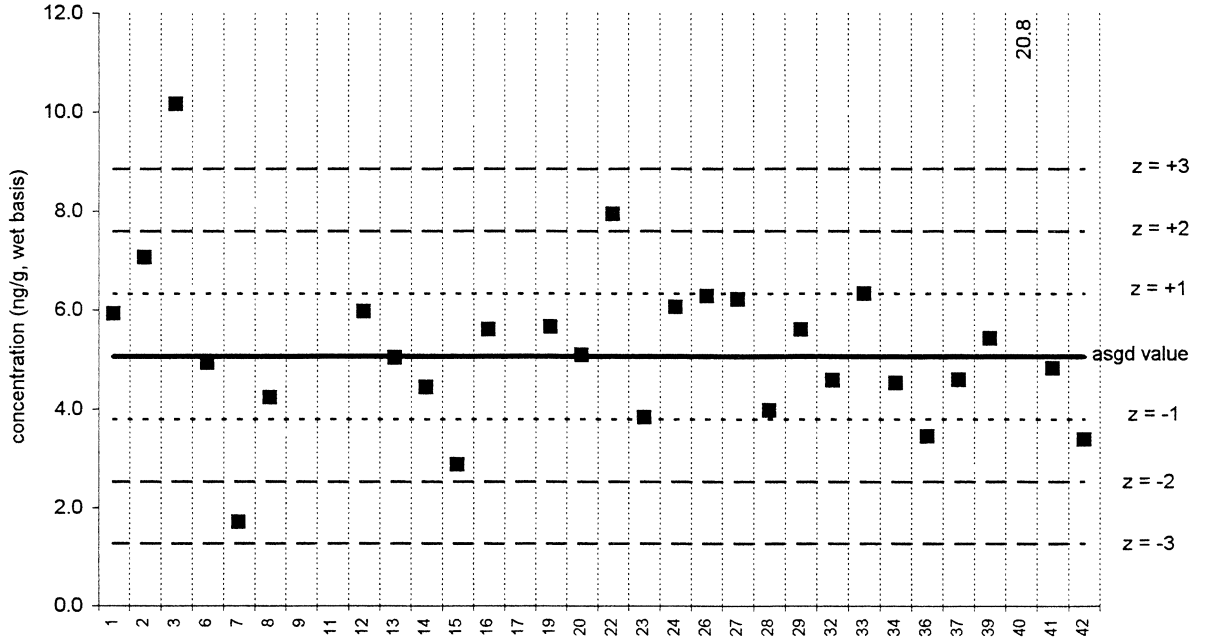
PCB 195 **CARP-1**

Target Value = 4.38 ± 0.90 ng/g (wet basis)
Reported Results: 23 Quantitative Results: 21



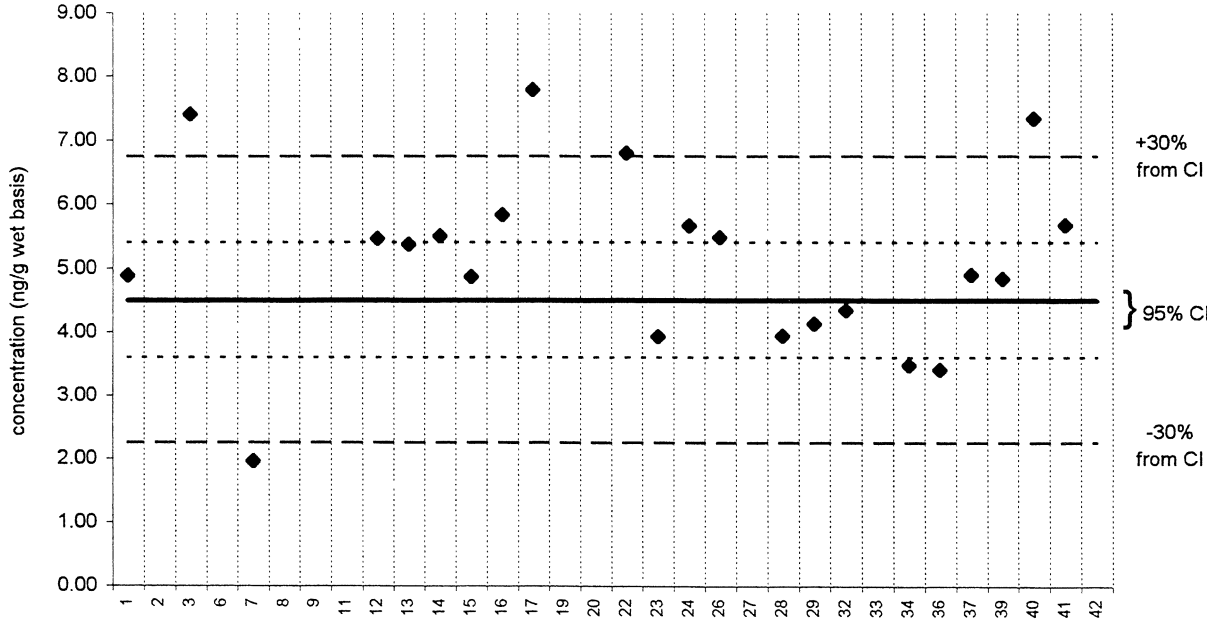
PCB 206 **Fish Homogenate IV (QA99FSH4)**

Assigned value = 5.06 ng/g s = 1.15 ng/g 95% CL = 0.50 ng/g (wet basis)
Reported Results: 30 Quantitative Results: 29



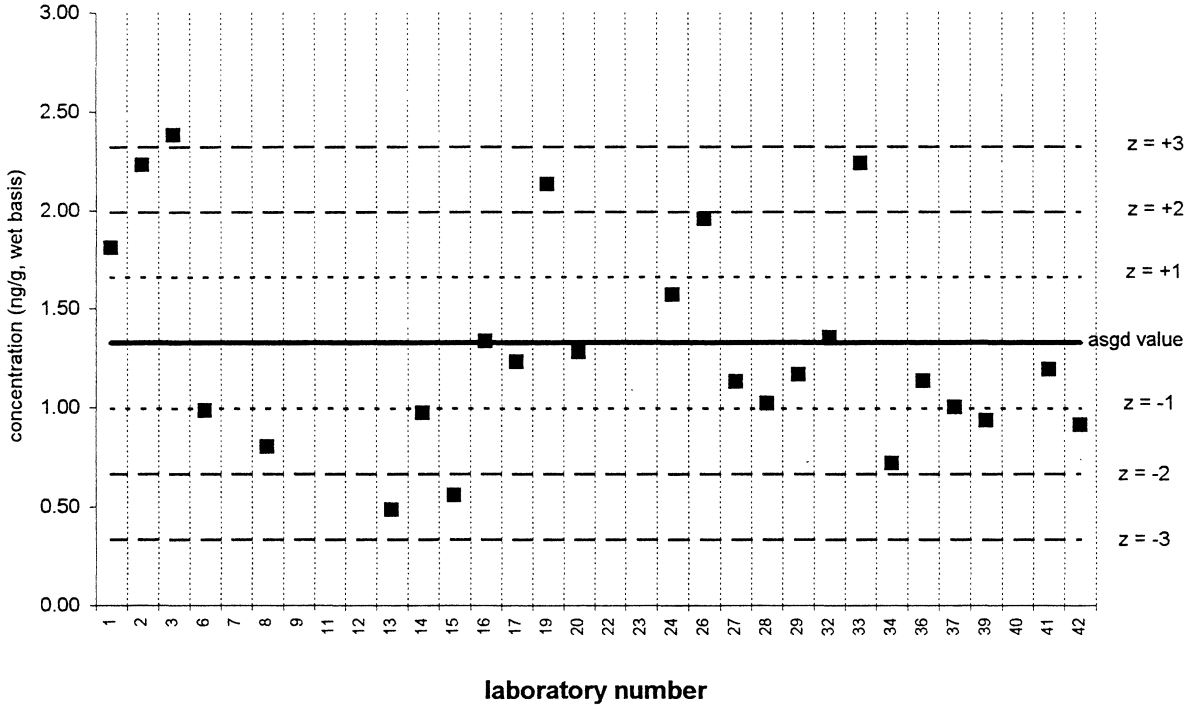
PCB 206 **CARP-1**

Target Value = 4.50 ± 0.90 ng/g (wet basis)
Reported Results: 24 Quantitative Results: 22



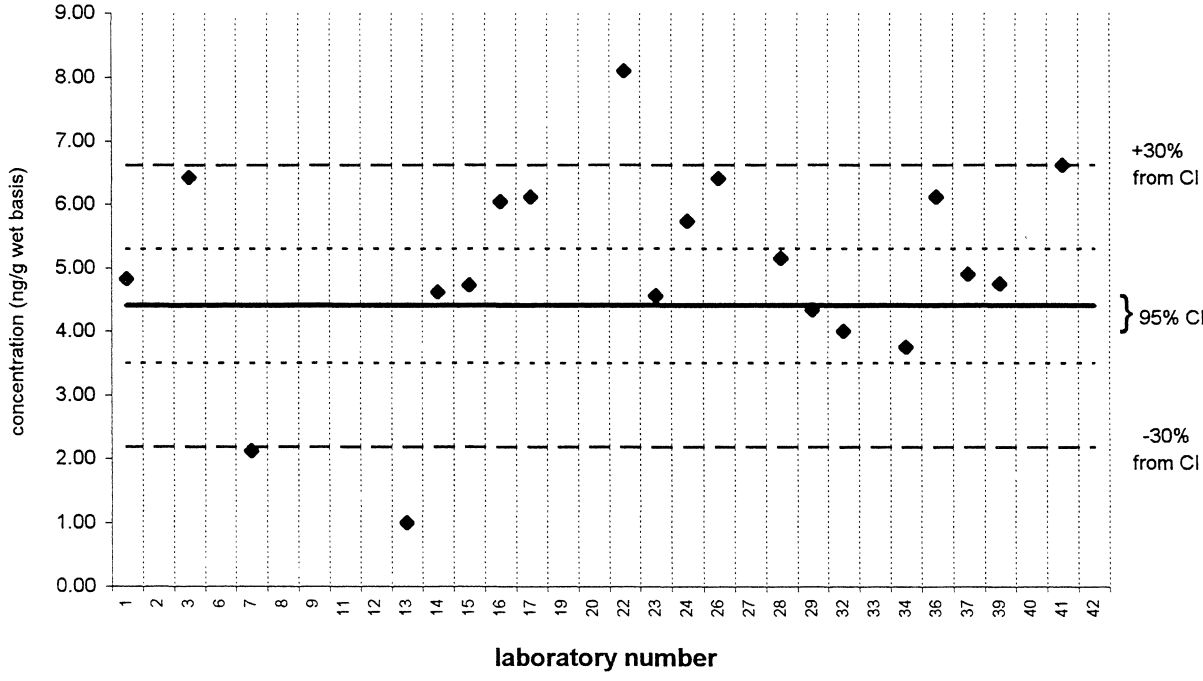
PCB 209 **Fish Homogenate IV (QA99FSH4)**

Assigned value = 1.33 ng/g s = 0.50 ng/g 95% CL = 0.23 ng/g (wet basis)
Reported Results: 28 Quantitative Results: 25



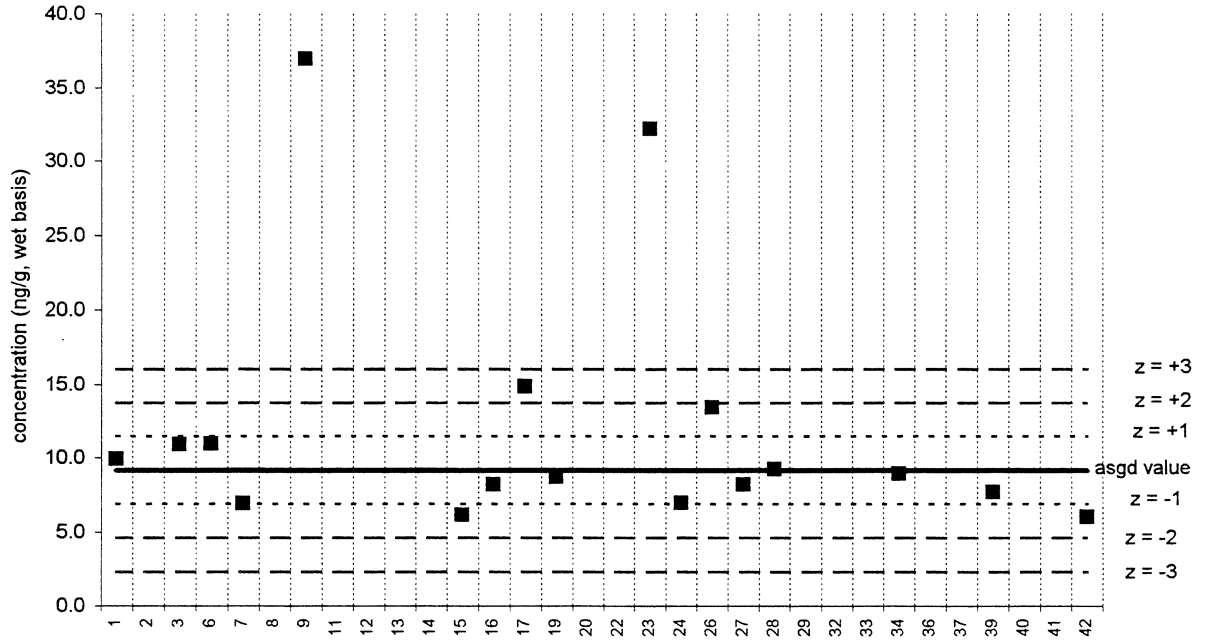
PCB 209 **CARP-1**

Target Value = 4.40 ± 0.90 ng/g (wet basis)
Reported Results: 22 Quantitative Results: 20



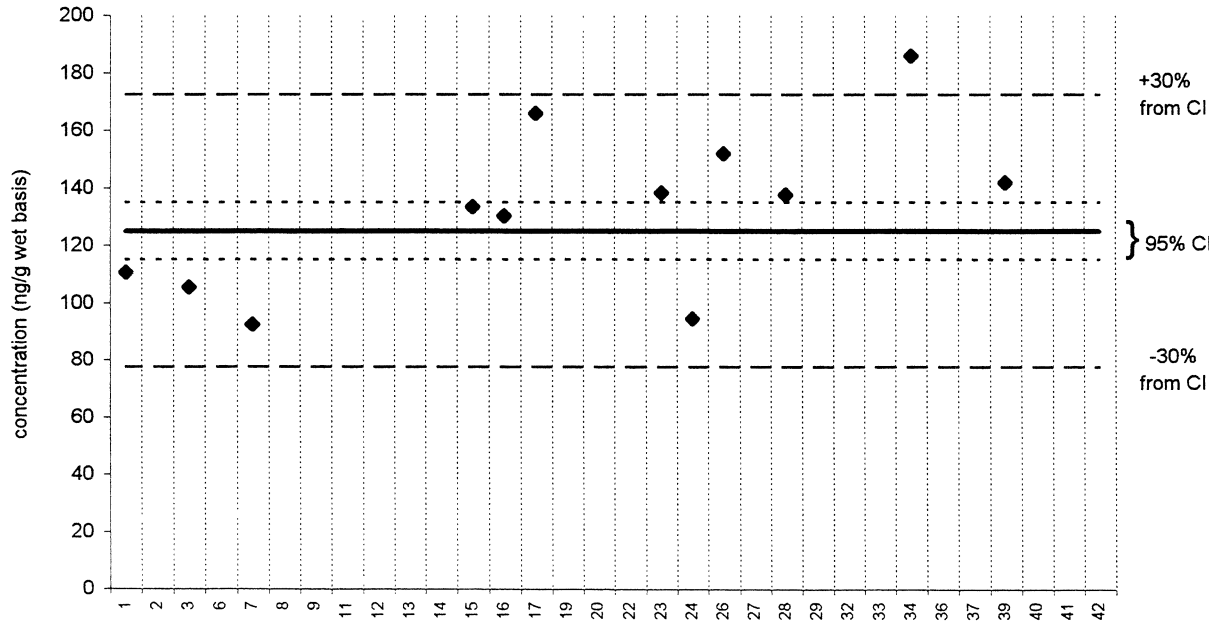
PCB 66 **Fish Homogenate IV (QA99FSH4)**

Assigned value = 9.16 ng/g s = 2.84 ng/g 95% CL = 1.72 ng/g (wet basis)
Reported Results: 17 Quantitative Results: 17



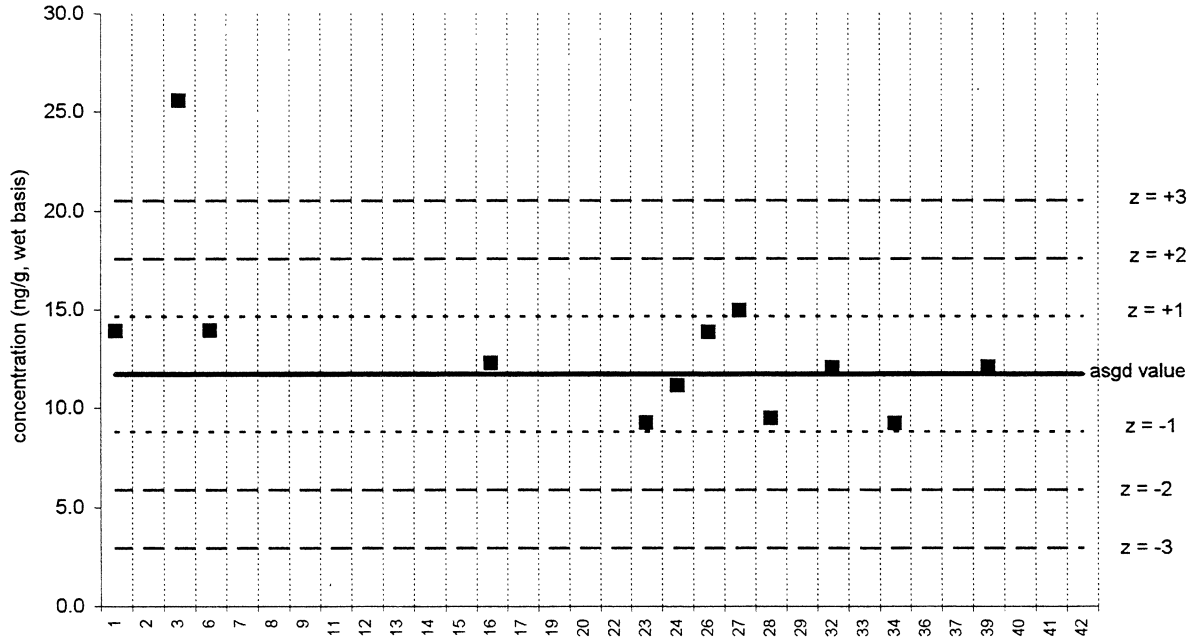
PCB 66 **CARP-1**

Target Value = 125 ± 10 ng/g (wet basis)
Reported Results: 13 Quantitative Results: 12



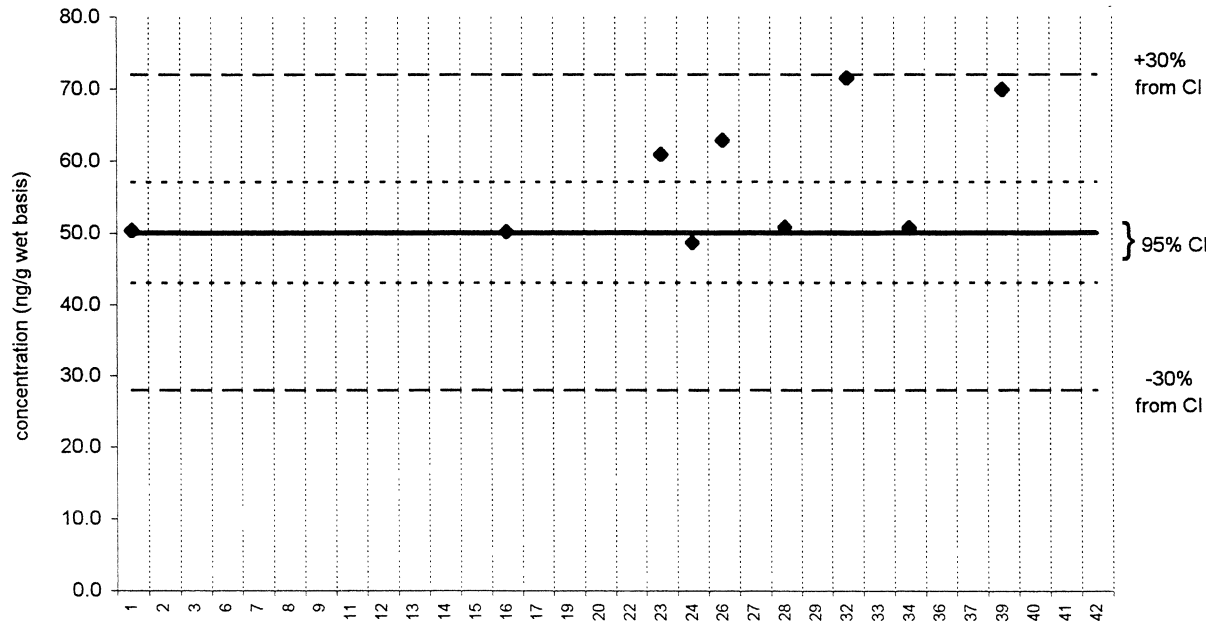
PCB 95 **Fish Homogenate IV (QA99FSH4)**

Assigned value = 11.7 ng/g s = 1.9 ng/g 95% CL = 1.4 ng/g (wet basis)
Reported Results: 13 Quantitative Results: 12



PCB 95 **CARP-1**

Target Value = 50.0 ± 7.0 ng/g (wet basis)
Reported Results: 9 Quantitative Results: 9



Appendix J: Charts of Sediment IX and SRM 1941a Results by Analyte

See Tables 4, 5, and 6 and Appendix D for results reported as <*number*, DL, etc.
Charts for analytes with few reported numerical results are not included in this appendix.

For Sediment IX plots:

Solid line: exercise assigned value

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

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

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

For SRM 1941a plots:

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

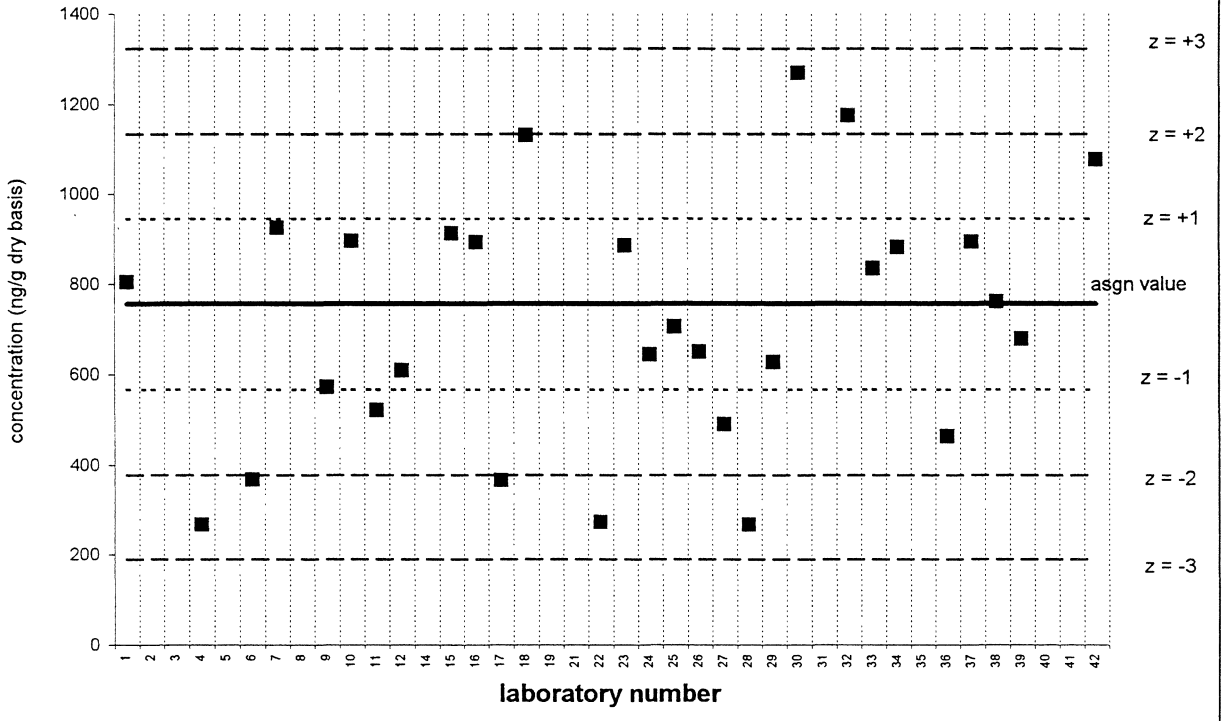
Dotted line: 95% confidence limits

Dashed line: 30% from 95% confidence limits

naphthalene **Sediment IX (QA99SED9)**

Assigned value = 756 ng/g s = 273 ng/g 95% CL = 113 ng/g (dry basis)

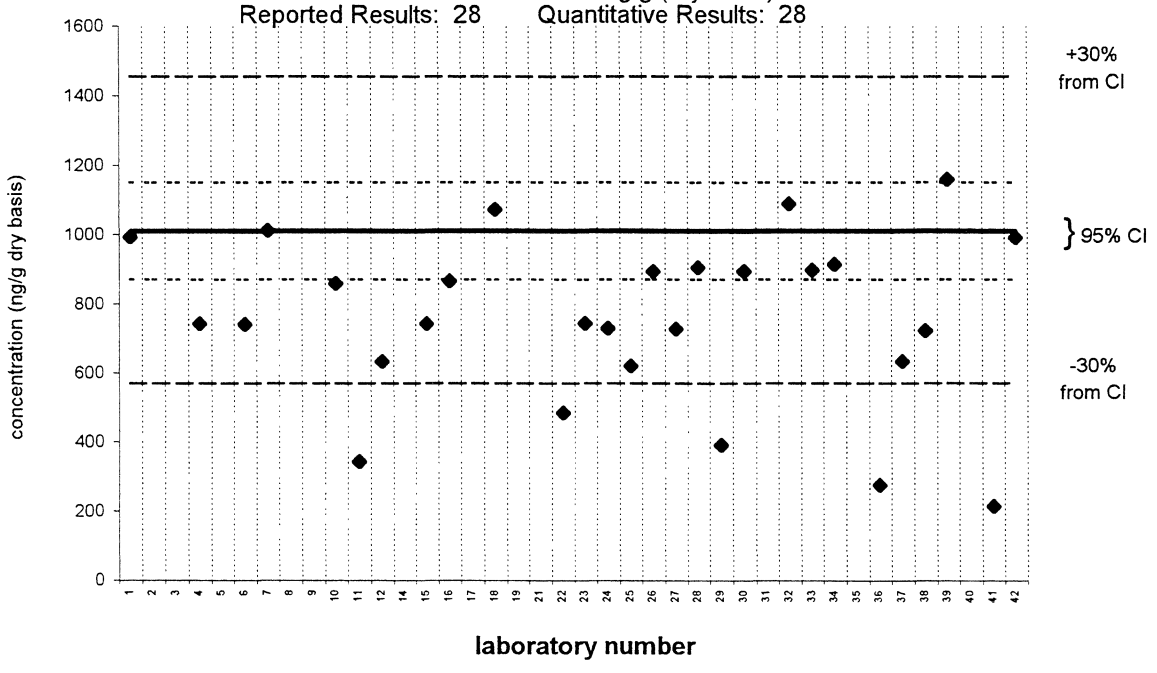
Reported Results: 30 Quantitative Results: 29



naphthalene **SRM 1941a**

Certified Value = 1010 ± 140 ng/g (dry basis)

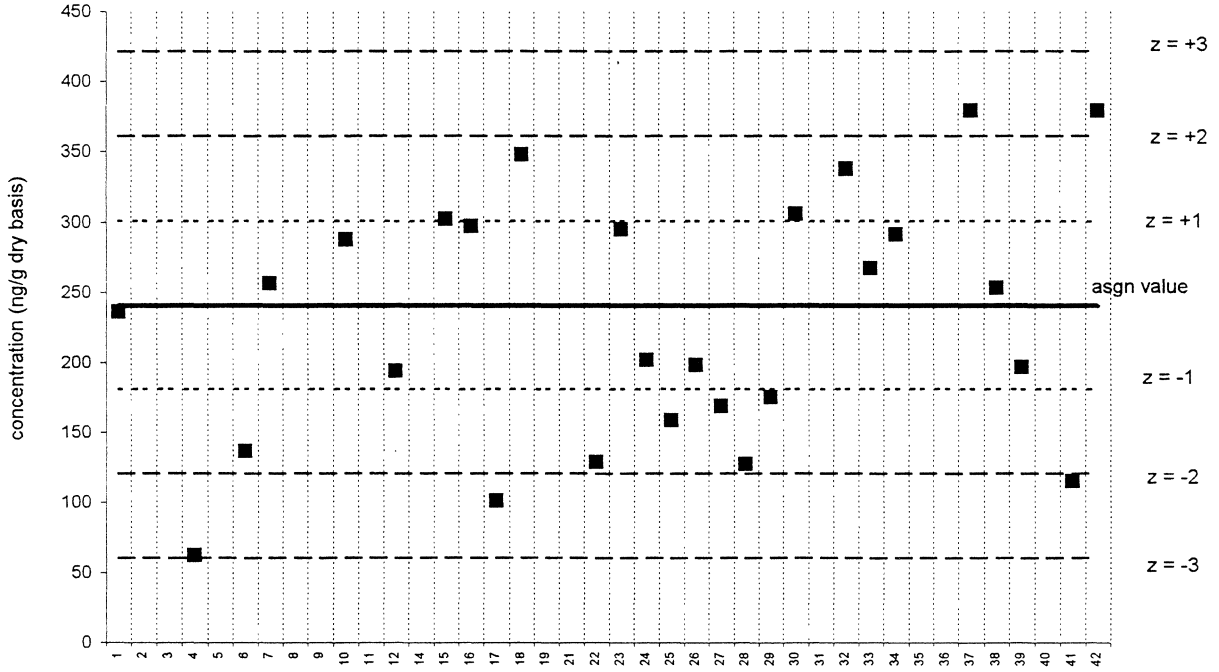
Reported Results: 28 Quantitative Results: 28



2-methylnaphthalene — Sediment IX (QA99SED9)

Assigned value = 241 ng/g s = 81 ng/g 95% CL = 34 ng/g (dry basis)

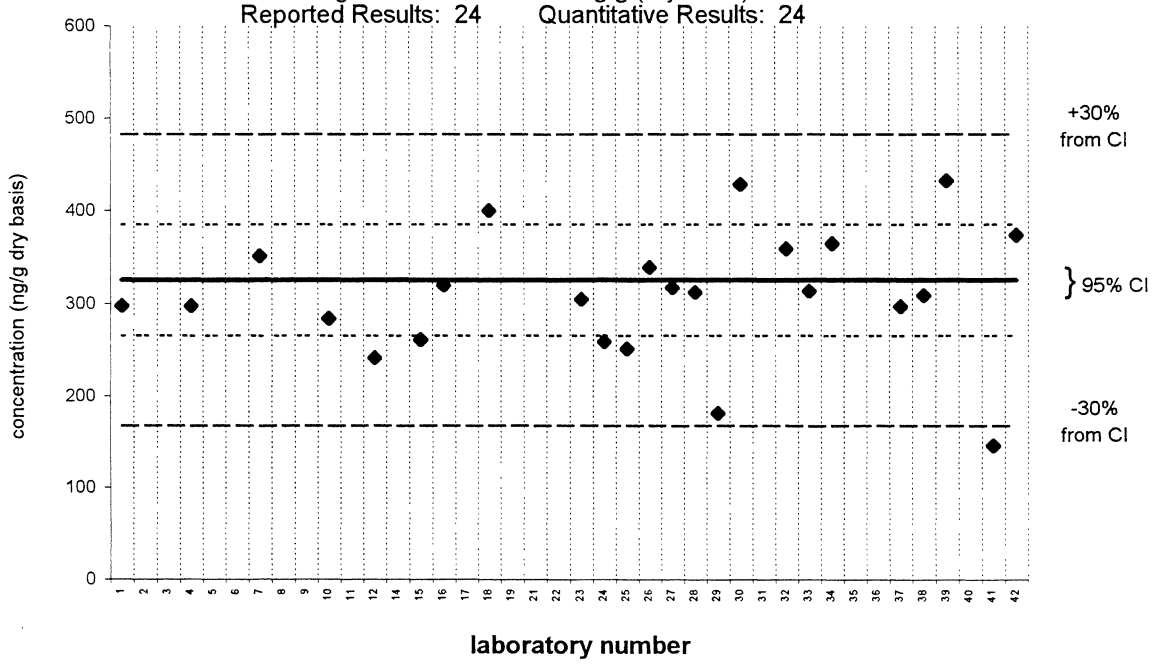
Reported Results: 27 Quantitative Results: 27



2-methylnaphthalene — SRM 1941a

Target Value = 325 ± 60 ng/g (dry basis)

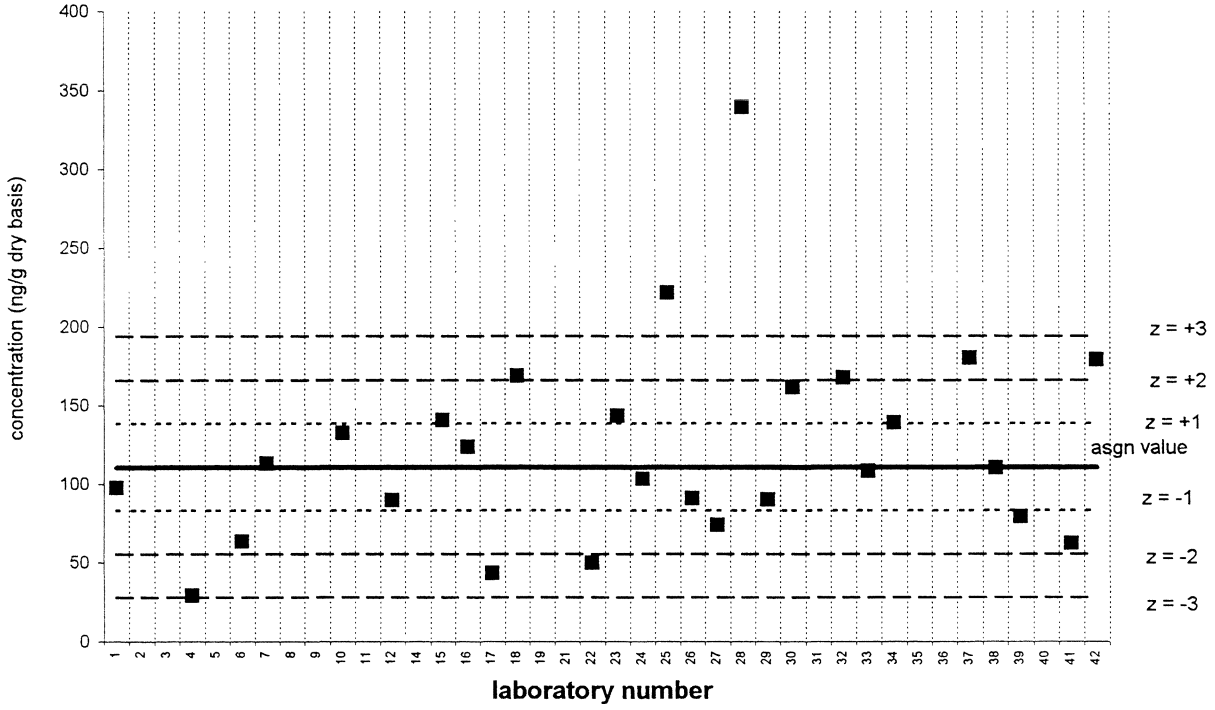
Reported Results: 24 Quantitative Results: 24



1-methylnaphthalene — Sediment IX (QA99SED9)

Assigned value = 111 ng/g s = 41 ng/g 95% CL = 18 ng/g (dry basis)

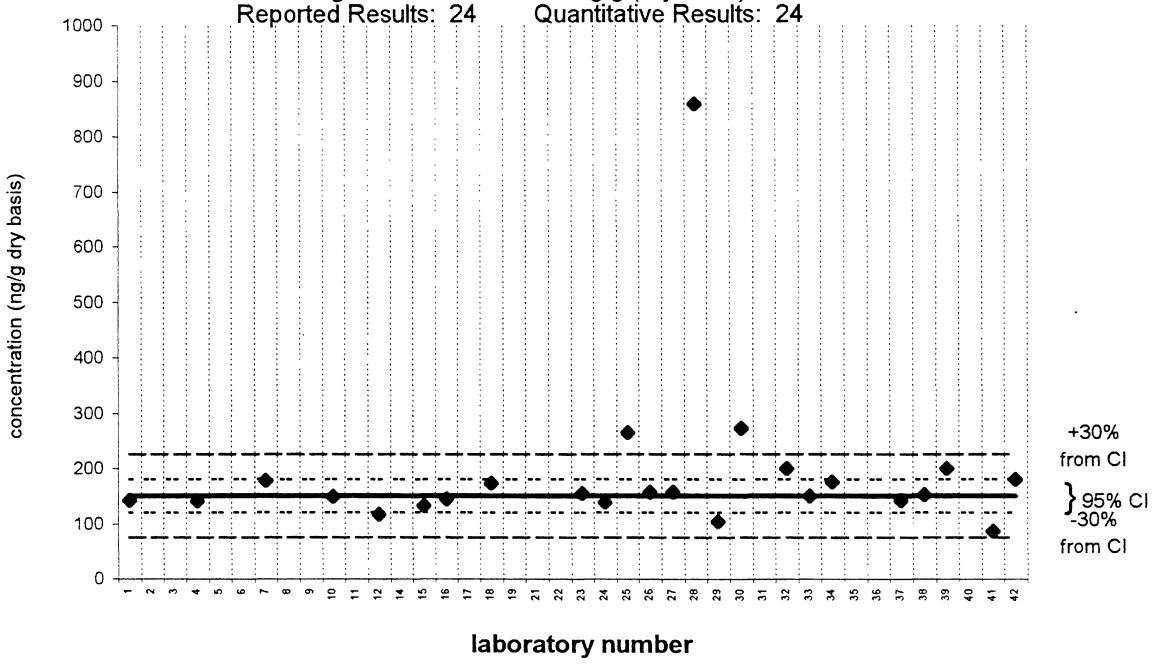
Reported Results: 27 Quantitative Results: 27



1-methylnaphthalene — SRM 1941a

Target Value = 150 ± 30 ng/g (dry basis)

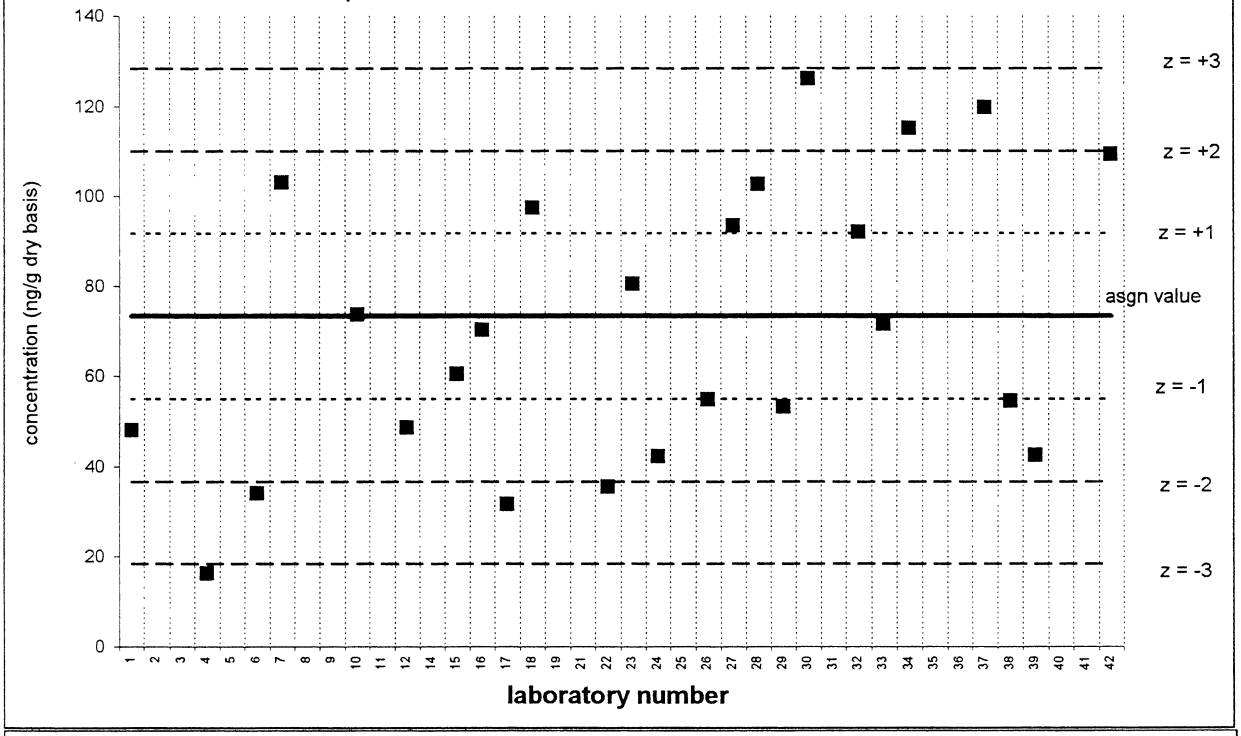
Reported Results: 24 Quantitative Results: 24



biphenyl **Sediment IX (QA99SED9)**

Assigned value = 73.3 ng/g s = 29.7 ng/g 95% CL = 12.5 ng/g (dry basis)

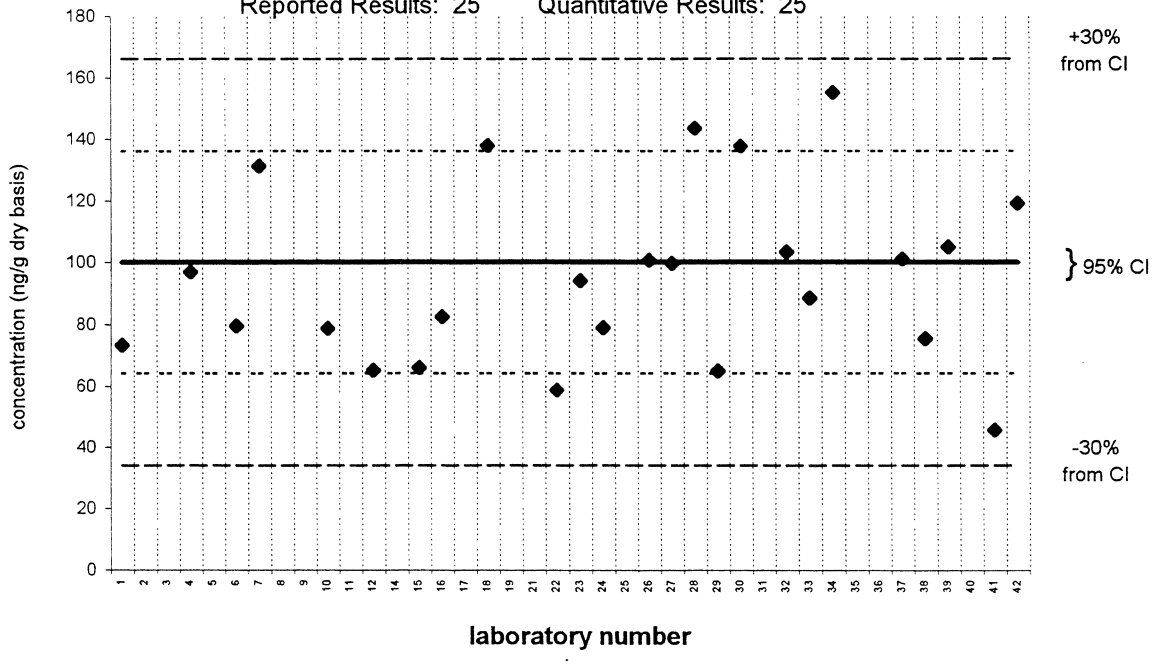
Reported Results: 26 Quantitative Results: 25



biphenyl **SRM 1941a**

Target Value = 100 ± 36 ng/g (dry basis)

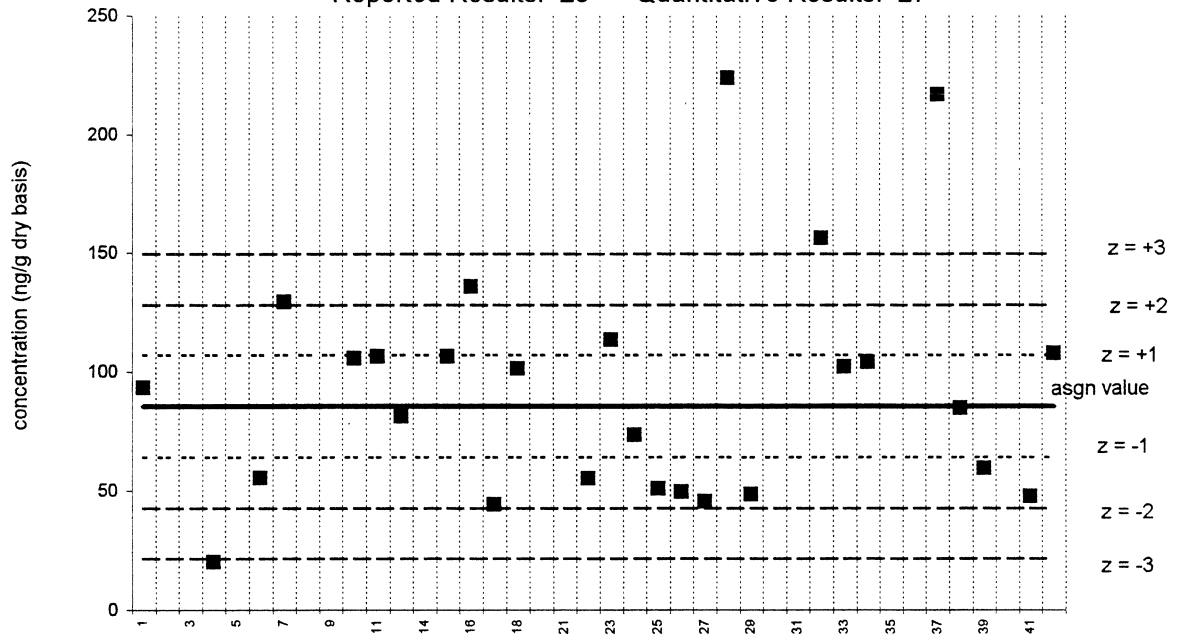
Reported Results: 25 Quantitative Results: 25



2,6-dimethylnaphthalene — Sediment IX (QA99SED9)

Assigned value = 85.4 ng/g s = 31.6 ng/g 95% CL = 14.0 ng/g (dry basis)

Reported Results: 28 Quantitative Results: 27

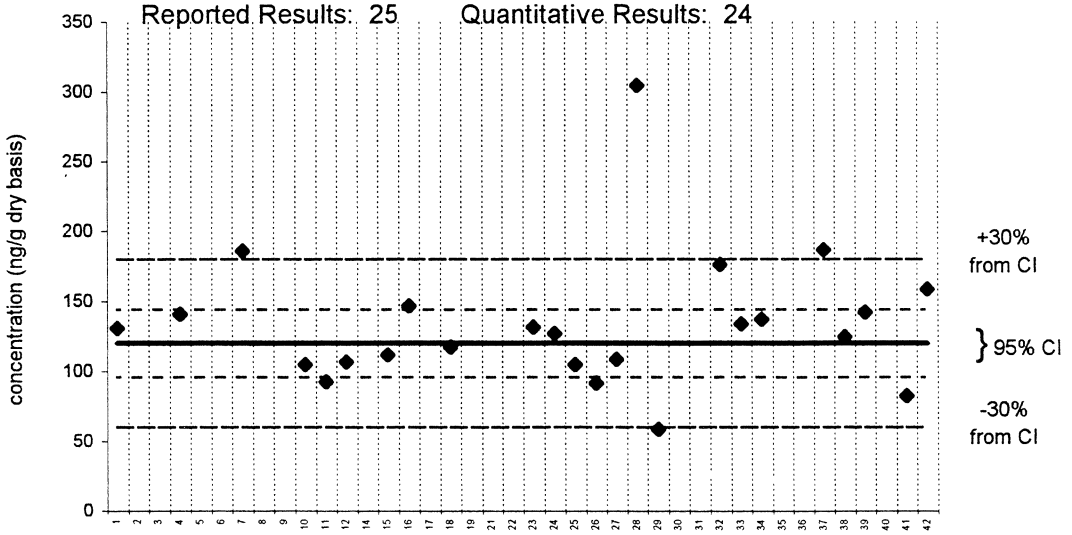


laboratory number

2,6-dimethylnaphthalene — SRM 1941a

Target Value = 120 ± 24 ng/g (dry basis)

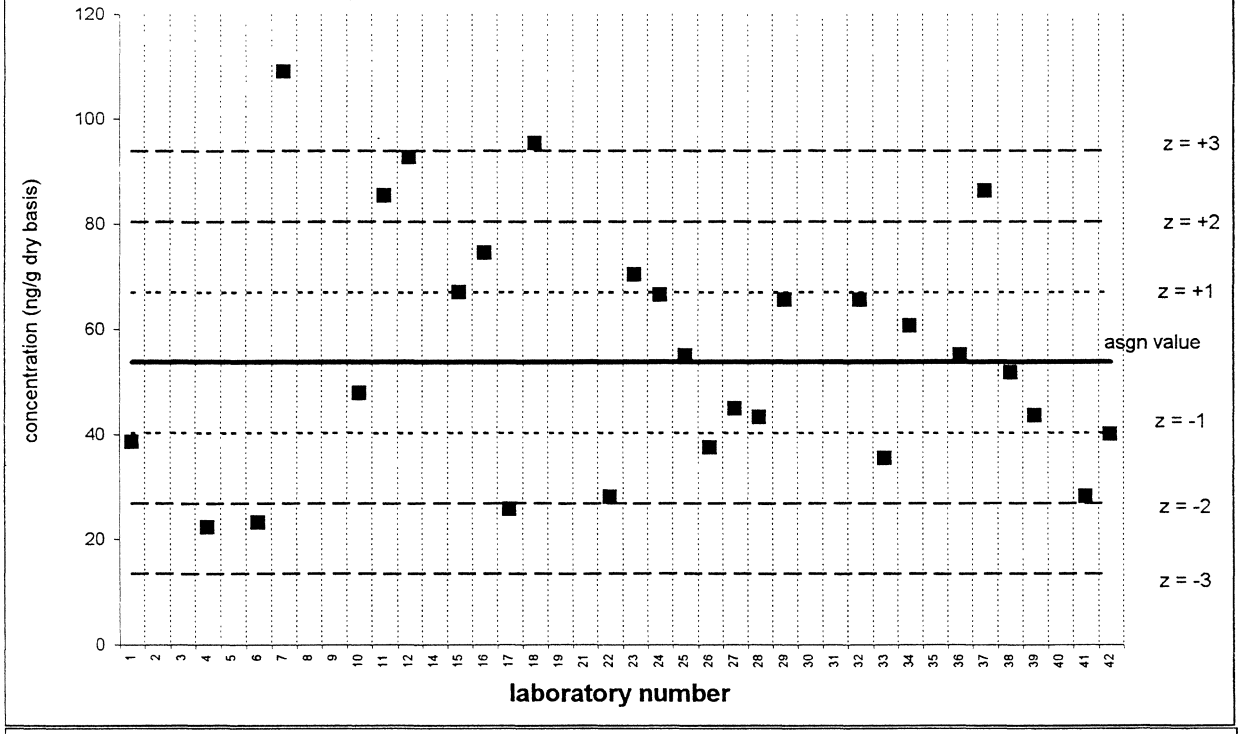
Reported Results: 25 Quantitative Results: 24



laboratory number

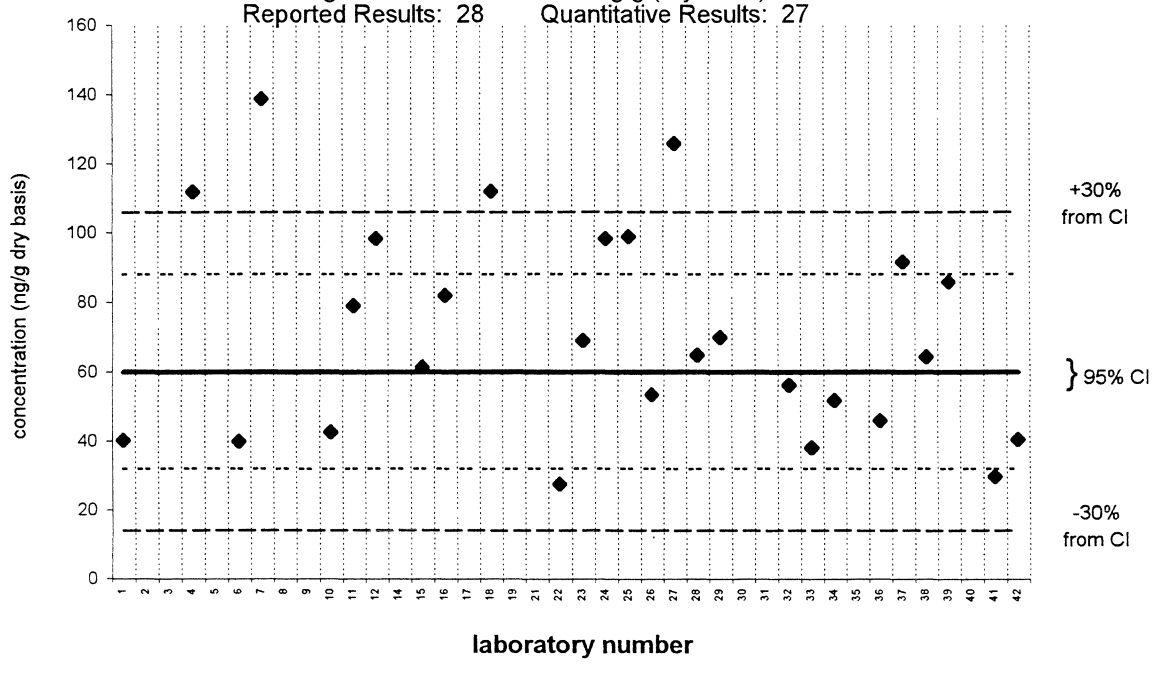
acenaphthylene — Sediment IX (QA99SED9)

Assigned value = 53.6 ng/g s = 20.1 ng/g 95% CL = 8.5 ng/g (dry basis)
Reported Results: 30 Quantitative Results: 28



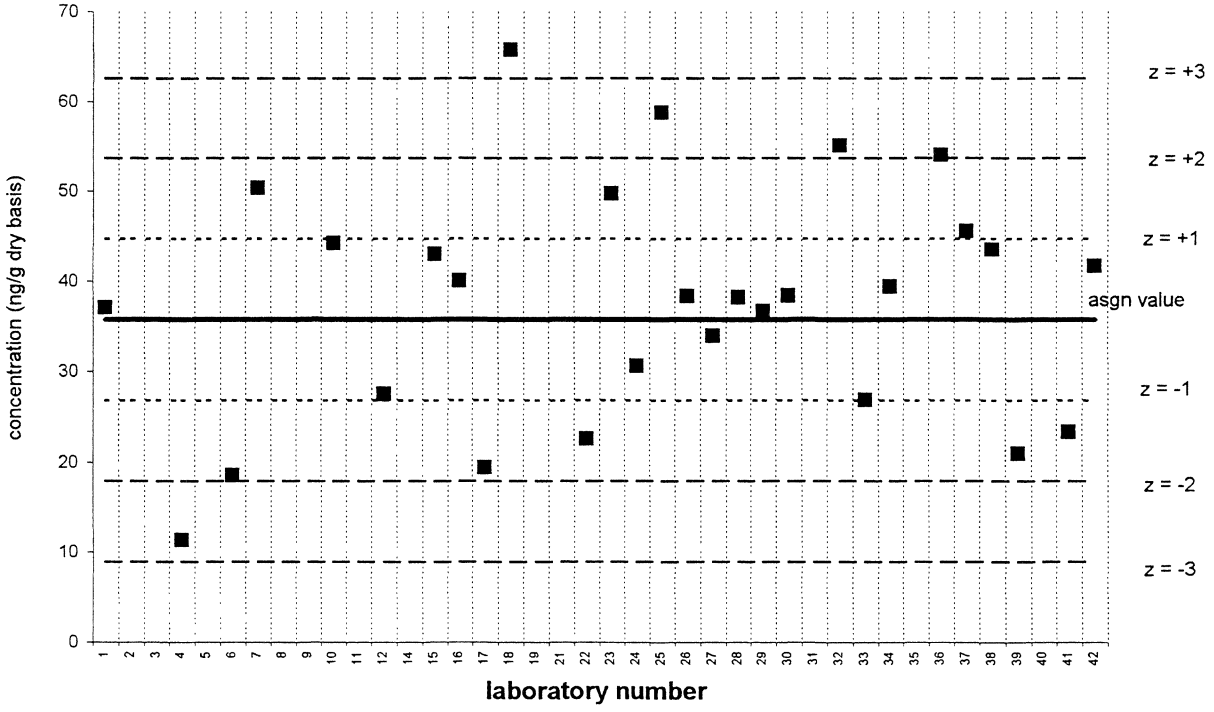
acenaphthylene — SRM 1941a

Target Value = 60.0 ± 28.0 ng/g (dry basis)
Reported Results: 28 Quantitative Results: 27



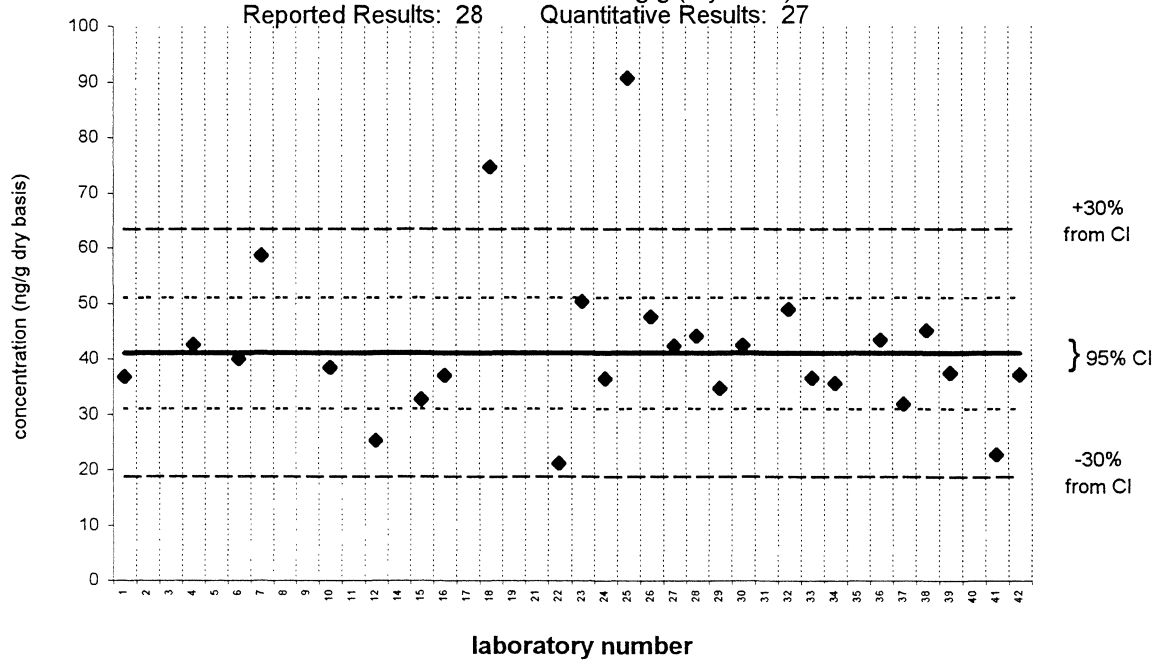
acenaphthene — Sediment IX (QA99SED9)

Assigned value = 35.7 ng/g s = 11.6 ng/g 95% CL = 4.7 ng/g (dry basis)
Reported Results: 30 Quantitative Results: 28



acenaphthene — SRM 1941a

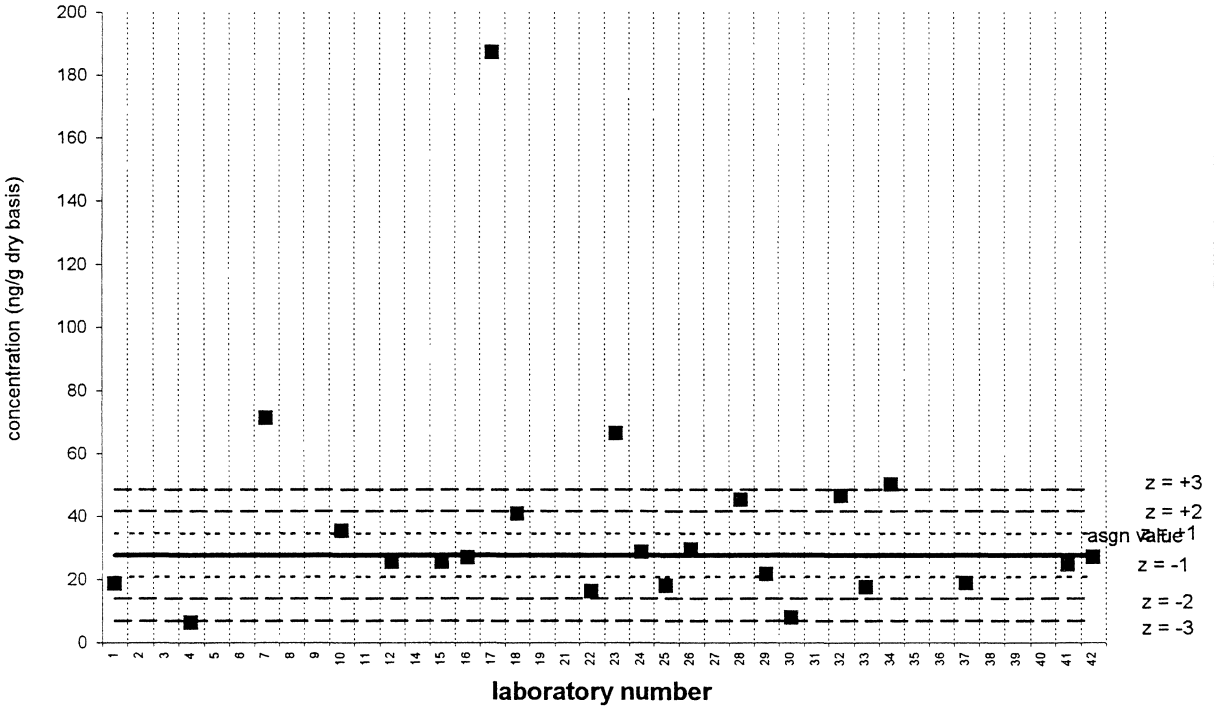
Information Value = 41.0 ± 10.0 ng/g (dry basis)
Reported Results: 28 Quantitative Results: 27



1,6,7-trimethylnaphthalene — Sediment IX (QA99SED9)

Assigned value = 27.7 ng/g s = 9.2 ng/g 95% CL = 5.3 ng/g (dry basis)

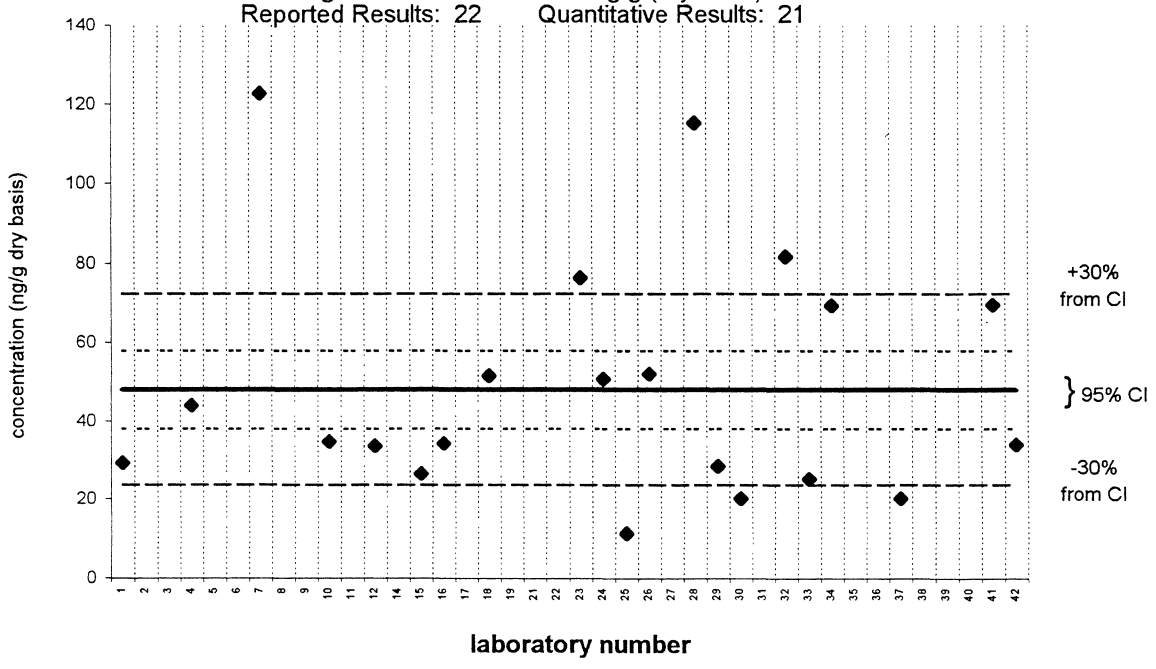
Reported Results: 24 Quantitative Results: 23



1,6,7-trimethylnaphthalene — SRM 1941a

Target Value = 48.0 ± 10.0 ng/g (dry basis)

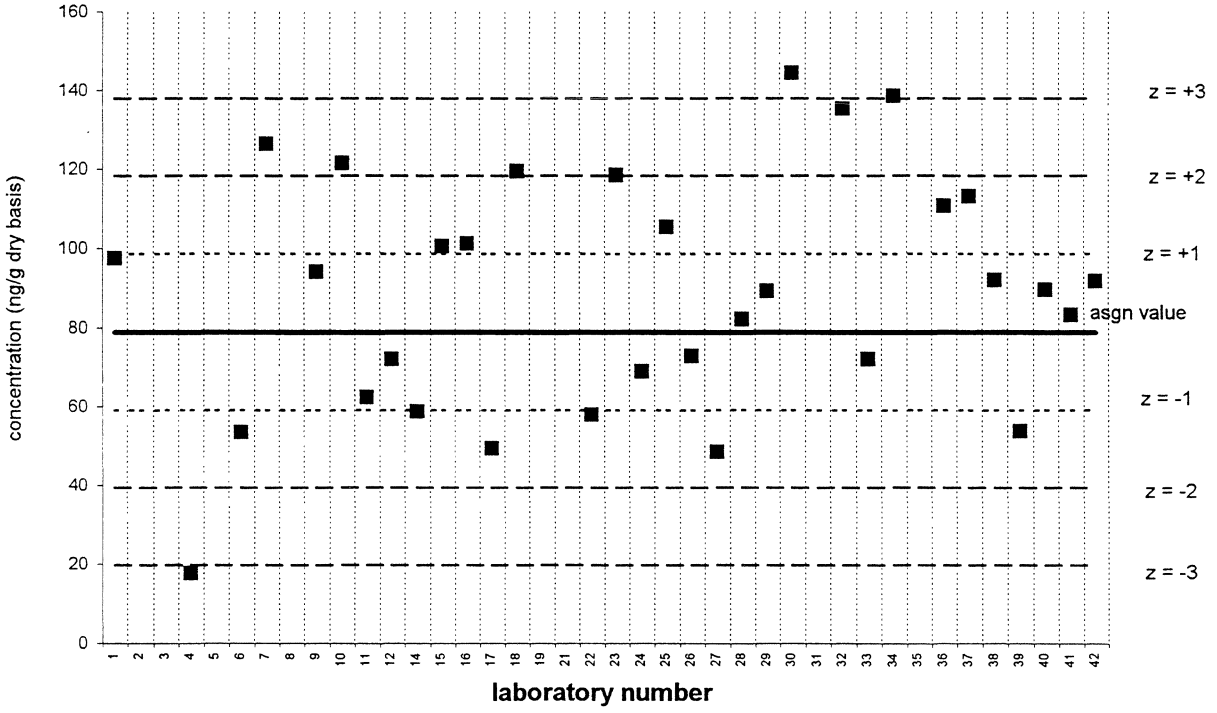
Reported Results: 22 Quantitative Results: 21



fluorene **Sediment IX (QA99SED9)**

Assigned value = 78.8 ng/g s = 27.9 ng/g 95% CL = 11.5 ng/g (dry basis)

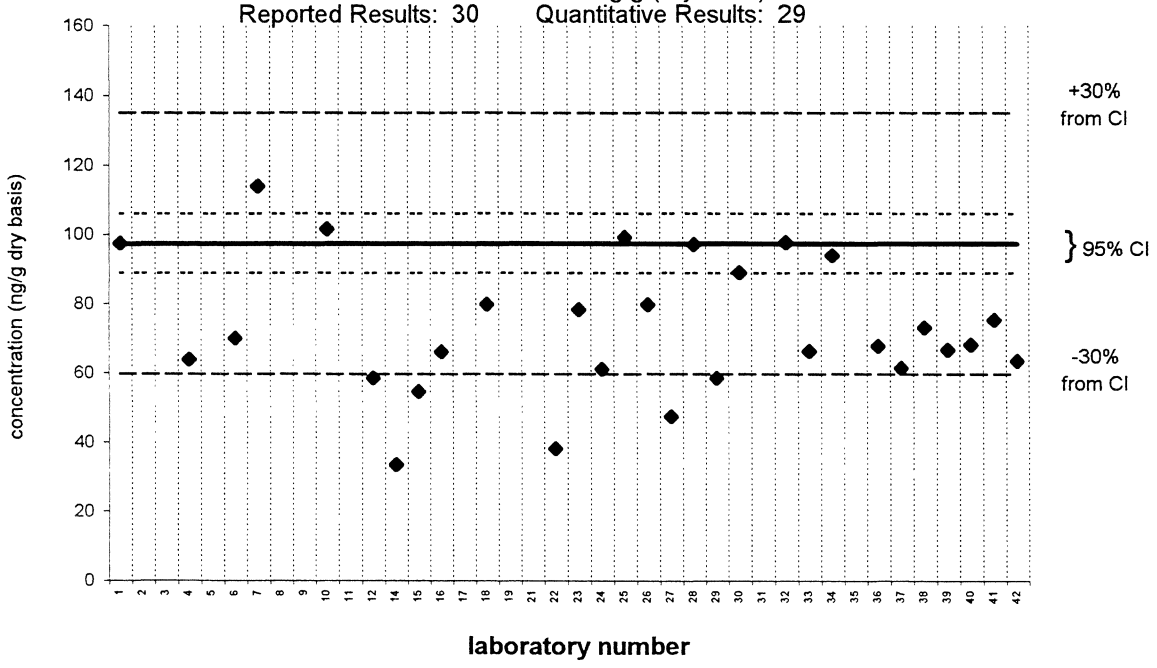
Reported Results: 32 Quantitative Results: 32

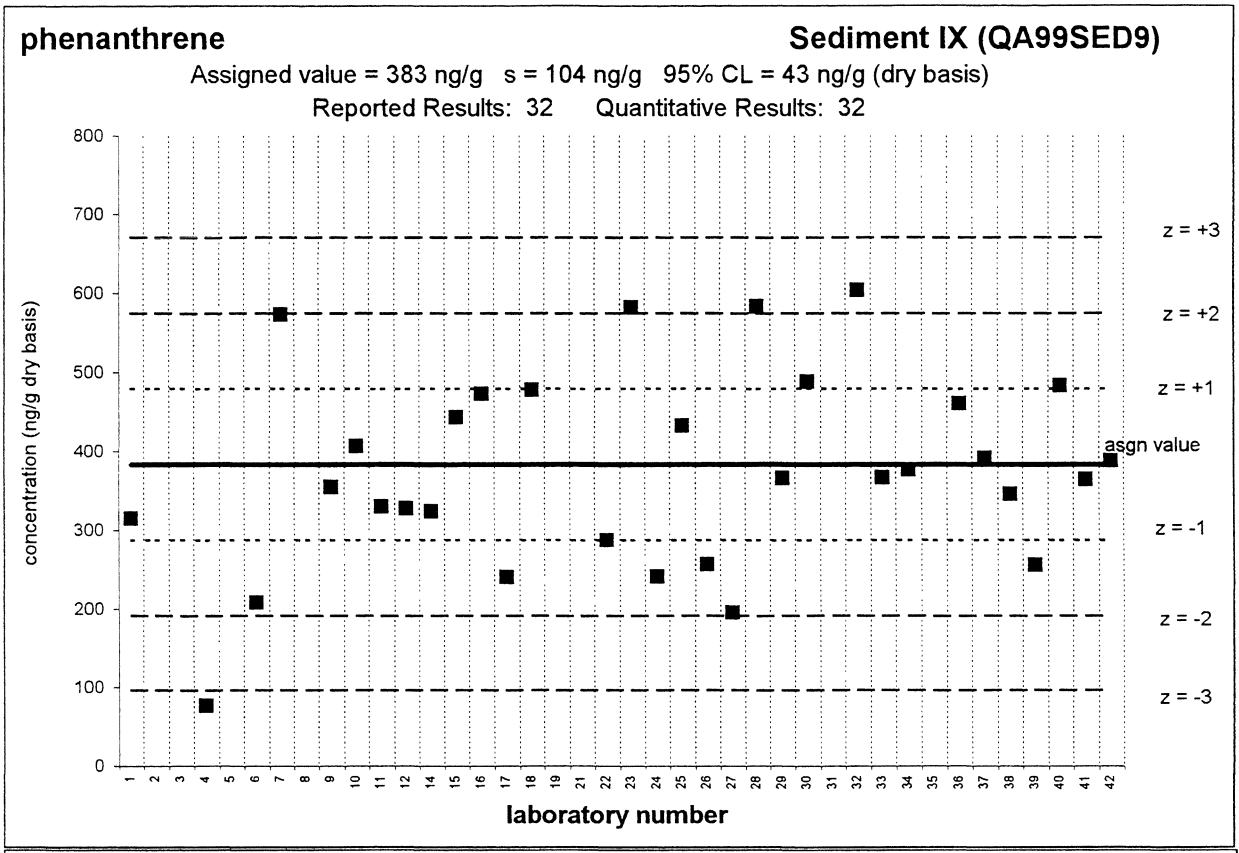


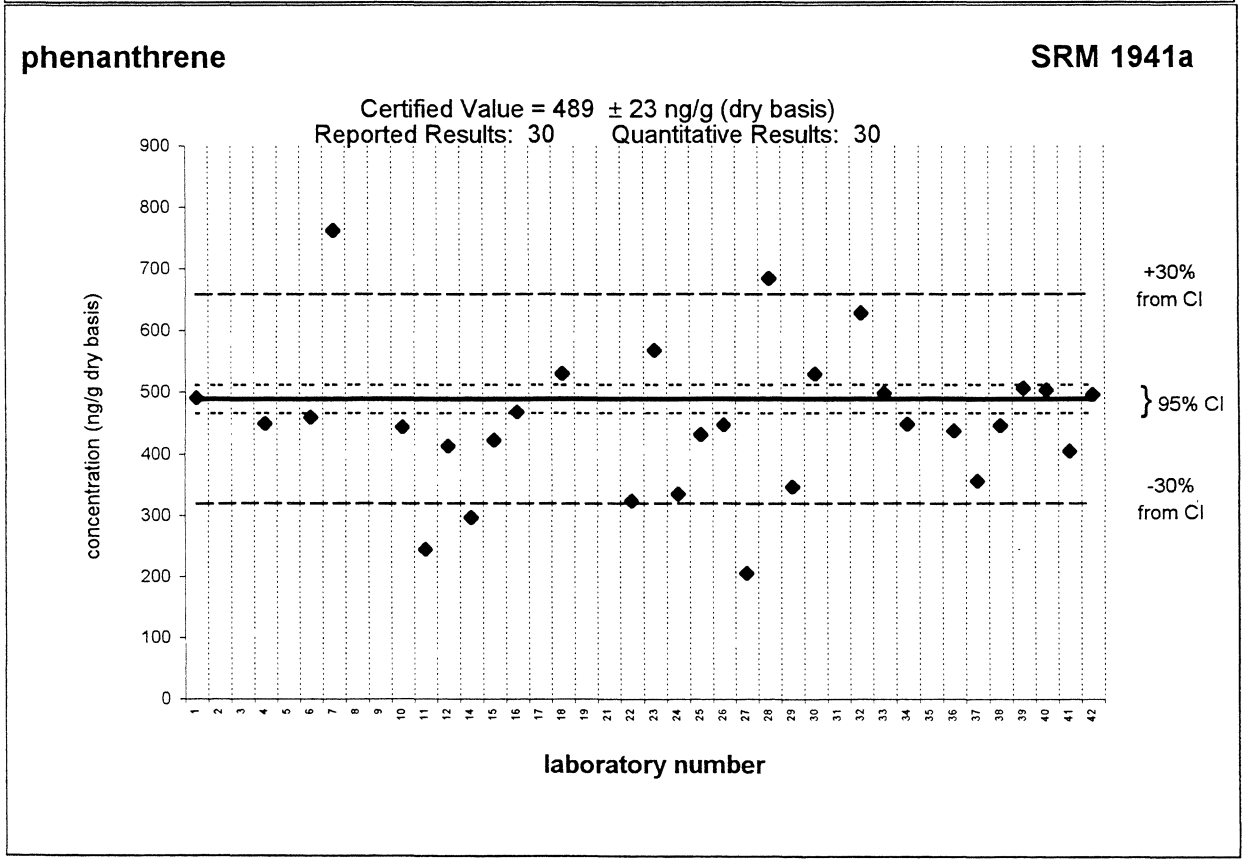
fluorene **SRM 1941a**

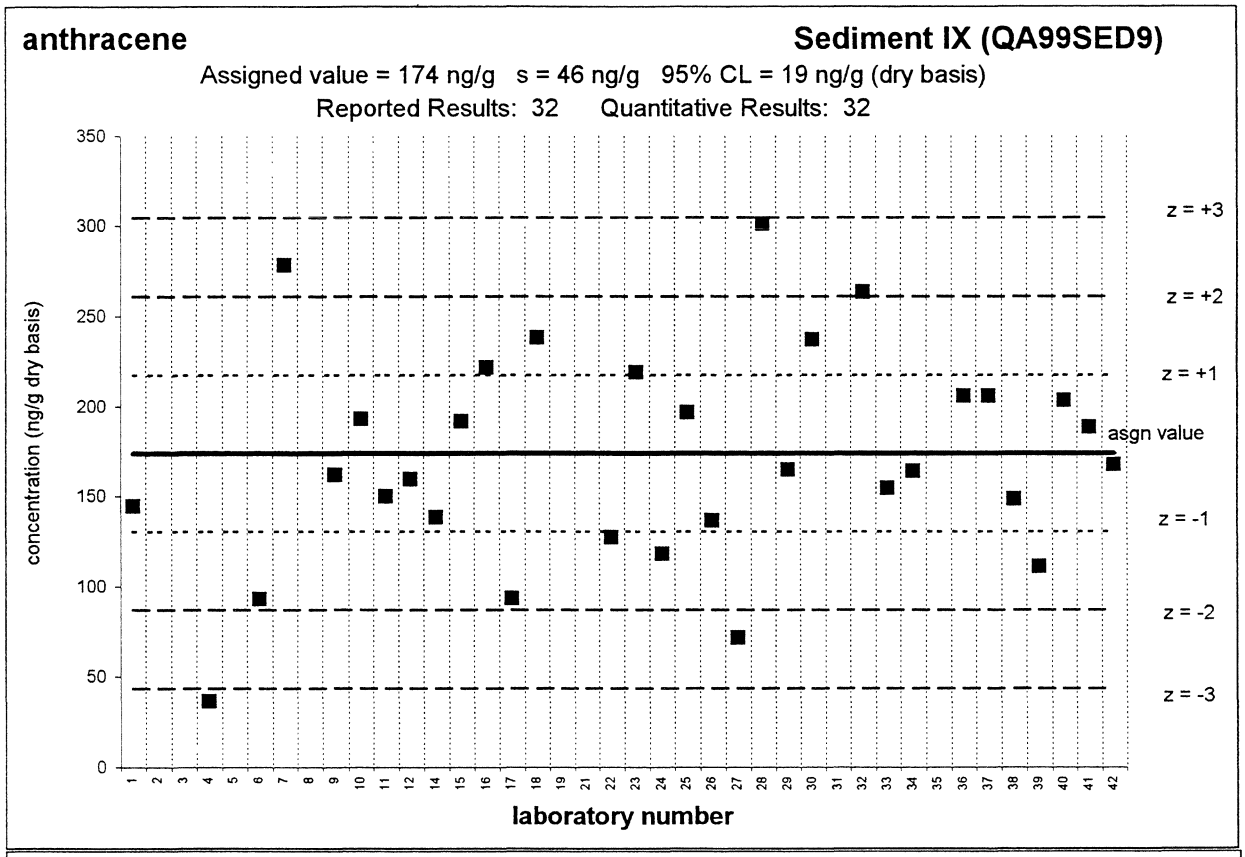
Certified Value = 97.3 ± 8.6 ng/g (dry basis)

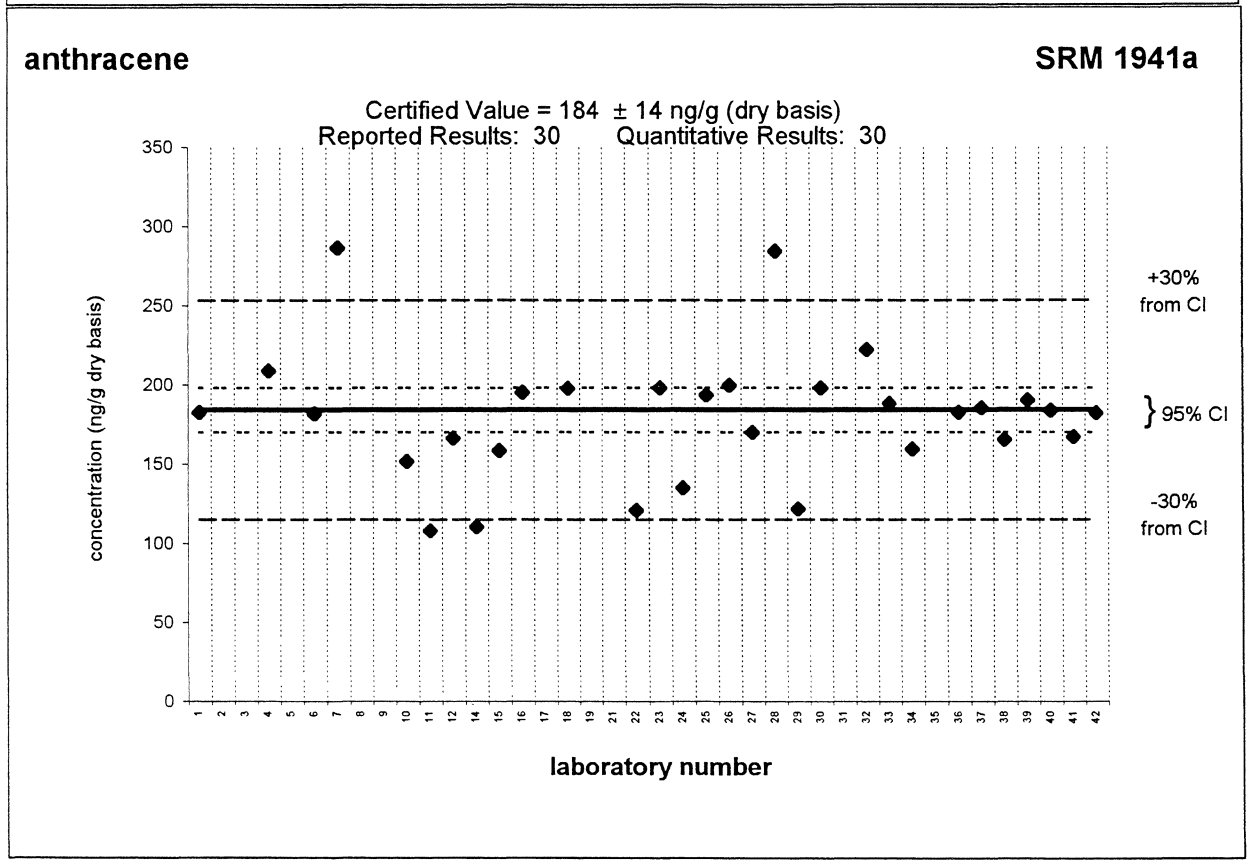
Reported Results: 30 Quantitative Results: 29




phenanthrene
Sediment IX (QA99SED9)
Assigned value = 383 ng/g s = 104 ng/g 95% CL = 43 ng/g (dry basis)
Reported Results: 32 Quantitative Results: 32
concentration (ng/g dry basis)
laboratory number
z = +3
z = +2
z = +1
asgn value
z = -1
z = -2
z = -3


phenanthrene
SRM 1941a
Certified Value = 489 ± 23 ng/g (dry basis)
Reported Results: 30 Quantitative Results: 30
concentration (ng/g dry basis)
laboratory number
+30% from CI
95% CI
-30% from CI

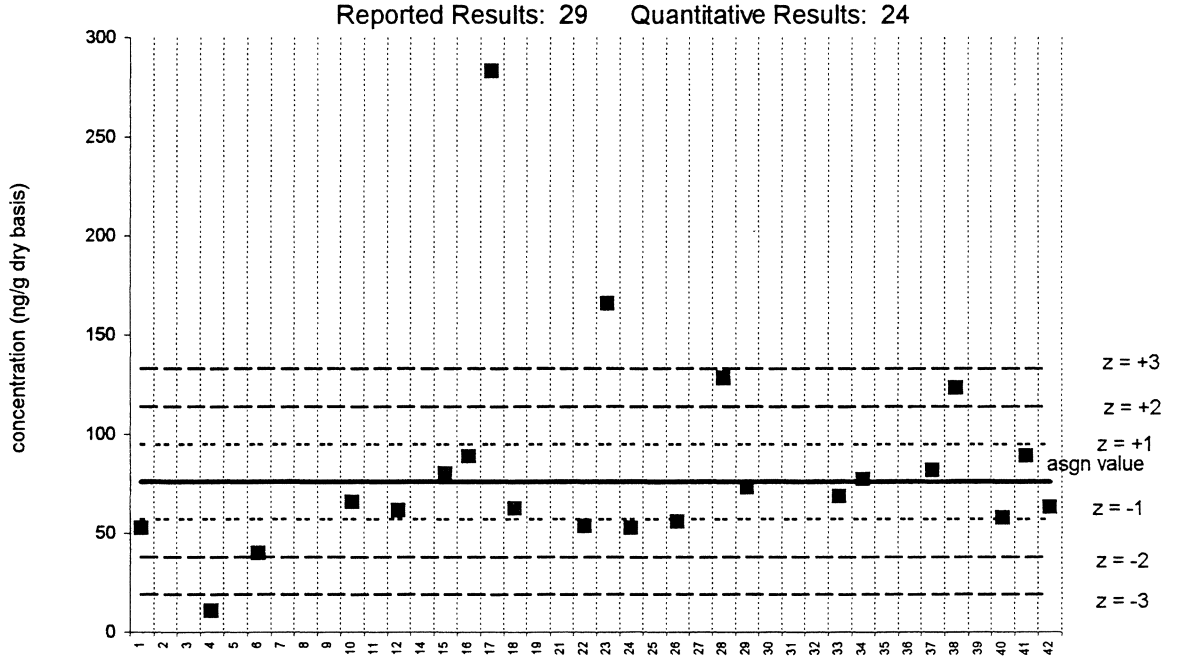

anthracene
Sediment IX (QA99SED9)
Assigned value = 174 ng/g s = 46 ng/g 95% CL = 19 ng/g (dry basis)
Reported Results: 32 Quantitative Results: 32
concentration (ng/g dry basis)
laboratory number
z = +3
z = +2
z = +1
asgn value
z = -1
z = -2
z = -3


anthracene
SRM 1941a
Certified Value = 184 ± 14 ng/g (dry basis)
Reported Results: 30 Quantitative Results: 30
concentration (ng/g dry basis)
laboratory number
+30% from CI
95% CI
-30% from CI

1-methylphenanthrene **Sediment IX (QA99SED9)**

Assigned value = 76.0 ng/g s = 24.5 ng/g 95% CL = 11.1 ng/g (dry basis)

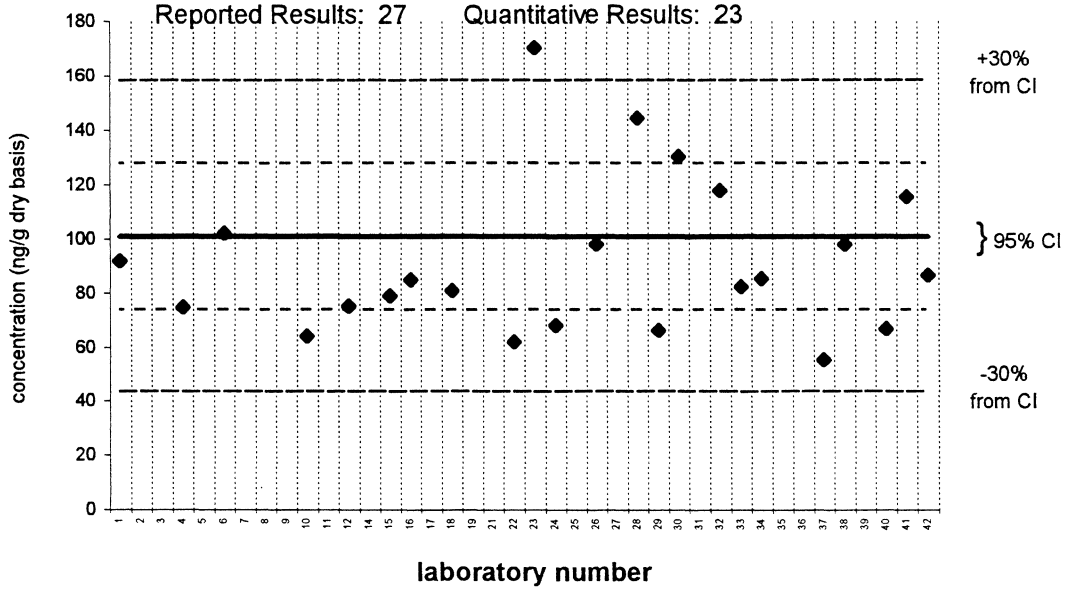
Reported Results: 29 Quantitative Results: 24



1-methylphenanthrene **SRM 1941a**

Information Value = 101 ± 27 ng/g (dry basis)

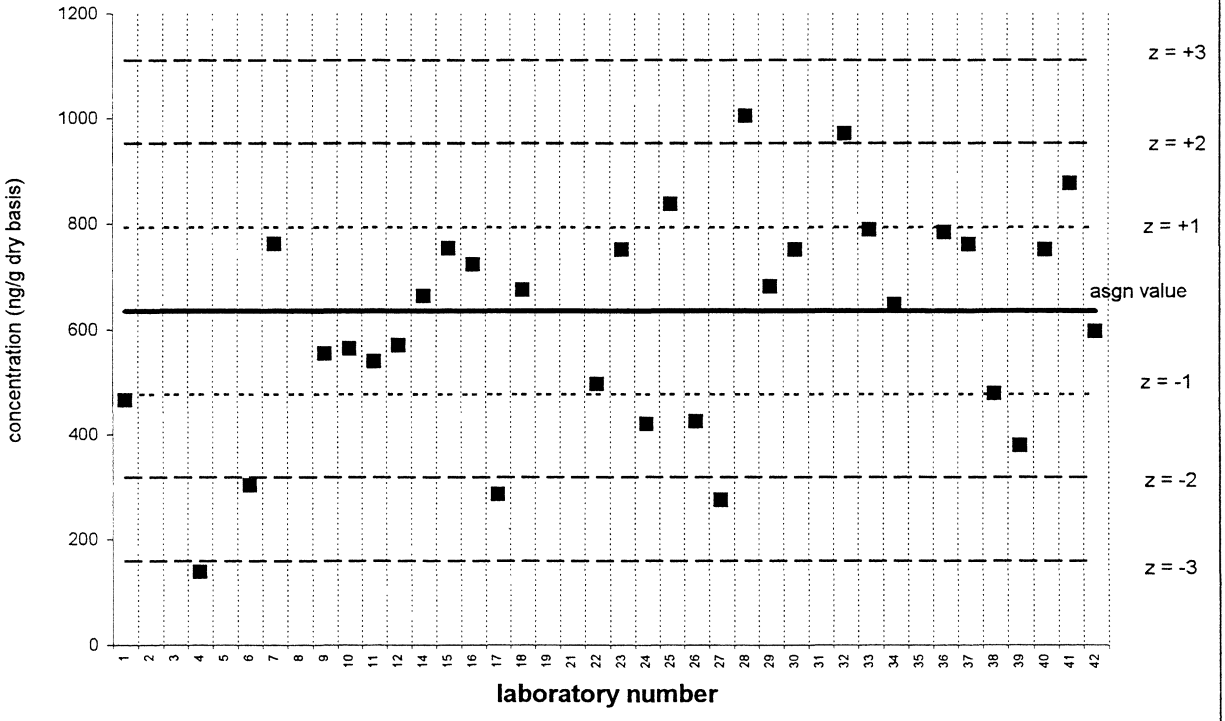
Reported Results: 27 Quantitative Results: 23



fluoranthene **Sediment IX (QA99SED9)**

Assigned value = 635 ng/g s = 179 ng/g 95% CL = 71 ng/g (dry basis)

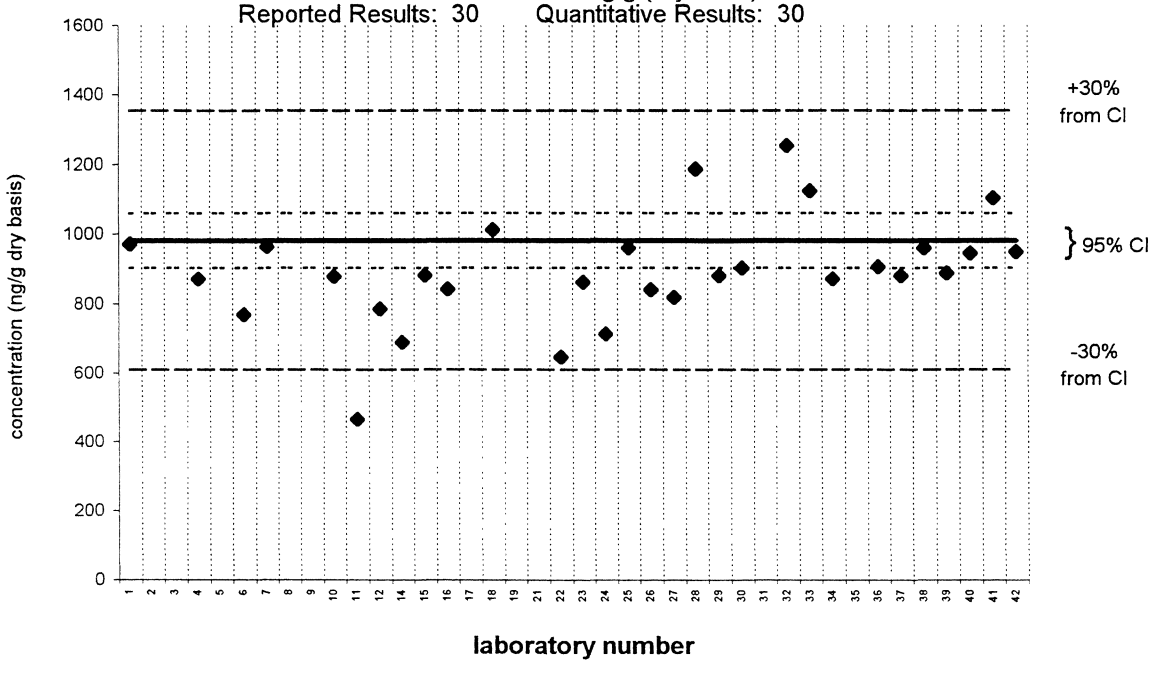
Reported Results: 32 Quantitative Results: 32

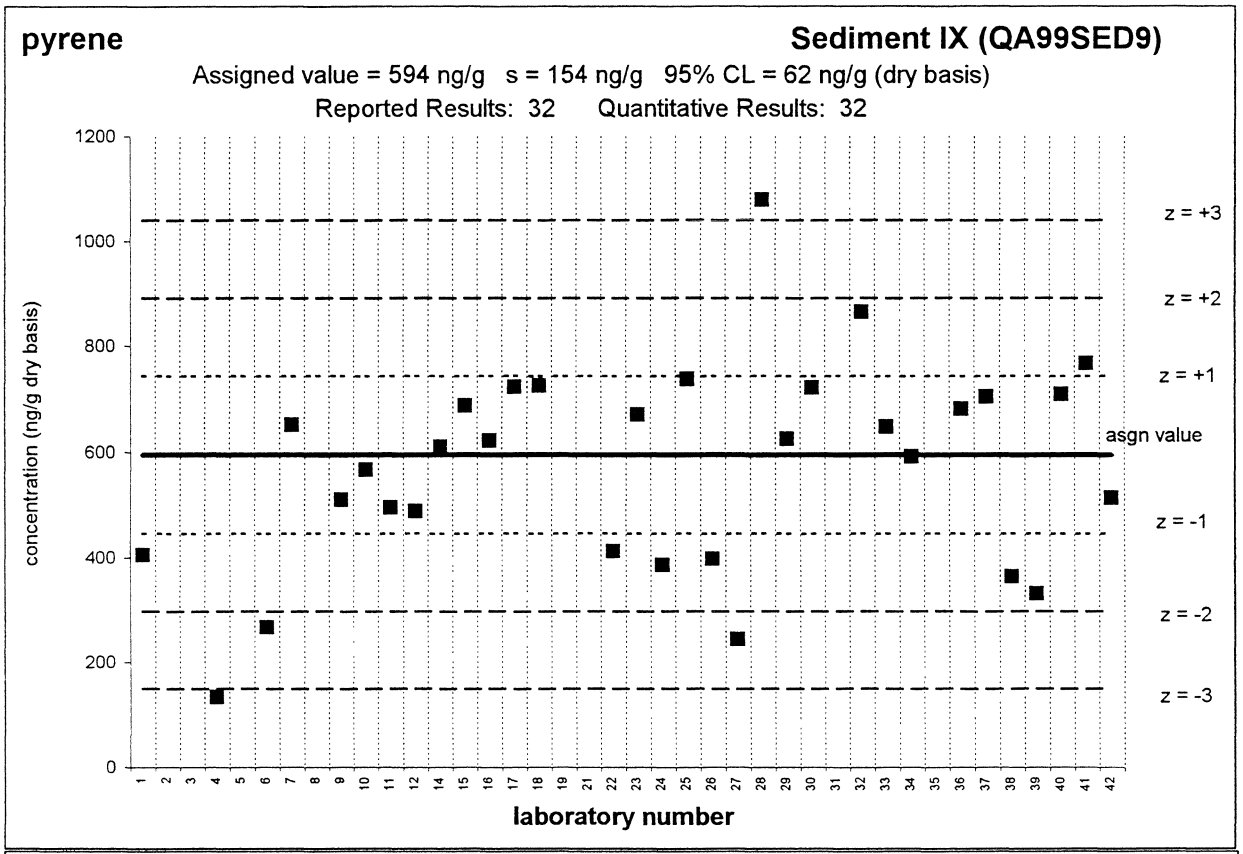


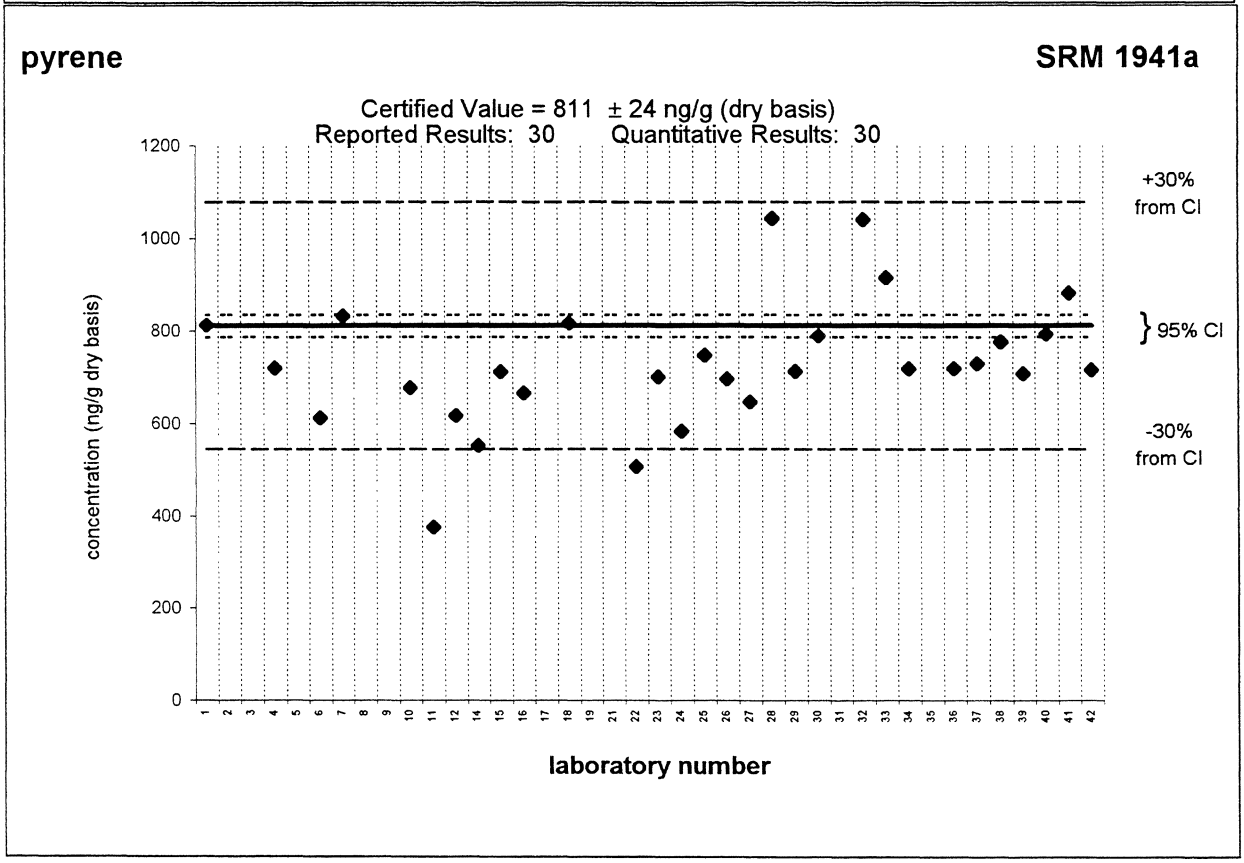
fluoranthene **SRM 1941a**

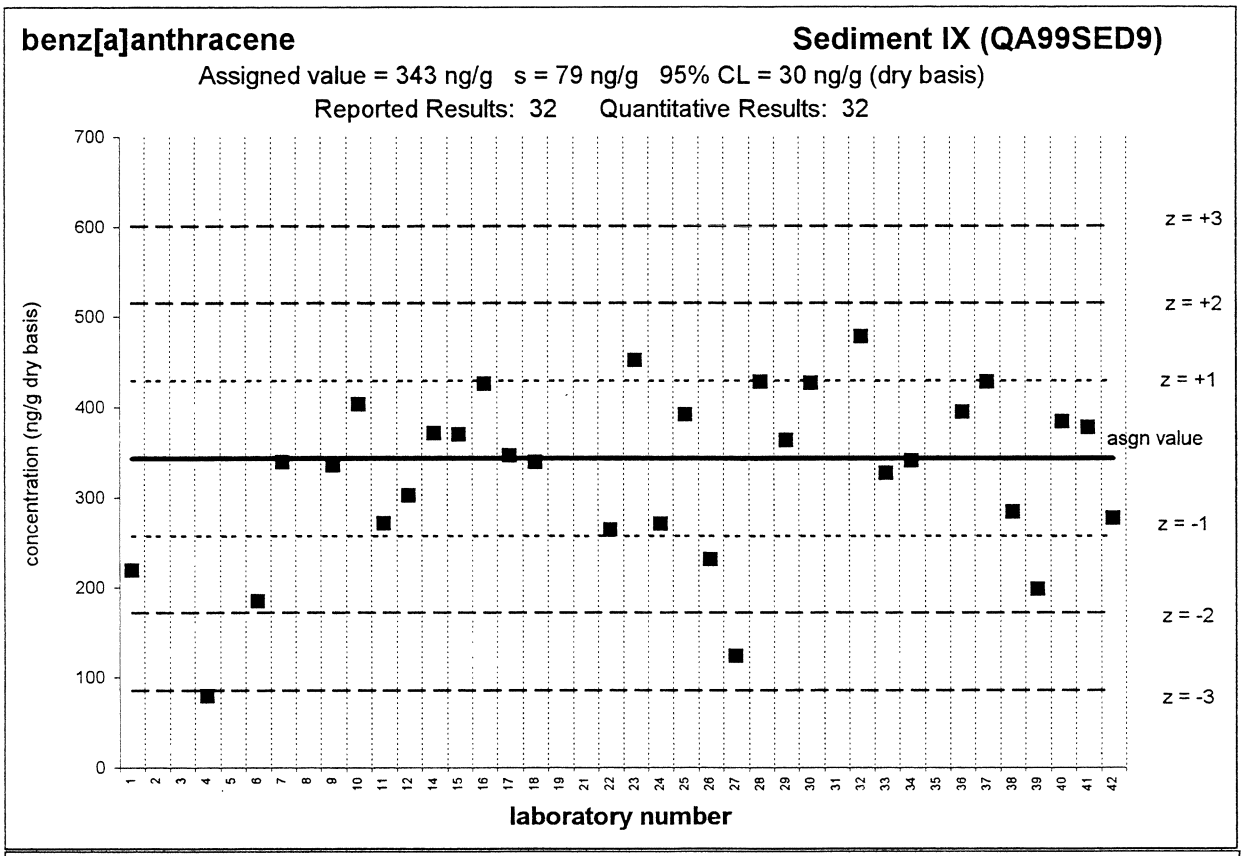
Certified Value = 981 ± 78 ng/g (dry basis)

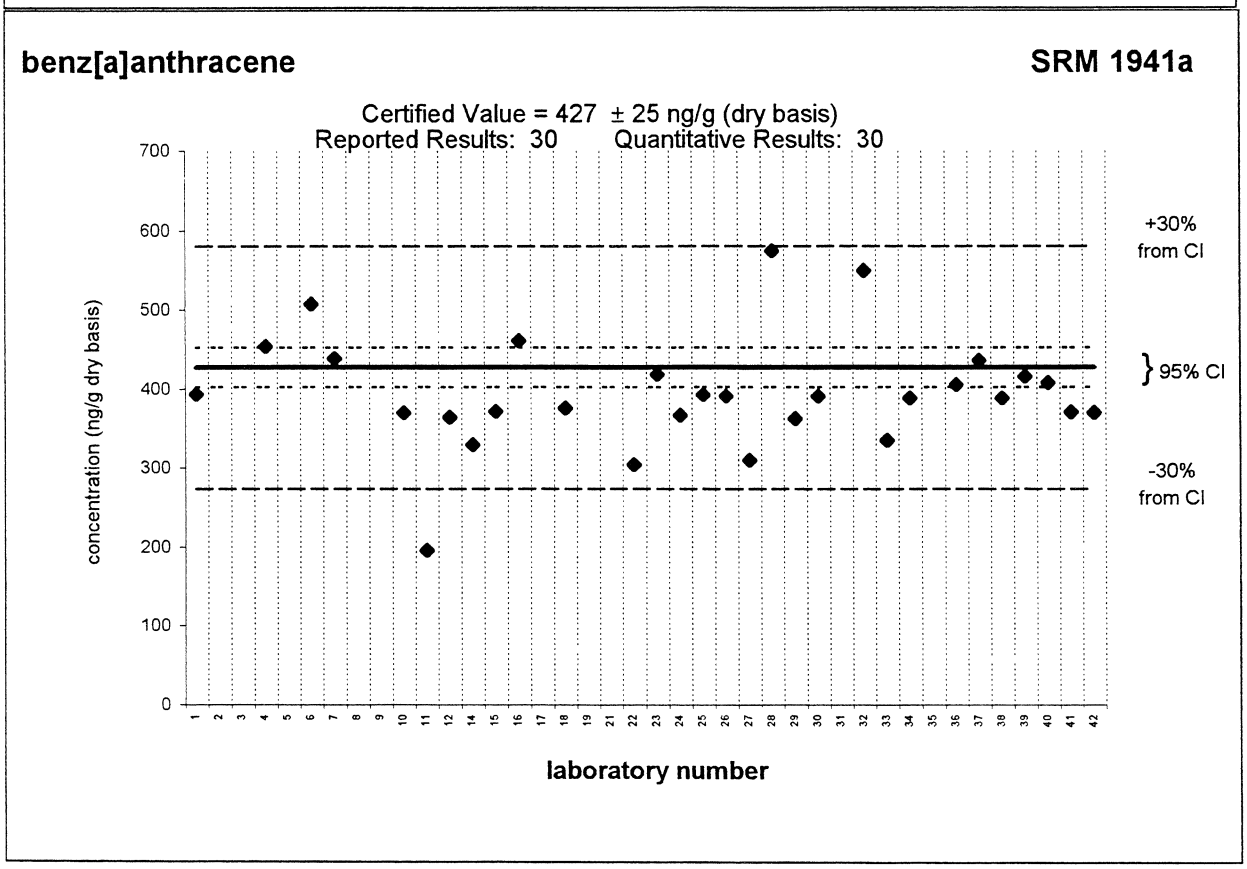
Reported Results: 30 Quantitative Results: 30




pyrene
Sediment IX (QA99SED9)
Assigned value = 594 ng/g s = 154 ng/g 95% CL = 62 ng/g (dry basis)
Reported Results: 32 Quantitative Results: 32
concentration (ng/g dry basis)
laboratory number
z = +3
z = +2
z = +1
asgn value
z = -1
z = -2
z = -3


pyrene
SRM 1941a
Certified Value = 811 ± 24 ng/g (dry basis)
Reported Results: 30 Quantitative Results: 30
concentration (ng/g dry basis)
laboratory number
+30% from CI
95% CI
-30% from CI

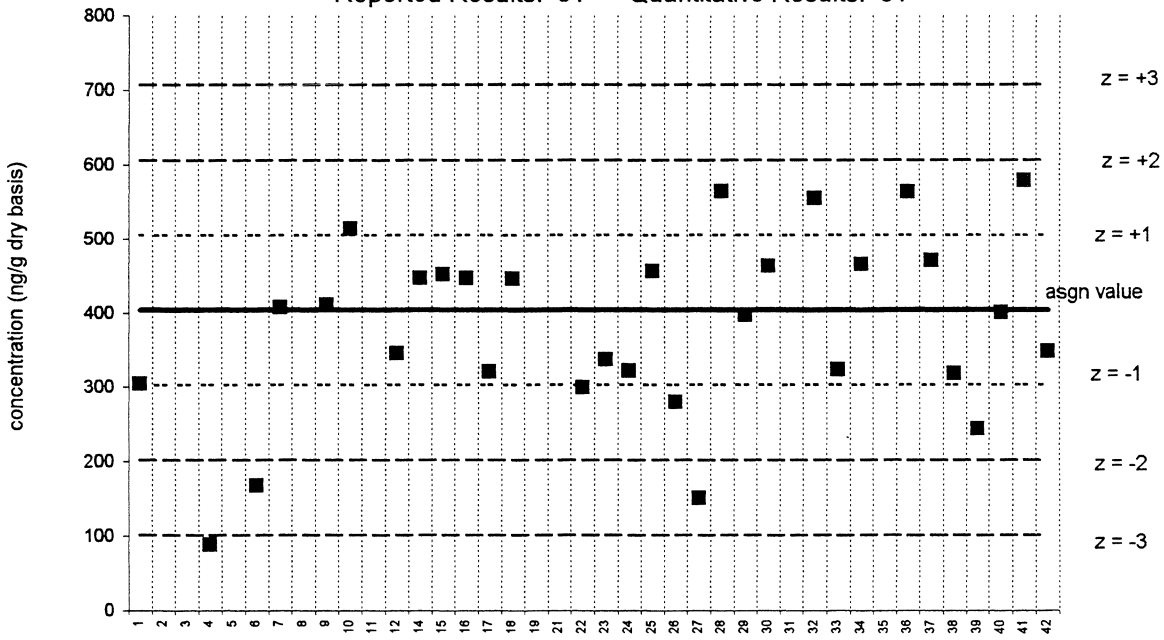

benz[a]anthracene
Sediment IX (QA99SED9)
Assigned value = 343 ng/g s = 79 ng/g 95% CL = 30 ng/g (dry basis)
Reported Results: 32 Quantitative Results: 32
concentration (ng/g dry basis)
laboratory number
z = +3
z = +2
z = +1
asgn value
z = -1
z = -2
z = -3


benz[a]anthracene
SRM 1941a
Certified Value = 427 ± 25 ng/g (dry basis)
Reported Results: 30 Quantitative Results: 30
concentration (ng/g dry basis)
laboratory number
+30% from CI
95% CI
-30% from CI

chrysene + triphenylene **Sediment IX (QA99SED9)**

Assigned value = 404 ng/g s = 92 ng/g 95% CL = 37 ng/g (dry basis)

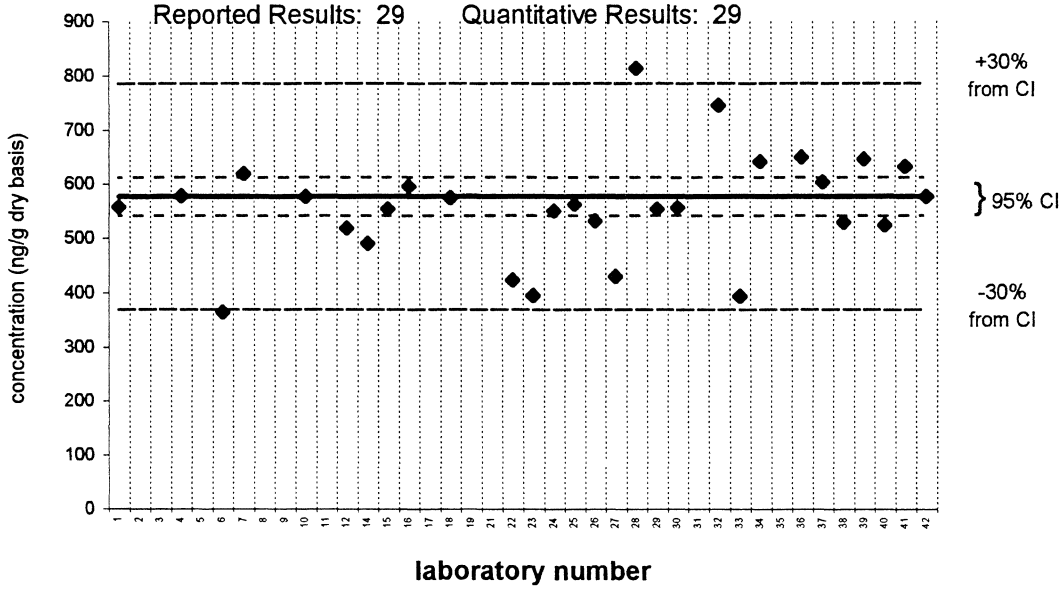
Reported Results: 31 Quantitative Results: 31



chrysene + triphenylene **SRM 1941a**

Information Value = 577 ± 35 ng/g (dry basis)

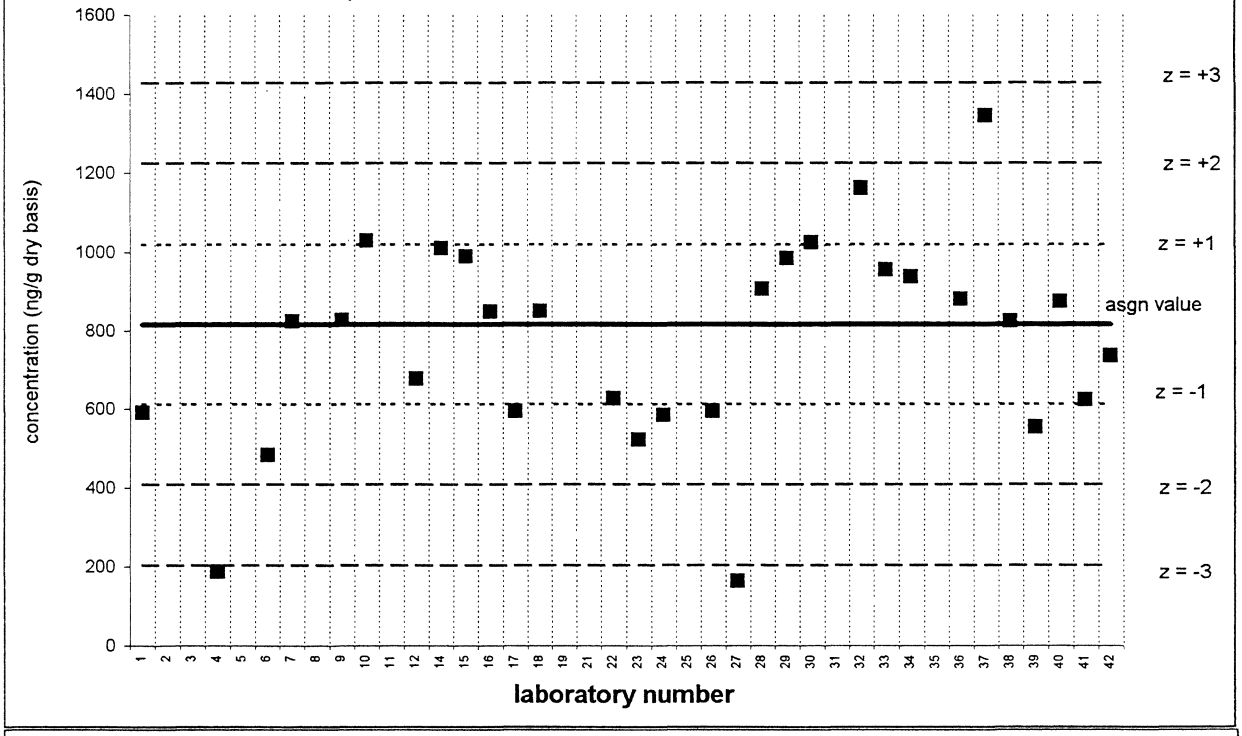
Reported Results: 29 Quantitative Results: 29



benzofluoranthenes [b+j+k] — Sediment IX (QA99SED9)

Assigned value = 815 ng/g s = 215 ng/g 95% CL = 85 ng/g (dry basis)

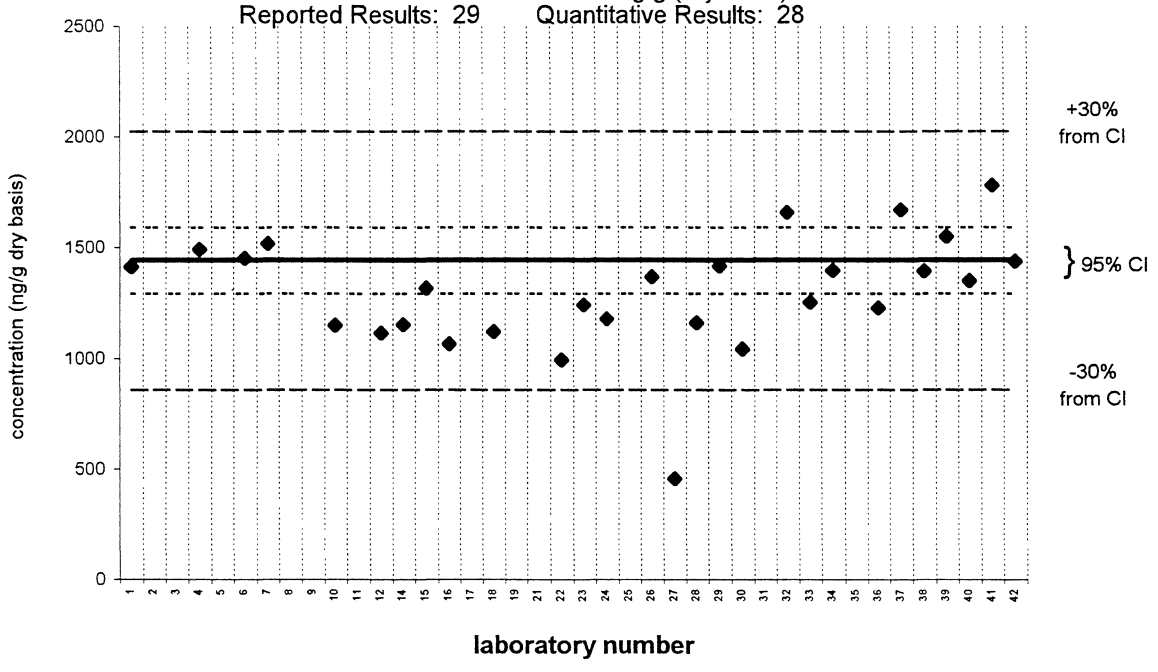
Reported Results: 31 Quantitative Results: 30

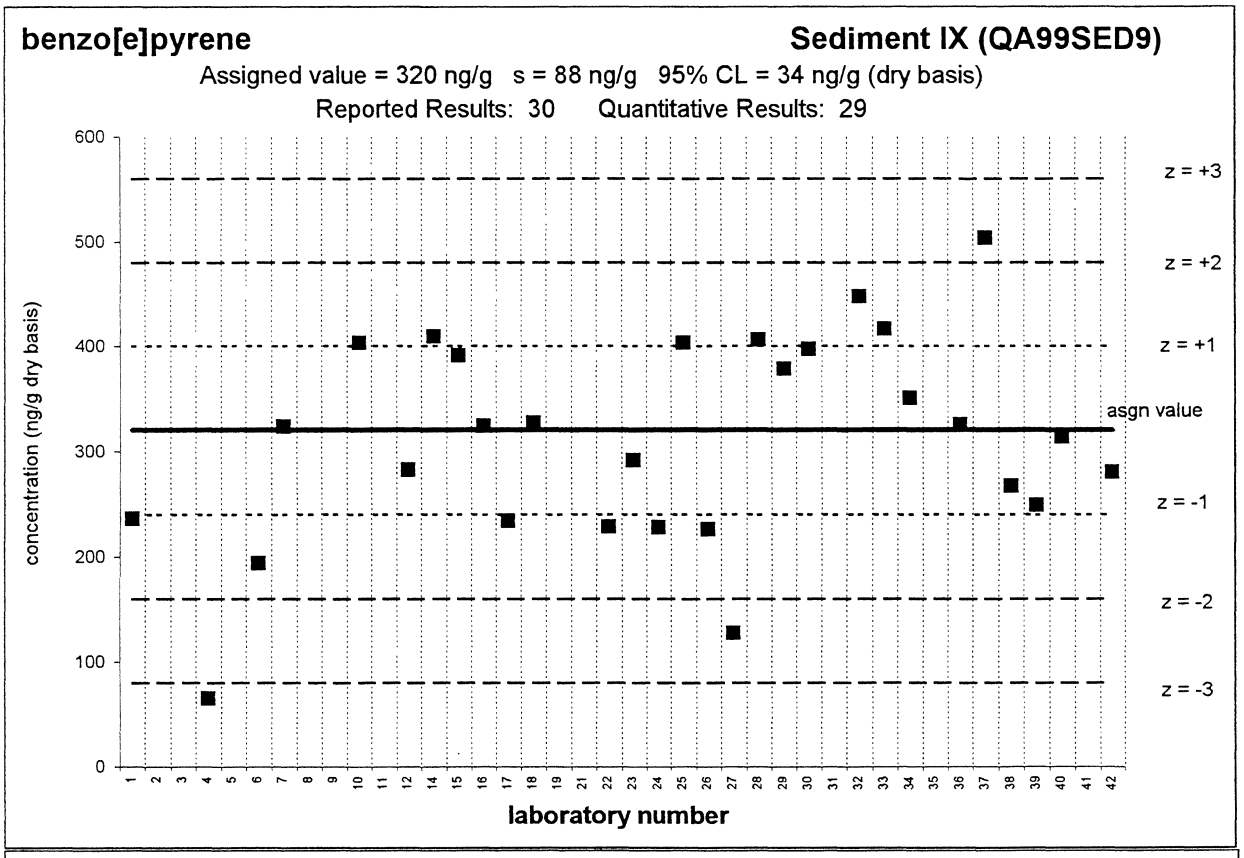


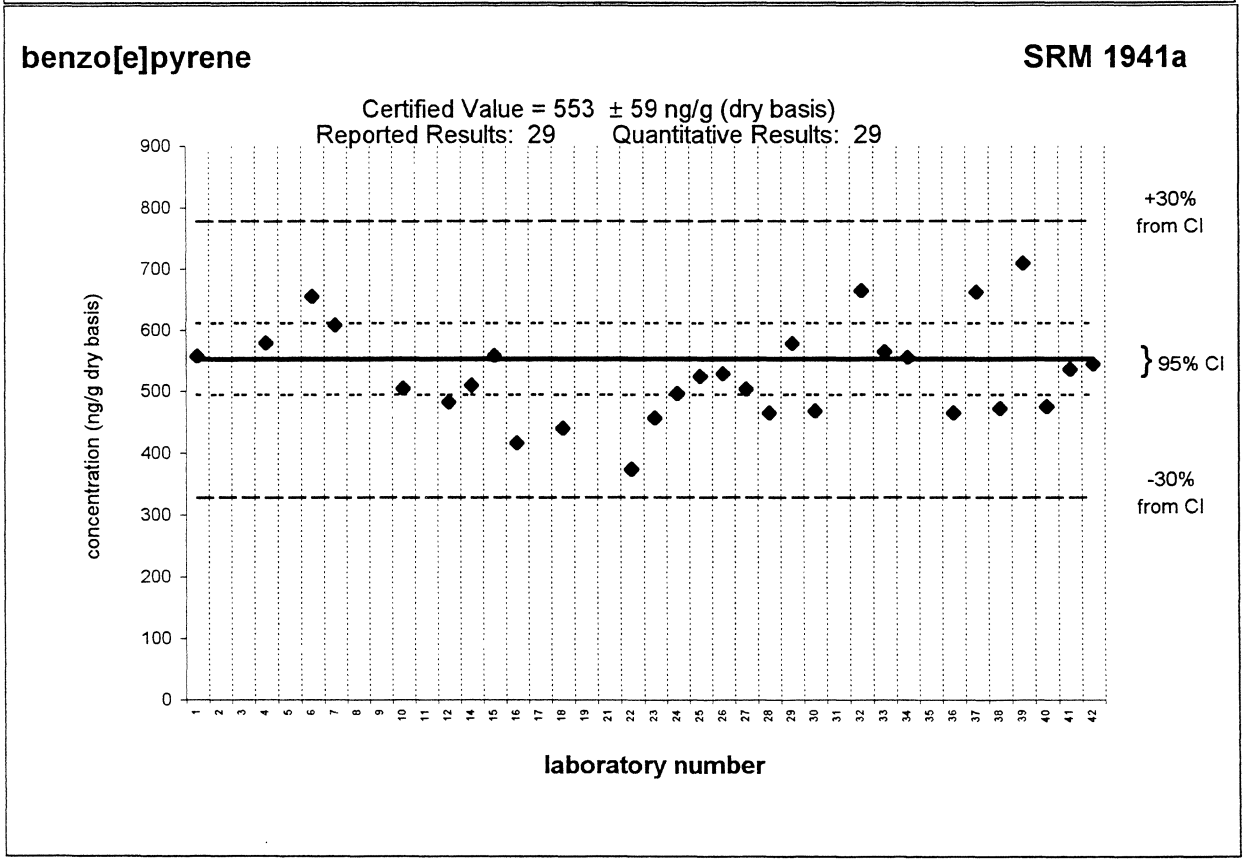
benzofluoranthenes [b+j+k] — SRM 1941a

Information Value = 1441 ± 150 ng/g (dry basis)

Reported Results: 29 Quantitative Results: 28



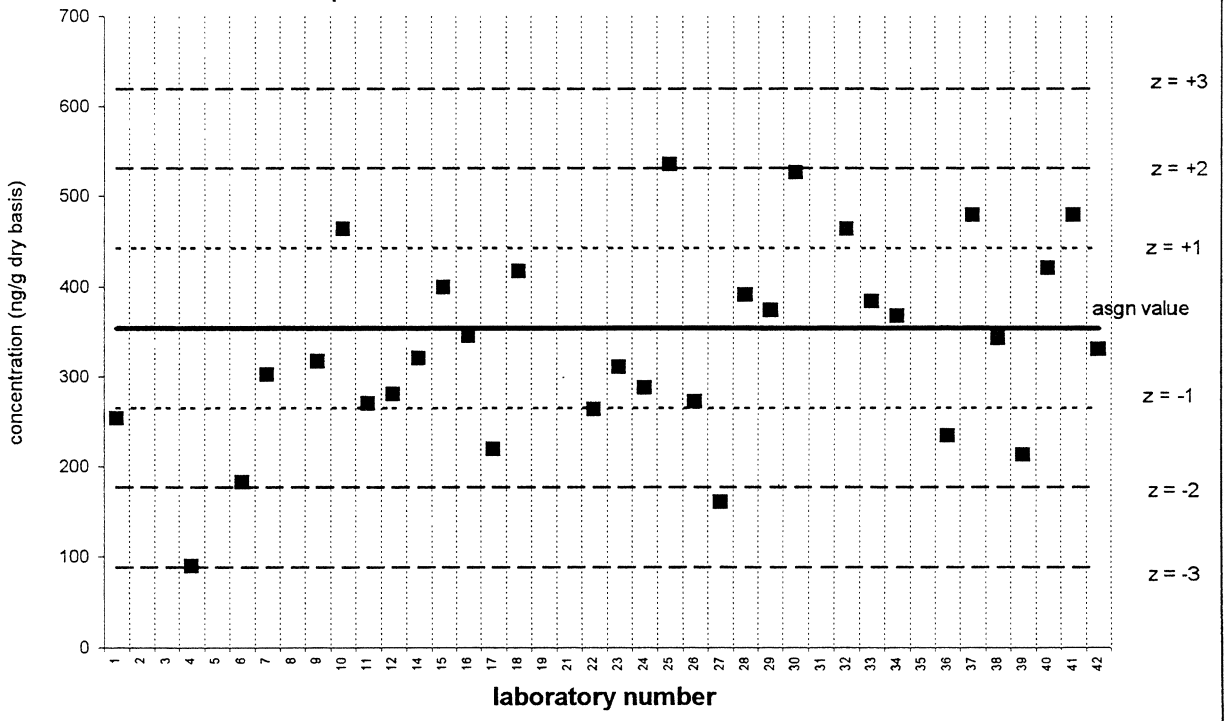

benzo[e]pyrene
Sediment IX (QA99SED9)
Assigned value = 320 ng/g s = 88 ng/g 95% CL = 34 ng/g (dry basis)
Reported Results: 30 Quantitative Results: 29
concentration (ng/g dry basis)
laboratory number
z = +3
z = +2
z = +1
asgn value
z = -1
z = -2
z = -3


benzo[e]pyrene
SRM 1941a
Certified Value = 553 ± 59 ng/g (dry basis)
Reported Results: 29 Quantitative Results: 29
concentration (ng/g dry basis)
laboratory number
+30% from CI
95% CI
-30% from CI

benzo[a]pyrene **Sediment IX (QA99SED9)**

Assigned value = 354 ng/g s = 103 ng/g 95% CL = 42 ng/g (dry basis)

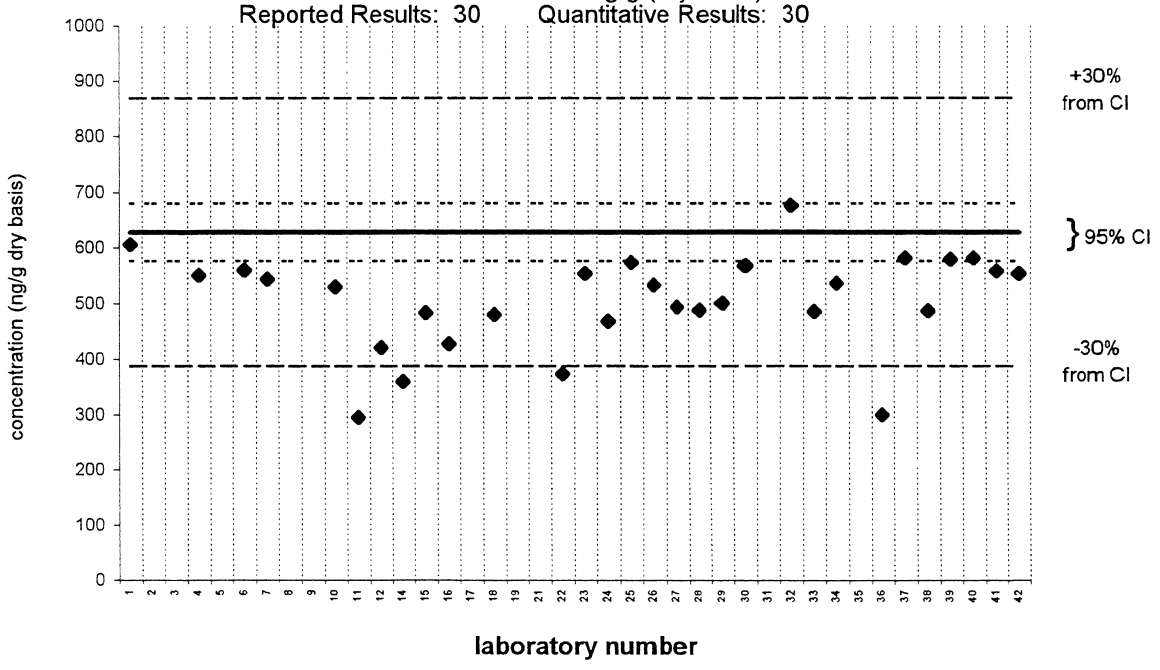
Reported Results: 32 Quantitative Results: 32



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

Certified Value = 628 ± 52 ng/g (dry basis)

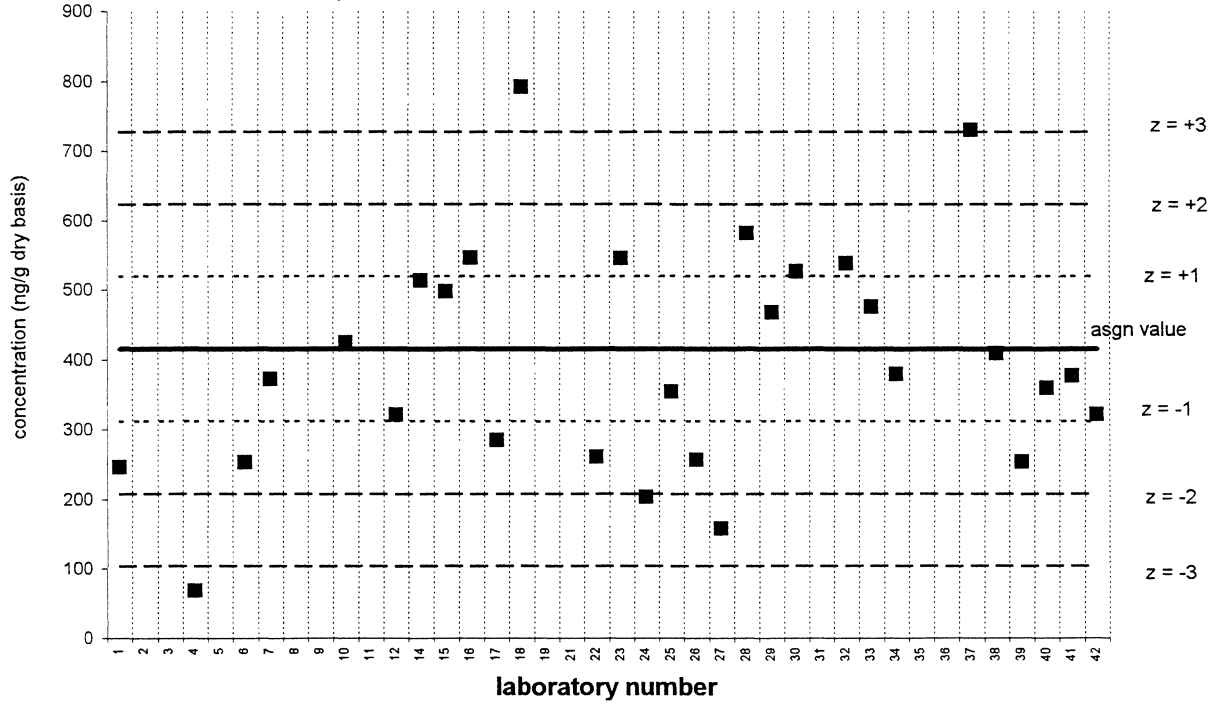
Reported Results: 30 Quantitative Results: 30



perylene **Sediment IX (QA99SED9)**

Assigned value = 416 ng/g s = 157 ng/g 95% CL = 63 ng/g (dry basis)

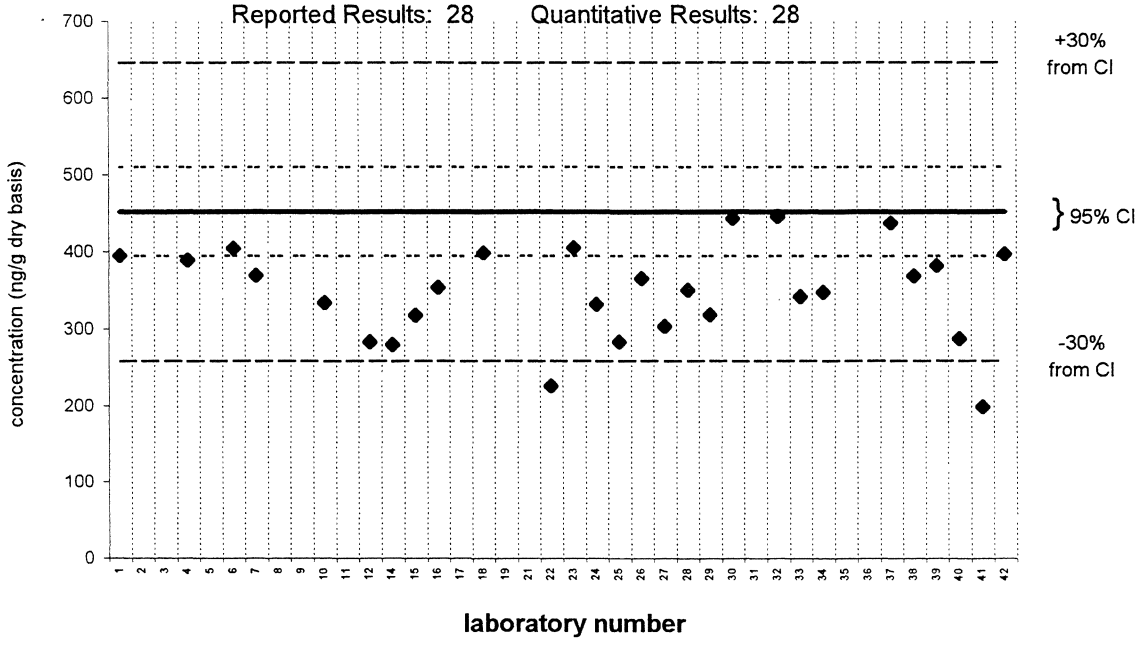
Reported Results: 29 Quantitative Results: 29

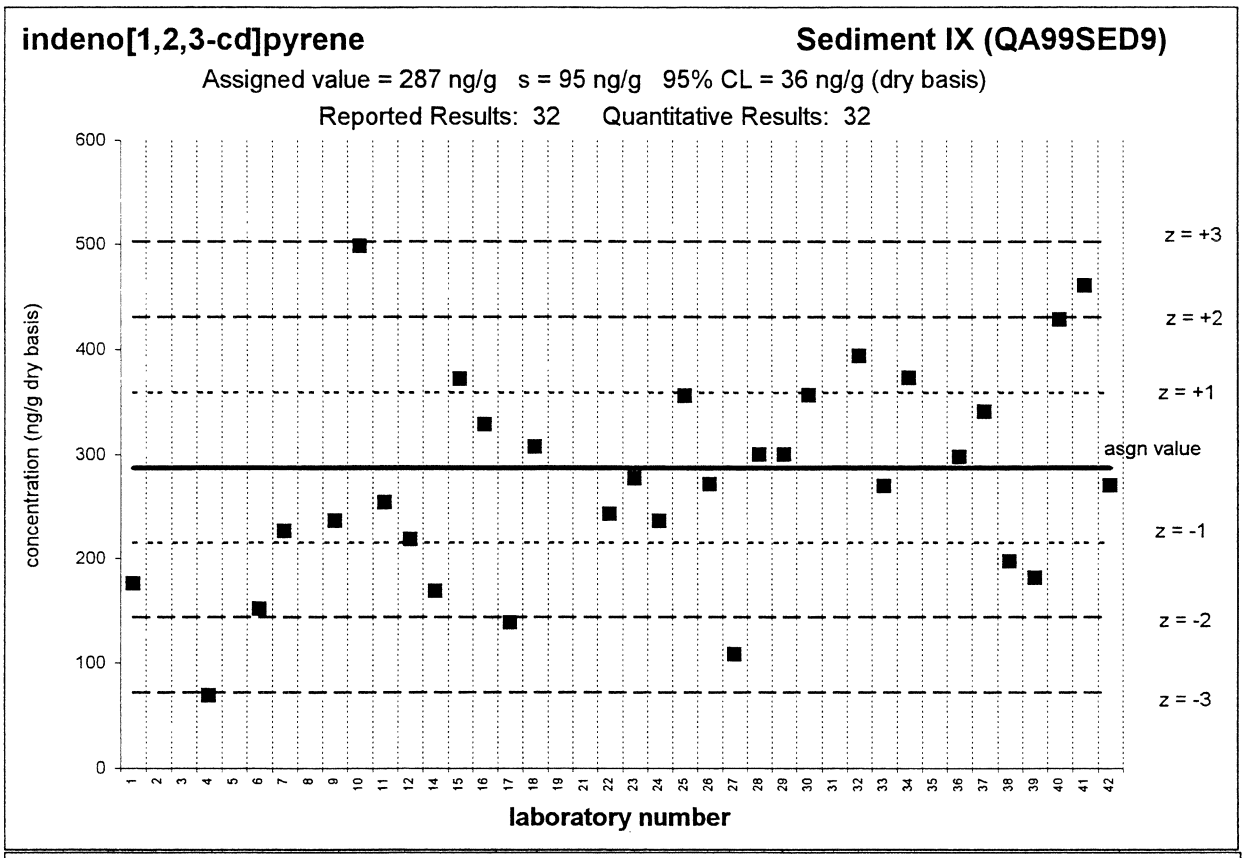


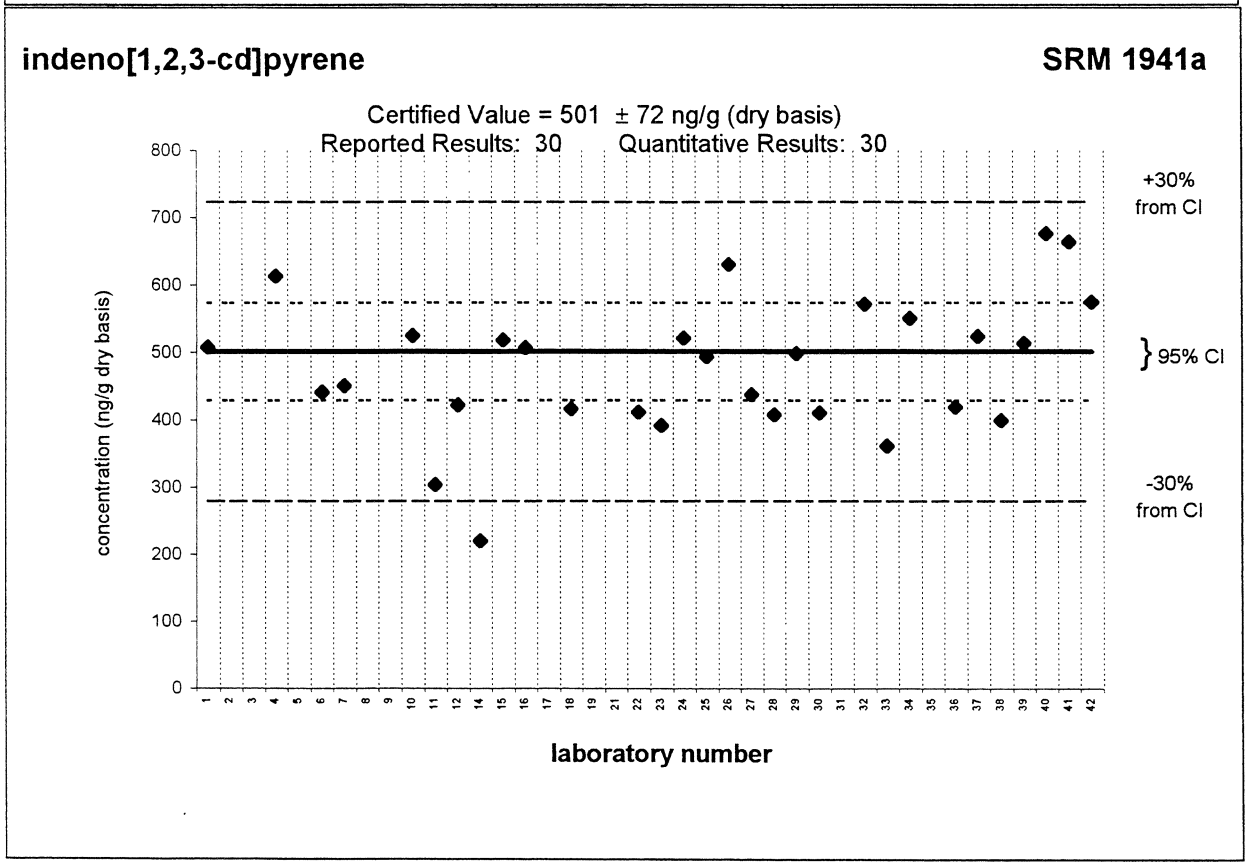
perylene **SRM 1941a**

Certified Value = 452 ± 58 ng/g (dry basis)

Reported Results: 28 Quantitative Results: 28



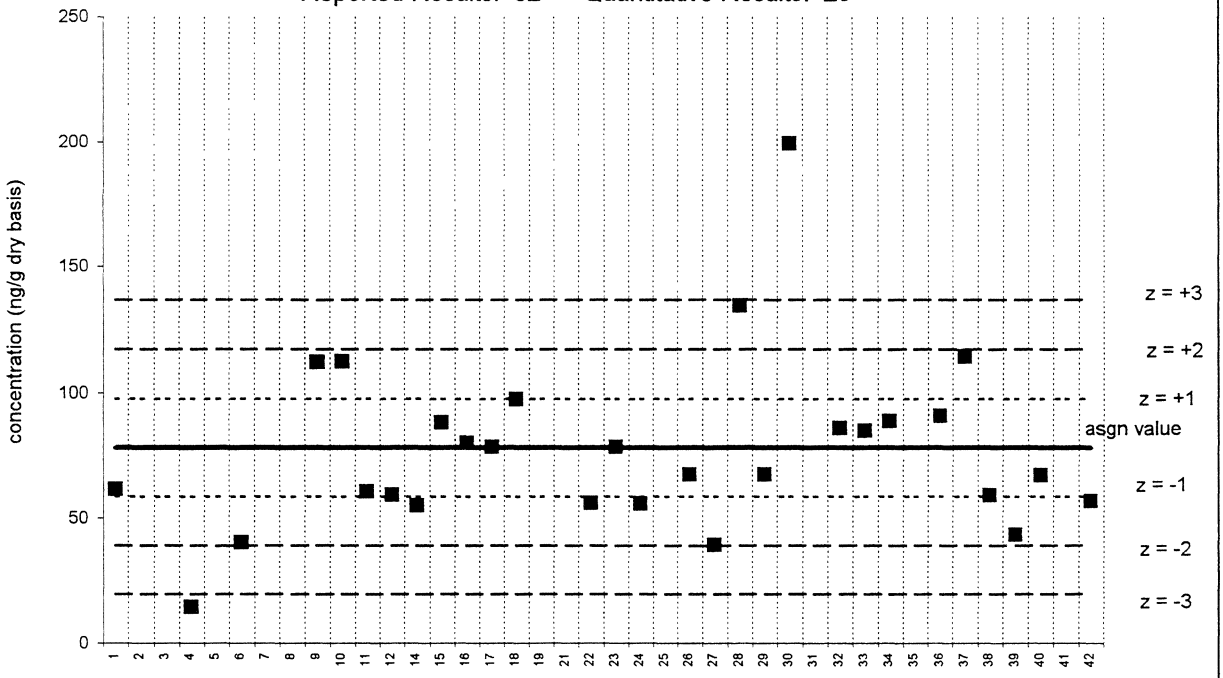

indeno[1,2,3-cd]pyrene
Sediment IX (QA99SED9)
Assigned value = 287 ng/g s = 95 ng/g 95% CL = 36 ng/g (dry basis)
Reported Results: 32 Quantitative Results: 32
concentration (ng/g dry basis)
laboratory number
z = +3
z = +2
z = +1
asgn value
z = -1
z = -2
z = -3


indeno[1,2,3-cd]pyrene
SRM 1941a
Certified Value = 501 ± 72 ng/g (dry basis)
Reported Results: 30 Quantitative Results: 30
concentration (ng/g dry basis)
laboratory number
+30% from CI
95% CI
-30% from CI

dibenz[a,h]anthracene + [a,c] **Sediment IX (QA99SED9)**

Assigned value = 78.1 ng/g s = 34.3 ng/g 95% CL = 14.2 ng/g (dry basis)

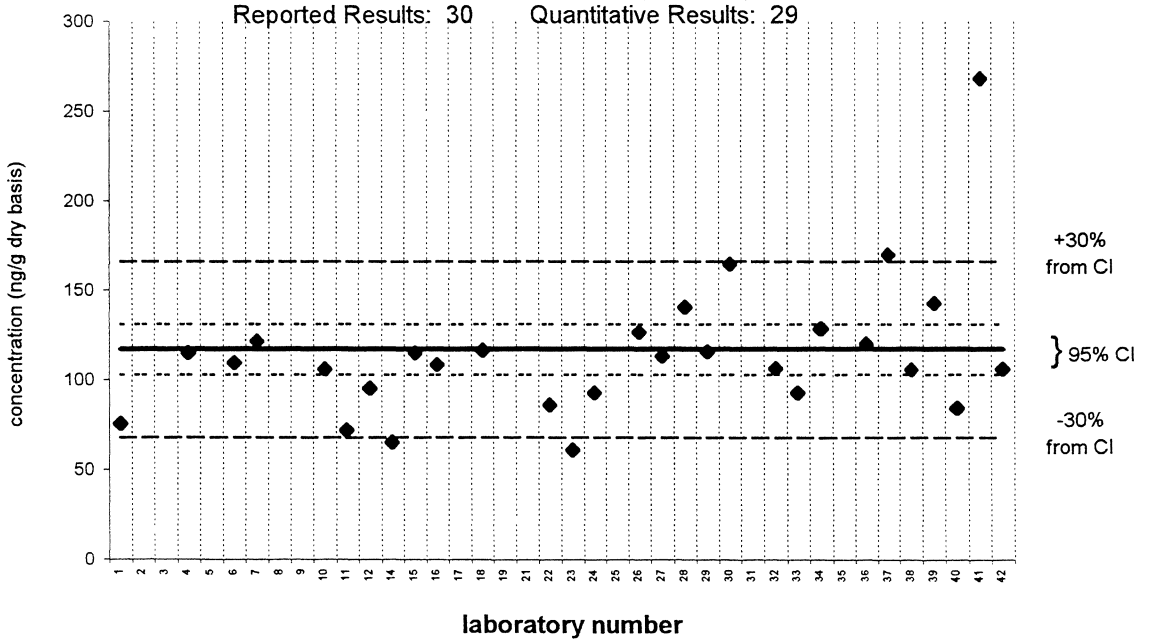
Reported Results: 32 Quantitative Results: 29



dibenz[a,h]anthracene + [a,c] **SRM 1941a**

Certified Value = 117 ± 14 ng/g (dry basis)

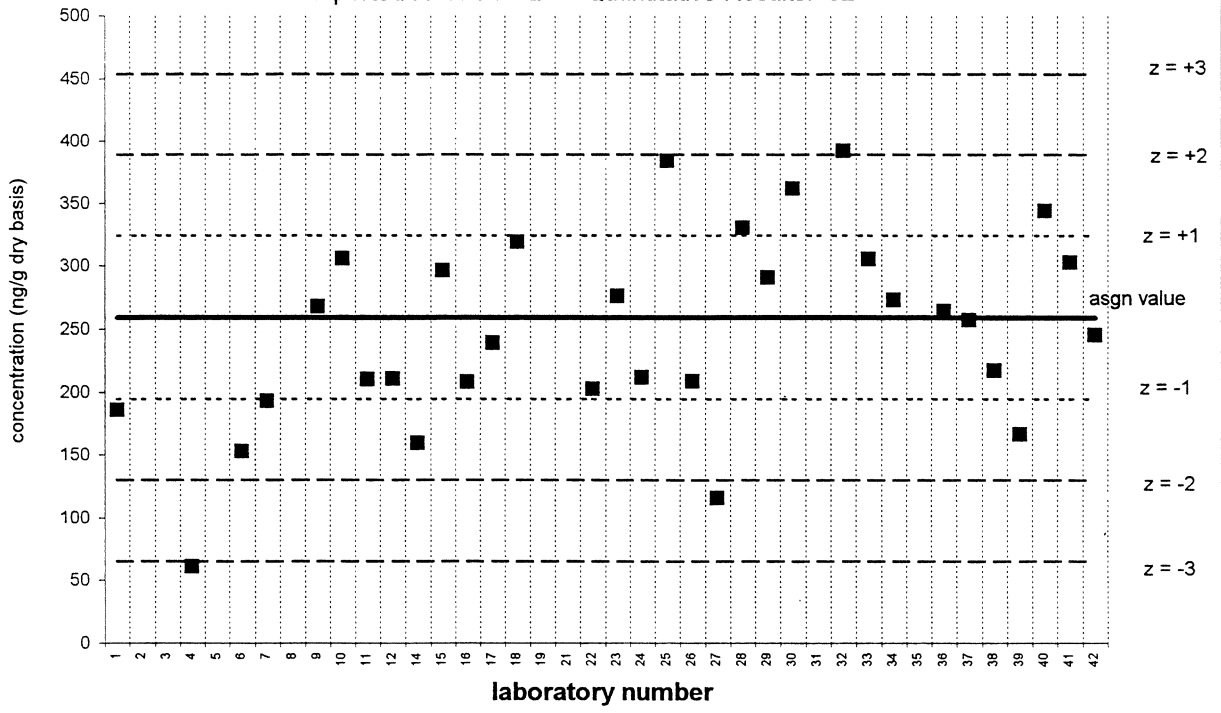
Reported Results: 30 Quantitative Results: 29



benzo[ghi]perylene — Sediment IX (QA99SED9)

Assigned value = 259 ng/g s = 71 ng/g 95% CL = 27 ng/g (dry basis)

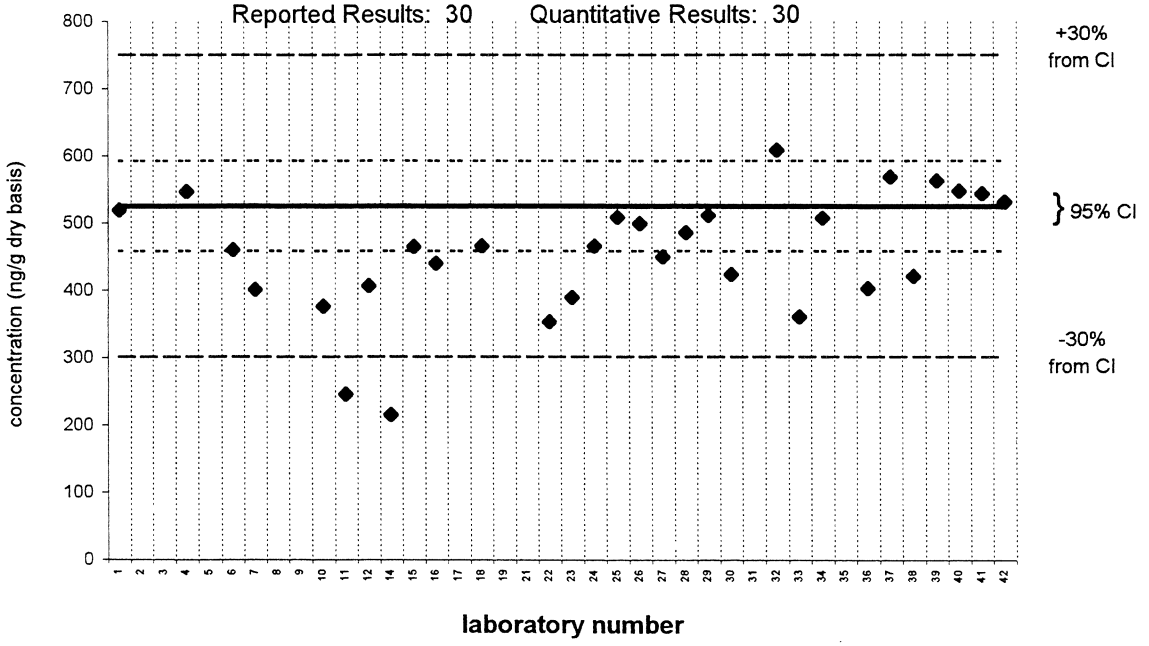
Reported Results: 32 Quantitative Results: 32



benzo[ghi]perylene — SRM 1941a

Certified Value = 525 ± 67 ng/g (dry basis)

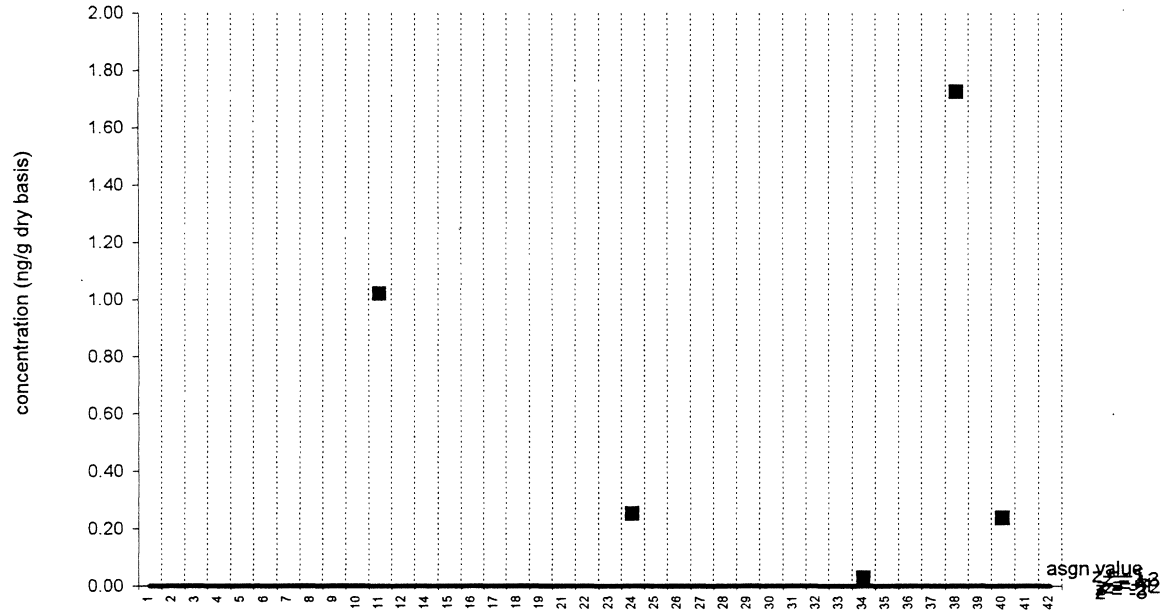
Reported Results: 30 Quantitative Results: 30



alpha-HCH **Sediment IX (QA99SED9)**

Assigned value = <1 ng/g (dry basis)

Reported Results: 23 Quantitative Results: 5

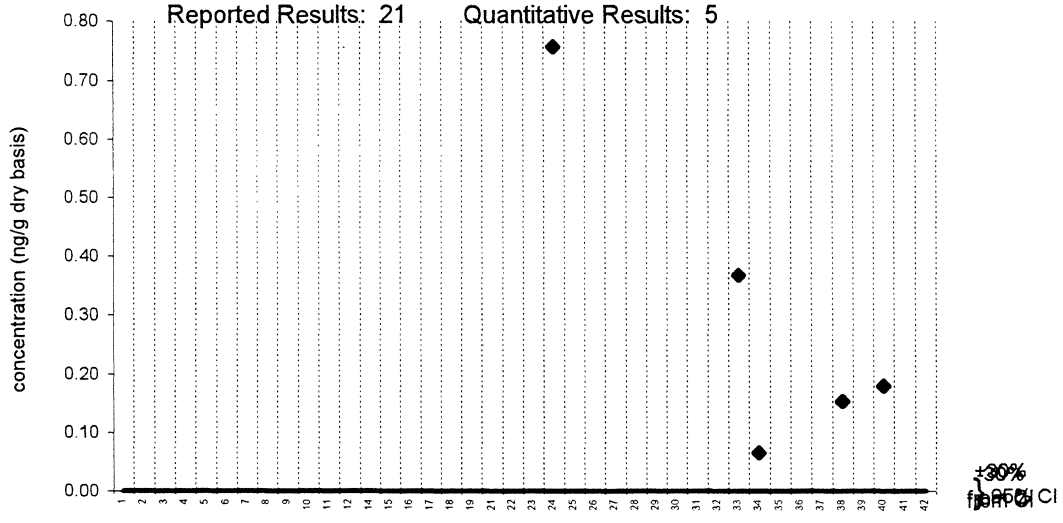


laboratory number

alpha-HCH **SRM 1941a**

Target Value = <2 ng/g (dry basis)

Reported Results: 21 Quantitative Results: 5

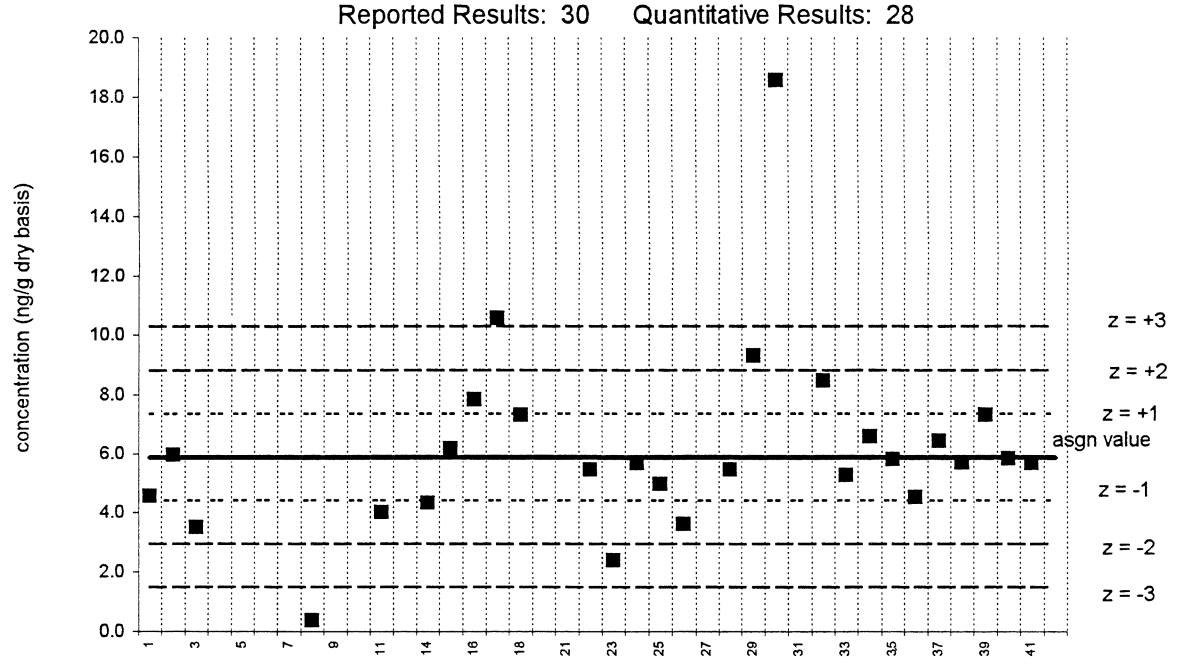


laboratory number

hexachlorobenzene **Sediment IX (QA99SED9)**

Assigned value = 5.88 ng/g s = 1.83 ng/g 95% CL = 0.74 ng/g (dry basis)

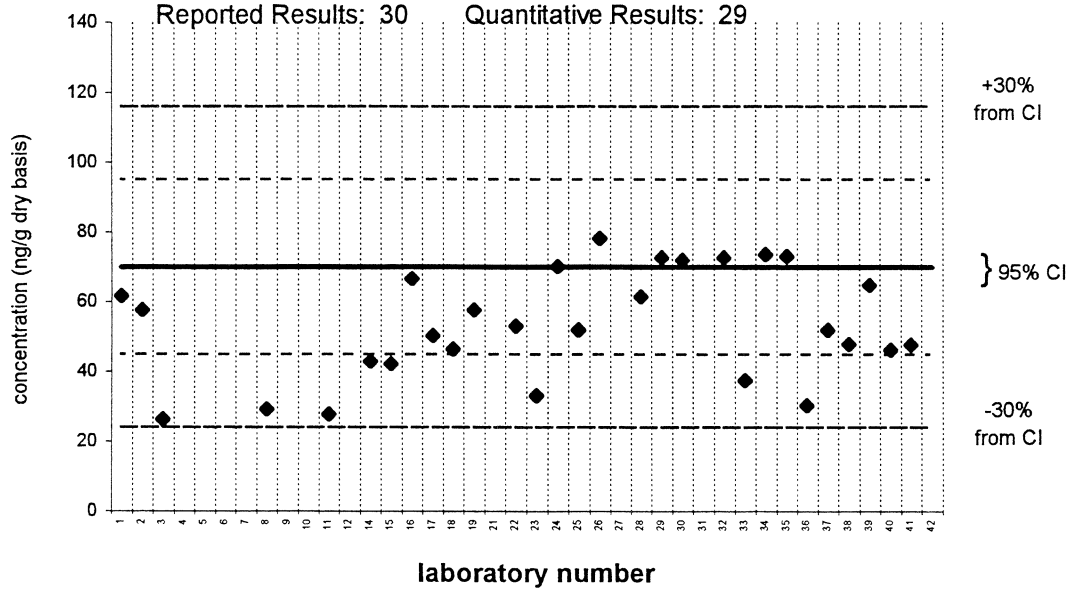
Reported Results: 30 Quantitative Results: 28



hexachlorobenzene **SRM 1941a**

Certified Value = 70.0 ± 25.0 ng/g (dry basis)

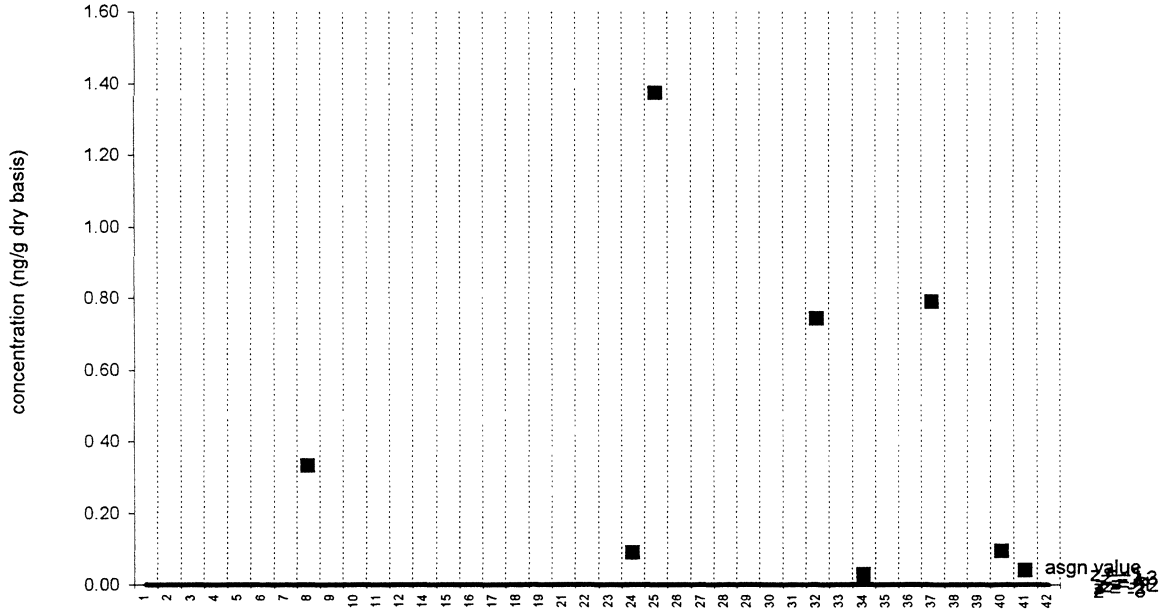
Reported Results: 30 Quantitative Results: 29



gamma-HCH **Sediment IX (QA99SED9)**

Assigned value = <1 ng/g (dry basis)

Reported Results: 29 Quantitative Results: 8

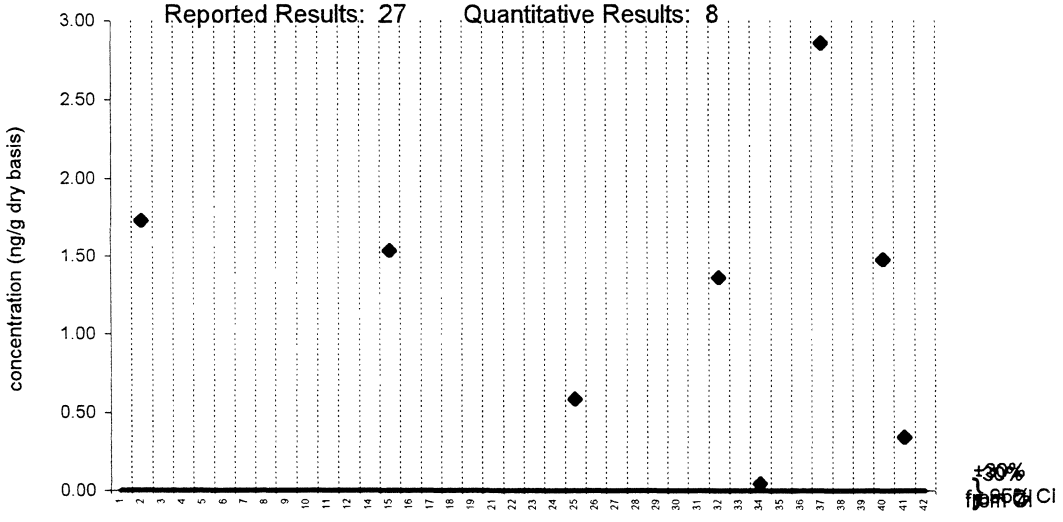


laboratory number

gamma-HCH **SRM 1941a**

Target Value = <2 ng/g (dry basis)

Reported Results: 27 Quantitative Results: 8

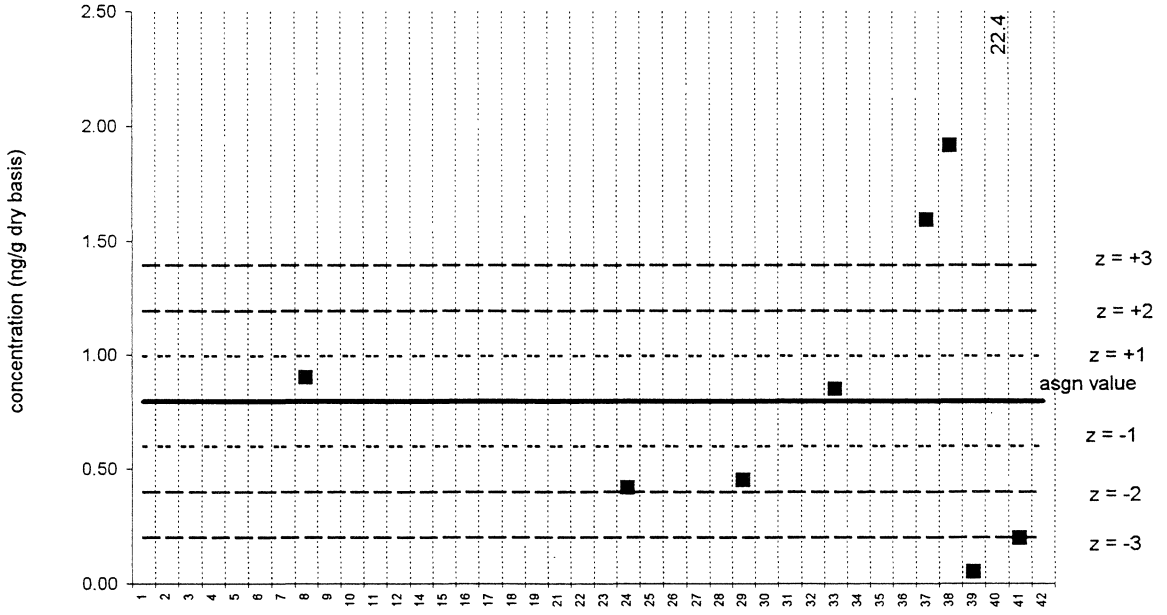


laboratory number

heptachlor **Sediment IX (QA99SED9)**

Assigned value = 0.80 ng/g s = 0.66 ng/g 95% CL = 0.55 ng/g (dry basis)

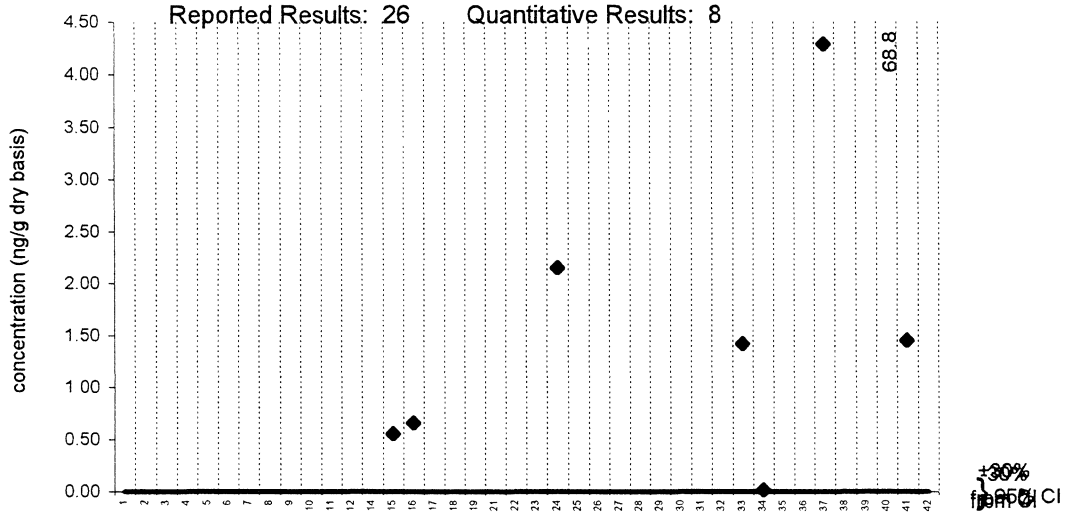
Reported Results: 28 Quantitative Results: 9



heptachlor **SRM 1941a**

Target Value = <2 ng/g (dry basis)

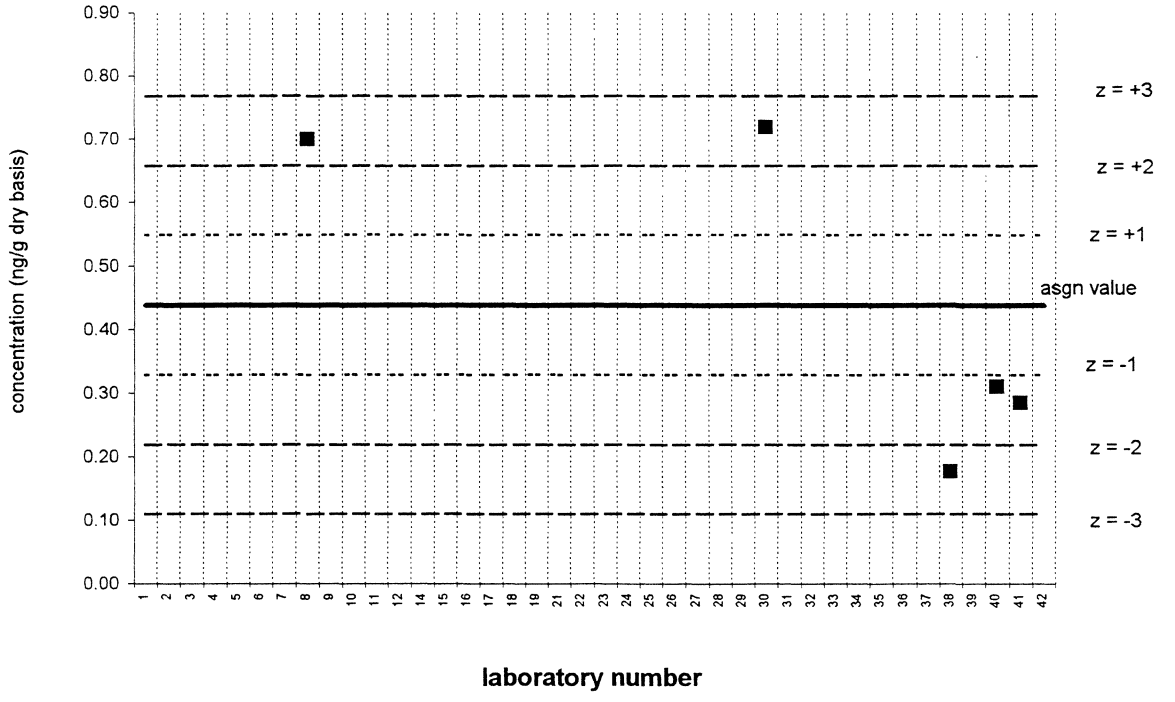
Reported Results: 26 Quantitative Results: 8



aldrin **Sediment IX (QA99SED9)**

Assigned value = 0.44 ng/g s = 0.25 ng/g 95% CL = 0.31 ng/g (dry basis)

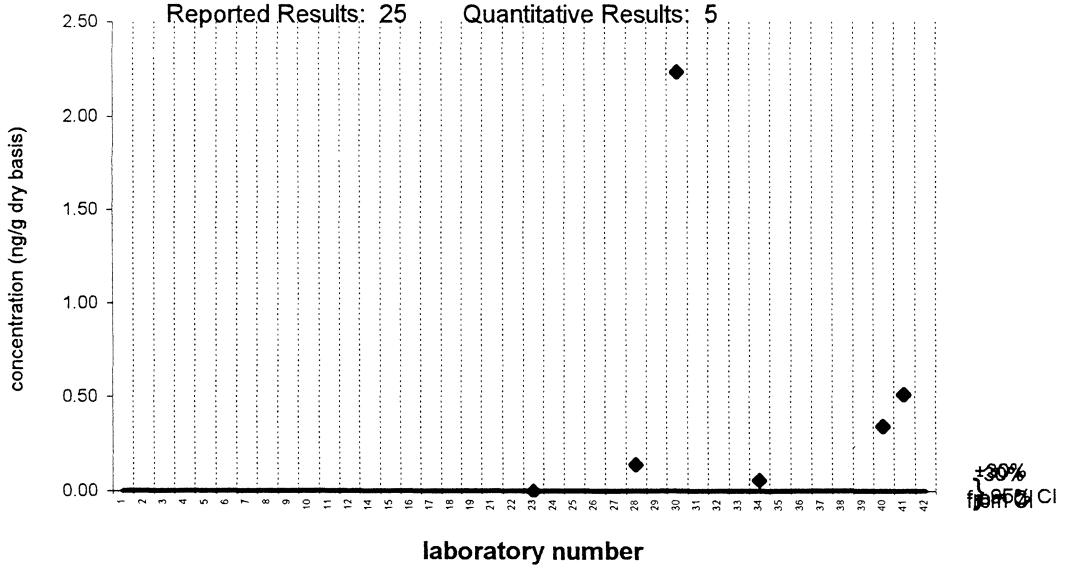
Reported Results: 27 Quantitative Results: 5



aldrin **SRM 1941a**

Target Value = <2 ng/g (dry basis)

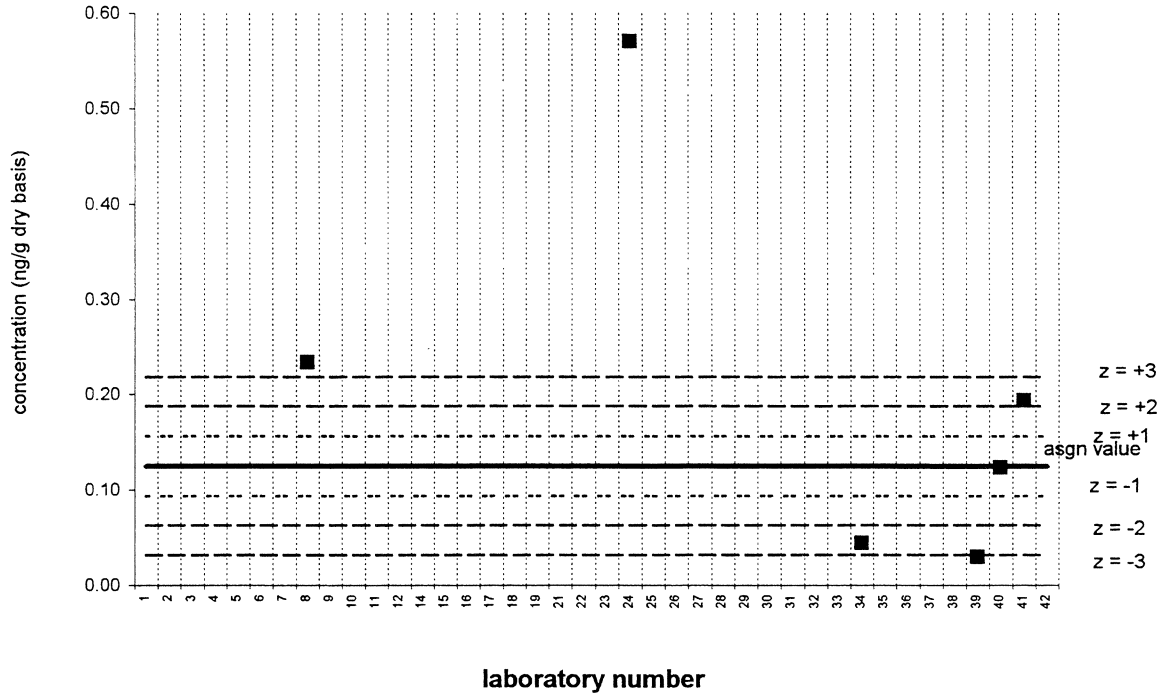
Reported Results: 25 Quantitative Results: 5



heptachlor epoxide — Sediment IX (QA99SED9)

Assigned value = 0.12 ng/g s = 0.09 ng/g 95% CL = 0.11 ng/g (dry basis)

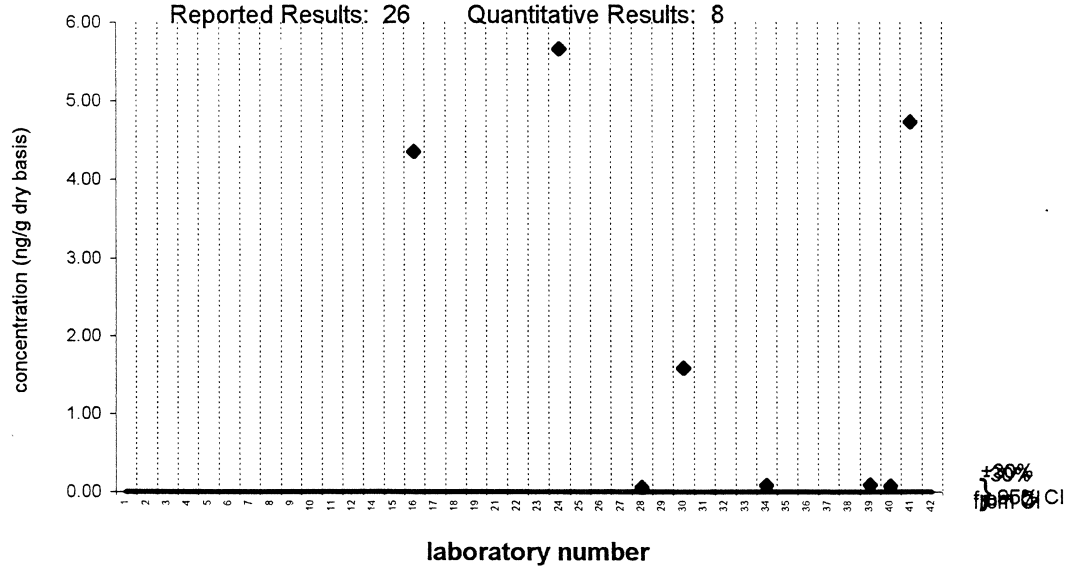
Reported Results: 28 Quantitative Results: 6



heptachlor epoxide — SRM 1941a

Target Value = <2 ng/g (dry basis)

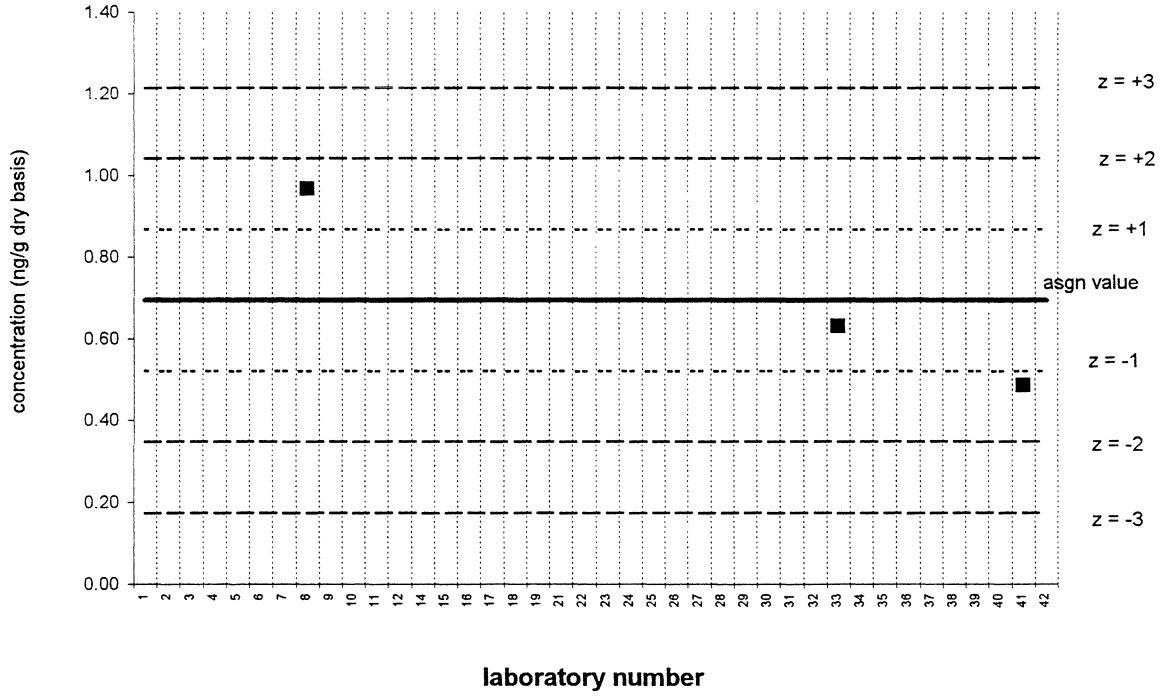
Reported Results: 26 Quantitative Results: 8



oxychlordane **Sediment IX (QA99SED9)**

Assigned value = 0.69 ng/g s = 0.25 ng/g 95% CL = 0.61 ng/g (dry basis)

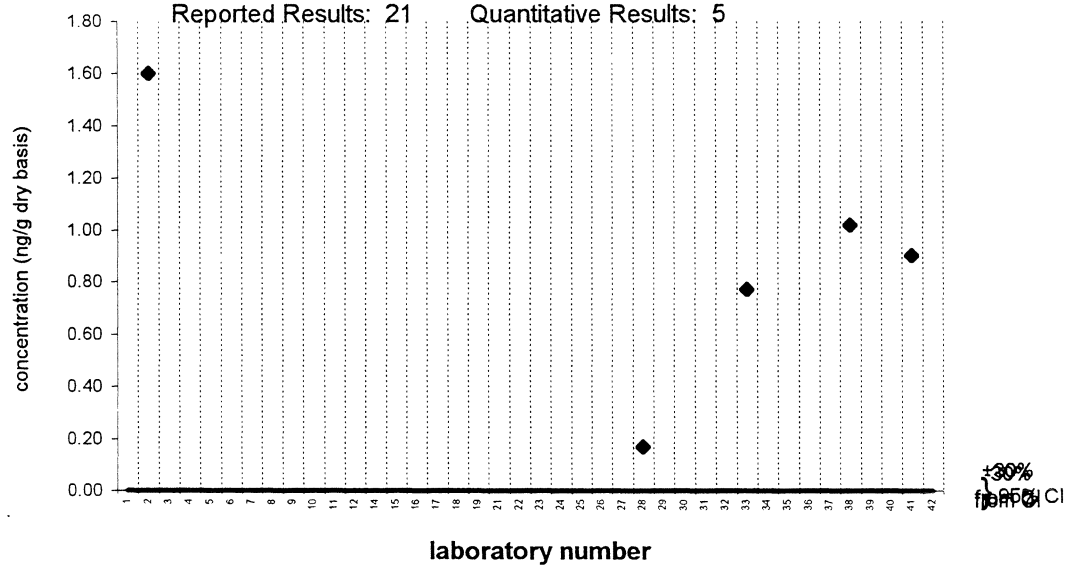
Reported Results: 22 Quantitative Results: 3



oxychlordane **SRM 1941a**

Target Value = <3 ng/g (dry basis)

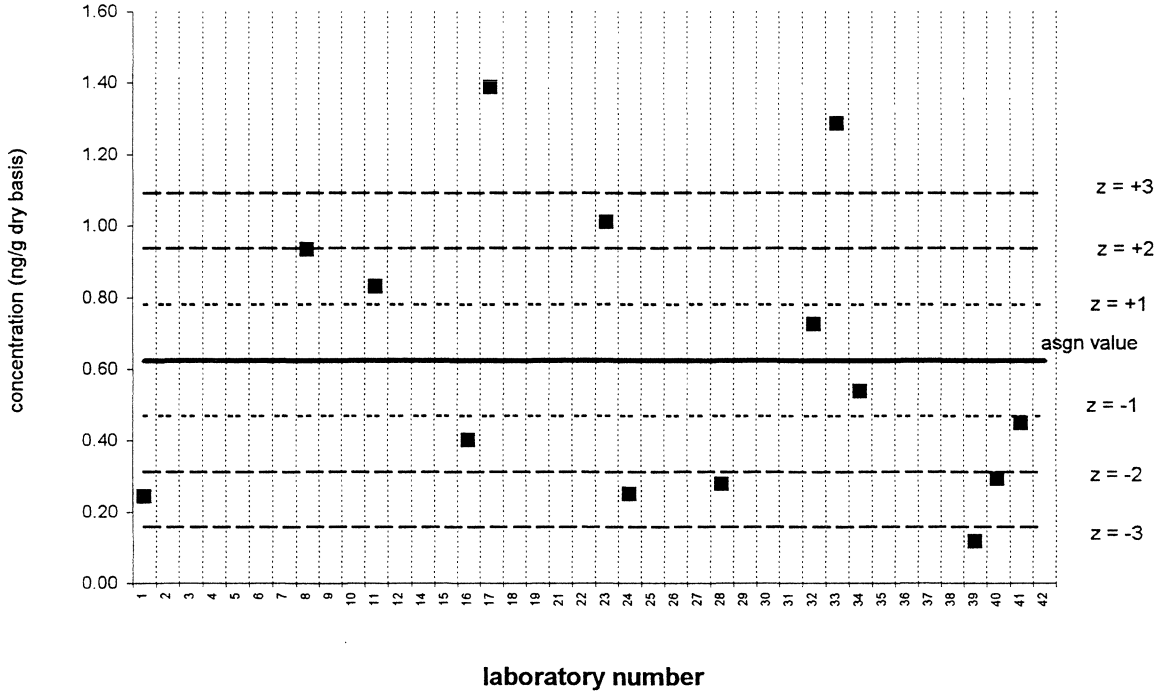
Reported Results: 21 Quantitative Results: 5



trans-chlordane **Sediment IX (QA99SED9)**

Assigned value = 0.62 ng/g s = 0.41 ng/g 95% CL = 0.24 ng/g (dry basis)

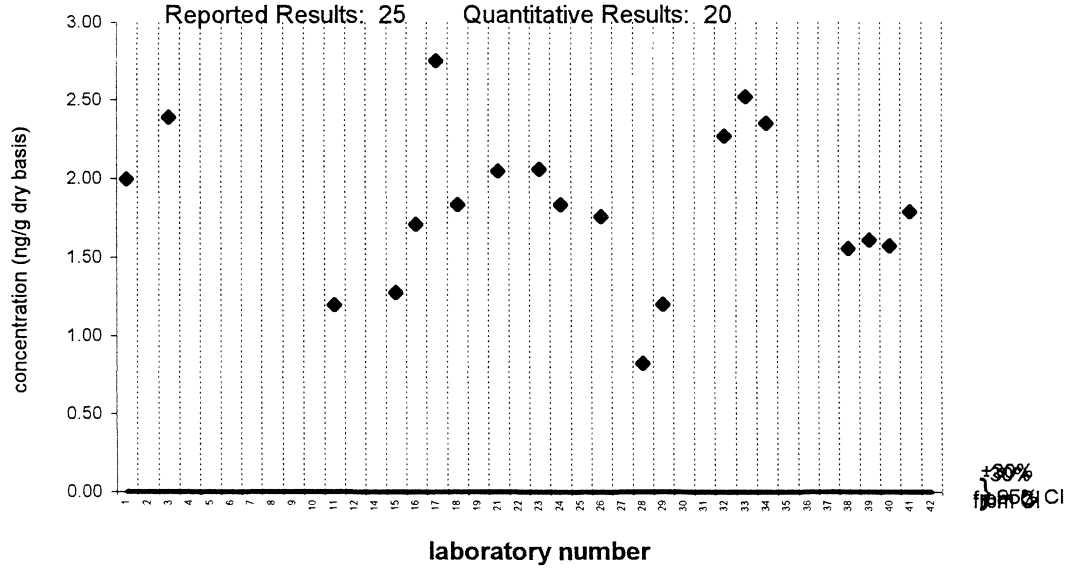
Reported Results: 26 Quantitative Results: 14



trans-chlordane **SRM 1941a**

Target Value = <2 ng/g (dry basis)

Reported Results: 25 Quantitative Results: 20

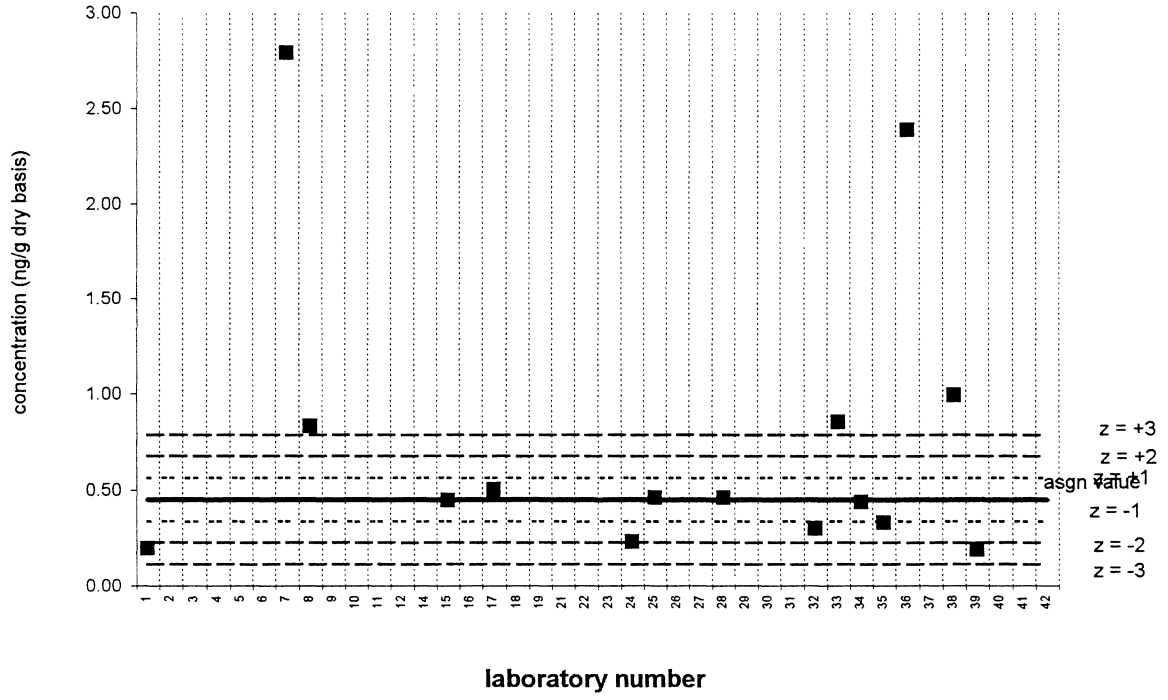


2,4'-DDE

Sediment IX (QA99SED9)

Assigned value = 0.45 ng/g s = 0.25 ng/g 95% CL = 0.15 ng/g (dry basis)

Reported Results: 28 Quantitative Results: 15

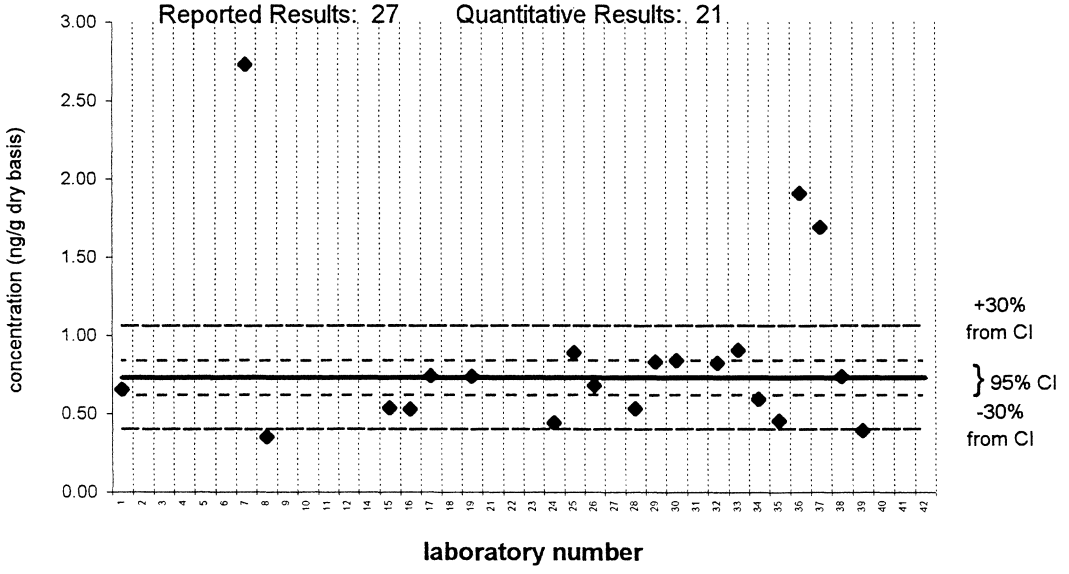


2,4'-DDE

SRM 1941a

Certified Value = 0.73 ± 0.11 ng/g (dry basis)

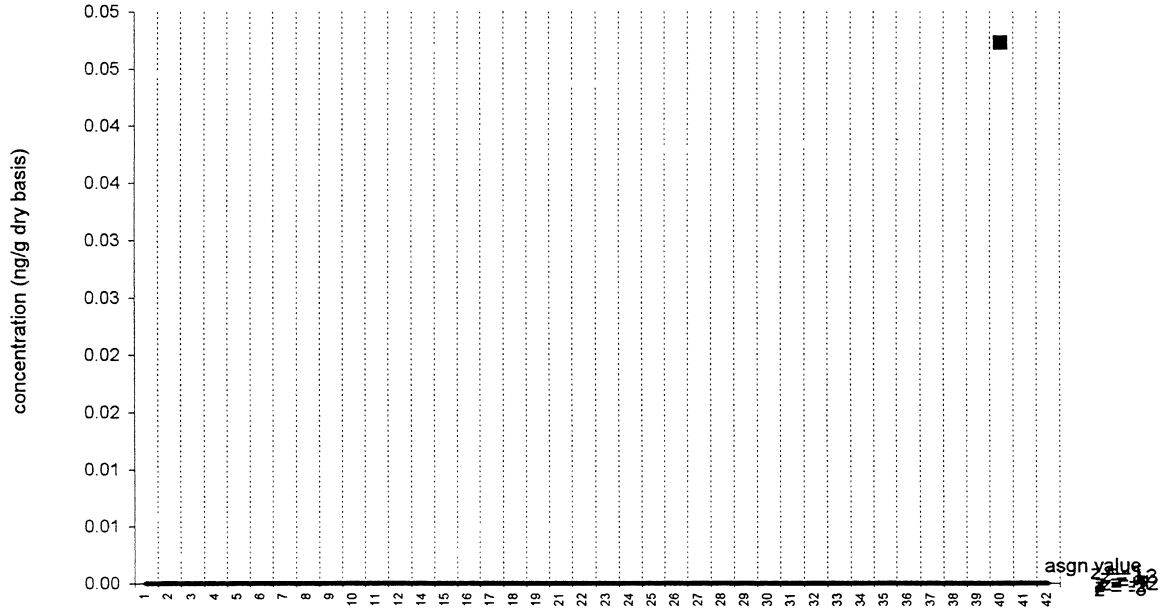
Reported Results: 27 Quantitative Results: 21



endosulfan I **Sediment IX (QA99SED9)**

Assigned value = <1 ng/g (dry basis)

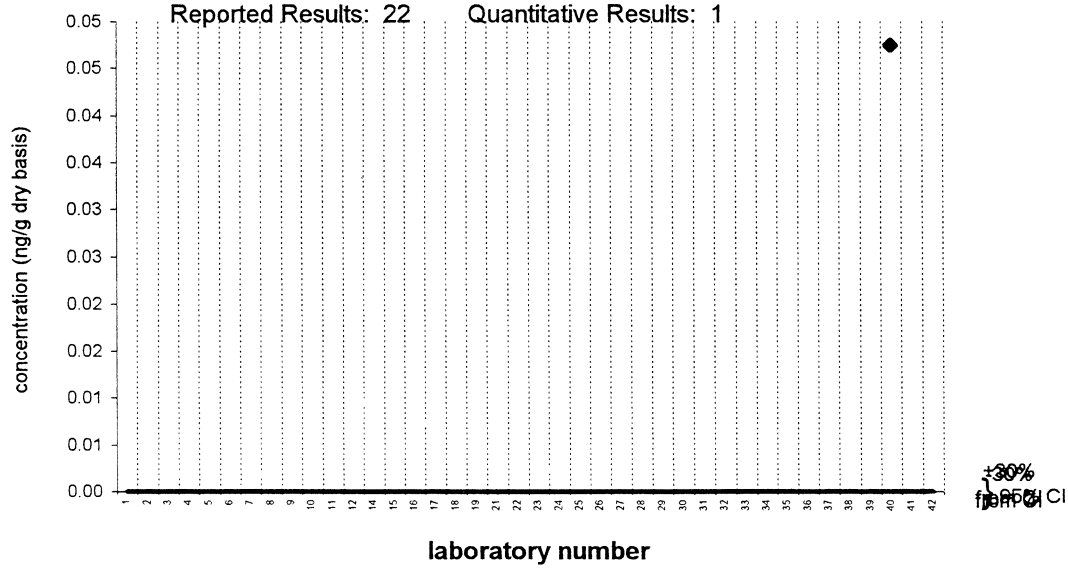
Reported Results: 24 Quantitative Results: 1



endosulfan I **SRM 1941a**

Target Value = <2 ng/g (dry basis)

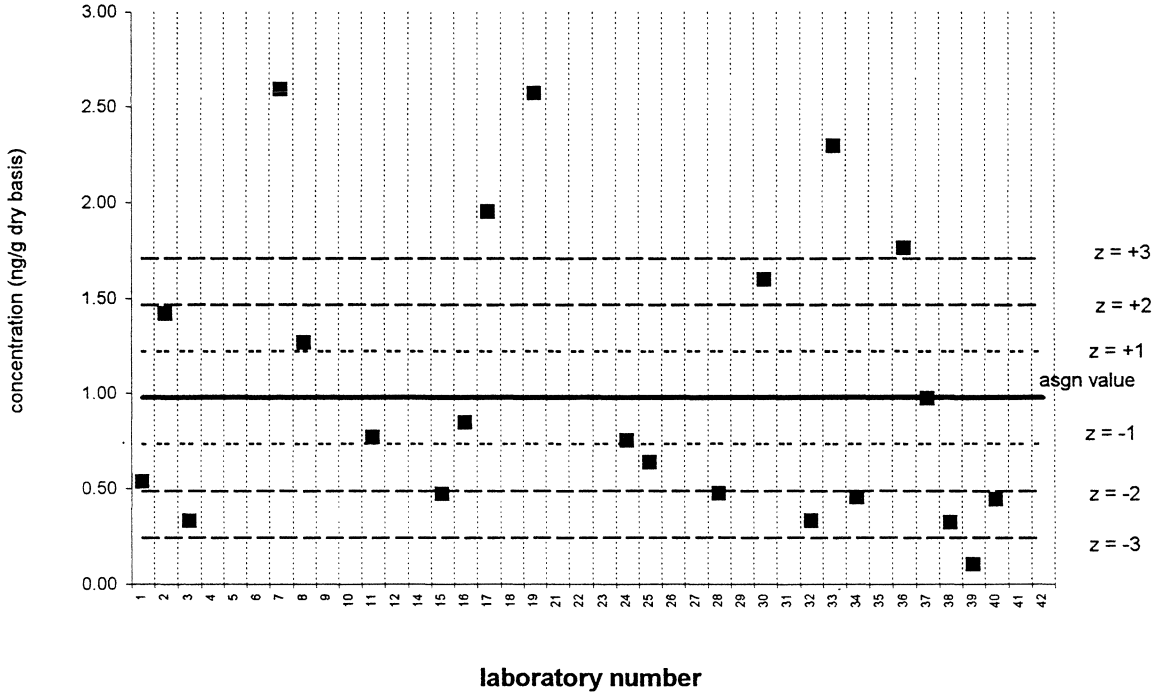
Reported Results: 22 Quantitative Results: 1



cis-chlordane **Sediment IX (QA99SED9)**

Assigned value = 0.98 ng/g s = 0.72 ng/g 95% CL = 0.34 ng/g (dry basis)

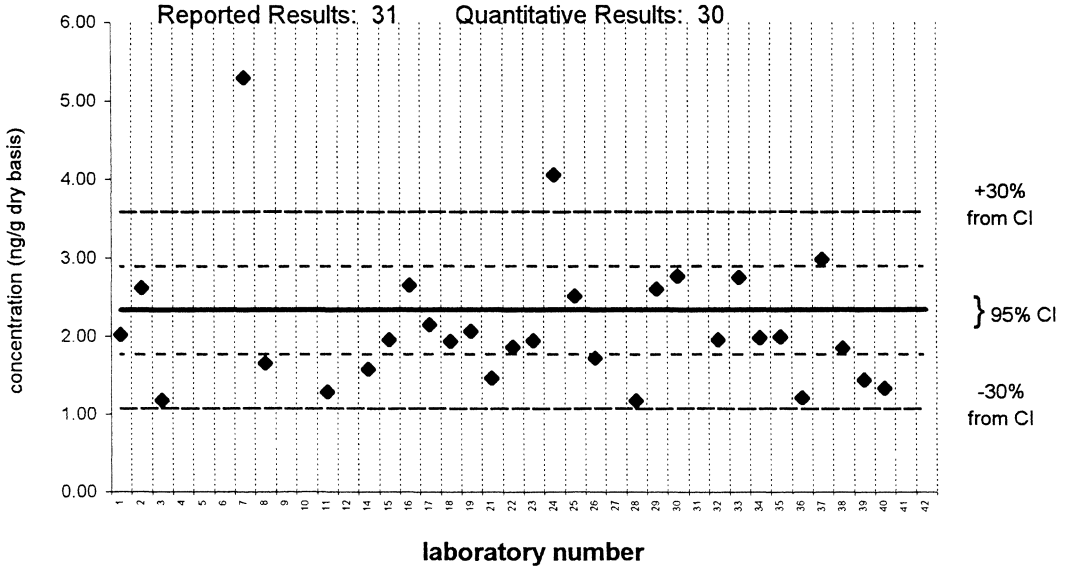
Reported Results: 32 Quantitative Results: 22



cis-chlordane **SRM 1941a**

Certified Value = 2.33 ± 0.56 ng/g (dry basis)

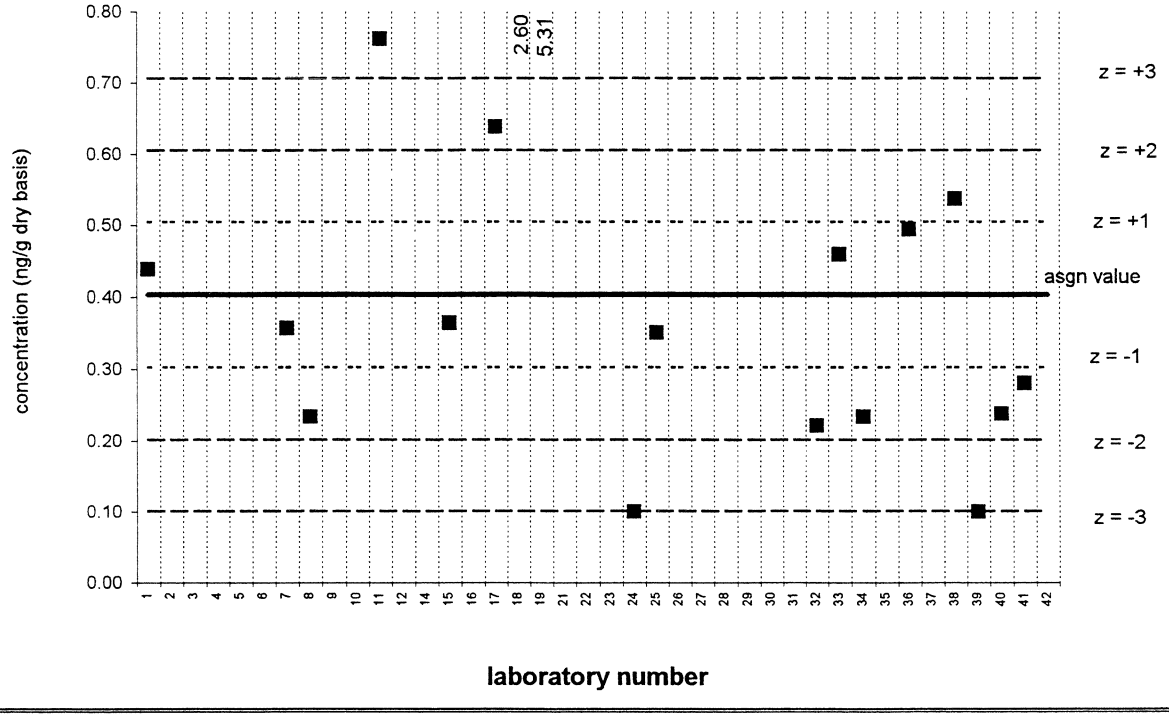
Reported Results: 31 Quantitative Results: 30



trans-nonachlor **Sediment IX (QA99SED9)**

Assigned value = 0.40 ng/g s = 0.18 ng/g 95% CL = 0.11 ng/g (dry basis)

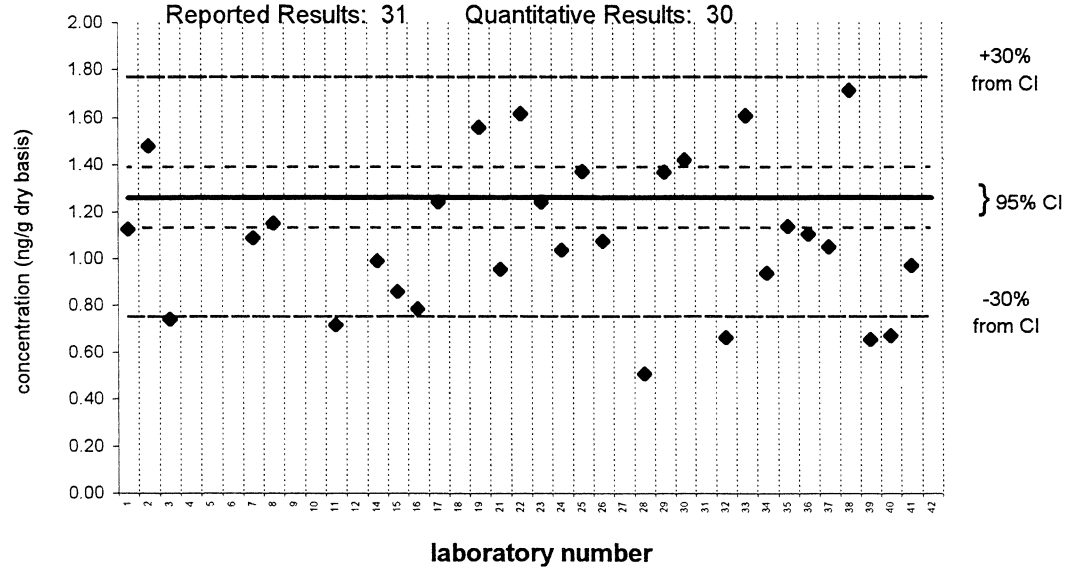
Reported Results: 30 Quantitative Results: 18



trans-nonachlor **SRM 1941a**

Certified Value = 1.26 ± 0.13 ng/g (dry basis)

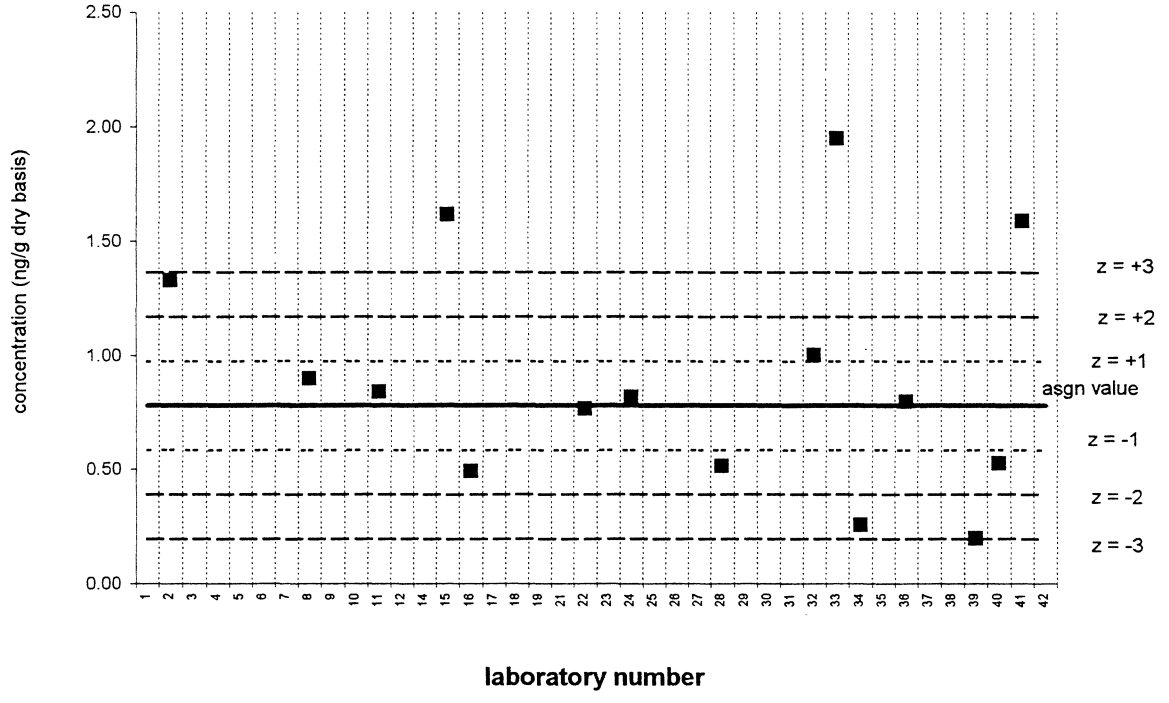
Reported Results: 31 Quantitative Results: 30



dieldrin **Sediment IX (QA99SED9)**

Assigned value = 0.78 ng/g s = 0.50 ng/g 95% CL = 0.34 ng/g (dry basis)

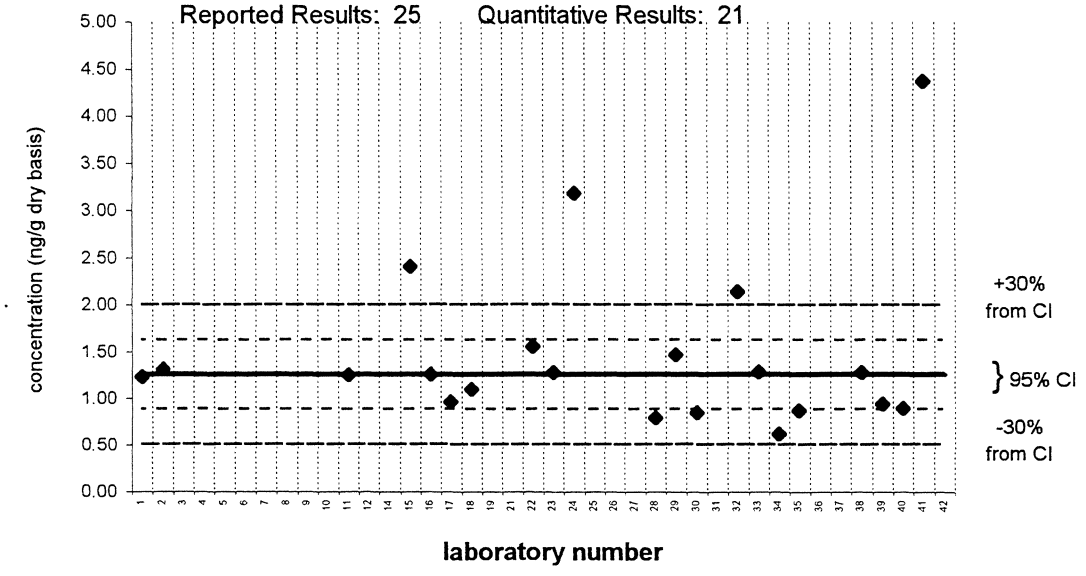
Reported Results: 27 Quantitative Results: 15



dieldrin **SRM 1941a**

Information Value = 1.26 ± 0.37 ng/g (dry basis)

Reported Results: 25 Quantitative Results: 21

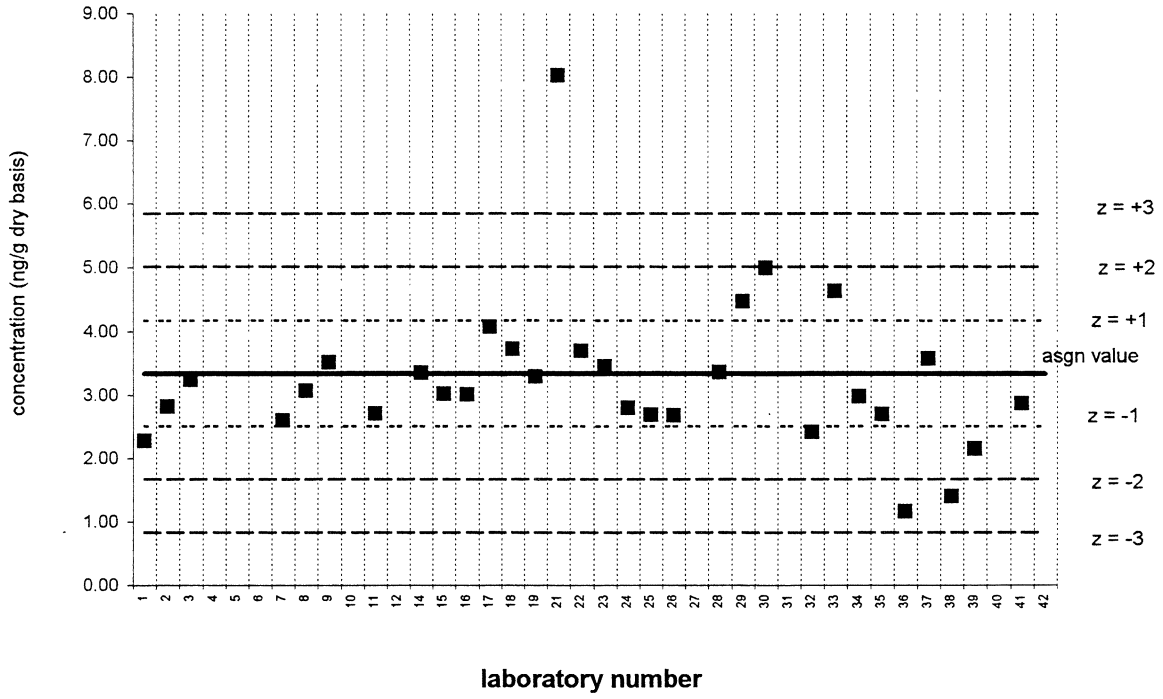


4,4'-DDE

Sediment IX (QA99SED9)

Assigned value = 3.34 ng/g s = 1.17 ng/g 95% CL = 0.45 ng/g (dry basis)

Reported Results: 31 Quantitative Results: 31

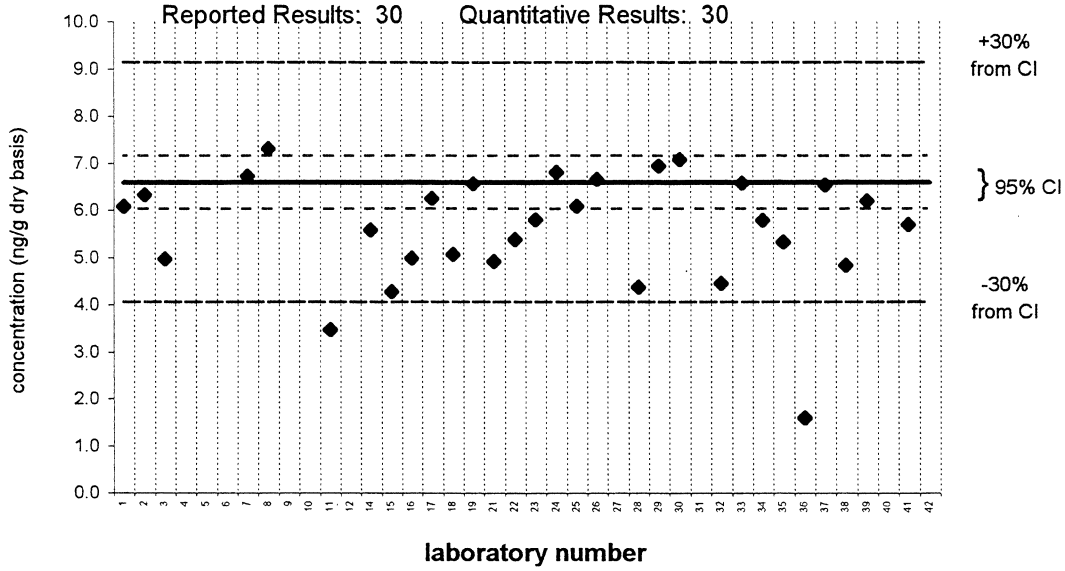


4,4'-DDE

SRM 1941a

Certified Value = 6.59 ± 0.56 ng/g (dry basis)

Reported Results: 30 Quantitative Results: 30

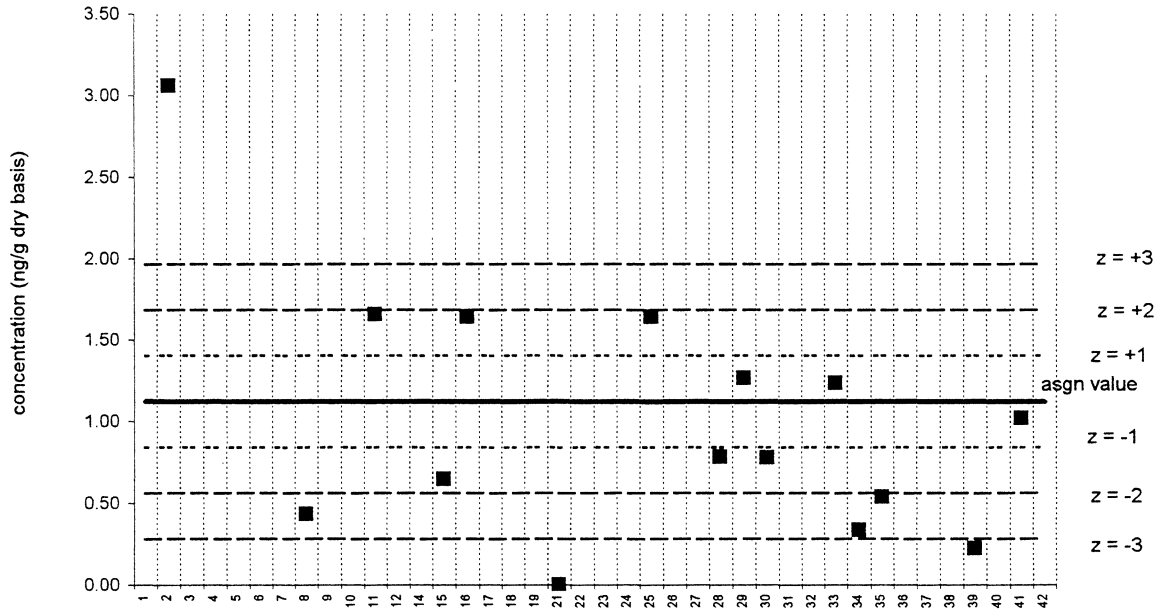


2,4'-DDD

Sediment IX (QA99SED9)

Assigned value = 1.12 ng/g s = 0.78 ng/g 95% CL = 0.50 ng/g (dry basis)

Reported Results: 25 Quantitative Results: 14



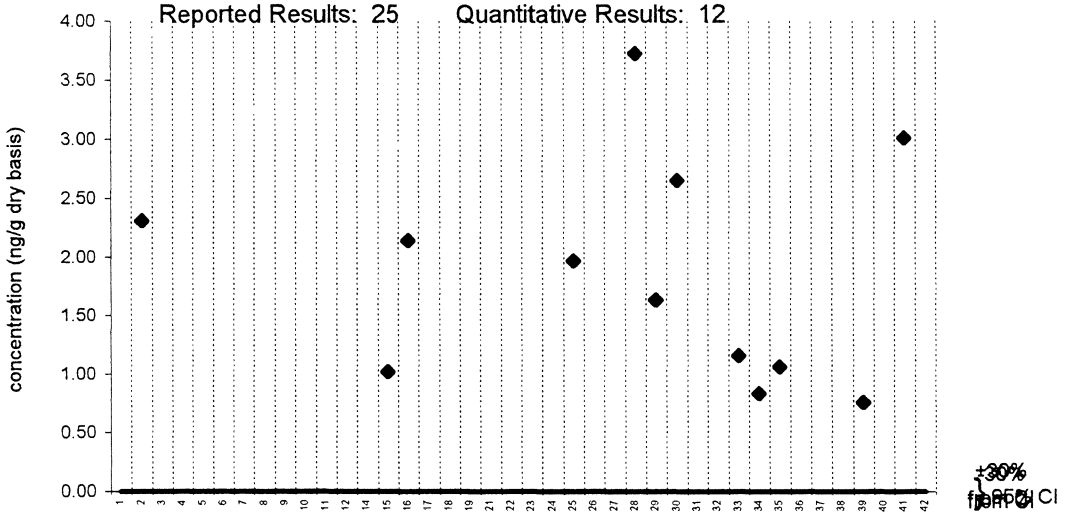
laboratory number

2,4'-DDD

SRM 1941a

Target Value = <2 ng/g (dry basis)

Reported Results: 25 Quantitative Results: 12

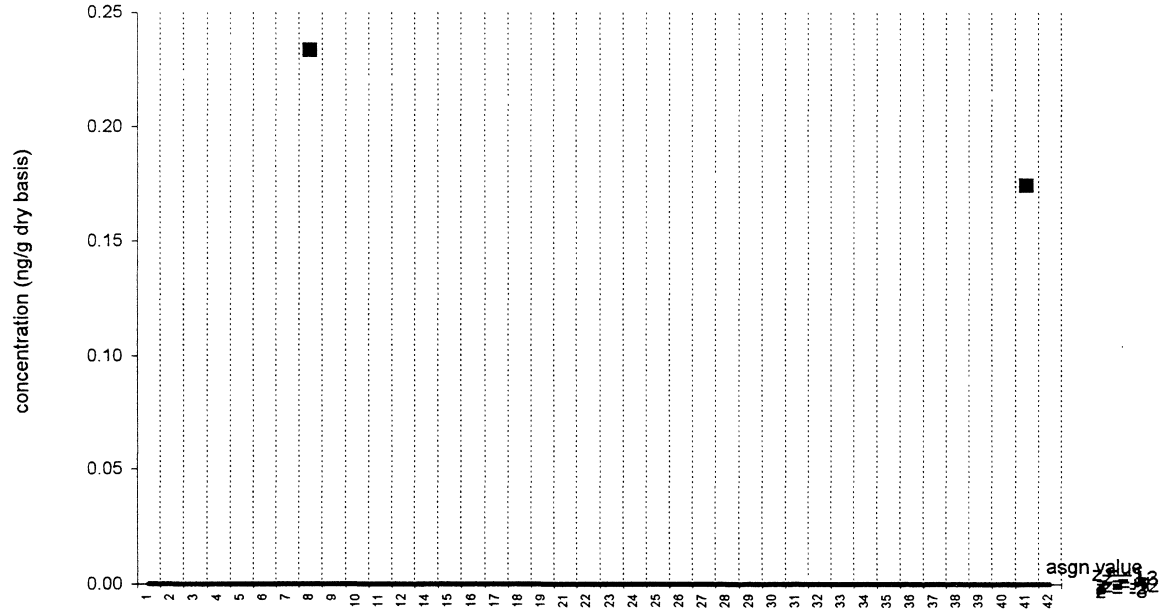


laboratory number

endrin **Sediment IX (QA99SED9)**

Assigned value = <1 ng/g (dry basis)

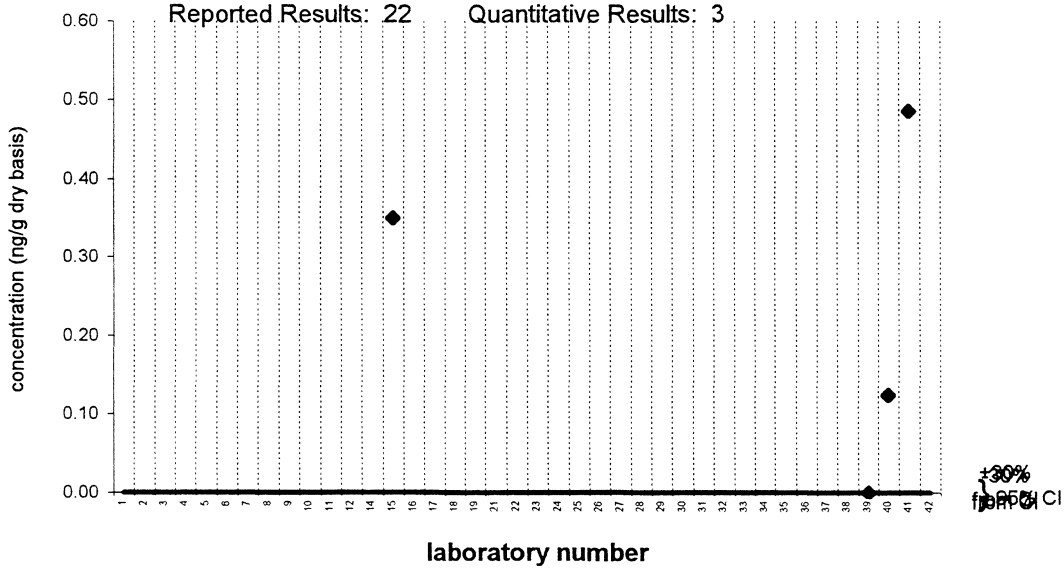
Reported Results: 23 Quantitative Results: 2



endrin **SRM 1941a**

Target Value = <2 ng/g (dry basis)

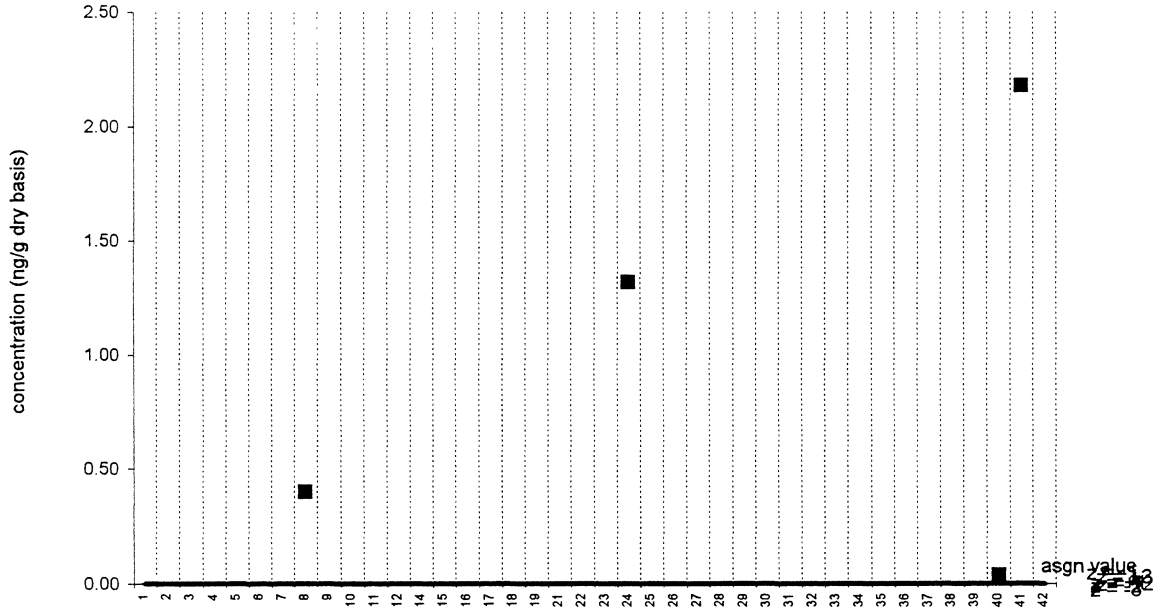
Reported Results: 22 Quantitative Results: 3



endosulfan II **Sediment IX (QA99SED9)**

Assigned value = <2 ng/g (dry basis)

Reported Results: 23 Quantitative Results: 4

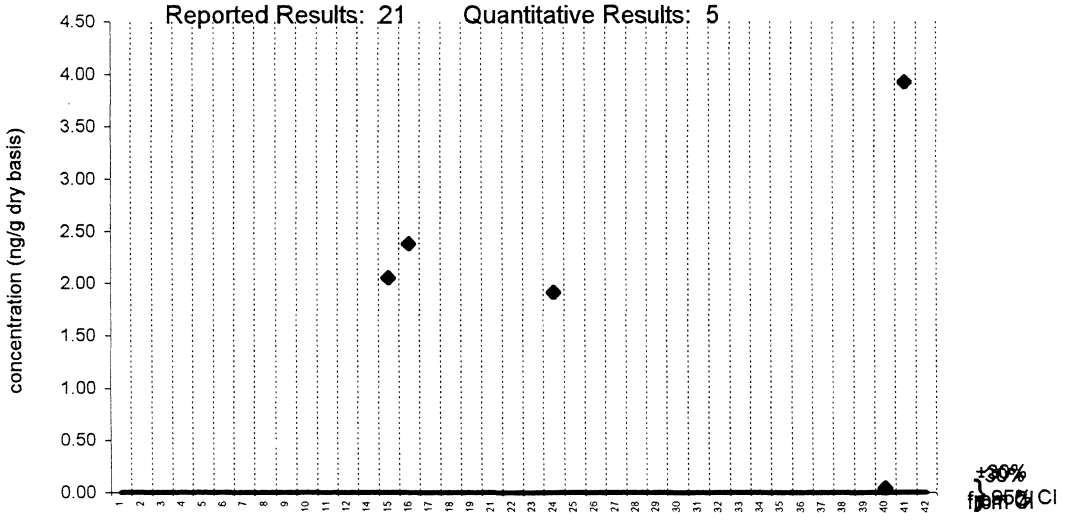


laboratory number

endosulfan II **SRM 1941a**

Target Value = <2 ng/g (dry basis)

Reported Results: 21 Quantitative Results: 5



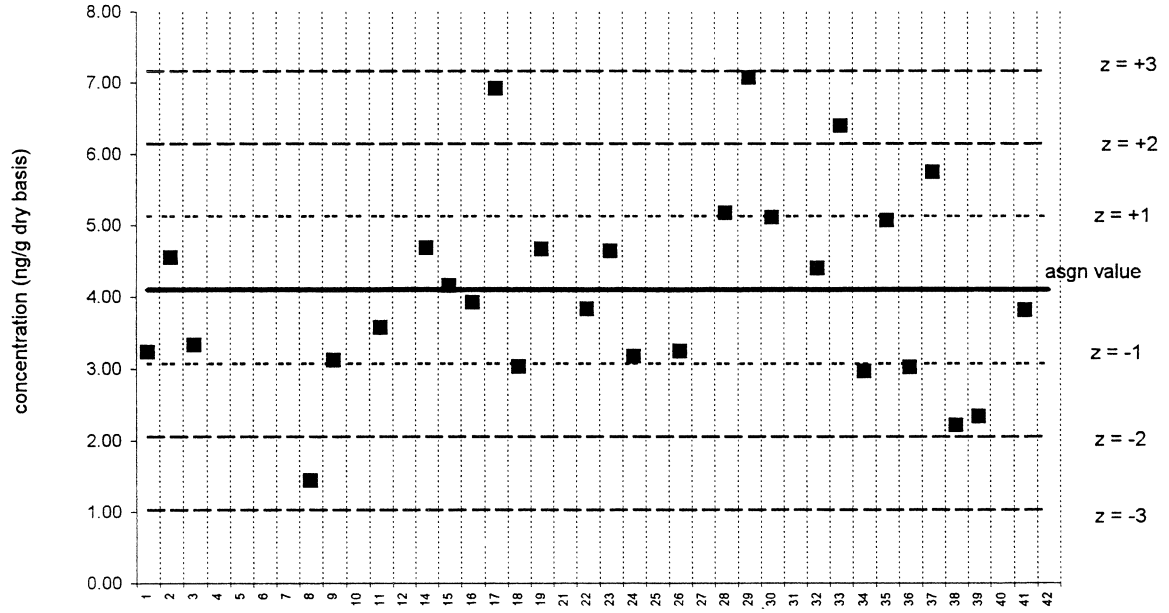
laboratory number

4,4'-DDD

Sediment IX (QA99SED9)

Assigned value = 4.10 ng/g s = 1.29 ng/g 95% CL = 0.53 ng/g (dry basis)

Reported Results: 30 Quantitative Results: 28

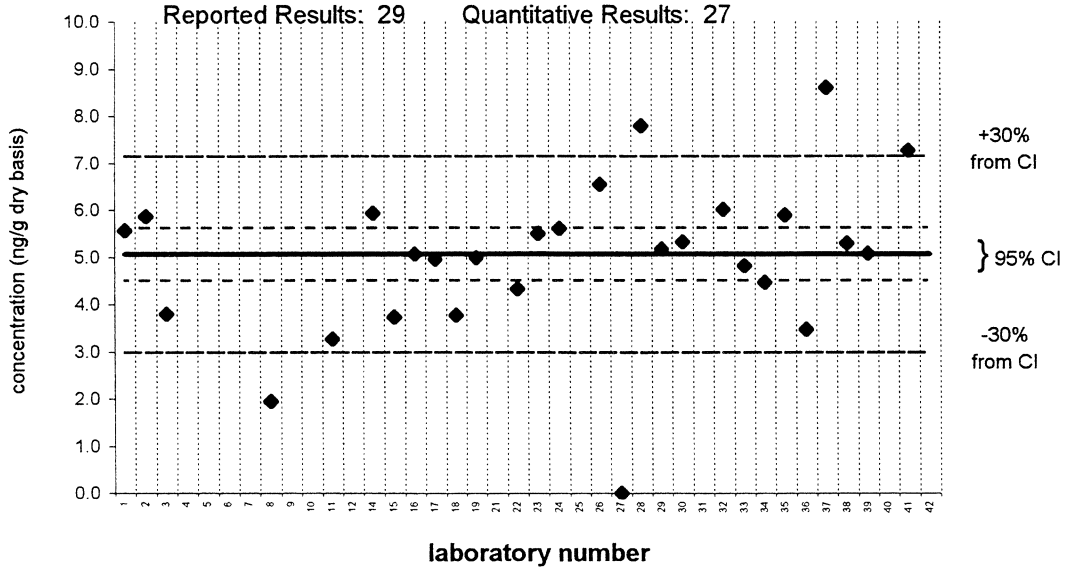


4,4'-DDD

SRM 1941a

Certified Value = 5.06 ± 0.56 ng/g (dry basis)

Reported Results: 29 Quantitative Results: 27

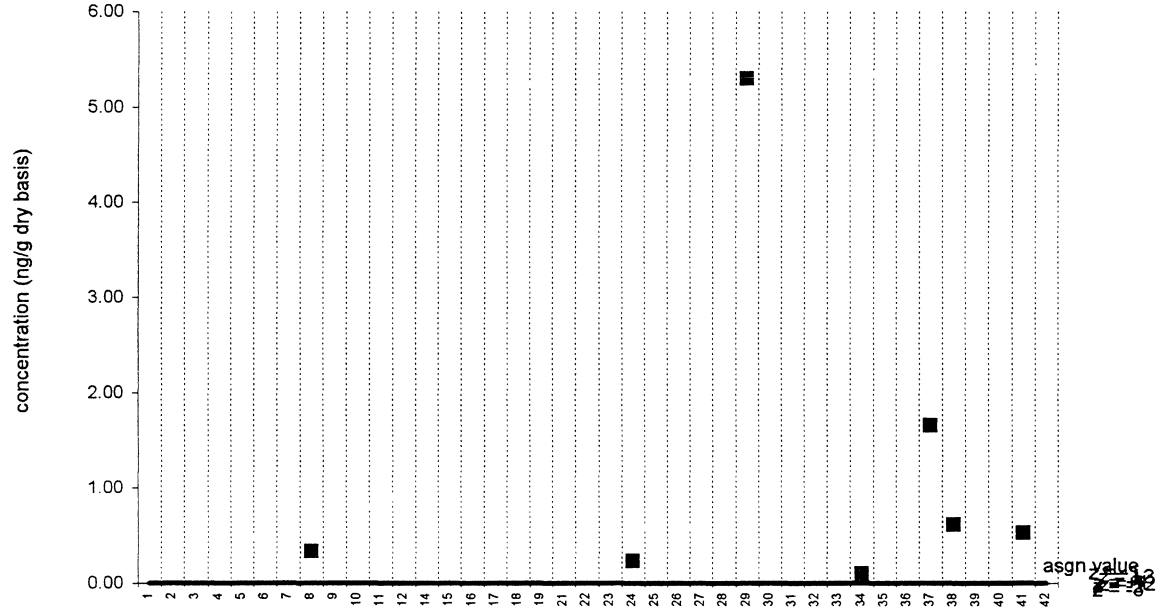


2,4'-DDT

Sediment IX (QA99SED9)

Assigned value = <2 ng/g (dry basis)

Reported Results: 26 Quantitative Results: 7

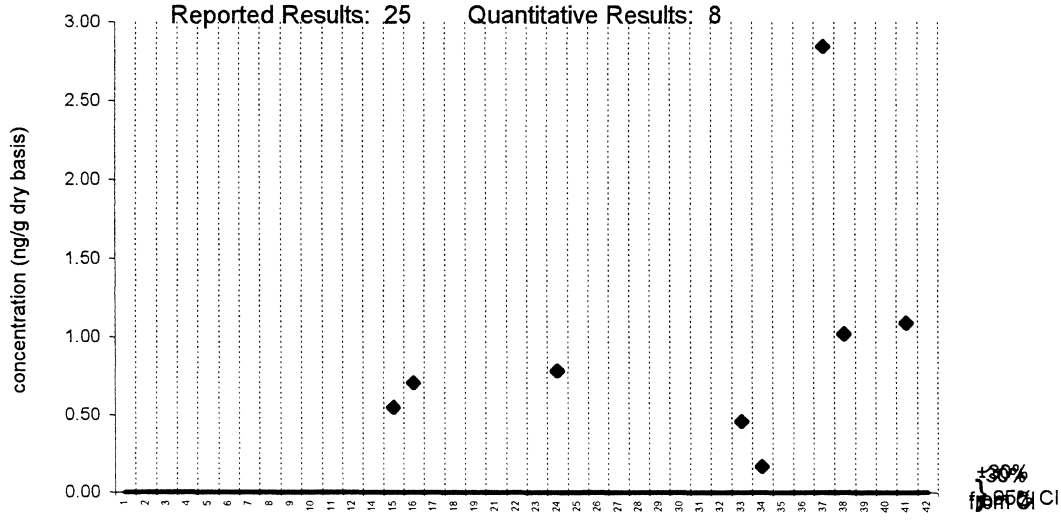


2,4'-DDT

SRM 1941a

Target Value = <2 ng/g (dry basis)

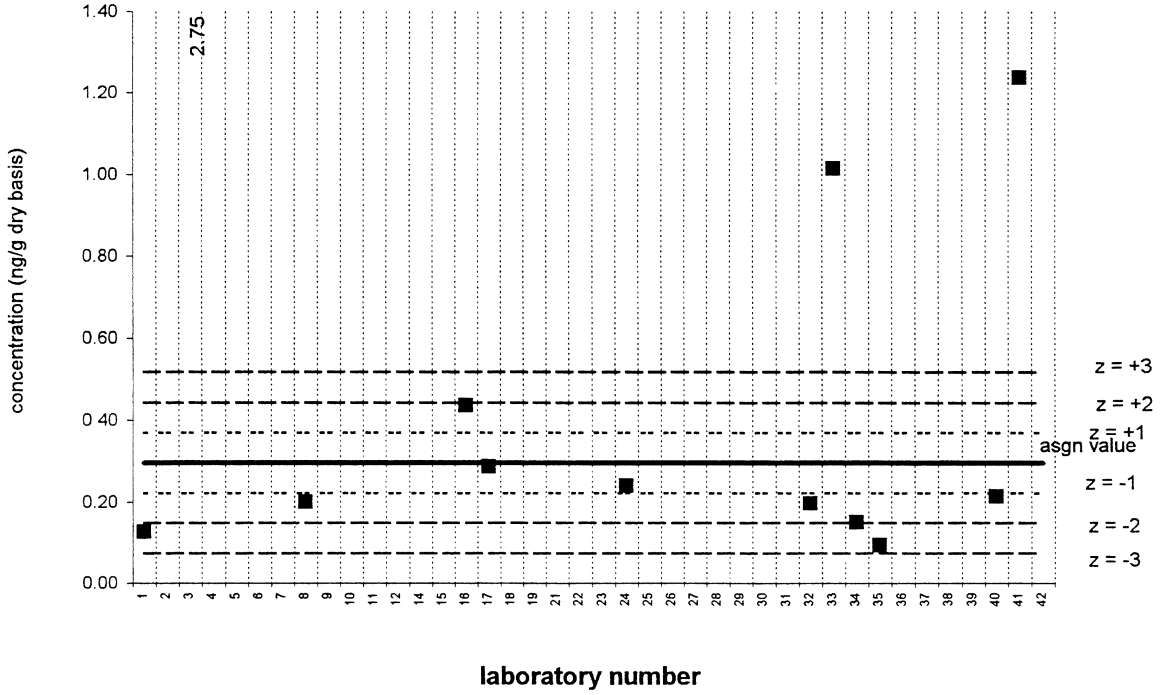
Reported Results: 25 Quantitative Results: 8



cis-nonachlor **Sediment IX (QA99SED9)**

Assigned value = 0.30 ng/g s = 0.27 ng/g 95% CL = 0.19 ng/g (dry basis)

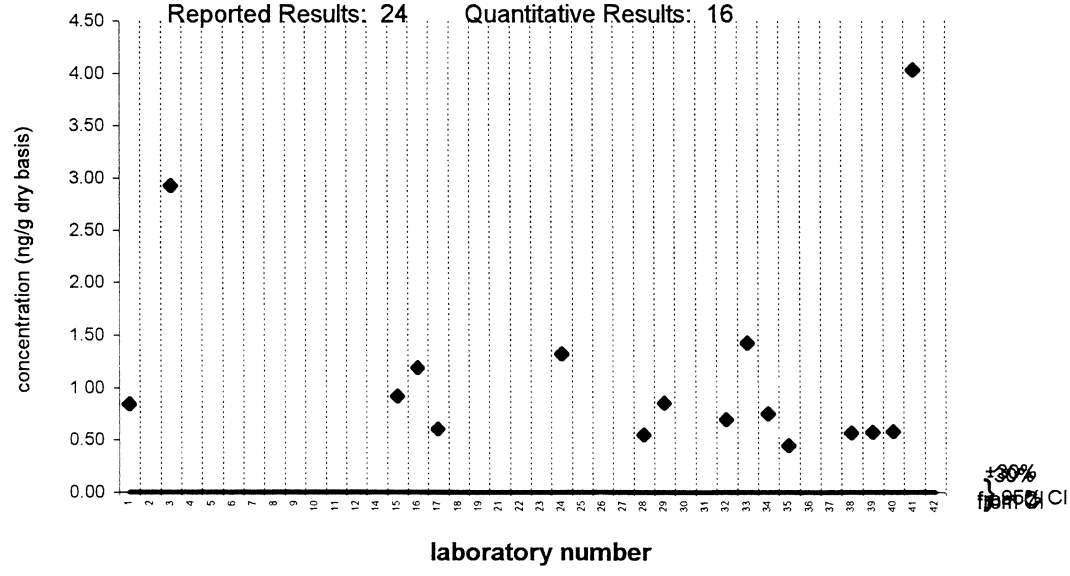
Reported Results: 25 Quantitative Results: 12



cis-nonachlor **SRM 1941a**

Target Value = <2 ng/g (dry basis)

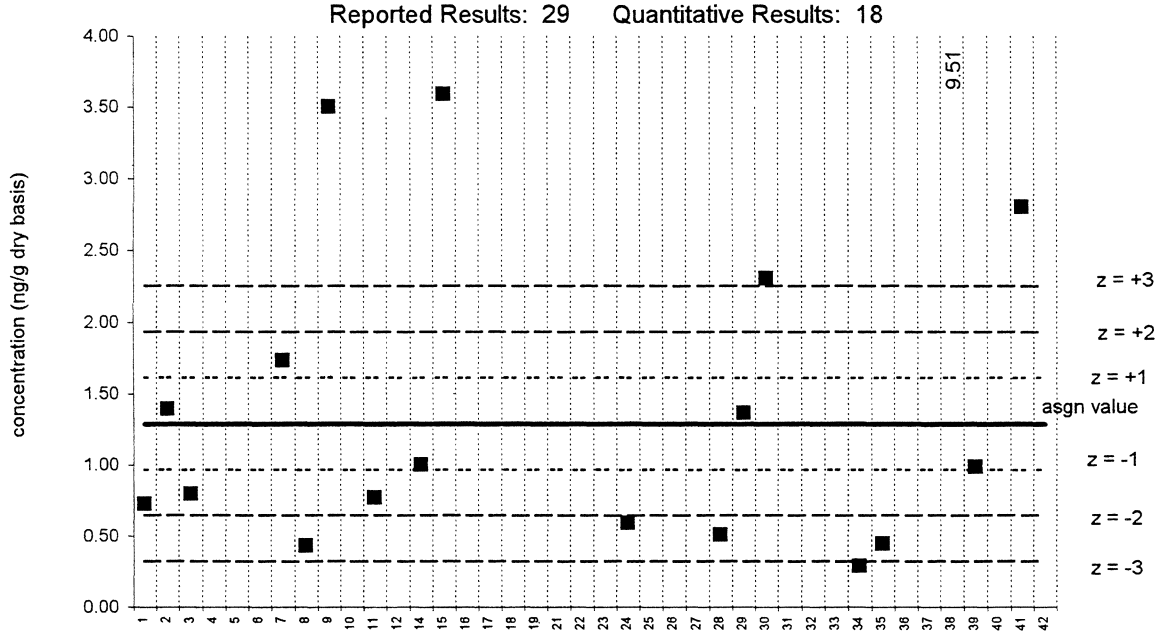
Reported Results: 24 Quantitative Results: 16



4,4'-DDT **Sediment IX (QA99SED9)**

Assigned value = 1.29 ng/g s = 1.17 ng/g 95% CL = 0.79 ng/g (dry basis)

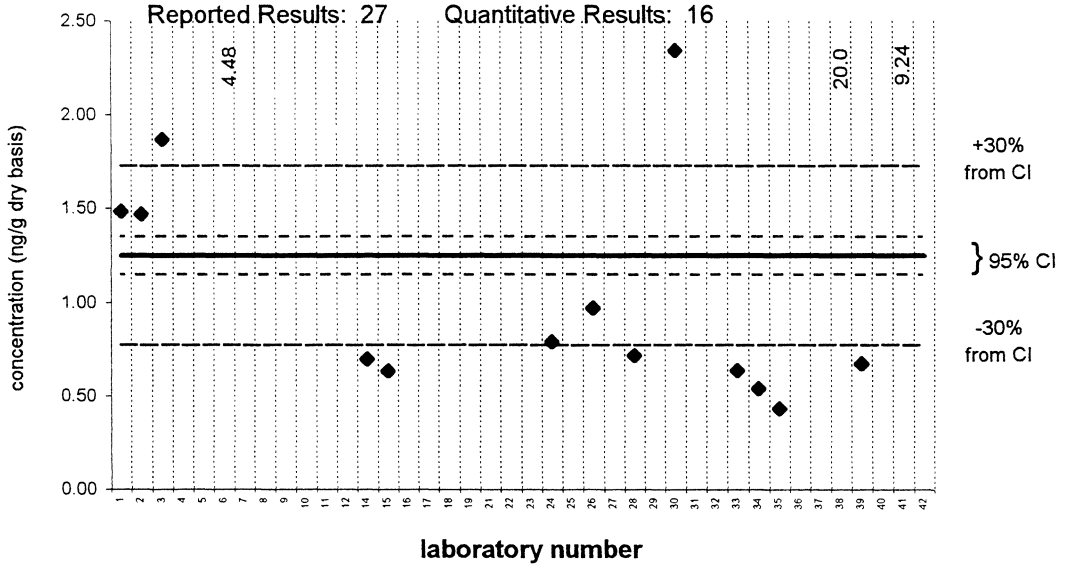
Reported Results: 29 Quantitative Results: 18



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

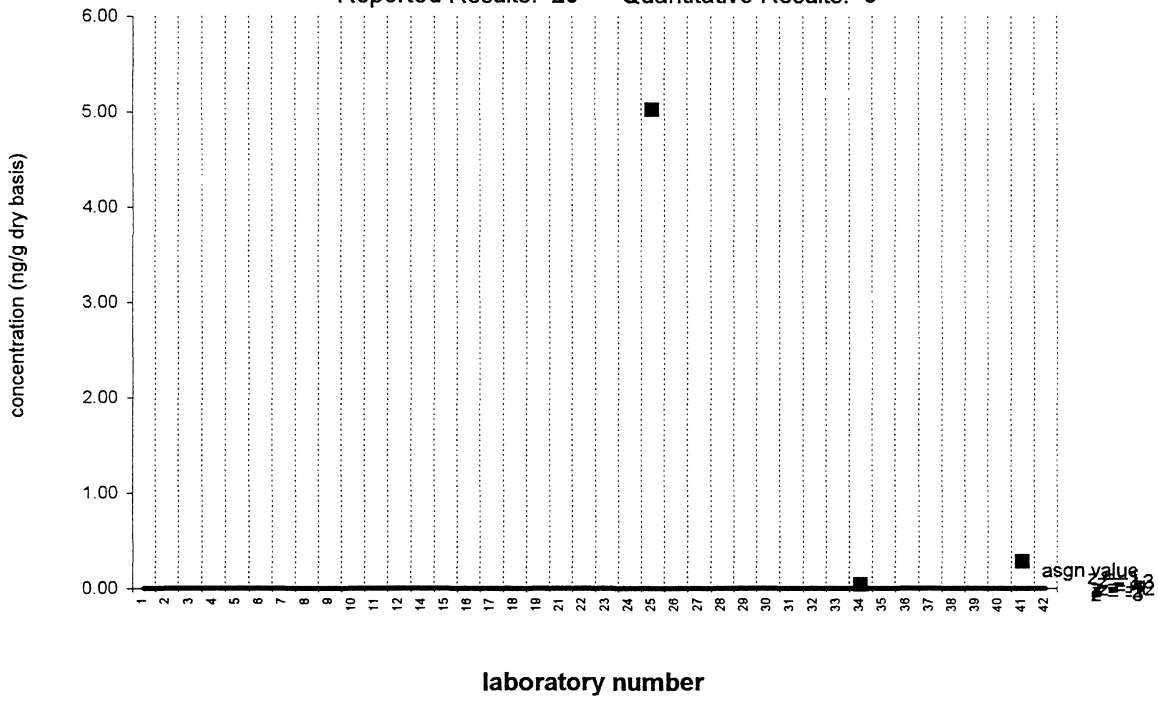
Information Value = 1.25 ± 0.10 ng/g (dry basis)

Reported Results: 27 Quantitative Results: 16



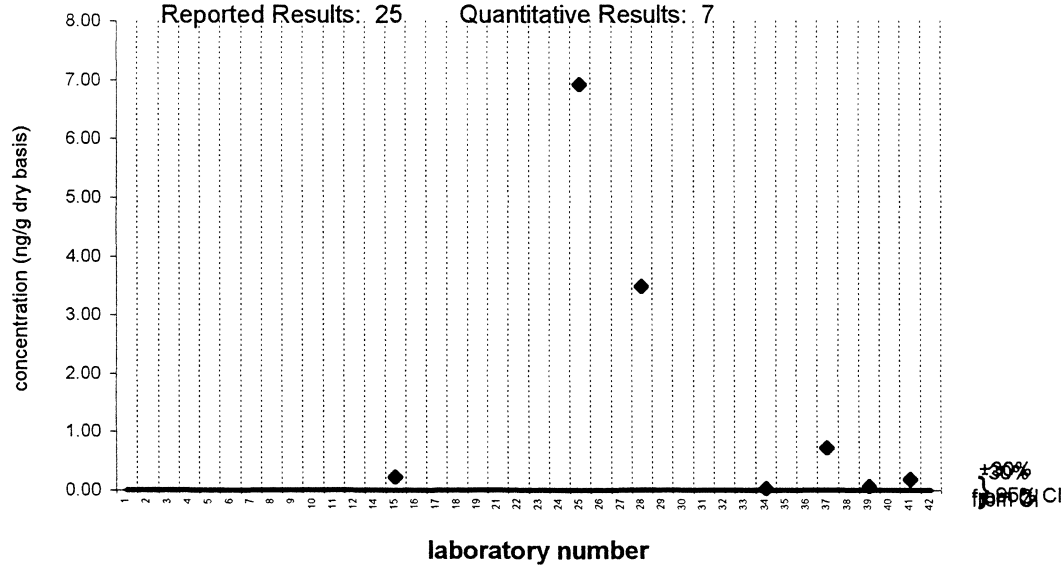
mirex **Sediment IX (QA99SED9)**

Assigned value = <1 ng/g (dry basis)
Reported Results: 26 Quantitative Results: 3



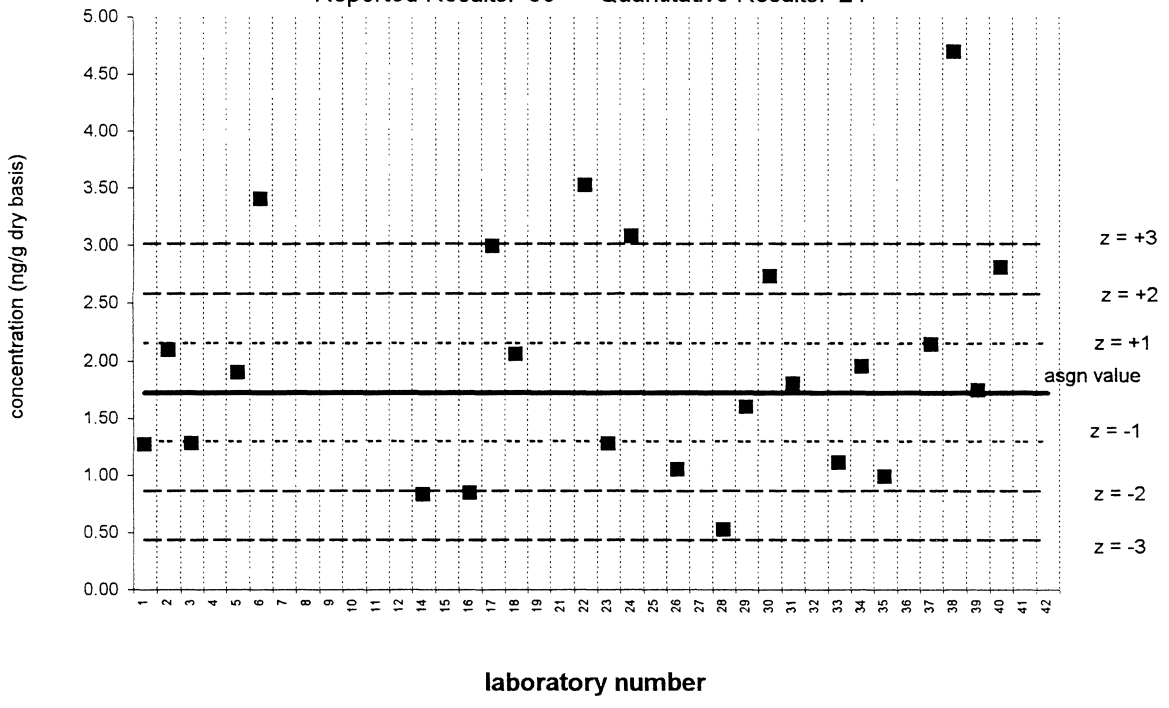
mirex **SRM 1941a**

Target Value = <2 ng/g (dry basis)
Reported Results: 25 Quantitative Results: 7



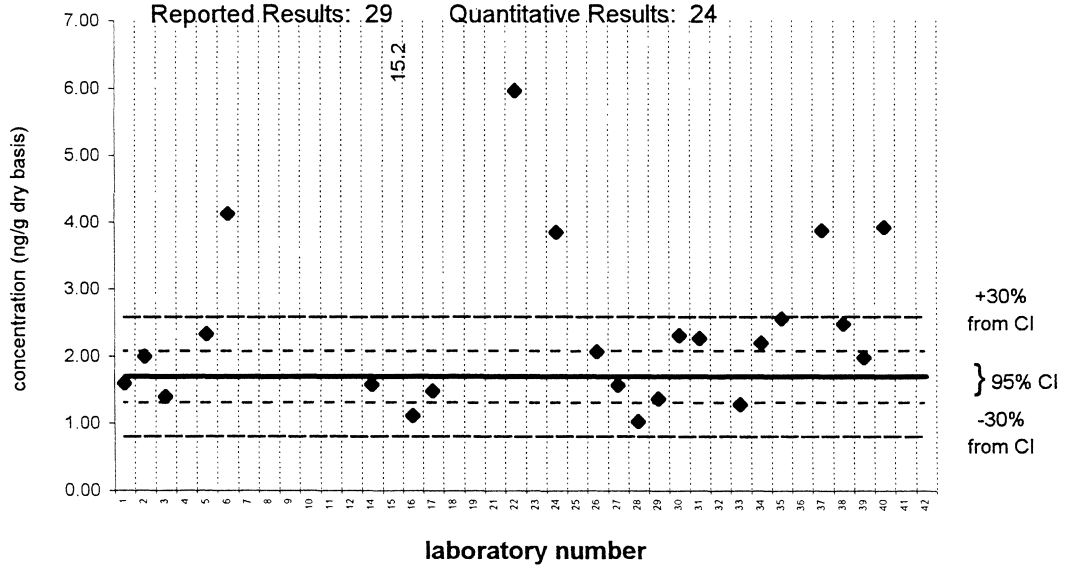
PCB 8 **Sediment IX (QA99SED9)**

Assigned value = 1.72 ng/g s = 0.97 ng/g 95% CL = 0.47 ng/g (dry basis)
Reported Results: 30 Quantitative Results: 24



PCB 8 **SRM 1941a**

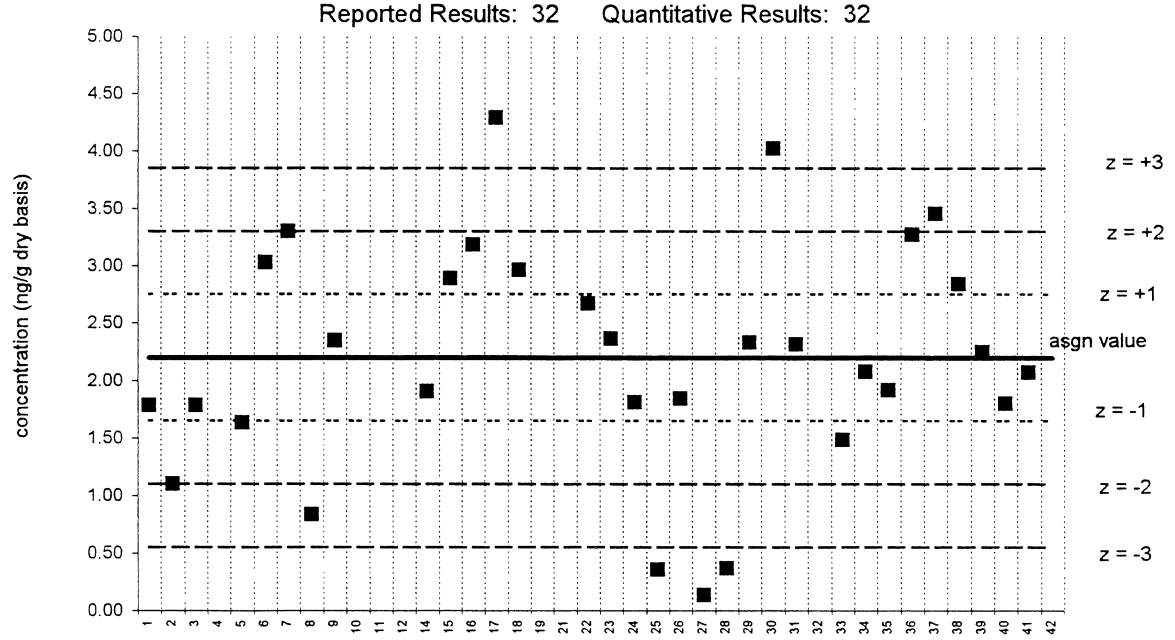
Target Value = 1.69 ± 0.38 ng/g (dry basis)
Reported Results: 29 Quantitative Results: 24



PCB 18 **Sediment IX (QA99SED9)**

Assigned value = 2.20 ng/g s = 1.00 ng/g 95% CL = 0.36 ng/g (dry basis)

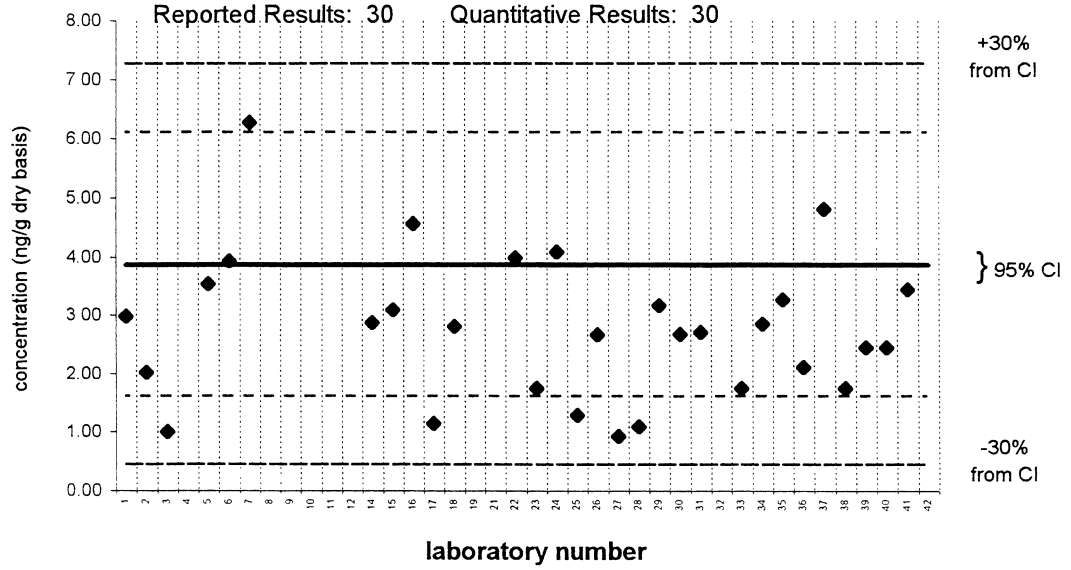
Reported Results: 32 Quantitative Results: 32



PCB 18 **SRM 1941a**

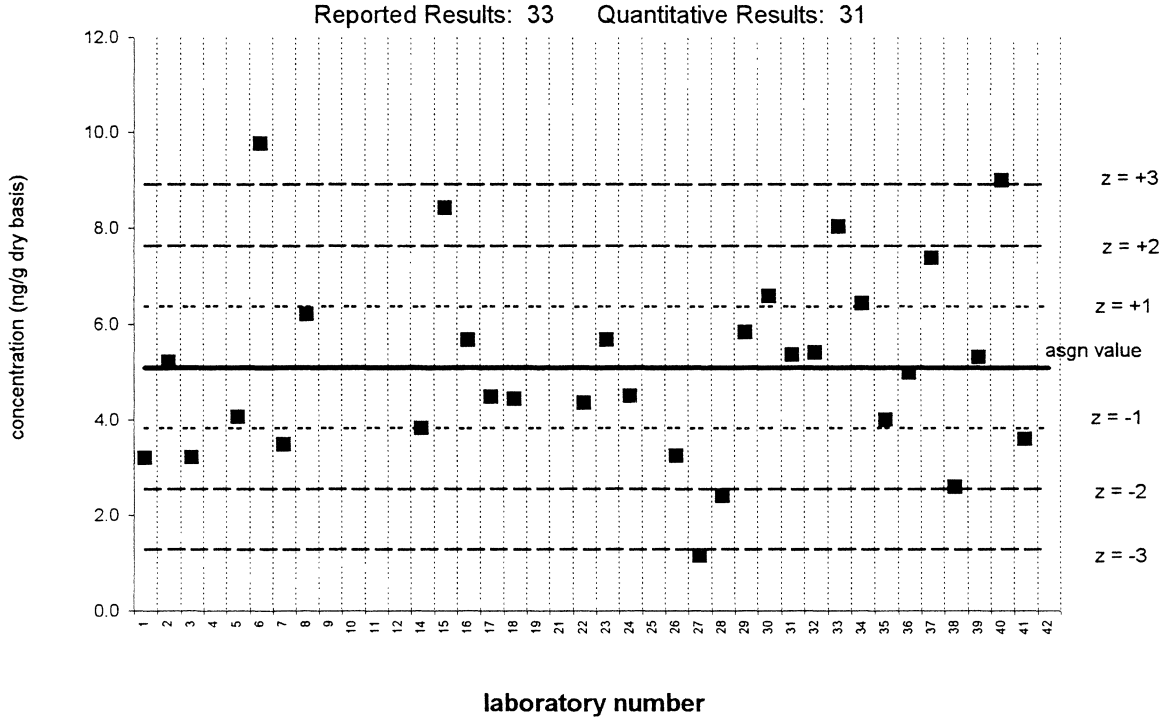
Target Value = 3.86 ± 2.25 ng/g (dry basis)

Reported Results: 30 Quantitative Results: 30



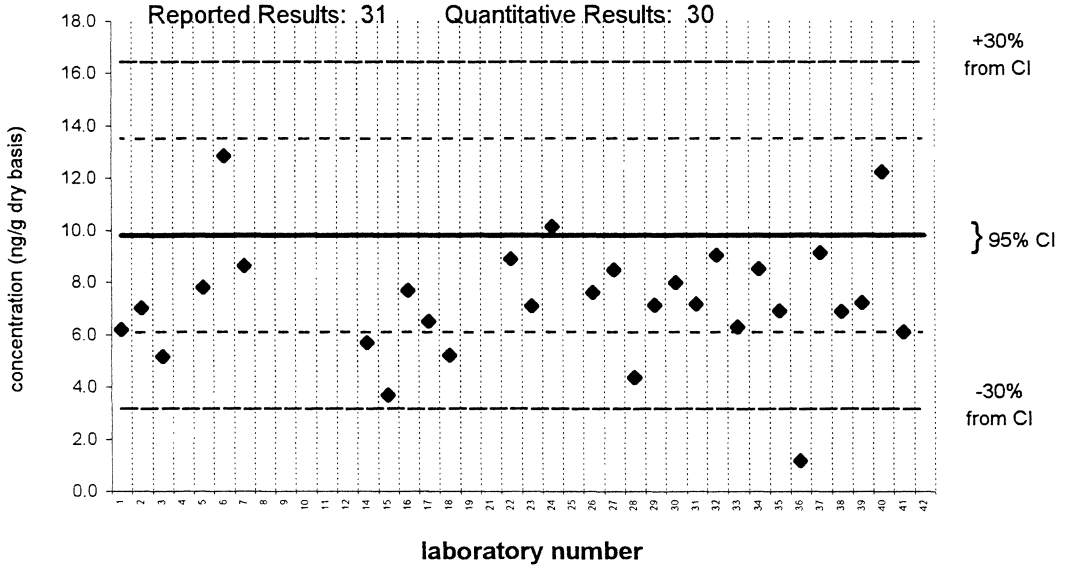
PCB 28 **Sediment IX (QA99SED9)**

Assigned value = 5.09 ng/g s = 2.02 ng/g 95% CL = 0.76 ng/g (dry basis)
Reported Results: 33 Quantitative Results: 31



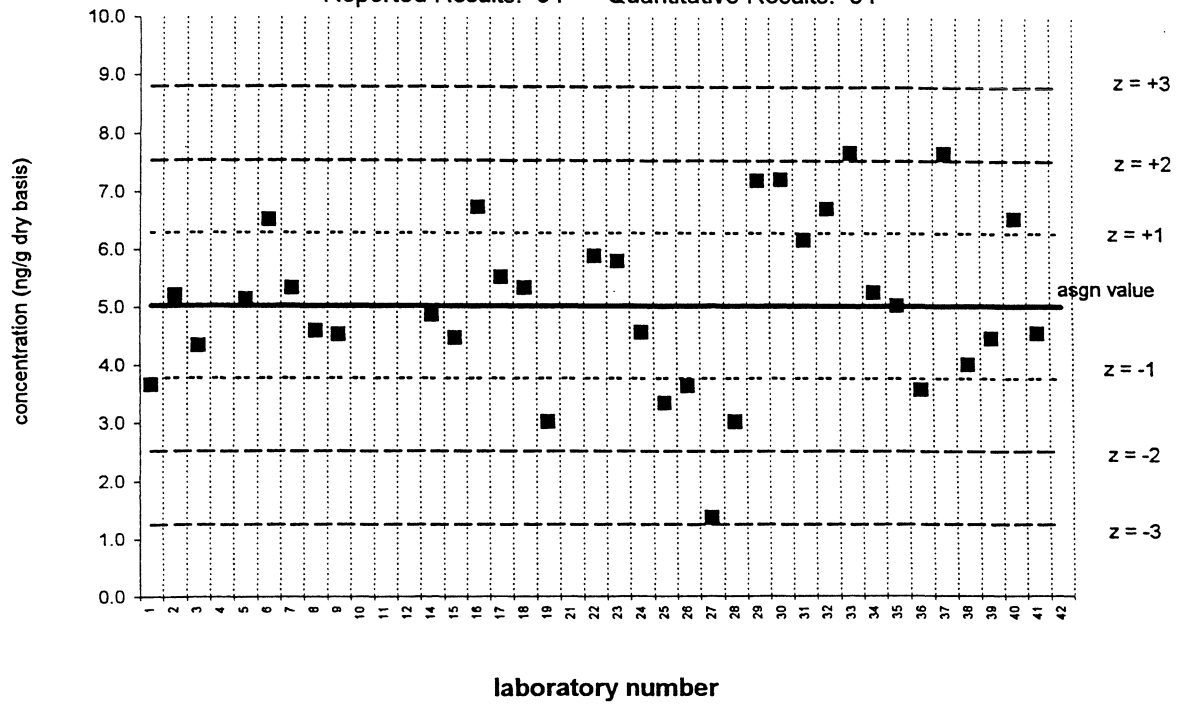
PCB 28 **SRM 1941a**

Information Value = 9.80 ± 3.70 ng/g (dry basis)
Reported Results: 31 Quantitative Results: 30



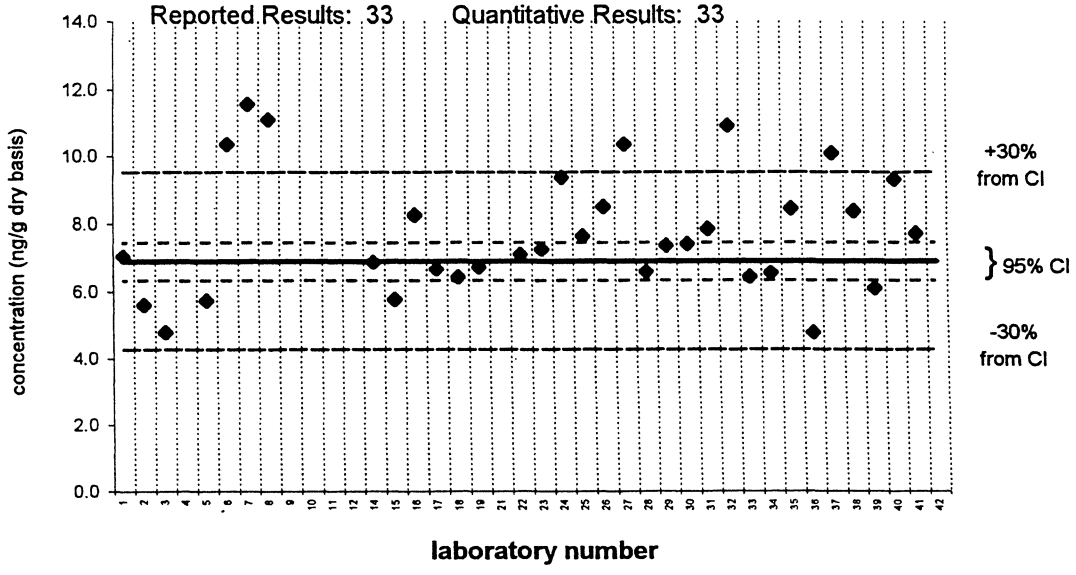
PCB 52 **Sediment IX (QA99SED9)**

Assigned value = 5.03 ng/g s = 1.28 ng/g 95% CL = 0.50 ng/g (dry basis)
Reported Results: 34 Quantitative Results: 34



PCB 52 **SRM 1941a**

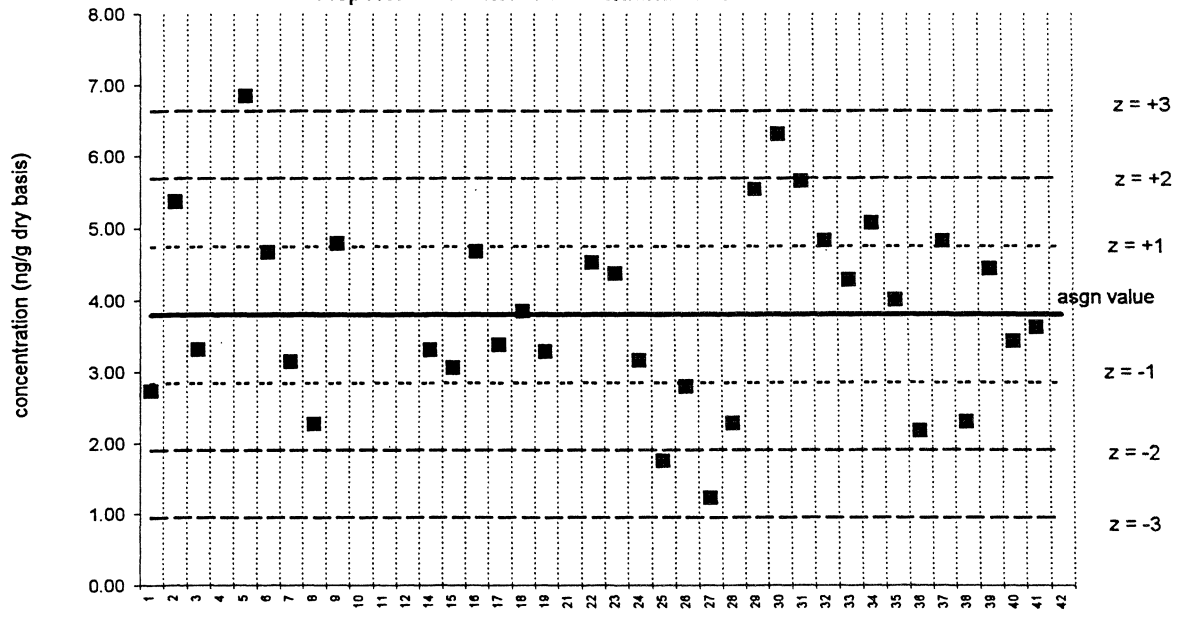
Certified Value = 6.89 ± 0.56 ng/g (dry basis)
Reported Results: 33 Quantitative Results: 33



PCB 44 **Sediment IX (QA99SED9)**

Assigned value = 3.79 ng/g s = 1.25 ng/g 95% CL = 0.49 ng/g (dry basis)

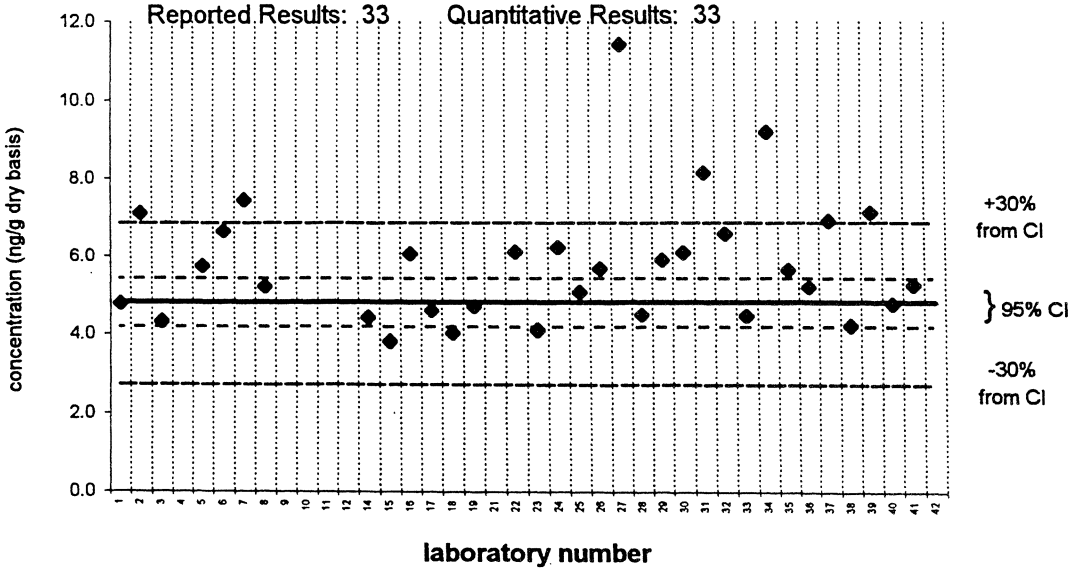
Reported Results: 34 Quantitative Results: 34



PCB 44 **SRM 1941a**

Certified Value = 4.80 ± 0.62 ng/g (dry basis)

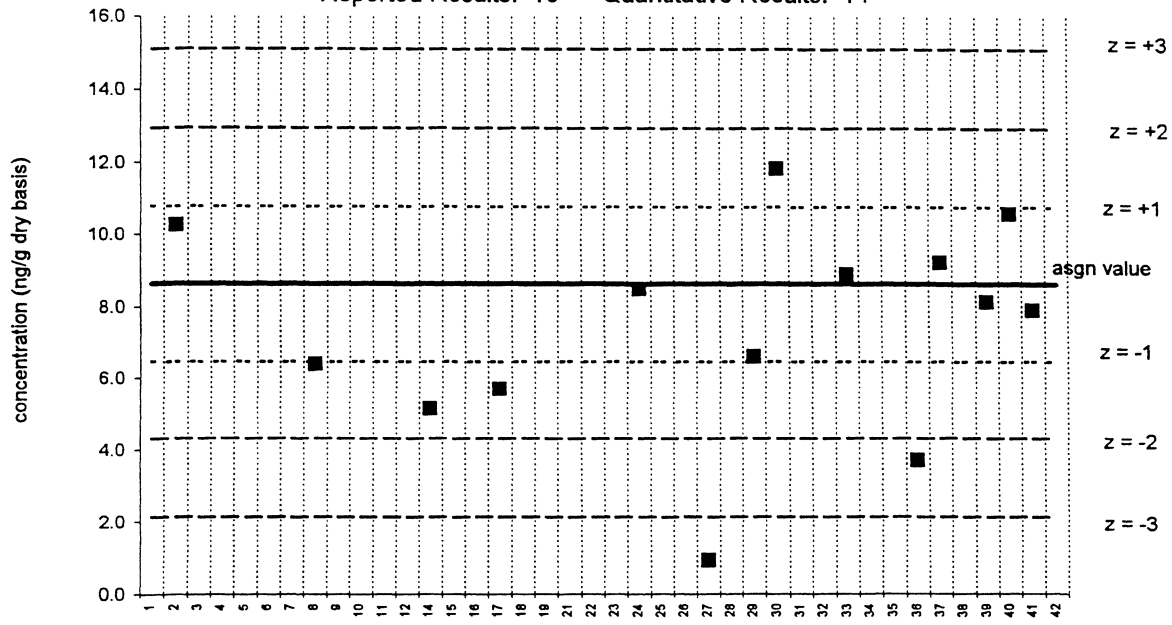
Reported Results: 33 Quantitative Results: 33



PCB 66/95 **Sediment IX (QA99SED9)**

Assigned value = 8.63 ng/g s = 1.59 ng/g 95% CL = 1.22 ng/g (dry basis)

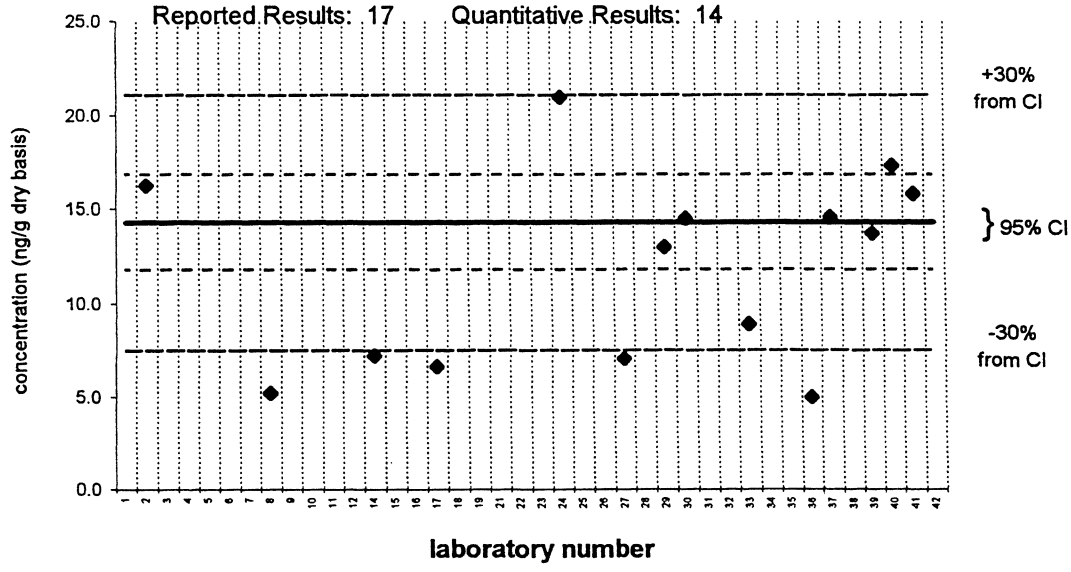
Reported Results: 16 Quantitative Results: 14



PCB 66/95 **SRM 1941a**

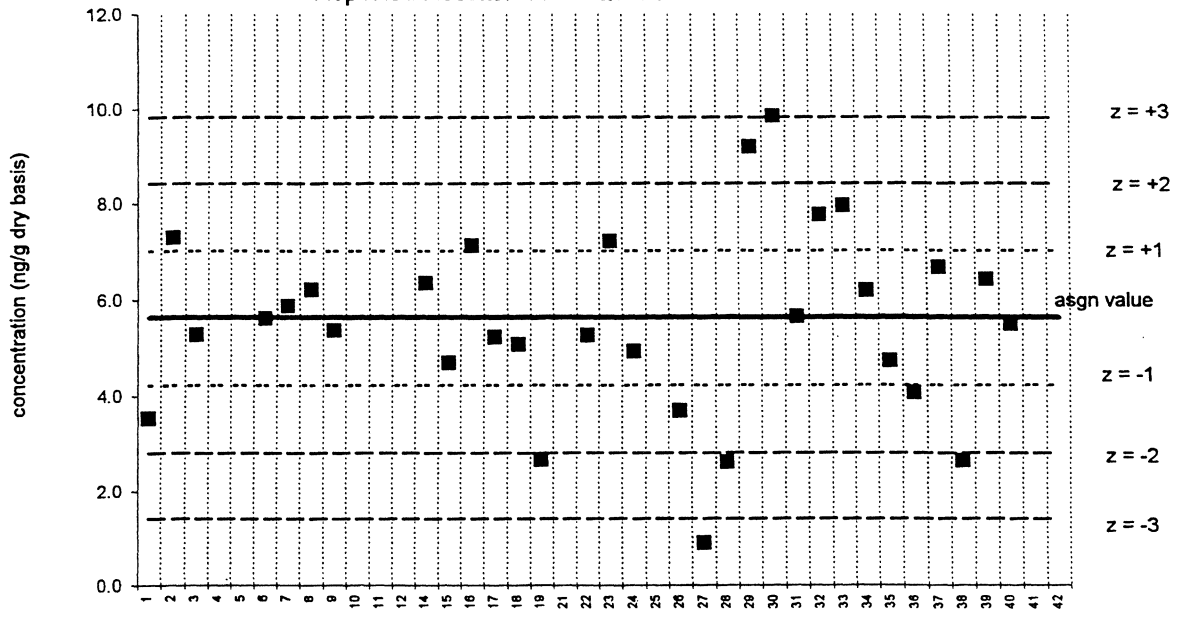
Certified Value = 14.3 ± 2.5 ng/g (dry basis)

Reported Results: 17 Quantitative Results: 14



PCB 101/90 **Sediment IX (QA99SED9)**

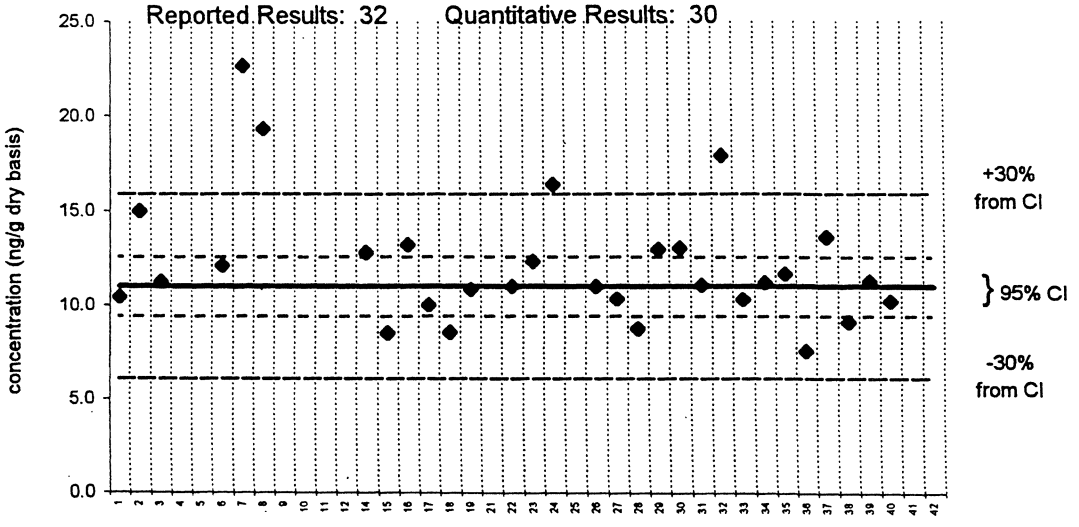
Assigned value = 5.62 ng/g s = 1.82 ng/g 95% CL = 0.70 ng/g (dry basis)
Reported Results: 33 Quantitative Results: 31



laboratory number

PCB 101/90 **SRM 1941a**

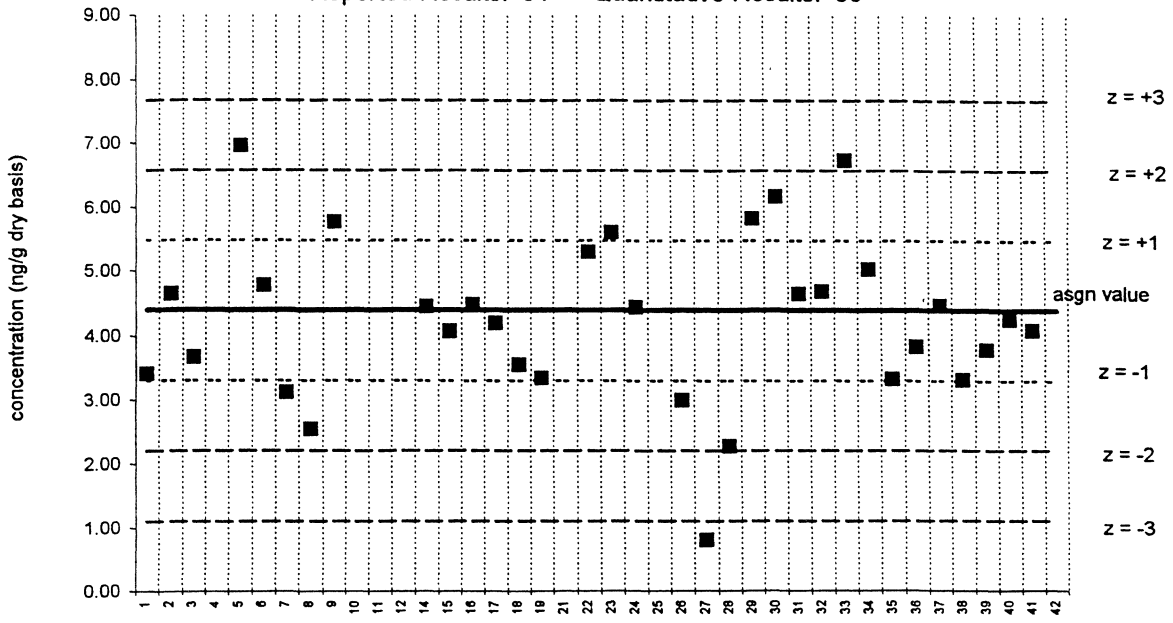
Certified Value = 11.0 ± 1.6 ng/g (dry basis)
Reported Results: 32 Quantitative Results: 30



laboratory number

PCB 118 **Sediment IX (QA99SED9)**

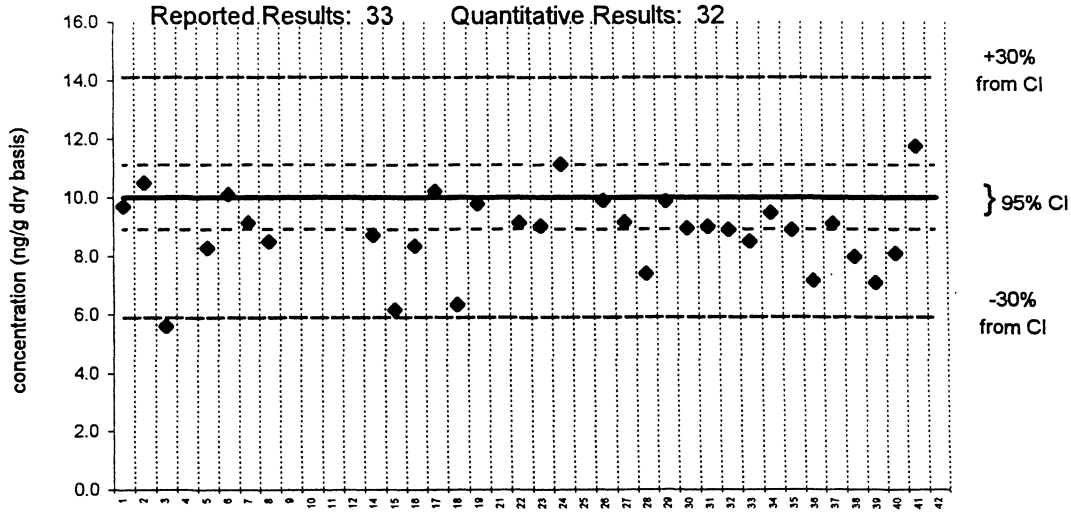
Assigned value = 4.39 ng/g s = 1.16 ng/g 95% CL = 0.42 ng/g (dry basis)
Reported Results: 34 Quantitative Results: 33



laboratory number

PCB 118 **SRM 1941a**

Certified Value = 10.0 ± 1.1 ng/g (dry basis)
Reported Results: 33 Quantitative Results: 32

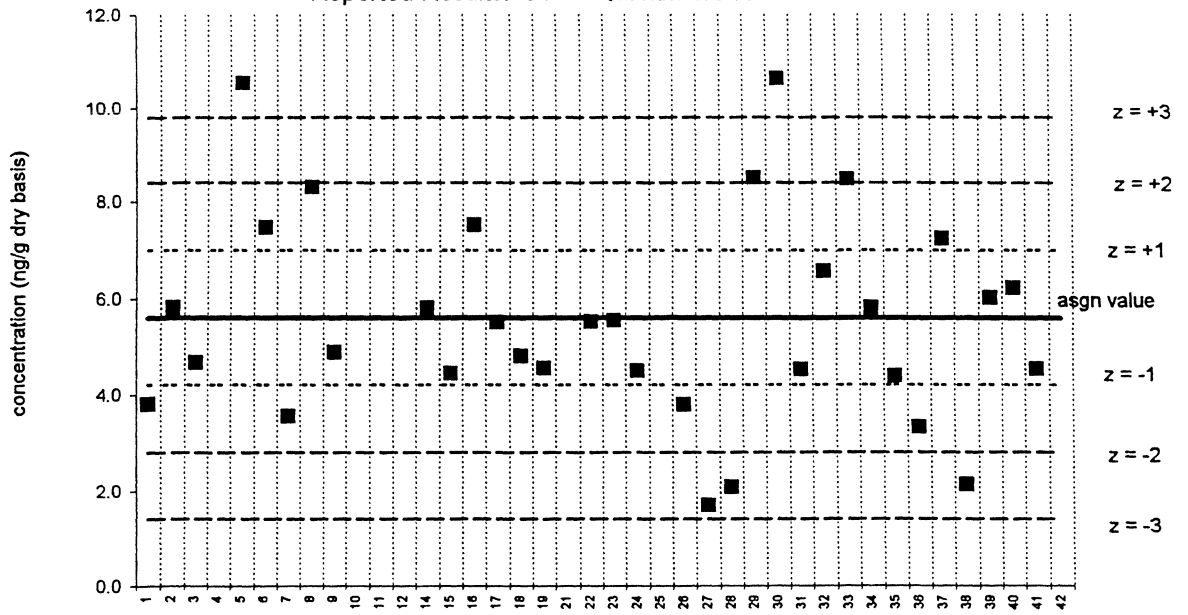


laboratory number

PCB 153 **Sediment IX (QA99SED9)**

Assigned value = 5.59 ng/g s = 2.20 ng/g 95% CL = 0.81 ng/g (dry basis)

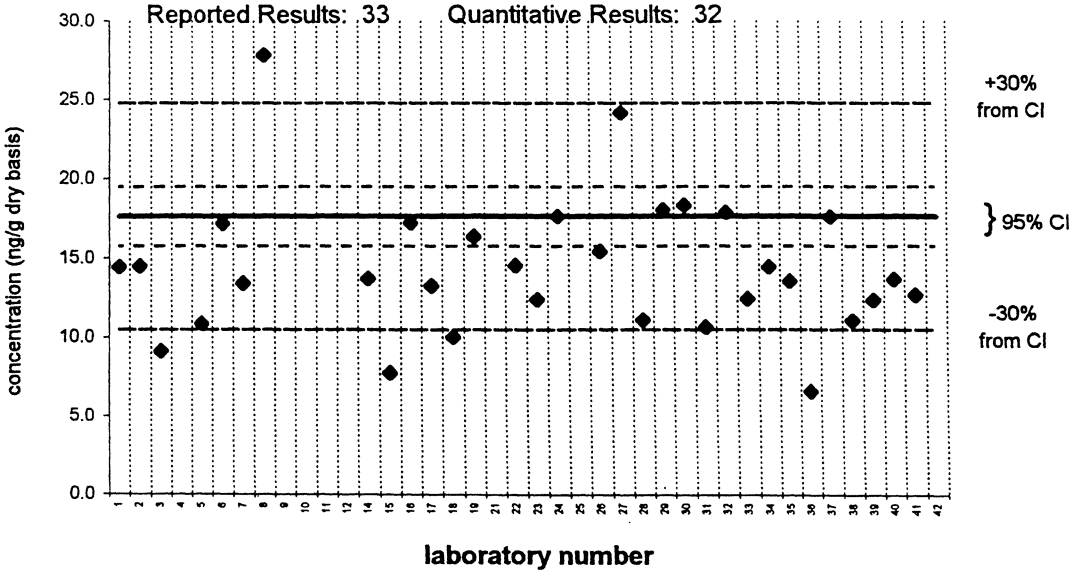
Reported Results: 34 Quantitative Results: 33



PCB 153 **SRM 1941a**

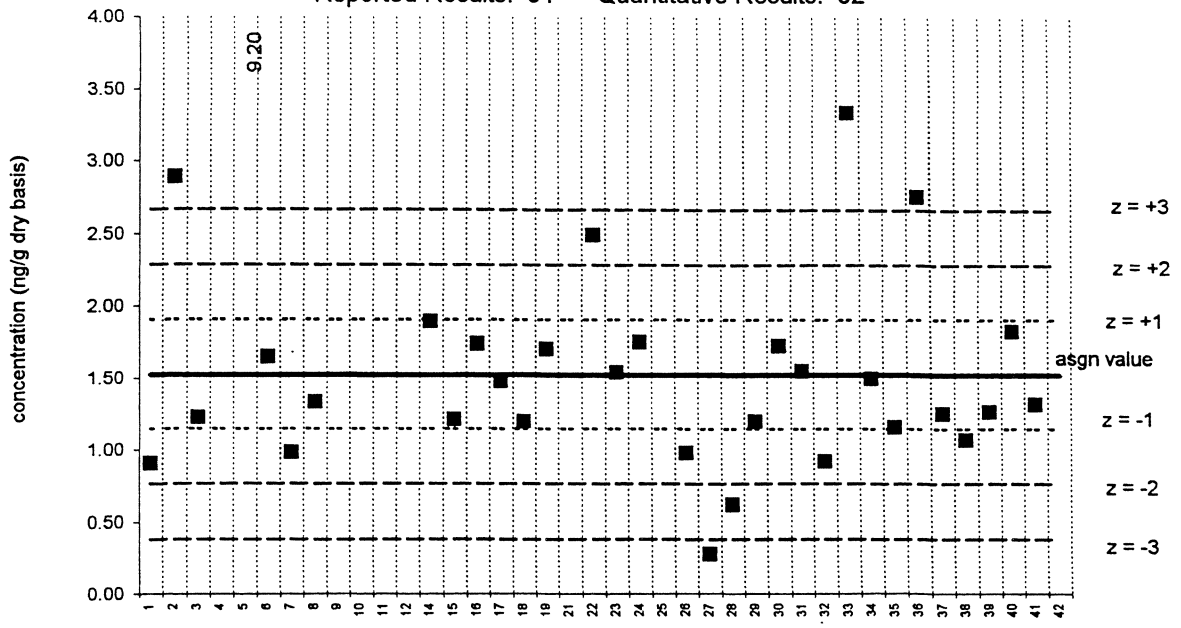
Certified Value = 17.6 ± 1.9 ng/g (dry basis)

Reported Results: 33 Quantitative Results: 32



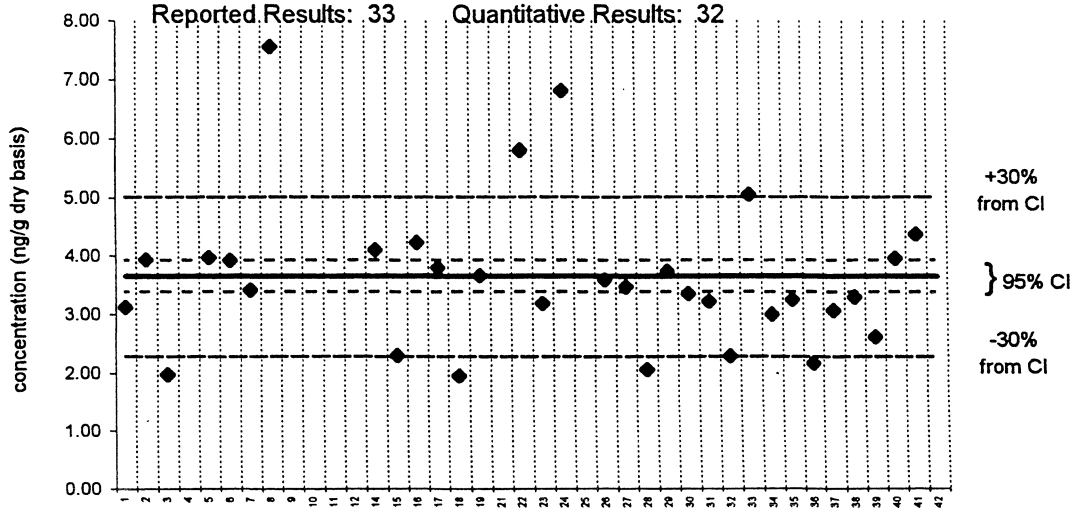
PCB 105 **Sediment IX (QA99SED9)**

Assigned value = 1.52 ng/g s = 0.67 ng/g 95% CL = 0.28 ng/g (dry basis)
Reported Results: 34 Quantitative Results: 32



PCB 105 **SRM 1941a**

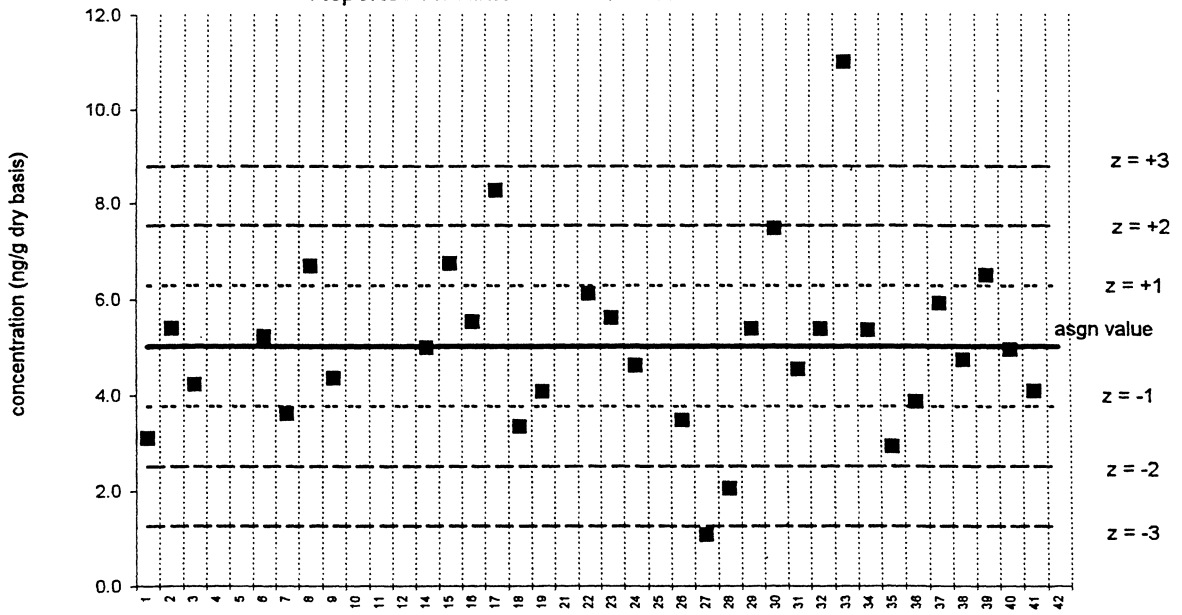
Certified Value = 3.65 ± 0.27 ng/g (dry basis)
Reported Results: 33 Quantitative Results: 32



PCB 138/163/164 **Sediment IX (QA99SED9)**

Assigned value = 5.01 ng/g s = 1.90 ng/g 95% CL = 0.71 ng/g (dry basis)

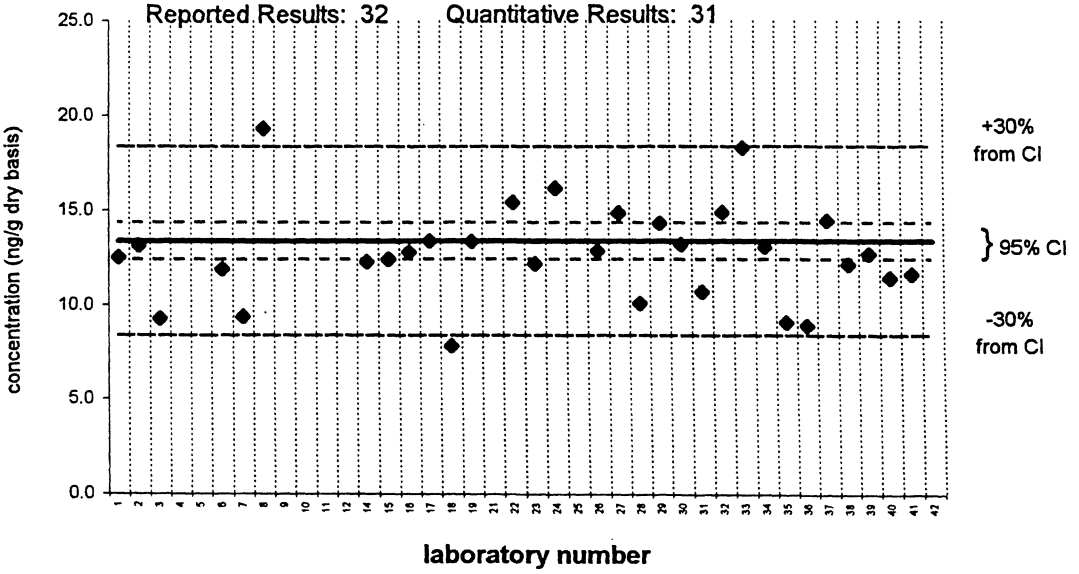
Reported Results: 33 Quantitative Results: 32



PCB 138/163/164 **SRM 1941a**

Certified Value = 13.4 ± 1.0 ng/g (dry basis)

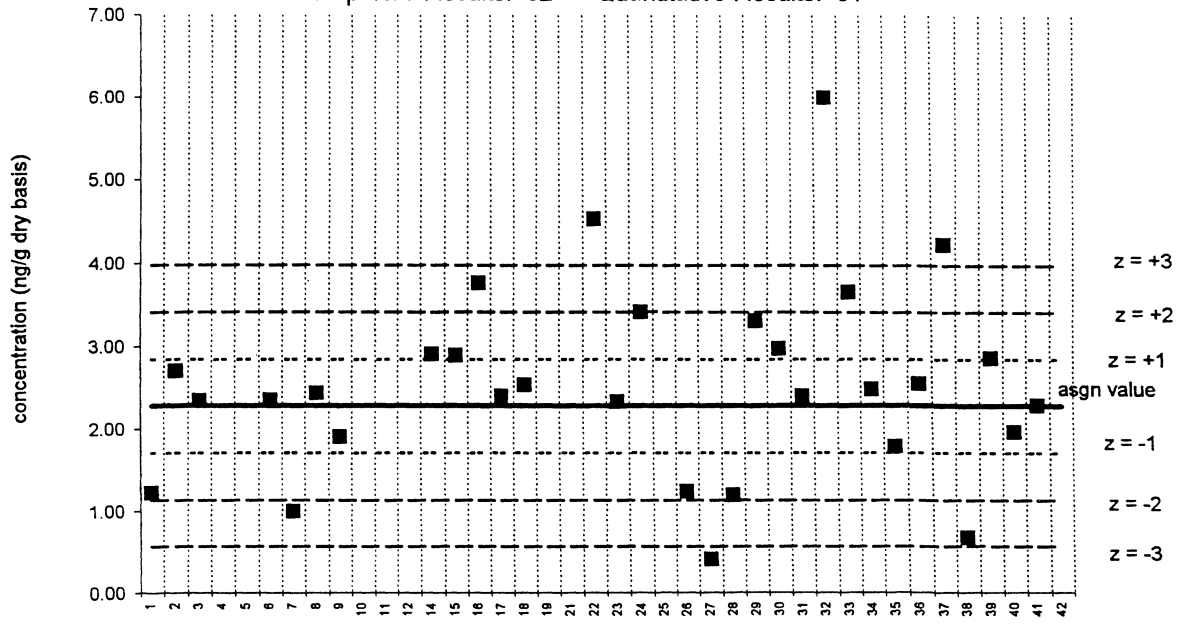
Reported Results: 32 Quantitative Results: 31



PCB 187/182 **Sediment IX (QA99SED9)**

Assigned value = 2.27 ng/g s = 1.05 ng/g 95% CL = 0.40 ng/g (dry basis)

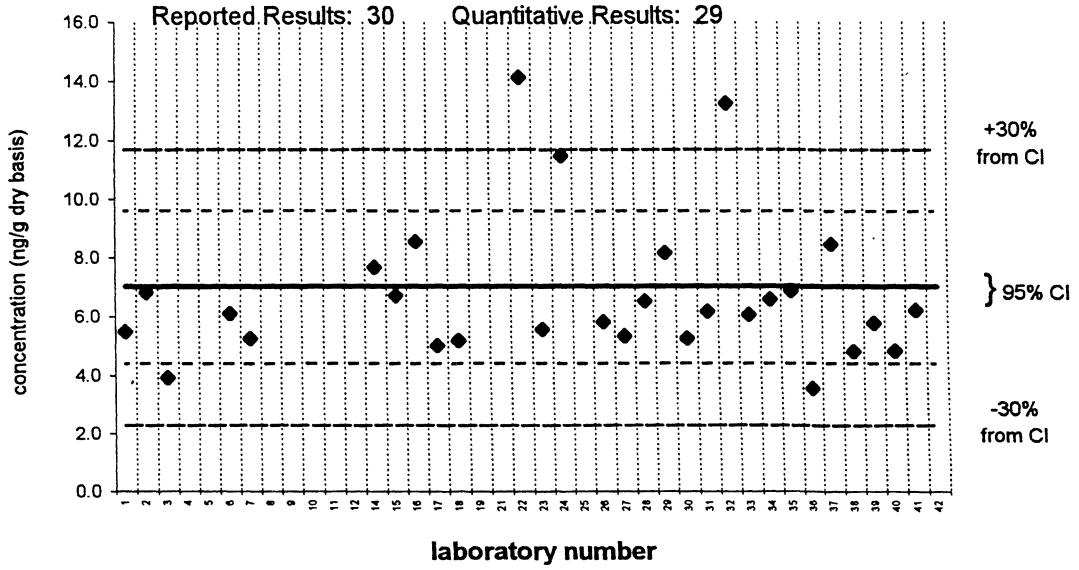
Reported Results: 32 Quantitative Results: 31



PCB 187/182 **SRM 1941a**

Information Value = 7.00 ± 2.60 ng/g (dry basis)

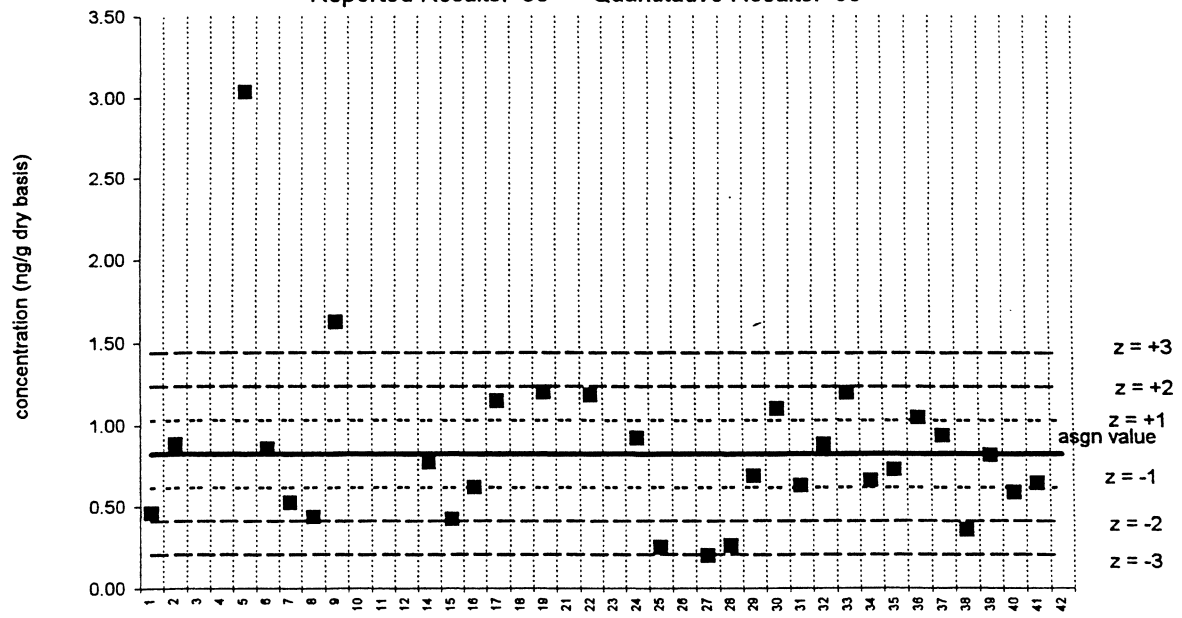
Reported Results: 30 Quantitative Results: 29



PCB 128 **Sediment IX (QA99SED9)**

Assigned value = 0.82 ng/g s = 0.54 ng/g 95% CL = 0.20 ng/g (dry basis)

Reported Results: 33 Quantitative Results: 30

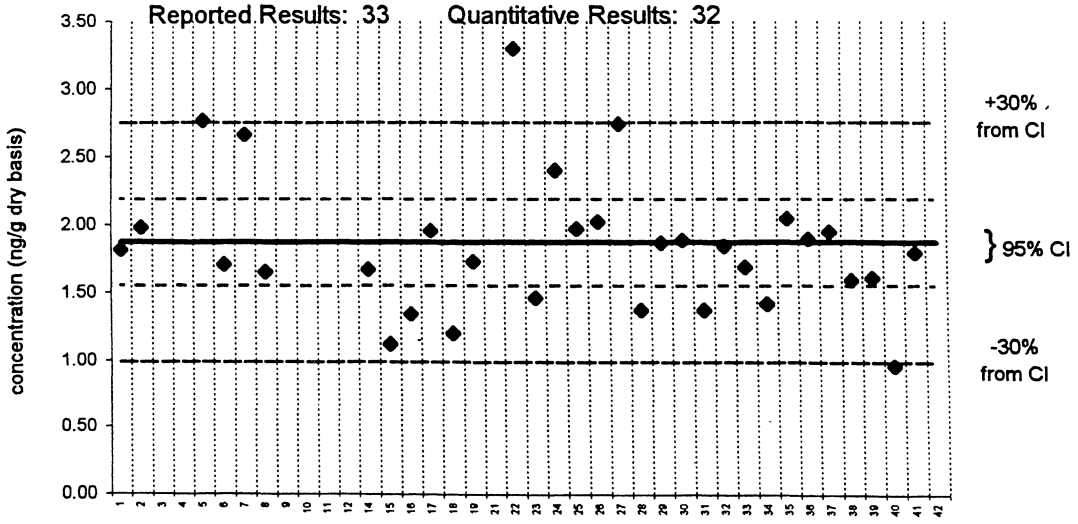


laboratory number

PCB 128 **SRM 1941a**

Certified Value = 1.87 ± 0.32 ng/g (dry basis)

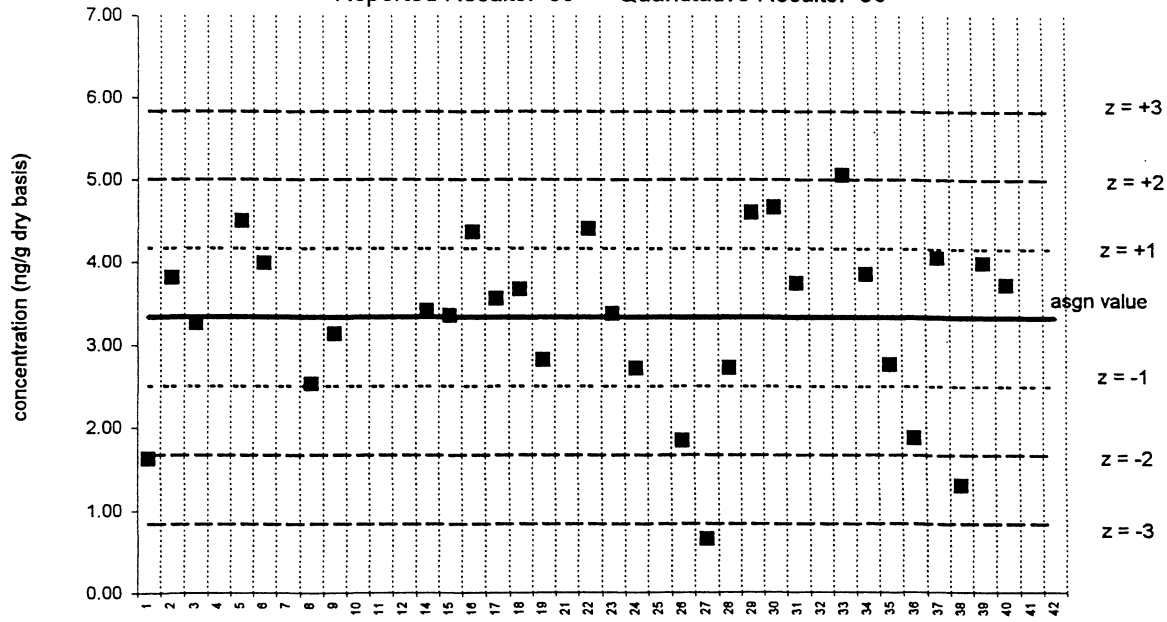
Reported Results: 33 Quantitative Results: 32



laboratory number

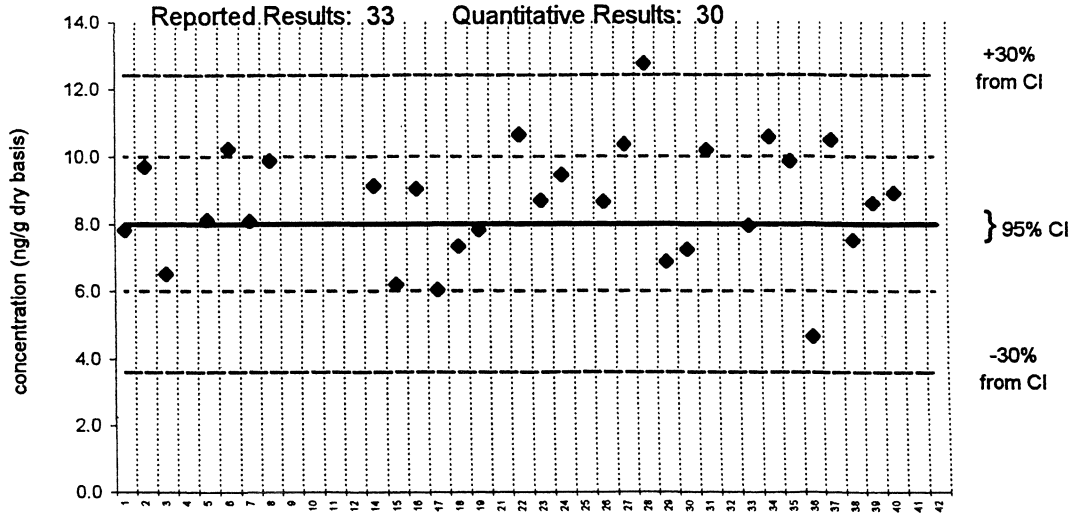
PCB 180 **Sediment IX (QA99SED9)**

Assigned value = 3.33 ng/g s = 1.08 ng/g 95% CL = 0.41 ng/g (dry basis)
Reported Results: 33 Quantitative Results: 30



PCB 180 **SRM 1941a**

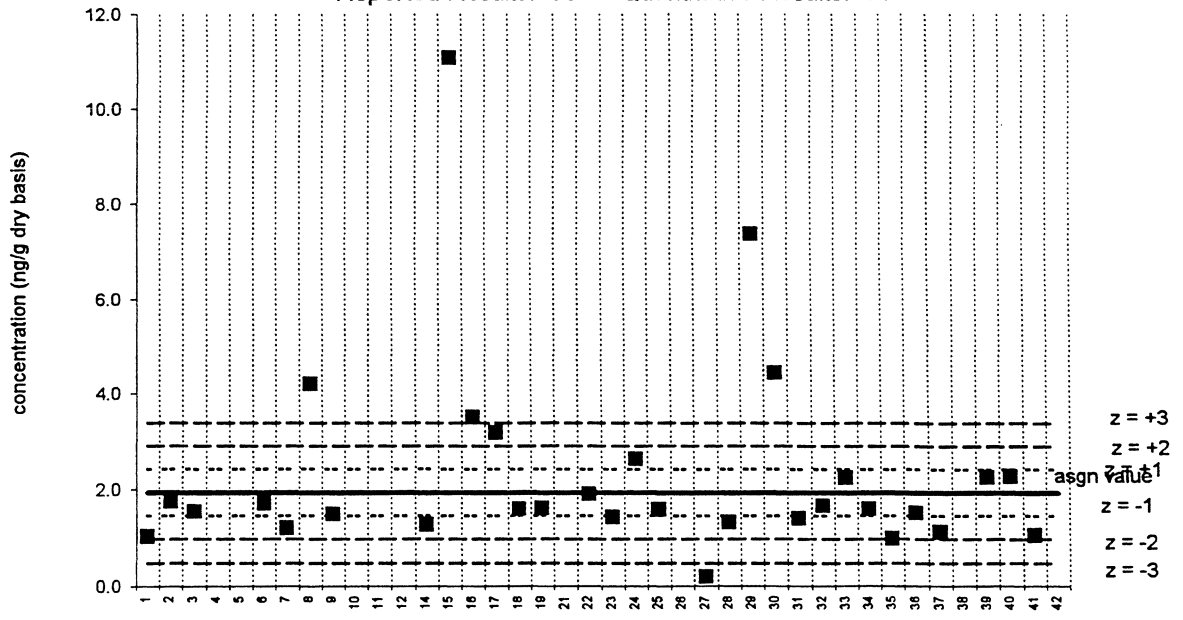
Target Value = 8.00 ± 2.00 ng/g (dry basis)
Reported Results: 33 Quantitative Results: 30



PCB 170/190 **Sediment IX (QA99SED9)**

Assigned value = 1.94 ng/g s = 1.35 ng/g 95% CL = 0.52 ng/g (dry basis)

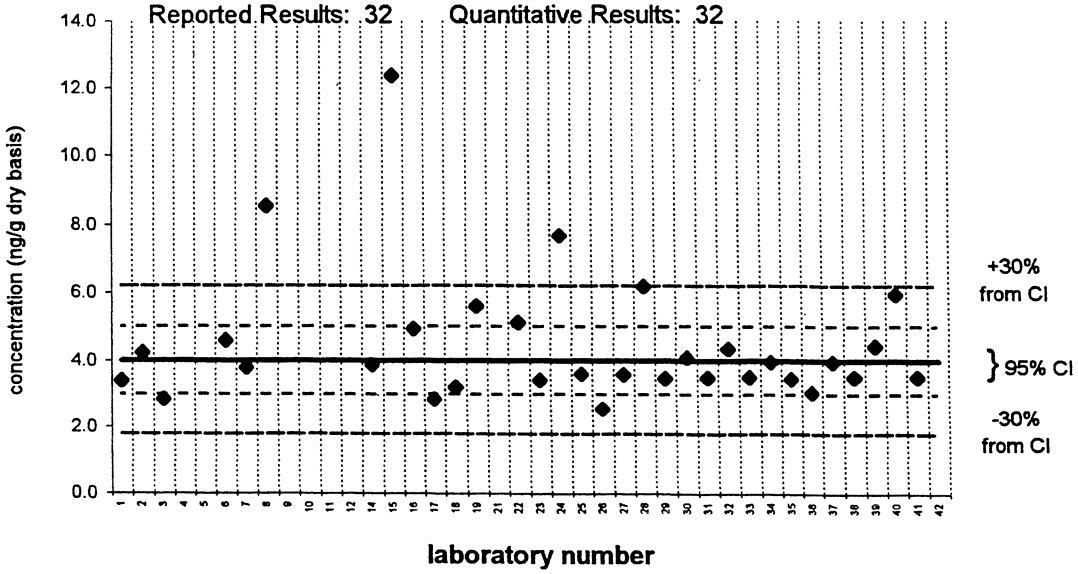
Reported Results: 33 Quantitative Results: 31



PCB 170/190 **SRM 1941a**

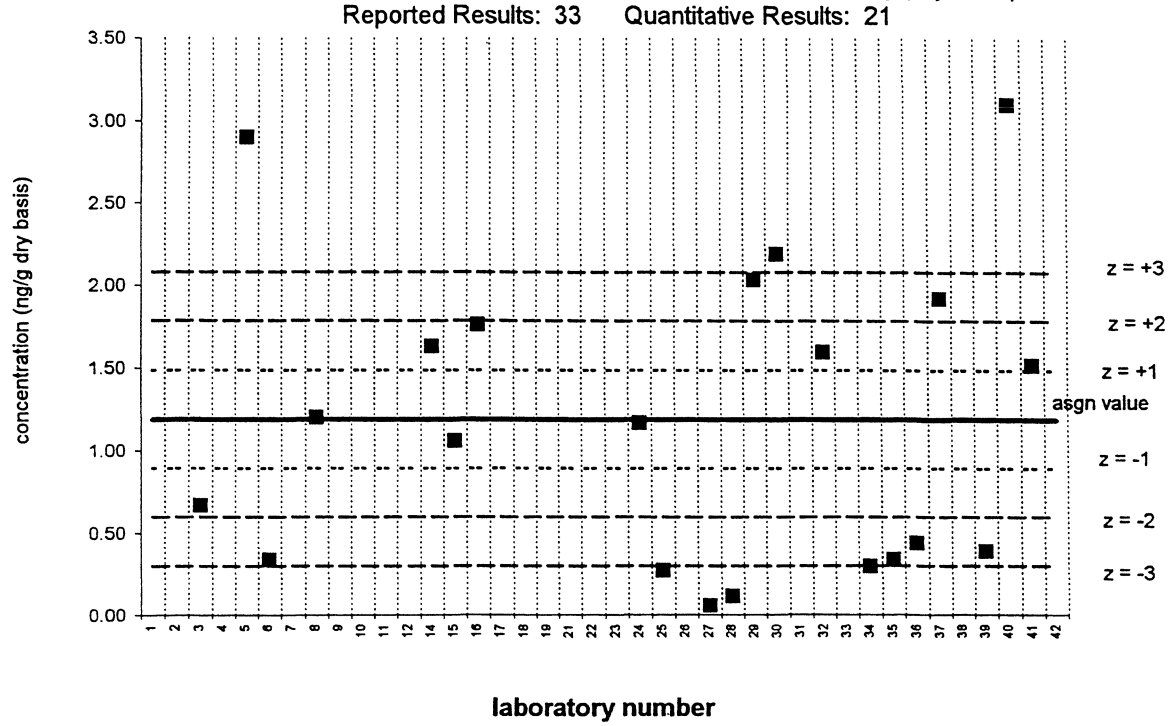
Target Value = 4.00 ± 1.00 ng/g (dry basis)

Reported Results: 32 Quantitative Results: 32



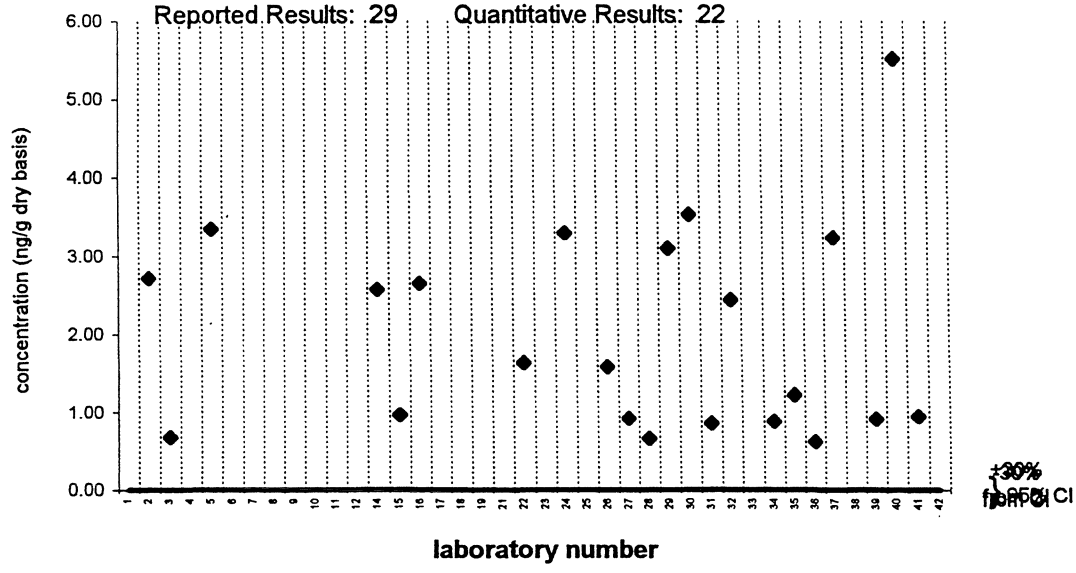
PCB 195 **Sediment IX (QA99SED9)**

Assigned value = 1.19 ng/g s = 0.91 ng/g 95% CL = 0.42 ng/g (dry basis)
Reported Results: 33 Quantitative Results: 21



PCB 195 **SRM 1941a**

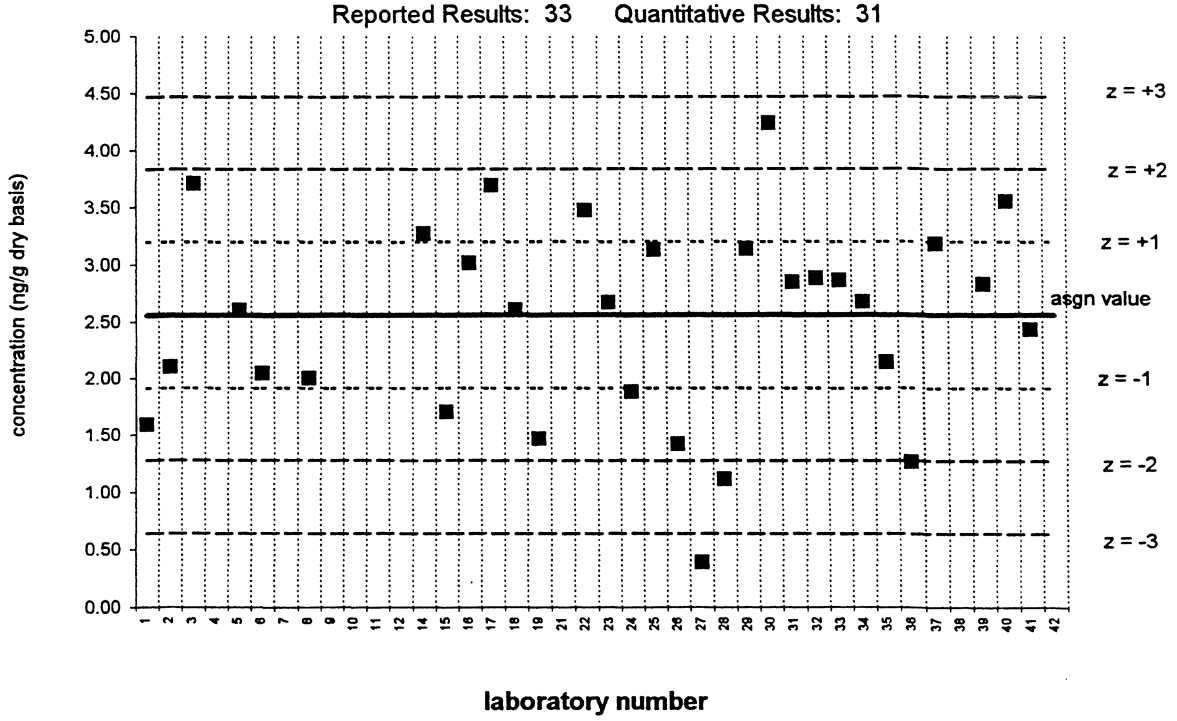
Target Value = <3 ng/g (dry basis)
Reported Results: 29 Quantitative Results: 22



PCB 206 **Sediment IX (QA99SED9)**

Assigned value = 2.55 ng/g s = 0.89 ng/g 95% CL = 0.34 ng/g (dry basis)

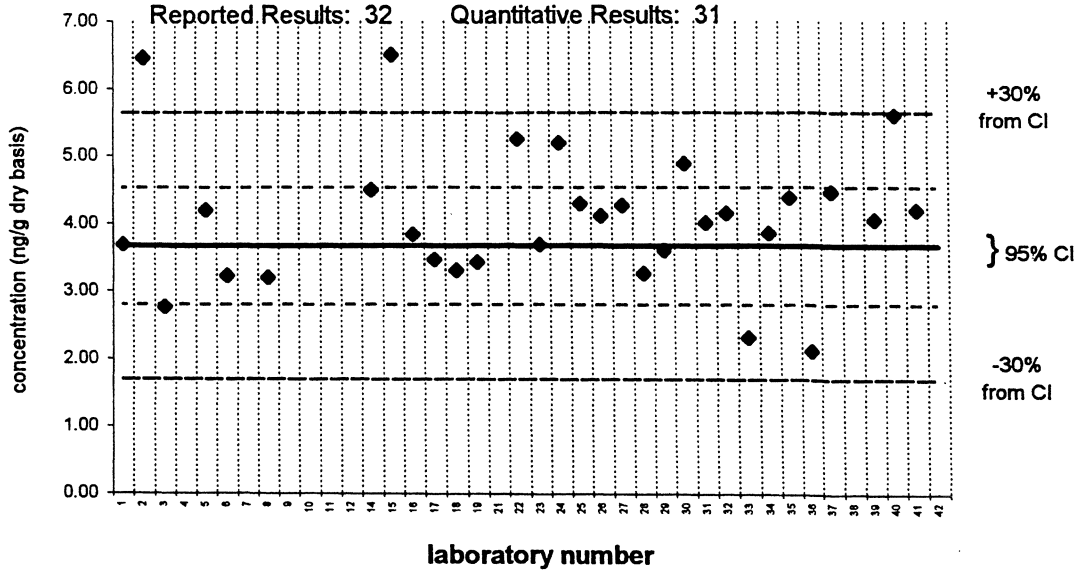
Reported Results: 33 Quantitative Results: 31



PCB 206 **SRM 1941a**

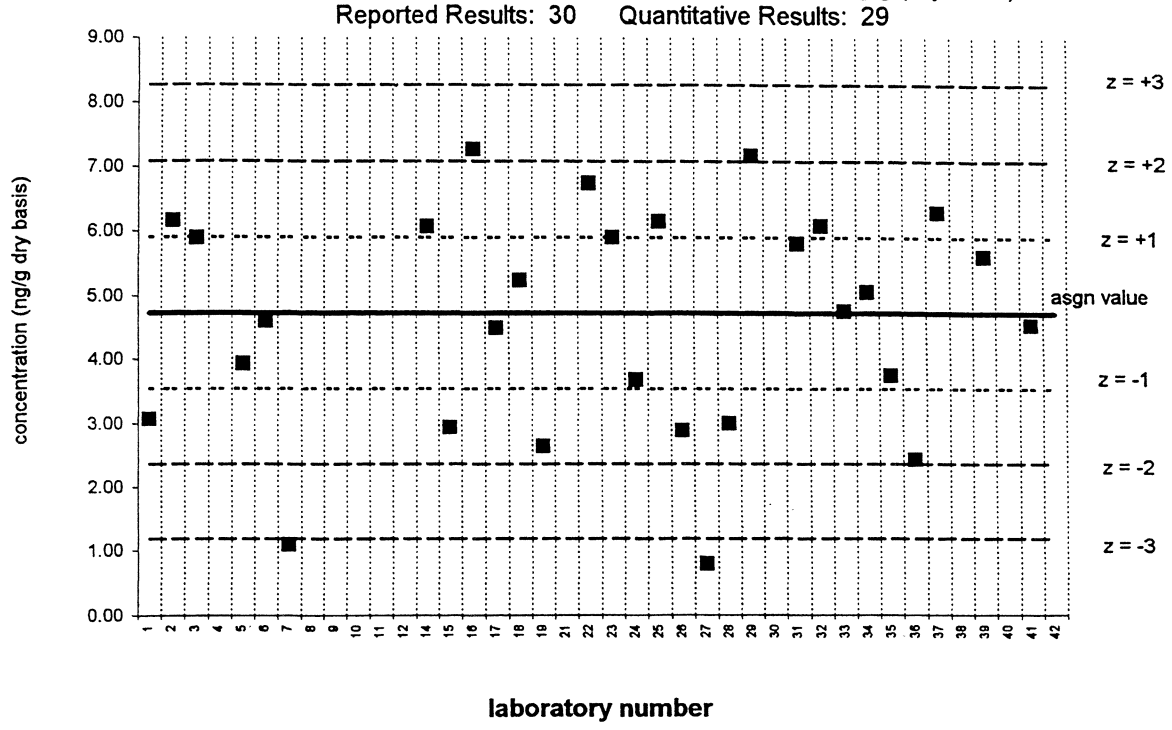
Certified Value = 3.67 ± 0.87 ng/g (dry basis)

Reported Results: 32 Quantitative Results: 31



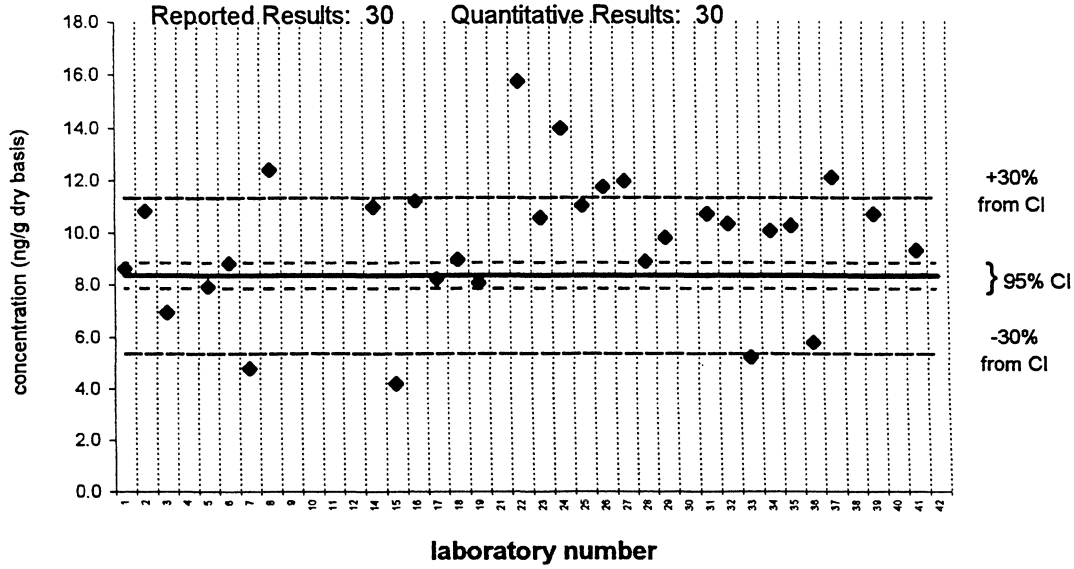
PCB 209 **Sediment IX (QA99SED9)**

Assigned value = 4.72 ng/g s = 1.63 ng/g 95% CL = 0.69 ng/g (dry basis)
Reported Results: 30 Quantitative Results: 29



PCB 209 **SRM 1941a**

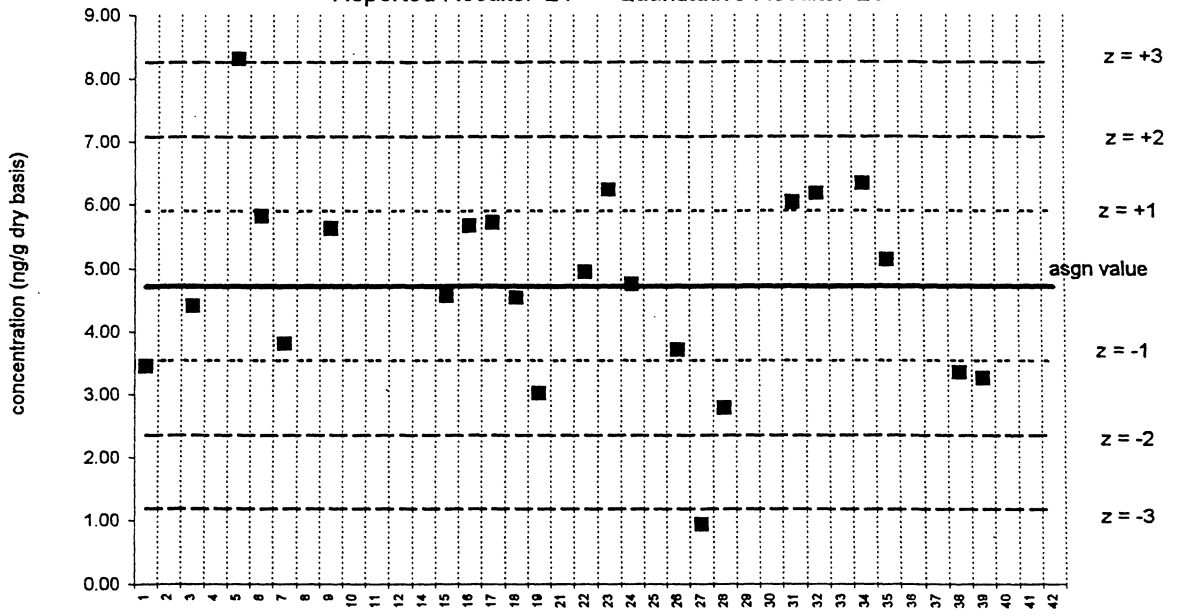
Certified Value = 8.34 ± 0.49 ng/g (dry basis)
Reported Results: 30 Quantitative Results: 30



PCB 66 **Sediment IX (QA99SED9)**

Assigned value = 4.71 ng/g s = 1.57 ng/g 95% CL = 0.68 ng/g (dry basis)

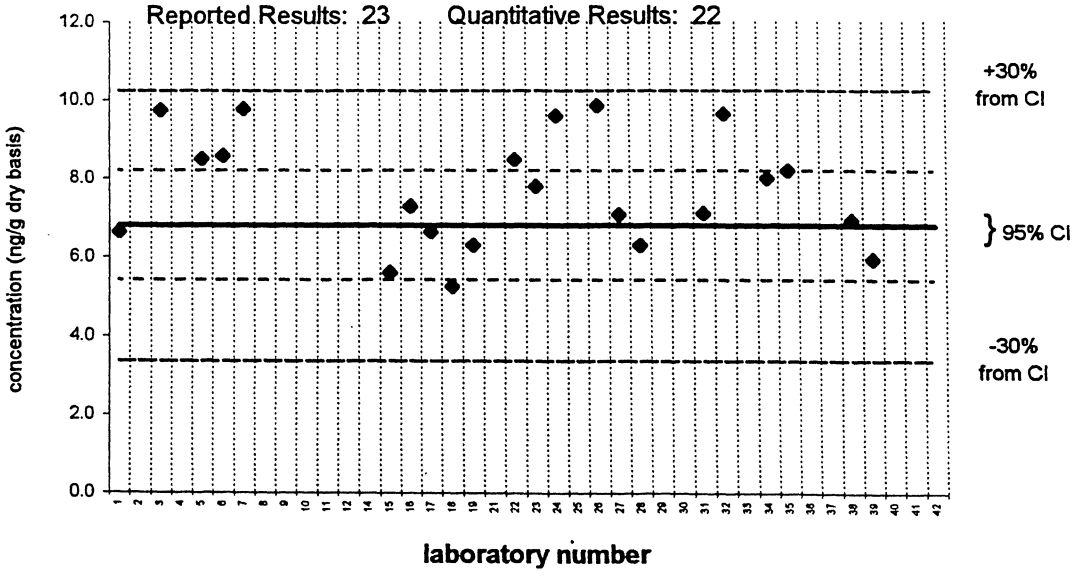
Reported Results: 24 Quantitative Results: 23



PCB 66 **SRM 1941a**

Certified Value = 6.80 ± 1.40 ng/g (dry basis)

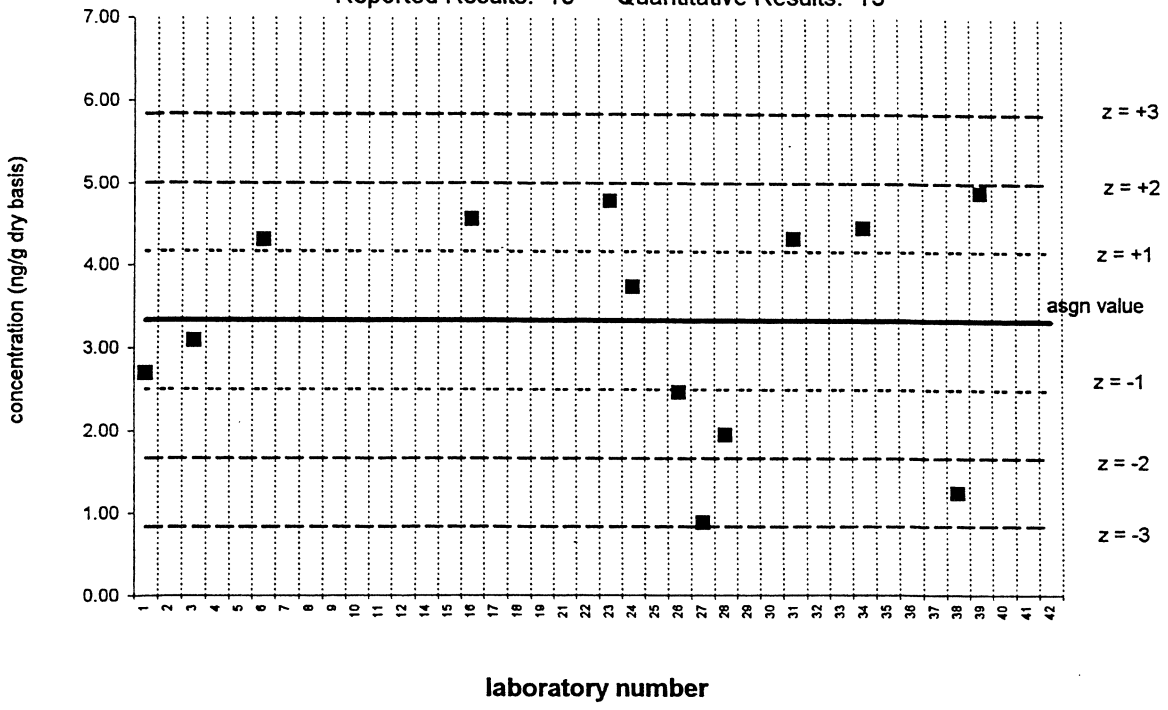
Reported Results: 23 Quantitative Results: 22



PCB 95 **Sediment IX (QA99SED9)**

Assigned value = 3.34 ng/g s = 1.38 ng/g 95% CL = 0.83 ng/g (dry basis)

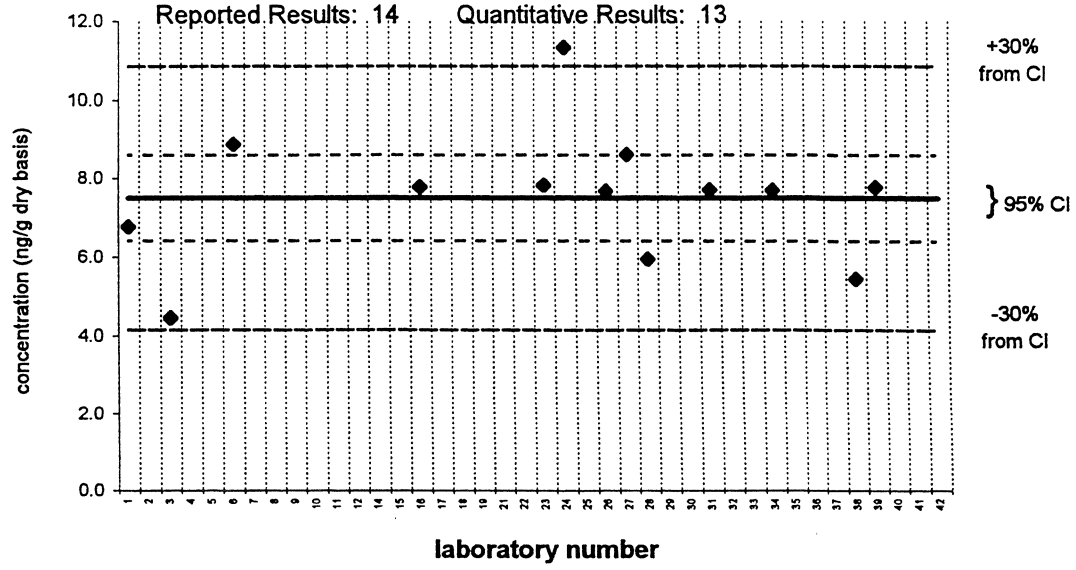
Reported Results: 15 Quantitative Results: 13



PCB 95 **SRM 1941a**

Certified Value = 7.50 ± 1.10 ng/g (dry basis)

Reported Results: 14 Quantitative Results: 13



Appendix K: List of Laboratories Participating in 1999 Intercomparison Exercises

For this exercise, data was 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-Gaithersburg which is Laboratory #1 in this exercise. The same code was used with both exercises.)

Academy of Natural Sciences
1900 Benjamin Franklin Parkway
Philadellphia, PA 19103
Jeffrey Ashley

Arthur D. Little, Inc.
20 Acorn Park
Cambridge, MA 02140
John Brown

Axys Analytical Services, LTD
2045 Mills Road West
P.O. Box 2219
Sidney, BC V8L3S8
Canada
Laurie Phillips

B& B Laboratories
1902 Pinon
College Station, TX 77845
Bernie Bernard

Battelle Ocean Sciences
397 Washington Street
Duxbury, MA 02332
Carole Peven

Bedford Institute of Oceanography
Marine Environmental Sciences Division
1 Challenger Drive
P.O. Box 1006
Dartmouth, NS B2Y 4A2
Jocelyne Hellou/Sean Stellar

California Dept. of Fish and Game
Fish and Wildlife Water Pollution Control Laboratory
2005 Nimbus Road
Rancho Cordova, CA 95670
David Crane / Kathleen Regalado

Central Contra Costa Sanitary District
5019 Imhoff Place
Martinez, CA 94553
Tri Nguyen

Chesapeake Biological Laboratory
1 Williams Street, P.O. Box 38
Solomons, MD 20688-0038
Joel Baker

CIEMAT
Avenida Complutense, 22-E70.P2.08
28040-Madrid
Spain
Rosa. Pérez-Pastor

Columbia Analytical Services
1317 S. 13th Avenue
Kelso, WA 98626
Lee Wolf

City of Los Angeles
Environmental Monitoring Division
12000 Vista del Mar
Playa del Rey, CA 90293
Zbyslaw J. Petryka/Ofelia Kim

City of San José
4245 Zanker Rd, Suite L
San José, CA 95134
Eric Papp

East Bay Municipal Utility District
PO Box 24055, MS 59
Oakland, CA 94623
François Rodigari

Environmental Protection Agency (EPA)
Atlantic Ecology Division
27 Tarzwell Drive
Narragansett, RI 02882
Joseph LiVolsi

Environment Canada
Environmental Sciences Centre
P. O. Box 23005
Moncton, New Brunswick E1A6S8
Canada
James Doull / Mireille Savoie

Florida Dept. Of Environmental Protection
2600 Blair Stone
Tallahassee, FL 32399
Liang Lin

Institute for National Measurement Standards
National Research Council of Canada
M-12 B-10
Montreal Road
Ottawa, Ontario K1A 0R6
Canada
Cathie Fraser / Graeme Gardner

Manchester Environmental Laboratory
7411 Beach Drive East
Port Orchard, WA 98366
Stuart Magoon

Murray State University
Department of Chemistry
456 Blackburn Science Bldg.
Murray KY 42071-3346
Bommanna G. Loganathan

MWRA Central Lab
190 Taft Ave.
Winthrop, MA 02152
Steve Rhode

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

NIST-Charleston Laboratory
219 Fort Johnson Road
Charleston, SC 29412-911 0
John Kucklick

NOAA/NMFS/ABL
Auke Bay Laboratory
P. O. Box 210155
11305 Glacier Highway
Juneau, AK 99821
Marie Larsen

NOAA-NMFS-NEFSC
Sandy Hook Marine Laboratory
74 Magruder Road
Highlands, NJ 07732
Ashok Deshpande

NOAA-NMFS
2725 Montlake Boulevard, East
Seattle, WA 98112
Donald Brown

NOAA/NOS/CCEHBR
219 Fort Johnson Road
Charleston, SC 29412
Dan Bearden

Philip Analytical Services
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Ron McLeod

Orange County Sanitation District
Environmental Sciences Laboratory
10844 Ellis Avenue
Fountain Valley, CA 92708
Samuel Mowbray

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Knoxville, TN 37921
David Thal

Serv de Hidrografia Naval
Depto. Oceanografia
Av. Montes de Oca 2124 (1271)
Buenos Aires - Argentina
Lucio José Janiot

Skidaway Institute of Technology
10 Ocean Science Circle
Savannah , GA 31411
Keith Maruya

Southwest Laboratory of Oklahoma
1700 Albany
Broken Arrow, OK 74012
Jayant Shringarpure

Texas A & M University
GERG
833 Graham Road
College Station, TX 77845
Terry Wade

Texas Parks and Wildlife Department
505 Staples Road
San Marcos, TX 78666
David Klein/Pamela Hamlett

UCLA
Institute of Geophysics and Planetary Physics
5863 Slichter Hall
Los Angeles, CA 90095-1567
Indira Venkatesan

University of Connecticut
Environmental Research Institute
U-210; Longley Bldg
Storrs, CT 06269
Christopher Perkins

University of Rhode Island
Graduate School of Oceanography
South Ferry Road
Narragansett, RI 02882
James G. Quinn

USDA
Environmental Chemistry Laboratory
Bldg 007, Room 225
Beltsville, MD 20705
Laura McConnell

USGS
National Water Quality Laboratory
PO Box 25046
Denver Federal Center
Bldg 95, Ent E3, MS 407
Denver, CO 80225-0048
Mary Cast/Tom Maloney

Wright State University
175 Brehm Laboratory
3640 Colonel Glenn Highway
Dayton, OH 45435
Thomas Tiernan

Woods Hole Group Environ. Lab
375 Paramount Dr, Suite B
Raynham, MA 02767
Peter J. Kane