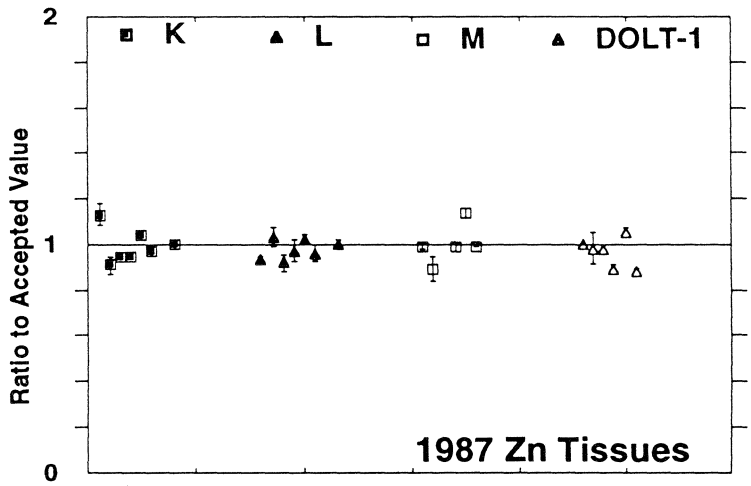
NOAA Technical Memorandum NOS ORCA 66

National Status and Trends Program
for Marine Environmental Quality

Elemental Analyses in Marine Sediments and Biological Tissues

Quality Assurance Program: Summary 1985-1990



Rockville, Maryland
September, 1992

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Office of Ocean Resources Conservation and Assessment
National Ocean Service
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U.S. Department of Commerce
Rockville, MD

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Quality Assurance Program: Summary 1985-1990

Nathalie Valette-Silver

Rockville, Maryland
September, 1992

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Elemental Analyses in Marine Sediments and Biological Tissues

Quality Assurance Program Summary, 1985-1990

Nathalie Valette-Silver

Abstract

Since 1985, six laboratories have provided data on trace contaminant elements in environmental samples to the NOAA National Status and Trends Program. This report presents and summarizes the results obtained from 1985 to 1990 by these laboratories for the Quality Assurance intercomparison exercises. In particular, it demonstrates the fact that consistent participation in the annual exercises has greatly improved the performance of the participants over the years and that all of the laboratories contributing data to the NS&T Program are generally furnishing data of good quality.

Introduction

Resource management in the Nation's coastal and estuarine regions requires reliable and continuous information on the status and trends of environmental quality in those areas. Beginning in 1984, the National Oceanic and Atmospheric Administration (NOAA) undertook the task of providing this information through its National Status and Trends Program (NS&T) for Marine Environmental Quality. The program's objectives include defining the geographic distribution of contaminant concentrations in marine organisms and sediments, and documenting biological responses to contamination. Samples have been collected since 1984 under the NS&T Benthic Surveillance Project, and since 1986 under the Mussel Watch Project. At Benthic Surveillance Project sites, benthic fishes are collected and their livers excised and stored for subsequent chemical analysis. At Mussel Watch Project sites, bivalve mollusks (mussels or oysters) are collected for analysis. Surface sediment samples have been collected at all sites in both projects.

A series of NS&T reports (Calder, 1987 and O'Connor, 1987, 1988, 1989a and b, 1991a and b, 1992) present and discuss contaminant concentrations in mollusks, fishes, and sediments. All of these reports concern results of analyses for the chemicals listed in Table 1. Because the NS&T data are the result of a federally mandated program and may be used to set standards or develop new legislation, it is important to determine their accuracy and precision. The NS&T Quality Assurance Program (QA) is responsible for making this determination.

The program has its origins in the QA Program designed for the NOAA Outer Continental Shelf Environmental Assessment Program (OCSEAP) that was devoted to the analysis of petroleum hydrocarbons and their interaction with the biota in marine sediments. For OCSEAP, William MacLeod of the NOAA National Marine Fisheries Service (NMFS) National Analytical Facility (NAF) developed control materials and calibration standards for use by all laboratories. When the NS&T program was initiated in 1984, the NMFS laboratories performing analyses for the Benthic Surveillance Project used a standardized set of measurement protocols for the organic compounds. The protocols included the uniformity of techniques and instrumentation as prescribed in MacLeod et al., 1985. When the Mussel Watch Project was initiated in 1986, new laboratories joined the program and the QA philosophy changed towards a performance-based program where particular techniques or instrumentation were not prescribed, and where only the quality of the final analytical results was tested.

Since 1985, there have been two working groups: one for the inorganic element analyses, coordinated by the National Research Council (NRC) of Canada, and one for the organic compounds analyses, first supervised by the NMFS/NAF and, after 1985, by the National Institute of Standards and Technology (NIST).

The NOAA/NS&T QA Program has benefited from interaction with other QA programs. In particular, the laboratories participating in the program may use material from the International Council for the Exploration of the Seas (ICES), which has a large, ongoing intercomparison exercise on analyses for

Table 1a. Trace Elements Analyzed in the NS&T Program

Symbol	Element
Al	Aluminum
Si	Silicon
Cr	Chromium
Mn	Manganese
Fe	Iron
Ni	Nickel
Cu	Copper
Zn	Zinc
As	Arsenic
Se	Selenium
Ag	Silver
Cd	Cadmium
Sn	Tin
Sb	Antimony
Hg	Mercury
Pb	Lead
Tl*	Thallium

*No longer analyzed

Table 1b. Organic Compounds Analyzed in the NS&T Program

Aromatic Hydrocarbons	CAS #
Naphthalene	91-20-3
2-Methylnaphthalene	91-57-6
1-Methylnaphthalene	90-12-0
Biphenyl	92-52-4
2,6-Dimethylnaphthalene	581-42-0
Acenaphthene	83-32-9
Acenaphthylene	208-96-8
2,3,5-Trimethylnaphthalene	829-26-5
Fluorene	86-73-7
Dibenz[a,h]anthracene	53-70-3
Indeno[1,2,3-cd]pyrene	193-39-5
Phenanthrene	85-01-8
Anthracene	120-12-7
1-Methylphenanthrene	832-69-9
Fluoranthene	206-44-0
Pyrene	129-00-0
Chrysene	218-01-9
Benz[a]anthracene	56-55-3
Benzo[b]fluoranthene	56832-73-6
Benzo[k]fluoranthene	207-08-9
Benzo[ghi]perylene	191-24-2
Benzo[e]pyrene	192-97-2
Benzo[a]pyrene	50-32-8
Perylene	198-55-0

Organotins
monobutyltin* (MBT)
dibutyltin* (DBT)
tributyltin* (TBT)
*Tin measured as cation

Chlorinated Pesticides	CAS #
Aldrin	309-00-2
cis-Chlordane	103-71-9
2,4'-DDD	3-19-0
4,4'-DDD	2-54-8
2,4'-DDE	3424-82-6
4,4'-DDE	72-55-9
2,4'-DDT	89-02-6
4,4'-DDT	50-29-3
Dieldrin	60-57-1
Heptaclor	76-44-8
Heptachlor epoxide	024-57-4
Hexachlorobenzene	118-74-1
Lindane (gamma-BHC)	58-89-9
Mirex	2385-85-5
trans-Nonachlor	39765-80-5
Endrin	72-20-8

Polychlorinated Biphenyls	Congener #
Dichlorobiphenyl	
2,4'	8
Trichlorobiphenyls	
2,2,5	18
2,4,4'	28
Tetrachlorobiphenyls	
2,2',3,5'	44
2,2',5,5'	52
2,3',4,4'	66
3,3',4,4'	77
Pentachlorobiphenyls	
2,2',4,5,5'	101
2,3,3',4,4'	105
2,3',4,4',5	118
3,3',4,4',5	126

Polychlorinated Biphenyls	
Hexachlorobiphenyls	
2,2',3,3',4,4'	128
2,2',3,4,4',5'	138
2,2',4,4',5,5'	153
Heptachlorobiphenyls	
2,2',3,3',4,4',5	170
2,2',3,4,4',5,5'	180
2,2',3,4',5,5',6	187
Octachlorobiphenyls	
2,2',3,3',4,4',5,6	195
Nonachlorobiphenyls	
2,2',3,3',4,4',5,5',6	206
Decachlorobiphenyl	
2,2'3,3',4,4',5,5',6,6'	209

polychlorinated biphenyls (PCBs), petroleum hydrocarbons (PAHs), and inorganic elements. This involvement has allowed NS&T laboratories to check their performance against many European laboratories. Furthermore, contributions from other programs made possible the development of new methods. The most important of these has been a new HPLC cleanup method developed with OCSEAP funding. This procedure has greatly decreased the time, and therefore the cost, of the organic analyses (from ~$2000 to ~$600 per analysis).

Presently, new technical improvements are being discussed, tested or refined, such as the use of supercritical fluids and the direct linkage of a gas chromatograph to the mass spectrometer. The development of Reference Material and Calibration Standards through NIST was also made possible by the financial support of several agencies and programs: the Department of Energy, the Office of Naval Research, the Department of Interior's Minerals Management Service, and NOAA (the National Marine Pollution Program Office and OCSEAP Program). Beginning in 1990, the Near Coastal Component of the U.S. Environmental Protection Agency's Environmental Monitoring and Assessment Program (EMAP) became a full partner in support of the QA program. Since then, laboratories contributing analyses to EMAP are also participating in the intercomparison exercises.

The NS&T QA Program is open to non-NS&T and EMAP laboratories. While intercomparison results from NS&T laboratories are published (as in this document), other participating laboratories are assured anonymity.

An annual workshop sponsored by NS&T reunites all the participants in order to discuss the results of the previous year's exercise, exchange new analytical information, and plan the next intercomparison exercise. The philosophy of the program is that the QA Program should attract good scientists, and the role of NOAA is to assist them in improving their measurements and in documenting their results.

Because NS&T uses up to six different laboratories, it is of crucial importance to know how faithfully results can be compared and if there are any systematic problems that could bias interpretation of the overall NS&T data set. Moreover,

one NS&T objective is to document temporal trends in chemical contamination, and it is necessary to be certain that such trends are real and do not reflect ongoing changes in the analytical capabilities of the laboratories.

The intercomparison exercises were designed to evaluate the performance of each laboratory, especially the accuracy and precision of their analyses. In addition to intercomparisons, the NS&T program presently requires that all of the laboratories involved in the Mussel Watch and Benthic Surveillance Projects report control charts, detection limits, blank values, spikes, reference, and control material analysis. These data are most appropriate for estimating the data quality for the NS&T Program itself but are not always available, particularly for the early years of the program.

This report discusses and summarizes the results obtained in the QA Program by the NS&T laboratories for inorganic elements for the period 1985 to 1990 inclusive. Because the quality of the NS&T Program field data would not be expected to exceed the capability demonstrated in intercomparison exercises, these results are also used to indirectly obtain an idea about data quality for NS&T Program measurements.

I. Detail of the Intercomparison Exercises

The four intercomparison exercises described here were performed under the guidance of Shier Berman from NRC in 1985, 1987, 1989, and 1990. Among the participating laboratories, those involved in the NS&T Program included three NOAA National Marine Fisheries Services (NMFS) laboratories: the Environmental Conservation Division (ECD) Northwest Fisheries Science Center; the Sandy Hook Northeast Fisheries Center (NNEC); and the Beaufort Southeast Fisheries Center (NSEC); as well as three non-NOAA laboratories: Texas A & M University (TAMU); Science Applications International Corporation (SAIC); and Battelle Northwest (BNW).

The raw data for all four exercises (1985,1987,1989,1990) are presented in Appendices B, C and D. All of these data are also available as spreadsheets in electronic form. Means and percent relative standard deviations (RSD) are presented in Appendix A (A1 and A2 for sediments and biological tissues;

respectively). In all the exercises, the means of the analytical values reported by each laboratory are compared to "Accepted Values" (Appendices A3 and A5). Depending on the sample or the element, these "Accepted Values" can variously represent: the simple means (censored of outliers) of all results reported by all laboratories, also called "Consensus Values" (*); a non-certified value calculated by NRC, also called "NRC Values" (**); the consensus values of all laboratories involved in the ICES exercises, also called "ICES Values"(°); or the "Certified Values" (***) of a certified reference material. For all four exercises, the precision of the analysis is also evaluated (Appendices A4 and A6) by categorizing the relative standard deviation (RSD from Appendices A1 and A2). Table 2 lists the common materials analyzed by NS&T laboratories from 1985 through 1990.

1) The first intercomparison exercise took place in 1985. It included the analysis of four sediment samples (A, B, C, and D sediments from the East Coast of Canada) and three biological substances (E = dogfish liver, F = adductor muscle of *Mytilus edulis*, G = digest of a sample prepared from adductor muscle of *Mytilus edulis*, similar to sample F). The study, which started in August 1985, included the analysis of 17 elements in sediments: Al, Si, Cr, Mn, Fe, Ni, Cu, Zn, As, Se, Cd, Sn, Sb, Hg, and Pb (Ag and Tl were optional); and the analysis of 11 elements in biological tissues: Cu, Zn, As, Cd, Hg, Pb, Cr, Fe, Ni, Mn, and Se. Four replicates were requested (Appendices B and C). The means, relative standard deviation RSD, and "Accepted Values" for this first round of exercises are given in Appendices A1 and A2. The results were discussed in December 1985 at the Gaithersburg, MD, workshop and later, in December 1986, at the Seattle, WA, workshop (Berman 1985/6, 1986).

Table 2. Samples used for the intercomparison exercises.

Sediments

Designation	Year	Description
A	1985	Sediment from the East Coast of Canada
B	1985	Sediment from the East Coast of Canada
C	1985	Sediment from the East Coast of Canada
D	1985	Sediment from the East Coast of Canada
H	1987	Sediment from the Gulf of St. Lawrence
I	1987	Sediment from a Nova Scotian Harbor
J	1987	Digest of sample similar to sample "I"
Mess-1	1987	Certified sediment reference material
K	1989	Sediment from a core taken in Puget Sound
BCSS-1	1989	Certified sediment reference material
L	1990	Near shore sediment from the Beaufort Sea
M	1990	Calcareous sediment from San Antonio Bay (TX)
BCSS-1	1990	Certified sediment reference material

Tissues

E	1985	Dogfish liver
F	1985	Mussel tissue
G	1985	Digest of sample similar to sample "F"
K	1987	Cod liver
L	1987	Mussel tissue
M	1987	Digest of sample similar to sample "L"
DOLT-1	1987	Certified reference material - dogfish liver (unknown)
Oyster	1989	Composite of oyster tissues
Mussel	1989	Composite of mussel tissues
DOLT-1	1989	Certified reference material - dogfish liver (known)
CRM-6	1989	Certified reference material - mussel tissue
O	1990	Composite of oyster tissues collected in the Gulf of Mexico
DOLT-1	1990	Certified reference material - dogfish liver (known)

2) The second intercomparison exercise took place in 1987. The samples, distributed in January 1987, included two unknown sediment samples (H and I), one solution prepared after digestion of sample I (J), the certified marine sediment MESS-1, three biological substances (K=cod liver powder; L=adductor muscle of *Mytilus edulis*; M=solution prepared after digestion of sample L), and the certified reference material known as DOLT-1.

For the sediments, six replicates were required for 14 elements: Al, Cr, Mn, Fe, Ni, Cu, Zn, As, Se, Ag, Cd, Sn, Hg, and Pb. Analyses for Si, Sb, and Tl were optional.

For the biological tissues, participants were required to perform six replicate analyses of each sample for 12 elements: Cr, Fe, Ni, Cu, Zn, As, Se, Ag, Cd, Sn, Hg and Pb. Analyses for Al, Si, Mn, Sb and Tl were optional (Appendices B and C). The results (Appendices A1and A2) were discussed at the 1987 Gaithersburg, MD, workshop and at the 1988 Duxbury, MA, workshop (Berman, 1987a, b).

3) The third intercomparison exercise took place in 1988 and 1989. For this exercise, only one sediment sample (K) was sent to each participant. In addition, the laboratories were required to analyze the marine sediment reference material known as BCSS-1. Two samples of shellfish biological material ("Oyster" and "Mussel") were sent to the laboratories. These samples were composites of the material collected during NOAA Mussel Watch Project sampling trips for the NIST National Biomonitoring Specimen Bank. The material was cryogenically homogenized, stored at liquid nitrogen temperatures (-195°C) and transferred to precleaned Teflon jars. In addition, the certified mussel reference material, CRM-6, or the dogfish liver reference material, DOLT-1, had to be analyzed.

For the sediments, participants were required to perform five replicate analyses of each sample for 13 elements: Al, Cr, Fe, Ni, Cu, Zn, As, Se, Ag, Cd, Sn, Hg and Pb. Analysis of Si, Mn, Sb, and Tl was optional. For the biological tissues, five replicate analyses for 14 metals (Al, Cr, Mn, Fe, Ni, Cu, Zn, As, As, Se, Ag, Cd, Sn, Hg and Pb) were requested (Appendices B and C). The results of this exercise (Appendices A1 and A2) were presented at a workshop in College Station, TX, in October 1989 (Berman, 1989 a, b) .

4) The fourth intercomparison exercise took place in 1990. For this exercise, the participants were required to analyze two sediment samples (L, M) in addition to the reference material BCSS-1, and one oyster tissue sample (O), plus the reference material DORM-1. Participants were required to perform five replicate analyses of each sample and reference material for 11 metals in the sediments (Al, Cr, Fe, Cu, Zn, As, Se, Cd, Sn, Hg, and Pb; with Si, Mn, Sb and Tl optional) and twelve metals (the same suite of elements plus Ag) in the biological tissues (Appendices B and C). The results (Appendices A1 and A2) were presented and discussed at Sequim, WA, during the annual QA meeting (Berman, 1990).

II. Analytical Techniques

Over the years, the various laboratories have used different analytical methods (Appendices B and C). The techniques most widely used are based on Atomic Absorption Spectroscopy (AAS) and include: Flame Atomic Absorption Spectroscopy (FAAS), often used in the analysis of Cu, Fe, Mn or Zn; Graphite Furnace Atomic Absorption Spectroscopy (GFAAS), generally used for As, Ni, Pb, Sb, Se, Sn; Hydrite Generation Atomic Absorption Spectroscopy (HGAAS), used exclusively for As, Se, Sn; and Cold Vapor Atomic Absorption Spectroscopy (CVAAS), used only for Hg. For these techniques, the sample must be completely digested beforehand. A mixture of hydrochloric (HCl), nitric (HNO_3), and hydrofluoric (HF) acids are generally used to dissolve sediment samples, whereas HNO_3 and perchloric acid ($HClO_4$) are used for dissolution of biological tissues.

Some other techniques, such as Instrumental Neutron Activation Analysis (INAA), were used in 1985 by Texas A&M University (TAMU) for Al, Cr, Fe, Mn, Ni, Sb, Se, and Sn, and by Battelle Northwest (BNW) for Sb. X-Ray Fluorescence (XRF) was used exclusively by BNW for Al, As, Cr, Fe, Mn, Ni, Pb, Se, Si, and Zn. Both INAA and XRF are nondestructive and do not require dissolution of the sample. In 1990, BNW often replaced XRF analysis with Inductively Coupled Plasma Mass Spectrometry (ICP-MS). In their analysis of the samples distributed to the participant laboratories for the exercises, NRC Canada has used, in some cases, the Inductively Coupled Plasma Atomic

Emission Spectrometry (ICPAES) technique to analyze Ag, Al, Cr, Cu, Fe, Mn, Ni, Pb, Zn and whenever possible, Isotope Dilution Inductively Coupled Plasma Mass Spectrometry, which can be a definitive method for analysis. Finally, Si was often analyzed by Colorimetry (SAIC and TAMU). These last three techniques required complete dissolution of the samples. A document giving the details of all techniques used by the NS&T laboratories since 1984 is presently in preparation.

III. Results

The accuracy of the results obtained from 1985 through 1990 in the QA Program are summarized in Appendix A3 for sediments and A5 for biological tissues. Results for precision are summarized in Appendix A4 for sediments and A6 for biological tissues. For accuracy, the difference between the mean laboratory results (i.e., analyzed samples giving quantifiable results above the detection limits) and the "Accepted Values" is expressed as a percentage. These results are further divided into four categories: 0 to 10%, 10 to 20%, 20 to 30%, > 30%). For precision, the categories are based on the % RSD (categories: 0 to 10%, 10 to 20%, 20 to 30%, > 30%).

For most of the elements analyzed in the NS&T Program, the category less than 10% is an achievable goal and is our targeted objective for both accuracy and precision. However, for some elements, such as Hg, the concentration in the intercomparison sample was so low that a precision or accuracy of 10% was very difficult, if not impossible, to achieve.

The percentage of samples falling in the categories 0-10%, 0-20% and 0-30% is shown in Figures 1 (a-d), 2 (a,d), and 3 (a,d) respectively. In an effort to follow the evolution over time of the laboratories analytical capability, identical calculations were performed year by year for the samples falling in the 0-10% category (Figs. 4 and 5).

Finally, the figures from Appendix D present the results obtained for sediments and the biological tissues by all NS&T laboratories, for all samples analyzed since 1985, normalized to their respective "Accepted Value." Precision of the measurements is displayed on these plots.

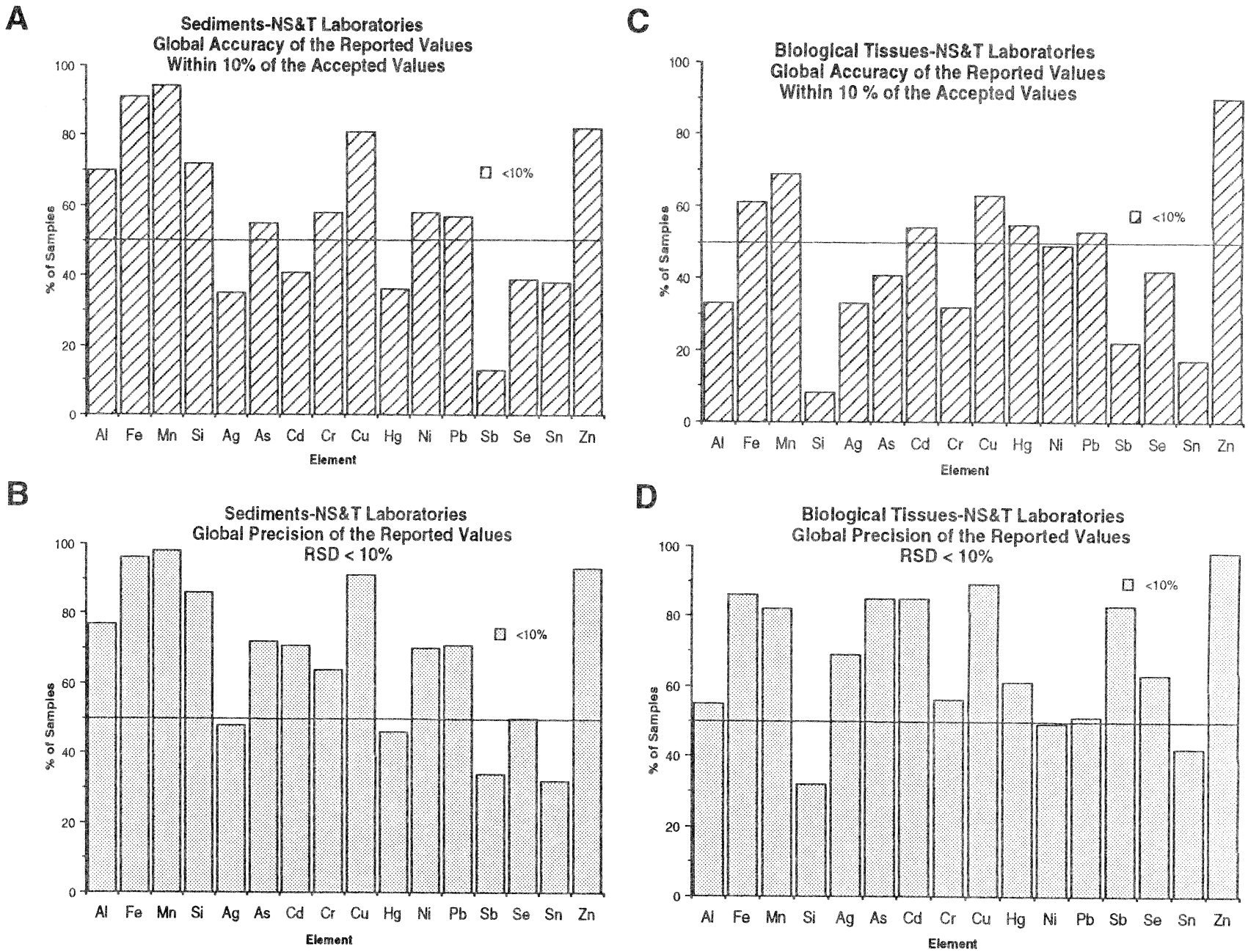

A
Sediments-NS&T Laboratories
Global Accuracy of the Reported Values
Within 10% of the Accepted Values
% of Samples
<10%
Al Fe Mn Si Ag As Cd Cr Cu Hg Ni Pb Sb Se Sn Zn
Element
B
Sediments-NS&T Laboratories
Global Precision of the Reported Values
RSD < 10%
% of Samples
<10%
Al Fe Mn Si Ag As Cd Cr Cu Hg Ni Pb Sb Se Sn Zn
Element
C
Biological Tissues-NS&T Laboratories
Global Accuracy of the Reported Values
Within 10 % of the Accepted Values
% of Samples
<10%
Al Fe Mn Si Ag As Cd Cr Cu Hg Ni Pb Sb Se Sn Zn
Element
D
Biological Tissues-NS&T Laboratories
Global Precision of the Reported Values
RSD < 10%
% of Samples
<10%
Al Fe Mn Si Ag As Cd Cr Cu Hg Ni Pb Sb Se Sn Zn
Element

Figure 1

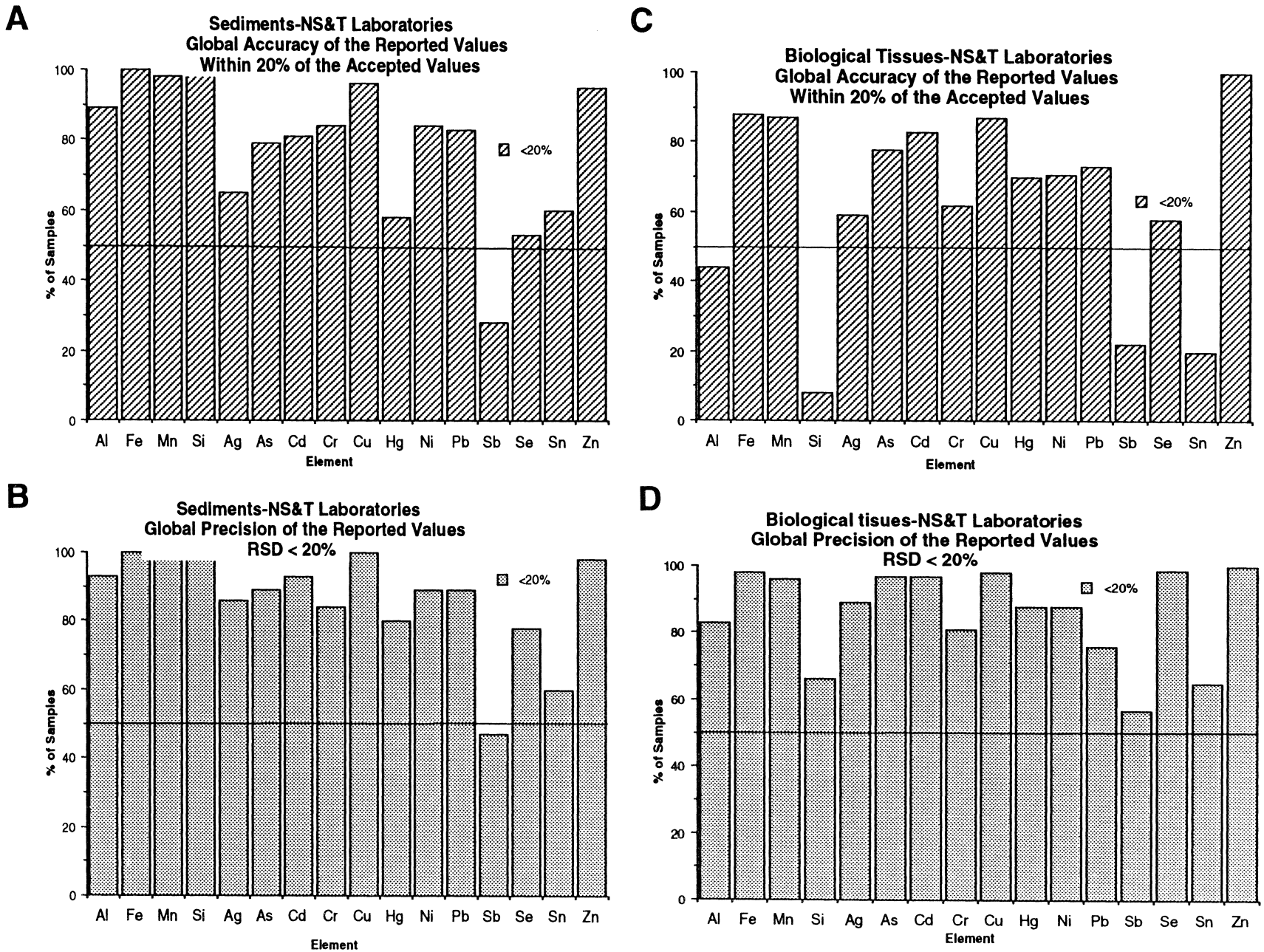

A
Sediments-NS&T Laboratories
Global Accuracy of the Reported Values
Within 20% of the Accepted Values
% of Samples
Element
<20%
B
Sediments-NS&T Laboratories
Global Precision of the Reported Values
RSD < 20%
C
Biological Tissues-NS&T Laboratories
Global Accuracy of the Reported Values
Within 20% of the Accepted Values
D
Biological tisues-NS&T Laboratories
Global Precision of the Reported Values
RSD < 20%
Al Fe Mn Si Ag As Cd Cr Cu Hg Ni Pb Sb Se Sn Zn
0 20 40 60 80 100

Figure 2

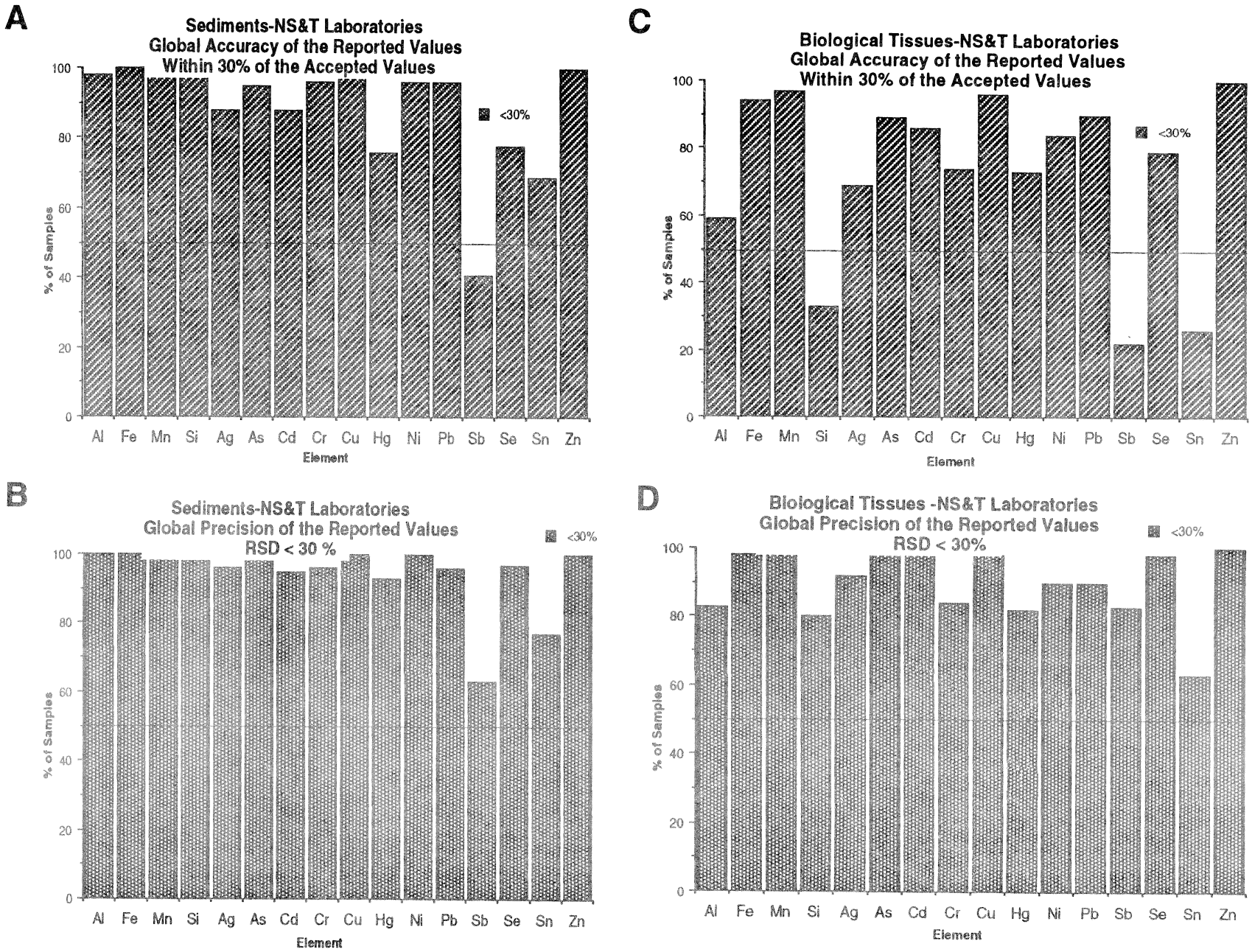
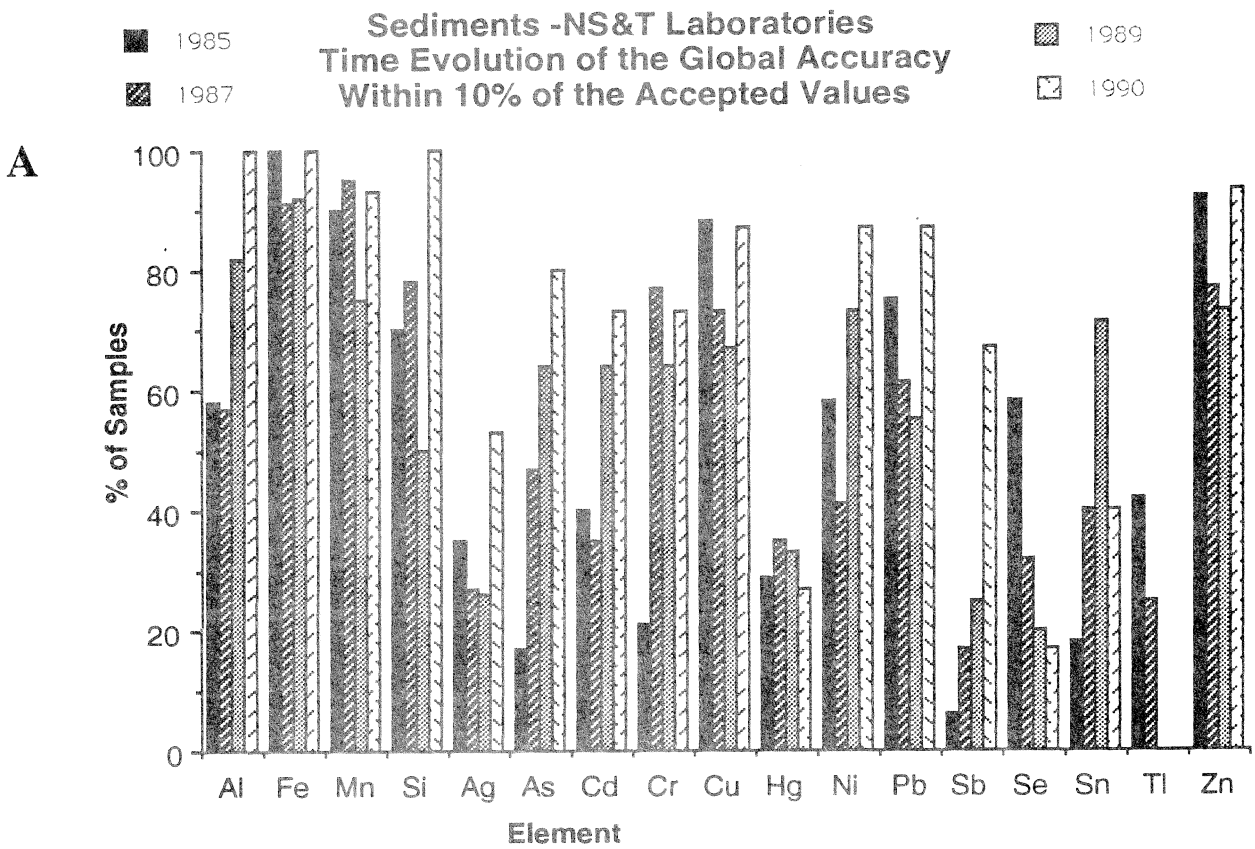

A
Sediments-NS&T Laboratories
Global Accuracy of the Reported Values
Within 30% of the Accepted Values
<30%
% of Samples
Element
Al Fe Mn Si Ag As Cd Cr Cu Hg Ni Pb Sb Se Sn Zn
B
Sediments-NS&T Laboratories
Global Precision of the Reported Values
RSD < 30 %
<30%
% of Samples
Element
Al Fe Mn Si Ag As Cd Cr Cu Hg Ni Pb Sb Se Sn Zn
C
Biological Tissues-NS&T Laboratories
Global Accuracy of the Reported Values
Within 30% of the Accepted Values
<30%
% of Samples
Element
Al Fe Mn Si Ag As Cd Cr Cu Hg Ni Pb Sb Se Sn Zn
D
Biological Tissues -NS&T Laboratories
Global Precision of the Reported Values
RSD < 30%
<30%
% of Samples
Element
Al Fe Mn Si Ag As Cd Cr Cu Hg Ni Pb Sb Se Sn Zn

Figure 3


A
Sediments -NS&T Laboratories
Time Evolution of the Global Accuracy
Within 10% of the Accepted Values
1985
1987
1989
1990
% of Samples
0
20
40
60
80
100
Al Fe Mn Si Ag As Cd Cr Cu Hg Ni Pb Sb Se Sn Tl Zn
Element

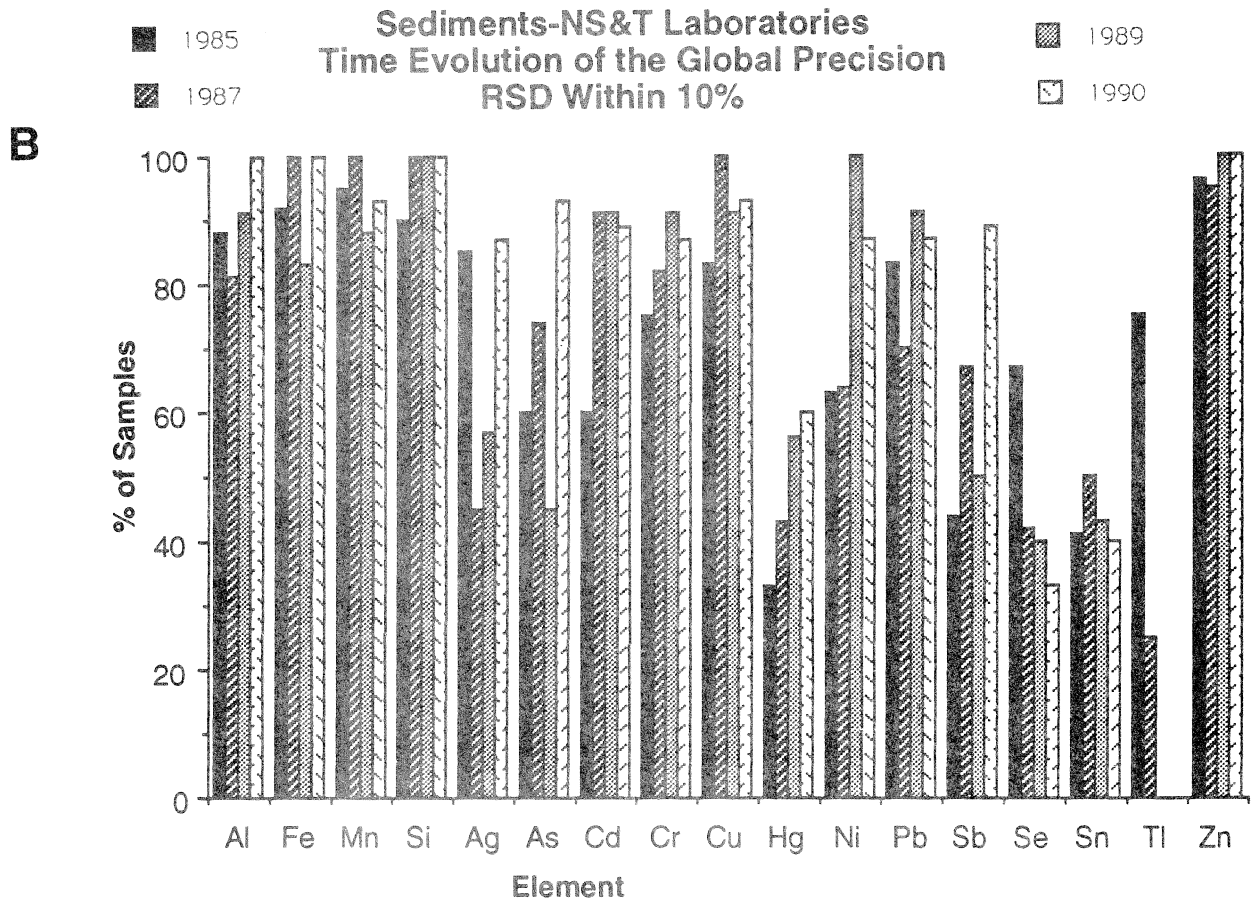
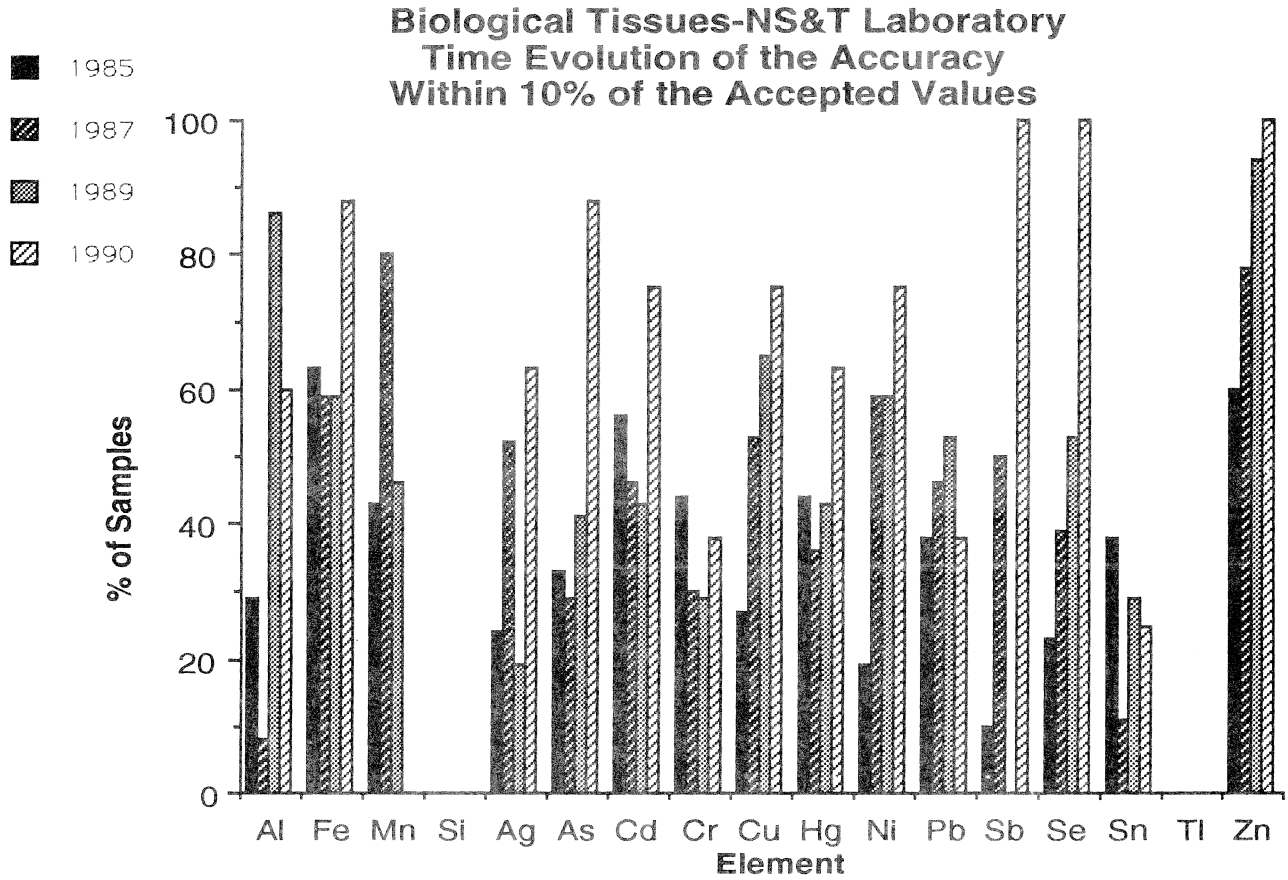

B
Sediments-NS&T Laboratories
Time Evolution of the Global Precision
RSD Within 10%
1985
1987
1989
1990
% of Samples
0
20
40
60
80
100
Al Fe Mn Si Ag As Cd Cr Cu Hg Ni Pb Sb Se Sn Tl Zn
Element

Figure 4

A


Biological Tissues-NS&T Laboratory
Time Evolution of the Accuracy
Within 10% of the Accepted Values
1985
1987
1989
1990
% of Samples
0
20
40
60
80
100
Al Fe Mn Si Ag As Cd Cr Cu Hg Ni Pb Sb Se Sn Tl Zn
Element

B

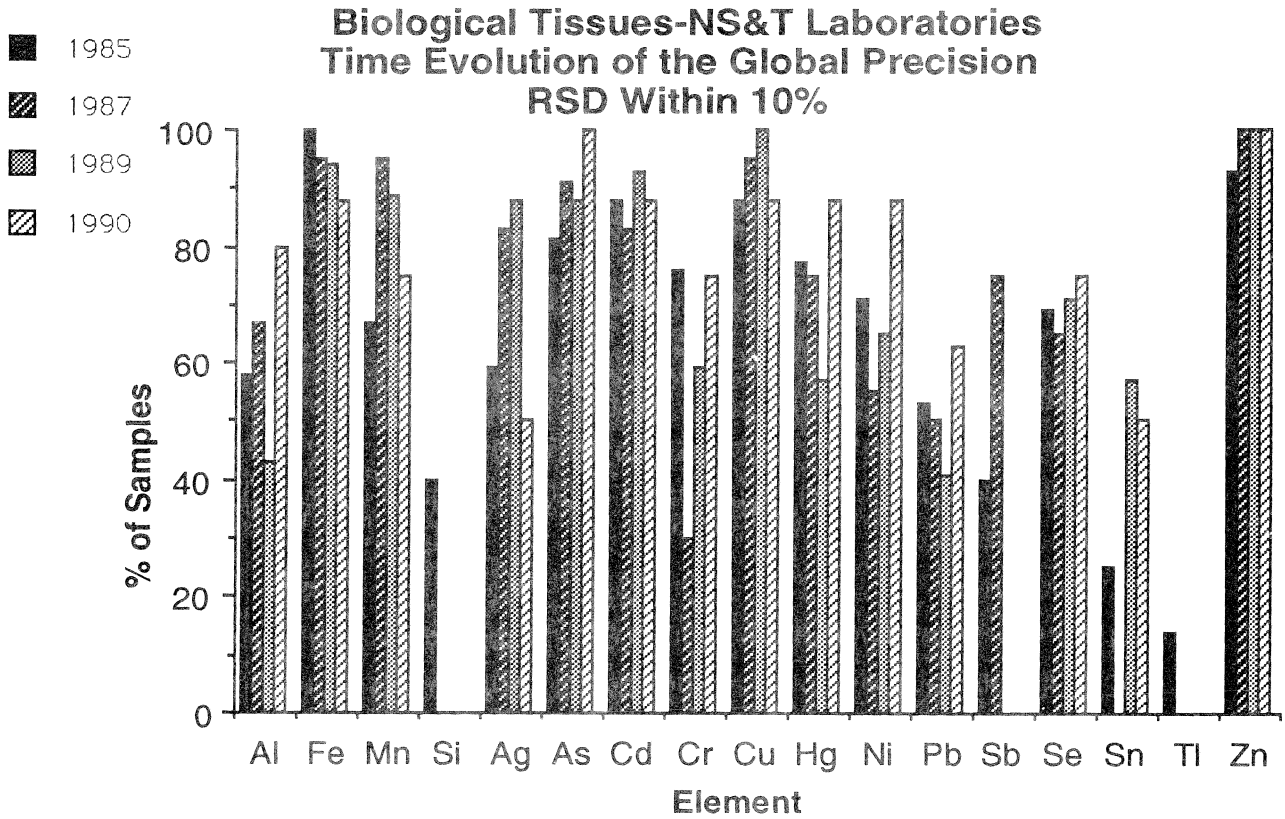

Biological Tissues-NS&T Laboratories
Time Evolution of the Global Precision
RSD Within 10%
1985
1987
1989
1990
% of Samples
0
20
40
60
80
100
Al Fe Mn Si Ag As Cd Cr Cu Hg Ni Pb Sb Se Sn Tl Zn
Element

Figure 5

The analysis of thallium was abandoned after 1987 because of the very low concentrations reported in natural samples. Consequently, this element is generally not considered in the following discussion.

Some problems were associated with samples G (1985, biological tissue), M (1987, biological tissue), and J (1987, sediment). These samples were solutions prepared after dissolution of samples similar to F, L, and I, respectively. Good interlaboratory agreement was expected for samples requiring little or no preparation prior to analysis. In fact, most of the laboratories reported data far from the Accepted Values. This lack of agreement was attributed to conservation problems during shipping of the samples from NRC to the laboratories, as opposed to analytical problems. For this reason, these samples are omitted in most of the following interpretations.

1) Marine Sediments

Accuracy

For 10 out of 16 elements analyzed in the sediments, the accuracy of more than half of the results falls into the 0 to 10% category (Figure 1a). For five elements - Ag, Cd, Hg, Se, and Sn - more than half of the results fall outside this desired category but are within the category, where the difference is less than 20% (Figure 2a). For the element Sb it is necessary to include differences up to 30% to account for more than half of the cases (Figure 3a).

Precision

For 12 elements analyzed in the sediments, RSDs were equal or less than 10% in at least half of the cases (Figure 1b). Ag, Hg, and Sn can be measured with an RSD less than 20%. Only for Sb is the precision often close to or greater than 30%.

Temporal evolution

Year to year, the samples are different and not always comparable, making temporal trends difficult to extract from the data. In addition, only four rounds of intercomparison exercises took place between 1985 and 1990, and each year a very small number of samples is analyzed. Consequently, the temporal trends reported here are merely an indication of the evolution in the analytical

capabilities of the laboratories. Only the elements displaying a constant increase or decrease over the years will be discussed.

It is obvious that the NS&T laboratories, taken as a whole, have generally improved their analytical capabilities for sediments between 1985 and 1990 (Figure 4a and b). This is especially true for the accuracy of Al, As (Figure 6), and Sb and for the precision of Si, Cd, and Hg. Samples of these elements are showing up in the targeted category in increasing percentages. Se is the only element for which both accuracy and precision have declined for all NS&T laboratories over the five-year period (Figure 4a and b).

2) Biological Tissues

Accuracy

Biological tissues are generally more difficult to analyze than sediments. This is reflected in the fact that for only seven elements - Fe, Mn, Cd, Cu, Hg, Pb, and Zn - do more than half of the results have an accuracy falling within 10% of the "Accepted Value" (Figure 1c). At least half of the data for five other elements - Ag, As, Cr, Ni, and Se - fall within the 20% category (Figure 2c). For Al, half of the reported values were within 30% of the "Accepted Value," but not even this level of accuracy was achieved for Si, Sb, and Sn (Figure 3c).

Precision

Only for Si and Sn is the RSD greater than 10% (Figure 1d; 2d; 3d).

Temporal evolution

The time evolution of the results obtained for biological tissues is generally noisy (Figs. 5a and 5b). Some general improvement in the accuracy of the analysis of As, Cu, Ni, Sb, Se, and Zn (Figure 7), and of the precision of As and Zn, are the only clear signals. Fe is the only element for which precision has decreased over the years.

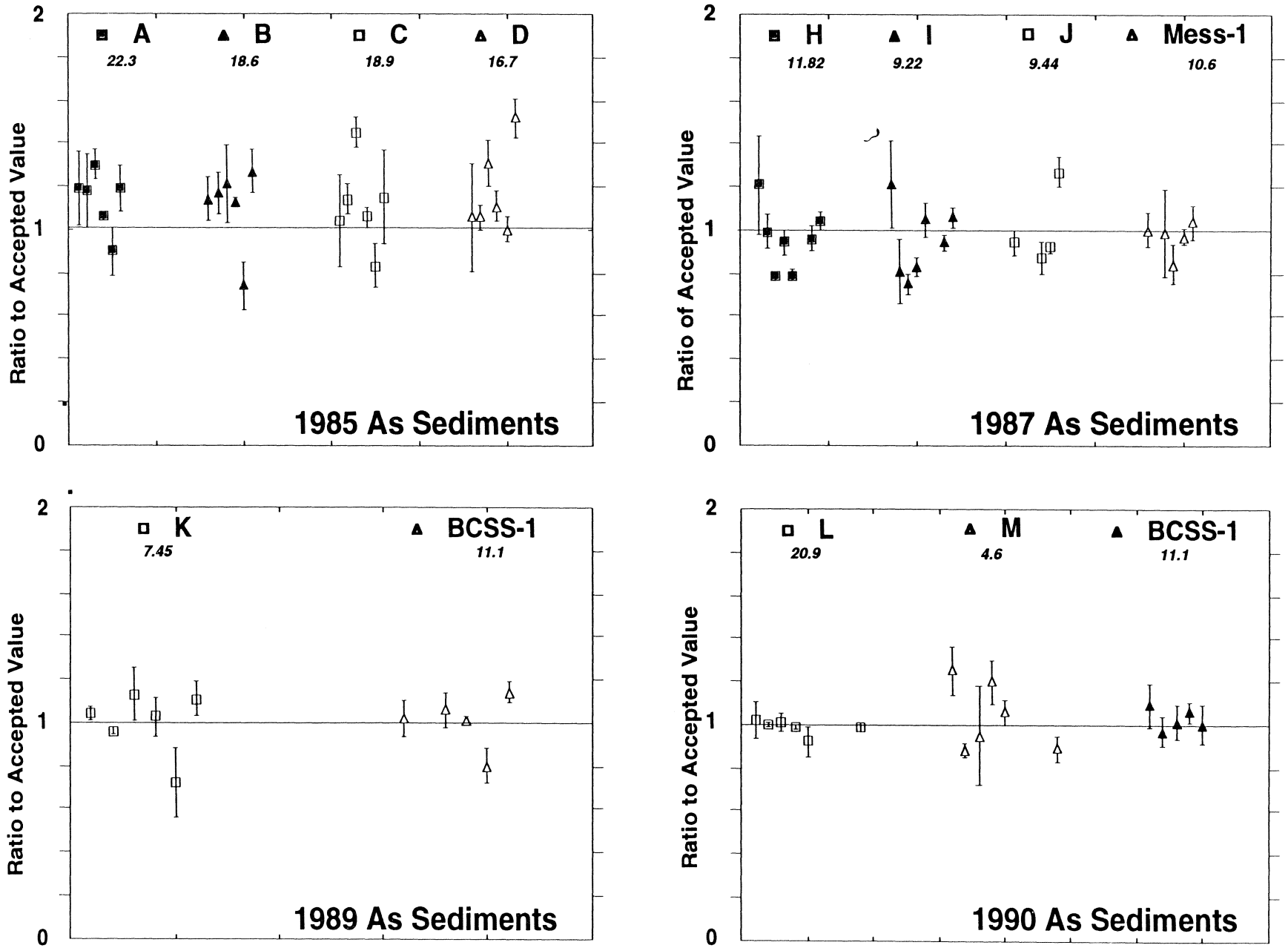

A
22.3
B
18.6
C
18.9
D
16.7
Ratio to Accepted Value
1985 As Sediments
H
11.82
I
9.22
J
9.44
Mess-1
10.6
Ratio of Accepted Value
1987 As Sediments
K
7.45
BCSS-1
11.1
Ratio to Accepted Value
1989 As Sediments
L
20.9
M
4.6
BCSS-1
11.1
Ratio to Accepted Value
1990 As Sediments
0
1
2

Figure 6

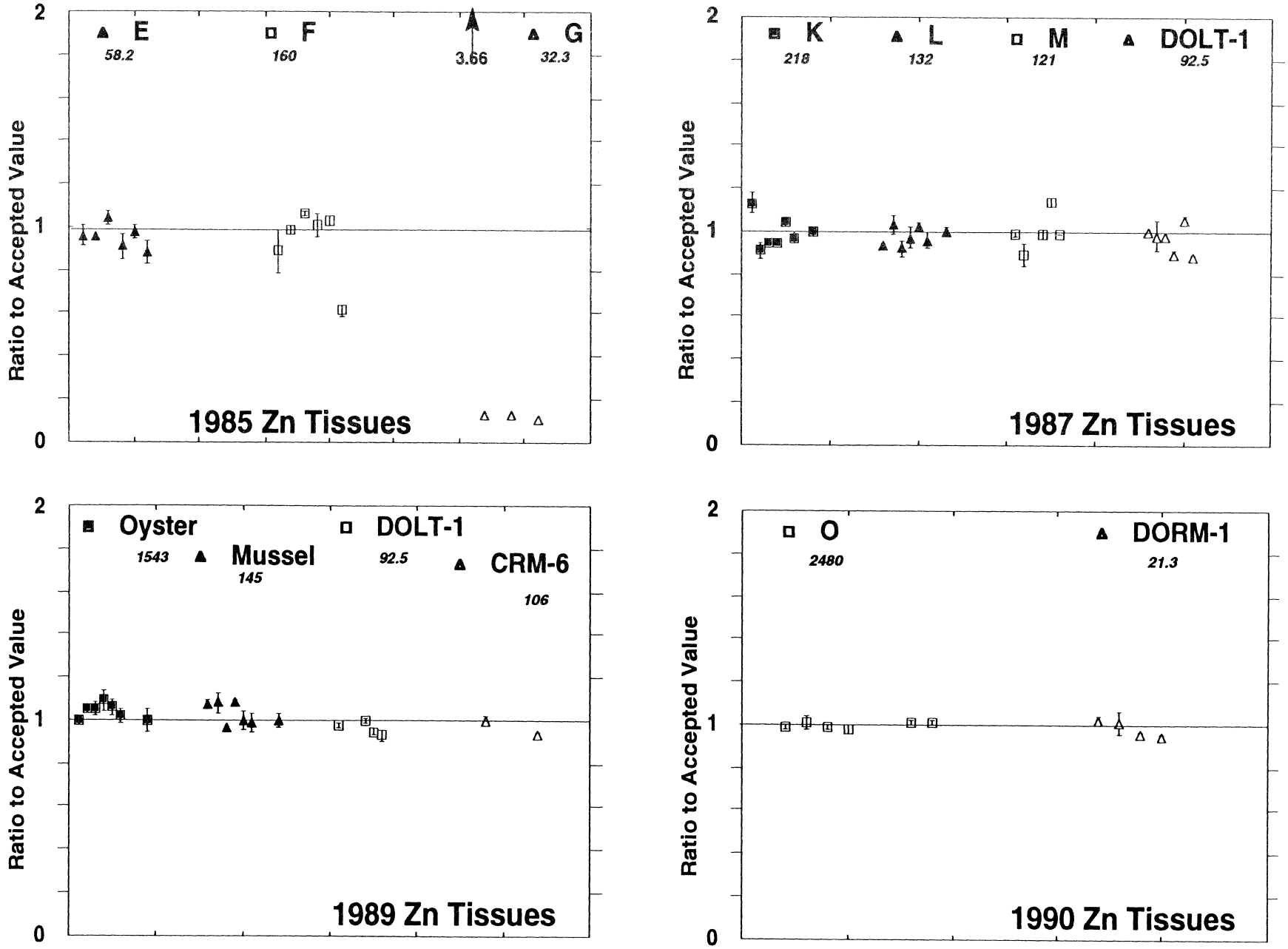

Ratio to Accepted Value
2
1
0
E
58.2
F
160
3.66
G
32.3
1985 Zn Tissues
K
218
L
132
M
121
DOLT-1
92.5
1987 Zn Tissues
Oyster
1543
Mussel
145
DOLT-1
92.5
CRM-6
106
1989 Zn Tissues
O
2480
DORM-1
21.3
1990 Zn Tissues

Figure 7

Table 3: Summary of the elements considered as problem elements (i.e. with less than 50% of the reported values within the 0-10% category)

	SEDIMENTS		BIOLOGICAL TISSUES		BOTH MATRICES	
Category	Accuracy	Precision	Accuracy	Precision	Accuracy	Precision
>10%	**Ag**,Cd, **Hg**,**Sb**, Se,**Sn**	**Ag**,**Hg**,**Sb**, **Sn**	Al,**Si**,Ag, As,Cr, Sb, Se,**Sn**	**Si**,**Sn**	Ag,Sb Se,**Sn**	**Sn.**

* Elements in bold type are those with analytical problems for both accuracy and precision.

From this study, it appears that when dealing with sediments, most of the analyzed elements are found in the 0 to 10% category. However, the accuracy and precision of the data reported by all the NS&T laboratories for Ag, Hg, Sb, and Sn are greater than 10%, being most of the time within 20 to 30 % accuracy and precision (Table 3).

When dealing with biological tissues, most of the elements fall in the targeted category, except for the accuracy and precision of the values reported for Si and Sn, which are generally greater than 20%. In the case of Si, they can exceed 30% (Table 3).

The difficulty in analyzing Sn is common to both matrices (Table 3).

IV. Discussion

1) Factors Influencing the Quality of the QA Data

Most of the data reported by the NS&T Laboratories for the NS&T QA Program and presented here are of good quality compared to what is generally reported for similar exercises (Robertson et al., 1974; Topping, 1983; Berman and Boyko, 1985a and b; Berman and Boyko, 1987; Berman, 1987). However, when describing the results, a few problems have been mentioned. Aside from laboratory experience, several factors can contribute to the observation that inaccuracies and precision were greater than 10% for some metals. These factors include: (1) the representativeness of the "Accepted Value" used to

compare the data, (2) the role of detection limits and concentration of the elements in the analyzed samples, (3) the technique used for the determination, and/or (4) some analytical weakness of a given laboratory for a given element or for a given sample.

1-1. Representativeness of the "Accepted Value"

The "Accepted Value" is used to establish the various categories (Appendices A3 and A5), shown in Figures 6 and 7 and in Appendix D. Since all of the "Accepted Values" do not have the same weight, these results have to be used with caution. The "Accepted Values" based on Certified Reference Materials are well-known values obtained by more than one technique by NRC Canada. However, since the laboratories know the results in advance, their use is limited. The ICES "Accepted Values" are consensus values based on a very large number of results obtained by U.S. and European laboratories. These are very useful data but they exist only for the biological tissues. The "Accepted Values" based on the NRC results are noncertified values generally obtained by two different methods, however, analytical errors cannot be completely ruled out. Finally, the last category of "Accepted Values" is based on the consensus values calculated, after removing the outliers, from the data reported by all of the laboratories participating in the QA Program. These values may be imprecise estimates based on disparate results from a few laboratories. Nevertheless, these values provide a basis for judging how well the laboratories compare with each other. The QA Program's recent inclusion of a greater number of participants (40) may help to improve the reliability of the consensus values.

1-2. Role of Detection Limits and Concentration in the QA Samples

In Figures 8a and 8b, the geometric means, the "high values," and the detection limits reported by each laboratory for all of the elements analyzed in the NS&T field samples for sediments and bivalve tissues (O'Connor 1989 and 1991) are compared to the range of concentrations observed in the QA samples.

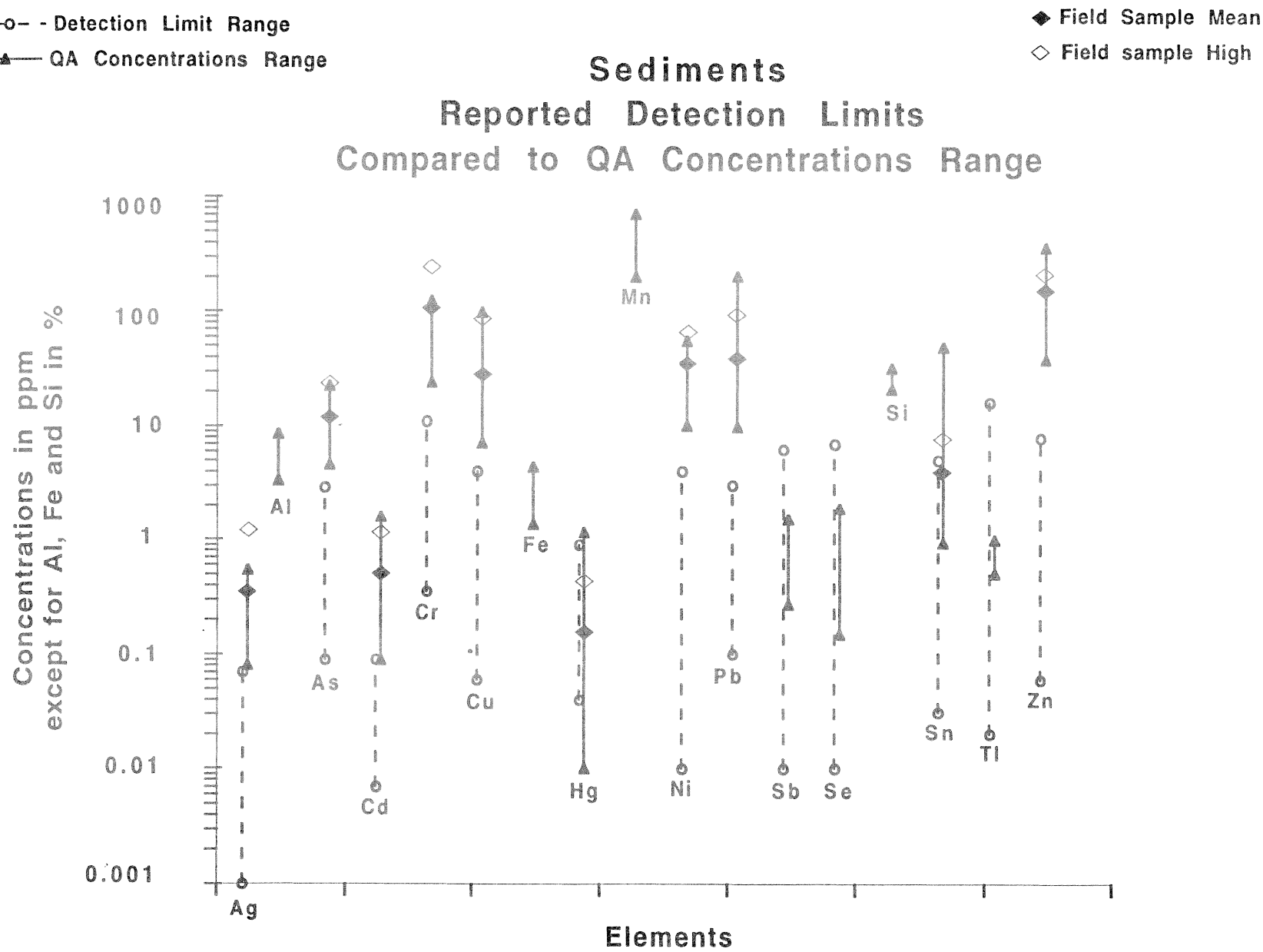

- -o- - Detection Limit Range
—▲— QA Concentrations Range
◆ Field Sample Mean
◇ Field sample High
Sediments
Reported Detection Limits
Compared to QA Concentrations Range
Concentrations in ppm
except for Al, Fe and Si in %
1000
100
10
1
0.1
0.01
0.001
Ag
Al
As
Cd
Cr
Cu
Fe
Hg
Mn
Ni
Pb
Sb
Se
Si
Sn
Tl
Zn
Elements

Figure 8a

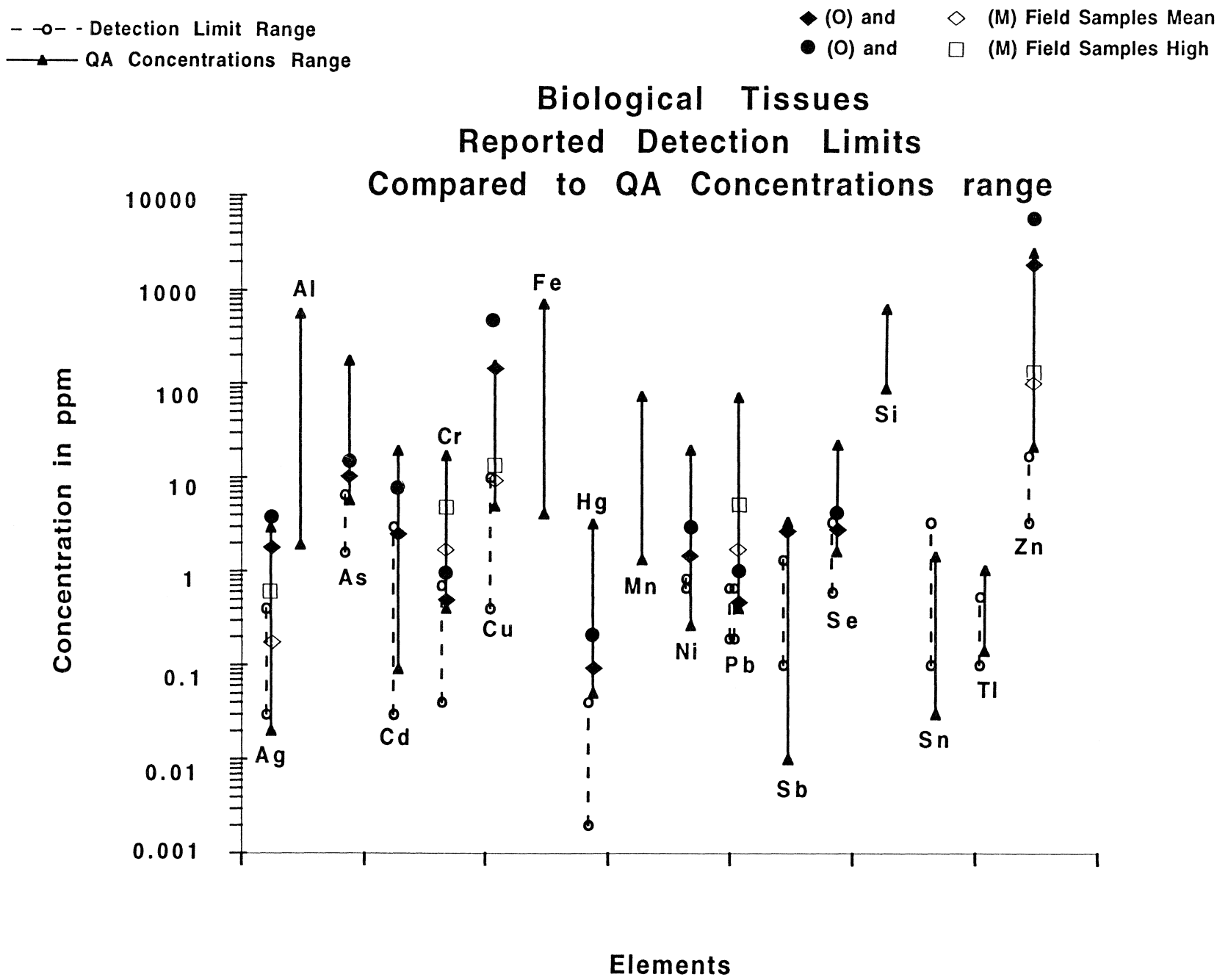

Detection Limit Range
QA Concentrations Range
(O) and
(O) and
(M) Field Samples Mean
(M) Field Samples High
Biological Tissues
Reported Detection Limits
Compared to QA Concentrations range
Concentration in ppm
10000
1000
100
10
1
0.1
0.01
0.001
Ag
Al
As
Cd
Cr
Cu
Fe
Hg
Mn
Ni
Pb
Sb
Se
Si
Sn
Tl
Zn
Elements

Figure 8b

For Hg, Sb, Se, and Sn in sediments, the "Accepted Values" for the QA exercise samples are either lower or within the range of the reported detection limits. For most of the elements, except Hg and Zn, the QA data for the biological tissues are also often below or within the range of the reported detection limits. In addition, for Sn, the highest concentrations are always lower than the reported detection limits. This can explain why some of these elements were reported in the QA exercises with poor precision and accuracy, and why biological tissues are more difficult to analyze than sediments.

None of this affected the results if the reported concentration for an intercomparison sample was "not detected." Such results did not contribute to overall assessments of accuracy or precision. However, whenever a laboratory extended its methodology to quantify such low concentrations, inaccurate results can be expected. The choice of low concentration samples was dictated by the laboratories' desire to test and improve their analytical capabilities.

The results of the QA exercises show that the NS&T laboratories encountered major problems with the analysis of Ag, Sn, Se, Hg, Sb, and Si. These elements are, in general, difficult to analyze. Furthermore, the difficulty increases for biological tissues due to the low concentration of most of these elements. For example, Sn ranges from 0.93 to 48.7 ppm in sediment samples, but from only 0.03 to 1.44 ppm in biological tissues (Appendix A1, A2). Often, these concentrations are either close to or below the reported detection limits.

In order to evaluate the influence of elemental concentrations in QA samples on the quality of the reported data, correlation coefficients (CC) were calculated between reported RSDs and "Accepted Values" of all samples, as well as the absolute value of the analytical biases of the laboratories (defined as the % departure from the "Accepted Value") versus the "Accepted Values" (Appendix A7 and Figs. 9a-d). When all of the laboratories are considered together few, significant correlations for RSD are observed at the 95% confidence level (for n=50, $|CC|>0.27$). This is due, in part, to the fact that CCs are often low for each laboratory when considered separately, but also to the fact that CCs are sometimes of opposite signs for the various laboratories (for example, the RSD for arsenic in sediments). Among the elements displaying a significant

correlation, most of them have a negative correlation, confirming the increased analytical difficulty at low concentration (for example, Se RSD in sediments or Cu in biological tissues - Figure 9 b). When considering each laboratory separately, few CCs are significant at the 95% confidence level (for n=8, ICCI>0.63). Here too, most of the significant CCs are negative (e.g., Se RSD in sediments for three laboratories out of five). Somewhat surprisingly, in a few cases the analytical precision was significantly worse at high concentrations (e.g. RSD increasing when "Accepted Value" increases; CC>0). This is the case for Cd RSD in sediments (Figure 9a). In most of the cases, the reason for this type of correlation is not obvious. However, sample dilution and nonhomogeneity in the samples certainly play an important role in these results.

It is generally understood that below a certain level, both accuracy and precision decrease with decreasing concentration. In this study, it appears that for accuracy, as with precision, only a few significant correlations exist. When a correlation does exist, it is generally negative (see Appendix , A7, Figs. 9c-d).

1-3. Role of the Analytical Method Used

Some differences between the results reported by the laboratories could be due to differences in the analytical techniques used. Some methods, such as XRF and INAA, have inherently higher detection limits and less precision than Atomic Absorption-Graphite Furnace. The detection limits reported for the analysis of Cr, Cu, and Ni in sediments and of As, Cu, Se, and Zn in biological tissues by XRF is often higher than those based on other techniques (See Appendices B and C; O'Connor, 1989a and b, 1991b). Similarly, the detection limits for the analysis of Sb using INAA is one order of magnitude greater than when using other techniques. While INAA was never used for field samples, the XRF method has been consistently used by one NS&T laboratory. However, in field samples, these elements were rarely below a detectable concentration.

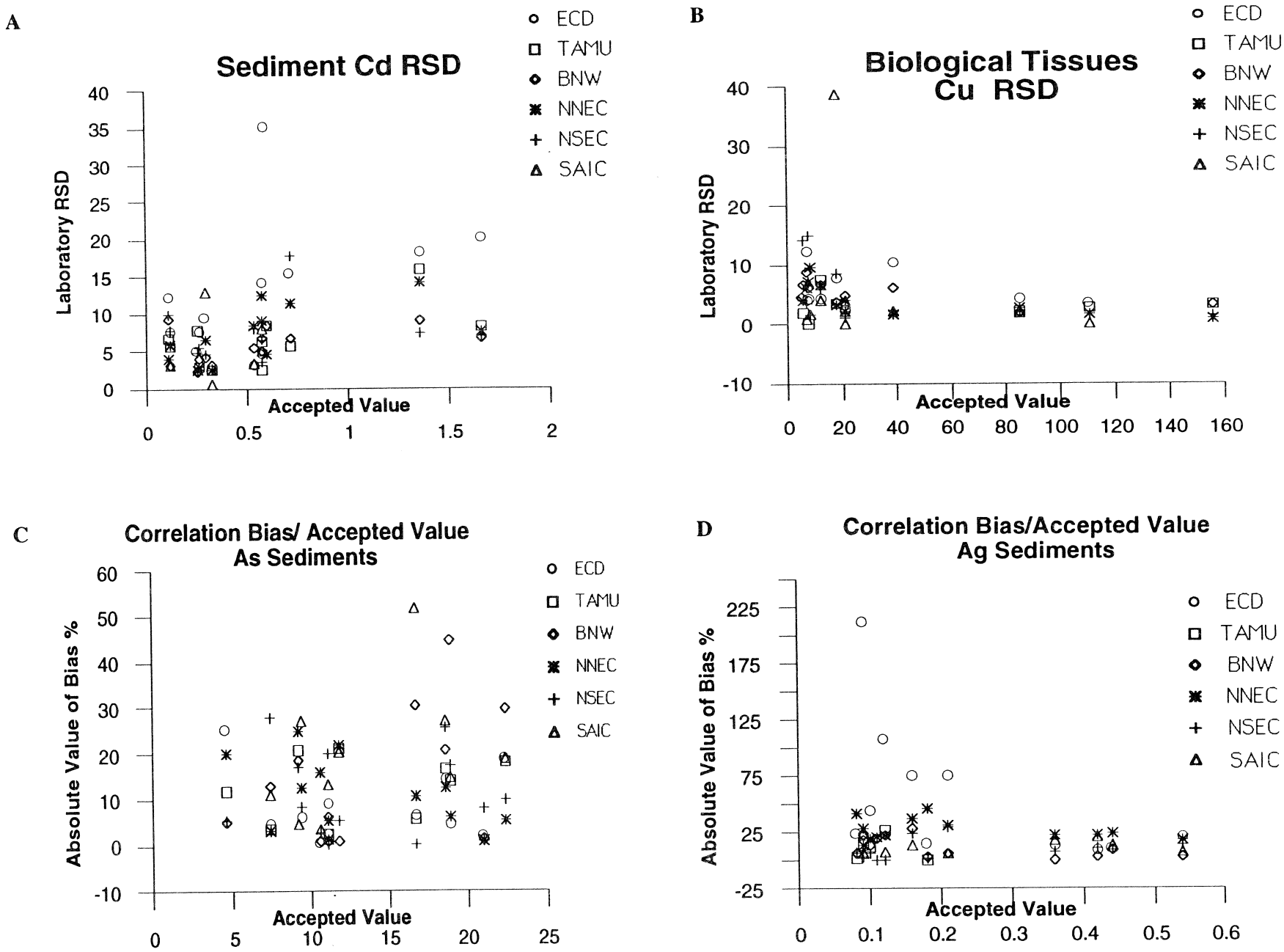

A
Sediment Cd RSD
Laboratory RSD
Accepted Value
ECD
TAMU
BNW
NNEC
NSEC
SAIC
B
Biological Tissues
Cu RSD
Laboratory RSD
Accepted Value
C
Correlation Bias/ Accepted Value
As Sediments
Absolute Value of Bias %
Accepted Value
D
Correlation Bias/Accepted Value
Ag Sediments
Absolute Value of Bias %
Accepted Value

Figure 9

2) Influence of Analytical Uncertainties on the Interpretation of Field Data

In the NS&T Program, the analysis of field samples collected in the coastal United States is divided between several laboratories. In 1985, six laboratories provided data to the Program. This number was reduced to five in 1990. It is therefore important to evaluate the influence of analytical uncertainties on the quality and comparability of NS&T field data. The sampling design generally consists of three stations per site, and at each station, the sediment or bivalve sample is a composite of three specimens.

In general, the concentration and matrix of the QA and NS&T field samples are relatively similar. In this case, the quality of the NS&T Program field data would not be expected to exceed the capability demonstrated in the intercomparison exercises, and the QA results can be used to indirectly obtain an idea about the quality of NS&T field measurements.

2-1. Precision

Within-site variability based on triplicate samples per year allows calculation of the total variability, including both environmental heterogeneity and analytical variability (Sokal and Rohlf, 1981; Gilbert, 1987; Mendenhall and Sincich, 1988; Miller and Miller 1988). Since the total variability has been previously estimated (O'Connor, 1991b) and assuming that the analytical ability of the NS&T laboratories is similar to that quantified here in the intercomparison exercises, then a rough estimate of the natural variability can be obtained (Table 4).

The total variability can be divided into its components thus:

$$S_T^2=S_L^2+S_N^2$$

where S_T^2=Total RSD

S_L^2=Laboratory RSD (mean of RSD for all samples analyzed in the QA Program)

S_N^2=Natural RSD

Table 4: Variability in chemical composition of the NS&T samples

(1) and (2) this report, (3) from O'Connor, 1989 a and b;

a)Sediments

Analyte	Overall coef Variation(3) S_T(%)	Laboratory Variation(1) S_L(%)*	Natural Variation(2) S_N(%)
Ag	35	25	25
As	30	23	19
Cd	29	16	24
Cr	26	13	23
Cu	22	11	19
Pb	24	12	21
Hg	42	38	19
Ni	24	13	20
Sb	46	37	27
Se	65	41	50
Sn	47	50	ε
Zn	20	5	19

b)Biological Tissues

Ag	39	16	36
As	19	16	10
Cd	22	15	16
Cr	37	18	33
Cu	22	10	20
Pb	36	14	33
Hg	31	30	7
Ni	30	15	26
Se	26	8	25
Sn	38	61	ε
Zn	22	5	21

*Values in this column were calculated excluding samples J (sediments) and G (biological tissues)

For example, if we accept that the overall coefficient of variation for Zn analysis of NS&T sediment samples is S_T= 20% (Table 4), and the analytical variability S_L= 5 % (this report), the natural variability, S_N, is:

$$S_N^2=400-25$$

$$S_N=19$$

Consequently, almost all of the variability observed for the analysis of Zn in sediments appears to be due to the natural variability (19%).

If we do the same calculations for Se, one of the most difficult elements to analyze in sediments, S_T=65% and S_L=41%, we obtain:

$$S_N^2=4225-1693$$

$$S_N=50$$

In this case, the variability observed in the field for Se (65%) is due almost equally to the analytical variability (41%) and the natural variability (50%).

From Table 4a, it appears that eight elements out of 12 display a natural variability equal to or greater than the analytical one.

The analytical variability of the remaining four elements, As, Hg, Sb, and Sn is greater than the natural variability with an extreme situation observed in the case of Sn. Except for Se, with its very high S_L, the calculated estimates of the natural variation in sediments for the remaining elements in Table 4a are all between 19 and 25%. Since small-scale environmental variability should be due to common processes, it is reasonable to expect an almost uniform set of S_N's.

The same information can be derived for the biological tissues. In Table 4b the overall coefficients of variation for the NS&T data are given (O'Connor, 1989) as well as the calculated analytical and natural variations. For most of the elements analyzed in the tissues, the laboratory variability is lower than the natural one. Three elements: As, Hg, and Sn show an analytical variability greater than the natural one. These are the same elements already cited in the case of the sediments. For the remaining elements, the S_N ranges from 16 percent to 36 percent. Compared to the sediments, this larger natural variability may reflect the interaction of biological and environmental processes.

2-2. Accuracy

Figures 6 and 7 and Appendix D display the spread among the values reported by the various laboratories.

The purpose of the NS&T field data is to detect spatial and temporal variations in the concentration of elements. Consequently, we need to provide threshold values (Table 5) to decide if the elemental concentrations at two sites are significantly different from each other. This is of special importance since up to six different laboratories have contributed data to the NS&T Program. In particular, the critical values , R_O , of the ratio $R=Y_i/Y_j$ of concentrations at sites i and j have been computed to detect those values that are significantly different from unity at the 95% confidence level (Sokal and Rohlf,1981; Gilbert, 1987; Mendenhall and Sincich, 1988; Miller and Miller, 1988).

In order to calculate these quantities, we take the estimated concentrations provided by the laboratories for a given element and assume that the ratio of these reported concentrations to the "Accepted Values," X_i , have a log-normal distribution (Figure 10). The random variable $x_i=log(X_i)$ is then normally distributed with a standard deviation, s, which can be estimated from the data after outliers have been removed.

If we define r as

$$r = log\ (R) = x_i - x_j\ (i \neq j)$$

then r possesses a standard deviation of

$$s_r = \sqrt{2}\ s.$$

Since the probability that the absolute value of r is greater than $t_{0.95\ (df)}\ \sqrt{2}\ s$ (where t is the t-test critical value and df the number of degrees of freedom, $df=n-1$) by chance alone is .05, then for sample numbers greater than 20, $t \approx 2$ and the corresponding value of R at the 95% confidence level is:

$$R_O = 10^{2s_r} = 10^{2\sqrt{2}\,s}$$

The use of this expression assumes that the means obtained from the field data possess the same number of degrees of freedom on average. This also

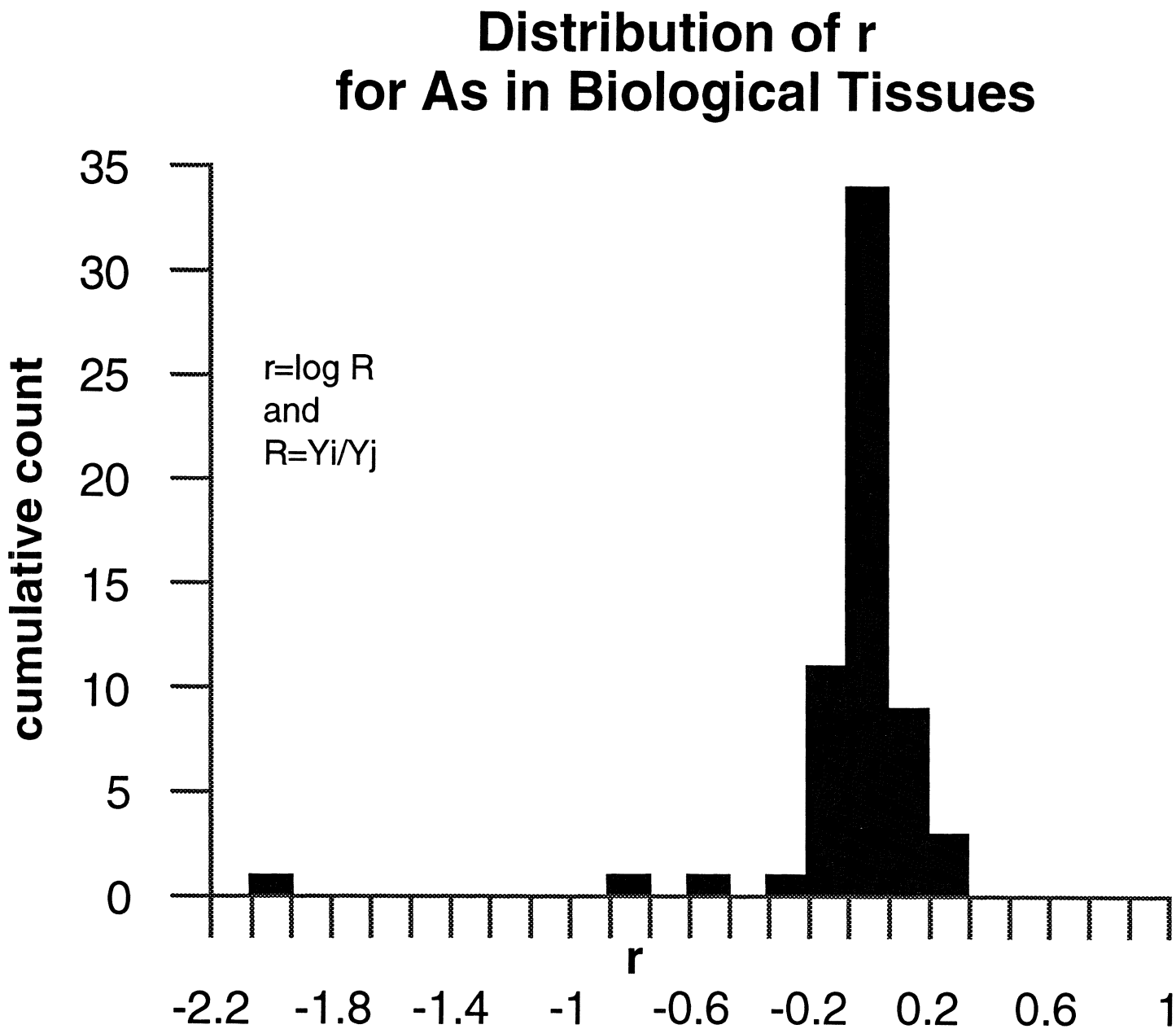

Distribution of r
for As in Biological Tissues
cumulative count
35
30
25
20
15
10
5
0
r=log R
and
R=Yi/Yj
r
-2.2
-1.8
-1.4
-1
-0.6
-0.2
0.2
0.6
1

Figure 10

assumes that the field data and QA data have the same statistical properties, and further, that the x_i 's are uncorrelated (Fig. 10).

Two concentrations can be declared different only when their ratio is at least greater than the *R* values listed in Table 5. For sediments, this ratio varies from 1.2 for Zn to 2.8 for Sb. For the biological tissues, this ratio varies from 1.3 for Zn to 162 for Sb. The highest critical values calculated are for Hg, Sb, and Sn in sediments and for Sb, Si, and Sn for biological tissues. This reinforces, once again, the fact that Sb and Sn are difficult elements to analyze and that the results obtained for these two analytes must be used with caution.

Table 5. Critical values of the ratio of two concentrations (at the 95% confidence level)

Chemical	Sediments					Biological Tissues				
Year	85	87	89	90	All	85	87	89	90	All
Ag	1.5	2.1	1.9	2.2	1.9	14.6*	2.0	2.0	2.8	2.6*
Al	1.4	1.9	1.3	1.1	1.5	2.7	3.7	1.3	1.6	2.4
As	1.6	1.5	1.6	1.3	1.5	6.6*	1.9	1.9	1.8	1.8*
Cd	1.6	2.2	1.4	1.4	1.7	1.6	2.1	1.4	1.3	1.7
Cr	2.0	1.3	1.4	1.7	1.6	1.9	1.7	2.2	1.5	1.9
Cu	1.2	1.4	1.3	1.4	1.3	1.8	1.4	1.3	1.4	1.4
Fe	1.1	1.2	1.2	1.1	1.2	1.7	1.6	1.4	1.3	1.5
Hg	1.5	5.8*	3.3	2.2	2.1*	2.1	2.7	2.0	1.6	2.3
Mn	1.2	1.2	1.7	1.1	1.3	1.4	1.3	1.6	2.0	1.4
Ni	1.5	1.5	1.4	1.3	1.5	3.1	1.5	1.7	1.3	1.8
Pb	1.5	1.7	1.5	1.4	1.5	2.1	2.1	2.2	2.1	2.0
Sb	3.6	3.3	2.6	1.6	2.8	137	39	-	-	162
Se	1.8	1.8	20*	2.1	1.9*	4.3	2.8	1.8	1.2	2.5
Si	1.2	1.2	1.5	1.2	1.3	25	-	-	-	25
Sn	40*	2.6	1.7	1.7	2*	4.3	14	60*	6.2	6*
Zn	1.2	1.2	1.3	1.2	1.2	1.6	1.2	1.1	1.1	1.3

Summaries over all years exclude years marked with an asterisk (*).

Conclusion

This report presents and discusses the results obtained in QA exercises by the laboratories contributing data to the NS&T Program. These laboratories are producing, in general, data with less than 10% inaccuracy and precision. The analytical precision gives rise to errors that are, in most cases, smaller than the natural variations observed in the field.

However, in some cases, the accuracy of the results reported by the laboratories for the same sample varies by at least a factor of two. The elements that are consistently the most difficult to analyze are Sb and Sn.

By participating in the QA exercises, the laboratories have improved their performance over the years as can be seen when comparing their present results with those from earlier years. In addition, compared to other laboratories recently involved in the QA Program (Willie and Berman, 1991), the NS&T laboratories produce data that are consistently more precise and accurate. Consequently, the NS&T laboratorie's ongoing participation in the intercomparison exercises is very important in insuring good quality and comparability of all data collected over the years. In addition, one other essential element that can insure good data input to the Program is the integration of a strong QA/QC program as an integral part of the field measurements.

Acknowledgments

This report was completed with the support of all of my NOAA colleagues. In particular, I want to thank all of the laboratories that contributed data to the QA project. When this summary began all results had to be tabulated by hand, an endeavor to which everyone contributed. I would especially like to thank Marie Gardella, Helen McMenamin, Charles Parker, James Price, Gunnar Lauenstein and Bernard Gottholm. Michele Harmon provided great help with correcting and formatting the data base. Thomas O'Connor participated in creating the summary tables in Appendices A3 and A5. I also wish to express my gratitude to Douglas Wolfe for his constant support and for taking the time to discuss and comment on this work. It was after extended discussions with Carol Ann Manen

that I was able to reconstruct the history of the program; in addition, she reviewed the manuscript and made many useful suggestions. I also appreciated the advice I received from Shier Berman (NRC Canada), Rennie Parris, Robert Watters, and Keith Eberhardt (all from NIST), and Paul Silver (DTM, Carnegie Institution), all of whom helped to verify the statistical treatment of the data. Many thanks to Andrew Robertson who reviewed this manuscript and to Kevin McMahon, who edited several versions of the manuscript. The NS&T laboratories were extremely helpful in verifying the data and reviewing the manuscript. Finally, I want to thank everyone who edited, reviewed, or contributed to this report.

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Figure Captions

Figures 1 through 5 are histograms of frequency showing on the vertical axis the percentage of samples analyzed between 1985 and 1990 falling in a given category for each analyte placed on the horizontal axis.

Figure 1: **A - Top left:** Percentage of the sediments samples for which the accuracy of the analysis falls in the 0-10% category. **B - Bottom left**: Same for precision. **C and D - Right:** Respectively display the same information for biological tissues.

Figure 2: **A - Top left:** Percentage of the sediments samples for which the accuracy of the analysis falls in the 0-20% category. **B - Bottom left**: Same for precision. **C and D - Right:** Respectively display the same information for biological tissues.

Figure 3: **A - Top left:** Percentage of the sediments samples for which the accuracy of the analysis falls in the 0-30% category. **B - Bottom left**: Same for precision. **C and D - Right:** Respectively display the same information for biological tissues.

Figure 4: **A - Top:** Time evolution of the accuracy of the sediment analysis (falling in the 0-10% category). **B - Bottom**: Time evolution of the Precision of the sediment analysis (falling in the 0-10% category).
Figure 5: **A - Top :** Time evolution of the accuracy of the biological tissues analysis (falling in the 0-10% category). **B - Bottom**: Time evolution of the Precision of the biological tissues analysis (falling in the 0-10% category).
Figures 6: Results obtained for the As in sediments by all the NS&T laboratories for all the samples analyzed between 1985 and 1990, normalized to their respective "Accepted Value." The vertical axis represents the ratio of the reported values to the accepted value. The values reported by each laboratory for each sample are plotted along the horizontal axis. Different symbols represents the different samples associated which a code letter or an acronym written in bold phase. Under the name of the sample, the nunber in italic represents the "Accepted Value" for that sample. For each sample, up to eight measurements are given and correspond to the values reported by the six NS&T laboratories and two measurements performed by NRC Canada. The results of the laboratories are always given in the same order and match the order followed in the tables (A1-A6). When a laboratory did not report data, its place is left blank. Precision of the measurements are also displayed on these plots. One figure is composed by four plots presenting the results for 1985, 1987, 1989, and 1990.

Figures 7: Same information but for Zn in biological tissues Figures for the remaining elements are displayed in Appendix D.

Figure 8 a and b: Detection limits reported by NS&T laboratories for field samples are compared to QA concentration range. The vertical axis represents, on a logarithmic scale, the elemental concentration in ppm, except for Al, Fe, and Si in sediments which are in %. On the horizontal axis are displayed the various elements. For the biological tissues, O represents "oyster" samples and M "mussel" samples. The detection limits are those reported by the laboratories for the NS&T field data in O'Connor, 1989 a and b, 1991a and b. The geometrical means reported for the field samples are from O'Connor 1991a and b and 1992. The "high concentrations" defined for field samples are reported in O'Connor 1991b, 1992. For the field samples, the "high values" are calculated as one sigma over the geometric mean of all values and represent the limit above which a value is considered high.

Figure 9 : **A** - Correlation between the "Accepted Value" and the RSD of the Cd measurements in sediments. **B** - Correlation between the "Accepted Value" and the RSD of the Cu measurements in biological tissues. **C** - Correlation between the "Accepted Value" and the absolute value of Bias for the As measurements in sediments. **D** - Correlation between the "Accepted Value" and the absolute value of Bias for the Ag measurements in sediments.

Figure 10 : Distribution of r for As in biological tissues.; r is equal to the log of the ratio $R=Y_i / Y_j$

APPENDICES

APPENDIX A
STATISTICAL RESULTS

Common Headings Used in Appendix A

Participating laboratories

1[a]	ECD, Environmental Conservation Division, NMFS Northwest Center (Seattle, WA)
2[b]	TAMU, Texas A&M University (College Station, TX)
3[b]	BATT, Battelle (Sequim, WA)
4[a]	FSNE, NMFS Northeast Center (Sandy Hook, NJ)
5[a]	FSSE, NMFS Southeast Center (Beaufort, NC)
6[b]	SAIC, Science Applications International Corp. (La Jolla, CA)

[a]Laboratories supplying data for the NS&T Benthic Surveillance Project
[b]Laboratories supplying data for the NS&T Mussel Watch Project

Analytes

Ag	Silver
Al	Aluminum
As	Arsenic
Cd	Cadmium
Cr	Chrome
Cu	Copper
Fe	Iron
Hg	Mercury
Mn	Manganese
Ni	Nickel
Pb	Lead
Sb	Antimony
Se	Selenium
Si	Silicon
Sn	Tin
Tl	Thallium
Zn	Zinc

A1 and A2

A1 and A2 display the statistical results obtained for sediments and biological tissues analysis, respectively. The headings in the tables refer to samples by letter or code, to "accepted values" which are defined in different ways, and the mean of the results for each laboratory referred to by number and acronyms.

The keys to those headings are as follows:
A1:

Samples Designation and Description

A	Sediment from the East Coast of Canada, analyzed in 1985.
B	Sediment from the East Coast of Canada, analyzed in 1985.
C	Sediment from the East Coast of Canada, analyzed in 1985.
D	Sediment from the East Coast of Canada, analyzed in 1985.
H	Sediment from the Gulf of St. Lawrence, analyzed in 1987.
I	Sediment from a Nova Scotian Harbor, analyzed in 1987.
J	Digest of sample similar to sample "I", analyzed in 1987.
MESS-1	Certified sediment reference material, analyzed in 1987 (known).
K	Sediment from a core in Puget Sound, analyzed in 1989.
BCSS-1	Certified sediment reference material, analyzed in 1989 (known).
L	Near shore sediment from the Beaufort Sea, analyzed in 1990.
M	Composite calcareous sediment from San Antonio Bay, Texas, analyzed in 1990.
BCSS-1	Certified sediment reference material, analyzed in 1990 (known).

Accepted values

These concentrations, save the certified ones, are not necessarily more accurate than those of the participating laboratories. They serve as a base against which to gauge the comparability of the results from the participating laboratories.

Consensus (*)	the mean of all individual laboratories
NRC (**)	the National Research Council (NRC) of Canada result
Certified (***)	the certified concentration for reference materials

Results compared with "accepted values" are the means of replicate analyses. The number of replicates in years 1985, 1987, 1989, and 1990, were 4, 6, 5, and 5 respectively.

A2:

Sample Designation and Description

E	Dogfish liver, analyzed in 1985.
F	Mussel tissue, analyzed in 1985.
G	Digest of sample similar to sample "F", analyzed in 1985.
K	Cod liver, analyzed in 1987.
L	Mussel tissue, analyzed in 1987.
M	Digest of sample similar to sample "L", analyzed in 1987.
DOLT-1 (87)	NRC Certified Reference Material (dogfish liver), analyzed (as unknown) in 1987.
Oyster	Composite of oyster tissues from NIST, analyzed in 1989.
Mussel	Composite of mussel tissues from NIST, analyzed in 1989.
DOLT-1 (89)	NRC Certified Reference material (dogfish liver), analyzed (known) in 1989.
CRM-6	NRC Certified Reference material (mussel tissue), analyzed (known) in 1989.
Oyster O	Composite of oysters collected over the entire Gulf of Mexico, analyzed in 1990.
DOLT-1	NRC Certified Reference Material (dogfish liver), analyzed (known) in 1990.

Accepted Values

These concentrations, save the certified ones, are not necessarily more accurate than those of the participating laboratories. They serve as a base against which to gauge the comparability of the results from the participating labs.

ICES(•)	the mean result from an ICES intercalibration.
Consensus(*)	the mean of all individual laboratory means.
NRC(**)	the National Research Council (NRC) of Canada result.
Certified(***)	the certified concentration for reference materials.

When only one laboratory reported a detectable concentration and there was no NRC, certified, or other independent value, no intercomparison was made.

Results compared with "accepted values" are the means of replicate analyses. The number of replicates in years 1985, 1987, 1989, and 1990, were 4, 6, 5, and 5, respectively.

Year	Matrix	Analyte	Sample	Statistics	Lab 1-ECD	Lab 2-TAMU	Lab 3-BNW	Lab 4-NNEC	Lab 5-NSEC	Lab 6-SAIC	Lab 8-NRC	Lab 9-NRC	Accepted Value	
1985	Sediments	Ag	A	Mean	0.45		0.43	0.33	0.38	0.50			0.42	*
1985	Sediments	Ag	A	RSTD	5.22		6.44	5.33	9.86	6.97			16.51	
1985	Sediments	Ag	B	Mean	0.41		0.36	0.28	0.33	0.42			0.36	*
1985	Sediments	Ag	B	RSTD	5.14		4.88	2.10	3.84	11.81			16.69	
1985	Sediments	Ag	C	Mean	0.65		0.56	0.45	0.47	0.58			0.54	*
1985	Sediments	Ag	C	RSTD	8.70		4.24	3.89	2.69	5.80			15.71	
1985	Sediments	Ag	D	Mean	0.49		0.49	0.34	0.40	0.50			0.44	*
1985	Sediments	Ag	D	RSTD	6.45		6.41	4.16	10.02	14.93			15.83	
1987	Sediments	Ag	H	Mean	0.28	0.08	0.07	0.08	0.10	0.09	0.09		0.09	**
1987	Sediments	Ag	H	RSTD	16.75	15.80	39.38	18.79	20.34	14.41	13.23		13.00	
1987	Sediments	Ag	I	Mean	0.25	0.09	0.09	0.09	0.12	0.13	0.12		0.12	**
1987	Sediments	Ag	I	RSTD	5.93	8.52	17.50	5.53	13.94	36.08	12.21		12.00	
1987	Sediments	Ag	J	Mean	0.36		0.19	0.14	0.15	0.19			0.21	*
1987	Sediments	Ag	J	RSTD	16.29		5.34	5.31	7.04	4.22			43.00	
1987	Sediments	Ag	MESS-1	Mean	0.28		0.11	0.10	0.12	0.18			0.16	*
1987	Sediments	Ag	MESS-1	RSTD	3.04		5.09	14.97	21.08	5.39			46.27	
1989	Sediments	Ag	K	Mean		0.08	0.07	0.12	0.09				0.09	*
1989	Sediments	Ag	K	RSTD		4.65	8.54	11.15	12.27				20.44	
1989	Sediments	Ag	BCSS-1	Mean			0.09	0.13	0.11				0.11	*
1989	Sediments	Ag	BCSS-1	RSTD			8.68	14.35	6.45				19.85	
1990	Sediments	Ag	L	Mean	0.21	0.18	0.18	0.10	0.19				0.18	**
1990	Sediments	Ag	L	RSTD	8.60	3.97	3.11	2.80	6.44				32.42	
1990	Sediments	Ag	M	Mean	0.09	0.07	0.08	0.04	0.08				0.08	**
1990	Sediments	Ag	M	RSTD	14.55	6.30	5.97	8.71	5.34				61.30	
1990	Sediments	Ag	BCSS-1	Mean	0.14	0.11	0.11	0.08	0.10				0.10	**
1990	Sediments	Ag	BCSS-1	RSTD	11.74	4.05	4.98	3.27	10.08				42.30	
1985	Sediments	Al	A	Mean	5.29	5.97	7.70	5.70	6.23	5.92			6.20	**
1985	Sediments	Al	A	RSTD	1.00	1.02	4.97	16.62	4.55	3.98			11.30	
1985	Sediments	Al	B	Mean	5.48	5.87	7.15	5.17	6.20	6.32			6.10	**
1985	Sediments	Al	B	RSTD	1.73	0.54	8.43	5.99	3.78	2.40			9.80	
1985	Sediments	Al	C	Mean	5.06	5.57	6.75	4.71	5.78	5.37			5.50	**
1985	Sediments	Al	C	RSTD	4.25	1.89	5.74	9.31	5.53	4.29			10.90	
1985	Sediments	Al	D	Mean	4.92	5.65	6.80	4.60	5.83	5.10			5.60	**
1985	Sediments	Al	D	RSTD	2.23	1.50	7.00	12.41	4.40	19.62			14.30	
1987	Sediments	Al	H	Mean	4.61	5.02	6.08	4.71	6.05	2.03	5.79	5.82	5.81	**
1987	Sediments	Al	H	RSTD	21.74	10.98	3.51	4.12	1.92	10.16	1.68	1.03	0.34	
1987	Sediments	Al	I	Mean	4.76	5.14	4.79	4.74	5.41	4.47	4.84	5.14	4.99	**
1987	Sediments	Al	I	RSTD	5.23	7.44	10.90	1.58	3.55	6.28	2.16	0.15	4.33	
1987	Sediments	Al	J	Mean	5.54			4.46	4.86	4.77			4.91	*

Year	Matrix	Analyte	Sample	Statistics	Lab 1-ECD	Lab 2-TAMU	Lab 3-BNW	Lab 4-NNEC	Lab 5-NSEC	Lab 6-SAIC	Lab 8-NRC	Lab 9-NRC	Accepted Value	
1987	Sediments	Al	J	RSTD	1.25			2.45	1.24	2.54			9.30	
1987	Sediments	Al	MESS-1	Mean	5.82		6.43	5.71	6.09	5.23			5.83	***
1987	Sediments	Al	MESS-1	RSTD	3.29		9.88	1.30	3.75	3.27			3.40	
1989	Sediments	Al	K	Mean	6.67	6.89	6.44	6.37	6.91	5.44	6.93		6.93	**
1989	Sediments	Al	K	RSTD	3.02	1.38	0.85	3.36	1.50	21.58	0.46		0.00	
1989	Sediments	Al	BCSS-1	Mean	6.54		6.58	6.25	6.05	5.38	6.32		6.26	***
1989	Sediments	Al	BCSS-1	RSTD	1.33		2.50	2.61	2.98	7.60			3.51	
1990	Sediments	Al	L	Mean	8.58	8.54	8.64	8.73	8.36		8.52		8.55	**
1990	Sediments	Al	L	RSTD	2.65	2.42	1.76	2.36	3.92		0.63		32.80	
1990	Sediments	Al	M	Mean	3.48	3.52	3.16	3.22	3.07		3.23		3.30	**
1990	Sediments	Al	M	RSTD	3.22	1.99	4.80	3.10	6.05		0.74		11.52	
1990	Sediments	Al	BCSS-1	Mean	6.31	6.68	6.88	6.34	6.01				6.26	***
1990	Sediments	Al	BCSS-1	RSTD	4.20	3.47	1.22	1.00	0.49				3.51	
1985	Sediments	As	A	Mean	26.50	26.33	28.95	23.55	20.05	26.50			22.30	**
1985	Sediments	As	A	RSTD	14.29	14.08	5.19	1.98	12.55	9.52			32.30	
1985	Sediments	As	B	Mean	21.25	21.68	22.50	20.98	13.80	23.67			18.60	**
1985	Sediments	As	B	RSTD	8.91	8.19	14.55	2.07	14.96	7.85			36.00	
1985	Sediments	As	C	Mean	19.75	21.58	27.38	20.10	15.63	21.67			18.90	**
1985	Sediments	As	C	RSTD	20.41	6.33	4.92	5.02	11.58	19.22			36.50	
1985	Sediments	As	D	Mean	17.75	17.68	21.80	18.48	16.75	25.37			16.70	**
1985	Sediments	As	D	RSTD	23.17	5.57	8.42	6.00	5.65	5.92			32.90	
1987	Sediments	As	H	Mean		14.32	11.68	9.22	11.17	9.38	11.40	12.23	11.82	**
1987	Sediments	As	H	RSTD		19.09	8.34	2.51	6.01	4.07	6.15	3.61	4.99	
1987	Sediments	As	I	Mean		11.15	7.50	6.93	7.65	9.65	8.67	9.77	9.22	**
1987	Sediments	As	I	RSTD		16.14	18.05	6.68	4.43	7.91	4.30	5.17	8.44	
1987	Sediments	As	J	Mean	8.87			8.23	8.65	12.00			9.44	*
1987	Sediments	As	J	RSTD	6.16			7.78	3.41	5.27			18.31	
1987	Sediments	As	MESS-1	Mean	10.65		10.50	8.92	10.28	11.00			10.60	***
1987	Sediments	As	MESS-1	RSTD	7.98		20.00	11.22	4.19	7.42			11.32	
1989	Sediments	As	K	Mean	7.78	7.17	8.40	7.68	5.38	8.28			7.45	*
1989	Sediments	As	K	RSTD	2.79	2.44	10.65	8.31	22.36	7.11			14.85	
1989	Sediments	As	BCSS-1	Mean	11.36		11.80	11.24	8.86	12.60			11.10	***
1989	Sediments	As	BCSS-1	RSTD	8.39		7.09	1.49	9.89	4.35			12.61	
1990	Sediments	As	L	Mean	21.30	20.96	21.20	20.68	19.20			20.62	20.90	**
1990	Sediments	As	L	RSTD	8.67	1.37	3.95	0.87	8.08			1.66	11.96	
1990	Sediments	As	M	Mean	5.75	4.06	4.36	5.53	4.86			4.11	4.60	**
1990	Sediments	As	M	RSTD	8.77	3.71	23.76	8.49	5.73			7.09	39.00	
1990	Sediments	As	BCSS-1	Mean	12.10	10.82	11.20	11.72	11.14				11.10	***
1990	Sediments	As	BCSS-1	RSTD	9.40	6.99	7.47	4.92	9.30				14.10	

Year	Matrix	Analyte	Sample	Statistics	Lab 1-ECD	Lab 2-TAMU	Lab 3-BNW	Lab 4-NNEC	Lab 5-NSEC	Lab 6-SAIC	Lab 8-NRC	Lab 9-NRC	Accepted Value	
1985	Sediments	Cd	A	Mean	1.66	1.74	2.20	1.23	1.32				1.59	**
1985	Sediments	Cd	A	RSTD	20.09	8.24	6.66	7.51	6.89				20.10	
1985	Sediments	Cd	B	Mean	1.36	1.29	1.51	1.00	1.14				1.27	**
1985	Sediments	Cd	B	RSTD	18.10	15.81	9.15	14.30	7.40				13.40	
1985	Sediments	Cd	C	Mean	0.71	0.92	0.91	0.79	0.98				0.87	**
1985	Sediments	Cd	C	RSTD	15.46	5.63	6.77	11.38	17.73				11.50	
1985	Sediments	Cd	D	Mean	0.59	0.82	0.78	0.60	0.64				0.70	**
1985	Sediments	Cd	D	RSTD	35.10	8.51	8.50	4.57	4.65				12.90	
1987	Sediments	Cd	H	Mean	0.12	0.15	0.21	0.21	0.22	0.18	0.19	0.19	0.19	**
1987	Sediments	Cd	H	RSTD	7.45	5.77	3.01	5.97	7.84	3.13	7.06	3.82	1.24	
1987	Sediments	Cd	I	Mean	0.57	0.81	1.10	1.09	1.05	1.03	0.99	0.99	0.99	**
1987	Sediments	Cd	I	RSTD	14.01	2.42	6.71	12.55	3.46	8.02	6.84	3.96	0.38	
1987	Sediments	Cd	J	Mean	0.32	0.68	1.21	0.86	1.11	1.00			0.86	*
1987	Sediments	Cd	J	RSTD	2.36	2.53	3.16	2.38	2.73	0.52			37.63	
1987	Sediments	Cd	MESS-1	Mean	0.53		0.68	0.67	0.65	0.64			0.59	***
1987	Sediments	Cd	MESS-1	RSTD	3.01		5.39	8.50	8.08	3.38			16.95	
1989	Sediments	Cd	K	Mean	0.57	0.47	0.47	0.48	0.46	0.52			0.50	*
1989	Sediments	Cd	K	RSTD	4.54	6.26	5.06	9.09	6.57	4.96			8.76	
1989	Sediments	Cd	BCSS-1	Mean	0.29		0.21	0.29	0.24	0.25			0.25	***
1989	Sediments	Cd	BCSS-1	RSTD	9.50		4.18	6.42	4.66	12.94			16.00	
1990	Sediments	Cd	L	Mean	0.25	0.22	0.25	0.23	0.22			0.24	0.24	**
1990	Sediments	Cd	L	RSTD	5.02	7.70	2.23	2.45	4.87			3.71	13.50	
1990	Sediments	Cd	M	Mean	0.11	0.08	0.06	0.09	0.09			0.07	0.09	**
1990	Sediments	Cd	M	RSTD	12.14	6.65	9.35	3.91	9.95			4.01	43.00	
1990	Sediments	Cd	BCSS-1	Mean	0.26	0.26	0.28	0.25	0.24				0.25	***
1990	Sediments	Cd	BCSS-1	RSTD	7.53	2.85	3.94	2.79	5.49				16.00	
1985	Sediments	Cr	A	Mean	49.73	67.34	74.00	105.75	53.00	69.13			62.50	**
1985	Sediments	Cr	A	RSTD	4.69	4.20	5.18	40.23	5.55	2.72			16.60	
1985	Sediments	Cr	B	Mean	53.25	68.64	78.25	108.38	47.75	60.90			62.10	**
1985	Sediments	Cr	B	RSTD	4.09	6.52	7.33	55.86	2.01	4.46			20.00	
1985	Sediments	Cr	C	Mean	45.25	61.08	72.25	71.68	45.75	60.90			59.80	**
1985	Sediments	Cr	C	RSTD	8.33	4.75	18.13	2.67	3.28	2.00			18.90	
1985	Sediments	Cr	D	Mean	52.73	79.13	85.75	79.00	48.75	66.58			68.70	**
1985	Sediments	Cr	D	RSTD	10.38	4.55	15.83	2.05	7.74	15.34			22.20	
1987	Sediments	Cr	H	Mean	73.05	66.83	81.33	66.02	70.05	69.17	70.83	66.77	68.80	**
1987	Sediments	Cr	H	RSTD	13.39	2.58	20.89	3.46	3.18	4.13	5.36	2.57	4.18	
1987	Sediments	Cr	I	Mean	43.97	44.83	44.90	42.40	40.05	44.33	39.25	43.52	41.38	**
1987	Sediments	Cr	I	RSTD	4.69	1.68	4.64	2.65	5.08	5.46	3.27	2.12	7.29	
1987	Sediments	Cr	J	Mean	41.75		42.12	37.77		38.67			40.08	*

Year	Matrix	Analyte	Sample	Statistics	Lab 1-ECD	Lab 2-TAMU	Lab 3-BNW	Lab 4-NNEC	Lab 5-NSEC	Lab 6-SAIC	Lab 8-NRC	Lab 9-NRC	Accepted Value	
1987	Sediments	Cr	J	RSTD	14.28		3.05	2.45		5.59			5.45	
1987	Sediments	Cr	MESS-1	Mean	58.83	68.17	72.40	62.37	61.12	56.75			71.00	***
1987	Sediments	Cr	MESS-1	RSTD	5.44	4.29	18.98	3.94	6.95	3.34			15.49	
1989	Sediments	Cr	K	Mean	72.86	76.67	78.80	77.66	67.92	77.20	84.50		84.50	**
1989	Sediments	Cr	K	RSTD	3.12	1.35	6.92	4.10	3.05	2.95	1.30		1.00	
1989	Sediments	Cr	BCSS-1	Mean	121.60		130.00	115.40	86.60	110.00	120.50		123.00	***
1989	Sediments	Cr	BCSS-1	RSTD	5.12		14.39	2.57	4.53	0.00	0.59		11.38	
1990	Sediments	Cr	L	Mean	117.20	106.00	111.40	113.00	104.20		101.40	112.60	110.00	**
1990	Sediments	Cr	L	RSTD	2.73	1.33	6.85	1.66	2.66		0.54	6.66	11.80	
1990	Sediments	Cr	M	Mean	34.62	28.10	24.80	13.38	24.66		22.24	23.34	24.20	**
1990	Sediments	Cr	M	RSTD	3.84	5.27	16.96	15.16	4.42		2.26	5.91	18.20	
1990	Sediments	Cr	BCSS-1	Mean	122.00	122.40	128.80	121.00	110.00		0.00	0.00	123.00	***
1990	Sediments	Cr	BCSS-1	RSTD	2.32	0.93	5.07	1.31	4.22				11.40	
1985	Sediments	Cu	A	Mean	104.50	98.92	97.50	104.30	91.75	102.73			97.50	**
1985	Sediments	Cu	A	RSTD	4.17	4.20	5.95	3.35	6.19	4.96			5.00	
1985	Sediments	Cu	B	Mean	83.25	86.32	74.75	85.23	71.25	95.55			81.90	**
1985	Sediments	Cu	B	RSTD	5.41	12.69	10.44	2.56	8.98	21.71			11.00	
1985	Sediments	Cu	C	Mean	43.25	42.00	46.00	46.25	43.25	46.98			44.10	**
1985	Sediments	Cu	C	RSTD	5.46	1.93	3.07	4.11	2.91	1.95			7.30	
1985	Sediments	Cu	D	Mean	39.00	35.58	41.50	37.35	34.25	35.85			36.50	**
1985	Sediments	Cu	D	RSTD	3.63	2.53	2.41	3.48	8.39	16.68			7.90	
1987	Sediments	Cu	H	Mean	28.62	31.90	33.98	32.73	29.45	30.00	33.02	33.45	33.23	**
1987	Sediments	Cu	H	RSTD	2.52	4.84	6.85	1.95	2.81	3.65	1.28	2.42	0.92	
1987	Sediments	Cu	I	Mean	40.97	41.35	42.53	45.53	40.72	41.00	44.54	43.23	43.89	*
1987	Sediments	Cu	I	RSTD	2.58	4.84	7.55	3.20	5.29	7.07	6.40	3.83	2.11	
1987	Sediments	Cu	J	Mean	25.83			45.73	33.58	42.17			36.83	***
1987	Sediments	Cu	J	RSTD	16.50			0.86	1.45	2.77			24.25	
1987	Sediments	Cu	MESS-1	Mean	26.33	27.62	27.50	27.45	25.42	25.50			25.10	***
1987	Sediments	Cu	MESS-1	RSTD	8.91	8.96	8.24	2.77	4.10	6.79			15.14	
1989	Sediments	Cu	K	Mean	34.20	34.28	37.00	38.38	33.98	30.80	32.65		32.65	**
1989	Sediments	Cu	K	RSTD	1.75	2.75	6.62	7.35	2.96	4.23	3.83		3.98	
1989	Sediments	Cu	BCSS-1	Mean	18.72		20.00	21.26	17.56	17.60	17.40		18.50	***
1989	Sediments	Cu	BCSS-1	RSTD	5.14		6.12	12.00	2.92	6.48			14.59	
1990	Sediments	Cu	L	Mean	39.08	36.96	36.00	41.10	36.22		39.72		38.60	**
1990	Sediments	Cu	L	RSTD	2.72	6.46	5.20	5.00	3.62		4.37		14.20	
1990	Sediments	Cu	M	Mean	7.43	7.10	10.60	8.64	7.16		7.14	7.81	7.10	**
1990	Sediments	Cu	M	RSTD	4.43	5.60	5.17	0.92	5.64		8.35	6.05	35.20	
1990	Sediments	Cu	BCSS-1	Mean	18.30	18.28	20.20	19.98	17.62				18.50	***
1990	Sediments	Cu	BCSS-1	RSTD	4.52	3.03	4.14	11.12	4.74				14.60	

Year	Matrix	Analyte	Sample	Statistics	Lab 1-ECD	Lab 2-TAMU	Lab 3-BNW	Lab 4-NNEC	Lab 5-NSEC	Lab 6-SAIC	Lab 8-NRC	Lab 9-NRC	Accepted Value	
1985	Sediments	Fe	A	Mean	3.93	3.93	4.09	3.87	4.00	4.44			4.20	**
1985	Sediments	Fe	A	RSTD	1.69	1.07	0.69	2.52	7.47	2.43			7.10	
1985	Sediments	Fe	B	Mean	3.73	3.72	3.80	3.66	3.95	4.08			3.90	**
1985	Sediments	Fe	B	RSTD	1.19	0.96	3.41	1.20	3.49	2.03			5.10	
1985	Sediments	Fe	C	Mean	3.57	3.54	3.83	3.52	4.08	3.69			3.80	**
1985	Sediments	Fe	C	RSTD	0.48	0.96	0.21	3.05	14.39	0.95			7.90	
1985	Sediments	Fe	D	Mean	3.60	3.42	3.72	3.54	3.91	3.41			3.70	**
1985	Sediments	Fe	D	RSTD	3.63	3.69	1.40	0.69	5.93	18.73			8.10	
1987	Sediments	Fe	H	Mean	3.08	3.19	3.47	2.81	3.46	2.92	3.49	3.23	3.36	**
1987	Sediments	Fe	H	RSTD	1.66	1.89	3.17	3.75	0.96	3.37	2.49	1.49	5.44	
1987	Sediments	Fe	I	Mean	2.13	2.16	2.18	2.05	2.06	1.88	2.07	2.12	2.09	**
1987	Sediments	Fe	I	RSTD	0.57	0.77	3.58	0.84	1.97	4.00	3.74	2.76	1.97	
1987	Sediments	Fe	J	Mean	2.01			2.11	2.25	1.95			2.08	*
1987	Sediments	Fe	J	RSTD	1.95			8.84	1.85	2.81			6.31	
1987	Sediments	Fe	MESS-1	Mean	2.87	2.98	3.08	2.92	2.88	2.85			3.05	***
1987	Sediments	Fe	MESS-1	RSTD	2.51	2.54	2.65	0.76	5.06	3.51			5.57	
1989	Sediments	Fe	K	Mean	4.25	3.82	3.94	3.74	3.90	3.48	3.89		3.89	**
1989	Sediments	Fe	K	RSTD	4.42	0.41	1.39	2.30	1.75	2.40	1.29		1.29	
1989	Sediments	Fe	BCSS-1	Mean	3.25		3.34	3.33	3.32	3.18	3.29		3.29	***
1989	Sediments	Fe	BCSS-1	RSTD	3.53		1.64	0.91	1.90	2.63	3.01		3.04	
1990	Sediments	Fe	L	Mean	4.30	3.99	4.24	4.39	4.24		4.34	4.48	4.36	**
1990	Sediments	Fe	L	RSTD	1.96	3.80	1.29	2.80	1.30		0.51	1.15	6.42	
1990	Sediments	Fe	M	Mean	1.32	1.29	1.40	1.34	1.41		1.33	1.38	1.35	**
1990	Sediments	Fe	M	RSTD	2.17	7.45	0.00	4.33	1.45		1.63	1.57	8.15	
1990	Sediments	Fe	BCSS-1	Mean	3.28	3.21	3.32	3.27	3.28				3.29	***
1990	Sediments	Fe	BCSS-1	RSTD	2.76	3.05	2.52	1.41	3.09				3.04	
1985	Sediments	Hg	A	Mean	0.81	1.32	1.06	1.31	0.97	0.98			1.14	**
1985	Sediments	Hg	A	RSTD	11.61	24.35	15.46	14.94	15.03	3.05			12.28	
1985	Sediments	Hg	B	Mean	0.68	0.94	0.88	0.81	0.75	0.70			0.84	**
1985	Sediments	Hg	B	RSTD	7.31	26.15	14.55	17.18	7.85	8.69			15.48	
1985	Sediments	Hg	C	Mean	0.31	0.27	0.25	0.22	0.25	0.23			0.27	**
1985	Sediments	Hg	C	RSTD	23.11	6.42	13.47	6.90	21.21	10.75			29.63	
1985	Sediments	Hg	D	Mean	0.29	0.32	0.21	0.23	0.24	0.20			0.26	**
1985	Sediments	Hg	D	RSTD	14.90	33.07	4.61	15.18	3.40	17.52			23.08	
1987	Sediments	Hg	H	Mean	0.17	0.09	0.10	0.12	0.11	0.11	0.09		0.09	**
1987	Sediments	Hg	H	RSTD	12.60	11.49	4.50	18.76	8.26	5.15	10.25		10.00	
1987	Sediments	Hg	I	Mean	0.13	0.12	0.15	0.21	0.17	0.15	0.16		0.16	**
1987	Sediments	Hg	I	RSTD	13.71	17.91	11.86	20.71	16.33	2.70	8.62		9.00	
1987	Sediments	Hg	J	Mean	0.13	0.18	0.02		0.73	0.06			0.22	**

Year	Matrix	Analyte	Sample	Statistics	Lab 1-ECD	Lab 2-TAMU	Lab 3-BNW	Lab 4-NNEC	Lab 5-NSEC	Lab 6-SAIC	Lab 8-NRC	Lab 9-NRC	Accepted Value	
1987	Sediments	Hg	J	RSTD	0.00	2.82	5.25			14.78			129.39	
1987	Sediments	Hg	MESS-1	Mean	0.17		0.17	0.22	0.20	0.18			0.17	***
1987	Sediments	Hg	MESS-1	RSTD	10.48		6.35	14.01	10.35	2.14			8.19	
1989	Sediments	Hg	K	Mean	0.14	0.05	0.06	0.10		0.06			0.08	*
1989	Sediments	Hg	K	RSTD	26.58	3.01	6.47	41.12		9.53			48.90	
1989	Sediments	Hg	BCSS-1	Mean	0.13		0.14	0.21		0.13			0.13	***
1989	Sediments	Hg	BCSS-1	RSTD	35.36		4.28	12.58		6.34			9.30	
1990	Sediments	Hg	L	Mean	0.33	0.07	0.09	0.09	0.10				0.09	**
1990	Sediments	Hg	L	RSTD	48.63	1.69	5.65	5.63	5.42				9.78	
1990	Sediments	Hg	M	Mean	0.47	0.01	0.02	0.01	0.03			0.01	0.01	**
1990	Sediments	Hg	M	RSTD	35.86	4.14	25.41	1.82	36.67			60.60	88.90	
1990	Sediments	Hg	BCSS-1	Mean	0.13	0.13	0.14	0.13	0.13				0.13	***
1990	Sediments	Hg	BCSS-1	RSTD	31.25	1.97	4.03	7.80	15.75				9.30	
1985	Sediments	Mn	A	Mean	519.50	555.20	525.00	470.25		545.75			508.00	**
1985	Sediments	Mn	A	RSTD	1.65	1.89	1.56	2.70		2.00			6.90	
1985	Sediments	Mn	B	Mean	509.00	549.00	510.25	507.50		489.50			490.00	**
1985	Sediments	Mn	B	RSTD	2.12	1.22	2.35	0.81		3.06			4.70	
1985	Sediments	Mn	C	Mean	728.50	752.20	715.25	632.00		713.50			703.00	**
1985	Sediments	Mn	C	RSTD	1.35	2.30	3.45	4.04		1.70			5.10	
1985	Sediments	Mn	D	Mean	599.75	614.20	607.25	541.25		550.00			578.00	**
1985	Sediments	Mn	D	RSTD	2.08	1.94	3.32	2.19		18.71			4.70	
1987	Sediments	Mn	H	Mean	530.50	547.33	504.00	489.67	522.83	490.00	502.17	479.20	490.68	**
1987	Sediments	Mn	H	RSTD	2.48	4.87	9.07	1.25	0.70	5.63	1.21	2.41	3.31	
1987	Sediments	Mn	I	Mean	474.50	486.33	421.67	431.67	409.33	450.00	452.50	450.50	451.50	**
1987	Sediments	Mn	I	RSTD	1.83	2.67	5.75	2.35	2.92	1.41	0.89	3.19	0.31	
1987	Sediments	Mn	J	Mean	455.33			456.50	442.00	433.33			446.79	*
1987	Sediments	Mn	J	RSTD	0.82			0.39	0.72	1.19			2.49	
1987	Sediments	Mn	MESS-1	Mean	539.83	524.50	504.00	480.33	478.33	492.50			513.00	***
1987	Sediments	Mn	MESS-1	RSTD	1.04	6.73	3.86	1.40	2.66	2.55			4.87	
1989	Sediments	Mn	K	Mean	326.20			524.00	541.60	472.00	534.67		535.00	**
1989	Sediments	Mn	K	RSTD	27.69			6.04	1.60	2.76	1.03		1.00	
1989	Sediments	Mn	BCSS-1	Mean	242.20			218.60	234.00	228.00			229.00	***
1989	Sediments	Mn	BCSS-1	RSTD	4.33			2.94	3.61	3.67			6.55	
1990	Sediments	Mn	L	Mean	359.00	369.40	346.00	360.40	364.40		346.20		358.00	**
1990	Sediments	Mn	L	RSTD	1.85	2.29	2.59	1.48	4.72		0.88		5.60	
1990	Sediments	Mn	M	Mean	198.00	218.00	216.00	197.60	54.20		194.20		199.00	**
1990	Sediments	Mn	M	RSTD	2.74	3.45	2.54	1.98	35.83		0.67		10.10	
1990	Sediments	Mn	BCSS-1	Mean	225.80	247.20	230.00	221.20	232.00				229.00	***
1990	Sediments	Mn	BCSS-1	RSTD	2.89	4.88	4.35	3.23	7.56				6.60	

A1-Inorganic Elements-Sediments-Statistics

Year	Matrix	Analyte	Sample	Statistics	Lab 1-ECD	Lab 2-TAMU	Lab 3-BNW	Lab 4-NNEC	Lab 5-NSEC	Lab 6-SAIC	Lab 8-NRC	Lab 9-NRC	Accepted Value	
1985	Sediments	Ni	A	Mean	38.23	36.62	40.25	49.13	31.00	44.00			39.00	**
1985	Sediments	Ni	A	RSTD	11.04	5.14	9.81	43.92	15.13	5.21			14.00	
1985	Sediments	Ni	B	Mean	40.70	34.50	38.75	51.60	34.75	35.43			38.00	**
1985	Sediments	Ni	B	RSTD	8.16	2.15	7.11	57.37	9.51	4.59			13.00	
1985	Sediments	Ni	C	Mean	34.00	26.26	35.75	25.73	32.00	29.13			31.30	**
1985	Sediments	Ni	C	RSTD	5.85	6.42	5.77	13.62	15.93	4.48			16.60	
1985	Sediments	Ni	D	Mean	39.03	32.46	39.75	31.68	36.50	27.55			35.50	**
1985	Sediments	Ni	D	RSTD	12.34	6.95	2.41	2.95	35.05	17.57			17.20	
1987	Sediments	Ni	H	Mean	42.30	39.93	41.15	33.65	44.83	36.83	35.83	36.48	36.16	**
1987	Sediments	Ni	H	RSTD	6.49	3.74	14.51	3.03	15.92	4.68	2.33	3.67	1.27	
1987	Sediments	Ni	I	Mean	22.38	22.37	20.65	17.30	31.33	17.50	19.00	19.87	19.43	**
1987	Sediments	Ni	I	RSTD	7.62	12.01	10.37	6.29	21.99	3.13	3.94	1.79	3.15	
1987	Sediments	Ni	J	Mean	22.90			17.20	18.48	16.83			18.85	*
1987	Sediments	Ni	J	RSTD	11.03			3.75	2.28	2.43			14.79	
1987	Sediments	Ni	MESS-1	Mean	29.55	30.14	29.40	25.03	37.83	25.00			29.50	***
1987	Sediments	Ni	MESS-1	RSTD	9.59	4.50	15.59	4.07	24.19	3.27			9.15	
1989	Sediments	Ni	K	Mean	42.72	44.65	48.00	44.08	50.62	58.80	44.45		44.40	**
1989	Sediments	Ni	K	RSTD	3.72	2.12	7.93	2.41	4.28	2.52	2.34		2.00	
1989	Sediments	Ni	BCSS-1	Mean	53.86		57.40	55.42	61.86	54.40	51.80		55.30	***
1989	Sediments	Ni	BCSS-1	RSTD	3.94		5.02	3.19	2.52	4.61			6.51	
1990	Sediments	Ni	L	Mean	46.70	49.96	49.00	48.76	47.60		52.16	49.78	49.20	**
1990	Sediments	Ni	L	RSTD	8.24	2.68	3.53	1.31	5.06		2.78	6.40	8.50	
1990	Sediments	Ni	M	Mean	26.00	9.91	13.00	10.56	9.92		10.76		10.10	**
1990	Sediments	Ni	M	RSTD	3.79	0.73	14.39	3.45	3.52		1.93		43.60	
1990	Sediments	Ni	BCSS-1	Mean	49.96	59.44	57.60	54.54	52.80				55.30	***
1990	Sediments	Ni	BCSS-1	RSTD	12.66	3.17	2.91	1.63	4.52				6.50	
1985	Sediments	Pb	A	Mean	188.00	211.75	197.50	217.50	204.50	188.25			200.00	**
1985	Sediments	Pb	A	RSTD	10.03	7.93	4.65	4.45	5.78	1.18			13.00	
1985	Sediments	Pb	B	Mean	128.00	159.80	163.75	150.18	167.50	178.50			163.00	**
1985	Sediments	Pb	B	RSTD	15.84	1.03	2.02	35.35	6.71	5.65			6.10	
1985	Sediments	Pb	C	Mean	55.00	79.02	80.75	53.83	75.40	94.60			76.00	**
1985	Sediments	Pb	C	RSTD	9.90	5.42	3.10	3.92	7.48	18.48			19.70	
1985	Sediments	Pb	D	Mean	49.00	68.53	66.75	48.83	66.98	64.68			63.00	**
1985	Sediments	Pb	D	RSTD	7.23	2.56	4.80	5.08	3.70	20.22			12.70	
1987	Sediments	Pb	H	Mean	12.28	26.50	19.72	19.30	20.58	17.83	21.10	20.17	20.63	**
1987	Sediments	Pb	H	RSTD	10.13	13.34	9.94	3.33	8.80	11.45	9.90	0.98	3.20	
1987	Sediments	Pb	I	Mean	65.50	123.60	99.67	93.40	104.50	109.67	107.00	104.50	105.75	**
1987	Sediments	Pb	I	RSTD	6.70	4.45	6.62	5.36	12.16	10.34	10.17	4.05	1.67	
1987	Sediments	Pb	J	Mean	56.45	99.67		94.82	92.23	89.50			86.53	*

Year	Matrix	Analyte	Sample	Statistics	Lab 1-ECD	Lab 2-TAMU	Lab 3-BNW	Lab 4-NNEC	Lab 5-NSEC	Lab 6-SAIC	Lab 8-NRC	Lab 9-NRC	Accepted Value	
1987	Sediments	Pb	J	RSTD	7.77	3.74		1.70	3.28	1.17			19.91	
1987	Sediments	Pb	MESS-1	Mean	26.67	35.18	34.00	31.60	33.33	33.25			34.00	***
1987	Sediments	Pb	MESS-1	RSTD	20.89	14.83	6.01	4.92	5.31	7.91			17.94	
1989	Sediments	Pb	K	Mean	7.12	8.61	9.02	7.92	9.30	9.60	9.79		9.79	**
1989	Sediments	Pb	K	RSTD	3.04	0.79	14.08	4.33	6.41	3.76	0.82		0.82	
1989	Sediments	Pb	BCSS-1	Mean	26.72		23.40	19.96	23.48	23.60	22.40		22.70	***
1989	Sediments	Pb	BCSS-1	RSTD	5.39		4.87	4.81	5.96	4.83			14.98	
1990	Sediments	Pb	L	Mean	26.22	22.86	21.20	21.14	21.46		22.10	24.12	21.80	**
1990	Sediments	Pb	L	RSTD	2.01	3.28	3.95	4.08	5.47		3.23	2.28	14.68	
1990	Sediments	Pb	M	Mean	12.42	12.50	11.92	8.32	11.90		12.32	14.76	12.70	**
1990	Sediments	Pb	M	RSTD	4.24	4.56	17.63	4.28	4.28		3.69	5.22	25.98	
1990	Sediments	Pb	BCSS-1	Mean	24.10	23.38	21.80	21.44	20.80				22.70	***
1990	Sediments	Pb	BCSS-1	RSTD	2.51	3.18	3.84	7.79	22.02				14.98	
1985	Sediments	Sb	A	Mean	3.20	1.51	0.71	1.30					1.50	**
1985	Sediments	Sb	A	RSTD	54.31	10.07	10.24	6.18					46.70	
1985	Sediments	Sb	B	Mean	2.50	1.35	0.66	1.07					1.20	**
1985	Sediments	Sb	B	RSTD	51.85	11.86	8.57	6.95					41.67	
1985	Sediments	Sb	C	Mean	4.65	0.77	0.53	0.51					0.60	**
1985	Sediments	Sb	C	RSTD	24.43	8.50	12.21	0.98					16.67	
1985	Sediments	Sb	D	Mean	4.23	0.71	0.52	0.52					0.60	**
1985	Sediments	Sb	D	RSTD	60.14	12.55	7.72	9.55					16.67	
1987	Sediments	Sb	H	Mean	0.54	1.05		0.56					0.72	*
1987	Sediments	Sb	H	RSTD	6.95	5.22		21.82					40.01	
1987	Sediments	Sb	I	Mean	0.67	0.88		0.42					0.65	*
1987	Sediments	Sb	I	RSTD	3.83	24.18		15.30					35.29	
1987	Sediments	Sb	J	Mean	0.48			0.14	0.19				0.27	*
1987	Sediments	Sb	J	RSTD	4.75			5.44	5.67				69.19	
1987	Sediments	Sb	MESS-1	Mean	0.72	0.99		0.54					0.73	***
1987	Sediments	Sb	MESS-1	RSTD	4.53	5.89		21.52					10.96	
1989	Sediments	Sb	K	Mean	0.36			0.58					0.47	*
1989	Sediments	Sb	K	RSTD	8.56			29.06					32.87	
1989	Sediments	Sb	BCSS-1	Mean	0.68			0.56					0.59	***
1989	Sediments	Sb	BCSS-1	RSTD	3.18			27.23					10.17	
1990	Sediments	Sb	L	Mean	0.69	1.18	0.96				1.12	1.04	1.09	**
1990	Sediments	Sb	L	RSTD	0.79	7.65	9.32				3.19	7.50	23.85	
1990	Sediments	Sb	M	Mean	0.37	0.36	0.30						0.34	**
1990	Sediments	Sb	M	RSTD	2.98	6.51	1.85						47.06	
1990	Sediments	Sb	BCSS-1	Mean	0.63	0.61	0.53						0.59	***
1990	Sediments	Sb	BCSS-1	RSTD	2.14	8.59	14.42						8.47	

Year	Matrix	Analyte	Sample	Statistics	Lab 1-ECD	Lab 2-TAMU	Lab 3-BNW	Lab 4-NNEC	Lab 5-NSEC	Lab 6-SAIC	Lab 8-NRC	Lab 9-NRC	Accepted Value	
1985	Sediments	Se	A	Mean	0.96		1.08	0.78					0.85	**
1985	Sediments	Se	A	RSTD	10.03		6.64	12.95					28.24	
1985	Sediments	Se	B	Mean	0.78		0.83	0.73					0.86	**
1985	Sediments	Se	B	RSTD	15.84		11.90	6.72					40.70	
1985	Sediments	Se	C	Mean	1.75		0.83	1.24					1.27	**
1985	Sediments	Se	C	RSTD	9.90		7.41	7.32					38.58	
1985	Sediments	Se	D	Mean	1.33		1.23	1.18					1.26	**
1985	Sediments	Se	D	RSTD	7.23		4.51	5.34					38.89	
1987	Sediments	Se	H	Mean	1.30	1.78	1.41	1.01	1.07		1.43	1.64	1.54	**
1987	Sediments	Se	H	RSTD	1.61	22.58	13.20	9.44	7.47		4.92	4.82	9.58	
1987	Sediments	Se	I	Mean	0.82	1.36	0.92	0.76	0.78		0.97	1.08	1.02	**
1987	Sediments	Se	I	RSTD	5.07	15.14	11.76	10.92	14.09		3.05	9.19	7.60	
1987	Sediments	Se	J	Mean	0.79	0.76	0.93	0.46	0.64				0.72	*
1987	Sediments	Se	J	RSTD	5.06	11.49	6.01	11.95	5.32				24.45	
1987	Sediments	Se	MESS-1	Mean	0.32		0.44	0.24	0.36				0.34	***
1987	Sediments	Se	MESS-1	RSTD	8.29		22.66	18.65	21.37				17.65	
1989	Sediments	Se	K	Mean		1.74	1.32	0.47		3.90			1.86	*
1989	Sediments	Se	K	RSTD		6.85	29.05	22.33		11.32			78.76	
1989	Sediments	Se	BCSS-1	Mean				0.28					0.43	***
1989	Sediments	Se	BCSS-1	RSTD				0.00					13.95	
1990	Sediments	Se	L	Mean	0.72	0.81	0.40	0.47				0.77	0.65	**
1990	Sediments	Se	L	RSTD	22.60	5.90	6.50	12.17				13.71	64.62	
1990	Sediments	Se	M	Mean	0.20	0.13	0.12	0.10					0.15	**
1990	Sediments	Se	M	RSTD	83.65	27.26	22.82	0.43					80.00	
1990	Sediments	Se	BCSS-1	Mean	0.44	0.48	0.37	0.39					0.43	***
1990	Sediments	Se	BCSS-1	RSTD	36.18	14.80	8.58	15.51					106.98	
1985	Sediments	Si	A	Mean	24.98		23.20	26.40	29.18	25.15			26.00	**
1985	Sediments	Si	A	RSTD	2.30		0.50	1.98	1.71	4.06			8.08	
1985	Sediments	Si	B	Mean	28.38		24.43	25.55	30.73	27.08			27.40	**
1985	Sediments	Si	B	RSTD	1.83		1.55	7.61	3.55	5.44			8.39	
1985	Sediments	Si	C	Mean	25.73		23.43	25.10	27.98	23.90			25.10	**
1985	Sediments	Si	C	RSTD	3.61		0.41	18.12	4.48	4.20			6.37	
1985	Sediments	Si	D	Mean	26.20		24.55	24.00	28.45	24.13			25.70	**
1985	Sediments	Si	D	RSTD	2.04		2.04	6.50	2.59	18.10			7.00	
1987	Sediments	Si	H	Mean	24.98			20.92	24.35	23.17	20.85		20.90	**
1987	Sediments	Si	H	RSTD	3.26			2.27	6.43	8.38	0.26		0.00	
1987	Sediments	Si	I	Mean	29.77			28.57	33.25	29.83	29.07		29.10	**
1987	Sediments	Si	I	RSTD	0.41			2.73	2.51	1.37	0.42		0.00	
1987	Sediments	Si	J	Mean										

Year	Matrix	Analyte	Sample	Statistics	Lab 1-ECD	Lab 2-TAMU	Lab 3-BNW	Lab 4-NNEC	Lab 5-NSEC	Lab 6-SAIC	Lab 8-NRC	Lab 9-NRC	Accepted Value	
1987	Sediments	Si	J	RSTD										
1987	Sediments	Si	MESS-1	Mean	31.55			30.73	36.83	32.50			31.60	***
1987	Sediments	Si	MESS-1	RSTD	1.79			2.18	4.35	3.97			2.85	
1989	Sediments	Si	K	Mean	34.28			27.32					30.80	*
1989	Sediments	Si	K	RSTD	9.84			3.65					15.98	
1989	Sediments	Si	BCSS-1	Mean	30.56			30.06					30.90	***
1989	Sediments	Si	BCSS-1	RSTD	2.70			8.26					1.62	
1990	Sediments	Si	L	Mean	27.96		27.80					23.98	26.58	*
1990	Sediments	Si	L	RSTD	1.09		3.01					0.19	8.48	
1990	Sediments	Si	M	Mean	31.84		31.30					32.22	31.79	*
1990	Sediments	Si	M	RSTD	1.94		1.26					2.13	1.45	
1990	Sediments	Si	BCSS-1	Mean	30.38		30.34						30.90	***
1990	Sediments	Si	BCSS-1	RSTD	2.59		1.27						1.62	
1985	Sediments	Sn	A	Mean	56.25	359.40	51.00	3.69	100.03	41.48			48.70	**
1985	Sediments	Sn	A	RSTD	11.37	1.63	9.47	8.21	2.51	9.42			64.07	
1985	Sediments	Sn	B	Mean	46.50	322.60	37.00	3.14	84.20	31.68			39.30	**
1985	Sediments	Sn	B	RSTD	15.75	2.03	13.42	18.75	3.65	21.68			67.18	
1985	Sediments	Sn	C	Mean	51.75	121.40	5.75		21.68	12.25			13.90	**
1985	Sediments	Sn	C	RSTD	14.75	2.23	15.65		19.94	53.20			86.33	
1985	Sediments	Sn	D	Mean	46.00	117.40	4.40		17.10	13.30			14.50	**
1985	Sediments	Sn	D	RSTD	24.40	3.11	28.93		11.27	32.65			105.52	
1987	Sediments	Sn	H	Mean	3.80	7.17	5.12	6.42	5.38	8.02	6.78		6.80	**
1987	Sediments	Sn	H	RSTD	5.52	3.26	13.73	5.16	5.18	13.02	5.36		6.00	
1987	Sediments	Sn	I	Mean	4.92	14.55	15.76	13.87	13.97	12.77	13.40		13.40	**
1987	Sediments	Sn	I	RSTD	6.61	20.90	6.34	9.44	17.87	23.56	7.74		8.00	
1987	Sediments	Sn	J	Mean	2.42		2.78	0.92	1.17				1.82	*
1987	Sediments	Sn	J	RSTD	7.13		22.48	21.17	20.04				50.30	
1987	Sediments	Sn	MESS-1	Mean	3.65		3.35	3.83	4.67				3.98	***
1987	Sediments	Sn	MESS-1	RSTD	8.62		17.48	9.14	27.80				11.06	
1989	Sediments	Sn	K	Mean		0.90	1.00	1.05	1.47				1.11	*
1989	Sediments	Sn	K	RSTD		6.63	21.21	6.93	21.09				22.86	
1989	Sediments	Sn	BCSS-1	Mean			1.84	1.93	1.77				1.85	***
1989	Sediments	Sn	BCSS-1	RSTD			11.91	8.27	14.87				10.81	
1990	Sediments	Sn	L	Mean	2.66	2.00	2.94	1.67	2.46		2.33	2.06	2.30	**
1990	Sediments	Sn	L	RSTD	18.53	1.89	1.86	5.10	10.60		2.61	18.77	47.83	
1990	Sediments	Sn	M	Mean	0.92	0.77	0.81	0.92	1.36		1.13		0.93	**
1990	Sediments	Sn	M	RSTD	22.53	8.20	23.32	12.63	12.30		10.16		44.09	
1990	Sediments	Sn	BCSS-1	Mean	1.94	1.82	2.06	1.83	2.28				1.85	***
1990	Sediments	Sn	BCSS-1	RSTD	28.14	9.35	4.34	16.03	17.38				10.81	

Year	Matrix	Analyte	Sample	Statistics	Lab 1-ECD	Lab 2-TAMU	Lab 3-BNW	Lab 4-NNEC	Lab 5-NSEC	Lab 6-SAIC	Lab 8-NRC	Lab 9-NRC	Accepted Value	
1985	Sediments	Tl	A	Mean			0.89	0.70	0.81				0.80	*
1985	Sediments	Tl	A	RSTD			2.80	11.79	5.06				12.24	
1985	Sediments	Tl	B	Mean			0.81	0.67	0.77				0.75	*
1985	Sediments	Tl	B	RSTD			5.57	10.33	7.72				9.33	
1985	Sediments	Tl	C	Mean			0.79	0.59	0.63				0.67	*
1985	Sediments	Tl	C	RSTD			3.82	7.58	3.89				15.74	
1985	Sediments	Tl	D	Mean			0.68	0.54	0.59				0.60	*
1985	Sediments	Tl	D	RSTD			3.69	14.89	6.64				11.55	
1987	Sediments	Tl	H	Mean	0.71			0.60	0.49			0.50	0.50	**
1987	Sediments	Tl	H	RSTD	17.32			12.75	9.46			0.81	1.00	
1987	Sediments	Tl	I	Mean	0.41			0.66	0.53			0.65	0.65	**
1987	Sediments	Tl	I	RSTD	9.27			18.92	17.05			2.30	2.00	
1987	Sediments	Tl	J	Mean	0.42			0.58	1.95				0.98	*
1987	Sediments	Tl	J	RSTD	11.27			13.09	25.07				85.52	
1987	Sediments	Tl	MESS-1	Mean	0.42			0.75	0.67				0.61	*
1987	Sediments	Tl	MESS-1	RSTD	4.96			12.58	20.79				28.51	
1985	Sediments	Zn	A	Mean	347.50	359.40	351.25	405.50	356.75	360.50			359.00	**
1985	Sediments	Zn	A	RSTD	1.28	1.63	1.30	2.76	4.41	3.67			6.13	
1985	Sediments	Zn	B	Mean	312.50	322.60	307.25	345.25	330.00	302.75			317.00	**
1985	Sediments	Zn	B	RSTD	2.93	2.03	4.76	3.00	3.64	5.44			7.08	
1985	Sediments	Zn	C	Mean	114.00	121.40	116.25	112.50	118.75	109.75			115.00	**
1985	Sediments	Zn	C	RSTD	1.60	2.23	1.91	1.54	6.05	4.84			4.35	
1985	Sediments	Zn	D	Mean	112.50	117.40	114.75	113.75	118.00	94.20			112.00	**
1985	Sediments	Zn	D	RSTD	1.70	3.11	3.13	0.84	2.08	16.49			7.14	
1987	Sediments	Zn	H	Mean	102.00	74.50	96.33	95.00	101.17	84.00	95.50	94.00	94.75	**
1987	Sediments	Zn	H	RSTD	2.32	5.35	5.67	2.31	11.31	6.98	2.87	5.17	1.12	
1987	Sediments	Zn	I	Mean	212.67	171.17	188.00	195.67	181.00	181.67	192.50	191.50	192.00	**
1987	Sediments	Zn	I	RSTD	2.14	5.51	4.72	4.42	2.88	5.41	3.33	0.98	0.37	
1987	Sediments	Zn	J	Mean	202.00			194.33	172.83	180.00			187.29	*
1987	Sediments	Zn	J	RSTD	1.04			1.44	2.44	3.51			7.08	
1987	Sediments	Zn	MESS-1	Mean	196.17	186.00	181.67	183.33	178.17	160.00			191.00	***
1987	Sediments	Zn	MESS-1	RSTD	1.92	4.48	3.58	2.64	4.18	0.00			8.90	
1989	Sediments	Zn	K	Mean	89.94	91.50	85.40	72.44	88.96	75.40	92.67		93.00	**
1989	Sediments	Zn	K	RSTD	3.13	1.85	2.94	5.13	3.28	2.01	1.65		2.00	
1989	Sediments	Zn	BCSS-1	Mean	115.40		110.00	95.00	113.00	112.00			119.00	***
1989	Sediments	Zn	BCSS-1	RSTD	3.55		0.00	3.94	2.80	3.99			10.08	
1990	Sediments	Zn	L	Mean	175.00	181.20	154.80	163.20	166.40		169.40	171.00	169.00	**
1990	Sediments	Zn	L	RSTD	2.29	1.26	1.16	1.01	1.38		0.99	5.55	10.65	
1990	Sediments	Zn	M	Mean	35.74	41.26	36.00	39.60	39.40		41.04		38.00	**

Year	Matrix	Analyte	Sample	Statistics	Lab 1-ECD	Lab 2-TAMU	Lab 3-BNW	Lab 4-NNEC	Lab 5-NSEC	Lab 6-SAIC	Lab 8-NRC	Lab 9-NRC	Accepted Value	
1990	Sediments	Zn	M	RSTD	3.53	5.37	5.89	4.60	7.33		2.14		15.53	
1990	Sediments	Zn	BCSS-1	Mean	117.20	131.80	108.40	119.80	112.80				119.00	***
1990	Sediments	Zn	BCSS-1	RSTD	2.86	2.60	2.22	2.60	2.76				10.08	

Year	Matrix	Analyte	Sample	Statistics	Lab 1-ECD	Lab 2-TAMU	Lab 3-BNW	Lab 4-NNEC	Lab 5-NSEC	Lab 6-SAIC	Lab 8-NRC	Lab 9-NRC	Accepted Value	
1985	Tissue	Ag	DOLT-1	Mean										
1985	Tissue	Ag	DOLT-1	RSTD										
1985	Tissue	Ag	E	Mean	1.04	1.06	2.69	2.14	2.64	2.69			2.04	*
1985	Tissue	Ag	E	RSTD	43.52	13.20	26.83	32.33	26.52	5.20			38.97	
1985	Tissue	Ag	F	Mean	0.05	0.07	0.06	0.06	0.06	0.04			0.06	*
1985	Tissue	Ag	F	RSTD	25.67	12.62	0.95	9.99	8.56	5.85			15.73	
1985	Tissue	Ag	G	Mean	0.07	0.01	0.01	0.00		0.01			0.02	*
1985	Tissue	Ag	G	RSTD	3.94	1.00	7.39	2.05		0.00			156.19	
1987	Tissue	Ag	DOLT-1	Mean	1.05		1.09	1.02	0.96	1.23			1.07	*
1987	Tissue	Ag	DOLT-1	RSTD	3.30		1.92	3.89	5.74	4.08			9.29	
1987	Tissue	Ag	K TIS	Mean	0.82	2.23	2.44	1.67	2.10	2.20	2.49	2.36	2.43	**
1987	Tissue	Ag	K TIS	RSTD	9.22	4.37	19.19	16.72	7.98	5.75	5.95	2.03	3.80	
1987	Tissue	Ag	L	Mean	0.10	0.20	0.14	0.16	0.14	0.16	0.14	0.14	0.14	**
1987	Tissue	Ag	L	RSTD	23.66	98.80	2.88	10.12	5.97	5.21	3.80	5.44	2.84	
1987	Tissue	Ag	M	Mean	0.22	0.07	0.15	0.13	0.15	0.17			0.15	*
1987	Tissue	Ag	M	RSTD	5.35	8.88	5.07	5.72	7.30	6.20			34.02	
1989	Tissue	Ag	CRM-6	Mean			0.02						0.03	***
1989	Tissue	Ag	CRM-6	RSTD			0.00						11.11	
1989	Tissue	Ag	DOLT-1	Mean	0.99			1.18	0.98				1.05	*
1989	Tissue	Ag	DOLT-1	RSTD	1.32			2.54	1.85				10.66	
1989	Tissue	Ag	Mussel	Mean	2.00	2.25	1.56	1.13	1.87	1.60	2.48		2.48	**
1989	Tissue	Ag	Mussel	RSTD	7.91	5.23	9.72	20.12	1.93	7.65	4.05		4.05	
1989	Tissue	Ag	Oyster	Mean	2.48	2.52	1.50	1.65	2.39	2.30	2.91		2.91	**
1989	Tissue	Ag	Oyster	RSTD	5.26	1.68	4.71	13.09	2.84	3.07	7.48		7.48	
1990	Tissue	Ag	DORM-1	Mean		0.15	0.40	0.21	0.22				0.21	**
1990	Tissue	Ag	DORM-1	RSTD		13.81	17.26	13.34	22.35				24.04	
1990	Tissue	Ag	Oyster O	Mean		2.50	1.78	2.50	2.47		2.91		2.65	**
1990	Tissue	Ag	Oyster O	RSTD		0.67	4.70	1.25	4.28		1.90		18.10	
1985	Tissue	Al	DOLT-1	Mean										
1985	Tissue	Al	DOLT-1	RSTD										
1985	Tissue	Al	E	Mean	15.40		4.98	14.56		6.70			10.41	*
1985	Tissue	Al	E	RSTD	47.08		8.70	43.26		13.05			51.26	
1985	Tissue	Al	F	Mean	427.00	792.50	556.25	543.00		502.00			564.15	*
1985	Tissue	Al	F	RSTD	29.18	6.71	2.72	5.32		7.26			24.32	
1985	Tissue	Al	G	Mean	54.70	1.80	1.96	2.29		1.63			1.92	*
1985	Tissue	Al	G	RSTD	13.55			1.16		4.82			14.58	
1987	Tissue	Al	DOLT-1	Mean				4.07					4.07	*
1987	Tissue	Al	DOLT-1	RSTD				6.90					6.90	
1987	Tissue	Al	K TIS	Mean		38.68		14.88		16.50			23.35	*

Year	Matrix	Analyte	Sample	Statistics	Lab 1-ECD	Lab 2-TAMU	Lab 3-BNW	Lab 4-NNEC	Lab 5-NSEC	Lab 6-SAIC	Lab 8-NRC	Lab 9-NRC	Accepted Value	
1987	Tissue	Al	K TIS	RSTD		10.37		18.26		11.34			56.94	
1987	Tissue	Al	L	Mean	116.47	119.72		66.32		46.50			87.25	*
1987	Tissue	Al	L	RSTD	77.53	11.88		11.56		5.57			41.88	
1987	Tissue	Al	M	Mean	167.50	83.33		57.15		76.67			96.16	*
1987	Tissue	Al	M	RSTD	39.26	6.20		2.79		2.28			50.79	
1989	Tissue	Al	CRM-6	Mean			175.67						175.67	*
1989	Tissue	Al	CRM-6	RSTD			8.23						8.23	
1989	Tissue	Al	DOLT-1	Mean										
1989	Tissue	Al	DOLT-1	RSTD										
1989	Tissue	Al	Mussel	Mean		323.70	296.00			366.00			328.57	*
1989	Tissue	Al	Mussel	RSTD		10.88	9.13			10.51			10.73	
1989	Tissue	Al	Oyster	Mean		258.14	260.00			240.00			252.71	*
1989	Tissue	Al	Oyster	RSTD		8.92	24.17			17.18			4.37	
1990	Tissue	Al	DORM-1	Mean			15.60	14.00					14.80	*
1990	Tissue	Al	DORM-1	RSTD			13.29	7.74					7.64	
1990	Tissue	Al	Oyster O	Mean		291.60	370.00	253.60			237.00		288.05	*
1990	Tissue	Al	Oyster O	RSTD		3.57	2.70	4.48			3.24		20.56	
1985	Tissue	As	DOLT-1	Mean										
1985	Tissue	As	DOLT-1	RSTD										
1985	Tissue	As	E	Mean	7.63	9.03	11.20	9.39	10.03	3.02			10.30	°
1985	Tissue	As	E	RSTD	26.82	3.31	4.89	0.96	2.06	4.45			25.24	
1985	Tissue	As	F	Mean	5.48	7.80	9.45	7.24	7.68	1.28			8.30	°
1985	Tissue	As	F	RSTD	18.53	1.05	3.05	5.96	9.83	7.51			16.87	
1985	Tissue	As	G	Mean	2.45	340.00		355.25		0.21			174.48	*
1985	Tissue	As	G	RSTD	17.79	2.40		5.35		2.35			114.65	
1987	Tissue	As	DOLT-1	Mean	11.75		10.57	8.27	8.57	9.55			10.10	***
1987	Tissue	As	DOLT-1	RSTD	5.64		11.76	4.63	5.65	4.87			13.86	
1987	Tissue	As	K TIS	Mean	15.17	8.13	10.88	9.03	8.20	8.17	9.54	10.45	10.00	**
1987	Tissue	As	K TIS	RSTD	4.86	3.81	2.75	2.77	1.34	4.82	4.48	4.40	6.44	
1987	Tissue	As	L	Mean	12.35	8.10	10.43	9.53	8.43	9.08	10.24	10.62	10.43	**
1987	Tissue	As	L	RSTD	5.56	11.74	6.90	6.07	2.77	5.67	2.73	4.39	2.55	
1987	Tissue	As	M	Mean	3.48			9.33	8.40	8.43			7.41	*
1987	Tissue	As	M	RSTD	5.27			3.99	1.30	4.66			35.82	
1989	Tissue	As	CRM-6	Mean			9.73				8.85		9.20	***
1989	Tissue	As	CRM-6	RSTD			4.29				16.78		5.43	
1989	Tissue	As	DOLT-1	Mean	9.80			10.40	9.10	8.94			10.10	***
1989	Tissue	As	DOLT-1	RSTD	1.44			5.27	5.38	4.45			13.86	
1989	Tissue	As	Mussel	Mean	7.18	10.62	9.26	11.60	9.76	7.22	9.56		9.56	**
1989	Tissue	As	Mussel	RSTD	49.25	7.14	8.63	4.72	6.22	5.22	8.19		8.19	

Year	Matrix	Analyte	Sample	Statistics	Lab 1-ECD	Lab 2-TAMU	Lab 3-BNW	Lab 4-NNEC	Lab 5-NSEC	Lab 6-SAIC	Lab 8-NRC	Lab 9-NRC	Accepted Value	
1989	Tissue	As	Oyster	Mean	8.08	7.92	7.06	8.82	7.04	5.10	5.68		5.68	**
1989	Tissue	As	Oyster	RSTD	3.85	5.60	7.73	9.86	4.56	19.16	4.01		4.01	
1990	Tissue	As	DORM-1	Mean		16.30	17.20	17.64	18.90				17.70	**
1990	Tissue	As	DORM-1	RSTD		5.19	6.37	0.86	2.95				11.86	
1990	Tissue	As	Oyster O	Mean		9.64	16.00	9.84	10.12			8.99	9.70	**
1990	Tissue	As	Oyster O	RSTD		2.48	7.65	1.20	3.23			10.02	12.37	
1985	Tissue	Cd	DOLT-1	Mean										
1985	Tissue	Cd	DOLT-1	RSTD										
1985	Tissue	Cd	E	Mean	2.21	2.23	2.29	2.32	2.48	2.31			2.20	°
1985	Tissue	Cd	E	RSTD	1.90	2.25	2.27	5.53	5.62	2.43			9.09	
1985	Tissue	Cd	F	Mean	1.42	1.10	1.10	1.08	1.03	0.75			1.10	°
1985	Tissue	Cd	F	RSTD	3.72	0.00	14.81	2.65	4.00	7.06			18.18	
1985	Tissue	Cd	G	Mean	1.56	12.00	45.15	37.08		0.04			19.16	*
1985	Tissue	Cd	G	RSTD	17.10	0.00	5.48	2.97		1.31			108.31	
1987	Tissue	Cd	DOLT-1	Mean	1.84	4.60	4.45	4.11	3.89	4.00			4.18	***
1987	Tissue	Cd	DOLT-1	RSTD	37.23	14.30	1.24	6.06	11.49	2.04			6.70	
1987	Tissue	Cd	K TIS	Mean	0.36	0.15	0.21	0.18	0.19	0.16	0.18	0.15	0.16	**
1987	Tissue	Cd	K TIS	RSTD	15.19	13.33	4.26	8.10	2.67	6.08	4.70	3.75	13.97	
1987	Tissue	Cd	L	Mean	1.10	0.52	0.65	0.68	0.61	0.61	0.69	0.57	0.63	**
1987	Tissue	Cd	L	RSTD	7.86	6.44	4.87	10.19	8.86	7.70	2.59	0.72	13.88	
1987	Tissue	Cd	M	Mean	1.43	0.52	0.69	0.64	0.69	0.67			0.77	*
1987	Tissue	Cd	M	RSTD	5.17	1.44	6.55	5.61	4.05	2.63			42.33	
1989	Tissue	Cd	CRM-6	Mean			0.93				0.73	0.77	0.82	***
1989	Tissue	Cd	CRM-6	RSTD			20.66				9.69	0.75	3.66	
1989	Tissue	Cd	DOLT-1	Mean				4.83	4.17	3.82			4.18	***
1989	Tissue	Cd	DOLT-1	RSTD				7.53	2.31	2.19			6.70	
1989	Tissue	Cd	Mussel	Mean		1.31	1.28	1.49	1.18	1.28	1.07	1.22	1.14	**
1989	Tissue	Cd	Mussel	RSTD		3.07	10.19	3.59	5.02	3.49	7.96	2.51	9.20	
1989	Tissue	Cd	Oyster	Mean		3.38	3.24	3.79	3.05	2.70	3.13	3.38	3.26	**
1989	Tissue	Cd	Oyster	RSTD		1.34	3.52	4.49	1.68	5.24	1.45	4.30	5.39	
1990	Tissue	Cd	DORM-1	Mean		0.09	0.10	0.09	0.10				0.09	**
1990	Tissue	Cd	DORM-1	RSTD		4.98	10.04	2.29	14.71				13.95	
1990	Tissue	Cd	Oyster O	Mean		4.45	4.22	4.19	4.58			4.44	4.39	**
1990	Tissue	Cd	Oyster O	RSTD		2.85	1.98	1.94	2.18			4.65	9.79	
1985	Tissue	Cr	DOLT-1	Mean										
1985	Tissue	Cr	DOLT-1	RSTD										
1985	Tissue	Cr	E	Mean	0.85	1.02	0.71	0.93	0.98	1.01			0.92	***
1985	Tissue	Cr	E	RSTD	25.98	10.25	7.97	19.16	6.18	5.72			16.30	

Year	Matrix	Analyte	Sample	Statistics	Lab 1-ECD	Lab 2-TAMU	Lab 3-BNW	Lab 4-NNEC	Lab 5-NSEC	Lab 6-SAIC	Lab 8-NRC	Lab 9-NRC	Accepted Value	
1985	Tissue	Cr	F	Mean	1.26	1.60	1.30	1.11	1.50	0.81			1.47	***
1985	Tissue	Cr	F	RSTD	4.34	5.10	2.32	2.71	5.57	5.98			17.01	
1985	Tissue	Cr	G	Mean	0.69	17.75	31.30	34.83		0.03			16.92	*
1985	Tissue	Cr	G	RSTD	11.36	2.82	17.71	2.13		1.74			96.97	
1987	Tissue	Cr	DOLT-1	Mean	0.32	0.60	0.45	0.39	0.48	0.38			0.40	***
1987	Tissue	Cr	DOLT-1	RSTD	38.81	5.94	51.37	26.50	18.34	11.92			17.50	
1987	Tissue	Cr	K TIS	Mean	6.15	5.49	5.55	5.67	6.14	4.22	5.10	4.79	4.95	**
1987	Tissue	Cr	K TIS	RSTD	18.45	15.07	12.67	10.36	4.43	4.08	7.14	2.16	4.35	
1987	Tissue	Cr	L	Mean	2.98	1.17	0.99	1.28	1.46	0.66	1.00	0.86	0.93	**
1987	Tissue	Cr	L	RSTD	17.15	25.60	14.19	13.82	24.29	9.14	10.00	11.67	11.05	
1987	Tissue	Cr	M	Mean	1.67		1.54	1.50	1.32	1.58			1.52	*
1987	Tissue	Cr	M	RSTD	11.80		19.35	3.98	11.65	4.75			8.45	
1989	Tissue	Cr	CRM-6	Mean			0.58				0.53	0.63	0.63	***
1989	Tissue	Cr	CRM-6	RSTD			14.41				20.20	23.76	11.11	
1989	Tissue	Cr	DOLT-1	Mean	0.38			0.38	0.36	0.38			0.40	***
1989	Tissue	Cr	DOLT-1	RSTD	28.68			15.80	16.96	4.92			17.50	
1989	Tissue	Cr	Mussel	Mean	5.14	4.34	4.62	4.21	3.44	2.54	2.83	3.13	2.98	**
1989	Tissue	Cr	Mussel	RSTD	6.96	15.66	3.56	7.28	2.26	10.27	8.04	1.58	6.91	
1989	Tissue	Cr	Oyster	Mean	1.03	0.98	1.14	0.92	0.74	0.71	0.66	0.43	0.54	**
1989	Tissue	Cr	Oyster	RSTD	6.37	4.26	7.85	30.33	23.16	4.78	7.51	28.28	30.83	
1990	Tissue	Cr	DORM-1	Mean		3.75	3.18	3.60	3.93				3.60	***
1990	Tissue	Cr	DORM-1	RSTD		6.05	21.02	3.12	6.83				11.11	
1990	Tissue	Cr	Oyster O	Mean		0.55	1.40	0.50	0.49		0.38	0.39	0.44	**
1990	Tissue	Cr	Oyster O	RSTD		8.25	13.36	1.85	4.08		4.42	7.74	45.45	
1985	Tissue	Cu	DOLT-1	Mean										
1985	Tissue	Cu	DOLT-1	RSTD										
1985	Tissue	Cu	E	Mean	21.35	16.50	19.43	19.85	17.95	14.20			17.90	°
1985	Tissue	Cu	E	RSTD	7.58	3.50	3.88	3.12	8.59	38.60			8.38	
1985	Tissue	Cu	F	Mean	8.03	6.70	10.03	8.07	9.00	5.22			7.30	°
1985	Tissue	Cu	F	RSTD	3.91	0.00	6.22	7.30	14.99	6.99			12.33	
1985	Tissue	Cu	G	Mean	5.21	186.25		250.00		0.22			110.42	*
1985	Tissue	Cu	G	RSTD	3.38	2.57		1.63		0.00			115.08	
1987	Tissue	Cu	DOLT-1	Mean	20.97	18.35	21.77	19.88	23.07	20.00			20.80	***
1987	Tissue	Cu	DOLT-1	RSTD	1.97	4.32	4.78	2.17	1.39	4.08			5.77	
1987	Tissue	Cu	K TIS	Mean	46.63	34.30	38.75	40.18	46.20	37.67	38.32	38.97	38.64	**
1987	Tissue	Cu	K TIS	RSTD	10.28	6.65	6.28	1.50	2.26	2.17	1.23	3.10	1.18	
1987	Tissue	Cu	L	Mean	7.17	6.83	8.65	8.02	8.52	7.03	6.72	7.28	7.00	**
1987	Tissue	Cu	L	RSTD	12.31	3.04	8.77	6.23	3.44	0.73	3.55	2.66	5.69	
1987	Tissue	Cu	M	Mean	6.40			7.18	11.40	6.72			7.93	*

Year	Matrix	Analyte	Sample	Statistics	Lab 1-ECD	Lab 2-TAMU	Lab 3-BNW	Lab 4-NNEC	Lab 5-NSEC	Lab 6-SAIC	Lab 8-NRC	Lab 9-NRC	Accepted Value	
1987	Tissue	Cu	M	RSTD	4.28			9.66	1.75	1.74			29.51	
1989	Tissue	Cu	CRM-6	Mean			6.68				4.90	4.68	4.90	***
1989	Tissue	Cu	CRM-6	RSTD			4.58					2.05	6.12	
1989	Tissue	Cu	DOLT-1	Mean	20.28			21.30	21.66	19.00			20.80	***
1989	Tissue	Cu	DOLT-1	RSTD	2.19			3.94	1.06	0.00			5.77	
1989	Tissue	Cu	Mussel	Mean	12.00	10.10	13.40	13.28	12.82	11.20	11.12	12.70	11.91	**
1989	Tissue	Cu	Mussel	RSTD	4.04	7.61	6.67	6.59	5.87	3.99	2.15	0.00	9.38	
1989	Tissue	Cu	Oyster	Mean	100.66	78.47	84.60	92.10	94.34	84.60		85.13	85.13	**
1989	Tissue	Cu	Oyster	RSTD	4.15	2.28	1.98	2.61	1.86	1.98		2.91	2.90	
1990	Tissue	Cu	DORM-1	Mean		4.82	5.50	5.20	4.74				5.22	***
1990	Tissue	Cu	DORM-1	RSTD		1.96	6.68	3.93	14.04				6.32	
1990	Tissue	Cu	Oyster O	Mean		157.60	164.00	175.00	199.40		151.00	160.60	156.00	**
1990	Tissue	Cu	Oyster O	RSTD		3.13	3.34	0.90	1.31		1.93	2.23	9.62	
1985	Tissue	Fe	DOLT-1	Mean										
1985	Tissue	Fe	DOLT-1	RSTD										
1985	Tissue	Fe	E	Mean	394.00	305.00	354.75	301.00	326.00	295.75			320.00	***
1985	Tissue	Fe	E	RSTD	4.50	1.89	3.68	3.91	0.66	3.08			10.31	
1985	Tissue	Fe	F	Mean	830.50	657.50	692.25	566.75	667.75	397.25			619.00	***
1985	Tissue	Fe	F	RSTD	1.89	0.76	2.25	3.08	7.78	2.81			8.56	
1985	Tissue	Fe	G	Mean	130.75	4.20		4.29		3.65			4.05	*
1985	Tissue	Fe	G	RSTD	5.31			1.62					8.54	
1987	Tissue	Fe	DOLT-1	Mean	612.67	648.00	795.67	676.33	778.50	672.50			712.00	***
1987	Tissue	Fe	DOLT-1	RSTD	1.13	4.45	4.45	2.58	2.59	2.54			6.74	
1987	Tissue	Fe	K TIS	Mean	344.83	321.33	317.67	323.50	343.83	286.67	342.40	348.40	345.40	**
1987	Tissue	Fe	K TIS	RSTD	5.82	5.57	11.41	4.18	3.99	2.85	5.64	5.17	1.23	
1987	Tissue	Fe	L	Mean	131.83	126.25	131.67	135.83	141.33	110.00	137.20	137.40	137.30	**
1987	Tissue	Fe	L	RSTD	4.61	4.86	10.28	6.49	3.76	0.00	7.31	1.83	0.10	
1987	Tissue	Fe	M	Mean	137.50	324.00		129.33	139.17	111.67			176.04	*
1987	Tissue	Fe	M	RSTD	3.79	4.45		6.61	2.89	3.66			56.40	
1989	Tissue	Fe	CRM-6	Mean			158.00				144.50		158.00	***
1989	Tissue	Fe	CRM-6	RSTD			5.17				1.47		5.06	
1989	Tissue	Fe	DOLT-1	Mean	732.00			723.00	710.60	710.00			712.00	***
1989	Tissue	Fe	DOLT-1	RSTD	2.24			2.51	2.21	3.30			6.74	
1989	Tissue	Fe	Mussel	Mean	426.00	458.80	502.00	542.60	466.60	398.00	487.00		487.00	**
1989	Tissue	Fe	Mussel	RSTD	8.40	4.39	21.52	10.05	3.12	3.28	11.03		11.00	
1989	Tissue	Fe	Oyster	Mean	232.00	265.00	258.00	280.60	280.40	236.00	220.50		221.00	**
1989	Tissue	Fe	Oyster	RSTD	7.08	6.72	9.25	8.54	4.55	2.32	12.51		13.00	
1990	Tissue	Fe	DORM-1	Mean		65.02	69.20	63.50	67.40				63.60	***
1990	Tissue	Fe	DORM-1	RSTD		3.69	4.14	4.47	14.48				8.33	

Year	Matrix	Analyte	Sample	Statistics	Lab 1-ECD	Lab 2-TAMU	Lab 3-BNW	Lab 4-NNEC	Lab 5-NSEC	Lab 6-SAIC	Lab 8-NRC	Lab 9-NRC	Accepted Value	
1990	Tissue	Fe	Oyster O	Mean		283.40	252.00	334.00	293.80		249.20	279.00	269.00	**
1990	Tissue	Fe	Oyster O	RSTD		3.18	4.35	0.97	1.66		1.93	1.96	8.30	
1985	Tissue	Hg	DOLT-1	Mean										
1985	Tissue	Hg	DOLT-1	RSTD										
1985	Tissue	Hg	E	Mean	0.18	0.35	0.38	0.33	0.40	0.40			0.37	°
1985	Tissue	Hg	E	RSTD	47.22	6.03	3.47	5.10	7.95	3.54			16.21	
1985	Tissue	Hg	F	Mean	0.18	0.18	0.18	0.17	0.19	0.17			0.27	°
1985	Tissue	Hg	F	RSTD	9.90	4.54	1.07	13.41	3.39	12.85			14.81	
1985	Tissue	Hg	G	Mean	0.32	3.20	3.36	3.00					3.19	*
1985	Tissue	Hg	G	RSTD	11.12								5.66	
1987	Tissue	Hg	DOLT-1	Mean	0.23	0.21	0.20	0.25	0.27	0.22			0.23	***
1987	Tissue	Hg	DOLT-1	RSTD	8.75	4.43	0.29	25.63	6.20	9.48			16.44	
1987	Tissue	Hg	K TIS	Mean	0.52	0.36	0.36	0.37	0.47	0.44	0.40	0.39	0.40	**
1987	Tissue	Hg	K TIS	RSTD	5.02	7.23	2.44	26.53	4.94	2.46	3.88	1.45	1.75	
1987	Tissue	Hg	L	Mean	0.09	0.08	0.07	0.13	0.13	0.09	0.08	0.25	0.16	**
1987	Tissue	Hg	L	RSTD	21.04	7.47	5.49	45.85	7.45	5.52	4.15	147.18	69.08	
1987	Tissue	Hg	M	Mean	0.06	0.07	0.00		0.11				0.06	*
1987	Tissue	Hg	M	RSTD		25.56	8.45						70.24	
1989	Tissue	Hg	CRM-6	Mean			0.05						0.05	*
1989	Tissue	Hg	CRM-6	RSTD			8.45							
1989	Tissue	Hg	DOLT-1	Mean	0.25			0.23		0.22			0.23	***
1989	Tissue	Hg	DOLT-1	RSTD	33.11			9.51		8.41			17.39	
1989	Tissue	Hg	Mussel	Mean	0.32	0.23	0.20	0.20		0.20			0.23	*
1989	Tissue	Hg	Mussel	RSTD	16.55	3.78	8.54	14.95		12.06			22.57	
1989	Tissue	Hg	Oyster	Mean	0.28	0.17	0.12	0.15		0.14			0.17	*
1989	Tissue	Hg	Oyster	RSTD	10.74	4.48	7.21	14.26		10.10			36.84	
1990	Tissue	Hg	DORM-1	Mean		0.80	0.74	0.81	0.94				0.80	***
1990	Tissue	Hg	DORM-1	RSTD		7.41	8.15	4.71	4.93				9.27	
1990	Tissue	Hg	Oyster O	Mean		0.14	0.13	0.12	0.16			0.09	0.12	**
1990	Tissue	Hg	Oyster O	RSTD		8.45	9.05	4.05	16.38			4.25	35.65	
1985	Tissue	Mn	DOLT-1	Mean										
1985	Tissue	Mn	DOLT-1	RSTD										
1985	Tissue	Mn	E	Mean	4.76	6.05	7.15	6.17	6.90	6.06			5.80	***
1985	Tissue	Mn	E	RSTD	12.06	4.37	15.51	7.73	40.15	4.23			13.79	
1985	Tissue	Mn	F	Mean	38.38	44.50	49.25	46.58	49.05	40.20			43.20	***
1985	Tissue	Mn	F	RSTD	16.48	2.25	6.06	3.66	7.46	4.20			7.87	
1985	Tissue	Mn	G	Mean	4.88	0.23		285.50		0.25			72.72	*
1985	Tissue	Mn	G	RSTD	11.31			0.20		1.98			195.11	

Year	Matrix	Analyte	Sample	Statistics	Lab 1-ECD	Lab 2-TAMU	Lab 3-BNW	Lab 4-NNEC	Lab 5-NSEC	Lab 6-SAIC	Lab 8-NRC	Lab 9-NRC	Accepted Value	
1987	Tissue	Mn	DOLT-1	Mean	8.42	8.63		9.00	8.97	8.10			8.72	***
1987	Tissue	Mn	DOLT-1	RSTD	2.75	9.85		1.99	4.15	4.39			6.08	
1987	Tissue	Mn	K TIS	Mean	8.08	8.55		8.90	8.75	7.47	8.60		8.60	**
1987	Tissue	Mn	K TIS	RSTD	9.04	7.05		1.00	4.32	6.03	6.45		6.00	
1987	Tissue	Mn	L	Mean	7.87	9.03		10.27	9.25	8.47	8.82		8.80	**
1987	Tissue	Mn	L	RSTD	11.89	4.18		5.18	2.02	4.99	1.95		2.27	
1987	Tissue	Mn	M	Mean	7.05	9.50		8.72	9.50	8.87			8.73	*
1987	Tissue	Mn	M	RSTD	3.88	5.77		5.59	5.77	3.47			11.50	
1989	Tissue	Mn	CRM-6	Mean							15.43		16.30	***
1989	Tissue	Mn	CRM-6	RSTD							2.62		7.36	
1989	Tissue	Mn	DOLT-1	Mean	8.78			8.80	8.58				8.70	***
1989	Tissue	Mn	DOLT-1	RSTD	2.69			5.39	6.56				5.75	
1989	Tissue	Mn	Mussel	Mean	9.78			13.46	11.18		9.03		9.03	**
1989	Tissue	Mn	Mussel	RSTD	3.89			11.42	10.17		12.19		12.19	
1989	Tissue	Mn	Oyster	Mean	20.42			17.02	16.86		16.30		16.30	**
1989	Tissue	Mn	Oyster	RSTD	4.68			6.69	8.68		6.83		6.83	
1990	Tissue	Mn	DORM-1	Mean			1.56		1.12				1.32	**
1990	Tissue	Mn	DORM-1	RSTD			3.51		43.92				19.70	
1990	Tissue	Mn	Oyster O	Mean			15.80		15.40				13.90	**
1990	Tissue	Mn	Oyster O	RSTD			5.30		5.28				34.53	
1985	Tissue	Ni	DOLT- 1	Mean										
1985	Tissue	Ni	DOLT- 1	RSTD										
1985	Tissue	Ni	E	Mean	0.42	0.34	0.65	0.54	0.19	0.35			0.38	***
1985	Tissue	Ni	E	RSTD	27.44	6.02	108.07	32.20	13.59	5.02			39.47	
1985	Tissue	Ni	F	Mean	2.85	2.35	3.95	2.76	2.79	1.69			3.30	***
1985	Tissue	Ni	F	RSTD	9.28	2.46	2.70	4.64	6.02	2.82			15.15	
1985	Tissue	Ni	G	Mean	0.93	22.75	38.95	35.08		0.03			19.55	*
1985	Tissue	Ni	G	RSTD	21.59	2.20	1.27	1.52		7.05			94.18	
1987	Tissue	Ni	DOLT- 1	Mean	0.38	0.25	0.28	0.24	0.32				0.26	***
1987	Tissue	Ni	DOLT- 1	RSTD	5.52	16.97	37.29	47.57	13.22				23.08	
1987	Tissue	Ni	K TIS	Mean	2.74	2.59	3.46	3.09	3.20	3.55	2.95	2.98	2.97	**
1987	Tissue	Ni	K TIS	RSTD	12.98	7.66	6.23	8.29	12.23	3.88	4.97	6.63	0.75	
1987	Tissue	Ni	L	Mean	1.25	1.05	0.98	1.25	1.03	1.32	0.96	0.96	0.96	**
1987	Tissue	Ni	L	RSTD	14.42	9.43	9.38	25.87	20.16	7.47	8.22	2.83	0.00	
1987	Tissue	Ni	M	Mean	1.04		1.10	1.02	1.38	1.13			1.13	*
1987	Tissue	Ni	M	RSTD	1.61		6.99	13.70	8.59	4.56			12.68	
1989	Tissue	Ni	CRM-6	Mean			0.96				0.87	1.02	0.93	***
1989	Tissue	Ni	CRM-6	RSTD			11.40				13.00		6.45	
1989	Tissue	Ni	DOLT-1	Mean	0.26			0.26	0.25	0.27			0.26	***

Year	Matrix	Analyte	Sample	Statistics	Lab 1-ECD	Lab 2-TAMU	Lab 3-BNW	Lab 4-NNEC	Lab 5-NSEC	Lab 6-SAIC	Lab 8-NRC	Lab 9-NRC	Accepted Value	
1989	Tissue	Ni	DOLT-1	RSTD	15.28			9.00	28.88	13.30			23.08	
1989	Tissue	Ni	Mussel	Mean	2.96	1.29	1.30	1.26	1.01	0.79	1.15	1.22	1.19	**
1989	Tissue	Ni	Mussel	RSTD	11.85	10.86	9.42	7.05	7.27	9.39	5.13	2.32	4.02	
1989	Tissue	Ni	Oyster	Mean	3.74	2.16	2.24	2.18	1.86	1.96	1.96	1.85	1.91	**
1989	Tissue	Ni	Oyster	RSTD	10.46	3.28	5.09	7.31	5.85	2.79	7.49	7.64	4.23	
1990	Tissue	Ni	DORM-1	Mean		1.24	1.28	1.19	1.34				1.20	***
1990	Tissue	Ni	DORM-1	RSTD		8.94	19.45	5.67	5.57				25.00	
1990	Tissue	Ni	Oyster O	Mean		1.89	2.35	1.95	1.89				1.91	**
1990	Tissue	Ni	Oyster O	RSTD		1.26	8.15	2.55	3.67				27.75	
1985	Tissue	Pb	DOLT-1	Mean										
1985	Tissue	Pb	DOLT-1	RSTD										
1985	Tissue	Pb	E	Mean	7.03	5.55	6.44	4.15	8.00	6.20			6.50	°
1985	Tissue	Pb	E	RSTD	20.86	11.06	12.38	24.26	33.79	9.61			18.46	
1985	Tissue	Pb	F	Mean	1.37	1.98	2.09	2.37	1.64	1.20			1.90	°
1985	Tissue	Pb	F	RSTD	57.54	2.53	4.33	21.87	5.81	7.87			15.79	
1985	Tissue	Pb	G	Mean	1.99	68.00	89.13	190.50		0.07			69.94	*
1985	Tissue	Pb	G	RSTD	35.00	1.20	3.87	3.16		2.03			111.69	
1987	Tissue	Pb	DOLT-1	Mean	1.31	1.51	1.40	1.48	1.29	1.48			1.36	***
1987	Tissue	Pb	DOLT-1	RSTD	13.09	0.47	16.29	26.96	32.99	10.17			21.32	
1987	Tissue	Pb	K TIS	Mean	1.13	1.95	2.05	2.03	1.34	2.38	1.63	1.32	1.47	**
1987	Tissue	Pb	K TIS	RSTD	8.45	14.63	13.14	33.49	13.67	7.23	10.81	44.77	14.79	
1987	Tissue	Pb	L	Mean	4.04	5.19	5.22	5.26	3.15	4.90	4.05	3.85	3.95	**
1987	Tissue	Pb	L	RSTD	10.53	10.68	16.49	35.59	6.98	2.58	2.15	3.68	3.54	
1987	Tissue	Pb	M	Mean	4.77	5.22	4.80	3.88	4.91	4.52			4.68	*
1987	Tissue	Pb	M	RSTD	3.48	2.55	1.91	4.19	7.39	2.59			9.73	
1989	Tissue	Pb	CRM-6	Mean			0.76				0.87	0.81	0.91	***
1989	Tissue	Pb	CRM-6	RSTD			5.28				1.63	0.88	4.40	
1989	Tissue	Pb	DOLT-1	Mean	1.34			1.46	1.41	1.40			1.36	***
1989	Tissue	Pb	DOLT-1	RSTD	23.37			23.68	14.15	16.75			21.32	
1989	Tissue	Pb	Mussel	Mean	6.26	10.47	9.74	1.30	9.10	9.62	10.22	9.97	10.09	**
1989	Tissue	Pb	Mussel	RSTD	10.75	4.72	2.96	22.37	5.33	3.40	4.76	0.14	1.72	
1989	Tissue	Pb	Oyster	Mean	1.01	0.49	0.46	0.15	0.51	0.45	0.57	0.47	0.52	**
1989	Tissue	Pb	Oyster	RSTD	5.36	7.76	12.24	38.19	16.02	14.74	10.67	16.73	14.10	
1990	Tissue	Pb	DORM-1	Mean		0.40	0.51	0.41	0.60				0.40	***
1990	Tissue	Pb	DORM-1	RSTD		9.03	13.66	22.12	42.21				30.00	
1990	Tissue	Pb	Oyster O	Mean		0.64	0.96	0.52	0.80		0.57	0.68	0.68	**
1990	Tissue	Pb	Oyster O	RSTD		4.56	4.23	4.97	4.45		1.19	13.61	33.82	
1985	Tissue	Sb	DOLT-1	Mean										

Year	Matrix	Analyte	Sample	Statistics	Lab 1-ECD	Lab 2-TAMU	Lab 3-BNW	Lab 4-NNEC	Lab 5-NSEC	Lab 6-SAIC	Lab 8-NRC	Lab 9-NRC	Accepted Value	
1985	Tissue	Sb	DOLT-1	RSTD										
1985	Tissue	Sb	E	Mean	1.50		0.13	0.04	0.23				0.47	*
1985	Tissue	Sb	E	RSTD	7.70		41.57	37.07	9.75				145.21	
1985	Tissue	Sb	F	Mean	2.60		0.07	0.00	0.15				0.71	*
1985	Tissue	Sb	F	RSTD	14.04		43.83	188.41	17.25				178.52	
1985	Tissue	Sb	G	Mean	4.00			0.20					0.20	*
1985	Tissue	Sb	G	RSTD	20.10			136.59						
1987	Tissue	Sb	DOLT-1	Mean	2.38								2.38	*
1987	Tissue	Sb	DOLT-1	RSTD	5.58									
1987	Tissue	Sb	K TIS	Mean	0.73						0.01		0.01	**
1987	Tissue	Sb	K TIS	RSTD	42.17						20.00		20.00	
1987	Tissue	Sb	L	Mean	0.98						0.02		0.02	**
1987	Tissue	Sb	L	RSTD	7.66						28.00		28.00	
1987	Tissue	Sb	M	Mean	3.33								3.33	*
1987	Tissue	Sb	M	RSTD	9.23									
1990	Tissue	Sb	DORM-1	Mean			0.04						0.04	*
1990	Tissue	Sb	DORM-1	RSTD			11.99							
1990	Tissue	Sb	Oyster O	Mean			0.02						0.02	*
1990	Tissue	Sb	Oyster O	RSTD			21.22							
1985	Tissue	Se	DOLT-1	Mean										
1985	Tissue	Se	DOLT-1	RSTD										
1985	Tissue	Se	E	Mean	1.38	4.78	4.25	3.67	3.21				4.30	***
1985	Tissue	Se	E	RSTD	20.03	1.05	11.12	1.70	2.80				6.98	
1985	Tissue	Se	F	Mean	0.87	2.75	2.78	1.95	2.31				2.80	***
1985	Tissue	Se	F	RSTD	18.84	6.96	3.45	3.60	6.64				7.14	
1985	Tissue	Se	G	Mean	0.34			65.73		0.13			22.06	*
1985	Tissue	Se	G	RSTD	11.78			3.76		4.62			171.38	
1987	Tissue	Se	DOLT-1	Mean	6.37	6.90	7.60	5.48	7.80	7.73			7.34	***
1987	Tissue	Se	DOLT-1	RSTD	4.93	2.05	3.95	5.81	12.00	5.00			5.72	
1987	Tissue	Se	K TIS	Mean	2.63	11.77	12.45	8.72	9.60	13.67	12.72		12.72	**
1987	Tissue	Se	K TIS	RSTD	7.07	6.21	3.40	4.19	3.02	3.78	2.45		2.45	
1987	Tissue	Se	L	Mean	4.30	3.32	2.78	2.47	2.33	2.52	3.42		3.42	**
1987	Tissue	Se	L	RSTD	15.64	17.62	14.27	7.97	12.62	13.40	2.45		2.34	
1987	Tissue	Se	M	Mean	2.23	3.72		2.33	2.13	2.70			2.62	*
1987	Tissue	Se	M	RSTD	13.42	1.10		7.00	12.10	4.68			24.75	
1989	Tissue	Se	CRM-6	Mean			1.63				2.10		1.87	*
1989	Tissue	Se	CRM-6	RSTD			11.40				0.00		17.68	
1989	Tissue	Se	DOLT-1	Mean	7.24			7.78	7.02	7.68			7.34	***
1989	Tissue	Se	DOLT-1	RSTD	2.51			9.85	2.74	3.11			5.72	

Year	Matrix	Analyte	Sample	Statistics	Lab 1-ECD	Lab 2-TAMU	Lab 3-BNW	Lab 4-NNEC	Lab 5-NSEC	Lab 6-SAIC	Lab 8-NRC	Lab 9-NRC	Accepted Value	
1989	Tissue	Se	Mussel	Mean	2.36	3.95	2.44	2.82	3.30	3.26	3.64		3.64	**
1989	Tissue	Se	Mussel	RSTD	6.43	13.62	22.93	7.27	5.67	4.65	6.90		6.90	
1989	Tissue	Se	Oyster	Mean	2.26	3.28	2.70	2.56	3.46	2.22	3.44		3.44	**
1989	Tissue	Se	Oyster	RSTD	6.71	12.09	5.24	11.91	9.50	5.87	7.85		7.85	
1990	Tissue	Se	DORM-1	Mean		1.69	1.58	1.63	1.45				1.62	***
1990	Tissue	Se	DORM-1	RSTD		6.99	12.17	5.71	4.31				7.41	
1990	Tissue	Se	Oyster O	Mean		3.12	3.20	3.17	3.04				3.13	**
1990	Tissue	Se	Oyster O	RSTD		1.55	10.60	0.98	7.59				5.11	
1985	Tissue	Si	E	Mean	10.58	565.00	10.15			146.75			183.12	*
1985	Tissue	Si	E	RSTD	37.45	2.28	8.91			4.53			143.40	
1985	Tissue	Si	F	Mean	95.25	1870.00	141.50			391.00			624.44	*
1985	Tissue	Si	F	RSTD	11.54	4.54	43.38			13.74			134.60	
1985	Tissue	Si	G	Mean	12.28	12.50	238.00						87.59	*
1985	Tissue	Si	G	RSTD	36.34		46.94						182.04	
1990	Tissue	Si	DORM-1	Mean			201.40						201.40	*
1990	Tissue	Si	DORM-1	RSTD			16.02							
1990	Tissue	Si	Oyster O	Mean			278.00						278.00	*
1990	Tissue	Si	Oyster O	RSTD			10.91							
1985	Tissue	Sn	DOLT-1	Mean										
1985	Tissue	Sn	DOLT-1	RSTD										
1985	Tissue	Sn	E	Mean	0.80		0.65		1.07				0.84	*
1985	Tissue	Sn	E	RSTD	4.68		25.15		11.23				25.07	
1985	Tissue	Sn	F	Mean	0.60		0.16		0.30				0.35	*
1985	Tissue	Sn	F	RSTD	13.20		6.45		11.25				63.83	
1985	Tissue	Sn	G	Mean	0.69		0.73						0.73	*
1985	Tissue	Sn	G	RSTD	11.02		11.40							
1987	Tissue	Sn	DOLT-1	Mean	0.52		0.06						0.29	*
1987	Tissue	Sn	DOLT-1	RSTD	32.82		18.23						110.62	
1987	Tissue	Sn	K TIS	Mean			0.19		0.45		0.19		0.19	**
1987	Tissue	Sn	K TIS	RSTD			25.05		62.15		3.72		4.00	
1987	Tissue	Sn	L	Mean	0.95		0.07				0.03		0.03	**
1987	Tissue	Sn	L	RSTD	19.69		38.03				34.40		34.00	
1987	Tissue	Sn	M	Mean	0.60		0.04		0.18				0.27	*
1987	Tissue	Sn	M	RSTD	11.68		15.65		39.56				108.46	
1989	Tissue	Sn	CRM-6	Mean			1.02						1.02	*
1989	Tissue	Sn	CRM-6	RSTD			8.94							
1989	Tissue	Sn	DOLT-1	Mean				0.15					0.15	*
1989	Tissue	Sn	DOLT-1	RSTD				19.80						

Year	Matrix	Analyte	Sample	Statistics	Lab 1-ECD	Lab 2-TAMU	Lab 3-BNW	Lab 4-NNEC	Lab 5-NSEC	Lab 6-SAIC	Lab 8-NRC	Lab 9-NRC	Accepted Value	
1989	Tissue	Sn	Mussel	Mean		1.18	0.23	2.53				1.44	1.44	**
1989	Tissue	Sn	Mussel	RSTD		6.30	57.80	2.66				9.85	9.85	
1989	Tissue	Sn	Oyster	Mean			0.10	0.52					0.31	*
1989	Tissue	Sn	Oyster	RSTD			36.99	6.80					94.28	
1990	Tissue	Sn	DORM-1	Mean		0.18	0.08	0.14	0.12				0.13	**
1990	Tissue	Sn	DORM-1	RSTD		14.68	8.06	2.59	47.94				108.36	
1990	Tissue	Sn	Oyster O	Mean		0.38	0.29	0.18	0.06		0.25		0.23	**
1990	Tissue	Sn	Oyster O	RSTD		7.21	5.30	17.19	30.84		7.51		148.06	
1985	Tissue	Tl	E	Mean	0.28			0.00					0.14	*
1985	Tissue	Tl	E	RSTD	34.82			167.07					138.89	
1985	Tissue	Tl	F	Mean	0.48			0.00					0.24	*
1985	Tissue	Tl	F	RSTD	10.53			71.03					138.48	
1985	Tissue	Tl	G	Mean	0.95		1.98	0.16					1.03	*
1985	Tissue	Tl	G	RSTD	6.08		28.28	85.54					88.20	
1985	Tissue	Zn	DOLT-1	Mean										
1985	Tissue	Zn	DOLT-1	RSTD										
1985	Tissue	Zn	E	Mean	55.80	56.00	60.25	52.83	57.25	50.93			58.20	°
1985	Tissue	Zn	E	RSTD	5.29	0.00	2.83	6.64	3.06	5.56			8.25	
1985	Tissue	Zn	F	Mean	141.68	158.75	170.25	161.50	165.00	97.35			160.00	°
1985	Tissue	Zn	F	RSTD	11.58	1.57	1.30	5.07	1.78	5.36			6.25	
1985	Tissue	Zn	G	Mean	118.25	3.80		3.82		3.24			32.28	*
1985	Tissue	Zn	G	RSTD	8.11			3.31		2.62			177.58	
1987	Tissue	Zn	DOLT-1	Mean	92.83	90.60	90.67	82.67	97.00	81.50			92.50	***
1987	Tissue	Zn	DOLT-1	RSTD	0.44	7.26	2.55	2.38	2.16	1.58			2.49	
1987	Tissue	Zn	K TIS	Mean	245.83	197.83	207.00	208.00	225.83	211.67	217.60		218.00	**
1987	Tissue	Zn	K TIS	RSTD	4.49	4.74	1.59	0.80	1.87	3.56	2.31		2.00	
1987	Tissue	Zn	L	Mean	122.67	135.67	121.83	127.67	134.83	126.67	132.20		132.00	**
1987	Tissue	Zn	L	RSTD	0.67	3.83	3.79	4.95	2.41	4.08	1.96		2.00	
1987	Tissue	Zn	M	Mean	120.50	107.67		120.00	138.17	120.00			121.27	*
1987	Tissue	Zn	M	RSTD	1.26	5.36		1.97	1.96	0.00			8.98	
1989	Tissue	Zn	CRM-6	Mean			108.67					98.70	106.00	***
1989	Tissue	Zn	CRM-6	RSTD			2.15					2.03	6.96	
1989	Tissue	Zn	DOLT-1	Mean	90.24			92.28	88.20	85.60			92.50	***
1989	Tissue	Zn	DOLT-1	RSTD	1.06			0.78	2.03	2.93			2.49	
1989	Tissue	Zn	Mussel	Mean	155.60	156.90	140.00	156.60	145.60	144.00		145.00	145.00	**
1989	Tissue	Zn	Mussel	RSTD	1.48	4.36	0.00	1.07	4.14	3.80		3.16	3.00	
1989	Tissue	Zn	Oyster	Mean	1536.00	1613.00	1620.00	1678.00	1642.00	1580.00		1543.33	1543.00	**
1989	Tissue	Zn	Oyster	RSTD	1.99	2.38	2.76	4.70	3.37	2.83		4.55	5.00	

Year	Matrix	Analyte	Sample	Statistics	Lab 1-ECD	Lab 2-TAMU	Lab 3-BNW	Lab 4-NNEC	Lab 5-NSEC	Lab 6-SAIC	Lab 8-NRC	Lab 9-NRC	Accepted Value	
1990	Tissue	Zn	DORM-1	Mean		21.64	21.60	20.54	20.04				21.30	***
1990	Tissue	Zn	DORM-1	RSTD		2.03	5.28	1.01	2.08				4.69	
1990	Tissue	Zn	Oyster O	Mean		2466.00	2500.00	2460.00	2420.00		2514.00	2508.00	2480.00	**
1990	Tissue	Zn	Oyster O	RSTD		0.74	2.83	0.81	1.60		0.92	1.21	3.23	

A3 and A4

Summary of results from intercalibration exercises for the accuracy (A3) and the precision (A4) of the elemental analyses of sediments. The headings in the table refer to samples by letter or code, to "acc. values" which are "accepted values" defined in different ways, and the results of laboratories referred to by number. The keys to those headings are the same as in A1 and A2 respectively.

ANALYTE	YEAR	Matrix	SAMPLE	Accepted Value		0-10%	10-20%	20-30%	>30%	nd	NA
Ag	1985	Sediments	A	0.42	*	1,3	5,6	4		2	
	1985	Sediments	B	0.36	*	3,5	1,6	4		2	
	1985	Sediments	C	0.54	*	3,6	4,5	1		2	
	1985	Sediments	D	0.44	*	5	1,3,6	4		2	
	1987	Sediments	H	0.09	**	5,6	2,4	3	1		
	1987	Sediments	I	0.12	**	5,6		2,3,4	1		
	1987	Sediments	J	0.21	*	3,6			1,4,5		2
	1987	Sediments	MESS-1	0.16	*		6	3,5	1,4		2
	1989	Sediments	K	0.09	*	5	2,3	4		6	1
	1989	Sediments	BCSS-1	0.11	*	5	4	3			1,2,6
	1990	Sediments	L	0.18	**	2,3,5	1		4		
	1990	Sediments	M	0.08	**	2,3,5		1	4		
	1990	Sediments	BSCC-1	0.1	**	2,3	5	1,4			
Al	1985	Sediments	A	6.2	**	2,4,5,6	1	3			
	1985	Sediments	B	6.1	**	2,5,6	1,3,4				
	1985	Sediments	C	5.5	**	1,2,5,6	4	3			
	1985	Sediments	D	5.6	**	2,5,6	1,4	3			
	1987	Sediments	H	5.81	**	3,5	2,4	1	6		
	1987	Sediments	I	4.99	**	1,2,3,4,5	6				
	1987	Sediments	J	4.91	*	4,5,6	1				2,3
	1987	Sediments	MESS-1	5.83	***	1,4,5	3,6				2
	1989	Sediments	K	6.93	**	1,2,3,4,5	6				
	1989	Sediments	BCSS-1	6.26	***	1,3,4,5	6				2
	1990	Sediments	L	8.55	**	1,2,3,4,5					
	1990	Sediments	M	3.3	**	1,2,3,4,5					
	1990	Sediments	BSCC-1	6.26	***	1,2,3,4,5					
As	1985	Sediments	A	22.3	**	4	1,2,5,6	3			
	1985	Sediments	B	18.6	**		1,2,4	3,5,6			
	1985	Sediments	C	18.9	**		1,4	2,5,6	3		
	1985	Sediments	D	16.7	**	1,2,5	4		3,6		
	1987	Sediments	H	11.82	**	3,5		2,4,6			1
	1987	Sediments	I	9.22	**	6	3,5	2,4			1
	1987	Sediments	J	9.44	*	1,5	4	6			2,3
	1987	Sediments	MESS-1	10.6	***	1,3,5,6	4				2
	1989	Sediments	K	7.45	*	1,2,4,6	3	5			
	1989	Sediments	BCSS-1	11.1	***	1,3,4	6	5			2
	1990	Sediments	L	20.9	**	1,2,3,4,5					
	1990	Sediments	M	4.6	**	3,5	2	1,4			
	1990	Sediments	BSCC-1	11.1	***	1,2,3,4,5					
Cd	1985	Sediments	A	1.59	**	1,2	5	4	3		6
	1985	Sediments	B	1.27	**	1,2	3,5	4			6
	1985	Sediments	C	0.87	**	2,3,4	1,5				6
	1985	Sediments	D	0.7	**	5	1,2,3,4				6
	1987	Sediments	H	0.19	**	4,6	3,5	2	1		
	1987	Sediments	I	0.99	**	4,5,6	2,3		1		
	1987	Sediments	J	0.86	*	4	6	2,5	1,3		
	1987	Sediments	MESS-1	0.59	***	1,6	3,4,5				2
	1989	Sediments	K	0.5	*	2,3,4,5,6	1				
	1989	Sediments	BCSS-1	0.25	***	5,6	1,3,4				2
	1990	Sediments	L	0.24	**	1,2,3,4,5					
	1990	Sediments	M	0.09	**	4,5	1,2	3			
	1990	Sediments	BSCC-1	0.25	***	1,2,4,5	3				

ANALYTE	YEAR	Matrix	SAMPLE	Accepted Value		0 to 10%	10 to 20%	20 to 30%	>30%	nd	NA
Cr	1985	Sediments	A	62.5	**	2	3,5,6	1	4		
	1985	Sediments	B	62.1	**	6	1,2	3,5	4		
	1985	Sediments	C	59.8	**	2,6	4	1,3,5			
	1985	Sediments	D	68.7	**	6	2,4	1,3,5			
	1987	Sediments	H	68.8	**	1,2,4,5,6	3				
	1987	Sediments	I	41.38	**	1,2,3,4,5,6					
	1987	Sediments	J	40.08	*	1,3,4,6					2,5
	1987	Sediments	MESS-1	71	***	2,3	1,4,5	6			
	1989	Sediments	K	84.5	**	2,3,4,6	1,5				
	1989	Sediments	BCSS-1	123	***	1,3,4	6	5			2
	1990	Sediments	L	110	**	1,2,3,4,5					
	1990	Sediments	M	24.2	**	3,5	2		1,4		
	1990	Sediments	BSCC-1	123	***	1,2,3,4	5				
Cu	1985	Sediments	A	97.5	**	1,2,3,4,5,6					
	1985	Sediments	B	81.9	**	1,2,3,4	5,6				
	1985	Sediments	C	44.1	**	1,2,3,4,5,6					
	1985	Sediments	D	36.5	**	1,2,4,5,6	3				
	1987	Sediments	H	33.23	**	2,3,4,6	1,5				
	1987	Sediments	I	43.89	**	1,2,3,4,5,6					
	1987	Sediments	J	36.83	*	5	6	1,4			2,3
	1987	Sediments	MESS-1	25.1	***	1,3,4,5,6	2				
	1989	Sediments	K	32.65	**	1,2,5,6	3,4				
	1989	Sediments	BCSS-1	18.5	***	1,3,5,6	4				2
	1990	Sediments	L	38.6	**	1,2,3,4,5					
	1990	Sediments	M	7.1	**	1,2,5		4	3		
	1990	Sediments	BSCC-1	18.5	***	1,2,3,4,5					
Fe	1985	Sediments	A	4.2	**	1,2,3,4,5,6					
	1985	Sediments	B	3.9	**	1,2,3,4,5,6					
	1985	Sediments	C	3.8	**	1,2,3,4,5,6					
	1985	Sediments	D	3.7	**	1,2,3,4,5,6					
	1987	Sediments	H	3.36	**	1,2,3,5	4,6				
	1987	Sediments	I	2.09	**	1,2,3,4,5,6					
	1987	Sediments	J	2.08	*	1,4,5,6					2,3
	1987	Sediments	MESS-1	3.05	***	1,2,3,4,5,6					
	1989	Sediments	K	3.89	**	1,2,3,4,5	6				
	1989	Sediments	BCSS-1	3.29	***	1,3,4,5,6					2
	1990	Sediments	L	4.36	**	1,2,3,4,5					
	1990	Sediments	M	1.35	**	1,2,3,4,5					
	1990	Sediments	BSCC-1	3.29	***	1,2,3,4,5					
Hg	1985	Sediments	A	1.14	**	3	2,4,5,6	1			
	1985	Sediments	B	0.84	**	3,4	1,2,5,6				
	1985	Sediments	C	0.27	**	2,3,5	1,4,6				
	1985	Sediments	D	0.26	**	5	1,4	2,3,6			
	1987	Sediments	H	0.09	**	2	3	5,6	1,4		
	1987	Sediments	I	0.16	**	3,5,6	1	2,4			
	1987	Sediments	J	0.22	*	2		1	3,5,6	4	
	1987	Sediments	MESS-1	0.17	***	1,3,6	5	4			2
	1989	Sediments	K	0.08	*		4	3	1,2,6		5
	1989	Sediments	BCSS-1	0.13	***	1,3,6			4		2,5
	1990	Sediments	L	0.09	**	3,4,5		2	1		
	1990	Sediments	M	0.01	**	2			1,3,4,5		
	1990	Sediments	BSCC-1	0.13	***	1,2,3,4,5					

ANALYTE	YEAR	Matrix	SAMPLE	Accepted Value		0 to 10%	10 to 20%	20 to 30%	>30%	nd	NA
Mn	1985	Sediments	A	508	**	1,2,3,4,6					5
	1985	Sediments	B	490	**	1,3,4,6	2				5
	1985	Sediments	C	703	**	1,2,3,6	4				5
	1985	Sediments	D	578	**	1,2,3,4,6					5
	1987	Sediments	H	490.7	**	1,3,4,5,6	2				
	1987	Sediments	I	451.5	**	1,2,3,4,5,6					
	1987	Sediments	J	446.8	*	1,4,5,6					2,3
	1987	Sediments	MESS-1	513	***	1,2,3,4,5,6					
	1989	Sediments	K	535	**	4,5	6		1		2,3
	1989	Sediments	BCSS-1	229	***	1,4,5,6					2,3
	1990	Sediments	L	358	**	1,2,3,4,5					
	1990	Sediments	M	199	**	1,2,3,4			5		
	1990	Sediments	BSCC-1	229	***	1,2,3,4,5					
Ni	1985	Sediments	A	39	**	1,2,3	6	4,5			
	1985	Sediments	B	38	**	1,2,3,5,6			4		
	1985	Sediments	C	31.3	**	1,5,6	2,3,4				
	1985	Sediments	D	35.5	**	1,2,5	3,4	6			
	1987	Sediments	H	36.16	**	4,6	1,2,3	5			
	1987	Sediments	I	19.43	**	3,6	1,2,4		5		
	1987	Sediments	J	18.85	*	4,5	6	1			2,3
	1987	Sediments	MESS-1	29.5	***	1,2,3	4,6	5			
	1989	Sediments	K	44.4	**	1,2,3,4	5		6		
	1989	Sediments	BCSS-1	55.3	***	1,3,4,6	5				2
	1990	Sediments	L	49.2	**	1,2,3,4,5					
	1990	Sediments	M	10.1	**	2,4,5		3	1		
	1990	Sediments	BSCC-1	55.3	***	1,2,3,4,5					
Pb	1985	Sediments	A	200	**	1,2,3,4,5,6					
	1985	Sediments	B	163	**	2,3,4,5,6	1				
	1985	Sediments	C	76	**	2,3,5		1,4,6			
	1985	Sediments	D	63	**	2,3,5,6		1,4			
	1987	Sediments	H	20.63	**	3,4,5	6	2	1		
	1987	Sediments	I	105.8	**	3,5,6	2,4		1		
	1987	Sediments	J	86.53	*	4,5,6	2		1		3
	1987	Sediments	MESS-1	34	***	2,3,4,5,6		1			
	1989	Sediments	K	9.79	**	3,5,6	2,4	1			
	1989	Sediments	BCSS-1	22.7	***	3,5,6	1,4				2
	1990	Sediments	L	21.8	**	2,3,4,5		1			
	1990	Sediments	M	12.7	**	1,2,3,5			4		
	1990	Sediments	BSCC-1	22.7	***	1,2,3,4,5					
Sb	1985	Sediments	A	1.5	**	2	4		1,3	6	5
	1985	Sediments	B	1.2	**		2,4		1,3	6	5
	1985	Sediments	C	0.6	**		3,4	2	1	6	5
	1985	Sediments	D	0.6	**		2,3,4		1	6	5
	1987	Sediments	H	0.72	*			1,4	2		3,5,6
	1987	Sediments	I	0.65	*	1			2,4		3,5,6
	1987	Sediments	J	0.27	*				1,4,5		2,3,6
	1987	Sediments	MESS-1	0.73	***	1		4	2		3,5,6
	1989	Sediments	K	0.47	*			1,4			2,3,5,6
	1989	Sediments	BCSS-1	0.59	***	4	1				2,3,5,6
	1990	Sediments	L	1.09	**	2	3		1	5	4
	1990	Sediments	M	0.34	**	1,2	3			5	4
	1990	Sediments	BSCC-1	0.59	***	1,2,3				5	4

ANALYTE	YEAR	Matrix	SAMPLE	Accepted Value		0 to 10%	10 to 20%	20 to 30%	>30%	nd	NA
Se	1985	Sediments	A	0.85	**	4	1	3		2,6	5
	1985	Sediments	B	0.86	**	1,3	4			2,6	5
	1985	Sediments	C	1.27	**	4			1,3	2,6	5
	1985	Sediments	D	1.26	**	1,3,4				2,6	5
	1987	Sediments	H	1.54	**	3	1,2		4,5	6	
	1987	Sediments	I	1.02	**	3		1,4,5	2	6	
	1987	Sediments	J	0.72	*	1,2	5	3	4	6	
	1987	Sediments	MESS-1	0.34	***	1,5		3,4		6	2
	1989	Sediments	K	1.86	*	2		3	4,6		1,5
	1989	Sediments	BCSS-1	0.43	***				4	3	1,2,5,6
	1990	Sediments	L	0.65	**		1	2,4	3		5
	1990	Sediments	M	0.15	**		2,3		1,4		5
	1990	Sediments	BSCC-1	0.43	***	1,4	2,3				5
Si	1985	Sediments	A	26	**	1,4,6	3,5				2
	1985	Sediments	B	27.4	**	1,4,6	3,5				2
	1985	Sediments	C	25.1	**	1,3,4,6	5				2
	1985	Sediments	D	25.7	**	1,3,4,6	5				2
	1987	Sediments	H	20.9	**	4	1,5,6				2,3
	1987	Sediments	I	29.1	**	1,4,6	5				2,3
	1987	Sediments	J							6	1,2,3,4,5
	1987	Sediments	MESS-1	31.6	***	1,4,6	5				2,3
	1989	Sediments	K	30.8	*		1,4				2,3,5,6
	1989	Sediments	BCSS-1	30.9	***	1,4					2,3,5,6
	1990	Sediments	L	26.58	*	1,3					2,4,5
	1990	Sediments	M	31.79	*	1,3					2,4,5
	1990	Sediments	BSCC-1	30.9	***	1,3					2,4,5
Sn	1985	Sediments	A	48.7	**	3	1,6		2,4,5		
	1985	Sediments	B	39.3	**	3	1,6		2,4,5		
	1985	Sediments	C	13.9	**		6		1,2,3,5	4	
	1985	Sediments	D	14.5	**	6	5		1,2,3	4	
	1987	Sediments	H	6.8	**	2,4	6	3,5	1		
	1987	Sediments	I	13.4	**	2,4,5,6	3		1		
	1987	Sediments	J	1.82	*				1,3,4,5	6	2
	1987	Sediments	MESS-1	3.98	***	1,4	3,5			6	2
	1989	Sediments	K	1.11	*	3,4	2		5		1,6
	1989	Sediments	BCSS-1	1.85	***	3,4,5					1,2,6
	1990	Sediments	L	2.3	**	5	1,2	3,4			
	1990	Sediments	M	0.93	**	1,4	2,3		5		
	1990	Sediments	BSCC-1	1.85	***	1,2,4	3	5			
Tl	1985	Sediments	A	0.8	*	5	3,4			6	1,2
	1985	Sediments	B	0.75	*	3,5	4			6	1,2
	1985	Sediments	C	0.67	*	5	3,4			6	1,2
	1985	Sediments	D	0.6	*	5	3,4			6	1,2
	1987	Sediments	H	0.5	**	5	4		1	6	2,3
	1987	Sediments	I	0.65	**	4	5		1	6	2,3
	1987	Sediments	J	0.98	*				1,4,5	6	2,3
	1987	Sediments	MESS-1	0.61	*	5		4	1	6	2,3
Zn	1985	Sediments	A	359	**	1,2,3,5,6	4				
	1985	Sediments	B	317	**	1,2,3,4,5,6					
	1985	Sediments	C	115	**	1,2,3,4,5,6					
	1985	Sediments	D	112	**	1,2,3,4,5	6				
	1987	Sediments	H	94.75	**	1,3,4,5	6	2			
	1987	Sediments	I	192	**	3,4,5,6	1,2				

ANALYTE	YEAR	Matrix	SAMPLE	Accepted Value		0 to 10%	10 to 20%	20 to 30%	>30%	nd	NA
	1987	Sediments	J	187.3	*	1,4,5,6					2,3
	1987	Sediments	MESS-1	191	***	1,2,3,4,5	6				
	1989	Sediments	K	93	**	1,2,3,5	6	4			
	1989	Sediments	BCSS-1	119	***	1,3,5,6	4				2
	1990	Sediments	L	169	**	1,2,3,4,5					
	1990	Sediments	M	38	**	1,2,3,4,5					
	1990	Sediments	BSCC-1	119	***	1,3,4,5	2				

ANALYTE	YEAR	MATRIX	SAMPLE	0 to 10%	10 to 20%	20 to 30%	>30%	Nd	NA
Ag	1985	Sediment	A	1,3,4,5,6				2	
	1985	Sediment	B	1,3,4,5	6			2	
	1985	Sediment	C	1,3,4,5,6				2	
	1985	Sediment	D	1,3,4	5,6			2	
	1987	Sediment	H		1,2,4,6	5	3		
	1987	Sediment	I	1,2,4	3,5	6			
	1987	Sediment	J	3,4,5,6	1				2
	1987	Sediment	MESS-1	1,3,6	4	5			2
	1989	Sediment	K	2,3	4,5			6	1
	1989	Sediment	BCSS-1	3,5	4				1,2,6
	1990	Sediment	L	1,2,3,4,5					
	1990	Sediment	M	2,3,4,5	1				
	1990	Sediment	BSCC-1	2,3,4,5	1				
Al	1985	Sediment	A	1,2,3,5,6	4				
	1985	Sediment	B	1,2,3,4,5,6					
	1985	Sediment	C	1,2,3,4,5,6					
	1985	Sediment	D	1,2,3,5	4,6				
	1987	Sediment	H	3,4,5	2,6	1			
	1987	Sediment	I	1,2,4,5,6	3				
	1987	Sediment	J	1,4,5,6					2,3
	1987	Sediment	MESS-1	1,3,4,5,6					2
	1989	Sediment	K	1,2,3,4,5		6			
	1989	Sediment	BCSS-1	1,3,4,5,6					2
	1990	Sediment	L	1,2,3,4,5					
	1990	Sediment	M	1,2,3,4,5					
	1990	Sediment	BSCC-1	1,2,3,4,5					
As	1985	Sediment	A	3,4	1,2,5,6				
	1985	Sediment	B	1,2,4,6	3,5				
	1985	Sediment	C	2,3,4	5,6	1			
	1985	Sediment	D	2,3,4,5		1	6		
	1987	Sediment	H	3,4,5,6	2				1
	1987	Sediment	I	4,5,6	2,3				1
	1987	Sediment	J	1,4,5,6					2,3
	1987	Sediment	MESS-1	1,5,6	4	3			2
	1989	Sediment	K		1,2,4,6	3	5		
	1989	Sediment	BCSS-1	1,3,4,5,6					2
	1990	Sediment	L	1,2,3,4,5					
	1990	Sediment	M	1,2,4,5		3			
	1990	Sediment	BSCC-1	1,2,3,4,5					
Cd	1985	Sediment	A	2,3,4,5		1			6
	1985	Sediment	B	3,5	1,2,4				6
	1985	Sediment	C	2,3	1,4,5				6
	1985	Sediment	D	2,3,4,5			1		6
	1987	Sediment	H	1,2,3,4,5,6					
	1987	Sediment	I	2,3,5,6	1,4				
	1987	Sediment	J	1,2,3,4,5,6					
	1987	Sediment	MESS-1	1,3,4,5,6					2
	1989	Sediment	K	1,2,3,4,5,6					
	1989	Sediment	BCSS-1	1,3,4,5	6				2
	1990	Sediment	L	1,2,3,4,5					
	1990	Sediment	M	2,3,4,5	1				
	1990	Sediment	BSCC-1	1,2,3,4,5					

ANALYTE	YEAR	MATRIX	SAMPLE	0 to 10%	10 to 20%	20 to 30%	>30%	Nd	NA
Cr	1985	Sediment	A	1,2,3,5,6			4		
	1985	Sediment	B	1,2,3,5,6			4		
	1985	Sediment	C	1,2,4,5,6	3				
	1985	Sediment	D	2,4,5	1,3,6				
	1987	Sediment	H	2,4,5,6	1	3			
	1987	Sediment	I	1,2,3,4,5,6					
	1987	Sediment	J	3,4,6	1				2,5
	1987	Sediment	MESS-1	1,2,4,5,6	3				
	1989	Sediment	K	1,2,3,4,5,6					
	1989	Sediment	BCSS-1	1,4,5,6	3				2
	1990	Sediment	L	1,2,3,4,5					
	1990	Sediment	M	1,2,5	3,4				
	1990	Sediment	BSCC-1	1,2,3,4,5					
Cu	1985	Sediment	A	1,2,3,4,5,6					
	1985	Sediment	B	1,4,5	2,3	6			
	1985	Sediment	C	1,2,3,4,5,6					
	1985	Sediment	D	1,2,3,4,5	6				
	1987	Sediment	H	1,2,3,4,5,6					
	1987	Sediment	I	1,2,3,4,5,6					
	1987	Sediment	J	1,4,5,6					2,3
	1987	Sediment	MESS-1	1,2,3,4,5,6					
	1989	Sediment	K	1,2,3,4,5,6					
	1989	Sediment	BCSS-1	1,3,5,6	4				2
	1990	Sediment	L	1,2,3,4,5					
	1990	Sediment	M	1,2,3,4,5					
	1990	Sediment	BSCC-1	1,2,3,5	4				
Fe	1985	Sediment	A	1,2,3,4,5,6					
	1985	Sediment	B	1,2,3,4,5,6					
	1985	Sediment	C	1,2,3,4,6	5				
	1985	Sediment	D	1,2,3,4,5	6				
	1987	Sediment	H	1,2,3,4,5,6					
	1987	Sediment	I	1,2,3,4,5,6					
	1987	Sediment	J	1,4,5,6					2,3
	1987	Sediment	MESS-1	1,2,3,4,5,6					
	1989	Sediment	K	1,2,3,4,5,6					
	1989	Sediment	BCSS-1	1,3,4,5,6					2
	1990	Sediment	L	1,2,3,4,5					
	1990	Sediment	M	1,2,3,4,5					
	1990	Sediment	BSCC-1	1,2,3,4,5					
Hg	1985	Sediment	A	6	1,3,4,5	2			
	1985	Sediment	B	1,5,6	3,4	2			
	1985	Sediment	C	2,4	3,6	1,5			
	1985	Sediment	D	3,5	1,4,6		2		
	1987	Sediment	H	3,5,6	1,2,4				
	1987	Sediment	I	6	1,2,3,5	4			
	1987	Sediment	J	1,2,3	6			4	5
	1987	Sediment	MESS-1	3,6	1,4,5				2
	1989	Sediment	K	2,3,6		1	4		5
	1989	Sediment	BCSS-1	3,6	4		1		2,5
	1990	Sediment	L	2,3,4,5			1		
	1990	Sediment	M	2,4		3	1,5		
	1990	Sediment	BSCC-1	2,3,4	5		1		

ANALYTE	YEAR	MATRIX	SAMPLE	0 to 10%	10 to 20%	20 to 30%	>30%	Nd	NA
Mn	1985	Sediment	A	1,2,3,4,6					5
	1985	Sediment	B	1,2,3,4,6					5
	1985	Sediment	C	1,2,3,4,6					5
	1985	Sediment	D	1,2,3,4	6				5
	1987	Sediment	H	1,2,3,4,5,6					
	1987	Sediment	I	1,2,3,4,5,6					
	1987	Sediment	J	1,4,5,6					2,3
	1987	Sediment	MESS-1	1,2,3,4,5,6					
	1989	Sediment	K	4,5,6		1			2,3
	1989	Sediment	BCSS-1	1,4,5,6					2,3
	1990	Sediment	L	1,2,3,4,5					
	1990	Sediment	M	1,2,3,4			5		
	1990	Sediment	BSCC-1	1,2,3,4,5					
Ni	1985	Sediment	A	2,3,6	1,5		4		
	1985	Sediment	B	1,2,3,5,6			4		
	1985	Sediment	C	1,2,3,6	4,5				
	1985	Sediment	D	2,3,4	1,6		5		
	1987	Sediment	H	1,2,4,6	3,5				
	1987	Sediment	I	1,4,6	2,3	5			
	1987	Sediment	J	4,5,6	1				2,3
	1987	Sediment	MESS-1	1,2,4,6	3	5			
	1989	Sediment	K	1,2,3,4,5,6					
	1989	Sediment	BCSS-1	1,3,4,5,6					2
	1990	Sediment	L	1,2,3,4,5					
	1990	Sediment	M	1,2,4,5	3				
	1990	Sediment	BSCC-1	2,3,4,5	1				
Pb	1985	Sediment	A	2,3,4,5,6	1				
	1985	Sediment	B	2,3,5,6	1		4		
	1985	Sediment	C	1,2,3,4,5	6				
	1985	Sediment	D	1,2,3,4,5,6					
	1987	Sediment	H	3,4,5	1,2,6				
	1987	Sediment	I	1,2,3,4	5.6				
	1987	Sediment	J	1,2,4,5,6					3
	1987	Sediment	MESS-1	3,4,5,6	2	1			
	1989	Sediment	K	1,2,4,5,6	3				
	1989	Sediment	BCSS-1	1,3,4,5,6					2
	1990	Sediment	L	1,2,3,4,5					
	1990	Sediment	M	1,2,4,5	3				
	1990	Sediment	BSCC-1	1,2,3,4		5			
Sb	1985	Sediment	A	4	2,3		1	6	5
	1985	Sediment	B	3,4	2		1	6	5
	1985	Sediment	C	2,4	3	1		6	5
	1985	Sediment	D	3,4	2		1	6	5
	1987	Sediment	H	1,2		4			3,5,6
	1987	Sediment	I	1	4	2			3,5,6
	1987	Sediment	J	1,4,5					2,3,6
	1987	Sediment	MESS-1	1,2		4			3,5,6
	1989	Sediment	K	1		4			2,3,5,6
	1989	Sediment	BCSS-1	1		4			2,3,5,6
	1990	Sediment	L	1,2,3				5	4
	1990	Sediment	M	1,2,3				5	4
	1990	Sediment	BSCC-1	1,2	3			5	4

ANALYTE	YEAR	MATRIX	SAMPLE	0 to 10%	10 to 20%	20 to 30%	>30%	Nd	NA
Se	1985	Sediment	A	3	1,4			2,6	5
	1985	Sediment	B	4	1,3			2,6	5
	1985	Sediment	C	1,3,4				2,6	5
	1985	Sediment	D	1,3,4				2,6	5
	1987	Sediment	H	1,4,5	3	2		6	
	1987	Sediment	I	1	2,3,4,5			6	
	1987	Sediment	J	1,3,5	2,4			6	
	1987	Sediment	MESS-1	1	4	3,5		6	2
	1989	Sediment	K	2	6	3,4			1,5
	1989	Sediment	BCSS-1	4				3	1,2,5,6
	1990	Sediment	L	2,3	4	1			5
	1990	Sediment	M	4		2,3	1		5
	1990	Sediment	BSCC-1	3	2,4		1		5
Si	1985	Sediment	A	1,3,4,5,6					2
	1985	Sediment	B	1,3,4,5,6					2
	1985	Sediment	C	1,3,5,6	4				2
	1985	Sediment	D	1,3,4,5	6				2
	1987	Sediment	H	1,4,5,6					2,3
	1987	Sediment	I	1,4,5,6					2,3
	1987	Sediment	J					6	1,2,3,4,5
	1987	Sediment	MESS-1	1,4,5,6					2,3
	1989	Sediment	K	1,4					2,3,5,6
	1989	Sediment	BCSS-1	1,4					2,3,5,6
	1990	Sediment	L	1,3					2,4,5
	1990	Sediment	M	1,3					2,4,5
	1990	Sediment	BSCC-1	1,3					2,4,5
Sn	1985	Sediment	A	2,3,4,5,6	1				
	1985	Sediment	B	2,5	1,3,4	6			
	1985	Sediment	C	2	1,3,5		6	4	
	1985	Sediment	D	2	5	1,3	6	4	
	1987	Sediment	H	1,2,4,5	3,6				
	1987	Sediment	I	1,3,4	5	2,6			
	1987	Sediment	J	1		3,4,5		6	2
	1987	Sediment	MESS-1	1,4	3	5		6	2
	1989	Sediment	K	2,4		3,5			1,6
	1989	Sediment	BCSS-1	4	3,5				1,2,6
	1990	Sediment	L	2,3,4	1,5				
	1990	Sediment	M	2	4,5	1,3			
	1990	Sediment	BSCC-1	2,3	4,5	1			
Tl	1985	Sediment	A	3,5	4			6	1,2
	1985	Sediment	B	3,5	4			6	1,2
	1985	Sediment	C	3,4,5				6	1,2
	1985	Sediment	D	3,5	4			6	1,2
	1987	Sediment	H	5	1,4			6	2,3
	1987	Sediment	I	1	4,5			6	2,3
	1987	Sediment	J		1,4	5		6	2,3
	1987	Sediment	MESS-1	1	4	5		6	2,3
Zn	1985	Sediment	A	1,2,3,4,5,6					
	1985	Sediment	B	1,2,3,4,5,6					
	1985	Sediment	C	1,2,3,4,5,6					
	1985	Sediment	D	1,2,3,4,5	6				
	1987	Sediment	H	1,2,3,4,6	5				
	1987	Sediment	I	1,2,3,4,5,6					

ANALYTE	YEAR	MATRIX	SAMPLE	0 to 10%	10 to 20%	20 to 30%	>30%	Nd	NA
	1987	Sediment	J	1,4,5,6					2,3
	1987	Sediment	MESS-1	1,2,3,4,5,6					
	1989	Sediment	K	1,2,3,4,5,6					
	1989	Sediment	BCSS-1	1,3,4,5,6					2
	1990	Sediment	L	1,2,3,4,5					
	1990	Sediment	M	1,2,3,4,5					
	1990	Sediment	BSCC-1	1,2,3,4,5					

A5 and A6

Summary of results from intercalibration exercises for the accuracy (A5) and the precision (A6) of the elemental analyses of biological tissues. The headings in the table refer to samples by letter or code, to "acc. values" which are "accepted values" defined in different ways, and the results of laboratories referred to by number. The keys to those headings are the same as in A1 and A2 respectively.

ANALYTE	YEAR	MATRIX	SAMPLE	Accepted Value		0 to 10%	10 to 20%	20 to 30%	>30%	Nd-NA
Ag	1985	Tissue	E	2.04	*	4			1,2,3,5,6	
	1985	Tissue	F	0.06	*	3,4,5	1,2	6		
	1985	Tissue	G	0.02	*				1,2,3,4,5,6	
	1985	Tissue	DOLT-1							1,2,3,4,5,6
	1987	Tissue	K TIS	2.43	**	2,3,6	5		1,4	
	1987	Tissue	L	0.14	**	3,5	4,6	1	2	
	1987	Tissue	M	0.15	*	3,4,5	6		1,2	
	1987	Tissue	DOLT-1	1.07	*	1,3,4,5	6			2
	1989	Tissue	Oyster	2.91	**		1,2,5	6	3,4	
	1989	Tissue	Mussel	2.48	**	2	1	5	3,4,6	
	1989	Tissue	DOLT-1	1.05	*	1,5	4			2,3,6
	1989	Tissue	CRM-6	0.03	***			3		1,2,4,5,6
	1990	Tissue	Oyster O	2.65	**	2,4,5			3	1
	1990	Tissue	DORM-1	0.21	**	4,5		2	3	1
Al	1985	Tissue	E	10.41	*				1,3,4,6	2,5
	1985	Tissue	F	564.15	*	3,4	6	1	2	5
	1985	Tissue	G	1.92	*	2,3	4,6		1	5
	1985	Tissue	DOLT-1							1,2,3,4,5,6
	1987	Tissue	K TIS	23.35	*			6	2,4	1,3,5
	1987	Tissue	L	87.25	*			4	1,2,6	3,5
	1987	Tissue	M	96.16	*		2	6	1,4	3,5
	1987	Tissue	DOLT-1	4.07	*	4				1,2,3,5,6
	1989	Tissue	Oyster	252.71	*	2,3,6				1,4,5
	1989	Tissue	Mussel	328.57	*	2,3	6			1,4,5
	1989	Tissue	DOLT-1							1,2,3,4,5,6
	1989	Tissue	CRM-6	175.67	*	3				1,2,4,5,6
	1990	Tissue	Oyster O	288.05	*	2	4	3		1,5
	1990	Tissue	DORM-1	14.80	*	3,4				1,2,5
As	1985	Tissue	E	10.30	°	3,4,5	2	1	6	
	1985	Tissue	F	8.30	°	2,5	3,4		1,6	
	1985	Tissue	G	174.48	*				1,2,4	3,5,6
	1985	Tissue	DOLT-1	10.10	***					1,2,3,4,5,6
	1987	Tissue	K TIS	10.00	**	3,4	2,5,6		1	
	1987	Tissue	L	10.43	**	3,4	1,5,6	2		
	1987	Tissue	M	7.41	*		5,6	4	1	2,3
	1987	Tissue	DOLT-1	10.10	***	3,6	1,4,5			2
	1989	Tissue	Oyster	5.68	**	6		3,5	1,2,4	
	1989	Tissue	Mussel	9.56	**	3,5	2	1,4,6		
	1989	Tissue	DOLT-1	10.10	***	1,4,5	6			2,3
	1989	Tissue	CRM-6	9.20	***	3				1,2,4,5,6
	1990	Tissue	Oyster O	9.70	**	2,4,5			3	1
	1990	Tissue	DORM-1	17.70	**	2,3,4,5				1
Cd	1985	Tissue	E	2.20	°	1,2,3,4,6	5			
	1985	Tissue	F	1.10	°	2,3,4,5		1	6	
	1985	Tissue	G	19.16	*				1,2,3,4	5,6
	1985	Tissue	DOLT-1	4.18	***					1,2,3,4,5,6
	1987	Tissue	K TIS	0.16	**	2,6	4,5		1,3	
	1987	Tissue	L	0.63	**	3,4,5,6	2		1	
	1987	Tissue	M	0.77	*		3,4,5,6		1,2	
	1987	Tissue	DOLT-1	4.18	***	2,3,4,5,6			1	
	1989	Tissue	Oyster	3.26	**	2,3,5	4,6			1
	1989	Tissue	Mussel	1.14	**	5	2,3,6		4	1
	1989	Tissue	DOLT-1	4.18	***	5,6	4			1,2,3
	1989	Tissue	CRM-6	0.82	***		3			1,2,4,5,6

ANALYTE	YEAR	MATRIX	SAMPLE	Accepted Value		0 to 10%	10 to 20%	20 to 30%	>30%	Nd-NA
	1990	Tissue	Oyster O	4.39	**	2,3,4,5				1
	1990	Tissue	DORM-1	0.09	**	2,4	3,5			1
Cr	1985	Tissue	E	0.92	***	1,4,5,6	2	3		
	1985	Tissue	F	1.47	***	2,5	1,3	4	6	
	1985	Tissue	G	16.92	*	2			1,3,4	5,6
	1985	Tissue	DOLT-1	0.40	***					1,2,3,4,5,6
	1987	Tissue	K TIS	4.95	**		2,3,4, 6	1,5		
	1987	Tissue	L	0.93	**	3		2,6	1,4,5	
	1987	Tissue	M	1.52	*	1,3,4,6	5			2
	1987	Tissue	DOLT-1	0.40	***	4,6	1,3,5		2	
	1989	Tissue	Oyster	0.54	**				1,2,3,4,5,6	
	1989	Tissue	Mussel	2.98	**		5,6		1,2,3,4	
	1989	Tissue	DOLT-1	0.40	***	1,4,5,6				2,3
	1989	Tissue	CRM-6	0.63	***	3				1,2,4,5,6
	1990	Tissue	Oyster O	0.44	**		4,5	2	3	1
	1990	Tissue	DORM-1	3.60	***	2,4,5	3			1
Cu	1985	Tissue	E	17.90	°	2,3,5	1,4	6		
	1985	Tissue	F	7.30	°	2	1,4	5,6	3	
	1985	Tissue	G	110.42	*				1,2,4	3,5,6
	1985	Tissue	DOLT-1	20.80	***					1,2,3,4,5,6
	1987	Tissue	K TIS	38.64	**	3,4,6	5	1		2
	1987	Tissue	L	7.00	**	1,6	4	3,5		2
	1987	Tissue	M	7.93	*	4	1,6		5	2,3
	1987	Tissue	DOLT-1	20.80	***	1,3,4,6	5			2
	1989	Tissue	Oyster	85.13	**	2,3,4,6	1,5			
	1989	Tissue	Mussel	11.91	**	1,5,6	2,3,4			
	1989	Tissue	DOLT-1	20.80	***	1,4,5,6				2,3
	1989	Tissue	CRM-6	4.90	***				3	1,2,4,5,6
	1990	Tissue	Oyster O	156.00	**	2,3	4	5		1
	1990	Tissue	DORM-1	5.22	***	2,3,4,5				1
Fe	1985	Tissue	E	320.00	***	2,4,5,6	3	1		
	1985	Tissue	F	619.00	***	2,4,5	3		1,6	
	1985	Tissue	G	4.05	*	2,4,6			1	3,5
	1985	Tissue	DOLT-1	712.00	***					1,2,3,4,5,6
	1987	Tissue	K TIS	345.40	**	1,2,3,4,5	6			
	1987	Tissue	L	137.30	**	1,2,3,4,5	6			
	1987	Tissue	M	176.04	*			1,4,5	2,6	3
	1987	Tissue	DOLT-1	712.00	***	4,5,6	1,3			2
	1989	Tissue	Oyster	221.00	**	1,6	2,3	4,5		
	1989	Tissue	Mussel	487.00	**	2,3,5	1,4,6			
	1989	Tissue	DOLT-1	712.00	***	1,4,5,6				2,3
	1989	Tissue	CRM-6	158.00	***	3				1,2,4,5,6
	1990	Tissue	Oyster O	269.00	**	2,3,5		4		1
	1990	Tissue	DORM-1	63.60	***	2,3,4,5				1
Hg	1985	Tissue	E	0.37	°	2,3,5,6	4		1	
	1985	Tissue	F	0.27	°				1,2,3,4,5,6	
	1985	Tissue	G	3.19	*	2,3,4			1	5,6
	1985	Tissue	DOLT-1	0.23	***					1,2,3,4,5,6
	1987	Tissue	K TIS	0.40	**	2,3,4,6	5		1	
	1987	Tissue	L	0.16	**		5		1,2,3,4,6	
	1987	Tissue	M	0.06	*	1	2		3,5	4,6
	1987	Tissue	DOLT-1	0.23	***	1,2,6	3,4,5			
	1989	Tissue	Oyster	0.17	*	2	4,6	3	1	5

ANALYTE	YEAR	MATRIX	SAMPLE	Accepted Value		0 to 10%	10 to 20%	20 to 30%	>30%	Nd-NA
	1989	Tissue	Mussel	0.23	*	2	3,4,6		1	5
	1989	Tissue	DOLT-1	0.23	***	1,4,6				2,3,5
	1989	Tissue	CRM-6	0.05	*	3				1,2,4,5,6
	1990	Tissue	Oyster O	0.12	**	3,4		2	5	1
	1990	Tissue	DORM-1	0.80	***	2,3,4	5			1
Mn	1985	Tissue	E	5.80	***	2,4,6	1,5	3		
	1985	Tissue	F	43.20	***	2,4,6	1,3,5			
	1985	Tissue	G	72.72	*				1,4	2,3,5,6
	1985	Tissue	DOLT-1	8.72	***					1,2,3,4,5,6
	1987	Tissue	K TIS	8.60	**	1,2,4,5	6			3
	1987	Tissue	L	8.80	**	2,5,6	1,4			3
	1987	Tissue	M	8.73	*	2,4,5,6	1			3
	1987	Tissue	DOLT-1	8.72	***	1,2,4,5,6				3
	1989	Tissue	Oyster	16.30	**	4,5		1		2,3,6
	1989	Tissue	Mussel	9.03	**	1		5	4	2,3,6
	1989	Tissue	DOLT-1	8.70	***	1,4,5				2,3,6
	1989	Tissue	CRM-6	16.30	***					1,2,3,4,5,6
	1990	Tissue	Oyster O	13.90	**		3,5			1,2,4
	1990	Tissue	DORM-1	1.32	**		3,5			1,2,4
Ni	1985	Tissue	E	0.38	***	1,2,6			3,4,5	
	1985	Tissue	F	3.30	***		1,3,4,5	2	6	
	1985	Tissue	G	19.55	*		2		1,3,4	5,6
	1985	Tissue	DOLT- 1	0.26	***					1,2,3,4,5,6
	1987	Tissue	K TIS	2.97	**	1,4,5	2,3,6			
	1987	Tissue	L	0.96	**	2,3,5			1,4,6	
	1987	Tissue	M	1.13	*	1,3,4,6		5		2
	1987	Tissue	DOLT- 1	0.26	***	2,3,4		5	1	6
	1989	Tissue	Oyster	1.91	**	5,6	2,3,4		1	
	1989	Tissue	Mussel	1.19	**	2,3,4	5		1,6	
	1989	Tissue	DOLT-1	0.26	***	1,4,5,6				2,3
	1989	Tissue	CRM-6	0.93	***	3				1,2,4,5,6
	1990	Tissue	Oyster O	1.91	**	2,4,5		3		1
	1990	Tissue	DORM-1	1.20	***	2,3,4	5			1
Pb	1985	Tissue	E	6.50	°	1,3,6	2	5	4	
	1985	Tissue	F	1.90	°	2,3	5	1,4	6	
	1985	Tissue	G	69.94	*	2		3	1,4	5,6
	1985	Tissue	DOLT-1	1.36	***					1,2,3,4,5,6
	1987	Tissue	K TIS	1.47	**	5		1	2,3,4,6	
	1987	Tissue	L	3.95	**	1	5	6	2,3,4	
	1987	Tissue	M	4.68	*	1,3,5,6	2,4			
	1987	Tissue	DOLT-1	1.36	***	1,3,4,5,6	2			
	1989	Tissue	Oyster	0.52	**	2,5	3,6		1,4	
	1989	Tissue	Mussel	10.09	**	2,3,5,6			1,4	
	1989	Tissue	DOLT-1	1.36	***	1,4,5,6			2,3	
	1989	Tissue	CRM-6	0.91	***		3			1,2,4,5,6
	1990	Tissue	Oyster O	0.68	**	2	5	4	3	1
	1990	Tissue	DORM-1	0.40	***	2,4		3	5	1
Sb	1985	Tissue	E	0.47	*				1,3,4,5	2,6
	1985	Tissue	F	0.71	*				1,3,4,5	2,6
	1985	Tissue	G	0.20	*	4			1	2,3,5,6
	1985	Tissue	DOLT-1	2.31	***					1,2,3,4,5,6
	1987	Tissue	K TIS	0.01	**				1	2,3,4,5,6
	1987	Tissue	L	0.02	**				1	2,3,4,5,6

ANALYTE	YEAR	MATRIX	SAMPLE	Accepted Value		0 to 10%	10 to 20%	20 to 30%	>30%	Nd-NA
	1987	Tissue	M	3.33	*	1				2,3,4,5,6
	1987	Tissue	DOLT-1	2.38	*	1				2,3,4,5,6
	1990	Tissue	Oyster O	0.02	*	3				1,2,4,5
	1990	Tissue	DORM-1	0.04	*	3				1,2,4,5
Se	1985	Tissue	E	4.30	***	3	2,4	5	1	6
	1985	Tissue	F	2.80	***	2,3	5		1,4	6
	1985	Tissue	G	22.06	*				1,4,6	2,3,5
	1985	Tissue	DOLT-1	7.34	***					1,2,3,4,5,6
	1987	Tissue	K TIS	12.72	**	2,3,6		5	1,4	
	1987	Tissue	L	3.42	**	2	3	1,4,6	5	
	1987	Tissue	M	2.62	*	6	1,4,5		2	3
	1987	Tissue	DOLT-1	7.34	***	2,3,5,6	1	4		
	1989	Tissue	Oyster	3.44	**	2,5		3,4	1,6	
	1989	Tissue	Mussel	3.64	**	2,5,6		4	1,3	
	1989	Tissue	DOLT-1	7.34	***	1,4,5,6				2,3
	1989	Tissue	CRM-6	1.87	*		3			1,2,4,5,6
	1990	Tissue	Oyster O	3.13	**	2,3,4,5				1
	1990	Tissue	DORM-1	1.62	***	2,3,4,5				1
Si	1985	Tissue	E	183.12	*		6		1,2,3	4,5
	1985	Tissue	F	624.44	*				1,2,3,6	4,5
	1985	Tissue	G	87.59	*				1,2,3	4,5,6
	1990	Tissue	Oyster O	278.00	*				3	1,2,4,5,6
	1990	Tissue	DORM-1	201.40	*				3	1,2,4,5,6
Sn	1985	Tissue	E	0.84	*	1		3,5		2,4,6
	1985	Tissue	F	0.35	*		5		1,3	2,4,6
	1985	Tissue	G	0.73	*	1,3				2,4,5,6
	1985	Tissue	DOLT-1	0.29	***					1,2,3,4,5,6
	1987	Tissue	K TIS	0.19	**	3			5	1,2,4,6
	1987	Tissue	L	0.03	**				1,3	2,4,5,6
	1987	Tissue	M	0.27	*				1,3,5	2,4,6
	1987	Tissue	DOLT-1	0.29	*				1,3	2,4,5,6
	1989	Tissue	Oyster	0.31	*				3,4	1,2,5,6
	1989	Tissue	Mussel	1.44	**		2		3,4	1,5,6
	1989	Tissue	DOLT-1	0.15	*	4				1,2,3,5,6
	1989	Tissue	CRM-6	1.02	*	3				1,2,4,5,6
	1990	Tissue	Oyster O	0.23	**		3,4		2,5	1
	1990	Tissue	DORM-1	0.13	**	4,5			2,3	1
Tl	1985	Tissue	E	0.14	*				1,4	2,3,5,6
	1985	Tissue	F	0.24	*				1,4	2,3,5,6
	1985	Tissue	G	1.03	*				1,3,4	2,5,6
Zn	1985	Tissue	E	58.20	***	1,2,3,4,5	6			
	1985	Tissue	F	160.00	***	2,3,4,5	1		6	
	1985	Tissue	G	32.28	*				1,2,4	3,5,6
	1985	Tissue	DOLT-1	92.50	***					1,2,3,4,5,6
	1987	Tissue	K TIS	218.00	**	2,3,4,5,6	1			
	1987	Tissue	L	132.00	**	1,2,3,4,5,6				
	1987	Tissue	M	121.27	*	1,4,6	2,5			3
	1987	Tissue	DOLT-1	92.50	***	1,2,3,5	4,6			
	1989	Tissue	Oyster	1543.00	**	1,2,3,4,5,6				
	1989	Tissue	Mussel	145.00	**	1,2,3,4,5,6				
	1989	Tissue	DOLT-1	92.50	***	1,4,5,6				2,3
	1989	Tissue	CRM-6	106.00	***				3	1,2,4,5,6

ANALYTE	YEAR	MATRIX	SAMPLE	Accepted Value		0 to 10%	10 to 20%	20 to 30%	>30%	Nd-NA
	1990	Tissue	Oyster O	2480.00	**	2,3,4,5				1
	1990	Tissue	DORM-1	21.30	***	2,3,4,5				1

ANALYTE	YEAR	MATRIX	SAMPLE	0 to 10%	10 to 20%	20 to 30%	>30%	Nd+NA
Ag	1985	Tissue	E	6	2	3,5	1,4	
	1985	Tissue	F	3,4,5,6	2	1		
	1985	Tissue	G	1,2,3,4,6				5
	1985	Tissue	DOLT-1					1,2,3,4,5,6
	1987	Tissue	K TIS	1,2,5,6,	3,4			
	1987	Tissue	L	3,4,5,6		1	2	
	1987	Tissue	M	1,2,3,4,5,6				
	1987	Tissue	DOLT-1	1,3,4,5,6				2
	1989	Tissue	Oyster	1,2,3,5,6	4			
	1989	Tissue	Mussel	1,2,3,5,6	4			
	1989	Tissue	DOLT-1	1,4,5				2,3,6
	1989	Tissue	CRM-6	3				1,2,4,5,6
	1990	Tissue	Oyster O	2,3,4,5				1
	1990	Tissue	DORM-1		2,3,4,5			1
Al	1985	Tissue	E	3	6		1,4	2,5
	1985	Tissue	F	2,3,4,6		1		5
	1985	Tissue	G	4,6	1			2,3,5
	1985	Tissue	DOLT-1					1,2,3,4,5,6
	1987	Tissue	K TIS	2,4,6				1,3,5
	1987	Tissue	L	6	2,4		1	3,5
	1987	Tissue	M	2,4,6			1	3,5
	1987	Tissue	DOLT-1	4				1,2,3,5,6
	1989	Tissue	Oyster	2	6	3		1,4,5
	1989	Tissue	Mussel	3	2,6			1,4,5
	1989	Tissue	DOLT-1					1,2,3,4,5,6
	1989	Tissue	CRM-6	3				1,2,4,5,6
	1990	Tissue	Oyster O	2,3,4				1,5
	1990	Tissue	DORM-1	4	3			1,2,5
As	1985	Tissue	E	2,3,4,5,6		1		
	1985	Tissue	F	2,3,4,5,6	1			
	1985	Tissue	G	2,4,6	1			3,5
	1985	Tissue	DOLT-1					1,2,3,4,5,6
	1987	Tissue	K TIS	1,2,3,4,5,6				
	1987	Tissue	L	1,3,4,5,6	2			
	1987	Tissue	M	1,4,5,6				2,3
	1987	Tissue	DOLT-1	1,4,5,6	3			2
	1989	Tissue	Oyster	1,2,3,4,5	6			
	1989	Tissue	Mussel	2,3,4,5,6			1	
	1989	Tissue	DOLT-1	1,4,5,6				2,3
	1989	Tissue	CRM-6	3	6			1,2,4,5
	1990	Tissue	Oyster O	2,3,4,5				1
	1990	Tissue	DORM-1	2,3,4,5				1
Cd	1985	Tissue	E	1,2,3,4,5,6				
	1985	Tissue	F	1,2,4,5,6	3			
	1985	Tissue	G	2,3,4,6	1			5
	1985	Tissue	DOLT-1					1,2,3,4,5,6
	1987	Tissue	K TIS	3,4,5,6	1,2			
	1987	Tissue	L	1,2,3,4,5,6				
	1987	Tissue	M	1,2,3,4,5,6				
	1987	Tissue	DOLT-1	3,4,6	2,5		1	
	1989	Tissue	Oyster	2,3,4,5,6				1
	1989	Tissue	Mussel	2,3,4,5,6				1
	1989	Tissue	DOLT-1	4,5,6				1,2,3
	1989	Tissue	CRM-6			3		1,2,4,5,6

ANALYTE	YEAR	MATRIX	SAMPLE	0 to 10%	10 to 20%	20 to 30%	>30%	Nd+NA
	1990	Tissue	Oyster O	2,3,4,5				1
	1990	Tissue	DORM-1	2,3,4	5			1
Cr	1985	Tissue	E	2,3,5,6	4	1		
	1985	Tissue	F	1,2,3,4,5,6				
	1985	Tissue	G	2,4,6	1,3			5
	1985	Tissue	DOLT-1					1,2,3,4,5,6
	1987	Tissue	K TIS	4,5,6	1,2,3			
	1987	Tissue	L	6	1,3,4	2,5		
	1987	Tissue	M	4,6	1,3,5			2
	1987	Tissue	DOLT-1	2	5,6	4	1,3	
	1989	Tissue	Oyster	1,2,3,6		5	4	
	1989	Tissue	Mussel	1,3,4,5,6	2			
	1989	Tissue	DOLT-1	6	4,5	1		2,3
	1989	Tissue	CRM-6		3			1,2,4,5,6
	1990	Tissue	Oyster O	2,4,5	3			1
	1990	Tissue	DORM-1	2,4,5		3		1
Cu	1985	Tissue	E	1,2,3,4,5			6	
	1985	Tissue	F	1,2,3,4,6	5			
	1985	Tissue	G	1,2,4,6				3,5
	1985	Tissue	DOLT-1					1,2,3,4,5,6
	1987	Tissue	K TIS	1,3,4,5,6				2
	1987	Tissue	L	3,4,5,6	1			2
	1987	Tissue	M	1,4,5,6				2,3
	1987	Tissue	DOLT-1	1,3,4,5,6				2
	1989	Tissue	Oyster	1,2,3,4,5,6				
	1989	Tissue	Mussel	1,2,3,4,5,6				
	1989	Tissue	DOLT-1	1,4,5,6				2,3
	1989	Tissue	CRM-6	3				1,2,4,5,6
	1990	Tissue	Oyster O	2,3,4,5				1
	1990	Tissue	DORM-1	2,3,4	5			1
Fe	1985	Tissue	E	1,2,3,4,5,6				
	1985	Tissue	F	1,2,3,4,5,6				
	1985	Tissue	G	1,4				2,3,5,6
	1985	Tissue	DOLT-1					1,2,3,4,5,6
	1987	Tissue	K TIS	1,2,4,5,6	3			
	1987	Tissue	L	1,2,3,4,5,6				
	1987	Tissue	M	1,2,4,5,6				3
	1987	Tissue	DOLT-1	1,3,4,5,6				2
	1989	Tissue	Oyster	1,2,3,4,5,6				
	1989	Tissue	Mussel	1,2,4,5,6		3		
	1989	Tissue	DOLT-1	1,4,5,6				2,3
	1989	Tissue	CRM-6	3				1,2,4,5,6
	1990	Tissue	Oyster O	2,3,4,5				1
	1990	Tissue	DORM-1	2,3,4	5			1
Hg	1985	Tissue	E	2,3,4,5,6			1	
	1985	Tissue	F	1,2,3,5	4,6			
	1985	Tissue	G	1				2,3,4,5,6
	1985	Tissue	DOLT-1					1,2,3,4,5,6
	1987	Tissue	K TIS	1,2,3,5,6		4		
	1987	Tissue	L	2,3,5,6		1	4	
	1987	Tissue	M	3		2		1,4,5,6
	1987	Tissue	DOLT-1	1,2,3,5,6		4		
	1989	Tissue	Oyster	2,3,6	1,4			5

ANALYTE	YEAR	MATRIX	SAMPLE	0 to 10%	10 to 20%	20 to 30%	>30%	Nd+NA
	1989	Tissue	Mussel	2,3	1,4,6			5
	1989	Tissue	DOLT-1	4,6			1	2,3,5
	1989	Tissue	CRM-6	3				1,2,4,5,6
	1990	Tissue	Oyster O	2,3,4	5			1
	1990	Tissue	DORM-1	2,3,4,5				1
Mn	1985	Tissue	E	2,4,6	1,3		5	
	1985	Tissue	F	2,3,4,5,6	1			
	1985	Tissue	G	4,6	1			2,3,5
	1985	Tissue	DOLT-1					1,2,3,4,5,6
	1987	Tissue	K TIS	1,2,4,5,6				3
	1987	Tissue	L	2,4,5,6	1			3
	1987	Tissue	M	1,2,4,5,6				3
	1987	Tissue	DOLT-1	1,2,4,5,6				3
	1989	Tissue	Oyster	1,4,5				2,3,6
	1989	Tissue	Mussel	1,5	4			2,3,6
	1989	Tissue	DOLT-1	1,4,5				2,3,6
	1989	Tissue	CRM-6					
	1990	Tissue	Oyster O	3,5				1,2,4
	1990	Tissue	DORM-1	3			5	1,2,4
Ni	1985	Tissue	E	2,6	5	1	3,4	
	1985	Tissue	F	1,2,3,4,5,6				
	1985	Tissue	G	2,3,4,6		1		5
	1985	Tissue	DOLT- 1					1,2,3,4,5,6
	1987	Tissue	K TIS	2,3,4,6	1,5			
	1987	Tissue	L	2,3,6	1,5	4		
	1987	Tissue	M	1,3,5,6	4			2
	1987	Tissue	DOLT- 1	1	2,5		3,4	6
	1989	Tissue	Oyster	1,2,3,4,5,6				
	1989	Tissue	Mussel	3,4,5,6	1,2			
	1989	Tissue	DOLT-1	4	1,6	5		2,3
	1989	Tissue	CRM-6		3			1,2,4,5,6
	1990	Tissue	Oyster O	2,3,4,5				1
	1990	Tissue	DORM-1	2,4,5,6	3			1
Pb	1985	Tissue	E	6	2,3,	1,4	5	
	1985	Tissue	F	2,3,5,6		4	1	
	1985	Tissue	G	2,3,4,6			1	5
	1985	Tissue	DOLT-1					1,2,3,4,5,6
	1987	Tissue	K TIS	1,6	2,3,5		4	
	1987	Tissue	L	5,6	1,2,3		4	
	1987	Tissue	M	1,2,3,4,5,6				
	1987	Tissue	DOLT-1	2,6	1,3	4	5	
	1989	Tissue	Oyster	1,2	3,5,6		4	
	1989	Tissue	Mussel	2,3,5,6	1	4		
	1989	Tissue	DOLT-1		5,6	1,4		2,3
	1989	Tissue	CRM-6	3				1,2,4,5,6
	1990	Tissue	Oyster O	2,3,4,5				1
	1990	Tissue	DORM-1	2	3	4	5	1
Sb	1985	Tissue	E	1,5			3,4	2,6
	1985	Tissue	F	1,5			3,4	2,6
	1985	Tissue	G		1		4	2,3,5,6
	1985	Tissue	DOLT-1					1,2,3,4,5,6
	1987	Tissue	K TIS				1	2,3,4,5,6
	1987	Tissue	L	1				2,3,4,5,6

ANALYTE	YEAR	MATRIX	SAMPLE	0 to 10%	10 to 20%	20 to 30%	>30%	Nd+NA
	1987	Tissue	M	1				2,3,4,5,6
	1987	Tissue	DOLT-1	1				2,3,4,5,6
	1990	Tissue	Oyster O			3		1,2,4,5
	1990	Tissue	DORM-1		3			1,2,4,5
Se	1985	Tissue	E	2,4,5	3,1			6
	1985	Tissue	F	2,3,4,5	1			6
	1985	Tissue	G	4,6	1			2,3,5
	1985	Tissue	DOLT-1					1,2,3,4,5,6
	1987	Tissue	K TIS	1,2,3,4,5,6				
	1987	Tissue	L	4	1,2,3,5,6			
	1987	Tissue	M	2,4,6	1,5			3
	1987	Tissue	DOLT-1	1,2,3,4,6	5			
	1989	Tissue	Oyster	1,3,5,6	2,4			
	1989	Tissue	Mussel	1,4,5,6	2	3		
	1989	Tissue	DOLT-1	1,4,5,6				2,3
	1989	Tissue	CRM-6		3			1,2,4,5,6
	1990	Tissue	Oyster O	2,4,5	3			1
	1990	Tissue	DORM-1	2,4,5	3			1
Si	1985	Tissue	E	2,3,6			1	4,5
	1985	Tissue	F	2	1,6		3	4,5
	1985	Tissue	G				1,3	2,4,5,6
	1990	Tissue	Oyster O		2			1,3,4,5
	1990	Tissue	DORM-1		3			1,2,4,5
Sn	1985	Tissue	E	1	5	3		2,4,6
	1985	Tissue	F	3	1,5			2,4,6
	1985	Tissue	G		1,3			2,4,5,6
	1985	Tissue	DOLT-1					1,2,3,4,5,6
	1987	Tissue	K TIS			3	5	1,2,4,6
	1987	Tissue	L			1	3	2,4,5,6
	1987	Tissue	M		1,3		5	2,4,6
	1987	Tissue	DOLT-1		3		1	2,4,5,6
	1989	Tissue	Oyster	4			3	1,2,5,6
	1989	Tissue	Mussel	2,4			3	1,5,6
	1989	Tissue	DOLT-1		4			1,2,3,5,6
	1989	Tissue	CRM-6	3				1,2,4,5,6
	1990	Tissue	Oyster O	2,3	4		5	1
	1990	Tissue	DORM-1	3,4	2		5	1
Tl	1985	Tissue	E				1,4	2,3,5,6
	1985	Tissue	F		1		4	2,3,5,6
	1985	Tissue	G	1		3	4	2,5,6
Zn	1985	Tissue	E	1,2,3,4,5,6				
	1985	Tissue	F	2,3,4,5,6	1			
	1985	Tissue	G	1,4,6				2,3,5
	1985	Tissue	DOLT-1					1,2,3,4,5,6,
	1987	Tissue	K TIS	1,2,3,4,5,6				
	1987	Tissue	L	1,2,3,4,5,6				
	1987	Tissue	M	1,2,4,5,6				3
	1987	Tissue	DOLT-1	1,2,3,4,5,6				
	1989	Tissue	Oyster	1,2,3,4,5,6				
	1989	Tissue	Mussel	1,2,3,4,5,6				
	1989	Tissue	DOLT-1	1,4,5,6				2,3
	1989	Tissue	CRM-6	3				1,2,4,5,6

ANALYTE	YEAR	MATRIX	SAMPLE	0 to 10%	10 to 20%	20 to 30%	>30%	Nd+NA
	1990	Tissue	Oyster O	2,3,4,5				1
	1990	Tissue	DORM-1	2,3,4,5				1

A7

Correlation coefficients (CC) are calculated between reported RSDs and "Accepted Values" of all the samples as well as the analytical biases of the laboratories (defined as the % departure from the "Accepted Value") versus the "Accepted Values". When all the laboratories are considered together, correlations are significant at the 95% confidence level (ICCI.>0.26 for n=60). When considering each laboratory separately, ICCI needs to be greater than 0.56 (for n=10) to be significant at the 95%confidence level.

A7-Correlation between concentration in the analyzed sample , precision and accuracy of the analyses

Sediments				Precision									Accuracy			
Analyte RSD	ECD	TAMU	BNW	NNEC	NSEC	SAIC	All		Bias	ECD	TAMU	BNW	NNEC	NSEC	SAIC	All
Ag	-0.34	0.67	-0.14	-0.25	-0.28	-0.44	-0.17		Ag	-0.55	-0.25	-0.62	-0.26	0.25	0.41	-0.06
As	0.55	0.6	-0.61	-0.71	0.17	0.46	0.03		As	-0.07	0.26	0.52	-0.44	0.02	0.39	-0.27
Al	-0.27	-0.24	-0.48	-0.26	-0.37	0.2	-0.2		Al	-0.17	-0.28	0.03	0.21	-0.02	0.16	-0.02
Cd	0.47	0.59	0.47	0.58	0.13	0.07	0.36		Cd	-0.23	0.34	0.72	-0.67	-0.26	0.69	-0.004
Cr	-0.37	-0.7	-0.12	-0.31	-0.25	-0.4	-0.2		Cr	-0.25	-0.23	-0.24	0.01	0.16	-0.3	-0.17
Cu	-0.14	0.28	0.31	-0.23	0.51	0.36	0.15		Cu	0.11	0.11	-0.61	-0.39	-0.46	0.53	-0.15
Fe	0.26	-0.54	-0.06	-0.42	0.27	0.07	-0.03		Fe	-0.05	-0.54	-0.79	-0.33	-0.32	0.47	-0.18
Hg	-0.12	0.5	0.65	-0.22	0.12	-0.12	-0.1		Hg	-0.26	0.43	-0.15	-0.07	-0.35	-0.08	-0.19
Mn	-0.29	-0.22	0.11	-0.14	-0.59	0.22	-0.22		Mn	-0.09	-0.09	-0.09	-0.38	0.46	0.05	0.11
Ni	-0.06	-0.48	-0.61	0.02	-0.26	0.21	-0.1		Ni	-0.67	-0.004	-0.63	0.2	-0.27	0.47	-0.25
Pb	0.35	-0.07	-0.47	0.42	-0.12	-0.3	0.03		Pb	-0.23	0.07	0.24	0.43	0.48	0.16	0.09
Sb	0.82	0.08	0.24	-0.72			0.26		Sb	-0.06	-0.34	-0.83	0.14			0.09
Se	-0.59	-0.15	-0.61	-0.23	-0.77		-0.46		Se	-0.23	0.11	-0.29	-0.27	-0.96		0.007
Si	0.4		-0.22	-0.24	-0.08	-0.38	-0.1		Si	-0.54		0.33	-0.45	0.11	-0.23	-0.23
Sn	0.11	-0.52	0.19	0.1	-0.42	0.32	0.06		Sn	0.07	0.72	-0.11	-0.85	0.8	-0.69	0.03
Zn	-0.46	-0.35	-0.14	-0.15	-0.29	-0.24	-0.23		Zn	0.08	-0.06	0.09	0.54	-0.12	0.62	0.17
Biological Tissues				Precision									Accuracy			
Analyte RSD	ECD	TAMU	BNW	NNEC	NSEC	SAIC	All		Bias	ECD	TAMU	BNW	NNEC	NSEC	SAIC	All
Ag	0.02	-0.39	0.35	0.38	-0.2	0.23	-0.002		Ag	-0.5	0.06	-0.25	-0.27	-0.37	0.05	-0.23
As	-0.09	-0.22	-0.57	-0.33		-0.24	-0.16		As	-0.38	0.02	0.3	-0.11		0.59	-0.15
Al	0.1	-0.27	0.005	0.09	-0.2	-0.32	0.01		Al	-0.67	0.85	-0.33	0.79	-0.22	-0.62	0.005
Cd	0.29	-0.28	-0.24	-0.28	-0.28	-0.54	-0.06		Cd	-0.78	-0.52	0.89	0.85	-0.36	-0.9	-0.09
Cr	-0.25	-0.28	-0.007	-0.41	-0.55	-0.54	-0.21		Cr	-0.49	-0.42	0.12	0.69	0.03	-0.83	-0.13
Cu	-0.2	-0.06	-0.62	-0.65	-0.42	-0.22	-0.27		Cu	-0.58	0.5	-0.47	0.49	0.22	-0.63	0.03
Fe	-0.52	-0.49	0.03	-0.14	-0.33	0.38	-0.18		Fe	-0.52	-0.18	0.3	-0.11	0.04	0.08	-0.04
Hg	-0.18	-0.3	-0.15	-0.31	-0.48	-0.57	-0.06		Hg	-0.62	0.11	0.34	0.1	-0.22	0.71	-0.12
Mn	0.5	-0.59	-0.19	-0.51	-0.34	-0.72	-0.19		Mn	-0.78	-0.86	-0.61	0.85	0.32	-0.87	-0.02
Ni	0.36	-0.42	-0.28	-0.38	-0.56	-0.02	-0.18		Ni	-0.62	0.34	0.76	0.73	-0.01	-0.8	-0.08
Pb	0.32	-0.36	-0.32	-0.5	-0.21	-0.45	-0.13		Pb	-0.69	-0.21	0.19	0.75	-0.23	-0.79	-0.05
Sb	-0.46		0.94	0.3			-0.16		Sb	-0.61		-0.99	-0.92			-0.31
Se	-0.21	-0.14	-0.45	-0.19	-0.32	-0.32	-0.22		Se	-0.58	-0.39	0.27	0.81	-0.04	-0.64	0.02
Si	-0.98		0.28				-0.18		Si	0.46	0.62	-0.58				5.7x10-9
Sn	-0.51		-0.25	0.7	0.07		-0.13		Sn	-0.65	-0.95	-0.29	0.71	0.05		0.07
Zn	-0.16	-0.4	0.06	-0.12	-0.09	-0.07	-0.15		Zn	-0.17	0.21	-0.2	0.23	-0.05	0.29	0.03

APPENDIX B AND C
RAW DATA

Common Headings used in both Appendices B and C

Participating laboratories

1[a]	ECD, Environmental Conservation Division, NMFS Northwest Center (Seattle, WA)
2[b]	TAMU, Texas A&M University (College Station, TX)
3[b]	BATT, Battelle (Sequim, WA)
4[a]	FSNE, NMFS Northeast Center (Sandy Hook, NJ)
5[a]	FSSE, NMFS Southeast Center (Beaufort, NC)
6[b]	SAIC, Science Applications International Corp. (La Jolla, CA)

[a]Laboratories supplying data for the NS&T Benthic Surveillance Project
[b]Laboratories supplying data for the NS&T Mussel Watch Project

Analytes

Ag	Silver
Al	Aluminum
As	Arsenic
Cd	Cadmium
Cr	Chrome
Cu	Copper
Fe	Iron
Hg	Mercury
Mn	Manganese
Ni	Nickel
Pb	Lead
Sb	Antimony
Se	Selenium
Si	Silicon
Sn	Tin
Tl	Thallium
Zn	Zinc

Analytical Method

GFAAS	Graphite Furnace Atomic Absorption Spectrometry
INAA	Instrumental Neutron Activation Analysis
FAAS	Flame Atomic Absorption Spectrometry
XRF	X-Ray Fluorescence
ICPAES	Inductively Coupled Plasma Emission Spectrometry
HGAAS	Hydrite Generation Atomic Absorption Spectrometry
IDICPMS	Isotope Dilution Inductively Coupled Plasma Mass Spectrometry
ICPMS	Inductively Coupled Plasma Mass Spectrometry
CVAAS	Cold Vapor Atomic Absorption Spectrometry
Color	Colorimetry

Appendix B - Biological Tissues

These are the raw results from intercalibration exercises for elemental analyses of biological tissues. The headings in the table refer to the year of the intercalibration exercise, the laboratories by number and code, analytes by symbols, samples by letter or code, replicate analysis (Rep.) by number, the results of laboratories referred to by number and the method used for the analysis by code. The keys to those headings are described on previous pages and below:

Sample Designation and Description

E	Dogfish liver analyzed in 1985
F	Mussel tissue analyzed in 1985
G	Digest of F analyzed in 1985
K	Cod liver analyzed in 1987
L	Mussel tissue analyzed in 1987
M	Digest of "L" analyzed in 1987
DOLT-1 (87)	NRC certified reference material (dogfish liver) analyzed, unknown, in 1987
Oyster	Composite of oyster tissues from NIST analyzed in 1989
Mussel	Composite of mussel tissues from NIST analyzed in 1989
DOLT-1 (89)	NRC certified reference dogfish liver analyzed, known, in 1989
CRM-6	NRC certified reference mussel tissue analyzed in 1989
Oyster O	Composite of oysters collected over the entire Gulf of Mexico analyzed in 1990
DOLT-1	NRC Certified Reference Material (dogfish liver) analyzed in 1990

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1985	1	Tissue	ECD	Ag	E	0.697	1.36	1.5	0.61							GFAAS
1985	2	Tissue	TAMU	Ag	E	0.995	1.202	1.141	0.894							GFAAS
1985	3	Tissue	BNW	Ag	E	2.26	3.5	1.93	3.07							GFAAS
1985	4	Tissue	NNEC	Ag	E	2.9	1.54	1.99								GFAAS
1985	5	Tissue	NSEC	Ag	E	2.02	2.05	3.19	3.3							GFAAS
1985	6	Tissue	SAIC	Ag	E	2.74	2.83	2.67	2.5							GFAAS
1985	8	Tissue	NRC8	Ag	E											
1985	9	Tissue	NRC9	Ag	E											
1985	1	Tissue	ECD	Ag	F	0.045	0.054	0.033	0.062							GFAAS
1985	2	Tissue	TAMU	Ag	F	0.073	0.075	0.06	0.059							GFAAS
1985	3	Tissue	BNW	Ag	F	0.06	0.06	0.061	0.061							GFAAS
1985	4	Tissue	NNEC	Ag	F	0.062	0.056	0.055	0.068							GFAAS
1985	5	Tissue	NSEC	Ag	F	0.052	0.059	0.064	0.057							GFAAS
1985	6	Tissue	SAIC	Ag	F	0.042	0.04	0.046	0.043							GFAAS
1985	8	Tissue	NRC8	Ag	F											
1985	9	Tissue	NRC9	Ag	F											
1985	1	Tissue	ECD	Ag	G	0.071	0.066	0.069	0.065							GFAAS
1985	2	Tissue	TAMU	Ag	G	0.006	0.006	0.006	0.006							GFAAS
1985	3	Tissue	BNW	Ag	G	0.006	0.005	0.006								GFAAS
1985	4	Tissue	NNEC	Ag	G	0.004	0.004	0.004	0.004							GFAAS
1985	5	Tissue	NSEC	Ag	G											
1985	6	Tissue	SAIC	Ag	G	0.006	0.006	0.006	0.006							GFAAS
1985	8	Tissue	NRC8	Ag	G											
1985	9	Tissue	NRC9	Ag	G											
1985	1	Tissue	ECD	Ag	DOLT-1											
1985	2	Tissue	TAMU	Ag	DOLT-1											
1985	3	Tissue	BNW	Ag	DOLT-1											
1985	4	Tissue	NNEC	Ag	DOLT-1											
1985	5	Tissue	NSEC	Ag	DOLT-1											
1985	6	Tissue	SAIC	Ag	DOLT-1											
1985	8	Tissue	NRC8	Ag	DOLT-1											
1985	9	Tissue	NRC9	Ag	DOLT-1											
1987	1	Tissue	ECD	Ag	K TIS	0.9	0.8	0.8	0.8	0.9	0.7					GFAAS
1987	2	Tissue	TAMU	Ag	K TIS	2.05	2.26	2.29	2.33	2.22	2.21					GFAAS
1987	3	Tissue	BNW	Ag	K TIS	2.74	2.74	2.5	2.51	2.65	1.51					GFAAS
1987	4	Tissue	NNEC	Ag	K TIS	1.98	1.66	1.67	1.92	1.62	1.19					GFAAS
1987	5	Tissue	NSEC	Ag	K TIS	2.04	1.95	2.13	2.13	2.4	1.95					GFAAS
1987	6	Tissue	SAIC	Ag	K TIS	2.1	2.1	2.1	2.2	2.4	2.3					GFAAS
1987	8	Tissue	NRC8	Ag	K TIS	2.59	2.42	2.31	2.69	2.46						GFAAS
1987	9	Tissue	NRC9	Ag	K TIS	2.29	2.34	2.35	2.38	2.43	2.39					IDICPMS
1987	1	Tissue	ECD	Ag	L	0.13	0.12	0.11	0.09	0.08	0.07					GFAAS
1987	2	Tissue	TAMU	Ag	L	0.12	0.1	0.09	0.6	0.2	0.1					GFAAS
1987	3	Tissue	BNW	Ag	L	0.14	0.14	0.15	0.14	0.14	0.14					GFAAS
1987	4	Tissue	NNEC	Ag	L	0.18	0.13	0.16	0.16	0.16	0.16					GFAAS

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1987	5	Tissue	NSEC	Ag	L	0.14	0.13	0.13	0.15	0.13	0.14					GFAAS
1987	6	Tissue	SAIC	Ag	L	0.17	0.15	0.15	0.16	0.16	0.15					GFAAS
1987	8	Tissue	NRC8	Ag	L	0.15	0.14	0.14	0.15	0.14						GFAAS
1987	9	Tissue	NRC9	Ag	L	0.14	0.13	0.14	0.15	0.13	0.14					IDICPMS
1987	1	Tissue	ECD	Ag	M	0.21	0.21	0.24	0.22	0.21	0.22					GFAAS
1987	2	Tissue	TAMU	Ag	M	0.07	0.06	0.06	0.07							GFAAS
1987	3	Tissue	BNW	Ag	M	0.14	0.14	0.15	0.16	0.15	0.15					GFAAS
1987	4	Tissue	NNEC	Ag	M	0.14	0.13	0.14	0.13	0.12	0.13					GFAAS
1987	5	Tissue	NSEC	Ag	M	0.17	0.15	0.14	0.14	0.15	0.15					GFAAS
1987	6	Tissue	SAIC	Ag	M	0.16	0.16	0.16	0.18	0.16	0.18					GFAAS
1987	8	Tissue	NRC8	Ag	M											
1987	9	Tissue	NRC9	Ag	M											
1987	1	Tissue	ECD	Ag	DOLT-1	1	1.02	1.06	1.05	1.04	1.1					GFAAS
1987	2	Tissue	TAMU	Ag	DOLT-1											
1987	3	Tissue	BNW	Ag	DOLT-1	1.08	1.11	1.07								GFAAS
1987	4	Tissue	NNEC	Ag	DOLT-1	1.01	1.04	0.99	1.04	1.08	0.97					GFAAS
1987	5	Tissue	NSEC	Ag	DOLT-1	0.99	1.03	0.99	0.96	0.89	0.9					GFAAS
1987	6	Tissue	SAIC	Ag	DOLT-1	1.2	1.2	1.3	1.2							GFAAS
1987	8	Tissue	NRC8	Ag	DOLT-1											
1987	9	Tissue	NRC9	Ag	DOLT-1											
1989	1	Tissue	ECD	Ag	Oyster	2.4	2.4	2.4	2.7	2.5						GFAAS
1989	2	Tissue	TAMU	Ag	Oyster	2.46	2.47	2.47	2.5	2.54	2.55	2.55	2.55	2.56	2.57	GFAAS
1989	3	Tissue	BNW	Ag	Oyster	1.4	1.5	1.5	1.6	1.5						GFAAS
1989	4	Tissue	NNEC	Ag	Oyster	1.7	1.38	1.97	1.63	1.56						GFAAS
1989	5	Tissue	NSEC	Ag	Oyster	2.44	2.37	2.48	2.32	2.34						GFAAS
1989	6	Tissue	SAIC	Ag	Oyster	2.4	2.2	2.3	2.3	2.3						GFAAS
1989	8	Tissue	NRC8	Ag	Oyster	3	2.59	2.96	3.08							ICPAES
1989	9	Tissue	NRC9	Ag	Oyster											
1989	1	Tissue	ECD	Ag	Mussel	2.2	2	2.1	1.9	1.8						GFAAS
1989	2	Tissue	TAMU	Ag	Mussel	2.11	2.14	2.19	2.32	2.33	2.4					GFAAS
1989	3	Tissue	BNW	Ag	Mussel	1.7	1.6	1.6	1.6	1.3						GFAAS
1989	4	Tissue	NNEC	Ag	Mussel	1.45	1.27	0.89	1.02	1.01						GFAAS
1989	5	Tissue	NSEC	Ag	Mussel	1.87	1.82	1.92	1.88	1.86						GFAAS
1989	6	Tissue	SAIC	Ag	Mussel	1.7	1.7	1.6	1.6	1.4						GFAAS
1989	8	Tissue	NRC8	Ag	Mussel	2.54	2.57	2.35	2.44							ICPAES
1989	9	Tissue	NRC9	Ag	Mussel											
1989	1	Tissue	ECD	Ag	DOLT-1	0.98	1	0.99	0.97	1						GFAAS
1989	2	Tissue	TAMU	Ag	DOLT-1											
1989	3	Tissue	BNW	Ag	DOLT-1											
1989	4	Tissue	NNEC	Ag	DOLT-1	1.22	1.15	1.19	1.15	1.19						GFAAS
1989	5	Tissue	NSEC	Ag	DOLT-1	1.01	0.98	0.98	0.99	0.96						GFAAS
1989	6	Tissue	SAIC	Ag	DOLT-1											GFAAS
1989	8	Tissue	NRC8	Ag	DOLT-1											
1989	9	Tissue	NRC9	Ag	DOLT-1											

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1989	1	Tissue	ECD	Ag	CRM-6											
1989	2	Tissue	TAMU	Ag	CRM-6											
1989	3	Tissue	BNW	Ag	CRM-6	0.02	0.02	0.02	0.02							GFAAS
1989	4	Tissue	NNEC	Ag	CRM-6											
1989	5	Tissue	NSEC	Ag	CRM-6											
1989	6	Tissue	SAIC	Ag	CRM-6											
1989	8	Tissue	NRC8	Ag	CRM-6	<1										ICPAES
1989	9	Tissue	NRC9	Ag	CRM-6											
1990	1	Tissue	ECD	Ag	Oyster O											
1990	2	Tissue	TAMU	Ag	Oyster O	2.51	2.47	2.49	2.5	2.51						GFAAS
1990	3	Tissue	BNW	Ag	Oyster O	1.9	1.8	1.7	1.8	1.7						ICPMS
1990	4	Tissue	NNEC	Ag	Oyster O	2.51	2.46	2.53	2.52	2.47						GFAAS
1990	5	Tissue	NSEC	Ag	Oyster O	2.45	2.39	2.55	2.61	2.36						GFAAS
1990	8	Tissue	NRC1	Ag	Oyster O	2.86	2.92	2.91	2.87	3						GFAAS
1990	9	Tissue	NRC2	Ag	Oyster O											
1990	1	Tissue	ECD	Ag	DORM-1											
1990	2	Tissue	TAMU	Ag	DORM-1	0.169	0.136	0.182	0.146	0.134						GFAAS
1990	3	Tissue	BNW	Ag	DORM-1	0.45	0.32	0.48	0.4	0.34						ICPMS
1990	4	Tissue	NNEC	Ag	DORM-1	0.183	0.179	0.212	0.233	0.24						GFAAS
1990	5	Tissue	NSEC	Ag	DORM-1	0.3	0.2	0.18	0.19	0.21						GFAAS
1990	8	Tissue	NRC1	Ag	DORM-1											
1990	9	Tissue	NRC2	Ag	DORM-1											
1985	1	Tissue	ECD	Al	E	19.8	23.3	9.75	8.76							GFAAS
1985	2	Tissue	TAMU	Al	E	<50	<50	<50	<50							FAAS
1985	3	Tissue	BNW	Al	E	5.18	4.91	5.42	4.41							FAAS
1985	4	Tissue	NNEC	Al	E	7.83	23	14.4	13							FAAS
1985	5	Tissue	NSEC	Al	E											
1985	6	Tissue	SAIC	Al	E	7.76	7.05	6.09	5.88							GFAAS
1985	8	Tissue	NRC8	Al	E											
1985	9	Tissue	NRC9	Al	E											
1985	1	Tissue	ECD	Al	F	265	492	400	551							GFAAS
1985	2	Tissue	TAMU	Al	F	810	860	750	750							FAAS
1985	3	Tissue	BNW	Al	F	562	561	568	534							FAAS
1985	4	Tissue	NNEC	Al	F	557	545	502	568							FAAS
1985	6	Tissue	SAIC	Al	F	378	308	349	290							FAAS
1985	6	Tissue	SAIC	Al	F	554	495	490	469							GFAAS
1985	8	Tissue	NRC8	Al	F											
1985	9	Tissue	NRC9	Al	F											
1985	1	Tissue	ECD	Al	G	59.3	48.8	48	62.7							GFAAS
1985	2	Tissue	TAMU	Al	G	1.8										FAAS
1985	3	Tissue	BNW	Al	G	1.961	1..993									FAAS
1985	4	Tissue	NNEC	Al	G	2.32	2.26	2.29	2.27							FAAS
1985	5	Tissue	NSEC	Al	G											

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1985	6	Tissue	SAIC	Al	G	1.54	1.61	1.63	1.73							GFAAS
1985	8	Tissue	NRC8	Al	G											
1985	9	Tissue	NRC9	Al	G											
1985	1	Tissue	ECD	Al	DOLT-1											
1985	2	Tissue	TAMU	Al	DOLT-1											
1985	3	Tissue	BNW	Al	DOLT-1											
1985	4	Tissue	NNEC	Al	DOLT-1											
1985	5	Tissue	NSEC	Al	DOLT-1											
1985	6	Tissue	SAIC	Al	DOLT-1											
1985	8	Tissue	NRC8	Al	DOLT-1											
1985	9	Tissue	NRC9	Al	DOLT-1											
1987	1	Tissue	ECD	Al	K TIS	<5										GFAAS
1987	2	Tissue	TAMU	Al	K TIS	33.9	44.6	40.2	36.8	37.9						FAAS
1987	3	Tissue	BNW	Al	K TIS											
1987	4	Tissue	NNEC	Al	K TIS	14.2	14.2	10.3	15.5	18	17.1					GFAAS
1987	5	Tissue	NSEC	Al	K TIS											
1987	6	Tissue	SAIC	Al	K TIS	19	16	17	14	18	15					GFAAS
1987	8	Tissue	NRC8	Al	K TIS											
1987	9	Tissue	NRC9	Al	K TIS											
1987	1	Tissue	ECD	Al	L	54.6	192	85.3	67.2	36.7	263					GFAAS
1987	2	Tissue	TAMU	Al	L	96.3	141	122	118	121	120					FAAS
1987	3	Tissue	BNW	Al	L											
1987	4	Tissue	NNEC	Al	L	61.6	54.7	70.4	63.6	73.3	74.3					GFAAS
1987	5	Tissue	NSEC	Al	L											
1987	6	Tissue	SAIC	Al	L	42	46	46	47	49	49					GFAAS
1987	8	Tissue	NRC8	Al	L											
1987	9	Tissue	NRC9	Al	L											
1987	1	Tissue	ECD	Al	M	108	116	100	220	240	221					GFAAS
1987	2	Tissue	TAMU	Al	M	80	80	90	80	80	90					FAAS
1987	3	Tissue	BNW	Al	M											
1987	4	Tissue	NNEC	Al	M	55.5	54.8	57.8	57.8	58.5	58.5					GFAAS
1987	5	Tissue	NSEC	Al	M											
1987	6	Tissue	SAIC	Al	M	76	77	74	76	78	79					GFAAS
1987	8	Tissue	NRC8	Al	M											
1987	9	Tissue	NRC9	Al	M											
1987	1	Tissue	ECD	Al	DOLT-1	<5										GFAAS
1987	2	Tissue	TAMU	Al	DOLT-1											
1987	3	Tissue	BNW	Al	DOLT-1											
1987	4	Tissue	NNEC	Al	DOLT-1	4.5	4	4.3	3.8	3.8	4					GFAAS
1987	5	Tissue	NSEC	Al	DOLT-1											
1987	6	Tissue	SAIC	Al	DOLT-1											
1987	8	Tissue	NRC8	Al	DOLT-1											
1987	9	Tissue	NRC9	Al	DOLT-1											
1989	1	Tissue	ECD	Al	Oyster											

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1989	2	Tissue	TAMU	Al	Oyster	228	241	247	253	264	279	295				FAAS
1989	3	Tissue	BNW	Al	Oyster	160	310	310	280	240						GFAAS
1989	4	Tissue	NNEC	Al	Oyster											
1989	5	Tissue	NSEC	Al	Oyster											
1989	6	Tissue	SAIC	Al	Oyster	290	210	240	270	190						GFAAS
1989	8	Tissue	NRC8	Al	Oyster											
1989	9	Tissue	NRC9	Al	Oyster											
1989	1	Tissue	ECD	Al	Mussel											
1989	2	Tissue	TAMU	Al	Mussel	262	278	298	306	334	342	349	350	355	363	FAAS
1989	3	Tissue	BNW	Al	Mussel	260	310	330	300	280						GFAAS
1989	4	Tissue	NNEC	Al	Mussel											
1989	5	Tissue	NSEC	Al	Mussel											
1989	6	Tissue	SAIC	Al	Mussel	410	340	320	360	400						GFAAS
1989	8	Tissue	NRC8	Al	Mussel											
1989	9	Tissue	NRC9	Al	Mussel											
1989	1	Tissue	ECD	Al	DOLT-1											
1989	2	Tissue	TAMU	Al	DOLT-1											
1989	3	Tissue	BNW	Al	DOLT-1											
1989	4	Tissue	NNEC	Al	DOLT-1											
1989	5	Tissue	NSEC	Al	DOLT-1											
1989	6	Tissue	SAIC	Al	DOLT-1											
1989	8	Tissue	NRC8	Al	DOLT-1											
1989	9	Tissue	NRC9	Al	DOLT-1											
1989	1	Tissue	ECD	Al	CRM-6											
1989	2	Tissue	TAMU	Al	CRM-6											
1989	3	Tissue	BNW	Al	CRM-6	181	190	174	191	156	162					GFAAS
1989	4	Tissue	NNEC	Al	CRM-6											
1989	5	Tissue	NSEC	Al	CRM-6											
1989	6	Tissue	SAIC	Al	CRM-6											
1989	8	Tissue	NRC8	Al	CRM-6											
1989	9	Tissue	NRC9	Al	CRM-6											
1990	1	Tissue	ECD	Al	Oyster O											
1990	2	Tissue	TAMU	Al	Oyster O	289	286	310	285	288						FAAS
1990	3	Tissue	BNW	Al	Oyster O	380	380	360	360	370						ICPMS
1990	4	Tissue	NNEC	Al	Oyster O	245	247	245	270	261						GFAAS
1990	5	Tissue	NSEC	Al	Oyster O											
1990	8	Tissue	NRC1	Al	Oyster O	230	241	228	240	246						ICPAES
1990	9	Tissue	NRC2	Al	Oyster O											
1990	1	Tissue	ECD	Al	DORM-1											
1990	2	Tissue	TAMU	Al	DORM-1	<80										FAAS
1990	3	Tissue	BNW	Al	DORM-1	16	14	19	14	15						ICPMS
1990	4	Tissue	NNEC	Al	DORM-1	13.8	13.6	13.2	15.9	13.5						GFAAS
1990	5	Tissue	NSEC	Al	DORM-1											
1990	8	Tissue	NRC1	Al	DORM-1											ICPAES

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1990	9	Tissue	NRC2	Al	DORM-1											
1985	1	Tissue	ECD	As	E	5.4	8.7	6.5	9.9							GFAAS
1985	2	Tissue	TAMU	As	E	8.9	9.1	8.7	9.4							GFAAS
1985	3	Tissue	BNW	As	E	11.5	11.8	10.6	10.9							XRF
1985	4	Tissue	NNEC	As	E	9.42	9.49	9.35	9.28							GFAAS
1985	5	Tissue	NSEC	As	E	9.8	10.2	10.2	9.9							GFAAS
1985	6	Tissue	SAIC	As	E	2.84	3.15	3.01	3.09							GFAAS
1985	8	Tissue	NRC8	As	E											
1985	9	Tissue	NRC9	As	E											
1985	1	Tissue	ECD	As	F	4.5	6.9	5.3	5.2							GFAAS
1985	2	Tissue	TAMU	As	F	7.8	7.7	7.9	7.8							GFAAS
1985	3	Tissue	BNW	As	F	9.5	9.1	9.4	9.8							XRF
1985	4	Tissue	NNEC	As	F	7.11	7.71	7.44	6.71							GFAAS
1985	5	Tissue	NSEC	As	F	7.3	7.4	8.8	7.2							GFAAS
1985	6	Tissue	SAIC	As	F	<1.3	<1.4	<1.2	<1.2							GFAAS
1985	8	Tissue	NRC8	As	F											
1985	9	Tissue	NRC9	As	F											
1985	1	Tissue	ECD	As	G	1.9	2.3	2.8	2.8							GFAAS
1985	2	Tissue	TAMU	As	G	340	350	330	340							GFAAS
1985	3	Tissue	BNW	As	G											XRF
1985	4	Tissue	NNEC	As	G	358	333	351	379							GFAAS
1985	5	Tissue	NSEC	As	G	0.21	0.21	0.21	0.22							GFAAS
1985	6	Tissue	SAIC	As	G											GFAAS
1985	8	Tissue	NRC8	As	G											
1985	9	Tissue	NRC9	As	G											
1985	1	Tissue	ECD	As	DOLT-1											
1985	2	Tissue	TAMU	As	DOLT-1											
1985	3	Tissue	BNW	As	DOLT-1											
1985	4	Tissue	NNEC	As	DOLT-1											
1985	5	Tissue	NSEC	As	DOLT-1											
1985	6	Tissue	SAIC	As	DOLT-1											
1985	8	Tissue	NRC8	As	DOLT-1											
1985	9	Tissue	NRC9	As	DOLT-1											
1987	1	Tissue	ECD	As	K TIS	14.2	14.7	15.7	14.7	15.6	16.1					GFAAS
1987	2	Tissue	TAMU	As	K TIS	8.4	8.1	7.7	8.3							GFAAS
1987	3	Tissue	BNW	As	K TIS	11.2	11	10.8	11.2	10.5	10.6					XRF
1987	4	Tissue	NNEC	As	K TIS	9.1	9.3	9.2	9.1	8.6	8.9					GFAAS
1987	5	Tissue	NSEC	As	K TIS	8.2	8.4	8.2	8.2	8.1	8.1					GFAAS
1987	6	Tissue	SAIC	As	K TIS	8	7.9	8.5	8.8	8	7.8					GFAAS
1987	8	Tissue	NRC8	As	K TIS	9.9	10.1	9.2	9.3	9.2						GFAAS
1987	9	Tissue	NRC9	As	K TIS	10.3	9.9	10	10.9	11	10.6					HGAAS
1987	1	Tissue	ECD	As	L	13.4	12.6	12.6	11.9	11.4	12.2					GFAAS
1987	2	Tissue	TAMU	As	L	9.7	7.2	7.7	8.1	7.8						GFAAS

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1987	3	Tissue	BNW	As	L	11.3	10.8	10.5	9.2	10.7	10.1					XRF
1987	4	Tissue	NNEC	As	L	10.4	8.8	9.5	9.8	9.7	9					GFAAS
1987	5	Tissue	NSEC	As	L	8.1	8.6	8.6	8.7	8.3	8.3					GFAAS
1987	6	Tissue	SAIC	As	L	9	8.6	8.6	9.1	10	9.2					GFAAS
1987	8	Tissue	NRC8	As	L	10.5	9.9	10.3	10	10.5						GFAAS
1987	9	Tissue	NRC9	As	L	10.8	11.2	10.8	9.8	10.5	10.6					HGAAS
1987	1	Tissue	ECD	As	M	3.2	3.4	3.4	3.6	3.6	3.7					GFAAS
1987	2	Tissue	TAMU	As	M											
1987	3	Tissue	BNW	As	M											
1987	4	Tissue	NNEC	As	M	9.4	9.6	9.8	9.4	9	8.8					GFAAS
1987	5	Tissue	NSEC	As	M	8.3	8.3	8.4	8.4	8.6	8.4					GFAAS
1987	6	Tissue	SAIC	As	M	8.4	7.7	8.6	8.7	8.8	8.4					GFAAS
1987	8	Tissue	NRC8	As	M											
1987	9	Tissue	NRC9	As	M											
1987	1	Tissue	ECD	As	DOLT-1	12.9	11.9	11.9	11.3	11	11.5					GFAAS
1987	2	Tissue	TAMU	As	DOLT-1											
1987	3	Tissue	BNW	As	DOLT-1	12	9.9	9.8								XRF
1987	4	Tissue	NNEC	As	DOLT-1	8.9	8.5	8.1	7.8	8.1	8.2					GFAAS
1987	5	Tissue	NSEC	As	DOLT-1	8.9	9.2	8.8	8.4	8.2	7.9					GFAAS
1987	6	Tissue	SAIC	As	DOLT-1	9.1	9.2	9.9	10							GFAAS
1987	8	Tissue	NRC8	As	DOLT-1											
1987	9	Tissue	NRC9	As	DOLT-1											
1989	1	Tissue	ECD	As	Oyster	8	8.4	7.7	8.4	7.9						GFAAS
1989	2	Tissue	TAMU	As	Oyster	7.3	7.3	7.7	7.8	7.9	8.1	8.3	8.4	8.5		GFAAS
1989	3	Tissue	BNW	As	Oyster	6.6	7.7	7.2	6.4	7.4						XRF
1989	4	Tissue	NNEC	As	Oyster	7.3	8.9	9.3	9.2	9.4						GFAAS
1989	5	Tissue	NSEC	As	Oyster	6.8	6.6	7.3	7.3	7.2						GFAAS
1989	6	Tissue	SAIC	As	Oyster	3.6	5.5	4.7	6.1	5.6						GFAAS
1989	8	Tissue	NRC8	As	Oyster	5.6	5.8	5.4	6	5.6						GFAAS
1989	9	Tissue	NRC9	As	Oyster											
1989	1	Tissue	ECD	As	Mussel	1.01	8.7	10	8	8.2						GFAAS
1989	2	Tissue	TAMU	As	Mussel	9.8	9.9	10.1	10.2	10.3	10.3	10.8	11.1	11.7	12	GFAAS
1989	3	Tissue	BNW	As	Mussel	8.2	8.7	10	10	9.4						XRF
1989	4	Tissue	NNEC	As	Mussel	11.3	11.5	12.2	12.1	10.9						GFAAS
1989	5	Tissue	NSEC	As	Mussel	8.9	10.6	9.9	9.7	9.7						GFAAS
1989	6	Tissue	SAIC	As	Mussel	6.8	7.3	7	7.2	7.8						GFAAS
1989	8	Tissue	NRC8	As	Mussel	8.2	9.7	9.8	10.2	9.9						GFAAS
1989	9	Tissue	NRC9	As	Mussel											
1989	1	Tissue	ECD	As	DOLT-1	9.9	9.9	9.6	9.9	9.7						GFAAS
1989	2	Tissue	TAMU	As	DOLT-1											
1989	3	Tissue	BNW	As	DOLT-1											
1989	4	Tissue	NNEC	As	DOLT-1	10	10	11	10	11						GFAAS
1989	5	Tissue	NSEC	As	DOLT-1	9.5	8.9	8.5	9.7	8.9						GFAAS
1989	6	Tissue	SAIC	As	DOLT-1	9.6	9	8.6	8.7	8.8						GFAAS

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1989	8	Tissue	NRC8	As	DOLT-1											
1989	9	Tissue	NRC9	As	DOLT-1											
1989	1	Tissue	ECD	As	CRM-6											
1989	2	Tissue	TAMU	As	CRM-6											
1989	3	Tissue	BNW	As	CRM-6	9.4	9.9	9.2	9.8	10.4	9.7					XRF
1989	4	Tissue	NNEC	As	CRM-6											
1989	5	Tissue	NSEC	As	CRM-6											
1989	6	Tissue	SAIC	As	CRM-6											
1989	8	Tissue	NRC8	As	CRM-6	7.8	9.9									GFAAS
1989	9	Tissue	NRC9	As	CRM-6											
1990	1	Tissue	ECD	As	Oyster O											
1990	2	Tissue	TAMU	As	Oyster O	9.66	9.7	9.56	9.98	9.32						GFAAS
1990	3	Tissue	BNW	As	Oyster O	15	15	16	18	16						ICPMS
1990	4	Tissue	NNEC	As	Oyster O	9.73	9.99	9.71	9.88	9.89						GFAAS
1990	5	Tissue	NSEC	As	Oyster O	10.5	10	10.4	9.7	10						GFAAS
1990	8	Tissue	NRC1	As	Oyster O											
1990	9	Tissue	NRC2	As	Oyster O	8.35	8.7	10.2	9.64	8.06						GFAAS
1990	1	Tissue	ECD	As	DORM-1											
1990	2	Tissue	TAMU	As	DORM-1	15.5	15.6	16.3	16.5	17.6						GFAAS
1990	3	Tissue	BNW	As	DORM-1	17	17	17	16	19						ICPMS
1990	4	Tissue	NNEC	As	DORM-1	17.7	17.4	17.6	17.7	17.8						GFAAS
1990	5	Tissue	NSEC	As	DORM-1	19.3	18.2	19.4	18.4	19.2						GFAAS
1990	8	Tissue	NRC1	As	DORM-1											
1990	9	Tissue	NRC2	As	DORM-1											GFAAS
1985	1	Tissue	ECD	Cd	E	2.15	2.23	2.24	2.23							GFAAS
1985	2	Tissue	TAMU	Cd	E	2.2	2.2	2.3	2.2							GFAAS
1985	3	Tissue	BNW	Cd	E	2.33	2.33	2.24	2.24							GFAAS
1985	4	Tissue	NNEC	Cd	E	2.46	2.28	2.16	2.37							GFAAS
1985	5	Tissue	NSEC	Cd	E	2.52	2.53	2.58	2.27							GFAAS
1985	6	Tissue	SAIC	Cd	E	2.34	2.3	2.24	2.37							GFAAS
1985	8	Tissue	NRC8	Cd	E											
1985	9	Tissue	NRC9	Cd	E											
1985	1	Tissue	ECD	Cd	F	1.41	1.49	1.37	1.39							GFAAS
1985	2	Tissue	TAMU	Cd	F	1.1	1.1	1.1	1.1							GFAAS
1985	3	Tissue	BNW	Cd	F	1.17	1.26	1.08	0.88							GFAAS
1985	4	Tissue	NNEC	Cd	F	1.12	1.08	1.05	1.08							GFAAS
1985	5	Tissue	NSEC	Cd	F	1.02	1.03	1.08	0.98							GFAAS
1985	6	Tissue	SAIC	Cd	F	0.75	0.69	0.82	0.75							GFAAS
1985	8	Tissue	NRC8	Cd	F											
1985	9	Tissue	NRC9	Cd	F											
1985	1	Tissue	ECD	Cd	G	1.33	1.32	1.77	1.8							GFAAS
1985	2	Tissue	TAMU	Cd	G	12	12	12	12							GFAAS
1985	3	Tissue	BNW	Cd	G	46.9	43.4									GFAAS

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1985	4	Tissue	NNEC	Cd	G	38.3	36.3	37.7	36							GFAAS
1985	5	Tissue	NSEC	Cd	G											GFAAS
1985	6	Tissue	SAIC	Cd	G	0.038	0.038	0.039	0.038							GFAAS
1985	8	Tissue	NRC8	Cd	G											
1985	9	Tissue	NRC9	Cd	G											
1985	1	Tissue	ECD	Cd	DOLT-1											
1985	2	Tissue	TAMU	Cd	DOLT-1											
1985	3	Tissue	BNW	Cd	DOLT-1											
1985	4	Tissue	NNEC	Cd	DOLT-1											
1985	5	Tissue	NSEC	Cd	DOLT-1											
1985	6	Tissue	SAIC	Cd	DOLT-1											
1985	8	Tissue	NRC8	Cd	DOLT-1											
1985	9	Tissue	NRC9	Cd	DOLT-1											
1987	1	Tissue	ECD	Cd	K TIS	0.43	0.3	0.42	0.31	0.34	0.37					GFAAS
1987	2	Tissue	TAMU	Cd	K TIS	0.18	0.14	0.14	0.14	0.13	0.17					GFAAS
1987	3	Tissue	BNW	Cd	K TIS	0.22	0.2	0.21	0.2	0.21	0.22					GFAAS
1987	4	Tissue	NNEC	Cd	K TIS	0.19	0.19	0.18	0.17	0.16	0.2					GFAAS
1987	5	Tissue	NSEC	Cd	K TIS	0.2	0.2	0.19	0.19	0.19	0.19					GFAAS
1987	6	Tissue	SAIC	Cd	K TIS	0.16	0.15	0.16	0.16	0.18	0.16					GFAAS
1987	8	Tissue	NRC8	Cd	K TIS	0.19	0.18	0.17	0.17	0.18						GFAAS
1987	9	Tissue	NRC9	Cd	K TIS	0.14	0.15	0.15	0.15	0.14						IDICPMS
1987	1	Tissue	ECD	Cd	L	1.07	1.23	1.02	1.09	1.17	1.01					GFAAS
1987	2	Tissue	TAMU	Cd	L	0.55	0.52	0.54	0.49	0.47	0.55					GFAAS
1987	3	Tissue	BNW	Cd	L	0.66	0.68	0.67	0.67	0.61	0.61					GFAAS
1987	4	Tissue	NNEC	Cd	L	0.78	0.61	0.64	0.75	0.63	0.67					GFAAS
1987	5	Tissue	NSEC	Cd	L	0.65	0.69	0.57	0.62	0.54	0.6					GFAAS
1987	6	Tissue	SAIC	Cd	L	0.6	0.65	0.63	0.66	0.6	0.53					GFAAS
1987	8	Tissue	NRC8	Cd	L	0.69	0.72	0.69	0.67	0.69						GFAAS
1987	9	Tissue	NRC9	Cd	L	0.57	0.57	0.57	0.56	0.57	0.57					IDICPMS
1987	1	Tissue	ECD	Cd	M	1.31	1.41	1.41	1.41	1.49	1.52					GFAAS
1987	2	Tissue	TAMU	Cd	M	0.52	0.51	0.52	0.53	0.52	0.53					GFAAS
1987	3	Tissue	BNW	Cd	M	0.62	0.68	0.68	0.74	0.68	0.74					GFAAS
1987	4	Tissue	NNEC	Cd	M	0.65	0.67	0.66	0.59	0.59	0.65					GFAAS
1987	5	Tissue	NSEC	Cd	M	0.67	0.64	0.7	0.71	0.71	0.7					GFAAS
1987	6	Tissue	SAIC	Cd	M	0.69	0.68	0.66	0.67	0.64	0.66					GFAAS
1987	8	Tissue	NRC8	Cd	M											
1987	9	Tissue	NRC9	Cd	M											
1987	1	Tissue	ECD	Cd	DOLT-1	2.86	1.31	1.65	1.06	2.43	1.7					GFAAS
1987	2	Tissue	TAMU	Cd	DOLT-1	4.87	3.85	5.08								GFAAS
1987	3	Tissue	BNW	Cd	DOLT-1	4.48	4.49	4.39								GFAAS
1987	4	Tissue	NNEC	Cd	DOLT-1	4.24	4.04	3.97	4.51	3.78	4.11					GFAAS
1987	5	Tissue	NSEC	Cd	DOLT-1	4.43	4.47	3.77	3.48	3.57	3.6					GFAAS
1987	6	Tissue	SAIC	Cd	DOLT-1	3.9	4	4	4.1							GFAAS
1987	8	Tissue	NRC8	Cd	DOLT-1											

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1987	9	Tissue	NRC9	Cd	DOLT-1											
1989	1	Tissue	ECD	Cd	Oyster											
1989	2	Tissue	TAMU	Cd	Oyster	3.3	3.36	3.38	3.39	3.4	3.42	3.44				GFAAS
1989	3	Tissue	BNW	Cd	Oyster	3.2	3.2	3.3	3.1	3.4						GFAAS
1989	4	Tissue	NNEC	Cd	Oyster	3.81	3.84	3.74	4.02	3.55						GFAAS
1989	5	Tissue	NSEC	Cd	Oyster	3.12	3.07	3.01	2.99	3.05						GFAAS
1989	6	Tissue	SAIC	Cd	Oyster	2.9	2.6	2.8	2.6	2.6						GFAAS
1989	8	Tissue	NRC8	Cd	Oyster	3.13	3.1	3.12	3.1	3.21						GFAAS
1989	9	Tissue	NRC9	Cd	Oyster	3.19	3.54	3.37	3.42							IDICPMS
1989	1	Tissue	ECD	Cd	Mussel											
1989	2	Tissue	TAMU	Cd	Mussel	1.23	1.25	1.3	1.3	1.31	1.31	1.32	1.34	1.34	1.36	GFAAS
1989	3	Tissue	BNW	Cd	Mussel	1.4	1.2	1.3	1.1	1.4						GFAAS
1989	4	Tissue	NNEC	Cd	Mussel	1.54	1.52	1.45	1.53	1.42						GFAAS
1989	5	Tissue	NSEC	Cd	Mussel	1.28	1.18	1.12	1.17	1.16						GFAAS
1989	6	Tissue	SAIC	Cd	Mussel	1.3	1.3	1.2	1.3	1.3						GFAAS
1989	8	Tissue	NRC8	Cd	Mussel	0.95	1.07	1.06	1.07	1.19						GFAAS
1989	9	Tissue	NRC9	Cd	Mussel	1.19	1.21	1.25								IDICPMS
1989	1	Tissue	ECD	Cd	DOLT-1											
1989	2	Tissue	TAMU	Cd	DOLT-1											
1989	3	Tissue	BNW	Cd	DOLT-1											
1989	4	Tissue	NNEC	Cd	DOLT-1	5.32	4.91	4.91	4.32	4.7						GFAAS
1989	5	Tissue	NSEC	Cd	DOLT-1	4.01	4.18	4.26	4.22	4.2						GFAAS
1989	6	Tissue	SAIC	Cd	DOLT-1	3.9	3.9	3.7	3.8	3.8						GFAAS
1989	8	Tissue	NRC8	Cd	DOLT-1											
1989	9	Tissue	NRC9	Cd	DOLT-1											
1989	1	Tissue	ECD	Cd	CRM-6											
1989	2	Tissue	TAMU	Cd	CRM-6											
1989	3	Tissue	BNW	Cd	CRM-6	1.1	1.14	0.84	0.98	0.61	0.93					GFAAS
1989	4	Tissue	NNEC	Cd	CRM-6											
1989	5	Tissue	NSEC	Cd	CRM-6											
1989	6	Tissue	SAIC	Cd	CRM-6											
1989	8	Tissue	NRC8	Cd	CRM-6	0.78	0.68									GFAAS
1989	9	Tissue	NRC9	Cd	CRM-6	0.76	0.77	0.77	0.76							IDICPMS
1990	1	Tissue	ECD	Cd	Oyster O											
1990	2	Tissue	TAMU	Cd	Oyster O	4.4	4.4	4.33	4.48	4.66						GFAAS
1990	3	Tissue	BNW	Cd	Oyster O	4.2	4.1	4.3	4.3	4.2						ICPMS
1990	4	Tissue	NNEC	Cd	Oyster O	4.11	4.23	4.21	4.1	4.29						GFAAS
1990	5	Tissue	NSEC	Cd	Oyster O	4.74	4.47	4.6	4.56	4.54						GFAAS
1990	8	Tissue	NRC1	Cd	Oyster O											
1990	9	Tissue	NRC2	Cd	Oyster O	4.78	4.28	4.44	4.27	4.43						GFAAS
1990	1	Tissue	ECD	Cd	DORM-1											
1990	2	Tissue	TAMU	Cd	DORM-1	0.096	0.094	0.088	0.087	0.086						GFAAS
1990	3	Tissue	BNW	Cd	DORM-1	0.084	0.092	0.1	0.11	0.1						ICPMS
1990	4	Tissue	NNEC	Cd	DORM-1	0.093	0.088	0.09	0.089	0.092						GFAAS

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1990	5	Tissue	NSEC	Cd	DORM-1	0.128	0.092	0.109	0.093	0.096						GFAAS
1990	8	Tissue	NRC1	Cd	DORM-1											
1990	9	Tissue	NRC2	Cd	DORM-1											GFAAS
1985	1	Tissue	ECD	Cr	E	0.789	1.17	0.712	0.71							GFAAS
1985	2	Tissue	TAMU	Cr	E	1.1	1.1	1	0.88							GFAAS
1985	3	Tissue	BNW	Cr	E	0.79	0.72	0.67	0.67							GFAAS
1985	4	Tissue	NNEC	Cr	E	1.19	0.788	0.869	0.87							GFAAS
1985	5	Tissue	NSEC	Cr	E	1.06	0.95	0.97	0.92							GFAAS
1985	6	Tissue	SAIC	Cr	E	0.95	1.09	1.01	1							GFAAS
1985	8	Tissue	NRC8	Cr	E											
1985	9	Tissue	NRC9	Cr	E											
1985	1	Tissue	ECD	Cr	F	1.3	1.3	1.19	1.23							GFAAS
1985	2	Tissue	TAMU	Cr	F	1.5	1.7	1.6	1.6							GFAAS
1985	3	Tissue	BNW	Cr	F	1.28	1.32	1.26	1.32							GFAAS
1985	4	Tissue	NNEC	Cr	F	1.07	1.13	1.09	1.13							GFAAS
1985	5	Tissue	NSEC	Cr	F	1.45	1.48	1.62	1.44							GFAAS
1985	6	Tissue	SAIC	Cr	F	0.8	0.86	0.84	0.75							GFAAS
1985	8	Tissue	NRC8	Cr	F											
1985	9	Tissue	NRC9	Cr	F											
1985	1	Tissue	ECD	Cr	G	0.692	0.636	0.802	0.635							GFAAS
1985	2	Tissue	TAMU	Cr	G	18	18	18	17							GFAAS
1985	3	Tissue	BNW	Cr	G	37.7	28.1	28.1								GFAAS
1985	4	Tissue	NNEC	Cr	G	35.2	34.8	35.5	33.8							GFAAS
1985	5	Tissue	NSEC	Cr	G											GFAAS
1985	6	Tissue	SAIC	Cr	G	0.029	0.028	0.029	0.029							GFAAS
1985	8	Tissue	NRC8	Cr	G											
1985	9	Tissue	NRC9	Cr	G											
1985	1	Tissue	ECD	Cr	DOLT-1											
1985	2	Tissue	TAMU	Cr	DOLT-1											
1985	3	Tissue	BNW	Cr	DOLT-1											
1985	4	Tissue	NNEC	Cr	DOLT-1											
1985	5	Tissue	NSEC	Cr	DOLT-1											
1985	6	Tissue	SAIC	Cr	DOLT-1											
1985	8	Tissue	NRC8	Cr	DOLT-1											
1985	9	Tissue	NRC9	Cr	DOLT-1											
1987	1	Tissue	ECD	Cr	K TIS	5.2	4.8	5.4	7	7.2	7.3					GFAAS
1987	2	Tissue	TAMU	Cr	K TIS	4.41	4.61	6.18	5.47	6.42	5.87					GFAAS
1987	3	Tissue	BNW	Cr	K TIS	4.34	5.42	6.06	5.29	6.3	5.86					GFAAS
1987	4	Tissue	NNEC	Cr	K TIS	6.57	5.75	5.05	5.25	6.11	5.28					GFAAS
1987	5	Tissue	NSEC	Cr	K TIS	6.26	6.57	6.16	5.82	5.88	6.13					GFAAS
1987	6	Tissue	SAIC	Cr	K TIS	4.2	4.5	4.1	4.2	4.3	4					GFAAS
1987	8	Tissue	NRC8	Cr	K TIS	5.29	5.59	4.72	5.12	4.77						GFAAS
1987	9	Tissue	NRC9	Cr	K TIS	4.81	4.93	4.64	4.78	4.81						IDICPMS

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1987	1	Tissue	ECD	Cr	L	3.4	3.3	3.6	2.5	2.7	2.4					GFAAS
1987	2	Tissue	TAMU	Cr	L	0.89	1.7	0.88	1.14	1.21	1.18					GFAAS
1987	3	Tissue	BNW	Cr	L	0.94	0.97	0.78	1.17	0.97	1.13					GFAAS
1987	4	Tissue	NNEC	Cr	L	1.6	1.11	1.22	1.28	1.32	1.14					GFAAS
1987	5	Tissue	NSEC	Cr	L	1.2	1.46	2.16	1.38	1.27	1.29					GFAAS
1987	6	Tissue	SAIC	Cr	L	0.68	0.62	0.62	0.61	0.77	0.67					GFAAS
1987	8	Tissue	NRC8	Cr	L	1.1	1	1.1	0.9	0.9						GFAAS
1987	9	Tissue	NRC9	Cr	L	0.77	0.78	0.85	0.88	0.81	1.04					IDICPMS
1987	1	Tissue	ECD	Cr	M	1.8	1.9	1.8	1.6	1.5	1.4					GFAAS
1987	2	Tissue	TAMU	Cr	M											
1987	3	Tissue	BNW	Cr	M	1.14	1.17	1.67	1.74	1.74	1.76					GFAAS
1987	4	Tissue	NNEC	Cr	M	1.45	1.52	1.45	1.56	1.45	1.58					GFAAS
1987	5	Tissue	NSEC	Cr	M	1.45	1.5	1.42	1.14	1.21	1.2					GFAAS
1987	6	Tissue	SAIC	Cr	M	1.6	1.5	1.6	1.5	1.7	1.6					GFAAS
1987	8	Tissue	NRC8	Cr	M											
1987	9	Tissue	NRC9	Cr	M											
1987	1	Tissue	ECD	Cr	DOLT-1	0.22	0.15	0.51	0.35	0.37	0.34					GFAAS
1987	2	Tissue	TAMU	Cr	DOLT-1	0.57	0.62									GFAAS
1987	3	Tissue	BNW	Cr	DOLT-1	0.72	0.35	0.29								GFAAS
1987	4	Tissue	NNEC	Cr	DOLT-1	0.56	0.28	0.41	0.45	0.34	0.31					GFAAS
1987	5	Tissue	NSEC	Cr	DOLT-1	0.44	0.54	0.44	0.48	0.6	0.35					GFAAS
1987	6	Tissue	SAIC	Cr	DOLT-1	0.35	0.34	0.44	0.38							GFAAS
1987	8	Tissue	NRC8	Cr	DOLT-1											
1987	9	Tissue	NRC9	Cr	DOLT-1											
1989	1	Tissue	ECD	Cr	Oyster	0.96	1.1	0.99	1	1.1						GFAAS
1989	2	Tissue	TAMU	Cr	Oyster	0.91	0.97	0.98	1	1.02						GFAAS
1989	3	Tissue	BNW	Cr	Oyster	1.1	1.2	1.2	1	1.2						GFAAS
1989	4	Tissue	NNEC	Cr	Oyster	0.81	0.75	0.72	1.4	0.92						GFAAS
1989	5	Tissue	NSEC	Cr	Oyster	0.64	1.01	0.62	0.82	0.62						GFAAS
1989	6	Tissue	SAIC	Cr	Oyster	0.75	0.71	0.66	0.73	0.7						GFAAS
1989	8	Tissue	NRC8	Cr	Oyster	0.6	0.69	0.64	0.73	0.65						GFAAS
1989	9	Tissue	NRC9	Cr	Oyster	0.51	0.34									IDICPMS
1989	1	Tissue	ECD	Cr	Mussel	5.6	5.4	5	5	4.7						GFAAS
1989	2	Tissue	TAMU	Cr	Mussel	3.74	4.07	4.13	4.27	5.51						GFAAS
1989	3	Tissue	BNW	Cr	Mussel	4.9	4.5	4.6	4.6	4.5						GFAAS
1989	4	Tissue	NNEC	Cr	Mussel	4.09	4.12	3.97	4.14	4.75						GFAAS
1989	5	Tissue	NSEC	Cr	Mussel	3.47	3.56	3.4	3.36	3.41						GFAAS
1989	6	Tissue	SAIC	Cr	Mussel	2.3	2.7	2.5	2.9	2.3						GFAAS
1989	8	Tissue	NRC8	Cr	Mussel	2.65	3.18	2.8	2.62	2.92						GFAAS
1989	9	Tissue	NRC9	Cr	Mussel	3.09	3.16									IDICPMS
1989	1	Tissue	ECD	Cr	DOLT-1	0.32	0.54	0.29	0.31	0.46						GFAAS
1989	2	Tissue	TAMU	Cr	DOLT-1											
1989	3	Tissue	BNW	Cr	DOLT-1											
1989	4	Tissue	NNEC	Cr	DOLT-1	0.38	0.35	0.47	0.41	0.31						GFAAS

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1989	5	Tissue	NSEC	Cr	DOLT-1	0.47	0.35	0.34	0.32	0.33						GFAAS
1989	6	Tissue	SAIC	Cr	DOLT-1	0.37	0.36	0.4	0.4	0.37						GFAAS
1989	8	Tissue	NRC8	Cr	DOLT-1											
1989	9	Tissue	NRC9	Cr	DOLT-1											
1989	1	Tissue	ECD	Cr	CRM-6											
1989	2	Tissue	TAMU	Cr	CRM-6											
1989	3	Tissue	BNW	Cr	CRM-6	0.63	0.63	0.64	0.62	0.46	0.48					GFAAS
1989	4	Tissue	NNEC	Cr	CRM-6											
1989	5	Tissue	NSEC	Cr	CRM-6											
1989	6	Tissue	SAIC	Cr	CRM-6											
1989	8	Tissue	NRC8	Cr	CRM-6	0.45	0.6									GFAAS
1989	9	Tissue	NRC9	Cr	CRM-6	0.52	0.73									IDICPMS
1990	1	Tissue	ECD	Cr	Oyster O											
1990	2	Tissue	TAMU	Cr	Oyster O	0.62	0.55	0.54	0.51	0.51						GFAAS
1990	3	Tissue	BNW	Cr	Oyster O	1.5	1.4	1.4	1.1	1.6						ICPMS
1990	4	Tissue	NNEC	Cr	Oyster O	0.514	0.5	0.503	0.49	0.51						GFAAS
1990	5	Tissue	NSEC	Cr	Oyster O	0.51	0.47	0.51	0.47	0.49						GFAAS
1990	8	Tissue	NRC1	Cr	Oyster O	0.399	0.38	0.359	0.376	0.399						IDICPMS
1990	9	Tissue	NRC2	Cr	Oyster O	0.35	0.43	0.38	0.41	0.39						GFAAS
1990	1	Tissue	ECD	Cr	DORM-1											
1990	2	Tissue	TAMU	Cr	DORM-1	3.99	3.46	3.96	3.61	3.73						GFAAS
1990	3	Tissue	BNW	Cr	DORM-1	3.1	2.7	2.5	4.2	3.4						ICPMS
1990	4	Tissue	NNEC	Cr	DORM-1	3.51	3.52	3.53	3.72	3.73						GFAAS
1990	5	Tissue	NSEC	Cr	DORM-1	3.7	3.75	4.35	3.81	4.04						GFAAS
1990	8	Tissue	NRC1	Cr	DORM-1											IDICPMS
1990	9	Tissue	NRC2	Cr	DORM-1											GFAAS
1985	1	Tissue	ECD	Cu	E	19.9	22.7	20	22.8							GFAAS
1985	2	Tissue	TAMU	Cu	E	16	17	17	16							FAAS
1985	3	Tissue	BNW	Cu	E	19.7	18.3	19.8	19.9							XRF
1985	4	Tissue	NNEC	Cu	E	19.5	20.7	19.3	19.9							FAAS
1985	5	Tissue	NSEC	Cu	E	16.3	18	20	17.5							FAAS
1985	6	Tissue	SAIC	Cu	E	6	16.7	16.6	17.5							GFAAS
1985	6	Tissue	SAIC	Cu	E	16.2	15.9	15.5	16.4							FAAS
1985	8	Tissue	NRC8	Cu	E											
1985	9	Tissue	NRC9	Cu	E											
1985	1	Tissue	ECD	Cu	F	8.26	7.74	7.78	8.34							GFAAS
1985	2	Tissue	TAMU	Cu	F	6.7	6.7	6.7	6.7							FAAS
1985	3	Tissue	BNW	Cu	F	10.4	9.9	10.6	9.2							XRF
1985	4	Tissue	NNEC	Cu	F	8.63	8.24	8.17	7.24							FAAS
1985	5	Tissue	NSEC	Cu	F	10.9	8.2	9	7.9							FAAS
1985	6	Tissue	SAIC	Cu	F	5.24	4.85	5.58								GFAAS
1985	6	Tissue	SAIC	Cu	F	5.51	4.71	5.43	5.05							FAAS
1985	8	Tissue	NRC8	Cu	F											

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1985	9	Tissue	NRC9	Cu	F											
1985	1	Tissue	ECD	Cu	G	5.11	5.03	5.29	5.42							GFAAS
1985	2	Tissue	TAMU	Cu	G	180	185	190	190							FAAS
1985	3	Tissue	BNW	Cu	G											XRF
1985	4	Tissue	NNEC	Cu	G	253	251	244	252							FAAS
1985	5	Tissue	NSEC	Cu	G											FAAS
1985	6	Tissue	SAIC	Cu	G	0.22	0.22	0.22	0.22							GFAAS
1985	6	Tissue	SAIC	Cu	G	0.18										FAAS
1985	8	Tissue	NRC8	Cu	G											
1985	9	Tissue	NRC9	Cu	G											
1985	1	Tissue	ECD	Cu	DOLT-1											
1985	2	Tissue	TAMU	Cu	DOLT-1											
1985	3	Tissue	BNW	Cu	DOLT-1											
1985	4	Tissue	NNEC	Cu	DOLT-1											
1985	5	Tissue	NSEC	Cu	DOLT-1											
1985	6	Tissue	SAIC	Cu	DOLT-1											
1985	8	Tissue	NRC8	Cu	DOLT-1											
1985	9	Tissue	NRC9	Cu	DOLT-1											
1987	1	Tissue	ECD	Cu	K TIS	55.4	42.3	44.2	43.6	45.8	48.5					GFAAS
1987	2	Tissue	TAMU	Cu	K TIS	32.6	34.8	35.7	37.9	32.3	32.4					
1987	3	Tissue	BNW	Cu	K TIS	40.4	38.4	42.7	37	36	38					XRF
1987	4	Tissue	NNEC	Cu	K TIS	39.6	40.2	41.3	39.7	40.1	40.2					FAAS
1987	5	Tissue	NSEC	Cu	K TIS	45.2	46.3	48.1	45.3	46.1	46.2					FAAS
1987	6	Tissue	SAIC	Cu	K TIS	37	39	37	38	38	37					GFAAS
1987	8	Tissue	NRC8	Cu	K TIS	38.7	38.4	38.5	37.5	38.5						GFAAS
1987	9	Tissue	NRC9	Cu	K TIS	39.6	38.6	37.6	41	38.1	38.9					IDICPMS
1987	1	Tissue	ECD	Cu	L	8	6.3	6.4	8.1	6.4	7.8					GFAAS
1987	2	Tissue	TAMU	Cu	L	6.8	6.8	7.1	6.5	6.9	6.9					
1987	3	Tissue	BNW	Cu	L	9.3	9.3	8.9	7.3	8.8	8.3					XRF
1987	4	Tissue	NNEC	Cu	L	7.5	8.5	7.6	7.7	8.7	8.1					FAAS
1987	5	Tissue	NSEC	Cu	L	8.9	8.3	8.3	8.2	8.6	8.8					FAAS
1987	6	Tissue	SAIC	Cu	L	7	7.1	7	7	7.1	7					GFAAS
1987	8	Tissue	NRC8	Cu	L	6.4	6.6	7	6.7	6.9						GFAAS
1987	9	Tissue	NRC9	Cu	L	7	7.5	7.1	7.4	7.4	7.3					IDICPMS
1987	1	Tissue	ECD	Cu	M	6.1	6.1	6.6	6.6	6.6						GFAAS
1987	2	Tissue	TAMU	Cu	M											
1987	3	Tissue	BNW	Cu	M											
1987	4	Tissue	NNEC	Cu	M	6.8	7.9	8.2	6.6	6.6	7					FAAS
1987	5	Tissue	NSEC	Cu	M	11.5	11.5	11.6	11.5	11.2	11.1					FAAS
1987	6	Tissue	SAIC	Cu	M	6.9	6.7	6.6	6.8	6.7	6.6					GFAAS
1987	8	Tissue	NRC8	Cu	M											
1987	9	Tissue	NRC9	Cu	M											
1987	1	Tissue	ECD	Cu	DOLT-1	21.7	21	20.8	20.6	21.1	20.6					GFAAS
1987	2	Tissue	TAMU	Cu	DOLT-1	18.2	17.7	19.2								

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1987	3	Tissue	BNW	Cu	DOLT-1	22.6	22.1	20.6								XRF
1987	4	Tissue	NNEC	Cu	DOLT-1	20.1	19.1	20.3	20	20.1	19.7					FAAS
1987	5	Tissue	NSEC	Cu	DOLT-1	23.2	23.6	22.8	23.1	23	22.7					FAAS
1987	6	Tissue	SAIC	Cu	DOLT-1	20	21	20	19							GFAAS
1987	8	Tissue	NRC8	Cu	DOLT-1											
1987	9	Tissue	NRC9	Cu	DOLT-1											
1989	1	Tissue	ECD	Cu	Oyster	95.3	100	107	100	101						GFAAS
1989	2	Tissue	TAMU	Cu	Oyster	75.3	77.1	77.4	77.6	77.9	78.5	79	80.2	80.8	80.9	GFAAS
1989	3	Tissue	BNW	Cu	Oyster	82	86	85	84	86						XRF
1989	4	Tissue	NNEC	Cu	Oyster	90	89.2	93.4	93	94.9						FAAS
1989	5	Tissue	NSEC	Cu	Oyster	93.7	96.2	93.5	92.2	96.1						FAAS
1989	6	Tissue	SAIC	Cu	Oyster	86	84	86	82	85						GFAAS
1989	8	Tissue	NRC8	Cu	Oyster											
1989	9	Tissue	NRC9	Cu	Oyster	86.3	81.5	85.7	87							IDICPMS
1989	1	Tissue	ECD	Cu	Mussel	12.4	11.2	11.9	12.2	12.3						GFAAS
1989	2	Tissue	TAMU	Cu	Mussel	9.1	9.1	9.4	9.7	9.9	10.4	10.4	10.9	11	11.1	GFAAS
1989	3	Tissue	BNW	Cu	Mussel	12	13	14	14	14						XRF
1989	4	Tissue	NNEC	Cu	Mussel	12.2	13.6	12.5	14.1	14						FAAS
1989	5	Tissue	NSEC	Cu	Mussel	12.3	13.5	11.8	13	13.5						FAAS
1989	6	Tissue	SAIC	Cu	Mussel	12	11	11	11	11						GFAAS
1989	8	Tissue	NRC8	Cu	Mussel	11.1	10.8	11.4	11.3	11						GFAAS
1989	9	Tissue	NRC9	Cu	Mussel	12.7	12.7	12.7								IDICPMS
1989	1	Tissue	ECD	Cu	DOLT-1	20.3	20.6	20	19.7	20.8						GFAAS
1989	2	Tissue	TAMU	Cu	DOLT-1											
1989	3	Tissue	BNW	Cu	DOLT-1											
1989	4	Tissue	NNEC	Cu	DOLT-1	20.8	20.2	21.3	21.9	22.3						FAAS
1989	5	Tissue	NSEC	Cu	DOLT-1	21.3	21.9	21.7	21.6	21.8						FAAS
1989	6	Tissue	SAIC	Cu	DOLT-1	19	19	19	19	19						GFAAS
1989	8	Tissue	NRC8	Cu	DOLT-1											
1989	9	Tissue	NRC9	Cu	DOLT-1											
1989	1	Tissue	ECD	Cu	CRM-6											
1989	2	Tissue	TAMU	Cu	CRM-6											
1989	3	Tissue	BNW	Cu	CRM-6	6.6	6.9	6.8	6.1	6.9	6.8					XRF
1989	4	Tissue	NNEC	Cu	CRM-6											
1989	5	Tissue	NSEC	Cu	CRM-6											
1989	6	Tissue	SAIC	Cu	CRM-6											
1989	8	Tissue	NRC8	Cu	CRM-6	4.9										GFAAS
1989	9	Tissue	NRC9	Cu	CRM-6	4.6	4.6	4.8	4.7							IDICPMS
1990	1	Tissue	ECD	Cu	Oyster O											
1990	2	Tissue	TAMU	Cu	Oyster O	160	158	149	161	160						FAAS
1990	3	Tissue	BNW	Cu	Oyster O	160	160	170	160	170						ICPMS
1990	4	Tissue	NNEC	Cu	Oyster O	175	176	174	173	177						FAAS
1990	5	Tissue	NSEC	Cu	Oyster O	199	202	198	202	196						FAAS
1990	8	Tissue	NRC1	Cu	Oyster O	148	150	149	153	155						ICPAES

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1990	9	Tissue	NRC2	Cu	Oyster O	165	158	162	162	156						FAAS
1990	1	Tissue	ECD	Cu	DORM-1											
1990	2	Tissue	TAMU	Cu	DORM-1	4.95	4.76	4.89	4.8	4.72						FAAS
1990	3	Tissue	BNW	Cu	DORM-1	5.4	5.5	5.4	6.1	5.1						ICPMS
1990	4	Tissue	NNEC	Cu	DORM-1	5.36	5.16	5.37	5.25	4.87						FAAS
1990	5	Tissue	NSEC	Cu	DORM-1	4.9	3.6	5.3	5.1	4.8						FAAS
1990	8	Tissue	NRC1	Cu	DORM-1											ICPAES
1990	9	Tissue	NRC2	Cu	DORM-1											FAAS
1985	1	Tissue	ECD	Fe	E	372	388	404	412							FAAS
1985	2	Tissue	TAMU	Fe	E	310	300	300	310							GFAAS
1985	3	Tissue	BNW	Fe	E	373	342	352	352							XRF
1985	4	Tissue	NNEC	Fe	E	297	301	289	317							FAAS
1985	5	Tissue	NSEC	Fe	E	324	329	326	325							FAAS
1985	6	Tissue	SAIC	Fe	E	294	295	308	286							FAAS
1985	8	Tissue	NRC8	Fe	E											
1985	9	Tissue	NRC9	Fe	E											
1985	1	Tissue	ECD	Fe	F	834	810	848	830							FAAS
1985	2	Tissue	TAMU	Fe	F	650	660	660	660							GFAAS
1985	3	Tissue	BNW	Fe	F	714	681	693	681							XRF
1985	4	Tissue	NNEC	Fe	F	576	563	584	544							FAAS
1985	5	Tissue	NSEC	Fe	F	687	687	706	591							FAAS
1985	6	Tissue	SAIC	Fe	F	410	403	386	390							FAAS
1985	8	Tissue	NRC8	Fe	F											
1985	9	Tissue	NRC9	Fe	F											
1985	1	Tissue	ECD	Fe	G	121	131	137	134							FAAS
1985	2	Tissue	TAMU	Fe	G	4.2										
1985	3	Tissue	BNW	Fe	G											
1985	4	Tissue	NNEC	Fe	G	4.24	4.27	4.39	4.25							FAAS
1985	5	Tissue	NSEC	Fe	G											
1985	6	Tissue	SAIC	Fe	G	3.65										
1985	8	Tissue	NRC8	Fe	G											
1985	9	Tissue	NRC9	Fe	G											
1985	1	Tissue	ECD	Fe	DOLT-1											
1985	2	Tissue	TAMU	Fe	DOLT-1											
1985	3	Tissue	BNW	Fe	DOLT-1											
1985	4	Tissue	NNEC	Fe	DOLT-1											
1985	5	Tissue	NSEC	Fe	DOLT-1											
1985	6	Tissue	SAIC	Fe	DOLT-1											
1985	8	Tissue	NRC8	Fe	DOLT-1											
1985	9	Tissue	NRC9	Fe	DOLT-1											
1987	1	Tissue	ECD	Fe	K TIS	322	336	364	324	356	367					GFAAS
1987	2	Tissue	TAMU	Fe	K TIS	339	291	314	337	329	318					FAAS
1987	3	Tissue	BNW	Fe	K TIS	389	310	318	299	290	300					XRF

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1987	4	Tissue	NNEC	Fe	K TIS	337	331	337	319	312	305					FAAS
1987	5	Tissue	NSEC	Fe	K TIS	355	336	344	333	330	365					FAAS
1987	6	Tissue	SAIC	Fe	K TIS	280	280	300	280	290	290					FAAS
1987	8	Tissue	NRC8	Fe	K TIS	319	349	350	367	327						FAAS
1987	9	Tissue	NRC9	Fe	K TIS	376	327	351	340	348						ICPMS
1987	1	Tissue	ECD	Fe	L	132	131	142	134	128	124					GFAAS
1987	2	Tissue	TAMU	Fe	L	134	128	123	120							FAAS
1987	3	Tissue	BNW	Fe	L	151	136	136	123	111	133					XRF
1987	4	Tissue	NNEC	Fe	L	152	137	131	131	137	127					FAAS
1987	5	Tissue	NSEC	Fe	L	147	138	149	137	137	140					FAAS
1987	6	Tissue	SAIC	Fe	L	110	110	110	110	110	110					FAAS
1987	8	Tissue	NRC8	Fe	L	122	132	146	143	143						FAAS
1987	9	Tissue	NRC9	Fe	L	141	137	134	138	137						ICPMS
1987	1	Tissue	ECD	Fe	M	146	139	140	134	132	134					GFAAS
1987	2	Tissue	TAMU	Fe	M	320	312	340								FAAS
1987	3	Tissue	BNW	Fe	M											
1987	4	Tissue	NNEC	Fe	M	137	136	138	123	119	123					FAAS
1987	5	Tissue	NSEC	Fe	M	141	138	140	144	140	132					FAAS
1987	6	Tissue	SAIC	Fe	M	110	120	110	110	110	110					FAAS
1987	8	Tissue	NRC8	Fe	M											
1987	9	Tissue	NRC9	Fe	M											
1987	1	Tissue	ECD	Fe	DOLT-1	610	612	614	604	625	611					GFAAS
1987	2	Tissue	TAMU	Fe	DOLT-1	640	624	680								
1987	3	Tissue	BNW	Fe	DOLT-1	812	820	755								XRF
1987	4	Tissue	NNEC	Fe	DOLT-1	707	665	687	669	669	661					FAAS
1987	5	Tissue	NSEC	Fe	DOLT-1	760	813	762	768	779	789					FAAS
1987	6	Tissue	SAIC	Fe	DOLT-1	680	670	690	650							FAAS
1987	8	Tissue	NRC8	Fe	DOLT-1											
1987	9	Tissue	NRC9	Fe	DOLT-1											
1989	1	Tissue	ECD	Fe	Oyster	240	240	250	220	210						FAAS
1989	2	Tissue	TAMU	Fe	Oyster	240	243	255	256	263	265	266	281	290	291	FAAS
1989	3	Tissue	BNW	Fe	Oyster	270	220	270	250	280						XRF
1989	4	Tissue	NNEC	Fe	Oyster	280	255	273	275	320						FAAS
1989	5	Tissue	NSEC	Fe	Oyster	284	269	273	301	275						FAAS
1989	6	Tissue	SAIC	Fe	Oyster	240	240	240	230	230						FAAS
1989	8	Tissue	NRC8	Fe	Oyster	201	240									ICPAES
1989	9	Tissue	NRC9	Fe	Oyster											
1989	1	Tissue	ECD	Fe	Mussel	390	480	440	420	400						FAAS
1989	2	Tissue	TAMU	Fe	Mussel	427	436	444	455	456	459	460	481	482	488	FAAS
1989	3	Tissue	BNW	Fe	Mussel	420	420	610	630	430						XRF
1989	4	Tissue	NNEC	Fe	Mussel	471	551	505	603	583						FAAS
1989	5	Tissue	NSEC	Fe	Mussel	476	458	476	478	445						FAAS
1989	6	Tissue	SAIC	Fe	Mussel	420	390	390	390	400						FAAS
1989	8	Tissue	NRC8	Fe	Mussel	449	525									ICPAES

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1989	9	Tissue	NRC9	Fe	Mussel											
1989	1	Tissue	ECD	Fe	DOLT-1	730	730	720	720	760						FAAS
1989	2	Tissue	TAMU	Fe	DOLT-1											
1989	3	Tissue	BNW	Fe	DOLT-1											
1989	4	Tissue	NNEC	Fe	DOLT-1	754	709	711	722	719						FAAS
1989	5	Tissue	NSEC	Fe	DOLT-1	720	722	694	724	693						FAAS
1989	6	Tissue	SAIC	Fe	DOLT-1	730	690	700	740	690						FAAS
1989	8	Tissue	NRC8	Fe	DOLT-1											
1989	9	Tissue	NRC9	Fe	DOLT-1											
1989	1	Tissue	ECD	Fe	CRM-6											
1989	2	Tissue	TAMU	Fe	CRM-6											
1989	3	Tissue	BNW	Fe	CRM-6	155	163	156	152	172	150					XRF
1989	4	Tissue	NNEC	Fe	CRM-6											
1989	5	Tissue	NSEC	Fe	CRM-6											
1989	6	Tissue	SAIC	Fe	CRM-6											
1989	8	Tissue	NRC8	Fe	CRM-6	143	146									ICPAES
1989	9	Tissue	NRC9	Fe	CRM-6											
1990	1	Tissue	ECD	Fe	Oyster O											
1990	2	Tissue	TAMU	Fe	Oyster O	294	285	269	284	285						FAAS
1990	3	Tissue	BNW	Fe	Oyster O	270	240	250	250	250						IDICPMS
1990	4	Tissue	NNEC	Fe	Oyster O	338	332	337	331	332						FAAS
1990	5	Tissue	NSEC	Fe	Oyster O	299	299	289	292	290						FAAS
1990	8	Tissue	NRC8	Fe	Oyster O	244	244	254	252	252						IDICPMS
1990	9	Tissue	NRC9	Fe	Oyster O	285	271	279	283	277						FAAS
1990	1	Tissue	ECD	Fe	DORM-1											
1990	2	Tissue	TAMU	Fe	DORM-1	63	68.2	65.1	66.4	62.4						FAAS
1990	3	Tissue	BNW	Fe	DORM-1	66	71	73	69	67						IDICPMS
1990	4	Tissue	NNEC	Fe	DORM-1	64.7	60.1	64.6	67	61.1						FAAS
1990	5	Tissue	NSEC	Fe	DORM-1	62	65	84	67	59						FAAS
1990	8	Tissue	NRC8	Fe	DORM-1											IDICPMS
1990	9	Tissue	NRC9	Fe	DORM-1											FAAS
1985	1	Tissue	ECD	Hg	E	0.13	0.09	0.27	0.24							CVAAS
1985	2	Tissue	TAMU	Hg	E	0.37	0.34	0.32	0.35							CVAAS
1985	3	Tissue	BNW	Hg	E	0.361	0.368	0.386	0.387							CVAAS
1985	4	Tissue	NNEC	Hg	E	0.305	0.345	0.33	0.332							CVAAS
1985	5	Tissue	NSEC	Hg	E	0.39	0.39	0.38	0.45							CVAAS
1985	6	Tissue	SAIC	Hg	E	0.42	0.39	0.4	0.39							CVAAS
1985	8	Tissue	NRC8	Hg	E											
1985	9	Tissue	NRC9	Hg	E											
1985	1	Tissue	ECD	Hg	F	0.15	0.18	0.19	0.18							CVAAS
1985	2	Tissue	TAMU	Hg	F	0.19	0.17	0.18	0.18							CVAAS
1985	3	Tissue	BNW	Hg	F	0.18	0.178	0.18	0.176							CVAAS
1985	4	Tissue	NNEC	Hg	F	0.194	0.175		0.148							CVAAS

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1985	5	Tissue	NSEC	Hg	F	0.2	0.185	0.192	0.197							CVAAS
1985	6	Tissue	SAIC	Hg	F	0.18	0.14	0.18	0.19							CVAAS
1985	8	Tissue	NRC8	Hg	F											
1985	9	Tissue	NRC9	Hg	F											
1985	1	Tissue	ECD	Hg	G	0.36	0.34	0.29	0.29							CVAAS
1985	2	Tissue	TAMU	Hg	G	3.2										CVAAS
1985	3	Tissue	BNW	Hg	G	3.36										CVAAS
1985	4	Tissue	NNEC	Hg	G	3										CVAAS
1985	5	Tissue	NSEC	Hg	G											
1985	6	Tissue	SAIC	Hg	G											
1985	8	Tissue	NRC8	Hg	G											
1985	9	Tissue	NRC9	Hg	G											
1985	1	Tissue	ECD	Hg	DOLT-1											
1985	2	Tissue	TAMU	Hg	DOLT-1											
1985	3	Tissue	BNW	Hg	DOLT-1											
1985	4	Tissue	NNEC	Hg	DOLT-1											
1985	5	Tissue	NSEC	Hg	DOLT-1											
1985	6	Tissue	SAIC	Hg	DOLT-1											
1985	8	Tissue	NRC8	Hg	DOLT-1											
1985	9	Tissue	NRC9	Hg	DOLT-1											
1987	1	Tissue	ECD	Hg	K TIS	0.528	0.536	0.544	0.471	0.532	0.528					CVAAS
1987	2	Tissue	TAMU	Hg	K TIS	0.344	0.41	0.344	0.343	0.352	0.357					CVAAS
1987	3	Tissue	BNW	Hg	K TIS	0.361	0.348	0.354	0.366	0.359	0.373					CVAAS
1987	4	Tissue	NNEC	Hg	K TIS	0.39	0.317	0.308	0.267	0.54	0.423					CVAAS
1987	5	Tissue	NSEC	Hg	K TIS	0.51	0.47	0.46	0.44	0.48	0.48					CVAAS
1987	6	Tissue	SAIC	Hg	K TIS	0.454	0.422	0.442	0.435	0.432	0.441					CVAAS
1987	8	Tissue	NRC8	Hg	K TIS	0.413	0.425	0.4	0.398	0.39	0.382					CVAAS
1987	9	Tissue	NRC9	Hg	K TIS	0.39	0.395	0.381	0.392	0.394	0.397					IDICPMS
1987	1	Tissue	ECD	Hg	L	0.091	0.082	0.101	0.08	0.08	0.131					CVAAS
1987	2	Tissue	TAMU	Hg	L	0.088	0.072	0.078	0.087	0.085	0.081					CVAAS
1987	3	Tissue	BNW	Hg	L	0.074	0.074	0.073	0.077	0.066	0.077					CVAAS
1987	4	Tissue	NNEC	Hg	L	0.111	0.078	0.046	0.173	0.165	0.193					CVAAS
1987	5	Tissue	NSEC	Hg	L	0.119	0.126	0.135	0.14	0.147	0.135					CVAAS
1987	6	Tissue	SAIC	Hg	L	0.083	0.084	0.095	0.086	0.083	0.09					CVAAS
1987	8	Tissue	NRC8	Hg	L	0.084	0.081	0.084	0.082	0.09						CVAAS
1987	9	Tissue	NRC9	Hg	L	0.091	0.083	0.083	0.078	0.89						IDICPMS
1987	1	Tissue	ECD	Hg	M	0.062										
1987	2	Tissue	TAMU	Hg	M	0.05	0.06	0.08	0.07	0.06	0.1					CVAAS
1987	3	Tissue	BNW	Hg	M	0.004	0.005	0.005	0.005	0.005	0.005					CVAAS
1987	4	Tissue	NNEC	Hg	M											
1987	5	Tissue	NSEC	Hg	M	0.11										
1987	6	Tissue	SAIC	Hg	M											
1987	8	Tissue	NRC8	Hg	M											
1987	9	Tissue	NRC9	Hg	M											

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1987	1	Tissue	ECD	Hg	DOLT-1	0.253	0.231	0.228	0.234	0.211	0.196					CVAAS
1987	2	Tissue	TAMU	Hg	DOLT-1	0.214	0.201									CVAAS
1987	3	Tissue	BNW	Hg	DOLT-1	0.197	0.196	0.196								CVAAS
1987	4	Tissue	NNEC	Hg	DOLT-1	0.171	0.19	0.293	0.308	0.322	0.226					CVAAS
1987	5	Tissue	NSEC	Hg	DOLT-1	0.27	0.29	0.27	0.24	0.26	0.26					CVAAS
1987	6	Tissue	SAIC	Hg	DOLT-1	0.253	0.206	0.214	0.215							CVAAS
1987	8	Tissue	NRC8	Hg	DOLT-1											
1987	9	Tissue	NRC9	Hg	DOLT-1											
1989	1	Tissue	ECD	Hg	Oyster	0.27	0.24	0.32	0.3	0.29						CVAAS
1989	2	Tissue	TAMU	Hg	Oyster	0.15	0.16	0.17	0.17	0.17	0.17	0.17	0.17			CVAAS
1989	3	Tissue	BNW	Hg	Oyster	0.11	0.13	0.13	0.13	0.12						CVAAS
1989	4	Tissue	NNEC	Hg	Oyster	0.17	0.14	0.17	0.12	0.16						CVAAS
1989	5	Tissue	NSEC	Hg	Oyster											
1989	6	Tissue	SAIC	Hg	Oyster	0.12	0.14	0.14	0.14	0.16						CVAAS
1989	8	Tissue	NRC8	Hg	Oyster											
1989	9	Tissue	NRC9	Hg	Oyster											
1989	1	Tissue	ECD	Hg	Mussel	0.29	0.27	0.37	0.28	0.38						CVAAS
1989	2	Tissue	TAMU	Hg	Mussel	0.21	0.22	0.22	0.22	0.22	0.23	0.23	0.23	0.23	0.24	CVAAS
1989	3	Tissue	BNW	Hg	Mussel	0.21	0.21	0.19	0.2	0.17						CVAAS
1989	4	Tissue	NNEC	Hg	Mussel	0.24	0.16	0.22	0.21	0.19						CVAAS
1989	5	Tissue	NSEC	Hg	Mussel											
1989	6	Tissue	SAIC	Hg	Mussel	0.18	0.17	0.23	0.2	0.21						CVAAS
1989	8	Tissue	NRC8	Hg	Mussel											
1989	9	Tissue	NRC9	Hg	Mussel											
1989	1	Tissue	ECD	Hg	DOLT-1	0.33	0.23	0.15	0.2	0.34						CVAAS
1989	2	Tissue	TAMU	Hg	DOLT-1											
1989	3	Tissue	BNW	Hg	DOLT-1											
1989	4	Tissue	NNEC	Hg	DOLT-1	0.21	0.21	0.26	0.22	0.24						CVAAS
1989	5	Tissue	NSEC	Hg	DOLT-1											
1989	6	Tissue	SAIC	Hg	DOLT-1	0.22	0.21	0.24	0.22	0.19						CVAAS
1989	8	Tissue	NRC8	Hg	DOLT-1											
1989	9	Tissue	NRC9	Hg	DOLT-1											
1989	1	Tissue	ECD	Hg	CRM-6											
1989	2	Tissue	TAMU	Hg	CRM-6											
1989	3	Tissue	BNW	Hg	CRM-6	0.05	0.05	0.05	0.05	0.04	0.05					CVAAS
1989	4	Tissue	NNEC	Hg	CRM-6											
1989	5	Tissue	NSEC	Hg	CRM-6											
1989	6	Tissue	SAIC	Hg	CRM-6											
1989	8	Tissue	NRC8	Hg	CRM-6											
1989	9	Tissue	NRC9	Hg	CRM-6											
1990	1	Tissue	ECD	Hg	Oyster O											
1990	2	Tissue	TAMU	Hg	Oyster O	0.155	0.124	0.15	0.14	0.148						CVAAS
1990	3	Tissue	BNW	Hg	Oyster O	0.13	0.11	0.12	0.13	0.14						ICPMS
1990	4	Tissue	NNEC	Hg	Oyster O	0.124	0.118	0.111	0.115	0.117						CVAAS

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1990	5	Tissue	NSEC	Hg	Oyster O	0.13	0.14	0.15	0.19	0.18						CVAAS
1990	8	Tissue	NRC1	Hg	Oyster O											
1990	9	Tissue	NRC2	Hg	Oyster O	0.099	0.088	0.092	0.093	0.094						CVAAS
1990	1	Tissue	ECD	Hg	DORM-1											
1990	2	Tissue	TAMU	Hg	DORM-1	0.752	0.81	0.893	0.747	0.788						CVAAS
1990	3	Tissue	BNW	Hg	DORM-1	0.8	0.74	0.64	0.77	0.74						ICPMS
1990	4	Tissue	NNEC	Hg	DORM-1	0.771	0.838	0.77	0.853	0.819						CVAAS
1990	5	Tissue	NSEC	Hg	DORM-1	0.92	0.9	0.93	1.02	0.93						CVAAS
1990	8	Tissue	NRC1	Hg	DORM-1											
1990	9	Tissue	NRC2	Hg	DORM-1											CVAAS
1985	1	Tissue	ECD	Mn	E	4.11	4.44	5.31	5.16							GFAAS
1985	2	Tissue	TAMU	Mn	E	5.9	5.8	6.4	6.1							FAAS
1985	3	Tissue	BNW	Mn	E	7.6	6.1	6.4	8.5							XRF
1985	4	Tissue	NNEC	Mn	E	6.82	6.16	6	5.69							FAAS
1985	5	Tissue	NSEC	Mn	E	5	11	5.5	6.1							FAAS
1985	6	Tissue	SAIC	Mn	E	5.72	6.27	6.24	5.99							GFAAS
1985	6	Tissue	SAIC	Mn	E	5.48	4.89	5.26	5.05							FAAS
1985	8	Tissue	NRC8	Mn	E											
1985	9	Tissue	NRC9	Mn	E											
1985	1	Tissue	ECD	Mn	F	31.2	35	42.8	44.5							GFAAS
1985	2	Tissue	TAMU	Mn	F	44	44	44	46							FAAS
1985	3	Tissue	BNW	Mn	F	50	45	50	52							XRF
1985	4	Tissue	NNEC	Mn	F	47	47.2	48	44.1							FAAS
1985	5	Tissue	NSEC	Mn	F	47.8	46.1	54.4	47.9							FAAS
1985	6	Tissue	SAIC	Mn	F	39.9	38.2	42.3	40.4							GFAAS
1985	6	Tissue	SAIC	Mn	F	26.3	27.2	28.9	27.9							FAAS
1985	8	Tissue	NRC8	Mn	F											
1985	9	Tissue	NRC9	Mn	F											
1985	1	Tissue	ECD	Mn	G	5.1	5.47	4.77	4.17							GFAAS
1985	2	Tissue	TAMU	Mn	G	0.23										FAAS
1985	3	Tissue	BNW	Mn	G											
1985	4	Tissue	NNEC	Mn	G	286	286	285	285							FAAS
1985	5	Tissue	NSEC	Mn	G											
1985	6	Tissue	SAIC	Mn	G	0.25	0.26	0.25	0.25							GFAAS
1985	6	Tissue	SAIC	Mn	G	0.17										FAAS
1985	8	Tissue	NRC8	Mn	G											
1985	9	Tissue	NRC9	Mn	G											
1985	1	Tissue	ECD	Mn	DOLT-1											
1985	2	Tissue	TAMU	Mn	DOLT-1											
1985	3	Tissue	BNW	Mn	DOLT-1											
1985	4	Tissue	NNEC	Mn	DOLT-1											
1985	5	Tissue	NSEC	Mn	DOLT-1											
1985	6	Tissue	SAIC	Mn	DOLT-1											

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1985	8	Tissue	NRC8	Mn	DOLT-1											
1985	9	Tissue	NRC9	Mn	DOLT-1											
1987	1	Tissue	ECD	Mn	K TIS	8.1	7.2	7.2	8.6	8.9	8.5					GFAAS
1987	2	Tissue	TAMU	Mn	K TIS	9	8.9	8.9	8.4	7.4	8.7					FAAS
1987	3	Tissue	BNW	Mn	K TIS											
1987	4	Tissue	NNEC	Mn	K TIS	9	8.8	8.9	8.8	9	8.9					FAAS
1987	5	Tissue	NSEC	Mn	K TIS	9	8.6	8.5	8.2	9.2	9					FAAS
1987	6	Tissue	SAIC	Mn	K TIS	8.2	7.7	7.2	7.5	7.3	6.9					GFAAS
1987	8	Tissue	NRC8	Mn	K TIS	9.4	8.3	8.1	9.2	8.4	8.2					ICPAES
1987	9	Tissue	NRC9	Mn	K TIS											
1987	1	Tissue	ECD	Mn	L	7.3	8.3	7.4	7.3	7.3	9.6					GFAAS
1987	2	Tissue	TAMU	Mn	L	8.4	9	9.5	9.1	9.3	8.9					FAAS
1987	3	Tissue	BNW	Mn	L											
1987	4	Tissue	NNEC	Mn	L	10.9	9.3	10.4	10.2	10.3	10.5					FAAS
1987	5	Tissue	NSEC	Mn	L	9.2	9.1	9.2	9.3	9.6	9.1					FAAS
1987	6	Tissue	SAIC	Mn	L	8.4	8.8	8.3	9.1	7.9	8.3					GFAAS
1987	8	Tissue	NRC8	Mn	L	8.9	8.7	8.8	9.1	8.8	8.6					ICPAES
1987	9	Tissue	NRC9	Mn	L											
1987	1	Tissue	ECD	Mn	M	6.8	6.8	6.8	7.3	7.3	7.3					GFAAS
1987	2	Tissue	TAMU	Mn	M	9	9	10	10	9	10					FAAS
1987	3	Tissue	BNW	Mn	M											
1987	4	Tissue	NNEC	Mn	M	7.8	8.9	8.9	8.6	9.2	8.9					FAAS
1987	5	Tissue	NSEC	Mn	M	9	10	10	10	9	9					FAAS
1987	6	Tissue	SAIC	Mn	M	8.6	9	8.6	8.6	9.3	9.1					GFAAS
1987	8	Tissue	NRC8	Mn	M											
1987	9	Tissue	NRC9	Mn	M											
1987	1	Tissue	ECD	Mn	DOLT-1	8.1	8.4	8.3	8.5	8.4	8.8					GFAAS
1987	2	Tissue	TAMU	Mn	DOLT-1	8.6	9.5	7.8								FAAS
1987	3	Tissue	BNW	Mn	DOLT-1											
1987	4	Tissue	NNEC	Mn	DOLT-1	9.2	8.7	9.1	8.9	9.1	9					FAAS
1987	5	Tissue	NSEC	Mn	DOLT-1	9.2	9.4	8.9	8.3	9	9					FAAS
1987	6	Tissue	SAIC	Mn	DOLT-1	7.8	7.9	8.6	8.1							GFAAS
1987	8	Tissue	NRC8	Mn	DOLT-1											
1987	9	Tissue	NRC9	Mn	DOLT-1											
1989	1	Tissue	ECD	Mn	Oyster	19.1	21.5	20.5	19.9	21.1						GFAAS
1989	2	Tissue	TAMU	Mn	Oyster											
1989	3	Tissue	BNW	Mn	Oyster											
1989	4	Tissue	NNEC	Mn	Oyster	17	15.3	17.2	17.1	18.5						FAAS
1989	5	Tissue	NSEC	Mn	Oyster	16.7	14.8	18.8	17.5	16.5						FAAS
1989	6	Tissue	SAIC	Mn	Oyster											
1989	8	Tissue	NRC8	Mn	Oyster	17.3	16.5	15.1								ICPAES
1989	9	Tissue	NRC9	Mn	Oyster											
1989	1	Tissue	ECD	Mn	Mussel	9.74	10.1	10.1	9.17	9.8						GFAAS
1989	2	Tissue	TAMU	Mn	Mussel											

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1989	3	Tissue	BNW	Mn	Mussel											
1989	4	Tissue	NNEC	Mn	Mussel	11.6	13.5	12.4	14.3	15.5						FAAS
1989	5	Tissue	NSEC	Mn	Mussel	12.1	9.2	11.4	11.6	11.6						FAAS
1989	6	Tissue	SAIC	Mn	Mussel											
1989	8	Tissue	NRC8	Mn	Mussel	7.9	9.1	10.1								ICPAES
1989	9	Tissue	NRC9	Mn	Mussel											
1989	1	Tissue	ECD	Mn	DOLT-1	8.51	8.54	8.98	9	8.85						GFAAS
1989	2	Tissue	TAMU	Mn	DOLT-1											
1989	3	Tissue	BNW	Mn	DOLT-1											
1989	4	Tissue	NNEC	Mn	DOLT-1	8.8	8.5	8.4	8.7	9.6						FAAS
1989	5	Tissue	NSEC	Mn	DOLT-1	8.3	8.4	9.3	9	7.9						FAAS
1989	6	Tissue	SAIC	Mn	DOLT-1											
1989	8	Tissue	NRC8	Mn	DOLT-1											
1989	9	Tissue	NRC9	Mn	DOLT-1											
1989	1	Tissue	ECD	Mn	CRM-6											
1989	2	Tissue	TAMU	Mn	CRM-6											
1989	3	Tissue	BNW	Mn	CRM-6											
1989	4	Tissue	NNEC	Mn	CRM-6											
1989	5	Tissue	NSEC	Mn	CRM-6											
1989	6	Tissue	SAIC	Mn	CRM-6											
1989	8	Tissue	NRC8	Mn	CRM-6	15.2	15.2	15.9								ICPAES
1989	9	Tissue	NRC9	Mn	CRM-6											
1990	1	Tissue	ECD	Mn	Oyster O											
1990	2	Tissue	TAMU	Mn	Oyster O											
1990	3	Tissue	BNW	Mn	Oyster O	17	15	16	16	15						ICPMS
1990	4	Tissue	NNEC	Mn	Oyster O											
1990	5	Tissue	NSEC	Mn	Oyster O	14.3	16.1	14.8	15.7	16.1						FAAS
1990	8	Tissue	NRC1	Mn	Oyster O											
1990	9	Tissue	NRC2	Mn	Oyster O											
1990	1	Tissue	ECD	Mn	DORM-1											
1990	2	Tissue	TAMU	Mn	DORM-1											
1990	3	Tissue	BNW	Mn	DORM-1	1.6	1.6	1.6	1.5	1.5						ICPMS
1990	4	Tissue	NNEC	Mn	DORM-1											
1990	5	Tissue	NSEC	Mn	DORM-1	1.3	0.9	0.4	1.7	1.3						FAAS
1990	8	Tissue	NRC1	Mn	DORM-1											
1990	9	Tissue	NRC2	Mn	DORM-1											
1985	1	Tissue	ECD	Ni	E	0.46	0.44	0.51	0.25							GFAAS
1985	2	Tissue	TAMU	Ni	E	0.36	0.36	0.32	0.33							GFAAS
1985	3	Tissue	BNW	Ni	E	0.31	0.28	0.31	1.71							GFAAS
1985	4	Tissue	NNEC	Ni	E	0.767	0.429	0.382	0.596							GFAAS
1985	5	Tissue	NSEC	Ni	E	0.2	0.18	0.16	0.22							GFAAS
1985	6	Tissue	SAIC	Ni	E	0.33	0.34	0.37	0.34							GFAAS
1985	8	Tissue	NRC8	Ni	E											

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1985	9	Tissue	NRC9	Ni	E											
1985	1	Tissue	ECD	Ni	F	3.2	2.7	2.9	2.6							GFAAS
1985	2	Tissue	TAMU	Ni	F	2.3	2.3	2.4	2.4							GFAAS
1985	3	Tissue	BNW	Ni	F	3.99	3.95	4.05	3.8							GFAAS
1985	4	Tissue	NNEC	Ni	F	2.89	2.81	2.73	2.59							GFAAS
1985	5	Tissue	NSEC	Ni	F	2.73	2.91	2.94	2.58							GFAAS
1985	6	Tissue	SAIC	Ni	F	1.76	1.66	1.68	1.66							GFAAS
1985	8	Tissue	NRC8	Ni	F											
1985	9	Tissue	NRC9	Ni	F											
1985	1	Tissue	ECD	Ni	G	0.73	0.78	1.1	1.1							GFAAS
1985	2	Tissue	TAMU	Ni	G	22	23	23	23							GFAAS
1985	3	Tissue	BNW	Ni	G	38.6	39.3									GFAAS
1985	4	Tissue	NNEC	Ni	G	35.5	34.9	35.5	34.4							GFAAS
1985	5	Tissue	NSEC	Ni	G											
1985	6	Tissue	SAIC	Ni	G	0.027	0.032	0.029	0.029							GFAAS
1985	8	Tissue	NRC8	Ni	G											
1985	9	Tissue	NRC9	Ni	G											
1985	1	Tissue	ECD	Ni	DOLT- 1											
1985	2	Tissue	TAMU	Ni	DOLT- 1											
1985	3	Tissue	BNW	Ni	DOLT- 1											
1985	4	Tissue	NNEC	Ni	DOLT- 1											
1985	5	Tissue	NSEC	Ni	DOLT- 1											
1985	6	Tissue	SAIC	Ni	DOLT- 1											
1985	8	Tissue	NRC8	Ni	DOLT- 1											
1985	9	Tissue	NRC9	Ni	DOLT- 1											
1987	1	Tissue	ECD	Ni	K TIS	2.41	2.58	2.67	2.43	3.22	3.15					GFAAS
1987	2	Tissue	TAMU	Ni	K TIS	2.84	2.66	2.54	2.31	2.74	2.43					GFAAS
1987	3	Tissue	BNW	Ni	K TIS	3.2	3.57	3.61	3.33	3.75	3.29					GFAAS
1987	4	Tissue	NNEC	Ni	K TIS	3.23	3.12	2.67	2.97	3.43	3.13					GFAAS
1987	5	Tissue	NSEC	Ni	K TIS	3.76	3.44	2.63	3.19	3.21	2.94					GFAAS
1987	6	Tissue	SAIC	Ni	K TIS	3.7	3.6	3.4	3.7	3.5	3.4					GFAAS
1987	8	Tissue	NRC8	Ni	K TIS	3.07	3.11	2.74	2.91	2.93						GFAAS
1987	9	Tissue	NRC9	Ni	K TIS	3.24	2.79	2.83	3.18	2.82	3.04					IDICPMS
1987	1	Tissue	ECD	Ni	L	1.45	1.29	1.19	1.05	1.05	1.44					GFAAS
1987	2	Tissue	TAMU	Ni	L	1.15	1.17	1.03	1.04	0.9	1.01					GFAAS
1987	3	Tissue	BNW	Ni	L	0.89	0.96	0.92	1.11	0.91	1.07					GFAAS
1987	4	Tissue	NNEC	Ni	L	0.99	0.99	1.02	1.18	1.64	1.67					GFAAS
1987	5	Tissue	NSEC	Ni	L	1.02	1.1	1.4	0.88	0.9	0.85					GFAAS
1987	6	Tissue	SAIC	Ni	L	1.3	1.4	1.4	1.2	1.4	1.2					GFAAS
1987	8	Tissue	NRC8	Ni	L	1.05	0.89	0.87	1.02	0.95						GFAAS
1987	9	Tissue	NRC9	Ni	L	0.94	0.92	0.97	0.96	0.99						IDICPMS
1987	1	Tissue	ECD	Ni	M	1.01	1.03	1.05	1.05	1.05	1.05					GFAAS
1987	2	Tissue	TAMU	Ni	M											
1987	3	Tissue	BNW	Ni	M	1.18	1.01	1.18	1.01	1.12	1.12					GFAAS

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1987	4	Tissue	NNEC	Ni	M	0.75	1.16	1.06	1.06	1.06	1.02					GFAAS
1987	5	Tissue	NSEC	Ni	M	1.42	1.43	1.55	1.21	1.29	1.37					GFAAS
1987	6	Tissue	SAIC	Ni	M	1.1	1.1	1.1	1.1	1.2	1.2					GFAAS
1987	8	Tissue	NRC8	Ni	M											
1987	9	Tissue	NRC9	Ni	M											
1987	1	Tissue	ECD	Ni	DOLT- 1	0.36	0.41	0.38	0.4	0.37	0.36					GFAAS
1987	2	Tissue	TAMU	Ni	DOLT- 1	0.22	0.28									GFAAS
1987	3	Tissue	BNW	Ni	DOLT- 1	0.4	0.23	0.21								GFAAS
1987	4	Tissue	NNEC	Ni	DOLT- 1	0.43	0.14	0.2	0.26	0.12	0.3					GFAAS
1987	5	Tissue	NSEC	Ni	DOLT- 1	0.33	0.28	0.31	0.33	0.29	0.4					GFAAS
1987	6	Tissue	SAIC	Ni	DOLT- 1											
1987	8	Tissue	NRC8	Ni	DOLT- 1											
1987	9	Tissue	NRC9	Ni	DOLT- 1											
1989	1	Tissue	ECD	Ni	Oyster	3.4	4.4	3.7	3.7	3.5						GFAAS
1989	2	Tissue	TAMU	Ni	Oyster	2.07	2.1	2.12	2.17	2.22	2.25					GFAAS
1989	3	Tissue	BNW	Ni	Oyster	2.1	2.3	2.4	2.2	2.2						GFAAS
1989	4	Tissue	NNEC	Ni	Oyster	2.24	2.16	2.38	1.94	2.18						GFAAS
1989	5	Tissue	NSEC	Ni	Oyster	1.94	1.84	1.72	1.82	2						GFAAS
1989	6	Tissue	SAIC	Ni	Oyster	2	1.9	2	2	1.9						GFAAS
1989	8	Tissue	NRC8	Ni	Oyster	1.96	1.85	2.02	2.18	1.81						GFAAS
1989	9	Tissue	NRC9	Ni	Oyster	1.95	1.75									IDICPMS
1989	1	Tissue	ECD	Ni	Mussel	2.6	3.1	2.6	3.4	3.1						GFAAS
1989	2	Tissue	TAMU	Ni	Mussel	1.13	1.19	1.2	1.22	1.22	1.27	1.31	1.32	1.5	1.57	GFAAS
1989	3	Tissue	BNW	Ni	Mussel	1.4	1.3	1.4	1.3	1.1						GFAAS
1989	4	Tissue	NNEC	Ni	Mussel	1.2	1.32	1.38	1.16	1.25						GFAAS
1989	5	Tissue	NSEC	Ni	Mussel	0.97	1.02	0.91	1.07	1.09						GFAAS
1989	6	Tissue	SAIC	Ni	Mussel	0.78	0.87	0.7	0.74	0.86						GFAAS
1989	8	Tissue	NRC8	Ni	Mussel	1.24	1.11	1.13	1.13							GFAAS
1989	9	Tissue	NRC9	Ni	Mussel	1.2	1.24									IDICPMS
1989	1	Tissue	ECD	Ni	DOLT-1	0.29	0.28	0.2	0.23	0.28						GFAAS
1989	2	Tissue	TAMU	Ni	DOLT-1											
1989	3	Tissue	BNW	Ni	DOLT-1											
1989	4	Tissue	NNEC	Ni	DOLT-1	0.28	0.28	0.26	0.23							GFAAS
1989	5	Tissue	NSEC	Ni	DOLT-1	0.38	0.24	0.19	0.24	0.22						GFAAS
1989	6	Tissue	SAIC	Ni	DOLT-1	0.28	0.3	0.26	0.21	0.29						GFAAS
1989	8	Tissue	NRC8	Ni	DOLT-1											
1989	9	Tissue	NRC9	Ni	DOLT-1											
1989	1	Tissue	ECD	Ni	CRM-6											
1989	2	Tissue	TAMU	Ni	CRM-6											
1989	3	Tissue	BNW	Ni	CRM-6	1.02	1.02	0.92	1.09	0.92	0.78					GFAAS
1989	4	Tissue	NNEC	Ni	CRM-6											
1989	5	Tissue	NSEC	Ni	CRM-6											
1989	6	Tissue	SAIC	Ni	CRM-6											
1989	8	Tissue	NRC8	Ni	CRM-6	0.79	0.95									GFAAS

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1989	9	Tissue	NRC9	Ni	CRM-6	1.02										IDICPMS
1990	1	Tissue	ECD	Ni	Oyster O											
1990	2	Tissue	TAMU	Ni	Oyster O	1.86	1.91	1.87	1.9							GFAAS
1990	3	Tissue	BNW	Ni	Oyster O	2.5	2.1	2.5	2.3							IDICPMS
1990	4	Tissue	NNEC	Ni	Oyster O	2.01	1.94	1.89	1.96							GFAAS
1990	5	Tissue	NSEC	Ni	Oyster O	1.97	1.85	1.82	1.93							GFAAS
1990	8	Tissue	NRC1	Ni	Oyster O											ICPAES
1990	9	Tissue	NRC2	Ni	Oyster O											GFAAS
1990	1	Tissue	ECD	Ni	DORM-1											
1990	2	Tissue	TAMU	Ni	DORM-1	1.36	1.11	1.35	1.17	1.21						GFAAS
1990	3	Tissue	BNW	Ni	DORM-1	1.5	0.9	1.5	1.2	1.3						IDICPMS
1990	4	Tissue	NNEC	Ni	DORM-1	1.25	1.15	1.26	1.1	1.19						GFAAS
1990	5	Tissue	NSEC	Ni	DORM-1	1.43	1.26	1.26	1.37	1.36						GFAAS
1990	8	Tissue	NRC1	Ni	DORM-1											ICPAES
1990	9	Tissue	NRC2	Ni	DORM-1											GFAAS
1985	1	Tissue	ECD	Pb	E	5.68	7.88	5.91	8.66							GFAAS
1985	2	Tissue	TAMU	Pb	E	6.1	4.8	5.3	6							GFAAS
1985	3	Tissue	BNW	Pb	E	6.08	6.49	7.52	5.66							GFAAS
1985	4	Tissue	NNEC	Pb	E	5.61	4.01	3.46	3.51							GFAAS
1985	5	Tissue	NSEC	Pb	E	6.11	6.7	7.19	12							GFAAS
1985	6	Tissue	SAIC	Pb	E	6.6	5.7	6.82	5.68							GFAAS
1985	8	Tissue	NRC8	Pb	E											
1985	9	Tissue	NRC9	Pb	E											
1985	1	Tissue	ECD	Pb	F	0.2	1.9	1.76	1.62							GFAAS
1985	2	Tissue	TAMU	Pb	F	2	2	1.9	2							GFAAS
1985	3	Tissue	BNW	Pb	F	2.08	2.19	1.97	2.1							GFAAS
1985	4	Tissue	NNEC	Pb	F	2.27	3.12	1.94	2.15							GFAAS
1985	5	Tissue	NSEC	Pb	F	1.58	1.7	1.74	1.54							GFAAS
1985	6	Tissue	SAIC	Pb	F	1.29	1.19	1.24	1.07							GFAAS
1985	8	Tissue	NRC8	Pb	F											
1985	9	Tissue	NRC9	Pb	F											
1985	1	Tissue	ECD	Pb	G	1.31	1.47	2.51	2.66							GFAAS
1985	2	Tissue	TAMU	Pb	G	67	68	68	69							GFAAS
1985	3	Tissue	BNW	Pb	G	94.3	87.4	87.4	87.4							GFAAS
1985	4	Tissue	NNEC	Pb	G	185	188	199	190							GFAAS
1985	5	Tissue	NSEC	Pb	G											
1985	6	Tissue	SAIC	Pb	G	0.072	0.075	0.075	0.073							GFAAS
1985	8	Tissue	NRC8	Pb	G											
1985	9	Tissue	NRC9	Pb	G											
1985	1	Tissue	ECD	Pb	DOLT-1											
1985	2	Tissue	TAMU	Pb	DOLT-1											
1985	3	Tissue	BNW	Pb	DOLT-1											
1985	4	Tissue	NNEC	Pb	DOLT-1											

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1985	5	Tissue	NSEC	Pb	DOLT-1											
1985	6	Tissue	SAIC	Pb	DOLT-1											
1985	8	Tissue	NRC8	Pb	DOLT-1											
1985	9	Tissue	NRC9	Pb	DOLT-1											
1987	1	Tissue	ECD	Pb	K TIS	1.1	0.98	1.08	1.14	1.2	1.25					GFAAS
1987	2	Tissue	TAMU	Pb	K TIS	2.46	1.83	2.09	1.73	1.7	1.9					GFAAS
1987	3	Tissue	BNW	Pb	K TIS	2.06	1.8	2.54	2.07	2.01	1.81					GFAAS
1987	4	Tissue	NNEC	Pb	K TIS	2.47	1.64	3.14	1.38	2.1	1.47					GFAAS
1987	5	Tissue	NSEC	Pb	K TIS	1.11	1.27	1.67	1.31	1.33	1.37					GFAAS
1987	6	Tissue	SAIC	Pb	K TIS	2.3	2.4	2.3	2.4	2.2	2.7					GFAAS
1987	8	Tissue	NRC8	Pb	K TIS	1.49	1.55	1.91	1.77	1.56	1.47					GFAAS
1987	9	Tissue	NRC9	Pb	K TIS	0.134	1.36	1.52	1.64	1.66	1.59					IDICPMS
1987	1	Tissue	ECD	Pb	L	3.96	4.01	4.73	3.93	4.2	3.42					GFAAS
1987	2	Tissue	TAMU	Pb	L	5.57	4.46	5.84	4.83	5.61	4.83					GFAAS
1987	3	Tissue	BNW	Pb	L	4.56	4.4	5.03	6.82	5.29	5.24					GFAAS
1987	4	Tissue	NNEC	Pb	L	4.26	3.81	3.94	6.15	4.74	8.67					GFAAS
1987	5	Tissue	NSEC	Pb	L	3.54	2.87	3.17	3.1	3.06	3.15					GFAAS
1987	6	Tissue	SAIC	Pb	L	5	4.7	5	4.8	4.9	5					GFAAS
1987	8	Tissue	NRC8	Pb	L	4.04	4.06	4	4.19	3.96						GFAAS
1987	9	Tissue	NRC9	Pb	L	3.73	3.89	4.08	3.75	3.81						IDICPMS
1987	1	Tissue	ECD	Pb	M	4.59	4.9	5	4.84	4.68	4.62					GFAAS
1987	2	Tissue	TAMU	Pb	M	5.1	5.25	5.15	5.1	5.45	5.25					GFAAS
1987	3	Tissue	BNW	Pb	M	4.91	4.85	4.64	4.76	4.79	4.82					GFAAS
1987	4	Tissue	NNEC	Pb	M	3.73	3.7	4.12	4.01	3.85	3.84					GFAAS
1987	5	Tissue	NSEC	Pb	M	5.25	5.3	5.1	4.4	4.65	4.75					GFAAS
1987	6	Tissue	SAIC	Pb	M	4.4	4.5	4.4	4.5	4.6	4.7					GFAAS
1987	8	Tissue	NRC8	Pb	M											
1987	9	Tissue	NRC9	Pb	M											
1987	1	Tissue	ECD	Pb	DOLT-1	1.27	1.08	1.21	1.3	1.55	1.47					GFAAS
1987	2	Tissue	TAMU	Pb	DOLT-1	1.5	1.51									GFAAS
1987	3	Tissue	BNW	Pb	DOLT-1	1.65	1.21	1.33								GFAAS
1987	4	Tissue	NNEC	Pb	DOLT-1	1.37	1.39	1.31	2.26	1.44	1.11					GFAAS
1987	5	Tissue	NSEC	Pb	DOLT-1	1.02	1.1	1.26	1.23	2.12	0.98					GFAAS
1987	6	Tissue	SAIC	Pb	DOLT-1	1.7	1.4	1.4	1.4							GFAAS
1987	8	Tissue	NRC8	Pb	DOLT-1											
1987	9	Tissue	NRC9	Pb	DOLT-1											
1989	1	Tissue	ECD	Pb	Oyster	1	0.98	1.1	0.96	1						GFAAS
1989	2	Tissue	TAMU	Pb	Oyster	0.45	0.47	0.48	0.48	0.53	0.55					GFAAS
1989	3	Tissue	BNW	Pb	Oyster	0.4	0.46	0.53	0.43							GFAAS
1989	4	Tissue	NNEC	Pb	Oyster	0.18	0.08	0.19	0.21	0.1						GFAAS
1989	5	Tissue	NSEC	Pb	Oyster	0.49	0.64	0.42	0.48	0.54						GFAAS
1989	6	Tissue	SAIC	Pb	Oyster	0.42	0.44	0.36	0.51	0.52						GFAAS
1989	8	Tissue	NRC8	Pb	Oyster	0.67	0.51	0.54	0.56	0.56						GFAAS
1989	9	Tissue	NRC9	Pb	Oyster	0.41	0.52									IDICPMS

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1989	1	Tissue	ECD	Pb	Mussel	7.2	6.5	6.3	5.4	5.9						GFAAS
1989	2	Tissue	TAMU	Pb	Mussel	9.5	10.1	10.2	10.2	10.4	10.7	10.7	10.7	11	11.2	GFAAS
1989	3	Tissue	BNW	Pb	Mussel	10	10	9.7	9.7	9.3						GFAAS
1989	4	Tissue	NNEC	Pb	Mussel	1.5	1.24	1.67	0.92	1.18						GFAAS
1989	5	Tissue	NSEC	Pb	Mussel	9.3	8.4	9.2	8.9	9.7						GFAAS
1989	6	Tissue	SAIC	Pb	Mussel	9.8	9.9	9.8	9.1	9.5						GFAAS
1989	8	Tissue	NRC8	Pb	Mussel	9.99	10.6	10.8	9.59	10.1						GFAAS
1989	9	Tissue	NRC9	Pb	Mussel	9.98	9.96									IDICPMS
1989	1	Tissue	ECD	Pb	DOLT-1	1.5	0.88	1.7	1.2	1.4						GFAAS
1989	2	Tissue	TAMU	Pb	DOLT-1											GFAAS
1989	3	Tissue	BNW	Pb	DOLT-1											
1989	4	Tissue	NNEC	Pb	DOLT-1	1.91	1.76	1.16	1.23	1.25						GFAAS
1989	5	Tissue	NSEC	Pb	DOLT-1	1.69	1.46	1.16	1.29	1.44						GFAAS
1989	6	Tissue	SAIC	Pb	DOLT-1	1.3	1.2	1.8	1.4	1.3						GFAAS
1989	8	Tissue	NRC8	Pb	DOLT-1											
1989	9	Tissue	NRC9	Pb	DOLT-1											
1989	1	Tissue	ECD	Pb	CRM-6											
1989	2	Tissue	TAMU	Pb	CRM-6											
1989	3	Tissue	BNW	Pb	CRM-6	0.8	0.74	0.7	0.75	0.8	0.79					GFAAS
1989	4	Tissue	NNEC	Pb	CRM-6											
1989	5	Tissue	NSEC	Pb	CRM-6											
1989	6	Tissue	SAIC	Pb	CRM-6											
1989	8	Tissue	NRC8	Pb	CRM-6	0.88	0.86									GFAAS
1989	9	Tissue	NRC9	Pb	CRM-6	0.8	0.81									ICPMS
1990	1	Tissue	ECD	Pb	Oyster O											
1990	2	Tissue	TAMU	Pb	Oyster O	0.64	0.59	0.65	0.66	0.66						GFAAS
1990	3	Tissue	BNW	Pb	Oyster O	0.94	0.99	0.97	0.9	1						ICPMS
1990	4	Tissue	NNEC	Pb	Oyster O	0.535	0.524	0.495	0.497	0.556						GFAAS
1990	5	Tissue	NSEC	Pb	Oyster O	0.82	0.78	0.78	0.78	0.86						GFAAS
1990	8	Tissue	NRC1	Pb	Oyster O	0.583	0.567	0.573	0.577	0.567						IDICPMS
1990	9	Tissue	NRC2	Pb	Oyster O	0.6	0.82	0.72	0.64	0.61						GFAAS
1990	1	Tissue	ECD	Pb	DORM-1											
1990	2	Tissue	TAMU	Pb	DORM-1	0.46	0.38	0.39	0.42	0.37						GFAAS
1990	3	Tissue	BNW	Pb	DORM-1	0.41	0.58	0.57	0.48	0.53						ICPMS
1990	4	Tissue	NNEC	Pb	DORM-1	0.457	0.338	0.285	0.494	0.458						GFAAS
1990	5	Tissue	NSEC	Pb	DORM-1	0.42	0.73	0.5	0.98	0.37						GFAAS
1990	8	Tissue	NRC1	Pb	DORM-1											
1990	9	Tissue	NRC2	Pb	DORM-1											
1985	1	Tissue	ECD	Sb	E	1.6	1.4	1.6	1.4							GFAAS
1985	2	Tissue	TAMU	Sb	E	<0.4	<0.4	<0.4	<0.4							GFAAS
1985	3	Tissue	BNW	Sb	E	0.17	0.08	0.08	0.17							INAA
1985	4	Tissue	NNEC	Sb	E	0.0384	0.0354	0.067	0.0322							GFAAS
1985	5	Tissue	NSEC	Sb	E	0.25	0.24	0.22	0.2							GFAAS

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1985	6	Tissue	SAIC	Sb	E	<0.25	<0.26	<0.24	<0.26							GFAAS
1985	8	Tissue	NRC8	Sb	E											
1985	9	Tissue	NRC9	Sb	E											
1985	1	Tissue	ECD	Sb	F	2.2	3	2.8	2.4							GFAAS
1985	2	Tissue	TAMU	Sb	F	<0.4	<0.4	<0.4	<0.4							GFAAS
1985	3	Tissue	BNW	Sb	F	0.11	0.06	0.05								INAA
1985	4	Tissue	NNEC	Sb	F	0.00832	0.00859	0.00811	<0.00784							GFAAS
1985	5	Tissue	NSEC	Sb	F	0.13	0.13	0.17	0.18							GFAAS
1985	6	Tissue	SAIC	Sb	F	<0.28	<0.29	<0.27	<0.24							GFAAS
1985	8	Tissue	NRC8	Sb	F											
1985	9	Tissue	NRC9	Sb	F											
1985	1	Tissue	ECD	Sb	G	4.6	3	3.7	4.7							GFAAS
1985	2	Tissue	TAMU	Sb	G	<0.4	<0.4	<0.4	<0.4							GFAAS
1985	3	Tissue	BNW	Sb	G											
1985	4	Tissue	NNEC	Sb	G	0.182	0.303	<0.166	0.485							GFAAS
1985	5	Tissue	NSEC	Sb	G											
1985	6	Tissue	SAIC	Sb	G	<0.01	<0.01	<0.01	<0.01							GFAAS
1985	8	Tissue	NRC8	Sb	G											
1985	9	Tissue	NRC9	Sb	G											
1985	1	Tissue	ECD	Sb	DOLT-1											
1985	2	Tissue	TAMU	Sb	DOLT-1											
1985	3	Tissue	BNW	Sb	DOLT-1											
1985	4	Tissue	NNEC	Sb	DOLT-1											
1985	5	Tissue	NSEC	Sb	DOLT-1											
1985	6	Tissue	SAIC	Sb	DOLT-1											
1985	8	Tissue	NRC8	Sb	DOLT-1											
1985	9	Tissue	NRC9	Sb	DOLT-1											
1987	1	Tissue	ECD	Sb	K TIS	0.22	0.71	0.66	1.1	1	0.7					GFAAS
1987	2	Tissue	TAMU	Sb	K TIS											
1987	3	Tissue	BNW	Sb	K TIS											
1987	4	Tissue	NNEC	Sb	K TIS	<0.01										GFAAS
1987	5	Tissue	NSEC	Sb	K TIS	<0.26										GFAAS
1987	6	Tissue	SAIC	Sb	K TIS											
1987	8	Tissue	NRC8	Sb	K TIS	0.01	0.01	0.01	0.02	0.01						IDICPMS
1987	9	Tissue	NRC9	Sb	K TIS											
1987	1	Tissue	ECD	Sb	L	1	1	1	1.1	0.9	0.9					GFAAS
1987	2	Tissue	TAMU	Sb	L											
1987	3	Tissue	BNW	Sb	L											
1987	4	Tissue	NNEC	Sb	L	<0.02										GFAAS
1987	5	Tissue	NSEC	Sb	L	<0.26										GFAAS
1987	6	Tissue	SAIC	Sb	L											
1987	8	Tissue	NRC8	Sb	L	0.03	0.02	0.02	0.01	0.01						IDICPMS
1987	9	Tissue	NRC9	Sb	L											
1987	1	Tissue	ECD	Sb	M	3.6	3.5	3.7	3.2	3	3					GFAAS

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1987	2	Tissue	TAMU	Sb	M											
1987	3	Tissue	BNW	Sb	M											
1987	4	Tissue	NNEC	Sb	M	<0.01										GFAAS
1987	5	Tissue	NSEC	Sb	M	<0.26										GFAAS
1987	6	Tissue	SAIC	Sb	M											
1987	8	Tissue	NRC8	Sb	M											
1987	9	Tissue	NRC9	Sb	M											
1987	1	Tissue	ECD	Sb	DOLT-1	2.3	2.6	2.3	2.5	2.3	2.3					GFAAS
1987	2	Tissue	TAMU	Sb	DOLT-1											
1987	3	Tissue	BNW	Sb	DOLT-1											
1987	4	Tissue	NNEC	Sb	DOLT-1	<0.01										GFAAS
1987	5	Tissue	NSEC	Sb	DOLT-1	<0.26										GFAAS
1987	6	Tissue	SAIC	Sb	DOLT-1											
1987	8	Tissue	NRC8	Sb	DOLT-1											
1987	9	Tissue	NRC9	Sb	DOLT-1											
1990	1	Tissue	ECD	Sb	Oyster O											
1990	2	Tissue	TAMU	Sb	Oyster O											
1990	3	Tissue	BNW	Sb	Oyster O	0.022	0.024	0.026	0.033	0.019						ICPMS
1990	4	Tissue	NNEC	Sb	Oyster O											
1990	5	Tissue	NSEC	Sb	Oyster O											
1990	8	Tissue	NRC1	Sb	Oyster O											
1990	9	Tissue	NRC2	Sb	Oyster O											
1990	1	Tissue	ECD	Sb	DORM-1											
1990	2	Tissue	TAMU	Sb	DORM-1											
1990	3	Tissue	BNW	Sb	DORM-1	0.038	0.045	0.033	0.038	0.043						ICPMS
1990	4	Tissue	NNEC	Sb	DORM-1											
1990	5	Tissue	NSEC	Sb	DORM-1											
1990	8	Tissue	NRC1	Sb	DORM-1											
1990	9	Tissue	NRC2	Sb	DORM-1											
1985	1	Tissue	ECD	Se	E	1.7	1.2	1.5	1.1							HGAAS
1985	2	Tissue	TAMU	Se	E	4.8	4.8	4.7	4.8							GFAAS
1985	3	Tissue	BNW	Se	E	4.3	3.9	3.9	4.9							XRF
1985	4	Tissue	NNEC	Se	E	3.69	3.74	3.6	3.63							HFAAS
1985	5	Tissue	NSEC	Se	E	3.29	3.22	3.24	3.08							HGAAS
1985	6	Tissue	SAIC	Se	E	<3.8	<4	<3.7	<3.9							GFAAS
1985	8	Tissue	NRC8	Se	E											
1985	9	Tissue	NRC9	Se	E											
1985	1	Tissue	ECD	Se	F	0.85	0.99	0.98	0.64							HGAAS
1985	2	Tissue	TAMU	Se	F	2.6	2.8	3	2.6							GFAAS
1985	3	Tissue	BNW	Se	F	2.7	2.8	2.7	2.9							XRF
1985	4	Tissue	NNEC	Se	F	1.87	1.97	2.03	1.91							HFAAS
1985	5	Tissue	NSEC	Se	F	2.29	2.39	2.45	2.1							HGAAS
1985	6	Tissue	SAIC	Se	F	<1.6	<1.7	<1.6	<1.5							GFAAS

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1985	8	Tissue	NRC8	Se	F											
1985	9	Tissue	NRC9	Se	F											
1985	1	Tissue	ECD	Se	G	0.392	0.309	0.355	0.309							HGAAS
1985	2	Tissue	TAMU	Se	G											
1985	3	Tissue	BNW	Se	G											
1985	4	Tissue	NNEC	Se	G	67.4	67.8	62.4	65.3							HFAAS
1985	5	Tissue	NSEC	Se	G											
1985	6	Tissue	SAIC	Se	G	0.13	0.13	0.12	0.12							GFAAS
1985	8	Tissue	NRC8	Se	G											
1985	9	Tissue	NRC9	Se	G											
1985	1	Tissue	ECD	Se	DOLT-1											
1985	2	Tissue	TAMU	Se	DOLT-1											
1985	3	Tissue	BNW	Se	DOLT-1											
1985	4	Tissue	NNEC	Se	DOLT-1											
1985	5	Tissue	NSEC	Se	DOLT-1											
1985	6	Tissue	SAIC	Se	DOLT-1											
1985	8	Tissue	NRC8	Se	DOLT-1											
1985	9	Tissue	NRC9	Se	DOLT-1											
1987	1	Tissue	ECD	Se	K TIS	2.8	2.9	2.6	2.6	2.4	2.5					GFAAS
1987	2	Tissue	TAMU	Se	K TIS	12.7	11	11.5	11.7	11.1	12.6					GFAAS
1987	3	Tissue	BNW	Se	K TIS	13.3	12.2	12.4	12.2	12.3	12.3					XRF
1987	4	Tissue	NNEC	Se	K TIS	8.6	9	9.1	8.9	8.1	8.6					GFAAS
1987	5	Tissue	NSEC	Se	K TIS	9.4	9.4	10.1	9.4	9.5	9.8					GFAAS
1987	6	Tissue	SAIC	Se	K TIS	14	14	14	13	13	14					GFAAS
1987	8	Tissue	NRC8	Se	K TIS	12.4	13.1	12.8	12.9	12.4						GFAAS
1987	9	Tissue	NRC9	Se	K TIS											
1987	1	Tissue	ECD	Se	L	3.7	4.8	4.5	3.8	3.7	5.3					GFAAS
1987	2	Tissue	TAMU	Se	L	3.7	3.2	3.7	3.4	2.2	3.7					GFAAS
1987	3	Tissue	BNW	Se	L	3.5	2.6	2.7	2.8	2.8	2.3					XRF
1987	4	Tissue	NNEC	Se	L	2.8	2.6	2.4	2.4	2.3	2.3					GFAAS
1987	5	Tissue	NSEC	Se	L	2.1	2.6	2.8	2.1	2.2	2.2					GFAAS
1987	6	Tissue	SAIC	Se	L	2.1	2.7	2.6	2.1	2.7	2.9					GFAAS
1987	8	Tissue	NRC8	Se	L	3.4	3.5	3.5	3.4	3.3						GFAAS
1987	9	Tissue	NRC9	Se	L											
1987	1	Tissue	ECD	Se	M	2.3	2.3	1.8	2.5							GFAAS
1987	2	Tissue	TAMU	Se	M	3.7	3.7	3.7	3.7	3.7	3.8					GFAAS
1987	3	Tissue	BNW	Se	M											
1987	4	Tissue	NNEC	Se	M	2.5	2.2	2.3	2.1	2.5	2.4					GFAAS
1987	5	Tissue	NSEC	Se	M	2.4	2.1	2.3	1.7	2.3	2					GFAAS
1987	6	Tissue	SAIC	Se	M	2.8	2.6	2.7	2.8	2.5	2.8					GFAAS
1987	8	Tissue	NRC8	Se	M											
1987	9	Tissue	NRC9	Se	M											
1987	1	Tissue	ECD	Se	DOLT-1	6.4	6.5	6	6.9	6.2	6.2					GFAAS
1987	2	Tissue	TAMU	Se	DOLT-1	7	6.8									GFAAS

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1987	3	Tissue	BNW	Se	DOLT-1	7.9	7.6	7.3								XRF
1987	4	Tissue	NNEC	Se	DOLT-1	5.8	5.1	5.7	5.2	5.3	5.8					GFAAS
1987	5	Tissue	NSEC	Se	DOLT-1	7	7.5	8.4	9.1	6.6	8.2					GFAAS
1987	6	Tissue	SAIC	Se	DOLT-1	7.3	8	8.1	7.5							GFAAS
1987	8	Tissue	NRC8	Se	DOLT-1											
1987	9	Tissue	NRC9	Se	DOLT-1											
1989	1	Tissue	ECD	Se	Oyster	2.4	2.4	2.1	2.1	2.3						GFAAS
1989	2	Tissue	TAMU	Se	Oyster	2.4	3	3.2	3.2	3.4	3.5	3.5	3.6	3.7		GFAAS
1989	3	Tissue	BNW	Se	Oyster	2.9	2.5	2.7	2.7	2.7						XRF
1989	4	Tissue	NNEC	Se	Oyster	2.8	2.3	2.6	2.9	2.2						GFAAS
1989	5	Tissue	NSEC	Se	Oyster	3.3	3.1	3.3	3.9	3.7						GFAAS
1989	6	Tissue	SAIC	Se	Oyster	2.1	2.4	2.2	2.3	2.1						GFAAS
1989	8	Tissue	NRC8	Se	Oyster	3.2	3.6	3.7	3.1	3.6						GFAAS
1989	9	Tissue	NRC9	Se	Oyster											
1989	1	Tissue	ECD	Se	Mussel	2.4	2.4	2.1	2.5	2.4						GFAAS
1989	2	Tissue	TAMU	Se	Mussel	3.2	3.3	3.5	3.7	3.9	4	4.1	4.5	4.5	4.8	GFAAS
1989	3	Tissue	BNW	Se	Mussel	2.6	2.9	1.5	2.4	2.8						XRF
1989	4	Tissue	NNEC	Se	Mussel	3	3	2.5	2.8	2.8						GFAAS
1989	5	Tissue	NSEC	Se	Mussel	3.3	3.2	3.1	3.6	3.3						GFAAS
1989	6	Tissue	SAIC	Se	Mussel	3.1	3.4	3.4	3.1	3.3						GFAAS
1989	8	Tissue	NRC8	Se	Mussel	3.5	4	3.4	3.5	3.8						GFAAS
1989	9	Tissue	NRC9	Se	Mussel											
1989	1	Tissue	ECD	Se	DOLT-1	7.4	7.4	7	7.1	7.3						GFAAS
1989	2	Tissue	TAMU	Se	DOLT-1											
1989	3	Tissue	BNW	Se	DOLT-1											
1989	4	Tissue	NNEC	Se	DOLT-1	9.1	7.2	7.6	7.3	7.7						GFAAS
1989	5	Tissue	NSEC	Se	DOLT-1	7.3	6.9	6.8	7	7.1						GFAAS
1989	6	Tissue	SAIC	Se	DOLT-1	7.4	7.8	8	7.5	7.7						GFAAS
1989	8	Tissue	NRC8	Se	DOLT-1											
1989	9	Tissue	NRC9	Se	DOLT-1											
1989	1	Tissue	ECD	Se	CRM-6											
1989	2	Tissue	TAMU	Se	CRM-6											
1989	3	Tissue	BNW	Se	CRM-6	1.8	1.5	1.4	1.8	1.5	1.8					XRF
1989	4	Tissue	NNEC	Se	CRM-6											
1989	5	Tissue	NSEC	Se	CRM-6											
1989	6	Tissue	SAIC	Se	CRM-6											
1989	8	Tissue	NRC8	Se	CRM-6	2.1	2.1									GFAAS
1989	9	Tissue	NRC9	Se	CRM-6											
1990	1	Tissue	ECD	Se	Oyster O											
1990	2	Tissue	TAMU	Se	Oyster O	3.15	3.11	3.16	3.04	3.14						GFAAS
1990	3	Tissue	BNW	Se	Oyster O	3.4	3.1	3.6	2.7	3.2						ICPMS
1990	4	Tissue	NNEC	Se	Oyster O	3.21	3.2	3.15	3.14	3.16						GFAAS
1990	5	Tissue	NSEC	Se	Oyster O	2.87	3.04	3.28	2.76	3.26						GFAAS
1990	8	Tissue	NRC1	Se	Oyster O											

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1990	9	Tissue	NRC2	Se	Oyster O											
1990	1	Tissue	ECD	Se	DORM-1											
1990	2	Tissue	TAMU	Se	DORM-1	1.77	1.67	1.74	1.49	1.77						GFAAS
1990	3	Tissue	BNW	Se	DORM-1	1.9	1.6	1.4	1.5	1.5						ICPMS
1990	4	Tissue	NNEC	Se	DORM-1	1.73	1.68	1.67	1.5	1.57						GFAAS
1990	5	Tissue	NSEC	Se	DORM-1	1.44	1.44	1.36	1.5	1.52						GFAAS
1990	8	Tissue	NRC1	Se	DORM-1											
1990	9	Tissue	NRC2	Se	DORM-1											
1985	1	Tissue	ECD	Si	E	6.9	14	14	7.4							FAAS
1985	2	Tissue	TAMU	Si	E	550	570	560	580							COLOR
1985	3	Tissue	BNW	Si	E	11.5	9.69	9.68	9.71							GFAAS
1985	6	Tissue	SAIC	Si	E (1)	156	141	143	147							COLOR
1985	6	Tissue	SAIC	Si	E (2)	523	529	540	551							COLOR
1985	1	Tissue	ECD	Si	F	86	94	111	90							FAAS
1985	2	Tissue	TAMU	Si	F	1870	1990	1810	1810							COLOR
1985	3	Tissue	BNW	Si	F	209	99.6	177	80.4							GFAAS
1985	6	Tissue	SAIC	Si	F (1)	408	443	397	316							COLOR
1985	6	Tissue	SAIC	Si	F (2)	6030	6300	6190	5930							COLOR
1985	1	Tissue	ECD	Si	G	12	12	18	7.1							FAAS
1985	2	Tissue	TAMU	Si	G	12.5										COLOR
1985	3	Tissue	BNW	Si	G	317	159									GFAAS
1990	1	Tissue	ECD	Si	Oyster O											
1990	2	Tissue	TAMU	Si	Oyster O											
1990	3	Tissue	BNW	Si	Oyster O	240	300	300	250	300						IDICPMS
1990	4	Tissue	NNEC	Si	Oyster O											
1990	5	Tissue	NSEC	Si	Oyster O											
1990	8	Tissue	NRC1	Si	Oyster O											
1990	9	Tissue	NRC2	Si	Oyster O											
1990	1	Tissue	ECD	Si	DORM-1											
1990	2	Tissue	TAMU	Si	DORM-1											
1990	3	Tissue	BNW	Si	DORM-1	174	195	172	217	249						IDICPMS
1990	4	Tissue	NNEC	Si	DORM-1											
1990	5	Tissue	NSEC	Si	DORM-1											
1990	8	Tissue	NRC1	Si	DORM-1											
1990	9	Tissue	NRC2	Si	DORM-1											
1985	1	Tissue	ECD	Sn	E	0.8	0.85	0.79	0.76							GFAAS
1985	2	Tissue	TAMU	Sn	E											
1985	3	Tissue	BNW	Sn	E	0.69	0.46	0.85	0.6							HGAAS
1985	4	Tissue	NNEC	Sn	E	<0.336	<0.335	<0.343	<0.334							HGAAS
1985	5	Tissue	NSEC	Sn	E	1.11	1	1.21	0.94							HGAAS
1985	6	Tissue	SAIC	Sn	E	<2.4	<2.6	<2.5	<2.4							GFAAS
1985	8	Tissue	NRC8	Sn	E											

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1985	9	Tissue	NRC9	Sn	E											
1985	1	Tissue	ECD	Sn	F	0.61	0.69	0.5	0.58							GFAAS
1985	2	Tissue	TAMU	Sn	F											
1985	3	Tissue	BNW	Sn	F	0.16	0.16	0.16	0.14							HGAAS
1985	4	Tissue	NNEC	Sn	F	<0.338	<0.349	<0.33	<0.319							HGAAS
1985	5	Tissue	NSEC	Sn	F	0.3	0.35	0.29	0.27							HGAAS
1985	6	Tissue	SAIC	Sn	F	<4	<3.9	<3.7	<3.9							GFAAS
1985	8	Tissue	NRC8	Sn	F											
1985	9	Tissue	NRC9	Sn	F											
1985	1	Tissue	ECD	Sn	G	0.79	0.63	0.69	0.63							GFAAS
1985	2	Tissue	TAMU	Sn	G											
1985	3	Tissue	BNW	Sn	G	0.61	0.72	0.78	0.79							HGAAS
1985	4	Tissue	NNEC	Sn	G	<0.00675	<0.00675	<0.00675	<0.00675							HGAAS
1985	5	Tissue	NSEC	Sn	G											
1985	6	Tissue	SAIC	Sn	G	<0.27	<0.27	<0.27	<0.27							GFAAS
1985	8	Tissue	NRC8	Sn	G											
1985	9	Tissue	NRC9	Sn	G											
1985	1	Tissue	ECD	Sn	DOLT-1											
1985	2	Tissue	TAMU	Sn	DOLT-1											
1985	3	Tissue	BNW	Sn	DOLT-1											
1985	4	Tissue	NNEC	Sn	DOLT-1											
1985	5	Tissue	NSEC	Sn	DOLT-1											
1985	6	Tissue	SAIC	Sn	DOLT-1											
1985	8	Tissue	NRC8	Sn	DOLT-1											
1985	9	Tissue	NRC9	Sn	DOLT-1											
1987	1	Tissue	ECD	Sn	K TIS	<0.03										GFAAS
1987	2	Tissue	TAMU	Sn	K TIS											
1987	3	Tissue	BNW	Sn	K TIS	0.21	0.22	0.19	0.24	0.13	0.13					HGFAAS
1987	4	Tissue	NNEC	Sn	K TIS	<0.3										GFAAS
1987	5	Tissue	NSEC	Sn	K TIS	0.94	0.34	0.31	0.29	0.35						GFAAS
1987	6	Tissue	SAIC	Sn	K TIS	<0.25										GFAAS
1987	8	Tissue	NRC8	Sn	K TIS	0.19	0.18	0.19	0.2	0.19						IDICPMS
1987	9	Tissue	NRC9	Sn	K TIS											
1987	1	Tissue	ECD	Sn	L	0.7	1.2	1.1	1	0.9	0.8					GFAAS
1987	2	Tissue	TAMU	Sn	L											
1987	3	Tissue	BNW	Sn	L	0.04	0.04	0.09	0.07	0.09						HGFAAS
1987	4	Tissue	NNEC	Sn	L	<0.3										GFAAS
1987	5	Tissue	NSEC	Sn	L	<0.24										GFAAS
1987	6	Tissue	SAIC	Sn	L	<1										GFAAS
1987	8	Tissue	NRC8	Sn	L	0.02	0.02	0.04	0.03	0.02						IDICPMS
1987	9	Tissue	NRC9	Sn	L											
1987	1	Tissue	ECD	Sn	M	0.7	0.64	0.61	0.57	0.6	0.49					GFAAS
1987	2	Tissue	TAMU	Sn	M											
1987	3	Tissue	BNW	Sn	M	0.04	0.04	0.04	0.03	0.03	0.03					HGFAAS

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1987	4	Tissue	NNEC	Sn	M	<0.3										GFAAS
1987	5	Tissue	NSEC	Sn	M	0.31	0.13	0.11	0.16	0.17	0.19					GFAAS
1987	6	Tissue	SAIC	Sn	M	<0.7										GFAAS
1987	8	Tissue	NRC8	Sn	M											
1987	9	Tissue	NRC9	Sn	M											
1987	1	Tissue	ECD	Sn	DOLT-1	0.71	0.62	0.49	0.34	0.3	0.65					GFAAS
1987	2	Tissue	TAMU	Sn	DOLT-1											
1987	3	Tissue	BNW	Sn	DOLT-1	0.07	0.07	0.05								HGFAAS
1987	4	Tissue	NNEC	Sn	DOLT-1	<0.3										GFAAS
1987	5	Tissue	NSEC	Sn	DOLT-1	<0.24										GFAAS
1987	6	Tissue	SAIC	Sn	DOLT-1	<0.5										GFAAS
1987	8	Tissue	NRC8	Sn	DOLT-1											
1987	9	Tissue	NRC9	Sn	DOLT-1											
1989	1	Tissue	ECD	Sn	Oyster											
1989	2	Tissue	TAMU	Sn	Oyster	<0.2										GFAAS
1989	3	Tissue	BNW	Sn	Oyster	0.13	0.15	0.06	0.07	0.11						HGAAS
1989	4	Tissue	NNEC	Sn	Oyster	0.52	0.47	0.57	0.52	0.52						GFAAS
1989	5	Tissue	NSEC	Sn	Oyster	<0.6										GFAAS
1989	6	Tissue	SAIC	Sn	Oyster											
1989	8	Tissue	NRC8	Sn	Oyster	<0.3										GFAAS
1989	9	Tissue	NRC9	Sn	Oyster	<0.5										IDICPMS
1989	1	Tissue	ECD	Sn	Mussel											
1989	2	Tissue	TAMU	Sn	Mussel	1.1	1.12	1.14	1.15	1.23	1.26	1.29				GFAAS
1989	3	Tissue	BNW	Sn	Mussel	0.33	0.34	0.07	0.1	0.3						HGAAS
1989	4	Tissue	NNEC	Sn	Mussel	2.48	2.53	2.65	2.51	2.5						GFAAS
1989	5	Tissue	NSEC	Sn	Mussel	<0.6										GFAAS
1989	6	Tissue	SAIC	Sn	Mussel											
1989	8	Tissue	NRC8	Sn	Mussel	<1.5										GFAAS
1989	9	Tissue	NRC9	Sn	Mussel	1.28	1.55	1.49								IDICPMS
1989	1	Tissue	ECD	Sn	DOLT-1											
1989	2	Tissue	TAMU	Sn	DOLT-1											
1989	3	Tissue	BNW	Sn	DOLT-1											
1989	4	Tissue	NNEC	Sn	DOLT-1	0.17	0.16	0.11	0.19	0.14						GFAAS
1989	5	Tissue	NSEC	Sn	DOLT-1	<0.24										GFAAS
1989	6	Tissue	SAIC	Sn	DOLT-1											
1989	8	Tissue	NRC8	Sn	DOLT-1											
1989	9	Tissue	NRC9	Sn	DOLT-1											
1989	1	Tissue	ECD	Sn	CRM-6											
1989	2	Tissue	TAMU	Sn	CRM-6											
1989	3	Tissue	BNW	Sn	CRM-6	0.99	1	1	0.95	0.97	1.2					HGAAS
1989	4	Tissue	NNEC	Sn	CRM-6											
1989	5	Tissue	NSEC	Sn	CRM-6											
1989	6	Tissue	SAIC	Sn	CRM-6											
1989	8	Tissue	NRC8	Sn	CRM-6											

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1989	9	Tissue	NRC9	Sn	CRM-6	<0.5										
1990	1	Tissue	ECD	Sn	Oyster O											
1990	2	Tissue	TAMU	Sn	Oyster O	0.4	0.37	0.34	0.38	0.41						GFAAS
1990	3	Tissue	BNW	Sn	Oyster O	0.29	0.3	0.29	0.29	0.26						ICPMS
1990	4	Tissue	NNEC	Sn	Oyster O	0.193	0.198	0.129	0.198	0.162						GFAAS
1990	5	Tissue	NSEC	Sn	Oyster O	0.08	0.04	0.04	0.07	0.06						GFAAS
1990	8	Tissue	NRC1	Sn	Oyster O	0.238	0.266	0.234	0.227	0.266						IDICPMS
1990	9	Tissue	NRC2	Sn	Oyster O											
1990	1	Tissue	ECD	Sn	DORM-1											
1990	2	Tissue	TAMU	Sn	DORM-1	0.17	0.23	0.16	0.18	0.18						GFAAS
1990	3	Tissue	BNW	Sn	DORM-1	0.081	0.068	0.07	0.076	0.081						ICPMS
1990	4	Tissue	NNEC	Sn	DORM-1	0.137	0.132	0.132	0.137	0.14						GFAAS
1990	5	Tissue	NSEC	Sn	DORM-1	0.04	0.2	0.13	0.14	0.1						GFAAS
1990	8	Tissue	NRC1	Sn	DORM-1											
1990	9	Tissue	NRC2	Sn	DORM-1											
1985	1	Tissue	ECD	Tl	E	0.4	0.3	0.2	0.2							GFAAS
1985	3	Tissue	BNW	Tl	E	<0.053	<0.053	<0.053	<0.053							GFAAS
1985	4	Tissue	NNEC	Tl	E	<0.00329	0.00328	0.00335	0.00658							GFAAS
1985	5	Tissue	NSEC	Tl	E	<0.039										GFAAS
1985	6	Tissue	SAIC	Tl	E	<0.2	<0.21	<0.2	<0.2							GFAAS
1985	1	Tissue	ECD	Tl	F	0.5	0.5	0.4	0.5							GFAAS
1985	3	Tissue	BNW	Tl	F	<0.053	<0.053	<0.053	<0.053							GFAAS
1985	4	Tissue	NNEC	Tl	F	0.00331	0.0103	0.00322	0.00312							GFAAS
1985	5	Tissue	NSEC	Tl	F	<0.039										GFAAS
1985	6	Tissue	SAIC	Tl	F	<0.25	<0.25	<0.24	<0.21							GFAAS
1985	1	Tissue	ECD	Tl	G	0.9	1	0.9	1							GFAAS
1985	3	Tissue	BNW	Tl	G	2.37	1.58									GFAAS
1985	4	Tissue	NNEC	Tl	G	0.132	0.199	<0.006	0.331							GFAAS
1985	6	Tissue	SAIC	Tl	G	<0.008	<0.008	<0.008	<0.008							GFAAS
1985	1	Tissue	ECD	Zn	E	55.7	59.6	52.4	55.5							GFAAS
1985	2	Tissue	TAMU	Zn	E	56	56	56	56							FAAS
1985	3	Tissue	BNW	Zn	E	60	62	58	61							XRF
1985	4	Tissue	NNEC	Zn	E	53.7	51.1	49.2	57.3							GFAAS
1985	5	Tissue	NSEC	Zn	E	55.1	56.6	58.3	59							GFAAS
1985	6	Tissue	SAIC	Zn	E	54.9	49.1	48.7	51							FAAS
1985	8	Tissue	NRC8	Zn	E											
1985	9	Tissue	NRC9	Zn	E											
1985	1	Tissue	ECD	Zn	F	138.4	126.3	164.9	137.1							GFAAS
1985	2	Tissue	TAMU	Zn	F	155	160	160	160							FAAS
1985	3	Tissue	BNW	Zn	F	171	169	173	168							XRF
1985	4	Tissue	NNEC	Zn	F	162	162	171	151							GFAAS
1985	5	Tissue	NSEC	Zn	F	162	165	169	164							GFAAS

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1985	6	Tissue	SAIC	Zn	F	98.5	90.4	103	97.5							FAAS
1985	8	Tissue	NRC8	Zn	F											
1985	9	Tissue	NRC9	Zn	F											
1985	1	Tissue	ECD	Zn	G	118.2	104.7	124.9	125.2							GFAAS
1985	2	Tissue	TAMU	Zn	G	3.8										
1985	3	Tissue	BNW	Zn	G											
1985	4	Tissue	NNEC	Zn	G	3.79	3.71	3.77	4							GFAAS
1985	5	Tissue	NSEC	Zn	G											
1985	6	Tissue	SAIC	Zn	G	3.18	3.3									FAAS
1985	8	Tissue	NRC8	Zn	G											
1985	9	Tissue	NRC9	Zn	G											
1985	1	Tissue	ECD	Zn	DOLT-1											
1985	2	Tissue	TAMU	Zn	DOLT-1											
1985	3	Tissue	BNW	Zn	DOLT-1											
1985	4	Tissue	NNEC	Zn	DOLT-1											
1985	5	Tissue	NSEC	Zn	DOLT-1											
1985	6	Tissue	SAIC	Zn	DOLT-1											
1985	8	Tissue	NRC8	Zn	DOLT-1											
1985	9	Tissue	NRC9	Zn	DOLT-1											
1987	1	Tissue	ECD	Zn	K TIS	238	238	254	232	257	256					GFAAS
1987	2	Tissue	TAMU	Zn	K TIS	202	207	197	199	180	202					FAAS
1987	3	Tissue	BNW	Zn	K TIS	209	208	211	203	203	208					XRF
1987	4	Tissue	NNEC	Zn	K TIS	205	208	210	208	209	208					FAAS
1987	5	Tissue	NSEC	Zn	K TIS	234	222	224	225	224	226					FAAS
1987	6	Tissue	SAIC	Zn	K TIS	210	210	200	220	210	220					FAAS
1987	8	Tissue	NRC8	Zn	K TIS	222	218	213	223	212						IDICPMS
1987	9	Tissue	NRC9	Zn	K TIS											
1987	1	Tissue	ECD	Zn	L	123	123	123	123	123	121					GFAAS
1987	2	Tissue	TAMU	Zn	L	133	142	137	132	129	141					FAAS
1987	3	Tissue	BNW	Zn	L	123	129	124	121	116	118					XRF
1987	4	Tissue	NNEC	Zn	L	133	116	130	131	131	125					FAAS
1987	5	Tissue	NSEC	Zn	L	134	135	130	134	136	140					FAAS
1987	6	Tissue	SAIC	Zn	L	130	130	130	120	120	130					FAAS
1987	8	Tissue	NRC8	Zn	L	128	133	135	132	133						IDICPMS
1987	9	Tissue	NRC9	Zn	L											
1987	1	Tissue	ECD	Zn	M	122	122	118	120	121	120					GFAAS
1987	2	Tissue	TAMU	Zn	M	101	111	111								FAAS
1987	3	Tissue	BNW	Zn	M											
1987	4	Tissue	NNEC	Zn	M	119	121	124	120	119	117					FAAS
1987	5	Tissue	NSEC	Zn	M	138	134	140	137	138	142					FAAS
1987	6	Tissue	SAIC	Zn	M	120	120	120	120	120	120					FAAS
1987	8	Tissue	NRC8	Zn	M											
1987	9	Tissue	NRC9	Zn	M											
1987	1	Tissue	ECD	Zn	DOLT-1	93	92	93	93	93	93					GFAAS

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1987	2	Tissue	TAMU	Zn	DOLT-1	86	83	91	100	93						FAAS
1987	3	Tissue	BNW	Zn	DOLT-1	92	92	88								XRF
1987	4	Tissue	NNEC	Zn	DOLT-1	84	81	86	81	82	82					FAAS
1987	5	Tissue	NSEC	Zn	DOLT-1	97	95	96	97	101	96					FAAS
1987	6	Tissue	SAIC	Zn	DOLT-1	82	81	83	80							FAAS
1987	8	Tissue	NRC8	Zn	DOLT-1											
1987	9	Tissue	NRC9	Zn	DOLT-1											
1989	1	Tissue	ECD	Zn	Oyster	1570	1510	1500	1560	1540						FAAS
1989	2	Tissue	TAMU	Zn	Oyster	1550	1580	1590	1590	1600	1620	1620	1650	1660	1670	FAAS
1989	3	Tissue	BNW	Zn	Oyster	1600	1600	1700	1600	1600						XRF
1989	4	Tissue	NNEC	Zn	Oyster	1780	1580	1710	1620	1700						FAAS
1989	5	Tissue	NSEC	Zn	Oyster	1700	1660	1650	1550	1650						FAAS
1989	6	Tissue	SAIC	Zn	Oyster	1600	1600	1600	1500	1600						FAAS
1989	8	Tissue	NRC8	Zn	Oyster											
1989	9	Tissue	NRC9	Zn	Oyster	1610	1470	1550								IDICPMS
1989	1	Tissue	ECD	Zn	Mussel	154	155	153	158	158						FAAS
1989	2	Tissue	TAMU	Zn	Mussel	146	150	150	154	156	158	162	163	164	166	FAAS
1989	3	Tissue	BNW	Zn	Mussel	140	140	140	140	140						XRF
1989	4	Tissue	NNEC	Zn	Mussel	157	154	158	156	158						FAAS
1989	5	Tissue	NSEC	Zn	Mussel	155	142	140	148	143						FAAS
1989	6	Tissue	SAIC	Zn	Mussel	150	140	150	140	140						FAAS
1989	8	Tissue	NRC8	Zn	Mussel											
1989	9	Tissue	NRC9	Zn	Mussel	140	146	149								IDICPMS
1989	1	Tissue	ECD	Zn	DOLT-1	89.4	91.7	89.7	90.7	89.7						FAAS
1989	2	Tissue	TAMU	Zn	DOLT-1											
1989	3	Tissue	BNW	Zn	DOLT-1											
1989	4	Tissue	NNEC	Zn	DOLT-1	92.5	92	91.5	92	93.4						FAAS
1989	5	Tissue	NSEC	Zn	DOLT-1	89	87	91	87	87						FAAS
1989	6	Tissue	SAIC	Zn	DOLT-1	86	86	89	85	82						FAAS
1989	8	Tissue	NRC8	Zn	DOLT-1											
1989	9	Tissue	NRC9	Zn	DOLT-1											
1989	1	Tissue	ECD	Zn	CRM-6											
1989	2	Tissue	TAMU	Zn	CRM-6											
1989	3	Tissue	BNW	Zn	CRM-6	108	108	106	109	113	108					XRF
1989	4	Tissue	NNEC	Zn	CRM-6											
1989	5	Tissue	NSEC	Zn	CRM-6											
1989	6	Tissue	SAIC	Zn	CRM-6											
1989	8	Tissue	NRC8	Zn	CRM-6											
1989	9	Tissue	NRC9	Zn	CRM-6	97.3	101	97.8								IDICPMS
1990	1	Tissue	ECD	Zn	Oyster O											
1990	2	Tissue	TAMU	Zn	Oyster O	2460	2450	2450	2480	2490						FAAS
1990	3	Tissue	BNW	Zn	Oyster O	2600	2400	2500	2500	2500						ICPMS
1990	4	Tissue	NNEC	Zn	Oyster O	2470	2450	2470	2430	2480						FAAS
1990	5	Tissue	NSEC	Zn	Oyster O	2410	2380	2390	2450	2470						FAAS

Year	Lab#	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep.2	Rep.3	Rep.4	Rep.5	Rep.6	Rep.7	Rep.8	Rep.9	Rep.10	Method
1990	8	Tissue	NRC1	Zn	Oyster O	2510	2500	2550	2520	2490						ICPAES
1990	9	Tissue	NRC2	Zn	Oyster O	2550	2470	2510	2520	2490						FAAS
1990	1	Tissue	ECD	Zn	DORM-1											
1990	2	Tissue	TAMU	Zn	DORM-1	21.3	21.4	21.5	22.4	21.6						FAAS
1990	3	Tissue	BNW	Zn	DORM-1	22	20	22	21	23						ICPMS
1990	4	Tissue	NNEC	Zn	DORM-1	20.5	20.7	20.8	20.4	20.3						FAAS
1990	5	Tissue	NSEC	Zn	DORM-1	20.3	20.5	19.6	19.6	20.2						FAAS
1990	8	Tissue	NRC1	Zn	DORM-1											
1990	9	Tissue	NRC2	Zn	DORM-1											

Appendix C - Sediments

These are the raw results from intercalibration exercises for elemental analyses of sediments. The headings in the table refer to the year of the intercalibration exercise, the laboratories by number and code, analytes by symbols, samples by letter or code, replicate analysis (Rep.) by number, the results of laboratories referred to by number and the method used for the analysis by code. The keys to those headings are described on previous pages and below:

Samples	**Designation and Description**
A	Sediment from the east coast of Canada analyzed in 1985
B	Sediment from the east coast of Canada analyzed in 1985
C	Sediment from the east coast of Canada analyzed in 1985
D	Sediment from the east coast of Canada analyzed in 1985
H	Sediment from the Gulf of St. Lawrence analyzed in 1987
I	Sediment from a Nova Scotian harbor analyzed in 1987
J	Digest of I analyzed in 1987
MESS-1	Certified sediment reference material analyzed in 1987
K	Sediment from a core in Puget Sound analyzed in 1989
BCSS-1	Certified sediment reference material analyzed in 1989
L	Near shore sediment from the Beaufort Sea analyzed in 1990
M	Composite calcareous sediment from San Antonio Bay, Texas analyzed in 1990
BCSS-1	Certified sediment reference material analyzed in 1990

Year	Lab #	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep. 2	Rep. 3	Rep. 4	Rep. 5	Rep. 6	Rep. 7	Rep. 8	Rep. 9	Rep. 10	Method
1985	1	SED	ECD	Ag	A	0.42	0.47	0.45	0.47							GFAAS
1985	2	SED	TAMU	Ag	A	<1.85	<1.76	<1.6	<1.69	<1.9						INAA
1985	3	SED	BNW	Ag	A	0.46	0.4	0.44	0.41							GFAAS
1985	4	SED	NNEC	Ag	A	0.32	0.32	0.35	0.31							GFAAS
1985	5	SED	NSEC	Ag	A	0.42	0.35	0.39	0.34							GFAAS
1985	6	SED	SAIC	Ag	A	0.46	0.54	0.52	0.49							GFAAS
1985	8	SED	NRC8	Ag	A											
1985	9	SED	NRC9	Ag	A											
1985	1	SED	ECD	Ag	B	0.38	0.41	0.43	0.4							GFAAS
1985	2	SED	TAMU	Ag	B	<1.9	<1.74	<1.62	<1.65	<1.83						INAA
1985	3	SED	BNW	Ag	B	0.38	0.34	0.35	0.35							GFAAS
1985	4	SED	NNEC	Ag	B	0.28	0.28	0.27	0.27							GFAAS
1985	5	SED	NSEC	Ag	B	0.34	0.33	0.33	0.31							GFAAS
1985	6	SED	SAIC	Ag	B	0.46	0.43	0.35	0.45							GFAAS
1985	8	SED	NRC8	Ag	B											
1985	9	SED	NRC9	Ag	B											
1985	1	SED	ECD	Ag	C	0.59	0.71	0.62	0.69							GFAAS
1985	2	SED	TAMU	Ag	C	<1.75	<1.77	<1.57	<1.64	<1.63	<1.84					INAA
1985	3	SED	BNW	Ag	C	0.56	0.59	0.54	0.54							GFAAS
1985	4	SED	NNEC	Ag	C	0.47	0.44	0.43	0.44							GFAAS
1985	5	SED	NSEC	Ag	C	0.45	0.47	0.47	0.48							GFAAS
1985	6	SED	SAIC	Ag	C	0.62	0.57	0.54	0.59							GFAAS
1985	8	SED	NRC8	Ag	C											
1985	9	SED	NRC9	Ag	C											
1985	1	SED	ECD	Ag	D	0.52	0.51	0.48	0.45							GFAAS
1985	2	SED	TAMU	Ag	D	<1.84	<1.76	<1.57	<1.64	<1.65	<1.8					INAA
1985	3	SED	BNW	Ag	D	0.48	0.46	0.53	0.47							GFAAS
1985	4	SED	NNEC	Ag	D	0.34	0.36	0.33	0.33							GFAAS
1985	5	SED	NSEC	Ag	D	0.4	0.38	0.37	0.46							GFAAS
1985	6	SED	SAIC	Ag	D	0.58	0.52	0.51	0.4							GFAAS
1985	8	SED	NRC8	Ag	D											
1985	9	SED	NRC9	Ag	D											
1987	1	SED	ECD	Ag	H	0.26	0.2	0.28	0.29	0.32	0.33					GFAAS
1987	2	SED	TAMU	Ag	H	0.09	0.09	0.07	0.06	0.07	0.08					GFAAS
1987	3	SED	BNW	Ag	H	0.05	0.05	0.04	0.11	0.09	0.08					GFAAS
1987	4	SED	NNEC	Ag	H	0.06	0.1	0.09	0.08	0.07	0.07					GFAAS
1987	5	SED	NSEC	Ag	H	0.13	0.09	0.08	0.11	0.09	0.08					GFAAS
1987	6	SED	SAIC	Ag	H	0.1	0.08	0.07	0.08	0.08	0.1					GFAAS
1987	8	SED	NRC8	Ag	H	0.08	0.08	0.11	0.09	0.09	0.08					GFAAS
1987	9	SED	NRC9	Ag	H											
1987	1	SED	ECD	Ag	I	0.24	0.23	0.24	0.25	0.27	0.26					GFAAS
1987	2	SED	TAMU	Ag	I	0.09	0.1	0.08	0.09	0.08	0.09					GFAAS
1987	3	SED	BNW	Ag	I	0.09	0.08	0.07	0.1	0.11	0.11					GFAAS

Year	Lab #	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep. 2	Rep. 3	Rep. 4	Rep. 5	Rep. 6	Rep. 7	Rep. 8	Rep. 9	Rep. 10	Method
1987	4	SED	NNEC	Ag	I	0.1	0.09	0.09	0.1	0.09	0.09					GFAAS
1987	5	SED	NSEC	Ag	I	0.13	0.14	0.09	0.12	0.12	0.12					GFAAS
1987	6	SED	SAIC	Ag	I	0.22	0.12	0.1	0.1	0.14	0.1					GFAAS
1987	8	SED	NRC8	Ag	I	0.13	0.12	0.11	0.11	0.15	0.12					GFAAS
1987	9	SED	NRC9	Ag	I											
1987	1	SED	ECD	Ag	J	0.41	0.42	0.41	0.31	0.31	0.3					GFAAS
1987	2	SED	TAMU	Ag	J											
1987	3	SED	BNW	Ag	J	0.18	0.2	0.2	0.18	0.2	0.2					GFAAS
1987	4	SED	NNEC	Ag	J	0.14	0.15	0.15	0.13	0.14	0.14					GFAAS
1987	5	SED	NSEC	Ag	J	0.13	0.14	0.15	0.15	0.15	0.16					GFAAS
1987	6	SED	SAIC	Ag	J	0.2	0.18	0.19	0.2	0.19	0.2					GFAAS
1987	8	SED	NRC8	Ag	J											
1987	9	SED	NRC9	Ag	J											
1987	1	SED	ECD	Ag	MESS-1	0.28	0.27	0.27	0.27	0.29	0.27					GFAAS
1987	2	SED	TAMU	Ag	MESS-1											
1987	3	SED	BNW	Ag	MESS-1	0.11	0.12	0.11								GFAAS
1987	4	SED	NNEC	Ag	MESS-1	0.11	0.11	0.11	0.1	0.08	0.08					GFAAS
1987	5	SED	NSEC	Ag	MESS-1	0.14	0.07	0.12	0.13	0.13	0.13					GFAAS
1987	6	SED	SAIC	Ag	MESS-1	0.19	0.17	0.17	0.18							GFAAS
1987	8	SED	NRC8	Ag	MESS-1											
1987	9	SED	NRC9	Ag	MESS-1											
1989	1	SED	ECD	Ag	K											
1989	2	SED	TAMU	Ag	K	0.074	0.076	0.078	0.081	0.083						GFAAS
1989	3	SED	BNW	Ag	K	0.076	0.083	0.068	0.076	0.068						GFAAS
1989	4	SED	NNEC	Ag	K	0.127	0.125	0.12	0.098	0.105						GFAAS
1989	5	SED	NSEC	Ag	K	0.099	0.074	0.1	0.09	0.101						GFAAS
1989	6	SED	SAIC	Ag	K	<0.021										GFAAS
1989	8	SED	NRC8	Ag	K											
1989	9	SED	NRC9	Ag	K											
1989	1	SED	ECD	Ag	BCSS-1											
1989	2	SED	TAMU	Ag	BCSS-1											
1989	3	SED	BNW	Ag	BCSS-1	0.084	0.099	0.079	0.084	0.086						GFAAS
1989	4	SED	NNEC	Ag	BCSS-1	0.135	0.147	0.144	0.113	0.106						GFAAS
1989	5	SED	NSEC	Ag	BCSS-1	0.111	0.114	0.096	0.107	0.105						GFAAS
1989	6	SED	SAIC	Ag	BCSS-1											
1989	8	SED	NRC8	Ag	BCSS-1											
1989	9	SED	NRC9	Ag	BCSS-1											
1990	1	SED	ECD	Ag	L	0.22	0.21	0.23	0.19	0.19						GFAAS
1990	2	SED	TAMU	Ag	L	0.178	0.174	0.18	0.192	0.187						GFAAS
1990	3	SED	BNW	Ag	L	0.17	0.18	0.18	0.18	0.17						GFAAS
1990	4*	SED	NNEC	Ag	L	0.097	0.102	0.099	0.103	0.097						GFAAS
1990	5	SED	NSEC	Ag	L	0.195	0.186	0.195	0.19	0.166						GFAAS
1990	11	SED	NRC1	Ag	L											

Year	Lab #	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep. 2	Rep. 3	Rep. 4	Rep. 5	Rep. 6	Rep. 7	Rep. 8	Rep. 9	Rep. 10	Method
1990	12	SED	NRC2	Ag	L											
1990	1	SED	ECD	Ag	M	0.092	0.12	0.096	0.11	0.088						GFAAS
1990	2	SED	TAMU	Ag	M	0.074	0.07	0.078	0.081	0.071						GFAAS
1990	3	SED	BNW	Ag	M	0.08	0.076	0.086	0.088	0.082						GFAAS
1990	4	SED	NNEC	Ag	M	0.044	0.045	0.044	0.053	0.048						GFAAS
1990	5	SED	NSEC	Ag	M	0.081	0.076	0.081	0.08	0.088						GFAAS
1990	11	SED	NRC1	Ag	M											
1990	12	SED	NRC2	Ag	M											
1990	1*	SED	ECD	Ag	BCSS-1	0.14	0.13	0.14	0.1	0.13						GFAAS
1990	2	SED	TAMU	Ag	BCSS-1	0.109	0.109	0.116	0.104	0.107						GFAAS
1990	3	SED	BNW	Ag	BCSS-1	0.11	0.1	0.11	0.1	0.1						GFAAS
1990	4	SED	NNEC	Ag	BCSS-1	0.078	0.075	0.071	0.076	0.075						GFAAS
1990	5	SED	NSEC	Ag	BCSS-1	0.103	0.097	0.12	0.114	0.12						GFAAS
1990	11	SED	NRC1	Ag	BCSS-1											
1990	12	SED	NRC2	Ag	BCSS-1											
1985	1	SED	ECD	Al	A	5.28	5.27	5.25	5.37							FAAS
1985	2	SED	TAMU	Al	A	5.95	5.92	6	5.97	6.07	5.9					INAA
1985	3	SED	BNW	Al	A	7.4	7.4	8.2	7.8							XRF
1985	4	SED	NNEC	Al	A	5.03	5.2	7.09	5.46							FAAS
1985	5	SED	NSEC	Al	A	6.38	6.54	6.09	5.91							FAAS
1985	6	SED	SAIC	Al	A	5.81	6.11	6.12	5.64							GFAAS
1985	8	SED	NRC8	Al	A											ICPAES
1985	9	SED	NRC9	Al	A											XRF
1985	1	SED	ECD	Al	B	5.46	5.59	5.49	5.36							FAAS
1985	2	SED	TAMU	Al	B	5.83	5.87	5.88	5.91	5.84	5.9					INAA
1985	3	SED	BNW	Al	B	7.1	6.6	8	6.9							XRF
1985	4	SED	NNEC	Al	B	5.17	5.07	4.84	5.58							FAAS
1985	5	SED	NSEC	Al	B	6.49	6.25	6.1	5.94							FAAS
1985	6	SED	SAIC	Al	B	6.23	6.53	6.32	6.19							GFAAS
1985	8	SED	NRC8	Al	B											ICPAES
1985	9	SED	NRC9	Al	B											XRF
1985	1	SED	ECD	Al	C	5.01	5.34	5.06	4.82							FAAS
1985	2	SED	TAMU	Al	C	5.66	5.5	5.59	5.73	5.47	5.49					INAA
1985	3	SED	BNW	Al	C	6.6	7.3	6.4	6.7							XRF
1985	4	SED	NNEC	Al	C	4.97	4.39	5.19	4.29							FAAS
1985	5	SED	NSEC	Al	C	5.5	6.19	5.55	5.86							FAAS
1985	6	SED	SAIC	Al	C	5.63	5.33	5.08	5.45							GFAAS
1985	8	SED	NRC8	Al	C											XRF
1985	9	SED	NRC9	Al	C											
1985	1	SED	ECD	Al	D	4.83	5.02	5.01	4.82							FAAS
1985	2	SED	TAMU	Al	D	5.6	5.79	5.65	5.57	5.63						INAA
1985	3	SED	BNW	Al	D	6.9	7.1	7.1	6.1							XRF

Year	Lab #	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep. 2	Rep. 3	Rep. 4	Rep. 5	Rep. 6	Rep. 7	Rep. 8	Rep. 9	Rep. 10	Method
1985	4	SED	NNEC	Al	D	5.27	4.27	4.84	4							FAAS
1985	5	SED	NSEC	Al	D	6.12	5.95	5.71	5.54							FAAS
1985	6	SED	SAIC	Al	D	5.84	5.49	5.43	3.62							GFAAS
1985	8	SED	NRC8	Al	D											ICPAES
1985	9	SED	NRC9	Al	D											XRF
1987	1	SED	ECD	Al	H	5.73	5.96	3.56	3.84	4.18	4.37					FAAS
1987	2	SED	TAMU	Al	H	4.55	5.12	4.28	5.5	4.94	5.73					FAAS
1987	3	SED	BNW	Al	H	5.9	6.1	5.8	6.1	6.2	6.4					XRF
1987	4	SED	NNEC	Al	H	4.75	4.96	4.86	4.7	4.54	4.44					FAAS
1987	5	SED	NSEC	Al	H	5.97	6.08	5.9	6.02	6.24	6.08					FAAS
1987	6	SED	SAIC	Al	H	2.4	2	2	2.1	1.9	1.8					FAAS
1987	8	SED	NRC8	Al	H	5.82	5.68	5.76	5.77	5.97	5.76					ICPAES
1987	9	SED	NRC9	Al	H	5.75	5.79	5.9	5.79	5.89	5.81					XRF
1987	1	SED	ECD	Al	I	4.76	4.89	4.66	5.18	4.55	4.51					FAAS
1987	2	SED	TAMU	Al	I	4.85	5.71	5.02	4.91	4.82	5.53					FAAS
1987	3	SED	BNW	Al	I	5.46	4.5	4.9	4.5	5.3	4.1					XRF
1987	4	SED	NNEC	Al	I	4.7	4.63	4.78	4.75	4.85	4.72					FAAS
1987	5	SED	NSEC	Al	I	5.26	5.23	5.26	5.41	5.62	5.66					FAAS
1987	6	SED	SAIC	Al	I	4.7	4	4.4	4.5	4.8	4.4					FAAS
1987	8	SED	NRC8	Al	I	4.72	4.98	4.75	4.85	4.88						ICPAES
1987	9	SED	NRC9	Al	I	5.15	5.14	5.15	5.14	5.14	5.13					XRF
1987	1	SED	ECD	Al	J	5.44	5.5	5.6	5.5	5.57	5.62					FAAS
1987	2	SED	TAMU	Al	J											
1987	3	SED	BNW	Al	J											
1987	4	SED	NNEC	Al	J	4.37	4.34	4.36	4.55	4.58	4.53					FAAS
1987	5	SED	NSEC	Al	J	4.91	4.93	4.88	4.78	4.88	4.8					FAAS
1987	6	SED	SAIC	Al	J	4.9	4.6	4.8	4.9	4.7	4.7					FAAS
1987	8	SED	NRC8	Al	J											
1987	9	SED	NRC9	Al	J											
1987	1	SED	ECD	Al	MESS-1	5.75	5.75	5.84	6.16	5.58	5.84					FAAS
1987	2	SED	TAMU	Al	MESS-1											
1987	3	SED	BNW	Al	MESS-1	6.41	7.08	5.81								XRF
1987	4	SED	NNEC	Al	MESS-1	5.71	5.76	5.64	5.62	5.71	5.82					FAAS
1987	5	SED	NSEC	Al	MESS-1	6.14	6.17	6.23	5.64	6.26	6.11					FAAS
1987	6	SED	SAIC	Al	MESS-1	5.4	5.3	5.2	5							FAAS
1987	8	SED	NRC8	Al	MESS-1											
1987	9	SED	NRC9	Al	MESS-1											
1989	1	SED	ECD	Al	K	6.39	6.92	6.64	6.59	6.79						FASS
1989	2	SED	TAMU	Al	K	6.75	6.78	6.87	6.92	6.93	6.96	7.01				INAA
1989	3	SED	BNW	Al	K	6.4	6.4	6.5	6.5	6.4						XRF
1989	4	SED	NNEC	Al	K	6.71	6.3	6.36	6.35	6.12						FASS
1989	5	SED	NSEC	Al	K	6.8	6.85	6.94	6.88	7.07						FASS
1989	6	SED	SAIC	Al	K	4.8	4.7	4.3	6.5	6.9						FASS

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1989	8	SED	NRC8	Al	K	6.94	6.89	6.95								ICPAES
1989	9	SED	NRC9	Al	K											
1989	1	SED	ECD	Al	BCSS-1	6.65	6.48	6.45	6.5	6.61						FAAS
1989	2	SED	TAMU	Al	BCSS-1											
1989	3	SED	BNW	Al	BCSS-1	6.5	6.5	6.7	6.8	6.4						XRF
1989	4	SED	NNEC	Al	BCSS-1	6.44	6.41	6.15	6.14	6.1						FAAS
1989	5	SED	NSEC	Al	BCSS-1	6.05	6.34	6.06	5.92	5.88						FAAS
1989	6	SED	SAIC	Al	BCSS-1	4.9	5.2	5.9	5.2	5.7						FAAS
1989	8	SED	NRC8	Al	BCSS-1	6.32										ICPAES
1989	9	SED	NRC9	Al	BCSS-1											
1990	1	SED	ECD	Al	L	8.81	8.66	8.47	8.72	8.24						FAAS
1990	2	SED	TAMU	Al	L	8.49	8.39	8.41	8.53	8.9						FAAS
1990	3	SED	BNW	Al	L	8.4	8.7	8.8	8.6	8.7						XRF
1990	4	SED	NNEC	Al	L	8.56	8.8	9.05	8.55	8.69						FAAS
1990	5	SED	NSEC	Al	L	8.73	8.41	7.83	8.36	8.46						FAAS
1990	8	SED	NRC1	Al	L	8.6	8.52	8.46	8.52	8.48						ICPAES
1990	9	SED	NRC2	Al	L											
1990	1	SED	ECD	Al	M	3.5	3.31	3.62	3.5	3.45						FAAS
1990	2	SED	TAMU	Al	M	3.48	3.45	3.49	3.63	3.53						FAAS
1990	3	SED	BNW	Al	M	2.9	3.2	3.3	3.2	3.2						XRF
1990	4	SED	NNEC	Al	M	3.09	3.15	3.31	3.32	3.22						FAAS
1990	5	SED	NSEC	Al	M	3.31	3.2	3	2.83	3.03						FAAS
1990	8	SED	NRC1	Al	M	3.22	3.19	3.24	3.24	3.25						ICPAES
1990	9	SED	NRC2	Al	M											
1990	1	SED	ECD	Al	BCSS-1	6.42	6.32	6.6	6.31	5.88						FAAS
1990	2	SED	TAMU	Al	BCSS-1	6.69	7.06	6.46	6.54	6.63						FAAS
1990	3	SED	BNW	Al	BCSS-1	7	6.8	6.8	6.9	6.9						XRF
1990	4	SED	NNEC	Al	BCSS-1	6.39	6.35	6.4	6.28	6.26						FAAS
1990	5	SED	NSEC	Al	BCSS-1	6.01	5.96	6.02	6.01	6.04						FAAS
1990	8	SED	NRC1	Al	BCSS-1											ICPAES
1990	9	SED	NRC2	Al	BCSS-1											
1985	1	SED	ECD	As	A	29	29	27	21							GFAAS
1985	2	SED	TAMU	As	A	23.6	24.8	31.8	25.1							HGAAS
1985	3	SED	BNW	As	A	30.6	29.7	28.3	27.2							GFAAS
1985	4	SED	NNEC	As	A	24	23.7	22.9	23.6							GFAAS
1985	5	SED	NSEC	As	A	16.3	21.4	21.6	20.9							GFAAS
1985	6	SED	SAIC	As	A	29.2	24.2	26.1								GFAAS
1985	8	SED	NRC8	As	A											
1985	9	SED	NRC9	As	A											
1985	1	SED	ECD	As	B	21	24	20	20							GFAAS
1985	2	SED	TAMU	As	B	21.7	21.3	24	19.7							HGAAS
1985	3	SED	BNW	As	B	22.7	18.1	26	23.2							GFAAS

Year	Lab #	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep. 2	Rep. 3	Rep. 4	Rep. 5	Rep. 6	Rep. 7	Rep. 8	Rep. 9	Rep. 10	Method
1985	4	SED	NNEC	As	B	20.6	20.6	21.3	21.4							GFAAS
1985	5	SED	NSEC	As	B	16.1	14.9	12.6	11.6							GFAAS
1985	6	SED	SAIC	As	B	22.4	25.8	22.8								GFAAS
1985	8	SED	NRC8	As	B											
1985	9	SED	NRC9	As	B											
1985	1	SED	ECD	As	C	15	22	24	18							GFAAS
1985	2	SED	TAMU	As	C	21.5	21.3	23.4	20.1							HGAAS
1985	3	SED	BNW	As	C	27.4	27.4	25.7	29							GFAAS
1985	4	SED	NNEC	As	C	19.6	19	20.5	21.3							GFAAS
1985	5	SED	NSEC	As	C	14.3	15	14.9	18.3							GFAAS
1985	6	SED	SAIC	As	C	17	25	23								GFAAS
1985	8	SED	NRC8	As	C											
1985	9	SED	NRC9	As	C											
1985	1	SED	ECD	As	D	15	23	19	14							GFAAS
1985	2	SED	TAMU	As	D	18.8	16.9	18.2	16.8							HGAAS
1985	3	SED	BNW	As	D	21.2	21.5	24.4	20.1							GFAAS
1985	4	SED	NNEC	As	D	18.3	19.9	17.2	18.5							GFAAS
1985	5	SED	NSEC	As	D	16.6	15.6	16.9	17.9							GFAAS
1985	6	SED	SAIC	As	D	26.9	25.3	23.9								GFAAS
1985	8	SED	NRC8	As	D											
1985	9	SED	NRC9	As	D											
1987	1	SED	ECD	As	H											
1987	2	SED	TAMU	As	H	14.3	17.4	14.8	14.8	15.4	9.2					GFAAS
1987	3	SED	BNW	As	H	11.4	10.3	11.8	13	12.5	11.1					XRF
1987	4	SED	NNEC	As	H	9.2	8.8	9.5	9.3	9.2	9.3					GFAAS
1987	5	SED	NSEC	As	H	11.2	11.6	11.8	11.1	11.4	9.9					GFAAS
1987	6	SED	SAIC	As	H	9.2	9.2	9	10	9.2	9.7					GFAAS
1987	8	SED	NRC8	As	H	12.6	10.5	11	11.4	11.6	11.3					GFAAS
1987	9	SED	NRC9	As	H	12.2	12.4	12.7	11.5	12	12.6					HGAAS
1987	1	SED	ECD	As	I											
1987	2	SED	TAMU	As	I	11.6	13	12.3	11.2	11	7.8					GFAAS
1987	3	SED	BNW	As	I	6.1	7	6.8	8.4	9.8	6.9					XRF
1987	4	SED	NNEC	As	I	7.2	7.4	6.9	6.8	6.1	7.2					GFAAS
1987	5	SED	NSEC	As	I	7.7	7.7	7.2	8	8	7.3					GFAAS
1987	6	SED	SAIC	As	I	10	8.8	9.4	9.4	11	9.3					GFAAS
1987	8	SED	NRC8	As	I	8.1	8.6	8.9	8.5	9.2	8.7					GFAAS
1987	9	SED	NRC9	As	I	9.4	9.9	10.1	10.5	9.6	9.1					HGAAS
1987	1	SED	ECD	As	J	8.4	8.4	8.4	9.4	9	9.6					GFAAS
1987	2	SED	TAMU	As	J											
1987	3	SED	BNW	As	J											
1987	4	SED	NNEC	As	J	8.6	8	7.4	8.6	7.7	9.1					GFAAS
1987	5	SED	NSEC	As	J	8.4	8.8	8.7	8.2	8.8	9					GFAAS
1987	6	SED	SAIC	As	J	12	13	12	11	12	12					GFAAS

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1987	8	SED	NRC8	As	J											
1987	9	SED	NRC9	As	J											
1987	1	SED	ECD	As	MESS-1	10.2	10.1	9.6	11.9	11.3	10.8					GFAAS
1987	2	SED	TAMU	As	MESS-1											
1987	3	SED	BNW	As	MESS-1	9	9.6	12.9								XRF
1987	4	SED	NNEC	As	MESS-1	10.4	7.4	8.4	9	8.9	9.4					GFAAS
1987	5	SED	NSEC	As	MESS-1	10.4	10.4	10.2	11	9.9	9.8					GFAAS
1987	6	SED	SAIC	As	MESS-1	10	12	11	11							GFAAS
1987	8	SED	NRC8	As	MESS-1											
1987	9	SED	NRC9	As	MESS-1											
1989	1	SED	ECD	As	K	7.9	8	7.9	7.5	7.6						GFAAS
1989	2	SED	TAMU	As	K	6.9	7.1	7.1	7.2	7.3	7.4					GFAAS
1989	3	SED	BNW	As	K	10	8	8	8	8						XRF
1989	4	SED	NNEC	As	K	7.8	7.3	6.8	8.4	8.1						GFAAS
1989	5	SED	NSEC	As	K	3.6	4.7	6.3	5.9	6.4						GFAAS
1989	6	SED	SAIC	As	K	8.7	7.8	8.3	7.6	9						GFAAS
1989	8	SED	NRC8	As	K											
1989	9	SED	NRC9	As	K											
1989	1	SED	ECD	As	BCSS-1	10.1	11.7	11	11.3	12.7						GFAAS
1989	2	SED	TAMU	As	BCSS-1											
1989	3	SED	BNW	As	BCSS-1	11	12	12	13	11						XRF
1989	4	SED	NNEC	As	BCSS-1	11.2	11.3	11.1	11.1	11.5						GFAAS
1989	5	SED	NSEC	As	BCSS-1	8.2	8.5	10.4	8.6	8.6						GFAAS
1989	6	SED	SAIC	As	BCSS-1	12	13	12	13	13						GFAAS
1989	8	SED	NRC8	As	BCSS-1											
1989	9	SED	NRC9	As	BCSS-1											
1990	1	SED	ECD	As	L	21.8	18.1	21.6	22.8	22.2						GFAAS
1990	2	SED	TAMU	As	L	21.2	20.9	20.6	20.8	21.3						GFAAS
1990	3	SED	BNW	As	L	20	22	21	22	21						XRF
1990	3	SED	NNEC	As	L	20.8	20.5	20.7	20.5	20.9						GFAAS
1990	5	SED	NSEC	As	L	18.1	21.1	17.2	20	19.6						GFAAS
1990	11	SED	NRC1	As	L											
1990	12	SED	NRC2	As	L	21.1	20.6	20.3	20.8	20.3						GFAAS
1990	1	SED	ECD	As	M	6.38	6.15	5.64	5.4	5.18						GFAAS
1990	2	SED	TAMU	As	M	4.04	4.18	3.94	4.25	3.9						GFAAS
1990	3	SED	BNW	As	M	5.4	3.4	3.4	5.5	4.1						XRF
1990	4	SED	NNEC	As	M	5.3	6.1	4.86	5.7	5.69						GFAAS
1990	5	SED	NSEC	As	M	4.93	4.43	4.76	5.02	5.15						GFAAS
1990	11	SED	NRC1	As	M											
1990	12	SED	NRC2	As	M	3.98	3.94	4.6	4.14	3.88						GFAAS
1990	1	SED	ECD	As	BCSS-1	10.3	13.3	12	12.1	12.8						GFAAS
1990	2	SED	TAMU	As	BCSS-1	11.4	10	10	11.2	11.5						GFAAS
1990	3	SED	BNW	As	BCSS-1	12	11	11	12	10						XRF

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1990	4	SED	NNEC	As	BCSS-1	12.1	11.9	10.7	12	11.9						GFAAS
1990	5	SED	NSEC	As	BCSS-1	11.3	11.6	9.5	11	12.3						GFAAS
1990	11	SED	NRC1	As	BCSS-1											
1990	12	SED	NRC2	As	BCSS-1											GFAAS
1985	1	SED	ECD	Cd	A	1.91	1.82	1.17	1.72							GFAAS
1985	2	SED	TAMU	Cd	A	1.74	1.91	1.56	1.73							GFAAS
1985	3	SED	BNW	Cd	A	2.09	2.09	2.2	2.4							GFAAS
1985	4	SED	NNEC	Cd	A	1.28	1.33	1.14	1.16							GFAAS
1985	5	SED	NSEC	Cd	A	1.33	1.44	1.3	1.22							GFAAS
1985	6	SED	SAIC	Cd	A											GFAAS
1985	8	SED	NRC8	Cd	A											GFAAS
1985	9	SED	NRC9	Cd	A											
1985	1	SED	ECD	Cd	B	1.64	1.45	1.26	1.07							GFAAS
1985	2	SED	TAMU	Cd	B	1.48	1.46	1.19	1.31	0.99						GFAAS
1985	3	SED	BNW	Cd	B	1.54	1.32	1.65	1.54							GFAAS
1985	4	SED	NNEC	Cd	B	1	1.02	1.17	0.82							GFAAS
1985	5	SED	NSEC	Cd	B	1.22	1.2	1.06	1.07							GFAAS
1985	6	SED	SAIC	Cd	B											GFAAS
1985	8	SED	NRC8	Cd	B											GFAAS
1985	9	SED	NRC9	Cd	B											
1985	1	SED	ECD	Cd	C	0.68	0.86	0.69	0.6							GFAAS
1985	2	SED	TAMU	Cd	C	0.93	0.98	0.95	0.86	0.87						GFAAS
1985	3	SED	BNW	Cd	C	0.87	0.9	0.87	1							GFAAS
1985	4	SED	NNEC	Cd	C	0.9	0.69	0.75	0.81							GFAAS
1985	5	SED	NSEC	Cd	C	0.72	1.08	1.03	1.08							GFAAS
1985	6	SED	SAIC	Cd	C											GFAAS
1985	8	SED	NRC8	Cd	C											GFAAS
1985	9	SED	NRC9	Cd	C											
1985	1	SED	ECD	Cd	D	0.69	0.65	0.72	0.28							GFAAS
1985	2	SED	TAMU	Cd	D	0.81	0.91	0.82	0.74							GFAAS
1985	3	SED	BNW	Cd	D	0.74	0.77	0.88	0.74							GFAAS
1985	4	SED	NNEC	Cd	D	0.62	0.57	0.59	0.63							GFAAS
1985	5	SED	NSEC	Cd	D	0.68	0.63	0.61	0.65							GFAAS
1985	6	SED	SAIC	Cd	D											GFAAS
1985	8	SED	NRC8	Cd	D											GFAAS
1985	9	SED	NRC9	Cd	D											
1987	1	SED	ECD	Cd	H	0.11	0.11	0.13	0.12	0.12	0.13					GFAAS
1987	2	SED	TAMU	Cd	H	0.15	0.15	0.15	0.14	0.13	0.15					GFAAS
1987	3	SED	BNW	Cd	H	0.21	0.21	0.22	0.21	0.2	0.21					GFAAS
1987	4	SED	NNEC	Cd	H	0.21	0.21	0.21	0.19	0.22	0.19					GFAAS
1987	5	SED	NSEC	Cd	H	0.23	0.25	0.23	0.21	0.22	0.2					GFAAS
1987	6	SED	SAIC	Cd	H	0.17	0.17	0.17	0.18	0.18	0.18					GFAAS

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1987	8	SED	NRC8	Cd	H	0.17	0.18	0.19	0.19	0.21	0.19					GFAAS
1987	9	SED	NRC9	Cd	H	0.18	0.19									IDICPMS
1987	1	SED	ECD	Cd	I	0.61	0.55	0.57	0.58	0.67	0.43					GFAAS
1987	2	SED	TAMU	Cd	I	0.83	0.82	0.83	0.8	0.82	0.78					GFAAS
1987	3	SED	BNW	Cd	I	1.02	1.09	1.22	1.07	1.11						GFAAS
1987	4	SED	NNEC	Cd	I	1.13	1.07	1.01	0.99	1.34	0.98					GFAAS
1987	5	SED	NSEC	Cd	I	1.03	1.1	1.07	1	1.05	1.02					GFAAS
1987	6	SED	SAIC	Cd	I	0.97	0.97	1.1	0.92	1.1	1.1					GFAAS
1987	8	SED	NRC8	Cd	I	0.95	0.96	0.93	1	1.1						GFAAS
1987	9	SED	NRC9	Cd	I	1	0.98	1	1.06	0.98	0.94					IDICPMS
1987	1	SED	ECD	Cd	J	0.31	0.31	0.32	0.32	0.32	0.33					GFAAS
1987	2	SED	TAMU	Cd	J	0.66	0.67	0.68	0.71	0.68	0.69					GFAAS
1987	3	SED	BNW	Cd	J	1.26	1.18	1.22	1.22	1.22	1.15					GFAAS
1987	4	SED	NNEC	Cd	J	0.86	0.86	0.87	0.86	0.88	0.82					GFAAS
1987	5	SED	NSEC	Cd	J	1.12	1.15	1.09	1.1	1.11	1.06					GFAAS
1987	6	SED	SAIC	Cd	J	0.99	1	0.99	1	1	1					GFAAS
1987	8	SED	NRC8	Cd	J											
1987	9	SED	NRC9	Cd	J											
1987	1	SED	ECD	Cd	MESS-1	0.53	0.51	0.56	0.53	0.53	0.53					GFAAS
1987	2	SED	TAMU	Cd	MESS-1											
1987	3	SED	BNW	Cd	MESS-1	0.68	0.67	0.63	0.72	0.72	0.65					GFAAS
1987	4	SED	NNEC	Cd	MESS-1	0.67	0.62	0.77	0.68	0.68	0.61					GFAAS
1987	5	SED	NSEC	Cd	MESS-1	0.71	0.68	0.62	0.71	0.6	0.6					GFAAS
1987	6	SED	SAIC	Cd	MESS-1	0.66	0.65	0.61	0.64							GFAAS
1987	8	SED	NRC8	Cd	MESS-1											
1987	9	SED	NRC9	Cd	MESS-1											
1989	1	SED	ECD	Cd	K	0.54	0.58	0.58	0.61	0.56						GFAAS
1989	2	SED	TAMU	Cd	K	0.43	0.44	0.46	0.47	0.48	0.5	0.51				GFAAS
1989	3	SED	BNW	Cd	K	0.46	0.51	0.46	0.48	0.45						GFAAS
1989	4	SED	NNEC	Cd	K	0.404	0.475	0.496	0.519	0.482						GFAAS
1989	5	SED	NSEC	Cd	K	0.451	0.512	0.429	0.461	0.468						GFAAS
1989	6	SED	SAIC	Cd	K	0.54	0.49	0.55	0.5	0.53						GFAAS
1989	8	SED	NRC8	Cd	K											
1989	1	SED	ECD	Cd	BCSS-1	0.3	0.27	0.32	0.32	0.26						GFAAS
1989	2	SED	TAMU	Cd	BCSS-1											
1989	3	SED	BNW	Cd	BCSS-1	0.2	0.22	0.21	0.22	0.22						GFAAS
1989	4	SED	NNEC	Cd	BCSS-1	0.287	0.306	0.266	0.315	0.293						GFAAS
1989	5	SED	NSEC	Cd	BCSS-1	0.263	0.236	0.237	0.239	0.249						GFAAS
1989	6	SED	SAIC	Cd	BCSS-1	0.27	0.27	0.23	0.29	0.21						GFAAS
1989	8	SED	NRC8	Cd	BCSS-1											
1990	1	SED	ECD	Cd	L	0.24	0.257	0.238	0.243	0.267						GFAAS
1990	2	SED	TAMU	Cd	L	0.198	0.212	0.213	0.237	0.236						GFAAS
1990	3	SED	BNW	Cd	L	0.25	0.24	0.24	0.25	0.25						GFAAS

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1990	4	SED	NNEC	Cd	L	0.222	0.224	0.228	0.235	0.233						GFAAS
1990	5	SED	NSEC	Cd	L	0.232	0.222	0.209	0.216	0.235						GFAAS
1990	11	SED	NRC1	Cd	L											
1990	12	SED	NRC2	Cd	L	0.249	0.238	0.235	0.257	0.24						GFAAS
1990	1	SED	ECD	Cd	M	0.124	0.108	0.096	0.091	0.108						GFAAS
1990	2	SED	TAMU	Cd	M	0.073	0.081	0.082	0.084	0.073						GFAAS
1990	3	SED	BNW	Cd	M	0.063	0.074	0.062	0.067	0.058						GFAAS
1990	4	SED	NNEC	Cd	M	0.093	0.1	0.094	0.09	0.093						GFAAS
1990	5	SED	NSEC	Cd	M	0.093	0.105	0.083	0.083	0.091						GFAAS
1990	11	SED	NRC1	Cd	M											
1990	12	SED	NRC2	Cd	M	0.072	0.071	0.069	0.071	0.065						GFAAS
1990	1	SED	ECD	Cd	BCSS-1	0.277	0.276	0.234	0.247	0.273						GFAAS
1990	2	SED	TAMU	Cd	BCSS-1	0.267	0.258	0.25	0.253	0.265						GFAAS
1990	3	SED	BNW	Cd	BCSS-1	0.29	0.29	0.27	0.27	0.27						GFAAS
1990	4	SED	NNEC	Cd	BCSS-1	0.24	0.244	0.253	0.243	0.256						GFAAS
1990	5	SED	NSEC	Cd	BCSS-1	0.248	0.232	0.253	0.229	0.26						GFAAS
1990	11	SED	NRC1	Cd	BCSS-1											
1990	12	SED	NRC2	Cd	BCSS-1											GFAAS
1985	1	SED	ECD	Cr	A	52	48.6	51.3	47							GFAAS
1985	2	SED	TAMU	Cr	A	67.6	69.5	63.4	65.8	70.4						INAA
1985	3	SED	BNW	Cr	A	69	77	77	73							XRF
1985	4	SED	NNEC	Cr	A	63.2	161	115	83.8							FAAS
1985	5	SED	NSEC	Cr	A	55	56	51	50							FAAS
1985	6	SED	SAIC	Cr	A	69.9	67.9	71.4	67.3							GFAAS
1985	8	SED	NRC8	Cr	A											
1985	9	SED	NRC9	Cr	A											
1985	1	SED	ECD	Cr	B	50.8	54.6	55.5	52.1							GFAAS
1985	2	SED	TAMU	Cr	B	71.7	73.1	69.2	67.6	61.6						INAA
1985	3	SED	BNW	Cr	B	70	83	81	79							XRF
1985	4	SED	NNEC	Cr	B	76.7	58.8	103	195							FAAS
1985	5	SED	NSEC	Cr	B	47	47	48	49							FAAS
1985	6	SED	SAIC	Cr	B	57.8	61.7	64.2	59.9							GFAAS
1985	8	SED	NRC8	Cr	B											
1985	9	SED	NRC9	Cr	B											
1985	1	SED	ECD	Cr	C	49.3	40.5	46.9	44.3							GFAAS
1985	2	SED	TAMU	Cr	C	57.2	62.7	60.1	62.4	58.9	65.2					INAA
1985	3	SED	BNW	Cr	C	71	72	89	57							XRF
1985	4	SED	NNEC	Cr	C	74.1	70.7	69.7	72.2							FAAS
1985	5	SED	NSEC	Cr	C	44	47	45	47							FAAS
1985	6	SED	SAIC	Cr	C	60.9	60.3	59.8	62.6							GFAAS
1985	8	SED	NRC8	Cr	C											
1985	9	SED	NRC9	Cr	C											

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1985	1	SED	ECD	Cr	D	46.7	49.6	58.3	56.3							GFAAS
1985	2	SED	TAMU	Cr	D	78.4	78.5	84.1	75.5							INAA
1985	3	SED	BNW	Cr	D	106	78	81	78							XRF
1985	4	SED	NNEC	Cr	D	80.3	77.5	80.5	77.7							FAAS
1985	5	SED	NSEC	Cr	D	54	48	48	45							FAAS
1985	6	SED	SAIC	Cr	D	76.3	70.3	67.4	52.3							GFAAS
1985	8	SED	NRC8	Cr	D											
1985	9	SED	NRC9	Cr	D											
1987	1	SED	ECD	Cr	H	62.7	59.6	81.6	81.5	79.8	73.1					GFAAS
1987	2	SED	TAMU	Cr	H	68	69	64	67	66	67					INAA
1987	3	SED	BNW	Cr	H	76	57	94	81	106	74					XRF
1987	4	SED	NNEC	Cr	H	66.1	66.4	70.1	64.8	63.3	65.4					FAAS
1987	5	SED	NSEC	Cr	H	71.5	70.4	69.5	68.7	73.3	66.9					FAAS
1987	6	SED	SAIC	Cr	H	65	69	71	70	73	67					GFAAS
1987	8	SED	NRC8	Cr	H	75.4	74.5	65.1	71.2	68.8	70					GFAAS
1987	9	SED	NRC9	Cr	H	68.4	66.3	64.8	66.1	69.3	65.7					ICPMS
1987	1	SED	ECD	Cr	I	42.3	41.8	44.5	45.7	46.9	42.6					GFAAS
1987	2	SED	TAMU	Cr	I	46	44	45	45	45	44					INAA
1987	3	SED	BNW	Cr	I	46.8	47.4	45.8	42.3	44.1	43					GFAAS
1987	4	SED	NNEC	Cr	I	42.1	44.2	41.7	41.2	41.9	43.3					FAAS
1987	5	SED	NSEC	Cr	I	41.8	41.7	42.1	38.6	37.5	38.6					FAAS
1987	6	SED	SAIC	Cr	I	43	41	44	48	46	44					GFAAS
1987	8	SED	NRC8	Cr	I	36.9	40.6	39.2	39.1	40.1	39.6					GFAAS
1987	9	SED	NRC9	Cr	I	43.3	43.8	44.1	44.7	43.2	42					ICPMS
1987	1	SED	ECD	Cr	J	35.8	35.8	46	51.1	40.9	40.9					GFAAS
1987	2	SED	TAMU	Cr	J											
1987	3	SED	BNW	Cr	J	42.3	40	42.3	42.6	41.6	43.9					GFAAS
1987	4	SED	NNEC	Cr	J	36.7	38.7	38.9	37.1	37.1	38.1					FAAS
1987	5	SED	NSEC	Cr	J											
1987	6	SED	SAIC	Cr	J	39	40	37	42	38	36					GFAAS
1987	8	SED	NRC8	Cr	J											
1987	9	SED	NRC9	Cr	J											
1987	1	SED	ECD	Cr	MESS-1	61	60.5	54.1	61.2	60.8	55.4					GFAAS
1987	2	SED	TAMU	Cr	MESS-1	69	63	68	69	72	68					INAA
1987	3	SED	BNW	Cr	MESS-1	54	82	62	86	78						XRF
1987	4	SED	NNEC	Cr	MESS-1	65.2	60.4	59.1	62	65.1	62.4					FAAS
1987	5	SED	NSEC	Cr	MESS-1	65.4	58.4	66.9	56.2	58.5	61.3					FAAS
1987	6	SED	SAIC	Cr	MESS-1	58	54	58	57							GFAAS
1987	8	SED	NRC8	Cr	MESS-1											
1987	9	SED	NRC9	Cr	MESS-1											
1989	1	SED	ECD	Cr	K	72.9	76.7	71.8	72.1	70.8						FAAS
1989	2	SED	TAMU	Cr	K	76	76	78	78	76	76					INAA
1989	3	SED	BNW	Cr	K	76	79	88	74	77						XRF

Year	Lab #	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep. 2	Rep. 3	Rep. 4	Rep. 5	Rep. 6	Rep. 7	Rep. 8	Rep. 9	Rep. 10	Method
1989	4	SED	NNEC	Cr	K	78.3	76.5	82.2	77.9	73.4						FAAS
1989	5	SED	NSEC	Cr	K	69.8	65.7	70.4	67.2	66.5						GFAAS
1989	6	SED	SAIC	Cr	K	75	75	77	79	80						GFAAS
1989	8	SED	NRC8	Cr	K	83.4	84.5	85.6								ICPAES
1989	1	SED	ECD	Cr	BCSS-1	114	126	116	128	124						FAAS
1989	2	SED	TAMU	Cr	BCSS-1											
1989	3	SED	BNW	Cr	BCSS-1	110	150	110	140	140						XRF
1989	4	SED	NNEC	Cr	BCSS-1	116	114	120	115	112						FAAS
1989	5	SED	NSEC	Cr	BCSS-1	89.5	91.2	86.8	83.8	81.7						GFAAS
1989	6	SED	SAIC	Cr	BCSS-1	110	110	110	110	110						GFAAS
1989	8	SED	NRC8	Cr	BCSS-1	121	120									ICPAES
1990	1	SED	ECD	Cr	L	115	118	119	121	113						GFAAS
1990	2	SED	TAMU	Cr	L	108	106	106	106	104						
1990	3	SED	BNW	Cr	L	116	111	108	101	121						XRF
1990	4	SED	NNEC	Cr	L	111	112	116	113	113						FAAS
1990	5	SED	NSEC	Cr	L	102	103	104	103	109						GFAAS
1990	11	SED	NRC1	Cr	L	101	102	101	102	101						ICPAES
1990	12	SED	NRC2	Cr	L	106	119	103	118	117						GFAAS
1990	1*	SED	ECD	Cr	M	32.9	33.8	36.3	34.7	35.4						GFAAS
1990	2	SED	TAMU	Cr	M	26.5	28.8	28.5	26.7	30						
1990	3	SED	BNW	Cr	M	21	30	26	20	27						XRF
1990	4*	SED	NNEC	Cr	M	15.6	11.8	11.9	15.6	12						FAAS
1990	5	SED	NSEC	Cr	M	24.5	25.7	23.1	24.3	25.7						GFAAS
1990	11	SED	NRC1	Cr	M	22.8	22.6	21.5	22.2	22.1						ICPAES
1990	12	SED	NRC2	Cr	M	22.3	24.4	25.2	22.7	22.1						GFAAS
1990	1	SED	ECD	Cr	BCSS-1	125	121	125	120	119						GFAAS
1990	2	SED	TAMU	Cr	BCSS-1	122	121	124	123	122						
1990	3	SED	BNW	Cr	BCSS-1	120	125	130	132	137						XRF
1990	4	SED	NNEC	Cr	BCSS-1	122	119	121	120	123						FAAS
1990	5	SED	NSEC	Cr	BCSS-1	104	110	110	109	117						GFAAS
1990	11	SED	NRC1	Cr	BCSS-1											ICPAES
1990	12	SED	NRC2	Cr	BCSS-1											GFAAS
1985	1	SED	ECD	Cu	A	111	102	103	102							FAAS
1985	2	SED	TAMU	Cu	A	101	96.6	93.2	104	99.8						FAAS
1985	3	SED	BNW	Cu	A	91	105	98	96							XRF
1985	4	SED	NNEC	Cu	A	105	106	107	99.2							FAAS
1985	5	SED	NSEC	Cu	A	95	86	98	88							FAAS
1985	6	SED	SAIC	Cu	A	101	104	109	96.9							GFAAS
1985	8	SED	NRC8	Cu	A											GFAAS
1985	9	SED	NRC9	Cu	A											
1985	1	SED	ECD	Cu	B	87	83	86	77							FAAS
1985	2	SED	TAMU	Cu	B	81	94.9	101	78.2	76.5						FAAS

Year	Lab #	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep. 2	Rep. 3	Rep. 4	Rep. 5	Rep. 6	Rep. 7	Rep. 8	Rep. 9	Rep. 10	Method
1985	3	SED	BNW	Cu	B	74	65	76	84							XRF
1985	4	SED	NNEC	Cu	B	84.5	88.1	82.9	85.4							FAAS
1985	5	SED	NSEC	Cu	B	80	67	66	72							FAAS
1985	6	SED	SAIC	Cu	B	102	77	122	81.2							GFAAS
1985	8	SED	NRC8	Cu	B											GFAAS
1985	9	SED	NRC9	Cu	B											
1985	1	SED	ECD	Cu	C	45	45	40	43							FAAS
1985	2	SED	TAMU	Cu	C	43.3	42.2	41.4	41.8	41.3						FAAS
1985	3	SED	BNW	Cu	C	45	48	45	46							XRF
1985	4	SED	NNEC	Cu	C	47.2	43.4	47.3	47.1							FAAS
1985	5	SED	NSEC	Cu	C	43	43	45	42							FAAS
1985	6	SED	SAIC	Cu	C	47.4	46.6	45.9	48							GFAAS
1985	8	SED	NRC8	Cu	C											GFAAS
1985	9	SED	NRC9	Cu	C											
1985	1	SED	ECD	Cu	D	40	40	39	37							FAAS
1985	2	SED	TAMU	Cu	D	35.7	34.8	34.8	35.6	37						FAAS
1985	3	SED	BNW	Cu	D	41	41	41	43							XRF
1985	4	SED	NNEC	Cu	D	37.9	37.5	35.5	38.5							FAAS
1985	5	SED	NSEC	Cu	D	31	34	38	34							FAAS
1985	6	SED	SAIC	Cu	D	40	38.8	37.6	27							GFAAS
1985	8	SED	NRC8	Cu	D											GFAAS
1985	9	SED	NRC9	Cu	D											
1987	1	SED	ECD	Cu	H	29.5	27.8	28.3	29.3	27.9	28.9					FAAS
1987	2	SED	TAMU	Cu	H	30.3	32.8	31	30.5	32.6	34.2					FAAS
1987	3	SED	BNW	Cu	H	32.2	30.6	35.3	35.2	33.6	37					XRF
1987	4	SED	NNEC	Cu	H	33.8	32.7	32.8	32.7	31.8	32.6					FAAS
1987	5	SED	NSEC	Cu	H	29.4	28.7	29.5	31	28.8	29.3					GFAAS
1987	6	SED	SAIC	Cu	H	29	30	29	30	32	30					GFAAS
1987	8	SED	NRC8	Cu	H	33.2	32.6	32.4	33.4	33.1	33.4					ICPAES
1987	9	SED	NRC9	Cu	H	32.8	32.8	32.9	34	34.8	33.4					IDICPMS
1987	1	SED	ECD	Cu	I	41.2	40.1	40.3	42.9	40.2	41.1					FAAS
1987	2	SED	TAMU	Cu	I	41.3	43.2	40.7	39.2	44.2	39.5					FAAS
1987	3	SED	BNW	Cu	I	38.7	38.3	44.6	43.5	44.3	45.8					XRF
1987	4	SED	NNEC	Cu	I	45.9	45.8	43.1	47.6	45.7	45.1					FAAS
1987	5	SED	NSEC	Cu	I	41.6	41.1	40.5	42.8	36.6	41.7					GFAAS
1987	6	SED	SAIC	Cu	I	42	37	43	39	40	45					GFAAS
1987	8	SED	NRC8	Cu	I	46.4	42.4	48.6	42	43.3						ICPAES
1987	9	SED	NRC9	Cu	I	42	40.7	44.3	45.2	43.1	44.1					IDICPMS
1987	1	SED	ECD	Cu	J	31.6	20.9	28.9	26.3	21	26.3					FAAS
1987	2	SED	TAMU	Cu	J											
1987	3	SED	BNW	Cu	J											
1987	4	SED	NNEC	Cu	J	46.4	45.8	45.2	45.6	45.6	45.8					FAAS
1987	5	SED	NSEC	Cu	J	33.5	34.1	32.9	33.4	34.2	33.4					GFAAS

Year	Lab #	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep. 2	Rep. 3	Rep. 4	Rep. 5	Rep. 6	Rep. 7	Rep. 8	Rep. 9	Rep. 10	Method
1987	6	SED	SAIC	Cu	J	41	42	41	42	43	44					GFAAS
1987	8	SED	NRC8	Cu	J											
1987	9	SED	NRC9	Cu	J											
1987	1	SED	ECD	Cu	MESS-1	28.7	26.1	23.9	23.2	28.4	27.7					FAAS
1987	2	SED	TAMU	Cu	MESS-1	28.8	26.5	30.8	24.2	27.8						FAAS
1987	3	SED	BNW	Cu	MESS-1	25.4	29.9	27.2								XRF
1987	4	SED	NNEC	Cu	MESS-1	28.8	27.9	27.1	27.1	26.8	27					FAAS
1987	5	SED	NSEC	Cu	MESS-1	26.4	25.4	25.3	26.6	25.1	23.7					GFAAS
1987	6	SED	SAIC	Cu	MESS-1	24	25	25	28							GFAAS
1987	8	SED	NRC8	Cu	MESS-1											
1987	9	SED	NRC9	Cu	MESS-1											
1989	1	SED	ECD	Cu	K	33.6	33.6	35	34.4	34.4						GFAAS
1989	2	SED	TAMU	Cu	K	33.2	33.7	33.8	34.2	35.1	35.7					FAAS
1989	3	SED	BNW	Cu	K	39	37	39	33	37						XRF
1989	4	SED	NNEC	Cu	K	41.9	41	36.4	36.4	36.2						FAAS
1989	5	SED	NSEC	Cu	K	34	32.5	33.6	34.8	35						GFAAS
1989	6	SED	SAIC	Cu	K	30	30	30	31	33						GFAAS
1989	8	SED	NRC8	Cu	K	32.1	34.4	31.5	32.6							IDICPMS
1989	1	SED	ECD	Cu	BCSS-1	17.3	18.6	18.5	19.8	19.4						GFAAS
1989	2	SED	TAMU	Cu	BCSS-1											
1989	3	SED	BNW	Cu	BCSS-1	20	18	20	21	21						XRF
1989	4	SED	NNEC	Cu	BCSS-1	25.8	20.1	19.7	20.3	20.4						FAAS
1989	5	SED	NSEC	Cu	BCSS-1	17	18.2	17.3	18	17.3						GFAAS
1989	6	SED	SAIC	Cu	BCSS-1	17	18	16	18	19						GFAAS
1989	8	SED	NRC8	Cu	BCSS-1	17.4										IDICPMS
1990	1	SED	ECD	Cu	L	39.2	39.9	38	40.3	38						GFAAS
1990	2	SED	TAMU	Cu	L	34.8	34.8	36.2	39.4	39.6						GFAAS
1990	3	SED	BNW	Cu	L	35	34	38	38	35						XRF
1990	4	SED	NNEC	Cu	L	43.3	39.7	43.4	39.5	39.6						FAAS
1990	5	SED	NSEC	Cu	L	36.5	35.4	35.5	35.3	38.4						GFAAS
1990	11	SED	NRC1	Cu	L	38.2	41.9	40.4	37.7	40.4						ICPAES
1990	12	SED	NRC2	Cu	L											GFAAS
1990	1	SED	ECD	Cu	M	7.67	7.61	7.73	7.15	7.01						GFAAS
1990	2	SED	TAMU	Cu	M	6.82	7.23	6.63	7.66	7.15						GFAAS
1990	3*	SED	BNW	Cu	M	10	11	10	11	11						XRF
1990	4	SED	NNEC	Cu	M	8.77	8.66	8.63	8.56	8.6						FAAS
1990	5	SED	NSEC	Cu	M	6.8	6.9	6.9	7.6	7.6						GFAAS
1990	11	SED	NRC1	Cu	M	7.42	7.39	7.36	7.47	6.08						ICPAES
1990	12	SED	NRC2	Cu	M	7.52	7.12	8.1	8.06	8.24						GFAAS
1990	1	SED	ECD	Cu	BCSS-1	19.3	18.2	17.9	17.2	18.9						GFAAS
1990	2	SED	TAMU	Cu	BCSS-1	17.8	18.9	17.6	18.6	18.5						GFAAS
1990	3	SED	BNW	Cu	BCSS-1	20	19	21	20	21						XRF
1990	4	SED	NNEC	Cu	BCSS-1	21.4	17.6	17.5	21.7	21.7						FAAS

Year	Lab #	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep. 2	Rep. 3	Rep. 4	Rep. 5	Rep. 6	Rep. 7	Rep. 8	Rep. 9	Rep. 10	Method
1990	5	SED	NSEC	Cu	BCSS-1	17.3	16.9	17	18.9	18						GFAAS
1990	11	SED	NRC1	Cu	BCSS-1											ICPAES
1990	12	SED	NRC2	Cu	BCSS-1											GFAAS
1985	1	SED	ECD	Fe	A	3.91	3.85	3.97	4							FAAS
1985	2	SED	TAMU	Fe	A	3.9	3.96	3.89	3.99	3.92						FAAS
1985	2	SED	TAMU	Fe	A	4	3.84	3.65	3.95	3.96						INAA
1985	3	SED	BNW	Fe	A	4.05	4.09	4.11	4.11							XRF
1985	4	SED	NNEC	Fe	A	3.8	3.91	3.98	3.77							FAAS
1985	5	SED	NSEC	Fe	A	3.83	3.67	4.3	4.2							FAAS
1985	6	SED	SAIC	Fe	A	4.28	4.46	4.49	4.52							GFAAS
1985	8	SED	NRC8	Fe	A											XRF
1985	9	SED	NRC9	Fe	A											ICPAES
1985	1	SED	ECD	Fe	B	3.77	3.7	3.68	3.76							FAAS
1985	2	SED	TAMU	Fe	B	3.77	3.72	3.73	3.67	3.72						FAAS
1985	2	SED	TAMU	Fe	B	3.9	3.72	3.6	3.51	3.48						INAA
1985	3	SED	BNW	Fe	B	3.76	3.64	3.88	3.93							XRF
1985	4	SED	NNEC	Fe	B	3.68	3.61	3.71	3.64							FAAS
1985	5	SED	NSEC	Fe	B	3.87	4	3.8	4.11							FAAS
1985	6	SED	SAIC	Fe	B	3.97	4.17	4.1	4.09							GFAAS
1985	8	SED	NRC8	Fe	B											XRF
1985	9	SED	NRC9	Fe	B											ICPAES
1985	1	SED	ECD	Fe	C	3.59	3.56	3.55	3.57							FAAS
1985	2	SED	TAMU	Fe	C	3.5	3.56	3.51	3.58	3.55						FAAS
1985	2	SED	TAMU	Fe	C	3.44	3.56	3.5	3.65	3.5	3.58					INAA
1985	3	SED	BNW	Fe	C	3.84	3.83	3.82	3.83							XRF
1985	4	SED	NNEC	Fe	C	3.6	3.36	3.57	3.53							FAAS
1985	5	SED	NSEC	Fe	C	4.03	3.73	3.63	4.92							FAAS
1985	6	SED	SAIC	Fe	C	3.66	3.72	3.65	3.71							GFAAS
1985	8	SED	NRC8	Fe	C											XRF
1985	9	SED	NRC9	Fe	C											ICPAES
1985	1	SED	ECD	Fe	D	3.57	3.47	3.57	3.78							FAAS
1985	2	SED	TAMU	Fe	D	3.49	3.2	3.51	3.46	3.45						FAAS
1985	2	SED	TAMU	Fe	D	3.67	3.53	3.42	3.59	3.54	3.45					INAA
1985	3	SED	BNW	Fe	D	3.78	3.74	3.67	3.68							XRF
1985	4	SED	NNEC	Fe	D	3.57	3.52	3.55	3.52							FAAS
1985	5	SED	NSEC	Fe	D	4.21	3.65	3.85	3.92							FAAS
1985	6	SED	SAIC	Fe	D	3.91	3.76	3.47	2.49							GFAAS
1985	8	SED	NRC8	Fe	D											XRF
1985	9	SED	NRC9	Fe	D											
1987	1	SED	ECD	Fe	H	3.12	3.08	3.11	3.04	3.13	3					FAAS
1987	2	SED	TAMU	Fe	H	3.19	3.2	3.07	3.21	3.23	3.23					INAA
1987	3	SED	BNW	Fe	H	3.41	3.35	3.49	3.41	3.52	3.66					XRF

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1987	4	SED	NNEC	Fe	H	2.77	2.93	2.93	2.82	2.72	2.68					FAAS
1987	5	SED	NSEC	Fe	H	3.45	3.45	3.5	3.43	3.51	3.44					FAAS
1987	6	SED	SAIC	Fe	H	3	3	2.8	2.8	3	2.9					FAAS
1987	8	SED	NRC8	Fe	H	3.49	3.34	3.49	3.45	3.59	3.55					ICPAES
1987	9	SED	NRC9	Fe	H	3.24	3.25	3.21	3.28	3.24	3.14					XRF
1987	1	SED	ECD	Fe	I	2.13	2.12	2.14	2.14	2.12	2.11					FAAS
1987	2	SED	TAMU	Fe	I	2.18	2.14	2.18	2.15	2.16	2.15					INAA
1987	3	SED	BNW	Fe	I	2.17	2.04	2.27	2.17	2.23	2.19					XRF
1987	4	SED	NNEC	Fe	I	2.06	2.03	2.04	2.06	2.03	2.07					FAAS
1987	5	SED	NSEC	Fe	I	2.01	2.1	2.1	2.05	2.02	2.09					FAAS
1987	6	SED	SAIC	Fe	I	2	1.9	1.8	1.9	1.8	1.9					FAAS
1987	8	SED	NRC8	Fe	I	2.08	1.92	2.09	2.15	2.06	2.09					ICPAES
1987	9	SED	NRC9	Fe	I	2.06	2.09	2.07	2.14	2.19	2.19					XRF
1987	1	SED	ECD	Fe	J	2.04	1.95	2.03	1.99	2.06	2.01					FAAS
1987	2	SED	TAMU	Fe	J											
1987	3	SED	BNW	Fe	J											
1987	4	SED	NNEC	Fe	J	2.02	2.12	2.48	1.99	2.02	2.03					FAAS
1987	5	SED	NSEC	Fe	J	2.23	2.28	2.19	2.28	2.3	2.23					FAAS
1987	6	SED	SAIC	Fe	J	2	2	1.9	1.9	1.9	2					FAAS
1987	8	SED	NRC8	Fe	J											
1987	9	SED	NRC9	Fe	J											
1987	1	SED	ECD	Fe	MESS-1	2.9	2.83	2.89	2.92	2.93	2.74					FAAS
1987	2	SED	TAMU	Fe	MESS-1	2.93	2.86	3.06	3.05	2.97	3					INAA
1987	3	SED	BNW	Fe	MESS-1	3.04	3.02	3.17								XRF
1987	4	SED	NNEC	Fe	MESS-1	2.91	2.9	2.91	2.95	2.95	2.91					FAAS
1987	5	SED	NSEC	Fe	MESS-1	3	2.97	2.6	2.93	2.93	2.86					FAAS
1987	6	SED	SAIC	Fe	MESS-1	2.8	3	2.8	2.8							FAAS
1987	8	SED	NRC8	Fe	MESS-1											
1987	9	SED	NRC9	Fe	MESS-1											
1989	1	SED	ECD	Fe	K	4.56	4.05	4.26	4.21	4.19						FAAS
1989	2	SED	TAMU	Fe	K	3.81	3.81	3.81	3.81	3.84	3.84					INAA
1989	3	SED	BNW	Fe	K	4	3.9	4	3.9	3.9						XRF
1989	4	SED	NNEC	Fe	K	3.6	3.75	3.75	3.82	3.8						FAAS
1989	5	SED	NSEC	Fe	K	3.89	3.81	3.98	3.86	3.95						FAAS
1989	6	SED	SAIC	Fe	K	3.4	3.4	3.5	3.6	3.5						FAAS
1989	8	SED	NRC8	Fe	K	3.84	3.88	3.94								ICPAES
1989	1	SED	ECD	Fe	BCSS-1	3.11	3.15	3.27	3.34	3.37						FAAS
1989	2	SED	TAMU	Fe	BCSS-1											
1989	3	SED	BNW	Fe	BCSS-1	3.3	3.3	3.3	3.4	3.4						XRF
1989	4	SED	NNEC	Fe	BCSS-1	3.29	3.32	3.33	3.35	3.37						FAAS
1989	5	SED	NSEC	Fe	BCSS-1	3.24	3.41	3.33	3.34	3.29						FAAS
1989	6	SED	SAIC	Fe	BCSS-1	3.1	3.2	3.1	3.3	3.2						FAAS
1989	8	SED	NRC8	Fe	BCSS-1	3.36	3.22									ICPAES

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1989	9	SED	NRC9	Fe	BCSS-1											
1990	1	SED	ECD	Fe	L	4.39	4.34	4.27	4.33	4.17						FAAS
1990	2*	SED	TAMU	Fe	L	4	4.06	4.06	4.11	3.73						FAAS
1990	3	SED	BNW	Fe	L	4.2	4.2	4.2	4.3	4.3						XRF
1990	4	SED	NNEC	Fe	L	4.55	4.49	4.29	4.32	4.29						FAAS
1990	5	SED	NSEC	Fe	L	4.26	4.2	4.18	4.23	4.32						FAAS
1990	11	SED	NRC1	Fe	L	4.3	4.35	4.35	4.35	4.33						ICPAES
1990	12	SED	NRC2	Fe	L	4.55	4.51	4.48	4.47	4.41						XRF
1990	1	SED	ECD	Fe	M	1.29	1.32	1.36	1.34	1.3						FAAS
1990	2	SED	TAMU	Fe	M	1.31	1.16	1.34	1.4	1.22						FAAS
1990	3	SED	BNW	Fe	M	1.4	1.4	1.4	1.4	1.4						XRF
1990	4	SED	NNEC	Fe	M	1.34	1.41	1.28	1.29	1.39						FAAS
1990	5	SED	NSEC	Fe	M	1.38	1.41	1.43	1.41	1.43						FAAS
1990	11	SED	NRC1	Fe	M	1.37	1.33	1.32	1.32	1.32						ICPAES
1990	12	SED	NRC2	Fe	M	1.39	1.4	1.39	1.36	1.35						XRF
1990	1	SED	ECD	Fe	BCSS-1	3.21	3.17	3.4	3.31	3.3						FAAS
1990	2	SED	TAMU	Fe	BCSS-1	3.06	3.16	3.23	3.28	3.3						FAAS
1990	3	SED	BNW	Fe	BCSS-1	3.3	3.2	3.4	3.3	3.4						XRF
1990	4	SED	NNEC	Fe	BCSS-1	3.29	3.23	3.32	3.31	3.22						FAAS
1990	5	SED	NSEC	Fe	BCSS-1	3.18	3.18	3.31	3.34	3.41						FAAS
1990	11	SED	NRC1	Fe	BCSS-1											ICPAES
1990	12	SED	NRC2	Fe	BCSS-1											XRF
1985	1	SED	ECD	Hg	A	0.81	0.88	0.88	0.68							CVAAS
1985	2	SED	TAMU	Hg	A	1.6	1.06	1.02	1.59							CVAAS
1985	3	SED	BNW	Hg	A	0.93	0.94	1.09	1.28							CVAAS
1985	4	SED	NNEC	Hg	A	1.49	1.43	1.24	1.06							CVAAS
1985	5	SED	NSEC	Hg	A	0.8	1.15	1	0.93							CVAAS
1985	6	SED	SAIC	Hg	A	0.99	0.94	1.01	0.97							CVAAS
1985	8	SED	NRC8	Hg	A											CVAAS
1985	9	SED	NRC9	Hg	A											
1985	1	SED	ECD	Hg	B	0.75	0.63	0.68	0.67							CVAAS
1985	2	SED	TAMU	Hg	B	0.93	1.29	1.05	0.72	0.7						CVAAS
1985	3	SED	BNW	Hg	B	1.06	0.8	0.78	0.87							CVAAS
1985	4	SED	NNEC	Hg	B	0.67	0.73	0.98	0.87							CVAAS
1985	5	SED	NSEC	Hg	B	0.67	0.75	0.81	0.77							CVAAS
1985	6	SED	SAIC	Hg	B	0.729	0.766	0.639	0.654							CVAAS
1985	8	SED	NRC8	Hg	B											CVAAS
1985	9	SED	NRC9	Hg	B											
1985	1	SED	ECD	Hg	C	0.35	0.24	0.26	0.39							CVAAS
1985	2	SED	TAMU	Hg	C	0.26	0.26	0.29								CVAAS
1985	3	SED	BNW	Hg	C	0.23	0.3	0.23	0.24							CVAAS
1985	4	SED	NNEC	Hg	C	0.23	0.21	0.23	0.2							CVAAS

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1985	5	SED	NSEC	Hg	C	0.17	0.26	0.29	0.26							CVAAS
1985	6	SED	SAIC	Hg	C	0.2	0.23	0.24	0.26							CVAAS
1985	8	SED	NRC8	Hg	C											CVAAS
1985	9	SED	NRC9	Hg	C											
1985	1	SED	ECD	Hg	D	0.29	0.31	0.23	0.33							CVAAS
1985	2	SED	TAMU	Hg	D	0.24	0.44	0.28								CVAAS
1985	3	SED	BNW	Hg	D	0.22	0.2	0.2	0.21							CVAAS
1985	4	SED	NNEC	Hg	D	0.23	0.21	0.19	0.27							CVAAS
1985	5	SED	NSEC	Hg	D	0.24	0.24	0.23	0.25							CVAAS
1985	6	SED	SAIC	Hg	D	0.16	0.18	0.24	0.2							CVAAS
1985	8	SED	NRC8	Hg	D											CVAAS
1985	9	SED	NRC9	Hg	D											
1987	1	SED	ECD	Hg	H	0.17	0.162	0.183	0.193	0.134	0.187					CVAAS
1987	2	SED	TAMU	Hg	H	0.108	0.081	0.088	0.102	0.084	0.09					CVAAS
1987	3	SED	BNW	Hg	H	0.096	0.096	0.098	0.101	0.108	0.1					CVAAS
1987	4	SED	NNEC	Hg	H	0.113	0.163	0.135	0.099	0.123	0.107					CVAAS
1987	5	SED	NSEC	Hg	H	0.111	0.095	0.116	0.106	0.118	0.119					CVAAS
1987	6	SED	SAIC	Hg	H	0.123	0.108	0.12	0.114	0.115	0.109					CVAAS
1987	8	SED	NRC8	Hg	H	0.093	0.107	0.083	0.082	0.099	0.094					CVAAS
1987	9	SED	NRC9	Hg	H											
1987	1	SED	ECD	Hg	I	0.124	0.158	0.108	0.125	0.139	0.149					CVAAS
1987	2	SED	TAMU	Hg	I	0.09	0.108	0.109	0.115	0.13	0.151					CVAAS
1987	3	SED	BNW	Hg	I	0.123	0.15	0.162	0.176	0.145	0.146					CVAAS
1987	4	SED	NNEC	Hg	I	0.133	0.262	0.21	0.192	0.213	0.225					CVAAS
1987	5	SED	NSEC	Hg	I	0.157	0.172	0.174	0.145	0.224	0.156					CVAAS
1987	6	SED	SAIC	Hg	I	0.147	0.146	0.144	0.152	0.14	0.145					CVAAS
1987	8	SED	NRC8	Hg	I	0.16	0.162	0.147	0.148	0.181						CVAAS
1987	9	SED	NRC9	Hg	I											
1987	1	SED	ECD	Hg	J	0.131	0.131									CVAAS
1987	2	SED	TAMU	Hg	J	0.18	0.19	0.18	0.18	0.19	0.18					CVAAS
1987	3	SED	BNW	Hg	J	0.021	0.019	0.019	0.021	0.019	0.019					CVAAS
1987	4	SED	NNEC	Hg	J	<0.059										CVAAS
1987	5	SED	NSEC	Hg	J	0.73										CVAAS
1987	6	SED	SAIC	Hg	J	0.063	0.059	0.047								CVAAS
1987	8	SED	NRC8	Hg	J											
1987	9	SED	NRC9	Hg	J											
1987	1	SED	ECD	Hg	MESS-1	0.165	0.148	0.159	0.18	0.197	0.184					CVAAS
1987	2	SED	TAMU	Hg	MESS-1											
1987	3	SED	BNW	Hg	MESS-1	0.164	0.171	0.163	0.176	0.178	0.193					CVAAS
1987	4	SED	NNEC	Hg	MESS-1	0.179	0.247	0.256	0.214	0.196	0.201					CVAAS
1987	5	SED	NSEC	Hg	MESS-1	0.19	0.21	0.231	0.176	0.194	0.181					CVAAS
1987	6	SED	SAIC	Hg	MESS-1	0.183	0.19	0.183	0.181							CVAAS
1987	8	SED	NRC8	Hg	MESS-1											

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1987	9	SED	NRC9	Hg	MESS-1											
1989	1	SED	ECD	Hg	K	0.085	0.18	0.17	0.13	0.14						CVAAS
1989	2	SED	TAMU	Hg	K	0.047	0.047	0.049	0.05	0.05	0.05					CVAAS
1989	3	SED	BNW	Hg	K	0.059	0.052	0.056	0.062	0.058						CVAAS
1989	4	SED	NNEC	Hg	K	0.125	0.085	0.04	0.086	0.14						CVAAS
1989	5	SED	NSEC	Hg	K											
1989	6	SED	SAIC	Hg	K	0.05	0.055	0.061	0.06	0.05						CVAAS
1989	8	SED	NRC8	Hg	K											
1989	1	SED	ECD	Hg	BCSS-1	0.092	0.075	0.12	0.18	0.16						CVAAS
1989	2	SED	TAMU	Hg	BCSS-1											
1989	3	SED	BNW	Hg	BCSS-1	0.13	0.13	0.14	0.14							CVAAS
1989	4	SED	NNEC	Hg	BCSS-1	0.226	0.198	0.243	0.225	0.175						CVAAS
1989	5	SED	NSEC	Hg	BCSS-1											
1989	6	SED	SAIC	Hg	BCSS-1	0.13	0.12	0.14	0.13	0.14						CVAAS
1989	8	SED	NRC8	Hg	BCSS-1											
1990	1	SED	ECD	Hg	L	0.39	0.54	0.14	0.2	0.39						CVAAS
1990	2	SED	TAMU	Hg	L	0.068	0.067	0.069	0.066	0.067						CVAAS
1990	3	SED	BNW	Hg	L	0.097	0.093	0.088	0.085	0.086						CVAAS
1990	4	SED	NNEC	Hg	L	0.091	0.092	0.091	0.103	0.091						CVAAS
1990	5	SED	NSEC	Hg	L	0.087	0.101	0.094	0.097	0.096						CVAAS
1990	11	SED	NRC1	Hg	L											
1990	12	SED	NRC2	Hg	L											CVAAS
1990	1*	SED	ECD	Hg	M	0.33	0.57	0.63	0.57	0.25						CVAAS
1990	2	SED	TAMU	Hg	M	0.011	0.011	0.011	0.01	0.011						CVAAS
1990	3*	SED	BNW	Hg	M	0.017	0.023	0.023	0.023	0.012						CVAAS
1990	4	SED	NNEC	Hg	M	0.0064	0.0062	0.0063	0.0061	0.0063						CVAAS
1990	5*	SED	NSEC	Hg	M	0.043	0.023	0.036	0.016	0.04						CVAAS
1990	11	SED	NRC1	Hg	M											
1990	12	SED	NRC2	Hg	M	0.016	0.005	0.004	0.006	0.009						CVAAS
1990	1	SED	ECD	Hg	BCSS-1	0.13	0.19	0.08	0.11	0.14						CVAAS
1990	2	SED	TAMU	Hg	BCSS-1	0.13	0.125	0.127	0.125	0.13						CVAAS
1990	3	SED	BNW	Hg	BCSS-1	0.14	0.14	0.14	0.13	0.13						CVAAS
1990	4	SED	NNEC	Hg	BCSS-1	0.131	0.139	0.117	0.133	0.117						CVAAS
1990	5	SED	NSEC	Hg	BCSS-1	0.098	0.143	0.129	0.15	0.144						CVAAS
1990	11	SED	NRC1	Hg	BCSS-1											
1990	12	SED	NRC2	Hg	BCSS-1											CVAAS
1985	1	SED	ECD	Mn	A	513	523	530	512							FAAS
1985	2	SED	TAMU	Mn	A	546	572	547	557	554						FAAS
1985	2	SED	TAMU	Mn	A	503	503	504	508	504	497					INAA
1985	3	SED	BNW	Mn	A	519	533	517	531							XRF
1985	4	SED	NNEC	Mn	A	481	472	452	476							FAAS
1985	5	SED	NSEC	Mn	A											

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1985	6	SED	SAIC	Mn	A	531	544	555	553							GFAAS
1985	8	SED	NRC8	Mn	A											ICPAES
1985	9	SED	NRC9	Mn	A											
1985	1	SED	ECD	Mn	B	523	506	510	497							FAAS
1985	2	SED	TAMU	Mn	B	543	545	547	550	560						FAAS
1985	2	SED	TAMU	Mn	B	512	500	500	508	496	509					INAA
1985	3	SED	BNW	Mn	B	518	500	500	523							XRF
1985	4	SED	NNEC	Mn	B	504	510	504	512							FAAS
1985	5	SED	NSEC	Mn	B											
1985	6	SED	SAIC	Mn	B	472	495	507	484							GFAAS
1985	8	SED	NRC8	Mn	B											ICPAES
1985	9	SED	NRC9	Mn	B											
1985	1	SED	ECD	Mn	C	738	720	736	720							FAAS
1985	2	SED	TAMU	Mn	C	727	764	770	743	757						FAAS
1985	2	SED	TAMU	Mn	C	711	703	687	685	685	691					INAA
1985	3	SED	BNW	Mn	C	748	703	719	691							XRF
1985	4	SED	NNEC	Mn	C	627	598	649	654							FAAS
1985	5	SED	NSEC	Mn	C											
1985	6	SED	SAIC	Mn	C	703	719	704	728							GFAAS
1985	8	SED	NRC8	Mn	C											ICPAES
1985	9	SED	NRC9	Mn	C											
1985	1	SED	ECD	Mn	D	596	607	584	612							FAAS
1985	2	SED	TAMU	Mn	D	608	601	609	630	623						FAAS
1985	2	SED	TAMU	Mn	D	585	581	578	574	606	560					INAA
1985	3	SED	BNW	Mn	D	630	618	587	594							XRF
1985	4	SED	NNEC	Mn	D	535	554	528	548							FAAS
1985	5	SED	NSEC	Mn	D											
1985	6	SED	SAIC	Mn	D	630	611	556	403							GFAAS
1985	8	SED	NRC8	Mn	D											ICPAES
1985	9	SED	NRC9	Mn	D											
1987	1	SED	ECD	Mn	H	518	536	536	511	536	546					FAAS
1987	2	SED	TAMU	Mn	H	519	525	543	543	562	592					FAAS
1987	3	SED	BNW	Mn	H	483	422	542	524	512	541					XRF
1987	4	SED	NNEC	Mn	H	493	489	499	481	486	490					FAAS
1987	5	SED	NSEC	Mn	H	520	529	519	524	524	521					FAAS
1987	6	SED	SAIC	Mn	H	540	480	480	460	500	480					FAAS
1987	8	SED	NRC8	Mn	H	510	503	500	508	494	498					FAAS
1987	9	SED	NRC9	Mn	H	472	475	468	484	497						ICPAES
1987	1	SED	ECD	Mn	I	459	482	480	481	473	472					FAAS
1987	2	SED	TAMU	Mn	I	496	497	480	469	476	500					FAAS
1987	3	SED	BNW	Mn	I	422	405	469	415	403	416					XRF
1987	4	SED	NNEC	Mn	I	443	434	428	432	414	439					FAAS
1987	5	SED	NSEC	Mn	I	387	418	408	408	416	419					FAAS

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1987	6	SED	SAIC	Mn	I	450	440	450	450	460	450					FAAS
1987	8	SED	NRC8	Mn	I	451	452	446	458	455	453					FAAS
1987	9	SED	NRC9	Mn	I	454	435	474	456	437	447					ICPAES
1987	1	SED	ECD	Mn	J	452	456	454	452	462	456					FAAS
1987	2	SED	TAMU	Mn	J											
1987	3	SED	BNW	Mn	J											
1987	4	SED	NNEC	Mn	J	455	455	459	455	458	457					FAAS
1987	5	SED	NSEC	Mn	J	440	442	437	446	443	444					FAAS
1987	6	SED	SAIC	Mn	J	440	440	430	430	430	430					FAAS
1987	8	SED	NRC8	Mn	J											
1987	9	SED	NRC9	Mn	J											
1987	1	SED	ECD	Mn	MESS-1	537	546	536	532	545	543					FAAS
1987	2	SED	TAMU	Mn	MESS-1	551	549	556	465	505	521					FAAS
1987	3	SED	BNW	Mn	MESS-1	511	482	519								XRF
1987	4	SED	NNEC	Mn	MESS-1	474	480	471	483	486	488					FAAS
1987	5	SED	NSEC	Mn	MESS-1	484	478	469	501	470	468					FAAS
1987	6	SED	SAIC	Mn	MESS-1	490	490	510	480							FAAS
1987	8	SED	NRC8	Mn	MESS-1											
1987	9	SED	NRC9	Mn	MESS-1											
1989	1	SED	ECD	Mn	K	326	212	465	317	311						GFAAS
1989	2	SED	TAMU	Mn	K											
1989	3	SED	BNW	Mn	K											
1989	4	SED	NNEC	Mn	K	570	506	490	541	513						FAAS
1989	5	SED	NSEC	Mn	K	542	534	556	536	540						FAAS
1989	6	SED	SAIC	Mn	K	460	460	480	470	490						FAAS
1989	8	SED	NRC8	Mn	K	531	532	541								ICPAES
1989	1	SED	ECD	Mn	BCSS-1	254	228	248	235	246						GFAAS
1989	2	SED	TAMU	Mn	BCSS-1											
1989	3	SED	BNW	Mn	BCSS-1											
1989	4	SED	NNEC	Mn	BCSS-1	222	223	224	215	209						FAAS
1989	5	SED	NSEC	Mn	BCSS-1	232	239	246	227	226						FAAS
1989	6	SED	SAIC	Mn	BCSS-1	230	220	220	240	230						FAAS
1989	8	SED	NRC8	Mn	BCSS-1											
1990	10	SED	ECD	Mn	L	350	365	354	362	364						FAAS
1990	4	SED	TAMU	Mn	L	360	375	381	365	366						FAAS
1990	3	SED	BNW	Mn	L	340	340	340	350	360						XRF
1990	2	SED	NNEC	Mn	L	354	366	361	356	365						FAAS
1990	8	SED	NSEC	Mn	L	365	345	353	369	390						FAAS
1990	11	SED	NRC1	Mn	L	341	346	348	348	348						ICPAES
1990	12	SED	NRC2	Mn	L											
1990	1	SED	ECD	Mn	M	197	204	202	197	190						FAAS
1990	2	SED	TAMU	Mn	M	210	221	210	223	226						FAAS
1990	3	SED	BNW	Mn	M	210	220	220	220	210						XRF

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1990	4	SED	NNEC	Mn	M	199	193	202	200	194						FAAS
1990	5*	SED	NSEC	Mn	M	42	53	88	46	42						FAAS
1990	11	SED	NRC1	Mn	M	194	195	195	192	195						ICPAES
1990	12	SED	NRC2	Mn	M											
1990	1	SED	ECD	Mn	BCSS-1	226	215	231	231	226						FAAS
1990	2	SED	TAMU	Mn	BCSS-1	239	264	240	237	256						FAAS
1990	3	SED	BNW	Mn	BCSS-1	230	220	240	240	220						XRF
1990	4	SED	NNEC	Mn	BCSS-1	229	216	215	229	217						FAAS
1990	5	SED	NSEC	Mn	BCSS-1	216	210	243	247	244						FAAS
1990	11	SED	NRC1	Mn	BCSS-1											ICPAES
1990	12	SED	NRC2	Mn	BCSS-1											
1985	1	SED	ECD	Ni	A	42.3	39.3	39	32.3							GFAAS
1985	2	SED	TAMU	Ni	A	33.5	36.2	37.7	37.7	38						FAAS
1985	2	SED	TAMU	Ni	A	<49.3	<46.3	<46.3	<43.4	<43.1						INAA
1985	3	SED	BNW	Ni	A	46	37	39	39							XRF
1985	4	SED	NNEC	Ni	A	34.1	79.4	49.8	33.2							GFAAS
1985	5	SED	NSEC	Ni	A	26	32	29	37							FAAS
1985	6	SED	SAIC	Ni	A	47.3	43.8	42.6	42.3							GFAAS
1985	8	SED	NRC8	Ni	A											
1985	9	SED	NRC9	Ni	A											
1985	1	SED	ECD	Ni	B	39.4	37.5	45.3	40.6							GFAAS
1985	2	SED	TAMU	Ni	B	35.2	35.4	33.8	34.1	34						FAAS
1985	2	SED	TAMU	Ni	B	<49.9	<46.4	<45.6	<47.6	<40.7						INAA
1985	3	SED	BNW	Ni	B	36	37	42	40							XRF
1985	4	SED	NNEC	Ni	B	28.6	31.1	92.5	54.2							GFAAS
1985	5	SED	NSEC	Ni	B	30	37	37	35							FAAS
1985	6	SED	SAIC	Ni	B	33.6	37.2	34.6	36.3							GFAAS
1985	8	SED	NRC8	Ni	B											
1985	9	SED	NRC9	Ni	B											
1985	1	SED	ECD	Ni	C	32.1	33.5	33.6	36.8							GFAAS
1985	2	SED	TAMU	Ni	C	28.3	27	24.1	26.9	25						FAAS
1985	2	SED	TAMU	Ni	C	<45.9	<45.8	<44.4	<47.1	<41.5	<40.8					INAA
1985	3	SED	BNW	Ni	C	34	38	34	37							XRF
1985	4	SED	NNEC	Ni	C	30.9	23.3	24.8	23.9							GFAAS
1985	5	SED	NSEC	Ni	C	27	30	32	39							FAAS
1985	6	SED	SAIC	Ni	C	29.8	30.4	27.4	28.9							GFAAS
1985	8	SED	NRC8	Ni	C											
1985	9	SED	NRC9	Ni	C											
1985	1	SED	ECD	Ni	D	40.4	37.8	44.7	33.2							GFAAS
1985	2	SED	TAMU	Ni	D	32.2	35.5	31.7	33.5	29.4						FAAS
1985	2	SED	TAMU	Ni	D	<49	<46.1	<43.8	<47.9	<41.7	<41					INAA
1985	3	SED	BNW	Ni	D	39	39	40	41							XRF

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1985	4	SED	NNEC	Ni	D	32.3	31.2	30.6	32.6							GFAAS
1985	5	SED	NSEC	Ni	D	44	46	38	18							FAAS
1985	6	SED	SAIC	Ni	D	30.4	31	28.3	20.5							GFAAS
1985	8	SED	NRC8	Ni	D											
1985	9	SED	NRC9	Ni	D											
1987	1	SED	ECD	Ni	H	42.8	41.5	39.6	45.2	39.1	45.6					GFAAS
1987	2	SED	TAMU	Ni	H	38.7	41.4	37.9	41.1	41.2	39.3					FAAS
1987	3	SED	BNW	Ni	H	30.3	42.2	42.5	39.5	44.8	47.6					XRF
1987	4	SED	NNEC	Ni	H	35.1	32.9	34	34.2	32.2	33.5					GFAAS
1987	5	SED	NSEC	Ni	H	42	43	42	39	59	44					GFAAS
1987	6	SED	SAIC	Ni	H	36	38	34	37	39	37					GFAAS
1987	8	SED	NRC8	Ni	H	37	36.6	34.7	35.7	35.6	35.4					ICPAES
1987	9	SED	NRC9	Ni	H	38.6	36.4	37.3	35.8	36.1	34.7					ICPMS
1987	1	SED	ECD	Ni	I	23.3	19.4	23.6	21.9	22	24.1					GFAAS
1987	2	SED	TAMU	Ni	I	22.3	21.3	25.2	17.9	22.5	25					FAAS
1987	3	SED	BNW	Ni	I	22.9	18.2	21.9	19.9	22.7	18.3					XRF
1987	4	SED	NNEC	Ni	I	18.9	17.9	16.7	15.7	17.5	17.1					GFAAS
1987	5	SED	NSEC	Ni	I	40	39	31	26	29	23					GFAAS
1987	6	SED	SAIC	Ni	I	18	17	17	17	18	18					GFAAS
1987	8	SED	NRC8	Ni	I	19.8	20	18.6	18.4	18.2	19					ICPAES
1987	9	SED	NRC9	Ni	I	20.4	19.9	20.1	19.6	19.4	19.8					ICPMS
1987	1	SED	ECD	Ni	J	24.5	23.8	25.7	19.9	20.6						GFAAS
1987	2	SED	TAMU	Ni	J											
1987	3	SED	BNW	Ni	J											
1987	4	SED	NNEC	Ni	J	18.1	16.7	17.8	16.4	17.1	17.1					GFAAS
1987	5	SED	NSEC	Ni	J	18.4	18.3	18.9	18.1	18.1	19.1					GFAAS
1987	6	SED	SAIC	Ni	J	17	17	16	17	17	17					GFAAS
1987	8	SED	NRC8	Ni	J											
1987	9	SED	NRC9	Ni	J											
1987	1	SED	ECD	Ni	MESS-1	34.5	27.6	27.4	28.5	27.9	31.4					GFAAS
1987	2	SED	TAMU	Ni	MESS-1	31.6	31.6	29.2	28.8	29.5						FAAS
1987	3	SED	BNW	Ni	MESS-1	25.4	28.4	34.4								XRF
1987	4	SED	NNEC	Ni	MESS-1	26.1	25.3	23.9	23.9	24.8	26.2					GFAAS
1987	5	SED	NSEC	Ni	MESS-1	48	41	45	38	23	32					GFAAS
1987	6	SED	SAIC	Ni	MESS-1	26	25	25	24							GFAAS
1987	8	SED	NRC8	Ni	MESS-1											
1987	9	SED	NRC9	Ni	MESS-1											
1989	1	SED	ECD	Ni	K	43.4	45.1	41	41.8	42.3						GFAAS
1989	2	SED	TAMU	Ni	K	43.6	43.7	44.1	45.5	45.5	45.5					FAAS
1989	3	SED	BNW	Ni	K	52	50	49	47	42						XRF
1989	4	SED	NNEC	Ni	K	45.9	43.2	43.5	44	43.8						GFAAS
1989	5	SED	NSEC	Ni	K	50.4	47.5	50.3	51.4	53.5						GFAAS
1989	6	SED	SAIC	Ni	K	58	59	57	61	59						GFAAS

Year	Lab #	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep. 2	Rep. 3	Rep. 4	Rep. 5	Rep. 6	Rep. 7	Rep. 8	Rep. 9	Rep. 10	Method
1989	8	SED	NRC8	Ni	K	43.5	45.3	43.6	45.4							IDICPMS
1989	1	SED	ECD	Ni	BCSS-1	50.9	55.2	54.2	56.3	52.7						GFAAS
1989	2	SED	TAMU	Ni	BCSS-1											
1989	3	SED	BNW	Ni	BCSS-1	57	53	58	58	61						XRF
1989	4	SED	NNEC	Ni	BCSS-1	57.7	56.3	53	54.6	55.5						GFAAS
1989	5	SED	NSEC	Ni	BCSS-1	59.6	62	64	61.7	62						GFAAS
1989	6	SED	SAIC	Ni	BCSS-1	50	55	55	56	56						GFAAS
1989	8	SED	NRC8	Ni	BCSS-1	51.8										IDICPMS
1990	1	SED	ECD	Ni	L	48.4	49.9	44.2	49.8	41.2						GFAAS
1990	2	SED	TAMU	Ni	L	51.7	48.4	50.1	48.9	50.7						GFAAS
1990	3	SED	BNW	Ni	L	49	50	46	50	50						XRF
1990	4	SED	NNEC	Ni	L	48.5	48.7	49.1	47.9	49.6						GFAAS
1990	5	SED	NSEC	Ni	L	49	51	45	47	46						GFAAS
1990	11	SED	NRC1	Ni	L	52.8	51.3	50.4	54.2	52.1						ICPAES
1990	12	SED	NRC2	Ni	L	46.9	52.5	46.6	49.3	53.6						ICPMS
1990	1*	SED	ECD	Ni	M	26.1	26.1	26.3	24.4	27.1						GFAAS
1990	2	SED	TAMU	Ni	M	9.86	9.97	9.92	9.82	9.99						GFAAS
1990	3	SED	BNW	Ni	M	13	16	12	13	11						XRF
1990	4	SED	NNEC	Ni	M	10.4	10.1	10.6	11.1	10.6						GFAAS
1990	5	SED	NSEC	Ni	M	9.5	10.1	9.6	10.3	10.1						GFAAS
1990	11	SED	NRC1	Ni	M	10.6	11.1	10.8	10.6	10.7						ICPAES
1990	12	SED	NRC2	Ni	M											ICPMS
1990	1	SED	ECD	Ni	BCSS-1	46.1	60.1	44.3	51.9	47.4						GFAAS
1990	2	SED	TAMU	Ni	BCSS-1	58.2	58.1	62.7	59	59.2						GFAAS
1990	3	SED	BNW	Ni	BCSS-1	59	57	59	58	55						XRF
1990	4	SED	NNEC	Ni	BCSS-1	55.8	53.9	54.8	53.5	54.7						GFAAS
1990	5	SED	NSEC	Ni	BCSS-1	55	49	52	54	54						GFAAS
1990	11	SED	NRC1	Ni	BCSS-1											ICPAES
1990	12	SED	NRC2	Ni	BCSS-1											ICPMS
1985	1	SED	ECD	Pb	A	213	206	177	158							GFAAS
1985	2	SED	TAMU	Pb	A	195	207	210	235							GFAAS
1985	3	SED	BNW	Pb	A	197	195	188	210							XRF
1985	4	SED	NNEC	Pb	A	227	220	219	204							GFAAS
1985	5	SED	NSEC	Pb	A	209	219	197	193							GFAAS
1985	6	SED	SAIC	Pb	A	185	189	190	189							GFAAS
1985	8	SED	NRC8	Pb	A											GFAAS
1985	9	SED	NRC9	Pb	A											
1985	1	SED	ECD	Pb	B	136	132	113	129							GFAAS
1985	2	SED	TAMU	Pb	B	162	161	158	159	159						GFAAS
1985	3	SED	BNW	Pb	B	163	160	168	164							XRF
1985	4	SED	NNEC	Pb	B	187	177	165	71.7							GFAAS
1985	5	SED	NSEC	Pb	B	180	158	158	174							GFAAS

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1985	6	SED	SAIC	Pb	B	172	168	189	185							GFAAS
1985	8	SED	NRC8	Pb	B											GFAAS
1985	9	SED	NRC9	Pb	B											
1985	1	SED	ECD	Pb	C	62	55	46	58							GFAAS
1985	2	SED	TAMU	Pb	C	79.5	79	72	83.4	81.2						GFAAS
1985	3	SED	BNW	Pb	C	84	80	81	78							XRF
1985	4	SED	NNEC	Pb	C	51.9	52.4	56.5	54.5							GFAAS
1985	5	SED	NSEC	Pb	C	75.9	81	67.6	77.1							GFAAS
1985	6	SED	SAIC	Pb	C	95.2	80	119	84.2							GFAAS
1985	8	SED	NRC8	Pb	C											GFAAS
1985	9	SED	NRC9	Pb	C											
1985	1	SED	ECD	Pb	D	49	49	49	47							GFAAS
1985	2	SED	TAMU	Pb	D	69.5	70.2	68.2	66.2							GFAAS
1985	3	SED	BNW	Pb	D	68	69	62	68							XRF
1985	4	SED	NNEC	Pb	D	45.6	50.1	48.3	51.3							GFAAS
1985	5	SED	NSEC	Pb	D	70.5	65.4	65.1	66.9							GFAAS
1985	6	SED	SAIC	Pb	D	74.4	71.7	67	45.6							GFAAS
1985	8	SED	NRC8	Pb	D											GFAAS
1985	9	SED	NRC9	Pb	D											
1987	1	SED	ECD	Pb	H	11.2	14.5	11.6	12.9	12.1	11.4					GFAAS
1987	2	SED	TAMU	Pb	H	22.2	29.7	25.3	31.5	23.8	26.5					GFAAS
1987	3	SED	BNW	Pb	H	19.2	22	21.3	16.9	18.2	20.7					GFAAS
1987	4	SED	NNEC	Pb	H	19.2	19.5	19.2	19.3	20.3	18.3					GFAAS
1987	5	SED	NSEC	Pb	H	22	22.7	20.5	19.1	21.3	17.9					GFAAS
1987	6	SED	SAIC	Pb	H	17	19	14	19	19	19					GFAAS
1987	8	SED	NRC8	Pb	H	20.5	24.4	18.9	22	21.8	19					ICPAES
1987	9	SED	NRC9	Pb	H	20	20.1	20	20.1	20.5	20.3					IDICPMS
1987	1	SED	ECD	Pb	I	64.7	60.6	68.1	60.2	70.6	68.8					GFAAS
1987	2	SED	TAMU	Pb	I	119	126	122	132	119						GFAAS
1987	3	SED	BNW	Pb	I	99	99.7	112	95.9	92.6	98.8					GFAAS
1987	4	SED	NNEC	Pb	I	95.6	94.4	99.1	87.2	87.3	96.8					GFAAS
1987	5	SED	NSEC	Pb	I	96	98	94	114	126	99					GFAAS
1987	6	SED	SAIC	Pb	I	98	110	130	110	100	110					GFAAS
1987	8	SED	NRC8	Pb	I	101	100	99	122	120	100					ICPAES
1987	9	SED	NRC9	Pb	I	105	110	100	99	107	106					IDICPMS
1987	1	SED	ECD	Pb	J	51.9	55.7	57	64.7	55.1	54.3					GFAAS
1987	2	SED	TAMU	Pb	J	100	98	102	94	105	99					GFAAS
1987	3	SED	BNW	Pb	J											
1987	4	SED	NNEC	Pb	J	97.7	95.6	94.3	94.3	93.5	93.5					GFAAS
1987	5	SED	NSEC	Pb	J	94.9	88.4	91.7	88.9	94.8	94.7					GFAAS
1987	6	SED	SAIC	Pb	J	90	90	91	89	88	89					GFAAS
1987	8	SED	NRC8	Pb	J											
1987	9	SED	NRC9	Pb	J											

Year	Lab #	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep. 2	Rep. 3	Rep. 4	Rep. 5	Rep. 6	Rep. 7	Rep. 8	Rep. 9	Rep. 10	Method
1987	1	SED	ECD	Pb	MESS-1	37.9	25.7	24.2	23.7	23.4	25.1					GFAAS
1987	2	SED	TAMU	Pb	MESS-1	29.5	37.2	41.4	32.6							GFAAS
1987	3	SED	BNW	Pb	MESS-1	33.3	32.4	36.3								GFAAS
1987	4	SED	NNEC	Pb	MESS-1	34.5	32	31.5	30.7	30.3	30.6					GFAAS
1987	5	SED	NSEC	Pb	MESS-1	30.7	34.1	35	35.2	33	32					GFAAS
1987	6	SED	SAIC	Pb	MESS-1	31	33	37	32							GFAAS
1987	8	SED	NRC8	Pb	MESS-1											
1987	9	SED	NRC9	Pb	MESS-1											
1989	1	SED	ECD	Pb	K	7.3	7.3	6.8	7	7.2						GFAAS
1989	2	SED	TAMU	Pb	K	8.55	8.56	8.6	8.61	8.72						GFAAS
1989	3	SED	BNW	Pb	K	6.9	9.2	10	9	10						XRF
1989	4	SED	NNEC	Pb	K	8.41	8.01	7.96	7.51	7.69						GFAAS
1989	5	SED	NSEC	Pb	K	10.3	9	8.9	9.4	8.9						GFAAS
1989	6	SED	SAIC	Pb	K	9.9	9.1	9.5	10	9.5						GFAAS
1989	8	SED	NRC8	Pb	K	9.83	9.7	9.75	9.88							IDICPMS
1989	1	SED	ECD	Pb	BCSS-1	25.6	25.6	26.4	26.9	29.1						GFAAS
1989	2	SED	TAMU	Pb	BCSS-1											
1989	3	SED	BNW	Pb	BCSS-1	25	22	24	23	23						XRF
1989	4	SED	NNEC	Pb	BCSS-1	19	18.9	20.2	20.8	20.9						GFAAS
1989	5	SED	NSEC	Pb	BCSS-1	22.5	22.6	23.8	25.8	22.7						GFAAS
1989	6	SED	SAIC	Pb	BCSS-1	24	23	22	24	25						GFAAS
1989	8	SED	NRC8	Pb	BCSS-1	22.4										IDICPMS
1990	1*	SED	ECD	Pb	L	25.6	25.8	26.5	26.9	26.3						GFAAS
1990	2	SED	TAMU	Pb	L	22.6	22.5	22.5	24.2	22.5						GFAAS
1990	3	SED	BNW	Pb	L	21	21	20	22	22						XRF
1990	4	SED	NNEC	Pb	L	21.7	19.7	21.8	21	21.5						GFAAS
1990	5	SED	NSEC	Pb	L	20.5	22.4	21	20.4	23						GFAAS
1990	11	SED	NRC1	Pb	L	22.8	22.5	21	22.4	21.8						IDICPMS
1990	12	SED	NRC2	Pb	L	24.5	24.2	23.3	23.9	24.7						GFAAS
1990	1	SED	ECD	Pb	M	11.8	13.1	12.5	12	12.7						GFAAS
1990	2	SED	TAMU	Pb	M	13.2	11.7	12.7	12.7	12.2						GFAAS
1990	3	SED	BNW	Pb	M	9.9	14	12	9.7	14						XRF
1990	4*	SED	NNEC	Pb	M	8.5	7.8	8.6	8.1	8.6						GFAAS
1990	5	SED	NSEC	Pb	M	12.1	11.4	11.4	12	12.6						GFAAS
1990	11	SED	NRC1	Pb	M	12.2	12.8	11.9	12.8	11.9						IDICPMS
1990	12	SED	NRC2	Pb	M	14.1	14.2	15.6	14.3	15.6						GFAAS
1990	1	SED	ECD	Pb	BCSS-1	23.7	23.3	24.5	24.8	24.2						GFAAS
1990	3	SED	TAMU	Pb	BCSS-1	22.6	23.9	23	24.4	23						GFAAS
1990	3	SED	BNW	Pb	BCSS-1	21	23	21	22	22						XRF
1990	4	SED	NNEC	Pb	BCSS-1	23.7	22.2	19.4	21.6	20.3						GFAAS
1990	5	SED	NSEC	Pb	BCSS-1	12.9	20.8	23.1	24.1	23.1						GFAAS
1990	11	SED	NRC1	Pb	BCSS-1											IDICPMS
1990	12	SED	NRC2	Pb	BCSS-1											GFAAS

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1985	1	SED	ECD	Sb	A	2.2	2.3	2.5	5.8							GFAAS
1985	2	SED	TAMU	Sb	A	1.49	1.5	1.33	1.7							INAA
1985	3	SED	BNW	Sb	A	0.79	0.66	0.67								INAA
1985	4	SED	NNEC	Sb	A	1.4	1.25	1.32	1.22							GFAAS
1985	5	SED	NSEC	Sb	A											
1985	6	SED	SAIC	Sb	A	<7.4	<7.6	<7.2	<7.1							GFAAS
1985	8	SED	NRC8	Sb	A											
1985	9	SED	NRC9	Sb	A											
1985	1	SED	ECD	Sb	B	4.8	1.8	2.2	1.8	1.9						GFAAS
1985	2	SED	TAMU	Sb	B	1.53	1.46	1.14	1.4	1.24						INAA
1985	3	SED	BNW	Sb	B	0.6	0.71	0.68								INAA
1985	4	SED	NNEC	Sb	B	1.15	1.08	0.97	1.08							GFAAS
1985	5	SED	NSEC	Sb	B											
1985	6	SED	SAIC	Sb	B	<6.4	<6.8	<6.6	<6.9							GFAAS
1985	8	SED	NRC8	Sb	B											
1985	9	SED	NRC9	Sb	B											
1985	1	SED	ECD	Sb	C	4.5	3.1	5.5	5.5							GFAAS
1985	2	SED	TAMU	Sb	C	0.79	0.68	0.85	0.74	0.81						INAA
1985	3	SED	BNW	Sb	C	0.6	0.48	0.5								INAA
1985	4	SED	NNEC	Sb	C	0.52	0.51	0.51	0.51							GFAAS
1985	5	SED	NSEC	Sb	C											
1985	6	SED	SAIC	Sb	C	<6.1	<6.6	<6.2	<6.7							GFAAS
1985	8	SED	NRC8	Sb	C											
1985	9	SED	NRC9	Sb	C											
1985	1	SED	ECD	Sb	D	2.6	1.8	7.4	5.1							GFAAS
1985	2	SED	TAMU	Sb	D	0.63	0.85	0.68	0.71	0.61	0.76					INAA
1985	3	SED	BNW	Sb	D	0.48	0.56	0.53								INAA
1985	4	SED	NNEC	Sb	D	0.59	0.53	0.49	0.48							GFAAS
1985	5	SED	NSEC	Sb	D											
1985	6	SED	SAIC	Sb	D	<4.8	<4.5	<4.5	<4.5							GFAAS
1985	8	SED	NRC8	Sb	D											
1985	9	SED	NRC9	Sb	D											
1987	1	SED	ECD	Sb	H	0.5	0.52	0.55	0.61	0.54	0.53					GFAAS
1987	2	SED	TAMU	Sb	H	1	1.1	1.1	1.1	1	1					GFAAS
1987	3	SED	BNW	Sb	H											
1987	4	SED	NNEC	Sb	H	0.63	0.55	0.44	0.4	0.71	0.65					GFAAS
1987	5	SED	NSEC	Sb	H											
1987	6	SED	SAIC	Sb	H											
1987	8	SED	NRC8	Sb	H											
1987	9	SED	NRC9	Sb	H											
1987	1	SED	ECD	Sb	I	0.67	0.65	0.63	0.69	0.7	0.67					GFAAS
1987	2	SED	TAMU	Sb	I	0.75	0.8	0.85	1.3	0.75	0.8					GFAAS
1987	3	SED	BNW	Sb	I											

Year	Lab #	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep. 2	Rep. 3	Rep. 4	Rep. 5	Rep. 6	Rep. 7	Rep. 8	Rep. 9	Rep. 10	Method
1987	4	SED	NNEC	Sb	I	0.49	0.43	0.35	0.48	0.34	0.4					GFAAS
1987	5	SED	NSEC	Sb	I											
1987	6	SED	SAIC	Sb	I											
1987	8	SED	NRC8	Sb	I											
1987	9	SED	NRC9	Sb	I											
1987	1	SED	ECD	Sb	J	0.5	0.47	0.5	0.5	0.46	0.45					GFAAS
1987	2	SED	TAMU	Sb	J											
1987	3	SED	BNW	Sb	J											
1987	4	SED	NNEC	Sb	J	0.13	0.14	0.13	0.15	0.14	0.14					GFAAS
1987	5	SED	NSEC	Sb	J	0.19	0.18	0.2	0.19	0.17	0.18					GFAAS
1987	6	SED	SAIC	Sb	J											
1987	8	SED	NRC8	Sb	J											
1987	9	SED	NRC9	Sb	J											
1987	1	SED	ECD	Sb	MESS-1	0.72	0.77	0.7	0.7	0.74	0.68					GFAAS
1987	2	SED	TAMU	Sb	MESS-1	0.95	1.1	0.95	0.95	1	1					GFAAS
1987	3	SED	BNW	Sb	MESS-1											
1987	4	SED	NNEC	Sb	MESS-1	0.75	0.59	0.48	0.45	0.44	0.55					GFAAS
1987	5	SED	NSEC	Sb	MESS-1											
1987	6	SED	SAIC	Sb	MESS-1											
1987	8	SED	NRC8	Sb	MESS-1											
1987	9	SED	NRC9	Sb	MESS-1											
1989	1	SED	ECD	Sb	K	0.4	0.38	0.35	0.32	0.35						GFAAS
1989	2	SED	TAMU	Sb	K											
1989	3	SED	BNW	Sb	K											
1989	4	SED	NNEC	Sb	K	0.69	0.82	0.46	0.46	0.46						GFAAS
1989	5	SED	NSEC	Sb	K											
1989	6	SED	SAIC	Sb	K											
1989	8	SED	NRC8	Sb	K											
1989	1	SED	ECD	Sb	BCSS-1	0.67	0.67	0.68	0.67	0.72						GFAAS
1989	2	SED	TAMU	Sb	BCSS-1											
1989	3	SED	BNW	Sb	BCSS-1											
1989	4	SED	NNEC	Sb	BCSS-1	0.69	0.75	0.45	0.54	0.39						GFAAS
1989	5	SED	NSEC	Sb	BCSS-1											
1989	6	SED	SAIC	Sb	BCSS-1											
1989	8	SED	NRC8	Sb	BCSS-1											
1990	1*	SED	ECD	Sb	L	0.7	0.7	0.69	0.69	0.69						GFAAS
1990	2	SED	TAMU	Sb	L	1.09	1.33	1.17	1.15	1.15						INAA
1990	3	SED	BNW	Sb	L	1	1	1	1	0.8						GFAAS
1990	4	SED	NNEC	Sb	L											
1990	5	SED	NSEC	Sb	L	<0.6										GFAAS
1990	11	SED	NRC1	Sb	L	1.09	1.1	1.09	1.17	1.14						IDICPMS
1990	12	SED	NRC2	Sb	L	1.16	0.95	1.06	1.05	1						GFAAS
1990	1	SED	ECD	Sb	M	0.37	0.38	0.37	0.37	0.35						GFAAS

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1990	2	SED	TAMU	Sb	M	0.34	0.34	0.39	0.38	0.35						INAA
1990	3	SED	BNW	Sb	M	0.3	0.29	0.29	0.3	0.3						GFAAS
1990	4	SED	NNEC	Sb	M											
1990	5	SED	NSEC	Sb	M	<0.6										GFAAS
1990	11	SED	NRC1	Sb	M											IDICPMS
1990	12	SED	NRC2	Sb	M											GFAAS
1990	1	SED	ECD	Sb	BCSS-1	0.64	0.64	0.62	0.62	0.61						GFAAS
1990	2	SED	TAMU	Sb	BCSS-1	0.6	0.56	0.59	0.7	0.62						INAA
1990	3	SED	BNW	Sb	BCSS-1	0.6	0.45	0.45	0.59	0.58						GFAAS
1990	4	SED	NNEC	Sb	BCSS-1											
1990	5	SED	NSEC	Sb	BCSS-1	<0.6										GFAAS
1990	11	SED	NRC1	Sb	BCSS-1											IDICPMS
1990	12	SED	NRC2	Sb	BCSS-1											GFAAS
1985	1	SED	ECD	Se	A	1.1	0.93	0.93	0.88							HGAAS
1985	2	SED	TAMU	Se	A	<2.86	<2.59	<2.32	<2.69	<2.86						INAA
1985	3	SED	BNW	Se	A	1.02	1.02	1.09	1.17							GFAAS
1985	4	SED	NNEC	Se	A	0.85	0.82	0.63	0.82							HGAAS
1985	5	SED	NSEC	Se	A											
1985	6	SED	SAIC	Se	A	<340	<173	<165	<162							GFAAS
1985	8	SED	NRC8	Se	A											GFAAS
1985	9	SED	NRC9	Se	A											
1985	1	SED	ECD	Se	B	0.8	0.93	0.76	0.63							HGAAS
1985	2	SED	TAMU	Se	B	<2.91	<2.59	<2.27	<2.13	<2.75						INAA
1985	3	SED	BNW	Se	B	0.74	0.74	0.91	0.91							GFAAS
1985	4	SED	NNEC	Se	B	0.66	0.75	0.75	0.77							HGAAS
1985	5	SED	NSEC	Se	B											
1985	6	SED	SAIC	Se	B	<135	<142	<139	<145							GFAAS
1985	8	SED	NRC8	Se	B											GFAAS
1985	9	SED	NRC9	Se	B											
1985	1	SED	ECD	Se	C	1.9	1.9	1.6	1.6							HGAAS
1985	2	SED	TAMU	Se	C	<2.71	<2.58	<2.26	<2.05	<2.78						INAA
1985	3	SED	BNW	Se	C	0.9	0.83	0.75	0.83							GFAAS
1985	4	SED	NNEC	Se	C	1.13	1.24	1.35	1.22							HGAAS
1985	5	SED	NSEC	Se	C											
1985	6	SED	SAIC	Se	C	<83	<90	<85	<92							GFAAS
1985	8	SED	NRC8	Se	C											GFAAS
1985	9	SED	NRC9	Se	C											
1985	1	SED	ECD	Se	D	1.3	1.4	1.2	1.4							HGAAS
1985	2	SED	TAMU	Se	D	<2.84	<2.54	<2.22	<2.16	<2.56	<2.69					INAA
1985	3	SED	BNW	Se	D	1.21	1.3	1.17	1.25							GFAAS
1985	4	SED	NNEC	Se	D	1.16	1.13	1.27	1.15							HGAAS
1985	5	SED	NSEC	Se	D											

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1985	6	SED	SAIC	Se	D	<83	<77	<78	<77							GFAAS
1985	8	SED	NRC8	Se	D											GFAAS
1985	9	SED	NRC9	Se	D											
1987	1	SED	ECD	Se	H	1.32	1.26	1.3	1.3	1.31	1.31					HGAAS
1987	2	SED	TAMU	Se	H	1	1.72	2.03	2.03	2.03	1.87					GFAAS
1987	3	SED	BNW	Se	H	1.24	1.37	1.19	1.46	1.69	1.53					GFAAS
1987	4	SED	NNEC	Se	H	1	0.92	0.99	0.9	1.15	1.08					GFAAS
1987	5	SED	NSEC	Se	H	1.18	1.01	1.1	1.07	0.95	1.1					HGAAS
1987	6	SED	SAIC	Se	H	<0.8										GFAAS
1987	8	SED	NRC8	Se	H	1.51	1.32	1.46	1.45	1.42						HGAAS
1987	9	SED	NRC9	Se	H	1.62	1.76	1.65	1.63	1.54						GFAAS
1987	1	SED	ECD	Se	I	0.85	0.82	0.75	0.85	0.78	0.84					HGAAS
1987	2	SED	TAMU	Se	I	1.47	1.38	1.17	1.24	1.7	1.18					GFAAS
1987	3	SED	BNW	Se	I	0.84	0.9	0.83	0.92	1.13	0.92					GFAAS
1987	4	SED	NNEC	Se	I	0.62	0.72	0.78	0.77	0.87	0.78					GFAAS
1987	5	SED	NSEC	Se	I	0.8	0.83	0.57	0.88	0.77	0.84					HGAAS
1987	6	SED	SAIC	Se	I	<1.6										GFAAS
1987	8	SED	NRC8	Se	I	0.97	0.98	0.97	0.92	1						HGAAS
1987	9	SED	NRC9	Se	I	1.07	1.22	1.02	1.12	0.96						GFAAS
1987	1	SED	ECD	Se	J	0.76	0.76	0.76	0.83	0.85	0.78					HGAAS
1987	2	SED	TAMU	Se	J	0.78	0.9	0.73	0.78	0.63	0.75					GFAAS
1987	3	SED	BNW	Se	J	0.92	0.99	0.92	0.99	0.92	0.84					GFAAS
1987	4	SED	NNEC	Se	J	0.47	0.38	0.42	0.52	0.47	0.52					GFAAS
1987	5	SED	NSEC	Se	J	0.68	0.68	0.61	0.64	0.6	0.63					HGAAS
1987	6	SED	SAIC	Se	J	<1.4										GFAAS
1987	8	SED	NRC8	Se	J											
1987	9	SED	NRC9	Se	J											
1987	1	SED	ECD	Se	MESS-1	0.31	0.3	0.28	0.33	0.34	0.35					HGAAS
1987	2	SED	TAMU	Se	MESS-1											
1987	3	SED	BNW	Se	MESS-1	0.34	0.4	0.34	0.44	0.59	0.51					GFAAS
1987	4	SED	NNEC	Se	MESS-1	0.21	0.21	0.26	0.32	0.21	0.22					GFAAS
1987	5	SED	NSEC	Se	MESS-1	0.51	0.34	0.36	0.36	0.33	0.28					HGAAS
1987	6	SED	SAIC	Se	MESS-1	<0.8										GFAAS
1987	8	SED	NRC8	Se	MESS-1											
1987	9	SED	NRC9	Se	MESS-1											
1989	1	SED	ECD	Se	K											
1989	2	SED	TAMU	Se	K	1.57	1.62	1.75	1.79	1.83	1.87					GFAAS
1989	3	SED	BNW	Se	K	1.5	1	1	1.2	1.9						XRF
1989	4	SED	NNEC	Se	K	0.63	0.39	0.4	0.4	0.51						GFAAS
1989	5	SED	NSEC	Se	K											
1989	6	SED	SAIC	Se	K	4.5	3.3	4.1	3.8	3.8						GFAAS
1989	8	SED	NRC8	Se	K											
1989	1	SED	ECD	Se	BCSS-1											

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1989	2	SED	TAMU	Se	BCSS-1											
1989	3	SED	BNW	Se	BCSS-1	<1										XRF
1989	4	SED	NNEC	Se	BCSS-1	0.28	0.28	0.28								GFAAS
1989	5	SED	NSEC	Se	BCSS-1											
1989	6	SED	SAIC	Se	BCSS-1											
1989	8	SED	NRC8	Se	BCSS-1											
1990	1	SED	ECD	Se	L	0.89	0.57	0.53	0.85	0.75						GFAAS
1990	2	SED	TAMU	Se	L	0.8	0.82	0.73	0.84	0.85						GFAAS
1990	3	SED	BNW	Se	L	0.41	0.37	0.42	0.37	0.42						GFAAS
1990	4	SED	NNEC	Se	L	0.494	0.37	0.501	0.497	0.502						GFAAS
1990	5	SED	NSEC	Se	L											
1990	11	SED	NRC1	Se	L											
1990	12	SED	NRC2	Se	L	0.79	0.69	0.8	0.92	0.65						GFAAS
1990	1	SED	ECD	Se	M	0.13	0.07	0.15	0.44							GFAAS
1990	2	SED	TAMU	Se	M	0.14	0.15	0.16	0.08	0.1						GFAAS
1990	3	SED	BNW	Se	M	0.09	0.14	0.09	0.14	0.14						GFAAS
1990	4	SED	NNEC	Se	M	0.0977	0.0985	0.0981	0.0988	0.0985						GFAAS
1990	5	SED	NSEC	Se	M											
1990	11	SED	NRC1	Se	M											
1990	12	SED	NRC2	Se	M											GFAAS
1990	1	SED	ECD	Se	BCSS-1	0.56	0.26	0.36	0.64	0.36						GFAAS
1990	2	SED	TAMU	Se	BCSS-1	0.58	0.47	0.41	0.52	0.42						GFAAS
1990	3	SED	BNW	Se	BCSS-1	0.38	0.33	0.37	0.42	0.37						GFAAS
1990	4	SED	NNEC	Se	BCSS-1	0.357	0.365	0.368	0.499	0.365						GFAAS
1990	5	SED	NSEC	Se	BCSS-1											
1990	11	SED	NRC1	Se	BCSS-1											
1990	12	SED	NRC2	Se	BCSS-1											GFAAS
1985	1	SED	ECD	Si	A	25	24.9	24.3	25.7							FAAS
1985	2	SED	TAMU	Si	A											
1985	3	SED	BNW	Si	A	23.3	23.3	23.1	23.1							XRF
1985	4	SED	NNEC	Si	A	26.8	26	26.9	25.9							FAAS
1985	5	SED	NSEC	Si	A	28.9	29.9	29.1	28.8							FAAS
1985	6	SED	SAIC	Si	A	25.1	26.4	25.2	23.9							COLOR
1985	8	SED	NRC8	Si	A											
1985	9	SED	NRC9	Si	A											
1985	1	SED	ECD	Si	B	28.6	27.9	28	29							FAAS
1985	2	SED	TAMU	Si	B											
1985	3	SED	BNW	Si	B	24.5	23.9	24.5	24.8							XRF
1985	4	SED	NNEC	Si	B	26.8	27.3	25.1	23							FAAS
1985	5	SED	NSEC	Si	B	29.7	29.9	31.4	31.9							FAAS
1985	6	SED	SAIC	Si	B	28.3	28.2	26.6	25.2							COLOR
1985	8	SED	NRC8	Si	B											

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1985	9	SED	NRC9	Si	B											
1985	1	SED	ECD	Si	C	24.8	26	25.2	26.9							FAAS
1985	2	SED	TAMU	Si	C											
1985	3	SED	BNW	Si	C	23.5	23.3	23.4	23.5							XRF
1985	4	SED	NNEC	Si	C	31.7	21.6	24.4	22.7							FAAS
1985	5	SED	NSEC	Si	C	26.5	27.5	28.5	29.4							FAAS
1985	6	SED	SAIC	Si	C	25.4	23.4	23.5	23.3							COLOR
1985	8	SED	NRC8	Si	C											
1985	9	SED	NRC9	Si	C											
1985	1	SED	ECD	Si	D	25.6	26.6	26.7	25.9							FAAS
1985	2	SED	TAMU	Si	D											
1985	3	SED	BNW	Si	D	25.2	24.6	24	24.4							XRF
1985	4	SED	NNEC	Si	D	24.1	25.4	21.8	24.7							FAAS
1985	5	SED	NSEC	Si	D	29.4	28.4	27.6	28.4							FAAS
1985	6	SED	SAIC	Si	D	27.4	26.6	24.7	17.8							COLOR
1985	8	SED	NRC8	Si	D											
1985	9	SED	NRC9	Si	D											
1987	1	SED	ECD	Si	H	24.2	24.8	26.1	25.9	24.4	24.5					FAAS
1987	2	SED	TAMU	Si	H											
1987	3	SED	BNW	Si	H											
1987	4	SED	NNEC	Si	H	20.5	21.8	20.7	20.7	20.7	21.1					FAAS
1987	5	SED	NSEC	Si	H	21.5	26	24.1	24.5	24.5	25.5					FAAS
1987	6	SED	SAIC	Si	H	23	22	22	22	27	23					COLOR
1987	8	SED	NRC8	Si	H	20.9	20.9	20.9	20.8	20.8	20.8					XRF
1987	9	SED	NRC9	Si	H											
1987	1	SED	ECD	Si	I	29.6	29.8	29.9	29.7	29.7	29.9					FAAS
1987	2	SED	TAMU	Si	I											
1987	3	SED	BNW	Si	I											
1987	4	SED	NNEC	Si	I	29.4	28.9	27.7	27.5	28.8	29.1					FAAS
1987	5	SED	NSEC	Si	I	33.7	34.4	32	32.8	33	33.6					FAAS
1987	6	SED	SAIC	Si	I	30	30	30	30	30	29					COLOR
1987	8	SED	NRC8	Si	I	29.2	29	29.1	28.9	29.2	29					XRF
1987	9	SED	NRC9	Si	I											
1987	1	SED	ECD	Si	J											
1987	2	SED	TAMU	Si	J											
1987	3	SED	BNW	Si	J											
1987	4	SED	NNEC	Si	J											
1987	5	SED	NSEC	Si	J											
1987	6	SED	SAIC	Si	J	<0.3										COLOR
1987	8	SED	NRC8	Si	J											
1987	9	SED	NRC9	Si	J											
1987	1	SED	ECD	Si	MESS-1	32.3	31.9	30.9	31.3	31.9	31					FAAS
1987	2	SED	TAMU	Si	MESS-1											

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1987	3	SED	BNW	Si	MESS-1											
1987	4	SED	NNEC	Si	MESS-1	31.5	30.7	31.5	30.7	30	30					FAAS
1987	5	SED	NSEC	Si	MESS-1	38	35	35	37	39	37					FAAS
1987	6	SED	SAIC	Si	MESS-1	34	33	31	32							COLOR
1987	8	SED	NRC8	Si	MESS-1											
1987	9	SED	NRC9	Si	MESS-1											
1989	1	SED	ECD	Si	SED K	38.9	36.2	33.7	32.4	30.2						FAAS
1989	2	SED	TAMU	Si	SED K											
1989	3	SED	BNW	Si	SED K											
1989	4	SED	NNEC	Si	SED K	28.2	26	26.5	28	27.9						FAAS
1989	5	SED	NSEC	Si	SED K											
1989	6	SED	SAIC	Si	SED K											
1989	8	SED	NRC8	Si	SED K											
1989	1	SED	ECD	Si	BCSS-1	30.8	29.4	30.5	30.4	31.7						FAAS
1989	2	SED	TAMU	Si	BCSS-1											
1989	3	SED	BNW	Si	BCSS-1											
1989	4	SED	NNEC	Si	BCSS-1	32.9	27.7	27.2	31.2	31.3						FAAS
1989	5	SED	NSEC	Si	BCSS-1											
1989	6	SED	SAIC	Si	BCSS-1											
1989	8	SED	NRC8	Si	BCSS-1											
1990	1	SED	ECD	Si	L	28.2	28.2	28.1	27.8	27.5						FAAS
1990	2	SED	TAMU	Si	L											
1990	3	SED	BNW	Si	L	27	27	28	28	29						XRF
1990	4	SED	NNEC	Si	L											
1990	5	SED	NSEC	Si	L											
1990	11	SED	NRC1	Si	L											
1990	12	SED	NRC2	Si	L	24	24	23.9	24	24						XRF
1990	1	SED	ECD	Si	M	31.6	31.1	31.8	31.9	32.8						FAAS
1990	2	SED	TAMU	Si	M											
1990	3	SED	BNW	Si	M	31.4	30.9	31.8	31.5	30.9						XRF
1990	4	SED	NNEC	Si	M											
1990	5	SED	NSEC	Si	M											
1990	11	SED	NRC1	Si	M											
1990	12	SED	NRC2	Si	M	31.4	32.2	33.3	32	32.2						XRF
1990	1	SED	ECD	Si	BCSS-1	29.2	30.7	30.6	31.3	30.1						FAAS
1990	2	SED	TAMU	Si	BCSS-1											
1990	3	SED	BNW	Si	BCSS-1	30.7	30	30.8	30.2	30						XRF
1990	4	SED	NNEC	Si	BCSS-1											
1990	5	SED	NSEC	Si	BCSS-1											
1990	11	SED	NRC1	Si	BCSS-1											
1990	12	SED	NRC2	Si	BCSS-1											XRF
1985	1	SED	ECD	Sn	A	51	65	52	57							GFAAS

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1985	2	SED	TAMU	Sn	A	<210	<208	<178	<198	<210						FAAS
1985	2	SED	TAMU	Sn	A	357	368	361	352	359						INAA
1985	3	SED	BNW	Sn	A	44	53	52	55							HGAAS
1985	4	SED	NNEC	Sn	A	3.42	3.99	3.9	3.43							GFAAS
1985	5	SED	NSEC	Sn	A	103.7	98.7	99.5	98.2							GFAAS
1985	6	SED	SAIC	Sn	A	43.3	37.9	46.1	38.6							GFAAS
1985	8	SED	NRC8	Sn	A											HGAAS
1985	9	SED	NRC9	Sn	A											
1985	1	SED	ECD	Sn	B	48	43	56	39							GFAAS
1985	2	SED	TAMU	Sn	B	<213	<207	<182	<184	<199						FAAS
1985	2	SED	TAMU	Sn	B	324	330	318	327	314						INAA
1985	3	SED	BNW	Sn	B	32	43	39	34							HGAAS
1985	4	SED	NNEC	Sn	B	4.01	2.94	2.87	2.73							GFAAS
1985	5	SED	NSEC	Sn	B	86.2	86.6	84.1	79.9							GFAAS
1985	6	SED	SAIC	Sn	B	24.5	32.6	28.9	40.7							GFAAS
1985	8	SED	NRC8	Sn	B											HGAAS
1985	9	SED	NRC9	Sn	B											
1985	1	SED	ECD	Sn	C	61	49	54	43							GFAAS
1985	2	SED	TAMU	Sn	C	<201	<208	<179	<176	<189	<201					FAAS
1985	2	SED	TAMU	Sn	C	119	121	126	121	120						INAA
1985	3	SED	BNW	Sn	C	5.3	5.3	5.3	7.1							HGAAS
1985	4	SED	NNEC	Sn	C	<0.51	<0.52	<0.56	<0.52							GFAAS
1985	5	SED	NSEC	Sn	C	28.1	20.2	18.8	19.6							GFAAS
1985	6	SED	SAIC	Sn	C	20.9	11.1	5.1	11.9							GFAAS
1985	8	SED	NRC8	Sn	C											HGAAS
1985	9	SED	NRC9	Sn	C											
1985	1	SED	ECD	Sn	D	61	34	43	46							GFAAS
1985	2	SED	TAMU	Sn	D	<208	<204	<174	<180	<188	<197					FAAS
1985	2	SED	TAMU	Sn	D	122	120	117	113	115						INAA
1985	3	SED	BNW	Sn	D	4.4	5.3	5.3	2.6							HGAAS
1985	4	SED	NNEC	Sn	D	0.69	<0.55	<0.58	<0.52							GFAAS
1985	5	SED	NSEC	Sn	D	18.5	15.2	15.7	19							GFAAS
1985	6	SED	SAIC	Sn	D	12.4	18.6	14.1	8.1							GFAAS
1985	8	SED	NRC8	Sn	D											HGAAS
1985	9	SED	NRC9	Sn	D											
1987	1	SED	ECD	Sn	H	3.6	4	3.9	4	3.8	3.5					GFAAS
1987	2	SED	TAMU	Sn	H	7.4	6.8	7.2	7	7.2	7.4					GFAAS
1987	3	SED	BNW	Sn	H	4.2	4.7	4.8	5.5	6.2	5.3					HGAAS
1987	4	SED	NNEC	Sn	H	6	6.5	6	6.6	6.7	6.7					GFAAS
1987	5	SED	NSEC	Sn	H	5.3	5	5.2	5.7	5.4	5.7					GFAAS
1987	6	SED	SAIC	Sn	H	10	7.4	7.7	8	8	7					GFAAS
1987	8	SED	NRC8	Sn	H	7	6.6	6.4	6.6	7.3						IDICPMS
1987	9	SED	NRC9	Sn	H											

Year	Lab #	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep. 2	Rep. 3	Rep. 4	Rep. 5	Rep. 6	Rep. 7	Rep. 8	Rep. 9	Rep. 10	Method
1987	1	SED	ECD	Sn	I	5.4	4.9	5	5	4.4	4.8					GFAAS
1987	2	SED	TAMU	Sn	I	12.4	16.7									GFAAS
1987	3	SED	BNW	Sn	I	15.5	17.2	15.1	14.7	16.3						HGAAS
1987	4	SED	NNEC	Sn	I	12.2	12.7	14.5	15.7	13.5	14.6					GFAAS
1987	5	SED	NSEC	Sn	I	18.1	11.5	12.1	12.8	13.6	15.7					GFAAS
1987	6	SED	SAIC	Sn	I	14	9.6	13	11	11	18					GFAAS
1987	8	SED	NRC8	Sn	I	14.8	12.8	13.4	12.3	12.6	14.5					IDICPMS
1987	9	SED	NRC9	Sn	I											
1987	1	SED	ECD	Sn	J	2.6	2.6	2.5	2.3	2.3	2.2					GFAAS
1987	2	SED	TAMU	Sn	J											
1987	3	SED	BNW	Sn	J	2.1	3.6	2.8	2.6							HGFAAS
1987	4	SED	NNEC	Sn	J	1.2	0.7	0.9	1.1	0.8	0.8					GFAAS
1987	5	SED	NSEC	Sn	J	1.3	1.5	1.3	1	0.9	1					GFAAS
1987	6	SED	SAIC	Sn	J	<1.6										GFAAS
1987	8	SED	NRC8	Sn	J											
1987	9	SED	NRC9	Sn	J											
1987	1	SED	ECD	Sn	MESS-1	3.1	3.6	4	3.9	3.6	3.7					GFAAS
1987	2	SED	TAMU	Sn	MESS-1											
1987	3	SED	BNW	Sn	MESS-1	3.7	2.6	2.6	3.6	3.8	3.8					HGFAAS
1987	4	SED	NNEC	Sn	MESS-1	3.3	3.8	3.9	3.8	4.4	3.8					GFAAS
1987	5	SED	NSEC	Sn	MESS-1	3.4	5.7	3.5	4.2	4.5	6.7					GFAAS
1987	6	SED	SAIC	Sn	MESS-1	<2										GFAAS
1987	8	SED	NRC8	Sn	MESS-1											
1987	9	SED	NRC9	Sn	MESS-1											
1989	1	SED	ECD	Sn	K											
1989	2	SED	TAMU	Sn	K	0.83	0.86	0.86	0.93	0.95	0.98					GFAAS
1989	3	SED	BNW	Sn	K	1	1.2	1.2	0.7	0.9						HGAAS
1989	4	SED	NNEC	Sn	K	1.09	1.06	1.09	0.92	1.08						GFAAS
1989	5	SED	NSEC	Sn	K	1.47	1.34	1.06	1.9	1.6						GFAAS
1989	6	SED	SAIC	Sn	K											
1989	8	SED	NRC8	Sn	K											
1989	1	SED	ECD	Sn	BCSS-1											
1989	2	SED	TAMU	Sn	BCSS-1											
1989	3	SED	BNW	Sn	BCSS-1	1.7	2.2	1.7	1.7	1.9						HGAAS
1989	4	SED	NNEC	Sn	BCSS-1	2.05	1.86	2.13	1.88	1.73						GFAAS
1989	5	SED	NSEC	Sn	BCSS-1	1.88	1.68	1.51	2.18	1.62						GFAAS
1989	6	SED	SAIC	Sn	BCSS-1											
1989	8	SED	NRC8	Sn	BCSS-1											
1990	1	SED	ECD	Sn	L	3.2	2.5	2	2.5	3.1						HGAAS
1990	2	SED	TAMU	Sn	L	1.97	2.06	1.98	2	1.97						GFAAS
1990	3	SED	BNW	Sn	L	3	2.9	3	2.9	2.9						HGAAS
1990	4	SED	NNEC	Sn	L	1.76	1.62	1.77	1.61	1.6						GFAAS
1990	5	SED	NSEC	Sn	L	2.4	2.4	2.1	2.6	2.8						GFAAS

Year	Lab #	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep. 2	Rep. 3	Rep. 4	Rep. 5	Rep. 6	Rep. 7	Rep. 8	Rep. 9	Rep. 10	Method
1990	11	SED	NRC1	Sn	L	2.36	2.28	2.38	2.38	2.25						IDICPMS
1990	12	SED	NRC2	Sn	L	1.78	1.92	2.42	2.53	1.67						GFAAS
1990	1	SED	ECD	Sn	M	0.62	0.97	1.2	0.89	0.92						HGAAS
1990	2	SED	TAMU	Sn	M	0.8	0.83	0.7	0.7	0.81						GFAAS
1990	3	SED	BNW	Sn	M	0.79	0.59	0.72	1.1	0.83						HGAAS
1990	4	SED	NNEC	Sn	M	0.932	0.918	1.08	0.917	0.752						GFAAS
1990	5*	SED	NSEC	Sn	M	1.4	1.4	1.2	1.2	1.6						GFAAS
1990	11	SED	NRC1	Sn	M	1.21	0.99	1.05	1.11	1.27						IDICPMS
1990	12	SED	NRC2	Sn	M											GFAAS
1990	1	SED	ECD	Sn	BCSS-1	2.1	2.2	2.4	2	1						HGAAS
1990	2	SED	TAMU	Sn	BCSS-1	1.7	1.63	1.99	1.79	2.01						GFAAS
1990	3	SED	BNW	Sn	BCSS-1	1.9	2.1	2.1	2.1	2.1						HGAAS
1990	4	SED	NNEC	Sn	BCSS-1	1.94	1.73	1.6	2.29	1.59						GFAAS
1990	5	SED	NSEC	Sn	BCSS-1	2.2	1.8	2.9	2.2	2.3						GFAAS
1990	11	SED	NRC1	Sn	BCSS-1											IDICPMS
1990	12	SED	NRC2	Sn	BCSS-1											GFAAS
1985	1	SED	ECD	Tl	A											
1985	2	SED	TAMU	Tl	A											
1985	3	SED	BNW	Tl	A	0.88	0.93	0.88	0.88							GFAAS
1985	4	SED	NNEC	Tl	A	0.71	0.79	0.7	0.59							GFAAS
1985	5	SED	NSEC	Tl	A	0.76	0.85	0.84	0.8							GFAAS
1985	6	SED	SAIC	Tl	A	<5.4	<5.6	<5.3	<5.2							GFAAS
1985	8	SED	NRC8	Tl	A											
1985	9	SED	NRC9	Tl	A											
1985	1	SED	ECD	Tl	B											
1985	2	SED	TAMU	Tl	B											
1985	3	SED	BNW	Tl	B	0.81	0.75	0.81	0.86							GFAAS
1985	4	SED	NNEC	Tl	B	0.73	0.59	0.64	0.73							GFAAS
1985	5	SED	NSEC	Tl	B	0.86	0.74	0.76	0.73							GFAAS
1985	6	SED	SAIC	Tl	B	<6.6	<6.9	<6.7	<7.1							GFAAS
1985	8	SED	NRC8	Tl	B											
1985	9	SED	NRC9	Tl	B											
1985	1	SED	ECD	Tl	C											
1985	2	SED	TAMU	Tl	C											
1985	3	SED	BNW	Tl	C	0.77	0.77	0.77	0.83							GFAAS
1985	4	SED	NNEC	Tl	C	0.54	0.6	0.64	0.56							GFAAS
1985	5	SED	NSEC	Tl	C	0.6	0.62	0.65	0.65							GFAAS
1985	6	SED	SAIC	Tl	C	<4.4	<4.7	<4.5	<4.8							GFAAS
1985	8	SED	NRC8	Tl	C											
1985	9	SED	NRC9	Tl	C											
1985	1	SED	ECD	Tl	D											
1985	2	SED	TAMU	Tl	D											

Year	Lab #	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep. 2	Rep. 3	Rep. 4	Rep. 5	Rep. 6	Rep. 7	Rep. 8	Rep. 9	Rep. 10	Method
1985	3	SED	BNW	Tl	D	0.64	0.69	0.69	0.69							GFAAS
1985	4	SED	NNEC	Tl	D	0.6	0.44	0.61	0.51							GFAAS
1985	5	SED	NSEC	Tl	D	0.63	0.61	0.54	0.58							GFAAS
1985	6	SED	SAIC	Tl	D	<9.9	<9.3	<9.3	<9.3							GFAAS
1985	8	SED	NRC8	Tl	D											
1985	9	SED	NRC9	Tl	D											
1987	1	SED	ECD	Tl	H	0.8	0.82	0.83	0.59	0.63	0.57					GFAAS
1987	2	SED	TAMU	Tl	H											
1987	3	SED	BNW	Tl	H											
1987	4	SED	NNEC	Tl	H	0.65	0.58	0.64	0.52	0.69	0.5					GFAAS
1987	5	SED	NSEC	Tl	H	0.53	0.52	0.52	0.43	0.45						GFAAS
1987	6	SED	SAIC	Tl	H	<1.8										GFAAS
1987	8	SED	NRC8	Tl	H											
1987	9	SED	NRC9	Tl	H	0.5	0.51	0.5	0.5	0.5	0.5					IDICPMS
1987	1	SED	ECD	Tl	I	0.4	0.41	0.48	0.43	0.37	0.39					GFAAS
1987	2	SED	TAMU	Tl	I											
1987	3	SED	BNW	Tl	I											
1987	4	SED	NNEC	Tl	I	0.87	0.59	0.73	0.55	0.63	0.56					GFAAS
1987	5	SED	NSEC	Tl	I	0.54	0.48	0.45	0.5	0.49	0.7					GFAAS
1987	6	SED	SAIC	Tl	I	<1.8										GFAAS
1987	8	SED	NRC8	Tl	I											
1987	9	SED	NRC9	Tl	I	0.64	0.68	0.65	0.65	0.64	0.66					IDICPMS
1987	1	SED	ECD	Tl	J	0.47	0.39	0.4	0.38	0.39	0.49					GFAAS
1987	2	SED	TAMU	Tl	J											
1987	3	SED	BNW	Tl	J											
1987	4	SED	NNEC	Tl	J	0.5	0.5	0.58	0.7	0.62	0.58					GFAAS
1987	5	SED	NSEC	Tl	J	1.2	2.2	1.6	2	2.6	2.1					GFAAS
1987	6	SED	SAIC	Tl	J	<0.8										GFAAS
1987	8	SED	NRC8	Tl	J											
1987	9	SED	NRC9	Tl	J											
1987	1	SED	ECD	Tl	MESS-1	0.43	0.44	0.42	0.42	0.41	0.38					GFAAS
1987	2	SED	TAMU	Tl	MESS-1											
1987	3	SED	[illegible]	Tl	MESS-1											
1987	4	[illegible]	[illegible]	Tl	MESS-1	0.77	0.66	0.72	0.79	0.91	0.66					GFAAS
1987	5	[illegible]	NSEC	Tl	MESS-1	0.71	0.43	0.79	0.73	0.69						GFAAS
1987	6	[illegible]	SAIC	Tl	MESS-1	<3.8										GFAAS
1987	8	[illegible]	NRC8	Tl	MESS-1											
1987	9	[illegible]	NRC9	Tl	MESS-1											
1985	1	SED	ECD	Zn	A	345	343	349	353							FAAS
1985	2	SED	TAMU	Zn	A	357	368	361	352	359						FAAS
1985	3	SED	BNW	Zn	A	352	352	345	356							XRF
1985	4	SED	NNEC	Zn	A	413	417	398	394							FAAS

Year	Lab #	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep. 2	Rep. 3	Rep. 4	Rep. 5	Rep. 6	Rep. 7	Rep. 8	Rep. 9	Rep. 10	Method
1985	5	SED	NSEC	Zn	A	363	360	370	334							FAAS
1985	6	SED	SAIC	Zn	A	380	351	354	357							FAAS
1985	8	SED	NRC8	Zn	A											ICPAES
1985	9	SED	NRC9	Zn	A											
1985	1	SED	ECD	Zn	B	323	301	315	311							FAAS
1985	2	SED	TAMU	Zn	B	324	330	318	327	314						FAAS
1985	3	SED	BNW	Zn	B	295	295	315	324							XRF
1985	4	SED	NNEC	Zn	B	348	353	350	330							FAAS
1985	5	SED	NSEC	Zn	B	316	324	339	341							FAAS
1985	6	SED	SAIC	Zn	B	308	307	317	279							FAAS
1985	8	SED	NRC8	Zn	B											ICPAES
1985	9	SED	NRC9	Zn	B											
1985	1	SED	ECD	Zn	C	113	116	115	112							FAAS
1985	2	SED	TAMU	Zn	C	119	121	126	121	120						FAAS
1985	3	SED	BNW	Zn	C	119	117	114	115							XRF
1985	4	SED	NNEC	Zn	C	113	110	113	114							FAAS
1985	5	SED	NSEC	Zn	C	108	122	123	122							FAAS
1985	6	SED	SAIC	Zn	C	112	102	114	111							FAAS
1985	8	SED	NRC8	Zn	C											ICPAES
1985	9	SED	NRC9	Zn	C											
1985	1	SED	ECD	Zn	D	111	111	115	113							FAAS
1985	2	SED	TAMU	Zn	D	122	120	117	113	115						FAAS
1985	3	SED	BNW	Zn	D	114	112	113	120							XRF
1985	4	SED	NNEC	Zn	D	113	114	113	115							FAAS
1985	5	SED	NSEC	Zn	D	118	115	118	121							FAAS
1985	6	SED	SAIC	Zn	D	109	102	92.6	73.2							FAAS
1985	8	SED	NRC8	Zn	D											ICPAES
1985	9	SED	NRC9	Zn	D											
1987	1	SED	ECD	Zn	H	103	105	104	101	100	99					FAAS
1987	2	SED	TAMU	Zn	H	73	76	73	81	69	75					FAAS
1987	3	SED	BNW	Zn	H	91	94	98	92	97	106					XRF
1987	4	SED	NNEC	Zn	H	95	97	98	92	94	94					FAAS
1987	5	SED	NSEC	Zn	H	107	97	122	94	94	93					FAAS
1987	6	SED	SAIC	Zn	H	95	81	79	85	84	80					FAAS
1987	8	SED	NRC8	Zn	H	95	95	92	94	97	100					ICPAES
1987	9	SED	NRC9	Zn	H	103	95	94	92	90	90					FAAS
1987	1	SED	ECD	Zn	I	208	218	212	207	217	214					FAAS
1987	2	SED	TAMU	Zn	I	174	154	170	170	179	180					FAAS
1987	3	SED	BNW	Zn	I	172	190	191	192	198	185					XRF
1987	4	SED	NNEC	Zn	I	197	212	188	190	192	195					FAAS
1987	5	SED	NSEC	Zn	I	180	184	185	176	174	187					FAAS
1987	6	SED	SAIC	Zn	I	190	190	190	180	170	170					FAAS
1987	8	SED	NRC8	Zn	I	187	204	195	190	187	192					ICPAES

Year	Lab #	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep. 2	Rep. 3	Rep. 4	Rep. 5	Rep. 6	Rep. 7	Rep. 8	Rep. 9	Rep. 10	Method
1987	9	SED	NRC9	Zn	I	190	192	194	193	191	189					FAAS
1987	1	SED	ECD	Zn	J	202	203	203	198	204	202					FAAS
1987	2	SED	TAMU	Zn	J											
1987	3	SED	BNW	Zn	J											
1987	4	SED	NNEC	Zn	J	197	198	195	191	192	193					FAAS
1987	5	SED	NSEC	Zn	J	176	179	168	170	174	170					FAAS
1987	6	SED	SAIC	Zn	J	170	180	180	180	190	180					FAAS
1987	8	SED	NRC8	Zn	J											
1987	9	SED	NRC9	Zn	J											
1987	1	SED	ECD	Zn	MESS-1	199	198	192	191	200	197					FAAS
1987	2	SED	TAMU	Zn	MESS-1	196	188	176	184							FAAS
1987	3	SED	BNW	Zn	MESS-1	175	182	188								XRF
1987	4	SED	NNEC	Zn	MESS-1	192	177	183	183	183	182					FAAS
1987	5	SED	NSEC	Zn	MESS-1	186	182	186	169	174	172					FAAS
1987	6	SED	SAIC	Zn	MESS-1	160	160	160	160							FAAS
1987	8	SED	NRC8	Zn	MESS-1											
1987	9	SED	NRC9	Zn	MESS-1											
1989	1	SED	ECD	Zn	SED K	92.6	91.5	91.8	86.6	87.2						FAAS
1989	2	SED	TAMU	Zn	SED K	89	89	91	92	92	93	93	93			FAAS
1989	3	SED	BNW	Zn	SED K	86	85	89	85	82						XRF
1989	4	SED	NNEC	Zn	SED K	66	73.1	73.5	75.5	74.1						FAAS
1989	5	SED	NSEC	Zn	SED K	87.6	85.1	92.5	91.1	88.5						FAAS
1989	6	SED	SAIC	Zn	SED K	77	74	75	74	77						FAAS
1989	8	SED	NRC8	Zn	SED K	91	93	94								FAAS
1989	1	SED	ECD	Zn	BCSS-1	110	118	119	118	112						FAAS
1989	2	SED	TAMU	Zn	BCSS-1											XRF
1989	3	SED	BNW	Zn	BCSS-1	110	110	110	110	110						FAAS
1989	4	SED	NNEC	Zn	BCSS-1	90	94	94	97	100						FAAS
1989	5	SED	NSEC	Zn	BCSS-1	112	118	114	111	110						FAAS
1989	6	SED	SAIC	Zn	BCSS-1	110	110	110	120	110						FAAS
1989	8	SED	NRC8	Zn	BCSS-1											
1990	1	SED	ECD	Zn	L	168	177	176	178	176						FAAS
1990	2	SED	TAMU	Zn	L	180	178	182	182	184						FAAS
1990	3	SED	BNW	Zn	L	156	154	156	152	156						XRF
1990	4	SED	NNEC	Zn	L	163	166	163	162	162						FAAS
1990	5	SED	NSEC	Zn	L	169	168	164	164	167						FAAS
1990	11	SED	NRC1	Zn	L	169	170	168	172	168						ICPAES
1990	12	SED	NRC2	Zn	L	180	182	161	164	168						FAAS
1990	1	SED	ECD	Zn	M	35.7	36.8	34.4	37.2	34.6						FAAS
1990	2	SED	TAMU	Zn	M	38.7	41.3	40.9	44.8	40.6						FAAS
1990	3	SED	BNW	Zn	M	35	33	36	38	38						XRF
1990	4	SED	NNEC	Zn	M	41.2	37.8	41.2	40.3	37.5						FAAS
1990	5	SED	NSEC	Zn	M	35.9	37.7	43.3	41.1	39						FAAS

Year	Lab #	Matrix	Lab Name	Analyte	Sample	Rep.1	Rep. 2	Rep. 3	Rep. 4	Rep. 5	Rep. 6	Rep. 7	Rep. 8	Rep. 9	Rep. 10	Method
1990	11	SED	NRC1	Zn	M	39.9	41.7	41.5	41.8	40.3						ICPAES
1990	12	SED	NRC2	Zn	M											FAAS
1990	1	SED	ECD	Zn	BCSS-1	120	121	117	115	113						FAAS
1990	2	SED	TAMU	Zn	BCSS-1	130	137	128	131	133						FAAS
1990	3	SED	BNW	Zn	BCSS-1	105	107	111	110	109						XRF
1990	4	SED	NNEC	Zn	BCSS-1	122	121	117	123	116						FAAS
1990	5	SED	NSEC	Zn	BCSS-1	110	115	117	110	112						FAAS
1990	11	SED	NRC1	Zn	BCSS-1											ICPAES
1990	12	SED	NRC2	Zn	BCSS-1											FAAS

APPENDIX D
FIGURES

Appendix D

Figures 1-17: Results obtained for the sediments by all the NS&T laboratories for all the samples analyzed between 1985 and 1990, normalized to their respective "Accepted Value". The vertical axis represents the ratio of the reported values to the accepted value. The values reported by each laboratory for each sample are plotted along the horizontal axis. Different symbols represent the different samples associated which a code letter or an acronym written in bold phase. Under the name of the sample, the nunber in italics represents the "Accepted Value" for that sample. For each sample, up to eight measurements are given and correspond to the values reported by the six NS&T laboratories and two measurements performed by NRC Canada. The results of the laboratories are always given in the same order and match the order followed in the tables (A1-A6). When a laboratory did not report data, its place is left blank. Precision of the measurements are also displayed on these plots. One figure is composed of four plots representing the results for 1985, 1987, 1989, and 1990.

Figures 18-34:Results obtained for biological tissues. Same legend as for figures 1-17.

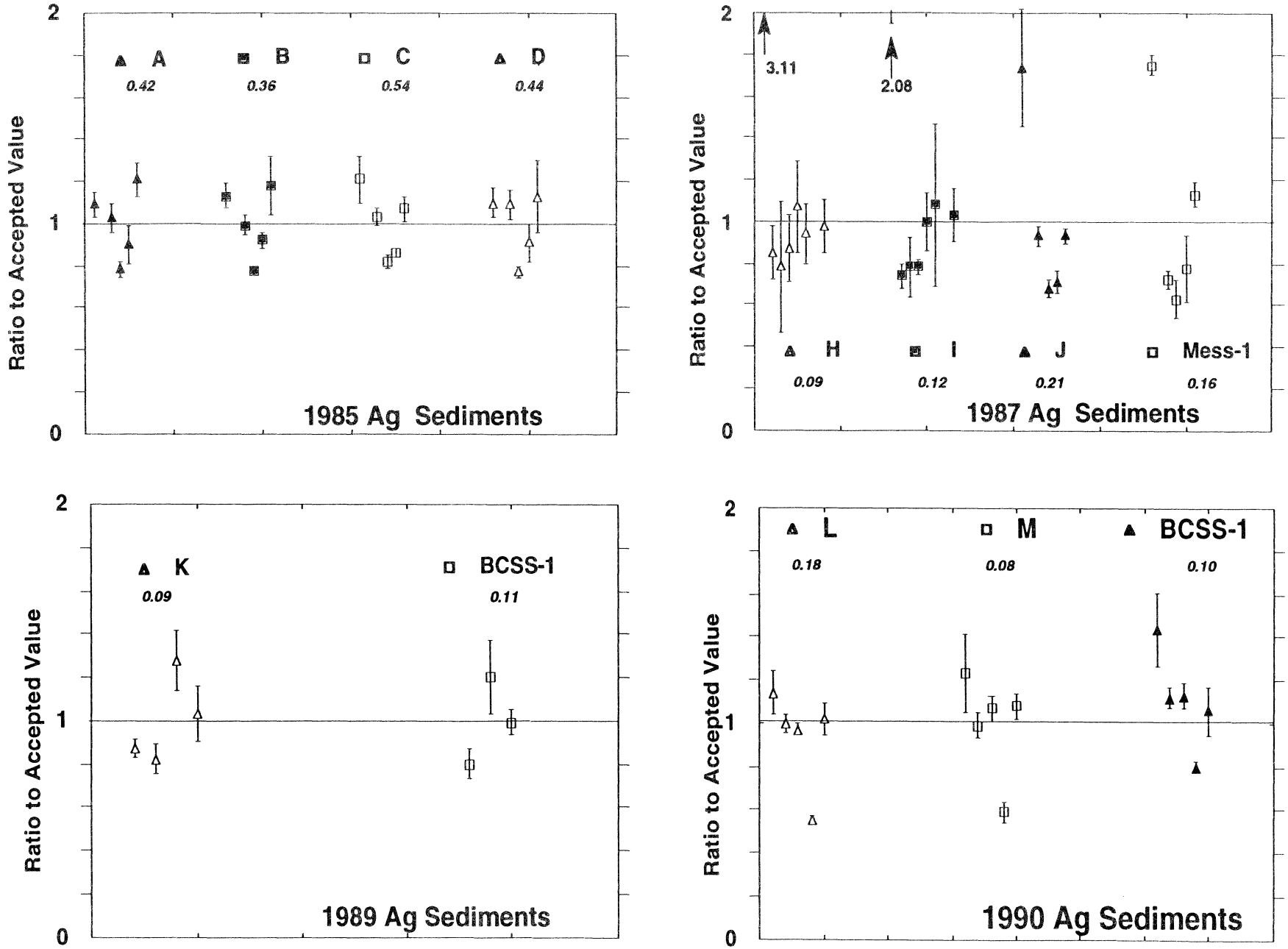

Ratio to Accepted Value
2
1
0
A
0.42
B
0.36
C
0.54
D
0.44
1985 Ag Sediments
3.11
2.08
H
0.09
I
0.12
J
0.21
Mess-1
0.16
1987 Ag Sediments
K
0.09
BCSS-1
0.11
1989 Ag Sediments
L
0.18
M
0.08
BCSS-1
0.10
1990 Ag Sediments

Figure 1

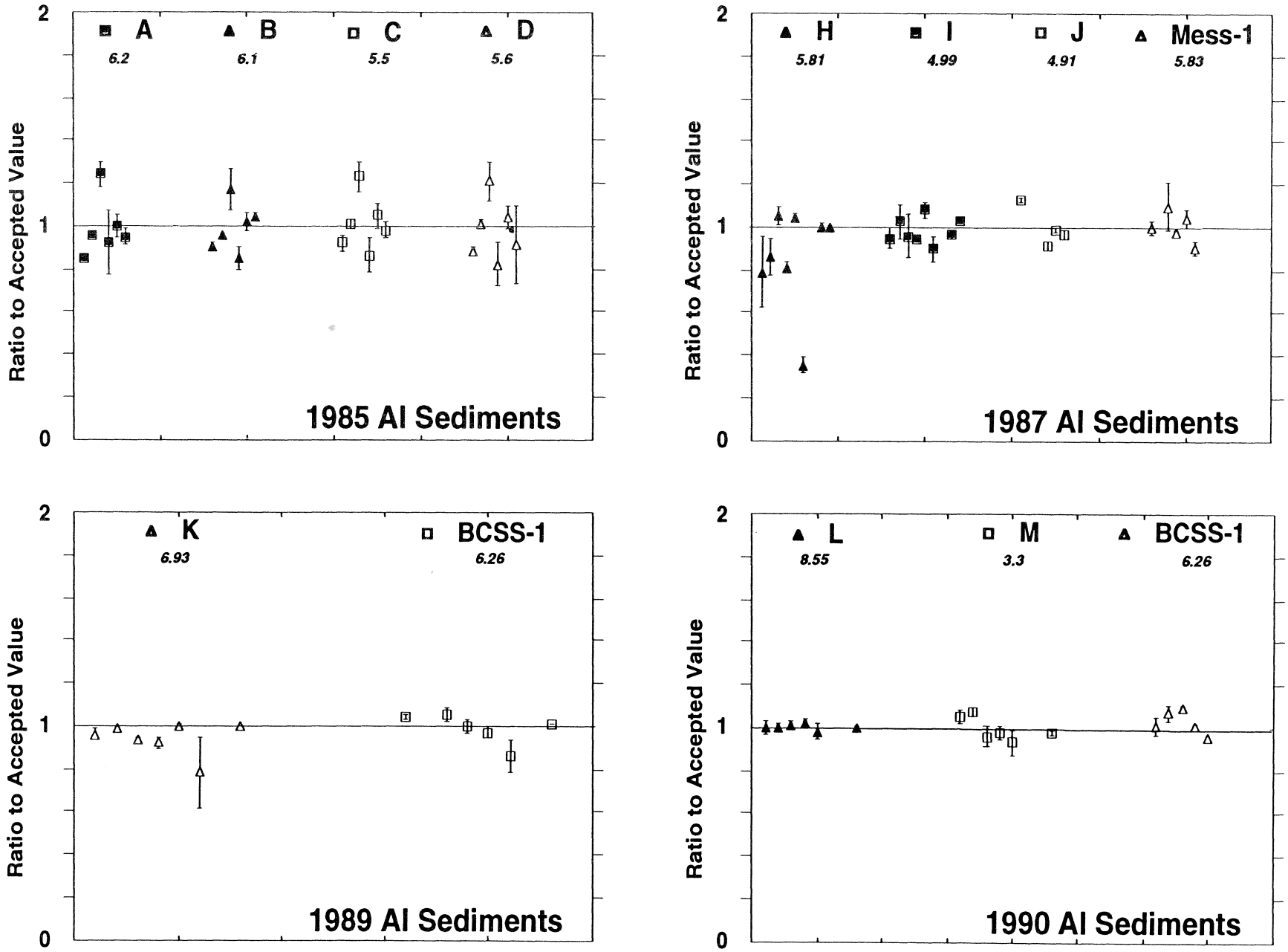

A
6.2
B
6.1
C
5.5
D
5.6
1985 Al Sediments
H
5.81
I
4.99
J
4.91
Mess-1
5.83
1987 Al Sediments
K
6.93
BCSS-1
6.26
1989 Al Sediments
L
8.55
M
3.3
BCSS-1
6.26
1990 Al Sediments
Ratio to Accepted Value
0
1
2

Figure 2

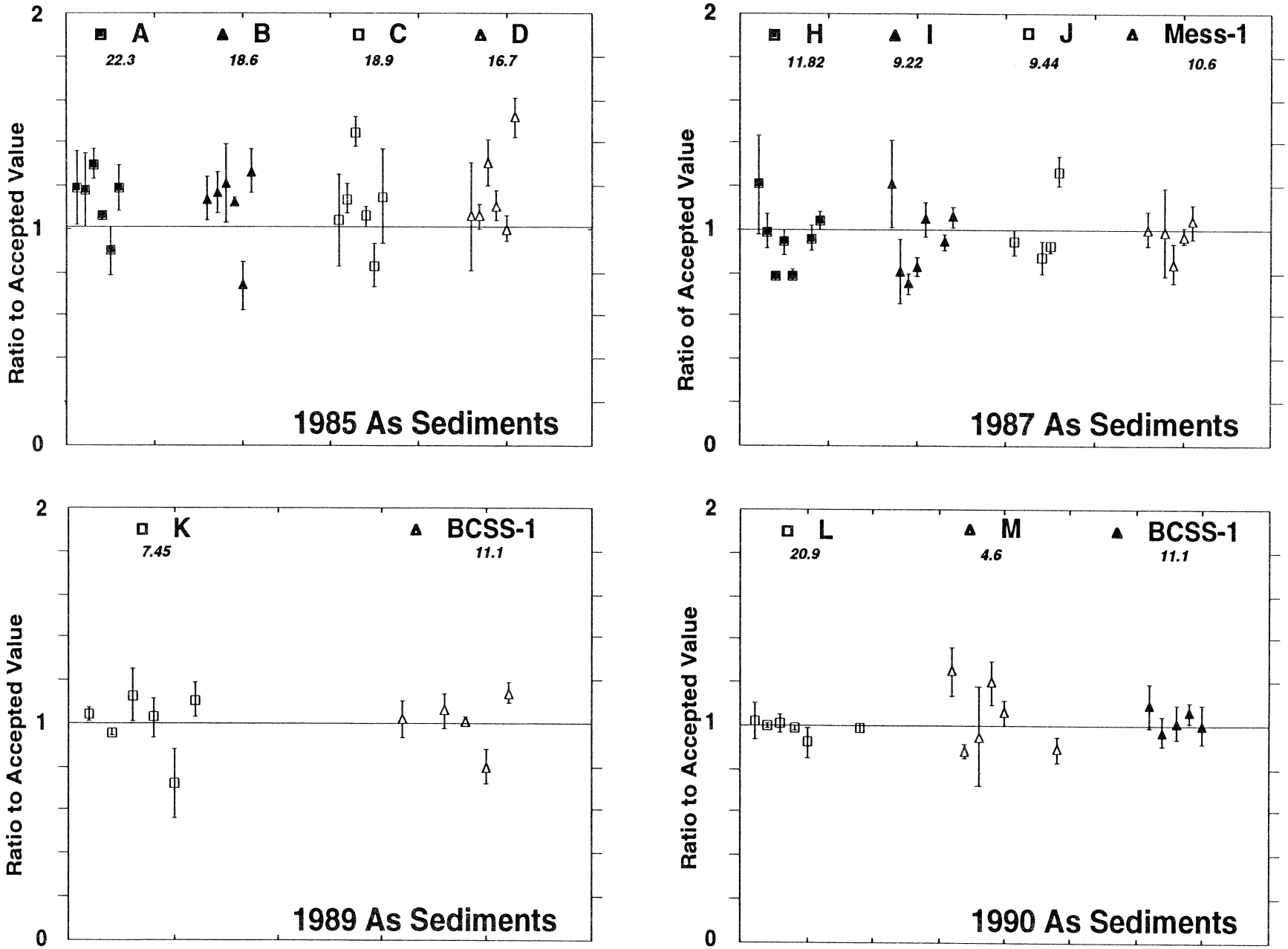

A
22.3
B
18.6
C
18.9
D
16.7
Ratio to Accepted Value
1985 As Sediments
H
11.82
I
9.22
J
9.44
Mess-1
10.6
Ratio of Accepted Value
1987 As Sediments
K
7.45
BCSS-1
11.1
Ratio to Accepted Value
1989 As Sediments
L
20.9
M
4.6
BCSS-1
11.1
Ratio to Accepted Value
1990 As Sediments
0
1
2

Figure 3

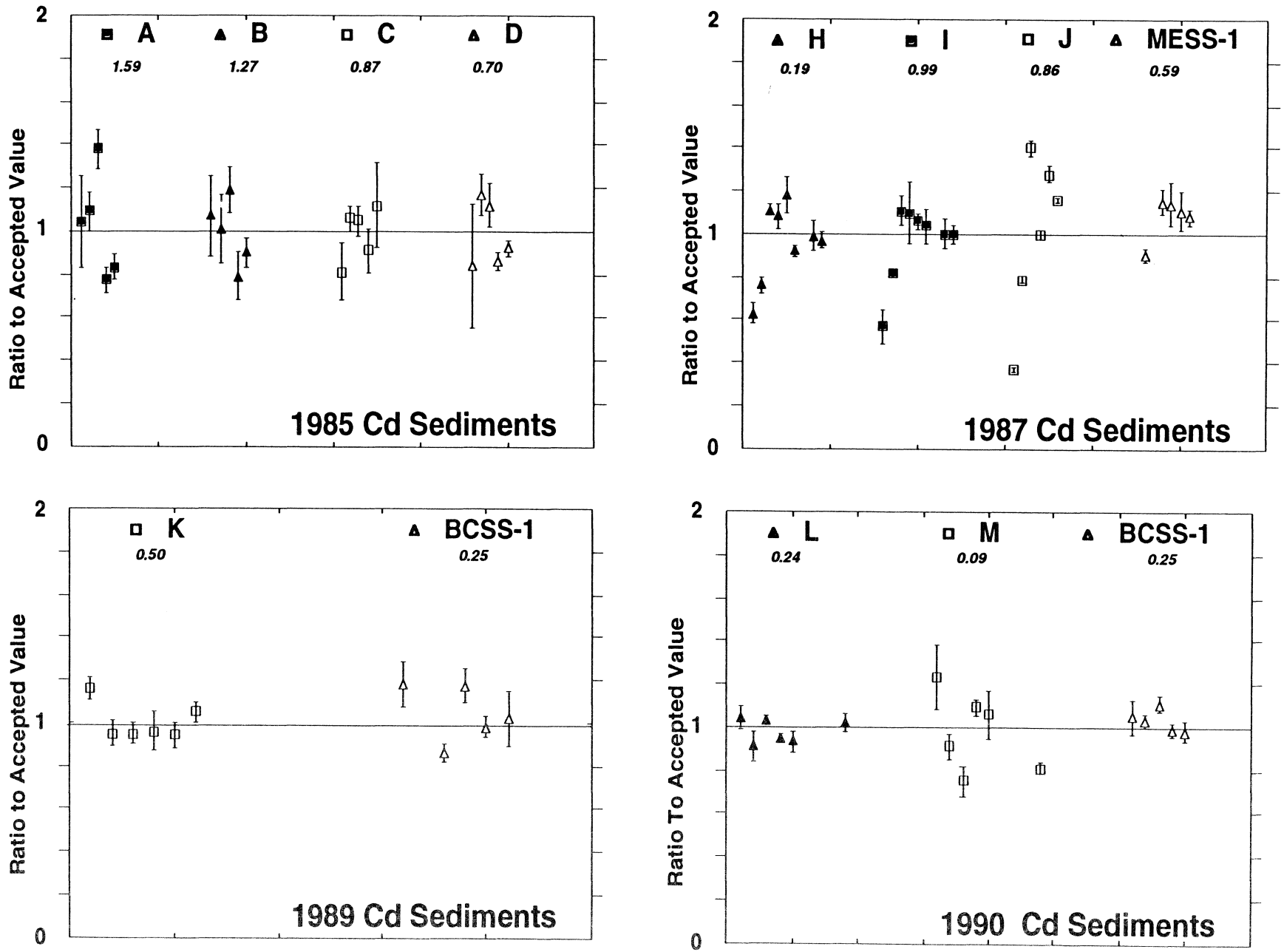

A
1.59
B
1.27
C
0.87
D
0.70
1985 Cd Sediments
Ratio to Accepted Value
H
0.19
I
0.99
J
0.86
MESS-1
0.59
1987 Cd Sediments
Ratio to Accepted Value
K
0.50
BCSS-1
0.25
1989 Cd Sediments
Ratio to Accepted Value
L
0.24
M
0.09
BCSS-1
0.25
1990 Cd Sediments
Ratio To Accepted Value
0
1
2

Figure 4

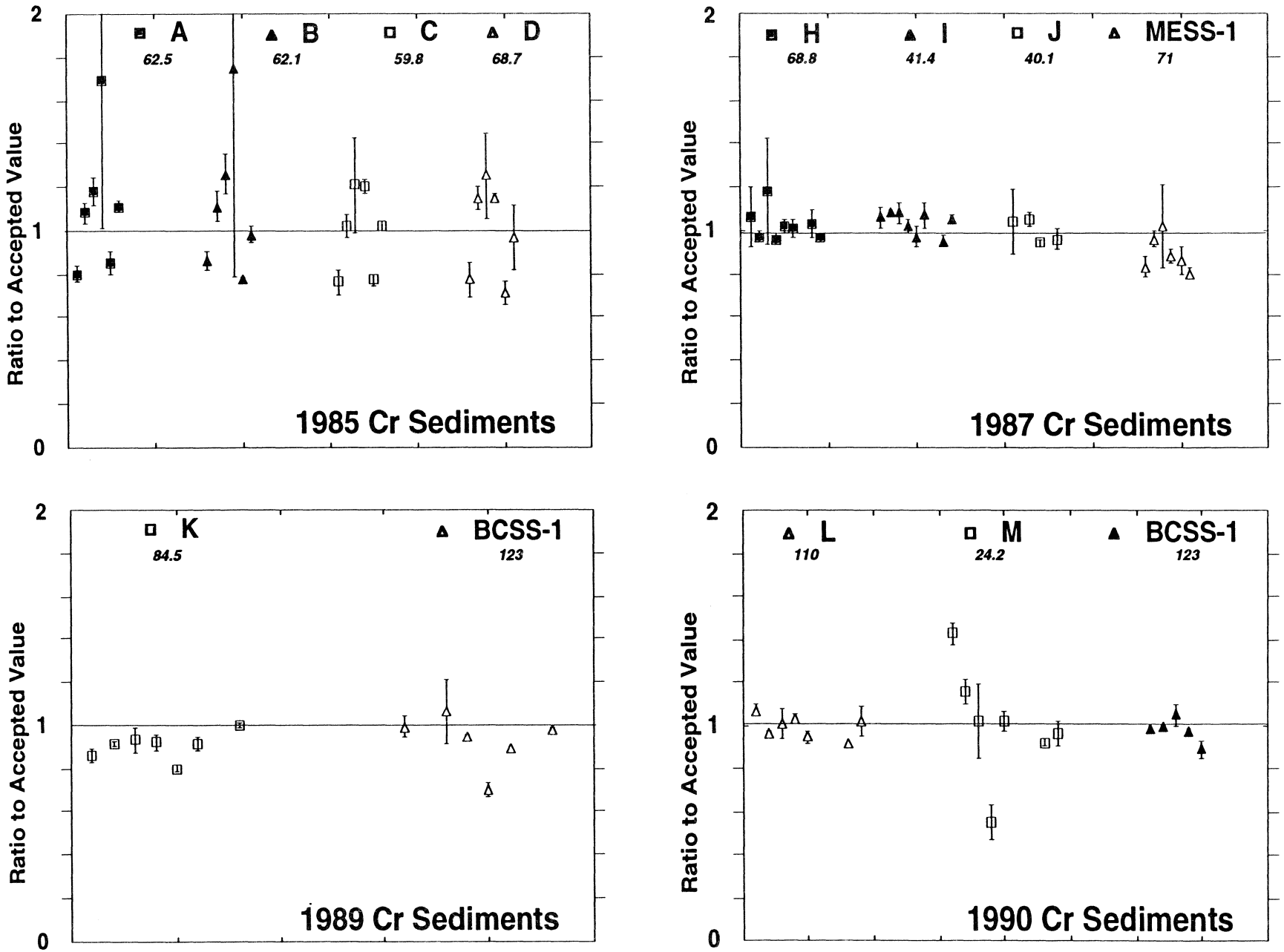

A
62.5
B
62.1
C
59.8
D
68.7
1985 Cr Sediments
H
68.8
I
41.4
J
40.1
MESS-1
71
1987 Cr Sediments
K
84.5
BCSS-1
123
1989 Cr Sediments
L
110
M
24.2
BCSS-1
123
1990 Cr Sediments
Ratio to Accepted Value
0
1
2

Figure 5

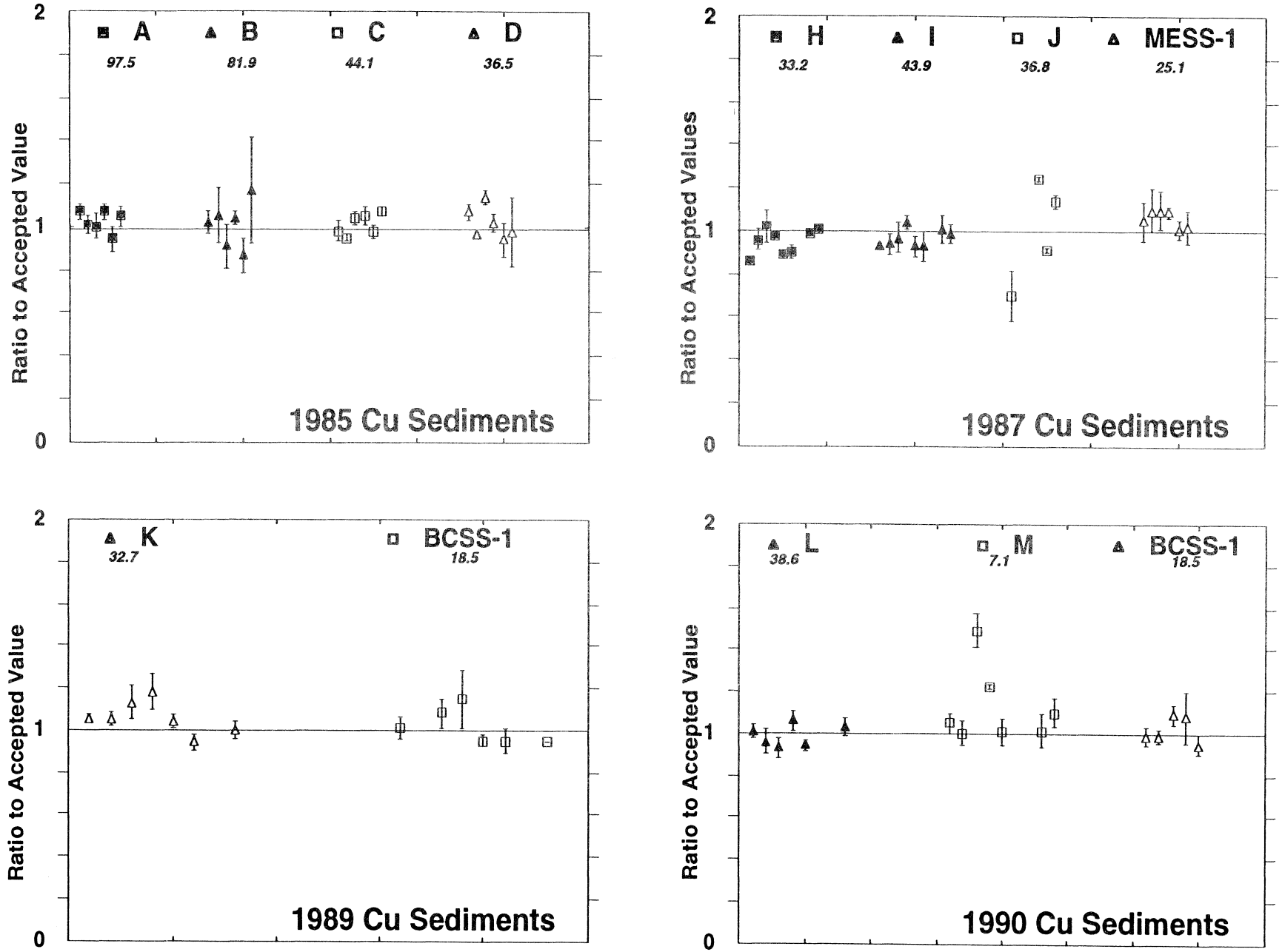

A
97.5
B
81.9
C
44.1
D
36.5
Ratio to Accepted Value
1985 Cu Sediments
H
33.2
I
43.9
J
36.8
MESS-1
25.1
Ratio to Accepted Values
1987 Cu Sediments
K
32.7
BCSS-1
18.5
Ratio to Accepted Value
1989 Cu Sediments
L
38.6
M
7.1
BCSS-1
18.5
Ratio to Accepted Value
1990 Cu Sediments
0
1
2

Figure 6

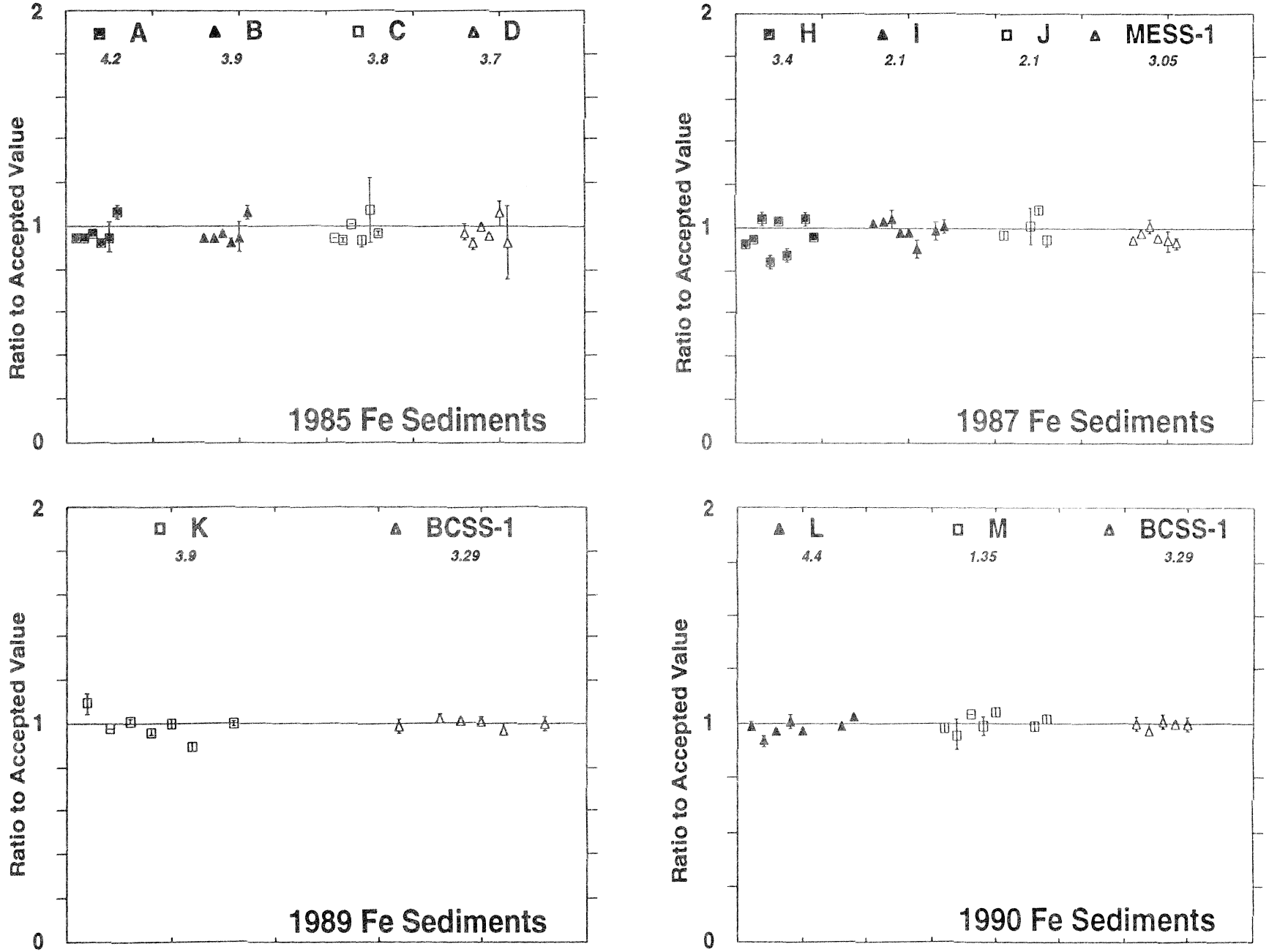

A
4.2
B
3.9
C
3.8
D
3.7
1985 Fe Sediments
H
3.4
I
2.1
J
2.1
MESS-1
3.05
1987 Fe Sediments
K
3.9
BCSS-1
3.29
1989 Fe Sediments
L
4.4
M
1.35
BCSS-1
3.29
1990 Fe Sediments
Ratio to Accepted Value
0
1
2

Figure 7

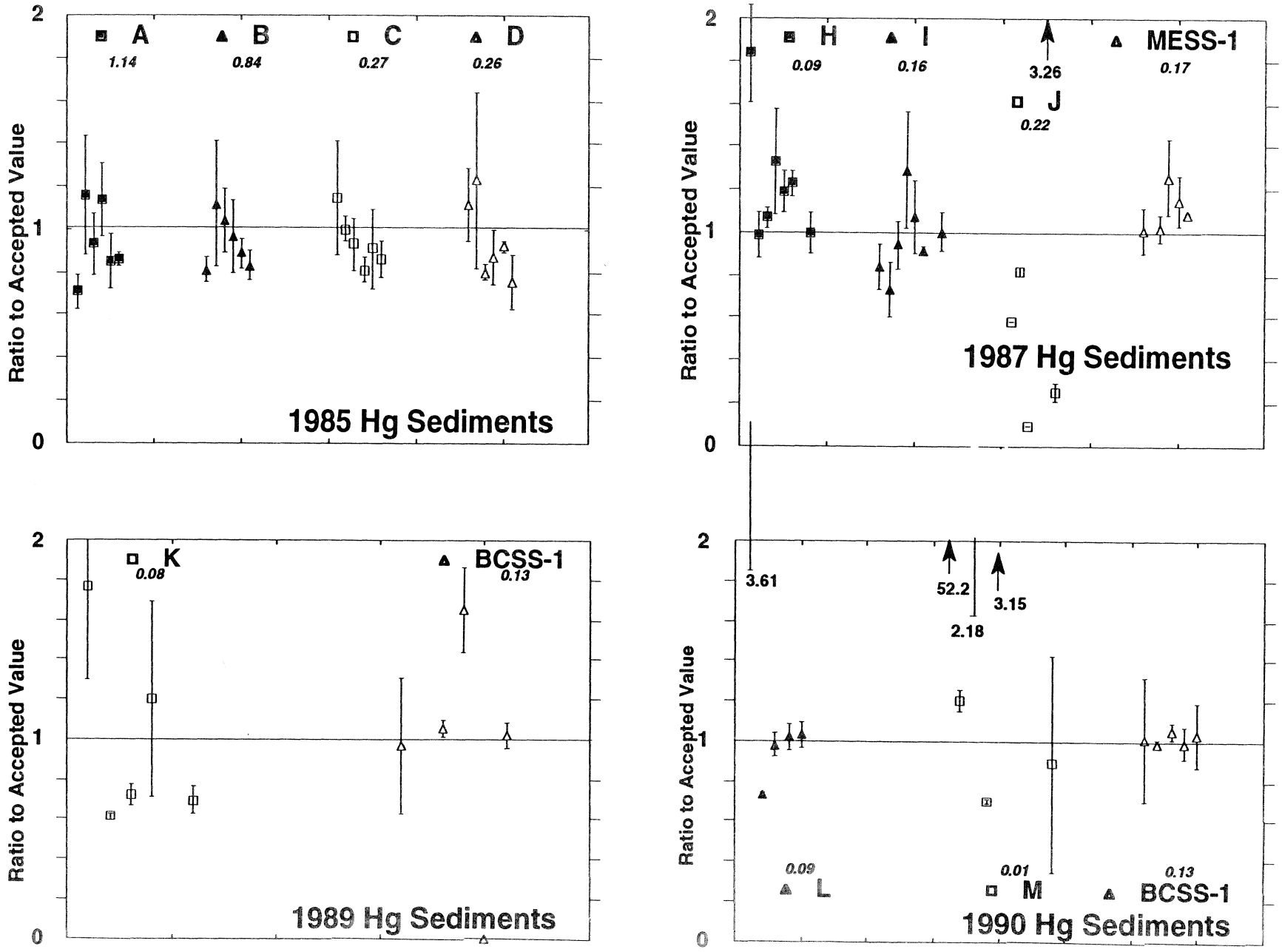

Ratio to Accepted Value
A
1.14
B
0.84
C
0.27
D
0.26
1985 Hg Sediments
H
0.09
I
0.16
3.26
J
0.22
MESS-1
0.17
1987 Hg Sediments
K
0.08
BCSS-1
0.13
1989 Hg Sediments
3.61
52.2
2.18
3.15
0.09
L
0.01
M
0.13
BCSS-1
1990 Hg Sediments

Figure 8

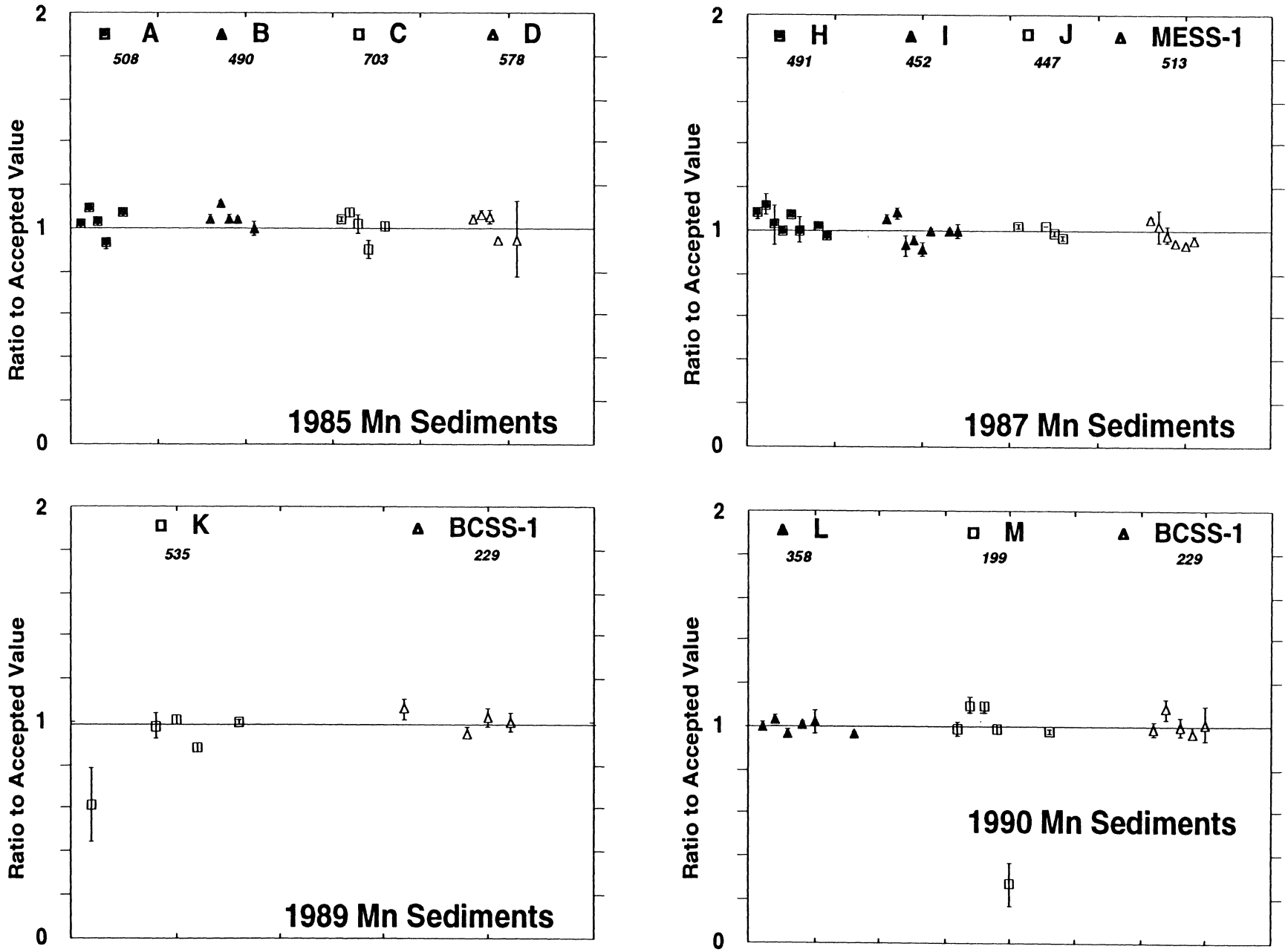

A
508
B
490
C
703
D
578
1985 Mn Sediments
H
491
I
452
J
447
MESS-1
513
1987 Mn Sediments
K
535
BCSS-1
229
1989 Mn Sediments
L
358
M
199
BCSS-1
229
1990 Mn Sediments
Ratio to Accepted Value
0
1
2

Figure 9

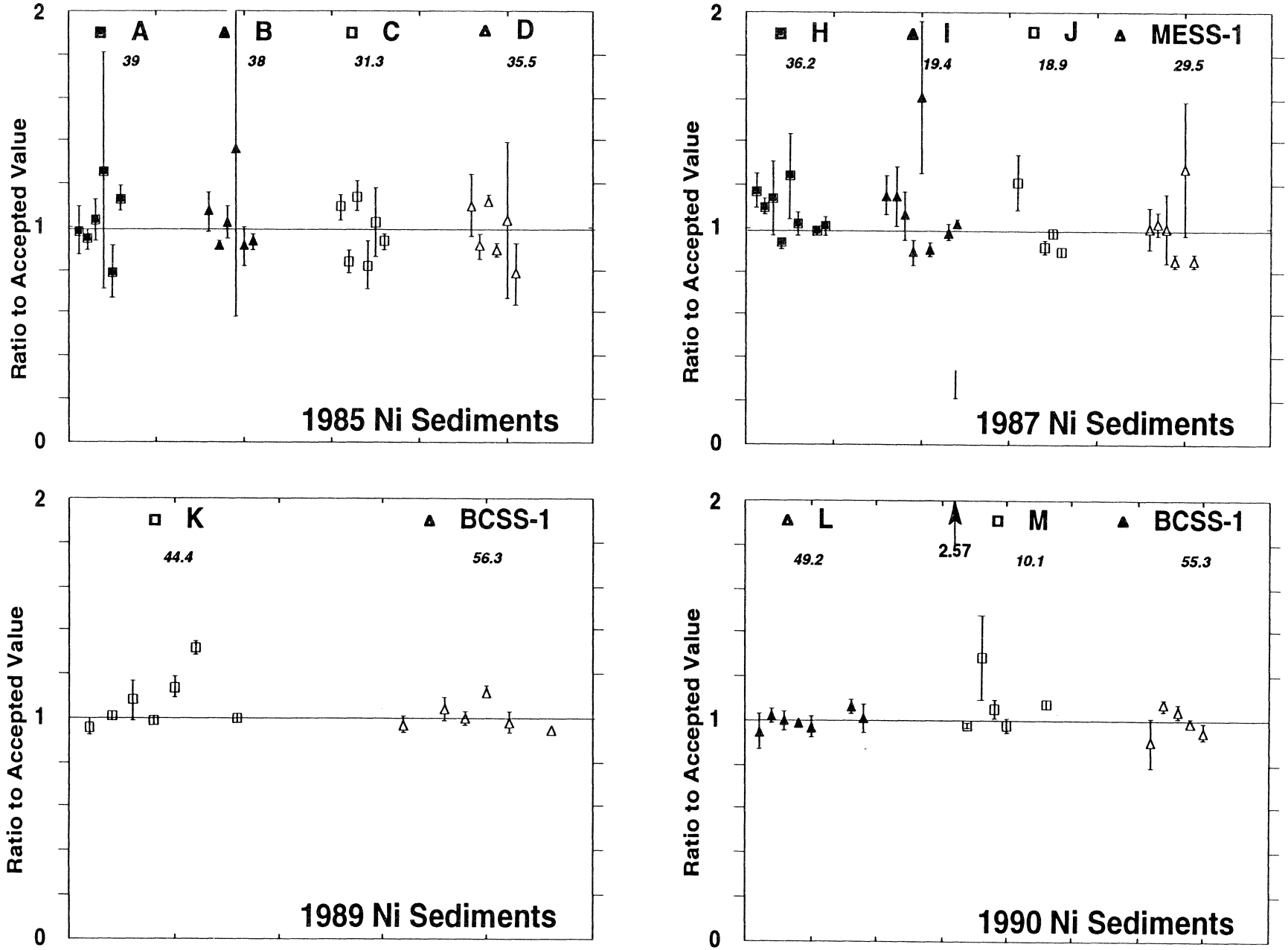

A
B
C
D
39
38
31.3
35.5
1985 Ni Sediments
H
I
J
MESS-1
36.2
19.4
18.9
29.5
1987 Ni Sediments
K
BCSS-1
44.4
56.3
1989 Ni Sediments
L
M
BCSS-1
49.2
2.57
10.1
55.3
1990 Ni Sediments
Ratio to Accepted Value
0
1
2

Figure 10

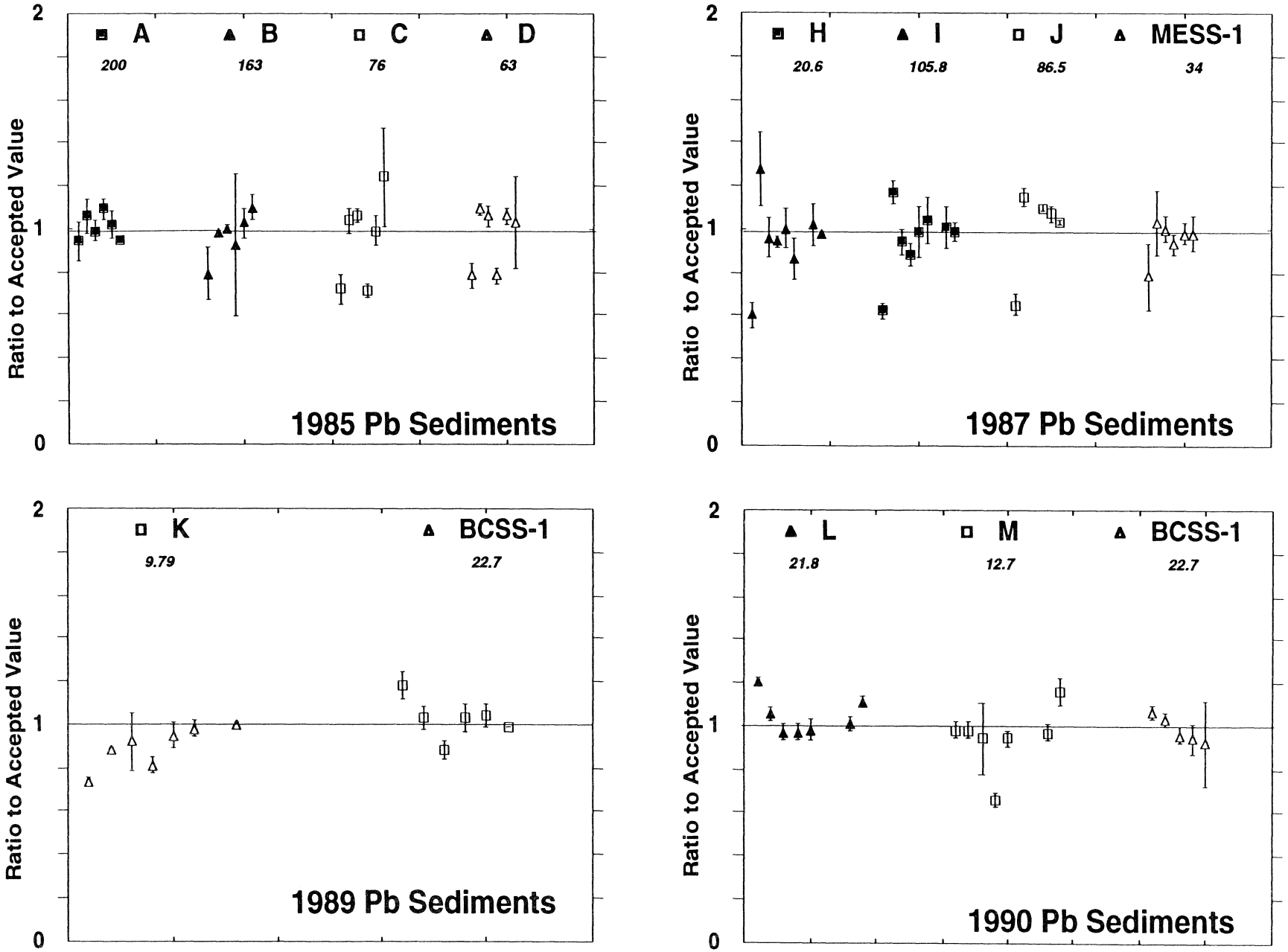

A
B
C
D
200
163
76
63
1985 Pb Sediments
H
I
J
MESS-1
20.6
105.8
86.5
34
1987 Pb Sediments
K
BCSS-1
9.79
22.7
1989 Pb Sediments
L
M
BCSS-1
21.8
12.7
22.7
1990 Pb Sediments
Ratio to Accepted Value
0
1
2

Figure 11

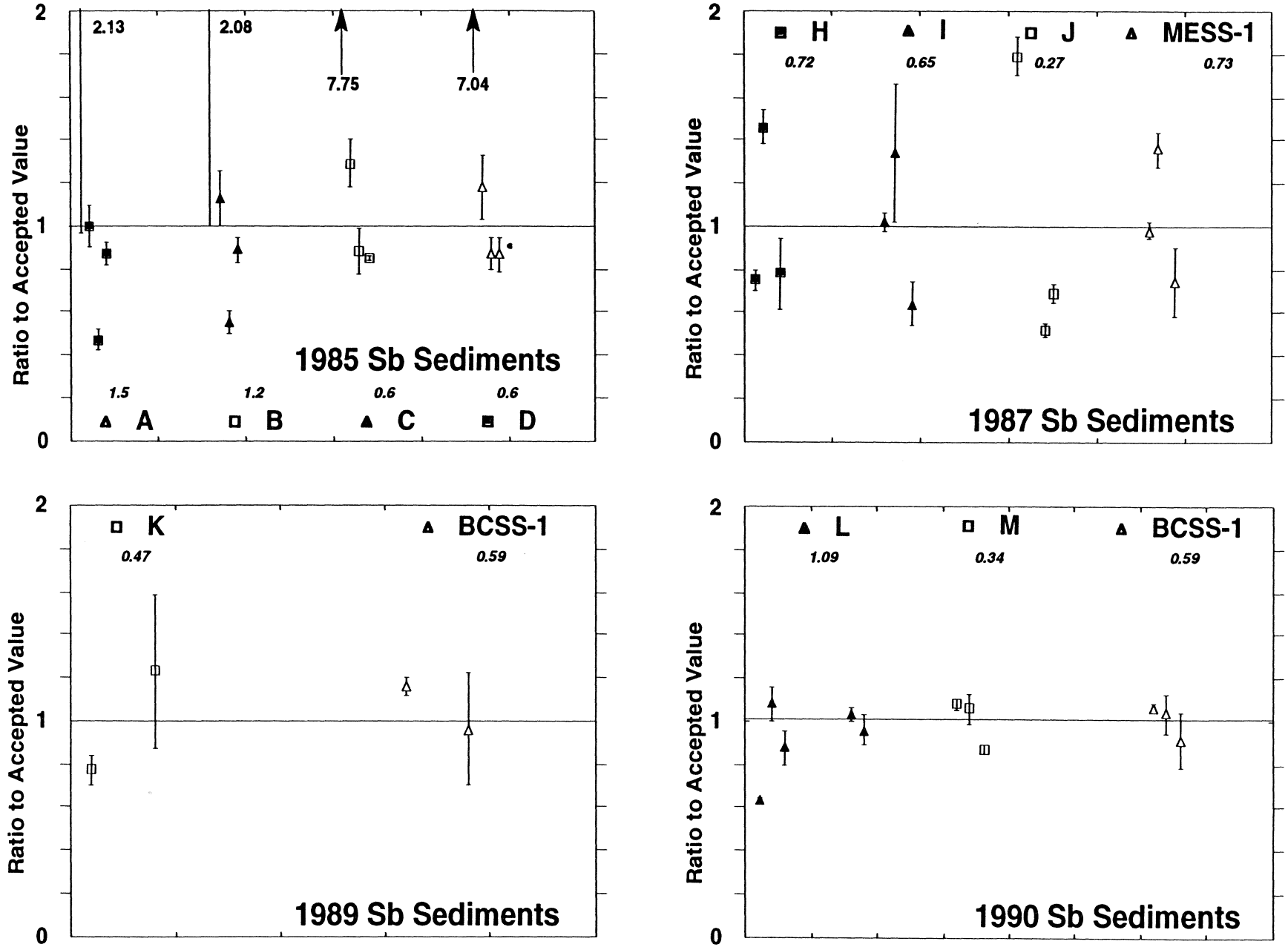

Ratio to Accepted Value
2
1
0
2.13
2.08
7.75
7.04
1.5
1.2
0.6
0.6
A
B
C
D
1985 Sb Sediments
H
I
J
MESS-1
0.72
0.65
0.27
0.73
1987 Sb Sediments
K
BCSS-1
0.47
0.59
1989 Sb Sediments
L
M
BCSS-1
1.09
0.34
0.59
1990 Sb Sediments

Figure 12

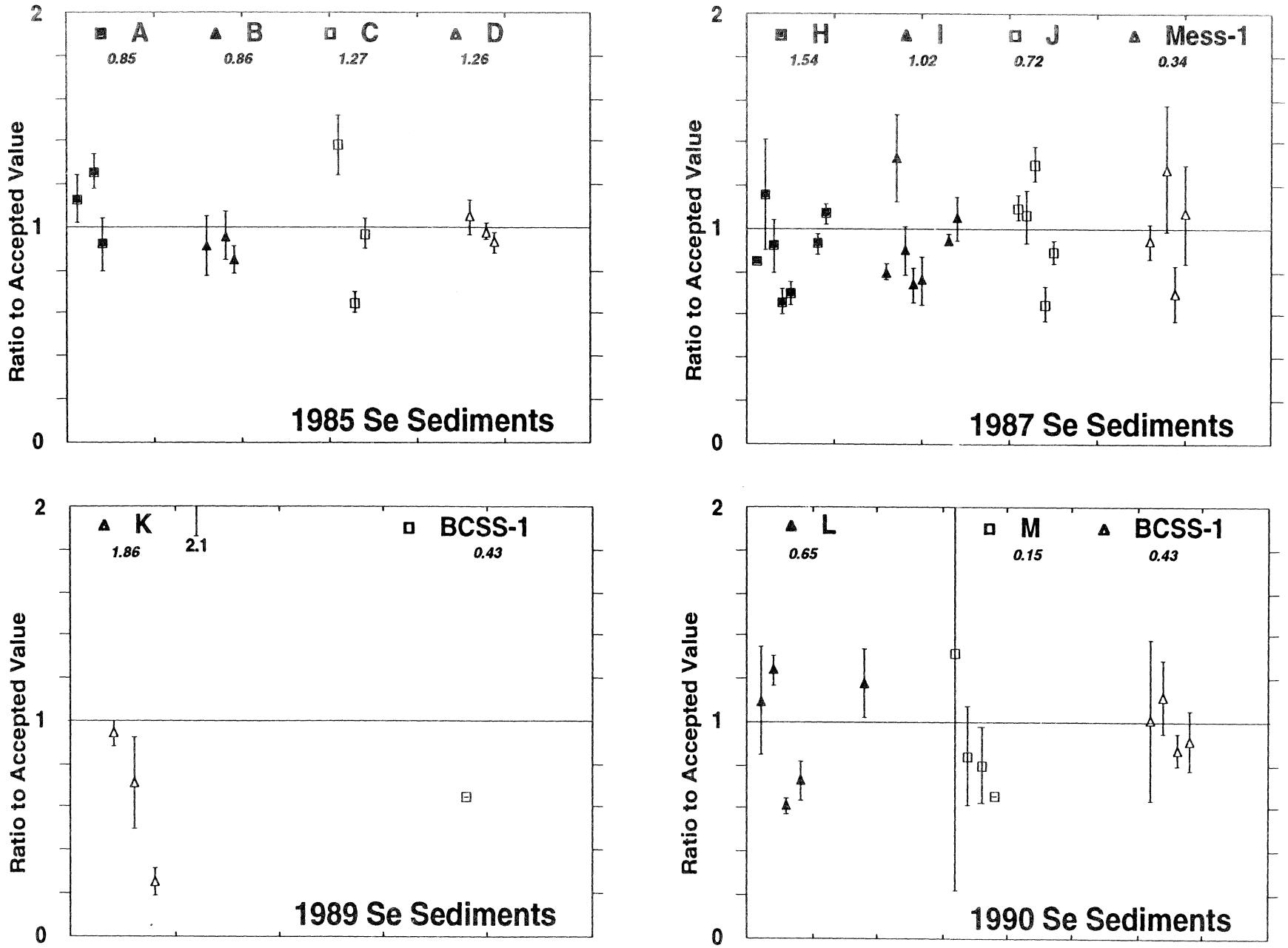

A
0.85
B
0.86
C
1.27
D
1.26
1985 Se Sediments
H
1.54
I
1.02
J
0.72
Mess-1
0.34
1987 Se Sediments
K
1.86
2.1
BCSS-1
0.43
1989 Se Sediments
L
0.65
M
0.15
BCSS-1
0.43
1990 Se Sediments
Ratio to Accepted Value
0
1
2

Figure 13

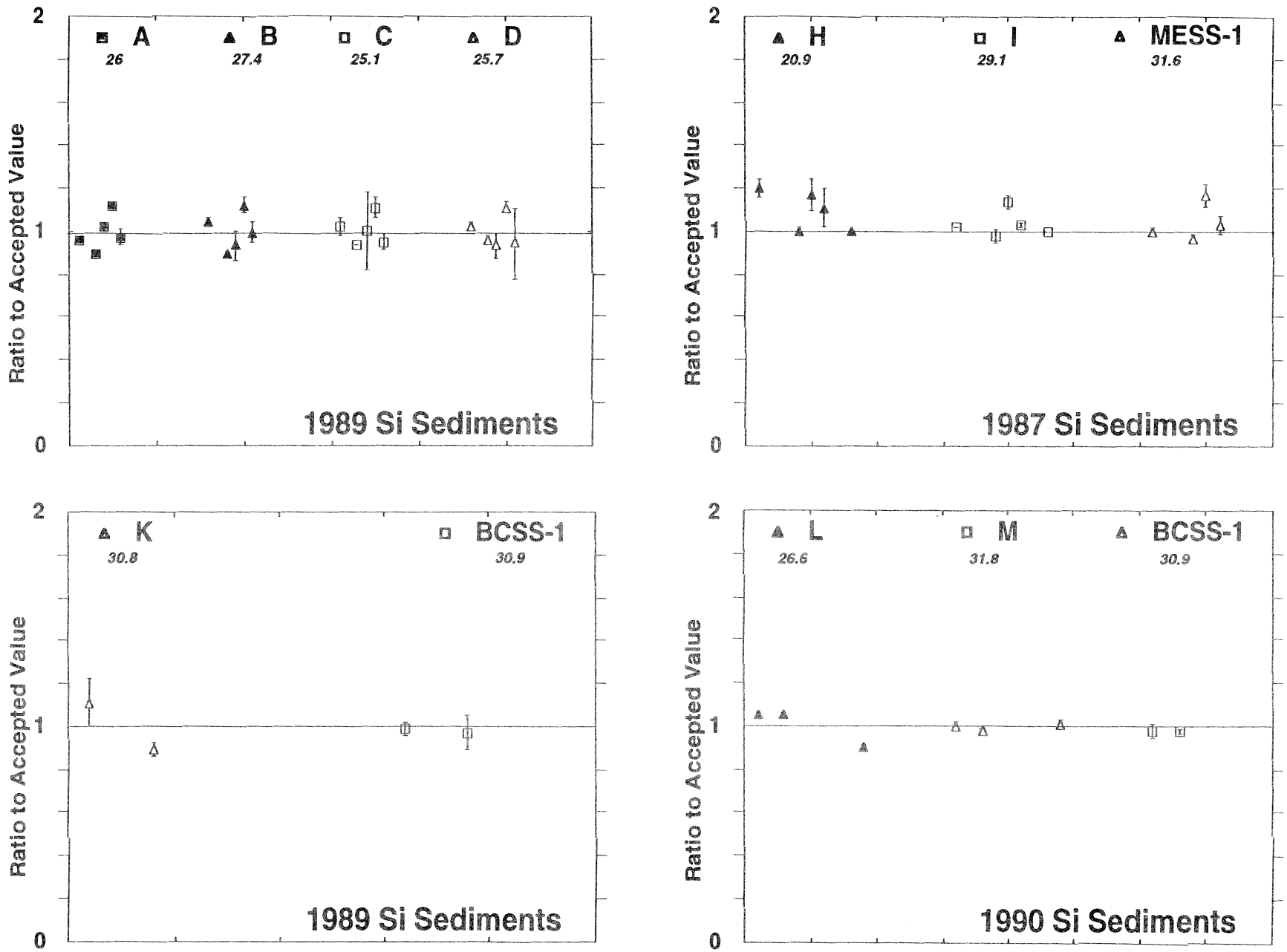

A
26
B
27.4
C
25.1
D
25.7
1989 Si Sediments
H
20.9
I
29.1
MESS-1
31.6
1987 Si Sediments
K
30.8
BCSS-1
30.9
1989 Si Sediments
L
26.6
M
31.8
BCSS-1
30.9
1990 Si Sediments
Ratio to Accepted Value
0
1
2

Figure 14

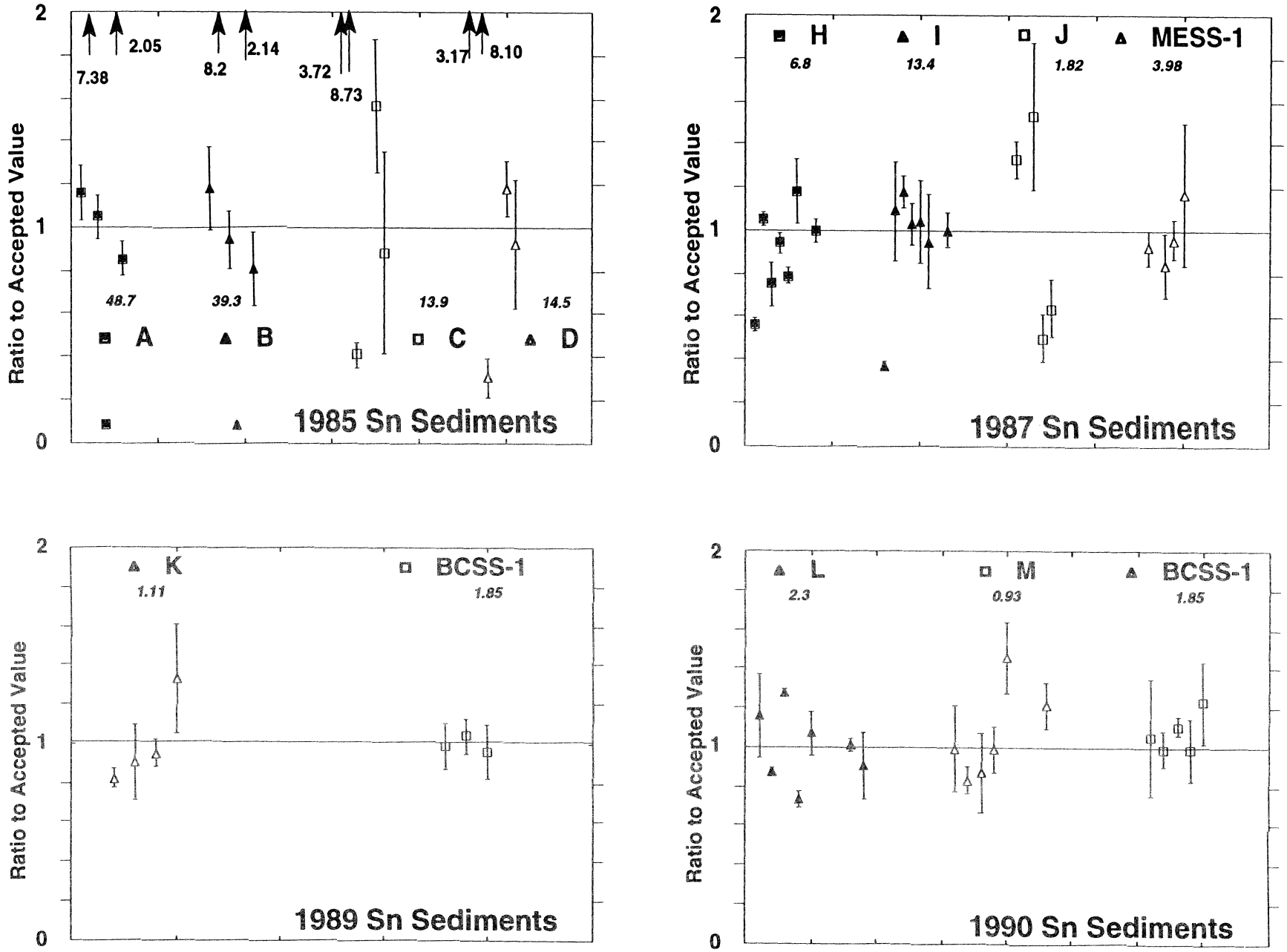
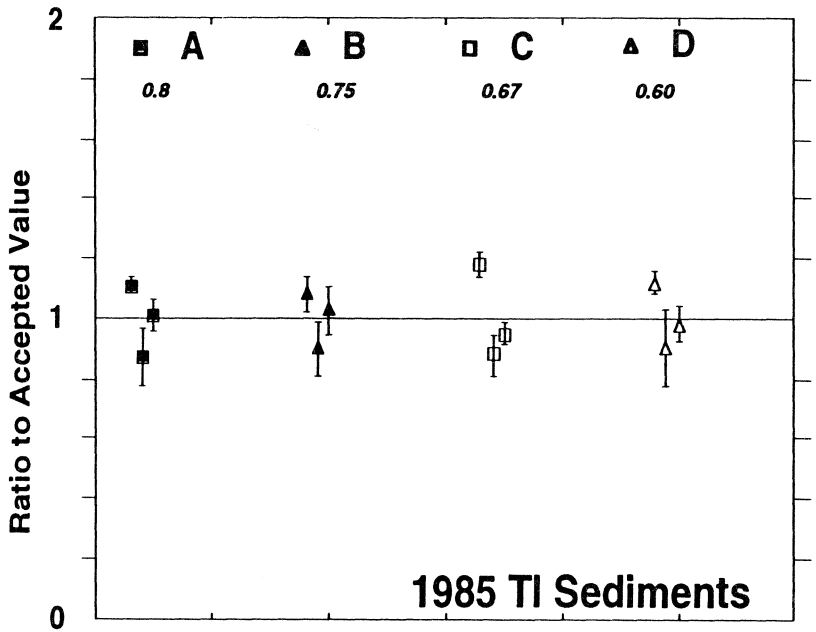

Ratio to Accepted Value
2
1
0
7.38
2.05
8.2
2.14
3.72
8.73
3.17
8.10
48.7
39.3
13.9
14.5
A
B
C
D
1985 Sn Sediments
H
I
J
MESS-1
6.8
13.4
1.82
3.98
1987 Sn Sediments
K
BCSS-1
1.11
1.85
1989 Sn Sediments
L
M
BCSS-1
2.3
0.93
1.85
1990 Sn Sediments

Figure 15


2
1
0
Ratio to Accepted Value
A
B
C
D
0.8
0.75
0.67
0.60
1985 TI Sediments

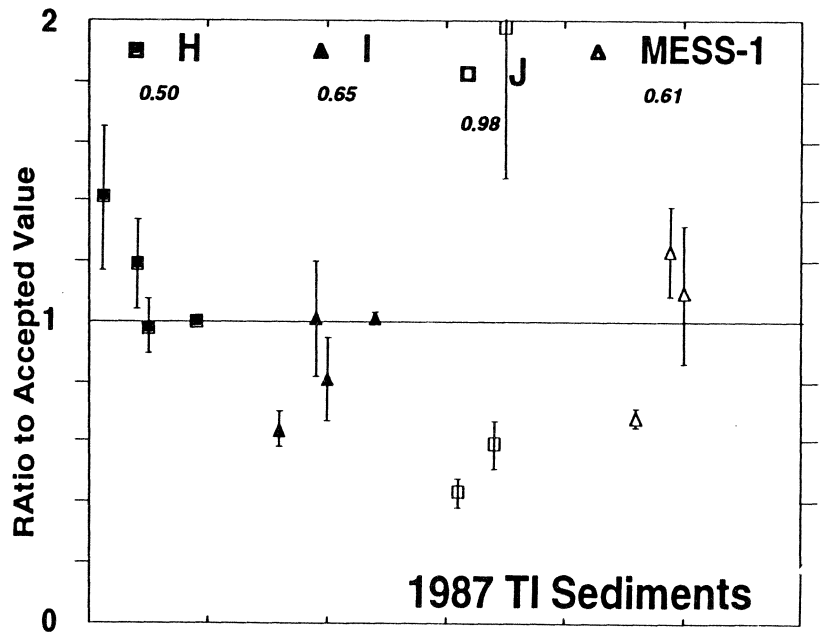

2
1
0
RAtio to Accepted Value
H
I
J
MESS-1
0.50
0.65
0.98
0.61
1987 TI Sediments

Figure 16

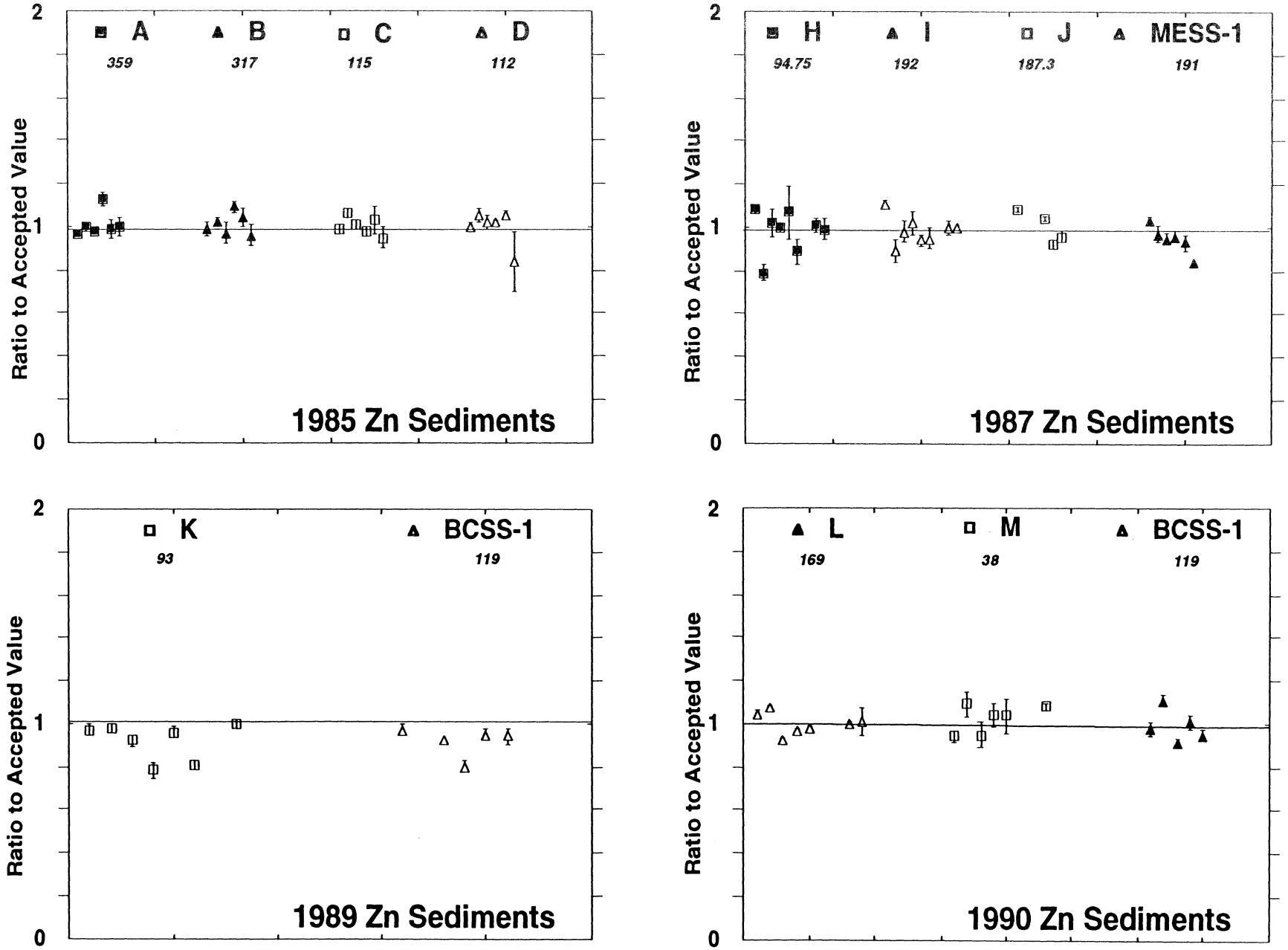

A
B
C
D
359
317
115
112
1985 Zn Sediments
H
I
J
MESS-1
94.75
192
187.3
191
1987 Zn Sediments
K
BCSS-1
93
119
1989 Zn Sediments
L
M
BCSS-1
169
38
119
1990 Zn Sediments
Ratio to Accepted Value
0
1
2

Figure 17

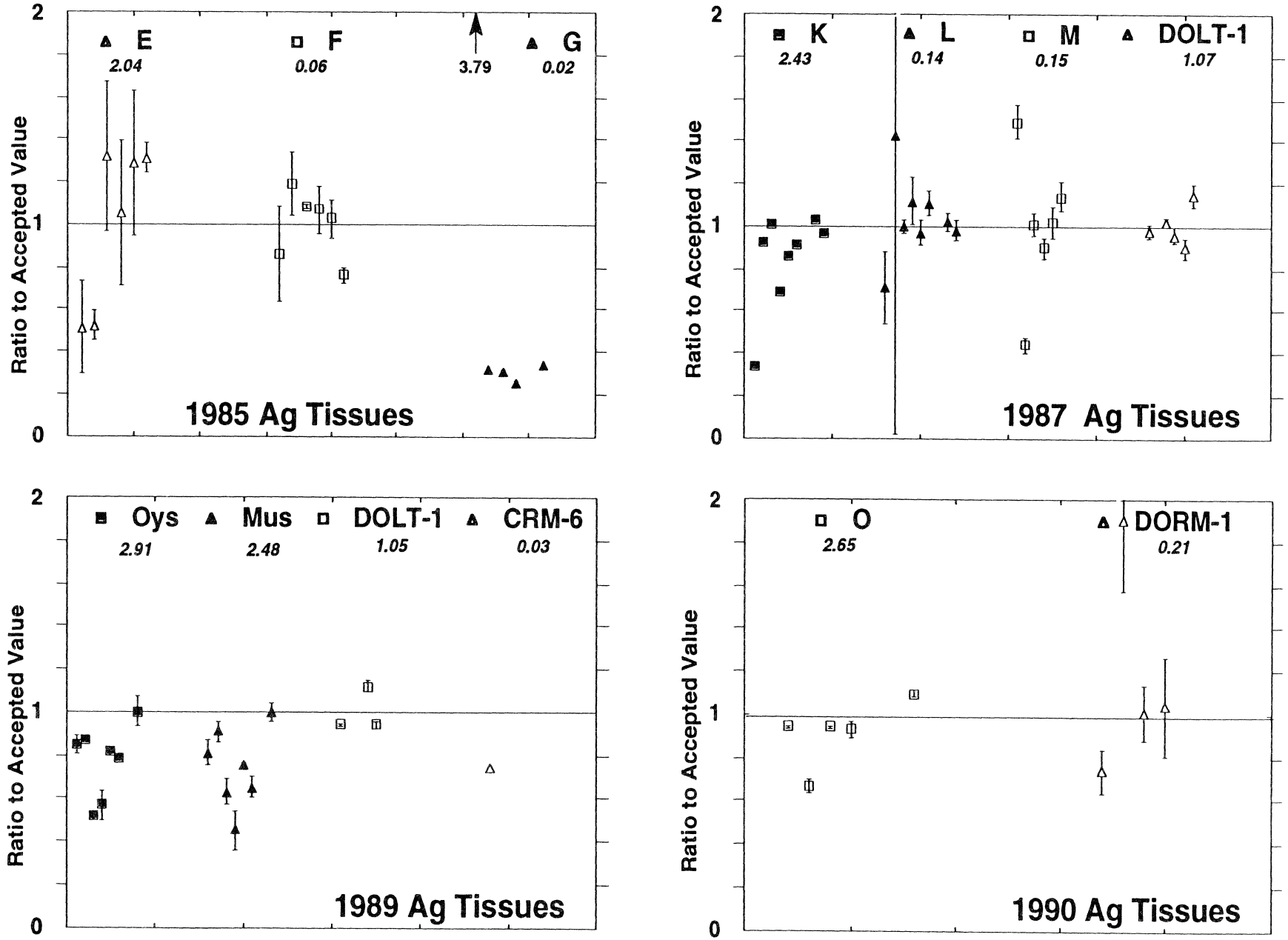

E
2.04
F
0.06
3.79
G
0.02
1985 Ag Tissues
K
2.43
L
0.14
M
0.15
DOLT-1
1.07
1987 Ag Tissues
Oys
2.91
Mus
2.48
DOLT-1
1.05
CRM-6
0.03
1989 Ag Tissues
O
2.65
DORM-1
0.21
1990 Ag Tissues
Ratio to Accepted Value
0
1
2

Figure 18

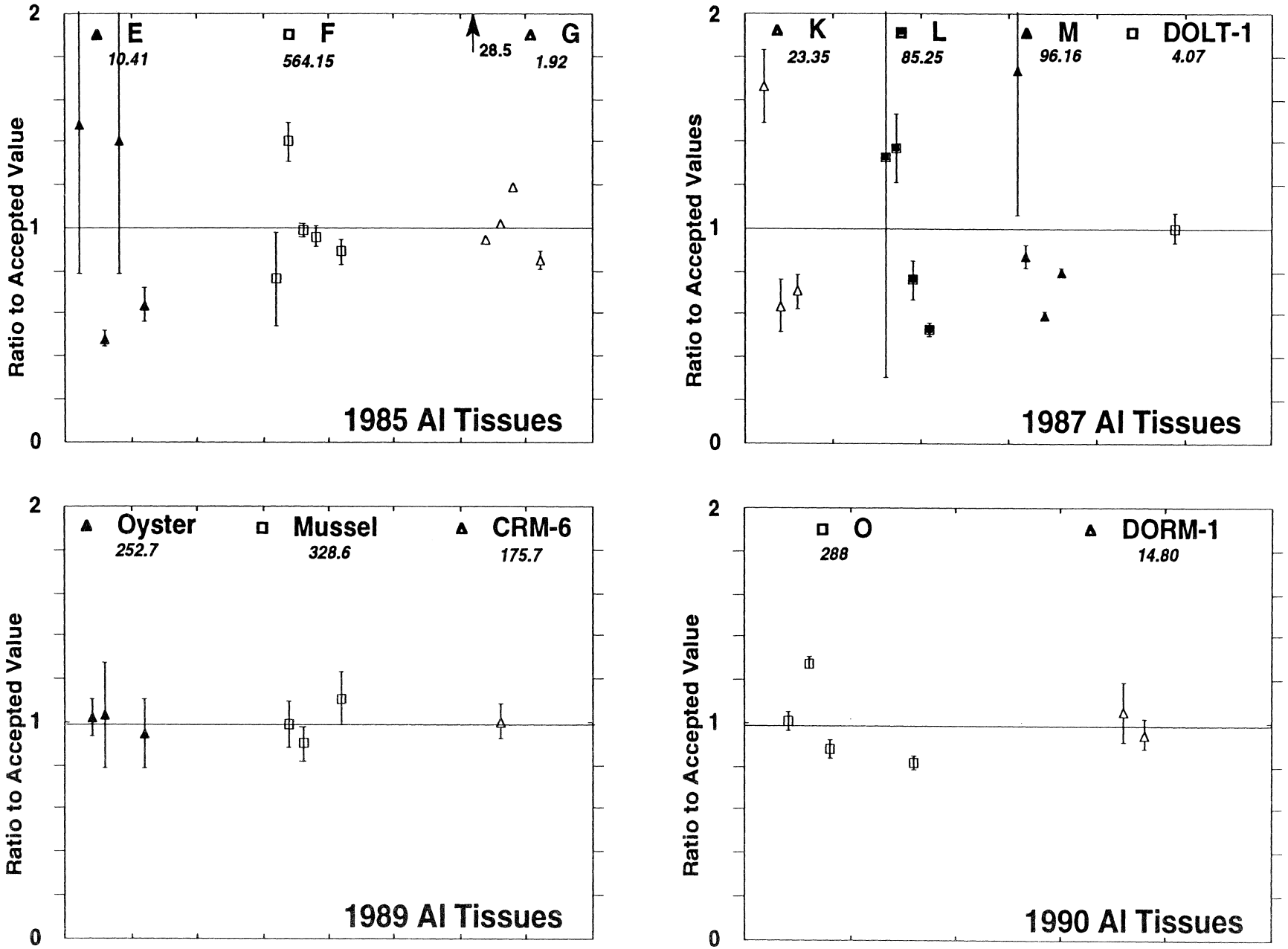

Ratio to Accepted Value
E
10.41
F
564.15
28.5
G
1.92
1985 Al Tissues
Ratio to Accepted Values
K
23.35
L
85.25
M
96.16
DOLT-1
4.07
1987 Al Tissues
Oyster
252.7
Mussel
328.6
CRM-6
175.7
1989 Al Tissues
O
288
DORM-1
14.80
1990 Al Tissues
0
1
2

Figure 19

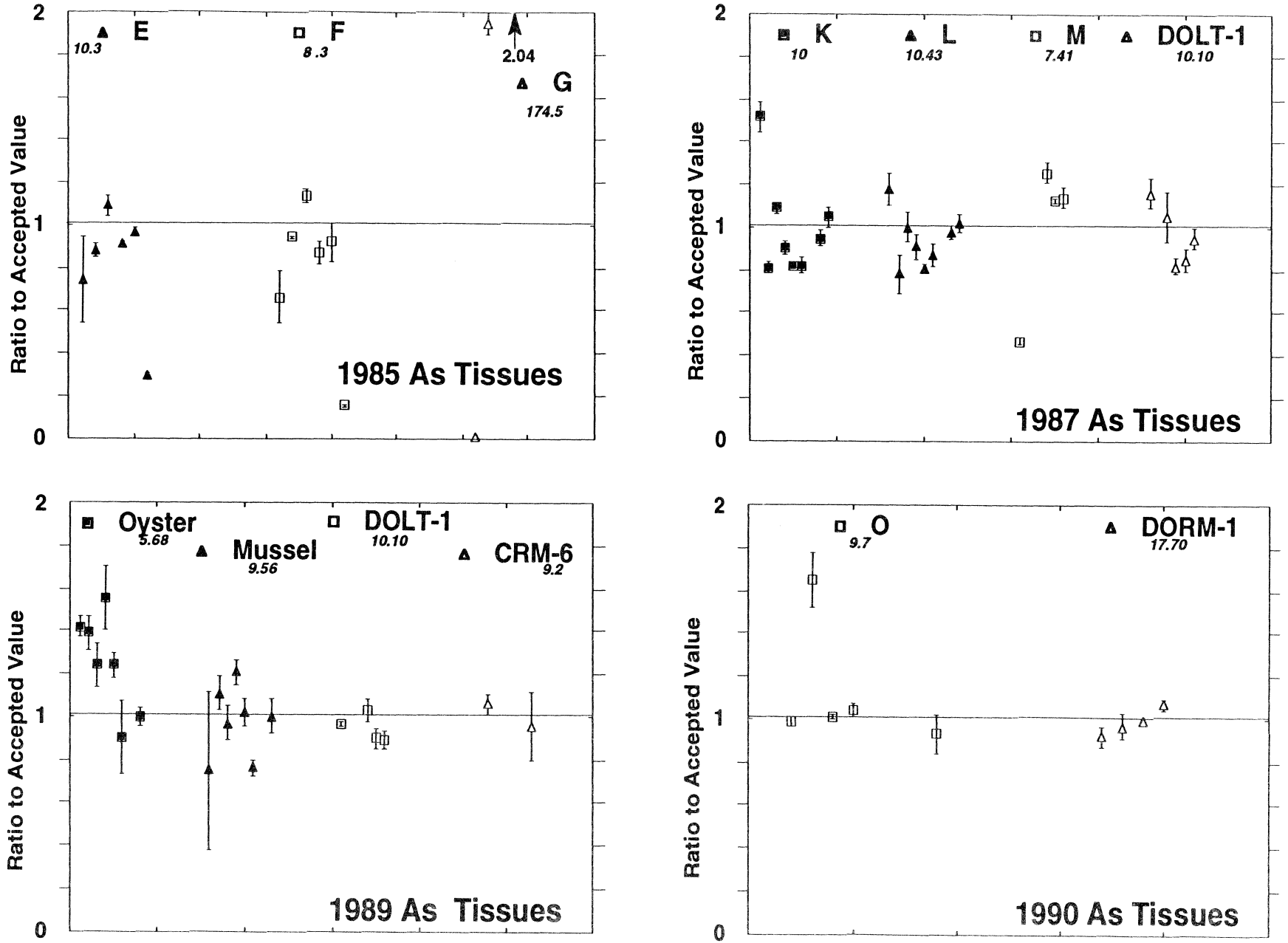

Ratio to Accepted Value
2
1
0
E
10.3
F
8.3
2.04
G
174.5
1985 As Tissues
K
10
L
10.43
M
7.41
DOLT-1
10.10
1987 As Tissues
Oyster
5.68
Mussel
9.56
DOLT-1
10.10
CRM-6
9.2
1989 As Tissues
O
9.7
DORM-1
17.70
1990 As Tissues

Figure 20

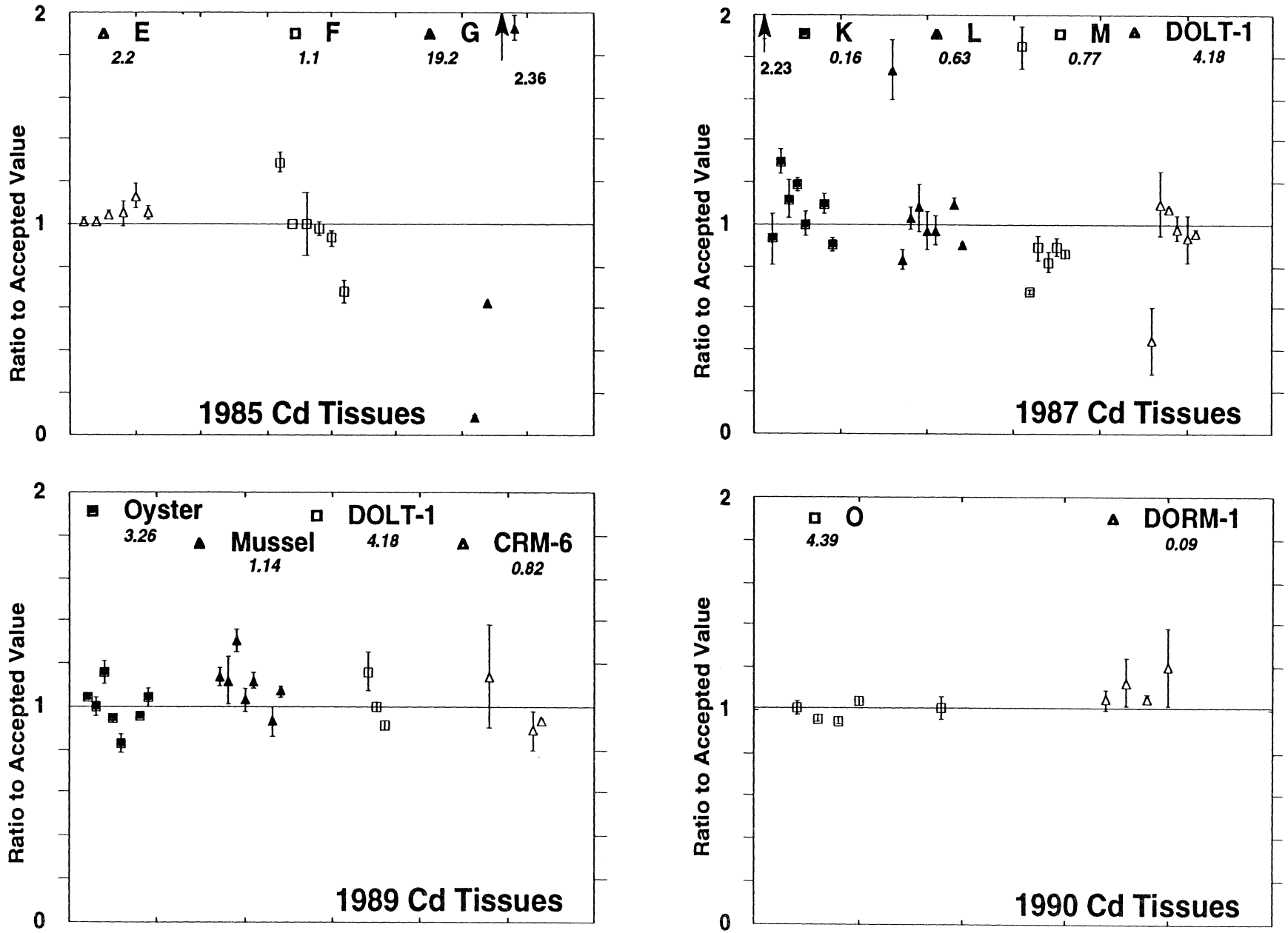

Ratio to Accepted Value
2
1
0
E
2.2
F
1.1
G
19.2
2.36
1985 Cd Tissues
K
2.23
0.16
L
0.63
M
0.77
DOLT-1
4.18
1987 Cd Tissues
Oyster
3.26
Mussel
1.14
DOLT-1
4.18
CRM-6
0.82
1989 Cd Tissues
O
4.39
DORM-1
0.09
1990 Cd Tissues

Figure 21

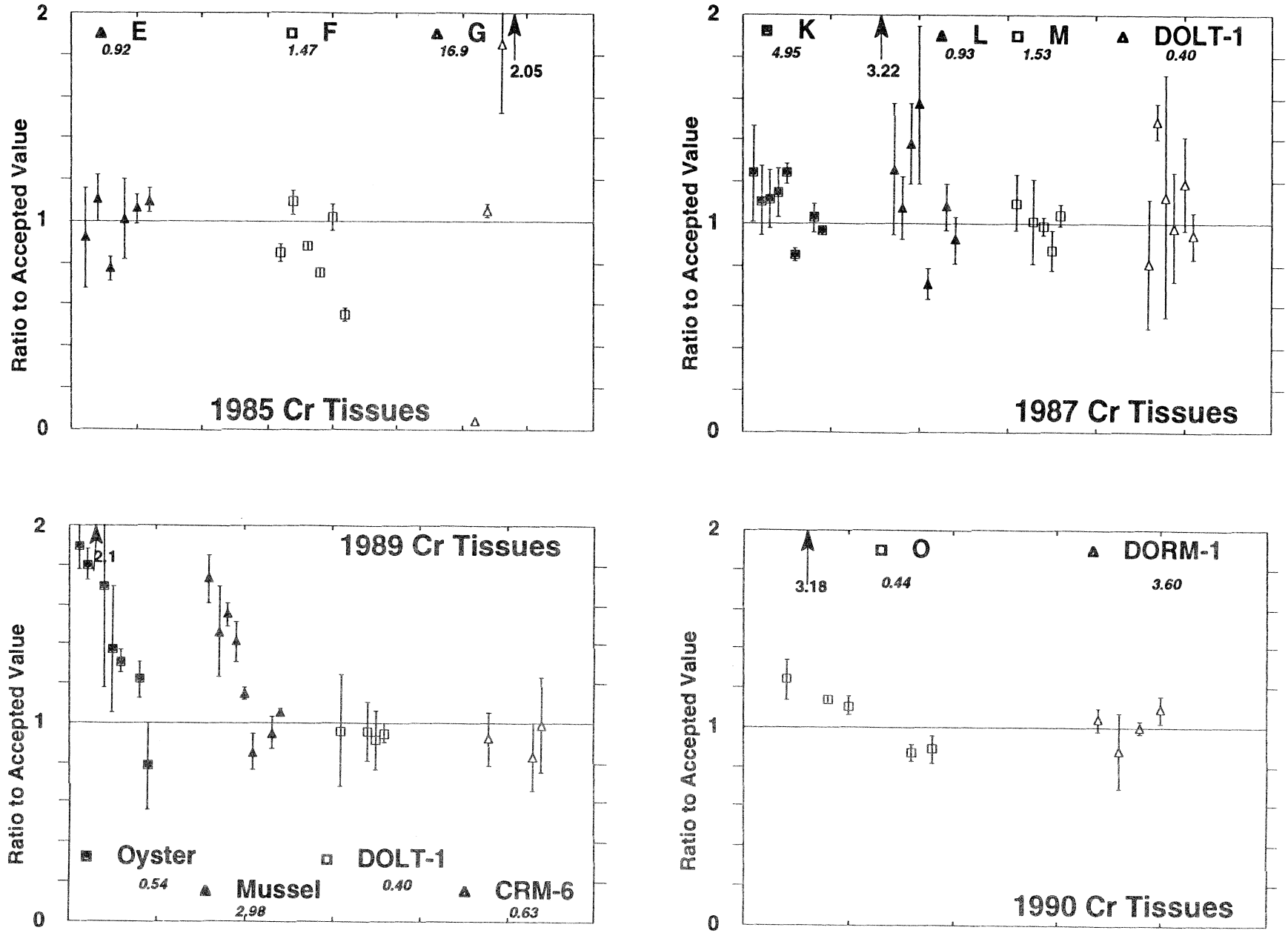

1985 Cr Tissues
E
0.92
F
1.47
G
16.9
2.05
1987 Cr Tissues
K
4.95
3.22
L
0.93
M
1.53
DOLT-1
0.40
1989 Cr Tissues
2.1
Oyster
0.54
Mussel
2.98
DOLT-1
0.40
CRM-6
0.63
1990 Cr Tissues
3.18
O
0.44
DORM-1
3.60
Ratio to Accepted Value
0
1
2

Figure 22

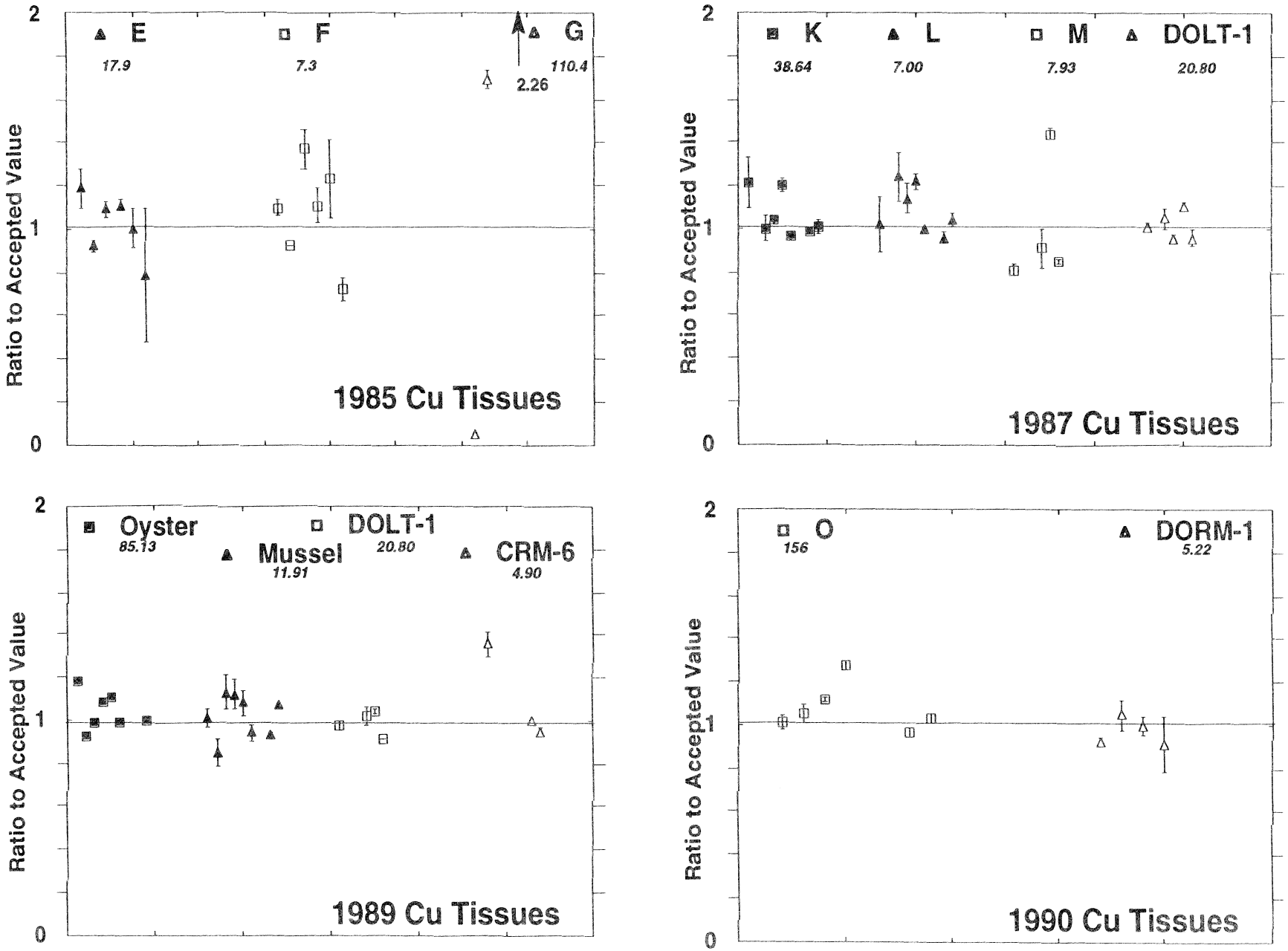

Ratio to Accepted Value
2
1
0
E
17.9
F
7.3
G
110.4
2.26
1985 Cu Tissues
K
38.64
L
7.00
M
7.93
DOLT-1
20.80
1987 Cu Tissues
Oyster
85.13
Mussel
11.91
DOLT-1
20.80
CRM-6
4.90
1989 Cu Tissues
O
156
DORM-1
5.22
1990 Cu Tissues

Figure 23

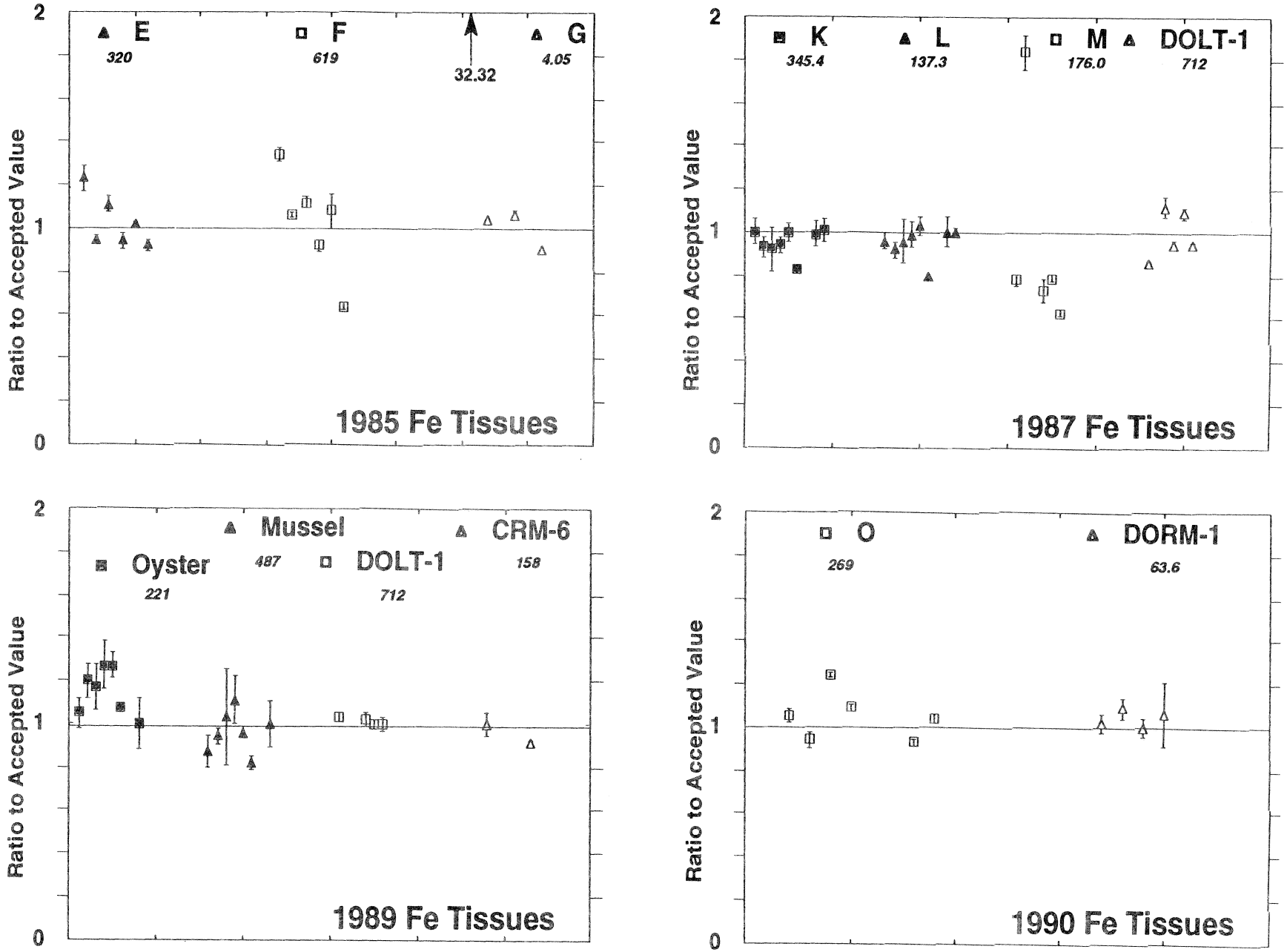

E
320
F
619
32.32
G
4.05
1985 Fe Tissues
K
345.4
L
137.3
M
176.0
DOLT-1
712
1987 Fe Tissues
Mussel
487
CRM-6
158
Oyster
221
DOLT-1
712
1989 Fe Tissues
O
269
DORM-1
63.6
1990 Fe Tissues
Ratio to Accepted Value
0
1
2

Figure 24

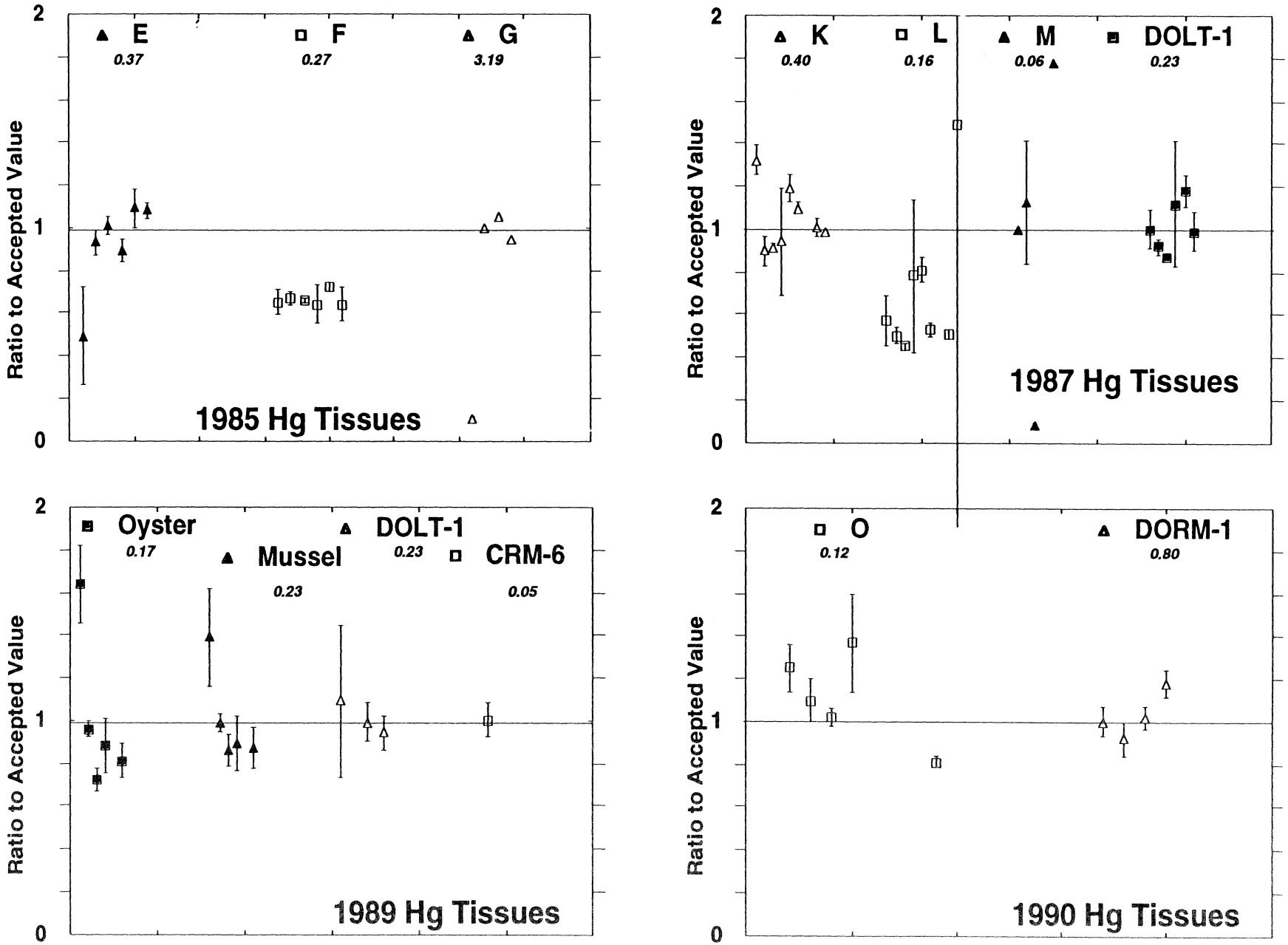

E
0.37
F
0.27
G
3.19
1985 Hg Tissues
K
0.40
L
0.16
M
0.06
DOLT-1
0.23
1987 Hg Tissues
Oyster
0.17
Mussel
0.23
DOLT-1
0.23
CRM-6
0.05
1989 Hg Tissues
O
0.12
DORM-1
0.80
1990 Hg Tissues
Ratio to Accepted Value
0
1
2

Figure 25

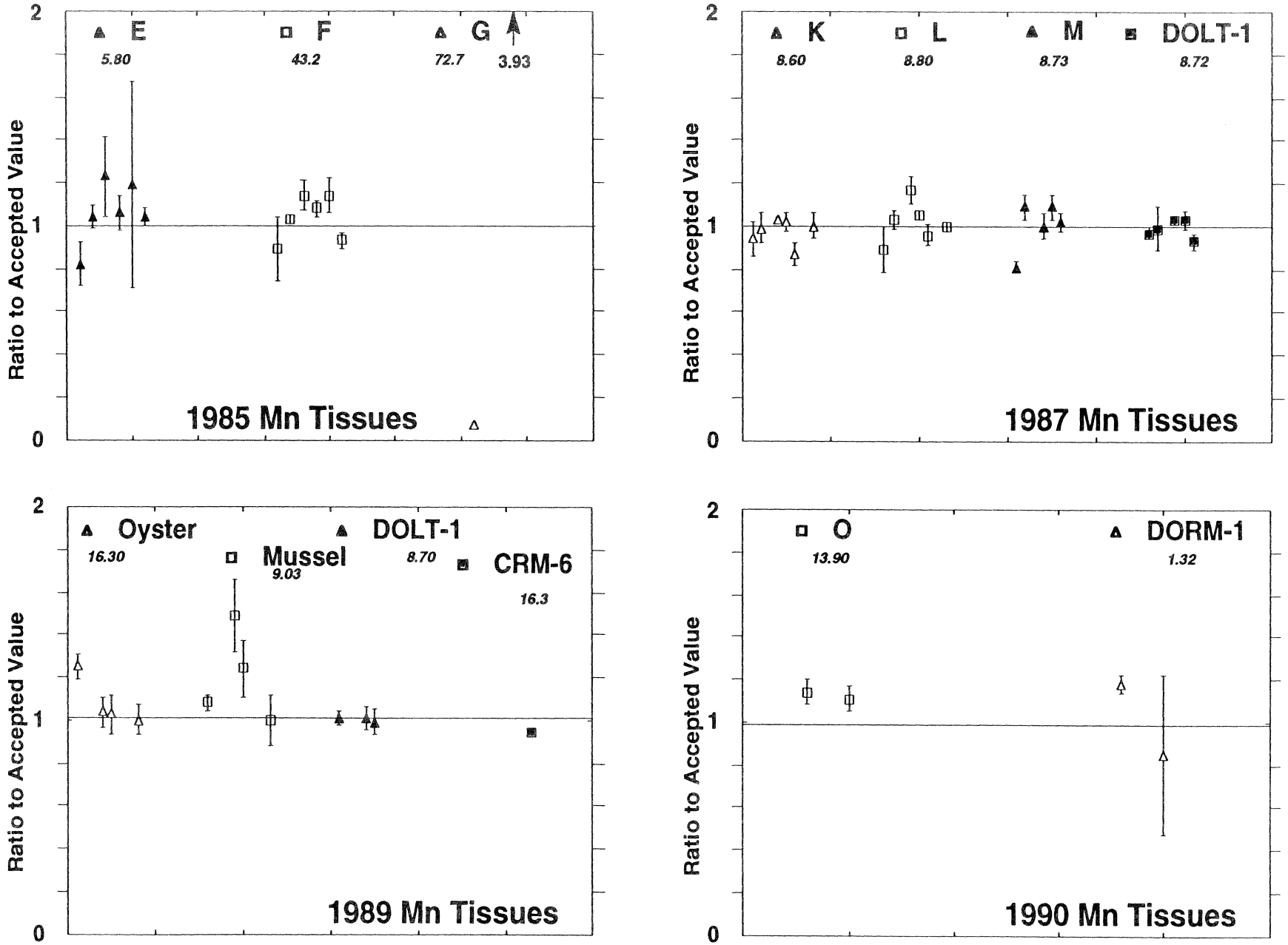

E
5.80
F
43.2
G
72.7
3.93
1985 Mn Tissues
K
8.60
L
8.80
M
8.73
DOLT-1
8.72
1987 Mn Tissues
Oyster
16.30
Mussel
9.03
DOLT-1
8.70
CRM-6
16.3
1989 Mn Tissues
O
13.90
DORM-1
1.32
1990 Mn Tissues
Ratio to Accepted Value
0
1
2

Figure 26

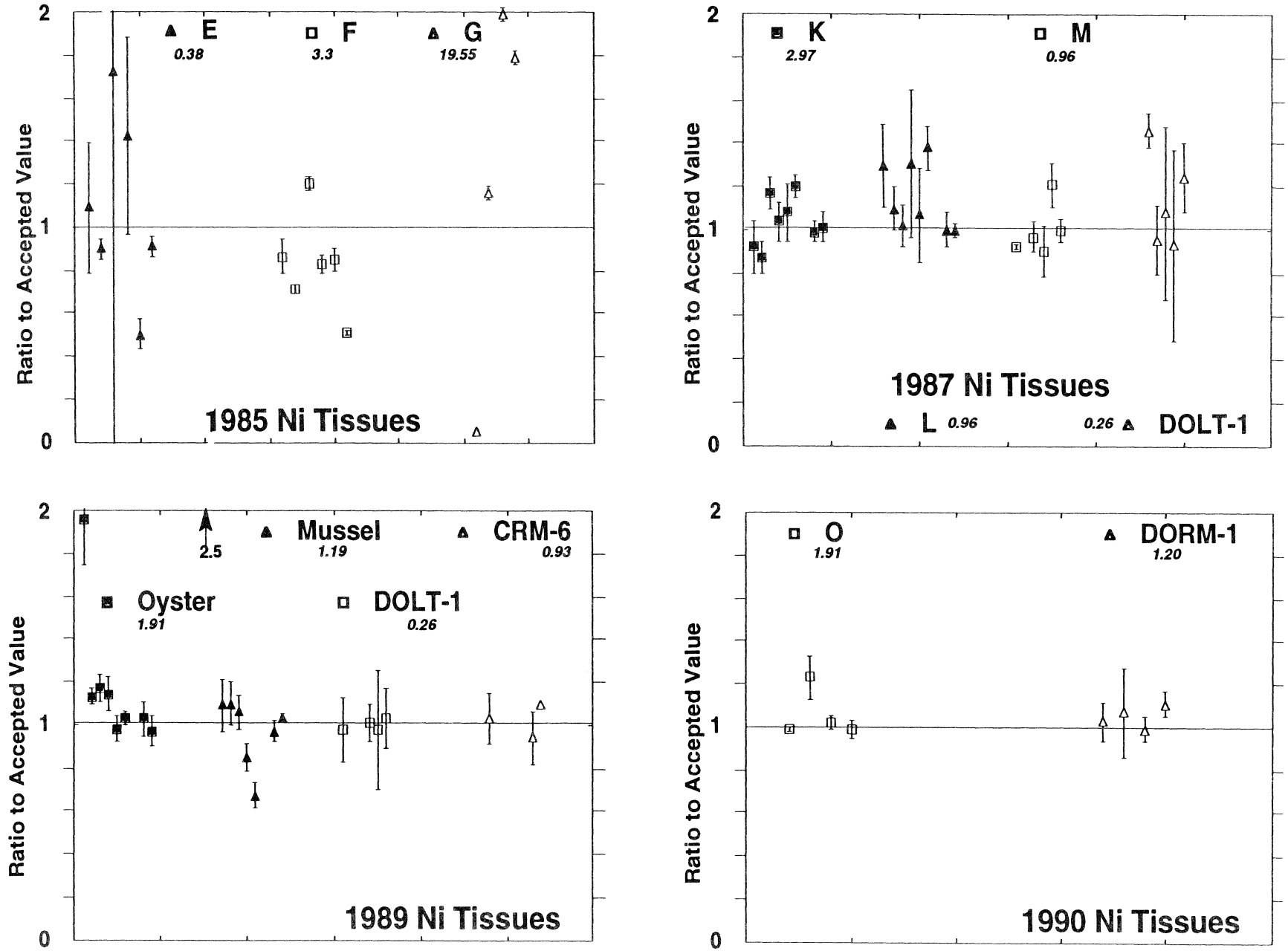

Ratio to Accepted Value
2
1
0
E
0.38
F
3.3
G
19.55
1985 Ni Tissues
K
2.97
M
0.96
L 0.96
0.26 DOLT-1
1987 Ni Tissues
2.5
Mussel
1.19
CRM-6
0.93
Oyster
1.91
DOLT-1
0.26
1989 Ni Tissues
O
1.91
DORM-1
1.20
1990 Ni Tissues

Figure 27

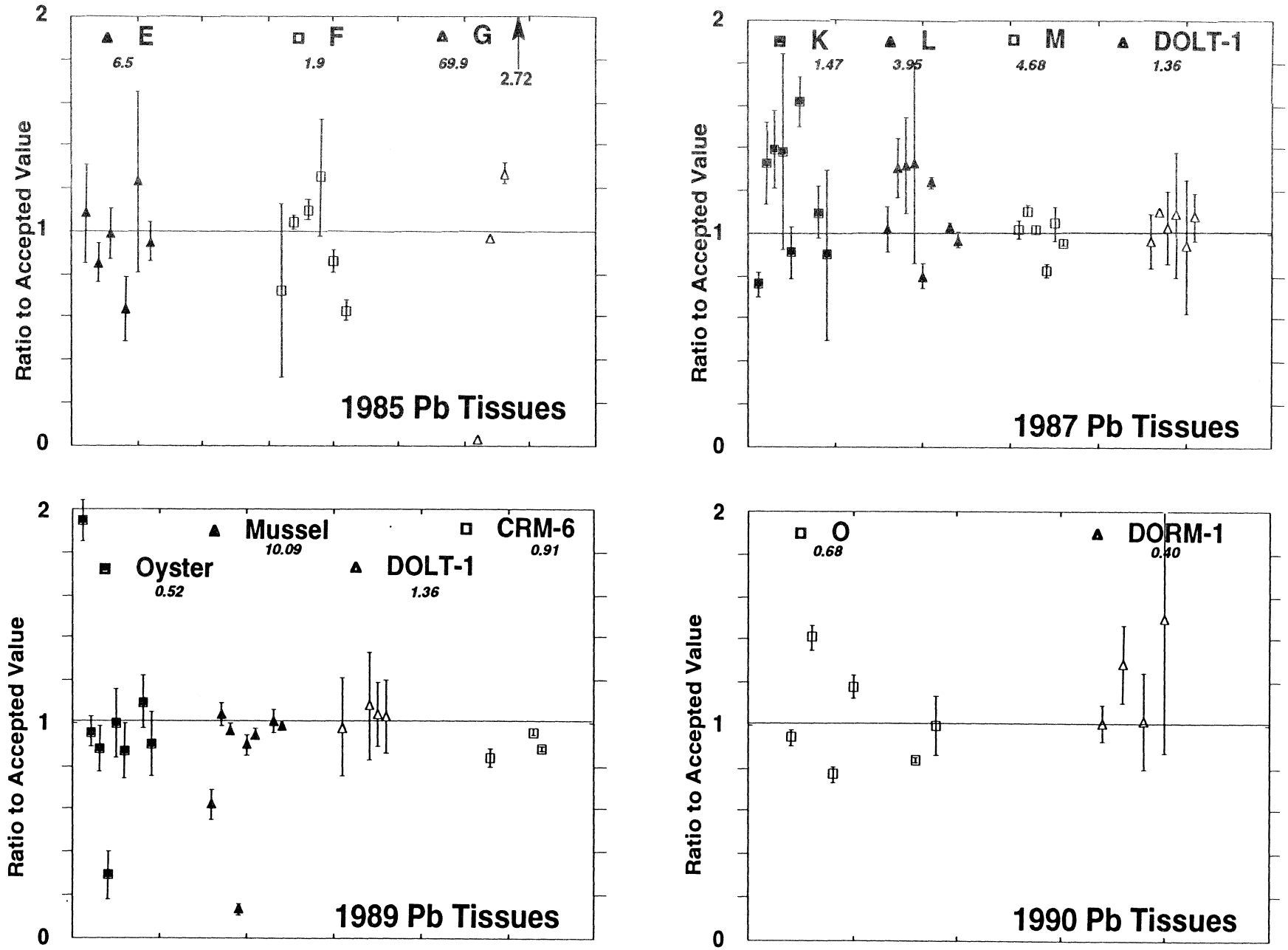

E
6.5
F
1.9
G
69.9
2.72
1985 Pb Tissues
K
1.47
L
3.95
M
4.68
DOLT-1
1.36
1987 Pb Tissues
Mussel
10.09
CRM-6
0.91
Oyster
0.52
DOLT-1
1.36
1989 Pb Tissues
O
0.68
DORM-1
0.40
1990 Pb Tissues
Ratio to Accepted Value
0
1
2

Figure 28

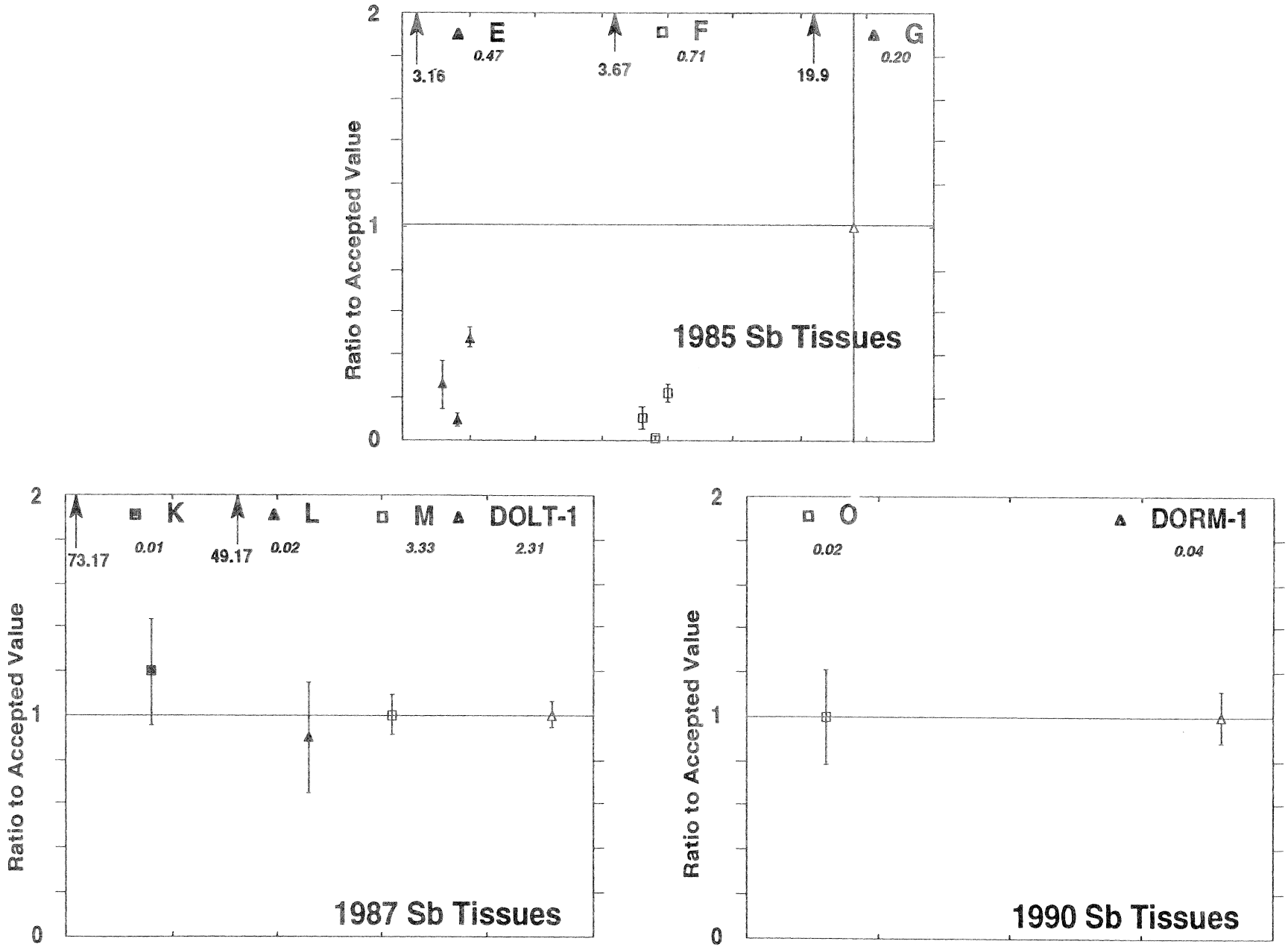

Ratio to Accepted Value
2
1
0
E
0.47
3.16
F
0.71
3.67
G
0.20
19.9
1985 Sb Tissues
K
0.01
73.17
L
0.02
49.17
M
3.33
DOLT-1
2.31
1987 Sb Tissues
O
0.02
DORM-1
0.04
1990 Sb Tissues

Figure 29

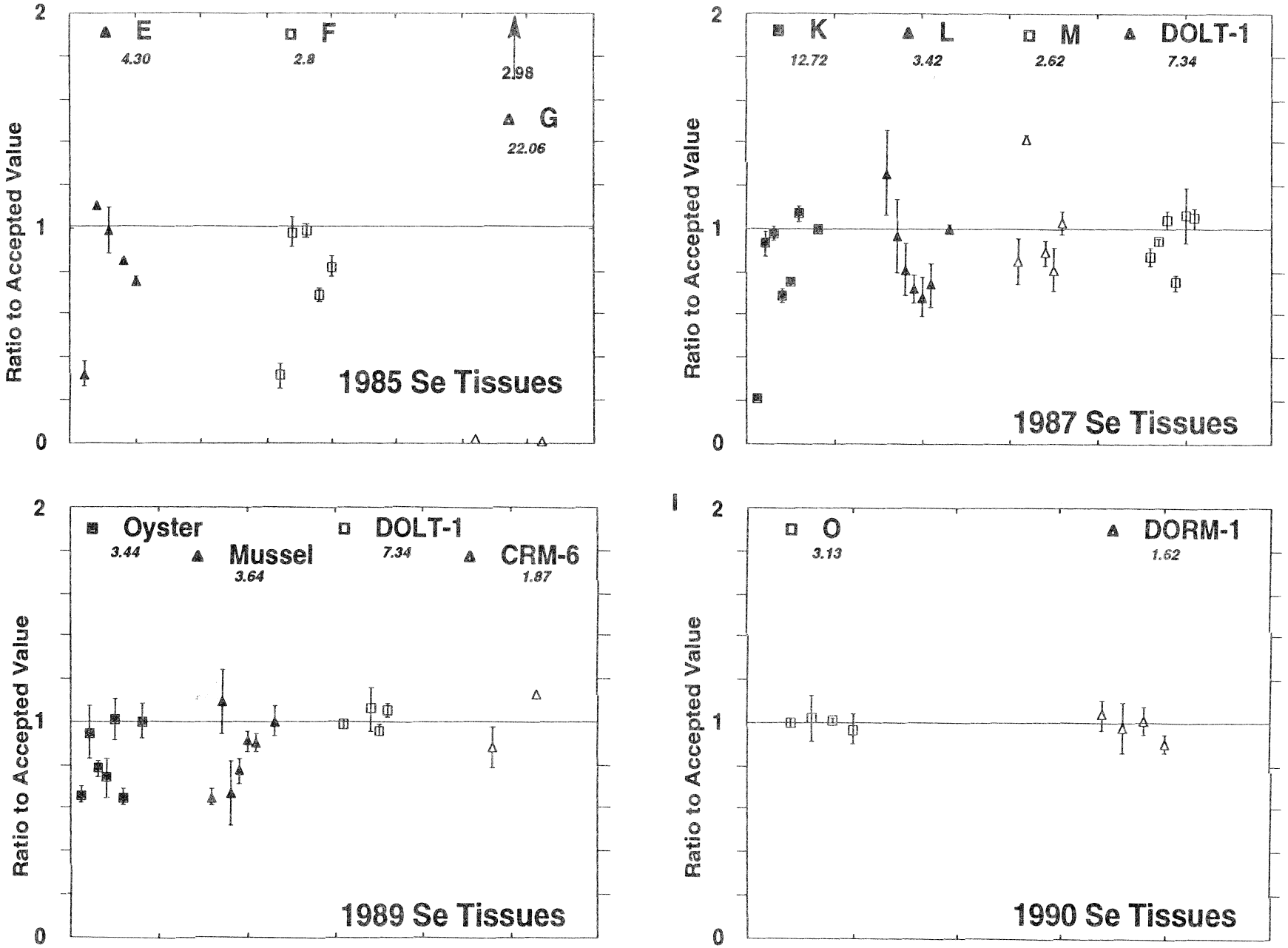
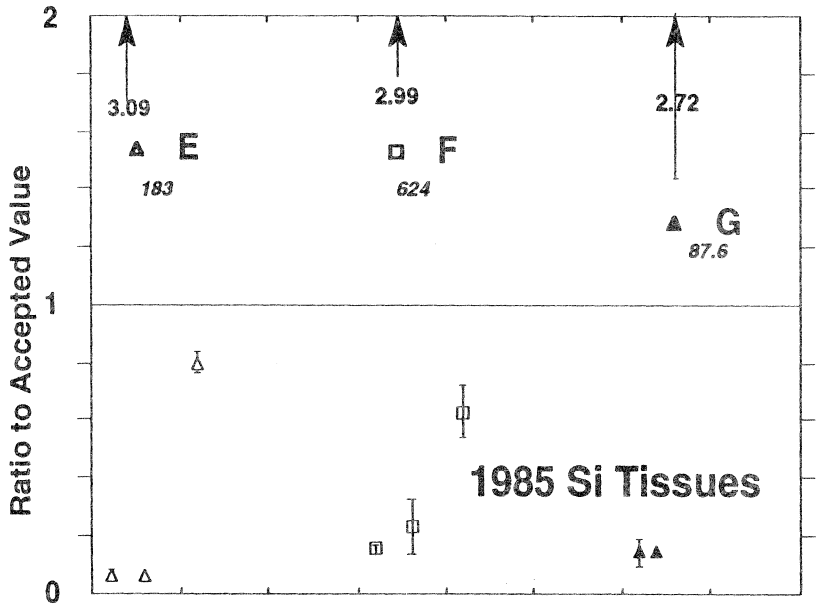

E
4.30
F
2.8
2.98
G
22.06
1985 Se Tissues
K
12.72
L
3.42
M
2.62
DOLT-1
7.34
1987 Se Tissues
Oyster
3.44
Mussel
3.64
DOLT-1
7.34
CRM-6
1.87
1989 Se Tissues
O
3.13
DORM-1
1.62
1990 Se Tissues
Ratio to Accepted Value
0
1
2

Figure 30


2
1
0
Ratio to Accepted Value
3.09
2.99
2.72
E
183
F
624
G
87.6
1985 Si Tissues

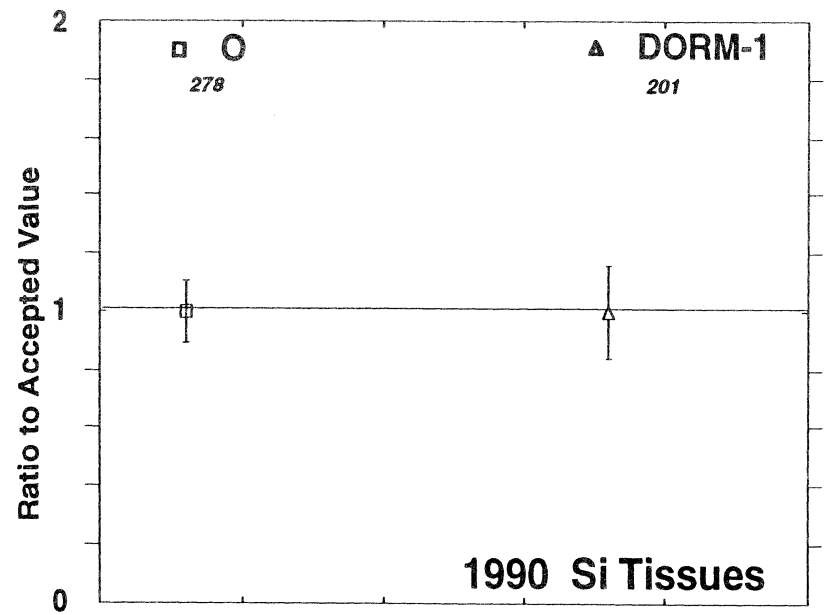

2
1
0
Ratio to Accepted Value
O
278
DORM-1
201
1990 Si Tissues

Figure 31

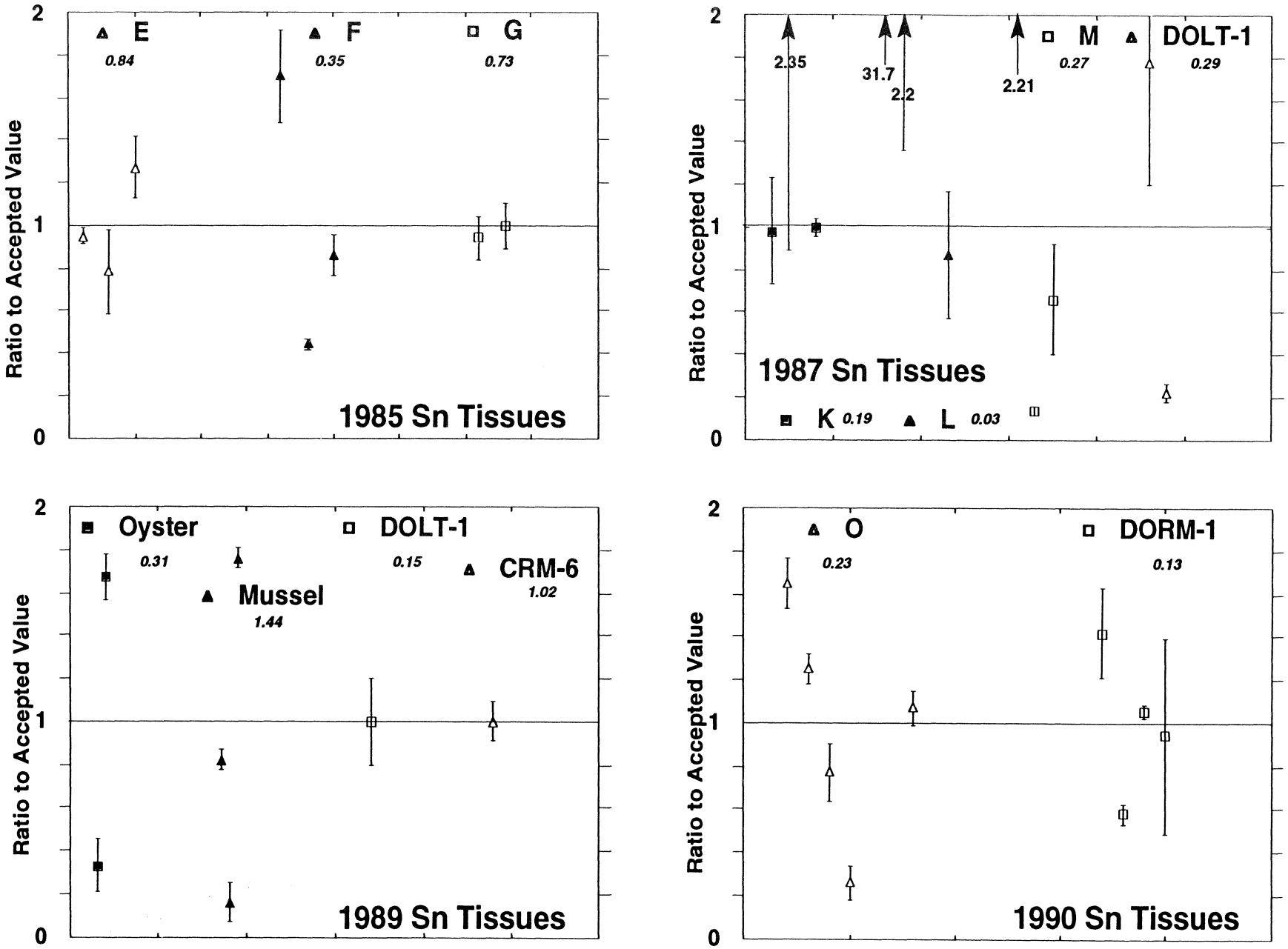

E
0.84
F
0.35
G
0.73
1985 Sn Tissues
Ratio to Accepted Value
2.35
31.7
2.2
2.21
M
0.27
DOLT-1
0.29
1987 Sn Tissues
K 0.19
L 0.03
Oyster
0.31
DOLT-1
0.15
CRM-6
1.02
Mussel
1.44
1989 Sn Tissues
O
0.23
DORM-1
0.13
1990 Sn Tissues
0
1
2

Figure 32

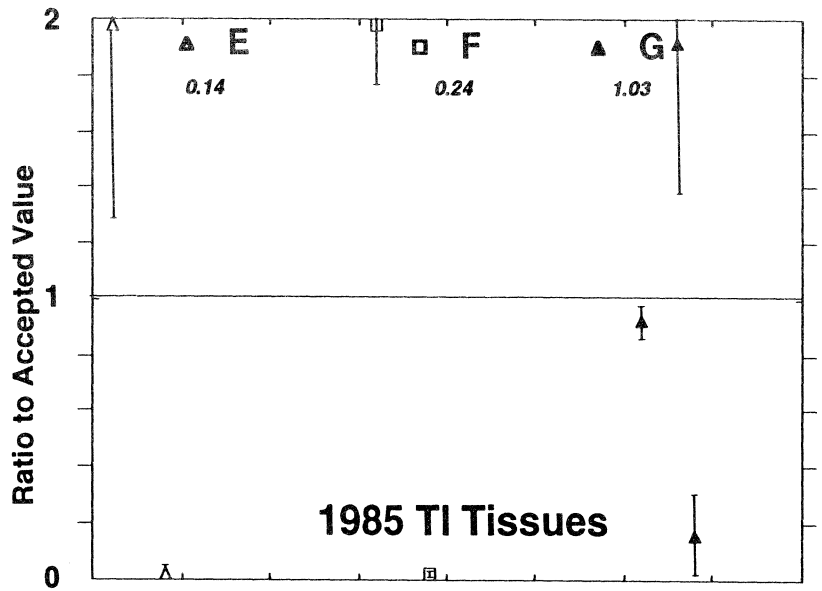


Figure 33

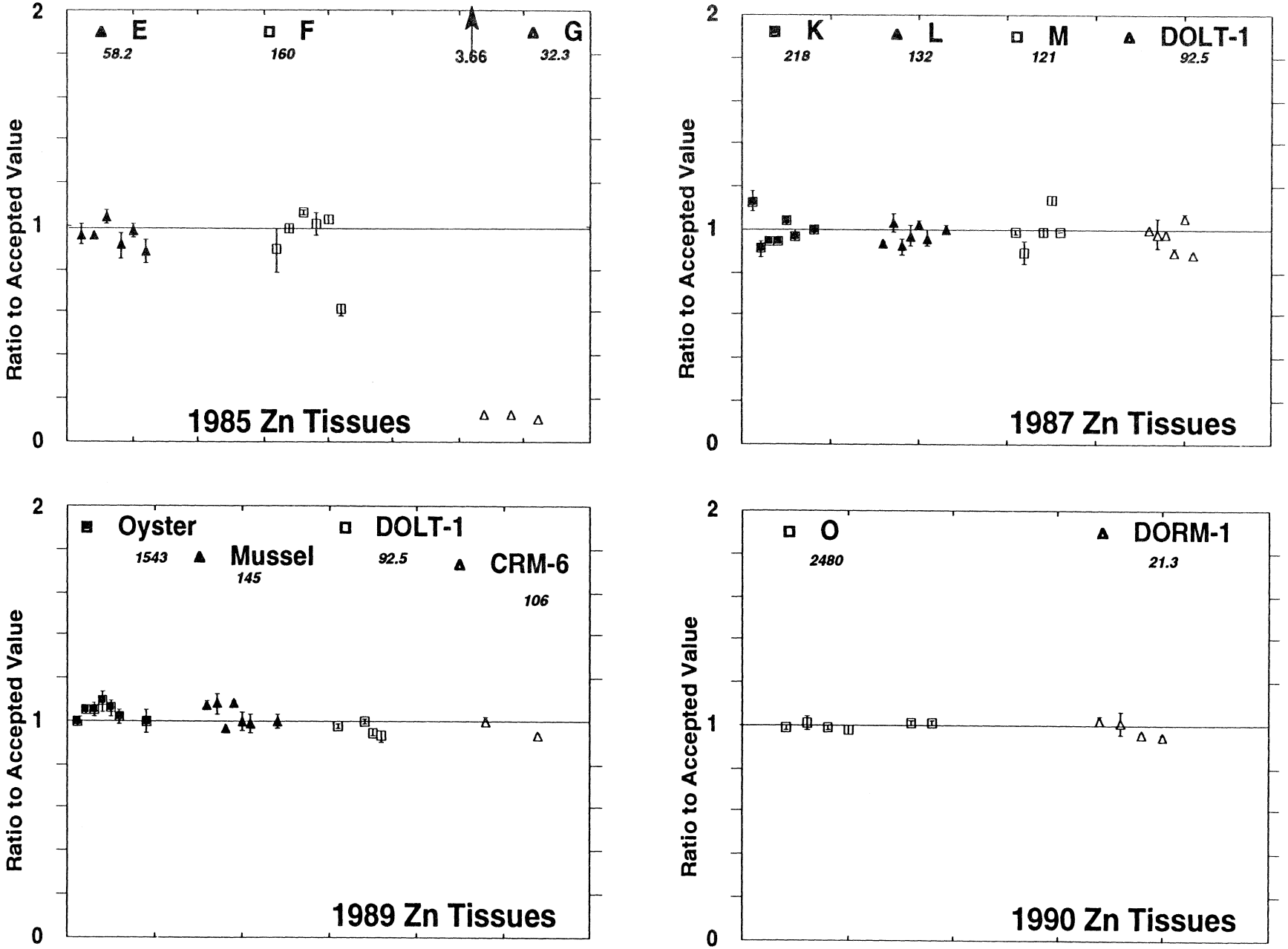


Figure 34

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