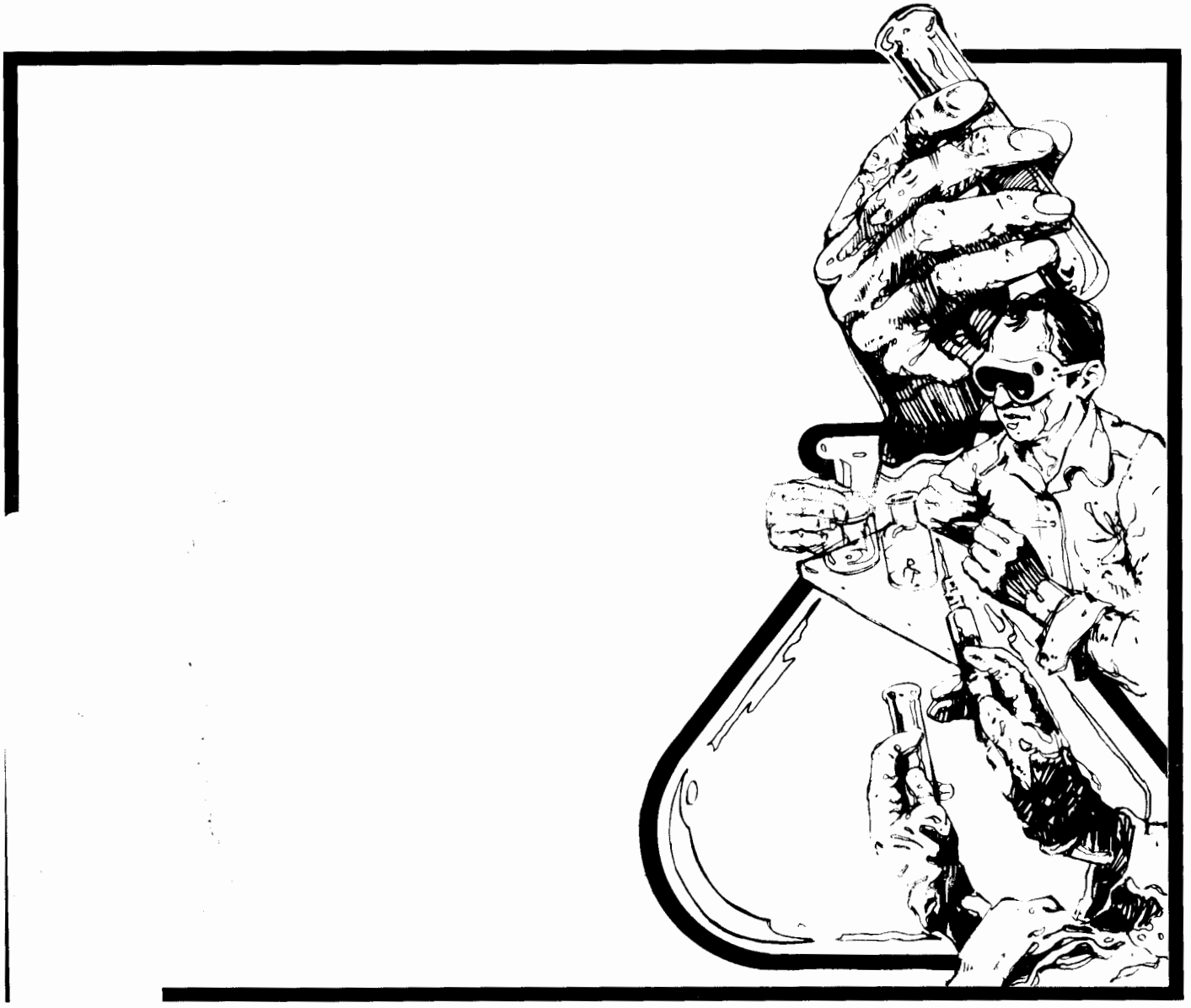
OCTOBER 1991

LA-12208-MS

Quality Assurance for Health and Environmental Chemistry: 1990



Los Alamos
L LABORATORY

Los Alamos National Laboratory is operated by the University of Calif · contract W-7405-ENG-36.

9554

An Affirmative Action/Equal Opportunity Employer

Edited by Lori Tamura, Group IS-11

Layout by Liz Stephens, Liana Vigil, and Margaret A. Gautier, Group HSE-9

Cover designed by Rod Furan, Group IS-12

This report was submitted in September 1991.

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither The Regents of the University of California, the United States Government nor any agency thereof, nor any of their employees makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by The Regents of the University of California, the United States Government, or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of The Regents of the University of California, the United States Government, or any agency thereof.

LA-12208-MS

UC-902 and UC-907
Issued: October 1991

Quality Assurance for Health and Environmental Chemistry: 1990

Margaret A. Gautier
Ernest S. Gladney
Nancy L. Koski
Elizabeth A. Jones
Bryan T. O'Malley

Los Alamos
NATIONAL LABORATORY

Los Alamos, New Mexico 87545

ACKNOWLEDGMENTS

The support offered by Group HSE-9 management is appreciated.

Craig Leasure, Group Leader
Christopher Liebman, Organic Chemistry Section Leader
Michael G. Bell, Inorganic Chemistry Section Leader
Daryl Knab, Radiochemistry Section Leader
Margaret A. Gautier, Quality Assurance and Data Management Section Leader
Charles Rzeszutko, Acting Sample Management Section Leader
James F. McInroy, Project Leader for Tissue Studies

Special thanks go to Craig Leasure, our group leader, who offered the support and encouragement needed to once again bring this document to completion.

We thank the analysts and data management personnel of HSE-9 who, in addition to the authors, provided the data compiled in this report:

Charles Apel, Bob Bates, Toney Begay, Suzanne Bell, Malti Bhatia, George Brooks, Colleen Burns, Sandra Cisneros-Flores, Peter Del Mar, Wanita Eberhardt, Larry R. Field, Terry Filer, Trudi Foreman, Yolanda Giles, Steven Goldstein, Edward Gonzales, Kelly Hakonson, Barbara Hemberger, Evangeline Hodge, Dianne Horn, Kathryn Jarrett, David Key, Daryl Knab, Martin Koby, Christopher Leibman, Carolyn Macdonell, Gloria Martinez, John Miglio, Matthew Monagle, Janet Montoya, Stuart Nielsen, Diane Noveroske, Harry Patterson, Richard Peters, Manuel E. Quintana, Richard Robinson, Rubanna Rodriguez, Ava Salman, Anthony Sanchez, Deanna Seitz, Kathleen Straw, Carol Sutcliffe, Laura Tsiagkouris, Mary Carol Williams, and Linda Willis.

Liana Vigil and Margaret Gautier performed the word processing, Lori Tamura (IS-11) provided editorial support, and Liz Stephens completed the layout for this report.

CONTENTS

ABSTRACT 1

OVERVIEW OF 1990 QUALITY ASSURANCE PERFORMANCE 3

I. INTRODUCTION 9

II. ANALYTICAL QUALITY ASSURANCE PHILOSOPHY 13

III. QUALITY ASSURANCE OBJECTIVES AND POLICIES 17

A. QA Program Policies 19

1. Frequency of QC 19

2. Program QACHECK 19

3. Under-control conditions 19

4. Out-of-control conditions 19

5. Assessing analytical performance 20

6. Analytical procedure control 20

7. Laboratory notebooks 21

8. Personnel training 21

B. QC Guidelines for the Analysts in Our Laboratory 21

1. Reagents, chemicals, and glassware 21

2. Instrument calibration 21

3. Instrument linearity 22

4. Instrument operating procedures 22

5. Balance and weight calibration 22

6. Record keeping 22

7. Analytical procedures 22

C. QC Guidelines for Radionuclide Counting Instrumentation 22

1. Alpha spectrometer systems 23

a. Backgrounds 23

b. **Calibrations** 24

2. *High-resolution gamma spectroscopy systems* 26

a. **Backgrounds** 26

b. **Energy calibrations** 26

c. **Efficiency calibrations** 27

3. *Liquid scintillation counting systems* 27

a. **Backgrounds** 27

b. **Quench curves** 27

c. **Normalization values** 28

d. **Efficiency calibrations** 28

e. **Figure of merit** 28

4. *Gas-flow proportional counting systems* 28

a. **Backgrounds** 28

b. **Voltage plateaus** 28

c. **Efficiency calibrations** 29

d. **Relative efficiency measurements** 29

e. **Quality control measurements** 29

5. *Zinc sulfide counting system* 29

a. **Backgrounds** 29

b. **Efficiency calibrations** 30

c. **Relative efficiency measurements** 30

6. *Gross gamma counting system* 30

a. **Backgrounds** 30

b. **Efficiency calibrations** 30

c. **Quality control measurements** 30

7. *System anomalies* 30

a. **Alpha spectrometer systems** 30

b. High-resolution gamma spectroscopy systems 30

c. Liquid scintillation counting systems 30

d. Gas-flow proportional counting systems 31

e. Zinc sulfide counting system 31

f. Gross gamma counting system 31

IV. AUTOMATED NUCLEAR COUNTING FACILITY 33

A. Automated System 35

B. System Configuration 35

C. General Operation 36

V. QUALITY ASSURANCE MANAGEMENT AND COMPUTING RESOURCES 39

A. System Configuration 41

B. System Back-Ups 41

C. Presampling Conference 43

D. Sample Management 45

E. Laboratory Information Management 47

1. Analytical data storage 48

2. Electronic Analytical Service Agreement 49

3. Organic sample tracking 49

4. Class-specific compound entry software 50

5. Report writer 51

6. Quality assurance software 52

7. Volatile, semivolatile, and pore gas data entry 53

8. Analyst proficiency software 54

9. Scheduled audits and corrective actions 54

10. Sample numbering 54

F. Chemical Abstract Service Organic Compound Numbering System 54

G. **Instrument-to-VAX Interfaces** 55

H. **Administrative Computing** 55

I. **Control Charts** 55

VI. CHEMICAL INVENTORY AND TRACKING SYSTEM 59

A. **Inventory System** 61

B. **Annual Chemical Inventory Process** 61

C. **Annual Chemical Inventory Software** 62

VII. INTERLABORATORY QUALITY ASSURANCE PROGRAM 65

A. **National Institute for Occupational Safety and Health (NIOSH) Proficiency Analytical Testing (PAT) Program** 67

B. **Environmental Monitoring and Support Laboratory-Cincinnati (EMSL-CI) Drinking Water Program** 68

C. **Environmental Monitoring and Support Laboratory-Cincinnati (EMSL-CI) Water Pollution Study** 68

D. **EPA Environmental Monitoring Systems Laboratory-Las Vegas (EMSL-LV)** 68

E. **Environmental Measurements Laboratory (EML)** 69

F. **National Pollutant Discharge Elimination System (NPDES)** 69

G. **DOE Beryllium Intercomparison** 69

VIII. SURVEILLANCE AND AUDITS 71

A. **Scheduling** 73

B. **Preparation** 73

C. **Performance** 73

D. **Reporting** 74

E. **Response, Follow-Up Action, and Records** 74

F. **Qualification of Auditors** 74

G. **Internal Audit Plan** 74

H. **Corrective Action System** 75

I. **External Audits of HSE-9 During 1990** 75

IX. CONTRACT LABORATORY QUALITY ASSURANCE 87

X. QUALITY CONTROL SAMPLE PREPARATION 91

A. **Bioassay Quality Assurance Program** 93

1. *Tritium* 93

2. *Depleted uranium* 93

3. *Enriched uranium* 94

4. *Plutonium* 94

5. *Americium* 95

B. **Tissue Quality Assurance Program** 95

C. **Organic Chemistry Quality Assurance Program** 96

1. *Charcoal tubes* 96

2. *Organic vapor monitors* 97

3. *Oil samples* 98

4. *Filter media* 99

5. *Soil samples* 99

a. **Volatile organic compounds** 100

b. **Semivolatile organic compounds** 100

c. **Pesticides** 101

d. **Herbicides** 101

e. **Polychlorinated biphenyls** 102

6. *Water samples* 102

a. **Volatile organic compounds** 102

b. **Semivolatile organic compounds** 103

c. **Herbicides** 104

d. **Pesticides** 105

e. **Polychlorinated biphenyls** 105

D. **Environmental Radioactivity Quality Assurance Program** 105

1. Soil samples 106

a. **Strontium-90** 106

b. **Cesium-137** 106

c. **Plutonium and americium** 106

d. **Tritium** 107

e. **Uranium** 107

f. **Gross alpha and gross beta** 108

2. Water samples 109

a. **Gross alpha/beta** 109

b. **Cesium-137** 110

c. **Plutonium and americium** 111

d. **Strontium-90** 111

e. **Uranium and U-235/U-238 ratio** 111

f. **Tritium** 112

g. **Radium-226** 113

3. Vegetation and vegetation ash 113

a. **Preparation of ash matrix** 113

b. **Cesium-137** 114

c. **Plutonium and americium** 114

4. Filter samples 114

a. **Plutonium and americium** 114

b. **Uranium** 115

E. **Environmental Inorganic Quality Assurance Program** 115

1. Filter samples 115

a. Stable elements 115

2. *Oil-based solvents* 116

a. Stable elements 116

3. *Water samples* 117

a. Trace elements 117

b. Mercury 119

c. Oil and grease 120

d. Nitrite-nitrogen 120

e. Cyanide 121

4. *Trace elements in soil* 121

a. Beryllium and lead 121

5. *Silica gel tubes* 122

a. Acidic anions 122

6. *Vegetation ash samples* 123

a. Beryllium and lead 123

XI. REFERENCE MATERIALS DATA COMPILATION 125

A. Data Collection 127

B. Data Compilation 128

C. Literature Surveying and Data Entry 129

D. Consensus Value Evaluation and Publication 131

REFERENCES 133

APPENDIXES

A. GLOSSARY A-1

B. COMPUTER SOFTWARE B-1

Typical Terminal Session for QACHECK Computer Program B-3

Program QACHECK B-7

Program SVC-ACCORD B-13

Program ANNUAL-CHEMINV B-47

LIMS Menus B-61

Examples of Analytical Reports B-69

Reference Material Data Compilation B-79

C. SUMMARY TABLES OF QUALITY ASSURANCE DATA C-1

D. PLOTS OF FIVE-YEAR TRENDS D-1

E. SUMMARY OF ANALYSES COMPLETED BY HSE-9 ..... E-1

F. NUCLEAR SPECTROMETRY F-1

Alpha Spectrometer Calibration and Background Data F-3

Gamma Spectrometer and Liquid Scintillation Background and Efficiency Data F-55

G. SUMMARY OF SPIKE RECOVERY DATA G-1

TABLES

I. SUMMARY OF QUALITY ASSURANCE TESTS FOR ANALYTICAL DATA COMPLETED DURING 1990 6

II. EPA CLP HOLDING TIME SUMMARY FOR JANUARY 1990 TO DECEMBER 1990 7

III. SUMMARY OF ORGANIC SURROGATE RECOVERIES FOR 1990 8

IV. ISOTOPIC COMPOSITION OF PLUTONIUM PROCESSED AT LOS ALAMOS . . . 25

V. QC PREPARATION BASED ON ANALYTICAL TECHNIQUE 117

B-I. MAIN MENU FROM HSE-9 LIMS B-63

B-II. ANALYTICAL SERVICE AGREEMENT AND SAMPLE RECEIVING MENU CALLED BY HSE-9 LIMS MAIN MENU B-63

B-III. DATA REDUCTION MENU CALLED BY HSE-9 LIMS MAIN MENU B-64

B-IV. DATA ENTRY MENU CALLED BY HSE-9 LIMS MAIN MENU B-64

B-V. REPORT WRITING MENU CALLED BY HSE-9 LIMS MAIN MENU B-65

B-VI. MISCELLANEOUS MENU CALLED BY HSE-9 LIMS MAIN MENU B-65

B-VII. QA SECTION MAINTENANCE MENU CALLED BY HSE-9 LIMS MAIN MENU B-66

B-VIII. BOOKKEEPING AND DATA SEARCHING MENU CALLED BY HSE-9 LIMS MAIN MENU B-66

B-IX. ORGANIC SECTION DATA ENTRY MENU CALLED BY HSE-9 DATA ENTRY MENU B-67

B-X. LITERATURE SURVEYED B-81

B-XI. DOMAIN AND RECORD DEFINITION OF SRMS B-83

B-XII. DOMAIN AND RECORD DEFINITION OF REFS B-83

B-XIII. DOMAIN AND RECORD DEFINITION OF SRMTABLE B-84

B-XIV. COMPARISON OF CONSENSUS VALUES AND METHOD MEANS FOR USGS BCR-1 . . . . . B-85

B-XV. WHOLE MATERIAL CONCENTRATION SUMMATIONS OF MAJOR AND MINOR ELEMENTS FOR SELECTED NIST SRMS B-86

C-I. SUMMARY OF HSE-9 QUALITY ASSURANCE TESTS FOR ANALYSES COMPLETED BY HSE-9 DURING 1990 ..... C-3

C-II. SUMMARY OF ANALYTICAL DETERMINATIONS ON NIST STANDARD REFERENCE MATERIALS BY HSE-9 ..... C-41

C-III. SUMMARY OF ELEMENTAL DETERMINATIONS ON CCRMP REFERENCE MATERIALS BY HSE-9 ..... C-54

C-IV. SUMMARY OF ELEMENTAL DETERMINATIONS ON USGS REFERENCE MATERIALS BY HSE-9 ..... C-59

KEY TO TABLE C-V C-60

C-V. INDIVIDUAL CONSTITUENT CONCENTRATIONS IN QUALITY ASSURANCE MATERIALS MEASURED BY HSE-9 IN 1990 ..... C-62

C-Va. SUMMARY OF FALSE POSITIVE/FALSE NEGATIVE RESULTS FOR HSE-9 IN 1990 ..... C-254

C-VI. INDEX TO TABLE C-V C-263

C-VII. REFERENCES FOR INDIVIDUAL CERTIFIED VALUES IN QUALITY ASSURANCE MATERIALS MEASURED BY HSE-9 IN 1990 ..... C-268

E-I. RADIOCHEMICAL ANALYSES COMPLETED BY HSE-9 IN 1990 ..... E-3

E-II. INORGANIC ANALYSES COMPLETED BY HSE-9 IN 1990 ..... E-5

E-III. ORGANIC ANALYSES COMPLETED BY HSE-9 IN 1990 ..... E-8

F-I. ALPHA SPECTROMETER CALIBRATION AND BACKGROUND DATA, FIRST QUARTER 1990 ..... F-5

F-II. ALPHA SPECTROMETER CALIBRATION AND BACKGROUND DATA, SECOND QUARTER 1990 ..... F-7

F-III. ALPHA SPECTROMETER CALIBRATION AND BACKGROUND DATA, THIRD QUARTER 1990 ..... F-9

F-IV. ALPHA SPECTROMETER CALIBRATION AND BACKGROUND DATA, FOURTH QUARTER 1990 ..... F-11

F-V. CALIBRATION DATA FOR THE 16 ROUTINE CALIBRATION PLATES F-13

F-VI. CALIBRATION DATA FOR THE 16 PLATES AS A SET F-13

F-VII. ESTIMATES OF ALPHA ACTIVITY FOR HSE-9 STANDARD NO. 2B F-14

G-I. PLUTONIUM-238 SPIKE RECOVERY IN URINE AS A FUNCTION OF CONCENTRATION AFTER CORRECTION FOR PLUTONIUM-242 TRACER RECOVERY G-3

G-II. PLUTONIUM-239 SPIKE RECOVERY IN URINE AS A FUNCTION OF CONCENTRATION AFTER CORRECTION FOR PLUTONIUM-242 TRACER RECOVERY G-3

G-III. AMERICIUM-241 SPIKE RECOVERY IN URINE AS A FUNCTION OF CONCENTRATION AFTER CORRECTION FOR AMERICIUM-243 TRACER RECOVERY G-3

G-IV. THALLIUM SPIKE RECOVERY IN URINE AS A FUNCTION OF CONCENTRATION G-3

G-V. TRITIUM SPIKE RECOVERY IN URINE AS A FUNCTION OF CONCENTRATION G-3

G-VI. URANIUM-235 SPIKE RECOVERY IN URINE AS A FUNCTION OF CONCENTRATION G-4

G-VII. URANIUM-238 SPIKE RECOVERY IN URINE AS A FUNCTION OF CONCENTRATION G-4

G-VIII. SPIKE RECOVERIES FOR WASTE-WATER, SLUDGE, AND SOIL ANALYSES G-5

G-IX. COMPARISON OF HSE-9 SPIKED SAMPLES WITH NIOSH PAT SAMPLES G-7

FIGURES

1. Number of analytical determinations performed per year 5

2. Diagram of the VAX 8200 system 42

3. Analytical Service Agreement form 44

4. Analytical Chemistry Request form 46

5. Sample label 46

6. Diagram of overall work flow and data review process 47

7. Quality control charts 56

8. Data compilation process 130

B-1. Single analysis analytical report for inorganic or radiochemistry B-71

B-2. Multiple analysis analytical report for inorganic or radiochemistry B-72

B-3. MSCAN analytical report B-73

B-4. Organic analytical report B-74

B-5. Organic analytical report for PCBs B-76

D-1. Five-year trends in quality assurance data for inorganic analyses D-3

D-2. Five-year trends in quality assurance data for radiochemical analyses D-33

D-3. Five-year trends in quality assurance data for organic analyses D-44

D-4. Five-year trends in EPA radiochemical quality assurance program for air filters, milk, and water D-73

D-5. Five-year trends in National Pollutant Discharge Elimination System quality assurance program for industrial and municipal waste waters D-77

D-6. Five-year trends in EPA Water Supply Performance Evaluation Studies D-81

D-7. Five-year trends in EPA Water Pollution Performance Evaluation Studies D-93

D-8. Organic surrogate data for bulk, sludge, soil, water, and charcoal tube matrices D-105

F-1. Plots of alpha spectrometer background data F-15

F-2. Plots of alpha spectrometer calibration data F-35

F-3. Energy calibrations for gamma detectors F-57

F-4. Gamma spectrometer relative efficiencies F-61

F-5. Liquid scintillation counter background data F-63

F-6. Liquid scintillation counter normalization curve F-63

F-7. Relative efficiency curves for liquid scintillation counters F-64

F-8. Figure of merit chart for the Packard 2200CA liquid scintillation counters F-65

F-9. Efficiency values for the alpha windowless gas-flow proportional system F-66

F-10. Efficiency values for the beta windowless gas-flow proportional system F-67

F-11. Relative efficiencies of the windowed gas-flow counting system F-68

F-12. Relative efficiencies for the Tennelec LB 5100 system F-70

F-13. Quality control charts for the alpha and beta measurements F-71

F-14. Quality control charts for gamma measurements F-72

QUALITY ASSURANCE FOR HEALTH AND ENVIRONMENTAL CHEMISTRY: 1990

by

Margaret A. Gautier, Ernest S. Gladney, Nancy L. Koski,
Elizabeth A. Jones, and Bryan T. O'Malley

ABSTRACT

This report documents the continuing quality assurance efforts of the Health and Environmental Chemistry Group (HSE-9) at the Los Alamos National Laboratory. The philosophy, methodology, computing resources, and laboratory information management system used by the quality assurance program to encompass the diversity of analytical chemistry practiced in the group are described. Included in the report are all quality assurance reference materials used, along with their certified or consensus concentrations, and all analytical chemistry quality assurance measurements made by HSE-9 during 1990.

OVERVIEW OF 1990 QUALITY ASSURANCE PERFORMANCE

OVERVIEW OF 1990 QUALITY ASSURANCE PERFORMANCE

A total of 46,684 quality control (QC) analytes were analyzed by the Health and Environmental Chemistry Group (HSE-9) during 1990 in conjunction with the routine analysis of approximately 231,877 determinations giving an overall QC level of effort of 20%. The total number of QC samples analyzed includes all of the analysts' internal QCs as well as the blind QCs submitted by the Quality Assurance and Data Management (QADM) Section. More than 6,600 of these QC analytes were spiked on various matrices by the QADM section, representing a 45% increase of in-house prepared QC samples over 1989. The 231,877 analytical determinations represent a 62% increase in workload for HSE-9 analysts over the 1989 level. The workload for HSE-9 has been increasing steadily since the Group was formed in 1984 and is displayed in Fig. 1 for the years 1984 through 1990. A summary of mean ratio data for bioassay, environmental, waste treatment, and industrial hygiene QC samples is presented in the Appendices. The mean ratios have been calculated as a function of analysis and matrix and are summarized as a mean ± one standard deviation for each matrix type. This is an appropriate way to display data for our laboratory, which operates on a demand basis and

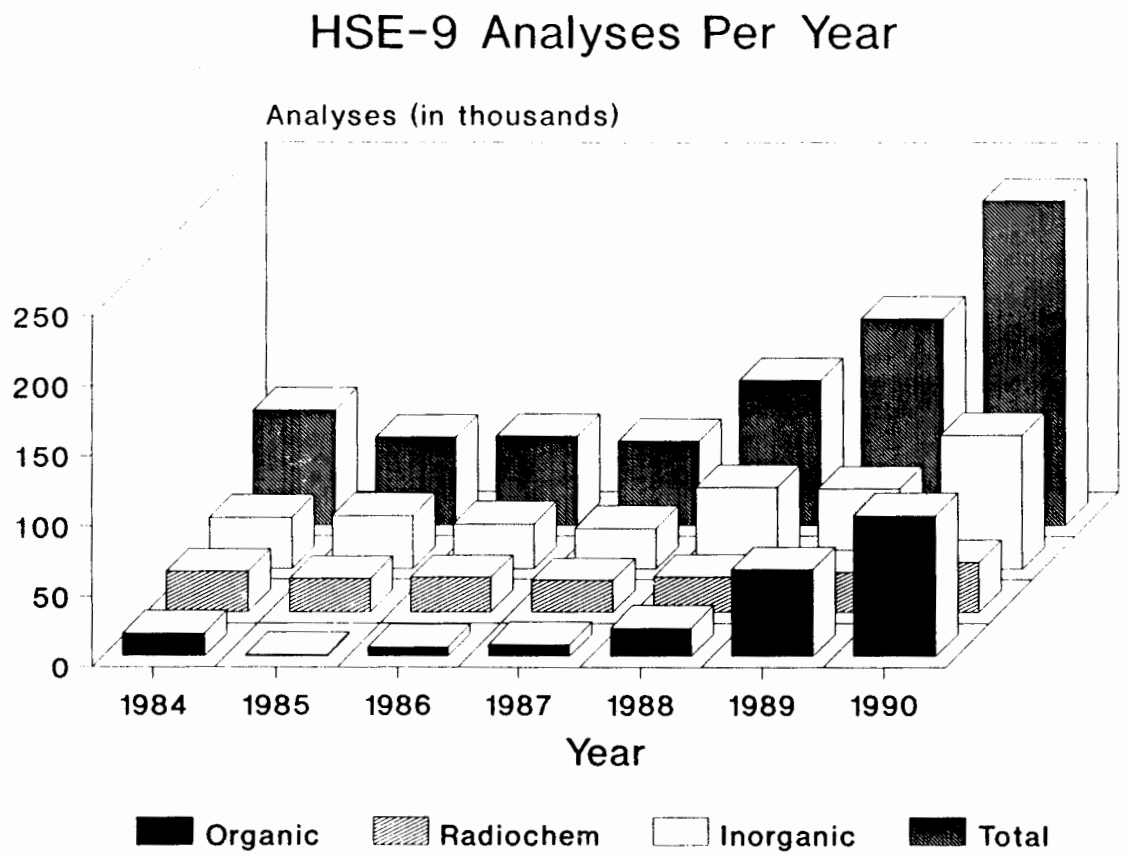


Fig. 1. Number of analytical determinations performed per year.

may perform any given analysis only infrequently. Analyses are considered under control when the absolute value of the difference between our result and the certified or consensus mean is within two propagated standard deviations of the experimental uncertainty and of the certified means.

The data in Table I provide a summary of the overall state of statistical control for analytical work performed by HSE-9 during 1990. More than 90% of most radiochemical and inorganic analyses are within the ±2 propagated standard deviations of the certified/consensus mean values and are considered under control. During 1990 the ^{242}Pu tracer used in the routine plutonium analysis in the bioassay program averaged 81% ± 7%, in the tissue program averaged 86% ± 17%, and in the environmental program averaged 40% ± 4% for vegetation, 65% ± 15% for waters, 78% ± 18% for filters, and 62% ± 16% for soils. Americium-243 tracer recovery for the bioassay program averaged 82% ± 12%, for the tissue program averaged 89% ± 7%, and for the environmental program averaged 59% ± 7% for vegetation, 78% ± 10% for water, 81% ± 10% for filters, and 66% ± 16% for soil. Thorium-234 tracer recovery for the tissue program averaged 86% ± 22%.

TABLE I. Summary of Quality Assurance Tests for Analytical Data Completed During 1990

Analysis and Matrix	No. of QCs	<2 Sigma (%)	2-3 Sigma (%)	>3 Sigma (%)
Stable Elements				
Biological Materials	247	96.0	2.8	1.2
Bulk Materials	92	93.5	2.2	4.3
Charcoal Tubes	1	0.0	0.0	100.0
Filters	757	93.9	2.7	3.4
Silicates	3911	94.0	3.7	2.3
Urine	9	100.0	0.0	0.0
Water	8126	96.9	1.7	1.4
Radiochemical				
Biological Materials	89	86.5	5.6	7.9
Filters	337	92.2	4.2	3.6
Silicates	242	76.9	14.0	9.0
Urine	645	92.2	37.0	4.1
Water	2972	97.8	1.4	0.8
Organic				
Bulk Materials	773	95.3	2.6	3.1
Charcoal Tubes	1071	87.4	2.2	0.7
Filters	341	96.5	3.7	0.0
Silicates	3844	93.7	1.0	5.3
Sludge	223	95.5	0.0	4.5
Water	5815	96.7	0.8	2.5

More than 90% of most organic analyses are within the ±2 propagated standard deviations of the experimental uncertainty and of the certified means. Table II shows that 86% of all extraction holding times and 97% of all instrument analysis holding times were met for organic analyses during 1990. On organic analyses, we currently monitor the rate of occurrence of false positives and false negatives, as well as the analyst's success in hitting the actual spiked concentrations. Observations of false positives may represent unintentional contamination of the QC during preparation, storage, or analysis, and is not immediately identified as a purely analytical problem. Frequent recurrence of either false condition indicates that either an analytical procedure or a QC preparation procedure needs careful review.

Table III summarizes our recovery information on organic surrogate compounds required for use in the Environmental Protection Agency (EPA) Contract Laboratory Program (CLP) protocol. All mean recoveries are within the EPA limits, although the standard deviations are large.

TABLE II. EPA CLP Holding Time Summary for January 1990 to December 1990

Organic Analysis Type	% Extractions Meeting EPA Criteria	% Instrument Analyses Meeting EPA Criteria	Total Number Analyses Performed
Volatiles in soils	83.2	100.0	226
Volatiles in waters	77.8	98.3	117
Semivolatiles in soils	89.8	98.5	206
Semivolatiles in waters	94.4	99.1	107
Pesticides in soils	89.3	100.0	84
Pesticides in waters	82.3	100.0	96
Herbicides in soils	92.9	77.6	98
Herbicides in waters	68.0	100.0	50
PCBs in soils	100.0	100.0	218
PCBs in waters	95.1	100.0	144

TABLE III: Summary of Organic Surrogate Recoveries for 1990

Surrogate Type	No. of Samples	Samples in-range (%)	EPA CLP Limits (%)
Volatiles in Soil			
1,2-Dichloroethane d4	277	78.9	70 - 121
Toluene d8	279	79.5	81 - 117
Bromofluorobenzene	257	73.2	74 - 121
Semivolatiles in Soil			
2-Fluorophenol	342	96.6	25 - 121
Phenol d6	351	98.3	24 - 113
Nitrobenzene-d5	351	98.3	23 - 120
2-Fluorobiphenyl	342	95.8	30 - 115
2,4,6-Tribromopehnol	339	95.5	19 - 122
Terphenyl-d14	347	98.3	18 - 137
Pesticides in Soil			
Dibutyl chlorendate	0	0.0	20 - 150
Volatiles in Water			
1,2-Dichloroethane d4	177	71.4	76 - 114
Toluene d8	183	73.8	88 - 110
Bromofluorobenzene	218	87.9	86 - 115
Semivolatiles in Water			
2-Fluorophenol	139	92.7	21 - 100
Pehnol d6	142	94.7	10 - 94
Nitrobenzene-d5	144	96.0	35 - 114
2-Fluorobiphenyl	143	95.3	43 - 116
2,4,6-Tribromophenol	141	94.0	10 - 123
Terphenyl-d14	128	85.3	33 - 141
Pesticides in Water			
Dibutyl chlorendate	0	0.0	24 - 154

I. INTRODUCTION

I. INTRODUCTION

The analytical chemistry activities in HSE-9 are diverse and encompass industrial hygiene, environmental surveillance and compliance, bioassay, industrial waste water, and US Transuranium Registry (USTR) tissue studies. This report is the seventh in an annual series from the Health and Environmental Chemistry Group (HSE-9) of the Health, Safety, and Environment (HSE) Division and succeeds those issued previously by the Environmental Surveillance Group.[1]

The mission of our group at Los Alamos National Laboratory (LANL) is to provide qualitative and quantitative analytical data to health physicists, industrial hygienists, environmental surveillance scientists, environmental compliance managers, epidemiologists, waste managers, and waste treatment plant operators. These data describe concentrations of materials in samples submitted for analysis. Incorrect results may lead to erroneous interpretation by management or operations personnel, which could adversely affect the health and safety of exposed personnel or could affect Laboratory compliance with environmental and waste disposal regulations.

During 1990, HSE-9 prepared a formal written Quality Assurance Program Plan. The written plan, along with appropriate supporting procedures, makes it less likely that actions that are known to be essential to superior performance will be neglected through oversight or the ever-present pressures of time, cost, and schedule. The laboratory quality assurance plan makes clear to all members of HSE-9 the standards that the Group intends to maintain. It also provides for continuity in maintaining those standards as the membership of the Group changes. Because the plan is periodically reviewed, the Group can regularly evaluate the effectiveness of its quality activities, eliminate ineffective procedures, and consider the advisability of any new measures. Finally, the plan provides documented evidence of our commitment to excellence in all facets of our analytical work. Successful implementation of the plan depends on the cooperation and support from all levels of management and staff. An effective quality assurance program will enhance confidence in our work for the internal and external organizations that support us, and for the public.

An outgrowth of writing the quality assurance (QA) program plan was the need to design and implement a formal corrective action system to address conditions adverse to quality. This system uses corrective action requests (CARs) to ask the appropriate manager to identify the cause of the condition and to document the corrective action taken to preclude repetition of the problem.

One of the fundamental responsibilities of HSE-9 management is to maintain a continuing program to ensure the reliability and validity of analytical laboratory data. The QA program addresses small, single-investigator projects (in which one person conducts all sampling, analytical, and interpretive functions) through large-scale facilities-monitoring pro-grams requiring year-to-year continuity. Our philosophy is that a QA program should apply to all aspects of sample and information management. The program should begin at the inception of a project, follow through collection and storage of samples before analysis, include all phases of chemical and physical analyses, extend through interpretation and data entry into the HSE-9 laboratory information management system

(LIMS), and culminate with the final reporting of results.

We use two concepts in our QA program to provide confidence in each analytical result reported by our laboratory: quality control (QC), the mechanism established to control errors, and quality assessment, the system used to verify that our entire analytical process is operating within limits we consider acceptable.

We strive to include the following elements in our QC program: (1) development of and adherence to principles of good laboratory practice, (2) consistent use of standard operating procedures, and (3) establishment of and adherence to carefully designed protocols for specific analytical processes. Consistent use of qualified personnel, reliable and well-maintained equipment, appropriate calibrations and standards, and close supervision of all operations are primary components of our QC system. Proper conception and execution of this QC program have resulted in our analytical system operating in a state of control, in which errors are within acceptable levels and are characterized statistically.

Quality assessment describes the techniques we use to assess the quality of our analytical process. We have established a system of control charts, which are plots of multiple data points from the same or similar samples versus time. These charts are used to determine if our system is in a state of statistical control and to visualize and monitor the relative variability of repetitive data. These control charts are also used with reference materials and spiked samples to assess the accuracy of our measurements. These concepts are further discussed by Keith et al.[2] A complete listing of definitions of terms, acronyms, and abbreviations used in this report along with standard quality assurance and statistical terms used routinely by HSE-9 is given in App. A. This listing was compiled from the US Environmental Protection Agency (EPA), the National Institute of Standards and Technology (NIST), formerly the National Bureau of Standards (NBS), and the Department of Energy (DOE).[3-5]

II. ANALYTICAL QUALITY ASSURANCE PHILOSOPHY

II. ANALYTICAL QUALITY ASSURANCE PHILOSOPHY

Our approach is based firmly on the concept of traceability through concurrent analysis of matrix-based certified QA materials. Traceability is a hierarchical system developed largely for regulatory purposes whereby transfer of accuracy among various components or institutions of a measurement system is established. Uriano and Gravatt[6] have examined this concept in detail. Taylor[7,8] has pointed out that this process has its limitations because the achievement of an acceptable result on a reference material does not guarantee a unique foundation for the result. Traceability may more often be based on inference than on firmly established scientific fact.

Laboratory policy[9] is to maintain traceability to NIST, which in turn maintains traceability to international metrology standards where applicable. We cannot achieve this traceability in all cases because NIST has limited resources for certification of matrix-based standard reference materials (SRMs) for as many elements and compounds as we need to measure. This restraint has led us in two directions.

First, we have a large library of reference materials from other national and international agencies [EPA, US Geological Survey (USGS), DOE Environmental Measurements Laboratory (EML), Canadian Geological Survey (CGS), Canadian Certified Reference Materials Project (CCRMP), International Atomic Energy Agency (IAEA), Centre de Recherces Petrographiques et Geochimiques, and the Japanese Geological Survey] in addition to the available NIST biological and environmental SRMs. Secondary QC materials are prepared in-house. All reference materials are inventoried and are organized by agency (for example, NIST, USGS, IAEA, EPA, etc.) to facilitate retrieval of the materials. Data bases are updated as materials are expended and as new materials are received to accurately reflect the supply of reference materials in our library.

Second, we continue to compile all available literature data on these reference materials so that consensus values for constituent concentrations that are not agency-certified may be developed. Our reference material data compilation efforts are discussed in detail in Section XI and are described in the references.[10-21] We have over 300 reference materials, some of which have certified or consensus values for as many as 80 constituents. Using VAX Datatrieve software, we have created two data bases, SRMS and REFS, to permit random collection of literature data on reference materials. At any time, this collection may be sorted as a function of any logical combination of parameters and printed for our determination of a consensus value.

Some agencies recommend that splitting and analysis of duplicates on 5% of the samples are sufficient QA. We believe that this approach is inadequate, providing at best only an assessment of precision, not accuracy. Our alternative is concurrent analysis of reference materials of similar matrix with every batch of samples. In this fashion, both precision and accuracy may be assessed, and traceability to a national standards laboratory is maintained. Because the compositional properties of these reference materials simulate those of the samples routinely measured, their correct measurement can imply correct measurement of routine samples. If sufficient quantities of reference materials are not available, we develop as many of our own secondary materials, traceable to agency reference materials, as possible. Participation in intercomparison studies is a necessary but not sufficient component of our QA program because these samples appear too infrequently to ensure that day-to-day control is maintained. We strive

to run a minimum of 10% of all analyses as matrix-based QA reference materials. For some determinations (for example, isotopic plutonium on silicates), this level of QA has proved to be prohibitively expensive.

Certain agencies are attempting to legislate QA through promulgation of analytical methods regulations, through licensing requirements for analysts, and through laboratory certification programs. The rapid pace of technological change in chemical instrumentation, the wide variety of sample matrices, and the broad dispersion of procedures throughout the literature make it difficult to establish a definitive method for any given determination that is not soon outdated. Licensing and certification address the qualifications of personnel and the adequacy of facilities on an infrequent basis at best, but they do not address the day-to-day data quality. A preferable alternative to the legislative approach to QA management is the development and implementation of a detailed, yet flexible QA program. This program permits each laboratory to use its existing expertise and facilities, to employ a variety of methods in the solution of ever-changing problems, and to encourage continuing innovation and adoption of the latest technology.

III. QUALITY ASSURANCE OBJECTIVES AND POLICIES

III. QUALITY ASSURANCE OBJECTIVES AND POLICIES

The purpose of the analytical QA program in HSE-9 is to continually monitor the scientific reliability (accuracy and precision) of reported laboratory data that are generated for use in HSE Division activities related to health and the environment. These data are also used by other organizations both within and outside the Laboratory.

Specific QA program objectives are (1) to assess the capabilities of analytical methods for meeting users' needs regarding precision, accuracy, sensitivity, and specificity; (2) to establish and monitor the routine operational performance of our laboratory through appropriate systems checks for ensuring that all aspects of the QA program are operative; (3) to run performance audits of blind standard samples for evaluation of our laboratory and to participate in collaborative test programs with peer laboratories for achieving and maintaining consistent and uniform levels of quality; and (4) to perform corrective actions as necessary.

A. QA Program Policies.

1. *Frequency of QC.* Quality control materials will be a minimum of 10% of all analyses. QC materials will be run with each batch and will include reagent blanks or samples that represent an appropriate blank. Bench level QC is the responsibility of each analyst.

2. *Program QACHECK.* Analysts will check with the QA officer or QA computer data base (through program QACHECK) to determine whether their analyses are under control for a particular batch. Appendix B contains a printed copy of this program and shows a typical terminal session.

3. *Under-control conditions.* Analyses are considered under control if the absolute value of the difference between our result ($\overline{X}_e$) and the certified or consensus mean ($\overline{X}_c$) is within the propagated standard deviation of the experimental uncertainty (U_e) and of the certified means (S_c). N is equal to the number of measurements on a sample and in our case is equal to 1. This concept is formulated in Eq. (1) and is an adaptation of Dixon and Massey to include the experimental uncertainty.[22]

$$z = \frac{|\overline{X}_e - \overline{X}_c|}{\sqrt{(U_e)^2 + (S_c)^2 / \sqrt{N}}} \qquad (1)$$

The test statistics used in this document are based on 5% and 0.2% levels of significance. The respective critical regions are defined using the z statistics 1.96 and 3.09. Data having a calculated z value ≤ 1.96 are accepted as in control at the 5% level of significance. Data that have a calculated z value > 1.96 and ≤ 3.0 are considered at the warning level, or the 0.2% level of significance. Data with a z value > 3.0 are considered out of control. This criterion is also incorporated in the QACHECK computer program. Quality assurance tests for analyses completed during 1990, which used Eq. (1), are reported in App. C, Table C-I.

4. *Out-of-control conditions.* Analyses that are out of control by criterion 3 are not reported to the SAMPLES data base or the requesting investigator and are performed again on new aliquots of the original sample, if that sample is available.

5. *Assessing analytical performance.* An additional approach for assessing overall performance on a variety of QA materials over longer times (for example, annually) involves the calculation of the mean of the ratios of $X_e/\overline{X}_c$ as a function of analysis and matrix types. These data are summarized as a mean ± one standard deviation for each determination in each matrix type, and σ is the standard deviation of the ratios [Eq. (2)]:

$$\frac{\sum (X_e \ / \ \overline{X}_c)}{n} \pm \sigma \qquad (2)$$

Results of this mean ratio approach for radiochemical, stable element, and organic analyses for all 1990 QC measurements made by HSE-9 are shown in App. C, Table C-I. All raw data used for these calculations, the certified or consensus values, and the sources of the reference materials are given in App. C, Tables C-II to C-VII. Summaries of elemental determinations on NIST, CCRMP, and USGS reference materials are also given in this appendix. Appendix D (Figs. D-1 to D-8) contains plots showing 5-yr trends for routine analyses that have sufficient ratio data for evaluation, plots of 5-yr trends in various EPA Quality Assurance Programs, and plots of % recovery data for organic surrogates. Appendix E (Tables E-I to E-III) summarizes isotopic, elemental, and organic compound analyses completed by HSE-9 in 1990.

6. *Analytical procedure control.* Reliable, verified analytical techniques, drawn primarily from the EPA, American Association of Official Analytical Chemists, American Society for Testing Materials, NIST, and similar sources, are used. Standard methods, however, do not ensure accuracy and may in fact provide false confidence. Methods often include an assemblage of techniques that do not fully address potential problems caused by samples containing, for example, large quantities of total dissolved solids. We continually develop improved procedures, which are verified through successful analyses of various agency reference materials and of duplicate and spiked samples of the same matrix as those being routinely analyzed before the procedure becomes part of our routine analytical program. All data compiled in the validation study is to be kept in a Laboratory notebook and should be summarized in the accuracy and precision section of the analytical procedure. All procedural development should be justified and planned before it is undertaken.

Document control in the analytical laboratory is needed to ensure that personnel have current methods, specifications, and standards and that documents are not obsolete. A document control system establishes controls to ensure that (1) analyses and calibrations are carried out in accordance with the latest analytical document issue; (2) an effective communication system among personnel is developed; (3) a central storage, issue, and archival point for analytical documents and changes is established; and (4) the legal and accreditation requirements are met. Our current methods used for routine analytical work are contained in Gautier and Gladney.[23] Each method has a unique number, and the manual is in loose-leaf form so that new methods can be added and obsolete methods removed. HSE-9 uses the analytical protocol required by the customer

to meet the specific needs of their programs. For example, SW-846 methodology is used for solid waste and the environmental restoration program.

7. *Laboratory notebooks*. The distribution of Laboratory notebooks used for raw data collection is recorded in the NOTEBOOK data base. This data base contains the notebook number, dates it was in use, analyst number, where it is located, and a brief description of the contents. The analyst number is a unique number assigned to each analyst employed by HSE-9 and is stored in the ANALYST data base along with the analyst's full name. All notebooks are bound and pages are consecutively numbered. All notebook entries are in ink; blank pages and large blank spaces are X'd; cancellation is by means of a single line that does not obscure the entry canceled; and all entries are dated and signed with full, legal signature (not initialed) at least once per page. The section leader periodically signs the book, for example, "Read and understood, pp._____ to _____, John Smith, Section Leader."

8. *Personnel training*. Users of analytical data have become increasingly concerned about the degree of proficiency of personnel working in the laboratory. As part of the quality assurance program, we have a training data base on the VAX to address this issue. Traditionally, training of technicians has been informal and "on the job." We document this technical training by recording the dates on which a given individual was trained in specific analytical procedures, viewed training tapes, etc. Similar records are kept of training of degreed personnel in the areas of seminars and meetings attended, special courses taken, or training in advanced instrumental techniques. Continued analytical proficiency is documented for each analyst by having them analyze blind QC samples submitted with routine sample batches. These records are a valuable tool in assessing the employee's analytical abilities and should be part of the employee's personnel record. The section leader and the individual employee are responsible for keeping this data base up to date.

B. QC Guidelines for the Analysts in Our Laboratory.

1. *Reagents, chemicals, and glassware*. Use fresh reagents and chemicals. Chemical calibration or standardization depends critically upon the quality of the chemicals used to provide the necessary standard solutions and upon the care exercised in their preparation. Use clean glassware of appropriate calibration.

2. *Instrument calibration*. Calibrate instruments daily. Record calibration results in a bound notebook and date and sign the entry. Each instrument should have its own calibration notebook kept near the instrument. Calibrate, when possible, by regression analysis of the net signal on the analyte concentration. Measure in triplicate at least three different concentrations of calibration standards. However, we recommend using more than three different concentrations. The concentrations of these standards must bracket the expected concentration of the analyte in the samples. For instruments in which absolute linearity cannot be established (for example, atomic absorption spectrophotometers), use a calibration scheme of three standards per concentration decade. For example, run the following standard concentrations to calibrate over the region of 1-100 ppm: 1, 5, 10, 50, and 100 ppm. Record instrument response to the standards and compare with

previous standards run under the same conditions to ensure that system response is not degrading. Record all instrument maintenance work in the notebook.

3. *Instrument linearity.* Do NOT report extrapolated results from instruments without evidence of linearity. Bracket all samples by two standards with concentrations near the expected concentration of the unknown and determine sample concentration by interpolation.

4. *Instrument operating procedures.* Use the written, updated, instrument operating instructions and logbooks available at the bench.

5. *Balance and weight calibration.* Calibrate balances and weights using standards traceable to NIST. HSE-9 participates in a balance and weight calibration program run by the Standards and Calibration Laboratory of the Metrology Calibration group, MEC-8. Calibration of all balances and weight sets is achieved through the use of standards traceable to national standards. Values reported on weight sets are those that would be observed in comparing the weights to standards of density 8.0 g/cc in local air density of 0.923 mg/cc. MEC-8 states that the balances will remain within the stated accuracy for one year and the weight sets for two years, provided they are used in accordance with generally accepted operational conditions. Calibration certificates are issued by MEC-8 along with calibration labels that are affixed to each balance and weight set.

6. *Record keeping.* Store analytical results in the HSE-9 LIMS. Each section should file raw data by Analytical Chemistry Request number and, after two years, archive the data in the Laboratory's Communication and Records Management Office.

7. *Analytical procedures.* Publish, distribute, and maintain current and complete analytical methods and procedures.[23,24] All analytical procedures used by HSE-9 are available at the bench. The Laboratory requires that these procedures undergo formal editing by the Information Services Division before they can be externally distributed. After completion of this editing process, procedures are issued as updates to LA-10300-M "Health and Environmental Chemistry: Analytical Techniques, Data Management, and Quality Assurance."[23] The manual is issued in three-ring binders for ease in updating. To date, analytical procedures have been issued externally for the Radiobioassay, Radiotissue, Industrial Hygiene, and Waste Water Chemistry sections of the manual.

C. QC Guidelines for Radionuclide Counting Instrumentation.

An extensive effort was undertaken during 1988 to formalize the quality assurance program for additional nuclear counting systems used by HSE-9. In addition to the QC already in place for the alpha and gamma spectrometer systems, documentation was formalized for the liquid scintillation, gas-flow proportional, and zinc sulphide counters. This program, in compliance with current EPA and DOE regulations concerning calibration, background, and efficiency measurements, provides a measure of the performance of the various systems. These data will provide accurate records of each system's performance and will document when a system has mechanical/electrical problems that should be investigated and remedied.

1. *Alpha spectrometer systems.* Background and calibration data bases are maintained that contain 10 measurements from which a running average is calculated. Each new calibration and background are compared against the data base mean and standard deviation for each detector. New calibration and background data are not added to the data base if they show evidence of out-of-control conditions. Because each system and each detector in the system are independent, control charts are kept on each detector for the spectrum of interest. Appendix F (Tables F-I to F-IV) shows four quarters of 1990 data. Tables F-V and F-VI show data on the 16 plates used for all routine alpha spectrometer calibrations. Changes in the counting efficiency, other than random fluctuation, are documented in Laboratory notebook A8192 and are generally due to a detector being replaced or needing cleaning, electrical power surges and outright failures, vacuum system leaks, and electronic noise. When a detector is replaced, new parameters are established based on 10 measurements before the background and calibration data are utilized. The count room QC program developed for our seven alpha spectrometer systems is described below.

   a. **Backgrounds.** Run at least one 70,000-s background per week on each system. Environmental samples use an 80,000-s background. Keep a QC chart for each detector showing counts for the ^{238}Pu, ^{239}Pu, and ^{242}Pu areas (Fig. F-1). The background count distribution in these areas of the spectrum, for each detector, is described by a Poisson distribution.

      (1) Probabilities. Apply probabilities associated with the upper 99% limit of the mean count for each detector to determine out-of-control conditions.

      (2) Corrective action. Take corrective action if individual background counts are greater than four for two consecutive counts for the ^{239}Pu areas. The ^{238}Pu areas average four counts in 70,000 s. A measurement of two consecutive counts of nine is considered out of control. The detector shall be cleaned or replaced when an out-of-control state is noted.

      (3) Bioassay samples. The desired detection limit, at the 0.05 confidence level, for the plutonium bioassay procedure is 0.03 pCi per 700-mL sample. To detect this concentration in routine samples, apply the following conditions to the sample for acceptance of individual sample control: 700-mL sample volume, ^{242}Pu tracer recovery greater than 40%, detector efficiency greater than 30%, count length of 70,000 s (1167 min), and background counts of four or less in 70,000 s.

         (a) The calculation for the detection limit of the minimum detectable amount (MDA) of activity, based on Currie,[25,26] is

$$MDA = \frac{\sqrt{4} \times 4.65}{1167 \times .40 \times .30 \times 2.22}$$

$$= 0.03\ pCi/700\ mL\ . \qquad (3)$$

         (b) Because the ^{242}Pu tracer recovery averages greater than 85%, the detection limit for the

majority of the samples analyzed is 0.01 pCi/700-mL sample.

(4) Environmental samples. The desired detection limit, at the 0.05 confidence level, for environmental samples is 0.03 pCi/aliquot of sample. The calculation for the detection limit of the MDA of activity is based on Currie.[25,26]

b. **Calibrations.** Run at least one calibration per week on each system and keep a QC chart for each detector (Fig. F-2). Use the set of 16 matched plates, which are calibrated against NIST SRM 4906-B33, a ^{238}Pu standard plate. The 16 calibration plates are new electropolished/electroplated plates prepared in late 1988. These new standard plates were prepared so that the calibration plates would more closely approximate the routine samples submitted for counting. The standard plates contain 722 dis/min ^{242}Pu, 330 dis/min ^{239}Pu, and 1032 dis/min ^{241}Am and ^{238}Pu. Because these plates contain a trace amount (< 1%) of ^{238}Pu, they will be evaluated each year for ^{238}Pu decay. Apply the following criteria to evaluate whether an out-of-control condition exists for calibration data:

- One point outside the three-sigma control limits.
- Eight successive points on one side of the mean (or 10 out of 11, or 12 out of 14).
- Two out of three successive points between ± two and three standard deviations from the mean.
- Four out of five successive points between ± one and two standard deviations from the mean.
- A definite trend in the data.

Calibration records date to 1953. The ^{239}Pu standard, No. 2B, was prepared by Group CMR-1. The electroplated plutonium is contained in a 1-in.-diameter area on a 2-in.-diameter platinum-plated copper disk. The original estimates and subsequent measurements of the gross alpha activity on this standard, made in a two-pi gas-flow proportional counting system, are given in Table F-VII. An alpha-energy spectrum made of this standard in 1990 demonstrates that 97% of the total alpha activity is consistent with decay energies of $^{239/240}$Pu (5.11 and 5.16 MeV). The remaining 3% was associated with the energies of ^{238}Pu (5.46 and 5.5 MeV). Based on alpha-energy peak locations and ratios of the alpha counts under each peak area, we conclude that the standard's alpha activity results from decay of ^{238}Pu and $^{239/240}$Pu radionuclides. The measurement was made using a 300-mm surface barrier detector rated to give an alpha particle resolution of 19.7 keV. The data demonstrate 20-keV energy resolution. This energy resolution was achieved at a sample-to-detector separation of 2.7 cm and a counting geometry of 1.3%.

The percent alpha activities of these two isotopes of plutonium, back-calculated to 1953, show that the plutonium electroplated on this source is characteristic of isotopic ratios for plutonium processed at Los Alamos in the 1950s, i.e. the gross alpha activity is ~3.8% ^{238}Pu (~0.02 atom percent) and

96.2% $^{239/240}Pu$ (~98 atom percent). The measurement made in 1990 suggests that the gross activity for this standard has decreased by about 1% over the 38-year study period due to the decay of the ^{238}Pu. Information obtained from D. W. Efurd, of the Nuclear and Radiochemistry Group (INC-11), provided information on the isotopic atom percent of plutonium processed at Los Alamos during the years 1944, 1951, 1952, 1957, and 1968, as shown in Table IV. The data may be used to explain changes noted for plutonium alpha reference standards as a function of time and their isotopic make-up. The infor-

TABLE IV. Isotopic Composition of Plutonium Processed at Los Alamos

Year Processed	Isotope	Average Atom Percent	High (%)	Low (%)
1944	Pu-238	below limit of detection[a]		
	Pu-239	99.9515		
	Pu-240	0.0482		
	Pu-241	0.0001		
	Pu-242	0.0002		
	Pu-244	below limit of detection		
1951	Pu-238	0.02	0.041	0.0006
	Pu-239	97.8	100.0	95.0
	Pu-240	2.1	4.8	0.04
	Pu-241	0.09	0.15	0.04
	Pu-242	not determined	—	—
1952	Pu-238	0.039	0.123	0.019
	Pu-239	97.7	99.9	96.5
	Pu-240	2.3	4.8	0.08
	Pu-241	0.12	0.27	0.05
	Pu-242	0.035	0.066	0.004
1957	Pu-238	0.009	0.011	0.0076
	Pu-239	94.2	95.2	93.5
	Pu-240	5.4	6.1	4.4
	Pu-241	0.41	0.49	0.33
	Pu-242	not determined	—	—
1968	Pu-238	0.011	0.019	0.004
	Pu-239	93.8	97.3	93.2
	Pu-240	5.7	6.1	2.6
	Pu-241	0.45	0.68	0.10
	Pu-242	0.021	0.023	0.0095

[a]Clinton (Oak Ridge) Plutonium measurement made on 01/15/82. Other data measurements made during the year of processing.

mation may also be of interest to health physicists evaluating occupational exposure to plutonium as a function of exposure date. The specific composition of plutonium associated with occupational exposures or bioassay analytical procedures should be established for exposure assessment.

NIST alpha standard SRM 4906-28 was obtained in 1973, and this standard or similar NIST SRMs have been used since 1973 as the primary alpha calibration standard for calibration of our gas-flow proportional counters. We have continued (from 1973 to the present) to reference measurements made against the NIST standards with measurements of the activity of standard No. 2B. The No. 2B standard was used to calibrate the instruments that were used for measuring the plutonium concentrations in bioassay urine samples collected from Los Alamos workers between 1953 and 1973. Before 1953, bioassay results were expressed in counts/min because there was no standard available to relate counts to ^{239}Pu mass.

(1) Record keeping. Print copies of all calibration and background data. The count room manager will review and sign all data and give them to QA for approval before release to other data reduction codes. Keep printed copies of calibration and background data indefinitely in notebooks.

(2) NIST standards. Use a NIST standard plate as the primary standard with which to calibrate secondary standard plates. Reference the same NIST standard plate in all computer data reduction codes.

(3) Plate size. Use the 5/8-in. standard plate size with a 1/2-in. plating area.

(4) System names. Refer to the alpha systems as Alpha 16, Alpha 32, Alpha 48, Alpha 64, Alpha 80, Alpha 96, and Alpha 112. The Alpha 96 is calibrated for the measurement of uranium, thorium, and americium in addition to plutonium.

2. *High-resolution gamma spectroscopy systems.*

a. **Backgrounds.** Run at least one 50,000-s background per week for each detector for each matrix (water, soil, and vegetation). Transfer the data to the VAX data storage disk and integrate the gamma-ray photopeaks of interest using the GAMS or NGAM data reduction code. Record the results in a Laboratory notebook. Archive all background spectra to hard copy and store with the count room records.

b. **Energy calibrations.** Run one energy calibration per week on each detector after filling the detector Dewars with liquid nitrogen. Use either the NIST SRM 4370B ^{152}Eu solution or the NIST SRM 4218E ^{152}Eu point source as the full-spectrum energy source. Use three primary photopeaks (122-, 779-, and 1408-keV lines) for calibration. Transfer the spectrum to the VAX data disk and archive the data to hard copy. Record the information (date, analyst, detector, calibration line, etc.) in the GeLi calibration logbook. Plot the data semiannually to provide quality

assurance documentation of the stability of the detectors (Fig. F-3).

c. **Efficiency calibrations.**

(1) Absolute efficiencies. Monitor the absolute efficiencies using the NIST SRM 4370B ^{152}Eu solution to generate the spectra. Transfer the data to the VAX data disk for storage. Obtain specific radionuclide standard solutions from NIST or EPA. Spike these solutions onto the variety of matrices and configurations that are commonly encountered in our nuclear counting facility. These variations include 10- and 25-mL glass scintillation vials, 500-mL Nalgene bottles, 1- and 4-L Marinelli beakers, 100 g of vegetation and soil in 500-mL Nalgene bottles, filters within our standard planchet (2- by 1/4-in.), and charcoal cartridges. Count these samples on an annual basis for 50,000 s for each matrix and/or configuration in each detector system. Transfer the data to disk, reduce the data using the GAMS or NGAM data reduction program, and log the results into the efficiency notebook for the gamma-counting facility. Archive all data to hard copy.

(2) Relative efficiencies. Another technique is used in the gamma-counting facility to address system performance over time. Once a month, measure the ^{152}Eu (NIST SRM 4370B) point source at a fixed distance and position from the detector face on each of our six detectors. Reduce the spectra using the GAMS or NGAM data reduction code to generate an efficiency for each of 11 different ^{152}Eu gamma energies present in the point source. Calculate the mean values of these efficiencies each month and compare them to those of the previous month. Plot the data (Fig. F-4), to give a visual record of each detector's performance.

3. *Liquid scintillation counting systems.*

a. **Backgrounds.** Run triplicate background measurements with every sample set using "blank" deep-well water to determine background levels. The count length will vary according to the matrix and sample with which it is counted. Print the data file and tape the printed copy to the appropriate instrument performance assessment (IPA) notebook for archival data storage. Plot the data to determine if trends are present (Fig. F-5). This information is used to determine if the instrument parameters are operating properly or if the well water is contaminated.

b. **Quench curves.** Run a quench curve at the beginning of each month. A standard set that contains a known amount of ^{3}H, with varying amounts of quenching agent (ethyl iodide) in each sample (n=10), is counted for 30 min. The automated program on the liquid scintillation counter will automatically generate a new quench curve with each sample set run. Print out the quench curve and tape the hard copy in the appropriate IPA notebook. The Spectral Index of External Standard values generated by the program are copied to other programs that are in use to provide those programs the most current quench curve information.

c. **Normalization values.** The liquid scintillation instrument contains two photomultiplier (PM) tubes. In order to follow PM tube performance, run a normalization standard each week to measure the varied response from the two PM tubes. If both PM tubes respond equally to the sample, the ratio should be equal to 1. If the ratio varies greater than 15% from that value, the PM tube electronics are in need of repair. Keep a record of these values, along with graphic representation of the data (Fig. F-6), in the liquid scintillation counter performance verification logbook.

d. **Efficiency calibrations.** Run an efficiency measurement each week to provide an alternate measure of system performance. Run standards, analyze trends, and record data in the liquid scintillation counter IPA verification notebook. If the variation of the standards exceeds ± 15% and/or the value of the standard is less than 58% for the 4530 liquid scintillation counter or less than 60% for the 2200CA liquid scintillation counter, the system is considered to be operating outside the allowable performance parameters and is in need of alignment or repair. See Fig. F-7.

e. **Figure of merit.** Another method of examining liquid scintillation system performance is the figure of merit (Fig. F-8). It is a numerical value calculated by dividing the efficiency squared by the background. This value indicates how efficiency and background interact and how the system measures an event in the presence of background. If this value goes below 150 (determined by the manufacturer), the cause should be investigated and the system repaired. This characteristic is available only on our new Packard 2200CA liquid scintillation counting system.

4. *Gas-flow proportional counting systems.*

a. **Backgrounds.** There are currently three gas-flow proportional counting systems in use, each requiring varying times for background information collection. The alpha count room proportional counting systems count backgrounds for 30 min each week. The gamma count room proportional counting systems have background counts run with each sample set. Record all data in the appropriate notebooks. This information is tabulated to show trends that may lead to corrective action as required.

b. **Voltage plateaus.**

(1) Alpha-counting facility. Run voltage plateaus each time a new Argon/Methane (P-10) gas supply tank is put on the proportional counting system. There are four gas-flow proportional counting systems in the alpha counting facility. Three are windowless (two for alpha and one for beta) and the fourth is windowed and is dedicated to ^{90}Sr analysis.

(2) Gamma-counting facility. Create a new voltage plateau on a semiannual basis for the gamma facility proportional counter. This counter is set for both alpha and beta counting.

Plot the data for all systems, generating a curve of voltage versus count rate. The point at which the voltage is set is determined to be within 10% of the "knee" of the curve. Record these values

in the appropriate notebooks for archival purposes.

c. Efficiency calibrations.

(1) Alpha-counting facility. Generate the efficiency values for the windowless gas-flow proportional systems on a weekly basis. For the alpha counting systems, measure NIST SRM 4906-B33 and 4906-B94 ^{239}Pu standards. Plot the data to determine if problems exist. See Fig. F-9. Count NIST secondary ^{210}Pb sources, nos. 7432 and 8357, on the beta counting system. Plot this data to determine if problems exist. See Fig. F-10. The windowed gas-flow counting system dedicated to ^{90}Sr analysis utilizes a secondary calibrated New England Nuclear ^{234}Pa source to monitor the relative efficiencies of each of the four detectors. Plot the data to monitor trends and to determine if the instruments are operating within acceptable limits. See Fig. F-11. Record all data in the appropriate IPA notebooks.

(2) Gamma-counting facility. A different means of efficiency measurement is used in the gamma-counting facility. Because the samples have an associated volume/mass, it is important to know the amount of self-absorption occurring within each sample. Calculate the self-absorption by counting a series of planchets with varying, known amounts of potassium salts (KCl) and plot the count rate versus the amount of precipitate on the planchet (precipitation curves). This curve yields an equation of the line that will allow the calculation of the correct activity on a planchet, regardless of the amount of mass associated with the sample. Record all values in the appropriate notebooks for archival purposes.

d. Relative efficiency measurements. These data record relative performance of the gas-flow detectors over time.

(1) Alpha-counting facility. Measure a known set of secondary standards each week on the alpha and beta counters. System performance is measured by comparing the calculated value of these standards to their consensus values.

(2) Gamma-counting facility. Measure, with each sample set, a NIST secondary source of ^{239}Pu as the alpha standard and a NIST secondary source of $^{90}Sr/^{90}Y$ as the beta standard. Record the data in the counting notebook. See Fig. F-12.

e. Quality control measurements. A QC material should be counted on all systems to provide an additional measure of performance. The only counter among the gas-flow proportional counting systems to which this currently applies is the windowed counter located in the gamma counting facility. Data from a QC that was repeatedly measured during the year was plotted for alpha and beta performance to provide this additional oversight. See Fig. F-13.

5. *Zinc sulfide counting system.*

a. Backgrounds. Accumulate backgrounds each week. Count a blank planchet for

100 min on each of the 8 detectors. Record the data in the appropriate notebook.

b. **Efficiency calibrations.** Take efficiency measurements each month. Perform the efficiency measurements using a NIST SRM 4904L-F20 ^{239}Pu standard. Count the sample in triplicate for 10 min on each system. The mean value associated with the set of data will consist of the efficiency value for that particular detector. Log the data onto a data logging sheet and store it in the appropriate notebook.

c. **Relative efficiency measurements.** Measure a set of internal secondary standards (NIST-traceable ^{239}Pu) of known value each week. Record the calculated value of the standards in the appropriate notebooks. Examine the data to determine if trends are appearing. Take the appropriate corrective action when necessary.

6. *Gross gamma counting system.*

a. **Backgrounds.** Accumulate a series of at least three 5-min backgrounds with each sample set measured. Record the data on the data analysis sheet for use in determining final sample activity.

b. **Efficiency calibrations.** Count in duplicate for 5 min either a soil or water matrix, prepared from a NIST 4233-B ^{137}Cs burn-up standard solution, with each sample set. Record these values on the data analysis sheet. These data are matrix dependent and are utilized in the data reduction code to determine the counting efficiency for each sample set. The counting efficiency is used to calculate the activity of the samples.

c. **Quality control measurements.** Count a QC sample (either soil or water) in triplicate for 5 min with each sample set. Record the data on the data analysis sheet. The data provide information on the performance of the counting system during the time that the samples are being counted. The measured QC value is divided by the calculated value providing a ratio that is used to judge system performance. If the measured QC value is in good agreement with the true value of the QC, the ratio should be close to one. See Fig. F-14.

7. *System anomalies.* This section is included for the first time with the 1990 data sets. It will address the problems of each system as suggested by the graphics in Appendix F. Probable causes for these anomalies will be addressed.

a. **Alpha spectrometer systems.** None.

b. **High-resolution gamma spectroscopy systems.** Data for the energy calibrations do not extend for the full year because the detector was taken off line and replaced with a high-performance germanium planar detector. This detector will provide an additional means of direct ^{241}Am analysis using gamma spectroscopy.

c. **Liquid scintillation counting systems.** The relative efficiency curve and the figure of merit for the 2200CA liquid scintillation counter show a definite spike in the last few data points. This was caused by the inappropriate change of the standard value in the program that derives these values. The problem was corrected with the last data set. Since this standard is used only as an

IPA indicator, it had no effect on the calculated data points.

d. **Gas-flow proportional counting systems.** There is a definite slope displayed in the data derived from the ^{210}Pb standard. This suggests that the standard may be degrading, because the other standard is giving correct values.

   The QC charts for the gas-flow system in the gamma counting facility, the beta QC data set in particular, display a consistent negative bias throughout the year. This has been attributed to the use of efficiencies derived from an old precipitation curve set, yielding low data values. New precipitation curves for both the alpha and beta counting plateaus are being prepared.

e. **Zinc sulfide counting system.** None.

f. **Gross gamma counting system.** None.

IV. AUTOMATED NUCLEAR COUNTING FACILITY

IV. AUTOMATED NUCLEAR COUNTING FACILITY

Our Automated Nuclear Counting Facility (ANCF), which automates sample changing, data collection, and data reduction for four high-performance germanium detectors, was completed during 1989. It utilizes software and computer controlled hardware that provides the following functions: (1) keyboard entry of sample and counting parameters, (2) automated data acquisition, (3) manipulation of samples using robotics, (4) peak identification and spectral analysis, (5) report generation, (6) insertion of data into the SAMPLES database through the HSE-9 LIMS, and (7) archiving of spectral data.

A. Automated System.

An EG&G ORTEC ADCAM Multi Channel Analyzer (MCA) system is the center of functionality in the ANCF. The ADCAM system runs on a personal computer (PC) and allows the automation software to directly reference supporting files during the gamma analysis process. These files contain calibration, background, detector description, sample description, and nuclide library information. The automation software integrates the ORTEC MCA with the rest of the system to provide a completely menu-driven environment for the end user. It can process up to 72 samples per run with minimal human intervention. These samples may be of a variety of matrices that include water, soil, vegetation, charcoal cartridges, and filters. The sample carrier vessels manipulated by the robot are designed to accommodate the various sizes and shapes of sample matrices. The system analyzes the spectral data collected from each sample. The activity and uncertainty information may be reported based on activity per sample or on weight/volume. The ANCF saves significant personnel time, eliminates keyboard transcription errors, and dramatically reduces sample turnaround time.

B. System Configuration.

Four intrinsic germanium detectors are connected to the MCA and are mounted on a precision-machined aluminum table. The table is 15 feet long by 4 feet wide and supports a lead cave with a pneumatically controlled top door for each of the four detectors. The robot is manufactured by PRI and moves the length of the table on a rail using a rack-and-pinion drive. A rack designed to hold the 72 samples sits between the shielded caves. The MCA emulator runs on an IBM PC/AT clone using the DOS 3.3 operating system. The emulator communicates with the Multi Channel Buffer (MCB) module, based in a Nuclear Instrumentation Module bin, via a PC-based interface card and shielded cable. The communication is either in the form of direct memory access or mailbox reads and writes. The mailbox allows the programmer to directly control the MCB to start the count, store the spectrum, and collect real-time and live-time values. The PC-based emulator enables storage and retrieval of the spectrum directly from the hard disk. Since the actual counting is buffered in the MCB, the PC can be used by the operator for other tasks. The PC can even be rebooted without affecting the operation of the MCB.

The PC is configured on an 80386 20-MHz platform. It uses a math coprocessor, 40 megabytes of hard disk space, and a 3.5-in. high-density floppy drive. The PC also contains 2 megabytes of RAM memory, part of which is sectioned off as a RAM Disk. The RAM Disk adds considerable computer

processing performance gains within the application because executable and library files that are often used (some of them as often as once per second) are stored there. In addition to the regular hardware on the PC bus, there is an MCB interface and an IBM TTL (0 V dc or 5 V dc) interface with 16 bits of binary input and output. The TTL interface collects 4 TTL input signals, one from each cave door, and distributes 4 output signals. The automation software is synchronized with the robot through these signals. The two subsystems derive critical software flow control information based on the position of the cave doors. The automation software and the robot change the state of the cave doors when needed.

C. General Operation.

Each of the following paragraphs corresponds to a menu selection in the automation software.

1. A fast and flexible Lotus-style input screen allows the user to enter the following sample and count information: sample numbers, request numbers, sample owners, sample weights and/or volumes, count time, analyst, matrix, analysis nuclide list, calibration filename, and background filename. Upon exiting, a file containing this information is created and is used by subsequent parts of the automation software.

2. The second data input screen prompts the user to specify the exact gamma analysis parameters to be used in the analysis phase. These parameters include decay correction, use of minimum detection limits, background subtraction, sorption correction, calculations used to adjust the activities based on sample weight or volume, units for adjusted activity, and the type of uncertainty to report (activity, percent, or total).

3. The counting process begins with the third menu selection. It initializes the cave door position to closed, prompts the user for which caves to count from, and instructs the user to load samples into the rack in the same order as the sample numbers were added in menu selection one. After the robot is initialized, the sample run begins. At this point, a counting screen is displayed that contains the following information about each detector: MCA and segment number, cave number, number of samples to be counted, the current sample being counted, total count time, real time, live time, and dead time. The status of each cave is also displayed in terms of whether it is being used during this run or is disabled. The screen is updated each second to reflect new counting statistics. If dead time exceeds 20%, a yellow warning message for that cave is displayed. At any time during the run, the user may type CNTL Y and a small screen of three choices will appear on top of the counting screen. This screen allows the user to branch to DOS to perform any DOS operation, to invoke the MCA emulation to visually inspect the spectrum being counted, or to abort the count, specifying whether or not to erase the files created for that particular run. The user eventually exits DOS or the MCA emulator and automatically reverts back to the counting screen.

4. Menu selection four invokes a complex and sophisticated software application that analyzes the spectrum with the aid of numerous supporting files. These files contain calibration, background, detector description, sample description, and nuclide library information. The software produces a report file for each sample and ensures

that spectral data are analyzed consistently and accurately for each run. The user interface requires no keyboard input. The menu displays which reports have been processed, which report is currently being processed, and in which part of the analysis phase it is currently working (Convert, BackGround Strip, Analyze Spectrum, and Create Report). This information allows the user to determine the length of time needed for each part of the analysis and allows him to accurately estimate when the process will be completed. Approximately 20 s are required per report.

5. In screen five, the automation software opens each report file, parses that file based on knowledge of how the report is formatted, and intelligently extracts each important data item required by the HSE-9 QADM Section for insertion into the SAMPLES database. The activities associated with each nuclide in each report file are converted to results per weight or volume as specified by the user in menu selection one. If those activities are below minimum detection limits, a file is opened, based on the combination of sample matrix and detector. This file contains uncertainties derived from each nuclide within each specific matrix. When all reports have been parsed, the information gathered from them is stored in a single file with an .ENT extension.

6. VT100 terminal emulation software is invoked in menu selection six, creating a link to the VAX. The user logs onto the VAX and calls up the LIMS menu. PCENTER is selected to invoke a program written to process the .ENT files created in menu five. PCENTER stores the sample analysis information for each sample number and nuclide in the SAMPLES database and produces a log file for the user. This log file contains status information about the database update.

7. An additional software application was created to convert the raw spectrum files created by this system or any ADCAM system to MCA.DAT format. MCA.DAT files are directly compatible with all of the analysis and LIMS database insertion software residing on the VAX used by other analysts in the group. This allows downward compatibility between the new ANCF and the older gamma spectroscopy software used by HSE-9.

8. A new module created in 1990 transfers sample and analytical data, contained in the reports generated by the automation software, to the H9VAX-based LIMS database. This process involves parsing the report files with software that recognizes the report format and extracting pertinent data items. When all report files have been parsed, the activities and uncertainites associated with each sample and nuclide are adjusted to compensate for sample weight or volume. A single file is created with all of the information extracted from the report files and formatted for the PCENTER program. PCENTER processes the file and updates the appropriate LIMS data base.

V. QUALITY ASSURANCE MANAGEMENT AND COMPUTING RESOURCES

V. QUALITY ASSURANCE MANAGEMENT AND COMPUTING RESOURCES

The quality assurance program is run by a QA officer, who heads an independent QADM Section within the group. The QA officer is responsible for carrying out our QA program and for taking or recommending measures to fulfill the quality objectives in the most efficient and economical manner possible, while ensuring continuing accuracy and precision of all data produced. The QA officer evaluates data as they are reported, prepares a written report quarterly about critical issues, and publishes this annual summary, which contains all raw QC data for historical archiving.

A. System Configuration.

Our ability to address this diverse mission is strongly based on our overall QA management system. Our computing facility consists of a central Digital Equipment Corporation (DEC) VAX 8200 computing system with 25 keyboard terminals, 50 microcomputers, and several data acquisition systems all linked to the VAX through Ethernet and DECnet. The VAX 8200 is equipped with three RA series disk drives capable of holding 833 Mbytes of data, three RLO2 10-Mbyte removable-cartridge disk drives, and one magnetic tape drive. Late in 1990, HSE-9 upgraded the computer facility to include a new MicroVax 4000/300 CPU with 1.2 Gbytes of disk capacity, and 32 Mbytes of RAM memory. This new computer was connected to the existing MicroVax 3800 in a mixed VAX Cluster configuration with a common boot device, common DSSI storage bus, and an Ethernet inter-CPU communications link (Fig 2). The HSE-9 LIMS will eventually be ported to this new computing environment. Additional facility upgrades include bringing up an Ethernet backbone segment which runs through each hallway in OH-1, and four new Ethernet thin wire segments connecting various CPUs and data acquisition systems to the local area network lines were installed in the computer room along with additional terminal servers and a DELNI. The total cost of the upgrade was $200,000.

Our system manager and information management staff maintain over 400 existing programs and 160 data bases containing over one million records. Our in-house LIMS has been structured around the VAX Datatrieve software system, which permits users to tailor data bases and interactive software to suit their particular needs. A primer entitled "Introduction to VAX/VMS" is distributed to HSE-9 users. It is an extensive introduction to the VAX/VMS operating system that consolidates a vast amount of usable information from numerous reference manuals.

B. System Back-Ups.

The HSE-9 data processing environment receives many daily updates to large data bases. It can be difficult to back up these files during normal working hours due to the number of open files and to the verification errors that result. Since so much of the information on the disks changes each day, it is important to back up that information on a daily basis. A complete back-up system includes both incremental back-ups (involving only the files that have changed since the last time back-ups were done) and image back-ups (involving all files on all disks, maintaining the directory tree structures). Historical image back-up save sets are also necessary so that old

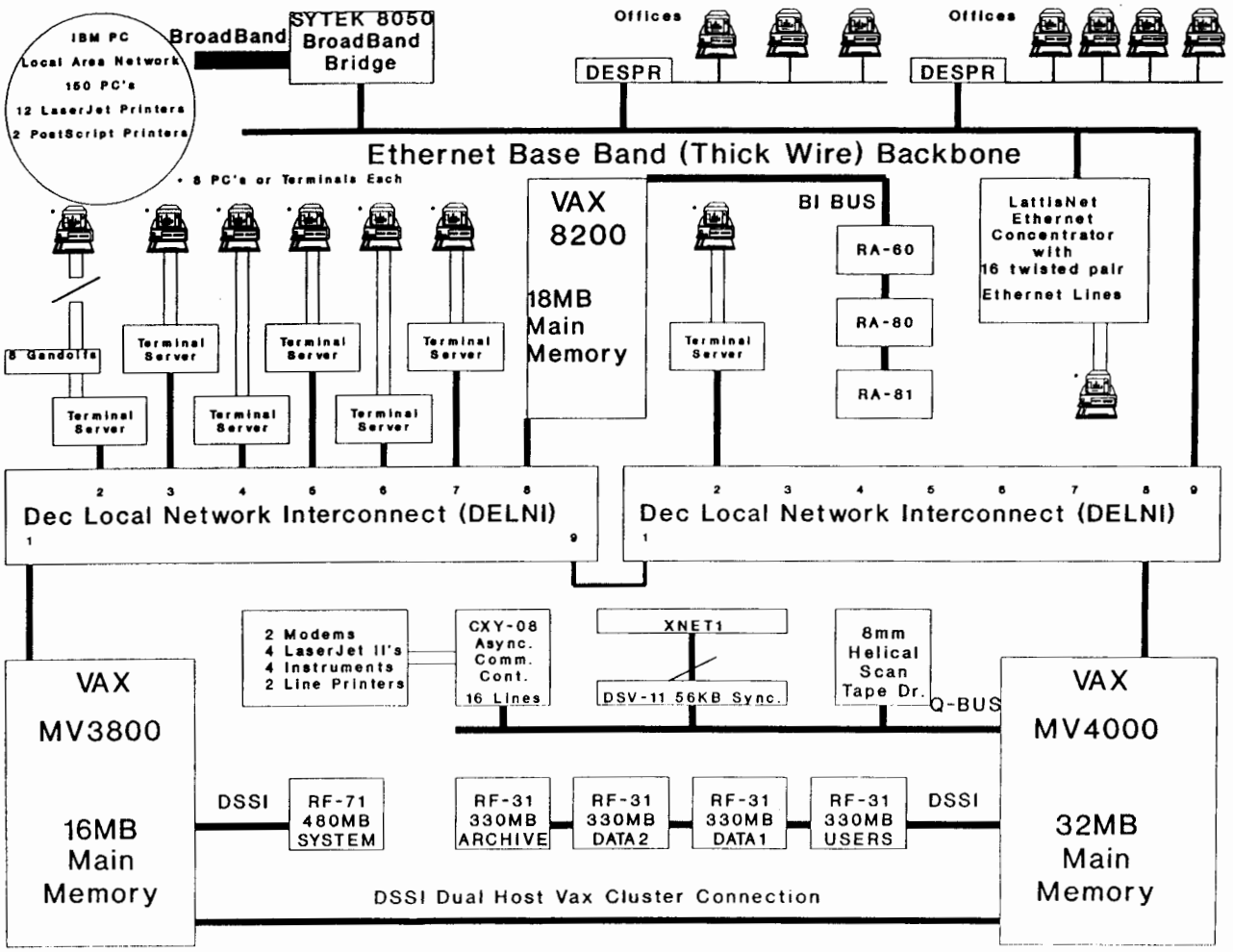


Fig. 2. Diagram of the VAX 8200 system.

raw data files from years past can be restored to disk.

We can perform unattended incremental back-ups late at night for up to a month's worth of data because of the introduction of helical scan technology and an 8-mm tape cartridge, approximately the size of an audio cassette cartridge. Since the physical size of the cartridge is small, it is no longer necessary to rotate image back-up save sets. This has allowed a much greater level of insurance against catastrophic loss of data such as from the very gradual or subtle introduction of bad data into back-up save sets as good data gets rotated off the tapes.

The TTI CTS-8000 UD Cartridge Tape Subsystem, manufactured by Transitional Technologies Inc., is a high-performance, high-capacity, 8-mm tape subsystem. The tape drive is capable of storing more than two billion bytes of formatted computer data on a single cartridge. Features of this subsystem include (1) a powerful internal Error Correction Code, (2) error recovery procedures implemented in the cartridge tape subsystem controller, (3) read-after-write error checking and automatic rewrite, (4) a nonrecoverable error rate of less than 1 bit in 1013 bits, and (5) high-performance SCSI bus data transfer rates of up to 1.5 Mbytes per second. The CTS-8000 UD is an add-on subsystem

designed to be integrated into the DEC Q-BUS-based CPUs. The operating system considers the tape subsystem to look and act like a TK50 tape drive, and uses the standard VMS TUDRIVER tape driver. This feature of compatibility ensures that the subsystem will be compatible with future DEC upgrades to the VMS operating system.

The back-up program, H9BACKUPS, runs continuously in a special batch queue or until the system is restarted. The tape drive is initially mounted and is not dismounted until the type of back-up changes from incremental to image. This happens twice a month when the day of the month is equal to 1 or 15. Because the tape is mounted for two weeks at a time, the possibility of mount failures, each time an incremental back-up is begun, is eliminated. The tape is left positioned just after the last written incremental save set and at the location where the new save set is to be written.

H9BACKUPS uses two disk files. One is entitled BACKUPS.LOG, and the other is a back-up journal file whose filename depends on the month of the year and the type of back-up. For example, if H9BACKUPS is doing incremental back-ups and the date is February 1990, the back-up journal file would be FEB1990-INC.BJL. The BACKUPS.LOG file contains a complete account of each back-up operation performed each day. The log file is closed, and a new revision is created each time image back-ups are run (the 1st and 15th of each month). This file logs the status of the back-ups and notes if there are any problems with the program as it runs in the batch queue. The journal file is an RMS sequential file that contains information about every file that gets backed up. This file is specifically formatted so that the back-up utility can scan it based on any combination of disk name, save set name, creation date, or filename to find the exact information needed from any number of different back-up save sets. This functionality is very useful when a user needs an old file restored and the system manager is not sure on which physical volume the file is located.

Each morning at 12:00 a.m., H9BACKUPS checks the day of the month. If the day is equal to Saturday or Sunday, back-ups are not begun, and the program reverts to standby mode until Monday morning at 12:00 a.m. If the day is not equal to 1 or 15, incremental back-ups are performed and the program reverts to standby mode until the next day at 12:00 a.m. If the day is equal to 1 or 15, image back-ups are needed and at 8:30 a.m., the program notifies the system console and all terminals enabled as operator consoles that the incremental tape needs to be replaced with that month's image back-up tape. A unique message number is printed with this message, and a mail file is sent to SYSTEM and MANAGER detailing what needs to be done by the operator. When changing the tape, the operator logs onto the system at a keyboard terminal and does a REPLY/TO=message-number. H9BACKUPS receives the REPLY from the operator, proceeds to initialize the image back-up tape, if it is the first of the month, and mounts the tape. The program then waits until 8:30 p.m. before it proceeds to do image back-ups. When image backups are completed, H9BACKUPS again waits until 8:30 a.m., mails a message, requests an operator to replace the image tape with the incremental tape, waits for a reply, initializes the incremental tape, closes the log file, resubmits itself to the batch queue to begin running at 12:00 a.m. the next day, and exits.

C. Presampling Conference.

A fundamental principle of our philosophy is that analytical service work is not a linear transfer of samples from customer to analyst

and of analytical results from analyst to customer. Continuing interaction between these parties is required and alerts HSE-9 management to future research needs for new technology. Appropriate HSE-9 managers and professional staff should be brought into the project at its inception and participate in its experimental design. For these reasons, HSE-9 uses an Analytical Service Agreement (Fig. 3) that is completed by the HSE-9 Sample Management Section and a potential customer during a presampling conference. During this conference, HSE-9 analytical capabilities and customer sampling and analytical requirements are discussed. Agreement is reached on the number and types of samples to be submitted, the types of containers and the sample preservation methods,[27] and any special protocol that may need to be followed. Scheduling requirements of both customer and

HSE-9 ANALYTICAL SERVICE AGREEMENT			REQUEST NUMBER:_____
I. PRESAMPLING CONFERENCE:			
Program Code:	Task ID#:	No. Samples Expected:	
Request Date:		Completion Date:	
Chain of Custody:		Special Protocol:	
Container Type:	Preservative:	Storage Conditions:	
Sample Hazards Present:			
Sample Disposal:	(All hazardous samples or TRU Wastes will be returned to the Customer.)		
Customer:		HSE-9 Section Leader:	
Customer Initials:	Customer Phone:	Mail Stop:	Date:
II. EMERGENCY SAMPLES: Emergency status REQUIRES the following approvals:			
Customer Group Leader_____	HSE-9 Group Leader_____	Date:_____	
III. SAMPLE RECEIPT			
Signature_____	Date:_____	Total No. Received:_____	
MATRIX	INITIAL SAMPLE NO.	FINAL SAMPLE NO.	NO. RECEIVED
Translation table of HSE-9/Customer numbers will be provided by Sample-Receiving and appear on each final data report.			

Fig. 3. Analytical Service Agreement form.

analysts are considered. A priority is assigned to the request by the HSE-9 Sample Management Section. Priority 1 is the highest priority level that can be assigned to any sample. Samples assigned a priority 1 status will be moved to the top of the assignment queue. The analyst will complete the analysis and issue a final report as soon as possible. This priority gives the analyst preapproval for overtime if it is required for the timely completion of the required analysis. Samples assigned a priority 2 status will be moved to the top of the analysis queue but will not supersede any existing or future priority 1 status samples. The analyst will complete the analysis as soon as possible during the analyst's normal working hours. Overtime will not be authorized for samples with a priority 2 status. Samples with this status will be scheduled for analysis on a first-come, first-served basis. Priority 3 is for routine samples that will be analyzed in order received, during normal working hours. The HSE-9 Analytical Service Agreement is available in electronic form from any group keyboard terminal. All information is documented on the Analytical Service Agreement that is signed by both Sample Management and the customer. In the event of emergency sampling, additional signatures from the HSE-9 Group Leader and the customer's Group Leader are required.

D. Sample Management.

During the third quarter of 1990, the HSE-9 Sample Receiving Laboratory was transferred to the new Sample Management Section. This was done in an effort to streamline our operations, improve our QC and chain-of-custody efforts, and better serve our customers. Following the presampling conference, the customer collects the samples and identifies each one with a unique descriptor of up to 12 characters. Samples are submitted to the HSE-9 Sample Management Section along with the Analytical Chemistry Reguest form (Fig. 4) prepared during the pre-sampling conference. Sample Management personnel generate a computer-printed label (Fig. 5) bearing a unique HSE-9 analytical number for each sample, and places the stick-on label on the sample container. Label information includes the date received, request number, sample number, and the name of the appropriate analytical chemistry section. This numbering protocol avoids sample number duplication, eliminates computer-incompatible customer-generated numbering systems, and minimizes transcription errors between customer and analyst. Multiple aliquots of any one sample will bear the same HSE-9 sample number, followed by a letter designating that each aliquot is one of a set. The HSE-9 CUSTOMER-NUMBER data base stores the customer's sample number, the HSE-9 sample number, and the date the sample was collected. This information is accessed by other programs that monitor EPA holding times. Only the HSE-9 sample number is used to identify the sample to the analysts, allowing the QADM Section to prepare and submit blind QC samples along with the customer samples. The Sample Management Section enters the HSE-9 sample numbers and the blind QCs on the Analytical Chemistry Request form.

The Sample Management section is responsible for logging sample information into the HSE-9 LIMS from a keyboard terminal using the interactive programs AGREEMENT, CUSTOMER-NUMBER, and SAMPLES-RECEIVED. Copies of the Analytical Service Agreement are distributed to the analytical chemistry Section Leaders and to the analysts using VAX-Mail. A copy of the completed Analytical Service Agreement is also sent to the customer. The customer copy and the copy filed in Sample Management include a cross-reference listing of the customer numbers and

HSE-9 ANALYTICAL CHEMISTRY REQUEST			REQUEST NUMBER:_____	
Program Code:		Task ID Number:		Request Date:
Customer Initials:		Customer Phone:		Mail Stop:
MATRIX		INITIAL SAMPLE NO.		FINAL SAMPLE NO.
SECTION	ANALYSIS	TECHNIQUE	ANALYST	DUE DATE
REMARKS:				

Fig. 4. Analytical Chemistry Request form.

*** 90.06720 ***
REQ # 11754 DATE: 17-JUL-90
INORGANIC

Fig. 5. Sample label.

the associated HSE-9 sample numbers. The analyst and Section Leader copies do not include this information in order to keep the QC samples blind. Both numbers appear on all analytical reports and are stored in the annual archives along with the analytical data. The old multicarbon analytical chemistry request form is reserved for use if the computer is not available.

E. Laboratory Information Management

The central portion of the group's work flow is shown in Fig. 6. A FORTRAN program, LIMS, provides menu-driven access to all information-handling software. All software approved for presampling conferences, sample submission, data reduction, data entry, report writing, QADM Section data maintenance, bookkeeping, and other miscellaneous functions is available through one of the menus. The menu screens are shown in App. B, Tables B-I to B-IX. HSE-9 LIMS operates as a set of stacked menus, and most submenu items call other DCL command files or Datatrieve procedures. The compiled HSE-9 LIMS program is installed in memory to increase speed and to protect the program from inadvertent modification.

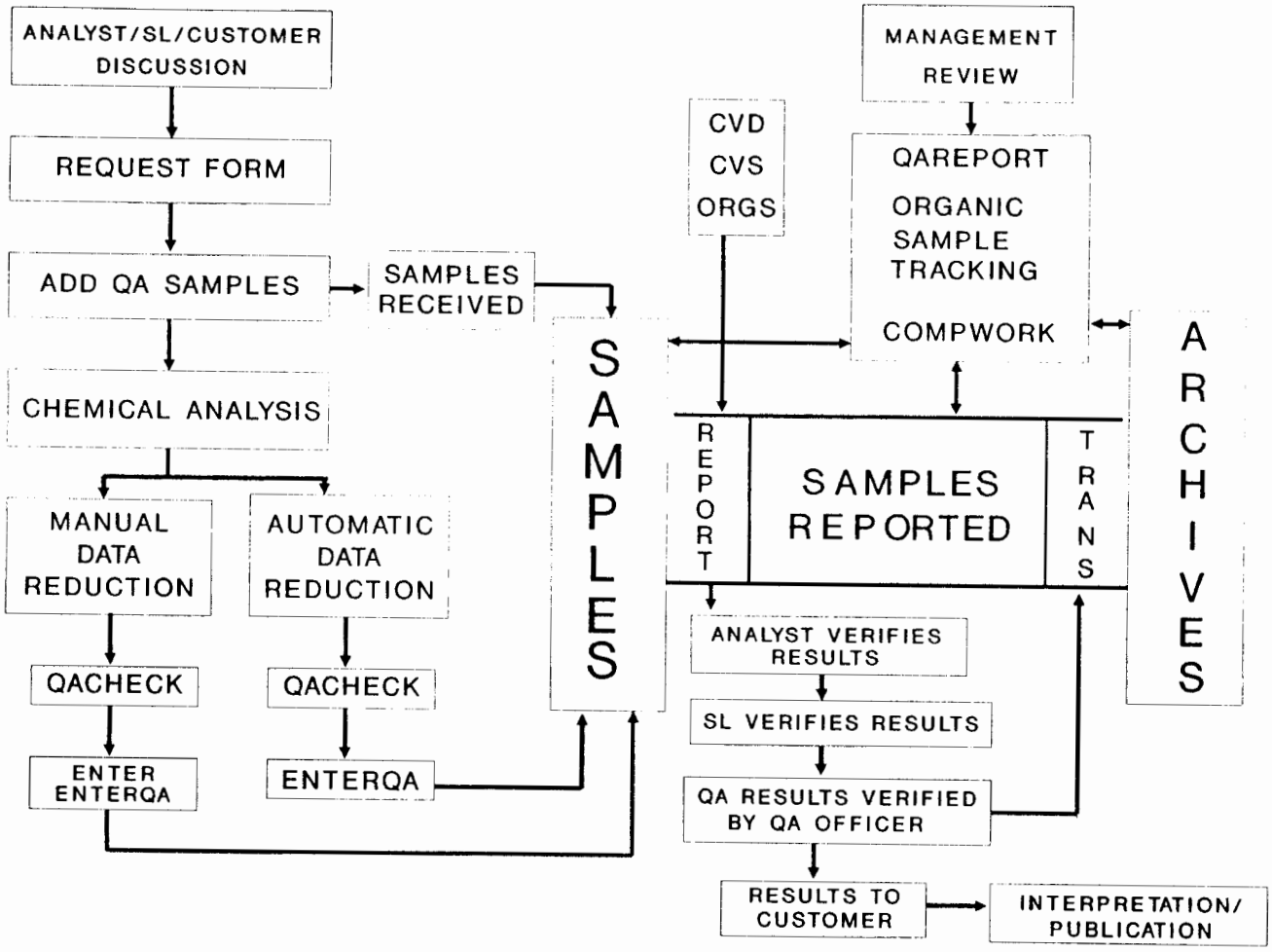


Fig. 6. Diagram of the overall work flow and data review process.

The following changes, upgrades, and enhancements were made to the Laboratory Information Management System during 1990.

- The Analytical Service Agreement was revised to allow the specific work request section to be prepared from preexisting templates that contain analyses, analytical techniques, and responsible analysts to minimize keyboard entry errors that can plague an electronic data management system. The SAMPLES-RECEIVED section of the service agreement automatically creates space in the SAMPLES data base for each sample and analysis requested, including all appropriate date, status, and holding time flags. Actual creation of these data records is done in batch mode, permitting Sample Management personnel to interactively initiate another request while the previous one is processed.

- Daily and weekly status reports were produced automatically in batch mode for priority 1 and 2 samples, for organic holding times, for QC results on waste treatment plant samples, and for the overall group workload.

- Lotus spreadsheet data reduction with automatic uploading to the SAMPLES database on the VAX was implemented for most classes of organic compound analyses and Inductively Coupled Plasma Mass Spectrometer (ICPMS) mass scans of inorganic sample constituents.

- A formal audit scheduling and corrective action tracking system was implemented using Datatrieve and DCL software.

- Security was enhanced to limit access to certain software assets, such as sample management codes, that should only be used by authorized members of the Group.

- The report writer was enhanced to provide for separate reporting and evaluation of organic duplicates, matrix spikes, blanks, and surrogates.

- The compilation of the annual tables for the QA report was systematized in a separate DCL-level command file.

- Input from all organic analytical software to the ORGANIC-SAMPLE-TRACKING data base was completed. All holding times and reporting dates were automatically stored for documentation purposes.

- Automated data input for blind QC samples prepared by the QADM Section was developed primarily for the classes of organic analyses that have large numbers of compounds associated with each analysis (e.g. volatiles and semivolatiles).

- Quarterly QA evaluation software was modified to significantly decrease execution time.

1. *Analytical data storage.* The SAMPLES data base contains records on work that has been requested but not analyzed and records with initial data that have not undergone analyst review. SAMPLES-REPORTED contains data for which formal reports have been written but which have not yet been released to the customer pending completion of formal review by the analyst, section leader, and QA officer. H9DATA1990 contains data that received formal approval and was released to the customer. The archival databases contain data as a function of completion date of the analytical work (i.e., H9DATA1988 archives only contain data produced during 1988). A new archival database is created each calendar year, and archived data from 1981 to the

present are available on-line with read access through the HSE-9 LIMS using the ALL-DATA-SEARCH software.

The structure of the SAMPLES-REPORTED and H9DATA1990 databases is similar to that used in SAMPLES and contains the following information: HSE-9 sample number, customer sample number, owner, matrix, phase, analysis, request number, request date, due date, project number, analyst, technique, symbol, result, uncertainty, units, completion date, status, notebook, page, analytical procedure number, batch number, special codes, and analytical comment. The batch number allows the reporting of QC data that apply to more than one request number on individual reports without having to reenter the QC data. The special codes field provides for improved bookkeeping by screening individual analyses within certain groups [e.g., Inductively Coupled Plasma (ICP) mass scans, volatiles, semivolatiles] from the work summary programs. The special codes field within H9DATA1990 and subsequent annual archives has the additional function of flagging data that were changed after the formal report was released to the customer. The original data record is retained without modification (other than addition of the special codes flag) and the superseding record is added to the archive to provide additional audit trail capability.

The SAMPLES-REPORTED, H9DATA1990, and subsequent annual archives have the same structure as SAMPLES with one additional field. A report number field was added to these two databases to permit rapid location and transfer of data that have been collected by the report writer to prepare a final report for release to the customer. This report number is generated by the report writer software and is unique to each report.

More than 230,000 analyses per year flow between our 50 analysts and the SAMPLES, SAMPLES-REPORTED, and H9DATA19XX data bases. Datatrieve permits a search of the databases as a function of any single parameter or any logical combination of parameters. These data can be transmitted to the analyst by video terminal or hard-copy line or laser printers. Using logical combinations of Datatrieve commands, the analyst can get a real-time assessment of what has been requested, what remains to be completed, what procedures have been suggested for certain determinations, etc. This eliminates the need for each analyst to maintain his or her own hard-copy record system and offers the analytical manager quick access to the overall status of a Section or the entire Group.

2. *Electronic Analytical Service Agreement.* Initiation of the work flow process has been largely automated through the development of an on-line Analytical Service Agreement (see App. B). The electronic service agreement may be invoked from any VAX terminal on our network. The record of the completed agreement is electronically stored in a central database, ANALYTICAL-AGREEMENT. We have reduced the overhead in the SAMPLES database by not creating records in this database until samples arrive in Sample Management. This eliminates the problem of carrying requested work in SAMPLES for customer samples that are never delivered.

3. *Organic sample tracking.* Creating space in the data base upon receipt of samples allows receiving-to-reporting

accountability for customer samples. This tracking includes holding and instrument analysis times specified by EPA primarily for organic determinations. At the time of receipt, a record is created in ORGANIC-SAMPLE-TRACKING (OST) for the major classes of organic analyses (e.g. volatiles, semivolatiles, PCBs). OST accepts the system date as the receipt date and automatically calculates the 7-day or 14-day extraction holding time. Upon entry of the extraction date, OST calculates the 40-day instrument analysis holding time. When analysts complete instrumental analysis, they may also enter the analysis date. Final reporting and archiving are automatically date-stamped in OST by the final report writer and the TRANS program.

4. *Class-specific compound entry software.* We have reduced the overhead in SAMPLES by using only single-entry master records for the major classes of organic analyses and for ICP mass scans from the time that the work is requested until the analyst is ready to enter the 60-70 elements/compounds which are individually determined. The master record contains all the bookkeeping information for the following classes of analyses: MSCAN, IDENT, VOLATILES, SEMIVOL, PESTICIDES, HERBICIDES, POREGAS, and PCB (1336363). The new Lotus-spreadsheet-based software permits direct uploading of the individual elements/compounds while reading the bookkeeping information from the master record and storing it in each individual analytical data record. To facilitate the rapid summary of backlog and completed work for these classes of analyses, the special codes field of the individual records is flagged so that they will not be counted by the bookkeeping programs and the master record is retained so that it may be counted in these summaries.

Special software (ORGANIC-IDENT) was written to permit unrestricted entry of compounds identified for any IDENT request, with provision to read all bookkeeping information from the master record and store it with each compound identified. Special software (ORGANIC-TIC) has also been developed to facilitate the entry of tentatively identified compounds discovered during volatile or semivolatile determinations.

Datatrieve-based, class-specific software permits the entry of QC sample data into CVS, the certified/consensus value database for the six major classes of organic analyses (CVS-VOLATILES, CVS-SEMIVOLATILES, CVS-PCB, CVS-HERBICIDES, CVS-PESTICIDES, and CVS-POREGAS). The entire target list of compounds for a given class of organic analysis is now entered for each QC sample prepared for that class of analysis. The concentrations and uncertainties of compounds actually spiked are then entered and the remaining records show both a concentration and uncertainty of zero, indicating that these compounds were NOT intentionally added by the QADM Section. When the analyst's data are submitted to the LIMS, we can monitor the rate of occurrence of false positives and false negatives, as well as the analyst's success in hitting the actual spiked concentrations, using procedures FALSEPOSITIVE, SPIKERECOVERY, and QAREPORT. Observations of false positives may represent unintentional contamination of the QC during preparation, storage, or analysis, and is not immediately identified as a purely analytical problem. Frequent recurrence

of either false condition indicates that either an analytical procedure or a QC preparation procedure needs careful review.

5. *Report writer.* During 1990, major revisions to the report writer software were made to reduce execution time and to provide more detail to the customer concerning blanks, duplicates, organic surrogate recoveries, matrix spikes, and matrix spike duplicates. Preliminary and final report writing functions are provided in the HSE-9 LIMS as shown in App. B, Table B-V. Our current philosophy is that the analyst maintains control of the data during the preliminary reporting process, as long as the data are not released to the customer. Any errors identified by the analyst during the data review may be corrected easily in SAMPLES without keeping the erroneous record for audit trail purposes. The production of a final report indicates the analyst's commitment to the accuracy of the data and the data are transferred to SAMPLES-REPORTED. Access to SAMPLES-REPORTED is allowed for only three personnel from the QADM Section who are not directly associated with the analytical production sections. Any further changes to the data require justification to the QA officer.

   Preliminary Reports. The preliminary report writer was completely rewritten so that it now operates just like the final report writer. A special queue was developed for these short reports to enhance turnaround time. The preliminary report writer permits the analyst to produce a hard copy of the open QC and customer data to review for data entry errors before formal reporting, without revealing the identity or control status of the blind QCs. Four types of preliminary reports are available: (1) a single analysis by one analyst on one request number; (2) multiple analyses by the same analyst on one request number; (3) multiple elements for a single sample done by ICP mass scan; and (4) multiple organic compounds by the same analyst on one request number. Option four provides a preliminary report as a function of organic class (i.e. volatiles, semivolatiles, pesticides, herbicides, pore gas, PCBs, or other).

   If the analyst detects errors in the analytical data during review of the preliminary report, the ENTER program may be used to modify the data in the SAMPLES database. This does not require management approval and no record of these changes is kept, since the data are still under the control of the analyst and have not been reported to the customer. Revised preliminary reports can be written as many times as desired without triggering software that transfers the data to SAMPLES-REPORTED, thus passing control to the QADM Section.

   Final Reports. When the analyst is confident that data are accurate, the final report writer permits the analyst to produce a hard copy of all customer data and both open and blind QCs for management and QA review for completeness and compliance with group QA standards and policies. The use of the final report software triggers the transfer of the data from SAMPLES to SAMPLES-REPORTED and the transfer of control of the data to the QADM section. The same four report types listed in the preliminary report section are also produced by the final report writer. Examples of these reports are shown in App. B (Figs. B-1 to B-5). The organic version of the final report writer was modified to reformat

output. Customer samples, sample duplicates, organic surrogates, blanks, blank spikes and duplicates, matrix spikes, and matrix spike duplicates are now printed in separate, clearly labeled sections of the report. Dates of sample collection, receipt, extraction, and analysis are also displayed with the heading for each customer sample. The results of both open and blind QC samples analyzed with the sample batch are printed on a separate page of the report package. The software recognizes blind QCs and prints the current certified or consensus value on these reports along with the calculated control status from Eq. (1) of Section III. The analyst and Section Leader review and sign the final reports, which then go to the QA officer for approval before release to the customer. Since the final report writer entails access to databases containing certified/consensus values for QC not available to the analyst, special privileges are built into the final report writer to give it restricted read access for each reporting session.

If errors are detected in the final report during data review and sign-off before release to the customer, the QA officer must evaluate the reasons and determine the course of action. Simple problems that should have been detected during the preliminary report review (such as inappropriate units) which do not result in changes to actual results may be modified and the report rewritten with QA officer approval. Data that fail to meet the QA criteria of the group may be rejected by the QA officer, and the samples will be reanalyzed without reporting the out-of-control data to the customer. No changes can be made to data in SAMPLES-REPORTED by other group personnel.

After QA approval of the final report for release to the customer, the TRANS program is invoked and the approved data are moved from SAMPLES-REPORTED to one of the annual archives as determined by the completion date entered by the analyst in the original data record. Changes shall not be made to records in the archives. Approved changes will be made to a new record with the original defective record remaining unchanged, except for the status and special codes flags. These flags provide an audit trail for all data changes made following formal approval and release of analytical data. All justifications for change are kept in bound Laboratory notebooks that are signed and dated by the individual authorized to make the change (usually the LIMS manager). All changed data will be re-reported to the customer.

A new electronic reporting system was developed for data obtained from analytical work performed for the Waste Management group (HSE-7). The data are now automatically moved to the archives upon completion of the "electronic report," making this reporting consistent with the rest of the system.

6. *Quality assurance software.* We have a utility program, QAREPORT, that looks at QC data in two-week windows. The report runs automatically in the report batch queue, mails the completed report to the LIMS manager, and resubmits itself to run again in two weeks. This program permits the QA officer to assess, on a biweekly basis, our success in meeting the analytical QA objectives and policies described in Section III. Portions of the code were reprogrammed and this improved the execution speed by 66%. In addition, a variety of Datatrieve

procedures were developed and installed in this part of QAREPORT to monitor incorrect entries in SAMPLES in the analyst, technique, analysis, program-code, and matrix fields.

QAREPORT automatically generates 10 biweekly reports that assist in the overall management of the group's workload. Several programs determine the current backlog of unfinished work as a function of analyst, requested determination, sample number, request number, and matrix. Other programs monitor sample holding times for extraction and instrument analysis; list completed work needing formal reporting, formal reports that have not received QA sign-off, and unfinished work that is past the agreed due date; and check for typographic errors in the analysis, analyst, program code, and analytical technique fields. Other software tools remain basically unchanged. WORKCOMP (work completed) and REPBYMAT (report by matrix) are utilities that facilitate rapid generation of reports for management concerning the number and type of determinations requested or completed during a given time and the associated cost code information. Tables E-I to E-III of App. E are generated directly by REPBYMAT.

With the Datatrieve view concept, program QAREPORT associates data from several data bases that include routine QC results as well as certified and consensus values for a given material and constituent. For a user-selected time frame (usually quarterly or annually), the resulting report consists of (1) the ratio, by matrix and analysis, of QC samples to customer samples submitted, (2) a detailed list of submitted QC samples that have matrix or units conflicts with the certified data, and (3) a listing of QC data falling above or below our acceptable limits of analytical error as defined by Eqs. (1) and (2) from Section III. Table C-I in App. C is generated directly by QAREPORT.

7. *Volatile, semivolatile, and pore gas data entry.* A completely new software interface was developed and successfully implemented that addresses the LIMS data entry needs of users with volatile, semi-volatile, and pore gas data. This software uses local copies of LOTUS 123 running on each user's PC to facilitate the data entry process. The basic design of the LOTUS macros that manage the data entry process involves the use of predefined templates with lists of target compounds, tentative id's, minimum detection limits, units of reporting, and conversion factors. The data entry person need only to use cursor control keys to move to the parts of the template he or she wishes to change. As the templates are "worked" up to a level of correctness, a menu command allows the user to save this information. The PC work stations are integrated with the VAX over a network link utilizing VAX disk space as a virtual disk drive on the work stations. Thus, when LOTUS is told to store the template information, the information is actually stored on the virtual drive, eliminating the time-consuming steps of explicitly moving that data from the PC work stations to the VAX with file transfer software running under a terminal emulation package. The data are now on the VAX, which runs the HSE-9 LIMS. The user invokes the LIMS data base update software and the software processes the data from the templates and stores it in the appropriate parts of the LIMS system.

8. *Analyst proficiency software.* This new software is available on the LIMS and summarizes QC results for individual analysts as a function of analysis and technique for both open and blind QC samples run during a user-selected time period. The results are displayed as the percent of each analysis/technique combination that were either under control, in the 2-3 sigma warning region, or out of control. Proficiency to perform a particular HSE-9 technical procedure is evaluated by each Section Leader and the QA Officer using the criteria set forth in HSE-9 Administrative Procedure AP-1.

9. *Scheduled audits and corrective actions.* New data bases and software were developed in 1990 to enable the group management to monitor the performance of routine audit functions, track the resolution of any resulting corrective actions, and archive evidence of periodic electronic audits of selected data management functions. The AUDIT-SCHEDULE data base contains fields for audit frequency, a sequentially assigned audit number, next audit date, and two lines of description of the function to be audited. Corrective actions that are issued due to these audits or any other audit/review activity within the group are entered into the CORRECTIVE-ACTION data base so that their resolution may be tracked electronically. CORRECTIVE-ACTION contains fields for audit number, corrective action number, date due, responder, status (active or closed), person who approved closure of the finding, and the closure date. Both of these data bases are reviewed weekly and listings of overdue audits and corrective actions are electronically mailed to group management. Both data bases have companion data bases in the group's archives (AUDIT-SCHEDULE-ARCHIVE and CORRECTIVE-ACTION-ARCHIVE) so that every audit conducted and every corrective action that is closed is electronically archived and kept for documentation purposes. Audits that result in no corrective action are similarly documented in these archives.

10. *Sample numbering.* Our sample-numbering system continues to use a sample number of the structure AA.xxxxx in which AA designates the last two digits of the current calendar year and xxxxx is a five-digit number serially assigned during the sample-receiving process. This structure facilitates efficient computer management of the data. Because open QC samples may carry over each year (e.g. NIST SRM 1633a Fly Ash), we assign them constant numbers in the series 00.xxxxx to make them easily distinguishable from various years' samples. Blind QC samples are assigned sample numbers, but are eventually tied back to the QC system through the use of the 00.xxxxx number in the customer number field. In the past, sample numbers were assigned in blocks to specific customers. The introduction of a blind QC system necessitated changing this approach. Analytical work performed for the Waste Management group (HSE-7) still retains the block approach to permit easy association of individual outfalls with previous data for the National Pollutant Discharge Elimination System (NPDES) reporting purposes.

F. Chemical Abstract Service Organic Compound Numbering System.

Organic chemistry nomenclature is complex and readily subject to typographical errors

during entry into SAMPLES. In 1984 we adopted a modified version of the Chemical Abstract Service (CAS) compound numbering system to facilitate our record keeping for the diversity of organic analyses performed. The CAS number for a given compound is stripped of the dashes and entered into the "analysis" field in SAMPLES. An organics data base, ORGS, is kept on the VAX to facilitate translation of these numbers to compound names before the data are reported to the customer. New compounds are added to this data base by the LIMS manager at the request of the Organic Chemistry Section, and listings of the data base can be generated alphabetically by compound name or numerically by CAS number.

G. Instrument-to-VAX Interfaces.

Many of our analytical instruments store their raw data directly on the VAX disks for off-line data reduction, and in several cases, the entire data generation process is computer controlled. A battery of data reduction programs are available to analysts that in most cases generate Datatrieve executable command files to input final analytical results directly into SAMPLES after analyst approval. For those instruments that still take raw data in the form of chart recordings, the analysts use one of the interactive data entry programs shown in the LIMS menu (App. B, Table B-I) to transfer final calculated values back to SAMPLES. When a set of samples has been completed for a given analysis, the analyst uses the report writer menu, Table B-V, App. B, to generate preliminary or final reports.

H. Administrative Computing.

Los Alamos National Laboratory considers sample data from the bioassay and tissue analysis programs to be confidential personal information, and we keep these data bases on the NOS administrative machine at the Central Computing Facility. The associated QC sample information is kept in the SAMPLES data base on our VAX.

The bioassay program has been computing in the administrative partition of the ICN for the last 15 years. During 1990 all codes used by the bioassay program were converted from machine N, the CDC 7600 machine running NOS, to VAX/VMS. All computing will be eventually transferred to the HSE Division VAX 6250 running VMS 5.0. Conversion code specifications, file formats, and flow diagrams were prepared and the program coding has been completed.

All codes used in the alpha-counting facility are also being converted. Many of the current functions of the ALPHA data reduction codes are being combined into as few separate programs as possible to make both operation and maintenance easier. The codes are now easier to follow and all instances of non-standard FORTRAN have been removed. Additional functionality is being added to the ALPHA code to accommodate the uranium alpha spectrometry data that the Radiochemistry Section will produce when it begins the routine analysis of bioassay samples for uranium by alpha spectroscopy in late 1990.

I. Control Charts.

One of the oldest methods used to monitor and control the quality of a procedure is the

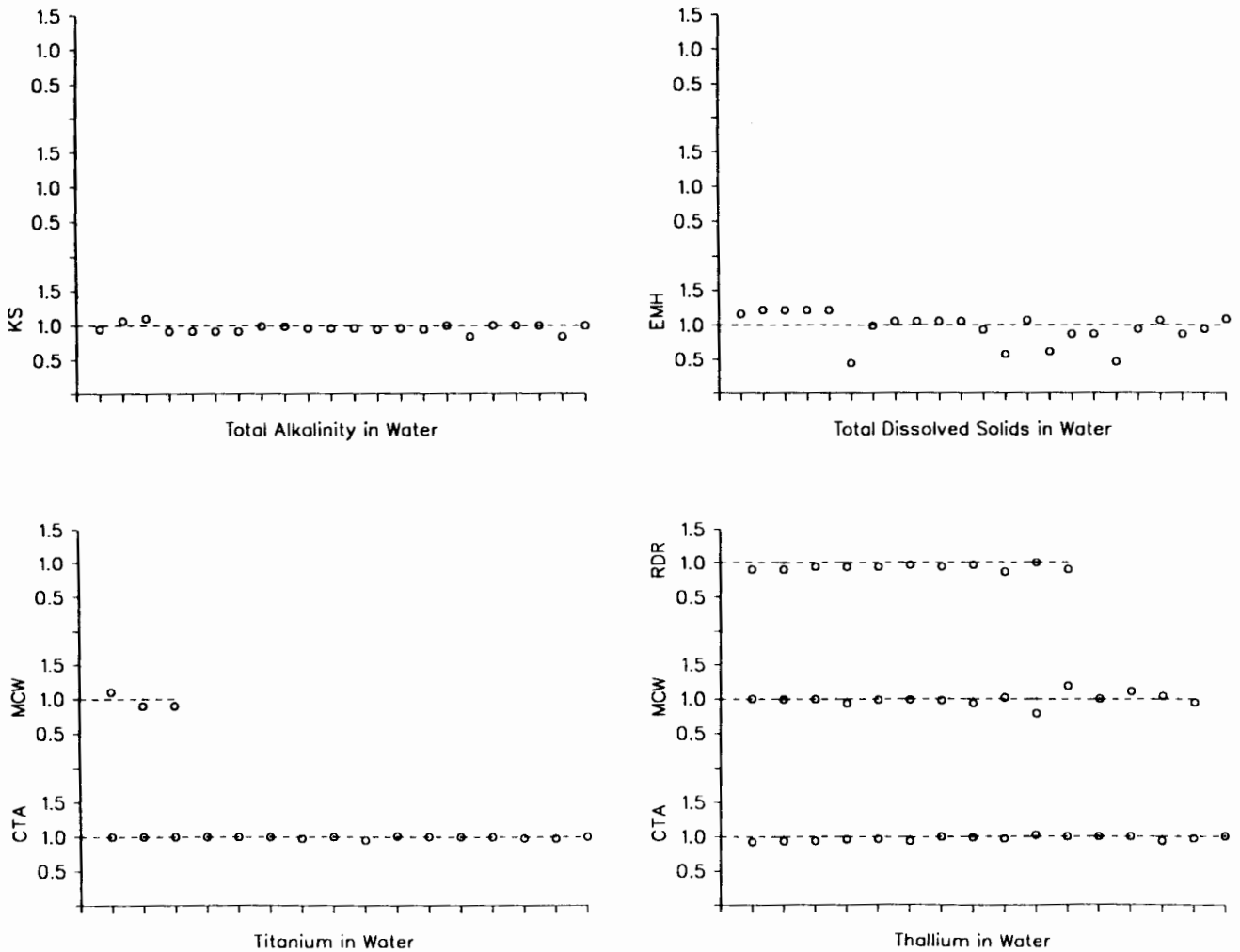


Fig. 7. Quality control charts

control chart (Fig. 7). The control chart is a graphic representation on which the values of the characteristic under investigation are plotted sequentially. We use the type of chart (devised by Shewhart[28]) that consists of a central line and two limit lines spaced above and below the central line. These are usually termed the inner and outer control limits. The distribution of the plotted values with respect to the control limits provides valuable statistical information on the quality of our analytical results. A computerized graphics package imports a file created by QAREPORT.

This data file is transferred each quarter from the HSE-9 VAX over the network to a VAX within the Laboratory's Central Computing Facility. DISSPLA is then used to create graphic representation of our QC data. These performance charts are based on analyte, matrix, and analyst, and four charts are plotted on each page (Fig. 7). More than 200 graphs, containing over 3000 data points, are plotted each quarter. The mean of all data for a given analyte and matrix is computed each quarter by this program and is stored in a file called YEARLY. This data file is used in the 5-yr trend plots of organic, inorganic, and radiochemistry QC data produced by HSE-9 (see App. D, Figs. D-1 to D-3).

Harvard Graphics software is being employed to produce the organic surrogate recovery plots shown in App. D (Fig. D-8). New LIMS

software was developed in 1990 to facilitate the collection of these data from the annual archives, sorting by matrix and analyte, and printing on individual files for downloading to Harvard Graphics running on an IBM PC. Individual data are given in App. C, Table C-V.

VI. CHEMICAL INVENTORY AND TRACKING SYSTEM

VI. CHEMICAL INVENTORY AND TRACKING SYSTEM

HSE-9 maintains an inventory of all chemicals in the group as part of the Federal Hazard Communication (Right-to-Know) legislation, Title 29, Code of Federal Regulations (CFR) Part 1910.1200. We designed and developed a chemical inventory and tracking system in 1987 using the latest bar-code and data base technology. All new chemicals are given a bar code and are logged into the system immediately upon receipt by the group. Our stock of more than 6,800 chemicals is one of the Laboratory's largest and is spread throughout our three locations at TA-35, TA-50, and TA-59.

A. Inventory System.

The inventory is located in a data base named CHEMINV. It is critical for compliance with the law and provides an excellent vehicle for locating available chemicals and avoiding unnecessary purchases. Our inventory of radioactive materials resides in a separate data base called RMD (radioactive materials data base). The inventory system utilizes two different bar-code reading devices. One device is attached to a VT220 terminal that communicates with the VAX and allows immediate deletion of expended chemicals from CHEMINV, the active-inventory data base. At the same time, all information associated with that particular chemical is automatically moved to EXPENDED-CHEMINV, the expended chemicals data base from which reorder lists and estimated usage data can be derived. The second bar-code reading device communicates with a programmable hand-held computer terminal that facilitates taking the annual inventory.

HSE-9 chemical inventory records are available in the QADM Section. EXPENDED-CHEMINV will be maintained indefinitely to meet legal requirements. All records are auditable and include the following information: (1) the identity of each chemical as it is referenced on an appropriate Material Safety Data Sheet (MSDS); (2) the CAS registry number; (3) the location(s) in which the chemicals are kept; and (4) the estimated amount of the chemical on hand. MSDSs for all of our chemicals are available in alphabetical order in three-ring binders that are distributed throughout our group.

During 1990 the chemical inventory in HSE-9 was reduced by several hundred chemicals as a result of the following: (1) acceptance by the Laboratory's Waste Management Group of excess chemicals during their sponsored "Waste-Free Days;" (2) general housecleaning of the laboratories in HSE-9 areas; and (3) the realization that it was more cost effective to get rid of older chemicals that did not contain the proper hazard labels than it was to research the hazards and acquire the proper labels. Peroxide-forming chemicals, such as ethyl and isopropyl ethers and tetrahydrofuran, and dry picric acid were also removed from HSE-9 laboratories. Chemical storage areas were reviewed for chemical compatibility and proper storage cabinets were purchased.

B. Annual Chemical Inventory Process.

Each year, the inventory process is begun by running an initialization program that is activated by selecting INITIALIZE ANNUAL CHEMICAL INVENTORY from the menu. This program initializes the ANNUAL-CHEMINV and NOTENTERED-CHEMINV data files and modifies every record in the CHEMINV domain by setting the audit bit to

0. This bit will later be set to 1 by the PROCESS-ANNUAL-CHEMINV procedure and the STORE-CHEM procedure. The audit bit will be used again by the procedure FIND-LOST-CHEMICALS after the physical inventory is completed. This procedure moves all records with audit equal to 0 from the CHEMINV domain to the LOST-CHEMINV domain, where that information will reside indefinitely unless PROCESS-ANNUAL-CHEMINV.DTR moves it back to the CHEMINV domain in a subsequent annual inventory, or STORE-CHEM erases it.

A hand-held portable data terminal (PDT) is used to take the annual inventory. It has a small keyboard that allows entry of alphanumeric characters and has a four-line liquid crystal display. It records the bar code, either scanned with the gun or typed in, and the location information typed in by the user. The location information consists of technical area, building, room number, and a field called other into which more specific information can be typed. When the user finishes scanning an area, the PDT is returned to the QADM Section and the information within the memory of the PDT is transferred to a file on an IBM PC using software that came with the PDT unit. The data is then cleared from the PDT memory and the unit is given to the next user.

Menu selection LOAD BARCODE FILE into ANNUAL-CHEMINV is chosen and the PC file is transferred to the VAX using VTERM. Information scanned with the PDT is loaded into the ANNUAL-CHEMINV domain and the original data file is stored in a subdirectory.

The 1990 inventory of HSE-9's chemicals was the first physical inventory taken since our system was set up in 1987. This inventory processed 6,872 chemicals and an additional 1,261 chemicals were still missing. The large number of missing chemicals was probably due to inaccurate inventory taking and to personnel failing to remove bar codes from chemicals that were either expended or disposed of through HSE-7. If a bar code is not removed when we are finished with a chemical, that chemical will never be moved to EXPENDED_CHEMINV. For this reason, a special data base called LOST_CHEMINV was set up at the end of the 1990 inventory to store these chemicals. Small adhesive dots printed with the last two digits of the year have been ordered for use next year. As each chemical is inventoried in 1991, a dot will be placed on the container to indicate that the chemical was accounted for.

C. Annual Chemical Inventory Software.

Menu item PROCESS BARCODE DATA loads the ANNUAL-CHEMINV domain into CHEMINV based on criteria documented in the software flow chart shown in App. B as part of the program ANNUAL_CHEMINV. This step processes data in the following two phases: (1) each bar code is looked up in the EXPENDED-CHEMINV domain and if found is moved back to the CHEMINV domain and (2) each bar code is looked up in CHEMINV and if found the location is updated and the audit bit is changed to 1. Bar-coded chemicals found during the inventory that were not in either CHEMINV or EXPENDED-CHEMINV are stored in NOTENTERED-CHEMINV. Upon completion of PROCESS-ANNUAL-CHEMINV, the contents of the domain NOTENTERED-CHEMINV are printed on the system line printer. The analyst must locate these bar-coded chemicals in the laboratories, and record the complete chemical inventory information onto a predefined form available from the QADM Section. The menu selection DISPLAY OR PRINT ALL BARCODES SCANNED BUT NOT FOUND IN THE

INVENTORY may be invoked at any time to reprint this list.

The QADM Section enters information from the form into the inventory with the menu selection STORE CHEMICAL. After data entry is completed, the contents of the domain NOTENTERED-CHEMINV will again be printed on the line printer. This is the new list of bar codes scanned but not found in the inventory. This loop should be continued until the NOTENTERED-CHEMINV domain is empty. STORE CHEMICAL also looks into the LOST-CHEMINV and NOTENTERED-CHEMINV domains for bar codes the user is entering. If the bar codes are found in either of these two domains, they are erased. The STORE CHEMICAL menu selection invokes the same STORE-CHEM procedure used routinely by the QADM Section.

After domain NOTENTERED-CHEMINV is empty, menu selection FIND ALL CHEMICALS IN THE CHEMICAL INVENTORY WHICH HAVE NOT BEEN SCANNED IN THE LABORATORIES (lost chemicals) is run. This selection invokes the procedure FIND-LOST-CHEMICALS that looks at the audit field in each record in CHEMINV. If the audit field is equal to 0, that record is moved to the domain LOST-CHEMINV. This procedure also prints the contents of LOST-CHEMINV on the system line printer.

VII. INTERLABORATORY QUALITY ASSURANCE PROGRAM

VII. INTERLABORATORY QUALITY ASSURANCE PROGRAM

We use the terms reproducibility, repeatability, intralaboratory variability, and interlaboratory variability in describing the various aspects of our measurement process. Repeatability is the variation in data generated on one sample by one analyst or instrument or both over a short time. Reproducibility is the variation over an extended time or by different laboratories or analysts. Intralaboratory variability is the difference in results obtained when a single laboratory repeatedly measures aliquots of the same sample, whereas interlaboratory variability is the difference in results obtained by various laboratories in measurements of aliquots of the same sample. Variabilities caused by equipment, conditions, and different operators (but independent of sample variabilities) affect reproducibility and are parts of intralaboratory variability. Laboratory biases, paired with differences in the capabilities of various laboratories, result in an interlaboratory variability that can be much larger than intralaboratory variability. Our well-designed and well-executed QA program helps to reduce both intralaboratory and interlaboratory variability.

An effective QC program should have external quality assessment to confirm the effectiveness of the internal program.[29] Proficiency testing creates a strong incentive for laboratories to maintain high standards of quality and provides interested agencies with a tangible record of laboratory performance. An argument sometimes put forth by critics of proficiency testing is that laboratories concentrate their best efforts on proficiency test samples.[30] Although this may be true, a laboratory's competency is nonetheless tested, even if it is not truly representative of their day-to-day operation. If a laboratory is indeed incompetent, it is not likely to do well on a proficiency test no matter what special efforts are made. Our experience indicates that proficiency testing serves as an incentive for our laboratory to maintain a high level of performance and that it generally leads to analytical improvement.

Group HSE-9 maintains widespread participation in intragroup, intergroup, and interlaboratory quality evaluation programs that use blind samples. We currently participate in the intercomparison programs described below, and App. C, Table C-V, reports data from these studies. Five-year trend plots of our results on several EPA intercomparison studies are shown in App. D (Figs. D-4 to D-7).

A. National Institute for Occupational Safety and Health (NIOSH) Proficiency Analytical Testing (PAT) Program.

This program provides reference samples for our industrial hygiene chemistry efforts. Each quarter, sample kits are mailed to participating laboratories, and data analysis is completed in time to allow participants to obtain repeat samples and correct analytical problems before the next round starts. The reference samples are designed to cover a variety of analytical methods used by occupational health laboratories and include contaminants for which analytical agreement is often poor. We receive metals on filters (a combination of lead, cadmium, and zinc) and organic solvents on charcoal tubes (a combination of up to three of the following: benzene; carbon tetrachloride; chloroform; 1,2-dichloroethane; methylene chloride; methyl chloroform; methyl ethyl ketone; methyl isobutyl ketone; p-dioxane; toluene; trichloroethylene; cellosolve acetate; and o-xylene). The concentration levels are randomly selected from a range of concentrations that is typical of samples taken near current or proposed 8-h

time-weighted-average threshold limit values (TLVs).

B. **Environmental Monitoring and Support Laboratory-Cincinnati (EMSL-CI) Drinking Water Program.**

As part of an independent evaluation of US EPA regional laboratories, state laboratories, and other selected laboratories for the drinking-water certification program, EMSL-CI sends us Water Supply Performance Evaluation (PE) Study samples twice a year. The study covers an ever-growing list of analytes, most at two concentration levels. We currently analyze for nitrate, nitrite, fluoride, turbidity, trace metals (a combination of arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver), residual free chlorine, corrosivity, sodium, total cyanide, sulfate, chlorinated hydrocarbon pesticides (insecticides) and herbicides, trihalomethanes, and regulated and unregulated volatile organic chemicals (VOCs). Three VOC samples were shipped with each study during 1990. One sample contained the eight VOCs (trichloroethylene; carbon tetrachloride; 1,1,1-trichloroethane; 1,2-dichloroethane; vinyl chloride; benzene; 1,1-dichloroethylene; and 1,4-dichlorobenzene) for which minimum concentration levels are being regulated. The second VOC contained an unspecified number of VOCs selected from the eight VOCs listed for regulation and selected from the Section 1445 unregulated contaminants listed on page 25,710 of the Federal Register of July 8, 1987. Sample three was to be analyzed using EPA Method 504 for volatiles and contained low levels of 1,2-dibromoethane (EDB) and 1,2-dibromo-3-chloropropane (DBCP). EMSL-CI prepares reports for each laboratory and reviews unacceptable data with the laboratory to identify and resolve problems.

C. **Environmental Monitoring and Support Laboratory-Cincinnati (EMSL-CI) Water Pollution Study.**

These studies are part of a continuing effort to provide independent evaluation of US EPA regional laboratories, state laboratories, and other selected laboratories analyzing for water pollution parameters. EMSL-CI sends Water Supply PE Study samples twice a year. The study covers trace metals, minerals, nutrients (ammonia-nitrogen, nitrate-nitrogen, orthophosphate, Kjeldahl-nitrogen, and total phosphorus), demands [chemical oxygen demand (COD), total organic carbon (TOC), and 5-day biological oxygen demand (BOD)], nonfilterable residue, oil and grease, PCBs in water and transformer oil, chlorinated hydrocarbon pesticides (insecticides), volatile halocarbons, and volatile aromatics. EMSL-CI prepares reports for each laboratory and reviews unacceptable data with the laboratory to identify and resolve problems.

D. **EPA Environmental Monitoring Systems Laboratory-Las Vegas (EMSL-LV).**

The Quality Assurance Division of EMSL-LV has been assigned the responsibility for radiation QC on environmental measurements. The EPA supplies samples to us through an extensive laboratory intercomparison studies program involving environmental media (milk, water, and air) and a variety of radionuclides with activities at or near environmental levels. Simulated environmental samples, containing one or more radionuclides, are prepared and periodically distributed to laboratories upon request. A report is returned to each participant. This program enables us to document the precision and accuracy of our radiation data, to identify instrument and procedural problems, and to compare our performance with that of other laboratories. Drinking-water laboratories certified for

radiochemistry must satisfactorily analyze two intercomparison crosscheck samples and a set of PE samples annually. Intercomparison samples differ from PE samples in that the former contain only one or two radionuclides (for example, ^{226}Ra and ^{228}Ra), whereas PE samples for radiochemistry are complex mixtures of alpha-, beta-, and photon-emitting radionuclides. Contaminant concentrations are furnished to the laboratory after completion of the study.

E. Environmental Measurements Laboratory (EML).

EML operates the Quality Assessment Program (QAP) for the DOE. The program is designed to test the quality of the environmental measurements being reported to the DOE by its contractors. Since 1976, real or synthetic environmental samples that have been prepared and thoroughly analyzed at EML have been distributed to these contractors. We receive semiannual samples for various radionuclide, trace metal, and complex anion determinations. The sample matrices include soil, water, vegetation, tissue, and air filters. Our results are returned to EML within 90 days, compiled with EML's results, and reported to us 30 days later.

F. National Pollutant Discharge Elimination System (NPDES).

The US EPA and state agencies with approved programs have a QA program for all major permittees under the NPDES. We receive performance samples containing constituents normally found in industrial and municipal waste waters. Participation in this program is mandated by Sec. 308(a) of the Clean Water Act. We are required to analyze and report only those pollutants specified in our NPDES permit (cadmium, chromium, copper, iron, mercury, nickel, zinc, pH, total suspended solids, ammonia as N, nitrate as N, total phosphorus as P, and chemical oxygen demand). An evaluation of our results is returned along with the true values. A copy of the evaluation is also sent to the appropriate EPA regional office and state agency.

G. DOE Beryllium Intercomparison.

We participate in a beryllium filter analysis "round-robin" intercomparison with three other DOE laboratories that routinely perform beryllium analyses: Rocky Flats, Oak Ridge, and Livermore. Each quarter, one of the participating laboratories is responsible for preparing 60 filters containing between 0.5 and 10.0 mg of beryllium. Twenty of the filters are the cellulose-ester type generally used in personal air samplers, and the remaining 40 filters are the paper type used for environmental air sampling and surface swipes. These filters are analyzed by each of the participating laboratories. Results are reported to the quarterly sponsor within 30 days after receipt of the samples. The quarterly sponsor is responsible for conducting statistical evaluation of the analytical measurements and providing timely results to other participants.

VIII. SURVEILLANCE AND AUDITS

VIII. SURVEILLANCE AND AUDITS

Formal planning was continued during 1990 to provide HSE-9 with a system for conducting and documenting internal audits of the production chemistry areas: organic, inorganic, and radiochemistry. A comprehensive system of planned and scheduled audits will be performed to verify compliance with all aspects of the quality assurance program and to determine its effectiveness. These audits will be performed in accordance with written procedures or check lists by personnel who do not have direct responsibility for performing the activities being audited. Audit results will be documented and reported to and reviewed by responsible management. Follow-up action, including reaudit of deficient areas, will be taken where indicated. The internal audit system was not implemented during 1990 due to insufficient personnel within the QADM Section.

A. Scheduling.

Both internal and external audits will be scheduled in a manner to provide coverage and coordination with ongoing quality assurance activities. Audits will be conducted at a frequency commensurate with the status and importance of the activity. The audit schedule will be reviewed periodically and revised as necessary to assure that coverage is current. Regularly scheduled audits will be supplemented by additional audits of specific subjects when necessary to provide adequate coverage.

B. Preparation.

The QADM Section will develop and document an audit plan for each audit. The plan will identify the audit scope, requirements, audit personnel, activity to be audited, organizations to be notified, applicable documents, schedule, and written procedures or check lists.

The Quality Assurance Officer will select and assign auditors who are members of the QADM Section who are independent of any direct responsibility for performance of the activities that they will audit. In the case of internal audits, personnel having direct responsibility for performing the activities being audited will not be involved in the selection of the audit team. *Audit personnel will have sufficient authority and organizational freedom to make the audit process meaningful and effective.*

An audit team will be identified before the beginning of each audit. This team will contain one or more auditors and will have an individual appointed to lead the team who organizes and directs the audit, coordinates the preparation and issuance of the audit report, and evaluates responses. The audit team Leader will ensure that the audit team is prepared before initiation of the audit.

C. Performance.

Audits will be performed in accordance with written procedures and check lists. Auditing will begin as early in the life of the activity as practicable and will be continued at intervals consistent with the schedule for accomplishing the activity. Elements selected for audit will be evaluated against specified requirements. Objective evidence will be examined to the extent necessary to determine if these elements are being implemented effectively. Audit results will be documented by auditing personnel and will be reviewed by management having responsibility for the area audited. Conditions requiring prompt corrective action will be reported immediately to management of the audited organization.

D. Reporting.

The audit report will be signed by the audit team Leader, issued to management, and will contain the following information:

1. description of the audit scope;

2. identification of the auditors;

3. identification of persons contacted during the audit activities;

4. summary of audit results, including a statement on the effectiveness of the quality assurance program elements that were audited; and

5. description of each reported adverse audit finding in sufficient detail to enable corrective action to be taken by the audited organization.

E. Response, Follow-Up Action, and Records.

Management of the audited organization or activity will investigate adverse audit findings, schedule corrective action, including measures to prevent recurrence, and notify the appropriate organization, in writing, of action taken or planned. The adequacy of audit responses will be evaluated by the QADM Section.

Follow-up action will be taken to verify that corrective action is accomplished as scheduled.

Audit records will include audit plans, audit reports, written replies, and the record of completion of corrective action.

F. Qualification of Auditors.

The Quality Assurance Officer will establish the audit personnel qualifications to accomplish the auditing of the quality assurance program. Personnel selected for quality assurance auditing assignments will have experience or training commensurate with the scope of the activities to be audited. Auditors will have or will be given appropriate training or orientation to develop their competence for performing required audits. Competence of personnel for performance of the various auditing functions will be developed by one or more of the following methods:

1. Training programs to provide both general and specialized training in audit performance. General training will include fundamentals, objectives, characteristics, organization, performance, and results of quality auditing. Specialized training will include methods of examining, questioning, evaluating, and documenting specific audit items and methods of closing out audit findings.

2. On-the-job training, guidance, and counseling under the direct supervision of a Lead Auditor. Such training will include planning, performing, reporting, and follow-up action involved in conducting audits.

G. Internal Audit Plan.

We utilize blind QC samples as a regular part of our routine QA/QC program and have written software to audit these data for overall performance. We anticipate conducting only systems, records, and follow-up audits as a regular part of our internal program.

Internal audits will be conducted in the same fashion as formal external audits. A regular schedule will be established in consultation with the organizations to be audited. Preaudit meetings will occur between the auditor and

Section Leader. After the audit is performed, the auditor will evaluate the findings and conduct a postaudit meeting with the Section Leader. A formal report of findings and noteworthy practices will be prepared and submitted to the Group Leader, Section Leader of the audited organization, and the QADM Section Leader. Where appropriate, unannounced follow-up audits will be used to verify corrective action implementation.

Systems audits will be of two distinct types: procedural and overall. Audits will be conducted by an auditor selected from qualified members of the QADM section. We will audit the conduct of specific analytical procedures against the written and approved versions in LA-10300-M to assure that analysts are conducting routine analytical procedures in conformance with approved, written instructions. This will be done by observation of the procedure during its execution in routine analysis. Overall systems audits will ideally be conducted by selecting an analytical result that has been published in one of our customer's reports and requiring the Section that produced the data to trace its production from sample receipt to the reporting of the final result. Specific check lists will be developed for each systems audit, and should include all of the following: instrument calibration data, original sample data, calculations, ability to duplicate the values that are resident in the data bases, evidence of VAX data input, use of bound Laboratory notebooks for associated analytical information, storage and retrieval of raw data, chain-of-custody evidence, ability to associate QCs with sample batch, and current written procedures available at the bench.

Schedules, requirements, and check lists will be developed during 1990 for implementation during 1991.

H. Corrective Action System.

An outgrowth of writing the Quality Assurance Program Plan in 1990 was the need to design and implement a formal corrective action system. Findings from internal electronic audits of the data bases and from all external audits conducted in HSE-9 during 1990 were documented and issued HSE-9 Internal Audit Memos with overall findings and Corrective Action Requests (CARs). Each CAR was assigned a number (e.g. CAR 90.001 is the first action for 1990) and a folder was created to receive the documentation related to each CAR. Three related Datatrieve data bases were created to provide for automatic tracking of the resolution status of each CAR. These data bases are described in Section V.E.9.

I. External Audits of HSE-9 During 1990.

1. On March 6th, Juan Corpion of HSE-8, representatives of IT Corp., and Pat Ringgenberg of the New Mexico Environmental Improvement Division, Hazardous Waste Section talked with HSE-9 to gather information regarding Resource Conservation and Recovery Act (RCRA) compliance. Questions asked of the QADM Section related to sample tracking, sample numbering, chain-of-custody, quality assurance, and data reporting, storage, and retrieval.

2. During the month of April, the Operations Management Office, Appraisals Group, conducted an independent environmental audit of Technical Area (TA) 50 pursuant to the Los Alamos National Laboratory Administrative Requirement (AR) 1-5, Environment, Safety, and Health Audits and Appraisals. HSE-9 had one priority 2 finding (failure to comply with federal, state, or local regulations or DOE Orders) and two priority 3 findings (failure to

comply with LANL requirements (e.g., ARs and Policy Guides). The findings are listed below.

Priority 2

- **WMF 2-1. Cleaning wipes that contain some radioactivity and some RCRA-listed solvents (e.g., acetone and methylene chloride) have been designated by LANL as mixed waste, but were discarded as low-level waste in some Building 1 laboratories.**

  Basis. DOE Order 5400.3 states that mixed waste should be managed according to the requirements of Subtitle C of RCRA. In addition, LANL AR 10-2 states that "Mixed wastes shall be segregated from other radioactive wastes ... and must be packaged separately."

  Corrective action. Each of the labs at TA-50 have a small can that is labeled hazardous waste. Personnel have been trained to place rags and wipes contaminated with organic solvents into these cans. Full cans are given to HSE-7 for proper disposal.

Priority 3

- **AQF 3-1. Several HSE-9 hoods in Building 1 laboratories were labeled with signs that say "no hazardous or radioactive materials." However these hoods were being used for operations involving these materials.** The labels were there because the exhaust capacities of the hoods are insufficient for these materials.

  Basis. AR 8-3 states that HSE-5, Industrial Hygiene, in cooperation with other groups in HSE Division, determines the needs for workspace ventilation, local exhaust systems, and air cleaning systems. If a workspace ventilation hood has limitations, they are posted on the hood by HSE-5. Disregarding hood labels is a violation of the requirement.

  Corrective action. Group HSE-5, Industrial Hygiene, removed all of the outdated stickers from the face of the hoods. The hoods in question were retested and failed. The entire system was rebalanced, and the hoods were tested again and passed. Proper new labels were attached to the hoods.

- **HFS 3-3. Chemicals were stored on or under laboratory personnel's desks, rather than on a storage shelf or in a cabinet.**

  Basis. The Spill Prevention Control Plan calls for chemicals to be stored in a chemical storage cabinet or shelf, or in a pan packed with adsorbent material.

  Corrective action. Chemicals were removed from desk areas. Personnel were instructed to keep chemicals away from their desks and to place chemicals on storage shelves or cabinets designated as authorized storage locations for chemicals.

3. On May 16th, a pre-Tiger Team audit was conducted at TA-50. The only finding listed for HSE-9 was that we needed to submit a listing of our chemical inventory to HSE-5. We had already submitted a listing of the entire chemical inventory to HSE-5 in February.

4. Ken Harrison and Bertha Thomas of Pacific Northwest Laboratories conducted a QA

Audit of HSE-9 on June 14th regarding our ability to meet their specifications for bioassay. They stated that our quality control program was excellent but that we lacked the formal Quality Assurance Program Plan and much of the written supporting documentation. That began an accelerated writing program that produced the QA Program Plan, a Bioassay Project Plan, and several administrative procedures. Ken Harrison was very supportive of our efforts and formally reviewed our procedures on a visit to HSE-9 from July 31st to August 1st. Battelle's requirements were met by the end of August.

5. On July 10th and 11th, Ernest Fawcett and Fred Graham from ICF Kaiser performed a pre-Tiger Team Occupational Safety and Health Act (OSHA) and environmental audit of HSE-9 at TA-59. Approximately 100-150 stickers were placed on non-conforming areas and items needing corrective action. No priority 1 problems (imminent danger to life or health) were noted. The formal report was received in November and the findings were distributed to the Section Leaders for corrective action.

6. A Special Nuclear Materials (NM) audit was performed by Frank Ortiz on September 6th of Account 460. The audit lasted approximately 3 hours. A report was sent to the HSE-9 Group Leader on November 30, 1990. The following observations were made:

   - Material is properly stored.

   - Nuclear Material Custodian should receive Material Accounting and Safeguard System (MASS) data base and Materials Control and Assurance training.

   - The physical boundary described in the Material Balance Account (MBA) operating procedures needs to be expanded to include locations where material is used for quality assurance program work.

   - The MASS location needs to reflect the addition of the new locations.

   - No discrepancies were noted during the nuclear material physical inventory.

   - Nuclear material in this MBA has not been measured.

   - NM Custodian will send memo to delete inactive location "R123."

   - Follow-up to be conducted on change of boundaries.

   Conclusions. The NM Custodian should contact OS-2 for guidance in measuring nuclear material and assigning appropriate measurement codes. The NM Custodian was cooperative. The NM Custodian should address (1) updating MBA operating procedures to reflect current boundary definitions and location changes and (2) procedures for updating MASS.

7. The annual HSE-9 precious metal audit was conducted on September 18th by Toby Trujillo, HSE-DO, and Ray Lovato, DOE Albuquerque. All materials were in order.

8. From mid-September through October, the Operations Management Office, Appraisals Group, conducted an independent audit of environmental compliance programs pursuant to the Los Alamos National Laboratory Environmental Audit Self-Assessment Handbook. This comprehensive review of operations and other activities was conducted to determine the extent of

compliance with applicable environmental regulations, DOE Orders, and LANL Requirements. Victoria Taylor of ICF Kaiser visited HSE-9 on October 9th and 10th as part of this audit team. HSE-9 had four priority 2 findings (failure to comply with federal, state, or local regulations or DOE Orders) and four priority 4 findings (a condition judged to be a deviation from good management practice). The findings are listed below.

Priority 2

a. **WQF 2-11. Auditable records not maintained.** Documentation is not maintained to ensure that auditable records are kept.

Basis. Chapter IV.5.2.d of DOE Order 5400.1 states "Auditable records shall be established in accordance with the requirements of DOE 5700.6B."

- **Record storage—general.** No secure centralized area is available for hard-copy record storage. Each laboratory area is responsible for maintenance of project files.

  Corrective action. HSE-9 located an area for hard-copy record storage of all analytical data. This area, Rm. 110, will be available by mid-June, 1991. Locked filing cabinets will be provided for data storage.

- **Organic extractions.** No consecutive log of sample extractions performed is maintained. At present, much pertinent sample information resides in analysts personal notebooks and is not readily accessible for internal or external audits.

  Corrective action. A log of organic extractions is maintained by the technician performing the majority of the extractions. For the few extractions not performed by this technician, the extraction information will be conveyed to him/her for inclusion in the master logbook. Extraction times are also being logged into a VAX data base called Organic Sample Tracking.

- **Analysis standards.** No laboratory-wide procedure is employed for assignment of unique log numbers for calibration standards so that traceability may be assured.

  Corrective action. All HSE-9 chemicals are bar-coded with a unique number that is part of our chemical inventory system. Traceability of calibration standards used by the Organic Section is maintained through solution logbooks and the analyst bench sheets.

b. **WQF 2-12. Calibration standards were improperly stored.** Volatile standards are not stored in a freezer at -10 to -20°C, and semivolatile standards are not stored in a refrigerator at 4°C. Extractable (semivolatile and pesticide) samples, standards, and other volatile samples are stored in the same refrigerator, creating the potential for cross contamination.

Basis. For RCRA compliance, the approved methods contained in the third edition of SW-846 contain specific guidance for sample and standard storage so that cross contamination is

eliminated and standard degradation is minimized.

Corrective action. Freezer and refrigerator temperatures are now monitored and maintained. Temperatures are recorded and posted on individual refrigerators. Additional refrigerators have been purchased and installed for the separate storage of samples and standards.

c. **WQF 2-13. Noncompliant analyses are performed**. Nonstandard pesticide and herbicide preparation methods are used in place of standard SW-846 or EPA 600 series protocols without demonstration of equivalency. No evidence of application to the appropriate agency for alternate technology status was available.

Basis. Attachment I-1 to DOE Order 5400.1 presents a list of federal requirements to be used by DOE facilities as guidance for establishing compliant environmental programs. DOE Order 5400.1, Chapter IV, Section a.2.c, states that "Standard analyses shall be used to analyze samples whenever such methods are required by regulatory programs. Exemptions due to analytical programs or for nonroutine analyses may be employed after receiving approval from the appropriate regulatory agency."

- **Inappropriate surrogate**. Neither the surrogate suggested by EPA Method 8080 [dibutylchlorendate (DBC)], nor a suitable alternative is used consistently to estimate the quality of organochlorine pesticide results.

  Corrective action. A suitable alternative for dibutylchlorendate has been identified for use in PCB (organochlorine) analysis. The selected surrogate, a bromonated biphenyl, is being incorporated into the PCB analysis procedure. Pesticide analyses are not currently performed. If pesticide analysis is resumed, the appropriate surrogate will be used.

- **Pesticide recovery records**. No records of pesticide recovery from each batch of activated alumina are maintained when alumina clean-up is used.

  Corrective action. Alumina clean-up is no longer used with the pesticide analysis.

- **Pesticide breakdown**. Breakdown of Endrin and DDT is not checked and recorded along with column linearity each time samples are analyzed.

  Corrective action. If pesticide analyses are performed in the future, the breakdown products of Endrin and DDT will be checked.

- **Equivalency of calibration procedure**. Inorganic analyses are performed using an alternate graphite furnace calibration procedure for which method equivalency is not fully documented.

  Corrective action. Method equivalency has been documented in Method No. WI100, "Atomic Absorption Methods - Method 7000 (SW846)."

The findings listed above are requirements of methods found in both 40 CFR 136 and the RCRA methods

written to the HSE Division Office

monitors have been acquired by the

contained in SW-846 "Test Methods for Evaluating Solid Wastes."

d. **WQF 2-14. The Quality Assurance Program for the environmental analysis laboratory is not documented.** The Quality Assurance program lacks documented guidance in some areas.

Basis. The general and specific

Corrective action. HSE-9 analytical procedures have been formalized and are contained in LA-10300-M, "Health and Environmental Chemistry: Analytical Techniques, Data Management, and Quality Assurance."

- **Personnel.** Based on review of the Draft QAPP, the responsibilities of

- **Calibration of balances.** No calibration weights are available for the balances and no record of daily calibration is maintained.

  Corrective action. Calibrated weights *have* been available for the balances since 1988. Records of daily calibration of balances are being recorded in logbooks associated with each balance.

- **SOPs for glassware.** No SOP for glassware washing, solvent rinsing, or storage is available.

  Corrective action. Glassware washing is addressed in the procedures written for each analytical method.

b. **WQF 4-8. Calibration standards are not traceable.** No documentation on calibration standards traceability was available.

Basis. All standards should be traceable to certified materials from NIST or the EPA repository if available.

Corrective action. Calibration standards are traceable through standards logbooks and the analyst bench sheets.

c. **WQF 4-9. Sample controls can be improved.** Not all samples are subject to potentially hazardous materials, to ensure sample integrity.

Corrective action. All samples processed by the Sample Management Section are handled under the chain-of-custody procedures detailed in Administrative Procedure AP-8, "Chain of Custody."

d. **WQF 4-13. Inadequate control of extraction solvents.** Extraction solvents were not checked for purity by lot before use.

Basis. Good management practice requires spot-checking the purity of reagents used for analysis.

Corrective action. Method blanks are associated with each analytical batch. This is sufficient for assessing the purity of extraction solvents. Historical data suggests that we do not encounter problems relating to contaminated extraction solvents.

9. Charles Ritchey and Terry Hollister of EPA Region VI conducted an audit of HSE-9's analytical chemistry areas on November 7th and 8th. This was an invited audit arranged by Larry Maassen of the Environmental Restoration Program Office. Our main objective was to be certain that we are meeting the EPA's requirements before we produce data for the RCRA/HSWA Environmental Restoration Program. Peggy

Drinking Water (EPA 570/9-90-008), "Laboratory Facilities," p. 16] is as follows: "It is recommended that a minimum of 150 to 200 square feet/laboratory person be available. The laboratory should contain at least 15 linear feet of usable bench space per analyst."

Corrective action. The Organic Section has obtained an additional laboratory from the QADM Section. Additional space from other occupants within OH-1 was sought without success. Formal memos were written to the HSE Division Office requesting additional space. There is also a request in the DOE System for a new Environmental Chemistry Building. Most of the space issues are not within our control.

b. **Safety issues**. While the purpose of this evaluation was not intended to be primarily a safety inspection, the following were noted:

- In Room 101, no alternate means for escape were available if the doorway were blocked by, for example, a fire.

  Corrective action. The probability of a fast, large fire in this area with current usage of the laboratories is small. The resources for adding a window to this room are not currently available but will be pursued.

- The date of the safety shower checks should be noted in a laboratory record.

  Corrective action. Provisions are being set up, with the contractor who performs this function, to tag each safety shower with the date that the shower was last inspected.

- A fire sprinkler head was located in the ceiling immediately above a high-voltage electrical source.

  Corrective action. The sprinkler head above the ICPMS was investigated and it was found that it will not go off until a temperature of 2200°C is reached.

c. **Quality control charts**. While quality control charts are plotted for each of the various analyses, generally they are drawn from a historical, i.e., several months old, rather than a current perspective. By plotting control charts on a daily basis, one can spot trends towards out-of-control data and biased data that conceivably would otherwise go unnoticed.

Corrective action. All sections within HSE-9 have implemented real-time quality control charts for most operations so that they are able to look for trends. Quarterly summary charts are also produced.

d. **Sample tracking**. The analysts are notified every two weeks of the holding times of samples in their possession. Since, in some cases, this is the total sample holding time, we recommend that the analysts be notified more frequently.

Corrective action. A new software package was developed for the Organic Section called Organic Sample Tracking and it is run on a daily basis. The output

from this program gives the status of all samples within that Section.

e. **Life expectancy of analytical instrumentation.** We recommend that the normal life expectancy for each of the analytical instruments be established and that replacements for this equipment be scheduled on this basis in the Laboratory's long-range budget. In determining the life expectancy, such factors as the availability of spare parts and service and improvements in equipment design and engineering should not be overlooked.

   Corrective action. There is no system within the Laboratory's current budget operations that will allow us to do long-range budgeting for replacement of analytical instrumentation. We are, however, pulling together listings of our analytical equipment as required by our Group's Calibration Procedure. We have not yet established life expectancy records for our analytical instrumentation. This is difficult for us to estimate since life expectancy is often dictated by when instrumentation is deemed "obsolete." Until that time, instrumentation is supported with replacement parts, new software and new hardware. Service is most often available through service contracts. We pride ourselves on maintaining state-of-the-art analytical capabilities and seek funding to replace outdated instrumentation on a yearly basis.

f. **Schedule for procedure writing.** We suggest that a master plan/schedule for the writing of procedures be established. This will not only serve as an aid in planning but will also help ensure that no procedure once deemed necessary will be overlooked.

   Corrective action. A master list was prepared of all the SOPs, administrative procedures, and analytical procedures that need to be written. These procedures have a very high priority, have been removed from back-burner status, and are being written on a regular basis. We have also instituted a formal review system and data base that resides on our VAX and prompts us when procedures are due for review.

g. **Policy for data-package signatures.** A policy on the signing of data packages should be established. For example, need the analyst sign or initial and date each page or each chromatogram or spectrum or merely the cover page? If the analyst signs only the cover page, what safeguards are in place to prevent the accidental insertion or removal of pages?

   Corrective action. A signature policy has been instituted that requires analysts to initial all separated components of a data package. The Organic Section has formed a data review subsection to ensure that data packages produced by the organic analysis section are uniform and consistent.

h. **Bar-code sample tracking.** We recommend that a bar-code system be established to enable the laboratory to track a sample from its receipt (or even its collection) to its final report. Bar-code systems have the potential of not only eliminating transcription errors but also of saving the analyst's time, thus freeing him/her for more work.

Corrective action. The feasibility of implementing a bar-code system has been investigated. Bar-coding equipment will be purchased during 1991 and suitable applications will begin to be developed.

i. **Missed performance evaluation analyses.** When an analysis is missed on a performance evaluation study, it should, at a minimum, be repeated on the next study.

Corrective action. The Radiochemistry and Inorganic Sections routinely try to repeat a missed analysis on the next performance study. The Organic Section will make every effort to see that this becomes part of their routine operations.

j. **QADM Section.** The Health and Environmental Chemistry Group is to be commended on its very active Quality Assurance and Data Management Section and on this Section's interaction with other Sections within the Group.

Corrective action. We are continuing to improve on our Quality Assurance oversight.

10. Toby Trujillo of HSE-DO conducted an audit of HSE-9 precious metals on November 28th. Our materials were all accounted for.

11. On December 18th, Tony Griggs and representatives of IT Corporation walked through HSE-9 and performed a RCRA inspection. Questions asked of the QADM Section related to sample tracking, sample numbering, chain-of-custody, and data reporting, storage, and retrieval.

IX. CONTRACT LABORATORY QUALITY ASSURANCE

IX. CONTRACT LABORATORY QUALITY ASSURANCE

Controls are exercised over procured analytical services to assure that these services conform to the same specifications as the analytical services provided in-house. These controls provide for source evaluation and selection, evaluation of objective evidence of quality furnished by the contract laboratory, periodic audits, and examination of analytical data upon completion.

The selection of contractors will be based on evaluation of their capability to provide analytical services comparable in quality to those of HSE-9 and in accordance with the requirements of the procurement documents prior to award of the contract. Measures for evaluation and selection of contract laboratories will be documented and will include the following: (a) the contractor's current quality records supported by documented qualitative and quantitative information that can be objectively evaluated, and (b) the contractor's technical and quality capability as determined by a direct evaluation of its facilities and personnel and the implementation of its quality program.

Verification activities will be accomplished by qualified personnel assigned to audit the activities of contractors. All activities performed to verify conformance to requirements will be recorded. Audits, nonconformances, and corrective actions will be documented. Contract laboratory analytical data will be approved in accordance with established HSE-9 data review procedures.

Group HSE-9 and the contractor will establish and document methods for disposition of analytical services that do not meet procurement document requirements. These methods will contain provisions for the following: (a) evaluation of nonconforming data, (b) submittal of nonconformance reports to the contractor, and (c) maintenance of records of contractor nonconformances.

When analytical work needs to be contracted, the QADM Section will (1) perform preaward surveys and periodic audits of the contract laboratories, (2) select qualified personnel that will judge performance and carry out audits in accordance with approved procedures and instructions, and (3) maintain and evaluate records of the contract laboratory's quality history.

The laboratories selected for this work are chosen on their performance rather than on cost or reputation. Quality control samples are submitted with all contracted work as a check on the reliability of the analysis. These QC samples consist of matrix-based NIST and EPA reference materials as well as duplicates and matrix-based spikes. Analytical reports to our customers indicate when a contract laboratory performed the analyses.

Our laboratory did not contract analytical work to outside laboratories during 1990.

X. QUALITY CONTROL SAMPLE PREPARATION

X. QUALITY CONTROL SAMPLE PREPARATION

In-house QC samples are prepared from stock standards of chemicals representative of the analytes of concern. The stock is spiked onto the same matrix as or one similar to that of the samples to be analyzed. QC samples are usually prepared in-house after the samples have been collected in the field. QCs are analyzed along with the samples under the same analytical conditions. The identification and quantitation of analytes in the QC samples help to determine our analytical accuracy and precision, and help to evaluate analytical methodology.

An analyte spiked directly onto a blank matrix and then immediately extracted may be easier to recover than the same analyte present in a sample. This may be due to naturally occurring or environmental contaminants in the sample that may react strongly with the analytes of interest. Analyte recovery is also influenced by analyte concentration and storage time. Because recovery often varies with concentration, the concentration of the QC samples and the expected values for unknowns are kept within the same range. For many of our programs, recoveries of the analytes of interest in the unknown samples are inferred from those found in the QC samples. Recovery data for the bioassay, tissue, and waste-water programs, as well as a comparison of recovery of HSE-9 spiked samples with recovery of samples from the NIOSH PAT Program, are shown in App. G (Tables G-I to G-IX). QC samples analyzed by HSE-9 during 1990 were prepared using the following procedures. These procedures are continually evaluated and revised as needed.

A. Bioassay Quality Assurance Program.

QC samples for the bioassay program are prepared by spiking the analytes of interest into blank urine samples. These spiked samples compose 10% of the routine sample load. App. G summarizes spike recovery results. The QC procedures used for the bioassay program are discussed below. All recovery data are reported at the one-sigma level.

1. *Tritium.* The results reported in 1990 were obtained on a Packard Model 2200CA liquid scintillation analyzer. All tritium QC solutions and routine reference standards were calibrated against NIST SRM 4927-B. The mean background of blank urine data for 1990 was 146 counts in 10 min, and the 0.05 confidence level was 0.1 μCi/L of urine. The recovery of tritium in QC samples averaged 93% ± 9%.

2. *Depleted uranium.* The reference standard used for uranium bioassay was prepared from NIST SRM 950a, U_3O_8, and contains 1 μg/L of natural uranium and 0.72% ^{235}U. Aliquots of this solution are used to prepare the calibration curve used with each set of routine samples analyzed and are used to prepare the QC samples. Laboratory employees are working with and are potentially exposed to depleted uranium (0.17% ^{235}U content by mass). Our standard value was recalculated to this same isotopic ratio using a 4.24 conversion factor derived from the following equation:

$$4.24 = \frac{0.72\%}{0.17\%} \quad . \qquad (4)$$

This conversion factor can only be used for analysis by delayed neutron activation. The values in Apps. C and G reflect the concentration of depleted uranium relative to the concentration of ^{235}U. The 0.05

confidence level for delayed neutron activation (DNA) is based on the counts observed on blank urine samples analyzed concurrently with the routine samples. The mean background count for the data collected during 1990 was 146 ± 18 counts (one sigma). Although each sample set had a different set of background values, 95% of the values fell within the two-sigma limits. The MDA for the procedure is calculated from the standard deviation about the linear regression calibration curve. This curve is obtained by using the regression of the observed counts of the uranium standard concentration added to blank urine samples. Four standards and two blanks are analyzed with each set of samples. For 1990 analyses, the MDA was 4 ± 1 μg/L (one sigma). The recovery of uranium in QC samples averaged 90% ± 11%. The large standard deviation associated with the ^{238}U analysis in urine is related to the measurement of depleted uranium and its corresponding low production of neutron counts.

3. *Enriched uranium.* QC samples are spiked with an enriched-uranium standard (93.16% ^{235}U) prepared from NIST SRM U-930 and are analyzed concurrently with the routine samples. The analyst uses a separate dilution of this same NIST standard to prepare the calibration curve in blank urine. The 0.05 confidence level for the detection of enriched uranium by DNA is based on counts from blank urine samples. The mean background count for the method during 1990 was 154 ± 19 counts at the one-sigma level. The MDA for samples containing 93% enriched uranium is calculated from the standard deviation about the intercept of the linear regression calibration curve. This corresponds to 1 pCi/L for 1990 data. The recovery of ^{235}U in QC samples averaged 85% ± 7%.

4. *Plutonium.* During 1990, the mean recovery of QC samples, prepared by adding ^{239}Pu to blank urine samples, averaged 103% ± 14% after correction for the ^{242}Pu tracer chemical losses.The mean recovery of ^{238}Pu was 108% ± 14%. The mean tracer recovery of all samples containing 4.07 pCi of ^{242}Pu, added by the analyst at the beginning of analysis, was 81% ± 7%. The standard deviation associated with the QC samples was a function of the ^{239}Pu activity level.

The distribution of alpha activity associated with the analysis of blank urine samples was used to determine the detection limits for the plutonium bioassay procedure. These data demonstrated a Poisson distribution about a mean of 1.68 counts/1167 min in the ^{239}Pu area and 3.01 counts/1167 min in the ^{238}Pu area. By the use of the Currie[25,26] method for calculation of the detection limit for low alpha activity, the MDA for ^{239}Pu is as follows:

$$MDA = \sqrt{1.68} \times 4.65 + 2.71$$

$$= 9 \ counts \ . \qquad (5)$$

The MDA for ^{238}Pu is 11 counts. The introduction of 2.71 counts in Eq. (5) follows Currie's theory that 2.71 counts may be associated with a zero blank case. Currie also recommends, for extreme low-level counting, that the value 2.71 be added if fewer than 70 background counts are observed. Samples with 11 or fewer counts are considered not detected at the 0.05 confidence level. Twelve counts

represent a measurement level of 0.01 pCi/L of sample for ^{239}Pu, of 0.02 pCi/L for ^{238}Pu, and of 0.02 pCi/L for ^{241}Am.

5. *Americium.* The mean recovery of ^{241}Am added to blank urine QC samples averaged 102% ± 2% after correction for the ^{243}Am tracer chemical losses. The mean tracer recovery of all samples containing 2.35 pCi of ^{243}Am, added by the analyst at the beginning of analysis, was 82% ± 12%. The standard deviation associated with the QC sample recovery was a function of the ^{241}Am activity level.

B. Tissue Quality Assurance Program.

The USTR is interested in the uptake, distribution, and retention of all of the transuranic elements in the human body. The greatest concerns at the present time are for the isotopes of plutonium and americium because production and use of these radionuclides has been more extensive than production of the other transuranic elements, resulting in a greater number of workers potentially or actually exposed to internal depositions.

Extensive animal studies have been made of the biokinetics and toxicology of transuranics. Extrapolation of these findings from animals to humans cannot be considered reliable until supplemented and supported by human data. Therefore, the primary objective of the USTR is to obtain improved understanding of the biokinetics and dosimetry of the transuranic elements in humans through analysis of autopsy tissues of occupationally exposed workers and to provide basic scientific data for radiation protection standards.

The USTR program relies entirely upon securing samples of various organs at autopsy or on receipt of donated whole bodies of occupationally exposed personnel. HSE-9 performs the radiochemical analysis of USTR autopsy tissue samples.

Attempts have been made to use several different matrices for the preparation of routine QC samples that simulate bone and tissue. Among the matrices used were spiked aliquots of calcium phosphate; human tissues spiked with ^{238}Pu (liver, lung, bone, kidney, lymph node, and thyroid); and animal liver, lung, and bone spiked with ^{238}Pu. Previously analyzed tissue samples overspiked with ^{238}Pu were also used as QC samples.

None of these matrices was entirely satisfactory because the characteristics of individual sets of human tissues were not predictable (they had different ashing and dissolution characteristics). The addition of ^{242}Pu tracer is a more realistic method of monitoring the chemical procedure and satisfies the needs of the QC program. The mean tracer recovery of all tissue samples containing 3.86 pCi of ^{242}Pu, added by the analyst at the beginning of analysis, was 86% ± 17%. Tissue samples were also analyzed for ^{241}Am, and the mean tracer recovery of all tissue samples containing 2.26 pCi of ^{243}Am tracer was 89% ± 7%.

We have decided to analyze either NIST SRM 4351, human lung, or NIST SRM 4352 human liver, quarterly. NIST states there is such significant inhomogeneity in the lung SRM, primarily because of fine particles containing plutonium, that a working sample should be an entire bottle (45 g). Smaller aliquots are not certified. More frequent analysis of entire bottles of these SRMs is prohibitive because of cost. NIST does not mention inhomogeneity in the liver SRM. Two-gram aliquots of NIST SRM 4352 have been overspiked with ^{238}Pu and were run as QC samples during 1989. This type of QC sample was not run during 1990.

C. Organic Chemistry Quality Assurance Program.

The Organic Chemistry Section analyzes a variety of matrices for a wide selection of organic compounds in support of the Laboratory's industrial hygiene program. Most industrial hygiene samples are collected on charcoal, silica, tenax, XAD, and florisil tubes, as well as organic vapor monitors. Volatile (VOC) and semivolatile (SVOC) organic compounds, herbicides, and pesticides in water and soil samples are analyzed for environmental compliance requirements. In addition, environmental pore gas samples are collected on charcoal tubes for quantitation of a select group of VOCs. PCBs are analyzed in soil, water, oil, air, and on swipes. Organic data for the recovery of surrogates added by the analyst before analysis to bulk, charcoal tube, sludge, soil, and water matrices are shown in App. D, Fig. D-8. Note that the Y axes on these plots are not to the same scale. Glass equipment is used when preparing stock solutions and QC samples for all organic analyses. This eliminates most contamination from phthalates that are leached from many kinds of plastic tubing, connectors, bottles, and other plastic equipment. The following organic QC sample preparation procedures are extracted from written QC procedures developed for use in our laboratory.

1. *Charcoal tubes.* The majority of industrial hygiene samples are collected on charcoal tubes for identification of any volatile organic compound. Pore gas samples are collected on charcoal tubes for quantitation of a set list of volatiles. These compounds are analyzed by gas chromatography using a mass-selective detector. To run these samples as routinely as possible, the Organic Chemistry Section analysts assume that a standard 10 L of air was sampled and set up the calibration curve accordingly. A typical calibration range is 0.1 - 2 times the TLV of the compound of interest. TLVs are obtained from "Threshold Limit Values and Biological Exposure Indices for 1989-1990" by the American Conference of Governmental Industrial Hygienists.[31] If a TLV is not available for a certain compound, a range of 1 - 10 mg per tube is assumed. QC samples prepared to accompany the NIOSH PAT samples are spiked between 0.3 - 2.0 mg/tube. QCs to accompany routine samples for compounds of lower volatility, such as 1,1,1-trichloroethane and nonane, are spiked between 30 - 100 μg/tube. Compounds of higher volatility, alcohols and acetone, are spiked between 100 - 300 μg/tube. Recoveries on QC samples showed that low-molecular-weight alcohols adsorb strongly to the charcoal and those recoveries run less than 50% of the spiked value. The recommended analytical method calls for desorption with a carbon disulfide/5% butanol mixture that will flood the charcoal with butanol to help recovery of the alcohols of interest. Carbon disulfide is generally the solvent of choice for the QC stock solutions and for desorption of the tubes by the analyst, except when methylene chloride or carbon disulfide is being analyzed. Since these two compounds coelute, 1,2-dichloroethane is used as the solvent when analyzing for these compounds.

A stock solution is prepared gravimetrically by adding 1 - 5 organic compounds to the solvent at a concentration such that a 2- to 15-μL spike on the small tube falls in the desired spike range. Up to 20 μL can be spiked onto large charcoal tubes used for pore gas analysis. Larger volumes may cause saturation of the charcoal and subsequent loss of analytes to the inside walls of the tubes. Further loss of the

volatile analytes may be prevented by spiking onto the middle 80% of the charcoal bed instead of near either end. Since these analytes are spiked onto the charcoal beds, instead of adsorbing on the charcoal as an air sample is pumped through the tube, it is important not to spike onto the back, smaller charcoal bed. The presence of analytes on the back bed indicates sample breakthrough, due to saturation of the first bed or inadequate adsorption of the compound of interest on the charcoal. The following procedure is used in spiking charcoal tubes.

Stock preparation.

(1) Add approximately 0.5 mL of carbon disulfide to a 1.0-mL volumetric flask. Stopper the flask and tare the balance.

(2) Determine the volume of neat analyte to be added based upon its density. Measure the chosen volume of analyte into a syringe and add it dropwise, just above the surface of the carbon disulfide. Restopper the flask and record the mass of analyte added. Tare the flask.

(3) Repeat step (2) for each analyte desired in the stock, and dilute to volume with carbon disulfide. Invert three times to mix.

QC sample preparation.

(1) Using a syringe, spike 5 - 12 μL of the stock onto a small charcoal tube or 5 - 20 μL onto a large charcoal tube (pore gas analysis) by placing the needle into the center of the tube and deep into the front charcoal bed.

(2) Expel the solution while slowly moving the needle up through the charcoal bed to distribute the solution evenly and to make certain no glass surfaces become wet.

(3) Withdraw the needle, cap the tube, and seal with Teflon tape. Allow this solution to adsorb on the charcoal for at least 4 h.

(4) Refrigerate all samples pending analysis.

2. *Organic vapor monitors.* Compounds will occasionally be sampled by diffusion onto an organic vapor monitor (OVM) manufactured by 3M Corporation. These monitors are not suitable for all organics, and the calculations to obtain spike ranges are different from those used for charcoal tubes. Information on suitable solvents and calculations is obtained from the "Organic Vapor Monitor #3500 Compound Guide" available from the Occupational Health and Safety Products Division of 3M.[32] Analysis of OVM badges over the years has determined that most analytes are found at levels considerably less than the TLVs. Therefore, most QC samples are spiked in the range of 30 - 100 μg/badge, falling within the range of the analyst's standard curves, and approximating the levels found in the unknown samples.

Stock preparation.

(1) Add approximately 0.5 mL of carbon disulfide to a 1.0-mL volumetric flask. Stopper the flask and tare the balance.

(2) Determine the volume of neat analyte to be added based upon its density. Measure the chosen volume of analyte into a syringe and add it dropwise, just above the surface of the carbon disulfide. Record the mass of analyte added.

(3) Repeat step (2) for each analyte used and dilute to volume with carbon disulfide.

QC sample preparation.

(1) Remove the plastic ring and white film from a vapor monitor.

(2) Place a 25- to 28-mm-diameter Whatman No. 2, 41, or 42 filter paper on the spacer plate.

(3) Snap the closure cap on the monitor and close the side port.

(4) Inject 5 - 12 μL of the stock solution onto the filter paper through the center port.

(5) Allow the monitor to sit 16 - 24 h to allow the organic material from the filter paper to adsorb onto the charcoal before elution.

(6) Refrigerate the sample pending analysis.

3. *Oil samples.* In the United States, Aroclors 1242, 1254, and 1260 were used as dielectrics in transformers. As transformers at the Laboratory are decommissioned, the oil must be tested for PCBs before disposal. The remaining oil samples received by HSE-9 were environmental or industrial hygiene samples taken from areas of possible contamination by PCBs or organic solvents.

Quality control samples for PCBs were spiked with in-house standards prepared from pure compounds diluted in hexane. Since the only PCBs used as dielectric fluids in transformers in the United States were Aroclors 1242, 1254, and 1260, only these PCBs have been used to spike routine QC samples.

Vacuum pump oil was chosen for the oil base blank after an experiment with various brands of motor oil showed excessive matrix interferences. Methods for preparing PCB-in-oil QC samples follow.

Stock preparation.

(1) Prepare an in-house stock standard by adding 250 - 300 mg of neat PCB to the bottom of a clean, tared, 5-mL volumetric flask with a clean glass Pasteur pipet or glass rod. Record the weight added and dilute to volume with hexane.

(2) The standard concentration will be 50,000 - 60,000 μg/mL.

QC sample preparation.

(1) The spike range for these analytes is 5 - 500 μg/g oil.

(2) Add 20 μL - 2 mL of stock PCB at various concentration levels to approximately 220 g of blank vacuum pump oil.

(3) Shake samples overnight in an ultrasonic mixer before aliquots are taken and submitted for analysis.

4. *Filter media.* In the event of a possible spill or after the cleanup of a known spill of PCBs, the Industrial Hygiene Group or the Physical Plant Support Group will sample the potentially contaminated surfaces for the presence of PCBs. A piece of gauze, 2- by 2-in., is wetted with cyclohexane and swiped across the suspect surface. For QC samples, the same type of gauze is spiked with Aroclors 1242, 1254, or 1260 standards diluted in isooctane or methanol. These standards are available from the EPA Repository for Toxic and Hazardous Materials in concentrations from 500 - 3000 μg/mL.

   Stock preparation.

   (1) Obtain an EPA PCB standard in isooctane or methanol in the range of 500 - 3000 μg/mL.

   QC sample preparation.

   (1) The spike range for these samples is 5 - 20 μg/sample.

   (2) Place a 2- by 2-in. gauze pad into a 20-mL glass vial fitted with a Teflon lid. Spike 5 - 40 μL of the EPA standard directly onto the pad to reach the desired spike range.

   (3) Store the sample at room temperature pending analysis.

5. *Soil samples.* Soil samples are received for the analysis of volatile and semivolatile organic compounds, pesticides, herbicides, and PCBs for compliance work done under RCRA. Certified matrix-based reference materials were not available for these analyses, so stock solutions of the analytes were prepared using compounds of the highest purity available. The stock solutions were spiked directly onto blank soil. Several soil types were used, including relatively organic-free surface soil, deep-well soil, and Ottawa sand. The surface and deep-well soils were heated at 100 to 200°C for up to three days, and the Ottawa sand was muffled at 500°C for 2 to 4 h to drive off volatile compounds. Aliquots of the soils were tested for volatile organic contamination to determine their suitability as a blank matrix. The surface soil was used as a matrix for semivolatile, herbicide, and pesticide QC samples. Of the three soils studied, the Ottawa sand was the most contaminant-free matrix for volatile QC samples but the retention of the analytes spiked onto the sand was not as good as desired.

   The VOCs are collected by a purge-and-trap technique followed by gas chromatographic analysis with a mass-selective detector. Analysis of VOC-on-soil samples uses heated purge-and-trap methodology and analysis of VOC-in-water samples uses purge-and-trap at ambient temperature. Semivolatiles are extracted by continuous liquid-liquid or Soxhlet techniques and are analyzed by gas chromatography followed by mass-selective detection. Pesticide analysis utilizes a Soxhlet extraction, gas chromatography, and electron capture detection. Herbicides are extracted using a solid phase technique, esterified, and analyzed by gas chromatography with electron capture detection. PCBs are extracted from soil with a hexane/acetone solvent followed by gas chromatography with an electron capture detector. The following procedures were used in the preparation of these samples.

a. Volatile organic compounds.

Stock preparation.

(1) Place 8 mL of methanol in a 10-mL volumetric flask. Stopper the flask and tare the balance.

(2) Dilute a neat volatile organic compound by adding 15 - 20 μL (10 - 30 mg) to the methanol. Add the compound dropwise from a syringe just above the surface of the methanol. This technique eliminates loss resulting from syringe emplacement in the solvent. Record the mass of the compound added and retare the balance.

(3) Repeat step (2) for each of 3 - 5 different volatile compounds. Dilute the stock to volume with methanol. Invert the flask three times to mix.

(4) Before preparing a dilution from this stock, discard the solution in the neck of the volumetric flask to minimize concentration changes due to loss of volatile compounds from the surface of the solution.

(5) Prepare a 1:100 dilution of the above solution by adding 100 μL of the stock to a 10-mL volumetric flask and diluting to volume with methanol. Invert the flask three times to mix.

(6) Discard the solution in the neck of the flask. Store the remaining stock solutions and their dilutions in vials with zero headspace at -20°C for up to three months.

QC sample preparation.

(1) The spike range for these analytes is 100 - 200 μg/kg of soil.

(2) Tare a clean, 1.5-mL flat-bottomed glass vial. Completely fill the vial with blank soil so that there is no headspace. Record the mass.

(3) Spike the soil with 20 - 50 μL of the 1:100 dilution of stock to reach the desired spike range. Fit the vial with a Teflon septum and a crimp cap. Refrigerate the samples pending analysis. These samples are subject to loss of the organic analytes after preparation and should be analyzed as soon as possible. The EPA holding time for analysis is 14 days.

b. Semivolatile organic compounds.

Stock preparation.

(1) Add 10 - 20 mg of a standard grade semivolatile compound to a clean, tared, 10-mL volumetric flask. Add solid compounds first, record the mass and tare the balance. Repeat for each solid compound.

(2) Add approximately 2 mL of acetone and retare the balance. Add liquid compounds next, record the mass and retare the balance after addition of each liquid compound. Add a total of 3 - 5 different semivolatile compounds.

(3) Dilute the sample to volume with acetone after adding the last compound. Invert to mix.

(4) Store the stock solution at -20°C for up to 3 months in an amber vial fitted with a screw cap and Teflon septum. Change the septum after each use and the vial may be used several times.

QC sample preparation.

(1) The spike range for these analytes is 0.7 - 6.7 mg/kg.

(2) Tare a clean, 2-oz glass vial fitted with a Teflon-lined cap. Add 30 g of blank soil to the vial and record the mass.

(3) Spike the soil with up to 250 μL of stock to reach the desired spike range, replace the lid, and refrigerate until analysis. This QC sample is subject to a 14-day holding time for extraction.

c. Pesticides.

Stock preparation.

(1) Add approximately 20 - 30 mg of lindane or a related pesticide, 20 - 40 mg of DDD or a related pesticide, or 150 - 200 mg of methoxychlor to a clean, tared, 10-mL volumetric flask and record the weight.

(2) Tare the balance. Repeat step (1) for each of 2 - 4 standards used.

(3) Dilute to volume with acetone and mix by inversion.

(4) Store the stock at room temperature.

(5) Prepare a 1:1000 dilution of stock by diluting 100 μL of stock to volume with methanol in a 100-mL volumetric flask. Store the dilution at room temperature in an amber bottle with a Teflon-lined screw cap.

QC sample preparation.

(1) The spike range is 0.02 - 0.1 μg/g of soil for lindane and related compounds, 0.04 - 0.2 μg/g of soil for DDD and related compounds, and 0.1 - 0.5 μg/g of soil for methoxychlor.

(2) Weigh 10-g aliquots of soil into 2-oz glass vials fitted with Teflon-lined caps. Record the mass of the soil sample.

(3) Spike soils with 100 - 250 μL of 1:1000 dilution of stock to reach the desired spike range. Cap the vials and refrigerate pending analysis. The EPA holding time for pesticide analysis is 7 d.

d. Herbicides.

Stock preparation.

(1) Add approximately 10 - 20 mg of Silvex or 30 - 60 mg of 2,4-D to a clean, tared, 100-mL volumetric flask and record the weight. Be sure to use the free-acid herbicides, not the methyl esters, since the soil extraction is followed by an esterification step. Tare the

balance. Repeat for each standard used.

(2) Dilute to volume with methanol and mix by inversion.

(3) Prepare a 1:10 dilution in methanol by adding 1.0 mL of stock to a 10-mL volumetric flask and diluting to volume with methanol.

(4) Refrigerate the undiluted stock in the 100-mL volumetric flask and the 1:10 dilution in amber bottles with septum caps for up to 3 months.

QC sample preparation.

(1) The spike range for these analytes is 0.05 - 0.15 μg/g soil for Silvex and 0.15 - 0.45 μg/g for 2,4-D.

(2) Weigh a 5-g aliquot of soil into a 2-oz glass vial fitted with a Teflon-lined cap. Record the mass of the soil.

(3) Spike the soil with 25 - 40 μL of 1:10 dilution of stock solution to reach the desired spike range. Cap the vial and refrigerate until analysis. The EPA holding time is 7 d.

e. **Polychlorinated biphenyls.** Most of the soil samples received for PCB analysis are environmental samples potentially contaminated after a spill of capacitor or transformer oil suspected of containing PCBs. Compliance samples are also analyzed for PCBs before the closure of a site.

Stock preparation.

(1) EPA PCB standards may be obtained from the EPA Repository for Toxic and Hazardous Materials. Use standards available in isooctane or methanol at a concentration of 3000 μg/mL. Routine QC samples are prepared from Aroclors 1242, 1254, and 1260.

QC sample preparation.

(1) The spike range for these analytes is 10 - 30 μg/g soil.

(2) Weigh 8 g of blank soil into a clean, 1/2-oz glass jar with a Teflon-lined screw cap. Record the mass of the soil.

(3) Spike 25 - 80 μL of an EPA PCB standard onto the surface of the soil to reach the desired spike range. Replace the Teflon-lined screw top and submit for analysis or store at room temperature pending analysis.

6. *Water samples.* The majority of samples submitted during 1990 were environmental compliance samples for the analysis of pesticides, herbicides, semivolatiles, volatiles, and PCBs.

a. **Volatile organic compounds.**

Stock preparation.

(1) Place 8 mL of methanol into a 10-mL volumetric flask. Stopper and tare the flask on an analytical balance.

(2) Dilute a neat volatile organic compound by adding 15 - 20 μL (10 - 30 mg) to the methanol. Add the compound dropwise from a syringe just above the surface of the methanol. This technique eliminates losses resulting from syringe emplacement in the solvent. Record the mass of the compound added and retare the balance.

(3) Repeat for each of 3 - 5 different compounds. Dilute the sample to volume with methanol. Invert the flask three times to mix.

(4) Discard the solution in the neck of the volumetric flask to minimize concentration changes due to loss of volatile compounds from the surface of the solution.

(5) Prepare a 1:20 dilution of the above solution by adding 500 μL of the stock to a 10-mL volumetric flask and diluting to volume with methanol. Invert the flask three times to mix. Discard the solution in the neck of the flask.

(6) Store stock solutions and their dilutions in vials with zero headspace at -20°C for up to 3 months.

QC sample preparation.

(1) The spike range for these analytes is 30 - 150 μg/L of water.

(2) Place approximately 45 mL of distilled water into a 50-mL volumetric flask.

(3) Add 500 μL of concentrated HCl as a preservative.

(4) Spike 30 - 50 μL of the 1:20 dilution of stock solution below the surface of the water to reach the desired spike range. Dilute to volume with distilled water. Stopper the flask and invert three times to mix.

(5) Discard the solution in the neck of the flask and transfer the remaining sample to a 1-oz bottle with zero headspace. Stopper with a cap fitted with a Teflon-lined septum.

(6) Refrigerate pending analysis.

(7) The EPA holding time for these samples is 14 d when preserved in 1% HCl.

b. Semivolatile organic compounds.

Stock preparation.

(1) Add 10 - 20 mg of a standard grade semivolatile compound to a clean, tared, 10-mL volumetric flask. Add solid compounds first, record the mass and tare the balance. Repeat for each solid compound.

(2) Add approximately 2 mL of acetone and retare the balance. Add liquid compounds next, record the mass and retare the balance after each addition. Use a total of 3 - 5 different semivolatile compounds.

(3) Dilute the sample to volume with acetone after adding the last compound. Invert to mix.

(4) Store the stock solution at -20°C for up to 3 months in an amber vial fitted with a screw cap and Teflon septum. Change the septum after each use and the vial may be used several times.

QC sample preparation.

(1) The spike range for these analytes is 20 - 200 μg/L of water.

(2) Fill a 1-L amber bottle having a Teflon-lined lid with distilled water. Since there are several phthalates among the semivolatile target compounds, the distilled water should never come into contact with plastic vessels or tubing because phthalates are readily leached from plastics, causing false positive results.

(3) Spike 20 - 100 μL of the stock solution below the surface of the water to reach the desired spike range.

(4) Cap the bottle and refrigerate pending analysis. The entire sample is analyzed assuming a 1-L volume.

(5) The EPA holding time for these samples is 7 d.

c. **Herbicides.** The only herbicides that are currently routinely checked and included in the QC samples are 2,4-D and Silvex. Free-acid herbicides, not methyl esters, are used since the extraction is followed by an esterification step.

Stock preparation.

(1) Add 10 - 20 mg of Silvex or 30 - 60 mg of 2,4-D to a clean, tared, 100-mL volumetric flask and record the weight. Tare the balance. Repeat for each standard used.

(2) Dilute to volume with methanol and mix by inversion.

(3) Prepare a 1:100 dilution in methanol by adding 100 μL of stock to a 10-mL volumetric flask and diluting to volume with methanol.

(4) Refrigerate the undiluted stock in the 100-mL volumetric flask and the 1:100 dilution in amber bottles with septum caps for up to 3 months.

QC sample preparation.

(1) The spike range for these analytes is 0.06 - 1.2 μg/L for 2,4-D and 0.02 - 0.4 μg/L for Silvex.

(2) Fill a 500-mL volumetric flask nearly to volume with distilled water.

(3) Spike 10 - 100 μL of the 1:100 dilution of the stock solution below the surface of the water to reach the desired spike range.

(4) Dilute to volume with distilled water and invert to mix.

(5) Refrigerate the sample pending analysis.

(6) The EPA holding time for these samples is 7 d.

d. Pesticides.

Stock preparation.

(1) Add approximately 20 - 30 mg of lindane or a related pesticide, 20 - 40 mg of DDD or a related pesticide, or 150 - 200 mg of methoxychlor to a clean, tared, 10-mL volumetric flask and record the weight.

(2) Tare the balance. Repeat step (1) for each of 2 - 4 standards used.

(3) Dilute to volume with acetone and mix by inversion. Store the stock at room temperature.

(4) Prepare a 1:1000 dilution of stock by diluting 100 μL of stock to volume with methanol in a 100-mL volumetric flask. Store the dilution at room temperature in an amber bottle with a Teflon-lined screw cap.

QC sample preparation.

(1) The spike range for these analytes is 0.1 - 0.2 μg/L for lindane and related pesticides, 0.2 - 0.4 μg/L for DDD and related pesticides, and 0.5 μg/L for methoxychlor.

(2) Fill a 500-mL volumetric flask nearly to volume with distilled water.

(3) Spike 20 - 50 μL of the 1:1000 dilution of stock solution below the surface of the water to reach the desired spike range.

(4) Dilute to volume with distilled water and invert to mix.

(5) The EPA holding time for these samples is 7 d.

e. Polychlorinated biphenyls. The EPA supplies PCB-in-water QC samples in vials to be diluted 1.0 mL to 1.0 L of distilled water. Most of the QC samples we supplied were these EPA samples. When a source of pure or highly concentrated PCB is found, we hope to prepare in-house PCB-in-water QC samples from neat PCB stocks.

D. Environmental Radiochemistry Quality Assurance Program.

Quality control samples for radioactive constituents are obtained from outside agencies and are prepared in-house. The Quality Assurance Division of EMSL-LV distributes reference soil samples that have been characterized for ^{235}U, ^{238}U, ^{228}Th, ^{230}Th, ^{232}Th, ^{226}Ra, ^{228}Ra, and ^{210}Pb. The NIST provides several soil and sediment SRMs for environmental radioactivity. Soil, rock, and ore samples obtained from the CGS and the CCRMP are used for the quality control of uranium, thorium, and radium analyses in silicate matrices. Our in-house QC samples are prepared by adding known quantities of liquid radioactivity standards to blank soil, water, and vegetation ash matrices. The constituent of interest should ideally be present in the same form in the QCs as it occurs in the samples, but this has not yet been achieved in all cases.

Because a blank matrix in the same form as the sample matrix was not always available, a blank matrix, which could act in a similar manner to the sample matrix, was substituted. Use of a NIST-, CGS-, or CCRMP-certified uranium-in-soil sample for the determination of uranium on vegetation ash is an example of this matrix substitution.

1. Soil samples. Surface soils have been contaminated with radionuclides as a result of the use and testing of nuclear weapons. The soil used as a matrix for QC samples should be dry and contaminant-free in order to prepare accurately weighed QC samples free from analytical interferents. A suitable blank soil would have been collected before World War II or would be collected from a deep well or other excavation where radioactive contamination is not likely to have occurred. Prior to use, a representative aliquot of the soil is analyzed to determine if it will provide a suitably blank matrix.

a. Strontium-90.

(1) The spike range for ^{90}Sr on soil is 5 - 45 pCi/g of soil.

(2) Tare a clean 250-mL Teflon beaker. Weigh 2 g of clean, dry, blank soil into the beaker.

(3) Spike the blank soil with a ^{90}Sr standard with a concentration of approximately 225 pCi/mL in 2 M hydrochloric acid. Add a volume of standard to the soil sample to give the desired spike value.

(4) Dry the spiked sample under a heat lamp if the volume of standard added produces an excessively wet sample.

(5) Cover the beaker with aluminum foil and store at room temperature pending analysis.

b. Cesium-137. Analysis for ^{137}Cs by gamma spectroscopy is nondestructive and a QC standard may be used indefinitely if periodically corrected for ^{137}Cs decay.

(1) The spike range for ^{137}Cs on soil is 5 - 60 pCi/g of soil.

(2) Tare a 500-mL high-density polyethylene bottle. Weigh 100.0 g of clean, dry soil into the bottle.

(3) Spike the blank soil using a ^{137}Cs standard with a concentration of 350 pCi/mL in 1 M HCl. Add a volume of standard to the soil to reach the desired spike range.

(4) Dry the spiked soil under a heat lamp, periodically mixing it with a vortex mixer, until all the large clumps are broken up and the soil is dry.

(5) Cap the bottle and submit for analysis or store at room temperature for future use.

c. Plutonium and americium.

(1) The spike range for ^{238}Pu, ^{239}Pu, or ^{241}Am on soil is 0.1 - 1 pCi/g of soil.

(2) Tare a 500-mL high-density polyethylene bottle. Weigh 10.0 g of clean, dry, deep-well soil into the bottle.

(3) Use ^{238}Pu and ^{239}Pu standards with concentrations of approximately 2 pCi/mL in 2 - 4 N nitric acid and an ^{241}Am standard with a concentration of approximately 18 pCi/mL in 4 N nitric acid to spike the blank soil. Add a volume of each standard to the blank soil to reach the desired spike range.

(4) Dry the spiked soil under a heat lamp, periodically mixing it with a vortex mixer, until all the large clumps are broken up and the soil is dry.

(5) Cap the bottle and submit for analysis or store at room temperature for future use.

d. **Tritium.** The tritium standard is spiked on soil as tritiated water and the spiked sample is used for the determination of both tritium and unbound moisture.

(1) The spike range for tritium is 80 pCi/L - 400 nCi/L. Unbound water is spiked at approximately 5 wt %. The concentration of tritium is expressed in pCi/L because it is a measure of the tritium concentration in the water extracted from the soil and is not a measure of the tritium concentration in the soil itself. Tritium concentration may be related to sample weight through the wt % of extractable water in the sample.

(2) Prepare several tritiated water standards covering the concentration range 80 pCi/L - 400 nCi/L. A 25-mL spike of one of these standards on 500 g of dry soil produces a QC sample with approximately 5 wt % unbound moisture and a tritium concentration in the desired spike range.

(3) For each QC sample, dry 600 g of clean soil in a 1-L beaker at 105 - 110°C for 12 - 15 h. Cool the soil in a desiccator.

(4) Tare a 600-mL glass beaker. Add 300.0 g of soil to the beaker and record the weight of soil added.

(5) Tare the balance. Add 25 mL of a tritiated water standard to the center of the soil. Record the weight of water added.

(6) Tare the balance. Add 200.0 g of dry soil to the beaker to cover the wet soil, bringing the total dry weight of soil to 500 ± 1 g and the total sample weight contributed by both the sand and the water to 525 ± 1 g. The tritium concentration of the sample is equal to the tritium concentration of the water spiked onto the sand and the unbound water is 4.76 wt %.

(7) Cover the beaker securely with plastic wrap and submit for analysis or store at below 0°C to prevent evaporation of the moisture until submitted for analysis.

e. **Uranium.** None of the soils tested for use as a blank matrix had a sufficiently low and consistent background for use in the determination of uranium in soil. For this reason, CCRMP soils with certified uranium content are used to

make QC samples for the measurement of uranium.

(1) The concentration range for the determination of uranium in soil by DNA is 10 - 500 μg/g of soil.

(2) Obtain CCRMP soils with certified uranium contents from 1 to 500 μg/g.

(3) Use either one soil or a combination of two soils in varying ratios to make QC samples covering the entire spike range.

(4) Submit a 1.0-g aliquot for analysis.

f. Gross alpha and gross beta.

(1) Spike range for gross alpha and gross beta on soil is 2.5 - 10 pCi/g.

(2) Determine the gross alpha and gross beta backgrounds of the sand selected as a QC matrix.

(3) Tare a 100-mL glass beaker. Weigh 2.0 g of clean, dry sand into the beaker.

(4) Spike the sand using an ^{241}Am standard with a concentration of 18 pCi/mL in 4 M nitric acid for the gross alpha component. Add a volume of standard to the sand to reach the desired spike range.

(5) Add the gross alpha background to the gross alpha contributed by the ^{241}Am to determine the total gross alpha concentration.

(6) Spike the sand using a ^{90}Sr standard with a concentration of 225 pCi/mL in 2 M HCl for the gross beta component.

(7) The gross beta compenent is contributed equally by the ^{90}Sr parent and the ^{90}Y daughter decay product in equilibrium in the standard. The concentration of the standard is expressed in terms of ^{90}Sr only.

(8) Divide the desired gross beta spike range in half and use the concentration of the standard expressed in terms of ^{90}Sr to calculate the volume of standard needed to reach the calculated spike range of 1.25 - 5 pCi/g.

(9) Add a volume of ^{90}Sr standard to the sand in the beaker to reach the calculated spike range.

(10) The gross beta component, calculated based on the ^{90}Sr concentration alone, must be multiplied by 2 to determine the gross beta concentration contributed by both the ^{90}Sr and the ^{90}Y in equilibrium in the standard.

(11) Add the gross beta background to the gross beta component contributed by the ^{90}Sr and ^{90}Y to determine the total gross beta concentration.

(12) Dry the sand under a heat lamp.

(13) Cover the beaker with plastic wrap and store at room temperature pending analysis.

2. *Water samples.* Distilled water with the appropriate acid concentration is used as a blank.

a. Gross alpha/beta.

(1) The spike range for gross alpha/beta in water is 5 - 20 pCi/L.

(2) EPA EMSL-LV Cross Check Gross Alpha/Beta samples are used as standards. Transfer the EPA sample to a glass flask immediately upon receipt to minimize adsorption onto the walls of the plastic shipping container. Samples that are more than 6 months old should not be used, so that concentration changes due to radioactive decay are minimized. The concentration of the undiluted EMSL-LV standard is used to determine the volume that will be needed to prepare a QC sample in the desired range. The alpha and beta concentrations given by EPA are the concentrations after dilution of the sample according to EPA instructions. The concentrations in the undiluted EMSL-LV standard must be back-calculated from the postdilution values supplied by EPA. The EMSL-LV standard should be mixed for 10 min before an aliquot is taken.

(3) Fill a 1-L volumetric flask to approximately 700 mL with distilled water.

(4) Add 43 mL of 12 M hydrochloric acid to produce a final acid concentration of 0.5 M.

(5) Add a volume of EMSL-LV standard to the acid in the flask to reach the desired spike range.

(6) Dilute the standard to volume with distilled water. Invert to mix.

(7) Transfer 900 mL of the standard into a 1-L beaker, cover the beaker with plastic wrap, and submit for analysis. The standard may be stored at room temperature in the 1-L flask for up to 6 months.

During this year, gross alpha/beta in water samples were also prepared by spiking distilled water with ^{241}Am and ^{90}Sr standards.

(1) The spike range for gross alpha/beta in water is 5 - 20 pCi/L.

(2) Determine the gross alpha and gross beta backgrounds of the distilled water used as a QC matrix.

(3) Fill a 1-L volumetric flask to approximately 700 mL with distilled water.

(4) Add 43 mL of 12 M HCl to produce a final acid concentration of 0.5 M.

(5) Use a ^{241}Am standard with a concentration of 18 pCi/mL in 4 M nitric acid for the gross alpha component. Add a volume of standard to the acid in the flask to reach the desired spike range.

(6) Add the gross alpha background to the gross alpha contributed by the ^{241}Am to determine the total gross alpha concentration.

(7) Use a ^{90}Sr standard with a concentration of 225 pCi/mL in 2 M HCl for the gross beta component.

(8) The gross beta component is contributed equally by the ^{90}Sr parent and the ^{90}Y daughter decay product in equilibrium in the standard. The concentration of the standard is expressed in terms of ^{90}Sr only.

(9) Divide the desired gross beta spike range in half and use the concentration of the standard expressed in terms of ^{90}Sr to calculate the volume of standard needed to reach the calculated spike range of 2.5 - 10 pCi/L.

(10) Add a volume of ^{90}Sr standard to the acid in the flask to reach the calculated spike range.

(11) The gross beta component, based on the ^{90}Sr concentration alone, must be multiplied by two to determine the gross beta concentration contributed by both the ^{90}Sr and the ^{90}Y in equilibrium in the standard.

(12) Add the gross beta background to the gross beta component contributed by the ^{90}Sr and ^{90}Y to determine the total gross beta concentration.

(13) Dilute the standard to volume with distilled water and invert to mix.

(14) Transfer 900 mL of the standard to a 1-L beaker, cover the beaker with plastic wrap, and submit for analysis. The standard may be stored in the flask at room temperature pending analysis.

b. Cesium-137. Analysis for ^{137}Cs by gamma spectroscopy is nondestructive and a QC sample may be used indefinitely if periodically corrected for ^{137}Cs decay.

(1) The spike range for ^{137}Cs in water is 500 - 2000 pCi/L.

(2) Fill a 500-mL volumetric flask to approximately 400 mL with distilled water.

(3) Add 1.25 mL of 16 M nitric acid to bring the final solution to a pH of approximately 1.

(4) Use a ^{137}Cs standard with a concentration of approximately 350 pCi/mL in water to spike the acid solution. Add a volume of standard to the acid to reach the desired spike range.

(5) Dilute the standard to volume with distilled water. Invert to mix.

(6) Transfer the solution to a 500-mL high-density polyethylene bottle, cap, and submit for analysis or store at room temperature for future use.

c. Plutonium and americium.

(1) The spike range for ^{238}Pu, ^{239}Pu, or ^{241}Am in water is 0.1 - 5 pCi/L.

(2) Fill a 500-mL volumetric flask to approximately 300 mL with distilled water.

(3) Carefully add 125 mL of 12 M hydrochloric acid to the water in the flask.

(4) Use ^{238}Pu and ^{239}Pu standards with concentrations of approximately 2 pCi/mL in 2 N nitric acid and an ^{241}Am standard with a concentration of approximately 18 pCi/mL in 4 N nitric acid to spike the solution in the flask. Add a volume of standard to the acid in the flask to reach the desired spike range.

(5) Dilute the standard to volume with distilled water. Invert to mix.

(6) Transfer the solution into a 600-mL beaker, cover the beaker with plastic wrap, and submit for analysis. The standard may be stored in the 500-mL flask at room temperature pending analysis.

d. Strontium-90.

(1) The spike range for ^{90}Sr in water is 200 - 400 pCi/L.

(2) Fill a 500-mL volumetric flask to approximately 400 mL with distilled water.

(3) Add 3.5 mL of 12 M hydrochloric acid to achieve a final acid concentration of 0.08 M.

(4) Use a ^{90}Sr standard with a concentration of approximately 200 pCi/mL in 2 M hydrochloric acid to spike the solution in the flask. Add a volume of standard to the acid in the flask to reach the desired spike range.

(5) Dilute the standard to volume with distilled water. Invert to mix.

(6) Transfer the solution to a 600-mL beaker, cover the beaker with plastic wrap, and submit for analysis. The standard may be stored at room temperature in the 500-mL flask pending analysis.

e. Uranium and $^{235}U/^{238}U$ ratio. NIST SRM 950a, natural uranium oxide, or other NIST-certified natural uranium SRMs are used to prepare the uranium standard solution. Although SRM 950a does not have a certified $^{235}U/^{238}U$ isotopic ratio, the natural ratio of 0.72% ^{235}U was assumed and was later confirmed by isotope-dilution mass spectrometry. A standard solution of depleted uranium in water may be made by using a mixture of a NIST-certified natural uranium SRM with NIST-certified depleted uranium SRM U 0002, a uranium isotopic standard. To minimize interference by trace impurities, double-deionized, 18-μmho/cm-conductivity water and low-temperature redistilled nitric acid are used to make QC samples for the determination of uranium and the $^{235}U/^{238}U$ ratio in water by ICPMS.

(1) Prepare a 1-g/L stock solution of natural uranium in 1% nitric acid by heating 1 g of NIST 950a, natural uranium oxide, in a platinum crucible to 900°C in a muffle furnace for 1 h and then dissolving 0.5896 g of the U_3O_8 in 20 mL of 8 M nitric acid. Evaporate the solution to near dryness and redissolve in 10 mL of 1.6 M nitric acid. Quantitatively transfer the solution to a 1-L volumetric flask and bring to volume with 1% nitric acid. Dilute 1 mL of the 1-g/L uranium stock solution to 10 mL with 5% nitric acid to produce a standard solution with a uranium concentration of 100 μg/mL.

(2) The spike range for uranium-in-water quality control standards is 50 - 100 μg/L.

(3) Fill a 250-mL volumetric flask to about 90% capacity with double-deionized, 18-μmho/cm-conductivity water.

(4) Add 7.5 mL of low-temperature redistilled nitric acid to the water in the flask.

(5) Use a natural uranium standard with a concentration of approximately 100 μg/mL in 3% nitric acid to spike the solution in the flask. Add a volume of standard to the acid in the flask to reach the desired spike range.

(6) Dilute the standard to volume with double-deionized, 18-μmho/cm-conductivity water. Invert to mix.

(7) Pour the standard into a high-density polyethylene bottle and store at room temperature pending analysis.

f. Tritium.

(1) The spike range for tritium in water is 10 - 20 nCi/L. *Blank tritium standards should be made, transferred to glass vials, and sealed before spiked tritium standards are made to avoid contamination of the blank by tritiated water vapor in the air.*

(2) Place approximately 3 mL of distilled water into a 10-mL volumetric flask.

(3) Use a tritium-in-water standard with a concentration of approximately 35 nCi/L to spike the water in the flask. Add a volume of tritium standard to the water in the flask to reach the desired spike range.

(4) Dilute the standard to volume with distilled water. Invert to mix.

(5) Transfer the solution to a glass vial, cap the vial, and wrap Parafilm around the cap to prevent evaporation.

(6) Store the QC sample in the glass vial at room temperature pending analysis.

(7) For analysis, an aliquot of the QC sample is pipetted into liquid scintillation cocktail and the activity is measured by liquid scintillation counting.

g. Radium-226.

(1) The spike range for ^{226}Ra in water is 0.5 - 5.0 pCi/L.

(2) Fill a 1-L volumetric flask to approximately 900 mL with distilled water.

(3) Add 10 mL of 12 M HCl to achieve a final acid concentration of 0.12 M.

(4) Use a ^{226}Ra standard with a concentration of approximately 10 pCi/mL in 0.1 M nitric acid to the solution in the flask to reach the desired spike range.

(5) Dilute the standard to volume with distilled water and invert to mix.

(6) Submit the sample for analysis or store it at room temperature in the 1-L flask pending analysis.

3. *Vegetation and vegetation ash.* Vegetation samples are ashed in a muffle furnace before analysis. Ash samples that were previously analyzed and were determined to be blank are used as a matrix for QC samples. Commercial pelletized rabbit food that was ashed was also used as a vegetation matrix. Because the ash yield from rabbit food is only about 5 wt %, ground-up rabbit food was used as a matrix for QC samples, such as ^{137}Cs on vegetation ash, requiring a large-volume matrix. An unspiked portion of the matrix is used as a blank.

a. Preparation of the ash matrix. Commercial pelletized rabbit food is ashed slowly to produce an ash matrix for QC samples. Prior to use as a matrix, the pooled and homogenized ash is determined to be suitably blank by analyzing a representative aliquot. All of the ash tested had high uranium backgrounds, prohibiting their use as a matrix material for the determination of uranium in ash by DNA.

Ashing more than 200 g of rabbit food at one time may cause a flammability hazard as the fat burns off at higher temperatures.

(1) Weigh 200 g of rabbit or farm stock food into a 1-L beaker.

(2) Cover the beaker with aluminum foil perforated with ¼- to ½-in holes. *The muffle furnace should be equipped with a safety switch that shuts the furnace off if the temperature exceeds its setting. The furnace should also be vented or located so that fumes are directed away from the work area.*

(3) Ash the food at 100°C for approximately 55 h.

(4) Continue to ash the food at 250°C for approximately 16 h.

(5) Continue to ash the food at 400°C for approximately 12 h.

(6) Complete the ashing of the food at 500°C for approximately 60 h.

(7) Allow the sample to cool in the furnace for approximately 24 h.

(8) Using insulated gloves, remove the beaker from the furnace. Crush the large chunks of ash with a spatula.

(9) Return the ash to the furnace and continue heating it at 500°C until the ash is grey and no weight change occurs over a 3-day heating period. Because all flammable matter has already been burned off, up to 1.5 kg of ash can be put into the muffle furnace at one time.

(10) Store the ash in a polyethylene bottle until it is homogenized and characterized for use as a QC matrix.

b. **Cesium-137.** Ground, nonashed rabbit food has been used as a matrix for ^{137}Cs on vegetation QC samples. During this year a sufficiently large amount of grain mix for chicken feed was ashed to provide enough of the matrix for several QC samples, each requiring 100.0 g of ash. The ^{137}Cs background in the ground food and the ash was measured to determine their suitability as a matrix. Analysis for ^{137}Cs by gamma spectroscopy is nondestructive and a QC sample may be used indefinitely if periodically corrected for ^{137}Cs decay.

(1) The spike range for ^{137}Cs in vegetation ash is 5 - 60 pCi/g of vegetation.

(2) Tare a 500-mL high-density polyethylene bottle. Weigh 100.0 g of ground rabbit food or ashed feed into the bottle.

(3) Use a ^{137}Cs standard with a concentration of approximately 350 pCi/mL in 1 M HCl to spike the ground rabbit food. Add a volume of standard to the ground food or ash to reach the desired spike range.

(4) Dry the spiked sample under a heat lamp, periodically mixing it with a vortex mixer, until all large clumps are broken up and the sample is dry.

(5) Cap the bottle and store at room temperature pending analysis.

c. **Plutonium and americium.**

(1) The spike range for ^{238}Pu, ^{239}Pu, or ^{241}Am on vegetation ash is 1 - 10 pCi/g of ash.

(2) Tare a 600-mL glass beaker. Weigh 1.0 g of vegetation ash into the beaker.

(3) Use ^{238}Pu and ^{239}Pu standards with concentrations of approximately 2 pCi/L in 2 N nitric acid and an ^{241}Am standard with a concentration of approximately 18 pCi/mL in 4 N nitric acid to spike the ash. Add a volume of each standard to the ash to reach the desired spike range.

(4) Cover the beaker with plastic wrap and store at room temperature pending analysis.

4. Filter samples.

a. **Plutonium and americium.** Microsorban (polystyrene) filters are used to collect plutonium and americium by air filtration. Because the filters are hydrophobic, a small amount of soil is placed on top of the filter to absorb the QC solutions.

(1) The spike range for ^{238}Pu, ^{239}Pu, or ^{241}Am on filters is 1 - 5 dpm/filter.

(2) Fold half of a Microsorban filter and place it into a 50-mL platinum crucible.

(3) Tare the filter and crucible. Add 0.1000 g of clean, dry soil on top of the filter.

(4) Use ^{238}Pu and ^{239}Pu standards with concentrations of approximately 2 pCi/mL in 2 M nitric acid and an ^{241}Am standard with a concentration of approximately 18 pCi/mL in 4 N nitric acid to spike the filters. Add a volume of the standard to the soil to reach the desired spike range.

(5) Dry the spiked soil and filter under a heat lamp.

(6) Cover the crucible with a platinum lid and submit for analysis.

b. Uranium.

(1) A natural uranium standard may be made from NIST 950a, uranium oxide, or another NIST-certified natural uranium standard as described in Section D.2.e, "Uranium and $^{235}U/^{238}U$ ratio." Dilute 10 mL of the original 1-g/L uranium standard to 100 mL with 1% - 10% low-temperature redistilled nitric acid to make a standard solution with a uranium concentration of 100 μg/mL.

(2) The spike range for uranium on filters is 0.5 - 2.5 μg/filter.

(3) Spike an aliquot of standard with a uranium concentration of 100 μg/mL on a filter paper using the procedure described below in Section E.1.a, "Stable elements."

E. Environmental Inorganic Quality Assurance Program.

Quality control for the stable constituent analysis program is maintained by analysis of certified or well-characterized environmental samples. The NIST has a large set of silicate, water, and biological SRMs. The EPA distributes mineral analysis and trace analysis water standards. Rock and soil reference materials have been obtained from the CGS and the USGS. Commercial stock solutions of stable elements are available in the range of 100 - 10,000 μg/mL in a matrix of dilute HNO_3 or HCl. The environmental standards certified by outside agencies are used to validate new procedures and to check established procedures at intermittent intervals or when problems occur. If the desired standard concentration is not available commercially, an available commercial standard may be diluted, or an in-house standard may be prepared from reagent-grade chemicals, provided that the solution is prepared in a suitable acidic or basic matrix. Most routine blind and nonblind QC samples are made in-house. The spike range for in-house QC samples depends upon the analytical methodology used and the sensitivity of analysis requested by the customer, and coincides with the middle 70% of the analyst's standard curve.

1. Filter samples.

a. Stable elements. The Industrial Hygiene and Environmental Protection Groups sample for the presence of airborne stable elements in Laboratory work areas

and in the local air-shed by passing a measured volume of air through filters. Work surfaces, such as laboratory benches, fume hoods, and machine tools, are swiped to monitor for the presence of selected elements. QC samples are matrix-matched to the samples whenever possible to avoid problems due to differences in filter type. Most filters are prepared for analysis by digestion, desorption, or dry ashing. Analysis is completed by instrumental thermal neutron activation (ITNA), DNA, ICPMS, inductively coupled plasma atomic emission spectrometry (ICPAES), or atomic absorption (AA) spectrometry. The following technique is used to prepare QC samples for these analyses.

(1) Determine the QC spike range that will fall within the middle 70% of the analyst's standard curve.

(2) Determine the concentration of standard needed to spike a volume of 10 - 50 μL onto the filter. If a stock solution is available at the appropriate concentration, use a direct spike of the standard. If the proper concentration is not available, prepare a dilution of one of the available standards using the same matrix as the standard.

(3) Place a blank filter on a clean beaker or bottle cap for support such that 80% - 95% of the filter surface is within the rim of the beaker.

(4) Spike 10 - 50 μL of the stock standard or an appropriate dilution onto the middle of the filter. Repeat for each analyte. If several analytes are spiked onto the same filter or if the total volume spiked exceeds 50 μL, drying may be necessary between spikes.

(5) Dot the spiking solution evenly around the filter to assure the proper geometry for irradiation when preparing samples for analysis by ITNA or DNA.

(6) Dry the filters in the air or under a heat lamp. Submit the samples for analysis or store for future use.

2. *Oil-based solvents*

a. **Stable elements.** The Waste Management Group samples many oil drums to determine disposal protocol. The Inorganic Section analyzes these samples for As, Ba, Cd, Cr, Pb, Hg, Ni, Se, Tl, and Zn. The three techniques employed in analysis are ICPMS, electrothermal vaporization atomic absorption (ETVAA), and flame atomic absorption (FAA). Commercial organometallic standards were available for all of the above elements except thallium, and we developed a method for making an organothallium standard by combining thallium acetylacetonate with 2-ethylhexanoic acid that acts as a stabilizer. All of the commercial standards were available at concentrations of 5000 μg/g except for As, Se, and Hg, which were available at 100-μg/g levels. The following technique is used to prepare these QC samples.

(1) Prepare a working standard that is 100 μg/g (wt/wt) of each element by adding 2 g of a 5000-μg/g organometallic standard to a clean, tared, 100-mL polypropylene

bottle. Record the mass added but DO NOT tare the balance. Repeat for the remaining 5000-μg/g elemental standards. Add 1 mL of commercial stabilizer solution. Add the manufacturer's 75 Base Oil to bring the total mass to 100 g. This is the working standard for Ba, Cd, Cr, Pb, Ni, Ag, and Zn. Wrap with foil or use an amber polyethylene bottle to prevent the deterioration of silver due to light.

(2) Prepare a 100-μg/mL (wt/v) working standard of thallium acetylacetonate. Add 3.7 mg of thallium acetylacetonate and 250 μL of 2-ethylhexanoic acid to a 25-mL volumetric flask. Dilute to volume with xylene.

(3) Preparation of the in-house QC sample depends upon the instrument that will be used for the analysis. Both the solvent of choice and the spike range vary with the analytical technique as listed in Table V.

(4) Determine the number of μg of each element necessary to give the appropriate concentration in a total volume of 100.0 mL.

(5) Add the desired amount of the first standard solution to a clean, tared, 100-mL volumetric flask. Record the mass. Tare the balance and repeat for all remaining standards, except thallium. Add the desired volume of thallium standard. Dilute to volume with the appropriate solvent. Mix well.

(6) Submit the QC sample for analysis. QC samples must be prepared for each sample set.

3. *Water Samples.*

a. **Trace elements.** Water samples are received for the analysis of many stable elements and compounds, some of which are unique to our work environments at the Laboratory and to northern New Mexico, where levels of silicates and natural uranium are higher than in other parts of the country. Quality control efforts involve preparation of samples with single and multiple elements or compounds in dilute acid matrices. The acid matrix of choice depends upon the

TABLE V. QC Preparation Based on Analytical Technique

Instrument	Spike Range	Solvent
ICPMS	0.5 - 1.0 μg/mL	kerosene
ETVAA	0.5 - 1.0 μg/mL	methylisobutyl ketone
FAA	4 - 6 μg/mL	d-limonene methylisobutyl ketone

elements present. Most samples are prepared in 3% nitric or hydrochloric acid. Nitric acid is the matrix of choice for analyses performed by ICPMS or FAA because Cl^- will cause spectral interferences. Several different commercially available single- and multiple-element aqueous standards are used, including solutions prepared by EPA and NIST. For some QC analytes, such as Cr^{+6}, the sample is prepared gravimetrically from a pure inorganic compound. A natural uranium standard is prepared gravimetrically from NIST SRM 950a, natural U_3O_8, as described under Section D.2.e, "Uranium and $^{235}U/^{238}U$ ratio." When silver is included in a trace element QC in water, the QC solution must be stored in the dark to avoid the reduction and subsequent loss of the silver. Wrapping the sample container in aluminum foil or using an amber polyethylene bottle adequately preserves the silver. The water samples are analyzed by a variety of techniques including ICPMS, ICPAES, ETVAA, cold vapor atomic absorption (CVAA) spectroscopy, FAA, ion chromatography (IC), ion selective electrodes (ISE), and spectrophotometry.

(1) Determine the total volume of sample needed by the analyst for analysis of all elements present by the appropriate techniques.

(2) Determine the total volume of sample concentration for each element or compound so that the QC will fall within the middle 70% of the analyst's standard curve for each analysis. The total volume multiplied by the final desired concentration gives the mass of the element to be spiked in the sample.

$$1.0\ L \times 2.5\ mg/L = 2.5\ mg\ Cr^{+6}\ . \quad (6)$$

(3) For commercial aqueous standards, the concentration is given for the element of interest. For samples prepared from pure inorganic compounds, the wt % of the element of interest must be determined in order to correctly calculate the concentration of that element. To prepare 1.0 L of Cr^{+6} standard with a concentration of 2.5 mg Cr/L from potassium dichromate, the following amount of $K_2Cr_2O_7$ is needed:

$$X = \frac{(2.5)\ (294.2)}{2\ (52.0)} \quad (7)$$

$$= 7.1\ mg\ K_2Cr_2O_7/L\ .$$

where X = mass of $K_2Cr_2O_7$ added (mg),
2.5 = concentration of Cr from potassium dichromate (mg/L),
294.2 = molecular weight of $K_2Cr_2O_7$ (g), and
2(52.0) = twice the atomic weight of Cr^{+6} (g).

(4) Prepare the acid matrix and fill the appropriate size volumetric flask with double-deionized water to

approximately 80% - 90% capacity. Slowly add enough acid of the appropriate concentration to the water to achieve 3% acid by volume. For ICPMS work use low-temperature redistilled nitric acid.

(5) Spike the aqueous elements singly or from a multielement standard into the acid solution. Weigh solid compounds into a tared weighing boat, record the mass, and quantitatively transfer to the acid solution.

(6) Dilute to volume with double-deionized, 18-μmho/cm-conductivity water.

(7) Submit for analysis or store at room temperature pending analysis.

b. Mercury. Low-level mercury solutions must be stabilized to maintain their certified concentration for longer than a few hours. Studies on the preservation of dilute mercury solutions[33] show that a dilute solution will maintain its concentration for as long as 5 months if it is preserved with 0.01% $Cr_2O_7^=$ and 5% nitric acid and is stored in a glass container.

(1) The spike range for Hg in water is 1 - 4 μg/L. *In preparing a dilute mercury standard, the acid and $Cr_2O_7^=$ must be added to the water before the mercury spike to prevent the immediate loss of mercury.*

(2) Prepare a stabilizing solution with a $Cr_2O_7^=$ concentration of 50 mg/mL by dissolving 341 mg of potassium dichromate in distilled water in a 5-mL flask. Dilute to volume with distilled water.

(3) Intermediate stock solution. Because the final concentration of the mercury QC is very low, an intermediate stock solution is prepared.

(a) Put 15 mL of distilled water into a 25-mL volumetric flask.

(b) Add 2.5 mL of low-temperature redistilled nitric acid to the solution in the flask.

(c) Add 50 μL of the stabilizing solution with a $Cr_2O_7^=$ concentration of 50 mg/mL to the flask to achieve a $Cr_2O_7^=$ concentration of 0.01% by weight.

(d) Use a mercury solution with a concentration of 1000-μg Hg/mL in 10% nitric acid. Add 250 μL of 1000 μg Hg/mL stock to the solution in the flask.

(e) Dilute the solution to volume with distilled water to produce a solution at a concentration level of 4 μg Hg/mL in 10% nitric acid and 0.01 wt % $Cr_2O_7^=$.

(4) Final QC standard. The final QC standard is in 5% nitric acid and at least 0.01% $Cr_2O_7^=$ solution.

(a) Fill a 100-mL flask to 80 mL with distilled water.

(b) Add 5 mL of low-temperature redistilled nitric acid.

(c) Add 200 μL of the 50 mg/mL $Cr_2O_7^{=}$ stabilizing solution to the acid solution in the flask.

(d) Use the 4-μg Hg/mL intermediate stock solution to spike the solution in the flask. Add a volume of standard to the solution in the flask to reach the desired spike range.

(e) Store the QC standard in glass until needed for analysis.

c. Oil and grease.

(1) The spike range for oil and grease in water is 20 - 100 mg/L.

(2) Fill a 1-L glass jar with a Teflon-lined lid nearly full of distilled water. The entire sample will be analyzed assuming a 1-L volume.

(3) Tare a small polyethylene weighing dish on a balance.

(4) Using a sample dropper, add vegetable oil to the weighing dish to reach the desired spike range.

(5) Quantitatively transfer the oil from the weighing dish into the water in the jar using a clean sample dropper and less than 3 mL of Freon.

(6) Cap the jar and submit the sample for analysis or refrigerate the sample pending analysis.

d. Nitrite-nitrogen. Almost immediately upon being dissolved in water, a nitrite salt is oxidized to nitrate and the integrity of the nitrite sample is lost. Therefore, a QC sample for the analysis of nitrite-nitrogen is distributed as a weighed aliquot of sodium nitrite salt which is dissolved just prior to analysis.

(1) The spike range for NO_2-N in water is 0.1 - 1.0 mg/L.

(2) Tare a 10-mL glass volumetric flask.

(3) Accurately weigh 10 - 100 mg of $NaNO_2$ salt into the flask.

(4) The wt % of N in the $NaNO_2$ must be calculated to determine the concentration of NO_2-N in the resultant QC sample. For example, 50 mg of $NaNO_2$ salt produces 10 mg of NO_2-N.

$$X = A \times B \quad . \tag{8}$$

where X = weight of N in $NaNO_3$ added,
A = 50 mg $NaNO_2$,
B = (14 mg N)/(69 mg $NaNO_2$),
14 = atomic weight of N, and
69 = molecular weight of $NaNO_2$.

(5) Stopper the flask and store it at room temperature pending final dilution and analysis of the sample.

(6) Just before analysis, dissolve the $NaNO_2$ salt in the flask in approx-

imately 8 mL of double-deionized water.

(7) Dilute the solution to volume with double-deionized water. Mix by inversion.

(8) Put approximately 90 mL of double-deionized water into a 100-mL glass volumetric flask.

(9) Spike 50 μL of the $NaNO_2$ solution from the 10-mL flask into the water in the 100-mL flask.

(10) Dilute the QC sample in the 100-mL flask to volume with double-deionized water. Mix by inversion.

(11) Analyze the QC sample in the 100-mL flask immediately after preparation.

e. **Cyanide.**

(1) The spike range for CN in water is 0.1 - 0.5 mg/L.

(2) EPA cyanide QC samples are used as standards. The concentration of the undiluted EPA standard is used to determine the volume needed to prepare a QC sample in the desired spike range. The CN concentration given by EPA is the concentration of the sample after dilution according to EPA instructions. The concentration of the undiluted CN sample must be back-calculated from the postdilution values supplied by EPA.

(3) Place approximately 40 mL of double-deionized water into a 50-mL glass volumetric flask.

(4) Add 180 μL of 50% NaOH to the water to produce a final pH > 12. Add the NaOH to the water before spiking it with the CN sample so that the CN is always added to a basic solution.

(5) Spike an aliquot of the undiluted EPA CN standard to the basic solution in the flask to reach the desired spike range.

(6) Dilute the QC sample to volume with double-deionized water. Mix by inversion.

(7) Refrigerate the sample pending analysis.

4. *Trace elements in soil.* Soils with certified concentrations of many trace elements are available from NIST, USGS, and CCRMP. Some in-house QC samples are made by overspiking a certified soil. A QC sample should ideally contain the constituent of interest in the same form in which it is present in the sample. At present, this is not always possible and QC samples for the determination of trace elements in soil may be made in aqueous solutions to correspond to the aqueous solutions resulting from the extraction of the trace elements from the soil samples.

a. **Beryllium and lead.** Because a suitable blank soil could not be found, NIST SRM 1646, Estuarine Sediment, with a certified lead content and a low, certified beryllium content is overspiked with a standard solution of beryllium. A sample of unspiked Estuarine Sediment

and a sample of Estuarine Sediment overspiked with beryllium are submitted together for analysis. The concentration of beryllium in the unspiked sample is subtracted from the concentration of beryllium in the overspiked sample to obtain the value of the beryllium overspike. The concentration of lead is the certified value given by NIST.

(1) The spike range for Be in soil is 10 - 20 μg/g of soil and the Pb is present in the soil at a concentration of 20 - 100 μg/g of soil.

(2) Tare a 250-mL Teflon beaker. Weigh 0.25 g of NIST SRM 1646, Estuarine Sediment, into the beaker.

(3) Use a beryllium standard with a concentration of 100 μg Be/mL in 2% nitric acid to overspike the sediment in the beaker. Add a volume of standard to the sediment to reach the desired spike range.

(4) Tare a second 250-mL Teflon beaker. Weigh 0.25 g of NIST SRM 1646, Estuarine Sediment, into the beaker.

(5) Do not overspike the sediment in the second beaker. Mark the sample as an unspiked sample used to determine the Be concentration in the reference material.

(6) Submit both a spiked and an unspiked sample for analysis or cover them with aluminum foil and store them at room temperature pending analysis.

(7) The amount of Be overspike is the difference between the Be concentration in the overspiked sample minus the Be concentration in the unspiked sample.

(8) The Pb concentration is the certified concentration in the reference material.

5. *Silica gel tubes.*

a. Acidic anions. Acidic anions are collected on silica gel adsorption tubes prepared by the manufacturer for that purpose.

(1) The spike range for acidic anions on silica gel is dependent on the anion but is generally in the range of 1 - 300 μg/tube.

(2) Use water-soluble salts of each anion of interest to prepare a stock solution to spike on the silica gel tube. Calculate the weight of each salt that must be dissolved in 1 mL of distilled water so that 10 μL of the solution will reach the desired spike range for the anion of interest.

For example, to spike 0.096 mg of NO_3^- as KNO_3 onto a tube in 0.010 mL of stock solution, 15.6 mg of KNO_3 must be dissolved in 1 mL of stock solution.

$$X = \frac{0.096\ mg\ NO_3^- \times 101\ mg\ KNO_3}{0.01\ mL \times 62\ mg\ NO_3^-}$$

$$= 15.6\ mg\ KNO_3\ , \qquad (9)$$

where X = weight of KNO_3 added (mg),

101 mg = molecular weight of KNO_3, and

62 mg = molecular weight of NO_3^-.

(3) Weigh the calculated amount of each salt into a 1-mL volumetric flask.

(4) Dissolve the salts in deionized water and dilute to volume with deionized water.

(5) Break the tip off one end of the silica gel tube.

(6) With a syringe, inject 10 μL of the salt stock solution into the middle of the silica gel bed in the tube.

(7) Place plastic caps over both ends of the silica gel tube and submit for analysis.

6. *Vegetation ash samples.*

a. **Beryllium and lead.** Aliquots of ash, prepared as described in Section D.3.a, were spiked and analyzed for Be and Pb. Incomplete recovery of Pb and a high Be background made the ash unacceptable as a matrix material. QC samples for beryllium and lead on ash were prepared using soil as the sample matrix as described in Section E.4.a, "Beryllium and lead."

XI. REFERENCE MATERIALS DATA COMPILATION

XI. REFERENCE MATERIALS DATA COMPILATION

The expansion of the analytical chemistry effort in support of the Laboratory's environmental monitoring program in the late 1970s prompted a wide-ranging search for better compositional data on biological, geological, and environmental reference materials available from national and international agencies. At that time, Flanagan[34] and Abbey[35,36] were the only individuals active in compiling literature data for USGS and CCRMP reference materials, and a limited data compilation had been published by Nadkarni and Morrison[37] for NIST SRMs. In order to make better use of the reference materials available, we undertook a survey of the chemical and geological literature to produce a more complete NIST data compilation.[38] The resulting document was so well received that the compilation effort was expanded to include selected USGS and CCRMP materials. Several publications[10-21] have since been issued that accomplished the following: (1) collected data on many NIST and several CCRMP materials not collected previously, (2) brought together in a single location all previously compiled data, and (3) set up the format of that single compilation to allow full evaluation of previously accepted concentration values and to facilitate the updating and republication of the compiled data. The compiled data on USGS rocks by Flanagan[34] had not been updated since 1972. Also, the development of new analytical techniques for some of the more difficult minor and trace elements would enable the assignment of concentration values to be placed on firmer footing. Finally, it was our opinion that each assigned concentration value should have a more quantitative estimate of its uncertainty than "magnitude", "?", etc., which had been commonly used by previous compilers.

The data compilation methods developed at Los Alamos have several important advantages over previous efforts. All raw data are presented along with the calculated consensus values. Our compilations remain the only ones that present a calculated uncertainty with every consensus value based upon three or more data points. Finally, the structure of our databases and the flexibility of Datatrieve provide for easy checking of each new reference for previous entry and rapid updating of previously published compilations.

A. Data Collection.

A limitation of many of these reference materials has been the restricted number of constituents that the issuing agency can afford to certify in each material. Numerous investigators outside the issuing agencies have published concentration data on constituents in these reference materials. Although several previous compilations and brief review articles on reference materials have appeared in the literature, we believe that the user should have access to both the summarized "consensus" value or mean concentration value and all the data on which they were based. Since abstracting services don't have a category "reference materials" and this label is rarely used in keyword indices published with articles, the widely scattered data in reports, articles, books, and conference proceedings have been collected with difficulty. Data collection has largely been accomplished through page-by-page scanning of 76 major journals in analytical chemistry, geology, petrology, geochemistry, and environmental science, listed in App. B, Table B-X. Over 4,600 references containing 101,000 original data points on NIST, USGS, and CCRMP reference materials have since been located.

Data compilations also provide a mechanism for quality assurance checks on agency- or compiler-"certified" values. Consistent

disagreement between the user community and a certifying agency should encourage the material's producer to carefully reexamine the certification measurements on the element(s) in dispute.

There has been continuing controversy among compilers concerning the determination and reporting of final compositional information on reference materials. Flanagan[34] has used "recommended," "average," and "magnitude" to characterize his "estimates" for major components and trace elements in United States Geological Survey materials. Gladney et al.[12] chose the term "consensus values" to describe the mean values calculated for USGS rocks after judgmental and statistical eliminations of initial outliers. The approach used by NIST to determine and assign their certified and informational values has been carefully documented in Uriano and Gravatt.[6]

Approaches to value judgment of data quality can be debated endlessly. The responsibility for the informed end use of these compiled data, regardless of who performed the compilation, lies with the individual investigator. All users should read our methodology carefully and critically to decide for themselves its limitations. The data compilations published by our team remain almost the only ones that consistently provide a statistical measure of the uncertainty of each compiled value. The following discussions document the philosophy behind our data compilations and the software used to produce them.

B. Data Compilation.

The data compilation began on a PDP-11/34 with an RSX operating system and first-generation Datatrieve (version 1.1) software and currently resides on a VAX 8200 minicomputer with a VAX/VMS (version 4.5) operating system. The data are managed using VAX Datatrieve (version 4.0) and the Common Data Dictionary (version 3.0) software packages. Datatrieve is an interactive data storage and maintenance software system that provides facilities for selective data retrieval, updating, sorting, formatting, and report generation with a minimum of programming overhead. Data were hand-entered into the system via terminal keyboard from copies of the original references.

Creating a Datatrieve information management application is a two-phase process: (1) describe the data to be used in the application and (2) use Datatrieve statements to process the data associated with these definitions. The data definition process involves establishing Datatrieve constructs called domains. Domains represent relationships between actual physical data and the description of the data. Datatrieve performs all data management in terms of domains. In its simplest form, a Datatrieve domain definition consists of a domain name, the name of the record definition, and the name of the data file.

- A record definition is a description of a record stored in the Common Data Dictionary.

- A record is a body of related information that is the basic unit for storing data. A record consists of one or more fields.

- A field is a segment of a data record in which individual data are stored. The exact characteristics of the data to be stored must be specified as part of the record definition process.

- The characteristics of the data file may be defined manually by the user, or automatically using DEC's Application Design Tool program within Datatrieve.

- A procedure is a fixed sequence of commands, statements, clauses, or arguments that you create, name, and store in the Common Data Dictionary. These are user-generated commands which codify commonly used command sets or intricate data verification routines. These may be easily called to perform operations on collections of data.

- The Common Data Dictionary is a software repository for definitions of data. Definitions are stored hierarchically and are accessed by reference to specific dictionary path names.

Early in the computerization of the data compilation process, it was decided to have two primary databases (domains): SRMS for the composition information and REFS for the individual references. Each data point was to be traceable to its original source. A more critical consideration was the need for random entry of both data and references. Some numbering system also needed to be developed for the references so that renumbering would not be required whenever periodic publications of our compiled data appeared. This numbering system needed to provide for easy sorting by both year of publication and first author. Furthermore, it had to provide a simple mechanism for determining whether any particular article had been previously located and included in the data bases. The domain and record definitions currently used are shown in App. B, Tables B-XI to B-XIII. These have been altered only slightly from the original versions of 1980. The CODE field consists of the last two digits of the year of publication plus the first three letters of the first author's last name. The two- digit numerical suffix field NUM is provided to enable handling of multiple reports by the same first author in the same year. This particular reference coding system was adopted in preference to a sequential numbering system to permit rapid searching of the reference database and to permit easy random updating of both the reference and concentration databases without the necessity of renumbering the references. Since over 4,600 references are now in REFS, these considerations are extremely important.

C. Literature Surveying and Data Entry.

A block diagram of the data compilation process is shown in Fig. 8. As mentioned previously, almost all literature surveying is accomplished through page-by-page scanning of the journals. Increasingly, authors are sending us preprints and reprints of articles and reports containing reference material data. This has been of great help, but only supplements the detailed scanning. A chart of literature inspected is kept and updated as each journal issue is searched. Whenever an article with reference material data is located, the first page, reference material data pages, and any others needed to interpret the reference material data are copied and returned to our laboratory for reference checking and data entry via terminal keyboard into the VAX.

Upon closure of the database for publication of a new or updated compilation, all records are inspected for typographical errors in material name, element name, units, analytical methods, and reference codes using Datatrieve procedures written specifically for this purpose. Inconsistencies are identified and corrected manually. All data reported as oxides in the original references but NOT converted during the entry process are now converted to elemental form using another Datatrieve procedure. Data are then sorted by material, constituent, and in ascending order of concentration within each constituent. This collection is printed for manual inspection. Some subjective criteria, as described by

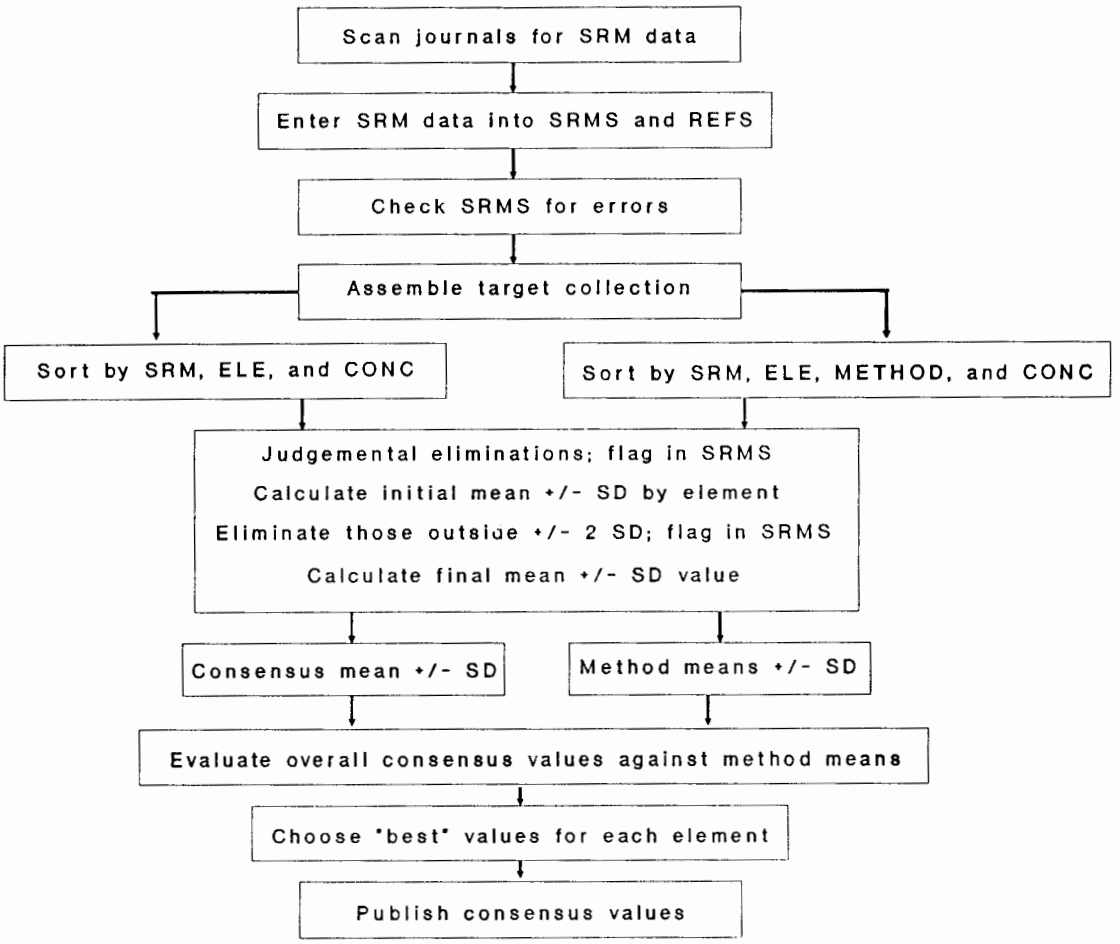


Fig. 8. Data compilation process.

Abbey,[35] are used to select data on either end of the reported concentration spectrum that we judge to be clearly beyond the limits of acceptability. These are marked by manually inserting an asterisk (*) in the S field of the SRMS domain. An initial mean and standard deviation is then computed for all remaining data for a given constituent in each reference material. All data points outside ± 2 standard deviations from the initial mean are automatically dropped by inserting an "&" in the S field, and a revised mean and standard deviation are computed. These final means and associated standard deviations are automatically written to domain SRMTABLE (definition shown in App. B, Table B-XIII) and ultimately are reported as our consensus values in the published tables of compiled data. The number of literature values used to calculate each final value is indicated in the tables. Where sufficient data exist, we compute the median using all data other than "less-than" values. Finally, we calculate mean values as a function of groups of analytical methods. Ignoring the data eliminated above containing an "&" in the S field, an iterative mean and standard deviation (using ± 2σ for first round eliminations and writing a "#" into the S field) are calculated for groups of analytical methods that had sufficient data (i.e., ITNA, IENA,

RTNA, RENA, and NAA are all combined into neutron activation; WXRF, EXRF, and XRF into X-ray fluorescence, etc.). These analytical method means and associated standard deviations are automatically written to domain SRMTABLE and included in the published tables of compiled data. A short portion of this data is shown in App. B, Table B-XIV.

If certified values provided by NIST or previous recommended values from another compiler are to be included in the tables for comparison, they may be inserted in SRMTABLE using another Datatrieve procedure. The final summary and individual data tables for publication are assembled from SRMTABLE and SRMS, respectively, using special editing macros. These tables are generated with the VAX Datatrieve report writing facilities and the DEC Keypad editor using our own user-written columnizing software and are printed on a Hewlett-Packard LaserJet printer. Data that were reported as "greater-than" values are omitted entirely, and "less-than" values are shown as a blank under concentration with the upper limit given as the uncertainty, with "L" under COMMENT, and with "*" under S. The data have been sorted in ascending order based upon material, constituent, and concentration. The final step in the data compilation process is the assembly of the reference table listing all individual references from which the data presented in a particular compilation were taken.

D. Consensus Value Evaluation and Publication.

Our consensus values for major and minor elements in some SRMs can be subjected to a test commonly used by geochemists. "Whole material" summations, similar to geochemists' "whole rock" summations, can be calculated from elemental data when oxygen data are available, or the elements can be converted to stoichiometric oxides and then summed. However, the traditional whole rock approach is inappropriate for coals, oils, biologicals, and nonsilicate rocks, in which many elements are not present in oxide forms. Since we still have not located any reports of oxygen determination in any of the biological SRMs, the "whole material" summation test cannot yet be applied. There are sufficient oxygen data on three coal and two fly ash materials to attempt the "whole material" summation. It is important that all concentration data used are either on a "dry-weight" basis or that the hydrogen or bound and unbound water is included as individual items in constituents summed. For several silicate rock SRMs with insufficient oxygen data, major and minor elements have been converted to stoichiometric oxide forms and summed. In all cases, the uncertainties (where known) are propagated onto the final sum using standard statistical techniques. Typical results of these calculations are shown in App. B, Table B-XV. Summations of 99% - 101% are considered a good indication that the major and minor element data are reasonably accurate and internally consistent.

Between 1950 and 1972, technical reports and compilations published in *Geochimica et Cosmochimica Acta* were the primary vehicles for reference material data communication. The advent of *Geostandards Newsletter* in 1977 and editorial decisions at *Geochimica et Cosmochimica Acta* to discourage reference material data compilations have resulted in significant changes in the pattern of data publication. Today, *Geostandards Newsletter* has become preeminent in the publication of reference material data.[16]

REFERENCES

REFERENCES

1. M. A. Gautier, E. S. Gladney, N. L. Koski, E. A. Jones, and B. T. O'Malley, "Quality Assurance for Health and Environmental Chemistry: 1989," Los Alamos National Laboratory report LA-11995-MS (1990).

2. L. H. Keith, R. A. Libby, W. Crummett, J. K. Taylor, J. Deegan, Jr., and G. Wentler, "Principles of Environmental Analysis," *Analytical Chemistry* **55**, 2210-2218 (1983).

3. "Test Methods for Evaluating Solid Waste; Volume 1A: Laboratory Manual Physical/ Chemical Methods," US Environmental Protection Agency report SW-846 (1986).

4. J. K. Taylor, "Principles of Quality Assurance of Chemical Measurements," National Bureau of Standards report NBSIR 85-3105 (1985).

5. "Environmental Regulatory Guide for Radiological Effluent Monitoring and Environmental Surveillance," US Department of Energy report DOE/EH-0173T (January 1991).

6. G. A. Uriano and C. C. Gravatt, "The Role of Reference Materials and Reference Methods in Chemical Analysis," *Critical Reviews in Analytical Chemistry* **6**, 361-411 (1977).

7. J. K. Taylor, "Quality Assurance of Chemical Measurements," *Analytical Chemistry* **53**, 1588A-1596A (1981).

8. J. K. Taylor, "Handbook for SRM Users," NBS Special Publication 260-100 (1985).

9. D. M. Kerr, "Metrology/Calibration Program," Los Alamos National Laboratory memorandum, DIR to Director's Staff, Division Leaders, and DADs (September 9, 1983).

10. E. S. Gladney, "Compilation of Elemental Concentration Data for Fourteen Canadian Certified Reference Materials Project Standards," Los Alamos Scientific Laboratory report LA-8382-MS (1980).

11. E. S. Gladney, "Comparison of Methods for Calculation of Recommended Elemental Concentrations for Canadian Certified Reference Materials Project Rock Standards SY-2, SY-3, and MRG-1," Los Alamos National Laboratory report LA-8770-MS (1981).

12. E. S. Gladney, C. E. Burns, and I. Roelandts, "1982 Compilation of Elemental Concentrations in Eleven United States Geological Survey Rock Standards," *Geostandards Newsletter* **7**, 3-226 (1983).

13. E. S. Gladney, C. E. Burns, and I. Roelandts, "1983 Compilation of Elemental Concentration Data for CCRMP Reference Soil Samples SO-1 to SO-4," *Geostandards Newsletter* **9**, 35-68 (1985).

14. E. S. Gladney, C. E. Burns, and I. Roelandts, "1982 Compilation of Elemental Concentration Data for the United States Geological Survey's Geochemical Exploration Reference Samples GXR-1 to GXR-6," *Geostandards Newsletter* **8**, 119 (1984).

15. E. S. Gladney, B. T. O'Malley, I. Roelandts, and T. E. Gills, "Compilation of Elemental

Concentration Data for NBS Clinical, Biological, Geological, and Environmental Standard Reference Materials," NBS Special Publication 260-111 (1987).

16. E. S. Gladney and I. Roelandts, "Distribution of NBS, USGS, and CCRMP Reference Material Data in the Literature (1951-1985)," *Geostandards Newsletter* **11**, 133-142 (1987).

17. E. S. Gladney and I. Roelandts, "Compilation of Boron Concentration Data for NBS, USGS, and CCRMP Reference Materials," *Geostandards Newsletter* **11**, 167-186 (1987).

18. E. S. Gladney and I. Roelandts, "Compilation of Elemental Concentration Data for USGS BIR-1, DNC-1, and W-2," *Geostandards Newsletter* **12**, 63-118 (1988).

19. E. S. Gladney and I. Roelandts, "Compilation of Elemental Concentration Data for USGS BHVO-1, MAG-1, QLO-1, RMG-1, SCo-1, SDC-1, SRG-1, and STM-1," *Geostandards Newsletter* **12**, 253-362 (1988).

20. E. S. Gladney and I. Roelandts, "1988 Compilation of Elemental Concentration Data for CCRMP SO-1 to SO-4 Soils," *Geostandards Newsletter* **13**, 217-268 (1989).

21. E. S. Gladney and I. Roelandts, "1988 Compilation of Elemental Concentration Data for USGS GXR-1 to GXR-6 Geochemical Exploration Reference Materials," *Geostandards Newsletter* **14**, 21-118 (1990).

22. W. J. Dixon and F. J. Massey, *Introduction to Statistical Analysis* (McGraw-Hill Book Company, New York, 1969), pp. 82-83.

23. M. A. Gautier and E. S. Gladney, Eds., "Health and Environmental Chemistry: Analytical Techniques, Data Management, and Quality Assurance," Los Alamos National Laboratory report LA-10300-M (1986).

24. E. S. Gladney, D. B. Curtis, D. R. Perrin, J. W. Owens, and W. E. Goode, "Nuclear Techniques for the Chemical Analysis of Environmental Materials," Los Alamos Scientific Laboratory report LA-8192-MS (1980).

25. L. A. Currie, "Limits for Qualitative Detection and Quantitative Determination," *Analytical Chemistry* **40**, 586-593 (1968).

26. L. A. Currie, "Lower Limit of Detection: Definition and Elaboration of a Proposed Position for Radiological Effluent and Environmental Measurements," US Nuclear Regulatory Commission report NUREG/CR-4007 (September 1984).

27. M. C. Williams, "Handbook for Sample Collection, Preservation, and Instrumental Techniques," Los Alamos National Laboratory report LA-11738-M (1990).

28. W. A. Shewhart, *Economic Control of Manufactured Products* (Van Nostrand Co., New York, 1931).

29. J. K. Taylor, "The Quest for Quality Assurance," *American Laboratory* **17** (10), 67 (1985).

30. R. R. Edwards, D. L. Schilling, Jr., and T. L. Rossmiller, "Performance Evaluation of Certified Water Analysis Laboratories," *Journal of Water Pollution Control Federation* **49**, 1704-12 (1977).

31. American Conference of Governmental Industrial Hygienists, "Threshold Limit Values and Biological Exposure Indices for 1990-1991" (ACGIH, Cincinnati, Ohio, 1990).

32. Occupational Health and Safety Products Division/3M, "Organic Vapor Monitor #3500 Compound Guide" (3M Corporation, St. Paul, Minnesota, 1982).

33. C. Feldman, "Preservation of Dilute Mercury Solutions," *Analytical Chemistry* **46**, 99-102 (1974).

34. F. J. Flanagan, "1972 Values for International Geochemical Reference Samples," *Geochimica et Cosmochimica Acta* **37**, 1189-1200 (1973).

35. S. Abbey, "Studies in Standard Samples for use in the General Analysis of Silicate Rock and Mineral Samples, Part 5: 1977 Edition of Usable Values," *X-ray Spectrometry* **7**, 99-121 (1978).

36. S. Abbey, "Standard Samples - How "standard" are they?," *Geostandards Newsletter* **1**, 39-45 (1977).

37. R. A. Nadkarni and G. H. Morrison, "Use of Standard Reference Materials as Multielement Irradiation Standards in Neutron Activation Analysis," *Journal of Radioanalytical Chemistry* **43**, 347-369 (1978).

38. E. S. Gladney, "Elemental Concentrations in NBS Biological and Environmental Standard Reference Materials," *Analytica Chimica Acta* **118**, 385-396 (1980).

APPENDIX A

GLOSSARY

Accreditation. A formal process by which a laboratory is evaluated with respect to established criteria for its competence to perform specified types of measurements.

Accuracy. The degree of agreement of a measurement with an accepted reference or true value, usually expressed as the difference between the two values.

ACS. American Chemical Society.

Adsorption. The physical process in which molecules of gas, dissolved substances, or liquids adhere in an extremely thin layer to the surface of solid bodies with which they are in contact.

Aliquot. Measured portion of a sample that is used in an analysis.

Alpha (α) probability. The proportion of false detection. Detection of an analyte that is not present.

AMDA. Acceptable minimum detectable amount. See detection limit.

Analyte. The specific component measured in a chemical analysis.

Analytical batch. Samples that are analyzed together with the same method sequence, the same lots of reagents, and with the manipulations common to each sample within the same time period. Samples in each batch should be of similar composition.

ANSI. American National Standards Institute.

Aroclor. Chlorinated diphenyl resin; dielectric; plasticizer. Monsanto Corporation marketed PCBs under the tradename Aroclor from 1930 to 1977. Aroclors were marketed for use in transformers, capacitors, printing inks, paints, dedusting agents, pesticides, and many other applications.

Audit. A systematic check to determine the quality of operation of a function or activity. Audits may be of two basic types:

Performance audits. Quantitative data are independently obtained for comparison with data routinely obtained in a measurement system.

System audits. A systematic on-site qualitative review of facilities, equipment, training, procedures, record keeping, data validation, data management, and reporting aspects of a total QA system to arrive at a measure of capability of the measurement system to generate data of the required quality.

Average (mean). The sum of a series of results divided by the number of results. The symbol is $\overline{X}$.

Beta (β) probability. The proportion of false nondetection. The nondetection of an analyte that is present.

Bias. An effect that systematically distorts a statistical result. A systematic displacement of all the observations in a sample from the true or accepted value.

Bioassay. Measurements to determine the amount of material in the excreta or in other biological materials removed from the body.

Biokinetics. The science of the movements within developing organisms.

Blank. A sample that is identical, in principle, to the sample of interest, except that the substance being analyzed is absent. The measured value or signal for the substance being analyzed is believed to be due to artifacts and should be subtracted from measured sample values to give a net value caused by the substance contained in the sample.

We differentiate blanks into the following categories:

Analytical or reagent blank. A blank used as a baseline for the analytical portion of a method. It may be an aliquot of analyte-free water, solvent, or carrier gas analyzed with the analytical batch and used to adjust or correct routine analytical results.

Equipment blank. A blank prepared in the field by collecting water that has been run over the sampling equipment prior to use to show if samples were contaminated by the sampling equipment.

Field blank. A blank that is an aliquot of analyte-free water or a solvent brought to the field in sealed containers and transported back to the laboratory with the sample containers.

Trip blank. A blank that checks on sample contamination originating from sample transport, shipping, and from site conditions.

Blind sample. A sample submitted for analysis with a composition known to the submitter but unknown to the analyst. A blind sample is one way to test proficiency of the measurement process.

Calibration. Comparison of one measurement standard or instrument with another standard or instrument to report or eliminate by adjustment any variation in the accuracy of the item being compared.

Calibration check. Verification of the ratio of instrument response to analyte amount, performed by analyzing for analyte standards in an appropriate solvent. Calibration check solutions are made from a stock solution that is different from the stock used to prepare standards.

CAR. Corrective action request.

CAS number. An organic compound numbering system developed by the Chemical Abstract Service.

CCRMP. Canadian Certified Reference Materials Project.

Certified reference material. A reference material with one or more property values certified by a technically valid procedure, accompanied by or traceable to a certificate or other documentation issued by a certifying body such as NIST.

Certified value. The value that appears in a certificate as the best estimate of the value for a property of a reference material.

Chain-of-custody. A procedure for preserving the integrity of a sample or of data. A written record that lists the location of the sample and data at all times; a procedure complete with signatures of those responsible for the sample.

Check sample. A blank that has been spiked with the analyte from an independent source in order to monitor the performance of the analytical method. The level of the spike should be at the regulatory action level when applicable. Otherwise, the spike shall be five times the estimate of the quantification limit. The matrix used shall be phase matched with the samples and well-characterized.

COD. Chemical oxygen demand.

Concentration. The quantity of material in activity, or mass per unit volume, or mass of a sample.

Cond. Conductivity.

Confidence interval. The interval within which the estimated parameter may lie with some given degree of probability.

Confidence level. The probability associated with a confidence interval.

Consensus value. A value assigned to the concentration of an element in a reference material by an investigator who compiles available literature data on international reference materials. Many methods exist for arriving at the assigned value; the most common is the calculation of a mean and standard deviation following the elimination of obvious outliers.

Control chart. The graphic record of values, results, samples, or controls recorded successively. The ordinate of the graph is scaled in units of the test result, and the abscissa is scaled in units of time or sequence of results.

Control limit. Limits on the control chart, established at ± 2 or 3 standard deviations from the mean, that are used as criteria for action or for judging the significance of variations between duplicate samples. Values falling outside the upper or lower control limit are considered out of control.

Data validation. The systematic review of a data set to identify outliers, suspect values, and transcription errors.

Desorption. The process of freeing a substance from a sorbed state.

Detection limit. Examination of the analytical and radiochemical literature for an appropriate definition of the limit of detection revealed an abundance of widely ranging terminology.

Acceptable minimum detectable amount. The amount of radioactive material that analytical measurement procedures should measure with the assumption that the material is free of interference from other radionuclides.

Environmental detection limit. The smallest level at which an analyte in an environmental medium can be unambiguously distinguished, for a given confidence level, by the use of a particular combination of sampling and measurement procedures, sample volume, analytical detection limit, and processing procedure.

Limit of detection. The smallest concentration of a substance that can be measured by a single measurement with a stated level of confidence.

MDA. Minimum detectable amount. The smallest amount of an analyte in a sample that will be detected with a beta probability of nondetection (type II error) while accepting an alpha probability of erroneously detecting that analyte in an appropriate blank sample (type I error). The alpha and beta probabilities are commonly set at 0.05.

MDL. Minimum detectable level (limit of detection). The limit of detection of an analytical method is the minimum concentration of the analyte of interest that can be observed by the instrument and distinguished from instrument noise with a specified degree of probability.

MQL. Method quantification limit. The minimum concentration of a substance that can be measured and reported.

DNA. Delayed neutron activation. The determination of fissionable materials through measurement of neutron emission from their neutron-rich fission products. Most commonly used for the measurement of uranium using calibration standards with a known atom % of ^{235}U.

DOE. Department of Energy.

Duplicate analysis. An analysis performed at the same time on equal quantities taken from the same sample or on two samples collected at the same time and place.

EML. Environmental Measurements Laboratory, New York, that operates the Quality Assessment Program for the DOE.

EMSL. Environmental Monitoring and Support Laboratory of the EPA, Las Vegas (LV), Nevada, and Cincinnati (CI), Ohio.

Environmental detection limit. See detection limit.

Environmental surveillance. The collection and analysis of samples of air, water, soil, foodstuffs, biota, and other environmental media from Laboratory sites and their environs and the measurement of various analytes for purposes of demonstrating compliance with applicable standards, and assessing effects, if any, on the local environment.

EPA. Environmental Protection Agency.

Error. The difference between an observed value and its true value.

Gross alpha. The total amount of measured alpha activity without identification of specific radionuclides.

Gross beta. The total amount of measured beta activity without identification of specific radionuclides.

Hard. Hardness.

Homogeneity. The degree to which a property or substance is randomly distributed throughout a material.

HSE-7. Waste Management Group, Los Alamos National Laboratory.

HSE-8. Environmental Protection Group, Los Alamos National Laboratory.

HSE-9. Health and Environmental Chemistry Group, Los Alamos National Laboratory.

H_2O^+. Bound water removed from geological materials by heating at 1,000°C after removal of unbound water.

H_2O^-. Unbound water removable by drying at 110°C for 24 h.

IAEA. International Atomic Energy Agency, Vienna, Austria.

Interlaboratory variability. The difference in results obtained by different laboratories when portions of a common sample are measured.

Intralaboratory variability. The difference in results when a single laboratory repeatedly measures portions of a common sample.

In vitro. Measurements to determine the presence of or to estimate the amount of radioactive material in the excreta or in other biological materials removed from the body.

In vivo. The measurement of radioactive material in the human body utilizing instrumentation that detects radiation emitted from the radioactive material in the body.

LIMS. Laboratory information management system.

Matrix/spike-duplicate analysis. Predetermined quantities of stock solutions of certain analytes added to a sample matrix prior to sample extraction/digestion and analysis. Samples are split into duplicates and are spiked and analyzed. Percent recoveries are calculated for each of the analytes detected. The relative % difference between the samples is calculated and used to

assess analytical precision. The concentration of the spike should be at the regulatory standard level or the estimated or actual method quantification limit.

MDA. See detection limit.

MDL. See detection limit.

Mean. Equal to the sum of units divided by the number of units (arithmetic average).

Measures of central tendency. Measures of the tendency of values within a set of data to be centered at some location (e.g., median, mode, arithmetic mean).

Measures of dispersion or variability. Measures of the differences, scatter, or variability of values within a set of numbers. Commonly used measures of the dispersion or variability are the range, standard deviation, variance, and coefficient of variation.

Median. The middle value of a set of data when the set is ranked in increasing or decreasing order.

Mode. The value occurring most frequently in a data set.

MQL. See detection limit.

MSDS. Material Safety Data Sheet. Written data on the hazards and properties of a particular material, including instructions for its safe use.

NBS. National Bureau of Standards. See NIST.

NIOSH. National Institute for Occupational Safety and Health.

NIST. National Institute of Standards and Technology (formerly the National Bureau of Standards), Gaithersburg, Maryland.

NPDES. National Pollutant Discharge Elimination System.

NRC. Nuclear Regulatory Commission.

Outlier. A value that appears to deviate markedly from the value for other members of the data set in which it occurs. The chance probability of its being a valid member of the group is very small. Such a questionable value may be eliminated from the group on the basis of further statistical investigation of the data set.

Overspike. The addition to a sample of a known amount of analyte over and above that which may be already present in the sample.

OVM. Organic vapor monitor.

P Alk. Phenolphthalein alkalinity.

PAT. Proficiency Analytical Testing Program from NIOSH.

PCB. Polychlorinated biphenyls are a class of 209 discrete chemical compounds, called congeners, in which one to ten chlorine atoms are attached to a biphenyl.

PE. Performance evaluation samples from EML.

Poisson distribution. The exponential limit of a binomial distribution as the probability (p) approaches zero and the number of events (n) approaches infinity. Describes the frequency pattern of counts emitted by radioactive decay in a continuous interval of time. A distribution of counts from radioactive decay greater than 20 events may be considered normally distributed and the t distribution statistics may be used to test results obtained.

Precision. The degree to which data generated from replicate or repetitive measurements agree.

Frequently assessed by calculating the standard deviation in a set of data points.

Preventive maintenance. An orderly program of positive actions for preventing failure of equipment and ensuring, as much as possible, that the equipment is operating with the reliability required for quality results.

Primary standards. A class of single elements or compounds that are well-characterized, stable, homogeneous, and produced in quantity. Their physical or chemical properties have been determined within specified measurement uncertainties by a recognized national standards laboratory such as NIST. Examples include NIST SRM 83c (As_2O_3) and NIST SRM 950b (U_3O_8).

Probability. The likelihood of the occurrence of any particular form of an event, estimated as the ratio of the number of ways or times that the event may occur in that form to the total number of ways that it could occur in any form.

Proficiency testing. A systematic testing program in which a sample, or random series of samples, is analyzed by a number of laboratories to determine the accuracy of each laboratory's analysis.

QA. Quality assurance. The total integrated program of planned and systematic actions necessary to provide confidence in and assure the reliability of each analytical result or measurement reported by a laboratory.

QADM. Quality Assurance and Data Management Section.

QAP. Quality Assessment Program from EML.

QAPP. Quality Assurance Program Plan.

QC. Quality control. Actions taken within a QA program to ensure validity of results. As used in this document, QC means all routine activities and checks, such as calibration of equipment, duplicate analyses, use of certified reagents, use of spiked samples, etc., included in normal internal procedures to control the accuracy and precision of a measurement process.

QNS. Quantity not sufficient.

Quality assessment. The system or techniques used to verify that the entire analytical process is operating within acceptable limits. Control charts are an example.

Quality assurance manual. A written document that identifies the policies, organization, objectives, functional activities, and specific quality assurance activities designed to achieve the quality goal desired for the operation of a laboratory.

Radiobioassay. Measurements to determine the presence of or to estimate the amount of radioactive material in the excreta or in other biological materials removed from the body.

Radiotissue. Measurements to determine the presence of or to estimate the amount of radioactive material in tissues removed from the body.

Random error. Variations of repeated measurements made within a sample set that are random in nature and individually not predictable. The causes of random error are assumed to be indeterminate or nonassignable and are generally assumed to be normally distributed.

Range. The absolute value of the difference between the maximum and minimum values in a set of results.

RCRA. Resource Conservation and Recovery Act.

Reagent grade. Analytical reagent (AR) grade, ACS reagent grade, and reagent grade are

synonymous terms for reagents that conform to the current specifications of the Committee on Analytical Reagent of the American Chemical Society.

Reference material. A material or substance with one or more properties that are sufficiently well established to be used for the calibration of an apparatus, the assessment of a measurement method, or for the assignment of values to materials.

Regression. A statistical method for investigating the relationship between a dependent variable or response and one or more independent or predicated variables.

Reliability. The ability of an item or a system to perform a required function under stated conditions for a stated period of time.

Repeatability. The variation in data generated on a single sample by a single analyst or instrument or both over a short period of time.

Replicate analysis. Repeated but independent determinations of the same sample, by the same analyst, at essentially the same time, and under the same conditions.

Replicate sample. Prepared by dividing a sample into two or more separate aliquots.

Representative sample. A sample taken to depict the characteristics of a population as accurately and precisely as possible.

Reproducibility. Variation over an extended time or by various analysts or laboratories.

RSD. Relative standard deviation. The standard deviation (precision) of a set of values divided by the arithmetic mean, $S/\overline{X}$. In this document it is expressed as percentage (%). The term is equivalent to coefficient of variation.

Secondary standards. Materials produced by commercial organizations, laboratories, or governmental agencies that are well characterized, stable, and homogeneous. The secondary standards are produced in quantity and have one or more physical or chemical properties experimentally determined within stated measurement uncertainties. The important distinction between primary and secondary standards is that the latter may be complex natural materials (rocks, vegetation, etc.) as well as high-purity compounds or elements.

We differentiate secondary standards between two classes:

Class I. Complex materials whose composition or physical properties have been determined and certified within specified measurement uncertainties by a recognized national standards laboratory. The NIST SRM program has produced a large number of such materials for use in bioassay and environmental analyses.

Class II. Complex materials whose preparation has been similar to that of Class I materials, but whose composition has not been certified by a national standards laboratory. Certain elements in NIST SRMs and all materials from USGS, CCRMP, IAEA, or EPA fall in this category. Mean elemental concentrations are frequently established by consensus.

Sensitivity. The degree to which an instrument or method can detect a particular analyte.

Shall statements. Indicate performance criteria and procedures required to operate and maintain an acceptable QA program.

Should statements. Indicate flexible guidance for an acceptable QA program.

SOP. Standard operating procedure. A procedure adopted for repetitive use when performing a specific measurement or sampling operation.

Spike. The addition to a blank sample of a known amount of a reference material, containing the analyte of interest.

Standard addition. A method in which small increments of a substance under measurement are added to a sample under analysis to establish a response function, or by extrapolation, to determine the amount of a constituent originally present in the test sample.

Standard curve. A curve that plots concentrations of known analyte standard versus the instrument response to the analyte.

Standard deviation. The square root of the average of the squares of the deviations of single observations from their arithmetic mean.

Standard method. A test method or procedure developed by a standards-writing organization, based on consensus opinion or other criteria, and often evaluated for its reliability by a collaborative testing procedure.

SRM. Standard reference material. A reference material distributed and certified by the National Institute of Standards and Technology.

Statistical control. Errors are within acceptable levels based on values calculated from a sample of observations.

Surrogate. Organic compounds that are similar to analytes of interest in chemical composition, extraction, and chromatography that are not normally found in environmental samples. These compounds are spiked into all blanks, standards, samples, and spiked samples prior to analysis. Percent recoveries are calculated for each surrogate and are an indication of the % recovery of the analytes in the sample.

Systematic error. The condition in which there is a consistent deviation of the results from the actual or true values by a measurement process. The cause for the deviation or bias may be known or unknown but is considered assignable.

TDS. Total dissolved solids.

TLV. Threshold limit values. Airborne concentrations of substances that represent conditions under which nearly all workers may be repeatedly exposed without adverse effect.

Tot alk. Total alkalinity.

Traceability. A hierarchical system used largely for regulatory purposes wherein transfer of accuracy among various components of a measurement system is established or inferred. For example, a working standard should be traceable to a secondary standard, Class II secondary standards to Class I secondary standards, and secondary standards to primary standards. A documented chain of comparisons connecting a working standard to a national standard such as those maintained by NIST.

Tritium. A radioisotope of hydrogen with a half-life of 12.3 years.

TSS. Total suspended solids.

Uncertainty. The range of values within which the true value is estimated to lie. It is a best estimate of possible inaccuracy due to both random and systematic error.

Uranium, natural. Uranium having an isotopic abundance the same as that normally found in the earth's crust. The $^{235}U/^{238}U$ ratio is 0.00725 (0.72 wt% ^{235}U).

Uranium, depleted. Uranium having isotopic abundance that is altered from that normally found in the earth's crust. The $^{235}U/^{238}U$ ratio is less than 0.00725. Depleted uranium is almost exclusively anthropogenic, occurring only very rarely in nature (Oklo Mine, Africa).

Uranium, enriched. Uranium having isotopic abundance that is altered from that normally found in the earth's crust, with ^{235}U in excess of 0.72 wt%. The $^{235}U/^{238}U$ ratio is greater than 0.00725. Enriched uranium is exclusively anthropogenic in origin.

Uranium, total. The amount of uranium in a sample, calculated by summing the contributions from all the isotopes. Total uranium in a sample may be derived from enriched, depleted, or natural isotopic abundance uranium, or any combination of the three.

USGS. United States Geological Survey.

USTR. United States Transuranium Registry.

Variance. The sum of the squares of the difference between the individual values of a set and the arithmetic mean of the set, divided by one less than the number of values. The square of the standard deviation.

VAX. Virtual Address Extension. VAX is a high-performance, multiprocessing computer system based on a 32-bit architecture. VAX is made by Digital Equipment Corporation.

VAX/VMS. The abbreviation for Virtual Address Extension/Virtual Memory System. The operating system for VAX computer systems.

Working standard. A secondary or in-house standard that has been calibrated against a primary reference standard.

APPENDIX B

COMPUTER SOFTWARE

Typical Terminal Session for

QACHECK Computer Program

TYPICAL TERMINAL SESSION FOR QACHECK COMPUTER PROGRAM

```
Username: USER
Password: XXXXXX

**************************************************************************
**************************************************************************

     Last interactive login on Monday, 27-MAR-1990 14:55
     Last non-interactive login on Monday, 27-MAR-1990 08:21


USER$ QACHECK
ENTER THE NUMBER OF YOUR CHOICE AND <CR>,

     1. PRELIMINARY REPORT

     2. FINAL REPORT

     3. NEWREPORTQA (QACHECK THAT WRITES TO SAMPLES DATABASE)

     4. QACHECK  (THIS DOES NOT WRITE TO SAMPLES)

     9. EXIT.  RETURN TO USER PROCESS

MENU CHOICE?: 3
DO YOU WANT TO ENTER QA THROUGH QACHECK? [Y/N]: Y
Enter ANALYST INITIALS (UP TO 3 CHARACTERS): ESG
Enter # OF DIFFERENT QA MATERIALS TO BE CHECKED AT THIS SESSION: 3



Enter HSE-9 SAMPLE NUMBER OF QA MATERIAL: 00.00533
Enter ANALYTICAL TECHNIQUE USED (UP TO 5 CHARACTERS): TCGS
Enter # OF DIFFERENT REQUEST NUMBERS TO BE ASSIGNED TO THIS QA: 1
Enter REQUEST NUMBER FOR THIS QA: 1111
Enter # OF ANALYSES OF THE SAME QA MATERIAL AND ANALYTICAL METHOD: 2

     Enter ANALYSIS (UP TO 10 CHARACTERS): B
     UNITS OF ENTRY MUST BE UG/G
     Enter RESULT     : 30.
     Enter UNCERTAINTY: 1.
     ANALYSIS UNDER CONTROL FOR 00.00533 B


     Enter ANALYSIS (UP TO 10 CHARACTERS): B
     UNITS OF ENTRY MUST BE UG/G
     Enter RESULT     : 25.
     Enter UNCERTAINTY: 1.
     ANALYSIS UNDER CONTROL FOR 00.00533 B
```

```
Enter HSE-9 SAMPLE NUMBER OF QA MATERIAL: 00.00576
Enter ANALYTICAL TECHNIQUE USED (UP TO 5 CHARACTERS): ITNA
Enter # OF DIFFERENT REQUEST NUMBERS TO BE ASSIGNED TO THIS QA: 2
Enter # OF ANALYSES OF THE SAME QA MATERIAL AND ANALYTICAL METHOD: 2

     Enter ANALYSIS (UP TO 10 CHARACTERS): AL
     UNITS OF ENTRY MUST BE %
     Enter RESULT     : 6.
     Enter UNCERTAINTY: .01
     ANALYSIS UNDER CONTROL FOR 00.00576 AL
     Enter REQUEST NUMBER: 1111
     Enter REQUEST NUMBER: 2222


     Enter ANALYSIS (UP TO 10 CHARACTERS): CA
     UNITS OF ENTRY MUST BE UG/G
     Enter RESULT     : 6000.
     Enter UNCERTAINTY: 100.
     ANALYSIS OUT OF CONTROL FOR 00.00576 CA        **REPEAT SAMPLE BATCH
     Enter REQUEST NUMBER: 1111
     Enter REQUEST NUMBER: 2222


Enter HSE-9 SAMPLE NUMBER OF QA MATERIAL: 00.00531
Enter ANALYTICAL TECHNIQUE USED (UP TO 5 CHARACTERS): FAA
Enter # OF DIFFERENT REQUEST NUMBERS TO BE ASSIGNED TO THIS QA: 1
Enter REQUEST NUMBER FOR THIS QA: 2222
Enter # OF ANALYSES OF THE SAME QA MATERIAL AND ANALYTICAL METHOD: 1

     Enter ANALYSIS (UP TO 10 CHARACTERS): BE
     UNITS OF ENTRY MUST BE NG/G
     Enter RESULT     : 100.
     Enter UNCERTAINTY: 10.
     ANALYSIS OUT OF CONTROL FOR 00.00531 BE        **REPEAT SAMPLE BATCH


AGAIN? [Y/N]: N

$ USER
```

Program QACHECK

```
PROCEDURE QACHECK2


! COMPARES USER INPUT VALUES FOR QAS WITH CVS DATABASE AND WRITES QA RECORDS
! TO SAMPLES DATABASE FOR SUBSEQUENT REPORTING; PERMITS THE ENTRY OF SEVERAL
! QA'S AND/OR SEVERAL ELEMENTS PER QA AND/OR SEVERAL REQUEST-NUMBERS PER QA
! WITH MINIMAL RETYPING OF COMMON INPUT PARAMETERS.  STATUS="X" USED TO
! DENOTE REUSE OF QA'S THAT DO NOT REPRESENT INDEPENDENT ANALYSES OF THAT QA
! SETS CUSTOMER-NUMBER = SAMPLE-NUMBER
!
DECLARE R USAGE REAL.
DECLARE RES USAGE REAL.
DECLARE UNC  USAGE REAL.
DECLARE UNS PIC X(10).
DECLARE SAMNUM PIC X(8).
DECLARE ANAL PIC X(10).
DECLARE CVRES USAGE REAL.
DECLARE CVUNC USAGE REAL.
DECLARE NOW USAGE DATE.
DECLARE USER PIC X(3).
DECLARE QUALITY PIC X(20).
DECLARE REQUEST PIC X(5).
DECLARE XTECH PIC X(5).
DECLARE XMAT PIC X(3).
DECLARE XSYM PIC X(1).
DECLARE A PIC X(2).
DECLARE B PIC X(1).
DECLARE Y PIC X(3).
DECLARE Z PIC X(3).
DECLARE COUNT1 PIC X(1).
!
READY SAMPLES SHARED WRITE;
READY CVS SHARED READ;
READY CVD SHARED READ;
USER=*."ANALYST INITIALS (UP TO 3 CHARACTERS)"
PRINT " "
Y =*."# OF DIFFERENT QA MATERIALS TO BE CHECKED AT THIS SESSION"
PRINT " "
REPEAT Y BEGIN
  PRINT " "
  SAMNUM=*."HSE-9 SAMPLE NUMBER OF QA MATERIAL"
  COUNT1 = COUNT OF CVS WITH SN=SAMNUM
  PRINT " "
  IF (COUNT1 NE 0) THEN BEGIN
    XMAT = SAMPLE_TYPE FROM CVD WITH SN=SAMNUM
  END ! IF COUNT1 NE 0
  IF (COUNT1 = 0) THEN BEGIN
    PRINT "*************************************************************"
    PRINT "THIS QA NUMBER NOT IN OUR QA DATABASE, SO YOU WILL BE ASKED TO"
    PRINT "SOME ADDITIONAL DATA ABOUT THIS MATERIAL"
    PRINT "*************************************************************"
    PRINT " "
    XMAT = *."MATRIX TYPE OF THIS QA"
  END ! IF COUNT1=0
```

```
PRINT " "
XTECH=*."ANALYTICAL TECHNIQUE USED (UP TO 5 CHARACTERS)"
PRINT " "
A = *."# OF DIFFERENT REQUEST NUMBERS TO BE ASSIGNED TO THIS QA"
IF (A = 1) THEN BEGIN
  PRINT " "
  REQUEST=*."REQUEST NUMBER FOR THIS QA"
END ! IF A=1
Z = *."# OF ANALYSES OF THE SAME QA MATERIAL AND ANALYTICAL METHOD"
REPEAT Z BEGIN
  PRINT " "
  ANAL=*."ANALYSIS (UP TO 10 CHARACTERS)"
  COUNT1 = COUNT OF CVS WITH SN=SAMNUM AND CVN=ANAL
  IF (COUNT1=0) THEN BEGIN
    PRINT " "
    PRINT "NO DATA AVAILABLE FOR "|||SAMNUM|||ANAL
    PRINT " "
    QUALITY="NO DATA AVAIL."
    RES=*."RESULT     "
    UNC=*."UNCERTAINTY"
    UNS=*."UNITS"
    NOW="TODAY";
  END ! IF COUNT1=0 BEGIN
  IF (COUNT1 NE 0) THEN BEGIN
    UNS=CV_UNITS FROM CVS WITH SN=SAMNUM AND CVN=ANAL
    PRINT " "
    PRINT "UNITS OF ENTRY MUST BE:  ",UNS(-)
    PRINT " "
    RES=*."RESULT     "
    UNC= *."UNCERTAINTY"
    PRINT " "
    CVRES=CV FROM CVS WITH SN=SAMNUM AND CVN=ANAL
    CVUNC=CVU FROM CVS WITH SN=SAMNUM AND CVN=ANAL
    IF (CVUNC LT 0.0001) THEN CVUNC = 0.1*CVRES
    NOW="TODAY";
    R=(FN$ABS(RES - CVRES))/(FN$SQRT(UNC*UNC + CVUNC*CVUNC))
    IF (R LT 2) THEN BEGIN
      PRINT "ANALYSIS UNDER CONTROL FOR "|||SAMNUM|||ANAL;
      PRINT " "
      QUALITY="UNDER CONTROL"
    END ! IF R LT 1 BEGIN
    IF ((R GE 2) AND (R LE 3)) THEN BEGIN
      PRINT "WARNING-ANALYSIS IN 2-3 SIGMA REGION FOR "|||SAMNUM|||ANAL;
      PRINT " "
      QUALITY="WARNING 2-3 SIGMA"
    END ! IF R GE 2 AND LE 3 BEGIN
    IF (R GT 3) THEN BEGIN
      PRINT "ANALYSIS OUT OF CONTROL FOR "|||SAMNUM|||ANAL|"**REPEAT SAMPLE BATCH"
      PRINT " "
      QUALITY="OUT OF CONTROL"
    END ! IF R GT 3 BEGIN
  END ! IF COUNT1 NE 0 BEGIN
  IF (RES GT 0) THEN XSYM=" " ELSE XSYM="<"
! B IS COUNTER FOR SENSING WHEN TO ASSIGN STATUS=X TO DUPLICATE QA'S
```

```
    B = 0
    REPEAT A BEGIN
      STORE SAMPLES USING BEGIN
         SN=SAMNUM;
         CN=SAMNUM
         ANALYSIS=ANAL;
         MATRIX=XMAT
         OWNER="QA"
         PROJECT_NUM="QA"
         TECHNIQUE=XTECH
         SYMBOL=XSYM
         RESULT=RES;
         UNCERTAINTY=UNC;
         UNITS=UNS;
         COMMENT=QUALITY
         IF (A = 1) THEN REQUEST_NUM=REQUEST
         IF (A GT 1) THEN REQUEST_NUM=*."REQUEST NUMBER"
         CD=NOW;
         ANALYST=USER;
         IF (B = 0) THEN STATUS = "T"
         IF (B GT 0) THEN STATUS = "X"
      END ! STORE SAMPLES
    B = B + 1
    END !REPEAT A
  END !REPEAT Z
END !REPEAT Y
!
FINISH;
!
END_PROCEDURE
```

Program SVC-ACCORD

```
      PROGRAM SVC_ACCORD
C     WRITTEN BY D KEY, HSE-9, FALL 1990
C       THIS PROGRAM WAS WRITTEN FOR THE PURPOSE OF BYPASSING DATATRIEVE
C     DATA ENTRY PROCEDURES IN GENERATING A SERVICE AGREEMENT. READING
C     AND WRITING DIRECTLY FROM/TO INDEXED FILES IS FASTER,(IN GENERAL)
C     THAN GOING THROUGH A GENERAL PURPOSE DATA MANAGEMENT SYSTEM.
C       THE FORMS USED FOR THE DATA ENTRY ARE GENERATED USING TDMS
C     ON A VAX.
C       PARAMETER VALIDATION, SUCH AS MATRIX,ANALYTE,HAZARDS,CONTAINER
C     AND STORAGE REQUIREMENTS, ETC. IS DONE BY READING DTR PARAMETER
C     FILES DIRECTLY, UPON EXITING THE DATA ENTRY FORM. ERRORS, (IF ANY),
C     ARE CORRECTED ON VARIOUS FORMS WHICH SHOW DIFFERENT SETS OF
C     PARAMETERS.
C
      INCLUDE '($FORIOSDEF)'
       INTEGER*4 TSS$OPEN,TSS$CLOSE,TSS$REQUEST,
     A           TSS$OPEN_RLB,TSS$CLOSE_RLB,TSS$SIGNAL,TSS$TRACE
      INTEGER*4 ACT
      INTEGER NCHAN,ISTAT,ERRNUM,LIBRARY_ID,OPFLG
      INTEGER VALID,INVALID,VALIDX(12)/12*0/,NVAL/9/,NLINE/0/
      CHARACTER*12 VALNAM(9)
      DATA VALNAM/'CUSTOMER ID ','STORAGE     ','PROGRAM CODE',
     A             'PRESERVATIVE','PROTOCOL    ','CONTAINER   ',
     B             'MATRIX      ','HAZARDS     ','DISPOSE     '/
C
      COMMON /CHECK/VALID,INVALID,VALIDX,NVAL,NLINE
C
      INTEGER NC,NEWREQNUM,OLDREQNUM,TMPLDELFLG
      CHARACTER       ANS,SYSDT*9,SYSTIM*23,BLNKTIM*23
      DATA BLNKTIM/'DD-MMM-19YY    00:00:00.00'/
      CHARACTER WSDATE*8
      CHARACTER DTRECV*8
      INTEGER*4 DDATE(2)
      EQUIVALENCE (DDATE,DTRECV)
      COMMON /DATE/DDATE
      INTEGER*4 DATDSP(2)
      COMMON/PRDATE/DATDSP
C
C     CDD DEFINED RECORDS USED
      INCLUDE 'USERS:[H9CHEM]SVCSRC(SERVICE_ACCORD_RECORD)'
      BYTE USER_SEL_RECORD
C
      BYTE USER_MSG_B1(35),USER_MSG_B2(35),USER_MSG_B3(35),USER_SEL_B
      CHARACTER SVC_USER_COMAREA_C*105,USER_SEL_C,SP1*128,OPT_C,SP2*128
      EQUIVALENCE (USER_SEL_C,SP1(64:64)),(OPT_C,SP2(64:64))
      EQUIVALENCE(USER_SEL_RECORD,USER_SEL_B),(USER_SEL_B,USER_SEL_C)
      EQUIVALENCE(USER_MSG_B1(1),SVC_USER_COMAREA_C(1:35)),
     A            (USER_MSG_B2(1),SVC_USER_COMAREA_C(36:71)),
     B            (USER_MSG_B3(1),SVC_USER_COMAREA_C(71:105))
C
      INTEGER TMPLNUM !NUMBER OF ENTRIES IN A TEMPLATE
      CHARACTER TMPLNAM*10,TMANLYSIS(50)*10,TMTECH(50)*5,TMANLST(50)*3
      COMMON/TMPL/TMANLYSIS,TMTECH,TMANLST,TMPLNUM
      INTEGER*4 WS_REQNUM,WS_DDJ(2)
```

```
      CHARACTER WS_TEMPLATE*10,WS_SECT,IN1*10,IN2*5,IN3*3,IN4*8
      CHARACTER WS_DD_TEMP*8
      BYTE WS_ID_RECORD(15),IB1(4),IB2(5),IB3(3),IB4(8),WS_DDB(8)
      EQUIVALENCE (IN1,IB1),(IN2,IB2),(IN3,IB3),(IN4,IB4)
      EQUIVALENCE (WS_DDI,WS_DDB),(WS_DDB,WS_DD_TEMP)
      EQUIVALENCE(WS_ID_RECORD(1),WS_REQNUM),
     A            (WS_ID_RECORD(5),WS_SECT),
     B            (WS_ID_RECORD(6),WS_TEMPLATE)
      STRUCTURE /W_S_R/    !RECORD STRUCTURE FOR WORKSPACE FORM/FILE
        CHARACTER DUM
        CHARACTER*10 WS_ANALYSIS
        CHARACTER*5 WS_TECH
        CHARACTER*3 WS_ANLST
        UNION
          MAP
            CHARACTER*8 WS_DD
          END MAP
          MAP
            INTEGER*4 WS_DDX(2)
          END MAP
        END UNION
      END STRUCTURE
      RECORD /W_S_R/WKSP_SETUP_RECORD(50)
C     DATA HOLDERS FOR WORKSPACW VALIDATION AFTER EXITING THE FORM
C     MUST VALIDATE ANALYSIS,TECHNUQUE,ANALYST
C     ANALYST/SECTION/INSTRUMENT COMBINATION NOT CHECKED
C     DATA FROM WKSP_SETUP_FORM
C     THIS IS ALSO USED IN THE TEMPLATE GENERATION AND REVIEW
      INTEGER WKSPFLG,TMPLFLG
      CHARACTER VWSANLSYS(50)*10,VWSTECH(50)*5,VWSANLST(50)*3,VWSDD(50)*8
      COMMON /WKSPVAL/VWSANLSYS,VWSTECH,VWSANLST,VWSDD
      REAL*4 DELT
      DATA DELT/0./
      COMMON/SVCREC/SERVICE_ACCORD_RECORD
      COMMON/SVCREQ/NCHAN,LIBRARY_ID
C     PROCESSING FLAGS, ETC.
      DATA NEWREQNUM/0/
C
C     SYSTEM DATE
      CALL DATE(SYSDT)
      SYSTIM = BLNKTIM
      SYSTIM(1:7) = SYSDT(1:7)
      SYSTIM(10:11) = SYSDT(8:9)
      ISTAT = SYS$BINTIM(SYSTIM,DDATE)
      ISTAT = SYS$BINTIM(SYSTIM,DATDSP)
C     OPEN FILES
      CALL OPENUP(OPFLG)   !OPEN ALL REQUIRED DTR FILES
      IF(OPFLG .EQ. 0)THEN
        TYPE *,' ALL THE FILES ARE NOT AVAILABLE AT THIS TIME, BYE'
        STOP    !MUST HAVE ALL FILES TO WORK. TRY LATER
      ENDIF
10    CONTINUE
C     OPEN TDMS REQUEST AND FORMS LIBRARY
      ISTAT = TSS$OPEN_RLB('USERS:[H9CHEM]S_A_L',LIBRARY_ID)
```

```
        IF((ISTAT .AND. 1) .EQ. 0)THEN
          TYPE *,' LIBRARY OPEN PROBLEM'
          ISTAT = TSS$SIGNAL ( )
          CALL LIB$STOP
        ENDIF
C
        ISTAT = TSS$OPEN(NCHAN)
        IF((ISTAT .AND. 1) .EQ. 0)THEN
          TYPE *,' TERMINAL CHANNEL PROBLEM'
          ISTAT = TSS$SIGNAL ( )
          CALL LIB$STOP
        ENDIF
C
C TRY TO DISPLAY A FROM... MENU1
1000    CONTINUE
C
        USER_SEL_C = ' '
        OPT_C = USER_SEL_C
C
        ISTAT = TSS$REQUEST(NCHAN,LIBRARY_ID,'SEL_MENU1', ! MAIN MENU
     A          USER_SEL_RECORD )
        IF((ISTAT .AND. 1) .EQ. 0)THEN
          TYPE *,' PROBLEM READING FROM MENU1 FORM'
          ISTAT = TSS$SIGNAL ( )
          CALL LIB$STOP
        ENDIF
C       CHECK MENU1 INPUT
C
        OPT_C = USER_SEL_C
        TYPE *,' OPTION ',OPT_C,' SELECTED 1000'
        IF(USER_SEL_C .EQ. 'A')THEN
          GOTO 1100
        ENDIF
        IF(USER_SEL_C .EQ. 'B')THEN
          GOTO 1200
        ENDIF
        IF(USER_SEL_C .EQ. 'C')THEN
          GOTO 1300
        ENDIF
        IF(USER_SEL_C .EQ. 'D')THEN
          GOTO 1400
        ENDIF
        IF(USER_SEL_C .EQ. 'E')THEN
          GOTO 1500
        ENDIF
        IF(USER_SEL_C .EQ. 'F')THEN
          GOTO 1600
        ENDIF
        IF(USER_SEL_C .EQ. 'G')THEN
          GOTO 1700
        ENDIF
        IF(USER_SEL_C .EQ. 'H')THEN
          GOTO 1800
        ENDIF
```

```
      IF(USER_SEL_C .EQ. 'I')THEN
        GOTO 1900
      ENDIF
      IF(USER_SEL_C .EQ. 'X')THEN
        GOTO 5000
      ENDIF
C
C
1100  CONTINUE
C
      TYPE *,' OPTION ',OPT_C,' SELECTED 1100'
      CALL SARINIT
      NEWREQNUM = 0
1110  CONTINUE
C
C     NOW IS THE TIME FOR ALL GOOD FORMS TO BE READ.... WE HOPE
C
      CALL SVC_IN_ALLIN ! GET DATA FROM THE MAIN DATA ENTRY FORM
      CALL SLDATE(RQDATE)
      CALL SLDATE(DUEDATE)
C
      ISTAT = TSS$REQUEST(NCHAN,LIBRARY_ID,'SVC_CLEARIT')!CLEAR SCREEN
      IF((ISTAT .AND. 1) .EQ. 0)THEN
        TYPE *,' PROBLEM CLEARING SCREEN '
        ISTAT = TSS$SIGNAL ( )
        CALL LIB$STOP
      ENDIF
C
      GOTO 1114
1112  CONTINUE
      CALL SVC_IN_CHECK ! SHOW INPUT FORM AND DATA FOR CORRECTIONS
      CALL SLDATE(RQDATE)
      CALL SLDATE(DUEDATE)
      ISTAT = TSS$REQUEST(NCHAN,LIBRARY_ID,'SVC_CLEARIT')
      IF((ISTAT .AND. 1) .EQ. 0)THEN
        TYPE *,' PROBLEM CLEARING SCREEN '
        ISTAT = TSS$SIGNAL ( )
        CALL LIB$STOP
      ENDIF
1114  CONTINUE
      NLINE = 14
      CALL CHKVAL ! RUN VALIDATION CHECK ON PARAMETERS WITH OPTIONS
      CALL SLDATE(RQDATE)
      CALL SLDATE(DUEDATE)
      CALL WAIT(1.)
C
C     GET A NEW REQUEST NUMBER
      GOTO 1130
1120  CONTINUE
1130  CONTINUE
      REQNUM = 0
      GO = '?'
C
      CALL SLDATE(RQDATE)
```

```
      CALL SLDATE(DUEDATE)
      CALL SVC_ALLOK !ASK USER IF ALL IS OK WITH DATA AT THIS POINT
C
      ISTAT = TSS$REQUEST(NCHAN,LIBRARY_ID,'SVC_CLEARIT')
      IF((ISTAT .AND. 1) .EQ. 0)THEN
        TYPE *,' PROBLEM CLEARING SCREEN '
        ISTAT = TSS$SIGNAL ( )
        CALL LIB$STOP
      ENDIF
C
      IF(GO .EQ. 'C')GOTO 1000
      IF(GO .EQ. 'Y')THEN
        TYPE *,' YOU HAVE STATED THAT THE DATA SHOWN ABOVE IS OK '
        IF(INVALID .EQ. 0)THEN
          TYPE *,' YOU MAY BE SATISFIED WITH INVALID DATA '
          TYPE *,' I AM NOT. DO YOU WISH TO CONTINUE?  Y/N '
          ANS = ' '
          READ (5,5),NC,ANS
          IF((NC .NE. 0).AND.((ANS.EQ.'Y').OR.(ANS.EQ.'y')))THEN
            TYPE *,' WE WILL TRY THE VALIDATION AGAIN '
            CALL WAIT(1.)
            GOTO 1112
          ENDIF
          TYPE *,' SINCE YOU DO NOT WISH TO TRY AGAIN..  WE SHALL'
          TYPE *,' CLEAR THE SLATE (SERVICE AGREEMENT RECORD). '
          TYPE *,' THE NEXT STEP IS TO THE MAIN MENU '
          CALL SARINIT
C         TYPE *,' MY RECORD IS CLEAR. I HOPE YOUR CONSCIENCE IS.'
          CALL WAIT(1.)
          GOTO 1000
        ENDIF
C     IF A NEW REQ NUM IS NEEDED, GET IT. IF NOT, USE THE OLD
C     ONE (OR NONE) UNTILL THE USER HAS IT RIGHT.
C     NEW OPTIONS AT THE MENU WILL RESET THE FLAG.
        IF(NEWREQNUM .EQ. 0)THEN
          CALL RDRQNUM(REQNUM)!GET A NEW REQUEST NUMBER
          NEWREQNUM = 1 !SET FLAG FOR NO NEW REQNUM
        ENDIF
        TYPE *,' THE SERVICE AGREEMENT REQUEST NUMBER IS ',REQNUM
        CALL WAIT(1.)
      ELSE
        TYPE *,' WE WILL LOOK AT THE INPUT FORM AND DATA AGAIN'
        TYPE *,' SO YOU CAN ADD DATA OR CORRECT YOUR ERRORS'
        CALL WAIT(1.)
        GOTO 1112
      ENDIF
C     CALL SARPRINT !PRINT THE COLLECTED DATA
C     GIVE THE USER TIME TO REFOCUS THE PEEPERS AND LOOK AT WHAT HAS
C     BEEN DONE SO FAR
C     CALL WAIT(1.)
C
1180  CONTINUE
      TYPE *,'ARE YOU READY TO CONTINUE ? (Y/N) '
      READ (5,5),NC,ANS
```

```
5       FORMAT(Q,A)
C # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
        IF((NC .EQ. 0) .AND. (USER_SEL_C .EQ. 'A'))GOTO 1700
C # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
        IF((ANS .NE. 'Y') .AND. (ANS .NE. 'y'))GOTO 1180
C       WRITE THE COLLECTED DATE TO THE SERVICE_AGREEMENT DATA FILE.
        ACT = 2 ! WRITE DATA TO SERVICE_AGREEMENT FILE
        CALL GPAGREE(ACT)
C # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
C       GO TO OPTION G AUTOMATICALLY
        IF(USER_SEL_C .EQ. 'A')GOTO 1700
        IF(USER_SEL_C .EQ. 'B')GOTO 1212
C # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
C # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
C # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
1200    CONTINUE
        REQNUM = 0
C       THIS OPTION IS  'B'  NEW SVC_AGR BY MODIFYING AN OLD ONE
C       READ AN OLD ONE AND MAKE A NEW ONE
        TYPE *,'    ENTER THE REQUEST NUMBER OF THE SERVICE AGREEMENT'
        TYPE *,'    YOU WISH TO START WITH '
        TYPE *,' OPTION ',OPT_C,' SELECTED 1200'
        READ (5,1205)OLDREQNUM
1205    FORMAT(I5)
        REQNUM = OLDREQNUM  !USE AS FLAG LATER TO GET WORKSPACE DATA
C       GET DATA FROM OLD SERVICE_AGREEMENT AND USE OLDREQNUM AS FLAG
C       WE MUST ALSO HAVE THE OLD TEMPLATE FROM THE WORKSPACE FILE
C
        NEWREQNUM = 0
        ACT = 1
        CALL GPAGREE(ACT)
C
C       WRITE TO DATA ENTRY FORM
        TYPE *,' RQDATE = ',RQDATE
        CALL SLDATE(RQDATE)
        CALL SLDATE(DUEDATE)
        GOTO 1112
1212    CONTINUE
C # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
C       GO TO OPTION G AUTOMATICALLY
        IF(USER_SEL_C .EQ. 'B')GOTO 1700
C # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
C
1300    CONTINUE
C       THIS OPTION IS TO REVIEW AN EXISTING SERVICE_AGREEMENT
C       THIS IS A READ ONLY OPTION
C       GET THE OLD REQUEST NUMBER
        TYPE *,' THIS OPTION IS TO REVIEW AN EXISTING SERVICE AGREEMENT'
        TYPE *,' THAT''S ALL FOLKS. ENTER THE REQUEST NUMBER TO BE REVIEWED'
        READ (5,1205)OLDREQNUM
        ACT = 1
        REQNUM = OLDREQNUM
        CALL GPAGREE(ACT)
C
```

```
      CALL SLDATE(RQDATE)
      CALL SLDATE(DUEDATE)
      CALL SVC_IN_ALLOUT ! WRITE DATA TO THE DATA ENTRY FORM
C     THERE IS NO INPUT IN THIS OPTION. OPTION 'B' IS FOR THAT
      GOTO 1000
1400  CONTINUE
      TYPE *,' THIS OPTION IS FOR REVIEWING EXISTING TEMPLATES'
      NTRY = 0
1402  CONTINUE
1404  CONTINUE
      NTRY = NTRY + 1
      TYPE *,' ENTER THE NAME OF THE TEMPLATE YOU WANT TO REVIEW'
      READ(5,1405)NC,TMPLNAM
1405  FORMAT(Q,A10)
      IF(NC .EQ. 0)THEN
        IF(NTRY .GT. 3)THEN
          TYPE *,' THREE STRIKES MEANS YOU ARE OUT. WE WILL STOP NOW'
          STOP
        ENDIF
        TYPE *,' I CAN NOT READ YOUR MIND. YOU MUST ENTER THE NAME OF'
        TYPE *,' AN EXISTING TEMPLATE BEFORE IT CAN BE REVIEWED....'
        GOTO 1404
      ENDIF
        CALL RDTMPL(TMPLNAM)
      IF(TMPLNUM .LT. 0)THEN
        TYPE *,' THERE IS NO TEMPLATE BY THE NAME OF ',TMPLNAM
        TYPE *,' WE WILL TRY AGAIN'
        CALL WAIT(0.5)
        GOTO 1402
      ELSE
C     TYPE *,' THERE ARE ',TMPLNUM,'  ENTRIES IN THE TEMPLATE  ',TMPLNAM
        IF(TMPLNUM .LT. 51)THEN
          DO II=TMPLNUM+1,50
          WKSP_SETUP_RECORD(II).DUM = ' '
          WKSP_SETUP_RECORD(II).WS_ANALYSIS(1:10) = ' '
          WKSP_SETUP_RECORD(II).WS_TECH(1:5) = ' '
          WKSP_SETUP_RECORD(II).WS_ANLST(1:3) = ' '
          WKSP_SETUP_RECORD(II).WS_DD = ' '
          ENDDO
        ENDIF
C     CALL WAIT(1.5)
      ENDIF
      WS_TEMPLATE = TMPLNAM
C     CALL SCROLLED WORKSPACE FORM HERE
      IF(TMPLNUM .GT. 0)THEN
      DO 1410 II=1,TMPLNUM
        WKSP_SETUP_RECORD(II).DUM = ' '
        WKSP_SETUP_RECORD(II).WS_ANALYSIS(1:10) = TMANLYSIS(II)
        WKSP_SETUP_RECORD(II).WS_TECH(1:5) = TMTECH(II)
        WKSP_SETUP_RECORD(II).WS_ANLST(1:3) = TMANLST(II)
        WKSP_SETUP_RECORD(II).WS_DD(1:8) = ' '
1410  CONTINUE
      ENDIF
      ISTAT = TSS$REQUEST(NCHAN,LIBRARY_ID,'SVC_TEMPLATE_SET',
```

```
     A           WS_ID_RECORD,WKSP_SETUP_RECORD )
        IF((ISTAT .AND. 1) .EQ. 0)THEN
          TYPE *,' PROBLEM WRITING TO TEMPLATE SCANNING FORM'
          ISTAT = TSS$SIGNAL ( )
          CALL LIB$STOP
        ENDIF
C
        ISTAT = TSS$REQUEST(NCHAN,LIBRARY_ID,'SVC_CLEARIT')
        IF((ISTAT .AND. 1) .EQ. 0)THEN
          TYPE *,' PROBLEM CLEARING SCREEN '
          ISTAT = TSS$SIGNAL ( )
          CALL LIB$STOP
        ENDIF
        GOTO 1000
1500    CONTINUE
        TYPE *,' THIS OPTION IS FOR CREATING A NEW TEMPLATE'
        TYPE *,' THE NAME OF THE NEW TEMPLATE MUST BE ENTERED AT THE TOP'
        TYPE *,' OF THE TEMPLATE FORM, BEFORE THE TEST INFORMATION'
        TMPLNAM = 'NEW'
        GOTO 1608
1505    CONTINUE
C       CALL WAIT(1.5)
        GOTO 1000
1600    CONTINUE
        TYPE *,' THIS OPTION IS FOR GETTING AN EXISTING'
        TYPE *,' TEMPLATE, MODIFYING IT, AND CREATING A NEW ONE.'
        TYPE *,' THIS ALSO MEANS SAVING THE NEW ONE WITH A NEW NAME'
        NTRY = 0
1602    CONTINUE
1604    CONTINUE
        NTRY = NTRY + 1
        TYPE *,' ENTER THE NAME OF THE TEMPLATE YOU WANT TO START WITH '
        READ(5,1605)NC,TMPLNAM
1605    FORMAT(Q,A10)
        IF(NC .EQ. 0)THEN
          IF(NTRY .GT. 3)THEN
            TYPE *,' YOU STRUCK OUT. BACK TO THE MAIN MENU'
            CALL WAIT(1.5)
            GOTO 1000
          ENDIF
          TYPE *,' I CAN NOT READ YOUR MIND. YOU MUST ENTER THE NAME OF'
          TYPE *,' AN EXISTING TEMPLATE BEFORE IT CAN BE MODIFIED....'
          GOTO 1604
        ENDIF
C       ENTER HERE WITH "NEW" TEMPLATE CREATION
1608    CONTINUE
        IF(TMPLNAM .NE. 'NEW')THEN
          CALL RDTMPL(TMPLNAM)
        ELSE
          TMPLNUM = 0
        ENDIF
        IF(TMPLNUM .LT. 0)THEN
          TYPE *,' THERE IS NO TEMPLATE BY THE NAME OF ',TMPLNAM
          TYPE *,' WE WILL TRY AGAIN'
```

```
          CALL WAIT(0.5)
          IF(NTRY .GT. 3)THEN
           TYPE *,' THIS MERRY-GO-ROUND IS GOING NOWHERE.'
           TYPE *,' BACK TO THE MAIN MENU'
           CALL WAIT(1.5)
           GOTO 1000
          ENDIF
          GOTO 1602
        ELSE
C       TYPE *,' THERE ARE ',TMPLNUM,'  ENTRIES IN THE TEMPLATE  ',TMPLNAM
          IF(TMPLNUM .LT. 51)THEN
            DO II=TMPLNUM+1,50
            WKSP_SETUP_RECORD(II).DUM = ' '
            WKSP_SETUP_RECORD(II).WS_ANALYSIS(1:10) = '-'
            WKSP_SETUP_RECORD(II).WS_TECH(1:5) = '-'
            WKSP_SETUP_RECORD(II).WS_ANLST(1:3) = '-'
            ENDDO
          ENDIF
C       CALL WAIT(1.5)  ENDIF
C       CALL SCROLLED TEMPLATE FORM HERE
        WS_TEMPLATE = TMPLNAM
        IF(TMPLNUM .GT. 0)THEN
        DO 1610 II=1,TMPLNUM
          WKSP_SETUP_RECORD(II).DUM = ' '
          WKSP_SETUP_RECORD(II).WS_ANALYSIS(1:10) = TMANLYSIS(II)
          WKSP_SETUP_RECORD(II).WS_TECH(1:5) = TMTECH(II)
          WKSP_SETUP_RECORD(II).WS_ANLST(1:3) = TMANLST(II)
1610    CONTINUE
        ENDIF
        ISTAT = TSS$REQUEST(NCHAN,LIBRARY_ID,'SVC_TEMPLATE_SET',
     A          WS_ID_RECORD,WKSP_SETUP_RECORD )
        IF((ISTAT .AND. 1) .EQ. 0)THEN
          TYPE *,' PROBLEM WRITING TO TEMPLATE SCANNING FORM'
          ISTAT = TSS$SIGNAL ( )
          CALL LIB$STOP
        ENDIF
        ISTAT = TSS$REQUEST(NCHAN,LIBRARY_ID,'SVC_CLEARIT')
        IF((ISTAT .AND. 1) .EQ. 0)THEN
          TYPE *,' PROBLEM CLEARING SCREEN '
          ISTAT = TSS$SIGNAL ( )
          CALL LIB$STOP
        ENDIF
        TMPLDELFLG = 0
        IF(TMPLNAM .EQ. 'NEW')THEN
          TMPLNAM = WS_TEMPLATE
        ELSEIF(TMPLNAM .EQ. WS_TEMPLATE)THEN
          TMPLDELFLG = 1
        ELSE
          TMPLNAM = WS_TEMPLATE
          TMPLDELFLG = 0
        ENDIF
        DO JJ=TMPLNUM+1,50 !CHECK FOR ADDITIONS TO TEMPLATE
        IF(WKSP_SETUP_RECORD(JJ).WS_ANALYSIS .EQ. '-')GOTO 1618
        ENDDO
```

```
      JJ = 51
1618  CONTINUE
      TMPLNUM = JJ - 1
      DO 1620 JJ=1,TMPLNUM
      VWSANLSYS(JJ) = WKSP_SETUP_RECORD(JJ).WS_ANALYSIS
      VWSTECH(JJ) = WKSP_SETUP_RECORD(JJ).WS_TECH
      VWSANLST(JJ) = WKSP_SETUP_RECORD(JJ).WS_ANLST
C     IN1 = WKSP_SETUP_RECORD(JJ).WS_ANALYSIS
C     IN2 = WKSP_SETUP_RECORD(JJ).WS_TECH
C     IN3 = WKSP_SETUP_RECORD(JJ).WS_ANLST
1620  CONTINUE
C     CALL WAIT(2.)
      NUMTMPL = TMPLNUM
      CALL TMPLPACK(NUMTMPL)
      IF(TMPLNUM .GT. NUMTMPL)THEN
        DO JJ=1,NUMTMPL
        WKSP_SETUP_RECORD(JJ).WS_ANALYSIS = VWSANLSYS(JJ)
        WKSP_SETUP_RECORD(JJ).WS_TECH = VWSTECH(JJ)
        WKSP_SETUP_RECORD(JJ).WS_ANLST = VWSANLST(JJ)
        WKSP_SETUP_RECORD(JJ).WS_DD = VWSDD(JJ)
        ENDDO
        DO II=NUMTMPL+1,TMPLNUM
        WKSP_SETUP_RECORD(II).DUM = ' '
        WKSP_SETUP_RECORD(II).WS_ANALYSIS(1:10) = '-'
        WKSP_SETUP_RECORD(II).WS_TECH(1:5) = '-'
        WKSP_SETUP_RECORD(II).WS_ANLST(1:3) = '-'
        WKSP_SETUP_RECORD(II).WS_DD = '-'
        ENDDO
        TMPLNUM = NUMTMPL
      ENDIF
      WKSPFLG = 0
      CALL WKSPCHK(WKSPFLG,TMPLNUM)
      IF(WKSPFLG .NE. 1)THEN
      TYPE *,' THERE ARE SOME INVALID TEMPLATE ENTRIES IN ',TMPLNAM
      TYPE *,' DO YOU WANT TO TRY AGAIN (Y), OR FORGET IT (N) (Y/N)'
      READ(5,5)NC,ANS
      IF((NC .EQ. 0).OR.((ANS .NE. 'Y').AND.(ANS .NE. 'y')))GOTO 1650
c
      GOTO 1610 ! DISPLAY DATA ONCE MORE, MODIFY,INPUT,VALIDATE AGAIN
1650  CONTINUE
      TYPE *,' YOU HAVE LET IT BE KNOWN THAT YOU ARE THROUGH WITH THIS'
      TYPE *,' INVALID SET OF DATA. BACK TO THE MAIN MENU AND FORGET'
      TYPE *,' WHAT YOU HAVE BEEN WORKING ON.... '
      CALL WAIT(1.)
      ELSE
      TYPE *,' DO YOU WANT TO SAVE THIS TEMPLATE FOR FUTURE USE?'
      TYPE *,' ENTER ( Y/N ). IF "N", DROP IT AND RETURN TO MAIN MENU'
      TYPE *,' OTHERWISE, TEMPLATE  ',TMPLNAM,'  WILL BE SAVED'
      CALL WAIT(1.5)
      READ(5,5)NC,ANS
      IF(((ANS .EQ. 'N').OR.(ANS .EQ. 'n')))GOTO 1000
      IF(USER_SEL_C .EQ. 'F')THEN
        IF(TMPLDELFLG .NE. 0)THEN
          TYPE *,' THE OLD VERSION OF TEMPLATE ',TMPLNAM,'  WILL BE'
```

```
            TYPE *,' DELETED  BEFORE THE NEW ONE IS SAVED'
C       CALL SUBR TO DELETE ALL EXISTING RECORDS OF THE OLD TEMPLATE
            CALL TMPLDEL(TMPLNAM)
            TMPLNAM = WS_TEMPLATE
            TMPLDELFLG = 0
          ENDIF
        ENDIF
        CALL TMPLSAV(TMPLNUM,TMPLNAM)
C       CALL WAIT(1.5)
        ENDIF
        CALL WAIT(1.)
        GOTO 1000
1700    CONTINUE
        TYPE *,' THIS OPTION IS FOR GETTING AN EXISTING'
        TYPE *,' TEMPLATE, MODIFYING IT, AND CREATING A NEW ONE FOR'
        TYPE *,' USE WITH AN ANALYTICAL AGREEMENT, WITHOUT SAVING THE'
        TYPE *,' NEW TEMPLATE. TEMPORARY USE ONLY'
        NTRY = 0
        IF(REQNUM .EQ. 0)THEN
          TYPE *,' ENTER THE REQUEST NUMBER OF THIS ANALYTICAL AGREEMENT'
          READ(5,1205)REQNUM
          CALL GPAGREE(1)
        ENDIF
1702    CONTINUE
1704    CONTINUE
        NTRY = NTRY + 1
        TYPE *,' ENTER THE NAME OF THE TEMPLATE YOU WANT TO START WITH '
        READ(5,1705)NC,TMPLNAM
1705    FORMAT(Q,A10)
        IF(NC .EQ. 0)THEN
          IF(NTRY .GT. 3)THEN
            TYPE *,' THREE STRIKES MEANS YOU ARE OUT. WE WILL STOP NOW'
            STOP
          ENDIF
          TYPE *,' I CAN NOT READ YOUR MIND. YOU MUST ENTER THE NAME OF'
          TYPE *,' AN EXISTING TEMPLATE BEFORE IT CAN BE MODIFIED....'
          GOTO 1704
        ENDIF
        IF(TMPLNAM .NE. 'NEW')THEN
          CALL RDTMPL(TMPLNAM)
        ELSE
          TMPLNUM = 0
        ENDIF
        IF(TMPLNUM .LT. 0)THEN
          TYPE *,' THERE IS NO TEMPLATE BY THE NAME OF ',TMPLNAM
          TYPE *,' WE WILL TRY AGAIN'
          CALL WAIT(0.5)
          GOTO 1702
        ELSE
          IF(TMPLNUM .LT. 51)THEN
            DO II=TMPLNUM+1,50
            WKSP_SETUP_RECORD(II).DUM = ' '
            WKSP_SETUP_RECORD(II).WS_ANALYSIS(1:10) = '-'
            WKSP_SETUP_RECORD(II).WS_TECH(1:5) = '-'
```

```
            WKSP_SETUP_RECORD(II).WS_ANLST(1:3) = '-'
            WKSP_SETUP_RECORD(II).WS_DD = '-'
            ENDDO
          ENDIF
C       CALL WAIT(1.5)
        ENDIF
C       CALL SCROLLED WORKSPACE FORM HERE
        WS_REQNUM = REQNUM
        WS_TEMPLATE = TMPLNAM
        WS_SECT = SECT
        CALL BADATE(WS_DDI,DUEDATE,2)
        IF(TMPLNUM .GT. 0)THEN
        DO 1710 II=1,TMPLNUM
          WKSP_SETUP_RECORD(II).DUM = ' '
          WKSP_SETUP_RECORD(II).WS_ANALYSIS(1:10) = TMANLYSIS(II)
          WKSP_SETUP_RECORD(II).WS_TECH(1:5) = TMTECH(II)
          WKSP_SETUP_RECORD(II).WS_ANLST(1:3) = TMANLST(II)
          WKSP_SETUP_RECORD(II).WS_DD(1:8) = DUEDATE
1710    CONTINUE
        ELSE
          DO II=1,50
          WKSP_SETUP_RECORD(II).WS_DD(1:8) = DUEDATE
          ENDDO
        ENDIF
        ISTAT = TSS$REQUEST(NCHAN,LIBRARY_ID,'SVC_WKSP_SET',
     A          WS_ID_RECORD,WKSP_SETUP_RECORD )
        IF((ISTAT .AND. 1) .EQ. 0)THEN
          TYPE *,' PROBLEM WRITING TO TEMPLATE SCANNING FORM'
          ISTAT = TSS$SIGNAL ( )
          CALL LIB$STOP
        ENDIF
C
        ISTAT = TSS$REQUEST(NCHAN,LIBRARY_ID,'SVC_CLEARIT')
        IF((ISTAT .AND. 1) .EQ. 0)THEN
          TYPE *,' PROBLEM CLEARING SCREEN '
          ISTAT = TSS$SIGNAL ( )
          CALL LIB$STOP
        ENDIF
        DO JJ=TMPLNUM+1,50 !CHECK FOR ADDITIONS TO TEMPLATE
        IF(WKSP_SETUP_RECORD(JJ).WS_ANALYSIS .EQ. '-')GOTO 1718
        ENDDO
        JJ = 51
1718    CONTINUE
        TMPLNUM = JJ - 1
C       TYPE *,' REQNUM,S,T  ',WS_REQNUM,' ',WS_SECT,' ',WS_TEMPLATE
        DO 1720 JJ=1,TMPLNUM
        VWSANLSYS(JJ) = WKSP_SETUP_RECORD(JJ).WS_ANALYSIS
        VWSTECH(JJ) = WKSP_SETUP_RECORD(JJ).WS_TECH
        VWSANLST(JJ) = WKSP_SETUP_RECORD(JJ).WS_ANLST
        VWSDD(JJ) = WKSP_SETUP_RECORD(JJ).WS_DD
C       IN1 = WKSP_SETUP_RECORD(JJ).WS_ANALYSIS
C       IN2 = WKSP_SETUP_RECORD(JJ).WS_TECH
C       IN3 = WKSP_SETUP_RECORD(JJ).WS_ANLST
C       IN4 = WKSP_SETUP_RECORD(JJ).WS_DD
```

```
1720    CONTINUE
C       CALL WAIT(2.)
        NUMTMPL = TMPLNUM
        CALL WKSPPACK(NUMTMPL)
        IF(TMPLNUM .GT. NUMTMPL)THEN
          DO JJ=1,NUMTMPL
          WKSP_SETUP_RECORD(JJ).WS_ANALYSIS = VWSANLSYS(JJ)
          WKSP_SETUP_RECORD(JJ).WS_TECH = VWSTECH(JJ)
          WKSP_SETUP_RECORD(JJ).WS_ANLST = VWSANLST(JJ)
          WKSP_SETUP_RECORD(JJ).WS_DD = VWSDD(JJ)
          ENDDO
          DO II=NUMTMPL+1,TMPLNUM
          WKSP_SETUP_RECORD(II).DUM = ' '
          WKSP_SETUP_RECORD(II).WS_ANALYSIS(1:10) = '-'
          WKSP_SETUP_RECORD(II).WS_TECH(1:5) = '-'
          WKSP_SETUP_RECORD(II).WS_ANLST(1:3) = '-'
          WKSP_SETUP_RECORD(II).WS_DD = '-'
          ENDDO
          TMPLNUM = NUMTMPL
        ENDIF
C
        WKSPFLG = 0
        CALL WKSPCHK(WKSPFLG,TMPLNUM)
        IF(WKSPFLG .NE. 1)THEN
        TYPE *,' THERE ARE SOME INVALID WORKSPACE ENTRIES.'
        TYPE *,' DO YOU WANT TO TRY AGAIN (Y), OR FORGET IT (N) (Y/N)'
        READ(5,5)NC,ANS
        IF((NC .EQ. 0).OR.((ANS .NE. 'Y').AND.(ANS .NE. 'y')))GOTO 1750
c
        GOTO 1710 ! DISPLAY DATA ONCE MORE, MODIFY,INPUT,VALIDATE AGAIN
1750    CONTINUE
        TYPE *,' YOU HAVE LET IT BE KNOWN THAT YOU ARE THROUGH WITH THIS'
        TYPE *,' INVALID SET OF DATA. BACK TO THE MAIN MENU AND FORGET'
        TYPE *,' WHAT YOU HAVE BEEN WORKING ON.... '
        CALL WAIT(1.)
        ELSE
        TYPE *,' DO YOU WANT TO USE THIS MODIFIED TEMPLATE FOR THE'
        TYPE *,' ANALYTICAL AGREEMENT FOR REQUEST NUMBER ',REQNUM
        TYPE *,' ENTER ( Y/N ). IF "N", DROP IT AND RETURN TO MAIN MENU'
        TYPE *,' OTHERWISE, THE MODIFIED TEMPLATE WILL BE SAVED AND USED'
        CALL WAIT(1.)
        READ(5,5)NC,ANS
        IF(((ANS .EQ. 'N').OR.(ANS .EQ. 'n')))GOTO 1000
        CALL WKSPSAV(TMPLNUM,REQNUM,WS_SECT)
C       CALL WAIT(1.5)
        ENDIF
        GOTO 1000
1800    CONTINUE
        TYPE *,' THIS OPTION IS TO DELETE AN EXISTING TEMPLATE'
        NTRY = 0
1802    CONTINUE
1804    CONTINUE
        NTRY = NTRY + 1
        TYPE *,' ENTER THE NAME OF THE TEMPLATE TO BE DELETED'
```

```
      READ(5,1805)NC,TMPLNAM
1805  FORMAT(Q,A10)
      IF(NC .EQ. 0)THEN
        IF(NTRY .GT. 3)THEN
          TYPE *,' THREE STRIKES MEANS YOU ARE OUT. WE WILL STOP NOW'
          STOP
        ENDIF
        TYPE *,' I CAN NOT READ YOUR MIND. YOU MUST ENTER THE NAME OF'
        TYPE *,' AN EXISTING TEMPLATE BEFORE IT CAN BE DELETED....'
        GOTO 1804
      ENDIF
      CALL RDTMPL(TMPLNAM)
      IF(TMPLNUM .EQ. 0)GOTO  1802
      CALL TMPLDEL(TMPLNAM)
      TYPE *,' TEMPLATE ',TMPLNAM,'  HAS BEEN DELETED'
      CALL WAIT(1.)
      GOTO 1000
1900  CONTINUE
      TYPE *,' THIS OPTION IS TO PRINT THE PRELIM. SERVICE AGREEMENT'
      CALL PRNTSVCA(REQNUM)
      GOTO 1000
5000  CONTINUE
C     ISTAT = TSS$TRACE_OFF ( )
C
      END
      SUBROUTINE GPAGREE(ACT)
C     THIS  READS/WRITES THE ANALYTICAL_AGREEMENT, MULTIMATRIX, AND
C     THE SAMPLE HAZARDS FILES FROM THE SERVICE_ACCORD_RECORD
C
      PARAMETER (NHAZ=8)
      PARAMETER (NPROT=4)
      PARAMETER (NDISP=2)
      PARAMETER (NSTOR=4)
      PARAMETER (NPRES=7)
      PARAMETER (NCNTN=4)
      CHARACTER VCINIT*3,VNAM*25,VCORG*11,VPHONE*6,VMS*4,VA
      CHARACTER OWN_KEY*3
      CHARACTER HAZRN*5,PRGCDX*4
      CHARACTER HAZZ(NHAZ)*20,HCODE(NHAZ)
      CHARACTER HAZIN(4)*20,HH,HZX(4)
      DATA HCODE/'N','T','R','A','B','G','F','E'/
      DATA HAZZ/'NONE                ','TOXIC               ',
     A          'RADIOACTIVE - MIXED ','RADIOACTIVE - ALPHA ',
     B          'RADIOACTIVE - BETA  ','RADIOACTIVE - GAMMA ',
     C          'FLAMMABLE           ','EXPLOSIVE, REACTIVE '/
      CHARACTER PROTV(NPROT)*6,PROTC(NPROT)/'A','E','X','N'/,PRTX(NPRES)
      DATA PROTV/'NIOSH ','EPA   ','NPDES ','NONE  '/
      CHARACTER DISPV(NDISP)*7,DISPC(NDISP)/'R','D'/,DSPX(2)
      DATA DISPV/'RETURN ','DISCARD'/
      CHARACTER STORE(NSTOR)*11,CSTOR(NSTOR)/'D','F','R','N'/,STX(NDISP)
      DATA STORE/'FREEZE     ','DARKNESS   ','REFRIGERATE','NONE       '/
      CHARACTER PRESV(NPRES)*16,PRESC(NPRES),PRX(NPRES)
      DATA PRESC/'H','A','S','C','R','M','N'/
      DATA PRESV/'Na OH,pH > 12   ','HNO3, pH < 2    ',
```

```
     A   'H2SO4, pH < 2 '  ,'HCL              ','KEEP @ 4 DEG C  ',
     A   'MULT REQ, REMARK','NONE             '/
         CHARACTER CNTNV(NCNTN)*15,CNTNC(NCNTN)/'G','P','T','N'/,CNX(NCNTN)
         DATA CNTNV/'GLASS          ','POLYETHYLENE   ',
     A            'TEFLON         ','NOTHING SPECIAL'/
C
         INTEGER*4  PASS1,ACT,RQNL,RQNX
         INCLUDE 'USERS:[H9CHEM]SVCSRC(SERVICE_ACCORD_RECORD)'
         COMMON/SVCREC/SERVICE_ACCORD_RECORD
         CHARACTER ANS,REM*70,LNC*2
         INTEGER*2 NC,LN
         BYTE LNB(2)
         EQUIVALENCE (LNB,LNC)
C
C        RECORD LAYOUTS FOR :
C                ANALYTICAL AGREEMENT FILE
C                MULTIMATRIX FILE
C                SAMPLE HAZARDS FILE
C                REMARKS FILE
C                TASKID
C        SET UP FOR ANALYTICAL AGREEMENT FILE
         CHARACTER RQNUM*5,AACHREC*159
         BYTE AAREC(159)
         INTEGER*4 AARDT(2),AADDT(2),AATDB(2),AADRB(2)
         EQUIVALENCE (AAREC,AACHREC)
         CHARACTER AARN*5,AAOWN*3,AAORG*11,AAPC*4,AASE*3,AARD*8,AADD*8,
     A             AAPRI*1,AASP*10,AACON*15,AAPRES*15,AASTOR*11,AADIS*7,
     B             AASECT*1,AASLI*3,AARSL*3,AACI*3,AACP*6,AAMS*4,AATD*8,
     C             AADR*8,AANR*3,AAISN*8,AAFSN*8,AAMAT*3
C
         EQUIVALENCE (AAREC(1),AARN),!REQUEST NUMBER
     A         (AAREC(6),AAOWN),! OWNER
     B         (AAREC(9),AAORG),!OWNER ORGANIZATION
     C         (AAREC(20),AAPC),!OWNER PROGRAM CODE
     D         (AAREC(24),AASE),!NUMBER SAMPLES EXPECTED
     E         (AAREC(27),AARD),!REQUEST DATE
     F         (AAREC(35),AADD),!DUE DATE
     G         (AAREC(43),AAPRI),!SAMPLE PRIORITY
     H         (AAREC(44),AASP),!SPECIAL PROTOCOL FOR SAMPLES
     I         (AAREC(54),AACON),!CONTAINER REQUIREMENTS
     J         (AAREC(69),AAPRES),!PRESERVATIVE REQUIREMENTS
     K         (AAREC(84),AASTOR),!STORAGE REQUIREMENTS
     L         (AAREC(95),AADIS), !DISPOSAL REQUIREMENTS
     M         (AAREC(102),AASECT),!HSE-9 SECTION
     N         (AAREC(103),AASLI),!HSE-9 SECTION LEARED'S INITIALS
     O         (AAREC(106),AARSL),
     P         (AAREC(109),AACI),!CUSTOMER INITIALS
     Q         (AAREC(112),AACP),!CUSTOMER PHONE #
     R         (AAREC(118),AAMS),!CUSTOMER MAIL STOP
     S         (AAREC(122),AATD),
     T         (AAREC(130),AADR),
     U         (AAREC(138),AANR),
     V         (AAREC(141),AAISN),
     W         (AAREC(149),AAFSN),
```

```
     X        (AAREC(157),AAMAT) !SAMPLE MATRIX

C
        EQUIVALENCE (AARD,AARDT),(AADD,AADDT),(AATD,AATDB),(AADR,AADRB)
C       SET UP FOR THE MULTIMATRIX FILE
        CHARACTER MMRN*5,MMMAT*3,MMISN*8,MMFSN*8,MMNR*3,MMDR*8
        CHARACTER MMYMAT(11)*3,MMZMAT*33
        INTEGER*4 C1,C2,IX
        REAL*8 MMDAT
        EQUIVALENCE(MMYMAT,MMZMAT)
        CHARACTER DTRECV*8
        INTEGER*4 DDATE(2)
        EQUIVALENCE (DDATE,DTRECV)
        COMMON /DATE/DTRECV
C       SET UP FOR THE SAMPLE HAZARDS FILE
        WRITE(RQNUM,109)REQNUM
109     FORMAT(I5)
        IF((ACT .EQ. 1).OR.(ACT .EQ. 3))THEN
          AACHREC = ' '
          READ(7,12,KEY=RQNUM,KEYID=0,ERR=240,IOSTAT=IOSR)
     A       AARN,AAOWN,AAORG,AAPC,AASE,AARD,AADD,AAPRI,AASP,AACON,
     B       AAPRES,AASTOR,AADIS,AASECT,AASLI,AARSL,AACI,AACP,AAMS,
     C       AATD,AADR,AANR,AAISN,AAFSN,AAMAT
C       MOVE DATA TO SERVICE_ACCORD_RECORD

        CINIT = AAOWN
C
C       READ OWNER FILE TO VERIFY CUSTOMER DATA
        OWN_KEY = CINIT
        VCINIT = ' '
        VNAM = ' '
        VPHONE = ' '
        VMS = ' '
        VCORG = ' '
C
        READ(1,101,KEY=OWN_KEY,KEYID=0,ERR=30,IOSTAT=IOSR)VCINIT,
     A       VNAM,VCORG,VPHONE,VMS,VA
101     FORMAT(A3,A25,A11,A6,A4,A)
        CNAME = VNAM
        GOTO 32
30      CONTINUE
        CNAME = 'UNKNOWN AT THIS TIME'
32      CONTINUE
        CORG = AAORG
        PROGCD = AAPC
        READ(AASE,110)NSE
        CALL BADATE(AARDT,RQDATE,1)
        CALL BADATE(AADDT,DUEDATE,1)
        PRIORITY = AAPRI
        PROTOCOL = AASP
        CONTAIN = AACON
        PRESERV = AAPRES
        STORAGE = AASTOR
        DISPOSE = AADIS
```

```
      SECT = AASECT
      SLI = AASLI
      CINIT = AACI
      CPHONE = AACP
      MAIL = AAMS
      DO JJ=1,NDISP
      IF(DISPOSE .EQ. DISPV(JJ))THEN
        DISP = DISPC(JJ)
        GOTO 1001
      ENDIF
      ENDDO
1001  CONTINUE
      DO JJ=1,NPROT
      IF(PROTOCOL .EQ. PROTV(JJ))THEN
        PRTCL = PROTV(JJ)
        GOTO 1002
      ENDIF
      ENDDO
1002  CONTINUE
      DO JJ=1,NSTOR
      IF(STORAGE .EQ. STORE(JJ))THEN
        STOR = CSTOR(JJ)
        GOTO 1003
      ENDIF
      ENDDO
1003  CONTINUE
      DO JJ=1,NPRES
      IF(PRESERV(1:15) .EQ. PRESV(JJ)(1:15))THEN
        PRES = PRESC(JJ)
        GOTO 1004
      ENDIF
      ENDDO
1004  CONTINUE
      DO JJ=1,NCNTN
      IF(CONTAIN .EQ. CNTNV(JJ))THEN
        CNTN = CNTNC(JJ)
        GOTO 1005
      ENDIF
      ENDDO
1005  CONTINUE
C
C     READ THE HAZARDS,MULTIMATRIX,REMARKS FILES
      DO JJ=1,4
      HAZIN(JJ) = ' '
      HZX(JJ) = ' '
      ENDDO
      READ(9,130,ERR=1007,KEYID=0,KEY=RQNUM)HAZRN,HAZIN(1)
      JH = 1
      DO JJ=2,4
      READ(9,130,ERR=1007)HAZRN,HAZIN(JJ)
      IF(HAZRN .NE. RQNUM)THEN
        HAZIN(JJ) = ' '
        GOTO 1007
      ENDIF
```

```
      JH = JH + 1
      ENDDO
1007  CONTINUE
      HAZ = HAZIN(1)
      HAZA = HAZIN(2)
      HAZB = HAZIN(3)
      HAZC = HAZIN(4)
      HZ = ' '
      HZA = ' '
      HZB = ' '
      HZC = ' '
      DO JK=1,4
      IF(HAZIN(JK) .EQ. ' ')GOTO 1008
      DO KK=1,NHAZ
      IF(HAZIN(JK) .EQ. HAZZ(KK))HZX(JK) = HCODE(KK)
      ENDDO
      ENDDO
1008  CONTINUE
      HZ = HZX(1)
      HZA = HZX(2)
      HZB = HZX(3)
      HZC = HZX(4)
C     END OF SAMPLE HAZARD SELECTION RESET
      MMZMAT = ' '
      READ(14,111,KEY=RQNUM,KEYID=0,ERR=1010)
     A        MMRN,MMYMAT(1),MMISN,MMFSN,MMNR,MMDAT
      JM = 1
      DO JJ=2,11
      READ(14,111,ERR=1010)
     A        MMRN,MMYMAT(JJ),MMISN,MMFSN,MMNR,MMDAT
        IF(MMRN .NE. RQNUM)THEN
          MMYMAT(JJ) = ' '
         GOTO 1010
        ENDIF
        JM = JM + 1
      ENDDO
1010  CONTINUE
      NMAT = JM
      SARMAT = MMZMAT
      C1 = 1
      DO JJ=1,11
      IX=INDEX(MMYMAT(JJ),' ')
      IF(IX .EQ. 0)THEN
      C2 = C1 + 2
      MATRX(C1:C2) = MMYMAT(JJ)(1:3)
      C1 = C2 + 1
      MATRX(C1:C1) = ','
      C1 = C1 + 1
      ELSEIF(IX .EQ. 1)THEN
      MATRX(C1:30) = ' '
      GOTO 1011
      ELSEIF(IX .GE. 2)THEN
      IX = IX - 1
      C2 = C1 + IX - 1
```

```
        MATRX(C1:C2) = MMYMAT(JJ)(1:IX)
        C1 = C2 + 1
        MATRX(C1:C1) = ','
        C1 = C1 + 1
        ENDIF
        ENDDO
1011    CONTINUE
C       END OF MATRIX RESTORATION
        READ(13,113,KEY=RQNUM,KEYID=0,ERR=1012)RQNUM,PRGCDX,TASKID
        GOTO 1013
1012    CONTINUE
        TASKID=' '
1013    CONTINUE
          IF(ACT .EQ. 3)GOTO 220
C       CALL DATA SELECTION RESET ROUTINE
        ELSEIF(ACT .EQ. 2)THEN
        NP1 = 0
        IF(PRES .EQ. 'M')NP1 = 1
C       SERVICE_AGREEMENT_RECORD VALUES TO ANLYTICAL_AGREEMENT FILE
        AARN = RQNUM
        AAOWN = CINIT
        AAORG = CORG
        AAPC = PROGCD
        IF(NSE .GE. 1000)THEN
          TYPE *,' THE NUMBER OF SAMPLES IS > 999. TOO BIG. SET TO 999'
          AASE = '999'
        ELSE
        WRITE(AASE,110)NSE
        ENDIF
        CALL BADATE(AARDT,RQDATE,2)
        CALL BADATE(AADDT,DUEDATE,2)
        AAPRI = PRIORITY
        AASP = PROTOCOL
        AACON = CONTAIN
        AAPRES = PRESERV
        AASTOR = STORAGE
        AADIS = DISPOSE
        AASECT = SECT
        AASLI = SLI
        AARSL = ' '
        AACI = CINIT
        AACP = CPHONE
        AAMS = MAIL
        CALL BADATE(AATDB,RQDATE,2)
        CALL BADATE(AADRB,DUEDATE,2)
        AANR = ' '
        AAISN = ' '
        AAFSN = ' '
        AAMAT = MAT1
C       END OF ANALYTICAL_AGREEMENT WRITE
C
C       WRITE MATRIX CODE TO MULTIMATRIX FILE
        MMRN = RQNUM
        MMZMAT(1:33) = SARMAT
```

```
      MMISN = ' '
      MMFSN = ' '
      MMNR = ' '
      MMDR = ' '
      CALL BADATE(MMDAT,MMDR,2)
      JMAT = NMAT
      DO JJ=1,JMAT
      WRITE(14,111)MMRN,MMYMAT(JJ),MMISN,MMFSN,MMNR,MMDAT
111   FORMAT(A5,A3,A8,A8,A3,A8)
      ENDDO
C     END OF MATRIX CODES
C
C     WRITE SAMPLE HAZARDS FILE
      HAZIN(1) = HAZ
      HAZIN(2) = HAZA
      HAZIN(3) = HAZB
      HAZIN(4) = HAZC
C             ENDIF
      NHE = 0
      DO K=1,4
      L = 5 - K
      IF(HAZIN(L) .NE. ' ')THEN
      NHE = L
      GOTO 17
      ENDIF
      ENDDO
17    CONTINUE
      IF(NHE .EQ. 0)THEN
        NHE = 1
        HAZIN(1) = 'NONE'
      ENDIF
      HAZRN = RQNUM
      DO JJ=1,NHE
      WRITE(9,130)HAZRN,HAZIN(JJ)
130   FORMAT(A5,A20)
      ENDDO
114   CONTINUE
      IF(TASKID .NE. ' ')THEN
        WRITE(13,113)RQNUM,PROGCD,TASKID
113   FORMAT(A5,A4,A15)
      ENDIF
C     END OF HAZARDS
C     END OF ANALYTICAL AGREEMENT & MULTIMATRIX WRITE
110   FORMAT(I3)
        WRITE(7,12,ERR=240,IOSTAT=IOSR)
     A     AARN,AAOWN,AAORG,AAPC,AASE,AARD,AADD,AAPRI,AASP,AACON,
     B     AAPRES,AASTOR,AADIS,AASECT,AASLI,AARSL,AACI,AACP,AAMS,
     C     AATD,AADR,AANR,AAISN,AAFSN,AAMAT
      LN = 0  ! LINE COUNTER IN THE REMARKS FILE
115   CONTINUE
      IF(NP1 .EQ. 1)THEN
        TYPE *,' YOU ENTERED "SEE REMARKS" FOR THE PRESERVITAVE'
        TYPE *,' YOU SHOULD ENTER SOME REMARKS ABOUT THE PRESERV.'
      ENDIF
```

```
306     CONTINUE
        TYPE *,' DO YOU WISH TO ENTER ANY REMARKS CONCERNING THIS '
        TYPE *,' ANALYTICAL SERVICE AGREEMENT?  Y/N  '
        READ(5,5)NC,ANS
                IF((NC .GT. 0).AND.((ANS .NE.'Y').AND.(ANS.NE.'y').AND.
    A               (ANS .NE.'N').AND.(ANS.NE.'n')))THEN
                  TYPE *,' AN ANSWER OF "Y" OR "N" WAS REQUESTED.'
                  TYPE *,' IF YOU NEED HELP WITH THIS, PLEASE GET IT.'
                  TYPE *,' TRY AGAIN'
                  GOTO 306
                ENDIF
5       FORMAT(Q,A)
        IF((NC .EQ. 0).OR.((ANS .NE. 'Y').AND.(ANS .NE. 'y')))GOTO 120
        DO NN=1,99
        TYPE *,' ENTER REMARK <CR>   OR   <CR> TO END REMARKS'
        READ(5,5)NC,REM
        IF(NC .EQ. 0)GOTO 120
        LN = LN + 1
        WRITE(LNC,212)LN
        IF(LN .LT. 10)LNC(1:1) = '0'
212     FORMAT(I2)
        WRITE(15,215)RQNUM,LNC,REM
215     FORMAT(A5,A2,A70)
        ENDDO
120     CONTINUE
        TYPE *,' THERE WERE ',LN,'  LINES OF REMARKS ENTERED '
        CALL WAIT(2.)
        ELSEIF(ACT .EQ. 3)THEN
220     CONTINUE
        AADRB(1) = DDATE(1)
        AADRB(2) = DDATE(2)
          REWRITE(7,12,ERR=260,IOSTAT=IOSR)
    A        AARN,AAOWN,AAORG,AAPC,AASE,AARD,AADD,AAPRI,AASP,AACON,
    B        AAPRES,AASTOR,AADIS,AASECT,AASLI,AARSL,AACI,AACP,AAMS,
    C        AATD,AADR,AANR,AAISN,AAFSN,AAMAT
        ENDIF
12      FORMAT(A5,A3,A11,A4,A3,A8,A8,A,A10,A15,A15,A11,
    A          A7,A,A3,A3,A3,A6,A4,A8,A8,A3,A8,A8,A3)
100     CONTINUE
        GOTO 290
240     CONTINUE
        TYPE *,' THERE IS A PROBLEM IN READING THE ANALYTICAL AGREEMENT FILE'
        TYPE *,' THE OLD REQUEST NUMBER YOU ARE LOOKING FOR MAY BE INVALID'
        CALL WAIT(2.5)
        STOP
250     CONTINUE
        TYPE *,' ERROR IN WRITING THE ANALYTICAL AGREEMENT FILE'
        STOP
260     CONTINUE
        TYPE *,' THERE IS A PROBLEM WITH REWRITE ON THE ANL AGREE FILE'
        STOP
290     CONTINUE
        END
C
```

```
      SUBROUTINE PRNTSVCA(PRLMNUM)
C     PRINT SERVICE AGREEMENT RECORDS AND NOTIFY THE APPROPRIATE
C     PEOPLE...  SECTION LEADERS,QC,ANALYST
      PARAMETER (NANL=50)
      PARAMETER (MMSN=50) ! MULTIMATRIX SAMPLE NUMBER COUNT
      INTEGER*4 PRLMNUM,CFLG,IOSR,PASS1/0/
      INCLUDE 'USERS:[H9CHEM]SVCSRC(SERVICE_ACCORD_RECORD)'
      COMMON/SVCREC/SERVICE_ACCORD_RECORD
      CHARACTER RQNUM*5,FILNAM*27,TRMNAM*27
      DATA FILNAM/'USERS:[SVCACC]AAP12345.TXT'/
      DATA TRMNAM/'USERS:[SVCACC]AAT12345.TXT'/
      BYTE BSTR122(122),BEQ122(122)
      CHARACTER STR122*122,STR2*2,EQ122*122,EQ2*2,USC10*10,USC2*2
      DATA BSTR122/122*'*'/,STR2/'**'/,USC2/'__'/
      DATA BEQ122/122*'='/,EQ2/'=='/,USC10/'__________'/
      EQUIVALENCE (BSTR122,STR122),(BEQ122,EQ122)
      CHARACTER PRSC*24,RN1*3,RN2*4,RN3*5,PRSCT(3)*25
      DATA PRSC/' PRESAMPLING CONFERENCE:'/
      DATA RN1/'I. '/,RN2/'II. '/,RN3/'III. '/
      CHARACTER SCTITL(4)*25,SCT(4)*1,SCTN*8,SCTID(4),SCT_LDR(4)*10
      CHARACTER AN_SCT(NANL)*1,VAX_ANLST(NANL)*10,ANLSTID(NANL)*3
      INTEGER SCTL(4)/9,7,15,17/,SCTCNT(4)/0,0,0,0/,AN_CNT(NANL),ANLSTCNT
      DATA SCTITL/' Inorganic Section       ',' Organic Section          ',
     A     ' Radiochemistry Section  ',' Quality Assurance Section'/
      DATA SCT/'I','O','R','Q'/,SCTN/' Section'/
      CHARACTER SLMAIL*44,SS,SSL*10,ANS,MAILBAG*14,DELMLBG*22
      DATA SLMAIL/'$ MAIL USERS:[SVCACC]AAT12345.TXT DUMMY     '/
      DATA MAILBAG/'$ @MBXXXXX.COM'/,DELMLBG/'$ DELETE MBXXXXX.COM;0'/
      CHARACTER MAILFILE*11
      DATA MAILFILE/'MBXXXXX.COM'/
      CHARACTER ANLSTML*44,NLKMAIL*44
      DATA NLKMAIL/'$ MAIL USERS:[SVCACC]AAT12345.TXT KOSKI     '/
      DATA ANLSTML/'$ MAIL USERS:[SVCACC]AAT12345.TXT ANLYSTID  '/
      CHARACTER SRPRINT*122,SRLASER*122
      INTEGER MAILFLG/0/
      DATA SRLASER
     A /'$PRINT/QUE=TTC6/FORM=LASERLMOCOL132/NOTIFY/NAME=AAP12345.TXT -
     A USERS:[H9CHEM]PRCTL.TXT,USERS:[SVCACC]AAP12345.TXT   '/
      CHARACTER PRCD*13,TKID*10,NXPS*20,RQDT*13
      DATA PRCD/'Program code:'/,TKID/'Task ID #:'/
      DATA NXPS/'No Samples Expected:'/,RQDT/'Request Date:'/
      CHARACTER DUDT*9,CSTD*19,SPRT*17,CNTP*15,PRSV*13,STRC*19
      DATA DUDT/'Due Date:'/,CSTD/'Chain of Custody: Y'/
      DATA SPRT/'Special Protocol:'/,CNTP/'Container Type:'/
      DATA PRSV/'Preservative:'/,STRC/'Storage Conditions:'/
      CHARACTER SHPR*23,SDSP*16,CNAM*8,COLN,CSTI*9,CSTP*6,CSTM*3
      DATA SHPR/'Sample Hazards Present:'/,SDSP/'Sample Disposal:'/
      DATA CNAM/'Customer'/COLN/':'/,CSTI/'Initials:'/,CSTP/'phone:'/
      CHARACTER EMST*18,SMPR*14,EMRQ*52,SIG*9,DTE*6,TOTR*19,STL*45,TO*2
      DATA CSTM/'MS:'/EMST/'EMERGENCY SAMPLES:'/,SMPR/'SAMPLE RECEIPT'/
      DATA EMRQ/'Emergency status REQUIRES the following approvals: '/
      DATA SIG/'Signature'/,DTE/'Date: '/TOTR/'Total No. Received:'/
      DATA STL/'Matrix  Initial SN     Final SN    # Received'/,TO/'to'/
      CHARACTER GRPL*14,HSE9*5,RANK*10,DTRECV*8,DSPDAT*8
```

```
      DATA RANK/'Priority  '/
      DATA GRPL/' GROUP LEADER '/,HSE9/'HSE-9'/
      CHARACTER MSG1*16,SMSG*18,RMSG*23,CMSG*18,MSG2*23,MSG3A*15,MSG3*46
      DATA MSG1/'HSE-9 ANALYTICAL'/      ,SMSG/' SERVICE AGREEMENT'/
      DATA RMSG/'REQUEST-NUMBER:   12345'/,CMSG/' CHEMISTRY REQUEST'/
      DATA MSG2/'(See Memo HSE-9/88-304.'/,MSG3A/'Liquid Samples)'/
      DATA MSG3/'Guidelines for Collection and Preservation of '/
      CHARACTER TRUH*54,TRUH1*18,THE*3,PRD,MSG4*35,MSG5*56,MSG6*26
      DATA TRUH/'(All hazardous samples or TRU wastes will be returned '/
      DATA TRUH1/'to the Customer.) '/
      DATA THE/'the'/PRD/'.'/,MSG4/'Translation table of HSE-9/Customer'/
      DATA MSG5/' numbers will be provided by Sample-Receiving and appear'/
      DATA MSG6/' on each final data report'/
      CHARACTER MP2A*34,MP2B*7,MP2C*17,MP2D*9,MP2E*7
      DATA MP2A/'HSE-9 ANALYTICAL CHEMISTRY REQUEST'/MP2B/'REMARKS'/
      DATA MP2C/'Section Analysis'/,MP2D/'Technique'/
      DATA MP2E/'Analyst'/
      INTEGER OPFLG/0/,JWSPR,NWSPR,JRM,WSPRDDI(2)
      REAL*8 WSPRDD(150)
      CHARACTER WSPR_RN*5,WSPR_SECT(150),WSPR_ANLSYS(150)*10,
     A          WSPR_TECH(150)*5,WSPR_ANLST(150)*3,WSPR_DD(150)*8
      CHARACTER WSPRDDC*8,RMK_RN*5,RMKLIN*2,RMK,NL*2,REMRK*70
      EQUIVALENCE(WSPRDDI,WSPRDDC),(WSPRDD,WSPR_DD)
C
C     MULTIMATRIX READ/PRINT DATA BLOCK
      CHARACTER MMRN*5,MMMAT(MMSN)*3,MMISN(MMSN)*8,MMFSN(MMSN)*8,
     A       MMNR(MMSN)*3,MMDR(MMSN)*8
      INTEGER*4 MMCNT
C     MULTIMATRIX READ/PRINT DATA BLOCK
      COMMON/MLMT/MMRN,MMMAT,MMISN,MMFSN,MMNR,MMDR,MMCNT
      INTEGER*4 DATDSP(2)
      COMMON/PRDATE/DATDSP
C
      CALL BADATE(DATDSP,DSPDAT,1)
      CALL SLDATE(DSPDAT)
C     GET SECTION/SECTION LEADER ID INFO
      IF(PASS1 .EQ. 0)THEN
      OPEN(UNIT=33,FILE='USERS:[H9CHEM]SECT_LDR_ID.LIS',STATUS='OLD',
     A   READONLY,SHARED,FORM='FORMATTED',ERR=218)
      REWIND 33
      DO JJ=1,4
      READ(33,1)SS,SSL
1     FORMAT(A,1X,A10)
      DO KK=1,4
      IF(SS .EQ. SCT(KK))THEN
        SCTID(KK) = SS
        SCT_LDR(KK) = SSL
        goto 11
      ENDIF
      ENDDO
11    continue
      ENDDO
      OPEN(UNIT=34,FILE='USERS:[H9CHEM]AN_SCT_ID.LIS',STATUS='OLD',
     A   READONLY,SHARED,FORM='FORMATTED',ERR=16)
```

```
      REWIND 34
      ANLSTCNT = 0
      NANLX = 50
      DO JJ=1,NANLX
      READ(34,12,END=18)ANLSTID(JJ),VAX_ANLST(JJ),AN_SCT(JJ)
12    FORMAT(A3,1X,A10,7X,A)
      ANLSTCNT = ANLSTCNT + 1
      ENDDO
15    continue
      GOTO 18
16    CONTINUE
      TYPE *,' THE ANALYST ID FILE IS NOT AVAILABLE NOW. '
      CALL WAIT(2.)
      RETURN
18    CONTINUE
C     TYPE *,' THERE ARE ',ANLSTCNT,'  ANALYSTS IN THE FILE'
      DO JJ= ANLSTCNT+1,NANL
      ANLSTID(JJ) = ' '
      VAX_ANLST(JJ) = ' '
      AN_SCT(JJ) = ' '
      ENDDO
      GOTO 220
218   CONTINUE
      TYPE *,' THE SECTION LEADER ID FILE IS NOT AVAILABLE NOW '
      CALL WAIT(2.)
      RETURN
219   CONTINUE
      GOTO 220
220   CONTINUE
      PASS1 = 1
      CLOSE (UNIT=33)
      CLOSE (UNIT=34)
      ENDIF
C
      MAILFLG = 0
      NTRY = 0
2     CONTINUE
      NTRY = NTRY + 1
      IF(PRLMNUM .EQ. 0)THEN
      TYPE *,'   ENTER THE REQUEST NUMBER OF THE SERVICE AGREEMENT'
      TYPE *,'  FOR WHICH YOU WISH TO PRINT THE  REPORT'
      READ(5,5)NC,PRLMNUM
5     FORMAT(Q,I5)
      IF(NC .EQ. 0)THEN
        IF(NTRY .GT. 3)THEN
          TYPE *,' THREE TRIES SHOULD BE ENUFF'
          CALL WAIT(1.0)
          GOTO 5000
        ENDIF
      ELSEIF(PRLMNUM .EQ. 0)THEN
          TYPE *,' IF YOU WISH TO PRINT INFORMATION CONCERNING A REQUEST,'
          TYPE *,' IT WOULD HELP IF YOU WOULD SHARE THE NUMBER WITH US.'
          TYPE *,' THIS IS THE ONLY WAY WE CAN HELP YOU IN YOUR EFFORT.'
          GOTO 2
```

```
        ENDIF
        ENDIF
        TYPE *,' SERVICE AGREEMENT FOR REQUEST NUMBER ',PRLMNUM
        TYPE *,' WILL BE PRINTED. IS THIS WHAT YOU WANT  Y/N ?'
        READ(5,225)NC,ANS
225     FORMAT(Q,A)
          IF((NC .GT. 0).AND.((ANS .NE.'Y').AND.(ANS.NE.'y').AND.
     A        (ANS .NE.'N').AND.(ANS.NE.'n')))THEN
            TYPE *,' AN ANSWER OF "Y" OR "N" WAS REQUESTED.'
            TYPE *,' IF YOU NEED HELP WITH THIS, PLEASE GET IT.'
            TYPE *,' TRY AGAIN'
            GOTO 2
          ENDIF
        IF((ANS .EQ. 'N') .OR. (ANS .EQ. 'n'))THEN
        PRLMNUM = 0
        GOTO 2
        ENDIF
C
        REQNUM = PRLMNUM
          CALL GPAGREE(1) ! GET SERVICE AGREEMENT INFO ON THIS REQUEST
30      CONTINUE
C
        WRITE(RQNUM,7)PRLMNUM
7       FORMAT(I5)
        DO J=1,4
          IF(RQNUM(J:J) .EQ. ' ')RQNUM(J:J) = '0'
        ENDDO
        FILNAM(18:22) = RQNUM(1:5)
        TRMNAM(18:22) = RQNUM(1:5)
        RMSG(19:23) = RQNUM(1:5)
        MAILFILE(3:7) = RQNUM(1:5)
        MAILBAG(6:10) = RQNUM(1:5)
        DELMLBG(12:16) = RQNUM(1:5)
C
C       THE FILES USED BELOW ARE USED ONLY IN THIS SUBROUTINE
C       UNIT = 31 IS THE FILE FOR PRINTING THE  SERVICE AGREEMENT.
        open(unit=31,file=filnam,err=1000,
     A     IOSTAT=IOSR,form='formatted',status='new')
C
C   UNIT 32 IS FOR THE VAXMAIL MESSAGE WHICH INFORMS CONCERNED CITIZENS
C   OF THE FACT THAT A SERVICE AGREEMENT IS IN THE WORKS WHICH CONCERNS THEM
        open(unit=32,file=trmnam,err=1001,
     &     IOSTAT=IOSR,form='formatted',status='new')
        OPEN(UNIT=30,FILE=MAILFILE,FORM='FORMATTED',STATUS='NEW',ERR=1002)
C       GET THE WORKSPACE INFO FIRST FOR SECTION, SLI INFO ON PAGE 1
        DO J=1,3
        SCTCNT(J) = 0
        ENDDO
        DO JWSPR=1,150
C       READ THE WORKSPACE FILE AND PRINT, ONE LINE AT A TIME.
          IF(JWSPR .EQ. 1)THEN
            READ(12,90,KEY=RQNUM,KEYID=0,ERR=95)WSPR_RN,WSPR_SECT(1),
     A          WSPR_ANLSYS(1),WSPR_TECH(1),WSPR_ANLST(1),WSPR_DD(1)
        NWSPR = 0
```

```
90      FORMAT(A5,A,A10,A5,A3,A8)
          ELSE
            READ(12,90,ERR=95)WSPR_RN,
     A      WSPR_SECT(JWSPR),WSPR_ANLSYS(JWSPR),
     A      WSPR_TECH(JWSPR),WSPR_ANLST(JWSPR),WSPR_DD(JWSPR)
          ENDIF
          IF(WSPR_RN .NE. RQNUM)GOTO 95
            NWSPR = NWSPR + 1
          DO J=1,3
            IF(WSPR_SECT(JWSPR) .EQ. SCT(J))SCTCNT(J) = 1
          ENDDO
          DO J=1,ANLSTCNT
            IF(AN_CNT(J) .EQ. 0)THEN
            IF(WSPR_ANLST(JWSPR) .EQ. ANLSTID(J))AN_CNT(J) = 1
            ENDIF
          ENDDO
        ENDDO
95      CONTINUE
        JSCT = 0
        DO J=1,3
        IF(SCTCNT(J) .GT. 0)THEN
          JSCT = JSCT + 1
          PRSCT(JSCT) = SCTITL(J)
        ENDIF
        ENDDO
97      FORMAT(1X,A)
C       WRITE THE ANALYTICAL AGREEMENT TEXT FILE
        WRITE(31,101)
101     FORMAT(1H1,/)
102     FORMAT(/)
103     FORMAT(///)
104     FORMAT(1X,A,/)
105     FORMAT(12X,A,A,39X,A,/)
C       WRITE PAGE HEADING FOR FIRST PAGE
        WRITE(31,104)STR122
        WRITE(31,105)MSG1,SMSG,RMSG
        WRITE(31,104)STR122
C       WRITE(31,102)
C       END OF HEADING FOR FIRST PAGE
        WRITE(31,106)RN1,PRSC,(PRSCT(KK),KK=1,JSCT)
106     FORMAT(1X,A,A,A25,A25,A25)
        WRITE(31,102)
        WRITE(31,107)PRCD,PROGCD,TKID,TASKID,NXPS,NSE
107     FORMAT(1X,A,1X,A,6X,A,1X,A,6X,A,I5/)
        WRITE(31,108)RQDT,RQDATE,DUDT,DUEDATE
108     FORMAT(1X,A,'  ',A,25X,A,'  ',A,/)
        WRITE(31,109)CSTD,SPRT,PROTOCOL
109     FORMAT(1X,A,18X,A,1X,A/)
        WRITE(31,110)CNTP,CONTAIN,PRSV,PRESERV,STRC,STORAGE
110     FORMAT(1X,A,1X,A,10X,A,1X,A,6X,A,1X,A,/)
        WRITE(31,111)MSG2,MSG3,MSG3A
111     FORMAT(1X,A,3X,A,A/)
        WRITE(31,112)SHPR,HAZ,HAZA,HAZB,HAZC
112     FORMAT(1X,A,/,23X,A,10X,A,/23X,A,10X,A/)
```

```
C       IF(HAZB .NE. ' ')WRITE(31,102)
        WRITE(31,113)SDSP,DISPOSE,TRUH,TRUH1
113     FORMAT(1X,A,1X,A,7X,A,A,/)
        WRITE(31,114)CNAM,COLN,CNAME,SLI
114     FORMAT(1X,A,A,2X,A,20X,'HSE-9 SAMPLE COORDINATION CUSTODIAN: ',A,//)
        WRITE(31,115)CNAM,CSTI,CINIT,CNAM,CSTP,CPHONE,CSTM,
     A    MAIL,RQDT,RQDATE
115     FORMAT(1X,A,1X,A,2X,A,5X,A,1X,A,2X,A,6X,A,2X,A,6X,A,2X,A/)
        WRITE(31,104)EQ122
        WRITE(31,117)RN2,EMST,RANK,PRIORITY,EMRQ
        WRITE(31,102)
117     FORMAT(1X,A,A,10X,A,X,A,10X,A/)
        WRITE(31,118)CNAM,GRPL,USC10,USC10,USC2,USC2,USC2,USC2,HSE9,GRPL,
     A              USC10,USC10,USC2,USC2,USC2,USC2,DTE,USC10,USC2,USC2
118     FORMAT(1X,A,A,A,A,A,A,A,A,A,2X,A,A,A,A,A,A,A,A,A,2X,A,A,A,A/)
        WRITE(31,104)EQ122
C       WRITE(31,102)
        WRITE(31,119),RN3,SMPR
119     FORMAT(1X,A,A,/)
        WRITE(31,120)SIG,USC10,USC10,USC10,USC10,DTE,DSPDAT,TOTR
120     FORMAT(1X,A,A,A,A,A,A,A,A,2X,A,/)
        WRITE(31,121)STL
121     FORMAT(1X,A,/)
C       INSERT CALL TO SUBR TO READ AND PRINT MULTIMATRIX DATA
C       THIS CALL WILL REPLACE THE WRITE OF MATRIX TYPES TO THE
C       REPORT FILE (31)
        CALL GMLMAT(RQNUM)
        DO JN=1,MMCNT
        IF(MMISN(JN)(1:3) .EQ. ' 0.')MMISN(JN)(1:3) = '00.'
        IF(MMFSN(JN)(1:3) .EQ. ' 0.')MMFSN(JN)(1:3) = '00.'
        WRITE(31,122)MMMAT(JN),MMISN(JN),TO,MMFSN(JN),MMNR(JN)
        ENDDO
122     FORMAT(1X,A3,5X,A8,4X,A2,2X,A8,5X,A3)
        WRITE(31,102)
        WRITE(31,123)MSG4,MSG5,MSG6
123     FORMAT(1X,A,A,A)
C       END OF FIRST PAGE, AND BY CHANCE THE START OF PAGE TWO
C       WRITE PAGE HEADING FOR SECOND PAGE
        WRITE(31,101)
        WRITE(31,104)STR122
        WRITE(31,105)MSG1,CMSG,RMSG
        WRITE(31,104)STR122
C       WRITE(31,102)
C       END OF HEADING FOR SECOMD PAGE
        WRITE(31,127)PRCD,PROGCD,TKID,TASKID,RQDT,RQDATE
127     FORMAT(1X,A,1X,A,6X,A,1X,A,6X,A,2X,A/)
        WRITE(31,115)CNAM,CSTI,CINIT,CNAM,CSTP,CPHONE,CSTM,MAIL
        WRITE(31,102)
        WRITE(31,121)STL(1:32)
        DO JN=1,MMCNT
        WRITE(31,122)MMMAT(JN),MMISN(JN),TO,MMFSN(JN),MMNR(JN)
        ENDDO
        WRITE(31,102)
        WRITE(31,102)
```

```
      WRITE(31,128)MP2C,MP2D,MP2E,DUDT(1:8)
128   FORMAT(1X,A,8X,A,4X,A,3X,A,1X,A)
      WRITE(31,129)
129   FORMAT(1X,'_______ ___________     _________'4X,
     A     '_________ _________',/)
      DO JWSPR=1,NWSPR
      CALL BADATE(WSPRDD(JWSPR),WSPRDDC,1)
        WRITE(31,131)WSPR_SECT(JWSPR),WSPR_ANLSYS(JWSPR),WSPR_TECH(JWSPR),
     A        WSPR_ANLST(JWSPR),WSPRDDC
131   FORMAT(4X,A,6X,A10,7X,A5,9X,A3,4X,A8)
      ENDDO
150   CONTINUE
      WRITE(31,134)MP2B
134   FORMAT(////,1X,A,/)
      DO JRM=1,200
        IF(JRM .EQ. 1)THEN
          READ(15,135,KEY=RQNUM,KEYID=0,ERR=160)RMK_RN,RMK_NL,REMRK
        ELSE
          READ(15,135,ERR=160)RMK_RN,RMK_NL,REMRK
        ENDIF
135   FORMAT(A5,A2,A70)
        IF(RMK_RN .NE. RQNUM)GOTO 160
        WRITE(31,136)REMRK
      ENDDO
160   CONTINUE
136   FORMAT(1X,A)
      GOTO 500
1000  CONTINUE
      TYPE *,' ERROR IN OPENING THE SERVICE AGREEMENT PRINT FILE'
      TYPE *,' IOSR = ',IOSR
      CALL WAIT(1.)
      GOTO 500
1001  CONTINUE
      TYPE *,' ERROR IN OPENING THE SVC AGREE FILE FOR NOTIFICATION'
      TYPE *,' IOSR = ',IOSR
      CALL WAIT(1.)
      GOTO 500
1002  CONTINUE
      TYPE *,' THE MAILBAG FILE WAS NOT OPENED.'
      CALL WAIT(1.)
      GOTO 500
500   CONTINUE ! THIS IS THE LOGICAL "RETURN"
      WRITE(32,550)RQNUM
550   FORMAT(1X,'THERE IS A NEW SERVICE AGREEMENT, NO. ',A5,' FOR YOU')
      WRITE(32,551)RQNUM
551   FORMAT(1X,'FILE NAME IS AAP',A5,'.TXT  USE  @PROGRAMS:SVCLASER'
     A ' TO PRINT')
      WRITE(32,552)RQNUM
552   FORMAT(1X,'  USE   TYPE SERVICE:AAP',A5,'.TXT TO SEE IT ON YOUR'
     A ' TERMINAL')
C
      CLOSE(UNIT=31) !SERVICE AGREEMENT REPORT FILE
      CLOSE(UNIT=32) !MESSAGE FILE TO MAIL TO SECTION LEADERS
C     NOW.... WRITE THE MAILBAG FILE TO SEND MAIL MSG TO ALL CONCERNED
```

```
        SRPRINT = SRLASER
        SRPRINT(52:56) = RQNUM
        SRPRINT(106:110) = RQNUM
        type *,' do you want to send section leader notification of'
        type *,' of pending service agreements?  (y/n) '
        read(5,555)ans
555     format(a)
        if ((ans .eq.'y').or.(ans .eq. 'Y'))then
        MAILFLG = 1
        SLMAIL(25:29) = RQNUM
        DO JJ=1,3
          IF(SCTCNT(JJ) .NE. 0)THEN
            SLMAIL(35:44) = SCT_LDR(JJ)
            WRITE(30,555)SLMAIL
            SCTCNT(JJ) = 0
          ENDIF
        ENDDO
        NLKMAIL(25:29) = RQNUM
        WRITE(30,555)NLKMAIL
        endif
        type *,' do you want to send analyst notification of'
        type *,' of pending service agreements?  (y/n) '
        READ(5,555)ANS
        if ((ans .eq.'y').or.(ans .eq. 'Y'))then
        MAILFLG = 1
        ANLSTML(25:29) = RQNUM
        DO JJ=1,ANLSTCNT
          IF(AN_CNT(JJ) .NE. 0)THEN
            ANLSTML(35:44) = VAX_ANLST(JJ)
            WRITE(30,555)ANLSTML
          ENDIF
        ENDDO
        ENDIF
        TYPE *,' DO YOU WANT TO PRINT THE SERVICE AGREEMENT? (Y/N)'
        READ(5,555)ANS
        if ((ans .eq.'y').or.(ans .eq. 'Y'))then
        MAILFLG = 1
        WRITE(30,555)SRPRINT(1:64)
        WRITE(30,555)SRPRINT(65:122)
        ENDIF
        CLOSE(UNIT=30)
        IF(MAILFLG .GT. 0)THEN
        CALL LIB$SPAWN(MAILBAG,,,,,,,,,,,)
        MAILFLG = 0
        ENDIF
5000    CONTINUE
        RETURN
        END
```

```
C* * * * * * * * * * * * * * * * * * * * * * *
C* * * * * * * * * * * * * * * * * * * * * * *
   THIS IS A LIST OF THE SUBROUTINES USED IN THE
    SERVICE AGREEMENT ALONG WITH A ONE LINE
    DESCRIPTION ABOUT WHAT EACH DOES
C* * * * * * * * * * * * * * * * * * * * * * *
C* * * * * * * * * * * * * * * * * * * * * * *
C* * * * * * * * * * * * * * * * * * * * * * *


      SUBROUTINE BADATE(BDATE,CDATE,AB)
        CONVERT DATE TO/FROM SYSTEM FORMAT TO/FROM CHARACTERS

      SUBROUTINE OPENUP(OPFLG)
        OPEN ALL FILES USED IN GENERATING A SERVICE AGREEMENT

      SUBROUTINE RDRQNUM(REQNUM)
        GET NEW REQUEST NUMBER, INCREMENT AND REPLACE THE VALUE

      SUBROUTINE RDTMPL(TMPLNAM)
        READ A SPECIFIC TEMPLATE FROM THE TEMPLATE FILE

      SUBROUTINE TMPLSAV(TMPLNUM,TMPLNAM)
        SAVE A NEW OR REVISED TEMPLATE

      SUBROUTINE CHKVAL
        PARAMETER VALIDATION (CALLS VALIDATION ROUTINES LISTED BELOW)

      SUBROUTINE VDISP(VALID)
        VALIDATE REQUESTED SAMPLE DISPOSAL INSTRUCTIONS

      SUBROUTINE VCNTN(VALID)
        VALIDATE SAMPLE CONTAINER SPECIFICATION

      SUBROUTINE VCUSTMR(VALID)
        VALIDATE CUSTOMER IDENTIFICATION

      SUBROUTINE VHAZ(VALID)
        VALIDATE NOTED SAMPLE HAZARDS FOR PROPER SPECIFICATIONS

      SUBROUTINE VMTRX(VALID)
        VALIDATE SPECIFIED SAMPLE MATRIX

      SUBROUTINE VPRCD(VALID)
        VALIDATE SPECIFIED PROGRAM CODE

      SUBROUTINE VPRES(VALID)
        VALIDATE REQUESTED SAMPLE PRESERVATIVE

      SUBROUTINE VPROT(VALID)
        VALIDATE SPECIFIED SAMPLE HANDLING PROTOCOL

      SUBROUTINE VSTOR(VALID)
        VALIDATE REQUESTED SAMPLE STORAGE SPEFIFICATIONS
```

```
SUBROUTINE WAIT(DELT)
  PAUSE FOR AN ARBITRARY TIME FOR OPERATOR TO READ SCREEN

SUBROUTINE WKSPCHK(WKSPFLG,TMPLNUM)
  VALIDATE WORKSPACE TABLE ENTRIES AQUIRED FROM TEMPLATE

SUBROUTINE WKSPPACK(TMPLNUM)
  PACK WORKSPACE ENTRIES IF TEPMPLATE WAS MODIFIED

SUBROUTINE WKSPSAV(TMPLNUM,REQNUM,SECT)
  SAVE TEMPLATE CONTENTS IN WORKSPACE

SUBROUTINE SVC_ALLIN
  READ DATA FROM SERVICE AGREEMENT GENERATION FORM

SUBROUTINE SVC_ALLOK
  WRITE TO SCREEN FOR ERROR CORRECTION

SUBROUTINE SVC_ALLOUT
  WRITE DATA TO SERVICE AGREEMENT FORM

SUBROUTINE SVC_CLEARIT
  CLEAR SCREEN

SUBROUTINE SVC_IN_ALLIN
  READ RECORD FROM DATA VERIFICATION FORM

SUBROUTINE SVC_IN_CHECK
  READ DATA FROM VALIDATION ERROR CORRECTION FORM

SUBROUTINE SVC_IN_ALLOUT
  WRITE RECORD TO VERIFICATION FORM

SUBROUTINE GMLMAT(RQN)
  GET THE MULTIMATRIX FILE RECORDS SPECIFIED FOR A REQUEST

SUBROUTINE GETWKSP(WKSPNUM,REQNUM)
  GET THE WORKSPACE RECORDS FOR A GIVEN REQUEST NUMBER

SUBROUTINE TMPLDEL(TMPLNAM)
  REMOVE A TEMPLATE FROM THE TEMPLATE LIBRARY

SUBROUTINE TMPLPACK(TMPLNUM)
  REMOVE BLANK RECORDS FORM TEMPLATE

SUBROUTINE SLDATE(CDT)
  REMOVE BLANK SPACES FROM DATE IN CHARACTER FORM
```

Program ANNUAL-CHEMINV

Annual_Cheminv
Written by Bryan O'Malley
07-26-88

Datatreive Procedures Associated with Annual Chemical Inventory
--- --- --- --- --- --- ---

Reset_Audit_Bit
Load_Barcodes
Process_Annual_Cheminv
Find_Lost_Chemicals
Store_Chem (same program qasection uses all of the time)
Delete_Chem (same program qasection uses all of the time)
Display_NotEntered_Cheminv
Define_New_Files

Datatrieve Domains for Annual Chemical Inventory
--- --- --- --- --- ---

Annual_Cheminv
Temp_Annual_Cheminv
Expended_Cheminv
Cheminv
Lost_Cheminv
Notentered_Cheminv

DCL Command Procedures Associated with Annual Chemical Inventory
--- --- --- --- --- --- ---

Annual_Cheminv_Menu.com
Init_Annual_Cheminv.com
Load_Barcodes.com

Functional Flow Diagram For the Annual Inventorying Process:

```
        "Initialize Annual Chemical Inventory" (menu sel. 1)
+----------------------------->|
|                               |
|                              \ /
|       Physically Scan the Chemicals in the Laboratory with the Barcode Reader
|                               |
|                               |
|                              \ /
|       "Dump Barcode Information from the Reader to the Vax" (menu sel. 2)
|                               |
|                               |
|                              \ /
|       "Process Barcode Data" (menu sel. 3)
|       processes the barcoded data scanned and dumped to the Vax.  Prints out
|       a list of barcodes scanned but not processed because they were not
|       found in the running inventory.
|                               |
|                               |
|                              \ /
|       (optional) "Display/Print all barcodes unable to be processed due
|       to the inability to find them in the running inventory." (menu sel. 4)
|                               |
| +---------------------------->|
| |                            \ /
| |     Read the printout of the chemicals scanned in the lab but not found
| |     in the running inventory.  Physically go to the location of those
| |     barcodes with a pencil and inventory forms in hand and fill in the
| |     blanks on the form(s).  You will need this information to enter into
| |     the computer in the next step.
| |                             |
| |                             |
| |                            \ /
| |     "Enter information about the barcoded chemicals not found in the
| |     running inventory" (menu sel. 5) transfer the information from the forms
| |     into the computer.      |
| |                             |
| |                            \ /
| |     (optional) "Display/Print all barcodes unable to be processed due
| |     to the inability to find them in the running inventory." (menu sel. 4)
| |                             |
| |                             |
| |        YES                 \ /
| +--------<    more barcodes scanned but not found in cheminv?
|                               | NO
|                               |
|         NO                   \ /
|+--------< finished scanning all chemicals in all laboratories?
                                | YES
                                |
                               \ /
        "Find all barcodes still in the running inventory and not scanned
        during this year's annual inventory and moved them to the Lost_cheminv
        domain." (menu sel. 6)
```

```
                Software Flow Chart for Annual_cheminv.com
init_annual_cheminv
+-------------------------------------------------------------------------+
|       define file for annual_cheminv supersede;                         |
|       define file for notentered_cheminv supersede;                     |
|       Reset_Audit_Bit (for cheminv modify using audit="0")              |
+-------------------------------------------------------------------------+
                                |
                                |
load_barcodes                  \ /
+-------------------------------------------------------------------------+
|       transfer pc ascii data file gen'd from PDTIII to Vax (do with vterm)  |
|         (file should be in correct format for Temp_Annual_Cheminv)      |
|         rename file to Temp_Annual_Cheminv.dat                          |
|       for temp_annual_cheminv (load those records into annual_cheminv)  |
|               store annual_cheminv using annual_cheminv_rec             |
|                  = annual_cheminv_rec                                   |
|       rename Temp_Annual_Cheminv.dat to Temp_Annual_Cheminv.done        |
+-------------------------------------------------------------------------+
                                |
                                |
process_annual_cheminv         \ /
+-------------------------------------------------------------------------+
| (first pass through domain annual_cheminv)                              |
|for each record in ANNUAL_CHEMINV (first pass through domain ANNUAL_CHEMINV)  |
|   if barcode exists on EXPENDED_CHEMINV then (move chemical back to CHEMINV) |
|      begin                                                              |
|      copy record from EXPENDED_CHEMINV to CHEMINV                      |
|      delete record in EXPENDED_CHEMINV                                 |
|      delete record in ANNUAL_CHEMINV                                   |
|      end (if barcode exists in EXPENDED_CHEMINV)                       |
| (second pass through domain ANNUAL_CHEMINV)                             |
|for each record in ANUAL_CHEMINV                                         |
|   if barcode exists in CHEMINV then                                     |
|      if locations are the same then (no changes are required)           |
|         delete record in ANNAUL_CHEMINV                                |
|      else (barcode exists in CHEMINV but location has changed)          |
|         begin                                                           |
|         modify location in CHEMINV to equal location in ANNUAL_CHEMINV |
|         delete record in ANNUAL_CHEMINV                                |
|         end (else)                                                      |
|   else (barcode doesn't exist in CHEMINV)                               |
|      if barcode exists in LOST_CHEMINV then                             |
|         begin                                                           |
|         copy record from LOST_CHEMINV to CHEMINV                       |
|         delete record from LOST_CHEMINV                                |
|         delete record from ANNUAL_CHEMINV                              |
|         end (if barcode in LOST_CHEMINV)                               |
|      else (store barcode from ANNUAL_CHEMINV in NOTENTERED_CHEMINV)     |
|         begin                                                           |
|         copy record from ANNUAL_CHEMINV into NOTENTERED_CHEMINV        |
|         delete record from ANNUAL_CHEMINV                              |
|         end (else)                                                      |
|       print contents of notentered_cheminv on line printer              |
+-------------------------------------------------------------------------+
```

```
                                |
                                |
display_notentered_cheminv     \ /
+-------------------------------------------------------------------------+
|       display contents of the domain notentered_cheminv                 |
|       print the contents of the domain notentered_cheminv               |
+-------------------------------------------------------------------------+
                                |
                                |
store_chem                     \ /
+-------------------------------------------------------------------------+
|       QASection or analyst uses standard store_chem procedure to enter  |
|          information about chemicals which were barcoded and scanned in |
|          the annual inventory but not found anywhere in the system.     |
+-------------------------------------------------------------------------+
                                |
                                |
find_lost_chemicals            \ /
+-------------------------------------------------------------------------+
|       for cheminv                                                       |
|          begin                                                          |
|          if audit=0 then                                                |
|             begin                                                       |
|             store lost_cheminv using cheminv_rec=cheminv_rec            |
|             erase                                                       |
|             end                                                         |
+-------------------------------------------------------------------------+
```

```
$! Annual_Cheminv_Menu.com
$!
$! Written by Bryan O'Malley
$!
$! 01-11-90
$!
$ MENU:
$ cls
$ type sys$input

                    Annual Chemical Inventory Menu
                    ------ -------- --------- ----


        1. Initialize Annual Chemical Inventory (done once a year)

        2. Load Barcode File Recently Transferred to the Vax into Annual_Cheminv

        3. Process Barcode Data

        4. Display and Print All Barcodes Scanned But Not Found In The Inventory

        5. Run Store_Chem To Enter Barcodes Scanned But Not Found In Inventory

        6. Find All Barcodes In Cheminv Not Scanned in Lab
          (done once a year AFTER all else, moves those records to Lost_Cheminv)

        7. Exit


$!
$ Sure = "n"
$ Inquire Selection "Enter your selection please. [1-7] "
$ if (Selection .lt. 1) .or. (Selection .gt. 7) then goto MENU
$!
$ define/user sys$input sys$command
$!
$ if Selection .eq. 1 then Inquire Sure "Are you SURE you want to INIT?"
$ if Sure then @Chem$Inventory:Init_Annual_Cheminv.Com
$!
$ if Selection .eq. 2 then @Chem$Inventory:Load_Barcodes.com
$!
$ if Selection .eq. 3 then MC DTR32 @Chem$Inventory:Process_Annual_Cheminv.dtr
$!
$ if Selection .eq. 4 then MC DTR32 @Chem$Inventory:Display_Notentered_Cheminv.dtr
$!
$ if Selection .eq. 5 then MC DTR32 @Chem$Inventory:Store_Chem.dtr
$!
$ if Selection .eq. 6 then Inquire Sure "Are you SURE you want to FIND LOSTCHEM?"
$ if Sure then MC DTR32 @Chem$Inventory:Find_Lost_Chemicals.dtr
$!
$ if Selection .eq. 7 then Goto END
$!
$ Goto MENU
$ END:
$ exit
```

```
$! WRITTEN BY BRYAN O'MALLEY
$! 1988
$! program name: chem$inventory:init_annual_cheminv.com
$!
$! RESET THE AUDIT BIT TO 0 IN THE CHEMICAL INVENTORY DOMAIN "CHEMINV"
$mc dtr32 @chem$inventory:reset_audit_bit.dtr
$!
$! DEFINE NEW FILES FOR THE DOMAINS ANNUAL_CHEMINV AND NOTENTERED_CHEMINV
$mc dtr32 @chem$inventory:define_new_files.dtr
$exit
```

```
$! Load_Barcodes.com
$! written by Bryan O'Malley
$! 1-10-90
$!
$ START:
$ cls
$ if p1 .eqs. "" then
$   Inquire P1 "Enter the file name you wish to process. "
$!
$ found = f$search("''p1'")
$ if found .eqs. "" then write Sys$output "File not found.  Try again..."
$ if found .eqs. "" then goto START
$!
$ copy 'p1' temp_annual_cheminv.dat
$ mc dtr32 @load_barcodes.dtr
$ exit
```

```
! Written by Bryan O'Malley
! 1988
! program name: chem$inventory:reset_audit_bit.dtr
!
! This procedure changes the audit bit to "0" in every record in the cheminv
! domain.  The datatrieve procedure store_chem always stores records in
! cheminv with the audit bit set to "1".  When process_annual_cheminv matches
! a scanned barcode with one found in the cheminv domain, it sets the audit bit
! to "1".  When the annual inventory is over, the only records which contain
! a "0" in the audit field will be the ones whose barcoded chemical was never
! scanned in the lab, thus it is lost and these records will be moved to the
! lost_chemicals domain where they will permenantly reside.
!
ready cheminv shared modify
for cheminv modify using audit="0"
finish
exit
```

```
! Load_Barcodes.dtr
! written by Bryan O'Malley
! 1-10-90
!
! User presumably transfered the data from the PDTIII to the pc, and vterm'd
! that file to the Vax.  This program renames the file to
! Temp_Annual_Cheminv.dat, and uses a Datatrieve domain to read the file, and
! transfer the information to the Annual_Cheminv domain.  It then renames that
! temp file to Temp_Annual_Cheminv.done .
!
declare bar pic 9(6).
ready temp_annual_cheminv read
ready annual_cheminv shared write
for temp_annual_cheminv
  begin
  bar = barcode
  if count of annual_cheminv with barcode = bar = 0 then
    store annual_cheminv using annual_cheminv_rec=annual_cheminv_rec;
  end
```

```
! Written by Bryan O'Malley
! 1988
! program name: chem$inventory:process_annual_cheminv.dtr
!
!This datatrieve procedure processes the data found in the datatrieve domain
!ANNUAL_CHEMINV.  This data consists of five fields: BARCODE PIC 9(6),
!TA PIC X(2), BUILDING PIC X(4), ROOM PIC X(4), and OTHER PIC X(15).
!
!The domains used by this procedure are:        CHEMINV
!                                               EXPENDED_CHEMINV
!                                               ANNUAL_CHEMINV
!                                               LOST_CHEMINV
!                                               NOTENTERED_CHEMINV
!
!The algorithm used in this procedure to load the information from
!ANNUAL_CHEMINV into CHEMINV is as follows:
!
!for each record in ANNUAL_CHEMINV (first pass through domain ANNUAL_CHEMINV)
!   if barcode exists on EXPENDED_CHEMINV then (move chemical back to CHEMINV)
!      begin
!      copy record from EXPENDED_CHEMINV to CHEMINV
!      delete record in EXPENDED_CHEMINV
!      delete record in ANNUAL_CHEMINV
!      end (if barcode exists in EXPENDED_CHEMINV)
!
!for each record in ANUAL_CHEMINV (second pass through domain ANNUAL_CHEMINV)
!   if barcode exists in CHEMINV then
!      if locations are the same then (no changes are required)
!         delete record in ANNAUL_CHEMINV
!      else (barcode exists in CHEMINV but location has changed)
!         begin
!         modify location in CHEMINV to equal location in ANNUAL_CHEMINV
!         delete record in ANNUAL_CHEMINV
!         end (else)
!   else (barcode doesn't exist in CHEMINV)
!      if barcode exists in LOST_CHEMINV then
!         begin
!         copy record from LOST_CHEMINV to CHEMINV
!         delete record from LOST_CHEMINV
!         delete record from ANNUAL_CHEMINV
!         end (if barcode in LOST_CHEMINV)
!      else (store barcode from ANNUAL_CHEMINV in NOTENTERED_CHEMINV)
!         begin
!         copy record from ANNUAL_CHEMINV into NOTENTERED_CHEMINV
!         delete record from ANNUAL_CHEMINV
!         end (else)
print "you may want to turn on logging to your printer to capture screen logging."
set no form
ready expended_cheminv shared write
ready cheminv shared write
ready annual_cheminv shared write
ready lost_cheminv shared write
ready notentered_cheminv shared write
declare bar pic 9(6).
declare tech pic x(2).
declare bldg pic x(4).
```

```
declare rm pic x(4).
declare ot pic x(15).
declare cnt pic 9(2).
!
! FIRST PASS THRU ANNUAL_CHEMINV
!
print "First pass, looking for barcodes in Expended_cheminv to move back to cheminv."
for annual_cheminv
   begin
   bar=barcode
   for first 1 expended_cheminv with barcode = bar !don't worry about audit bit
      begin
      print barcode," found in Expended_Cheminv, moving it to Cheminv."
      store cheminv using cheminv_rec=expended_cheminv_rec
      erase !remove record from expended_cheminv
      end
   end
!
! SECOND PASS THRU ANNUAL_CHEMINV
!
print skip, "Second Pass thru Annual_Cheminv."
for annual_cheminv
   begin
   bar=barcode
   tech=ta
   bldg=building
   rm=room
   ot=other
   cnt=0
   for cheminv with barcode=bar
      if ta=tech and building=bldg and room=rm and ot=other then !locations same
         begin
         print barcode," found in cheminv.  Location has not changed."
         modify using audit=1             !mark that record as accounted for...
         cnt=cnt + 1
         end else
      begin !locations are different, update cheminv with new location
         print barcode," found in cheminv.  Updating Location."
         modify using
            begin
            ta=tech
            building=bldg
            room=rm
            other=ot
            audit=1  !mark that record as accounted for...
            end
         cnt=cnt + 1
         end
   if cnt=0 then
      for lost_cheminv with barcode=bar
         begin
         print barcode," not in cheminv, found in Lost_Cheminv.  Moving it to Cheminv."
         store cheminv using
            begin
            cheminv_rec=cheminv_rec     !audit bit is set to 1
            ta=tech
```

```
            building=bldg
            room=rm
            other=ot
            end
         cnt=cnt + 1                                    !by this assignment
         erase !remove record from lost_cheminv
         end
   if cnt=0 then              !info about barcoded chemical still not found...
      begin
      print barcode," not found anywhere.  Storing information in Notentered_cheminv."
      if count of notentered_cheminv with barcode = bar = 0 then
        store notentered_cheminv using cheminv_rec=annual_cheminv_rec
      end
!
   erase                      !remove that record from annual_cheminv
   end                        !process_annual_cheminv.dtr
exit
```

```
! find_lost_chemicals.dtr
!
! Written by Bryan O'Malley
! 1988
! purpose: to search the cheminv domain looking for records with the audit bit
!       set to "0".  These records have not been processed in the annual
!       inventorying process and do not belong in the current inventory
!       (cheminv) any longer.  These records will be moved to the lost_cheminv
!       domain where they will permenantly reside unless one of the other
!       process....dtr programs bring the records back to the current inventory.
!
ready cheminv shared write
ready lost_cheminv shared write
!
for cheminv
   if audit="0" then
      begin
      store lost_cheminv using cheminv_rec=cheminv_rec
      erase !clear the record in cheminv after it is copied to lost_cheminv
      end
```

```
! display_notentered_cheminv.dtr
!
! Written by Bryan O'Malley
! 1988
! purpose: display the contents of the notentered_cheminv domain and
!       print that info on the system line printer
!
declare ans pic x(10).
ready notentered_cheminv shared
report notentered_cheminv on tta0:
set report_name= "Barcodes scanned in lab but not found in Cheminv.  Use Store_Chem"
print barcode,ta,building,room,other
end_report
!
print "You may want to log this list to your local printer.  "
print "It also will be printed on the system line printer."
ans = *."yes when ready..."
report notentered_cheminv
set report_name= "Barcodes scanned but not found in Cheminv."/"Treat like new chemicals and Use Store_Chem"
print barcode,ta,building,room,other
end_report
```

```
!Define_New_Files.dtr
!Bryan O'Malley
!init domains each year.  No dups for barcode
!
define file for annual_cheminv supercede, key=barcode;
define file for notentered_cheminv supercede, key=barcode;
```

LIMS Menus

TABLE B-I

MAIN MENU FROM HSE-9 LIMS

HSE-9 LABORATORY INFORMATION MANAGEMENT SYSTEM (LIMS)

HSE-9 LIMS: MAIN MENU

X. SAMPLE MANAGEMENT

A. DATA REDUCTION PROGRAMS

B. DATA ENTRY PROGRAMS

C. DATA REPORTING PROGRAMS

D. MISCELLANEOUS (NONE OF THE ABOVE)

E. QA SECTION LIMS MAINTENANCE

F. BOOKKEEPING AND DATA SEARCHING

Z. EXIT FROM LIMS AND RETURN TO USER PROMPT

ENTER THE LETTER OF YOUR CHOICE AND <CR>, I.E. A <CR>

TABLE B-II

ANALYTICAL SERVICE AGREEMENT AND SAMPLE RECEIVING MENU
CALLED BY HSE-9 LIMS MAIN MENU

HSE-9 LIMS: SAMPLE MANAGEMENT MENU

A. ANALYTICAL AGREEMENT FORM

B. STORE-CUSTOMER
C. NEW-STORE-CUSTOMER
D. FIND-CN2

E. SAMPLES RECEIVED
F. PRINT PREVIOUS REQUEST FORM
G. ADD SN TO EXISTING REQUEST

H. REQUEST-NUMBER PRIORITY SYSTEM

I. LABEL

Y. RETURN TO MAIN MENU

Z. EXIT FROM LIMS. RETURN TO YOUR USER PROMPT.

ENTER THE LETTER OF YOUR CHOICE AND <CR>, I.E. A <CR>

TABLE B-III

DATA REDUCTION MENU CALLED BY HSE-9 LIMS MAIN MENU

HSE-9 LIMS: DATA REDUCTION PROGRAM MENU

A. REDUCE (ALPHA, BETA, H-3, SR-90, GAMMA)

B. GAMS (GAMMA-RAY SPECTROMETRY)
C. NGAM (GAMMA-RAY SPECTROMETRY, AUTO MOD OF SAMPLES)
D. EGAMS (GAMMA-RAY SPECTROMETRY, AUTO DATA ENTRY)

E. GSCAN
F. EFF
G. LSC
H. RAD. SCREENING

I. AA
J. AAS

Y. RETURN TO MAIN LIMS MENU

Z. EXIT FROM LIMS AND RETURN TO USER PROMPT

ENTER THE LETTER OF YOUR CHOICE AND <CR>, I.E. A <CR>

TABLE B-IV

DATA ENTRY MENU CALLED BY HSE-9 LIMS MAIN MENU

HSE-9 LIMS: DATA ENTRY PROGRAM MENU

A. ENTER
B. MSCAN
C. ALL ORGANICS
D. QACHECK (DOES NOT WRITE TO SAMPLES)
E. QACHECK-WRITE (WRITES TO SAMPLES)
F. TA50ENTER
G. SPIKES AND DUPLICATES (INORG & RADIO)
H. FLUB
I. FLUB 50
J. PC-ENTER
K. BATCHNUMBER-CHECK

Y. RETURN TO MAIN LIMS MENU

Z. EXIT FROM LIMS AND RETURN TO USER PROMPT

ENTER THE LETTER OF YOUR CHOICE AND <CR>, I.E. A <CR>

TABLE B-V

REPORT WRITING MENU CALLED BY HSE-9 LIMS MAIN MENU

HSE-9 LIMS: REPORT WRITING PROGRAMS

A. PRELIMINARY REPORT

B. FINAL REPORT FOR INORGANICS, ORGANICS, MSCAN

C. REPORT HSE-7 DATA ELECTRONICALLY

Y. RETURN TO MAIN LIMS MENU

Z. EXIT FROM LIMS AND RETURN TO USER PROMPT

ENTER THE LETTER OF YOUR CHOICE AND <CR>, I.E. A <CR>

TABLE B-VI

MISCELLANEOUS MENU CALLED BY HSE-9 LIMS MAIN MENU

HSE-9 LIMS: MISCELLANEOUS MENU

A. MEAN
B. STDDEV (STANDARD DEVIATION)
C. ALLDATA-SEARCH (ARCHIVE-SEARCH)
D. QA-HELP

E. G. BROOKS FIX
G. LINREG (LINEAR REGRESSION)
H. POLY (POLYNOMINAL FITTING)
I. LSQ (LEAST SQUARES FITTING)

Y. RETURN TO MAIN LIMS MENU

Z. EXIT FROM LIMS AND RETURN TO USER PROMPT

ENTER THE LETTER OF YOUR CHOICE AND <CR>, I.E. A <CR>

TABLE B-VII

QA SECTION MAINTENANCE MENU CALLED BY HSE-9 LIMS MAIN MENU

HSE-9 LIMS: QA SECTION MAINTENANCE MENU

A. SUBMIT
B. TRANS (ARCHIVING OF FORMAL REPORTS)

D. SCHEDULE
E. COMPWORK (WORK COMPLETED)
F. QASECTION-REPORT

G. ORGANIC-ARCHIVE (ARCHIVING OF ORGANICS W/O FORMAL REPORT)
H. CVS-STORE ROUTINES
I. ANALYST PROFICIENCY
J. AUDITS-INTERNAL AUTOMATED
K. SURROGATE CHART PLOTS

Y. RETURN TO MAIN LIMS MENU

Z. EXIT FROM LIMS AND RETURN TO USER PROMPT

ENTER THE LETTER OF YOUR CHOICE AND <CR>, I.E. A <CR>

TABLE B-VIII

BOOKKEEPING AND DATA SEARCHING MENU CALLED BY HSE-9 LIMS MAIN MENU

HSE-9 LIMS: BOOKKEEPING AND DATA SEARCHING MENU

A. ORGANIC SAMPLE TRACKING
B. SCHEDULE
C. OVERDUE WORKLIST (NOT YET FUNCTIONAL)
D. DATABASE LISTINGS
E.G. ORGS, OWNER, ANALYST, ANALYSIS, ETC.

E. ARCHIVE-SEARCH (ALLDATA-SEARCH)

F. GENERATE CUSTOMER LIST
G. CHEMICAL INVENTORY
H. ANALYST REASSIGNMENT-INORGANIC SECTION

Y. RETURN TO MAIN LIMS MENU

Z. EXIT FROM LIMS AND RETURN TO USER PROMPT

ENTER THE LETTER OF YOUR CHOICE AND <CR>, I.E. A <CR>

TABLE B-IX

ORGANIC SECTION DATA ENTRY MENU CALLED BY HSE-9 DATA ENTRY MENU

HSE-9 LIMS: ORGANIC SECTION DATA ENTRY MENU

A. VOLATILE DATA ENTRY (SAMPLES, DUPS, BLANKS, AND SPIKES)

B. SEMIVOLATILES

C. PCB'S (SPREAD SHEET VERSION)

D. HERBICIDES

E. PHENOLS

F. PESTICIDES

G. POREGAS

H. INDUSTIRAL HYGIENE (ANALYSIS = 04, 07, AND/OR BREATH-AIR))
I. TENTITIVELY IDENTIFIED COMPOUNDS (TIC)
J. PCB'S (OLD DTR VERSION)

K. HIGH EXPLOSIVES

Y. RETURN TO MAIM LIMS MENU

Examples of Analytical Reports

REPORT NUMBER: 7696

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: BATES on 14-Aug-1989

ANALYSIS: SR-90 REQUEST NUMBER: 10425 MATRIX: SS ANALYST: Richard Peters PROGRAM CODE: WA52

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: AL-LA-46

ANALYTICAL TECHNIQUE: PC ANALYTICAL PROCEDURE :

CUSTOMER NUM	SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
DP@DPS-1	89.14395	0.26	0.17	PCI/G	8/07/89	
LA@TOTAVI	89.14396	0.12	0.16	PCI/G	8/07/89	
LA@OTOWI	89.14397	0.39	0.27	PCI/G	8/07/89	

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: BATES on 14-Aug-1989

ANALYSIS: SR-90 REQUEST NUMBER: 10425 MATRIX: SS ANALYST: Richard Peters PROGRAM CODE: WA52

OWNER: Max Maes GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0817 TASK-ID: AL-LA-46

There were no open (non-blind) Quality Control materials run with the samples reported above for one of the following reasons:

____ Only qualitative data requested

____ No QC samples run with this sample batch.

____ No QC samples for this constituent and matrix type available within HSE-9

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
89.14411	5.22	0.32	PCI/G	5.6	0.6	8/14/89	UNDER CONTROL

Analyst	Section Leader	QA Officer
Date	Date	Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

Fig. B-1. Single analysis analytical report for inorganic or radiochemistry.

REPORT NUMBER: 7695

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: CB on 14-Aug-1989

REQUEST NUMBER: 10612 MATRIX: W ANALYST: Charles T. Apel PROGRAM CODE: M211

OWNER: Richard Romero GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-2212 TASK-ID: 57

CUSTOMER NUM	SAMPLE NUM	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
89.00051 RR	89.16095	BA	0.01	0.003	MG/L	8/14/89	3010
89.00051 RR	89.16095	CD	< 0.08		MG/L	8/14/89	3010
89.00051 RR	89.16095	CR	< 0.1		MG/L	8/14/89	3010
89.00052 RR	89.16096	BA	0.07	0.007	MG/L	8/14/89	3010
89.00052 RR	89.16096	CD	< 0.08		MG/L	8/14/89	3010
89.00052 RR	89.16096	CR	< 0.1		MG/L	8/14/89	3010

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: CB on 14-Aug-1989

REQUEST NUMBER: 10612 MATRIX: W ANALYST: Charles T. Apel PROGRAM CODE: M211

OWNER: Richard Romero GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-2212 TASK-ID: 57

CUSTOMER NUM	SAMPLE NUM	ANALYSIS	RESULT	UNCER	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCER	COMPLETION DATE	COMMENT
00.20193	00.20193	BA	11.	1.1	MG/L	10.	1.	8/14/89	UNDER CONTROL
00.20193	00.20193	CD	10.3	1.	MG/L	10.	1.	8/14/89	UNDER CONTROL
00.20193	00.20193	CR	10.4	1.	MG/L	10.	1.	8/14/89	UNDER CONTROL

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	ANALYSIS	RESULT	UNCER	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCER	COMPLETION DATE	COMMENT
89.16076	BA	1.04	0.1	MG/L	1.	0.1	8/14/89	UNDER CONTROL
89.16076	CD	4.1	0.4	MG/L	4.	0.4	8/14/89	UNDER CONTROL
89.16076	CR	5.1	0.4	MG/L	4.	0.4	8/14/89	WARNING 2-3 SIG

Analyst	Section Leader	QA Officer
Date	Date	Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

Fig. B-2. Multiple analysis analytical report for inorganic or radoichemistry.

REPORT NUMBER: 7626

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: MCW on 9-Aug-1989

ICP MASS SCAN

REQUEST NUMBER: 10629 MATRIX: W ANALYST: Mary Carol Williams PROGRAM CODE: WA57

OWNER: Janeen Robertson GROUP: HSE-5 MAIL-STOP: K494 PHONE: 7-7801 TASK-ID:

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
89-569-B	89.16195	AG	< 50.		UG/L	8/07/89	
89-569-B	89.16195	AS	19.	57.	MG/L	8/07/89	
.							
.							
.							
89-569-B	89.16195	ZN	4.7	14.1	MG/L	8/07/89	
89-569-B	89.16195	ZR	< 50.		UG/L	8/07/89	

********** HSE-9 QUALITY ASSURANCE REPORT *********

ICP MASS SCAN

Prepared by: MCW on 9-Aug-1989

REQUEST NUMBER: 10629 MATRIX: W ANALYST: Mary Carol Williams PROGRAM CODE: WA57

OWNER: Janeen Robertson GROUP: HSE-5 MAIL-STOP: K494 PHONE: 7-7801 TASK-ID:

CUSTOMER NUM	SAMPLE NUM	ANALYSIS	RESULT	UNCER	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCER	COMPLETION DATE	COMMENT
00.98625	00.98625	AG	70.	210.	UG/L	100.	10.	8/07/89	UNDER CONTROL
00.98625	00.98625	AS	81.	240.	UG/L	100.	10.	8/07/89	UNDER CONTROL
.									
.									
.									
00.98625	00.98625	ZN	65.	189.	UG/L	100.	10.	8/07/89	UNDER CONTROL
00.98625	00.98625	ZR	< 1.		UG/L			8/07/89	UNDER CONTROL

The following analyst QA's have no CV data for comparison

CUSTOMER NUM	SAMPLE NUM	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
00.98625	00.98625	RE	< 1.		UG/L	8/07/89	NO DATA AVAIL.

Analyst Section Leader QA Officer

Date Date Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

Fig. B-3. MSCAN analytical report.

REPORT NUMBER: 7698

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: TRB on 15-Aug-1989

EPA VOLATILES

REQUEST NUMBER: 10659 MATRIX: SS ANALYST: Toney Begay PROGRAM CODE: CU1C

OWNER: Dave McInroy GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0819 TASK-ID:

CUSTOMER NUMBER	SAMPLE NUMBER	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
LAGC-01-05	89.16412	67641	< 20.		UG/KG	8/10/89		Acetone
LAGC-01-05	89.16412	107028	< 100.		UG/KG	8/10/89		Acrolein
LAGC-01-05	89.16412	107131	< 100.		UG/KG	8/10/89		Acrylonitrile
LAGC-01-05	89.16412	71432	< 5.		UG/KG	8/10/89		Benzene
LAGC-01-05	89.16412	108861	< 5.		UG/KG	8/10/89		Bromobenzene
.								
.								
.								
LAGC-01-05	89.16412	95636	< 5.		UG/KG	8/10/89		1,2,4-Trimethylbenzene
LAGC-01-05	89.16412	108678	< 5.		UG/KG	8/10/89		1,3,5-Trimethylbenzene
LAGC-01-05	89.16412	108054	< 10.		UG/KG	8/10/89		Vinyl acetate
LAGC-01-05	89.16412	75014	< 10.		UG/KG	8/10/89		Vinyl chloride
LAGC-01-05	89.16412	1330207	< 5.		UG/KG	8/10/89		Mixed-Xylenes (o ± m ± p)

Fig. B-4. Organic analytical report.

REPORT NUMBER: 7698 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT **********

Prepared by: TRB on 15-Aug-1989

EPA VOLATILES

REQUEST NUMBER: 10659 MATRIX: SS ANALYST: Toney Begay PROGRAM CODE: CU1C

OWNER: Dave McInroy GROUP: HSE-8 MAIL-STOP: K490 PHONE: 7-0819 TASK-ID:

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	ANALYSIS	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT	COMPOUND-NAME
89.16599	67641	177.	53.1	UG/KG			8/10/89	OUT OF CONTROL	Acetone
89.16599	107028	< 100.		UG/KG			8/10/89	UNDER CONTROL	Acrolein
.									
.									
.									
89.16599	75014	< 10.		UG/KG			8/10/89	UNDER CONTROL	Vinyl chloride
89.16599	1330207	< 5.		UG/KG			8/10/89	UNDER CONTROL	Mixed-Xylenes (o ± m ± p)

SURROGATE RESULTS FOR EPA VOLATILES

Surrogate 1 = 1,2-Dichloroethane d4 (CAS # = 17060070)
Surrogate 2 = Toluene d8 (CAS # = 2037265)
Surrogate 3 = 4-Bromofluorobenzene (CAS # = 460004)

SAMPLE NUMBER	UNITS	Surrogate 1	Surrogate 2	Surrogate 3	COMPLETION DATE
89.16412	%	83.2	86.9	103.	10-Aug-1989
89.16599	%	110.	89.5	102.	10-Aug-1989
EPA Limits:					
Water	%	76 - 114	88 - 110	86 - 115	
Soil	%	70 - 121	81 - 117	74 - 121	

Analyst Section Leader QA Officer

Date Date Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

REPORT NUMBER: 7652

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: DMS on 13-Aug-1989

POLYCHLORINATED BIPHENYLS

REQUEST NUMBER: 10673 MATRIX: MOL ANALYST: Dee Seitz PROGRAM CODE: WA56

OWNER: Lee Esquibel GROUP: HSE-7 MAIL-STOP: E518 PHONE: 7-7316 TASK-ID:

SUMMARY of TOTAL PCB's for customer samples on this report

CUSTOMER NUM	SAMPLE NUM	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
41-4-5	89.16597	1336363	< 4.		UG/G	8/13/89		Mixed-Aroclor

DETAILED PCB DATA for customer samples on this report

CUSTOMER NUM	SAMPLE NUM	ANALYSIS	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT	COMPOUND NAME
41-4-5	89.16597	1336363	< 4.		UG/G	8/13/89		Mixed-Aroclor
41-4-5	89.16597	53469219	< 4.		UG/G	8/13/89		Aroclor 1242
41-4-5	89.16597	11097691	< 4.		UG/G	8/13/89		Aroclor 1254
41-4-5	89.16597	11096825	< 4.		UG/G	8/13/89		Aroclor 1260

Fig. B-5. Organic analytical report for PCBs.

REPORT NUMBER: 7652 (continued)

********** HSE-9 QUALITY ASSURANCE REPORT **********

Prepared by: DMS on 13-Aug-1989

POLYCHLORINATED BIPHENYLS

REQUEST NUMBER: 10673 MATRIX: MOL ANALYST: Dee Seitz PROGRAM CODE: WA56

OWNER: Lee Esquibel GROUP: HSE-7 MAIL-STOP: E518 PHONE: 7-7316 TASK-ID:

CUSTOMER NUM	SAMPLE NUM	ANALYSIS	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT	COMPOUND
00.96842	00.96842	1336363	17.	3.4	UG/G	24.6	2.5	8/13/89	UNDER CONTROL	Mixed-Aroclor
00.96842	00.96842	53469219	< 4.		UG/G			8/13/89	UNDER CONTROL	Aroclor 1242
00.96842	00.96842	11097691	< 4.		UG/G			8/13/89	UNDER CONTROL	Aroclor 1254
00.96842	00.96842	11096825	17.	3.4	UG/G	24.6	2.5	8/13/89	UNDER CONTROL	Aroclor 1260

SUMMARY OF CONTROL STATUS OF BLIND QA SAMPLES RUN WITH THIS BATCH

SAMPLE NUM	ANALYSIS	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT	COMPOUND-NAME
89.16598	1336363	37.5	7.5	UG/G	57.	6.	8/13/89	WARNING 2-3 SIG	Mixed-Aroclor
89.16598	53469219	< 4.		UG/G			8/13/89	UNDER CONTROL	Aroclor 1242
89.16598	11097691	< 4.		UG/G			8/13/89	UNDER CONTROL	Aroclor 1254
89.16598	11096825	37.5	7.5	UG/G	57.	6.	8/13/89	WARNING 2-3 SIG	Aroclor 1260

Analyst Section Leader QA Officer

Date Date Date

The control status of the preceeding data was evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

Reference Material Data Compilation

TABLE B-X

LITERATURE SURVEYED

Journal	Volume No.
Acta Chimica Hungarica	113 - 119
Acta Chimica Scandanavia	36A - 42A 39B
Advances in Inorganic and Radiochemistry	28 - 31
American Laboratory	11 - 20
American Mineralogist	67 - 70
Analusis	1 - 16
Analyst	97 - 113
Analytica Chimica Acta	53 - 215
Analytical Chemistry	44 - 60
Analytical Instrumentation	13 - 14
Analytical Letters	1 - 20
Analytical Proceedings	23 - 24
Annales de la Societe Geologique de Belgique	91 - 111
Applied Spectroscopy	25 - 42
Atomic Absorption Newsletter	1 - 18
Atomic Spectrometry	1 - 9
Biological Trace Element Research	1 - 11
Bulletin des Societes Chimiques Belges	80 - 97
Bunseki Kagaku	22 - 37
Canadian Journal of Earth Sciences	9 - 24
Canadian Journal of Spectroscopy	20 - 33
Chemical Geology	13 - 68
Comptes-Rendus Hebdomadaires des Seances de l'Academie des Sciences (Paris)	272 - 307
Contributions to Mineralogy and Petrology	36 - 100
Earth and Planetary Science Letters	1 - 90
Economic Geology	67 - 80
Environmental Geology	1 - 5
Environmental Letters	1 - 10
Environmental Pollution	29A - 39A 1B - 11B
Environmental Research	1 - 38
Environmental Science and Technology	5 - 20
Fresenius Zeitschrift fur Analytische Chemie	244 - 332
Fuel	64 - 67
Geochemistry International (trans. from Geokhimiya)	9 - 25
Geophysical Research Letters	1 - 7
Geochimica et Cosmochimica Acta	36 - 52
Geostandards Newsletter	1 - 12
Geotechnical Testing Journal	1 - 7
Geochemical Journal	7 - 21
Health Physics	49 - 55
ICP Information Newsletter	10 - 12
International Journal of Applied Radiation and Isotopes	23 - 36
International Journal of Environmental Analytical Chemistry	1 - 23
International Journal of Environmental Studies	1 - 25
Journal of Analytical Atomic Spectrometry	1 - 3
Journal of Analytical Chemistry of USSR (trans. of Zhurnal Analiticheskoi Khimii)	26 - 41
Journal of Chromatographic Science	24 - 26
Journal of Environmental Quality	1 - 14
Journal of Environmental Radioactivity	1 - 3
Journal of Environmental Science and Health	11 - 20
Journal of Geochemical Exploration	1 - 30
Journal of Petrology	12 - 29
Journal of Radioanalytical and Nuclear Chemistry	10 - 128
Journal of Research of the USGS	1 - 6
Journal of the Association of Official Analytical Chemists	55 - 68
Journal of the Geological Society (London)	127 - 143
Journal of the Soil Science Society of America	46 - 48
Journal of the South African Chemical Institute	21 - 37
Journal of Trace and Microprobe Techniques	1 - 5
Journal of Volcanology and Geothermal Research	1 - 26
Lithos	4 - 21
Marine Geology	12 - 44

TABLE B-X (cont)

Journal	Volume No.
Mass Spectroscopy	31 - 32
Meteoritics	1 - 21
Microchemical Journal	17 - 28
Mikrochimica Acta (Wien)	1972 - 1985
Mineralogy Magazine	40 - 44
Nuclear Instruments and Methods	114 - 172
Precambrian Research	1 - 14
Radiochimica Acta	17 - 43
Radiochemical and Radioanalytical Letters	1 - 59
Sedimentology	16 - 34
Spectrochimica Acta	27B - 43B
Spectroscopy Letters	17 - 19
Talanta	19 - 35
X-ray Spectrometry	1 - 17

TABLE B-XI

DOMAIN AND RECORD DEFINITIONS OF SRMS

```
DOMAIN SRMS USING SRMS_REC ON H9DATA:[DATBAS]NEWSRM.DAT;

RECORD SRMS_REC USING
01 SRMS_REC.
    05  MAT     PIC X(5).
    05  ELE     PIC X(10).
    05  CONC    PIC IS S9(5)V9(4)
                EDIT_STRING IS  -Z(4)9.9(4).
    05  UNCER   PIC IS S9(5)V9(4)
                EDIT_STRING IS  -Z(4)9.9(4).
    05  UNITS   PIC X(6).
    05  COMMENT PIC X(2).
    05  S       PIC X(1).
    05  METHOD  PIC X(5).
    05  REFERENCE.
        10  CODE    PIC X(5).
        10  NUM     PIC IS S9(2)
                EDIT_STRING IS  -9(2).
    05  STATUS  PIC X(1).
```

TABLE B-XII

DOMAIN AND RECORD DEFINITION OF REFS

```
DOMAIN REFS USING NEWREF_REC ON H9DATA:[DATBAS]NEWREF.DAT;

RECORD NEWREF_REC USING
01 NEWREF_REC.
    05  REFERENCE.
        10  CODE    PIC X(5).
        10  N       PIC IS S9(2)
                EDIT_STRING IS  -9(2).
    05  DESCRIP1        PIC X(60)
                        QUERY_NAME IS D1.
    05  DESCRIP2        PIC X(60)
                        QUERY_NAME IS D2.
    05  DESCRIP3        PIC X(60)
                        QUERY_NAME IS D3.
    05  DESCRIP4        PIC X(60)
                        QUERY_NAME IS D4.
```

TABLE B-XIII

DOMAIN AND RECORD DEFINITION OF SRMTABLE

```
DOMAIN SRMTABLE USING SRMTABLE_REC
 ON SRMTAB.DAT;

RECORD SRMTABLE_REC USING
01 SRMTABLE_REC.
    05  SRM     PIC X(5).
    05  ELEMENT PIC X(10).
    05  UNITS   PIC X(6).
    05  NBSMEAN PIC IS S9(5)V9(4)
                EDIT_STRING IS  -Z(4)9.9(4).
    05  NBSSD   PIC IS S9(5)V9(4)
                EDIT_STRING IS  -Z(4)9.9(4).
    05  CONMEAN PIC IS S9(5)V9(4)
                EDIT_STRING IS  -Z(4)9.9(4).
    05  CONSD   PIC IS S9(5)V9(4)
                EDIT_STRING IS  -Z(4)9.9(4).
    05  CONN    PIC X(3).
    05  MEDIAN  PIC IS S9(5)V9(4)
                EDIT_STRING IS  -Z(4)9.9(4).
    05  LOWRANGE        PIC IS S9(5)V9(4)
                         EDIT_STRING IS  -Z(4)9.9(4)
                         QUERY_NAME IS LR.
    05  HIRANGE PIC IS S9(5)V9(4)
                EDIT_STRING IS  -Z(4)9.9(4).
    05  AAMEAN  PIC IS S9(5)V9(4)
                EDIT_STRING IS  -Z(4)9.9(4).
    05  AASD    PIC IS S9(5)V9(4)
                EDIT_STRING IS  -Z(4)9.9(4).
    05  AAN     PIC X(3).
    05  NAAMEAN PIC IS S9(5)V9(4)
                EDIT_STRING IS  -Z(4)9.9(4).
    05  NAASD   PIC IS S9(5)V9(4)
                EDIT_STRING IS  -Z(4)9.9(4).
    05  NAAN    PIC X(3).
    05  ICPESMEAN       PIC IS S9(5)V9(4)
                         EDIT_STRING IS  -Z(4)9.9(4)
                         QUERY_NAME IS ICP.
    05  ICPESSD PIC IS S9(5)V9(4)
                EDIT_STRING IS  -Z(4)9.9(4).
    05  ICPESN  PIC X(3).
    05  XRFMEAN PIC IS S9(5)V9(4)
                EDIT_STRING IS  -Z(4)9.9(4).
    05  XRFSD   PIC IS S9(5)V9(4)
                EDIT_STRING IS  -Z(4)9.9(4).
    05  XRFN    PIC X(3).
    05  PAAMEAN PIC IS S9(5)V9(4)
                EDIT_STRING IS  -Z(4)9.9(4).
    05  PAASD   PIC IS S9(5)V9(4)
                EDIT_STRING IS  -Z(4)9.9(4).
    05  PAAN    PIC X(3).
    05  OESMEAN PIC IS S9(5)V9(4)
                EDIT_STRING IS  -Z(4)9.9(4).
    05  OESSD   PIC IS S9(5)V9(4)
                EDIT_STRING IS  -Z(4)9.9(4).
    05  OESN    PIC X(3).
    05  OTHERMEAN1      PIC IS S9(5)V9(4)
                         EDIT_STRING IS  -Z(4)9.9(4)
                         QUERY_NAME IS OM1.
    05  OTHERSD1        PIC IS S9(5)V9(4)
                         EDIT_STRING IS  -Z(4)9.9(4)
                         QUERY_NAME IS OSD1.
    05  OTHERN1 PIC X(3).
    05  OTHERMETHOD1    PIC X(5)
                         QUERY_NAME IS OMETH1.
```

TABLE B-XIII (cont)

```
05  OTHERMEAN2      PIC IS S9(5)V9(4)
                    EDIT_STRING IS  -Z(4)9.9(4)
                    QUERY_NAME IS OM2.
05  OTHERSD2        PIC IS S9(5)V9(4)
                    EDIT_STRING IS  -Z(4)9.9(4)
                    QUERY_NAME IS OSD2.
05  OTHERN2 PIC X(3).
05  OTHERMETHOD2    PIC X(5)
                    QUERY_NAME IS OMETH2.
```

TABLE B-XIV

COMPARISON OF CONSENSUS VALUES AND METHOD MEANS FOR USGS BCR-1

Method	Mean ± Std. Dev.	No.
Ag (ppb)		
CONS	28 ± 5	55
AA	28 ± 9	9
NAA	27 ± 5	43
XRF	32	1
OES	20	1
EXRF	< 4000	
ICPES	< 3000	
IDMS	27 ± 3	3
NM	35	1
SSMS	32	2
Al (%)		
CONS	7.22 ± 0.13	186
AA	7.23 ± 0.13	35
NAA	7.23 ± 0.24	39
ICPES	7.19 ± 0.14	8
XRF	7.22 ± 0.19	46
OES	7.10 ± 0.22	4
14NAA	7.12 ± 0.16	4
ABS	6.98	1
CHEM	7.26 ± 0.06	3
COLOR	7.29 ± 0.20	20
CPAA	7.12	1
DCPES	7.25 ± 0.11	4
FE	7.47	1
GRAV	7.22 ± 0.13	15
POT	7.62	1
PROBE	7.23 ± 0.15	8
TCGS	7.37	1
TITR	7.32	1
UU	7.22 ± 0.12	11

TABLE B-XV

WHOLE MATERIAL CONCENTRATION SUMMATIONS OF MAJOR AND MINOR ELEMENTS FOR SELECTED NIST SRMS

Oxide and elemental whole rock summations (%)

Oxide	RV ± SD	Element	RV ± SD
SiO2	54.11 ± 0.36	Al	7.22 ± 0.13
Al2O3	13.65 ± 0.25	Ba	0.068 ± 0.002
Fe2O3	3.59 ± 0.28	C	0.008 ± 0.004
FeO	8.88 ± 0.15	Ca	4.97 ± 0.11
Fe2O3-T	(13.42 ± 0.36)	F	0.049 ± 0.005
MnO	0.18 ± 0.01	Fe	9.38 ± 0.25
MgO	3.48 ± 0.13	H (total)	0.17 ± 0.03
CaO	6.95 ± 0.15	K	1.40 ± 0.03
Na2O	3.27 ± 0.12	Mg	2.10 ± 0.08
K2O	1.69 ± 0.04	Mn	0.137 ± 0.009
TiO2	2.24 ± 0.10	Na	2.43 ± 0.09
P2O5	0.36 ± 0.02	O	45.1 ± 0.4
H2O+	0.75 ± 0.19	P	0.156 ± 0.010
H2O-	0.81 ± 0.22	S	0.041 ± 0.005
CO2	0.03 ± 0.02	Si	25.27 ± 0.17
F	0.049 ± 0.005	Sr	0.033 ± 0.001
S	0.041 ± 0.005	Ti	1.34 ± 0.06
BaO	0.080 ± 0.002	V	0.041 ± 0.003
		Zn	0.013 ± 0.001
Total	100.16 ± 0.67	Zr	0.019 ± 0.001
		Total	99.95 ± 0.55

APPENDIX C

SUMMARY TABLES OF QUALITY ASSURANCE DATA

TABLE C-I

SUMMARY OF HSE-9 QUALITY ASSURANCE TESTS FOR ANALYSES COMPLETED BY HSE-9 DURING 1990

Stable Element Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
B	Ag	-	-	5	5	91	5.2	2	100	-	-	---
C	Ag	-	-	-	-	36	0.0	-	-	-	-	---
F	Ag	-	-	1	1	5	16.7	1	100	-	-	---
M	Ag	-	6	2	8	71	10.1	8	100	-	-	1.08 ± 0.18
S	Ag	-	7	98	105	1378	7.1	57	95	2	4	9.03 ± 23.59
W	Ag	-	72	287	359	694	34.1	325	98	1	1	1.03 ± 0.13
B	Al	-	-	5	5	91	5.2	5	100	-	-	1.03 ± 0.03
C	Al	-	-	-	-	3	0.0	-	-	-	-	---
F	Al	-	-	-	-	2	0.0	-	-	-	-	---
M	Al	-	-	-	-	1	0.0	-	-	-	-	---
S	Al	-	-	94	94	1036	8.3	93	97	2	1	1.00 ± 0.04
W	Al	-	27	166	193	145	57.1	159	92	2	6	1.33 ± 1.53
B	As	-	-	15	15	148	9.2	15	93	7	-	1.02 ± 0.12
C	As	-	-	-	-	41	0.0	-	-	-	-	---
F	As	-	-	1	1	5	16.7	1	100	-	-	---
M	As	-	7	4	11	124	8.1	11	64	9	27	0.84 ± 0.32
S	As	-	6	96	102	1382	6.9	94	100	-	-	1.25 ± 1.49
W	As	-	70	269	339	542	38.5	305	96	3	1	1.03 ± 0.14
B	Au	-	-	5	5	91	5.2	2	100	-	-	---
C	Au	-	-	-	-	3	0.0	-	-	-	-	---
F	Au	-	-	1	1	7	12.5	1	100	-	-	---
M	Au	-	-	-	-	6	0.0	-	-	-	-	---
S	Au	-	1	96	97	1156	7.7	44	100	-	-	1.14 ± 0.27
W	Au	-	2	18	20	15	57.1	20	100	-	-	0.84
B	B	-	2	6	8	7	53.3	8	100	-	-	1.05 ± 0.19
F	B	-	-	1	1	1	50.0	1	100	-	-	---
M	B	-	-	-	-	6	0.0	-	-	-	-	---
S	B	-	6	3	9	135	6.3	8	38	-	63	1.80 ± 1.42
W	B	-	31	48	79	181	30.4	79	97	-	3	1.01 ± 0.07
B	Ba	-	-	5	5	91	5.2	5	100	-	-	1.12 ± 0.22
C	Ba	-	-	-	-	34	0.0	-	-	-	-	---
F	Ba	-	3	5	8	8	50.0	8	88	-	13	1.22 ± 0.27
M	Ba	-	8	-	8	69	10.4	8	100	-	-	0.95 ± 0.08
S	Ba	-	16	127	143	1475	8.8	127	89	4	7	0.95 ± 0.26
W	Ba	-	78	338	416	497	45.6	382	98	1	1	1.03 ± 0.08
B	Be	-	-	3	3	52	5.5	-	-	-	-	---
C	Be	-	-	-	-	3	0.0	-	-	-	-	---
F	Be	-	115	145	260	1014	20.4	236	97	2	-	1.00 ± 0.09
M	Be	-	2	-	2	10	16.7	2	50	-	50	0.65
S	Be	-	11	18	29	248	10.5	29	72	17	10	0.99 ± 0.64
W	Be	-	28	312	340	260	56.7	306	98	1	-	1.03 ± 0.12
C	Bi	-	-	-	-	3	0.0	-	-	-	-	---

TABLE C-I (cont)

Stable Element Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
F	Bi	-	-	1	1	5	16.7	1	100	-	-	---
M	Bi	-	-	-	-	6	0.0	-	-	-	-	---
S	Bi	-	1	2	3	155	1.9	2	100	-	-	2.23
W	Bi	-	2	17	19	15	55.9	19	100	-	-	---
W	Bio O2 Demand	-	-	3	3	-	100.0	3	67	-	33	1.76 ± 0.68
B	Br	-	-	8	8	121	6.2	8	88	13	-	1.09 ± 0.14
F	Br	-	-	1	1	3	25.0	1	100	-	-	---
M	Br	-	-	-	-	5	0.0	-	-	-	-	---
S	Br	-	-	94	94	1000	8.6	45	96	4	-	1.05 ± 0.18
W	Br	-	11	6	17	53	24.3	17	59	6	35	1.20 ± 0.32
S	C	-	-	1	1	-	100.0	-	-	-	-	---
B	Ca	-	-	5	5	91	5.2	5	100	-	-	0.79
F	Ca	-	5	2	7	5	58.3	7	86	14	-	1.17 ± 0.23
S	Ca	-	-	94	94	1000	8.6	93	96	4	-	0.99 ± 0.10
W	Ca	-	24	54	78	219	26.3	78	91	9	-	1.16 ± 0.10
B	Cd	-	-	3	3	82	3.5	3	100	-	-	1.03 ± 0.08
C	Cd	-	-	-	-	39	0.0	-	-	-	-	---
F	Cd	-	10	30	40	15	72.7	40	100	-	-	1.02 ± 0.06
M	Cd	-	6	3	9	112	7.4	9	100	-	-	0.98 ± 0.08
S	Cd	-	12	11	23	334	6.4	23	96	-	4	1.44 ± 2.02
W	Cd	-	79	357	436	613	41.6	402	99	-	1	1.01 ± 0.14
B	Ce	-	-	5	5	91	5.2	5	100	-	-	0.95 ± 0.04
C	Ce	-	-	-	-	3	0.0	-	-	-	-	---
F	Ce	-	-	1	1	6	14.3	1	100	-	-	---
M	Ce	-	-	-	-	6	0.0	-	-	-	-	---
S	Ce	-	1	96	97	1155	7.7	77	95	1	4	1.93 ± 5.51
W	Ce	-	3	17	20	14	58.8	20	100	-	-	---
B	Cl	-	-	5	5	91	5.2	5	100	-	-	0.84 ± 0.03
M	Cl	-	-	-	-	9	0.0	-	-	-	-	---
S	Cl	-	-	94	94	1042	8.3	66	89	6	5	1.18 ± 0.31
W	Cl	-	38	59	97	292	24.9	96	98	1	1	1.03 ± 0.12
W	Cl2 (Free)	-	-	7	7	-	100.0	6	100	-	-	0.92 ± 0.02
S	CN	-	-	-	-	12	0.0	-	-	-	-	---
W	CN	-	27	106	133	337	28.3	132	89	9	2	0.86 ± 0.10
M	CO	-	-	-	-	8	0.0	-	-	-	-	---
M	CO2	-	-	-	-	1	0.0	-	-	-	-	---
M	CO2	-	-	-	-	7	0.0	-	-	-	-	---
B	Co	-	-	5	5	-	100.0	5	80	20	-	1.02 ± 0.15
C	Co	-	-	-	-	3	0.0	-	-	-	-	---
F	Co	-	-	2	2	5	28.6	2	100	-	-	0.68
M	Co	-	-	-	-	6	0.0	-	-	-	-	---
S	Co	-	1	96	97	1155	7.7	94	93	5	2	0.96 ± 0.19
W	Co	-	9	100	109	45	70.8	75	99	1	-	1.04 ± 0.28
C	COD	-	-	-	-	4	0.0	-	-	-	-	---

TABLE C-I (cont)

Stable Element Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
W	COD	-	13	29	42	411	9.3	42	100	-	-	1.00 ± 0.13
W	Conductivity	-	21	51	72	154	31.9	72	83	11	6	0.91 ± 0.07
B	Cr	-	-	5	5	118	4.1	5	100	-	-	0.94 ± 0.05
C	Cr	-	-	-	-	36	0.0	-	-	-	-	---
F	Cr	-	26	10	36	27	57.1	35	94	-	6	1.02 ± 0.22
M	Cr	-	6	5	11	94	10.5	11	100	-	-	0.98 ± 0.10
S	Cr	-	10	98	108	1297	7.7	107	91	5	5	1.01 ± 0.27
W	Cr	-	67	339	406	677	37.5	372	98	2	-	1.06 ± 0.17
B	Cs	-	6	10	16	115	12.2	16	100	-	-	1.00 ± 0.17
C	Cs	-	-	-	-	3	0.0	-	-	-	-	---
F	Cs	-	-	1	1	5	16.7	1	100	-	-	---
M	Cs	-	-	-	-	6	0.0	-	-	-	-	---
S	Cs	-	1	96	97	1155	7.7	88	92	7	1	0.96 ± 0.23
W	Cs	-	2	17	19	15	55.9	19	100	-	-	---
B	Cu	-	-	5	5	91	5.2	5	100	-	-	---
C	Cu	-	-	-	-	3	0.0	-	-	-	-	---
F	Cu	-	3	12	15	14	51.7	14	93	-	7	1.14 ± 0.25
M	Cu	-	-	-	-	6	0.0	-	-	-	-	---
S	Cu	-	10	107	117	1245	8.6	106	98	-	2	1.01 ± 0.36
W	Cu	-	34	250	284	517	35.5	250	96	2	2	1.04 ± 0.24
B	Dy	-	-	5	5	91	5.2	2	50	-	50	1.79
C	Dy	-	-	-	-	3	0.0	-	-	-	-	---
F	Dy	-	-	1	1	5	16.7	1	100	-	-	---
M	Dy	-	-	-	-	6	0.0	-	-	-	-	---
S	Dy	-	1	96	97	1155	7.7	69	97	1	1	1.11 ± 0.45
W	Dy	-	2	17	19	15	55.9	19	100	-	-	---
C	Er	-	-	-	-	3	0.0	-	-	-	-	---
F	Er	-	-	1	1	5	16.7	1	100	-	-	---
M	Er	-	-	-	-	6	0.0	-	-	-	-	---
S	Er	-	1	2	3	155	1.9	1	100	-	-	4.60
W	Er	-	2	17	19	15	55.9	19	100	-	-	---
B	Eu	-	-	5	5	91	5.2	5	100	-	-	0.91 ± 0.05
C	Eu	-	-	-	-	3	0.0	-	-	-	-	---
F	Eu	-	-	1	1	5	16.7	1	100	-	-	---
M	Eu	-	-	-	-	6	0.0	-	-	-	-	---
S	Eu	-	1	96	97	1155	7.7	70	93	6	1	1.00 ± 0.40
W	Eu	-	2	17	19	15	55.9	19	100	-	-	---
B	F	-	1	12	13	81	13.8	13	100	-	-	1.05 ± 0.21
M	F	-	-	-	-	5	0.0	-	-	-	-	---
S	F	-	1	6	7	66	9.6	7	100	-	-	1.05 ± 0.14
W	F	-	52	78	130	285	31.3	130	100	-	-	1.04 ± 0.10
B	Fe	-	-	5	5	91	5.2	5	80	20	-	0.93 ± 0.03
F	Fe	-	8	15	23	29	44.2	23	78	4	17	1.27 ± 0.71
S	Fe	-	3	94	97	1091	8.2	96	99	1	-	0.99 ± 0.06

TABLE C-I (cont)

Stable Element Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
W	Fe	-	27	84	111	480	18.8	111	96	-	4	1.03 ± 0.12
M	Flash Point	-	-	12	12	35	25.5	12	100	-	-	1.00 ± 0.01
W	Flash Point	-	-	-	-	4	0.0	-	-	-	-	---
B	Ga	-	-	5	5	91	5.2	3	100	-	-	---
C	Ga	-	-	-	-	3	0.0	-	-	-	-	---
F	Ga	-	-	1	1	5	16.7	1	100	-	-	---
M	Ga	-	-	-	-	6	0.0	-	-	-	-	---
S	Ga	-	1	96	97	1155	7.7	75	95	4	1	0.98 ± 0.31
W	Ga	-	2	17	19	15	55.9	19	100	-	-	---
C	Gd	-	-	-	-	3	0.0	-	-	-	-	---
F	Gd	-	-	-	-	5	0.0	-	-	-	-	---
M	Gd	-	-	-	-	6	0.0	-	-	-	-	---
S	Gd	-	1	2	3	155	1.9	2	100	-	-	2.55
W	Gd	-	2	17	19	15	55.9	19	100	-	-	---
C	Ge	-	-	-	-	3	0.0	-	-	-	-	---
F	Ge	-	-	1	1	5	16.7	1	100	-	-	---
M	Ge	-	-	-	-	6	0.0	-	-	-	-	---
S	Ge	-	1	2	3	155	1.9	2	50	-	50	4.42
W	Ge	-	2	17	19	15	55.9	19	100	-	-	---
F	H2O-	-	-	-	-	1	0.0	-	-	-	-	---
S	H2O-	-	4	-	4	31	11.4	4	100	-	-	0.94 ± 0.04
W	Hardness	-	25	28	53	151	26.0	53	94	4	2	1.13 ± 0.09
B	Hf	-	-	5	5	91	5.2	5	100	-	-	0.97 ± 0.07
C	Hf	-	-	-	-	3	0.0	-	-	-	-	---
F	Hf	-	-	1	1	5	16.7	1	100	-	-	---
M	Hf	-	-	-	-	6	0.0	-	-	-	-	---
S	Hf	-	1	96	97	1155	7.7	80	95	-	5	0.98 ± 0.21
W	Hf	-	2	17	19	15	55.9	19	100	-	-	---
B	Hg	-	-	6	6	149	3.9	3	100	-	-	1.11
C	Hg	-	-	-	-	37	0.0	-	-	-	-	---
F	Hg	-	-	3	3	3	50.0	3	33	-	67	0.45
M	Hg	-	10	1	11	97	10.2	11	91	-	9	1.03 ± 0.28
S	Hg	-	9	100	109	1309	7.7	70	99	1	-	2.21 ± 4.90
T	Hg	-	1	4	5	3	62.5	1	-	-	100	---
W	Hg	-	73	114	187	514	26.7	187	97	2	1	0.99 ± 0.11
C	Ho	-	-	-	-	3	0.0	-	-	-	-	---
F	Ho	-	-	1	1	5	16.7	1	100	-	-	---
M	Ho	-	-	-	-	6	0.0	-	-	-	-	---
S	Ho	-	1	2	3	155	1.9	2	100	-	-	1.66
W	Ho	-	3	17	20	15	57.1	20	95	-	5	---
B	I	-	-	5	5	91	5.2	2	100	-	-	---
F	I	-	-	1	1	3	25.0	1	100	-	-	---
M	I	-	-	-	-	5	0.0	-	-	-	-	---
S	I	-	-	94	94	1000	8.6	40	98	3	-	0.81 ± 0.16

TABLE C-I (cont)

Stable Element Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
W	I	-	2	1	3	6	33.3	3	100	-	-	---
B	In	-	-	5	5	91	5.2	2	100	-	-	---
C	In	-	-	-	-	3	0.0	-	-	-	-	---
F	In	-	-	-	-	2	0.0	-	-	-	-	---
M	In	-	-	-	-	6	0.0	-	-	-	-	---
S	In	-	1	96	97	1154	7.8	45	100	-	-	---
W	In	-	3	15	18	9	66.7	18	100	-	-	---
C	Ir	-	-	-	-	3	0.0	-	-	-	-	---
F	Ir	-	-	1	1	5	16.7	1	100	-	-	---
M	Ir	-	-	-	-	6	0.0	-	-	-	-	---
S	Ir	-	1	2	3	155	1.9	-	-	-	-	---
W	Ir	-	2	17	19	15	55.9	19	100	-	-	---
B	K	-	-	5	5	91	5.2	5	100	-	-	1.06
S	K	-	-	94	94	1000	8.6	93	98	2	-	0.98 ± 0.08
W	K	-	24	53	77	221	25.8	77	100	-	-	1.02 ± 0.07
B	La	-	-	5	5	91	5.2	5	100	-	-	0.91 ± 0.09
C	La	-	-	-	-	3	0.0	-	-	-	-	---
F	La	-	-	1	1	5	16.7	1	100	-	-	---
M	La	-	-	-	-	6	0.0	-	-	-	-	---
S	La	-	1	96	97	1155	7.7	73	88	7	5	0.96 ± 0.33
W	La	-	2	17	19	14	57.6	19	100	-	-	---
B	Li	-	-	1	1	18	5.3	1	100	-	-	0.86
C	Li	-	-	-	-	3	0.0	-	-	-	-	---
F	Li	-	-	1	1	5	16.7	1	100	-	-	---
M	Li	-	-	-	-	6	0.0	-	-	-	-	---
S	Li	-	1	5	6	184	3.2	5	80	-	20	1.20 ± 0.75
W	Li	-	3	26	29	63	31.5	29	100	-	-	0.99 ± 0.11
B	Lu	-	-	5	5	91	5.2	2	100	-	-	0.91
C	Lu	-	-	-	-	3	0.0	-	-	-	-	---
F	Lu	-	-	1	1	5	16.7	1	100	-	-	---
M	Lu	-	-	-	-	6	0.0	-	-	-	-	---
S	Lu	-	1	96	97	1155	7.7	63	95	5	-	1.06 ± 0.43
W	Lu	-	2	17	19	15	55.9	19	100	-	-	---
B	Mg	-	-	5	5	91	5.2	5	100	-	-	1.07 ± 0.19
S	Mg	-	-	94	94	1000	8.6	93	82	14	4	0.89 ± 0.11
W	Mg	-	30	64	94	245	27.7	94	100	-	-	1.04 ± 0.06
B	Mn	-	-	5	5	91	5.2	5	100	-	-	1.00 ± 0.06
C	Mn	-	-	-	-	3	0.0	-	-	-	-	---
F	Mn	-	3	4	7	20	25.9	7	100	-	-	0.97 ± 0.05
M	Mn	-	-	-	-	6	0.0	-	-	-	-	---
S	Mn	-	4	96	100	1167	7.9	97	89	9	2	1.07 ± 0.13
W	Mn	-	20	166	186	126	59.6	152	99	1	1	1.07 ± 0.20
B	Mo	-	-	4	4	91	4.2	4	100	-	-	2.11
C	Mo	-	-	-	-	3	0.0	-	-	-	-	---

TABLE C-I (cont)

Stable Element Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
F	Mo	-	-	1	1	5	16.7	1	100	-	-	---
M	Mo	-	-	-	-	6	0.0	-	-	-	-	---
S	Mo	-	1	6	7	192	3.5	6	83	-	17	0.29
W	Mo	-	20	165	185	126	59.5	151	95	2	3	1.05 ± 0.18
M	N2O	-	-	-	-	8	0.0	-	-	-	-	---
B	Na	-	-	5	5	91	5.2	5	100	-	-	0.96 ± 0.02
F	Na	-	2	1	3	8	27.3	3	100	-	-	1.05 ± 0.04
S	Na	-	-	94	94	1000	8.6	93	99	1	-	1.00 ± 0.06
W	Na	-	28	59	87	213	29.0	86	95	2	2	1.11 ± 0.08
C	Nb	-	-	-	-	3	0.0	-	-	-	-	---
F	Nb	-	-	1	1	5	16.7	1	100	-	-	---
M	Nb	-	-	-	-	6	0.0	-	-	-	-	---
S	Nb	-	1	2	3	155	1.9	2	-	-	100	0.09
W	Nb	-	2	17	19	15	55.9	19	100	-	-	---
B	Nd	-	-	5	5	91	5.2	2	100	-	-	---
C	Nd	-	-	-	-	3	0.0	-	-	-	-	---
F	Nd	-	-	1	1	5	16.7	1	100	-	-	---
M	Nd	-	-	-	-	6	0.0	-	-	-	-	---
S	Nd	-	1	96	97	1155	7.7	65	91	6	3	1.23 ± 0.57
W	Nd	-	2	17	19	15	55.9	19	100	-	-	---
S	NH3-N	-	-	-	-	9	0.0	-	-	-	-	---
W	NH3-N	-	15	43	58	489	10.6	58	97	2	2	0.99 ± 0.12
C	Ni	-	-	-	-	33	0.0	-	-	-	-	---
F	Ni	-	6	9	15	27	35.7	15	93	7	-	1.07 ± 0.12
M	Ni	-	-	-	-	6	0.0	-	-	-	-	---
S	Ni	-	11	16	27	278	8.9	27	100	-	-	0.83 ± 0.19
W	Ni	-	36	285	321	267	54.6	287	99	1	-	1.02 ± 0.19
M	NO2	-	-	-	-	8	0.0	-	-	-	-	---
W	NO2	-	1	-	1	-	100.0	1	100	-	-	1.31
W	NO2-N	-	8	2	10	143	6.5	8	100	-	-	0.98 ± 0.16
W	NO3	-	1	1	2	1	66.7	2	100	-	-	0.92
S	NO3-N	-	-	-	-	61	0.0	-	-	-	-	---
W	NO3-N	-	43	73	116	328	26.1	115	93	7	-	1.01 ± 0.08
M	Normality	-	-	-	-	17	0.0	-	-	-	-	---
W	Normality	-	-	-	-	56	0.0	-	-	-	-	---
M	O2	-	-	-	-	8	0.0	-	-	-	-	---
M	Oil/Grease	-	-	-	-	3	0.0	-	-	-	-	---
W	Oil/Grease	-	13	7	20	105	16.0	20	100	-	-	0.90 ± 0.10
S	P	-	-	-	-	9	0.0	-	-	-	-	---
W	P	-	11	74	85	450	15.9	85	93	6	1	0.96 ± 0.45
W	P Alkalinity	-	-	-	-	223	0.0	-	-	-	-	---
B	Pb	-	-	-	-	27	0.0	-	-	-	-	---
C	Pb	-	-	-	-	36	0.0	-	-	-	-	---
F	Pb	-	64	96	160	411	28.0	158	96	4	-	1.02 ± 0.13

TABLE C-I (cont)

Stable Element Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
M	Pb	-	7	5	12	108	10.0	12	100	-	-	1.02 ± 0.14
S	Pb	-	17	22	39	389	9.1	39	100	-	-	1.02 ± 0.25
W	Pb	-	79	414	493	595	45.3	458	97	2	1	1.02 ± 0.15
C	Pd	-	-	-	-	3	0.0	-	-	-	-	---
F	Pd	-	-	1	1	5	16.7	1	100	-	-	---
M	Pd	-	-	-	-	6	0.0	-	-	-	-	---
S	Pd	-	1	2	3	155	1.9	-	-	-	-	---
W	Pd	-	2	17	19	15	55.9	19	100	-	-	---
C	pH	-	-	-	-	4	0.0	-	-	-	-	---
S	pH	-	-	-	-	53	0.0	-	-	-	-	---
W	pH	-	21	282	303	1186	20.3	300	100	-	-	1.01 ± 0.02
M	Phase	-	-	-	-	20	0.0	-	-	-	-	---
W	Phase	-	-	-	-	13	0.0	-	-	-	-	---
W	PO4-P	-	22	39	61	214	22.2	61	95	5	-	0.87 ± 0.21
C	Pr	-	-	-	-	3	0.0	-	-	-	-	---
F	Pr	-	-	1	1	5	16.7	1	100	-	-	---
M	Pr	-	-	-	-	6	0.0	-	-	-	-	---
S	Pr	-	1	2	3	155	1.9	2	100	-	-	2.20
W	Pr	-	2	17	19	15	55.9	19	100	-	-	---
C	Pt	-	-	-	-	3	0.0	-	-	-	-	---
F	Pt	-	-	1	1	5	16.7	1	100	-	-	---
M	Pt	-	-	-	-	6	0.0	-	-	-	-	---
S	Pt	-	1	2	3	155	1.9	-	-	-	-	---
W	Pt	-	2	17	19	15	55.9	19	100	-	-	---
B	Rb	-	-	5	5	91	5.2	5	100	-	-	1.02
C	Rb	-	-	-	-	3	0.0	-	-	-	-	---
F	Rb	-	-	1	1	5	16.7	1	100	-	-	---
M	Rb	-	-	-	-	6	0.0	-	-	-	-	---
S	Rb	-	1	96	97	1155	7.7	92	97	2	1	0.97 ± 0.17
W	Rb	-	2	17	19	15	55.9	19	100	-	-	---
F	Re	-	-	1	1	3	25.0	1	100	-	-	---
S	Re	-	-	-	-	1	0.0	-	-	-	-	---
W	Re	-	2	2	4	7	36.4	4	100	-	-	---
C	Rh	-	-	-	-	3	0.0	-	-	-	-	---
F	Rh	-	-	1	1	5	16.7	1	100	-	-	---
M	Rh	-	-	-	-	6	0.0	-	-	-	-	---
S	Rh	-	1	2	3	155	1.9	-	-	-	-	---
W	Rh	-	2	18	20	15	57.1	19	100	-	-	---
C	Ru	-	-	-	-	3	0.0	-	-	-	-	---
F	Ru	-	-	1	1	5	16.7	1	100	-	-	---
M	Ru	-	-	-	-	6	0.0	-	-	-	-	---
S	Ru	-	1	2	3	155	1.9	-	-	-	-	---
W	Ru	-	2	17	19	15	55.9	19	100	-	-	---
M	S	-	-	1	1	4	20.0	1	100	-	-	1.01

TABLE C-I (cont)

Stable Element Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
B	Sb	-	-	5	5	91	5.2	5	100	-	-	0.88 ± 0.09
C	Sb	-	-	-	-	3	0.0	-	-	-	-	---
F	Sb	-	-	1	1	5	16.7	1	100	-	-	---
M	Sb	-	-	-	-	6	0.0	-	-	-	-	---
S	Sb	-	12	96	108	1242	8.0	90	84	13	2	0.87 ± 0.34
W	Sb	-	23	152	175	126	58.1	140	95	-	5	1.20 ± 1.07
B	Sc	-	-	5	5	91	5.2	5	100	-	-	0.93 ± 0.03
F	Sc	-	-	-	-	3	0.0	-	-	-	-	---
S	Sc	-	-	94	94	1000	8.6	75	97	-	3	1.01 ± 0.34
W	Sc	-	-	1	1	-	100.0	1	100	-	-	---
B	Se	-	-	5	5	106	4.5	5	100	-	-	1.08 ± 0.13
C	Se	-	-	-	-	39	0.0	-	-	-	-	---
F	Se	-	-	2	2	5	28.6	2	100	-	-	---
M	Se	-	5	-	5	69	6.8	5	60	20	20	0.68 ± 0.11
S	Se	-	6	96	102	1384	6.9	64	97	3	-	2.95 ± 4.16
W	Se	-	77	223	300	512	36.9	266	100	-	-	1.00 ± 0.12
W	Si	-	1	3	4	10	28.6	4	100	-	-	1.00 ± 0.03
M	SiO2	-	-	-	-	1	0.0	-	-	-	-	---
W	SiO2	-	29	42	71	243	22.6	71	100	-	-	1.00 ± 0.04
B	Sm	-	-	5	5	91	5.2	5	80	20	-	1.01 ± 0.20
C	Sm	-	-	-	-	3	0.0	-	-	-	-	---
F	Sm	-	-	1	1	5	16.7	1	100	-	-	---
M	Sm	-	-	-	-	6	0.0	-	-	-	-	---
S	Sm	-	1	96	97	1155	7.7	73	93	4	3	1.03 ± 0.41
W	Sm	-	2	17	19	15	55.9	19	100	-	-	---
C	Sn	-	-	-	-	3	0.0	-	-	-	-	---
F	Sn	-	1	3	4	11	26.7	3	33	-	67	0.25
M	Sn	-	-	-	-	6	0.0	-	-	-	-	---
S	Sn	-	1	2	3	155	1.9	2	100	-	-	2.16
W	Sn	-	6	21	27	44	38.0	27	100	-	-	1.04 ± 0.07
M	SO2	-	-	-	-	8	0.0	-	-	-	-	---
W	SO2	-	-	-	-	2	0.0	-	-	-	-	---
S	SO4	-	-	-	-	21	0.0	-	-	-	-	---
W	SO4	-	38	59	97	311	23.8	95	95	4	1	1.18 ± 0.14
C	Solids	-	-	-	-	51	0.0	-	-	-	-	---
C	Sp Gravity	-	-	-	-	4	0.0	-	-	-	-	---
B	Sr	-	-	5	5	91	5.2	5	100	-	-	0.98
C	Sr	-	-	-	-	3	0.0	-	-	-	-	---
F	Sr	-	-	1	1	5	16.7	1	100	-	-	---
M	Sr	-	-	-	-	6	0.0	-	-	-	-	---
S	Sr	-	1	96	97	1155	7.7	92	97	3	-	1.12 ± 0.35
W	Sr	-	13	97	110	98	52.9	110	99	1	-	0.99 ± 0.06
B	Ta	-	-	5	5	91	5.2	2	100	-	-	---
C	Ta	-	-	-	-	3	0.0	-	-	-	-	---

TABLE C-I (cont)

Stable Element Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
F	Ta	-	-	1	1	5	16.7	1	100	-	-	---
M	Ta	-	-	-	-	6	0.0	-	-	-	-	---
S	Ta	-	9	96	105	1230	7.9	72	99	1	-	0.99 ± 0.11
W	Ta	-	2	17	19	15	55.9	19	100	-	-	---
W	Tot Alkalinity	-	30	49	79	255	23.7	79	96	1	3	0.99 ± 0.09
B	Tb	-	-	5	5	91	5.2	2	100	-	-	0.85
C	Tb	-	-	-	-	3	0.0	-	-	-	-	---
F	Tb	-	-	1	1	6	14.3	1	100	-	-	---
M	Tb	-	-	-	-	6	0.0	-	-	-	-	---
S	Tb	-	1	96	97	1155	7.7	58	100	-	-	0.91 ± 0.46
W	Tb	-	3	17	20	14	58.8	20	100	-	-	---
W	Total Cations	-	-	-	-	35	0.0	-	-	-	-	---
W	Tot Dis Solids	-	22	41	63	174	26.6	63	87	6	6	0.98 ± 0.19
C	Te	-	-	-	-	3	0.0	-	-	-	-	---
F	Te	-	-	1	1	6	14.3	1	100	-	-	---
M	Te	-	-	-	-	6	0.0	-	-	-	-	---
S	Te	-	1	2	3	155	1.9	2	100	-	-	---
W	Te	-	3	17	20	14	58.8	20	100	-	-	---
B	Th	-	-	5	5	91	5.2	5	100	-	-	0.93 ± 0.03
C	Th	-	-	-	-	3	0.0	-	-	-	-	---
F	Th	-	-	1	1	5	16.7	1	100	-	-	---
M	Th	-	-	-	-	6	0.0	-	-	-	-	---
S	Th	-	9	105	114	1239	8.4	96	92	5	3	0.98 ± 0.55
W	Th	-	2	51	53	16	76.8	19	100	-	-	---
B	Ti	-	-	5	5	91	5.2	5	100	-	-	1.13 ± 0.29
C	Ti	-	-	-	-	3	0.0	-	-	-	-	---
F	Ti	-	-	1	1	5	16.7	1	100	-	-	---
M	Ti	-	-	-	-	6	0.0	-	-	-	-	---
S	Ti	-	1	96	97	1155	7.7	94	97	2	1	0.99 ± 0.28
W	Ti	-	9	52	61	42	59.2	61	100	-	-	1.06 ± 0.30
C	Tl	-	-	-	-	33	0.0	-	-	-	-	---
F	Tl	-	23	38	61	132	31.6	61	75	7	18	1.03 ± 0.76
M	Tl	-	-	-	-	6	0.0	-	-	-	-	---
S	Tl	-	3	2	5	176	2.8	5	100	-	-	0.89 ± 0.23
U	Tl	-	-	9	9	-	100.0	9	100	-	-	1.02 ± 0.14
W	Tl	-	36	256	292	266	52.3	258	97	2	1	0.99 ± 0.18
C	Tm	-	-	-	-	3	0.0	-	-	-	-	---
F	Tm	-	-	1	1	5	16.7	1	100	-	-	---
M	Tm	-	-	-	-	6	0.0	-	-	-	-	---
S	Tm	-	1	2	3	155	1.9	2	50	-	50	3.33
W	Tm	-	2	17	19	15	55.9	19	100	-	-	---
M	Tot Org Halides	-	2	-	2	36	5.3	2	100	-	-	0.94
W	Tot Org Halides	-	-	-	-	2	0.0	-	-	-	-	---
S	Tot Sus Solids	-	1	-	1	-	100.0	1	100	-	-	0.89

TABLE C-I (cont)

Stable Element Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
W	Tot Sus Solids	-	8	54	62	410	13.1	62	97	3	-	0.97 ± 0.10
W	Turbidity	-	2	4	6	-	100.0	6	83	17	-	0.95 ± 0.32
B	U	-	-	21	21	164	11.4	21	81	10	10	1.05 ± 0.13
C	U	-	-	-	-	3	0.0	-	-	-	-	---
F	U	-	12	46	58	158	26.9	58	93	3	3	1.03 ± 0.10
M	U	-	-	-	-	6	0.0	-	-	-	-	---
S	U	-	48	297	345	1665	17.2	324	96	3	1	0.96 ± 0.10
W	U	-	62	297	359	400	47.3	316	91	1	8	0.97 ± 0.14
B	V	-	-	5	5	91	5.2	5	100	-	-	0.92 ± 0.08
C	V	-	-	-	-	3	0.0	-	-	-	-	---
F	V	-	-	1	1	5	16.7	1	100	-	-	---
M	V	-	-	-	-	6	0.0	-	-	-	-	---
S	V	-	3	96	99	1154	7.9	94	97	1	2	0.97 ± 0.14
W	V	-	13	147	160	93	63.2	126	94	3	3	0.98 ± 0.15
B	W	-	-	5	5	-	100.0	5	100	-	-	1.33
C	W	-	-	-	-	3	0.0	-	-	-	-	---
F	W	-	-	1	1	5	16.7	1	100	-	-	---
M	W	-	-	-	-	6	0.0	-	-	-	-	---
S	W	-	9	96	105	1230	7.9	50	100	-	-	1.71 ± 1.44
W	W	-	2	17	19	15	55.9	19	100	-	-	---
C	Y	-	-	-	-	3	0.0	-	-	-	-	---
F	Y	-	-	1	1	5	16.7	1	100	-	-	---
M	Y	-	-	-	-	6	0.0	-	-	-	-	---
S	Y	-	1	2	3	155	1.9	2	50	50	-	1.16
W	Y	-	2	18	20	15	57.1	20	95	-	5	---
B	Yb	-	-	5	5	91	5.2	2	100	-	-	1.14
C	Yb	-	-	-	-	3	0.0	-	-	-	-	---
F	Yb	-	-	1	1	5	16.7	1	100	-	-	---
M	Yb	-	-	-	-	6	0.0	-	-	-	-	---
S	Yb	-	1	96	97	1155	7.7	73	84	11	5	1.15 ± 0.38
W	Yb	-	2	17	19	15	55.9	19	100	-	-	---
B	Zn	-	-	5	5	91	5.2	5	100	-	-	1.25 ± 0.25
C	Zn	-	-	-	-	3	0.0	-	-	-	-	---
F	Zn	-	10	28	38	5	88.4	38	97	-	3	0.98 ± 0.10
M	Zn	-	-	-	-	6	0.0	-	-	-	-	---
S	Zn	-	2	96	98	1162	7.8	97	93	1	6	1.08 ± 0.46
W	Zn	-	35	218	253	326	43.7	219	95	3	2	1.01 ± 0.25
B	Zr	-	-	5	5	91	5.2	2	100	-	-	---
C	Zr	-	-	-	-	3	0.0	-	-	-	-	---
F	Zr	-	-	1	1	5	16.7	1	100	-	-	---
M	Zr	-	-	-	-	6	0.0	-	-	-	-	---
S	Zr	-	1	96	97	1155	7.7	79	85	5	10	1.44 ± 0.94
W	Zr	-	2	17	19	14	57.6	19	100	-	-	---

TABLE C-I (cont)

Radiochemical Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
C	Alpha	-	-	-	-	16	0.0	-	-	-	-	---
F	Alpha	-	-	117	117	205	36.3	116	100	-	-	0.91 ± 0.07
M	Alpha	-	-	-	-	239	0.0	-	-	-	-	---
S	Alpha	-	4	-	4	193	2.0	4	75	25	-	1.19 ± 0.75
W	Alpha	-	36	698	734	1384	34.7	734	98	1	-	1.01 ± 0.44
B	Am-241	-	-	6	6	-	100.0	6	100	-	-	1.02 ± 0.22
C	Am-241	-	-	-	-	19	0.0	-	-	-	-	---
F	Am-241	-	16	2	18	42	30.0	18	78	22	-	0.83 ± 0.04
S	Am-241	-	20	10	30	151	16.6	30	70	27	3	0.93 ± 0.23
U	Am-241	-	-	4	4	-	100.0	4	75	-	25	1.66
W	Am-241	-	16	75	91	518	14.9	91	92	8	-	0.96 ± 0.10
B	As-72	-	-	-	-	11	0.0	-	-	-	-	---
F	As-72	-	-	-	-	20	0.0	-	-	-	-	---
B	As-73	-	-	-	-	208	0.0	-	-	-	-	---
F	As-73	-	-	-	-	220	0.0	-	-	-	-	---
S	As-73	-	-	-	-	1	0.0	-	-	-	-	---
W	As-73	-	-	-	-	1	0.0	-	-	-	-	---
B	As-74	-	-	-	-	185	0.0	-	-	-	-	---
F	As-74	-	-	-	-	197	0.0	-	-	-	-	---
S	As-74	-	-	-	-	1	0.0	-	-	-	-	---
W	As-74	-	-	-	-	1	0.0	-	-	-	-	---
W	Ba-133	-	3	7	10	-	100.0	10	100	-	-	0.81 ± 0.07
B	Be-7	-	-	-	-	237	0.0	-	-	-	-	---
C	Be-7	-	-	-	-	1	0.0	-	-	-	-	---
F	Be-7	-	-	3	3	201	1.5	3	100	-	-	0.96 ± 0.01
W	Be-7	-	-	-	-	36	0.0	-	-	-	-	---
C	Beta	-	-	-	-	1	0.0	-	-	-	-	---
F	Beta	-	-	108	108	205	34.5	107	100	-	-	0.85 ± 0.02
M	Beta	-	-	-	-	234	0.0	-	-	-	-	---
S	Beta	-	4	-	4	189	2.1	4	50	25	25	1.43 ± 0.70
W	Beta	-	36	700	736	1087	40.4	736	98	1	1	0.98 ± 0.47
B	Cd-109	-	-	-	-	208	0.0	-	-	-	-	---
F	Cd-109	-	-	-	-	211	0.0	-	-	-	-	---
S	Cd-109	-	-	-	-	1	0.0	-	-	-	-	---
W	Cd-109	-	-	-	-	1	0.0	-	-	-	-	---
F	Ce-144	-	-	6	6	-	100.0	6	50	-	50	1.50 ± 0.63
W	Ce-144	-	-	6	6	-	100.0	6	100	-	-	1.04 ± 0.06
C	Co-56	-	-	-	-	1	0.0	-	-	-	-	---
W	Co-56	-	-	-	-	38	0.0	-	-	-	-	---
B	Co-57	-	-	-	-	260	0.0	-	-	-	-	---
C	Co-57	-	-	-	-	2	0.0	-	-	-	-	---
F	Co-57	-	-	6	6	224	2.6	6	50	17	33	1.33 ± 0.55
S	Co-57	-	-	-	-	41	0.0	-	-	-	-	---
W	Co-57	-	-	37	37	111	25.0	37	100	-	-	1.25 ± 0.25

TABLE C-I (cont)

Radiochemical Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
C	Co-58	-	-	-	-	2	0.0	-	-	-	-	---
W	Co-58	-	-	-	-	55	0.0	-	-	-	-	---
B	Co-60	-	-	-	-	217	0.0	-	-	-	-	---
C	Co-60	-	-	-	-	2	0.0	-	-	-	-	---
F	Co-60	-	-	6	6	225	2.6	6	33	67	-	1.11 ± 0.39
S	Co-60	-	-	-	-	50	0.0	-	-	-	-	---
W	Co-60	-	3	69	72	56	56.3	72	97	3	-	0.90 ± 0.20
W	Cr-51	-	-	-	-	9	0.0	-	-	-	-	---
B	Cs-134	-	-	-	-	217	0.0	-	-	-	-	---
F	Cs-134	-	-	6	6	224	2.6	6	50	50	-	1.24 ± 0.50
S	Cs-134	-	-	-	-	41	0.0	-	-	-	-	---
W	Cs-134	-	3	79	82	5	94.3	82	100	-	-	1.05 ± 0.51
B	Cs-137	-	13	47	60	374	13.8	30	90	10	-	1.04 ± 0.31
C	Cs-137	-	-	-	-	3	0.0	-	-	-	-	---
F	Cs-137	-	-	9	9	224	3.9	9	67	11	22	1.24 ± 0.56
S	Cs-137	-	30	45	75	242	23.7	75	79	15	7	1.04 ± 0.60
W	Cs-137	-	29	129	158	318	33.2	158	95	4	1	0.84 ± 1.06
B	Cu-64	-	-	-	-	5	0.0	-	-	-	-	---
F	Cu-64	-	-	-	-	5	0.0	-	-	-	-	---
S	Eu-152	-	-	-	-	26	0.0	-	-	-	-	---
W	Fe-59	-	-	-	-	7	0.0	-	-	-	-	---
B	Ga-68	-	-	-	-	11	0.0	-	-	-	-	---
F	Ga-68	-	-	-	-	20	0.0	-	-	-	-	---
M	Gamma	-	-	-	-	232	0.0	-	-	-	-	---
S	Gamma	-	-	6	6	212	2.8	6	100	-	-	1.10
W	Gamma	-	1	60	61	1075	5.4	60	87	12	2	1.22 ± 0.22
B	H-3	-	-	-	-	55	0.0	-	-	-	-	---
F	H-3	-	-	-	-	1	0.0	-	-	-	-	---
M	H-3	-	-	-	-	30	0.0	-	-	-	-	---
S	H-3	-	21	-	21	190	10.0	21	76	14	10	0.94 ± 0.06
U	H-3	-	-	188	188	-	100.0	188	97	-	3	0.95 ± 0.09
W	H-3	-	37	377	414	754	35.4	414	99	-	-	0.93 ± 0.07
B	I-131	-	3	3	6	189	3.1	6	100	-	-	0.76 ± 0.10
F	I-131	-	-	-	-	195	0.0	-	-	-	-	---
S	I-131	-	-	-	-	1	0.0	-	-	-	-	---
W	I-131	-	-	-	-	1	0.0	-	-	-	-	---
S	K-40	-	-	6	6	-	100.0	6	50	-	50	0.90 ± 0.41
W	Mn-52	-	-	-	-	8	0.0	-	-	-	-	---
B	Mn-54	-	-	-	-	260	0.0	-	-	-	-	---
C	Mn-54	-	-	-	-	4	0.0	-	-	-	-	---
F	Mn-54	-	-	9	9	223	3.9	9	67	11	22	2.92 ± 2.24
S	Mn-54	-	-	-	-	1	0.0	-	-	-	-	---
W	Mn-54	-	-	60	60	83	42.0	60	100	-	-	1.11 ± 0.12

TABLE C-I (cont)

Radiochemical Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
B	Na-22	-	-	-	-	260	0.0	-	-	-	-	---
F	Na-22	-	-	-	-	223	0.0	-	-	-	-	---
S	Na-22	-	-	-	-	1	0.0	-	-	-	-	---
W	Na-22	-	-	48	48	26	64.9	48	100	-	-	0.96 ± 0.03
B	Na-24	-	-	-	-	5	0.0	-	-	-	-	---
F	Na-24	-	-	-	-	5	0.0	-	-	-	-	---
C	Nb-95	-	-	-	-	4	0.0	-	-	-	-	---
W	Nb-95	-	-	-	-	39	0.0	-	-	-	-	---
B	Pu-238	-	3	16	19	36	34.5	4	100	-	-	0.99
C	Pu-238	-	-	-	-	27	0.0	-	-	-	-	---
F	Pu-238	-	17	1	18	128	12.3	17	100	-	-	0.92 ± 0.10
M	Pu-238	-	-	-	-	3	0.0	-	-	-	-	---
S	Pu-238	-	16	-	16	204	7.3	16	94	6	-	0.95 ± 0.14
U	Pu-238	-	-	131	131	-	100.0	131	99	1	-	1.08 ± 0.15
W	Pu-238	-	20	43	63	260	19.5	63	98	2	-	0.90 ± 0.07
B	Pu-239	-	3	22	25	36	41.0	10	70	20	10	1.22 ± 0.48
C	Pu-239	-	-	-	-	27	0.0	-	-	-	-	---
F	Pu-239	-	17	4	21	128	14.1	21	100	-	-	1.06 ± 0.14
M	Pu-239	-	-	-	-	3	0.0	-	-	-	-	---
S	Pu-239	-	16	6	22	204	9.7	22	82	5	14	0.95 ± 0.14
U	Pu-239	-	-	136	136	-	100.0	136	97	1	1	1.08 ± 0.16
W	Pu-239	-	20	66	86	260	24.9	86	97	-	3	0.95 ± 0.09
S	Ra-226	-	-	2	2	3	40.0	2	100	-	-	0.99
W	Ra-226	-	6	33	39	49	44.3	39	90	-	10	0.96 ± 0.16
B	Rb-83	-	-	-	-	260	0.0	-	-	-	-	---
F	Rb-83	-	-	-	-	224	0.0	-	-	-	-	---
S	Rb-83	-	-	-	-	1	0.0	-	-	-	-	---
W	Rb-83	-	-	-	-	37	0.0	-	-	-	-	---
W	Rb-84	-	-	-	-	51	0.0	-	-	-	-	---
B	Rb-86	-	-	-	-	185	0.0	-	-	-	-	---
F	Rb-86	-	-	-	-	188	0.0	-	-	-	-	---
S	Rb-86	-	-	-	-	1	0.0	-	-	-	-	---
W	Rb-86	-	-	-	-	2	0.0	-	-	-	-	---
B	Ru-103	-	-	-	-	217	0.0	-	-	-	-	---
F	Ru-103	-	-	-	-	224	0.0	-	-	-	-	---
S	Ru-103	-	-	-	-	1	0.0	-	-	-	-	---
W	Ru-103	-	-	-	-	1	0.0	-	-	-	-	---
W	Ru-106	-	3	7	10	-	100.0	10	100	-	-	0.81 ± 0.12
W	Sc-46	-	-	-	-	23	0.0	-	-	-	-	---
W	Sc-48	-	-	-	-	9	0.0	-	-	-	-	---
B	Se-72	-	-	-	-	194	0.0	-	-	-	-	---
F	Se-72	-	-	-	-	197	0.0	-	-	-	-	---
S	Se-72	-	-	-	-	1	0.0	-	-	-	-	---
W	Se-72	-	-	-	-	1	0.0	-	-	-	-	---

TABLE C-I (cont)

Radiochemical Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
B	Se-75	-	-	-	-	208	0.0	-	-	-	-	---
C	Se-75	-	-	-	-	8	0.0	-	-	-	-	---
F	Se-75	-	-	-	-	220	0.0	-	-	-	-	---
S	Se-75	-	-	-	-	41	0.0	-	-	-	-	---
W	Se-75	-	-	-	-	149	0.0	-	-	-	-	---
C	Sr-82	-	-	-	-	1	0.0	-	-	-	-	---
W	Sr-82	-	-	-	-	34	0.0	-	-	-	-	---
C	Sr-85	-	-	-	-	4	0.0	-	-	-	-	---
W	Sr-85	-	-	-	-	75	0.0	-	-	-	-	---
W	Sr-89	-	-	-	-	63	0.0	-	-	-	-	---
B	Sr-90	-	3	30	33	128	20.5	33	82	-	18	0.85 ± 0.27
F	Sr-90	-	-	14	14	-	100.0	13	77	-	23	1.56 ± 0.83
S	Sr-90	-	22	17	39	212	15.5	41	68	15	17	0.89 ± 0.27
W	Sr-90	-	7	28	35	95	26.9	38	71	11	18	0.83 ± 0.26
S	Th-228	-	-	-	-	10	0.0	-	-	-	-	---
B	Th-230	-	-	-	-	2	0.0	-	-	-	-	---
C	U-234	-	-	-	-	28	0.0	-	-	-	-	---
W	U-234	-	-	23	23	45	33.8	23	100	-	-	1.07 ± 0.12
B	U-235	-	-	15	15	-	100.0	-	-	-	-	---
C	U-235	-	-	-	-	29	0.0	-	-	-	-	---
U	U-235	-	-	77	77	-	100.0	77	90	8	3	0.87 ± 0.12
W	U-235	-	-	58	58	47	55.2	58	98	2	-	0.97 ± 0.19
S	U-235/238	-	11	4	15	396	3.6	15	87	13	-	0.97 ± 0.05
W	U-235/238	-	9	128	137	14	90.7	137	100	-	-	1.00 ± 0.05
B	U-238	-	-	15	15	-	100.0	-	-	-	-	---
U	U-238	-	-	109	109	-	100.0	109	72	14	15	0.85 ± 0.15
W	V-48	-	-	-	-	20	0.0	-	-	-	-	---
C	Y-88	-	-	-	-	3	0.0	-	-	-	-	---
W	Y-88	-	-	-	-	60	0.0	-	-	-	-	---
B	Zn-65	-	-	-	-	217	0.0	-	-	-	-	---
C	Zn-65	-	-	-	-	3	0.0	-	-	-	-	---
F	Zn-65	-	-	-	-	224	0.0	-	-	-	-	---
S	Zn-65	-	-	-	-	1	0.0	-	-	-	-	---
W	Zn-65	-	3	7	10	23	30.3	10	90	10	-	0.87 ± 0.16
C	Zr-88	-	-	-	-	3	0.0	-	-	-	-	---
W	Zr-88	-	-	-	-	33	0.0	-	-	-	-	---
W	Zr-95	-	-	-	-	2	0.0	-	-	-	-	---

TABLE C-I (cont)

Organic Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
W	2-(2-Butoxyethoxy)ethyl acetat	-	-	-	-	15	0.0	-	-	-	-	---
W	N,N-(2-Hydroxyethyl)-Dodecanam	-	-	-	-	2	0.0	-	-	-	-	---
W	1-(2-Methoxy-1-methylethoxy)-2	-	-	-	-	1	0.0	-	-	-	-	---
T	6-Amino-Hexanoic Acid	-	-	-	-	3	0.0	-	-	-	-	---
W	6-Amino-Hexanoic Acid	-	-	-	-	6	0.0	-	-	-	-	---
C	Acenaphthene	1	3	-	4	16	20.0	3	100	-	-	---
F	Acenaphthene	-	-	-	-	2	0.0	-	-	-	-	---
M	Acenaphthene	-	2	1	3	11	21.4	2	100	-	-	---
S	Acenaphthene	19	30	-	49	324	13.1	30	100	-	-	---
W	Acenaphthene	19	25	5	49	112	30.4	29	100	-	-	0.83
C	Acenaphthylene	1	3	-	4	12	25.0	3	100	-	-	---
F	Acenaphthylene	-	-	-	-	2	0.0	-	-	-	-	---
M	Acenaphthylene	-	2	1	3	11	21.4	2	100	-	-	---
S	Acenaphthylene	17	30	-	47	297	13.7	30	100	-	-	---
W	Acenaphthylene	9	25	5	39	112	25.8	29	100	-	-	0.70
T	Acetic acid	-	-	-	-	3	0.0	-	-	-	-	---
C	Acetone	-	-	-	-	8	0.0	-	-	-	-	---
F	Acetone	-	-	-	-	2	0.0	-	-	-	-	---
M	Acetone	-	1	-	1	17	5.6	1	-	-	100	---
S	Acetone	51	20	1	72	257	21.9	21	19	-	81	---
T	Acetone	-	5	-	5	27	15.6	5	60	20	20	0.66 ± 0.22
W	Acetone	37	37	13	87	122	41.6	50	74	-	26	---
M	Acetylene	-	-	-	-	8	0.0	-	-	-	-	---
C	Acrolein	-	-	-	-	4	0.0	-	-	-	-	---
M	Acrolein	-	-	-	-	6	0.0	-	-	-	-	---
S	Acrolein	46	13	1	60	178	25.2	14	100	-	-	---
W	Acrolein	30	24	8	62	83	42.8	32	100	-	-	---
F	Acrylamide	-	-	-	-	2	0.0	-	-	-	-	---
T	Acrylamide	-	-	-	-	2	0.0	-	-	-	-	---
C	Acrylonitrile	-	-	-	-	4	0.0	-	-	-	-	---
M	Acrylonitrile	-	-	-	-	6	0.0	-	-	-	-	---
S	Acrylonitrile	46	13	1	60	178	25.2	14	100	-	-	---
W	Acrylonitrile	30	24	8	62	83	42.8	32	100	-	-	---
S	Adipic ester	-	1	-	1	5	16.7	-	-	-	-	---
S	Alcohols	-	-	-	-	11	0.0	-	-	-	-	---
T	Alcohols	-	1	-	1	-	100.0	-	-	-	-	---
W	Alcohols	-	-	-	-	13	0.0	-	-	-	-	---
M	Aldrin	-	-	-	-	1	0.0	-	-	-	-	---
S	Aldrin	-	8	-	8	67	10.7	8	100	-	-	---
W	Aldrin	-	10	2	12	82	12.8	12	100	-	-	0.99
S	Aliphatic Hydrocarbons	-	-	-	-	40	0.0	-	-	-	-	---
C	Aniline	1	3	-	4	12	25.0	4	100	-	-	---
F	Aniline	-	-	-	-	2	0.0	-	-	-	-	---
M	Aniline	-	2	1	3	11	21.4	2	100	-	-	---

TABLE C-I (cont)

Organic Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
S	Aniline	17	30	-	47	297	13.7	30	83	-	17	0.10 ± 0.03
W	Aniline	9	25	5	39	112	25.8	29	100	-	-	0.84 ± 0.16
C	Anthracene	1	3	-	4	12	25.0	3	100	-	-	---
F	Anthracene	-	-	-	-	2	0.0	-	-	-	-	---
M	Anthracene	-	2	1	3	11	21.4	2	100	-	-	2.53
S	Anthracene	17	30	-	47	297	13.7	30	93	3	3	0.80 ± 0.27
T	Anthracene	-	-	-	-	8	0.0	-	-	-	-	---
W	Anthracene	9	25	5	39	112	25.8	29	90	3	7	0.61 ± 0.14
F	Mixed-Aroclor	-	42	43	85	512	14.2	85	93	6	1	0.96 ± 0.24
M	Mixed-Aroclor	-	71	72	143	988	12.6	143	92	8	1	0.86 ± 0.18
S	Mixed-Aroclor	-	28	26	54	178	23.3	49	96	2	2	0.98 ± 0.27
T	Mixed-Aroclor	-	2	2	4	10	28.6	4	100	-	-	0.88 ± 0.09
W	Mixed-Aroclor	-	21	34	55	95	36.7	55	95	2	4	1.33 ± 0.77
F	Aroclor 1242	-	42	43	85	511	14.3	85	95	4	1	0.96 ± 0.30
M	Aroclor 1242	-	71	72	143	526	21.4	143	99	1	-	0.97 ± 0.19
S	Aroclor 1242	-	28	26	54	177	23.4	49	98	2	-	1.06 ± 0.34
T	Aroclor 1242	-	2	2	4	10	28.6	4	100	-	-	0.79
W	Aroclor 1242	-	20	34	54	96	36.0	54	96	2	2	1.32 ± 0.32
W	Aroclor 1248	-	-	1	1	-	100.0	1	-	-	100	6.11
F	Aroclor 1254	-	42	43	85	511	14.3	85	100	-	-	0.98 ± 0.27
M	Aroclor 1254	-	71	72	143	527	21.3	143	100	-	-	---
S	Aroclor 1254	-	28	26	54	177	23.4	49	100	-	-	0.73 ± 0.02
T	Aroclor 1254	-	2	2	4	10	28.6	4	100	-	-	0.98
W	Aroclor 1254	-	20	34	54	96	36.0	54	96	-	4	1.44 ± 0.56
F	Aroclor 1260	-	42	43	85	511	14.3	85	98	2	-	0.95 ± 0.19
M	Aroclor 1260	-	71	72	143	526	21.4	143	92	7	1	0.79 ± 0.14
S	Aroclor 1260	-	28	26	54	177	23.4	49	98	-	2	0.95 ± 0.19
T	Aroclor 1260	-	2	2	4	10	28.6	4	100	-	-	0.97
W	Aroclor 1260	-	20	34	54	96	36.0	54	98	-	2	1.08 ± 0.22
C	Aromatic hydrocarbons	-	-	-	-	3	0.0	-	-	-	-	---
M	Aromatic hydrocarbons	-	-	-	-	1	0.0	-	-	-	-	---
S	Aromatic hydrocarbons	-	-	-	-	10	0.0	-	-	-	-	---
T	Aromatic hydrocarbons	-	1	-	1	59	1.7	-	-	-	-	---
W	Aromatic hydrocarbons	-	-	-	-	16	0.0	-	-	-	-	---
W	Azido Benzene	-	-	-	-	1	0.0	-	-	-	-	---
C	Azobenzene	1	3	-	4	12	25.0	3	100	-	-	---
F	Azobenzene	-	-	-	-	2	0.0	-	-	-	-	---
M	Azobenzene	-	2	1	3	11	21.4	2	100	-	-	---
S	Azobenzene	17	30	-	47	296	13.7	30	100	-	-	---
W	Azobenzene	9	25	5	39	112	25.8	29	100	-	-	---
M	alpha-BHC	-	-	-	-	1	0.0	-	-	-	-	---
M	beta-BHC	-	-	-	-	1	0.0	-	-	-	-	---
M	delta-BHC	-	-	-	-	1	0.0	-	-	-	-	---
S	alpha-BHC	-	8	-	8	66	10.8	8	100	-	-	---

TABLE C-I (cont)

Organic Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
S	beta-BHC	-	8	-	8	66	10.8	8	100	-	-	---
S	delta-BHC	-	8	-	8	66	10.8	8	100	-	-	---
W	beta-BHC	-	10	2	12	82	12.8	12	100	-	-	---
W	alpha-BHC	-	10	2	12	82	12.8	12	100	-	-	---
W	delta-BHC	-	10	2	12	82	12.8	12	100	-	-	---
C	Benzene	-	-	-	-	10	0.0	-	-	-	-	---
F	Benzene	-	-	-	-	4	0.0	-	-	-	-	---
M	Benzene	-	1	-	1	18	5.3	1	100	-	-	---
S	Benzene	46	20	1	67	298	18.4	21	86	-	14	0.67 ± 0.24
T	Benzene	-	69	9	78	835	8.5	78	94	4	3	0.86 ± 0.23
W	Benzene	37	39	13	89	169	34.5	50	98	2	-	0.99 ± 0.27
S	Benzene Acetic Acid	-	-	-	-	1	0.0	-	-	-	-	---
W	1,2-Benzene dicarboxylic acid,	-	1	-	1	-	100.0	-	-	-	-	---
C	Benzenes, substituted	-	-	-	-	11	0.0	-	-	-	-	---
S	Benzenes, substituted	-	2	-	2	11	15.4	-	-	-	-	---
T	Benzenes, substituted	-	-	-	-	1	0.0		-	-	-	---
W	Benzenes, substituted	-	-	-	-	8	0.0	-	-	-	-	---
C	m-Benzidine	1	3	-	4	12	25.0	3	100	-	-	---
F	m-Benzidine	-	-	-	-	2	0.0	-	-	-	-	---
M	m-Benzidine	-	2	1	3	11	21.4	2	100	-	-	---
S	m-Benzidine	17	30	-	47	298	13.6	30	100	-	-	---
W	m-Benzidine	9	25	5	39	112	25.8	29	100	-	-	---
C	1,2-Benzisothiazole	-	-	-	-	1	0.0	-	-	-	-	---
C	Benzo[a]anthracene	1	3	-	4	12	25.0	3	100	-	-	---
F	Benzo[a]anthracene	-	-	-	-	2	0.0	-	-	-	-	---
M	Benzo[a]anthracene	-	2	1	3	11	21.4	2	100	-	-	---
S	Benzo[a]anthracene	17	30	-	47	298	13.6	30	100	-	-	---
T	Benzo[a]anthracene	-	-	-	-	8	0.0	-	-	-	-	---
W	Benzo[a]anthracene	9	25	5	39	112	25.8	29	97	-	3	0.96
C	Benzo[a]pyrene	1	3	-	4	12	25.0	3	100	-	-	---
F	Benzo[a]pyrene	-	-	-	-	2	0.0	-	-	-	-	---
M	Benzo[a]pyrene	-	2	1	3	11	21.4	2	100	-	-	---
S	Benzo[a]pyrene	17	30	-	47	299	13.6	30	100	-	-	---
T	Benzo[a]pyrene	-	-	-	-	8	0.0	-	-	-	-	---
W	Benzo[a]pyrene	9	25	5	39	112	25.8	29	97	-	3	0.49 ± 0.33
C	Benzo[b]fluoranthene	1	3	-	4	12	25.0	3	100	-	-	0.75
F	Benzo[b]fluoranthene	-	-	-	-	2	0.0	-	-	-	-	---
M	Benzo[b]fluoranthene	-	2	1	3	11	21.4	2	50	-	0	---
S	Benzo[b]fluoranthene	17	30	-	47	299	13.6	30	97	3	-	0.98
W	Benzo[b]fluoranthene	9	25	5	39	112	25.8	29	100	-	-	0.86
C	Benzo[g,h,i]perylene	1	3	-	4	12	25.0	3	100	-	-	---
F	Benzo[g,h,i]perylene	-	-	-	-	2	0.0	-	-	-	-	---
M	Benzo[g,h,i]perylene	-	2	1	3	11	21.4	2	100	-	-	---
S	Benzo[g,h,i]perylene	17	30	-	47	296	13.7	30	100	-	-	---

TABLE C-I (cont)

Organic Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
W	Benzo[g,h,i]perylene	9	25	5	39	112	25.8	29	100	-	-	1.06 ± 0.06
C	Benzo[k]fluoranthene	1	3	-	4	12	25.0	3	100	-	-	---
F	Benzo[k]fluoranthene	-	-	-	-	2	0.0	-	-	-	-	---
M	Benzo[k]fluoranthene	-	2	1	3	11	21.4	2	50	-	50	---
S	Benzo[k]fluoranthene	17	30	-	47	298	13.6	30	100	-	-	---
T	Benzo[k]fluoranthene	-	-	-	-	8	0.0	-	-	-	-	---
W	Benzo[k]fluoranthene	9	25	5	39	112	25.8	29	100	-	-	0.88
C	Benzoic acid	1	3	-	4	12	25.0	3	67	-	33	---
F	Benzoic acid	-	-	-	-	2	0.0	-	-	-	-	---
M	Benzoic acid	-	2	1	3	11	21.4	2	100	-	-	---
S	Benzoic acid	17	30	-	47	298	13.6	30	63	-	37	0.50 ± 0.35
W	Benzoic acid	9	25	5	39	112	25.8	29	76	7	17	0.55 ± 0.33
W	Benzophenone	-	-	-	-	1	0.0	-	-	-	-	---
C	Benzothiazole	-	-	-	-	1	0.0	-	-	-	-	---
T	Benzothiazole	-	-	-	-	1	0.0	-	-	-	-	---
C	2(3H)-Benzothiazolone	-	-	-	-	2	0.0	-	-	-	-	---
C	Benzyl alcohol	1	3	-	4	12	25.0	4	100	-	-	---
F	Benzyl alcohol	-	-	-	-	2	0.0	-	-	-	-	---
M	Benzyl alcohol	-	2	1	3	11	21.4	2	100	-	-	---
S	Benzyl alcohol	17	30	-	47	297	13.7	30	93	3	3	0.74 ± 0.26
W	Benzyl alcohol	9	25	5	39	112	25.8	29	93	3	3	0.53 ± 0.25
C	Bis(2-chloroethoxy)methane	1	3	-	4	12	25.0	3	100	-	-	---
F	Bis(2-chloroethoxy)methane	-	-	-	-	2	0.0	-	-	-	-	---
M	Bis(2-chloroethoxy)methane	-	2	1	3	11	21.4	2	100	-	-	---
S	Bis(2-chloroethoxy)methane	17	30	-	47	296	13.7	30	100	-	-	---
W	Bis(2-chloroethoxy)methane	9	25	5	39	112	25.8	29	100	-	-	0.67
C	Bis(2-chloroethyl)ether	1	3	-	4	12	25.0	4	100	-	-	---
F	Bis(2-chloroethyl)ether	-	-	-	-	2	0.0	-	-	-	-	---
M	Bis(2-chloroethyl)ether	-	2	1	3	11	21.4	2	100	-	-	---
S	Bis(2-chloroethyl)ether	17	30	-	47	299	13.6	30	97	3	-	0.67 ± 0.08
W	Bis(2-chloroethyl)ether	9	25	5	39	112	25.8	29	97	3	-	0.64 ± 0.05
C	Bis(2-chloroisopropyl)ether	1	3	-	4	12	25.0	4	100	-	-	---
F	Bis(2-chloroisopropyl)ether	-	-	-	-	2	0.0	-	-	-	-	---
M	Bis(2-chloroisopropyl)ether	-	2	1	3	11	21.4	2	100	-	-	---
S	Bis(2-chloroisopropyl)ether	17	30	-	47	296	13.7	30	100	-	-	---
W	Bis(2-chloroisopropyl)ether	9	25	5	39	112	25.8	29	100	-	-	---
W	Bis(2-ethylhexyl)adipate	-	-	2	2	-	100.0	2	50	50	-	0.52
C	Bis(2-ethylhexyl)phthalate	1	3	-	4	12	25.0	3	-	-	100	---
F	Bis(2-ethylhexyl)phthalate	-	-	-	-	2	0.0	-	-	-	-	---
M	Bis(2-ethylhexyl)phthalate	-	2	1	3	11	21.4	2	100	-	-	0.92
S	Bis(2-ethylhexyl)phthalate	17	30	-	47	296	13.7	30	87	-	13	---
W	Bis(2-ethylhexyl)phthalate	9	25	5	39	112	25.8	29	83	3	14	0.89 ± 0.09
C	Bromobenzene	-	-	-	-	8	0.0	-	-	-	-	---
F	Bromobenzene	-	-	-	-	2	0.0	-	-	-	-	---

TABLE C-I (cont)

Organic Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
M	Bromobenzene	-	1	-	1	17	5.6	1	100	-	-	---
S	Bromobenzene	52	20	1	73	257	22.1	21	100	-	-	---
T	Bromobenzene	-	49	-	49	624	7.3	50	98	-	2	0.84 ± 0.16
W	Bromobenzene	37	37	13	87	122	41.6	50	100	-	-	---
C	Bromochloromethane	-	-	-	-	8	0.0	-	-	-	-	---
F	Bromochloromethane	-	-	-	-	2	0.0	-	-	-	-	---
M	Bromochloromethane	-	1	-	1	17	5.6	1	100	-	-	---
S	Bromochloromethane	51	20	1	72	257	21.9	21	90	5	5	0.52
W	Bromochloromethane	37	37	13	87	122	41.6	50	100	-	-	1.10
C	Bromodichloromethane	-	-	-	-	8	0.0	-	-	-	-	---
F	Bromodichloromethane	-	-	-	-	2	0.0	-	-	-	-	---
M	Bromodichloromethane	-	1	-	1	17	5.6	1	100	-	-	---
S	Bromodichloromethane	52	20	1	73	257	22.1	21	100	-	-	---
W	Bromodichloromethane	37	37	13	87	122	41.6	50	100	-	-	1.07 ± 0.10
C	Bromoform	-	-	-	-	8	0.0	-	-	-	-	---
F	Bromoform	-	-	-	-	2	0.0	-	-	-	-	---
M	Bromoform	-	1	-	1	17	5.6	1	100	-	-	---
S	Bromoform	52	20	1	73	257	22.1	21	95	-	5	---
W	Bromoform	37	37	13	87	122	41.6	50	100	-	-	1.04 ± 0.23
C	Bromomethane	-	-	-	-	8	0.0	-	-	-	-	---
F	Bromomethane	-	-	-	-	2	0.0	-	-	-	-	---
M	Bromomethane	-	1	-	1	17	5.6	1	100	-	-	---
S	Bromomethane	51	20	1	72	257	21.9	21	100	-	-	---
W	Bromomethane	37	37	13	87	122	41.6	50	100	-	-	---
C	4-Bromophenylphenyl ether	1	3	-	4	12	25.0	3	100	-	-	---
F	4-Bromophenylphenyl ether	-	-	-	-	2	0.0	-	-	-	-	---
M	4-Bromophenylphenyl ether	-	2	1	3	11	21.4	2	100	-	-	---
S	4-Bromophenylphenyl ether	17	30	-	47	298	13.6	30	100	-	-	---
W	4-Bromophenylphenyl ether	9	25	5	39	112	25.8	29	100	-	-	0.99
C	2-Butanone	-	-	-	-	8	0.0	-	-	-	-	---
F	2-Butanone	-	-	-	-	2	0.0	-	-	-	-	---
M	2-Butanone	-	1	-	1	17	5.6	1	-	-	100	---
S	2-Butanone	52	20	1	73	257	22.1	21	52	5	43	1.10 ± 0.70
T	2-Butanone	-	1	-	1	3	25.0	1	100	-	-	---
W	2-Butanone	37	37	13	87	122	41.6	50	72	8	20	0.89 ± 0.55
M	Butoxy-2-ethanol	-	-	-	-	4	0.0	-	-	-	-	---
S	Butoxy-2-ethanol	-	-	-	-	1	0.0	-	-	-	-	---
T	Butoxy-2-ethanol	-	-	-	-	14	0.0	-	-	-	-	---
W	Butoxy-2-ethanol	-	-	-	-	8	0.0	-	-	-	-	---
W	Butoxy-2-ethoxy-2-ethanol	-	-	-	-	10	0.0	-	-	-	-	---
W	1-(2-Butoxyethoxy)ethanol	-	-	-	-	1	0.0	-	-	-	-	---
T	n-Butyl acetate	-	1	-	1	13	7.1	1	100	-	-	---
C	n-Butylbenzene	-	-	-	-	8	0.0	-	-	-	-	---
C	tert-Butylbenzene	-	-	-	-	8	0.0	-	-	-	-	---

TABLE C-I (cont)

Organic Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
C	sec-Butylbenzene	-	-	-	-	8	0.0	-	-	-	-	---
F	tert-Butylbenzene	-	-	-	-	2	0.0	-	-	-	-	---
F	sec-Butylbenzene	-	-	-	-	2	0.0	-	-	-	-	---
F	n-Butylbenzene	-	-	-	-	2	0.0	-	-	-	-	---
M	n-Butylbenzene	-	1	-	1	17	5.6	1	100	-	-	---
M	tert-Butylbenzene	-	1	-	1	17	5.6	1	100	-	-	---
M	sec-Butylbenzene	-	1	-	1	17	5.6	1	100	-	-	---
S	n-Butylbenzene	52	20	1	73	257	22.1	21	95	-	5	0.25
S	sec-Butylbenzene	52	20	1	73	257	22.1	21	100	-	-	---
S	tert-Butylbenzene	52	20	1	73	257	22.1	21	100	-	-	---
W	n-Butylbenzene	37	37	13	87	122	41.6	50	96	-	4	---
W	tert-Butylbenzene	37	37	13	87	122	41.6	50	100	-	-	0.99
W	sec-Butylbenzene	37	37	13	87	122	41.6	50	100	-	-	0.72
T	n-Butylbenzenesulfonamide	-	-	-	-	3	0.0	-	-	-	-	---
C	Butylbenzyl phthalate	1	3	-	4	12	25.0	3	67	-	33	---
F	Butylbenzyl phthalate	-	-	-	-	2	0.0	-	-	-	-	---
M	Butylbenzyl phthalate	-	2	1	3	11	21.4	2	100	-	-	---
S	Butylbenzyl phthalate	17	30	-	47	296	13.7	30	97	-	3	---
W	Butylbenzyl phthalate	9	25	5	39	112	25.8	29	93	-	7	0.10
T	n-Butyric acid	-	-	-	-	1	0.0	-	-	-	-	---
W	Caffeine	-	-	-	-	5	0.0	-	-	-	-	---
C	Carbon disulfide	-	-	-	-	8	0.0	-	-	-	-	---
F	Carbon disulfide	-	-	-	-	2	0.0	-	-	-	-	---
M	Carbon disulfide	-	1	-	1	17	5.6	1	100	-	-	2.31
S	Carbon disulfide	51	20	1	72	257	21.9	21	76	-	24	0.34 ± 0.11
T	Carbon disulfide	-	-	-	-	5	0.0	-	-	-	-	---
W	Carbon disulfide	37	37	13	87	122	41.6	50	88	2	10	0.98 ± 0.60
C	Carbon tetrachloride	-	-	-	-	8	0.0	-	-	-	-	---
F	Carbon tetrachloride	-	-	-	-	2	0.0	-	-	-	-	---
M	Carbon tetrachloride	-	1	-	1	18	5.3	1	100	-	-	---
S	Carbon tetrachloride	52	20	1	73	257	22.1	21	62	5	33	0.61 ± 0.28
T	Carbon tetrachloride	-	77	9	86	842	9.3	87	85	1	14	0.99 ± 0.33
W	Carbon tetrachloride	37	37	13	87	122	41.6	50	96	-	4	0.79 ± 0.22
W	2-Carboxylic acid	-	-	-	-	6	0.0	-	-	-	-	---
S	3-Carene	-	-	-	-	1	0.0	-	-	-	-	---
M	Chlordane	-	-	-	-	1	0.0	-	-	-	-	---
S	Chlordane	-	8	-	8	66	10.8	8	100	-	-	---
W	Chlordane	-	10	2	12	82	12.8	12	100	-	-	---
C	4-Chloro-3-methylphenol	1	3	-	4	16	20.0	3	100	-	-	---
F	4-Chloro-3-methylphenol	-	-	-	-	2	0.0	-	-	-	-	---
M	4-Chloro-3-methylphenol	-	2	1	3	11	21.4	2	100	-	-	---
S	4-Chloro-3-methylphenol	19	30	-	49	323	13.2	30	100	-	-	---
W	4-Chloro-3-methylphenol	19	25	5	49	112	30.4	29	100	-	-	0.90
C	4-Chloroaniline	1	3	-	4	12	25.0	3	100	-	-	---

TABLE C-I (cont)

Organic Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
F	4-Chloroaniline	-	-	-	-	2	0.0	-	-	-	-	---
M	4-Chloroaniline	-	2	1	3	11	21.4	2	100	-	-	---
S	4-Chloroaniline	17	30	-	47	299	13.6	30	100	-	-	---
W	4-Chloroaniline	9	25	5	39	112	25.8	29	100	-	-	---
C	Chlorobenzene	-	-	-	-	10	0.0	-	-	-	-	---
F	Chlorobenzene	-	-	-	-	4	0.0	-	-	-	-	---
M	Chlorobenzene	-	1	-	1	17	5.6	1	100	-	-	---
S	Chlorobenzene	46	20	1	67	298	18.4	21	71	10	19	0.58 ± 0.23
T	Chlorobenzene	-	68	-	68	833	7.5	69	86	4	10	0.78 ± 0.33
W	Chlorobenzene	37	39	13	89	169	34.5	50	98	-	2	0.88 ± 0.17
C	Chlorodibromomethane	-	-	-	-	8	0.0	-	-	-	-	---
F	Chlorodibromomethane	-	-	-	-	2	0.0	-	-	-	-	---
M	Chlorodibromomethane	-	1	-	1	17	5.6	1	100	-	-	---
S	Chlorodibromomethane	52	20	1	73	257	22.1	21	81	-	19	0.65 ± 0.29
W	Chlorodibromomethane	37	37	13	87	122	41.6	50	96	2	2	0.90 ± 0.20
C	Chloroethane	-	-	-	-	8	0.0	-	-	-	-	---
F	Chloroethane	-	-	-	-	2	0.0	-	-	-	-	---
M	Chloroethane	-	1	-	1	17	5.6	1	100	-	-	---
S	Chloroethane	51	20	1	72	257	21.9	21	100	-	-	---
W	Chloroethane	37	37	13	87	122	41.6	50	100	-	-	---
C	2-Chloroethylvinyl ether	-	-	-	-	4	0.0	-	-	-	-	---
M	2-Chloroethylvinyl ether	-	-	-	-	6	0.0	-	-	-	-	---
S	2-Chloroethylvinyl ether	46	13	1	60	178	25.2	14	100	-	-	---
W	2-Chloroethylvinyl ether	30	24	8	62	83	42.8	32	100	-	-	---
C	Chloroform	-	-	-	-	8	0.0	-	-	-	-	---
F	Chloroform	-	-	-	-	2	0.0	-	-	-	-	---
M	Chloroform	-	1	-	1	17	5.6	1	100	-	-	---
S	Chloroform	51	20	1	72	257	21.9	21	100	-	-	---
T	Chloroform	-	70	9	79	845	8.5	80	91	4	5	1.01 ± 0.36
W	Chloroform	37	37	13	87	122	41.6	50	98	-	2	1.15 ± 0.14
C	Chloromethane	-	-	-	-	8	0.0	-	-	-	-	---
F	Chloromethane	-	-	-	-	2	0.0	-	-	-	-	---
M	Chloromethane	-	1	-	1	17	5.6	1	100	-	-	---
S	Chloromethane	51	20	1	72	256	22.0	21	100	-	-	---
W	Chloromethane	37	37	13	87	122	41.6	50	100	-	-	---
C	2-Chloronaphthalene	1	3	-	4	12	25.0	3	100	-	-	---
F	2-Chloronaphthalene	-	-	-	-	2	0.0	-	-	-	-	---
M	2-Chloronaphthalene	-	2	1	3	11	21.4	2	100	-	-	---
S	2-Chloronaphthalene	17	30	-	47	297	13.7	30	100	-	-	---
W	2-Chloronaphthalene	9	26	5	40	114	26.0	30	100	-	-	0.71
C	o-Chlorophenol	1	3	-	4	16	20.0	4	100	-	-	---
F	o-Chlorophenol	-	-	-	-	2	0.0	-	-	-	-	---
M	o-Chlorophenol	-	2	1	3	11	21.4	2	100	-	-	---
S	p-Chlorophenol	-	-	-	-	2	0.0	-	-	-	-	---

TABLE C-I (cont)

Organic Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
S	o-Chlorophenol	19	30	-	49	322	13.2	30	100	-	-	---
W	o-Chlorophenol	19	25	5	49	112	30.4	29	100	-	-	0.67
C	4-Chlorophenylphenyl ether	1	3	-	4	12	25.0	3	100	-	-	---
F	4-Chlorophenylphenyl ether	-	-	-	-	2	0.0	-	-	-	-	---
M	4-Chlorophenylphenyl ether	-	2	1	3	11	21.4	2	100	-	-	---
S	4-Chlorophenylphenyl ether	17	30	-	47	298	13.6	30	100	-	-	---
W	4-Chlorophenylphenyl ether	9	25	5	39	112	25.8	29	100	-	-	0.90
C	o-Chlorotoluene	-	-	-	-	8	0.0	-	-	-	-	---
C	p-Chlorotoluene	-	-	-	-	8	0.0	-	-	-	-	---
F	o-Chlorotoluene	-	-	-	-	2	0.0	-	-	-	-	---
F	p-Chlorotoluene	-	-	-	-	2	0.0	-	-	-	-	---
M	o-Chlorotoluene	-	1	-	1	17	5.6	1	100	-	-	---
M	p-Chlorotoluene	-	1	-	1	17	5.6	1	100	-	-	---
S	p-Chlorotoluene	52	20	1	73	257	22.1	21	95	-	5	---
S	o-Chlorotoluene	52	20	1	73	257	22.1	21	100	-	-	---
W	o-Chlorotoluene	37	37	13	87	122	41.6	50	100	-	-	0.90
W	p-Chlorotoluene	37	37	13	87	122	41.6	50	100	-	-	---
C	Chrysene	1	3	-	4	12	25.0	3	100	-	-	---
F	Chrysene	-	-	-	-	2	0.0	-	-	-	-	---
M	Chrysene	-	2	1	3	11	21.4	2	100	-	-	---
S	Chrysene	17	30	-	47	297	13.7	30	100	-	-	---
T	Chrysene	-	-	-	-	8	0.0	-	-	-	-	---
W	Chrysene	9	25	5	39	112	25.8	29	97	-	3	0.94
C	Cyclic Hydrocarbons	-	-	-	-	4	0.0	-	-	-	-	---
S	Cyclic Hydrocarbons	-	1	-	1	11	8.3	-	-	-	-	---
T	Cyclic Hydrocarbons	-	-	-	-	2	0.0	-	-	-	-	---
W	Cyclic Hydrocarbons	-	-	-	-	5	0.0	-	-	-	-	---
S	Cyclohexane, trans-1-(cyclohex	-	-	-	-	1	0.0	-	-	-	-	---
S	Cyclohexane, trans-1-(cyclohex	-	-	-	-	1	0.0	-	-	-	-	---
T	Cyclohexanes, alkylated	-	-	-	-	7	0.0	-	-	-	-	---
W	Cyclohexanone	-	1	-	1	1	50.0	-	-	-	-	---
S	Cyclohexanone, 3,3,5-Trimethyl	-	-	-	-	1	0.0	-	-	-	-	---
W	Cyclohexylamine	-	-	-	-	2	0.0	-	-	-	-	---
S	Cyclopropane, 1,1-dimethyl-2-(	-	-	-	-	1	0.0	-	-	-	-	---
S	Mixed-Cymenes	-	-	-	-	1	0.0	-	-	-	-	---
S	2,4-D	-	10	-	10	92	9.8	10	80	10	10	1.01 ± 0.82
W	2,4-D	-	7	2	9	41	18.0	9	100	-	-	1.61 ± 1.70
M	p,p'-DDD	-	-	-	-	2	0.0	-	-	-	-	---
S	p,p'-DDD	-	8	-	8	74	9.8	8	100	-	-	0.76
W	p,p'-DDD	-	10	2	12	82	12.8	12	100	-	-	0.96 ± 0.08
M	p,p'-DDE	-	-	-	-	2	0.0	-	-	-	-	---
S	p,p'-DDE	-	8	-	8	74	9.8	8	100	-	-	0.89 ± 0.13
S	o,p'-DDE	-	-	-	-	9	0.0	-	-	-	-	---
W	p,p'-DDE	-	10	2	12	82	12.8	12	92	8	-	0.81 ± 0.13

TABLE C-I (cont)

Organic Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
M	p,p'-DDT	-	-	-	-	2	0.0	-	-	-	-	---
S	p,p'-DDT	-	8	-	8	74	9.8	8	100	-	-	1.65
S	o,p'-DDT	-	-	-	-	9	0.0	-	-	-	-	---
W	p,p'-DDT	-	10	2	12	82	12.8	12	100	-	-	1.20 ± 0.21
W	Decachlorobiphenyl (2,2',3,3',	-	-	1	1	-	100.0	1	100	-	-	0.78
S	Decanal	-	-	-	-	1	0.0	-	-	-	-	---
T	n-Decane	-	-	-	-	1	0.0	-	-	-	-	---
F	Di(2-ethylhexyl) sebacate (DEH	-	-	-	-	1	0.0	-	-	-	-	---
W	Di(2-ethylhexyl) sebacate (DEH	-	-	-	-	1	0.0	-	-	-	-	---
C	Di-n-butyl phthalate	1	3	-	4	12	25.0	3	100	-	-	---
F	Di-n-butyl phthalate	-	-	-	-	2	0.0	-	-	-	-	---
M	Di-n-butyl phthalate	-	2	1	3	11	21.4	2	100	-	-	---
S	Di-n-butyl phthalate	17	30	-	47	297	13.7	30	93	-	7	---
W	Di-n-butyl phthalate	9	25	5	39	112	25.8	29	97	-	3	0.22
C	Di-n-octyl phthalate	1	3	-	4	12	25.0	3	100	-	-	---
F	Di-n-octyl phthalate	-	-	-	-	2	0.0	-	-	-	-	---
M	Di-n-octyl phthalate	-	2	1	3	11	21.4	2	100	-	-	---
S	Di-n-octyl phthalate	17	30	-	47	299	13.6	30	100	-	-	---
W	Di-n-octyl phthalate	9	25	5	39	112	25.8	29	97	-	3	---
C	Dibenzo[a,h]anthracene	1	3	-	4	12	25.0	3	100	-	-	---
F	Dibenzo[a,h]anthracene	-	-	-	-	2	0.0	-	-	-	-	---
M	Dibenzo[a,h]anthracene	-	2	1	3	11	21.4	2	100	-	-	---
S	Dibenzo[a,h]anthracene	17	30	-	47	299	13.6	30	100	-	-	---
W	Dibenzo[a,h]anthracene	9	25	5	39	112	25.8	29	100	-	-	1.10
C	Dibenzofuran	1	3	-	4	12	25.0	3	100	-	-	---
F	Dibenzofuran	-	-	-	-	2	0.0	-	-	-	-	---
M	Dibenzofuran	-	2	1	3	11	21.4	2	100	-	-	---
S	Dibenzofuran	17	30	-	47	299	13.6	30	100	-	-	---
W	Dibenzofuran	9	25	5	39	112	25.8	29	100	-	-	---
C	1,2-Dibromo-3-chloropropane	-	-	-	-	8	0.0	-	-	-	-	---
F	1,2-Dibromo-3-chloropropane	-	-	-	-	2	0.0	-	-	-	-	---
M	1,2-Dibromo-3-chloropropane	-	1	-	1	17	5.6	1	100	-	-	---
S	1,2-Dibromo-3-chloropropane	52	20	1	73	257	22.1	21	100	-	-	---
W	1,2-Dibromo-3-chloropropane	37	37	13	87	122	41.6	50	10	-	-	---
C	1,2-Dibromoethane	-	-	-	-	8	0.0	-	-	-	-	---
F	1,2-Dibromoethane	-	-	-	-	2	0.0	-	-	-	-	---
M	1,2-Dibromoethane	-	1	-	1	17	5.6	1	100	-	-	---
S	1,2-Dibromoethane	52	20	1	73	257	22.1	21	90	-	10	0.29
W	1,2-Dibromoethane	37	37	13	87	122	41.6	50	100	-	-	1.08
C	Dibromomethane	-	-	-	-	8	0.0	-	-	-	-	---
F	Dibromomethane	-	-	-	-	2	0.0	-	-	-	-	---
M	Dibromomethane	-	1	-	1	17	5.6	1	100	-	-	---
S	Dibromomethane	52	20	1	73	257	22.1	21	100	-	-	---
W	Dibromomethane	37	37	13	87	122	41.6	50	100	-	-	1.26

TABLE C-I (cont)

Organic Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
C	o-Dichlorobenzene (1,2)	1	3	-	4	20	16.7	4	100	-	-	---
F	o-Dichlorobenzene (1,2)	-	-	-	-	4	0.0	-	-	-	-	---
M	o-Dichlorobenzene (1,2)	-	3	1	4	28	12.5	3	100	-	-	---
S	o-Dichlorobenzene (1,2)	69	50	1	120	553	17.8	51	100	-	-	---
W	o-Dichlorobenzene (1,2)	46	63	18	127	236	35.0	80	100	-	-	0.94 ± 0.16
C	m-Dichlorobenzene (1,3)	1	3	-	4	20	16.7	4	100	-	-	---
F	m-Dichlorobenzene (1,3)	-	-	-	-	4	0.0	-	-	-	-	---
M	m-Dichlorobenzene (1,3)	-	3	1	4	28	12.5	3	100	-	-	---
S	m-Dichlorobenzene (1,3)	69	50	1	120	554	17.8	51	100	-	-	---
W	m-Dichlorobenzene (1,3)	46	63	18	127	236	35.0	80	100	-	-	1.00 ± 0.22
C	p-Dichlorobenzene (1,4)	1	3	-	4	24	14.3	4	100	-	-	---
F	p-Dichlorobenzene (1,4)	-	-	-	-	4	0.0	-	-	-	-	---
M	p-Dichlorobenzene (1,4)	-	3	1	4	28	12.5	3	100	-	-	---
S	p-Dichlorobenzene (1,4)	71	50	1	122	579	17.4	51	96	-	4	0.09
W	p-Dichlorobenzene (1,4)	56	63	18	137	236	36.7	80	98	1	1	0.92 ± 0.24
C	3,3′-Dichlorobenzidine	1	3	-	4	12	25.0	3	100	-	-	---
F	3,3′-Dichlorobenzidine	-	-	-	-	2	0.0	-	-	-	-	---
M	3,3′-Dichlorobenzidine	-	2	1	3	11	21.4	2	100	-	-	---
S	3,3′-Dichlorobenzidine	17	30	-	47	296	13.7	30	100	-	-	---
W	3,3′-Dichlorobenzidine	9	25	5	39	112	25.8	29	100	-	-	---
C	Dichlorodifluoromethane	-	-	-	-	4	0.0	-	-	-	-	---
M	Dichlorodifluoromethane	-	-	-	-	6	0.0	-	-	-	-	---
S	Dichlorodifluoromethane	46	13	1	60	178	25.2	14	100	-	-	---
W	Dichlorodifluoromethane	30	24	8	62	83	42.8	32	100	-	-	---
C	1,1-Dichloroethane	-	-	-	-	10	0.0	-	-	-	-	---
C	1,2-Dichloroethane	-	-	-	-	8	0.0	-	-	-	-	---
F	1,1-Dichloroethane	-	-	-	-	2	0.0	-	-	-	-	---
F	1,2-Dichloroethane	-	-	-	-	2	0.0	-	-	-	-	---
M	1,1-Dichloroethane	-	1	-	1	17	5.6	1	100	-	-	1.37
M	1,2-Dichloroethane	-	1	-	1	17	5.6	1	100	-	-	---
S	1,2-Dichloroethane	51	20	1	72	257	21.9	21	57	14	29	0.71 ± 0.25
S	1,1-Dichloroethane	51	20	1	72	275	20.7	21	52	10	38	0.56 ± 0.19
T	1,2-Dichloroethane	-	10	9	19	25	43.2	19	100	-	-	0.98 ± 0.08
W	1,2-Dichloroethane	37	37	13	87	122	41.6	50	98	-	2	1.07 ± 0.19
W	1,1-Dichloroethane	37	39	13	89	136	39.6	50	96	-	4	1.00 ± 0.30
C	trans-1,2-Dichloroethene	-	-	-	-	8	0.0	-	-	-	-	---
C	1,1-Dichloroethene	-	-	-	-	8	0.0	-	-	-	-	---
F	1,1-Dichloroethene	-	-	-	-	4	0.0	-	-	-	-	---
F	trans-1,2-Dichloroethene	-	-	-	-	2	0.0	-	-	-	-	---
M	1,1-Dichloroethene	-	1	-	1	17	5.6	1	100	-	-	---
M	trans-1,2-Dichloroethene	-	1	-	1	17	5.6	1	100	-	-	---
S	1,1-Dichloroethene	46	20	1	67	280	19.3	21	100	-	-	---
S	trans-1,2-Dichloroethene	51	20	1	72	257	21.9	21	100	-	-	---

TABLE C-I (cont)

Organic Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
W	trans-1,2-Dichloroethene	37	37	13	87	122	41.6	50	100	-	-	---
W	1,1-Dichloroethene	37	37	13	87	155	36.0	50	98	-	2	1.23
C	cis-1,2-Dichloroethylene	-	-	-	-	8	0.0	-	-	-	-	---
F	cis-1,2-Dichloroethylene	-	-	-	-	2	0.0	-	-	-	-	---
M	cis-1,2-Dichloroethylene	-	1	-	1	17	5.6	1	100	-	-	---
S	cis-1,2-Dichloroethylene	51	20	1	72	257	21.9	21	100	-	-	---
W	cis-1,2-Dichloroethylene	37	37	13	87	122	41.6	50	100	-	-	---
C	2,4-Dichlorophenol	1	3	-	4	12	25.0	3	67	-	33	5.15
F	2,4-Dichlorophenol	-	-	-	-	2	0.0	-	-	-	-	---
M	2,4-Dichlorophenol	-	2	1	3	11	21.4	2	100	-	-	---
S	2,4-Dichlorophenol	17	30	-	47	296	13.7	30	97	3	-	0.66
W	2,4-Dichlorophenol	9	25	5	39	112	25.8	29	97	-	3	0.64 ± 0.21
C	1,3-Dichloropropane	-	-	-	-	8	0.0	-	-	-	-	---
C	1,2-Dichloropropane	-	-	-	-	8	0.0	-	-	-	-	---
C	2,2-Dichloropropane	-	-	-	-	8	0.0	-	-	-	-	---
F	1,3-Dichloropropane	-	-	-	-	2	0.0	-	-	-	-	---
F	2,2-Dichloropropane	-	-	-	-	2	0.0	-	-	-	-	---
F	1,2-Dichloropropane	-	-	-	-	2	0.0	-	-	-	-	---
M	1,3-Dichloropropane	-	1	-	1	17	5.6	1	100	-	-	---
M	1,2-Dichloropropane	-	1	-	1	17	5.6	1	100	-	-	---
M	2,2-Dichloropropane	-	1	-	1	17	5.6	1	100	-	-	---
S	1,3-Dichloropropane	52	20	1	73	257	22.1	21	95	-	5	---
S	2,2-Dichloropropane	52	20	1	73	257	22.1	21	100	-	-	---
S	1,2-Dichloropropane	52	20	1	73	257	22.1	21	95	-	5	0.77
W	1,2-Dichloropropane	37	37	13	87	122	41.6	50	100	-	-	0.95 ± 0.15
W	2,2-Dichloropropane	37	37	13	87	122	41.6	50	100	-	-	---
W	1,3-Dichloropropane	37	37	13	87	122	41.6	50	100	-	-	1.09
C	cis-1,3-Dichloropropene	-	-	-	-	8	0.0	-	-	-	-	---
C	trans-1,3-Dichloropropene	-	-	-	-	8	0.0	-	-	-	-	---
C	1,1-Dichloropropene	-	-	-	-	8	0.0	-	-	-	-	---
F	cis-1,3-Dichloropropene	-	-	-	-	2	0.0	-	-	-	-	---
F	trans-1,3-Dichloropropene	-	-	-	-	2	0.0	-	-	-	-	---
F	1,1-Dichloropropene	-	-	-	-	2	0.0	-	-	-	-	---
M	cis-1,3-Dichloropropene	-	1	-	1	17	5.6	1	-	-	100	0.40
M	trans-1,3-Dichloropropene	-	1	-	1	17	5.6	1	100	-	-	1.89
M	1,1-Dichloropropene	-	1	-	1	17	5.6	1	100	-	-	---
S	trans-1,3-Dichloropropene	46	20	1	67	257	20.7	21	95	-	5	0.93 ± 0.46
S	1,1-Dichloropropene	51	20	1	72	257	21.9	21	95	-	5	---
S	cis-1,3-Dichloropropene	46	20	1	67	257	20.7	21	81	5	14	0.36 ± 0.19
W	trans-1,3-Dichloropropene	37	37	13	87	122	41.6	50	100	-	-	1.69 ± 0.34
W	cis-1,3-Dichloropropene	37	37	13	87	122	41.6	50	78	14	8	0.52 ± 0.10
W	1,1-Dichloropropene	37	37	13	87	122	41.6	50	100	-	-	---
M	Dieldrin	-	-	-	-	1	0.0	-	-	-	-	---
S	Dieldrin	-	8	-	8	66	10.8	8	100	-	-	---

TABLE C-I (cont)

Organic Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
W	Dieldrin	-	10	2	12	82	12.8	12	100	-	-	1.02
T	Diethyl ether	-	-	-	-	1	0.0	-	-	-	-	---
W	Diethyl ether	-	2	-	2	1	66.7	-	-	-	-	---
C	Diethyl phthalate	1	3	-	4	12	25.0	3	100	-	-	---
F	Diethyl phthalate	-	-	-	-	2	0.0	-	-	-	-	---
M	Diethyl phthalate	-	2	1	3	11	21.4	2	100	-	-	1.07
S	Diethyl phthalate	17	30	-	47	296	13.7	30	100	-	-	1.11 ± 0.31
W	Diethyl phthalate	9	25	5	39	112	25.8	29	76	-	24	0.31 ± 0.40
T	Diethylene glycol	-	-	-	-	3	0.0	-	-	-	-	---
W	Diethylhydroxylamine	-	-	-	-	2	0.0	-	-	-	-	---
C	Dimethyl phthalate	1	3	-	4	12	25.0	3	67	-	33	4.72
F	Dimethyl phthalate	-	-	-	-	2	0.0	-	-	-	-	---
M	Dimethyl phthalate	-	2	1	3	11	21.4	2	100	-	-	---
S	Dimethyl phthalate	17	30	-	47	296	13.7	30	100	-	-	0.79
W	Dimethyl phthalate	9	25	5	39	112	25.8	29	90	-	10	---
W	5,5-Dimethyl-2,4-Imadazolidine	-	-	-	-	1	0.0	-	-	-	-	---
S	3,7-Dimethyl-nonane	-	-	-	-	1	0.0	-	-	-	-	---
M	2,5-Dimethylbenzaldehyde	-	-	-	-	1	0.0	-	-	-	-	---
M	3,4-Dimethylbenzaldehyde	-	-	-	-	1	0.0	-	-	-	-	---
M	2,4-Dimethylbenzaldehyde	-	-	-	-	1	0.0	-	-	-	-	---
W	3-(1,1-Dimethylethyl)phenol	-	-	-	-	1	0.0	-	-	-	-	---
C	3,4-Dimethylheptane	-	-	-	-	1	0.0	-	-	-	-	---
M	3,4-Dimethylheptane	-	-	-	-	1	0.0	-	-	-	-	---
C	2,4-Dimethylphenol	1	3	-	4	12	25.0	3	100	-	-	1.04
F	2,4-Dimethylphenol	-	-	-	-	2	0.0	-	-	-	-	---
M	2,4-Dimethylphenol	-	2	1	3	11	21.4	2	100	-	-	---
S	2,4-Dimethylphenol	17	30	-	47	296	13.7	30	93	-	7	0.35
W	2,4-Dimethylphenol	9	25	5	39	112	25.8	29	100	-	-	0.71
W	Dimethylsulfoxide	-	-	-	-	1	0.0	-	-	-	-	---
C	2,4-Dinitrophenol	1	3	-	4	12	25.0	3	100	-	-	---
F	2,4-Dinitrophenol	-	-	-	-	2	0.0	-	-	-	-	---
M	2,4-Dinitrophenol	-	2	1	3	11	21.4	2	100	-	-	---
S	2,4-Dinitrophenol	17	30	-	47	296	13.7	30	100	-	-	---
W	2,4-Dinitrophenol	9	25	5	39	112	25.8	29	100	-	-	---
C	2,6-Dinitrotoluene	1	3	-	4	12	25.0	3	100	-	-	---
C	2,4-Dinitrotoluene	1	3	-	4	16	20.0	3	100	-	-	---
F	2,4-Dinitrotoluene	-	-	-	-	2	0.0	-	-	-	-	---
F	2,6-Dinitrotoluene	-	-	-	-	2	0.0	-	-	-	-	---
M	2,6-Dinitrotoluene	-	2	1	3	11	21.4	2	100	-	-	---
M	2,4-Dinitrotoluene	-	2	1	3	11	21.4	2	100	-	-	---
S	2,6-Dinitrotoluene	17	30	-	47	297	13.7	30	100	-	-	---
S	2,4-Dinitrotoluene	19	32	-	51	336	13.2	32	100	-	-	0.87
W	2,4-Dinitrotoluene	19	25	5	49	112	30.4	29	100	-	-	0.96
W	2,6-Dinitrotoluene	9	25	5	39	112	25.8	29	100	-	-	0.91

TABLE C-I (cont)

Organic Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
W	Dioctyl adipate	-	-	-	-	1	0.0	-	-	-	-	---
T	1,4-Dioxane	-	1	-	1	18	5.3	-	-	-	-	---
W	2,5-Diphenyloxazole	-	-	-	-	1	0.0	-	-	-	-	---
T	Dipropyleneglycol-monomethyl-e	-	-	-	-	6	0.0	-	-	-	-	---
C	2,2'-Dithiobis-Benzothiazole	-	-	-	-	1	0.0	-	-	-	-	---
S	n-Dodecane	-	-	-	-	1	0.0	-	-	-	-	---
M	Endosulfan I	-	-	-	-	1	0.0	-	-	-	-	---
S	Endosulfan I	-	3	-	3	24	11.1	3	100	-	-	---
W	Endosulfan I	-	10	2	12	82	12.8	12	100	-	-	---
M	Endosulfan II	-	-	-	-	1	0.0	-	-	-	-	---
S	Endosulfan II	-	3	-	3	24	11.1	3	100	-	-	---
W	Endosulfan II	-	10	2	12	82	12.8	12	100	-	-	---
M	Endosulfan sulfate	-	-	-	-	1	0.0	-	-	-	-	---
S	Endosulfan sulfate	-	8	-	8	66	10.8	8	100	-	-	---
W	Endosulfan sulfate	-	10	2	12	82	12.8	12	100	-	-	---
M	Endrin	-	-	-	-	1	0.0	-	-	-	-	---
S	Endrin	-	8	-	8	66	10.8	8	100	-	-	---
W	Endrin	-	10	2	12	82	12.8	12	100	-	-	---
M	Endrin aldehyde	-	-	-	-	1	0.0	-	-	-	-	---
S	Endrin aldehyde	-	8	-	8	66	10.8	8	100	-	-	---
W	Endrin aldehyde	-	10	2	12	82	12.8	12	100	-	-	---
C	Esters	-	-	-	-	1	0.0	-	-	-	-	---
S	Esters	1	2	-	3	12	20.0	-	-	-	-	---
W	Esters	-	-	-	-	2	0.0	-	-	-	-	---
W	Ethane, 2-chloro-1,1,2-trifluo	-	-	-	-	1	0.0	-	-	-	-	---
T	Ethanol	-	3	2	5	9	35.7	5	20	-	80	0.56 ± 0.17
S	Ethanone, 1-(2,2-dimethylcyclo	-	-	-	-	2	0.0	-	-	-	-	---
W	2-Ethoxy ethanol	-	-	-	-	1	0.0	-	-	-	-	---
T	Ethoxyethyl acetate	-	-	-	-	5	0.0	-	-	-	-	---
T	Ethyl acetate	-	3	-	3	17	15.0	3	67	-	33	0.69 ± 0.20
C	2-Ethyl-1-hexanol	-	-	-	-	1	0.0	-	-	-	-	---
M	2-Ethyl-1-hexanol	-	-	-	-	1	0.0	-	-	-	-	---
S	2-Ethyl-1-hexanol	-	-	-	-	3	0.0	-	-	-	-	---
C	Ethylbenzene	-	-	-	-	8	0.0	-	-	-	-	---
F	Ethylbenzene	-	-	-	-	2	0.0	-	-	-	-	---
M	Ethylbenzene	-	1	-	1	17	5.6	1	-	-	100	0.12
S	Ethylbenzene	46	20	1	67	257	20.7	21	62	-	38	0.51 ± 0.23
T	Ethylbenzene	-	68	-	68	833	7.5	69	74	10	16	1.03 ± 0.40
W	Ethylbenzene	37	37	13	87	122	41.6	50	92	4	4	0.80 ± 0.18
W	Ethylisothiocyanate	-	-	-	-	2	0.0	-	-	-	-	---
C	Fluoranthene	1	3	-	4	12	25.0	3	100	-	-	---
F	Fluoranthene	-	-	-	-	2	0.0	-	-	-	-	---
M	Fluoranthene	-	2	1	3	11	21.4	2	100	-	-	---
S	Fluoranthene	17	30	-	47	297	13.7	30	100	-	-	---

TABLE C-I (cont)

Organic Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
T	Fluoranthene	-	-	-	-	8	0.0	-	-	-	-	---
W	Fluoranthene	9	25	5	39	112	25.8	29	100	-	-	0.98
C	Fluorene	1	3	-	4	12	25.0	3	100	-	-	---
F	Fluorene	-	-	-	-	2	0.0	-	-	-	-	---
M	Fluorene	-	2	1	3	11	21.4	2	100	-	-	---
S	Fluorene	17	30	-	47	297	13.7	30	100	-	-	---
W	Fluorene	9	25	5	39	112	25.8	29	100	-	-	0.92
T	Formaldehyde	-	5	1	6	23	20.7	3	67	-	33	1.03
S	HMX	-	2	-	2	10	16.7	2	100	-	-	0.95
S	Halogenated Hydrocarbon	-	-	-	-	2	0.0	-	-	-	-	---
W	Halogenated Hydrocarbon	-	-	-	-	3	0.0	-	-	-	-	---
M	Halogenated hydrocarbons	-	-	-	-	8	0.0	-	-	-	-	---
W	Halogenated hydrocarbons	-	-	-	-	2	0.0	-	-	-	-	---
M	Heptachlor	-	-	-	-	1	0.0	-	-	-	-	---
S	Heptachlor	-	8	-	8	66	10.8	8	100	-	-	0.59
W	Heptachlor	-	10	4	14	82	14.6	14	93	-	7	0.82 ± 0.29
M	Heptachlor epoxide	-	-	-	-	1	0.0	-	-	-	-	---
S	Heptachlor epoxide	-	8	-	8	66	10.8	8	100	-	-	0.87 ± 0.22
W	Heptachlor epoxide	-	10	4	14	82	14.6	14	100	-	-	1.05 ± 0.13
M	n-Heptane	-	-	-	-	2	0.0	-	-	-	-	---
S	n-Heptane	-	-	-	-	1	0.0	-	-	-	-	---
S	Heptane, 2-methyl-7-Pentyl-bic	-	-	-	-	1	0.0	-	-	-	-	---
S	2-Heptanone	-	-	-	-	1	0.0	-	-	-	-	---
W	3-Heptanone	-	2	1	3	-	100.0	-	-	-	-	---
S	2-Heptanone, 6-Methyl-	-	-	-	-	3	0.0	-	-	-	-	---
C	1-Heptene	-	-	-	-	2	0.0	-	-	-	-	---
C	Hexachlorobenzene	1	3	-	4	12	25.0	3	100	-	-	---
F	Hexachlorobenzene	-	-	-	-	2	0.0	-	-	-	-	---
M	Hexachlorobenzene	-	2	1	3	11	21.4	2	100	-	-	---
S	Hexachlorobenzene	17	30	-	47	296	13.7	30	97	-	3	0.54
W	Hexachlorobenzene	9	26	5	40	114	26.0	30	93	7	-	0.72 ± 0.14
C	Hexachlorobutadiene	1	3	-	4	17	19.0	3	100	-	-	---
F	Hexachlorobutadiene	-	-	-	-	4	0.0	-	-	-	-	---
M	Hexachlorobutadiene	-	3	1	4	28	12.5	3	100	-	-	0.99
S	Hexachlorobutadiene	67	49	1	117	553	17.5	50	88	6	6	0.59 ± 0.17
W	Hexachlorobutadiene	42	57	18	117	233	33.4	74	91	4	5	0.50 ± 0.09
C	Hexachlorocyclopentadiene	1	3	-	4	12	25.0	3	100	-	-	---
F	Hexachlorocyclopentadiene	-	-	-	-	2	0.0	-	-	-	-	---
M	Hexachlorocyclopentadiene	-	2	1	3	11	21.4	2	100	-	-	---
S	Hexachlorocyclopentadiene	17	30	-	47	298	13.6	30	93	-	7	0.36
W	Hexachlorocyclopentadiene	9	26	5	40	114	26.0	30	90	-	10	0.48
C	Hexachloroethane	1	3	-	4	12	25.0	4	100	-	-	---
F	Hexachloroethane	-	-	-	-	2	0.0	-	-	-	-	---

TABLE C-I (cont)

Organic Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
M	Hexachloroethane	-	2	1	3	11	21.4	2	100	-	-	---
S	Hexachloroethane	17	30	-	47	297	13.7	30	93	-	7	0.09
W	Hexachloroethane	9	26	5	40	114	26.0	30	90	3	7	0.52 ± 0.13
C	Hexadecanoic acid	-	-	-	-	1	0.0	-	-	-	-	---
S	Hexadecanoic acid	-	-	-	-	1	0.0	-	-	-	-	---
W	Hexadecanoic acid	-	-	-	-	3	0.0	-	-	-	-	---
C	2-Hexanone	-	-	-	-	8	0.0	-	-	-	-	---
F	2-Hexanone	-	-	-	-	2	0.0	-	-	-	-	---
M	2-Hexanone	-	1	-	1	17	5.6	1	-	-	100	0.18
S	2-Hexanone	52	20	1	73	257	22.1	21	67	5	29	1.28 ± 0.64
W	3-Hexanone	-	-	1	1	-	100.0	-	-	-	-	---
W	2-Hexanone	37	37	13	87	122	41.6	50	80	4	16	0.94 ± 0.42
S	4-Hexen-1-ol, 2-ethenyl-2,5-di	-	-	-	-	2	0.0	-	-	-	-	---
T	Hydrocarbon, Terpene	-	-	-	-	24	0.0	-	-	-	-	---
C	Hydrocarbons	-	-	-	-	8	0.0	-	-	-	-	---
F	Hydrocarbons	-	-	-	-	5	0.0	-	-	-	-	---
M	Hydrocarbons	-	-	-	-	13	0.0	-	-	-	-	---
S	Hydrocarbons	-	-	-	-	47	0.0	-	-	-	-	---
T	Hydrocarbons	-	4	-	4	105	3.7	-	-	-	-	---
W	Hydrocarbons	-	-	-	-	22	0.0	-	-	-	-	---
S	4-Hydroxy-3-Methoxy Benzaldehy	-	-	-	-	1	0.0	-	-	-	-	---
C	Indeno[1,2,3-cd]pyrene	1	3	-	4	12	25.0	3	100	-	-	---
F	Indeno[1,2,3-cd]pyrene	-	-	-	-	2	0.0	-	-	-	-	---
M	Indeno[1,2,3-cd]pyrene	-	2	1	3	11	21.4	2	100	-	-	---
S	Indeno[1,2,3-cd]pyrene	17	30	-	47	296	13.7	30	100	-	-	---
W	Indeno[1,2,3-cd]pyrene	9	25	5	39	112	25.8	29	97	-	3	---
W	1-Iodo-octane	-	1	-	1	-	100.0	-	-	-	-	---
T	Iso-pentyl acetate	-	-	-	-	3	0.0	-	-	-	-	---
T	Isobutyl acetate	-	1	-	1	3	25.0	1	100	-	-	---
C	Isophorone	1	3	-	4	12	25.0	3	100	-	-	---
F	Isophorone	-	-	-	-	2	0.0	-	-	-	-	---
M	Isophorone	-	2	1	3	11	21.4	2	100	-	-	0.80
S	Isophorone	17	30	-	47	297	13.7	30	77	17	7	0.64 ± 0.17
W	Isophorone	9	25	5	39	112	25.8	29	97	3	-	0.69 ± 0.11
C	Isopropylbenzene	-	-	-	-	8	0.0	-	-	-	-	---
F	Isopropylbenzene	-	-	-	-	2	0.0	-	-	-	-	---
M	Isopropylbenzene	-	1	-	1	17	5.6	1	100	-	-	---
S	Isopropylbenzene	52	20	1	73	257	22.1	21	100	-	-	---
W	Isopropylbenzene	37	37	13	87	122	41.6	50	100	-	-	0.98
C	4-Isopropyltoluene	-	-	-	-	8	0.0	-	-	-	-	---
S	4-Isopropyltoluene	-	-	-	-	2	0.0	-	-	-	-	---
M	4-Isopropyltoluene	-	1	-	1	17	5.6	1	100	-	-	---
S	4-Isopropyltoluene	52	20	1	73	257	22.1	21	71	-	29	---

TABLE C-I (cont)

Organic Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
W	4-Isopropyltoluene	37	37	13	87	122	41.6	50	100	-	-	---
C	2-Isothiocyanato-2-Methyl Prop	-	-	-	-	2	0.0	-	-	-	-	---
S	Ketones	-	-	-	-	2	0.0	-	-	-	-	---
W	Ketones	-	-	-	-	5	0.0	-	-	-	-	---
T	a-Limonene	-	-	-	-	6	0.0	-	-	-	-	---
W	a-Limonene	-	-	-	-	1	0.0	-	-	-	-	---
M	Lindane	-	-	-	-	1	0.0	-	-	-	-	---
S	Lindane	-	8	-	8	66	10.8	8	100	-	-	0.86 ± 0.31
W	Lindane	-	10	4	14	82	14.6	14	100	-	-	1.10 ± 0.28
M	Methane	-	-	-	-	8	0.0	-	-	-	-	---
F	Methanol	-	-	-	-	1	0.0	-	-	-	-	---
T	Methanol	-	-	-	-	2	0.0	-	-	-	-	---
M	Methoxychlor	-	-	-	-	1	0.0	-	-	-	-	---
S	Methoxychlor	-	7	-	7	60	10.4	7	100	-	-	0.68 ± 0.11
W	Methoxychlor	-	9	4	13	64	16.9	13	100	-	-	1.09 ± 0.28
T	2-Methoxyethyl acetate	-	-	-	-	4	0.0	-	-	-	-	---
C	Methyl iodide	-	-	-	-	4	0.0	-	-	-	-	---
M	Methyl iodide	-	-	-	-	6	0.0	-	-	-	-	---
S	Methyl iodide	46	13	1	60	178	25.2	14	100	-	-	---
W	Methyl iodide	30	24	8	62	83	42.8	32	100	-	-	---
C	4-Methyl-2-pentanone	-	-	-	-	8	0.0	-	-	-	-	---
F	4-Methyl-2-pentanone	-	-	-	-	2	0.0	-	-	-	-	---
M	4-Methyl-2-pentanone	-	1	-	1	17	5.6	1	100	-	-	---
S	4-Methyl-2-pentanone	52	20	1	73	257	22.1	21	90	-	10	---
T	4-Methyl-2-pentanone	-	2	-	2	17	10.5	2	100	-	-	---
W	4-Methyl-2-pentanone	37	37	13	87	122	41.6	50	98	2	-	---
W	2-Methyl-2-propenoic acid	-	-	-	-	1	0.0	-	-	-	-	---
W	1-Methyl-2-pyrrolidinone	-	-	-	-	1	0.0	-	-	-	-	---
W	4-Methyl-3-nitro Benzoic Acid	-	-	-	-	1	0.0	-	-	-	-	---
C	6-Methyl-3-undecene	-	-	-	-	1	0.0	-	-	-	-	---
M	6-Methyl-3-undecene	-	-	-	-	1	0.0	-	-	-	-	---
C	2-Methyl-4,6-dinitrophenol	1	3	-	4	12	25.0	3	100	-	-	---
F	2-Methyl-4,6-dinitrophenol	-	-	-	-	2	0.0	-	-	-	-	---
M	2-Methyl-4,6-dinitrophenol	-	2	1	3	11	21.4	2	100	-	-	---
S	2-Methyl-4,6-dinitrophenol	17	30	-	47	297	13.7	30	100	-	-	---
W	2-Methyl-4,6-dinitrophenol	9	25	5	39	112	25.8	29	100	-	-	0.74
S	1-ethyl-2-Methylbenzene	-	-	-	-	2	0.0	-	-	-	-	---
W	1-ethyl-2-Methylbenzene	-	-	-	-	1	0.0	-	-	-	-	---
M	Methylcyclohexane	-	-	-	-	2	0.0	-	-	-	-	---
T	Methylcyclohexane	-	-	-	-	1	0.0	-	-	-	-	---
S	6-ethyl-2-Methyldecane	-	-	-	-	1	0.0	-	-	-	-	---
C	Methylene chloride	-	-	-	-	8	0.0	-	-	-	-	---
F	Methylene chloride	-	-	-	-	2	0.0	-	-	-	-	---
M	Methylene chloride	-	1	-	1	17	5.6	1	-	-	100	---

TABLE C-I (cont)

Organic Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
S	Methylene chloride	51	20	1	72	257	21.9	21	76	-	24	---
T	Methylene chloride	-	1	-	1	12	7.7	1	100	-	-	0.84
W	Methylene chloride	37	37	13	87	122	41.6	50	90	-	10	1.13 ± 0.15
C	2-Methylnaphthalene	1	3	-	4	12	25.0	3	100	-	-	---
F	2-Methylnaphthalene	-	-	-	-	2	0.0	-	-	-	-	---
M	2-Methylnaphthalene	-	2	1	3	11	21.4	2	100	-	-	---
S	2-Methylnaphthalene	17	30	-	47	298	13.6	30	100	-	-	---
W	2-Methylnaphthalene	9	25	5	39	112	25.8	29	100	-	-	---
W	3-Methylpentane	-	1	-	1	-	100.0	-	-	-	-	---
C	2-Methylphenol	1	3	-	4	12	25.0	4	100	-	-	---
C	4-Methylphenol	1	3	-	4	12	25.0	4	100	-	-	---
F	4-Methylphenol	-	-	-	-	2	0.0	-	-	-	-	---
F	2-Methylphenol	-	-	-	-	2	0.0	-	-	-	-	---
M	4-Methylphenol	-	2	1	3	11	21.4	2	100	-	-	---
M	2-Methylphenol	-	2	1	3	11	21.4	2	100	-	-	---
S	2-Methylphenol	17	30	-	47	297	13.7	30	100	-	-	---
S	4-Methylphenol	17	30	-	47	299	13.6	30	100	-	-	---
W	2-Methylphenol	9	25	5	39	112	25.8	29	100	-	-	---
W	4-Methylphenol	9	25	5	39	112	25.8	29	100	-	-	---
T	alpha-Methylstyrene	-	-	-	-	1	0.0	-	-	-	-	---
M	Mineral oil	-	-	-	-	1	0.0	-	-	-	-	---
W	Morpholine	-	-	-	-	3	0.0	-	-	-	-	---
C	Naphthalene	1	3	-	4	17	19.0	3	100	-	-	0.76
F	Naphthalene	-	-	-	-	4	0.0	-	-	-	-	---
M	Naphthalene	-	3	1	4	28	12.5	3	100	-	-	---
S	Naphthalene	67	49	1	117	553	17.5	50	96	2	2	0.55 ± 0.16
T	Naphthalene	-	2	-	2	10	16.7	2	100	-	-	0.81
W	Naphthalene	42	56	18	116	231	33.4	73	100	-	-	0.79
C	2-Nitroaniline	1	3	-	4	12	25.0	3	100	-	-	---
C	4-Nitroaniline	1	3	-	4	12	25.0	3	100	-	-	0.89
C	3-Nitroaniline	1	3	-	4	12	25.0	3	100	-	-	---
F	4-Nitroaniline	-	-	-	-	2	0.0	-	-	-	-	---
F	2-Nitroaniline	-	-	-	-	2	0.0	-	-	-	-	---
F	3-Nitroaniline	-	-	-	-	2	0.0	-	-	-	-	---
M	4-Nitroaniline	-	2	1	3	11	21.4	2	100	-	-	---
M	2-Nitroaniline	-	2	1	3	11	21.4	2	100	-	-	---
M	3-Nitroaniline	-	2	1	3	11	21.4	2	100	-	-	---
S	3-Nitroaniline	17	30	-	47	298	13.6	30	100	-	-	---
S	2-Nitroaniline	17	30	-	47	297	13.7	30	100	-	-	---
S	4-Nitroaniline	17	30	-	47	298	13.6	30	90	3	7	0.39 ± 0.19
W	3-Nitroaniline	9	25	5	39	112	25.8	29	100	-	-	---
W	4-Nitroaniline	9	25	5	39	112	25.8	29	100	-	-	---
W	2-Nitroaniline	9	25	5	39	112	25.8	29	100	-	-	---
C	Nitrobenzene	1	3	-	4	12	25.0	4	100	-	-	---

TABLE C-I (cont)

Organic Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
F	Nitrobenzene	-	-	-	-	2	0.0	-	-	-	-	---
M	Nitrobenzene	-	2	1	3	11	21.4	2	100	-	-	---
S	Nitrobenzene	17	30	-	47	297	13.7	30	93	3	3	0.59
W	Nitrobenzene	9	25	5	39	112	25.8	29	97	-	3	0.69 ± 0.17
C	Nitrogenous Hydrocarbon	-	-	-	-	1	0.0	-	-	-	-	---
S	Nitrogenous Hydrocarbon	2	1	-	3	7	30.0	-	-	-	-	---
T	Nitrogenous Hydrocarbon	-	-	-	-	1	0.0	-	-	-	-	---
W	Nitrogenous Hydrocarbon	-	-	-	-	12	0.0	-	-	-	-	---
C	4-Nitrophenol	1	3	-	4	16	20.0	3	67	-	33	---
C	2-Nitrophenol	1	3	-	4	12	25.0	3	100	-	-	---
F	2-Nitrophenol	-	-	-	-	2	0.0	-	-	-	-	---
F	4-Nitrophenol	-	-	-	-	2	0.0	-	-	-	-	---
M	2-Nitrophenol	-	2	1	3	11	21.4	2	100	-	-	---
M	4-Nitrophenol	-	2	1	3	11	21.4	2	100	-	-	---
S	4-Nitrophenol	19	30	-	49	320	13.3	30	97	-	3	0.77 ± 0.28
S	2-Nitrophenol	17	30	-	47	298	13.6	30	100	-	-	---
S	m-Nitrophenol	-	-	-	-	2	0.0	-	-	-	-	---
W	2-Nitrophenol	9	25	5	39	112	25.8	29	100	-	-	0.75
W	4-Nitrophenol	19	25	5	49	112	30.4	29	97	-	3	0.84 ± 0.19
C	N-Nitrosodi-n-propylamine	1	3	-	4	16	20.0	4	100	-	-	---
F	N-Nitrosodi-n-propylamine	-	-	-	-	2	0.0	-	-	-	-	---
M	N-Nitrosodi-n-propylamine	-	2	1	3	11	21.4	2	100	-	-	---
S	N-Nitrosodi-n-propylamine	19	30	-	49	324	13.1	30	100	-	-	---
W	N-Nitrosodi-n-propylamine	19	25	5	49	112	30.4	29	100	-	-	0.64
C	N-Nitrosodimethylamine	1	3	-	4	12	25.0	4	100	-	-	---
F	N-Nitrosodimethylamine	-	-	-	-	2	0.0	-	-	-	-	---
M	N-Nitrosodimethylamine	-	2	1	3	11	21.4	2	100	-	-	---
S	N-Nitrosodimethylamine	17	30	-	47	297	13.7	30	100	-	-	---
W	N-Nitrosodimethylamine	9	25	5	39	112	25.8	29	100	-	-	---
C	N-Nitrosodiphenylamine	1	3	-	4	12	25.0	3	100	-	-	---
F	N-Nitrosodiphenylamine	-	-	-	-	2	0.0	-	-	-	-	---
M	N-Nitrosodiphenylamine	-	2	1	3	11	21.4	2	100	-	-	---
S	N-Nitrosodiphenylamine	17	30	-	47	298	13.6	30	100	-	-	---
W	N-Nitrosodiphenylamine	9	25	5	39	112	25.8	29	100	-	-	---
F	n-Nonane	-	-	-	-	1	0.0	-	-	-	-	---
S	n-Nonane	-	-	-	-	1	0.0	-	-	-	-	---
S	Octamethylcyclotetrasiloxane	-	-	-	-	3	0.0	-	-	-	-	---
W	Octanoic Acid	-	-	-	-	1	0.0	-	-	-	-	---
C	Oxidized Aliphatic Hydrocarbon	-	-	-	-	1	0.0	-	-	-	-	---
S	Oxidized Aliphatic Hydrocarbon	-	-	-	-	8	0.0	-	-	-	-	---
T	Oxidized Aliphatic Hydrocarbon	-	-	-	-	4	0.0	-	-	-	-	---
W	Oxidized Aliphatic Hydrocarbon	-	-	-	-	36	0.0	-	-	-	-	---
S	Oxidized Aromatic Hydrocarbons	-	-	-	-	4	0.0	-	-	-	-	---

TABLE C-I (cont)

Organic Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
W	Oxidized Aromatic Hydrocarbons	-	-	-	-	5	0.0	-	-	-	-	---
C	Oxygenated Hydrocarbon	-	-	-	-	2	0.0	-	-	-	-	---
M	Oxygenated Hydrocarbon	-	-	-	-	3	0.0	-	-	-	-	---
S	Oxygenated Hydrocarbon	11	-	-	11	34	24.4	-	-	-	-	---
W	Oxygenated Hydrocarbon	1	3	-	4	24	14.3	-	-	-	-	---
C	Pentachlorophenol	1	3	-	4	16	20.0	3	67	-	33	---
F	Pentachlorophenol	-	-	-	-	2	0.0	-	-	-	-	---
M	Pentachlorophenol	-	2	1	3	11	21.4	2	100	-	-	1.19
S	Pentachlorophenol	19	30	-	49	324	13.1	30	100	-	-	1.03 ± 0.10
W	Pentachlorophenol	19	25	5	49	112	30.4	29	97	3	-	0.92 ± 0.23
W	3-Pentanone	-	-	1	1	-	100.0	-	-	-	-	---
W	1-Penten-3-ol	-	1	-	1	-	100.0	-	-	-	-	---
T	n-Pentyl acetate	-	1	-	1	3	25.0	1	100	-	-	0.97
F	Petroleum Hydrocarbons, Total	-	-	-	-	3	0.0	-	-	-	-	---
M	Petroleum Hydrocarbons, Total	-	-	-	-	1	0.0	-	-	-	-	---
S	Petroleum Hydrocarbons, Total	-	1	-	1	15	6.3	1	100	-	-	1.07
T	Petroleum Hydrocarbons, Total	-	-	-	-	3	0.0	-	-	-	-	---
C	Phenanthrene	1	3	-	4	12	25.0	3	67	-	33	4.83
F	Phenanthrene	-	-	-	-	2	0.0	-	-	-	-	---
M	Phenanthrene	-	2	1	3	11	21.4	2	100	-	-	---
S	Phenanthrene	17	30	-	47	298	13.6	30	100	-	-	0.89
W	Phenanthrene	9	25	5	39	112	25.8	29	93	-	7	0.64
C	Phenol	1	3	-	4	16	20.0	4	100	-	-	---
F	Phenol	-	-	-	-	2	0.0	-	-	-	-	---
M	Phenol	-	2	1	3	11	21.4	2	100	-	-	---
S	Phenol	19	30	-	49	322	13.2	30	90	7	3	0.63 ± 0.08
T	Phenol	-	-	-	-	1	0.0	-	-	-	-	---
W	Phenol	19	25	5	49	112	30.4	29	90	3	7	0.50 ± 0.13
C	Phenols (Method 604)	-	-	-	-	4	0.0	-	-	-	-	---
M	Phenols (Method 604)	-	-	-	-	1	0.0	-	-	-	-	---
W	Phenols (Method 604)	-	-	-	-	4	0.0	-	-	-	-	---
C	1-Phenyl-1,2-Propanedione	-	-	-	-	1	0.0	-	-	-	-	---
M	1-Phenyl-1,2-Propanedione	-	-	-	-	3	0.0	-	-	-	-	---
S	Phthalate & Succinate Esters	-	-	-	-	1	0.0	-	-	-	-	---
T	Phthalate ester	-	-	-	-	1	0.0	-	-	-	-	---
W	Phthalate ester	-	-	-	-	2	0.0	-	-	-	-	---
W	Phthalic anhydride	-	-	-	-	1	0.0	-	-	-	-	---
M	Picric Acid	-	-	-	-	1	0.0	-	-	-	-	---
W	alpha-Pinene	-	-	-	-	1	0.0	-	-	-	-	---
T	Polyethylene glycol	-	-	-	-	3	0.0	-	-	-	-	---
S	Polynuclear Aromatic Hydrocarb	-	-	-	-	4	0.0	-	-	-	-	---
W	Pristane	-	-	-	-	1	0.0	-	-	-	-	---
S	1-Propanamine, N,N-dimethyl-3-	-	-	-	-	1	0.0	-	-	-	-	---

TABLE C-I (cont)

Organic Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
T	1,2-Propanediol	-	-	-	-	4	0.0	-	-	-	-	---
T	2-Propanol	-	1	-	1	9	10.0	1	100	-	-	---
T	n-Propyl acetate	-	1	-	1	3	25.0	1	100	-	-	---
C	Propylbenzene	-	-	-	-	8	0.0	-	-	-	-	---
F	Propylbenzene	-	-	-	-	2	0.0	-	-	-	-	---
M	Propylbenzene	-	1	-	1	17	5.6	1	100	-	-	---
S	Propylbenzene	52	20	1	73	257	22.1	21	95	-	5	0.32
W	Propylbenzene	37	37	13	87	122	41.6	50	96	-	4	---
C	Pyrene	1	3	-	4	16	20.0	3	100	-	-	---
F	Pyrene	-	-	-	-	2	0.0	-	-	-	-	---
M	Pyrene	-	2	1	3	11	21.4	2	100	-	-	1.01
S	Pyrene	19	30	-	49	322	13.2	30	100	-	-	---
T	Pyrene	-	-	-	-	8	0.0	-	-	-	-	---
W	Pyrene	19	25	5	49	112	30.4	29	100	-	-	0.99
T	Pyridine	-	-	-	-	3	0.0	-	-	-	-	---
S	RDX	-	2	-	2	11	15.4	2	100	-	-	0.87
C	Saturated Hydrocarbons	-	-	-	-	13	0.0	-	-	-	-	---
M	Saturated Hydrocarbons	-	-	-	-	12	0.0	-	-	-	-	---
S	Saturated Hydrocarbons	5	-	-	5	60	7.7	-	-	-	-	---
W	Saturated Hydrocarbons	-	1	-	1	13	7.1	-	-	-	-	---
C	Styrene	-	-	-	-	8	0.0	-	-	-	-	---
F	Styrene	-	-	-	-	2	0.0	-	-	-	-	---
M	Styrene	-	1	-	1	17	5.6	1	100	-	-	---
S	Styrene	46	20	1	67	257	20.7	21	90	-	10	0.36
W	Styrene	37	37	13	87	122	41.6	50	100	-	-	0.84 ± 0.11
S	2,4,5-T	-	-	-	-	60	0.0	-	-	-	-	---
W	2,4,5-T	-	-	-	-	13	0.0	-	-	-	-	---
S	2,4,5-TP	-	10	-	10	92	9.8	10	100	-	-	0.91 ± 0.24
W	2,4,5-TP	-	7	2	9	41	18.0	9	100	-	-	1.10 ± 0.29
T	Terpene Hydrocarbons	-	-	-	-	13	0.0	-	-	-	-	---
W	Terpene Hydrocarbons	-	-	-	-	2	0.0	-	-	-	-	---
M	Terphenyl	-	-	-	-	1	0.0	-	-	-	-	---
T	1,1,2,2-Tetrabromoethane	-	1	-	1	15	6.3	1	100	-	-	---
C	1,1,1,2-Tetrachloroethane	-	-	-	-	8	0.0	-	-	-	-	---
C	1,1,2,2-Tetrachloroethane	-	-	-	-	8	0.0	-	-	-	-	---
F	1,1,2,2-Tetrachloroethane	-	-	-	-	2	0.0	-	-	-	-	---
F	1,1,1,2-Tetrachloroethane	-	-	-	-	2	0.0	-	-	-	-	---
M	1,1,1,2-Tetrachloroethane	-	1	-	1	17	5.6	1	100	-	-	---
M	1,1,2,2-Tetrachloroethane	-	1	-	1	17	5.6	1	100	-	-	---
S	1,1,2,2-Tetrachloroethane	52	20	1	73	261	21.9	21	86	-	14	---
S	1,1,1,2-Tetrachloroethane	52	20	1	73	257	22.1	21	95	5	-	0.57
W	1,1,2,2-Tetrachloroethane	37	38	13	88	122	41.9	50	98	-	2	---
W	1,1,1,2-Tetrachloroethane	37	37	13	87	122	41.6	50	100	-	-	0.97
C	Tetrachloroethylene	-	-	-	-	8	0.0	-	-	-	-	---

TABLE C-I (cont)

Organic Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGM (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
F	Tetrachloroethylene	-	-	-	-	2	0.0	-	-	-	-	---
M	Tetrachloroethylene	-	1	-	1	17	5.6	1	100	-	-	---
S	Tetrachloroethylene	52	20	1	73	257	22.1	21	52	5	43	0.48 ± 0.23
T	Tetrachloroethylene	-	68	9	77	835	8.4	78	97	-	3	1.06 ± 0.19
W	Tetrachloroethylene	37	37	13	87	122	41.6	50	94	-	6	0.80 ± 0.20
S	Tetrahydrofuran	1	-	-	1	6	14.3	-	-	-	-	---
W	Tetrahydrofuran	1	-	-	1	1	50.0	-	-	-	-	---
W	Tetrahydrofurfuryl alcohol	-	-	-	-	2	0.0	-	-	-	-	---
C	Tetramethyl Thiourea	-	-	-	-	1	0.0	-	-	-	-	---
C	Tetramethyl urea	-	-	-	-	1	0.0	-	-	-	-	---
S	Tetryl(methyl-2,4,6-trinitroph	-	2	-	2	11	15.4	2	100	-	-	1.05
W	Thiourea	-	-	-	-	1	0.0	-	-	-	-	---
M	p-Tolualdehyde	-	-	-	-	1	0.0	-	-	-	-	---
C	Toluene	-	-	-	-	10	0.0	-	-	-	-	---
F	Toluene	-	-	-	-	4	0.0	-	-	-	-	---
M	Toluene	-	1	-	1	22	4.3	1	100	-	-	0.76
S	Toluene	46	20	1	67	298	18.4	21	52	5	43	0.56 ± 0.27
T	Toluene	-	77	9	86	939	8.4	86	81	5	14	0.88 ± 0.32
W	Toluene	37	39	13	89	169	34.5	50	86	6	8	0.80 ± 0.18
W	Tolyltriazole	-	-	-	-	2	0.0	-	-	-	-	---
F	Total organics, Identification	-	-	-	-	13	0.0	-	-	-	-	---
M	Total organics, Identification	-	-	-	-	32	0.0	-	-	-	-	---
S	Total organics, Identification	-	-	-	-	1	0.0	-	-	-	-	---
T	Total organics, Identification	-	26	4	30	314	8.7	-	-	-	-	---
W	Total organics, Identification	-	-	-	-	12	0.0	-	-	-	-	---
M	Toxaphene	-	-	-	-	1	0.0	-	-	-	-	---
S	Toxaphene	-	8	-	8	66	10.8	8	100	-	-	---
W	Toxaphene	-	11	3	14	82	14.6	14	86	-	14	7.95
W	Tri-2-butoxyethyl phosphate	-	-	-	-	1	0.0	-	-	-	-	---
T	Tributyl phosphate	-	-	-	-	3	0.0	-	-	-	-	---
C	1,1,2-Trichloro-1,2,2-trifluor	-	-	-	-	4	0.0	-	-	-	-	---
M	1,1,2-Trichloro-1,2,2-trifluor	-	-	-	-	6	0.0	-	-	-	-	---
S	1,1,2-Trichloro-1,2,2-trifluor	46	13	1	60	182	24.8	14	100	-	-	---
W	1,1,2-Trichloro-1,2,2-trifluor	30	24	8	62	83	42.8	32	100	-	-	---
C	1,2,4-Trichlorobenzene	1	3	-	4	21	16.0	3	100	-	-	---
C	1,2,3-Trichlorobenzene	-	-	-	-	5	0.0	-	-	-	-	---
F	1,2,3-Trichlorobenzene	-	-	-	-	2	0.0	-	-	-	-	---
F	1,2,4-Trichlorobenzene	-	-	-	-	4	0.0	-	-	-	-	---
M	1,2,3-Trichlorobenzene	-	1	-	1	17	5.6	1	100	-	-	---
M	1,2,4-Trichlorobenzene	-	3	1	4	28	12.5	3	100	-	-	---
S	1,2,4-Trichlorobenzene	69	49	1	119	581	17.0	50	100	-	-	---
S	1,2,3-Trichlorobenzene	50	19	1	70	257	21.4	20	100	-	-	---
T	Trichlorobenzene	-	-	-	-	3	0.0	-	-	-	-	---
T	1,2,4-Trichlorobenzene	-	1	1	2	3	40.0	2	100	-	-	0.74

TABLE C-I (cont)

Organic Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
W	1,2,4-Trichlorobenzene	52	57	18	127	233	35.3	74	100	-	-	0.69
W	1,2,3-Trichlorobenzene	33	31	13	77	119	39.3	44	95	-	5	---
C	1,1,1-Trichloroethane	-	-	-	-	8	0.0	-	-	-	-	---
C	1,1,2-Trichloroethane	-	-	-	-	8	0.0	-	-	-	-	---
F	1,1,2-Trichloroethane	-	-	-	-	2	0.0	-	-	-	-	---
F	1,1,1-Trichloroethane	-	-	-	-	2	0.0	-	-	-	-	---
M	1,1,2-Trichloroethane	-	1	-	1	17	5.6	1	-	-	100	---
M	1,1,1-Trichloroethane	-	1	-	1	17	5.6	1	1	-	100	---
S	1,1,1-Trichloroethane	52	20	1	73	257	22.1	21	81	-	19	0.55 ± 0.24
S	1,1,2-Trichloroethane	52	20	1	73	257	22.1	21	71	5	24	0.70 ± 0.30
T	1,1,2-Trichloroethane	-	1	-	1	-	100.0	1	100	-	-	1.09
T	1,1,1-Trichloroethane	-	79	9	88	938	8.6	89	90	3	7	0.88 ± 0.29
W	1,1,1-Trichloroethane	37	37	13	87	122	41.6	50	96	-	4	0.91 ± 0.22
W	1,1,2-Trichloroethane	37	37	13	87	122	41.6	50	98	-	2	0.94 ± 0.11
C	Trichloroethene	-	-	-	-	10	0.0	-	-	-	-	---
F	Trichloroethene	-	-	-	-	4	0.0	-	-	-	-	---
M	Trichloroethene	-	1	-	1	17	5.6	1	100	-	-	---
S	Trichloroethene	46	20	1	67	298	18.4	21	71	5	24	0.47 ± 0.26
T	Trichloroethene	-	81	9	90	911	9.0	88	99	-	1	1.14 ± 0.21
W	Trichloroethene	37	39	13	89	169	34.5	50	98	-	2	0.84 ± 0.22
C	Trichlorofluoromethane	-	-	-	-	8	0.0	-	-	-	-	---
F	Trichlorofluoromethane	-	-	-	-	2	0.0	-	-	-	-	---
M	Trichlorofluoromethane	-	1	-	1	25	3.8	1	100	-	-	---
S	Trichlorofluoromethane	51	20	1	72	257	21.9	21	100	-	-	---
T	Trichlorofluoromethane	-	-	-	-	6	0.0	-	-	-	-	---
W	Trichlorofluoromethane	37	37	13	87	122	41.6	50	100	-	-	---
C	2,4,6-Trichlorophenol	1	3	-	4	12	25.0	3	100	-	-	---
C	2,4,5-Trichlorophenol	1	3	-	4	12	25.0	3	100	-	-	0.82
F	2,4,5-Trichlorophenol	-	-	-	-	2	0.0	-	-	-	-	---
F	2,4,6-Trichlorophenol	-	-	-	-	2	0.0	-	-	-	-	---
M	2,4,5-Trichlorophenol	-	2	1	3	11	21.4	2	100	-	-	0.84
M	2,4,6-Trichlorophenol	-	2	1	3	11	21.4	2	100	-	-	---
S	2,4,6-Trichlorophenol	17	30	-	47	297	13.7	30	100	-	-	---
S	2,4,5-Trichlorophenol	17	30	-	47	297	13.7	30	97	3	-	0.74 ± 0.11
W	2,4,5-Trichlorophenol	9	25	5	39	112	25.8	29	90	3	7	0.74 ± 0.16
W	2,4,6-Trichlorophenol	9	25	5	39	112	25.8	29	100	-	-	0.82
C	1,2,3-Trichloropropane	-	-	-	-	8	0.0	-	-	-	-	---
F	1,2,3-Trichloropropane	-	-	-	-	2	0.0	-	-	-	-	---
M	1,2,3-Trichloropropane	-	1	-	1	17	5.6	1	100	-	-	---
S	1,2,3-Trichloropropane	52	20	1	73	257	22.1	21	100	-	-	---
W	1,2,3-Trichloropropane	37	37	13	87	122	41.6	50	100	-	-	---
M	2,2,4-Trimethyl-1,3-Pentanedio	-	-	-	-	1	0.0	-	-	-	-	---
T	2,2,4-Trimethyl-1,3-Pentanedio	-	-	-	-	4	0.0	-	-	-	-	---

TABLE C-I (cont)

Organic Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
C	1,3,5-Trimethylbenzene	-	-	-	-	8	0.0	-	-	-	-	---
C	1,2,4-Trimethylbenzene	-	-	-	-	8	0.0	-	-	-	-	---
F	1,2,4-Trimethylbenzene	-	-	-	-	2	0.0	-	-	-	-	---
F	1,3,5-Trimethylbenzene	-	-	-	-	2	0.0	-	-	-	-	---
M	1,2,3-Trimethylbenzene	-	-	-	-	2	0.0	-	-	-	-	---
M	1,2,4-Trimethylbenzene	-	1	-	1	17	5.6	1	-	-	100	---
M	1,3,5-Trimethylbenzene	-	1	-	1	17	5.6	1	100	-	-	---
S	1,3,5-Trimethylbenzene	52	20	1	73	257	22.1	21	100	-	-	---
S	1,2,4-Trimethylbenzene	52	20	1	73	256	22.2	21	86	-	14	0.39
T	1,2,4-Trimethylbenzene	-	68	-	68	833	7.5	69	97	1	1	1.09 ± 0.35
W	1,2,4-Trimethylbenzene	37	37	13	87	122	41.6	50	94	-	6	37.50
W	1,3,5-Trimethylbenzene	37	37	13	87	122	41.6	50	98	-	2	---
S	2,4,6-Trinitrotoluene	-	2	-	2	11	15.4	2	100	-	-	0.96
W	2,4,6-Trinitrotoluene	-	-	-	-	1	0.0	-	-	-	-	---
F	n-Undecane	-	-	-	-	1	0.0	-	-	-	-	---
S	n-Undecane	-	-	-	-	3	0.0	-	-	-	-	---
M	Unidentified sulfur compounds	-	-	-	-	2	0.0	-	-	-	-	---
S	Unknown Alcohol	-	1	-	1	3	25.0	-	-	-	-	---
W	Unknown Alcohol	-	-	-	-	9	0.0	-	-	-	-	---
S	Unknown Ketone	2	-	-	2	1	66.7	-	-	-	-	---
W	Unknown Ketone	-	-	-	-	2	0.0	-	-	-	-	---
C	Unknown Polynuclear Aromatic H	-	-	-	-	2	0.0	-	-	-	-	---
S	Unknown Polynuclear Aromatic H	-	-	-	-	12	0.0	-	-	-	-	---
W	Unknown Polynuclear Aromatic H	-	1	-	1	1	50.0	-	-	-	-	---
S	Unknown alkanes	-	-	-	-	1	0.0	-	-	-	-	---
M	Unknown ester	-	-	-	-	1	0.0	-	-	-	-	---
T	Unknown ester	-	-	-	-	9	0.0	-	-	-	-	---
W	Unknown ester	-	-	-	-	2	0.0	-	-	-	-	---
C	Unknown organic acid	-	-	-	-	4	0.0	-	-	-	-	---
M	Unknown organic acid	-	1	-	1	2	33.3	-	-	-	-	---
S	Unknown organic acid	5	-	-	5	16	23.8	-	-	-	-	---
W	Unknown organic acid	-	-	-	-	5	0.0	-	-	-	-	---
C	Unknown organic compound	-	-	-	-	5	0.0	-	-	-	-	---
S	Unknown organic compound	12	2	-	14	48	22.6	-	-	-	-	---
W	Unknown organic compound	5	3	-	8	65	11.0	-	-	-	-	---
C	Unsaturated Hydrocarbons	-	-	-	-	1	0.0	-	-	-	-	---
S	Unsaturated Hydrocarbons	1	-	-	1	4	20.0	-	-	-	-	---
W	Unsaturated Hydrocarbons	-	-	-	-	4	0.0	-	-	-	-	---
C	Vinyl acetate	-	-	-	-	8	0.0	-	-	-	-	---
F	Vinyl acetate	-	-	-	-	2	0.0	-	-	-	-	---
M	Vinyl acetate	-	1	-	1	17	5.6	1	100	-	-	---
S	Vinyl acetate	51	20	1	72	257	21.9	21	81	-	19	0.59 ± 0.43
W	Vinyl acetate	37	37	13	87	122	41.6	50	90	-	10	0.56 ± 0.38
C	Vinyl chloride	-	-	-	-	8	0.0	-	-	-	-	---

TABLE C-I (cont)

Organic Analyses

MATRIX	ANALYSIS	NO. BLANKS	NO. BLINDS	NO. OPENS	TOTAL NO. QCS	NUMBER SAMPLES	% QC SAMPLES	NO. QC WITH CV	UNDER CONTROL <2 SIGMA (%)	WARNING 2-3 SIGMA (%)	OUT OF CONTROL >3 SIGMA (%)	HSE-9 CV RATIO ± SD
F	Vinyl chloride	-	-	-	-	2	0.0	-	-	-	-	---
M	Vinyl chloride	-	1	-	1	17	5.6	1	100	-	-	---
S	Vinyl chloride	51	20	1	72	257	21.9	21	100	-	-	---
W	Vinyl chloride	37	37	13	87	122	41.6	50	100	-	-	0.86
C	o-Xylene	-	-	-	-	4	0.0	-	-	-	-	---
M	o-Xylene	-	1	-	1	13	7.1	1	-	-	100	---
S	o-Xylene	6	6	-	12	62	16.2	6	100	-	-	---
T	o-Xylene	-	68	9	77	834	8.5	78	81	1	18	1.00 ± 0.18
T	m-Xylene	-	5	-	5	57	8.1	5	80	-	20	---
T	p-Xylene	-	-	-	-	3	0.0	-	-	-	-	---
W	o-Xylene	1	10	1	12	19	38.7	11	91	-	9	---
C	Mixed-Xylenes (o ± m ± p)	-	-	-	-	8	0.0	-	-	-	-	---
F	Mixed-Xylenes (o ± m ± p)	-	-	-	-	2	0.0	-	-	-	-	---
M	Mixed-Xylenes (o ± m ± p)	-	1	-	1	19	5.0	1	-	-	00	---
S	Mixed-Xylenes (o ± m ± p)	52	20	1	73	257	22.1	21	86	-	14	0.35
T	Mixed-Xylenes (o ± m ± p)	-	67	-	67	863	7.2	66	58	-	42	0.86
W	Mixed-Xylenes (o ± m ± p)	37	37	13	87	122	41.6	50	94	2	4	2.16

TABLE C-II

SUMMARY OF ANALYTICAL DETERMINATIONS ON NIST STANDARD REFERENCE MATERIALS BY HSE-9

Material	Constituent	Mean ± Std Dev	Units	N[a]	Technique[b]
NBS 45b Homogeneous River Sediment	Cs-137	1.65 ± 0.10	pCi/g	5	G
NBS 97b Flint Clay	Ag	< 4	ug/g	1	ATNA
	Al	20.2	%	1	ATNA
	As	11	ug/g	1	ATNA
	Au	< 6	ng/g	1	ATNA
	Ba	180	ug/g	1	ATNA
	Br	1.7	ug/g	1	ATNA
	Ca	< 900	ug/g	1	ATNA
	Ce	41.8	ug/g	1	ATNA
	Cl	36	ug/g	1	ATNA
	Co	3.63	ug/g	1	ATNA
	Cr	239	ug/g	1	ATNA
	Cs	3.37	ug/g	1	ATNA
	Cu	< 150	ug/g	1	ATNA
	Dy	6.1	ug/g	1	ATNA
	Eu	730	ng/g	1	ATNA
	Fe	8400	ug/g	1	ATNA
	Ga	67	ug/g	1	ATNA
	Hf	13.4	ug/g	1	ATNA
	Hg	< 0.8	ug/g	1	ATNA
	I	< 8	ug/g	1	ATNA
	In	0.12	ug/g	1	ATNA
	K	5300	ug/g	1	ATNA
	La	24.2	ug/g	1	ATNA
	Lu	0.71	ug/g	1	ATNA
	Mg	1400	ug/g	1	ATNA
	Mn	49.7	ug/g	1	ATNA
	Na	500	ug/g	1	ATNA
	Nd	< 25	ug/g	1	ATNA
	Rb	31	ug/g	1	ATNA
	Sb	2.06	ug/g	1	ATNA
	Sc	22.9	ug/g	1	ATNA
	Se	< 5	ug/g	1	ATNA
	Sm	3.33	ug/g	1	ATNA
	Sr	< 140	ug/g	1	ATNA
	Ta	3.47	ug/g	1	ATNA
	Tb	0.8	ug/g	1	ATNA
	Th	36.7	ug/g	1	ATNA
	Ti	1.3	%	1	ATNA
	U	9.5	ug/g	1	ATNA
	V	242	ug/g	1	ATNA
	W	4.2	ug/g	1	ATNA
	Yb	5.4	ug/g	1	ATNA
	Zn	85	ug/g	1	ATNA
	Zr	720	ug/g	1	ATNA
NBS 98a Plastic Clay	Ag	< 5	ug/g	1	ATNA
	Al	17.1	%	1	ATNA
	As	10	ug/g	1	ATNA
	Au	< 0.01	ug/g	1	ATNA
	Ba	80	ug/g	1	ATNA
	Br	< 2.3	ug/g	1	ATNA
	Ca	< 1700	ug/g	1	ATNA
	Ce	221	ug/g	1	ATNA
	Cl	< 50	ug/g	1	ATNA
	Co	11.7	ug/g	1	ATNA
	Cr	258	ug/g	1	ATNA
	Cs	5.9	ug/g	1	ATNA
	Cu	190	ug/g	1	ATNA
	Dy	20.1	ug/g	1	ATNA
	Eu	3.26	ug/g	1	ATNA
	Fe	0.91	%	1	ATNA
	Ga	37	ug/g	1	ATNA
	Hf	8.3	ug/g	1	ATNA
	Hg	900	ng/g	1	ATNA

TABLE C-II (cont)

Material	Constituent	Mean ± Std Dev	Units	N [a]	Technique [b]
NBS 98a Plastic Clay (cont)	I	< 11	ug/g	1	ATNA
	In	0.13	ng/g	1	ATNA
	K	9000	ug/g	1	ATNA
	La	115	ug/g	1	ATNA
	Lu	1.18	ug/g	1	ATNA
	Mg	2400	ug/g	1	ATNA
	Mn	23.9	ug/g	1	ATNA
	Na	600	ug/g	1	ATNA
	Nd	130	ug/g	1	ATNA
	Rb	29	ug/g	1	ATNA
	Sb	2.48	ug/g	1	ATNA
	Sc	33.7	ug/g	1	ATNA
	Se	19	ug/g	1	ATNA
	Sm	16.8	ug/g	1	ATNA
	Sr	370	ug/g	1	ATNA
	Ta	1.96	ug/g	1	ATNA
	Tb	2.8	ug/g	1	ATNA
	Th	25.3	ug/g	1	ATNA
	Ti	0.95	%	1	ATNA
	U	59.3	ug/g	1	ATNA
	V	352	ug/g	1	ATNA
	W	2.3	ug/g	1	ATNA
	Yb	9.9	ug/g	1	ATNA
	Zn	< 19	ug/g	1	ATNA
	Zr	220	ug/g	1	ATNA
NBS 98b Plastic Clay	Ag	< 4	ug/g	1	ATNA
	Al	14.5	%	1	ATNA
	As	7.6	ug/g	1	ATNA
	Au	< 8	ng/g	1	ATNA
	Ba	610	ug/g	1	ATNA
	Br	< 2	ug/g	1	ATNA
	Ca	< 1100	ug/g	1	ATNA
	Ce	115	ug/g	1	ATNA
	Cl	< 40	ug/g	1	ATNA
	Co	15	ug/g	1	ATNA
	Cr	121	ug/g	1	ATNA
	Cs	15.4	ug/g	1	ATNA
	Cu	< 150	ug/g	1	ATNA
	Dy	5.8	ug/g	1	ATNA
	Eu	1.25	ug/g	1	ATNA
	Fe	1.2	%	1	ATNA
	Ga	36	ug/g	1	ATNA
	Hf	6.7	ug/g	1	ATNA
	Hg	< 0.8	ug/g	1	ATNA
	I	< 11	ug/g	1	ATNA
	In	0.12	ug/g	1	ATNA
	K	3.11	%	1	ATNA
	La	69	ug/g	1	ATNA
	Lu	0.56	ug/g	1	ATNA
	Mg	4200	ug/g	1	ATNA
	Mn	128	ug/g	1	ATNA
	Na	1480	ug/g	1	ATNA
	Nd	48	ug/g	1	ATNA
	Rb	157	ug/g	1	ATNA
	Sb	1.45	ug/g	1	ATNA
	Sc	21.3	ug/g	1	ATNA
	Se	4.6	ug/g	1	ATNA
	Sm	6.7	ug/g	1	ATNA
	Sr	230	ug/g	1	ATNA
	Ta	1.68	ug/g	1	ATNA
	Tb	0.65	ug/g	1	ATNA
	Th	19.9	ug/g	1	ATNA
	Ti	8000	ug/g	1	ATNA
	U	4.57	ug/g	1	ATNA
	V	174	ug/g	1	ATNA
	W	2.9	ug/g	1	ATNA
	Yb	3.8	ug/g	1	ATNA

TABLE C-II (cont)

Material	Constituent	Mean ± Std Dev	Units	N [a]	Technique [b]
NBS 98b Plastic Clay (cont)	Zn	81	ug/g	1	ATNA
	Zr	210	ug/g	1	ATNA
NBS 99a Feldspar	Ag	3.0	ug/g	1	ATNA
	Al	10.8	%	1	ATNA
	As	< 3	ug/g	1	ATNA
	Au	< 0.021	ug/g	1	ATNA
	Ba	2880	ug/g	1	ATNA
	Br	< 5	ug/g	1	ATNA
	Ca	1.29	%	1	ATNA
	Ce	4.3	ug/g	1	ATNA
	Cl	< 120	ug/g	1	ATNA
	Co	220	ng/g	1	ATNA
	Cr	< 0.7	ug/g	1	ATNA
	Cs	0.46	ug/g	1	ATNA
	Cu	< 300	ug/g	1	ATNA
	Dy	< 6.0	ug/g	1	ATNA
	Eu	790	ng/g	1	ATNA
	Fe	420	ug/g	1	ATNA
	Ga	< 40	ug/g	1	ATNA
	Hf	340	ng/g	1	ATNA
	Hg	< 240	ng/g	1	ATNA
	I	< 17	ug/g	1	ATNA
	In	< 0.3	ug/g	1	ATNA
	K	4.6	%	1	ATNA
	La	2.6	ug/g	1	ATNA
	Lu	< 17	ng/g	1	ATNA
	Mg	< 1300	ug/g	1	ATNA
	Mn	10.5	ug/g	1	ATNA
	Na	4.78	%	1	ATNA
	Nd	< 6	ug/g	1	ATNA
	Rb	108	ug/g	1	ATNA
	Sb	< 500	ng/g	1	ATNA
	Sc	214	ng/g	1	ATNA
	Se	< 1.4	ug/g	1	ATNA
	Sm	440	ug/g	1	ATNA
	Sr	420	ug/g	1	ATNA
	Ta	< 160	ng/g	1	ATNA
	Tb	< 47	ng/g	1	ATNA
	Th	470	ng/g	1	ATNA
	Ti	< 4000	ug/g	1	ATNA
	U	0.238	ug/g	1	ATNA
	V	< 7	ug/g	1	ATNA
	W	< 8	ug/g	1	ATNA
	Yb	< 1.2	ug/g	1	ATNA
	Zn	< 6.9	ug/g	1	ATNA
	Zr	< 70	ug/g	1	ATNA
NBS 120c Phosphate Rock	Ag	< 2.1	ug/g	1	ATNA
	Al	6700	ug/g	1	ATNA
	As	8.0	ug/g	1	ATNA
	Au	0.003	ug/g	1	ATNA
	Ba	70	ug/g	1	ATNA
	Br	0.55	ug/g	1	ATNA
	Ca	35.7	%	1	ATNA
	Ce	133	ug/g	1	ATNA
	Cl	< 60	ug/g	1	ATNA
	Co	6.1	ug/g	1	ATNA
	Cr	63	ug/g	1	ATNA
	Cs	0.66	ug/g	1	ATNA
	Cu	< 130	ug/g	1	ATNA
	Dy	18.7	ug/g	1	ATNA
	Eu	3.7	ug/g	1	ATNA
	Fe	7500	ug/g	1	ATNA
	Ga	18	ug/g	1	ATNA
	Hf	1.5	ug/g	1	ATNA
	Hg	< 0.8	ug/g	1	ATNA
	I	19	ug/g	1	ATNA

TABLE C-II (cont)

Material	Constituent	Mean ± Std Dev	Units	N[a]	Technique[b]
NBS 120c Phosphate Rock (cont)	In	< 0.09	ug/g	1	ATNA
	K	< 900	ug/g	1	ATNA
	La	99	ug/g	1	ATNA
	Lu	1.65	ug/g	1	ATNA
	Mg	1500	ug/g	1	ATNA
	Mn	236	ug/g	1	ATNA
	Na	3790	ug/g	1	ATNA
	Nd	91	ug/g	1	ATNA
	Rb	5.0	ug/g	1	ATNA
	Sb	1.89	ug/g	1	ATNA
	Sc	5.9	ug/g	1	ATNA
	Se	< 6	ug/g	1	ATNA
	Sm	15.2	ug/g	1	ATNA
	Sr	910	ug/g	1	ATNA
	Ta	< 30	ng/g	1	ATNA
	Tb	2.9	ug/g	1	ATNA
	Th	7.4	ug/g	1	ATNA
	Ti	520	ug/g	1	ATNA
	U	107	ug/g	1	ATNA
	V	88	ug/g	1	ATNA
	W	< 3	ug/g	1	ATNA
	Yb	12.4	ug/g	1	ATNA
	Zn	95	ug/g	1	ATNA
	Zr	310	ug/g	1	ATNA
NBS 278 Obsidian Rock	U	4.48 ± 0.14	ug/g	73	DNA
		3.9	ug/g	1	ICPMS
		4.57 ± 0.10	ug/g	6	IENA
NBS 679 Brick Clay	Ag	< 5	ug/g	1	ATNA
	Al	10.9	%	1	ATNA
	As	9.5	ug/g	1	ATNA
	Au	< 7	ng/g	1	ATNA
	Ba	450	ug/g	1	ATNA
	Br	1.2	ug/g	1	ATNA
	Ca	< 2100	ug/g	1	ATNA
	Ce	109	ug/g	1	ATNA
	Cl	< 100	ug/g	1	ATNA
	Co	24.8	ug/g	1	ATNA
	Cr	108	ug/g	1	ATNA
	Cs	9.1	ug/g	1	ATNA
	Cu	< 300	ug/g	1	ATNA
	Dy	7.6	ug/g	1	ATNA
	Eu	1.74	ug/g	1	ATNA
	Fe	8.9	%	1	ATNA
	Ga	28	ug/g	1	ATNA
	Hf	4.7	ug/g	1	ATNA
	Hg	< 0.8	ug/g	1	ATNA
	I	< 30	ug/g	1	ATNA
	In	< 0.24	ug/g	1	ATNA
	K	2.39	%	1	ATNA
	La	53	ug/g	1	ATNA
	Lu	0.57	ug/g	1	ATNA
	Mg	6400	ug/g	1	ATNA
	Mn	1880	ug/g	1	ATNA
	Na	1330	ug/g	1	ATNA
	Nd	43	ug/g	1	ATNA
	Rb	198	ug/g	1	ATNA
	Sb	0.76	ug/g	1	ATNA
	Sc	22.2	ug/g	1	ATNA
	Se	< 5	ug/g	1	ATNA
	Sm	9.6	ug/g	1	ATNA
	Sr	< 400	ug/g	1	ATNA
	Ta	1.27	ug/g	1	ATNA
	Tb	1.2	ug/g	1	ATNA

TABLE C-II (cont)

Material	Constituent	Mean ± Std Dev	Units	N [a]	Technique [b]
NBS 679 Brick Clay (cont)	Th	13.5	ug/g	1	ATNA
	Ti	5600	ug/g	1	ATNA
	U	2.75	ug/g	1	ATNA
	V	156	ug/g	1	ATNA
	W	1.8	ug/g	1	ATNA
	Yb	4.38	ug/g	1	ATNA
	Zn	90	ug/g	1	ATNA
	Zr	< 240	ug/g	1	ATNA
NBS 688 Basalt Rock	Ag	< 5	ug/g	2	ATNA
	Al	8.58	%	2	ATNA
	As	2.2	ug/g	2	ATNA
	Au	< 12	ng/g	2	ATNA
	Ba	220	ug/g	2	ATNA
	Br	< 2.5	ug/g	2	ATNA
	Ca	8.65	%	2	ATNA
	Ce	13.1	ug/g	2	ATNA
	Cl	< 105	ug/g	2	ATNA
	Co	44.1	ug/g	2	ATNA
	Cr	314	ug/g	2	ATNA
	Cs	< 1.5	ug/g	2	ATNA
	Cu	< 270	ug/g	2	ATNA
	Dy	3.15	ug/g	2	ATNA
	Eu	0.855	ug/g	2	ATNA
	Fe	6.85	%	2	ATNA
	Ga	< 18	ug/g	2	ATNA
	Hf	1.45	ug/g	2	ATNA
	Hg	< 800	ng/g	2	ATNA
	I	< 21	ug/g	2	ATNA
	In	< 230	ng/g	2	ATNA
	K	< 1500	ug/g	2	ATNA
	La	5.0	ug/g	2	ATNA
	Lu	330	ng/g	2	ATNA
	Mg	4.20	%	2	ATNA
	Mn	1310	ug/g	2	ATNA
	Na	1.55	%	2	ATNA
	Nd	< 35	ug/g	2	ATNA
	Rb	< 12	ug/g	2	ATNA
	Sb	< 280	ng/g	2	ATNA
	Sc	34	ug/g	2	ATNA
	Se	< 4.6	ug/g	2	ATNA
	Sm	2.21	ug/g	2	ATNA
	Sr	< 350	ug/g	2	ATNA
	Ta	< 600	ng/g	2	ATNA
	Tb	365	ng/g	2	ATNA
	Th	< 440	ng/g	2	ATNA
	Ti	6000	ug/g	2	ATNA
	U	324	ng/g	2	ATNA
	V	231	ug/g	2	ATNA
	W	< 4.4	ug/g	2	ATNA
	Yb	2.06	ug/g	2	ATNA
	Zn	< 17	ug/g	2	ATNA
	Zr	< 220	ug/g	2	ATNA
NBS 694 Western Phosphate Rock	Ag	4.9	ug/g	1	ATNA
	Al	1.04	%	1	ATNA
	As	13	ug/g	1	ATNA
	Au	< 8	ng/g	1	ATNA
	Ba	60	ug/g	1	ATNA
	Br	5.8	ug/g	1	ATNA
	Ca	30.8	%	1	ATNA
	Ce	25	ug/g	1	ATNA
	Cl	220	ug/g	1	ATNA
	Co	1.59	ug/g	1	ATNA
	Cr	770	ug/g	1	ATNA
	Cs	1.4	ug/g	1	ATNA
	Cu	< 200	ug/g	1	ATNA
	Dy	9.0	ug/g	1	ATNA

TABLE C-II (cont)

Material	Constituent	Mean ± Std Dev	Units	N [a]	Technique [b]
NBS 694 Western Phosphate Rock (cont)	Eu	1.52	ug/g	1	ATNA
	Fe	4800	ug/g	1	ATNA
	Ga	8.0	ug/g	1	ATNA
	Hf	1.9	ug/g	1	ATNA
	Hg	< 0.7	ug/g	1	ATNA
	I	< 11	ug/g	1	ATNA
	In	< 0.16	ug/g	1	ATNA
	K	4500	ug/g	1	ATNA
	La	103	ug/g	1	ATNA
	Lu	0.97	ug/g	1	ATNA
	Mg	1700	ug/g	1	ATNA
	Mn	93	ug/g	1	ATNA
	Na	6400	ug/g	1	ATNA
	Nd	41	ug/g	1	ATNA
	Rb	6.0	ug/g	1	ATNA
	Sb	6.4	ug/g	1	ATNA
	Sc	2.81	ug/g	1	ATNA
	Se	11	ug/g	1	ATNA
	Sm	4.9	ug/g	1	ATNA
	Sr	870	ug/g	1	ATNA
	Ta	0.18	ug/g	1	ATNA
	Tb	1.21	ug/g	1	ATNA
	Th	1.61	ug/g	1	ATNA
	Ti	640	ug/g	1	ATNA
	U	131	ug/g	1	ATNA
	V	1610	ug/g	1	ATNA
	W	< 0.5	ug/g	1	ATNA
	Yb	7.2	ug/g	1	ATNA
	Zn	1400	ug/g	1	ATNA
	Zr	< 90	ug/g	1	ATNA
NBS 696 Bauxite (Surinam)	Ag	< 3	ug/g	1	ATNA
	Al	28.7	%	1	ATNA
	As	15	ug/g	1	ATNA
	Au	< 5	ng/g	1	ATNA
	Ba	< 300	ug/g	1	ATNA
	Br	6.3	ug/g	1	ATNA
	Ca	< 900	ug/g	1	ATNA
	Ce	37.4	ug/g	1	ATNA
	Cl	< 40	ug/g	1	ATNA
	Co	1.26	ug/g	1	ATNA
	Cr	319	ug/g	1	ATNA
	Cs	< 0.8	ug/g	1	ATNA
	Cu	< 210	ug/g	1	ATNA
	Dy	3.2	ug/g	1	ATNA
	Eu	0.365	ug/g	1	ATNA
	Fe	6.3	%	1	ATNA
	Ga	100	ug/g	1	ATNA
	Hf	30.6	ug/g	1	ATNA
	Hg	0.9	ug/g	1	ATNA
	I	21	ug/g	1	ATNA
	In	0.18	ug/g	1	ATNA
	K	< 400	ug/g	1	ATNA
	La	26.9	ug/g	1	ATNA
	Lu	0.403	ug/g	1	ATNA
	Mg	< 700	ug/g	1	ATNA
	Mn	35.8	ug/g	1	ATNA
	Na	41.8	ug/g	1	ATNA
	Nd	< 16	ug/g	1	ATNA
	Rb	< 9	ug/g	1	ATNA
	Sb	1.32	ug/g	1	ATNA
	Sc	8.0	ug/g	1	ATNA
	Se	3.6	ug/g	1	ATNA
	Sm	1.84	ug/g	1	ATNA
	Sr	< 150	ug/g	1	ATNA
	Ta	3.97	ug/g	1	ATNA
	Tb	0.31	ug/g	1	ATNA
	Th	74	ug/g	1	ATNA

TABLE C-II (cont)

Material	Constituent	Mean ± Std Dev	Units	N [a]	Technique [b]
NBS 696 Bauxite (Surinam) (cont)	Ti	1.6	%	1	ATNA
	U	5.35	ug/g	1	ATNA
	V	394	ug/g	1	ATNA
	W	4.1	ug/g	1	ATNA
	Yb	2.64	ug/g	1	ATNA
	Zn	20	ug/g	1	ATNA
	Zr	2200	ug/g	1	ATNA
NBS 1085 Wear-Metals In Lubricating Oil, High	Ag	285	ug/g	2	ICPMS
	Cr	235	ug/g	2	ICPMS
	Pb	240	ug/g	2	ICPMS
NBS 1566 Oyster Tissue	U	123 ± 4	ng/g	9	DNA
NBS SRM 1566a Oyster Tissue	As	10	ug/g	1	IENA
NBS 1568 Rice Flour	As	420	ng/g	1	IENA
NBS 1569 Brewers Yeast	As	615	ng/g	2	IENA
	Br	4.5	ug/g	1	IENA
NBS 1571 Orchard Leaves	Li	600	ng/g	1	ICPMS
NBS 1572 Citrus Leaves	As	3.65	ug/g	2	IENA
	B	60.6 ± 6.3	ug/g	5	ICPES
	Br	8.1	ug/g	1	IENA
	Cs	104	ng/g	2	ITNA
	F	2.9	ug/g	1	ISE
	U	39.5	ng/g	2	DNA
NBS 1573 Tomato Leaves	As	285	ng/g	2	IENA
	Cd	2.7	ug/g	1	FAA
	Cs	50	ng/g	1	ITNA
	F	5.9 ± 1.1	ug/g	12	ISE
	Hg	114	ng/g	1	CVAA
	U	69	ng/g	2	DNA
NBS 1575 Pine Needles	As	240	ng/g	2	IENA
	Br	7.3	ug/g	1	IENA
	Cs	140	ng/g	2	ITNA
NBS 1577a Bovine Liver	Be	0.5	ug/g	2	FAA
		1.0	ug/g	1	FAAC
	Cd	480	ng/g	1	AAC
		400	ng/g	1	ETVAA
NBS 1632 Trace Elements In Coal	Ag	< 3	ug/g	1	ATNA
	Al	1.77	%	1	ATNA
	As	5.8	ug/g	1	ATNA
	Au	< 6	ng/g	1	ATNA
	B	51	ug/g	1	ICPES
	Ba	320	ug/g	1	ATNA
	Br	19	ug/g	1	ATNA
	Ca	< 3000	ug/g	1	ATNA
	Ce	20	ug/g	1	ATNA
	Cl	770	ug/g	1	ATNA
	Co	5.6	ug/g	1	ATNA
	Cr	20	ug/g	1	ATNA
	Cs	1.6	ug/g	1	ATNA
	Cu	< 100	ug/g	1	ATNA
	Dy	2.2	ug/g	1	ATNA
	Eu	340	ng/g	1	ATNA
	Fe	8300	ug/g	1	ATNA
	Ga	< 8	ug/g	1	ATNA
	Hf	0.91	ug/g	1	ATNA
	Hg	< 600	ng/g	1	ATNA
	I	< 8	ug/g	1	ATNA
	In	< 100	ng/g	1	ATNA
	K	2900	ug/g	1	ATNA

TABLE C-II (cont)

Material	Constituent	Mean ± Std Dev	Units	N [a]	Technique [b]
NBS 1632 Trace Elements In Coal (cont)	La	10.4	ug/g	1	ATNA
	Lu	100	ng/g	1	ATNA
	Mg	1700	ug/g	1	ATNA
	Mn	42	ug/g	1	ATNA
	Mo	8.0	ug/g	1	ATNA
	Na	370	ug/g	1	ATNA
	Nd	< 10	ug/g	1	ATNA
	Rb	21	ug/g	1	ATNA
	Sb	2.4	ug/g	1	ATNA
	Sc	3.7	ug/g	1	ATNA
	Se	3.7	ug/g	1	ATNA
	Sm	2.14	ug/g	1	ATNA
	Sr	< 100	ug/g	1	ATNA
	Ta	< 400	ng/g	1	ATNA
	Tb	220	ng/g	1	ATNA
	Th	3.0	ug/g	1	ATNA
	Ti	1200	ug/g	1	ATNA
	U	1.31	ug/g	1	ATNA
	V	33	ug/g	1	ATNA
	W	1200	ng/g	1	ATNA
	Yb	910	ng/g	1	ATNA
	Zn	41	ug/g	1	ATNA
	Zr	< 200	ug/g	1	ATNA
NBS 1632a Trace Elements In Coal (Bituminous)	B	69	ug/g	2	ICPES
	Ag	1.7 ± 0.6	ug/g	3	ATNA
	Al	8640 ± 220	ug/g	3	ATNA
	As	3.5 ± 0.1	ug/g	3	ATNA
	Au	3.7 ± 1.5	ng/g	3	ATNA
	Ba	80 ± 20	ug/g	3	ATNA
	Br	20 ± 3	ug/g	3	ATNA
	Ca	1930 ± 300	ug/g	3	ATNA
	Ce	8.6 ± 0.6	ug/g	3	ATNA
	Cl	1040 ± 30	ug/g	3	ATNA
	Co	2.14 ± 0.15	ug/g	3	ATNA
	Cr	10.4 ± 0.6	ug/g	3	ATNA
	Cs	420 ± 60	ng/g	3	ATNA
	Cu	87 ± 15	ug/g	3	ATNA
	Dy	780 ± 80	ug/g	3	ATNA
	Eu	150 ± 10	ng/g	3	ATNA
	Fe	7120 ± 100	ug/g	3	ATNA
	Ga	6 ± 1	ug/g	3	ATNA
	Hf	420 ± 40	ng/g	3	ATNA
	Hg	330 ± 60	ng/g	3	ATNA
	I	5.3 ± 0.6	ug/g	3	ATNA
	In	77 ± 6	ng/g	3	ATNA
	K	670 ± 120	ug/g	3	ATNA
	La	4.25 ± 0.05	ug/g	3	ATNA
	Lu	45 ± 6	ng/g	3	ATNA
	Mg	460 ± 50	ug/g	3	ATNA
	Mn	12.4 ± 0.8	ug/g	3	ATNA
	Mo	15	ug/g	2	ATNA
	Na	487 ± 6	ug/g	3	ATNA
	Nd	8.7 ± 3.8	ug/g	3	ATNA
	Rb	5.3 ± 0.6	ug/g	3	ATNA
	Sb	220 ± 10	ng/g	3	ATNA
	Sc	1.77 ± 0.04	ug/g	3	ATNA
	Se	1.33 ± 0.15	ug/g	3	ATNA
	Sm	750 ± 26	ng/g	3	ATNA
	Sr	90 ± 10	ug/g	3	ATNA
	Ta	260 ± 90	ng/g	3	ATNA
	Tb	130 ± 10	ng/g	3	ATNA
	Th	1.26 ± 0.04	ug/g	3	ATNA
	Ti	413 ± 6	ug/g	3	ATNA
	U	410 ± 40	ng/g	3	ATNA
	V	13.2 ± 1.5	ug/g	3	ATNA
	W	1400 ± 800	ng/g	3	ATNA
	Yb	430 ± 60	ng/g	3	ATNA

TABLE C-II (cont)

Material	Constituent	Mean ± Std Dev	Units	N [a]	Technique [b]
NBS 1632a Trace Elements In Coal-Bituminous (cont)	Zn	14 ± 2	ug/g	3	ATNA
	Zr	100 ± 50	ug/g	3	ATNA
NBS 1635 Trace Elements In Coal-Subbituminous (cont)	Ag	< 1000	ng/g	1	ATNA
	Al	3200	ug/g	1	ATNA
	As	400	ng/g	1	ATNA
	Au	< 4	ng/g	1	ATNA
	Ba	74	ug/g	1	ATNA
	Br	1.2	ug/g	1	ATNA
	Ca	4300	ug/g	1	ATNA
	Ce	3.1	ug/g	1	ATNA
	Cl	< 40	ug/g	1	ATNA
	Co	810	ng/g	1	ATNA
	Cr	2.2	ug/g	1	ATNA
	Cs	< 400	ng/g	1	ATNA
	Cu	< 100	ug/g	1	ATNA
	Dy	< 2	ug/g	1	ATNA
	Eu	60	ng/g	1	ATNA
	Fe	2100	ug/g	1	ATNA
	Ga	< 7	ug/g	1	ATNA
	Hf	290	ng/g	1	ATNA
	Hg	< 300	ng/g	1	ATNA
	I	< 6	ug/g	1	ATNA
	In	< 90	ng/g	1	ATNA
	K	< 600	ug/g	1	ATNA
	La	1.9	ug/g	1	ATNA
	Lu	29	ng/g	1	ATNA
	Mg	800	ug/g	1	ATNA
	Mn	20	ug/g	1	ATNA
	Mo	< 50	ug/g	1	ATNA
	Na	2400	ug/g	1	ATNA
	Nd	< 5	ug/g	1	ATNA
	Rb	< 3	ug/g	1	ATNA
	Sb	140	ng/g	1	ATNA
	Sc	570	ng/g	1	ATNA
	Se	0.9	ug/g	1	ATNA
	Sm	330	ng/g	1	ATNA
	Sr	< 90	ug/g	1	ATNA
	Ta	< 200	ng/g	1	ATNA
	Tb	38	ng/g	1	ATNA
	Th	550	ng/g	1	ATNA
	Ti	330	ug/g	1	ATNA
	U	190	ng/g	1	ATNA
	V	4.4	ug/g	1	ATNA
	W	< 2	ug/g	1	ATNA
	Yb	180	ng/g	1	ATNA
	Zn	8.0	ug/g	1	ATNA
	Zr	< 60	ug/g	1	ATNA
NBS 1643A Trace Elements In Water	Ag	2.88 ± 0.08	ug/L	5	ICPMS
	As	74 ± 2	ug/L	35	ICPMS
	Ba	46.0 ± 0.4	ug/L	7	ICPMS
	Be	20.0 ± 1.8	ug/L	47	ICPMS
	Cd	10.26 ± 0.15	ug/L	5	ICPMS
	Cr	19.3 ± 1.8	ug/L	32	ICPMS
	Cu	18.5 ± 1.6	ug/L	25	ICPMS
	Mn	34 ± 2	ug/L	35	ICPMS
	Mo	106 ± 18	ug/L	33	ICPMS
	Ni	56 ± 3	ug/L	32	ICPMS
	Pb	27.2 ± 0.5	ug/L	7	ICPMS
	Sr	239 ± 2	ug/L	3	ICPMS
	V	52 ± 2	ug/L	45	ICPMS
	Zn	63 ± 2	ug/L	16	ICPMS
NBS 1643b Trace Elements In Water	Ag	10.3 ± 1.0	ug/L	5	ETVAA
		9.3	ug/L	2	FAA
		10.7 ± 1.0	ug/L	75	ICPMS

TABLE C-II (cont)

Material	Constituent	Mean ± Std Dev	Units	N [a]	Technique [b]
NBS 1643b Trace Elements In Water (cont)	As	56 ± 4	ug/L	26	ETVAA
		50	ug/L	2	FAA
		56 ± 5	ug/L	32	ICPMS
	Ba	45 ± 2	ug/L	97	ICPMS
	Be	20 ± 2	ug/L	35	ICPMS
	Cd	18.5	ug/L	2	ETVAA
		20	ug/L	2	FAA
		19.8 ± 1.0	ug/L	86	ICPMS
	Co	27.6 ± 0.5	ug/L	5	ICPMS
	Cr	16	ug/L	2	ETVAA
		19.5 ± 0.6	ug/L	4	FAA
		20 ± 2	ug/L	52	ICPMS
	Cu	19	ug/L	1	FAA
		23 ± 2	ug/L	57	ICPMS
	Fe	100	ug/L	1	FAA
	Mn	32 ± 3	ug/L	21	ICPMS
	Mo	98 ± 6	ug/L	25	ICPMS
	Ni	50 ± 5	ug/L	60	ICPMS
	Pb	22.2 ± 1.9	ug/L	4	ETVAA
		20	ug/L	2	FAA
		23.1 ± 1.8	ug/L	76	ICPMS
	Se	10.2 ± 1.2	ug/L	24	ETVAA
		10.2	ug/L	2	FAA
		9.7 ± 1.1	ug/L	7	ICPMS
	Sr	236 ± 12	ug/L	15	ICPMS
	Tl	7.2 ± 1.0	ug/L	26	ETVAA
		7.0	ug/L	1	FAA
		7.8 ± 0.9	ug/L	80	ICPMS
	U	1.7	ug/L	1	ICPMS
	V	49.5	ug/L	2	ETVAA
		43 ± 4	ug/L	19	ICPMS
	Zn	70	ug/L	1	FAA
		66 ± 5	ug/L	55	ICPMS
NBS 1645 River Sediment	Ag	1.33 ± 0.15	ug/g	3	ATNA
		2.0	ug/g	1	ICPES
	Al	2.42 ± 0.04	%	3	ATNA
	As	69 ± 2	ug/g	3	ATNA
	Au	17	ng/g	1	ATNA
	B	82	ug/g	1	ICPES
	Ba	380 ± 17	ug/g	3	ATNA
		340 ± 30	ug/g	14	ICPMS
	Be	1.03 ± 0.11	ug/g	9	ICPMS
	Br	1.8 ± 0.6	ug/g	3	ATNA
	Ca	3.08 ± 0.12	%	3	ATNA
	Cd	10.2 ± 0.5	ug/g	4	ICPES
		9.4	ug/g	2	ICPMS
	Ce	800	ug/g	2	ATNA
	Cl	106 ± 16	ug/g	3	ATNA
	Co	7.80 ± 0.17	ug/g	3	ATNA
	Cr	2.81 ± 0.04	%	3	ATNA
	Cs	2.29 ± 0.18	ug/g	3	ATNA
	Cu	210	ug/g	2	ATNA
		107 ± 10	ug/g	11	ICPMS
	Dy	1.1	ug/g	1	ATNA
	Eu	330 ± 10	ng/g	3	ATNA
	Fe	10.27 ± 0.12	%	3	ATNA
	Ga	9	ug/g	1	ATNA
	Hf	1.3 ± 0.2	ug/g	3	ATNA
	Hg	1.1	ug/g	1	ATNA
		1.1	ug/g	1	CVAA
	I	< 16	ug/g	3	ATNA
	In	< 270	ng/g	3	ATNA
	K	1.31 ± 0.08	%	3	ATNA
	La	8.27 ± 0.15	ug/g	3	ATNA
	Lu	< 300	ug/g	3	ATNA
	Mg	6400 ± 500	ug/g	3	ATNA

TABLE C-II (cont)

Material	Constituent	Mean ± Std Dev	Units	N [a]	Technique [b]
NBS 1645 River Sediment (cont)	Mn	800 ± 10	ug/g	3	ATNA
	Na	5580 ± 60	ug/g	3	ATNA
	Nd	< 20	ug/g	3	ATNA
	Ni	40 ± 2	ug/g	14	ICPMS
	Pb	714 ± 29	ug/g	14	ICPMS
	Rb	45 ± 5	ug/g	3	ATNA
	Sb	35 ± 2	ug/g	3	ATNA
	Sc	2.01 ± 0.03	ug/g	3	ATNA
	Se	< 8	ug/g	3	ATNA
	Sm	1.29 ± 0.04	ug/g	3	ATNA
	Sr	813 ± 64	ug/g	3	ATNA
	Ta	< 600	ng/g	3	ATNA
	Tb	< 500	ng/g	3	ATNA
	Th	1.9 ± 0.3	ug/g	3	ATNA
		1.6 ± 0.2	ug/g	9	ICPMS
	Ti	1120 ± 130	ug/g	3	ATNA
	U	1.13 ± 0.04	ug/g	3	ATNA
		1.09 ± 0.07	ug/g	78	DNA
		1.06 ± 0.09	ug/g	22	ICPMS
		1.08 ± 0.05	ug/g	6	IENA
	U-235/238	0.0071 ± 0.0002	ratio	4	ICPMS
	V	21.8 ± 0.9	ug/g	3	ATNA
	W	1.9 ± 0.2	ug/g	3	ATNA
	Yb	670 ± 120	ng/g	3	ATNA
	Zn	1530 ± 150	ug/g	3	ATNA
	Zr	< 300	ug/g	3	ATNA
NBS 1646 Estuarine Sediment	Ag	< 4	ug/g	6	ATNA
	Al	6.13 ± 0.18	%	6	ATNA
	As	10.8 ± 0.4	ug/g	6	ATNA
	Au	< 17	ng/g	6	ATNA
	B	3.0	ug/g	1	ICPES
	Ba	410 ± 25	ug/g	6	ATNA
		380 ± 30	ug/g	6	ICPES
	Br	135 ± 14	ug/g	6	ATNA
	Ca	8000 ± 1000	ug/g	6	ATNA
	Cd	< 4	ug/g	1	ICPES
	Ce	81 ± 4	ug/g	6	ATNA
	Cl	1.32 ± 0.08	%	6	ATNA
	Co	9.4 ± 0.4	ug/g	6	ATNA
	Cr	78 ± 4	ug/g	6	ATNA
		58	ug/g	1	ICPES
	Cs	3.52 ± 0.17	ug/g	6	ATNA
	Cu	< 300	ug/g	6	ATNA
	Dy	6.5 ± 1.2	ug/g	6	ATNA
	Eu	1.30 ± 0.08	ug/g	6	ATNA
	Fe	3.28 ± 0.14	%	6	ATNA
	Ga	< 30	ug/g	6	ATNA
	Hf	11.0 ± 0.4	ug/g	6	ATNA
	Hg	< 700	ng/g	6	ATNA
	I	32 ± 4	ug/g	6	ATNA
	In	< 300	ng/g	6	ATNA
	K	1.92 ± 0.13	%	6	ATNA
	La	38.2 ± 0.3	ug/g	6	ATNA
	Lu	440 ± 40	ng/g	6	ATNA
	Mg	0.91 ± 0.06	%	6	ATNA
	Mn	381 ± 12	ug/g	6	ATNA
	Na	2.00 ± 0.03	%	6	ATNA
	Nd	40 ± 5	ug/g	6	ATNA
	Pb	31	ug/g	2	ICPES
	Rb	84 ± 5	ug/g	6	ATNA
	Sb	460 ± 110	ng/g	5	ATNA
	Sc	10.3 ± 0.3	ug/g	6	ATNA
	Se	1.1 ± 0.7	ug/g	3	ATNA
	Sm	6.83 ± 0.15	ug/g	6	ATNA
	Sr	< 400	ug/g	6	ATNA
	Ta	0.98 ± 0.07	ug/g	6	ATNA
	Tb	0.82 ± 0.06	ug/g	6	ATNA

TABLE C-II (cont)

Material	Constituent	Mean ± Std Dev	Units	N [a]	Technique [b]
NBS 1646 Estuarine Sediment (cont)	Th	9.8 ± 0.4	ug/g	6	ATNA
	Ti	4680 ± 210	ug/g	6	ATNA
	U	2.91 ± 0.05	ug/g	6	ATNA
	V	90 ± 5	ug/g	6	ATNA
	W	< 7	ug/g	6	ATNA
	Yb	3.22 ± 0.22	ug/g	6	ATNA
	Zn	113 ± 16	ug/g	6	ATNA
	Zr	430 ± 90	ug/g	6	ATNA
NBS 1819-III Sulfur In Lubricating Base Oil	S	2890	ug/g	1	ITNA
NBS 2704 Buffalo River Sediment	Ag	< 4	ug/g	5	ATNA
	Al	6.18 ± 0.08	%	5	ATNA
	As	22.2 ± 0.4	ug/g	5	ATNA
	Au	< 10	ng/g	5	ATNA
	Ba	440 ± 40	ug/g	5	ATNA
		400 ± 34	ug/g	4	ICPES
	Br	6.8 ± 0.5	ug/g	5	ATNA
	Ca	2.66 ± 0.14	%	5	ATNA
	Cd	3.2	ug/g	1	ICPMS
	Ce	69.0 ± 1.7	ug/g	5	ATNA
	Cl	100 ± 40	ug/g	4	ATNA
	Co	13.4 ± 0.3	ug/g	5	ATNA
	Cr	143 ± 4	ug/g	5	ATNA
	Cs	5.65 ± 0.16	ug/g	5	ATNA
	Cu	< 220	ug/g	5	ATNA
	Dy	5.8 ± 0.2	ug/g	5	ATNA
	Eu	1.32 ± 0.10	ug/g	5	ATNA
	Fe	4.17 ± 0.07	%	5	ATNA
	Ga	16 ± 1	ug/g	3	ATNA
	Hf	8.5 ± 0.3	ug/g	5	ATNA
	Hg	1.5 ± 0.1	ug/g	3	ATNA
	I	< 17	ug/g	5	ATNA
	In	< 200	ng/g	5	ATNA
	K	2.04 ± 0.12	%	5	ATNA
	La	32.0 ± 0.5	ug/g	5	ATNA
	Li	37	ug/g	2	ICPMS
	Lu	0.46 ± 0.03	ug/g	5	ATNA
	Mg	1.13 ± 0.10	%	5	ATNA
	Mn	618 ± 8	ug/g	5	ATNA
	Na	5940 ± 60	ug/g	5	ATNA
	Nd	35 ± 9	ug/g	4	ATNA
	Pb	135 ± 17	ug/g	4	ICPES
	Rb	101 ± 8	ug/g	5	ATNA
	Sb	3.77 ± 0.14	ug/g	5	ATNA
	Sc	11.6 ± 0.2	ug/g	5	ATNA
	Se	2.1 ± 0.6	ug/g	3	ATNA
	Sm	6.28 ± 0.26	ug/g	5	ATNA
	Sr	< 300	ug/g	5	ATNA
	Ta	190 ± 420	ng/g	5	ATNA
	Tb	170 ± 390	ng/g	5	ATNA
	Th	9.26 ± 0.17	ug/g	5	ATNA
	Ti	4440 ± 130	ug/g	5	ATNA
	U	3.14 ± 0.08	ug/g	5	ATNA
	V	92 ± 6	ug/g	5	ATNA
	W	3.0 ± 1.1	ug/g	4	ATNA
	Yb	3.48 ± 0.21	ug/g	5	ATNA
	Zn	422 ± 19	ug/g	5	ATNA
	Zr	370 ± 120	ug/g	5	ATNA
NBS 4350 Environmental Radioactivity Sediment	Cs-137	2.25	pCi/g	2	G
NBS 4350B River Sediment	Cs-137	0.795	pCi/g	2	G
NBS 4353 Rocky-Flats Soil No 1	Am-241	0.023	pCi/g	2	G
	Cs-137	0.63 ± 0.50	pCi/g	16	G

TABLE C-II (cont)

Material	Constituent	Mean ± Std Dev	Units	N [a]	Technique [b]
NBS 4355 Peruvian Soil	Be	0.71	ug/g	1	ICPES
	U	1.3	ug/g	2	ICPMS
NBS 8034 Sewage Sludge (CRM 144)	Ag	11	ug/g	1	ICPES
	Cd	2.9	ug/g	1	ICPES
	Hg	1.4	ug/g	1	CVAA

[a] Total number of analyses included In the mean.
[b] Analytical technique codes:
AAC = Flameless AA with Chemical Separation
ATNA = Automated Thermal Neutron Activation
CVAA = Cold Vapor Atomic Absorption Spectrophotometry
DNA = Delayed-Neutron Assay
ETVAA = Electrothermal Vaporization Atomic Absorption
FAA = Flame Atomic Absorption Spectrophotometry
FAAC = Flame Atomic Absorption Spectrophotometry with Chemical Separation
G = Gamma Spectroscopy - Ge(Li) or HPGE
ICPES = Inductively Coupled Plasma Atomic Emission Spectrometry
ICPMS = Inductively Coupled Plasma Mass Spectrometry
IENA = Instrumental Epithermal Neutron Activation
ISE = Ion Selective Electrode
ITNA = Instrumental Thermal Neutron Activation
PC = Proportional Counting
RAS = Radiochemical Alpha Spectrometry

TABLE C-III

SUMMARY OF ELEMENTAL DETERMINATIONS ON CCRMP REFERENCE MATERIALS BY HSE-9

Material	Constituent	Mean ± Std Dev	Units	N [a]	Technique [b]
CCRMP BL-1 Uranium Ore	Ra-226	72	pCi/g	1	G
CCRMP CLV-1 Vegetative Radionuclide	Cs-137	2.85 ± 2.0	pCi/g	6	G
CCRMP CLV-2 Vegetative Radionuclide	Cs-137	0.96	pCi/g	2	G
CCRMP DH-1 Thorium-Uranium Ore	Ra-226	590	pCi/g	1	G
CCRMP DL-1A Thorium-Uranium Ore	U	93	ug/g	1	ICPMS
	U-235/238	0.0071	ratio	1	ICPMS
CCRMP MRG-1 Gabbro	Ag	< 8	ug/g	5	ATNA
	Al	4.34 ± 0.11	%	5	ATNA
	As	< 2	ug/g	5	ATNA
	Au	7	ng/g	2	ATNA
	Ba	< 700	ug/g	5	ATNA
	Br	< 3	ug/g	5	ATNA
	Ca	10.6 ± 0.3	%	5	ATNA
	Ce	28 ± 2	ug/g	5	ATNA
	Cl	140 ± 25	ug/g	5	ATNA
	Co	87 ± 6	ug/g	5	ATNA
	Cr	489 ± 36	ug/g	5	ATNA
	Cs	< 2	ug/g	5	ATNA
	Cu	< 250	ug/g	5	ATNA
	Dy	3.5 ± 1.4	ug/g	5	ATNA
	Eu	1.40 ± 0.16	ug/g	5	ATNA
	Fe	12.6 ± 1.0	%	5	ATNA
	Ga	20 ± 3	ug/g	5	ATNA
	Hf	3.9 ± 0.2	ug/g	5	ATNA
	Hg	< 1300	ng/g	5	ATNA
	I	< 22	ug/g	5	ATNA
	In	< 230	ng/g	5	ATNA
	K	1340 ± 190	ug/g	5	ATNA
	La	9.37 ± 0.17	ug/g	5	ATNA
	Lu	102 ± 23	ng/g	5	ATNA
	Mg	7.29 ± 0.24	%	5	ATNA
	Mn	1380 ± 30	ug/g	5	ATNA
	Na	5360 ± 120	ug/g	5	ATNA
	Nd	27	ug/g	1	ATNA
	Rb	< 20	ug/g	5	ATNA
	Sb	440 ± 50	ng/g	5	ATNA
	Sc	54 ± 4	ug/g	5	ATNA
	Se	< 1000	ng/g	5	ATNA
	Sm	4.40 ± 0.10	ug/g	5	ATNA
	Sr	< 400	ug/g	5	ATNA
	Ta	756 ± 26	ng/g	5	ATNA
	Tb	470 ± 140	ng/g	5	ATNA
	Th	0.90 ± 0.13	ug/g	5	ATNA
	Ti	2.18 ± 0.08	%	5	ATNA
	U	238 ± 19	ng/g	5	ATNA
	V	524 ± 11	ug/g	5	ATNA
	W	< 4	ug/g	5	ATNA
	Yb	810 ± 120	ng/g	5	ATNA
	Zn	202 ± 22	ug/g	5	ATNA
	Zr	< 600	ug/g	5	ATNA
CCRMP SO-1 Regosolic Soil	Ag	4140 ± 900	ng/g	7	ATNA
	Al	9.16 ± 0.12	%	7	ATNA
	As	2.1 ± 0.4	ug/g	7	ATNA
	Au	< 14	ng/g	7	ATNA
	Ba	910 ± 40	ug/g	7	ATNA
		630 ± 330	ug/g	6	ICPES
	Be	1.6 ± 0.7	ug/g	8	ICPES
	Br	2.1 ± 1.0	ug/g	7	ATNA
	Ca	1.71 ± 0.08	%	7	ATNA
	Cd	< 4	ug/g	1	ICPES

TABLE C-III (cont)

Material	Constituent	Mean ± Std Dev	Units	N [a]	Technique [b]
CCRMP SO-1 Regosolic Soil (cont)	Ce	112 ± 8	ug/g	7	ATNA
	Cl	137 ± 17	ug/g	7	ATNA
	Co	27.0 ± 1.3	ug/g	7	ATNA
	Cr	174 ± 10	ug/g	7	ATNA
	Cs	4.9 ± 0.3	ug/g	7	ATNA
	Cu	< 300	ug/g	7	ATNA
		52.3 ± 0.6	ug/g	3	ICPES
	Dy	4.6 ± 0.4	ug/g	7	ATNA
	Eu	1.55 ± 0.11	ug/g	7	ATNA
	F	880 ± 120	ug/g	6	ISE
	Fe	5.82 ± 0.34	%	7	ATNA
	Ga	23 ± 6	ug/g	7	ATNA
	Hf	2.56 ± 0.19	ug/g	7	ATNA
	Hg	< 700	ng/g	7	ATNA
		22 ± 3	ng/g	5	CVGFA
	I	< 22	ug/g	7	ATNA
	In	< 300	ng/g	7	ATNA
	K	2.58 ± 0.14	%	7	ATNA
	La	56.3 ± 1.5	ug/g	7	ATNA
	Lu	325 ± 30	ng/g	7	ATNA
	Mg	2.06 ± 0.20	%	7	ATNA
	Mn	967 ± 19	ug/g	7	ATNA
	Mo	< 50	ug/g	1	ATNA
	Na	2.03 ± 0.05	%	7	ATNA
	Nd	49 ± 11	ug/g	7	ATNA
	Ni	85 ± 3	ug/g	3	ICPES
	Pb	26 ± 8	ug/g	4	ICPES
	Rb	124 ± 7	ug/g	7	ATNA
	Sb	< 360	ng/g	7	ATNA
		210	ng/g	1	ITNA
	Sc	17.1 ± 0.9	ug/g	7	ATNA
	Se	< 4	ug/g	7	ATNA
	Sm	8.04 ± 0.26	ug/g	7	ATNA
	Sr	360 ± 60	ug/g	7	ATNA
	Ta	0.67 ± 0.07	ug/g	7	ATNA
		0.79 ± 0.08	ug/g	3	ITNA
	Tb	0.82 ± 0.05	ug/g	7	ATNA
	Th	11.3 ± 0.7	ug/g	7	ATNA
		12.1 ± 0.9	ug/g	3	ITNA
	Ti	4730 ± 350	ug/g	7	ATNA
	U	1.69 ± 0.05	ug/g	7	ATNA
		1.80	ug/g	1	DNA
		1.49 ± 0.12	ug/g	16	ICPMS
		1.67 ± 0.07	ug/g	5	IENA
	U-235/238	0.0070 ± 0.0003	ratio	3	ICPMS
	V	125 ± 4	ug/g	7	ATNA
	W	< 5.6	ug/g	6	ATNA
		< 2.0	ug/g	3	ITNA
	Yb	2.26 ± 0.11	ug/g	7	ATNA
	Zn	134 ± 11	ug/g	7	ATNA
	Zr	< 330	ug/g	6	ATNA
CCRMP SO-2 Podzolic Soil	Ag	< 3	ug/g	8	ATNA
	Al	7.93 ± 0.11	%	9	ATNA
	As	1.7 ± 0.1	ug/g	3	ATNA
	Au	< 14	ng/g	9	ATNA
	Ba	1030 ± 40	ug/g	9	ATNA
		1100 ± 100	ug/g	4	ICPES
	Be	1.3 ± 0.6	ug/g	3	ICPES
	Br	19 ± 2	ug/g	9	ATNA
	Ca	1.86 ± 0.11	%	9	ATNA
	Ce	118 ± 7	ug/g	9	ATNA
	Cl	114 ± 23	ug/g	9	ATNA
	Co	7.15 ± 0.18	ug/g	9	ATNA
	Cr	12.4 ± 0.8	ug/g	9	ATNA
	Cs	0.85 ± 0.40	ug/g	9	ATNA
	Cu	< 290	ug/g	9	ATNA
		0.2	ug/g	2	ICPES

TABLE C-III (cont)

Material	Constituent	Mean ± Std Dev	Units	N [a]	Technique [b]
CCRMP SO-2 Podzolic Soil (cont)	Dy	8.6 ± 0.6	ug/g	9	ATNA
	Eu	3.31 ± 0.10	ug/g	9	ATNA
	Fe	5.34 ± 0.11	%	9	ATNA
	Ga	24 ± 3	ug/g	9	ATNA
	Hf	19.1 ± 0.8	ug/g	9	ATNA
	Hg	< 600	ng/g	9	ATNA
	I	9.5 ± 0.5	ug/g	4	ATNA
	In	120	ng/g	1	ATNA
	K	2.32 ± 0.13	%	9	ATNA
	La	47.2 ± 1.8	ug/g	9	ATNA
	Lu	530 ± 30	ng/g	9	ATNA
	Mg	4700 ± 1000	ug/g	9	ATNA
	Mn	751 ± 24	ug/g	9	ATNA
	Mo	< 200	ug/g	1	ATNA
	Na	1.86 ± 0.06	%	9	ATNA
	Nd	69 ± 16	ug/g	9	ATNA
	Ni	< 3.5	ug/g	2	ICPES
	Pb	23	ug/g	2	ICPES
	Rb	68 ± 7	ug/g	9	ATNA
	Sb	< 350	ng/g	9	ATNA
		150	ng/g	2	ITNA
	Sc	10.8 ± 0.2	ug/g	9	ATNA
	Se	< 3	ug/g	7	ATNA
	Sm	12.3 ± 1.0	ug/g	9	ATNA
	Sr	360 ± 80	ug/g	9	ATNA
	Ta	1.22 ± 0.07	ug/g	9	ATNA
		1.3	ug/g	2	ITNA
	Tb	1.41 ± 0.05	ug/g	9	ATNA
	Th	3.38 ± 0.14	ug/g	9	ATNA
		4.15	ug/g	2	ITNA
	Ti	7880 ± 460	ug/g	9	ATNA
	U	0.94 ± 0.03	ug/g	9	ATNA
		0.95 ± 0.06	ug/g	5	IENA
	U-235/238	0.0070 ± 0.0009	ratio	3	ICPMS
	V	54 ± 4	ug/g	9	ATNA
	W	< 5	ug/g	9	ATNA
		< 2	ug/g	2	ITNA
	Yb	3.96 ± 0.17	ug/g	9	ATNA
	Zn	121 ± 10	ug/g	9	ATNA
	Zr	840 ± 270	ug/g	9	ATNA
CCRMP SO-3 Calcareous C Horizon Soil	Ag	< 2200	ng/g	5	ATNA
	Al	3.07 ± 0.06	%	5	ATNA
	As	2.8 ± 0.3	ug/g	5	ATNA
	Au	< 9	ng/g	5	ATNA
	B	16.5	ug/g	2	ICPES
	Ba	314 ± 15	ug/g	5	ATNA
		46 ± 6	ug/g	3	ICPES
	Be	2.0	ug/g	2	ICPES
	Br	5.5 ± 0.3	ug/g	5	ATNA
	Ca	15.9 ± 0.6	%	5	ATNA
	Cd	120	ng/g	1	ICPMS
	Ce	37.6 ± 0.8	ug/g	5	ATNA
	Cl	318 ± 20	ug/g	5	ATNA
	Co	5.4 ± 0.2	ug/g	5	ATNA
	Cr	27.5 ± 1.2	ug/g	5	ATNA
	Cs	1.19 ± 0.10	ug/g	5	ATNA
	Cu	< 200	ug/g	5	ATNA
		12.3 ± 0.6	ug/g	3	ICPES
	Dy	3.5 ± 1.0	ug/g	5	ATNA
	Eu	0.80 ± 0.04	ug/g	5	ATNA
	F	360	ug/g	1	ISE
	Fe	1.61 ± 0.03	%	5	ATNA
	Ga	< 13	ug/g	5	ATNA
	Hf	4.72 ± 0.15	ug/g	5	ATNA
	Hg	< 400	ng/g	5	ATNA
		< 25	ng/g	1	CVAA
	I	< 14	ug/g	5	ATNA

TABLE C-III (cont)

Material	Constituent	Mean ± Std Dev	Units	N [a]	Technique [b]
CCRMP SO-3 Calcareous C Horizon Soil (cont)	In	< 160	ng/g	5	ATNA
	K	1.16 ± 0.10	%	5	ATNA
	La	16.7 ± 1.6	ug/g	5	ATNA
	Li	7.3	ug/g	1	FAA
	Lu	255 ± 17	ng/g	5	ATNA
	Mg	4.4 ± 0.4	%	5	ATNA
	Mn	571 ± 18	ug/g	5	ATNA
	Mo	< 120	ug/g	1	ATNA
	Na	7260 ± 610	ug/g	5	ATNA
	Nd	23 ± 5	ug/g	5	ATNA
	Ni	9.2 ± 1.6	ug/g	3	ICPES
	Pb	20	ug/g	2	ICPES
	Rb	37 ± 3	ug/g	5	ATNA
	Sb	260 ± 80	ng/g	5	ATNA
		300 ± 260	ng/g	3	ITNA
	Sc	5.20 ± 0.17	ug/g	5	ATNA
	Se	< 3	ug/g	5	ATNA
	Sm	3.3 ± 0.6	ug/g	5	ATNA
	Sr	270	ug/g	2	ATNA
	Ta	0.36 ± 0.03	ug/g	5	ATNA
		0.43 ± 0.07	ug/g	3	ITNA
	Tb	0.464 ± 0.040	ug/g	5	ATNA
	Th	3.67 ± 0.12	ug/g	5	ATNA
		3.9 ± 0.2	ug/g	3	ITNA
	Ti	1960 ± 230	ug/g	5	ATNA
	U	1.09 ± 0.02	ug/g	5	ATNA
		0.88	ug/g	2	ICPMS
		1.15 ± 0.10	ug/g	5	IENA
	U-235/238	0.0069 ± 0.0004	ratio	3	ICPMS
	V	33.1 ± 1.8	ug/g	5	ATNA
	W	< 3	ug/g	5	ATNA
		< 2	ug/g	3	ITNA
	Yb	1.66 ± 0.14	ug/g	5	ATNA
	Zn	55.8 ± 1.6	ug/g	5	ATNA
	Zr	270 ± 100	ug/g	5	ATNA
CCRMP SO-4 Chernozemic A Horizon Soil	Ag	< 3	ug/g	7	ATNA
	Al	5.39 ± 0.17	%	7	ATNA
	As	7.1 ± 0.3	ug/g	7	ATNA
	Au	< 9	ng/g	7	ATNA
	Ba	760 ± 50	ug/g	7	ATNA
	Be	1.2	ug/g	1	ICPES
	Br	6.2 ± 0.5	ug/g	7	ATNA
	Ca	1.0 ± 0.3	%	7	ATNA
	Ce	56.6 ± 1.4	ug/g	7	ATNA
	Cl	< 90	ug/g	7	ATNA
	Co	9.3 ± 0.5	ug/g	7	ATNA
	Cr	69 ± 3	ug/g	7	ATNA
	Cs	2.58 ± 0.16	ug/g	7	ATNA
	Cu	< 200	ug/g	7	ATNA
	Dy	3.9 ± 0.2	ug/g	7	ATNA
	Eu	0.95 ± 0.06	ug/g	7	ATNA
	Fe	2.31 ± 0.09	%	7	ATNA
	Ga	12 ± 3	ug/g	7	ATNA
	Hf	7.8 ± 0.3	ug/g	7	ATNA
	Hg	< 440	ng/g	7	ATNA
	I	< 15	ug/g	7	ATNA
	In	< 180	ng/g	7	ATNA
	K	1.72 ± 0.10	%	7	ATNA
	La	28.0 ± 0.8	ug/g	7	ATNA
	Lu	350 ± 30	ng/g	7	ATNA
	Mg	5240 ± 770	ug/g	7	ATNA
	Mn	630 ± 40	ug/g	7	ATNA
	Mo	< 60	ug/g	1	ATNA
	Na	0.994 ± 0.022	%	7	ATNA
	Nd	28 ± 3	ug/g	7	ATNA
	Rb	63 ± 5	ug/g	7	ATNA

TABLE C-III (cont)

Material	Constituent	Mean ± Std Dev	Units	N [a]	Technique [b]
CCRMP SO-4 Chernozemic A Horizon Soil (cont)	Sb	530 ± 70	ng/g	7	ATNA
	Sc	8.0 ± 0.3	ug/g	7	ATNA
	Se	1800 ± 1300	ng/g	7	ATNA
	Sm	4.6 ± 0.3	ug/g	7	ATNA
	Sr	< 260	ug/g	7	ATNA
	Ta	0.64 ± 0.05	ug/g	7	ATNA
	Tb	0.58 ± 0.03	ug/g	7	ATNA
	Th	7.8 ± 0.3	ug/g	7	ATNA
	Ti	3210 ± 130	ug/g	7	ATNA
	U	2.30 ± 0.07	ug/g	7	ATNA
	V	80 ± 2	ug/g	7	ATNA
	W	1.6	ug/g	2	ATNA
	Yb	2.48 ± 0.19	ug/g	7	ATNA
	Zn	91 ± 7	ug/g	7	ATNA
	Zr	380 ± 150	ug/g	7	ATNA

[a] Total number of analyses included In the mean.
[b] Analytical technique codes:
ATNA = Automated Thermal Neutron Activation
CVGFA = Cold Vapor Gold Film Analyzer
DNA = Delayed-Neutron Assay
FAA = Flame Atomic Absorption Spectrophotometry
G = Ge(Li), Gamma Spectroscopy
ICPES = Inductively Coupled Plasma Atomic Emission Spectrometry
ICPMS = Inductively Coupled Plasma Mass Spectrometry
IENA = Instrumental Epithermal Neutron Activation
ISE = Ion Selective Electrode
ITNA = Instrumental Thermal Neutron Activation

TABLE C-IV

SUMMARY OF ELEMENTAL DETERMINATIONS ON USGS REFERENCE MATERIALS BY HSE-9

Material	Constituent	Mean ± Std Dev	Units	N [a]	Technique [b]
USGS GXR-1 Jasperoid	Ag	33	ug/g	2	ICPES
	Ba	500	ug/g	2	ICPES
	Be	0.95	ug/g	2	ICPES
	Cd	17.3	ug/g	2	ICPES
	Cr	9.0	ug/g	2	ICPES
	Hg	4.60	ug/g	2	CVAA
	Ni	34.5	ug/g	2	ICPES
	Pb	705	ug/g	2	ICPES
	Sb	180	ug/g	2	ICPES
USGS GXR-2 Soil	Ag	12	ug/g	1	ATNA
	Al	17.8	%	1	ATNA
	As	26	ug/g	1	ATNA
	Au	28	ng/g	1	ATNA
	Ba	2100	ug/g	1	ATNA
	Br	3.7	ug/g	1	ATNA
	Ca	0.76	%	1	ATNA
	Ce	50	ug/g	1	ATNA
	Cl	< 90	ug/g	1	ATNA
	Co	7.3	ug/g	1	ATNA
	Cr	35	ug/g	1	ATNA
	Cs	4.3	ug/g	1	ATNA
	Cu	< 300	ug/g	1	ATNA
	Dy	3.1	ug/g	1	ATNA
	Eu	0.67	ug/g	1	ATNA
	Fe	1.71	%	1	ATNA
	Ga	36	ug/g	1	ATNA
	Hf	6.8	ug/g	1	ATNA
	Hg	2700	ug/g	1	ATNA
	I	< 20	ug/g	1	ATNA
	In	< 200	ng/g	1	ATNA
	K	1.36	%	1	ATNA
	La	21	ug/g	1	ATNA
	Lu	260	ng/g	1	ATNA
	Mg	0.73	%	1	ATNA
	Mn	890	ug/g	1	ATNA
	Na	5500	ug/g	1	ATNA
	Nd	16	ug/g	1	ATNA
	Rb	68	ug/g	1	ATNA
	Sb	41	ug/g	1	ATNA
	Sc	5.5	ug/g	1	ATNA
	Se	1.0	ug/g	1	ATNA
	Sm	3.6	ug/g	1	ATNA
	Sr	< 400	ug/g	1	ATNA
	Ta	690	ng/g	1	ATNA
	Tb	430	ng/g	1	ATNA
	Th	7.8	ug/g	1	ATNA
	Ti	2900	ug/g	1	ATNA
	U	2.8	ug/g	1	ATNA
	V	48	ug/g	1	ATNA
	W	1.4	ug/g	1	ATNA
	Yb	1.6	ug/g	1	ATNA
	Zn	480	ug/g	1	ATNA
	Zr	210	ug/g	1	ATNA

[a] Total number of analyses included In the mean.
[b] Analytical technique codes:
ATNA = Automated Thermal Neutron Activation
CVAA = Cold Vapor Atomic Absorption
ICPES = Inductively Coupled Plasma Atomic Emission Spectrometry

KEY TO TABLE C-V

****

EPA Beta Performance
Evaluation in Water, May 1990[a]

****

Beta[b] 87EPA 01[c] PC[d]

CV = 35. ± 5. pCi/L[e] [ ][f]

Result	Uncer.	Date[g]
23.	2.	6/03
25.	3.	6/03
27.	3.	6/03

Co-60 87EPA 01 G

CV = No Data Available (pCi/L)[e]

Result	Uncer.	Date
7.2	3.	5/10
6.3	3.	5/10
8.0	3.	5/10

---

[a]Quality assurance material name.
[b]Analyte.
[c]Reference code.
[d]Analytical technique.
[e]Certified value. "No Data Available" means that this analyte does not have a certified value and that data is being collected to determine a consensus value.
[f]Contract laboratory code.
[g]Result, uncertainty, and date analyzed.

Uncertainties quoted in this table are those calculated and reported by the analyst. At present there is no uniform policy concerning the calculation of uncertainties in HSE-9. This need is being addressed.

KEY (cont)

Analytical technique codes:

AAC	= Flameless AA with Chemical Separation
ACOLR	= Automated Colorimetry
BOM	= Beckman Oxygen Meter
CALC	= Calculation
CALOR	= Calorimetry
CB	= Conductivity Bridge
CEA	= Combustion-Elemental Analyzer
COLOR	= Spectrophotometric, colorimetric
CORR	= Corrosivity
CVAA	= Cold Vapor Atomic Absorbtion Spectroscopy
CVGFA	= Cold Vapor Gold Film Analyzer
DNA	= Delayed Neutron Assay
ETVAA	= Electrothermal Vaporation Atomic Absorbtion
FAA	= Flame Atomic Absorbtion Spectroscopy
FAAC	= Flame AA with Chemical Separation
FIA	= Flow Injection Analysis
FP	= Flash Point
FTIR	= Fourier Transformation Infrared Spectroscopy
G	= Gamma Spectroscopy - Ge(Li) or HPGE
GCEC	= Gas Chromatography with Electron Capture
GCFID	= Gas Chromatography - Flame Ionization Detector
GCMS	= Gas Chromatography/Mass Spectrometry
GE	= Glass Electrode
GELI	= Ge(Li), Gamma Spectroscopy
GRAV	= Gravimetry (evaporation)
HYDRO	= Hydrometry
IC	= Ion Chromatography
ICPAE	= Inductively Coupled Plasma Atomic Emission Spectrometry
ICPES	= Inductively Coupled Plasma Atomic Emission Spectrometry
ICPMS	= Inductively Coupled Plasma Mass Spectrometry
IENA	= Instrumental Epithermal Neutron Activation
IR	= Infrared Spectrometry
ISE	= Ion Selective Electrodes
ITNA	= Instrumental Thermal Neutron Activation
KIT	= PCB Field Test Kits
LS	= Liquid Scintillation Counting
NAI	= Sodium iodide, Gamma Spectroscopy
PAPER	= Paper test strips
PC	= Proportional Counting
PTGC	= Purge & Trap/Gas Chromatography
PTITR	= Potentiometric Titration
RAS	= Radiochemical Alpha Spectrometry
RESIS	= Resistivity
SC	= Scintillation Counting with Na(I) Crystal
TITR	= Titration
VISC	= Viscosity

TABLE C-V

INDIVIDUAL CONSTITUENT CONCENTRATIONS IN QUALITY ASSURANCE MATERIALS MEASURED BY HSE-9 IN 1990

****

Bionetics Collaborative Study

****

Ag 90BIO 01 ICPMS

CV = 2200 ug/L

Result	Uncer	Date
2000	200	5/14
1900	200	5/14

As 90BIO 01 ICPMS

CV = 2201 ug/L

Result	Uncer	Date
2100	200	5/14

Ba 90BIO 01 ICPMS

CV = 2202 ug/L

Result	Uncer	Date
2100	200	5/14
2000	200	5/14

Be 90BIO 01 ICPMS

CV = 1099 ug/L

Result	Uncer	Date
1200	100	5/14

Cd 90BIO 01 ICPMS

CV = 1100 ug/L

Result	Uncer	Date
1100	100	5/14
1000	100	5/14

Co 90BIO 01 ICPMS

CV = 1106 ug/L

Result	Uncer	Date
1100	100	5/14

Cr 90BIO 01 ICPMS

CV = 2199 ug/L

Result	Uncer	Date
2100	200	5/14
2100	200	5/14

Cu 90BIO 01 ICPMS

CV = 1100 ug/L

Result	Uncer	Date
1100	100	5/14

Mn 90BIO 01 ICPMS

CV = 1100 ug/L

Result	Uncer	Date
1100	100	5/14

Mo 90BIO 01 ICPMS

CV = 1100 ug/L

Result	Uncer	Date
1100	100	5/14
1100	100	5/14

Ni 90BIO 01 ICPMS

CV = 1099 ug/L

Result	Uncer	Date
1000	100	5/14
990	100	5/14

Pb 90BIO 01 ICPMS

CV = 1100 ug/L

Result	Uncer	Date
1300	100	5/14

Se 90BIO 01 ICPMS

CV = 2201 ug/L

Result	Uncer	Date
2000	200	5/14

Tl 90BIO 01 ICPMS

CV = 1100 ug/L

Result	Uncer	Date
1000	100	5/14
1100	100	5/14

V 90BIO 01 ICPMS

CV = 2199 ug/L

Result	Uncer	Date
2200	200	5/14

Zn 90BIO 01 ICPMS

CV = 2198 ug/L

Result	Uncer	Date
2200	200	5/14

****

Bionetics QC Sample

****

Ag 90BIO 01 ICPMS

CV = 160 + 20 ug/L

Result	Uncer	Date
150	20	4/25
150	20	4/25
130	10	4/25
130	10	4/25
140	10	4/25
160	20	4/25
150	20	4/25
140	10	4/25

Al 90BIO 01 ICPMS

CV = 160 + 16 ug/L

Result	Uncer	Date
180	20	4/25
150	10	4/25
190	20	4/25
190	20	4/25

As 90BIO 01 ICPMS

CV = 160 + 16 ug/L

Result	Uncer	Date
140	10	4/25
160	20	4/25
160	20	4/25

Ba 90BIO 01 ICPMS

CV = 200 + 20 ug/L

Result	Uncer	Date
180	20	4/25
200	20	4/25
200	20	4/25
200	20	4/25
200	20	4/25
180	20	4/25
200	20	4/25
180	20	4/25
200	20	4/25
200	20	4/25
180	20	4/25
200	20	4/25
200	20	4/25

Be 90BIO 01 ICPMS

CV = 80 + 8 ug/L

Result	Uncer	Date
79	8	4/25
63	6	4/25
75	8	4/25
89	9	4/25

Cd 90BIO 01 ICPMS

CV = 100 + 10 ug/L

Result	Uncer	Date
100	10	4/25
99	10	4/25
98	10	4/25
98	10	4/25
99	10	4/25
91	9	4/25
92	9	4/25
100	10	4/25

Co 90BIO 01 ICPMS

CV = 101 + 10 ug/L

Result	Uncer	Date
98	10	4/25
140	10	4/25
97	10	4/25
89	9	4/25

Cr 90BIO 01 ICPMS

CV = 160 + 16 ug/L

Result	Uncer	Date
150	20	4/25
170	20	4/25
150	20	4/25
150	20	4/25
150	20	4/25
160	20	4/25
150	20	4/25
160	20	4/25

Cu 90BIO 01 ICPMS

CV = 100 + 10 ug/L

Result	Uncer	Date
100	10	4/25
91	9	4/25
100	10	4/25
130	10	4/25
110	10	4/25
110	10	4/25
91	9	4/25
100	10	4/25

Mn 90BIO 01 ICPMS

CV = 100 + 10 ug/L

Result	Uncer	Date
88	9	4/25
95	10	4/25
110	10	4/25
97	10	4/25

Mo 90BIO 01 ICPMS

CV = 80 + 8 ug/L

Result	Uncer	Date
74	7	4/25
84	8	4/25
81	8	4/25
82	8	4/25
82	8	4/25
83	8	4/25
80	8	4/25
82	8	4/25
87	9	4/25
84	8	4/25
74	7	4/25
74	7	4/25

Ni 90BIO 01 ICPMS

CV = 100 + 10 ug/L

Result	Uncer	Date
120	10	4/25
100	10	4/25
130	10	4/25
95	10	4/25
85	9	4/25
96	10	4/25
92	9	4/25
91	9	4/25
98	10	4/25
92	9	4/25
100	10	4/25
98	10	4/25

Pb 90BIO 01 ICPMS

CV = 100 + 10 ug/L

Result	Uncer	Date
96	10	4/25
99	10	4/25
99	10	4/25
92	9	4/25
98	10	4/25
92	9	4/25
98	10	4/25
91	9	4/25
96	10	4/25
98	10	4/25
98	10	4/25
96	10	4/25
99	10	4/25

Sb 90BIO 01 ICPMS

CV = 80 + 8 ug/L

Result	Uncer	Date
81	8	4/25
80	8	4/25
81	8	4/25
75	8	4/25
75	8	4/25
79	8	4/25
80	8	4/25
81	8	4/25

Se 90BIO 01 ICPMS

CV = 200 + 20 ug/L

Result	Uncer	Date
210	20	4/25
220	20	4/25
210	20	4/25
210	20	4/25
260	30	4/25
180	20	4/25
150	20	4/25
170	20	4/25

Tl 90BIO 01 ICPMS

CV = 80 + 8 ug/L

Result	Uncer	Date
79	8	4/25
75	8	4/25
79	8	4/25
75	8	4/25
81	8	4/25
78	8	4/25
80	8	4/25
80	8	4/25

U 90BIO 01 ICPMS

CV = 100 + 10 ug/L

Result	Uncer	Date
96	10	4/25
100	10	4/25
99	10	4/25
98	10	4/25

V 90BIO 01 ICPMS

CV = 200 + 20 ug/L

Result	Uncer	Date
190	20	4/25
190	20	4/25
200	20	4/25
180	20	4/25

TABLE C-V (cont)

****

Bionetics QC Sample (cont)

****

Zn 90BIO 01 ICPMS

CV = 160 + 16 ug/L

Result	Uncer	Date
170	20	4/25
170	20	4/25
170	20	4/25
150	20	4/25
170	20	4/25
170	20	4/25
150	20	4/25
180	20	4/25
180	20	4/25
140	10	4/25
160	20	4/25
170	20	4/25
170	20	4/25

****

CCRMP BL-1 Uranium Ore

****

Ra-226 77ING 01 G

CV = 75 + 4 pCi/g

Result	Uncer	Date
72	11	3/30

****

CCRMP CLV-1 Vegetative Radionuclide

****

Cs-137 86OAL 01 G

CV = 3 pCi/g

Result	Uncer	Date
1.8	0.3	3/02
6.1	1.1	8/27
2.4	0.4	8/27
2.0	0.3	8/27
2.4	0.4	10/30
2.4	0.4	11/26

****

CCRMP CLV-2 Vegetative Radionuclide

****

Cs-137 86OAL 01 G

CV = 0.92 pCi/g

Result	Uncer	Date
0.99	0.23	3/02
0.93	0.19	11/20

****

CCRMP DH-1 Thorium-Uranium Ore

****

Ra-226 77ING 01 G

CV = 578 + 12 pCi/g

Result	Uncer	Date
590	90	3/30

****

CCRMP DL-1A Thorium-Uranium Ore

****

U 85CAN 01 ICPMS

CV = 116 + 3 ug/g

Result	Uncer	Date
93	9	9/12

U-235/238 89W-9 01 ICPMS

CV = 0.0072 + 0.0001 ratio

Result	Uncer	Date
0.0071	0.0002	9/12

****

CCRMP MRG-1 Gabbro

****

Ag 90GLA 01 ATNA

CV = 110 + 27 ng/g

Result	Uncer	Date
< 10000		5/25
< 8000		5/25
< 6000		5/27
< 8000		6/24
< 6000		7/21

Al 90GLA 01 ATNA

CV = 4.48 + 0.15 %

Result	Uncer	Date
4.38	0.13	5/25
4.25	0.12	5/25
4.46	0.13	5/27
4.21	0.12	6/24
4.42	0.13	7/21

As 90GLA 01 ATNA

CV = 730 + 370 ng/g

Result	Uncer	Date
< 1000		5/25
< 1700		5/25
< 1500		5/27
< 1700		6/24
< 1800		7/21

Au 90GLA 01 ATNA

CV = 5.4 ng/g

Result	Uncer	Date
< 11		5/25
6.5	2.4	5/25
< 8		5/27
7.7	2.5	6/24
< 7		7/21

Ba 90GLA 01 ATNA

CV = 61 + 23 ug/g

Result	Uncer	Date
< 800		5/25
< 700		5/25
< 600		5/27
< 700		6/24
< 600		7/21

Br ATNA

CV = none available ug/g

Result	Uncer	Date
< 3		5/25
< 2.6		5/25
< 2		5/27
< 2.5		6/24
< 2.2		7/21

Ca 90GLA 01 ATNA

CV = 10.51 + 0.24 %

Result	Uncer	Date
10.6	0.4	5/25
10.2	0.4	5/25
10.3	0.4	5/27
11	0.5	6/24
10.7	0.4	7/21

Ce 90GLA 01 ATNA

CV = 26 + 4 ug/g

Result	Uncer	Date
31.2	2	5/25
25.3	1.6	5/25
26.4	1.4	5/27
28.1	1.7	6/24
28.2	1.5	7/21

Cl 90GLA 01 ATNA

CV = 170 + 30 ug/g

Result	Uncer	Date
120	20	5/25
140	20	5/25
170	20	5/27
160	30	6/24
< 110		7/21

Co 90GLA 01 ATNA

CV = 87 + 7 ug/g

Result	Uncer	Date
95	5	5/25
79.2	4.1	5/25
86	5	5/27
85	4	6/24
90	5	7/21

Cr 90GLA 01 ATNA

CV = 430 + 80 ug/g

Result	Uncer	Date
540	30	5/25
439	26	5/25
486	29	5/27
480	30	6/24
500	30	7/21

Cs 90GLA 01 ATNA

CV = 570 + 160 ng/g

Result	Uncer	Date
< 3000		5/25
< 2200		5/25
< 1900		5/27
< 2100		6/24
< 1900		7/21

Cu 90GLA 01 ATNA

CV = 134 + 14 ug/g

Result	Uncer	Date
< 250		5/25
< 250		5/25
< 240		5/27
< 230		6/24
< 240		7/21

Dy 90GLA 01 ATNA

CV = 2.9 + 0.9 ug/g

Result	Uncer	Date
2.2	0.4	5/25
3.3	0.5	5/25
3.3	0.4	5/27
2.9	0.4	6/24
< 6		7/21

Eu 90GLA 01 ATNA

CV = 1.39 + 0.12 ug/g

Result	Uncer	Date
1.6	0.2	5/25
1.19	0.11	5/25
1.4	0.2	5/27
1.3	0.2	6/24
1.5	0.2	7/21

Fe 90GLA 01 ATNA

CV = 12.54 + 0.27 %

Result	Uncer	Date
13.9	0.7	5/25
11.2	0.6	5/25
12.7	0.7	5/27
12.2	0.6	6/24
13.1	0.7	7/21

Ga 90GLA 01 ATNA

CV = 17 + 4 ug/g

Result	Uncer	Date
19	3	5/25
16	3	5/25
21	3	5/27
21	4	6/24
< 23		7/21

Hf 90GLA 01 ATNA

CV = 3.76 + 0.22 ug/g

Result	Uncer	Date
4.2	0.5	5/25
3.51	0.2	5/25
3.9	0.5	5/27
4	0.5	6/24
3.8	0.5	7/21

Hg 90GLA 01 ATNA

CV = 140 + 40 ng/g

Result	Uncer	Date
< 1700		5/25
< 1400		5/25
< 1000		5/27
< 1400		6/24
< 1000		7/21

I ATNA

CV = none available ug/g

Result	Uncer	Date
< 23		5/25
< 22		5/25
< 22		5/27
< 24		6/24
< 21		7/21

In 90GLA 01 ATNA

CV = < 500 ng/g

Result	Uncer	Date
< 230		5/25
< 240		5/25
< 220		5/27
< 220		6/24
< 220		7/21

K 90GLA 01 ATNA

CV = 1510 + 220 ug/g

Result	Uncer	Date
1400	300	5/25
1200	200	5/25
1100	200	5/27
1600	300	6/24
< 1400		7/21

La 90GLA 01 ATNA

CV = 9.8 + 0.8 ug/g

Result	Uncer	Date
9.4	0.4	5/25
9.2	0.6	5/25
9.47	0.48	5/27
9.6	0.5	6/24
9.2	0.6	7/21

Lu 90GLA 01 ATNA

CV = 120 + 40 ng/g

Result	Uncer	Date
120	30	5/25
110	20	5/25
120	20	5/27
95	22	6/24
64	17	7/21

Mg 90GLA 01 ATNA

CV = 8.17 + 0.19 %

Result	Uncer	Date
7.2	0.5	5/25
7.1	0.6	5/25
7.16	0.44	5/27
7.7	0.4	6/24
7.3	0.4	7/21

Mn 90GLA 01 ATNA

CV = 1310 + 100 ug/g

Result	Uncer	Date
1370	50	5/25
1330	50	5/25
1400	60	5/27
1370	50	6/24
1410	60	7/21

TABLE C-V (cont)

****

CCRMP MRG-1 Gabbro
(cont)

****

Na 90GLA 01 ATNA

CV = 5500 + 600 ug/g

Result	Uncer	Date
5450	230	5/25
5160	220	5/25
5450	230	5/27
5360	240	6/24
5400	230	7/21

Nd 90GLA 01 ATNA

CV = 19.2 + 2.2 ug/g

Result	Uncer	Date
< 60		5/25
< 47		5/25
27	8	5/27
< 50		6/24
< 40		7/21

Rb 90GLA 01 ATNA

CV = 8.5 + 2.4 ug/g

Result	Uncer	Date
< 24		5/25
< 20		5/25
< 18		5/27
< 20		6/24
< 18		7/21

Sb 90GLA 01 ATNA

CV = 860 + 160 ng/g

Result	Uncer	Date
480	90	5/25
370	80	5/25
440	70	5/27
430	60	6/24
500	70	7/21

Sc 90GLA 01 ATNA

CV = 55 + 5 ug/g

Result	Uncer	Date
60	3	5/25
49.5	2.6	5/25
54	3	5/27
53	3	6/24
56	3	7/21

Se 90GLA 01 ATNA

CV = 194 + 5 ng/g

Result	Uncer	Date
< 10000		5/25
< 7000		5/25
< 60000		5/27
< 8000		6/24
< 7000		7/21

Sm 90GLA 01 ATNA

CV = 4.5 + 0.5 ug/g

Result	Uncer	Date
4.55	0.2	5/25
4.27	0.19	5/25
4.45	0.2	5/27
4.35	0.2	6/24
4.39	0.2	7/21

Sr 90GLA 01 ATNA

CV = 266 + 13 ug/g

Result	Uncer	Date
< 400		5/25
320	110	5/25
< 330		5/27
< 400		6/24
490	90	7/21

Ta 90GLA 01 ATNA

CV = 800 + 50 ng/g

Result	Uncer	Date
760	110	5/25
740	100	5/25
780	100	5/27
720	100	6/24
780	80	7/21

Tb 90GLA 01 ATNA

CV = 510 + 60 ng/g

Result	Uncer	Date
580	90	5/25
400	60	5/25
300	110	5/27
400	70	6/24
650	110	7/21

Th 90GLA 01 ATNA

CV = 0.93 + 0.18 ug/g

Result	Uncer	Date
1.1	0.2	5/25
0.93	0.13	5/25
0.74	0.1	5/27
0.86	0.11	6/24
0.85	0.1	7/21

Ti 90GLA 01 ATNA

CV = 2.26 + 0.09 %

Result	Uncer	Date
2.1	0.3	5/25
2.1	0.3	5/25
2.2	0.3	5/27
2.2	0.3	6/24
2.3	0.3	7/21

U 90GLA 01 ATNA

CV = 240 + 40 ng/g

Result	Uncer	Date
263	15	5/25
243	15	5/25
226	14	5/27
244	15	6/24
212	13	7/21

V 90GLA 01 ATNA

CV = 526 + 33 ug/g

Result	Uncer	Date
517	19	5/25
511	18	5/25
534	19	5/27
521	19	6/24
537	19	7/21

W 90GLA 01 ATNA

CV = 300 + 60 ng/g

Result	Uncer	Date
< 5000		5/25
< 4000		5/25
< 3900		5/27
< 4000		6/24
< 5000		7/21

Yb 90GLA 01 ATNA

CV = 600 ng/g

Result	Uncer	Date
780	140	5/25
810	100	5/25
680	90	5/27
780	100	6/24
1000	100	7/21

Zn 90GLA 01 ATNA

CV = 191 + 15 ug/g

Result	Uncer	Date
230	30	5/25
170	20	5/25
200	30	5/27
200	30	6/24
210	30	7/21

Zr 90GLA 01 ATNA

CV = 108 + 16 ug/g

Result	Uncer	Date
< 700		5/25
< 600		5/25
< 600		5/27
< 600		6/24
< 600		7/21

****

CCRMP SO-1 Regosolic Soil

****

Ag 89GLA 03 ATNA

CV = 100 ng/g

Result	Uncer	Date
< 4000		5/08
< 4000		5/25
< 6000		5/27
< 4000		6/07
< 4000		7/21
< 3000		7/21
< 4000		8/14

Ag 89GLA 03 MSCAN

CV = 100 ng/g

Result	Uncer	Date
9500	28500	9/13

Al 85CAN 01 ATNA

CV = 9.38 + 0.17 %

Result	Uncer	Date
9	0.3	5/08
9.1	0.3	5/25
9.04	0.25	5/27
9.3	0.3	6/07
9.2	0.3	7/21
9.3	0.3	7/21
9.2	0.3	8/14

As 89GLA 03 ATNA

CV = 2 + 0.2 ug/g

Result	Uncer	Date
1.9	0.4	5/08
2.7	0.5	5/25
1.9	0.4	5/27
2	0.4	6/07
2.3	0.4	7/21
1.6	0.3	7/21
2.5	0.4	8/14

As 89GLA 03 MSCAN

CV = 2 + 0.2 ug/g

Result	Uncer	Date
26	78	9/13

Au 89GLA 03 ATNA

CV = 1 ng/g

Result	Uncer	Date
< 13		5/08
< 14		5/25
< 18		5/27
< 16		6/07
< 11		7/21
< 11		7/21
< 15		8/14

Au 89GLA 03 MSCAN

CV = 1 ng/g

Result	Uncer	Date
< 500		9/13

B 89GLA 03 MSCAN

CV = 19 + 2 ug/g

Result	Uncer	Date
30	90	9/13

Ba 85CAN 01 ATNA

CV = 879 + 47 ug/g

Result	Uncer	Date
900	50	5/08
910	80	5/25
930	60	5/27
960	50	6/07
900	90	7/21
830	160	7/21
940	90	8/14

Ba 85CAN 01 ICPES

CV = 879 + 47 ug/g

Result	Uncer	Date
340	70	2/12
330	70	2/27
330	70	2/27
930	90	3/26
850	90	3/26
1000	200	8/09

Ba 85CAN 01 MSCAN

CV = 879 + 47 ug/g

Result	Uncer	Date
440	1300	9/13

Be 89GLA 03 ICPES

CV = 1.98 + 0.29 ug/g

Result	Uncer	Date
3	1	1/22
1.3	0.1	1/25
1.1	0.2	8/02
1.1	0.2	8/02
1.2	0.2	8/02
1.1	0.2	8/02
1.9	0.4	11/27
2	0.4	11/28

Be 89GLA 03 MSCAN

CV = 1.98 + 0.29 ug/g

Result	Uncer	Date
< 5		9/13

Bi 89GLA 03 MSCAN

CV = 360 + 110 ng/g

Result	Uncer	Date
1400	4200	9/13

Br 89GLA 03 ATNA

CV = 2.15 ug/g

Result	Uncer	Date
1.7	0.5	5/08
1.6	0.4	5/25
< 4.3		5/27
1.8	0.4	6/07
2	0.4	7/21
1	0.4	7/21
2.2	0.5	8/14

Ca 85CAN 01 ATNA

CV = 1.8 + 0.07 %

Result	Uncer	Date
1.71	0.1	5/08
1.67	0.1	5/25
1.71	0.11	5/27
1.8	0.11	6/07
1.62	0.1	7/21
1.64	0.1	7/21
1.83	0.1	8/14

Cd 89GLA 03 ICPES

CV = 130 + 40 ng/g

Result	Uncer	Date
< 4000		8/09

Cd 89GLA 03 MSCAN

CV = 130 + 40 ng/g

Result	Uncer	Date
< 500		9/13

TABLE C-V (cont)

****

CCRMP SO-1 Regosolic Soil
(cont)

****

Ce 89GLA 03 ATNA

CV = 102 + 10 ug/g

Result	Uncer	Date
114	5	5/08
114	5	5/25
109	5	5/27
119	5	6/07
110	5	7/21
97	5	7/21
121	5	8/14

Ce 89GLA 03 MSCAN

CV = 102 + 10 ug/g

Result	Uncer	Date
420	1300	9/13

Cl 89GLA 03 ATNA

CV = 150 ug/g

Result	Uncer	Date
< 140		5/08
< 120		5/25
< 130		5/27
130	30	6/07
120	30	7/21
160	20	7/21
160	30	8/14

Co 85CAN 01 ATNA

CV = 32 + 3 ug/g

Result	Uncer	Date
26.4	1.4	5/08
26.9	1.4	5/25
26.7	1.4	5/27
28.8	1.5	6/07
25.7	1.4	7/21
25.6	1.3	7/21
28.8	1.5	8/14

Co 85CAN 01 MSCAN

CV = 32 + 3 ug/g

Result	Uncer	Date
30	90	9/13

Cr 85CAN 01 ATNA

CV = 160 + 15 ug/g

Result	Uncer	Date
175	10	5/08
177	11	5/25
171	10	5/27
185	11	6/07
170	10	7/21
157	9	7/21
186	11	8/14

Cr 85CAN 01 ICPES

CV = 160 + 15 ug/g

Result	Uncer	Date
200	40	8/09

Cr 85CAN 01 MSCAN

CV = 160 + 15 ug/g

Result	Uncer	Date
420	1300	9/13

Cs 89GLA 03 ATNA

CV = 5.07 + 0.18 ug/g

Result	Uncer	Date
4.9	0.3	5/08
5.1	0.3	5/25
4.7	0.3	5/27
5.2	0.3	6/07
4.6	0.3	7/21
4.5	0.3	7/21
5.4	0.3	8/14

Cs 89GLA 03 MSCAN

CV = 5.07 + 0.18 ug/g

Result	Uncer	Date
13	39	9/13

Cu 85CAN 01 ATNA

CV = 61 + 3 ug/g

Result	Uncer	Date
< 400		5/08
< 300		5/25
< 320		5/27
< 300		6/07
< 300		7/21
< 300		7/21
< 300		8/14

Cu 85CAN 01 ICPES

CV = 61 + 3 ug/g

Result	Uncer	Date
53	10	2/12
52	10	2/27
52	10	2/27

Cu 85CAN 01 MSCAN

CV = 61 + 3 ug/g

Result	Uncer	Date
86	260	9/13

Dy 89GLA 03 ATNA

CV = 4.5 + 0.4 ug/g

Result	Uncer	Date
4.4	0.4	5/08
4.3	0.5	5/25
4.5	0.4	5/27
5.1	0.5	6/07
4	0.4	7/21
4.7	0.5	7/21
5.3	0.5	8/14

Dy 89GLA 03 MSCAN

CV = 4.5 + 0.4 ug/g

Result	Uncer	Date
17	51	9/13

Er 89GLA 03 MSCAN

CV = 2 + 0.4 ug/g

Result	Uncer	Date
9.2	27.6	9/13

Eu 89GLA 03 ATNA

CV = 1.57 + 0.05 ug/g

Result	Uncer	Date
1.52	0.07	5/08
1.57	0.08	5/25
1.52	0.06	5/27
1.69	0.08	6/07
1.44	0.07	7/21
1.43	0.06	7/21
1.7	0.09	8/14

Eu 89GLA 03 MSCAN

CV = 1.57 + 0.05 ug/g

Result	Uncer	Date
6.5	19.5	9/13

F 89GLA 03 ISE

CV = 850 + 170 ug/g

Result	Uncer	Date
780	160	4/09
970	190	4/09
770	150	5/07
1000	200	5/07
1000	200	5/08
770	150	5/08

Fe 85CAN 01 ATNA

CV = 6 + 0.13 %

Result	Uncer	Date
5.8	0.3	5/08
5.9	0.3	5/25
5.61	0.3	5/27
6.2	0.3	6/07
5.5	0.3	7/21
5.4	0.3	7/21
6.3	0.3	8/14

Ga 89GLA 03 ATNA

CV = 24.1 + 0.8 ug/g

Result	Uncer	Date
< 20		5/08
25	5	5/25
37	6	5/27
20	4	6/07
21	5	7/21
22	5	7/21
19	5	8/14

Ga 89GLA 03 MSCAN

CV = 24.1 + 0.8 ug/g

Result	Uncer	Date
13	39	9/13

Gd 89GLA 03 MSCAN

CV = 6.1 + 0.3 ug/g

Result	Uncer	Date
30	90	9/13

Ge 89GLA 03 MSCAN

CV = 1 ug/g

Result	Uncer	Date
8.8	26.4	9/13

Hf 89GLA 03 ATNA

CV = 2.5 + 0.4 ug/g

Result	Uncer	Date
2.6	0.2	5/08
2.6	0.4	5/25
2.49	0.14	5/27
2.7	0.4	6/07
2.5	0.4	7/21
2.21	0.17	7/21
2.8	0.4	8/14

Hf 89GLA 03 MSCAN

CV = 2.5 + 0.4 ug/g

Result	Uncer	Date
3.3	9.9	9/13

Hg 85CAN 01 ATNA

CV = 22 + 3 ng/g

Result	Uncer	Date
< 700		5/08
< 600		5/25
< 1000		5/27
< 700		6/07
< 600		7/21
< 700		7/21
< 700		8/14

Hg 85CAN 01 CVGFA

CV = 22 + 3 ng/g

Result	Uncer	Date
20	3	2/26
25	3	2/26
20	3	2/26
25	3	2/26
20	3	2/26

Ho 89GLA 03 MSCAN

CV = 1.1 + 0.4 ug/g

Result	Uncer	Date
3.4	10.2	9/13

I 89GLA 03 ATNA

CV = 12 ug/g

Result	Uncer	Date
< 20		5/08
< 19		5/25
< 24		5/27
< 25		6/07
< 21		7/21
< 21		7/21
< 23		8/14

In 89GLA 03 ATNA

CV = 100 ng/g

Result	Uncer	Date
< 300		5/08
< 230		5/25
< 300		5/27
< 300		6/07
< 300		7/21
< 300		7/21
< 300		8/14

In 89GLA 03 MSCAN

CV = 100 ng/g

Result	Uncer	Date
< 500		9/13

Ir MSCAN

CV = none available ng/g

Result	Uncer	Date
< 500		9/13

K 85CAN 01 ATNA

CV = 2.68 + 0.08 %

Result	Uncer	Date
2.45	0.16	5/08
2.62	0.18	5/25
2.6	0.17	5/27
2.79	0.18	6/07
2.38	0.16	7/21
2.5	0.17	7/21
2.7	0.18	8/14

La 89GLA 03 ATNA

CV = 54 + 2 ug/g

Result	Uncer	Date
55	3	5/08
55	3	5/25
57	3	5/27
57	3	6/07
55	3	7/21
56	3	7/21
59	3	8/14

La 89GLA 03 MSCAN

CV = 54 + 2 ug/g

Result	Uncer	Date
160	480	9/13

Li 89GLA 03 MSCAN

CV = 48 + 2 ug/g

Result	Uncer	Date
120	360	9/13

TABLE C-V (cont)

****

CCRMP SO-1 Regosolic Soil
(cont)

****

Lu 89GLA 03 ATNA

CV = 310 + 20 ng/g

Result	Uncer	Date
330	20	5/08
323	22	5/25
293	26	5/27
341	23	6/07
358	24	7/21
280	40	7/21
356	23	8/14

Lu 89GLA 03 MSCAN

CV = 310 + 20 ng/g

Result	Uncer	Date
1300	3900	9/13

Mg 85CAN 01 ATNA

CV = 2.31 + 0.11 %

Result	Uncer	Date
1.83	0.15	5/08
1.81	0.11	5/25
2.03	0.13	5/27
2.33	0.14	6/07
2.05	0.16	7/21
2.08	0.14	7/21
2.3	0.14	8/14

Mn 85CAN 01 ATNA

CV = 890 + 30 ug/g

Result	Uncer	Date
1000	40	5/08
970	40	5/25
949	37	5/27
970	40	6/07
950	40	7/21
950	40	7/21
980	40	8/14

Mn 85CAN 01 MSCAN

CV = 890 + 30 ug/g

Result	Uncer	Date
1.3	3.9	9/13

Mo 89GLA 03 ATNA

CV = 2 + 1 ug/g

Result	Uncer	Date
< 50		5/08

Mo 89GLA 03 MSCAN

CV = 2 + 1 ug/g

Result	Uncer	Date
1.1	3.3	9/13

Na 85CAN 01 ATNA

CV = 1.97 + 0.08 %

Result	Uncer	Date
1.99	0.08	5/08
2.02	0.09	5/25
2.05	0.09	5/27
2.07	0.09	6/07
1.99	0.08	7/21
2	0.08	7/21
2.12	0.1	8/14

Nb 89GLA 03 MSCAN

CV = 11.7 + 1.4 ug/g

Result	Uncer	Date
1	3	9/13

Nd 89GLA 03 ATNA

CV = 44 + 3 ug/g

Result	Uncer	Date
42	6	5/08
50	7	5/25
55	9	5/27
63	9	6/07
53	8	7/21
28	7	7/21
51	7	8/14

Nd 89GLA 03 MSCAN

CV = 44 + 3 ug/g

Result	Uncer	Date
190	570	9/13

Ni 85CAN 01 ICPES

CV = 94 + 7 ug/g

Result	Uncer	Date
85	17	2/12
88	18	2/27
82	16	2/27

Ni 85CAN 01 MSCAN

CV = 94 + 7 ug/g

Result	Uncer	Date
110	330	9/13

Pb 85CAN 01 ICPES

CV = 21 + 4 ug/g

Result	Uncer	Date
31	15	2/12
34	15	2/27
19	15	2/27
< 20		8/09

Pb 85CAN 01 MSCAN

CV = 21 + 4 ug/g

Result	Uncer	Date
14	42	9/13

Pd MSCAN

CV = none available ng/g

Result	Uncer	Date
< 500		9/13

Pr 89GLA 03 MSCAN

CV = 11.8 + 2 ug/g

Result	Uncer	Date
50	150	9/13

Pt MSCAN

CV = none available ng/g

Result	Uncer	Date
< 500		9/13

Rb 85CAN 01 ATNA

CV = 139 + 12 ug/g

Result	Uncer	Date
113	6	5/08
127	7	5/25
121	7	5/27
136	7	6/07
125	7	7/21
117	7	7/21
126	7	8/14

Rb 85CAN 01 MSCAN

CV = 139 + 12 ug/g

Result	Uncer	Date
220	660	9/13

Rh MSCAN

CV = none available ng/g

Result	Uncer	Date
< 500		9/13

Ru MSCAN

CV = none available ng/g

Result	Uncer	Date
< 500		9/13

Sb 89GLA 03 ATNA

CV = 297 + 25 ng/g

Result	Uncer	Date
< 400		5/08
< 300		5/25
< 430		5/27
< 400		6/07
< 300		7/21
< 300		7/21
< 400		8/14

Sb 89GLA 03 ITNA

CV = 297 + 25 ng/g

Result	Uncer	Date
< 160		2/26
< 200		2/26
210	150	2/26

Sb 89GLA 03 MSCAN

CV = 297 + 25 ng/g

Result	Uncer	Date
< 500		9/13

Sc 89GLA 03 ATNA

CV = 17.7 + 0.8 ug/g

Result	Uncer	Date
16.4	0.9	5/08
17.2	0.9	5/25
16.8	0.9	5/27
18.2	1	6/07
16.4	0.9	7/21
16.1	0.9	7/21
18.4	1	8/14

Se 89GLA 03 ATNA

CV = 91 + 7 ng/g

Result	Uncer	Date
700	600	5/08
< 5000		5/25
< 4900		5/27
< 5000		6/07
< 4000		7/21
< 4000		7/21
< 5000		8/14

Se 89GLA 03 MSCAN

CV = 91 + 7 ng/g

Result	Uncer	Date
< 5000		9/13

Sm 89GLA 03 ATNA

CV = 7.9 + 0.5 ug/g

Result	Uncer	Date
7.7	0.3	5/08
7.7	0.3	5/25
8.3	0.4	5/27
8.2	0.4	6/07
8	0.4	7/21
8.1	0.4	7/21
8.3	0.4	8/14

Sm 89GLA 03 MSCAN

CV = 7.9 + 0.5 ug/g

Result	Uncer	Date
34	100	9/13

Sn 89GLA 03 MSCAN

CV = 2.6 + 0.7 ug/g

Result	Uncer	Date
11	33	9/13

Sr 85CAN 01 ATNA

CV = 328 + 29 ug/g

Result	Uncer	Date
300	90	5/08
< 300		5/25
< 410		5/27
410	90	6/07
410	90	7/21
< 300		7/21
< 400		8/14

Sr 85CAN 01 MSCAN

CV = 328 + 29 ug/g

Result	Uncer	Date
240	720	9/13

Ta 89GLA 03 ATNA

CV = 0.7 + 0.12 ug/g

Result	Uncer	Date
0.71	0.07	5/08
0.68	0.06	5/25
0.63	0.07	5/27
0.78	0.07	6/07
0.68	0.07	7/21
0.54	0.06	7/21
0.66	0.07	8/14

Ta 89GLA 03 ITNA

CV = 0.7 + 0.12 ug/g

Result	Uncer	Date
0.76	0.14	2/26
0.73	0.13	2/26
0.89	0.16	2/26

Ta 89GLA 03 MSCAN

CV = 0.7 + 0.12 ug/g

Result	Uncer	Date
< 0.5		9/13

Tb 89GLA 03 ATNA

CV = 0.88 + 0.07 ug/g

Result	Uncer	Date
0.9	0.12	5/08
0.75	0.07	5/25
0.78	0.08	5/27
0.86	0.08	6/07
0.85	0.1	7/21
0.78	0.09	7/21
0.84	0.08	8/14

Tb 89GLA 03 MSCAN

CV = 0.88 + 0.07 ug/g

Result	Uncer	Date
3.6	10.8	9/13

Te 89GLA 03 MSCAN

CV = 40 ng/g

Result	Uncer	Date
< 500		9/13

Th 89GLA 03 ATNA

CV = 12.4 + 1.2 ug/g

Result	Uncer	Date
11.2	1	5/08
11.4	0.4	5/25
11.2	0.4	5/27
12	0.6	6/07
10.6	0.9	7/21
10.4	0.4	7/21
12.5	0.5	8/14

Th 89GLA 03 ITNA

CV = 12.4 + 1.2 ug/g

Result	Uncer	Date
12	1	2/26
13.1	1.2	2/26
11.3	1	2/26

TABLE C-V (cont)

****

CCRMP SO-1 Regosolic Soil (cont)

****

Th 89GLA 03 MSCAN

CV = 12.4 + 1.2 ug/g

Result	Uncer	Date
74	220	9/13

Ti 85CAN 01 ATNA

CV = 5300 + 200 ug/g

Result	Uncer	Date
4900	700	5/08
4400	600	5/25
4600	600	5/27
4200	600	6/07
5000	700	7/21
5200	700	7/21
4800	600	8/14

Ti 85CAN 01 MSCAN

CV = 5300 + 200 ug/g

Result	Uncer	Date
4600	13800	9/13

Tl 89GLA 03 MSCAN

CV = 640 ng/g

Result	Uncer	Date
550	1700	9/13

Tm 89GLA 03 MSCAN

CV = 420 + 130 ng/g

Result	Uncer	Date
1400	4200	9/13

U 89GLA 03 ATNA

CV = 1.71 + 0.04 ug/g

Result	Uncer	Date
1.65	0.07	5/08
1.76	0.07	5/25
1.62	0.07	5/27
1.72	0.07	6/07
1.67	0.07	7/21
1.69	0.07	7/21
1.72	0.07	8/14

U 89GLA 03 DNA

CV = 1.71 + 0.04 ug/g

Result	Uncer	Date
1.8	0.2	1/22

U 89GLA 03 ICPMS

CV = 1.71 + 0.04 ug/g

Result	Uncer	Date
1.4	0.3	7/31
1.3	0.3	8/13
1.4	0.3	8/13
1.4	0.3	8/13
1.5	0.3	8/13
1.4	0.3	8/14
1.4	0.3	8/16
1.4	0.3	8/16
1.6	0.3	8/16
1.6	0.3	8/16
1.4	0.1	9/11
1.61	0.08	9/18
1.56	0.08	9/20
1.65	0.09	9/21
1.69	0.08	10/19
1.6	0.1	11/16

U 89GLA 03 IENA

CV = 1.71 + 0.04 ug/g

Result	Uncer	Date
1.75	0.12	2/22
1.7	0.2	2/22
1.6	0.2	2/22
1.7	0.1	2/22
1.6	0.1	2/22

U 89GLA 03 MSCAN

CV = 1.71 + 0.04 ug/g

Result	Uncer	Date
1.6	4.8	9/13

U-235/238 81W-8 03 ICPMS

CV = 0.0072 + 0.0001 ratio

Result	Uncer	Date
0.0070	0.0004	2/21
0.0068	0.0003	2/21
0.0073	0.0002	2/22

V 89GLA 03 ATNA

CV = 133 + 4 ug/g

Result	Uncer	Date
121	5	5/08
128	5	5/25
132	6	5/27
127	5	6/07
121	5	7/21
122	5	7/21
123	5	8/14

V 89GLA 03 MSCAN

CV = 133 + 4 ug/g

Result	Uncer	Date
210	630	9/13

W 89GLA 03 ATNA

CV = 0.7 ug/g

Result	Uncer	Date
< 6		5/08
< 6		5/25
< 6		5/27
< 6		6/07
< 6		7/21
3.1	1.3	7/21
< 6		8/14

W 89GLA 03 ITNA

CV = 0.7 ug/g

Result	Uncer	Date
< 2		2/21
< 2		2/21
< 2		2/21

W 89GLA 03 MSCAN

CV = 0.7 ug/g

Result	Uncer	Date
< 0.5		9/13

Y 89GLA 03 MSCAN

CV = 24.5 + 1.4 ug/g

Result	Uncer	Date
54	160	9/13

Yb 89GLA 03 ATNA

CV = 2.24 + 0.25 ug/g

Result	Uncer	Date
2.3	0.2	5/08
2.28	0.2	5/25
2.2	0.2	5/27
2.1	0.2	6/07
2.47	0.2	7/21
2.25	0.18	7/21
2.2	0.17	8/14

Yb 89GLA 03 MSCAN

CV = 2.24 + 0.25 ug/g

Result	Uncer	Date
8.3	24.9	9/13

Zn 85CAN 01 ATNA

CV = 146 + 5 ug/g

Result	Uncer	Date
140	20	5/08
140	20	5/25
120	20	5/27
150	20	6/07
120	30	7/21
130	20	7/21
140	20	8/14

Zn 85CAN 01 MSCAN

CV = 146 + 5 ug/g

Result	Uncer	Date
170	510	9/13

Zr 89GLA 03 ATNA

CV = 84 + 10 ug/g

Result	Uncer	Date
< 200		5/08
< 400		5/25
< 440		5/27
470	130	6/07
< 190		7/21
< 210		7/21
< 400		8/14

Zr 89GLA 03 MSCAN

CV = 84 + 10 ug/g

Result	Uncer	Date
57	170	9/13

****

CCRMP SO-2 Podzolic Soil

****

Ag 89GLA 03 ATNA

CV = 190 ng/g

Result	Uncer	Date
< 3000		4/10
< 5000		5/25
< 3700		5/27
< 3200		5/27
< 3000		6/07
< 3000		7/21
1500	500	7/21
< 3000		7/21
< 3000		8/14

Al 85CAN 01 ATNA

CV = 8.07 + 0.18 %

Result	Uncer	Date
8	0.2	4/10
7.87	0.22	5/25
7.77	0.22	5/27
7.74	0.22	5/27
7.97	0.22	6/07
8.04	0.21	7/21
8.01	0.22	7/21
8.02	0.22	7/21
7.94	0.22	8/14

As 89GLA 03 ATNA

CV = 1.17 + 0.13 ug/g

Result	Uncer	Date
1.8	0.4	4/10
< 2.5		5/25
1.7	0.3	5/27
< 2.2		5/27
< 2.4		6/07
1.8	0.4	7/21
< 2.1		7/21
< 2.2		7/21
< 2.4		8/14

Au 89GLA 03 ATNA

CV = 1.5 ng/g

Result	Uncer	Date
< 20		4/10
< 16		5/25
< 15		5/27
< 12		5/27
< 16		6/07
< 10		7/21
< 10		7/21
< 13		7/21
< 15		8/14

Ba 85CAN 01 ATNA

CV = 966 + 67 ug/g

Result	Uncer	Date
1080	60	4/10
1010	70	5/25
1050	60	5/27
1020	80	5/27
1010	50	6/07
1000	70	7/21
1020	60	7/21
1000	60	7/21
1100	200	8/14

Ba 85CAN 01 ICPES

CV = 966 + 67 ug/g

Result	Uncer	Date
43	9	2/26
41	8	2/26
1000	100	3/26
1100	100	3/26
1200	100	4/04
1100	100	4/04

Be 89GLA 03 ICPES

CV = 2 + 0.3 ug/g

Result	Uncer	Date
1.6	0.4	1/22
0.55	0.05	1/25
1.7	0.3	7/13

Br 89GLA 03 ATNA

CV = 17 + 2 ug/g

Result	Uncer	Date
18	2	4/10
21	2	5/25
17	2	5/27
18	2	5/27
23	2	6/07
16	2	7/21
17	2	7/21
18	2	7/21
22	2	8/14

Ca 85CAN 01 ATNA

CV = 1.96 + 0.1 %

Result	Uncer	Date
1.9	0.1	4/10
1.96	0.11	5/25
1.85	0.11	5/27
1.73	0.1	5/27
1.8	0.1	6/07
1.86	0.1	7/21
1.67	0.1	7/21
1.98	0.11	7/21
1.95	0.11	8/14

Ce 89GLA 03 ATNA

CV = 112 + 8 ug/g

Result	Uncer	Date
117	5	4/10
109	5	5/25
117	5	5/27
123	6	5/27
121	5	6/07
119	5	7/21
117	5	7/21
107	5	7/21
129	6	8/14

Cl 89GLA 03 ATNA

CV = 84 ug/g

Result	Uncer	Date
< 100		4/10
130	20	5/25
< 110		5/27
140	30	5/27
84	19	6/07
130	20	7/21
140	20	7/21
< 110		7/21
78	17	8/14

TABLE C-V (cont)

****

CCRMP SO-2 Podzolic Soil
(cont)

****

Co 89GLA 03 ATNA

CV = 7.6 + 0.6 ug/g

Result	Uncer	Date
7.4	0.4	4/10
6.9	0.5	5/25
7.22	0.4	5/27
7.2	0.4	5/27
7.1	0.4	6/07
6.9	0.4	7/21
7.3	0.4	7/21
7	0.4	7/21
7.3	0.4	8/14

Cr 89GLA 03 ATNA

CV = 12.3 + 1.3 ug/g

Result	Uncer	Date
12	1	4/10
11.2	1	5/25
11.7	1	5/27
12.9	1.1	5/27
12.6	1	6/07
13.6	1.1	7/21
11.6	1.1	7/21
12.9	1.1	7/21
13.4	1.1	8/14

Cs 89GLA 03 ATNA

CV = 0.41 + 0.05 ug/g

Result	Uncer	Date
0.33	0.09	4/10
< 1.5		5/25
0.32	0.09	5/27
< 1.1		5/27
0.5	0.08	6/07
< 1		7/21
< 0.9		7/21
< 0.9		7/21
< 1.1		8/14

Cu 85CAN 01 ATNA

CV = 7 + 1 ug/g

Result	Uncer	Date
< 300		4/10
< 250		5/25
< 290		5/27
< 260		5/27
< 300		6/07
< 300		7/21
< 300		7/21
< 300		7/21
< 300		8/14

Cu 85CAN 01 ICPES

CV = 7 + 1 ug/g

Result	Uncer	Date
< 0.2		2/26
< 0.2		2/26

Dy 89GLA 03 ATNA

CV = 8.8 + 1.4 ug/g

Result	Uncer	Date
10	1	4/10
8.7	1	5/25
8.3	0.8	5/27
8.2	0.7	5/27
8.4	0.9	6/07
8.2	0.7	7/21
9.4	0.8	7/21
8.3	0.7	7/21
8.3	0.7	8/14

Eu 89GLA 03 ATNA

CV = 3.15 + 0.06 ug/g

Result	Uncer	Date
3.2	0.2	4/10
3.45	0.17	5/25
3.3	0.2	5/27
3.24	0.18	5/27
3.36	0.18	6/07
3.18	0.17	7/21
3.36	0.19	7/21
3.25	0.18	7/21
3.45	0.19	8/14

Fe 85CAN 01 ATNA

CV = 5.56 + 0.16 %

Result	Uncer	Date
5.3	0.3	4/10
5.3	0.3	5/25
5.3	0.27	5/27
5.39	0.29	5/27
5.3	0.3	6/07
5.3	0.3	7/21
5.4	0.3	7/21
5.2	0.3	7/21
5.6	0.3	8/14

Ga 89GLA 03 ATNA

CV = 24.3 + 0.3 ug/g

Result	Uncer	Date
25	4	4/10
28	5	5/25
23	4	5/27
19	4	5/27
24	4	6/07
28	5	7/21
23	5	7/21
24	6	7/21
25	5	8/14

Hf 89GLA 03 ATNA

CV = 17.4 + 1.3 ug/g

Result	Uncer	Date
20	2	4/10
18.3	1.6	5/25
20	2	5/27
19.3	1.3	5/27
18.5	1.7	6/07
18.8	1.3	7/21
20	2	7/21
18	2	7/21
19.2	1.8	8/14

Hg 85CAN 01 ATNA

CV = 82 + 9 ng/g

Result	Uncer	Date
< 600		4/10
< 900		5/25
< 600		5/27
230	220	5/27
< 600		6/07
< 600		7/21
< 600		7/21
< 600		7/21
< 600		8/14

I 89GLA 03 ATNA

CV = 15 ug/g

Result	Uncer	Date
< 20		4/10
< 21		5/25
< 18		5/27
10	3	5/27
10	3	6/07
< 20		7/21
9	3	7/21
8.9	2.3	7/21
< 20		8/14

In 89GLA 03 ATNA

CV = < 300 ng/g

Result	Uncer	Date
< 300		4/10
< 250		5/25
120	40	5/27
< 210		5/27
< 300		6/07
< 300		7/21
< 230		7/21
< 220		7/21
< 300		8/14

K 85CAN 01 ATNA

CV = 2.45 + 0.04 %

Result	Uncer	Date
2.4	0.2	4/10
2.37	0.16	5/25
2.34	0.16	5/27
2.32	0.16	5/27
2.37	0.16	6/07
2.07	0.14	7/21
2.17	0.15	7/21
2.5	0.17	7/21
2.32	0.16	8/14

La 89GLA 03 ATNA

CV = 46.5 + 0.7 ug/g

Result	Uncer	Date
50	3	4/10
48	3	5/25
45	3	5/27
48	3	5/27
48	3	6/07
44	3	7/21
46	3	7/21
48	3	7/21
48	3	8/14

Lu 89GLA 03 ATNA

CV = 460 + 60 ng/g

Result	Uncer	Date
530	30	4/10
490	30	5/25
525	30	5/27
538	31	5/27
540	30	6/07
560	30	7/21
580	40	7/21
500	40	7/21
520	30	8/14

Mg 85CAN 01 ATNA

CV = 5400 + 300 ug/g

Result	Uncer	Date
3600	600	4/10
5400	600	5/25
3000	500	5/27
4800	700	5/27
5400	700	6/07
5100	600	7/21
4100	500	7/21
5000	600	7/21
6100	700	8/14

Mn 85CAN 01 ATNA

CV = 720 + 20 ug/g

Result	Uncer	Date
700	30	4/10
760	30	5/25
727	30	5/27
749	31	5/27
760	30	6/07
760	30	7/21
770	30	7/21
780	30	7/21
760	30	8/14

Mo 89GLA 03 ATNA

CV = 2 + 1 ug/g

Result	Uncer	Date
< 200		4/10

Na 85CAN 01 ATNA

CV = 1.9 + 0.05 %

Result	Uncer	Date
1.91	0.08	4/10
1.91	0.08	5/25
1.77	0.08	5/27
1.88	0.08	5/27
1.89	0.08	6/07
1.73	0.07	7/21
1.83	0.08	7/21
1.89	0.08	7/21
1.9	0.08	8/14

Nd 89GLA 03 ATNA

CV = 57 + 2 ug/g

Result	Uncer	Date
56	6	4/10
95	12	5/25
64	7	5/27
72	8	5/27
79	9	6/07
60	7	7/21
60	8	7/21
48	7	7/21
90	10	8/14

Ni 85CAN 01 ICPES

CV = 8 + 2 ug/g

Result	Uncer	Date
< 3.5		2/26
< 3.5		2/26

Pb 89GLA 03 ICPES

CV = 20 + 2 ug/g

Result	Uncer	Date
30	15	2/26
16	15	2/26

Rb 85CAN 01 ATNA

CV = 78 + 6 ug/g

Result	Uncer	Date
66	4	4/10
56	5	5/25
67	4	5/27
74	5	5/27
60	4	6/07
77	5	7/21
71	5	7/21
72	5	7/21
68	4	8/14

Sb 89GLA 03 ATNA

CV = 106 + 18 ng/g

Result	Uncer	Date
< 400		4/10
< 400		5/25
< 340		5/27
< 340		5/27
< 400		6/07
< 300		7/21
< 300		7/21
< 300		7/21
< 400		8/14

Sb 89GLA 03 ITNA

CV = 106 + 18 ng/g

Result	Uncer	Date
190	130	2/26
110	60	2/26

Sc 89GLA 03 ATNA

CV = 11.3 + 0.3 ug/g

Result	Uncer	Date
10.8	0.6	4/10
10.8	0.6	5/25
10.7	0.6	5/27
11	0.6	5/27
10.6	0.6	6/07
10.7	0.6	7/21
11	0.6	7/21
10.6	0.6	7/21
11	0.6	8/14

Se 89GLA 03 ATNA

CV = 400 + 80 ng/g

Result	Uncer	Date
< 3000		4/10
1000	700	5/25
< 3200		5/27
1900	1200	5/27
< 5000		6/07
< 3000		7/21
< 4000		7/21
< 4000		7/21
< 900		8/14

TABLE C-V (cont)

****

CCRMP SO-2 Podzolic Soil
(cont)

****

Sm 89GLA 03 ATNA

CV = 11.8 + 1.2 ug/g

Result	Uncer	Date
14.6	0.7	4/10
12.3	0.6	5/25
11.4	0.5	5/27
12.3	0.6	5/27
12.6	0.6	6/07
11.4	0.5	7/21
11.7	0.5	7/21
12.1	0.5	7/21
12.5	0.6	8/14

Sr 85CAN 01 ATNA

CV = 340 + 50 ug/g

Result	Uncer	Date
360	100	4/10
540	110	5/25
< 280		5/27
330	90	5/27
280	80	6/07
390	80	7/21
430	90	7/21
310	80	7/21
< 300		8/14

Ta 89GLA 03 ATNA

CV = 1.15 + 0.13 ug/g

Result	Uncer	Date
1.3	0.1	4/10
1.1	0.2	5/25
1.19	0.1	5/27
1.2	0.1	5/27
1.2	0.1	6/07
1.34	0.1	7/21
1.22	0.09	7/21
1.19	0.09	7/21
1.2	0.1	8/14

Ta 89GLA 03 ITNA

CV = 1.15 + 0.13 ug/g

Result	Uncer	Date
1.2	0.2	2/26
1.4	0.2	2/26

Tb 89GLA 03 ATNA

CV = 1.62 + 0.19 ug/g

Result	Uncer	Date
1.4	0.1	4/10
1.33	0.12	5/25
1.5	0.2	5/27
1.4	0.1	5/27
1.4	0.1	6/07
1.38	0.13	7/21
1.4	0.2	7/21
1.4	0.1	7/21
1.5	0.1	8/14

Th 89GLA 03 ATNA

CV = 3.8 + 0.4 ug/g

Result	Uncer	Date
3.3	0.1	4/10
3.43	0.16	5/25
3.35	0.15	5/27
3.34	0.15	5/27
3.6	0.22	6/07
3.36	0.15	7/21
3.37	0.15	7/21
3.14	0.14	7/21
3.58	0.16	8/14

Th 89GLA 03 ITNA

CV = 3.8 + 0.4 ug/g

Result	Uncer	Date
4	0.4	2/26
4.3	0.4	2/26

Ti 85CAN 01 ATNA

CV = 8600 + 200 ug/g

Result	Uncer	Date
7500	1000	4/10
8200	1000	5/25
6900	900	5/27
8100	1000	5/27
8000	1000	6/07
8400	1100	7/21
8100	1000	7/21
8100	1000	7/21
7600	1000	8/14

U 89GLA 03 ATNA

CV = 0.98 + 0.05 ug/g

Result	Uncer	Date
0.89	0.04	4/10
0.95	0.04	5/25
0.889	0.039	5/27
0.968	0.043	5/27
0.97	0.04	6/07
0.99	0.04	7/21
0.93	0.04	7/21
0.93	0.04	7/21
0.95	0.04	8/14

U 89GLA 03 IENA

CV = 0.98 + 0.05 ug/g

Result	Uncer	Date
0.93	0.08	2/22
0.97	0.07	2/22
0.85	0.1	2/22
1	0.1	2/22
1	0.1	2/22

U-235/238 81H-8 03 ICPMS

CV = 0.0072 + 0.0001 ratio

Result	Uncer	Date
0.0074	0.0003	2/22
0.0076	0.0002	2/26
0.0060	0.0013	2/26

V 89GLA 03 ATNA

CV = 57 + 4 ug/g

Result	Uncer	Date
50	3	4/10
54	3	5/25
50.5	3	5/27
55	3	5/27
61	3	6/07
56	3	7/21
59	3	7/21
53	3	7/21
52	3	8/14

W 89GLA 03 ATNA

CV = 0.4 ug/g

Result	Uncer	Date
< 5		4/10
< 6		5/25
< 5		5/27
< 5		5/27
< 5		6/07
< 5		7/21
< 5		7/21
< 6		7/21
< 6		8/14

W 89GLA 03 ITNA

CV = 0.4 ug/g

Result	Uncer	Date
< 2		2/21
< 2		2/21

Yb 89GLA 03 ATNA

CV = 3.5 + 0.4 ug/g

Result	Uncer	Date
3.9	0.3	4/10
3.9	0.3	5/25
3.62	0.24	5/27
3.96	0.26	5/27
4.2	0.3	6/07
4	0.3	7/21
4	0.3	7/21
4.2	0.3	7/21
3.9	0.3	8/14

Zn 85CAN 01 ATNA

CV = 124 + 5 ug/g

Result	Uncer	Date
140	20	4/10
130	20	5/25
120	20	5/27
120	30	5/27
120	20	6/07
100	30	7/21
120	20	7/21
120	20	7/21
120	20	8/14

Zr 89GLA 03 ATNA

CV = 760 + 60 ug/g

Result	Uncer	Date
800	100	4/10
610	110	5/25
720	120	5/27
1500	200	5/27
680	80	6/07
700	100	7/21
950	110	7/21
850	120	7/21
750	120	8/14

****

CCRMP SO-3 Calcareous
C Horizon Soil

****

Ag 89GLA 03 ATNA

CV = < 50 ng/g

Result	Uncer	Date
< 3000		5/08
< 2100		6/07
< 2000		6/07
< 1900		7/21
< 1900		7/21

Al 85CAN 01 ATNA

CV = 3.06 + 0.11 %

Result	Uncer	Date
3.01	0.09	5/08
3.08	0.09	6/07
3.02	0.09	6/07
3.13	0.09	7/21
3.12	0.16	7/21

As 89GLA 03 ATNA

CV = 2.51 + 0.13 ug/g

Result	Uncer	Date
3.2	0.4	5/08
2.9	0.4	6/07
2.7	0.3	6/07
2.8	0.4	7/21
2.3	0.3	7/21

Au 89GLA 03 ATNA

CV = 0.49 ng/g

Result	Uncer	Date
< 10		5/08
< 9		6/07
< 9		6/07
< 8		7/21
< 8		7/21

B 89GLA 03 ICPES

CV = 26 + 3 ug/g

Result	Uncer	Date
26	5	7/02
7	3	8/28

Ba 85CAN 01 ATNA

CV = 300 + 40 ug/g

Result	Uncer	Date
290	30	5/08
310	60	6/07
330	30	6/07
320	30	7/21
320	50	7/21

Ba 85CAN 01 ICPES

CV = 300 + 40 ug/g

Result	Uncer	Date
50	10	2/12
40	8	2/12
49	10	2/27

Be 89GLA 03 ICPES

CV = 0.81 + 0.15 ug/g

Result	Uncer	Date
3.2	0.3	1/25
0.8	0.16	11/28

Br 89GLA 03 ATNA

CV = 5.5 ug/g

Result	Uncer	Date
5.4	0.6	5/08
5.9	0.6	6/07
5.7	0.6	6/07
5.2	0.6	7/21
5.1	0.6	7/21

Ca 85CAN 01 ATNA

CV = 14.63 + 0.4 %

Result	Uncer	Date
15.5	0.6	5/08
15.6	0.6	6/07
16.9	0.7	6/07
15.8	0.6	7/21
15.5	0.6	7/21

Cd 89GLA 03 ICPMS

CV = 120 + 30 ng/g

Result	Uncer	Date
120	20	2/06

Ce 89GLA 03 ATNA

CV = 34 + 2 ug/g

Result	Uncer	Date
38.6	1.7	5/08
36.6	1.8	6/07
38	1.7	6/07
36.9	1.7	7/21
37.8	1.7	7/21

Cl 89GLA 03 ATNA

CV = 210 ug/g

Result	Uncer	Date
320	30	5/08
300	40	6/07
350	30	6/07
320	30	7/21
300	30	7/21

TABLE C-V (cont)

****

CCRMP SO-3 Calcareous
C Horizon Soil
(cont)

****

Co 89GLA 03 ATNA

CV = 5.5 + 0.8 ug/g

Result	Uncer	Date
5.4	0.3	5/08
5	0.3	6/07
5.6	0.3	6/07
5.5	0.3	7/21
5.5	0.3	7/21

Cr 85CAN 01 ATNA

CV = 26 + 3 ug/g

Result	Uncer	Date
28.1	1.8	5/08
25.7	1.6	6/07
27.9	1.8	6/07
27	1.7	7/21
28.8	1.8	7/21

Cs 89GLA 03 ATNA

CV = 1.12 + 0.09 ug/g

Result	Uncer	Date
1.31	0.11	5/08
1.1	0.1	6/07
1.07	0.08	6/07
1.23	0.08	7/21
1.24	0.11	7/21

Cu 85CAN 01 ATNA

CV = 17 + 1 ug/g

Result	Uncer	Date
< 200		5/08
< 200		6/07
< 170		6/07
< 200		7/21
< 200		7/21

Cu 85CAN 01 ICPES

CV = 17 + 1 ug/g

Result	Uncer	Date
13	3	2/12
12	2	2/12
12	2	2/27

Dy 89GLA 03 ATNA

CV = 2.8 + 0.3 ug/g

Result	Uncer	Date
< 5		5/08
3.4	0.3	6/07
2.3	0.3	6/07
2.8	0.3	7/21
< 4		7/21

Eu 89GLA 03 ATNA

CV = 0.74 + 0.05 ug/g

Result	Uncer	Date
0.86	0.05	5/08
0.77	0.11	6/07
0.82	0.04	6/07
0.77	0.04	7/21
0.8	0.05	7/21

F 89GLA 03 ISE

CV = 340 + 90 ug/g

Result	Uncer	Date
360	70	5/08

Fe 85CAN 01 ATNA

CV = 1.51 + 0.06 %

Result	Uncer	Date
1.6	0.08	5/08
1.55	0.08	6/07
1.62	0.08	6/07
1.62	0.09	7/21
1.64	0.08	7/21

Ga 89GLA 03 ATNA

CV = 6.4 + 0.3 ug/g

Result	Uncer	Date
< 12		5/08
< 13		6/07
< 13		6/07
< 14		7/21
< 14		7/21

Hf 89GLA 03 ATNA

CV = 4.29 + 0.24 ug/g

Result	Uncer	Date
4.8	0.4	5/08
4.5	0.7	6/07
4.9	0.3	6/07
4.7	0.3	7/21
4.7	0.3	7/21

Hg 89GLA 03 ATNA

CV = 17 + 7 ng/g

Result	Uncer	Date
< 600		5/08
< 400		6/07
< 400		6/07
< 300		7/21
< 300		7/21

Hg 89GLA 03 CVAA

CV = 17 + 7 ng/g

Result	Uncer	Date
< 25		10/18

I 89GLA 03 ATNA

CV = 1 ug/g

Result	Uncer	Date
< 12		5/08
< 14		6/07
< 17		6/07
< 14		7/21
< 14		7/21

In 89GLA 03 ATNA

CV = 100 ng/g

Result	Uncer	Date
< 190		5/08
< 150		6/07
< 170		6/07
< 140		7/21
< 140		7/21

K 85CAN 01 ATNA

CV = 1.16 + 0.05 %

Result	Uncer	Date
1.21	0.08	5/08
1.21	0.09	6/07
1.21	0.08	6/07
1.19	0.08	7/21
0.97	0.07	7/21

La 89GLA 03 ATNA

CV = 16.9 + 1.3 ug/g

Result	Uncer	Date
17.8	1	5/08
17.5	0.9	6/07
16.9	0.9	6/07
17.2	1.1	7/21
13.9	0.8	7/21

Li 89GLA 03 FAA

CV = 9 + 3 ug/g

Result	Uncer	Date
7.3	1	1/04

Lu 89GLA 03 ATNA

CV = 230 + 50 ng/g

Result	Uncer	Date
275	18	5/08
231	14	6/07
262	15	6/07
261	16	7/21
248	14	7/21

Mg 85CAN 01 ATNA

CV = 4.98 + 0.1 %

Result	Uncer	Date
4.7	0.3	5/08
4.1	0.3	6/07
4.88	0.25	6/07
4	0.3	7/21
4.1	0.3	7/21

Mn 85CAN 01 ATNA

CV = 520 + 20 ug/g

Result	Uncer	Date
540	20	5/08
584	24	6/07
574	23	6/07
570	30	7/21
586	23	7/21

Mo 89GLA 03 ATNA

CV = 2 + 1 ug/g

Result	Uncer	Date
< 120		5/08

Na 85CAN 01 ATNA

CV = 7400 + 400 ug/g

Result	Uncer	Date
7700	300	5/08
7600	300	6/07
7300	300	6/07
7500	300	7/21
6200	300	7/21

Nd 89GLA 03 ATNA

CV = 17.2 + 1 ug/g

Result	Uncer	Date
15	3	5/08
21	5	6/07
27	5	6/07
29	4	7/21
22	4	7/21

Ni 85CAN 01 ICPES

CV = 16 + 3 ug/g

Result	Uncer	Date
8.7	3.5	2/12
8	3.5	2/12
11	2	2/27

Pb 85CAN 01 ICPES

CV = 14 + 3 ug/g

Result	Uncer	Date
24	15	2/12
17	15	2/12
< 15		2/27
< 20		12/19

Rb 85CAN 01 ATNA

CV = 39 + 3 ug/g

Result	Uncer	Date
38	3	5/08
33.9	2.4	6/07
40	3	6/07
34.6	2.4	7/21
40	3	7/21

Sb 89GLA 03 ATNA

CV = 323 + 6 ng/g

Result	Uncer	Date
210	60	5/08
330	60	6/07
< 200		6/07
350	60	7/21
< 190		7/21

Sb 89GLA 03 ITNA

CV = 323 + 6 ng/g

Result	Uncer	Date
120	80	2/26
170	100	2/26
600	200	2/26

Sc 89GLA 03 ATNA

CV = 5.2 + 0.3 ug/g

Result	Uncer	Date
5.3	0.3	5/08
4.9	0.3	6/07
5.3	0.3	6/07
5.2	0.3	7/21
5.3	0.3	7/21

Se 89GLA 03 ATNA

CV = 34 + 15 ng/g

Result	Uncer	Date
700	400	5/08
< 3000		6/07
< 3000		6/07
< 2400		7/21
< 2500		7/21

Sm 89GLA 03 ATNA

CV = 3.47 + 0.19 ug/g

Result	Uncer	Date
4.13	0.19	5/08
3.41	0.15	6/07
3.3	0.15	6/07
3.32	0.15	7/21
2.48	0.11	7/21

Sr 85CAN 01 ATNA

CV = 220 + 30 ug/g

Result	Uncer	Date
290	70	5/08
< 240		6/07
< 300		6/07
< 230		7/21
250	80	7/21

Ta 89GLA 03 ATNA

CV = 0.43 + 0.06 ug/g

Result	Uncer	Date
0.4	0.04	5/08
0.35	0.04	6/07
0.31	0.03	6/07
0.36	0.03	7/21
0.36	0.03	7/21

Ta 89GLA 03 ITNA

CV = 0.43 + 0.06 ug/g

Result	Uncer	Date
0.45	0.07	2/26
0.35	0.06	2/26
0.49	0.09	2/26

TABLE C-V (cont)

****

CCRMP SO-3 Calcareous
C Horizon Soil
(cont)

****

Tb 89GLA 03 ATNA

CV = 0.5 + 0.01 ug/g

Result	Uncer	Date
0.43	0.05	5/08
0.43	0.04	6/07
0.53	0.05	6/07
0.45	0.06	7/21
0.48	0.05	7/21

Th 89GLA 03 ATNA

CV = 3.88 + 0.21 ug/g

Result	Uncer	Date
3.73	0.16	5/08
3.49	0.15	6/07
3.81	0.16	6/07
3.65	0.15	7/21
3.69	0.15	7/21

Th 89GLA 03 ITNA

CV = 3.88 + 0.21 ug/g

Result	Uncer	Date
4	0.5	2/26
3.7	0.4	2/26
4.1	0.5	2/26

Ti 85CAN 01 ATNA

CV = 2000 + 200 ug/g

Result	Uncer	Date
1800	300	5/08
1700	300	6/07
2200	300	6/07
1900	300	7/21
2200	300	7/21

U 89GLA 03 ATNA

CV = 1.11 + 0.02 ug/g

Result	Uncer	Date
1.09	0.05	5/08
1.05	0.04	6/07
1.12	0.05	6/07
1.1	0.04	7/21
1.1	0.04	7/21

U 89GLA 03 ICPMS

CV = 1.11 + 0.02 ug/g

Result	Uncer	Date
1.03	0.05	9/24
0.74	0.19	11/15

U 89GLA 03 IENA

CV = 1.11 + 0.02 ug/g

Result	Uncer	Date
1.23	0.1	2/22
0.98	0.1	2/22
1.19	0.1	2/22
1.15	0.1	2/22
1.2	0.1	2/22

U-235/238 81H-8 03 ICPMS

CV = 0.0072 + 0.0001 ratio

Result	Uncer	Date
0.0070	0.0001	2/20
0.0072	0.0004	2/22
0.0064	0.0022	9/24

V 89GLA 03 ATNA

CV = 36 + 4 ug/g

Result	Uncer	Date
34	2	5/08
34.1	2.1	6/07
35	2.1	6/07
31.3	1.9	7/21
31	5	7/21

W 89GLA 03 ATNA

CV = 0.6 ug/g

Result	Uncer	Date
< 3		5/08
< 3		6/07
< 3		6/07
< 3		7/21
< 3		7/21

W 89GLA 03 ITNA

CV = 0.6 ug/g

Result	Uncer	Date
< 2		2/21
< 2		2/21
< 2		2/21

Yb 89GLA 03 ATNA

CV = 1.67 + 0.18 ug/g

Result	Uncer	Date
1.73	0.15	5/08
1.8	0.14	6/07
1.72	0.12	6/07
1.59	0.13	7/21
1.46	0.11	7/21

Zn 89GLA 03 ATNA

CV = 48.3 + 1.8 ug/g

Result	Uncer	Date
55	8	5/08
54	8	6/07
58	8	6/07
55	7	7/21
57	8	7/21

Zr 89GLA 03 ATNA

CV = 156 + 13 ug/g

Result	Uncer	Date
210	40	5/08
130	30	6/07
390	60	6/07
260	50	7/21
350	70	7/21

****

CCRMP SO-4 Chernozemic
A Horizon Soil

****

Ag 89GLA 03 ATNA

CV = 120 ng/g

Result	Uncer	Date
< 3000		5/08
< 2500		5/27
< 3000		6/07
< 3000		6/07
2600	600	7/21
< 2200		7/21
< 3000		7/21

Al 85CAN 01 ATNA

CV = 5.46 + 0.15 %

Result	Uncer	Date
5.18	0.15	5/08
5.15	0.15	5/27
5.52	0.16	6/07
5.39	0.16	6/07
5.59	0.15	7/21
5.45	0.16	7/21
5.46	0.16	7/21

As 89GLA 03 ATNA

CV = 7.4 + 0.22 ug/g

Result	Uncer	Date
6.9	0.7	5/08
7.1	0.8	5/27
6.9	0.7	6/07
7.3	0.8	6/07
7	0.8	7/21
7.8	0.8	7/21
6.9	0.7	7/21

Au 89GLA 03 ATNA

CV = 0.64 ng/g

Result	Uncer	Date
< 10		5/08
< 10		5/27
< 8		6/07
< 11		6/07
< 9		7/21
< 9		7/21
< 9		7/21

Ba 89GLA 03 ATNA

CV = 700 + 40 ug/g

Result	Uncer	Date
710	60	5/08
770	49	5/27
860	50	6/07
760	40	6/07
800	50	7/21
720	70	7/21
720	70	7/21

Be 89GLA 03 ICPES

CV = 1.26 + 0.14 ug/g

Result	Uncer	Date
1.2	0.2	1/22

Br 89GLA 03 ATNA

CV = 5.2 + 0.4 ug/g

Result	Uncer	Date
6.2	0.7	5/08
6.6	0.8	5/27
5.6	0.6	6/07
7.2	0.8	6/07
5.7	0.7	7/21
6	0.7	7/21
6.3	0.8	7/21

Ca 85CAN 01 ATNA

CV = 1.11 + 0.05 %

Result	Uncer	Date
1.15	0.07	5/08
1.03	0.07	5/27
1.13	0.07	6/07
1.08	0.07	6/07
1.15	0.07	7/21
< 0.3		7/21
1.18	0.07	7/21

Ce 89GLA 03 ATNA

CV = 54 + 1 ug/g

Result	Uncer	Date
57	2	5/08
56	3	5/27
59	3	6/07
57	3	6/07
57	3	7/21
56	3	7/21
54.3	2.5	7/21

Cl 89GLA 03 ATNA

CV = 30 ug/g

Result	Uncer	Date
< 80		5/08
< 80		5/27
< 100		6/07
< 80		6/07
< 90		7/21
< 80		7/21
< 90		7/21

Co 89GLA 03 ATNA

CV = 10.4 + 1.4 ug/g

Result	Uncer	Date
9.3	0.5	5/08
8.8	0.5	5/27
10	0.5	6/07
9.2	0.5	6/07
10	0.5	7/21
9.3	0.5	7/21
8.8	0.5	7/21

Cr 85CAN 01 ATNA

CV = 61 + 6 ug/g

Result	Uncer	Date
70	4	5/08
66	4	5/27
75	4	6/07
68	4	6/07
71	4	7/21
68	4	7/21
66	4	7/21

Cs 89GLA 03 ATNA

CV = 2.88 + 0.19 ug/g

Result	Uncer	Date
2.56	0.16	5/08
2.38	0.16	5/27
2.75	0.17	6/07
2.46	0.15	6/07
2.76	0.22	7/21
2.72	0.18	7/21
2.42	0.15	7/21

Cu 85CAN 01 ATNA

CV = 22 + 1 ug/g

Result	Uncer	Date
< 200		5/08
< 180		5/27
< 200		6/07
< 210		6/07
< 190		7/21
< 210		7/21
< 190		7/21

Dy 89GLA 03 ATNA

CV = 3.5 + 0.6 ug/g

Result	Uncer	Date
4.2	0.4	5/08
3.52	0.32	5/27
3.7	0.4	6/07
4.2	0.6	6/07
3.8	0.4	7/21
3.9	0.3	7/21
3.9	0.4	7/21

Eu 89GLA 03 ATNA

CV = 0.97 + 0.07 ug/g

Result	Uncer	Date
0.95	0.06	5/08
0.8870	0.05	5/27
1.04	0.06	6/07
1	0.07	6/07
0.98	0.06	7/21
0.88	0.05	7/21
0.9	0.06	7/21

Fe 85CAN 01 ATNA

CV = 2.37 + 0.07 %

Result	Uncer	Date
2.26	0.12	5/08
2.25	0.11	5/27
2.47	0.13	6/07
2.3	0.12	6/07
2.4	0.12	7/21
2.29	0.12	7/21
2.21	0.11	7/21

Ga 89GLA 03 ATNA

CV = 10.7 + 0.2 ug/g

Result	Uncer	Date
12	2	5/08
8	2	5/27
10	3	6/07
< 17		6/07
11	4	7/21
14	3	7/21
15	3	7/21

TABLE C-V (cont)

****

CCRMP SO-4 Chernozemic
A Horizon Soil
(cont)

****

Hf 89GLA 03 ATNA

CV = 8 + 0.3 ug/g

Result	Uncer	Date
7.7	0.3	5/08
7.5	0.4	5/27
8.4	0.5	6/07
7.6	0.8	6/07
8.1	0.6	7/21
7.8	0.4	7/21
7.6	0.4	7/21

Hg 89GLA 03 ATNA

CV = 32 + 10 ng/g

Result	Uncer	Date
< 400		5/08
< 470		5/27
< 500		6/07
< 500		6/07
< 400		7/21
< 400		7/21
< 400		7/21

I 89GLA 03 ATNA

CV = 3 ug/g

Result	Uncer	Date
< 15		5/08
< 17		5/27
< 16		6/07
< 16		6/07
< 15		7/21
< 14		7/21
< 15		7/21

In 89GLA 03 ATNA

CV = 100 ng/g

Result	Uncer	Date
< 170		5/08
< 180		5/27
< 180		6/07
< 200		6/07
< 180		7/21
< 160		7/21
< 170		7/21

K 85CAN 01 ATNA

CV = 1.73 + 0.03 %

Result	Uncer	Date
1.65	0.11	5/08
1.74	0.11	5/27
1.6	0.11	6/07
1.64	0.11	6/07
1.85	0.13	7/21
1.85	0.13	7/21
1.7	0.11	7/21

La 89GLA 03 ATNA

CV = 28.2 + 1.7 ug/g

Result	Uncer	Date
26.5	1.4	5/08
27.5	1.4	5/27
28.3	1.6	6/07
28.4	1.6	6/07
27.9	1.7	7/21
29.1	1.7	7/21
28	1.5	7/21

Lu 89GLA 03 ATNA

CV = 370 + 40 ng/g

Result	Uncer	Date
326	18	5/08
360	20	5/27
369	21	6/07
360	21	6/07
388	23	7/21
315	24	7/21
338	19	7/21

Mg 85CAN 01 ATNA

CV = 5600 + 400 ug/g

Result	Uncer	Date
4200	400	5/08
5300	600	5/27
4900	500	6/07
5600	600	6/07
5800	600	7/21
4500	500	7/21
6400	600	7/21

Mn 85CAN 01 ATNA

CV = 600 + 20 ug/g

Result	Uncer	Date
550	20	5/08
610	25	5/27
650	30	6/07
640	30	6/07
670	30	7/21
660	30	7/21
650	30	7/21

Mo 89GLA 03 ATNA

CV = 1 + 0.3 ug/g

Result	Uncer	Date
< 60		5/08

Na 85CAN 01 ATNA

CV = 1 + 0.02 %

Result	Uncer	Date
0.96	0.04	5/08
0.9810	0.0430	5/27
1	0.04	6/07
1.01	0.04	6/07
0.99	0.04	7/21
1.03	0.04	7/21
0.99	0.04	7/21

Nd 89GLA 03 ATNA

CV = 25 + 2 ug/g

Result	Uncer	Date
23	4	5/08
26	6	5/27
29	5	6/07
34	6	6/07
29	6	7/21
29	5	7/21
28	4	7/21

Rb 89GLA 03 ATNA

CV = 69 + 8 ug/g

Result	Uncer	Date
63	4	5/08
57	7	5/27
70	4	6/07
61	4	6/07
69	4	7/21
60	4	7/21
64	4	7/21

Sb 89GLA 03 ATNA

CV = 710 + 30 ng/g

Result	Uncer	Date
460	70	5/08
590	70	5/27
420	70	6/07
590	90	6/07
510	70	7/21
520	70	7/21
610	70	7/21

Sc 89GLA 03 ATNA

CV = 8.4 + 0.4 ug/g

Result	Uncer	Date
7.9	0.4	5/08
7.52	0.41	5/27
8.5	0.4	6/07
7.8	0.4	6/07
8.3	0.4	7/21
8	0.4	7/21
7.7	0.4	7/21

Se 89GLA 03 ATNA

CV = 490 + 110 ng/g

Result	Uncer	Date
1900	600	5/08
830	340	5/27
700	500	6/07
< 4000		6/07
< 900		7/21
< 3000		7/21
1000	500	7/21

Sm 89GLA 03 ATNA

CV = 4.7 + 0.2 ug/g

Result	Uncer	Date
4.07	0.18	5/08
4.57	0.21	5/27
4.85	0.22	6/07
4.86	0.23	6/07
4.57	0.21	7/21
4.6	0.21	7/21
4.46	0.2	7/21

Sr 85CAN 01 ATNA

CV = 170 + 20 ug/g

Result	Uncer	Date
< 300		5/08
< 270		5/27
< 230		6/07
< 300		6/07
< 220		7/21
< 230		7/21
240	80	7/21

Ta 89GLA 03 ATNA

CV = 0.62 + 0.11 ug/g

Result	Uncer	Date
0.56	0.05	5/08
0.6	0.06	5/27
0.68	0.05	6/07
0.67	0.07	6/07
0.62	0.05	7/21
0.67	0.05	7/21
0.68	0.05	7/21

Tb 89GLA 03 ATNA

CV = 0.61 + 0.03 ug/g

Result	Uncer	Date
0.6	0.06	5/08
0.54	0.05	5/27
0.59	0.06	6/07
0.58	0.07	6/07
0.6	0.06	7/21
0.61	0.06	7/21
0.53	0.05	7/21

Th 89GLA 03 ATNA

CV = 8.6 + 0.7 ug/g

Result	Uncer	Date
7.9	0.3	5/08
7.52	0.3	5/27
8.3	0.3	6/07
7.8	0.3	6/07
8.1	0.3	7/21
7.7	0.3	7/21
7.4	0.3	7/21

Ti 85CAN 01 ATNA

CV = 3400 + 200 ug/g

Result	Uncer	Date
3300	400	5/08
3300	400	5/27
3200	400	6/07
3400	500	6/07
3200	400	7/21
3100	400	7/21
3000	400	7/21

U 89GLA 03 ATNA

CV = 2.38 + 0.07 ug/g

Result	Uncer	Date
2.23	0.09	5/08
2.19	0.08	5/27
2.38	0.09	6/07
2.32	0.09	6/07
2.34	0.09	7/21
2.35	0.09	7/21
2.33	0.09	7/21

V 89GLA 03 ATNA

CV = 85 + 5 ug/g

Result	Uncer	Date
78	3	5/08
80	4	5/27
81	4	6/07
82	4	6/07
77	3	7/21
80	4	7/21
84	4	7/21

W 89GLA 03 ATNA

CV = 1 ug/g

Result	Uncer	Date
< 3		5/08
< 3.6		5/27
1.6	0.5	6/07
< 4		6/07
< 4		7/21
1.5	0.4	7/21
< 4		7/21

Yb 89GLA 03 ATNA

CV = 2.1 + 0.4 ug/g

Result	Uncer	Date
2.08	0.14	5/08
2.6	0.3	5/27
2.45	0.17	6/07
2.51	0.17	6/07
2.47	0.16	7/21
2.61	0.18	7/21
2.63	0.16	7/21

Zn 85CAN 01 ATNA

CV = 94 + 3 ug/g

Result	Uncer	Date
100	20	5/08
91	12	5/27
94	12	6/07
93	12	6/07
95	12	7/21
85	11	7/21
79	23	7/21

Zr 89GLA 03 ATNA

CV = 270 + 15 ug/g

Result	Uncer	Date
400	60	5/08
250	40	5/27
630	70	6/07
260	40	6/07
560	90	7/21
300	50	7/21
290	50	7/21

TABLE C-V (cont)

****

DOE Be Intercomparison Study
Round 1 - 1990

****

Be FAA

CV = none available ug/filter

Result	Uncer	Date
0.9	0.1	8/27
1.5	0.2	8/27
2.0	0.2	8/27
2.6	0.3	8/27
3.0	0.3	8/27
4.1	0.4	8/27
5.3	0.5	8/27
5.5	0.6	8/27
7.2	0.7	8/27
8.2	0.8	8/27
8.9	0.9	8/27
9.3	0.9	8/27

****

DOE Be Intercomparison Study
Round 2 - 1990

****

Be 90DOE 01 FAA

CV = 1.0 ug/filter

Result	Uncer	Date
1.0	0.1	6/06
1.0	0.1	6/06
1.0	0.1	6/06
1.0	0.1	6/06

CV = 2.5 ug/filter

Result	Uncer	Date
2.5	0.2	6/06
2.4	0.2	6/06
2.4	0.2	6/06
2.5	0.2	6/06

CV = 5.0 ug/filter

Result	Uncer	Date
5.2	0.5	6/06
5.3	0.5	6/06
5.3	0.5	6/06
5.2	0.5	6/06

CV = 8.75 ug/filter

Result	Uncer	Date
9.2	0.9	6/06
9.2	0.9	6/06
9.1	0.9	6/06
9.2	0.9	6/06

****

DOE Be Intercomparison Study
Round 3 - 1990

****

Be 90DOE 01 FAA

CV = 0.8 + 0.08 ug/filter

Result	Uncer	Date
0.86	0.1	8/10
0.85	0.1	8/10
0.85	0.1	8/10
0.86	0.1	8/10

CV = 4.2 + 0.4 ug/filter

Result	Uncer	Date
4.36	0.4	8/10
4.3	0.4	8/10
4.35	0.4	8/10
4.4	0.4	8/10

CV = 9.2 + 0.9 ug/filter

Result	Uncer	Date
10	1	8/08
9.8	1	8/10
9.6	1	8/10
9.6	1	8/10

****

DOE Be Intercomparison Study
Round 4 - 1990

****

Be 90DOE 01 FAA

CV = 1.00 + 0.06 ug/filter

Result	Uncer	Date
1.0	0.1	12/12
1.0	0.1	12/12
1.0	0.1	12/12
1.0	0.1	12/12

CV = 2.50 + 0.05 ug/filter

Result	Uncer	Date
2.5	0.3	12/12
2.5	0.3	12/12
2.5	0.3	12/12
2.5	0.3	12/12

CV = 7.50 + 0.14 ug/filter

Result	Uncer	Date
7.1	0.7	12/12
7.6	0.8	12/12
8.0	0.8	12/12
8.0	0.8	12/12

****

EML Radionuclides in Soil
April 1980

****

Cs-137 80EML 01 G

CV = 0.72 + 0.07 pCi/g

Result	Uncer	Date
0.57	0.22	7/24
0.57	0.22	7/24
0.49	0.14	7/25
1.7	0.5	7/25
1.6	0.5	8/27
1.9	0.5	8/29
0.5	0.11	8/30
0.5	0.11	9/25
0.85	0.21	9/28
0.8	0.19	9/29
0.79	0.2	9/29
0.6	0.14	12/18

****

EML Radionuclides in Soil
May 1984

****

Am-241 84EML 01 G

CV = 0.36 + 0.02 pCi/g

Result	Uncer	Date
0.38	0.1	11/15
0.54	0.11	12/17

****

EML Radionuclides in Soil
Nov. 1988

****

Sr-90 88EML 01 PC

CV = 1.39 + 0.14 pCi/g

Result	Uncer	Date
1	0.2	4/11
1.3	0.2	4/11
1.3	0.2	4/11

****

EML Radionuclides in Soil
May 1989

****

Sr-90 89EML 01 PC

CV = 1.09 + 0.05 pCi/g

Result	Uncer	Date
0.9	1.86	4/10
1.4	2.3	4/10
0.87	1.82	4/10

****

EML Radionuclides in Soil
Nov. 1989

****

Am-241 89EML 01 RAS

CV = 0.06 + 0.007 pCi/g

Result	Uncer	Date
0.087	0.007	1/17
0.077	0.006	1/17
0.069	0.006	1/17

****

EML Radionuclides in Soil
May 1990

****

Am-241 90EML 01 RAS

CV = 106 + 10 Bq/kg

Result	Uncer	Date
90	4	9/10
90	4	9/10
90	4	9/10

Cs-137 90EML 01 G

CV = 17500 + 175 Bq/kg

Result	Uncer	Date
11000	2000	5/10
11000	2000	5/10
13000	2000	5/10

K-40 90EML 01 G

CV = 608 Bq/kg

Result	Uncer	Date
< 100		5/10
< 100		5/10
120	40	5/10

Analysis not performed routinely -- background values may not be adequate.

Pu-239 90EML 01 RAS

CV = 212 + 8 Bq/kg

Result	Uncer	Date
162	7	5/01
158	6	5/01
173	8	5/01

Sr-90 90EML 01 PC

CV = 665 + 13 Bq/kg

Result	Uncer	Date
579	17	5/01
634	18	5/01
622	18	5/01

U 90EML 01 DNA

CV = 10.3 + 0.2 ug/g

Result	Uncer	Date
10	1	5/10
10	1	5/10
10	1	5/10

****

EML Radionuclides in Soil
Nov. 1990

****

Cs-137 90EML 01 G

CV = 196 + 20 Bq/kg

Result	Uncer	Date
200	30	11/06
210	30	11/06
200	30	11/06

K-40 90EML 01 G

CV = 513 + 36 Bq/kg

Result	Uncer	Date
580	90	11/06
590	100	11/06
590	100	11/06

Pu-239 90EML 01 RAS

CV = 1.15 + 0.1 Bq/kg

Result	Uncer	Date
1.2	0.2	12/05
0.99	0.14	12/05
1.5	0.2	12/05

U 90EML 01 DNA

CV = 2.19 + 0.09 ug/g

Result	Uncer	Date
2.2	0.2	11/06
2.1	0.2	11/06
2.1	0.2	11/06

****

EML Radionuclides
in Vegetation, Nov 1988

****

Sr-90 88EML 01 PC

CV = 3.8 + 0.11 pCi/g

Result	Uncer	Date
4.1	4	4/11
3.2	3.5	4/11
3.3	3.6	4/11

****

EML Radionuclides
in Vegetation, May 1989

****

Sr-90 89EML 01 PC

CV = 3.75 pCi/g

Result	Uncer	Date
3.4	3.6	4/10
3.4	3.7	4/10
2.2	2.9	4/10

****

EML Radionuclides
in Vegetation, Nov 1989

****

Am-241 89EML 01 RAS

CV = 1.6 + 0.2 pCi/kg

Result	Uncer	Date
1.1	0.5	1/17
1.2	0.5	1/17
1.7	0.6	1/17

Sr-90 89EML 01 PC

CV = 49.4 + 3 pCi/g

Result	Uncer	Date
13.8	0.4	3/13
13.6	0.6	3/13
13.7	0.4	3/13

****

EML Radionuclides
in Vegetation, May 1990

****

Am-241 90EML 01 RAS

CV = 0.307 + 0.012 Bq/kg

Result	Uncer	Date
0.37	0.08	9/10
0.37	0.08	9/10
0.37	0.08	9/10

Cs-137 90EML 01 G

CV = 28.5 + 1.1 Bq/kg

Result	Uncer	Date
35	6	5/10
33	5	5/10
33	5	5/10

TABLE C-V (cont)

****

EML Radionuclides
in Vegetation, May 1990
(cont)

****

Pu-239 90EML 01 RAS

CV = 0.333 + 0.013 Bq/kg

Result	Uncer	Date
0.8	0.21	5/01
0.37	0.09	5/01
0.35	0.08	5/01

Sr-90 90EML 01 PC

CV = 70.2 + 2.1 Bq/kg

Result	Uncer	Date
24	3	6/01
28.5	2.6	6/01
39.6	2.6	6/01

U 90EML 01 DNA

CV = 0.0418 + 0.0017 ug/g

Result	Uncer	Date
0.049	0.004	5/04
0.055	0.004	5/04
0.058	0.004	5/04

****

EML Radionuclides
in Vegetation, Nov. 1990

****

Cs-137 90EML 01 G

CV = 18.2 + 1.6 Bq/kg

Result	Uncer	Date
27	4	11/08
26	4	11/08
27	4	11/08

Pu-239 90EML 01 RAS

CV = 0.0959 + 0.0038 Bq/kg

Result	Uncer	Date
0.0890	0.0001	12/05
0.0770	0.0001	12/05
0.0890	0.0001	12/05

Sr-90 90EML 01 PC

CV = 889 + 89 Bq/kg

Result	Uncer	Date
963	37	12/31
889	37	12/31
889	37	12/31

****

EML Radionuclides in Water
Apr. 1980

****

Cs-137 80EML 01 G

CV = 1020 + 50 pCi/L

Result	Uncer	Date
1200	200	3/22
990	180	3/26
800	150	3/28
930	190	4/12
1000	200	5/10
1100	200	5/15
710	130	5/15
1100	200	6/11
1100	200	6/11
1100	200	6/11
1000	200	6/11
1100	200	6/11
1400	200	6/11
1200	200	6/11
1200	200	6/11
980	190	6/12
980	190	6/12
1300	200	6/12
980	190	6/12
1300	200	6/12
1300	200	6/12
980	190	6/12
1300	200	6/12
1100	200	6/27
1300	200	6/27
1100	200	7/11
1100	200	7/11
1300	200	7/11
1300	200	7/11
1300	200	7/11
1000	200	7/17
1000	200	7/17
1000	200	7/17
1000	200	7/17
1000	200	7/17
1000	200	7/17
940	140	8/29
890	140	8/29
890	140	8/29
940	140	8/29
760	140	9/27
930	160	10/09
870	140	10/17
1100	200	10/25
1100	200	10/25
840	130	11/05
1100	200	11/08
1100	200	11/08
1200	200	11/26
1200	200	11/26

****

EML Radionuclides in Water
Nov. 1988

****

Sr-90 88EML 01 PC

CV = 930 + 56 pCi/L

Result	Uncer	Date
837	14	4/11
871	15	4/11
803	14	4/11

****

EML Radionuclides in Water
May 1989

****

Co-57 89EML 01 G

CV = 880 + 40 pCi/L

Result	Uncer	Date
860	130	1/29
830	130	1/29
780	130	1/29
780	130	2/13
830	130	2/13
860	130	2/13

Co-60 89EML 01 G

CV = 0.94 + 0.05 pCi/mL

Result	Uncer	Date
0.67	0.11	1/29
0.73	0.12	1/29
0.7	0.11	1/29
0.67	0.11	2/13
0.7	0.11	2/13
0.73	0.12	2/13

Mn-54 89EML 01 G

CV = 0.3 + 0.02 pCi/mL

Result	Uncer	Date
0.33	0.06	1/29
0.33	0.06	1/29
0.31	0.05	1/29
0.33	0.06	2/13
0.31	0.05	2/13
0.33	0.06	2/13

Sr-90 89EML 01 PC

CV = 0.55 + 0.02 pCi/mL

Result	Uncer	Date
0.5350	0.0450	4/10
0.5610	0.0460	4/10
0.5480	0.0460	4/10

****

EML Radionuclides in Water
May 1990

****

Am-241 90EML 01 RAS

CV = 0.86 + 0.077 Bq/L

Result	Uncer	Date
0.7180	0.0410	8/01
0.6590	0.0390	8/01
0.7030	0.04	8/01

Ce-144 90EML 01 G

CV = 403 + 16 Bq/L

Result	Uncer	Date
400	60	5/10
390	60	5/10
400	60	5/10

Co-57 90EML 01 G

CV = 198 + 10 Bq/L

Result	Uncer	Date
200	30	5/10
190	30	5/10
190	30	5/10

Co-60 90EML 01 G

CV = 206 + 8 Bq/L

Result	Uncer	Date
190	30	5/10
190	30	5/10
190	30	5/10

Cs-134 90EML 01 G

CV = 462 + 23 Bq/L

Result	Uncer	Date
490	70	5/10
490	70	5/10
480	70	5/10

Cs-137 90EML 01 G

CV = 198 + 10 Bq/L

Result	Uncer	Date
190	30	5/10
200	30	5/10
190	30	5/10

H-3 90EML 01 LS

CV = 1960 + 39 Bq/L

Result	Uncer	Date
1800	200	5/01
1700	200	5/01
1700	200	5/01

Mn-54 90EML 01 G

CV = 103 + 4 Bq/L

Result	Uncer	Date
100	20	5/10
99	15	5/10
100	20	5/10

Pu-239 90EML 01 RAS

CV = 1.04 + 0.09 Bq/L

Result	Uncer	Date
1.13	0.05	5/01
1.18	0.06	5/01
1.14	0.05	5/01

Sr-90 90EML 01 PC

CV = 111 + 4 Bq/L

Result	Uncer	Date
94.6	0.89	5/01
104.3	0.9	5/01
100.7	0.9	5/01

U 90EML 01 ICPMS

CV = 0.0788 + 0.0016 ug/mL

Result	Uncer	Date
0.0661	0.0019	4/20
0.0700	0.0018	4/20
0.0704	0.0018	4/20

****

EML Radionuclides in Water
Nov 1990

****

Ce-144 90EML 01 G

CV = 923 + 28 Bq/L

Result	Uncer	Date
990	170	11/08
1100	200	11/08
970	170	11/08

Incorrect branching ratios used in calculations.

Co-57 90EML 01 G

CV = 1300 + 40 Bq/L

Result	Uncer	Date
1500	200	11/08
1500	200	11/08
1500	200	11/08

Co-60 90EML 01 G

CV = 491 + 20 Bq/L

Result	Uncer	Date
520	80	11/08
520	80	11/08
510	80	11/08

Cs-134 90EML 01 G

CV = 355 + 21 Bq/L

Result	Uncer	Date
420	60	11/08
420	60	11/08
420	60	11/08

Cs-137 90EML 01 G

CV = 390 + 20 Bq/L

Result	Uncer	Date
480	70	11/08
470	70	11/08
480	70	11/08

H-3 90EML 01 LS

CV = 3900 + 510 Bq/L

Result	Uncer	Date
3240	270	10/31
3240	270	10/31
3240	270	10/31

Mn-54 90EML 01 G

CV = 301 + 9 Bq/L

Result	Uncer	Date
330	50	11/08
330	50	11/08
330	50	11/08

Pu-239 90EML 01 RAS

CV = 1.09 + 0.02 Bq/L

Result	Uncer	Date
0.8950	0.0440	12/05
0.8440	0.04	12/05
0.8620	0.0390	12/05

Sr-90 90EML 01 PC

CV = 9.93 + 0.7 Bq/L

Result	Uncer	Date
2.96	0.07	12/31
2.96	0.07	12/31
2.96	0.07	12/31
3.15	0.07	12/31
2.96	0.07	12/31
3.15	0.07	12/31

U 90EML 01 ICPMS

CV = 189 + 8 ug/L

Result	Uncer	Date
18.9	0.4	10/17
20.7	0.4	10/17
19.4	0.4	10/17

TABLE C-V (cont)

****

EML Radionuclides
on Air Filter, Nov 1988

****

Sr-90 88EML 01 PC

CV = 9.5 + 0.76 pCi/filter

Result	Uncer	Date
11	2	4/11
10	2	4/11

****

EML Radionuclides
on Air Filter, May 1989

****

Mn-54 89EML 01 G

CV = 3.74 + 0.37 pCi/filter

Result	Uncer	Date
16	16	2/13
24	14	2/13
26	16	2/13

Sr-90 89EML 01 PC

CV = 2.39 + 0.02 pCi/filter

Result	Uncer	Date
4.4	2.3	4/10
2.7	4	4/10

****

EML Radionuclides
on Air Filter, May 1990

****

Am-241 90EML 01 RAS

CV = 0.054 + 0.006 Bq/filter

Result	Uncer	Date
0.0440	0.0032	8/01
0.0425	0.0034	8/01

Be-7 90EML 01 G

CV = 51.4 + 3.6 Bq/filter

Result	Uncer	Date
50	8	4/19
49	8	4/19
50	8	4/19

Ce-144 90EML 01 G

CV = 31.2 + 1.2 Bq/filter

Result	Uncer	Date
27	4	4/19
28	4	4/19
27	4	4/19

Co-57 90EML 01 G

CV = 6.5 + 0.4 Bq/filter

Result	Uncer	Date
5.2	0.8	4/19
5.1	0.8	4/19
5.1	0.8	4/19

Co-60 90EML 01 G

CV = 9.4 + 0.6 Bq/filter

Result	Uncer	Date
6.7	1	4/19
6.9	1.1	4/19
6.8	1	4/19

Cs-134 90EML 01 G

CV = 18.2 + 1.5 Bq/filter

Result	Uncer	Date
13	2	4/19
14	2	4/19
14	2	4/19

Cs-137 90EML 01 G

CV = 20.4 + 0.6 Bq/filter

Result	Uncer	Date
19	3	4/19
18	3	4/19
20	3	4/19

Mn-54 90EML 01 G

CV = 9.6 + 0.38 Bq/filter

Result	Uncer	Date
8.7	1.3	4/19
8.9	1.3	4/19
8.7	1.3	4/19

Pu-239 90EML 01 RAS

CV = 0.039 + 0.005 Bq/filter

Result	Uncer	Date
0.0350	0.0024	5/01
0.0334	0.0025	5/01

Sr-90 90EML 01 PC

CV = 0.24 + 0.038 Bq/filter

Result	Uncer	Date
0.72	0.08	6/01
0.74	0.09	6/01
0.72	0.08	6/01

Aliquot questionable.

U 90EML 01 ICPMS

CV = 2.01 + 0.12 ug/filter

Result	Uncer	Date
1.93	0.07	5/15
1.84	0.11	5/15
2	0.02	5/15

****

EML Radionuclides
on Air Filter, Nov. 1990

****

Ce-144 90EML 01 G

CV = 16.5 + 0.8 Bq/filter

Result	Uncer	Date
37	6	11/08
37	6	11/08
32	5	11/08

Incorrect branching ratios
used in calculations

Co-57 90EML 01 G

CV = 11.4 + 0.5 Bq/filter

Result	Uncer	Date
23	3	11/08
20	3	11/08
22	3	11/08

Co-60 90EML 01 G

CV = 25.4 + 0.5 Bq/filter

Result	Uncer	Date
35	5	11/08
39	6	11/08
39	6	11/08

Cs-134 90EML 01 G

CV = 16.3 + 0.5 Bq/filter

Result	Uncer	Date
30	4	11/08
27	4	11/08
29	4	11/08

Cs-137 90EML 01 G

CV = 15.7 + 0.6 Bq/filter

Result	Uncer	Date
33	5	11/08
33	5	11/08
29	4	11/08

Mn-54 90EML 01 G

CV = 33.3 + 1 Bq/filter

Result	Uncer	Date
68	10	11/08
67	10	11/08
59	9	11/08

Pu-239 90EML 01 RAS

CV = 0.051 + 0.01 Bq/filter

Result	Uncer	Date
0.0450	0.0040	12/05
0.0410	0.0028	12/05

U 90EML 01 ICPMS

CV = 0.985 + 0.01 ug/filter

Result	Uncer	Date
1.06	0.05	11/19
1.16	0.08	11/19
1.09	0.06	11/19

****

EPA Air Filter Intercomparison
March 1989

****

Alpha 89EPA 01 PC

CV = 21 + 5 pCi/filter

Result	Uncer	Date
20	4	2/14
19	4	2/14
19	4	2/14
20	4	2/14
19	4	2/14
19	4	2/14
20	4	2/22
20	4	2/22
20	4	2/22
18	4	2/22
10	4	2/22
18	4	2/22
20	4	2/22
20	4	2/22
18	4	2/22
18	4	3/02
20	4	3/02
20	4	3/02
18	4	3/27
19	4	3/27
19	4	3/27
18	4	3/27
20	4	3/27
19	4	3/27
19	4	3/27
19	4	3/27
18	4	3/27
20	4	4/05
19	4	4/05
20	4	4/05
18	4	4/25
18	4	4/25
19	4	4/25
20	4	5/02
19	4	5/02
18	4	5/02

Alpha (cont)

20	4	5/02
18	4	5/02
19	4	5/02
18	4	5/17
19	4	5/17
19	4	5/17
20	4	5/17
18	4	5/17
18	4	5/17
20	4	5/17
20	4	5/17
20	4	5/17
20	4	5/17
18	4	5/17
18	4	5/17
19	4	6/11
20	4	6/11
20	4	6/11
19	4	6/11
18	4	6/11
18	4	6/11
19	4	7/13
19	4	7/13
19	4	7/13
19	4	7/13
19	4	7/13
19	4	7/13
19	4	7/31
19	4	7/31
19	4	7/31
19	4	7/31
19	4	7/31
19	4	7/31
19	4	7/31
19	4	7/31
19	4	8/15
18	4	8/15
20	4	8/15
19	4	8/31
19	4	8/31
19	4	8/31
19	4	8/31
19	4	8/31
19	4	8/31
19	4	9/29
18	4	9/29
19	4	9/29
18	4	9/29
19	4	9/29
19	4	9/29
19	4	10/17
19	4	10/17
19	4	10/17
19	4	10/31
19	4	10/31
19	4	10/31
19	4	10/31
20	4	10/31
20	4	10/31
20	4	11/15
20	4	11/15
19	4	11/15
20	4	12/05
20	4	12/05
19	4	12/05

Beta 89EPA 01 PC

CV = 62 + 5 pCi/filter

Result	Uncer	Date
54	7	2/14
52	7	2/14
54	7	2/14
54	7	2/14
52	7	2/14

Beta (cont)

54	7	2/14
51	7	2/22
52	7	2/22
51	7	2/22
53	7	2/22
51	7	2/22
51	7	2/22
52	7	2/22
52	7	2/22
53	7	2/22
51	7	3/02
52	7	3/02
53	7	3/02
50	7	3/23
53	7	3/23
50	6	3/23
54	7	3/27
53	7	3/27
52	7	3/27
51	7	3/27
52	7	3/27
51	7	3/27
52	7	3/27
54	7	3/27
51	7	3/27
54	7	4/05
53	7	4/05
52	7	4/05
51	7	4/25
51	7	4/25
51	7	4/25
54	7	5/02
51	7	5/02
54	7	5/02
53	7	5/02
51	7	5/02
53	7	5/02
52	7	5/17
53	7	5/17
53	7	5/17
52	7	5/17
53	7	5/17
53	7	5/17
54	7	6/11
53	7	6/11
53	7	6/11
54	7	6/11
53	7	6/11
53	7	6/11
52	7	6/14
53	7	6/14
52	7	6/14
52	7	7/13
50	7	7/13
52	7	7/13
50	7	7/13
52	7	7/13
52	7	7/13
53	7	7/31
53	7	7/31
53	7	7/31
53	7	7/31
53	7	7/31
53	7	7/31
53	7	7/31
53	7	7/31
53	7	8/15
52	7	8/15
52	7	8/15
51	7	8/31
53	7	8/31
53	7	8/31
53	7	8/31
53	7	8/31
51	7	8/31
53	7	9/29
52	7	9/29
52	7	9/29

TABLE C-V (cont)

****

EPA Air Filter Intercomparison
March 1989
(cont)

****

Beta (cont)

53	7	9/29
52	7	9/29
52	7	9/29
53	7	10/17
51	7	10/17
51	7	10/17
53	7	10/31
53	7	10/31
52	7	10/31
52	7	10/31
52	7	10/31
52	7	10/31
53	7	11/15
53	7	11/15
53	7	11/15
53	7	12/05
52	7	12/05
53	7	12/05

****

EPA Air Filter Intercomparison
August 1989

****

Alpha 89EPA 01 PC

CV = 6 + 5 pCi/filter

Result	Uncer	Date
5	1	3/08
5	1	3/08
5	1	3/08
5	1	3/08
5	1	3/08
5	1	3/08
5	1	3/08
5	1	3/08
5	1	3/08

****

EPA Air Filter Intercomparison
April 1990

****

Alpha 90EPA 01 PC

CV = 5 + 5 pCi/filter

Result	Uncer	Date
6	1	4/05
6	1	4/05
5	1	4/05

Beta 90EPA 01 PC

CV = 31 + 5 pCi/filter

Result	Uncer	Date
27	4	4/05
28	4	4/05
27	4	4/05

Cs-137 90EPA 01 G

CV = 10 + 5 pCi/filter

Result	Uncer	Date
6.8	1.5	5/07
10	2	5/07
6.5	1.4	5/07

Sr-90 90EPA 01 PC

CV = 10 + 1.5 pCi/filter

Result	Uncer	Date
9.9	0.6	7/17
10.3	0.6	7/17
9.5	0.8	7/17

****

EPA Air Filter Intercomparison
August 1990

****

Alpha 90EPA 01 PC

CV = 10 + 5 pCi/filter

Result	Uncer	Date
10	2	10/17
10	2	10/17
10	2	10/17

Beta 90EPA 01 PC

CV = 62 + 5 pCi/filter

Result	Uncer	Date
54	7	10/17
54	7	10/17
55	7	10/17

Sr-90 90EPA 01 PC

CV = 20 + 5 pCi/filter

Result	Uncer	Date
20.7	0.8	11/05
19.9	0.8	11/05
20	0.8	11/05

****

EPA Alpha Performance
Evaluation in Water, Apr. 1988

****

Ra-226 88EPA 01 RAS

CV = 6.4 + 0.96 pCi/L

Result	Uncer	Date
6.7	0.7	3/21
6.9	0.7	3/21
7.5	0.8	4/17
7.5	0.8	4/23
5.6	0.6	4/25
6.2	0.6	7/10
5.8	0.6	7/12

****

EPA Alpha Performance
Evaluation in Water, Oct. 1989

****

U 89EPA 01 ICPMS

CV = 12 + 6 pCi/L

Result	Uncer	Date
12	0.7	1/04
11.8	0.6	1/04
12.1	0.7	1/04

****

EPA Alpha Performance
Evaluation in Water, Apr. 1990

****

Alpha 90EPA 01 PC

CV = 90 + 23 pCi/L

Result	Uncer	Date
110	20	5/10
180	40	5/10
110	20	5/10

Sample evaporation occured. Resulting small mass caused computer program to calculate artifically large result.

Ra-226 90EPA 01 RAS

CV = 5 + 0.8 pCi/L

Result	Uncer	Date
4.8	0.5	6/20
5.4	0.5	6/20
4.8	0.5	6/20

U 90EPA 01 ICPMS

CV = 20 + 6 pCi/L

Result	Uncer	Date
26.7	0.3	5/01
27	0.3	5/01
27	0.5	5/01

****

EPA Alpha Performance
Evaluation in Water, Oct. 1990

****

Alpha 90EPA 01 PC

CV = 62 + 16 pCi/L

Result	Uncer	Date
90	20	11/15
90	20	11/15
80	20	11/15

U 90EPA 01 ICPMS

CV = 10.2 + 3 pCi/L

Result	Uncer	Date
9.36	0.4	11/19
10.6	0.5	11/19
10.1	0.4	11/19

****

EPA Beta Performance
Evaluation in Water, Oct. 1988

****

Sr-90 88EPA 01 RAS

CV = none available pCi/L

Result	Uncer	Date
0.48	2.73	4/11
0.48	2.73	4/11
0.48	2.73	4/11

****

EPA Beta Performance
Evaluation in Water, Oct. 1989

****

Cs-134 89EPA 01 G

CV = 5 + 5 pCi/L

Result	Uncer	Date
2.4	6.5	1/05
14	7	1/05
6.6	6.2	1/05
6.6	6.2	1/05
2.4	6.5	1/05
14	7	1/05
2.4	6.5	1/05
14	7	1/05
14	7	1/05
2.4	6.5	1/05
6.6	6.2	1/05
6.6	6.2	1/05

Cs-137 89EPA 01 G

CV = 5 + 5 pCi/L

Result	Uncer	Date
- 4.57	6.5	1/05
- 10.5	7.7	1/05
- 17.9	6.4	1/05
- 4.57	6.5	1/05
- 4.57	6.5	1/05
- 17.9	6.4	1/05
- 17.9	6.4	1/05
- 10.5	7.7	1/05
- 10.5	7.7	1/05
- 10.5	7.7	1/05
- 17.9	6.4	1/05
- 4.57	6.5	1/05

****

EPA Beta Performance
Evaluation in Water, Apr. 1990

****

Beta 90EPA 01 PC

CV = 52 + 5 pCi/L

Result	Uncer	Date
44	5	5/10
35	4	5/10
46	5	5/10

Cs-134 90EPA 01 G

CV = 15 + 5 pCi/L

Result	Uncer	Date
36	10	6,25
21	11	6/25
33	9	6/25

High results due to incorrect efficiency values and inconsistent background values.

Cs-137 90EPA 01 G

CV = 15 + 5 pCi/L

Result	Uncer	Date
< 10		6/25
< 10		6/25
< 10		6/25

Sr-90 90EPA 01 PC

CV = 10 + 1.5 pCi/L

Result	Uncer	Date
9.4	2.1	6/01
9.1	0.9	6/01
9.5	0.9	6/01

****

EPA Beta Performance
Evaluation in Water, Oct. 1990

****

Beta 90EPA 01 PC

CV = 53 + 5 pCi/L

Result	Uncer	Date
48	5	11/15
56	6	11/15
57	6	11/15

Cs-137 90EPA 01 G

CV = 5 + 5 pCi/L

Result	Uncer	Date
32	10	12/19
12	10	12/31
2.5	10.5	12/31

****

EPA Cyanide in Water

****

CN 82EPA 01 ACOLR

CV = 224 + 29 ug/L

Result	Uncer	Date
190	20	1/19
190	20	1/19
180	20	2/07
190	20	2/07
180	20	2/07
190	20	2/07
180	20	2/16
190	20	2/16
190	20	2/26
190	20	2/26
170	20	3/13
170	20	3/13
190	20	3/20
190	20	3/20
170	20	3/20
190	20	3/20
190	20	4/03
190	20	4/03
190	20	4/12
170	20	4/17
172	20	4/17
170	20	4/17
170	20	4/17
190	20	5/02
190	20	5/02
190	20	5/18
200	20	5/21
200	20	5/21
190	20	5/23
230	20	6/06
226	20	6/06
170	20	6/19
170	20	6/19
170	20	6/21
220	20	7/27
108	10	7/27
180	20	9/07
190	20	9/25
190	20	9/25
190	20	9/25
170	20	10/19
190	20	10/24
180	20	11/14
180	20	11/14
170	20	12/07
180	20	12/14
170	20	12/[illegible]

CV = 561 + 60 ug/L

Result	Uncer	Date
544	50	1/19
544	50	1/19
500	50	2/07
500	50	2/07
490	50	2/07
520	50	2/16
510	50	2/16
510	50	2/20
510	50	2/26
490	50	2/26
480	50	3/13
470	50	3/13
480	50	3/13
480	50	3/20
510	50	3/20
490	50	3/20

TABLE C-V (cont)

****

EPA Cyanide in Water
(cont)

****

CN (cont)

510	50	3/20
500	50	4/03
500	50	4/03
490	50	4/17
490	50	4/17
490	50	4/17
580	60	5/02
510	50	5/02
580	60	5/18
580	60	5/18
520	50	5/21
520	50	5/21
520	50	5/25
520	50	5/25
520	50	6/06
562	50	6/06
560	60	6/07
560	60	6/08
690	70	6/21
500	50	7/02
500	50	7/02
500	50	7/02
500	50	7/02
530	50	7/03
552	50	7/03
560	60	7/06
538	50	7/06
530	50	7/27
510	50	7/27
532	50	7/27
510	50	9/07
510	50	9/19
510	50	9/19
560	60	9/20
520	50	10/05
530	50	11/19

****

EPA Demand Analyses in Water

****

Chemical Oxygen Demand COLOR
82EPA 01, 87EPA 02, 89EPA 02

CV = 104.5 + 17 mg/L

Result	Uncer	Date
100	20	2/16
120	20	2/16
110	20	2/16

CV = 104.5 + 4.6 mg/L

Result	Uncer	Date
99	20	3/02
100	20	3/02
100	20	3/02
110	20	3/15
110	20	3/15
110	20	3/15
100	20	3/15
110	20	3/21
110	20	3/21
96	19	4/04
110	20	4/04
100	20	5/02
97	19	6/11

Chemical Oxygen Demand (cont)

100	20	6/12
110	20	6/29
97	19	6/29
110	20	7/26
100	20	8/31
95	19	10/02
120	20	11/05
100	20	11/06
110	20	12/06
94	19	12/11

CV = 232 + 18 mg/L

Result	Uncer	Date
220	40	1/17
240	50	1/18
220	40	1/30
240	50	2/16
240	50	2/16
230	50	3/02

****

EPA Drinking Water Study 22

****

Turbidity 88EPA 01 COLOR

CV = 3.75 NTU

Result	Uncer	Date
3.8	0.8	5/14

****

EPA Drinking Water Study 26

****

Ag 90EPA 04 ICPMS

CV = 22.4 + 1.3 ug/L

Result	Uncer	Date
21	1.2	5/24

CV = 97 + 4.4 ug/L

Result	Uncer	Date
90.3	5.1	5/24

As 90EPA 04 ICPMS

CV = 54.3 + 3.1 ug/L

Result	Uncer	Date
45.1	2.7	5/24

CV = 150 + 7 ug/L

Result	Uncer	Date
132	1	5/24

Ba 90EPA 04 ICPMS

CV = 633 + 21 ug/L

Result	Uncer	Date
655	20	5/24

CV = 743 + 22 ug/L

Result	Uncer	Date
763	26	5/24

Be 90EPA 04 ICPMS

CV = 0.53 + 0.053 ug/L

Result	Uncer	Date
0.6	0.1	5/24

CV = 23.1 + 1.1 ug/L

Result	Uncer	Date
21.9	2	5/24

Cd 90EPA 04 ICPMS

CV = 9.2 + 0.5 ug/L

Result	Uncer	Date
8.5	0.1	5/24

CV = 53.9 + 2.5 ug/L

Result	Uncer	Date
53	0.5	5/24

Cl2(Free) 90EPA 04 PTITR

CV = 0.301 + 0.055 mg/L

Result	Uncer	Date
0.27	0.03	5/25

CV = 0.908 + 0.063 mg/L

Result	Uncer	Date
0.82	0.08	5/25

CN 90EPA 04 ACOLR

CV = 0.1 + 0.01 mg/L

Result	Uncer	Date
0.0950	0.01	5/23

CV = 0.37 + 0.046 mg/L

Result	Uncer	Date
0.3180	0.03	5/23

Cr 90EPA 04 ICPMS

CV = 50.2 + 2.2 ug/L

Result	Uncer	Date
46.8	0.9	5/24

CV = 94.6 + 4 ug/L

Result	Uncer	Date
89.4	1.7	5/24

Cu 90EPA 04 ICPMS

CV = 93.1 + 3.3 ug/L

Result	Uncer	Date
86.8	3.1	5/24

CV = 483 + 13 ug/L

Result	Uncer	Date
438	14	5/24

Both low Cu results possibly due to incorrect calibration standard.

F 90EPA 04 ISE

CV = 1.25 + 0.04 mg/L

Result	Uncer	Date
1.3	0.1	5/17
1.3	0.1	5/17

CV = 3.41 + 0.11 mg/L

Result	Uncer	Date
3.2	0.3	5/17
3.2	0.3	5/17

Hardness 90EPA 04 CALC

CV = 125 + 4 mg/L

Result	Uncer	Date
180	20	5/02

Hg 90EPA 04 CVAA

CV = 2.47 + 0.2 ug/L

Result	Uncer	Date
2	0.2	5/11

CV = 4.56 + 0.34 ug/L

Result	Uncer	Date
4	0.4	5/11

Na 90EPA 04 IC

CV = 18 + 0.6 mg/L

Result	Uncer	Date
20	2	5/23

Ni 90EPA 04 ICPMS

CV = 151 + 6 ug/L

Result	Uncer	Date
140	10	5/24

CV = 331 + 12 ug/L

Result	Uncer	Date
310	30	5/24

NO2-N 90EPA 04 FIA

CV = 0.125 + 0.002 mg/L

Result	Uncer	Date
0.15	0.02	5/23

CV = 0.85 + 0.04 mg/L

Result	Uncer	Date
0.9630	0.09	5/23

NO3-N 90EPA 04 FIA

CV = 0.85 + 0.075 mg/L

Result	Uncer	Date
0.99	0.1	5/24

CV = 9 + 0.5 mg/L

Result	Uncer	Date
10	1	5/24

Pb 90EPA 04 ICPMS

CV = 2.95 + 0.48 ug/L

Result	Uncer	Date
2.6	0.1	5/24

CV = 49.2 + 2.4 ug/L

Result	Uncer	Date
50.2	0.6	5/24

pH 90EPA 04 GE

CV = 9.12 + 0.08 units

Result	Uncer	Date
9.29	0.1	5/18

Sb 90EPA 04 ICPMS

CV = 14 + 1.5 ug/L

Result	Uncer	Date
13.6	0.3	5/24

CV = 120 + 9 ug/L

Result	Uncer	Date
117	3	5/24

Se 90EPA 04 ETVAA

CV = 9.99 + 0.69 ug/L

Result	Uncer	Date
9.5	1	5/11

CV = 41.1 + 2.5 ug/L

Result	Uncer	Date
38	4	5/11

SO4 90EPA 04 FIA

CV = 7.5 + 0.76 mg/L

Result	Uncer	Date
6.1	1	5/23

CV = 24 + 1 mg/L

Result	Uncer	Date
23	2	5/23

Total Alkalinity TITR
90EPA 04

CV = 39.2 + 1.4 mg/L

Result	Uncer	Date
41	4	5/24
41	4	5/24

Total Dissolved Solids GRAV
90EPA 04

CV = 254 + 31 mg/L

Result	Uncer	Date
230	20	5/23

Tl 90EPA 04 ICPMS

CV = 4 + 0.49 ug/L

Result	Uncer	Date
4	0.1	5/24

CV = 80 + 5.8 ug/L

Result	Uncer	Date
77.4	0.7	5/24

TABLE C-V (cont)

****

EPA Drinking Water Study 26 (cont)

****

Turbidity 90EPA 04 COLOR

CV = 1.36 + 0.1 NTU

Result	Uncer	Date
1.2	0.2	5/14

CV = 5.95 + 0.26 NTU

Result	Uncer	Date
5.6	1.1	5/14

****

EPA Drinking Water Study 27

****

Ag 90EPA 02 FAA

CV = 48.5 + 3.6 ug/L

Result	Uncer	Date
49	10	11/02

As 90EPA 02 ETVAA

CV = 30 + 2 ug/L

Result	Uncer	Date
28	5	11/02

Ba 90EPA 02 ICPES

CV = 953 + 38 ug/L

Result	Uncer	Date
910	90	11/26

Be 90EPA 02 ICPES

CV = 4.67 + 0.57 ug/L

Result	Uncer	Date
5	0.5	11/26

Cd 90EPA 02 ICPES

CV = 29.3 + 1.9 ug/L

Result	Uncer	Date
29	5	11/26

Cl2(Free) 90EPA 02 PTITR

CV = 470 + 40 ug/L

Result	Uncer	Date
0.35	0.04	11/28

CN 90EPA 02 ACOLR

CV = 180 + 21 ug/L

Result	Uncer	Date
0.17	0.02	11/19

Cr 90EPA 02 ICPES

CV = 75.3 + 4.6 ug/L

Result	Uncer	Date
71	7	11/26

Cu 90EPA 02 FAA

CV = 122 + 6 ug/L

Result	Uncer	Date
120	10	11/02

F 90EPA 02 ISE

CV = 4.35 + 0.22 mg/L

Result	Uncer	Date
4.6	0.5	11/14

Hardness 90EPA 02 CALC

CV = 134 + 5 mg/L

Result	Uncer	Date
180	20	11/15

Hg 90EPA 02 CVAA

CV = 1.29 + 0.22 ug/L

Result	Uncer	Date
1.3	0.2	11/26

Na 90EPA 02 ICPES

CV = 14 + 0.8 mg/L

Result	Uncer	Date
15	2	11/26

Ni 90EPA 02 ICPES

CV = 451 + 22 ug/L

Result	Uncer	Date
420	40	11/26

NO2-N 90EPA 02 FIA

CV = 250 + 20 ug/L

Result	Uncer	Date
300	30	11/19

NO3-N 90EPA 02 FIA

CV = 550 + 110 ug/L

Result	Uncer	Date
990	100	11/19

Pb 90EPA 02 ICPES

CV = 91.3 + 5.4 ug/L

Result	Uncer	Date
160	20	11/26

pH 90EPA 02 GE

CV = 9.17 + 0.1 units

Result	Uncer	Date
9.34	0.1	11/14

Sb 90EPA 02 ETVAA

CV = 7 + 1.8 ug/L

Result	Uncer	Date
7.8	1	11/02

Se 90EPA 02 ETVAA

CV = 59.9 + 3.4 ug/L

Result	Uncer	Date
53	10	11/02

SO4 90EPA 02 IC

CV = 13 + 1 mg/L

Result	Uncer	Date
14	1	11/19

Total Alkalinity 90EPA 02 TITR

CV = 30.5 + 2.6 mg/L

Result	Uncer	Date
32	3	11/14

Total Dissolved Solids 90EPA 02 GRAV

CV = 240 + 69 mg/L

Result	Uncer	Date
310	30	11/19

Tl 90EPA 02 ETVAA

CV = 26.9 + 2.4 ug/L

Result	Uncer	Date
27	5	11/02

Turbidity 90EPA 02 COLOR

CV = 0.91 + 0.26 NTU

Result	Uncer	Date
1.4	0.3	11/09
0.8	0.16	11/09

****

EPA Free Chlorine in Water

****

Cl2(Free) 90EPA 02 PTITR

CV = 1.5 + 0.15 mg/L

Result	Uncer	Date
1.4	0.3	4/01

****

EPA Gross Alpha/Beta in Water May 1988

****

Alpha 88EPA 01 PC

CV = 11 + 5 pCi/L

Result	Uncer	Date
8	2	1/16
10	2	1/16
12	3	1/16
11	3	2/08
10	2	2/08
8	2	2/08
8	2	2/14
10	2	2/14
11	2	2/14
9	2	2/14
7	2	2/14
11	2	2/14
7	2	2/14
9	2	2/14
11	2	2/14
10	2	3/08
7	2	3/08
9	2	3/08
9	2	3/08
7	2	3/08
10	2	3/08
11	2	3/19
10	2	3/19
8	2	3/19
10	2	3/19
11	2	3/19
8	2	3/19
11	2	3/27
8	2	3/27
8	2	3/27
7	2	4/05
12	3	4/05
8	2	4/05
14	3	4/12
10	2	4/12

Alpha (cont)

9	2	4/12
14	3	4/12
9	2	4/12
10	2	4/12
8	2	4/23
10	2	4/23
11	3	4/23
8	2	4/25
7	2	4/25
5	1	4/25
10	2	4/26
9	2	4/26
10	2	4/26
9	2	4/26
9	2	4/26
9	2	4/26
12	3	5/02
11	2	5/02
13	3	5/02
12	3	5/02
11	2	5/02
13	3	5/02
11	2	5/03
8	2	5/03
8	2	5/03
8	2	5/03
11	2	5/03
8	2	5/03
11	2	5/03
8	2	5/03
8	2	5/03
8	2	5/10
9	2	5/10
11	2	5/10
11	2	5/10
9	1	5/10
8	2	5/10
12	3	5/15
10	2	5/15
10	2	5/15
8	2	5/15
8	2	5/15
12	3	5/15
10	2	5/15
8	2	5/15
7	2	5/22
9	2	5/22
14	3	5/22
9	2	5/22
7	2	5/22
14	3	5/22
9	2	5/22
7	2	5/22
9	2	5/22
12	3	5/22
12	3	5/22
14	3	5/22
9	2	5/22
10	2	5/22
10	2	5/22
12	3	5/30
9	2	5/30
8	2	5/30
8	2	5/30
9	2	5/30
12	3	5/30
9	2	6/13
7.2	2	6/13
12	3	6/13
7	2	6/14
9	2	6/14
12	3	6/14
12	3	6/14
12	3	6/14
9	2	6/14
9	2	6/14
7	2	6/14
12	3	6/14

Alpha (cont)

7.2	2	6/14
7	2	6/14
9	2	6/14
7	2	6/26
8	2	6/26
7	2	6/26
13	3	6/26
10	2	6/26
10	2	6/26
8	2	6/26
13	3	6/26
10	2	6/26
8	2	6/26
10	2	6/26
10	2	6/26
11	2	6/26
8	2	6/26
11	2	6/26
7	2	6/26
11	2	6/2[illegible]
13	3	6/26
10	2	6/26
10	2	6/26
7	2	6/26
10	2	6/26
11	2	6/26
13	3	6/26
10	2	6/27
7	2	6/27
9	2	6/27
10	2	7/02
6	2	7/02
6	2	7/02
10	2	7/05
12	3	7/05
9	1	7/05
8	2	7/11
12	3	7/11
9	2	7/11
9	2	7/11
8	2	7/11
8	2	7/11
12	3	7/11
12	3	7/11
9	2	7/11
8	2	7/23
8	2	7/23
10	2	7/23
10	2	7/23
8.2	2	7/23
8	2	7/23
8	2	7/23
8	2	7/23
8	2	7/23
8	2	7/23
10	2	7/23
8	2	7/23
8	2	7/23
10	2	7/23
12	3	8/15
9	2	8/15
11	2	8/15
12	3	8/15
10	2	8/15
8	2	8/15
14	3	9/04
14	3	9/04
8	2	9/04
10	2	9/04
8	2	9/04
10	2	9/04
8	2	9/04
10	2	9/04
14	3	9/04
12	3	10/01
10	2	10/01
10	2	10/01

TABLE C-V (cont)

****

EPA Gross Alpha/Beta in Water
May 1988
(cont)

****

Alpha (cont)

10	2	10/01
10	2	10/01
10	2	10/01
10	2	10/01
12	3	10/01
10	2	10/01
12	3	10/01
13	3	10/11
8	2	10/11
8	3	10/11
13	3	10/11
12	3	10/11
12	3	10/11
8	2	10/17
12	3	10/17
10	2	10/17
12	3	10/24
8	2	10/24
13	3	10/24
12	3	10/24
8	2	10/24
12	3	10/24
13	3	10/24
10	2	10/24
10	2	10/26
8	2	10/24
13	3	10/24
12	3	10/24
9.2	2	11/07
7	2	11/07
8	2	11/07
8	2	11/19
11	2	11/19
11	2	11/19
13	3	11/19
11	2	11/19
8	2	11/19
13	3	11/19
8	2	11/19
13	3	11/19
7	2	12/05
9	2	12/05
13	3	12/05

Beta 88EPA 01 PC

CV = 11 + 5 pCi/L

Result	Uncer	Date
8.6	1	1/16
10	1	1/16
8.7	1	1/16
8.8	1	2/08
10	1	2/08
8.8	1	2/08
8.9	1	2/14
9	1	2/14
11	1	2/14
10	1	2/14
8.9	1	2/14
9	1	2/14
9	1	2/14
10	1	2/14
11	1	2/14
9	1	3/08
8.3	1	3/08
9	1	3/08
9	1	3/08

Beta (cont)

8.3	1	3/08
9	1	3/08
9	1	3/19
8.7	1	3/19
8	1	3/19
9	1	3/19
8.7	1	3/19
8	1	3/19
9	1	3/27
9	1	3/27
9	1	3/27
9	1	4/05
11	1	4/05
9	1	4/05
9	1	4/12
9	1	4/12
8	1	4/12
8	1	4/12
9	1	4/12
9	1	4/12
9	1	4/23
8.5	1	4/23
10	1	4/23
8	1	4/25
6.9	0.8	4/25
7.5	0.9	4/25
8	1	4/26
8.5	1	4/26
8.5	1	4/26
9	1	4/26
8	1	4/26
9	1	4/26
10	1	5/02
11	1	5/02
10	1	5/02
11	1	5/03
9	1	5/03
9	1	5/03
9	1	5/03
11	1	5/03
11	1	5/03
9	1	5/03
9	1	5/03
9	1	5/03
9	1	5/10
9	1	5/10
10	1	5/10
10	1	5/10
9	1	5/10
9	1	5/10
11	1	5/15
9	1	5/15
9	1	5/15
9	1	5/15
9	1	5/15
11	1	5/15
9	1	5/15
9	1	5/15
10	1	5/22
9	1	5/22
9	1	5/22
9	1	5/22
10	1	5/22
9	1	5/22
9	1	5/22
11	1	5/22
9	1	5/22
9	1	5/22
9	1	5/22
9	1	5/22
11	1	5/22
10	1	5/22
9	1	5/22
8.6	1	5/30
11	1	5/30
9	1	5/30
9	1	5/30
8.6	1	5/30

Beta (cont)

11	1	5/30
10	1	6/13
8.6	1	6/13
9	1	6/13
8.6	1	6/14
10	1	6/14
10	1	6/14
9	1	6/14
9	1	6/14
9	1	6/14
8.6	1	6/14
8.6	1	6/14
8.6	1	6/14
9	1	6/14
10	1	6/14
11	1	6/26
10	1	6/26
10	1	6/26
9	1	6/26
8.4	1	6/26
9	1	6/26
8.4	1	6/26
10	1	6/26
11	1	6/26
11	1	6/26
9	1	6/26
10	1	6/26
8.4	1	6/26
10	1	6/26
11	1	6/26
8.7	1	6/26
10	1	6/26
9	1	6/26
10	1	6/26
10	1	6/26
8.7	1	6/26
8.4	1	6/26
8.7	1	6/26
8.7	1	6/26
10	1	6/27
10	1	6/27
9	1	6/27
8	1	7/02
8	1	7/02
10	1	7/02
8.3	0.9	7/05
10	1	7/05
9	1	7/05
10	1	7/11
9	1	7/11
8.8	1	7/11
10	1	7/11
11	1	7/11
8.8	1	7/11
10	1	7/11
10	1	7/11
10	1	7/11
9	1	7/11
9	1	7/11
8.8	1	7/11
10	1	7/11
10	1	7/23
12	1	7/23
10	1	7/23
8.5	1	7/23
12	1	7/23
8.5	1	7/23
12	1	7/23
12	1	7/23
10	1	7/23
12	1	7/23
8.5	1	7/23
10	1	7/23
10	1	7/23
8.5	1	7/23
8.5	1	7/23
12	1	8/14
11	1	8/14

Beta (cont)

9	1	8/14
12	1	8/15
9	1	8/15
12	1	8/15
11	1	8/15
9	1	8/15
10	1	8/15
12	1	9/04
9	1	9/04
13	1	9/04
13	1	9/04
12	1	9/04
9	1	9/04
9	1	9/04
13	1	9/04
12	1	9/04
12	1	10/01
11	1	10/01
12	1	10/01
9	1	10/01
9	1	10/01
9	1	10/01
12	1	10/01
11	1	10/01
11	1	10/01
9	1	10/01
9	1	10/11
12	1	10/11
12	1	10/11
12	1	10/11
9	1	10/11
11	1	10/11
9	1	10/17
12	1	10/17
12	1	10/17
13	1	10/24
10	1	10/24
9	1	10/24
12	1	10/24
11	1	10/24
11	1	10/24
9	1	10/24
13	1	10/24
12	1	10/24
9	1	10/24
12	1	10/24
11	1	10/24
8.6	1	11/07
12	1	11/07
11	1	11/07
12	1	11/19
11	1	11/19
11	1	11/19
9	1	11/19
9	1	11/19
12	1	11/19
11	1	11/19
12	1	11/19
9	1	11/19
7.5	0.9	12/05
12	1	12/05
12	1	12/05

****

EPA Gross Alpha/Beta in Water
Jan 1990

****

Alpha 90EPA 01 PC

CV = 12 + 5 pCi/L

Result	Uncer	Date
21	4	2/14
24	5	2/14
1.2	0.5	2/14

Beta 90EPA 01 PC

CV = 9 + 1 pCi/L

Result	Uncer	Date
11	1	2/14
1.2	0.3	2/14
7.2	0.9	2/14

****

EPA Gross Alpha/Beta in Water
May 1990

****

Alpha 90EPA 01 PC

CV = 22 + 6 pCi/L

Result	Uncer	Date
16	3	6/13
18	4	6/13
14	3	6/13

Beta 90EPA 01 PC

CV = 15 + 5 pCi/L

Result	Uncer	Date
14	2	6/13
15	2	6/13
13	1	6/13

****

EPA Gross Alpha/Beta in Water
Sept 1990

****

Alpha 90EPA 01 PC

CV = 10 + 5 pCi/L

Result	Uncer	Date
7	2	10/11
9	2	10/11
9	2	10/11

Beta 90EPA 01 PC

CV = 10 + 5 pCi/L

Result	Uncer	Date
12	1	10/11
96	10	10/11
11	1	10/11

****

EPA Mineral Analysis in Water

****

Br 90GAU 04 IC

CV = 8.00 + 0.08 mg/L

Result	Uncer	Date
< 0.5		4/26
< 0.5		4/26

CV = 10 + 1 mg/L

Result	Uncer	Date
< 0.5		4/26
< 0.5		4/26

Ca 87EPA 02, 89EPA 02 IC

CV = 20 + 1.2 mg/L

Result	Uncer	Date
23	2	1/19
22	2	1/22
24	2	2/07
20	2	2/07
22	2	2/20
21	2	2/20
23	2	3/13
23	2	4/13
27	3	4/13
22	2	4/13
26	3	4/13
22	2	4/20
24	2	4/20
22	2	4/20
23	2	4/20
22	2	4/20
22	2	4/20
22	2	4/20
23	2	4/20
24	2	4/20
23	2	4/20
22	2	4/20
25	3	4/20
22	2	4/20
23	2	5/01
23	2	5/01
23	2	5/01
23	2	5/01
23	2	5/01
25	3	5/11
23	2	5/14
23	2	5/18
23	2	5/18
26	3	5/23
23	2	5/23
24	2	5/25
22	2	5/25
22	2	5/25
22	2	5/25
23	2	5/25
24	2	6/07

TABLE C-V (cont)

****

EPA Mineral Analysis in Water
(cont)

****

Ca (cont)

24	2	6/07
24	2	6/08
24	2	6/08
24	2	6/13
24	2	7/27
26	3	8/08
26	3	8/08
25	3	8/13
24	2	9/26
24	2	9/26
24	2	9/26
24	2	9/26
24	2	10/17
25	3	10/25
23	2	11/05
23	2	11/26
27	3	11/26

Ca 87EPA 02 ICPES

CV = 20 + 1.2 mg/L

Result	Uncer	Date
23	2	3/21
20	2	4/30

Cl 87EPA 02, 89EPA 02 ACOLR

CV = 51.6 + 1.8 mg/L

Result	Uncer	Date
51	5	4/13

CV = 52.1 + 1.8 mg/L

Result	Uncer	Date
51	5	4/13

Cl 87EPA 02, 89EPA 02 FIA

CV = 51.6 + 1.8 mg/L

Result	Uncer	Date
57	6	3/02
55	6	4/02
51	5	5/14

CV = 52.1 + 1.8 mg/L

Result	Uncer	Date
52	5	2/14
51	5	2/14
52	5	2/20
53	5	3/02
53	5	3/02
58	6	3/02
53	5	6/07
53	5	6/07
53	5	6/07
53	5	6/07
53	5	6/07
51	5	7/10
51	5	7/11

Cl (cont)

50	5	7/11
50	5	7/11
50	5	7/26
55	6	8/23
56	6	9/10

Cl 87EPA 02, 89EPA 02 IC

CV = 51.6 + 1.8 mg/L

Result	Uncer	Date
55	6	2/08
55	6	4/19
54	5	4/19
52	5	5/14
51	5	5/14

CV = 52.1 + 1.8 mg/L

Result	Uncer	Date
50	5	1/19
49	5	1/19
52	5	2/08
55	6	2/08
63	6	2/16
52	5	2/20
48	5	4/13
52	5	4/13
52	5	4/13
48	5	4/13
48	5	4/13
48	5	4/13
50	5	4/19
50	5	4/19
50	5	4/19
50	5	4/19
50	5	4/19
49	5	5/14
50	5	5/14
49	5	5/14
49	5	5/14
53	5	5/14
50	5	5/14
51	5	5/14
50	5	5/14
53	5	5/14
49	5	5/14
49	5	5/14
49	5	5/14
47	5	5/25
47	5	5/25
47	5	5/25
53	5	8/01
51	5	8/08
51	5	8/08
54	5	10/17
54	5	10/18
54	5	10/18
55	6	10/24
65	7	10/29
57	6	11/05
55	6	12/14
52	5	12/17
50	5	12/17

Conductivity CB
87EPA 02, 89EPA 02

CV = 267 + 11 umhos/cm

Result	Uncer	Date
284	14	4/04
238	12	4/16
250	13	4/16
235	12	4/17
233	12	4/19
198	10	4/25
250	12	4/25
239	12	4/25
248	12	5/01
228	11	5/01
197	10	5/11
199	10	11/19
263	14	12/19

F 87EPA 02 IC

CV = 1 + 0.05 mg/L

Result	Uncer	Date
0.99	0.1	2/16
0.89	0.09	10/29

F 85EPA 02, 89EPA 02 ISE
87EPA 02

CV = 1.00 + 0.05 mg/L

Result	Uncer	Date
0.96	0.1	2/23
0.9	0.09	2/23
0.83	0.08	2/23
1.0	0.2	3/01
1.3	0.3	3/01
1.1	0.2	3/01
1.1	0.2	3/01
1.1	0.2	3/01
1.2	0.2	3/01
0.99	0.1	3/02
1.0	0.1	3/02
0.94	0.09	3/02
1.2	0.1	3/02
1.2	0.1	3/02
1.2	0.1	3/02
1.0	0.1	3/02
1.1	0.1	3/13
1.1	0.1	3/13
1.1	0.1	3/13
1.1	0.1	3/13
1.1	0.1	3/13
1.1	0.1	3/13
1.1	0.1	3/13
1.1	0.1	3/13
1.1	0.1	3/13
1.1	0.1	3/13
1.1	0.1	3/14
1.1	0.1	3/14
1.3	0.2	3/19
1.2	0.2	3/19
1.0	0.1	3/19
1.1	0.2	3/19
0.99	0.1	3/23
0.94	0.09	3/23
1.0	0.1	4/05
1.1	0.1	4/05
1.1	0.1	4/05
1.1	0.1	4/05
0.9	0.09	4/10
0.9	0.09	4/12
0.9	0.09	4/12
1.1	0.1	4/12

F (cont)

1.0	0.1	4/12
1.0	0.1	4/12
1.1	0.1	4/16
1.1	0.1	4/16
1.1	0.1	4/16
0.84	0.08	4/16
1.0	0.1	4/16
0.84	0.08	4/16
1.0	0.1	4/16
0.84	0.08	4/16
1.0	0.1	4/16
0.87	0.09	5/03
0.95	0.1	5/03
0.87	0.09	5/03
0.87	0.09	5/03
0.95	0.1	5/03
0.95	0.1	5/03
0.95	0.1	5/04
0.95	0.1	5/04
0.95	0.1	5/04
1.1	0.1	5/04
1.1	0.1	5/04
1.1	0.1	5/04
1.0	0.1	5/11
1.0	0.1	5/11
0.97	0.1	5/11
0.97	0.1	5/11
1.0	0.1	5/17
1.0	0.1	5/17
1.0	0.1	5/17
1.0	0.1	5/17
1.0	0.1	5/17
1.0	0.1	5/17
1.2	0.1	6/06
1.2	0.1	6/07
1.2	0.1	6/07
1.0	0.1	7/10
0.98	0.1	7/24
0.98	0.1	7/27
0.98	0.1	7/27
0.97	0.1	8/24
1.1	0.1	9/04
1.1	0.1	9/11
1.1	0.1	9/11
1.1	0.1	9/11
1.1	0.1	9/11
0.99	0.1	9/12
1.1	0.1	9/28
0.99	0.1	10/03
1.1	0.1	10/11
1.1	0.1	10/18
1.1	0.1	11/14
1.1	0.1	12/06
1.1	0.1	12/06

Hardness CALC
87EPA 02, 89EPA 02

CV = 70.5 + 2.52 mg/L

Result	Uncer	Date
75	8	2/27
77	8	4/25
80	8	4/25
77	8	5/02
77	8	5/02
84	8	5/24

CV = 72.2 + 2.5 mg/L

Result	Uncer	Date
76	8	2/27
73	7	2/27
88	9	4/16
90	9	4/16

Hardness (cont)

80	8	4/25
76	8	4/25
76	8	4/25
87	9	4/25
76	8	4/25
76	8	4/25
80	8	4/25
76	8	4/25
80	8	5/02
77	8	5/02
77	8	5/02
77	8	5/02
77	8	5/02
76	8	5/24
77	8	5/24
77	8	5/24
88	9	5/24
81	8	5/24
77	8	6/11
82	8	6/11
78	8	6/11
82	8	6/14
88	9	8/14
88	9	8/14
84	8	10/01
84	8	10/01
82	8	11/09
78	8	11/14
91	9	11/29
81	8	11/29

K 87EPA 02, 89EPA 02 IC

CV = 5.00 + 0.39 mg/L

Result	Uncer	Date
5.0	0.5	1/19
5.0	0.5	1/22
5.1	0.5	2/07
4.9	1.0	2/07
4.8	1.0	2/20
4.8	1.0	2/20
5.1	0.5	3/13
4.6	0.5	3/22
5.3	0.5	3/22
4.9	0.5	4/18
5.2	0.5	4/18
5.1	0.5	4/18
5.5	0.5	4/20
5.5	0.5	4/20
5.3	0.5	4/20
4.7	0.5	4/20
5.5	0.5	4/20
5.5	0.5	4/20
5.3	0.5	4/20
6.4	0.6	4/20
5.7	0.6	4/20
5.8	0.6	4/20
4.9	0.5	5/14
4.7	0.5	5/14
5.2	0.5	5/14
4.9	0.5	5/14
4.9	0.5	5/14
4.9	0.5	5/14
4.9	0.5	5/14
5.1	0.5	5/14
5.1	0.5	5/14
4.9	0.5	5/14
4.8	0.5	5/14
4.8	0.5	5/14
4.9	0.5	5/18
5.1	0.5	5/25
5.1	0.5	5/25
5.1	0.5	5/25
5.1	0.5	6/07
5.1	0.5	6/07

K (cont)

5.1	0.5	6/08
5.1	0.5	6/08
5.1	0.5	6/13
5.3	0.5	7/27
5.3	0.5	8/08
5.3	0.5	8/08
5.2	0.5	8/13
5.1	0.5	9/26
5.1	0.5	9/26
5.1	0.5	9/26
4.9	0.5	9/26
5.0	0.5	10/17
4.9	0.5	10/25
4.8	0.5	10/25
4.8	0.5	10/25
4.6	0.5	11/05
5.9	0.6	11/26
5.2	0.5	11/26

K 87EPA 02 ICPES

CV = 5.00 + 0.39 mg/L

Result	Uncer	Date
5.6	0.6	3/21
5.7	0.6	4/30

Mg 87EPA 02, 89EPA 02 IC

CV = 5.00 + 0.28 mg/L

Result	Uncer	Date
5.0	0.5	1/19
4.9	0.5	1/22
4.7	0.5	2/07
5.2	0.5	2/07
5.0	0.5	2/20
5.0	0.5	2/20
4.8	0.5	3/13
5.6	0.5	4/13
4.9	0.5	4/13
5.6	0.5	4/13
5.1	0.5	4/20
5.3	0.5	4/20
5.0	0.5	4/20
5.0	0.5	4/20
5.0	0.5	4/20
5.1	0.5	4/20
5.0	0.5	4/20
5.0	0.5	4/20
5.6	0.6	4/20
5.0	0.5	4/20
5.0	0.5	4/20
5.0	0.5	4/20
4.9	0.5	5/01
4.9	0.5	5/01
4.9	0.5	5/01
4.9	0.5	5/01
4.9	0.5	5/01
5.4	0.5	5/11
4.9	0.5	5/14
4.9	0.5	5/18
4.9	0.6	5/18
5.8	0.6	5/23
5.7	0.5	5/23
5.4	0.5	5/25
5.4	0.5	5/25
5.4	0.5	5/25
5.4	0.5	5/25
5.4	0.5	6/07
5.4	0.5	6/07
5.4	0.5	6/08
5.4	0.5	6/08

TABLE C-V (cont)

****

EPA Mineral Analysis in Water
(cont)

****

Mg (cont)

5.4	0.5	6/13
5.4	0.5	7/27
5.6	0.5	8/08
5.6	0.6	8/08
5.7	0.6	8/13
5.8	0.6	9/26
5.8	0.6	9/26
5.5	0.5	9/26
5.3	0.5	9/26
5.3	0.5	10/17
5.4	0.5	10/25
5.4	0.5	11/05
5.4	0.5	11/26
6.1	0.6	11/26

Mg 87EPA 02 ICPES

CV = 5.00 + 0.36 mg/L

Result	Uncer	Date
5.7	0.6	3/21
5.4	0.5	4/30

Na 87EPA 02, 89EPA 02 IC

CV = 20.0 + 1.1 mg/L

Result	Uncer	Date
24	2	1/19
22	2	1/22
22	2	1/31
23	2	2/07
22	2	2/07
21	2	2/20
21	2	2/20
20	2	3/13
23	2	3/22
22	2	3/22
23	2	4/17
22	2	4/18
23	2	4/18
22	2	4/18
22	2	4/20
23	2	4/20
22	2	4/20
22	2	4/20
23	2	4/20
22	2	4/20
22	2	4/20
22	2	4/20
22	2	4/20
22	2	4/20
22	2	5/11
23	2	5/11
22	2	5/14
22	2	5/14
22	2	5/14
22	2	5/14
21	2	5/14
22	2	5/14
22	2	5/14
21	2	5/14
22	2	5/14
22	2	5/14
22	2	5/18
21	2	5/23

Na (cont)

21	2	5/25
21	2	5/25
22	2	5/25
23	2	6/07
23	2	6/07
23	2	6/08
23	2	6/08
23	2	6/13
23	2	7/27
24	2	8/08
24	2	8/08
24	2	8/08
24	2	8/13
25	3	9/26
25	3	9/26
24	2	9/26
26	3	9/26
25	3	10/17
23	2	10/25
25	3	10/25
20	2	11/05
24	2	11/26
27	3	11/26

Na 87EPA 02 ICPES

CV = 20.0 + 1.1 mg/L

Result	Uncer	Date
23	2	3/21
22	2	4/30

pH 82EPA 01, 85EPA 02, 87EPA 02, 89EPA 02 GE

CV = none available units

Result	Uncer	Date
5.7	0.1	4/19
5.69	0.1	5/11

CV = 5.70 + 0.06 units

Result	Uncer	Date
5.66	0.1	4/04
7.85	0.1	4/17
5.71	0.1	4/17
5.66	0.1	5/01

CV = 6.00 + 0.05 units

Result	Uncer	Date
6.01	0.1	4/17
6.03	0.1	4/25
6.14	0.1	4/25
6.09	0.1	5/11
6.07	0.1	5/11
6.07	0.1	5/24
5.98	0.1	6/08
6.10	0.1	9/19
6.11	0.1	9/24
6.02	0.1	10/05
6.01	0.1	10/05
6.11	0.1	11/19

CV = 7.80 + 0.08 units

Result	Uncer	Date
7.76	0.1	4/17
7.94	0.1	5/01

SO4 87EPA 02, 89EPA 02 ACOLR

CV = 20.0 + 1.4 mg/L

Result	Uncer	Date
26	3	4/13
26	3	4/13
27	3	4/13

SO4 87EPA 02 FIA

CV = 20.0 + 1.7 mg/L

Result	Uncer	Date
19	2	2/14
19	2	2/14
21	2	2/14
21	2	2/14
23	2	3/02
20	2	3/02
22	2	3/02
21	2	3/02
24	2	4/26
18	2	6/07
17	2	6/07
18	2	6/07
18	2	6/07
18	2	6/08
23	2	7/10
23	2	7/16
23	2	7/16

SO4 87EPA 02, 89EPA 02 IC

CV = 20.0 + 1.7 mg/L

Result	Uncer	Date
26	3	2/08
26	3	2/16
26	3	2/16
26	3	2/20
26	3	4/13
26	3	4/13
26	3	4/13
25	3	4/13
26	3	4/13
26	3	4/19
26	3	4/19
26	3	4/19
26	3	4/19
26	3	4/19
26	3	4/19
26	3	4/19
26	3	5/14
26	3	5/14
24	2	5/14
25	3	5/14
25	3	5/14
26	3	5/14
26	3	5/14
26	3	5/14
25	3	5/14
26	3	5/14
25	3	5/14
26	3	5/14
26	3	5/14
26	3	5/14
26	3	5/14
19	2	5/23
25	3	5/25
25	3	5/25
25	3	5/25
25	3	5/25
25	3	8/01
25	3	8/08

SO4 (cont)

25	2	8/08
24	2	9/19
24	2	9/19
25	3	10/17
25	3	10/18
25	3	10/18
25	3	10/24
21	2	10/29
24	2	11/05
24	2	11/19
26	3	12/14
23	2	12/17
23	2	12/17

Total Alkalinity TITR
87EPA 02, 89EPA 02

CV = 20.0 + 1.4 mg/L

Result	Uncer	Date
24	5	1/19
24	5	1/19
20	3	4/24
20	3	4/24
20	3	4/24
20	3	4/24
21	3	5/15
21	3	5/25

CV = 27.3 + 1.6 mg/L

Result	Uncer	Date
27	3	1/18
26	3	1/18
26	3	1/18
28	3	1/18
< 5		1/19
< 5		1/19
27	3	2/09
27	2	3/12
26	3	4/02
29	3	4/05
30	3	4/05
26	3	4/05
27	3	4/12
25	3	4/12
25	3	4/12
27	3	4/12
25	3	4/12
27	3	4/12
26	3	4/24
26	3	4/24
23	3	4/24
26	3	4/24
26	3	4/24
23	3	4/24
26	3	4/24
26	3	4/24
27	3	5/15
27	3	5/15
27	3	5/15
27	3	5/15
27	3	5/15
27	3	5/15
28	3	5/15
27	3	5/15
27	3	5/15
26	3	5/17
27	3	5/24
25	3	6/07
25	3	6/07
27	3	6/25
25	3	8/24
24	2	8/24
27	3	9/14

Total Alkalinity (cont)

25	3	9/28
26	3	10/09
25	3	10/09
27	3	10/11
27	3	11/14
26	3	11/29
20	2	11/29
26	3	12/10

Low results 1/19 due to low pH from acid-rinsed glassware.

Total Dissolved Solids GRAV
87EPA 02, 89EPA 02

CV = 140 + 20 mg/L

Result	Uncer	Date
160	20	4/11
62	6	4/12
130	10	4/19
86	9	4/25
130	10	4/25
65	6	5/01
130	10	12/10

CV = 150 + 16 mg/L

Result	Uncer	Date
150	20	4/12
86	9	4/19
160	20	4/25
84	8	4/25
140	10	5/01
170	20	5/11

****

EPA Nutrients in Water

****

NH3-N 88EPA 02 ACOLR

CV = 2 + 0.16 mg/L

Result	Uncer	Date
2.19	0.2	7/10

NH3-N 84EPA 02, 86EPA 02, 88EPA 02 FIA

CV = 150 + 20 ug/L

Result	Uncer	Date
170	20	2/16
160	20	3/02
150	20	3/02
160	20	3/21
160	20	4/13
160	20	11/06

CV = 1.52 + 0.09 mg/L

Result	Uncer	Date
1.4	0.1	2/16
1.5	0.2	3/20
1.4	0.1	3/21
1.8	0.2	6/07
1.8	0.2	6/07

NH3-N (cont)

CV = 2.0 + 0.1 mg/L

Result	Uncer	Date
2.0	0.2	1/18
2.0	0.2	1/18
2.0	0.2	2/16
1.2	0.1	2/16
2.3	0.2	3/20
1.8	0.2	3/20
1.8	0.2	3/20
1.7	0.2	3/28
1.7	0.2	3/28
1.9	0.2	4/09
1.9	0.2	4/09
1.9	0.2	4/12
1.9	0.2	5/03
1.8	0.2	5/03
2.1	0.2	6/07
2.1	0.2	6/07
2.1	0.2	6/07
2.5	0.3	6/07
2.0	0.2	7/09
2.2	0.2	7/10
2.1	0.2	7/10
2.1	0.2	7/10
1.9	0.2	7/13
1.9	0.2	7/13
1.9	0.2	7/13
1.7	0.2	8/03
1.7	0.2	8/03
2.1	0.2	8/14
2.2	0.2	8/14
2.1	0.2	9/07
2.2	0.2	10/09
2.2	0.2	10/24
2.2	0.2	11/05
2.3	0.2	12/03
2.0	0.2	12/19
2.0	0.2	12/19

NH3-N 88EPA 02 IC

CV = 2.00 + 0.16 mg/L

Result	Uncer	Date
1.8	0.2	7/13

NO3-N FIA
84EPA 01, 84EPA 02, 86EPA 02, 88EPA 02

CV = 140 + 20 ug/L

Result	Uncer	Date
140	40	8/08
170	40	9/19
160	40	9/19
160	40	9/19
150	40	10/17
150	40	10/17
170	40	12/17

CV = 180 + 20 ug/L

Result	Uncer	Date
180	20	8/08
180	20	8/08
180	20	8/08
180	40	8/08
180	40	8/08
160	20	8/28
160	20	9/10

TABLE C-V (cont)

****

EPA Nutrients in Water
(cont)

****

NO3-N (cont)

190	20	9/19
190	20	9/19
190	20	9/19
190	20	9/19
190	20	9/19
170	20	10/17
190	20	10/24
170	20	11/05
170	40	11/06
170	20	11/06
190	20	11/19
200	20	12/17

CV = 1.6 + 0.1 mg/L

Result	Uncer	Date
1.6	0.2	2/07
1.6	0.2	2/07
1.6	0.2	2/15
1.6	0.2	3/21
1.5	0.2	4/02
1.5	0.2	4/12
1.5	0.2	4/13
1.6	0.2	4/25
1.6	0.2	4/25
1.5	0.2	5/11
1.5	0.2	5/11
1.8	0.2	5/11
1.6	0.2	6/07
1.6	0.2	6/07
1.6	0.2	6/07
1.6	0.2	6/07
1.7	0.2	9/19
1.7	0.2	9/19
1.6	0.2	9/28

CV = 2.00 + 0.08 mg/L

Result	Uncer	Date
1.9	0.2	1/19
1.9	0.2	1/19
2.0	0.2	1/31
2.0	0.2	1/31
2.0	0.2	1/31
2.0	0.2	1/31
2.0	0.2	2/07
2.0	0.2	2/07
2.0	0.2	2/07
2.0	0.2	2/07
2.0	0.2	2/15
2.0	0.2	2/15
1.9	0.2	3/02
2.0	0.2	3/21
2.0	0.2	3/21
2.0	0.2	3/21
2.0	0.2	4/12
2.0	0.2	4/12
2.0	0.2	4/12
2.0	0.2	4/12
1.8	0.2	4/12
1.9	0.2	4/13
2.0	0.2	4/13
2.0	0.2	4/13
2.0	0.2	4/13
2.0	0.2	4/13
2.0	0.2	4/17
1.9	0.2	4/17
2.5	0.2	4/25
1.6	0.2	4/25

NO3-N (cont)

2.5	0.2	4/25
2.5	0.2	4/25
2.5	0.3	4/25
2.5	0.2	4/25
1.4	0.1	4/25
1.5	0.2	4/25
2.0	0.2	5/02
2.0	0.2	5/02
2.0	0.2	5/11
2.0	0.2	5/11
2.0	0.2	5/11
2.0	0.2	5/11
2.0	0.2	5/11
2.0	0.2	5/11
2.0	0.2	5/11
2.0	0.2	5/11
2.0	0.2	5/11
2.0	0.2	5/24
2.0	0.2	6/07
2.0	0.2	6/07
2.0	0.2	6/07
2.0	0.2	6/07
2.0	0.2	6/07
2.0	0.2	6/07
1.9	0.2	7/12
2.0	0.2	7/12
2.0	0.2	7/12
2.0	0.2	7/12
2.1	0.2	7/18
2.0	0.2	7/18

P 81EPA 01, 84EPA 02, 86EPA 02 ACOLR

CV = 40 + 10 ug/L

Result	Uncer	Date
86	20	11/06

CV = 130 + 30 ug/L

Result	Uncer	Date
56	10	1/08
120	20	2/07
120	20	2/07
120	20	2/07
120	20	2/07
170	30	2/15
120	20	3/02
120	20	3/02
70	20	3/26
70	20	3/26
150	30	3/28
150	30	3/28
96	20	4/05
96	20	4/05
130	20	5/03
130	20	5/03
100	20	5/24
100	20	5/24
200	40	6/06
200	40	6/06
150	20	6/08
130	30	7/10
130	30	7/18
130	30	7/18
130	30	7/18
210	40	7/31
210	40	7/31

P (cont)

CV = 140 + 40 ug/L

Result	Uncer	Date
48	10	1/08
48	10	2/07
150	30	2/07
150	30	2/07
150	30	2/07
180	40	2/15
120	20	3/02
120	20	3/02
88	20	3/26
88	20	3/26
150	30	3/28
150	30	3/28
96	20	4/05
96	20	4/05
96	19	4/12
120	20	5/03
120	20	5/03
110	20	5/24
110	20	5/24
110	20	5/25
150	20	6/08
150	20	6/08
120	20	7/10
120	20	7/18
120	20	7/18
120	20	7/18
120	20	7/18
180	40	7/31
180	40	7/31
160	30	8/07
100	20	8/30
100	20	8/30
120	20	9/18
120	30	10/05
120	20	10/24
120	30	10/24

CV = 1.04 + 0.06 mg/L

Result	Uncer	Date
0.81	0.16	11/05
0.85	0.17	11/06
0.83	0.16	12/03

CV = 1.50 + 0.07 mg/L

Result	Uncer	Date
1.3	0.1	8/30
1.3	0.1	8/30
1.3	0.3	12/07
1.2	0.3	12/14

PO4-P ACOLR
84EPA 01, 84EPA 02, 86EPA 02, 88EPA 02

CV = 50 + 10 ug/L

Result	Uncer	Date
75	15	4/12
75	15	4/12
75	15	4/12
75	15	4/12
63	20	8/01
< 20		11/19
21	20	11/19
< 20		12/17

PO4-P (cont)

CV = 270 + 10 ug/L

Result	Uncer	Date
210	40	2/07
210	40	2/07
230	50	4/12
240	50	4/20
240	50	4/20
240	50	4/20
240	50	4/20
250	50	5/01
220	40	5/01
210	40	5/02
210	40	5/02
210	40	5/02
210	40	5/02
210	40	5/02
210	40	5/02
220	40	5/03
210	40	5/03
240	20	5/23
190	40	5/23
180	40	5/23
240	20	5/23
240	20	5/23
240	20	5/23
200	40	6/06
210	40	6/08
310	60	8/01
310	60	8/01
210	40	9/18
210	40	9/18
270	50	9/18
200	40	12/17

CV = 390 + 40 ug/L

Result	Uncer	Date
350	70	4/12
290	60	5/01
300	60	5/01

CV = 500 + 20 ug/L

Result	Uncer	Date
440	40	2/07
380	80	2/07
390	80	2/07
410	40	2/20
400	40	4/12
480	100	4/20
480	100	4/20
390	80	5/01
380	80	5/03
370	70	6/08
360	70	6/08
350	70	8/10
350	70	8/10
350	70	8/10
380	80	11/19

****

EPA Oil and Grease

****

Oil/Grease 87EPA 02 GRAV

CV = 20 + 6 mg/L

Result	Uncer	Date
21	4	2/09
19	4	9/25

****

EPA Plutonium-239 in Water
Jan. 1990

****

Pu-239 90EPA 01 RAS

CV = 5.6 + 0.6 pCi/L

Result	Uncer	Date
5.15	0.29	2/13
4.92	0.24	2/13
4.78	0.24	2/13
4.85	0.19	3/05
4.95	0.2	3/05
4.73	0.19	3/05
5.44	0.2	3/05
5.1	0.2	3/05
5.01	0.18	3/05

****

EPA Plutonium-239 in Water
Aug. 1990

****

Pu-239 90EPA 01 RAS

CV = 9.1 + 0.9 pCi/L

Result	Uncer	Date
7.79	0.34	10/11
8.02	0.33	10/11
8.15	0.37	10/11

****

EPA Radionuclides in Food
July 1988

****

Sr-90 88EPA 01 PC

CV = 34 + 2 pCi/kg

Result	Uncer	Date
34	12	4/11
32	11	4/11
34	11	4/11

****

EPA Radionuclides in Milk
June 1988

****

Sr-90 88EPA 01 PC

CV = 60 + 3 pCi/L

Result	Uncer	Date
61	14	4/11
61	15	4/11
68	16	4/11

****

EPA Radionuclides in Milk
Nov. 1988

****

Sr-90 88EPA 01 RAS

CV = 60 + 3 pCi/L

Result	Uncer	Date
58	15	4/11
58	15	4/11
56	15	4/11

****

EPA Radionuclides in Milk
April 1989

****

Sr-90 89EPA 01 RAS

CV = 55 + 3 pCi/L

Result	Uncer	Date
58	15	4/11
56	15	4/11
64	16	4/11

****

EPA Radionuclides in Milk
Feb. 1990

****

Cs-137 90EPA 01 G

CV = 24 + 5 pCi/L

Result	Uncer	Date
24	4	5/17
22	4	5/17
18	4	5/17

I-131 90EPA 01 G

CV = 99 + 10 pCi/L

Result	Uncer	Date
84	14	5/17
87	16	5/17
77	14	5/17

Sr-90 90EPA 01 PC

CV = 23 + 5 pCi/L

Result	Uncer	Date
14.1	1.1	7/02
23.4	1.3	7/02
25.3	1.4	7/02

TABLE C-V (cont)

****

EPA Radionuclides in Milk
June 1990

****

Cs-137 90EPA 01 G

CV = 20 + 5 pCi/L

Result	Uncer	Date
15	5	11/09
17	4	11/09
22	6	11/09

I-131 90EPA 01 G

CV = 58 + 6 pCi/L

Result	Uncer	Date
42	13	11/09
41	15	11/09
35	14	11/09

****

EPA Radionuclides in Water
Feb. 1990

****

Ba-133 90EPA 01 G

CV = 74 + 7 pCi/L

Result	Uncer	Date
51	11	3/13
57	11	3/13
67	12	3/13
61	13	7/13

Co-60 90EPA 01 G

CV = 15 + 5 pCi/L

Result	Uncer	Date
7.9	11.3	3/13
19	11	3/13
21	11	3/13
11	12	7/13

Cs-134 90EPA 01 G

CV = 18 + 5 pCi/L

Result	Uncer	Date
24	10	3/13
22	9	3/13
24	9	3/13
29	9	7/13

Cs-137 90EPA 01 G

CV = 18 + 5 pCi/L

Result	Uncer	Date
24	8	3/13
10	9	3/13
18	10	3/13
24	13	7/13

Ru-106 90EPA 01 G

CV = 139 + 14 pCi/L

Result	Uncer	Date
100	70	3/13
92	59	3/13
110	60	3/13
120	90	7/13

Zn-65 90EPA 01 G

CV = 139 + 14 pCi/L

Result	Uncer	Date
140	30	3/13
120	30	3/13
110	20	3/13
120	30	7/13

****

EPA Radionuclides in Water
June 1990

****

Ba-133 90EPA 01 G

CV = 99 + 10 pCi/L

Result	Uncer	Date
80	14	7/13
80	15	7/13
90	16	7/13

Co-60 90EPA 01 G

CV = 24 + 5 pCi/L

Result	Uncer	Date
17	9	7/13
14	11	7/13
11	11	7/13

Outliers due to incorrect inefficiency value generated from earlier graph and to incorrect/inconsistent background value.

Cs-134 90EPA 01 G

CV = 24 + 5 pCi/L

Result	Uncer	Date
45	10	7/13
34	9	7/13
38	10	7/13

Cs-137 90EPA 01 G

CV = 25 + 5 pCi/L

Result	Uncer	Date
19	8	7/13
18	8	7/13
21	7	7/13

Ru-106 90EPA 01 G

CV = 210 + 21 pCi/L

Result	Uncer	Date
220	60	7/13
190	80	7/13
200	80	7/13

Zn-65 90EPA 01 G

CV = 148 + 15 pCi/L

Result	Uncer	Date
140	30	7/13
160	30	7/13
140	30	7/13

****

EPA Radionuclides in Water
Oct. 1990

****

Ba-133 90EPA 01 G

CV = 110 + 11 pCi/L

Result	Uncer	Date
94	16	11/09
85	15	11/09
77	14	11/09

Co-60 90EPA 01 G

CV = 20 + 5 pCi/L

Result	Uncer	Date
11	9	11/09
3.2	8.5	11/09
6.6	10.5	11/09

Certified value is near detection limit. Also, contaminated detectors cause varying background.

Cs-134 90EPA 01 G

CV = 12 + 5 pCi/L

Result	Uncer	Date
7.7	8.1	11/09
3.9	10.5	11/09
9.9	8.2	11/09

Cs-137 90EPA 01 G

CV = 12 + 5 pCi/L

Result	Uncer	Date
21	10	11/09
18	12	11/09
23	10	11/09

Ru-106 90EPA 01 G

CV = 151 + 15 pCi/L

Result	Uncer	Date
100	70	11/09
120	110	11/09
100	60	11/09

Zn-65 90EPA 01 G

CV = 115 + 12 pCi/L

Result	Uncer	Date
56	18	11/09
84	20	11/09
100	20	11/09

****

EPA Radium in Water
Dec. 1987

****

Ra-226 87EPA 01 RAS

CV = 4.8 + 0.72 pCi/L

Result	Uncer	Date
4.8	0.44	3/21
4.3	0.4	4/04
4.8	0.5	4/10
4.2	0.4	4/12
4.2	0.4	4/23
4.9	0.5	4/25
4.7	0.5	7/10
4.7	0.5	7/10
4.4	0.4	7/31
4.4	0.4	7/31

****

EPA Radium in Water
March 1990

****

Ra-226 90EPA 01 RAS

CV = 4.9 + 0.7 pCi/L

Result	Uncer	Date
4.9	0.5	4/25
4.1	0.4	4/25
4.8	0.5	4/25

****

EPA Radium in Water
June 1990

****

Ra-226 90EPA 01 RAS

CV = 12.1 + 1.8 pCi/L

Result	Uncer	Date
11.8	1	8/30
11.3	1	8/30
10.8	1	8/30

****

EPA Residue in Water

****

Total Suspended Solids GRAV
86EPA 02, 87EPA 02, 89EPA 02

CV = 31.5 + 1.8 mg/L

Result	Uncer	Date
25	3	3/13
27	3	6/25
28	3	8/10

CV = 32 + 2 mg/L

Result	Uncer	Date
47	5	2/16
26	26	3/26
36	4	5/23
31	3	5/31

CV = 274 + 14 mg/L

Result	Uncer	Date
290	30	1/08

CV = 278 + 9 mg/L

Result	Uncer	Date
250	30	1/08
250	30	1/12
240	20	1/18
270	30	2/07
270	30	2/07
270	30	2/16
240	20	2/21
270	30	2/21
270	30	2/23
260	30	3/02
260	30	3/13
280	30	3/19
280	30	3/19
290	30	3/26
280	30	4/12
280	30	4/17
290	30	4/17
290	30	4/17
270	30	4/25
260	30	5/03
220	20	5/15
230	20	5/22
230	20	5/23
290	30	5/23
270	30	5/31
270	30	6/06
270	30	6/08

Total Suspended Solids (cont)

280	30	6/12
250	30	6/15
250	30	6/25
250	30	6/25
260	30	7/02
250	30	7/12
250	30	7/12
280	30	7/18
270	30	7/24
280	30	8/02
280	30	8/08
280	30	8/10
250	30	8/27
270	30	9/04
290	30	9/17
300	30	9/26
290	30	10/15
290	30	10/19
300	30	10/24
300	30	11/05
300	30	11/06
230	20	11/14
260	30	12/10

****

EPA Strontium in Water
Jan. 1990

****

Sr-90 90EPA 01 PC

CV = 20 + 1.5 pCi/L

Result	Uncer	Date
21	2	3/13
20	2	3/13
20	2	3/13

****

EPA Strontium in Water
May 1990

****

Sr-90 90EPA 01 PC

CV = 7 + 5 pCi/L

Result	Uncer	Date
7.5	0.8	6/14
7.1	0.8	6/14
7.2	0.8	6/14

****

EPA Study 10 (NPDES)

****

Al 90EPA 02 FAA

CV = 1200 + 82 ug/L

Result	Uncer	Date
1300	100	3/27

TABLE C-V (cont)

****

EPA Study 10 (NPDES)
(cont)

****

Al 90EPA 02 ICPMS

CV = 1200 + 82 ug/L

Result	Uncer	Date
1300	100	5/07

As 90EPA 02 FAA

CV = 30 + 2.8 ug/L

Result	Uncer	Date
33	7	4/05

As 90EPA 02 ICPMS

CV = 30 + 2.8 ug/L

Result	Uncer	Date
29	3	5/07

Be 90EPA 02 FAA

CV = 75.6 + 4 ug/L

Result	Uncer	Date
78	8	3/27

Be 90EPA 02 ICPMS

CV = 75.6 + 4 ug/L

Result	Uncer	Date
80	8	5/07

Biological Oxygen Demand ISE
90EPA 02

CV = 50.9 + 7.3 mg/L

Result	Uncer	Date
57	6	4/01

Cd 90EPA 02 FAA

CV = 300 + 16 ug/L

Result	Uncer	Date
300	30	4/05

Cd 90EPA 02 ICPMS

CV = 300 + 16 ug/L

Result	Uncer	Date
29	3	5/07
30	3	5/07

CN 90EPA 02 ACOLR

CV = 0.055 + 0.01 mg/L

Result	Uncer	Date
0.0450	0.01	4/12

Co 90EPA 02 FAA

CV = 750 + 33 ug/L

Result	Uncer	Date
750	80	3/27

Co 90EPA 02 ICPMS

CV = 750 + 33 ug/L

Result	Uncer	Date
730	70	5/07

Chemical Oxygen Demand COLOR
90EPA 02

CV = 76.2 + 5.9 mg/L

Result	Uncer	Date
72	14	3/15
70	14	3/15

Cr 90EPA 02 FAA

CV = 50 + 4 ug/L

Result	Uncer	Date
50	10	4/05

Cr 90EPA 02 ICPMS

CV = 50 + 4 ug/L

Result	Uncer	Date
44	4	5/07
43	4	5/07

Cu 90EPA 02 FAA

CV = 85 + 3.6 ug/L

Result	Uncer	Date
87	9	4/05

Cu 90EPA 02 ICPMS

CV = 85 + 3.6 ug/L

Result	Uncer	Date
85	9	5/07
84	8	5/07

Fe 90EPA 02 FAA

CV = 650 + 30 ug/L

Result	Uncer	Date
660	70	4/05

Fe 90EPA 02 ICPMS

CV = 650 + 30 ug/L

Result	Uncer	Date
640	60	5/07
600	60	5/07

Hg 90EPA 02 CVAA

CV = 7 + 0.59 ug/L

Result	Uncer	Date
6.8	0.8	4/05

Mn 90EPA 02 FAA

CV = 200 + 6 ug/L

Result	Uncer	Date
200	20	3/27

Mn 90EPA 02 ICPMS

CV = 200 + 6 ug/L

Result	Uncer	Date
170	20	5/07

NH3-N 90EPA 02 FIA

CV = 3.6 + 0.26 mg/L

Result	Uncer	Date
3.5	0.4	4/12

Ni 90EPA 02 FAA

CV = 200 + 9 ug/L

Result	Uncer	Date
210	20	3/27
210	20	3/27

Ni 90EPA 02 ICPMS

CV = 200 + 9 ug/L

Result	Uncer	Date
200	20	5/07
200	20	5/07

NO3-N 90EPA 02 FIA

CV = 2.2 + 0.16 mg/L

Result	Uncer	Date
2.1	0.2	4/12

OIL/GREASE 90EPA 02 GRAV

CV = 18 + 2.1 mg/L

Result	Uncer	Date
14	3	3/15

P 90EPA 02 ACOLR

CV = 9 + 0.6 mg/L

Result	Uncer	Date
7.3	1.5	4/12

Pb 90EPA 02 FAA

CV = 100 + 8 ug/L

Result	Uncer	Date
97	10	4/05

Pb 90EPA 02 ICPMS

CV = 100 + 8 ug/L

Result	Uncer	Date
93	9	5/07
95	10	5/07

pH 90EPA 02 GE

CV = 6 + 0.04 units

Result	Uncer	Date
6.05	0.1	3/30

PO4-P 90EPA 02 ACOLR

CV = 4.5 + 0.2 mg/L

Result	Uncer	Date
3.8	0.8	4/12

Se 90EPA 02 ETVAA

CV = 70 + 5.6 ug/L

Result	Uncer	Date
68	14	4/05

Se 90EPA 02 ICPMS

CV = 70 + 5.6 ug/L

Result	Uncer	Date
58	6	5/07

Total Suspended Solids GRAV
90EPA 02

CV = 73 + 2.8 mg/L

Result	Uncer	Date
79	8	4/01

V 90EPA 02 ETVAA

CV = 1150 + 51 ug/L

Result	Uncer	Date
1200	10u	4/10

V 90EPA 02 ICPMS

CV = 1150 + 51 ug/L

Result	Uncer	Date
1000	100	5/07

Zn 90EPA 02 FAA

CV = 900 + 36 ug/L

Result	Uncer	Date
850	90	4/05

Zn 90EPA 02 ICPMS

CV = 900 + 36 ug/L

Result	Uncer	Date
860	90	5/07

****

EPA Total Residual Chlorine
in Water

****

Cl2(Free) 88EPA 02 PTITR

CV = 0.602 + 0.104 mg/L

Result	Uncer	Date
0.54	0.05	5/25

****

EPA Trace Metals in Water

****

Ag 83EPA 02 ETVAA

CV = 0.99 + 0.1 mg/L

Result	Uncer	Date
0.9	0.5	1/19

Al 84EPA 02, 88EPA 01 ICPMS

CV = 110 + 20 ug/L

Result	Uncer	Date
169	9	4/11

CV = 500 + 40 ug/L

Result	Uncer	Date
505	25	4/11
505	25	4/11
521	25	4/11
569	25	4/11
569	25	4/11
486	25	4/11
470	50	10/05
530	50	10/05
530	50	10/05

As ETVAA
76EPA 02, 84EPA 02,
88EPA 01, 90GAU 04

CV = 27 + 3 ug/L

Result	Uncer	Date
30	3	1/22
29	6	1/25
28	6	1/25
29	3	2/06
29	6	2/06
29	6	2/06
32	6	2/06
29	3	2/06
30	3	2/06
30	3	2/06
30	3	2/06
30	3	2/06
30	6	2/08
31	6	2/08
29	6	2/09
29	6	2/09
28	6	2/09
30	6	2/09
29	6	2/21
30	6	2/21
30	6	2/23
29	6	3/06
29	6	3/07
31	6	3/19
31	6	3/19
27	5	3/29
26	5	3/29
31	6	4/05
27	5	4/05
26	5	4/05
27	5	4/05
29	6	4/05
30	3	4/16
30	6	4/25
31	3	5/01
31	3	5/01
31	2	6/08
31	2	6/08
31	3	6/08
31	6	7/24

CV = 50 + 5 ug/L

Result	Uncer	Date
45	5	6/28

TABLE C-V (cont)

****

EPA Trace Metals in Water
(cont)

****

As (cont)

CV = 51 + 4 ug/L

Result	Uncer	Date
52	10	8/08
53	10	8/08
50	10	8/08
52	10	8/08
50	10	8/08
54	10	8/08
53	10	8/08
49	5	8/13
52	10	8/23
53	10	8/23
52	10	8/23
51	10	8/23
49	10	8/23
51	10	8/23
49	5	8/30
49	5	8/30
49	5	8/30
50	10	10/09
51	11	10/09
49	10	10/09
53	11	10/09
48	10	10/25
50	10	10/25
46	9	10/25
51	10	10/25
51	10	11/02
52	10	11/02
49	10	11/02
46	10	11/02
52	11	11/21
49	10	11/21

CV = 100 + 10 ug/L

Result	Uncer	Date
86	9	2/09
120	10	2/09
94	9	2/09

As 88EPA 02 FAA

CV = 1.0 + 0.1 mg/L

Result	Uncer	Date
0.9	0.1	1/24

As 88EPA 01 ICPMS

CV = 100 + 10 ug/L

Result	Uncer	Date
110	10	10/05
110	10	10/05
99	10	10/05
99	10	10/05

Ba 83EPA 02, 86EPA 02 FAA

CV = 5.00 + 0.35 mg/L

Result	Uncer	Date
4.9	0.5	4/06
5.0	0.5	4/06
4.9	0.5	4/06
5.1	0.5	8/13
5.0	0.5	12/14

CV = 10.0 + 0.5 mg/L

Result	Uncer	Date
9.9	5	1/18

Ba 90GAU 04 ICPES

CV = 330 + 30 ug/L

Result	Uncer	Date
410	40	7/24
380	40	7/24
380	40	12/11

Be 88EPA 01, 88EPA 02 FAA

CV = 100 + 5 ug/L

Result	Uncer	Date
100	10	2/28
100	10	2/28
110	10	3/27
100	10	3/27
100	10	3/27
100	10	3/27
100	10	5/29
100	30	6/08
100	10	8/10
100	10	8/10
100	10	8/16
100	10	8/24
90	10	8/27
90	10	8/27
90	10	8/29
120	10	8/29
100	10	9/06
100	10	9/12
110	10	9/18
110	10	9/18
90	10	9/19
90	10	9/25
90	10	10/02
110	10	10/05
100	10	10/12
96	10	10/12
96	10	10/17
96	10	10/17
90	10	10/29
100	10	11/05
100	10	11/05
100	10	11/05
100	10	11/26
100	10	11/29
100	10	12/12

Be (cont)

CV = 1.0 + 0.1 mg/L

Result	Uncer	Date
1.0	0.1	1/25
1.0	0.1	1/25
0.9	0.1	1/25
0.9	0.1	1/29
1.0	0.1	2/22
1.0	0.1	2/27
0.9	0.1	3/01
0.9	0.1	3/02
0.9	0.1	3/06
0.9	0.1	3/12
0.9	0.1	3/13
0.9	0.1	3/14
0.9	0.1	3/15
1.0	0.1	3/21
1.0	0.1	3/22
1.0	0.1	4/09
1.1	0.1	4/17
1.1	0.5	4/17
1.0	0.1	4/20
0.9	0.1	4/23
0.9	0.1	5/07
0.99	0.1	8/10
0.98	0.1	8/10
1.0	0.1	8/16
0.99	0.1	8/24
1.0	0.1	8/27
1.0	0.1	8/27
1.0	0.1	8/29
1.0	0.1	8/29
1.0	0.1	9/06
0.99	0.1	9/12
1.0	0.1	9/18
1.0	0.1	9/18
1.0	0.1	9/19
1.0	0.1	9/25
1.0	0.1	10/02
1.0	0.1	10/05
0.96	0.1	10/17
0.96	0.1	10/17
0.97	0.1	10/29
1.0	0.1	11/02
1.0	0.1	11/05
1.0	0.1	11/05
1.0	0.1	11/05
1.0	0.1	11/06
0.97	0.1	11/14
0.95	0.1	11/14
1.0	0.1	11/26
1.0	0.1	11/29
1.0	0.1	12/12
0.96	0.1	12/12
1.0	0.1	12/12
1.0	0.1	12/21
1.0	0.1	12/21
1.0	0.1	12/21
1.0	0.1	12/21

Be 88EPA 01 ICPMS

CV = 100 + 5 ug/L

Result	Uncer	Date
98.1	5	3/09
82.8	4.4	3/09
82.8	4.2	3/09
97	10	10/05
97	10	10/05

Cd 88EPA 02 AAC

CV = 1.0 + 0.1 mg/L

Result	Uncer	Date
1.1	0.1	2/07

Cd 84EPA 02, 88EPA 01, 88EPA 02 ETVAA

CV = 9 + 1 ug/L

Result	Uncer	Date
8.6	0.9	1/10
7.2	1.4	2/09
8	1.6	2/09
7.8	1.6	2/09
7.3	1.4	2/09
9.2	1.8	4/24
9.7	2	4/24
9.3	1.9	4/24
10	2	7/03
10	2	8/03
9.2	1.8	8/03

CV = 25 + 2 ug/L

Result	Uncer	Date
20	4	7/03

CV = 1.0 + 0.1 mg/L

Result	Uncer	Date
1.0	0.2	2/09
0.9	0.1	3/26
0.9	0.1	3/26

Cd 84EPA 02, 88EPA 01, 88EPA 02 FAA

CV = 9 + 1 ug/L

Result	Uncer	Date
9.9	1	6/21

CV = 25 + 2 ug/L

Result	Uncer	Date
25	3	2/09
25	3	2/09
27	6	3/07
26	10	4/25
21	10	6/12
22	10	8/13
22	3	11/28
22	3	11/28
25	3	12/17
25	3	12/17

CV = 1.0 + 0.1 mg/L

Result	Uncer	Date
1.0	0.1	1/25
1.0	0.1	1/29
1.0	0.1	10/24
1.0	0.1	11/28

Cd 88EPA 01 ICPMS

CV = 25 + 2 ug/L

Result	Uncer	Date
24	5	4/03
25	5	4/03
23	2	10/05
25	3	10/05
25	3	10/05
25	3	10/05
25	3	10/05

Co 88EPA 01 FAA

CV = 100 + 6 ug/L

Result	Uncer	Date
110	10	3/27
110	10	3/27
110	10	3/27
110	10	3/27
110	10	3/27

Co 88EPA 01 ICPMS

CV = 100 + 6 ug/L

Result	Uncer	Date
91	9	10/05
91	9	10/05
95	10	10/05

Cr 78EPA 02, 84EPA 02, 88EPA 01 ETVAA

CV = 7 + 1 ug/L

Result	Uncer	Date
7.5	1.6	1/10
6.2	1.2	1/10
7.1	1.4	2/09
7.6	1.6	2/09
7.4	1.4	2/09
6.2	1.2	2/09
7.8	1.0	4/25
8.3	1.0	5/01
6.7	1.0	5/09
8.1	1.8	5/09
8.9	1.8	7/03
13	3	8/03

CV = 53 + 4 ug/L

Result	Uncer	Date
56	10	9/25

CV = 100 + 8 ug/L

Result	Uncer	Date
110	20	7/03

Cr 84EPA 02, 88EPA 01, 88EPA 02 FAA

CV = 7 + 1 ug/L

Result	Uncer	Date
6.9	2	6/21

Cr (cont)

CV = 100 + 8 ug/L

Result	Uncer	Date
99	10	1/12
100	10	1/12
110	10	2/09
100	10	2/09
95	10	3/07
100	10	3/12
98	10	3/12
96	40	8/13
100	10	8/24
90	10	9/07
110	10	10/09
96	10	10/19
110	10	12/17
110	10	12/17
110	10	12/17
110	10	12/17

CV = 1.0 + 0.1 mg/L

Result	Uncer	Date
0.9	0.5	1/19
0.9	0.1	4/23
1.0	0.1	8/24
1.0	0.1	9/07
1.0	0.1	10/24

Cr 88EPA 01 ICPMS

CV = 100 + 8 ug/L

Result	Uncer	Date
99	10	10/05
99	10	10/05
98	10	10/05
98	10	10/05
90	9	10/05
91	9	10/05

Cu 88EPA 01 FAA

CV = 100 + 5 ug/L

Result	Uncer	Date
100	10	1/10
106	10	1/10
98	10	2/09
100	10	2/09
99	10	2/09
100	10	2/09
100	10	2/09
100	10	4/25
100	10	4/30
100	10	4/30
110	10	4/30
110	10	4/30
96	10	5/01
100	10	5/09
110	10	5/09
100	10	6/19
100	10	6/19
100	10	6/21
100	10	7/02
100	10	7/03
110	10	7/03
100	10	7/03
110	10	7/03
110	10	7/03
110	10	8/03
100	10	8/03

TABLE C-V (cont)

****

EPA Trace Metals in Water
(cont)

****

Cu (cont)

100	10	8/03
100	10	8/03
110	10	11/02
98	10	12/19

Cu 88EPA 01 ICPMS

CV = 100 + 5 ug/L

Result	Uncer	Date
87.6	4.4	3/09
87.6	4.4	3/09
97.5	2.5	3/13
98	10	10/05
98	10	10/05
92	9	10/05
91	9	10/05

Fe 88EPA 01, 88EPA 02 FAA

CV = 100 + 9 ug/L

Result	Uncer	Date
89	20	1/10
120	20	1/10
100	20	2/09
94	20	2/09
99	20	2/09
110	20	2/09
99	20	2/09
100	20	2/09
100	20	2/09
98	20	2/09
110	20	2/09
100	10	2/23
100	10	3/12
110	10	3/12
100	10	4/25
110	10	4/30
95	10	4/30
95	10	4/30
110	10	4/30
110	10	5/01
110	10	5/07
100	10	5/07
110	10	5/07
110	10	5/07
100	10	5/07
110	10	5/09
110	10	5/09
110	10	5/11
100	10	5/11
100	10	5/11
100	10	5/11
100	20	6/08
110	10	6/19
110	20	6/21
110	10	6/26
100	10	7/02
100	10	7/03
110	10	7/03
99	10	7/03
89	9	7/03
100	10	7/03
110	10	8/03
98	10	8/03
94	9	8/03

Fe (cont)

100	10	8/03
120	10	10/09
110	10	10/09
110	10	10/09
99	20	10/19
100	20	10/19
120	10	12/19

CV = 1.0 + 0.1 mg/L

Result	Uncer	Date
1.0	0.1	3/19
1.0	0.5	3/23
1.0	0.1	5/09

Fe 88EPA 01 ICPMS

CV = 100 + 9 ug/L

Result	Uncer	Date
100	10	8/02

Hg 88GAU 04 CVAA

CV = 16.0 + 1.7 ug/L

Result	Uncer	Date
14	2	2/21
14	2	2/21
18	2	3/23
17	3	5/02

Mn 88EPA 01, 88EPA 02 FAA

CV = 100 + 5 ug/L

Result	Uncer	Date
100	10	3/12
100	10	3/12
100	10	3/27
110	10	3/27
110	10	3/27
100	10	3/27
110	10	3/27

CV = 1.0 + 0.1 mg/L

Result	Uncer	Date
0.9	0.1	3/16
0.9	0.5	3/22

Mn 88EPA 01 ICPMS

CV = 100 + 5 ug/L

Result	Uncer	Date
110	10	10/05
110	10	10/05
98	10	10/05
110	10	10/05
98	10	10/05

Ni 88EPA 01, 88EPA 02 FAA

CV = 100 + 6 ug/L

Result	Uncer	Date
110	40	1/30
110	40	1/30
96	40	1/30
100	10	3/12
110	10	3/12
110	10	3/27
94	10	3/27
110	10	3/27
93	10	3/27
99	10	6/19
93	40	8/13
110	10	10/19

CV = 1.0 + 0.1 mg/L

Result	Uncer	Date
1.0	0.5	1/19
1.0	0.5	4/20
1.1	0.1	5/09

Ni 88EPA 01 ICPMS

CV = 100 + 6 ug/L

Result	Uncer	Date
83.4	4.2	3/09
95.9	5	3/09
83.4	4.4	3/09
90	9	10/05
93	9	10/05
100	10	10/05
95	10	10/05
100	10	10/05

Pb 84EPA 02, 88EPA 01 ETVAA

CV = 43 + 4 ug/L

Result	Uncer	Date
41	4	1/10
45	9	2/09
43	9	2/09
41	8	2/09
41	8	2/09
45	9	4/24
42	8	4/24

CV = 100 + 8 ug/L

Result	Uncer	Date
100	20	7/03

Pb 84EPA 02, FAA
88EPA 01, 88EPA 02

CV = 43 + 4 ug/L

Result	Uncer	Date
47	10	6/21

Pb (cont)

CV = 100 + 8 ug/L

Result	Uncer	Date
100	10	2/09
93	9	2/09
91	10	3/07
100	10	4/04
110	50	4/25
110	50	5/01
110	10	6/19
110	10	6/19
110	10	6/19
110	10	7/02
90	10	8/09
90	10	8/09
120	10	8/10
100	50	8/13
100	10	8/20
100	10	8/24
100	10	9/13
110	10	9/20
100	10	9/20
100	10	9/20
110	10	9/26
110	10	10/29
110	10	10/30
110	10	11/28
100	10	11/28
110	10	12/17
110	10	12/17

CV = 1.0 + 0.1 mg/L

Result	Uncer	Date
0.9	0.5	1/17
0.9	0.5	1/17
0.9	0.5	1/17
0.9	0.5	1/24
0.9	0.5	1/24
0.9	0.5	1/24
1.0	0.1	1/25
1.0	0.5	1/25
0.9	0.5	2/21
1.0	0.5	2/21
0.9	0.2	3/01
1.2	0.5	3/01
0.9	0.5	3/06
0.9	0.5	3/15
1.0	0.5	3/27
0.9	0.5	4/10
1.0	0.5	4/24
1.0	0.5	4/27
1.0	0.5	5/11
1.1	0.5	8/09
1.0	0.1	8/10
0.9	0.1	8/20
1.0	0.1	8/24
0.97	0.1	9/13
1.0	0.1	9/20
1.2	0.1	9/26
1.2	0.1	9/26
1.0	0.1	10/24
1.0	0.1	10/29
1.0	0.1	10/30
1.0	0.1	11/28
1.0	0.1	11/28
0.99	1	12/11
1.0	0.1	12/21
1.0	0.1	12/21

Pb 88EPA 01 ICPMS

CV = 100 + 8 ug/L

Result	Uncer	Date
120	6	3/09
96	5	3/09
120	6	3/09
103	3	3/13
103	3	3/13
95	10	10/05
97	10	10/05
94	9	10/05

Sb 83EPA 01 ETVAA

CV = 8.5 + 0.7 ug/L

Result	Uncer	Date
8.5	1.0	4/25
8.4	2.0	5/01
8.7	5.0	6/21
9.6	1.9	8/06
9.3	1.9	8/06
10	2	11/02

Se ETVAA
78EPA 02, 84EPA 02,
88EPA 02, 90GAU 04

CV = 8.1 + 1.1 ug/L

Result	Uncer	Date
8.2	1.6	8/08
8.6	1.8	8/08
8.1	1.6	8/08
8.1	1.6	8/08
8.1	1.6	8/08
8.5	1.8	8/08
8.5	1.9	8/08
7.9	1.6	8/08
7.5	1.0	8/13
8.6	1.9	8/23
8.4	1.6	8/23
8.1	1.6	8/23
8.2	1.6	8/23
7.6	1.6	8/23
8.3	1.6	8/23
8.4	1.0	8/30
8.1	1.0	8/30
9.9	1.0	8/30
8.6	2.0	10/09
8.0	2.0	10/09
7.7	2.0	10/09
11	2.0	10/09
7.8	2.0	10/25
8.0	2.0	10/25
10	2.0	10/25
7.7	2.0	10/25
7.4	2.0	10/25
8.4	2.0	10/25
8.2	2.0	10/25
8.0	2.0	11/02
8.1	2.0	11/02
7.5	2.0	11/02
8.0	2.0	11/02
8.1	2.0	11/21
7.6	2.0	11/21

Se (cont)

CV = 11 + 2 ug/L

Result	Uncer	Date
12	1	1/22
11	2	1/25
11	2	1/25
10	1	2/06
12	1	2/06
11	1	2/06
11	1	2/06
12	1	2/06
12	1	2/06
11	1	2/06
12	2	2/08
12	2	2/08
12	3	2/09
11	3	2/09
13	3	2/09
13	3	2/09
13	3	2/09
9.6	2	2/21
10	2	2/21
10	2	2/23
11	2	3/19
12	2	3/19
11	2	3/29
11	2	3/29
10	2	4/05
10	2	4/05
8.9	1.8	4/05
11	2	4/05
10	1	4/16
11	2	4/25
13	2	5/01
11	1	5/01
9.7	1	5/07
9.7	1	5/07
11.3	1	5/07
10	1	5/07
10.7	1	5/07
11.4	1	5/07
9.3	1	5/07
10	1	5/07
10	2	5/09
11	2	5/09
11	1	5/11
11.2	1	5/11
11	1	5/11
11	1	5/11
11	1	5/11
11	1	5/11
9.3	1	6/08
9.2	1	6/08
9.1	1	6/08
9.2	1	6/08
11	2	7/02
11	2	7/02
11	2	7/02
12	2	7/24

CV = 12 + 1 ug/L

Result	Uncer	Date
12	1	6/28

CV = 1.0 + 0.1 mg/L

Result	Uncer	Date
0.74	0.2	2/01

TABLE C-V (cont)

****

EPA Trace Metals in Water
(cont)

****

Se 88EPA 01 ICPMS

CV = 25 + 3 ug/L

Result	Uncer	Date
24	2	10/05
26	3	10/05

Tl 83EPA 01, 88EPA 02 ETVAA

CV = 25 + 3 ug/L

Result	Uncer	Date
24	2	5/29
25	3	6/08
24	2	6/19
23	5	9/18
23	5	9/18
23	5	9/18
22	4	9/18
25	5	10/12
26	5	10/12

CV = 1.0 + 0.1 mg/L

Result	Uncer	Date
0.85	0.1	1/24
0.85	0.1	1/24
1.0	0.5	2/21
1.0	0.1	10/17

V 88EPA 01 ICPMS

CV = 250 + 16 ug/L

Result	Uncer	Date
270	30	10/05

Zn 88EPA 01, 88EPA 02 FAA

CV = 100 + 5 ug/L

Result	Uncer	Date
106	10	1/10
99	10	2/09
100	10	2/09
100	10	2/09
100	10	2/09
100	10	4/25
100	10	4/30
99	10	4/30
99	10	4/30
100	10	4/30
100	10	5/01
99	10	5/11
100	10	5/11
100	10	6/21
100	10	7/03
100	10	7/03
99	10	7/03
100	10	7/03
100	10	7/03

Zn (cont)

110	10	8/03
100	10	8/03
100	10	8/03
113	10	8/03
100	10	9/10
110	10	12/19

CV = 1.0 + 0.1 mg/L

Result	Uncer	Date
1.0	0.1	1/25
0.97	0.1	9/10

Zn 88EPA 01 ICPMS

CV = 100 + 5 ug/L

Result	Uncer	Date
100	10	10/05
96	10	10/05
96	10	10/05
100	10	10/05

****

EPA Tritium in Water Blank
Feb. 1990

****

H-3 90EPA 01 LS

CV = none available pCi/L

Result	Uncer	Date
200	300	3/05
300	300	3/05
300	300	3/05

****

EPA Tritium in Water Blank
June 1990

****

H-3 90EPA 01 LS

CV = none available pCi/L

Result	Uncer	Date
0.0	200	10/31
0.0	200	10/31
- 200	200	10/31

****

EPA Tritium in Water Blank
Oct. 1990

****

H-3 90EPA 01 LS

CV = none available pCi/L

Result	Uncer	Date
500	300	11/13
200	200	11/13
0.0	200	11/13

****

EPA Tritium in Water
Feb. 1990

****

H-3 90EPA 01 LS

CV = 4976 + 498 pCi/L

Result	Uncer	Date
5400	600	3/05
5100	600	3/05
5000	600	3/05

****

EPA Tritium in Water
June 1990

****

H-3 90EPA 01 LS

CV = 2933 + 358 pCi/L

Result	Uncer	Date
3400	400	10/31
3300	400	10/31
3100	400	10/31

****

EPA Tritium in Water
Oct. 1990

****

H-3 90EPA 01 LS

CV = 7203 + 720 pCi/L

Result	Uncer	Date
7100	800	11/13
7400	800	11/13
6900	800	11/13

****

EPA Turbidity in Water

****

Turbidity 78EPA 01 COLOR

CV = 0.82 + 0.18 NTU

Result	Uncer	Date
0.35	0.07	11/09

****

EPA Uranium in Water
Aug. 1989

****

U-235 89EPA 01 DNA

CV = 41 + 6 pCi/L

Result	Uncer	Date
38	4	1/02
39	4	1/02
35	4	1/16
35	4	1/16
30	3	1/29
29	3	1/29
38	4	2/12
36	4	2/12
38	4	2/26
39	4	2/26
37	4	3/12
37	4	3/12

****

EPA Uranium in Water
Feb. 1990

****

U 90EPA 01 DNA

CV = 4 + 6 pCi/L

Result	Uncer	Date
< 4		4/30
< 4		4/30
< 4		4/30

U 90EPA 01 ICPMS

CV = 4 + 6 pCi/L

Result	Uncer	Date
5.4	0.08	4/09
5.4	0.06	4/09
5.5	0.05	4/09

****

EPA Uranium in Water
Aug. 1990

****

U 90EPA 01 DNA

CV = 32 + 5 ug/L

Result	Uncer	Date
17	2	8/30
17	2	8/30
17	2	8/30

U 90EPA 01 ICPMS

CV = 32 + 5 ug/L

Result	Uncer	Date
26	0.3	7/31
25.9	0.7	7/31

U-235 90EPA 01 DNA

CV = 20.8 + 3 pCi/L

Result	Uncer	Date
19	1.7	7/16
19.8	1.8	7/16
16	2	7/30
14	2	7/30
19	3	8/13
18	3	8/13
18	2	8/27
18	2	8/27
20	2	9/10
22	2	9/10
21.8	1.9	9/24
21.9	2	9/24
18	2	10/09
20	2	10/09
20	2	10/22
21	2	10/22
21	2	11/19
22	2	11/19
20	2	12/03
23	2	12/03
15	2	12/17
14	1	12/17
21	2	12/31
20.2	1	12/31

****

EPA Water Pollution Study 22

****

Ag 89EPA 02 ETVAA

CV = 7.3 + 0.7 ug/L

Result	Uncer	Date
9.2	1.8	3/27
9.3	1.8	3/27
9.3	1.8	3/27

Al 89EPA 02 FAA

CV = 350 + 30 ug/L

Result	Uncer	Date
450	50	3/27
400	40	3/27
420	40	3/27
410	40	3/27

Al 89EPA 02 ICPMS

CV = 350 + 30 ug/L

Result	Uncer	Date
340	30	5/14

As 89EPA 02 ETVAA

CV = 45.1 + 3.6 ug/L

Result	Uncer	Date
52	10	4/05
55	11	4/05
45	9	4/05
45	9	4/05

As 89EPA 02 ICPMS

CV = 45.1 + 3.6 ug/L

Result	Uncer	Date
41	4	5/14

Be 89EPA 02 FAA

CV = 400 + 20 ug/L

Result	Uncer	Date
410	40	3/27
420	40	3/27
420	40	3/27
420	40	3/27

Be 89EPA 02 ICPMS

CV = 400 + 20 ug/L

Result	Uncer	Date
440	40	5/14

Cd 89EPA 02 ICPMS

CV = 85.1 + 3.8 ug/L

Result	Uncer	Date
86	9	5/14
90	9	5/14

Co 89EPA 02 FAA

CV = 200 + 10 ug/L

Result	Uncer	Date
190	20	3/27
210	20	3/27
210	20	3/27
210	20	3/27

Co 89EPA 02 ICPMS

CV = 200 + 10 ug/L

Result	Uncer	Date
190	20	5/14

Fe 89EPA 02 ICPMS

CV = 1827 + 68 ug/L

Result	Uncer	Date
1700	200	5/14
1800	200	5/14

Mn 89EPA 02 FAA

CV = 292 + 11 ug/L

Result	Uncer	Date
320	30	3/27
320	30	3/27
320	30	3/27

TABLE C-V (cont)

****

EPA Water Pollution Study 22 (cont)

****

Mn 89EPA 02 ICPMS

CV = 292 + 11 ug/L

Result	Uncer	Date
250	30	5/14

Mo 89EPA 02 ICPMS

CV = 7.04 + 1.7 ug/L

Result	Uncer	Date
6	1	5/14
6.2	1	5/14
5.9	1	5/14

Ni 89EPA 02 FAA

CV = 370 + 20 ug/L

Result	Uncer	Date
400	40	3/27
410	40	3/27
400	40	3/27
400	40	3/27

Ni 89EPA 02 ICPMS

CV = 370 + 20 ug/L

Result	Uncer	Date
366	34	5/14
370	40	5/14

Pb 89EPA 02 ETVAA

CV = 91.9 + 7.4 ug/L

Result	Uncer	Date
110	20	7/03
100	20	7/03

Pb 89EPA 02 FAA

CV = 91.9 + 7.4 ug/L

Result	Uncer	Date
90	9	4/04

Pb 89EPA 02 ICPMS

CV = 415 + 27 ug/L

Result	Uncer	Date
420	40	5/14
400	40	5/14

Se 89EPA 02 ETVAA

CV = 48 + 5.9 ug/L

Result	Uncer	Date
43	9	3/29
44	9	4/05
51	10	4/05

Se 89EPA 02 ICPMS

CV = 48 + 5.9 ug/L

Result	Uncer	Date
37	4	5/14

Sr 89EPA 02 ICPMS

CV = 24.4 + 2 ug/L

Result	Uncer	Date
20	2	5/14
24	2	5/14

Tl 89EPA 02 FAA

CV = 12.8 + 1.4 ug/L

Result	Uncer	Date
11	2	7/09

CV = 91.2 + 9.2 ug/L

Result	Uncer	Date
78	16	7/09

Tl 89EPA 02 ICPMS

CV = 12.8 + 1.4 ug/L

Result	Uncer	Date
15	2	5/14

Zn 89EPA 02 ICPMS

CV = 401 + 21 ug/L

Result	Uncer	Date
370	40	5/14
320	30	5/14

****

EPA Water Pollution Study 24

****

Ag 90EPA 02 ETVAA

CV = 1.68 + 0.18 ug/L

Result	Uncer	Date
2.15	0.2	4/11

Ag (cont)

CV = 4.43 + 0.38 ug/L

Result	Uncer	Date
5.41	0.5	4/11

Al 90EPA 02 FAA

CV = 750 + 54 ug/L

Result	Uncer	Date
81	8	3/27

Original result recorded in lab notebook was 0.813 mg/L, which is 813 ug/L. Analyst made typo in data entry.

CV = 1200 + 82 ug/L

Result	Uncer	Date
1300	100	3/27

As 90EPA 02 ETVAA

CV = 30 + 2.8 ug/L

Result	Uncer	Date
32	6	4/05
29	6	12/07
33	7	12/10
32	6	12/10
26	5	12/10

CV = 180 + 13 ug/L

Result	Uncer	Date
190	40	4/05
180	40	12/18
180	40	12/18

As 90EPA 02 ICPMS

CV = 30 + 2.8 ug/L

Result	Uncer	Date
28	3	5/11

CV = 180 + 13 ug/L

Result	Uncer	Date
180	20	5/11

Be 90EPA 02 FAA

CV = 75.6 + 4 ug/L

Result	Uncer	Date
77	8	3/27

CV = 180 + 9 ug/L

Result	Uncer	Date
187	17	3/27

Be 90EPA 02 ICPMS

CV = 75.6 + 4 ug/L

Result	Uncer	Date
87	9	5/08

CV = 180 + 9 ug/L

Result	Uncer	Date
220	20	5/11

Ca 90EPA 02 ICPES

CV = 12.9 + 0.5 mg/L

Result	Uncer	Date
12	1	3/21

CV = 41 + 1.4 mg/L

Result	Uncer	Date
39	4	3/21

Cd 90EPA 02 FAA

CV = 110 + 5 ug/L

Result	Uncer	Date
120	20	4/05
120	10	12/17
120	10	12/17

CV = 300 + 16 ug/L

Result	Uncer	Date
310	60	4/05

Cd 90EPA 02 ICPMS

CV = 110 + 5 ug/L

Result	Uncer	Date
110	10	5/11
110	10	5/11

CV = 300 + 16 ug/L

Result	Uncer	Date
290	30	5/11
290	30	5/11

Cl 90EPA 02 ACOLR

CV = 95 + 2.4 mg/L

Result	Uncer	Date
92	9	3/30

CV = 194 + 5 mg/L

Result	Uncer	Date
190	20	3/30

Cl2(Free) 90EPA 02 PTITR

CV = 0.22 + 0.04 mg/L

Result	Uncer	Date
0.21	0.04	4/01

CV = 1.5 + 0.15 mg/L

Result	Uncer	Date
1.4	0.3	4/01

CN 90EPA 02 ACOLR

CV = 0.055 + 0.01 mg/L

Result	Uncer	Date
0.04	0.01	3/30

CV = 0.7 + 0.068 mg/L

Result	Uncer	Date
0.52	0.05	3/30

Co 90EPA 02 FAA

CV = 300 + 14 ug/L

Result	Uncer	Date
300	30	3/27

CV = 750 + 33 ug/L

Result	Uncer	Date
740	70	3/27

Co 90EPA 02 ICPMS

CV = 300 + 14 ug/L

Result	Uncer	Date
310	30	5/11
290	30	5/11

CV = 750 + 33 ug/L

Result	Uncer	Date
750	80	5/11

Chemical Oxygen Demand 90EPA 02 COLOR

CV = 50 + 4.4 mg/L

Result	Uncer	Date
40	10	3/15
38	10	3/15

CV = 76.2 + 5.9 mg/L

Result	Uncer	Date
70	14	3/15
72	14	3/15

Conductivity 90EPA 02 CB

CV = 715 + 26 umhos/cm

Result	Uncer	Date
645	32	3/30

CV = 728 + 24 umhos/cm

Result	Uncer	Date
692	35	3/30

Cr 90EPA 02 FAA

CV = 50 + 4 ug/L

Result	Uncer	Date
51	11	4/05

CV = 700 + 43 ug/L

Result	Uncer	Date
619	12	4/05
750	80	12/17
740	70	12/17
740	70	12/17
750	80	12/17

Cr 90EPA 02 ICPMS

CV = 50 + 4 ug/L

Result	Uncer	Date
46	5	5/11
48	5	5/11

CV = 700 + 43 ug/L

Result	Uncer	Date
630	60	5/11
590	60	5/11

Cu 90EPA 02 FAA

CV = 85 + 3.6 ug/L

Result	Uncer	Date
85	9	4/05

CV = 500 + 17 ug/L

Result	Uncer	Date
500	50	4/05
520	50	12/19

Cu 90EPA 02 ICPMS

CV = 85 + 3.6 ug/L

Result	Uncer	Date
84	8	5/11
88	9	5/11

TABLE C-V (cont)

****

EPA Water Pollution Study 24
(cont)

****

Cu (cont)

CV = 500 + 17 ug/L

Result	Uncer	Date
490	50	5/11
470	50	5/11

F 90EPA 02 ISE

CV = 0.58 + 0.04 mg/L

Result	Uncer	Date
0.67	0.07	3/13
0.67	0.07	3/13

CV = 2.3 + 0.08 mg/L

Result	Uncer	Date
2.3	0.2	3/13
2.3	0.2	3/13

Fe 90EPA 02 FAA

CV = 650 + 30 ug/L

Result	Uncer	Date
670	70	4/05

CV = 1650 + 73 ug/L

Result	Uncer	Date
1600	200	4/05
1800	200	12/19

Fe 90EPA 02 ICPMS

CV = 650 + 30 ug/L

Result	Uncer	Date
640	60	5/11
630	60	5/11

CV = 1650 + 73 ug/L

Result	Uncer	Date
1500	200	5/11

Hardness 90EPA 02 CALC

CV = 56.1 + 2.3 mg/L

Result	Uncer	Date
56	6	3/27

CV = 267 + 7 mg/L

Result	Uncer	Date
270	30	3/27

Hg 90EPA 02 CVAA

CV = 1.25 + 0.19 ug/L

Result	Uncer	Date
1.4	0.2	4/05

CV = 7 + 0.59 ug/L

Result	Uncer	Date
7.1	0.7	4/05

K 90EPA 02 ICPES

CV = 7 + 0.46 mg/L

Result	Uncer	Date
7.5	0.8	3/21

CV = 24 + 1.2 mg/L

Result	Uncer	Date
24	2	3/21

Mg 90EPA 02 ICPES

CV = 5.8 + 0.29 mg/L

Result	Uncer	Date
6.2	0.6	3/21

CV = 40 + 2 mg/L

Result	Uncer	Date
43	4	3/21

Mn 90EPA 02 FAA

CV = 200 + 6 ug/L

Result	Uncer	Date
200	20	3/27

CV = 650 + 20 ug/L

Result	Uncer	Date
670	70	3/27

Mn 90EPA 02 ICPMS

CV = 200 + 6 ug/L

Result	Uncer	Date
180	20	5/11
180	20	5/11

CV = 650 + 20 ug/L

Result	Uncer	Date
630	60	5/11

Mo 90EPA 02 ICPMS

CV = 3.2 + 0.91 ug/L

Result	Uncer	Date
4.1	1	4/05
2.7	1	5/11
3.4	1	5/11
3.2	1	5/11

CV = 73.6 + 9.3 ug/L

Result	Uncer	Date
80	8	4/05
70	7	5/11
69	7	5/11
71	7	5/11

Na 90EPA 02 ICPES

CV = 6.72 + 0.37 mg/L

Result	Uncer	Date
6.7	0.7	3/21

CV = 123 + 4 mg/L

Result	Uncer	Date
120	10	3/21

NH3-N 90EPA 02 FIA

CV = 3.6 + 0.26 mg/L

Result	Uncer	Date
3.4	0.3	3/30

CV = 11 + 0.7 mg/L

Result	Uncer	Date
11	1	3/30

Ni 90EPA 02 FAA

CV = 200 + 9 ug/L

Result	Uncer	Date
200	20	3/27

CV = 800 + 34 ug/L

Result	Uncer	Date
780	80	3/27

Ni 90EPA 02 ICPMS

CV = 200 + 9 ug/L

Result	Uncer	Date
210	20	5/11
200	20	5/11

Ni (cont)

CV = 800 + 34 ug/L

Result	Uncer	Date
770	80	5/11
800	80	5/11

NO3-N 90EPA 02 FIA

CV = 2.2 + 0.16 mg/L

Result	Uncer	Date
2.3	0.2	3/30

CV = 6.5 + 0.39 mg/L

Result	Uncer	Date
6.6	0.7	3/30

OIL/GREASE 90EPA 02 GRAV

CV = 10 + 1.9 mg/L

Result	Uncer	Date
6.8	1.4	3/15

CV = 18 + 2.1 mg/L

Result	Uncer	Date
13	3	3/15

P 90EPA 02 ACOLR

CV = 4 + 0.26 mg/L

Result	Uncer	Date
3.3	0.7	3/30

CV = 9 + 0.6 mg/L

Result	Uncer	Date
6.9	1.4	3/30

Pb 90EPA 02 FAA

CV = 100 + 8 ug/L

Result	Uncer	Date
98.2	9	4/05

CV = 275 + 12 ug/L

Result	Uncer	Date
280	30	4/05
290	30	12/17
290	30	12/17

Pb 90EPA 02 ICPMS

CV = 100 + 8 ug/L

Result	Uncer	Date
95	10	5/11
91	9	5/11

Pb (cont)

CV = 275 + 12 ug/L

Result	Uncer	Date
260	30	5/11
260	30	5/11

pH 90EPA 02 GE

CV = 6 + 0.04 units

Result	Uncer	Date
6	0.1	3/30

CV = 8.5 + 0.11 units

Result	Uncer	Date
8.49	0.1	3/30

PO4-P 90EPA 02 ACOLR

CV = 0.95 + 0.06 mg/L

Result	Uncer	Date
0.81	0.16	3/30

CV = 4.5 + 0.2 mg/L

Result	Uncer	Date
4.1	0.8	3/30

Sb 90EPA 02 ICPMS

CV = 19.6 + 2.8 ug/L

Result	Uncer	Date
21	2	4/05
140	10	5/11
140	10	5/11

CV = 70.4 + 7 ug/L

Result	Uncer	Date
69	7	4/05
550	60	5/11
530	50	5/11

Se 90EPA 02 ETVAA

CV = 16 + 1.7 ug/L

Result	Uncer	Date
16	3	4/05
16	3	12/18
16	3	12/18

CV = 70 + 5.6 ug/L

Result	Uncer	Date
72	7	4/05
72	14	12/07
70	14	12/10
70	14	12/10
72	14	12/10

Se 90EPA 02 ICPMS

CV = 16 + 1.7 ug/L

Result	Uncer	Date
19	2	5/11
20	2	5/11

CV = 70 + 5.6 ug/L

Result	Uncer	Date
71	7	5/11
70	7	5/11

SO4 90EPA 02 ACOLR

CV = 100 + 4.9 mg/L

Result	Uncer	Date
93	9	3/30

SO4 90EPA 02 FIA

CV = 25 + 1.7 mg/L

Result	Uncer	Date
23	2	3/30

Sr 90EPA 02 ICPMS

CV = 1.63 + 0.61 ug/L

Result	Uncer	Date
1.6	1	5/11
1.4	1	5/11
1.5	1	5/11

CV = 57 + 3 ug/L

Result	Uncer	Date
55	6	5/11
56	6	5/11
54	5	5/11

Total Alkalinity TITR
90EPA 02

CV = 9.1 + 1.2 mg/L

Result	Uncer	Date
11	1	3/12
9	1	3/12

CV = 87.5 + 2 mg/L

Result	Uncer	Date
87	9	3/12
90	9	3/12

Total Dissolved Solids GRAV
90EPA 02

CV = 395 + 38 mg/L

Result	Uncer	Date
420	40	3/30

TABLE C-V (cont)

****

EPA Water Pollution Study 24 (cont)

****

Total Dissolved Solids (cont)

CV = 441 + 69 mg/L

Result	Uncer	Date
400	40	3/30

Ti 90EPA 02 ICPMS

CV = 35.3 + 3.5 ug/L

Result	Uncer	Date
35	4	4/05
35	4	5/11
37	4	5/11
35	4	5/11
35	4	5/11

CV = 238 + 15 ug/L

Result	Uncer	Date
220	20	4/05
210	20	5/11
230	20	5/11
220	20	5/11
210	20	5/11

Tl 90EPA 02 ETVAA

CV = 4.75 + 0.66 ug/L

Result	Uncer	Date
4.8	1	4/11

CV = 84.6 + 7.3 ug/L

Result	Uncer	Date
73	7	4/11
80	16	12/11
77	15	12/11

Tl 90EPA 02 ICPMS

CV = 4.75 + 0.66 ug/L

Result	Uncer	Date
4.6	1	5/11
4.4	1	5/11

CV = 84.6 + 7.3 ug/L

Result	Uncer	Date
81	8	5/11
81	8	5/11

Total Suspended Solids 90EPA 02 GRAV

CV = 60 + 2.2 mg/L

Result	Uncer	Date
55	6	3/30

CV = 73 + 2.8 mg/L

Result	Uncer	Date
71	7	3/30

V 90EPA 02 ETVAA

CV = 1150 + 51 ug/L

Result	Uncer	Date
1300	100	4/11

CV = 1900 + 83 ug/L

Result	Uncer	Date
2000	200	4/11

V 90EPA 02 ICPMS

CV = 1150 + 51 ug/L

Result	Uncer	Date
1100	100	5/11
1100	100	5/11

CV = 1900 + 83 ug/L

Result	Uncer	Date
1700	200	5/11
1800	200	5/11

Zn 90EPA 02 FAA

CV = 550 + 23 ug/L

Result	Uncer	Date
540	50	4/05
570	60	12/19

CV = 900 + 36 ug/L

Result	Uncer	Date
860	90	4/05

Zn 90EPA 02 ICPMS

CV = 550 + 23 ug/L

Result	Uncer	Date
500	50	5/11
500	50	5/11

CV = 900 + 36 ug/L

Result	Uncer	Date
850	90	5/11
870	90	5/11

****

EPA Water Pollution Study 25

****

Ag 90EPA 02 FAA

CV = 1.2 + 0.17 ug/L

Result	Uncer	Date
1.2	1	10/10

CV = 12.4 + 1.1 ug/L

Result	Uncer	Date
12	10	10/10

Ag 90EPA 02 ICPMS

CV = 1.2 + 0.17 ug/L

Result	Uncer	Date
1.1	1	10/15

CV = 12.4 + 1.1 ug/L

Result	Uncer	Date
12	1	10/15

Al 90EPA 02 ICPES

CV = 45.7 + 8.5 ug/L

Result	Uncer	Date
57	7	10/29

CV = 1428 + 104 ug/L

Result	Uncer	Date
1400	100	10/29

Al 90EPA 02 ICPMS

CV = 45.7 + 8.5 ug/L

Result	Uncer	Date
34	3	10/15

CV = 1428 + 104 ug/L

Result	Uncer	Date
1500	100	9/20
1400	100	10/15

As 90EPA 02 ETVAA

CV = 51.9 + 4.8 ug/L

Result	Uncer	Date
53	10	10/10

CV = 312 + 23 ug/L

Result	Uncer	Date
320	60	10/10

As 90EPA 02 ICPMS

CV = 51.9 + 4.8 ug/L

Result	Uncer	Date
51	5	10/15

CV = 312 + 23 ug/L

Result	Uncer	Date
330	30	10/15

Be 90EPA 02 ICPES

CV = 20.9 + 1.8 ug/L

Result	Uncer	Date
22	2	10/29

CV = 806 + 57 ug/L

Result	Uncer	Date
820	80	10/29

Be 90EPA 02 ICPMS

CV = 20.9 + 1.8 ug/L

Result	Uncer	Date
24	2	10/15

CV = 806 + 57 ug/L

Result	Uncer	Date
1000	100	10/15

Biologial Oxygen Demand 90EPA 02 TITR

CV = 12.6 + 2.4 mg/L

Result	Uncer	Date
34	5	10/15

CV = 76.6 + 11.9 mg/L

Result	Uncer	Date
110	20	10/15

Ca 90EPA 02 ICPES

CV = none available ug/L

Result	Uncer	Date
< 9		10/29
< 9		10/29

Cd 90EPA 02 ICPES

CV = 6.35 + 0.79 ug/L

Result	Uncer	Date
18	2	10/29

Cd (cont)

CV = 72 + 4.4 ug/L

Result	Uncer	Date
82	8	10/29

Cd 90EPA 02 ICPMS

CV = 6.35 + 0.79 ug/L

Result	Uncer	Date
8	0.8	9/20
7.3	1	10/15

CV = 72 + 4.4 ug/L

Result	Uncer	Date
73	7	10/15

Cl 90EPA 02 IC

CV = 8.66 + 0.46 mg/L

Result	Uncer	Date
8.9	0.9	10/24
8.8	0.9	10/24

CV = 142 + 4 mg/L

Result	Uncer	Date
150	20	10/24
150	20	10/24

CN 90EPA 02 ACOLR

CV = 0.11 + 0.02 mg/L

Result	Uncer	Date
0.1070	0.01	10/23

CV = 0.54 + 0.06 mg/L

Result	Uncer	Date
0.5	0.05	10/23

Co 90EPA 02 ICPES

CV = 27.2 + 1.7 ug/L

Result	Uncer	Date
25	5	10/29

CV = 452 + 27 ug/L

Result	Uncer	Date
460	50	10/29

Co 90EPA 02 ICPMS

CV = 27.2 + 1.7 ug/L

Result	Uncer	Date
24	2	10/15

Co (cont)

CV = 452 + 27 ug/L

Result	Uncer	Date
460	50	10/15

Chemical Oxygen Demand 90EPA 02 COLOR

CV = 18.2 + 3.8 mg/L

Result	Uncer	Date
< 10		10/02

CV = 121 + 10 mg/L

Result	Uncer	Date
120	20	10/02

Conductivity 90EPA 02 CB

CV = 67.8 + 4 umhos/cm

Result	Uncer	Date
61	3.1	10/23
62	3.1	10/23

CV = 770 + 37 umhos/cm

Result	Uncer	Date
742	37	10/23
744	37	10/23

Cr 90EPA 02 ICPES

CV = 11 + 2 ug/L

Result	Uncer	Date
17	2	10/29

CV = 106 + 9.4 ug/L

Result	Uncer	Date
120	10	10/29

Cr 90EPA 02 ICPMS

CV = 11 + 2 ug/L

Result	Uncer	Date
9.1	1	10/15

CV = 106 + 9.4 ug/L

Result	Uncer	Date
85	9	10/15

Cu 90EPA 02 FAA

CV = 25.2 + 2 ug/L

Result	Uncer	Date
30	3	10/10

TABLE C-V (cont)

****

EPA Water Pollution Study 25
(cont)

****

Cu (cont)

CV = 720 + 32 ug/L

Result	Uncer	Date
730	70	10/10

Cu 90EPA 02 ICPMS

CV = 25.2 + 2 ug/L

Result	Uncer	Date
20	2	10/15

CV = 720 + 32 ug/L

Result	Uncer	Date
710	70	10/15

F 90EPA 02 ISE

CV = 0.18 + 0.026 mg/L

Result	Uncer	Date
< 0.2		9/14
< 0.2		9/14

CV = 0.91 + 0.053 mg/L

Result	Uncer	Date
0.84	0.2	9/14
0.84	0.2	9/14

Fe 90EPA 02 FAA

CV = 32.5 + 3.4 ug/L

Result	Uncer	Date
40	20	10/10

CV = 1230 + 60 ug/L

Result	Uncer	Date
1400	100	10/10

Fe 90EPA 02 ICPMS

CV = 32.5 + 3.4 ug/L

Result	Uncer	Date
55	6	10/15

CV = 1230 + 60 ug/L

Result	Uncer	Date
1400	100	10/15

Hg 90EPA 02 CVAA

CV = 6.01 + 0.73 ug/L

Result	Uncer	Date
5.6	0.6	10/10

CV = 44 + 4.2 ug/L

Result	Uncer	Date
44	4	10/10

K 90EPA 02 ICPES

CV = none available ug/L

Result	Uncer	Date
< 180		10/29
< 180		10/29

Mg 90EPA 02 ICPES

CV = none available ug/L

Result	Uncer	Date
< 15		10/29
< 15		10/29

Mn 90EPA 02 FAA

CV = 19.3 + 1.5 ug/L

Result	Uncer	Date
21	20	10/10

CV = 551 + 32 ug/L

Result	Uncer	Date
560	60	10/10

Mn 90EPA 02 ICPMS

CV = 19.3 + 1.5 ug/L

Result	Uncer	Date
16	2	10/15

CV = 551 + 32 ug/L

Result	Uncer	Date
570	60	10/15

Mo 90EPA 02 ICPES

CV = 9.58 + 1.75 ug/L

Result	Uncer	Date
10	1	10/29

CV = 56 + 8.2 ug/L

Result	Uncer	Date
59	6	10/29

Mo 90EPA 02 ICPMS

CV = 9.58 + 1.75 ug/L

Result	Uncer	Date
9.7	1	10/15

CV = 56 + 8.2 ug/L

Result	Uncer	Date
56	6	10/15

Na 90EPA 02 ICPES

CV = none available ug/L

Result	Uncer	Date
100	10	10/29
540	50	10/29

NH3-N 90EPA 02 FIA

CV = 1.6 + 0.16 mg/L

Result	Uncer	Date
1.6	0.2	10/23

CV = 8.76 + 0.69 mg/L

Result	Uncer	Date
9	0.9	10/23

Ni 90EPA 02 ICPES

CV = 41.8 + 3 ug/L

Result	Uncer	Date
42	7	10/29

CV = 940 + 46 ug/L

Result	Uncer	Date
970	100	10/29

Ni 90EPA 02 ICPMS

CV = 41.8 + 3 ug/L

Result	Uncer	Date
36	4	10/15

CV = 940 + 46 ug/L

Result	Uncer	Date
940	90	10/15

NO3-N 90EPA 02 FIA

CV = 0.65 + 0.068 mg/L

Result	Uncer	Date
0.71	0.07	10/23

NO3-N (cont)

CV = 3.2 + 0.26 mg/L

Result	Uncer	Date
3.5	0.4	10/23

OIL/GREASE 90EPA 02 GRAV

CV = 20 + 3.8 mg/L

Result	Uncer	Date
20	4	9/25

CV = 38 + 5.7 mg/L

Result	Uncer	Date
38	7	9/25

P 90EPA 02 ACOLR

CV = 0.625 + 0.069 mg/L

Result	Uncer	Date
0.63	0.13	10/24

CV = 8.2 + 0.74 mg/L

Result	Uncer	Date
6.4	1.3	10/24

Pb 90EPA 02 ICPES

CV = 32.2 + 2.8 ug/L

Result	Uncer	Date
40	11	10/29

CV = 1344 + 107 ug/L

Result	Uncer	Date
1400	100	10/29

Pb 90EPA 02 ICPMS

CV = 32.2 + 2.8 ug/L

Result	Uncer	Date
32	3	10/15

CV = 1344 + 107 ug/L

Result	Uncer	Date
1300	100	10/15

pH 90EPA 02 GE

CV = 4.6 + 0.03 units

Result	Uncer	Date
4.6	0.1	9/24

pH (cont)

CV = 8.33 + 0.15 units

Result	Uncer	Date
8.37	0.1	9/24

Sb 90EPA 02 ETVAA

CV = 24 + 3.7 ug/L

Result	Uncer	Date
24	4	10/10

CV = 157 + 17.5 ug/L

Result	Uncer	Date
160	20	10/10

Sb 90EPA 02 ICPMS

CV = 24 + 3.7 ug/L

Result	Uncer	Date
23	2	10/15

CV = 157 + 17.5 ug/L

Result	Uncer	Date
160	20	10/15

Se 90EPA 02 ETVAA

CV = 30 + 3.9 ug/L

Result	Uncer	Date
31	6	10/10

CV = 130 + 15.6 ug/L

Result	Uncer	Date
130	30	10/10

Se 90EPA 02 ICPMS

CV = 30 + 3.9 ug/L

Result	Uncer	Date
23	2	10/15

CV = 130 + 15.6 ug/L

Result	Uncer	Date
130	10	10/15

SO4 90EPA 02 IC

CV = 8 + 1.15 mg/L

Result	Uncer	Date
9.1	0.9	10/24
9	0.9	10/24

SO4 (cont)

CV = 90 + 6 mg/L

Result	Uncer	Date
130	10	10/24
140	10	10/24

Sr 90EPA 02 ICPES

CV = 16.8 + 1.2 ug/L

Result	Uncer	Date
17	2	10/29

CV = 46.7 + 3.9 ug/L

Result	Uncer	Date
48	5	10/29

Sr 90EPA 02 ICPMS

CV = 16.8 + 1.2 ug/L

Result	Uncer	Date
17	2	10/15

CV = 46.7 + 3.9 ug/L

Result	Uncer	Date
47	5	10/15

Total Alkalinity TITR
90EPA 02

CV = 6.69 + 1.59 mg/L

Result	Uncer	Date
5	0.5	9/14
5.8	0.6	9/14

CV = 47.3 + 3.3 mg/L

Result	Uncer	Date
45	5	9/14
45	5	9/14

Ti 90EPA 02 ICPES

CV = 50.9 + 4.6 ug/L

Result	Uncer	Date
52	5	10/29

CV = 260 + 16.5 ug/L

Result	Uncer	Date
270	30	10/29

Ti 90EPA 02 ICPMS

CV = 50.9 + 4.6 ug/L

Result	Uncer	Date
49	5	10/15

TABLE C-V (cont)

****

EPA Water Pollution Study 25 (cont)

****

Ti (cont)

CV = 260 + 16.5 ug/L

Result	Uncer	Date
250	30	10/15

Tl 90EPA 02 ETVAA

CV = 11 + 1.52 ug/L

Result	Uncer	Date
11	2	10/10

CV = 67.9 + 6.1 ug/L

Result	Uncer	Date
68	14	10/10

Tl 90EPA 02 ICPMS

CV = 11 + 1.52 ug/L

Result	Uncer	Date
11	1	10/15

CV = 67.9 + 6.1 ug/L

Result	Uncer	Date
62	6	10/15

Total Suspended Solids 90EPA 02 GRAV

CV = 16.6 + 1.8 mg/L

Result	Uncer	Date
17	2	10/23

CV = 42.4 + 2.9 mg/L

Result	Uncer	Date
43	4	10/23

V 90EPA 02 ICPES

CV = 58.1 + 4.2 ug/L

Result	Uncer	Date
52	5	10/29

CV = 255 + 14 ug/L

Result	Uncer	Date
250	30	10/29

V 90EPA 02 ICPMS

CV = 58.1 + 4.2 ug/L

Result	Uncer	Date
55	6	10/15

CV = 255 + 14 ug/L

Result	Uncer	Date
210	20	10/15

Zn 90EPA 02 FAA

CV = 25.4 + 2.7 ug/L

Result	Uncer	Date
26	10	10/10

CV = 768 + 37 ug/L

Result	Uncer	Date
760	80	10/10

Zn 90EPA 02 ICPMS

CV = 25.4 + 2.7 ug/L

Result	Uncer	Date
24	2	10/15

CV = 768 + 37 ug/L

Result	Uncer	Date
690	70	10/15

****

GSJ JA-1 Andesite

****

Ag 87AND 01 ATNA

CV = < 20 ng/g

Result	Uncer	Date
< 7000		8/29
< 7000		8/29
< 6000		8/29

Al 87AND 01 ATNA

CV = 7.92 %

Result	Uncer	Date
8.24	0.24	8/29
8.11	0.24	8/29
8.10	0.23	8/29

As 87AND 01 ATNA

CV = 2.92 ug/g

Result	Uncer	Date
4.4	1.0	8/29
< 5		8/29
< 5		8/29

Au 87AND 01 ATNA

CV = 0.092 ng/g

Result	Uncer	Date
< 14		8/29
< 14		8/29
< 13		8/29

Ba 87AND 01 ATNA

CV = 307 ug/g

Result	Uncer	Date
440	50	8/29
470	50	8/29
280	50	8/29

Br 87AND 01 ATNA

CV = 7 ug/g

Result	Uncer	Date
< 6		8/29
< 6		8/29
< 6		8/29

Ca 87AND 01 ATNA

CV = 4.06 %

Result	Uncer	Date
3.94	0.20	8/29
4.60	0.23	8/29
4.29	0.21	8/29

Ce 87AND 01 ATNA

CV = 13.2 ug/g

Result	Uncer	Date
14.9	1.0	8/29
15.3	0.9	8/29
15.6	1.2	8/29

Cl 87AND 01 ATNA

CV = 35 ug/g

Result	Uncer	Date
< 150		8/29
< 140		8/29
< 140		8/29

Co 87AND 01 ATNA

CV = 11.8 ug/g

Result	Uncer	Date
11.1	0.6	8/29
11.4	0.6	8/29
11.1	0.6	8/29

Cr 87AND 01 ATNA

CV = 7.3 ug/g

Result	Uncer	Date
5.2	1.1	8/29
5.2	0.8	8/29
6.5	1.2	8/29

Cs 87AND 01 ATNA

CV = 640 ng/g

Result	Uncer	Date
380	110	8/29
670	160	8/29
690	130	8/29

Cu 87AND 01 ATNA

CV = 42.2 ug/g

Result	Uncer	Date
< 400		8/29
< 400		8/29
< 400		8/29

Dy 87AND 01 ATNA

CV = 4.9 ug/g

Result	Uncer	Date
4.6	0.6	8/29
5.4	0.6	8/29
4.9	0.6	8/29

Eu 87AND 01 ATNA

CV = 1.2 ug/g

Result	Uncer	Date
1.16	0.08	8/29
1.17	0.06	8/29
1.12	0.06	8/29

Fe 87AND 01 ATNA

CV = 4.86 %

Result	Uncer	Date
5.0	0.3	8/29
5.1	0.3	8/29
5.1	0.3	8/29

Ga 87AND 01 ATNA

CV = 17.3 ug/g

Result	Uncer	Date
< 180		8/29
< 180		8/29
< 180		8/29

Hf 87AND 01 ATNA

CV = 2.4 ug/g

Result	Uncer	Date
2.42	0.20	8/29
2.60	0.40	8/29
2.58	0.17	8/29

Hg 87AND 01 ATNA

CV = 8 ng/g

Result	Uncer	Date
< 1200		8/29
< 1200		8/29
< 1100		8/29

I 87AND 01 ATNA

CV = 0.015 ug/g

Result	Uncer	Date
< 30		8/29
< 30		8/29
< 30		8/29

In ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.4		8/29
< 0.4		8/29
< 0.3		8/29

K 87AND 01 ATNA

CV = 6800 ug/g

Result	Uncer	Date
< 15000		8/29
< 15000		8/29
< 15000		8/29

La 87AND 01 ATNA

CV = 5.5 ug/g

Result	Uncer	Date
5.4	0.3	8/29
5.6	0.3	8/29
5.6	0.4	8/29

Lu 87AND 01 ATNA

CV = 460 ng/g

Result	Uncer	Date
510	40	8/29
470	40	8/29
450	30	8/29

Mg 87AND 01 ATNA

CV = 0.971 %

Result	Uncer	Date
0.85	0.10	8/29
0.75	0.09	8/29
0.89	0.10	8/29

Mn 87AND 01 ATNA

CV = 1160 ug/g

Result	Uncer	Date
1300	50	8/29
1310	50	8/29
1290	50	8/29

Na 87AND 01 ATNA

CV = 2.86 %

Result	Uncer	Date
3.06	0.13	8/29
3.11	0.13	8/29
3.06	0.13	8/29

Nd 87AND 01 ATNA

CV = 11 ug/g

Result	Uncer	Date
< 40		8/29
< 40		8/29
< 40		8/29

Rb 87AND 01 ATNA

CV = 11.8 ug/g

Result	Uncer	Date
< 15		8/29
< 15		8/29
< 14		8/29

Sb 87AND 01 ATNA

CV = 260 ng/g

Result	Uncer	Date
< 400		8/29
< 400		8/29
< 400		8/29

TABLE C-V (cont)

****

GSJ JA-1 Andesite
(cont)

****

Sc 87AND 01 ATNA

CV = 28.4 ug/g

Result	Uncer	Date
28.9	1.5	8/29
29.5	1.6	8/29
29.0	1.5	8/29

Se 87AND 01 ATNA

CV = 8.6 ng/g

Result	Uncer	Date
< 7000		8/29
< 7000		8/29
< 7000		8/29

Sm 87AND 01 ATNA

CV = 3.6 ug/g

Result	Uncer	Date
3.58	0.16	8/29
3.69	0.17	8/29
3.63	0.17	8/29

Sr 87AND 01 ATNA

CV = 266 ug/g

Result	Uncer	Date
< 500		8/29
< 500		8/29
< 500		8/29

Ta 87AND 01 ATNA

CV = 100 ng/g

Result	Uncer	Date
< 700		8/29
< 700		8/29
< 700		8/29

Tb 87AND 01 ATNA

CV = 770 ng/g

Result	Uncer	Date
690	90	8/29
690	70	8/29
720	110	8/29

Th 87AND 01 ATNA

CV = 820 ng/g

Result	Uncer	Date
830	100	8/29
750	90	8/29
640	100	8/29

Tl 87AND 01 ATNA

CV = 5200 ug/g

Result	Uncer	Date
5000	700	8/29
4300	600	8/29
5200	700	8/29

U 87AND 01 ATNA

CV = 340 ng/g

Result	Uncer	Date
379	23	8/29
416	24	8/29
359	21	8/29

V 87AND 01 ATNA

CV = 105 ug/g

Result	Uncer	Date
97	5	8/29
115	5	8/29
101	5	8/29

W 87AND 01 ATNA

CV = 3.9 ug/g

Result	Uncer	Date
< 15		8/29
< 15		8/29
< 15		8/29

Yb 87AND 01 ATNA

CV = 2.9 ug/g

Result	Uncer	Date
3.40	0.22	8/29
3.15	0.20	8/29
3.45	0.21	8/29

Zn 87AND 01 ATNA

CV = 90.6 ug/g

Result	Uncer	Date
100	10	8/29
99	14	8/29
96	13	8/29

Zr 87AND 01 ATNA

CV = 87 ug/g

Result	Uncer	Date
< 500		8/29
< 500		8/29
< 500		8/29

****

GSJ JA-2 Andesite

****

Ag ATNA

CV = none available ug/g

Result	Uncer	Date
< 4		8/29
< 4		8/29
< 4		8/29

Al 87AND 01 ATNA

CV = 8.10 %

Result	Uncer	Date
8.43	0.24	8/29
8.22	0.23	8/29
8.28	0.23	8/29

As 87AND 01 ATNA

CV = 770 ng/g

Result	Uncer	Date
< 3000		8/29
< 3000		8/29
< 3000		8/29

Au ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.0070		8/29
< 0.0070		8/29
< 0.0070		8/29

Ba 87AND 01 ATNA

CV = 317 ug/g

Result	Uncer	Date
280	70	8/29
320	30	8/29
280	40	8/29

Br ATNA

CV = none available ug/g

Result	Uncer	Date
< 3		8/29
< 3		8/29
< 3		8/29

Ca 87AND 01 ATNA

CV = 4.63 %

Result	Uncer	Date
4.54	0.21	8/29
4.67	0.21	8/29
4.51	0.21	8/29

Ce 87AND 01 ATNA

CV = 29 ug/g

Result	Uncer	Date
32.7	1.6	8/29
33.7	1.7	8/29
34.0	1.7	8/29

Cl 87AND 01 ATNA

CV = 210 ug/g

Result	Uncer	Date
< 130		8/29
< 120		8/29
< 130		8/29

Co 87AND 01 ATNA

CV = 30 ug/g

Result	Uncer	Date
28.5	1.5	8/29
28.9	1.5	8/29
28.9	1.5	8/29

Cr 87AND 01 ATNA

CV = 465 ug/g

Result	Uncer	Date
470	30	8/29
480	30	8/29
480	30	8/29

Cs 87AND 01 ATNA

CV = 4.2 ug/g

Result	Uncer	Date
4.2	0.3	8/29
4.3	0.3	8/29
4.23	0.25	8/29

Cu 87AND 01 ATNA

CV = 28.6 ug/g

Result	Uncer	Date
< 300		8/29
< 300		8/29
< 300		8/29

Dy 87AND 01 ATNA

CV = < 1 ug/g

Result	Uncer	Date
3.1	0.4	8/29
2.6	0.3	8/29
2.8	0.3	8/29

Eu 87AND 01 ATNA

CV = 0.91 ug/g

Result	Uncer	Date
0.85	0.05	8/29
0.85	0.05	8/29
0.84	0.05	8/29

Fe 87AND 01 ATNA

CV = 4.30 %

Result	Uncer	Date
4.23	0.22	8/29
4.35	0.22	8/29
4.30	0.22	8/29

Ga 87AND 01 ATNA

CV = 16.4 ug/g

Result	Uncer	Date
< 110		8/29
< 120		8/29
< 120		8/29

Hf 87AND 01 ATNA

CV = 2.8 ug/g

Result	Uncer	Date
2.9	0.4	8/29
2.9	0.4	8/29
2.8	0.4	8/29

Hg ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.6		8/29
< 0.6		8/29
< 0.6		8/29

I 87AND 01 ATNA

CV = 0.005 ug/g

Result	Uncer	Date
< 20		8/29
< 20		8/29
< 19		8/29

In ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.25		8/29
< 0.25		8/29
< 0.25		8/29

K 87AND 01 ATNA

CV = 1.50 %

Result	Uncer	Date
1.3	0.2	8/29
1.2	0.2	8/29
1.5	0.3	8/29

La 87AND 01 ATNA

CV = 16 ug/g

Result	Uncer	Date
15.5	0.8	8/29
15.4	1.0	8/29
15.3	0.9	8/29

Lu 87AND 01 ATNA

CV = 270 ng/g

Result	Uncer	Date
269	20	8/29
241	20	8/29
247	19	8/29

Mg 87AND 01 ATNA

CV = 4.63 %

Result	Uncer	Date
4.38	0.22	8/29
4.20	0.30	8/29
4.32	0.22	8/29

Mn 87AND 01 ATNA

CV = 851 ug/g

Result	Uncer	Date
910	40	8/29
910	40	8/29
910	40	8/29

TABLE C-V (cont)

****

GSJ JA-2 Andesite
(cont)

****

Na 87AND 01 ATNA

CV = 2.28 %

Result	Uncer	Date
2.23	0.09	8/29
2.23	0.09	8/29
2.20	0.09	8/29

Nd 87AND 01 ATNA

CV = 14 ug/g

Result	Uncer	Date
< 18		8/29
< 18		8/29
< 18		8/29

Rb 87AND 01 ATNA

CV = 68 ug/g

Result	Uncer	Date
72	5	8/29
76	5	8/29
77	5	8/29

Sb 87AND 01 ATNA

CV = 130 ng/g

Result	Uncer	Date
< 220		8/29
< 230		8/29
< 230		8/29

Sc 87AND 01 ATNA

CV = 19 ug/g

Result	Uncer	Date
18.2	1.0	8/29
18.6	1.0	8/29
18.5	1.0	8/29

Se ATNA

CV = none available ug/g

Result	Uncer	Date
< 3		8/29
< 3		8/29
< 3		8/29

Sm 87AND 01 ATNA

CV = 3.1 ug/g

Result	Uncer	Date
2.85	0.13	8/29
2.85	0.13	8/29
2.80	0.13	8/29

Sr 87AND 01 ATNA

CV = 252 ug/g

Result	Uncer	Date
< 300		8/29
< 300		8/29
350	100	8/29

Ta 87AND 01 ATNA

CV = 610 ng/g

Result	Uncer	Date
600	60	8/29
670	60	8/29
640	60	8/29

Tb 87AND 01 ATNA

CV = 480 ng/g

Result	Uncer	Date
370	50	8/29
370	50	8/29
410	60	8/29

Th 87AND 01 ATNA

CV = 4.7 ug/g

Result	Uncer	Date
4.60	0.19	8/29
4.78	0.20	8/29
4.86	0.23	8/29

Ti 87AND 01 ATNA

CV = 4013 ug/g

Result	Uncer	Date
3800	500	8/29
3900	500	8/29
3700	500	8/29

U 87AND 01 ATNA

CV = 2.4 ug/g

Result	Uncer	Date
2.36	0.09	8/29
2.32	0.09	8/29
2.36	0.09	8/29

V 87AND 01 ATNA

CV = 130 ug/g

Result	Uncer	Date
128	5	8/29
125	5	8/29
124	5	8/29

W ATNA

CV = none available ug/g

Result	Uncer	Date
< 10		8/29
< 10		8/29
< 10		8/29

Yb 87AND 01 ATNA

CV = 1.6 ug/g

Result	Uncer	Date
1.68	0.12	8/29
1.54	0.11	8/29
1.47	0.11	8/29

Zn 87AND 01 ATNA

CV = 62.7 ug/g

Result	Uncer	Date
45	20	8/29
50	20	8/29
52	21	8/29

Zr 87AND 01 ATNA

CV = 119 ug/g

Result	Uncer	Date
170	50	8/29
< 170		8/29
< 170		8/29

****

GSJ JA-3 Andesite

****

Ag ATNA

CV = none available ug/g

Result	Uncer	Date
< 4		8/29
< 4		8/29
< 4		8/29

Al 87AND 01 ATNA

CV = 8.24 %

Result	Uncer	Date
8.42	0.24	8/29
8.50	0.24	8/29
8.52	0.24	8/29

As 87AND 01 ATNA

CV = 4.5 ug/g

Result	Uncer	Date
5.8	0.9	8/29
4.8	0.8	8/29
4.3	0.7	8/29

Au ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.01		8/29
< 0.01		8/29
< 0.01		8/29

Ba 87AND 01 ATNA

CV = 318 ug/g

Result	Uncer	Date
340	40	8/29
350	70	8/29
390	30	8/29

Br ATNA

CV = none available ug/g

Result	Uncer	Date
1.3	0.4	8/29
2.0	0.6	8/29
1.4	0.4	8/29

Ca 87AND 01 ATNA

CV = 4.49 %

Result	Uncer	Date
4.62	0.21	8/29
4.82	0.22	8/29
4.82	0.22	8/29

Ce 87AND 01 ATNA

CV = 23 ug/g

Result	Uncer	Date
24.3	1.2	8/29
23.2	1.1	8/29
24.3	1.2	8/29

Cl ATNA

CV = none available ug/g

Result	Uncer	Date
320	40	8/29
340	30	8/29
370	30	8/29

Co 87AND 01 ATNA

CV = 21 ug/g

Result	Uncer	Date
21.3	1.1	8/29
21.4	1.1	8/29
21.2	1.2	8/29

Cr 87AND 01 ATNA

CV = 67.5 ug/g

Result	Uncer	Date
72	4	8/29
72	4	8/29
71	4	8/29

Cs 87AND 01 ATNA

CV = 2.2 ug/g

Result	Uncer	Date
2.16	0.15	8/29
2.20	0.30	8/29
2.26	0.16	8/29

Cu 87AND 01 ATNA

CV = 45.3 ug/g

Result	Uncer	Date
< 300		8/29
< 300		8/29
< 300		8/29

Dy ATNA

CV = none available ug/g

Result	Uncer	Date
4.5	1.3	8/29
< 5		8/29
2.6	0.3	8/29

Eu 87AND 01 ATNA

CV = 0.90 ug/g

Result	Uncer	Date
0.84	0.09	8/29
0.84	0.05	8/29
0.85	0.05	8/29

Fe 87AND 01 ATNA

CV = 4.61 %

Result	Uncer	Date
4.87	0.24	8/29
4.90	0.30	8/29
4.86	0.25	8/29

Ga 87AND 01 ATNA

CV = 17 ug/g

Result	Uncer	Date
< 120		8/29
< 130		8/29
< 130		8/29

Hf 87AND 01 ATNA

CV = 3.8 ug/g

Result	Uncer	Date
3.6	0.5	8/29
3.5	0.3	8/29
3.5	0.4	8/29

Hg ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.6		8/29
< 0.6		8/29
< 0.6		8/29

I ATNA

CV = none available ug/g

Result	Uncer	Date
< 19		8/29
< 18		8/29
< 18		8/29

In ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.23		8/29
< 0.23		8/29
< 0.23		8/29

K 87AND 01 ATNA

CV = 1.19 %

Result	Uncer	Date
< 1.2		8/29
1.2	0.3	8/29
1.4	0.3	8/29

La 87AND 01 ATNA

CV = 14 ug/g

Result	Uncer	Date
10.2	0.5	8/29
10.0	0.5	8/29
10.0	0.6	8/29

TABLE C-V (cont)

****

GSJ JA-3 Andesite
(cont)

****

Lu 87AND 01 ATNA

CV = 400 ng/g

Result	Uncer	Date
342	22	8/29
370	24	8/29
339	22	8/29

Mg 87AND 01 ATNA

CV = 2.20 %

Result	Uncer	Date
1.70	0.11	8/29
1.83	0.11	8/29
1.63	0.10	8/29

Mn 87AND 01 ATNA

CV = 820 ug/g

Result	Uncer	Date
910	40	8/29
900	40	8/29
900	40	8/29

Na 87AND 01 ATNA

CV = 2.35 %

Result	Uncer	Date
2.54	0.11	8/29
2.54	0.11	8/29
2.52	0.11	8/29

Nd 87AND 01 ATNA

CV = 12 ug/g

Result	Uncer	Date
< 23		8/29
< 22		8/29
< 22		8/29

Rb 87AND 01 ATNA

CV = 36 ug/g

Result	Uncer	Date
40	3	8/29
45	4	8/29
39	4	8/29

Sb 87AND 01 ATNA

CV = 340 ng/g

Result	Uncer	Date
320	80	8/29
370	70	8/29
390	80	8/29

Sc 87AND 01 ATNA

CV = 19 ug/g

Result	Uncer	Date
21.3	1.1	8/29
21.5	1.1	8/29
21.4	1.1	8/29

Se ATNA

CV = none available ug/g

Result	Uncer	Date
< 5		8/29
< 4		8/29
< 4		8/29

Sm 87AND 01 ATNA

CV = 3.2 ug/g

Result	Uncer	Date
3.24	0.15	8/29
3.19	0.15	8/29
3.17	0.15	8/29

Sr 87AND 01 ATNA

CV = 294 ug/g

Result	Uncer	Date
< 300		8/29
< 300		8/29
< 300		8/29

Ta 87AND 01 ATNA

CV = 140 ng/g

Result	Uncer	Date
190	50	8/29
180	50	8/29
200	50	8/29

Tb ATNA

CV = none available ug/g

Result	Uncer	Date
0.57	0.06	8/29
0.55	0.06	8/29
0.48	0.06	8/29

Th 87AND 01 ATNA

CV = 4.7 ug/g

Result	Uncer	Date
3.34	0.15	8/29
3.44	0.15	8/29
3.39	0.15	8/29

Ti 87AND 01 ATNA

CV = 4073 ug/g

Result	Uncer	Date
3900	500	8/29
3800	500	8/29
4100	600	8/29

U 87AND 01 ATNA

CV = 1.4 ug/g

Result	Uncer	Date
1.10	0.05	8/29
1.04	0.04	8/29
1.05	0.04	8/29

V 87AND 01 ATNA

CV = 172 ug/g

Result	Uncer	Date
169	7	8/29
168	7	8/29
169	7	8/29

W ATNA

CV = none available ug/g

Result	Uncer	Date
10	2	8/29
9.5	1.6	8/29
10	2	8/29

Yb 87AND 01 ATNA

CV = 2.6 ug/g

Result	Uncer	Date
2.14	0.14	8/29
2.31	0.18	8/29
2.42	0.16	8/29

Zn 87AND 01 ATNA

CV = 67.5 ug/g

Result	Uncer	Date
74	10	8/29
76	10	8/29
76	10	8/29

Zr 87AND 01 ATNA

CV = 123 ug/g

Result	Uncer	Date
520	120	8/29
< 400		8/29
< 400		8/29

****

GSJ JCh-1 Chert

****

Ag ATNA

CV = none available ug/g

Result	Uncer	Date
< 1.2		6/08

Al 90TER 01 ATNA

CV = 3800 ug/g

Result	Uncer	Date
3890	170	6/08

As 90TER 01 ATNA

CV = 400 ng/g

Result	Uncer	Date
400	100	6/08

Au ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.0040		6/08

Ba ATNA

CV = none available ug/g

Result	Uncer	Date
298	20	6/08

Br ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.8		6/08

Ca 90TER 01 ATNA

CV = 290 ug/g

Result	Uncer	Date
< 800		6/08

Ce ATNA

CV = none available ug/g

Result	Uncer	Date
4.8	0.5	6/08

Cl ATNA

CV = none available ug/g

Result	Uncer	Date
< 30		6/08

Co 90TER 01 ATNA

CV = 15 ug/g

Result	Uncer	Date
14.4	0.8	6/08

Cr 90TER 01 ATNA

CV = 9 ug/g

Result	Uncer	Date
7.5	0.5	6/08

Cs 90TER 01 ATNA

CV = 300 ng/g

Result	Uncer	Date
240	30	6/08

Cu 90TER 01 ATNA

CV = 15.5 ug/g

Result	Uncer	Date
< 80		6/08

Dy ATNA

CV = none available ug/g

Result	Uncer	Date
< 1.9		6/08

Eu ATNA

CV = none available ug/g

Result	Uncer	Date
0.060	0.005	6/08

Fe 90TER 01 ATNA

CV = 2600 ug/g

Result	Uncer	Date
2480	130	6/08

Ga ATNA

CV = none available ug/g

Result	Uncer	Date
< 5		6/08

Hf ATNA

CV = none available ug/g

Result	Uncer	Date
0.16	0.02	6/08

Hg ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.22		6/08

I ATNA

CV = none available ug/g

Result	Uncer	Date
< 6		6/08

In ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.05		6/08

K 90TER 01 ATNA

CV = 1860 ug/g

Result	Uncer	Date
1800	200	6/08

La ATNA

CV = none available ug/g

Result	Uncer	Date
1.50	0.09	6/08

Lu ATNA

CV = none available ug/g

Result	Uncer	Date
0.029	0.005	6/08

Mg 90TER 01 ATNA

CV = 450 ug/g

Result	Uncer	Date
< 500		6/08

TABLE C-V (cont)

****

GSJ JCh-1 Chert (cont)

****

Mn 90TER 01 ATNA

CV = 140 ug/g

Result	Uncer	Date
146	6	6/08

Na 90TER 01 ATNA

CV = 230 ug/g

Result	Uncer	Date
223	10	6/08

Nd ATNA

CV = none available ug/g

Result	Uncer	Date
< 9		6/08

Rb 90TER 01 ATNA

CV = 8.5 ug/g

Result	Uncer	Date
7.7	1.2	6/08

Sb ATNA

CV = none available ug/g

Result	Uncer	Date
0.088	0.019	6/08

Sc ATNA

CV = none available ug/g

Result	Uncer	Date
0.93	0.05	6/08

Se ATNA

CV = none available ug/g

Result	Uncer	Date
< 1.6		6/08

Sm ATNA

CV = none available ug/g

Result	Uncer	Date
0.275	0.015	6/08

Sr 90TER 01 ATNA

CV = 4.6 ug/g

Result	Uncer	Date
< 100		6/08

Ta ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.3		6/08

Tb ATNA

CV = none available ug/g

Result	Uncer	Date
0.045	0.012	6/08

Th ATNA

CV = none available ug/g

Result	Uncer	Date
0.60	0.04	6/08

Ti 90TER 01 ATNA

CV = 180 ug/g

Result	Uncer	Date
< 1600		6/08

U ATNA

CV = none available ug/g

Result	Uncer	Date
0.63	0.03	6/08

V 90TER 01 ATNA

CV = 6 ug/g

Result	Uncer	Date
9.1	0.8	6/08

W ATNA

CV = none available ug/g

Result	Uncer	Date
110	10	6/08

Yb ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.22		6/08

Zn 90TER 01 ATNA

CV = 9.1 ug/g

Result	Uncer	Date
9	3	6/08

Zr ATNA

CV = none available ug/g

Result	Uncer	Date
< 60		6/08

****

GSJ JDo-1 Dolomite

****

Ag ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.6		7/07
< 0.6		8/14

Al 90TER 01 ATNA

CV = 70 ug/g

Result	Uncer	Date
< 300		7/07
< 400		8/14

As 90TER 01 ATNA

CV = 110 ng/g

Result	Uncer	Date
< 400		7/07
190	60	8/14

Au ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.0024		7/07
< 0.0018		8/14

Ba ATNA

CV = none available ug/g

Result	Uncer	Date
< 300		7/07
< 20		8/14

Br ATNA

CV = none available ug/g

Result	Uncer	Date
0.70	0.09	7/07
0.57	0.08	8/14

Ca 90TER 01 ATNA

CV = 24.4 %

Result	Uncer	Date
25.3	1.0	7/07
25.1	1.0	8/14

Ce ATNA

CV = none available ug/g

Result	Uncer	Date
2.0	0.4	7/07
2.2	0.5	8/14

Cl ATNA

CV = none available ug/g

Result	Uncer	Date
< 50		7/07
< 60		8/14

Co 90TER 01 ATNA

CV = < 300 ng/g

Result	Uncer	Date
270	40	7/07
300	50	8/14

Cr 90TER 01 ATNA

CV = 7 ug/g

Result	Uncer	Date
7.4	0.5	7/07
8.2	0.5	8/14

Cs 90TER 01 ATNA

CV = < 200 ng/g

Result	Uncer	Date
< 170		7/07
< 180		8/14

Cu 90TER 01 ATNA

CV = 1.4 ug/g

Result	Uncer	Date
< 70		7/07
< 70		8/14

Dy ATNA

CV = none available ug/g

Result	Uncer	Date
0.66	0.15	7/07
0.79	0.12	8/14

Eu ATNA

CV = none available ug/g

Result	Uncer	Date
0.15	0.03	7/07
0.16	0.03	8/14

Fe 90TER 01 ATNA

CV = 140 ug/g

Result	Uncer	Date
162	12	7/07
159	12	8/14

Ga ATNA

CV = none available ug/g

Result	Uncer	Date
< 3		7/07
< 4		8/14

Hf ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.1		7/07
< 0.1		8/14

Hg ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.15		7/07
< 0.15		8/14

I ATNA

CV = none available ug/g

Result	Uncer	Date
< 9		7/07
< 9		8/14

In ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.06		7/07
< 0.06		8/14

K 90TER 01 ATNA

CV = 17 ug/g

Result	Uncer	Date
< 240		7/07
< 300		8/14

La ATNA

CV = none available ug/g

Result	Uncer	Date
8.3	0.4	7/07
8.2	0.5	8/14

Lu ATNA

CV = none available ug/g

Result	Uncer	Date
0.037	0.003	7/07
0.039	0.004	8/14

Mg 90TER 01 ATNA

CV = 11.1 %

Result	Uncer	Date
10.1	0.5	7/07
10.2	0.5	8/14

Mn 90TER 01 ATNA

CV = 50 ug/g

Result	Uncer	Date
53.7	2.3	7/07
51.8	2.2	8/14

Na 90TER 01 ATNA

CV = 70 ug/g

Result	Uncer	Date
74	3	7/07
74	3	8/14

Nd ATNA

CV = none available ug/g

Result	Uncer	Date
< 4		7/07
7.1	2.1	8/14

Rb 90TER 01 ATNA

CV = < 200 ng/g

Result	Uncer	Date
< 2200		7/07
< 2200		8/14

TABLE C-V (cont)

****

GSJ JDo-1 Dolomite
(cont)

****

Sb ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.06		7/07
< 0.06		8/14

Sc ATNA

CV = none available ug/g

Result	Uncer	Date
0.132	0.008	7/07
0.133	0.007	8/14

Se ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.9		7/07
< 0.9		8/14

Sm ATNA

CV = none available ug/g

Result	Uncer	Date
0.72	0.03	7/07
0.70	0.03	8/14

Sr 90TER 01 ATNA

CV = 119 ug/g

Result	Uncer	Date
< 160		7/07
100	40	8/14

Ta ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.12		7/07
< 0.13		8/14

Tb ATNA

CV = none available ug/g

Result	Uncer	Date
0.11	0.01	7/07
0.12	0.01	8/14

Th ATNA

CV = none available ug/g

Result	Uncer	Date
0.040	0.011	7/07
0.050	0.014	8/14

Ti 90TER 01 ATNA

CV = < 12 ug/g

Result	Uncer	Date
< 2300		7/07
< 2300		8/14

U ATNA

CV = none available ug/g

Result	Uncer	Date
0.86	0.04	7/07
0.85	0.04	8/14

V 90TER 01 ATNA

CV = < 5 ug/g

Result	Uncer	Date
3.5	0.5	7/07
3.8	0.6	8/14

W ATNA

CV = none available ug/g

Result	Uncer	Date
0.3	0.1	7/07
1.4	0.7	8/14

Yb ATNA

CV = none available ug/g

Result	Uncer	Date
0.43	0.04	7/07
0.33	0.03	8/14

Zn 90TER 01 ATNA

CV = 34.4 ug/g

Result	Uncer	Date
37	5	7/07
39	6	8/14

Zr ATNA

CV = none available ug/g

Result	Uncer	Date
< 50		7/07
< 50		8/14

****

GSJ JF-1 Feldspar

****

Ag ATNA

CV = none available ug/g

Result	Uncer	Date
< 1		8/29
< 1		8/29
< 1		8/29

Al 87AND 01 ATNA

CV = 9.52 %

Result	Uncer	Date
10.0	0.3	8/29
9.8	0.3	8/29
9.7	0.3	8/29

As 87AND 01 ATNA

CV = 0.96 ug/g

Result	Uncer	Date
0.9	0.4	8/29
< 3		8/29
1.6	0.5	8/29

Au ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.008		8/29
< 0.008		8/29
< 0.008		8/29

Ba 87AND 01 ATNA

CV = 1680 ug/g

Result	Uncer	Date
2050	110	8/29
2070	110	8/29
2100	130	8/29

Br ATNA

CV = none available ug/g

Result	Uncer	Date
< 3		8/29
< 3		8/29
< 3		8/29

Ca 87AND 01 ATNA

CV = 0.75 %

Result	Uncer	Date
0.69	0.06	8/29
0.68	0.06	8/29
0.60	0.05	8/29

Ce 87AND 01 ATNA

CV = 4.3 ug/g

Result	Uncer	Date
4.4	0.4	8/29
4.5	0.4	8/29
4.6	0.4	8/29

Cl 87AND 01 ATNA

CV = 0.2 ug/g

Result	Uncer	Date
< 100		8/29
< 100		8/29
< 100		8/29

Co 87AND 01 ATNA

CV = 200 ng/g

Result	Uncer	Date
320	60	8/29
280	60	8/29
300	60	8/29

Cr 87AND 01 ATNA

CV = 5.8 ug/g

Result	Uncer	Date
4.0	0.4	8/29
4.3	0.4	8/29
3.6	0.3	8/29

Cs 87AND 01 ATNA

CV = 2.2 ug/g

Result	Uncer	Date
2.3	0.13	8/29
2.1	0.13	8/29
2.2	0.13	8/29

Cu 87AND 01 ATNA

CV = 0.20 ug/g

Result	Uncer	Date
< 300		8/29
< 300		8/29
< 300		8/29

Dy 87AND 01 ATNA

CV = < 1 ug/g

Result	Uncer	Date
< 5		8/29
< 5		8/29
< 5		8/29

Eu 87AND 01 ATNA

CV = 850 ng/g

Result	Uncer	Date
790	40	8/29
780	40	8/29
790	40	8/29

Fe 87AND 01 ATNA

CV = 560 ug/g

Result	Uncer	Date
570	30	8/29
550	40	8/29
540	40	8/29

Ga 87AND 01 ATNA

CV = 18.1 ug/g

Result	Uncer	Date
< 100		8/29
< 100		8/29
< 110		8/29

Hf 87AND 01 ATNA

CV = 1.3 ug/g

Result	Uncer	Date
1.27	0.12	8/29
1.17	0.11	8/29
1.25	0.07	8/29

Hg ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.3		8/29
< 0.3		8/29
< 0.3		8/29

I ATNA

CV = none available ug/g

Result	Uncer	Date
< 13		8/29
< 13		8/29
< 14		8/29

In ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.23		8/29
< 0.23		8/29
< 0.24		8/29

K 87AND 01 ATNA

CV = 8.35 %

Result	Uncer	Date
9.4	0.7	8/29
9.0	0.7	8/29
8.4	0.7	8/29

La 87AND 01 ATNA

CV = 2.6 ug/g

Result	Uncer	Date
2.66	0.14	8/29
2.65	0.15	8/29
2.68	0.17	8/29

Lu 87AND 01 ATNA

CV = 60 ng/g

Result	Uncer	Date
55	6	8/29
63	7	8/29
47	7	8/29

Mg 87AND 01 ATNA

CV = 36 ug/g

Result	Uncer	Date
< 1100		8/29
< 1100		8/29
< 1200		8/29

Mn 87AND 01 ATNA

CV = < 77 ug/g

Result	Uncer	Date
7.3	0.5	8/29
8.1	0.5	8/29
8.3	1.2	8/29

Na 87AND 01 ATNA

CV = 2.63 %

Result	Uncer	Date
2.61	0.11	8/29
2.60	0.11	8/29
2.58	0.11	8/29

TABLE C-V (cont)

****

GSJ JF-1 Feldspar
(cont)

****

Nd 87AND 01 ATNA

CV = 1.5 ug/g

Result	Uncer	Date
< 7		8/29
< 7		8/29
< 7		8/29

Rb 87AND 01 ATNA

CV = 264 ug/g

Result	Uncer	Date
283	13	8/29
276	13	8/29
282	13	8/29

Sb 87AND 01 ATNA

CV = 60 ng/g

Result	Uncer	Date
< 200		8/29
< 190		8/29
< 190		8/29

Sc 87AND 01 ATNA

CV = 220 ng/g

Result	Uncer	Date
214	12	8/29
220	12	8/29
218	12	8/29

Se ATNA

CV = none available ug/g

Result	Uncer	Date
< 1.7		8/29
< 1.6		8/29
< 1.7		8/29

Sm 87AND 01 ATNA

CV = 380 ng/g

Result	Uncer	Date
380	23	8/29
399	23	8/29
376	22	8/29

Sr 87AND 01 ATNA

CV = 163 ug/g

Result	Uncer	Date
< 240		8/29
310	70	8/29
< 240		8/29

Ta 87AND 01 ATNA

CV = 400 ng/g

Result	Uncer	Date
< 180		8/29
< 180		8/29
< 200		8/29

Tb 87AND 01 ATNA

CV = 100 ng/g

Result	Uncer	Date
60	30	8/29
< 41		8/29
64	23	8/29

Th 87AND 01 ATNA

CV = 1.3 ug/g

Result	Uncer	Date
1.29	0.06	8/29
1.35	0.07	8/29
1.31	0.08	8/29

Ti 87AND 01 ATNA

CV = 30 ug/g

Result	Uncer	Date
< 3000		8/29
< 3000		8/29
< 3000		8/29

U 87AND 01 ATNA

CV = 330 ng/g

Result	Uncer	Date
368	21	8/29
359	21	8/29
335	20	8/29

V 87AND 01 ATNA

CV = 3 ug/g

Result	Uncer	Date
< 6		8/29
< 6		8/29
< 6		8/29

W ATNA

CV = none available ug/g

Result	Uncer	Date
< 8		8/29
< 8		8/29
< 8		8/29

Yb 87AND 01 ATNA

CV = 350 ng/g

Result	Uncer	Date
250	90	8/29
340	80	8/29
350	90	8/29

Zn 87AND 01 ATNA

CV = 3.2 ug/g

Result	Uncer	Date
8.4	1.4	8/29
12	2	8/29
10	2	8/29

Zr 87AND 01 ATNA

CV = 41 ug/g

Result	Uncer	Date
< 80		8/29
90	30	8/29
< 70		8/29

****

GSJ JF-2 Feldspar

****

Ag ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.7		8/29
< 0.6		8/29
< 0.6		8/29

Al 87AND 01 ATNA

CV = 9.75 %

Result	Uncer	Date
10.1	0.3	8/29
10.2	0.3	8/29
10.3	0.3	8/29

As 87AND 01 ATNA

CV = 280 ng/g

Result	Uncer	Date
< 2200		8/29
< 2000		8/29
< 2000		8/29

Au ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.005		8/29
< 0.004		8/29
< 0.004		8/29

Ba 87AND 01 ATNA

CV = 320 ug/g

Result	Uncer	Date
310	30	8/29
310	30	8/29
300	50	8/29

Br ATNA

CV = none available ug/g

Result	Uncer	Date
< 1.9		8/29
< 1.8		8/29
< 1.8		8/29

Ca 87AND 01 ATNA

CV = 643 ug/g

Result	Uncer	Date
< 1300		8/29
< 1400		8/29
< 1400		8/29

Ce 87AND 01 ATNA

CV = 500 ng/g

Result	Uncer	Date
480	160	8/29
430	160	8/29
470	150	8/29

Cl 87AND 01 ATNA

CV = 75 ug/g

Result	Uncer	Date
< 110		8/29
< 100		8/29
< 100		8/29

Co 87AND 01 ATNA

CV = 400 ng/g

Result	Uncer	Date
580	170	8/29
520	150	8/29
550	150	8/29

Cr 87AND 01 ATNA

CV = 4 ug/g

Result	Uncer	Date
0.83	0.16	8/29
1.1	0.2	8/29
1.4	0.2	8/29

Cs 87AND 01 ATNA

CV = 1.4 ug/g

Result	Uncer	Date
1.04	0.06	8/29
1.00	0.06	8/29
1.04	0.06	8/29

Cu 87AND 01 ATNA

CV = 0.3 ug/g

Result	Uncer	Date
< 230		8/29
< 220		8/29
< 220		8/29

Dy 87AND 01 ATNA

CV = 1 ug/g

Result	Uncer	Date
< 4		8/29
< 4		8/29
< 4		8/29

Eu ATNA

CV = none available ug/g

Result	Uncer	Date
0.55	0.03	8/29
0.54	0.03	8/29
0.553	0.024	8/29

Fe 87AND 01 ATNA

CV = 419 ug/g

Result	Uncer	Date
344	22	8/29
339	21	8/29
346	21	8/29

Ga 87AND 01 ATNA

CV = 18 ug/g

Result	Uncer	Date
< 70		8/29
< 70		8/29
< 80		8/29

Hf 87AND 01 ATNA

CV = 3.1 ug/g

Result	Uncer	Date
0.12	0.03	8/29
0.13	0.03	8/29
0.14	0.03	8/29

Hg ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.14		8/29
< 0.13		8/29
< 0.14		8/29

I ATNA

CV = none available ug/g

Result	Uncer	Date
< 11		8/29
< 11		8/29
< 11		8/29

In ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.19		8/29
< 0.18		8/29
< 0.18		8/29

K 87AND 01 ATNA

CV = 10.87 %

Result	Uncer	Date
10.9	0.8	8/29
9.6	0.7	8/29
10.1	0.7	8/29

La 87AND 01 ATNA

CV = 2.6 ug/g

Result	Uncer	Date
0.55	0.06	8/29
0.50	0.06	8/29
0.44	0.08	8/29

Lu ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.03		8/29
< 0.03		8/29
< 0.03		8/29

TABLE C-V (cont)

****

GSJ JF-2 Feldspar
(cont)

****

Mg 87AND 01 ATNA

CV = 18 ug/g

Result	Uncer	Date
< 1000		8/29
< 900		8/29
< 900		8/29

Mn 87AND 01 ATNA

CV = 7.74 ug/g

Result	Uncer	Date
10.9	0.6	8/29
11.0	1.0	8/29
10.5	0.8	8/29

Na 87AND 01 ATNA

CV = 1.83 %

Result	Uncer	Date
1.76	0.07	8/29
1.75	0.07	8/29
1.75	0.07	8/29

Nd 87AND 01 ATNA

CV = 200 ng/g

Result	Uncer	Date
< 4000		8/29
< 4000		8/29
< 4000		8/29

Rb 87AND 01 ATNA

CV = 222 ug/g

Result	Uncer	Date
234	11	8/29
228	11	8/29
233	11	8/29

Sb 87AND 01 ATNA

CV = 40 ng/g

Result	Uncer	Date
< 140		8/29
< 130		8/29
< 130		8/29

Sc 87AND 01 ATNA

CV = 80 ng/g

Result	Uncer	Date
68	4	8/29
67	4	8/29
72	4	8/29

Se ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.8		8/29
< 0.8		8/29
< 0.8		8/29

Sm 87AND 01 ATNA

CV = 200 ng/g

Result	Uncer	Date
< 150		8/29
< 140		8/29
< 140		8/29

Sr 87AND 01 ATNA

CV = 193 ug/g

Result	Uncer	Date
< 170		8/29
190	50	8/29
200	50	8/29

Ta ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.14		8/29
< 0.14		8/29
< 0.15		8/29

Tb ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.120		8/29
< 0.011		8/29
< 0.009		8/29

Th 87AND 01 ATNA

CV = 1 ug/g

Result	Uncer	Date
0.260	0.022	8/29
0.290	0.021	8/29
0.274	0.019	8/29

Ti 87AND 01 ATNA

CV = 24 ug/g

Result	Uncer	Date
< 3000		8/29
< 2500		8/29
< 3000		8/29

U 87AND 01 ATNA

CV = 200 ng/g

Result	Uncer	Date
69	8	8/29
80	8	8/29
73	8	8/29

V 87AND 01 ATNA

CV = 700 ng/g

Result	Uncer	Date
< 6000		8/29
< 6000		8/29
< 5000		8/29

W ATNA

CV = none available ng/g

Result	Uncer	Date
4.2	0.7	8/29
3.8	0.7	8/29
3.4	0.6	8/29

Yb 87AND 01 ATNA

CV = 1 ug/g

Result	Uncer	Date
< 0.30		8/29
< 0.23		8/29
< 0.22		8/29

Zn 87AND 01 ATNA

CV = 800 ng/g

Result	Uncer	Date
< 2000		8/29
< 1800		8/29
< 2000		8/29

Zr 87AND 01 ATNA

CV = 7 ug/g

Result	Uncer	Date
< 40		8/29
< 40		8/29
< 30		8/29

****

GSJ JG-3 Granodiorite

****

Ag ATNA

CV = none available ug/g

Result	Uncer	Date
< 3		8/14

Al 87AND 01 ATNA

CV = 8.21 %

Result	Uncer	Date
8.33	0.23	8/14

As 87AND 01 ATNA

CV = 370 ng/g

Result	Uncer	Date
< 3000		8/14

Au 87AND 01 ATNA

CV = 0.4 ng/g

Result	Uncer	Date
< 15		8/14

Ba 87AND 01 ATNA

CV = 453 ug/g

Result	Uncer	Date
460	70	8/14

Br ATNA

CV = none available ug/g

Result	Uncer	Date
< 3		8/14

Ca 87AND 01 ATNA

CV = 2.69 %

Result	Uncer	Date
2.95	0.15	8/14

Ce 87AND 01 ATNA

CV = 42 ug/g

Result	Uncer	Date
43.5	2.1	8/14

Cl 87AND 01 ATNA

CV = 111 ug/g

Result	Uncer	Date
150	30	8/14

Co 87AND 01 ATNA

CV = 11.4 ug/g

Result	Uncer	Date
10.4	0.6	8/14

Cr 87AND 01 ATNA

CV = 23.6 ug/g

Result	Uncer	Date
19.8	1.3	8/14

Cs 87AND 01 ATNA

CV = 1.9 ug/g

Result	Uncer	Date
1.7	0.11	8/14

Cu 87AND 01 ATNA

CV = 6 ug/g

Result	Uncer	Date
< 300		8/14

Dy 87AND 01 ATNA

CV = 3 ug/g

Result	Uncer	Date
2.4	0.3	8/14

Eu ATNA

CV = none available ug/g

Result	Uncer	Date
0.81	0.05	8/14

Fe 87AND 01 ATNA

CV = 2.61 %

Result	Uncer	Date
2.47	0.13	8/14

Ga 87AND 01 ATNA

CV = 17 ug/g

Result	Uncer	Date
< 30		8/14

Hf 87AND 01 ATNA

CV = 4.9 ug/g

Result	Uncer	Date
4.3	0.6	8/14

Hg ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.5		8/14

I ATNA

CV = none available ug/g

Result	Uncer	Date
< 17		8/14

In ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.24		8/14

K 87AND 01 ATNA

CV = 2.18 %

Result	Uncer	Date
2.19	0.17	8/14

La 87AND 01 ATNA

CV = 22 ug/g

Result	Uncer	Date
21.8	1.2	8/14

Lu ATNA

CV = none available ug/g

Result	Uncer	Date
0.278	0.019	8/14

Mg 87AND 01 ATNA

CV = 1.08 %

Result	Uncer	Date
0.79	0.07	8/14

Mn 87AND 01 ATNA

CV = 560 ug/g

Result	Uncer	Date
600	30	8/14

TABLE C-V (cont)

****

GSJ JG-3 Granodiorite (cont)

****

Na 87AND 01 ATNA

CV = 2.99 %

Result	Uncer	Date
3.14	0.14	8/14

Nd 87AND 01 ATNA

CV = 16 ug/g

Result	Uncer	Date
22	5	8/14

Rb 87AND 01 ATNA

CV = 66 ug/g

Result	Uncer	Date
75	5	8/14

Sb 87AND 01 ATNA

CV = 70 ng/g

Result	Uncer	Date
< 400		8/14

Sc 87AND 01 ATNA

CV = 2.1 ug/g

Result	Uncer	Date
8.2	0.4	8/14

Se ATNA

CV = none available ug/g

Result	Uncer	Date
< 3		8/14

Sm 87AND 01 ATNA

CV = 3.8 ug/g

Result	Uncer	Date
3.3	0.15	8/14

Sr 87AND 01 ATNA

CV = 372 ug/g

Result	Uncer	Date
430	110	8/14

Ta ATNA

CV = none available ug/g

Result	Uncer	Date
0.51	0.05	8/14

Tb ATNA

CV = none available ug/g

Result	Uncer	Date
0.38	0.04	8/14

Th 87AND 01 ATNA

CV = 8 ug/g

Result	Uncer	Date
8.2	0.3	8/14

Ti 87AND 01 ATNA

CV = 2900 ug/g

Result	Uncer	Date
2600	400	8/14

U 87AND 01 ATNA

CV = 2 ug/g

Result	Uncer	Date
2.43	0.09	8/14

V 87AND 01 ATNA

CV = 73 ug/g

Result	Uncer	Date
66	3	8/14

W ATNA

CV = none available ug/g

Result	Uncer	Date
16	2	8/14

Yb 87AND 01 ATNA

CV = 2.1 ug/g

Result	Uncer	Date
1.8	0.2	8/14

Zn 87AND 01 ATNA

CV = 44.8 ug/g

Result	Uncer	Date
< 24		8/14

Zr 87AND 01 ATNA

CV = 137 ug/g

Result	Uncer	Date
130	40	8/14

****

GSJ JGb-1 Gabbro

****

Ag ATNA

CV = none available ug/g

Result	Uncer	Date
< 5		8/29
< 5		8/29
< 5		8/29

Al 87AND 01 ATNA

CV = 9.34 %

Result	Uncer	Date
9.3	0.3	8/29
9.1	0.3	8/29
9.3	0.3	8/29

As 87AND 01 ATNA

CV = 1.11 ug/g

Result	Uncer	Date
< 4		8/29
< 4		8/29
< 4		8/29

Au 87AND 01 ATNA

CV = 1.1 ng/g

Result	Uncer	Date
< 10		8/29
< 10		8/29
< 10		8/29

Ba 87AND 01 ATNA

CV = 63 ug/g

Result	Uncer	Date
< 500		8/29
< 500		8/29
< 500		8/29

Br ATNA

CV = none available ug/g

Result	Uncer	Date
< 4		8/29
< 4		8/29
< 4		8/29

Ca 87AND 01 ATNA

CV = 8.57 %

Result	Uncer	Date
9.2	0.4	8/29
9.1	0.4	8/29
8.8	0.4	8/29

Ce 87AND 01 ATNA

CV = 8 ug/g

Result	Uncer	Date
9.0	0.5	8/29
8.6	0.6	8/29
8.7	0.5	8/29

Cl 87AND 01 ATNA

CV = 87 ug/g

Result	Uncer	Date
< 100		8/29
< 110		8/29
< 100		8/29

Co 87AND 01 ATNA

CV = 61.6 ug/g

Result	Uncer	Date
62	3	8/29
58	3	8/29
62	3	8/29

Cr 87AND 01 ATNA

CV = 59.3 ug/g

Result	Uncer	Date
61	4	8/29
55	3	8/29
59	4	8/29

Cs 87AND 01 ATNA

CV = 270 ng/g

Result	Uncer	Date
< 1500		8/29
< 1500		8/29
< 1500		8/29

Cu 87AND 01 ATNA

CV = 86.8 ug/g

Result	Uncer	Date
< 300		8/29
< 300		8/29
< 300		8/29

Dy 87AND 01 ATNA

CV = 1.4 ug/g

Result	Uncer	Date
2.3	0.4	8/29
< 8		8/29
< 5		8/29

Eu 87AND 01 ATNA

CV = 610 ng/g

Result	Uncer	Date
620	40	8/29
500	80	8/29
590	100	8/29

Fe 87AND 01 ATNA

CV = 10.6 %

Result	Uncer	Date
11.2	0.6	8/29
10.2	0.6	8/29
11.1	0.6	8/29

Ga 87AND 01 ATNA

CV = 18.9 ug/g

Result	Uncer	Date
< 150		8/29
< 150		8/29
< 150		8/29

Hf 87AND 01 ATNA

CV = 840 ng/g

Result	Uncer	Date
950	100	8/29
710	130	8/29
790	110	8/29

Hg 87AND 01 ATNA

CV = 2.1 ng/g

Result	Uncer	Date
< 800		8/29
< 900		8/29
< 800		8/29

I ATNA

CV = none available ug/g

Result	Uncer	Date
< 22		8/29
< 30		8/29
< 21		8/29

In ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.23		8/29
< 0.30		8/29
< 0.22		8/29

K 87AND 01 ATNA

CV = 2160 ug/g

Result	Uncer	Date
< 8000		8/29
< 8000		8/29
< 8000		8/29

La 87AND 01 ATNA

CV = 3.95 ug/g

Result	Uncer	Date
3.65	0.23	8/29
3.91	0.23	8/29
3.75	0.19	8/29

Lu 87AND 01 ATNA

CV = 160 ng/g

Result	Uncer	Date
190	20	8/29
130	20	8/29
150	20	8/29

Mg 87AND 01 ATNA

CV = 4.72 %

Result	Uncer	Date
3.42	0.18	8/29
4.55	0.24	8/29
3.68	0.20	8/29

Mn 87AND 01 ATNA

CV = 1320 ug/g

Result	Uncer	Date
1620	70	8/29
1560	60	8/29
1610	70	8/29

Na 87AND 01 ATNA

CV = 0.913 %

Result	Uncer	Date
1.00	0.04	8/29
0.98	0.04	8/29
0.98	0.04	8/29

TABLE C-V (cont)

****

GSJ JGb-1 Gabbro
(cont)

****

Nd 87AND 01 ATNA

CV = 5.7 ug/g

Result	Uncer	Date
< 30		8/29
< 40		8/29
< 30		8/29

Rb 87AND 01 ATNA

CV = 4 ug/g

Result	Uncer	Date
< 15		8/29
< 14		8/29
< 15		8/29

Sb 87AND 01 ATNA

CV = 110 ng/g

Result	Uncer	Date
< 300		8/29
< 300		8/29
< 300		8/29

Sc 87AND 01 ATNA

CV = 35 ug/g

Result	Uncer	Date
36.1	1.9	8/29
32.8	1.7	8/29
36.0	1.9	8/29

Se 87AND 01 ATNA

CV = 170 ng/g

Result	Uncer	Date
< 6000		8/29
< 6000		8/29
< 6000		8/29

Sm 87AND 01 ATNA

CV = 1.5 ug/g

Result	Uncer	Date
1.49	0.07	8/29
1.44	0.07	8/29
1.45	0.07	8/29

Sr 87AND 01 ATNA

CV = 321 ug/g

Result	Uncer	Date
< 400		8/29
< 400		8/29
< 400		8/29

Ta 87AND 01 ATNA

CV = 170 ng/g

Result	Uncer	Date
< 700		8/29
< 700		8/29
< 600		8/29

Tb 87AND 01 ATNA

CV = 300 ng/g

Result	Uncer	Date
200	40	8/29
210	70	8/29
150	70	8/29

Th 87AND 01 ATNA

CV = 530 ng/g

Result	Uncer	Date
350	70	8/29
480	80	8/29
550	80	8/29

Ti 87AND 01 ATNA

CV = 0.97 %

Result	Uncer	Date
0.87	0.11	8/29
0.87	0.11	8/29
0.96	0.12	8/29

U 87AND 01 ATNA

CV = 150 ng/g

Result	Uncer	Date
133	10	8/29
140	10	8/29
154	11	8/29

V 87AND 01 ATNA

CV = 640 ug/g

Result	Uncer	Date
667	24	8/29
640	23	8/29
666	24	8/29

W 87AND 01 ATNA

CV = 0.81 ug/g

Result	Uncer	Date
< 13		8/29
< 13		8/29
< 13		8/29

Yb 87AND 01 ATNA

CV = 1 ug/g

Result	Uncer	Date
1.2	0.1	8/29
1.0	0.1	8/29
1.1	0.1	8/29

Zn 87AND 01 ATNA

CV = 111 ug/g

Result	Uncer	Date
120	20	8/29
< 18		8/29
120	20	8/29

Zr 87AND 01 ATNA

CV = 33 ug/g

Result	Uncer	Date
< 500		8/29
< 230		8/29
< 500		8/29

****

GSJ JLk-1 Lake Sediment

****

Ag ATNA

CV = none available ug/g

Result	Uncer	Date
< 4		7/07
< 4		8/14
< 4		8/14

Al 90TER 01 ATNA

CV = 8.92 %

Result	Uncer	Date
8.8	0.25	7/07
8.9	0.3	8/14
9.1	0.3	8/14

As 90TER 01 ATNA

CV = 27.7 ug/g

Result	Uncer	Date
28	3	7/07
30	3	8/14
26	3	8/14

Au ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.012		7/07
< 0.012		8/14
< 0.009		8/14

Ba ATNA

CV = none available ug/g

Result	Uncer	Date
610	50	7/07
690	60	8/14
700	140	8/14

Br ATNA

CV = none available ug/g

Result	Uncer	Date
10.0	1.0	7/07
9.4	1.0	8/14
8.1	0.9	8/14

Ca 90TER 01 ATNA

CV = 4900 ug/g

Result	Uncer	Date
< 3000		7/07
3700	500	8/14
3700	500	8/14

Ce ATNA

CV = none available ug/g

Result	Uncer	Date
90	4	7/07
96	4	8/14
99	5	8/14

Cl ATNA

CV = none available ug/g

Result	Uncer	Date
< 120		7/07
< 130		8/14
< 140		8/14

Co 90TER 01 ATNA

CV = 18.1 ug/g

Result	Uncer	Date
16.6	0.9	7/07
18.6	1.0	8/14
18.8	1.1	8/14

Cr 90TER 01 ATNA

CV = 69 ug/g

Result	Uncer	Date
64	4	7/07
73	4	8/14
100	6	8/14

Cs 90TER 01 ATNA

CV = 12.4 ug/g

Result	Uncer	Date
11.8	0.7	7/07
12.7	0.7	8/14
13.1	0.8	8/14

Cu 90TER 01 ATNA

CV = 59.8 ug/g

Result	Uncer	Date
< 300		7/07
< 300		8/14
< 300		8/14

Dy ATNA

CV = none available ug/g

Result	Uncer	Date
8.0	0.7	7/07
6.6	0.6	8/14
7.9	0.7	8/14

Eu ATNA

CV = none available ug/g

Result	Uncer	Date
1.21	0.05	7/07
1.35	0.07	8/14
1.39	0.08	8/14

Fe 90TER 01 ATNA

CV = 4.78 %

Result	Uncer	Date
4.6	0.3	7/07
5.1	0.3	8/14
5.1	0.3	8/14

Ga ATNA

CV = none available ug/g

Result	Uncer	Date
19	3	7/07
25	4	8/14
34	5	8/14

Hf ATNA

CV = none available ug/g

Result	Uncer	Date
3.8	0.3	7/07
4.4	0.5	8/14
4.5	0.6	8/14

Hg ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.7		7/07
< 0.7		8/14
< 0.8		8/14

I ATNA

CV = none available ug/g

Result	Uncer	Date
< 30		7/07
< 30		8/14
< 30		8/14

In ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.3		7/07
< 0.3		8/14
< 0.3		8/14

K 90TER 01 ATNA

CV = 2.3 %

Result	Uncer	Date
2.43	0.16	7/07
2.57	0.18	8/14
2.26	0.15	8/14

La ATNA

CV = none available ug/g

Result	Uncer	Date
43.4	2.5	7/07
44	3	8/14
41	3	8/14

Lu ATNA

CV = none available ug/g

Result	Uncer	Date
0.62	0.03	7/07
0.70	0.04	8/14
0.73	0.04	8/14

TABLE C-V (cont)

****

GSJ JLk-1 Lake Sediment (cont)

****

Mg 90TER 01 ATNA

CV = 1106 %

Result	Uncer	Date
0.90	0.09	7/07
0.98	0.09	8/14
0.97	0.10	8/14

Mn 90TER 01 ATNA

CV = 2100 ug/g

Result	Uncer	Date
2150	90	7/07
2140	90	8/14
2170	90	8/14

Na 90TER 01 ATNA

CV = 7800 ug/g

Result	Uncer	Date
8200	400	7/07
8500	400	8/14
7800	300	8/14

Nd ATNA

CV = none available ug/g

Result	Uncer	Date
66	10	7/07
53	10	8/14
50	10	8/14

Rb 90TER 01 ATNA

CV = 144 ug/g

Result	Uncer	Date
135	7	7/07
154	8	8/14
149	8	8/14

Sb ATNA

CV = none available ug/g

Result	Uncer	Date
2.09	0.13	7/07
2.07	0.14	8/14
1.81	0.13	8/14

Sc ATNA

CV = none available ug/g

Result	Uncer	Date
14.7	0.8	7/07
16.2	0.9	8/14
16.5	0.9	8/14

Se ATNA

CV = none available ug/g

Result	Uncer	Date
< 5		7/07
< 4		8/14
< 5		8/14

Sm ATNA

CV = none available ug/g

Result	Uncer	Date
8.3	0.4	7/07
8.3	0.4	8/14
7.7	0.3	8/14

Sr 90TER 01 ATNA

CV = 69 ug/g

Result	Uncer	Date
< 500		7/07
< 500		8/14
< 500		8/14

Ta ATNA

CV = none available ug/g

Result	Uncer	Date
1.30	0.10	7/07
1.24	0.09	8/14
1.30	0.10	8/14

Tb ATNA

CV = none available ug/g

Result	Uncer	Date
1.16	0.11	7/07
1.20	0.10	8/14
1.20	0.10	8/14

Th ATNA

CV = none available ug/g

Result	Uncer	Date
18.7	0.7	7/07
20.9	0.8	8/14
21.0	0.8	8/14

Ti 90TER 01 ATNA

CV = 4000 ug/g

Result	Uncer	Date
4000	600	7/07
3900	600	8/14
3500	500	8/14

U ATNA

CV = none available ug/g

Result	Uncer	Date
4.05	0.15	7/07
4.33	0.16	8/14
4.36	0.16	8/14

V 90TER 01 ATNA

CV = 116 ug/g

Result	Uncer	Date
119	6	7/07
111	5	8/14
110	5	8/14

W ATNA

CV = none available ug/g

Result	Uncer	Date
2.8	0.5	7/07
3.6	0.8	8/14
3.5	0.6	8/14

Yb ATNA

CV = none available ug/g

Result	Uncer	Date
4.4	0.3	7/07
4.9	0.3	8/14
4.1	0.3	8/14

Zn 90TER 01 ATNA

CV = 151 ug/g

Result	Uncer	Date
140	20	7/07
150	20	8/14
150	20	8/14

Zr ATNA

CV = none available ug/g

Result	Uncer	Date
< 190		7/07
< 350		8/14
280	110	8/14

****

GSJ JLs-1 Limestone

****

Ag ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.4		6/08
< 0.3		8/14
< 0.4		8/14

Al 90TER 01 ATNA

CV = 110 ug/g

Result	Uncer	Date
< 400		6/08
< 400		8/14
< 400		8/14

As 90TER 01 ATNA

CV = 150 ng/g

Result	Uncer	Date
< 400		6/08
180	50	8/14
< 300		8/14

Au ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.0020		6/08
< 0.0018		8/14
< 0.0018		8/14

Ba ATNA

CV = none available ug/g

Result	Uncer	Date
460	220	6/08
520	110	8/14
510	90	8/14

Br ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.5		6/08
< 0.4		8/14
< 0.4		8/14

Ca 90TER 01 ATNA

CV = 39.34 %

Result	Uncer	Date
40.9	1.7	6/08
41.8	1.7	8/14
42.9	1.7	8/14

Ce ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.40		6/08
< 0.23		8/14
< 0.12		8/14

Cl ATNA

CV = none available ug/g

Result	Uncer	Date
< 50		6/08
< 60		8/14
< 60		8/14

Co 90TER 01 ATNA

CV = < 300 ng/g

Result	Uncer	Date
15	12	6/08
< 100		8/14
< 26		8/14

Cr 90TER 01 ATNA

CV = 3 ug/g

Result	Uncer	Date
3.3	0.3	6/08
2.7	0.2	8/14
3.1	0.3	8/14

Cs 90TER 01 ATNA

CV = < 200 ng/g

Result	Uncer	Date
< 120		6/08
< 100		8/14
< 130		8/14

Cu 90TER 01 ATNA

CV = < 0.5 ug/g

Result	Uncer	Date
< 80		6/08
< 80		8/14
< 90		8/14

Dy ATNA

CV = none available ug/g

Result	Uncer	Date
< 2.3		6/08
< 1.7		8/14
< 1.8		8/14

Eu ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.04		6/08
< 0.03		8/14
< 0.04		8/14

Fe 90TER 01 ATNA

CV = 100 ug/g

Result	Uncer	Date
87	9	6/08
110	20	8/14
97	9	8/14

Ga ATNA

CV = none available ug/g

Result	Uncer	Date
< 4		6/08
< 3		8/14
< 3		8/14

Hf ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.08		6/08
< 0.08		8/14
< 0.09		8/14

Hg ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.10		6/08
< 0.10		8/14
< 0.12		8/14

I ATNA

CV = none available ug/g

Result	Uncer	Date
< 6		6/08
< 5		8/14
< 5		8/14

TABLE C-V (cont)

****

GSJ JLs-1 Limestone
(cont)

****

In ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.07		6/08
< 0.06		8/14
< 0.06		8/14

K 90TER 01 ATNA

CV = 25 ug/g

Result	Uncer	Date
< 240		6/08
< 180		8/14
< 180		8/14

La ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.40		6/08
0.08	0.03	8/14
0.09	0.03	8/14

Lu ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.02		6/08
< 0.03		8/14
< 0.03		8/14

Mg 90TER 01 ATNA

CV = 3700 ug/g

Result	Uncer	Date
3600	300	6/08
3340	240	8/14
3170	230	8/14

Mn 90TER 01 ATNA

CV = 15 ug/g

Result	Uncer	Date
18.8	1.2	6/08
20.2	1.4	8/14
18.5	1.2	8/14

Na 90TER 01 ATNA

CV = 15 ug/g

Result	Uncer	Date
12.0	1.0	6/08
14.2	1.1	8/14
11.9	0.9	8/14

Nd ATNA

CV = none available ug/g

Result	Uncer	Date
< 2.3		6/08
< 4		8/14
< 4		8/14

Rb 90TER 01 ATNA

CV = < 200 ng/g

Result	Uncer	Date
< 2300		6/08
< 1900		8/14
< 2100		8/14

Sb ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.04		6/08
< 0.04		8/14
< 0.04		8/14

Sc ATNA

CV = none available ug/g

Result	Uncer	Date
0.0210	0.0020	6/08
0.0263	0.0018	8/14
0.0246	0.0018	8/14

Se ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.6		6/08
< 0.7		8/14
< 0.9		8/14

Sm ATNA

CV = none available ug/g

Result	Uncer	Date
0.013	0.007	6/08
< 0.09		8/14
0.012	0.006	8/14

Sr 90TER 01 ATNA

CV = 296 ug/g

Result	Uncer	Date
280	40	6/08
340	40	8/14
280	40	8/14

Ta ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.11		6/08
< 0.09		8/14
< 0.11		8/14

Tb ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.07		6/08
1.84	0.17	8/14
< 0.08		8/14

Th ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.06		6/08
< 0.07		8/14
< 0.07		8/14

Ti 90TER 01 ATNA

CV = < 12 ug/g

Result	Uncer	Date
< 1800		6/08
< 1500		8/14
< 1500		8/14

U ATNA

CV = none available ug/g

Result	Uncer	Date
1.80	0.07	6/08
1.92	0.07	8/14
1.95	0.08	8/14

V 90TER 01 ATNA

CV = < 5 ug/g

Result	Uncer	Date
2.7	0.6	6/08
3.9	0.7	8/14
3.7	0.6	8/14

W ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.8		6/08
< 0.7		8/14
< 0.3		8/14

Yb ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.10		6/08
< 0.09		8/14
< 0.09		8/14

Zn 90TER 01 ATNA

CV = 2.9 ug/g

Result	Uncer	Date
2.4	0.2	6/08
4.6	1.5	8/14
3.4	1.3	8/14

Zr ATNA

CV = none available ug/g

Result	Uncer	Date
< 22		6/08
< 18		8/14
< 22		8/14

****

GSJ JP-1 Peroditite

****

Ag ATNA

CV = none available ug/g

Result	Uncer	Date
< 3		8/29
< 3		8/29
< 3		8/29

Al 87AND 01 ATNA

CV = 3280 ug/g

Result	Uncer	Date
3930	200	8/29
3740	200	8/29
3480	190	8/29

As 87AND 01 ATNA

CV = 340 ng/g

Result	Uncer	Date
< 2000		8/29
< 2100		8/29
< 2100		8/29

Au 87AND 01 ATNA

CV = 0.1 ng/g

Result	Uncer	Date
< 5		8/29
< 5		8/29
< 5		8/29

Ba 87AND 01 ATNA

CV = 17 ug/g

Result	Uncer	Date
< 300		8/29
< 300		8/29
< 300		8/29

Br ATNA

CV = none available ug/g

Result	Uncer	Date
< 2.3		8/29
< 2.3		8/29
< 2.4		8/29

Ca 87AND 01 ATNA

CV = 4000 ug/g

Result	Uncer	Date
3900	300	8/29
3100	300	8/29
3100	300	8/29

Ce ATNA

CV = none available ug/g

Result	Uncer	Date
< 1.4		8/29
< 1.4		8/29
< 1.4		8/29

Cl 87AND 01 ATNA

CV = 50 ug/g

Result	Uncer	Date
77	11	8/29
68	10	8/29
< 60		8/29

Co 87AND 01 ATNA

CV = 116 ug/g

Result	Uncer	Date
112	6	8/29
112	6	8/29
112	6	8/29

Cr 87AND 01 ATNA

CV = 2970 ug/g

Result	Uncer	Date
2960	170	8/29
2970	170	8/29
2990	180	8/29

Cs 87AND 01 ATNA

CV = < 100 ng/g

Result	Uncer	Date
< 800		8/29
< 800		8/29
< 800		8/29

Cu 87AND 01 ATNA

CV = 5.7 ug/g

Result	Uncer	Date
< 140		8/29
< 140		8/29
< 140		8/29

Dy ATNA

CV = none available ug/g

Result	Uncer	Date
< 6		8/29
< 6		8/29
< 6		8/29

Eu ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.11		8/29
< 0.11		8/29
< 0.11		8/29

Fe 87AND 01 ATNA

CV = 5.83 %

Result	Uncer	Date
5.7	0.3	8/29
5.8	0.3	8/29
5.8	0.3	8/29

Ga 87AND 01 ATNA

CV = 0.5 ng/g

Result	Uncer	Date
< 70		8/29
< 80		8/29
< 80		8/29

TABLE C-V (cont)

****

GSJ JP-1 Peroditite
(cont)

****

Hf 87AND 01 ATNA

CV = 200 ng/g

Result	Uncer	Date
< 400		8/29
< 400		8/29
< 400		8/29

Hg ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.6		8/29
< 0.6		8/29
< 0.6		8/29

I ATNA

CV = none available ug/g

Result	Uncer	Date
< 20		8/29
< 20		8/29
< 20		8/29

In ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.12		8/29
< 0.13		8/29
< 0.13		8/29

K 87AND 01 ATNA

CV = 25 ug/g

Result	Uncer	Date
< 2400		8/29
< 2300		8/29
< 2200		8/29

La 87AND 01 ATNA

CV = 40 ng/g

Result	Uncer	Date
< 60		8/29
< 60		8/29
< 70		8/29

Lu ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.12		8/29
< 0.12		8/29
< 0.12		8/29

Mg 87AND 01 ATNA

CV = 26.97 %

Result	Uncer	Date
27.1	1.4	8/29
26.7	1.5	8/29
26.6	1.4	8/29

Mn 87AND 01 ATNA

CV = 929 ug/g

Result	Uncer	Date
970	40	8/29
970	40	8/29
960	40	8/29

Na 87AND 01 ATNA

CV = 156 ug/g

Result	Uncer	Date
151	8	8/29
160	8	8/29
148	9	8/29

Nd ATNA

CV = none available ug/g

Result	Uncer	Date
< 21		8/29
< 21		8/29
< 21		8/29

Rb 87AND 01 ATNA

CV = < 1 ug/g

Result	Uncer	Date
< 11		8/29
< 11		8/29
< 11		8/29

Sb 87AND 01 ATNA

CV = < 40 ng/g

Result	Uncer	Date
< 140		8/29
< 150		8/29
< 140		8/29

Sc 87AND 01 ATNA

CV = 7.7 ug/g

Result	Uncer	Date
6.8	0.4	8/29
6.8	0.4	8/29
6.8	0.4	8/29

Se 87AND 01 ATNA

CV = 6.3 ng/g

Result	Uncer	Date
< 4000		8/29
< 4000		8/29
< 4000		8/29

Sm ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.19		8/29
< 0.2		8/29
< 0.2		8/29

Sr 87AND 01 ATNA

CV = < 1 ug/g

Result	Uncer	Date
< 300		8/29
< 300		8/29
< 300		8/29

Ta 87AND 01 ATNA

CV = < 1 ug/g

Result	Uncer	Date
< 0.5		8/29
< 0.5		8/29
< 0.5		8/29

Tb ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.4		8/29
< 0.5		8/29
< 0.05		8/29

Th 87AND 01 ATNA

CV = 180 ng/g

Result	Uncer	Date
< 400		8/29
< 400		8/29
< 400		8/29

Ti 87AND 01 ATNA

CV = 60 ug/g

Result	Uncer	Date
< 5000		8/29
< 5000		8/29
< 5000		8/29

U 87AND 01 ATNA

CV = 50 ng/g

Result	Uncer	Date
< 17		8/29
< 30		8/29
< 30		8/29

V 87AND 01 ATNA

CV = 29 ug/g

Result	Uncer	Date
28.7	1.9	8/29
26.6	1.7	8/29
26.5	1.8	8/29

W ATNA

CV = none available ug/g

Result	Uncer	Date
< 6		8/29
< 6		8/29
< 6		8/29

Yb ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.23		8/29
< 0.23		8/29
< 0.23		8/29

Zn 87AND 01 ATNA

CV = 29.5 ug/g

Result	Uncer	Date
39	7	8/29
43	7	8/29
47	7	8/29

Zr 87AND 01 ATNA

CV = 6 ug/g

Result	Uncer	Date
< 130		8/29
< 130		8/29
< 130		8/29

****

GSJ JSd-1 Stream Sediment

****

Ag ATNA

CV = none available ug/g

Result	Uncer	Date
< 3		6/08

Al 90TER 01 ATNA

CV = 7.76 %

Result	Uncer	Date
7.83	0.22	6/08

As 90TER 01 ATNA

CV = 2.36 ug/g

Result	Uncer	Date
2.1	0.4	6/08

Au ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.01		6/08

Ba ATNA

CV = none available ug/g

Result	Uncer	Date
620	60	6/08

Br ATNA

CV = none available ug/g

Result	Uncer	Date
1.3	0.3	6/08

Ca 90TER 01 ATNA

CV = 2.2 %

Result	Uncer	Date
2.17	0.12	6/08

Ce ATNA

CV = none available ug/g

Result	Uncer	Date
35.6	1.6	6/08

Cl ATNA

CV = none available ug/g

Result	Uncer	Date
< 140		6/08

Co 90TER 01 ATNA

CV = 10.9 ug/g

Result	Uncer	Date
11.0	0.6	6/08

Cr 90TER 01 ATNA

CV = 22 ug/g

Result	Uncer	Date
24.1	1.6	6/08

Cs 90TER 01 ATNA

CV = 2 ug/g

Result	Uncer	Date
2.13	0.17	6/08

Cu 90TER 01 ATNA

CV = 22.2 ug/g

Result	Uncer	Date
< 300		6/08

Dy ATNA

CV = none available ug/g

Result	Uncer	Date
2.2	0.3	6/08

Eu ATNA

CV = none available ug/g

Result	Uncer	Date
1.01	0.06	6/08

Fe 90TER 01 ATNA

CV = 3.57 %

Result	Uncer	Date
3.62	0.18	6/08

Ga ATNA

CV = none available ug/g

Result	Uncer	Date
< 30		6/08

TABLE C-V (cont)

****

GSJ JSd-1 Stream Sediment (cont)

****

Hf ATNA
CV = none available ug/g

Result	Uncer	Date
4.0	0.4	6/08

Hg ATNA
CV = none available ug/g

Result	Uncer	Date
< 0.5		6/08

I ATNA
CV = none available ug/g

Result	Uncer	Date
< 20		6/08

In ATNA
CV = none available ug/g

Result	Uncer	Date
< 0.3		6/08

K 90TER 01 ATNA
CV = 1.82 %

Result	Uncer	Date
1.83	0.14	6/08

La ATNA
CV = none available ug/g

Result	Uncer	Date
17.3	0.9	6/08

Lu ATNA
CV = none available ug/g

Result	Uncer	Date
0.217	0.019	6/08

Mg 90TER 01 ATNA
CV = 1.12 %

Result	Uncer	Date
1.07	0.08	6/08

Mn 90TER 01 ATNA
CV = 720 ug/g

Result	Uncer	Date
750	30	6/08

Na 90TER 01 ATNA
CV = 2.03 %

Result	Uncer	Date
2.05	0.09	6/08

Nd ATNA
CV = none available ug/g

Result	Uncer	Date
< 19		6/08

Rb 90TER 01 ATNA
CV = 65 ug/g

Result	Uncer	Date
65	4	6/08

Sb ATNA
CV = none available ug/g

Result	Uncer	Date
< 0.3		6/08

Sc ATNA
CV = none available ug/g

Result	Uncer	Date
10.7	0.6	6/08

Se ATNA
CV = none available ug/g

Result	Uncer	Date
< 4		6/08

Sm ATNA
CV = none available ug/g

Result	Uncer	Date
3.42	0.16	6/08

Sr 90TER 01 ATNA
CV = 323 ug/g

Result	Uncer	Date
200	60	6/08

Ta ATNA
CV = none available ug/g

Result	Uncer	Date
0.76	0.08	6/08

Tb ATNA
CV = none available ug/g

Result	Uncer	Date
0.42	0.05	6/08

Th ATNA
CV = none available ug/g

Result	Uncer	Date
4.50	0.18	6/08

Ti 90TER 01 ATNA
CV = 3900 ug/g

Result	Uncer	Date
3700	500	6/08

U ATNA
CV = none available ug/g

Result	Uncer	Date
0.96	0.04	6/08

V 90TER 01 ATNA
CV = 81 ug/g

Result	Uncer	Date
75	4	6/08

W ATNA
CV = none available ug/g

Result	Uncer	Date
< 6		6/08

Yb ATNA
CV = none available ug/g

Result	Uncer	Date
1.2	0.2	6/08

Zn 90TER 01 ATNA
CV = 99 ug/g

Result	Uncer	Date
100	10	6/08

Zr ATNA
CV = none available ug/g

Result	Uncer	Date
340	90	6/08

****

GSJ JSd-2 Stream Sediment

****

Ag ATNA
CV = none available ug/g

Result	Uncer	Date
< 4		6/08

Al 90TER 01 ATNA
CV = 6.6 %

Result	Uncer	Date
6.46	0.19	6/08

As 90TER 01 ATNA
CV = 39.4 ug/g

Result	Uncer	Date
40	4	6/08

Au ATNA
CV = none available ug/g

Result	Uncer	Date
0.075	0.008	6/08

Ba ATNA
CV = none available ug/g

Result	Uncer	Date
1240	70	6/08

Br ATNA
CV = none available ug/g

Result	Uncer	Date
1.3	0.7	6/08

Ca 90TER 01 ATNA
CV = 2.6 %

Result	Uncer	Date
2.58	0.13	6/08

Ce ATNA
CV = none available ug/g

Result	Uncer	Date
23.5	1.4	6/08

Cl ATNA
CV = none available ug/g

Result	Uncer	Date
< 100		6/08

Co 90TER 01 ATNA
CV = 48 ug/g

Result	Uncer	Date
44.7	2.4	6/08

Cr 90TER 01 ATNA
CV = 104 ug/g

Result	Uncer	Date
112	7	6/08

Cs 90TER 01 ATNA
CV = 1.2 ug/g

Result	Uncer	Date
1.0	0.1	6/08

Cu 90TER 01 ATNA
CV = 1114 ug/g

Result	Uncer	Date
1300	200	6/08

Dy ATNA
CV = none available ug/g

Result	Uncer	Date
3.4	0.4	6/08

Eu ATNA
CV = none available ug/g

Result	Uncer	Date
0.80	0.04	6/08

Fe 90TER 01 ATNA
CV = 8.05 %

Result	Uncer	Date
7.6	0.4	6/08

Ga ATNA
CV = none available ug/g

Result	Uncer	Date
< 30		6/08

Hf ATNA
CV = none available ug/g

Result	Uncer	Date
2.95	0.15	6/08

Hg ATNA
CV = none available ug/g

Result	Uncer	Date
0.5	0.3	6/08

I ATNA
CV = none available ug/g

Result	Uncer	Date
< 18		6/08

In ATNA
CV = none available ug/g

Result	Uncer	Date
0.29	0.05	6/08

K 90TER 01 ATNA
CV = 0.95 %

Result	Uncer	Date
0.88	0.09	6/08

La ATNA
CV = none available ug/g

Result	Uncer	Date
11.3	0.6	6/08

Lu ATNA
CV = none available ug/g

Result	Uncer	Date
0.293	0.023	6/08

Mg 90TER 01 ATNA
CV = 1.69 %

Result	Uncer	Date
1.40	0.08	6/08

TABLE C-V (cont)

****

GSJ JSd-2 Stream Sediment (cont)

****

Mn 90TER 01 ATNA
CV = 950 ug/g

Result	Uncer	Date
1000	40	6/08

Na 90TER 01 ATNA
CV = 1.84 %

Result	Uncer	Date
1.86	0.08	6/08

Nd ATNA
CV = none available ug/g

Result	Uncer	Date
< 30		6/08

Rb 90TER 01 ATNA
CV = 27 ug/g

Result	Uncer	Date
29	4	6/08

Sb ATNA
CV = none available ug/g

Result	Uncer	Date
11.6	0.6	6/08

Sc ATNA
CV = none available ug/g

Result	Uncer	Date
16.4	0.9	6/08

Se ATNA
CV = none available ug/g

Result	Uncer	Date
19	5	6/08

Sm ATNA
CV = none available ug/g

Result	Uncer	Date
2.80	0.13	6/08

Sr 90TER 01 ATNA
CV = 202 ug/g

Result	Uncer	Date
< 300		6/08

Ta ATNA
CV = none available ug/g

Result	Uncer	Date
< 0.6		6/08

Tb ATNA
CV = none available ug/g

Result	Uncer	Date
0.44	0.05	6/08

Th ATNA
CV = none available ug/g

Result	Uncer	Date
2.35	0.12	6/08

Ti 90TER 01 ATNA
CV = 3800 ug/g

Result	Uncer	Date
3300	500	6/08

U ATNA
CV = none available ug/g

Result	Uncer	Date
1.15	0.05	6/08

V 90TER 01 ATNA
CV = 124 ug/g

Result	Uncer	Date
127	5	6/08

W ATNA
CV = none available ug/g

Result	Uncer	Date
4.7	0.7	6/08

Yb ATNA
CV = none available ug/g

Result	Uncer	Date
2.02	0.18	6/08

Zn 90TER 01 ATNA
CV = 2070 ug/g

Result	Uncer	Date
2000	300	6/08

Zr ATNA
CV = none available ug/g

Result	Uncer	Date
< 200		6/08

****

GSJ JSd-3 Stream Sediment

****

Ag ATNA
CV = none available ug/g

Result	Uncer	Date
3.5	0.7	6/08

Al 90TER 01 ATNA
CV = 5.36 %

Result	Uncer	Date
5.22	0.15	6/08

As 90TER 01 ATNA
CV = 261 ug/g

Result	Uncer	Date
230	30	6/08

Au ATNA
CV = none available ug/g

Result	Uncer	Date
< 0.009		6/08

Ba ATNA
CV = none available ug/g

Result	Uncer	Date
480	40	6/08

Br ATNA
CV = none available ug/g

Result	Uncer	Date
4.8	0.6	6/08

Ca 90TER 01 ATNA
CV = 3800 ug/g

Result	Uncer	Date
< 2300		6/08

Ce ATNA
CV = none available ug/g

Result	Uncer	Date
44.3	2.3	6/08

Cl ATNA
CV = none available ug/g

Result	Uncer	Date
< 70		6/08

Co 90TER 01 ATNA
CV = 12.5 ug/g

Result	Uncer	Date
11.7	0.6	6/08

Cr 90TER 01 ATNA
CV = 35 ug/g

Result	Uncer	Date
36.2	2.3	6/08

Cs 90TER 01 ATNA
CV = 30.6 ug/g

Result	Uncer	Date
28.8	1.6	6/08

Cu 90TER 01 ATNA
CV = 426 ug/g

Result	Uncer	Date
310	80	6/08

Dy ATNA
CV = none available ug/g

Result	Uncer	Date
< 7		6/08

Eu ATNA
CV = none available ug/g

Result	Uncer	Date
0.70	0.04	6/08

Fe 90TER 01 ATNA
CV = 3.07 %

Result	Uncer	Date
2.91	0.15	6/08

Ga ATNA
CV = none available ug/g

Result	Uncer	Date
< 14		6/08

Hf ATNA
CV = none available ug/g

Result	Uncer	Date
3.4	0.3	6/08

Hg ATNA
CV = none available ug/g

Result	Uncer	Date
< 0.7		6/08

I ATNA
CV = none available ug/g

Result	Uncer	Date
< 21		6/08

In ATNA
CV = none available ug/g

Result	Uncer	Date
3.3	0.5	6/08

K 90TER 01 ATNA
CV = 1.67 %

Result	Uncer	Date
1.59	0.11	6/08

La ATNA
CV = none available ug/g

Result	Uncer	Date
18.9	1.0	6/08

Lu ATNA
CV = none available ug/g

Result	Uncer	Date
0.23	0.02	6/08

Mg 90TER 01 ATNA
CV = 7120 ug/g

Result	Uncer	Date
6900	700	6/08

Mn 90TER 01 ATNA
CV = 1110 ug/g

Result	Uncer	Date
1170	50	6/08

Na 90TER 01 ATNA
CV = 3300 ug/g

Result	Uncer	Date
2840	130	6/08

Nd ATNA
CV = none available ug/g

Result	Uncer	Date
26	6	6/08

Rb 90TER 01 ATNA
CV = 285 ug/g

Result	Uncer	Date
274	13	6/08

Sb ATNA
CV = none available ug/g

Result	Uncer	Date
3.26	0.17	6/08

Sc ATNA
CV = none available ug/g

Result	Uncer	Date
10.5	0.6	6/08

Se ATNA
CV = none available ug/g

Result	Uncer	Date
1.5	0.7	6/08

Sm ATNA
CV = none available ug/g

Result	Uncer	Date
2.98	0.14	6/08

TABLE C-V (cont)

****

GSJ JSd-3 Stream Sediment (cont)

****

Sr 90TER 01 ATNA
CV = 60 ug/g

Result	Uncer	Date
< 300		6/08

Ta ATNA
CV = none available ug/g

Result	Uncer	Date
0.55	0.05	6/08

Tb ATNA
CV = none available ug/g

Result	Uncer	Date
0.44	0.07	6/08

Th ATNA
CV = none available ug/g

Result	Uncer	Date
7.2	0.3	6/08

Ti 90TER 01 ATNA
CV = 2500 ug/g

Result	Uncer	Date
2400	400	6/08

U ATNA
CV = none available ug/g

Result	Uncer	Date
1.67	0.07	6/08

V 90TER 01 ATNA
CV = 72 ug/g

Result	Uncer	Date
66	3	6/08

W ATNA
CV = none available ug/g

Result	Uncer	Date
190	20	6/08

Yb ATNA
CV = none available ug/g

Result	Uncer	Date
1.49	0.12	6/08

Zn 90TER 01 ATNA
CV = 139 ug/g

Result	Uncer	Date
130	20	6/08

Zr ATNA
CV = none available ug/g

Result	Uncer	Date
200	60	6/08

****

GSJ JSl-1 Slate

****

Ag ATNA
CV = none available ug/g

Result	Uncer	Date
< 5		6/08

Al 90TER 01 ATNA
CV = 9.32 %

Result	Uncer	Date
9.1	0.3	6/08

As 90TER 01 ATNA
CV = 15.6 ug/g

Result	Uncer	Date
16	2	6/08

Au ATNA
CV = none available ug/g

Result	Uncer	Date
< 0.013		6/08

Ba ATNA
CV = none available ug/g

Result	Uncer	Date
330	50	6/08

Br ATNA
CV = none available ug/g

Result	Uncer	Date
< 3		6/08

Ca 90TER 01 ATNA
CV = 1.02 %

Result	Uncer	Date
0.93	0.07	6/08

Ce ATNA
CV = none available ug/g

Result	Uncer	Date
62	3	6/08

Cl ATNA
CV = none available ug/g

Result	Uncer	Date
< 100		6/08

Co 90TER 01 ATNA
CV = 14.7 ug/g

Result	Uncer	Date
15	1	6/08

Cr 90TER 01 ATNA
CV = 58 ug/g

Result	Uncer	Date
60	4	6/08

Cs 90TER 01 ATNA
CV = 8.6 ug/g

Result	Uncer	Date
7.8	0.5	6/08

Cu 90TER 01 ATNA
CV = 40 ug/g

Result	Uncer	Date
< 240		6/08

Dy ATNA
CV = none available ug/g

Result	Uncer	Date
4.9	0.4	6/08

Eu ATNA
CV = none available ug/g

Result	Uncer	Date
1.26	0.07	6/08

Fe 90TER 01 ATNA
CV = 4.78 %

Result	Uncer	Date
4.6	0.24	6/08

Ga ATNA
CV = none available ug/g

Result	Uncer	Date
20	4	6/08

Hf ATNA
CV = none available ug/g

Result	Uncer	Date
4.8	0.5	6/08

Hg ATNA
CV = none available ug/g

Result	Uncer	Date
< 0.9		6/08

I ATNA
CV = none available ug/g

Result	Uncer	Date
< 19		6/08

In ATNA
CV = none available ug/g

Result	Uncer	Date
< 0.23		6/08

K 90TER 01 ATNA
CV = 2.37 %

Result	Uncer	Date
2.44	0.17	6/08

La ATNA
CV = none available ug/g

Result	Uncer	Date
29.5	1.7	6/08

Lu ATNA
CV = none available ug/g

Result	Uncer	Date
0.44	0.03	6/08

Mg 90TER 01 ATNA
CV = 1.5 %

Result	Uncer	Date
1.41	0.10	6/08

Mn 90TER 01 ATNA
CV = 480 ug/g

Result	Uncer	Date
499	22	6/08

Na 90TER 01 ATNA
CV = 1.63 %

Result	Uncer	Date
1.67	0.07	6/08

Nd ATNA
CV = none available ug/g

Result	Uncer	Date
24	8	6/08

Rb 90TER 01 ATNA
CV = 116 ug/g

Result	Uncer	Date
121	7	6/08

Sb ATNA
CV = none available ug/g

Result	Uncer	Date
0.9	0.1	6/08

Sc ATNA
CV = none available ug/g

Result	Uncer	Date
16.2	0.9	6/08

Se ATNA
CV = none available ug/g

Result	Uncer	Date
< 5		6/08

Sm ATNA
CV = none available ug/g

Result	Uncer	Date
6.0	0.3	6/08

Sr 90TER 01 ATNA
CV = 192 ug/g

Result	Uncer	Date
380	90	6/08

Ta ATNA
CV = none available ug/g

Result	Uncer	Date
0.68	0.06	6/08

Tb ATNA
CV = none available ug/g

Result	Uncer	Date
0.78	0.08	6/08

Th ATNA
CV = none available ug/g

Result	Uncer	Date
9.8	0.4	6/08

Ti 90TER 01 ATNA
CV = 4400 ug/g

Result	Uncer	Date
4200	600	6/08

U ATNA
CV = none available ug/g

Result	Uncer	Date
2.6	0.1	6/08

V 90TER 01 ATNA
CV = 135 ug/g

Result	Uncer	Date
137	6	6/08

W ATNA
CV = none available ug/g

Result	Uncer	Date
4.7	1.8	6/08

TABLE C-V (cont)

****

GSJ JSl-1 Slate
(cont)

****

Yb ATNA

CV = none available ug/g

Result	Uncer	Date
2.89	0.19	6/08

Zn 90TER 01 ATNA

CV = 112 ug/g

Result	Uncer	Date
110	20	6/08

Zr ATNA

CV = none available ug/g

Result	Uncer	Date
420	100	6/08

****

GSJ JSl-2 Slate

****

Ag ATNA

CV = none available ug/g

Result	Uncer	Date
< 4		6/08

Al ATNA

CV = none available %

Result	Uncer	Date
9.50	0.30	6/08

As ATNA

CV = none available ug/g

Result	Uncer	Date
12	1	6/08

Au ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.012		6/08

Ba ATNA

CV = none available ug/g

Result	Uncer	Date
310	40	6/08

Br ATNA

CV = none available ug/g

Result	Uncer	Date
< 3		6/08

Ca ATNA

CV = none available %

Result	Uncer	Date
1.38	0.08	6/08

Ce ATNA

CV = none available ug/g

Result	Uncer	Date
70	3	6/08

Cl ATNA

CV = none available ug/g

Result	Uncer	Date
< 80		6/08

Co ATNA

CV = none available ug/g

Result	Uncer	Date
14.2	0.8	6/08

Cr ATNA

CV = none available ug/g

Result	Uncer	Date
61	4	6/08

Cs ATNA

CV = none available ug/g

Result	Uncer	Date
8.0	0.5	6/08

Cu ATNA

CV = none available ug/g

Result	Uncer	Date
< 240		6/08

Dy ATNA

CV = none available ug/g

Result	Uncer	Date
5.4	0.5	6/08

Eu ATNA

CV = none available ug/g

Result	Uncer	Date
1.14	0.07	6/08

Fe ATNA

CV = none available %

Result	Uncer	Date
4.29	0.22	6/08

Ga ATNA

CV = none available ug/g

Result	Uncer	Date
17	4	6/08

Hf ATNA

CV = none available ug/g

Result	Uncer	Date
5.2	0.5	6/08

Hg ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.7		6/08

I ATNA

CV = none available ug/g

Result	Uncer	Date
< 19		6/08

In ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.23		6/08

K ATNA

CV = none available %

Result	Uncer	Date
2.60	0.18	6/08

La ATNA

CV = none available ug/g

Result	Uncer	Date
33.8	1.8	6/08

Lu ATNA

CV = none available ug/g

Result	Uncer	Date
0.50	0.03	6/08

Mg ATNA

CV = none available %

Result	Uncer	Date
1.37	0.09	6/08

Mn ATNA

CV = none available ug/g

Result	Uncer	Date
670	30	6/08

Na ATNA

CV = none available %

Result	Uncer	Date
1.02	0.04	6/08

Nd ATNA

CV = none available ug/g

Result	Uncer	Date
31	7	6/08

Rb ATNA

CV = none available ug/g

Result	Uncer	Date
129	7	6/08

Sb ATNA

CV = none available ug/g

Result	Uncer	Date
1.0	0.1	6/08

Sc ATNA

CV = none available ug/g

Result	Uncer	Date
15.8	0.8	6/08

Se ATNA

CV = none available ug/g

Result	Uncer	Date
< 4		6/08

Sm ATNA

CV = none available ug/g

Result	Uncer	Date
6.7	0.3	6/08

Sr ATNA

CV = none available ug/g

Result	Uncer	Date
410	90	6/08

Ta ATNA

CV = none available ug/g

Result	Uncer	Date
0.81	0.07	6/08

Tb ATNA

CV = none available ug/g

Result	Uncer	Date
0.72	0.07	6/08

Th ATNA

CV = none available ug/g

Result	Uncer	Date
11.4	0.4	6/08

Ti ATNA

CV = none available ug/g

Result	Uncer	Date
3900	500	6/08

U ATNA

CV = none available ug/g

Result	Uncer	Date
2.73	0.10	6/08

V ATNA

CV = none available ug/g

Result	Uncer	Date
120	5	6/08

W ATNA

CV = none available ug/g

Result	Uncer	Date
2.7	0.6	6/08

Yb ATNA

CV = none available ug/g

Result	Uncer	Date
3.29	0.20	6/08

Zn ATNA

CV = none available ug/g

Result	Uncer	Date
70	30	6/08

Zr ATNA

CV = none available ug/g

Result	Uncer	Date
< 190		6/08

****

HSE-9 Flash Point of 1-Hexanol

****

Flash Point 86WIL 01 FP

CV = 145 Deg. F

Result	Uncer	Date
144	4	1/04
144	4	1/04
144	4	1/31
145	4	3/26
146	4	5/03
146	4	6/14
146	4	6/14
144	4	6/29
143	4	8/20
144	4	8/31
144	4	10/09
144	4	11/06

TABLE C-V (cont)

****

HSE-9 Gross Alpha/Beta in Water

****

Alpha 89GAU 04 PC

CV = 1.0 + 0.5 pCi/L

Result	Uncer	Date
- 0.3	0.4	2/14
1.6	0.5	4/12
- 1.9	0.7	4/25
0.3	0.4	5/03
0.7	0.4	5/10
0.7	0.4	5/22
1.3	0.5	6/14
1.3	0.5	7/05
0.1	0.3	7/23
1.8	0.6	9/04
0.6	0.3	10/01
0.8	0.4	10/24
0.8	0.4	10/24
0.1	0.2	10/24
2.5	0.8	12/05

CV = 5.3 + 1.1 pCi/L

Result	Uncer	Date
11	2	10/17
11	2	10/24

CV = 6.0 + 0.6 pCi/L

Result	Uncer	Date
11	2	2/08

CV = 7.1 + 1.4 pCi/L

Result	Uncer	Date
14	3	7/05

CV = 7.2 + 1.4 pCi/L

Result	Uncer	Date
5	1	2/14
8	2	5/10
1.8	0.5	6/04

On 6/4, analyte may have plated out on walls of sample container prior to analysis

CV = 8.9 + 1.8 pCi/L

Result	Uncer	Date
100	90	8/20
14	3	10/17
16	3	11/15

CV = 9.6 + 1.9 pCi/L

Result	Uncer	Date
5	1	4/26

Alpha (cont)

CV = 12 + 1.2 pCi/L

Result	Uncer	Date
5	1	5/02
16	3	5/22
24	5	6/04
18	4	10/24

Beta 89GAU 04 PC

CV = 0.6 + 0.3 pCi/L

Result	Uncer	Date
1.6	0.3	2/14
1.7	0.3	4/12
4.3	0.6	4/25
0.8	0.3	5/03
0.5	0.3	5/10
2.5	0.4	5/22
3.0	0.4	6/14
1.0	0.3	7/05
0.4	0.2	7/23
1.6	0.3	9/04
0.2	0.2	10/01
0.8	0.3	10/24
0.7	0.3	10/24
0.5	0.2	10/24
1.7	0.3	12/05

CV = 5.4 + 1.1 pCi/L

Result	Uncer	Date
8.4	1	5/10
0.9	0.3	6/04

On 6/4, analyte may have plated out on walls of sample container prior to analysis

CV = 6.7 + 1.3 pCi/L

Result	Uncer	Date
7.6	0.9	10/24

CV = 8.9 + 1.8 pCi/L

Result	Uncer	Date
9.0	1	10/17
8.7	1	11/15

CV = 9.0 + 0.9 pCi/L

Result	Uncer	Date
11	1	5/22
10	1	6/04

CV = 10 + 1 pCi/L

Result	Uncer	Date
8.4	1	2/08

CV = 12 + 1.2 pCi/L

Result	Uncer	Date
5.6	0.7	2/14

Beta (cont)

CV = 13 + 1.3 pCi/L

Result	Uncer	Date
14	1	10/24

CV = 13.4 + 1.3 pCi/L

Result	Uncer	Date
14	2	7/05

CV = 16 + 1.6 pCi/L

Result	Uncer	Date
7.4	0.9	4/26
16	2	10/17

CV = 20 + 2 pCi/L

Result	Uncer	Date
8.1	0.9	5/02

CV = 36 + 4 pCi/L

Result	Uncer	Date
< 90		8/20

Gamma G

CV = none available pCi/L

Result	Uncer	Date
< 12		8/20

****

HSE-9 Gross Alpha/Beta on Soil

****

Alpha 90GAU 01 PC

CV = 4.4 + 0.4 pCi/g

Result	Uncer	Date
10	2	7/11

CV = 4.9 + 3.9 pCi/g

Result	Uncer	Date
1.3	0.4	6/26
7	2	10/01
3.9	0.9	10/01

Beta 90GAU 01 PC

CV = 2.4 + 1.5 pCi/g

Result	Uncer	Date
6	0.7	6/26
1.9	0.3	10/01
2	0.3	10/01

CV = 4.8 + 0.5 pCi/g

Result	Uncer	Date
7.7	0.8	7/11

****

HSE-9 Gross Gamma in Soil

****

Gamma 85GAU 01 G

CV = 219 + 11 pCi/g

Result	Uncer	Date
240	20	10/25
240	20	10/25
240	20	10/25
240	20	11/20
240	20	11/20
240	20	11/20

****

HSE-9 Gross Gamma in Water

****

Gamma 85GAU 01 NAI

CV = 1360 + 68 pCi/L

Result	Uncer	Date
2200	300	1/17
1700	300	1/17
1400	300	1/17
1900	300	1/22
1900	300	1/22
1600	300	1/22
1600	300	2/07
1500	300	2/07
1600	300	2/07
1800	300	2/09
1400	300	2/09
1800	300	2/09
1100	200	2/16
1300	300	2/16
1500	300	2/16
1400	300	3/02
1100	300	3/02
1300	300	3/02
1200	300	3/05
1600	300	3/05
1500	300	3/23
1600	300	3/23
1600	300	3/23
1900	300	3/23
1900	300	3/23
1500	300	3/23
1600	300	3/26
1900	300	3/26
1500	300	3/26
1300	300	4/09
900	300	4/09
1600	300	4/09
1700	300	4/23
1800	300	4/23
1900	300	4/23
1800	300	5/17
1600	300	5/17
1800	300	5/17
1800	300	5/17
1600	300	5/17
1800	300	5/17
1800	300	5/17
900	300	7/12
1800	300	5/22
1600	300	5/22
1500	300	5/22
1500	300	7/12
1400	300	7/12
64	6	8/13

Gamma (cont)

2000	300	8/15
2200	300	8/15
1800	300	8/15
1700	300	10/04
1900	300	10/04
1700	300	10/04
2100	300	10/09
2000	300	10/09
2100	300	10/09
1800	300	10/11
2100	300	10/11
2300	300	10/11

****

HSE-9 Oil/Grease in Water

****

Oil/Grease 90GAU 01 GRAV

CV = 26 + 3 mg/L

Result	Uncer	Date
24	5	11/02

CV = 27 + 3 mg/L

Result	Uncer	Date
26	5	2/23

CV = 30 + 3 mg/L

Result	Uncer	Date
26	5	3/22

CV = 40 + 4 mg/L

Result	Uncer	Date
38	8	3/19

CV = 48 + 5 mg/L

Result	Uncer	Date
35	7	5/15

CV = 62.4 + 6.2 mg/L

Result	Uncer	Date
62	12	2/07

CV = 63 + 6 mg/L

Result	Uncer	Date
59	12	3/14

CV = 66 + 7 mg/L

Result	Uncer	Date
58	12	7/03

CV = 77 + 8 mg/L

Result	Uncer	Date
78	16	3/08
74	15	5/18

Oil/Grease (cont)

CV = 78.1 + 7.8 mg/L

Result	Uncer	Date
74	15	2/13

CV = 96 + 10 mg/L

Result	Uncer	Date
83	17	2/28

CV = 106 + 11 mg/L

Result	Uncer	Date
84	17	5/31

****

HSE-9 Mercury on Charcoal

****

Hg FAA

CV = none available ug/g

Result	Uncer	Date
3.9	0.4	4/30
4	0.4	4/30
4	0.4	4/30
3.9	0.4	4/30

****

HSE-9 Radionuclides in Tissue

****

Pu-239 89GAU 03 RAS

CV = 0.111 + 0.011 pCi/sample

Result	Uncer	Date
0.16	0.02	2/15

****

HSE-9 Radionuclides in Urine

****

Am-241 90GAU 01 RAS

CV = 0.25 + 0.01 pCi/sample

Result	Uncer	Date
0.27	0.03	3/15
0.56	0.08	11/19

H-3 90GAU 03 LS

CV = not spiked uCi/L

Result	Uncer	Date
< 0.1		1/02
< 0.1		1/16
< 0.1		1/16
< 1.0		1/29
< 1.0		2/12
< 0.1		2/26
< 0.1		3/12

TABLE C-V (cont)

****

HSE-9 Radionuclides in Urine
(cont)

****

H-3 (cont)

< 0.1		3/26
< 0.1		4/09
< 0.1		4/23
< 0.1		5/07
< 0.1		5/21
< 0.1		6/03
< 0.1		6/04
< 0.1		7/09
< 0.1		7/16
< 0.1		7/16
< 0.1		7/16
< 0.1		8/06
< 0.1		8/06
< 0.1		8/13
< 0.1		8/20
< 0.1		8/20
< 0.1		8/27
< 0.1		8/27
< 0.1		9/03
< 0.1		9/10
< 0.1		10/01
< 0.1		10/01
< 0.1		10/09
< 0.1		10/09
< 0.1		10/29
< 0.1		11/05
< 0.1		11/05
< 0.1		11/13
< 0.1		11/13
< 0.1		11/19
< 0.1		11/19
< 0.1		11/26
< 0.1		12/03
< 0.1		12/03
< 0.1		12/17
4.4	0.3	12/31

CV = 0.44 + 0.02 uCi/L

Result	Uncer	Date
0.4	0.06	7/09
0.4	0.06	7/16
0.4	0.1	7/16
0.4	0.06	7/30
0.4	0.06	8/06
0.4	0.06	8/13
0.4	0.1	8/20
0.4	0.1	9/03
0.5	0.1	9/03
0.4	0.1	9/10
0.4	0.1	9/24
0.4	0.1	9/24
0.44	0.1	10/01
0.4	0.06	10/09
0.5	0.07	10/09
0.4	0.06	10/09
0.4	0.06	10/22
0.5	0.07	11/05
0.3	0.04	11/19
0.3	0.04	11/19
0.4	0.1	12/03
0.4	0.1	12/03
0.5	0.1	12/10
0.5	0.1	12/17

H-3 (cont)

CV = 0.46 + 0.02 uCi/L

Result	Uncer	Date
0.4	0.04	1/02
0.4	0.1	1/16
0.5	0.07	1/16
0.4	0.06	1/29
0.4	0.06	2/12
0.4	0.06	2/26
0.4	0.1	3/12
0.4	0.06	3/26
0.4	0.1	4/09
0.4	0.06	4/23
0.4	0.1	5/07
0.3	0.04	5/21
0.4	0.06	6/03
0.4	0.1	6/04

CV = 0.73 + 0.03 uCi/L

Result	Uncer	Date
0.7	0.1	12/17

CV = 0.74 + 0.03 uCi/L

Result	Uncer	Date
0.7	0.1	7/09
0.8	0.1	7/09
0.7	0.1	7/16
0.7	0.09	7/16
0.7	0.09	7/30
0.7	0.09	8/06
0.7	0.1	8/27
0.8	0.1	9/03
0.6	0.1	9/10
0.7	0.1	9/24
0.7	0.1	9/24
0.7	0.09	10/09
0.7	0.09	10/09
0.7	0.08	10/22
0.7	0.09	10/29
0.7	0.1	11/05
0.6	0.1	12/03
0.7	0.1	12/03
0.7	0.1	12/10

CV = 0.76 + 0.04 uCi/L

Result	Uncer	Date
0.8	0.1	1/16
0.9	0.11	1/16
0.7	0.09	1/29
0.7	0.1	2/12
0.7	0.09	2/26
0.7	0.1	3/12
0.7	0.09	3/26
0.7	0.1	4/09
0.7	0.09	4/23
0.7	0.1	5/07
0.7	0.09	5/21
0.7	0.09	6/03
0.7	0.1	6/04
0.7	0.1	6/04
0.8	0.1	7/02
0.8	0.1	7/02

CV = 4.29 + 0.16 uCi/L

Result	Uncer	Date
3.8	0.5	7/16
3.7	0.5	7/16
4.1	0.5	7/30
4.1	0.5	8/13

H-3 (cont)

4.5	0.6	9/03
3.9	0.5	9/10
4.1	0.5	9/10
3.9	0.5	9/24
4.29	0.4	10/01
4.4	0.6	10/09
4	0.5	10/22
3.9	0.5	10/22
4.3	0.6	10/29
4.4	0.4	11/05
4.4	0.4	11/05
4.3	0.6	11/13
4.2	0.5	11/13
4.4	0.6	12/03
4.3	0.6	12/03
4.5	0.6	12/17
< 0.1		12/31

CV = 4.41 + 0.22 uCi/L

Result	Uncer	Date
4.3	0.6	1/02
4.5	0.32	1/02
5.4	0.7	1/16
4.2	0.6	1/16
4.1	0.5	1/29
3.9	0.5	2/12
4.3	0.6	2/26
5.2	0.7	3/12
4.2	0.6	3/26
4.4	0.6	4/09
3.9	0.5	4/23
4.0	0.5	5/07
3.9	0.5	5/21
4.4	0.6	6/03
4.0	0.5	6/04
4.5	0.6	7/02

CV = 8.58 + 0.32 uCi/L

Result	Uncer	Date
8.2	1	7/30
8.5	1	8/06
8.7	1	8/13
8.4	1.1	8/20
9.1	1.1	8/27
8.1	0.5	9/10
7.7	0.9	9/24
8.2	0.9	9/24
8.3	1	10/01
8.4	1	10/09
8.5	1	10/09
7.9	1	10/22
8.4	1	10/29
8.1	1.1	11/26
8.3	1	11/26
8.5	1	12/10
8.6	1	12/10
9.0	1.1	12/17
9.0	0.5	12/31

CV = 8.82 + 0.44 uCi/L

Result	Uncer	Date
8.9	0.53	1/02
8.3	1	1/16
11	1	1/16
8.7	1	1/29
7.9	1	2/12
8.1	1	2/26
8.2	1	3/12
8.9	1.1	3/26
8.9	1.1	4/09
8	1	4/23
7.9	1	5/07

H-3 (cont)

7.9	1	5/21
9.3	1.1	6/03
8.3	1	6/04
8.4	1	7/02

Pu-238 90GAU 01 RAS

CV = 0.050 + 0.003 pCi/sample

Result	Uncer	Date
0.06	0.01	4/23
0.06	0.01	5/20
0.07	0.02	5/22
0.05	0.01	6/13
0.07	0.02	6/25
0.07	0.02	7/16
0.05	0.01	7/27
0.06	0.01	8/10
0.07	0.02	8/29

CV = 0.06 + 0.003 pCi/sample

Result	Uncer	Date
0.05	0.01	1/05
0.07	0.02	2/07
0.07	0.02	2/22
0.08	0.01	7/16
0.07	0.02	7/27
0.05	0.01	9/05
0.07	0.02	9/05
0.07	0.02	9/17
0.08	0.02	10/10
0.05	0.01	10/10
0.08	0.02	10/16
0.06	0.02	10/30
0.06	0.01	11/05
0.08	0.02	11/05
0.06	0.01	11/05
0.07	0.01	11/08
0.056	0.01	11/14
0.07	0.02	11/14
0.07	0.02	11/14
0.07	0.02	11/14
0.046	0.01	11/14
0.078	0.02	11/19
0.099	0.02	11/19
0.06	0.01	11/21
0.04	0.01	12/18
0.06	0.01	12/18
0.058	0.014	12/20
0.07	0.01	12/21

CV = 0.11 + 0.005 pCi/sample

Result	Uncer	Date
0.12	0.02	3/12
0.11	0.03	4/01
0.13	0.03	4/09
0.10	0.02	4/27
0.11	0.02	5/20
0.13	0.02	5/20
0.13	0.03	6/13
0.11	0.02	7/16
0.14	0.03	8/29

CV = 0.12 + 0.006 pCi/sample

Result	Uncer	Date
0.13	0.01	1/15
0.09	0.01	1/15
0.12	0.01	1/22
0.13	0.03	7/16
0.12	0.02	7/27

Pu-238 (cont)

0.12	0.02	9/05
0.12	0.02	9/05
0.12	0.02	9/26
0.11	0.02	9/30
0.13	0.03	10/10
0.14	0.03	10/30
0.12	0.02	11/13
0.13	0.03	11/14
0.12	0.02	11/14
0.12	0.02	11/19
0.14	0.03	11/20
0.14	0.03	11/21
0.14	0.03	11/26
0.13	0.03	11/28
0.106	0.01	11/30
0.15	0.02	12/13
0.13	0.03	12/20
0.13	0.03	12/20

CV = 0.18 + 0.01 pCi/sample

Result	Uncer	Date
0.19	0.04	4/01
0.24	0.04	4/09
0.20	0.02	4/27
0.19	0.03	5/20
0.18	0.03	6/13
0.20	0.04	6/25
0.25	0.04	7/01
0.16	0.03	7/03
0.19	0.03	7/27
0.17	0.03	8/17
0.22	0.03	9/05

CV = 0.19 + 0.01 pCi/sample

Result	Uncer	Date
0.22	0.02	1/22
0.20	0.04	2/22
0.17	0.03	2/22

CV = 0.20 + 0.01 pCi/sample

Result	Uncer	Date
0.20	0.04	8/29
0.21	0.04	9/05
0.20	0.04	9/05
0.19	0.02	9/05
0.20	0.02	9/25
0.23	0.04	10/10
0.18	0.03	10/30
0.21	0.04	11/07
0.23	0.04	11/14
0.24	0.04	11/14
0.19	0.03	11/14
0.18	0.03	11/19
0.24	0.04	11/20
0.22	0.04	11/26
0.23	0.04	11/26
0.22	0.03	11/30
0.25	0.05	11/30

CV = 0.36 + 0.02 pCi/sample

Result	Uncer	Date
0.37	0.06	3/12
0.41	0.06	3/16
0.35	0.05	5/20
0.37	0.06	6/01
0.43	0.06	6/01
0.40	0.06	6/27
0.35	0.05	8/29

Pu-238 (cont)

CV = 0.39 + 0.02 pCi/sample

Result	Uncer	Date
0.40	0.06	1/05
0.37	0.03	2/02

CV = 0.40 + 0.01 pCi/sample

Result	Uncer	Date
0.43	0.06	7/16
0.43	0.06	7/16
0.43	0.06	8/17
0.43	0.07	9/05
0.46	0.07	10/30
0.40	0.06	10/30
0.42	0.06	11/05
0.43	0.06	11/08
0.44	0.07	11/13
0.38	0.06	11/13
0.44	0.07	11/14
0.40	0.03	11/14
0.48	0.07	11/20
0.30	0.05	11/28
0.43	0.06	11/28
0.43	0.06	11/28
0.48	0.07	11/30
0.41	0.06	12/18
0.40	0.06	12/20
0.42	0.06	12/20
0.39	0.06	12/21
0.47	0.07	12/21

Pu-239 90GAU 01 RAS

CV = 0.050 + 0.002 pCi/sample

Result	Uncer	Date
0.04	0.01	2/02
0.05	0.01	2/02
0.07	0.02	3/12
0.05	0.02	3/16
0.07	0.02	4/09
0.04	0.01	4/27
0.07	0.02	5/02
0.06	0.02	6/01
0.06	0.02	6/01
0.06	0.02	6/13
0.06	0.01	6/25
0.07	0.02	7/27
0.05	0.01	8/29
0.05	0.01	9/05
0.04	0.02	9/17
0.06	0.02	9/25
0.05	0.01	9/30
0.07	0.02	10/10
0.07	0.02	10/30
0.07	0.02	11/05
0.06	0.01	11/05
0.052	0.014	11/14
0.06	0.02	11/14
0.06	0.02	11/14
0.058	0.02	11/14
0.055	0.01	11/19
0.04	0.01	11/26
0.06	0.02	11/28
0.058	0.02	11/30
0.07	0.02	11/30
0.07	0.01	12/13
0.05	0.01	12/21

TABLE C-V (cont)

****

MCE-9 Radionuclides in Urine (cont)

****

Pu-239 (cont)

CV = 0.060 + 0.003 pCi/sample

Result	Uncer	Date
0.05	0.01	1/15
0.06	0.02	2/22
0.05	0.01	2/22

CV = 0.14 + 0.01 pCi/sample

Result	Uncer	Date
0.17	0.02	3/12
0.14	0.02	3/15
0.13	0.02	4/23
0.14	0.01	5/02
0.17	0.02	6/01
0.16	0.02	6/13
0.17	0.02	7/03
0.15	0.02	7/27
0.15	0.02	7/27
0.15	0.02	8/10
0.13	0.03	8/29
0.15	0.02	9/05
0.13	0.02	9/05
0.11	0.02	9/05
0.13	0.02	9/17
0.16	0.02	9/30
0.14	0.02	10/10
0.15	0.03	10/10
0.16	0.02	10/16
0.12	0.01	10/30
0.15	0.02	11/08
0.13	0.02	11/14
0.14	0.02	11/14
0.15	0.02	11/14
0.17	0.02	11/14
0.14	0.02	11/19
0.15	0.02	11/20
0.15	0.02	11/28
0.13	0.02	11/30
0.16	0.02	12/13
0.15	0.02	12/18
0.14	0.02	12/20

CV = 0.15 + 0.01 pCi/sample

Result	Uncer	Date
0.14	0.02	2/22

CV = 0.21 + 0.01 pCi/sample

Result	Uncer	Date
0.25	0.03	3/15
0.20	0.02	4/12
0.22	0.02	5/02
0.25	0.03	5/22
0.22	0.02	6/01
0.23	0.03	6/13
0.21	0.02	7/12
0.22	0.02	7/16
0.26	0.02	7/16
0.42	0.03	7/27
0.26	0.03	8/10
0.22	0.02	8/17
0.19	0.02	9/05
0.21	0.02	9/17
0.17	0.02	9/25
0.18	0.02	9/26

Pu-239 (cont)

0.25	0.02	10/10
0.22	0.02	11/05
0.24	0.03	11/05
0.24	0.03	11/08
0.21	0.02	11/08
0.23	0.02	11/[illegible]
0.22	0.02	11/19
0.21	0.04	11/19
0.24	0.03	11/26
0.21	0.02	11/28
0.23	0.03	12/[illegible]
0.23	0.03	12/10
0.22	0.02	12/21

CV = 0.22 + 0.01 pCi/sample

Result	Uncer	Date
0.23	0.03	1/05
0.21	0.03	1/22
0.24	0.03	2/02

CV = 0.41 + 0.01 pCi/sample

Result	Uncer	Date
0.40	0.03	3/16
0.51	0.03	4/01
0.45	0.04	4/12
0.49	0.04	5/02
0.47	0.04	5/20
0.44	0.04	5/22
0.44	0.04	6/13
0.50	0.04	7/01
0.46	0.04	7/03
0.47	0.04	7/12
0.43	0.03	7/16
0.47	0.04	8/10
0.40	0.03	9/05
0.44	0.04	9/05
0.42	0.03	9/26
0.47	0.04	10/30
0.44	0.04	10/30
0.45	0.04	11/05
0.42	0.03	11/08
0.41	0.03	11/13
0.40	0.03	11/14
0.42	0.03	11/14
0.404	0.03	11/14
0.43	0.03	11/14
0.38	0.03	11/19
0.44	0.04	11/20
0.375	0.03	11/30
0.47	0.04	11/30
0.42	0.03	12/13
0.45	0.04	12/18
0.43	0.03	12/20
0.429	0.03	12/20
0.46	0.04	12/21

CV = 0.44 + 0.02 pCi/sample

Result	Uncer	Date
0.40	0.03	1/22
0.40	0.03	2/07
0.44	0.04	2/22

U-235 90GAU 03 DNA

CV = none available pCi/L

Result	Uncer	Date
< 4		1/02
< 4		1/16
< 4		1/29

U-235 (cont)

< 4		2/12
< 4		2/26
< 4		3/12
< 4		3/26
< 4		4/09
< 4		4/23
< 4		5/07
< 4		5/21
< 4		8/27
< 4		9/24
< 4		10/09
< 4		10/09
< 4		12/31

CV = 5.14 + 0.26 pCi/L

Result	Uncer	Date
4.1	0.6	1/02
4.1	0.6	1/16
4.0	0.32	1/29
4.9	0.5	1/29
4.2	0.6	2/12
4.5	0.6	2/26

CV = 5.68 + 0.20 pCi/L

Result	Uncer	Date
4.6	0.6	6/04
5.5	0.8	9/10
5.8	0.8	11/19
6.2	0.6	12/03
5.6	0.6	12/31

CV = 7.71 + 0.39 pCi/L

Result	Uncer	Date
5.0	1.0	3/12
6.1	1.2	3/26

CV = 8.52 + 0.3 pCi/L

Result	Uncer	Date
6.7	1.3	4/09
7.0	1.4	4/23
7.1	1.4	6/04
6.4	1.7	7/02
6.6	1.0	7/03
7.2	1.1	7/16
7.5	1.7	8/27
8.2	0.7	12/03

CV = 10.28 + 0.51 pCi/L

Result	Uncer	Date
9.3	1.4	3/12
8.6	1.3	3/26

CV = 11.36 + 0.4 pCi/L

Result	Uncer	Date
9.4	1.4	4/09
9.9	1.5	4/23
8.4	1.3	5/07
9.4	1.4	5/21
9.2	1.4	7/03
10	2	7/16
8.3	1.2	7/30
9.4	1.5	7/30
11	2	11/05
11	2	11/19
15	2	12/17

U-235 (cont)

CV = 15.4 + 0.8 pCi/L

Result	Uncer	Date
14	2	1/02
13	2	1/16
15	1	1/29
14	2	2/12
13	2	2/26

CV = 17.0 + 0.6 pCi/L

Result	Uncer	Date
15	2	8/13
15	2	10/22
11	1	11/05

CV = 20.6 + 1.0 pCi/L

Result	Uncer	Date
18.1	1.6	3/12
16.9	1.5	3/26

CV = 22.7 + 0.8 pCi/L

Result	Uncer	Date
20	2	4/09
19.8	1.8	4/23
17	2	5/21
22.3	2	9/10
18	3	10/22
29	4	12/17
21	3	12/31

CV = 25.7 + 1.3 pCi/L

Result	Uncer	Date
22.6	2	1/02
19.9	1.8	1/16
23	5	2/12
22	4	2/26

CV = 28.4 + 1.0 pCi/L

Result	Uncer	Date
22	4	6/04
23	5	7/02
27	5	8/13
26	5	9/24
24	5	10/22
26	5	11/19

U-238 90GAU 03 DNA

CV = none available ug/L

Result	Uncer	Date
< 4		1/02
< 4		1/16
< 4		1/29
< 4		2/12
< 4		2/26
< 4		3/12
< 4		3/26
< 4		4/09
< 4		4/23
< 4		5/21
< 4		7/16
< 4		7/16
< 4		7/30
< 4		8/27

U-238 (cont)

< 4		9/10
< 4		9/24
< 4		10/09
< 4		11/05
< 4		11/19
< 4		12/03
< 4		12/17
< 4		12/17
< 4		12/31
< 4		12/31

CV = 8.48 + 0.24 ug/L

Result	Uncer	Date
9.9	1.6	1/02
8.7	1.4	1/16
9.7	1.6	2/12
11	2	2/26
6.5	1.0	5/07
4.81	0.17	5/21
8.9	1.4	7/03
6.1	1.0	8/13
4.0	0.6	8/27
5.9	0.9	8/27
8.5	1.4	9/24
6.7	1.1	10/09
4.9	0.8	10/09
6.0	1.0	11/19
6.1	1.7	12/03
7.6	2.1	12/17

CV = 12.7 + 0.6 ug/L

Result	Uncer	Date
11	2	1/29
13	2	3/12
12	2	3/26
11	2	6/04
11	2	7/02
8.3	1.3	7/30
11	2	8/13
9.5	1.7	9/10
10	2	9/24
11	2	11/05
10	2	11/05
14	1	12/31

CV = 17.0 + 0.5 ug/L

Result	Uncer	Date
15	2	1/02
14	1	1/16
9.2	0.9	2/12
15	2	2/26
16	2	4/09
15	2	4/23
12	1	8/13
12	1	9/24
14	3	10/22
16	2	10/22
14	1	11/05
20	3	12/31

U-238 (cont)

CV = 21.2 + 0.6 ug/L

Result	Uncer	Date
21	4	3/12
18	3	3/26
20	4	5/07
15	3	5/21
17	3	7/03
20	4	7/30
20	4	8/13
17	3	8/27
11	2	9/24
17	3	10/09
13	2	11/19

CV = 25.4 + 0.7 ug/L

Result	Uncer	Date
24.2	1.5	1/02
21.7	1.3	1/16
24	3	1/29
27.3	1.6	4/09
21.6	1.3	4/23
24.4	1.5	6/04
19.8	1.2	7/02
22.3	1.3	7/03
18.2	1.1	7/16
18.9	1.1	7/16
21.6	1.3	9/10
20	4	10/09
22	1.8	10/22
18.3	1.1	11/19
18.3	1.1	11/19
20	3	12/03
27	3	12/31

CV = 33.9 + 1.7 ug/L

Result	Uncer	Date
35	5	1/29
31.4	2.5	2/12
33.7	2.7	2/26
29.4	2.4	3/12
29.5	2.4	3/26
34.3	2.8	4/09
26.9	2.2	4/23
29.9	2.4	6/04
26	3	7/02
30.3	2.4	7/03
26.2	2.1	8/13
27.4	2.2	8/27
29.4	1.8	9/10
27.1	1.6	10/22
23	4	10/22
28	4	12/03
29	3	12/17

TABLE C-V (cont)

****

HSE-9 Radionuclides in Water

****

Alpha 90GAU 04 PC

CV = 6.0 + 0.6 pCi/L

Result	Uncer	Date
9	2	5/22

CV = 51 + 5 nCi/L

Result	Uncer	Date
58	2	1/04
56.3	1.6	1/04
55	2	1/04
60	2	1/04
52	1	1/08
56	2	1/08
57	2	1/08
57	2	1/08
57	2	1/08
57	2	1/08
55	2	1/09
51	1	1/09
57	2	1/10
51.9	1.5	1/11
57	2	1/11
56	2	1/12
53	1	1/12
60	2	1/16
53	1	1/16
51.2	1.4	1/17
59.2	2	1/17
60	2	1/18
49	1	1/18
53.2	1.5	1/19
59	2	1/19
53	2	1/23
57	2	1/23
53	1	1/23
59	2	1/23
58	2	1/24
54.5	1.5	1/24
56	2	1/25
54	2	1/25
53	2	1/26
54.3	1.5	1/26
54.3	1.5	1/29
55	2	1/29
52	2	1/30
55.9	1.5	1/30
53	2	1/31
55	2	1/31
54	2	2/01
55	2	2/01
53	2	2/02
55	2	2/02
54	2	2/05
54	2	2/06
54	2	2/06
55	2	2/06
53	1	2/08
56	2	2/08
57	2	2/08
54	2	2/09
52	1	2/09
51	1	2/12
54	2	2/12
53	1	2/13
54	2	2/13
55	2	2/14
52	1	2/15
52	1	2/15
57	2	2/15

Alpha (cont)

57	2	2/16
54	2	2/16
55	2	2/21
57	2	2/21
58	2	2/21
58	2	2/22
53	1	2/22
54	1	2/22
51	1	2/23
55	2	2/23
58	2	2/26
51	1	2/26
51	1	2/27
57	2	2/27
51	1	2/28
56	2	2/28
56	2	3/01
52	1	3/01
51	1	3/02
57	2	3/02
53	1	3/05
52	2	3/05
54	2	3/06
52	1	3/06
54	2	3/07
52	1	3/07
52	2	3/08
52	1	3/09
56	2	3/09
56	2	3/12
53	1	3/12
53	1	3/13
54	2	3/13
54	2	3/14
53	1	3/14
53	2	3/15
53	1	3/15
56	2	3/16
54	1	3/16
53	1	3/19
57	2	3/19
52	1	3/20
57	2	3/20
56	2	3/21
53	1	3/21
52	1	3/22
56	2	3/22
51	1	3/23
56	2	3/23
54	1	3/26
54	2	3/26
53	1	3/27
54	2	3/27
53	2	3/28
55	1	3/28
54	1	3/29
53	2	3/29
53	2	3/30
54	1	4/02
51	2	4/02
54	1	4/03
51	2	4/03
54	1	4/04
52	2	4/04
52	2	4/05
54	1	4/06
53	2	4/06
54	1	4/09
54	2	4/09
54	1	4/10
51	2	4/10
54	1	4/11
52	2	4/11
53	1	4/12
53	2	4/12
53	1	4/13
55	1	4/13
55	1	4/16

Alpha (cont)

54	2	4/16
56	1	4/17
51	2	4/17
55	1	4/18
52	2	4/18
50	2	4/19
54	1	4/19
54	1	4/23
52	2	4/23
52	2	4/23
52	2	4/24
54	1	4/24
54	2	4/25
53	1	4/25
54	1	4/30
51	2	4/30
52	2	4/30
51	2	4/30
54	1	4/30
55	1	5/01
55	1	5/02
50	2	5/02
49	2	5/03
54	1	5/03
50	2	5/04
55	1	5/04
55	1	5/07
53	2	5/07
54	1	5/08
52	2	5/08
53	1	5/09
53	2	5/09
55	1	5/10
50	2	5/10
52	2	5/11
51	2	5/14
53	1	5/14
54	1	5/15
49	2	5/15
55	1	5/16
50	2	5/16
50	2	5/17
52	2	5/18
53	1	5/18
54	1	5/21
51	2	5/21
54	1	5/22
52	2	5/22
52	2	5/23
55	1	5/23
55	1	5/24
53	2	5/24
53	1	5/25
51	2	5/25
52	1	5/30
51	1	5/30
51	2	5/30
53	2	5/30
51	2	5/31
51	1	6/01
52	2	6/01
53	1	6/04
49	2	6/04
50	2	6/06
53	1	6/06
54	1	6/06
52	2	6/06
52	1	6/08
50	2	6/08
52	1	6/11
49	2	6/11
52	2	6/11
52	1	6/11
50	2	6/12
53	1	6/12
51	2	6/13
51	2	6/14

Alpha (cont)

52	1	6/14
53	1	6/14
55	1	6/15
50	2	6/15
52	2	6/18
52	1	6/18
55	1	6/20
52	2	6/20
53	2	6/20
54	2	6/20
53	1	6/21
53	2	6/21
52	1	6/22
51	2	6/22
54	1	6/25
51	2	6/25
52	2	6/26
51	2	6/27
53	1	6/27
53	1	6/28
52	2	6/28
53	1	6/29
52	2	6/29
53	1	7/02
51	2	7/02
53	1	7/03
52	2	7/03
54	1	7/05
54	2	7/05
53	1	7/06
50	2	7/06
52	2	7/09
54	1	7/09
54	1	7/10
52	2	7/10
53	1	7/11
52	2	7/11
53	1	7/12
53	2	7/12
52	1	7/13
51	2	7/13
51	1	7/16
53	2	7/16
54	1	7/17
51	2	7/17
50	2	7/18
54	2	7/19
54	1	7/19
51	1	7/20
54	2	7/20
53	1	7/23
51	2	7/23
53	2	7/24
53	1	7/24
55	2	7/25
53	1	7/26
52	2	7/26
53	2	7/27
54	1	7/27
53	1	7/30
53	2	7/30
53	1	7/31
50	2	7/31
52	1	8/01
52	2	8/01
53	2	8/02
51	2	8/03
53	1	8/03
53	1	8/06
50	2	8/06
54	1	8/07
53	2	8/07
52	2	8/13
50	2	8/13
55	1	8/13
54	2	8/13
51	2	8/13
52	2	8/14

Alpha (cont)

55	1	8/14
53	1	8/15
53	2	8/15
52	2	8/16
54	1	8/17
52	1	8/20
51	2	8/20
50	2	8/20
50	2	8/20
52	1	8/21
51	2	8/21
52	2	8/23
50	2	8/23
54	1	8/23
52	1	8/24
54	2	8/24
53	1	8/27
51	2	8/27
53	2	8/28
55	1	8/29
53	2	8/29
55	1	8/30
51	2	8/30
54	1	8/31
50	2	8/31
51	2	9/04
54	1	9/04
51	2	9/05
54	1	9/06
52	2	9/06
52	2	9/07
52	2	9/07
54	1	9/10
51	2	9/10
54	2	9/11
51	2	9/12
54	1	9/12
53	2	9/13
54	1	9/13
54	1	9/14
52	2	9/14
53	2	9/17
55	1	9/18
54	1	9/18
52	2	9/18
52	2	9/19
54	1	9/19
49.3	1.8	9/26
53.5	1.3	9/26
52	2	9/26
51	2	9/26
51	2	9/26
54	1	9/26
51	2	9/26
52	1	9/26
50	1	9/26
53	2	9/27
53	1	9/27
55	1	9/28
53	2	9/28
51	2	10/01
52	1	10/01
54	1	10/02
53	2	10/02
50	2	10/03
54	1	10/03
50	2	10/04
51	2	10/09
54	1	10/09
55	1	10/09
48	2	10/09
50	2	10/10
54	1.4	10/15
53	1.4	10/15
50	2	10/15
53	1.8	10/15
52	1.8	10/15
55	1	10/15

Alpha (cont)

54	1	10/16
50	2	10/16
55	1	10/17
50	2	10/17
54	1	10/18
50	2	10/18
49	2	10/19
55	1	10/23
47	2	10/23
48	2	10/23
55	1	10/23
49	2	10/24
55	1	10/24
54	1	10/25
49	2	10/25
58	6	10/26
55	6	10/26
56	6	10/29
57	6	10/29
55	6	10/30
57	6	10/30
56	6	10/31
54	5	10/31
57	6	11/01
57	6	11/01
58	6	11/02
58	6	11/02
56	6	11/05
56	6	11/05
55	6	11/06
58	6	11/06
57	6	11/07
56	6	11/08
57	6	11/08
56	6	11/09
57	6	11/09
56	6	11/13
55	6	11/13
55	6	11/14
56	6	11/14
57	6	11/15
58	6	11/16
57	6	11/16
56	6	11/19
56	6	11/19
59	6	11/20
56	6	11/21
56	6	11/21
58	6	11/26
57	6	11/26
57	6	11/27
56	6	11/27
56	6	11/28
56	6	11/28
55	6	11/29
54	5	11/29
57	6	11/30
55	6	11/30
56	6	12/03
56	6	12/03
56	6	12/04
55	6	12/04
54	5	12/05
54	5	12/05
55	6	12/06
54	5	12/07
55	6	12/07
57	6	12/10
55	6	12/10
54	5	12/11
55	6	12/12
56	6	12/12
58	6	12/13
55	6	12/14
54	5	12/14

TABLE C-V (cont)

****

HSE-9 Radionuclides in Water
(cont)

****

Alpha (cont)

56	6	12/17
57	6	12/17
57	6	12/18
54	5	12/18
54	5	12/19

Am-241 85GAU 01 GELI

CV = 46 + 7 nCi/L

Result	Uncer	Date
46	7	1/04
47	7	1/09
45	7	1/16
46	7	1/22
46	7	1/30
44	7	2/05
44	7	2/13
45	7	2/21
46	7	2/26
46	7	3/05
45	7	3/12
45	7	3/20
46	7	3/27
48	7	4/03
49	7	4/09
48	7	4/16
48	7	4/24
48	7	5/01
48	7	5/07
47	7	5/15
46	7	5/21
48	7	5/30
47	7	6/06
48	7	6/11
47	7	6/18
48	7	6/26
46	7	7/02
46	7	7/10
48	7	7/17
47	7	7/23
46	7	7/30
47	7	8/06
46	7	8/14
46	7	8/20
44	7	8/28
42	6	9/05
40	6	9/11
44	7	9/18
44	7	9/26
42	6	10/02
44	7	10/09
42	6	10/15
43	6	10/23
42	6	10/29
42	6	11/05
42	6	11/13
45	7	11/20
45	7	11/26
46	7	12/03
47	7	12/10
47	6	12/17

CV = 380 + 60 nCi/L

Result	Uncer	Date
390	40	7/17

Am-241 90FIL 01 NAI

CV = 2.31 + 0.34 uCi/L

Result	Uncer	Date
2.44	0.16	9/10
2.45	0.15	9/12
2.46	0.16	10/17
2.46	0.16	11/06
2.48	0.16	12/04
2.45	0.16	12/06
2.44	0.15	12/19

Am-241 89GAU 01 RAS

CV = not spiked pCi/L

Result	Uncer	Date
0.0	0.01	10/29

CV = 0.18 + 0.02 pCi/L

Result	Uncer	Date
0.13	0.02	10/24
0.12	0.02	10/24
0.18	0.03	10/24
0.19	0.03	10/24

CV = 0.80 + 0.08 pCi/L

Result	Uncer	Date
0.6210	0.0520	9/06

CV = 1.60 + 0.16 pCi/L

Result	Uncer	Date
1.44	0.1	9/10

CV = 2.2 + 0.2 pCi/L

Result	Uncer	Date
1.92	0.12	3/01

CV = 2.7 + 0.3 pCi/L

Result	Uncer	Date
2.35	0.11	10/24
2.40	0.11	10/24
1.91	0.09	10/24
1.94	0.09	10/24

CV = 4.5 + 0.4 pCi/L

Result	Uncer	Date
3.62	0.14	10/24
3.43	0.14	10/24
3.57	0.15	10/24
3.36	0.14	10/24

CV = 380 + 60 nCi/L

Result	Uncer	Date
420	50	1/09
310	40	2/02
320	40	3/02
390	50	4/06
390	40	5/07
320	40	6/11
300	40	7/13
300	30	8/07

Am-241 (cont)

370	40	9/10
450	50	10/10
390	40	11/02
380	50	11/29
400	50	12/11

Beta 90GAU 04 PC

CV = 10 + 1 pCi/L

Result	Uncer	Date
10	1	5/22

CV = 66 + 7 nCi/L

Result	Uncer	Date
67.3	1.3	1/04
69	2	1/04
70	2	1/04
65	1	1/04
65	1	1/08
66	1	1/08
69	2	1/08
71	2	1/08
65	1	1/08
68	2	1/08
67	1	1/09
67	2	1/09
68	2	1/10
68	2	1/11
66.3	1.3	1/11
67	2	1/12
67	1	1/12
66	2	1/16
66	1	1/16
66.1	1.3	1/17
68	1.6	1/17
68	2	1/18
66	1	1/18
66	2	1/19
67.3	1.4	1/19
66	1	1/23
65	2	1/23
66	2	1/23
64	1	1/23
67	2	1/24
66.5	1.4	1/24
66	1	1/25
67	2	1/25
66	2	1/26
67.6	1.4	1/26
66.2	1.4	1/29
65	2	1/29
66	2	1/30
68.4	1.4	1/30
68	1	1/31
67	2	1/31
66	1	2/01
65	2	2/01
66	2	2/02
67	1	2/02
67	2	2/05
67	1	2/06
67	2	2/06
66	1	2/06
66	2	2/08
68	1	2/08
68	2	2/08
67	2	2/09
67	1	2/09
67	2	2/12
67	1	2/12
67	2	2/13
67	1	2/13
67	1	2/14

Beta (cont)

67	1	2/15
72	2	2/15
67	1	2/15
71	2	2/16
65	1	2/16
73	2	2/21
71	2	2/21
67	1	2/21
72	2	2/22
67	1	2/22
67	1	2/22
72	2	2/23
63	1	2/23
69	2	2/26
64	1	2/26
65	1	2/27
71	2	2/27
67	1	2/28
68	2	2/28
70	2	3/01
67	1	3/01
67	1	3/02
70	2	3/02
67	2	3/05
63	1	3/06
69	2	3/06
64	1	3/06
69	2	3/07
64	1	3/07
69	2	3/08
65	2	3/09
65	1	3/09
65	1	3/12
64	2	3/12
65	2	3/13
64	1	3/13
65	2	3/14
65	1	3/14
63	2	3/15
65	2	3/15
69	1	3/16
64	1	3/16
64	1	3/19
69	2	3/19
62	1	3/20
68	2	3/20
64	1	3/21
71	2	3/21
67	2	3/22
64	1	3/22
67	2	3/23
64	1	3/23
63	2	3/26
66	1	3/26
65	2	3/27
66	1	3/27
65	2	3/28
67	1	3/28
65	1	3/29
63	1	3/29
66	2	3/30
66	2	4/02
67	1	4/02
68	1	4/03
64	2	4/03
68	1	4/04
63	1	4/04
65	2	4/05
66	1	4/06
64	2	4/06
65	2	4/09
67	1	4/09
67	1	4/10
63	2	4/10
63	2	4/11
66	1	4/11
67	1	4/12
65	2	4/12

Beta (cont)

66	1	4/13
65	2	4/13
68	1	4/16
65	2	4/16
68	1	4/17
63	2	4/17
66	1	4/18
66	2	4/18
67	1	4/19
65	2	4/19
66	1	4/23
65	2	4/23
65	2	4/23
67	2	4/24
64	1	4/24
65	2	4/25
67	1	4/25
68	1	4/30
62	2	4/30
63	2	4/30
64	2	4/30
67	1	4/30
67	1	5/01
62	2	5/01
66	1	5/02
63	2	5/02
67	1	5/03
64	2	5/03
66	1	5/04
63	2	5/04
66	1	5/07
65	2	5/07
66	1	5/08
64	2	5/08
66	1	5/09
62	1	5/09
66	1	5/10
64	2	5/10
64	2	5/11
65	1	5/14
61	2	5/14
66	1	5/15
61	2	5/15
63	1	5/16
61	2	5/16
61	2	5/17
63	2	5/18
66	1	5/18
64	1	5/21
62	2	5/21
65	1	5/22
61	1	5/22
66	1	5/23
64	1	5/23
65	1	5/24
62	1	5/24
65	1	5/25
61	2	5/25
64	2	5/30
63	2	5/30
63	1	5/30
65	1	5/30
61	2	5/31
64	1	6/01
64	2	6/01
64	1	6/04
61	2	6/04
63	2	6/06
64	1	6/06
64	1	6/06
64	2	6/06
62	2	6/08
64	1	6/08
63	1	6/11
61	2	6/11
63	1	6/11
64	2	6/11
65	1	6/12

Beta (cont)

62	2	6/12
61	2	6/13
64	1	6/14
62	2	6/14
64	1	6/14
64	1	6/15
61	1	6/15
62	2	6/18
64	1	6/18
62	2	6/20
62	2	6/20
64	2	6/20
64	1	6/20
62	2	6/21
64	1	6/21
62	2	6/22
64	1	6/22
62	2	6/25
65	1	6/25
63	2	6/26
64	2	6/27
64	1	6/27
65	1	6/28
63	2	6/28
64	2	6/29
65	1	6/29
64	1	7/02
60	2	7/02
64	1	7/03
62	2	7/03
62	2	7/05
64	1	7/05
63	2	7/06
64	1	7/06
63	1	7/09
62	2	7/09
64	2	7/10
63	1	7/10
62	1	7/11
62	2	7/11
63	1	7/12
64	2	7/12
62	1	7/13
64	2	7/13
64	1	7/16
63	2	7/16
65	1	7/17
64	2	7/17
64	2	7/18
66	2	7/19
64	1	7/19
64	2	7/20
64	1	7/20
62	1	7/23
61	2	7/23
64	1	7/24
63	2	7/24
64	2	7/25
64	1	7/26
63	2	7/26
63	1	7/27
62	2	7/27
62	1	7/30
64	2	7/30
62	1	7/31
63	2	7/31
64	2	8/01
62	1	8/01
64	2	8/02
61	1	8/03
63	2	8/03
63	1	8/06
62	2	8/06
63	1	8/07
63	2	8/07
64	2	8/13
64	2	8/13
63	2	8/13

TABLE C-V (cont)

****

HSE-9 Radionuclides in Water
(cont)

****

Beta (cont)

62	2	8/13
65	1	8/13
64	1	8/14
64	2	8/14
64	1	8/15
62	2	8/15
63	2	8/16
64	1	8/17
63	1	8/20
62	2	8/20
63	1	8/20
63	1	8/20
64	1	8/21
64	2	8/21
61	2	8/23
61	2	8/23
65	1	8/23
66	1	8/24
62	2	8/24
64	1	8/27
64	2	8/27
63	2	8/28
64	1	8/29
63	2	8/29
64	2	8/30
64	1	8/30
64	1	8/31
63	2	8/31
63	2	9/04
64	1	9/04
63	2	9/05
64	1	9/06
61	2	9/06
65	1	9/07
61	2	9/07
64	2	9/10
64	1	9/10
63	2	9/11
63	2	9/12
65	1	9/12
63	2	9/13
66	1	9/13
65	1	9/14
62	2	9/14
63	2	9/17
65	1	9/18
65	1	9/18
64	2	9/18
63	2	9/19
64	1	9/19
64	1	9/26
64	2	9/26
64	1	9/26
61.3	1.5	9/26
63	2	9/26
62	2	9/26
62	2	9/26
63.7	1.2	9/26
64	1	9/27
61	2	9/27
63	2	9/28
63	1	9/28
62	2	10/01
66	1	10/01
63	1	10/02
62	2	10/02
64	1	10/03
62	2	10/03
62	2	10/04
65	1	10/09
63	2	10/09

Beta (cont)

64	1	10/09
62	2	10/09
63	2	10/10
65	1.2	10/15
65	1.2	10/15
62	1.5	10/15
63	1.5	10/15
61	2	10/15
66	1	10/15
64	1	10/16
64	2	10/16
64	1	10/17
63	2	10/17
64	1	10/18
61	2	10/18
63	2	10/19
65	1	10/23
66	1	10/23
64	2	10/23
61	2	10/23
63	2	10/24
66	1	10/24
67	1	10/25
61	2	10/25
65	7	10/26
64	6	10/26
65	7	10/29
64	6	10/29
63	6	10/30
65	7	10/30
64	6	10/31
64	6	10/31
66	7	11/01
63	6	11/01
65	7	11/02
66	7	11/02
61	6	11/05
63	6	11/05
64	6	11/06
63	6	11/06
64	6	11/07
65	6	11/08
64	6	11/08
63	6	11/09
64	6	11/09
63	6	11/13
64	6	11/13
65	6	11/14
64	6	11/14
63	6	11/15
65	7	11/16
63	6	11/16
64	6	11/19
64	6	11/19
63	6	11/20
65	6	11/21
64	6	11/21
63	6	11/26
66	7	11/26
62	6	11/27
63	6	11/27
63	6	11/28
64	6	11/28
62	6	11/29
62	6	11/29
64	6	11/30
63	6	11/30
62	6	12/03
64	6	12/03
62	6	12/04
64	6	12/04
63	6	12/05
61	6	12/05
63	6	12/06
62	6	12/07
59	6	12/07
64	6	12/10
64	6	12/10

Beta (cont)

59	6	12/11
61	6	12/12
60	6	12/12
64	6	12/13
63	6	12/14
65	6	12/14
66	7	12/17
63	6	12/17
65	6	12/18
62	6	12/18
62	6	12/19

Co-57 85GAU 01 GELI

CV = 40 + 6 nCi/L

Result	Uncer	Date
38	15	1/09
51	16	1/16
64	17	1/22
65	18	1/30
59	19	2/05
54	16	2/21
62	19	2/26
55	18	3/05
56	17	3/12
59	19	3/20
58	22	3/27
68	24	4/03
53	24	4/09
43	21	4/16
66	22	4/24
55	24	5/01
49	26	5/07
58	25	5/15
51	24	5/21
53	24	6/06
61	29	6/11
57	29	6/18
54	24	6/26
43	29	8/06
34	27	11/05

Co-60 85GAU 01 GELI

CV = 25 + 4 nCi/L

Result	Uncer	Date
24	4	1/04
26	4	1/09
26	4	1/16
26	4	1/22
26	4	1/30
25	4	2/05
27	4	2/13
25	4	2/21
27	4	2/26
26	4	3/05
25	4	3/12
25	4	3/20
26	4	3/27
22	3	4/03
21	3	4/09
21	3	4/16
22	3	4/24
20	3	5/01
18	3	5/07
20	3	5/15
21	4	5/21
19	3	5/30
21	3	6/06
18	3	6/11
16	3	6/18
24	4	6/26

Co-60 (cont)

22	3	7/02
26	4	7/17
20	3	7/23
24	4	7/30
22	3	8/06
26	4	8/14
21	3	8/20
25	4	8/28
26	4	9/05
26	4	9/11
27	4	9/18
23	4	9/26
23	4	10/02
25	4	10/09
25	4	10/15
26	4	10/23
25	4	10/29
22	3	11/05
21	3	11/13
26	4	11/20
26	4	11/26
26	4	12/03
26	4	12/10
27	4	12/17

Cs-134 85GAU 01 GELI

CV = 51 + 8 nCi/L

Result	Uncer	Date
41	6	1/04
43	6	1/09
42	6	1/16
42	6	1/22
44	6	1/30
40	6	2/05
40	6	2/13
44	7	2/21
43	6	2/26
43	6	3/05
42	6	3/12
40	6	3/20
43	6	3/27
41	6	4/03
39	6	4/09
41	6	4/16
41	6	4/24
40	6	5/01
39	6	5/07
41	6	5/15
44	6	5/21
42	6	5/30
45	7	6/06
41	6	6/11
40	6	6/18
42	6	6/26
40	6	7/02
41	6	7/10
44	6	7/17
42	6	7/23
52	8	7/30
51	8	8/06
42	6	8/14
40	6	8/20
42	6	8/28
40	6	9/05
41	6	9/11
42	6	9/18
42	6	9/26
41	6	10/02
42	6	10/09
40	6	10/15
43	6	10/23
42	6	10/29
53	8	11/05
42	6	11/13

Cs-134 (cont)

52	8	11/20
54	8	11/26
54	8	12/03
58	9	12/10
47	6	12/17

Cs-137 90GAU 01 G

CV = not spiked pCi/L

Result	Uncer	Date
64	24	8/29
34	81	11/26

CV = 529 + 53 pCi/L

Result	Uncer	Date
470	90	5/16
540	120	7/17
560	90	8/29
590	110	11/26

CV = 600 + 60 pCi/L

Result	Uncer	Date
610	130	6/12
640	120	10/25
650	120	10/25

CV = 705 + 70 pCi/L

Result	Uncer	Date
550	100	3/26
1700	300	6/11
510	110	6/27
710	140	7/17
800	140	9/27

CV = 920 + 92 pCi/L

Result	Uncer	Date
1000	200	6/12

CV = 1060 + 100 pCi/L

Result	Uncer	Date
1300	200	6/07
1100	200	7/11

CV = 1.41 + 0.1 nCi/L

Result	Uncer	Date
1.2	0.2	4/12
1.4	0.2	6/12
1.2	0.2	7/17

CV = 1.76 + 0.2 nCi/L

Result	Uncer	Date
1.5	0.2	3/20

CV = 2.12 + 0.2 nCi/L

Result	Uncer	Date
1.6	0.2	3/28
2.1	0.3	7/17

Cs-137 (cont)

CV = 180 + 30 nCi/L

Result	Uncer	Date
190	30	1/04
190	30	1/09
190	30	1/16
190	30	1/22
190	30	1/30
180	30	2/05
190	30	2/13
190	30	2/21
190	30	2/26
190	30	3/05
190	30	3/12
180	30	3/20
180	30	3/27
180	30	4/03
180	30	4/09
180	30	4/16
190	30	4/24
190	30	5/01
180	30	5/07
190	30	5/15
180	30	5/21
190	30	5/30
190	30	6/06
190	30	6/11
190	30	6/18
180	30	6/26
190	30	7/02
190	30	7/10
200	30	7/17
200	30	7/23
190	30	7/30
190	30	8/06
190	30	8/14
190	30	8/20
190	30	8/28
190	30	9/05
190	30	9/11
190	30	9/18
190	30	9/26
190	30	10/02
190	30	10/09
190	30	10/15
190	30	10/23
190	30	10/29
190	30	11/05
190	30	11/13
190	30	11/20
190	30	11/26
190	30	12/03
190	30	12/10
190	30	12/17

H-3 86GAU 01 LS

CV = not spiked pCi/L

Result	Uncer	Date
- 200	300	1/16
100	300	1/16
- 200	300	1/25
- 100	300	1/25
- 200	300	1/25
400	400	2/08
600	400	2/08
200	300	2/20
200	300	2/20
600	300	2/20
700	300	2/20
- 100	300	3/01
0	300	3/01
- 100	300	3/01
200	300	3/05

TABLE C-V (cont)

****

HSE-9 Radionuclides in Water
(cont)

****

H-3 (cont)

100	300	3/12
- 300	300	3/12
700	300	3/12
1000	300	3/19
300	300	3/19
- 300	300	3/19
300	300	3/19
- 300	300	3/19
100	300	3/27
300	300	3/27
100	300	3/27
- 100	300	5/01
200	300	5/01
200	300	5/01
- 200	300	5/01
300	300	5/01
300	300	5/01
200	300	5/01
300	300	5/01
100	300	5/01
400	300	5/01
- 100	300	5/01
- 200	300	5/01
- 200	300	5/01
- 200	300	5/01
- 100	300	5/01
0	300	5/01
300	300	5/01
200	300	5/01
200	300	5/01
- 100	300	5/01
200	300	5/01
- 100	300	5/01
- 200	300	5/01
300	300	5/01
200	300	5/01
300	300	5/01
- 200	300	5/01
- 200	300	5/01
- 100	300	5/01
300	300	5/01
- 100	300	5/01
- 100	300	5/01
200	300	5/01
- 100	300	5/02
100	300	5/02
100	300	5/02
200	300	5/02
200	300	5/02
200	300	5/02
100	300	5/02
100	300	5/02
200	300	5/02
0	300	5/14
100	300	5/14
0	300	5/14
500	300	5/15
- 400	300	5/15
0	300	5/15
- 400	300	5/15
500	300	5/15
500	200	5/15
- 400	300	5/15
- 400	300	5/15
500	300	5/15
- 400	300	5/15
500	300	5/15
- 400	300	5/15
500	300	5/15
- 100	300	5/24
- 100	300	5/24

H-3 (cont)

400	300	5/24
0	300	6/20
- 200	300	6/20
0	300	6/20
0	300	6/20
- 200	300	6/20
- 200	300	6/20
- 200	300	6/20
- 200	300	6/20
- 200	300	6/20
0	300	6/20
0	300	6/20
- 200	300	6/20
- 100	300	6/20
- 100	300	6/20
200	300	6/20
100	300	6/20
- 400	300	8/01
100	300	8/02
- 400	300	8/02
- 300	300	8/02
- 400	300	8/02
100	300	8/02
300	300	8/02
500	300	8/02
- 400	300	8/02
- 300	300	8/02
- 300	300	8/02
290	220	9/07
20	30	9/10
200	300	9/12
200	300	9/12
- 100	300	9/12
400	300	10/11
300	300	10/11
100	300	10/11
0	300	10/11
400	300	10/16
400	300	10/18
300	300	10/18
400	300	10/18
400	300	10/18
300	300	10/18
400	300	10/18
300	300	10/18
300	300	10/18
100	300	10/31
600	300	10/31
400	300	10/31
100	300	10/31
200	300	10/31
- 300	300	10/31
200	300	10/31
100	300	10/31
- 300	300	10/31
600	300	10/31
400	300	10/31
600	300	10/31
400	300	10/31
- 300	300	10/31
100	300	10/31
0	300	10/31
0	200	11/01
- 200	200	11/01
100	200	11/06
- 100	200	11/06
300	200	11/06
300	200	11/06
100	200	11/06
- 300	200	11/06
- 100	200	11/06
- 300	200	11/06
300	200	11/06
100	200	11/06
300	200	11/06
100	200	11/06
100	200	11/06
300	200	11/06

H-3 (cont)

0	200	11/13
300	200	11/13
100	200	11/15
400	200	11/15
400	200	11/15
100	200	11/15
100	200	11/15
400	200	11/15
- 500	200	12/03

CV = 19255 + 870 pCi/L

Result	Uncer	Date
19000	2000	1/16
23000	2000	2/08
18000	2000	2/20
18000	2000	2/20
18000	2000	3/01
19000	2000	3/01
19000	2000	3/01
17000	2000	3/05
19000	2000	3/12
16000	2000	3/12
20000	2000	3/19
19000	2000	3/19
20000	2000	3/19
19000	2000	3/19
18000	2000	3/27
18000	2000	3/27
19000	2000	3/27
18000	2000	5/01
17000	2000	5/01
18000	2000	5/01
18000	2000	5/01
17000	2000	5/01
18000	2000	5/01
17000	2000	5/01
17000	2000	5/01
18000	2000	5/01
18000	2000	5/01
17000	2000	5/01
18000	2000	5/01
17000	2000	5/01
18000	2000	5/01
17000	2000	5/01
17000	2000	5/01
17000	2000	5/01
18000	2000	5/01
17000	2000	5/01
18000	2000	5/01
17000	2000	5/01
17000	2000	5/01
18000	2000	5/01
18000	2000	5/01
18000	2000	5/02
17000	2000	5/02
17000	2000	5/02
18000	2000	5/02
17000	2000	5/02
18000	2000	5/02
17000	2000	5/02
18000	2000	5/02
19000	2000	5/14
19000	2000	5/14
18000	2000	5/14
19000	2000	5/15
20000	2000	5/15
19000	2000	5/15
20000	2000	5/15

H-3 (cont)

19000	2000	5/15
20000	2000	5/15
19000	2000	5/15
20000	2000	5/15
20000	2000	5/15
20000	2000	5/15
19000	2000	5/15
19000	2000	5/15
18000	2000	5/24
18000	2000	5/24
19000	2000	5/24
17000	2000	6/20
17000	2000	6/20
16000	2000	6/20
16000	2000	6/20
17000	2000	6/20
16000	2000	6/20
17000	2000	6/20
16000	2000	6/20
16000	2000	6/20
17000	2000	6/20
17000	2000	6/20
17000	2000	6/20
16000	2000	6/20
16000	2000	6/20
16000	2000	8/01
16000	2000	8/02
16000	2000	8/02
16000	2000	8/02
16000	2000	8/02
16000	2000	8/02
16000	2000	8/02
16000	2000	8/02
16000	2000	8/02
15000	2000	8/02
17000	2000	8/02
18000	2000	9/10
18000	2000	9/12
18000	2000	9/12
17000	2000	9/12
17000	2000	10/11
16000	2000	10/11
17000	2000	10/16
16000	2000	10/18
16000	2000	10/18
16000	2000	10/18
16000	2000	10/18
17000	2000	10/18
17000	2000	10/18
17000	2000	10/18
17000	2000	10/18
16000	2000	10/31
16000	2000	10/31
17000	2000	10/31
18000	2000	10/31
16000	2000	10/31
16000	2000	10/31
16000	2000	10/31
16000	2000	10/31
17000	2000	10/31
16000	2000	10/31
18000	2000	10/31
17000	2000	10/31
17000	2000	10/31
17000	2000	10/31
17000	2000	10/31
18000	2000	10/31
17000	2000	11/01
17000	2000	11/01
16000	2000	11/06
18000	2000	11/06
18000	2000	11/06
16000	2000	11/06
17000	2000	11/06
17000	2000	11/06
18000	2000	11/06
16000	2000	11/06
16000	2000	11/06

H-3 (cont)

17000	2000	11/06
18000	2000	11/06
17000	2000	11/06
18000	2000	11/06
17000	2000	11/06
17000	2000	11/15
17000	2000	11/15
17000	2000	11/15
16000	2000	11/15
16000	2000	11/15
16000	2000	11/15
17000	2000	12/03

CV = 19420 + 750 pCi/L

Result	Uncer	Date
20000	2000	1/16
22000	2000	1/25
20000	2000	1/25
22000	2000	1/25
19000	2000	2/08

CV = 10 + 1 nCi/L

Result	Uncer	Date
10	1	5/02
9.98	0.37	9/07
8.8	1.0	10/11
9.0	1.0	12/03

CV = 10.8 + 1.1 nCi/L

Result	Uncer	Date
11	1	5/01

CV = 12.6 + 1.3 nCi/L

Result	Uncer	Date
11	1	5/01

CV = 13.0 + 1.3 nCi/L

Result	Uncer	Date
13	1	5/01
13	1	10/11
13	1	11/13

CV = 14.4 + 1.4 nCi/L

Result	Uncer	Date
14	2	1/16
15	2	5/01

CV = 17.0 + 1.7 nCi/L

Result	Uncer	Date
17	2	5/15
16	2	10/31

CV = 18.0 + 1.8 nCi/L

Result	Uncer	Date
18	2	3/19

H-3 (cont)

CV = 20 + 2 nCi/L

Result	Uncer	Date
20	2	5/02
21	2	5/15
18	2	8/01

CV = 5.0 + 0.2 uCi/L

Result	Uncer	Date
4.9	0.1	1/05
4.9	0.1	2/05
4.9	0.1	3/02
4.9	0.1	3/22
4.9	0.1	4/03
5.0	0.1	4/11
4.9	0.1	5/01
4.9	0.1	5/03
4.9	0.1	5/23
4.9	0.1	5/30
4.9	0.1	6/06
5.0	0.1	6/25
4.9	0.1	7/03
4.9	0.1	7/13
4.9	0.1	7/25
4.8	0.1	7/31
4.8	0.1	9/05
4.56	0.13	10/02
4.56	0.13	10/31
4.9	0.14	11/20
4.93	0.14	12/04

Mn-54 85GAU 01 GELI

CV = 55 + 8 nCi/L

Result	Uncer	Date
62	10	1/04
56	10	1/09
54	10	1/16
58	9	1/22
70	11	1/30
60	10	2/05
60	8	2/13
54	10	2/21
67	11	2/26
68	10	3/05
55	11	3/12
62	12	3/20
62	11	3/27
49	11	4/03
58	12	4/16
66	11	4/24
65	12	5/01
62	12	5/07
58	12	5/15
51	11	5/21
53	12	6/06
60	12	6/11
63	13	6/26
47	11	7/02
74	14	7/10
60	14	7/17
62	13	7/23
59	14	7/30
65	14	8/06
59	15	8/14
64	16	8/20
65	16	8/28
71	13	9/05
69	17	9/11
52	8	9/18
58	16	9/26
60	14	10/02

TABLE C-V (cont)

****

HSE-9 Radionuclides in Water
(cont)

****

Mn-54 (cont)

49	15	10/09
61	18	10/15
65	20	10/23
62	17	10/29
65	18	11/05
53	16	11/13
73	18	11/20
77	19	11/26
68	20	12/03
75	21	12/10
77	21	12/17

Na-22 85GAU 01 GELI

CV = 32 + 5 nCi/L

Result	Uncer	Date
31	5	1/04
31	5	1/09
29	4	1/16
31	5	1/22
32	5	1/30
31	5	2/05
32	5	2/13
30	5	2/21
30	5	2/26
29	4	3/05
31	5	3/12
29	4	3/20
31	5	3/27
32	5	4/03
31	5	4/09
31	5	4/16
30	4	4/24
32	5	5/01
30	5	5/07
28	4	5/15
31	5	5/21
31	5	5/30
31	5	6/06
33	5	6/26
31	5	7/02
31	5	7/17
30	5	7/23
31	5	7/30
31	5	8/06
30	5	8/14
31	5	8/20
29	4	8/28
32	5	9/05
30	5	9/11
30	5	9/18
31	5	9/26
31	5	10/02
30	5	10/09
30	4	10/15
32	5	10/23
30	4	10/29
32	5	11/05
31	5	11/13
30	4	11/20
31	4	11/26
30	5	12/03
29	5	12/10
33	5	12/17

Pu-238 89GAU 01 RAS

CV = not spiked pCi/L

Result	Uncer	Date
0.0	0.0101	3/15
0.0	0.010	5/03
0.0110	0.0180	5/08
0.0380	0.0310	5/14
- 0.0039	0.0130	5/14
0.0043	0.0074	6/20
0.0083	0.0083	9/04
- 0.0039	0.0104	11/15

CV = 0.12 + 0.01 pCi/L

Result	Uncer	Date
0.081	0.021	10/18

CV = 0.30 + 0.03 pCi/L

Result	Uncer	Date
0.24	0.03	6/20

CV = 0.39 + 0.04 pCi/L

Result	Uncer	Date
0.4	0.04	5/03

CV = 0.50 + 0.05 pCi/L

Result	Uncer	Date
0.36	0.04	6/20

CV = 0.59 + 0.06 pCi/L

Result	Uncer	Date
0.51	0.05	3/01
0.48	0.07	9/10

CV = 0.60 + 0.06 pCi/L

Result	Uncer	Date
0.6020	0.0560	5/03

CV = 0.79 + 0.08 pCi/L

Result	Uncer	Date
0.67	0.09	5/14

CV = 0.80 + 0.08 pCi/L

Result	Uncer	Date
0.67	0.06	5/14

CV = 1.0 + 0.1 pCi/L

Result	Uncer	Date
0.8990	0.0710	6/20

CV = 1.1 + 0.1 pCi/L

Result	Uncer	Date
1.1	0.07	11/15

Pu-238 (cont)

CV = 1.18 + 0.12 pCi/L

Result	Uncer	Date
1.18	0.09	9/04

CV = 128 + 17 nCi/L

Result	Uncer	Date
120	10	1/04
120	20	1/09
120	10	1/19
120	10	1/24
120	20	2/02
120	10	2/08
120	10	2/22
110	10	3/02
110	10	3/02
120	10	3/08
120	10	3/16
110	10	3/21
110	10	4/06
110	10	4/12
120	10	4/12
120	10	4/17
120	10	4/25
120	20	5/07
110	10	5/09
120	10	5/16
120	10	5/24
100	10	6/06
110	10	6/08
110	10	6/21
120	10	6/22
120	10	6/28
110	10	7/06
110	10	7/13
120	10	7/20
110	10	8/03
120	10	8/17
120	10	8/23
110	10	9/10
110	10	9/12
110	10	9/17
110	10	10/10
110	10	10/19
120	10	11/02
120	10	11/07
130	20	11/29
110	10	12/06
120	20	12/11
120	10	12/13

Pu-239 89GAU 01 RAS

CV = not spiked pCi/L

Result	Uncer	Date
- 0.0130	0.0130	3/15
0.0066	0.0114	5/03
0.0055	0.0166	5/08
0.0	0.01	5/14
- 0.0039	0.0039	5/14
0.0085	0.0085	6/20
0.0170	0.01	9/04
0.0240	0.0140	11/15

CV = 0.20 + 0.02 pCi/L

Result	Uncer	Date
0.24	0.03	6/20

Pu-239 (cont)

CV = 0.29 + 0.03 pCi/L

Result	Uncer	Date
0.33	0.06	5/14

CV = 0.40 + 0.04 pCi/L

Result	Uncer	Date
0.39	0.05	5/14

CV = 0.55 + 0.06 pCi/L

Result	Uncer	Date
0.59	0.06	9/04

CV = 0.58 + 0.06 pCi/L

Result	Uncer	Date
0.54	0.05	5/03

CV = 0.60 + 0.06 pCi/L

Result	Uncer	Date
0.54	0.0510	5/03

CV = 0.72 + 0.08 pCi/L

Result	Uncer	Date
0.649	0.056	3/01

CV = 0.80 + 0.08 pCi/L

Result	Uncer	Date
0.968	0.074	6/20

CV = 1.0 + 0.1 pCi/L

Result	Uncer	Date
1.08	0.07	6/20

CV = 1.64 + 0.16 pCi/L

Result	Uncer	Date
1.87	0.15	9/10

CV = 2.47 + 0.25 pCi/L

Result	Uncer	Date
2.54	0.13	10/18

CV = 4.0 + 0.4 pCi/L

Result	Uncer	Date
4.56	0.2	11/15

CV = 370 + 43 nCi/L

Result	Uncer	Date
370	40	1/04
390	50	1/09
370	40	1/19
360	40	1/24
340	40	2/02
360	40	2/08
360	40	2/22
350	40	3/02

Pu-239 (cont)

300	30	3/02
370	40	3/08
360	40	3/16
340	40	3/21
320	40	4/06
350	40	4/12
350	40	4/12
350	40	4/17
360	40	4/25
360	40	5/07
340	40	5/09
380	40	5/16
350	40	5/24
310	40	6/06
340	70	6/08
330	40	6/21
360	40	6/22
360	40	6/28
340	40	7/06
310	40	7/13
350	40	7/20
340	40	8/03
360	40	8/17
350	40	8/23
330	40	9/10
360	40	9/12
330	40	9/17
350	40	10/10
360	40	10/19
350	40	11/02
350	40	11/07
360	50	11/29
350	40	12/06
360	40	12/11
360	40	12/13

Ra-226 90GAU 01 PC

CV = none available pCi/L

Result	Uncer	Date
0.65	0.06	10/04

CV = 0.64 + 0.06 pCi/L

Result	Uncer	Date
0.04	0.01	10/04

CV = 1.4 + 0.1 pCi/L

Result	Uncer	Date
0.82	0.08	3/21

CV = 4.7 + 0.5 pCi/L

Result	Uncer	Date
4.6	0.05	3/21

Ra-226 90GAU 01 RAS

CV = 2.2 + 0.2 pCi/L

Result	Uncer	Date
1.4	0.1	7/10

CV = 4.4 + 0.4 pCi/L

Result	Uncer	Date
1.7	0.2	7/31

Sr-90 89GAU 04 PC

CV = not spiked pCi/L

Result	Uncer	Date
0.18	0.6	1/30
0.96	0.49	1/30
0.43	0.61	7/19
0.54	0.68	8/01
0.9	0.8	11/16

CV = 200 + 20 pCi/L

Result	Uncer	Date
182	3	7/19
190	8	11/16

CV = 268 + 27 pCi/L

Result	Uncer	Date
282	4	7/17

CV = 290 + 29 pCi/L

Result	Uncer	Date
221	5	7/25

CV = 402 + 40 pCi/L

Result	Uncer	Date
390	4	1/30
342	5	7/25

U-234 89FIL 01 RAS

CV = 55 + 6 nCi/L

Result	Uncer	Date
53	6	1/23
65	9	2/02
56	6	2/14
56	6	3/01
64	9	3/02
53	6	3/27
68	10	4/06
56	6	4/11
60	7	4/17
62	9	5/07
53	6	5/16
73	10	6/06
52	6	6/28
63	9	7/13
63	9	8/07
54	6	8/24
65	9	9/10
48	5	9/19
58	8	10/10
54	6	10/19
67	9	11/02
56	8	12/11
49	5	12/13

TABLE C-V (cont)

****

HSE-9 Radionuclides in Water (cont)

****

U-235 89FIL 01 RAS

CV = 2.4 + 0.4 nCi/L

Result	Uncer	Date
1.9	0.4	1/23
3.3	1.5	2/02
2.4	0.4	2/14
1.7	1.1	3/02
2.5	0.5	3/27
2.6	1.4	4/06
2.3	0.4	4/11
2.0	0.4	4/17
3.5	1.4	5/07
2.2	0.4	5/16
2.4	1.3	6/06
2.0	0.4	6/28
3.9	1.5	7/13
3.6	1.6	8/07
2.5	0.5	8/24
2.2	1.6	9/10
2.1	0.4	9/19
2.4	1.2	10/10
2.3	0.4	10/19
3.2	1.4	11/02
2.7	1.4	12/11
2.4	0.4	12/13

****

HSE-9 Radionuclides on Biologicals Materials

****

Cs-137 90GAU 01 G

CV = not spiked pCi/g

Result	Uncer	Date
0.17	0.13	8/27
0.10	0.12	10/30
0.24	0.12	11/20

CV = 5.3 + 0.5 pCi/g

Result	Uncer	Date
7.1	1.1	3/01

CV = 17.6 + 2 pCi/g

Result	Uncer	Date
19	3	10/30

CV = 35.3 + 4 pCi/g

Result	Uncer	Date
36	5	3/01
35	5	8/27
33	5	11/20

CV = 52.9 + 5.3 pCi/g

Result	Uncer	Date
40	6	3/01
50	8	11/26

****

HSE-9 Radionuclides on Filter Media

****

Alpha PC

CV = not spiked pCi/filter

Result	Uncer	Date
7	1	4/05

Am-241 89GAU 01 RAS

CV = not spiked pCi/filter

Result	Uncer	Date
0.012	0.008	1/17
0.007	0.008	1/17
0.049	0.02	2/28
0.013	0.005	2/28
0.013	0.007	8/01
0.02	0.008	8/01
0.005	0.006	10/17
0.008	0.004	10/17

CV = 0.99 + 0.10 pCi/filter

Result	Uncer	Date
0.853	0.048	2/28

CV = 1.3 + 0.10 pCi/filter

Result	Uncer	Date
1.14	0.07	8/01
1.05	0.05	10/17

CV = 1.4 + 0.1 pCi/filter

Result	Uncer	Date
1.17	0.06	1/17

CV = 1.6 + 0.2 pCi/filter

Result	Uncer	Date
1.29	0.11	8/01

CV = 1.8 + 0.2 pCi/filter

Result	Uncer	Date
1.45	0.07	10/17

CV = 2.2 + 0.2 pCi/filter

Result	Uncer	Date
1.99	0.09	1/17
1.78	0.08	2/28

Beta PC

CV = not spiked pCi/filter

Result	Uncer	Date
8	1	4/05

Pu-238 89GAU 01 RAS

CV = not spiked pCi/filter

Result	Uncer	Date
0.007	0.005	1/17
- 0.009	0.005	1/17
0.011	0.007	2/26
0.011	0.006	2/26
- 0.003	0.004	6/20
0.003	0.003	6/20
0.0	0.005	10/17
0.0	0.005	10/17

CV = 0.44 + 0.04 pCi/filter

Result	Uncer	Date
0.37	0.029	6/20

CV = 0.79 + 0.10 pCi/filter

Result	Uncer	Date
0.621	0.042	2/22

CV = 1.0 + 0.1 pCi/filter

Result	Uncer	Date
0.802	0.049	1/17

CV = 1.2 + 0.1 pCi/filter

Result	Uncer	Date
1.26	0.06	10/17

CV = 1.4 + 0.1 pCi/filter

Result	Uncer	Date
1.4	0.08	8/31

CV = 1.6 + 0.2 pCi/filter

Result	Uncer	Date
1.35	0.07	1/17
1.44	0.07	2/26
1.56	0.08	6/20

CV = 1.8 + 0.2 pCi/filter

Result	Uncer	Date
1.89	0.09	10/17

Pu-239 89GAU 01 RAS

CV = not spiked pCi/filter

Result	Uncer	Date
0.011	0.006	1/17
0.002	0.004	1/17
0.007	0.004	2/26
0.008	0.005	2/26
0.001	0.003	6/20
0.0	0.005	6/20
0.006	0.004	10/17
0.008	0.004	10/17

CV = 0.75 + 0.10 pCi/filter

Result	Uncer	Date
0.9110	0.0530	2/26

Pu-239 (cont)

CV = 1.0 + 0.1 pCi/filter

Result	Uncer	Date
1.22	0.07	8/31

CV = 1.5 + 0.2 pCi/filter

Result	Uncer	Date
1.69	0.08	1/17
1.65	0.08	6/20

CV = 1.7 + 0.2 pCi/filter

Result	Uncer	Date
2.11	0.09	10/17

CV = 1.9 + 0.2 pCi/filter

Result	Uncer	Date
2.05	0.1	2/22

CV = 2.0 + 0.2 pCi/filter

Result	Uncer	Date
2.24	0.1	1/17

CV = 2.1 + 0.2 pCi/filter

Result	Uncer	Date
2.43	0.1	10/17

CV = 2.2 + 0.2 pCi/filter

Result	Uncer	Date
2.36	0.1	6/20

Sr-90 PC

CV = not spiked pCi/filter

Result	Uncer	Date
- 0.7	0.3	7/17

U 90GAU 03 DNA

CV = not spiked ng/filter

Result	Uncer	Date
25	3	2/13

CV = 247 + 25 ng/filter

Result	Uncer	Date
261	16	3/02
252	15	3/02
274	16	3/02

CV = 300 + 30 ng/filter

Result	Uncer	Date
393	20	2/13

U (cont)

CV = 450 + 45 ng/filter

Result	Uncer	Date
510	50	8/30

CV = 1000 + 100 ng/filter

Result	Uncer	Date
1140	50	2/13

CV = 1007 + 101 ng/filter

Result	Uncer	Date
988	50	3/02
988	50	3/02
988	50	3/02

CV = 5000 + 750 ng/filter

Result	Uncer	Date
4730	300	1/10
4730	300	1/10
5100	400	1/10
5100	400	1/10
4880	300	1/10
4880	300	1/10

****

HSE-9 Radionuclides on Soil

****

Am-241 89GAU 01 G

CV = not spiked pCi/g

Result	Uncer	Date
0.011	0.002	1/18

CV = 0.15 + 0.02 pCi/g

Result	Uncer	Date
0.11	0.02	9/10

Am-241 89GAU 01 RAS

CV = not spiked pCi/g

Result	Uncer	Date
0.0033	0.0011	1/17
0.0034	0.0042	12/03

CV = 0.10 + 0.01 pCi/g

Result	Uncer	Date
0.076	0.005	12/03

CV = 0.12 + 0.01 pCi/g

Result	Uncer	Date
0.102	0.006	9/10

Am-241 (cont)

CV = 0.14 + 0.01 pCi/g

Result	Uncer	Date
0.123	0.007	8/08
0.111	0.006	10/22
0.154	0.008	10/22
0.146	0.009	10/22
0.14	0.007	10/22

CV = 0.17 + 0.02 pCi/g

Result	Uncer	Date
0.15	0.007	8/08

CV = 0.54 + 0.05 pCi/g

Result	Uncer	Date
0.425	0.016	10/22
0.502	0.02	10/22
0.441	0.017	10/22
0.518	0.02	10/22

CV = 0.90 + 0.09 pCi/g

Result	Uncer	Date
0.686	0.026	10/22
0.807	0.027	10/22
0.642	0.025	10/22
0.698	0.024	10/22

Cs-137 89GAU 01 G

CV = not spiked pCi/g

Result	Uncer	Date
0.068	0.395	7/24
0.27	0.12	9/29
0.065	1.8	10/01
0.15	0.09	11/19
0.038	0.083	12/18

CV = 1.8 + 0.2 pCi/g

Result	Uncer	Date
1.6	0.3	3/26
1.4	0.2	9/29

CV = 2.5 + 0.2 pCi/g

Result	Uncer	Date
2.1	0.3	9/29

CV = 3.2 + 0.3 pCi/g

Result	Uncer	Date
3.4	0.5	2/06

CV = 3.5 + 0.4 pCi/g

Result	Uncer	Date
2.8	0.4	12/18

CV = 5.3 + 0.5 pCi/g

Result	Uncer	Date
3.9	1.8	8/28

TABLE C-V (cont)

****

HSE-9 Radionuclides on Soil (cont)

****

Cs-137 (cont)

CV = 7.1 + 0.7 pCi/g

Result	Uncer	Date
5.1	0.8	12/18

CV = 12.3 + 1 pCi/g

Result	Uncer	Date
9.5	1.4	7/26
9.7	1.8	10/11
9.7	1.5	12/18

CV = 15.9 + 2 pCi/g

Result	Uncer	Date
24	4	7/25
15	4	10/01
13	2	12/18

CV = 17.6 + 2 pCi/g

Result	Uncer	Date
13	2	9/29

CV = 21.2 + 2 pCi/g

Result	Uncer	Date
17	3	12/18

CV = 26.5 + 3 pCi/g

Result	Uncer	Date
11	2	12/18

CV = 30 + 3 pCi/g

Result	Uncer	Date
24	4	7/24
26	4	7/26
84	13	8/30
24	4	12/18

CV = 35.2 + 3 pCi/g

Result	Uncer	Date
27	4	8/28

CV = 42.3 + 4 pCi/g

Result	Uncer	Date
33	5	9/29
32	5	10/26

CV = 45.8 + 5 pCi/g

Result	Uncer	Date
38	6	8/29

Cs-137 (cont)

CV = 60 + 6 pCi/g

Result	Uncer	Date
49	7	8/29
46	7	12/18

H-3 89GAU 01 LS

CV = not spiked pCi/L

Result	Uncer	Date
700	300	5/23
700	300	5/24
1000	300	6/20
- 100	300	8/01
- 100	300	10/31
700	300	10/31
300	200	10/31
700	200	11/01
400	200	11/01

CV = 3.8 + 0.4 nCi/L

Result	Uncer	Date
3.8	0.5	11/01

CV = 19 + 2 nCi/L

Result	Uncer	Date
18	2	10/31

CV = 22.8 + 2 nCi/L

Result	Uncer	Date
18	2	9/10
22	2	10/31
21	2	10/31

CV = 38 + 4 nCi/L

Result	Uncer	Date
37	4	5/23
37	4	9/10

CV = 55.4 + 6 nCi/L

Result	Uncer	Date
54	6	10/31
52	5	12/03

CV = 56.9 + 6 nCi/L

Result	Uncer	Date
54.2	0.7	9/07
49	5	11/01

CV = 94.9 + 9 nCi/L

Result	Uncer	Date
90	9	6/20

H2O- 89GAU 01 GRAV

CV = 4.76 + 0.5 %

Result	Uncer	Date
4.4	0.4	10/11
4.2	0.4	10/11
4.7	0.5	10/22
4.5	0.5	11/15

Pu-238 89GAU 01 RAS

CV = not spiked pCi/g

Result	Uncer	Date
0.0	0.0005	1/17
0.001	0.005	8/06
0.001	0.005	8/23
0.001	0.0007	10/11
- 0.0004	0.0004	10/17
0.0004	0.0006	12/05

CV = 0.10 + 0.01 pCi/g

Result	Uncer	Date
0.103	0.006	8/06
0.125	0.011	9/10

CV = 0.12 + 0.01 pCi/g

Result	Uncer	Date
0.0984	0.0055	8/06

CV = 0.15 + 0.02 pCi/g

Result	Uncer	Date
0.142	0.007	9/10

CV = 0.16 + 0.02 pCi/g

Result	Uncer	Date
0.143	0.008	8/06

CV = 0.20 + 0.02 pCi/g

Result	Uncer	Date
0.147	0.008	8/06

CV = 0.23 + 0.02 pCi/g

Result	Uncer	Date
0.21	0.01	9/04

CV = 0.26 + 0.03 pCi/g

Result	Uncer	Date
0.287	0.013	10/11

CV = 0.30 + 0.03 pCi/g

Result	Uncer	Date
0.269	0.014	5/14
0.268	0.012	8/31

Pu-239 89GAU 01 RAS

CV = not spiked pCi/g

Result	Uncer	Date
0.0023	0.0010	1/17
0.0	0.0050	8/06
0.0	0.0050	8/23
0.0008	0.0006	10/11
0.0016	0.0008	10/17
- 0.0002	0.0004	12/05

CV = 0.14 + 0.01 pCi/g

Result	Uncer	Date
0.13	0.009	5/14

CV = 0.20 + 0.02 pCi/g

Result	Uncer	Date
0.193	0.009	8/31

CV = 0.22 + 0.02 pCi/g

Result	Uncer	Date
0.189	0.009	8/06

CV = 0.25 + 0.02 pCi/g

Result	Uncer	Date
0.258	0.011	9/04
0.266	0.012	10/11

CV = 0.29 + 0.03 pCi/g

Result	Uncer	Date
0.25	0.011	8/06
0.249	0.011	8/06

CV = 0.32 + 0.03 pCi/g

Result	Uncer	Date
0.329	0.015	8/06

CV = 0.36 + 0.04 pCi/g

Result	Uncer	Date
0.364	0.014	9/10

CV = 0.37 + 0.04 pCi/g

Result	Uncer	Date
0.413	0.025	9/10

Sr-90 89GAU 04 PC

CV = not spiked pCi/g

Result	Uncer	Date
0.20	0.14	1/31
0.32	0.15	3/13
0.28	0.82	3/13
0.56	0.20	3/13
0.07	0.31	3/28
0.07	0.16	3/28
45.7	0.8	5/04
0.39	0.16	5/04
0.19	0.19	5/04
0.25	0.38	5/04

Sr-90 (cont)

0.04	0.18	6/01
0.57	0.22	7/17
0.16	0.26	7/17
0.21	0.20	11/16
- 0.01	0.20	11/16

One of the blanks from 5/4/90 was apparently confused with one of the samples.

CV = 2.8 + 0.3 pCi/g

Result	Uncer	Date
2.25	0.21	3/28

CV = 5.6 + 0.6 pCi/g

Result	Uncer	Date
5.22	0.32	8/14

CV = 11 + 1 pCi/g

Result	Uncer	Date
7.6	0.3	5/04
9.32	0.46	7/09

CV = 14 + 1.4 pCi/g

Result	Uncer	Date
12.3	1	11/16

CV = 16.7 + 2 pCi/g

Result	Uncer	Date
12.6	0.4	3/28

CV = 17 + 2 pCi/g

Result	Uncer	Date
14.2	1	11/16

CV = 22 + 2 pCi/g

Result	Uncer	Date
25.9	0.8	7/17
26	1	11/16
14.4	1	11/16

CV = 28 + 3 pCi/g

Result	Uncer	Date
44.7	1.1	7/17

CV = 33 + 3 pCi/g

Result	Uncer	Date
40.8	1.1	3/13

CV = 42 + 4 pCi/g

Result	Uncer	Date
33.9	0.6	1/31

Sr-90 (cont)

CV = 44 + 4 pCi/g

Result	Uncer	Date
0.16	0.36	5/04

This sample was apparently confused with a blank during analysis.

CV = 56 + 6 pCi/g

Result	Uncer	Date
37.1	1.1	8/07

U 89GAU 05 DNA

CV = 11 + 1 ug/g

Result	Uncer	Date
11	1	7/19

CV = 14 + 1 ug/g

Result	Uncer	Date
13	1	7/09

CV = 35 + 4 ug/g

Result	Uncer	Date
34	3	6/11

CV = 37 + 4 ug/g

Result	Uncer	Date
35	4	8/30

CV = 39 + 4 ug/g

Result	Uncer	Date
37	4	11/09

CV = 71 + 7 ug/g

Result	Uncer	Date
67	7	8/30

CV = 72 + 7 ug/g

Result	Uncer	Date
69	7	9/18

CV = 73 + 7 ug/g

Result	Uncer	Date
69	7	7/19

CV = 104 + 10 ug/g

Result	Uncer	Date
97	10	6/11

CV = 143 + 14 ug/g

Result	Uncer	Date
130	10	11/07

TABLE C-V (cont)

****

HSE-9 Radionuclides on Soil (cont)

****

U (cont)

CV = 174 + 17 ug/g

Result	Uncer	Date
160	20	7/19

CV = 208 + 21 ug/g

Result	Uncer	Date
200	20	8/30

CV = 212 + 21 ug/g

Result	Uncer	Date
200	20	5/04

CV = 235 + 24 ug/g

Result	Uncer	Date
220	20	7/19

CV = 236 + 24 ug/g

Result	Uncer	Date
220	20	6/11

CV = 251 + 25 ug/g

Result	Uncer	Date
240	20	9/18

CV = 257 + 26 ug/g

Result	Uncer	Date
250	20	8/30

CV = 280 + 25 ug/g

Result	Uncer	Date
270	30	8/30
250	30	11/07

****

HSE-9 Radionuclides on Vegetation Ash

****

Pu-238 90GAU 01 RAS

CV = not spiked pCi/g

Result	Uncer	Date
0.0022	0.0073	10/25
0.0054	0.0121	10/25

CV = 1.8 + 0.2 pCi/g

Result	Uncer	Date
1.88	0.13	10/25

Pu-239 90GAU 01 RAS

CV = not spiked pCi/g

Result	Uncer	Date
- 0.0054	0.0054	10/25
- 0.0044	0.0031	10/25

CV = 1.5 + 0.2 pCi/g

Result	Uncer	Date
1.67	0.12	10/25

****

HSE-9 Trace Elements in Bulk Liquid

****

Ag 90GAU 01 ICPMS

CV = 0.70 + 0.07 mg/L

Result	Uncer	Date
0.72	0.14	11/26

CV = 0.79 + 0.08 mg/L

Result	Uncer	Date
0.85	0.17	8/23
0.85	0.17	8/24
0.84	0.17	8/24
0.71	0.14	8/28

CV = 0.94 + 0.09 mg/L

Result	Uncer	Date
1.4	0.3	8/28

As 90GAU 01 ETVAA

CV = 500 + 50 ug/L

Result	Uncer	Date
600	120	2/08
700	140	2/08

CV = 0.98 + 0.1 mg/L

Result	Uncer	Date
0.97	0.2	2/06

As 90GAU 01 ICPMS

CV = 0.50 + 0.05 mg/L

Result	Uncer	Date
0.48	0.1	8/29
0.49	0.1	9/10

CV = 0.52 + 0.05 mg/L

Result	Uncer	Date
0.46	0.09	8/28

As (cont)

CV = 0.63 + 0.06 mg/L

Result	Uncer	Date
0.19	0.04	11/26

CV = 0.71 + 0.07 mg/L

Result	Uncer	Date
0.36	0.07	8/23
0.39	0.08	8/24
0.35	0.07	8/24

Was not stable due to being run several days after dilution with kerosene

---

Ba 90GAU 01 ICPMS

CV = 0.69 + 0.07 mg/L

Result	Uncer	Date
0.74	0.15	11/26

CV = 0.78 + 0.08 mg/L

Result	Uncer	Date
0.76	0.15	8/23
0.76	0.15	8/24
0.77	0.16	8/24
0.77	0.16	8/24
0.64	0.13	8/28
0.64	0.13	8/28

CV = 0.94 + 0.09 mg/L

Result	Uncer	Date
0.89	0.18	8/28

Cd 90GAU 01 FAA

CV = 580 + 60 ug/L

Result	Uncer	Date
590	120	2/08
610	120	2/08

CV = 640 + 60 ug/L

Result	Uncer	Date
600	120	2/08

CV = 0.59 + 0.06 mg/L

Result	Uncer	Date
0.66	0.14	2/06

Cd 90GAU 01 ICPMS

CV = 0.68 + 0.07 mg/L

Result	Uncer	Date
0.57	0.11	11/26

Cd (cont)

CV = 0.77 + 0.08 mg/L

Result	Uncer	Date
0.73	0.15	8/23
0.76	0.15	8/24
0.73	0.15	8/24

CV = 0.92 + 0.09 mg/L

Result	Uncer	Date
0.89	0.18	8/28

Cr 90GAU 01 FAA

CV = 590 + 60 ug/L

Result	Uncer	Date
660	130	2/08
630	130	2/08

CV = 660 + 70 ug/L

Result	Uncer	Date
660	130	2/08

CV = 0.68 + 0.07 mg/L

Result	Uncer	Date
0.68	0.14	11/26

Cr 90GAU 01 ICPMS

CV = 0.77 + 0.08 mg/L

Result	Uncer	Date
0.72	0.14	8/23
0.81	0.16	8/23
0.77	0.15	8/24
0.81	0.16	8/24

CV = 0.93 + 0.09 mg/L

Result	Uncer	Date
0.9	0.18	8/28

Hg 90GAU 01 CVAA

CV = 20 + 2 ug/L

Result	Uncer	Date
25	3	6/19

CV = 0.79 + 0.08 mg/L

Result	Uncer	Date
0.35	0.04	12/12

CV = 0.9 + 0.09 mg/L

Result	Uncer	Date
1.4	0.3	10/01

Hg 90GAU 01 ICPMS

CV = 0.45 + 0.04 mg/L

Result	Uncer	Date
0.40	0.08	8/23
0.41	0.08	8/24
0.41	0.08	8/24
0.40	0.08	8/24
0.44	0.09	6/28

CV = 0.79 + 0.08 mg/L

Result	Uncer	Date
0.80	0.25	12/19

CV = 0.81 + 0.08 mg/L

Result	Uncer	Date
1.0	0.2	8/28
1.0	0.2	8/28

Pb 90GAU 01 FAA

CV = 600 + 60 ug/L

Result	Uncer	Date
670	130	2/08
640	130	2/08

CV = 640 + 60 ug/L

Result	Uncer	Date
680	140	2/08

Pb 90GAU 01 ICPMS

CV = 0.59 + 0.06 mg/L

Result	Uncer	Date
0.68	0.14	2/06

CV = 0.69 + 0.07 mg/L

Result	Uncer	Date
0.9	0.18	11/26

CV = 0.78 + 0.08 mg/L

Result	Uncer	Date
0.72	0.14	8/23
0.72	0.14	8/24
0.78	0.16	8/24
0.76	0.16	8/28

CV = 0.94 + 0.09 mg/L

Result	Uncer	Date
1	0.2	8/28

Se 90GAU 01 ICPMS

CV = 0.65 + 0.06 mg/L

Result	Uncer	Date
0.53	0.11	8/28

Se (cont)

CV = 0.84 + 0.08 mg/L

Result	Uncer	Date
0.53	0.11	8/23
0.63	0.13	8/24
0.57	0.12	8/24

CV = 0.89 + 0.09 mg/L

Result	Uncer	Date
0.45	0.09	11/26

****

HSE-9 Trace Elements in Soil

****

Ni 90GAU 02 FAA

CV = 920 + 90 ug/L

Result	Uncer	Date
920	90	8/13

Tl 90GAU 02 FAA

CV = 44 + 4 ug/L

Result	Uncer	Date
47	5	8/13

****

HSE-9 Trace Elements in Urine

****

Tl 90GAU 02 ICPMS

CV = 15 + 2 ug/L

Result	Uncer	Date
19	2	1/22
13	1	4/05
16	2	5/30
15	2	6/14
14	2	11/19

CV = 40 + 4 ug/L

Result	Uncer	Date
47	5	1/22
32	3	4/05
43	4	5/30
42.5	4	6/14

TABLE C-V (cont)

****

HSE-9 Trace Elements in Water

****

Ag 89GAU 02 ETVAA

CV = 0.50 + 0.05 mg/L

Result	Uncer	Date
0.50	0.05	2/23
0.50	0.05	10/09
0.50	0.05	10/09
0.51	0.05	10/09

CV = 0.68 + 0.07 mg/L

Result	Uncer	Date
0.7	0.5	1/19

Ag 90GAU 01 FAA

CV = not spiked ug/L

Result	Uncer	Date
< 10		6/29
< 10		8/30

CV = 510 + 51 ug/L

Result	Uncer	Date
500	50	8/01

CV = 540 + 54 ug/L

Result	Uncer	Date
580	60	8/01

CV = 600 + 60 ug/L

Result	Uncer	Date
630	60	10/09
600	60	11/02
610	60	11/02

CV = 700 + 70 ug/L

Result	Uncer	Date
730	70	2/06
280	30	3/16
310	30	6/07
300	30	6/07
300	30	6/07

CV = 900 + 90 ug/L

Result	Uncer	Date
950	100	10/09
1000	100	10/19

CV = 0.47 + 0.05 mg/L

Result	Uncer	Date
0.49	0.05	5/01
0.48	0.05	6/07
0.49	0.05	6/07

Ag (cont)

CV = 0.50 + 0.05 mg/L

Result	Uncer	Date
0.50	0.06	1/10
0.51	0.06	1/10
0.51	0.05	1/22
0.50	0.05	1/25
0.50	0.05	1/25
0.51	0.05	2/06
0.51	0.05	2/06
0.50	0.05	2/06
0.50	0.05	2/06
0.51	0.05	2/06
0.50	0.05	2/06
0.50	0.05	2/06
0.50	0.05	2/06
0.52	0.06	2/08
0.51	0.06	2/08
0.51	0.06	2/08
0.50	0.05	2/09
0.50	0.05	2/09
0.50	0.05	2/09
0.50	0.05	2/09
0.49	0.05	2/21
0.50	0.05	2/21
0.51	0.05	3/19
0.50	0.05	3/19
0.50	0.05	3/27
0.50	0.05	3/27
0.50	0.05	4/05
0.50	0.05	4/05
0.51	0.05	4/16
0.49	0.05	4/25
0.50	0.05	4/30
0.50	0.05	4/30
0.50	0.05	4/30
0.50	0.05	4/30
0.51	0.06	5/01
0.50	0.05	5/11
0.50	0.05	5/11
0.50	0.05	5/11
0.50	0.05	5/11
0.51	0.05	6/08
0.50	0.05	6/08
0.51	0.05	6/08
0.51	0.05	6/08
0.51	0.05	6/08
0.51	0.05	6/21
0.50	5.0	6/27
0.51	5.0	6/27
0.52	5.0	6/27
0.50	5.0	6/27
0.51	0.05	6/27
0.50	0.05	6/29
0.49	0.05	6/29
0.49	0.05	6/29
0.50	0.05	6/29
0.51	0.05	6/29
0.50	0.05	6/29
0.50	0.05	6/29
0.52	0.05	6/29
0.52	0.05	6/29
0.49	0.05	7/24
0.49	0.05	7/24
0.49	0.05	7/24
0.49	0.05	7/24
0.49	0.05	7/24
0.50	0.05	8/01
0.50	0.05	8/01
0.50	0.05	8/01
0.51	0.05	8/03
0.51	0.05	8/03
0.49	0.05	8/13
0.50	0.05	8/13
0.50	0.05	8/30
0.51	0.06	8/30
0.51	0.06	8/30

Ag (cont)

Result	Uncer	Date
0.49	0.05	8/30
0.51	0.06	8/30
0.51	0.06	8/30
0.50	0.05	8/30
0.52	0.05	10/19
0.51	0.05	10/19
0.52	0.05	10/19
0.50	0.05	11/02
0.51	0.05	11/02
0.50	0.05	11/02
0.51	0.06	11/02
0.51	0.06	11/02
0.50	0.05	11/07
0.50	0.05	11/07
0.49	0.05	12/17
0.49	0.05	12/17

CV = 0.56 + 0.06 mg/L

Result	Uncer	Date
0.55	0.06	6/27

CV = 0.60 + 0.06 mg/L

Result	Uncer	Date
0.60	0.06	8/02
0.65	0.06	8/30

CV = 0.61 + 0.06 mg/L

Result	Uncer	Date
0.63	0.06	6/07
0.60	0.06	6/27
0.61	6.0	6/27

CV = 0.68 + 0.07 mg/L

Result	Uncer	Date
0.74	0.07	1/25
0.75	0.08	1/25
0.73	0.07	1/25
0.73	0.07	2/08
0.73	0.07	2/20
0.73	0.07	2/23

CV = 0.75 + 0.08 mg/L

Result	Uncer	Date
0.77	0.08	7/25

CV = 0.8 + 0.1 mg/L

Result	Uncer	Date
0.79	7.9	6/27

CV = 1.0 + 0.1 mg/L

Result	Uncer	Date
0.8	0.1	4/16
0.88	0.09	6/07
0.9	0.09	6/07
1.0	0.1	6/29
1.0	0.1	6/29

CV = 1.2 + 0.1 mg/L

Result	Uncer	Date
1.2	0.1	6/29

Ag (cont)

CV = 1.3 + 0.1 mg/L

Result	Uncer	Date
1.4	0.1	8/30
1.4	0.1	8/30

CV = 1.4 + 0.1 mg/L

Result	Uncer	Date
1.5	0.2	10/09
1.5	0.2	10/19
1.5	0.2	11/02
1.5	0.2	11/07

CV = 1.5 + 0.2 mg/L

Result	Uncer	Date
1.5	0.1	2/06
1.5	0.2	6/29
1.5	0.2	8/30

CV = 6.0 + 0.6 mg/L

Result	Uncer	Date
6.0	0.6	12/17

Ag 90GAU 02 ICPES

CV = 1.2 + 0.1 mg/L

Result	Uncer	Date
1.4	0.1	12/07

CV = 10 + 1 mg/L

Result	Uncer	Date
9.1	0.9	8/07
11	1	12/07

Ag 90GAU 02 ICPMS

CV = 6.4 + 0.6 ug/L

Result	Uncer	Date
5.9	0.5	8/13
5.8	0.2	8/20

CV = 8.0 + 0.8 ug/L

Result	Uncer	Date
7.5	0.1	5/15
6.2	1.0	7/05

CV = 11 + 1 ug/L

Result	Uncer	Date
10	0.9	8/13
9.4	0.4	8/20

CV = 16 + 2 ug/L

Result	Uncer	Date
13.4	0.5	8/07
15	1.4	11/14

Ag (cont)

CV = 30 + 3 ug/L

Result	Uncer	Date
31	6	9/07

CV = 43 + 4 ug/L

Result	Uncer	Date
42.2	1.7	10/03
43	5	10/04
49	5	11/01
48	5	11/01

CV = 80 + 8 ug/L

Result	Uncer	Date
81	8	11/26

CV = 100 + 10 ug/L

Result	Uncer	Date
110	10	1/30
110	10	1/30
100	10	2/06
100	10	2/08
99	10	2/08
100	10	2/21
100	10	2/21
93	9	2/23
95	10	2/23
94	9	2/23
97	10	2/23
110	10	3/12
100	10	3/12
100	10	8/01
100	10	8/01
99	10	8/14
100	10	8/14
100	10	8/31
99	10	9/04
95.9	3.9	10/04
94	3.9	10/04
96.4	4	10/04
110	10	10/05
110	10	10/05
110	10	10/05
110	10	10/05
100	10	11/01
110	10	11/01
100	10	11/16
100	10	11/19
100	10	11/30
100	10	12/18
110	10	12/18

CV = 180 + 20 ug/L

Result	Uncer	Date
190	20	11/30

CV = 220 + 20 ug/L

Result	Uncer	Date
250	30	11/28
230	20	12/18

CV = 0.61 + 0.06 mg/L

Result	Uncer	Date
0.67	0.07	9/04

Ag 88GAU 02 MSCAN

CV = 100 + 10 ug/L

Result	Uncer	Date
20	14	1/24
110	330	3/16
70	210	8/07
110	330	9/13
100	300	9/17
87	260	9/17
180	540	9/21
180	540	9/21
110	330	11/05
110	330	11/07
120	360	11/08
110	330	11/08
110	330	11/08
80	240	11/13
80	240	11/14
110	330	11/19
100	300	12/05

Al 90GAU 02 ICPES

CV = 4.0 + 0.4 mg/L

Result	Uncer	Date
4.2	0.4	3/19
4.3	0.4	3/19
4.2	0.4	3/19
4.1	0.4	3/19
4.1	0.4	3/29
3.9	0.4	3/29
4.1	0.4	3/29
4.1	0.4	5/22
4.1	0.4	5/22
4.3	0.4	5/24
4.7	0.9	7/23

CV = 5.0 + 0.5 mg/L

Result	Uncer	Date
5.3	0.5	3/19
5.1	1	7/25

CV = 6.0 + 0.6 mg/L

Result	Uncer	Date
6.3	2	2/06
5.2	2	2/06
4.8	2	2/06
6.3	0.6	12/06
6.2	0.6	12/06
6.4	0.6	12/06

CV = 50 + 5 mg/L

Result	Uncer	Date
49	5	3/29
49	5	5/22

CV = 65 + 6 mg/L

Result	Uncer	Date
66	7	5/22

CV = 100 + 10 mg/L

Result	Uncer	Date
98	10	3/19

TABLE C-V (cont)

****

HSE-9 Trace Elements in Water
(cont)

****

Al (cont)

CV = 150 + 15 mg/L

Result	Uncer	Date
160	20	5/25
110	10	12/06

CV = 200 + 20 mg/L

Result	Uncer	Date
210	40	7/23

CV = 350 + 40 mg/L

Result	Uncer	Date
330	70	2/06

Al 90GAU 02 ICPMS

CV = 14 + 1 ug/L

Result	Uncer	Date
100	10	11/02

CV = 19 + 2 ug/L

Result	Uncer	Date
230	30	10/31
230	30	11/07

CV = 50 + 5 ug/L

Result	Uncer	Date
86	9	8/24
82	8	8/24
68	10	8/29

CV = 100 + 10 ug/L

Result	Uncer	Date
94	9	5/14
100	10	10/05
110	10	11/01
120	10	11/16
120	10	11/16
120	10	11/16

CV = 150 + 15 ug/L

Result	Uncer	Date
166	11	9/05

CV = 200 + 20 ug/L

Result	Uncer	Date
230	20	8/24
220	20	11/16

Al (cont)

CV = 250 + 25 ug/L

Result	Uncer	Date
310	50	7/24
310	50	7/24
290	50	7/24
290	50	7/24
280	50	7/24
280	50	7/24
310	50	10/31
300	50	10/31
260	40	10/31
254	21	11/02
216	18	11/02
313	26	11/02
298	25	11/02
210	30	11/06
200	30	11/06
220	30	11/06
221	19	11/06
269	25	12/06
264	24	12/06
268	25	12/06
240	20	12/21
250	30	12/21
240	20	12/21
270	30	12/21
260	30	12/21
230	20	12/21

CV = 300 + 30 ug/L

Result	Uncer	Date
302	27	8/02
302	27	8/03
302	27	8/03
370	50	8/24
320	40	8/24
360	40	8/24
310	30	8/24
310	30	8/24
310	30	8/24
290	30	8/28
290	30	8/28
290	30	8/28

CV = 400 + 40 ug/L

Result	Uncer	Date
1200	200	7/24
407	36	8/02
475	42	8/02
424	38	8/02
407	36	8/02
475	42	8/02
425	38	8/02
425	38	8/03
475	42	8/03
440	40	8/24
440	40	8/24
450	50	8/24
440	40	8/24
450	50	8/24
450	50	8/24
440	50	8/24
460	50	8/24
460	50	8/24
440	40	8/24
440	40	8/24
440	40	8/24
460	50	8/24
400	40	8/28
400	40	8/28
400	40	8/28
400	40	8/28

Al (cont)

400	40	8/28
400	40	8/28
420	40	8/28
420	40	8/29
420	40	8/29
442	40	9/05
439	40	9/05
425	38	9/05
421	25	9/06
417	25	9/06
434	26	9/06
240	40	11/06

Al 88GAU 02 MSCAN

CV = 100 + 10 ug/L

Result	Uncer	Date
160	480	9/21
160	480	9/21
150	450	11/05
150	450	11/07
170	510	11/08
150	450	11/08
150	450	11/08
90	270	11/13
90	270	11/14
< 10		11/19
100	300	12/05

As 90GAU 01 ETVAA

CV = not spiked ug/L

Result	Uncer	Date
< 2		8/23

CV = 10 + 1 ug/L

Result	Uncer	Date
9	2	8/08
9.4	2	8/13
11	2	8/23
10	2	8/23
10	2	10/09
9.8	2	10/25
10	2	11/02

CV = 15 + 2 ug/L

Result	Uncer	Date
22.6	2	6/29
14	3	8/30

CV = 20 + 2 ug/L

Result	Uncer	Date
19	2	7/03

CV = 30 + 3 ug/L

Result	Uncer	Date
30	6	4/16
30	6	6/11
32	3	6/21
25	5	10/09
29	6	10/25
31	6	11/21
32	6	12/18

As (cont)

CV = 40 + 4 ug/L

Result	Uncer	Date
45	5	6/29
42.3	4	6/29
38	8	12/07

CV = 46 + 5 ug/L

Result	Uncer	Date
45	5	5/01
52	5	6/06
42	8	6/11
43	9	8/08
43	8	8/08
43	8	8/23
42	8	8/30

CV = 49 + 5 ug/L

Result	Uncer	Date
50	10	8/08

CV = 50 + 5 ug/L

Result	Uncer	Date
51	10	3/06
56	10	3/16
53	5	4/20
54	5	5/01
55	6	6/06
54	5	6/21
54	5	6/21
55	11	6/28
45	9	10/09
46	5	11/02

CV = 52 + 5 ug/L

Result	Uncer	Date
53	10	8/08

CV = 58 + 6 ug/L

Result	Uncer	Date
63	6	6/06
52	10	6/25
58	6	6/28

CV = 60 + 6 ug/L

Result	Uncer	Date
53	10	7/25
55	10	11/02
44	8	12/10

CV = 65 + 6 ug/L

Result	Uncer	Date
64	13	1/22
71	13	1/22
66	12	1/25
65	12	1/25
62	6	2/08
72	14	2/09
66	14	2/09
62	12	2/20
62	12	2/23

As (cont)

CV = 70 + 7 ug/L

Result	Uncer	Date
66	7	2/06

CV = 96 + 10 ug/L

Result	Uncer	Date
110	20	2/09
110	20	2/09

CV = 100 + 10 ug/L

Result	Uncer	Date
90	9	2/06

As 89GAU 02 FAA

CV = 65 + 6 ug/L

Result	Uncer	Date
50	20	1/24

As 90GAU 02 ICPMS

CV = 6.4 + 0.6 ug/L

Result	Uncer	Date
9.9	1	12/06

CV = 8.0 + 0.8 ug/L

Result	Uncer	Date
7.3	0.1	6/08

CV = 11 + 1 ug/L

Result	Uncer	Date
7.7	1	8/28
9	1	8/31
5.3	0.5	12/13

CV = 16 + 2 ug/L

Result	Uncer	Date
15.1	0.3	8/14
11.8	0.2	12/04

CV = 20 + 2 ug/L

Result	Uncer	Date
18	1.1	9/05
4	1	12/04

CV = 35 + 4 ug/L

Result	Uncer	Date
35	5	11/19

CV = 50 + 5 ug/L

Result	Uncer	Date
50	5	11/19

As (cont)

CV = 58 + 6 ug/L

Result	Uncer	Date
56	6	8/31

CV = 100 + 10 ug/L

Result	Uncer	Date
110	10	2/21
97	10	2/23
91	9	2/23
91	9	5/14
110	330	5/29
94	9	8/01
100	10	8/01
95	10	8/31
110	10	9/04
110	10	9/19
100	10	9/19
110	10	10/05
110	10	10/05
100	10	11/01
98	10	11/01
110	10	11/16
110	10	11/19

As 88GAU 02 MSCAN

CV = 100 + 10 ug/L

Result	Uncer	Date
170	120	1/24
100	300	3/16
81	240	8/07
110	330	9/13
97	290	9/17
65	200	9/17
170	510	9/21
170	510	9/21
94	280	11/05
94	280	11/07
93	280	11/08
94	280	11/08
94	280	11/08
67	200	11/13
67	200	11/14
110	330	11/19
77	230	12/05

Au 90GAU 02 ICPMS

CV = 50 + 5 ug/L

Result	Uncer	Date
42	8	9/12

Au 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 1		1/24
< 1		3/16
< 1		8/07
< 1		9/13
< 1		9/17
< 1		9/17
< 1		9/21
< 1		9/21
< 1		11/05

TABLE C-V (cont)

****

HSE-9 Trace Elements in Water
(cont)

****

Au (cont)

< 1	11/07
< 1	11/08
< 1	11/08
< 1	11/08
< 1	11/13
< 1	11/14
< 1	11/19
< 1	12/05

B 90GAU 02 FIA

CV = 250 + 20 ug/L

Result	Uncer	Date
290	100	5/31
290	100	5/31
280	100	5/31

CV = 1.0 + 0.1 mg/L

Result	Uncer	Date
1.0	0.1	5/31

CV = 1.3 + 0.1 mg/L

Result	Uncer	Date
1.5	0.2	1/25
1.3	0.1	1/25
1.3	0.1	1/25

CV = 2.0 + 0.2 mg/L

Result	Uncer	Date
2.0	0.2	4/19
2.0	0.2	5/31
1.9	0.2	9/28

CV = 3 + 0.3 mg/L

Result	Uncer	Date
3.1	0.3	4/19
3.1	0.3	4/19
3.0	0.3	4/19
3.1	0.3	4/19
3.1	0.3	4/19
3.1	0.3	4/19
3.1	0.3	4/19
3.1	0.3	4/19
3.1	0.3	4/19
2.9	0.3	5/29
2.9	0.3	5/29
3.0	0.3	5/29
3.4	0.3	5/29
3.0	0.3	5/31
3.0	0.3	5/31
2.9	0.3	5/31
3.1	0.3	7/19
3.2	0.3	7/19
3.0	0.3	7/19
2.9	0.3	9/28
3.0	0.3	9/28
3.0	0.3	10/17
3.0	0.3	10/17

B (cont)

CV = 4.0 + 0.4 mg/L

Result	Uncer	Date
4.0	0.4	10/17

CV = 4.2 + 0.4 mg/L

Result	Uncer	Date
4.2	0.4	1/25
4.2	0.4	1/25
4.1	0.4	1/25

CV = 5.0 + 0.5 mg/L

Result	Uncer	Date
5.1	0.5	1/25
4.9	0.5	1/25
4.9	0.5	1/25
4.9	0.5	1/25
4.9	0.5	1/25
4.9	0.5	1/25
4.9	0.5	1/25
5.0	0.5	5/31
4.9	0.5	5/31
5.3	0.5	9/28

B 90GAU 02 ICPES

CV = 3.0 + 0.3 mg/L

Result	Uncer	Date
2.7	0.3	8/28
2.8	0.3	8/28
2.9	0.3	8/28
3.0	0.05	9/17

CV = 7.0 + 0.7 mg/L

Result	Uncer	Date
7.1	0.7	3/29
7.0	0.7	5/22

CV = 8.0 + 0.8 mg/L

Result	Uncer	Date
8.0	0.8	3/19
8.2	0.8	3/19
7.9	0.8	3/19
8.1	0.8	3/19
7.9	0.8	3/29
8.3	0.8	3/29
8.1	0.8	3/29
7.9	0.8	5/22
7.8	0.8	5/22
8.1	0.8	5/24
9.4	1.9	7/23

CV = 9.1 + 0.9 mg/L

Result	Uncer	Date
9.4	0.9	5/22

CV = 10 + 1 mg/L

Result	Uncer	Date
10	1	3/19
10	1	7/02
9.8	1	7/02

B (cont)

CV = 25 + 2.5 mg/L

Result	Uncer	Date
25	3	3/19

CV = 38 + 4 mg/L

Result	Uncer	Date
39	4	5/25

CV = 50 + 5 mg/L

Result	Uncer	Date
56	11	7/23

B 88GAU 02 ICPMS

CV = 100 + 10 ug/L

Result	Uncer	Date
89	267	5/29

B 88GAU 02 MSCAN

CV = 100 + 10 ug/L

Result	Uncer	Date
< 100		1/24
59	180	8/07
110	330	9/13
< 10		9/17
< 10		9/17

Ba 90GAU 02 FAA

CV = 5.0 + 0.5 mg/L

Result	Uncer	Date
5.0	0.5	8/13

CV = 12 + 1 mg/L

Result	Uncer	Date
13	1	12/14

CV = 17 + 2 mg/L

Result	Uncer	Date
11	5	1/18

Ba 90GAU 01 ICPES

CV = none available ug/L

Result	Uncer	Date
90	10	7/24
< 3		8/27

CV = 300 + 30 ug/L

Result	Uncer	Date
310	30	10/11
330	30	11/19
340	30	11/20

Ba (cont)

CV = 1.0 + 0.1 mg/L

Result	Uncer	Date
0.93	0.09	8/01
1.0	0.1	8/14
1.1	0.1	8/27
1.0	0.1	8/31
1.1	0.1	11/20

CV = 1.9 + 0.2 mg/L

Result	Uncer	Date
2.0	0.2	7/24

CV = 2.0 + 0.2 mg/L

Result	Uncer	Date
2.0	0.2	1/16
2.0	0.2	3/29
1.9	0.2	5/22
2.0	0.2	6/29
2.1	0.2	8/14
2.2	0.2	8/27

CV = 2.2 + 0.2 mg/L

Result	Uncer	Date
2.0	0.2	1/19
2.4	0.2	1/30
2.5	0.3	1/30

CV = 2.6 + 0.3 mg/L

Result	Uncer	Date
2.6	0.3	5/22

CV = 3.0 + 0.3 mg/L

Result	Uncer	Date
3.1	0.3	7/02

CV = 3.5 + 0.4 mg/L

Result	Uncer	Date
3.3	0.3	1/23

CV = 4.0 + 0.4 mg/L

Result	Uncer	Date
3.9	0.4	3/19
3.8	0.4	3/19
3.9	0.4	3/19
4.1	0.4	3/19
3.8	0.4	3/29
3.9	0.4	3/29
3.9	0.4	3/29
4.0	0.4	4/04
3.8	0.4	4/04
4.0	0.4	4/04
4.0	0.4	4/04
3.9	0.4	4/04
3.8	0.4	4/04
3.9	0.4	4/04
3.9	0.4	4/04
4.0	0.4	4/04
3.9	0.4	4/04
3.7	0.4	5/22
3.6	0.4	5/22
4.0	0.4	5/24
4.4	0.9	7/23

Ba (cont)

CV = 5.0 + 0.5 mg/L

Result	Uncer	Date
5.2	0.5	1/30
5.3	0.5	1/30
5.3	1.0	2/12
5.0	1.0	2/12
5.3	1.0	2/12
5.4	1.0	2/12
5.5	0.6	2/20
5.0	0.5	3/19
4.9	0.5	4/05
4.8	0.5	4/05
4.8	1.0	4/23
4.7	0.9	4/23
4.7	0.5	5/02
4.6	0.5	5/02
5.0	0.5	6/12
4.9	0.5	6/12
5.1	0.5	6/13
5.0	0.5	6/13
4.4	0.4	6/14
5.0	0.5	6/14
5.3	0.5	6/14
5.2	0.5	6/14
5.2	0.5	6/29
5.0	0.5	6/29
4.9	0.5	7/02
5.1	0.5	7/02
5.0	0.5	7/02
5.1	0.5	7/02
5.2	0.5	7/12
5.1	0.5	7/12
5.1	0.5	7/12
5.1	0.5	7/12
4.7	0.5	7/24
4.5	0.5	7/24
4.9	0.5	7/25
5.0	0.5	8/01
4.9	0.5	8/01
4.9	0.5	8/27
5.4	0.5	12/11
5.4	0.5	12/11

CV = 8.0 + 0.8 mg/L

Result	Uncer	Date
7.7	0.8	11/01
8.7	0.9	11/20

CV = 9.0 + 0.9 mg/L

Result	Uncer	Date
9.6	1	4/05
9.5	1	4/30
12	3	5/02
9.2	0.9	6/12
10	1	6/14

CV = 10 + 1 mg/L

Result	Uncer	Date
10	1	1/16
10	1	1/16
10	1	1/16
9.7	1	1/18
9.7	1	1/18
9.7	1	1/18
10	1	1/18
9.1	0.9	1/19
8.7	0.9	1/19
11	1	1/23
10.8	1	1/23
10	1	1/23

Ba (cont)

9.8	1	1/30
11	1	1/30
10	1	1/30
10	1	1/30
11	2	2/26
10	2	2/26
10	2	2/26
10	2	2/26
10	2	2/27
11	2	2/27
10	1	3/19
10	1	3/19
10	1	3/19
9.8	1	3/19
12	2	3/26
11	2	3/26
11	1	4/30
11	1	4/30
10	1	5/21
11	1	6/14
11	1	6/15
11	1	7/24
10	1	7/24
12	1	7/24
10	1	7/25
10	1	7/25
10	1	8/09
11	1	8/14
11	1	8/14
11	1	8/14
11	1	8/14
11	1	8/14
11	1	8/14
11	1	8/14
11	1	8/14
11	1	8/27
11	1	8/27
11	1	8/27
11	1	8/27
11	1	8/27
10	1	8/31
10	1	8/31
9.4	0.9	10/11
9.5	0.9	10/11
9.4	0.9	10/31
9.7	1	11/01
9.5	1	11/01
9.5	1	11/02
9.7	1	11/02
9.4	0.9	11/06
11	1	11/19
11	1	11/19
11	1	11/19
11	1	11/20
11	1	11/20
10	1	11/20
11	1	11/20
11	1	11/20
9.3	1	11/26
10	1	12/07
10	1	12/07
10	1	12/07

= 12 + 1 mg/L

Result	Uncer	Date
11	1	12/07

TABLE C-V (cont)

****

HSE-9 Trace Elements in Water
(cont)

****

Ba (cont)

CV = 15 + 2 mg/L

Result	Uncer	Date
18	2	2/20
16	2	3/20
16	3	4/23
15	2	5/21
16	2	5/25
17	2	6/12

CV = 16 + 2 mg/L

Result	Uncer	Date
17	2	7/02
16	2	7/24

CV = 17.5 + 2 mg/L

Result	Uncer	Date
18	2	7/02
17	2	8/31

CV = 18 + 2 mg/L

Result	Uncer	Date
17	2	10/31
18	2	11/02

CV = 20 + 2 mg/L

Result	Uncer	Date
21	4	7/23

Ba 90GAU 02 ICPMS

CV = 12 + 1 ug/L

Result	Uncer	Date
18.4	0.7	8/13
13.9	0.3	8/20

CV = 15 + 2 ug/L

Result	Uncer	Date
15.3	0.2	6/20
17.7	0.2	7/05

CV = 20 + 2 ug/L

Result	Uncer	Date
21	2	11/19

CV = 21 + 2 ug/L

Result	Uncer	Date
26.6	1	8/13
25.6	0.5	8/20
25.7	0.5	8/21

Ba (cont)

CV = 30 + 3 ug/L

Result	Uncer	Date
35.7	0.4	8/07
32.7	1.4	11/14

CV = 35 + 4 ug/L

Result	Uncer	Date
32	3	11/19

CV = 50 + 5 ug/L

Result	Uncer	Date
50.3	4	9/07
53	1.1	10/04
43.6	1.6	10/05
70	7	11/28
63	6	12/18

CV = 100 + 10 ug/L

Result	Uncer	Date
110	10	1/30
110	10	1/30
100	10	2/06
110	10	2/08
100	10	2/21
100	10	2/21
100	10	2/22
100	10	2/22
100	10	2/23
100	10	2/23
120	10	3/12
110	10	3/12
98	10	5/14
97	10	5/14
110	320	5/29
90	9	8/01
110	10	8/01
87	9	8/01
97	10	8/14
100	10	8/14
100	10	8/31
100	10	9/04
110	10	10/04
110	10	10/04
110	10	10/04
97	10	11/01
100	10	11/01
100	10	11/16
100	10	11/19
110	10	11/30
110	10	12/18
100	10	12/18

CV = 160 + 20 ug/L

Result	Uncer	Date
190	20	11/26

CV = 210 + 20 ug/L

Result	Uncer	Date
130	10	11/30

CV = 0.63 + 0.06 mg/L

Result	Uncer	Date
0.67	0.07	9/04

Ba 88GAU 02 MSCAN

CV = 100 + 10 ug/L

Result	Uncer	Date
120	80	1/24
110	330	3/16
97	290	8/07
100	300	9/13
100	300	9/17
89	270	9/17
120	360	9/21
120	360	9/21
110	330	11/05
110	330	11/07
110	330	11/08
110	330	11/08
110	330	11/08
80	240	11/13
80	240	11/14
91	270	11/19
86	260	12/05

Be 90GAU 02 ICPES

CV = 20 + 2 ug/L

Result	Uncer	Date
20	2	3/19

CV = 30 + 3 ug/L

Result	Uncer	Date
30	3	5/25

CV = 40 + 4 ug/L

Result	Uncer	Date
40	10	7/23

CV = 300 + 30 ug/L

Result	Uncer	Date
240	20	3/29

CV = 0.040 + 0.004 mg/L

Result	Uncer	Date
0.048	0.010	7/25

CV = 0.30 + 0.03 mg/L

Result	Uncer	Date
0.24	0.02	5/22

CV = 0.36 + 0.04 mg/L

Result	Uncer	Date
0.28	0.03	8/31

CV = 0.40 + 0.04 mg/L

Result	Uncer	Date
0.31	0.03	5/22

Be (cont)

CV = 0.50 + 0.05 mg/L

Result	Uncer	Date
0.57	0.06	1/25
0.56	0.06	1/25
0.57	0.06	1/25
0.57	0.06	1/25
0.55	0.06	1/25
0.57	0.06	1/25
0.56	0.06	1/25
0.56	0.06	1/25
0.54	0.05	1/25
0.64	0.13	8/02
0.57	0.11	8/02
0.66	0.13	8/02
0.67	0.14	8/02
0.68	0.14	8/02

CV = 3.2 + 0.3 mg/L

Result	Uncer	Date
3.5	0.4	3/19
3.4	0.3	3/19
3.4	0.3	3/19
3.3	0.3	3/19
3.4	0.3	3/29
3.4	0.3	3/29
3.4	0.3	3/29
3.5	0.4	5/22
3.4	0.3	5/22
3.4	0.3	5/24
3.1	0.6	7/23

CV = 4.0 + 0.4 mg/L

Result	Uncer	Date
4.3	0.4	3/19

CV = 10 + 1 mg/L

Result	Uncer	Date
11	1	1/18
11	1	1/18
11	1	1/18
11	1	1/18
9.8	1	8/31
9.7	1	8/31
8.6	1	11/26
9.4	1.9	11/27

Be 90GAU 02 ICPMS

CV = 12 + 1 ug/L

Result	Uncer	Date
12.2	0.6	8/24

CV = 15 + 2 ug/L

Result	Uncer	Date
16	2	8/02
14.5	0.7	8/27

CV = 21 + 2 ug/L

Result	Uncer	Date
21.9	1.1	8/24
21.6	1.1	8/24
21.9	1.8	8/31

Be (cont)

CV = 30 + 3 ug/L

Result	Uncer	Date
36	5	8/14
33	4	11/05

CV = 40 + 4 ug/L

Result	Uncer	Date
41	4	11/19
47	9	12/12

CV = 45 + 4 ug/L

Result	Uncer	Date
44.2	2.6	9/05
32	3	12/05

CV = 50 + 5 ug/L

Result	Uncer	Date
52	5	11/19

CV = 70 + 7 ug/L

Result	Uncer	Date
68	14	11/26

CV = 72 + 7 ug/L

Result	Uncer	Date
86.8	4.4	2/28
78.1	3.9	2/28
87	9	3/01
63.4	0.3	3/09
70.1	4.8	3/09
70.1	3.5	3/09
77.6	3.3	3/13
73.9	3.6	3/16
81.2	4	3/16
73.9	3.6	3/16
81.2	4	3/16
73.9	2.5	3/16

CV = 100 + 10 ug/L

Result	Uncer	Date
93	9	1/30
96	10	2/23
95	10	3/12
90	9	5/14
120	520	5/29
110	10	8/01
100	10	8/14
120	10	9/19
140	10	9/19
110	10	10/05
110	10	10/05
84	8	11/01
99	10	11/01
110	10	11/16
110	10	12/18

CV = 190 + 20 ug/L

Result	Uncer	Date
190	20	11/28
200	20	12/18

Be 88GAU 02 MSCAN

CV = 100 + 10 ug/L

Result	Uncer	Date
74	51	1/24
100	300	3/16
100	300	8/07
110	330	9/13
< 100		9/17
< 10		9/17
39	120	9/21
39	120	9/21
100	300	11/05
100	300	11/07
100	300	11/08
100	300	11/08
100	300	11/08
69	210	11/13
69	210	11/14
80	240	11/19
98	290	12/05

Bi 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 1		1/24
< 1		3/16
< 1		8/07
< 1		9/13
< 1		9/17
< 1		9/17
< 1		9/21
< 1		9/21
< 1		11/05
< 1		11/07
< 1		11/08
< 1		11/08
< 1		11/08
< 1		11/13
< 1		11/14
< 1		11/19
< 1		12/05

Br 90GAU 01 IC

CV = 3.0 + 0.3 mg/L

Result	Uncer	Date
2.9	0.3	10/29

CV = 6.3 + 0.6 mg/L

Result	Uncer	Date
6.9	0.7	5/18

CV = 6.6 + 0.7 mg/L

Result	Uncer	Date
10	1	4/26

CV = 7.9 + 0.8 mg/L

Result	Uncer	Date
15	2	5/18
8.4	0.8	7/18

TABLE C-V (cont)

****

HSE-9 Trace Elements in Water (cont)

****

Br (cont)

CV = 20 + 2 mg/L

Result	Uncer	Date
12	1	2/21
25	3	4/26
27	3	6/08
22	2	7/18

Br 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 1		3/16

Br 90GAU 01 TITR

CV = 9.5 + 1.0 mg/L

Result	Uncer	Date
11	1	5/29

Ca 90GAU 04 IC

CV = 16 + 1 mg/L

Result	Uncer	Date
18	2	5/11
19	2	6/07

CV = 18 + 2 mg/L

Result	Uncer	Date
24	2	9/26
23	2	10/17

CV = 22 + 2 mg/L

Result	Uncer	Date
29	3	8/08
28	3	10/17

CV = 24 + 1 mg/L

Result	Uncer	Date
26	3	5/23
29	3	6/07

Ca 89MON 01 ICPES

CV = 10 + 1 mg/L

Result	Uncer	Date
10	1	4/12

Ca (cont)

CV = 15 + 2 mg/L

Result	Uncer	Date
21	2	2/06

CV = 50 + 5 mg/L

Result	Uncer	Date
50	10	2/06
45	10	2/07
51	10	2/07
43	10	2/07

Cd 90GAU 02 ETVAA

CV = 2.0 + 0.2 ug/L

Result	Uncer	Date
1.9	0.2	6/21

CV = 4.0 + 0.4 ug/L

Result	Uncer	Date
4.1	0.4	6/21
4.1	0.4	6/21

CV = 4.5 + 0.4 ug/L

Result	Uncer	Date
5.1	1	7/03

Cd 90GAU 02 FAA

CV = 2.0 + 0.2 ug/L

Result	Uncer	Date
2	1	4/30
2	1	4/30

CV = 4.0 + 0.4 ug/L

Result	Uncer	Date
4	1	4/30
4	1	4/30

CV = 0.60 + 0.06 mg/L

Result	Uncer	Date
0.61	0.06	8/13

CV = 0.65 + 0.06 mg/L

Result	Uncer	Date
0.6	0.1	1/29

CV = 20 + 2 mg/L

Result	Uncer	Date
20	2	12/17

Cd 90GAU 01 ICPES

CV = not spiked ug/L

Result	Uncer	Date
< 30		7/24
< 30		8/27

CV = 500 + 50 ug/L

Result	Uncer	Date
470	50	10/11
550	60	11/19
540	50	11/20

CV = 600 + 60 ug/L

Result	Uncer	Date
540	50	7/02
600	60	7/24

CV = 0.46 + 0.05 mg/L

Result	Uncer	Date
0.4	0.02	6/14

CV = 0.50 + 0.05 mg/L

Result	Uncer	Date
0.43	0.04	7/02
0.54	0.07	7/12
0.53	0.05	8/31

CV = 0.60 + 0.06 mg/L

Result	Uncer	Date
0.50	0.05	7/24
0.60	0.06	7/24
0.60	0.06	8/27

CV = 1.0 + 0.1 mg/L

Result	Uncer	Date
1.0	0.1	1/18
1.0	0.1	1/18

CV = 1.4 + 0.1 mg/L

Result	Uncer	Date
1.4	0.1	8/14
1.5	0.2	8/27

CV = 1.6 + 0.2 mg/L

Result	Uncer	Date
1.7	0.2	7/24

CV = 1.8 + 0.2 mg/L

Result	Uncer	Date
2.0	0.2	1/19
2.0	0.2	1/30
2.0	0.2	1/30

Cd (cont)

CV = 2.0 + 0.2 mg/L

Result	Uncer	Date
1.9	0.2	6/14
2.2	0.2	6/15
2.2	0.2	11/20

CV = 2.5 + 0.2 mg/L

Result	Uncer	Date
2.0	0.2	1/16

CV = 4.0 + 0.4 mg/L

Result	Uncer	Date
3.8	0.4	8/01
4.1	0.4	8/14
4.3	0.4	8/27
3.9	0.4	8/31

CV = 4.8 + 0.5 mg/L

Result	Uncer	Date
4.2	0.4	1/23

CV = 5.0 + 0.5 mg/L

Result	Uncer	Date
5.3	0.5	1/30
5.7	0.5	1/30
5.5	0.6	2/20
5.4	0.5	4/05
5.2	0.5	4/05
5.1	1.0	4/23
5.0	1.0	4/23
5.0	0.5	6/12
5.0	0.5	6/12
5.2	0.5	6/13
4.9	0.5	6/13
4.9	0.5	6/14
4.5	0.5	6/14
4.5	0.5	6/14
4.5	0.5	6/14
4.9	0.5	6/14
5.1	0.5	6/14
5.3	0.5	6/14
5.2	0.5	6/27
5.1	0.5	6/29
5.1	0.5	6/29
5.0	0.5	6/29
5.1	0.5	6/29
5.0	0.5	7/02
4.8	0.5	7/02
4.9	0.5	7/02
5.1	0.5	7/02
5.3	0.5	7/12
5.3	0.5	7/12
5.4	0.5	7/12
5.3	0.5	7/12
5.4	0.5	7/12
5.2	0.5	8/01
5.0	0.5	8/01
4.3	0.4	9/17

CV = 7.2 + 0.7 mg/L

Result	Uncer	Date
7.8	0.8	4/05
6.5	0.7	4/30
7.6	0.8	6/12
7.0	0.7	6/14

Cd (cont)

CV = 8.0 + 0.8 mg/L

Result	Uncer	Date
8.0	0.8	6/12
7.9	0.8	6/27
7.9	0.8	6/29
7.3	0.7	10/31
7.9	0.8	11/02

CV = 10 + 1 mg/L

Result	Uncer	Date
11	1	1/16
9.8	0.9	1/16
10	1	1/16
11	1	1/18
10	1	1/18
10	1	1/18
11	1	1/18
11	1	1/19
10.6	1	1/19
11	1	1/19
10	1	1/19
10.6	1	1/19
10	1	1/19
9.7	1	1/23
9.7	1	1/23
9.7	1	1/23
11	1	1/30
10	1	1/30
11	1	1/30
11	1	1/30
9.8	1	3/19
10	1	3/19
10	1	3/19
9.7	1	4/30
9.7	1	4/30
11	1	5/21
10	1	7/24
9.5	1	7/25
9.4	0.9	7/25
11	1	8/13
11	1	8/13
10	1	8/14
10	1	8/14
10	1	8/14
10	1	8/14
10	1	8/14
10	1	8/14
10	1	8/14
10	1	8/14
11	1	8/27
11	1	8/27
11	1	8/27
11	1	8/27
11	1	8/27
10	1	8/31
10	1	8/31
9.6	0.9	10/11
9.5	0.9	10/11
9.9	1	10/31
9.7	1	11/01
9.9	1	11/01
9.8	1	11/02
9.9	1	11/02
9.7	1	11/06
11	1	11/19
11	1	11/19
11	1	11/19
12	1	11/20
11	1	11/20
11	1	11/20
11	1	11/20
11	1	11/20

Cd (cont)

8.8	1	11/26
11	1	12/07
11	1	12/07
11	1	12/07

CV = 12 + 1 mg/L

Result	Uncer	Date
13	1	2/20
11	1	3/20
12	3	4/23
13	1	5/21
13	1	6/12
11	1	11/01
13	1	11/20

CV = 20 + 2 mg/L

Result	Uncer	Date
20	2	12/07

CV = 25 + 2 mg/L

Result	Uncer	Date
26	3	6/29
24	2	7/02

CV = 30 + 3 mg/L

Result	Uncer	Date
32	3	8/09

Cd 90GAU 02 ICPMS

CV = 6.4 + 0.6 ug/L

Result	Uncer	Date
6.7	0.3	8/13
6.1	0.2	8/20

CV = 8.0 + 0.8 ug/L

Result	Uncer	Date
7.3	0.3	5/15
7.7	0.1	6/20

CV = 11 + 1 ug/L

Result	Uncer	Date
9.2	0.4	8/13
10	0.4	8/20

CV = 16 + 2 ug/L

Result	Uncer	Date
14.7	0.5	8/07
14.3	0.9	11/16

CV = 20 + 2 ug/L

Result	Uncer	Date
19	2	11/19

CV = 40 + 4 ug/L

Result	Uncer	Date
41	4	11/19

TABLE C-V (cont)

****

HSE-9 Trace Elements in Water
(cont)

****

Cd (cont)

CV = 50 + 5 ug/L

Result	Uncer	Date
50.8	3.3	9/07
44.2	1.3	10/04
46.4	0.5	10/04

CV = 100 + 10 ug/L

Result	Uncer	Date
110	10	1/30
110	10	1/30
100	10	2/06
100	10	2/08
100	10	2/21
100	10	2/21
100	10	2/21
96	10	2/23
95	10	2/23
97	10	2/23
120	10	3/12
120	10	3/12
95	10	5/14
99	10	5/14
100	310	5/29
110	10	8/01
88	9	8/01
98	10	8/14
100	10	8/14
95	10	8/31
98	10	9/04
100	10	9/19
100	10	9/19
100	3	10/04
100	3	10/04
101	3	10/04
110	10	10/05
110	10	10/05
110	10	10/05
110	10	10/05
100	10	10/05
100	10	10/05
100	10	10/05
110	10	10/05
100	10	11/01
110	10	11/01
100	10	11/16
100	10	11/19
110	10	11/30
100	10	12/18
100	10	12/18

CV = 110 + 10 ug/L

Result	Uncer	Date
110	10	11/26

CV = 170 + 20 ug/L

Result	Uncer	Date
160	20	11/28
170	20	12/18

Cd (cont)

CV = 230 + 20 ug/L

Result	Uncer	Date
220	20	11/30

CV = 0.58 + 0.06 mg/L

Result	Uncer	Date
0.60	0.06	8/31

Cd 88GAU 02 MSCAN

CV = 100 + 10 ug/L

Result	Uncer	Date
200	140	1/24
100	300	3/16
100	300	8/07
110	330	9/13
94	280	9/17
82	250	9/17
120	360	9/21
120	360	9/21
120	360	11/05
120	360	11/07
120	360	11/08
120	360	11/08
120	360	11/08
100	300	11/13
100	300	11/14
83	250	11/19
100	300	12/05

Ce 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 1		1/24
< 1		3/16
< 1		8/07
< 1		9/13
< 1		9/17
< 1		9/17
< 1		9/21
< 1		9/21
< 1		11/05
< 1		11/07
< 1		11/08
< 1		11/08
< 1		11/08
< 1		11/13
< 1		11/14
< 1		11/19
< 1		12/05

Cl FIA

CV = none available ug/L

Result	Uncer	Date
13	1	2/14

CV = 6.3 + 0.6 mg/L

Result	Uncer	Date
8	1	5/17

Cl (cont)

CV = 7.9 + 0.8 mg/L

Result	Uncer	Date
11	1	5/17
10	1	6/27

CV = 9.4 + 0.9 mg/L

Result	Uncer	Date
16	2	6/07

CV = 25 + 2 mg/L

Result	Uncer	Date
29	3	9/26

CV = 32 + 3 mg/L

Result	Uncer	Date
40	4	9/26

CV = 38 + 4 mg/L

Result	Uncer	Date
49	5	9/26
50	5	9/26

CV = 41 + 2 mg/L

Result	Uncer	Date
46	5	6/07

CV = 46 + 5 mg/L

Result	Uncer	Date
47	5	10/17

CV = 57 + 6 mg/L

Result	Uncer	Date
59	6	7/25
57	6	10/17

CV = 62 + 2 mg/L

Result	Uncer	Date
67	7	6/07

Cl 90GAU 02 IC

CV = 5.0 + 0.5 mg/L

Result	Uncer	Date
4.4	0.4	12/14

CV = 15.8 + 1.6 mg/L

Result	Uncer	Date
17	2	2/16

CV = 41 + 2 mg/L

Result	Uncer	Date
41	4	5/14

Cl (cont)

CV = 46 + 5 mg/L

Result	Uncer	Date
49	5	9/24

CV = 62 + 2 mg/L

Result	Uncer	Date
59	6	5/17

CN 90GAU 04 ACOLR

CV = 170 + 20 ug/L

Result	Uncer	Date
111	10	4/17
113	10	6/21

CV = 220 + 22 ug/L

Result	Uncer	Date
160	20	7/02

CV = 340 + 30 ug/L

Result	Uncer	Date
236	20	5/02
243	20	6/06

CV = 450 + 40 ug/L

Result	Uncer	Date
327	30	6/06
322	30	7/02

CV = 0.10 + 0.01 mg/L

Result	Uncer	Date
0.081	0.01	2/26
0.077	0.01	4/17
0.075	0.01	5/02
0.079	0.01	5/23

CV = 0.12 + 0.01 mg/L

Result	Uncer	Date
0.117	0.01	9/25

CV = 0.14 + 0.01 mg/L

Result	Uncer	Date
0.106	0.01	2/07
0.106	0.01	2/16
0.094	0.01	5/02
0.118	0.01	5/23

CV = 0.18 + 0.02 mg/L

Result	Uncer	Date
0.18	0.02	9/19
0.16	0.02	12/17

CN (cont)

CV = 0.22 + 0.02 mg/L

Result	Uncer	Date
0.20	0.02	7/02
0.20	0.02	7/02

CV = 0.28 + 0.03 mg/L

Result	Uncer	Date
0.20	0.02	2/20
0.18	0.02	4/03

CV = 0.36 + 0.04 mg/L

Result	Uncer	Date
0.335	0.01	9/25

CV = 0.47 + 0.05 mg/L

Result	Uncer	Date
0.45	0.05	7/27

CV = 0.49 + 0.05 mg/L

Result	Uncer	Date
0.347	0.03	3/13
0.37	0.04	3/20

Co 90GAU 02 ICPES

CV = 20 + 2 mg/L

Result	Uncer	Date
21	2	3/19

CV = 30 + 3 mg/L

Result	Uncer	Date
29	3	5/25

CV = 40 + 4 mg/L

Result	Uncer	Date
41	4	3/19
39	4	3/19
41	4	3/19
39	4	3/19
41	4	3/29
40	4	3/29
39	4	3/29
41	4	5/22
40	4	5/22
38	4	5/24
41	8	7/23
42	9	7/23

CV = 50 + 5 mg/L

Result	Uncer	Date
50	5	3/19

CV = 150 + 15 mg/L

Result	Uncer	Date
150	20	3/29
150	20	5/22

Co (cont)

CV = 190 + 19 mg/L

Result	Uncer	Date
200	20	5/22

Co 88GAU 02 ICPMS

CV = 100 + 10 ug/L

Result	Uncer	Date
89	9	5/14
67	201	5/29
100	10	10/05
110	10	10/05

Co 88GAU 02 MSCAN

CV = 100 + 10 ug/L

Result	Uncer	Date
160	110	1/24
110	330	3/16
51	153	8/07
91	270	9/13
99	300	9/17
62	190	9/17
240	720	9/21
240	720	9/21
130	390	11/05
130	390	11/07
130	390	11/08
130	390	11/08
130	390	11/08
81	240	11/13
81	240	11/14
130	390	11/19
86	260	12/05

Chemical Oxygen Demand
90GAU 04 COLOR

CV = 100 + 10 mg/L

Result	Uncer	Date
170	30	11/05

CV = 120 + 10 mg/L

Result	Uncer	Date
120	20	6/29

Conductivity 90GAU 04 CB

CV = 220 + 10 umhos/cm

Result	Uncer	Date
201	10	5/11
191	10	5/24

CV = 248 + 25 umhos/cm

Result	Uncer	Date
197	10	9/24
175	9	10/05

TABLE C-V (cont)

****

HSE-9 Trace Elements in Water (cont)

****

Conductivity (cont)

CV = 304 + 30 umhos/cm

Result	Uncer	Date
236	12	7/25
258	13	10/05

CV = 330 + 10 umhos/cm

Result	Uncer	Date
273	14	5/11
280	14	6/08

Cr 90GAU 02 ETVAA

CV = 20 + 2 ug/L

Result	Uncer	Date
27	3	4/23
23	2	5/01
24	4	6/21
27	6	6/21

CV = 25 + 2 ug/L

Result	Uncer	Date
26	5	7/03

CV = 40 + 4 ug/L

Result	Uncer	Date
52	10	6/21

Cr 90GAU 02 FAA

CV = 0.55 + 0.06 mg/L

Result	Uncer	Date
0.50	0.05	1/12

CV = 0.65 + 0.06 mg/L

Result	Uncer	Date
0.50	0.5	1/19

CV = 1.4 + 0.1 mg/L

Result	Uncer	Date
1.4	0.1	8/13

CV = 60 + 6 mg/L

Result	Uncer	Date
64	6	12/17

Cr 90GAU 01 ICPES

CV = none available ug/L

Result	Uncer	Date
< 70		7/24
< 100		8/27

CV = 1.0 + 0.1 mg/L

Result	Uncer	Date
1.0	0.1	6/29
1.1	0.1	8/09
1.0	0.1	11/01
1.0	0.1	11/20

CV = 1.4 + 0.1 mg/L

Result	Uncer	Date
1.0	0.1	1/16
1.4	0.1	7/24
1.4	0.1	7/24
1.3	0.1	8/27

CV = 1.6 + 0.2 mg/L

Result	Uncer	Date
1.7	0.2	7/24

CV = 2.0 + 0.2 mg/L

Result	Uncer	Date
2.0	0.2	7/02
2.0	0.2	7/24

CV = 2.1 + 0.2 mg/L

Result	Uncer	Date
2.0	0.2	1/19
2.3	0.2	1/30
2.4	0.2	1/30

CV = 2.7 + 0.3 mg/L

Result	Uncer	Date
2.5	0.3	1/23

CV = 4.0 + 0.4 mg/L

Result	Uncer	Date
4.3	0.4	1/18
4.3	0.4	1/18
4.1	0.4	6/14
4.4	0.4	6/15
3.7	0.4	8/01
4.2	0.4	8/14
4.0	0.4	8/27
4.0	0.4	8/31

CV = 5.0 + 0.5 mg/L

Result	Uncer	Date
5.4	0.5	1/30
5.2	0.5	1/30
5.4	0.5	2/20
5.3	0.5	4/05
5.2	0.5	4/05
5.2	1.0	4/23
5.1	1.0	4/23
5.0	0.5	6/12
5.1	0.5	6/12

Cr (cont)

Result	Uncer	Date
5.2	0.5	6/13
5.2	0.5	6/13
5.1	0.5	6/14
4.6	0.5	6/14
5.4	0.5	6/14
5.2	0.5	6/14
5.0	0.5	6/29
5.1	0.5	6/29
5.0	0.5	7/02
4.9	0.5	7/02
5.1	0.5	7/02
5.1	0.5	7/02
5.1	0.5	7/02
4.6	0.5	7/12
4.6	0.5	7/12
4.9	0.5	7/12
4.7	0.5	7/12
5.0	0.5	8/01
5.1	0.5	8/01
5.3	0.5	8/31

CV = 6.0 + 0.6 mg/L

Result	Uncer	Date
6.2	0.6	8/14
6.4	0.6	8/27

CV = 8.4 + 0.8 mg/L

Result	Uncer	Date
9.2	0.9	4/05
7.9	0.8	4/30
8.9	0.9	6/12
8.7	0.9	6/14

CV = 10 + 1 mg/L

Result	Uncer	Date
11	1	1/16
11	1	1/16
10	1	1/16
11	1	1/18
11	1	1/18
11	1	1/18
11	1	1/18
9.9	1	1/19
11	1	1/19
11	1	1/19
9.8	0.9	1/19
11	1	1/19
11	1	1/19
9.9	1	1/23
10	1	1/23
10	1	1/23
10	1	1/30
10	1	1/30
10	1	1/30
10	1	1/30
10	1	3/19
10	1	3/19
10	1	3/19
9.6	1	4/30
10	1	4/30
11	1	5/21
9.8	1	7/02
11	1	7/24
9.9	1	7/25
10	1	7/25
10	1	8/14
10	1	8/14
10	1	8/14
10	1	8/14
10	1	8/14
10	1	8/14
10	1	8/14

Cr (cont)

Result	Uncer	Date
10	1	8/14
10	1	8/14
11	1	8/27
11	1	8/27
11	1	8/27
11	1	8/27
11	1	8/27
11	1	8/31
11	1	8/31
9.4	0.9	10/11
9.5	0.9	10/11
11	1	10/31
10	1	11/01
10	1	11/01
10	1	11/02
11	1	11/02
10	1	11/06
11	1	11/19
11	1	11/19
11	1	11/19
11	1	11/20
11	1	11/20
11	1	11/20
10	1	11/20
10	1	11/20
8.6	1	11/26
10	1	12/07
11	1	12/07
10	1	12/07

CV = 14 + 1 mg/L

Result	Uncer	Date
15	2	2/20
14	1	3/20
14	3	4/23
15	2	5/21
15	2	6/12

CV = 20 + 2 mg/L

Result	Uncer	Date
21	2	10/31
22	2	11/02

CV = 40 + 4 mg/L

Result	Uncer	Date
45	5	10/11
44	4	11/19
42	4	11/20
44	4	11/20

CV = 60 + 6 mg/L

Result	Uncer	Date
58	6	12/07

Cr 90GAU 02 ICPMS

CV = 12 + 1 ug/L

Result	Uncer	Date
13	1	8/24

CV = 15 + 2 ug/L

Result	Uncer	Date
20	2	6/08

Cr (cont)

CV = 21 + 2 ug/L

Result	Uncer	Date
24	2	8/24
24	3	8/24

CV = 25 + 2 ug/L

Result	Uncer	Date
29.9	1.7	9/05

CV = 30 + 3 ug/L

Result	Uncer	Date
30.6	1.9	9/06
28.4	0.8	12/04

CV = 35 + 4 ug/L

Result	Uncer	Date
32	5	11/19

CV = 50 + 5 ug/L

Result	Uncer	Date
47	5	11/19

CV = 80 + 8 ug/L

Result	Uncer	Date
80	8	11/28
85	9	12/18

CV = 100 + 10 ug/L

Result	Uncer	Date
120	10	1/30
110	10	2/06
99	10	2/08
110	10	2/21
110	10	2/21
91	9	2/22
99	10	2/23
100	10	2/23
96	10	3/12
94	10	3/12
90	9	5/14
86	9	5/14
67	201	5/29
100	10	8/01
100	10	8/01
94	9	8/01
110	10	8/01
96	10	8/01
110	10	8/01
90	9	8/14
90	9	8/14
120	10	9/19
100	10	9/19
110	10	10/05
100	10	10/05
100	10	10/05
110	10	10/05
90	9	11/01
100	10	11/01
110	10	11/16
110	10	11/19
82	8	11/30
110	10	12/18
120	10	12/18

Cr (cont)

CV = 160 + 20 ug/L

Result	Uncer	Date
120	10	11/30

CV = 250 + 20 ug/L

Result	Uncer	Date
220	20	11/26

Cr 88GAU 02 MSCAN

CV = 100 + 10 ug/L

Result	Uncer	Date
120	80	1/24
110	330	3/16
64	190	8/07
100	300	9/13
96	290	9/17
54	160	9/17
240	720	9/21
240	720	9/21
140	420	11/05
140	420	11/07
140	420	11/08
140	420	11/08
140	420	11/08
91	270	11/13
91	270	11/14
110	330	11/19
98	290	12/05

Cs 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 1		1/24
< 1		3/16
< 1		8/07
< 1		9/13
< 1		9/17
< 1		9/17
< 1		9/21
< 1		9/21
< 1		11/05
< 1		11/07
< 1		11/08
< 1		11/08
< 1		11/08
< 1		11/13
< 1		11/14
< 1		11/19
< 1		12/05

Cu 90GAU 02 FAA

CV = 500 + 50 ug/L

Result	Uncer	Date
480	50	4/05
510	50	6/21

CV = 600 + 60 ug/L

Result	Uncer	Date
610	60	7/03

TABLE C-V (cont)

****

HSE-9 Trace Elements in Water (cont)

****

Cu (cont)

CV = 1.5 + 0.2 mg/L

Result	Uncer	Date
1.4	0.1	4/05
1.5	0.2	4/23
1.4	0.1	4/30
1.4	0.1	4/30
1.4	0.1	5/01
1.5	0.2	6/21
1.4	0.1	6/21

Cu 89GAU 02 ICPES

CV = 2 + 0.2 mg/L

Result	Uncer	Date
2.1	0.4	2/12
2.1	0.4	2/12
2	0.4	2/12
2.1	0.4	2/12

CV = 4 + 0.4 mg/L

Result	Uncer	Date
3.9	0.4	4/30

CV = 10 + 1 mg/L

Result	Uncer	Date
11	2	2/26
11	2	2/26
11	2	2/26
10	2	2/26
11	2	2/27
11	2	2/27
9.6	1	4/30
9.8	1	4/30

Cu 90GAU 02 ICPMS

CV = 6.4 + 0.6 ug/L

Result	Uncer	Date
5.9	0.2	8/24

CV = 8 + 0.8 ug/L

Result	Uncer	Date
7.8	0.2	6/08
16.8	1.2	6/21

CV = 11 + 1 ug/L

Result	Uncer	Date
36.1	1.3	8/24
12.6	0.5	8/24

Cu (cont)

CV = 16 + 2 ug/L

Result	Uncer	Date
14.3	0.9	9/06
10	1	11/06

CV = 25 + 2 ug/L

Result	Uncer	Date
23	5	11/19

CV = 32 + 3 ug/L

Result	Uncer	Date
36	6	10/31

CV = 40 + 4 ug/L

Result	Uncer	Date
39	5	11/19

CV = 50 + 5 ug/L

Result	Uncer	Date
49.9	2.8	9/06
32	5	12/05

CV = 63 + 6 ug/L

Result	Uncer	Date
67.3	3.4	2/28
60.2	4.8	2/28
67	7	3/01
63.8	2.4	3/09
63.8	2.4	3/09
67.5	3.5	3/13
58.6	4.4	3/13
64.7	0.6	3/16
64.7	0.6	3/16
64.7	1.1	3/16
64.7	0.6	3/16
64.7	1.1	3/16

CV = 70 + 7 ug/L

Result	Uncer	Date
76	8	11/28
81	8	12/18

CV = 100 + 10 ug/L

Result	Uncer	Date
120	10	1/30
120	10	1/30
110	10	2/06
100	10	2/08
110	10	2/21
110	10	2/21
96	10	2/22
100	10	2/23
99	10	2/23
95	10	2/23
110	10	3/12
110	10	3/12
88	9	5/14
88	9	5/14
77	231	5/29
110	10	8/01
86	9	8/01
110	10	8/01

Cu (cont)

91	9	8/01
100	10	8/14
99	10	8/14
96	10	10/05
98	10	10/05
94	9	10/05
97	10	10/05
91	9	11/01
100	10	11/01
110	10	11/16
110	10	12/18
120	10	12/18

CV = 200 + 20 ug/L

Result	Uncer	Date
190	20	11/26

Cu 88GAU 02 MSCAN

CV = 100 + 10 ug/L

Result	Uncer	Date
< 1		1/24
110	330	3/16
64	190	8/07
110	330	9/13
89	270	9/17
51	150	9/17
260	780	9/21
260	780	9/21
110	330	11/05
110	330	11/07
110	330	11/08
110	330	11/08
110	330	11/08
77	230	11/13
77	230	11/14
120	360	11/19
120	360	12/05

Dy 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 1		1/24
< 1		3/16
< 1		8/07
< 1		9/13
< 1		9/17
< 1		9/17
< 1		9/21
< 1		9/21
< 1		11/05
< 1		11/07
< 1		11/08
< 1		11/08
< 1		11/08
< 1		11/13
< 1		11/14
< 1		11/19
< 1		12/05

Er 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 1		1/24
< 1		3/16

Er (cont)

< 1		8/07
< 1		9/13
< 1		9/17
< 1		9/17
< 1		9/21
< 1		9/21
< 1		11/05
< 1		11/07
< 1		11/08
< 1		11/08
< 1		11/08
< 1		11/13
< 1		11/14
1.2	3.6	11/19
< 1		12/05

Eu 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 1		1/24
< 1		3/16
< 1		8/07
< 1		9/13
< 1		9/17
< 1		9/17
< 1		9/21
< 1		9/21
< 1		11/05
< 1		11/07
< 1		11/08
< 1		11/08
< 1		11/08
< 1		11/13
< 1		11/14
< 1		11/19
< 1		12/05

F 90GAU 01 IC

CV = 5.1 + 0.5 mg/L

Result	Uncer	Date
4.0	0.4	2/16

F 90GAU 04 ISE

CV = 900 + 90 ug/L

Result	Uncer	Date
1100	100	9/14
1000	100	9/28
1100	100	10/11

CV = 0.80 + 0.05 mg/L

Result	Uncer	Date
0.82	0.02	5/17
0.82	0.08	5/17

CV = 1.1 + 0.1 mg/L

Result	Uncer	Date
1.1	0.1	7/25
1.1	0.1	7/27
1.1	0.1	7/27
1.2	0.1	10/18

F (cont)

CV = 1.13 + 0.10 mg/L

Result	Uncer	Date
1.1	0.1	5/17
1.2	0.1	7/10
1.1	0.1	9/14

CV = 1.2 + 0.1 mg/L

Result	Uncer	Date
1.3	0.1	5/17
1.3	0.1	5/25

CV = 1.36 + 0.10 mg/L

Result	Uncer	Date
1.6	0.2	6/06
1.6	0.2	6/07
1.5	0.2	9/14
1.3	0.1	9/14

CV = 2.0 + 0.2 mg/L

Result	Uncer	Date
2.2	0.2	11/14

Fe 90GAU 02 ETVAA

CV = 25 + 2 ug/L

Result	Uncer	Date
< 0.04		6/26

CV = 1.0 + 0.1 mg/L

Result	Uncer	Date
1	0.1	5/01

Fe 90GAU 02 FAA

CV = 10 + 1 ug/L

Result	Uncer	Date
< 20		10/09
< 20		10/19

CV = 25 + 2 ug/L

Result	Uncer	Date
< 40		8/02

CV = 40 + 4 ug/L

Result	Uncer	Date
< 40		7/02
38	20	10/19

CV = 550 + 55 ug/L

Result	Uncer	Date
580	60	7/03

Fe (cont)

CV = 1.0 + 0.1 mg/L

Result	Uncer	Date
0.97	0.1	4/23
0.77	0.08	4/30
0.77	0.08	4/30
0.99	0.1	5/07
0.97	0.1	5/11
0.97	0.1	5/11
0.97	0.1	5/11
1.0	0.1	6/21
1.0	0.1	6/21

CV = 1.2 + 0.1 mg/L

Result	Uncer	Date
1.2	0.1	2/09
1.1	0.1	2/09
1.1	0.1	2/09

CV = 1.5 + 0.2 mg/L

Result	Uncer	Date
1.5	0.2	2/09
1.5	0.2	2/09
1.5	0.2	4/23
1.5	0.2	4/30
1.5	0.2	4/30
1.5	0.2	6/21

Fe 89GAU 02 ICPES

CV = 2.0 + 0.2 mg/L

Result	Uncer	Date
2	0.3	2/06
2	0.3	2/06
2	0.3	2/06

CV = 3.6 + 0.4 mg/L

Result	Uncer	Date
3.8	0.8	2/06

CV = 4.0 + 0.4 mg/L

Result	Uncer	Date
4	0.4	1/18
4	0.4	1/18

CV = 6.0 + 0.6 mg/L

Result	Uncer	Date
5.3	0.5	4/30

CV = 10 + 1 mg/L

Result	Uncer	Date
10	1	1/19
10	1	1/19
10	1	1/19
10	1	1/19
9.7	1	4/30
9.6	1	4/30

TABLE C-V (cont)

****

HSE-9 Trace Elements in Water (cont)

****

Fe 88GAU 02 ICPMS

CV = 100 + 10 ug/L

Result	Uncer	Date
110	10	5/14

Fe 88GAU 02 MSCAN

CV = 100 + 10 ug/L

Result	Uncer	Date
170	120	1/24
< 1		9/21
< 1		9/21

Ga 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
3.9	2	1/24
< 1		3/16
< 1		8/07
< 1		9/13
< 1		9/17
< 1		9/17
5.3	15.9	9/21
5.3	15.9	9/21
3.2	9.6	11/05
3.2	9.6	11/07
3.2	9.6	11/08
3.2	9.6	11/08
3.2	9.6	11/08
2.8	8.4	11/13
2.8	8.4	11/14
< 1		11/19
< 1		12/05

Gd 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 1		1/24
< 1		3/16
< 1		8/07
< 1		9/13
< 1		9/17
< 1		9/17
< 1		9/21
< 1		9/21
< 1		11/05
< 1		11/07
< 1		11/08
< 1		11/08
< 1		11/08
< 1		11/13
< 1		11/14
3.4	10.2	11/19
< 1		12/05

Ge 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
1.1	0.7	1/24
< 1		3/16
< 1		8/07
< 1		9/13
< 1		9/17
< 1		9/17
< 1		9/21
< 1		9/21
< 1		11/05
< 1		11/07
< 1		11/08
< 1		11/08
< 1		11/08
< 1		11/13
< 1		11/14
7.8	23.4	11/19
< 1		12/05

Hardness 90GAU 04 CALC

CV = 56 + 3 mg/L

Result	Uncer	Date
63	6	5/24
65	7	6/11
63	6	6/11

CV = 63 + 6 mg/L

Result	Uncer	Date
82	8	10/01
78	8	11/09

CV = 78 + 8 mg/L

Result	Uncer	Date
97	10	8/14
95	10	11/09

CV = 85 + 3 mg/L

Result	Uncer	Date
91	9	6/11
98	10	6/14

Hf 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 1		1/24
< 1		3/16
< 1		8/07
< 1		9/13
< 1		9/17
< 1		9/17
< 1		9/21
< 1		9/21
< 1		11/05
< 1		11/07
< 1		11/08
< 1		11/08
< 1		11/08
< 1		11/13
< 1		11/14
2.6	7.8	11/19
< 1		12/05

Hg 90GAU 01 CVAA

CV = not spiked ug/L

Result	Uncer	Date
< 0.2		6/29
< 0.2		7/03
< 0.2		7/03
< 0.2		7/27
0.2	0.2	8/23

CV = 1.0 + 0.1 ug/L

Result	Uncer	Date
1.0	0.2	4/27
0.76	0.2	6/06
1.4	0.2	6/21
0.67	0.2	6/29
1.0	0.2	8/08
0.94	0.2	8/23
0.7	0.2	10/01
0.86	0.2	10/26
1.0	0.1	12/21

CV = 1.1 + 0.1 ug/L

Result	Uncer	Date
0.96	0.1	11/20
1.3	0.1	12/03

CV = 1.5 + 0.2 ug/L

Result	Uncer	Date
2.1	0.2	1/16

CV = 1.6 + 0.2 ug/L

Result	Uncer	Date
0.91	0.2	7/03
1.2	0.2	7/27
1.2	0.2	7/27
1.5	0.2	10/18
1.7	0.2	11/01

CV = 1.8 + 0.2 ug/L

Result	Uncer	Date
1.3	0.2	1/25
1.4	0.2	1/25
0.9	0.2	2/21

CV = 2.0 + 0.2 ug/L

Result	Uncer	Date
2.0	0.2	1/10
1.9	0.2	1/16
1.9	0.2	1/17
2.2	0.2	1/25
2.1	0.2	1/25
2.1	0.2	2/08
2.0	0.2	2/08
2.1	0.2	2/08
2.0	0.2	2/08
2.2	0.2	2/23
2.3	0.2	3/19
2.3	0.2	3/19
2.0	0.4	4/05
2.2	0.2	4/05
2.3	0.2	4/25
2.0	0.2	4/25
1.9	0.2	5/11
1.9	0.2	5/11
1.9	0.2	5/11

Hg (cont)

Result	Uncer	Date
2.1	0.2	5/22
1.9	0.2	6/19
1.8	0.2	6/25
2.0	0.2	8/08
1.9	0.2	8/09
1.8	0.2	9/07
1.7	0.2	10/01
1.5	0.2	12/13
1.9	0.2	12/19

CV = 2.3 + 0.2 ug/L

Result	Uncer	Date
2.25	0.2	11/20
2.0	0.2	12/07

CV = 2.9 + 0.3 ug/L

Result	Uncer	Date
3.1	0.3	1/16

CV = 3.0 + 0.3 ug/L

Result	Uncer	Date
2.8	0.3	2/08
2.9	0.3	4/16
2.7	0.3	4/27
2.7	0.3	4/27
2.7	0.3	4/27
2.8	0.2	6/06
2.5	0.2	6/12
2.2	0.2	6/21
2.8	0.3	9/24
2.6	0.3	10/01

CV = 3.5 + 0.4 ug/L

Result	Uncer	Date
3.56	0.3	7/03
3.0	0.3	7/03
3.9	0.4	8/08
3.1	0.3	8/23
3.0	0.3	10/18
3.5	0.4	10/26
3.1	0.3	12/07
3.2	0.3	12/07

CV = 4.0 + 0.4 ug/L

Result	Uncer	Date
3.6	0.4	1/17
3.9	0.4	2/08
3.9	0.4	3/16
3.9	0.4	4/05
3.9	0.4	4/16
4.4	0.4	4/24
4.0	0.4	4/24
4.0	0.4	4/27
3.9	0.4	4/27
3.8	0.4	4/27
4.0	0.4	4/27
3.9	0.4	4/27
3.9	0.4	4/27
3.9	0.4	4/27
3.6	0.4	4/27
3.8	0.4	4/27
3.8	0.4	4/27
4.2	0.4	5/11
4.2	0.4	5/11
4.2	0.4	5/11
4.2	0.4	5/11
4.2	0.4	5/11
4.2	0.4	5/11

Hg (cont)

Result	Uncer	Date
4.2	0.4	6/06
4.2	0.4	6/06
3.8	0.2	6/08
3.8	0.2	6/08
4.0	0.2	6/08
4.0	0.2	6/08
3.8	0.2	6/08
3.9	0.3	6/12
3.7	0.4	6/19
3.8	0.3	6/21
4.0	0.4	6/25
4.0	0.4	6/25
4.0	0.4	6/26
3.8	0.4	6/29
3.8	0.4	6/29
3.8	0.4	6/29
4.0	0.4	6/29
3.9	0.4	7/03
3.9	0.4	7/03
3.9	0.4	7/03
3.8	0.4	7/27
3.7	0.4	7/27
3.8	0.4	7/27
3.8	0.4	7/27
3.6	0.4	7/27
3.9	0.4	7/30
4.6	0.5	8/08
4.4	0.4	8/08
4.4	0.4	8/08
4.6	0.5	8/08
4.4	0.4	8/08
4.8	0.5	8/08
4.4	0.4	8/08
4.4	0.4	8/08
4.2	0.4	8/08
4.2	0.4	8/08
4.0	0.4	8/09
4.3	0.4	8/23
3.5	0.4	8/23
4.2	0.4	8/23
3.8	0.4	8/23
3.9	0.4	8/23
3.4	0.3	8/23
4.2	0.4	9/07
4.2	0.4	9/07
4.2	0.4	9/10
4.2	0.4	9/10
4.1	0.4	9/10
4.3	0.4	9/10
4.2	0.4	9/10
4.3	0.4	9/10
4.0	0.4	9/24
4.2	0.4	9/25
4.3	0.4	10/01
4.3	0.4	10/01
4.3	0.4	10/01
4.3	0.4	10/01
4.3	0.4	10/01
4.1	0.4	10/18
4.1	0.4	10/22
4.4	0.4	11/01
4.1	0.4	11/02
4.2	0.4	11/20
4.2	0.4	12/07
4.4	0.4	12/07
4.0	0.4	12/13
4.4	0.4	12/18
4.4	0.4	12/19
4.4	0.4	12/19
4.4	0.4	12/19
4.1	0.4	12/21

Hg 89GAU 01 ETVAA

CV = 2.0 + 0.2 ug/L

Result	Uncer	Date
2.4	0.2	1/22

CV = 2.9 + 0.3 ug/L

Result	Uncer	Date
2.4	0.2	1/22
2.2	0.2	1/22

Hg 89GAU 01 FAA

CV = 2.0 + 0.2 ug/L

Result	Uncer	Date
1.9	0.2	4/30
1.9	0.2	4/30

CV = 4.0 + 0.4 ug/L

Result	Uncer	Date
4.2	0.4	2/23
4.2	0.4	10/26
4.4	0.4	12/03
4.1	0.4	12/03

Hg 88GAU 02 MSCAN

CV = 100 + 10 ug/L

Result	Uncer	Date
< 10		3/16

Ho 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 1		1/24
< 1		3/16
< 1		8/07
< 1		9/13
< 1		9/17
< 1		9/17
< 1		9/21
< 1		9/21
< 1		11/05
< 1		11/07
< 1		11/08
< 1		11/08
< 1		11/08
< 1		11/13
< 1		11/14
< 1		11/19
< 1		12/05

I 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 1		3/16

TABLE C-V (cont)

****

HSE-9 Trace Elements in Water (cont)

****

In 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 1		1/24
< 1		9/13
< 1		9/17
< 1		9/17
< 1		9/21
< 1		9/21
< 1		11/05
< 1		11/07
< 1		11/08
< 1		11/08
< 1		11/08
< 1		11/13
< 1		11/14
< 1		11/19
< 1		12/05

Ir 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 1		1/24
< 1		3/16
< 1		8/07
< 1		9/13
< 1		9/17
< 1		9/17
< 1		9/21
< 1		9/21
< 1		11/05
< 1		11/07
< 1		11/08
< 1		11/08
< 1		11/08
< 1		11/13
< 1		11/14
2.9	8.7	11/19
< 1		12/05

K 90GAU 04 IC

CV = 4.0 + 0.4 mg/L

Result	Uncer	Date
3.8	0.4	5/14
4.1	0.4	6/07

CV = 4.5 + 0.4 mg/L

Result	Uncer	Date
4.7	0.5	9/26
4.4	0.4	10/17

CV = 5.5 + 0.6 mg/L

Result	Uncer	Date
5.7	0.6	8/08
5.5	0.6	10/17

K (cont)

CV = 6.0 + 0.3 mg/L

Result	Uncer	Date
5.8	0.6	5/17
6.2	0.6	6/07

K 90GAU 02 ICPES

CV = 25 + 2 mg/L

Result	Uncer	Date
21	4	2/06

CV = 50 + 5 mg/L

Result	Uncer	Date
45	10	2/07
47	10	2/07
54	10	2/07

K 89MON 01 ICPMS

CV = 100 + 10 mg/L

Result	Uncer	Date
110	10	4/12

La 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 1		1/24
< 1		3/16
< 1		8/07
< 1		9/13
< 1		9/17
< 1		9/17
< 1		9/21
< 1		9/21
< 1		11/05
< 1		11/07
< 1		11/08
< 1		11/08
< 1		11/08
< 1		11/13
< 1		11/14
< 1		11/19
< 1		12/05

Li 89GAU 02 IC

CV = 2.0 + 0.2 mg/L

Result	Uncer	Date
2.0	0.2	2/07
2.4	0.2	2/07
2.0	0.2	2/22
2.0	0.2	2/22

Li 90GAU 02 ICPES

CV = 0.95 + 0.10 mg/L

Result	Uncer	Date
0.9	0.2	2/06

Li (cont)

CV = 2.5 + 0.2 mg/L

Result	Uncer	Date
1.9	1	2/07
2.6	1	2/07
2.3	1	2/07

CV = 8.0 + 0.8 mg/L

Result	Uncer	Date
7.7	0.8	9/17

Li 86GAU 01 ICPMS

CV = 500 + 50 ug/L

Result	Uncer	Date
510	110	4/03

Li 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/24
< 10		3/16
< 1000		8/07
< 10		9/13
< 10		9/17
< 10		9/17
< 10		9/21
< 10		9/21
< 10		11/05
< 10		11/07
< 10		11/08
< 10		11/08
< 10		11/08
< 10		11/13
< 10		11/14
< 10		11/19
< 10		12/05

Lu 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 1		1/24
< 1		3/16
< 1		8/07
< 1		9/13
< 1		9/17
< 1		9/17
< 1		9/21
< 1		9/21
< 1		11/05
< 1		11/07
< 1		11/08
< 1		11/08
< 1		11/08
< 1		11/13
< 1		11/14
< 1		11/19
< 1		12/05

Mg 90GAU 04 IC

CV = 4.0 + 0.3 mg/L

Result	Uncer	Date
4.1	0.5	5/11
4.4	0.4	6/07

CV = 4.5 + 0.4 mg/L

Result	Uncer	Date
5.6	0.6	9/26
5.0	0.5	10/17

CV = 5.5 + 0.6 mg/L

Result	Uncer	Date
6.2	0.6	8/08
6.1	0.6	10/17

CV = 6.0 + 0.3 mg/L

Result	Uncer	Date
6.3	0.6	5/23
6.6	0.6	6/07

Mg 90GAU 02 ICPES

CV = 5.0 + 0.5 mg/L

Result	Uncer	Date
4.9	0.5	3/19

CV = 8.0 + 0.8 mg/L

Result	Uncer	Date
7.6	0.8	5/25

CV = 10 + 1 mg/L

Result	Uncer	Date
9.9	1	4/12
10	2	7/23
10	2	7/25

CV = 12.5 + 1.2 mg/L

Result	Uncer	Date
12	3	2/07
13	3	2/07
13	3	2/07

CV = 20 + 2 mg/L

Result	Uncer	Date
20	2	3/29
21	2	5/22

CV = 24 + 2 mg/L

Result	Uncer	Date
24	2	3/19
23	2	3/19
23	2	3/19
24	2	3/19
24	2	3/29
24	2	3/29
23	2	3/29
24	2	5/22

Mg (cont)

Result	Uncer	Date
24	2	5/22
24	2	5/24
26	5	7/23

CV = 26 + 3 mg/L

Result	Uncer	Date
27	3	5/22

CV = 30 + 3 mg/L

Result	Uncer	Date
30	3	3/19

CV = 32 + 3 mg/L

Result	Uncer	Date
33	7	2/06

Mn 90GAU 02 ICPES

CV = 500 + 50 ug/L

Result	Uncer	Date
500	50	3/19

CV = 800 + 80 ug/L

Result	Uncer	Date
740	70	5/25

CV = 1.0 + 0.1 mg/L

Result	Uncer	Date
1.1	0.2	7/23
1.0	0.2	7/25

CV = 2.0 + 0.2 mg/L

Result	Uncer	Date
1.9	0.2	4/30

CV = 3.0 + 0.3 mg/L

Result	Uncer	Date
3.2	0.3	1/18
3.2	0.3	1/18
3.0	0.3	3/29
3.2	0.3	5/22

CV = 3.9 + 0.4 mg/L

Result	Uncer	Date
4.1	0.4	5/22

CV = 4.8 + 0.5 mg/L

Result	Uncer	Date
4.8	0.5	3/19
4.7	0.5	3/19
4.8	0.5	3/19
5.0	0.5	3/19
4.8	0.5	3/29
4.7	0.5	3/29
4.9	0.5	3/29

Mn (cont)

Result	Uncer	Date
5.0	0.5	5/22
5.0	0.5	5/22
4.7	0.5	5/24
5.2	1.1	7/23

CV = 6.0 + 0.6 mg/L

Result	Uncer	Date
6.1	0.6	3/19

CV = 10 + 1 mg/L

Result	Uncer	Date
11	1	1/19
11	1	1/19
11	1	1/19
11	1	1/19
9.7	1	4/30
9.9	1	4/30

Mn 90GAU 02 ICPMS

CV = 6.4 + 0.6 ug/L

Result	Uncer	Date
6.3	0.4	8/24

CV = 8.0 + 0.8 ug/L

Result	Uncer	Date
8.7	1.8	6/08

CV = 11 + 1 ug/L

Result	Uncer	Date
12.2	0.8	8/24
11.5	0.8	8/24

CV = 14 + 1 ug/L

Result	Uncer	Date
9.5	1	11/29

CV = 16 + 2 ug/L

Result	Uncer	Date
17.5	1	9/06
14	0.2	12/04

CV = 25 + 2 ug/L

Result	Uncer	Date
24	2	11/19

CV = 30 + 3 ug/L

Result	Uncer	Date
29	3	11/19

CV = 50 + 5 ug/L

Result	Uncer	Date
49.4	2.8	9/05
35	5	12/04

TABLE C-V (cont)

****

HSE-9 Trace Elements in Water
(cont)

****

Mn (cont)

CV = 100 + 10 ug/L

Result	Uncer	Date
89	9	5/14
62	186	5/29
110	10	10/05
110	10	10/05
91	9	11/01
99	10	11/01
110	10	11/16

Mn 88GAU 02 MSCAN

CV = 100 + 10 ug/L

Result	Uncer	Date
130	90	1/24
100	300	3/16
59	180	8/07
110	330	9/13
100	300	9/17
57	170	9/17
230	690	9/21
230	690	9/21
140	420	11/05
140	420	11/07
140	420	11/08
140	420	11/08
140	420	11/08
84	250	11/13
84	250	11/14
120	360	11/19
75	230	12/05

Mo 90GAU 02 ICPES

CV = 5.0 + 0.5 mg/L

Result	Uncer	Date
5.1	0.5	3/19

CV = 8.0 + 0.8 mg/L

Result	Uncer	Date
7.3	0.7	5/25

CV = 10 + 1 mg/L

Result	Uncer	Date
9.9	2	7/23

CV = 25 + 2 mg/L

Result	Uncer	Date
26	3	3/29
28	3	5/22

Mo (cont)

CV = 32 + 3.2 mg/L

Result	Uncer	Date
33	3	3/19
34	3	3/19
33	3	3/19
33	3	3/19
33	3	3/29
33	3	3/29
34	3	3/29
35	4	5/22
35	4	5/22
36	4	5/22
32	3	5/24
34	7	7/23

CV = 40 + 4 mg/L

Result	Uncer	Date
42	4	3/19

Mo 90GAU 02 ICPMS

CV = 20 + 2 ug/L

Result	Uncer	Date
39.5	1	5/15
20.7	1	8/24
21	1	8/24
21	2	8/31

CV = 25 + 2 ug/L

Result	Uncer	Date
25	3	9/06
4.5	1	12/04

CV = 40 + 4 ug/L

Result	Uncer	Date
38.4	1.9	8/24
42	4	11/19

CV = 50 + 5 ug/L

Result	Uncer	Date
49	3.3	8/14
50	6	11/06
52	5	11/19

CV = 100 + 10 ug/L

Result	Uncer	Date
97	10	5/14
93	9	5/14
94	9	5/14
100	310	5/29
110	10	10/05
100	10	10/05
100	10	10/05
100	10	10/05
110	10	10/05
100	10	10/05
100	10	10/05
100	10	10/05
100	10	10/05
100	10	11/01
100	10	11/01
110	10	11/16

Mo 88GAU 02 MSCAN

CV = 100 + 10 ug/L

Result	Uncer	Date
68	47	1/24
100	300	3/16
90	270	8/07
100	300	9/13
< 100		9/17
2.2	6.6	9/17
99	297	9/21
99	297	9/21
110	330	11/05
110	330	11/07
110	330	11/08
110	330	11/08
110	330	11/08
75	230	11/13
75	230	11/14
89	270	11/19
99	300	12/05

Na 90GAU 01 IC

CV = 4.0 + 0.4 mg/L

Result	Uncer	Date
4.1	0.4	11/07

CV = 8.8 + 0.9 mg/L

Result	Uncer	Date
12	1	10/25

CV = 16 + 1 mg/L

Result	Uncer	Date
17	2	5/11
18	2	6/07

CV = 18 + 2 mg/L

Result	Uncer	Date
21	2	8/08
21	2	9/26
20	2	10/17

CV = 22 + 2 mg/L

Result	Uncer	Date
26	3	8/08
25	3	10/17

CV = 24 + 1 mg/L

Result	Uncer	Date
25	3	5/17
27	3	6/07

Na 89MON 01 ICPES

CV = 10 + 1 mg/L

Result	Uncer	Date
10	1	4/12
9.9	1	11/26

Na (cont)

CV = 100 + 10 mg/L

Result	Uncer	Date
98	20	2/06

CV = 500 + 50 mg/L

Result	Uncer	Date
440	100	2/07
530	100	2/07
510	100	2/07

Nb 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 1		1/24
< 1		3/16
< 1		8/07
< 1		9/13
< 1		9/17
< 1		9/17
< 1		9/21
< 1		9/21
< 1		11/05
< 1		11/07
< 1		11/08
< 1		11/08
< 1		11/08
< 1		11/13
< 1		11/14
< 1		11/19
< 1		12/05

Nd 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 1		1/24
< 1		3/16
< 1		8/07
< 1		9/13
< 1		9/17
< 1		9/17
< 1		9/21
< 1		9/21
< 1		11/05
< 1		11/07
< 1		11/08
< 1		11/08
< 1		11/08
< 1		11/13
< 1		11/14
2.4	7.2	11/19
< 1		12/05

NH3-N 90GAU 04 FIA

CV = 0.91 + 0.09 mg/L

Result	Uncer	Date
0.8	0.08	12/03
0.8	0.08	12/03

NH3-N (cont)

CV = 1.6 + 0.2 mg/L

Result	Uncer	Date
1.15	0.1	12/19
1.16	0.1	12/19

Ni 90GAU 02 FAA

CV = 0.80 + 0.08 mg/L

Result	Uncer	Date
0.8	0.5	1/19

Ni 90GAU 02 ICPES

CV = 2.0 + 0.2 mg/L

Result	Uncer	Date
1.8	0.2	7/02
1.8	0.2	7/02

CV = 4.0 + 0.4 mg/L

Result	Uncer	Date
3.9	0.4	3/19
4.1	0.4	3/19
4.0	0.4	3/19
4.0	0.4	3/19
4.2	0.4	3/20
4.0	0.4	3/29
4.0	0.4	3/29
4.0	0.4	3/29
4.2	0.4	5/22
4.0	0.4	5/22
3.8	0.4	5/24
4.1	0.8	7/23

CV = 5.0 + 0.5 mg/L

Result	Uncer	Date
5.5	1.1	2/12
6.0	1.2	2/12
5.8	1.2	2/12
5.2	1.0	2/12
5.0	0.5	3/19
5.4	0.5	7/02
5.3	0.5	7/02
5.1	0.5	7/02
5.2	0.5	7/02

CV = 6.0 + 0.6 mg/L

Result	Uncer	Date
5.7	0.6	7/02

CV = 10 + 1 mg/L

Result	Uncer	Date
11	1	1/18
11	1	1/18
10	1	1/18
10	1	1/18
11	2	2/26
11	2	2/26
11	2	2/26
12	2	2/26
12	2	2/27
12	2	2/27
10	1	3/19

Ni (cont)

10	1	3/19
10	1	3/19
9.8	1	3/29
10	1	5/22
10	1	8/31
11	1	8/31
8.4	1	11/26

CV = 12 + 1 mg/L

Result	Uncer	Date
13	1	8/31

CV = 13 + 1 mg/L

Result	Uncer	Date
13	1	5/22

CV = 25 + 2.5 mg/L

Result	Uncer	Date
25	3	3/19

CV = 38 + 4 mg/L

Result	Uncer	Date
37	4	5/25

CV = 50 + 5 mg/L

Result	Uncer	Date
51	10	7/23

Ni 90GAU 02 ICPMS

CV = 8.0 + 0.8 ug/L

Result	Uncer	Date
7.6	0.1	6/08
10	1	6/21

CV = 30 + 3 ug/L

Result	Uncer	Date
28	5	11/19
27	4	12/12

CV = 50 + 5 ug/L

Result	Uncer	Date
51	10	11/26

CV = 56 + 6 ug/L

Result	Uncer	Date
56.9	0.6	8/24

CV = 57 + 6 ug/L

Result	Uncer	Date
53.9	4.6	2/28
60	6	2/28
60	6	3/01
51.2	2.5	3/09
53	2.1	3/09
53	2.1	3/09
57.3	2	3/13

TABLE C-V (cont)

****

HSE-9 Trace Elements in Water
(cont)

****

Ni (cont)

55.8	0.6	3/16
57.2	0.7	3/16
57.2	0.7	3/16
55.8	0.6	3/16
57.2	0.7	3/16

CV = 61 + 6 ug/L

Result	Uncer	Date
64.9	0.6	8/24
58.8	0.6	8/24
70.1	2.8	8/31

CV = 66 + 7 ug/L

Result	Uncer	Date
71.3	3.9	8/14
50.4	4.1	12/04

CV = 70 + 7 ug/L

Result	Uncer	Date
67	7	11/19

CV = 100 + 10 ug/L

Result	Uncer	Date
120	10	1/30
100	10	2/06
99	10	2/08
110	10	2/21
110	10	2/21
110	10	2/21
93	9	2/23
100	10	2/23
100	10	2/23
110	10	2/23
96	10	2/23
100	10	3/12
100	10	3/12
91	9	5/14
88	9	5/14
91	9	5/14
72	216	5/29
91	9	8/01
87	9	8/01
110	10	8/01
110	10	8/01
110	10	8/01
94	9	8/14
100	10	8/14
96.9	4.3	9/05
98	10	10/05
95	10	10/05
98	10	10/05
98	10	10/05
100	10	10/05
92	9	11/01
110	10	11/01
110	10	11/16
100	10	11/30
110	10	12/18
120	10	12/18

Ni (cont)

CV = 180 + 20 ug/L

Result	Uncer	Date
140	10	11/30

CV = 220 + 20 ug/L

Result	Uncer	Date
220	40	11/28
220	20	12/18

Ni 88GAU 02 MSCAN

CV = 100 + 10 ug/L

Result	Uncer	Date
160	110	1/24
110	330	3/16
19	57	8/07
110	330	9/13
97	290	9/17
59	180	9/17
280	840	9/21
280	840	9/21
120	360	11/05
120	360	11/07
120	360	11/08
120	360	11/08
120	360	11/08
80	240	11/13
80	240	11/14
110	330	11/19
88	260	12/05

NO2 90GAU 01 FIA

CV = 0.48 + 0.05 mg/L

Result	Uncer	Date
0.63	0.12	2/15

NO2-N 90GAU 01 FIA

CV = 310 + 30 ug/L

Result	Uncer	Date
324	30	4/25

CV = 480 + 50 ug/L

Result	Uncer	Date
424	40	6/07

CV = 490 + 50 ug/L

Result	Uncer	Date
380	40	5/09

CV = 510 + 50 ug/L

Result	Uncer	Date
436	40	4/13

Ni (cont)

CV = 540 + 50 ug/L

Result	Uncer	Date
600	60	5/02

CV = 620 + 62 ug/L

Result	Uncer	Date
500	50	4/25

CV = 710 + 70 ug/L

Result	Uncer	Date
540	50	5/15

NO3 87GAU 01 IC

CV = 8.8 + 0.9 mg/L

Result	Uncer	Date
8.6	0.9	2/16

CV = 11.7 + 1.2 mg/L

Result	Uncer	Date
10	1	2/16

NO3-N 90GAU 04 FIA

CV = 0.96 + 0.10 mg/L

Result	Uncer	Date
0.99	0.1	12/14
1.0	0.1	12/14

NO3-N 90GAU 01 IC

CV = 4.0 + 0.4 mg/L

Result	Uncer	Date
4.3	0.4	10/29

P 90GAU 02 ACOLR

CV = 0.050 + 0.005 mg/L

Result	Uncer	Date
0.21	0.04	7/18

CV = 0.10 + 0.01 mg/L

Result	Uncer	Date
0.036	0.02	4/02
0.092	0.02	6/06

CV = 0.44 + 0.04 mg/L

Result	Uncer	Date
0.31	0.06	6/06

P (cont)

CV = 0.50 + 0.05 mg/L

Result	Uncer	Date
0.38	0.08	2/15
0.52	0.10	4/02
0.60	0.12	4/02

CV = 0.90 + 0.09 mg/L

Result	Uncer	Date
0.72	0.14	4/02

CV = 1.0 + 0.1 mg/L

Result	Uncer	Date
0.88	0.2	7/18

Pb 90GAU 02 ETVAA

CV = 30 + 3 ug/L

Result	Uncer	Date
35	7	6/21

CV = 40 + 4 ug/L

Result	Uncer	Date
50	10	6/21
54	10	6/21
43	9	7/03
44	9	7/03

Pb 90GAU 02 FAA

CV = 30 + 3 ug/L

Result	Uncer	Date
70	50	4/30
70	50	4/30
70	50	5/01

CV = 40 + 4 ug/L

Result	Uncer	Date
< 40		4/30
< 40		4/30

CV = 55 + 6 ug/L

Result	Uncer	Date
46	10	7/02

CV = 0.61 + 0.06 mg/L

Result	Uncer	Date
0.63	0.06	9/20

CV = 0.68 + 0.07 mg/L

Result	Uncer	Date
0.7	0.5	1/24

Pb (cont)

CV = 20 + 2 mg/L

Result	Uncer	Date
20	4	8/13

CV = 60 + 6 mg/L

Result	Uncer	Date
62	6	12/17

Pb 90GAU 01 ICPES

CV = none available ug/L

Result	Uncer	Date
< 250		7/24
< 1000		8/27

CV = 1.6 + 0.2 mg/L

Result	Uncer	Date
1.8	0.2	1/19
2.0	0.3	1/30

CV = 3.0 + 0.3 mg/L

Result	Uncer	Date
2.5	0.3	1/23

CV = 4.5 + 0.5 mg/L

Result	Uncer	Date
4.0	0.4	1/16

CV = 10 + 1 mg/L

Result	Uncer	Date
12	1	1/16
9.6	0.9	1/16
9.8	0.9	1/16
12	1	1/18
11	1	1/18
11	1	1/18
11	1	1/18
9.6	0.9	1/19
9.6	0.9	1/19
9.9	1	1/23
9.8	1	1/23
10.8	1	1/23
11	1	1/30
9.9	1	1/30
11	1	1/30
10	1	1/30
11	2	2/26
12	2	2/26
12	2	2/26
11	2	2/26
11	2	2/27
12	2	2/27
9.8	1	3/19
9.7	1	3/19
9.8	1	3/19
9.6	1	4/30
10	1	4/30
11	1	5/21
9.8	1	7/24
9.6	1	7/25
9.3	0.9	7/25
10	1	8/14
10	1	8/14

Pb (cont)

10	1	8/14
10	1	8/14
10	1	8/14
10	1	8/14
10	1	8/14
10	1	8/14
10	1	8/22
9.9	1	8/22
8.9	0.9	8/22
11	1	8/27
10	1	8/27
10	1	8/27
10	1	8/27
10	1	8/27
12	1	8/31
12	1	8/31
10	1	10/11
10	1	10/11
9.8	1	10/31
9.7	1	11/01
9.6	1	11/01
9.9	1	11/02
9.9	1	11/02
9.7	1	11/06
11	1	11/19
11	1	11/19
11	1	11/19
11	1	11/20
11	1	11/20
11	1	11/20
11	1	11/20
11	1	11/20
9.4	1	11/26
10	1	12/07
11	1	12/07
11	1	12/07
9.4	0.9	12/19

CV = 11 + 1 mg/L

Result	Uncer	Date
11	1	2/20
10	1	3/20
11	2	4/23
11	1	5/21
11	1	6/12

CV = 12 + 1 mg/L

Result	Uncer	Date
12	1	1/30
9.9	2	8/01
12	1	8/14
11	1	8/27
12	1	8/31
11	1	10/31
12	1	11/02

CV = 14 + 1 mg/L

Result	Uncer	Date
13	1	8/14
14	1	8/27

CV = 15 + 2 mg/L

Result	Uncer	Date
16	2	1/30
16	2	1/30
15	3	2/12
17	3	2/12
16	3	2/12
17	4	2/12
16	2	2/20

TABLE C-V (cont)

****

HSE-9 Trace Elements in Water
(cont)

****

Pb (cont)

15	2	4/05
15	2	4/05
15	3	4/23
15	3	4/23
14	1	6/12
13	1	6/12
15	2	6/13
14	1	6/13
15	2	6/14
13	1	6/14
14	1	6/14
15	2	6/14
16	2	6/29
15	2	6/29
15	2	7/02
16	2	7/02
15	2	7/02
16	2	7/02
15	2	7/02
14	1	7/12
15	2	7/12
15	2	7/12
15	2	7/12
14	1	7/24
13	3	8/01
12	2	8/01
15	2	8/09
15	2	9/19

CV = 20 + 2 mg/L

Result	Uncer	Date
21	2	6/29
18	2	7/02
19	2	7/24
19	2	7/24
18	2	8/27

CV = 25 + 2 mg/L

Result	Uncer	Date
25	3	4/05
21	2	4/30
23	2	6/12
23	2	6/14

CV = 30 + 3 mg/L

Result	Uncer	Date
29	3	6/14
32	3	6/15
30	3	7/02
32	3	8/31

CV = 50 + 5 mg/L

Result	Uncer	Date
45	5	9/19
46	5	11/01
52	5	11/20

CV = 60 + 6 mg/L

Result	Uncer	Date
58	6	12/07

Pb (cont)

CV = 100 + 10 mg/L

Result	Uncer	Date
98	10	10/11
110	10	11/19
110	10	11/20
110	10	11/20

Pb 90GAU 02 ICPMS

CV = 10 + 1 ug/L

Result	Uncer	Date
10	2	11/19

CV = 12 + 1 ug/L

Result	Uncer	Date
11.4	0.5	8/13
11.6	0.4	8/20

CV = 15 + 2 ug/L

Result	Uncer	Date
15.6	0.4	6/20
14.6	0.2	7/05

CV = 20 + 2 ug/L

Result	Uncer	Date
20.1	1.7	9/07
4.3	0.6	10/04
12	0.4	10/05

CV = 21 + 2 ug/L

Result	Uncer	Date
20	1	8/13
21	0.7	8/20

CV = 30 + 3 ug/L

Result	Uncer	Date
29.2	0.3	8/07
29.1	0.9	11/14
29	3	11/19

CV = 41 + 4 ug/L

Result	Uncer	Date
39.1	2	2/28
39	2	2/28
39.8	2	3/09
38.4	1.2	3/13
38.4	1.2	3/13
38.5	2	3/13
41	0.6	3/16
41	1	3/16
39.4	0.7	3/16
39.4	0.7	3/16
41	0.4	3/16

CV = 100 + 10 ug/L

Result	Uncer	Date
100	10	1/30
100	10	1/30
100	10	2/06

Pb (cont)

110	10	2/08
100	10	2/08
99	10	2/21
99	10	2/21
100	10	2/22
100	10	2/23
100	10	2/23
99	10	2/23
120	10	2/23
110	10	2/23
98	10	5/14
100	10	5/14
110	340	5/29
110	10	8/01
88	9	8/01
110	10	8/01
120	10	8/01
100	10	8/14
98	10	8/14
100	10	8/31
100	10	9/04
100	10	9/19
99	10	9/19
120	20	10/04
100	20	10/04
130	20	10/04
95	10	10/05
95	10	10/05
100	10	10/05
100	10	10/05
100	10	10/05
98	10	10/05
100	10	10/05
95	10	10/05
100	10	10/05
100	10	11/01
100	10	11/01
100	10	11/16
100	10	11/19
110	10	11/30
100	10	12/18
100	10	12/18

CV = 150 + 20 ug/L

Result	Uncer	Date
150	20	11/30

CV = 180 + 20 ug/L

Result	Uncer	Date
170	20	11/28
180	20	12/18

CV = 240 + 20 ug/L

Result	Uncer	Date
240	20	11/26

CV = 610 + 60 ug/L

Result	Uncer	Date
580	60	8/31

Pb 88GAU 02 MSCAN

CV = 100 + 10 ug/L

Result	Uncer	Date
190	130	1/24
94	280	3/16
120	360	8/07

Pb (cont)

110	330	9/13
95	290	9/17
98	290	9/17
94	280	9/21
94	280	9/21
120	360	11/05
120	360	11/07
120	360	11/08
120	360	11/08
120	360	11/08
120	360	11/13
120	360	11/14
110	330	11/19
96	290	12/05

Pd 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
5.3	3	1/24
< 1		3/16
1.2	3.6	8/07
1.6	4.8	9/13
< 1		9/17
< 1		9/17
< 1		9/21
< 1		9/21
< 1		11/05
< 1		11/07
< 1		11/08
< 1		11/08
< 1		11/08
< 1		11/13
< 1		11/14
< 1		11/19
< 1		12/05

PO4-P 90GAU 01 IC

CV = 13 + 1 mg/L

Result	Uncer	Date
12	1	10/29

Pr 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 1		1/24
< 1		3/16
< 1		8/07
< 1		9/13
< 1		9/17
< 1		9/17
< 1		9/21
< 1		9/21
< 1		11/05
< 1		11/07
< 1		11/08
< 1		11/08
< 1		11/08
< 1		11/13
< 1		11/14
< 1		11/19
< 1		12/05

Pt 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 1		1/24
< 1		3/16
< 1		8/07
< 1		9/13
< 1		9/17
< 1		9/17
< 1		9/21
< 1		9/21
< 1		11/05
< 1		11/07
< 1		11/08
< 1		11/08
< 1		11/08
< 1		11/13
< 1		11/14
< 1		11/19
< 1		12/05

Rb 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 1		1/24
< 1		3/16
< 1		8/07
< 1		9/13
< 1		9/17
< 1		9/17
< 1		9/21
< 1		9/21
< 1		11/05
< 1		11/07
< 1		11/08
< 1		11/08
< 1		11/08
< 1		11/13
< 1		11/14
< 1		11/19
< 1		12/05

Re 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 1		3/16
< 1		8/07

Rh 88GAU 02 ICPMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		12/18

Rh 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 1		1/24
< 1		3/16
< 1		8/07
< 1		9/13
< 1		9/17

Rh (cont)

< 1		9/17
< 1		9/21
< 1		9/21
< 1		11/05
< 1		11/07
< 1		11/08
< 1		11/08
< 1		11/08
< 1		11/13
< 1		11/14
< 1		11/19
< 1		12/05

Ru 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 1		1/24
< 1		3/16
< 1		8/07
< 1		9/13
< 1		9/17
< 1		9/17
< 1		9/21
< 1		9/21
< 1		11/05
< 1		11/07
< 1		11/08
< 1		11/08
< 1		11/08
< 1		11/13
< 1		11/14
< 1		11/19
< 1		12/05

Sb 90GAU 02 ETVAA

CV = 15 + 2 ug/L

Result	Uncer	Date
17	3	8/06

CV = 25 + 3 ug/L

Result	Uncer	Date
28	20	6/21

CV = 40 + 4 ug/L

Result	Uncer	Date
44	4	4/23
44	4	5/01
43	30	6/21
43	30	6/21

Sb 89GAU 02 ICPES

CV = 5.0 + 0.5 mg/L

Result	Uncer	Date
5.3		1/18

CV = 10 + 1 mg/L

Result	Uncer	Date
11	1	1/18
11	1	1/18
11	1	1/18

TABLE C-V (cont)

****

HSE-9 Trace Elements in Water
(cont)

****

Sb (cont)

11	1	1/18
12	1	1/19
11	1	1/19
12	1	1/19
11	1	2/05

Sb 90GAU 02 ICPMS

CV = 12 + 1 ug/L

Result	Uncer	Date
12.9	0.9	8/13
11.7	0.6	8/20

CV = 15 + 2 ug/L

Result	Uncer	Date
15.4	0.4	7/05
14.6	0.3	7/05
14.6	0.3	7/05
12.1	0.3	7/05
16	2	7/24
16	2	7/24
18	2	7/24
18	2	7/24
14.5	0.6	8/07
13.9	0.6	8/07
14.2	0.6	8/07
16.3	1.2	8/13
16.3	1.2	8/13
15.6	1.1	8/13
15.6	1.1	8/13
15.6	1.1	8/13
16.3	1.2	8/13
16.3	1.2	8/13
16.3	1.2	8/13
16.3	1.2	8/13
16.3	1.2	8/13
15.6	1.1	8/13
16.3	1.2	8/13
15.6	1.1	8/13
16.3	1.2	8/13
16.3	1.2	8/13
18	2	8/17
16	10	8/17
16	10	8/17
18	2	8/17
16	0.8	8/21
15.5	0.8	8/21
15.5	0.8	8/21
15.5	0.8	8/21
15.6	0.8	8/21
15.6	0.8	8/21
16	0.8	8/21
16	0.8	8/21
15.6	0.8	8/21
17	2	9/07
17	2	9/07
16	2	9/07

CV = 21 + 2 ug/L

Result	Uncer	Date
20.7	1.5	8/13
20.3	1	8/20

Sb (cont)

CV = 25 + 2 ug/L

Result	Uncer	Date
26	3	11/19

CV = 30 + 3 ug/L

Result	Uncer	Date
26.7	1.2	8/07
29	5	11/14

CV = 40 + 4 ug/L

Result	Uncer	Date
36.8	0.2	5/24
38.4	0.8	8/21
38.4	0.8	8/21
35.9	2.2	10/04
38.3	2.4	10/04
36.6	2.3	10/04
35.9	2.2	10/04
38.3	2.4	10/04
36.6	2.3	10/04
33	6	11/14
34	6	11/14
59	10	11/14
34	6	11/14
42	4	11/19

CV = 50 + 5 ug/L

Result	Uncer	Date
52	6	9/07
26.8	1.7	10/04
1.1	0.5	10/04
26.8	1.7	10/05

CV = 100 + 10 ug/L

Result	Uncer	Date
100	310	5/29
110	10	10/04
110	10	10/04
120	10	10/04
110	10	10/05
110	10	10/05
110	10	10/05
110	10	10/05
110	10	10/05
100	10	10/05
120	10	11/01
120	10	11/01
110	10	11/16

Sb 88GAU 02 MSCAN

CV = 100 + 10 ug/L

Result	Uncer	Date
120	80	1/24
110	330	3/16
80	240	8/07
120	360	9/13
100	300	9/17
90	270	9/17
98	290	9/21
98	290	9/21
93	280	11/05
93	280	11/07
92	280	11/08
93	280	11/08

Sb (cont)

93	280	11/08
73	220	11/13
73	220	11/14
83	250	11/19
81	240	12/05

Sc 88GAU 02 MSCAN

CV = none available ug/L

Result	Uncer	Date
< 10		3/16

Se 90GAU 01 ETVAA

CV = none available ug/L

Result	Uncer	Date
< 1		8/23

CV = 10 + 1 ug/L

Result	Uncer	Date
11	1	5/07
11	1	6/06
9.9	1	10/25

CV = 12 + 1 ug/L

Result	Uncer	Date
12	2	10/09
11	2	10/25

CV = 15 + 2 ug/L

Result	Uncer	Date
14	2	6/29

CV = 20 + 2 ug/L

Result	Uncer	Date
21	4	3/16
23	2	4/25
23	2	5/01
21	2	6/06
21	2	6/21
21	2	6/21
22.5	2	7/03
20	2	8/13
19	4	8/23

CV = 30 + 3 ug/L

Result	Uncer	Date
28	3	5/07
28	3	5/07
28	3	5/07
29	3	5/09
24	4	6/25
31	6	8/08
29	6	10/09
28	6	10/25
27	5	11/02
29	6	12/07

Se (cont)

CV = 40 + 4 ug/L

Result	Uncer	Date
40	4	6/29
38	8	8/08
39	8	8/23
40	8	8/30
39	8	11/02
40	8	12/10

CV = 46 + 5 ug/L

Result	Uncer	Date
45	9	8/08
45	9	8/08
44	8	8/23
45	9	8/30

CV = 48 + 5 ug/L

Result	Uncer	Date
50	5	5/07

CV = 49 + 5 ug/L

Result	Uncer	Date
49	5	5/01
50	5	6/06
51	10	6/11
50	5	7/02

CV = 50 + 5 ug/L

Result	Uncer	Date
51	5	2/06
52	5	4/16
49	5	5/07
48	5	5/11
48	5	5/11
48	5	5/11
52	10	6/11
51	5	6/21
55	6	6/28
49	5	6/29
49	10	10/09
52	10	10/25

CV = 53 + 5 ug/L

Result	Uncer	Date
52	10	8/08

CV = 56 + 6 ug/L

Result	Uncer	Date
55	11	8/08

CV = 58 + 6 ug/L

Result	Uncer	Date
66	13	6/28

Se (cont)

CV = 60 + 6 ug/L

Result	Uncer	Date
65	13	7/25
64	12	10/09
63	12	11/02
56	12	11/21
55	11	12/18

CV = 63 + 6 ug/L

Result	Uncer	Date
63	6	6/06
61	12	6/25
71	7	6/28

CV = 70 + 7 ug/L

Result	Uncer	Date
71	13	1/22
68	13	1/22
68	14	1/25
68	14	1/25
50	20	2/01
72	14	2/08
71	14	2/20
71	14	2/23

CV = 80 + 8 ug/L

Result	Uncer	Date
79	8	2/06
99	20	2/09
100	20	2/09

CV = 96 + 10 ug/L

Result	Uncer	Date
96	20	2/09
99	20	2/09

Se 90GAU 02 ICPMS

CV = 63 + 6 ug/L

Result	Uncer	Date
55	6	9/04

CV = 100 + 10 ug/L

Result	Uncer	Date
100	10	2/21
87	9	5/14
88	264	5/29
96	10	8/31
100	10	9/04
110	10	10/01
99	10	10/01
110	10	10/05
96	10	10/05
110	10	10/05
98	10	10/05
110	10	11/19

Se 88GAU 02 MSCAN

CV = 100 + 10 ug/L

Result	Uncer	Date
74	51	1/24
94	280	3/16
78	240	8/07
120	360	9/13
120	360	9/17
65	200	9/17
160	480	9/21
160	480	9/21
92	280	11/05
92	280	11/07
87	260	11/08
92	280	11/08
92	280	11/08
51	150	11/13
51	150	11/14
120	360	11/19
89	270	12/05

Si 89GAU 02 ICPES

CV = 8.0 + 0.8 mg/L

Result	Uncer	Date
7.8	1	2/06
7.8	1	2/06
8.1	1	2/06

CV = 27 + 3 mg/L

Result	Uncer	Date
28	6	2/06

SiO2 89GAU 02 FIA

CV = 30 + 3 mg/L

Result	Uncer	Date
30	5	4/26
29	5	4/26
29	5	4/26
29	5	4/26

CV = 32 + 3 mg/L

Result	Uncer	Date
31	3	9/28
31	3	9/28

CV = 43 + 4 mg/L

Result	Uncer	Date
42	5	4/26
42	5	4/26
42	5	4/26

CV = 45 + 4 mg/L

Result	Uncer	Date
42	5	5/24
47	5	5/24
43	4	10/17
41	4	12/10

TABLE C-V (cont)

****

HSE-9 Trace Elements in Water
(cont)

****

SiO2 (cont)

CV = 49 + 5 mg/L

Result	Uncer	Date
48	5	7/06
48	5	7/06

CV = 50 + 5 mg/L

Result	Uncer	Date
53	5	2/12
51	5	2/12
52	5	2/12
54	5	2/12
55	6	2/12
54	5	2/12
54	5	2/12
51	5	2/12
50	5	4/26
50	5	4/26
55	6	4/26
50	5	4/26
50	5	4/26
50	5	4/26
51	5	4/26
51	5	4/26
50	5	4/26
50	5	4/26
51	5	4/26
50	5	5/24
51	5	5/25
53	5	5/25
54	5	5/25
53	5	5/25
49	5	5/25
50	5	5/25
50	5	5/25
51	5	5/25
50	5	7/06
51	5	7/06
51	5	7/06
49	5	9/28
53	5	9/28
52	5	10/15
50	5	10/15
50	5	10/15
49	5	10/15
49	5	10/15
51	5	12/10
50	5	12/10

CV = 51 + 5 mg/L

Result	Uncer	Date
53	5	12/10
49	5	12/10

CV = 54 + 5 mg/L

Result	Uncer	Date
52	5	2/12
52	5	2/12

SiO2 (cont)

CV = 64 + 6 mg/L

Result	Uncer	Date
61	6	4/26
61	6	4/26
61	6	4/26
62	6	4/26

CV = 66 + 7 mg/L

Result	Uncer	Date
64	6	4/26
67	7	5/24
67	7	5/24
63	6	10/17

CV = 79 + 8 mg/L

Result	Uncer	Date
74	7	2/12
76	8	2/12
74	7	5/24
74	7	5/25

Sm 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 1		1/24
< 1		3/16
< 1		8/07
< 1		9/13
< 1		9/17
< 1		9/17
< 1		9/21
< 1		9/21
< 1		11/05
< 1		11/07
< 1		11/08
< 1		11/08
< 1		11/08
< 1		11/13
< 1		11/14
1.5	4.5	11/19
< 1		12/05

Sn 90GAU 02 ETVAA

CV = 15 + 2 ug/L

Result	Uncer	Date
16	2	6/21

CV = 20 + 2 ug/L

Result	Uncer	Date
20	4	6/19

CV = 45 + 4 ug/L

Result	Uncer	Date
54	5	6/21
47	10	6/21
48	10	8/06

Sn (cont)

CV = 50 + 5 ug/L

Result	Uncer	Date
49	10	4/25
49	5	5/01

CV = 53 + 5 ug/L

Result	Uncer	Date
54	11	8/06

Sn 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 1		1/24
< 1		3/16
< 1		8/07
< 1		9/13
< 1		9/17
< 1		9/17
2.5	7.5	9/21
2.5	7.5	9/21
< 1		11/05
< 1		11/07
< 1		11/08
< 1		11/08
< 1		11/08
< 1		11/13
< 1		11/14
1.5	4.5	11/19
< 1		12/05

SO4 FIA

CV = none available ug/L

Result	Uncer	Date
12	1	2/14
12	1	2/14

CV = 16 + 1 mg/L

Result	Uncer	Date
15	2	6/07

CV = 18 + 2 mg/L

Result	Uncer	Date
23	2	10/17

CV = 19.8 + 2.0 mg/L

Result	Uncer	Date
20	2	6/08

CV = 22 + 2 mg/L

Result	Uncer	Date
27	3	8/07
28	3	10/17

CV = 24 + 1 mg/L

Result	Uncer	Date
24	2	6/07

SO4 (cont)

CV = 24.8 + 2.0 mg/L

Result	Uncer	Date
26	3	5/17
30	3	6/27

CV = 29.8 + 3.0 mg/L

Result	Uncer	Date
29	3	6/07

SO4 90GAU 04 IC

CV = 16 + 1 mg/L

Result	Uncer	Date
20	2	5/14

CV = 18 + 2 mg/L

Result	Uncer	Date
21	2	9/19
23	2	9/24

CV = 22 + 2 mg/L

Result	Uncer	Date
23	2	7/16

CV = 24 + 1 mg/L

Result	Uncer	Date
31	3	5/17

CV = 30 + 3 mg/L

Result	Uncer	Date
39	4	12/14

Sr 90GAU 02 ICPMS

CV = 50 + 5 ug/L

Result	Uncer	Date
59.6	0.7	8/14
48	6	11/06

CV = 100 + 10 ug/L

Result	Uncer	Date
110	10	11/16

CV = 350 + 40 ug/L

Result	Uncer	Date
350	4	8/02
352	4	8/02
350	4	8/02
349	4	8/02
349	4	8/02
352	4	8/02
352	4	8/03
349	4	8/03
350	4	8/03
349	4	8/03
352	4	8/03

Sr (cont)

Result	Uncer	Date
350	4	8/03
349	4	8/14
340	3	8/14
349	4	8/14
340	3	8/14
349	4	8/14
349	4	8/14
340	17	8/24
333	16	8/24
331	16	8/24
328	16	8/24
328	16	8/24
340	17	8/24
328	16	8/24
341	8	8/24
331	16	8/24
333	16	8/24
333	16	8/24
340	17	8/24
331	16	8/24
342	17	8/27
287	17	8/27
334	17	8/27
349	3	9/05
347	3	9/05
349	3	9/05
357	7	9/06
353	7	9/06
360	7	9/06

CV = 360 + 36 ug/L

Result	Uncer	Date
350	4	8/02
350	4	8/03
350	4	8/03
350	4	8/03
353	8	8/24
320	16	8/24
320	16	8/24
320	16	8/24
352	8	8/24
349	8	8/24

CV = 400 + 40 ug/L

Result	Uncer	Date
398	20	8/24
416	8	9/05
357	4	10/05

CV = 500 + 50 ug/L

Result	Uncer	Date
560	60	11/16

CV = 700 + 70 ug/L

Result	Uncer	Date
699	7	8/02
661	30	8/27

CV = 800 + 80 ug/L

Result	Uncer	Date
776	38	8/24
793	39	8/24

Sr 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 1		1/24
< 1		3/16
< 1		8/07
< 1		9/13
< 1		9/17
< 1		9/17
< 1		9/21
< 1		9/21
< 1		11/05
< 1		11/07
< 1		11/08
< 1		11/08
< 1		11/08
< 1		11/13
< 1		11/14
< 1		11/19
< 1		12/05

Ta 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 1		1/24
< 1		3/16
< 1		8/07
< 1		9/13
< 1		9/17
< 1		9/17
< 1		9/21
< 1		9/21
< 1		11/05
< 1		11/07
< 1		11/08
< 1		11/08
< 1		11/08
< 1		11/13
< 1		11/14
< 1		11/19
< 1		12/05

Total Alkalinity TITR
90GAU 04

CV = 16 + 1 mg/L

Result	Uncer	Date
13	3	6/07

CV = 18 + 2 mg/L

Result	Uncer	Date
20	2	9/28
19	2	10/09

CV = 22 + 2 mg/L

Result	Uncer	Date
23	5	8/24
24	2	10/11

TABLE C-V (cont)

****

HSE-9 Trace Elements in Water
(cont)

****

Total Alkalinity (cont)

CV = 24 + 1 mg/L

Result	Uncer	Date
27	3	5/15
27	3	5/15
28	3	5/17
28	3	5/17
27	3	6/07

Tb 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 1		1/24
< 1		3/16
< 1		8/07
< 1		9/13
< 1		9/17
< 1		9/17
< 1		9/21
< 1		9/21
< 1		11/05
< 1		11/07
< 1		11/08
< 1		11/08
< 1		11/13
< 1		11/14
< 1		11/19
< 1		12/05

Total Dissolved Solids
90GAU 04 GRAV

CV = 120 + 20 mg/L

Result	Uncer	Date
137	13	5/11
140	10	5/25

CV = 135 + 14 mg/L

Result	Uncer	Date
200	20	10/18
200	20	11/19

CV = 165 + 16 mg/L

Result	Uncer	Date
150	20	7/27
190	20	11/15

CV = 180 + 20 mg/L

Result	Uncer	Date
190	20	5/15
200	20	6/13

Te 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 1		1/24
< 1		3/16
< 1		8/07
< 1		9/13
< 1		9/17
< 1		9/17
< 1		9/21
< 1		9/21
< 1		11/05
< 1		11/07
< 1		11/08
< 1		11/08
< 1		11/08
< 1		11/13
< 1		11/14
1.4	4.2	11/19
< 1		12/05

Th 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 1		1/24
< 1		3/16
< 1		8/07
< 1		9/13
< 1		9/17
< 1		9/17
< 1		9/21
< 1		9/21
< 1		11/05
< 1		11/07
< 1		11/08
< 1		11/08
< 1		11/08
< 1		11/13
< 1		11/14
3.1	9.3	11/19
< 1		12/05

Ti 90GAU 02 ICPES

CV = 400 + 40 ug/L

Result	Uncer	Date
400	40	3/19
400	40	3/19
400	40	3/19
400	40	3/19
400	40	3/29
390	40	3/29
380	40	3/29
400	40	5/22
400	40	5/22
390	40	5/24
440	90	7/23

CV = 500 + 50 ug/L

Result	Uncer	Date
500	50	3/19

CV = 1.0 + 0.1 mg/L

Result	Uncer	Date
1.0	0.1	3/19
1.0	0.2	7/25

Tl (cont)

CV = 1.5 + 0.2 mg/L

Result	Uncer	Date
1.5	0.2	5/25

CV = 2.0 + 0.2 mg/L

Result	Uncer	Date
2.1	0.4	7/23

CV = 10 + 1 mg/L

Result	Uncer	Date
10	1	3/29
9.8	1	5/22

CV = 13 + 1 mg/L

Result	Uncer	Date
13	1	5/22

Ti 88GAU 02 ICPMS

CV = 100 + 10 ug/L

Result	Uncer	Date
90	9	5/14
90	9	5/14
81	243	5/29
110	10	10/05
110	10	10/05
99	10	10/05
87	9	11/01
110	10	11/01
97	10	11/16

Ti 88GAU 02 MSCAN

CV = 100 + 10 ug/L

Result	Uncer	Date
80	56	1/24
110	330	3/16
57	170	8/07
99	300	9/13
97	290	9/17
50	150	9/17
230	690	9/21
230	690	9/21
150	450	11/05
150	450	11/07
150	450	11/08
150	450	11/08
150	450	11/08
110	330	11/13
110	330	11/14
130	390	11/19
93	280	12/05

Tl 90GAU 02 ETVAA

CV = 40 + 4 ug/L

Result	Uncer	Date
35	8	10/18

Tl (cont)

CV = 56 + 6 ug/L

Result	Uncer	Date
0.5	0.1	1/24

CV = 62 + 6 ug/L

Result	Uncer	Date
64	13	7/10

Tl 90GAU 02 FAA

CV = 62 + 6 ug/L

Result	Uncer	Date
71	14	7/09

Tl 89GAU 02 ICPES

CV = 5.0 + 0.5 mg/L

Result	Uncer	Date
5.0	0.5	1/18
5.0	0.5	1/18

CV = 10 + 1 mg/L

Result	Uncer	Date
11	1	1/18
11	1	1/18
12	1	1/18
10	1	1/18
11	1	1/18
11	1	1/18
11	1	1/18
10	1	1/18

CV = 15 + 2 mg/L

Result	Uncer	Date
15	2	3/29
14	1	5/22

CV = 16.0 + 1.6 mg/L

Result	Uncer	Date
16	2	3/19
15	2	3/19
15	2	3/19
15	2	3/19
16	2	3/29
16	2	3/29
16	2	3/29
16	2	5/22
16	2	5/22
16	2	5/24
18	4	7/23

CV = 20 + 2 mg/L

Result	Uncer	Date
19	2	3/19
20	2	5/22

Tl (cont)

CV = 25.0 + 2.5 mg/L

Result	Uncer	Date
24	2	3/19

CV = 38 + 4 mg/L

Result	Uncer	Date
38	4	5/25

CV = 50 + 5 mg/L

Result	Uncer	Date
55	11	7/23

Tl 90GAU 02 ICPMS

CV = none available ug/L

Result	Uncer	Date
< 0.2		9/13

CV = 6.4 + 0.6 ug/L

Result	Uncer	Date
5.7	0.1	8/13
5.8	0.1	8/20

CV = 8.0 + 0.8 ug/L

Result	Uncer	Date
6.9	0.1	5/15
7.4	0.2	6/20

CV = 11 + 1 ug/L

Result	Uncer	Date
9.9	0.1	8/13
9.9	0.1	8/20

CV = 16 + 2 ug/L

Result	Uncer	Date
14.5	0.2	8/08
14.8	1.4	11/14

CV = 18 + 2 ug/L

Result	Uncer	Date
16.1	1.5	10/04
35	4	10/05
18	2	11/01
18	2	11/01

CV = 20 + 2 ug/L

Result	Uncer	Date
45	11	7/05

CV = 40 + 4 ug/L

Result	Uncer	Date
23	6	7/05

Tl (cont)

CV = 60 + 6 ug/L

Result	Uncer	Date
56.4	0.8	5/15
56.4	0.8	5/15

CV = 100 + 10 ug/L

Result	Uncer	Date
100	10	1/30
100	10	1/30
100	10	2/06
100	10	2/08
100	10	2/08
96	10	2/21
99	10	2/21
100	10	2/23
100	10	2/23
94	10	2/23
99	10	2/23
120	10	3/12
110	10	5/14
100	10	5/14
110	340	5/29
110	10	8/01
110	10	8/01
100	10	8/14
100	10	8/14
100	10	10/04
110	10	10/04
94	9	10/04
98	10	10/05
98	10	10/05
98	10	10/05
100	10	10/05
98	10	10/05
98	10	10/05
110	10	11/01
110	10	11/01
110	10	11/16
100	10	11/30
110	10	11/30
110	10	12/18
100	10	12/18

CV = 200 + 20 ug/L

Result	Uncer	Date
210	20	11/26

CV = 230 + 20 ug/L

Result	Uncer	Date
240	20	11/28
250	30	12/18

Tl 88GAU 02 MSCAN

CV = 100 + 10 ug/L

Result	Uncer	Date
260	180	1/24
100	300	3/16
120	360	8/07
110	330	9/13
99	300	9/17
100	300	9/17
110	330	9/21
110	330	9/21
110	330	11/05
110	330	11/07
110	330	11/08

TABLE C-V (cont)

****

HSE-9 Trace Elements in Water
(cont)

****

Tl (cont)

110	330	11/08
110	330	11/08
110	330	11/13
110	330	11/14
110	330	11/19
100	300	12/05

Tm 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 1		1/24
< 1		3/16
< 1		8/07
< 1		9/13
< 1		9/17
< 1		9/17
< 1		9/21
< 1		9/21
< 1		11/05
< 1		11/07
< 1		11/08
< 1		11/08
< 1		11/08
< 1		11/13
< 1		11/14
< 1		11/19
< 1		12/05

Total Organic Halides
89GAU 01 ATNA

CV = 256 + 14 ug/g

Result	Uncer	Date
230	30	2/01

CV = 275 + 21 ug/g

Result	Uncer	Date
270	30	2/01

U 89GAU 02 ICPMS

CV = 10 + 1 ug/L

Result	Uncer	Date
11	2	2/06
11	2	2/08

CV = 18 + 2 ug/L

Result	Uncer	Date
18	2	2/06
19	2	2/08

U (cont)

CV = 20 + 2 ug/L

Result	Uncer	Date
18.4	0.4	5/15
21.4	0.2	6/20
21.4	0.2	8/07
19.9	1.8	11/14

CV = 25 + 2 ug/L

Result	Uncer	Date
22	3	6/08
22	3	6/08
22	3	6/08
22	3	6/08
22	3	6/08
22	3	6/08
24	2	6/15
21	2	6/15
24	2	6/15
21	2	6/15
24	2	6/15
21	2	6/15
24	2	6/15
21	2	6/15
22	2	6/20
23	2	6/20
22	2	6/21
24.8	0.2	6/21
24.9	0.2	6/21
24.8	0.2	6/21
24.9	0.2	6/21
22	3	6/21
22	2	6/21
22	3	6/21
23	2	6/21
24.9	1.5	6/27
23.1	1.4	6/27
22.4	1.4	6/27
24.9	1.5	6/27
23	2	6/27
23	2	6/27
22.4	1.4	6/27
23.1	1.4	6/27
23.9	1.4	6/27
23.9	1.4	6/27
23.9	1.4	6/27
23.2	1.4	6/27
23.2	1.4	6/27
23.2	1.4	6/27
22	3	7/02
21	3	7/02
21	3	7/02
18	3	7/02
24	2	9/11
23	2	9/11
23	2	9/11

CV = 30 + 3 ug/L

Result	Uncer	Date
29.9	1.1	8/13
29.3	0.6	8/20

CV = 32 + 3 ug/L

Result	Uncer	Date
32	3	12/19

U (cont)

CV = 40 + 4 ug/L

Result	Uncer	Date
35	4	2/02
37	9	7/05
40	4	7/05
36	9	7/05
42.3	3.6	7/20
40	3.5	7/20
46.9	3.9	7/20
42.4	1	8/07
41.9	0.5	8/07
39.5	0.4	8/07
42	4	8/10
41	4	8/10
37.1	1.4	8/13
39.2	1.4	8/13
38	1.4	8/13
39.2	1.4	8/13
38.4	1.4	8/13
38	1.4	8/13
38.4	1.4	8/13
38.4	1.4	8/13
38	1.4	8/13
38	1.4	8/13
39.2	1.4	8/13
39.2	1.4	8/13
38.4	1.4	8/13
39.2	1.4	8/13
38.4	1.4	8/13
38	1.4	8/13
40	4	8/14
41	4	8/14
38	4	8/16
44	4	8/16
41	4	8/16
43	4	8/16
38	0.8	8/20
38.9	0.8	8/21
37.8	0.8	8/21
38.9	0.8	8/21
43	4	8/21
39.6	0.8	8/21
37.8	0.8	8/21
44	4	8/21
38.9	0.8	8/21
38.9	0.8	8/21
42	4	8/21
39.6	0.8	8/21
39	1	8/31
50	5	8/31
40	1	8/31
41	1	8/31
40	1	8/31
49	5	8/31
40	1	8/31
41	1	8/31
42	1	8/31
40	1	8/31
40	1	8/31
41	1	8/31
41	1	8/31
42	1	8/31
40	1	8/31
41	1	8/31
41	1	8/31
41	1	8/31
42	1	8/31
40	1	8/31
41	1	8/31
40	1	8/31
42	1	8/31
40	1	8/31
42	1	8/31
40	1	8/31
41.2	0.4	9/07
38.9	0.4	9/07

U (cont)

41.1	0.4	9/07
36	4	9/11
34	3	9/11
35	4	9/11
34	3	9/12
34	3	9/12
38	0.8	9/18
38.5	0.9	9/18
41.5	2.5	9/20
41	2.5	9/20
42.9	2.5	9/20
42	2.1	9/21
40.7	2.4	9/21
41.2	2.1	9/24
41.9	2.1	9/24
42.9	2.1	9/24
44	1	11/15
42	1	11/15
42	1	11/15
41	4	11/19

CV = 45 + 4 ug/L

Result	Uncer	Date
50	5	10/04
50	5	10/04
49	5	10/04
44	0.8	10/17
43.3	0.8	10/17
44.8	0.8	10/17
41.5	2.1	10/19
42.8	2.1	10/19
44.1	2.2	10/19
39.6	3.6	11/14
47.7	4.3	11/14
49.6	4.5	11/14
49.7	4.5	11/14
42.4	2	11/16
43.5	2	11/16
49	5	11/19
45.6	0.5	12/10
47.5	0.5	12/10
45.6	0.5	12/10
43.1	2.2	12/13
48.4	3.4	12/18
48.1	3.4	12/18

CV = 50 + 5 ug/L

Result	Uncer	Date
46.9	0.5	4/06
23	3	6/08
42	5	6/21
45	5	6/27
51	5	8/21
49	3	8/31
47	3	8/31

CV = 52 + 5 ug/L

Result	Uncer	Date
51	2.5	12/13

CV = 60 + 6 ug/L

Result	Uncer	Date
76	19	7/05
61.5	0.6	9/07
11.5	0.2	10/04
39	4	10/05

U (cont)

CV = 63 + 6 ug/L

Result	Uncer	Date
55	7	6/08
60.1	3.5	6/27

CV = 72 + 7 ug/L

Result	Uncer	Date
70	3.2	11/16
73.9	5.2	12/18

CV = 74 + 7 ug/L

Result	Uncer	Date
68	7	6/15
69.9	4.1	6/27
61	8	7/02
77	7	8/21
69	4	8/31
71	4	8/31
65.1	3.3	9/12
72.4	1.3	10/17

CV = 76 + 8 ug/L

Result	Uncer	Date
88.2	4.4	3/09
78	11	3/13
92.2	6.2	3/13
92.2	6.2	3/13
92.9	0.9	3/16
80.8	0.4	3/16
92.9	0.5	3/16
80.8	0.4	3/16
84.8	4.2	3/16
86.8	4.3	3/16
88.2	1.1	3/19
88.4	1.8	3/20
78.5	1	4/06
75.6	0.7	4/09
78.5	1	4/09
79	1.1	4/09
75.6	0.7	4/09
79	1.1	4/09
72.5	0.7	4/20
75.8	1.3	4/20
72.5	0.5	4/20
75.8	1.3	4/20
74.5	0.7	5/01
80.7	0.2	5/15
76.9	0.8	5/15
76.4	0.8	5/15
80.7	0.2	5/15
81.9	0.8	7/27
76.3	0.8	7/27
73.2	3.6	7/31
73.6	3.8	7/31
72.1	3.6	7/31
73.2	3.6	7/31
75.1	1.7	7/31
73.6	3.7	7/31
86.4	0.9	9/07
77	8	9/12
75	8	9/12

CV = 88 + 9 ug/L

Result	Uncer	Date
77.1	3.9	6/15
73	11	7/02
87.9	1.6	10/17
79.4	4	10/19

U (cont)

CV = 90 + 9 ug/L

Result	Uncer	Date
48	12	7/05

CV = 92 + 9 ug/L

Result	Uncer	Date
92	9	11/15
96.4	6.8	12/18

CV = 94 + 9 ug/L

Result	Uncer	Date
86.3	2.2	4/09
88.2	5.2	6/27
100	10	8/21
88	4	8/31
90	5	8/31
110	10	11/15
79	9	11/15
100	10	11/15

CV = 96 + 10 ug/L

Result	Uncer	Date
96	9	2/01
93	9	2/01
93	9	2/01
93	9	2/01
95	9	2/01
93	9	2/02
109	5	2/12
92	9	2/20
100	8	2/28
95	4.8	2/28

CV = 100 + 10 ug/L

Result	Uncer	Date
100	10	2/20
94	9	2/21
110	10	2/22
110	10	2/23
110	10	2/23
110	10	8/14
99	10	9/19
97	10	9/20
90.8	1.8	10/04
111	2	10/04
104	2	10/04
110	10	11/01
110	10	11/01
100	10	11/16
100	10	12/18

CV = 200 + 20 ug/L

Result	Uncer	Date
200	20	11/28
200	20	12/18

U 89GAU 02 MSCAN

CV = 100 + 10 ug/L

Result	Uncer	Date
< 1		1/24
< 1		3/16
150	460	8/07

TABLE C-V (cont)

****

HSE-9 Trace Elements in Water
(cont)

****

U (cont)

110	330	9/13
170	510	9/17
180	540	9/17
< 1		9/21
< 1		9/21
< 1		11/05
100	300	11/07
100	300	11/08
100	300	11/08
100	300	11/08
< 1		11/13
100	300	11/14
< 1		11/19
110	330	12/05

Spike accidently omitted 9/21

U-235/238 89GAU 01 ICPMS

CV = 0.0072 + 0.0001 ratio

Result	Uncer	Date
0.0070	0.0007	1/25
0.0076	0.0008	1/25
0.0072	0.0007	1/25
0.0079	0.0008	1/25
0.0070	0.0007	1/25
0.0071	0.0007	1/25
0.0071	0.0007	1/25
0.0074	0.0007	1/25
0.0073	0.0007	1/25
0.0077	0.0008	1/25
0.0073	0.0007	1/25
0.0072	0.0007	1/25
0.0072	0.0007	1/25
0.0070	0.0007	1/25
0.0076	0.0008	1/25
0.0075	0.0007	1/25
0.0073	0.0007	1/25
0.0069	0.0007	1/25
0.0073	0.0003	2/01
0.0066	0.0006	2/01
0.0069	0.0004	2/01
0.0071	0.0003	2/01
0.0069	0.0004	2/01
0.0072	0.0001	2/22
0.0071	0.0001	2/22
0.0072	0.0001	2/22
0.0069	0.0001	2/22
0.0070	0.0001	2/22
0.0075	0.0001	2/22
0.0071	0.0001	2/22
0.0070	0.0001	2/22
0.0070	0.0001	2/22
0.0071	0.0001	2/22
0.0071	0.0001	2/22
0.0070	0.0001	2/22
0.0070	0.0001	2/22
0.0073	0.0001	2/22
0.0069	0.0001	2/22
0.0070	0.0001	2/22
0.0070	0.0001	2/22
0.0070	0.0001	2/22
0.0072	0.0001	2/22
0.0070	0.0001	2/22
0.0072	0.0001	2/22
0.0073	0.0001	2/22
0.0070	0.0001	2/22
0.0068	0.0001	2/22
0.0073	0.0001	2/22

U-235/238 (cont)

0.0068	0.0005	2/22
0.0067	0.0005	2/22
0.0069	0.0001	2/22
0.0070	0.0002	2/22
0.0069	0.0001	2/22
0.0068	0.0001	2/22
0.0071	0.0001	2/26
0.0070	0.0001	2/26
0.0070	0.0002	2/26
0.0071	0.0002	2/26
0.0070	0.0002	2/26
0.0073	0.0001	2/26
0.0070	0.0001	2/26
0.0071	0.0001	2/26
0.0068	0.0001	2/26
0.0069	0.0001	2/26
0.0073	0.0001	2/26
0.0070	0.0001	2/26
0.0071	0.0001	2/26
0.0070	0.0002	2/26
0.0076	0.0001	2/28
0.0072	0.0002	2/28
0.0071	0.0002	2/28
0.0074	0.0002	2/28
0.0071	0.0001	2/28
0.0074	0.0001	2/28
0.0070	0.0001	2/28
0.0073	0.0001	2/28
0.0069	0.0002	2/28
0.0072	0.0001	2/28
0.0069	0.0003	2/28
0.0072	0.0002	3/05
0.0077	0.0004	3/16
0.0067	0.0007	3/16
0.0070	0.0001	3/19
0.0068	0.0002	3/19
0.0070	0.0001	3/19
0.0068	0.0002	3/19
0.0068	0.0002	3/19
0.0068	0.0002	3/19
0.0073	0.0002	3/20
0.0071	0.0001	3/21
0.0071	0.0002	3/21
0.0072	0.0001	3/22
0.0072	0.0002	3/22
0.0071	0.0014	7/05
0.0110	0.0030	7/05
0.0072	0.0014	7/05
0.0074	0.0014	7/05
0.0074	0.0014	7/05
0.0071	0.0001	7/27
0.0077	0.0002	7/27
0.0070	0.0001	7/27
0.0069	0.0001	7/27
0.0072	0.0010	8/27
0.0070	0.0001	8/27
0.0077	0.0007	9/11
0.0069	0.0007	9/11
0.0070	0.0007	9/11
0.0070	0.0007	9/11
0.0076	0.0007	9/11
0.0072	0.0007	9/11
0.0070	0.0001	9/12
0.0070	0.0001	9/12
0.0071	0.0001	9/12
0.0069	0.0002	9/12
0.0069	0.0001	9/12
0.0072	0.0001	9/18
0.0076	0.0003	9/20
0.0071	0.0002	9/20
0.0073	0.0001	9/20
0.0077	0.0003	9/24
0.0074	0.0003	9/24
0.0070	0.0002	9/24
0.0072	0.0002	10/17
0.0073	0.0004	10/17
0.0074	0.0004	10/17
0.0073	0.0001	10/17

U-235/238 (cont)

0.0069	0.0006	10/19
0.0072	0.0007	10/19
0.0077	0.0005	10/19
0.0082	0.0004	11/15
0.0076	0.0004	11/15
0.0073	0.0004	11/15
0.0077	0.0005	11/16
0.0080	0.0003	11/16
0.0069	0.0004	11/28
0.0072	0.0002	12/14
0.0072	0.0002	12/14
0.0074	0.0002	12/14

V 89GAU 02 ICPES

CV = 1.0 + 0.1 mg/L

Result	Uncer	Date
1.0	0.1	1/18
1.0	0.1	1/18

CV = 10 + 1 mg/L

Result	Uncer	Date
11	1	1/19
10	1	1/19
11	1	1/19
11	1	1/19
10	1	1/19

V 90GAU 02 ICPMS

CV = 8.0 + 0.8 ug/L

Result	Uncer	Date
7.7	0.1	8/02
8.1	0.2	8/28

CV = 50 + 5 ug/L

Result	Uncer	Date
50	5	11/19

CV = 56 + 6 ug/L

Result	Uncer	Date
53.8	0.5	8/24

CV = 61 + 6 ug/L

Result	Uncer	Date
61.5	0.6	8/24
60.7	0.6	8/24
59.2	0.6	8/31

CV = 66 + 7 ug/L

Result	Uncer	Date
57.8	0.6	8/14
50	7	11/06

CV = 80 + 8 ug/L

Result	Uncer	Date
80	8	11/19

V (cont)

CV = 100 + 10 ug/L

Result	Uncer	Date
90	9	5/14
92	9	5/14
85	255	5/29
101	3	9/05
110	10	10/05
100	10	10/05
110	10	11/01
92	9	11/01
110	10	11/16
97	15	11/19
5.7	0.6	12/04

V 88GAU 02 MSCAN

CV = 100 + 10 ug/L

Result	Uncer	Date
99	69	1/24
110	330	3/16
51	153	8/07
97	290	9/13
94	280	9/17
49	150	9/17
140	420	11/05
140	420	11/07
140	420	11/08
140	420	11/08
140	420	11/08
97	290	11/13
97	290	11/14
110	330	11/19
110	330	12/05

W 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 1		1/24
< 1		3/16
< 1		8/07
< 1		9/13
< 1		9/17
< 1		9/17
< 1		9/21
< 1		9/21
< 1		11/05
< 1		11/07
< 1		11/08
< 1		11/08
< 1		11/08
< 1		11/08
< 1		11/13
< 1		11/14
2.3	6.9	11/19
< 1		12/05

Y 90GAU 02 ICPMS

CV = none available ug/L

Result	Uncer	Date
23	2	9/11

Y 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 1		1/24
< 1		3/16
< 1		8/07
< 1		9/13
< 1		9/17
< 1		9/17
< 1		9/21
< 1		9/21
< 1		11/05
< 1		11/07
< 1		11/08
< 1		11/08
< 1		11/08
< 1		11/13
< 1		11/14
< 1		11/19
< 1		12/05

Yb 88GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 1		1/24
< 1		3/16
< 1		8/07
< 1		9/13
< 1		9/17
< 1		9/17
< 1		9/21
< 1		9/21
< 1		11/05
< 1		11/07
< 1		11/08
< 1		11/08
< 1		11/08
< 1		11/13
< 1		11/14
2.6	7.8	11/19
< 1		12/05

Zn 90GAU 02 ETVAA

CV = 700 + 70 ug/L

Result	Uncer	Date
680	70	5/01

Zn 90GAU 02 FAA

CV = 230 + 20 ug/L

Result	Uncer	Date
210	20	11/05
220	20	11/05

CV = 700 + 70 ug/L

Result	Uncer	Date
670	70	4/23
690	70	4/30
690	70	4/30
680	70	6/21
690	70	6/21

Zn (cont)

CV = 1.3 + 0.1 mg/L

Result	Uncer	Date
1.2	0.1	4/30
1.2	0.1	4/30
1.2	0.1	6/21

CV = 1.4 + 0.1 mg/L

Result	Uncer	Date
1.4	0.1	7/03

Zn 90GAU 02 ICPES

CV = 6.0 + 0.6 mg/L

Result	Uncer	Date
5.0	0.5	4/30

CV = 10 + 1 mg/L

Result	Uncer	Date
9.9	1	4/30
9.7	1	4/30

Zn 90GAU 02 ICPMS

CV = none available ug/L

Result	Uncer	Date
< 10		11/19

This QC was supposed to contain Zn, but apparently none was added.

CV = 12 + 1 ug/L

Result	Uncer	Date
9.9	2.1	8/24

CV = 15 + 2 ug/L

Result	Uncer	Date
15	0.3	6/08
56.1	3.5	6/21

CV = 21 + 2 ug/L

Result	Uncer	Date
47	6	8/24
36	4	8/24

CV = 30 + 3 ug/L

Result	Uncer	Date
35	10	11/06
35	5	11/21

CV = 32 + 3 ug/L

Result	Uncer	Date
22	5	11/21

TABLE C-V (cont)

****

HSE-9 Trace Elements in Water
(cont)

****

Zn (cont)

CV = 70 + 7 ug/L

Result	Uncer	Date
50	5	11/19

CV = 90 + 9 ug/L

Result	Uncer	Date
67	14	12/05
101	5	12/13

CV = 100 + 10 ug/L

Result	Uncer	Date
120	10	1/30
110	10	1/30
110	10	2/06
110	10	2/08
110	10	2/08
110	10	2/21
96	10	2/23
100	10	2/23
100	10	2/23
98	10	2/23
99	10	3/12
110	10	3/12
86	9	5/14
84	8	5/14
97	291	5/29
100	10	8/01
88	9	8/01
100	10	8/01
94	9	8/01
110	10	8/01
110	10	8/01
91	9	8/01
100	10	8/14
97	10	8/14
99	10	10/05
93	9	10/05
100	10	10/05
98	10	10/05
93	9	11/01
110	10	11/01
99	10	11/16
110	10	12/18
120	10	12/18

CV = 160 + 20 ug/L

Result	Uncer	Date
160	20	11/28
160	20	12/18

CV = 180 + 20 ug/L

Result	Uncer	Date
169	9	10/31

CV = 230 + 20 ug/L

Result	Uncer	Date
230	20	11/26

Zn 88GAU 02 MSCAN

CV = 100 + 10 ug/L

Result	Uncer	Date
50	35	1/24
110	330	3/16
65	190	8/07
100	300	9/13
100	300	9/17
70	210	9/17
170	510	9/21
170	510	9/21
85	260	11/05
85	260	11/07
85	260	11/08
85	260	11/08
85	260	11/08
82	250	11/13
82	250	11/14
110	330	11/19
110	330	12/05

Zr 89GAU 02 MSCAN

CV = not spiked ug/L

Result	Uncer	Date
< 1		1/24
< 1		3/16
< 1		8/07
< 1		9/13
< 1		9/17
< 1		9/17
< 1		9/21
< 1		9/21
< 1		11/05
< 1		11/07
< 1		11/08
< 1		11/08
< 1		11/08
< 1		11/13
< 1		11/14
< 1		11/19
< 1		12/05

****

HSE-9 Trace Elements
in Biologicals Materials

****

Cs 89GAU 02 ITNA

CV = < 1 ug/g

Result	Uncer	Date
0.091	0.036	2/08
0.13	0.04	2/08

CV = 10 + 1 ug/g

Result	Uncer	Date
8.4	1.3	2/08

CV = 11 + 1 ug/g

Result	Uncer	Date
8.8	1.3	2/08

Cs (cont)

CV = 210 + 21 ug/g

Result	Uncer	Date
200	30	2/08

CV = 219 + 22 ug/g

Result	Uncer	Date
180	30	2/08

****

HSE-9 Trace Elements
on Filter Media

****

Ag 90GAU 03 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
< 0.001		5/29
0.0025	0.0075	5/29
< 0.001		5/29

As 90GAU 02 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
0.0049	0.0150	5/29
< 0.001		5/29
< 0.001		5/29

Au 90GAU 03 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
< 0.001		5/29
< 0.001		5/29
< 0.001		5/29

B 90GAU 03 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
< 0.001		5/29
< 0.001		5/29
< 0.001		5/30

Ba 90GAU 02 ICPMS

CV = 3.0 + 0.3 ug/filter

Result	Uncer	Date
5.5	0.6	2/20
3.7	0.4	2/20
3.7	0.4	2/20
3.4	0.4	2/22

Ba (cont)

CV = 4.7 + 0.5 ug/filter

Result	Uncer	Date
5.1	0.5	2/20
4.7	0.5	2/22
4.7	0.5	2/22

Ba 90GAU 02 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
0.11	0.34	5/29
0.086	0.258	5/29
0.086	0.258	5/29

Be 89GAU 01, 90GAU 02 FAA

CV = not spiked ug/filter

Result	Uncer	Date
0.2	0.1	3/12
0.1	0.1	3/12
< 0.1		3/12
< 0.1		3/12
0.1	0.1	3/13
< 0.1		3/13

CV = 1.0 + 0.1 ug/filter

Result	Uncer	Date
1.0	0.1	1/25
1.3	0.2	1/31
1.0	0.1	2/07
1.2	0.2	2/15
1.1	0.2	3/01
1.0	0.3	3/02
1.0	0.2	3/14
0.7	0.1	3/21
0.7	0.1	3/21
1.0	0.1	4/18
1.0	0.1	5/07
0.9	0.1	6/06
0.9	0.1	6/06
1.1	0.1	6/13
0.9	0.1	6/26
0.8	0.1	7/17
0.9	0.1	7/23
0.9	0.1	7/27
1.0	0.1	7/31
1.0	0.1	7/31
1.1	0.1	8/28
0.9	0.1	8/29
1.1	0.1	9/18
1.1	0.1	9/19
1.0	0.1	9/25
1.0	0.1	9/25
0.9	0.1	10/17
1.0	0.1	11/26
1.0	0.1	11/29
1.1	0.1	12/21

CV = 2.0 + 0.2 ug/filter

Result	Uncer	Date
2.0	0.2	9/07
2.0	2	9/07

Be (cont)

CV = 3.0 + 0.3 ug/filter

Result	Uncer	Date
3.1	0.1	1/04
3.2	0.3	1/25
3.0	0.2	1/29
3.1	0.3	2/07
3.0	0.3	2/07
2.9	0.1	2/22
3.1	0.3	3/05
2.5	0.4	3/22
2.7	0.3	3/28
2.9	0.4	4/04
3.0	0.3	4/09
2.6	0.5	4/09
3.1	0.5	4/23
2.9	0.5	5/23
2.9	0.3	6/20
2.7	0.3	6/27
2.8	0.3	7/23
3.0	0.3	8/08
3.0	0.1	8/10
2.9	0.3	8/27
2.2	0.2	8/29
3.3	0.3	9/18
3.0	0.3	9/25
3.0	0.3	10/02
2.9	0.3	10/12
3.0	0.3	11/05
3.0	0.3	11/05
3.1	0.3	11/06
3.1	0.3	11/29
3.0	0.3	12/12
3.1	0.3	12/21

CV = 5.0 + 0.5 ug/filter

Result	Uncer	Date
5.3	0.1	1/25
5.3	0.1	1/25
5.6	1.0	1/25
5.1	0.5	1/29
5.2	0.5	2/14
4.8	0.1	2/22
5.1	0.5	2/27
5.5	0.5	3/06
4.8	0.2	3/15
4.4	0.2	3/21
4.7	0.4	4/09
4.9	0.5	5/23
4.9	0.5	5/29
4.0	0.4	6/08
5.1	0.5	6/13
4.9	0.5	6/20
4.6	0.5	7/03
5.0	0.5	8/16
4.9	0.5	8/24
5.5	0.5	9/06
5.1	0.5	9/12
5.5	0.5	9/18
5.5	0.5	9/19
4.9	0.5	10/05
5.1	0.5	10/29
5.2	0.5	11/05
5.3	0.5	11/05
4.9	0.5	11/07
5.0	0.5	11/26
5.1	0.5	12/21
5.2	0.5	12/21

CV = 6.0 + 0.6 ug/filter

Result	Uncer	Date
5.9	0.5	5/24
6.3	0.6	6/06

Be (cont)

CV = 7.0 + 0.7 ug/filter

Result	Uncer	Date
7.5	0.8	1/25
7.6	1.0	1/25
7.4	0.8	1/25
6.9	0.7	2/07
7.0	0.7	2/07
7.5	0.5	2/15
7.2	1.0	2/27
7.0	0.6	3/06
6.9	0.7	3/28
6.9	0.4	4/04
6.9	0.7	6/08
6.8	0.7	6/20
7.2	0.7	6/20
7.2	0.1	7/27
7.4	0.7	8/10
7.4	0.7	8/10
7.0	0.7	8/27
7.6	0.8	8/28
7.2	0.1	8/29
6.5	0.7	9/12
7.0	0.7	10/05
7.6	0.8	10/17
7.0	0.7	10/29
7.3	0.7	11/14
7.3	0.7	11/14
7.2	0.7	11/26
7.2	0.7	11/29
6.2	0.6	12/12
6.2	0.6	12/21

CV = 8.0 + 0.8 ug/filter

Result	Uncer	Date
7.7	0.4	5/07
7.9	0.6	5/24

CV = 9.0 + 0.9 ug/filter

Result	Uncer	Date
9.6	1.0	1/25
9.3	1.0	1/25
9.7	1.0	1/25
9.6	1.0	2/07
9.6	1.0	2/07
9.2	1.0	2/14
8.7	0.1	2/22
9.3	0.5	3/02
8.9	0.4	3/02
8.9	0.4	3/05
8.9	0.2	3/15
8.8	0.4	3/22
8.8	0.4	3/22
9.1	0.4	4/09
8.9	0.9	5/29
8.9	0.9	6/13
8.9	1.0	7/03
8.8	0.9	7/23
10.1	0.1	7/31
9.4	0.1	8/16
9.3	0.1	8/29
10	1.0	9/06
9.1	1.0	9/12
9.8	1.0	10/17
9.4	1.0	11/05
9.3	0.9	11/14
9.3	0.9	11/14
9.1	0.9	12/12
9.0	0.9	12/12
9.1	0.9	12/21

TABLE C-V (cont)

****

HSE-9 Trace Elements
on Filter Media
(cont)

****

Be (cont)

CV = 10 + 1 ug/filter

Result	Uncer	Date
10.8	0.1	1/04
10.8	1.0	1/25
10.8	1.0	1/25
10.7	1.0	1/25
10	1	1/31
11	1	2/07
10.2	0.7	2/15
9.9	1.0	2/28
10.8	0.3	3/01
10	0.2	3/14
13	1	4/09
9.8	1.0	4/18
9.7	0.5	4/23
8.3	0.8	6/06
9.9	1.0	6/13
9.6	1.0	6/26
9.5	0.9	6/27
9.6	1.0	7/17
9.9	1.0	7/23
10.4	0.1	7/31
11	1	8/08
4.4	0.4	8/10
10	1	8/24
10	1	9/07
11	1	9/07
10	1	9/12
11.1	1.0	9/18
10	1	9/25
10	1	10/02
10	1	10/12
10	1	10/17
10	1	11/02
10	1	11/14
10	1	11/26
11	1	11/29
10	1	12/21

Low result on 8/10 due to Be remaining in undigested filter

CV = 15 + 2 ug/filter

Result	Uncer	Date
3.9	0.4	8/10

Low result on 8/10 due to Be remaining in undigested filter

CV = 18 + 2 ug/filter

Result	Uncer	Date
12.3	1.1	3/12

CV = 19 + 2 ug/filter

Result	Uncer	Date
16.3	0.1	3/13
13.9	0.2	3/13

CV = 20 + 2 ug/filter

Result	Uncer	Date
17	2	3/12

Be (cont)

CV = 22 + 2 ug/filter

Result	Uncer	Date
17	3	3/12
17.3	1.4	3/12

CV = 100 + 10 ug/filter

Result	Uncer	Date
85	9	9/07
90	9	9/07

CV = 180 + 18 ug/filter

Result	Uncer	Date
160	20	9/07
170	20	9/07

Be 90GAU 02 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
0.017	0.051	5/29
< 0.001		5/29
< 0.001		5/29

Bi 90GAU 03 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
< 0.001		5/29
< 0.001		5/29
0.0012	0.0036	5/29

Br 90GAU 03 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
0.0028	0.0084	5/29
0.0028	0.0084	5/29
0.0031	0.0093	5/29

Ca 90GAU 02 ICPES

CV = none available ug/filter

Result	Uncer	Date
30	10	6/08

Not spiked - suspect Ca contam. due to filter contribution.

CV = 8.0 + 0.8 ug/filter

Result	Uncer	Date
13	3	5/10

CV = 10 + 1 ug/filter

Result	Uncer	Date
10	10	6/08

Ca (cont)

CV = 13.0 + 1.3 ug/filter

Result	Uncer	Date
17	10	6/08

CV = 15.0 + 1.5 ug/filter

Result	Uncer	Date
14	3	5/10

CV = 100 + 10 ug/filter

Result	Uncer	Date
120	20	6/08

CV = 500 + 50 ug/filter

Result	Uncer	Date
490	100	6/08

Cd 86GAU 02 FAA

CV = 5.0 + 0.2 ug/filter

Result	Uncer	Date
5.6	0.6	2/14
4.8	0.5	7/16
5.0	0.5	10/24

CV = 9.9 + 0.5 ug/filter

Result	Uncer	Date
9.9	1	1/25

CV = 10 + 1 ug/filter

Result	Uncer	Date
10	1	1/25
10	1	2/14
11	1	4/25
10.8	1.0	4/25

CV = 12.6 + 0.6 ug/filter

Result	Uncer	Date
13	1	4/25

CV = 13 + 1 ug/filter

Result	Uncer	Date
13	1	4/25

CV = 15 + 2 ug/filter

Result	Uncer	Date
15	2	1/25
20	2	7/16
15	2	10/24

CV = 19.1 + 0.1 ug/filter

Result	Uncer	Date
19	2	7/16

Cd (cont)

CV = 20 + 2 ug/filter

Result	Uncer	Date
20	2	10/24
21.2	2	11/28

CV = 22 + 2 ug/filter

Result	Uncer	Date
22	2	1/25

CV = 23 + 2 ug/filter

Result	Uncer	Date
23	3	10/24

CV = 25 + 2.5 ug/filter

Result	Uncer	Date
25	3	7/16

Cd 90GAU 02 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
0.0024	0.0072	5/29
0.0026	0.0078	5/29
0.0026	0.0078	5/29

Ce 90GAU 03 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
< 0.001		5/29
< 0.001		5/29
< 0.001		5/29
< 0.001		5/30

Co 90GAU 02 MSCAN

CV = 0.40 + 0.04 ug/filter

Result	Uncer	Date
0.27	0.82	5/29
0.27	0.82	5/29

CV = 0.70 + 0.07 ug/filter

Result	Uncer	Date
0.48	1.43	5/29
0.48	1.43	5/29

Cr 90GAU 02 FAA

CV = 5.0 + 0.5 ug/filter

Result	Uncer	Date
4.9	0.5	5/21

Cr (cont)

CV = 10 + 1 ug/filter

Result	Uncer	Date
10	1	9/07
10.7	1	9/07

CV = 11 + 1 ug/filter

Result	Uncer	Date
11	1	8/24

CV = 12 + 1 ug/filter

Result	Uncer	Date
12	1	10/24

CV = 13 + 1 ug/filter

Result	Uncer	Date
3.6	0.4	3/12
15	2	5/21

CV = 15 + 2 ug/filter

Result	Uncer	Date
18	2	8/28
17	2	9/07
18	2	9/07

CV = 17 + 2 ug/filter

Result	Uncer	Date
13	1	4/23
16	2	4/23

CV = 20 + 2 ug/filter

Result	Uncer	Date
3.4	0.4	3/09

CV = 35 + 4 ug/filter

Result	Uncer	Date
39	4	9/07
37	4	9/07

CV = 43 + 4 ug/filter

Result	Uncer	Date
47	5	10/24

CV = 50 + 5 ug/filter

Result	Uncer	Date
48	5	10/24

CV = 65 + 6 ug/filter

Result	Uncer	Date
69	7	9/07
73	7	9/07

Cr (cont)

CV = 90 + 9 ug/filter

Result	Uncer	Date
93	9	9/07
110	10	9/07

CV = 120 + 10 ug/filter

Result	Uncer	Date
110	10	10/24

Cr 90GAU 02 ICPMS

CV = 3.9 + 0.4 ug/filter

Result	Uncer	Date
4.7	0.5	2/20
4.5	0.5	2/22

CV = 4.2 + 0.4 ug/filter

Result	Uncer	Date
5.1	0.5	2/20
4.8	0.5	2/20
5.0	0.5	2/20
4.6	0.5	2/22

Cr 90GAU 02 MSCAN

CV = 0.40 + 0.04 ug/filter

Result	Uncer	Date
0.37	1.12	5/29
0.37	1.12	5/29

CV = 0.70 + 0.07 ug/filter

Result	Uncer	Date
0.64	1.92	5/29
0.64	1.92	5/29

Cs 90GAU 02 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
< 0.001		5/29
< 0.001		5/29
< 0.001		5/29

Cu 90GAU 02 FAA

CV = 5.0 + 0.5 ug/filter

Result	Uncer	Date
5.9	0.6	6/19
6.4	0.6	9/07
6.0	0.6	9/07

CV = 9.0 + 0.9 ug/filter

Result	Uncer	Date
11	1	6/19
11	1	7/02

TABLE C-V (cont)

****

HSE-9 Trace Elements
on Filter Media
(cont)

****

Cu (cont)

CV = 20 + 2 ug/filter

Result	Uncer	Date
22	2	9/07
23	2	9/07

CV = 140 + 14 ug/filter

Result	Uncer	Date
140	10	9/07
140	10	9/07

CV = 180 + 18 ug/filter

Result	Uncer	Date
180	20	9/07
170	20	9/07

Cu 90GAU 02 ICPMS

CV = 3.2 + 0.3 ug/filter

Result	Uncer	Date
6.1	0.6	2/22

CV = 5.0 + 0.5 ug/filter

Result	Uncer	Date
4.5	0.5	2/20
4.4	0.4	2/22

Cu 90GAU 03 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
0.28	0.85	5/29
0.37	1.12	5/29
0.28	0.85	5/29

Dy 90GAU 02 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
< 0.001		5/29
< 0.001		5/29
< 0.001		5/29

Er 90GAU 03 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
< 0.001		5/29
< 0.001		5/29
< 0.001		5/29

Eu 90GAU 02 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
< 0.001		5/29
< 0.001		5/29
< 0.001		5/29

Fe 90GAU 02 ETVAA

CV = 2.5 + 0.2 ug/filter

Result	Uncer	Date
11	1	2/23

Fe 90GAU FAA

CV = 5.0 + 0.5 ug/filter

Result	Uncer	Date
6.4	0.6	5/09
6.1	0.6	9/07
8.0	0.8	9/07

CV = 6.0 + 0.6 ug/filter

Result	Uncer	Date
6.8	1	2/06

CV = 7.0 + 0.7 ug/filter

Result	Uncer	Date
8.9	0.9	5/09
9.0	1.0	6/19

CV = 9.0 + 0.9 ug/filter

Result	Uncer	Date
9	1	2/06

CV = 10 + 1 ug/filter

Result	Uncer	Date
14	2	3/19

CV = 15 + 2 ug/filter

Result	Uncer	Date
15.6	0.2	3/19
16	2	3/23
17	2	3/23
14	1	9/07
24	2	9/07

CV = 17 + 2 ug/filter

Result	Uncer	Date
19	2	6/19

CV = 20 + 2 ug/filter

Result	Uncer	Date
12	1	3/09

Fe (cont)

CV = 25 + 2 ug/filter

Result	Uncer	Date
12	1	3/12

CV = 100 + 10 ug/filter

Result	Uncer	Date
120	10	9/07
110	10	9/07

CV = 150 + 15 ug/filter

Result	Uncer	Date
170	20	9/07
170	20	9/07

Fe 90GAU 02 ICPES

CV = 5.0 + 0.5 ug/filter

Result	Uncer	Date
5.6	1.1	5/10

CV = 13 + 1 ug/filter

Result	Uncer	Date
13	3	5/10

Ga 90GAU 03 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
0.0012	0.0036	5/29
0.0019	0.0057	5/29
0.0012	0.0036	5/29

Gd 90GAU 03 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
< 0.001		5/29
< 0.001		5/29

Ge 90GAU 03 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
< 0.001		5/29
< 0.001		5/29
< 0.001		5/29

Hf 90GAU 03 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
< 0.001		5/29
< 0.001		5/29
< 0.001		5/29

Hg 90GAU 02 CVAA

CV = 50 + 5 ng/tube

Result	Uncer	Date
< 10		3/23

CV = 200 + 20 ng/tube

Result	Uncer	Date
80	10	3/23
100	10	3/23

Inappropriate sampling media;
Hg could not be extracted
from traps.

Hg 90GAU 02 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
< 0.001		5/29
< 0.001		5/29
< 0.001		5/29

Ho 90GAU 03 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
< 0.001		5/29
< 0.001		5/29
< 0.001		5/29
< 0.001		5/30

I 90GAU 03 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
0.0023	0.0069	5/29
0.0023	0.0069	5/29
0.0040	0.0120	5/29

In 90GAU 03 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
< 0.001		5/29
< 0.001		5/29
< 0.001		5/29

Ir 90GAU 02 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
< 0.001		5/29
< 0.001		5/29
< 0.001		5/29

La 90GAU 03 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
< 0.001		5/29
< 0.001		5/29
< 0.001		5/29

Li 90GAU 03 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
0.44	1.33	5/29
0.54	1.61	5/29
0.44	1.33	5/29

Lu 90GAU 03 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
< 0.001		5/29
< 0.001		5/29
< 0.001		5/29

Mn 90GAU 02 FAA

CV = 5.0 + 0.5 ug/filter

Result	Uncer	Date
4.8	0.5	3/22

CV = 6.5 + 0.6 ug/filter

Result	Uncer	Date
5.8	0.5	3/16

CV = 9.5 + 1.0 ug/filter

Result	Uncer	Date
8.8	1	3/16

CV = 9.6 + 1.0 ug/filter

Result	Uncer	Date
10	2	3/22

CV = 17 + 2 ug/filter

Result	Uncer	Date
17	2	3/12

CV = 20 + 2 ug/filter

Result	Uncer	Date
20	2	3/09

Mn 90GAU 02 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
0.16	0.47	5/29
0.13	0.38	5/29
0.13	0.38	5/29

Mo 90GAU 02 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
0.012	0.036	5/29
0.0013	0.0039	5/29
0.0013	0.0039	5/29

Na 90GAU 02 IC

CV = 440 + 40 ug/filter

Result	Uncer	Date
480	50	10/25

Na 90GAU 02 ICPES

CV = 0.15 + 0.02 mg/filter

Result	Uncer	Date
0.15	0.03	4/10

CV = 2.0 + 0.2 mg/filter

Result	Uncer	Date
2.1	0.2	4/10

Nb 90GAU 03 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
< 0.001		5/29
< 0.001		5/29
< 0.001		5/29

Nd 90GAU 02 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
< 0.001		5/29
< 0.001		5/29
< 0.001		5/29

Ni 90GAU 02 FAA

CV = 5.0 + 0.5 ug/filter

Result	Uncer	Date
5.6	0.5	5/21

TABLE C-V (cont)

****

HSE-9 Trace Elements
on Filter Media
(cont)

****

Ni (cont)

CV = 6.5 + 0.7 ug/filter

Result	Uncer	Date
6.1	1.8	4/20
7.0	0.7	5/09

CV = 9.0 + 0.9 ug/filter

Result	Uncer	Date
12	1	5/09
9.7	1	6/19

CV = 17 + 2 ug/filter

Result	Uncer	Date
17	2	4/20
20	2	6/19

CV = 20 + 2 ug/filter

Result	Uncer	Date
19	2	3/09
24	3	5/21

CV = 32 + 3 ug/filter

Result	Uncer	Date
28	3	3/12

Ni 90GAU 02 ICPMS

CV = 0.40 + 0.04 ug/filter

Result	Uncer	Date
0.42	0.08	9/12

CV = 0.90 + 0.09 ug/filter

Result	Uncer	Date
0.93	0.09	9/11
0.96	0.10	9/11
0.93	0.09	9/12

Ni 90GAU 03 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
0.0037	0.011	5/29
0.012	0.036	5/29
0.0037	0.011	5/29

Pb 90GAU 02 ETVAA

CV = 10 + 1 ug/filter

Result	Uncer	Date
9.9	1.0	6/19

Pb 90GAU 02 FAA

CV = 5.0 + 0.5 ug/filter

Result	Uncer	Date
5.0	0.5	8/20
5.1	0.5	9/20
7.2	0.7	9/26
5.0	0.5	12/11
5.0	0.5	12/11

CV = 7.0 + 0.7 ug/filter

Result	Uncer	Date
7.5	0.8	8/09
7.2	0.1	9/13
7.6	0.8	9/26
7.2	0.7	11/28
7.0	0.7	12/11

CV = 10 + 1 ug/filter

Result	Uncer	Date
9.3	0.2	1/18
10.3	0.3	1/24
10.3	0.3	1/24
10.3	0.3	1/24
10.6	1	1/31
9.8	1	2/21
10	1	2/21
6.6	1.8	3/01
9.7	0.4	3/01
6.8	1	3/15
8.5	1	3/27
14	1	4/04
10	1	5/21
9.3	0.5	5/25
8.9	0.5	5/25
11	1	6/19
9.9	1	7/02
10	1	8/02
10	1	8/10
11	1	8/24
11	1	10/30
9.8	1	11/28

CV = 11 + 1 ug/filter

Result	Uncer	Date
11	2	8/09
10.9	1	9/13
11	1	9/20

CV = 12 + 1 ug/filter

Result	Uncer	Date
12	1	4/18
12	1	4/20

CV = 13 + 1 ug/filter

Result	Uncer	Date
12.1	0.2	1/17
12.1	0.2	1/17
12.1	0.2	1/17
13.5	1	1/25
13	1	2/14
14	1	2/14
14	2	3/01
13.9	0.3	3/01
16	2	4/10
12.7	1	5/11

Pb (cont)

13	1	6/19
12	1	7/11
12	2	7/17
13	1	10/29

CV = 14 + 1 ug/filter

Result	Uncer	Date
14	2	8/20
19	2	9/26
14	1	10/29
14	2	12/11
15	2	12/21
14	1	12/21

CV = 15 + 2 ug/filter

Result	Uncer	Date
15	2	1/25
15	2	7/16

CV = 15.5 + 1.2 ug/filter

Result	Uncer	Date
16	2	1/25

CV = 16 + 2 ug/filter

Result	Uncer	Date
15.7	0.3	1/17
15.7	0.3	1/17
15.7	0.3	1/17
18	2	1/25
17	2	1/31
18.1	1	2/21
18.1	1	2/21
18.8	1	2/21
13	2	3/27
22	2	4/04
16	2	4/27

CV = 18 + 2 ug/filter

Result	Uncer	Date
19	2	4/18

CV = 19 + 2 ug/filter

Result	Uncer	Date
19.7	0.3	1/24
20.1	0.4	1/24
21	2	2/14
20	2	2/21
20	2	2/21
18.7	0.6	3/06
15	1	3/15
21.9	2	4/23
20	2	4/24
17	2	5/11
19	2	5/25
20	2	8/10
24	2	9/26

CV = 20 + 2 ug/filter

Result	Uncer	Date
16	2	8/28

Pb (cont)

CV = 22 + 2 ug/filter

Result	Uncer	Date
21.3	0.3	1/18
21.6	2	1/31
26	3	2/14
24	2	2/14
23.9	0.4	3/01
22.4	0.6	3/06
18	1	3/15
22.9	2	4/18
22.9	2	4/23
14	2	4/24
21	2	6/19
21	2	7/11
22	3	8/02
22	2	10/30
23	2	11/28

CV = 25 + 3 ug/filter

Result	Uncer	Date
26	0.4	1/24
26	0.4	1/24
26	0.4	1/24
24	3	1/31
23	2	2/14
29.2	2	2/21
29.4	2	2/21
23	0.3	3/01
23	2	3/02
19	2	3/15
26.2	1.9	4/10
24.6	2	4/25
23	3	4/27
21.4	2	5/21
24.3	2	5/25
22	2	7/17
25	3	10/29

CV = 32 + 3 ug/filter

Result	Uncer	Date
31	3	10/24

CV = 44.2 + 1.8 ug/filter

Result	Uncer	Date
44.6	4	4/25

CV = 45 + 4 ug/filter

Result	Uncer	Date
45.4	4	1/25
44	4	4/25

CV = 52 + 5 ug/filter

Result	Uncer	Date
55	6	10/24

CV = 60 + 6 ug/filter

Result	Uncer	Date
58	6	7/16

CV = 65 + 6 ug/filter

Result	Uncer	Date
63.2	6	4/25

Pb (cont)

CV = 69.5 + 3.0 ug/filter

Result	Uncer	Date
67	7	7/16

CV = 80 + 8 ug/filter

Result	Uncer	Date
79	8	1/25
82	8	10/24

CV = 95 + 10 ug/filter

Result	Uncer	Date
98	10	10/24

CV = 100 + 10 ug/filter

Result	Uncer	Date
97	10	7/16

Pb 90GAU 02 ICPMS

CV = 3.8 + 0.4 ug/filter

Result	Uncer	Date
4.1	0.4	2/20
4.2	0.4	2/20
4.1	0.4	2/20
4.0	0.4	2/20
3.8	0.4	2/22
4.1	0.4	2/22

Pb 90GAU 02 MSCAN

CV = 0.40 + 0.04 ug/filter

Result	Uncer	Date
0.52	1.56	5/29
0.52	1.56	5/29

CV = 0.70 + 0.07 ug/filter

Result	Uncer	Date
1.1	3.4	5/29
1.1	3.4	5/29

Pd 90GAU 02 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
< 0.001		5/29
< 0.001		5/29
< 0.001		5/29

Pr 90GAU 02 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
< 0.001		5/29
< 0.001		5/29
< 0.001		5/29

Pt 90GAU 03 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
0.0094	0.028	5/29
0.0094	0.028	5/29
0.021	0.063	5/29

Rb 90GAU 02 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
0.0015	0.0045	5/29
0.0015	0.0045	5/29
0.0015	0.0045	5/29

Re 90GAU 03 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
< 0.001		5/29
< 0.001		5/29
< 0.001		5/30

Rh 90GAU 03 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
< 0.001		5/29
< 0.001		5/29
< 0.001		5/29

Ru 90GAU 03 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
< 0.001		5/29
< 0.001		5/29
< 0.001		5/29

Sb 90GAU 03 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
0.0014	0.0042	5/29
0.0019	0.0057	5/29
0.0014	0.0042	5/29

Se 90GAU 03 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
0.0035	0.011	5/29
0.016	0.048	5/29
0.0035	0.011	5/29
0.016	0.048	5/30

TABLE C-V (cont)

****

HSE-9 Trace Elements
on Filter Media
(cont)

****

Sm 90GAU 02 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
< 0.001		5/29
< 0.001		5/29
< 0.001		5/29

Sn 90GAU 02 ETVAA

CV = 15 + 2 ug/filter

Result	Uncer	Date
3.9	0.4	6/19

CV = 20 + 2 ug/filter

Result	Uncer	Date
4.7	0.5	6/19

Sn 90GAU 02 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
0.059	0.177	5/29
0.083	0.249	5/29
0.083	0.249	5/29

Sr 90GAU 03 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
0.0037	0.011	5/29
0.0037	0.011	5/29
0.0061	0.018	5/29

Ta 90GAU 02 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
< 0.001		5/29
< 0.001		5/29
< 0.001		5/29

Tb 90GAU 03 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
< 0.001		5/29
< 0.001		5/29
< 0.001		5/29
< 0.001		5/29

Te 90GAU 03 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
< 0.001		5/29
< 0.001		5/29
< 0.001		5/29
< 0.001		5/29

Th 90GAU 03 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
< 0.001		5/29
< 0.001		5/29
0.0010	0.0036	5/29

Ti 90GAU 02 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
0.034	0.102	5/29
0.023	0.069	5/29
0.023	0.069	5/29

Tl 90GAU 02 ETVAA

CV = 12 + 1 ng/filter

Result	Uncer	Date
14	10	5/29
11	2	6/19
0		7/10
0		7/10
23	10	10/12
66	13	10/17
16	10	10/18

CV = 23 + 2 ng/filter

Result	Uncer	Date
27	10	5/29
77	8	6/19
18	10	10/24

CV = 25 + 3 ng/filter

Result	Uncer	Date
32	10	7/13
16	10	7/23
25	5	9/18
< 10		10/12
33	7	10/18

CV = 35 + 4 ng/filter

Result	Uncer	Date
28	6	7/10
22	10	12/11

Tl (cont)

CV = 37 + 4 ng/filter

Result	Uncer	Date
33	25	7/10
42	8	9/18
43	9	11/15

CV = 40 + 4 ng/filter

Result	Uncer	Date
22	4	9/18
41	8	11/15

CV = 42 + 4 ng/filter

Result	Uncer	Date
35	7	7/23
54	10	9/18
40	8	12/11

CV = 49 + 5 ng/filter

Result	Uncer	Date
40	25	7/10
49	10	7/13
45	9	7/13
17	10	10/24
18	10	10/24
40	10	11/02
41	10	11/02

CV = 150 + 20 ng/filter

Result	Uncer	Date
80	30	6/22

CV = 200 + 20 ng/filter

Result	Uncer	Date
200	40	7/13
150	30	7/13

CV = 250 + 20 ng/filter

Result	Uncer	Date
210	40	5/16

CV = 400 + 40 ng/filter

Result	Uncer	Date
410	80	7/13
390	80	10/18

CV = 450 + 40 ng/filter

Result	Uncer	Date
300	100	1/24
390	80	5/16
410	80	5/16

CV = 540 + 50 ng/filter

Result	Uncer	Date
340	60	7/20

Tl (cont)

CV = 3.0 + 0.3 ug/filter

Result	Uncer	Date
2.9	0.6	7/10

Tl 90GAU 02 FAA

CV = 23 + 2 ng/filter

Result	Uncer	Date
29	6	7/09
31	6	7/09
33	7	7/09

CV = 25 + 3 ng/filter

Result	Uncer	Date
30	3	10/17

CV = 40 + 4 ng/filter

Result	Uncer	Date
44	9	7/09

CV = 200 + 20 ng/filter

Result	Uncer	Date
70	10	9/07
< 10		9/07

CV = 230 + 20 ng/filter

Result	Uncer	Date
< 100		2/05

CV = 350 + 40 ng/filter

Result	Uncer	Date
77	30	6/08

CV = 0.52 + 0.05 ug/filter

Result	Uncer	Date
0.2	0.1	2/05

CV = 0.60 + 0.06 ug/filter

Result	Uncer	Date
0.23	0.02	9/12
0.23	0.02	9/12

CV = 1.0 + 0.1 ug/filter

Result	Uncer	Date
0.4	0.1	2/05

CV = 80 + 8 ug/filter

Result	Uncer	Date
85	9	9/12
87	9	9/12

Tl (cont)

CV = 100 + 10 ug/filter

Result	Uncer	Date
100	10	9/12
100	10	9/12

Tl 90GAU 02 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
0.0042	0.0130	5/29
0.0011	0.0033	5/29
0.0011	0.0033	5/29

Tm 90GAU 03 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
< 0.001		5/29
< 0.001		5/29
< 0.001		5/29

U 90GAU 03 DNA

CV = 250 + 20 ng/filter

Result	Uncer	Date
270	30	8/30
280	30	8/30
270	30	8/30
270	30	8/30
280	30	8/30
270	30	8/30

CV = 400 + 40 ng/filter

Result	Uncer	Date
352	17	5/22
369	17	5/22
387	17	5/22
460	50	8/30
460	50	8/30
480	50	8/30

CV = 700 + 70 ng/filter

Result	Uncer	Date
740	70	8/30
730	70	8/30

CV = 900 + 90 ng/filter

Result	Uncer	Date
827	35	5/22
992	35	5/22
810	35	5/22
960	100	8/30
990	100	8/30
990	100	8/30

U (cont)

CV = 1000 + 100 ng/filter

Result	Uncer	Date
1000	100	8/30
1000	100	8/30
960	100	8/30
960	100	8/30
1000	100	8/30
1000	100	8/30

CV = 1300 + 100 ng/filter

Result	Uncer	Date
1300	100	8/30

U 90GAU 03 ICPMS

CV = 0.74 + 0.07 ug/filter

Result	Uncer	Date
0.72	0.07	12/19

CV = 4.4 + 0.4 ug/filter

Result	Uncer	Date
4.7	0.5	2/20
5.0	0.5	2/22
4.9	0.5	2/22
5.3	0.5	2/22

CV = 4.9 + 0.5 ug/filter

Result	Uncer	Date
3.8	0.4	2/20
3.9	0.4	2/20
4.5	0.5	2/22

U 90GAU 03 MSCAN

CV = 0.40 + 0.04 ug/filter

Result	Uncer	Date
< 0.001		5/29
< 0.001		5/29

CV = 0.70 + 0.07 ug/filter

Result	Uncer	Date
< 0.001		5/30

V 90GAU 03 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
< 0.001		5/29
< 0.001		5/29

TABLE C-V (cont)

****

HSE-9 Trace Elements
on Filter Media
(cont)

****

W 90GAU 02 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
0.0081	0.024	5/29
0.0052	0.016	5/29
0.0052	0.016	5/29

Y 90GAU 03 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
< 0.001		5/29
< 0.001		5/29
< 0.001		5/29

Yb 90GAU 03 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
< 0.001		5/29
< 0.001		5/29
< 0.001		5/29

Zn 90GAU 02 FAA

CV = 50 + 5 ug/filter

Result	Uncer	Date
50	5	7/25
25	3	9/10
54	5	9/10

CV = 60 + 6 ug/filter

Result	Uncer	Date
62	6	9/10
66	7	9/10

CV = 90 + 9 ug/filter

Result	Uncer	Date
86	9	7/25

CV = 100 + 10 ug/filter

Result	Uncer	Date
100	10	4/25
120	10	4/25
100	10	9/10
93	9	9/10

CV = 130 + 10 ug/fflter

Result	Uncer	Date
130	10	4/25
120	10	7/25

Zn (cont)

CV = 150 + 20 ug/filter

Result	Uncer	Date
139	10	1/25
160	20	9/10
150	20	9/10

CV = 182 + 8 ug/filter

Result	Uncer	Date
180	20	1/25

CV = 188 + 10 ug/filter

Result	Uncer	Date
170	20	7/25

CV = 200 + 20 ug/filter

Result	Uncer	Date
210	20	9/10
200	20	9/10

CV = 211 + 10 ug/filter

Result	Uncer	Date
213	20	4/25

CV = 250 + 20 ug/filter

Result	Uncer	Date
260	30	1/25

CV = 300 + 30 ug/filter

Result	Uncer	Date
310	30	1/25

Zn 90GAU 02 MSCAN

CV = 0.40 + 0.04 ug/filter

Result	Uncer	Date
0.42	1.25	5/29
0.42	1.25	5/29

CV = 0.70 + 0.07 ug/filter

Result	Uncer	Date
0.72	2.16	5/29

Zr 90GAU 02 MSCAN

CV = not spiked ug/filter

Result	Uncer	Date
0.0053	0.016	5/29
0.0064	0.019	5/29
0.0064	0.019	5/29

****

HSE-9 pH, TDS, Conductivity
in Water

****

Conductivity 84ADA 01 CB

CV = 300 + 30 umhos/cm

Result	Uncer	Date
298	15	1/08
287	14	1/29
292	15	2/26
287	14	4/02
286	14	4/04
286	14	4/04
300	15	4/17
300	15	4/17
300	15	4/17
272	14	4/17
287	14	4/19
271	13	4/25
271	13	4/25
271	13	4/25
283	14	4/30
282	14	5/01
282	14	5/01
284	14	5/01
288	14	5/11
288	14	5/11
271	13	5/11
288	14	5/11
271	13	5/11
284	14	5/24
268	13	5/30
274	14	6/08
281	14	6/28
280	14	7/02
274	14	7/19
271	14	7/25
271	14	7/25
271	14	7/25
277	14	7/27
270	13	7/30
278	14	8/29
273	14	9/04
258	13	9/24
258	13	9/24
283	14	10/01
262	13	10/05
283	14	10/24
289	14	10/29
272	14	11/19
299	15	12/03
299	15	12/19

pH 84ADA 01 GE

CV = 6.87 + 0.06 units

Result	Uncer	Date
6.81	0.1	1/04
6.93	0.1	1/04
6.86	0.1	1/08
6.81	0.1	1/08
6.83	0.1	1/08
6.93	0.1	1/09
6.96	0.1	1/10
6.90	0.1	1/11
6.90	0.1	1/12
6.91	0.1	1/16
6.85	0.1	1/17
6.85	0.1	1/18
6.92	0.1	1/19
6.93	0.1	1/23

pH (cont)

6.91	0.1	1/23
6.93	0.1	1/24
6.85	0.1	1/25
6.92	0.1	1/26
6.83	0.1	1/29
6.84	0.1	1/30
6.93	0.1	1/31
6.96	0.1	2/02
6.93	0.1	2/05
6.91	0.1	2/06
6.89	0.1	2/07
6.92	0.1	2/08
6.90	0.1	2/09
6.87	0.1	2/12
6.91	0.1	2/13
6.96	0.1	2/14
6.94	0.1	2/15
6.91	0.1	2/16
6.86	0.1	2/21
6.95	0.1	2/21
6.95	0.1	2/22
6.85	0.1	2/23
6.93	0.1	2/26
6.96	0.1	2/27
6.97	0.1	2/28
6.90	0.1	3/01
6.97	0.1	3/02
6.94	0.1	3/05
6.95	0.1	3/06
6.98	0.1	3/07
6.88	0.1	3/08
6.95	0.1	3/09
6.96	0.1	3/12
6.95	0.1	3/13
6.92	0.1	3/14
6.95	0.1	3/15
6.90	0.1	3/16
6.94	0.1	3/19
6.90	0.1	3/20
6.91	0.1	3/21
6.92	0.1	3/22
6.91	0.1	3/23
6.94	0.1	3/26
6.93	0.1	3/27
6.96	0.1	3/28
6.94	0.1	3/29
6.94	0.1	3/30
6.89	0.1	4/02
6.87	0.1	4/03
6.83	0.1	4/04
6.80	0.1	4/04
6.80	0.1	4/04
6.84	0.1	4/05
6.94	0.1	4/06
6.81	0.1	4/09
6.85	0.1	4/10
6.82	0.1	4/11
6.92	0.1	4/12
6.92	0.1	4/12
6.91	0.1	4/13
6.85	0.1	4/16
6.93	0.1	4/17
6.91	0.1	4/17
6.91	0.1	4/17
6.91	0.1	4/17
6.93	0.1	4/17
6.85	0.1	4/17
6.88	0.1	4/18
6.92	0.1	4/19
6.83	0.1	4/19
6.87	0.1	4/23
6.93	0.1	4/23
6.89	0.1	4/24
6.79	0.1	4/25
6.93	0.1	4/25
6.93	0.1	4/25
6.93	0.1	4/25
6.91	0.1	4/30

pH (cont)

6.92	0.1	4/30
6.86	0.1	4/30
6.92	0.1	5/01
6.83	0.1	5/01
6.92	0.1	5/01
6.94	0.1	5/02
6.95	0.1	5/03
6.91	0.1	5/04
6.90	0.1	5/07
6.94	0.1	5/08
6.96	0.1	5/09
6.94	0.1	5/10
6.89	0.1	5/11
6.94	0.1	5/11
6.90	0.1	5/11
6.94	0.1	5/11
6.90	0.1	5/11
6.90	0.1	5/11
6.92	0.1	5/14
6.94	0.1	5/15
6.90	0.1	5/16
6.87	0.1	5/17
6.82	0.1	5/18
6.92	0.1	5/18
6.92	0.1	5/21
6.87	0.1	5/22
6.85	0.1	5/23
6.94	0.1	5/23
6.84	0.1	5/24
6.99	0.1	5/24
6.80	0.1	5/25
6.92	0.1	5/30
6.95	0.1	5/30
6.92	0.1	5/31
6.90	0.1	6/01
6.87	0.1	6/04
6.93	0.1	6/06
6.90	0.1	6/06
6.93	0.1	6/08
6.88	0.1	6/08
6.86	0.1	6/08
6.95	0.1	6/11
6.95	0.1	6/12
6.85	0.1	6/13
6.89	0.1	6/14
6.91	0.1	6/15
6.94	0.1	6/18
6.92	0.1	6/19
6.81	0.1	6/20
6.91	0.1	6/21
6.89	0.1	6/22
6.94	0.1	6/25
6.89	0.1	6/26
6.90	0.1	6/27
6.81	0.1	6/28
6.89	0.1	6/29
6.94	0.1	7/02
6.93	0.1	7/03
6.93	0.1	7/05
6.92	0.1	7/06
6.95	0.1	7/09
6.88	0.1	7/10
6.85	0.1	7/11
6.82	0.1	7/12
6.81	0.1	7/13
6.91	0.1	7/16
6.82	0.1	7/17
6.93	0.1	7/18
6.94	0.1	7/19
6.90	0.1	7/20
6.93	0.1	7/23
6.87	0.1	7/24
6.94	0.1	7/25
6.94	0.1	7/25
6.94	0.1	7/25
6.94	0.1	7/25
6.86	0.1	7/26

pH (cont)

6.85	0.1	7/27
6.95	0.1	7/30
6.94	0.1	7/31
6.96	0.1	8/01
6.92	0.1	8/02
6.93	0.1	8/03
6.94	0.1	8/06
6.89	0.1	8/07
6.94	0.1	8/08
6.92	0.1	8/13
6.94	0.1	8/13
6.96	0.1	8/13
6.89	0.1	8/14
6.93	0.1	8/15
6.90	0.1	8/16
6.83	0.1	8/16
6.86	0.1	8/20
6.91	0.1	8/20
6.86	0.1	8/21
6.84	0.1	8/23
6.90	0.1	8/23
6.93	0.1	8/24
6.93	0.1	8/27
6.93	0.1	8/28
6.92	0.1	8/29
6.96	0.1	8/30
6.92	0.1	8/31
6.96	0.1	9/04
6.92	0.1	9/05
6.92	0.1	9/06
6.86	0.1	9/07
6.97	0.1	9/10
6.88	0.1	9/10
6.88	0.1	9/11
6.80	0.1	9/12
6.97	0.1	9/13
6.96	0.1	9/14
7.01	0.1	9/17
6.95	0.1	9/18
6.85	0.1	9/19
6.90	0.1	9/20
6.94	0.1	9/24
6.94	0.1	9/24
6.95	0.1	9/24
6.94	0.1	9/24
6.93	0.1	9/26
6.89	0.1	9/26
6.90	0.1	9/27
6.85	0.1	9/28
6.93	0.1	10/01
6.91	0.1	10/02
6.93	0.1	10/03
6.84	0.1	10/04
6.90	0.1	10/05
6.88	0.1	10/05
6.93	0.1	10/09
6.91	0.1	10/10
6.87	0.1	10/15
6.95	0.1	10/15
6.92	0.1	10/15
6.79	0.1	10/16
6.94	0.1	10/17
6.91	0.1	10/18
6.85	0.1	10/19
6.88	0.1	10/23
6.90	0.1	10/23
6.82	0.1	10/24
6.81	0.1	10/25
6.79	0.1	10/26
6.83	0.1	10/29
6.94	0.1	10/30
6.87	0.1	10/31
6.83	0.1	11/01
6.90	0.1	11/02
6.94	0.1	11/05
6.91	0.1	11/06
6.84	0.1	11/07
6.79	0.1	11/08

TABLE C-V (cont)

****

HSE-9 pH, TDS, Conductivity in Water (cont)

****

pH (cont)

6.94	0.1	11/09
6.96	0.1	11/13
6.88	0.1	11/14
6.94	0.1	11/14
6.87	0.1	11/15
6.95	0.1	11/16
6.97	0.1	11/19
6.96	0.1	11/19
6.79	0.1	11/20
7.00	0.1	11/21
6.98	0.1	11/26
6.97	0.1	11/27
6.95	0.1	11/28
6.91	0.1	11/29
6.89	0.1	11/30
6.97	0.1	12/03
6.90	0.1	12/04
6.89	0.1	12/05
6.82	0.1	12/06
6.84	0.1	12/07
6.95	0.1	12/10
6.93	0.1	12/11
6.86	0.1	12/12
6.85	0.1	12/13
6.87	0.1	12/14
6.82	0.1	12/17
6.92	0.1	12/18
6.86	0.1	12/19

Total Dissolved Solids 84ADA 01 GRAV

CV = 293 + 20 mg/L

Result	Uncer	Date
300	30	1/08
300	30	1/12
290	30	1/31
240	20	3/02
360	40	4/11
360	40	4/12
360	40	4/12
360	40	4/12
360	40	4/12
310	30	4/19
310	30	4/19
310	30	4/19
310	30	4/19
260	30	5/01
260	30	5/01
260	30	5/01
260	30	5/01
320	30	5/15
280	30	5/18
260	30	5/18
280	30	5/23
320	30	5/25
320	30	5/25
300	30	5/25
300	30	5/25
290	30	6/13
290	30	6/13
280	30	7/12
270	30	7/27
270	30	7/27
280	30	8/02
270	30	10/18
270	30	10/18

Total Dissolved Solids (cont)

280	30	11/15
280	30	11/19
280	30	11/19
250	30	12/10
220	20	12/10

****

NBS 45b Homogeneous River Sediment

****

Cs-137 78NBS 08 G

CV = 2.7 pCi/g

Result	Uncer	Date
1.9	0.3	2/06
1.6	0.3	7/25
1.6	0.3	7/26
1.6	0.3	7/26
1.7	0.3	8/17
1.5	0.2	10/26

****

NBS 97b Flint Clay

****

Ag ATNA

CV = none available ug/g

Result	Uncer	Date
< 4		7/07

Al 88NBS 02 ATNA

CV = 20.76 + 0.15 %

Result	Uncer	Date
20.2	0.5	7/07

As ATNA

CV = none available ug/g

Result	Uncer	Date
11	1	7/07

Au ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.006		7/07

Ba 88NBS 02 ATNA

CV = 180 ug/g

Result	Uncer	Date
180	40	7/07

Br ATNA

CV = none available ug/g

Result	Uncer	Date
1.7	0.5	7/07

Ca 88NBS 02 ATNA

CV = 249 + 26 ug/g

Result	Uncer	Date
< 900		7/07

Ce ATNA

CV = none available ug/g

Result	Uncer	Date
41.8	2.3	7/07

Cl ATNA

CV = none available ug/g

Result	Uncer	Date
36	6	7/07

Co 88NBS 02 ATNA

CV = 3.8 ug/g

Result	Uncer	Date
3.63	0.2	7/07

Cr 88NBS 02 ATNA

CV = 227 + 12 ug/g

Result	Uncer	Date
239	14	7/07

Cs 88NBS 02 ATNA

CV = 3.4 ug/g

Result	Uncer	Date
3.37	0.22	7/07

Cu ATNA

CV = none available ug/g

Result	Uncer	Date
< 150		7/07

Dy ATNA

CV = none available ug/g

Result	Uncer	Date
6.1	0.6	7/07

Eu 88NBS 02 ATNA

CV = 840 ng/g

Result	Uncer	Date
730	40	7/07

Fe 88NBS 02 ATNA

CV = 8310 + 80 ug/g

Result	Uncer	Date
8400	400	7/07

Ga ATNA

CV = none available ug/g

Result	Uncer	Date
67	6	7/07

Hf 88NBS 02 ATNA

CV = 13 ug/g

Result	Uncer	Date
13.4	0.7	7/07

Hg ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.8		7/07

I ATNA

CV = none available ug/g

Result	Uncer	Date
< 8		7/07

In ATNA

CV = none available ug/g

Result	Uncer	Date
0.12	0.02	7/07

K 88NBS 02 ATNA

CV = 5130 + 230 ug/g

Result	Uncer	Date
5300	400	7/07

La ATNA

CV = none available ug/g

Result	Uncer	Date
24.2	1.4	7/07

Lu ATNA

CV = none available ug/g

Result	Uncer	Date
0.71	0.04	7/07

Mg 88NBS 02 ATNA

CV = 1130 + 20 ug/g

Result	Uncer	Date
1400	200	7/07

Mn 88NBS 02 ATNA

CV = 47 + 5 ug/g

Result	Uncer	Date
49.7	2.2	7/07

Na 88NBS 02 ATNA

CV = 492 + 23 ug/g

Result	Uncer	Date
500	21	7/07

Nd ATNA

CV = none available ug/g

Result	Uncer	Date
< 25		7/07

Rb 88NBS 02 ATNA

CV = 33 ug/g

Result	Uncer	Date
31	3	7/07

Sb 88NBS 02 ATNA

CV = 2.2 ug/g

Result	Uncer	Date
2.06	0.13	7/07

Sc 88NBS 02 ATNA

CV = 22 ug/g

Result	Uncer	Date
22.9	1.2	7/07

Se ATNA

CV = none available ug/g

Result	Uncer	Date
< 5		7/07

Sm ATNA

CV = none available ug/g

Result	Uncer	Date
3.33	0.16	7/07

Sr 88NBS 02 ATNA

CV = 84 + 2 ug/g

Result	Uncer	Date
< 140		7/07

Ta ATNA

CV = none available ug/g

Result	Uncer	Date
3.47	0.21	7/07

Tb ATNA

CV = none available ug/g

Result	Uncer	Date
0.80	0.08	7/07

Th 88NBS 02 ATNA

CV = 36 ug/g

Result	Uncer	Date
36.7	1.4	7/07

Ti 88NBS 02 ATNA

CV = 1.43 + 0.04 %

Result	Uncer	Date
1.3	0.2	7/07

U ATNA

CV = none available ug/g

Result	Uncer	Date
9.5	0.3	7/07

V ATNA

CV = none available ug/g

Result	Uncer	Date
242	9	7/07

W ATNA

CV = none available ug/g

Result	Uncer	Date
4.2	0.6	7/07

TABLE C-V (cont)

****

NBS 97b Flint Clay
(cont)

****

Yb ATNA
CV = none available ug/g

Result	Uncer	Date
5.4	0.3	7/07

Zn 88NBS 02 ATNA
CV = 87 ug/g

Result	Uncer	Date
85	11	7/07

Zr 88NBS 02 ATNA
CV = 500 ug/g

Result	Uncer	Date
720	130	7/07

****

NBS 98a Plastic Clay

****

Ag ATNA
CV = none available ug/g

Result	Uncer	Date
< 5		7/07

Al 69NBS 10 ATNA
CV = 17.56 %

Result	Uncer	Date
17.1	0.5	7/07

As 87GLA 01 ATNA
CV = 11.4 ug/g

Result	Uncer	Date
10	1	7/07

Au ATNA
CV = none available ug/g

Result	Uncer	Date
< 0.01		7/07

Ba 69NBS 10 ATNA
CV = 270 ug/g

Result	Uncer	Date
80	50	7/07

Br ATNA
CV = none available ug/g

Result	Uncer	Date
< 2.3		7/07

Ca 69NBS 10 ATNA
CV = 2200 ug/g

Result	Uncer	Date
< 1700		7/07

Ce 87GLA 01 ATNA
CV = 200 ug/g

Result	Uncer	Date
221	11	7/07

Cl ATNA
CV = none available ug/g

Result	Uncer	Date
< 50		7/07

Co 87GLA 01 ATNA
CV = 13 ug/g

Result	Uncer	Date
11.7	0.6	7/07

Cr 69NBS 10 ATNA
CV = 200 ug/g

Result	Uncer	Date
258	15	7/07

Cs 87GLA 01 ATNA
CV = 6.2 ug/g

Result	Uncer	Date
5.9	0.4	7/07

Cu 87GLA 01 ATNA
CV = 121 ug/g

Result	Uncer	Date
190	50	7/07

Dy 87GLA 01 ATNA
CV = 17.5 ug/g

Result	Uncer	Date
20.1	1.6	7/07

Eu 87GLA 01 ATNA
CV = 3.35 ug/g

Result	Uncer	Date
3.26	0.16	7/07

Fe 69NBS 10 ATNA
CV = 0.937 %

Result	Uncer	Date
0.91	0.05	7/07

Ga 87GLA 01 ATNA
CV = 23.3 ug/g

Result	Uncer	Date
37	4	7/07

Hf 87GLA 01 ATNA
CV = 7.3 ug/g

Result	Uncer	Date
8.3	0.7	7/07

Hg 87GLA 01 ATNA
CV = 39 ng/g

Result	Uncer	Date
900	300	7/07

I ATNA
CV = none available ug/g

Result	Uncer	Date
< 11		7/07

In ATNA
CV = none available ug/g

Result	Uncer	Date
0.13	0.04	7/07

K 69NBS 10 ATNA
CV = 8630 ug/g

Result	Uncer	Date
9000	600	7/07

La 87GLA 01 ATNA
CV = 130 ug/g

Result	Uncer	Date
115	6	7/07

Lu 87GLA 01 ATNA
CV = 1.15 ug/g

Result	Uncer	Date
1.18	0.06	7/07

Mg 69NBS 10 ATNA
CV = 2500 ug/g

Result	Uncer	Date
2400	400	7/07

Mn 87GLA 01 ATNA
CV = 41.4 ug/g

Result	Uncer	Date
23.9	1.6	7/07

Na 69NBS 10 ATNA
CV = 610 ug/g

Result	Uncer	Date
600	30	7/07

Nd 87GLA 01 ATNA
CV = 98 ug/g

Result	Uncer	Date
130	20	7/07

Rb 87GLA 01 ATNA
CV = 35 ug/g

Result	Uncer	Date
29	5	7/07

Sb 87GLA 01 ATNA
CV = 2.4 ug/g

Result	Uncer	Date
2.48	0.14	7/07

Sc 87GLA 01 ATNA
CV = 32 ug/g

Result	Uncer	Date
33.7	1.8	7/07

Se ATNA
CV = none available ug/g

Result	Uncer	Date
19	5	7/07

Sm 87GLA 01 ATNA
CV = 12 ug/g

Result	Uncer	Date
16.8	0.8	7/07

Sr 69NBS 10 ATNA
CV = 330 ug/g

Result	Uncer	Date
370	60	7/07

Ta 87GLA 01 ATNA
CV = 2.46 ug/g

Result	Uncer	Date
1.96	0.13	7/07

Tb 87GLA 01 ATNA
CV = 2.92 ug/g

Result	Uncer	Date
2.8	0.3	7/07

Th 87GLA 01 ATNA
CV = 23.9 ug/g

Result	Uncer	Date
25.3	1	7/07

Ti 69NBS 10 ATNA
CV = 0.964 %

Result	Uncer	Date
0.95	0.12	7/07

U ATNA
CV = none available ug/g

Result	Uncer	Date
59	2	7/07

V 87GLA 01 ATNA
CV = 554 ug/g

Result	Uncer	Date
352	13	7/07

W ATNA
CV = none available ug/g

Result	Uncer	Date
2.3	0.7	7/07

Yb 87GLA 01 ATNA
CV = 9.8 ug/g

Result	Uncer	Date
9.9	0.5	7/07

Zn 87GLA 01 ATNA
CV = < 23 ug/g

Result	Uncer	Date
< 19		7/07

Zr 87GLA 01 ATNA
CV = 740 ug/g

Result	Uncer	Date
220	120	7/07

****

NBS 98b Plastic Clay

****

Ag ATNA
CV = none available ug/g

Result	Uncer	Date
< 4		7/07

Al 88NBS 03 ATNA
CV = 14.3 + 0.2 %

Result	Uncer	Date
14.5	0.4	7/07

As ATNA
CV = none available ug/g

Result	Uncer	Date
7.6	0.8	7/07

Au ATNA
CV = none available ug/g

Result	Uncer	Date
< 0.008		7/07

TABLE C-V (cont)

****

NBS 98b Plastic Clay (cont)

****

Ba 88NBS 03 ATNA
CV = 700 ug/g

Result	Uncer	Date
610	60	7/07

Br ATNA
CV = none available ug/g

Result	Uncer	Date
< 1.9		7/07

Ca 88NBS 03 ATNA
CV = 759 + 35 ug/g

Result	Uncer	Date
< 1100		7/07

Ce ATNA
CV = none available ug/g

Result	Uncer	Date
115	5	7/07

Cl ATNA
CV = none available ug/g

Result	Uncer	Date
< 40		7/07

Co 88NBS 03 ATNA
CV = 16.3 ug/g

Result	Uncer	Date
15	0.8	7/07

Cr 88NBS 03 ATNA
CV = 119 + 5 ug/g

Result	Uncer	Date
121	7	7/07

Cs 88NBS 03 ATNA
CV = 16.5 ug/g

Result	Uncer	Date
15.4	0.9	7/07

Cu ATNA
CV = none available ug/g

Result	Uncer	Date
< 150		7/07

Dy ATNA
CV = none available ug/g

Result	Uncer	Date
5.8	0.5	7/07

Eu 88NBS 03 ATNA
CV = 1.3 ug/g

Result	Uncer	Date
1.25	0.07	7/07

Fe 88NBS 03 ATNA
CV = 1.18 + 0.01 %

Result	Uncer	Date
1.2	0.07	7/07

Ga ATNA
CV = none available ug/g

Result	Uncer	Date
36	3	7/07

Hf 88NBS 03 ATNA
CV = 7.2 ug/g

Result	Uncer	Date
6.7	0.7	7/07

Hg ATNA
CV = none available ug/g

Result	Uncer	Date
< 0.8		7/07

I ATNA
CV = none available ug/g

Result	Uncer	Date
< 11		7/07

In ATNA
CV = none available ug/g

Result	Uncer	Date
0.12	0.03	7/07

K 88NBS 03 ATNA
CV = 2.81 + 0.07 %

Result	Uncer	Date
3.11	0.2	7/07

La ATNA
CV = none available ug/g

Result	Uncer	Date
69	4	7/07

Lu ATNA
CV = none available ug/g

Result	Uncer	Date
0.56	0.03	7/07

Mg 88NBS 03 ATNA
CV = 3580 + 120 ug/g

Result	Uncer	Date
4200	400	7/07

Mn 88NBS 03 ATNA
CV = 116 + 5 ug/g

Result	Uncer	Date
128	5	7/07

Na 88NBS 03 ATNA
CV = 1496 + 66 ug/g

Result	Uncer	Date
1480	70	7/07

Nd ATNA
CV = none available ug/g

Result	Uncer	Date
48	9	7/07

Rb 88NBS 03 ATNA
CV = 180 ug/g

Result	Uncer	Date
157	8	7/07

Sb 88NBS 03 ATNA
CV = 1.6 ug/g

Result	Uncer	Date
1.45	0.1	7/07

Sc 88NBS 03 ATNA
CV = 22 ug/g

Result	Uncer	Date
21.3	1.1	7/07

Se ATNA
CV = none available ug/g

Result	Uncer	Date
4.6	1.3	7/07

Sm ATNA
CV = none available ug/g

Result	Uncer	Date
6.7	0.3	7/07

Sr 88NBS 03 ATNA
CV = 189 + 8 ug/g

Result	Uncer	Date
230	50	7/07

Ta ATNA
CV = none available ug/g

Result	Uncer	Date
1.68	0.11	7/07

Tb ATNA
CV = none available ug/g

Result	Uncer	Date
0.65	0.07	7/07

Th 88NBS 03 ATNA
CV = 21 ug/g

Result	Uncer	Date
19.9	0.8	7/07

Ti 88NBS 03 ATNA
CV = 8090 + 120 ug/g

Result	Uncer	Date
8000	1000	7/07

U ATNA
CV = none available ug/g

Result	Uncer	Date
4.57	0.16	7/07

V ATNA
CV = none available ug/g

Result	Uncer	Date
174	7	7/07

W ATNA
CV = none available ug/g

Result	Uncer	Date
2.9	0.6	7/07

Yb ATNA
CV = none available ug/g

Result	Uncer	Date
3.8	0.3	7/07

Zn 88NBS 03 ATNA
CV = 110 ug/g

Result	Uncer	Date
81	11	7/07

Zr 88NBS 03 ATNA
CV = 220 ug/g

Result	Uncer	Date
210	50	7/07

****

NBS 99a Feldspar

****

Ag ATNA
CV = none available ug/g

Result	Uncer	Date
3.0	0.4	7/21

Al 81NBS 16 ATNA
CV = 10.8 %

Result	Uncer	Date
10.8	0.4	7/21

As ATNA
CV = none available ug/g

Result	Uncer	Date
< 3		7/21

Au ATNA
CV = none available ug/g

Result	Uncer	Date
< 0.021		7/21

Ba 81NBS 16 ATNA
CV = 2330 ug/g

Result	Uncer	Date
2880	170	7/21

Br ATNA
CV = none available ug/g

Result	Uncer	Date
< 5		7/21

Ca 81NBS 16 ATNA
CV = 1.53 %

Result	Uncer	Date
1.29	0.09	7/21

Ce 87GLA 01 ATNA
CV = 5 ug/g

Result	Uncer	Date
4.3	0.3	7/21

Cl ATNA
CV = none available ug/g

Result	Uncer	Date
< 120		7/21

Co 87GLA 01 ATNA
CV = 100 ng/g

Result	Uncer	Date
220	50	7/21

Cr 87GLA 01 ATNA
CV = < 3 ug/g

Result	Uncer	Date
< 0.7		7/21

Cs ATNA
CV = none available ug/g

Result	Uncer	Date
0.46	0.03	7/21

TABLE C-V (cont)

****

NBS 99a Feldspar (cont)

****

Cu ATNA
CV = none available ug/g

Result	Uncer	Date
< 300		7/21

Dy ATNA
CV = none available ug/g

Result	Uncer	Date
< 6		7/21

Eu 87GLA 01 ATNA
CV = 820 ng/g

Result	Uncer	Date
790	40	7/21

Fe 81NBS 16 ATNA
CV = 450 ug/g

Result	Uncer	Date
420	30	7/21

Ga ATNA
CV = none available ug/g

Result	Uncer	Date
< 40		7/21

Hf 87GLA 01 ATNA
CV = 300 ng/g

Result	Uncer	Date
340	30	7/21

Hg 87GLA 01 ATNA
CV = 165 ng/g

Result	Uncer	Date
< 240		7/21

I ATNA
CV = none available ug/g

Result	Uncer	Date
< 17		7/21

In ATNA
CV = none available ug/g

Result	Uncer	Date
< 0.3		7/21

K 87GLA 01 ATNA
CV = 4.27 + 0.12 %

Result	Uncer	Date
4.6	0.3	7/21

La 87GLA 01 ATNA
CV = 22 ug/g

Result	Uncer	Date
2.6	0.3	7/21

Lu 87GLA 01 ATNA
CV = < 100 ng/g

Result	Uncer	Date
17	4	7/21

Mg 81NBS 16 ATNA
CV = 120 ug/g

Result	Uncer	Date
< 1300		7/21

Mn ATNA
CV = none available ug/g

Result	Uncer	Date
10.5	0.6	7/21

Na 87GLA 01 ATNA
CV = 4.55 + 0.09 %

Result	Uncer	Date
4.78	0.2	7/21

Nd 87GLA 01 ATNA
CV = < 4 ug/g

Result	Uncer	Date
< 6		7/21

Rb 87GLA 01 ATNA
CV = 104 ug/g

Result	Uncer	Date
108	5	7/21

Sb 87GLA 01 ATNA
CV = < 300 ng/g

Result	Uncer	Date
< 500		7/21

Sc 87GLA 01 ATNA
CV = 230 ng/g

Result	Uncer	Date
214	12	7/21

Se ATNA
CV = none available ug/g

Result	Uncer	Date
< 1.4		7/21

Sm 87GLA 01 ATNA
CV = 500 ng/g

Result	Uncer	Date
440	30	7/21

Sr ATNA
CV = none available ug/g

Result	Uncer	Date
420	70	7/21

Ta 87GLA 01 ATNA
CV = < 200 ng/g

Result	Uncer	Date
< 160		7/21

Tb 87GLA 01 ATNA
CV = < 200 ng/g

Result	Uncer	Date
47	17	7/21

Th 87GLA 01 ATNA
CV = 500 ng/g

Result	Uncer	Date
470	30	7/21

Ti 81NBS 16 ATNA
CV = 42 ug/g

Result	Uncer	Date
< 4000		7/21

U ATNA
CV = none available ug/g

Result	Uncer	Date
0.238	0.015	7/21

V ATNA
CV = none available ug/g

Result	Uncer	Date
< 7		7/21

W ATNA
CV = none available ug/g

Result	Uncer	Date
< 8		7/21

Yb 87GLA 01 ATNA
CV = < 300 ng/g

Result	Uncer	Date
< 1200		7/21

Zn 87GLA 01 ATNA
CV = < 7 ug/g

Result	Uncer	Date
6.9	1.1	7/21

Zr 87GLA 01 ATNA
CV = 70 ug/g

Result	Uncer	Date
< 70		7/21

****

NBS 120c Phosphate Rock

****

Ag ATNA
CV = none available ug/g

Result	Uncer	Date
< 2.1		7/07

Al 88NBS 04 ATNA
CV = 6880 + 210 ug/g

Result	Uncer	Date
6700	300	7/07

As 88NBS 04 ATNA
CV = 7 ug/g

Result	Uncer	Date
8	0.9	7/07

Au ATNA
CV = none available ug/g

Result	Uncer	Date
0.0030	0.0023	7/07

Ba ATNA
CV = none available ug/g

Result	Uncer	Date
70	60	7/07

Br ATNA
CV = none available ug/g

Result	Uncer	Date
0.55	0.13	7/07

Ca 88NBS 04 ATNA
CV = 34.33 + 0.12 %

Result	Uncer	Date
35.7	1.4	7/07

Ce ATNA
CV = none available ug/g

Result	Uncer	Date
133	7	7/07

Cl ATNA
CV = none available ug/g

Result	Uncer	Date
< 60		7/07

Co 88NBS 04 ATNA
CV = 8 ug/g

Result	Uncer	Date
6.1	0.3	7/07

Cr 88NBS 04 ATNA
CV = 68 ug/g

Result	Uncer	Date
63	4	7/07

Cs ATNA
CV = none available ug/g

Result	Uncer	Date
0.66	0.07	7/07

Cu 88NBS 04 ATNA
CV = 13 ug/g

Result	Uncer	Date
< 130		7/07

Dy ATNA
CV = none available ug/g

Result	Uncer	Date
18.7	1.4	7/07

Eu 88NBS 04 ATNA
CV = 4 ug/g

Result	Uncer	Date
3.7	0.3	7/07

Fe 88NBS 04 ATNA
CV = 7550 + 210 ug/g

Result	Uncer	Date
7500	400	7/07

Ga ATNA
CV = none available ug/g

Result	Uncer	Date
18	6	7/07

Hf ATNA
CV = none available ug/g

Result	Uncer	Date
1.5	0.11	7/07

Hg ATNA
CV = none available ug/g

Result	Uncer	Date
< 0.8		7/07

I ATNA
CV = none available ug/g

Result	Uncer	Date
19	2	7/07

TABLE C-V (cont)

****

NBS 120c Phosphate Rock (cont)

****

In ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.09		7/07

K 88NBS 04 ATNA

CV = 1220 + 33 ug/g

Result	Uncer	Date
< 900		7/07

La ATNA

CV = none available ug/g

Result	Uncer	Date
99	6	7/07

Lu ATNA

CV = none available ug/g

Result	Uncer	Date
1.65	0.08	7/07

Mg 88NBS 04 ATNA

CV = 1930 + 60 ug/g

Result	Uncer	Date
1500	200	7/07

Mn 88NBS 04 ATNA

CV = 210 + 15 ug/g

Result	Uncer	Date
236	10	7/07

Na 88NBS 04 ATNA

CV = 3860 + 150 ug/g

Result	Uncer	Date
3790	160	7/07

Nd ATNA

CV = none available ug/g

Result	Uncer	Date
91	14	7/07

Rb ATNA

CV = none available ug/g

Result	Uncer	Date
5	4	7/07

Sb ATNA

CV = none available ug/g

Result	Uncer	Date
1.89	0.12	7/07

Sc ATNA

CV = none available ug/g

Result	Uncer	Date
5.9	0.3	7/07

Se ATNA

CV = none available ug/g

Result	Uncer	Date
< 6		7/07

Sm ATNA

CV = none available ug/g

Result	Uncer	Date
15.2	0.7	7/07

Sr 88NBS 04 ATNA

CV = 850 ug/g

Result	Uncer	Date
910	80	7/07

Ta ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.03		7/07

Tb ATNA

CV = none available ug/g

Result	Uncer	Date
2.9	0.3	7/07

Th ATNA

CV = none available ug/g

Result	Uncer	Date
7.4	0.5	7/07

Ti 88NBS 04 ATNA

CV = 617 + 36 ug/g

Result	Uncer	Date
520	110	7/07

U 88NBS 04 ATNA

CV = 114 + 2 ug/g

Result	Uncer	Date
107	7	7/07

V 88NBS 04 ATNA

CV = 109 + 14 ug/g

Result	Uncer	Date
88	4	7/07

W ATNA

CV = none available ug/g

Result	Uncer	Date
< 3		7/07

Yb ATNA

CV = none available ug/g

Result	Uncer	Date
12.4	0.6	7/07

Zn 88NBS 04 ATNA

CV = 72 ug/g

Result	Uncer	Date
95	12	7/07

Zr ATNA

CV = none available ug/g

Result	Uncer	Date
310	250	7/07

****

NBS 278 Obsidian Rock

****

U 81NBS 03 DNA

CV = 4.58 + 0.04 ug/g

Result	Uncer	Date
4.5	0.5	1/19
4.4	0.5	1/19
4.5	0.5	1/19
4.5	0.5	1/19
4.4	0.5	1/19
4.5	0.5	1/19

U (cont)

4.43	0.4	1/22
4.6	0.5	1/22
4.5	0.5	1/22
4.43	0.4	1/29
4.33	0.4	1/29
4.34	0.4	1/29
4.45	0.4	3/19
4.46	0.4	3/19
4.66	0.4	3/19
4.46	0.4	3/19
4.46	0.4	3/19
4.45	0.4	3/19
4.4	0.4	5/04
4.5	0.4	5/04
4.4	0.4	5/04
4.5	0.4	5/04
4.4	0.4	5/04
4.4	0.4	5/04
4.4	0.4	5/04
4.5	0.4	5/04
4.4	0.4	5/04
4.4	0.4	7/09
4.4	0.4	7/10
4.4	0.4	7/10
4.4	0.4	7/10
4.4	0.4	7/10
4.4	0.4	7/10
4.4	0.4	7/10
4.4	0.4	7/10
4.4	0.4	7/10
4.4	0.4	7/19
4.4	0.4	7/19
4.6	0.6	7/19
4.4	0.4	7/19
4.4	0.4	7/19
4.6	0.5	7/19
4.6	0.5	7/19
4.4	0.4	7/19
4.4	0.4	7/19
4.6	0.5	7/20
4.4	0.4	7/20
4.6	0.5	7/20
4.4	0.4	7/20
4.4	0.4	7/20
4.6	0.5	7/20
4.4	0.4	7/20
4.4	0.4	7/20
4.6	0.5	8/30
4.6	0.5	8/30
4.6	0.5	8/30
4.7	0.5	8/30
4.6	0.5	8/30
4.6	0.5	8/30
4.6	0.5	8/30
4.7	0.5	8/30
4.7	0.5	8/30
4.5	0.5	9/18
4.6	0.5	9/18
4.6	0.5	9/18
4.5	0.5	9/18
4.5	0.5	9/18
4.3	0.4	11/07
4.3	0.4	11/07
4.5	0.5	11/07
4.2	0.4	11/08
4.8	0.5	11/08
4.8	0.5	11/08
4.5	0.4	11/08
4.2	0.4	11/08

U 81NBS 03 ICPMS

CV = 4.58 + 0.04 ug/g

Result	Uncer	Date
3.9	0.8	7/31

U 81NBS 03 IENA

CV = 4.58 + 0.04 ug/g

Result	Uncer	Date
4.51	0.30	2/22
4.59	0.33	2/22
4.50	0.40	2/22
4.65	0.34	2/22
4.71	0.40	2/22
4.45	0.40	2/22

****

NBS 679 Brick Clay

****

Ag ATNA

CV = none available ug/g

Result	Uncer	Date
< 5		7/07

Al 87NBS 03 ATNA

CV = 11.01 + 0.34 %

Result	Uncer	Date
10.9	0.3	7/07

As ATNA

CV = none available ug/g

Result	Uncer	Date
9.5	1.0	7/07

Au ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.007		7/07

Ba 87NBS 03 ATNA

CV = 432 + 10 ug/g

Result	Uncer	Date
450	90	7/07

Br ATNA

CV = none available ug/g

Result	Uncer	Date
1.2	0.3	7/07

Ca 87NBS 03 ATNA

CV = 1628 + 13 ug/g

Result	Uncer	Date
< 2100		7/07

Ce 87NBS 03 ATNA

CV = 105 ug/g

Result	Uncer	Date
109	5	7/07

Cl ATNA

CV = none available ug/g

Result	Uncer	Date
< 100		7/07

Co 87NBS 03 ATNA

CV = 26 ug/g

Result	Uncer	Date
24.8	1.3	7/07

Cr 87NBS 03 ATNA

CV = 110 + 5 ug/g

Result	Uncer	Date
108	6	7/07

Cs 87NBS 03 ATNA

CV = 9.6 ug/g

Result	Uncer	Date
9.1	0.5	7/07

Cu ATNA

CV = none available ug/g

Result	Uncer	Date
< 300		7/07

Dy ATNA

CV = none available ug/g

Result	Uncer	Date
7.6	0.7	7/07

Eu 87NBS 03 ATNA

CV = 1.9 ug/g

Result	Uncer	Date
1.74	0.09	7/07

Fe 87NBS 03 ATNA

CV = 9.05 + 0.21 %

Result	Uncer	Date
8.9	0.5	7/07

TABLE C-V (cont)

****

NBS 679 Brick Clay (cont)

****

Ga ATNA
CV = none available ug/g

Result	Uncer	Date
28	3	7/07

Hf 87NBS 03 ATNA
CV = 4.6 ug/g

Result	Uncer	Date
4.7	0.7	7/07

Hg ATNA
CV = none available ug/g

Result	Uncer	Date
< 0.8		7/07

I ATNA
CV = none available ug/g

Result	Uncer	Date
< 30		7/07

In ATNA
CV = none available ug/g

Result	Uncer	Date
< 0.24		7/07

K 87NBS 03 ATNA
CV = 2.43 + 0.05 %

Result	Uncer	Date
2.39	0.15	7/07

La ATNA
CV = none available ug/g

Result	Uncer	Date
53	3	7/07

Lu ATNA
CV = none available ug/g

Result	Uncer	Date
0.57	0.03	7/07

Mg 87NBS 03 ATNA
CV = 7552 + 88 ug/g

Result	Uncer	Date
6400	700	7/07

Mn 87NBS 03 ATNA
CV = 1730 ug/g

Result	Uncer	Date
1880	80	7/07

Na 87NBS 03 ATNA
CV = 1304 + 38 ug/g

Result	Uncer	Date
1330	60	7/07

Nd ATNA
CV = none available ug/g

Result	Uncer	Date
43	7	7/07

Rb 87NBS 03 ATNA
CV = 190 ug/g

Result	Uncer	Date
198	10	7/07

Sb ATNA
CV = none available ug/g

Result	Uncer	Date
0.76	0.09	7/07

Sc 87NBS 03 ATNA
CV = 22.5 ug/g

Result	Uncer	Date
22.2	1.2	7/07

Se ATNA
CV = none available ug/g

Result	Uncer	Date
< 5		7/07

Sm ATNA
CV = none available ug/g

Result	Uncer	Date
9.6	0.4	7/07

Sr 87NBS 03 ATNA
CV = 73.4 + 2.6 ug/g

Result	Uncer	Date
< 400		7/07

Ta ATNA
CV = none available ug/g

Result	Uncer	Date
1.27	0.10	7/07

Tb ATNA
CV = none available ug/g

Result	Uncer	Date
1.2	0.2	7/07

Th 87NBS 03 ATNA
CV = 14 ug/g

Result	Uncer	Date
13.5	1.2	7/07

Ti 87NBS 03 ATNA
CV = 5770 + 330 ug/g

Result	Uncer	Date
5600	800	7/07

U ATNA
CV = none available ug/g

Result	Uncer	Date
2.75	0.10	7/07

V ATNA
CV = none available ug/g

Result	Uncer	Date
156	7	7/07

W ATNA
CV = none available ug/g

Result	Uncer	Date
1.8	0.5	7/07

Yb ATNA
CV = none available ug/g

Result	Uncer	Date
4.38	0.25	7/07

Zn 87NBS 03 ATNA
CV = 150 ug/g

Result	Uncer	Date
90	30	7/07

Zr ATNA
CV = none available ug/g

Result	Uncer	Date
< 240		7/07

****

NBS 688 Basalt Rock

****

Ag ATNA
CV = none available ug/g

Result	Uncer	Date
< 4.9		5/23
< 4.7		5/27

Al 81NBS 04 ATNA
CV = 9.18 + 0.05 %

Result	Uncer	Date
8.41	0.24	5/23
8.74	0.24	5/27

As 87GLA 01 ATNA
CV = 2.5 ug/g

Result	Uncer	Date
2.0	0.4	5/23
2.4	0.4	5/27

Au 87GLA 01 ATNA
CV = 2.1 ng/g

Result	Uncer	Date
< 12		5/23
< 11		5/27

Ba 87GLA 01 ATNA
CV = 197 + 12 ug/g

Result	Uncer	Date
290	60	5/23
150	30	5/27

Br 90GLA 02 ATNA
CV = 260 ng/g

Result	Uncer	Date
< 2700		5/23
< 2300		5/27

Ca 87GLA 01 ATNA
CV = 8.47 + 0.36 %

Result	Uncer	Date
8.6	0.36	5/23
8.7	0.37	5/27

Ce 87GLA 01 ATNA
CV = 13 + 2 ug/g

Result	Uncer	Date
13.4	0.8	5/23
12.8	0.9	5/27

Cl 87GLA 01 ATNA
CV = 34 + 3 ug/g

Result	Uncer	Date
< 110		5/23
< 100		5/27

Co 87GLA 01 ATNA
CV = 49 + 3 ug/g

Result	Uncer	Date
44.2	2.3	5/23
44.0	2.3	5/27

Cr 81NBS 04 ATNA
CV = 332 + 9 ug/g

Result	Uncer	Date
312	18	5/23
317	19	5/27

Cs 87GLA 01 ATNA
CV = 240 + 150 ng/g

Result	Uncer	Date
< 1500		5/23
< 1500		5/27

Cu 81NBS 04 ATNA
CV = 96 ug/g

Result	Uncer	Date
< 250		5/23
< 290		5/27

Dy 87GLA 01 ATNA
CV = 3.4 + 0.2 ug/g

Result	Uncer	Date
3.2	0.4	5/23
3.1	1.1	5/27

Eu 87GLA 01 ATNA
CV = 1.01 + 0.02 ug/g

Result	Uncer	Date
0.83	0.04	5/23
0.88	0.06	5/27

Fe 81NBS 04 ATNA
CV = 7.23 + 0.03 %

Result	Uncer	Date
6.81	0.39	5/23
6.89	0.39	5/27

Ga 87GLA 01 ATNA
CV = 17.4 ug/g

Result	Uncer	Date
< 18		5/23
< 17		5/27

Hf 87GLA 01 ATNA
CV = 1.55 + 0.08 ug/g

Result	Uncer	Date
1.42	0.10	5/23
1.48	0.11	5/27

Hg ATNA
CV = none available ng/g

Result	Uncer	Date
< 800		5/23
< 800		5/27

I ATNA
CV = none available ug/g

Result	Uncer	Date
< 23		5/23
< 19		5/27

In ATNA
CV = none available ug/g

Result	Uncer	Date
< 0.25		5/23
< 0.21		5/27

TABLE C-V (cont)

****

NBS 688 Basalt Rock
(cont)

****

K 81NBS 04 ATNA

CV = 1550 + 70 ug/g

Result	Uncer	Date
< 1500		5/23
1400	400	5/27

La 87GLA 01 ATNA

CV = 5.3 + 0.4 ug/g

Result	Uncer	Date
5.25	0.30	5/23
4.74	0.29	5/27

Lu 87GLA 01 ATNA

CV = 350 + 40 ng/g

Result	Uncer	Date
331	24	5/23
330	23	5/27

Mg 87GLA 01 ATNA

CV = 5.26 + 0.22 %

Result	Uncer	Date
4.77	0.25	5/23
3.64	0.19	5/27

Mn 81NBS 04 ATNA

CV = 1290 + 20 ug/g

Result	Uncer	Date
1290	50	5/23
1330	60	5/27

Na 81NBS 04 ATNA

CV = 1.60 + 0.02 %

Result	Uncer	Date
1.54	0.07	5/23
1.56	0.07	5/27

Nd 87GLA 01 ATNA

CV = 9.6 + 1.0 ug/g

Result	Uncer	Date
< 36		5/23
< 35		5/27

Rb 81NBS 04 ATNA

CV = 1.91 + 0.01 ug/g

Result	Uncer	Date
< 12		5/23
< 12		5/27

Sb 87GLA 01 ATNA

CV = 300 + 200 ng/g

Result	Uncer	Date
< 280		5/23
< 270		5/27

Sc 87GLA 01 ATNA

CV = 38 + 3 ug/g

Result	Uncer	Date
34.0	2.0	5/23
34.1	1.8	5/27

Se 87GLA 01 ATNA

CV = < 3 ug/g

Result	Uncer	Date
< 4.6		5/23
< 4.5		5/27

Sm 87GLA 01 ATNA

CV = 2.5 + 0.2 ug/g

Result	Uncer	Date
2.26	0.10	5/23
2.16	0.10	5/27

Sr 81NBS 04 ATNA

CV = 169.2 + 0.7 ug/g

Result	Uncer	Date
< 380		5/23
< 310		5/27

Ta 87GLA 01 ATNA

CV = 310 + 70 ng/g

Result	Uncer	Date
280	120	5/23
< 600		5/27

Tb 87GLA 01 ATNA

CV = 520 + 40 ng/g

Result	Uncer	Date
430	60	5/23
300	110	5/27

Th 81NBS 04 ATNA

CV = 330 + 20 ng/g

Result	Uncer	Date
< 600		5/23
280	80	5/27

Ti 81NBS 04 ATNA

CV = 7010 + 60 ug/g

Result	Uncer	Date
6200	800	5/23
5800	800	5/27

U 87GLA 01 ATNA

CV = 310 + 24 ng/g

Result	Uncer	Date
280	15	5/23
368	18	5/27

V 87GLA 01 ATNA

CV = 242 + 8 ug/g

Result	Uncer	Date
227	9	5/23
235	9	5/27

W ATNA

CV = none available ug/g

Result	Uncer	Date
< 4.5		5/23
< 4.3		5/27

Yb 87GLA 01 ATNA

CV = 2.05 + 0.20 ug/g

Result	Uncer	Date
2.25	0.16	5/23
1.88	0.15	5/27

Zn 87GLA 01 ATNA

CV = 84 + 10 ug/g

Result	Uncer	Date
< 17		5/23
< 16		5/27

Zr 87GLA 01 ATNA

CV = 60.6 + 1.9 ug/g

Result	Uncer	Date
< 220		5/23
< 210		5/27

****

NBS 694 Western Phosphate Rock

****

Ag ATNA

CV = none available ug/g

Result	Uncer	Date
4.9	0.7	7/07

Al 84NBS 14 ATNA

CV = 0.95 + 0.05 %

Result	Uncer	Date
1.04	0.04	7/07

As ATNA

CV = none available ug/g

Result	Uncer	Date
13	2	7/07

Au ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.008		7/07

Ba ATNA

CV = none available ug/g

Result	Uncer	Date
60	50	7/07

Br ATNA

CV = none available ug/g

Result	Uncer	Date
5.8	0.8	7/07

Ca 84NBS 14 ATNA

CV = 31.2 + 0.3 %

Result	Uncer	Date
30.8	1.2	7/07

Ce ATNA

CV = none available ug/g

Result	Uncer	Date
25	5	7/07

Cl ATNA

CV = none available ug/g

Result	Uncer	Date
220	30	7/07

Co ATNA

CV = none available ug/g

Result	Uncer	Date
1.59	0.14	7/07

Cr 84NBS 14 ATNA

CV = 680 ug/g

Result	Uncer	Date
770	50	7/07

Cs ATNA

CV = none available ug/g

Result	Uncer	Date
1.40	0.11	7/07

Cu ATNA

CV = none available ug/g

Result	Uncer	Date
< 200		7/07

Dy ATNA

CV = none available ug/g

Result	Uncer	Date
9.0	0.7	7/07

Eu ATNA

CV = none available ug/g

Result	Uncer	Date
1.52	0.07	7/07

Fe 84NBS 14 ATNA

CV = 5520 + 420 ug/g

Result	Uncer	Date
4800	300	7/07

Ga ATNA

CV = none available ug/g

Result	Uncer	Date
< 8		7/07

Hf ATNA

CV = none available ug/g

Result	Uncer	Date
1.9	0.2	7/07

Hg ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.7		7/07

I ATNA

CV = none available ug/g

Result	Uncer	Date
< 11		7/07

In ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.16		7/07

K 84NBS 14 ATNA

CV = 4230 + 170 ug/g

Result	Uncer	Date
4500	400	7/07

La ATNA

CV = none available ug/g

Result	Uncer	Date
103	6	7/07

Lu ATNA

CV = none available ug/g

Result	Uncer	Date
0.97	0.05	7/07

Mg 84NBS 14 ATNA

CV = 1990 + 120 ug/g

Result	Uncer	Date
1700	300	7/07

Mn 84NBS 14 ATNA

CV = 90 + 9 ug/g

Result	Uncer	Date
93	4	7/07

TABLE C-V (cont)

****

NBS 694 Western Phosphate Rock (cont)

****

Na 84NBS 14 ATNA
CV = 6380 + 300 ug/g

Result	Uncer	Date
6400	300	7/07

Nd ATNA
CV = none available ug/g

Result	Uncer	Date
41	13	7/07

Rb ATNA
CV = none available ug/g

Result	Uncer	Date
6	5	7/07

Sb ATNA
CV = none available ug/g

Result	Uncer	Date
6.4	0.3	7/07

Sc ATNA
CV = none available ug/g

Result	Uncer	Date
2.81	0.15	7/07

Se ATNA
CV = none available ug/g

Result	Uncer	Date
11	3	7/07

Sm ATNA
CV = none available ug/g

Result	Uncer	Date
4.9	0.3	7/07

Sr ATNA
CV = none available ug/g

Result	Uncer	Date
870	80	7/07

Ta ATNA
CV = none available ug/g

Result	Uncer	Date
0.18	0.04	7/07

Tb ATNA
CV = none available ug/g

Result	Uncer	Date
1.21	0.11	7/07

Th ATNA
CV = none available ug/g

Result	Uncer	Date
1.61	0.09	7/07

Ti 84NBS 14 ATNA
CV = 660 ug/g

Result	Uncer	Date
640	120	7/07

U 84NBS 14 ATNA
CV = 141.4 + 0.6 ug/g

Result	Uncer	Date
131	4	7/07

V 84NBS 14 ATNA
CV = 1700 + 400 ug/g

Result	Uncer	Date
1610	60	7/07

W ATNA
CV = none available ug/g

Result	Uncer	Date
< 0.5		7/07

Yb ATNA
CV = none available ug/g

Result	Uncer	Date
7.2	0.4	7/07

Zn 84NBS 14 ATNA
CV = 1520 ug/g

Result	Uncer	Date
1400	200	7/07

Zr ATNA
CV = none available ug/g

Result	Uncer	Date
< 90		7/07

****

NBS 696 Bauxite (Surinam)

****

Ag ATNA
CV = none available ug/g

Result	Uncer	Date
< 3		7/07

Al 78NBS 09 ATNA
CV = 28.8 + 0.2 %

Result	Uncer	Date
28.7	0.8	7/07

As ATNA
CV = none available ug/g

Result	Uncer	Date
15	2	7/07

Au ATNA
CV = none available ug/g

Result	Uncer	Date
< 0.005		7/07

Ba 78NBS 09 ATNA
CV = 36 ug/g

Result	Uncer	Date
< 300		7/07

Br ATNA
CV = none available ug/g

Result	Uncer	Date
6.3	0.7	7/07

Ca 78NBS 09 ATNA
CV = 130 + 15 ug/g

Result	Uncer	Date
< 900		7/07

Ce 78NBS 09 ATNA
CV = 41 ug/g

Result	Uncer	Date
37.4	2.1	7/07

Cl ATNA
CV = none available ug/g

Result	Uncer	Date
< 40		7/07

Co 78NBS 09 ATNA
CV = 0.9 ug/g

Result	Uncer	Date
1.26	0.08	7/07

Cr 78NBS 09 ATNA
CV = 320 + 30 ug/g

Result	Uncer	Date
319	19	7/07

Cs ATNA
CV = none available ug/g

Result	Uncer	Date
< 0.8		7/07

Cu ATNA
CV = none available ug/g

Result	Uncer	Date
< 210		7/07

Dy ATNA
CV = none available ug/g

Result	Uncer	Date
3.2	0.3	7/07

Eu ATNA
CV = none available ug/g

Result	Uncer	Date
0.365	0.020	7/07

Fe 78NBS 09 ATNA
CV = 6.08 + 0.07 %

Result	Uncer	Date
6.3	0.3	7/07

Ga ATNA
CV = none available ug/g

Result	Uncer	Date
100	7	7/07

Hf 78NBS 09 ATNA
CV = 32 ug/g

Result	Uncer	Date
30.6	1.5	7/07

Hg ATNA
CV = none available ug/g

Result	Uncer	Date
0.9	0.3	7/07

I ATNA
CV = none available ug/g

Result	Uncer	Date
21	2	7/07

In ATNA
CV = none available ug/g

Result	Uncer	Date
0.18	0.03	7/07

K 78NBS 09 ATNA
CV = 75 + 20 ug/g

Result	Uncer	Date
< 400		7/07

La ATNA
CV = none available ug/g

Result	Uncer	Date
26.9	1.7	7/07

Lu ATNA
CV = none available ug/g

Result	Uncer	Date
0.403	0.023	7/07

Mg 78NBS 09 ATNA
CV = 72 + 20 ug/g

Result	Uncer	Date
< 700		7/07

Mn 78NBS 09 ATNA
CV = 31 + 8 ug/g

Result	Uncer	Date
35.8	2.4	7/07

Na 78NBS 09 ATNA
CV = 52 ug/g

Result	Uncer	Date
41.8	2.1	7/07

Nd ATNA
CV = none available ug/g

Result	Uncer	Date
< 16		7/07

Rb ATNA
CV = none available ug/g

Result	Uncer	Date
< 9		7/07

Sb ATNA
CV = none available ug/g

Result	Uncer	Date
1.32	0.08	7/07

Sc 78NBS 09 ATNA
CV = 8 ug/g

Result	Uncer	Date
8.0	0.4	7/07

Se ATNA
CV = none available ug/g

Result	Uncer	Date
3.6	1.1	7/07

Sm ATNA
CV = none available ug/g

Result	Uncer	Date
1.84	0.08	7/07

Sr ATNA
CV = none available ug/g

Result	Uncer	Date
< 150		7/07

TABLE C-V (cont)

****

NBS 696 Bauxite (Surinam) (cont)

****

Ta ATNA

CV = none available ug/g

Result	Uncer	Date
3.97	0.24	7/07

Tb ATNA

CV = none available ug/g

Result	Uncer	Date
0.31	0.04	7/07

Th ATNA

CV = none available ug/g

Result	Uncer	Date
74	3	7/07

Ti 78NBS 09 ATNA

CV = 1.58 + 0.03 %

Result	Uncer	Date
1.6	0.2	7/07

U ATNA

CV = none available ug/g

Result	Uncer	Date
5.35	0.19	7/07

V 78NBS 09 ATNA

CV = 400 + 30 ug/g

Result	Uncer	Date
394	15	7/07

W ATNA

CV = none available ug/g

Result	Uncer	Date
4.1	0.5	7/07

Yb ATNA

CV = none available ug/g

Result	Uncer	Date
2.64	0.16	7/07

Zn 78NBS 09 ATNA

CV = 11 + 6 ug/g

Result	Uncer	Date
20	4	7/07

Zr 78NBS 09 ATNA

CV = 1000 + 200 ug/g

Result	Uncer	Date
2200	300	7/07

****

NBS 1085 Wear-Metals in Lubricating Oil, High

****

Ag 85NBS 09 ICPMS

CV = 291 ug/g

Result	Uncer	Date
280	60	8/21
290	60	8/21

Cr 85NBS 09 ICPMS

CV = 298 + 5 ug/g

Result	Uncer	Date
240	50	8/21
230	50	8/21

Pb 85NBS 09 ICPMS

CV = 305 ug/g

Result	Uncer	Date
240	50	8/21
240	50	8/21

****

NBS 1566 Oyster Tissue

****

U 83NBS 02 DNA

CV = 116 + 6 ng/g

Result	Uncer	Date
118	6	3/02
119	6	3/02
121	6	3/02
126	7	3/08
119	6	3/08
128	8	3/08
124	6	5/07
124	6	5/07
124	6	5/07

****

NBS SRM 1566a Oyster Tissue

****

As 89NBS 02 IENA

CV = 14.0 + 1.2 ug/g

Result	Uncer	Date
10	1	5/14

****

NBS 1568 Rice Flour

****

As 78NBS 06 IENA

CV = 410 + 50 ng/g

Result	Uncer	Date
420	50	5/14

****

NBS 1569 Brewers Yeast

****

As 87GLA 01 IENA

CV = 590 + 70 ng/g

Result	Uncer	Date
580	80	5/14
650	100	5/28

Br 87GLA 01 IENA

CV = 4 + 3 ug/g

Result	Uncer	Date
4.5	0.5	5/29

****

NBS 1571 Orchard Leaves

****

Li 87GLA 01 ICPMS

CV = 700 + 150 ng/g

Result	Uncer	Date
600	120	4/03

****

NBS 1572 Citrus Leaves

****

As 82NBS 03 IENA

CV = 3.1 + 0.3 ug/g

Result	Uncer	Date
3.5	0.4	5/14
3.8	0.6	5/28

B 87GLA 01 ICPES

CV = 66.6 ug/g

Result	Uncer	Date
56	11	7/02
68	14	7/02
55	11	8/28
57	11	8/28
67	13	9/17

Br 82NBS 03 IENA

CV = 8.2 ug/g

Result	Uncer	Date
8.1	0.8	5/29

Cs 87GLA 01 ITNA

CV = 93 + 20 ng/g

Result	Uncer	Date
110	40	2/08
97	30	2/08

F 87GLA 01 ISE

CV = 4 ug/g

Result	Uncer	Date
2.9	0.6	5/17

U 87GLA 01 DNA

CV = 40 + 2 ng/g

Result	Uncer	Date
39	3	1/26
40	3	1/26

****

NBS 1573 Tomato Leaves

****

As 76NBS 02 IENA

CV = 270 + 50 ng/g

Result	Uncer	Date
290	50	5/14
280	50	5/28

Cd 87GLA 01 FAA

CV = 2.5 + 0.2 ug/g

Result	Uncer	Date
2.7	0.5	4/03

Cs 87GLA 01 ITNA

CV = 57 + 8 ng/g

Result	Uncer	Date
50	31	2/08

F 87GLA 01 ISE

CV = 5.5 + 0.4 ug/g

Result	Uncer	Date
6.6	1.2	3/01
6.6	1.2	3/01
5.8	1.2	3/01
7.8	1.6	3/01
6.5	1.2	3/01
6.0	1.2	3/01
6.7	1.4	3/01
6.0	1.2	3/01
5.5	1.1	3/19
5.5	1.1	3/19
3.9	0.8	5/17
4.1	0.8	5/17

Hg 87GLA 01 CVAA

CV = 103 + 22 ng/g

Result	Uncer	Date
114	10	5/02

U 76NBS 02 DNA

CV = 61 + 3 ng/g

Result	Uncer	Date
67	4	1/26
71	4	1/26

****

NBS 1575 Pine Needles

****

As 76NBS 03 IENA

CV = 210 + 40 ng/g

Result	Uncer	Date
220	40	5/14
260	50	5/28

Br 87GLA 01 IENA

CV = 6.9 + 0.9 ug/g

Result	Uncer	Date
7.3	0.8	5/29

Cs 87GLA 01 ITNA

CV = 110 + 10 ng/g

Result	Uncer	Date
140	40	2/08
140	40	2/08

****

NBS 1577a Bovine Liver

****

Be FAA

CV = none available ug/g

Result	Uncer	Date
0.5	1.0	4/17
0.5	1.0	4/17

Be FAAC

CV = none available ug/g

Result	Uncer	Date
< 1		4/20

Cd 85NBS 08 AAC

CV = 440 + 60 ng/g

Result	Uncer	Date
480	50	2/07

Cd 85NBS 08 ETVAA

CV = 440 + 60 ng/g

Result	Uncer	Date
400	50	2/09

****

NBS 1632 Trace Elements in Coal

****

Ag 87GLA 01 ATNA

CV = 63 + 13 ng/g

Result	Uncer	Date
< 3000		4/08

Al 87GLA 01 ATNA

CV = 1.73 + 0.10 %

Result	Uncer	Date
1.77	0.06	3/24

As 74NBS 01 ATNA

CV = 5.9 + 0.6 ug/g

Result	Uncer	Date
5.8	0.6	4/08

TABLE C-V (cont)

****

NBS 1632 Trace Elements in Coal (cont)

****

Au 87GLA 01 ATNA

CV = 0.92 ng/g

Result	Uncer	Date
< 6		4/08

B 87GLA 01 ICPES

CV = 41 + 8 ug/g

Result	Uncer	Date
51	10	12/07

Ba 87GLA 01 ATNA

CV = 326 + 32 ug/g

Result	Uncer	Date
320	30	4/08

Br 87GLA 01 ATNA

CV = 17.7 + 1.7 ug/g

Result	Uncer	Date
19	2	4/08

Ca 87GLA 01 ATNA

CV = 4180 + 420 ug/g

Result	Uncer	Date
< 3000		4/08

Ce 87GLA 01 ATNA

CV = 20.7 + 1.9 ug/g

Result	Uncer	Date
20	1	4/08

Cl 87GLA 01 ATNA

CV = 876 + 66 ug/g

Result	Uncer	Date
770	60	3/24

Co 87GLA 01 ATNA

CV = 5.6 + 0.6 ug/g

Result	Uncer	Date
5.6	0.3	4/08

Cr 74NBS 01 ATNA

CV = 20.2 + 0.5 ug/g

Result	Uncer	Date
20	1	4/08

Cs 87GLA 01 ATNA

CV = 1.50 + 0.18 ug/g

Result	Uncer	Date
1.6	0.1	4/08

Cu 74NBS 01 ATNA

CV = 18 + 2 ug/g

Result	Uncer	Date
< 100		4/08

Dy 87GLA 01 ATNA

CV = 1.23 + 0.20 ug/g

Result	Uncer	Date
2.2	0.2	4/08

Eu 87GLA 01 ATNA

CV = 360 + 40 ng/g

Result	Uncer	Date
340	20	4/08

Fe 74NBS 01 ATNA

CV = 8700 + 300 ug/g

Result	Uncer	Date
8300	400	4/08

Ga 87GLA 01 ATNA

CV = 5.9 + 1.1 ug/g

Result	Uncer	Date
< 8		4/08

Hf 87GLA 01 ATNA

CV = 0.98 + 0.10 ug/g

Result	Uncer	Date
0.91	0.07	4/08

Hg 74NBS 01 ATNA

CV = 120 + 20 ng/g

Result	Uncer	Date
< 600		4/08

I 87GLA 01 ATNA

CV = 3.2 + 0.4 ug/g

Result	Uncer	Date
< 8		4/08

In 87GLA 01 ATNA

CV = 35 + 21 ng/g

Result	Uncer	Date
< 100		4/08

K 87GLA 01 ATNA

CV = 2780 + 170 ug/g

Result	Uncer	Date
2900	300	4/08

La 87GLA 01 ATNA

CV = 10.6 + 0.7 ug/g

Result	Uncer	Date
10.4	0.6	4/08

Lu 87GLA 01 ATNA

CV = 129 + 16 ng/g

Result	Uncer	Date
100	10	4/08

Mg 87GLA 01 ATNA

CV = 1560 + 410 ug/g

Result	Uncer	Date
1700	400	3/24

Mn 74NBS 01 ATNA

CV = 40 + 3 ug/g

Result	Uncer	Date
42	2	4/08

Mo 87GLA 01 ATNA

CV = 3.8 + 0.8 ug/g

Result	Uncer	Date
8	3	4/08

Na 87GLA 01 ATNA

CV = 379 + 29 ug/g

Result	Uncer	Date
370	20	3/24

Nd 87GLA 01 ATNA

CV = 9.0 + 1.6 ug/g

Result	Uncer	Date
< 10		4/08

Rb 87GLA 01 ATNA

CV = 20.5 + 2.2 ug/g

Result	Uncer	Date
21	2	4/08

Sb 87GLA 01 ATNA

CV = 3.4 + 0.6 ug/g

Result	Uncer	Date
2.4	0.1	4/08

Sc 87GLA 01 ATNA

CV = 3.8 + 0.2 ug/g

Result	Uncer	Date
3.7	0.2	4/08

Se 74NBS 01 ATNA

CV = 2.9 + 0.3 ug/g

Result	Uncer	Date
3.7	0.9	4/08

Sm 87GLA 01 ATNA

CV = 1.6 + 0.2 ug/g

Result	Uncer	Date
2.14	0.10	4/08

Sr 87GLA 01 ATNA

CV = 150 + 20 ug/g

Result	Uncer	Date
< 100		4/08

Ta 87GLA 01 ATNA

CV = 250 + 40 ng/g

Result	Uncer	Date
< 400		4/08

Tb 87GLA 01 ATNA

CV = 280 + 70 ng/g

Result	Uncer	Date
220	40	4/08

Th 87GLA 01 ATNA

CV = 3.16 + 0.23 ug/g

Result	Uncer	Date
3.0	0.1	4/08

Ti 87GLA 01 ATNA

CV = 940 + 120 ug/g

Result	Uncer	Date
1200	200	4/08

U 74NBS 01 ATNA

CV = 1.4 + 0.1 ug/g

Result	Uncer	Date
1.31	0.06	4/08

V 74NBS 01 ATNA

CV = 35 + 3 ug/g

Result	Uncer	Date
33	5	4/08

W 87GLA 01 ATNA

CV = 740 + 65 ng/g

Result	Uncer	Date
1200	500	4/08

Yb 87GLA 01 ATNA

CV = 790 + 130 ng/g

Result	Uncer	Date
910	90	4/08

Zn 74NBS 01 ATNA

CV = 37 + 4 ug/g

Result	Uncer	Date
41	6	4/08

Zr 87GLA 01 ATNA

CV = 34 + 10 ug/g

Result	Uncer	Date
< 200		4/08

****

NBS 1632a Trace Elements in Coal (Bituminous)

****

B 87GLA 01 ICPES

CV = 53.2 + 1.5 ug/g

Result	Uncer	Date
67	14	12/06
71	15	12/06

****

NBS 1632b Trace Elements in Coal (Bituminous)

****

Ag ATNA

CV = none available ug/g

Result	Uncer	Date
< 2		4/08
< 1		4/09
< 2.1		5/22

Al 85NBS 02 ATNA

CV = 8550 + 190 ug/g

Result	Uncer	Date
8700	300	3/24
8400	300	4/09
8820	330	5/22

As 85NBS 02 ATNA

CV = 3.72 + 0.09 ug/g

Result	Uncer	Date
3.6	0.4	4/08
3.5	0.4	4/09
3.4	0.4	5/22

Au ATNA

CV = none available ng/g

Result	Uncer	Date
< 4		4/08
< 2		4/09
< 5		5/22

Ba 85NBS 02 ATNA

CV = 67.5 + 2.1 ug/g

Result	Uncer	Date
80	20	4/08
60	10	4/09
100	20	5/22

TABLE C-V (cont)

****

NBS 1632b Trace Elements
in Coal (Bituminous)
(cont)

****

Br 85NBS 02 ATNA

CV = 17 ug/g

Result	Uncer	Date
19	2	4/08
18	2	4/09
23	2	5/22

Ca 85NBS 02 ATNA

CV = 2040 + 60 ug/g

Result	Uncer	Date
1600	300	4/08
< 2000		4/09
< 2200		5/22

Ce 85NBS 02 ATNA

CV = 9 ug/g

Result	Uncer	Date
9.1	0.5	4/08
8.8	0.5	4/09
8.0	0.6	5/22

Cl 85NBS 02 ATNA

CV = 1260 ug/g

Result	Uncer	Date
1030	80	3/24
1020	80	4/09
1080	80	5/22

Co 85NBS 02 ATNA

CV = 2.29 + 0.17 ug/g

Result	Uncer	Date
2.3	0.2	4/08
2.0	0.1	4/09
2.13	0.13	5/22

Cr 85NBS 02 ATNA

CV = 11 ug/g

Result	Uncer	Date
11.0	0.7	4/08
10.3	0.7	4/09
9.9	0.7	5/22

Cs 85NBS 02 ATNA

CV = 440 ng/g

Result	Uncer	Date
410	50	4/08
480	40	4/09
370	60	5/22

Cu 85NBS 02 ATNA

CV = 6.28 + 0.30 ug/g

Result	Uncer	Date
< 100		4/08
< 90		4/09
< 70		5/22

Dy ATNA

CV = none available ng/g

Result	Uncer	Date
800	100	4/08
700	100	4/09
850	120	5/22

Eu 85NBS 02 ATNA

CV = 170 ng/g

Result	Uncer	Date
160	10	4/08
140	10	4/09
150	10	5/22

Fe 85NBS 02 ATNA

CV = 7590 + 450 ug/g

Result	Uncer	Date
7200	400	4/08
7000	400	4/09
7150	390	5/22

Ga ATNA

CV = none available ug/g

Result	Uncer	Date
< 6		4/08
< 5		4/09
< 7		5/22

Hf 85NBS 02 ATNA

CV = 430 ng/g

Result	Uncer	Date
370	30	4/08
440	40	4/09
450	40	5/22

Hg ATNA

CV = none available ng/g

Result	Uncer	Date
< 300		4/08
< 300		4/09
< 400		5/22

I ATNA

CV = none available ug/g

Result	Uncer	Date
< 6		4/08
< 5		4/09
< 5		5/22

In ATNA

CV = none available ng/g

Result	Uncer	Date
< 80		4/08
< 80		4/09
< 70		5/22

K 85NBS 02 ATNA

CV = 748 + 28 ug/g

Result	Uncer	Date
< 600		4/08
800	100	4/09
< 600		5/22

La 85NBS 02 ATNA

CV = 5.1 ug/g

Result	Uncer	Date
4.3	0.2	4/08
4.2	0.3	4/09
4.26	0.24	5/22

Lu ATNA

CV = none available ng/g

Result	Uncer	Date
45	6	4/08
38	5	4/09
51	10	5/22

Mg 85NBS 02 ATNA

CV = 383 + 8 ug/g

Result	Uncer	Date
410	80	3/24
510	70	4/09
< 450		5/22

Mn 85NBS 02 ATNA

CV = 12.4 + 1.0 ug/g

Result	Uncer	Date
13.1	0.6	4/08
12.6	0.6	4/09
11.5	0.5	5/22

Mo 85NBS 02 ATNA

CV = 0.9 ug/g

Result	Uncer	Date
< 20		4/08
< 10		4/09

Na 85NBS 02 ATNA

CV = 515 + 11 ug/g

Result	Uncer	Date
490	20	3/24
480	20	4/09
492	21	5/22

Nd ATNA

CV = none available ug/g

Result	Uncer	Date
< 7		4/08
< 6		4/09
< 13		5/22

Rb 85NBS 02 ATNA

CV = 5.05 + 0.11 ug/g

Result	Uncer	Date
< 5		4/08
< 5		4/09
< 6		5/22

Sb 85NBS 02 ATNA

CV = 240 ng/g

Result	Uncer	Date
220	30	4/08
230	20	4/09
210	40	5/22

Sc 85NBS 02 ATNA

CV = 1.9 ug/g

Result	Uncer	Date
1.80	0.10	4/08
1.72	0.09	4/09
1.79	0.10	5/22

Se 85NBS 02 ATNA

CV = 1.29 + 0.11 ug/g

Result	Uncer	Date
1.2	0.4	4/08
1.5	0.4	4/09
1.3	0.4	5/22

Sm 85NBS 02 ATNA

CV = 870 ng/g

Result	Uncer	Date
780	40	4/08
740	30	4/09
730	40	5/22

Sr 85NBS 02 ATNA

CV = 102 ug/g

Result	Uncer	Date
< 90		4/08
100	20	4/09
< 80		5/22

Ta ATNA

CV = none available ng/g

Result	Uncer	Date
160	40	4/08
< 300		4/09
< 320		5/22

Tb ATNA

CV = none available ng/g

Result	Uncer	Date
140	30	4/08
120	20	4/09
130	30	5/22

Th 85NBS 02 ATNA

CV = 1.34 + 0.04 ug/g

Result	Uncer	Date
1.31	0.07	4/08
1.25	0.06	4/09
1.23	0.06	5/22

Ti 85NBS 02 ATNA

CV = 454 + 17 ug/g

Result	Uncer	Date
410	80	4/08
410	70	4/09
420	80	5/22

U 85NBS 02 ATNA

CV = 436 + 12 ng/g

Result	Uncer	Date
410	20	4/08
370	20	4/09
440	30	5/22

V 85NBS 02 ATNA

CV = 14 ug/g

Result	Uncer	Date
12.4	1.0	4/08
12.3	1.0	4/09
15.0	1.1	5/22

W 85NBS 02 ATNA

CV = 480 ng/g

Result	Uncer	Date
< 2000		4/08
500	200	4/09
< 1700		5/22

Yb ATNA

CV = none available ng/g

Result	Uncer	Date
480	70	4/08
370	40	4/09
450	70	5/22

Zn 85NBS 02 ATNA

CV = 11.9 + 0.8 ug/g

Result	Uncer	Date
12	3	4/08
13	3	4/09
16	3	5/22

Zr ATNA

CV = none available ug/g

Result	Uncer	Date
< 80		4/08
< 70		4/09
< 160		5/22

TABLE C-V (cont)

****

NBS 1633a Trace Elements in Coal Fly Ash

****

Ag 87GLA 01 MSCAN

CV = < 300 ng/g

Result	Uncer	Date
1800	5400	9/17

As 85NBS 11 MSCAN

CV = 145 + 15 ug/g

Result	Uncer	Date
180	540	9/17

Au MSCAN

CV = none available ng/g

Result	Uncer	Date
< 500		9/17

B 87GLA 01 MSCAN

CV = 40.3 + 2.1 ug/g

Result	Uncer	Date
< 5		9/17

Ba 87GLA 01 MSCAN

CV = 1420 + 100 ug/g

Result	Uncer	Date
770	2300	9/17

Be 87GLA 01 MSCAN

CV = 12.8 + 0.6 ug/g

Result	Uncer	Date
< 5		9/17

Bi 87GLA 01 MSCAN

CV = 1.26 ug/g

Result	Uncer	Date
0.71	2.1	9/17

Cd 85NBS 11 MSCAN

CV = 1.00 + 0.15 ug/g

Result	Uncer	Date
< 0.5		9/17

Ce 87GLA 01 MSCAN

CV = 175 + 7 ug/g

Result	Uncer	Date
22	66	9/17

Co 87GLA 01 MSCAN

CV = 43 + 3 ug/g

Result	Uncer	Date
7.8	23.4	9/17

Cr 85NBS 11 MSCAN

CV = 196 + 6 ug/g

Result	Uncer	Date
27	81	9/17

Cs 87GLA 01 MSCAN

CV = 10.5 + 0.7 ug/g

Result	Uncer	Date
< 0.5		9/17

Cu 85NBS 11 MSCAN

CV = 118 + 3 ug/g

Result	Uncer	Date
30	90	9/17

Dy 87GLA 01 MSCAN

CV = 15.6 + 1.2 ug/g

Result	Uncer	Date
3	9	9/17

Er MSCAN

CV = none available ug/g

Result	Uncer	Date
1.9	5.7	9/17

Eu 87GLA 01 MSCAN

CV = 3.7 + 0.2 ug/g

Result	Uncer	Date
0.79	2.4	9/17

Ga 87GLA 01 MSCAN

CV = 56 + 3 ug/g

Result	Uncer	Date
2	6	9/17

Gd 87GLA 01 MSCAN

CV = 19 + 4 ug/g

Result	Uncer	Date
3.6	10.8	9/17

Ge 87GLA 01 MSCAN

CV = 33.9 + 0.2 ug/g

Result	Uncer	Date
1.6	4.8	9/17

Hf 87GLA 01 MSCAN

CV = 7.4 + 0.3 ug/g

Result	Uncer	Date
< 0.5		9/17

Ho 87GLA 01 MSCAN

CV = 2.9 ug/g

Result	Uncer	Date
0.65	2	9/17

In 87GLA 01 MSCAN

CV = 158 + 5 ng/g

Result	Uncer	Date
< 500		9/17

Ir MSCAN

CV = none available ng/g

Result	Uncer	Date
< 500		9/17

La 87GLA 01 MSCAN

CV = 84 + 8 ug/g

Result	Uncer	Date
9.1	27.3	9/17

Li 87GLA 01 MSCAN

CV = 165 + 50 ug/g

Result	Uncer	Date
< 5		9/17

Lu 87GLA 01 MSCAN

CV = 1.12 + 0.18 ug/g

Result	Uncer	Date
< 0.5		9/17

Mn 85NBS 11 MSCAN

CV = 179 + 8 ug/g

Result	Uncer	Date
47	140	9/17

Mo 87GLA 01 MSCAN

CV = 30 + 3 ug/g

Result	Uncer	Date
0.75	2.3	9/17

Nb 87GLA 01 MSCAN

CV = 28 ug/g

Result	Uncer	Date
< 0.5		9/17

Nd 87GLA 01 MSCAN

CV = 74 + 10 ug/g

Result	Uncer	Date
13	39	9/17

Ni 85NBS 11 MSCAN

CV = 127 + 4 ug/g

Result	Uncer	Date
26	78	9/17

Pb 85NBS 11 MSCAN

CV = 72.4 + 0.4 ug/g

Result	Uncer	Date
29	87	9/17

Pd MSCAN

CV = none available ng/g

Result	Uncer	Date
< 500		9/17

Pr 87GLA 01 MSCAN

CV = 18.4 ug/g

Result	Uncer	Date
2.9	8.7	9/17

Pt MSCAN

CV = none available ng/g

Result	Uncer	Date
< 500		9/17

Rb 85NBS 11 MSCAN

CV = 131 + 2 ug/g

Result	Uncer	Date
4.5	13.5	9/17

Rh MSCAN

CV = none available ng/g

Result	Uncer	Date
< 500		9/17

Ru MSCAN

CV = none available ng/g

Result	Uncer	Date
< 500		9/17

Sb 85NBS 11 MSCAN

CV = 6.8 + 0.4 ug/g

Result	Uncer	Date
0.71	2.1	9/17

Se 85NBS 11 MSCAN

CV = 10.3 + 0.6 ug/g

Result	Uncer	Date
8.6	25.8	9/17

Sm 87GLA 01 MSCAN

CV = 17 + 1.5 ug/g

Result	Uncer	Date
3.4	10.2	9/17

Sn 87GLA 01 MSCAN

CV = 10 + 6 ug/g

Result	Uncer	Date
0.84	2.5	9/17

Sr 85NBS 11 MSCAN

CV = 830 + 30 ug/g

Result	Uncer	Date
120	360	9/17

Ta 87GLA 01 MSCAN

CV = 2.0 + 0.2 ug/g

Result	Uncer	Date
< 0.5		9/17

Tb 87GLA 01 MSCAN

CV = 2.5 + 0.3 ug/g

Result	Uncer	Date
0.58	1.7	9/17

Te 87GLA 01 MSCAN

CV = < 3.5 ug/g

Result	Uncer	Date
< 0.5		9/17

Th 85NBS 11 MSCAN

CV = 24.7 + 0.3 ug/g

Result	Uncer	Date
13	39	9/17

Ti 87GLA 01 MSCAN

CV = 8230 + 390 ug/g

Result	Uncer	Date
720	2200	9/17

Tl 85NBS 11 MSCAN

CV = 5.7 + 0.2 ug/g

Result	Uncer	Date
2.6	7.8	9/17

Tm 87GLA 01 MSCAN

CV = 2.4 ug/g

Result	Uncer	Date
< 0.5		9/17

U 85NBS 11 MSCAN

CV = 10.2 + 0.1 ug/g

Result	Uncer	Date
6.2	18.6	9/17

V 85NBS 11 MSCAN

CV = 297 + 6 ug/g

Result	Uncer	Date
110	330	9/17

W 87GLA 01 MSCAN

CV = 5.7 + 0.7 ug/g

Result	Uncer	Date
1.7	5.1	9/17

TABLE C-V (cont)

****

NBS 1633a Trace Elements in Coal Fly Ash (cont)

****

Y 87GLA 01 MSCAN

CV = 82 + 6 ug/g

Result	Uncer	Date
9.3	27.9	9/17

Yb 87GLA 01 MSCAN

CV = 7.4 + 0.7 ug/g

Result	Uncer	Date
1.6	4.8	9/17

Zn 85NBS 11 MSCAN

CV = 220 + 10 ug/g

Result	Uncer	Date
70	210	9/17

Zr 87GLA 01 MSCAN

CV = 330 + 80 ug/g

Result	Uncer	Date
2.3	6.9	9/17

The preceeding data show that a simple nitric acid leach and qualitative ICP mass scan are inadequate for analysis of ash type materials.

****

NBS 1635 Trace Elements in Coal (Subbituminous)

****

Ag 87GLA 01 ATNA

CV = < 38 ng/g

Result	Uncer	Date
< 1000		4/09

Al 87GLA 01 ATNA

CV = 2950 + 270 ug/g

Result	Uncer	Date
3200	200	4/09

As 79NBS 04 ATNA

CV = 420 + 200 ng/g

Result	Uncer	Date
400	100	4/09

Au 87GLA 01 ATNA

CV = < 6 ng/g

Result	Uncer	Date
< 4		4/09

Ba 87GLA 01 ATNA

CV = 73 + 5 ug/g

Result	Uncer	Date
74	10	4/09

Br 87GLA 01 ATNA

CV = 1.4 + 0.4 ug/g

Result	Uncer	Date
1.2	0.2	4/09

Ca 87GLA 01 ATNA

CV = 5350 + 340 ug/g

Result	Uncer	Date
4300	500	4/09

Ce 87GLA 01 ATNA

CV = 3.4 + 0.1 ug/g

Result	Uncer	Date
3.1	0.3	4/09

Cl 87GLA 01 ATNA

CV = 26.8 + 1.0 ug/g

Result	Uncer	Date
< 40		4/09

Co 87GLA 01 ATNA

CV = 821 + 19 ng/g

Result	Uncer	Date
810	70	4/09

Cr 79NBS 04 ATNA

CV = 2.5 + 0.3 ug/g

Result	Uncer	Date
2.2	0.3	4/09

Cs 87GLA 01 ATNA

CV = 53 + 7 ng/g

Result	Uncer	Date
< 400		4/09

Cu 79NBS 04 ATNA

CV = 3.6 + 0.3 ug/g

Result	Uncer	Date
< 100		4/09

Dy 87GLA 01 ATNA

CV = 330 ng/g

Result	Uncer	Date
< 2000		4/09

Eu 87GLA 01 ATNA

CV = 62 + 3 ng/g

Result	Uncer	Date
60	9	4/09

Fe 79NBS 04 ATNA

CV = 2390 + 50 ug/g

Result	Uncer	Date
2100	100	4/09

Ga 79NBS 04 ATNA

CV = 1.05 ug/g

Result	Uncer	Date
< 7		4/09

Hf 87GLA 01 ATNA

CV = 290 + 30 ng/g

Result	Uncer	Date
290	30	4/09

Hg 87GLA 01 ATNA

CV = 20 ng/g

Result	Uncer	Date
< 300		4/09

I 87GLA 01 ATNA

CV = 600 ng/g

Result	Uncer	Date
< 6000		4/09

In 87GLA 01 ATNA

CV = 5 ng/g

Result	Uncer	Date
< 90		4/09

K 87GLA 01 ATNA

CV = 96 + 20 ug/g

Result	Uncer	Date
< 600		4/09

La 87GLA 01 ATNA

CV = 1.8 + 0.3 ug/g

Result	Uncer	Date
1.9	0.1	4/09

Lu 87GLA 01 ATNA

CV = 28 + 9 ng/g

Result	Uncer	Date
29	5	4/09

Mg 87GLA 01 ATNA

CV = 1000 + 100 ug/g

Result	Uncer	Date
800	100	4/09

Mn 79NBS 04 ATNA

CV = 21.4 + 1.5 ug/g

Result	Uncer	Date
20	1	4/09

Mo 87GLA 01 ATNA

CV = 0.27 ug/g

Result	Uncer	Date
< 50		4/09

Na 87GLA 01 ATNA

CV = 2390 + 200 ug/g

Result	Uncer	Date
2400	100	4/09

Nd 87GLA 01 ATNA

CV = 1.38 ug/g

Result	Uncer	Date
< 5		4/09

Rb 87GLA 01 ATNA

CV = 850 + 100 ng/g

Result	Uncer	Date
< 3000		4/09

Sb 87GLA 01 ATNA

CV = 150 + 30 ng/g

Result	Uncer	Date
140	30	4/09

Sc 87GLA 01 ATNA

CV = 630 + 50 ng/g

Result	Uncer	Date
570	30	4/09

Se 79NBS 04 ATNA

CV = 0.9 + 0.3 ug/g

Result	Uncer	Date
0.9	0.2	4/09

Sm 87GLA 01 ATNA

CV = 290 + 40 ng/g

Result	Uncer	Date
330	20	4/09

Sr 87GLA 01 ATNA

CV = 120 + 20 ug/g

Result	Uncer	Date
< 90		4/09

Ta 87GLA 01 ATNA

CV = 45.8 + 1.7 ng/g

Result	Uncer	Date
< 200		4/09

Tb 87GLA 01 ATNA

CV = 42 ng/g

Result	Uncer	Date
38	9	4/09

Th 79NBS 04 ATNA

CV = 620 + 40 ng/g

Result	Uncer	Date
550	40	4/09

Ti 87GLA 01 ATNA

CV = 202 + 6 ug/g

Result	Uncer	Date
330	70	4/09

U 79NBS 04 ATNA

CV = 240 + 20 ng/g

Result	Uncer	Date
190	10	4/09

V 79NBS 04 ATNA

CV = 5.2 + 0.5 ug/g

Result	Uncer	Date
4.4	0.6	4/09

W 87GLA 01 ATNA

CV = 190 ng/g

Result	Uncer	Date
< 2000		4/09

Yb 87GLA 01 ATNA

CV = 160 + 20 ng/g

Result	Uncer	Date
180	50	4/09

Zn 79NBS 04 ATNA

CV = 4.7 + 0.5 ug/g

Result	Uncer	Date
8	2	4/09

Zr 87GLA 01 ATNA

CV = 16 + 2 ug/g

Result	Uncer	Date
< 60		4/09

TABLE C-V (cont)

****

NBS 1643A Trace Elements in Water

****

Ag 80NBS 01 ICPMS

CV = 2.8 + 0.3 ug/L

Result	Uncer	Date
2.8	0.1	7/20
2.8	0.1	7/20
2.9	0.1	8/07
3.0	0.1	8/07
2.9	0.1	8/07

As 80NBS 01 ICPMS

CV = 76 + 7 ug/L

Result	Uncer	Date
70.2	0.4	5/24
76.0	3.0	8/02
72.2	2.8	8/02
72.2	2.8	8/02
76.0	3.0	8/02
71.0	2.8	8/02
71.0	2.8	8/02
70.9	1.5	8/14
76.4	1.6	8/14
76.0	1.6	8/14
76.4	1.6	8/14
76.0	1.6	8/14
70.9	1.5	8/14
75.1	3.6	8/24
76.7	3.8	8/24
74.5	3.7	8/24
74.2	1.4	8/24
74.1	1.4	8/24
74.5	3.8	8/24
75.9	1.5	8/24
75.1	3.8	8/24
76.7	3.8	8/24
76.7	3.8	8/24
74.5	3.7	8/24
75.1	3.8	8/24
73.9	0.5	8/31
76.8	0.5	8/31
76.8	0.5	8/31
68.0	4.2	9/05
73.9	4.6	9/05
71.9	4.5	9/05
72.3	1.0	12/04
75.3	1.0	12/04
76.9	1.1	12/04
77.8	1.1	12/04

Ba 80NBS 01 ICPMS

CV = 46 + 2 ug/L

Result	Uncer	Date
45.9	0.1	7/20
45.8	0.5	7/20
45.9	0.5	7/20
45.8	0.5	7/20
45.9	0.5	8/07
46.9	0.5	8/07
46.0	0.5	8/07

Be 80NBS 01 ICPMS

CV = 19 + 2 ug/L

Result	Uncer	Date
20.5	1.8	5/24
23	3	8/02
20	3	8/02
21	3	8/02
20	3	8/02
23	3	8/02
21	3	8/02
23	3	8/02
20	3	8/02
21	3	8/02
20	3	8/02
23	3	8/02
21	3	8/02
22	3	8/14
24	3	8/14
18	2	8/14
18	2	8/14
22	3	8/14
24	3	8/14
20.1	1	8/24
19.8	1	8/24
20	1	8/24
19.8	1	8/24
19.9	1	8/24
19.8	1	8/24
19.9	1	8/24
20.2	1	8/24
20.1	1	8/24
19.9	1	8/24
19.8	1	8/24
20.1	1	8/24
19.4	1	8/27
19.7	1	8/27
19.5	1	8/27
20.5	1.6	8/31
20.6	1.6	8/31
20.4	1.6	8/31
19.9	1.2	9/05
20.7	1.2	9/05
19.8	1.2	9/05
17	2	12/05
16	2	12/05
15	2	12/05
18	2	12/05
18	2	12/05
17	2	12/05
19	2	12/05

Cd 80NBS 01 ICPMS

CV = 10 + 1 ug/L

Result	Uncer	Date
10.1	0.2	7/20
10.3	0.2	7/20
10.4	0.3	8/07
10.4	0.3	8/07
10.1	0.3	8/07

Cr 80NBS 01 ICPMS

CV = 17 + 2 ug/L

Result	Uncer	Date
21	3	8/02
19	3	8/02
25	4	8/02
21	3	8/03
25	4	8/03
19	3	8/03

Cr (cont)

19	3	8/24
19	3	8/24
19	2	8/24
19	2	8/24
19	2	8/24
19	2	8/24
19	2	8/24
19	2	8/24
19	2	8/24
19	3	8/24
19	2	8/24
19	2	8/24
20	4	9/05
17.4	1.1	9/05
19	3	9/05
18.5	1.2	9/05
21	4	9/05
18.6	1.2	9/05
18.5	1.2	9/06
18.6	1.2	9/06
17.4	1.1	9/06
18	0.5	12/04
17.3	0.5	12/04
17.7	0.5	12/04
17.4	0.5	12/04
21	2	12/06

Cu 80NBS 01 ICPMS

CV = 18 + 2 ug/L

Result	Uncer	Date
19.9	0.7	8/24
17.7	0.6	8/24
19.2	0.8	8/24
18.9	0.8	8/24
15.2	0.7	8/24
19.9	0.7	8/24
17.7	0.6	8/24
17.7	0.6	8/24
18.3	0.6	8/24
18.3	0.6	8/24
18.3	0.6	8/24
19.9	0.7	8/24
20.4	0.5	9/05
19.7	0.5	9/05
21.4	0.5	9/05
20.5	1.1	9/06
17.7	0.9	9/06
18.6	1.0	9/06
17.7	0.9	9/06
18.6	1.0	9/06
20.5	1.1	9/06
15.1	1.2	12/04
18.1	1.4	12/04
18.0	1.4	12/04
15.1	1.2	12/04

Mn 80NBS 01 ICPMS

CV = 31 + 2 ug/L

Result	Uncer	Date
38	5	8/02
33	5	8/02
38	5	8/02
36	5	8/02
36	5	8/02
33	5	8/02
36	5	8/02
33.8	2.7	8/24
33.3	2.3	8/24
32.6	2.2	8/24
33.5	2.3	8/24

Mn (cont)

32.6	2.2	8/24
33.0	2.6	8/24
33.5	2.3	8/24
33.3	2.3	8/24
33.5	2.3	8/24
33.6	2.7	8/24
33.3	2.3	8/24
32.6	2.2	8/24
33	5	9/05
36	5	9/05
37	5	9/05
33.5	1.9	9/06
31.8	1.8	9/06
33	1.9	9/06
33	1.9	9/06
31.8	1.8	9/06
33.5	1.9	9/06
30.5	0.7	12/04
29.9	0.4	12/04
31.3	0.4	12/04
30.8	0.4	12/04
37	4	12/06
35	4	12/06
36	4	12/06

Mo 80NBS 01 ICPMS

CV = 95 + 6 ug/L

Result	Uncer	Date
103	10	7/20
105	10	7/20
110	20	8/02
110	20	8/02
110	20	8/02
110	20	8/02
110	20	8/02
105	7	8/14
7.2	7.2	8/14
108	7	8/14
107	7	8/14
108	7	8/14
108	7	8/14
105	7	8/14
107	7	8/14
110	10	8/24
110	10	8/24
110	10	8/24
110	10	8/24
110	10	8/24
110	10	8/24
110	10	8/24
110	10	8/24
110	10	8/24
110	10	8/24
110	10	8/24
110	10	8/24
110	10	8/24
110	10	8/31
110	10	8/31
100	10	8/31
110	10	9/06
110	10	9/06
110	10	9/06

Ni 80NBS 01 ICPMS

CV = 55 + 3 ug/L

Result	Uncer	Date
59	4.6	8/02
60.7	4.8	8/02
58.3	4.6	8/02
60.4	3.3	8/14
59.8	3.3	8/14

Ni (cont)

53.8	2.9	8/14
53.8	2.9	8/14
60.4	3.3	8/14
59.8	3.3	8/14
55.2	0.6	8/24
55.9	0.6	8/24
54.9	0.5	8/24
54	0.5	8/24
56.2	0.6	8/24
54	0.5	8/24
56.2	0.6	8/24
54	0.5	8/24
54.7	0.5	8/24
54.7	0.5	8/24
56.2	0.6	8/24
54.7	0.5	8/24
55.3	2.2	8/31
56.9	2.3	8/31
59.2	2.4	8/31
55.5	2.4	9/05
53.9	2.4	9/05
49.8	2.2	9/05
46.1	3.8	12/04
52.3	4.3	12/04
49.3	3.8	12/04
54.1	4.4	12/04
59.1	5.6	12/06

Pb 80NBS 01 ICPMS

CV = 27 + 1 ug/L

Result	Uncer	Date
26.9	0.4	7/20
27.9	0.4	7/20
27.9	0.4	7/20
26.9	0.4	7/20
27.0	0.3	8/07
26.6	0.3	8/07
27.5	0.3	8/07

Sr 80NBS 01 ICPMS

CV = 239 + 5 ug/L

Result	Uncer	Date
237	2	10/05
238	2	10/05
241	2	10/05

V 80NBS 01 ICPMS

CV = 53 + 3 ug/L

Result	Uncer	Date
51.7	0.5	8/02
52.9	0.5	8/02
51.7	0.5	8/02
52.9	0.5	8/02
52.9	0.5	8/02
53	0.5	8/02
53	0.5	8/02
53	0.5	8/02
52.9	0.5	8/02
53	0.5	8/02
51.7	0.5	8/02
51.7	0.5	8/02
51.8	0.1	8/14
51.8	0.5	8/14
55	0.1	8/14
52	0.5	8/14
52	0.1	8/14

V (cont)

55	0.6	8/14
53.4	0.5	8/24
53.6	0.5	8/24
53.4	0.5	8/24
52.9	0.5	8/24
53.6	0.5	8/24
53.4	0.5	8/24
53.4	0.5	8/24
53.6	0.5	8/24
53.4	0.5	8/24
53.6	0.5	8/24
53.4	0.5	8/24
53.3	0.5	8/28
52.6	0.5	8/28
52.9	0.5	8/28
53.9	0.5	8/31
53.5	0.5	8/31
53.5	0.5	8/31
53.9	1.3	9/05
54.5	1.4	9/05
54.9	1.4	9/05
45.7	1.9	12/04
47.9	2	12/04
44.9	2.1	12/04
45.8	1.9	12/04
54	0.5	12/06
54	0.5	12/06
53.4	0.5	12/06

Zn 80NBS 01 ICPMS

CV = 72 + 4 ug/L

Result	Uncer	Date
62	7	8/24
62	7	8/24
62	7	8/24
62	7	8/24
65	8	8/24
64	8	8/24
62	7	8/24
62	7	8/24
65	8	8/24
64	8	8/24
65	8	8/24
64	8	8/24
64	9	12/05
63	9	12/05
65	9	12/05
55	8	12/05

TABLE C-V (cont)

****

NBS 1643b Trace Elements
in Water

****

Ag 84NBS 05 ETVAA

CV = 9.8 + 0.8 ug/L

Result	Uncer	Date
11	2	3/27
8.6	1.7	3/27
11	2	3/27
11	2	3/27
10	1	4/11

Ag 84NBS 05 FAA

CV = 9.8 + 0.8 ug/L

Result	Uncer	Date
9.3	0.9	12/17
9.3	0.9	12/17

Ag 84NBS 05 ICPMS

CV = 9.8 + 0.8 ug/L

Result	Uncer	Date
13	3	2/06
12	1	2/08
11	1	2/21
12	1	2/21
12	2	2/23
12	2	2/23
9.3	2	3/12
8.7	2	3/12
8.7	1	5/11
9.9	1	5/11
9.9	0.2	5/15
9.8	0.1	5/15
9.8	0.1	5/15
9.5	0.1	5/15
9.5	0.1	5/15
9.9	0.2	5/15
9.8	0.6	5/24
10.4	0.6	5/24
9.8	0.2	7/05
11.2	0.1	7/20
10	1	8/01
11	1	8/01
11	1	8/01
11	1	8/01
10.8	1	8/13
10.5	0.9	8/13
10.5	0.9	8/13
10.6	0.9	8/13
10.4	0.9	8/13
10.8	1	8/13
10.7	0.9	8/13
10.7	0.9	8/13
10.6	0.9	8/13
10.6	0.9	8/13
10.6	1	8/13
10.6	1	8/13
11	1	8/14
10	1	8/14
12	1	8/17
10	1	8/17
10	0.4	8/20
10	0.4	8/20
10.2	0.4	8/20
10.2	0.4	8/20

Ag (cont)

10.2	0.4	8/20
10.2	0.4	8/20
12	1	8/31
11	1	9/04
12	2	9/07
11	2	9/07
12	2	9/07
7.8	0.4	10/04
11	1	10/04
11	1	10/04
10.3	0.4	10/04
11	1	10/04
10.9	0.5	10/04
10.6	0.4	10/04
12	1	10/05
11	2	10/05
11	2	10/05
13	1	11/01
9.6	1	11/01
11	1	11/14
10.7	1	11/14
11	1	11/14
11	2	11/16
10	1	11/19
13	2	11/30
10.5	0.9	12/04
10.5	0.9	12/04
10.8	0.9	12/04
11	2	12/17
11	1	12/17
13	2	12/18

As 84NBS 05 ETVAA

CV = 49 ug/L

Result	Uncer	Date
54.9	2	6/08
49.3	2	6/08
48.9	4	6/21
52	10	6/25
52	10	6/25
57	11	6/28
56	11	6/28
52	10	6/28
56	11	6/28
60	12	7/03
47	9	7/24
59	12	7/30
59	12	8/06
60	12	11/21
60	12	11/21
57	11	12/07
54	11	12/07
62	12	12/10
58	12	12/10
51	10	12/10
54	11	12/10
58	12	12/18
57	11	12/18
57	12	12/18
58	12	12/18
59	12	12/18

As 84NBS 05 FAA

CV = 49 ug/L

Result	Uncer	Date
47	10	6/29
53	11	6/29

As 84NBS 05 ICPMS

CV = 49 ug/L

Result	Uncer	Date
66	7	2/21
51	5	2/23
48	5	5/11
48.5	0.3	5/24
49.9	0.3	5/24
55	7	6/08
56	7	6/08
55	7	6/08
55	7	6/11
56	7	6/11
55	7	6/11
57	6	8/01
55	6	8/01
53.8	2.1	8/02
53.8	2.1	8/02
61	6	8/31
53.6	1.1	8/31
63	6	9/04
68	7	9/19
52	5	9/19
56	6	10/05
54	5	10/05
54	5	10/05
56	6	11/01
57	6	11/01
59	6	11/16
59	6	11/19
59	6	12/06
54	5	12/13
46	5	12/13
57	6	12/13
67	7	12/17

Ba 84NBS 05 ICPMS

CV = 44 + 2 ug/L

Result	Uncer	Date
47	5	1/30
48	5	1/30
44	4	2/06
45	4	2/08
48	5	2/21
48	5	2/21
45	5	2/22
45	5	2/22
47	5	2/23
48	5	2/23
44	4	3/12
45	5	3/12
43.8	1	3/13
44	0.4	3/23
44	0.4	3/23
45	5	5/11
44	4	5/11
47.4	1.4	5/24
45.3	1.3	5/24
46	0.5	6/21
44.3	0.4	6/21
44	0.4	6/21
43.7	0.4	6/21
43.7	0.4	6/22
44	0.4	6/22
44	0.4	6/22
43.7	0.4	6/22
44.3	0.4	6/22
46	0.5	6/22
46	0.5	6/22
44.3	0.4	6/22
43.6	0.3	7/05
47.4	0.5	7/20
47.4	0.5	7/20

Ba (cont)

45	5	8/01
46	5	8/01
47	5	8/01
45	5	8/01
49	5	8/01
40	4	8/01
47	5	8/01
41.9	1.6	8/13
41.9	1.6	8/13
43.1	1.6	8/13
42	1.6	8/13
41.9	1.6	8/13
43.1	1.6	8/13
43.1	1.6	8/13
42	1.6	8/13
42	1.6	8/13
42	1.6	8/13
43.1	1.6	8/13
41.9	1.6	8/13
44	4	8/14
43	4	8/14
44	4	8/14
49.4	4.3	8/17
47	4.1	8/17
43.5	0.9	8/20
43.6	0.9	8/20
43.6	0.9	8/20
42.3	0.9	8/20
42.3	0.9	8/20
43.5	0.9	8/20
43.6	0.9	8/21
42.3	0.9	8/21
43.6	0.9	8/21
43.5	0.9	8/21
43.5	0.9	8/21
42.3	0.9	8/21
42	4	8/31
46	5	9/04
46.5	3.4	9/07
46.6	3.4	9/07
44.6	3.3	9/07
46	5	10/04
48	5	10/04
51	6	10/04
49	6	10/04
42.2	1.4	10/04
41.9	1.4	10/04
43.6	1.4	10/04
45	5	11/01
45	5	11/01
44	4	11/01
44.4	2	11/14
45.7	2	11/14
47.6	2.1	11/14
45	5	11/16
45	5	11/19
45	5	11/30
44.9	0.9	12/04
45.5	0.9	12/04
44.1	0.9	12/04
46	5	12/17
45	5	12/17
46	5	12/18

Be 84NBS 05 ICPMS

CV = 19 + 2 ug/L

Result	Uncer	Date
16	2	1/30
22	2	2/21
19	2	3/12
21.7	1.1	3/13
23.2	1.1	3/16
23.2	1.2	3/16
23.2	1.2	3/16

Be (cont)

20	2	5/11
21	2	5/11
19	1.7	5/24
18	1.6	5/24
17	2	7/31
18	2	8/01
21	3	8/02
21	3	8/02
21	3	8/02
17	2	8/14
19.7	1.6	8/31
26	5	9/19
23	5	9/19
21	2	10/05
19	2	11/01
19	2	11/01
20	2	11/05
21	2	11/05
22	2	11/05
22	2	11/05
17	2	11/16
17	2	12/05
23	5	12/12
23	4	12/12
22	4	12/12
20	2	12/17
21	2	12/17
22	2	12/18

Cd 84NBS 05 ETVAA

CV = 20 + 1 ug/L

Result	Uncer	Date
20	4	2/09
17	3	7/03

Cd 84NBS 05 FAA

CV = 20 + 1 ug/L

Result	Uncer	Date
20	2	12/17
20	2	12/17

Cd 84NBS 05 ICPMS

CV = 20 + 1 ug/L

Result	Uncer	Date
23	2	1/30
22	2	1/30
20	2	2/06
19	2	2/08
19	2	2/21
19	2	2/21
18	2	2/23
18	2	2/23
19	2	3/12
19	2	5/11
20	2	5/11
18.3	0.2	5/15
18.6	0.2	5/15
18.6	0.2	5/15
18.6	0.3	5/15
18.6	0.3	5/15
18.3	0.2	5/15
19.8	0.2	5/24
19.5	0.2	5/24
20.4	0.2	6/21
19.9	0.2	6/21
19.2	0.2	6/21

Cd (cont)

20.7	0.2	6/21
20.4	0.2	6/22
19.9	0.2	6/22
19.2	0.2	6/22
20.7	0.2	6/22
19.2	0.2	6/22
19.9	0.2	6/22
20.7	0.2	6/22
20.4	0.2	6/22
20.6	0.6	7/20
20	2	8/01
21	2	8/01
20	2	8/01
18.8	0.7	8/13
20	0.7	8/13
18.9	0.7	8/13
18.9	0.7	8/13
18.8	0.7	8/13
18.9	0.7	8/13
18.9	0.7	8/13
18.8	0.7	8/13
18.8	0.7	8/13
20	0.7	8/13
20	0.7	8/13
20	0.7	8/13
20	2	8/14
20	2	8/14
18.9	0.7	8/20
19.8	0.7	8/20
19.2	0.7	8/20
19.8	0.7	8/20
19.2	0.7	8/20
18.9	0.7	8/20
19	2	8/31
22	2	9/04
21.9	1.4	9/07
20	1.3	9/07
20.8	1.3	9/07
19	2	9/19
19	2	9/19
19.5	0.6	10/04
19.5	0.6	10/04
19.3	0.5	10/04
19.3	0.6	10/04
19.9	0.2	10/04
19.8	0.2	10/04
19.8	0.2	10/04
20	2	10/05
21	2	10/05
20	2	10/05
21	2	10/05
23	2	10/05
20	2	11/01
21	2	11/01
20	2	11/16
19	1.2	11/16
18.2	1.1	11/16
19.1	1.2	11/16
20	2	11/19
21	2	11/19
21	2	11/30
21.4	2	12/17
21	2	12/17
21	2	12/18

Co 84NBS 05 ICPMS

CV = 26 + 1 ug/L

Result	Uncer	Date
28	3	5/11
28	3	10/05
28	3	10/05
27	3	10/05
27	3	10/05

TABLE C-V (cont)

****

NBS 1643b Trace Elements
in Water
(cont)

****

Cr 84NBS 05 ETVAA

CV = 18.6 + 0.4 ug/L

Result	Uncer	Date
15	3	2/09
17	3	7/03

Cr 84NBS 05 FAA

CV = 18.6 + 0.4 ug/L

Result	Uncer	Date
19	2	12/17
20	2	12/17
19	2	12/17
20	2	12/17

Cr 84NBS 05 ICPMS

CV = 18.6 + 0.4 ug/L

Result	Uncer	Date
24	2	1/30
24	2	1/30
18	2	2/06
19	2	2/08
22	2	2/21
22	2	2/21
19	2	2/22
20	2	2/23
20	2	3/12
18	2	3/12
17	2	3/12
21	2	3/12
17	2	5/11
17	2	5/11
18.3	0.3	5/24
22	3	6/08
20	2	6/08
21	2	6/08
22	3	6/11
21	2	6/11
20	2	6/11
22	2	8/01
23.2	2.2	8/01
19	2	8/01
23	2	8/01
25	3	8/01
19	2	8/01
21	2	8/01
24	2	8/01
19	2	8/01
20	2	8/01
24	4	8/02
24	4	8/02
18	2	8/14
18	2	8/14
19	4	9/05
21.5	2	9/19
18	2	9/19
19	2	10/05
19	2	10/05
18	2	10/05
18	2	10/05
19	2	10/05
19	2	10/05

Cr (cont)

18	2	11/01
20	2	11/01
21	2	11/16
21	2	11/19
18	2	11/30
25	3	12/17
25	3	12/17
19	2	12/18

Cu 84NBS 05 FAA

CV = 21.9 + 0.4 ug/L

Result	Uncer	Date
19	2	12/19

Cu 84NBS 05 ICPMS

CV = 21.9 + 0.4 ug/L

Result	Uncer	Date
26	3	1/30
24	2	2/06
25	2	2/08
25	3	2/21
26	3	2/21
24	2	2/22
24	2	2/23
23	2	2/23
22	2	3/12
22	2	3/12
24	1.2	3/13
23.6	0.3	3/16
23.6	1.2	3/16
23.2	2.2	5/11
22	2	5/11
20.6	1	5/24
21.7	0.4	6/08
21.1	0.4	6/08
21.7	0.4	6/08
21.1	0.4	6/11
21.7	0.4	6/11
21.7	0.4	6/11
24.7	1.8	6/21
25.3	1.8	6/21
23.7	1.7	6/21
22.1	1.6	6/21
22.1	1.6	6/21
25.3	1.8	6/21
24.7	1.8	6/21
23.7	1.7	6/21
18	2	8/01
21	2	8/01
24	2	8/01
27	3	8/01
23	2	8/01
22	2	8/01
26	3	8/01
21	2	8/14
22	2	8/14
21.9	0.5	9/05
22	2	10/05
22	2	10/05
22	2	10/05
22	2	10/05
28	4	10/31
22	3	10/31
27	4	10/31
24	2	11/01
25	2	11/01
21	1.5	11/06
23	1.1	11/06
19.6	1.4	11/06
17.8	1.3	11/06

Cu (cont)

24	2	11/16
18	2	12/17
20	2	12/17
21	2	12/18

Fe 84NBS 05 FAA

CV = 99 + 8 ug/L

Result	Uncer	Date
100	10	12/19

Mn 84NBS 05 ICPMS

CV = 28 + 2 ug/L

Result	Uncer	Date
27	3	5/11
35	7	6/08
33	7	6/08
33	7	6/08
35	7	6/11
33	7	6/11
33	7	6/11
36	5	8/02
36	5	8/02
31	5	9/05
32	3	10/05
32	3	10/05
32	3	10/05
32	3	10/05
34	3	11/01
35	3	11/01
33	3	11/16
32	3	11/21
31	3	11/29
31	3	12/06
24	2	12/06

Mo 84NBS 05 ICPMS

CV = 85 + 3 ug/L

Result	Uncer	Date
93	9	5/11
90.4	1.4	5/15
91.9	1.5	5/15
91.3	2.3	5/15
90.4	1.4	5/15
91.3	2.3	5/15
91.9	1.5	5/15
100	10	7/20
100	20	8/02
100	10	8/31
96	10	10/05
95	10	10/05
97	10	10/05
99	10	10/05
95	10	10/05
110	10	11/01
100	10	11/01
100	30	11/06
110	30	11/06
110	30	11/06
110	30	11/06
100	10	11/16
100	20	12/04
97	16	12/04
98	16	12/04

Ni 84NBS 05 ICPMS

CV = 49 + 3 ug/L

Result	Uncer	Date
51	5	2/06
47	5	2/08
58	6	2/21
61	6	2/21
51	5	2/23
52	5	2/23
52	5	3/12
55	6	3/12
48	1	3/13
50	0.6	3/16
50	0.6	3/16
50	0.6	3/16
47	5	5/11
53	5	5/11
44	5	5/24
45	5	5/24
45.7	3.2	6/08
45.5	3.2	6/08
45.6	3.2	6/08
45.5	3.2	6/11
45.6	3.2	6/11
45.7	3.2	6/11
48.7	1.8	6/21
48.7	1.8	6/21
50.5	1.9	6/21
54.8	2.1	6/21
53.4	2	6/21
53.4	2	6/21
50.5	1.9	6/21
54.8	2.1	6/21
59	6	8/01
54	5	8/01
56	6	8/01
60	6	8/01
44	4	8/01
63	6	8/01
43	4	8/01
47	5	8/01
48	5	8/01
57.2	4.5	8/02
52	5	8/14
46	5	8/14
45	5	8/14
45	5	8/14
49.6	2	8/31
52	5	10/05
48	5	10/05
48	5	10/05
47	5	10/05
47	5	10/05
46	5	11/01
52	5	11/01
55	6	11/16
55	6	11/30
43	6	12/12
42	6	12/12
43	6	12/12
53	5	12/17
55	6	12/17
49	5	12/18

Pb 84NBS 05 ETVAA

CV = 23.7 + 0.7 ug/L

Result	Uncer	Date
21	4	2/09
25	5	7/03
21	4	8/03
22	5	8/03

Pb 84NBS 05 FAA

CV = 23.7 + 0.7 ug/L

Result	Uncer	Date
20	2	12/17
20	2	12/17

Pb 84NBS 05 ICPMS

CV = 23.7 + 0.7 ug/L

Result	Uncer	Date
20	2	1/30
21	2	1/30
22	2	2/06
21	2	2/08
22	2	2/08
20	2	2/21
20	2	2/21
22	2	3/12
24.4	0.3	3/13
23.7	0.4	3/16
23.7	0.4	3/16
23.7	0.4	3/16
21.8	0.2	5/15
21.9	0.2	5/15
22.1	0.1	5/15
23.5	0.3	5/24
21.9	0.3	5/24
25.4	0.6	6/21
24.3	0.6	6/21
24.8	0.6	6/21
23.8	0.6	6/21
23.8	0.6	6/22
24.8	0.6	6/22
24.3	0.6	6/22
23.4	0.3	7/05
24.2	0.4	7/20
24.2	0.4	7/20
24.1	0.4	7/24
21	2	8/01
19	2	8/01
21	2	8/01
20	2	8/01
21	2	8/01
21	2	8/01
22.6	1.1	8/13
21.2	1	8/13
21.2	1	8/13
24	1.1	8/13
21.2	1	8/13
22.6	1.1	8/13
22.6	1.1	8/13
21.2	1	8/13
24	1.1	8/13
22.6	1.1	8/13
24	1.1	8/13
24	1.1	8/13
23.1	0.8	8/20
23.2	0.8	8/20
23.2	0.8	8/20
22.8	0.8	8/20
22.8	0.8	8/20
23.2	0.8	8/20
22	2	8/31
26	2	9/07
25.5	2	9/07
25.1	1.9	9/07
21	2	9/19
22.8	2	9/19
26	4	10/04
26	4	10/04
24.5	0.8	10/04
25	0.9	10/04
30	4	10/04
24.1	0.8	10/04

Pb (cont)

25	4	10/04
22	2	11/01
23	2	11/01
23.2	0.7	11/14
26.2	0.8	11/14
24	0.7	11/14
22	2	11/16
22	2	11/19
23	2	11/30
24	2	12/17
24	2	12/17
24	2	12/18

Se 84NBS 05 ETVAA

CV = 9.7 + 0.5 ug/L

Result	Uncer	Date
9.1	1	6/08
8.7	1	6/08
9.2	1	6/21
12	2	6/25
14	3	6/25
11	2	6/25
9.5	1	6/28
10	1	6/28
9.9	1	6/28
9.6	1	6/28
10	2	7/03
10	2	7/24
9.6	2	11/21
9.7	2	11/21
12	2	12/07
10	2	12/07
9.6	1	12/10
9.3	1	12/10
11	2	12/10
10	2	12/18
11	2	12/18
10	2	12/18
9.7	2	12/18
10	2	12/18

Se 84NBS 05 FAA

CV = 9.7 + 0.5 ug/L

Result	Uncer	Date
9.6	1	6/29
10.8	1	6/29

Se 84NBS 05 ICPMS

CV = 9.7 + 0.5 ug/L

Result	Uncer	Date
11	1	5/11
9.9	1	5/11
10	2	8/31
8.3	1	9/04
9.4	2	10/05
8.5	2	10/05
11	2	11/19

TABLE C-V (cont)

****

NBS 1643b Trace Elements in Water (cont)

****

Sr 84NBS 05 ICPMS

CV = 227 + 6 ug/L

Result	Uncer	Date
230	20	5/11
230	20	5/11
220	20	10/05
243	2	10/05
230	20	10/05
240	20	10/05
240	20	10/05
260	30	11/01
250	30	11/01
222	2	11/06
233	2	11/06
217	2	11/06
230	2	11/06
250	30	11/16
250	30	11/16

Tl 84NBS 05 ETVAA

CV = 8.0 + 0.2 ug/L

Result	Uncer	Date
8.8	1.9	4/11
6.1	2.0	5/16
5.8	2.0	5/16
7.5	0.8	5/29
6.3	1.0	6/08
7.0	1.4	7/10
8.6	1.7	7/10
7.3	1.0	7/13
6.0	1.0	7/13
7.3	1.0	7/13
7.2	1.0	7/13
9.1	1.8	7/20
8.2	1.6	7/20
7.0	1.0	7/23
6.9	1.0	7/23
6.1	1.0	8/13
8.1	1.0	9/18
8.3	1.0	9/18
7.0	1.0	10/18
6.3	1.0	10/24
6.1	2.0	11/02
6.1	2.0	11/02
7.6	1.0	11/15
7.7	1.0	11/15
6.8	1.0	12/11
8.5	1.0	12/11

Tl 84NBS 05 FAA

CV = 8.0 + 0.2 ug/L

Result	Uncer	Date
7.0	1.4	7/09

Tl 84NBS 05 ICPMS

CV = 8.0 + 0.2 ug/L

Result	Uncer	Date
7.8	2.0	1/30
7.8	2.0	1/30
7.9	2.0	2/06
7.2	1.0	2/08
8.2	1.0	2/08
7.6	1.0	2/21
8.1	1.0	2/21
8.1	1.0	2/21
7.5	1.0	2/21
6.9	1.0	2/23
7.3	1.0	2/23
8.0	1.0	2/23
6.8	1.0	2/23
6.3	1.0	5/11
7.7	0.1	5/15
7.2	0.2	5/15
7.5	0.2	5/15
7.5	0.2	5/15
7.2	0.2	5/15
7.7	0.1	5/15
7.2	0.1	5/24
8.0	0.1	5/24
8.5	0.2	6/21
8.4	0.2	6/21
8.2	0.2	6/21
7.9	0.2	6/21
8.5	0.2	6/22
8.4	0.2	6/22
7.9	0.2	6/22
8.2	0.2	6/22
8.2	0.2	6/22
8.5	0.2	6/22
7.9	0.2	6/22
8.4	0.2	6/22
12.0	3.0	7/05
8.2	2.1	7/05
8.2	0.1	7/20
5.0	2.0	8/01
5.1	2.0	8/01
7.5	2.0	8/01
6.7	2.0	8/01
8.1	0.1	8/13
7.9	0.1	8/13
7.9	0.1	8/13
7.7	0.1	8/13
7.7	0.1	8/13
7.7	0.1	8/13
7.9	0.1	8/13
8.1	0.1	8/13
7.7	0.1	8/13
8.1	0.1	8/13
8.1	0.1	8/13
7.9	0.1	8/13
5.4	1.0	8/14
8.1	0.1	8/20
8.1	0.1	8/20
8.0	0.1	8/20
8.0	0.1	8/20
8.0	0.1	8/20
8.0	0.1	8/20
8.8	0.7	9/07
8.3	0.7	9/07
9.0	0.8	9/07
7.7	0.7	10/04
9.3	0.8	10/04
8.0	0.7	10/04
7.8	0.7	10/04
8.0	0.1	10/04
8.4	0.1	10/04
8.0	0.1	10/04
7.4	1.0	11/01
5.1	1.0	11/01
8.8	0.8	11/14
7.7	0.7	11/14

Tl (cont)

8.9	0.8	11/14
7.6	1.0	11/16
7.5	1.0	11/30
7.7	1.0	12/17
7.8	1.0	12/17
7.6	1.0	12/18

U 89GLA 04 ICPMS

CV = none available ug/L

Result	Uncer	Date
1.7	2	2/06

V 84NBS 05 ETVAA

CV = 45.2 + 0.4 ug/L

Result	Uncer	Date
49	5	4/10
50	5	4/11

V 84NBS 05 ICPMS

CV = 45.2 + 0.4 ug/L

Result	Uncer	Date
38	4	5/11
42.5	0.4	8/02
42.5	0.4	8/02
45.9	0.5	8/31
44	4	10/05
44	4	10/05
47	5	10/05
47	5	10/05
48	5	11/01
47	5	11/01
40.4	2.4	11/06
39.8	2.4	11/06
43.7	2.6	11/06
46.8	2.8	11/06
40	6	11/19
37	6	11/19
36	5	11/19
42	6	11/19
47.3	0.5	12/06

Zn 84NBS 05 FAA

CV = 66 + 2 ug/L

Result	Uncer	Date
70	7	12/19

Zn 84NBS 05 ICPMS

CV = 66 + 2 ug/L

Result	Uncer	Date
69	7	1/30
70	7	2/06
67	7	2/08
72	7	2/21
70	7	2/23
68	7	2/23
68	7	2/23
59	6	3/12
60	6	3/12

Zn (cont)

55	6	5/11
67.5	1.2	6/08
64.9	1.1	6/08
62.2	1.1	6/08
64.9	1.1	6/11
67.5	1.2	6/11
62.2	1.1	6/11
67.9	4.2	6/21
66.8	4.2	6/21
77.2	4.8	6/21
67.9	4.2	6/21
66.8	4.2	6/21
77.2	4.8	6/21
58	6	8/01
63	6	8/01
68	7	8/01
57	6	8/01
58	6	8/01
65	7	8/01
60	6	8/14
61	6	8/14
60	6	10/05
60	6	10/05
60	6	10/05
63	6	10/05
66.9	3.3	10/31
64.1	3.2	10/31
75.2	3.8	10/31
62	6	11/01
63	6	11/01
64.8	3.2	11/06
70.3	3.5	11/06
73	3.7	11/06
63.9	3.2	11/06
68	7	11/16
68.7	3	11/21
65.4	2.9	11/21
72.6	3.2	11/21
69	3.5	12/13
66.7	3.4	12/13
66.9	3.4	12/13
66	7	12/17
70	7	12/17
67	7	12/18
61.2	3.2	12/21
63.7	3.4	12/21

****

NBS 1645 River Sediment

****

Ag 87GLA 01 ATNA

CV = 1.75 ug/g

Result	Uncer	Date
1.5	0.5	5/25
1.3	0.4	6/24
1.2	0.4	7/21

Ag 87GLA 01 ICPES

CV = 1.75 ug/g

Result	Uncer	Date
< 2		8/07

Al 82NBS 11 ATNA

CV = 2.26 + 0.04 %

Result	Uncer	Date
2.38	0.07	5/25
2.44	0.07	6/24
2.45	0.07	7/21

As 87GLA 01 ATNA

CV = 67 + 3 ug/g

Result	Uncer	Date
67	7	5/25
71	7	6/24
69	8	7/21

Au ATNA

CV = none available ng/g

Result	Uncer	Date
< 7		5/25
17	3	6/24
< 8		7/21

B 87GLA 01 ICPES

CV = 31 ug/g

Result	Uncer	Date
82	16	9/17

Sample appears to have been switched with NBS 1646 Estuarine Sediment also analyzed 9/17

Ba 87GLA 01 ATNA

CV = 374 + 26 ug/g

Result	Uncer	Date
360	40	5/25
390	40	6/24
390	40	7/21

Ba 87GLA 01 ICPMS

CV = 374 + 26 ug/g

Result	Uncer	Date
343	15	3/09
343	15	3/09
341	9	3/09
343	15	3/09
341	9	3/09
341	9	3/09
341	9	3/09
343	15	3/09
309	15	3/16
321	20	3/16
309	15	3/16
321	20	3/16
402	12	3/23
402	12	3/23

Be 87GLA 01 ICPMS

CV = 1 ug/g

Result	Uncer	Date
1.0	0.1	3/01
1.2	0.1	3/01
0.9	0.07	3/09
0.9	0.07	3/09
0.9	0.07	3/09
1.1	0.1	3/16
1.1	0.1	3/16
1.1	0.1	3/16
1.1	0.1	3/16

Br ATNA

CV = none available ug/g

Result	Uncer	Date
1.3	0.3	5/25
0.24	0.3	6/24
1.6	0.3	7/21

Ca 87GLA 01 ATNA

CV = 2.6 + 0.3 %

Result	Uncer	Date
2.99	0.14	5/25
3.03	0.15	6/24
3.21	0.15	7/21

Cd 82NBS 11 ICPES

CV = 10 + 2 ug/g

Result	Uncer	Date
11	2	8/13
10	2	8/13
9.9	2	8/13
10	3	9/17

Cd 82NBS 11 ICPMS

CV = 10 + 2 ug/g

Result	Uncer	Date
9.5	1.9	4/03
9.4	1.9	4/03

Ce 87GLA 01 ATNA

CV = 24 ug/g

Result	Uncer	Date
540	30	5/25
< 4		6/24
1070	50	7/21

TABLE C-V (cont)

****

NBS 1645 River Sediment
(cont)

****

Cl ATNA

CV = none available ug/g

Result	Uncer	Date
120	20	5/25
89	14	6/24
110	10	7/21

Co 82NBS 11 ATNA

CV = 10.1 + 0.6 ug/g

Result	Uncer	Date
7.7	0.4	5/25
7.7	0.4	6/24
8.0	0.4	7/21

Cr 82NBS 11 ATNA

CV = 2.96 + 0.28 %

Result	Uncer	Date
2.78	0.16	5/25
2.85	0.17	6/24
2.81	0.17	7/21

Cs 87GLA 01 ATNA

CV = 2.8 + 0.5 ug/g

Result	Uncer	Date
2.09	0.17	5/25
2.34	0.21	6/24
2.44	0.21	7/21

Cu 82NBS 11 ATNA

CV = 110 + 20 ug/g

Result	Uncer	Date
< 170		5/25
200	60	6/24
220	60	7/21

Cu 82NBS 11 ICPMS

CV = 110 + 20 ug/g

Result	Uncer	Date
130	10	3/01
120	10	3/01
102	7	3/09
100	10	3/09
102	7	3/09
100	10	3/09
100	10	3/09
102	7	3/09
99	3	3/16
112	3	3/16
112	3	3/16

Dy 87GLA 01 ATNA

CV = 2 ug/g

Result	Uncer	Date
1.1	0.2	5/25
< 5		6/24
< 4		7/21

Eu 87GLA 01 ATNA

CV = 500 ng/g

Result	Uncer	Date
330	50	5/25
340	50	6/24
320	40	7/21

Fe 82NBS 11 ATNA

CV = 11 + 1 %

Result	Uncer	Date
10.2	0.5	5/25
10.2	0.6	6/24
10.4	0.5	7/21

Ga 87GLA 01 ATNA

CV = 41 + 20 ug/g

Result	Uncer	Date
9	3	5/25
< 30		6/24
< 13		7/21

Hf 87GLA 01 ATNA

CV = 1.39 ug/g

Result	Uncer	Date
1.3	0.2	5/25
1.1	0.3	6/24
1.6	0.2	7/21

Hg 82NBS 11 ATNA

CV = 1.1 + 0.5 ug/g

Result	Uncer	Date
< 1.3		5/25
< 1.6		6/24
< 1.1		7/21

Hg 82NBS 11 CVAA

CV = 1.1 + 0.5 ug/g

Result	Uncer	Date
1.1	0.1	1/17

I ATNA

CV = none available ug/g

Result	Uncer	Date
< 16		5/25
< 16		6/24
< 14		7/21

In 87GLA 01 ATNA

CV = < 790 ng/g

Result	Uncer	Date
290	70	5/25
310	40	6/24
220	30	7/21

K 82NBS 11 ATNA

CV = 1.26 + 0.05 %

Result	Uncer	Date
1.22	0.09	5/25
1.37	0.11	6/24
1.33	0.09	7/21

La 82NBS 11 ATNA

CV = 9 ug/g

Result	Uncer	Date
8.3	0.4	5/25
8.4	0.4	6/24
8.1	0.5	7/21

Lu ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.24		5/25
< 0.30		6/24
< 0.30		7/21

Mg 82NBS 11 ATNA

CV = 7400 + 200 ug/g

Result	Uncer	Date
6600	600	5/25
6700	500	6/24
5800	500	7/21

Mn 82NBS 11 ATNA

CV = 780 + 100 ug/g

Result	Uncer	Date
790	30	5/25
800	30	6/24
810	30	7/21

Na 82NBS 11 ATNA

CV = 5400 + 100 ug/g

Result	Uncer	Date
5530	230	5/25
5570	230	6/24
5640	250	7/21

Nd ATNA

CV = none available ug/g

Result	Uncer	Date
< 16		5/25
< 21		6/24
< 16		7/21

Ni 82NBS 11 ICPMS

CV = 45.8 + 2.9 ug/g

Result	Uncer	Date
42	4	3/01
37	4	3/01
42.4	2	3/09
40.7	2	3/09
42.4	2	3/09
40.7	2	3/09
42.4	2	3/09
40.7	2	3/09
39	4	3/16
39	4	3/16
37	4	3/16
37	4	3/16
37	4	3/16
39	4	3/16

Pb 82NBS 11 ICPMS

CV = 714 + 28 ug/g

Result	Uncer	Date
690	70	2/28
740	70	2/28
757	10	3/09
757	10	3/09
723	30	3/09
723	30	3/09
723	30	3/09
757	10	3/09
695	13	3/16
695	13	3/16
683	11	3/16
683	11	3/16
683	11	3/16
695	13	3/16

Rb 87GLA 01 ATNA

CV = 41 + 4 ug/g

Result	Uncer	Date
51	5	5/25
42	4	6/24
43	4	7/21

Sb 87GLA 01 ATNA

CV = 31 + 6 ug/g

Result	Uncer	Date
33.8	1.6	5/25
37.6	2.1	6/24
34.6	1.7	7/21

Sc 82NBS 11 ATNA

CV = 2 ug/g

Result	Uncer	Date
1.99	0.11	5/25
1.99	0.10	6/24
2.05	0.11	7/21

Se 87GLA 01 ATNA

CV = 1.3 + 0.4 ug/g

Result	Uncer	Date
< 7		5/25
< 9		6/24
< 7		7/21

Sm 87GLA 01 ATNA

CV = 1.24 ug/g

Result	Uncer	Date
1.30	0.06	5/25
1.33	0.06	6/24
1.25	0.06	7/21

Sr 87GLA 01 ATNA

CV = 880 + 90 ug/g

Result	Uncer	Date
860	100	5/25
840	90	6/24
740	90	7/21

Ta 87GLA 01 ATNA

CV = 220 ng/g

Result	Uncer	Date
< 600		5/25
< 600		6/24
< 500		7/21

Tb ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.5		5/25
< 0.5		6/24
< 0.4		7/21

Th 82NBS 11 ATNA

CV = 1.6 + 0.2 ug/g

Result	Uncer	Date
1.6	0.2	5/25
2.0	0.2	6/24
2.14	0.2	7/21

Th 82NBS 11 ICPMS

CV = 1.6 + 0.2 ug/g

Result	Uncer	Date
1.2	0.1	2/28
1.3	0.1	2/28
1.8	0.2	3/09
1.6	0.1	3/09
1.6	0.1	3/09
1.6	0.1	3/09
1.8	0.2	3/09
1.8	0.2	3/09
1.7	0.1	3/16

Ti 87GLA 01 ATNA

CV = 500 + 200 ug/g

Result	Uncer	Date
1200	200	5/25
1200	200	6/24
970	180	7/21

U 82NBS 11 ATNA

CV = 1.11 + 0.05 ug/g

Result	Uncer	Date
1.12	0.05	5/25
1.10	0.04	6/24
1.18	0.05	7/21

U 82NBS 11 DNA

CV = 1.11 + 0.05 ug/g

Result	Uncer	Date
1.1	0.2	1/19
1.2	0.2	1/19
1.0	0.2	1/19
1.1	0.2	1/19
1.0	0.2	1/19
1.2	0.2	1/19
1.1	0.2	1/22
0.98	0.2	1/22
1.1	0.2	1/22
1.1	0.2	1/29
1.1	0.2	1/29
1.1	0.2	1/29
1.1	0.2	3/19
1.1	0.2	3/19
1.1	0.2	3/19
1.1	0.2	3/19
1.1	0.2	3/19
1.0	0.2	3/19
0.98	0.1	5/04
1.1	0.1	5/04
1.1	0.1	5/04
0.98	0.1	5/04
1.1	0.1	5/04
1.1	0.1	5/04

TABLE C-V (cont)

****

NBS 1645 River Sediment
(cont)

****

U (cont)

1.1	0.1	5/04
0.98	0.1	5/04
1.1	0.1	5/04
1.1	0.1	7/10
1.0	0.1	7/10
1.1	0.1	7/10
1.0	0.1	7/10
1.1	0.1	7/10
1.07	0.1	7/10
1.07	0.1	7/10
1.0	0.1	7/10
1.1	0.1	7/10
1.1	0.1	7/10
1.1	0.1	7/19
1.1	0.1	7/19
1.1	0.1	7/19
1.1	0.1	7/19
1.1	0.1	7/19
1.1	0.1	7/19
1.1	0.1	7/19
1.1	0.1	7/19
1.1	0.1	7/19
1.1	0.1	7/20
1.1	0.1	7/20
1.1	0.1	7/20
1.1	0.1	7/20
1.1	0.1	7/20
1.1	0.1	7/20
1.1	0.1	7/20
1.1	0.1	7/20
1.0	0.1	8/30
1.1	0.1	8/30
1.1	0.1	8/30
1.16	0.11	8/30
1.1	0.1	8/30
1.16	0.11	8/30
1.16	0.11	8/30
1.0	0.1	8/30
1.0	0.1	8/30
1.1	0.1	9/18
1.1	0.1	9/18
1.08	0.1	9/18
1.1	0.1	9/18
1.1	0.1	9/18
1.08	0.1	9/18
1.1	0.1	11/07
1.07	0.1	11/07
1.2	0.1	11/07
1.17	0.11	11/08
1.1	0.1	11/08
1.09	0.1	11/08
1.09	0.1	11/08
1.1	0.1	11/08
1.17	0.11	11/08

U 82NBS 11 ICPMS

CV = 1.11 + 0.05 ug/g

Result	Uncer	Date
1.0	0.1	2/28
0.99	0.1	2/28
1.2	0.1	3/09
1.0	0.1	3/09
1.0	0.1	3/09
1.2	0.1	3/09
1.2	0.1	3/09
1.0	0.1	3/09
1.1	0.1	3/16

U (cont)

1.1	0.1	3/16
1.1	0.1	3/16
1.1	0.1	3/16
1.1	0.1	3/16
0.93	0.18	7/31
0.88	0.09	9/11
0.91	0.09	9/12
1.07	0.06	9/18
1.04	0.05	9/20
1.1	0.06	9/21
1.17	0.06	9/24
1.13	0.06	10/19
1.09	0.1	11/16

U 82NBS 11 IENA

CV = 1.11 + 0.05 ug/g

Result	Uncer	Date
1.1	0.1	2/22
0.97	0.1	2/22
1.12	0.1	2/22
1.1	0.2	2/22
1.09	0.1	2/22
1.1	0.1	2/22

U-235/238 89GLA 04 ICPMS

CV = 0.0072 + 0.0001 ratio

Result	Uncer	Date
0.0069	0.0001	2/26
0.0073	0.0002	2/26
0.0069	0.0001	2/26
0.0073	0.0002	2/26

V 82NBS 11 ATNA

CV = 23.5 + 6.9 ug/g

Result	Uncer	Date
22.3	1.8	5/25
22.3	1.8	6/24
20.8	1.5	7/21

W ATNA

CV = none available ug/g

Result	Uncer	Date
1.9	0.6	5/25
2.2	0.5	6/24
1.7	0.4	7/21

Yb 87GLA 01 ATNA

CV = 600 ng/g

Result	Uncer	Date
550	90	5/25
780	100	6/24
680	100	7/21

Zn 82NBS 11 ATNA

CV = 1700 + 200 ug/g

Result	Uncer	Date
1700	200	5/25
1400	200	6/24
1500	200	7/21

Zr 87GLA 01 ATNA

CV = 61 + 9 ug/g

Result	Uncer	Date
< 160		5/25
< 300		6/24
< 160		7/21

****

NBS 1646 Estuarine Sediment

****

Ag 87GLA 01 ATNA

CV = 88 ng/g

Result	Uncer	Date
< 3600		5/22
< 4000		5/26
< 3000		5/26
< 4700		5/27
< 4000		6/24
< 4000		7/21

Al 82NBS 01 ATNA

CV = 6.25 + 0.20 %

Result	Uncer	Date
5.86	0.17	5/22
6.09	0.18	5/26
6.31	0.17	5/26
6.20	0.17	5/27
6.02	0.17	6/24
6.31	0.18	7/21

As 82NBS 01 ATNA

CV = 12 + 1 ug/g

Result	Uncer	Date
11	1	5/22
11	1	5/26
11	1	5/26
11	1	5/27
11	1	6/24
10	1	7/21

Au ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.013		5/22
< 0.017		5/26
< 0.017		5/26
< 0.013		5/27
< 0.017		6/24
< 0.016		7/21

B 87GLA 01 ICPES

CV = 82.5 ug/g

Result	Uncer	Date
< 3		9/17

Sample appears to have been switched with NBS 1645 River Sediment also analyzed 9/17

Ba 87GLA 01 ATNA

CV = 409 ug/g

Result	Uncer	Date
450	70	5/22
420	40	5/26
390	40	5/26
380	50	5/27
420	50	6/24
400	40	7/21

Ba 87GLA 01 ICPES

CV = 409 ug/g

Result	Uncer	Date
400	40	3/26
400	40	3/26
410	40	3/26
360	40	3/26
330	30	4/04
400	80	8/09

Br 87GLA 01 ATNA

CV = 117 ug/g

Result	Uncer	Date
120	10	5/22
140	20	5/26
150	20	5/26
120	10	5/27
150	20	6/24
130	10	7/21

Ca 82NBS 01 ATNA

CV = 8300 + 300 ug/g

Result	Uncer	Date
9000	700	5/22
7900	700	5/26
8600	700	5/26
6600	600	5/27
9000	700	6/24
7000	600	7/21

Cd 82NBS 01 ICPES

CV = 360 + 70 ng/g

Result	Uncer	Date
< 4000		8/09

Ce 87GLA 01 ATNA

CV = 80 + 4 ug/g

Result	Uncer	Date
77	4	5/22
82	4	5/26
86	4	5/26
76	4	5/27
78	4	6/24
85	4	7/21

Cl 87GLA 01 ATNA

CV = 1.38 %

Result	Uncer	Date
1.28	0.09	5/22
1.46	0.11	5/26
1.27	0.09	5/26
1.31	0.09	5/27
1.25	0.09	6/24
1.34	0.10	7/21

Co 82NBS 01 ATNA

CV = 10 + 1 ug/g

Result	Uncer	Date
9.0	0.5	5/22
9.5	0.5	5/26
9.9	0.6	5/26
9.4	0.5	5/27
8.9	0.5	6/24
9.4	0.5	7/21

Cr 82NBS 01 ATNA

CV = 76 + 3 ug/g

Result	Uncer	Date
73	4	5/22
78	5	5/26
84	5	5/26
78	5	5/27
77	5	6/24
78	5	7/21

Cr 82NBS 01 ICPES

CV = 76 + 3 ug/g

Result	Uncer	Date
58	12	8/09

Cs 87GLA 01 ATNA

CV = 3.69 + 0.10 ug/g

Result	Uncer	Date
3.46	0.23	5/22
3.70	0.30	5/26
3.60	0.30	5/26
3.34	0.22	5/27
3.31	0.20	6/24
3.70	0.30	7/21

Cu 82NBS 01 ATNA

CV = 18 + 3 ug/g

Result	Uncer	Date
< 340		5/22
< 300		5/26
< 300		5/26
< 370		5/27
< 300		6/24
< 300		7/21

Dy 87GLA 01 ATNA

CV = 4.3 + 2.0 ug/g

Result	Uncer	Date
5.5	0.5	5/22
8.7	1.8	5/26
6.1	0.6	5/26
6.7	1.5	5/27
6.2	0.6	6/24
5.8	0.5	7/21

Eu 87GLA 01 ATNA

CV = 1.4 + 0.2 ug/g

Result	Uncer	Date
1.25	0.08	5/22
1.35	0.07	5/26
1.34	0.06	5/26
1.31	0.08	5/27
1.17	0.05	6/24
1.41	0.10	7/21

Fe 82NBS 01 ATNA

CV = 3.35 + 0.10 %

Result	Uncer	Date
3.15	0.16	5/22
3.30	0.18	5/26
3.49	0.18	5/26
3.19	0.17	5/27
3.14	0.16	6/24
3.38	0.17	7/21

TABLE C-V (cont)

****

NBS 1646 Estuarine Sediment (cont)

****

Ga 87GLA 01 ATNA

CV = 19 ug/g

Result	Uncer	Date
< 26		5/22
< 30		5/26
< 30		5/26
10	3	5/27
< 30		6/24
< 30		7/21

Hf 87GLA 01 ATNA

CV = 11.2 ug/g

Result	Uncer	Date
10.8	0.5	5/22
11.2	0.6	5/26
11.6	0.5	5/26
10.6	0.5	5/27
10.7	0.6	6/24
11.0	1.0	7/21

Hg 82NBS 01 ATNA

CV = 63 + 10 ng/g

Result	Uncer	Date
< 600		5/22
< 700		5/26
< 500		5/26
< 900		5/27
< 600		6/24
< 700		7/21

I 87GLA 01 ATNA

CV = 34.2 ug/g

Result	Uncer	Date
28	4	5/22
34	4	5/26
37	4	5/26
31	4	5/27
32	4	6/24
27	3	7/21

In 88GLA 02 ATNA

CV = 60 ng/g

Result	Uncer	Date
< 240		5/22
< 300		5/26
< 300		5/26
< 260		5/27
< 300		6/24
< 250		7/21

K 90GLA 02 ATNA

CV = 2.1 + 0.3 %

Result	Uncer	Date
1.83	0.13	5/22
1.93	0.14	5/26
2.03	0.15	5/26
1.79	0.13	5/27
1.82	0.14	6/24
2.10	0.16	7/21

La 87GLA 01 ATNA

CV = 37 + 2 ug/g

Result	Uncer	Date
37.7	2.4	5/22
38.4	2.2	5/26
38.3	2.1	5/26
38.0	2.2	5/27
38.1	2.1	6/24
38.6	2.4	7/21

Lu 87GLA 01 ATNA

CV = 380 + 60 ng/g

Result	Uncer	Date
480	30	5/22
423	24	5/26
396	24	5/26
400	30	5/27
440	30	6/24
480	30	7/21

Mg 82NBS 01 ATNA

CV = 1.09 + 0.08 %

Result	Uncer	Date
0.83	0.15	5/22
0.91	0.09	5/26
0.90	0.08	5/26
0.88	0.13	5/27
1.00	0.10	6/24
0.92	0.16	7/21

Mn 82NBS 01 ATNA

CV = 375 + 20 ug/g

Result	Uncer	Date
360	15	5/22
388	17	5/26
391	15	5/26
387	15	5/27
374	15	6/24
388	16	7/21

Na 87GLA 01 ATNA

CV = 2.00 + 0.20 %

Result	Uncer	Date
2.00	0.08	5/22
1.99	0.09	5/26
2.00	0.08	5/26
1.96	0.08	5/27
2.00	0.08	6/24
2.06	0.09	7/21

Nd 87GLA 01 ATNA

CV = 36 + 4 ug/g

Result	Uncer	Date
43	8	5/22
35	3	5/26
46	4	5/26
40	8	5/27
33	6	6/24
41	8	7/21

Pb 82NBS 01 ICPES

CV = 28.2 + 1.8 ug/g

Result	Uncer	Date
29	20	8/09
33	25	8/22

Rb 82NBS 01 ATNA

CV = 87 ug/g

Result	Uncer	Date
82	5	5/22
77	4	5/26
82	5	5/26
92	6	5/27
85	5	6/24
84	10	7/21

Sb 87GLA 01 ATNA

CV = 790 + 200 ng/g

Result	Uncer	Date
< 370		5/22
630	110	5/26
480	130	5/26
330	110	5/27
450	120	6/24
420	110	7/21

Sc 87GLA 01 ATNA

CV = 10.8 + 0.4 ug/g

Result	Uncer	Date
10.1	0.5	5/22
10.3	0.6	5/26
10.9	0.6	5/26
10.3	0.6	5/27
10.0	0.5	6/24
10.4	0.6	7/21

Se 87GLA 01 ATNA

CV = 530 + 90 ng/g

Result	Uncer	Date
1800	600	5/22
< 5000		5/26
< 4000		5/26
900	700	5/27
500	400	6/24
< 5000		7/21

Sm 87GLA 01 ATNA

CV = 6.4 + 0.3 ug/g

Result	Uncer	Date
7.1	0.3	5/22
6.7	0.3	5/26
6.8	0.3	5/26
6.7	0.3	5/27
6.8	0.3	6/24
6.9	0.3	7/21

Sr 87GLA 01 ATNA

CV = 220 ug/g

Result	Uncer	Date
< 290		5/22
< 400		5/26
< 300		5/26
< 310		5/27
< 400		6/24
< 300		7/21

Ta 87GLA 01 ATNA

CV = 1 ug/g

Result	Uncer	Date
0.91	0.09	5/22
0.95	0.09	5/26
0.97	0.07	5/26
1.11	0.09	5/27
0.98	0.08	6/24
0.93	0.08	7/21

Tb 87GLA 01 ATNA

CV = 0.95 ug/g

Result	Uncer	Date
0.73	0.07	5/22
0.82	0.08	5/26
0.90	0.09	5/26
0.83	0.08	5/27
0.77	0.07	6/24
0.88	0.10	7/21

Th 87GLA 01 ATNA

CV = 10.0 + 0.6 ug/g

Result	Uncer	Date
9.25	0.37	5/22
9.9	0.4	5/26
10.3	0.4	5/26
10.2	0.4	5/27
9.4	0.4	6/24
9.5	0.7	7/21

Ti 87GLA 01 ATNA

CV = 4200 + 800 ug/g

Result	Uncer	Date
4300	600	5/22
4800	600	5/26
4700	600	5/26
4800	600	5/27
4900	700	6/24
4600	600	7/21

U 87GLA 01 ATNA

CV = 2.99 + 0.06 ug/g

Result	Uncer	Date
2.83	0.11	5/22
2.92	0.11	5/26
2.98	0.11	5/26
2.87	0.11	5/27
2.91	0.11	6/24
2.95	0.11	7/21

V 82NBS 01 ATNA

CV = 94 + 1 ug/g

Result	Uncer	Date
89	4	5/22
87	4	5/26
85	9	5/26
96	5	5/27
87	4	6/24
98	5	7/21

W ATNA

CV = none available ug/g

Result	Uncer	Date
< 6		5/22
< 6		5/26
< 7		5/26
< 6		5/27
< 7		6/24
< 7		7/21

Yb 90GLA 02 ATNA

CV = 2.24 + 0.22 ug/g

Result	Uncer	Date
3.12	0.25	5/22
2.96	0.22	5/26
3.50	0.40	5/26
3.13	0.24	5/27
3.50	0.30	6/24
3.14	0.24	7/21

Zn 82NBS 01 ATNA

CV = 138 + 6 ug/g

Result	Uncer	Date
100	30	5/22
130	20	5/26
120	20	5/26
110	20	5/27
90	30	6/24
130	20	7/21

Zr 87GLA 01 ATNA

CV = 335 ug/g

Result	Uncer	Date
370	60	5/22
360	60	5/26
480	80	5/26
600	140	5/27
400	100	6/24
370	60	7/21

****

NBS 1819-III Sulfur in Lubricating Base Oil

****

S 85NBS 06 ITNA

CV = 2865 + 70 ug/g

Result	Uncer	Date
2890	130	5/22

TABLE C-V (cont)

****

NBS 2704 Buffalo River Sediment

****

Ag ATNA

CV = none available ug/g

Result	Uncer	Date
< 3		5/26
< 3		5/26
< 4		5/27
< 4		6/24
< 3		7/21

Al 88NBS 01 ATNA

CV = 6.11 + 0.16 %

Result	Uncer	Date
6.21	0.18	5/26
6.06	0.16	5/26
6.15	0.18	5/27
6.22	0.18	6/24
6.25	0.18	7/21

As 88NBS 01 ATNA

CV = 23.4 + 0.8 ug/g

Result	Uncer	Date
22	2	5/26
22	2	5/26
22	2	5/27
22	2	6/24
23	2	7/21

Au ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.01		5/26
< 0.01		5/26
< 0.01		5/27
< 0.009		6/24
< 0.008		7/21

Ba 88NBS 01 ATNA

CV = 414 + 12 ug/g

Result	Uncer	Date
490	40	5/26
450	40	5/26
400	40	5/27
480	40	6/24
400	60	7/21

Ba 88NBS 01 ICPES

CV = 414 + 12 ug/g

Result	Uncer	Date
450	50	3/26
380	40	4/04
380	40	4/04
390	40	4/04

Br 88NBS 01 ATNA

CV = 7 ug/g

Result	Uncer	Date
6.6	0.7	5/26
7.2	0.8	5/26
6.1	0.7	5/27
7.3	1.0	6/24
6.8	0.8	7/21

Ca 88NBS 01 ATNA

CV = 2.60 + 0.03 %

Result	Uncer	Date
2.70	0.14	5/26
2.73	0.14	5/26
2.53	0.14	5/27
2.84	0.15	6/24
2.52	0.13	7/21

Cd 88NBS 01 ICPMS

CV = 3.45 + 0.22 ug/g

Result	Uncer	Date
3.2	0.6	4/03

Ce 88NBS 01 ATNA

CV = 72 ug/g

Result	Uncer	Date
68	3	5/26
69	3	5/26
68	3	5/27
72	3	6/24
68	3	7/21

Cl 88NBS 01 ATNA

CV = < 100 ug/g

Result	Uncer	Date
48	11	5/26
140	30	5/26
120	20	5/27
< 90		6/24
110	20	7/21

Co 88NBS 01 ATNA

CV = 14.0 + 0.6 ug/g

Result	Uncer	Date
13.7	0.7	5/26
13.4	0.7	5/26
13.1	0.7	5/27
13.2	0.7	6/24
13.7	0.7	7/21

Cr 88NBS 01 ATNA

CV = 135 + 5 ug/g

Result	Uncer	Date
148	9	5/26
145	9	5/26
137	8	5/27
144	9	6/24
142	8	7/21

Cs 88NBS 01 ATNA

CV = 6 ug/g

Result	Uncer	Date
5.8	0.3	5/26
5.5	0.4	5/26
5.46	0.36	5/27
5.8	0.3	6/24
5.7	0.4	7/21

Cu 88NBS 01 ATNA

CV = 98.6 + 5.0 ug/g

Result	Uncer	Date
< 230		5/26
< 190		5/26
< 240		5/27
< 190		6/24
< 210		7/21

Dy 88NBS 01 ATNA

CV = 6 ug/g

Result	Uncer	Date
5.5	1.3	5/26
6.1	0.5	5/26
6.0	0.5	5/27
5.7	0.7	6/24
5.7	0.5	7/21

Eu 88NBS 01 ATNA

CV = 1.3 ug/g

Result	Uncer	Date
1.27	0.08	5/26
1.38	0.09	5/26
1.16	0.06	5/27
1.38	0.09	6/24
1.41	0.09	7/21

Fe 88NBS 01 ATNA

CV = 4.11 + 0.10 %

Result	Uncer	Date
4.22	0.22	5/26
4.17	0.22	5/26
4.07	0.20	5/27
4.24	0.24	6/24
4.16	0.21	7/21

Ga 88NBS 01 ATNA

CV = 15 ug/g

Result	Uncer	Date
15	3	5/26
< 17		5/26
17	3	5/27
< 30		6/24
16	3	7/21

Hf 88NBS 01 ATNA

CV = 8 ug/g

Result	Uncer	Date
8.3	0.5	5/26
8.8	0.9	5/26
8.1	0.4	5/27
8.7	1.2	6/24
8.5	0.8	7/21

Hg 88NBS 01 ATNA

CV = 1.44 + 0.07 ug/g

Result	Uncer	Date
1.4	0.3	5/26
1.6	0.3	5/26
1.5	0.4	5/27
< 0.7		6/24
< 0.6		7/21

I 88NBS 01 ATNA

CV = 2 ug/g

Result	Uncer	Date
< 15		5/26
< 18		5/26
< 16		5/27
< 19		6/24
< 17		7/21

In ATNA

CV = none available ug/g

Result	Uncer	Date
< 0.17		5/26
< 0.20		5/26
< 0.17		5/27
< 0.19		6/24
< 0.19		7/21

K 88NBS 01 ATNA

CV = 2.00 + 0.04 %

Result	Uncer	Date
2.21	0.15	5/26
2.09	0.14	5/26
2.03	0.13	5/27
1.91	0.14	6/24
1.96	0.13	7/21

La 88NBS 01 ATNA

CV = 29 ug/g

Result	Uncer	Date
32	2	5/26
32.4	1.7	5/26
32	2	5/27
32.1	1.7	6/24
33.2	2	7/21

Li 88NBS 01 ICPMS

CV = 50 ug/g

Result	Uncer	Date
37	7	4/03
37	7	4/03

Lu 88NBS 01 ATNA

CV = 0.6 ug/g

Result	Uncer	Date
0.47	0.03	5/26
0.42	0.03	5/26
0.44	0.03	5/27
0.49	0.03	6/24
0.46	0.03	7/21

Mg 88NBS 01 ATNA

CV = 1.20 + 0.02 %

Result	Uncer	Date
1.10	0.10	5/26
1.23	0.09	5/26
0.98	0.17	5/27
1.19	0.09	6/24
1.13	0.07	7/21

Mn 88NBS 01 ATNA

CV = 555 + 19 ug/g

Result	Uncer	Date
620	30	5/26
610	30	5/26
612	24	5/27
630	30	6/24
620	30	7/21

Na 88NBS 01 ATNA

CV = 5470 + 140 ug/g

Result	Uncer	Date
5890	250	5/26
6000	300	5/26
5890	250	5/27
5900	300	6/24
6000	300	7/21

Nd ATNA

CV = none available ug/g

Result	Uncer	Date
30	2	5/26
33	3	5/26
29	7	5/27
49	8	6/24
< 20		7/21

Pb 88NBS 01 ICPES

CV = 161 + 17 ug/g

Result	Uncer	Date
120	20	8/22
130	30	8/22
160	30	12/19
130	30	12/19

Rb 88NBS 01 ATNA

CV = 100 ug/g

Result	Uncer	Date
101	6	5/26
95	5	5/26
114	7	5/27
96	5	6/24
101	6	7/21

Sb 88NBS 01 ATNA

CV = 3.79 + 0.15 ug/g

Result	Uncer	Date
3.90	0.21	5/26
3.65	0.19	5/26
3.65	0.20	5/27
3.95	0.21	6/24
3.72	0.20	7/21

Sc 88NBS 01 ATNA

CV = 12 ug/g

Result	Uncer	Date
11.7	0.6	5/26
11.5	0.6	5/26
11.3	0.6	5/27
11.6	0.6	6/24
11.8	0.6	7/21

TABLE C-V (cont)

****

NBS 2704 Buffalo River Sediment (cont)

****

Se 88NBS 01 ATNA

CV = 1.1 ug/g

Result	Uncer	Date
2.6	0.9	5/26
1.4	0.7	5/26
2.2	0.7	5/27
< 5		6/24
< 4		7/21

Sm 88NBS 01 ATNA

CV = 6.7 ug/g

Result	Uncer	Date
6.1	0.3	5/26
6.2	0.3	5/26
6.5	0.3	5/27
6.0	0.3	6/24
6.6	0.3	7/21

Sr 88NBS 01 ATNA

CV = 130 ug/g

Result	Uncer	Date
< 250		5/26
< 300		5/26
< 260		5/27
< 300		6/24
< 250		7/21

Ta ATNA

CV = none available ug/g

Result	Uncer	Date
0.94	0.07	5/26
0.96	0.07	5/26
0.97	0.08	5/27
0.95	0.11	6/24
0.94	0.08	7/21

Tb ATNA

CV = none available ug/g

Result	Uncer	Date
0.92	0.09	5/26
0.89	0.12	5/26
0.82	0.08	5/27
0.87	0.08	6/24
0.88	0.08	7/21

Th 88NBS 01 ATNA

CV = 9.2 ug/g

Result	Uncer	Date
9.3	0.4	5/26
9.3	0.4	5/26
9.1	0.4	5/27
9.5	0.4	6/24
9.1	0.4	7/21

Ti 88NBS 01 ATNA

CV = 4570 + 180 ug/g

Result	Uncer	Date
4500	600	5/26
4500	600	5/26
4300	600	5/27
4300	600	6/24
4600	600	7/21

U 88NBS 01 ATNA

CV = 3.13 + 0.13 ug/g

Result	Uncer	Date
3.05	0.11	5/26
3.18	0.12	5/26
3.07	0.12	5/27
3.17	0.12	6/24
3.23	0.12	7/21

V 88NBS 01 ATNA

CV = 95 + 4 ug/g

Result	Uncer	Date
93	4	5/26
83	4	5/26
93	4	5/27
92	4	6/24
99	4	7/21

W ATNA

CV = none available ug/g

Result	Uncer	Date
4.6	1.0	5/26
2.8	0.5	5/26
2.4	0.6	5/27
< 6		6/24
2.2	0.4	7/21

Yb 88NBS 01 ATNA

CV = 2.8 ug/g

Result	Uncer	Date
3.60	0.30	5/26
3.36	0.20	5/26
3.71	0.23	5/27
3.17	0.23	6/24
3.54	0.21	7/21

Zn 88NBS 01 ATNA

CV = 438 + 12 ug/g

Result	Uncer	Date
400	50	5/26
410	50	5/26
430	60	5/27
450	60	6/24
420	50	7/21

Zr 88NBS 01 ATNA

CV = 300 ug/g

Result	Uncer	Date
530	230	5/26
420	80	5/26
280	80	5/27
240	50	6/24
390	70	7/21

****

NBS 4350 Environmental Radioactivity Sediment

****

Cs-137 75NBS 03 G

CV = 2.70 + 0.12 pCi/g

Result	Uncer	Date
2.5	0.4	3/26
2.0	0.3	9/29

****

NBS 4350B River Sediment

****

Cs-137 81NBS 02 G

CV = 0.783 + 0.049 pCi/g

Result	Uncer	Date
0.78	0.19	12/18
0.81	0.19	12/18

****

NBS 4353 Rocky-Flats Soil No 1

****

Am-241 81NBS 01 G

CV = 0.0338 + 0.0025 pCi/g

Result	Uncer	Date
0.034	0.067	11/15
0.012	0.011	12/05

Cs-137 81NBS 01 G

CV = 0.464 + 0.021 pCi/g

Result	Uncer	Date
0.35	0.15	2/06
0.37	0.11	7/25
1.2	0.5	7/26
1.4	0.4	7/26
1.4	0.4	7/26
1.0	0.3	8/27
0.32	0.14	8/29
0.67	0.33	8/30
0.67	0.33	9/25
0.26	0.11	9/28
0.65	0.14	9/28
0.41	0.12	9/29
0.24	0.09	9/29
0.36	0.10	11/08
0.40	0.12	11/19
0.41	0.13	12/18

****

NBS 4355 Peruvian Soil

****

Be 82NBS 10 ICPES

CV = 1.8 + 0.3 ug/g

Result	Uncer	Date
0.71	0.14	8/02

U 82NBS 10 ICPMS

CV = 3.0 + 0.5 ug/g

Result	Uncer	Date
1.3	0.3	8/13
1.3	0.3	8/16

****

NBS 4958 Radium-226 in Water (NSE-9 Dilution)

****

Ra-226 89GAU 03 PC

CV = 10.9 + 0.5 pCi/L

Result	Uncer	Date
12.7	1.2	4/04
11.2	1.0	4/05
12	1	6/18
13	1	6/18
13	1	6/19
13	1	6/20
9.9	1	7/10

****

NBS 8034 Sewage Sludge (CRM 144)

****

Ag 85BCR 02 ICPES

CV = 13 ug/g

Result	Uncer	Date
11	2	8/07

Cd 85BCR 02 ICPES

CV = 3.41 + 0.25 ug/g

Result	Uncer	Date
2.9	.0	8/13

Hg 85BCR 02 CVAA

CV = 1.49 + 0.22 ug/g

Result	Uncer	Date
1.4	0.2	7/27

****

NIOSH PAT Round 100 Trace Metals on Air Filter

****

Cd 90PAT 01 FAA

CV = none available ug/filter

Result	Uncer	Date
< 0.1		1/25

CV = 8.9 + 0.6 ug/filter

Result	Uncer	Date
8.9	1.0	1/25

CV = 9.9 + 0.4 ug/filter

Result	Uncer	Date
10	1	1/25

CV = 11.8 + 0.6 ug/filter

Result	Uncer	Date
12	1	1/25

CV = 15.7 + 0.8 ug/filter

Result	Uncer	Date
15.8	1.5	1/25

Pb 90PAT 01 FAA

CV = none available ug/filter

Result	Uncer	Date
< 1		1/25

CV = 20.1 + 1.6 ug/filter

Result	Uncer	Date
20	2	1/25

CV = 32.8 + 1.8 ug/filter

Result	Uncer	Date
33.4	3	1/25

CV = 44.3 + 2.8 ug/filter

Result	Uncer	Date
45	4	1/24

CV = 59.1 + 3.6 ug/filter

Result	Uncer	Date
61	6	1/25

Zn 90PAT 01 FAA

CV = none available ug/filter

Result	Uncer	Date
< 5		1/25

CV = 84.7 + 5.7 ug/filter

Result	Uncer	Date
85.8	8	1/25

CV = 104.3 + 7.3 ug/filter

Result	Uncer	Date
110	10	1/25

CV = 145.7 + 11.4 ug/filter

Result	Uncer	Date
144	10	1/25

CV = 170.4 + 11.3 ug/filter

Result	Uncer	Date
170	20	1/25

TABLE C-V (cont)

****

NIOSH PAT Round 101
Trace Metals on Air Filter

****

Cd 90PAT 01 FAA

CV = none available ug/filter

Result	Uncer	Date
< 0.1		4/25

CV = 8 + 0.3 ug/filter

Result	Uncer	Date
8.1	0.8	4/25

CV = 10 + 0.4 ug/filter

Result	Uncer	Date
10	1	4/25

CV = 11.9 + 0.4 ug/filter

Result	Uncer	Date
12	1	4/25

CV = 15 + 0.5 ug/filter

Result	Uncer	Date
15	2	4/25

Pb 90PAT 01 FAA

CV = none available ug/filter

Result	Uncer	Date
< 0.1		4/25

CV = 24.1 + 1.2 ug/filter

Result	Uncer	Date
23.4	2	4/25

CV = 36.1 + 1.4 ug/filter

Result	Uncer	Date
36	4	4/25

CV = 41.9 + 1.6 ug/filter

Result	Uncer	Date
41	4	4/25

CV = 57.5 + 2.2 ug/filter

Result	Uncer	Date
58	6	4/25

Zn 90PAT 01 FAA

CV = none available ug/filter

Result	Uncer	Date
< 1		4/25

CV = 100.9 + 5.6 ug/filter

Result	Uncer	Date
98	10	4/25

CV = 127.5 + 5.2 ug/filter

Result	Uncer	Date
130	10	4/25

CV = 184.2 + 6.9 ug/filter

Result	Uncer	Date
180	20	4/25

CV = 215.3 + 7.9 ug/filter

Result	Uncer	Date
210	20	4/25

****

NIOSH PAT Round 102
Trace Metals on Air Filter

****

Cd 90PAT 01 FAA

CV = none available mg/filter

Result	Uncer	Date
< 0.0001		7/16

CV = 0.009 + 0.0004 mg/filter

Result	Uncer	Date
0.0089	0.0009	7/25

CV = 0.0117 + 0.0005 mg/filter

Result	Uncer	Date
0.0110	0.0010	7/25

CV = 0.0119 + 0.0005 mg/filter

Result	Uncer	Date
0.0110	0.0010	7/25

CV = 0.0192 + 0.0008 mg/filter

Result	Uncer	Date
0.0190	0.0020	7/25

Pb 90PAT 01 FAA

CV = none available mg/filter

Result	Uncer	Date
< 0.0010		7/16

CV = 0.0268 + 0.0014 mg/filter

Result	Uncer	Date
0.0260	0.0030	7/25

CV = 0.0483 + 0.0023 mg/filter

Result	Uncer	Date
0.0460	0.0050	7/25

CV = 0.0642 + 0.0033 mg/filter

Result	Uncer	Date
0.0640	0.0060	7/25

CV = 0.0843 + 0.0037 mg/filter

Result	Uncer	Date
0.0830	0.0080	7/25

Zn 90PAT 01 FAA

CV = none available mg/filter

Result	Uncer	Date
< 0.0010		7/25

CV = 0.1071 + 0.005 mg/filter

Result	Uncer	Date
0.1	0.01	7/25

CV = 0.1297 + 0.0054 mg/filter

Result	Uncer	Date
0.12	0.01	7/25

CV = 0.1751 + 0.008 mg/filter

Result	Uncer	Date
0.16	0.02	7/25

CV = 0.2185 + 0.0102 mg/filter

Result	Uncer	Date
0.2	0.02	7/25

****

NIOSH PAT Round 103
Trace Metals on Air Filter

****

Cd 90PAT 01 FAA

CV = none available ug/filter

Result	Uncer	Date
< 0.1		10/24

Cd (cont)

CV = 7.2 + 0.3 ug/filter

Result	Uncer	Date
7.5	0.8	10/24

CV = 10.7 + 0.6 ug/filter

Result	Uncer	Date
11	1	10/24

CV = 11.1 + 0.5 ug/filter

Result	Uncer	Date
10	1	10/24

CV = 18.5 + 0.9 ug/filter

Result	Uncer	Date
19	2	10/24

Cr 90PAT 01 FAA

CV = none available ug/filter

Result	Uncer	Date
< 0.1		10/24

CV = 52.8 + 3 ug/filter

Result	Uncer	Date
57	6	10/24

CV = 89.4 + 5 ug/filter

Result	Uncer	Date
100	10	10/24

CV = 101.5 + 6.2 ug/filter

Result	Uncer	Date
110	10	10/24

CV = 194.7 + 12.3 ug/filter

Result	Uncer	Date
220	20	10/24

Pb 90PAT 01 FAA

CV = none available ug/filter

Result	Uncer	Date
< 0.5		10/24

CV = 26.5 + 1.3 ug/filter

Result	Uncer	Date
28	3	10/24

CV = 39.2 + 1.8 ug/filter

Result	Uncer	Date
42	4	10/24

Pb (cont)

CV = 59.8 + 2.6 ug/filter

Result	Uncer	Date
63	6	10/24

CV = 71.7 + 2.6 ug/filter

Result	Uncer	Date
76	8	10/24

****

Packard Instruments
Radionuclides in Water

****

H-3 79PAC 01 LS

CV = 12.5 + 0.5 uCi/L

Result	Uncer	Date
12.7	0.4	1/05
12.7	0.4	2/05
12.7	0.4	3/02
12.7	0.4	3/22
12.8	0.4	4/03
12.8	0.4	4/11
12.7	0.4	5/01
12.8	0.4	5/23
12.7	0.4	5/30
12.8	0.4	6/06
12.8	0.4	6/25
12.8	0.4	7/03
12.8	0.4	7/13
12.7	0.4	7/25
12.7	0.4	7/31
12.7	0.4	9/05
12.6	0.4	10/02
12.7	0.4	10/31
12.7	0.4	11/20
12.7	0.4	12/04

****

UNLV-QAL Trace Elements
in Soil

****

Ag 87QAL 01 MSCAN

CV = 22.2 mg/kg

Result	Uncer	Date
27	81	9/13

As 87QAL 01 MSCAN

CV = 917 mg/kg

Result	Uncer	Date
1.1	3.3	9/13

Au MSCAN

CV = none available mg/kg

Result	Uncer	Date
< 500		9/13

B MSCAN

CV = none available mg/kg

Result	Uncer	Date
11	33	9/13

Ba 87QAL 01 MSCAN

CV = 4.8 mg/kg

Result	Uncer	Date
6.2	18.6	9/13

Be 87QAL 01 MSCAN

CV = 19.4 mg/kg

Result	Uncer	Date
24	72	9/13

Bi MSCAN

CV = none available mg/kg

Result	Uncer	Date
290	870	9/13

Cd 87QAL 01 MSCAN

CV = 45.4 mg/kg

Result	Uncer	Date
48	140	9/13

Ce MSCAN

CV = none available mg/kg

Result	Uncer	Date
2.6	7.8	9/13

Co 87QAL 01 MSCAN

CV = 144 mg/kg

Result	Uncer	Date
130	390	9/13

Cr 87QAL 01 MSCAN

CV = 99.6 mg/kg

Result	Uncer	Date
210	630	9/13

Cs MSCAN

CV = none available mg/kg

Result	Uncer	Date
< 500		9/13

TABLE C-V (cont)

****

UNLV-QAL Trace Elements in Soil (cont)

****

Cu 87QAL 01 MSCAN
CV = 6.91 g/kg

Result	Uncer	Date
7.2	21.6	9/13

Dy MSCAN
CV = none available mg/kg

Result	Uncer	Date
3	9	9/13

Er MSCAN
CV = none available mg/kg

Result	Uncer	Date
1.8	5.4	9/13

Eu MSCAN
CV = none available mg/kg

Result	Uncer	Date
590	1800	9/13

Ga MSCAN
CV = none available mg/kg

Result	Uncer	Date
< 500		9/13

Gd MSCAN
CV = none available mg/kg

Result	Uncer	Date
2.5	7.5	9/13

Ge MSCAN
CV = none available mg/kg

Result	Uncer	Date
6	18	9/13

Hf MSCAN
CV = none available mg/kg

Result	Uncer	Date
< 500		9/13

Ho MSCAN
CV = none available mg/kg

Result	Uncer	Date
610	1800	9/13

In MSCAN
CV = none available mg/kg

Result	Uncer	Date
13	39	9/13

Ir MSCAN
CV = none available mg/kg

Result	Uncer	Date
< 500		9/13

La MSCAN
CV = none available mg/kg

Result	Uncer	Date
1.3	3.9	9/13

Li MSCAN
CV = none available mg/kg

Result	Uncer	Date
< 5000		9/13

Lu MSCAN
CV = none available mg/kg

Result	Uncer	Date
< 500		9/13

Mn 87QAL 01 MSCAN
CV = 208 mg/kg

Result	Uncer	Date
260	780	9/13

Mo MSCAN
CV = none available mg/kg

Result	Uncer	Date
56	170	9/13

Nb MSCAN
CV = none available mg/kg

Result	Uncer	Date
< 500		9/13

Nd MSCAN
CV = none available mg/kg

Result	Uncer	Date
3.4	10.2	9/13

Ni 87QAL 01 MSCAN
CV = 60.9 mg/kg

Result	Uncer	Date
72	220	9/13

Pb 87QAL 01 MSCAN
CV = 236 mg/kg

Result	Uncer	Date
270	810	9/13

Pd MSCAN
CV = none available mg/kg

Result	Uncer	Date
790	2400	9/13

Pr MSCAN
CV = none available mg/kg

Result	Uncer	Date
520	1600	9/13

Pt MSCAN
CV = none available mg/kg

Result	Uncer	Date
< 500		9/13

Rb MSCAN
CV = none available mg/kg

Result	Uncer	Date
510	1500	9/13

Rh MSCAN
CV = none available mg/kg

Result	Uncer	Date
< 500		9/13

Ru MSCAN
CV = none available mg/kg

Result	Uncer	Date
930	2800	9/13

Sb 87QAL 01 MSCAN
CV = 211 mg/kg

Result	Uncer	Date
210	630	9/13

Se 87QAL 01 MSCAN
CV = 39.2 mg/kg

Result	Uncer	Date
48	140	9/13

Sm MSCAN
CV = none available mg/kg

Result	Uncer	Date
1.5	4.5	9/13

Sn MSCAN
CV = none available mg/kg

Result	Uncer	Date
17	51	9/13

Sr MSCAN
CV = none available mg/kg

Result	Uncer	Date
150	450	9/13

Ta MSCAN
CV = none available mg/kg

Result	Uncer	Date
< 500		9/13

Tb MSCAN
CV = none available mg/kg

Result	Uncer	Date
520	1600	9/13

Te MSCAN
CV = none available mg/kg

Result	Uncer	Date
< 500		9/13

Th MSCAN
CV = none available mg/kg

Result	Uncer	Date
2.8	8.4	9/13

Ti MSCAN
CV = none available mg/kg

Result	Uncer	Date
700	2100	9/13

Tl 87QAL 01 MSCAN
CV = 39 mg/kg

Result	Uncer	Date
44	130	9/13

Tm MSCAN
CV = none available mg/kg

Result	Uncer	Date
< 500		9/13

U MSCAN
CV = none available mg/kg

Result	Uncer	Date
16	48	9/13

V 87QAL 01 MSCAN
CV = 65.8 mg/kg

Result	Uncer	Date
99	300	9/13

W MSCAN
CV = none available mg/kg

Result	Uncer	Date
35	110	9/13

Y MSCAN
CV = none available mg/kg

Result	Uncer	Date
12	36	9/13

Yb MSCAN
CV = none available mg/kg

Result	Uncer	Date
1.7	5.1	9/13

Zn 87QAL 01 MSCAN
CV = 187 mg/kg

Result	Uncer	Date
170	510	9/13

Zr MSCAN
CV = none available mg/kg

Result	Uncer	Date
8.2	24.6	9/13

****

USGS GXR-1 Jasperoid

****

Ag 89GLA 02 ICPES
CV = 31 + 4 ppm

Result	Uncer	Date
34	7	8/07
32	6	8/07

Ba 89GLA 02 ICPES
CV = 750 + 180 ppm

Result	Uncer	Date
500	50	1/18
500	50	1/18

Be 89GLA 02 ICPES
CV = 1.22 + 0.24 ppm

Result	Uncer	Date
0.9	0.09	1/18
1	0.1	1/18

Cd 89GLA 02 ICPES
CV = 3.3 + 1.3 ppm

Result	Uncer	Date
33	3	1/18
1.6	0.5	1/18

Cr 89GLA 02 ICPES
CV = 12 + 3 ppm

Result	Uncer	Date
8	0.8	1/18
10	1	1/18

Hg 89GLA 02 CVAA
CV = 3.9 + 0.6 ppm

Result	Uncer	Date
4.69	0.4	1/12
4.5	0.4	1/12

TABLE C-V (cont)

****

USGS GXR-1 Jasperoid (cont)

****

Ni 89GLA 02 ICPES

CV = 41 + 8 ppm

Result	Uncer	Date
37	4	1/18
32	3	1/18

Pb 89GLA 02 ICPES

CV = 730 + 60 ppm

Result	Uncer	Date
720	70	1/18
690	70	1/18

Sb 89GLA 02 ICPES

CV = 122 + 18 ppm

Result	Uncer	Date
180	20	2/05
180	20	2/05

****

USGS GXR-2 Soil

****

Ag 89GLA 02 ATNA

CV = 17 + 3 ppm

Result	Uncer	Date
12	2	5/27

Al 89GLA 02 ATNA

CV = 18.57 + 0.06 %

Result	Uncer	Date
17.8	0.5	5/27

As 89GLA 02 ATNA

CV = 25 + 4 ppm

Result	Uncer	Date
26	3	5/27

Au 89GLA 02 ATNA

CV = 36 + 5 ppb

Result	Uncer	Date
28	4	5/27

Ba 89GLA 02 ATNA

CV = 2240 + 60 ppm

Result	Uncer	Date
2100	100	5/27

Br 89GLA 02 ATNA

CV = 3.2 ppm

Result	Uncer	Date
3.7	0.4	5/27

Ca 89GLA 02 ATNA

CV = 0.93 + 0.07 %

Result	Uncer	Date
0.76	0.06	5/27

Ce 89GLA 02 ATNA

CV = 51.4 + 1.6 ppm

Result	Uncer	Date
50	2	5/27

Cl 89GLA 02 ATNA

CV = < 71 ppm

Result	Uncer	Date
< 90		5/27

Co 89GLA 02 ATNA

CV = 8.6 + 0.3 ppm

Result	Uncer	Date
7.3	0.4	5/27

Cr 89GLA 02 ATNA

CV = 36 + 4 ppm

Result	Uncer	Date
35	2	5/27

Cs 89GLA 02 ATNA

CV = 5.2 + 0.3 ppm

Result	Uncer	Date
4.3	0.3	5/27

Cu 89GLA 02 ATNA

CV = 76 + 9 ppm

Result	Uncer	Date
< 300		5/27

Dy 89GLA 02 ATNA

CV = 3.3 + 0.3 ppm

Result	Uncer	Date
3.1	0.3	5/27

Eu 89GLA 02 ATNA

CV = 0.81 + 0.1 ppm

Result	Uncer	Date
0.67	0.06	5/27

Fe 89GLA 02 ATNA

CV = 1.86 + 0.06 %

Result	Uncer	Date
1.71	0.09	5/27

Ga 89GLA 02 ATNA

CV = 37 + 8 ppm

Result	Uncer	Date
36	3	5/27

Hf 89GLA 02 ATNA

CV = 8.3 + 0.9 ppm

Result	Uncer	Date
6.8	0.3	5/27

Hg 89GLA 02 ATNA

CV = 2.9 + 0.7 ppm

Result	Uncer	Date
2700	500	5/27

I 89GLA 02 ATNA

CV = none available ppm

Result	Uncer	Date
< 20		5/27

In 89GLA 02 ATNA

CV = 252 ppb

Result	Uncer	Date
< 200		5/27

K 89GLA 02 ATNA

CV = 1.37 + 0.09 %

Result	Uncer	Date
1.36	0.09	5/27

La 89GLA 02 ATNA

CV = 25.6 + 1.8 ppm

Result	Uncer	Date
21	1	5/27

Lu 89GLA 02 ATNA

CV = 270 ppb

Result	Uncer	Date
260	20	5/27

Mg 89GLA 02 ATNA

CV = 0.848 + 0.09 %

Result	Uncer	Date
0.73	0.06	5/27

Mn 89GLA 02 ATNA

CV = 1010 + 40 ppm

Result	Uncer	Date
890	30	5/27

Na 89GLA 02 ATNA

CV = 5600 + 110 ppm

Result	Uncer	Date
5500	200	5/27

Nd 89GLA 02 ATNA

CV = 19 ppm

Result	Uncer	Date
16	3	5/27

Rb 89GLA 02 ATNA

CV = 78 + 8 ppm

Result	Uncer	Date
68	4	5/27

Sb 89GLA 02 ATNA

CV = 49 + 5 ppm

Result	Uncer	Date
41	2	5/27

Sc 89GLA 02 ATNA

CV = 6.88 + 0.09 ppm

Result	Uncer	Date
5.5	0.3	5/27

Se 89GLA 02 ATNA

CV = 0.61 + 0.13 ppm

Result	Uncer	Date
1	0.4	5/27

Sm 89GLA 02 ATNA

CV = 3.5 + 0.2 ppm

Result	Uncer	Date
3.6	0.2	5/27

Sr 89GLA 02 ATNA

CV = 160 + 10 ppm

Result	Uncer	Date
< 400		5/27

Ta 89GLA 02 ATNA

CV = 900 + 170 ppb

Result	Uncer	Date
690	70	5/27

Tb 89GLA 02 ATNA

CV = 480 + 90 ppb

Result	Uncer	Date
430	60	5/27

Th 89GLA 02 ATNA

CV = 8.8 + 0.3 ppm

Result	Uncer	Date
7.8	0.3	5/27

Ti 89GLA 02 ATNA

CV = 3020 + 240 ppm

Result	Uncer	Date
2900	400	5/27

U 89GLA 02 ATNA

CV = 2.9 + 0.06 ppm

Result	Uncer	Date
2.8	0.1	5/27

V 89GLA 02 ATNA

CV = 52 + 4 ppm

Result	Uncer	Date
48	3	5/27

W 89GLA 02 ATNA

CV = 1.9 + 0.4 ppm

Result	Uncer	Date
1.4	0.3	5/27

Yb 89GLA 02 ATNA

CV = 2.04 + 0.24 ppm

Result	Uncer	Date
1.6	0.1	5/27

Zn 89GLA 02 ATNA

CV = 530 + 64 ppm

Result	Uncer	Date
480	60	5/27

Zr 89GLA 02 ATNA

CV = 269 + 26 ppm

Result	Uncer	Date
210	60	5/27

TABLE C-V (cont)

****

EPA Chlorinated Hydrocarbon Pesticides

****

Mixed-Aroclor
78EPA 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.78		3/27
< 0.78		3/27

Aroclor 1242
78EPA 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.78		3/27
< 0.78		3/27

Aroclor 1254
78EPA 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.78		3/27
< 0.78		3/27

Aroclor 1260
78EPA 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.78		3/27
< 0.78		3/27

Toxaphene 78EPA 01 GCEC

CV = 4.5 + 0.93 ug/L

Result	Uncer	Date
52	11	3/27

CV = 7.51 + 1.81 ug/L

Result	Uncer	Date
32	6	3/27

****

EPA Drinking Water Study 26

****

Acenaphthene
90EPA 04 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/18
< 10		5/18
< 10		5/18
< 10		5/18

Acenaphthylene
90EPA 04 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/18
< 10		5/18

CV = 6.27 + 0.92 ug/L

Result	Uncer	Date
4.3	1.3	5/18

CV = 20.7 + 3.31 ug/L

Result	Uncer	Date
15	5	5/18

Acetone 90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 20		5/21
< 20		5/21
< 20		5/21
< 20		5/21

Acrolein
Acrylonitrile
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 100		5/21
< 100		5/21
< 100		5/21
< 100		5/21

Aniline
Anthracene
90EPA 04 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/18
< 10		5/18
< 10		5/18
< 10		5/18

Mixed-Aroclor
90EPA 04 GCEC

CV = 0.397 + 0.193 ug/L

Result	Uncer	Date
0.33	0.07	5/24

CV = 0.45 + 0.21 ug/L

Result	Uncer	Date
0.35	0.07	5/24

Aroclor 1242
90EPA 04 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.20		5/24
< 0.11		5/24

Aroclor 1254
90EPA 04 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.11		5/24

CV = 0.397 + 0.193 ug/L

Result	Uncer	Date
0.33	0.07	5/24

Aroclor 1260
90EPA 04 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.11		5/24
< 0.2		5/24

Azobenzene 90EPA 04 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/18
< 10		5/18
< 10		5/18
< 10		5/18

Benzene 90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21

CV = 10.3 + 0.7 ug/L

Result	Uncer	Date
11	3	5/21

m-Benzidine 90EPA 04 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/18
< 10		5/18
< 10		5/18
< 10		5/18

Benzo[a]anthracene
90EPA 04 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/18
< 10		5/18

CV = 2.4 + 0.38 ug/L

Result	Uncer	Date
< 10		5/18

CV = 12.4 + 2.1 ug/L

Result	Uncer	Date
12	4	5/18

Benzo[a]pyrene
90EPA 04 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/18
< 10		5/18

CV = 2.25 + 0.48 ug/L

Result	Uncer	Date
< 10		5/18

CV = 15.5 + 3.0 ug/L

Result	Uncer	Date
9.7	2.9	5/18

Benzo[b]fluoranthene
90EPA 04 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/18
< 10		5/18
< 10		5/18
< 10		5/18

Benzo[g,h,i]perylene
90EPA 04 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/18
< 10		5/18

CV = 3.5 + 0.9 ug/L

Result	Uncer	Date
3.5	1	5/18

CV = 25.8 + 6.7 ug/L

Result	Uncer	Date
29	9	5/18

Benzo[k]fluoranthene
Benzoic acid
Benzyl alcohol
Bis(2-chloroethoxy)methane
Bis(2-chloroethyl)ether
Bis(2-chloroisopropyl)ether
90EPA 04 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/18
< 10		5/18
< 10		5/18
< 10		5/18

Bis(2-ethylhexyl)adipate
90EPA 04 GCMS

CV = 4.57 + 1.55 ug/L

Result	Uncer	Date
0.43		5/18

CV = 21.3 + 6.3 ug/L

Result	Uncer	Date
20		5/18

Bis(2-ethylhexyl)phthalate
90EPA 04 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/18
< 10		5/18

Bis(2-ethylhexyl)phthalate
(cont)

CV = 7.73 + 3.43 ug/L

Result	Uncer	Date
7.9	2.4	5/18

CV = 34.2 + 12.5 ug/L

Result	Uncer	Date
27	8	5/18

Bromobenzene
Bromochloromethane
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21
< 5		5/21

Bromodichloromethane
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21

CV = 25.8 + 1.7 ug/L

Result	Uncer	Date
23	7	5/21

CV = 60.5 + 4.0 ug/L

Result	Uncer	Date
66	20	5/21

Bromoform 90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21

CV = 15.4 + 1.0 ug/L

Result	Uncer	Date
15	4	5/21

CV = 77.4 + 5.2 ug/L

Result	Uncer	Date
93	28	5/21

TABLE C-V (cont)

****

EPA Drinking Water Study 26
(cont)

****

Bromomethane
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/21
< 10		5/21
< 10		5/21
< 10		5/21

4-Bromophenylphenyl ether
90EPA 04 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/18
< 10		5/18
< 10		5/18
< 10		5/18

2-Butanone 90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 20		5/21
< 20		5/21
< 20		5/21
< 20		5/21

n-Butylbenzene
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21
< 5		5/21

sec-Butylbenzene
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21

CV = 12.2 + 0.8 ug/L

Result	Uncer	Date
8.8	2.6	5/21

tert-Butylbenzene
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21
< 5		5/21

Butylbenzyl phthalate
90EPA 04 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/18
< 10		5/18
< 10		5/18
< 10		5/18

Carbon disulfide
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21
< 5		5/21

Carbon tetrachloride
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21

CV = 16.7 + 1.1 ug/L

Result	Uncer	Date
15	5	5/21

4-Chloro-3-methylphenol
4-Chloroaniline
90EPA 04 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/18
< 10		5/18
< 10		5/18
< 10		5/18

Chlorobenzene
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21

CV = 18.3 + 1.2 ug/L

Result	Uncer	Date
16	5	5/21

Chlorodibromomethane
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21

CV = 22.1 + 1.5 ug/L

Result	Uncer	Date
19	6	5/21

CV = 72.9 + 4.9 ug/L

Result	Uncer	Date
78	23	5/21

Chloroethane
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/21
< 10		5/21
< 10		5/21
< 10		5/21

2-Chloroethylvinyl ether
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 50		5/21
< 50		5/21
< 50		5/21
< 50		5/21

Chloroform 90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21

Chloroform (cont)

CV = 7.5 + 0.5 ug/L

Result	Uncer	Date
7.9	2.4	5/21

CV = 59.1 + 3.9 ug/L

Result	Uncer	Date
60	18	5/21

Chloromethane
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/21
< 10		5/21
< 10		5/21
< 10		5/21

2-Chloronaphthalene
o-Chlorophenol
4-Chlorophenylphenyl ether
90EPA 04 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/18
< 10		5/18
< 10		5/18
< 10		5/18

o-Chlorotoluene
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21

CV = 22.0 + 1.5 ug/L

Result	Uncer	Date
20	6	5/21

p-Chlorotoluene
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21
< 5		5/21

Chrysene 90EPA 04 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/18
< 10		5/18
< 10		5/18
< 10		5/18

2,4-D 90EPA 04 GCEC

CV = 8.67 + 1.39 ug/L

Result	Uncer	Date
9.4	1.9	6/06

CV = 62 + 10 ug/L

Result	Uncer	Date
65	13	6/06

Decachlorobiphenyl
(2,2',3,3',4,4',5,5',6,6'-)
90EPA 04 GCEC

CV = 0.45 + 0.21 ug/L

Result	Uncer	Date
0.35	0.07	5/24

Di-n-butyl phthalate
Di-n-octyl phthalate
Dibenzo[a,h]anthracene
Dibenzofuran
90EPA 04 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/18
< 10		5/18
< 10		5/18
< 10		5/18

1,2-Dibromo-3-chloropropane
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21

CV = 1.13 + 0.15 ug/L

Result	Uncer	Date
< 5		5/21

1,2-Dibromoethane
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21
< 5		5/21

Dibromomethane
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21

CV = 28.2 + 1.9 ug/L

Result	Uncer	Date
36	11	5/21

o-Dichlorobenzene (1,2)
90EPA 04 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/18
< 10		5/18
< 10		5/18
< 10		5/18

o-Dichlorobenzene (1,2)
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21

CV = 24.3 + 1.6 ug/L

Result	Uncer	Date
25	7	5/21

m-Dichlorobenzene (1,3)
90EPA 04 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/18
< 10		5/18
< 10		5/18
< 10		5/18

TABLE C-V (cont)

****

EPA Drinking Water Study 26
(cont)

****

m-Dichlorobenzene (1,3)
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21
< 5		5/21

p-Dichlorobenzene (1,4)
90EPA 04 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/18
< 10		5/18
< 10		5/18
< 10		5/18

p-Dichlorobenzene (1,4)
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21

CV = 14.6 + 1.0 ug/L

Result	Uncer	Date
15	5	5/21

3,3'-Dichlorobenzidine
90EPA 04 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/18
< 10		5/18
< 10		5/18
< 10		5/18

Dichlorodifluoromethane
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/21
< 10		5/21
< 10		5/21
< 10		5/21

1,1-Dichloroethane
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21
< 5		5/21

1,2-Dichloroethane
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21

CV = 10.8 + 0.7 ug/L

Result	Uncer	Date
16	5	5/21

1,1-Dichloroethene
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21

CV = 6.64 + 0.88 ug/L

Result	Uncer	Date
5.8	1.7	5/21

trans-1,2-Dichloroethene
cis-1,2-Dichloroethylene
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21
< 5		5/21

2,4-Dichlorophenol
90EPA 04 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/18
< 10		5/18
< 10		5/18
< 10		5/18

1,2-Dichloropropane
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21

CV = 18.1 + 1.2 ug/L

Result	Uncer	Date
16	5	5/21

1,3-Dichloropropane
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21

CV = 23.4 + 1.6 ug/L

Result	Uncer	Date
25	8	5/21

2,2-Dichloropropane
1,1-Dichloropropene
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21
< 5		5/21

Diethyl phthalate
90EPA 04 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/18
< 10		5/18

CV = 3.48 + 0.94 ug/L

Result	Uncer	Date
0.43	0.1	5/18

CV = 27.8 + 6.6 ug/L

Result	Uncer	Date
2.9	0.9	5/18

Dimethyl phthalate
2,4-Dimethylphenol
2,4-Dinitrophenol
2,4-Dinitrotoluene
2,6-Dinitrotoluene
90EPA 04 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/18
< 10		5/18
< 10		5/18
< 10		5/18

Ethylbenzene
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21
< 5		5/21

Fluoranthene
Fluorene
90EPA 04 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/18
< 10		5/18
< 10		5/18
< 10		5/18

Heptachlor 90EPA 04 GCEC

CV = 0.325 + 0.054 ug/L

Result	Uncer	Date
0.34	0.04	6/08

CV = 2.27 + 0.28 ug/L

Result	Uncer	Date
2.16	0.2	6/08

Heptachlor epoxide
90EPA 04 GCEC

CV = 0.198 + 0.022 ug/L

Result	Uncer	Date
0.21	0.03	6/08

CV = 1.81 + 0.16 ug/L

Result	Uncer	Date
1.9	0.2	6/08

Hexachlorobenzene
Hexachlorobutadiene
90EPA 04 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/18
< 10		5/18
< 10		5/18
< 10		5/18

Hexachlorobutadiene
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21
< 5		5/21

Hexachlorocyclopentadiene
Hexachloroethane
90EPA 04 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/18
< 10		5/18
< 10		5/18
< 10		5/18

2-Hexanone 90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 20		5/21
< 20		5/21
< 20		5/21
< 20		5/21

Indeno[1,2,3-cd]pyrene
Isophorone
90EPA 04 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/18
< 10		5/18
< 10		5/18
< 10		5/18

Isopropylbenzene
4-Isopropyltoluene
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21
< 5		5/21

Lindane 90EPA 04 GCEC

CV = 0.352 + 0.045 ug/L

Result	Uncer	Date
0.42	0.04	6/08

CV = 4.28 + 0.49 ug/L

Result	Uncer	Date
4.3	0.4	6/08

Methoxychlor 90EPA 04 GCEC

CV = 2.18 + 0.24 ug/L

Result	Uncer	Date
2.0	0.2	6/08

CV = 92.8 + 10.1 ug/L

Result	Uncer	Date
85.4	8	6/08

Methyl iodide 90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21
< 5		5/21

4-Methyl-2-pentanone
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 20		5/21
< 20		5/21
< 20		5/21
< 20		5/21

2-Methyl-4,6-dinitrophenol
90EPA 04 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/18
< 10		5/18
< 10		5/18
< 10		5/18

Methylene chloride
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21

TABLE C-V (cont)

****

EPA Drinking Water Study 26
(cont)

****

Methylene chloride (cont)

CV = 15.2 + 1.0 ug/L

Result	Uncer	Date
15	4	5/21

2-Methylnaphthalene
2-Methylphenol
4-Methylphenol
Naphthalene
90EPA 04 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/18
< 10		5/18
< 10		5/18
< 10		5/18

Naphthalene 90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21
< 5		5/21

2-Nitroaniline
3-Nitroaniline
4-Nitroaniline
Nitrobenzene
2-Nitrophenol
4-Nitrophenol
N-Nitrosodi-n-propylamine
N-Nitrosodimethylamine
N-Nitrosodiphenylamine
Pentachlorophenol
Phenanthrene
Phenol
90EPA 04 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/18
< 10		5/18
< 10		5/18
< 10		5/18

Propylbenzene
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21
< 5		5/21

Pyrene 90EPA 04 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/18
< 10		5/18
< 10		5/18
< 10		5/18

Styrene 90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21
< 5		5/21

2,4,5-TP 90EPA 04 GCEC

CV = 2.50 + 0.36 ug/L

Result	Uncer	Date
2.4	0.5	6/06

CV = 44.4 + 6.5 ug/L

Result	Uncer	Date
48	10	6/06

1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethylene
Toluene
1,1,2-Trichloro-1,2,2-trifluoroethane
1,2,3-Trichlorobenzene
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21
< 5		5/21

1,2,4-Trichlorobenzene
90EPA 04 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/18
< 10		5/18
< 10		5/18
< 10		5/18

1,2,4-Trichlorobenzene
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21
< 5		5/21

1,1,1-Trichloroethane
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21

CV = 13.6 + 0.9 ug/L

Result	Uncer	Date
13	4	5/21

1,1,2-Trichloroethane
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21

CV = 26.9 + 1.8 ug/L

Result	Uncer	Date
30	9	5/21

Trichloroethene
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21

CV = 6.63 + 0.88 ug/L

Result	Uncer	Date
6.3	1.9	5/21

Trichlorofluoromethane
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21
< 5		5/21

2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
90EPA 04 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/18
< 10		5/18
< 10		5/18
< 10		5/18

1,2,3-Trichloropropane
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21
< 5		5/21

Vinyl acetate
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/21
< 10		5/21
< 10		5/21
< 10		5/21

Vinyl chloride
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/21
< 10		5/21
< 10		5/21

CV = 8.7 + 1.2 ug/L

Result	Uncer	Date
7.5	2.2	5/21

Mixed-Xylenes (o + m + p)
90EPA 04 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/21
< 5		5/21
< 5		5/21
< 5		5/21

****

EPA Drinking Water Study 27

****

Acenaphthene
Acenaphthylene
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27
< 10		11/27

Acetone 90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 20		11/27
< 20		11/27
< 20		11/27
< 20		11/27

Acrolein
Acrylonitrile
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 100		11/27
< 100		11/27
< 100		11/27
< 100		11/27

Aniline
Anthracene
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27
< 10		11/27

Mixed-Aroclor
90EPA 02 GCEC

CV = 0.353 + 0.33 ug/L

Result	Uncer	Date
0.68	0.09	11/27

Aroclor 1242
90EPA 02 GCEC

CV = not spiked ug/L

Result	Uncer	Date
0.31	0.06	11/27

Aroclor 1254
90EPA 02 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.4		11/27

Aroclor 1260
90EPA 02 GCEC

CV = not spiked ug/L

Result	Uncer	Date
0.37	0.07	11/27

Azobenzene 90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27
< 10		11/27

Benzene 90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27

CV = 7.09 + 1.42 ug/L

Result	Uncer	Date
10	3	11/27

---

m-Benzidine
Benzo[a]anthracene
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27
< 10		11/27

Benzo[a]pyrene
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27

CV = 22.1 + 1.6 ug/L

Result	Uncer	Date
0.73	0.02	11/27

TABLE C-V (cont)

****

EPA Drinking Water Study 27
(cont)

****

Benzo(b)fluoranthene
Benzo(g,h,i)perylene
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27
< 10		11/27

Benzo(k)fluoranthene
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27

CV = 11.7 + 2.0 ug/L

Result	Uncer	Date
13	4	11/27

Benzoic acid
Benzyl alcohol
Bis(2-chloroethoxy)methane
Bis(2-chloroethyl)ether
Bis(2-chloroisopropyl)ether
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27
< 10		11/27

Bis(2-ethylhexyl)phthalate
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27

CV = 17.3 + 8.5 ug/L

Result	Uncer	Date
16	5	11/27

Bromobenzene
Bromochloromethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27
< 5		11/27

Bromodichloromethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27

CV = 32.4 + 3.2 ug/L

Result	Uncer	Date
32	10	11/27

Bromoform 90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27

CV = 14.1 + 1.4 ug/L

Result	Uncer	Date
14	4	11/27

CV = 22.7 + 2.2 ug/L

Result	Uncer	Date
22	7	11/27

Bromomethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/27

4-Bromophenylphenyl ether
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27
< 10		11/27

2-Butanone 90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 20		11/27
< 20		11/27
< 20		11/27
< 20		11/27

n-Butylbenzene
sec-Butylbenzene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27
< 5		11/27

tert-Butylbenzene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27

CV = 14.1 + 1.4 ug/L

Result	Uncer	Date
14	4	11/27

Butylbenzyl phthalate
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27

CV = 13.7 + 3.3 ug/L

Result	Uncer	Date
1.4	0.4	11/27

Carbon disulfide
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27
< 5		11/27

Carbon tetrachloride
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27

CV = 8.48 + 3.42 ug/L

Result	Uncer	Date
10	3	11/27

CV = 87 + 8 ug/L

Result	Uncer	Date
< 5		11/27

4-Chloro-3-methylphenol
4-Chloroaniline
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27
< 10		11/27

Chlorobenzene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27
< 5		11/27

Chlorodibromomethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27

CV = 30.8 + 3.1 ug/L

Result	Uncer	Date
29	9	11/27

Chloroethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/27

2-Chloroethylvinyl ether
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 50		11/27
< 50		11/27
< 50		11/27
< 50		11/27

Chloroform 90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
87	26	11/27
< 5		11/27
< 5		11/27
< 5		11/27

Chloromethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/27

2-Chloronaphthalene
o-Chlorophenol
4-Chlorophenylphenyl ether
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27
< 10		11/27

o-Chlorotoluene
p-Chlorotoluene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27
< 5		11/27

Chrysene 90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27
< 10		11/27

Cyclohexanone
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
5.2		11/27

2,4-D 90EPA 02 GCEC

CV = 46.3 + 6.4 ug/L

Result	Uncer	Date
64	13	12/31

Di-n-butyl phthalate
Di-n-octyl phthalate
Dibenzo(a,h)anthracene
Dibenzofuran
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27
< 10		11/27

1,2-Dibromo-3-chloropropane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27
< 10		11/27

CV = 0.65 + 0.13 ug/L

Result	Uncer	Date
< 10		11/27

1,2-Dibromoethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27

CV = 1.45 + 0.29 ug/L

Result	Uncer	Date
< 5		11/27

TABLE C-V (cont)

****

EPA Drinking Water Study 27
(cont)

****

Dibromomethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27
< 5		11/27

o-Dichlorobenzene (1,2)
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27
< 10		11/27

o-Dichlorobenzene (1,2)
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27
< 5		11/27

m-Dichlorobenzene (1,3)
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27
< 10		11/27

m-Dichlorobenzene (1,3)
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27

CV = 6.5 + 1.3 ug/L

Result	Uncer	Date
8.0	2.4	11/27

p-Dichlorobenzene (1,4)
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27
< 10		11/27

p-Dichlorobenzene (1,4)
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27

CV = 9.6 + 1.9 ug/L

Result	Uncer	Date
13	4	11/27

3,3'-Dichlorobenzidine
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27
< 10		11/27

Dichlorodifluoromethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/27

1,1-Dichloroethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27
< 5		11/27

1,2-Dichloroethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27

1,2-Dichloroethane (cont)

CV = 4.9 + 1.0 ug/L

Result	Uncer	Date
7.0	2.1	11/27

1,1-Dichloroethene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27

CV = 9.4 + 1.9 ug/L

Result	Uncer	Date
15	5	11/27

trans-1,2-Dichloroethene
cis-1,2-Dichloroethylene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27
< 5		11/27

2,4-Dichlorophenol
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27
< 10		11/27

1,2-Dichloropropane
1,3-Dichloropropane
2,2-Dichloropropane
1,1-Dichloropropene
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27
< 5		11/27

Diethyl phthalate
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27
< 10		11/27

Dimethyl phthalate
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27

CV = 10.2 + 2.0 ug/L

Result	Uncer	Date
< 10		11/27

2,4-Dimethylphenol
2,4-Dinitrophenol
2,4-Dinitrotoluene
2,6-Dinitrotoluene
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27
< 10		11/27

Ethylbenzene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27

CV = 11.6 + 1.2 ug/L

Result	Uncer	Date
12	4	11/27

Fluoranthene
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27

CV = 16.3 + 2.6 ug/L

Result	Uncer	Date
16	5	11/27

Fluorene 90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27

CV = 6.4 + 1.4 ug/L

Result	Uncer	Date
6.03	0.2	11/27

Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27
< 10		11/27

2-Hexanone
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 20		11/27
< 20		11/27
< 20		11/27
< 20		11/27

Indeno(1,2,3-cd)pyrene
Isophorone
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27
< 10		11/27

Isopropylbenzene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27

CV = 12.3 + 1.2 ug/L

Result	Uncer	Date
12	4	11/27

4-Isopropyltoluene
Methyl iodide
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27
< 5		11/27

4-Methyl-2-pentanone
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 20		11/27
< 20		11/27
< 20		11/27
< 20		11/27

2-Methyl-4,6-dinitrophenol
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27
< 10		11/27

Methylene chloride
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27
< 5		11/27

2-Methylnaphthalene
2-Methylphenol
4-Methylphenol
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27
< 10		11/27

Naphthalene
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27

TABLE C-V (cont)

****

EPA Drinking Water Study 27
(cont)

****

Naphthalene (cont)

CV = 24.3 + 2.8 ug/L

Result	Uncer	Date
20	6	11/27

2-Nitroaniline
3-Nitroaniline
4-Nitroaniline
Nitrobenzene
2-Nitrophenol
4-Nitrophenol
N-Nitrosodi-n-propylamine
N-Nitrosodimethylamine
N-Nitrosodiphenylamine
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27
< 10		11/27

Oxygenated Hydrocarbon
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
66		11/27
38		11/27
13		11/27

Pentachlorophenol
Phenanthrene
Phenol
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27
< 10		11/27

Propylbenzene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27

CV = 7.8 + 1.6 ug/L

Result	Uncer	Date
< 5		11/27

Pyrene 90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27
< 10		11/27

Saturated Hydrocarbons
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
15		11/27

Styrene 90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27

CV = 9.2 + 1.8 ug/L

Result	Uncer	Date
9.0	2.7	11/27

2,4,5-TP 90EPA 02 GCEC

CV = 18 + 3 ug/L

Result	Uncer	Date
25	5	12/31

1,1,1,2-Tetrachloroethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27
< 5		11/27

1,1,2,2-Tetrachloroethane
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
11		11/27

1,1,2,2-Tetrachloroethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27
< 5		11/27

Tetrachloroethylene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27

CV = 7.8 + 1.6 ug/L

Result	Uncer	Date
8.0	2.4	11/27

Toluene
1,1,2-Trichloro-1,2,2-
trifluoroethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27
< 5		11/27

1,2,4-Trichlorobenzene
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27
< 10		11/27

1,1,1-Trichloroethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27

CV = 7.4 + 1.5 ug/L

Result	Uncer	Date
9.0	2.7	11/27

1,1,2-Trichloroethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27
< 5		11/27

Trichloroethene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27

CV = 14.0 + 1.4 ug/L

Result	Uncer	Date
17	5	11/27

Trichlorofluoromethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27
< 5		11/27

2,4,5-Trichlorophenol
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27
< 10		11/27

2,4,6-Trichlorophenol
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27

CV = 7.3 + 4.6 ug/L

Result	Uncer	Date
< 10		11/27

1,2,3-Trichloropropane
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27
< 5		11/27

Unknown Polynuclear Aromatic
Hydrocarbon
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
6		11/27

Unknown organic compound
90EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
37		11/27
18		11/27
33		11/27

Vinyl acetate
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/27

Vinyl chloride
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		11/27
< 10		11/27
< 10		11/27

CV = 3.6 + 0.7 ug/L

Result	Uncer	Date
< 10		11/27

Mixed-Xylenes (o + m + p)
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27

Mixed-Xylenes (o + m + p)
(cont)

CV = 8.4 + 1.7 ug/L

Result	Uncer	Date
9.0	2.7	11/27

****

EPA GC/MS Acids in Water

****

Acenaphthene
Acenaphthylene
Aniline
Anthracene
Azobenzene
m-Benzidine
Benzo[a]anthracene
Benzo[a]pyrene
Benzo[b]fluoranthene
Benzo[g,h,i]perylene
Benzo[k]fluoranthene
Benzoic acid
Benzyl alcohol
Bis(2-chloroethoxy)methane
Bis(2-chloroethyl)ether
Bis(2-chloroisopropyl)ether
88EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12

Bis(2-ethylhexyl)phthalate
88EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
98	20	2/12

4-Bromophenylphenyl ether
Butylbenzyl phthalate
88EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12

4-Chloro-3-methylphenol
88EPA 02 GCMS

CV = 100 + 40 ug/L

Result	Uncer	Date
90	18	2/12

4-Chloroaniline
2-Chloronaphthalene
88EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12

TABLE C-V (cont)

****

EPA GC/MS Acids in Water
(cont)

****

o-Chlorophenol
88EPA 02 GCMS

CV = 100 + 30 ug/L

Result	Uncer	Date
67	13	2/12

4-Chlorophenylphenyl ether
Chrysene
Di-n-butyl phthalate
Di-n-octyl phthalate
Dibenzo[a,h]anthracene
Dibenzofuran
o-Dichlorobenzene (1,2)
m-Dichlorobenzene (1,3)
p-Dichlorobenzene (1,4)
3,3'-Dichlorobenzidine
88EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12

2,4-Dichlorophenol
88EPA 02 GCMS

CV = 100 + 30 ug/L

Result	Uncer	Date
78	16	2/12

Diethyl phthalate
Dimethyl phthalate
88EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12

2,4-Dimethylphenol
88EPA 02 GCMS

CV = 100 + 30 ug/L

Result	Uncer	Date
71	14	2/12

2,4-Dinitrophenol
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Fluoranthene
Fluorene
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Indeno[1,2,3-cd]pyrene
Isophorone
88EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12

2-Methyl-4,6-dinitrophenol
88EPA 02 GCMS

CV = 100 + 90 ug/L

Result	Uncer	Date
74	15	2/12

2-Methylnaphthalene
2-Methylphenol
4-Methylphenol
Naphthalene
2-Nitroaniline
3-Nitroaniline
4-Nitroaniline
Nitrobenzene
88EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12

2-Nitrophenol
88EPA 02 GCMS

CV = 100 + 40 ug/L

Result	Uncer	Date
75	15	2/12

4-Nitrophenol
88EPA 02 GCMS

CV = 100 + 50 ug/L

Result	Uncer	Date
78	16	2/12

N-Nitrosodi-n-propylamine
N-Nitrosodimethylamine
N-Nitrosodiphenylamine
88EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12

Pentachlorophenol
88EPA 02 GCMS

CV = 100 + 50 ug/L

Result	Uncer	Date
91	18	2/12

Phenanthrene
88EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12

Phenol 88EPA 02 GCMS

CV = 100 + 20 ug/L

Result	Uncer	Date
63	13	2/12

Pyrene
1,2,4-Trichlorobenzene
2,4,5-Trichlorophenol
88EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12

2,4,6-Trichlorophenol
88EPA 02 GCMS

CV = 100 + 30 ug/L

Result	Uncer	Date
82	16	2/12

****

EPA GC/MS Base Neutrals

****

Acenaphthene
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/25
< 330		3/28

CV = 100 + 28 ug/L

Result	Uncer	Date
83	17	2/12

Acenaphthylene
Aniline
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/25
< 10		2/12
< 330		3/28

Anthracene 86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
85	17	1/25
< 330		3/28

CV = 100 + 32 ug/L

Result	Uncer	Date
74	15	2/12

Azobenzene
m-Benzidine
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/25
< 10		2/12
< 330		3/28

Benzo[a]anthracene
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 330		3/28

CV = 100 + 28 ug/L

Result	Uncer	Date
< 10		1/25

Benzo[a]pyrene
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/25
< 330		3/28

CV = 100 + 39 ug/L

Result	Uncer	Date
81	16	2/12

Benzo[b]fluoranthene
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/25
< 330		3/28

CV = 100 + 39 ug/L

Result	Uncer	Date
86	17	2/12

Benzo[g,h,i]perylene
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/25
< 330		3/28

CV = 100 + 59 ug/L

Result	Uncer	Date
100	20	2/12

Benzo[k]fluoranthene
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 330		3/28

CV = 100 + 32 ug/L

Result	Uncer	Date
65	13	1/25

Benzoic acid
Benzyl alcohol
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/25
< 10		2/12
< 330		3/28

Bis(2-chloroethoxy)methane
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 330		3/28

CV = 100 + 34 ug/L

Result	Uncer	Date
67	13	1/25

Bis(2-chloroethyl)ether
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 330		3/28

CV = 100 + 55 ug/L

Result	Uncer	Date
67	13	1/25

Bis(2-chloroisopropyl)ether
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/25
< 10		2/12
< 330		3/28

Bis(2-ethylhexyl)phthalate
86EPA 02 GCMS

CV = 100 + 31 ug/L

Result	Uncer	Date
< 10		1/25
< 330		3/28

CV = 100 + 41 ug/L

Result	Uncer	Date
81	16	2/12

4-Bromophenylphenyl ether
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/25
< 330		3/28

CV = 100 + 23 ug/L

Result	Uncer	Date
99	20	2/12

Butylbenzyl phthalate
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/25
< 330		3/28

CV = 100 + 23 ug/L

Result	Uncer	Date
< 10		2/12

TABLE C-V (cont)

****

EPA GC/MS Base Neutrals
(cont)

****

4-Chloro-3-methylphenol
4-Chloroaniline
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/25
< 10		2/12
< 330		3/28

2-Chloronaphthalene
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 330		3/28

CV = 100 + 13 ug/L

Result	Uncer	Date
71	14	1/25

o-Chlorophenol
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/25
< 10		2/12
< 330		3/28

4-Chlorophenylphenyl ether
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/25
< 330		3/28

CV = 100 + 33 ug/L

Result	Uncer	Date
90	18	2/12

Chrysene 86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
97	19	1/25
< 330		3/28

CV = 100 + 48 ug/L

Result	Uncer	Date
94	19	2/12

Di-n-butyl phthalate
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 330		3/28

CV = 100 + 17 ug/L

Result	Uncer	Date
22	4	1/25

Di-n-octyl phthalate
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
52	10	1/25
< 10		2/12
< 330		3/28

Dibenzo[a,h]anthracene
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/25
< 330		3/28

CV = 100 + 70 ug/L

Result	Uncer	Date
110	20	2/12

Dibenzofuran
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/25
< 10		2/12
< 330		3/28

o-Dichlorobenzene (1,2)
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 330		3/28

CV = 100 + 31 ug/L

Result	Uncer	Date
66	13	1/25

m-Dichlorobenzene (1,3)
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 330		3/28

CV = 100 + 42 ug/L

Result	Uncer	Date
62	12	1/25

p-Dichlorobenzene (1,4)
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/25
< 330		3/28

CV = 100 + 32 ug/L

Result	Uncer	Date
65	13	2/12

3,3'-Dichlorobenzidine
2,4-Dichlorophenol
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/25
< 10		2/12
< 330		3/28

Diethyl phthalate
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 330		3/28

CV = 100 + 26 ug/L

Result	Uncer	Date
11	2	1/25

Dimethyl phthalate
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/25
< 330		3/28

CV = 100 + 23 ug/L

Result	Uncer	Date
< 10		2/12

2,4-Dimethylphenol
2,4-Dinitrophenol
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/25
< 10		2/12
< 330		3/28

2,4-Dinitrotoluene
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 330		3/28

CV = 100 + 22 ug/L

Result	Uncer	Date
96	19	1/25

2,6-Dinitrotoluene
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 330		3/28

CV = 100 + 30 ug/L

Result	Uncer	Date
91	18	1/25

Fluoranthene
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/25
< 330		3/28

CV = 100 + 33 ug/L

Result	Uncer	Date
98	20	2/12

Fluorene 86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/25
< 330		3/28

CV = 100 + 21 ug/L

Result	Uncer	Date
90	18	2/12

Hexachlorobenzene
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 330		3/28

CV = 100 + 25 ug/L

Result	Uncer	Date
96	19	1/25

Hexachlorobutadiene
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 330		3/28

CV = 100 + 26 ug/L

Result	Uncer	Date
68	14	1/25

Hexachlorocyclopentadiene
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/25
< 10		2/12
< 330		3/28

Hexachloroethane
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/25
< 330		3/28

CV = 100 + 24 ug/L

Result	Uncer	Date
60	12	2/12

Indeno[1,2,3-cd]pyrene
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/25
23	5	2/12
< 330		3/28

Isophorone 86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 330		3/28

CV = 100 + 63 ug/L

Result	Uncer	Date
71	14	1/25

2-Methyl-4,6-dinitrophenol
2-Methylnaphthalene
2-Methylphenol
4-Methylphenol
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/25
< 10		2/12
< 330		3/28

Naphthalene 86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/25
< 330		3/28

CV = 100 + 30 ug/L

Result	Uncer	Date
76	15	2/12

2-Nitroaniline
3-Nitroaniline
4-Nitroaniline
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/25
< 10		2/12
< 330		3/28

Nitrobenzene 86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/25
< 330		3/28

CV = 100 + 39 ug/L

Result	Uncer	Date
79	16	2/12

TABLE C-V (cont)

****

EPA GC/MS Base Neutrals
(cont)

****

2-Nitrophenol
4-Nitrophenol
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/25
< 10		2/12
< 330		3/28

N-Nitrosodi-n-propylamine
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 330		3/28

CV = 100 + 55 ug/L

Result	Uncer	Date
64	13	1/25

N-Nitrosodimethylamine
N-Nitrosodiphenylamine
Pentachlorophenol
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/25
< 10		2/12
< 330		3/28

Phenanthrene
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 330		3/28

CV = 100 + 21 ug/L

Result	Uncer	Date
< 10		1/25

Phenol 86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/25
< 10		2/12
< 330		3/28

Pyrene 86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 330		3/28

CV = 100 + 25 ug/L

Result	Uncer	Date
99	20	1/25

1,2,4-Trichlorobenzene
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 330		3/28

CV = 100 + 28 ug/L

Result	Uncer	Date
69	14	1/25

2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
86EPA 02 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/25
< 10		2/12
< 330		3/28

****

EPA PCB in Sediment

****

Mixed-Aroclor 89EPA 02 GCEC

CV = 15.0 + 0.3 ug/g

Result	Uncer	Date
13	3	12/18

Aroclor 1242 89EPA 02 GCEC

CV = 8.16 + 0.28 ug/g

Result	Uncer	Date
8.3	1.7	12/18

Aroclor 1254 89EPA 02 GCEC

CV = 6.81 + 0.14 ug/g

Result	Uncer	Date
5	1	12/18

Aroclor 1260 89EPA 02 GCEC

CV = not spiked ug/g

Result	Uncer	Date
< 0.05		12/18

****

EPA PCB in Sediment Study

****

Mixed-Aroclor GCEC

CV = no data available ug/g

Result	Uncer	Date
62	12	12/18
5.6	1.2	12/18
< 0.05		12/18
0.5	0.1	12/18
0.22	0.08	12/18

Aroclor 1242 GCEC

CV = no data available ug/g

Result	Uncer	Date
< 0.05		12/18
< 0.05		12/18
< 0.05		12/18
< 0.05		12/18
< 0.05		12/18

Aroclor 1254 GCEC

CV = no data available ug/g

Result	Uncer	Date
< 0.05		12/18
< 0.05		12/18
< 0.05		12/18
< 0.05		12/18
< 0.05		12/18

Aroclor 1260 GCEC

CV = no data available ug/g

Result	Uncer	Date
0.22	0.08	12/18
0.5	0.1	12/18
5.6	1.2	12/18
< 0.05		12/18
62	12	12/18

****

EPA PCB in Water

****

Mixed-Aroclor
79EPA 01, 84EPA 02 GCEC

CV = 1.6 + 0.4 ug/L

Result	Uncer	Date
2.4	0.5	2/20
2.8	0.6	5/03
2.5	0.5	5/11
2.4	0.5	5/11
2.0	0.4	5/24

CV = 1.9 + 0.4 ug/L

Result	Uncer	Date
2.3	0.5	6/05
2.9	0.6	9/17
2.8	0.6	9/19
2.8	0.6	10/03
4.1	0.8	12/05

CV = 3.4 + 0.8 ug/L

Result	Uncer	Date
2.8	0.7	4/20
2.8	0.7	4/20
4.1	0.8	5/02
3.6	0.7	7/02
3.6	0.7	7/24
3.7	0.7	9/06

CV = 5.4 + 1.0 ug/L

Result	Uncer	Date
6.7	1.7	5/24

CV = 5.4 + 1.3 ug/L

Result	Uncer	Date
8.5	1.7	2/20

CV = 6.3 + 1.5 ug/L

Result	Uncer	Date
9.4	1.9	2/01

CV = 8.4 + 2.0 ug/L

Result	Uncer	Date
8.6	1.7	2/12
15	3	3/06
8.2	1.7	3/28
8.4	1.7	4/20
8.4	1.7	4/20

CV = 50 + 10 ug/L

Result	Uncer	Date
51	10	2/12
59	12	3/06
61	12	3/28
67	13	4/10
55	11	5/02
45	9	7/02
50	10	7/24
55	11	9/06

CV = 50 + 12 ug/L

Result	Uncer	Date
56	11	1/16
56	11	1/16
56	11	1/16
57	11	2/01
46	9	6/05
72	14	9/17
61	12	9/29
77	16	11/02

CV = 50 + 14 ug/L

Result	Uncer	Date
60	12	5/03

Aroclor 1242
79EPA 01, 84EPA 02 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.55		2/12
< 0.71		2/20
< 0.83		3/06
< 0.67		3/28
< 0.4		4/10
< 0.51		4/20
< 0.4		5/02
< 0.4		5/03
< 0.4		5/11
< 0.2		5/24
< 0.4		7/02
< 0.4		7/24
< 0.4		9/06

CV = 1.9 + 0.4 ug/L

Result	Uncer	Date
2.3	0.5	6/05
2.9	0.6	9/17
2.8	0.6	9/19
2.8	0.6	10/03
4.1	0.8	12/05

CV = 6.3 + 1.5 ug/L

Result	Uncer	Date
9.4	1.9	2/01

CV = 50 + 12 ug/L

Result	Uncer	Date
56	11	1/16
56	11	1/16
56	11	1/16
57	11	2/01
46	9	6/05
72	14	9/17
61	12	9/29
77	16	11/02

Aroclor 1254
79EPA 01, 84EPA 02 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.4		1/16
< 0.4		1/16
< 0.4		1/16
< 0.5		2/01
< 0.5		2/12
< 0.55		2/12
< 0.83		3/06
< 0.67		3/28
< 0.4		4/10
< 0.51		4/20
< 0.4		5/02
< 0.4		6/05
< 0.4		7/02
< 0.4		7/24
< 0.4		9/06
< 0.6		9/17
< 0.4		9/19
< 0.4		9/29
< 0.4		10/03
< 0.4		11/02
< 0.4		12/05

CV = 1.6 + 0.4 ug/L

Result	Uncer	Date
2.4	0.5	2/20
2.8	0.6	5/03
2.4	0.5	5/11
2.5	0.5	5/11
2.0	0.4	5/24

CV = 5.4 + 1.0 ug/L

Result	Uncer	Date
6.7	1.7	5/24

CV = 5.4 + 1.3 ug/L

Result	Uncer	Date
8.5	1.7	2/20

CV = 50 + 14 ug/L

Result	Uncer	Date
60	12	5/03

Aroclor 1260
79EPA 01, 84EPA 02 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.4		1/16
< 0.4		1/16
< 0.4		1/16
< 0.5		2/01
< 0.71		2/20
< 0.4		5/03
< 0.4		5/11
< 0.2		5/24
< 0.4		6/05
< 0.6		9/17
< 0.4		9/19
< 0.4		9/29
< 0.4		10/03
< 0.4		11/02
< 0.4		12/05

TABLE C-V (cont)

****

EPA PCB in Water
(cont)

****

Aroclor 1260 (cont)

CV = 3.4 + 0.8 ug/L

Result	Uncer	Date
2.8	0.7	4/20
2.8	0.7	4/20
4.1	0.8	5/02
3.6	0.7	7/02
3.6	0.7	7/24
3.7	0.7	9/06

CV = 8.4 + 2.0 ug/L

Result	Uncer	Date
8.6	1.7	2/12
15	3	3/06
8.2	1.7	3/28
8.4	1.7	4/20
8.4	1.7	4/20

CV = 50 + 10 ug/L

Result	Uncer	Date
51	10	2/12
59	12	3/06
61	12	3/28
67	13	4/10
55	11	5/02
45	9	7/02
50	10	7/24
55	11	9/06

****

EPA Water Pollution Study 24

****

Acetone
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 20		4/16
< 20		4/16
< 20		4/16
< 20		4/16

Aldrin 90EPA 02 GCEC

CV = 0.192 + 0.039 ug/L

Result	Uncer	Date
0.19	0.47	4/16

CV = 0.567 + 0.096 ug/L

Result	Uncer	Date
0.56	0.14	4/16

Mixed-Aroclor
90EPA 02 GCEC

CV = 2.7 + 0.5 ug/L

Result	Uncer	Date
17	3	4/16

CV = 10.2 + 1.5 ug/L

Result	Uncer	Date
30	6	4/16

CV = 45 + 10 ug/L

Result	Uncer	Date
32	6	3/22

CV = 50 + 10 ug/L

Result	Uncer	Date
29	6	3/22

Aroclor 1242
90EPA 02 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 4		3/22
< 1		4/16
< 1		4/16

CV = 45 + 10 ug/L

Result	Uncer	Date
32	6	3/22

Aroclor 1248
90EPA 02 GCEC

CV = 2.7 + 0.5 ug/L

Result	Uncer	Date
17	3	4/16

Incorrect calibration curve.

Aroclor 1254
90EPA 02 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 4		3/22
< 1		4/16

CV = 10.2 + 1.5 ug/L

Result	Uncer	Date
30	6	4/16

Incorrect calibration curve.

CV = 50 + 10 ug/L

Result	Uncer	Date
29	6	3/22

Incorrect calibration curve.

Aroclor 1260
90EPA 02 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 4		3/22
< 4		3/22
< 1		4/16
< 1		4/16

alpha-BHC 90EPA 02 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.04		4/16
< 0.04		4/16

beta-BHC 90EPA 02 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.1		4/16
< 0.1		4/16

delta-BHC 90EPA 02 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.12		4/16
< 0.12		4/16

Benzene 90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16

CV = 13.0 + 1.5 ug/L

Result	Uncer	Date
13	3	4/16

CV = 53 + 6 ug/L

Result	Uncer	Date
50	10	4/16

Bromobenzene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16
< 5		4/16
< 5		4/16

Bromochloromethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16
< 5		4/16
< 5		4/16

Bromodichloromethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16

CV = 14.2 + 1.7 ug/L

Result	Uncer	Date
17	3	4/16

CV = 49.2 + 4.8 ug/L

Result	Uncer	Date
54	11	4/16

Bromoform 90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16

CV = 5.3 + 1.0 ug/L

Result	Uncer	Date
7.7	1.5	4/16

CV = 37.1 + 5.6 ug/L

Result	Uncer	Date
44	9	4/16

Bromomethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		4/16
< 10		4/16
< 10		4/16
< 10		4/16

2-Butanone 90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 20		4/16
< 20		4/16
< 20		4/16
< 20		4/16

n-Butylbenzene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16
< 5		4/16
< 5		4/16

sec-Butylbenzene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16
< 5		4/16
< 5		4/16

tert-Butylbenzene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16
< 5		4/16
< 5		4/16

Carbon disulfide
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16
< 5		4/16
< 5		4/16

Carbon tetrachloride
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16

CV = 14.7 + 2.2 ug/L

Result	Uncer	Date
14	3	4/16

Carbon tetrachloride (cont)

CV = 61 + 9 ug/L

Result	Uncer	Date
45	9	4/16

Chlordane 90EPA 02 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.25		4/16
< 0.25		4/16

Chlorobenzene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16

CV = 12.1 + 1.4 ug/L

Result	Uncer	Date
13	3	4/16

CV = 51.1 + 5.4 ug/L

Result	Uncer	Date
52	10	4/16

Chlorodibromomethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16

CV = 9.4 + 1.3 ug/L

Result	Uncer	Date
11	2	4/16

CV = 58 + 7 ug/L

Result	Uncer	Date
62	12	4/16

Chloroethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		4/16
< 10		4/16
< 10		4/16
< 10		4/16

TABLE C-V (cont)

****

EPA Water Pollution Study 24
(cont)

****

Chloroform
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16

CV = 8.6 + 1.3 ug/L

Result	Uncer	Date
10	2	4/16

CV = 42.1 + 4.2 ug/L

Result	Uncer	Date
46	9	4/16

Chloromethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		4/16
< 10		4/16
< 10		4/16
< 10		4/16

o-Chlorotoluene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16
< 5		4/16
< 5		4/16

p-Chlorotoluene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16
< 5		4/16
< 5		4/16

p,p'-DDD 90EPA 02 GCEC

CV = 0.133 + 0.032 ug/L

Result	Uncer	Date
0.14	0.04	4/16

p,p'-DDD (cont)

CV = 1.13 + 0.17 ug/L

Result	Uncer	Date
1.1	0.3	4/16

p,p'-DDE 90EPA 02 GCEC

CV = 0.292 + 0.058 ug/L

Result	Uncer	Date
0.28	0.07	4/16

CV = 0.608 + 0.103 ug/L

Result	Uncer	Date
0.58	0.15	4/16

p,p'-DDT 90EPA 02 GCEC

CV = 0.250 + 0.062 ug/L

Result	Uncer	Date
0.28	0.07	4/16

CV = 0.875 + 0.162 ug/L

Result	Uncer	Date
0.81	0.2	4/16

1,2 Dibromo-3-chloropropane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		4/16
< 10		4/16
< 10		4/16
< 10		4/16

1,2-Dibromoethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16
< 5		4/16
< 5		4/16

Dibromomethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16
< 5		4/16
< 5		4/16

o-Dichlorobenzene (1,2)
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16

CV = 17 + 2 ug/L

Result	Uncer	Date
20	4	4/16

CV = 65 + 7 ug/L

Result	Uncer	Date
61	12	4/16

m-Dichlorobenzene (1,3)
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16

CV = 11.1 + 1.5 ug/L

Result	Uncer	Date
14	3	4/16

CV = 79 + 8 ug/L

Result	Uncer	Date
77	15	4/16

p-Dichlorobenzene (1,4)
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16

CV = 23 + 3 ug/L

Result	Uncer	Date
27	5	4/16

CV = 84 + 10 ug/L

Result	Uncer	Date
80	16	4/16

1,1-Dichloroethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16
< 5		4/16
< 5		4/16

1,2-Dichloroethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16

CV = 6.73 + 0.84 ug/L

Result	Uncer	Date
8.5	1.7	4/16

CV = 50 + 6 ug/L

Result	Uncer	Date
56	11	4/16

1,1-Dichloroethene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16
< 5		4/16
< 5		4/16

trans-1,2-Dichloroethene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16
< 5		4/16
< 5		4/16

cis-1,2-Dichloroethylene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16
< 5		4/16
< 5		4/16

1,2-Dichloropropane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16
< 5		4/16
< 5		4/16

1,3-Dichloropropane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16
< 5		4/16
< 5		4/16

2,2-Dichloropropane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16
< 5		4/16
< 5		4/16

1,1-Dichloropropene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16
< 5		4/16
< 5		4/16

cis-1,3-Dichloropropene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16
< 5		4/16
< 5		4/16

trans-1,3-Dichloropropene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16
< 5		4/16
< 5		4/16

Dieldrin 90EPA 02 GCEC

CV = 0.267 + 0.042 ug/L

Result	Uncer	Date
0.28	0.06	4/16

CV = 0.65 + 0.10 ug/L

Result	Uncer	Date
0.65	0.16	4/16

Endosulfan I
90EPA 02 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.05		4/16
< 0.05		4/16

Endosulfan II
90EPA 02 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.08		4/16
< 0.08		4/16

Endosulfan sulfate
90EPA 02 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.09		4/16
< 0.09		4/16

Endrin 90EPA 02 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.03		4/16
< 0.03		4/16

Endrin aldehyde
90EPA 02 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.31		4/16
< 0.31		4/16

Ethylbenzene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16

CV = 21.0 + 2.1 ug/L

Result	Uncer	Date
20	4	4/16

CV = 93 + 10 ug/L

Result	Uncer	Date
71	14	4/16

TABLE C-V (cont)

****

EPA Water Pollution Study 24
(cont)

****

Heptachlor 90EPA 02 GCEC

CV = 0.083 + 0.021 ug/L

Result	Uncer	Date
0.0850	0.21	4/16

CV = 0.467 + 0.087 ug/L

Result	Uncer	Date
0.46	0.12	4/16

Heptachlor epoxide 90EPA 02 GCEC

CV = 0.283 + 0.042 ug/L

Result	Uncer	Date
0.29	0.07	4/16

CV = 0.42 + 0.06 ug/L

Result	Uncer	Date
0.43	0.11	4/16

Hexachlorobutadiene 90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16
< 5		4/16
< 5		4/16

2-Hexanone 90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 20		4/16
< 20		4/16
< 20		4/16
< 20		4/16

Isopropylbenzene 90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16
< 5		4/16
< 5		4/16

4-Isopropyltoluene 90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16
< 5		4/16
< 5		4/16

Lindane 90EPA 02 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.03		4/16
< 0.03		4/16

Methoxychlor 90EPA 02 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.08		4/16
< 0.08		4/16

4-Methyl-2-pentanone 90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 20		4/16
< 20		4/16
< 20		4/16
< 20		4/16

Methylene chloride 90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16

CV = 6.4 + 1.4 ug/L

Result	Uncer	Date
8.3	1.7	4/16

CV = 37 + 5 ug/L

Result	Uncer	Date
40	8	4/16

Naphthalene 90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16
< 5		4/16
< 5		4/16

Propylbenzene 90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16
< 5		4/16
< 5		4/16

Styrene 90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16
< 5		4/16
< 5		4/16

1,1,1,2-Tetrachloroethane 90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16
< 5		4/16
< 5		4/16

1,1,2,2-Tetrachloroethane 90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16
< 5		4/16
< 5		4/16

Tetrachloroethylene 90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16

CV = 4.42 + 0.72 ug/L

Result	Uncer	Date
5	1	4/16

Tetrachloroethylene (cont)

CV = 48 + 6 ug/L

Result	Uncer	Date
41	8	4/16

Toluene 90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16

CV = 16.3 + 1.6 ug/L

Result	Uncer	Date
15	3	4/16

CV = 67 + 7 ug/L

Result	Uncer	Date
53	11	4/16

Toxaphene 90EPA 02 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 2.5		4/16
< 2.5		4/16

1,2,3-Trichlorobenzene 90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16
< 5		4/16
< 5		4/16

1,2,4-Trichlorobenzene 90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16
< 5		4/16
< 5		4/16

1,1,1-Trichloroethane 90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16

1,1,1-Trichloroethane (cont)

CV = 12.1 + 1.8 ug/L

Result	Uncer	Date
12	2	4/16

CV = 66 + 10 ug/L

Result	Uncer	Date
53	11	4/16

1,1,2-Trichloroethane 90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16
< 5		4/16
< 5		4/16

Trichloroethene 90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16

CV = 11.6 + 1.5 ug/L

Result	Uncer	Date
12	2	4/16

CV = 55 + 6 ug/L

Result	Uncer	Date
52	10	4/16

Trichlorofluoromethane
1,2,3-Trichloropropane
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16
< 5		4/16
< 5		4/16

Vinyl acetate
Vinyl chloride
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		4/16
< 10		4/16
< 10		4/16
< 10		4/16

Mixed-Xylenes (o + m + p)
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		4/16
< 5		4/16
< 5		4/16
< 5		4/16

****

EPA Water Pollution Study 25

****

Acetone 90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 20		9/21
< 20		9/21
< 20		9/21
< 20		9/21

Acrolein
Acrylonitrile
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 100		9/21
< 100		9/21
< 100		9/21
< 100		9/21

Mixed-Aroclor 90EPA 02 GCEC

CV = 4.27 + 1.21 ug/L

Result	Uncer	Date
5.3	1.1	9/29

CV = 6.5 + 1.7 ug/L

Result	Uncer	Date
9.5	1.9	9/29

CV = 26.3 + 8.4 ug/L

Result	Uncer	Date
22	4	9/29

CV = 50 + 29 ug/L

Result	Uncer	Date
37	7	9/29

TABLE C-V (cont)

****

EPA Water Pollution Study 25
(cont)

****

Aroclor 1242
90EPA 02 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 4		9/29
< 0.4		9/29
< 4		9/29

CV = 6.5 + 1.7 ug/L

Result	Uncer	Date
9.5	1.9	9/29

Aroclor 1254
90EPA 02 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.4		9/29
< 0.4		9/29
< 4		9/29

CV = 26.3 + 8.4 ug/L

Result	Uncer	Date
22	4	9/29

Aroclor 1260
90EPA 02 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 4		9/29
< 0.4		9/29

CV = 4.27 + 1.21 ug/L

Result	Uncer	Date
5.3	1.1	9/29

CV = 50 + 29 ug/L

Result	Uncer	Date
37	7	9/29

Benzene 90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		9/21
< 5		9/21

CV = 17.8 + 2.2 ug/L

Result	Uncer	Date
20	6	9/21

Benzene (cont)

CV = 82 + 10 ug/L

Result	Uncer	Date
84	25	9/21

Bromobenzene
Bromochloromethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21

Bromodichloromethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		9/21
< 5		9/21

CV = 10.1 + 1.3 ug/L

Result	Uncer	Date
12	4	9/21

CV = 62 + 7 ug/L

Result	Uncer	Date
62	19	9/21

Bromoform 90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		9/21
< 5		9/21

CV = 14.4 + 2.6 ug/L

Result	Uncer	Date
14	4	9/21

CV = 66 + 9 ug/L

Result	Uncer	Date
64	19	9/21

Bromomethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		9/21
< 10		9/21
< 10		9/21
< 10		9/21

2-Butanone 90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 20		9/21
< 20		9/21
< 20		9/21
< 20		9/21

n-Butylbenzene
sec-Butylbenzene
tert-Butylbenzene
Carbon disulfide
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21

Carbon tetrachloride
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		9/21
< 5		9/21

CV = 6.81 + 1.15 ug/L

Result	Uncer	Date
7.0	2.1	9/21

CV = 55 + 8 ug/L

Result	Uncer	Date
42	13	9/21

Chlorobenzene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		9/21
< 5		9/21

CV = 13.9 + 1.9 ug/L

Result	Uncer	Date
15	5	9/21

CV = 63 + 8 ug/L

Result	Uncer	Date
57	17	9/21

Chlorodibromomethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		9/21
< 5		9/21

CV = 12.6 + 1.8 ug/L

Result	Uncer	Date
13	4	9/21

CV = 45 + 6 ug/L

Result	Uncer	Date
42	13	9/21

Chloroethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		9/21
< 10		9/21
< 10		9/21
< 10		9/21

2-Chloroethylvinyl ether
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 50		9/21
< 50		9/21
< 50		9/21
< 50		9/21

Chloroform 90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		9/21
< 5		9/21

CV = 9.74 + 1.33 ug/L

Result	Uncer	Date
14	4	9/21

CV = 37.4 + 4.9 ug/L

Result	Uncer	Date
42	13	9/21

Chloromethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		9/21
< 10		9/21
< 10		9/21
< 10		9/21

o-Chlorotoluene
p-Chlorotoluene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21

1,2-Dibromo-3-chloropropane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		9/21
< 10		9/21
< 10		9/21
< 10		9/21

1,2-Dibromoethane
Dibromomethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21

o-Dichlorobenzene (1,2)
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		9/21
< 5		9/21

CV = 13.5 + 1.8 ug/L

Result	Uncer	Date
14	4	9/21

CV = 59 + 8 ug/L

Result	Uncer	Date
51	15	9/21

m-Dichlorobenzene (1,3)
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		9/21
< 5		9/21

CV = 19.7 + 2.9 ug/L

Result	Uncer	Date
20	6	9/21

CV = 52 + 7 ug/L

Result	Uncer	Date
47	14	9/21

p-Dichlorobenzene (1,4)
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		9/21
< 5		9/21

CV = 15.3 + 2.1 ug/L

Result	Uncer	Date
15	5	9/21

CV = 48 + 6 ug/L

Result	Uncer	Date
43	13	9/21

Dichlorodifluoromethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		9/21
< 10		9/21
< 10		9/21
< 10		9/21

1,1-Dichloroethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21

TABLE C-V (cont)

****

EPA Water Pollution Study 25
(cont)

****

1,2-Dichloroethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		9/21
< 5		9/21

CV = 13.3 + 1.6 ug/L

Result	Uncer	Date
16	5	9/21

CV = 26.7 + 3.1 ug/L

Result	Uncer	Date
30	9	9/21

1,1-Dichloroethene
trans-1,2-Dichloroethene
cis-1,2-Dichloroethylene
1,2-Dichloropropane
1,3-Dichloropropane
2,2-Dichloropropane
1,1-Dichloropropene
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21

Ethylbenzene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		9/21
< 5		9/21

CV = 9.6 + 1.6 ug/L

Result	Uncer	Date
9.0	2.7	9/21

CV = 58 + 7 ug/L

Result	Uncer	Date
52	16	9/21

Hexachlorobutadiene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21

2-Hexanone 90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 20		9/21
< 20		9/21
< 20		9/21
< 20		9/21

Isopropylbenzene
4-Isopropyltoluene
Methyl iodide
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21

4-Methyl-2-pentanone
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 20		9/21
< 20		9/21
< 20		9/21
< 20		9/21

Methylene chloride
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		9/21
< 5		9/21

CV = 12.3 + 2.3 ug/L

Result	Uncer	Date
16	5	9/21

CV = 43 + 8 ug/L

Result	Uncer	Date
42	13	9/21

Naphthalene
Propylbenzene
Styrene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21

Tetrachloroethylene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		9/21
< 5		9/21

CV = 11.7 + 1.9 ug/L

Result	Uncer	Date
13	4	9/21

CV = 54 + 8 ug/L

Result	Uncer	Date
46	14	9/21

Toluene 90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		9/21
< 5		9/21

CV = 12.9 + 1.5 ug/L

Result	Uncer	Date
12	4	9/21

CV = 94 + 12 ug/L

Result	Uncer	Date
82	25	9/21

1,1,2-Trichloro-1,2,2-
trifluoroethane
1,2,3-Trichlorobenzene
1,2,4-Trichlorobenzene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21

1,1,1-Trichloroethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		9/21
< 5		9/21

CV = 7.86 + 1.24 ug/L

Result	Uncer	Date
9.0	2.7	9/21

CV = 58 + 9 ug/L

Result	Uncer	Date
54	16	9/21

1,1,2-Trichloroethane
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21

Trichloroethene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		9/21
< 5		9/21

CV = 10.5 + 1.6 ug/L

Result	Uncer	Date
12	4	9/21

CV = 47 + 7 ug/L

Result	Uncer	Date
44	13	9/21

Trichlorofluoromethane
1,2,3-Trichloropropane
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21

Vinyl acetate
Vinyl chloride
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		9/21
< 10		9/21
< 10		9/21
< 10		9/21

Mixed-Xylenes (o + m + p)
90EPA 02 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21

****

HSE-9 Organics in Oil

****

Acenaphthene
Acenaphthylene
Aniline
Anthracene
Azobenzene
m-Benzidine
Benzo[a]anthracene
Benzo[a]pyrene
90GAU 01 GCMS

CV = not spiked ug/g

Result	Uncer	Date
< 200		8/30

Benzo[b]fluoranthene
90GAU 01 GCMS

CV = 1500 + 200 ug/g

Result	Uncer	Date
< 200		8/30

Benzo[g,h,i]perylene
90GAU 01 GCMS

CV = not spiked ug/g

Result	Uncer	Date
< 200		8/30

Benzo[k]fluoranthene
90GAU 01 GCMS

CV = not spiked ug/g

Result	Uncer	Date
1100	300	8/30

Benzoic acid
Benzyl alcohol
Bis(2-chloroethoxy)methane
Bis(2-chloroethyl)ether
Bis(2-chloroisopropyl)ether
90GAU 01 GCMS

CV = not spiked ug/g

Result	Uncer	Date
< 200		8/30

Bis(2-ethylhexyl)phthalate
90GAU 01 GCMS

CV = 1200 + 100 ug/g

Result	Uncer	Date
1100	300	8/30

4-Bromophenylphenyl ether
Butylbenzyl phthalate
4-Chloro-3-methylphenol
4-Chloroaniline
2-Chloronaphthalene
o-Chlorophenol
4-Chlorophenylphenyl ether
Chrysene
Di-n-butyl phthalate
Di-n-octyl phthalate
Dibenzo[a,h]anthracene
Dibenzofuran
o-Dichlorobenzene (1,2)
m-Dichlorobenzene (1,3)
p-Dichlorobenzene (1,4)
3,3'-Dichlorobenzidine
2,4-Dichlorophenol
Diethyl phthalate
Dimethyl phthalate
2,4-Dimethylphenol
2,4-Dinitrophenol
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Fluoranthene
Fluorene
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Indeno[1,2,3-cd]pyrene
Isophorone
2-Methyl-4,6-dinitrophenol
2-Methylnaphthalene
2-Methylphenol
4-Methylphenol
Naphthalene
2-Nitroaniline
3-Nitroaniline
4-Nitroaniline
Nitrobenzene
2-Nitrophenol
4-Nitrophenol
N-Nitrosodi-n-propylamine
N-Nitrosodimethylamine
N-Nitrosodiphenylamine
90GAU 01 GCMS

CV = not spiked ug/g

Result	Uncer	Date
< 200		8/30

TABLE C-V (cont)

****

HSE-9 Organics in Oil
(cont)

****

Pentachlorophenol
90GAU 01 GCMS

CV = 1600 + 200 ug/g

Result	Uncer	Date
1900	600	8/30

Phenanthrene
Phenol
90GAU 01 GCMS

CV = not spiked ug/g

Result	Uncer	Date
< 200		8/30

Pyrene 90GAU 01 GCMS

CV = 1500 + 200 ug/g

Result	Uncer	Date
1500	500	8/30

1,2,4-Trichlorobenzene
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
90GAU 01 GCMS

CV = not spiked ug/g

Result	Uncer	Date
< 200		8/30

****

HSE-9 Organics in Solvent

****

Acenaphthene
Acenaphthylene
Aniline
90GAU 01 GCMS

CV = not spiked mg/L

Result	Uncer	Date
< 10		7/19

Anthracene 90GAU 01 GCMS

CV = 99 + 10 mg/L

Result	Uncer	Date
250	80	7/19

Azobenzene
m-Benzidine
Benzo[a]anthracene
Benzo[a]pyrene
Benzo[b]fluoranthene
Benzo[g,h,i]perylene
Benzo[k]fluoranthene
Benzoic acid
Benzyl alcohol
Bis(2-chloroethoxy)methane
Bis(2-chloroethyl)ether
Bis(2-chloroisopropyl)ether
Bis(2-ethylhexyl)phthalate
4-Bromophenylphenyl ether
Butylbenzyl phthalate
4-Chloro-3-methylphenol
4-Chloroaniline
2-Chloronaphthalene
o-Chlorophenol
4-Chlorophenylphenyl ether
Chrysene
Di-n-butyl phthalate
Di-n-octyl phthalate
Dibenzo[a,h]anthracene
Dibenzofuran
o-Dichlorobenzene (1,2)
m-Dichlorobenzene (1,3)
p-Dichlorobenzene (1,4)
3,3'-Dichlorobenzidine
2,4-Dichlorophenol
90GAU 01 GCMS

CV = not spiked mg/L

Result	Uncer	Date
< 10		7/19

Diethyl phthalate
90GAU 01 GCMS

CV = 94 + 9 mg/L

Result	Uncer	Date
100	30	7/19

Dimethyl phthalate
2,4-Dimethylphenol
2,4-Dinitrophenol
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Fluoranthene
Fluorene
Hexachlorobenzene
90GAU 01 GCMS

CV = not spiked mg/L

Result	Uncer	Date
< 10		7/19

Hexachlorobutadiene
90GAU 01 GCMS

CV = 98 + 10 mg/L

Result	Uncer	Date
97	29	7/19

Hexachlorocyclopentadiene
Hexachloroethane
Indeno[1,2,3-cd]pyrene
90GAU 01 GCMS

CV = not spiked mg/L

Result	Uncer	Date
< 10		7/19

Isophorone 90GAU 01 GCMS

CV = 108 + 10 mg/L

Result	Uncer	Date
87	26	7/19

2-Methyl-4,6-dinitrophenol
2-Methylnaphthalene
2-Methylphenol
4-Methylphenol
Naphthalene
2-Nitroaniline
3-Nitroaniline
4-Nitroaniline
Nitrobenzene
2-Nitrophenol
4-Nitrophenol
N-Nitrosodi-n-propylamine
N-Nitrosodimethylamine
N-Nitrosodiphenylamine
Pentachlorophenol
Phenanthrene
Phenol
Pyrene
1,2,4-Trichlorobenzene
90GAU 01 GCMS

CV = not spiked mg/L

Result	Uncer	Date
< 10		7/19

2,4,5-Trichlorophenol
90GAU 01 GCMS

CV = 100 + 10 mg/L

Result	Uncer	Date
84	25	7/19

2,4,6-Trichlorophenol
90GAU 01 GCMS

CV = not spiked mg/L

Result	Uncer	Date
< 10		7/19

****

HSE-9 Organics in Water

****

Acenaphthene
Acenaphthylene
89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 10		3/22
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		5/29
< 10		6/15
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

Acetone 89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
340	100	1/09
79	24	2/14
320	100	2/14
88	26	2/14
< 10		2/22
110	30	3/01
60	18	3/01
45	13	3/01
72	22	3/01
330	100	3/20
400	120	3/02
71	21	3/21
< 20		4/18
87	26	4/18
< 20		4/18
< 20		4/18
< 20		4/18
23	7	4/18
< 20		4/18
< 20		4/28
< 20		4/28
< 20		4/28
< 20		5/03
< 20		5/08
< 20		5/08
< 20		5/10
< 20		5/11
< 20		5/15
< 20		5/15
< 20		5/16

Acetone (cont)

Result	Uncer	Date
< 20		5/16
< 20		5/16
< 20		5/16
< 20		5/16
< 20		5/16
< 20		5/18
< 20		5/18
< 20		5/21
< 20		5/25
< 20		5/25
< 20		6/29
< 20		6/29
< 20		7/06
24	7	7/06
< 20		7/17
< 20		7/17
< 20		7/25
< 20		7/25
< 20		7/25
< 20		8/28
< 20		9/21
< 20		9/21
< 20		9/21
< 20		9/21
< 20		11/07
< 20		11/07
< 20		11/07
< 20		11/08
< 20		11/15
< 20		11/15
< 20		11/15
< 20		11/27
< 20		11/27
< 20		11/27
< 20		11/27
< 20		12/04
< 20		12/04
< 20		12/06
< 20		12/06
< 20		12/06
< 20		12/11
< 20		12/11

Acrolein
Acrylonitrile
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 100		5/03
< 100		5/08
< 100		5/08
< 100		5/10
< 100		5/11
< 100		5/15
< 100		5/15
< 100		5/16
< 100		5/16
< 100		5/16
< 100		5/16
< 100		5/16
< 100		5/18
< 100		5/18
< 100		5/21
< 100		5/25
< 100		5/25
< 100		6/29
< 100		6/29
< 100		7/06
< 100		7/06
< 100		7/17
< 100		7/17
< 100		7/25
< 100		7/25

Acrolein
Acrylonitrile (cont)

Result	Uncer	Date
< 100		7/25
< 100		8/28
< 100		9/21
< 100		9/21
< 100		9/21
< 100		9/21
< 100		11/07
< 100		11/07
< 100		11/07
< 100		11/08
< 100		11/15
< 100		11/15
< 100		11/15
< 100		11/27
< 100		11/27
< 100		11/27
< 100		11/27
< 100		12/04
< 100		12/04
< 100		12/06
< 100		12/06
< 100		12/06
< 100		12/11
< 100		12/11

Aldrin 90GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.06		3/01
< 0.06		4/12
< 0.06		5/09
< 0.06		5/09
< 0.06		5/31
< 0.06		6/15
< 0.06		7/27
< 0.03		8/23
< 0.06		12/04

Aniline 89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 10		3/22
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		5/29
< 10		6/15
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/21
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/29
< 10		12/06

TABLE C-V (cont)

****

HSE-9 Organics in Water
(cont)

****

Aniline (cont)

CV = 54 + 5 ug/L

Result	Uncer	Date
42	13	11/27

CV = 110 + 10 ug/L

Result	Uncer	Date
120	40	8/29

CV = 130 + 10 ug/L

Result	Uncer	Date
110	30	11/29
83	25	12/06

Anthracene
89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 10		3/22
< 10		5/09
< 10		5/29
< 10		5/29
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

CV = 79 + 8 ug/L

Result	Uncer	Date
53	16	8/09

CV = 99 + 10 ug/L

Result	Uncer	Date
34	10	5/04

CV = 150 + 20 ug/L

Result	Uncer	Date
96	30	5/16
110	30	8/21

Anthracene (cont)

CV = 170 + 20 ug/L

Result	Uncer	Date
93	28	6/15

Mixed-Aroclor
89GAU 01 GCEC

CV = 1.7 + 0.2 ug/L

Result	Uncer	Date
1.6	0.3	1/16

Azobenzene 89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 10		3/22
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		5/29
< 10		6/15
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

---

alpha-BHC 90GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.02		3/01
< 0.04		4/12
< 0.02		5/09
< 0.02		5/09
< 0.02		5/31
< 0.02		6/15
< 0.02		7/27
< 0.02		8/23
< 0.02		12/04

---

beta-BHC 90GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.1		3/01
< 0.1		4/12

beta-BHC (cont)

Result	Uncer	Date
< 0.1		5/09
< 0.1		5/09
< 0.1		5/31
< 0.1		6/15
< 0.1		7/27
< 0.1		8/23
< 0.1		12/04

---

delta-BHC 90GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.12		3/01
< 0.12		4/12
< 0.12		5/09
< 0.12		5/09
< 0.12		5/31
< 0.12		6/15
< 0.12		7/27
< 0.12		8/23
< 0.12		12/04

Benzene 90GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		3/20
< 5		3/21
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18
< 5		5/18
< 5		5/21
< 5		5/25
< 5		5/25
< 5		6/29
< 5		6/29
< 5		7/06
< 5		7/17
< 5		7/25
< 5		7/25
< 5		9/21
< 5		9/21

Benzene (cont)

Result	Uncer	Date
< 5		9/21
< 5		11/07
< 5		11/15
< 5		11/15
< 5		11/27
< 5		11/27
< 5		11/27
< 5		12/04
< 5		12/04
< 5		12/06
< 5		12/06
< 5		12/11

CV = 56 + 6 ug/L

Result	Uncer	Date
99	30	11/07

CV = 66 + 7 ug/L

Result	Uncer	Date
60	18	7/06

CV = 72 + 7 ug/L

Result	Uncer	Date
60	18	1/09

CV = 75 + 8 ug/L

Result	Uncer	Date
67	20	7/25
79	24	9/21
63	19	11/15
69	21	11/27
58	17	12/11

CV = 79 + 8 ug/L

Result	Uncer	Date
62	19	7/17

CV = 80 + 8 ug/L

Result	Uncer	Date
62	19	11/07
60	18	12/06

CV = 81 + 8 ug/L

Result	Uncer	Date
100	30	2/14

CV = 94 + 9 ug/L

Result	Uncer	Date
96	29	8/28

CV = 100 + 10 ug/L

Result	Uncer	Date
49	15	11/08

1,2-Benzene dicarboxylic acid,
diisononylester GCMS

CV = not spiked ug/L

Result	Uncer	Date
100		8/21

---

m-Benzidine
Benzo[a]anthracene
Benzo[a]pyrene
Benzo[b]fluoranthene
Benzo[g,h,i]perylene
Benzo[k]fluoranthene
89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 10		3/22
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		5/29
< 10		6/15
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

Benzoic acid
89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		3/06
< 10		3/22
< 10		5/04
< 10		5/16
< 10		5/29
< 10		6/15
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/21
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

Benzoic acid (cont)

CV = 61 + 6 ug/L

Result	Uncer	Date
11	3	11/27

CV = 87 + 9 ug/L

Result	Uncer	Date
55	11	3/07

CV = 95 + 10 ug/L

Result	Uncer	Date
25	5	2/28

CV = 120 + 10 ug/L

Result	Uncer	Date
60	18	8/29

CV = 140 + 10 ug/L

Result	Uncer	Date
46	9	3/06
34	7	3/06
180	50	5/09

CV = 150 + 20 ug/L

Result	Uncer	Date
< 10		11/29
100	30	12/06

CV = 170 + 20 ug/L

Result	Uncer	Date
150	40	5/29

Benzyl alcohol
89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 10		3/22
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		5/29
< 10		6/15
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/21
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/29
< 10		12/06

TABLE C-V (cont)

****

HSE-9 Organics in Water
(cont)

****

Benzyl alcohol (cont)

CV = 54 + 5 ug/L

Result	Uncer	Date
29	9	11/27

CV = 110 + 10 ug/L

Result	Uncer	Date
81	24	8/29

CV = 130 + 10 ug/L

Result	Uncer	Date
94	28	11/29
15	5	12/06

Bis(2-chloroethoxy)methane
89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 10		3/22
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		5/29
< 10		6/15
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

Bis(2-chloroethyl)ether
89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 10		3/22

Bis(2-chloroethyl)ether (cont)

< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		5/29
< 10		6/15
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/21
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/29
< 10		12/06

CV = 48 + 5 ug/L

Result	Uncer	Date
33	10	11/27

CV = 96 + 10 ug/L

Result	Uncer	Date
66	20	8/29

CV = 120 + 10 ug/L

Result	Uncer	Date
73	22	11/29
66	20	12/06

Bis(2-chloroisopropyl)ether
89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 10		3/22
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		5/29
< 10		6/15
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

Bis(2-ethylhexyl)phthalate
89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
21	4	3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 10		3/22
< 10		5/04
< 10		5/09
< 10		5/16
11	3	5/29
< 10		5/29
< 10		6/15
23	7	8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
16	5	12/06
35	11	12/06

Bromobenzene
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 2		1/09
< 5		2/14
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		3/21
< 5		3/20
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18

Bromobenzene (cont)

< 5		5/18
< 5		5/21
< 5		5/25
< 5		5/25
< 5		6/29
< 5		6/29
< 5		7/06
< 5		7/06
< 5		7/17
< 5		7/17
< 5		7/25
< 5		7/25
< 5		7/25
< 5		8/28
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/15
< 5		11/15
< 5		11/15
< 5		11/27
< 5		11/27
< 5		11/27
< 5		11/27
< 5		12/04
< 5		12/04
< 5		12/06
< 5		12/06
< 5		12/06
< 5		12/11
< 5		12/11

Bromochloromethane
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/09
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		3/21
< 5		3/20
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16

Bromochloromethane (cont)

< 5		5/16
< 5		5/18
< 5		5/18
< 5		5/21
< 5		5/25
< 5		5/25
< 5		6/29
< 5		6/29
< 5		7/06
< 5		7/06
< 5		7/17
< 5		7/17
< 5		7/25
< 5		7/25
< 5		7/25
< 5		8/28
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/15
< 5		11/15
< 5		11/15
< 5		11/27
< 5		11/27
< 5		11/27
< 5		11/27
< 5		12/04
< 5		12/04
< 5		12/06
< 5		12/06
< 5		12/06
< 5		12/11
< 5		12/11

CV = 87 + 9 ug/L

Result	Uncer	Date
96	29	2/14

Bromodichloromethane
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 2		1/09
< 5		2/14
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		3/21
< 5		3/20
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/08

Bromodichloromethane (cont)

< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18
< 5		5/18
< 5		5/21
< 5		5/25
< 5		5/25
< 5		6/29
< 5		6/29
< 5		7/06
< 5		7/06
< 5		7/17
< 5		7/17
< 5		7/25
< 5		7/25
< 5		7/25
< 5		8/28
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/15
< 5		11/15
< 5		11/15
< 5		11/27
< 5		11/27
< 5		11/27
< 5		11/27
< 5		12/04
< 5		12/04
< 5		12/06
< 5		12/06
< 5		12/06
< 5		12/11
< 5		12/11

Bromoform 89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/09
< 5		2/14
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		3/21
< 5		3/20
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03

TABLE C-V (cont)

****

HSE-9 Organics in Water
(cont)

****

Bromoform (cont)

< 5	5/08
< 5	5/08
< 5	5/10
< 5	5/11
< 5	5/15
< 5	5/15
< 5	5/16
< 5	5/16
< 5	5/16
< 5	5/16
< 5	5/16
< 5	5/16
< 5	5/18
< 5	5/18
< 5	5/21
< 5	5/25
< 5	5/25
< 5	6/29
< 5	6/29
< 5	7/06
< 5	7/06
< 5	7/17
< 5	7/17
< 5	7/25
< 5	7/25
< 5	7/25
< 5	8/28
< 5	9/21
< 5	9/21
< 5	9/21
< 5	9/21
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/08
< 5	11/15
< 5	11/15
< 5	11/15
< 5	11/27
< 5	11/27
< 5	11/27
< 5	11/27
< 5	12/04
< 5	12/06
< 5	12/06
< 5	12/06
< 5	12/11
< 5	12/11

CV = 106 + 11 ug/L

Result	Uncer	Date
65	20	12/04

Bromomethane
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 2		1/09
< 10		2/14
< 10		2/14
< 10		2/14
< 10		2/22
< 10		3/01
< 10		3/01
< 10		3/01

Bromomethane (cont)

< 10	3/01
< 10	3/02
< 10	3/21
< 10	3/20
< 10	4/18
< 10	4/18
< 10	4/18
< 10	4/18
< 10	4/18
< 10	4/18
< 10	4/18
< 10	4/18
< 10	4/28
< 10	4/28
< 10	4/28
< 10	5/03
< 10	5/08
< 10	5/08
< 10	5/10
< 10	5/11
< 10	5/15
< 10	5/15
< 10	5/16
< 10	5/16
< 10	5/16
< 10	5/16
< 10	5/16
< 10	5/16
< 10	5/18
< 10	5/18
< 10	5/21
< 10	5/25
< 10	5/25
< 10	6/29
< 10	6/29
< 10	7/06
< 10	7/06
< 10	7/17
< 10	7/17
10	7/25
< 10	7/25
< 10	7/25
< 10	8/28
< 10	9/21
< 10	9/21
< 10	9/21
< 10	9/21
< 10	11/07
< 10	11/07
< 10	11/07
< 10	11/08
< 10	11/15
< 10	11/15
< 10	11/15
< 10	11/27
< 10	11/27
< 10	11/27
< 10	11/27
< 10	11/27
< 10	12/04
< 10	12/04
< 10	12/06
< 10	12/06
< 10	12/06
< 10	12/11
< 10	12/11

4-Bromophenylphenyl ether
89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06

4-Bromophenylphenyl ether
(cont)

< 10	3/07
< 10	3/22
< 10	5/04
< 10	5/09
< 10	5/16
< 10	5/29
< 10	5/29
< 10	6/15
< 10	8/09
< 10	8/09
< 10	8/20
< 10	8/21
< 10	8/21
< 10	8/21
< 10	8/29
< 10	8/29
< 10	11/27
< 10	11/27
< 10	11/27
< 10	11/29
< 10	11/29
< 10	12/06
< 10	12/06

2-Butanone 89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/09
< 10		2/22
100	30	3/01
76	23	3/01
83	25	3/21
< 20		4/18
< 20		4/18
< 20		4/18
< 20		4/18
< 20		4/18
< 20		4/28
< 20		4/28
< 20		4/28
< 20		5/03
< 20		5/08
< 20		5/10
< 20		5/11
< 20		5/15
< 20		5/15
< 20		5/16
< 20		5/16
< 20		5/16
< 20		5/16
< 20		5/18
< 20		5/21
< 20		5/25
< 20		6/29
16	5	7/06
< 20		7/17
< 20		7/17
< 20		7/25
< 20		7/25
< 20		7/25
< 20		8/28
< 20		9/21
< 20		9/21
< 20		9/21
< 20		11/07
< 20		11/07
25	8	11/15
32	10	11/15
28	8	11/27
< 20		11/27
< 20		11/27
< 20		12/04
< 20		12/04

2-Butanone (cont)

< 20	12/06
< 20	12/06
< 20	12/06
< 20	12/11

CV = 72 + 7 ug/L

Result	Uncer	Date
< 20		2/14

CV = 73 + 7 ug/L

Result	Uncer	Date
55	17	11/07

CV = 85 + 8 ug/L

Result	Uncer	Date
64	19	5/16
190	60	7/06

CV = 97 + 10 ug/L

Result	Uncer	Date
23	7	6/29
63	19	9/21
39	12	11/15
< 20		11/27
26	8	12/11

CV = 100 + 10 ug/L

Result	Uncer	Date
83	25	5/08

CV = 110 + 11 ug/L

Result	Uncer	Date
65	19	5/16

CV = 120 + 10 ug/L

Result	Uncer	Date
130	40	2/14
56	17	5/25

CV = 127 + 13 ug/L

Result	Uncer	Date
110	30	3/01

CV = 130 + 10 ug/L

Result	Uncer	Date
260	80	2/14
180	50	3/01
73	22	5/18
32	10	11/08

CV = 140 + 10 ug/L

Result	Uncer	Date
230	70	3/02
190	60	4/18
140	40	4/18

2-Butanone (cont)

CV = 150 + 20 ug/L

Result	Uncer	Date
< 20		3/20

n-Butylbenzene
90GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		3/21
< 5		3/20
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18
< 5		5/18
< 5		5/21
< 5		5/25
< 5		5/25
< 5		6/29
< 5		6/29
< 5		7/06
< 5		7/06
< 5		7/17
< 5		7/17
< 5		7/25
< 5		7/25
< 5		7/25
< 5		8/28
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/15
< 5		11/15
< 5		11/15
< 5		11/27
< 5		11/27
< 5		11/27
10	3	11/27
< 5		12/04

n-Butylbenzene (cont)

< 5	12/04
< 5	12/06
< 5	12/06
< 5	12/06
< 5	12/11
< 5	12/11

CV = 86 + 9 ug/L

Result	Uncer	Date
< 2		1/09

CV = 97 + 10 ug/L

Result	Uncer	Date
< 5		2/14

sec-Butylbenzene
tert-Butylbenzene
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 2		1/09
< 5		2/14
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		3/21
< 5		3/20
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18
< 5		5/18
< 5		5/21
< 5		5/25
< 5		5/25
< 5		6/29
< 5		6/29
< 5		7/06
< 5		7/06
< 5		7/17
< 5		7/17
< 5		7/25
< 5		7/25
< 5		7/25
< 5		8/28

TABLE C-V (cont)

****

HSE-9 Organics in Water
(cont)

****

sec-Butylbenzene
tert-Butylbenzene (cont)

< 5	9/21
< 5	9/21
< 5	9/21
< 5	9/21
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/08
< 5	11/15
< 5	11/15
< 5	11/15
< 5	11/27
< 5	11/27
< 5	11/27
< 5	11/27
< 5	12/04
< 5	12/04
< 5	12/06
< 5	12/06
< 5	12/06
< 5	12/11
< 5	12/11

Butylbenzyl phthalate
89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 10		3/22
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		5/29
< 10		6/15
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

Carbon disulfide
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
1600	500	1/09
57	17	2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/21
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18
< 5		5/21
< 5		5/25
< 5		6/29
< 5		6/29
< 5		7/06
< 5		7/06
< 5		7/17
< 5		7/17
< 5		7/25
< 5		7/25
< 5		7/25
< 5		8/28
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/15
< 5		11/15
< 5		11/15
< 5		11/27
< 5		11/27
< 5		11/27
< 5		11/27
< 5		12/04
< 5		12/06
< 5		12/06
< 5		12/06
35	11	12/11
35	11	12/11

CV = 81 + 8 ug/L

Result	Uncer	Date
67	20	5/16

CV = 90 + 9 ug/L

Result	Uncer	Date
84	25	12/04

Carbon disulfide (cont)

CV = 97 + 10 ug/L

Result	Uncer	Date
84	25	5/08

CV = 100 + 10 ug/L

Result	Uncer	Date
13	4	5/16

CV = 110 + 11 ug/L

Result	Uncer	Date
90	27	5/25

CV = 120 + 10 ug/L

Result	Uncer	Date
160	50	2/14
120	30	2/14
96	29	3/01
80	24	5/18

CV = 122 + 12 ug/L

Result	Uncer	Date
110	30	3/01

CV = 130 + 10 ug/L

Result	Uncer	Date
250	70	3/02
83	25	4/18
41	12	4/18

CV = 140 + 10 ug/L

Result	Uncer	Date
360	110	3/20

Carbon tetrachloride
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 2		1/09
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		3/20
< 5		3/21
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08

Carbon tetrachloride (cont)

< 5	5/08
< 5	5/10
< 5	5/11
< 5	5/15
< 5	5/15
< 5	5/16
< 5	5/16
< 5	5/16
< 5	5/16
< 5	5/16
< 5	5/16
< 5	5/16
< 5	5/18
< 5	5/18
< 5	5/21
< 5	5/25
< 5	5/25
< 5	6/29
< 5	7/06
< 5	7/06
< 5	7/17
< 5	7/25
< 5	7/25
< 5	9/21
< 5	9/21
< 5	9/21
< 5	9/21
< 5	11/07
< 5	11/07
< 5	11/08
< 5	11/15
< 5	11/15
< 5	11/27
< 5	11/27
< 5	11/27
< 5	12/04
< 5	12/04
< 5	12/06
< 5	12/06
< 5	12/06
< 5	12/11
< 5	12/11

CV = 76 + 8 ug/L

Result	Uncer	Date
79	24	2/14

CV = 100 + 10 ug/L

Result	Uncer	Date
70	21	6/29
81	24	7/25
65	20	11/15
71	21	11/27

CV = 110 + 10 ug/L

Result	Uncer	Date
77	23	7/17
73	22	11/07
83	25	12/06

CV = 130 + 10 ug/L

Result	Uncer	Date
95	29	8/28

Chlordane 90GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.25		3/01
< 0.25		4/12
< 0.25		5/09
< 0.25		5/09
< 0.25		5/31
< 0.25		6/15
< 0.25		7/27
< 0.25		8/23
< 0.25		12/04

4-Chloro-3-methylphenol
4-Chloroaniline
89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 10		3/22
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		5/29
< 10		6/15
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

Chlorobenzene
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 2		1/09
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08

Chlorobenzene (cont)

< 5	5/11
< 5	5/15
< 5	5/15
< 5	5/16
< 5	5/16
< 5	5/16
< 5	5/16
< 5	5/16
< 5	5/18
< 5	5/18
< 5	5/21
< 5	5/25
< 5	6/29
< 5	6/29
< 5	7/06
< 5	7/17
< 5	7/25
< 5	7/25
< 5	9/21
< 5	9/21
< 5	9/21
< 5	11/07
< 5	11/15
< 5	11/15
< 5	11/27
< 5	11/27
< 5	11/27
< 5	12/04
< 5	12/04
< 5	12/06
< 5	12/06
< 5	12/11

CV = 57 + 6 ug/L

Result	Uncer	Date
68	20	11/07

CV = 66 + 7 ug/L

Result	Uncer	Date
44	13	7/06

CV = 76 + 8 ug/L

Result	Uncer	Date
64	19	7/25
56	17	9/21
59	18	11/15
71	21	11/27
49	15	12/11

CV = 78 + 8 ug/L

Result	Uncer	Date
76	23	4/18

CV = 80 + 8 ug/L

Result	Uncer	Date
53	16	7/17

CV = 81 + 8 ug/L

Result	Uncer	Date
52	16	11/07
59	18	12/06

TABLE C-V (cont)

****

HSE-9 Organics in Water
(cont)

****

Chlorobenzene (cont)

CV = 89 + 9 ug/L

Result	Uncer	Date
82	25	5/08

CV = 93 + 9 ug/L

Result	Uncer	Date
91	27	3/21
80	24	5/16

CV = 95 + 10 ug/L

Result	Uncer	Date
83	25	8/28

CV = 100 + 10 ug/L

Result	Uncer	Date
99	30	5/25
40	12	11/08

CV = 110 + 10 ug/L

Result	Uncer	Date
99	30	2/14
100	30	4/28
100	30	5/10

CV = 112 + 11 ug/L

Result	Uncer	Date
120	30	3/01

CV = 130 + 10 ug/L

Result	Uncer	Date
140	40	3/20

Chlorodibromomethane
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 2		1/09
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		5/03

Chlorodibromomethane (cont)

< 5		5/08
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18
< 5		5/18
< 5		5/21
< 5		5/25
< 5		6/29
< 5		6/29
< 5		7/06
< 5		7/06
< 5		7/17
< 5		7/17
< 5		7/25
< 5		7/25
< 5		7/25
< 5		8/28
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/15
< 5		11/15
< 5		11/15
< 5		11/27
< 5		11/27
< 5		11/27
< 5		11/27
< 5		12/04
< 5		12/06
< 5		12/06
< 5		12/06
< 5		12/11
< 5		12/11

CV = 82 + 8 ug/L

Result	Uncer	Date
83	25	4/18

CV = 94 + 9 ug/L

Result	Uncer	Date
93	30	5/08

CV = 95 + 10 ug/L

Result	Uncer	Date
64	19	12/04

CV = 98 + 10 ug/L

Result	Uncer	Date
92	28	3/21
35	10	5/16

CV = 110 + 10 ug/L

Result	Uncer	Date
97	29	2/14
97	29	5/25

Chlorodibromomethane (cont)

CV = 118 + 12 ug/L

Result	Uncer	Date
120	40	3/01

CV = 120 + 12 ug/L

Result	Uncer	Date
110	30	4/28
69	21	5/10

CV = 140 + 10 ug/L

Result	Uncer	Date
140	40	3/20

Chloroethane
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 2		1/09
< 10		2/14
< 10		2/14
< 10		2/14
< 10		2/22
< 10		3/01
< 10		3/01
< 10		3/01
< 10		3/01
< 10		3/02
< 10		3/20
< 10		3/21
< 10		4/18
< 10		4/18
< 10		4/18
< 10		4/18
< 10		4/18
< 10		4/18
< 10		4/28
< 10		4/28
< 10		4/28
< 10		5/03
< 10		5/08
< 10		5/08
< 10		5/10
< 10		5/11
< 10		5/15
< 10		5/15
< 10		5/16
< 10		5/16
< 10		5/16
< 10		5/16
< 10		5/16
< 10		5/18
< 10		5/18
< 10		5/21
< 10		5/25
< 10		5/25
< 10		6/29
< 10		6/29
< 10		7/06
< 10		7/06
< 10		7/17
< 10		7/17
< 10		7/25
< 10		7/25
< 10		7/25
< 10		8/28
< 10		9/21
< 10		9/21

Chloroethane (cont)

< 10	9/21
< 10	9/21
< 10	11/07
< 10	11/07
< 10	11/07
< 10	11/08
< 10	11/15
< 10	11/15
< 10	11/15
< 10	11/27
< 10	11/27
< 10	11/27
< 10	11/27
< 10	12/04
< 10	12/04
< 10	12/06
< 10	12/06
< 10	12/06
< 10	12/11
< 10	12/11

2-Chloroethylvinyl ether
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 50		5/03
< 50		5/08
< 50		5/08
< 50		5/10
< 50		5/11
< 50		5/15
< 50		5/15
< 50		5/16
< 50		5/16
< 50		5/16
< 50		5/16
< 50		5/16
< 50		5/18
< 50		5/18
< 50		5/21
< 50		5/25
< 50		5/25
< 50		6/29
< 50		6/29
< 50		7/06
< 50		7/06
< 50		7/17
< 50		7/17
< 50		7/25
< 50		7/25
< 50		7/25
< 50		8/28
< 50		9/21
< 50		9/21
< 50		9/21
< 50		9/21
< 50		11/07
< 50		11/07
< 50		11/07
< 50		11/08
< 50		11/15
< 50		11/15
< 50		11/15
< 50		11/27
< 50		11/27
< 50		11/27
< 50		11/27
< 50		12/04
< 50		12/04
< 50		12/06

2-Chloroethylvinyl ether
(cont)

< 50	12/06
< 50	12/06
< 50	12/11
< 50	12/11

Chloroform 89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 2		1/09
< 5		2/14
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		3/20
< 5		3/21
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18
< 5		5/18
< 5		5/21
< 5		5/25
< 5		5/25
< 5		6/29
< 5		6/29
< 5		7/06
< 5		7/06
< 5		7/17
< 5		7/17
< 5		7/25
< 5		7/25
< 5		7/25
< 5		8/28
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/15
< 5		11/15
< 5		11/15
< 5		11/27
< 5		11/27
< 5		11/27
< 5		11/27

Chloroform (cont)

< 5	12/04
< 5	12/04
< 5	12/06
< 5	12/06
< 5	12/06
< 5	12/11
< 5	12/11

Chloromethane
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 2		1/09
< 10		2/14
< 10		2/14
< 10		2/14
< 10		2/22
< 10		3/01
< 10		3/01
< 10		3/01
< 10		3/02
< 10		3/20
< 10		3/21
< 10		4/18
< 10		4/18
< 10		4/18
< 10		4/18
< 10		4/18
< 10		4/18
< 10		4/28
< 10		4/28
< 10		4/28
< 10		5/03
< 10		5/08
< 10		5/08
< 10		5/10
< 10		5/11
< 10		5/15
< 10		5/15
< 10		5/16
< 10		5/16
< 10		5/16
< 10		5/16
< 10		5/16
< 10		5/18
< 10		5/18
< 10		5/21
< 10		5/25
< 10		5/25
< 10		6/29
< 10		6/29
< 10		7/06
< 10		7/06
< 10		7/17
< 10		7/17
< 10		7/25
< 10		7/25
< 10		7/25
< 10		8/28
< 10		9/21
< 10		9/21
< 10		9/21
< 10		11/07
< 10		11/07
< 10		11/07
< 10		11/08
< 10		11/15
< 10		11/15
< 10		11/15
< 10		11/27

TABLE C-V (cont)

****

HSE-9 Organics in Water
(cont)

****

Chloromethane (cont)

< 10	11/27
< 10	11/27
< 10	11/27
< 10	12/04
< 10	12/04
< 10	12/06
< 10	12/06
< 10	12/06
< 10	12/11
< 10	12/11

2-Chloronaphthalene
89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 0.1		1/16
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 10		3/22
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		5/29
< 10		6/15
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

o-Chlorophenol
4-Chlorophenylphenyl ether
89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 10		3/22
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		5/29
< 10		6/15

o-Chlorophenol
4-Chlorophenylphenyl ether
(cont)

< 10	8/09
< 10	8/09
< 10	8/20
< 10	8/21
< 10	8/21
< 10	8/21
< 10	8/29
< 10	8/29
< 10	11/27
< 10	11/27
< 10	11/27
< 10	11/29
< 10	11/29
< 10	12/06
< 10	12/06

o-Chlorotoluene
p-Chlorotoluene
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 2		1/09
< 5		2/14
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		3/20
< 5		3/21
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		5/03
< 5		5/08
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18
< 5		5/18
< 5		5/21
< 5		5/25
< 5		5/25
< 5		6/29
< 5		6/29
< 5		7/06
< 5		7/06
< 5		7/17
< 5		7/17
< 5		7/25
< 5		7/25
< 5		7/25
< 5		8/28
< 5		9/21

o-Chlorotoluene
p-Chlorotoluene (cont)

< 5	9/21
< 5	9/21
< 5	9/21
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/08
< 5	11/15
< 5	11/15
< 5	11/15
< 5	11/27
< 5	11/27
< 5	11/27
< 5	11/27
< 5	12/04
< 5	12/04
< 5	12/06
< 5	12/06
< 5	12/06
< 5	12/11
< 5	12/11

Chrysene 89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 10		3/22
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		5/29
< 10		6/15
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

2,4-D 90GAU 01 GCEC

CV = 0.38 + 0.04 ug/L

Result	Uncer	Date
0.34	0.07	6/05
0.34	0.07	6/11

CV = 0.39 + 0.04 ug/L

Result	Uncer	Date
2.5	1.3	3/15

2,4-D (cont)

CV = 0.45 + 0.04 ug/L

Result	Uncer	Date
0.31	0.06	6/05
0.44	0.11	8/06

CV = 0.54 + 0.05 ug/L

Result	Uncer	Date
0.63	0.44	10/24

CV = 0.70 + 0.07 ug/L

Result	Uncer	Date
0.41	0.17	6/06

p,p'-DDD 90GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.08		3/01
< 0.04		4/12
< 0.04		6/15
< 0.04		7/27
< 0.04		8/23
< 0.04		12/04

CV = 0.25 + 0.02 ug/L

Result	Uncer	Date
0.15	0.07	5/09
0.22	0.07	5/31

CV = 0.30 + 0.03 ug/L

Result	Uncer	Date
0.32	0.12	5/09

p,p'-DDE 90GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.08		3/01
< 0.04		4/12
< 0.04		5/09
< 0.04		5/09
< 0.04		5/31

CV = 0.23 + 0.02 ug/L

Result	Uncer	Date
0.19	0.09	8/23

CV = 0.25 + 0.02 ug/L

Result	Uncer	Date
0.17	0.08	12/04

CV = 0.29 + 0.03 ug/L

Result	Uncer	Date
0.24	0.12	7/27

p,p'-DDE (cont)

CV = 0.34 + 0.03 ug/L

Result	Uncer	Date
0.2	0.06	6/15

p,p'-DDT 90GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.03		5/09
< 0.03		5/09
< 0.06		5/31
< 0.06		6/15
< 0.06		7/27
< 0.03		8/23
< 0.06		12/04

CV = 0.11 + 0.01 ug/L

Result	Uncer	Date
0.14	0.07	4/12

CV = 0.16 + 0.02 ug/L

Result	Uncer	Date
0.24	0.06	3/01

Di-n-butyl phthalate
Di-n-octyl phthalate
Dibenzo[a,h]anthracene
Dibenzofuran
89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 10		3/22
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		5/29
< 10		6/15
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

1,2-Dibromo-3-chloropropane
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/09
< 5		2/14
< 10		2/14
< 5		2/14
< 5		2/22
< 10		3/01
< 10		3/01
< 10		3/01
< 10		3/01
< 10		3/02
< 10		3/20
< 10		3/21
< 10		4/18
< 10		4/18
< 10		4/18
< 10		4/18
< 10		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18
< 5		5/18
< 5		5/21
< 5		5/25
< 5		5/25
< 5		6/29
< 5		6/29
< 5		7/06
< 5		7/06
< 5		7/17
< 5		7/17
< 5		7/25
< 5		7/25
< 5		7/25
< 10		8/28
< 10		9/21
< 10		9/21
< 10		9/21
< 10		9/21
< 10		11/07
< 10		11/07
< 10		11/07
< 10		11/08
< 10		11/15
< 10		11/15
< 10		11/15
11	3	11/27
< 10		11/27
< 10		11/27
< 10		11/27
< 10		12/04
< 10		12/04
< 10		12/06
< 10		12/06
< 10		12/06
< 10		12/11
< 10		12/11

TABLE C-V (cont)

****

HSE-9 Organics in Water
(cont)

****

1,2-Dibromoethane
90GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		3/20
< 5		3/21
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18
< 5		5/18
< 5		5/21
< 5		5/25
< 5		5/25
< 5		6/29
< 5		6/29
< 5		7/06
< 5		7/06
< 5		7/17
< 5		7/17
< 5		7/25
< 5		7/25
< 5		7/25
< 5		8/28
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/15
< 5		11/15
< 5		11/15
< 5		11/27
< 5		11/27
< 5		11/27
< 5		12/04
< 5		12/06

1,2-Dibromoethane (cont)

< 5		12/06
< 5		12/06
< 5		12/11
< 5		12/11

CV = 86 + 9 ug/L

Result	Uncer	Date
80	24	1/09

CV = 97 + 10 ug/L

Result	Uncer	Date
120	40	2/14

Dibromomethane
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 2		1/09
< 5		2/14
< 5		2/14
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/20
< 5		3/21
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18
< 5		5/18
< 5		5/21
< 5		5/25
< 5		5/25
< 5		6/29
< 5		6/29
< 5		7/06
< 5		7/06
< 5		7/17
< 5		7/17
< 5		7/25
< 5		7/25
< 5		7/25
< 5		8/28
< 5		9/21
< 5		9/21
< 5		9/21

Dibromomethane (cont)

< 5		9/21
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/15
< 5		11/15
< 5		11/15
< 5		11/27
< 5		11/27
< 5		11/27
< 5		11/27
< 5		12/04
< 5		12/04
< 5		12/06
< 5		12/06
< 5		12/06
< 5		12/11
< 5		12/11

o-Dichlorobenzene (1,2)
89GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.1		1/16

o-Dichlorobenzene (1,2)
89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 5		3/20
< 10		3/22
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		5/29
< 10		6/15
< 5		6/29
< 5		6/29
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

o-Dichlorobenzene (1,2)
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 2		1/09
< 5		2/14
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		3/21
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18
< 5		5/18
< 5		5/21
< 5		5/25
< 5		5/25
< 5		7/06
< 5		7/06
< 5		7/17
< 5		7/17
< 5		7/25
< 5		7/25
< 5		7/25
< 5		8/28
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/15
< 5		11/15
< 5		11/15
< 5		11/27
< 5		11/27
< 5		11/27
6	1.8	11/27
< 5		12/04
< 5		12/04
< 5		12/06
< 5		12/06
< 5		12/06
< 5		12/11
< 5		12/11

m-Dichlorobenzene (1,3)
89GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.1		1/16

m-Dichlorobenzene (1,3)
89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 5		3/20
< 10		3/22
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		5/29
< 10		6/15
< 5		6/29
< 5		6/29
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

m-Dichlorobenzene (1,3)
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 2		1/09
< 5		2/14
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		3/21
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08

m-Dichlorobenzene (1,3) (cont)

< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18
< 5		5/18
< 5		5/21
< 5		5/25
< 5		5/25
< 5		7/06
< 5		7/06
< 5		7/17
< 5		7/17
< 5		7/25
< 5		7/25
< 5		7/25
< 5		8/28
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/15
< 5		11/15
< 5		11/15
< 5		11/27
< 5		11/27
< 5		11/27
< 5		12/04
< 5		12/04
< 5		12/06
< 5		12/06
< 5		12/06
< 5		12/11
< 5		12/11

p-Dichlorobenzene (1,4)
89GAU 01 GCEC

CV = 1.7 + 0.2 ug/L

Result	Uncer	Date
0.96	0.19	1/16

p-Dichlorobenzene (1,4)
90GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 5		3/20
< 10		3/22
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		6/15
< 5		6/29

TABLE C-V (cont)

****

HSE-9 Organics in Water
(cont)

****

p-Dichlorobenzene (1,4) (cont)

< 5	6/29
< 10	8/09
< 10	8/09
< 10	8/20
< 10	8/21
< 10	8/21
< 10	8/21
< 10	8/29
< 10	8/29
< 10	11/27
< 10	11/27
< 10	11/27
< 10	11/29
< 10	11/29
< 10	12/06
< 10	12/06

CV = 125 + 12 ug/L

Result	Uncer	Date
< 10		5/29

CV = 167 + 17 ug/L

Result	Uncer	Date
120	20	2/12

p-Dichlorobenzene (1,4) 89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/09
< 5		2/14
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		3/21
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16

p-Dichlorobenzene (1,4) (cont)

< 5	5/18
< 5	5/18
< 5	5/21
< 5	5/25
< 5	5/25
< 5	7/06
< 5	7/06
< 5	7/17
< 5	7/17
< 5	7/25
< 5	7/25
< 5	7/25
< 5	8/28
< 5	9/21
< 5	9/21
< 5	9/21
< 5	9/21
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/08
< 5	11/15
< 5	11/15
< 5	11/15
< 5	11/27
< 5	11/27
< 5	11/27
< 5	11/27
< 5	12/04
< 5	12/04
< 5	12/06
< 5	12/06
< 5	12/06
< 5	12/11
< 5	12/11

3,3'-Dichlorobenzidine 89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 10		3/22
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		5/29
< 10		6/15
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

Dichlorodifluoromethane 89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		5/03
< 10		5/08
< 10		5/08
< 10		5/10
< 10		5/11
< 10		5/15
< 10		5/15
< 10		5/16
< 10		5/16
< 10		5/16
< 10		5/16
< 10		5/16
< 10		5/18
< 10		5/18
< 10		5/21
< 10		5/25
< 10		5/25
< 10		6/29
< 10		6/29
< 10		7/06
< 10		7/06
< 10		7/17
< 10		7/17
< 10		7/25
< 10		7/25
< 10		7/25
< 10		8/28
< 10		9/21
< 10		9/21
< 10		9/21
< 10		9/21
< 10		11/07
< 10		11/07
< 10		11/07
< 10		11/08
< 10		11/15
< 10		11/15
< 10		11/15
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/27
< 10		12/04
< 10		12/04
< 10		12/06
< 10		12/06
< 10		12/06
< 10		12/11
< 10		12/11

1,1-Dichloroethane 89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 2		1/09
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/21
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28

1,1-Dichloroethane (cont)

< 5	5/03
< 5	5/08
< 5	5/10
< 5	5/11
< 5	5/15
< 5	5/15
< 5	5/16
< 5	5/16
< 5	5/16
< 5	5/16
< 5	5/18
< 5	5/21
< 5	5/25
< 5	6/29
< 5	7/06
< 5	7/17
< 5	7/17
< 5	7/25
< 5	7/25
< 5	7/25
< 5	8/28
< 5	9/21
< 5	9/21
< 5	9/21
< 5	11/07
< 5	11/07
< 5	11/15
< 5	11/15
< 5	11/27
< 5	11/27
< 5	11/27
< 5	12/04
< 5	12/06
< 5	12/06
< 5	12/06
< 5	12/11

CV = 57 + 6 ug/L

Result	Uncer	Date
100	30	11/07

CV = 67 + 7 ug/L

Result	Uncer	Date
66	20	7/06

CV = 71 + 7 ug/L

Result	Uncer	Date
56	17	12/04

CV = 74 + 7 ug/L

Result	Uncer	Date
73	22	5/16

CV = 76 + 8 ug/L

Result	Uncer	Date
94	28	6/29
83	25	9/21
64	19	11/15
70	21	11/27
67	20	12/11

CV = 89 + 9 ug/L

Result	Uncer	Date
83	25	5/08

1,1-Dichloroethane (cont)

CV = 93 + 9 ug/L

Result	Uncer	Date
87	26	5/16

CV = 100 + 10 ug/L

Result	Uncer	Date
93	28	5/25

CV = 110 + 10 ug/L

Result	Uncer	Date
100	30	2/14
140	40	2/14
150	40	3/01
87	26	5/18
51	15	11/08

CV = 112 + 11 ug/L

Result	Uncer	Date
150	50	3/01

CV = 120 + 10 ug/L

Result	Uncer	Date
160	50	3/02
110	30	4/18
110	30	4/18

CV = 130 + 10 ug/L

Result	Uncer	Date
160	50	3/20

1,2-Dichloroethane 89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 2		1/09
< 5		2/14
< 5		2/14
110	30	2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18

1,2-Dichloroethane (cont)

< 5	5/18
< 5	5/21
< 5	5/25
< 5	6/29
< 5	7/06
< 5	7/06
< 5	7/17
< 5	7/25
< 5	7/25
< 5	9/21
< 5	9/21
< 5	9/21
< 5	9/21
< 5	11/07
< 5	11/07
< 5	11/08
< 5	11/15
< 5	11/15
< 5	11/27
< 5	11/27
< 5	11/27
< 5	12/04
< 5	12/06
< 5	12/06
< 5	12/11
< 5	12/11

CV = 76 + 8 ug/L

Result	Uncer	Date
62	19	12/04

CV = 84 + 9 ug/L

Result	Uncer	Date
92	28	4/18

CV = 87 + 9 ug/L

Result	Uncer	Date
76	23	6/29
110	30	7/25
91	27	11/15
90	27	11/27

CV = 91 + 9 ug/L

Result	Uncer	Date
86	26	7/17

CV = 92 + 9 ug/L

Result	Uncer	Date
74	22	11/07
92	28	12/06

CV = 96 + 10 ug/L

Result	Uncer	Date
91	27	5/08

CV = 100 + 10 ug/L

Result	Uncer	Date
100	30	3/21
140	40	5/16

TABLE C-V (cont)

****

HSE-9 Organics in Water
(cont)

****

1,2-Dichloroethane (cont)

CV = 110 + 11 ug/L

Result	Uncer	Date
110	30	5/25
130	40	8/28

CV = 119 + 12 ug/L

Result	Uncer	Date
130	40	3/01

CV = 120 + 12 ug/L

Result	Uncer	Date
110	30	4/28
120	40	5/10

CV = 140 + 10 ug/L

Result	Uncer	Date
130	40	3/20

1,1-Dichloroethene
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 2		1/09
< 5		2/14
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		3/20
12	4	3/21
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18
< 5		5/18

1,1-Dichloroethene (cont)

< 5	5/21
< 5	5/25
< 5	5/25
< 5	6/29
< 5	6/29
< 5	7/06
< 5	7/06
< 5	7/17
< 5	7/17
< 5	7/25
< 5	7/25
< 5	7/25
< 5	8/28
< 5	9/21
< 5	9/21
< 5	9/21
< 5	9/21
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/08
< 5	11/15
< 5	11/15
< 5	11/15
< 5	11/27
< 5	11/27
< 5	11/27
< 5	11/27
< 5	12/04
< 5	12/04
< 5	12/06
< 5	12/06
< 5	12/06
< 5	12/11
< 5	12/11

---

trans-1,2-Dichloroethene
cis ,2-Dichloroethylene
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 2		1/09
< 5		2/14
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		3/20
< 5		3/21
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16

trans-1,2-Dichloroethene
cis-1,2-Dichloroethylene
(cont)

< 5	5/16
< 5	5/16
< 5	5/18
< 5	5/18
< 5	5/21
< 5	5/25
< 5	5/25
< 5	6/29
< 5	6/29
< 5	7/06
< 5	7/06
< 5	7/17
< 5	7/17
< 5	7/25
< 5	7/25
< 5	7/25
< 5	8/28
< 5	9/21
< 5	9/21
< 5	9/21
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/08
< 5	11/15
< 5	11/15
< 5	11/15
< 5	11/27
< 5	11/27
< 5	11/27
< 5	11/27
< 5	12/04
< 5	12/04
< 5	12/06
< 5	12/06
< 5	12/06
< 5	12/11
< 5	12/11

2,4-Dichlorophenol
89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/07
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		5/29
< 10		6/15
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

2,4-Dichlorophenol (cont)

CV = 130 + 13 ug/L

Result	Uncer	Date
46	9	3/22

CV = 163 + 16 ug/L

Result	Uncer	Date
130	30	3/06

1,2-Dichloropropane
90GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		3/20
< 5		3/21
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18
< 5		5/18
< 5		5/21

1,2-Dichloropropane (cont)

< 5	11/15
< 5	11/27
< 5	11/27
< 5	11/27
< 5	11/27
< 5	12/04
< 5	12/06
< 5	12/06
< 5	12/06
< 5	12/11
< 5	12/11

CV = 66 + 7 ug/L

Result	Uncer	Date
60	18	1/09

CV = 75 + 8 ug/L

Result	Uncer	Date
89	27	2/14

CV = 89 + 9 ug/L

Result	Uncer	Date
71	21	12/04

1,3-Dichloropropane
2,2-Dichloropropane
1,1-Dichloropropene
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/09
< 5		2/14
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		3/20
< 5		3/21
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18
< 5		5/18
< 5		5/21

1,3-Dichloropropane
2,2-Dichloropropane
1,1-Dichloropropene (cont)

< 5	5/25
< 5	5/25
< 5	6/29
< 5	6/29
< 5	7/06
< 5	7/06
< 5	7/17
< 5	7/17
< 5	7/25
< 5	7/25
< 5	7/25
< 5	8/28
< 5	9/21
< 5	9/21
< 5	9/21
< 5	9/21
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/08
< 5	11/15
< 5	11/15
< 5	11/15
< 5	11/27
< 5	11/27
< 5	11/27
< 5	11/27
< 5	12/04
< 5	12/04
< 5	12/06
< 5	12/06
< 5	12/06
< 5	12/11
< 5	12/11

---

cis-1,3-Dichloropropene
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/09
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/21
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18
< 5		5/21
< 5		5/25
< 5		6/29
< 5		6/29
< 5		7/06
< 5		7/06
< 5		7/17
< 5		7/17

TABLE C-V (cont)

****

HSE-9 Organics in Water
(cont)

****

cis-1,3-Dichloropropene (cont)

< 5	7/25
< 5	7/25
< 5	7/25
< 5	8/28
< 5	9/21
< 5	9/21
< 5	9/21
< 5	9/21
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/08
< 5	11/15
< 5	11/15
< 5	11/15
< 5	11/27
< 5	11/27
< 5	11/27
< 5	11/27
< 5	12/04
< 5	12/04
< 5	12/06
< 5	12/06
< 5	12/06
< 5	12/11
< 5	12/11

CV = 56 + 6 ug/L

Result	Uncer	Date
32	10	5/16

CV = 67 + 7 ug/L

Result	Uncer	Date
39	12	5/08

CV = 70 + 7 ug/L

Result	Uncer	Date
26	8	5/16

CV = 77 + 8 ug/L

Result	Uncer	Date
44	13	5/25

CV = 81 + 8 ug/L

Result	Uncer	Date
39	12	2/14

CV = 84 + 8 ug/L

Result	Uncer	Date
50	15	3/01
51	15	3/01
42	13	5/18

CV = 85 + 9 ug/L

Result	Uncer	Date
61	18	2/14

cis-1,3-Dichloropropene (cont)

CV = 91 + 9 ug/L

Result	Uncer	Date
50	15	3/02
35	11	4/18
36	11	4/18

CV = 98 + 10 ug/L

Result	Uncer	Date
40	12	3/20

---

trans-1,3-Dichloropropene
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 2		1/09
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/21
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18
< 5		5/21
< 5		5/25
< 5		6/29
< 5		6/29
< 5		7/06
< 5		7/06
< 5		7/17
< 5		7/17
< 5		7/25
< 5		7/25
< 5		7/25
< 5		8/28
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/15
< 5		11/15
< 5		11/15
< 5		11/27
< 5		11/27
< 5		11/27
< 5		12/04
< 5		12/04

trans-1,3-Dichloropropene
(cont)

< 5	12/06
< 5	12/06
< 5	12/06
< 5	12/11
< 5	12/11

CV = 24 + 2 ug/L

Result	Uncer	Date
41	12	5/16

CV = 28 + 3 ug/L

Result	Uncer	Date
51	15	5/08

CV = 30 + 3 ug/L

Result	Uncer	Date
29	9	5/16

CV = 32 + 3 ug/L

Result	Uncer	Date
58	17	5/25

CV = 34 + 3 ug/L

Result	Uncer	Date
57	17	2/14

CV = 35 + 4 ug/L

Result	Uncer	Date
78	23	3/01
84	25	3/01
56	17	5/18

CV = 36 + 4 ug/L

Result	Uncer	Date
59	18	2/14

CV = 38 + 4 ug/L

Result	Uncer	Date
67	20	3/02
56	17	4/18
53	16	4/18

CV = 41 + 4 ug/L

Result	Uncer	Date
64	19	3/20

Dieldrin 90GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.08		3/01
< 0.04		4/12
< 0.04		5/09
< 0.04		5/09
< 0.04		5/31

Dieldrin (cont)

< 0.04	6/15
< 0.04	7/27
< 0.04	8/23
< 0.04	12/04

Diethyl phthalate
89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 10		3/22
< 10		5/09
< 10		5/29
< 10		5/29
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
14	4	11/29
< 10		11/29
< 10		12/06
< 10		12/06

CV = 75 + 8 ug/L

Result	Uncer	Date
97	29	8/09

CV = 94 + 9 ug/L

Result	Uncer	Date
< 10		5/04

CV = 140 + 10 ug/L

Result	Uncer	Date
15	4	5/16

CV = 150 + 15 ug/L

Result	Uncer	Date
34	10	8/21

CV = 160 + 20 ug/L

Result	Uncer	Date
33	10	6/15

Dimethyl phthalate
89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06

Dimethyl phthalate (cont)

< 10	3/06
< 10	3/07
< 10	5/04
< 10	5/09
< 10	5/16
< 10	5/29
< 10	5/29
< 10	6/15
< 10	8/09
< 10	8/09
< 10	8/20
< 10	8/21
< 10	8/21
< 10	8/21
< 10	8/29
< 10	8/29
< 10	11/27
< 10	11/27
< 10	11/27
< 10	11/29
< 10	11/29
< 10	12/06
< 10	12/06

CV = 142 + 14 ug/L

Result	Uncer	Date
< 10		3/22

CV = 177 + 18 ug/L

Result	Uncer	Date
< 10		3/06

2,4-Dimethylphenol
2,4-Dinitrophenol
89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 10		3/22
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		5/29
< 10		6/15
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

2,4-Dinitrotoluene
89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 10		3/22
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		5/29
< 10		6/15
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

CV = 25 + 2 mg/L

Result	Uncer	Date
22	7	7/19

2,6-Dinitrotoluene
89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 10		3/22
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		5/29
< 10		6/15
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

TABLE C-V (cont)

****

NSE-9 Organics in Water
(cont)

****

Endosulfan I
90GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.05		3/01
< 0.05		4/12
< 0.05		5/09
< 0.05		5/09
< 0.05		5/31
< 0.05		6/15
< 0.05		7/27
< 0.05		8/23
< 0.05		12/04

Endosulfan II
90GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.08		3/01
< 0.08		4/12
< 0.08		5/09
< 0.08		5/09
< 0.08		5/31
< 0.08		6/15
< 0.08		7/27
< 0.08		8/23
< 0.08		12/04

Endosulfan sulfate
90GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.09		3/01
< 0.09		4/12
< 0.09		5/09
< 0.09		5/09
< 0.09		5/31
< 0.09		6/15
< 0.09		7/27
< 0.09		8/23
< 0.09		12/04

Endrin 90GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.06		3/01
< 0.03		4/12
< 0.03		5/09
< 0.03		5/09
< 0.03		5/31
< 0.03		6/15
< 0.03		7/27
< 0.03		8/23
< 0.03		12/04

Endrin aldehyde
90GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.62		3/01
< 0.31		4/12
< 0.31		5/09
< 0.31		5/09
< 0.31		5/31
< 0.31		6/15
< 0.31		7/27
< 0.31		8/23
< 0.31		12/04

Ethylbenzene 89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 2		1/09
28	8	2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/21
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18
< 5		5/21
< 5		5/25
< 5		6/29
< 5		7/06
< 5		7/17
< 5		7/17
< 5		7/25
< 5		7/25
< 5		7/25
< 5		8/28
< 5		9/21
< 5		9/21
< 5		9/21
< 5		11/07
< 5		11/07
< 5		11/15
< 5		11/15
< 5		11/27
< 5		11/27
< 5		11/27
< 5		12/04
< 5		12/06
< 5		12/06
< 5		12/06
< 5		12/11

CV = 56 + 6 ug/L

Result	Uncer	Date
68	20	11/07

Ethylbenzene (cont)

CV = 65 + 6 ug/L

Result	Uncer	Date
36	11	7/06

CV = 75 + 8 ug/L

Result	Uncer	Date
53	16	6/29
36	11	9/21
54	16	11/15
71	21	11/27
50	15	12/11

CV = 82 + 8 ug/L

Result	Uncer	Date
71	21	5/16

CV = 88 + 9 ug/L

Result	Uncer	Date
58	17	12/04

CV = 98 + 10 ug/L

Result	Uncer	Date
81	24	5/08

CV = 100 + 10 ug/L

Result	Uncer	Date
69	21	5/16
40	12	11/08

CV = 110 + 11 ug/L

Result	Uncer	Date
110	30	5/25

CV = 120 + 10 ug/L

Result	Uncer	Date
100	30	2/14
120	40	2/14
99	30	3/01
91	27	5/18

CV = 122 + 12 ug/L

Result	Uncer	Date
120	40	3/01

CV = 130 + 10 ug/L

Result	Uncer	Date
110	30	3/02
86	26	4/18
85	25	4/18

CV = 140 + 10 ug/L

Result	Uncer	Date
110	30	3/20

Fluoranthene
Fluorene
89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 10		3/22
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		5/29
< 10		6/15
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

HMX 90GAU 04 GCMS

CV = 10 + 1 mg/L

Result	Uncer	Date
10	3	7/19

Heptachlor 90GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.03		3/01
< 0.03		4/12
< 0.03		6/15
< 0.03		7/27
< 0.03		8/23
< 0.03		12/04

CV = 0.13 + 0.01 ug/L

Result	Uncer	Date
0.053	0.053	5/09
0.11	0.04	5/31

CV = 0.16 + 0.02 ug/L

Result	Uncer	Date
0.023	0.023	5/09

Heptachlor epoxide
90GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.04		5/09
< 0.04		5/09
< 0.04		5/31

CV = 0.08 + 0.01 ug/L

Result	Uncer	Date
0.097	0.048	4/12

CV = 0.13 + 0.01 ug/L

Result	Uncer	Date
0.17	0.04	3/01

CV = 0.21 + 0.02 ug/L

Result	Uncer	Date
0.18	0.08	8/23

CV = 0.23 + 0.02 ug/L

Result	Uncer	Date
0.22	0.1	12/04

CV = 0.27 + 0.03 ug/L

Result	Uncer	Date
0.31	0.15	7/27

CV = 0.31 + 0.03 ug/L

Result	Uncer	Date
0.26	0.07	6/15

Hexachlorobenzene
89GAU 01 GCEC

CV = 1.3 + 0.1 ug/L

Result	Uncer	Date
0.82	0.16	1/16

Hexachlorobenzene
90GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 10		3/22
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		6/15
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21

Hexachlorobenzene (cont)

< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

CV = 100 + 10 ug/L

Result	Uncer	Date
59	18	5/29

CV = 134 + 13 ug/L

Result	Uncer	Date
96	19	2/12

Hexachlorobutadiene
89GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.01		1/16

Hexachlorobutadiene
89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 5		3/20
< 10		3/22
< 10		5/09
< 10		5/29
< 10		5/29
< 5		6/29
< 5		6/29
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

CV = 78 + 8 ug/L

Result	Uncer	Date
32	10	8/09

TABLE C-V (cont)

****

HSE-9 Organics in Water
(cont)

****

Hexachlorobutadiene (cont)

CV = 98 + 10 ug/L

Result	Uncer	Date
39	12	5/04

CV = 150 + 20 ug/L

Result	Uncer	Date
72	22	5/16
82	25	8/21

CV = 170 + 20 ug/L

Result	Uncer	Date
85	26	6/15

Hexachlorobutadiene 90GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		3/21
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18
< 5		5/18
< 5		5/21
< 5		5/25
< 5		5/25
< 5		7/06
< 5		7/06
< 5		7/17
< 5		7/17
< 5		7/25
< 5		7/25
< 5		7/25

Hexachlorobutadiene (cont)

< 5		8/28
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/15
< 5		11/15
< 5		11/15
< 5		12/06
< 5		12/06
< 5		12/06
< 5		12/11
< 5		12/11

CV = 81 + 8 ug/L

Result	Uncer	Date
< 2		1/09

CV = 91 + 9 ug/L

Result	Uncer	Date
< 5		2/14

Hexachlorocyclopentadiene 89GAU 01 GCEC

CV = 1.7 + 0.2 ug/L

Result	Uncer	Date
0.74	0.15	1/16

Hexachlorocyclopentadiene 90GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 10		3/22
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		6/15
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

Hexachlorocyclopentadiene (cont)

CV = 128 + 13 ug/L

Result	Uncer	Date
< 10		5/29

CV = 170 + 17 ug/L

Result	Uncer	Date
89	18	2/12

Hexachloroethane 89GAU 01 GCEC

CV = 1.7 + 0.2 ug/L

Result	Uncer	Date
0.58	0.12	1/16

Hexachloroethane 90GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 10		3/22
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		6/15
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

CV = 124 + 12 ug/L

Result	Uncer	Date
< 10		5/29

CV = 166 + 17 ug/L

Result	Uncer	Date
100	20	2/12

2-Hexanone 89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/09
< 20		2/14
25	8	2/14
< 10		2/22
39	12	3/01
34	10	3/01
< 20		4/18
< 20		4/18
< 20		4/18
< 20		4/18
< 20		4/28
< 20		4/28
< 20		5/03
< 20		5/08
< 20		5/11
< 20		5/15
< 20		5/15
< 20		5/16
< 20		5/16
< 20		5/16
< 20		5/16
< 20		5/16
< 20		5/18
< 20		5/21
< 20		5/25
< 20		5/25
< 20		6/29
< 20		6/29
< 20		7/06
< 20		7/17
< 20		7/25
< 20		7/25
< 20		9/21
< 20		9/21
< 20		9/21
66	20	11/07
34	10	11/15
67	20	11/15
38	11	11/27
51	15	11/27
< 20		11/27
< 20		12/04
< 20		12/06
< 20		12/06
< 20		12/11

CV = 75 + 8 ug/L

Result	Uncer	Date
45	14	11/07

CV = 81 + 8 ug/L

Result	Uncer	Date
27	8	12/04

CV = 82 + 8 ug/L

Result	Uncer	Date
87	26	5/16

CV = 86 + 9 ug/L

Result	Uncer	Date
120	40	4/18

2-Hexanone (cont)

CV = 88 + 9 ug/L

Result	Uncer	Date
180	50	7/06

CV = 99 + 10 ug/L

Result	Uncer	Date
110	30	5/08

CV = 100 + 10 ug/L

Result	Uncer	Date
120	30	3/21
81	24	7/25
84	25	9/21
50	15	11/15
< 20		11/27
48	14	12/11

CV = 110 + 10 ug/L

Result	Uncer	Date
97	29	7/17
40	12	11/07
48	14	12/06

CV = 120 + 12 ug/L

Result	Uncer	Date
170	50	3/01
120	30	4/28
140	40	5/10
110	30	5/18

CV = 124 + 12 ug/L

Result	Uncer	Date
110	30	3/01

CV = 130 + 10 ug/L

Result	Uncer	Date
110	30	2/14
210	60	3/02
160	50	4/18
190	60	4/18
98	29	8/28

CV = 140 + 10 ug/L

Result	Uncer	Date
< 20		3/20
33	10	11/08

Indeno[1,2,3-cd]pyrene 89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 10		3/22

Indeno[1,2,3-cd]pyrene (cont)

< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		5/29
< 10		6/15
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

Isophorone 89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 10		3/22
< 10		5/09
< 10		5/29
< 10		5/29
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

CV = 86 + 9 ug/L

Result	Uncer	Date
71	21	8/09

CV = 108 + 10 ug/L

Result	Uncer	Date
57	17	5/04

CV = 160 + 20 ug/L

Result	Uncer	Date
98	29	5/16
130	40	8/21

CV = 180 + 20 ug/L

Result	Uncer	Date
120	40	6/15

TABLE C-V (cont)

****

HSE-9 Organics in Water
(cont)

****

Isopropylbenzene
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/09
< 5		2/14
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		3/20
< 5		3/21
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18
< 5		5/18
< 5		5/21
< 5		5/25
< 5		5/25
< 5		6/29
< 5		6/29
< 5		7/06
< 5		7/06
< 5		7/17
< 5		7/17
< 5		7/25
< 5		7/25
< 5		7/25
< 5		8/28
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/15
< 5		11/15
< 5		11/15
< 5		11/27
< 5		11/27
< 5		11/27
< 5		11/27
< 5		12/04

Isopropylbenzene (cont)

< 5		12/04
< 5		12/06
< 5		12/06
< 5		12/06
< 5		12/11
< 5		12/11

4-Isopropyltoluene
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 2		1/09
< 5		2/14
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		3/20
< 5		3/21
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18
< 5		5/18
< 5		5/21
< 5		5/25
< 5		5/25
< 5		6/29
< 5		6/29
< 5		7/06
< 5		7/06
< 5		7/17
< 5		7/17
< 5		7/25
< 5		7/25
< 5		7/25
< 5		8/28
< 5		9/21
< 5		9/21
< 5		9/21
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/15
< 5		11/15
< 5		11/15
< 5		11/27
< 5		11/27

4-Isopropyltoluene (cont)

< 5		11/27
6	1.8	11/27
< 5		12/04
< 5		12/04
< 5		12/06
< 5		12/06
< 5		12/06
< 5		12/11
< 5		12/11

Lindane 90GAU 01 GCEC

CV = 0.10 + 0.01 ug/L

Result	Uncer	Date
0.061	0.03	5/09
0.096	0.03	5/31

CV = 0.12 + 0.01 ug/L

Result	Uncer	Date
0.13	0.05	5/09

CV = 0.13 + 0.01 ug/L

Result	Uncer	Date
0.23	0.06	3/01

CV = 0.14 + 0.01 ug/L

Result	Uncer	Date
0.21	0.1	4/12

CV = 0.16 + 0.02 ug/L

Result	Uncer	Date
0.11	0.05	8/23

CV = 0.18 + 0.02 ug/L

Result	Uncer	Date
0.15	0.07	12/04

CV = 0.21 + 0.02 ug/L

Result	Uncer	Date
0.19	0.09	7/27

CV = 0.24 + 0.02 ug/L

Result	Uncer	Date
0.28	0.08	6/15

Methoxychlor
90GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.08		4/12

CV = 0.61 + 0.06 ug/L

Result	Uncer	Date
0.62	0.3	8/23

Methoxychlor (cont)

CV = 0.68 + 0.07 ug/L

Result	Uncer	Date
0.68	0.34	12/04

CV = 0.79 + 0.08 ug/L

Result	Uncer	Date
0.8	0.4	7/27

CV = 0.91 + 0.09 ug/L

Result	Uncer	Date
1.7	0.5	6/15

CV = 0.94 + 0.1 ug/L

Result	Uncer	Date
0.6	0.2	5/09
1.0	0.3	5/31

CV = 1.1 + 0.1 ug/L

Result	Uncer	Date
1.1	0.3	5/09

Methyl iodide
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/03
< 5		5/08
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18
< 5		5/18
< 5		5/21
< 5		5/25
< 5		5/25
< 5		6/29
< 5		6/29
< 5		7/06
< 5		7/06
< 5		7/17
< 5		7/17
< 5		7/25
< 5		7/25
< 5		7/25
< 5		8/28
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/15
< 5		11/15
< 5		11/15

Methyl iodide (cont)

< 5		11/27
< 5		11/27
< 5		11/27
< 5		11/27
< 5		12/04
< 5		12/04
< 5		12/06
< 5		12/06
< 5		12/06
< 5		12/11
< 5		12/11

4-Methyl-2-pentanone
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/09
< 10		2/14
< 10		2/14
< 10		2/22
< 20		3/01
< 20		3/01
< 20		3/01
< 20		3/01
< 20		3/02
< 20		3/20
< 20		3/21
< 20		4/18
< 20		4/18
< 20		4/18
< 20		4/18
< 20		4/18
< 20		4/18
< 20		4/28
< 20		4/28
< 20		4/28
< 20		5/03
< 20		5/08
< 20		5/08
< 20		5/10
< 20		5/11
< 20		5/15
< 20		5/15
< 20		5/16
< 20		5/16
< 20		5/16
< 20		5/16
< 20		5/16
< 20		5/16
< 20		5/18
< 20		5/18
< 20		5/21
< 20		5/25
< 20		5/25
< 20		6/29
< 20		6/29
< 20		7/06
< 20		7/06
< 20		7/17
< 20		7/17
< 20		7/25
< 20		7/25
< 20		7/25
< 20		8/28
< 20		9/21
< 20		9/21
< 20		9/21
< 20		11/07
< 20		11/07
< 20		11/08
< 20		11/15

4-Methyl-2-pentanone (cont)

< 20		11/15
< 20		11/15
25	8	11/27
< 20		11/27
< 20		11/27
< 20		11/27
< 20		12/04
< 20		12/04
< 20		12/06
< 20		12/06
< 20		12/06
< 20		12/11
< 20		12/11

CV = 64 + 6 ug/L

Result	Uncer	Date
< 20		2/14

2-Methyl-4,6-dinitrophenol
89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 10		3/22
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		5/29
< 10		6/15
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

Methylene chloride
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
94	28	1/09
< 5		2/14
22	7	2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/01
110	30	3/02
50	15	3/20
< 5		3/21
< 5		4/18

TABLE C-V (cont)

****

HSE-9 Organics in Water
(cont)

****

Methylene chloride (cont)

11	3	4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18
< 5		5/18
< 5		5/21
< 5		5/25
< 5		5/25
< 5		6/29
< 5		6/29
< 5		7/06
< 5		7/06
< 5		7/17
< 5		7/17
< 5		7/25
< 5		7/25
< 5		7/25
< 5		8/28
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21
< 5		11/07
< 5		11/07
7	2.1	11/07
< 5		11/08
< 5		11/15
< 5		11/15
< 5		11/15
< 5		11/27
< 5		11/27
< 5		11/27
< 5		11/27
< 5		12/04
< 5		12/04
< 5		12/06
< 5		12/06
< 5		12/06
< 5		12/11
< 5		12/11

2-Methylnaphthalene
2-Methylphenol
4-Methylphenol
89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 10		3/22
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		5/29
< 10		6/15
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

Naphthalene
89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 5		3/20
< 10		3/22
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		5/29
< 10		6/15
< 5		6/29
< 5		6/29
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

Naphthalene 89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 2		1/09
< 5		2/14
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		3/21
< 5		4/18
< 5		4/18
3.6	1.1	4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18
< 5		5/18
< 5		5/21
< 5		5/25
< 5		5/25
< 5		7/06
< 5		7/06
< 5		7/17
< 5		7/17
< 5		7/25
< 5		7/25
< 5		7/25
< 5		8/28
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
15	5	11/15
21	6	11/15
< 5		11/15
< 5		12/06
< 5		12/06
< 5		12/06
< 5		12/11
< 5		12/11

2-Nitroaniline
3-Nitroaniline
4-Nitroaniline
89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 10		3/22
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		5/29
< 10		6/15
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

Nitrobenzene 89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/07
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		5/29
< 10		6/15
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

CV = 116 + 11 ug/L

Result	Uncer	Date
51	10	3/22

Nitrobenzene (cont)

CV = 145 + 14 ug/L

Result	Uncer	Date
120	20	3/06

2-Nitrophenol
89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 10		3/22
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		5/29
< 10		6/15
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

4-Nitrophenol
89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		3/06
< 10		3/22
< 10		5/04
< 10		5/16
< 10		5/29
< 10		6/15
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

4-Nitrophenol (cont)

CV = 103 + 10 ug/L

Result	Uncer	Date
84	17	3/07

CV = 110 + 10 ug/L

Result	Uncer	Date
79	16	2/28

CV = 170 + 20 ug/L

Result	Uncer	Date
170	30	3/06
81	16	3/06
180	50	5/09

CV = 200 + 20 ug/L

Result	Uncer	Date
210	60	5/29

N-Nitrosodi-n-propylamine
N-Nitrosodimethylamine
N-Nitrosodiphenylamine
89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 10		3/22
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		5/29
< 10		6/15
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

Pentachlorophenol
89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		3/06
< 10		3/22
< 10		5/04
< 10		5/16

TABLE C-V (cont)

****

HSE-9 Organics in Water (cont)

****

Pentachlorophenol (cont)

Result	Uncer	Date
< 10		5/29
< 10		6/15
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

CV = 89 + 9 ug/L

Result	Uncer	Date
69	14	3/07

CV = 97 + 10 ug/L

Result	Uncer	Date
78	16	2/28

CV = 150 + 20 ug/L

Result	Uncer	Date
180	40	3/06
80	16	3/06
180	50	5/09

CV = 170 + 20 ug/L

Result	Uncer	Date
170	50	5/29

Phenanthrene 89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/07
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		5/29
< 10		6/15
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29

Phenanthrene (cont)

Result	Uncer	Date
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

CV = 114 + 11 ug/L

Result	Uncer	Date
42	8	3/22

CV = 142 + 14 ug/L

Result	Uncer	Date
130	30	3/06

Phenol 89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 10		3/22
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		5/29
< 10		6/15
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/21
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/29
< 10		12/06

CV = 53 + 5 ug/L

Result	Uncer	Date
15	5	11/27

CV = 110 + 10 ug/L

Result	Uncer	Date
66	20	8/29

CV = 130 + 10 ug/L

Result	Uncer	Date
74	22	11/29
55	17	12/06

Propylbenzene 90GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		3/20
< 5		3/21
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18
< 5		5/18
< 5		5/21
< 5		5/25
< 5		5/25
< 5		6/29
< 5		6/29
< 5		7/06
< 5		7/06
< 5		7/17
< 5		7/17
< 5		7/25
< 5		7/25
< 5		7/25
< 5		8/28
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/15
< 5		11/15
< 5		11/15
< 5		11/27
< 5		11/27
< 5		11/27
< 5		11/27
< 5		12/04
< 5		12/04
< 5		12/06
< 5		12/06
< 5		12/06
< 5		12/11
< 5		12/11

Propylbenzene (cont)

CV = 68 + 7 ug/L

Result	Uncer	Date
< 2		1/09

CV = 76 + 8 ug/L

Result	Uncer	Date
< 5		2/14

Pyrene 89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 10		3/22
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		5/29
< 10		6/15
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

RDX 90GAU 04 GCMS

CV = 13 + 2 mg/L

Result	Uncer	Date
12	4	7/19

Styrene 90GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		3/20
< 5		3/21
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18

Styrene (cont)

Result	Uncer	Date
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18
< 5		5/18
< 5		5/21
< 5		5/25
< 5		5/25
< 5		6/29
< 5		6/29
< 5		7/06
< 5		7/06
< 5		7/17
< 5		7/17
< 5		7/25
< 5		7/25
< 5		7/25
< 5		8/28
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/15
< 5		11/15
< 5		11/15
< 5		11/27
< 5		11/27
< 5		11/27
< 5		11/27
< 5		12/04
< 5		12/04
< 5		12/06
< 5		12/06
< 5		12/06
< 5		12/11
< 5		12/11

CV = 64 + 6 ug/L

Result	Uncer	Date
45	14	1/09

CV = 72 + 7 ug/L

Result	Uncer	Date
61	18	2/14

2,4,5-TP 90GAU 01 GCEC

CV = 0.19 + 0.02 ug/L

Result	Uncer	Date
0.34	0.17	3/15

2,4,5-TP (cont)

CV = 0.20 + 0.02 ug/L

Result	Uncer	Date
0.20	0.04	6/05
0.20	0.04	6/11

CV = 0.24 + 0.02 ug/L

Result	Uncer	Date
0.18	0.04	6/05
0.22	0.05	8/06

CV = 0.29 + 0.03 ug/L

Result	Uncer	Date
0.31	0.22	10/24

CV = 0.38 + 0.04 ug/L

Result	Uncer	Date
0.23	0.09	6/06

1,1,1,2-Tetrachloroethane 90GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		3/20
< 5		3/21
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18
< 5		5/18
< 5		5/21
< 5		5/25
< 5		5/25
< 5		6/29
< 5		6/29
< 5		7/06
< 5		7/06
< 5		7/17
< 5		7/17

TABLE C-V (cont)

****

HSE-9 Organics in Water
(cont)

****

1,1,1,2-Tetrachloroethane
(cont)

< 5	7/25
< 5	7/25
< 5	7/25
< 5	8/28
< 5	9/21
< 5	9/21
< 5	9/21
< 5	9/21
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/08
< 5	11/15
< 5	11/15
< 5	11/15
< 5	11/27
< 5	11/27
< 5	11/27
< 5	11/27
< 5	12/04
< 5	12/04
< 5	12/06
< 5	12/06
< 5	12/06
< 5	12/11
< 5	12/11

CV = 74 + 7 ug/L

Result	Uncer	Date
63	19	1/09

CV = 84 + 8 ug/L

Result	Uncer	Date
91	27	2/14

1,1,2,2-Tetrachloroethane
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/09
< 5		2/14
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		3/20
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08

1,1,2,2-Tetrachloroethane
(cont)

< 5	5/08
< 5	5/10
< 5	5/11
< 5	5/15
< 5	5/15
< 5	5/16
< 5	5/16
< 5	5/16
< 5	5/16
< 5	5/16
< 5	5/16
< 5	5/16
< 5	5/18
< 5	5/18
< 5	5/18
< 5	5/21
< 5	5/25
< 5	5/25
< 5	6/29
< 5	6/29
< 5	7/06
< 5	7/06
< 5	7/17
< 5	7/17
< 5	7/25
< 5	7/25
< 5	7/25
< 5	8/28
< 5	9/21
< 5	9/21
< 5	9/21
< 5	9/21
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/08
< 5	11/15
< 5	11/15
< 5	11/15
< 5	11/27
< 5	11/27
< 5	11/27
< 5	11/27
< 5	12/04
< 5	12/04
< 5	12/06
< 5	12/06
< 5	12/06
< 5	12/11
< 5	12/11

CV = 98 + 10 ug/L

Result	Uncer	Date
< 5		3/21

Tetrachloroethylene
90GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28

Tetrachloroethylene (cont)

< 5	5/03
< 5	5/08
< 5	5/11
< 5	5/15
< 5	5/15
< 5	5/16
< 5	5/16
< 5	5/16
< 5	5/16
< 5	5/16
< 5	5/18
< 5	5/18
< 5	5/21
< 5	5/25
< 5	6/29
< 5	7/06
< 5	7/17
< 5	7/17
< 5	7/25
< 5	7/25
< 5	7/25
< 5	8/28
< 5	9/21
< 5	9/21
< 5	9/21
< 5	11/07
< 5	11/07
< 5	11/15
< 5	11/15
< 5	11/27
< 5	11/27
< 5	11/27
< 5	12/04
< 5	12/04
< 5	12/06
< 5	12/06
< 5	12/06
< 5	12/11

CV = 62 + 6 ug/L

Result	Uncer	Date
66	20	11/07

CV = 72 + 7 ug/L

Result	Uncer	Date
32	10	7/06

CV = 74 + 7 ug/L

Result	Uncer	Date
61	18	1/09

CV = 82 + 8 ug/L

Result	Uncer	Date
57	17	6/29
50	15	9/21
58	17	11/15
64	19	11/27
51	15	12/11

CV = 83 + 8 ug/L

Result	Uncer	Date
97	29	2/14

CV = 100 + 10 ug/L

Result	Uncer	Date
70	21	4/18

Tetrachloroethylene (cont)

CV = 110 + 10 ug/L

Result	Uncer	Date
45	14	11/08

CV = 120 + 12 ug/L

Result	Uncer	Date
91	27	3/21
96	29	5/08
77	23	5/16

CV = 130 + 13 ug/L

Result	Uncer	Date
110	30	5/25

CV = 140 + 10 ug/L

Result	Uncer	Date
110	30	2/14
110	30	4/28
120	30	5/10

CV = 145 + 14 ug/L

Result	Uncer	Date
130	40	3/01

CV = 170 + 20 ug/L

Result	Uncer	Date
170	50	3/20

Tetryl(methyl-2,4,6-
trinitrophenylnitramine)
90GAU 04 GCMS

CV = 17 + 2 mg/L

Result	Uncer	Date
18	5	7/19

Toluene 89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
20	6	1/09
19	6	2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16

Toluene (cont)

< 5	5/16
< 5	5/16
< 5	5/18
< 5	5/21
< 5	5/25
< 5	5/25
< 5	6/29
< 5	7/06
< 5	7/17
< 5	7/17
< 5	7/25
< 5	7/25
< 5	7/25
< 5	8/28
< 5	9/21
< 5	9/21
< 5	9/21
< 5	11/07
< 5	11/07
< 5	11/15
< 5	11/15
< 5	11/27
< 5	11/27
< 5	11/27
< 5	12/04
< 5	12/04
< 5	12/06
< 5	12/06
< 5	12/06
< 5	12/11

CV = 66 + 7 ug/L

Result	Uncer	Date
84	25	11/07

CV = 77 + 8 ug/L

Result	Uncer	Date
44	13	7/06

CV = 84 + 8 ug/L

Result	Uncer	Date
71	21	5/16

CV = 88 + 9 ug/L

Result	Uncer	Date
75	22	4/18
< 5		6/29
49	15	9/21
65	20	11/15
80	24	11/27
62	19	12/11

CV = 100 + 10 ug/L

Result	Uncer	Date
100	30	3/21
84	25	5/08

CV = 120 + 12 ug/L

Result	Uncer	Date
120	40	3/01
100	30	4/28
95	29	5/10
50	15	11/08

Toluene (cont)

CV = 125 + 12 ug/L

Result	Uncer	Date
130	40	3/01

CV = 130 + 10 ug/L

Result	Uncer	Date
95	28	2/14
90	27	5/18

CV = 140 + 10 ug/L

Result	Uncer	Date
120	40	3/02
100	30	4/18
85	26	4/18

CV = 150 + 20 ug/L

Result	Uncer	Date
130	40	3/20

Toxaphene 90GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 2.5		3/01
< 2.5		4/12
< 2.5		5/09
< 2.5		5/09
< 2.5		5/31
< 2.5		6/15
< 2.5		7/27
< 2.5		8/23
< 2.5		12/04

1,1,2-Trichloro-
1,2,2-trifluoroethane
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		5/03
< 5		5/08
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18
< 5		5/18
< 5		5/21
< 5		5/25
< 5		5/25
< 5		6/29
< 5		6/29
< 5		7/06
< 5		7/06
< 5		7/17
< 5		7/17
< 5		7/25

TABLE C-V (cont)

****

HSE-9 Organics in Water
(cont)

****

1,1,2-Trichloro-
1,2,2-trifluoroethane (cont)

< 5		7/25
< 5		7/25
< 5		8/28
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/15
< 5		11/15
< 5		11/15
< 5		11/27
< 5		11/27
< 5		11/27
< 5		11/27
< 5		12/04
< 5		12/04
< 5		12/06
< 5		12/06
< 5		12/06
< 5		12/11
< 5		12/11

1,2,3-Trichlorobenzene
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
11	3	1/09
< 5		2/14
14	4	2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		3/20
< 5		3/21
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/18

1,2,3-Trichlorobenzene (cont)

< 5		5/18
< 5		5/21
< 5		5/25
< 5		5/25
< 5		6/29
< 5		6/29
< 5		7/06
< 5		7/06
< 5		7/17
< 5		7/17
< 5		7/25
< 5		7/25
< 5		7/25
< 5		8/28
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
7	2.1	11/15
7	2.1	11/15
< 5		11/15
< 5		12/06
< 5		12/06
< 5		12/06
< 5		12/11
< 5		12/11

1,2,4-Trichlorobenzene
89GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.01		1/16

1,2,4-Trichlorobenzene
89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 5		3/20
< 10		3/22
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		5/29
< 10		6/15
< 5		6/29
< 5		6/29
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27

1,2,4-Trichlorobenzene (cont)

< 10		11/29
< 10		11/29
< 10		12/[illegible]
< 10		12/06

1,2,4-Trichlorobenzene
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 2		1/09
< 5		2/14
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
7	2.1	3/20
< 5		3/21
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18
< 5		5/18
< 5		5/21
< 5		5/25
< 5		5/25
< 5		6/29
< 5		6/29
< 5		7/06
< 5		7/17
< 5		7/25
< 5		7/25
< 5		9/21
< 5		9/21
< 5		9/21
< 5		11/07
< 5		11/15
< 5		11/15
< 5		11/27
< 5		11/27
< 5		11/27
< 5		12/04
< 5		12/04
< 5		12/06
< 5		12/06
< 5		12/11

1,1,1-Trichloroethane
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 2		1/09
< 5		2/14
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
7	2.1	3/20
< 5		3/21
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18
< 5		5/18
< 5		5/21
< 5		5/25
< 5		5/25
< 5		6/29
< 5		6/29
< 5		7/06
< 5		7/17
< 5		7/25
< 5		7/25
< 5		9/21
< 5		9/21
< 5		9/21
< 5		11/07
< 5		11/15
< 5		11/15
< 5		11/27
< 5		11/27
< 5		11/27
< 5		12/04
< 5		12/04
< 5		12/06
< 5		12/06
< 5		12/11

CV = 67 + 7 ug/L

Result	Uncer	Date
98	29	11/07

CV = 78 + 8 ug/L

Result	Uncer	Date
58	18	7/06

1,1,1-Trichloroethane (cont)

CV = 90 + 9 ug/L

Result	Uncer	Date
83	25	7/25
88	26	9/21
66	20	11/15
75	23	11/27
68	20	12/11

CV = 94 + 9 ug/L

Result	Uncer	Date
76	23	7/17

CV = 95 + 10 ug/L

Result	Uncer	Date
74	22	11/07
75	23	12/06

CV = 110 + 10 ug/L

Result	Uncer	Date
99	30	8/28

CV = 120 + 10 ug/L

Result	Uncer	Date
54	16	11/08

1,1,2-Trichloroethane
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 2		1/09
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
100	30	3/21
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18
< 5		5/21
< 5		5/25
< 5		5/25
< 5		6/29
< 5		7/06
< 5		7/06
< 5		7/17
< 5		7/25
< 5		7/25
< 5		9/21
< 5		9/21

1,1,2-Trichloroethane (cont)

< 5		9/21
< 5		9/21
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/15
< 5		11/15
< 5		11/27
< 5		11/27
< 5		11/27
< 5		12/04
< 5		12/04
< 5		12/06
< 5		12/06
< 5		12/11
< 5		12/11

CV = 78 + 8 ug/L

Result	Uncer	Date
77	23	5/16

CV = 82 + 8 ug/L

Result	Uncer	Date
86	26	4/18

CV = 94 + 9 ug/L

Result	Uncer	Date
94	28	5/08

CV = 96 + 10 ug/L

Result	Uncer	Date
78	23	6/29
96	29	7/25
88	26	11/15
94	28	11/27

CV = 100 + 10 ug/L

Result	Uncer	Date
75	22	7/17
72	22	11/07
72	22	12/06

CV = 118 + 12 ug/L

Result	Uncer	Date
110	30	3/01

CV = 120 + 10 ug/L

Result	Uncer	Date
130	40	2/14
120	40	3/01
110	30	4/28
120	40	5/10
100	30	5/18
130	40	8/28

CV = 130 + 10 ug/L

Result	Uncer	Date
130	40	3/02
120	40	4/18
130	40	4/18

TABLE C-V (cont)

****

HSE-9 Organics in Water
(cont)

****

1,1,2-Trichloroethane (cont)

CV = 140 + 10 ug/L

Result	Uncer	Date
140	40	3/20

Trichloroethene
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 2		1/09
< 5		2/14
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		3/20
< 5		3/21
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18
< 5		5/18
< 5		5/21
< 5		5/25
< 5		5/25
< 5		6/29
< 5		7/06
< 5		7/06
< 5		7/17
< 5		7/25
< 5		7/25
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/15
< 5		11/15
< 5		11/27
< 5		11/27

Trichloroethene (cont)

< 5		11/27
< 5		12/04
< 5		12/04
< 5		12/06
< 5		12/06
< 5		12/11
< 5		12/11

CV = 80 + 8 ug/L

Result	Uncer	Date
51	15	6/29
63	19	7/25
60	18	11/15
67	20	11/27

CV = 84 + 8 ug/L

Result	Uncer	Date
64	19	7/17

CV = 85 + 8 ug/L

Result	Uncer	Date
62	19	11/07
61	18	12/06

CV = 100 + 10 ug/L

Result	Uncer	Date
87	26	8/28

Trichlorofluoromethane
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 2		1/09
< 5		2/14
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		3/20
< 5		3/21
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
9.4	2.8	4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16

Trichlorofluoromethane (cont)

< 5		5/16
< 5		5/18
< 5		5/18
< 5		5/21
< 5		5/25
< 5		5/25
< 5		6/29
< 5		6/29
< 5		7/06
< 5		7/06
< 5		7/17
< 5		7/17
< 5		7/25
< 5		7/25
< 5		7/25
< 5		8/28
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/15
< 5		11/15
< 5		11/27
< 5		11/27
< 5		11/27
< 5		12/04
< 5		12/04
< 5		12/06
< 5		12/06
< 5		12/06
< 5		12/11
< 5		12/11

2,4,5-Trichlorophenol
89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		3/06
< 10		3/22
< 10		5/29
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

CV = 80 + 8 ug/L

Result	Uncer	Date
68	20	8/09

CV = 84 + 8 ug/L

Result	Uncer	Date
60	12	3/07

2,4,5-Trichlorophenol (cont)

CV = 91 + 9 ug/L

Result	Uncer	Date
64	13	2/28

CV = 100 + 10 ug/L

Result	Uncer	Date
< 10		5/04

CV = 140 + 10 ug/L

Result	Uncer	Date
140	30	3/06
64	13	3/06
120	40	5/09

CV = 150 + 20 ug/L

Result	Uncer	Date
94	28	5/16
130	40	8/21

CV = 160 + 20 ug/L

Result	Uncer	Date
120	40	5/29

CV = 170 + 20 ug/L

Result	Uncer	Date
87	26	6/15

2,4,6-Trichlorophenol
89GAU 01 GCMS

CV = not spiked ug/L

Result	Uncer	Date
< 10		2/12
< 10		2/28
< 10		3/06
< 10		3/06
< 10		3/06
< 10		3/07
< 10		3/22
< 10		5/04
< 10		5/09
< 10		5/16
< 10		5/29
< 10		5/29
< 10		6/15
< 10		8/09
< 10		8/09
< 10		8/20
< 10		8/21
< 10		8/21
< 10		8/21
< 10		8/29
< 10		8/29
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/29
< 10		11/29
< 10		12/06
< 10		12/06

1,2,3-Trichloropropane
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 10		1/09
< 5		2/14
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		3/20
< 5		3/21
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/08
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
5.3	1.6	5/25
< 5		6/29
< 5		6/29
< 5		7/06
< 5		7/06
< 5		7/17
< 5		7/17
< 5		7/25
< 5		7/25
< 5		7/25
< 5		8/28
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/15
< 5		11/15
< 5		11/27
< 5		11/27
< 5		11/27
< 5		11/27
< 5		12/04
< 5		12/04
< 5		12/06
< 5		12/06
< 5		12/06
< 5		12/11
< 5		12/11

1,2,4-Trimethylbenzene
90GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		3/20
< 5		3/21
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18
< 5		5/18
< 5		5/21
< 5		5/25
< 5		5/25
< 5		6/29
< 5		6/29
< 5		7/06
< 5		7/06
< 5		7/17
< 5		7/17
< 5		7/25
< 5		7/25
< 5		7/25
< 5		8/28
< 5		9/21
< 5		9/21
< 5		9/21
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/15
< 5		11/15
12	4	11/15
< 5		11/27
< 5		11/27
< 5		11/27
< 5		11/27
< 5		12/04
< 5		12/04
< 5		12/06
< 5		12/06
< 5		12/06
< 5		12/11
< 5		12/11

TABLE C-V (cont)

****

HSE-9 Organics in Water
(cont)

****

1,2,4-Trimethylbenzene (cont)

CV = 71 + 7 ug/L

Result	Uncer	Date
< 2		1/09

CV = 80 + 8 ug/L

Result	Uncer	Date
11000	3000	2/14

1,3,5-Trimethylbenzene
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 2		1/09
< 5		2/14
200	60	2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		3/20
< 5		3/21
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18
< 5		5/18
< 5		5/21
< 5		5/25
< 5		5/25
< 5		6/29
< 5		6/29
< 5		7/06
< 5		7/06
< 5		7/17
< 5		7/17
< 5		7/25
< 5		7/25
< 5		7/25
< 5		8/28
< 5		9/21

1,3,5-Trimethylbenzene (cont)

< 5	9/21
< 5	9/21
< 5	9/21
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/08
< 5	11/15
< 5	11/15
< 5	11/15
< 5	11/27
< 5	11/27
< 5	11/27
< 5	11/27
< 5	12/04
< 5	12/04
< 5	12/06
< 5	12/06
< 5	12/06
< 5	12/11
< 5	12/11

2,4,6-Trinitrotoluene
90GAU 04 GCMS

CV = 19 + 2 mg/L

Result	Uncer	Date
18	5	7/19

Vinyl acetate
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 2		1/09
< 10		2/14
< 10		2/14
< 10		2/22
< 10		3/01
< 10		3/01
< 10		3/01
< 10		3/02
< 10		4/18
< 10		4/18
< 10		4/18
< 10		4/18
< 10		4/18
< 10		4/18
< 10		5/03
< 10		5/08
< 10		5/08
< 10		5/11
< 10		5/15
< 10		5/15
< 10		5/16
< 10		5/16
< 10		5/16
< 10		5/18
< 10		5/18
< 10		5/21
< 10		5/25
< 10		6/29
< 10		6/29
< 10		7/06
< 10		7/06
< 10		7/17
< 10		7/17
< 10		7/25
< 10		7/25

Vinyl acetate (cont)

< 10	7/25
< 10	8/28
< 10	9/21
< 10	9/21
< 10	9/21
< 10	9/21
< 10	11/07
< 10	11/07
< 10	11/07
< 10	11/08
< 10	11/15
< 10	11/15
< 10	11/15
< 10	11/27
< 10	11/27
< 10	11/27
< 10	11/27
< 10	12/04
< 10	12/04
< 10	12/06
< 10	12/06
< 10	12/06
< 10	12/11
< 10	12/11

CV = 82 + 8 ug/L

Result	Uncer	Date
96	29	4/18

CV = 94 + 9 ug/L

Result	Uncer	Date
41	12	5/08

CV = 98 + 10 ug/L

Result	Uncer	Date
97	29	3/21
12	4	5/16

CV = 110 + 10 ug/L

Result	Uncer	Date
110	30	2/14
21	6	5/25

CV = 117 + 12 ug/L

Result	Uncer	Date
120	30	3/01

CV = 120 + 12 ug/L

Result	Uncer	Date
75	22	4/28
12	4	5/10

CV = 140 + 10 ug/L

Result	Uncer	Date
< 10		3/20

Vinyl chloride
89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 2		1/09
< 10		2/14
< 10		2/14
< 10		2/14
< 10		2/22
< 10		3/01
< 10		3/01
< 10		3/01
< 10		3/01
< 10		3/02
< 10		3/20
< 10		3/21
< 10		4/18
< 10		4/18
< 10		4/18
< 10		4/18
< 10		4/18
< 10		4/18
< 10		4/18
< 10		4/28
< 10		4/28
< 10		4/28
< 10		5/03
< 10		5/08
< 10		5/08
< 10		5/10
< 10		5/11
< 10		5/15
< 10		5/15
< 10		5/16
< 10		5/16
< 10		5/16
< 10		5/16
< 10		5/16
< 10		5/18
< 10		5/18
< 10		5/21
< 10		5/25
< 10		5/25
< 10		6/29
< 10		6/29
< 10		7/06
< 10		7/06
< 10		7/17
< 10		7/17
< 10		7/25
< 10		7/25
< 10		7/25
< 10		8/28
< 10		9/21
< 10		9/21
< 10		9/21
< 10		9/21
< 10		11/07
< 10		11/07
< 10		11/07
< 10		11/08
< 10		11/15
< 10		11/15
< 10		11/15
< 10		11/27
< 10		11/27
< 10		11/27
< 10		11/27
< 10		12/04
< 10		12/04
< 10		12/06
< 10		12/06
< 10		12/06
< 10		12/11
< 10		12/11

o-Xylene 89GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 2		1/09
< 5		2/14
68	20	2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
< 5		3/20
< 5		3/21

Mixed-Xylenes (o + m + p)
90GAU 01 PTGC

CV = not spiked ug/L

Result	Uncer	Date
< 5		2/14
< 5		2/14
< 5		2/22
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/01
< 5		3/02
6.5	2	3/20
< 5		3/21
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/18
< 5		4/28
< 5		4/28
< 5		4/28
< 5		5/03
< 5		5/08
< 5		5/08
< 5		5/10
< 5		5/11
< 5		5/15
< 5		5/15
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/16
< 5		5/18
< 5		5/18
< 5		5/21
< 5		5/25
< 5		5/25
< 5		6/29
< 5		6/29
< 5		7/06
< 5		7/06
< 5		7/17
< 5		7/17
< 5		7/25
< 5		7/25
< 5		7/25
< 5		8/28
< 5		9/21
< 5		9/21
< 5		9/21
< 5		9/21
< 5		11/07

Mixed-Xylenes (o + m + p)
(cont)

< 5	11/07
< 5	11/07
< 5	11/08
< 5	11/15
< 5	11/15
< 5	11/15
< 5	11/27
< 5	11/27
< 5	11/27
< 5	11/27
< 5	12/04
< 5	12/04
< 5	12/06
< 5	12/06
< 5	12/06
< 5	12/11
< 5	12/11

CV = 79 + 8 ug/L

Result	Uncer	Date
< 2		1/09

CV = 89 + 9 ug/L

Result	Uncer	Date
290	90	2/14

****

HSE-9 Organics on Charcoal

****

Acetone
90GAU 01 GCMS

CV = 66 + 7 ug/tube

Result	Uncer	Date
38	12	5/02

CV = 86 + 9 ug/tube

Result	Uncer	Date
56	28	5/22

CV = 91 + 9 ug/tube

Result	Uncer	Date
65	13	4/23

CV = 100 + 10 ug/tube

Result	Uncer	Date
36	7	5/02

Alcohols GCMS

CV = not spiked ug/g

Result	Uncer	Date
1.6	0.2	4/09

TABLE C-V (cont)

****

HSE-9 Organics on Charcoal
(cont)

****

Benzene 90GAU 01 GCFID

CV = not spiked mg/tube

Result	Uncer	Date
< 0.04		7/28

CV = 0.17 + 0.02 mg/tube

Result	Uncer	Date
0.16	0.02	7/28

CV = 0.25 + 0.02 mg/tube

Result	Uncer	Date
0.23	0.02	7/28

CV = 0.34 + 0.03 mg/tube

Result	Uncer	Date
0.32	0.03	7/28

Benzene 89GAU 01 GCMS

CV = not spiked ug/tube

Result	Uncer	Date
< 4		2/15
< 4		2/20
< 4		2/21
< 4		2/26
< 4		2/27
< 4		2/27
< 4		2/28
11	2	2/28
< 4		2/28
< 4		2/28
< 4		2/28
< 4		2/28
< 4		2/28
< 4		3/01
< 4		3/05
< 4		3/05
< 4		3/13
< 4		3/13
< 4		3/13

CV = 71 + 7 ug/tube

Result	Uncer	Date
0.0		10/18

Analysis not completed because analyst unknowingly added one of the spiked analytes to the QC as an internal standard.

Benzene 90GAU 01 PTGC

CV = not spiked ug/tube

Result	Uncer	Date
< 8		6/12
< 8		6/12
< 8		6/14

Benzene (cont)

< 8		6/15
< 8		6/19
< 8		6/20
< 8		6/22
< 8		6/25
< 8		6/26
< 8		9/11
< 8		9/11
< 8		9/12
< 8		9/12
< 8		9/12
< 8		9/12
< 8		9/13
< 8		9/13
< 8		9/14
< 8		9/18
< 8		9/18
< 8		9/19
< 8		9/19
< 8		9/19
< 8		9/19
< 4		9/20
< 8		12/19

CV = 40 + 4 ug/tube

Result	Uncer	Date
20	6	12/07
24	7	12/19

CV = 46 + 5 ug/tube

Result	Uncer	Date
43	13	6/27

CV = 47 + 5 ug/tube

Result	Uncer	Date
26	8	12/17

CV = 50 + 5 ug/tube

Result	Uncer	Date
29	9	6/18
37	11	6/19

CV = 51 + 5 ug/tube

Result	Uncer	Date
34	10	8/15
60	18	9/13
50	15	9/13

CV = 60 + 6 ug/tube

Result	Uncer	Date
39	12	6/13
43	13	6/25

CV = 61 + 6 ug/tube

Result	Uncer	Date
57	17	8/15
68	21	9/14

CV = 64 + 6 ug/tube

Result	Uncer	Date
62	19	6/28

Benzene (cont)

CV = 71 + 7 ug/tube

Result	Uncer	Date
60	18	8/16
61	18	9/11
73	22	9/13

CV = 79 + 8 ug/tube

Result	Uncer	Date
67	20	12/17

CV = 80 + 8 ug/tube

Result	Uncer	Date
68	20	6/21

CV = 82 + 8 ug/tube

Result	Uncer	Date
51	15	8/16
120	40	9/11

CV = 92 + 9 ug/tube

Result	Uncer	Date
120	40	9/11
42	13	9/14

Bromobenzene
90GAU 01 PTGC

CV = not spiked ug/tube

Result	Uncer	Date
< 8		6/12
< 8		6/12
< 8		6/14
< 8		6/15
< 8		6/19
< 8		6/20
< 8		6/22
< 8		6/27
< 8		6/28
< 8		8/15
< 8		8/15
< 8		8/16
< 8		8/16
< 8		9/11
< 8		9/11
< 8		9/11
< 8		9/14
< 8		9/18
< 8		9/18
< 8		9/19
< 8		9/19
< 8		9/19
< 8		9/19
< 4		9/20
< 8		12/07
< 8		12/17
< 8		12/19

CV = 44 + 4 ug/tube

Result	Uncer	Date
32	10	6/18
39	12	6/19

Bromobenzene (cont)

CV = 53 + 5 ug/tube

Result	Uncer	Date
49	15	6/13
44	13	6/25

CV = 54 + 5 ug/tube

Result	Uncer	Date
39	12	9/11
63	19	9/13
47	14	9/13

CV = 60 + 6 ug/tube

Result	Uncer	Date
53	16	12/19

CV = 65 + 6 ug/tube

Result	Uncer	Date
49	15	9/11
49	15	9/12
53	16	9/13
60	18	9/14

CV = 69 + 7 ug/tube

Result	Uncer	Date
54	16	12/17

CV = 71 + 7 ug/tube

Result	Uncer	Date
71	21	6/21

CV = 76 + 8 ug/tube

Result	Uncer	Date
76	23	9/12

CV = 79 + 8 ug/tube

Result	Uncer	Date
79	24	6/25

CV = 87 + 9 ug/tube

Result	Uncer	Date
81	24	9/12

CV = 98 + 10 ug/tube

Result	Uncer	Date
84	25	9/12
40	12	9/14

CV = 109 + 11 ug/tube

Result	Uncer	Date
70	21	9/13
67	20	9/13

Bromobenzene (cont)

CV = 110 + 10 ug/tube

Result	Uncer	Date
100	30	6/26

2-Butanone 90GAU 01 GCMS

CV = not spiked ug/tube

Result	Uncer	Date
< 0.5		5/02

---

n-Butyl acetate
90GAU 01 GCMS

CV = not spiked ug/tube

Result	Uncer	Date
< 1		3/26

Carbon tetrachloride
90GAU 01 GCMS

CV = not spiked mg/tube

Result	Uncer	Date
< 0.1		2/06
< 4		2/15
< 4		2/21
37	8	2/26
< 4		2/27
< 4		2/28
< 4		2/28
< 4		2/28
< 4		2/28
< 4		2/28
< 4		3/01
< 4		3/05

CV = 44 + 4 ug/tube

Result	Uncer	Date
17	3	2/20
40	8	2/27
< 4		3/13

CV = 62 + 6 ug/tube

Result	Uncer	Date
29	6	2/28
21	4	3/13

CV = 71 + 7 ug/tube

Result	Uncer	Date
28	6	2/28

CV = 89 + 9 ug/tube

Result	Uncer	Date
22	4	3/05
40	8	3/13

Carbon tetrachloride (cont)

CV = 0.63 + 0.06 mg/tube

Result	Uncer	Date
0.67	0.07	2/06

CV = 0.80 + 0.08 mg/tube

Result	Uncer	Date
0.75	0.15	10/26

CV = 0.814 + 0.041 mg/tube

Result	Uncer	Date
0.82	0.16	10/26

CV = 0.88 + 0.09 mg/tube

Result	Uncer	Date
0.89	0.09	2/06

CV = 1.1 + 0.1 mg/tube

Result	Uncer	Date
1.1	0.2	10/26

CV = 1.2 + 0.1 mg/tube

Result	Uncer	Date
1.3	0.1	2/06

CV = 1.4 + 0.1 mg/tube

Result	Uncer	Date
1.3	0.3	10/26

Carbon tetrachloride
90GAU 01 PTGC

CV = not spiked ug/tube

Result	Uncer	Date
< 8		6/12
< 8		6/13
< 8		6/14
< 8		6/18
< 8		6/19
< 8		6/20
< 8		6/21
< 8		6/27
< 8		6/28
< 8		9/11
< 8		9/11
< 8		9/12
< 8		9/12
< 8		9/12
< 8		9/12
18	5	9/13
12	4	9/13
< 8		9/14
< 8		9/18
< 8		12/07
< 8		12/17
< 8		12/17
< 8		12/19

TABLE C-V (cont)

****

HSE-9 Organics on Charcoal (cont)

****

Carbon tetrachloride (cont)

CV = 44 + 4 ug/tube

Result	Uncer	Date
< 8		9/19

CV = 48 + 5 ug/tube

Result	Uncer	Date
41	12	8/15
64	19	9/13
36	11	9/13

CV = 51 + 5 ug/tube

Result	Uncer	Date
74	22	6/12
55	17	6/19

CV = 53 + 5 ug/tube

Result	Uncer	Date
22	7	9/19

CV = 54 + 5 ug/tube

Result	Uncer	Date
46	14	12/19

CV = 57 + 6 ug/tube

Result	Uncer	Date
68	20	8/15
80	24	9/14

CV = 61 + 6 ug/tube

Result	Uncer	Date
63	19	6/25

CV = 62 + 6 ug/tube

Result	Uncer	Date
90	27	9/19
47	14	9/20

CV = 64 + 6 ug/tube

Result	Uncer	Date
98	29	6/25

CV = 66 + 7 ug/tube

Result	Uncer	Date
73	22	8/16
77	23	9/11
80	24	9/13

Carbon tetrachloride (cont)

CV = 70 + 7 ug/tube

Result	Uncer	Date
110	30	9/19

CV = 71 + 7 ug/tube

Result	Uncer	Date
82	25	6/15

CV = 76 + 8 ug/tube

Result	Uncer	Date
59	18	8/16
90	27	9/11

CV = 79 + 8 ug/tube

Result	Uncer	Date
120	40	9/18

CV = 85 + 8 ug/tube

Result	Uncer	Date
120	40	6/26

CV = 86 + 9 ug/tube

Result	Uncer	Date
90	27	9/11
50	15	9/14

CV = 92 + 9 ug/tube

Result	Uncer	Date
84	25	6/22

Chlorobenzene 89GAU 01 GCMS

CV = not spiked ug/tube

Result	Uncer	Date
< 4		2/15
< 4		2/20
< 4		2/21
< 4		2/26
< 4		2/28
< 4		2/28
< 4		2/28
< 4		2/28
< 4		2/28
< 4		3/05
< 4		3/13
< 4		3/13

CV = 66 + 7 ug/tube

Result	Uncer	Date
42	9	2/27
35	7	2/27
20	4	2/28
20	4	3/13

Chlorobenzene (cont)

CV = 92 + 9 ug/tube

Result	Uncer	Date
56	11	2/28
43	9	3/01
26	5	3/05

Chlorobenzene 90GAU 01 PTGC

CV = not spiked ug/tube

Result	Uncer	Date
< 8		6/12
< 8		6/12
< 8		6/13
< 8		6/14
< 8		6/15
< 8		6/18
< 8		6/19
< 8		6/19
< 8		6/20
< 8		6/21
< 8		6/22
< 8		6/25
< 8		6/25
23	7	6/26
< 8		6/27
< 8		6/28
< 8		8/15
< 8		8/15
< 8		8/16
< 8		8/16
< 8		9/11
< 8		9/11
< 8		9/11
< 8		9/14
< 8		9/18
< 8		9/18
< 8		9/19
< 8		9/19
< 8		9/19
< 8		9/19
< 4		9/20
< 8		12/07
< 8		12/17
< 8		12/17
< 8		12/19

CV = 46 + 5 ug/tube

Result	Uncer	Date
30	9	12/19

CV = 55 + 6 ug/tube

Result	Uncer	Date
49	15	9/11
78	23	9/13
58	17	9/13

CV = 66 + 7 ug/tube

Result	Uncer	Date
59	18	9/11
68	20	9/12
66	20	9/13
82	25	9/14

Chlorobenzene (cont)

CV = 77 + 8 ug/tube

Result	Uncer	Date
90	27	9/12

CV = 88 + 9 ug/tube

Result	Uncer	Date
98	30	9/12

CV = 99 + 10 ug/tube

Result	Uncer	Date
100	30	9/12
56	17	9/14

CV = 110 + 11 ug/tube

Result	Uncer	Date
96	29	9/13
41	12	9/13

Chloroform 89GAU 01 GCMS

CV = not spiked ug/tube

Result	Uncer	Date
< 4		2/20
< 4		2/28
< 4		2/28
< 4		3/05
< 4		3/13

CV = 46 + 5 ug/tube

Result	Uncer	Date
48	10	2/27
27	6	2/28
< 4		3/01
33	7	3/13

CV = 55 + 6 ug/tube

Result	Uncer	Date
48	10	2/21
32	7	2/26

CV = 64 + 6 ug/tube

Result	Uncer	Date
61	12	2/28
23	5	3/05

CV = 74 + 7 ug/tube

Result	Uncer	Date
40	8	2/28
61	12	3/13

CV = 83 + 8 ug/tube

Result	Uncer	Date
53	11	2/28
62	12	2/28

Chloroform (cont)

CV = 87 + 9 ug/tube

Result	Uncer	Date
94	19	9/10

CV = 89 + 9 ug/tube

Result	Uncer	Date
81	16	12/12

CV = 92 + 9 ug/tube

Result	Uncer	Date
72	14	2/15
42	8	2/27

CV = 0.263 + 0.032 mg/tube

Result	Uncer	Date
0.3	0.03	2/06

CV = 0.50 + 0.05 mg/tube

Result	Uncer	Date
0.48	0.05	2/06

CV = 0.71 + 0.07 mg/tube

Result	Uncer	Date
0.6490	0.06	2/06

CV = 0.99 + 0.10 mg/tube

Result	Uncer	Date
0.90	0.09	2/06

Chloroform 90GAU 01 PTGC

CV = not spiked ug/tube

Result	Uncer	Date
< 8		6/12
< 8		6/13
< 8		6/14
< 8		6/18
< 8		6/19
< 8		6/20
< 8		6/21
< 8		6/25
< 8		6/26
< 8		6/27
< 8		6/28
< 8		8/15
< 8		8/15
< 8		8/16
< 8		8/16
< 8		9/11
< 8		9/11
< 8		9/11
< 8		9/11
< 8		9/11
< 8		9/12
< 8		9/12
< 8		9/12
< 8		9/12
< 8		9/13
< 8		9/13
< 8		9/13
< 8		9/13
< 8		9/13
< 8		9/14
< 8		9/14
< 8		9/14
< 8		9/18
< 8		9/18
< 8		9/19
< 8		9/19
< 8		9/19
< 8		9/19
< 4		9/20
< 8		12/19

CV = 50 + 5 ug/tube

Result	Uncer	Date
62	19	12/07
55	17	12/19

CV = 59 + 6 ug/tube

Result	Uncer	Date
92	28	12/17

CV = 62 + 6 ug/tube

Result	Uncer	Date
120	40	6/12
95	29	6/19

CV = 74 + 7 ug/tube

Result	Uncer	Date
93	28	6/25

CV = 87 + 9 ug/tube

Result	Uncer	Date
140	40	6/15

CV = 99 + 10 ug/tube

Result	Uncer	Date
160	50	12/17

CV = 110 + 10 ug/tube

Result	Uncer	Date
140	40	6/22

1,2-Dichloroethane 90GAU 01 GCMS

CV = not spiked ug/tube

Result	Uncer	Date
3.8	1.9	3/26

CV = 0.57 + 0.06 mg/tube

Result	Uncer	Date
0.55	0.11	10/26

CV = 0.727 + 0.046 mg/tube

Result	Uncer	Date
0.65	0.07	2/06

TABLE C-V (cont)

****

HSE-9 Organics on Charcoal
(cont)

****

1,2-Dichloroethane (cont)

CV = 0.767 + 0.039 mg/tube

Result	Uncer	Date
0.77	0.15	10/26

CV = 0.80 + 0.08 mg/tube

Result	Uncer	Date
0.83	0.17	10/26

CV = 0.93 + 0.09 mg/tube

Result	Uncer	Date
0.79	0.08	2/06

CV = 1.0 + 0.1 mg/tube

Result	Uncer	Date
1.0	0.2	10/26

CV = 1.3 + 0.1 mg/tube

Result	Uncer	Date
1.1	0.1	2/06

CV = 1.8 + 0.2 mg/tube

Result	Uncer	Date
1.6	0.2	2/06

1,4-Dioxane 90GAU 01 GCMS

CV = not spiked ug/tube

Result	Uncer	Date
< 1		5/22

Ethanol 90GAU 01 GCMS

CV = 120 + 10 ug/tube

Result	Uncer	Date
65	10	4/30

CV = 210 + 21 ug/tube

Result	Uncer	Date
< 20		8/20
180	50	8/20

CV = 240 + 20 ug/tube

Result	Uncer	Date
97	20	4/30

Ethanol (cont)

CV = 290 + 30 ug/tube

Result	Uncer	Date
130	30	4/30

Analyses done on 4/30 were by NIOSH method #1400, which apparently is not accurate for this analyte and matrix. A different method is under development.

Ethyl acetate
90GAU 01 GCMS

CV = 75 + 8 ug/tube

Result	Uncer	Date
51	11	5/02

CV = 96 + 10 ug/tube

Result	Uncer	Date
90	45	5/22

CV = 110 + 10 ug/tube

Result	Uncer	Date
50	10	5/02

Ethylbenzene
89GAU 01 GCMS

CV = not spiked ug/tube

Result	Uncer	Date
< 4		2/20
< 4		2/28
< 4		2/28
< 4		3/05
< 4		3/13

CV = 44 + 4 ug/tube

Result	Uncer	Date
36	7	2/27
22	4	2/28
17	4	3/13

CV = 52 + 5 ug/tube

Result	Uncer	Date
41	8	2/21
32	6	2/26

CV = 61 + 6 ug/tube

Result	Uncer	Date
50	10	2/28
< 4		3/01
20	4	3/05

CV = 70 + 7 ug/tube

Result	Uncer	Date
40	8	2/28
35	7	3/13

Ethylbenzene (cont)

CV = 78 + 8 ug/tube

Result	Uncer	Date
43	9	2/28
45	9	2/28

CV = 87 + 9 ug/tube

Result	Uncer	Date
56	11	2/15
54	11	2/27

Ethylbenzene
90GAU 01 PTGC

CV = not spiked ug/tube

Result	Uncer	Date
< 8		6/12
43	13	6/13
< 8		6/14
28	8	6/18
< 8		6/19
< 8		6/20
61	18	6/21
< 8		6/27
< 8		6/28
< 8		8/15
< 8		8/15
< 8		8/16
< 8		8/16
< 8		9/11
< 8		9/11
< 8		9/11
< 8		9/19
< 8		9/19
< 4		9/20
< 8		12/17
< 8		12/17

CV = 42 + 4 ug/tube

Result	Uncer	Date
32	10	12/19
39	12	12/19

CV = 43 + 4 ug/tube

Result	Uncer	Date
51	15	9/11
66	20	9/13
49	15	9/13
68	20	9/18

CV = 52 + 5 ug/tube

Result	Uncer	Date
64	19	9/11
68	21	9/12
56	17	9/13
66	20	9/14
< 8		9/14

CV = 54 + 5 ug/tube

Result	Uncer	Date
98	29	6/12
81	24	6/19

Ethylbenzene (cont)

CV = 59 + 6 ug/tube

Result	Uncer	Date
< 8		12/07

CV = 60 + 6 ug/tube

Result	Uncer	Date
96	29	9/12
90	27	9/19

CV = 64 + 6 ug/tube

Result	Uncer	Date
66	20	6/25

CV = 69 + 7 ug/tube

Result	Uncer	Date
110	30	9/12
120	40	9/18

CV = 70 + 7 ug/tube

Result	Uncer	Date
73	22	6/25

CV = 75 + 8 ug/tube

Result	Uncer	Date
73	22	6/15

CV = 77 + 8 ug/tube

Result	Uncer	Date
110	30	9/12
45	14	9/14
< 8		9/19

CV = 86 + 9 ug/tube

Result	Uncer	Date
100	30	9/13
97	29	9/13

CV = 93 + 9 ug/tube

Result	Uncer	Date
94	28	6/26

CV = 96 + 10 ug/tube

Result	Uncer	Date
120	40	6/22

Isobutyl acetate
90GAU 01 GCMS

CV = not spiked ug/tube

Result	Uncer	Date
< 1		5/02

4-Methyl-2-pentanone
90GAU 01 GCMS

CV = not spiked ug/tube

Result	Uncer	Date
< 1.0		3/26
< 0.5		5/02

Methylene chloride
90GAU 01 GCMS

CV = 90 + 9 ug/tube

Result	Uncer	Date
76	23	9/10

Naphthalene 90GAU 01 GCMS

CV = 87 + 9 ug/tube

Result	Uncer	Date
62	15	11/09

CV = 240 + 24 ug/tube

Result	Uncer	Date
220	70	5/22

2-Propanol 90GAU 01 GCMS

CV = not spiked ug/tube

Result	Uncer	Date
< 25		5/02

---

n-Propyl acetate
90GAU 01 GCMS

CV = not spiked ug/tube

Result	Uncer	Date
< 1		5/02

1,1,2,2-Tetrabromoethane
90GAU 01 GCMS

CV = not spiked ug/tube

Result	Uncer	Date
< 4		3/26

Tetrachloroethylene
90GAU 01 GCFID

CV = 0.62 + 0.06 mg/tube

Result	Uncer	Date
0.55	0.06	4/20

CV = 0.99 + 0.1 mg/tube

Result	Uncer	Date
0.95	0.1	4/20
0.95	0.1	4/20

Tetrachloroethylene (cont)

CV = 1.5 + 0.2 mg/tube

Result	Uncer	Date
1.4	0.1	4/20

Tetrachloroethylene
89GAU 01 GCMS

CV = not spiked ug/tube

Result	Uncer	Date
< 4		2/15
< 4		2/20
4	0.8	2/21
< 4		2/26
< 4		2/27
< 4		2/27
< 4		2/28
< 4		2/28
< 4		2/28
< 4		2/28
< 4		2/28
< 4		2/28
< 4		2/28
< 4		3/01
< 4		3/05
< 4		3/05
< 4		3/13
< 4		3/13
< 4		3/13

Tetrachloroethylene
90GAU 01 PTGC

CV = not spiked ug/tube

Result	Uncer	Date
< 8		6/12
< 8		6/12
< 8		6/14
< 8		6/15
< 8		6/19
< 8		6/20
< 8		6/22
< 8		6/25
< 8		6/26
< 8		6/27
< 8		6/28
< 8		8/15
< 8		8/15
< 8		8/16
< 8		8/16
< 8		9/11
< 8		9/11
< 8		9/11
< 8		9/11
< 8		9/11
< 8		9/12
< 8		9/12
< 8		9/12
< 8		9/12
< 8		9/13
< 8		9/13
< 8		9/13
< 8		9/13
< 8		9/13
< 8		9/14
< 8		9/14
< 8		9/19
< 8		9/19
< 4		9/20
< 8		12/07
< 8		12/17

TABLE C-V (cont)

****

HSE-9 Organics on Charcoal
(cont)

****

Tetrachloroethylene (cont)

< 8		12/17
< 8		12/19
< 8		12/19

CV = 44 + 4 ug/tube

Result	Uncer	Date
57	17	9/18

CV = 52 + 5 ug/tube

Result	Uncer	Date
49	15	6/18
62	19	6/19

CV = 53 + 5 ug/tube

Result	Uncer	Date
49	15	9/14

CV = 62 + 6 ug/tube

Result	Uncer	Date
80	24	9/19

CV = 63 + 6 ug/tube

Result	Uncer	Date
77	23	6/13
53	16	6/25

CV = 70 + 7 ug/tube

Result	Uncer	Date
110	30	9/18

CV = 79 + 8 ug/tube

Result	Uncer	Date
< 8		9/19

CV = 84 + 8 ug/tube

Result	Uncer	Date
97	29	6/21

Toluene 90GAU 01 GCFID

CV = not spiked mg/tube

Result	Uncer	Date
< 0.04		7/28

CV = 0.82 + 0.08 mg/tube

Result	Uncer	Date
0.78	0.08	7/28

Toluene (cont)

CV = 1.23 + 0.10 mg/tube

Result	Uncer	Date
1.2	0.1	7/28

CV = 1.64 + 0.20 mg/tube

Result	Uncer	Date
1.6	0.2	7/28

Toluene 89GAU 01 GCMS

CV = not spiked ug/tube

Result	Uncer	Date
< 4		2/20
< 4		2/28
< 4		2/28
< 4		3/05
< 4		3/13
1.6	0.8	3/26

CV = 44 + 4 ug/tube

Result	Uncer	Date
90	50	4/26

CV = 54 + 5 ug/tube

Result	Uncer	Date
41	8	2/27
25	5	2/28
21	4	3/13

CV = 61 + 6 ug/tube

Result	Uncer	Date
60	12	5/02

CV = 65 + 6 ug/tube

Result	Uncer	Date
47	9	2/21
35	7	2/26

CV = 70 + 7 ug/tube

Result	Uncer	Date
56	28	5/04
0.0		10/18

Analysis on 10/18 not completed because analyst unknowingly added one of the spiked analytes to the QC as an internal standard.

CV = 76 + 8 ug/tube

Result	Uncer	Date
56	11	2/28
< 4		3/01
25	5	3/05

CV = 79 + 8 ug/tube

Result	Uncer	Date
67	33	5/22

Toluene (cont)

CV = 86 + 9 ug/tube

Result	Uncer	Date
44	9	2/28
43	9	3/13

CV = 92 + 9 ug/tube

Result	Uncer	Date
38	8	5/02

CV = 97 + 10 ug/tube

Result	Uncer	Date
50	10	2/28
53	11	2/28

CV = 110 + 10 ug/tube

Result	Uncer	Date
62	13	2/15
61	12	2/27

CV = 400 + 40 ug/tube

Result	Uncer	Date
520	160	5/22

Toluene 90GAU 01 PTGC

CV = not spiked ug/tube

Result	Uncer	Date
< 8		6/12
< 8		6/12
< 8		6/13
< 8		6/14
< 8		6/15
< 8		6/18
< 8		6/19
< 8		6/19
< 8		6/20
< 8		6/21
< 8		6/22
< 8		6/25
< 8		6/25
< 8		6/26
< 8		9/11
< 8		9/11
< 8		9/12
< 8		9/12
< 8		9/12
< 8		9/12
< 8		9/13
< 8		9/13
< 8		9/14
< 8		9/18
< 8		12/17
< 8		12/17

CV = 37 + 4 ug/tube

Result	Uncer	Date
47	14	6/27

Toluene (cont)

CV = 44 + 4 ug/tube

Result	Uncer	Date
< 8		9/19
35	11	12/19
43	13	12/19

CV = 45 + 4 ug/tube

Result	Uncer	Date
33	10	8/15
53	16	9/13
45	13	9/13

CV = 52 + 5 ug/tube

Result	Uncer	Date
67	20	6/28
39	12	9/19

CV = 54 + 5 ug/tube

Result	Uncer	Date
50	15	8/15
64	19	9/14

CV = 61 + 6 ug/tube

Result	Uncer	Date
76	23	9/19
73	22	9/20

CV = 62 + 6 ug/tube

Result	Uncer	Date
46	14	12/07

CV = 63 + 6 ug/tube

Result	Uncer	Date
53	16	8/16
56	17	9/11
63	19	9/13

CV = 70 + 7 ug/tube

Result	Uncer	Date
89	27	9/19

CV = 72 + 7 ug/tube

Result	Uncer	Date
48	14	8/16
96	29	9/11

CV = 78 + 8 ug/tube

Result	Uncer	Date
96	29	9/18

CV = 81 + 8 ug/tube

Result	Uncer	Date
94	28	9/11
40	12	9/14

1,1,1-Trichloroethane
90GAU 01 GCFID

CV = 0.55 + 0.06 mg/tube

Result	Uncer	Date
0.49	0.05	4/20

CV = 0.89 + 0.09 mg/tube

Result	Uncer	Date
0.80	0.09	4/20
0.81	0.08	4/20

CV = 1.3 + 0.1 mg/tube

Result	Uncer	Date
1.1	0.1	4/20

1,1,1-Trichloroethane
89GAU 01 GCMS

CV = not spiked ug/tube

Result	Uncer	Date
< 4		2/15
< 4		2/21
50	10	2/26
< 4		2/27
< 4		2/28
< 4		2/28
< 4		2/28
< 4		2/28
< 4		2/28
< 4		2/28
< 4		3/01
< 4		3/05

CV = 48 + 5 ug/tube

Result	Uncer	Date
26	5	2/20
24	5	2/27
28	6	3/13

CV = 49 + 5 ug/tube

Result	Uncer	Date
50	10	4/26

CV = 66 + 7 ug/tube

Result	Uncer	Date
42	8	2/28
48	10	3/13

CV = 68 + 7 ug/tube

Result	Uncer	Date
68	14	5/02
91	18	5/31

CV = 76 + 8 ug/tube

Result	Uncer	Date
42	8	2/28

1,1,1-Trichloroethane (cont)

CV = 78 + 8 ug/tube

Result	Uncer	Date
44	22	5/04

CV = 88 + 9 ug/tube

Result	Uncer	Date
110	20	4/23
60	15	5/22

CV = 91 + 9 ug/tube

Result	Uncer	Date
92	18	10/18

CV = 95 + 10 ug/tube

Result	Uncer	Date
37	8	3/05
36	7	3/13

CV = 98 + 10 ug/tube

Result	Uncer	Date
90	20	7/27

CV = 102 + 10 ug/tube

Result	Uncer	Date
72	15	5/02

1,1,1-Trichloroethane
90GAU 01 PTGC

CV = not spiked ug/tube

Result	Uncer	Date
< 8		6/12
< 8		6/12
< 8		6/13
< 8		6/14
< 8		6/15
< 8		6/18
< 8		6/19
< 8		6/19
< 8		6/20
< 8		6/21
< 8		6/22
< 8		6/25
< 8		6/25
< 8		6/26
< 8		6/27
< 8		6/28
< 8		8/15
< 8		8/15
< 8		8/16
< 8		8/16
< 8		9/11
< 8		9/11
< 8		9/11
< 8		9/11
< 8		9/11
< 8		9/12
< 8		9/12
< 8		9/12
< 8		9/12
< 8		9/13
< 8		9/13
< 8		9/13

TABLE C-V (cont)

****

HSE-9 Organics on Charcoal
(cont)

****

1,1,1-Trichloroethane (cont)

< 8	9/13
< 8	9/13
< 8	9/14
< 8	9/14
< 8	9/19
< 8	9/19
< 4	9/20
< 8	12/17
< 8	12/17

CV = 54 + 5 ug/tube

Result	Uncer	Date
82	25	9/18

CV = 57 + 6 ug/tube

Result	Uncer	Date
52	16	12/19
73	22	12/19

CV = 65 + 6 ug/tube

Result	Uncer	Date
45	14	9/14

CV = 76 + 8 ug/tube

Result	Uncer	Date
100	30	9/19

CV = 80 + 8 ug/tube

Result	Uncer	Date
62	19	12/07

CV = 86 + 9 ug/tube

Result	Uncer	Date
130	40	9/18

CV = 97 + 10 ug/tube

Result	Uncer	Date
< 8		9/19

1,1,2-Trichloroethane 90GAU 01 GCMS

CV = 46 + 5 ug/tube

Result	Uncer	Date
50	30	4/09

Trichloroethene 90GAU 01 GCFID

CV = 0.58 + 0.06 mg/tube

Result	Uncer	Date
0.53	0.05	4/20

CV = 0.93 + 0.09 mg/tube

Result	Uncer	Date
0.88	0.09	4/20
0.88	0.09	4/20

CV = 1.4 + 0.1 mg/tube

Result	Uncer	Date
1.3	0.1	4/20

Trichloroethene 89GAU 01 GCMS

CV = not spiked ug/tube

Result	Uncer	Date
< 4		2/15
< 4		2/20
< 4		2/21
< 4		2/26
< 4		2/27
< 4		2/27
< 4		2/28
< 4		2/28
< 4		2/28
< 4		2/28
< 4		2/28
< 4		2/28
< 4		2/28
< 4		3/01
< 4		3/05
< 4		3/05
< 4		3/13
< 4		3/13
< 4		3/13
< 2		3/26
< 1		5/22
< 0.5		10/18

CV = 0.58 + 0.04 mg/tube

Result	Uncer	Date
0.61	0.12	10/26

CV = 1.1 + 0.1 mg/tube

Result	Uncer	Date
0.98	0.2	10/26

CV = 1.5 + 0.1 mg/tube

Result	Uncer	Date
1.5	0.3	10/26

CV = 1.9 + 0.2 mg/tube

Result	Uncer	Date
2	0.4	10/26

Trichloroethene 90GAU 01 PTGC

CV = not spiked ug/tube

Result	Uncer	Date
< 8		6/12
< 8		6/12
< 8		6/14
< 8		6/15
< 8		6/19
< 8		6/20
< 8		6/22
< 8		6/25
< 8		6/26
< 8		6/27
< 8		6/28
< 8		8/15
< 8		8/15
< 8		8/16
< 8		8/16
< 8		9/11
< 8		9/11
< 8		9/11
< 8		9/14
< 8		9/18
< 8		12/07
< 8		12/17
< 8		12/17
< 8		12/19
< 8		12/19

CV = 40 + 4 ug/tube

Result	Uncer	Date
< 8		9/19

CV = 46 + 5 ug/tube

Result	Uncer	Date
55	17	9/11
82	25	9/13
60	18	9/13

CV = 49 + 5 ug/tube

Result	Uncer	Date
40	12	9/19

CV = 55 + 6 ug/tube

Result	Uncer	Date
67	20	9/11
72	22	9/12
73	22	9/13
86	26	9/14

CV = 57 + 6 ug/tube

Result	Uncer	Date
78	23	9/19
80	24	9/20

CV = 64 + 6 ug/tube

Result	Uncer	Date
90	27	9/12

CV = 65 + 6 ug/tube

Result	Uncer	Date
75	23	9/19

Trichloroethene (cont)

CV = 69 + 7 ug/tube

Result	Uncer	Date
75	23	6/18
88	27	6/19

CV = 73 + 7 ug/tube

Result	Uncer	Date
99	30	9/18

CV = 74 + 7 ug/tube

Result	Uncer	Date
96	29	9/12

CV = 83 + 8 ug/tube

Result	Uncer	Date
110	30	6/13
90	27	6/25
99	30	9/12
62	19	9/14

CV = 92 + 9 ug/tube

Result	Uncer	Date
100	30	9/13
99	30	9/13

CV = 110 + 10 ug/tube

Result	Uncer	Date
140	40	6/21

1,2,4-Trimethylbenzene 89GAU 01 GCMS

CV = not spiked ug/tube

Result	Uncer	Date
< 4		2/15
< 4		2/20
< 4		2/21
< 4		2/26
< 4		2/27
< 4		2/27
< 4		2/28
< 4		2/28
< 4		2/28
< 4		2/28
< 4		2/28
< 4		2/28
< 4		2/28
< 4		2/28
< 4		3/01
< 4		3/05
< 4		3/05
< 4		3/13
< 4		3/13
< 4		3/13

1,2,4-Trimethylbenzene 90GAU 01 PTGC

CV = not spiked ug/tube

Result	Uncer	Date
< 8		6/12
< 8		6/13
< 8		6/14
< 8		6/18
< 8		6/19
< 8		6/20
< 8		6/21
< 8		6/25
< 8		6/26
< 8		6/27
< 8		6/28
< 8		9/11
< 8		9/11
< 8		9/12
< 8		9/12
< 8		9/12
< 8		9/12
< 8		9/13
< 8		9/13
< 8		9/14
< 8		9/18
< 8		12/07
< 8		12/17
< 8		12/19

CV = 41 + 4 ug/tube

Result	Uncer	Date
< 8		9/19

CV = 46 + 5 ug/tube

Result	Uncer	Date
82	25	6/12
66	20	6/19

CV = 49 + 5 ug/tube

Result	Uncer	Date
31	9	9/19

CV = 50 + 5 ug/tube

Result	Uncer	Date
40	12	8/15
72	22	9/13
61	18	9/13

CV = 55 + 6 ug/tube

Result	Uncer	Date
46	14	6/25

CV = 57 + 6 ug/tube

Result	Uncer	Date
68	20	9/19
69	21	9/20

CV = 61 + 6 ug/tube

Result	Uncer	Date
62	19	8/15
77	23	9/14

1,2,4-Trimethylbenzene (cont)

CV = 64 + 6 ug/tube

Result	Uncer	Date
55	16	6/15

CV = 66 + 7 ug/tube

Result	Uncer	Date
73	22	9/19

CV = 71 + 7 ug/tube

Result	Uncer	Date
68	21	8/16
68	20	9/11
72	22	9/13

CV = 74 + 7 ug/tube

Result	Uncer	Date
83	25	9/18

CV = 77 + 8 ug/tube

Result	Uncer	Date
70	21	12/19

CV = 81 + 8 ug/tube

Result	Uncer	Date
64	19	8/16
160	50	9/11

CV = 83 + 8 ug/tube

Result	Uncer	Date
88	27	6/22

CV = 88 + 9 ug/tube

Result	Uncer	Date
69	21	12/17

CV = 91 + 9 ug/tube

Result	Uncer	Date
150	50	9/11
48	14	9/14

---

m-Xylene 89GAU 01 GCMS

CV = not spiked ug/tube

Result	Uncer	Date
< 4		2/15
< 4		2/20
< 4		2/21
< 4		2/26
45	9	2/27

TABLE C-V (cont)

****

HSE-9 Organics on Charcoal
(cont)

****

o-Xylene 90GAU 01 GCFID

CV = 1.01 + 0.10 mg/tube

Result	Uncer	Date
0.99	0.10	7/28

CV = 1.52 + 0.20 mg/tube

Result	Uncer	Date
1.5	0.2	7/28

CV = 1.63 + 0.10 mg/tube

Result	Uncer	Date
1.7	0.2	7/28

CV = 2.02 + 0.20 mg/tube

Result	Uncer	Date
2.0	0.2	7/28

---

o-Xylene 89GAU 01 GCMS

CV = not spiked ug/tube

Result	Uncer	Date
< 4		2/15
< 4		2/20
< 4		2/21
< 4		2/26
< 4		2/28
< 4		2/28
< 4		2/28
< 4		2/28
< 4		2/28
< 4		3/05
< 4		3/13
< 4		3/13

CV = 66 + 7 ug/tube

Result	Uncer	Date
< 4		2/27
< 4		2/27
< 4		2/28
< 4		3/13

CV = 92 + 9 ug/tube

Result	Uncer	Date
< 4		2/28
< 4		3/01
< 4		3/05

---

o-Xylene 90GAU 01 PTGC

CV = not spiked ug/tube

Result	Uncer	Date
< 8		6/12
< 8		6/13
< 8		6/14

o-Xylene (cont)

Result	Uncer	Date
< 8		6/18
< 8		6/19
< 8		6/20
< 8		6/21
< 8		6/25
< 8		6/26
< 8		8/15
< 8		8/15
< 8		8/16
< 8		8/16
< 8		9/11
< 8		9/11
< 8		9/11
60	18	9/14
< 8		9/18
< 8		9/18
< 8		9/19
< 8		9/19
< 8		9/19
< 8		9/19
< 4		9/20
< 8		12/19

CV = 42 + 4 ug/tube

Result	Uncer	Date
< 8		6/12
51	15	6/19

CV = 50 + 5 ug/tube

Result	Uncer	Date
52	16	6/25

CV = 52 + 5 ug/tube

Result	Uncer	Date
77	23	6/27
42	13	9/11
69	21	9/13
52	16	9/13
55	17	12/07
54	16	12/19

CV = 58 + 6 ug/tube

Result	Uncer	Date
< 8		6/15

CV = 62 + 6 ug/tube

Result	Uncer	Date
53	16	9/11
57	17	9/12
59	18	9/13
70	21	9/14
< 8		12/17

CV = 72 + 7 ug/tube

Result	Uncer	Date
< 8		6/28
82	30	9/12

CV = 75 + 8 ug/tube

Result	Uncer	Date
< 8		6/22

o-Xylene (cont)

CV = 82 + 8 ug/tube

Result	Uncer	Date
89	27	9/12

CV = 93 + 9 ug/tube

Result	Uncer	Date
90	27	9/12
47	14	9/14

CV = 100 + 10 ug/tube

Result	Uncer	Date
< 8		12/17

CV = 103 + 10 ug/tube

Result	Uncer	Date
83	25	9/13
78	24	9/13

Mixed-Xylenes (o + m + p)
89GAU 01 GCMS

CV = not spiked ug/tube

Result	Uncer	Date
37	7	2/27
< 4		2/28
58	12	2/28
< 4		2/28
< 4		2/28
19	4	2/28
< 4		2/28
< 4		2/28
< 4		3/01
28	5	3/05
< 4		3/05
< 4		3/13
21	4	3/13
< 4		3/13
< 1		3/26
< 1		5/02
0.0		10/18
0.0		10/18

Analysis on 10/18 not completed because analyst unknowingly added one of the spiked analytes to the QC as an internal standard.

Mixed-Xylenes (o + m + p)
90GAU 01 PTGC

CV = not spiked ug/tube

Result	Uncer	Date
66	20	6/12
< 8		6/12
< 8		6/14
45	13	6/15
< 8		6/19
< 8		6/20
74	22	6/22
< 8		6/25
< 8		6/26
< 8		6/27
110	30	6/28
40	12	8/15

Mixed-Xylenes (o + m + p)
(cont)

Result	Uncer	Date
61	18	8/15
66	20	8/16
61	18	8/16
69	21	9/11
110	30	9/11
110	30	9/11
< 8		9/11
< 8		9/11
< 8		9/12
< 8		9/12
< 8		9/12
< 8		9/12
< 8		9/13
< 8		9/13
65	19	9/13
53	16	9/13
77	23	9/13
80	24	9/14
48	15	9/14
< 8		9/14
< 8		9/18
< 8		9/18
< 8		9/19
< 8		9/19
< 8		9/19
< 8		9/19
< 4		9/20
62	19	12/07
61	18	12/17
130	40	12/17
< 8		12/19
< 8		12/19

CV = 52 + 5 ug/tube

Result	Uncer	Date
< 8		6/18
55	16	6/19

CV = 63 + 6 ug/tube

Result	Uncer	Date
< 8		6/13
42	13	6/25

CV = 84 + 8 ug/tube

Result	Uncer	Date
< 8		6/21

****

HSE-9 Organics on Florisil

****

Mixed-Aroclor
90GAU 04 GCEC

CV = 15 + 2 ug/tube

Result	Uncer	Date
12	2	5/31

CV = 18 + 2 ug/tube

Result	Uncer	Date
15	3	5/31

Aroclor 1242 90GAU 04 GCEC

CV = 15 + 2 ug/tube

Result	Uncer	Date
12	2	5/31

CV = 18 + 2 ug/tube

Result	Uncer	Date
15	3	5/31

Aroclor 1254 90GAU 04 GCEC

CV = not spiked ug/tube

Result	Uncer	Date
< 0.04		5/31
< 0.04		5/31

Aroclor 1260 90GAU 04 GCEC

CV = not spiked ug/tube

Result	Uncer	Date
< 0.04		5/31
< 0.04		5/31

1,2,4-Trichlorobenzene
90GAU 01 GCMS

CV = 52 + 5 ug/tube

Result	Uncer	Date
38	11	5/31

CV = 61 + 6 ug/tube

Result	Uncer	Date
46	15	5/31

Note: all tubes run on 5/31 showed breakthrough to back of charcoal bed. Suspect bad batch of florisil tubes.

****

HSE-9 Organics on Sludge

****

Acenaphthene
Acenaphthylene
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		3/05
< 660		12/06

Acetone 90GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
680	200	2/13

Aniline
Anthracene
Azobenzene
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		3/05
< 660		12/06

Benzene 90GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		2/13

---

m-Benzidine
Benzo[a]anthracene
Benzo[a]pyrene
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		3/05
< 660		12/06

Benzo[b]fluoranthene
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		3/05

CV = 5.7 + 0.6 mg/kg

Result	Uncer	Date
4.3	1.3	12/06

Benzo[g,h,i]perylene
Benzo[k]fluoranthene
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		3/05
< 660		12/06

Benzoic acid
90GAU 01 GCMS

CV = not spiked mg/kg

Result	Uncer	Date
< 660		12/06

CV = 3900 + 400 ug/kg

Result	Uncer	Date
< 330		3/05

TABLE C-V (cont)

****

HSE-9 Organics on Sludge
(cont)

****

Benzyl alcohol
Bis(2-chloroethoxy)methane
Bis(2-chloroethyl)ether
Bis(2-chloroisopropyl)ether
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		3/05
< 660		12/06

Bis(2-ethylhexyl)phthalate
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
31000	6000	3/05
4.9	1.5	12/06

Bromobenzene
Bromochloromethane
Bromodichloromethane
Bromoform
90GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		2/13

Bromomethane
90GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 10		2/13

4-Bromophenylphenyl ether
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		3/05
< 660		12/06

2-Butanone 90GAU 01 PTGC

CV = 266 + 27 ug/kg

Result	Uncer	Date
< 20		2/13

n-Butylbenzene
sec-Butylbenzene
tert-Butylbenzene
90GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		2/13

Butylbenzyl phthalate
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		3/05
< 660		12/06

Carbon disulfide
90GAU 01 PTGC

CV = 255 + 26 ug/kg

Result	Uncer	Date
590	180	2/13

Carbon tetrachloride
90GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		2/13

4-Chloro-3-methylphenol
4-Chloroaniline
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		3/05
< 660		12/06

Chlorobenzene
Chlorodibromomethane
90GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		2/13

Chloroethane 90GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 10		2/13

Chloroform 90GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		2/13

Chloromethane
90GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 10		2/13

2-Chloronaphthalene
o-Chlorophenol
4-Chlorophenylphenyl ether
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		3/05
< 660		12/06

o-Chlorotoluene
p-Chlorotoluene
90GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		2/13

Chrysene
Di-n-butyl phthalate
Di-n-octyl phthalate
Dibenzo[a,h]anthracene
Dibenzofuran
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		3/05
< 660		12/06

1,2-Dibromo-3-chloropropane
90GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 10		2/13

1,2-Dibromoethane
Dibromomethane
90GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		2/13

o-Dichlorobenzene (1,2)
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		3/05
< 660		12/06

o-Dichlorobenzene (1,2)
90GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		2/13

m-Dichlorobenzene (1,3)
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		3/05
< 660		12/06

m-Dichlorobenzene (1,3)
90GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		2/13

p-Dichlorobenzene (1,4)
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		3/05
< 660		12/06

p-Dichlorobenzene (1,4)
90GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		2/13

3,3'-Dichlorobenzidine
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		3/05
< 660		12/06

1,1-Dichloroethane
90GAU 01 PTGC

CV = 234 + 23 ug/kg

Result	Uncer	Date
320	100	2/13

1,2-Dichloroethane
1,1-Dichloroethene
trans-1,2-Dichloroethene
cis-1,2-Dichloroethylene
90GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		2/13

2,4-Dichlorophenol
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		3/05
< 660		12/06

1,2-Dichloropropane
1,3-Dichloropropane
2,2-Dichloropropane
1,1-Dichloropropene
90GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		2/13

cis-1,3-Dichloropropene
90GAU 01 PTGC

CV = 176 + 18 ug/kg

Result	Uncer	Date
70	21	2/13

trans-1,3-Dichloropropene
90GAU 01 PTGC

CV = 74 + 7 ug/kg

Result	Uncer	Date
140	40	2/13

Diethyl phthalate
Dimethyl phthalate
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		3/05
< 660		12/06

2,4-Dimethylphenol
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		3/05

CV = 5.7 + 0.6 mg/kg

Result	Uncer	Date
5.9	1.8	12/06

2,4-Dinitrophenol
2,4-Dinitrotoluene
2,6-Dinitrotoluene
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		3/05
< 660		12/06

Ethylbenzene
90GAU 01 PTGC

CV = 256 + 26 ug/kg

Result	Uncer	Date
31	9	2/13

Fluoranthene
Fluorene
Hexachlorobenzene
Hexachlorobutadiene
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		3/05
< 660		12/06

Hexachlorobutadiene
90GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		2/13

Hexachlorocyclopentadiene
Hexachloroethane
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		3/05
< 660		12/06

TABLE C-V (cont)

****

HSE-9 Organics on Sludge
(cont)

****

2-Hexanone 90GAU 01 PTGC

CV = 259 + 26 ug/kg

Result	Uncer	Date
46	14	2/13

Indeno[1,2,3-cd]pyrene
Isophorone
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		3/05
< 660		12/06

Isopropylbenzene
4-Isopropyltoluene
90GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		2/13

4-Methyl-2-pentanone
90GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 20		2/13

2-Methyl-4,6-dinitrophenol
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		3/05
< 660		12/06

Methylene chloride
90GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
2000	600	2/13

2-Methylnaphthalene
2-Methylphenol
4-Methylphenol
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		3/05
< 660		12/06

Naphthalene 90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		3/05

CV = 5.5 + 0.6 mg/kg

Result	Uncer	Date
4.2	1.3	12/06

Naphthalene 90GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		2/13

2-Nitroaniline
3-Nitroaniline
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		3/05
< 660		12/06

4-Nitroaniline
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		3/05

CV = 5.3 + 0.5 mg/kg

Result	Uncer	Date
4.7	1.4	12/06

Nitrobenzene
2-Nitrophenol
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		3/05
< 660		12/06

4-Nitrophenol
90GAU 01 GCMS

CV = not spiked mg/kg

Result	Uncer	Date
< 660		12/06

CV = 4600 + 500 ug/kg

Result	Uncer	Date
< 330		3/05

N-Nitrosodi-n-propylamine
N-Nitrosodimethylamine
N-Nitrosodiphenylamine
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		3/05
< 660		12/06

Pentachlorophenol
90GAU 01 GCMS

CV = not spiked mg/kg

Result	Uncer	Date
< 660		12/06

CV = 4000 + 400 ug/kg

Result	Uncer	Date
< 330		3/05

Phenanthrene
Phenol
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		3/05
< 660		12/06

Propylbenzene
90GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		2/13

Pyrene 90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		3/05
< 660		12/06

Styrene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethylene
90GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		2/13

Toluene 90GAU 01 PTGC

CV = 262 + 26 ug/kg

Result	Uncer	Date
200	60	2/13

1,2,3-Trichlorobenzene
90GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		2/13

1,2,4-Trichlorobenzene
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		3/05
< 660		12/06

1,2,4-Trichlorobenzene
90GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		2/13

1,1,1-Trichloroethane
90GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
19	6	2/13

1,1,2-Trichloroethane
Trichloroethene
Trichlorofluoromethane
90GAU 01 PTGC

CV = 246 + 25 ug/kg

Result	Uncer	Date
< 5		2/13

2,4,5-Trichlorophenol
90GAU 01 GCMS

CV = not spiked mg/kg

Result	Uncer	Date
< 660		12/06

CV = 3800 + 400 ug/kg

Result	Uncer	Date
3100	600	3/05

2,4,6-Trichlorophenol
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		3/05
< 660		12/06

1,2,3-Trichloropropane
90GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		2/13

1,2,4-Trimethylbenzene
90GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
34	10	2/13

1,3,5-Trimethylbenzene
90GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		2/13

Vinyl acetate
Vinyl chloride
90GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 10		2/13

o-Xylene 90GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
10	3	2/13

Mixed-Xylenes (o + m + p)
90GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
15	4	2/13

****

HSE-9 Organics on Soil

****

Acenaphthene 90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 330		5/29
< 17		6/14
< 20		6/15
< 330		7/18
< 330		7/18
< 330		7/19
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/06
< 330		8/06
< 330		8/07
< 330		8/07
< 330		8/13
< 330		8/14
< 330		8/14
< 330		8/21
< 330		8/21
< 330		8/21
< 330		8/21
< 330		9/04
< 330		9/04
< 330		10/30
< 330		10/30
< 330		12/04
< 330		12/04
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/14
< 330		12/14
< 330		12/14
< 330		12/14

TABLE C-V (cont)

****

HSE-9 Organics on Soil
(cont)

****

Acenaphthylene
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 330		5/29
< 17		6/14
< 20		6/15
< 330		7/18
< 330		7/18
< 330		7/19
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/06
< 330		8/06
< 330		8/07
< 330		8/07
< 330		8/13
< 330		8/14
< 330		8/14
< 330		8/21
< 330		8/21
< 330		8/21
< 330		8/21
< 330		9/04
< 330		9/04
< 330		10/30
< 330		10/30
< 330		12/04
< 330		12/04
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/14
< 330		12/14
< 330		12/14
< 330		12/14

Acetone 89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 20		1/16
< 20		1/19
< 10		2/06
< 10		2/06
< 10		2/06
< 10		2/06
< 10		2/06
1000	300	2/13
410	120	2/21

Acetone (cont)

1400	400	3/21
870	260	3/21
< 2000		5/14
< 2000		5/14
< 20		5/17
< 20		5/18
< 20		5/18
1400	400	5/19
< 20		5/22
< 20		5/30
< 20		5/31
4900	1500	5/31
< 20		5/31
3100	15	6/03
< 20		6/03
< 20		6/03
< 20		6/04
< 20		6/05
4800	1400	6/05
740	220	6/26
< 20		6/26
< 20		6/27
32	10	6/27
< 20		6/29
1300	400	6/29
22	6	7/02
22	7	7/02
< 20		7/04
< 20		7/06
2300	700	7/06
3200	1000	7/10
< 20		7/10
< 20		7/23
81	24	7/27
< 20		7/27
< 20		7/31
< 20		7/31
180	50	8/10
< 20		8/10
< 20		8/14
260	80	9/04
< 20		9/04
140	40	9/05
370	110	9/05
< 20		10/05
< 20		10/22
< 20		10/22
< 20		11/01
< 20		11/01
< 20		11/01
100	30	11/01
< 20		11/07
< 20		11/07
< 20		11/07
< 20		11/07
< 20		11/07
25	8	11/07
< 20		11/08
< 20		11/08
47	14	11/27
< 20		11/27
< 20		11/27

Acrolein
Acrylonitrile
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 10000		5/14
< 10000		5/14
< 100		5/17
< 100		5/18
< 100		5/18
< 100		5/19

Acrolein
Acrylonitrile (cont)

< 100	5/22
< 100	5/30
< 100	5/31
< 100	5/31
< 100	5/31
< 100	6/03
< 100	6/03
< 100	6/03
< 100	6/04
< 100	6/05
< 100	6/05
< 100	6/26
< 100	6/26
< 100	6/27
< 100	6/27
< 100	6/29
< 100	6/29
< 100	7/02
< 100	7/02
< 100	7/04
< 100	7/06
< 2500	7/06
< 100	7/10
< 100	7/10
< 100	7/23
< 100	7/27
< 100	7/27
< 100	7/31
< 100	7/31
< 100	8/10
< 100	8/10
< 100	8/14
< 100	9/04
< 100	9/04
< 100	9/05
< 100	9/05
< 100	10/05
< 100	10/22
< 100	10/22
< 100	11/01
< 100	11/01
< 100	11/01
< 100	11/01
< 100	11/07
< 100	11/07
< 100	11/07
< 100	11/07
< 100	11/07
< 100	11/07
< 100	11/08
< 100	11/08
< 100	11/27
< 100	11/27
< 100	11/27

Aldrin 90GAU 01 GCEC

CV = not spiked ug/kg

Result	Uncer	Date
< 4		2/15
< 2		5/15
< 30		7/17
< 3		7/18
< 3		7/18
< 3		9/20
< 6		9/20

Aniline 90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 330		5/29
< 17		6/14
< 20		6/15
< 330		7/18
< 330		7/18
< 330		7/19
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/06
< 330		8/06
< 330		8/07
< 330		8/07
< 330		8/13
< 330		8/14
< 330		8/14
< 330		8/21
< 330		8/21
< 330		8/21
< 330		8/21
< 330		9/04
< 330		10/30
< 330		12/04
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/14
< 330		12/14

CV = 1.8 + 0.2 mg/kg

Result	Uncer	Date
< 330		12/04

CV = 4.0 + 0.4 mg/kg

Result	Uncer	Date
< 330		9/04

CV = 4.4 + 0.4 mg/kg

Result	Uncer	Date
0.36	0.11	10/30

CV = 5.2 + 0.5 ug/kg

Result	Uncer	Date
0.40	0.12	12/14

CV = 5.8 + 0.6 mg/kg

Result	Uncer	Date
0.89	0.27	12/14

Anthracene 90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/11
< 330		5/29
< 330		7/18
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/06
< 330		8/07
< 330		8/13
< 330		8/14
< 330		8/21
< 330		8/21
< 330		9/04
< 330		9/04
< 330		10/30
< 330		10/30
< 330		12/04
< 330		12/04
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/14
< 330		12/14
< 330		12/14

CV = 730 + 73 ug/kg

Result	Uncer	Date
510	150	8/06

CV = 990 + 100 ug/kg

Result	Uncer	Date
580	170	8/03

CV = 2.0 + 0.2 mg/kg

Result	Uncer	Date
1.3	0.4	8/21

CV = 2.50 + 0.25 mg/kg

Result	Uncer	Date
0.98	0.29	5/09

CV = 2.6 + 0.3 mg/kg

Result	Uncer	Date
1.8	0.5	8/03
2.3	0.7	8/07

CV = 3.0 + 0.3 mg/kg

Result	Uncer	Date
4.6	1.4	6/15

Anthracene (cont)

CV = 3.30 + 0.33 mg/kg

Result	Uncer	Date
2.0	0.6	5/04
3.1	0.9	8/14

CV = 4.0 + 0.4 mg/kg

Result	Uncer	Date
< 17		6/14
3.4	1.0	7/19

CV = 4.3 + 0.4 mg/kg

Result	Uncer	Date
3.7	1.1	8/21

CV = 6.1 + 0.6 mg/kg

Result	Uncer	Date
5.3	1.6	7/18

Azobenzene 90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 330		5/29
< 17		6/14
< 20		6/15
< 330		7/18
< 330		7/18
< 330		7/19
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/06
< 330		8/06
< 330		8/07
< 330		8/07
< 330		8/13
< 330		8/14
< 330		8/14
< 330		8/21
< 330		8/21
< 330		8/21
< 330		8/21
< 330		9/04
< 330		9/04
< 330		10/30
< 330		10/30
< 330		12/04
< 330		12/04
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06

TABLE C-V (cont)

****

HSE-9 Organics on Soil
(cont)

****

Azobenzene (cont)

< 330	12/14
< 330	12/14
< 330	12/14
< 330	12/14

alpha-BHC 90GAU 01 GCEC

CV = not spiked ug/kg

Result	Uncer	Date
< 3		2/15
< 1		5/15
< 2		7/17
< 2		7/18
< 2		7/18
< 2		9/20
< 2		9/20

beta-BHC 90GAU 01 GCEC

CV = not spiked ug/kg

Result	Uncer	Date
< 3		2/15
< 2		5/15
< 4		7/17
< 3		7/18
< 4		7/18
< 3		9/20
< 3		9/20

delta-BHC 90GAU 01 GCEC

CV = not spiked ug/kg

Result	Uncer	Date
< 6		2/15
< 3		5/15
< 11		7/17
< 11		7/18
< 8		7/18
< 8		9/20
< 8		9/20

Benzene 89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/19
< 5		2/13
< 5		3/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31

Benzene (cont)

< 5	5/31
< 5	6/03
< 5	6/03
< 5	6/03
< 5	6/04
< 5	6/05
< 5	6/05
< 5	6/26
< 5	6/27
< 5	6/27
< 5	6/29
< 5	6/29
< 5	7/02
< 5	7/02
< 5	7/04
< 5	7/06
< 130	7/06
< 5	7/10
< 5	7/23
< 5	7/27
< 5	7/27
< 5	7/31
< 5	7/31
< 5	8/10
< 5	8/10
< 5	8/14
< 5	9/04
< 5	9/05
< 5	9/05
< 5	10/05
< 5	10/22
< 5	10/22
< 5	11/01
< 5	11/01
< 5	11/01
< 5	11/01
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/08
< 5	11/08
< 5	11/27
< 5	11/27

CV = 72 + 7 ug/kg

Result	Uncer	Date
71	21	2/21

CV = 110 + 10 ug/kg

Result	Uncer	Date
77	23	7/10
70	21	11/27

CV = 120 + 10 ug/kg

Result	Uncer	Date
32	10	9/04

CV = 130 + 10 ug/kg

Result	Uncer	Date
< 5		6/26

CV = 164 + 16 ug/kg

Result	Uncer	Date
< 5		1/16

m-Benzidine
Benzo[a]anthracene
Benzo[a]pyrene
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 330		5/29
< 17		6/14
< 20		6/15
< 330		7/18
< 330		7/18
< 330		7/19
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/06
< 330		8/06
< 330		8/07
< 330		8/07
< 330		8/13
< 330		8/14
< 330		8/14
< 330		8/21
< 330		8/21
< 330		8/21
< 330		9/04
< 330		9/04
< 330		10/30
< 330		10/30
< 330		12/04
< 330		12/04
< 330		12/06
< 330		12/06
< 330		12/14
< 330		12/14
< 330		12/14
< 330		12/14

Benzo[b]fluoranthene
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 330		5/29
< 17		6/14
< 20		6/15
< 330		7/18
< 330		7/18
< 330		7/19
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/06
< 330		8/06
< 330		8/07
< 330		8/07
< 330		8/13
< 330		8/14
< 330		8/14
< 330		8/21
< 330		8/21
< 330		8/21
< 330		9/04
< 330		9/04
< 330		10/30
< 330		10/30
< 330		12/04
< 330		[illegible]/04
< 330		[illegible]06
< 330		[illegible]/06
< 330		12/06
< 330		12/14
< 330		12/14
< 330		12/14
< 330		12/14

CV = 3.4 + 0.3 mg/kg

Result	Uncer	Date
4.7	1.4	12/06

CV = 6.5 + 0.6 mg/kg

Result	Uncer	Date
3.7	1.1	12/06

Benzo[g,h,i]perylene
Benzo[k]fluoranthene
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 330		5/29
< 17		6/14
< 20		6/15
< 330		7/18
< 330		7/18
< 330		7/19
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/03

Benzo[g,h,i]perylene
Benzo[k]fluoranthene (cont)

< 330	8/03
< 330	8/06
< 330	8/06
< 330	8/07
< 330	8/07
< 330	8/13
< 330	8/14
< 330	8/14
< 330	8/21
< 330	8/21
< 330	8/21
< 330	8/21
< 330	9/04
< 330	9/04
< 330	10/30
< 330	10/30
< 330	12/04
< 330	12/04
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/14
< 330	12/14
< 330	12/14
< 330	12/14

Benzoic acid
89GAU 01 GCMS

CV = not spiked mg/kg

Result	Uncer	Date
< 1400		3/05
< 330		3/05
0.79	0.16	3/05
0.77	0.15	3/06
< 330		5/04
< 330		5/09
< 330		5/29
< 17		6/14
< 20		6/15
< 330		7/18
< 330		7/18
< 330		7/19
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/06
< 330		8/06
< 330		8/07
< 330		8/07
< 330		8/13
< 330		8/14
< 330		8/14
< 330		8/21
< 330		8/21
< 330		8/21
0.49	0.15	8/21
< 330		9/04
< 330		10/30
< 330		12/04
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/14
< 330		12/14

Benzoic acid (cont)

CV = 2.0 + 0.2 mg/kg

Result	Uncer	Date
0.6	0.18	12/04

CV = 2.85 + 0.28 mg/kg

Result	Uncer	Date
2.0	0.6	5/11

CV = 3.1 + 0.3 mg/kg

Result	Uncer	Date
< 330		3/05

CV = 3.2 + 0.3 mg/kg

Result	Uncer	Date
2.5	0.5	2/21

CV = 3.80 + 0.38 mg/kg

Result	Uncer	Date
< 330		4/27

CV = 4.6 + 0.5 mg/kg

Result	Uncer	Date
1.6	0.5	9/04

CV = 4.8 + 0.5 mg/kg

Result	Uncer	Date
6.0	1.8	4/20

CV = 5.0 + 0.5 mg/kg

Result	Uncer	Date
1.7	0.5	10/30

CV = 5.8 + 0.6 mg/kg

Result	Uncer	Date
0.99	0.3	12/14

CV = 6.6 + 0.7 mg/kg

Result	Uncer	Date
0.95	0.29	12/14

CV = 13 + 1 mg/kg

Result	Uncer	Date
< 990		3/23

Benzyl alcohol
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05

TABLE C-V (cont)

****

HSE-9 Organics on Soil
(cont)

****

Benzyl alcohol (cont)

< 330	3/05
< 330	3/06
< 990	3/23
< 330	4/20
< 330	4/27
< 330	5/04
< 330	5/09
< 330	5/11
< 330	5/29
< 17	6/14
< 20	6/15
< 330	7/18
< 330	7/18
< 330	7/19
< 330	7/19
< 330	8/03
< 330	8/03
< 330	8/03
< 330	8/03
< 330	8/06
< 330	8/06
< 330	8/07
< 330	8/07
< 330	8/13
< 330	8/14
< 330	8/14
< 330	8/21
< 330	8/21
< 330	8/21
< 330	8/21
< 330	9/04
< 330	10/30
< 330	12/04
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/14
< 330	12/14

CV = 1.8 + 0.2 mg/kg

Result	Uncer	Date
1.3	0.4	12/04

CV = 4.0 + 0.4 mg/kg

Result	Uncer	Date
3.2	1	9/04

CV = 4.4 + 0.4 ug/g

Result	Uncer	Date
5.3	1.6	10/30

CV = 5.2 + 0.5 mg/kg

Result	Uncer	Date
2.3	0.7	12/14

CV = 5.8 + 0.6 ug/g

Result	Uncer	Date
3.1	0.9	12/14

Bis(2-chloroethoxy)methane
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 330		5/29
< 17		6/14
< 20		6/15

Bis(2-chloroethyl)ether
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 330		5/29
< 17		6/14
< 20		6/15

Bis(2-chloroethyl)ether (cont)

< 330	7/18
< 330	7/18
< 330	7/19
< 330	7/19
< 330	8/03
< 330	8/03
< 330	8/03
< 330	8/03
< 330	8/06
< 330	8/06
< 330	8/07
< 330	8/07
< 330	8/13
< 330	8/14
< 330	8/14
< 330	8/21
< 330	8/21
< 330	8/21
< 330	8/21
< 330	9/04
< 330	10/30
< 330	12/04
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/14
< 330	12/14

CV = 1.6 + 0.2 mg/kg

Result	Uncer	Date
1.2	0.4	12/04

CV = 3.6 + 0.4 mg/kg

Result	Uncer	Date
2.4	0.7	9/04

CV = 3.9 + 0.4 ug/g

Result	Uncer	Date
2.9	0.9	10/30

CV = 4.6 + 0.5 mg/kg

Result	Uncer	Date
3.0	0.9	12/14

CV = 5.2 + 0.6 ug/g

Result	Uncer	Date
2.8	0.8	12/14

Bis(2-chloroisopropyl)ether
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04

Bis(2-chloroisopropyl)ether
(cont)

< 330	5/09
< 330	5/11
< 330	5/29
< 17	6/14
< 20	6/15
< 330	7/18
< 330	7/18
< 330	7/19
< 330	7/19
< 330	8/03
< 330	8/03
< 330	8/03
< 330	8/03
< 330	8/06
< 330	8/06
< 330	8/07
< 330	8/07
< 330	8/13
< 330	8/14
< 330	8/14
< 330	8/21
< 330	8/21
< 330	8/21
< 330	8/21
< 330	9/04
< 330	9/04
< 330	10/30
< 330	10/30
< 330	12/04
< 330	12/04
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/14
< 330	12/14
< 330	12/14
< 330	12/14

Bis(2-ethylhexyl)phthalate
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
74000	15000	3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 330		3/06
1.1	0.2	3/23
< 330		4/20
5400	1600	4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 330		5/29
< 17		6/14
< 20		6/15
< 330		7/18
< 330		7/18
< 330		7/19
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/06
< 330		8/06
< 330		8/07
540	160	8/07
< 330		8/13
< 330		8/14

Bis(2-ethylhexyl)phthalate
(cont)

0.47	0.14	8/14
450	140	8/21
< 330		8/21
< 330		8/21
< 330		8/21
< 330		9/04
< 330		9/04
< 330		10/30
< 330		10/30
< 330		12/04
< 330		12/04
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/14
< 330		12/14
< 330		12/14
< 330		12/14

Bromobenzene 89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		1/19
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/13
< 5		2/21
< 5		3/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/05
< 5		6/26
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 130		7/06
< 5		7/06
< 5		7/10
< 5		7/10
< 5		7/23
< 5		7/27
< 5		7/27
< 5		7/31
< 5		7/31
< 5		8/10
< 5		8/10

Bromobenzene (cont)

< 5	8/14
< 5	9/04
< 5	9/04
< 5	9/05
< 5	9/05
< 5	10/05
< 5	10/22
< 5	10/22
< 5	11/01
< 5	11/01
< 5	11/01
< 5	11/01
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/08
< 5	11/08
< 5	11/27
< 5	11/27
< 5	11/27

Bromochloromethane
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/19
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/13
< 5		3/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/05
< 5		6/26
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 5		7/06
< 130		7/06
< 5		7/10
< 5		7/10
< 5		7/23
< 5		7/27
< 5		7/27
< 5		7/31
< 5		7/31
< 5		8/10
< 5		8/10

TABLE C-V (cont)

****

HSE-9 Organics on Soil
(cont)

****

Bromochloromethane (cont)

< 5	8/14
< 5	9/04
< 5	9/04
< 5	9/05
< 5	9/05
< 5	10/05
< 5	10/22
< 5	10/22
< 5	11/01
< 5	11/01
< 5	11/01
< 5	11/01
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/08
< 5	11/08
< 5	11/27
< 5	11/27
< 5	11/27

CV = 78 + 8 ug/kg

Result	Uncer	Date
41	12	2/21

CV = 176 + 18 ug/kg

Result	Uncer	Date
< 5		1/16

Bromodichloromethane 89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		1/19
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/13
< 5		2/21
< 5		3/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/04

Bromodichloromethane (cont)

< 5	6/05
< 5	6/05
< 5	6/26
< 5	6/26
< 5	6/27
< 5	6/27
< 5	6/29
< 5	6/29
< 5	7/02
< 5	7/02
< 5	7/04
< 130	7/06
< 5	7/06
< 5	7/10
< 5	7/10
< 5	7/23
< 5	7/27
< 5	7/27
< 5	7/31
< 5	7/31
< 5	8/10
< 5	8/10
< 5	8/14
< 5	9/04
< 5	9/04
< 5	9/05
< 5	9/05
< 5	10/05
< 5	10/22
< 5	10/22
< 5	11/01
< 5	11/01
< 5	11/01
< 5	11/01
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/08
< 5	11/08
< 5	11/27
< 5	11/27
< 5	11/27

Bromoform 89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/13
< 5		2/21
< 5		3/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/03

Bromoform (cont)

< 5	6/04
< 5	6/05
< 5	6/05
< 5	6/26
< 5	6/26
< 5	6/27
< 5	6/27
< 5	6/29
< 5	6/29
< 5	7/02
< 5	7/02
< 5	7/04
< 130	7/06
< 5	7/06
< 5	7/10
< 5	7/10
< 5	7/23
< 5	7/27
< 5	7/27
< 5	7/31
< 5	7/31
< 5	8/10
< 5	8/10
< 5	8/14
< 5	9/04
< 5	9/04
< 5	9/05
< 5	9/05
< 5	10/05
< 5	10/22
< 5	10/22
< 5	11/01
< 5	11/01
< 5	11/01
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/08
< 5	11/08
< 5	11/27
< 5	11/27
< 5	11/27

CV = 120 + 12 ug/kg

Result	Uncer	Date
< 5		1/19

Bromomethane 89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 10		1/16
< 10		1/19
< 10		2/06
< 10		2/06
< 10		2/06
< 10		2/06
< 10		2/06
< 10		2/13
< 10		2/21
< 10		3/21
< 10		3/21
< 1000		5/14
< 1000		5/14
< 10		5/17
< 10		5/18
< 10		5/18
< 10		5/19
< 10		5/22

Bromomethane (cont)

< 10	5/30
< 10	5/31
< 10	5/31
< 10	5/31
< 10	6/03
< 10	6/03
< 10	6/03
< 10	6/04
< 10	6/05
< 10	6/05
< 10	6/26
< 10	6/26
< 10	6/27
< 10	6/27
< 10	6/29
< 10	6/29
< 10	7/02
< 10	7/02
< 10	7/04
< 10	7/06
< 250	7/06
< 10	7/10
< 10	7/10
< 10	7/23
< 10	7/27
< 10	7/27
< 10	7/31
< 10	7/31
< 10	8/10
< 10	8/10
< 10	8/14
< 10	9/04
< 10	9/04
< 10	9/05
< 10	9/05
< 10	10/05
< 10	10/22
< 10	10/22
< 10	11/01
< 10	11/01
< 10	11/01
< 10	11/01
< 10	11/07
< 10	11/07
< 10	11/07
< 10	11/07
< 10	11/07
< 10	11/07
< 10	11/08
< 10	11/08
< 10	11/27
< 10	11/27
< 10	11/27

4-Bromophenylphenyl ether
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 330		5/29
< 17		6/14
< 20		6/15
< 330		7/18

4-Bromophenylphenyl ether
(cont)

< 330	7/18
< 330	7/19
< 330	7/19
< 330	8/03
< 330	8/03
< 330	8/03
< 330	8/03
< 330	8/06
< 330	8/06
< 330	8/07
< 330	8/07
< 330	8/13
< 330	8/14
< 330	8/14
< 330	8/21
< 330	8/21
< 330	8/21
< 330	8/21
< 330	9/04
< 330	9/04
< 330	10/30
< 330	10/30
< 330	12/04
< 330	12/04
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/14
< 330	12/14
< 330	12/14
< 330	12/14

2-Butanone 89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 10		1/19
< 10		2/06
< 10		2/06
< 10		2/06
< 10		2/06
< 10		2/06
< 10		2/06
73	22	3/21
14000	4000	5/14
14000	4000	5/14
< 20		5/17
< 20		5/18
< 20		5/18
< 20		5/22
< 20		5/30
< 20		5/31
< 20		5/31
< 20		6/03
180	50	6/03
< 20		6/03
< 20		6/04
< 20		6/05
< 20		6/26
< 20		6/27
< 20		6/27
< 20		6/29
< 20		7/02
< 20		7/02
< 20		7/04
< 20		7/06
4700	1400	7/06
< 20		7/10
< 20		7/23
< 20		7/27
< 20		7/31
< 20		7/31

2-Butanone (cont)

< 20	8/10
< 20	8/14
< 20	9/04
44	13 9/05
< 20	10/05
< 20	10/22
< 20	10/22
< 20	11/01
< 20	11/01
< 20	11/01
< 20	11/07
< 20	11/07
< 20	11/07
< 20	11/07
< 20	11/07
24	7 11/07
24	7 11/08
31	9 11/08
< 20	11/27
< 20	11/27

CV = 64 + 6 ug/kg

Result	Uncer	Date
< 10		2/21

CV = 120 + 12 ug/kg

Result	Uncer	Date
140	40	3/21

CV = 140 + 10 ug/kg

Result	Uncer	Date
100	30	2/13
200	60	5/19
240	70	7/10
< 20		11/27

CV = 146 + 15 ug/kg

Result	Uncer	Date
< 10		1/16

CV = 150 + 15 ug/kg

Result	Uncer	Date
250	80	6/29
97	29	9/04
35	11	11/01

CV = 160 + 20 ug/kg

Result	Uncer	Date
47	14	9/05

CV = 170 + 20 ug/kg

Result	Uncer	Date
89	27	6/26
88	26	7/27
71	21	8/10

CV = 180 + 20 ug/kg

Result	Uncer	Date
380	110	6/05

TABLE C-V (cont)

****

HSE-9 Organics on Soil
(cont)

****

2-Butanone (cont)

CV = 200 + 20 ug/kg

Result	Uncer	Date
460	140	5/31

n-Butylbenzene
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		1/19
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/13
< 5		3/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/05
< 5		6/26
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 130		7/06
< 5		7/06
< 5		7/10
< 5		7/10
< 5		7/23
< 5		7/27
< 5		7/27
< 5		7/31
< 5		7/31
< 5		8/10
< 5		8/10
< 5		8/14
< 5		9/04
< 5		9/04
< 5		9/05
< 5		9/05
< 5		10/05
< 5		10/22
< 5		10/22
< 5		11/01

n-Butylbenzene (cont)

Result	Uncer	Date
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/08
20	6	11/27
< 5		11/27
< 5		11/27

CV = 86 + 9 ug/kg

Result	Uncer	Date
21	6	2/21

sec-Butylbenzene
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		1/19
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/13
< 5		2/21
< 5		3/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/05
< 5		6/26
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 5		7/06
< 130		7/06
< 5		7/10
< 5		7/10
< 5		7/23
< 5		7/27
< 5		7/27
< 5		7/31
< 5		7/31
< 5		8/10
< 5		8/10

sec-Butylbenzene (cont)

Result	Uncer	Date
< 5		8/14
< 5		9/04
< 5		9/04
< 5		9/05
< 5		9/05
< 5		10/05
< 5		10/22
< 5		10/22
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/08
9	2.7	11/27
< 5		11/27
< 5		11/27

tert-Butylbenzene
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		1/19
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/13
< 5		2/21
< 5		3/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/05
< 5		6/26
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 130		7/06
< 5		7/06
< 5		7/10
< 5		7/10
< 5		7/23
< 5		7/27
< 5		7/27
< 5		7/31

tert-Butylbenzene (cont)

Result	Uncer	Date
< 5		7/31
< 5		8/10
< 5		8/10
< 5		8/14
< 5		9/04
< 5		9/04
< 5		9/05
< 5		9/05
< 5		10/05
< 5		10/22
< 5		10/22
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/08
6	1.8	11/27
< 5		11/27
< 5		11/27

Butylbenzyl phthalate
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
12000	200	3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
3000	900	4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 330		5/29
< 17		6/14
< 20		6/15
< 330		7/18
< 330		7/18
< 330		7/19
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/06
< 330		8/06
< 330		8/07
< 330		8/07
< 330		8/13
< 330		8/14
< 330		8/14
< 330		8/21
< 330		8/21
< 330		8/21
< 330		8/21
< 330		9/04
< 330		9/04
< 330		10/30
< 330		10/30
< 330		12/04
< 330		12/04
< 330		12/06
< 330		12/06
< 330		12/06

Butylbenzyl phthalate (cont)

Result	Uncer	Date
< 330		12/06
< 330		12/06
< 330		12/14
< 330		12/14
< 330		12/14
< 330		12/14

Carbon disulfide
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		1/19
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/26
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 5		7/06
< 130		7/06
9.7	2.9	7/10
< 5		7/10
< 5		7/23
< 5		7/27
< 5		7/27
< 5		7/31
< 5		7/31
< 5		8/10
< 5		8/10
< 5		8/14
< 5		9/04
< 5		9/04
< 5		9/05
< 5		9/05
< 5		10/05
< 5		10/22
< 5		10/22
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/08

Carbon disulfide (cont)

Result	Uncer	Date
< 5		11/27
< 5		11/27
< 5		11/27

CV = 120 + 12 ug/kg

Result	Uncer	Date
22	7	3/21

CV = 130 + 13 ug/kg

Result	Uncer	Date
< 5		5/19

CV = 140 + 10 ug/kg

Result	Uncer	Date
56	17	2/13

CV = 180 + 20 ug/kg

Result	Uncer	Date
78	23	6/05

CV = 190 + 19 ug/kg

Result	Uncer	Date
< 5		5/31

Carbon tetrachloride
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/13
< 5		3/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 5		7/06
< 130		7/06
< 5		7/10

TABLE C-V (cont)

****

HSE-9 Organics on Soil
(cont)

****

Carbon tetrachloride (cont)

< 5	7/23
< 5	7/27
< 5	7/31
< 5	7/31
< 5	8/10
< 5	8/14
< 5	9/04
< 5	9/05
< 5	10/05
< 5	10/22
< 5	10/22
< 5	11/01
< 5	11/01
< 5	11/01
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/08
< 5	11/08
< 5	11/27
< 5	11/27

CV = 68 + 7 ug/kg

Result	Uncer	Date
68	21	2/21

CV = 121 + 12 ug/kg

Result	Uncer	Date
< 5		1/19

CV = 150 + 20 ug/kg

Result	Uncer	Date
88	26	7/10
81	24	11/27

CV = 154 + 15 ug/kg

Result	Uncer	Date
< 5		1/16

CV = 160 + 16 ug/kg

Result	Uncer	Date
< 5		6/29
13	4	9/04
< 5		9/05
< 5		11/01

CV = 170 + 20 ug/kg

Result	Uncer	Date
130	40	8/10

CV = 180 + 20 ug/kg

Result	Uncer	Date
< 5		6/26
35	10	7/27

Chlordane 90GAU 01 GCEC

CV = not spiked ug/kg

Result	Uncer	Date
< 40		2/15
< 20		5/15
< 40		7/17
< 40		7/18
< 30		7/18
< 30		9/20
< 30		9/20

4-Chloro-3-methylphenol
4-Chloroaniline
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 330		5/29
< 17		6/14
< 20		6/15
< 330		7/18
< 330		7/18
< 330		7/19
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/06
< 330		8/06
< 330		8/07
< 330		8/07
< 330		8/13
< 330		8/14
< 330		8/14
< 330		8/21
< 330		8/21
< 330		8/21
< 330		8/21
< 330		9/04
< 330		9/04
< 330		10/30
< 330		10/30
< 330		12/04
< 330		12/04
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/14
< 330		12/14
< 330		12/14
< 330		12/14

Chlorobenzene
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		1/19
< 5		2/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/26
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 5		7/06
< 130		7/06
< 5		7/10
< 5		7/23
< 5		7/27
< 5		7/27
< 5		7/31
< 5		7/31
< 5		8/10
< 5		8/10
< 5		8/14
< 5		9/04
< 5		9/05
< 5		9/05
< 5		10/05
< 5		10/22
< 5		10/22
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/08
< 5		11/27
< 5		11/27

CV = 90 + 9 ug/kg

Result	Uncer	Date
33	10	3/21

CV = 110 + 11 ug/kg

Result	Uncer	Date
43	13	3/21
78	24	7/10
85	26	11/27

Chlorobenzene (cont)

CV = 120 + 10 ug/kg

Result	Uncer	Date
42	13	2/13
68	20	9/04

CV = 130 + 13 ug/kg

Result	Uncer	Date
75	23	6/03
22	7	6/26

CV = 160 + 20 ug/kg

Result	Uncer	Date
140	40	6/05

Chlorodibromomethane
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/26
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 130		7/06
< 5		7/06
< 5		7/10
< 5		7/10
< 5		7/23
< 5		7/27
< 5		7/27
< 5		7/31
< 5		7/31
< 5		8/10
< 5		8/10
< 5		8/14
< 5		9/04
< 5		9/04
< 5		9/05
< 5		9/05
< 5		10/05
< 5		10/22

Chlorodibromomethane (cont)

< 5	10/22
< 5	11/01
< 5	11/01
< 5	11/01
< 5	11/01
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/08
< 5	11/08
< 5	11/27
< 5	11/27
< 5	11/27

CV = 95 + 10 ug/kg

Result	Uncer	Date
32	10	3/21

CV = 108 + 11 ug/kg

Result	Uncer	Date
< 5		1/19

CV = 110 + 11 ug/kg

Result	Uncer	Date
45	14	3/21

CV = 130 + 10 ug/kg

Result	Uncer	Date
47	14	2/13
100	30	6/03

CV = 170 + 20 ug/kg

Result	Uncer	Date
170	50	6/05

Chloroethane
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 10		1/16
< 10		1/19
< 10		2/06
< 10		2/06
< 10		2/06
< 10		2/06
< 10		2/06
< 10		2/13
< 10		2/21
< 10		3/21
< 10		3/21
< 10000		5/14
< 1000		5/14
< 10		5/17
< 10		5/18
< 10		5/18
< 10		5/19
< 10		5/22
< 10		5/30
< 10		5/31
< 10		5/31
< 10		5/31

Chloroethane (cont)

< 10	6/03
< 10	6/03
< 10	6/03
< 10	6/04
< 10	6/05
< 10	6/05
< 10	6/26
< 10	6/26
< 10	6/27
< 10	6/27
< 10	6/29
< 10	6/29
< 10	7/02
< 10	7/02
< 10	7/04
< 250	7/06
< 10	7/06
< 10	7/10
< 10	7/10
< 10	7/23
< 10	7/27
< 10	7/27
< 10	7/31
< 10	7/31
< 10	8/10
< 10	8/10
< 10	8/14
< 10	9/04
< 10	9/04
< 10	9/05
< 10	9/05
< 10	10/05
< 10	10/22
< 10	10/22
< 10	11/01
< 10	11/01
< 10	11/01
< 10	11/01
< 10	11/07
< 10	11/07
< 10	11/07
< 10	11/07
< 10	11/07
< 10	11/07
< 10	11/08
< 10	11/08
< 10	11/27
< 10	11/27
< 10	11/27

2-Chloroethylvinyl ether
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5000		5/14
< 5000		5/14
< 50		5/17
< 50		5/18
< 50		5/18
< 50		5/19
< 50		5/22
< 50		5/30
< 50		5/31
< 50		5/31
< 50		5/31
< 50		6/03
< 50		6/03
< 50		6/03
< 50		6/04
< 50		6/05
< 50		6/05
< 50		6/26
< 50		6/26
< 50		6/27

TABLE C-V (cont)

****

HSE-9 Organics on Soil
(cont)

****

2-Chloroethylvinyl ether
(cont)

< 50	6/27
< 50	6/29
< 50	6/29
< 50	7/02
< 50	7/02
< 50	7/04
< 50	7/06
< 1300	7/06
< 50	7/10
< 50	7/10
< 50	7/23
< 50	7/27
< 50	7/27
< 50	7/31
< 50	7/31
< 50	8/10
< 50	8/10
< 50	8/14
< 50	9/04
< 50	9/04
< 50	9/05
< 50	9/05
< 50	10/05
< 50	10/22
< 50	10/22
< 50	11/01
< 50	11/01
< 50	11/01
< 50	11/01
< 50	11/07
< 50	11/07
< 50	11/07
< 50	11/07
< 50	11/07
< 50	11/08
< 50	11/08
< 50	11/27
< 50	11/27
< 50	11/27

Chloroform 89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		1/19
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/13
< 5		2/21
< 5		3/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		5/31

Chloroform (cont)

< 5	6/03
< 5	6/03
< 5	6/03
< 5	6/04
< 5	6/05
< 5	6/05
< 5	6/26
< 5	6/26
< 5	6/27
< 5	6/27
< 5	6/29
< 5	6/29
< 5	7/02
< 5	7/02
< 5	7/04
< 5	7/06
< 130	7/06
< 5	7/10
< 5	7/10
< 5	7/23
< 5	7/27
< 5	7/27
< 5	7/31
< 5	7/31
< 5	8/10
< 5	8/10
< 5	8/14
< 5	9/04
< 5	9/04
< 5	9/05
< 5	9/05
< 5	10/05
< 5	10/22
< 5	10/22
< 5	11/01
< 5	11/01
< 5	11/01
< 5	11/01
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/08
< 5	11/08
< 5	11/27
< 5	11/27
< 5	11/27

Chloromethane 89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 10		1/16
< 10		1/19
< 10		2/06
< 10		2/06
< 10		2/06
< 10		2/06
< 10		2/06
< 10		2/13
< 10		2/21
< 10		3/21
< 10		3/21
< 1000		5/14
< 1000		5/14
< 10		5/17
< 10		5/18
< 10		5/18
< 10		5/19
< 10		5/22
< 10		5/30
< 10		5/31
< 10		5/31

Chloromethane (cont)

< 10	5/31
< 10	6/03
< 10	6/03
< 10	6/03
< 10	6/04
< 10	6/05
< 10	6/05
< 10	6/26
< 10	6/26
< 10	6/27
< 10	6/27
< 10	6/29
< 10	6/29
< 10	7/02
< 10	7/02
< 10	7/04
< 250	7/06
< 10	7/06
< 10	7/10
< 10	7/10
< 10	7/23
< 10	7/27
< 10	7/27
< 10	7/31
< 10	7/31
< 10	8/10
< 10	8/10
< 10	8/14
< 10	9/04
< 10	9/04
< 10	9/05
< 10	9/05
< 10	10/05
< 10	10/22
< 10	10/22
< 10	11/01
< 10	11/01
< 10	11/01
< 10	11/07
< 10	11/07
< 10	11/07
< 10	11/07
< 10	11/07
< 10	11/07
< 10	11/08
< 10	11/08
< 10	11/27
< 10	11/27
< 10	11/27

2-Chloronaphthalene
o-Chlorophenol
4-Chlorophenylphenyl ether
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 330		5/29
< 17		6/14
< 20		6/15
< 330		7/18
< 330		7/18

2-Chloronaphthalene
o-Chlorophenol
4-Chlorophenylphenyl ether
(cont)

< 330	7/19
< 330	7/19
< 330	8/03
< 330	8/03
< 330	8/03
< 330	8/03
< 330	8/06
< 330	8/06
< 330	8/07
< 330	8/07
< 330	8/13
< 330	8/14
< 330	8/14
< 330	8/21
< 330	8/21
< 330	8/21
< 330	8/21
< 330	9/04
< 330	9/04
< 330	10/30
< 330	10/30
< 330	12/04
< 330	12/04
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/14
< 330	12/14
< 330	12/14
< 330	12/14

o-Chlorotoluene
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		1/19
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/13
< 5		2/21
< 5		3/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/05
< 5		6/26
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29

o-Chlorotoluene (cont)

< 5	6/29
< 5	7/02
< 5	7/02
< 5	7/04
< 5	7/06
< 130	7/06
< 5	7/10
< 5	7/10
< 5	7/23
< 5	7/27
< 5	7/27
< 5	7/31
< 5	7/31
< 5	8/10
< 5	8/10
< 5	8/14
< 5	9/04
< 5	9/04
< 5	9/05
< 5	9/05
< 5	10/05
< 5	10/22
< 5	10/22
< 5	11/01
< 5	11/01
< 5	11/01
< 5	11/01
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/08
< 5	11/08
< 5	11/27
< 5	11/27
< 5	11/27

p-Chlorotoluene
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/13
< 5		2/21
< 5		3/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/05
< 5		6/26
< 5		6/26
< 5		6/27
< 5		6/27

p-Chlorotoluene (cont)

< 5	6/27
< 5	6/29
< 5	6/29
< 5	7/02
< 5	7/02
< 5	7/04
< 5	7/06
< 130	7/06
< 5	7/10
< 5	7/10
< 5	7/23
< 5	7/27
< 5	7/27
< 5	7/31
< 5	7/31
< 5	8/10
< 5	8/10
< 5	8/14
< 5	9/04
< 5	9/04
< 5	9/05
< 5	9/05
< 5	10/05
< 5	10/22
< 5	10/22
< 5	11/01
< 5	11/01
< 5	11/01
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/08
< 5	11/08
< 5	11/27
< 5	11/27
< 5	11/27

CV = 134 + 13 ug/kg

Result	Uncer	Date
< 5		1/19

Chrysene 90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 330		5/29
< 17		6/14
< 20		6/15
< 330		7/18
< 330		7/18
< 330		7/19
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/06

TABLE C-V (cont)

****

HSE-9 Organics on Soil
(cont)

****

Chrysene (cont)

< 330	8/06
< 330	8/07
< 330	8/07
< 330	8/13
< 330	8/14
< 330	8/14
< 330	8/21
< 330	8/21
< 330	8/21
< 330	8/21
< 330	9/04
< 330	9/04
< 330	10/30
< 330	10/30
< 330	12/04
< 330	12/04
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/14
< 330	12/14
< 330	12/14
< 330	12/14

2,4-D 90GAU 01 GCEC

CV = 0.17 + 0.02 ug/g

Result	Uncer	Date
0.11	0.02	6/26
0.17	0.04	9/11
0.17	0.04	9/11

CV = 0.22 + 0.02 ug/g

Result	Uncer	Date
0.19	0.08	5/23
0.18	0.04	7/30

CV = 0.23 + 0.02 ug/g

Result	Uncer	Date
0.79	0.16	2/27

CV = 0.28 + 0.03 ug/g

Result	Uncer	Date
0.18	0.13	10/24

CV = 0.32 + 0.03 ug/g

Result	Uncer	Date
0.19	0.1	11/29

CV = 0.39 + 0.04 ug/g

Result	Uncer	Date
0.21	0.11	11/29

p,p'-DDD 90GAU 01 GCEC

CV = not spiked ug/kg

Result	Uncer	Date
< 6		2/15
< 5		7/17
< 4		7/18
< 5		7/18
< 4		9/20
< 4		9/20

CV = 25 + 2 ug/kg

Result	Uncer	Date
23	11	5/15

p,p'-DDE 90GAU 01 GCEC

CV = not spiked ug/kg

Result	Uncer	Date
< 4		2/15
< 2		5/15
< 3		7/17

CV = 13 + 1 ug/kg

Result	Uncer	Date
12	6	7/18

CV = 21 + 2 ug/kg

Result	Uncer	Date
16	12	9/20
23	17	9/20

CV = 28 + 3 ug/kg

Result	Uncer	Date
22	11	7/18

p,p'-DDT 90GAU 01 GCEC

CV = not spiked ug/kg

Result	Uncer	Date
< 2		5/15
< 80		7/17
< 4		7/18
< 4		7/18
< 8		9/20
< 8		9/20

CV = 34 + 3 ug/kg

Result	Uncer	Date
56	15	2/15

Di-n-butyl phthalate
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05

Di-n-butyl phthalate (cont)

< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
860	260	4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 330		5/29
< 17		6/14
< 20		6/15
< 330		7/18
< 330		7/18
< 330		7/19
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/06
< 330		8/06
< 330		8/07
< 330		8/07
< 330		8/13
< 330		8/14
< 330		8/14
< 330		8/21
2000	600	8/21
< 330		8/21
< 330		8/21
< 330		9/04
< 330		9/04
< 330		10/30
< 330		10/30
< 330		12/04
< 330		12/04
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/14
< 330		12/14
< 330		12/14
< 330		12/14

Di-n-octyl phthalate
Dibenzo[a,h]anthracene
Dibenzofuran
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 330		5/29
< 17		6/14
< 20		6/15
< 330		7/18
< 330		7/18
< 330		7/19
< 330		7/19
< 330		8/03
< 330		8/03

Di-n-octyl phthalate
Dibenzo[a,h]anthracene
Dibenzofuran (cont)

< 330	8/03
< 330	8/03
< 330	8/06
< 330	8/06
< 330	8/07
< 330	8/07
< 330	8/13
< 330	8/14
< 330	8/14
< 330	8/21
< 330	8/21
< 330	8/21
< 330	8/21
< 330	9/04
< 330	9/04
< 330	10/30
< 330	10/30
< 330	12/04
< 330	12/04
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/14
< 330	12/14
< 330	12/14
< 330	12/14

1,2-Dibromo-3-chloropropane
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 10		1/16
< 10		1/19
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/13
< 5		2/21
< 10		3/21
< 10		3/21
< 1000		5/14
< 1000		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/05
< 5		6/26
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 130		7/06

1,2-Dibromo-3-chloropropane
(cont)

< 5	7/06
< 5	7/10
< 5	7/10
< 5	7/23
< 5	7/27
< 5	7/27
< 5	7/31
< 5	7/31
< 5	8/10
< 5	8/10
< 5	8/14
< 10	9/04
< 10	9/04
< 10	9/05
< 10	9/05
< 10	10/05
< 10	10/22
< 10	10/22
< 10	11/01
< 10	11/01
< 10	11/01
< 10	11/01
< 10	11/07
< 10	11/07
< 10	11/07
< 10	11/07
< 10	11/07
< 10	11/07
< 10	11/08
< 10	11/08
< 10	11/27
< 10	11/27
< 10	11/27

1,2-Dibromoethane
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/19
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/13
< 5		3/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/05
< 5		6/26
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		6/29
< 5		7/02
< 5		7/02

1,2-Dibromoethane (cont)

< 5	7/04
< 5	7/06
< 130	7/06
< 5	7/10
< 5	7/10
< 5	7/23
< 5	7/27
< 5	7/27
< 5	7/27
< 5	7/31
< 5	7/31
< 5	8/10
< 5	8/10
< 5	8/14
< 5	9/04
< 5	9/04
< 5	9/05
< 5	9/05
< 5	10/05
< 5	10/22
< 5	10/22
< 5	11/01
< 5	11/01
< 5	11/01
< 5	11/01
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/08
< 5	11/08
< 5	11/27
< 5	11/27
< 5	11/27

CV = 86 + 9 ug/kg

Result	Uncer	Date
25	7	2/21

CV = 196 + 20 ug/kg

Result	Uncer	Date
59	18	1/16

Dibromomethane
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		1/19
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/13
< 5		2/21
< 5		3/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31

TABLE C-V (cont)

****

HSE-9 Organics on Soil
(cont)

****

Dibromomethane (cont)

< 5	5/31
< 5	6/03
< 5	6/03
< 5	6/03
< 5	6/04
< 5	6/05
< 5	6/05
< 5	6/26
< 5	6/26
< 5	6/27
< 5	6/27
< 5	6/29
< 5	6/29
< 5	7/02
< 5	7/02
< 5	7/04
< 130	7/06
< 5	7/06
< 5	7/10
< 5	7/10
< 5	7/23
< 5	7/27
< 5	7/27
< 5	7/31
< 5	7/31
< 5	8/10
< 5	8/10
< 5	8/14
< 5	9/04
< 5	9/04
< 5	9/05
< 5	9/05
< 5	10/05
< 5	10/22
< 5	10/22
< 5	11/01
< 5	11/01
< 5	11/01
< 5	11/01
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/08
< 5	11/08
< 5	11/27
< 5	11/27
< 5	11/27

o-Dichlorobenzene (1,2)
m-Dichlorobenzene (1,3)
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09

o-Dichlorobenzene (1,2)
m-Dichlorobenzene (1,3) (cont)

< 330	5/11
< 330	5/29
< 17	6/14
< 20	6/15
< 330	7/18
< 330	7/18
< 330	7/19
< 330	7/19
< 330	8/03
< 330	8/03
< 330	8/03
< 330	8/03
< 330	8/06
< 330	8/06
< 330	8/07
< 330	8/07
< 330	8/13
< 330	8/14
< 330	8/14
< 330	8/21
< 330	8/21
< 330	8/21
< 330	8/21
< 330	9/04
< 330	9/04
< 330	9/04
< 330	10/30
< 330	10/30
< 330	12/04
< 330	12/04
< 330	12/04
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/14
< 330	12/14
< 330	12/14

o-Dichlorobenzene (1,2)
m-Dichlorobenzene (1,3)
p-Dichlorobenzene (1,4)
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		1/19
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/13
< 5		2/21
< 5		3/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05

o-Dichlorobenzene (1,2)
m-Dichlorobenzene (1,3)
p-Dichlorobenzene (1,4) (cont)

< 5	6/05
< 5	6/26
< 5	6/26
< 5	6/27
< 5	6/27
< 5	6/29
< 5	6/29
< 5	7/02
< 5	7/02
< 5	7/04
< 5	7/06
< 130	7/06
< 5	7/10
< 5	7/10
< 5	7/23
< 5	7/27
< 5	7/27
< 5	7/31
< 5	7/31
< 5	8/10
< 5	8/10
< 5	8/14
< 5	9/04
< 5	9/04
< 5	9/05
< 5	9/05
< 5	10/05
< 5	10/22
< 5	10/22
< 5	11/01
< 5	11/01
< 5	11/01
< 5	11/01
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/08
< 5	11/08
< 5	11/27
< 5	11/27
< 5	11/27

p-Dichlorobenzene (1,4)
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 17		6/14
< 20		6/15
< 330		7/18
< 330		7/18
< 330		7/19
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/06
< 330		8/06

p-Dichlorobenzene (1,4) (cont)

< 330	8/07
< 330	8/07
< 330	8/13
< 330	8/14
< 330	8/14
< 330	8/21
< 330	8/21
< 330	8/21
< 330	8/21
< 330	9/04
< 330	9/04
< 330	10/30
< 330	10/30
< 330	12/04
< 330	12/04
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/14
< 330	12/14
< 330	12/14
< 330	12/14

CV = 2.78 + 0.30 mg/kg

Result	Uncer	Date
0.26	0.05	3/06

CV = 3.3 + 0.3 mg/kg

Result	Uncer	Date
< 330		5/29

3,3'-Dichlorobenzidine
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 330		5/29
< 17		6/14
< 20		6/15
< 330		7/18
< 330		7/18
< 330		7/19
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/06
< 330		8/06
< 330		8/07
< 330		8/07
< 330		8/13
< 330		8/14
< 330		8/14
< 330		8/21
< 330		8/21
< 330		8/21

3,3'-Dichlorobenzidine (cont)

< 330	8/21
< 330	9/04
< 330	9/04
< 330	10/30
< 330	10/30
< 330	12/04
< 330	12/04
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/14
< 330	12/14
< 330	12/14
< 330	12/14

Dichlorodifluoromethane
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 1000		5/14
< 1000		5/14
< 10		5/17
< 10		5/18
< 10		5/18
< 10		5/19
< 10		5/22
< 10		5/30
< 10		5/31
< 10		5/31
< 10		5/31
< 10		6/03
< 10		6/03
< 10		6/03
< 10		6/04
< 10		6/05
< 10		6/05
< 10		6/05
< 10		6/26
< 10		6/26
< 10		6/27
< 10		6/27
< 10		6/29
< 10		6/29
< 10		7/02
< 10		7/02
< 10		7/04
< 250		7/06
< 10		7/06
< 10		7/10
< 10		7/10
< 10		7/23
< 10		7/27
< 10		7/27
< 10		7/31
< 10		7/31
< 10		8/10
< 10		8/10
< 10		8/14
< 10		9/04
< 10		9/04
< 10		9/05
< 10		9/05
< 10		10/05
< 10		10/22
< 10		10/22
< 10		11/01
< 10		11/01
< 10		11/01
< 10		11/01
< 10		11/07
< 10		11/07
< 10		11/07
< 10		11/07

Dichlorodifluoromethane (cont)

< 10	11/07
< 10	11/07
< 10	11/08
< 10	11/08
< 10	11/27
< 10	11/27
< 10	11/27

1,1-Dichloroethane
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		1/19
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 5		7/06
< 130		7/06
< 5		7/10
< 5		7/23
< 5		7/27
< 5		7/31
< 5		7/31
< 5		8/10
< 5		8/14
< 5		9/04
< 5		9/05
< 5		10/05
< 5		10/22
< 5		10/22
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/08
< 5		11/27
< 5		11/27

TABLE C-V (cont)

****

HSE-9 Organics on Soil
(cont)

****

1,1-Dichloroethane (cont)

CV = 110 + 11 ug/kg

Result	Uncer	Date
49	15	3/21
71	21	7/10
65	20	11/27

CV = 120 + 10 ug/kg

Result	Uncer	Date
64	19	2/13
< 5		5/19
< 5		6/29
21	6	9/04
< 5		9/05
< 5		11/01

CV = 130 + 10 ug/kg

Result	Uncer	Date
< 5		6/26
40	12	7/27
110	30	8/10

CV = 160 + 20 ug/kg

Result	Uncer	Date
120	40	6/05

CV = 180 + 18 ug/kg

Result	Uncer	Date
86	26	5/31

1,2-Dichloroethane
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
42	13	1/16
< 5		1/19
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/26

1,2-Dichloroethane (cont)

< 5	6/27
< 5	6/27
< 5	6/29
< 5	7/02
< 5	7/02
< 5	7/04
< 5	7/06
< 130	7/06
< 5	7/10
< 5	7/23
< 5	7/27
< 5	7/31
< 5	7/31
< 5	8/10
< 5	8/14
< 5	9/04
< 5	9/05
< 5	10/05
< 5	10/22
< 5	10/22
< 5	11/01
< 5	11/01
< 5	11/01
< 5	11/01
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/08
< 5	11/08
< 5	11/27
< 5	11/27

CV = 96 + 10 ug/kg

Result	Uncer	Date
46	14	3/21

CV = 120 + 12 ug/kg

Result	Uncer	Date
66	20	3/21

CV = 130 + 10 ug/kg

Result	Uncer	Date
55	16	2/13
140	40	7/10
87	26	9/04
80	24	11/27

CV = 140 + 14 ug/kg

Result	Uncer	Date
79	24	6/03
48	14	6/29
< 5		9/05
< 5		11/01

CV = 150 + 20 ug/kg

Result	Uncer	Date
< 5		6/26
99	30	7/27
130	40	8/10

CV = 170 + 20 ug/kg

Result	Uncer	Date
180	50	6/05

1,1-Dichloroethene
trans-1,2-Dichloroethene
cis-1,2-Dichloroethylene
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		1/19
< 5		2/13
< 5		2/21
< 5		3/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/05
< 5		6/26
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 5		7/06
< 130		7/06
< 5		7/10
< 5		7/10
< 5		7/23
< 5		7/27
< 5		7/27
< 5		7/31
< 5		7/31
< 5		8/10
< 5		8/10
< 5		8/14
< 5		9/04
< 5		9/04
< 5		9/05
< 5		9/05
< 5		10/05
< 5		10/22
< 5		10/22
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/07
< 5		11/07
< 5		11/[illegible]
< 5		11/[illegible]
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/08
< 5		11/27
< 5		11/27
< 5		11/27

2,4-Dichlorophenol
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 330		3/05
2300	500	3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 330		5/29
< 17		6/14
< 20		6/15
< 330		7/18
< 330		7/18
< 330		7/19
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/06
< 330		8/06
< 330		8/07
< 330		8/07
< 330		8/13
< 330		8/14
< 330		8/14
< 330		8/21
< 330		8/21
< 330		8/21
< 330		8/21
< 330		9/04
< 330		9/04
< 330		10/30
< 330		10/30
< 330		12/04
< 330		12/04
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/14
< 330		12/14
< 330		12/14
< 330		12/14

CV = 3.3 + 0.3 mg/kg

Result	Uncer	Date
2.0	0.4	3/05
17	3	3/05

1,2-Dichloropropane
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/19
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/13
< 5		3/21
< 5		3/21

1,2-Dichloropropane (cont)

< 500	5/14
< 500	5/14
< 5	5/17
< 5	5/18
< 5	5/18
< 5	5/19
< 5	5/22
< 5	5/30
< 5	5/31
< 5	5/31
< 5	5/31
< 5	6/03
< 5	6/03
< 5	6/04
< 5	6/05
< 5	6/05
< 5	6/26
< 5	6/26
< 5	6/27
< 5	6/27
< 5	6/29
< 5	6/29
< 5	7/02
< 5	7/02
< 5	7/04
< 5	7/06
< 130	7/06
< 5	7/10
< 5	7/10
< 5	7/23
< 5	7/27
< 5	7/27
< 5	7/31
< 5	7/31
< 5	8/10
< 5	8/10
< 5	8/14
< 5	9/04
< 5	9/04
< 5	9/05
< 5	9/05
< 5	10/05
< 5	10/22
< 5	10/22
< 5	11/01
< 5	11/01
< 5	11/01
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/08
< 5	11/08
< 5	11/27
< 5	11/27
< 5	11/27

CV = 66 + 7 ug/kg

Result	Uncer	Date
51	15	2/21

CV = 151 + 15 ug/kg

Result	Uncer	Date
< 5		1/16

1,3-Dichloropropane
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/13
< 5		2/21
< 5		3/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/05
< 5		6/26
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 5		7/06
< 130		7/06
< 5		7/10
< 5		7/10
< 5		7/23
< 5		7/27
< 5		7/27
< 5		7/31
< 5		7/31
< 5		8/10
< 5		8/10
< 5		8/14
< 5		9/04
< 5		9/04
< 5		9/05
< 5		9/05
< 5		10/05
< 5		10/22
< 5		10/22
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/08
< 5		11/27
< 5		11/27
< 5		11/27

TABLE C-V (cont)

****

HSE-9 Organics on Soil
(cont)

****

1,3-Dichloropropane (cont)

CV = 101 + 10 ug/kg

Result	Uncer	Date
< 5		1/19

2,2-Dichloropropane
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		1/19
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/13
< 5		2/21
< 5		3/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/05
< 5		6/26
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 130		7/06
< 5		7/06
< 5		7/10
< 5		7/10
< 5		7/23
< 5		7/27
< 5		7/27
< 5		7/31
< 5		7/31
< 5		8/10
< 5		8/10
< 5		8/14
< 5		9/04
< 5		9/04
< 5		9/05
< 5		9/05
< 5		10/05
< 5		10/22
< 5		10/22

2,2-Dichloropropane (cont)

< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/08
< 5		11/27
< 5		11/27
< 5		11/27

1,1-Dichloropropene
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		1/19
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/13
< 5		2/21
< 5		3/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/05
< 5		6/26
< 5		6/26
< 5		6/27
5.9	1.8	6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 130		7/06
< 5		7/06
< 5		7/10
< 5		7/10
< 5		7/23
< 5		7/27
< 5		7/27
< 5		7/31
< 5		7/31
< 5		8/10
< 5		8/10
< 5		8/14
< 5		9/04
< 5		9/04
< 5		9/05
< 5		9/05
< 5		10/05
< 5		10/22
< 5		10/22
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/07
< 5		11/07

1,1-Dichloropropene (cont)

< 5		10/22
< 5		10/22
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/08
< 5		11/27
< 5		11/27
< 5		11/27

cis-1,3-Dichloropropene
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		1/19
< 5		2/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/26
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 5		7/06
< 130		7/06
< 5		7/10
< 5		7/10
< 5		7/23
< 5		7/27
< 5		7/27
< 5		7/31
< 5		7/31
< 5		8/10
< 5		8/10
< 5		8/14
< 5		9/04
< 5		9/04
< 5		9/05
< 5		9/05
< 5		10/05
< 5		10/22
< 5		10/22
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/07
< 5		11/07

cis-1,3-Dichloropropene (cont)

< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/08
< 5		11/27
< 5		11/27
< 5		11/27

CV = 81 + 8 ug/kg

Result	Uncer	Date
20	6	3/21

CV = 91 + 9 ug/kg

Result	Uncer	Date
16	5	5/19

CV = 94 + 9 ug/kg

Result	Uncer	Date
20	6	2/13

CV = 120 + 10 ug/kg

Result	Uncer	Date
80	24	6/05

CV = 130 + 13 ug/kg

Result	Uncer	Date
67	20	5/31

trans-1,3-Dichloropropene
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		1/19
< 5		2/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/26
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 5		7/06
< 130		7/06
< 5		7/10

trans-1,3-Dichloropropene
(cont)

< 5		7/10
< 5		7/23
< 5		7/27
< 5		7/27
< 5		7/31
< 5		7/31
< 5		8/10
< 5		8/10
< 5		8/14
< 5		9/04
< 5		9/04
< 5		9/05
< 5		9/05
< 5		10/05
< 5		10/22
< 5		10/22
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/08
< 5		11/27
< 5		11/27
< 5		11/27

CV = 34 + 3 ug/kg

Result	Uncer	Date
24	7	3/21

CV = 38 + 4 ug/kg

Result	Uncer	Date
14	4	5/19

CV = 40 + 4 ug/kg

Result	Uncer	Date
28	8	2/13

CV = 50 + 5 ug/kg

Result	Uncer	Date
84	25	6/05

CV = 56 + 6 ug/kg

Result	Uncer	Date
67	20	5/31

Dieldrin 90GAU 01 GCEC

CV = not spiked ug/kg

Result	Uncer	Date
< 6		2/15
< 3		5/15
< 3		7/17
< 3		7/18
< 3		7/18
< 3		9/20
< 3		9/20

Diethyl phthalate
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/11
< 330		5/29
< 330		7/18
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/06
< 330		8/07
< 330		8/13
< 330		8/14
< 330		8/21
< 330		8/21
< 330		9/04
< 330		9/04
< 330		10/30
< 330		10/30
< 330		12/04
< 330		12/04
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/14
< 330		12/14
< 330		12/14
< 330		12/14

CV = 690 + 69 ug/kg

Result	Uncer	Date
800	240	8/06

CV = 940 + 90 ug/kg

Result	Uncer	Date
940	280	8/03

CV = 1.9 + 0.2 mg/kg

Result	Uncer	Date
1.7	0.5	8/21

CV = 2.3 + 0.2 mg/kg

Result	Uncer	Date
2.3	0.7	5/09

CV = 2.5 + 0.2 mg/kg

Result	Uncer	Date
2.4	0.7	8/03
2.7	0.8	8/07

TABLE C-V (cont)

****

HSE-9 Organics on Soil
(cont)

****

Diethyl phthalate (cont)

CV = 2.8 + 0.3 mg/kg

Result	Uncer	Date
5.9	1.8	6/15

CV = 3.1 + 0.3 mg/kg

Result	Uncer	Date
2.8	0.8	5/04
3.3	1.0	8/14

CV = 3.8 + 0.4 mg/kg

Result	Uncer	Date
< 17		6/14
3.7	1.1	7/19

CV = 4.1 + 0.4 mg/kg

Result	Uncer	Date
4.8	1.4	8/21

CV = 5.8 + 0.6 mg/kg

Result	Uncer	Date
5.8	1.7	7/18

Dimethyl phthalate 90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 330		5/29
< 17		6/14
< 20		6/15
< 330		7/18
< 330		7/18
< 330		7/19
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/06
< 330		8/06
< 330		8/07
< 330		8/07
< 330		8/13
< 330		8/14
< 330		8/14
< 330		8/21
< 330		8/21
< 330		8/21

Dimethyl phthalate (cont)

< 330	8/21
< 330	9/04
< 330	9/04
< 330	10/30
< 330	10/30
< 330	12/04
< 330	12/04
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/14
< 330	12/14
< 330	12/14
< 330	12/14

CV = 3.5 + 0.4 mg/kg

Result	Uncer	Date
2.7	0.5	3/05
2.8	0.6	3/05

2,4-Dimethylphenol 90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 330		5/29
< 17		6/14
< 20		6/15
< 330		7/18
< 330		7/18
< 330		7/19
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/06
< 330		8/06
< 330		8/07
< 330		8/07
< 330		8/13
< 330		8/14
< 330		8/14
< 330		8/21
< 330		8/21
< 330		8/21
< 330		9/04
< 330		9/04
< 330		10/30
< 330		10/30
< 330		12/04
< 330		12/04
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/14
< 330		12/14
< 330		12/14

2,4-Dimethylphenol (cont)

< 330	12/14
< 330	12/14
< 330	12/14
< 330	12/14

CV = 3.4 + 0.3 mg/kg

Result	Uncer	Date
0.84	0.25	12/06

CV = 6.5 + 0.6 mg/kg

Result	Uncer	Date
3.0	0.9	12/06

2,4-Dinitrophenol 90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 330		5/29
< 17		6/14
< 20		6/15
< 330		7/18
< 330		7/18
< 330		7/19
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/06
< 330		8/06
< 330		8/07
< 330		8/07
< 330		8/13
< 330		8/14
< 330		8/14
< 330		8/21
< 330		8/21
< 330		8/21
< 330		8/21
< 330		9/04
< 330		9/04
< 330		10/30
< 330		10/30
< 330		12/04
< 330		12/04
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/14
< 330		12/14
< 330		12/14

2,4-Dinitrotoluene 90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 330		5/29
< 17		6/14
< 20		6/15
< 330		7/18
< 330		7/18
< 330		7/19
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/06
< 330		8/06
< 330		8/07
< 330		8/07
< 330		8/13
< 330		8/14
< 330		8/14
< 330		8/21
< 330		8/21
< 330		8/21
< 330		8/21
< 330		9/04
< 330		9/04
< 330		10/30
< 330		10/30
< 330		12/04
< 330		12/04
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/14
< 330		12/14
< 330		12/14

CV = 16 + 2 ug/g

Result	Uncer	Date
14	4	7/19

2,6-Dinitrotoluene 90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27

2,6-Dinitrotoluene (cont)

< 330	5/04
< 330	5/09
< 330	5/11
< 330	5/29
< 17	6/14
< 20	6/15
< 330	7/18
< 330	7/18
< 330	7/19
< 330	7/19
< 330	8/03
< 330	8/03
< 330	8/03
< 330	8/03
< 330	8/06
< 330	8/06
< 330	8/07
< 330	8/07
< 330	8/13
< 330	8/14
< 330	8/14
< 330	8/21
< 330	8/21
< 330	8/21
< 330	8/21
< 330	9/04
< 330	9/04
< 330	10/30
< 330	10/30
< 330	12/04
< 330	12/04
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/14
< 330	12/14
< 330	12/14

Endosulfan I 90GAU 01 GCEC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		2/15
< 2		5/15

Endosulfan II 90GAU 01 GCEC

CV = not spiked ug/kg

Result	Uncer	Date
< 7		2/15
< 3		5/15

Endosulfan sulfate 90GAU 01 GCEC

CV = not spiked ug/kg

Result	Uncer	Date
< 10		2/15
< 5		5/15
< 13		7/17
< 13		7/18
< 9		7/18
< 9		9/20
< 9		9/20

Endrin 90GAU 01 GCEC

CV = not spiked ug/kg

Result	Uncer	Date
< 10		2/15
< 3		5/15
< 3		7/17
< 3		7/18
< 3		7/18
< 3		9/20
< 3		9/20

Endrin aldehyde 90GAU 01 GCEC

CV = not spiked ug/kg

Result	Uncer	Date
< 8		2/15
< 8		5/15
< 20		7/17
< 20		7/18
< 20		7/18
< 20		9/20
< 20		9/20

Ethylbenzene 89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		1/19
< 5		2/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 5		7/06
< 130		7/06
< 5		7/10
< 5		7/23
< 5		7/27
< 5		7/31
< 5		7/31
< 5		8/10
< 5		8/14
< 5		9/04
< 5		9/05
< 5		10/05
< 5		10/22
< 5		10/22
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/07

TABLE C-V (cont)

****

HSE-9 Organics on Soil
(cont)

****

Ethylbenzene (cont)

< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/08
< 5	11/08
< 5	11/27
< 5	11/27

CV = 110 + 10 ug/kg

Result	Uncer	Date
80	24	7/10
85	26	11/27

CV = 120 + 12 ug/kg

Result	Uncer	Date
49	15	3/21
38	11	6/29
56	17	9/04
< 5		9/05
< 5		11/01

CV = 130 + 13 ug/kg

Result	Uncer	Date
29	9	5/19
20	6	6/26
85	25	7/27
95	28	8/10

CV = 140 + 10 ug/kg

Result	Uncer	Date
44	13	2/13

CV = 180 + 20 ug/kg

Result	Uncer	Date
150	50	6/05

CV = 190 + 19 ug/kg

Result	Uncer	Date
130	40	5/31

Fluoranthene
Fluorene
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20

Fluoranthene
Fluorene (cont)

< 330	4/27
< 330	5/04
< 330	5/09
< 330	5/11
< 330	5/29
< 17	6/14
< 20	6/15
< 330	7/18
< 330	7/18
< 330	7/19
< 330	7/19
< 330	8/03
< 330	8/03
< 330	8/03
< 330	8/03
< 330	8/06
< 330	8/06
< 330	8/07
< 330	8/07
< 330	8/13
< 330	8/14
< 330	8/14
< 330	8/21
< 330	8/21
< 330	8/21
< 330	8/21
< 330	9/04
< 330	9/04
< 330	10/30
< 330	10/30
< 330	12/04
< 330	12/04
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/14
< 330	12/14
< 330	12/14
< 330	12/14

HMX 90GAU 04 GCMS

CV = 21 + 2 ug/g

Result	Uncer	Date
19	6	7/19

Heptachlor 90GAU 01 GCEC

CV = not spiked ug/kg

Result	Uncer	Date
< 4		2/15
< 3		7/17
< 3		7/18
< 3		7/18
< 3		9/20
< 3		9/20

CV = 13 + 1 ug/kg

Result	Uncer	Date
10	5	5/15

Heptachlor epoxide
90GAU 01 GCEC

CV = not spiked ug/kg

Result	Uncer	Date
< 3		5/15
< 4		7/17

CV = 12 + 1 ug/kg

Result	Uncer	Date
8	4	7/18

CV = 19 + 2 ug/kg

Result	Uncer	Date
20	15	9/20

CV = 20 + 2 ug/kg

Result	Uncer	Date
14	10	9/20

CV = 26 + 3 ug/kg

Result	Uncer	Date
19	9	7/18

CV = 28 + 3 ug/kg

Result	Uncer	Date
34	7	2/15

Hexachlorobenzene
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 17		6/14
< 20		6/15
< 330		7/18
< 330		7/18
< 330		7/19
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/06
< 330		8/06
< 330		8/07
< 330		8/07
< 330		8/13
< 330		8/14
< 330		8/14
< 330		8/21
< 330		8/21
< 330		8/21
< 330		8/21

Hexachlorobenzene (cont)

< 330	9/04
< 330	9/04
< 330	10/30
< 330	10/30
< 330	12/04
< 330	12/04
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/14
< 330	12/14
< 330	12/14
< 330	12/14

CV = 2.23 + 0.20 mg/kg

Result	Uncer	Date
1.6	0.3	3/06

CV = 2.7 + 0.3 mg/kg

Result	Uncer	Date
0.98	0.29	5/29

Hexachlorobutadiene
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/11
< 330		5/29
< 330		7/18
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/06
< 330		8/07
< 330		8/13
< 330		8/14
< 330		8/21
< 330		8/21
< 330		9/04
< 330		9/04
< 330		10/30
< 330		10/30
< 330		12/04
< 330		12/04
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/14
< 330		12/14
< 330		12/14
< 330		12/14

CV = 720 + 72 ug/kg

Result	Uncer	Date
510	150	8/06

Hexachlorobutadiene (cont)

CV = 980 + 100 ug/kg

Result	Uncer	Date
630	190	8/03

CV = 2.0 + 0.2 mg/kg

Result	Uncer	Date
1.3	0.4	8/21

CV = 2.40 + 0.24 mg/kg

Result	Uncer	Date
1.0	0.3	5/09

CV = 2.6 + 0.3 mg/kg

Result	Uncer	Date
< 330		8/03
1.7	0.5	8/07

CV = 2.9 + 0.3 mg/kg

Result	Uncer	Date
2.0	0.6	6/15

CV = 3.3 + 0.3 ug/g

Result	Uncer	Date
1.6	0.5	5/04
1.9	0.6	8/14

CV = 3.9 + 0.4 mg/kg

Result	Uncer	Date
< 17		6/14
3.1	0.9	7/19

CV = 4.2 + 0.4 mg/kg

Result	Uncer	Date
3.3	1.0	8/21

CV = 6.0 + 0.6 mg/kg

Result	Uncer	Date
3.2	1.0	7/18

Hexachlorobutadiene
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		1/19
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/13
< 5		3/21
< 5		3/21
< 500		5/14
< 500		5/14

Hexachlorobutadiene (cont)

< 5	5/17
< 5	5/18
< 5	5/18
< 5	5/19
< 5	5/22
< 5	5/30
< 5	5/31
< 5	5/31
< 5	5/31
< 5	6/03
< 5	6/03
< 5	6/03
< 5	6/04
< 5	6/05
< 5	6/05
< 5	6/26
< 5	6/26
< 5	6/27
< 5	6/27
< 5	6/29
< 5	6/29
< 5	7/02
< 5	7/02
< 5	7/04
< 5	7/06
< 130	7/06
< 5	7/10
< 5	7/10
< 5	7/23
< 5	7/27
< 5	7/27
< 5	7/31
< 5	7/31
< 5	8/10
< 5	8/10
< 5	8/14
< 5	9/04
< 5	9/04
< 5	9/05
< 5	9/05
< 5	10/05
< 5	10/22
< 5	10/22
< 5	11/01
< 5	11/01
< 5	11/01
< 5	11/01
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/08
< 5	11/08

CV = 81 + 8 ug/kg

Result	Uncer	Date
14	4	2/21

Hexachlorocyclopentadiene
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 990		3/23
< 330		4/20
< 330		4/27

TABLE C-V (cont)

****

HSE-9 Organics on Soil
(cont)

****

Hexachlorocyclopentadiene
(cont)

< 330	5/04
< 330	5/09
< 330	5/11
< 17	6/14
< 20	6/15
< 330	7/18
< 330	7/18
< 330	7/19
< 330	7/19
< 330	8/03
< 330	8/03
< 330	8/03
< 330	8/03
< 330	8/06
< 330	8/06
< 330	8/07
< 330	8/07
< 330	8/13
< 330	8/14
< 330	8/14
< 330	8/21
< 330	8/21
< 330	8/21
< 330	8/21
< 330	9/04
< 330	9/04
< 330	10/30
< 330	10/30
< 330	12/04
< 330	12/04
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/14
< 330	12/14
< 330	12/14
< 330	12/14

CV = 2.78 + 0.3 mg/kg

Result	Uncer	Date
1.0	0.2	3/06

CV = 3.4 + 0.3 mg/kg

Result	Uncer	Date
< 330		5/29

Hexachloroethane
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09

Hexachloroethane (cont)

< 330	5/11
< 17	6/14
< 20	6/15
< 330	7/18
< 330	7/18
< 330	7/19
< 330	7/19
< 330	8/03
< 330	8/03
< 330	8/03
< 330	8/03
< 330	8/06
< 330	8/06
< 330	8/07
< 330	8/07
< 330	8/13
< 330	8/14
< 330	8/14
< 330	8/21
< 330	8/21
< 330	8/21
< 330	9/04
< 330	9/04
< 330	10/30
< 330	10/30
< 330	12/04
< 330	12/04
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/14
< 330	12/14
< 330	12/14
< 330	12/14

CV = 2.76 + 0.30 mg/kg

Result	Uncer	Date
0.26	0.05	3/06

CV = 3.3 + 0.3 mg/kg

Result	Uncer	Date
< 330		5/29

2-Hexanone 89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 10		1/16
< 10		2/06
< 10		2/06
< 10		2/06
< 10		2/06
< 10		2/06
< 10		2/06
51	15	2/13
< 10		2/21
38	11	3/21
< 2000		5/14
< 2000		5/14
< 20		5/17
< 20		5/18
< 20		5/18
< 20		5/22
< 20		5/30
< 20		5/31
< 20		5/31
< 20		6/03
< 20		6/03

2-Hexanone (cont)

< 20	6/04
< 20	6/05
< 20	6/26
< 20	6/27
< 20	6/27
< 20	6/29
31	9 6/29
< 20	7/02
< 20	7/02
< 20	7/04
< 500	7/06
< 20	7/06
< 20	7/10
< 20	7/23
< 20	7/27
< 20	7/27
< 20	7/31
< 20	7/31
< 20	8/10
< 20	8/10
< 20	8/14
< 20	9/04
< 20	9/05
< 20	9/05
< 20	10/05
< 20	10/22
< 20	10/22
< 20	11/01
< 20	11/01
< 20	11/01
< 20	11/01
< 20	11/07
< 20	11/07
< 20	11/07
21	6 11/07
23	7 11/07
43	13 11/07
35	11 11/08
22	7 11/08
< 20	11/27
46	14 11/27

CV = 99 + 10 ug/kg

Result	Uncer	Date
55	16	3/21

CV = 111 + 11 ug/kg

Result	Uncer	Date
< 10		1/19

CV = 130 + 13 ug/kg

Result	Uncer	Date
160	50	5/19

CV = 140 + 14 ug/kg

Result	Uncer	Date
220	60	6/03

CV = 150 + 20 ug/kg

Result	Uncer	Date
300	90	7/10
< 20		11/27

CV = 160 + 20 ug/kg

Result	Uncer	Date
140	40	9/04

2-Hexanone (cont)

CV = 180 + 20 ug/kg

Result	Uncer	Date
410	120	6/05
110	30	6/26

CV = 200 + 20 ug/kg

Result	Uncer	Date
400	120	5/31

Indeno[1,2,3-cd]pyrene
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 330		5/29
< 17		6/14
< 20		6/15
< 330		7/18
< 330		7/18
< 330		7/19
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/06
< 330		8/06
< 330		8/07
< 330		8/07
< 330		8/13
< 330		8/14
< 330		8/14
< 330		8/21
< 330		8/21
< 330		8/21
< 330		8/21
< 330		9/04
< 330		9/04
< 330		10/30
< 330		10/30
< 330		12/04
< 330		12/04
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/14
< 330		12/14
< 330		12/14
< 330		12/14

Isophorone 90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/11
< 330		5/29
< 330		7/18
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/06
< 330		8/07
< 330		8/13
< 330		8/14
< 330		8/21
< 330		8/21
< 330		9/04
< 330		9/04
< 330		10/30
< 330		10/30
< 330		12/04
< 330		12/04
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/14
< 330		12/14
< 330		12/14
< 330		12/14

CV = 790 + 79 ug/kg

Result	Uncer	Date
580	170	8/06

CV = 1.08 + 0.11 mg/kg

Result	Uncer	Date
0.64	0.19	8/03

CV = 2.2 + 0.2 mg/kg

Result	Uncer	Date
1.2	0.4	8/21

CV = 2.7 + 0.3 mg/kg

Result	Uncer	Date
1.2	0.4	5/09

CV = 2.9 + 0.3 mg/kg

Result	Uncer	Date
< 330		8/03
1.7	0.5	8/07

CV = 3.0 + 0.3 mg/kg

Result	Uncer	Date
3.3	1.0	6/15

Isophorone (cont)

CV = 3.6 + 0.4 mg/g

Result	Uncer	Date
1.8	0.5	5/04
2.1	0.6	8/14

CV = 4.3 + 0.4 mg/kg

Result	Uncer	Date
< 17		6/14
2.9	0.9	7/19

CV = 4.7 + 0.4 mg/kg

Result	Uncer	Date
3.7	1.1	8/21

CV = 6.7 + 0.7 mg/kg

Result	Uncer	Date
3.5	1.1	7/18

Isopropylbenzene
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		1/19
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/13
< 5		2/21
< 5		3/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/05
< 5		6/26
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 130		7/06
< 5		7/06
< 5		7/10
< 5		7/10
< 5		7/23
< 5		7/27

TABLE C-V (cont)

****

HSE-9 Organics on Soil
(cont)

****

Isopropylbenzene (cont)

< 5	7/27
< 5	7/31
< 5	7/31
< 5	8/10
< 5	8/10
< 5	8/14
< 5	9/04
< 5	9/04
< 5	9/05
< 5	9/05
< 5	10/05
< 5	10/22
< 5	10/22
< 5	11/01
< 5	11/01
< 5	11/01
< 5	11/01
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/08
< 5	11/08
< 5	11/27
< 5	11/27
< 5	11/27

4-Isopropyltoluene
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		1/19
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/13
< 5		2/21
< 5		3/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
17	5	5/31
< 5		6/03
11	3	6/03
< 5		6/03
< 5		6/04
< 5		6/05
13	4	6/05
6.1	1.8	6/26
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29

4-Isopropyltoluene (cont)

11	3	6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 130		7/06
< 5		7/06
< 5		7/10
6.4	1.9	7/10
< 5		7/23
< 5		7/27
< 5		7/27
< 5		7/31
< 5		7/31
< 5		8/10
< 5		8/10
< 5		8/14
< 5		9/04
< 5		9/04
< 5		9/05
< 5		9/05
< 5		10/05
< 5		10/22
< 5		10/22
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/08
< 5		11/27
< 5		11/27
< 5		11/27

Lindane 90GAU 01 GCEC

CV = not spiked ug/kg

Result	Uncer	Date
< 2		7/17

CV = 9 + 1 ug/kg

Result	Uncer	Date
8	4	7/18

CV = 10 + 1 ug/kg

Result	Uncer	Date
11	6	5/15

CV = 15 + 2 ug/kg

Result	Uncer	Date
11	8	9/20

CV = 16 + 2 ug/kg

Result	Uncer	Date
8	6	9/20

CV = 20 + 2 ug/kg

Result	Uncer	Date
14	7	7/18

Lindane (cont)

CV = 28 + 3 ug/kg

Result	Uncer	Date
41	8	2/15

Methoxychlor 90GAU 01 GCEC

CV = not spiked ug/kg

Result	Uncer	Date
< 9		7/17

CV = 34 + 3 ug/kg

Result	Uncer	Date
20	10	7/18

CV = 57 + 6 ug/kg

Result	Uncer	Date
45	34	9/20

CV = 58 + 6 ug/kg

Result	Uncer	Date
38	28	9/20

CV = 76 + 8 ug/kg

Result	Uncer	Date
43	21	7/18

CV = 94 + 10 ug/kg

Result	Uncer	Date
82	40	5/15

Methyl iodide
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/05
< 5		6/26
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		6/29
< 5		7/02
< 5		7/02

Methyl iodide (cont)

< 5	7/04
< 130	7/06
< 5	7/06
< 5	7/10
< 5	7/10
< 5	7/23
< 5	7/27
< 5	7/27
< 5	7/31
< 5	7/31
< 5	8/10
< 5	8/10
< 5	8/14
< 5	9/04
< 5	9/04
< 5	9/05
< 5	9/05
< 5	10/05
< 5	10/22
< 5	10/22
< 5	11/01
< 5	11/01
< 5	11/01
< 5	11/01
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/08
< 5	11/08
< 5	11/27
< 5	11/27
< 5	11/27

4-Methyl-2-pentanone
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 10		1/19
< 10		2/06
< 10		2/06
< 10		2/06
< 10		2/06
< 10		2/06
< 10		2/06
< 10		2/13
< 20		3/21
< 20		3/21
< 2000		5/14
< 2000		5/14
< 20		5/17
< 20		5/18
< 20		5/18
< 20		5/19
< 20		5/22
< 20		5/30
< 20		5/31
< 20		5/31
< 20		5/31
< 20		6/03
< 20		6/03
< 20		6/03
< 20		6/04
< 20		6/05
< 20		6/05
< 20		6/26
< 20		6/26
< 20		6/27
< 20		6/27
< 20		6/29
< 20		6/29
< 20		7/02

4-Methyl-2-pentanone (cont)

< 20	7/02
< 20	7/04
< 500	7/06
< 20	7/06
< 20	7/10
< 20	7/10
< 20	7/23
< 20	7/27
< 20	7/27
< 20	7/31
< 20	7/31
< 20	8/10
< 20	8/10
< 20	8/14
< 20	9/04
< 20	9/04
< 20	9/05
< 20	10/05
< 20	10/22
< 20	10/22
< 20	11/01
< 20	11/01
< 20	11/01
< 20	11/01
< 20	11/07
< 20	11/07
< 20	11/07
< 20	11/07
< 20	11/07
< 20	11/08
< 20	11/08
< 20	11/27
< 20	11/27
< 20	11/27

CV = 57 + 6 ug/kg

Result	Uncer	Date
< 10		2/21

CV = 130 + 13 ug/kg

Result	Uncer	Date
< 10		1/16

2-Methyl-4,6-dinitrophenol
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 330		5/29
< 17		6/14
< 20		6/15
< 330		7/18
< 330		7/18
< 330		7/19
< 330		7/19
< 330		8/03
< 330		8/03

2-Methyl-4,6-dinitrophenol
(cont)

< 330	8/03
< 330	8/03
< 330	8/06
< 330	8/06
< 330	8/07
< 330	8/07
< 330	8/13
< 330	8/14
< 330	8/14
< 330	8/21
< 330	8/21
< 330	8/21
< 330	8/21
< 330	9/04
< 330	9/04
< 330	10/30
< 330	10/30
< 330	12/04
< 330	12/04
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/14
< 330	12/14
< 330	12/14
< 330	12/14

Methylene chloride
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		1/19
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/13
12	4	2/21
< 5		3/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
12	4	5/31
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/04
15	5	6/05
< 5		6/05
< 5		6/26
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 5		7/06
< 130		7/06
6.4	1.9	7/10

TABLE C-V (cont)

****

HSE-9 Organics on Soil
(cont)

****

Methylene chloride (cont)

Result	Uncer	Date
5.2	1.6	7/10
< 5		7/23
< 5		7/27
< 5		7/27
< 5		7/31
< 5		7/31
< 5		8/10
< 5		8/10
< 5		8/14
< 5		9/04
< 5		9/04
< 5		9/05
< 5		9/05
< 5		10/05
< 5		10/22
< 5		10/22
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
7	2.1	11/07
< 5		11/07
< 5		11/08
< 5		11/08
< 5		11/27
< 5		11/27
< 5		11/27

2-Methylnaphthalene
2-Methylphenol
4-Methylphenol
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 330		5/29
< 17		6/14
< 20		6/15
< 330		7/18
< 330		7/18
< 330		7/19
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/06
< 330		8/06
< 330		8/07
< 330		8/07
< 330		8/13
< 330		8/14

2-Methylnaphthalene
2-Methylphenol
4-Methylphenol (cont)

< 330		8/14
< 330		8/21
< 330		8/21
< 330		8/21
< 330		8/21
< 330		9/04
< 330		9/04
< 330		10/30
< 330		10/30
< 330		12/04
< 330		12/04
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/14
< 330		12/14
< 330		12/14
< 330		12/14

Naphthalene
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 330		5/29
< 17		6/14
< 20		6/15
< 330		7/18
< 330		7/18
< 330		7/19
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/06
< 330		8/06
< 330		8/07
< 330		8/07
< 330		8/13
< 330		8/14
< 330		8/14
< 330		8/21
< 330		8/21
< 330		8/21
< 330		8/21
< 330		9/04
< 330		9/04
< 330		10/30
< 330		10/30
< 330		12/04
< 330		12/04
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/14
< 330		12/14
< 330		12/14
< 330		12/14

Naphthalene (cont)

CV = 2.57 + 0.30 mg/kg

Result	Uncer	Date
1.9	0.4	3/05

CV = 3.3 + 0.3 mg/kg

Result	Uncer	Date
1.9	0.6	12/06

CV = 6.3 + 0.6 mg/kg

Result	Uncer	Date
2.2	0.7	12/06

Naphthalene
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		1/19
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/13
< 5		2/21
< 5		3/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/05
< 5		6/26
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 5		7/06
< 130		7/06
< 5		7/10
< 5		7/10
< 5		7/23
< 5		7/27
< 5		7/27
< 5		7/31
< 5		7/31
< 5		8/10
< 5		8/10
< 5		8/14
< 5		9/04
< 5		9/04

Naphthalene (cont)

< 5		9/05
< 5		9/05
< 5		10/05
< 5		10/22
< 5		10/22
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
7	2.1	11/07
17	5	11/07
< 5		11/08
< 5		11/08

2-Nitroaniline
3-Nitroaniline
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 330		5/29
< 17		6/14
< 20		6/15
< 330		7/18
< 330		7/18
< 330		7/19
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/06
< 330		8/06
< 330		8/07
< 330		8/07
< 330		8/13
< 330		8/14
< 330		8/14
< 330		8/21
< 330		8/21
< 330		8/21
< 330		8/21
< 330		9/04
< 330		9/04
< 330		10/30
< 330		10/30
< 330		12/04
< 330		12/04
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/14
< 330		12/14
< 330		12/14
< 330		12/14

4-Nitroaniline
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 330		5/29
< 17		6/14
< 20		6/15
< 330		7/18
< 330		7/18
< 330		7/19
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/06
< 330		8/06
< 330		8/07
< 330		8/07
< 330		8/13
< 330		8/14
< 330		8/14
< 330		8/21
< 330		8/21
< 330		8/21
< 330		8/21
< 330		9/04
< 330		9/04
< 330		10/30
< 330		10/30
< 330		12/04
< 330		12/04
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/14
< 330		12/14
< 330		12/14
< 330		12/14

CV = 3.0 + 0.3 ug/kg

Result	Uncer	Date
1.7	0.3	3/05

CV = 3.2 + 0.3 mg/kg

Result	Uncer	Date
0.41	0.12	12/06

CV = 6.0 + 0.6 mg/kg

Result	Uncer	Date
2.8	0.8	12/06

Nitrobenzene
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 330		5/29
< 17		6/14
< 20		6/15
< 330		7/18
< 330		7/18
< 330		7/19
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/06
< 330		8/06
< 330		8/07
< 330		8/07
< 330		8/13
< 330		8/14
< 330		8/14
< 330		8/21
< 330		8/21
< 330		8/21
< 330		8/21
< 330		9/04
< 330		9/04
< 330		10/30
< 330		10/30
< 330		12/04
< 330		12/04
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/14
< 330		12/14
< 330		12/14
< 330		12/14

CV = 2.9 + 0.3 mg/kg

Result	Uncer	Date
1.5	0.3	3/05
1.9	0.4	3/05
< 1.4		3/05

2-Nitrophenol
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04

TABLE C-V (cont)

****

HSE-9 Organics on Soil
(cont)

****

2-Nitrophenol (cont)

< 330	5/09
< 330	5/11
< 330	5/29
< 17	6/14
< 20	6/15
< 330	7/18
< 330	7/18
< 330	7/19
< 330	7/19
< 330	8/03
< 330	8/03
< 330	8/03
< 330	8/03
< 330	8/06
< 330	8/06
< 330	8/07
< 330	8/07
< 330	8/13
< 330	8/14
< 330	8/14
< 330	8/21
< 330	8/21
< 330	8/21
< 330	8/21
< 330	9/04
< 330	9/04
< 330	10/30
< 330	10/30
< 330	12/04
< 330	12/04
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/14
< 330	12/14
< 330	12/14
< 330	12/14

4-Nitrophenol
89GAU 01 GCMS

CV = not spiked mg/kg

Result	Uncer	Date
< 330		3/05
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 330		5/04
< 330		5/09
< 330		5/29
< 17		6/14
< 20		6/15
< 330		7/18
< 330		7/18
< 330		7/19
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/06
< 330		8/06
< 330		8/07
< 330		8/07
< 330		8/13

4-Nitrophenol (cont)

< 330	8/14
< 330	8/14
< 330	8/21
< 330	8/21
< 330	8/21
< 330	8/21
< 330	9/04
< 330	9/04
< 330	10/30
< 330	10/30
< 330	12/04
< 330	12/04
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/14
< 330	12/14
< 330	12/14

CV = 3.36 + 0.34 mg/kg

Result	Uncer	Date
3.1	0.9	5/11

CV = 3.7 + 0.4 mg/kg

Result	Uncer	Date
3.6	0.7	2/21

CV = 4.48 + 0.45 mg/kg

Result	Uncer	Date
3.1	0.9	4/27

CV = 5.6 + 0.6 mg/kg

Result	Uncer	Date
5.6	1.7	4/20

CV = 16 + 2 mg/kg

Result	Uncer	Date
3.9	0.8	3/23

N-Nitrosodi-n-propylamine
N-Nitrosodimethylamine
N-Nitrosodiphenylamine
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 330		5/29
< 17		6/14
< 20		6/15
< 330		7/18

N-Nitrosodi-n-propylamine
N-Nitrosodimethylamine
N-Nitrosodiphenylamine (cont)

< 330	7/18
< 330	7/19
< 330	7/19
< 330	8/03
< 330	8/03
< 330	8/03
< 330	8/03
< 330	8/06
< 330	8/06
< 330	8/07
< 330	8/07
< 330	8/13
< 330	8/14
< 330	8/14
< 330	8/21
< 330	8/21
< 330	8/21
< 330	8/21
< 330	9/04
< 330	9/04
< 330	10/30
< 330	10/30
< 330	12/04
< 330	12/04
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/14
< 330	12/14
< 330	12/14
< 330	12/14

Pentachlorophenol
89GAU 01 GCMS

CV = not spiked mg/kg

Result	Uncer	Date
< 330		3/05
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 330		5/04
< 330		5/09
< 330		5/29
< 17		6/14
< 20		6/15
< 330		7/18
< 330		7/18
< 330		7/19
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/06
< 330		8/06
< 330		8/07
< 330		8/07
< 330		8/13
< 330		8/14
< 330		8/14
< 330		8/21
< 330		8/21
< 330		8/21
< 330		8/21
< 330		9/04
< 330		9/04
< 330		10/30
< 330		10/30
< 330		12/04

Pentachlorophenol (cont)

< 330	12/04
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/14
< 330	12/14
< 330	12/14
< 330	12/14

CV = 2.91 + 0.29 mg/kg

Result	Uncer	Date
3.1	0.9	5/11

CV = 3.2 + 0.3 mg/kg

Result	Uncer	Date
3.6	0.7	2/21

CV = 3.88 + 0.39 mg/kg

Result	Uncer	Date
3.3	1.0	4/27

CV = 4.8 + 0.5 mg/kg

Result	Uncer	Date
5.4	1.6	4/20

CV = 14 + 1 mg/kg

Result	Uncer	Date
14	3	3/23

Phenanthrene
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 330		5/29
< 17		6/14
< 20		6/15
< 330		7/18
< 330		7/18
< 330		7/19
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/06
< 330		8/06
< 330		8/07
< 330		8/07
< 330		8/13
< 330		8/14
< 330		8/14
< 330		8/21
< 330		8/21

Phenanthrene (cont)

< 330	8/21
< 330	8/21
< 330	9/04
< 330	9/04
< 330	10/30
< 330	10/30
< 330	12/04
< 330	12/04
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/14
< 330	12/14
< 330	12/14
< 330	12/14

CV = 2.8 + 0.3 mg/kg

Result	Uncer	Date
2.5	0.5	3/05
2.5	0.5	3/05
14	3	3/05

Phenol 90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 330		5/29
< 17		6/14
< 20		6/15
< 330		7/18
< 330		7/18
< 330		7/19
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/03
390	120	8/03
< 330		8/06
< 330		8/06
< 330		8/07
< 330		8/07
< 330		8/13
< 330		8/14
< 330		8/14
< 330		8/21
< 330		8/21
< 330		8/21
< 330		8/21
< 330		9/04
< 330		10/30
< 330		12/04
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/14
< 330		12/14

Phenol (cont)

CV = 1.8 + 0.2 mg/kg

Result	Uncer	Date
1.3	0.4	12/04

CV = 3.07 + 0.30 mg/kg

Result	Uncer	Date
2.1	0.4	3/05

CV = 4.0 + 0.4 mg/kg

Result	Uncer	Date
2.5	0.8	9/04

CV = 4.3 + 0.4 mg/kg

Result	Uncer	Date
3.1	0.9	10/30

CV = 5.1 + 0.5 mg/kg

Result	Uncer	Date
2.8	0.8	12/14

CV = 5.7 + 0.6 mg/kg

Result	Uncer	Date
2.9	0.9	12/14

Propylbenzene
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		1/19
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/13
< 5		3/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/05
< 5		6/26
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		6/29

TABLE C-V (cont)

****

HSE-9 Organics on Soil
(cont)

****

Propylbenzene (cont)

< 5	7/02
< 5	7/02
< 5	7/04
< 130	7/06
< 5	7/06
< 5	7/10
< 5	7/10
< 5	7/23
< 5	7/27
< 5	7/27
< 5	7/31
< 5	7/31
< 5	8/10
< 5	8/10
< 5	8/14
< 5	8/14
< 5	9/04
< 5	9/04
< 5	9/05
< 5	9/05
< 5	10/05
< 5	10/22
< 5	10/22
< 5	11/01
< 5	11/01
< 5	11/01
< 5	11/01
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/08
< 5	11/08
< 5	11/27
< 5	11/27
< 5	11/27

CV = 68 + 7 ug/kg

Result	Uncer	Date
22	7	2/21

Pyrene 90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 330		5/29
< 17		6/14
< 20		6/15
< 330		7/18
< 330		7/18
< 330		7/19
< 330		7/19
< 330		8/03

Pyrene (cont)

< 330	8/03
< 330	8/03
< 330	8/03
< 330	8/06
< 330	8/06
< 330	8/07
< 330	8/07
< 330	8/13
< 330	8/14
< 330	8/14
< 330	8/21
< 330	8/21
< 330	8/21
< 330	8/21
< 330	9/04
< 330	9/04
< 330	10/30
< 330	10/30
< 330	12/04
< 330	12/04
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/14
< 330	12/14
< 330	12/14
< 330	12/14

RDX 90GAU 04 GCMS

CV = 43 + 4 ug/g

Result	Uncer	Date
36	11	7/19

Styrene 89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/19
< 5		2/13
< 5		3/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/05
< 5		6/26
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 5		7/06
< 130		7/06

Styrene (cont)

< 5	7/10
< 5	7/10
< 5	7/23
< 5	7/27
< 5	7/27
< 5	7/31
< 5	7/31
< 5	8/10
< 5	8/10
< 5	8/14
< 5	8/14
< 5	9/04
< 5	9/04
< 5	9/05
< 5	9/05
< 5	10/05
< 5	10/22
< 5	10/22
< 5	11/01
< 5	11/01
< 5	11/01
< 5	11/01
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/08
< 5	11/08
< 5	11/27
< 5	11/27
< 5	11/27

CV = 64 + 6 ug/kg

Result	Uncer	Date
26	8	2/21

CV = 146 + 15 ug/kg

Result	Uncer	Date
46	14	1/16

2,4,5-TP 90GAU 01 GCEC

CV = 0.09 + 0.01 mg/kg

Result	Uncer	Date
0.08	0.02	6/26
0.11	0.03	9/11
0.12	0.03	9/11

CV = 0.11 + 0.01 mg/kg

Result	Uncer	Date
0.12	0.02	2/27

CV = 0.12 + 0.01 mg/kg

Result	Uncer	Date
0.10	0.04	5/23
0.10	0.02	7/30
0.08	0.04	11/29

CV = 0.15 + 0.02 mg/kg

Result	Uncer	Date
0.15	0.10	10/24
0.09	0.05	11/29

1,1,1,2-Tetrachloroethane
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		1/19
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/13
< 5		3/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/05
< 5		6/26
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 5		7/06
< 130		7/06
< 5		7/10
< 5		7/10
< 5		7/23
< 5		7/27
< 5		7/27
< 5		7/31
< 5		7/31
< 5		8/10
< 5		8/10
< 5		8/14
< 5		9/04
< 5		9/04
< 5		9/05
< 5		9/05
< 5		10/05
< 5		10/22
< 5		10/22
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/08
< 5		11/27
< 5		11/27
< 5		11/27

1,1,1,2-Tetrachloroethane
(cont)

CV = 74 + 7 ug/kg

Result	Uncer	Date
43	13	2/21

1,1,2,2-Tetrachloroethane
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/13
< 5		2/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/05
< 5		6/26
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 130		7/06
< 5		7/06
< 5		7/10
< 5		7/10
< 5		7/23
< 5		7/27
< 5		7/27
< 5		7/31
< 5		7/31
< 5		8/10
< 5		8/10
< 5		8/14
< 5		9/04
< 5		9/04
< 5		9/05
< 5		9/05
< 5		10/05
< 5		10/22
< 5		10/22
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07

1,1,2,2-Tetrachloroethane
(cont)

< 5	11/07
< 5	11/08
< 5	11/08
< 5	11/27
< 5	11/27
< 5	11/27

CV = 95 + 10 ug/kg

Result	Uncer	Date
< 5		3/21

CV = 121 + 12 ug/kg

Result	Uncer	Date
< 5		1/19

CV = 130 + 13 ug/kg

Result	Uncer	Date
< 5		6/03

Tetrachloroethylene
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/19
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 130		7/06
< 5		7/06
< 5		7/10
< 5		7/23
< 5		7/27
< 5		7/31
< 5		7/31
< 5		8/10
< 5		8/14
< 5		9/04
< 5		9/05
< 5		10/05
< 5		10/22
< 5		10/22
< 5		11/01

TABLE C-V (cont)

****

HSE-9 Organics on Soil
(cont)

****

Tetrachloroethylene (cont)

< 5	11/01
< 5	11/01
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/07
< 5	11/08
< 5	11/08
< 5	11/27
< 5	11/27

CV = 74 + 7 ug/kg

Result	Uncer	Date
54	16	2/21

CV = 120 + 12 ug/kg

Result	Uncer	Date
34	10	3/21
81	24	7/10
93	28	11/27

CV = 130 + 13 ug/kg

Result	Uncer	Date
30	9	6/29
28	8	9/04
< 5		9/05
< 5		11/01

CV = 140 + 14 ug/kg

Result	Uncer	Date
41	12	3/21
< 5		6/26
64	19	7/27
92	28	8/10

CV = 160 + 20 ug/kg

Result	Uncer	Date
75	23	2/13
43	13	6/03

CV = 168 + 17 ug/kg

Result	Uncer	Date
27	8	1/16

CV = 210 + 20 ug/kg

Result	Uncer	Date
160	50	6/05

Tetryl(methyl-2,4,6-trinitrophenylnitramine)
90GAU 04 GCMS

CV = 44 + 4 ug/g

Result	Uncer	Date
46	14	7/19

Toluene 89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		2/13
11	3	2/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 5		7/06
< 130		7/06
< 5		7/10
< 5		7/23
< 5		7/27
< 5		7/31
< 5		7/31
< 5		8/10
< 5		8/14
< 5		9/04
< 5		9/05
< 5		10/05
< 5		10/22
< 5		10/22
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/08
< 5		11/27
< 5		11/27

CV = 100 + 10 ug/kg

Result	Uncer	Date
39	12	3/21

Toluene (cont)

CV = 130 + 10 ug/kg

Result	Uncer	Date
110	30	7/10
100	30	11/27

CV = 135 + 14 ug/kg

Result	Uncer	Date
< 5		1/19

CV = 140 + 14 ug/kg

Result	Uncer	Date
16	5	5/19
55	17	6/29
52	16	9/04
< 5		9/05
< 5		11/01

CV = 142 + 14 ug/kg

Result	Uncer	Date
81	24	6/03

CV = 150 + 20 ug/kg

Result	Uncer	Date
9.4	2.8	6/26
85	26	7/27
110	30	8/10

CV = 180 + 20 ug/kg

Result	Uncer	Date
160	50	6/05

CV = 200 + 20 ug/kg

Result	Uncer	Date
140	40	5/31

Toxaphene 90GAU 01 GCEC

CV = not spiked ug/kg

Result	Uncer	Date
< 400		2/15
< 200		5/15
< 330		7/17
< 310		7/18
< 330		7/18
< 310		9/20
< 310		9/20

1,1,2-Trichloro-1,2,2-trifluoroethane
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18

1,1,2-Trichloro-1,2,2-trifluoroethane (cont)

< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/05
< 5		6/26
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 130		7/06
< 5		7/06
< 5		7/10
< 5		7/10
< 5		7/23
< 5		7/27
< 5		7/27
< 5		7/31
< 5		7/31
< 5		8/10
< 5		8/10
< 5		8/14
< 5		9/04
< 5		9/04
< 5		9/05
< 5		9/05
< 5		10/05
< 5		10/22
< 5		10/22
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/08
< 5		11/27
< 5		11/27
< 5		11/27

1,2,3-Trichlorobenzene
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		1/19
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/13
< 5		2/21
< 5		3/21
< 5		3/21
< 500		5/14

1,2,3-Trichlorobenzene (cont)

< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/05
< 5		6/26
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 5		7/06
< 130		7/06
< 5		7/10
< 5		7/10
< 5		7/23
< 5		7/27
< 5		7/27
< 5		7/31
< 5		7/31
< 5		8/10
< 5		8/10
< 5		8/14
< 5		9/04
< 5		9/05
< 5		9/05
< 5		10/05
< 5		10/22
< 5		10/22
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
7	2.1	11/07
< 5		11/08
< 5		11/08

1,2,4-Trichlorobenzene
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 330		5/29

1,2,4-Trichlorobenzene (cont)

< 17	6/14
< 20	6/15
< 330	7/18
< 330	7/18
< 330	7/19
< 330	7/19
< 330	8/03
< 330	8/03
< 330	8/03
< 330	8/03
< 330	8/06
< 330	8/06
< 330	8/07
< 330	8/07
< 330	8/13
< 330	8/14
< 330	8/14
< 330	8/21
< 330	8/21
< 330	8/21
< 330	8/21
< 330	9/04
< 330	9/04
< 330	10/30
< 330	10/30
< 330	12/04
< 330	12/04
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/06
< 330	12/14
< 330	12/14
< 330	12/14
< 330	12/14

1,2,4-Trichlorobenzene
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		1/19
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/13
< 5		2/21
< 5		3/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/05
< 5		6/26
< 5		6/26
< 5		6/27
< 5		6/27

TABLE C-V (cont)

****

HSE-9 Organics on Soil
(cont)

****

1,2,4-Trichlorobenzene (cont)

< 5		6/29
< 5		6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 5		7/06
< 130		7/06
< 5		7/10
< 5		7/10
< 5		7/23
< 5		7/27
< 5		7/27
< 5		7/31
< 5		7/31
< 5		8/10
< 5		8/10
< 5		8/14
< 5		9/04
< 5		9/04
< 5		9/05
< 5		9/05
< 5		10/05
< 5		10/22
< 5		10/22
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08

1,1,1-Trichloroethane
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		1/19
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/13
< 5		2/21
< 5		3/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
17	5	5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03

1,1,1-Trichloroethane (cont)

< 5		6/04
< 5		6/05
< 5		6/05
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 130		7/06
< 5		7/06
< 5		7/10
< 5		7/23
< 5		7/27
< 5		7/27
< 5		7/31
< 5		7/31
< 5		8/10
< 5		8/10
< 5		8/14
< 5		9/04
< 5		9/05
< 5		9/05
< 5		10/05
< 5		10/22
< 5		10/22
< 5		11/01
< 5		11/01
< 5		11/01
6	1.8	11/01
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/08
< 5		11/27
< 5		11/27

CV = 130 + 10 ug/kg

Result	Uncer	Date
88	26	7/10
80	24	11/27

CV = 140 + 10 ug/kg

Result	Uncer	Date
20	6	9/04

CV = 160 + 20 ug/kg

Result	Uncer	Date
< 5		6/26

1,1,2-Trichloroethane
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		1/19
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06

1,1,2-Trichloroethane (cont)

< 5		2/13
< 5		2/21
< 5		3/21
34	10	3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
120	40	6/03
< 5		6/04
< 5		6/05
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 5		7/06
< 130		7/06
< 5		7/10
< 5		7/23
< 5		7/27
< 5		7/31
< 5		7/31
< 5		8/10
< 5		8/14
< 5		9/04
< 5		9/05
< 5		10/05
< 5		10/22
< 5		10/22
< 5		11/01
< 5		11/01
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/08
< 5		11/27
< 5		11/27

CV = 130 + 13 ug/kg

Result	Uncer	Date
66	20	5/19

CV = 140 + 10 ug/kg

Result	Uncer	Date
130	40	7/10
110	30	11/27

CV = 150 + 15 ug/kg

Result	Uncer	Date
97	29	6/29
100	30	9/04
20	6	9/05
< 5		11/01

1,1,2-Trichloroethane (cont)

CV = 160 + 20 ug/kg

Result	Uncer	Date
110	30	8/10

CV = 170 + 20 ug/kg

Result	Uncer	Date
200	60	6/05
34	10	6/26
120	40	7/27

CV = 190 + 19 ug/kg

Result	Uncer	Date
180	50	5/31

Trichloroethene
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		1/19
< 5		2/13
< 5		2/21
< 5		3/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/05
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 130		7/06
< 5		7/06
< 5		7/10
< 5		7/23
< 5		7/27
< 5		7/31
< 5		7/31
< 5		8/10
< 5		8/14
< 5		9/04
< 5		9/05
< 5		10/05
< 5		10/22
< 5		10/22
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/07
< 5		11/07
< 5		11/07

Trichloroethene (cont)

< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/08
< 5		11/27
< 5		11/27

CV = 120 + 10 ug/kg

Result	Uncer	Date
68	20	7/10
19	6	9/04
80	24	11/27

CV = 130 + 13 ug/kg

Result	Uncer	Date
10	3	6/29
83	25	8/10
< 5		9/05
< 5		11/01

CV = 140 + 10 ug/kg

Result	Uncer	Date
< 5		6/26
40	12	7/27

Trichlorofluoromethane
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		1/19
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/13
< 5		2/21
< 5		3/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/05
< 5		6/26
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 130		7/06

Trichlorofluoromethane (cont)

< 5		7/06
< 5		7/10
< 5		7/10
< 5		7/23
< 5		7/27
< 5		7/27
< 5		7/31
< 5		7/31
< 5		8/10
< 5		8/10
< 5		8/14
< 5		9/04
< 5		9/04
< 5		9/05
< 5		9/05
< 5		10/05
< 5		10/22
< 5		10/22
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/08
< 5		11/27
< 5		11/27
< 5		11/27

2,4,5-Trichlorophenol
89GAU 01 GCMS

CV = not spiked mg/kg

Result	Uncer	Date
< 330		3/05
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 330		5/29
< 330		7/18
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/06
< 330		8/07
< 330		8/13
< 330		8/14
< 330		8/21
< 330		8/21
< 330		9/04
< 330		9/04
< 330		10/30
< 330		10/30
< 330		12/04
< 330		12/04
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/14
< 330		12/14
< 330		12/14
< 330		12/14

TABLE C-V (cont)

****

HSE-9 Organics on Soil
(cont)

****

2,4,5-Trichlorophenol (cont)

CV = 730 + 73 ug/kg

Result	Uncer	Date
510	150	8/06

CV = 1.0 + 0.1 mg/kg

Result	Uncer	Date
0.60	0.18	8/03

CV = 2.0 + 0.2 mg/kg

Result	Uncer	Date
1.3	0.4	8/21

CV = 2.50 + 0.25 mg/kg

Result	Uncer	Date
1.5	0.5	5/09

CV = 2.7 + 0.3 mg/kg

Result	Uncer	Date
1.7	0.5	8/03
2.2	0.7	8/07

CV = 2.73 + 0.27 mg/kg

Result	Uncer	Date
2.2	0.7	5/11

CV = 3.0 + 0.3 mg/kg

Result	Uncer	Date
2.9	0.6	2/21
< 20		6/15

CV = 3.3 + 0.3 mg/kg

Result	Uncer	Date
2.0	0.6	5/04
2.5	0.8	8/14

CV = 3.64 + 0.36 mg/kg

Result	Uncer	Date
3.1	0.9	4/27

CV = 4.0 + 0.4 mg/kg

Result	Uncer	Date
< 17		6/14
3.2	1.0	7/19

CV = 4.3 + 0.4 mg/kg

Result	Uncer	Date
3.8	1.1	8/21

2,4,5-Trichlorophenol (cont)

CV = 4.6 + 0.5 mg/kg

Result	Uncer	Date
3.8	1.1	4/20

CV = 6.2 + 0.6 mg/kg

Result	Uncer	Date
4.5	1.4	7/18

CV = 13 + 1 mg/kg

Result	Uncer	Date
8.8	1.8	3/23

2,4,6-Trichlorophenol
90GAU 01 GCMS

CV = not spiked ug/kg

Result	Uncer	Date
< 330		2/21
< 1400		3/05
< 330		3/05
< 330		3/05
< 330		3/05
< 330		3/06
< 990		3/23
< 330		4/20
< 330		4/27
< 330		5/04
< 330		5/09
< 330		5/11
< 330		5/29
< 17		6/14
< 20		6/15
< 330		7/18
< 330		7/18
< 330		7/19
< 330		7/19
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/03
< 330		8/06
< 330		8/06
< 330		8/07
< 330		8/07
< 330		8/13
< 330		8/14
< 330		8/14
< 330		8/21
< 330		8/21
< 330		8/21
< 330		8/21
< 330		9/04
< 330		9/04
< 330		10/30
< 330		10/30
< 330		12/04
< 330		12/04
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/06
< 330		12/14
< 330		12/14
< 330		12/14
< 330		12/14

1,2,3-Trichloropropane
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		1/19
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/13
< 5		2/21
< 5		3/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/05
< 5		6/26
< 5		6/26
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/27
< 130		7/06
< 5		7/06
< 5		7/10
< 5		7/10
< 5		7/10
< 5		7/23
< 5		7/27
< 5		7/27
< 5		7/27
< 5		7/31
< 5		7/31
< 5		7/31
< 5		8/10
< 5		8/10
< 5		8/10
< 5		8/14
< 5		8/14
< 5		9/04
< 5		9/04
< 5		9/04
< 5		9/05
< 5		9/05
< 5		10/05
< 5		10/22
< 5		10/22
< 5		10/22
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/08
< 5		11/08
< 5		11/27
< 5		11/27
< 5		11/27

1,2,4-Trimethylbenzene
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		1/19
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/13
< 5		3/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/05
< 5		6/26
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 130		7/06
< 5		7/06
< 5		7/10
< 5		7/10
< 5		7/23
< 5		7/27
< 5		7/27
< 5		7/31
< 5		7/31
< 5		8/10
< 5		8/10
< 5		8/14
< 5		9/04
< 5		9/04
< 5		9/05
47	14	9/05
< 5		10/05
< 5		10/22
< 5		10/22
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/08
< 5		11/27
20	6	11/27
< 5		11/27

1,2,4-Trimethylbenzene (cont)

CV = 71 + 7 ug/kg

Result	Uncer	Date
28	8	2/21

1,3,5-Trimethylbenzene
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		1/19
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/13
< 5		2/21
< 5		3/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/05
< 5		6/26
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 130		7/06
< 5		7/06
< 5		7/10
< 5		7/10
< 5		7/23
< 5		7/27
< 5		7/27
< 5		7/31
< 5		7/31
< 5		8/10
< 5		8/10
< 5		8/14
< 5		9/04
< 5		9/04
< 5		9/05
< 5		9/05
< 5		10/05
< 5		10/22
< 5		10/22
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/07
< 5		11/07
< 5		11/07

1,3,5-Trimethylbenzene (cont)

Result	Uncer	Date
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/08
< 5		11/27
< 5		11/27
< 5		11/27

2,4,6-Trinitrotoluene
90GAU 04 GCMS

CV = 15 + 2 ug/g

Result	Uncer	Date
14	4	7/19

Vinyl acetate
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		1/19
< 10		2/06
< 10		2/06
< 10		2/06
< 10		2/06
< 10		2/06
< 10		2/21
< 1000		5/14
< 1000		5/14
< 10		5/17
< 10		5/18
< 10		5/18
< 10		5/19
< 10		5/22
< 10		5/30
< 10		5/31
< 10		5/31
< 10		5/31
< 10		6/03
< 10		6/03
< 10		6/04
< 10		6/05
< 10		6/26
< 10		6/26
< 10		6/27
< 10		6/27
< 10		6/29
< 10		6/29
< 10		7/02
< 10		7/02
< 10		7/04
< 10		7/06
< 250		7/06
< 10		7/10
< 10		7/10
< 10		7/23
< 10		7/27
< 10		7/27
< 10		7/31
< 10		7/31
< 10		8/10
< 10		8/10
< 10		8/14
< 10		9/04
< 10		9/04
< 10		9/05
< 10		9/05
< 10		10/05
< 10		10/22
< 10		10/22

TABLE C-V (cont)

****

HSE-9 Organics on Soil
(cont)

****

Vinyl acetate (cont)

< 10	11/01
< 10	11/01
< 10	11/01
< 10	11/01
< 10	11/07
< 10	11/07
< 10	11/07
< 10	11/07
< 10	11/07
< 10	11/07
< 10	11/08
< 10	11/08
< 10	11/27
< 10	11/27
< 10	11/27

CV = 94 + 9 ug/kg

Result	Uncer	Date
28	8	3/21

CV = 110 + 11 ug/kg

Result	Uncer	Date
31	9	3/21

CV = 130 + 10 ug/kg

Result	Uncer	Date
53	16	2/13
21	6	6/03

CV = 170 + 20 ug/kg

Result	Uncer	Date
210	60	6/05

Vinyl chloride
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 10		1/16
< 10		1/19
< 10		2/06
< 10		2/06
< 10		2/06
< 10		2/06
< 10		2/06
< 10		2/13
< 10		2/21
< 10		3/21
< 10		3/21
< 1000		5/14
< 1000		5/14
< 10		5/17
< 10		5/18
< 10		5/18
< 10		5/19
< 10		5/22
< 10		5/30
< 10		5/31
< 10		5/31
< 10		5/31

Vinyl chloride (cont)

< 10	6/03
< 10	6/03
< 10	6/03
< 10	6/04
< 10	6/05
< 10	6/05
< 10	6/26
< 10	6/26
< 10	6/27
< 10	6/27
< 10	6/29
< 10	6/29
< 10	7/02
< 10	7/02
< 10	7/04
< 10	7/06
< 250	7/06
< 10	7/10
< 10	7/10
< 10	7/23
< 10	7/27
< 10	7/27
< 10	7/31
< 10	7/31
< 10	8/10
< 10	8/10
< 10	8/14
< 10	9/04
< 10	9/04
< 10	9/05
< 10	9/05
< 10	10/05
< 10	10/22
< 10	10/22
< 10	11/01
< 10	11/01
< 10	11/01
< 10	11/01
< 10	11/07
< 10	11/07
< 10	11/07
< 10	11/07
< 10	11/07
< 10	11/08
< 10	11/08
< 10	11/27
< 10	11/27
< 10	11/27

o-Xylene 89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/16
< 5		1/19
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/13
< 5		2/21
< 5		3/21
< 5		3/21

Mixed-Xylenes (o + m + p)
89GAU 01 PTGC

CV = not spiked ug/kg

Result	Uncer	Date
< 5		1/19
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/06
< 5		2/13
< 5		3/21
< 5		3/21
< 500		5/14
< 500		5/14
< 5		5/17
< 5		5/18
< 5		5/18
< 5		5/19
< 5		5/22
< 5		5/30
< 5		5/31
< 5		5/31
< 5		5/31
< 5		6/03
< 5		6/03
< 5		6/03
< 5		6/04
< 5		6/05
< 5		6/05
< 5		6/26
< 5		6/26
< 5		6/27
< 5		6/27
< 5		6/29
< 5		6/29
< 5		7/02
< 5		7/02
< 5		7/04
< 130		7/06
< 5		7/06
8.5	2.6	7/10
< 5		7/10
< 5		7/23
< 5		7/27
< 5		7/27
< 5		7/31
< 5		7/31
< 5		8/10
< 5		8/10
< 5		8/14
< 5		9/04
< 5		9/04
< 5		9/05
< 5		9/05
< 5		10/05
< 5		10/22
< 5		10/22
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/01
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/07
< 5		11/08
< 5		11/08
< 5		11/27
< 5		11/27
< 5		11/27

Mixed-Xylenes (o + m + p)
(cont)

CV = 79 + 8 ug/kg

Result	Uncer	Date
27	8	2/21

CV = 180 + 18 ug/kg

Result	Uncer	Date
< 5		1/16

****

HSE-9 Organics on Vapor Badge

****

Acetone
90GAU 01 GCMS

CV = 98 + 10 ug/badge

Result	Uncer	Date
100	20	2/06

Formaldehyde
90GAU 01 GCMS

CV = 1.8 + 0.2 ug/badge

Result	Uncer	Date
3.5	0.7	3/26

CV = 5.4 + 0.5 ug/badge

Result	Uncer	Date
6.2	1.3	3/26

CV = 14 + 1 ug/badge

Result	Uncer	Date
13	3	5/03

CV = 20 + 2 ug/badge

Result	Uncer	Date
17	4	11/13

CV = 59 + 6 ug/badge

Result	Uncer	Date
47	9	11/13

CV = 74 + 7 ug/badge

Result	Uncer	Date
< 1		8/20

n-Pentyl acetate
89GAU 01 GCMS

CV = 620 + 60 ug/badge

Result	Uncer	Date
600	60	1/25

1,1,1-Trichloroethane
90GAU 01 GCMS

CV = 96 + 10 ug/badge

Result	Uncer	Date
96	20	2/06

CV = 462 + 46 ug/badge

Result	Uncer	Date
460	100	1/18

****

HSE-9 PCB in Oil

****

Mixed-Aroclor
87GAU 04 GCEC

CV = 7.9 + 0.8 ug/g

Result	Uncer	Date
7.2	1.5	1/08
6.4	1.3	1/16
6.4	1.3	1/16
6.4	1.3	1/16
8.3	1.7	1/17
6.3	1.3	1/22
6.3	1.3	1/22
6.3	1.3	1/22
5.2	1.0	2/27
8.7	1.7	2/28
6.7	1.3	4/16
7.2	1.4	5/16
7.6	1.5	6/05
7.7	1.5	6/05
7.1	1.4	6/07
5.7	1.1	6/25
8.5	1.7	6/26
8.1	1.6	11/02

CV = 21.4 + 2.1 ug/g

Result	Uncer	Date
27	5	1/30
16	3	2/12
20	4	2/12
19	4	2/14
21	4	3/22
15	3	6/05
16	3	6/08
16	3	6/19
18	4	8/07
19	4	8/24
20	4	9/10
17	3	11/02
16	3	12/12

CV = 24.6 + 2.5 ug/g

Result	Uncer	Date
21	4	1/18
21	4	1/18
21	4	1/18
17	3	2/12
17	3	3/07
19	4	5/08
23	5	5/08
17	3	5/14

Mixed-Aroclor (cont)

17	3	7/12
23	5	8/13
19	4	8/24
17	4	12/17

CV = 25 + 2 ug/g

Result	Uncer	Date
16	3	1/23
16	3	1/23
23	5	2/12
31	6	2/14
21	4	3/05
17	3	5/31
17	4	6/05
18	4	7/09
17	3	8/07
18	4	8/16
18	4	8/28
17	3	9/11
21	4	9/20
19	4	10/03
20	4	10/03
19	4	10/03
18	4	10/03
20	4	10/22
20	4	10/23
19	4	10/24
23	5	11/02
18	4	11/08
19	4	12/12

CV = 36.4 + 3.6 ug/g

Result	Uncer	Date
39	8	2/28
26	5	3/15

CV = 44.5 + 4.4 ug/g

Result	Uncer	Date
27	4	1/23
51	10	3/05
35	7	3/07
43	9	4/05
39	8	5/08
36	7	6/05

CV = 53.3 + 5.3 ug/g

Result	Uncer	Date
68	14	12/06

CV = 56 + 6 ug/g

Result	Uncer	Date
70	10	3/22

CV = 57 + 6 ug/g

Result	Uncer	Date
36	7	1/23
42	8	1/30
41	8	3/22
53	11	4/05
49	10	5/08
43	9	5/14
43	9	6/05
41	8	6/08
42	9	7/12
46	9	7/17
46	9	8/13

TABLE C-V (cont)

****

HSE-9 PCB in Oil
(cont)

****

Mixed-Aroclor (cont)

40	8	8/16
48	12	8/28
41	8	9/11
49	10	9/20
46	9	10/17
46	9	10/17
39	8	10/22
42	8	10/23
41	8	10/24
33	7	12/17

CV = 57.2 + 5.7 ug/g

Result	Uncer	Date
47	9	1/18
47	9	1/18
47	9	1/18
38	8	1/23
38	8	1/23
45	9	3/22
46	9	5/31
62	12	6/12
41	8	6/19
38	8	7/09
24	5	7/09
42	8	9/10

CV = 300 + 30 ug/g

Result	Uncer	Date
360	70	1/08
250	50	1/16
250	50	1/16
250	50	1/16
270	60	1/17
250	50	1/22
250	50	1/22
250	50	1/22
340	70	4/16
250	50	5/16
280	60	6/05
240	50	6/05
240	50	6/05
250	50	6/07
250	50	6/26
330	70	9/17
340	70	9/17
290	60	9/26
280	60	10/23
300	60	10/23
460	90	11/14
430	90	11/14
340	70	11/29
310	60	11/29
370	70	12/06

CV = 305 + 30 ug/g

Result	Uncer	Date
360	70	2/27
230	50	3/15
260	50	6/05
270	50	6/05
280	60	6/25
300	60	9/26
330	70	11/02
290	60	12/06
480	100	12/06

Aroclor 1242 86GAU 01 GCEC

CV = not spiked ug/g

Result	Uncer	Date
< 6.3		1/18
< 6.3		1/18
< 6.3		1/18
< 6.3		1/18
< 6.3		1/18
< 6.3		1/18
< 4		1/23
< 0.8		1/23
< 0.8		1/23
< 0.8		1/23
< 4		1/23
< 0.8		1/23
< 4		1/30
< 4		1/30
< 0.8		2/12
< 0.8		2/12
< 4		2/12
< 4		2/12
< 4		2/14
< 4		2/14
< 4		3/05
< 4		3/05
< 4		3/07
< 4		3/07
< 4		3/22
< 4		3/22
< 4		3/22
< 4		4/05
< 4		4/05
< 4		5/08
< 4		5/08
< 4		5/08
< 4		5/08
< 4		5/14
< 4		5/14
< 4		5/31
< 4		5/31
< 2		6/05
< 2		6/05
< 4		6/05
< 4		6/05
< 4		6/08
< 4		6/08
< 4		6/12
< 4		6/19
< 4		6/19
< 4		7/09
< 4		7/09
< 4		7/09
< 4		7/12
< 4		7/12
< 4		7/17
< 4		8/07
< 4		8/07
< 4		8/13
< 4		8/13
< 4		8/16
< 4		8/16
< 4		8/24
< 4		8/24
< 1		8/28
< 1		8/28
< 4		9/10
< 4		9/10
< 4		9/11
< 4		9/11
< 4		9/20
< 4		9/20
< 4		10/03
< 4		10/03
< 4		10/03
< 4		10/03
< 4		10/17
< 4		10/17

Aroclor 1242 (cont)

< 4		10/22
< 4		10/22
< 4		10/23
< 4		10/23
< 4		10/24
< 4		10/24
< 2		11/02
< 4		11/02
< 4		11/08
< 4		12/12
< 4		12/12
< 4		12/17
< 4		12/17

CV = 7.9 + 0.8 ug/g

Result	Uncer	Date
7.2	1.5	1/08
6.4	1.3	1/16
6.4	1.3	1/16
6.4	1.3	1/16
8.3	1.7	1/17
6.3	1.3	1/22
6.3	1.3	1/22
6.3	1.3	1/22
5.2	1	2/27
8.7	1.7	2/28
6.7	1.3	4/16
7.2	1.4	5/16
7.6	1.5	6/05
7.7	1.5	6/05
7.1	1.4	6/07
5.7	1.1	6/25
8.5	1.7	6/26
8.1	1.6	11/02

CV = 31 + 3 ug/g

Result	Uncer	Date
38	8	3/22

CV = 36.4 + 3.6 ug/g

Result	Uncer	Date
39	8	2/28
26	5	3/15

CV = 53.3 + 5.3 ug/g

Result	Uncer	Date
68	14	12/06

CV = 300 + 30 ug/g

Result	Uncer	Date
360	70	1/08
250	50	1/16
250	50	1/16
250	50	1/16
270	60	1/17
250	50	1/22
250	50	1/22
250	50	1/22
340	70	4/16
250	50	5/16
280	60	6/05
240	50	6/05
240	50	6/05
250	50	6/07
250	50	6/26
330	70	9/17
340	70	9/17
290	60	9/26

Aroclor 1242 (cont)

280	60	10/23
300	60	10/23
460	90	11/14
430	90	11/14
340	70	11/29
310	60	11/29
370	70	12/06

CV = 305 + 30 ug/g

Result	Uncer	Date
360	70	2/27
230	50	3/15
270	50	6/05
260	50	6/05
280	60	6/25
300	60	9/26
330	70	11/02
290	60	12/06
480	100	12/06

Aroclor 1254 86GAU 01 GCEC

CV = not spiked ug/g

Result	Uncer	Date
< 5		1/08
< 4		1/08
< 4		1/16
< 4		1/16
< 4		1/16
< 4		1/16
< 4		1/16
< 4		1/17
< 4		1/17
< 6.3		1/18
< 6.3		1/18
< 6.3		1/18
< 6.3		1/18
< 6.3		1/18
< 6.3		1/18
< 4		1/22
< 4		1/22
< 4		1/22
< 4		1/22
< 4		1/22
< 4		1/22
< 4		1/23
< 0.8		1/23
< 0.8		1/23
< 0.8		1/23
< 0.8		1/23
< 4		1/23
< 4		1/30
< 4		1/30
< 0.8		2/12
< 0.8		2/12
< 4		2/12
< 4		2/12
< 4		2/14
< 4		2/14
< 2.1		2/27
< 2.1		2/27
< 4		2/28
< 4		2/28
< 4		3/05
< 4		3/05
< 4		3/07
< 4		3/07
< 4		3/15
< 4		3/15
< 4		3/22
< 4		3/22
< 4		3/22

Aroclor 1254 (cont)

< 4		3/22
< 4		4/05
< 4		4/05
< 4		4/16
< 4		4/16
< 4		5/08
< 4		5/08
< 4		5/08
< 4		5/08
< 4		5/14
< 4		5/14
< 1		5/16
< 4		5/16
< 4		5/31
< 4		5/31
< 2		6/05
< 2		6/05
< 4		6/05
< 4		6/05
< 4		6/05
< 4		6/05
< 4		6/05
< 4		6/05
< 4		6/05
< 4		6/05
< 4		6/05
< 4		6/05
< 4		6/07
< 4		6/07
< 4		6/08
< 4		6/08
< 4		6/12
< 4		6/19
< 4		6/19
< 4		6/25
< 4		6/25
< 4		6/26
< 4		6/26
< 4		7/09
< 4		7/09
< 4		7/09
< 4		7/12
< 4		7/12
< 4		7/17
< 4		8/07
< 4		8/07
< 4		8/13
< 4		8/13
< 4		8/16
< 4		8/16
< 4		8/24
< 4		8/24
< 1		8/28
< 1		8/28
< 4		9/10
< 4		9/10
< 4		9/11
< 4		9/11
< 4		9/17
< 4		9/17
< 4		9/20
< 4		9/20
< 4		9/26
< 4		9/26
< 4		10/03
< 4		10/03
< 4		10/03
< 4		10/03
< 4		10/17
< 4		10/17
< 4		10/22
< 4		10/22
< 4		10/23
< 4		10/23
< 4		10/23
< 4		10/24
< 4		10/24
< 2		11/02

Aroclor 1254 (cont)

< 4		11/02
< 1.3		11/02
< 4		11/02
< 4		11/08
< 4		11/14
< 4		11/14
< 4		11/29
< 4		11/29
< 4		12/06
< 8		12/06
< 4		12/06
< 8		12/06
< 4		12/12
< 4		12/12
< 4		12/17
< 4		12/17

Aroclor 1260 86GAU 01 GCEC

CV = not spiked ug/g

Result	Uncer	Date
< 5		1/08
< 4		1/08
< 4		1/16
< 4		1/16
< 4		1/16
< 4		1/16
< 4		1/16
< 4		1/16
< 4		1/17
< 4		1/17
< 4		1/22
< 4		1/22
< 4		1/22
< 4		1/22
< 4		1/22
< 4		1/22
< 2.1		2/27
< 2.1		2/27
< 4		2/28
< 4		2/28
< 4		3/15
< 4		3/15
< 4		4/16
< 4		4/16
< 4		5/16
< 1		5/16
< 4		6/05
< 4		6/05
< 4		6/05
< 4		6/05
< 4		6/05
< 4		6/05
< 4		6/05
< 4		6/07
< 4		6/07
< 4		6/25
< 4		6/25
< 4		6/26
< 4		6/26
< 4		9/17
< 4		9/17
< 4		9/26
< 4		9/26
< 4		10/23
< 4		10/23
< 1.3		11/02
< 4		11/02
< 4		11/14
< 4		11/14
< 4		11/29
< 4		11/29
< 4		12/06

TABLE C-V (cont)

****

HSE-9 PCB in Oil
(cont)

****

Aroclor 1260 (cont)

< 8		12/06
< 4		12/06
< 8		12/06

CV = 21.4 + 2.1 ug/g

Result	Uncer	Date
27	5	1/30
16	3	2/12
20	4	2/12
19	4	2/14
21	4	3/22
15	3	6/05
16	3	6/08
16	3	6/19
18	4	8/07
19	4	8/24
20	4	9/10
17	3	11/02
16	3	12/12

CV = 24.6 + 2.5 ug/g

Result	Uncer	Date
21	4	1/18
21	4	1/18
21	4	1/18
17	3	2/12
17	3	3/07
23	5	5/08
19	4	5/08
17	3	5/14
17	3	7/12
23	5	8/13
19	4	8/24
17	4	12/17

CV = 25 + 2 ug/g

Result	Uncer	Date
16	3	1/23
16	3	1/23
23	5	2/12
31	6	2/14
21	4	3/05
32	6	3/22
17	3	5/31
17	4	6/05
18	4	7/09
17	3	8/07
18	4	8/16
18	4	8/28
17	3	9/11
21	4	9/20
19	4	10/03
20	4	10/03
19	4	10/03
18	4	10/03
20	4	10/22
20	4	10/23
19	4	10/24
23	5	11/02
18	4	11/08
19	4	12/12

Aroclor 1260 (cont)

CV = 44.5 + 4.4 ug/g

Result	Uncer	Date
27	4	1/23
51	10	3/05
35	7	3/07
43	9	4/05
39	8	5/08
36	7	6/05

CV = 57 + 6 ug/g

Result	Uncer	Date
36	7	1/23
42	8	1/30
41	8	3/22
53	11	4/05
49	10	5/08
43	9	5/14
43	9	6/05
41	8	6/08
42	9	7/12
46	9	7/17
46	9	8/13
40	8	8/16
48	12	8/28
41	8	9/11
49	10	9/20
46	9	10/17
46	9	10/17
39	8	10/22
42	8	10/23
41	8	10/24
33	7	12/17

CV = 57.2 + 5.7 ug/g

Result	Uncer	Date
47	9	1/18
47	9	1/18
47	9	1/18
38	8	1/23
38	8	1/23
45	9	3/22
46	9	5/31
62	12	6/12
41	8	6/19
38	8	7/09
24	5	7/09
42	8	9/10

****

HSE-9 PCB on Filter Media

****

Mixed-Aroclor
89GAU 04 GCEC

CV = 5.0 + 0.5 ug/sample

Result	Uncer	Date
6.2	1.2	2/02
3.9	0.8	3/13
5.8	1.2	7/23
3.9	0.8	9/27
3.4	0.7	10/24
6.0	1.2	12/11

Mixed-Aroclor (cont)

CV = 6.0 + 0.6 ug/sample

Result	Uncer	Date
4.9	1.0	4/18
4.7	0.9	5/09
3.3	0.7	5/09
6.0	1.2	5/23
5.2	1	7/10
10	2	11/14

CV = 6.2 + 0.6 ug/sample

Result	Uncer	Date
5.3	1.0	4/12
6.4	1.3	5/09

CV = 7.5 + 0.8 ug/sample

Result	Uncer	Date
10	2	2/07
6.4	1.3	3/13
5	1	9/27

CV = 8.5 + 0.8 ug/sample

Result	Uncer	Date
7.8	1.6	1/04
6.6	1.3	2/05
11	2	3/05
9.2	1.8	5/09
9.0	1.8	5/23
6.4	1.3	7/18
5.6	1.1	8/23
9.2	1.8	12/06

CV = 10 + 1 ug/sample

Result	Uncer	Date
7.1	1.4	2/28
10	2	3/30
12	2	7/10
9.4	1.9	9/06
11	2	9/14
13	3	12/11

CV = 10.5 + 1.0 ug/sample

Result	Uncer	Date
8.9	1.8	1/23
11	2	3/30
12	2	5/23
12	2	6/12
8.7	1.7	7/09
9.5	2.0	11/08

CV = 11.5 + 1.0 ug/sample

Result	Uncer	Date
8.4	1.7	2/02

CV = 12 + 1 ug/filter

Result	Uncer	Date
11	2	5/18

Mixed-Aroclor (cont)

CV = 12.5 + 1.0 ug/sample

Result	Uncer	Date
9	2	2/05
15	3	3/05
13	3	5/23
11	2	6/28
10	2	7/23
16	4	8/29
13	3	9/14

CV = 13 + 1 ug/sample

Result	Uncer	Date
19	4	11/14
15	3	11/29

CV = 14.5 + 1.0 ug/sample

Result	Uncer	Date
9.7	1.9	1/23
9.7	1.9	1/23
16	3	4/03
17	3	5/23
14	3	7/09
14	3	8/24

CV = 15 + 2 ug/sample

Result	Uncer	Date
15	3	2/28
16	3	4/12
16	3	7/23
13	3	8/23
12	2	10/29

CV = 16 + 2 ug/sample

Result	Uncer	Date
26	5	12/05

CV = 16.1 + 1.0 ug/sample

Result	Uncer	Date
16	3	5/18

CV = 17 + 2 ug/sample

Result	Uncer	Date
17	3	1/23
14	3	4/18
16	3	6/05

CV = 17.5 + 2.0 ug/sample

Result	Uncer	Date
14	3	1/08
26	5	2/06
17	3	6/05
12	2	9/25

CV = 18 + 2 ug/sample

Result	Uncer	Date
20	4	4/12
16	3	11/26

Mixed-Aroclor (cont)

CV = 19 + 2 ug/sample

Result	Uncer	Date
13	3	1/23
13	3	1/23
23	5	4/03
16	3	6/28
13	3	7,09
14	3	7/18
23	6	8/29
20	4	11/29

CV = 20 + 2 ug/sample

Result	Uncer	Date
13	3	1/08
16	3	7/23
9.3	1.9	8/23
15	3	9/25
16	3	11/02

CV = 22 + 2 ug/sample

Result	Uncer	Date
23	5	7/13

CV = 25 + 3 ug/sample

Result	Uncer	Date
20	4	8/23

Aroclor 1242 89GAU 04 GCEC

CV = not spiked ug/sample

Result	Uncer	Date
< 0.4		1/04
< 0.4		1/23
< 0.4		1/23
< 0.4		1/23
< 0.3		1/23
< 0.4		1/23
< 0.4		1/23
< 0.4		2/02
< 0.4		2/02
< 1		2/05
< 1		2/05
< 0.4		2/06
< 0.4		2/07
< 0.4		3/05
< 0.4		3/05
< 0.4		3/13
< 0.4		3/13
< 0.4		3/30
< 0.4		3/30
< 0.4		4/03
< 0.4		4/03
< 0.4		4/12
< 0.4		4/12
< 0.4		4/12
< 4		4/18
< 4		4/18
< 0.4		5/09
< 0.4		5/09
< 1		5/23
< 1		5/23
< 1		5/23
< 1		5/23
< 1		5/23
< 0.4		6/05
< 0.4		6/05
< 0.4		6/12

Aroclor 1242 (cont)

< 0.4		6/28
< 0.4		6/28
< 0.4		7/09
< 0.4		7/09
< 4		7/09
< 0.4		7/13
< 0.4		7/18
< 0.4		7/18
< 0.4		8/24
< 0.2		8/29
< 0.2		8/29
< 0.4		9/06
< 0.4		9/27
< 0.4		9/27
< 0.4		10/24
< 0.4		10/29
< 0.4		11/02
< 0.4		11/08
< 0.4		11/26
< 0.4		12/11
< 0.4		12/11

CV = 5.0 + 0.5 ug/sample

Result	Uncer	Date
5.8	1.2	7/23

CV = 6.0 + 0.6 ug/sample

Result	Uncer	Date
3.3	0.7	5/09
4.7	0.9	5/09
5.2	1	7/10
10	2	11/14

CV = 8.5 + 0.8 ug/sample

Result	Uncer	Date
5.6	1.1	8/23
9.2	1.8	12/06

CV = 10 + 1 ug/sample

Result	Uncer	Date
7.1	1.4	2/28
12	2	7/10
11	2	9/14

CV = 12 + 1 ug/sample

Result	Uncer	Date
11	2	5/18

CV = 12.5 + 1 ug/sample

Result	Uncer	Date
10	2	7/23
13	3	9/14

CV = 13 + 1 ug/sample

Result	Uncer	Date
19	4	11/14
15	3	11/29

TABLE C-V (cont)

****

HSE-9 PCB on Filter Media
(cont)

****

Aroclor 1242 (cont)

CV = 15 + 2 ug/sample

Result	Uncer	Date
15	3	2/28
16	3	7/23
13	3	8/23

CV = 16 + 2 ug/sample

Result	Uncer	Date
26	5	12/05

CV = 16.1 + 1.0 ug/sample

Result	Uncer	Date
16	3	5/18

CV = 17.5 + 2.0 ug/sample

Result	Uncer	Date
14	3	1/08
12	2	9/25

CV = 19 + 2 ug/sample

Result	Uncer	Date
20	4	11/29

CV = 20 + 2 ug/sample

Result	Uncer	Date
13	3	1/08
16	3	7/23
9.3	1.9	8/23
15	3	9/25

CV = 25 + 3 ug/sample

Result	Uncer	Date
20	4	8/23

Aroclor 1254 89GAU 04 GCEC

CV = not spiked ug/sample

Result	Uncer	Date
< 0.4		1/04
< 0.8		1/08
< 4		1/08
< 0.4		1/23
< 0.4		1/23
< 0.3		1/23
< 0.4		1/23
< 0.4		1/23
< 0.4		1/23
< 1		2/05
< 1		2/05
< 4		2/28
< 0.4		2/28
< 0.4		3/05
< 0.4		3/05
< 0.4		3/30

Aroclor 1254 (cont)

< 0.4		3/30
< 0.4		4/03
< 0.4		4/03
< 0.4		4/12
< 0.4		4/12
< 0.4		4/12
< 4		4/18
< 4		4/18
< 0.4		5/09
< 0.4		5/09
< 0.4		5/09
< 0.4		5/09
< 0.4		5/18
< 0.4		5/18
< 1		5/23
< 1		5/23
< 1		5/23
< 1		5/23
< 1		5/23
< 0.4		6/05
< 0.4		6/12
< 0.4		6/28
< 0.4		6/28
< 0.4		7/09
< 0.4		7/09
< 4		7/09
< 0.4		7/10
< 0.4		7/10
< 0.4		7/13
< 0.4		7/18
< 0.4		7/18
< 0.4		7/23
< 0.4		7/23
< 0.4		7/23
< 0.4		7/23
< 0.4		8/23
< 0.4		8/23
< 0.4		8/23
< 0.4		8/23
< 0.4		8/24
< 0.2		8/29
< 0.2		8/29
< 0.4		9/06
< 0.4		9/14
< 0.4		9/14
< 0.4		9/25
< 0.4		9/25
< 0.4		10/24
< 0.4		10/29
< 0.4		11/02
< 0.4		11/08
< 0.4		11/14
< 0.4		11/14
< 0.4		11/26
< 0.4		11/29
< 0.4		11/29
< 0.4		12/05
< 0.4		12/06
< 0.4		12/11
< 0.4		12/11

CV = 5.0 + 0.5 ug/sample

Result	Uncer	Date
6.2	1.2	2/02
3.9	0.8	3/13
3.9	0.8	9/27

CV = 7.5 + 0.8 ug/sample

Result	Uncer	Date
10	2	2/07
6.4	1.3	3/13
5	1	9/27

Aroclor 1254 (cont)

CV = 11.5 + 1.0 ug/sample

Result	Uncer	Date
8.4	1.7	2/02

CV = 17.5 + 2.0 ug/sample

Result	Uncer	Date
26	5	2/06
17	3	6/05

Aroclor 1260 89GAU 04 GCEC

CV = not spiked ug/sample

Result	Uncer	Date
< 4		1/08
< 0.8		1/08
< 0.4		2/02
< 0.4		2/02
< 0.4		2/06
< 0.4		2/07
< 0.4		2/28
< 4		2/28
< 0.4		3/13
< 0.4		3/13
< 0.4		5/09
< 0.4		5/09
< 0.4		5/18
< 0.4		5/18
< 0.4		6/05
< 0.4		7/10
< 0.4		7/10
< 0.4		7/23
< 0.4		7/23
< 0.4		7/23
< 0.4		8/23
< 0.4		8/23
< 0.4		8/23
< 0.4		8/23
< 0.4		8/23
< 0.4		9/14
< 0.4		9/14
< 0.4		9/25
< 0.4		9/25
< 0.4		10/24
< 0.4		11/14
< 0.4		11/14
< 0.4		11/29
< 0.4		11/29
< 0.4		12/05
< 0.4		12/06

CV = 5.0 + 0.5 ug/sample

Result	Uncer	Date
3.4	0.7	10/24
6.0	1.2	12/11

CV = 6.0 + 0.6 ug/sample

Result	Uncer	Date
4.9	1.0	4/18
6.0	1.2	5/23

CV = 6.2 + 0.6 ug/sample

Result	Uncer	Date
5.3	1.0	4/12
6.4	1.3	5/09

Aroclor 1260 (cont)

CV = 8.5 + 0.8 ug/sample

Result	Uncer	Date
7.8	1.6	1/04
6.6	1.3	2/05
11	2	3/05
9.2	1.8	5/09
9.0	1.8	5/23
6.4	1.3	7/18

CV = 10 + 1 ug/sample

Result	Uncer	Date
10	2	3/30
9.4	1.9	9/06
13	3	12/11

CV = 10.5 + 1.0 ug/sample

Result	Uncer	Date
8.9	1.8	1/23
11	2	3/30
12	2	5/23
12	2	6/12
8.7	1.7	7/09
9.5	2	11/08

CV = 12.5 + 1.0 ug/sample

Result	Uncer	Date
9	1.8	2/05
15	3	3/05
13	3	5/23
11	2	6/28
16	4	8/29

CV = 14.5 + 1.0 ug/sample

Result	Uncer	Date
9.7	1.9	1/23
9.7	1.9	1/23
16	3	4/03
17	3	5/23
14	3	7/09
14	3	8/24

CV = 15 + 2 ug/sample

Result	Uncer	Date
16	3	4/12
12	2	10/29

CV = 17 + 2 ug/sample

Result	Uncer	Date
17	3	1/23
14	3	4/18
16	3	6/05

CV = 18 + 2 ug/sample

Result	Uncer	Date
20	4	4/12
16	3	11/26

Aroclor 1260 (cont)

CV = 19 + 2 ug/sample

Result	Uncer	Date
13	3	1/23
13	3	1/23
23	5	4/03
16	3	6/28
13	3	7/09
14	3	7/18
23	6	8/29

CV = 20 + 2 ug/sample

Result	Uncer	Date
16	3	11/02

CV = 22 + 2 ug/sample

Result	Uncer	Date
23	5	7/13

****

HSE-9 PCB on Florisil

****

Mixed-Aroclor
90GAU 01 GCEC

CV = 9.7 + 1.0 ug/tube

Result	Uncer	Date
9.4	2.3	8/27

CV = 30 + 3 ug/tube

Result	Uncer	Date
29	6	3/28

Aroclor 1242 90GAU 01 GCEC

CV = not spiked ug/tube

Result	Uncer	Date
< 0.04		3/28
< 1.0		8/27

Aroclor 1254 90GAU 01 GCEC

CV = not spiked ug/tube

Result	Uncer	Date
< 1.0		8/27

CV = 30 + 3 ug/tube

Result	Uncer	Date
29	6	3/28

Aroclor 1260 90GAU 01 GCEC

CV = not spiked ug/tube

Result	Uncer	Date
< 0.04		3/28

Aroclor 1260 (cont)

CV = 9.7 + 1.0 ug/tube

Result	Uncer	Date
9.4	2.3	8/27

****

HSE-9 PCB on Soil

****

Mixed-Aroclor
90GAU 04 GCEC

CV = 9.9 + 1.0 ug/g

Result	Uncer	Date
11	2	3/29

CV = 10 + 1 ug/g

Result	Uncer	Date
14	3	3/29
10	2	7/09

CV = 11 + 1 ug/g

Result	Uncer	Date
10	2	1/08
10	3	1/19
8.7	1.7	6/27
12	3	6/28
13	3	8/21
8.2	1.6	9/27
6.1	1.2	9/29
7.7	1.5	10/03

Sample run on 9/29 had evaporated.

CV = 12 + 1 ug/g

Result	Uncer	Date
12	2	1/24
26	5	3/16

CV = 13 + 1 ug/g

Result	Uncer	Date
13	3	1/08
11	2	7/25

CV = 14 + 1 ug/g

Result	Uncer	Date
16	3	3/05

CV = 15 + 2 ug/g

Result	Uncer	Date
15	3	1/24
26	6	3/16
12	2	4/10
9.5	2	6/27
13	3	9/06
16	3	9/25
11	2	9/27

TABLE C-V (cont)

****

HSE-9 PCB on Soil
(cont)

****

Mixed-Aroclor (cont)

CV = 16 + 2 ug/g

Result	Uncer	Date
14	3	8/21

CV = 17 + 2 ug/g

Result	Uncer	Date
12	2	9/29

CV = 19 + 2 ug/g

Result	Uncer	Date
21	4	6/14
21	4	6/28
19	4	7/09
13	3	10/18

CV = 21 + 2 ug/g

Result	Uncer	Date
22	4	9/25

CV = 22 + 2 ug/g

Result	Uncer	Date
27	5	6/14
20	4	10/03

CV = 22.2 + 2.0 ug/g

Result	Uncer	Date
20	4	2/07

CV = 24 + 2 ug/g

Result	Uncer	Date
23	5	1/08
22	4	10/03

CV = 26 + 3 ug/g

Result	Uncer	Date
24	5	8/23
18	4	10/03
23	5	10/18
26	5	11/08

CV = 27 + 3 ug/g

Result	Uncer	Date
35	7	1/19

CV = 28 + 3 ug/g

Result	Uncer	Date
23	5	7/25

Mixed-Aroclor (cont)

CV = 30 + 3 ug/g

Result	Uncer	Date
35	7	4/10
33	7	5/09
31	6	9/29
33	7	9/29

CV = 40.5 + 4.0 ug/g

Result	Uncer	Date
39	8	2/07

CV = 41 + 4 ug/g

Result	Uncer	Date
28	6	3/05

CV = 56 + 6 ug/g

Result	Uncer	Date
47	9	3/09

Aroclor 1242 89GAU 04 GCEC

CV = not spiked ug/g

Result	Uncer	Date
< 0.05		1/08
< 0.05		1/08
< 0.05		1/08
< 0.63		1/19
< 0.63		1/19
< 0.05		3/05
< 0.05		3/05
< 2.5		3/09
< 0.06		4/10
< 0.06		4/10
< 0.05		5/09
< 0.05		6/14
< 0.05		6/14
< 0.05		6/27
< 0.05		6/27
< 0.5		6/28
< 0.5		6/28
< 0.05		8/23
< 0.05		9/27
< 0.05		9/27
< 0.05		9/29
< 0.05		9/29
< 0.01		9/29
< 0.01		9/29
< 0.05		10/03
< 0.05		10/03
< 0.05		10/18
< 0.05		10/18
< 0.05		11/08

CV = 9.9 + 1.0 ug/g

Result	Uncer	Date
11	2	3/29

CV = 10 + 1 ug/g

Result	Uncer	Date
14	3	3/29
10	2	7/09

Aroclor 1242 (cont)

CV = 11 + 1 ug/g

Result	Uncer	Date
13	3	8/21
7.7	1.5	10/03

CV = 12 + 1 ug/g

Result	Uncer	Date
12	2	1/24
26	5	3/16

CV = 13 + 1 ug/g

Result	Uncer	Date
11	2	7/25

CV = 15 + 2 ug/g

Result	Uncer	Date
15	3	1/24
26	6	3/16
13	3	9/06
16	3	9/25

CV = 16 + 2 ug/g

Result	Uncer	Date
14	3	8/21

CV = 19 + 2 ug/g

Result	Uncer	Date
19	4	7/09

CV = 21 + 2 ug/g

Result	Uncer	Date
22	4	9/25

CV = 22.2 + 2.0 ug/g

Result	Uncer	Date
20	4	2/07

CV = 26 + 3 ug/g

Result	Uncer	Date
18	4	10/03

CV = 28 + 3 ug/g

Result	Uncer	Date
23	5	7/25

CV = 40.5 + 4.0 ug/g

Result	Uncer	Date
39	8	2/07

Aroclor 1254 89GAU 04 GCEC

CV = not spiked ug/g

Result	Uncer	Date
< 0.05		1/08
< 0.05		1/08
< 0.05		1/08
< 0.63		1/19
< 0.63		1/19
< 0.63		1/24
< 0.63		1/24
< 0.63		2/07
< 0.63		2/07
< 0.05		3/05
< 0.05		3/05
< 2.5		3/09
< 0.63		3/16
< 0.63		3/16
< 0.05		3/29
< 0.05		3/29
< 0.06		4/10
< 0.06		4/10
< 0.05		5/09
< 0.05		6/14
< 0.05		6/14
< 0.05		6/27
< 0.05		6/27
< 0.5		6/28
< 0.5		6/28
< 0.5		7/09
< 0.5		7/09
< 0.05		7/25
< 0.05		7/25
< 0.05		8/21
< 0.05		8/21
< 0.05		8/23
< 0.5		9/06
< 0.05		9/25
< 0.05		9/25
< 0.05		9/29
< 0.05		9/29
< 0.01		9/29
< 0.01		9/29
< 0.05		10/03
< 0.05		10/03
< 0.05		10/03
< 0.05		10/03
< 0.05		10/18
< 0.05		10/18
< 0.05		11/08

CV = 11 + 1 ug/g

Result	Uncer	Date
8.2	1.6	9/27

CV = 15 + 2 ug/g

Result	Uncer	Date
11	2	9/27

Aroclor 1260 89GAU 04 GCEC

CV = not spiked ug/g

Result	Uncer	Date
< 0.63		1/24
< 0.63		1/24
< 0.63		2/07
< 0.63		2/07
< 0.63		3/16
< 0.63		3/16
< 0.05		3/29
< 0.05		3/29

Aroclor 1260 (cont)

< 0.5		7/09
< 0.5		7/09
< 0.05		7/25
< 0.05		7/25
< 0.05		8/21
< 0.05		8/21
< 0.5		9/06
< 0.05		9/25
< 0.05		9/25
< 0.05		9/27
< 0.05		9/27
< 0.05		10/03
< 0.05		10/03

CV = 11 + 1 ug/g

Result	Uncer	Date
10	2	1/08
10	3	1/19
8.7	1.7	6/27
12	3	6/28
6.1	1.2	9/29

Sample run on 9/29 had evaporated.

CV = 13 + 1 ug/g

Result	Uncer	Date
13	3	1/08

CV = 14 + 1 ug/g

Result	Uncer	Date
16	3	3/05

CV = 15 + 2 ug/g

Result	Uncer	Date
12	2	4/10
9.5	2	6/27

CV = 17 + 2 ug/g

Result	Uncer	Date
12	2	9/29

CV = 19 + 2 ug/g

Result	Uncer	Date
21	4	6/14
21	4	6/28
13	3	10/18

CV = 22 + 2 ug/g

Result	Uncer	Date
27	5	6/14
20	4	10/03

CV = 24 + 2 ug/g

Result	Uncer	Date
23	5	1/08
22	4	10/03

Aroclor 1260 (cont)

CV = 26 + 3 ug/g

Result	Uncer	Date
24	5	8/23
23	5	10/18
26	5	11/08

CV = 27 + 3 ug/g

Result	Uncer	Date
35	7	1/19

CV = 30 + 3 ug/g

Result	Uncer	Date
35	7	4/10
33	7	5/09
31	6	9/29
33	7	9/29

CV = 41 + 4 ug/g

Result	Uncer	Date
28	6	3/05

CV = 56 + 6 ug/g

Result	Uncer	Date
47	9	3/09

****

HSE-9 Pesticides in Water

****

Aldrin 90GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.06		4/12
< 0.06		5/08

---

alpha-BHC 90GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.04		4/12
< 0.02		5/08

---

beta-BHC 90GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.1		4/12
< 0.1		5/08

TABLE C-V (cont)

****

HSE-9 Pesticides in Water (cont)

****

delta-BHC 90GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.12		4/12
< 0.12		5/08

Chlordane 90GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.25		4/12
< 0.25		5/08

p,p'-DDD 90GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.04		4/12

CV = 0.35 + 0.04 ug/L

Result	Uncer	Date
0.31	0.08	5/08

p,p'-DDE 90GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.04		4/12
< 0.04		5/08

p,p'-DDT 90GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.03		5/08

CV = 0.10 + 0.01 ug/L

Result	Uncer	Date
< 0.25		4/12

Dieldrin 90GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.04		4/12
< 0.04		5/08

Endosulfan I 90GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.05		4/12
< 0.05		5/08

Endosulfan II 90GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.08		4/12
< 0.08		5/08

Endosulfan sulfate 90GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.09		4/12
< 0.09		5/08

Endrin 90GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.03		4/12
< 0.03		5/08

Endrin aldehyde 90GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.31		4/12
< 0.31		5/08

Heptachlor 90GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.03		4/12

CV = 0.19 + 0.02 ug/L

Result	Uncer	Date
0.14	0.04	5/08

Heptachlor epoxide 90GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.04		5/08

Heptachlor epoxide (cont)

CV = 0.07 + 0.01 ug/L

Result	Uncer	Date
0.077	0.039	4/12

Lindane 90GAU 01 GCEC

CV = 0.13 + 0.01 ug/L

Result	Uncer	Date
0.14	0.07	4/12

CV = 0.14 + 0.01 ug/L

Result	Uncer	Date
0.14	0.03	5/08

Methoxychlor 90GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 0.08		4/12

CV = 1.3 + 0.1 ug/L

Result	Uncer	Date
1.3	0.3	5/08

Toxaphene 90GAU 01 GCEC

CV = not spiked ug/L

Result	Uncer	Date
< 2.5		4/12
< 2.5		5/08

****

NIOSH PAT Round 100
Organics on Charcoal

****

Carbon tetrachloride 90PAT 01 GCMS

CV = not spiked mg/tube

Result	Uncer	Date
< 0.1		2/06

CV = 0.439 + 0.034 mg/tube

Result	Uncer	Date
0.531	0.050	2/06

CV = 0.675 + 0.052 mg/tube

Result	Uncer	Date
0.78	0.08	2/06

Carbon tetrachloride (cont)

CV = 0.869 + 0.071 mg/tube

Result	Uncer	Date
0.93	0.09	2/06

CV = 1.08 + 0.08 mg/tube

Result	Uncer	Date
1.19	0.11	2/06

GC/MS used rather than normal GC/FID.

Chloroform 90PAT 01 GCMS

CV = not spiked mg/tube

Result	Uncer	Date
< 0.1		2/06

CV = 0.458 + 0.032 mg/tube

Result	Uncer	Date
0.48	0.05	2/06

CV = 0.574 + 0.044 mg/tube

Result	Uncer	Date
0.59	0.06	2/06

CV = 0.807 + 0.056 mg/tube

Result	Uncer	Date
0.83	0.08	2/06

CV = 1.02 + 0.08 mg/tube

Result	Uncer	Date
1.0	0.1	2/06

1,2-Dichloroethane 90PAT 01 GCMS

CV = not spiked mg/tube

Result	Uncer	Date
< 0.1		2/06

CV = 0.691 + 0.044 mg/tube

Result	Uncer	Date
0.72	0.07	2/06

CV = 0.772 + 0.049 mg/tube

Result	Uncer	Date
0.76	0.08	2/06

CV = 0.839 + 0.062 mg/tube

Result	Uncer	Date
0.84	0.08	2/06

1,2-Dichloroethane (cont)

CV = 0.961 + 0.066 mg/tube

Result	Uncer	Date
1.0	0.1	2/06

****

NIOSH PAT Round 101
Organics on Charcoal

****

Tetrachloroethylene 90PAT 01 GCFID

CV = not spiked mg/tube

Result	Uncer	Date
< 0.05		4/20

CV = 0.3605 + 0.0215 mg/tube

Result	Uncer	Date
0.35	0.04	4/20

CV = 0.4979 + 0.0257 mg/tube

Result	Uncer	Date
0.47	0.05	4/20

CV = 0.7694 + 0.040 mg/tube

Result	Uncer	Date
0.76	0.08	4/20

CV = 1.0992 + 0.0588 mg/tube

Result	Uncer	Date
1.09	0.1	4/20

1,1,1-Trichloroethane 90PAT 01 GCFID

CV = not spiked mg/tube

Result	Uncer	Date
< 0.05		4/20

CV = 0.4361 + 0.0226 mg/tube

Result	Uncer	Date
0.40	0.04	4/20

CV = 0.7153 + 0.0372 mg/tube

Result	Uncer	Date
0.65	0.07	4/20

CV = 0.8474 + 0.0354 mg/tube

Result	Uncer	Date
0.79	0.08	4/20

1,1,1-Trichloroethane (cont)

CV = 1.0451 + 0.0471 mg/tube

Result	Uncer	Date
0.97	0.1	4/20

Trichloroethene 90PAT 01 GCFID

CV = not spiked mg/tube

Result	Uncer	Date
< 0.05		4/20

CV = 0.4305 + 0.020 mg/tube

Result	Uncer	Date
0.41	0.04	4/20

CV = 0.6061 + 0.0341 mg/tube

Result	Uncer	Date
0.57	0.06	4/20

CV = 0.6869 + 0.0378 mg/tube

Result	Uncer	Date
0.66	0.07	4/20

CV = 0.8619 + 0.0538 mg/tube

Result	Uncer	Date
0.82	0.08	4/20

****

NIOSH PAT Round 102
Organics on Charcoal

****

Benzene 90PAT 01 GCFID

CV = not spiked mg/tube

Result	Uncer	Date
< 0.04		7/28

CV = 0.1477 + 0.0073 mg/tube

Result	Uncer	Date
0.14	0.01	7/28

CV = 0.1909 + 0.0094 mg/tube

Result	Uncer	Date
0.19	0.02	7/28

CV = 0.2445 + 0.0094 mg/tube

Result	Uncer	Date
0.24	0.02	7/28

TABLE C-V (cont)

****

NIOSH PAT Round 102
Organics on Charcoal
(cont)

****

Benzene (cont)

CV = 0.2894 + 0.0116 mg/tube

Result	Uncer	Date
0.29	0.03	7/28

Toluene 90PAT 01 GCFID

CV = not spiked mg/tube

Result	Uncer	Date
< 0.04		7/28

CV = 0.902 + 0.0446 mg/tube

Result	Uncer	Date
0.9	0.09	7/28

CV = 1.1526 + 0.0453 mg/tube

Result	Uncer	Date
1.1	0.1	7/28

CV = 1.3808 + 0.0546 mg/tube

Result	Uncer	Date
1.4	0.1	7/28

CV = 1.5987 + 0.0663 mg/tube

Result	Uncer	Date
1.6	0.2	7/28

o-Xylene 90PAT 01 GCFID

CV = not spiked mg/tube

Result	Uncer	Date
< 0.04		7/28

CV = 0.8029 + 0.0435 mg/tube

Result	Uncer	Date
0.82	0.08	7/28

CV = 1.0888 + 0.059 mg/tube

Result	Uncer	Date
1.2	0.1	7/28

CV = 1.2496 + 0.0668 mg/tube

Result	Uncer	Date
1.3	0.1	7/28

o-Xylene (cont)

CV = 1.5362 + 0.0866 mg/tube

Result	Uncer	Date
1.5	0.2	7/28

****

NIOSH PAT Round 103
Organics on Charcoal

****

Carbon tetrachloride 90PAT 01 GCMS

CV = not spiked ug/tube

Result	Uncer	Date
< 6		10/26

CV = 0.4495 + 0.0198 mg/tube

Result	Uncer	Date
0.44	0.1	10/26

CV = 0.6597 + 0.0288 mg/tube

Result	Uncer	Date
0.67	0.14	10/26

CV = 0.9283 + 0.0419 mg/tube

Result	Uncer	Date
0.91	0.18	10/26

CV = 1.2119 + 0.0448 mg/tube

Result	Uncer	Date
1.2	0.2	10/26

1,2-Dichloroethane 90PAT 01 GCMS

CV = not spiked ug/tube

Result	Uncer	Date
< 5		10/26

CV = 0.6528 + 0.026 mg/tube

Result	Uncer	Date
0.73	0.15	10/26

CV = 0.7943 + 0.0336 mg/tube

Result	Uncer	Date
0.81	0.16	10/26

CV = 0.9434 + 0.0402 mg/tube

Result	Uncer	Date
1.0	0.2	10/26

1,2-Dichloroethane (cont)

CV = 1.106 + 0.0418 mg/tube

Result	Uncer	Date
1.1	0.2	10/26

Trichloroethene 90PAT 01 GCMS

CV = not spiked ug/tube

Result	Uncer	Date
< 5		10/26

CV = 0.5839 + 0.0251 mg/tube

Result	Uncer	Date
0.67	0.13	10/26

CV = 0.879 + 0.0344 mg/tube

Result	Uncer	Date
0.92	0.18	10/26

CV = 0.9533 + 0.0337 mg/tube

Result	Uncer	Date
0.97	0.2	10/26

CV = 1.1533 + 0.0467 mg/tube

Result	Uncer	Date
1.3	0.3	10/26

****

HSE-9 Pesticide Surrogate
in Bulk Materials

****

Dibutyl chlorendate GCEC

none reported

****

HSE-9 Pesticide Surrogate
in Soil

****

Dibutyl chlorendate GCEC

none reported

****

HSE-9 Pesticide Surrogate
in Water

****

Dibutyl chlorendate GCEC

none reported

****

HSE-9 Poregas Surrogate
on Charcoal Tube

****

Bromobenzene GCMS

EPA SW-846 Limits: none

Result	Uncer	Date
88.6		2/15
112.9		2/15
93.2		2/15
86.4		2/15
122.7		2/15
100.9		2/15
144.1		2/20
108.6		2/20
111.7		2/20
98.7		2/20
162.1		2/20
103.3		2/20
89.7		2/20
91.6		2/20
88.3		2/20
104.2		2/20
85.3		2/20
93.0		2/20
108.9		2/20
114.3		2/20
82.0		2/21
93.4		2/21
92.4		2/21
82.5		2/21
114.3		2/21
2.0		2/21
134.2		2/21
124.8		2/21
96.6		2/21
101.1		2/21
111.8		2/21
104.6		2/26
86.9		2/26
115.9		2/26

Bromobenzene (cont)

100.1		2/26
85.1		2/26
120.6		2/26
95.4		2/26
93.4		2/26
94.6		2/26
93.4		2/26
127.6		2/26
130.0		2/26
85.2		2/26
122.9		2/26
92.4		2/26
106.0		2/26
127.1		2/27
116.3		2/27
112.5		2/27
70.5		2/27
87.0		2/27
131.7		2/27
134.6		2/27
115.5		2/27
86.5		2/27
116.8		2/27
135.0		2/27
112.5		2/27
95.2		2/27
83.0		2/27
134.0		2/27
75.5		2/27
108.0		2/27
126.8		2/27
85.0		2/27
125.3		2/27
82.9		2/27
89.9		2/27
119.1		2/27
88.7		2/27
81.7		2/27
85.2		2/27
199.6		2/27
127.0		2/27
84.8		2/27
111.1		2/27
94.2		2/27
113.0		2/27
85.7		2/27
95.5		2/28
88.4		2/28
82.2		2/28
85.7		2/28
65.6		2/28
79.2		2/28
65.1		2/28
69.1		2/28
116.1		2/28
82.3		2/28
97.3		2/28
81.8		2/28
82.6		2/28
64.3		2/28
116.9		2/28
52.5		2/28
90.9		2/28
92.7		2/28
58.2		2/28
71.4		2/28
64.6		2/28
72.5		2/28
105.6		2/28
116.0		2/28
70.4		2/28
67.0		2/28
83.7		2/28
85.0		2/28
65.2		2/28
76.3		2/28
73.0		2/28
98.8		2/28

Bromobenzene (cont)

93.7		2/28
84.1		2/28
103.5		2/28
104.7		2/28
78.9		2/28
65.2		2/28
85.3		2/28
76.2		2/28
73.7		2/28
62.6		2/28
87.6		2/28
70.1		2/28
95.0		2/28
89.2		2/28
63.4		2/28
83.3		2/28
80.6		2/28
81.1		2/28
65.2		2/28
89.5		2/28
65.8		2/28
82.3		2/28
86.0		2/28
122.3		2/28
89.9		2/28
70.7		2/28
101.5		2/28
95.4		2/28
97.7		2/28
111.0		2/28
95.5		2/28
94.8		2/28
82.8		2/28
109.7		2/28
78.3		2/28
82.1		2/28
117.3		2/28
90.1		2/28
109.8		2/28
84.0		2/28
81.0		2/28
64.4		2/28
127.6		2/28
80.1		2/28
85.5		2/28
108.7		2/28
114.4		2/28
99.2		3/01
75.4		3/05
49.7		3/05
87.5		3/05
0		3/05
91.4		3/05
95.6		3/05
88.8		3/05
97.1		3/05
77.8		3/05
78.9		3/05
100.4		3/05
54.2		3/05
68.2		3/05
76.6		3/13
62.1		3/13
51.3		3/13
62.6		3/13
66.1		3/13
54.2		3/13
54.6		3/13
63.9		3/13
58.1		3/13
61.8		3/13
81.4		3/13
77.0		3/13
53.7		3/13
52.3		3/13
74.8		3/13
55.2		3/13
68.8		3/13

TABLE C-V (cont)

Bromobenzene (cont)

114.9	3/13
69.2	3/13
69.6	3/13
78.0	3/13
67.4	3/13
79.5	3/13
97.9	3/13
93.1	3/13
84.3	3/13
59.6	3/13
67.4	3/13
55.0	3/13
61.9	3/13
55.7	3/13
73.6	3/13
92.9	3/13
54.6	3/13
67.7	3/13
123.4	3/13
84.1	3/13
75.3	3/13
54.0	3/13
65.9	3/13
90.9	3/13
93.9	3/13
53.2	3/13
69.8	3/13
59.1	3/13
124.8	3/13
101.0	3/13
66.4	3/13
58.5	3/13
74.7	3/13
73.6	3/13
104.3	3/13
64.3	3/13
52.5	3/13
130.5	3/13
125.8	3/21

Bromobenzene PTGC

EPA SW-846 Limits: none

Result	Uncer	Date
0		6/12
0		6/12
0		6/12
0		6/12
0		6/12
0		6/12
0		6/12
0		6/12
0		6/12
0		6/12
0		6/12
0		6/12
0		6/12
0		6/12
0		6/12
0		6/12
0		6/12
0		6/12
0		6/12
80.0		6/12
0		6/12
0		6/12
0		6/12
0		6/12
0		6/12
0		6/12
0		6/12
0		6/12
0		6/12
0		6/12

Bromobenzene (cont)

0	6/12
0	6/12
0	6/13
0	6/13
0	6/13
0	6/13
0	6/13
0	6/13
0	6/13
0	6/13
82.0	6/13
0	6/13
93.0	6/13
0	6/13
0	6/13
0	6/13
0	6/13
0	6/13
0	6/13
0	6/13
0	6/13
0	6/13
0	6/13
0	6/13
0	6/13
0	6/13
0	6/13
0	6/13
0	6/13
92.0	6/14
105.0	6/14
96.0	6/14
113.0	6/15
99.0	6/15
103.0	6/18
109.0	6/18
144.0	6/19
93.0	6/19
87.0	6/20
84.0	6/20
104.0	6/21
95.0	6/21
96.0	6/22
82.0	6/25
97.0	6/25
122.7	6/25
81.0	6/27
82.0	6/27
91.1	8/15
90.9	8/15
114.7	8/15
85.3	8/15
76.3	8/15
81.8	8/16
83.9	8/16
85.3	8/16
85.1	8/16
93.1	8/16
81.5	8/17
103.6	8/17
79.0	9/11
70.0	9/11
60.0	9/12
59.0	9/12
64.0	9/12
63.0	9/12
72.0	9/13
72.0	9/13
93.0	9/13
106.0	9/13
99.0	9/13
130.0	9/13

Bromobenzene (cont)

95.0	9/13
94.0	9/14
82.0	9/14
98.9	9/18
87.7	9/18
109.7	9/18
105.1	9/19
93.1	9/19
73.3	9/19
46.4	9/19
85.8	9/19
97.8	9/19
99.3	12/07
88.7	12/07
96.0	12/07
97.3	12/17
72.7	12/17
114.7	12/17
97.3	12/17
84.7	12/19
82.7	12/19
77.3	12/19
99.3	12/19

****

HSE-9 Semivolatile Surrogate in Bulk Materials

****

2-Fluorobiphenyl GCMS

EPA SW-846 Limits: none

Result	Uncer	Date
0		4/19
41.0		5/29
0		7/19
51.0		8/23
71.9		8/23
73.2		8/23
73.3		8/23
52.4		8/23
75.0		8/23
66.7		8/23
57.6		8/24
111.8		8/30
100.2		8/30
104.2		8/30

2-Fluorophenol GCMS

EPA SW-846 Limits: none

Result	Uncer	Date
0		4/19
27.0		5/29
0		7/19
62.0		8/23
12.5		8/23
27.3		8/23
40.0		8/23
58.3		8/23
62.1		8/23
25.7		8/23
17.0		8/24
105.7		8/30
90.9		8/30
84.3		8/30

****

HSE-9 Semivolatile Surrogate in Bulk Materials (cont)

****

Nitrobenzene d5 GCMS

EPA SW-846 Limits: none

Result	Uncer	Date
0		4/19
30.0		5/29
0		7/19
44.7		8/23
70.8		8/23
71.3		8/23
59.8		8/23
50.4		8/23
64.7		8/23
65.3		8/23
50.9		8/24
73.8		8/30
69.4		8/30
64.0		8/30

Phenol-d5 GCMS

EPA SW-846 Limits: none

Result	Uncer	Date
0		4/19
30.0		5/29
0		7/19
61.9		8/23
12.3		8/23
61.7		8/23
52.3		8/23
56.1		8/23
30.5		8/23
45.7		8/23
16.6		8/24
91.8		8/30
97.2		8/30
88.9		8/30

p-Terphenyl-d14 GCMS

EPA SW-846 Limits: none

Result	Uncer	Date
0		4/19
64.0		5/29
0		7/19
11.7		8/23
68.3		8/23
61.6		8/23
69.3		8/23
9.3		8/23
10.2		8/23
70.0		8/23
14.1		8/24
91.8		8/30
99.2		8/30
102.6		8/30

2,4,6-Tribromophenol GCMS

EPA SW-846 Limits: none

Result	Uncer	Date
0		4/19
48.0		5/29
0		7/19
81.8		8/23
81.6		8/23
33.3		8/23
35.1		8/23
85.1		8/23
20.4		8/23
83.5		8/23
27.2		8/24
90.1		8/30
115.2		8/30
132.2		8/30

****

HSE-9 Semivolatile Surrogate on Filter Media

****

2-Fluorobiphenyl GCMS

EPA SW-846 Limits: none

Result	Uncer	Date
72		3/22
109		3/22

2-Fluorophenol GCMS

EPA SW-846 Limits: none

Result	Uncer	Date
41		3/22
48		3/22

Nitrobenzene d5 GCMS

EPA SW-846 Limits: none

Result	Uncer	Date
54		3/22
55		3/22

Phenol-d5 GCMS

EPA SW-846 Limits: none

Result	Uncer	Date
51		3/22
47		3/22

p-Terphenyl-d14 GCMS

EPA SW-846 Limits: none

Result	Uncer	Date
116		3/22
119		3/22

2,4,6-Tribromophenol GCMS

EPA SW-846 Limits: none

Result	Uncer	Date
21		3/22
73		3/22

****

HSE-9 Semivolatile Surrogate in Sludge

****

2-Fluorobiphenyl GCMS

EPA SW-846 Limits: none

Result	Uncer	Date
75.0		2/28
75.0		2/28
98.0		3/05
94.0		3/05
91.0		3/05
90.0		3/05
102.0		3/23
127.0		4/27
82.0		5/09
93.2		8/14
75.3		12/06
79.8		12/06
107.7		12/06
47.7		12/06
108.1		12/06
76.5		12/14
75.0		12/14
64.0		12/14
76.4		12/14
54.0		12/14

2-Fluorophenol GCMS

EPA SW-846 Limits: none

Result	Uncer	Date
60.0		2/28
57.0		2/28
72.0		3/05
56.0		3/05
41.0		3/05
79.0		3/05
71.0		3/23
54.0		4/27
69.0		5/09
74.3		8/14
53.8		12/06
75.5		12/06
33.2		12/06
61.2		12/06
78.4		12/06
63.6		12/14
48.2		12/14
58.8		12/14
71.0		12/14
35.1		12/14

TABLE C-V (cont)

Nitrobenzene d5 GCMS

EPA SW-846 Limits: none

Result	Uncer	Date
76.0		2/28
70.0		2/28
62.0		3/05
40.0		3/05
54.0		3/05
58.0		3/05
84.0		3/23
87.0		4/27
73.0		5/09
90.7		8/14
67.9		12/06
75.9		12/06
37.0		12/06
113.0		12/06
97.5		12/06
60.5		12/14
63.0		12/14
32.5		12/14
52.0		12/14
54.9		12/14

Phenol-d5 GCMS

EPA SW-846 Limits: none

Result	Uncer	Date
73.0		2/28
71.0		2/28
69.0		3/05
72.0		3/05
53.0		3/05
61.0		3/05
77.0		3/23
67.0		4/27
90.0		5/09
85.5		8/14
65.8		12/06
61.1		12/06
85.2		12/06
82.4		12/06
35.4		12/06
44.0		12/14
67.2		12/14
63.6		12/14
55.8		12/14
68.2		12/14

p-Terphenyl-d14 GCMS

EPA SW-846 Limits: none

Result	Uncer	Date
43.0		2/28
27.0		2/28
90.0		3/05
90.0		3/05
80.0		3/05
109.0		3/05
128.0		3/23
149.0		4/27
95.0		5/09
98.4		8/14
54.2		12/06
90.8		12/06
71.8		12/06
73.7		12/06
101.3		12/06

p-Terphenyl-d14 (cont)

Result	Uncer	Date
75.7		12/14
83.8		12/14
71.6		12/14
89.1		12/14
95.0		12/14

2,4,6-Tribromophenol GCMS

EPA SW-846 Limits: none

Result	Uncer	Date
76.0		2/28
78.0		2/28
38.0		3/05
35.0		3/05
21.0		3/05
44.0		3/05
111.0		3/23
48.0		4/27
73.0		5/09
81.8		8/14
130.7		12/06
136.6		12/06
55.5		12/06
90.4		12/06
99.3		12/06
62.4		12/14
66.8		12/14
60.1		12/14
74.2		12/14
80.8		12/14

****

HSE-9 Semivolatile Surrogate in Soil

****

2-Fluorobiphenyl GCEC

EPA SW-846 Limits: 30 - 115 %

Result	Uncer	Date
69.0		3/05

2-Fluorobiphenyl GCMS

EPA SW-846 Limits: 30 - 115 %

Result	Uncer	Date
61.7		1/05
68.0		1/25
91.0		1/25
97.0		1/25
71.0		1/25
82.0		1/25
79.0		1/25
82.0		1/25
85.0		1/25
93.0		1/25
94.0		1/25
87.0		2/12
98.0		2/12
62.0		2/21
81.0		2/21
79.0		2/21
77.0		2/21
90.0		2/21
84.0		2/21
76.0		2/21
150.0		3/05
130.0		3/05

2-Fluorobiphenyl (cont)

Result	Uncer	Date
89.0		3/05
84.0		3/05
105.0		3/05
94.0		3/05
77.0		3/05
82.0		3/05
83.0		3/05
78.0		3/05
76.0		3/05
160.0		3/05
76.0		3/05
85.0		3/05
140.0		3/05
79.0		3/05
117.0		3/05
78.0		3/05
91.0		3/05
85.0		3/05
82.0		3/05
97.0		3/05
133.0		3/05
140.0		3/05
113.0		3/05
130.0		3/05
120.0		3/05
63.0		3/06
60.0		3/06
75.0		3/23
66.0		3/23
66.0		3/23
80.0		3/23
83.0		3/23
73.0		3/23
74.0		3/27
80.0		3/27
84.0		3/27
83.0		3/27
66.0		3/27
90.0		3/27
85.0		3/27
86.0		3/28
77.0		3/28
88.0		3/28
87.0		3/28
82.0		3/28
84.0		3/28
92.0		3/28
77.0		3/28
76.0		3/28
56.0		3/28
81.0		3/28
72.0		3/28
79.0		4/18
79.0		4/18
105.0		4/18
83.0		4/18
92.0		4/18
80.0		4/18
102.0		4/18
80.0		4/18
89.0		4/18
96.0		4/18
89.0		4/18
81.0		4/18
87.0		4/18
83.0		4/18
95.0		4/18
71.0		4/19
97.0		4/20
98.0		4/20
80.0		4/20
97.0		4/20
99.0		4/20
95.0		4/20
97.0		4/20
98.0		4/20
101.0		4/20
99.0		4/20

****

HSE-9 Semivolatile Surrogate in Soil (cont)

****

2-Fluorobiphenyl (cont)

Result	Uncer	Date
98.0		4/20
99.0		4/20
52.0		4/27
56.0		4/27
75.0		4/27
127.0		4/27
74.0		4/27
84.0		4/27
83.0		4/27
46.0		4/28
59.0		4/28
60.0		4/28
53.0		4/28
52.0		4/28
52.0		4/28
49.0		4/28
59.0		4/28
42.0		4/28
60.0		4/28
68.0		4/28
42.0		4/28
60.0		4/28
57.0		4/28
61.0		4/28
48.0		4/28
61.0		4/28
53.0		4/28
55.0		4/28
57.0		4/28
38.0		4/28
45.0		4/28
80.0		5/04
49.0		5/04
123.0		5/04
77.0		5/04
76.0		5/04
83.0		5/04
53.0		5/04
74.0		5/09
55.0		5/09
78.0		5/11
75.0		5/11
71.0		5/11
107.0		5/11
100.0		5/11
102.0		5/11
103.0		5/11
100.0		5/11
97.0		5/11
84.0		5/11
69.0		5/11
101.0		5/11
98.0		5/11
102.0		5/11
104.0		5/15
78.0		5/15
105.0		5/15
81.0		5/15
71.0		5/15
80.0		5/15
62.0		5/15
60.0		5/15
3.0		5/29
57.0		5/29
80.0		5/29
81.0		5/29
89.0		6/13
85.0		6/14
87.0		6/14
85.0		6/14

2-Fluorobiphenyl (cont)

Result	Uncer	Date
76.0		6/14
82.0		6/14
91.0		6/14
91.0		6/14
92.0		6/14
89.0		6/14
78.0		6/14
65.0		6/15
76.0		6/15
79.0		6/15
83.0		6/15
79.0		6/15
75.0		6/15
78.0		6/18
70.0		6/18
77.0		6/18
79.0		6/18
79.0		6/18
79.0		6/18
82.0		6/18
76.0		6/18
84.0		6/18
85.0		6/18
50.3		7/18
79.7		7/18
74.7		7/18
69.5		7/18
79.5		7/18
103.6		7/19
80.9		7/19
71.5		7/19
83.1		7/19
53.2		7/19
82.2		8/03
88.3		8/03
25.7		8/03
75.2		8/03
88.2		8/03
84.6		8/03
76.6		8/03
98.2		8/03
87.0		8/03
84.5		8/03
84.0		8/03
79.8		8/03
79.1		8/03
82.8		8/03
67.0		8/03
75.0		8/03
82.1		8/03
78.0		8/03
86.6		8/03
79.3		8/03
72.8		8/03
87.5		8/03
89.4		8/03
70.8		8/06
77.6		8/06
87.6		8/06
85.6		8/06
65.8		8/06
77.7		8/06
76.6		8/06
71.0		8/06
80.4		8/06
74.0		8/06
70.4		8/06
76.6		8/06
78.4		8/06
83.2		8/06
74.8		8/07
73.5		8/07
76.1		8/07
64.0		8/07
76.6		8/07
68.4		8/07
68.4		8/13
67.6		8/13

2-Fluorobiphenyl (cont)

Result	Uncer	Date
65.5		8/13
48.0		8/13
87.8		8/13
71.2		8/13
80.8		8/13
65.5		8/13
63.9		8/14
60.5		8/14
86.1		8/21
81.3		8/21
75.2		8/21
68.8		8/21
79.2		8/21
84.5		8/21
82.3		8/21
83.1		8/21
74.4		8/21
89.8		8/21
80.6		8/21
78.5		8/21
72.3		8/21
88.3		8/21
76.4		8/21
80.8		8/21
59.6		8/21
87.0		8/21
65.2		8/21
81.6		8/21
76.8		8/21
79.5		8/21
58.2		9/04
69.0		9/04
62.3		9/04
64.7		9/04
50.2		9/04
53.8		9/04
58.5		9/04
65.8		9/04
58.7		9/04
62.4		9/04
57.2		9/04
59.2		9/04
53.8		9/04
60.4		9/04
62.6		9/04
63.5		9/04
73.6		10/30
83.3		10/30
77.2		10/30
75.7		10/30
74.4		10/30
84.1		10/30
76.5		10/30
76.6		10/30
84.4		10/30
73.0		10/30
80.0		12/04
79.4		12/04
73.4		12/04
69.9		12/04
75.8		12/04
74.9		12/04
71.0		12/04
75.1		12/04
73.8		12/04
74.7		12/04
71.5		12/04
77.9		12/04
79.2		12/04
64.5		12/04
82.5		12/04
66.5		12/06
62.1		12/06
17.6		12/06
70.5		12/06
70.5		12/06
57.4		12/06
74.9		12/06

TABLE C-V (cont)

2-Fluorobiphenyl (cont)

59.5	12/06
80.8	12/06
69.3	12/06
69.7	12/06
70.8	12/06
69.9	12/06
77.8	12/06
50.0	12/06
69.5	12/06
68.6	12/06
67.7	12/06
73.2	12/06
72.0	12/06
64.8	12/06
72.2	12/06
64.6	12/06
63.7	12/06
65.4	12/06
58.3	12/06
63.5	12/06
62.7	12/06
72.6	12/06
66.5	12/06
59.4	12/14
65.2	12/14
78.5	12/14
70.8	12/14
68.4	12/14
78.5	12/14
81.2	12/14
89.6	12/14
76.9	12/14
75.7	12/14
67.1	12/14
84.9	12/14
98.0	12/14
65.3	12/14
81.8	12/14
69.8	12/14
88.6	12/14
45.6	12/14

2-Fluorophenol GCEC

EPA SW-846 Limits: 25 - 121 %

Result	Uncer	Date
45.0		3/05

2-Fluorophenol GCMS

EPA SW-846 Limits: 25 - 121 %

Result	Uncer	Date
60.6		1/05
66.0		1/25
73.0		1/25
73.0		1/25
77.0		1/25
60.0		1/25
67.0		1/25
63.0		1/25
56.0		1/25
76.0		1/25
48.0		1/25
75.0		2/12
56.0		2/12
50.0		2/21
58.0		2/21
62.0		2/21
76.0		2/21
62.0		2/21
61.0		2/21
71.0		2/21

2-Fluorophenol (cont)

74.0	3/05
52.0	3/05
58.0	3/05
61.0	3/05
41.0	3/05
62.0	3/05
60.0	3/05
68.0	3/05
70.0	3/05
57.0	3/05
60.0	3/05
52.0	3/05
61.0	3/05
59.0	3/05
72.0	3/05
50.0	3/05
52.0	3/05
58.0	3/05
61.0	3/05
70.0	3/05
59.0	3/05
61.0	3/05
57.0	3/05
62.0	3/05
51.0	3/05
0	3/06
42.0	3/06
44.0	3/23
41.0	3/23
34.0	3/23
48.0	3/23
64.0	3/23
50.0	3/23
42.0	3/27
49.0	3/27
39.0	3/27
54.0	3/27
53.0	3/27
59.0	3/27
38.0	3/27
60.0	3/28
55.0	3/28
59.0	3/28
60.0	3/28
47.0	3/28
64.0	3/28
38.0	3/28
52.0	3/28
55.0	3/28
49.0	3/28
41.0	3/28
51.0	4/18
69.0	4/18
44.0	4/18
83.0	4/18
49.0	4/18
43.0	4/18
49.0	4/18
64.0	4/18
58.0	4/18
47.0	4/18
42.0	4/18
301.0	4/18
96.0	4/18
88.0	4/18
139.0	4/18
55.0	4/19
78.0	4/20
84.0	4/20
76.0	4/20
99.0	4/20
81.0	4/20
84.0	4/20
78.0	4/20
80.0	4/20
79.0	4/20
83.0	4/20
80.0	4/20

2-Fluorophenol (cont)

67.0	4/20
63.0	4/27
55.0	4/27
60.0	4/27
54.0	4/27
54.0	4/27
30.0	4/27
32.0	4/27
52.0	4/28
40.0	4/28
42.0	4/28
23.0	4/28
47.0	4/28
49.0	4/28
31.0	4/28
42.0	4/28
47.0	4/28
56.0	4/28
40.0	4/28
39.0	4/28
35.0	4/28
47.0	4/28
13.0	4/28
52.0	4/28
37.0	4/28
35.0	4/28
39.0	4/28
51.0	4/28
39.0	4/28
36.0	4/28
88.0	5/04
28.0	5/04
57.0	5/04
50.0	5/04
38.0	5/04
58.0	5/04
43.0	5/04
48.0	5/09
46.0	5/09
77.0	5/11
62.0	5/11
60.0	5/11
65.0	5/11
66.0	5/11
74.0	5/11
40.0	5/11
66.0	5/11
73.0	5/11
73.0	5/11
71.0	5/11
60.0	5/11
67.0	5/11
73.0	5/11
73.0	5/15
73.0	5/15
65.0	5/15
57.0	5/15
64.0	5/15
49.0	5/15
46.0	5/15
64.0	5/15
40.0	5/29
49.0	5/29
19.0	5/29
2.0	5/29
71.0	6/13
75.0	6/14
75.0	6/14
61.0	6/14
69.0	6/14
73.0	6/14
74.0	6/14
68.0	6/14
68.0	6/14
68.0	6/14
61.0	6/14
71.0	6/15
78.0	6/15

****

HSE-9 Semivolatile Surrogate
in Soil
(cont)

****

2-Fluorophenol (cont)

72.0	6/15
54.0	6/15
76.0	6/15
74.0	6/15
70.0	6/18
67.0	6/18
72.0	6/18
71.0	6/18
64.0	6/18
71.0	6/18
80.0	6/18
83.0	6/18
71.0	6/18
86.0	6/18
46.4	7/18
52.7	7/18
55.7	7/18
59.7	7/18
55.3	7/18
68.4	7/19
82.2	7/19
52.9	7/19
75.1	7/19
48.3	7/19
65.4	8/03
73.0	8/03
74.7	8/03
73.2	8/03
78.2	8/03
66.2	8/03
68.7	8/03
75.1	8/03
114.0	8/03
67.6	8/03
70.1	8/03
70.5	8/03
76.9	8/03
70.3	8/03
79.1	8/03
59.5	8/03
76.9	8/03
65.0	8/03
61.0	8/03
72.7	8/03
1.3	8/03
58.9	8/03
93.0	8/03
52.1	8/06
67.7	8/06
67.5	8/06
67.0	8/06
73.5	8/06
63.4	8/06
68.2	8/06
75.0	8/06
58.9	8/06
62.4	8/06
74.7	8/06
54.4	8/06
72.4	8/06
70.4	8/06
50.8	8/07
47.1	8/07
57.1	8/07
58.4	8/07
52.9	8/07
67.2	8/07
61.8	8/13
79.2	8/13
20.1	8/13

2-Fluorophenol (cont)

41.2	8/13
27.3	8/13
30.8	8/13
44.1	8/13
30.8	8/13
54.5	8/14
55.9	8/14
51.7	8/21
88.7	8/21
81.6	8/21
81.7	8/21
68.9	8/21
72.6	8/21
55.9	8/21
67.8	8/21
81.2	8/21
76.1	8/21
63.3	8/21
80.9	8/21
65.8	8/21
80.9	8/21
72.1	8/21
84.6	8/21
87.4	8/21
70.6	8/21
67.4	8/21
60.0	8/21
75.1	8/21
64.7	8/21
57.1	9/04
63.4	9/04
57.4	9/04
44.2	9/04
47.8	9/04
49.4	9/04
67.2	9/04
58.3	9/04
61.9	9/04
49.8	9/04
61.2	9/04
55.3	9/04
60.8	9/04
63.1	9/04
52.4	9/04
61.4	9/04
95.5	10/30
99.3	10/30
88.8	10/30
84.5	10/30
84.3	10/30
81.6	10/30
81.0	10/30
89.0	10/30
79.5	10/30
84.8	10/30
57.8	12/04
68.1	12/04
65.6	12/04
59.1	12/04
63.5	12/04
63.3	12/04
64.5	12/04
66.0	12/04
64.3	12/04
68.7	12/04
64.7	12/04
67.1	12/04
74.5	12/04
72.5	12/04
70.6	12/04
57.3	12/06
55.5	12/06
57.4	12/06
60.1	12/06
58.1	12/06
39.1	12/06
47.2	12/06
63.5	12/06

2-Fluorophenol (cont)

46.1	12/06
60.2	12/06
64.8	12/06
64.6	12/06
43.6	12/06
55.3	12/06
66.9	12/06
56.0	12/06
23.4	12/06
0.2	12/06
62.6	12/06
63.0	12/06
50.5	12/06
61.1	12/06
61.6	12/06
38.6	12/06
59.6	12/06
53.3	12/06
62.1	12/06
58.6	12/06
66.3	12/06
57.0	12/06
71.1	12/14
66.3	12/14
58.1	12/14
74.4	12/14
67.1	12/14
74.9	12/14
73.9	12/14
77.5	12/14
66.0	12/14
74.0	12/14
91.4	12/14
48.9	12/14
80.8	12/14
69.3	12/14
77.0	12/14
39.5	12/14
76.0	12/14
69.5	12/14

Nitrobenzene d5 GCEC

EPA SW-846 Limits: 23 - 120 %

Result	Uncer	Date
52.0		3/05

Nitrobenzene d5 GCMS

EPA SW-846 Limits: 23 - 120 %

Result	Uncer	Date
52.9		1/05
90.0		1/25
80.0		1/25
85.0		1/25
58.0		1/25
87.0		1/25
65.0		1/25
68.0		1/25
74.0		1/25
62.0		1/25
73.0		1/25
74.0		2/12
82.0		2/12
52.0		2/21
63.0		2/21
66.0		2/21
81.0		2/21
78.0		2/21
67.0		2/21
70.0		2/21
78.0		3/05

TABLE C-V (cont)

Nitrobenzene d5 (cont)

54.0	3/05
81.0	3/05
66.0	3/05
70.0	3/05
67.0	3/05
74.0	3/05
85.0	3/05
60.0	3/05
70.0	3/05
82.0	3/05
66.0	3/05
63.0	3/05
67.0	3/05
75.0	3/05
66.0	3/05
64.0	3/05
70.0	3/05
67.0	3/05
50.0	3/05
63.0	3/05
75.0	3/05
84.0	3/05
81.0	3/05
68.0	3/05
78.0	3/05
76.0	3/05
22.0	3/06
40.0	3/06
74.0	3/23
50.0	3/23
54.0	3/23
48.0	3/23
60.0	3/23
69.0	3/23
61.0	3/27
46.0	3/27
49.0	3/27
66.0	3/27
64.0	3/27
71.0	3/27
57.0	3/27
69.0	3/28
64.0	3/28
63.0	3/28
43.0	3/28
57.0	3/28
65.0	3/28
67.0	3/28
61.0	3/28
53.0	3/28
56.0	3/28
31.0	3/28
74.0	3/28
57.0	4/18
70.0	4/18
64.0	4/18
57.0	4/18
36.0	4/18
61.0	4/18
61.0	4/18
50.0	4/18
64.0	4/18
64.0	4/18
60.0	4/18
52.0	4/18
57.0	4/18
55.0	4/18
62.0	4/18
64.0	4/19
86.0	4/20
88.0	4/20
89.0	4/20
93.0	4/20
81.0	4/20
84.0	4/20
86.0	4/20
91.0	4/20
88.0	4/20

Nitrobenzene d5 (cont)

87.0	4/20
74.0	4/20
88.0	4/20
107.0	4/27
41.0	4/27
38.0	4/27
69.0	4/27
73.0	4/27
60.0	4/27
70.0	4/27
41.0	4/28
52.0	4/28
45.0	4/28
52.0	4/28
48.0	4/28
62.0	4/28
54.0	4/28
56.0	4/28
38.0	4/28
42.0	4/28
53.0	4/28
48.0	4/28
42.0	4/28
41.0	4/28
30.0	4/28
53.0	4/28
24.0	4/28
61.0	4/28
48.0	4/28
50.0	4/28
42.0	4/28
44.0	4/28
32.0	5/04
46.0	5/04
59.0	5/04
47.0	5/04
58.0	5/04
57.0	5/04
102.0	5/04
61.0	5/09
45.0	5/09
76.0	5/11
47.0	5/11
74.0	5/11
60.0	5/11
74.0	5/11
74.0	5/11
81.0	5/11
87.0	5/11
75.0	5/11
85.0	5/11
78.0	5/11
67.0	5/11
64.0	5/11
69.0	5/11
70.0	5/15
83.0	5/15
79.0	5/15
51.0	5/15
61.0	5/15
71.0	5/15
54.0	5/15
68.0	5/15
32.0	5/29
55.0	5/29
48.0	5/29
0	5/29
76.0	6/13
82.0	6/14
58.0	6/14
82.0	6/14
72.0	6/14
71.0	6/14
70.0	6/14
56.0	6/14
68.0	6/14
65.0	6/14
77.0	6/14

Nitrobenzene d5 (cont)

75.0	6/15
51.0	6/15
73.0	6/15
68.0	6/15
66.0	6/15
67.0	6/15
69.0	6/18
67.0	6/18
82.0	6/18
63.0	6/18
61.0	6/18
82.0	6/18
67.0	6/18
70.0	6/18
70.0	6/18
73.0	6/18
66.2	7/18
70.8	7/18
66.8	7/18
57.7	7/18
59.0	7/18
85.2	7/19
52.3	7/19
80.4	7/19
69.5	7/19
86.1	7/19
71.1	8/03
67.3	8/03
71.8	8/03
79.1	8/03
68.6	8/03
77.7	8/03
73.3	8/03
60.2	8/03
73.8	8/03
66.6	8/03
75.3	8/03
57.5	8/03
51.4	8/03
68.4	8/03
86.2	8/03
64.6	8/03
73.8	8/03
69.8	8/03
1.3	8/03
72.8	8/03
67.4	8/03
65.6	8/03
81.5	8/03
84.5	8/06
87.4	8/06
80.8	8/06
63.2	8/06
76.6	8/06
88.8	8/06
78.8	8/06
70.6	8/06
77.9	8/06
77.2	8/06
75.4	8/06
86.4	8/06
83.0	8/06
80.0	8/06
68.7	8/07
57.3	8/07
60.6	8/07
65.9	8/07
63.8	8/07
60.8	8/07
63.1	8/13
63.1	8/13
68.1	8/13
65.6	8/13
84.3	8/13
44.0	8/13
63.2	8/13
87.3	8/13
61.6	8/14

****

HSE-9 Semivolatile Surrogate
in Soil
(cont)

****

Nitrobenzene d5 (cont)

57.3	8/14
83.8	8/21
70.2	8/21
66.3	8/21
73.3	8/21
85.8	8/21
65.1	8/21
77.1	8/21
25.6	8/21
63.9	8/21
57.2	8/21
81.9	8/21
54.0	8/21
72.9	8/21
78.6	8/21
70.4	8/21
85.2	8/21
80.0	8/21
79.0	8/21
87.5	8/21
85.8	8/21
78.4	8/21
64.8	8/21
43.5	9/04
56.1	9/04
37.7	9/04
60.7	9/04
72.1	9/04
61.9	9/04
51.1	9/04
58.1	9/04
47.1	9/04
18.3	9/04
48.8	9/04
33.6	9/04
47.2	9/04
44.7	9/04
27.2	9/04
33.4	9/04
87.7	10/30
57.7	10/30
60.5	10/30
45.7	10/30
64.1	10/30
50.9	10/30
87.5	10/30
61.8	10/30
60.3	10/30
70.1	10/30
55.2	12/04
71.9	12/04
65.2	12/04
64.0	12/04
66.5	12/04
65.4	12/04
61.8	12/04
69.4	12/04
68.8	12/04
73.2	12/04
55.0	12/04
77.6	12/04
67.1	12/04
63.9	12/04
72.3	12/04
61.6	12/06
40.9	12/06
37.6	12/06
40.9	12/06
43.7	12/06
27.2	12/06

Nitrobenzene d5 (cont)

53.9	12/06
0	12/06
63.2	12/06
55.9	12/06
54.8	12/06
55.7	12/06
49.6	12/06
57.9	12/06
50.4	12/06
38.1	12/06
67.6	12/06
50.8	12/06
66.8	12/06
54.0	12/06
52.0	12/06
66.5	12/06
36.9	12/06
58.5	12/06
48.2	12/06
53.3	12/06
40.5	12/06
42.6	12/06
56.2	12/06
41.8	12/06
58.9	12/14
54.0	12/14
59.0	12/14
66.9	12/14
60.3	12/14
71.3	12/14
66.3	12/14
59.0	12/14
61.5	12/14
71.6	12/14
76.4	12/14
32.3	12/14
79.4	12/14
72.4	12/14
73.6	12/14
44.6	12/14
58.6	12/14
36.7	12/14

Phenol-d5 GCEC

EPA SW-846 Limits: 24 - 113 %

Result	Uncer	Date
60.0		3/05

Phenol-d5 GCMS

EPA SW-846 Limits: 24 - 113 %

Result	Uncer	Date
65.8		1/05
59.0		1/25
70.0		1/25
68.0		1/25
56.0		1/25
69.0		1/25
64.0		1/25
76.0		1/25
81.0		1/25
80.0		1/25
82.0		1/25
61.0		2/12
78.0		2/12
88.0		2/21
68.0		2/21
70.0		2/21
70.0		2/21
67.0		2/21
54.0		2/21

Phenol-d5 (cont)

80.0	2/21
64.0	3/05
46.0	3/05
67.0	3/05
63.0	3/05
59.0	3/05
81.0	3/05
85.0	3/05
57.0	3/05
74.0	3/05
85.0	3/05
71.0	3/05
84.0	3/05
71.0	3/05
70.0	3/05
66.0	3/05
70.0	3/05
82.0	3/05
87.0	3/05
83.0	3/05
86.0	3/05
85.0	3/05
69.0	3/05
80.0	3/05
69.0	3/05
64.0	3/05
79.0	3/05
64.0	3/05
54.0	3/06
34.0	3/06
44.0	3/23
59.0	3/23
66.0	3/23
54.0	3/23
48.0	3/23
47.0	3/23
54.0	3/27
54.0	3/27
67.0	3/27
62.0	3/27
63.0	3/27
51.0	3/27
56.0	3/27
62.0	3/28
40.0	3/28
59.0	3/28
65.0	3/28
63.0	3/28
72.0	3/28
67.0	3/28
57.0	3/28
50.0	3/28
67.0	3/28
67.0	3/28
54.0	3/28
52.0	4/18
85.0	4/18
57.0	4/18
51.0	4/18
58.0	4/18
90.0	4/18
63.0	4/18
51.0	4/18
52.0	4/18
54.0	4/18
64.0	4/18
143.0	4/18
87.0	4/18
99.0	4/18
301.0	4/18
64.0	4/19
112.0	4/20
94.0	4/20
92.0	4/20
87.0	4/20
91.0	4/20
87.0	4/20
94.0	4/20

TABLE C-V (cont)

Phenol-d5 (cont)

85.0	4/20
90.0	4/20
88.0	4/20
77.0	4/20
89.0	4/20
58.0	4/27
67.0	4/27
30.0	4/27
66.0	4/27
65.0	4/27
33.0	4/27
64.0	4/27
32.0	4/28
44.0	4/28
43.0	4/28
24.0	4/28
47.0	4/28
34.0	4/28
52.0	4/28
53.0	4/28
51.0	4/28
59.0	4/28
53.0	4/28
32.0	4/28
39.0	4/28
49.0	4/28
39.0	4/28
43.0	4/28
37.0	4/28
40.0	4/28
42.0	4/28
57.0	4/28
40.0	4/28
27.0	4/28
102.0	5/04
63.0	5/04
37.0	5/04
54.0	5/04
57.0	5/04
43.0	5/04
52.0	5/04
70.0	5/09
54.0	5/09
85.0	5/11
55.0	5/11
80.0	5/11
79.0	5/11
83.0	5/11
80.0	5/11
87.0	5/11
67.0	5/11
73.0	5/11
67.0	5/11
87.0	5/11
84.0	5/11
66.0	5/11
80.0	5/11
73.0	5/15
55.0	5/15
52.0	5/15
75.0	5/15
62.0	5/15
70.0	5/15
87.0	5/15
86.0	5/15
3.0	5/29
56.0	5/29
29.0	5/29
61.0	5/29
75.0	6/13
71.0	6/14
64.0	6/14
76.0	6/14
73.0	6/14
72.0	6/14
69.0	6/14
71.0	6/14
61.0	6/14

Phenol-d5 (cont)

76.0	6/14
57.0	6/14
66.0	6/15
66.0	6/15
61.0	6/15
63.0	6/15
51.0	6/15
67.0	6/15
61.0	6/18
62.0	6/18
69.0	6/18
72.0	6/18
55.0	6/18
71.0	6/18
65.0	6/18
61.0	6/18
59.0	6/18
62.0	6/18
72.2	7/18
67.6	7/18
63.8	7/18
68.4	7/18
60.0	7/18
46.9	7/19
72.1	7/19
56.0	7/19
81.5	7/19
68.0	7/19
77.6	8/03
67.5	8/03
81.2	8/03
67.0	8/03
42.9	8/03
70.5	8/03
83.6	8/03
78.7	8/03
78.8	8/03
69.7	8/03
85.8	8/03
85.4	8/03
59.4	8/03
78.0	8/03
11.6	8/03
65.0	8/03
72.8	8/03
81.5	8/03
76.8	8/03
65.1	8/03
75.5	8/03
57.2	8/03
90.5	8/03
77.3	8/06
74.9	8/06
79.2	8/06
85.2	8/06
74.1	8/06
77.9	8/06
76.8	8/06
61.5	8/06
82.5	8/06
85.1	8/06
82.2	8/06
91.7	8/06
89.6	8/06
80.8	8/06
60.5	8/07
70.0	8/07
72.8	8/07
61.4	8/07
66.2	8/07
57.9	8/07
64.0	8/13
63.1	8/13
68.1	8/13
83.6	8/13
46.1	8/13
69.1	8/13
85.9	8/13

Phenol-d5 (cont)

64.0	8/13
58.4	8/14
58.9	8/14
87.7	8/21
79.7	8/21
79.1	8/21
78.9	8/21
86.6	8/21
72.2	8/21
91.8	8/21
85.0	8/21
89.7	8/21
94.2	8/21
80.6	8/21
70.2	8/21
84.0	8/21
66.2	8/21
84.3	8/21
81.2	8/21
86.7	8/21
55.4	8/21
72.9	8/21
67.1	8/21
63.2	8/21
78.3	8/21
59.1	9/04
55.2	9/04
68.5	9/04
61.5	9/04
64.6	9/04
62.3	9/04
57.9	9/04
53.9	9/04
66.2	9/04
59.6	9/04
66.9	9/04
64.3	9/04
64.7	9/04
54.2	9/04
49.2	9/04
50.5	9/04
98.6	10/30
88.0	10/30
81.6	10/30
88.7	10/30
95.6	10/30
82.0	10/30
99.1	10/30
90.0	10/30
85.0	10/30
87.4	10/30
71.4	12/04
68.9	12/04
70.7	12/04
72.8	12/04
71.2	12/04
70.9	12/04
69.3	12/04
64.9	12/04
72.0	12/04
78.7	12/04
76.0	12/04
79.8	12/04
63.9	12/04
79.2	12/04
74.0	12/04
64.4	12/06
61.2	12/06
35.6	12/06
55.9	12/06
64.5	12/06
4.8	12/06
59.9	12/06
68.2	12/06
74.4	12/06
54.0	12/06
64.7	12/06
60.5	12/06

****

HSE-9 Semivolatile Surrogate
in Soil
(cont)

****

Phenol-d5 (cont)

72.2	12/06
60.4	12/06
63.1	12/06
63.0	12/06
67.2	12/06
57.7	12/06
54.7	12/06
67.3	12/06
64.1	12/06
67.4	12/06
50.8	12/06
63.8	12/06
44.1	12/06
60.5	12/06
57.2	12/06
62.2	12/06
69.9	12/06
63.4	12/06
76.1	12/14
66.6	12/14
86.5	12/14
59.3	12/14
64.9	12/14
79.3	12/14
37.6	12/14
81.0	12/14
79.4	12/14
67.8	12/14
79.6	12/14
74.2	12/14
81.0	12/14
70.9	12/14
77.3	12/14
72.1	12/14
84.5	12/14
74.1	12/14

p-Terphenyl-d14 GCEC

EPA SW-846 Limits: 18 - 137 %

Result	Uncer	Date
81.0		3/05

p-Terphenyl-d14 GCMS

EPA SW-846 Limits: 18 - 137 %

Result	Uncer	Date
104.3		1/05
101.0		1/25
92.0		1/25
103.0		1/25
94.0		1/25
108.0		1/25
110.0		1/25
104.0		1/25
103.0		1/25
98.0		1/25
102.0		1/25
120.0		2/12
115.0		2/12
89.0		2/21
87.0		2/21
84.0		2/21
96.0		2/21

p-Terphenyl-d14 (cont)

80.0	2/21
86.0	2/21
92.0	2/21
120.0	3/05
69.0	3/05
116.0	3/05
99.0	3/05
70.0	3/05
91.0	3/05
62.0	3/05
106.0	3/05
112.0	3/05
156.0	3/05
74.0	3/05
75.0	3/05
82.0	3/05
73.0	3/05
75.0	3/05
89.0	3/05
81.0	3/05
82.0	3/05
92.0	3/05
137.0	3/05
87.0	3/05
96.0	3/05
86.0	3/05
116.0	3/05
128.0	3/05
105.0	3/06
95.0	3/06
112.0	3/23
87.0	3/23
95.0	3/23
94.0	3/23
96.0	3/23
95.0	3/23
39.0	3/27
83.0	3/27
123.0	3/27
105.0	3/27
100.0	3/27
94.0	3/27
111.0	3/28
93.0	3/28
104.0	3/28
111.0	3/28
114.0	3/28
99.0	3/28
103.0	3/28
108.0	3/28
90.0	3/28
87.0	3/28
106.0	3/28
122.0	4/18
97.0	4/18
95.0	4/18
110.0	4/18
94.0	4/18
99.0	4/18
166.0	4/18
102.0	4/18
94.0	4/18
114.0	4/18
92.0	4/18
84.0	4/18
117.0	4/18
119.0	4/18
86.0	4/18
83.0	4/19
86.0	4/20
85.0	4/20
93.0	4/20
81.0	4/20
96.0	4/20
91.0	4/20
101.0	4/20
87.0	4/20
91.0	4/20

p-Terphenyl-d14 (cont)

106.0	4/20
92.0	4/20
99.0	4/20
91.0	4/27
100.0	4/27
83.0	4/27
77.0	4/27
95.0	4/27
98.0	4/27
150.0	4/27
93.0	4/28
83.0	4/28
87.0	4/28
83.0	4/28
89.0	4/28
89.0	4/28
88.0	4/28
95.0	4/28
81.0	4/28
77.0	4/28
84.0	4/28
85.0	4/28
89.0	4/28
84.0	4/28
90.0	4/28
86.0	4/28
89.0	4/28
74.0	4/28
81.0	4/28
77.0	4/28
79.0	4/28
76.0	4/28
78.0	5/04
100.0	5/04
83.0	5/04
167.0	5/04
95.0	5/04
77.0	5/04
100.0	5/04
88.0	5/09
90.0	5/09
80.0	5/11
100.0	5/11
108.0	5/11
85.0	5/11
80.0	5/11
85.0	5/11
113.0	5/11
128.0	5/11
121.0	5/11
120.0	5/11
117.0	5/11
94.0	5/11
137.0	5/11
156.0	5/11
74.0	5/15
83.0	5/15
105.0	5/15
86.0	5/15
87.0	5/15
124.0	5/15
82.0	5/15
85.0	5/15
33.0	5/29
115.0	5/29
72.0	5/29
119.0	5/29
97.0	6/13
103.0	6/14
103.0	6/14
97.0	6/14
96.0	6/14
90.0	6/14
98.0	6/14
91.0	6/14
104.0	6/14
100.0	6/14
99.0	6/14

TABLE C-V (cont)

p-Terphenyl-d14 (cont)

70.0	6/15
72.0	6/15
75.0	6/15
75.0	6/15
76.0	6/15
74.0	6/15
83.0	6/18
94.0	6/18
79.0	6/18
137.0	6/18
78.0	6/18
101.0	6/18
78.0	6/18
84.0	6/18
80.0	6/18
70.0	6/18
85.7	7/18
86.2	7/18
73.4	7/18
85.9	7/18
94.4	7/18
94.2	7/19
73.8	7/19
82.3	7/19
94.6	7/19
85.3	7/19
110.5	8/03
86.7	8/03
118.7	8/03
89.5	8/03
104.0	8/03
98.8	8/03
104.1	8/03
85.6	8/03
85.9	8/03
108.3	8/03
95.4	8/03
103.2	8/03
105.5	8/03
88.2	8/03
95.2	8/03
88.9	8/03
106.7	8/03
102.5	8/03
78.5	8/03
89.9	8/03
89.3	8/03
110.1	8/03
99.6	8/03
109.8	8/06
87.2	8/06
90.4	8/06
109.0	8/06
91.9	8/06
93.8	8/06
95.8	8/06
89.8	8/06
74.6	8/06
114.2	8/06
96.4	8/06
93.6	8/06
81.4	8/06
72.6	8/06
95.7	8/07
88.7	8/07
86.7	8/07
94.8	8/07
74.6	8/07
90.6	8/07
87.5	8/13
68.7	8/13
80.5	8/13
82.8	8/13
86.7	8/13
80.5	8/13
84.0	8/13
80.8	8/13
84.7	8/14

p-Terphenyl-d14 (cont)

83.6	8/14
77.8	8/21
78.9	8/21
89.8	8/21
77.5	8/21
82.0	8/21
72.0	8/21
99.6	8/21
99.4	8/21
104.7	8/21
78.1	8/21
85.9	8/21
82.7	8/21
83.6	8/21
94.6	8/21
82.2	8/21
72.6	8/21
74.0	8/21
72.5	8/21
76.5	8/21
94.2	8/21
91.3	8/21
85.4	8/21
60.9	9/04
67.7	9/04
60.7	9/04
64.4	9/04
68.7	9/04
66.4	9/04
67.0	9/04
60.5	9/04
74.7	9/04
66.7	9/04
63.2	9/04
64.9	9/04
63.1	9/04
63.5	9/04
64.6	9/04
65.2	9/04
84.3	10/30
91.3	10/30
84.2	10/30
85.3	10/30
85.3	10/30
79.6	10/30
69.0	10/30
82.8	10/30
78.0	10/30
79.5	10/30
91.8	12/04
82.2	12/04
93.6	12/04
94.0	12/04
79.5	12/04
100.6	12/04
77.1	12/04
81.4	12/04
79.4	12/04
80.3	12/04
87.4	12/04
97.0	12/04
74.6	12/04
84.4	12/04
111.4	12/04
84.2	12/06
72.7	12/06
92.1	12/06
72.6	12/06
66.8	12/06
67.9	12/06
70.7	12/06
79.0	12/06
62.1	12/06
77.5	12/06
73.0	12/06
78.1	12/06
60.9	12/06
80.9	12/06

p-Terphenyl-d14 (cont)

80.7	12/06
85.0	12/06
67.4	12/06
63.6	12/06
67.9	12/06
72.0	12/06
72.5	12/06
79.6	12/06
75.2	12/06
78.1	12/06
69.9	12/06
77.2	12/06
79.3	12/06
76.0	12/06
63.2	12/06
89.4	12/06
75.7	12/14
87.8	12/14
88.9	12/14
98.4	12/14
83.5	12/14
86.4	12/14
78.3	12/14
75.4	12/14
103.0	12/14
68.6	12/14
88.7	12/14
89.1	12/14
87.4	12/14
90.0	12/14
40.3	12/14
77.8	12/14
64.3	12/14
79.2	12/14

2,4,6-Tribromophenol GCEC

EPA SW-846 Limits: 19 - 122 %

Result	Uncer	Date
91.0		3/05

2,4,6-Tribromophenol GCMS

EPA SW-846 Limits: 19 - 122 %

Result	Uncer	Date
65.8		1/05
70.0		1/25
104.0		1/25
94.0		1/25
98.0		1/25
93.0		1/25
87.0		1/25
104.0		1/25
104.0		1/25
103.0		1/25
103.0		1/25
98.0		2/12
96.0		2/12
77.0		2/21
92.0		2/21
63.0		2/21
75.0		2/21
79.0		2/21
100.0		2/21
78.0		2/21
122.0		3/05
75.0		3/05
62.0		3/05
123.0		3/05
56.0		3/05
140.0		3/05
160.0		3/05

****

HSE-9 Semivolatile Surrogate
in Soil
(cont)

****

2,4,6-Tribromophenol (cont)

73.0	3/05
114.0	3/05
78.0	3/05
97.0	3/05
79.0	3/05
113.0	3/05
89.0	3/05
90.0	3/05
21.0	3/05
220.0	3/05
86.0	3/05
207.0	3/05
170.0	3/05
64.0	3/05
84.0	3/05
120.0	3/05
73.0	3/05
84.0	3/05
69.0	3/05
110.0	3/05
62.0	3/06
80.0	3/06
100.0	3/23
77.0	3/23
79.0	3/23
69.0	3/23
71.0	3/23
71.0	3/23
82.0	3/27
83.0	3/27
77.0	3/27
145.0	3/27
97.0	3/27
60.0	3/27
70.0	3/28
51.0	3/28
58.0	3/28
99.0	3/28
53.0	3/28
83.0	3/28
69.0	3/28
81.0	3/28
65.0	3/28
84.0	3/28
82.0	3/28
55.0	4/18
18.0	4/18
79.0	4/18
74.0	4/18
48.0	4/18
42.0	4/18
60.0	4/18
101.0	4/18
94.0	4/18
92.0	4/18
33.0	4/18
102.0	4/18
214.0	4/18
42.0	4/18
83.0	4/18
82.0	4/19
81.0	4/20
80.0	4/20
98.0	4/20
76.0	4/20
87.0	4/20
92.0	4/20
94.0	4/20
88.0	4/20
97.0	4/20

2,4,6-Tribromophenol (cont)

87.0	4/20
81.0	4/20
88.0	4/20
77.0	4/27
79.0	4/27
76.0	4/27
76.0	4/27
82.0	4/27
63.0	4/27
67.0	4/27
69.0	4/28
76.0	4/28
64.0	4/28
71.0	4/28
51.0	4/28
69.0	4/28
72.0	4/28
51.0	4/28
39.0	4/28
47.0	4/28
51.0	4/28
46.0	4/28
75.0	4/28
51.0	4/28
57.0	4/28
72.0	4/28
62.0	4/28
61.0	4/28
60.0	4/28
44.0	4/28
51.0	4/28
68.0	4/28
69.0	5/04
69.0	5/04
69.0	5/04
117.0	5/04
62.0	5/04
72.0	5/04
63.0	5/04
77.0	5/09
76.0	5/09
97.0	5/11
95.0	5/11
98.0	5/11
99.0	5/11
89.0	5/11
88.0	5/11
78.0	5/11
82.0	5/11
105.0	5/11
106.0	5/11
106.0	5/11
89.0	5/11
90.0	5/11
85.0	5/11
78.0	5/15
105.0	5/15
73.0	5/15
92.0	5/15
102.0	5/15
79.0	5/15
73.0	5/15
106.0	5/15
19.0	5/29
79.0	5/29
44.0	5/29
77.0	5/29
77.0	6/13
82.0	6/14
64.0	6/14
82.0	6/14
76.0	6/14
81.0	6/14
82.0	6/14
84.0	6/14
90.0	6/14
97.0	6/14
77.0	6/14

2,4,6-Tribromophenol (cont)

87.0	6/15
83.0	6/15
79.0	6/15
83.0	6/15
78.0	6/15
76.0	6/15
83.0	6/18
76.0	6/18
76.0	6/18
95.0	6/18
85.0	6/18
81.0	6/18
91.0	6/18
90.0	6/18
93.0	6/18
82.0	6/18
83.1	7/18
95.9	7/18
73.9	7/18
87.1	7/18
89.5	7/18
70.4	7/19
89.7	7/19
90.8	7/19
50.1	7/19
96.5	7/19
66.8	8/03
76.4	8/03
84.4	8/03
82.9	8/03
99.3	8/03
70.2	8/03
78.8	8/03
60.8	8/03
80.8	8/03
74.2	8/03
84.5	8/03
79.6	8/03
59.2	8/03
79.5	8/03
87.9	8/03
58.8	8/03
87.2	8/03
60.1	8/03
88.1	8/03
74.1	8/03
75.2	8/03
70.2	8/03
68.2	8/03
82.0	8/06
85.7	8/06
85.0	8/06
87.4	8/06
89.1	8/06
90.2	8/06
73.2	8/06
74.6	8/06
81.8	8/06
94.5	8/06
86.6	8/06
71.2	8/06
72.8	8/06
75.2	8/06
90.5	8/07
94.6	8/07
107.8	8/07
84.0	8/07
84.7	8/07
67.8	8/07
98.0	8/13
100.5	8/13
8.5	8/13
9.1	8/13
9.1	8/13
100.8	8/13
80.2	8/13
9.1	8/13
90.5	8/14

TABLE C-V (cont)

2,4,6-Tribromophenol (cont)

89.3	8/14
61.5	8/21
121.0	8/21
114.8	8/21
110.1	8/21
88.7	8/21
90.4	8/21
111.1	8/21
116.2	8/21
112.0	8/21
70.6	8/21
74.8	8/21
81.1	8/21
106.2	8/21
89.1	8/21
87.4	8/21
83.3	8/21
115.3	8/21
120.4	8/21
124.7	8/21
109.9	8/21
116.1	8/21
125.3	8/21
83.5	9/04
84.0	9/04
74.7	9/04
82.7	9/04
88.0	9/04
73.4	9/04
81.9	9/04
98.9	9/04
82.3	9/04
88.1	9/04
80.1	9/04
83.8	9/04
74.3	9/04
76.9	9/04
79.7	9/04
86.0	9/04
83.3	10/30
87.7	10/30
84.6	10/30
88.7	10/30
68.9	10/30
68.9	10/30
84.7	10/30
67.0	10/30
82.7	10/30
74.1	10/30
75.5	12/04
81.5	12/04
76.8	12/04
86.3	12/04
84.5	12/04
75.4	12/04
74.7	12/04
95.5	12/04
82.6	12/04
78.8	12/04
83.5	12/04
64.3	12/04
84.9	12/04
71.1	12/04
92.8	12/04
91.2	12/06
63.4	12/06
113.1	12/06
79.2	12/06
56.1	12/06
49.9	12/06
86.5	12/06
108.8	12/06
120.3	12/06
44.9	12/06
104.3	12/06
55.0	12/06
69.0	12/06
61.5	12/06

2,4,6-Tribromophenol (cont)

61.1	12/06
88.1	12/06
54.0	12/06
66.7	12/06
69.0	12/06
39.4	12/06
61.9	12/06
43.6	12/06
65.7	12/06
79.3	12/06
65.1	12/06
71.4	12/06
71.2	12/06
67.2	12/06
57.9	12/06
62.1	12/06
70.9	12/14
79.7	12/14
64.0	12/14
62.7	12/14
93.5	12/14
68.8	12/14
62.6	12/14
91.0	12/14
100.6	12/14
83.0	12/14
40.1	12/14
60.0	12/14
79.6	12/14
74.1	12/14
84.6	12/14
83.8	12/14
89.5	12/14
69.3	12/14

****

HSE-9 Semivolatile Surrogate
in Water

****

2-Fluorobiphenyl GCMS

EPA SW-846 Limits: 43 - 116 %

Result	Uncer	Date
68.0		1/25
48.0		1/25
35.0		1/25
82.0		2/12
81.0		2/12
83.0		2/12
64.0		2/12
61.0		2/12
71.0		2/12
72.0		2/12
63.0		2/12
59.0		2/12
77.0		2/12
77.0		2/28
82.0		2/28
71.0		2/28
85.0		3/06
36.0		3/06
47.0		3/06
70.0		3/06
87.0		3/06
81.0		3/06
89.0		3/06
42.0		3/06
67.0		3/07
59.0		3/07
54.0		3/07
60.0		3/07
59.0		3/07
96.0		3/22

2-Fluorobiphenyl (cont)

70.0	3/22
90.0	3/22
82.0	3/22
63.0	3/28
77.0	4/03
84.0	4/27
72.0	4/27
86.0	4/27
78.0	4/27
48.0	5/04
81.0	5/04
48.0	5/04
58.0	5/04
48.0	5/09
80.0	5/09
92.0	5/09
78.0	5/09
81.0	5/09
85.0	5/09
60.0	5/10
0	5/10
75.0	5/11
88.0	5/11
74.0	5/11
60.0	5/11
62.0	5/11
102.0	5/11
48.0	5/15
64.0	5/15
66.0	5/15
61.0	5/15
62.0	5/15
72.0	5/15
73.0	5/15
78.0	5/16
51.0	5/16
62.0	5/16
67.0	5/16
65.0	5/16
64.0	5/16
70.0	5/16
64.0	5/16
75.0	5/17
73.0	5/17
80.0	5/18
86.0	5/18
80.0	5/18
86.0	5/18
72.0	5/23
64.0	5/23
71.0	5/23
69.0	5/24
51.0	5/24
78.0	5/24
69.0	5/24
91.0	5/24
67.0	5/24
106.0	5/25
60.0	5/25
69.0	5/29
69.0	5/29
58.0	5/29
49.0	5/29
62.0	5/29
110.0	5/29
61.0	5/29
60.0	5/29
0	5/29
74.0	6/01
62.0	6/15
68.0	6/15
59.0	6/19
79.0	7/16
95.0	7/16
62.4	8/09
66.7	8/09
62.8	8/09
66.0	8/09

****

HSE-9 Semivolatile Surrogate
in Water
(cont)

****

2-Fluorobiphenyl (cont)

78.2	8/09
68.2	8/09
72.2	8/09
80.2	8/20
69.7	8/20
63.6	8/20
63.6	8/21
70.3	8/21
69.4	8/21
70.9	8/21
80.2	8/21
53.1	8/21
75.6	8/21
0	8/21
0	8/21
71.1	8/29
72.3	8/29
72.4	8/29
69.4	8/29
68.1	8/29
68.3	11/27
88.2	11/27
93.9	11/27
68.9	11/27
68.7	11/27
76.0	11/27
70.2	11/27
78.4	11/27
66.7	11/29
67.6	11/29
68.6	11/29
73.9	11/29
66.0	11/29
66.8	11/29
69.1	11/29
67.0	11/29
72.5	11/29
64.6	11/29
57.5	12/06
63.6	12/06
62.1	12/06
50.6	12/06
62.3	12/06
87.6	12/06
86.8	12/06
63.8	12/11
71.4	12/11
63.0	12/11
68.7	12/11
68.1	12/12

2-Fluorophenol GCMS

EPA SW-846 Limits: 21 - 100 %

Result	Uncer	Date
49.0		1/25
47.0		1/25
67.0		1/25
58.0		2/12
49.0		2/12
48.0		2/12
46.0		2/12
56.0		2/12
35.0		2/12
58.0		2/12
85.0		2/12
75.0		2/12

2-Fluorophenol (cont)

81.0	2/12
59.0	2/28
60.0	2/28
69.0	2/28
83.0	3/06
83.0	3/06
62.0	3/06
70.0	3/06
78.0	3/06
30.0	3/06
54.0	3/06
32.0	3/06
40.0	3/07
46.0	3/07
42.0	3/07
53.0	3/07
54.0	3/07
73.0	3/22
48.0	3/22
61.0	3/22
2.0	3/22
52.0	3/28
53.0	4/03
67.0	4/27
65.0	4/27
47.0	4/27
64.0	4/27
10.0	5/04
63.0	5/04
36.0	5/04
41.0	5/04
56.0	5/09
63.0	5/09
32.0	5/09
67.0	5/09
70.0	5/09
59.0	5/09
55.0	5/10
0	5/10
43.0	5/11
49.0	5/11
24.0	5/11
11.0	5/11
43.0	5/11
62.0	5/11
52.0	5/15
52.0	5/15
54.0	5/15
23.0	5/15
57.0	5/15
57.0	5/15
60.0	5/15
57.0	5/16
56.0	5/16
52.0	5/16
51.0	5/16
61.0	5/16
60.0	5/16
70.0	5/16
75.0	5/16
71.0	5/17
68.0	5/17
78.0	5/18
81.0	5/18
78.0	5/18
81.0	5/18
59.0	5/23
68.0	5/23
59.0	5/23
64.0	5/24
48.0	5/24
72.0	5/24
73.0	5/24
57.0	5/24
41.0	5/24
48.0	5/25
89.0	5/25
88.0	5/29

2-Fluorophenol (cont)

56.0	5/29
47.0	5/29
41.0	5/29
56.0	5/29
64.0	5/29
0	5/29
67.0	5/29
53.0	5/29
0	6/01
65.0	6/15
49.0	6/15
22.0	6/19
74.0	7/16
25.0	7/16
72.6	8/09
19.6	8/09
44.4	8/09
75.1	8/09
60.9	8/09
61.7	8/09
66.5	8/09
73.0	8/20
59.2	8/20
52.4	8/20
49.6	8/21
74.7	8/21
65.2	8/21
66.0	8/21
73.0	8/21
69.6	8/21
48.3	8/21
0	8/21
0	8/21
61.7	8/29
65.7	8/29
55.5	8/29
52.8	8/29
53.4	8/29
78.6	11/27
70.1	11/27
45.6	11/27
53.3	11/27
45.2	11/27
56.2	11/27
47.9	11/27
33.9	11/27
55.5	11/29
61.7	11/29
63.8	11/29
59.1	11/29
62.4	11/29
59.6	11/29
54.4	11/29
64.3	11/29
57.0	11/29
61.3	11/29
20.5	12/06
18.8	12/06
45.2	12/06
58.1	12/06
48.0	12/06
41.5	12/06
41.9	12/06
50.5	12/11
69.2	12/11
64.4	12/11
29.5	12/11
52.6	12/12

TABLE C-V (cont)

Nitrobenzene d5 GCMS

EPA SW-846 Limits: 35 - 114 %

Result	Uncer	Date
69.0		1/25
84.0		1/25
93.0		1/25
76.0		2/12
69.0		2/12
77.0		2/12
65.0		2/12
52.0		2/12
68.0		2/12
73.0		2/12
59.0		2/12
58.0		2/12
72.0		2/12
78.0		2/28
75.0		2/28
69.0		2/28
85.0		3/06
83.0		3/06
36.0		3/06
75.0		3/06
47.0		3/06
68.0		3/06
83.0		3/06
89.0		3/06
59.0		3/07
53.0		3/07
74.0		3/07
61.0		3/07
46.0		3/07
80.0		3/22
85.0		3/22
82.0		3/22
103.0		3/22
55.0		3/28
66.0		4/03
69.0		4/27
85.0		4/27
70.0		4/27
80.0		4/27
49.0		5/04
41.0		5/04
73.0		5/04
40.0		5/04
74.0		5/09
75.0		5/09
76.0		5/09
66.0		5/09
39.0		5/09
75.0		5/09
0		5/10
57.0		5/10
57.0		5/11
88.0		5/11
64.0		5/11
63.0		5/11
69.0		5/11
67.0		5/11
70.0		5/15
65.0		5/15
58.0		5/15
64.0		5/15
37.0		5/15
59.0		5/15
61.0		5/15
45.0		5/16
62.0		5/16
54.0		5/16
60.0		5/16
62.0		5/16
74.0		5/16
77.0		5/16
60.0		5/16
72.0		5/17
74.0		5/17

Nitrobenzene d5 (cont)

80.0	5/18
85.0	5/18
80.0	5/18
85.0	5/18
66.0	5/23
65.0	5/23
73.0	5/23
75.0	5/24
67.0	5/24
53.0	5/24
66.0	5/24
67.0	5/24
48.0	5/24
56.0	5/25
95.0	5/25
71.0	5/29
58.0	5/29
72.0	5/29
69.0	5/29
52.0	5/29
46.0	5/29
0	5/29
58.0	5/29
60.0	5/29
71.0	6/01
58.0	6/15
79.0	6/15
55.0	6/19
27.0	7/16
95.0	7/16
68.0	8/09
90.2	8/09
75.3	8/09
74.9	8/09
82.6	8/09
71.3	8/09
77.0	8/09
62.2	8/20
81.3	8/20
71.2	8/20
71.9	8/21
70.7	8/21
81.3	8/21
57.3	8/21
0	8/21
0	8/21
75.9	8/21
0	8/21
73.9	8/21
75.6	8/29
73.0	8/29
78.7	8/29
78.7	8/29
74.9	8/29
54.9	11/27
67.8	11/27
68.2	11/27
68.9	11/27
58.5	11/27
50.8	11/27
78.9	11/27
74.8	11/27
72.5	11/29
69.3	11/29
70.1	11/29
72.0	11/29
70.7	11/29
66.9	11/29
69.9	11/29
61.5	11/29
72.6	11/29
76.7	11/29
72.4	12/06
55.3	12/06
53.2	12/06
50.6	12/06
40.0	12/06
53.8	12/06

Nitrobenzene d5 (cont)

97.4	12/06
63.9	12/11
71.0	12/11
70.9	12/11
64.0	12/11
64.5	12/12

Phenol-d5 GCMS

EPA SW-846 Limits: 10 - 94 %

Result	Uncer	Date
61.0		1/25
74.0		1/25
35.0		1/25
77.0		2/12
62.0		2/12
70.0		2/12
57.0		2/12
45.0		2/12
80.0		2/12
51.0		2/12
84.0		2/12
60.0		2/12
37.0		2/12
84.0		2/28
72.0		2/28
69.0		2/28
35.0		3/06
37.0		3/06
76.0		3/06
85.0		3/06
87.0		3/06
80.0		3/06
88.0		3/06
60.0		3/06
63.0		3/07
46.0		3/07
60.0		3/07
49.0		3/07
50.0		3/07
65.0		3/22
75.0		3/22
0		3/22
46.0		3/22
59.0		3/28
66.0		4/03
77.0		4/27
55.0		4/27
51.0		4/27
73.0		4/27
78.0		5/04
12.0		5/04
50.0		5/04
43.0		5/04
79.0		5/09
40.0		5/09
78.0		5/09
67.0		5/09
79.0		5/09
57.0		5/09
0		5/10
72.0		5/10
58.0		5/11
75.0		5/11
72.0		5/11
27.0		5/11
70.0		5/11
50.0		5/11
68.0		5/15
36.0		5/15
60.0		5/15
64.0		5/15
66.0		5/15
58.0		5/15
63.0		5/15

****

HSE-9 Semivolatile Surrogate in Water (cont)

****

Phenol-d5 (cont)

60.0	5/16
66.0	5/16
55.0	5/16
58.0	5/16
50.0	5/16
49.0	5/16
52.0	5/16
53.0	5/16
72.0	5/17
62.0	5/17
69.0	5/18
69.0	5/18
69.0	5/18
69.0	5/18
73.0	5/23
65.0	5/23
64.0	5/23
79.0	5/24
82.0	5/24
68.0	5/24
63.0	5/24
61.0	5/24
49.0	5/24
55.0	5/25
88.0	5/25
0	5/29
103.0	5/29
54.0	5/29
44.0	5/29
71.0	5/29
49.0	5/29
67.0	5/29
60.0	5/29
59.0	5/29
0	6/01
58.0	6/15
46.0	6/15
10.0	6/19
61.0	7/16
100.0	7/16
80.2	8/09
93.3	8/09
19.5	8/09
37.6	8/09
75.0	8/09
70.5	8/09
64.9	8/09
65.1	8/20
55.9	8/20
81.9	8/20
75.5	8/21
81.9	8/21
74.1	8/21
0	8/21
55.8	8/21
0	8/21
83.6	8/21
79.1	8/21
65.3	8/21
11.1	8/29
10.3	8/29
15.6	8/29
64.1	8/29
70.8	8/29
31.8	11/27
18.1	11/27
59.0	11/27
78.4	11/27
30.6	11/27
75.1	11/27

Phenol-d5 (cont)

62.1	11/27
30.8	11/27
74.9	11/29
55.3	11/29
74.1	11/29
83.8	11/29
72.9	11/29
72.0	11/29
64.6	11/29
69.1	11/29
70.3	11/29
77.5	11/29
64.4	12/06
33.5	12/06
45.3	12/06
51.0	12/06
45.6	12/06
54.9	12/06
60.8	12/06
55.8	12/11
58.3	12/11
58.3	12/11
74.3	12/11
63.4	12/12

p-Terphenyl-d14 GCMS

EPA SW-846 Limits: 33 - 141 %

Result	Uncer	Date
30.0		1/25
120.0		1/25
56.0		1/25
74.0		2/12
82.0		2/12
57.0		2/12
7.0		2/12
78.0		2/12
86.0		2/12
101.0		2/12
92.0		2/12
62.0		2/12
63.0		2/12
99.0		2/28
53.0		2/28
89.0		2/28
77.0		3/06
58.0		3/06
55.0		3/06
89.0		3/06
92.0		3/06
105.0		3/06
106.0		3/06
0		3/06
33.0		3/07
79.0		3/07
69.0		3/07
66.0		3/07
12.0		3/07
85.0		3/22
101.0		3/22
46.0		3/22
114.0		3/22
103.0		3/28
36.0		4/03
17.0		4/27
83.0		4/27
98.0		4/27
80.0		4/27
76.0		5/04
84.0		5/04
75.0		5/04
51.0		5/04
87.0		5/09
59.0		5/09
125.0		5/09

p-Terphenyl-d14 (cont)

55.0	5/09
121.0	5/09
98.0	5/09
94.0	5/10
0	5/10
98.0	5/11
44.0	5/11
68.0	5/11
49.0	5/11
24.0	5/11
13.0	5/11
72.0	5/15
80.0	5/15
83.0	5/15
81.0	5/15
70.0	5/15
78.0	5/15
72.0	5/15
62.0	5/16
72.0	5/16
35.0	5/16
37.0	5/16
65.0	5/16
42.0	5/16
61.0	5/16
43.0	5/16
49.0	5/17
85.0	5/17
76.0	5/18
76.0	5/18
76.0	5/18
76.0	5/18
92.0	5/23
84.0	5/23
71.0	5/23
53.0	5/24
87.0	5/24
82.0	5/24
45.0	5/24
46.0	5/24
95.0	5/24
48.0	5/25
199.0	5/25
174.0	5/29
157.0	5/29
81.0	5/29
79.0	5/29
43.0	5/29
36.0	5/29
75.0	5/29
91.0	5/29
19.0	5/29
50.0	6/01
67.0	6/15
22.0	6/15
47.0	6/19
37.0	7/16
107.0	7/16
91.9	8/09
92.9	8/09
86.0	8/09
96.1	8/09
109.2	8/09
89.2	8/09
91.1	8/09
22.1	8/20
66.2	8/20
90.3	8/20
32.4	8/21
0	8/21
23.8	8/21
90.1	8/21
90.3	8/21
96.5	8/21
81.4	8/21
77.8	8/21
0	8/21
73.4	8/29

TABLE C-V (cont)

p-Terphenyl-d14 (cont)

70.7	8/29
77.7	8/29
71.9	8/29
74.9	8/29
68.7	11/27
103.9	11/27
69.1	11/27
77.3	11/27
62.0	11/27
96.4	11/27
83.3	11/27
94.7	11/27
69.8	11/29
48.3	11/29
21.8	11/29
60.5	11/29
19.9	11/29
18.7	11/29
27.4	11/29
60.9	11/29
67.5	11/29
67.5	11/29
93.3	12/06
111.2	12/06
101.8	12/06
100.0	12/06
80.2	12/06
105.3	12/06
92.0	12/06
33.1	12/11
19.9	12/11
21.3	12/11
30.0	12/11
48.6	12/12

2,4,6-Tribromophenol GCMS

EPA SW-846 Limits: 10 - 123 %

Result	Uncer	Date
56.0		1/25
66.0		1/25
91.0		1/25
66.0		2/12
95.0		2/12
91.0		2/12
95.0		2/12
91.0		2/12
86.0		2/12
92.0		2/12
69.0		2/12
91.0		2/12
90.0		2/12
87.0		2/28
85.0		2/28
83.0		2/28
98.0		3/06
87.0		3/06
73.0		3/06
43.0		3/06
69.0		3/06
62.0		3/06
42.0		3/06
89.0		3/06
53.0		3/07
51.0		3/07
58.0		3/07
66.0		3/07
70.0		3/07
120.0		3/22
131.0		3/22
114.0		3/22
0		3/22
59.0		3/28
78.0		4/03
83.0		4/27

2,4,6-Tribromophenol (cont)

79.0	4/27
58.0	4/27
73.0	4/27
49.0	5/04
66.0	5/04
6.0	5/04
96.0	5/04
89.0	5/09
67.0	5/09
88.0	5/09
56.0	5/09
75.0	5/09
98.0	5/09
89.0	5/10
0	5/10
152.0	5/11
79.0	5/11
88.0	5/11
90.0	5/11
81.0	5/11
36.0	5/11
65.0	5/15
70.0	5/15
61.0	5/15
70.0	5/15
68.0	5/15
64.0	5/15
75.0	5/15
73.0	5/16
74.0	5/16
71.0	5/16
67.0	5/16
82.0	5/16
70.0	5/16
81.0	5/16
66.0	5/16
72.0	5/17
77.0	5/17
86.0	5/18
84.0	5/18
86.0	5/18
84.0	5/18
77.0	5/23
76.0	5/23
81.0	5/23
89.0	5/24
67.0	5/24
62.0	5/24
68.0	5/24
89.0	5/24
77.0	5/24
120.0	5/25
73.0	5/25
86.0	5/29
0	5/29
80.0	5/29
69.0	5/29
105.0	5/29
62.0	5/29
71.0	5/29
71.0	5/29
78.0	5/29
0	6/01
79.0	6/15
82.0	6/15
25.0	6/19
118.0	7/16
107.0	7/16
83.5	8/09
96.6	8/09
80.7	8/09
92.8	8/09
87.9	8/09
78.3	8/09
59.9	8/09
71.9	8/20
96.0	8/20
104.6	8/20

2,4,6-Tribromophenol (cont)

104.6	8/21
98.1	8/21
105.2	8/21
61.1	8/21
0	8/21
79.8	8/21
0	8/21
85.6	8/21
107.3	8/21
84.7	8/29
80.4	8/29
87.7	8/29
82.9	8/29
90.6	8/29
83.6	11/27
57.7	11/27
86.6	11/27
94.7	11/27
78.7	11/27
83.5	11/27
81.9	11/27
84.6	11/27
71.2	11/29
75.6	11/29
53.6	11/29
74.5	11/29
73.7	11/29
68.4	11/29
58.5	11/29
68.3	11/29
71.5	11/29
85.3	11/29
82.7	12/06
103.0	12/06
83.6	12/06
83.9	12/06
73.8	12/06
49.4	12/06
95.3	12/06
75.7	12/11
24.3	12/11
75.4	12/11
68.7	12/11
73.2	12/12

****

HSE-9 Volatile Surrogate
in Bulk Materials

****

4-Bromofluorobenzene PTGC

EPA SW-846 Limits: none

Result	Uncer	Date
19.3		2/13
67.2		2/13
165.0		2/13
68.1		2/13
71.5		2/13
61.4		2/13
28.4		2/13
51.4		2/13
48.6		2/13
104.0		2/13
92.2		2/13
63.6		2/13
186.0		5/18
97.0		8/29
99.0		8/29
139.0		8/29
77.6		8/29
94.8		8/29

****

HSE-9 Volatile Surrogate
in Bulk Materials
(cont)

****

1,2-Dichloroethane d4 PTGC

EPA SW-846 Limits: none

Result	Uncer	Date
108.0		2/13
111.0		2/13
101.0		2/13
98.2		2/13
76.7		2/13
172.0		2/13
93.9		2/13
118.0		2/13
115.0		2/13
96.0		2/13
99.1		2/13
118.0		2/13
131.0		5/18
91.2		8/29
85.2		8/29
81.2		8/29
130.4		8/29
72.0		8/29

Toluene d8 PTGC

EPA SW-846 Limits: none

Result	Uncer	Date
111.0		2/13
109.0		2/13
90.9		2/13
85.1		2/13
82.6		2/13
47.0		2/13
83.1		2/13
78.5		2/13
115.0		2/13
102.0		2/13
93.2		2/13
113.0		2/13
100.0		5/18
79.4		8/29
83.2		8/29
80.8		8/29
78.6		8/29
89.0		8/29

****

HSE-9 Volatile Surrogate
on Filter Media

****

4-Bromofluorobenzene GCMS

EPA SW-846 Limits: none

Result	Uncer	Date
110		4/18
110		4/18
106		4/18
98		4/18

1,2-Dichloroethane d4 GCMS

EPA SW-846 Limits: none

Result	Uncer	Date
104		4/18
96.5		4/18
84.3		4/18
108		4/18

Toluene d8 GCMS

EPA SW-846 Limits: none

Result	Uncer	Date
98.9		4/18
98.1		4/18
90		4/18
110		4/18

****

HSE-9 Volatile Surrogate
in Sludge

****

4-Bromofluorobenzene GCMS

EPA SW-846 Limits: none

Result	Uncer	Date
60.0		3/22

4-Bromofluorobenzene PTGC

EPA SW-846 Limits: none

Result	Uncer	Date
53.2		2/14
116.0		2/14
114.0		2/14
162.7		9/04
256.8		9/04
174.9		9/04
112.2		11/28
131.3		11/28
127.9		11/28

1,2-Dichloroethane d4 GCMS

EPA SW-846 Limits: none

Result	Uncer	Date
127.0		3/22

1,2-Dichloroethane d4 PTGC

EPA SW-846 Limits: none

Result	Uncer	Date
92.5		2/14
117.0		2/14
105.0		2/14
89.5		9/04
65.1		9/04
79.1		9/04
79.3		9/04

1,2-Dichloroethane d4 (cont)

65.1	9/04
87.4	11/28
77.2	11/28
117.5	11/28

Toluene d8 GCMS

EPA SW-846 Limits: none

Result	Uncer	Date
80.8		3/22

Toluene d8 PTGC

EPA SW-846 Limits: none

Result	Uncer	Date
102.0		2/14
85.2		2/14
72.5		2/14
84.8		9/04
84.0		9/04
90.0		9/04
88.2		11/28
67.7		11/28
79.4		11/28

****

HSE-9 Volatile Surrogate
in Soil

****

4-Bromofluorobenzene GCMS

EPA SW-846 Limits: 74 - 121 %

Result	Uncer	Date
370.0		1/19

4-Bromofluorobenzene PTGC

EPA SW-846 Limits: 74 - 121 %

Result	Uncer	Date
59.5		1/04
124.0		1/04
71.6		1/04
95.7		1/04
50.7		1/16
110.0		1/16
95.4		1/16
53.1		1/16
92.5		1/16
67.2		1/16
16.8		1/16
38.3		1/16
89.6		1/16
91.6		1/16
59.8		1/16
42.2		1/16
73.0		1/16
62.0		1/16
32.7		1/16
15.4		1/16
34.9		1/16
27.4		1/16
17.4		1/16
94.8		1/16
112.0		2/06

TABLE C-V (cont)

4-Bromofluorobenzene (cont)

112.0	2/06
98.4	2/13
112.0	2/13
94.6	2/13
119.0	2/13
111.0	2/13
100.0	2/13
129.0	2/14
131.0	2/14
132.0	2/14
136.0	2/14
134.0	2/14
106.0	2/14
119.0	2/14
126.0	2/14
111.0	2/14
133.0	2/14
114.0	2/14
122.0	2/14
78.0	2/21
112.0	3/21
103.0	3/21
108.0	3/21
94.7	3/21
93.4	3/21
79.1	3/21
108.0	3/21
86.5	3/21
93.8	3/21
93.1	3/21
112.0	3/21
114.0	3/21
94.8	3/21
88.0	3/21
122.0	3/21
96.9	3/21
96.3	3/21
103.0	3/21
111.0	3/21
120.0	4/18
112.0	4/23
120.0	4/23
115.0	4/23
126.0	4/23
116.0	4/23
116.0	4/23
124.0	4/23
125.0	4/23
115.0	4/23
131.0	4/23
105.0	4/23
118.0	4/23
150.0	4/28
121.0	4/28
138.0	4/28
119.0	4/28
142.0	4/28
129.0	4/28
110.0	4/28
96.9	4/28
93.9	4/28
137.0	5/03
138.0	5/03
148.0	5/03
143.0	5/03
134.0	5/03
123.0	5/03
151.0	5/03
145.0	5/03
133.0	5/03
132.0	5/08
108.0	5/14
108.0	5/14
139.0	5/17
131.0	5/17
129.0	5/17
148.0	5/17
134.0	5/17

4-Bromofluorobenzene (cont)

126.0	5/17
160.0	5/17
148.0	5/17
113.0	5/17
127.0	5/17
102.0	5/17
105.0	5/17
109.0	5/18
108.0	5/18
111.0	5/18
111.0	5/18
108.0	5/18
127.0	5/19
102.0	5/22
124.0	5/22
120.0	5/22
138.0	5/22
122.0	5/22
166.0	5/22
163.0	5/22
114.0	5/22
115.0	5/30
231.0	5/30
116.0	5/30
181.0	5/30
171.0	5/30
206.0	5/30
138.0	5/31
156.0	5/31
200.0	5/31
146.0	5/31
166.0	5/31
164.0	5/31
155.0	5/31
150.0	5/31
158.0	5/31
165.0	5/31
154.0	5/31
106.0	5/31
96.0	5/31
106.0	5/31
115.0	5/31
95.7	5/31
120.0	6/01
159.0	6/01
177.0	6/03
169.0	6/03
174.0	6/03
149.0	6/03
106.0	6/03
115.0	6/04
162.0	6/05
142.0	6/05
133.0	6/05
146.0	6/05
146.0	6/05
118.0	6/05
143.0	6/05
133.0	6/05
169.0	6/05
115.0	6/05
102.0	6/26
108.0	6/26
112.0	6/26
119.0	6/26
109.0	6/26
115.0	6/26
113.0	6/26
109.0	6/26
111.0	6/26
111.0	6/26
108.0	6/27
124.0	6/27
119.0	6/27
115.0	6/27
116.0	6/27
115.0	6/27
90.0	6/27

4-Bromofluorobenzene (cont)

100.0	6/27
95.2	6/29
110.0	6/29
119.0	6/29
117.0	6/29
117.0	6/29
120.0	6/29
115.0	6/29
96.0	7/02
99.3	7/02
111.0	7/02
115.0	7/02
101.0	7/02
98.3	7/02
90.0	7/02
81.5	7/02
89.0	7/02
95.9	7/04
83.4	7/04
81.6	7/04
84.0	7/04
78.9	7/04
81.8	7/04
85.7	7/04
88.9	7/04
108.0	7/06
109.0	7/06
110.0	7/06
95.4	7/06
93.1	7/06
102.0	7/06
109.0	7/09
114.0	7/09
111.0	7/10
93.4	7/10
94.9	7/10
119.0	7/23
165.0	7/23
119.0	7/23
90.0	7/27
112.0	7/27
107.0	7/31
108.0	7/31
111.0	7/31
114.0	7/31
136.0	7/31
143.0	7/31
88.2	7/31
96.8	7/31
97.5	8/10
99.4	8/10
103.0	8/10
101.0	8/10
101.0	8/10
103.0	8/10
102.0	8/10
104.0	8/14
93.7	9/04
94.3	9/04
101.1	9/04
92.9	9/04
98.3	9/04
101.2	9/04
94.7	9/04
83.7	9/04
86.3	9/04
97.0	9/04
98.6	9/04
100.5	9/04
99.3	9/04
93.5	9/04
96.5	9/04
97.0	9/04
99.3	9/04
94.6	9/04
90.7	9/04
91.6	9/05
89.2	9/05

****

HSE-9 Volatile Surrogate
in Soil
(cont)

****

4-Bromofluorobenzene (cont)

93.3	9/05
84.5	9/05
95.2	9/05
105.2	9/05
102.9	9/05
95.3	9/05
104.4	9/05
105.8	9/05
106.8	9/05
97.0	9/05
102.7	9/05
113.2	9/05
105.1	9/05
108.2	9/05
93.9	9/05
94.4	9/05
191.2	10/05
447.8	10/05
393.1	10/05
83.9	10/05
140.3	10/22
104.9	10/22
99.6	10/22
97.4	10/22
95.1	10/22
95.8	10/22
97.4	10/22
105.4	10/22
91.5	10/22
100.4	10/22
101.0	11/01
94.4	11/01
106.3	11/01
100.6	11/01
99.3	11/01
90.0	11/01
115.5	11/01
100.9	11/01
95.9	11/01
99.7	11/01
93.5	11/01
102.1	11/01
101.6	11/01
108.4	11/01
116.7	11/01
105.5	11/01
107.1	11/01
92.4	11/01
89.8	11/07
103.0	11/07
93.6	11/07
99.5	11/07
83.9	11/07
111.4	11/07
106.6	11/07
105.4	11/07
85.1	11/07
85.9	11/07
110.2	11/07
85.9	11/07
87.9	11/07
110.6	11/07
100.4	11/07
85.9	11/07
109.9	11/07
108.5	11/07
87.9	11/07
110.0	11/07
90.5	11/07
107.3	11/07

4-Bromofluorobenzene (cont)

86.1	11/07
91.2	11/07
93.6	11/07
110.3	11/07
94.5	11/07
87.2	11/07
85.7	11/07
102.0	11/07
87.3	11/07
110.1	11/07
111.0	11/07
95.8	11/07
107.7	11/07
108.7	11/07
113.2	11/07
118.3	11/07
88.0	11/07
98.7	11/08
98.8	11/08
110.9	11/08
85.4	11/08
88.4	11/08
83.1	11/08
82.6	11/08
82.6	11/08
100.3	11/08
98.8	11/27
91.0	11/27
88.7	11/27
109.9	11/28
113.1	11/28

1,2-Dichloroethane d4 GCMS

EPA SW-846 Limits: 70 - 121 %

Result	Uncer	Date
111.0		1/19

1,2-Dichloroethane d4 PTGC

EPA SW-846 Limits: 70 - 121 %

Result	Uncer	Date
85.2		1/04
128.0		1/04
108.0		1/04
138.0		1/04
67.2		1/16
168.0		1/16
74.1		1/16
28.8		1/16
181.0		1/16
86.0		1/16
83.5		1/16
136.0		1/16
81.5		1/16
51.2		1/16
199.0		1/16
3.6		1/16
190.0		1/16
187.0		1/16
81.8		1/16
42.2		1/16
98.6		1/16
88.1		1/16
87.2		1/16
95.3		1/16
102.0		2/06
104.0		2/06
99.9		2/13
103.0		2/13
103.0		2/13
111.0		2/13

1,2-Dichloroethane d4 (cont)

93.4	2/13
110.0	2/13
133.0	2/14
140.0	2/14
136.0	2/14
125.0	2/14
134.0	2/14
119.0	2/14
135.0	2/14
127.0	2/14
135.0	2/14
139.0	2/14
140.0	2/14
140.0	2/14
0	2/21
120.0	3/21
116.0	3/21
108.0	3/21
103.0	3/21
112.0	3/21
85.7	3/21
136.0	3/21
117.0	3/21
107.0	3/21
108.0	3/21
130.0	3/21
114.0	3/21
117.0	3/21
124.0	3/21
114.0	3/21
120.0	3/21
108.0	3/21
111.0	3/21
109.0	3/21
139.0	4/18
94.8	4/23
89.8	4/23
117.0	4/23
81.7	4/23
93.7	4/23
107.0	4/23
83.4	4/23
104.0	4/23
110.1	4/23
101.0	4/23
102.0	4/23
104.0	4/23
94.2	4/28
85.0	4/28
88.3	4/28
93.1	4/28
81.9	4/28
109.0	4/28
92.4	4/28
116.0	4/28
84.0	4/28
96.5	5/03
106.0	5/03
100.0	5/03
101.0	5/03
83.0	5/03
102.0	5/03
103.0	5/03
108.0	5/03
109.0	5/03
108.0	5/08
137.0	5/14
137.0	5/14
114.0	5/17
143.0	5/17
112.0	5/17
89.3	5/17
118.0	5/17
124.0	5/17
112.0	5/17
105.0	5/17
126.0	5/17
116.0	5/17

TABLE C-V (cont)

1,2-Dichloroethane d4 (cont)

119.0	5/17
107.0	5/17
86.4	5/18
114.0	5/18
104.0	5/18
104.0	5/18
114.0	5/18
139.0	5/19
109.0	5/22
112.0	5/22
115.0	5/22
218.0	5/22
123.0	5/22
168.0	5/22
110.0	5/22
93.8	5/22
146.0	5/30
150.0	5/30
250.0	5/30
180.0	5/30
140.0	5/30
94.3	5/30
140.0	5/31
110.0	5/31
110.0	5/31
130.0	5/31
212.0	5/31
110.0	5/31
89.3	5/31
92.3	5/31
137.0	5/31
153.0	5/31
117.0	5/31
120.0	5/31
117.0	5/31
133.0	5/31
92.3	5/31
122.0	5/31
124.0	6/01
124.0	6/01
220.0	6/03
149.0	6/03
120.0	6/03
119.0	6/03
92.3	6/03
95.4	6/04
102.0	6/05
105.0	6/05
121.0	6/05
114.0	6/05
123.0	6/05
129.0	6/05
127.0	6/05
110.0	6/05
132.0	6/05
117.0	6/05
91.1	6/26
85.9	6/26
95.8	6/26
90.7	6/26
90.6	6/26
88.1	6/26
88.5	6/26
89.2	6/26
91.0	6/26
91.8	6/26
92.1	6/27
107.0	6/27
106.0	6/27
87.5	6/27
87.0	6/27
96.1	6/27
110.0	6/27
113.0	6/27
106.0	6/29
102.0	6/29
101.0	6/29
102.0	6/29

1,2-Dichloroethane d4 (cont)

102.0	6/29
107.0	6/29
91.4	6/29
92.1	7/02
86.9	7/02
106.0	7/02
93.5	7/02
92.6	7/02
87.0	7/02
71.5	7/02
89.8	7/02
90.7	7/02
74.6	7/04
82.6	7/04
74.6	7/04
81.5	7/04
74.7	7/04
32.4	7/04
92.2	7/04
84.5	7/04
93.5	7/06
90.8	7/06
93.3	7/06
77.5	7/06
89.8	7/06
86.7	7/06
56.0	7/09
89.0	7/09
102.0	7/10
96.9	7/10
122.0	7/10
107.0	7/23
100.0	7/23
99.0	7/23
98.5	7/27
101.0	7/27
97.5	7/31
95.7	7/31
81.9	7/31
113.0	7/31
96.6	7/31
90.3	7/31
97.6	7/31
101.0	7/31
103.0	8/10
103.0	8/10
88.3	8/10
105.0	8/10
83.2	8/10
110.0	8/10
92.4	8/10
77.1	8/14
83.1	9/04
84.1	9/04
101.6	9/04
89.6	9/04
85.3	9/04
87.7	9/04
104.6	9/04
98.8	9/04
107.6	9/04
84.5	9/04
100.3	9/04
97.5	9/04
110.3	9/04
116.2	9/04
78.3	9/04
80.1	9/04
80.3	9/04
93.8	9/04
75.7	9/04
83.1	9/04
86.1	9/04
95.2	9/05
96.1	9/05
90.2	9/05
86.1	9/05
99.4	9/05

1,2-Dichloroethane d4 (cont)

96.0	9/05
95.0	9/05
86.7	9/05
92.1	9/05
103.4	9/05
102.7	9/05
92.7	9/05
88.7	9/05
105.5	9/05
91.7	9/05
96.0	9/05
96.8	9/05
94.3	9/05
104.2	9/05
72.0	9/05
123.2	10/05
113.2	10/05
131.0	10/05
77.7	10/05
87.4	10/22
92.1	10/22
93.3	10/22
110.1	10/22
91.1	10/22
104.4	10/22
123.9	10/22
96.9	10/22
99.9	10/22
99.0	10/22
52.2	11/01
93.5	11/01
64.8	11/01
53.9	11/01
61.1	11/01
77.5	11/01
82.8	11/01
99.1	11/01
39.4	11/01
129.4	11/01
89.9	11/01
71.8	11/01
119.6	11/01
79.1	11/01
41.6	11/01
59.3	11/01
66.5	11/01
120.5	11/01
103.5	11/07
99.2	11/07
77.3	11/07
101.3	11/07
80.0	11/07
81.9	11/07
100.0	11/07
94.0	11/07
93.3	11/07
77.7	11/07
81.2	11/07
87.8	11/07
83.2	11/07
94.2	11/07
102.7	11/07
90.7	11/07
96.9	11/07
87.1	11/07
80.4	11/07
83.6	11/07
84.9	11/07
142.4	11/07
75.9	11/07
106.4	11/07
115.6	11/07
105.6	11/07
103.1	11/07
105.1	11/07
93.0	11/07
85.4	11/07
93.8	11/07

****

HSE-9 Volatile Surrogate
in Soil
(cont)

****

1,2-Dichloroethane d4 (cont)

88.4	11/07
95.1	11/07
78.9	11/07
88.0	11/07
98.8	11/07
98.0	11/07
95.7	11/07
76.5	11/07
91.5	11/08
105.1	11/08
82.0	11/08
85.8	11/08
111.0	11/08
89.2	11/08
99.2	11/08
96.1	11/08
75.5	11/08
73.0	11/27
80.7	11/27
79.0	11/27
83.8	11/28
90.9	11/28

Toluene d8 GCMS

EPA SW-846 Limits: 81 - 117 %

Result	Uncer	Date
107.0		1/19

Toluene d8 PTGC

EPA SW-846 Limits: 81 - 117 %

Result	Uncer	Date
127.0		1/04
98.5		1/04
115.0		1/04
97.4		1/04
109.0		1/16
59.0		1/16
74.8		1/16
42.0		1/16
52.6		1/16
89.6		1/16
93.7		1/16
107.0		1/16
110.0		1/16
116.0		1/16
0		1/16
50.4		1/16
24.5		1/16
62.7		1/16
57.4		1/16
105.0		1/16
118.0		1/16
103.0		1/16
94.2		1/16
132.5		1/16
97.9		2/06
110.0		2/06
106.0		2/13
109.0		2/13
99.4		2/13
115.0		2/13
93.8		2/13

Toluene d8 (cont)

93.8	2/13
131.0	2/14
123.0	2/14
138.0	2/14
107.0	2/14
123.0	2/14
112.0	2/14
138.0	2/14
126.0	2/14
132.0	2/14
107.0	2/14
108.0	2/14
130.0	2/14
114.0	2/21
78.2	3/21
93.7	3/21
89.6	3/21
109.0	3/21
93.7	3/21
89.1	3/21
111.0	3/21
79.6	3/21
91.5	3/21
115.0	3/21
95.7	3/21
108.0	3/21
87.7	3/21
88.7	3/21
79.0	3/21
102.0	3/21
92.8	3/21
104.0	3/21
96.0	3/21
130.0	4/18
73.1	4/23
75.8	4/23
83.6	4/23
70.4	4/23
65.7	4/23
86.6	4/23
84.4	4/23
73.7	4/23
72.1	4/23
76.6	4/23
74.2	4/23
77.4	4/23
74.6	4/28
75.0	4/28
76.2	4/28
76.4	4/28
59.7	4/28
62.6	4/28
78.6	4/28
94.0	4/28
66.3	4/28
91.4	5/03
93.8	5/03
91.7	5/03
102.0	5/03
92.9	5/03
91.5	5/03
89.1	5/03
89.7	5/03
87.9	5/03
85.2	5/08
103.0	5/14
103.0	5/14
88.2	5/17
86.4	5/17
84.1	5/17
89.1	5/17
92.8	5/17
88.9	5/17
88.1	5/17
77.8	5/17
93.0	5/17
85.9	5/17
83.3	5/17

Toluene d8 (cont)

97.6	5/17
101.0	5/18
97.1	5/18
103.0	5/18
103.0	5/18
91.8	5/18
96.4	5/19
93.1	5/22
91.8	5/22
63.6	5/22
87.9	5/22
59.8	5/22
83.5	5/22
90.0	5/22
113.0	5/22
109.0	5/30
77.0	5/30
69.3	5/30
84.0	5/30
83.9	5/30
76.8	5/30
99.2	5/31
73.7	5/31
106.0	5/31
98.9	5/31
101.0	5/31
99.3	5/31
87.2	5/31
95.3	5/31
95.3	5/31
91.9	5/31
113.0	5/31
114.0	5/31
105.0	5/31
102.0	5/31
95.2	5/31
108.0	5/31
114.0	6/01
114.0	6/01
57.0	6/03
82.0	6/03
100.0	6/03
89.2	6/03
95.3	6/03
98.2	6/04
97.2	6/05
89.2	6/05
85.5	6/05
97.1	6/05
91.3	6/05
94.1	6/05
104.0	6/05
101.0	6/05
101.0	6/05
102.0	6/05
90.0	6/26
80.5	6/26
83.8	6/26
81.8	6/26
83.8	6/26
81.7	6/26
85.4	6/26
79.8	6/26
80.1	6/26
86.1	6/26
84.8	6/27
89.9	6/27
80.1	6/27
90.9	6/27
90.5	6/27
85.4	6/27
86.7	6/27
88.4	6/27
96.7	6/29
82.2	6/29
94.5	6/29
92.5	6/29
91.1	6/29

TABLE C-V (cont)

Toluene d8 (cont)

92.1	6/29
85.3	6/29
92.5	7/02
89.4	7/02
90.9	7/02
82.5	7/02
95.5	7/02
87.9	7/02
91.4	7/02
90.8	7/02
93.2	7/02
78.9	7/04
82.6	7/04
80.8	7/04
80.1	7/04
80.7	7/04
80.7	7/04
76.4	7/04
77.0	7/04
86.6	7/06
85.4	7/06
85.0	7/06
88.4	7/06
79.6	7/06
81.2	7/06
87.4	7/09
97.4	7/09
97.0	7/10
96.5	7/10
92.2	7/10
84.0	7/23
70.0	7/23
86.0	7/23
90.9	7/27
85.0	7/27
92.4	7/31
88.5	7/31
89.1	7/31
88.0	7/31
92.1	7/31
86.4	7/31
92.9	7/31
84.9	7/31
88.9	8/10
88.9	8/10
86.9	8/10
87.0	8/10
88.6	8/10
90.5	8/10
90.8	8/10
85.3	8/14
98.9	9/04
84.5	9/04
96.0	9/04
83.8	9/04
102.4	9/04
96.8	9/04
81.2	9/04
86.1	9/04
97.6	9/04
95.1	9/04
95.9	9/04
85.8	9/04
96.9	9/04
96.5	9/04
82.5	9/04
94.2	9/04
82.4	9/04
81.3	9/04
82.2	9/04
93.2	9/05
86.3	9/05
90.3	9/05
82.4	9/05
92.6	9/05
82.0	9/05
92.6	9/05
88.1	9/05

Toluene d8 (cont)

89.1	9/05
89.9	9/05
89.7	9/05
90.7	9/05
81.3	9/05
90.9	9/05
83.0	9/05
88.4	9/05
89.6	9/05
92.9	9/05
87.2	10/05
76.2	10/05
77.3	10/05
72.9	10/05
95.9	10/22
92.8	10/22
92.8	10/22
95.9	10/22
94.3	10/22
93.9	10/22
96.4	10/22
96.8	10/22
100.9	10/22
94.4	10/22
83.5	11/01
82.3	11/01
75.6	11/01
83.8	11/01
78.7	11/01
74.6	11/01
84.5	11/01
74.6	11/01
80.8	11/01
74.6	11/01
84.3	11/01
81.1	11/01
76.4	11/01
84.8	11/01
76.1	11/01
84.2	11/01
80.7	11/01
83.1	11/01
92.0	11/07
82.4	11/07
84.3	11/07
90.9	11/07
85.0	11/07
99.1	11/07
82.7	11/07
97.5	11/07
97.5	11/07
100.9	11/07
87.2	11/07
98.6	11/07
99.0	11/07
98.9	11/07
99.7	11/07
98.0	11/07
91.7	11/07
85.7	11/07
75.1	11/07
99.1	11/07
83.6	11/07
86.3	11/07
96.3	11/07
85.4	11/07
98.8	11/07
101.7	11/07
99.8	11/07
100.2	11/07
87.7	11/07
88.6	11/07
88.9	11/07
88.2	11/07
90.9	11/07
88.2	11/07
88.6	11/07
88.2	11/07

Toluene d8 (cont)

99.2	11/07
99.2	11/07
86.6	11/07
82.2	11/08
81.2	11/08
81.9	11/08
103.1	11/08
105.0	11/08
102.3	11/08
82.2	11/08
82.8	11/08
104.1	11/08
84.9	11/27
89.0	11/27
89.3	11/27
77.5	11/28
82.3	11/28

****

HSE-9 Volatile Surrogate
in Water

****

4-Bromofluorobenzene GCMS

EPA SW-846 Limits: 86 - 115 %

Result	Uncer	Date
97.3		3/20
95.7		3/20
110.0		6/29
110.0		6/29
114.0		6/29
111.0		6/29
111.0		6/29
113.0		6/29
110.0		7/23
112.0		7/23

4-Bromofluorobenzene PTGC

EPA SW-846 Limits: 86 - 115 %

Result	Uncer	Date
114.0		1/04
84.0		1/09
110.0		1/31
98.0		1/31
95.4		2/14
161.0		2/14
110.0		2/14
151.0		2/14
91.5		2/14
93.1		2/22
106.0		2/22
94.2		2/22
88.1		3/01
94.2		3/01
95.4		3/01
97.3		3/01
124.0		3/01
114.0		3/01
117.0		3/01
118.0		3/01
108.0		3/01
120.0		3/01
108.0		3/01
116.0		3/02
102.0		3/21
113.0		3/21
102.0		3/21
103.0		3/21
99.5		3/21

****

HSE-9 Volatile Surrogate
in Water
(cont)

****

4-Bromofluorobenzene (cont)

106.0	3/21
105.0	4/16
99.0	4/16
102.0	4/16
103.0	4/16
105.0	4/18
105.0	4/18
105.0	4/18
102.0	4/18
103.0	4/18
112.0	4/18
104.0	4/18
104.0	4/18
102.0	4/18
115.0	4/18
109.0	4/18
95.2	4/18
94.2	4/18
93.4	4/18
93.5	4/18
111.0	4/18
95.3	4/18
94.6	4/18
118.0	4/18
104.0	4/18
106.0	4/18
105.0	4/18
114.0	4/28
113.0	4/28
117.0	4/28
112.0	4/28
111.0	4/28
103.0	4/28
117.0	4/28
117.0	4/28
114.0	4/28
106.0	4/28
108.0	4/28
115.0	4/28
110.0	4/28
115.0	4/28
115.0	4/28
110.0	4/28
114.0	4/28
106.0	5/03
109.0	5/03
124.0	5/03
107.0	5/03
107.0	5/03
132.0	5/03
138.0	5/03
106.0	5/03
98.3	5/08
89.7	5/08
98.0	5/08
97.0	5/08
98.4	5/08
97.5	5/08
99.9	5/08
99.2	5/08
98.4	5/08
99.5	5/08
97.1	5/08
107.0	5/10
106.0	5/10
110.0	5/10
106.0	5/10
110.0	5/10
109.0	5/10
107.0	5/10

4-Bromofluorobenzene (cont)

107.0	5/10
110.0	5/10
107.0	5/11
99.0	5/11
106.0	5/11
104.0	5/11
106.0	5/11
116.0	5/11
115.0	5/11
107.0	5/11
107.0	5/14
105.0	5/15
97.4	5/15
97.4	5/15
97.1	5/15
105.0	5/15
105.0	5/16
107.0	5/16
104.0	5/16
107.0	5/16
103.0	5/16
118.0	5/16
111.0	5/16
108.0	5/16
107.0	5/16
108.0	5/16
112.0	5/16
17.0	5/16
105.0	5/17
105.0	5/17
100.0	5/18
99.2	5/18
108.0	5/18
98.7	5/18
99.0	5/18
97.6	5/18
101.0	5/18
101.0	5/18
106.0	5/21
101.0	5/21
101.0	5/21
103.0	5/21
122.0	5/25
125.0	5/25
131.0	5/25
124.0	5/25
120.0	5/25
118.0	6/03
94.8	7/06
94.6	7/06
92.6	7/06
86.3	7/06
96.9	7/17
101.0	7/17
102.0	7/17
97.2	7/17
100.0	7/17
93.8	7/23
88.9	7/25
92.3	7/25
87.9	7/25
90.4	7/25
90.0	7/25
91.1	7/25
90.9	7/25
90.9	7/25
86.8	7/25
88.9	7/25
93.0	7/27
87.1	7/27
109.0	7/30
99.3	8/28
100.5	8/28
101.2	8/28
98.0	8/28
98.3	8/28
94.7	8/28
100.9	8/28

4-Bromofluorobenzene (cont)

111.3	9/21
93.2	9/21
101.9	9/21
105.2	9/21
92.1	9/21
102.2	9/21
104.9	9/21
107.6	9/21
96.5	9/21
98.3	9/21
96.5	9/21
95.4	9/21
93.1	9/21
101.0	9/21
96.7	9/21
91.9	9/21
91.2	9/21
94.5	11/01
97.4	11/07
103.4	11/07
102.8	11/07
96.2	11/07
103.2	11/07
102.1	11/07
98.5	11/08
102.0	11/08
90.8	11/15
94.2	11/15
133.7	11/15
91.5	11/15
97.3	11/15
94.3	11/15
103.6	11/15
99.2	11/27
85.2	11/27
83.7	11/27
98.8	11/27
80.9	11/27
85.7	11/27
92.1	11/27
107.5	11/27
97.0	11/27
87.1	11/27
98.0	11/27
95.4	11/27
81.6	11/27
93.6	12/04
90.9	12/04
91.6	12/04
90.2	12/04
89.0	12/04
90.2	12/04
102.6	12/06
98.3	12/06
99.9	12/06
96.5	12/06
99.2	12/06
101.0	12/06
97.4	12/11
96.9	12/11
94.2	12/11
97.2	12/11
100.4	12/11
92.8	12/11
92.8	12/11
103.6	12/11
97.0	12/11
100.0	12/11

TABLE C-V (cont)

1,2-Dichloroethane d4 GCMS

EPA SW-846 Limits: 76 - 114 %

Result	Uncer	Date
115.0		3/20
116.0		3/20
92.0		6/29
89.3		6/29
88.0		6/29
82.5		6/29
98.1		6/29
82.5		6/29
87.0		7/23
89.3		7/23

1,2-Dichloroethane d4 PTGC

EPA SW-846 Limits: 76 - 114 %

Result	Uncer	Date
216.0		1/04
79.0		1/09
201.0		1/31
173.0		1/31
120.0		2/14
129.0		2/14
106.0		2/14
182.0		2/14
106.0		2/14
117.0		2/22
119.0		2/22
113.0		2/22
113.0		3/01
122.0		3/01
124.0		3/01
116.0		3/01
126.0		3/01
120.0		3/01
132.0		3/01
117.0		3/01
108.0		3/01
115.0		3/01
129.0		3/01
131.0		3/02
107.0		3/21
120.0		3/21
108.0		3/21
108.0		3/21
124.0		3/21
116.0		3/21
118.0		4/16
115.0		4/16
111.0		4/16
124.0		4/16
109.0		4/18
113.0		4/18
125.0		4/18
113.0		4/18
96.5		4/18
111.0		4/18
117.0		4/18
92.5		4/18
114.0		4/18
135.0		4/18
118.0		4/18
111.0		4/18
109.0		4/18
119.0		4/18
91.5		4/18
93.5		4/18
117.0		4/18
117.0		4/18
122.0		4/18
110.0		4/18
89.2		4/18
122.0		4/18

1,2-Dichloroethane d4 (cont)

138.0		4/28
135.0		4/28
94.3		4/28
121.0		4/28
181.0		4/28
139.0		4/28
130.0		4/28
101.0		4/28
124.0		4/28
168.0		4/28
140.0		4/28
128.0		4/28
99.8		4/28
106.0		4/28
105.0		4/28
105.0		4/28
107.0		4/28
131.0		5/03
126.0		5/03
101.0		5/03
131.0		5/03
104.0		5/03
138.0		5/03
97.2		5/03
119.0		5/03
86.1		5/08
106.0		5/08
110.0		5/08
97.4		5/08
117.0		5/08
106.0		5/08
109.0		5/08
112.0		5/08
111.0		5/08
90.9		5/08
108.0		5/08
95.0		5/10
92.1		5/10
93.4		5/10
94.3		5/10
94.4		5/10
94.0		5/10
108.0		5/10
104.0		5/10
121.0		5/10
102.0		5/11
87.1		5/11
105.0		5/11
116.0		5/11
129.0		5/11
105.0		5/11
107.0		5/11
97.7		5/11
106.0		5/14
110.0		5/15
125.0		5/15
109.0		5/15
109.0		5/15
111.0		5/15
106.0		5/16
131.0		5/16
104.0		5/16
102.0		5/16
119.0		5/16
102.0		5/16
121.0		5/16
132.0		5/16
111.0		5/16
95.3		5/16
163.0		5/16
114.0		5/16
132.0		5/17
137.0		5/17
114.0		5/18
96.2		5/18
116.0		5/18
86.4		5/18
110.0		5/18

1,2-Dichloroethane d4 (cont)

105.0		5/18
115.0		5/18
96.7		5/18
117.0		5/21
140.0		5/21
99.3		5/21
129.0		5/21
100.0		5/25
107.0		5/25
108.0		5/25
103.0		5/25
104.0		5/25
135.0		6/03
153.0		7/06
169.0		7/06
99.0		7/06
77.8		7/06
99.4		7/17
88.4		7/17
91.1		7/17
92.6		7/17
79.6		7/17
87.7		7/23
105.0		7/25
99.6		7/25
99.5		7/25
119.0		7/25
79.0		7/25
89.3		7/25
79.0		7/25
94.7		7/25
91.8		7/25
95.7		7/25
85.3		7/27
102.0		7/27
90.1		7/30
98.8		8/28
77.1		8/28
98.7		8/28
82.3		8/28
86.0		8/28
80.0		8/28
91.1		8/28
86.0		8/28
82.0		8/28
133.5		9/21
86.9		9/21
88.8		9/21
102.0		9/21
96.6		9/21
97.2		9/21
127.7		9/21
94.3		9/21
90.6		9/21
97.7		9/21
89.0		9/21
93.5		9/21
105.0		9/21
104.6		9/21
102.1		9/21
94.6		9/21
106.4		9/21
91.5		9/21
96.7		9/21
87.9		11/01
101.4		11/07
98.9		11/07
99.7		11/07
91.7		11/07
117.0		11/07
97.6		11/07
104.7		11/08
99.7		11/08
91.8		11/15
89.6		11/15
94.5		11/15
89.9		11/15
102.5		11/15

****

HSE-9 Volatile Surrogate
in Water
(cont)

****

1,2-Dichloroethane d4 (cont)

98.9		11/15
90.7		11/15
89.4		11/27
88.1		11/27
89.7		11/27
100.7		11/27
105.6		11/27
106.2		11/27
97.5		11/27
104.6		11/27
98.4		11/27
109.6		11/27
86.8		11/27
82.2		11/27
102.8		11/27
87.9		12/04
89.6		12/04
90.5		12/04
94.3		12/04
91.7		12/04
91.5		12/04
100.3		12/06
67.3		12/06
100.4		12/06
116.7		12/06
109.6		12/06
109.6		12/06
91.2		12/11
91.2		12/11
91.6		12/11
91.4		12/11
95.2		12/11
87.6		12/11
91.0		12/11
94.0		12/11
82.0		12/11
65.8		12/11

Toluene d8 GCMS

EPA SW-846 Limits: 88 - 110 %

Result	Uncer	Date
79.6		3/20
97.8		3/20
79.0		6/29
78.1		6/29
80.4		6/29
80.5		6/29
80.3		6/29
79.9		6/29
80.7		7/23
81.0		7/23

Toluene d8 PTGC

EPA SW-846 Limits: 88 - 110 %

Result	Uncer	Date
60.0		1/04
94.0		1/09
70.8		1/31
90.6		1/31
101.0		2/14
97.6		2/14
106.0		2/14

Toluene d8 (cont)

115.0		2/14
114.0		2/14
105.0		2/22
107.0		2/22
105.0		2/22
99.5		3/01
136.0		3/01
107.0		3/01
125.0		3/01
95.5		3/01
96.8		3/01
95.9		3/01
107.0		3/01
116.0		3/01
93.6		3/01
101.0		3/01
110.0		3/02
103.0		3/21
106.0		3/21
116.0		3/21
128.0		3/21
105.0		3/21
113.0		3/21
106.0		4/16
108.0		4/16
110.0		4/16
105.0		4/16
126.0		4/18
105.0		4/18
110.0		4/18
114.0		4/18
90.7		4/18
92.0		4/18
91.4		4/18
93.8		4/18
90.0		4/18
134.0		4/18
107.0		4/18
130.0		4/18
96.6		4/18
138.0		4/18
132.0		4/18
108.0		4/18
104.0		4/18
110.0		4/18
122.0		4/18
134.0		4/18
132.0		4/18
103.0		4/18
96.2		4/28
73.2		4/28
73.6		4/28
95.6		4/28
95.9		4/28
98.4		4/28
93.7		4/28
115.0		4/28
102.0		4/28
106.0		4/28
98.8		4/28
96.9		4/28
102.0		4/28
101.0		4/28
102.0		4/28
98.1		4/28
93.7		4/28
109.0		5/03
95.4		5/03
88.7		5/03
102.0		5/03
112.0		5/03
114.0		5/03
107.0		5/03
108.0		5/03
84.1		5/08
91.2		5/08
92.3		5/08
90.9		5/08

Toluene d8 (cont)

97.5		5/08
106.0		5/08
95.1		5/08
94.0		5/08
93.7		5/08
92.3		5/08
94.3		5/08
106.0		5/10
103.0		5/10
103.0		5/10
104.0		5/10
100.0		5/10
103.0		5/10
106.0		5/10
106.0		5/10
103.0		5/10
99.0		5/11
100.0		5/11
99.6		5/11
101.0		5/11
112.0		5/11
105.0		5/11
95.0		5/11
105.0		5/11
101.0		5/14
91.5		5/15
99.2		5/15
92.4		5/15
92.4		5/15
99.2		5/15
95.2		5/16
102.0		5/16
102.0		5/16
102.0		5/16
104.0		5/16
101.0		5/16
101.0		5/16
105.0		5/16
98.3		5/16
102.0		5/16
102.0		5/16
100.0		5/16
99.6		5/17
98.8		5/17
99.3		5/18
97.3		5/18
97.3		5/18
101.0		5/18
99.0		5/18
101.0		5/18
91.8		5/18
98.9		5/18
101.0		5/21
99.4		5/21
97.8		5/21
99.3		5/21
119.0		5/25
112.0		5/25
112.0		5/25
112.0		5/25
112.0		5/25
106.0		6/03
87.0		7/06
85.8		7/06
81.1		7/06
82.9		7/06
97.2		7/17
98.0		7/17
96.3		7/17
98.6		7/17
97.0		7/17
93.5		7/23
88.8		7/25
90.6		7/25
91.8		7/25
92.2		7/25
88.6		7/25
89.8		7/25

TABLE C-V (cont)

Toluene dB (cont)		Toluene dB (cont)		Toluene dB (cont)	
93.9	7/25	92.0	9/21	93.6	11/27
90.1	7/25	93.2	9/21	96.3	11/27
91.1	7/25	91.1	9/21	101.7	11/27
91.1	7/25	83.2	11/01	96.9	11/27
91.8	7/27	108.1	11/07	95.3	11/27
92.4	7/27	106.2	11/07	91.5	12/04
85.2	7/30	104.2	11/07	89.2	12/04
85.4	8/28	107.8	11/07	88.7	12/04
86.1	8/28	107.2	11/07	89.8	12/04
88.3	8/28	105.9	11/07	90.5	12/04
87.3	8/28	102.2	11/08	90.7	12/04
86.4	8/28	105.9	11/08	89.7	12/06
87.8	8/28	92.4	11/15	87.5	12/06
85.1	8/28	93.4	11/15	87.3	12/06
93.4	9/21	92.4	11/15	86.3	12/06
100.2	9/21	90.1	11/15	86.2	12/06
92.5	9/21	91.2	11/15	87.4	12/06
100.2	9/21	92.8	11/15	85.2	12/11
99.8	9/21	96.6	11/15	84.4	12/11
102.5	9/21	94.2	11/27	85.2	12/11
95.3	9/21	89.7	11/27	86.0	12/11
95.4	9/21	99.1	11/27	85.2	12/11
94.8	9/21	95.4	11/27	84.2	12/11
93.7	9/21	92.1	11/27	86.4	12/11
100.6	9/21	94.0	11/27	88.0	12/11
92.0	9/21	93.0	11/27	85.2	12/11
103.3	9/21	95.3	11/27	84.6	12/11
91.7	9/21				

TABLE C-Va

SUMMARY OF FALSE POSITIVE/FALSE NEGATIVE RESULTS FOR HSE-9 IN 1990

Biological Materials: Inorganic and Radiochemical Constituents

Analysis	False +	False -	Total QCs	Analysis	False +	False -	Total QCs	Analysis	False +	False -	Total QCs
Ag	-	-	2	Ga	-	-	3	Sr	-	3	5
Al	-	-	5	Hf	-	-	5	Ta	-	-	2
As	-	-	15	Hg	-	-	3	Tb	-	-	2
Au	-	-	2	I	-	-	2	Th	-	-	5
B	-	-	8	In	-	-	2	Ti	-	-	5
Ba	-	-	5	K	-	2	5	V	-	-	5
Br	-	-	8	La	-	-	5	W	-	-	5
Ca	-	1	5	Li	-	-	1	Yb	-	-	2
Cd	-	-	3	Lu	-	-	2	Zn	-	-	5
Ce	-	-	5	Mg	-	-	5	Zr	-	-	2
Cl	-	-	5	Mn	-	-	5				
Co	-	-	5	Mo	-	-	4				
Cr	-	-	5	Na	-	-	5	Am-241	-	-	6
Cs	-	-	16	Nd	-	-	2	Cs-137	-	-	30
Cu	-	-	5	Rb	-	-	5	I-131	-	-	6
Dy	-	-	2	Sb	-	-	5	Pu-238	-	-	4
Eu	-	-	5	Sc	-	-	5	Pu-239	-	-	10
F	-	-	13	Se	-	-	5	Sr-90	-	-	33
Fe	-	-	5	Sm	-	-	5	U	-	-	21

Bulk Materials: Inorganic and Radiochemical Constituents

Analysis	False +	False -	Total QCs	Analysis	False +	False -	Total QCs	Analysis	False +	False -	Total QCs
Ag	-	-	8	Cd	-	-	9	S	-	-	1
As	-	-	11	Cr	-	-	11	Se	-	-	5
Ba	-	-	8	Flash Point	-	-	12	Total Organic Halides	-	-	2
Be	-	-	2	Hg	-	-	11				
				Pb	-	-	12				

Bulk Materials: Organic Constituents

Compound	False +	False -	Total QCs	Compound	False +	False -	Total QCs
Acenaphthene	-	-	2	Mixed-Aroclor	-	-	143
Acenaphthylene	-	-	2	Aroclor 1242	-	-	143
Acetone	1	-	1	Aroclor 1254	-	-	143
Aniline	-	-	2	Aroclor 1260	-	-	143
Anthracene	-	-	2	Azobenzene	-	-	2

TABLE C-Va (cont)

Bulk Materials: Organic Constituents (cont)

Compound	False +	False -	Total QCs
Benzene	-	-	1
m-Benzidine	-	-	2
Benzo[a]anthracene	-	-	2
Benzo[a]pyrene	-	-	2
Benzo[b]fluoranthene	-	1	2
Benzo[g,h,i]perylene	-	-	2
Benzo[k]fluoranthene	1	-	2
Benzoic acid	-	-	2
Benzyl alcohol	-	-	2
Bis(2-chloroethoxy)methane	-	-	2
Bis(2-chloroethyl)ether	-	-	2
Bis(2-chloroisopropyl)ether	-	-	2
Bis(2-ethylhexyl)phthalate	-	-	2
Bromobenzene	-	-	1
Bromochloromethane	-	-	1
Bromodichloromethane	-	-	1
Bromoform	-	-	1
Bromomethane	-	-	1
4-Bromophenylphenyl ether	-	-	2
2-Butanone	-	1	1
n-Butylbenzene	-	-	1
sec-Butylbenzene	-	-	1
tert-Butylbenzene	-	-	1
Butylbenzyl phthalate	-	-	2
Carbon disulfide	-	-	1
Carbon tetrachloride	-	-	1
4-Chloro-3-methylphenol	-	-	2
4-Chloroaniline	-	-	2
Chlorobenzene	-	-	1
Chlorodibromomethane	-	-	1
Chloroethane	-	-	1
Chloroform	-	-	1
Chloromethane	-	-	1
2-Chloronaphthalene	-	-	2
o-Chlorophenol	-	-	2
4-Chlorophenylphenyl ether	-	-	2
o-Chlorotoluene	-	-	1
p-Chlorotoluene	-	-	1
Chrysene	-	-	2
Di-n-butyl phthalate	-	-	2
Di-n-octyl phthalate	-	-	2
Dibenzo[a,h]anthracene	-	-	2
Dibenzofuran	-	-	2
1,2-Dibromo-3-chloropropane	-	-	1
1,2-Dibromoethane	-	-	1
Dibromomethane	-	-	1
o-Dichlorobenzene (1,2)	-	-	3
m-Dichlorobenzene (1,3)	-	-	3
p-Dichlorobenzene (1,4)	-	-	3
3,3'-Dichlorobenzidine	-	-	2
1,1-Dichloroethane	-	-	1
1,2-Dichloroethane	-	-	1
1,1-Dichloroethene	-	-	1
trans-1,2-Dichloroethene	-	-	1
cis-1,2-Dichloroethylene	-	-	1
2,4-Dichlorophenol	-	-	2
1,2-Dichloropropane	-	-	1
1,3-Dichloropropane	-	-	1
2,2-Dichloropropane	-	-	1
1,1-Dichloropropene	-	-	1
cis-1,3-Dichloropropene	-	-	1
trans-1,3-Dichloropropene	-	-	1
Diethyl phthalate	-	-	2
Dimethyl phthalate	-	-	2
2,4-Dimethylphenol	-	-	2
2,4-Dinitrophenol	-	-	2
2,4-Dinitrotoluene	-	-	2
2,6-Dinitrotoluene	-	-	2
Ethylbenzene	-	-	1
Fluoranthene	-	-	2
Fluorene	-	-	2
Hexachlorobenzene	-	-	2
Hexachlorobutadiene	-	-	3
Hexachlorocyclopentadiene	-	-	2
Hexachloroethane	-	-	2
2-Hexanone	-	-	1
Indeno[1,2,3-cd]pyrene	-	-	2
Isophorone	-	-	2
Isopropylbenzene	-	-	1
4-Isopropyltoluene	-	-	1
4-Methyl-2-pentanone	-	-	1
2-Methyl-4,6-dinitrophenol	-	-	2
Methylene chloride	1	-	1
2-Methylnaphthalene	-	-	2
2-Methylphenol	-	-	2
4-Methylphenol	-	-	2
Naphthalene	-	-	3
2-Nitroaniline	-	-	2
3-Nitroaniline	-	-	2
4-Nitroaniline	-	-	2
Nitrobenzene	-	-	2
2-Nitrophenol	-	-	2
4-Nitrophenol	-	-	2
N-Nitrosodi-n-propylamine	-	-	2
N-Nitrosodimethylamine	-	-	2
N-Nitrosodiphenylamine	-	-	2
Pentachlorophenol	-	-	2
Phenanthrene	-	-	2
Phenol	-	-	2
Propylbenzene	-	-	1
Pyrene	-	-	2
Styrene	-	-	1
1,1,1,2-Tetrachloroethane	-	-	1
1,1,2,2-Tetrachloroethane	-	-	1
Tetrachloroethylene	-	-	1
Toluene	-	-	1
1,2,3-Trichlorobenzene	-	-	1
1,2,4-Trichlorobenzene	-	-	3
1,1,1-Trichloroethane	1	-	1
1,1,2-Trichloroethane	-	1	1
Trichloroethene	-	-	1
Trichlorofluoromethane	-	-	1
2,4,5-Trichlorophenol	-	-	2
2,4,6-Trichlorophenol	-	-	2
1,2,3-Trichloropropane	-	-	1
1,2,4-Trimethylbenzene	1	-	1
1,3,5-Trimethylbenzene	-	-	1
Vinyl acetate	-	-	1
Vinyl chloride	-	-	1
o-Xylene	1	-	1
Mixed-Xylenes (o + m + p)	1	-	1

TABLE C-Va (cont)

Charcoal Tubes: Inorganic and Radiochemical Constituents

Analysis	False +	False -	Total QCs	Analysis	False +	False -	Total QCs	Analysis	False +	False -	Total QCs
				Hg	-	1	1				

Charcoal Tubes: Organic Constituents

Compound	False +	False -	Total QCs	Compound	False +	False -	Total QCs
Acetone	-	-	5	Isobutyl acetate	-	-	1
Mixed-Aroclor	-	-	4	4-Methyl-2-pentanone	-	-	2
Aroclor 1242	-	-	4	Methylene chloride	-	-	1
Aroclor 1254	-	-	4	Naphthalene	-	-	2
Aroclor 1260	-	-	4	n-Pentyl acetate	-	-	1
Benzene	1	1	79	2-Propanol	-	-	1
Bromobenzene	-	-	50	n-Propyl acetate	-	-	1
2-Butanone	-	-	1	1,1,2,2-Tetrabromoethane	-	-	1
n-Butyl acetate	-	-	1	Tetrachloroethylene	1	1	78
Carbon tetrachloride	3	2	87	Toluene	1	3	86
Chlorobenzene	1	-	69	1,2,4-Trichlorobenzene	-	-	2
Chloroform	-	1	80	1,1,1-Trichloroethane	1	1	89
1,2-Dichloroethane	-	-	19	1,1,2-Trichloroethane	-	-	1
1,4-Dioxane	-	-	1	Trichloroethene	-	1	90
Ethanol	-	1	5	1,2,4-Trimethylbenzene	-	1	69
Ethyl acetate	-	-	3	m-Xylene	1	-	5
Ethylbenzene	3	4	69	o-Xylene	1	13	78
Formaldehyde	-	1	6	Mixed-Xylenes (o + m + p)	25	4	67
Hydrocarbons	-	-	1				

Filter Media: Organic Constituents

Compound	False +	False -	Total QCs	Compound	False +	False -	Total QCs
Mixed-Aroclor	-	-	85	Aroclor 1254	-	-	85
Aroclor 1242	-	-	85	Aroclor 1260	-	-	85

TABLE C-Va (cont)

Filter Media: Inorganic and Radiochemical Constituents

Analysis	False +	False -	Total QCs	Analysis	False +	False -	Total QCs	Analysis	False +	False -	Total QCs
Ag	-	-	1	La	-	-	1	Ti	-	-	1
As	-	-	1	Li	-	-	1	Tl	-	5	61
Au	-	-	1	Lu	-	-	1	Tm	-	-	1
B	-	-	1	Mn	-	-	7	V	-	-	1
Ba	-	-	8	Mo	-	-	1	W	-	-	1
Be	-	-	248	Na	-	-	3	Y	-	-	1
Bi	-	-	1	Nb	-	-	1	Yb	-	-	1
Br	-	-	1	Nd	-	-	1	Zn	-	-	38
Ca	1	-	7	Ni	-	-	15	Zr	-	-	1
Cd	-	-	40	Pb	-	-	158				
Ce	-	-	1	Pd	-	-	1				
Co	-	-	2	Pr	-	-	1				
Cr	-	-	35	Pt	-	-	1	Alpha	-	-	116
Cs	-	-	1	Rb	-	-	1	Am-241	3	-	18
Cu	-	-	14	Re	-	-	1	Be-7	-	-	3
Dy	-	-	1	Rh	-	-	1	Beta	-	-	107
Er	-	-	1	Ru	-	-	1	Ce-144	-	-	6
Eu	-	-	1	Sb	-	-	1	Co-57	-	-	6
Fe	-	-	23	Se	-	-	2	Co-60	-	-	6
Ga	-	-	1	Sm	-	-	1	Cs-134	-	-	6
Ge	-	-	1	Sn	-	-	3	Cs-137	-	-	9
Hf	-	-	1	Sr	-	-	1	Mn-54	-	-	9
Hg	-	-	3	Ta	-	-	1	Pu-238	-	-	17
Ho	-	-	1	Tb	-	-	1	Pu-239	-	-	21
I	-	-	1	Te	-	-	1	Sr-90	-	-	13
Ir	-	-	1	Th	-	-	1	U	1	1	58

Silicate Materials: Inorganic and Radiochemical Constituents

Analysis	False +	False -	Total QCs	Analysis	False +	False -	Total QCs	Analysis	False +	False -	Total QCs
Ag	-	-	57	Hf	-	1	80	Tb	-	1	58
Al	-	-	93	Hg	-	2	71	Te	-	-	2
As	-	-	95	Ho	-	-	2	Th	-	-	96
Au	-	3	47	I	-	-	46	Ti	-	-	95
B	-	2	6	In	-	1	45	Tl	-	-	5
Ba	-	-	127	K	-	1	93	Tm	-	1	2
Be	-	1	29	La	-	3	76	V	-	-	94
Bi	-	-	2	Li	-	1	5	W	-	1	50
Br	-	3	45	Lu	-	1	66	Y	-	-	2
Ca	-	4	93	Mg	-	-	93	Yb	-	3	73
Cd	-	1	23	Mn	-	-	98	Zn	-	4	97
Ce	-	1	77	Mo	-	-	6	Zr	-	-	79
Cl	-	6	66	Na	-	-	93				
Co	-	-	97	Nb	-	1	2	Alpha	-	-	4
Cr	-	-	107	Nd	-	-	65	Am-241	2	-	30
Cs	-	1	91	Ni	-	2	27	Beta	-	-	4
Cu	-	2	110	Pb	-	-	39	Cs-137	1	-	75
Dy	3	-	69	Pr	-	-	2	Gamma	-	-	6
Er	-	-	1	Rb	-	-	92	H-3	5	-	21
Eu	-	-	73	Sb	-	5	90	K-40	-	2	6
F	-	-	7	Sc	-	-	78	Pu-238	-	-	16
Fe	-	-	96	Se	-	3	67	Pu-239	1	-	22
Ga	-	2	75	Sm	-	3	73	Ra-226	-	-	2
Gd	-	-	2	Sn	-	-	2	Sr-90	5	-	42
Ge	-	-	2	Sr	-	1	92	U	-	3	324
H2O-	-	-	4	Ta	-	4	75	U-235/238	-	-	15

TABLE C-Va (cont)

Silicate Materials: Organic Constituents

Compound	False +	False -	Total QCs
Acenaphthene	-	-	47
Acenaphthylene	-	-	47
Acetone	23	-	72
Acrolein	-	-	60
Acrylonitrile	-	-	60
Aldrin	-	-	8
Aniline	-	2	47
Anthracene	-	-	47
Mixed-Aroclor	-	-	49
Aroclor 1242	-	-	49
Aroclor 1254	-	-	49
Aroclor 1260	-	-	49
Azobenzene	-	-	47
alpha-BHC	-	-	8
beta-BHC	-	-	8
delta-BHC	-	-	8
Benzene	-	2	67
m-Benzidine	-	-	47
Benzo[a]anthracene	-	-	47
Benzo[a]pyrene	-	-	47
Benzo[b]fluoranthene	-	-	47
Benzo[g,h,i]perylene	-	-	47
Benzo[k]fluoranthene	-	-	47
Benzoic acid	3	3	47
Benzyl alcohol	-	-	47
Bis(2-chloroethoxy)methane	-	-	47
Bis(2-chloroethyl)ether	-	-	47
Bis(2-chloroisopropyl)ether	-	-	47
Bis(2-ethylhexyl)phthalate	5	-	47
Bromobenzene	-	-	73
Bromochloromethane	-	1	72
Bromodichloromethane	-	-	73
Bromoform	-	1	73
Bromomethane	-	-	72
4-Bromophenylphenyl ether	-	-	47
2-Butanone	9	3	73
n-Butylbenzene	1	-	73
sec-Butylbenzene	1	-	73
tert-Butylbenzene	1	-	73
Butylbenzyl phthalate	1	-	47
Carbon disulfide	1	2	72
Carbon tetrachloride	-	6	73
Chlordane	-	-	8
4-Chloro-3-methylphenol	-	-	47
4-Chloroaniline	-	-	47
Chlorobenzene	-	-	67
Chlorodibromomethane	-	1	73
Chloroethane	-	-	72
2-Chloroethylvinyl ether	-	-	60
Chloroform	-	-	72
Chloromethane	-	-	72
2-Chloronaphthalene	-	-	47
o-Chlorophenol	-	-	47
4-Chlorophenylphenyl ether	-	-	47
o-Chlorotoluene	-	-	73
p-Chlorotoluene	-	1	73
Chrysene	-	-	47
2,4-D	-	-	10
p,p'-DDD	-	-	8
p,p'-DDE	-	-	8
p,p'-DDT	-	-	8
Di-n-butyl phthalate	2	-	47
Di-n-octyl phthalate	-	-	47
Dibenzo[a,h]anthracene	-	-	47
Dibenzofuran	-	-	47
1,2-Dibromo-3-chloropropane	-	-	73
1,2-Dibromoethane	-	-	73
Dibromomethane	-	-	73
o-Dichlorobenzene (1,2)	-	-	120
m-Dichlorobenzene (1,3)	-	-	120
p-Dichlorobenzene (1,4)	-	1	120
3,3'-Dichlorobenzidine	-	-	47
Dichlorodifluoromethane	-	-	60
1,1-Dichloroethane	-	5	72
1,2-Dichloroethane	1	3	72
1,1-Dichloroethene	-	-	67
trans-1,2-Dichloroethene	-	-	72
cis-1,2-Dichloroethylene	-	-	72
2,4-Dichlorophenol	-	-	47
1,2-Dichloropropane	-	1	73
1,3-Dichloropropane	-	1	73
2,2-Dichloropropane	-	-	73
1,1-Dichloropropene	1	-	72
cis-1,3-Dichloropropene	-	-	67
trans-1,3-Dichloropropene	-	-	67
Dieldrin	-	-	8
Diethyl phthalate	-	-	47
Dimethyl phthalate	-	-	47
2,4-Dimethylphenol	-	-	49
2,4-Dinitrophenol	-	-	47
2,4-Dinitrotoluene	-	-	47
2,6-Dinitrotoluene	-	-	47
Endosulfan I	-	-	3
Endosulfan II	-	-	3
Endosulfan sulfate	-	-	8
Endrin	-	-	8
Endrin aldehyde	-	-	8
Ethylbenzene	-	2	67
Fluoranthene	-	-	47
Fluorene	-	-	47
Heptachlor	-	-	8
Heptachlor epoxide	-	-	8
Hexachlorobenzene	-	-	47
Hexachlorobutadiene	-	1	117
Hexachlorocyclopentadiene	-	1	47
Hexachloroethane	-	1	47
2-Hexanone	9	2	73
HMX	-	-	2
Indeno[1,2,3-cd]pyrene	-	-	47
Isophorone	-	1	47
Isopropylbenzene	-	-	73
4-Isopropyltoluene	7	-	73
Lindane	-	-	8
Methoxychlor	-	-	7
Methyl iodide	-	-	60
4-Methyl-2-pentanone	-	2	73
2-Methyl-4,6-dinitrophenol	-	-	47
Methylene chloride	7	-	72
2-Methylnaphthalene	-	-	47
2-Methylphenol	-	-	47
4-Methylphenol	-	-	47
Naphthalene	2	-	117
2-Nitroaniline	-	-	47
3-Nitroaniline	-	-	47
4-Nitroaniline	-	-	47
Nitrobenzene	-	-	47

TABLE C-Va (cont)

Silicate Materials: Organic Constituents

Compound	False +	False -	Total QCs
2-Nitrophenol	-	-	47
4-Nitrophenol	-	-	47
N-Nitrosodi-n-propylamine	-	-	47
N-Nitrosodimethylamine	-	-	47
N-Nitrosodiphenylamine	-	-	47
Pentachlorophenol	-	-	47
Petroleum Hydrocarbons, Total	-	-	1
Phenanthrene	-	-	47
Phenol	1	-	47
Propylbenzene	-	-	73
Pyrene	-	-	47
Styrene	-	-	67
RDX	-	-	2
2,4,5-TP	-	-	10
1,1,1,2-Tetrachloroethane	-	-	73
1,1,2,2-Tetrachloroethane	-	3	73
Tetrachloroethylene	-	3	73
Tetryl(methyl-2,4,6-trinitrophenylnitramine)	-	-	2
Toluene	1	3	67
Toxaphene	-	-	8
1,1,2-Trichloro-1,2,2-trifluoroethane	-	-	60
1,2,3-Trichlorobenzene	1	-	70
1,2,4-Trichlorobenzene	-	-	117
1,1,1-Trichloroethane	2	1	73
1,1,2-Trichloroethane	2	1	73
Trichloroethene	-	3	67
Trichlorofluoromethane	-	-	72
2,4,5-Trichlorophenol	-	-	47
2,4,6-Trichlorophenol	-	-	47
1,2,3-Trichloropropane	-	-	73
1,2,4-Trimethylbenzene	2	-	73
1,3,5-Trimethylbenzene	-	-	73
2,4,6-Trinitrotoluene	-	-	2
Vinyl acetate	-	-	72
Vinyl chloride	-	-	72
o-Xylene	-	-	12
Mixed-Xylenes (o + m + p)	1	1	73

Sludge: Organic Constituents

Compound	False +	False -	Total QCs
Acenaphthene	-	-	4
Acenaphthylene	-	-	4
Aniline	-	-	5
Anthracene	-	-	4
Azobenzene	-	-	4
m-Benzidine	-	-	4
Benzo[a]anthracene	-	-	4
Benzo[a]pyrene	-	-	4
Benzo[b]fluoranthene	-	-	4
Benzo[g,h,i]perylene	-	-	4
Benzo[k]fluoranthene	-	-	4
Benzoic acid	-	1	4
Benzyl alcohol	-	-	5
Bis(2-chloroethoxy)methane	-	-	4
Bis(2-chloroethyl)ether	-	-	5
Bis(2-chloroisopropyl)ether	-	-	5
Bis(2-ethylhexyl)phthalate	3	-	4
4-Bromophenylphenyl ether	-	-	4
Butylbenzyl phthalate	1	-	4
4-Chloro-3-methylphenol	-	-	4
4-Chloroaniline	-	-	4
2-Chloronaphthalene	-	-	4
o-Chlorophenol	-	-	5
4-Chlorophenylphenyl ether	-	-	4
Chrysene	-	-	4
Di-n-butyl phthalate	-	-	4
Di-n-octyl phthalate	-	-	4
Dibenzo[a,h]anthracene	-	-	4
Dibenzofuran	-	-	4
o-Dichlorobenzene (1,2)	-	-	5
m-Dichlorobenzene (1,3)	-	-	5
p-Dichlorobenzene (1,4)	-	-	5
3,3'-Dichlorobenzidine	-	-	4
2,4-Dichlorophenol	-	-	4
Diethyl phthalate	-	-	4
Dimethyl phthalate	-	-	4
2,4-Dimethylphenol	-	-	4
2,4-Dinitrophenol	-	-	4
2,4-Dinitrotoluene	-	-	4
2,6-Dinitrotoluene	-	-	4
Fluoranthene	-	-	4
Fluorene	-	-	4
Hexachlorobenzene	-	-	4
Hexachlorobutadiene	-	-	4
Hexachlorocyclopentadiene	-	-	4
Hexachloroethane	-	-	5
Indeno[1,2,3-cd]pyrene	-	-	4
Isophorone	-	-	4
2-Methyl-4,6-dinitrophenol	-	-	4
2-Methylnaphthalene	-	-	4
2-Methylphenol	-	-	5
4-Methylphenol	-	-	5
Naphthalene	-	-	4
2-Nitroaniline	-	-	4
3-Nitroaniline	-	-	4
4-Nitroaniline	-	-	4
Nitrobenzene	-	1	5
2-Nitrophenol	-	-	4
4-Nitrophenol	-	1	4
N-Nitrosodi-n-propylamine	-	-	5
N-Nitrosodimethylamine	-	-	5
N-Nitrosodiphenylamine	-	-	4
Pentachlorophenol	-	1	4
Phenanthrene	-	-	4
Phenol	-	-	5
Pyrene	-	-	4
1,2,4-Trichlorobenzene	-	-	4
2,4,5-Trichlorophenol	-	-	4
2,4,6-Trichlorophenol	-	-	4

TABLE C-Va (cont)

Urine: Inorganic and Radiochemical Constituents

Analysis	False +	False -	Total QCs	Analysis	False +	False -	Total QCs	Analysis	False +	False -	Total QCs
Tl	-	-	9	Am-241	-	2	4	Pu-239	-	-	136
				H-3	1	1	188	U-235	-	-	77
				Pu-238	-	-	131	U-238	-	-	109

Water: Inorganic and Radiochemical Constituents

Analysis	False +	False -	Total QCs	Analysis	False +	False -	Total QCs	Analysis	False +	False -	Total QCs
Ag	-	-	321	La	-	-	19	Total Dissolved Solids	-	-	63
Al	-	2	158	Li	-	-	29	Te	-	-	20
As	-	-	305	Lu	-	-	19	Th	-	-	19
Au	-	-	20	Mg	-	-	94	Ti	-	-	61
B	-	2	79	Mn	-	-	152	Tl	-	-	253
Ba	1	-	378	Mo	-	-	151	Tm	-	-	19
Be	-	1	306	Na	2	-	87	Total Suspended Solids	-	-	62
Bi	-	-	19	Nb	-	-	19	Turbidity	-	-	6
Biological Ox. Demand	-	-	3	Nd	-	-	19	V	-	-	126
Br	-	4	17	NH3-N	-	-	58	W	-	-	19
Ca	-	-	78	Ni	-	-	283	Y	1	-	20
Cd	-	-	398	NO2	-	-	1	Yb	-	-	19
Ce	-	-	20	NO2-N	-	-	10	Zn	-	-	214
Cl	-	-	96	NO3	-	-	2	Zr	-	-	19
Cl2(Free)	-	-	7	NO3-N	-	-	116				
CN	-	-	133	Oil/Grease	-	-	20	Alpha	-	1	734
Co	-	-	75	P	-	-	85	Am-241	-	-	91
Chemical Ox. Demand	-	1	42	Pb	-	-	456	Ba-133	-	-	10
Conductivity	-	-	72	Pd	-	-	19	Beta	-	-	736
Cr	-	-	368	pH	-	-	301	Ce-144	-	-	6
Cs	-	-	19	PO4-P	-	2	61	Co-57	-	-	37
Cu	-	1	245	Pr	-	-	19	Co-60	-	-	72
Dy	-	-	19	Pt	-	-	19	Cs-134	-	-	82
Er	-	-	19	Rb	-	-	19	Cs-137	1	4	158
Eu	-	-	19	Re	-	-	4	Gamma	-	-	61
F	-	-	130	Rh	-	-	20	H-3	3	1	414
Fe	-	3	111	Ru	-	-	19	Mn-54	-	-	60
Ga	-	-	19	Sb	-	-	140	Na-22	-	-	48
Gd	-	-	19	Sc	-	-	1	Pu-238	-	-	63
Ge	-	-	19	Se	-	-	266	Pu-239	-	-	84
Hardness	-	-	53	Si	-	-	75	Ra-226	1	-	39
Hf	-	-	19	Sm	-	-	19	Ru-106	-	-	10
Hg	-	1	187	Sn	-	-	27	Sr-90	-	-	38
Ho	1	-	20	SO4	-	-	95	U	15	2	327
I	-	-	3	Sr	-	-	110	U-234	-	-	23
In	-	-	18	Ta	-	-	19	U-235	-	-	58
Ir	-	-	19	Total Alkalinity	-	2	79	U-235/238	-	-	137
K	-	-	77	Tb	-	-	20	Zn-65	-	-	10

TABLE C-Va (cont)

Water: Organic Constituents

Compound	False +	False -	Total QCs
Acenaphthene	-	-	49
Acenaphthylene	-	-	39
Acetone	14	-	87
Acrolein	-	-	62
Acrylonitrile	-	-	62
Aldrin	-	-	12
Aniline	-	-	39
Anthracene	1	-	39
Mixed-Aroclor	-	-	53
Aroclor 1242	1	-	52
Aroclor 1248	-	-	1
Aroclor 1254	1	-	52
Aroclor 1260	1	-	52
Azobenzene	-	-	39
alpha-BHC	-	-	12
beta-BHC	-	-	12
delta-BHC	-	-	12
Benzene	-	-	89
m-Benzidine	-	-	39
Benzo[a]anthracene	-	1	39
Benzo[a]pyrene	-	-	39
Benzo[b]fluoranthene	-	-	39
Benzo[g,h,i]perylene	-	-	39
Benzo[k]fluoranthene	-	-	39
Benzoic acid	-	1	39
Benzyl alcohol	-	-	39
Bis(2-chloroethoxy)methane	-	-	39
Bis(2-chloroethyl)ether	-	-	39
Bis(2-chloroisopropyl)ether	-	-	39
Bis(2-ethylhexyl)adipate	-	-	2
Bis(2-ethylhexyl)phthalate	7	1	39
Bromobenzene	-	-	87
Bromochloromethane	-	-	87
Bromodichloromethane	-	-	87
Bromoform	-	-	87
Bromomethane	-	-	87
4-Bromophenylphenyl ether	-	-	39
2-Butanone	7	3	87
n-Butylbenzene	1	2	87
sec-Butylbenzene	-	-	87
tert-Butylbenzene	-	-	87
Butylbenzyl phthalate	-	1	39
Carbon disulfide	4	-	87
Carbon tetrachloride	-	1	87
Chlordane	-	-	12
4-Chloro-3-methylphenol	1	-	49
4-Chloroaniline	-	-	39
Chlorobenzene	-	-	89
Chlorodibromomethane	-	-	87
Chloroethane	-	-	87
2-Chloroethylvinyl ether	-	-	62
Chloroform	1	-	87
Chloromethane	-	-	87
2-Chloronaphthalene	-	-	40
o-Chlorophenol	1	-	49
4-Chlorophenylphenyl ether	-	-	39
o-Chlorotoluene	-	-	87
p-Chlorotoluene	-	-	87
Chrysene	1	-	39
2,4-D	-	-	9

Compound	False +	False -	Total QCs
p,p'-DDD	-	-	12
p,p'-DDE	-	-	12
p,p'-DDT	-	-	12
Decachlorobiphenyl (2,2',3,3',4,4',5,5',6,6'-)	-	-	1
Di-n-butyl phthalate	-	-	39
Di-n-octyl phthalate	1	-	39
Dibenzo[a,h]anthracene	-	-	39
Dibenzofuran	-	-	39
1,2-Dibromo-3-chloropropane	1	-	87
1,2-Dibromoethane	-	-	87
Dibromomethane	-	-	87
o-Dichlorobenzene (1,2)	1	-	127
m-Dichlorobenzene (1,3)	-	-	127
p-Dichlorobenzene (1,4)	1	1	137
3,3'-Dichlorobenzidine	-	-	39
Dichlorodifluoromethane	-	-	62
1,1-Dichloroethane	-	-	89
1,2-Dichloroethane	1	-	87
1,1-Dichloroethene	1	-	87
trans-1,2-Dichloroethene	-	-	87
cis-1,2-Dichloroethylene	-	-	87
2,4-Dichlorophenol	-	-	39
1,2-Dichloropropane	-	-	87
1,3-Dichloropropane	-	-	87
2,2-Dichloropropane	-	-	87
1,1-Dichloropropene	-	-	87
cis-1,3-Dichloropropene	-	-	87
trans-1,3-Dichloropropene	-	-	87
Dieldrin	-	-	12
Diethyl phthalate	1	1	39
Dimethyl phthalate	-	3	39
2,4-Dimethylphenol	-	-	39
2,4-Dinitrophenol	-	-	39
2,4-Dinitrotoluene	-	-	49
2,6-Dinitrotoluene	-	-	39
Endosulfan I	-	-	12
Endosulfan II	-	-	12
Endosulfan sulfate	-	-	12
Endrin	-	-	12
Endrin aldehyde	-	-	12
Ethylbenzene	1	-	87
Fluoranthene	-	-	39
Fluorene	-	-	39
Heptachlor	-	-	14
Heptachlor epoxide	-	-	14
Hexachlorobenzene	-	-	40
Hexachlorobutadiene	-	2	117
Hexachlorocyclopentadiene	-	1	40
Hexachloroethane	-	1	40
2-Hexanone	8	2	87
Indeno[1,2,3-cd]pyrene	1	-	39
Isophorone	-	-	39
Isopropylbenzene	-	-	87
4-Isopropyltoluene	1	-	87
Lindane	-	-	14
Methoxychlor	-	-	13
Methyl iodide	-	-	62
4-Methyl-2-pentanone	1	1	87
2-Methyl-4,6-dinitrophenol	-	-	39

TABLE C-Va (cont)

Water: Organic Constituents

Compound	False +	False -	Total QCs	Compound	False +	False -	Total QCs
Methylene chloride	5	-	87	1,1,1,2-Tetrachloroethane	-	-	87
2-Methylnaphthalene	-	-	39	1,1,2,2-Tetrachloroethane	-	1	87
2-Methylphenol	-	-	39	Tetrachloroethylene	-	-	87
4-Methylphenol	-	-	39	Toluene	2	1	89
Naphthalene	3	-	116	Toxaphene	-	-	14
2-Nitroaniline	-	-	39	1,1,2-Trichloro-			
3-Nitroaniline	-	-	39	1,2,2-trifluoroethane	-	-	62
4-Nitroaniline	-	-	39	1,2,3-Trichlorobenzene	4	-	77
Nitrobenzene	-	-	39	1,2,4-Trichlorobenzene	1	-	127
2-Nitrophenol	-	-	39	1,1,1-Trichloroethane	1	-	87
4-Nitrophenol	3	-	49	1,1,2-Trichloroethane	1	-	87
N-Nitrosodi-n-propylamine	1	-	49	Trichloroethene	-	-	89
N-Nitrosodimethylamine	-	-	39	Trichlorofluoromethane	1	-	87
N-Nitrosodiphenylamine	-	-	39	2,4,5-Trichlorophenol	-	1	39
Pentachlorophenol	-	-	49	2,4,6-Trichlorophenol	-	-	39
Phenanthrene	-	1	39	1,2,3-Trichloropropane	1	-	87
Phenol	3	-	49	1,2,4-Trimethylbenzene	1	1	87
Propylbenzene	-	2	87	1,3,5-Trimethylbenzene	1	-	87
Pyrene	-	-	49	Vinyl acetate	-	1	87
Styrene	-	-	87	Vinyl chloride	-	-	87
2,4,5-TP	-	-	9	o-Xylene	1	-	12
				Mixed-Xylenes (o + m + p)	1	1	87

TABLE C-VI

INDEX TO TABLE C-V

Quality Assurance Material	Page
Bionetics Collaborative Study	C-62
Bionetics QC Sample	C-62
CCRMP BL-1 Uranium Ore	C-63
CCRMP CLV-1 Vegetative Radionuclide	C-63
CCRMP CLV-2 Vegetative Radionuclide	C-63
CCRMP DH-1 Thorium-Uranium Ore	C-63
CCRMP DL-1A Thorium-Uranium Ore	C-63
CCRMP MRG-1 Gabbro	C-63
CCRMP SO-1 Regosolic Soil	C-64
CCRMP SO-2 Podzolic Soil	C-67
CCRMP SO-3 Calcareous C Horizon Soil	C-69
CCRMP SO-4 Chernozemic A Horizon Soil	C-71
DOE Beryllium on Filter Media Intercomparison: Round 1	C-73
DOE Beryllium on Filter Media Intercomparison: Round 2	C-73
DOE Beryllium on Filter Media Intercomparison: Round 3	C-73
DOE Beryllium on Filter Media Intercomparison: Round 4	C-73
EML Radionuclides in Soil, April 1980	C-73
EML Radionuclides in Soil, May 1984	C-73
EML Radionuclides in Soil, Nov. 1988	C-73
EML Radionuclides in Soil, May 1989	C-73
EML Radoinuclides in Soil, Nov. 1989	C-73
EML Radionuclides in Soil, May 1990	C-73
EML Radionuclides in Soil, Nov. 1990	C-73
EML Radionuclides in Vegetation, Nov. 1988	C-73
EML Radionuclides in Vegetation, May 1989	C-73
EML Radionuclides in Vegetation, Nov. 1989	C-73
EML Radionuclides in Vegetation, May 1990	C-73
EML Radionuclides in Vegetation, Nov. 1990	C-74
EML Radionuclides in Water, Apr. 1980	C-74
EML Radionuclides in Water, Nov. 1988	C-74
EML Radionuclides in Water, May 1989	C-74
EML Radionuclides in Water, May 1990	C-74
EML Radionuclides in Water, Nov. 1990	C-74
EML Radionuclides on Air Filters, Nov. 1988	C-75
EML Radionuclides on Air Filters, May 1989	C-75
EML Radionuclides on Air Filters, May 1990	C-75
EML Radionuclides on Air Filters, Nov. 1990	C-75
EPA Air Filter Intercomparison, March 1989	C-75
EPA Air Filter Intercomparison, Aug. 1989	C-76
EPA Air Filter Intercomparison, April 1990	C-76
EPA Air Filter Intercomparison, August 1990	C-76
EPA Alpha Performance Evaluation in Water, Apr. 1988	C-76
EPA Alpha Performance Evaluation in Water, Oct. 1989	C-76
EPA Alpha Performance Evaluation in Water, Apr. 1990	C-76
EPA Alpha Performance Evaluation in Water, Oct. 1990	C-76

TABLE C-VI (cont)

Quality Assurance Material	Page
EPA Beta Performance Evaluation in Water, Oct. 1988	C-76
EPA Beta Performance Evaluation in Water, Oct. 1989	C-76
EPA Beta Performance Evaluation in Water, Apr. 1990	C-76
EPA Beta Performance Evaluation in Water, Oct. 1990	C-76
EPA Chlorinated Hydrocarbon Pesticides	C-169
EPA Cyanide in Water	C-76
EPA Demand Analyses in Water	C-77
EPA Drinking Water Study 22, Inorganic Analyses	C-77
EPA Drinking Water Study 26, Inorganic Analyses	C-77
EPA Drinking Water Study 26, Organic Analyses	C-169
EPA Drinking Water Study 27, Inorganic Analyses	C-78
EPA Drinking Water Study 27, Organic Analyses	C-172
EPA Free Chlorine in Water	C-78
EPA GC/MS Acids in Water	C-175
EPA GC/MS Base Neutrals	C-176
EPA Gross Alpha/Beta in Water, May 1988	C-78
EPA Gross Alpha/Beta in Water, Jan. 1990	C-79
EPA Gross Alpha/Beta in Water, May 1990	C-79
EPA Gross Alpha/Beta in Water, Sept. 1990	C-79
EPA Mineral Analyses in Water	C-79
EPA Nutrients in Water	C-81
EPA Oil and Grease	C-82
EPA PCB in Sediment	C-178
EPA PCB in Sediment Study	C-178
EPA PCB in Water	C-178
EPA Plutonium-239 in Water, Jan. 1990	C-82
EPA Plutonium-239 in Water, Aug. 1990	C-82
EPA Radionuclides in Food, July 1988	C-82
EPA Radionuclides in Milk, June 1988	C-82
EPA Radionuclides in Milk, Nov. 1988	C-82
EPA Radionuclides in Milk, April 1989	C-82
EPA Radionuclides in Milk, Feb. 1990	C-82
EPA Radionuclides in Milk, June 1990	C-83
EPA Radionuclides in Water, Feb. 1990	C-83
EPA Radionuclides in Water, June 1990	C-83
EPA Radionuclides in Water, Oct. 1990	C-83
EPA Radium in Water, Dec. 1987	C-83
EPA Radium in Water, Mar. 1990	C-83
EPA Radium in Water, June 1990	C-83
EPA Residue in Water	C-83
EPA Strontium in Water, Jan. 1990	C-83
EPA Strontium in Water, May 1990	C-83
EPA Study 10 (NPDES)	C-83
EPA Total Residual Chlorine in Water	C-84
EPA Trace Metals in Water	C-84
EPA Tritium in Water Blank, Feb. 1990	C-87
EPA Tritium in Water Blank, June 1990	C-87
EPA Tritium in Water Blank, Oct. 1990	C-87
EPA Tritium in Water, Feb. 1990	C-87
EPA Tritium in Water, June 1990	C-87

TABLE C-VI (cont)

Quality Assurance Material	Page
EPA Tritium in Water, Oct. 1990	C-87
EPA Turbidity in Water	C-87
EPA Uranium in Water, Aug. 1989	C-87
EPA Uranium in Water, Feb. 1990	C-87
EPA Uranium in Water, Aug. 1990	C-87
EPA Water Pollution Study 22, Inorganic Analyses	C-87
EPA Water Pollution Study 24, Inorganic Analyses	C-88
EPA Water Pollution Study 24, Organic Analyses	C-179
EPA Water Pollution Study 25, Inorganic Analyses	C-90
EPA Water Pollution Study 25, Organic Analyses	C-181
GSJ JA-1 Andesite	C-92
GSJ JA-2 Andesite	C-93
GSJ JA-3 Andesite	C-94
GSJ JCh-1 Chert	C-95
GSJ JDo-1 Dolomite	C-96
GSJ JF-1 Feldspar	C-97
GSJ JF-2 Feldspar	C-98
GSJ JG-3 Granodiorite	C-99
GSJ JGb-1 Gabbro	C-100
GSJ JLk-1 Lake Sediment	C-101
GSJ JLs-1 Limestone	C-102
GSJ JP-1 Peroditite	C-103
GSJ JSd-1 Stream Sediment	C-104
GSJ JSd-2 Stream Sediment	C-105
GSJ JSd-3 Stream Sediment	C-106
GSJ JSl-1 Slate	C-107
GSJ JSL-2 Slate	C-108
HSE-9 Flash Point of 1-Hexanol	C-108
HSE-9 Gross Alpha/Beta in Water	C-109
HSE-9 Gross Alpha/Beta on Soil	C-109
HSE-9 Gross Gamma in Soil	C-109
HSE-9 Gross Gamma in Water	C-109
HSE-9 Mercury on Charcoal	C-109
HSE-9 Oil/Grease in Water	C-109
HSE-9 Organics in Oil	C-183
HSE-9 Organics in Solvent	C-184
HSE-9 Organics in Water	C-184
HSE-9 Organics on Charcoal	C-203
HSE-9 Organics on Florisil	C-209
HSE-9 Organics on Sludge	C-209
HSE-9 Organics on Soil	C-211
HSE-9 Organics on Vapor Badge	C-233
HSE-9 PCB in Oil	C-233
HSE-9 PCB on Filter Media	C-235
HSE-9 PCB on Florisil	C-236
HSE-9 PCB on Soil	C-236
HSE-9 Pesticides in Water	C-237
HSE-9 Pesticide Surrogate in Bulk Materials	C-239

TABLE C-VI (cont)

Quality Assurance Material	Page
HSE-9 Pesticide Surrogate in Soil	C-239
HSE-9 Pesticide Surrogate in Water	C-239
HSE-9 Poregas Surrogate on Charcoal Tube	C-239
HSE-9 Radionuclides in Tissue	C-109
HSE-9 Radionuclides in Urine	C-109
HSE-9 Radionuclides in Water	C-112
HSE-9 Radionuclides on Biological Materials	C-117
HSE-9 Radionuclides on Filter Media	C-117
HSE-9 Radionuclides on Soil	C-117
HSE-9 Radionuclides on Vegetation Ash	C-119
HSE-9 Semivolatile Surrogate in Bulk Materials	C-240
HSE-9 Semivolatile Surrogate on Filter Media	C-240
HSE-9 Semivolatile Surrogate in Sludge	C-240
HSE-9 Semivolatile Surrogate in Soil	C-241
HSE-9 Semivolatile Surrogate in Water	C-246
HSE-9 Trace Elements in Biological Materials	C-138
HSE-9 Trace Elements in Bulk Liquid	C-119
HSE-9 Trace Elements on Filter Media	C-138
HSE-9 Trace Elements in Soil	C-119
HSE-9 Trace Elements in Urine	C-119
HSE-9 Trace Elements in Water	C-120
HSE-9 Volatile Surrogate in Bulk Materials	C-248
HSE-9 Volatile Surrogate on Filter Media	C-248
HSE-9 Volatile Surrogate in Sludge	C-248
HSE-9 Volatile Surrogate in Soil	C-248
HSE-9 Volatile Surrogate in Water	C-251
HSE-9 pH, TDS, and Conductivity in Water	C-143
NBS 45b Homogeneous River Sediment	C-144
NBS 97b Flint Clay	C-144
NBS 98a Plastic Clay	C-145
NBS 98b Plastic Clay	C-145
NBS 99a Feldspar	C-146
NBS 120c Phosphate Rock	C-147
NBS 278 Obsidian Rock	C-148
NBS 679 Brick Clay	C-148
NBS 688 Basalt Rock	C-149
NBS 694 Western Phosphate Rock	C-150
NBS 696 Bauxite (Surinam)	C-151
NBS 1085 Wear-Metals in Lubricating Oil, High	C-152
NBS 1566 Oyster Tissue	C-152
NBS 1566a Oyster Tissue	C-152
NBS 1568 Fice Flour	C-152
NBS 1569 Brewers Yeast	C-152
NBS 1571 Orchard Leaves	C-152
NBS 1572 Citrus Leaves	C-152
NBS 1573 Tomato Leaves	C-152
NBS 1575 Pine Needles	C-152
NBS 1577a Bovine Liver	C-152
NBS 1632 Trace Elements in Coal	C-152

TABLE C-VI (cont)

Quality Assurance Material	Page
NBS 1632a Trace Elements in Coal (Bituminous)	C-153
NBS 1632b Trace Elements in Coal (Bituminous)	C-153
NBS 1633a Trace Elements in Coal Fly Ash	C-155
NBS 1635 Trace Elements in Coal (Subbituminous)	C-156
NBS 1643A Trace Elements in Water	C-157
NBS 1643b Trace Elements in Water	C-158
NBS 1645 River Sediment	C-160
NBS 1646 Estuarine Sediment	C-162
NBS 1819-III Sulfur in Lubricating Oil	C-163
NBS 2704 Buffalo River Sediment	C-164
NBS 4350 Environmental Radioactivity Sediment	C-165
NBS 4350B River Sediment	C-165
NBS 4353 Rocky Flats Soil No. 1	C-165
NBS 4355 Peruvian Soil	C-165
NBS 4958 Radium-226 in Water (HSE-9 Dilution)	C-165
NBS 8034 Sewage Sludge (CRM 144)	C-165
NIOSH PAT Round 100 Organics on Charcoal	C-238
NIOSH PAT Round 100 Trace Metals on Air Filters	C-165
NIOSH PAT Round 101 Organics on Charcoal	C-238
NIOSH PAT Round 101 Trace Metals on Air Filters	C-166
NIOSH PAT Round 102 Organics on Charcoal	C-238
NIOSH PAT Round 102 Trace Metals on Air Filters	C-166
NIOSH PAT Round 103 Organics on Charcoal	C-239
NIOSH PAT Round 103 Trace Metals on Air Filters	C-166
Packard Instruments Radionuclides in Water	C-166
UNLV-QAL Trace Elements in Water	C-166
USGS GXR-1 Jasperoid	C-167
USGS GXR-2 Soil	C-168

TABLE C-VII

REFERENCES FOR INDIVIDUAL CERTIFIED VALUES IN QUALITY ASSURANCE MATERIALS MEASURED BY HSE-9 IN 1990

Code	N	Reference
69NBS	10	National Bureau of Standards, Certificate of Analysis, SRM 98a, Plastic Clay (1969).
74NBS	01	National Bureau of Standards, Certificate of Analysis, SRM 1632, Trace Elements in Coal (1974).
75NBS	03	National Bureau of Standards, Certificate of Analysis, SRM 4350, Environmental Radioactivity Standard: River Sediment (1975).
76NBS	02	National Bureau of Standards, Certificate of Analysis, SRM 1573, Tomato Leaves (1976).
76NBS	03	National Bureau of Standards, Certificate of Analysis, SRM 1575, Pine Needles (1976).
77ING	01	J. C. Ingles, R. Sutarno, W. S. Bowman, and G. Faye, Radioactive Ores DH-1, DL-1, BL-1, BL-2, BL-3, BL-4: Certified Reference Materials, CANMET Report 77-64 (1977).
78EPA	01	Environmental Protection Agency, Water Supply Quality Control Check Samples, EMSL, Cincinnati (1978).
78NBS	06	National Bureau of Standards, Certificate of Analysis, SRM 1568, Rice Flour (1978).
78NBS	08	National Bureau of Standards, Report of Investigation, Research Material 45b, Homogeneous River Sediment for Radioactivity Measurements (1978).
78NBS	09	National Bureau of Standards, Addendum to Certificate of Analysis, SRM 1567 (1978).
79EPA	01	Environmental Protection Agency, Water Pollution Quality Control Samples, EMSL, Cincinnati (1979).
79NBS	04	National Bureau of Standards, Certificate of Analysis, SRM 1635, Trace Elements in Coal: Subbituminous (1979).
79PAC	01	Packard Instrument Company, Tritium standard certified against NBS reference material, Downer's Grove, Illinois, (1979).
80EML	01	Environmental Measurements Laboratory, Private Communication (1980).
80NBS	01	National Bureau of Standards, Certificate of Analysis, SRM 1643A, Trace Elements in Water (1980).
81EPA	01	Environmental Protection Agency, EPA Water Pollution Quality Control Samples, EMSL, Cincinnati (1981).
81H-8	03	Ibid., Assumption of Natural Isotopic Abundance for Uranium (1981).
81NBS	01	National Bureau of Standards, Certificate of Analysis, SRM 4353, Environmental Radioactivity, Rocky Flats Soil No. 1 (1981).
81NBS	02	National Bureau of Standards, Certificate of Analysis, SRM 4350B, Environmental Radioactivity, River Sediment (1981).
81NBS	03	National Bureau of Standards, Certificate of Analysis, SRM 278, Obsidian Rock (1981).
81NBS	04	National Bureau of Standards, Certificate of Analysis, SRM 688, Basalt Rock (1981).
81NBS	16	National Bureau of Standards, Certificate of Analysis, SRM 99a, Feldspar (1981).
82EPA	01	Environmental Protection Agency, Quality Control Samples for Water Pollution, EMSL, Cincinnati (1982).
82NBS	01	National Bureau of Standards, Certificate of Analysis, SRM 1646, Estuarine Sediment, (Revised 6/7/82) (1982).
82NBS	03	National Bureau of Standards, Certificate of Analysis, SRM 1572, Citrus Leaves (Revised 12/20/82) (1982).
82NBS	10	National Bureau of Standards, Certificate of Analysis, SRM 4355, Peruvian Soil, Environmental Radioactivity (1982)
82NBS	11	National Bureau of Standards, Certificate of Analysis, SRM 1645, River Sediment (Revised) (1982).

TABLE C-VII (cont)

Code	N	Reference
83EPA	01	Environmental Protection Agency, Quality Assurance Check Samples, EMSL, Las Vegas (1983).
83EPA	02	Environmental Protection Agency, Quality Control Samples for Water Pollution, EMSL, Cincinnati (1983).
83NBS	02	National Bureau of Standards, Certificate of Analysis, SRM 1566, Oyster Tissue (1983).
84ADA	01	W. H. Adams, HSE-9 In-House Quality Control Standard for pH, TDS, and Conductivity, Standard Methods, 15th Edition, p. 29 (1984).
84EML	01	Environmental Measurements Laboratory, Quality Assessment Program, Department of Energy, New York (1984).
84EPA	01	Environmental Protection Agency, Quality Assurance Check Samples, EMSL, Las Vegas (1984).
84EPA	02	Environmental Protection Agency, Quality Assurance Check Samples, EMSL, Cincinnati (1984).
84NBS	05	National Bureau of Standards, Certificate, SRM 1643B, Trace Elements in Water (1984).
84NBS	14	National Bureau of Standards, Certificate of Analysis, SRM 694, Western Phosphate Rock (1984).
85BCR	02	Community Bureau of Reference, Certificate of Analysis, Certified Reference Material BCR 144, Trace Elements in Sewage Sludge, revised (1985).
85CAN	01	Canadian Certified Reference Materials Project, Revised Certificates of Analysis, DL-1a, DH-1a, BL-4a, BL-5, and SO-1 thru SO-4 (1985).
85EPA	02	Environmental Protection Agency, Quality Assurance Check Samples, EMSL, Cincinnati (1985).
85GAU	01	M. A. Gautier, HSE-9 In-House Quality Assurance Samples, Miscellaneous Samples (1985).
85NBS	02	National Bureau of Standards, Certificate of Analysis, SRM 1632b, Trace Elements in Coal (Bituminous) (1985).
85NBS	06	National Bureau of Standards, Certificate of Analysis, SRM 1819, Sulfur in Lubricating Base Oil (1985).
85NBS	08	National Bureau of Standards, Certificate of Analysis, SRM 1577a, Bovine Liver (Revised 2/1/85) (1985).
85NBS	09	National Bureau of Standards, Certificate of Analysis, SRM 1083, 1084, and 1085, Wear-Metals in Oil (1985).
85NBS	11	National Bureau of Standards, Certficate of Analysis SRM 1633a, Trace Elements in Coal Fly Ash (1985).
85WIL	01	M. C. Williams, HSE-9 In-House Quality Assurance Samples Prepared at TA-50 (1985).
86DAL	01	J. L. Dalton and W. S. Bowman, "Vegetative Radionuclide Reference Materials," National Uranium Tailings Program report NUTP-4E, CANMET (1986).
86EPA	02	Environmental Protection Agency, Quality Assurance Check Samples, EMSL, Cincinnati (1986).
86GAU	01	M. A. Gautier, HSE-9 In-House Quality Assurance Samples, Miscellaneous Samples (1986).
86GAU	02	M. A. Gautier, HSE-9 In-House Quality Assurance Samples, Prepared from Fisher and Spex Certified Reference Solutions (1986).
86WIL	01	M. C. Williams, HSE-9 In-House Quality Assurance Samples Prepared at TA-50 (1986).
87AND	01	A. Ando, Written communication of compiled values for Geological Survey of Japan, Reference Materials (1987).
87EPA	01	Environmental Protection Agency, Quality Assurance Check Samples, EMSL, Las Vegas (1987).
87EPA	02	Environmental Protection Agency, Quality Assurance Check Samples, EMSL, Cincinnati (1987).
87GAU	01	M. A. Gautier, HSE-9 In-House Quality Assurance Samples, Miscellaneous Samples (1987).

TABLE C-VII (cont)

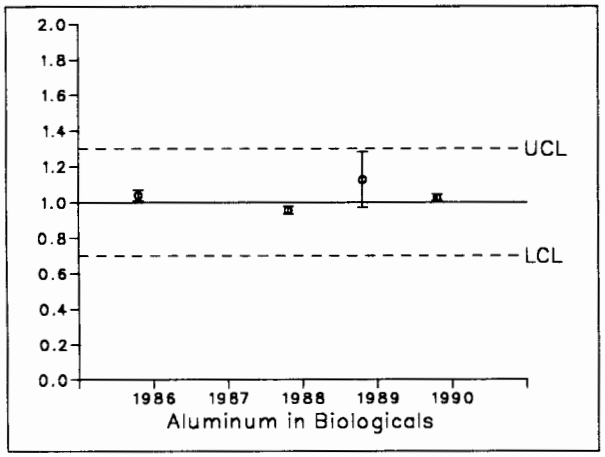
Code	N	Reference
87GAU	02	M. A. Gautier, HSE-9 In-House Quality Assurance Samples, Prepared from Fisher, Spex, and Alfa Products Certified Reference Solutions (1987).
87GAU	03	M. A. Gautier, HSE-9 In-House Quality Assurance Samples, Prepared from NBS Traceable Materials (1987).
87GAU	04	M. A. Gautier, HSE-9 In-House Quality Assurance Samples, Prepared from EPA Traceable Materials (1987).
87GLA	01	E. S. Gladney, B. O'Malley, I. Roelandts, and T. E. Gills, Compilation of Elemental Concentration Data for NBS Clinical, Biological, Geological and Environmental Standard Reference Materials, NBS Special Publication 260-111 (1987).
87NBS	03	National Bureau of Standards, Certificate of Analysis, SRM 679, Brick Clay (1987).
87QAL	01	University of Nevada, Quality Assurance Laboratory, Environmental Research Center, Las Vegas (1987).
88EML	01	Environmental Measurements Laboratory, DOE-QAP Quality Assurance Program (1988).
88EPA	01	Environmental Protection Agency, Quality Assurance Check Samples, EMSL, Las Vegas (1988).
88EPA	02	Environmental Protection Agency, Quality Assurance Check Samples, EMSL, Cincinnati (1988).
88GAU	01	M. A. Gautier, HSE-9 In-House Quality Assurance Samples, Miscellaneous Samples (1988).
88GAU	02	M. A. Gautier, HSE-9 In-House Quality Assurance Samples, Prepared from Fisher, Spex, and Alfa Products Certified Reference Solutions (1988).
88GAU	03	M. A. Gautier, HSE-9 In-House Quality Assurance Samples, Prepared from NBS Traceable Materials (1988).
88GAU	04	M. A. Gautier, HSE-9 In-House Quality Assurance Samples, Prepared from EPA Traceable Materials (1988).
88GLA	02	E. S. Gladney, Interim Calculations of Compiled Value from SRMS Literature Database (1988).
88NBS	01	National Bureau of Standards, Certificate of Analysis, SRM 2704, Buffalo River Sediment (1988).
88NBS	02	National Bureau of Standards, Certificate of Analysis, SRM 97b, Flint Clay (1988).
88NBS	03	National Bureau of Standards, Certificate of Analysis, SRM 98b, Plastic Clay (1988).
88NBS	04	National Bureau of Standards, Certificate of Analysis, SRM 120c, Phosphate Rock (1988).
89EML	01	Environmental Measurements Laboratory, DOE-QAP Quality Assurance Program (1989).
89EPA	01	Environmental Protection Agency, Quality Assurance Check Samples, EMSL, Las Vegas (1989).
89EPA	02	Environmental Protection Agency, Quality Assurance Check Samples, EMSL, Cincinnati (1989).
89FIL	01	T. D. Filer, HSE-9 In-house Quality Assurance Sample Prepared at TA-50 (1989).
89GAU	01	M. A. Gautier, HSE-9 In-House Quality Assurance Samples, Miscellaneous Samples (1989).
89GAU	02	M. A. Gautier, HSE-9 In-House Quality Assurance Samples, Prepared from Fisher, Spex, and Alfa Products Certified Reference Solutions (1989).
89GAU	03	M. A. Gautier, HSE-9 In-House Quality Assurance Samples, Prepared from NBS Traceable Materials (1989).
89GAU	04	M. A. Gautier, HSE-9 In-House Quality Assurance Samples, Prepared from EPA Traceable Materials (1989).
89GAU	05	M. A. Gautier, HSE-9 In-House Quality Assurance Samples, Prepared from CCRMP Traceable Materials (1989).

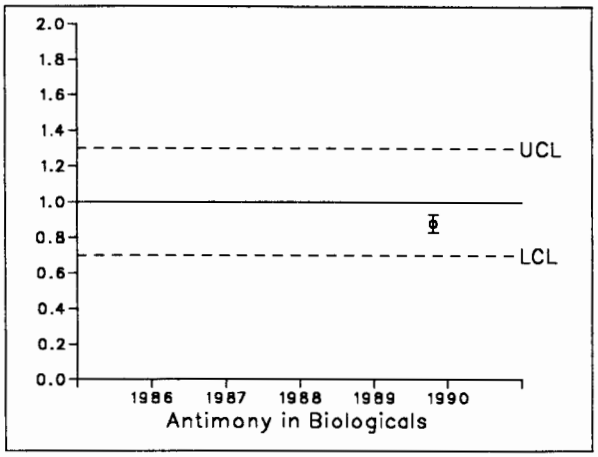
TABLE C-VII (cont)

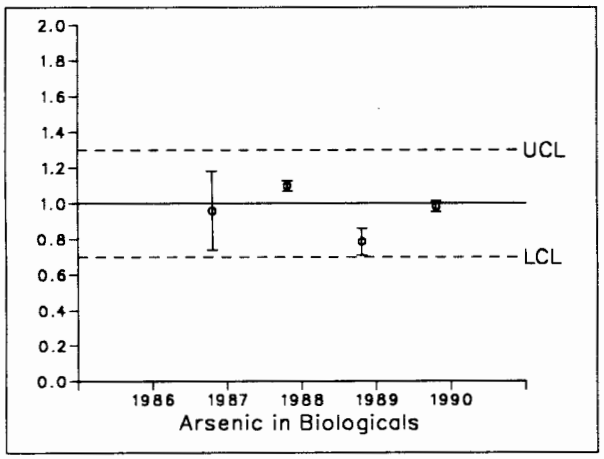
Code	N	Reference
89GLA	02	E. S. Gladney and I. Roelandts, 1988 Compilation of Elemental Concentration Data for USGS Geochemical Exploration Reference Materials GXR-1 to GXR-6, Geostandards Newsletter, 14: 21 - 118 (1990).
89GLA	03	E. S. Gladney and I. Roelandts, 1988 Compilation of Elemental Concentration Data for CCRMP Soils SO-1 to SO-4, Geostandards Newsletter, 13: 217-268.
89GLA	04	E. S. Gladney, Interim Calculations of Compiled Value from SRMS Literature Database (1989).
89H-9	01	Assumption of Natural Isotopic Abundance for Uranium (1989).
89MON	01	J. D. Montoya, HSE-9 In-House Quality Assurance Samples Prepared at TA-50 (1989).
89NBS	02	National Institutes of Standards and Technology, Certificate of Analysis, SRM 1566a, Oyster Tissue, (1989).
90BIO	01	Bionetics Corporation, Method 200.8 Collaborative Study Cincinnati, OH (1990).
90EML	01	Environmental Measurements Laboratory, DOE-QAP Quality Assurance Program (1990).
90EPA	01	Environmental Protection Agency, Quality Assurance Check Samples, EMSL, Las Vegas (1990).
90EPA	02	Environmental Protection Agency, Quality Assurance Check Samples, EMSL, Cincinnati (1990).
90FIL	01	T.D. Filer, HSE-9 In-house Quality Assurance Sample Prepared at TA-50 (1990).
90GAU	01	M. A. Gautier, HSE-9 In-House Quality Assurance Samples, Miscellaneous Samples (1990).
90GAU	02	M. A. Gautier, HSE-9 In-House Quality Assurance Samples, Prepared from Fisher, Spex, MCB, and Alfa Products Certified Reference Solutions (1990).
90GAU	03	M. A. Gautier, HSE-9 In-House Quality Assurance Samples, Prepared from NBS Traceable Materials (1990).
90GAU	04	M. A. Gautier, HSE-9 In-House Quality Assurance Samples, Prepared from EPA Traceable Materials (1990).
90GLA	01	E. S. Gladney and I. Roelandts, 1988 Compilation of Elemental Concentration Data for CCRMP Reference Rock Samples SY-2, SY-3, and MRG-1, Geostandards Newsletter, 14: 373 - 458 (1990).
90GLA	02	E. S. Gladeny, Interim Calculations of Compiled Value from SRMS Literature Database (1990).
90PAT	01	Proficiency Analytical Testing Program, National Institute for Occupational Safety and Health (1990).
90TER	01	S. Terashima, A. Ando, T. Okai, Y. Kaniai, M. Taniguchi, F. Takizawa, and S. Itoh, Elemental Concentrations in Nine New GSJ Rock Reference Samples "Sedimentary Rock Series," Geostandards Newsletter, 14: 1-5 (1990).
91GAU	01	M. A. Gautier, HSE-9 In-House Quality Assurance Samples, Miscellaneous Samples (1991).
91GAU	03	M. A. Gautier, HSE-9 In-House Quality Assurance Samples, Prepared from NIST Traceable Materials (1991).

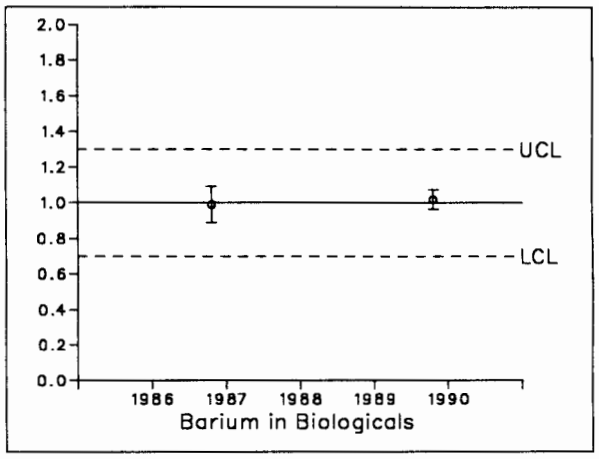
APPENDIX D

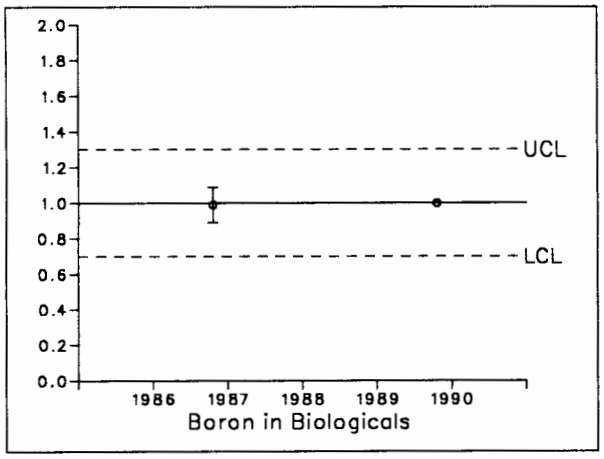
PLOTS OF FIVE-YEAR TRENDS











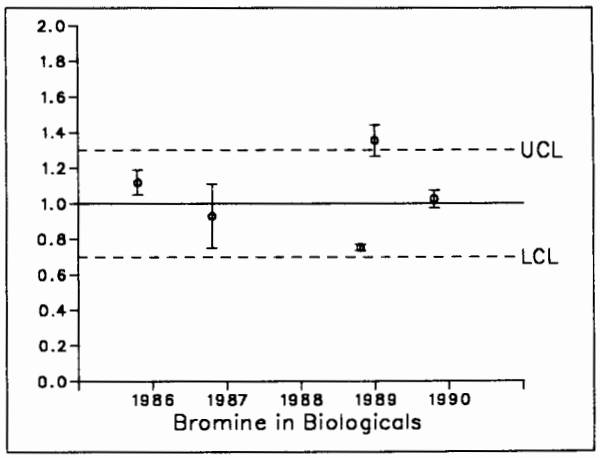


Fig. D-1. Five-year trends in quality assurance data for inorganic analyses.

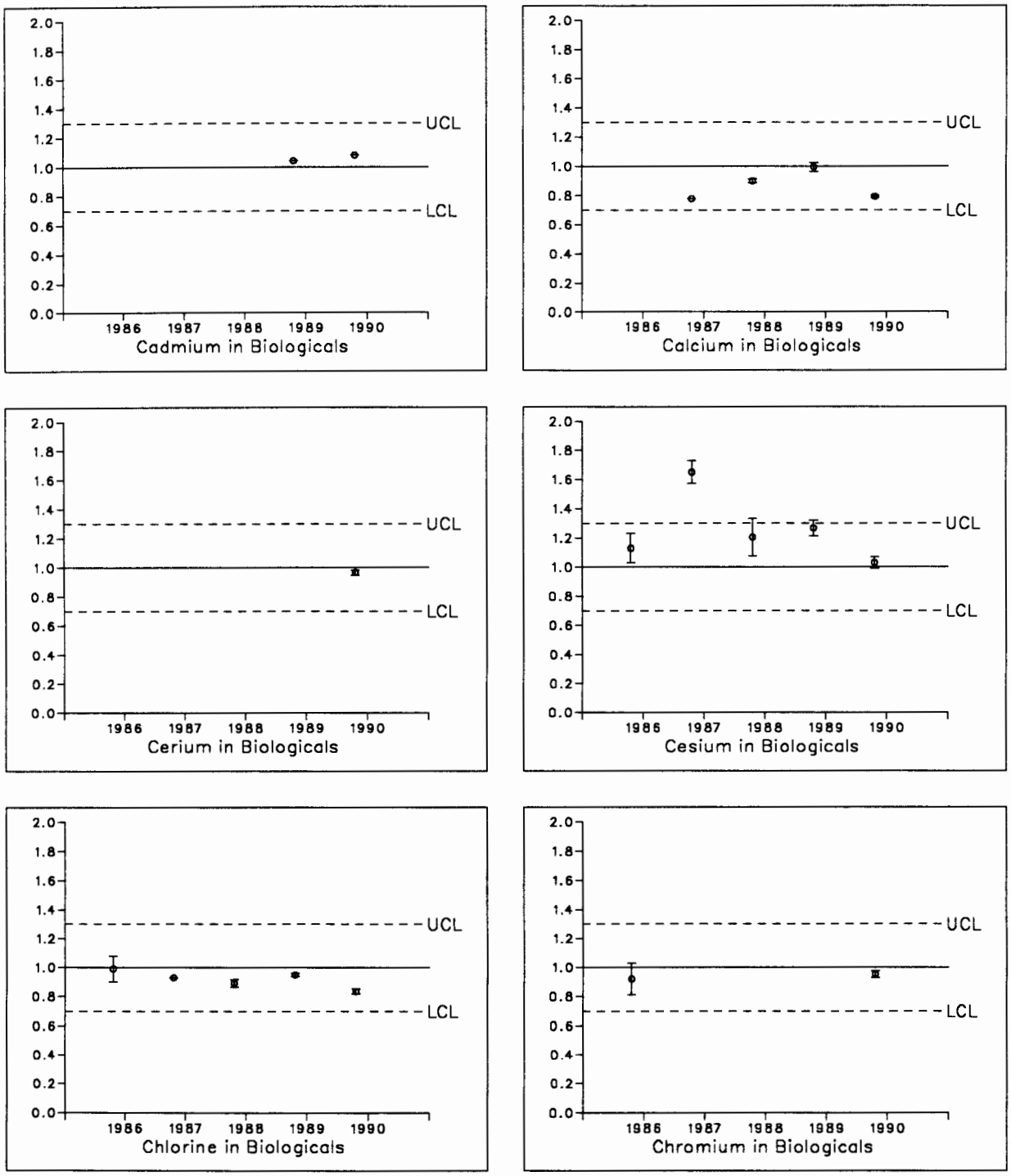
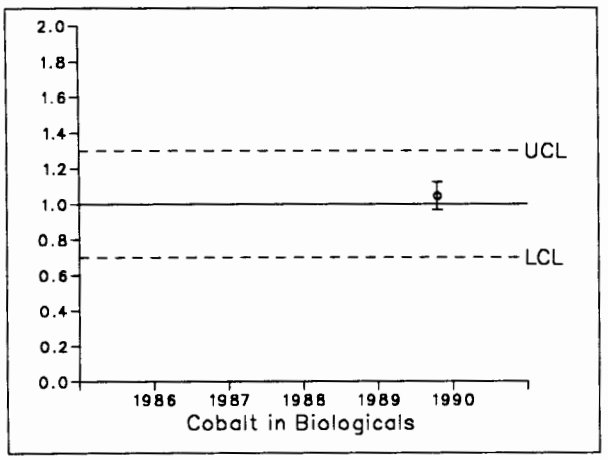
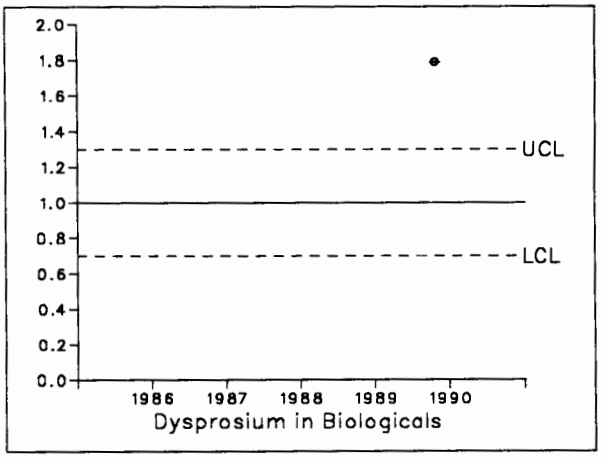
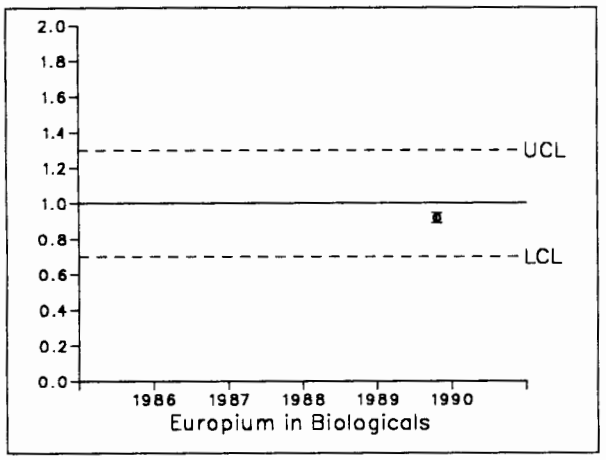
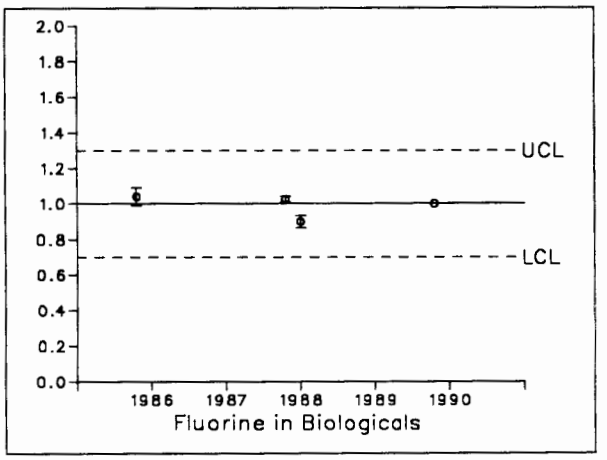

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Cadmium in Biologicals
Calcium in Biologicals
Cerium in Biologicals
Cesium in Biologicals
Chlorine in Biologicals
Chromium in Biologicals

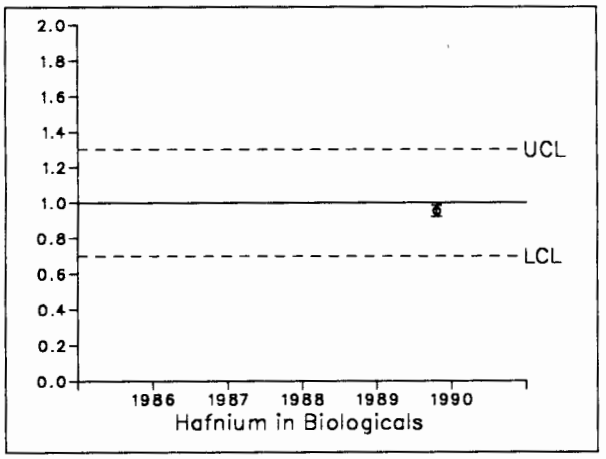
Fig. D-1. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Cobalt in Biologicals


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Dysprosium in Biologicals


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Europium in Biologicals


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Fluorine in Biologicals


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Hafnium in Biologicals

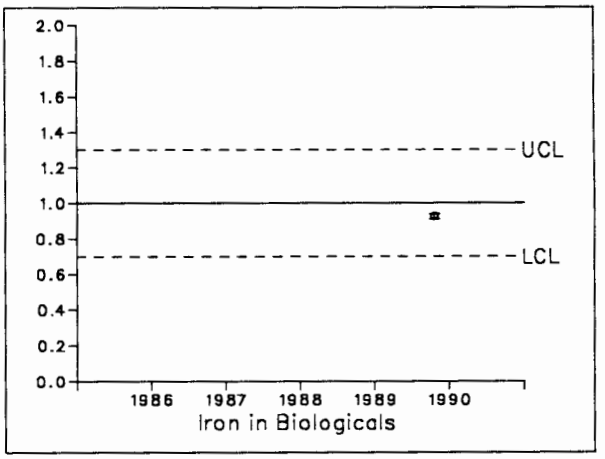
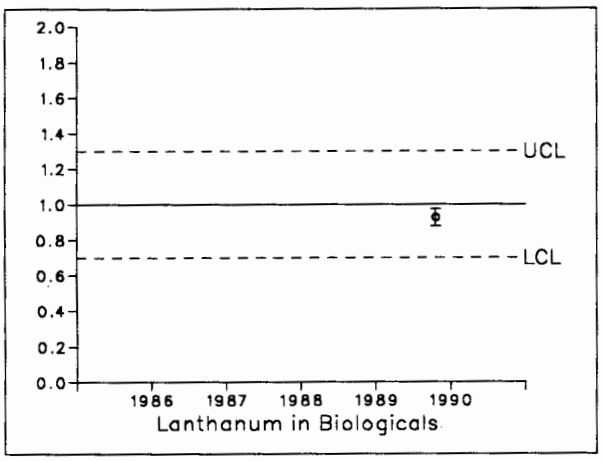
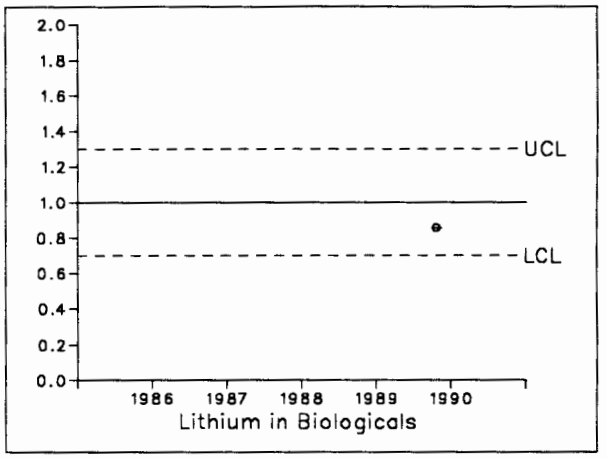
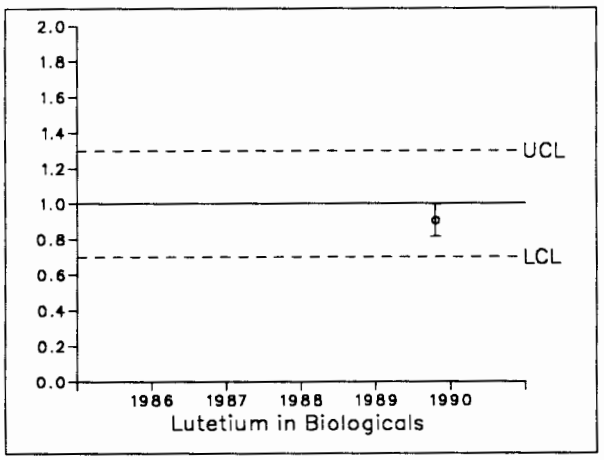
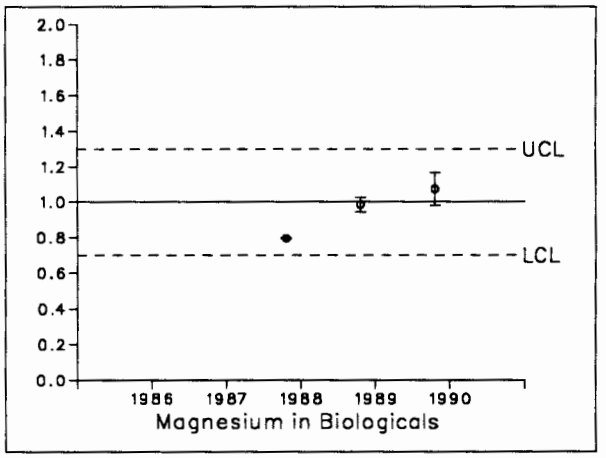

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Iron in Biologicals

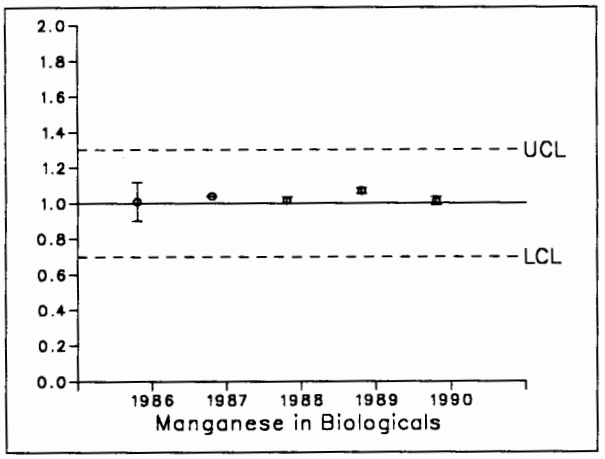
Fig. D-1. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Lanthanum in Biologicals


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Lithium in Biologicals


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Lutetium in Biologicals


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Magnesium in Biologicals


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Manganese in Biologicals

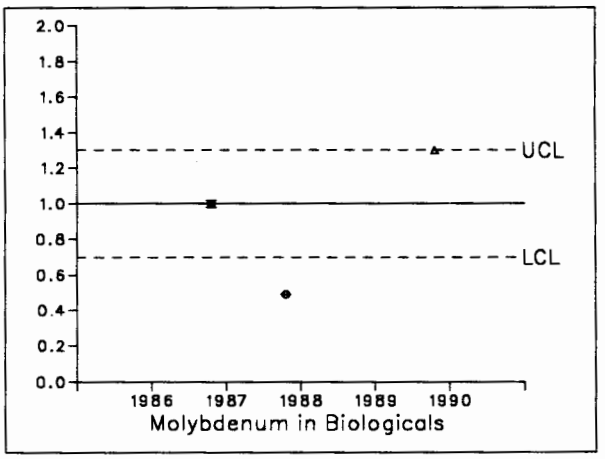
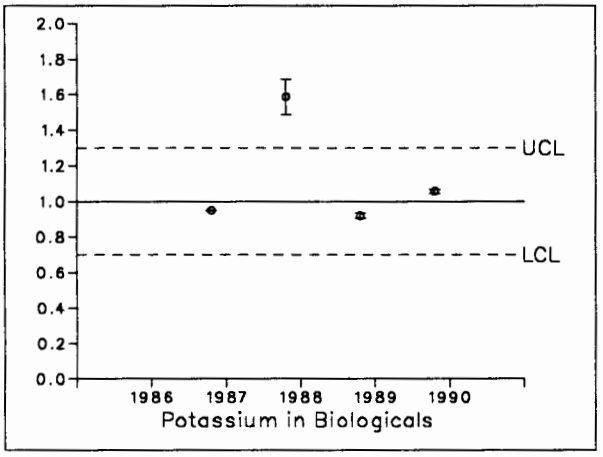
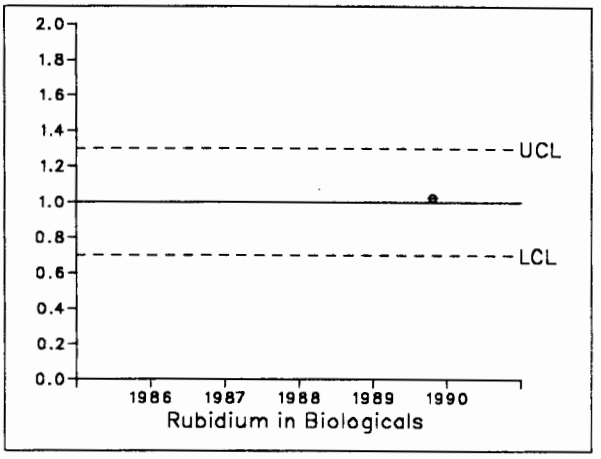
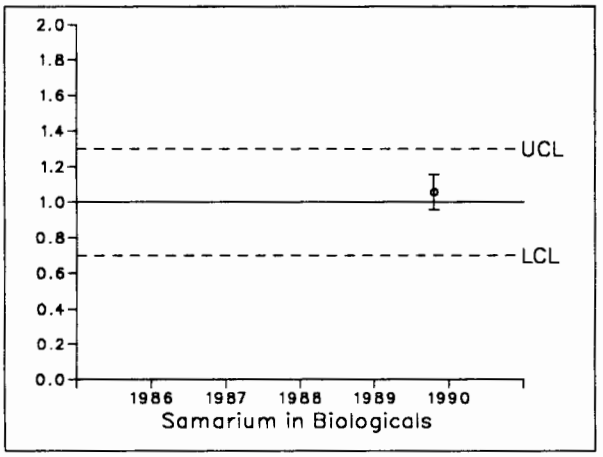
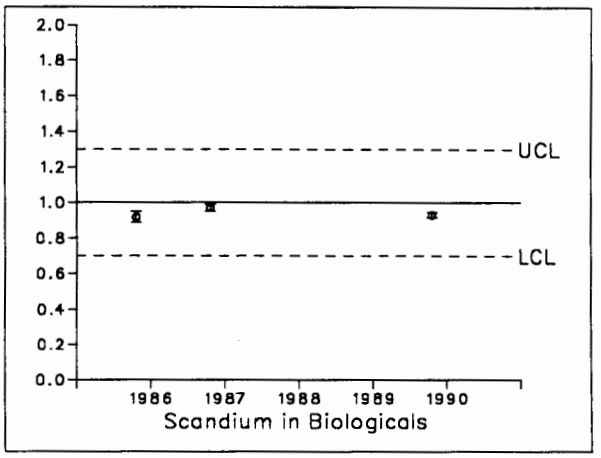

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Molybdenum in Biologicals

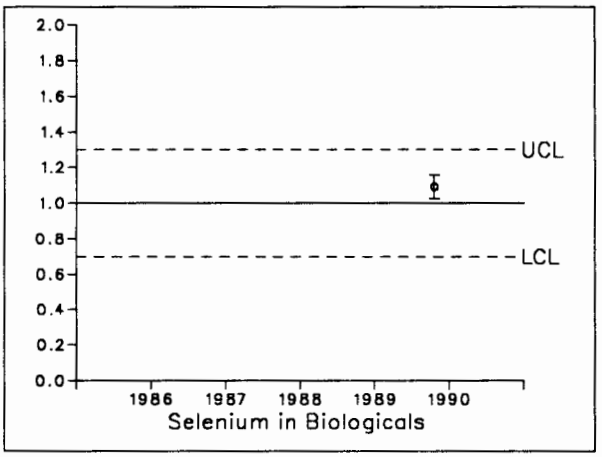
Fig. D-1. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Potassium in Biologicals


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Rubidium in Biologicals


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Samarium in Biologicals


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Scandium in Biologicals


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Selenium in Biologicals

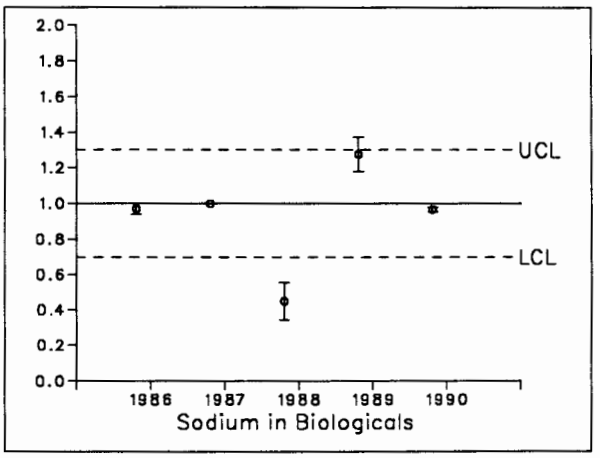

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Sodium in Biologicals

Fig. D-1. (cont)

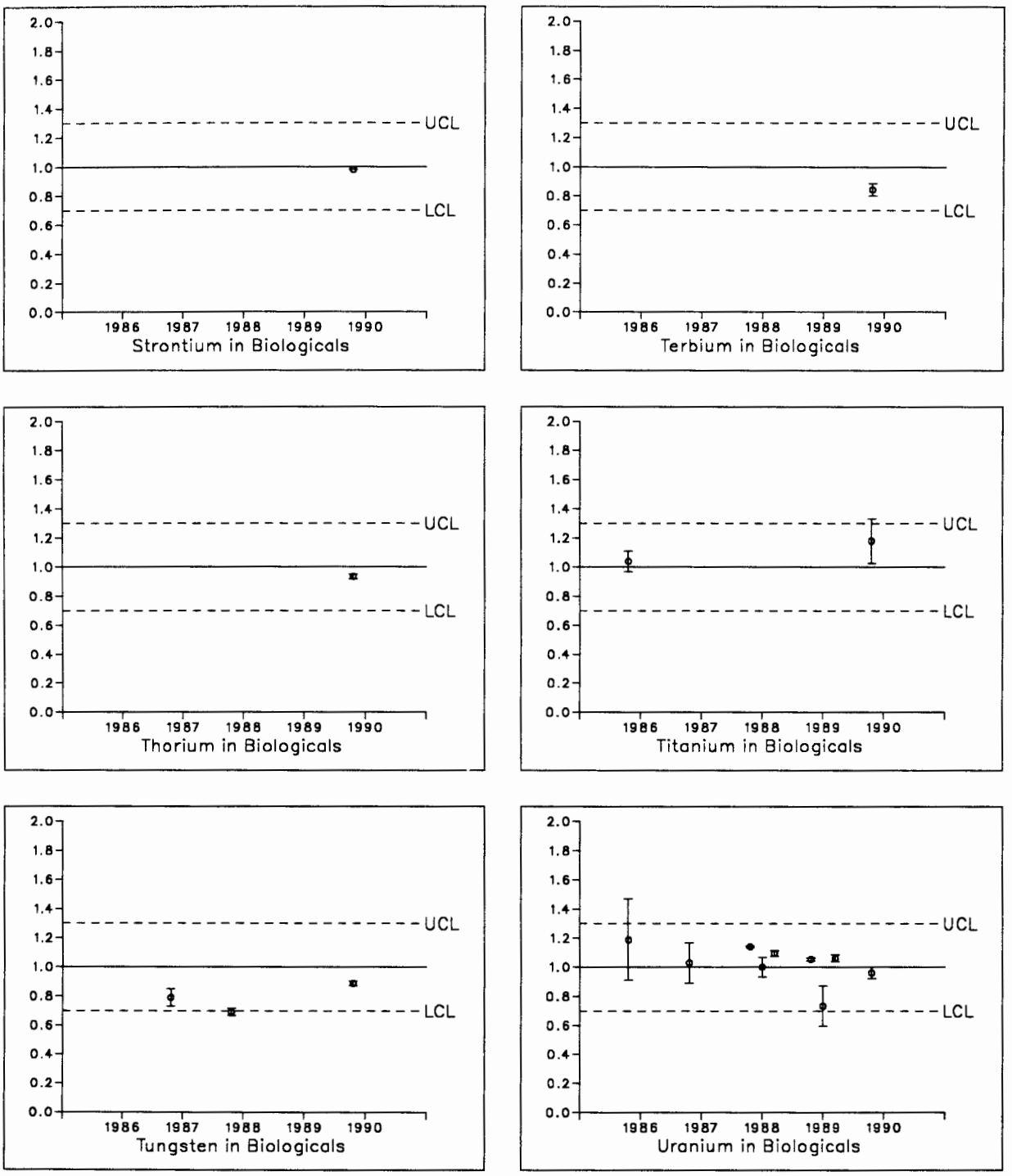
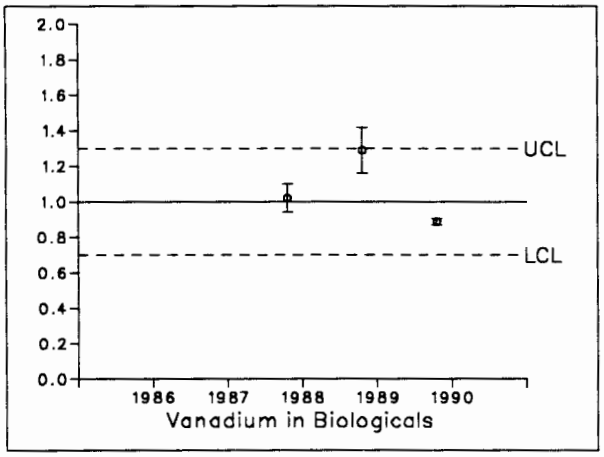
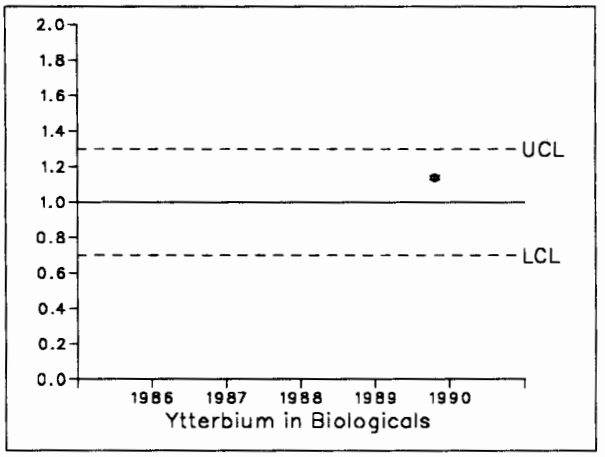
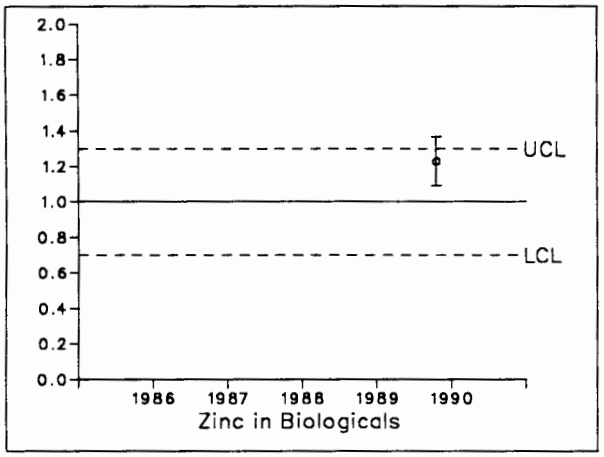
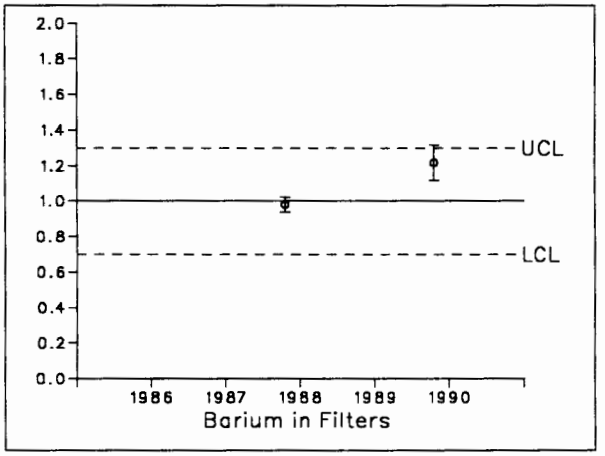

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Strontium in Biologicals
Terbium in Biologicals
Thorium in Biologicals
Titanium in Biologicals
Tungsten in Biologicals
Uranium in Biologicals

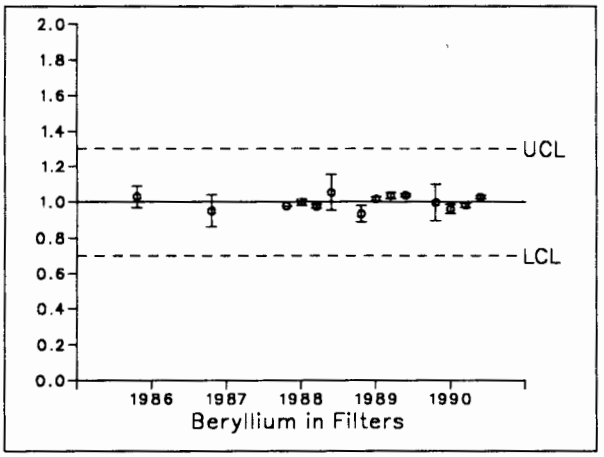
Fig. D-1. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Vanadium in Biologicals


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Ytterbium in Biologicals


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Zinc in Biologicals


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Barium in Filters


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Beryllium in Filters

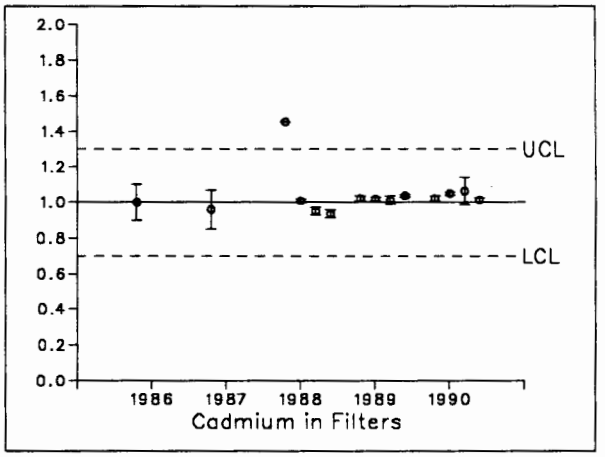
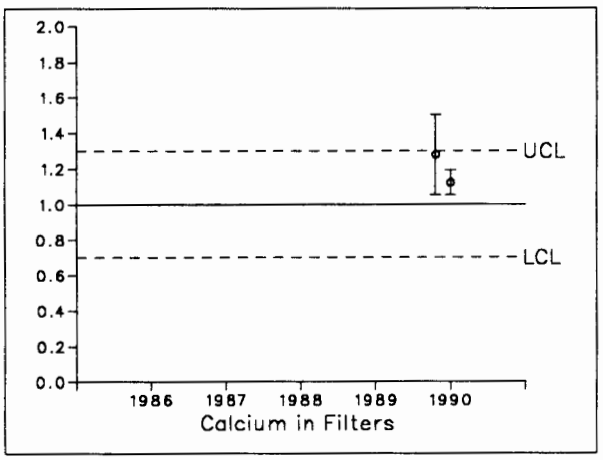
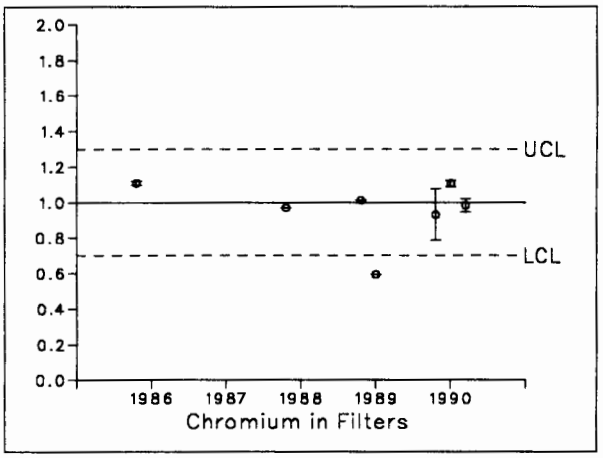
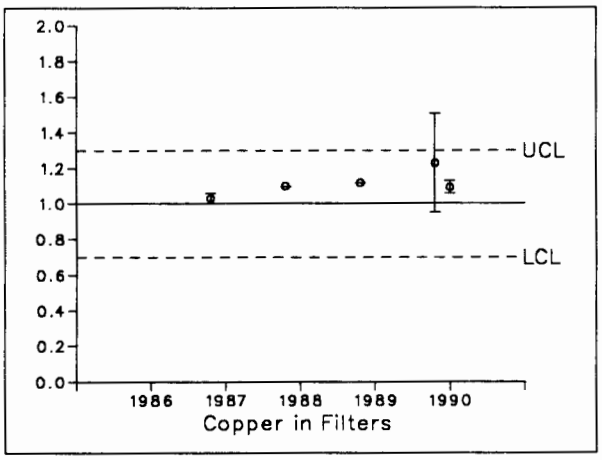
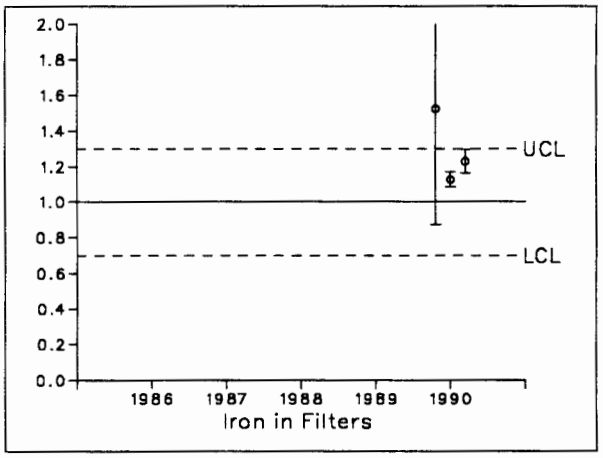

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Cadmium in Filters

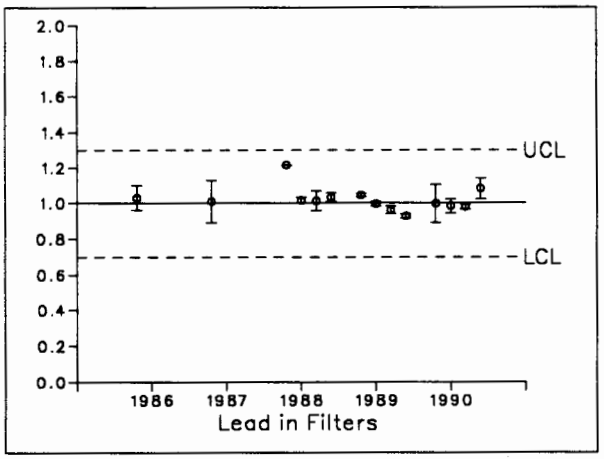
Fig. D-1. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Calcium in Filters


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Chromium in Filters


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Copper in Filters


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Iron in Filters


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Lead in Filters

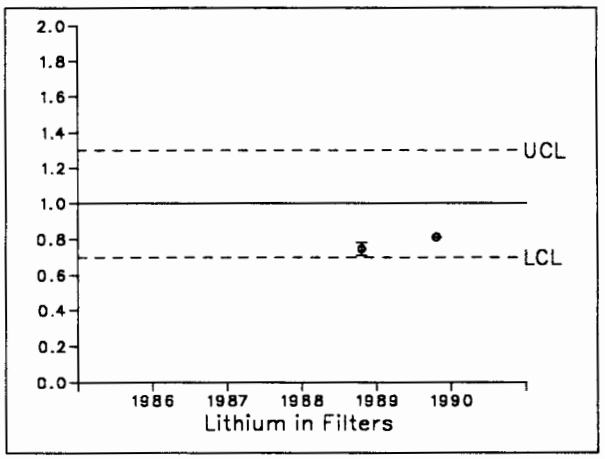

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Lithium in Filters

Fig. D-1. (cont)

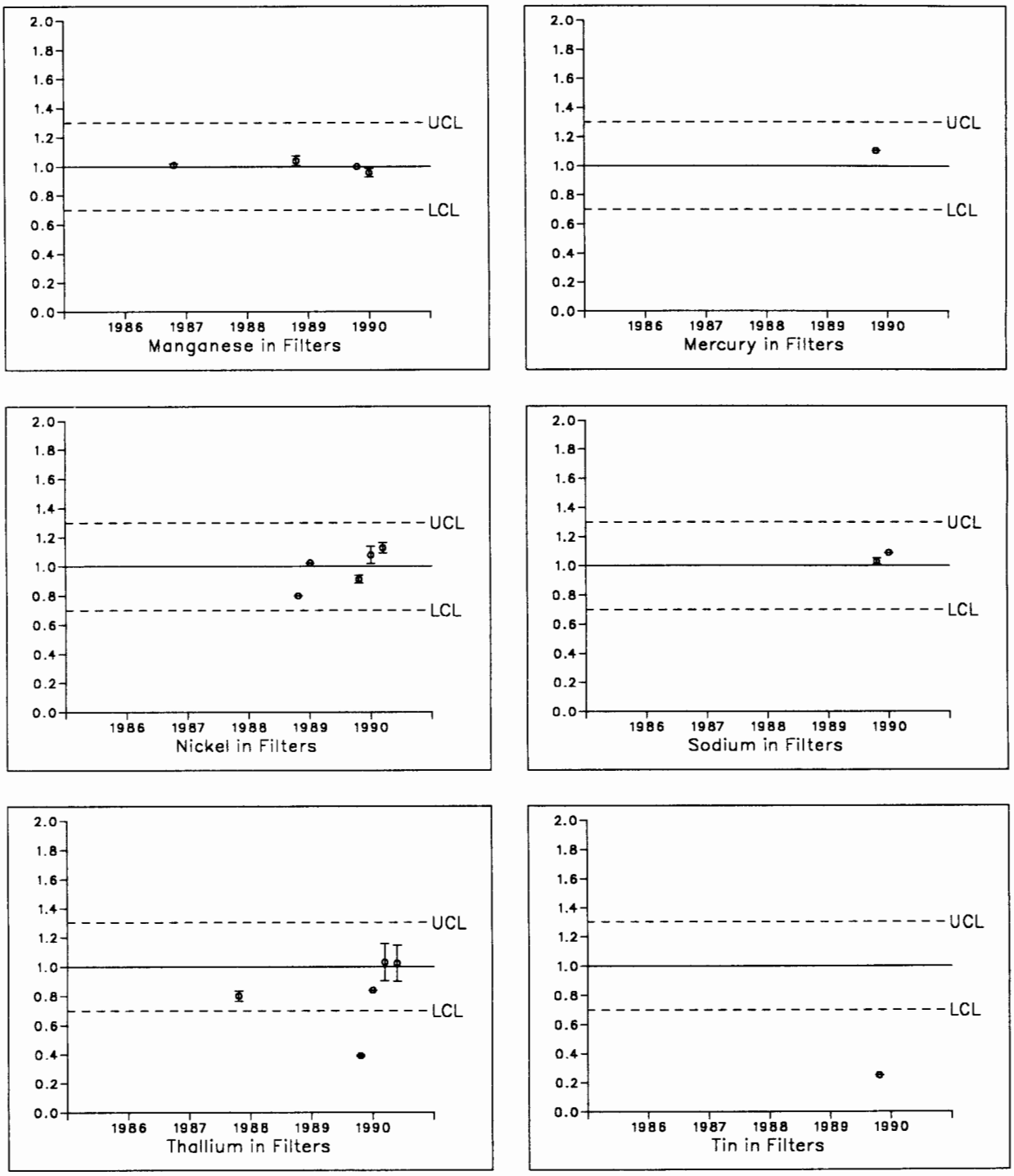
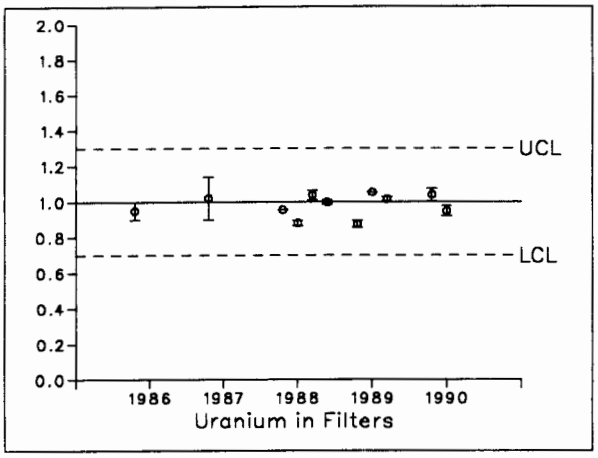
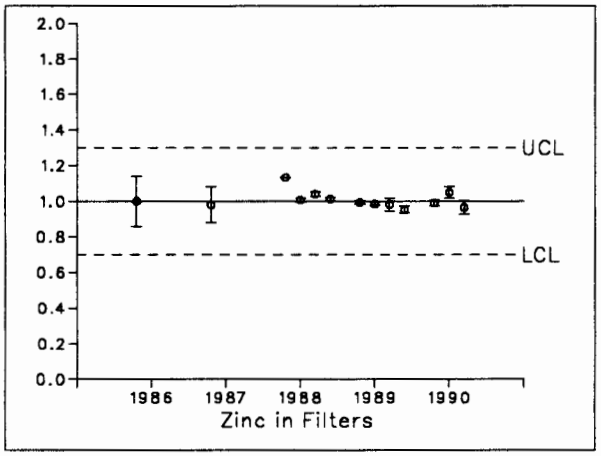
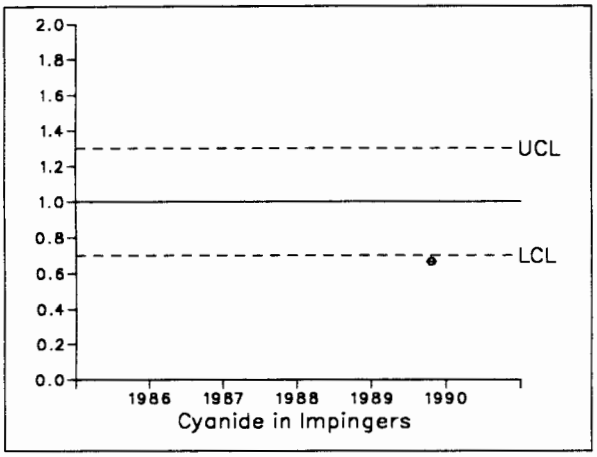
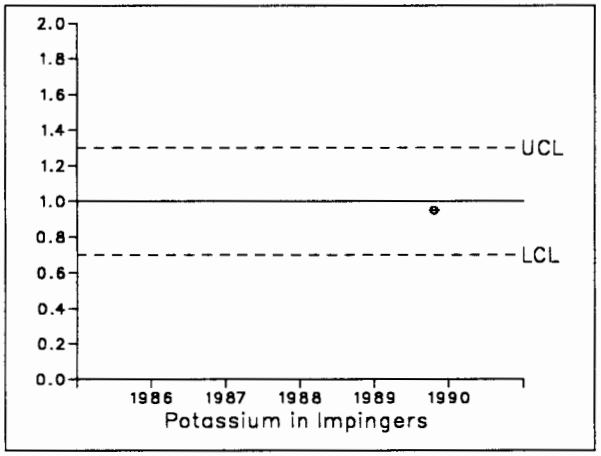

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Manganese in Filters
Mercury in Filters
Nickel in Filters
Sodium in Filters
Thallium in Filters
Tin in Filters

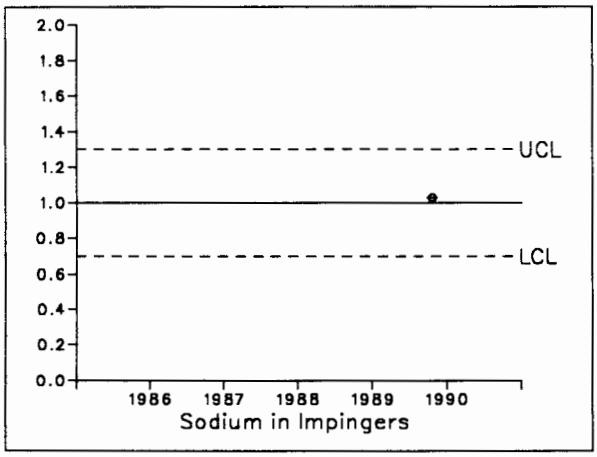
Fig. D-1. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Uranium in Filters


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Zinc in Filters


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Cyanide in Impingers


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Potassium in Impingers


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Sodium in Impingers

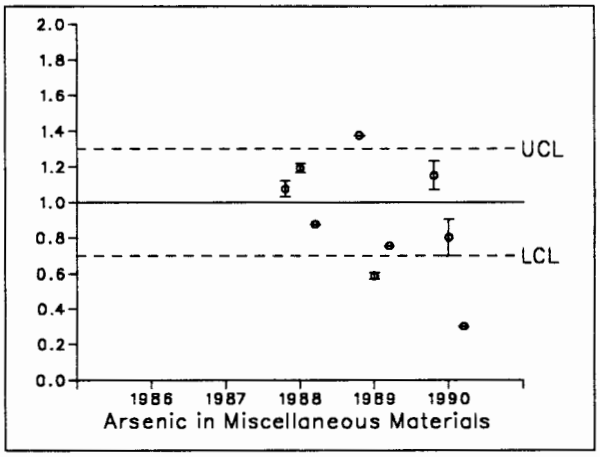
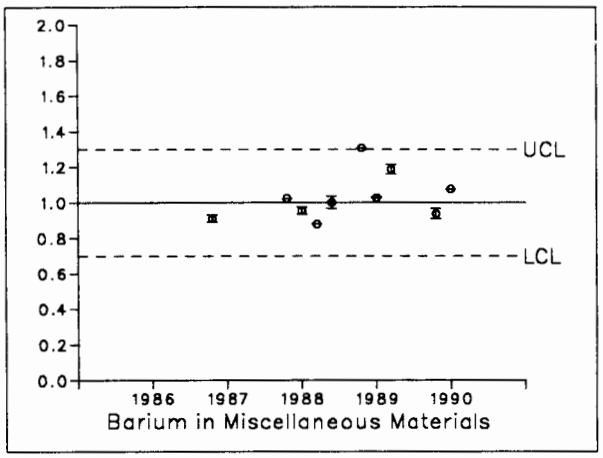
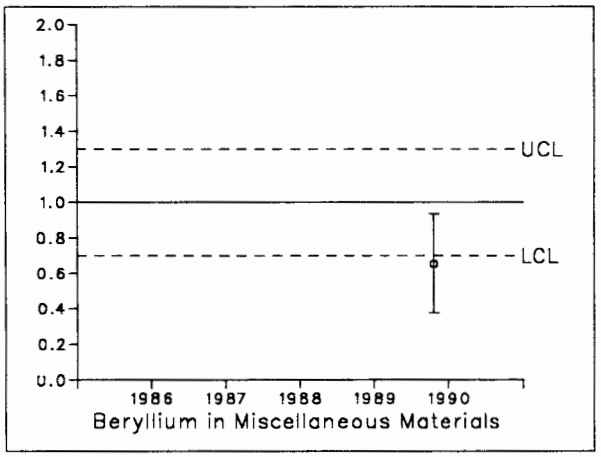
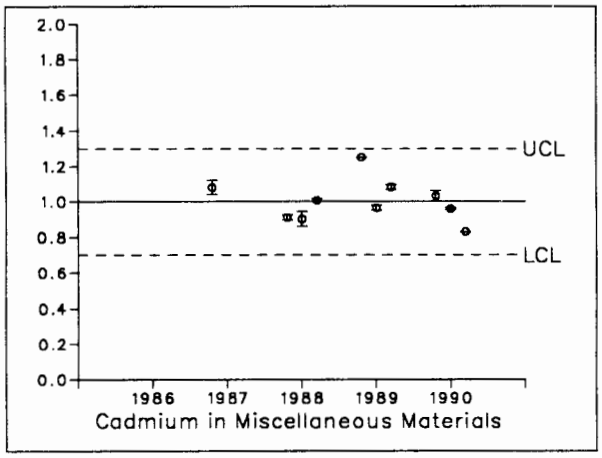
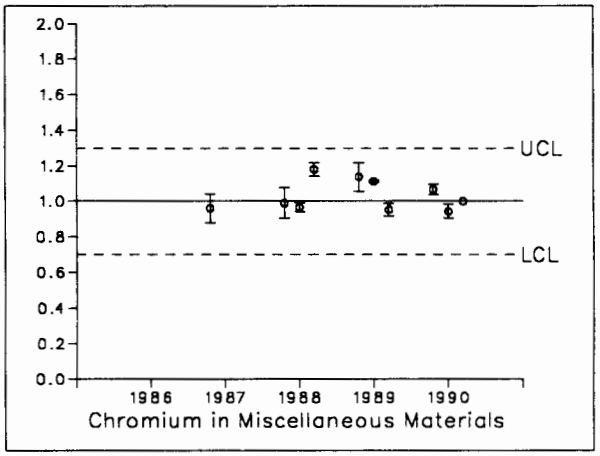

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Arsenic in Miscellaneous Materials

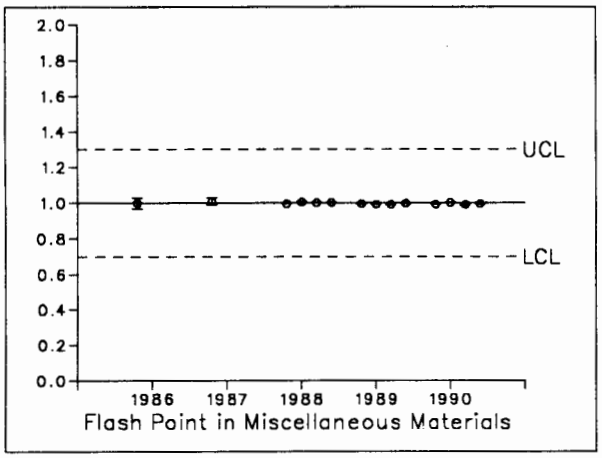
Fig. D-1. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Barium in Miscellaneous Materials


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Beryllium in Miscellaneous Materials


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Cadmium in Miscellaneous Materials


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Chromium in Miscellaneous Materials


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Flash Point in Miscellaneous Materials

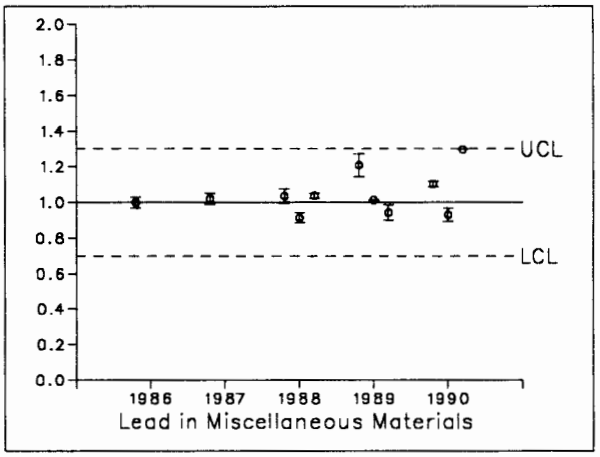
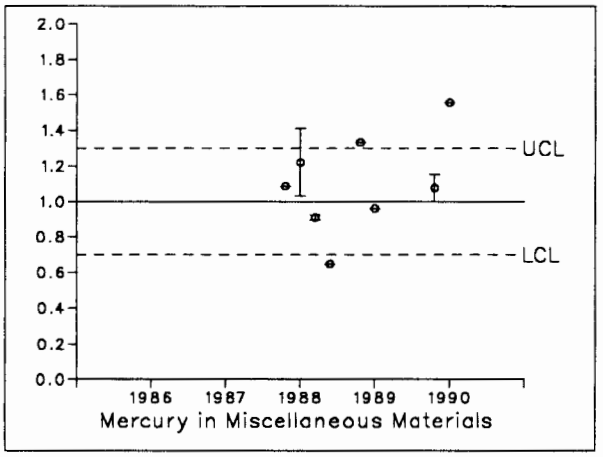
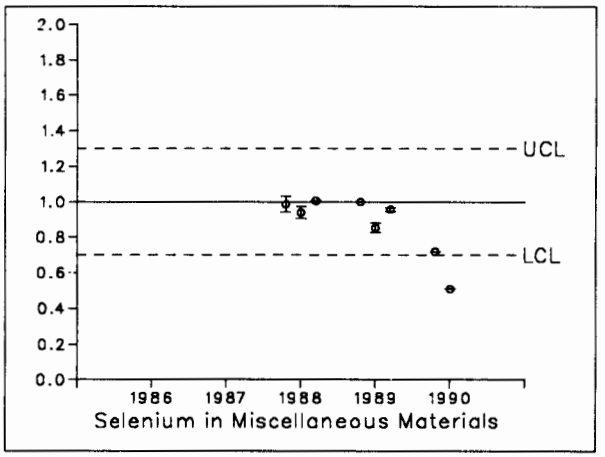
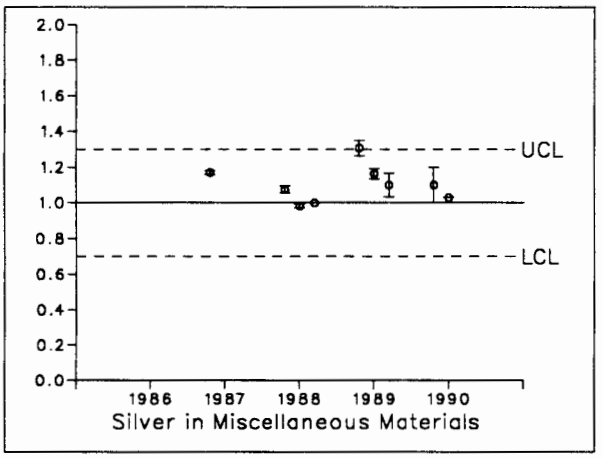
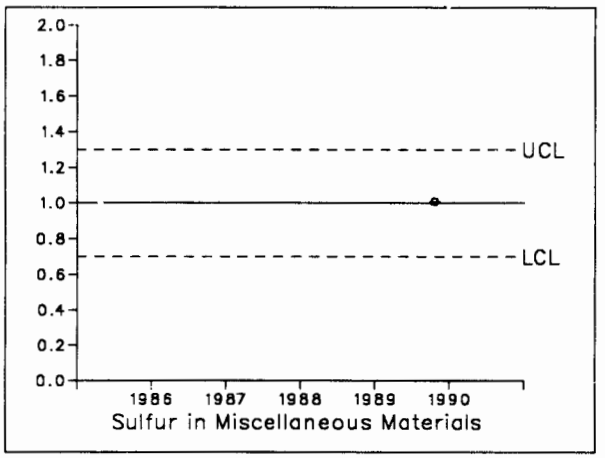

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Lead in Miscellaneous Materials

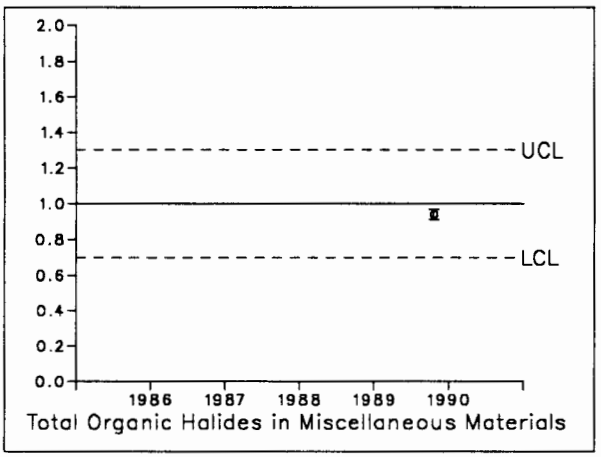
Fig. D-1. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Mercury in Miscellaneous Materials


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Selenium in Miscellaneous Materials


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Silver in Miscellaneous Materials


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Sulfur in Miscellaneous Materials


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Total Organic Halides in Miscellaneous Materials

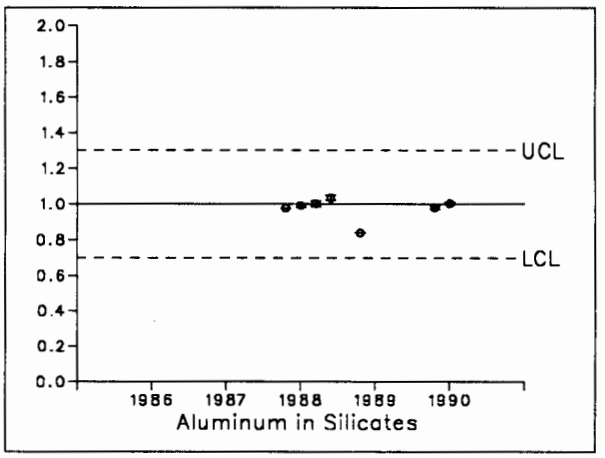
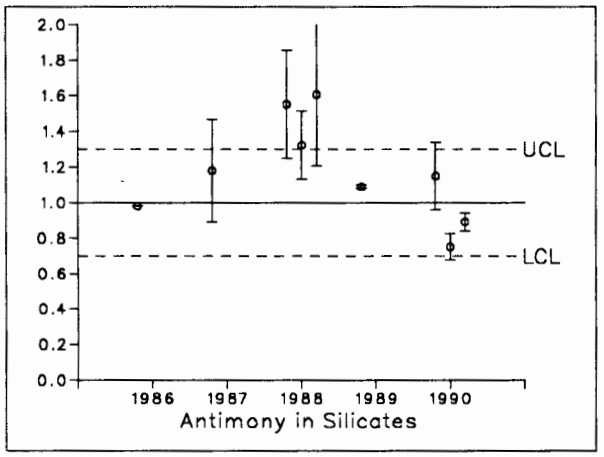
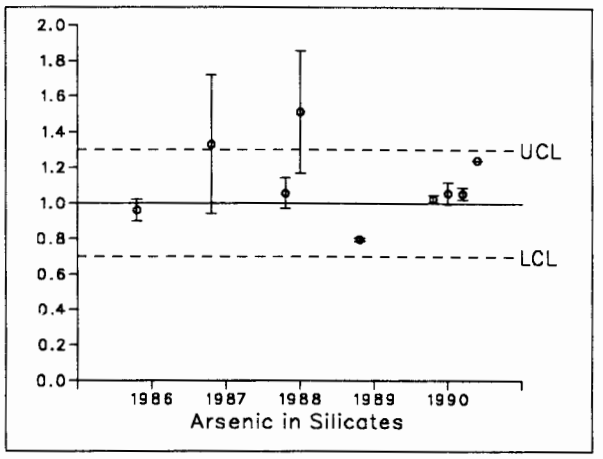
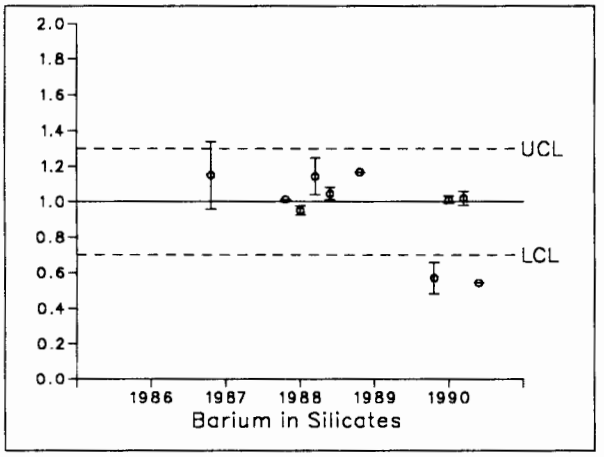
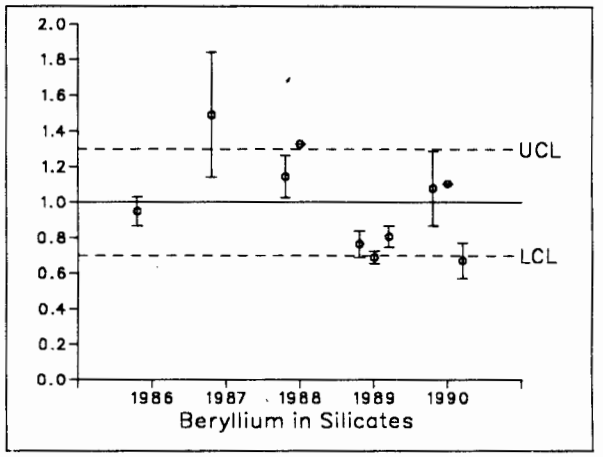

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Aluminum in Silicates

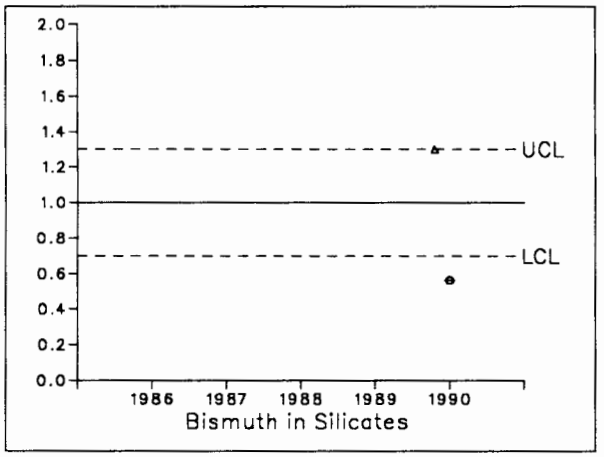
Fig. D-1. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Antimony in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Arsenic in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Barium in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Beryllium in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Bismuth in Silicates

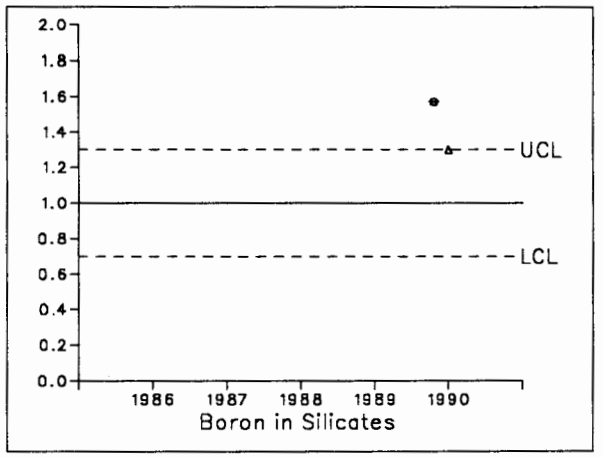
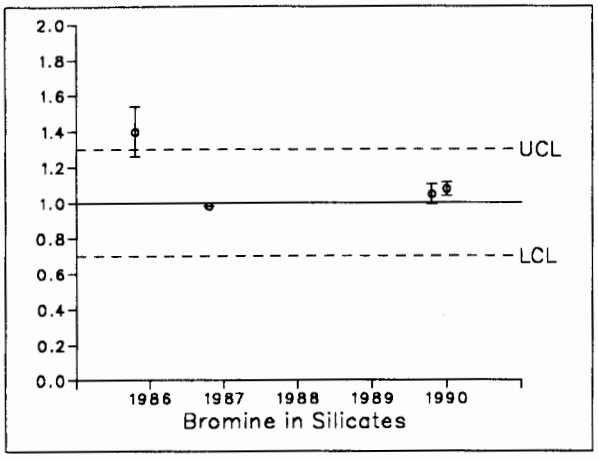
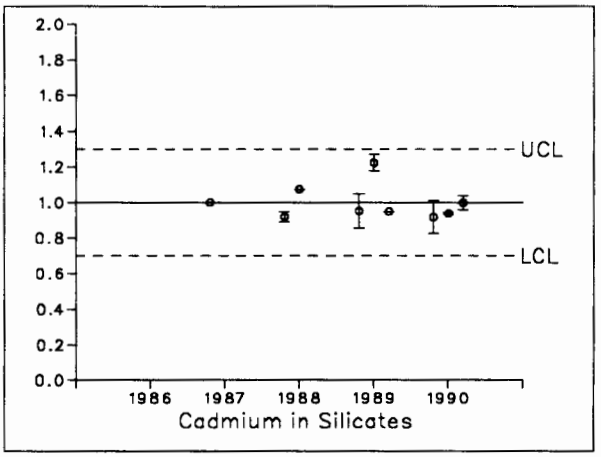
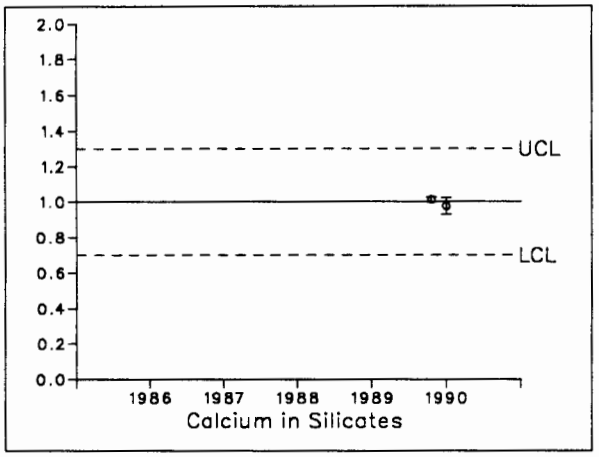
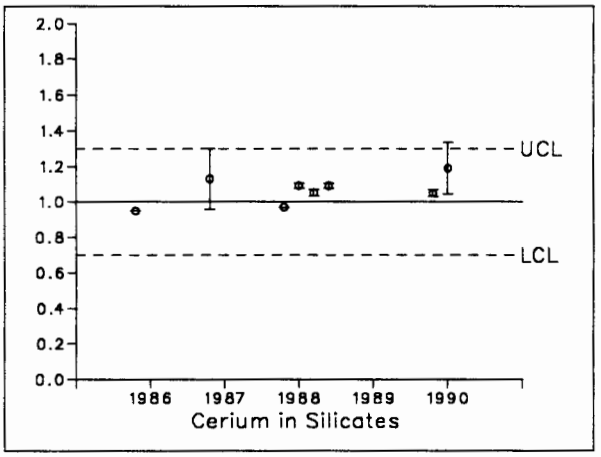

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Boron in Silicates

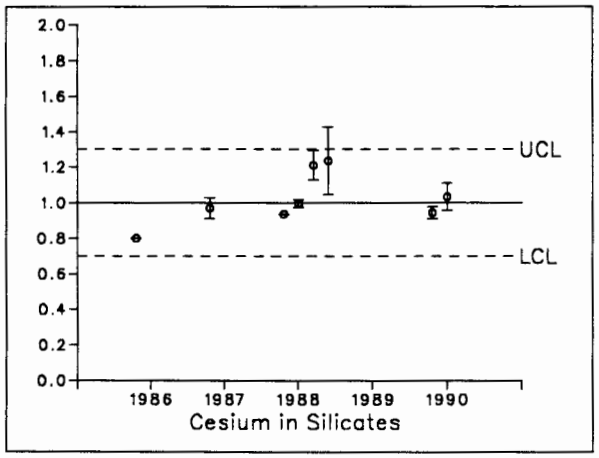
Fig. D-1. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Bromine in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Cadmium in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Calcium in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Cerium in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Cesium in Silicates

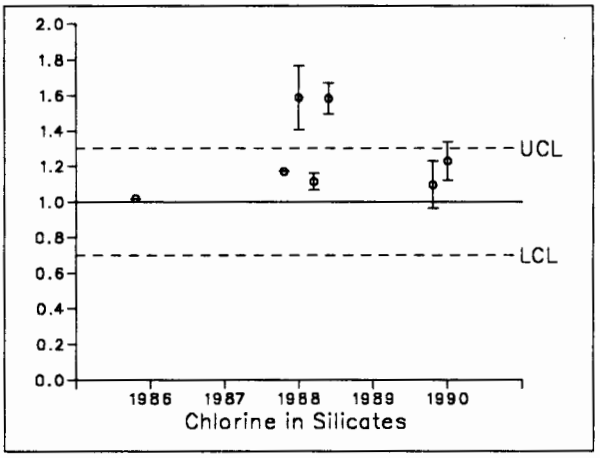
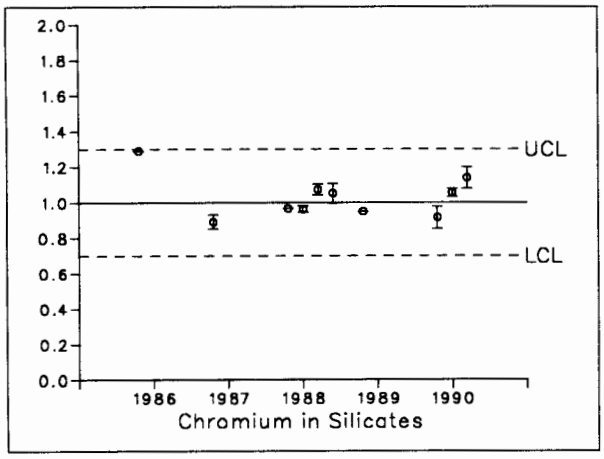
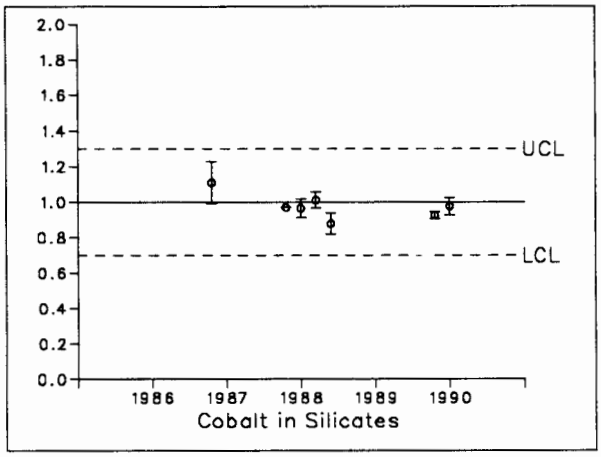
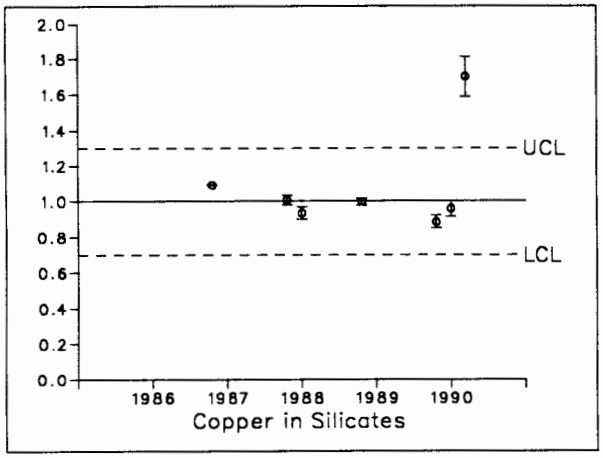
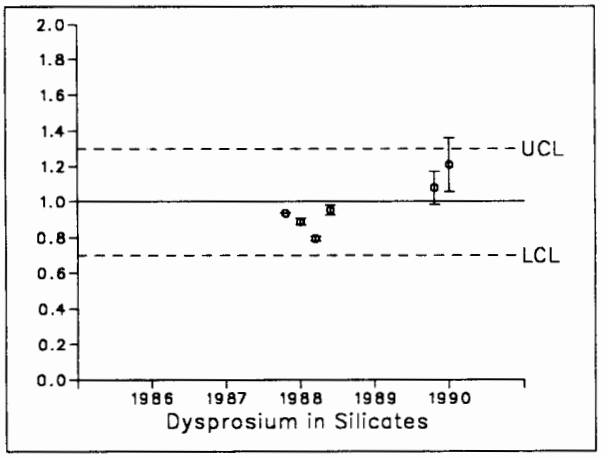

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Chlorine in Silicates

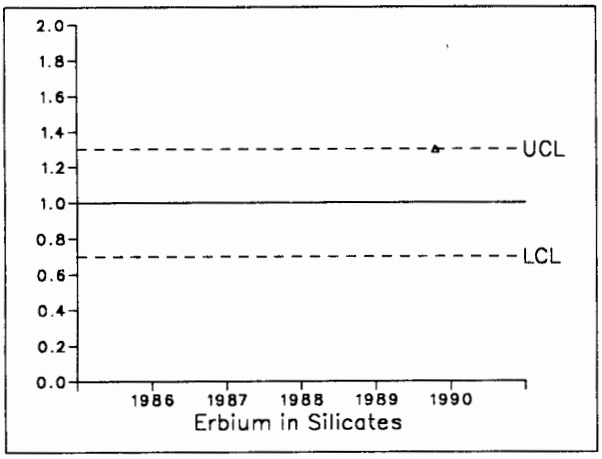
Fig. D-1. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Chromium in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Cobalt in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Copper in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Dysprosium in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Erbium in Silicates

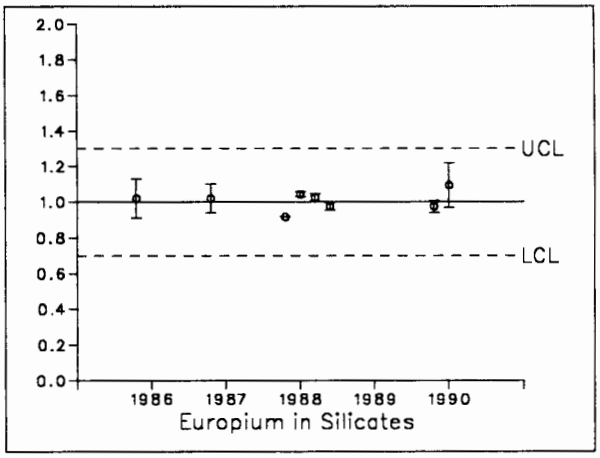
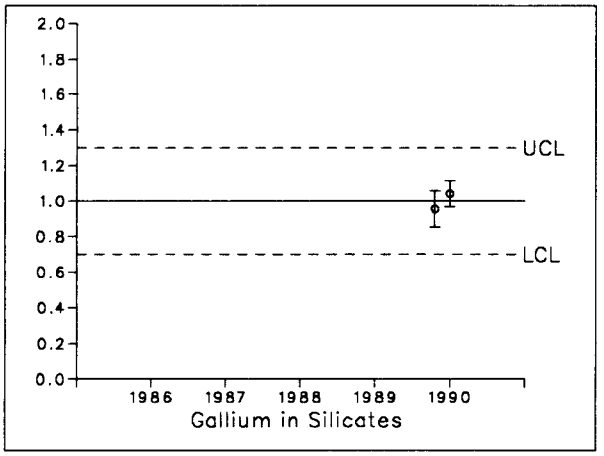
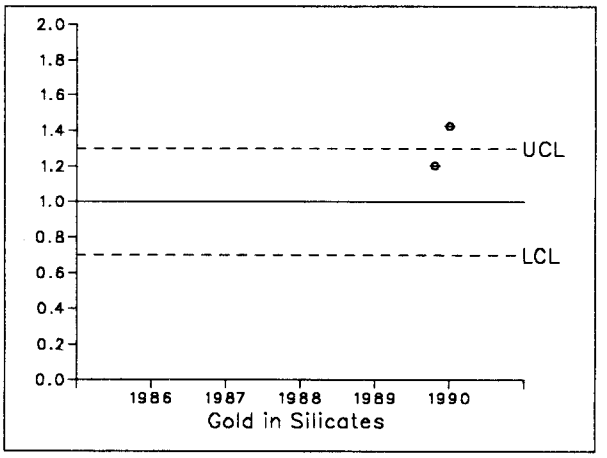
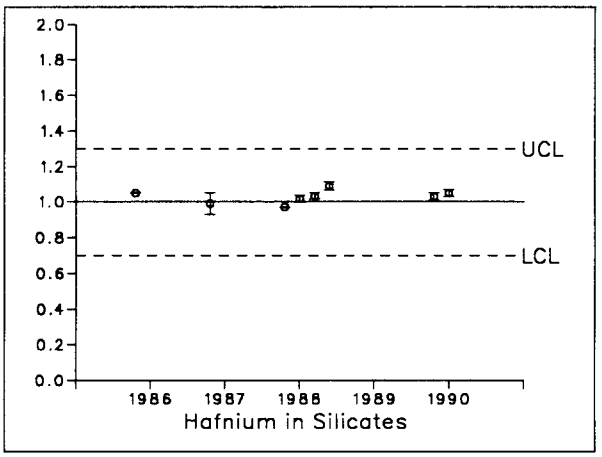
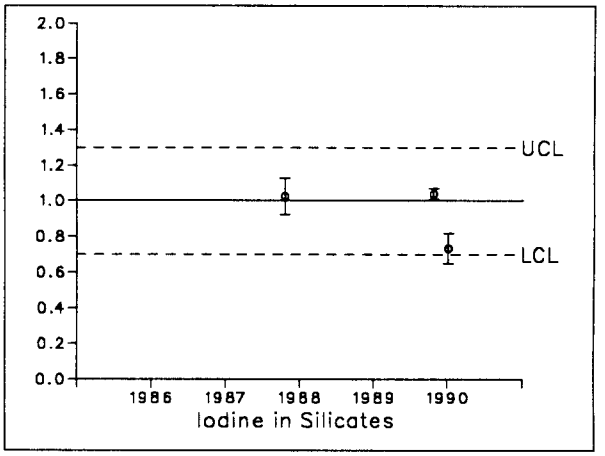

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Europium in Silicates

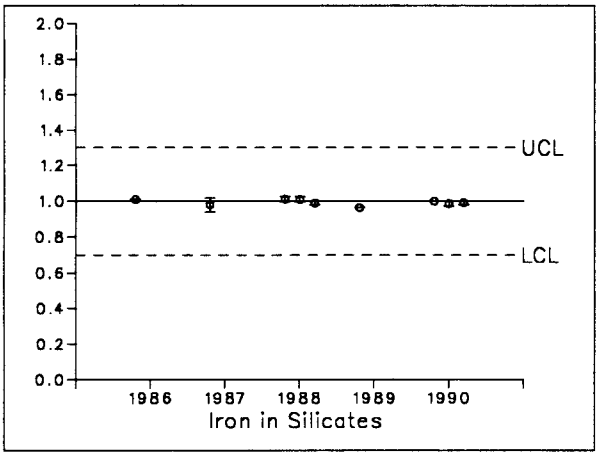
Fig. D-1. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Gallium in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Gold in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Hafnium in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Iodine in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Iron in Silicates

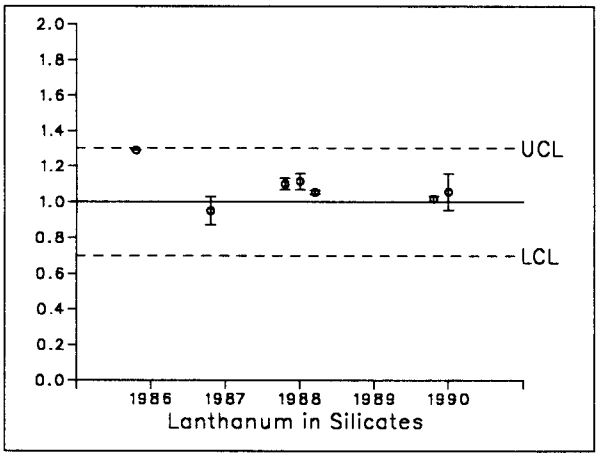
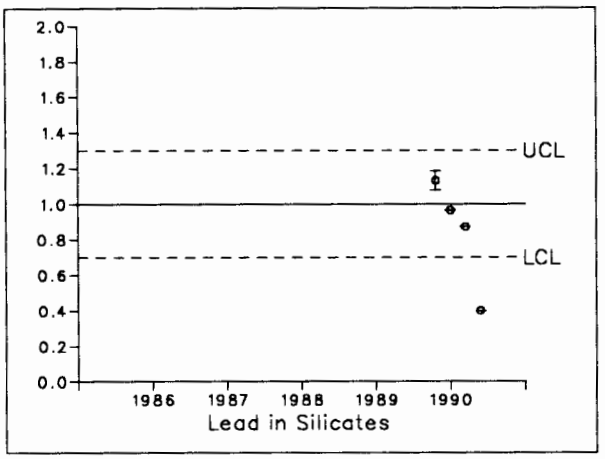
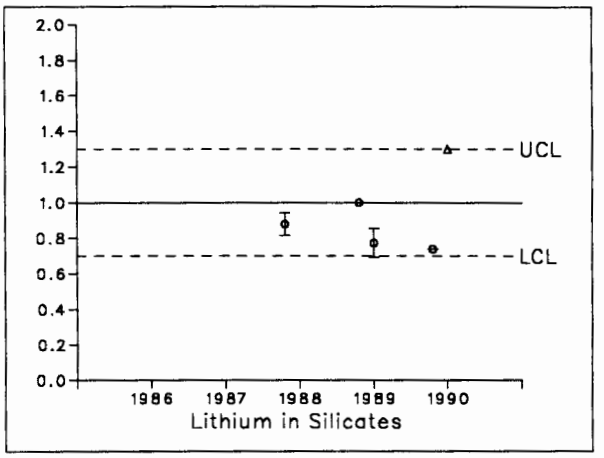
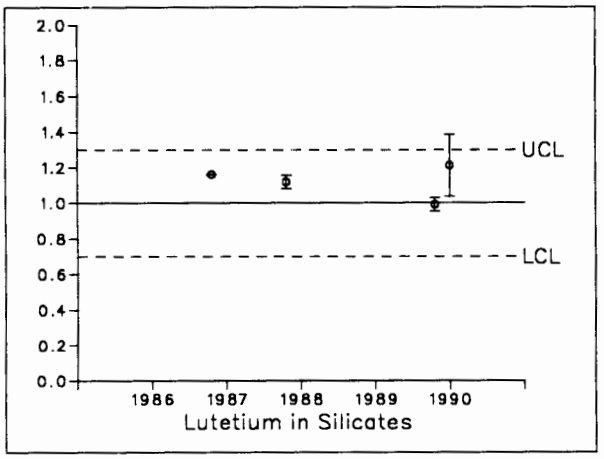
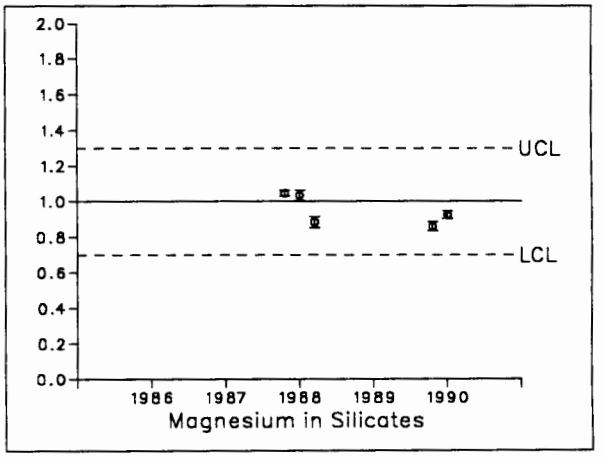

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Lanthanum in Silicates

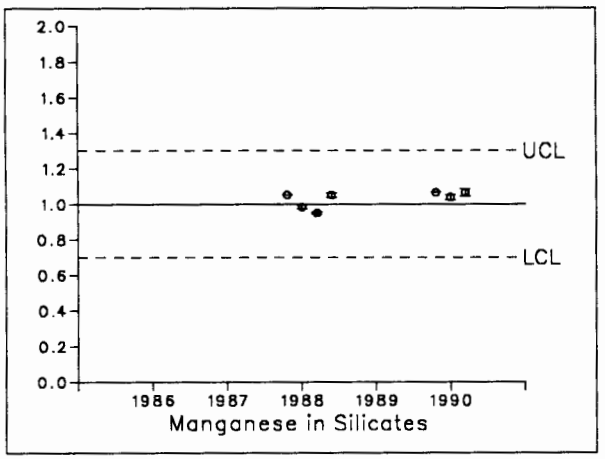
Fig. D-1. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Lead in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Lithium in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Lutetium in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Magnesium in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Manganese in Silicates

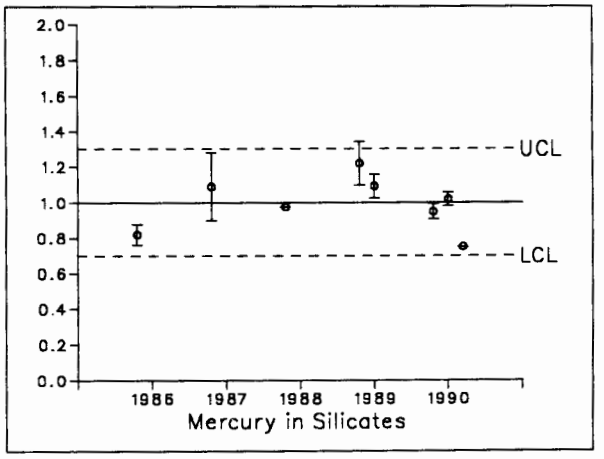
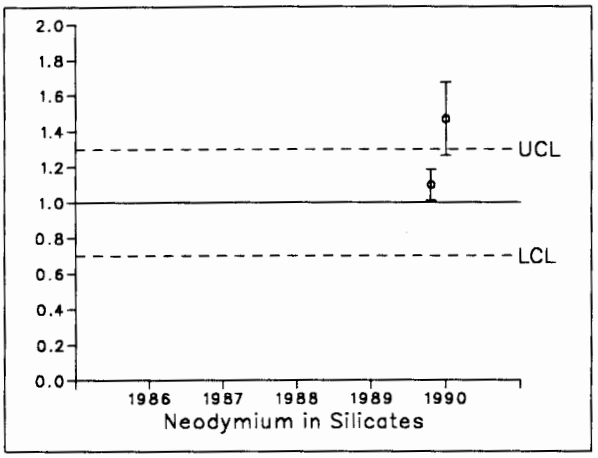
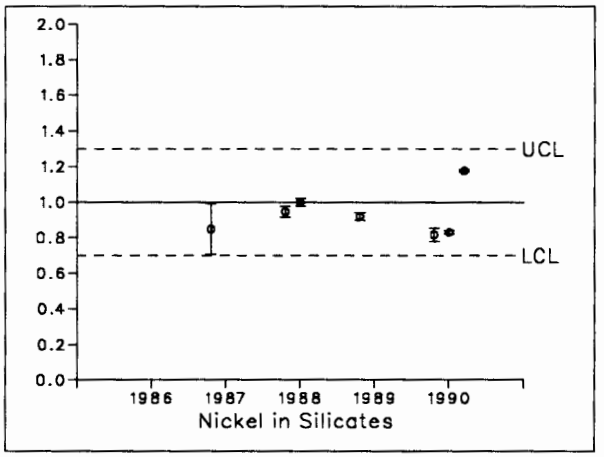
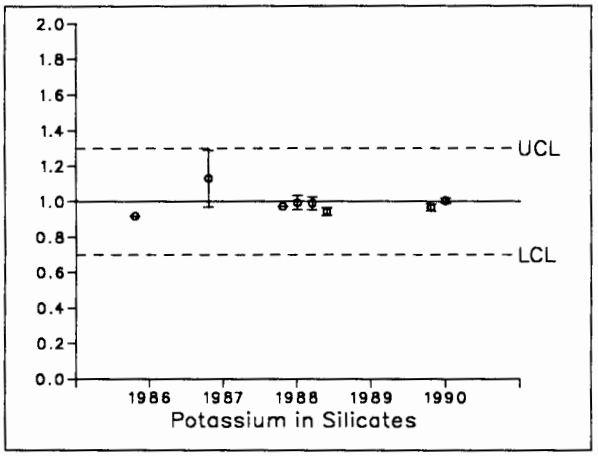
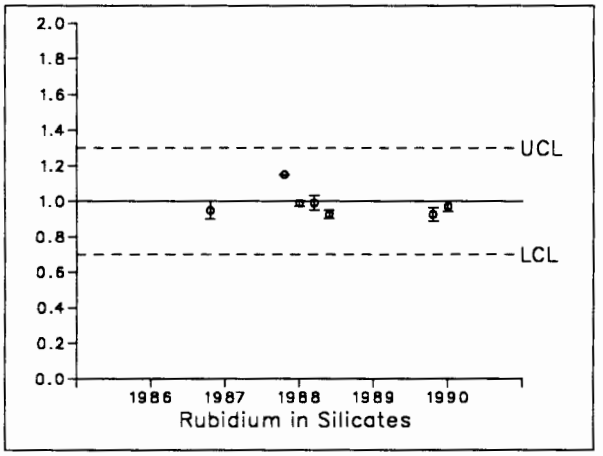

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Mercury in Silicates

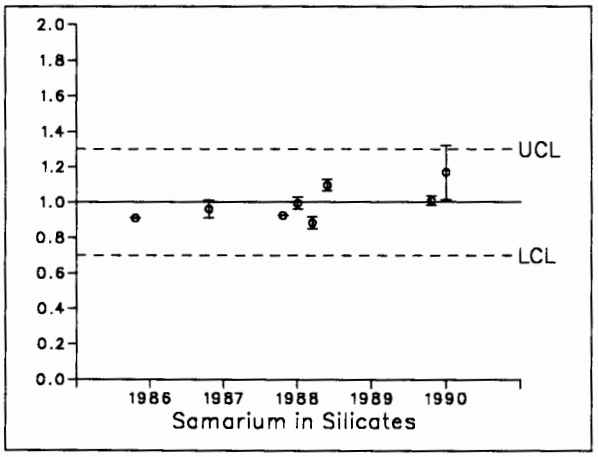
Fig. D-1. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Neodymium in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Nickel in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Potassium in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Rubidium in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Samarium in Silicates

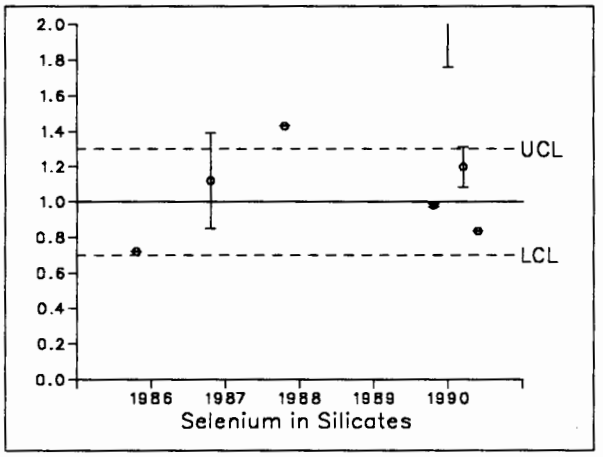
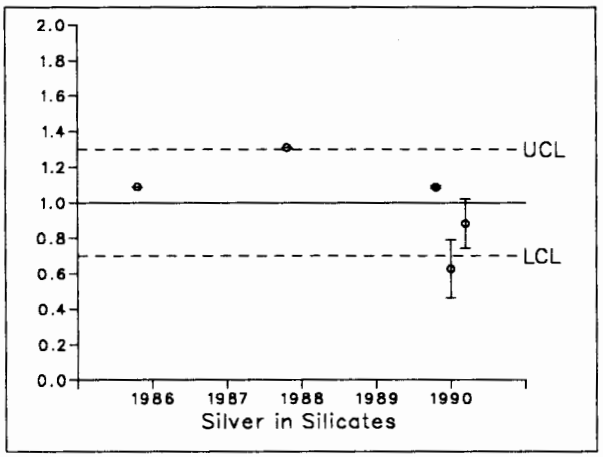
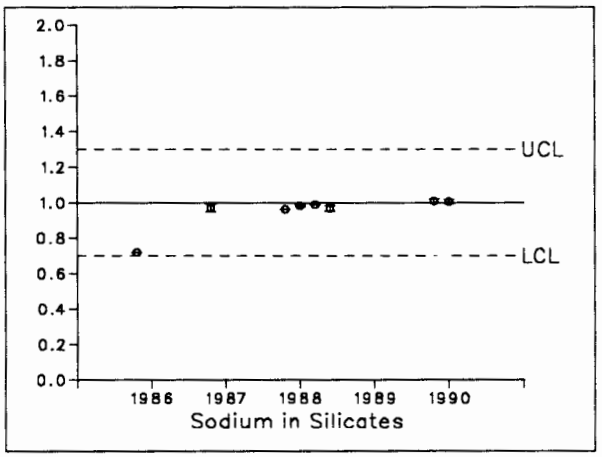
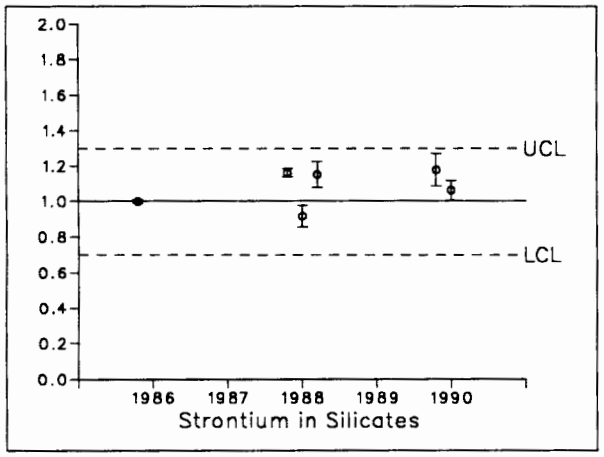
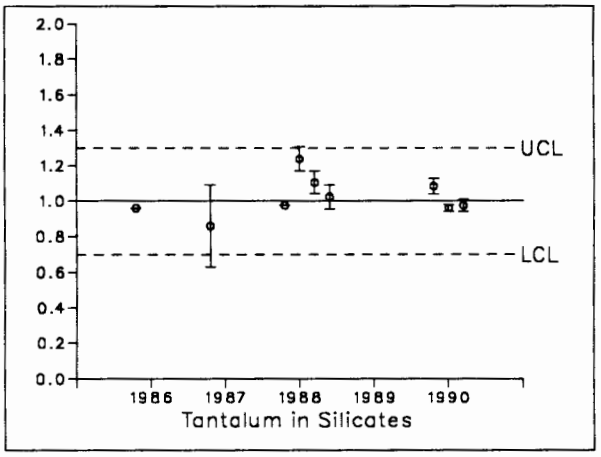

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Selenium in Silicates

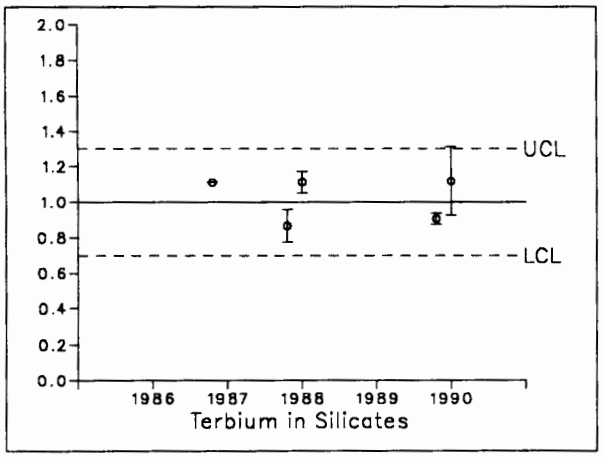
Fig. D-1. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Silver in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Sodium in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Strontium in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Tantalum in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Terbium in Silicates

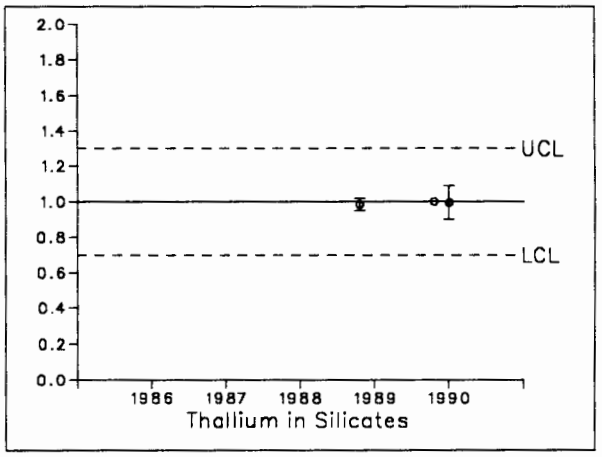
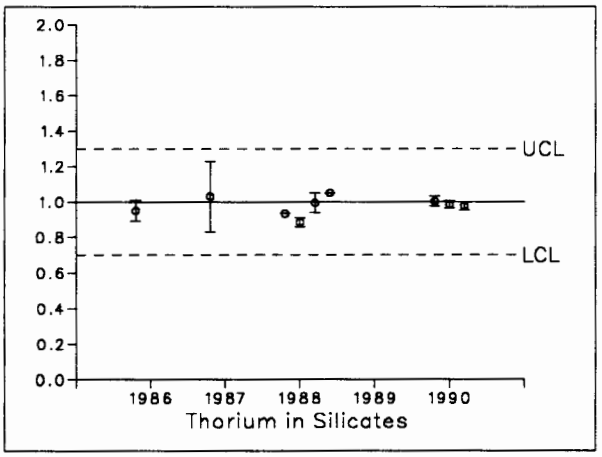
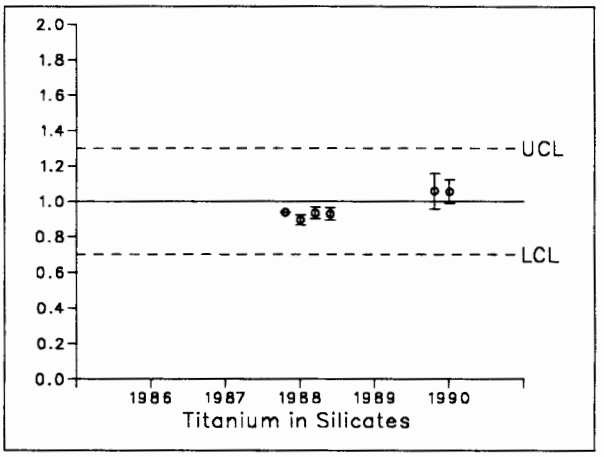
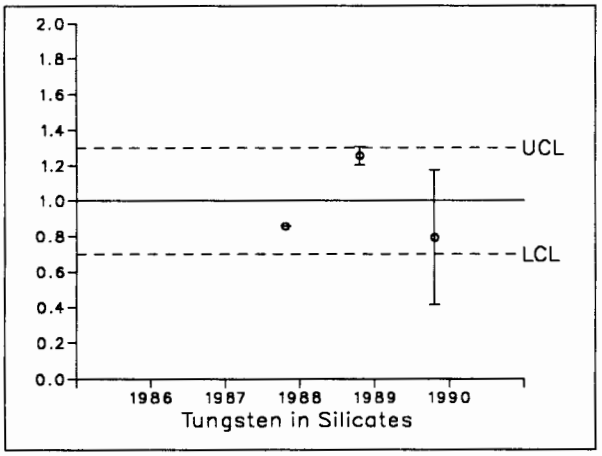
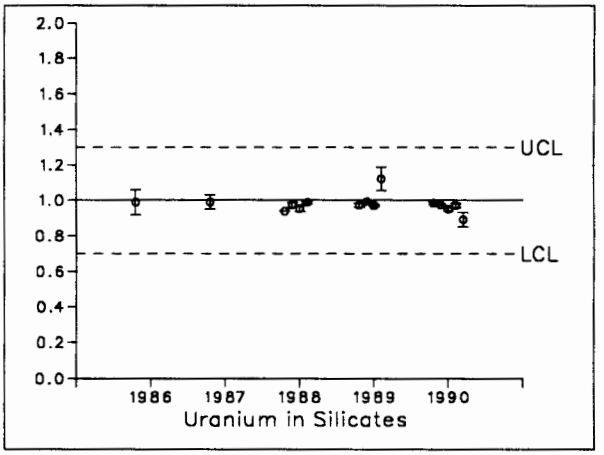

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Thallium in Silicates

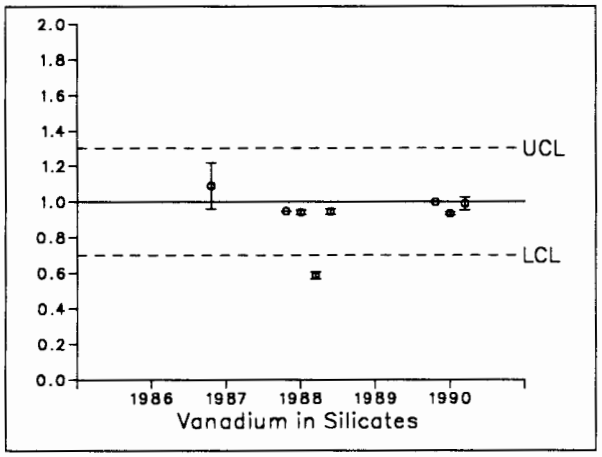
Fig. D-1. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Thorium in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Titanium in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Tungsten in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Uranium in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Vanadium in Silicates

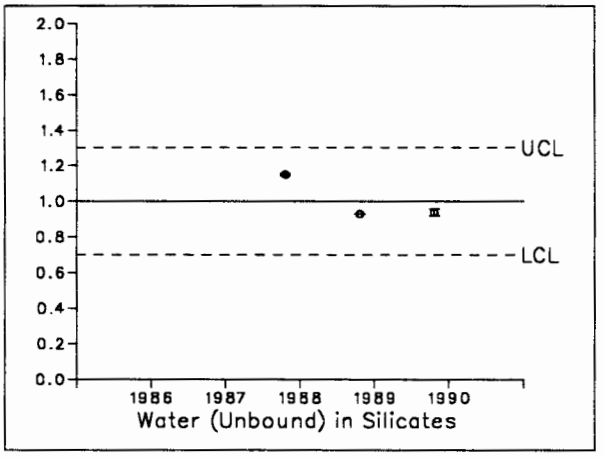
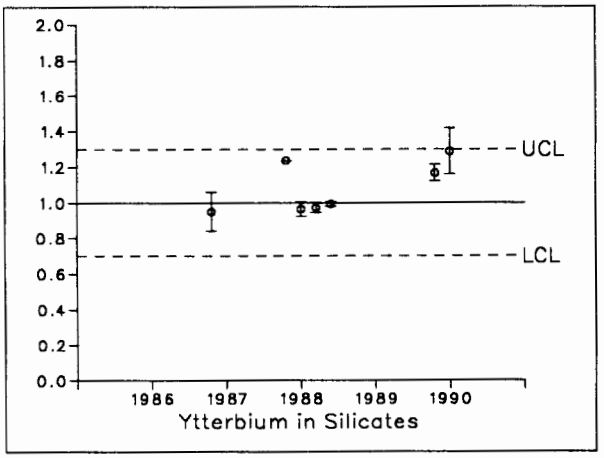
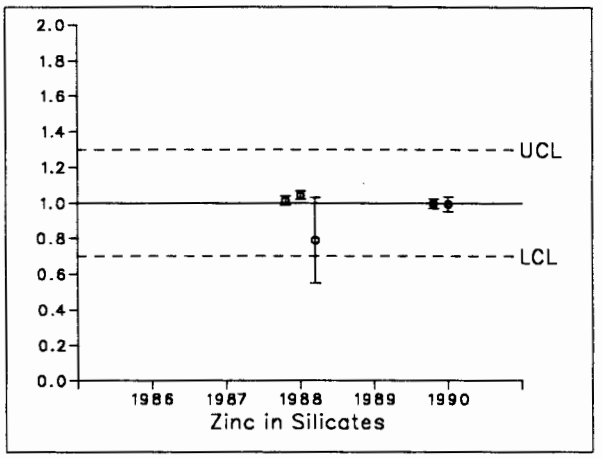
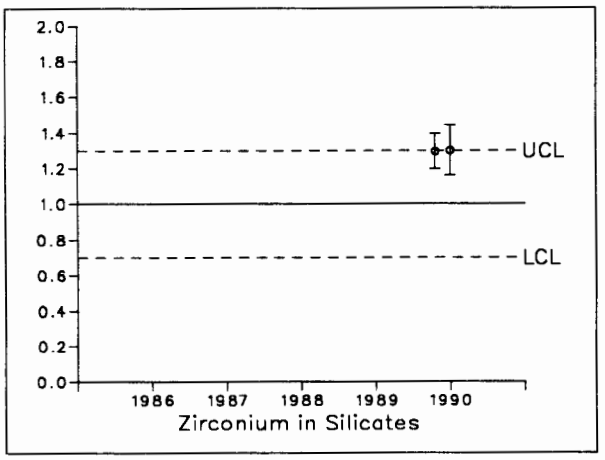
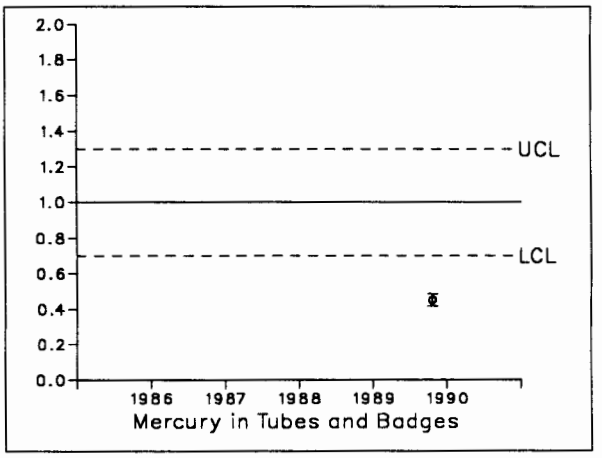

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Water (Unbound) in Silicates

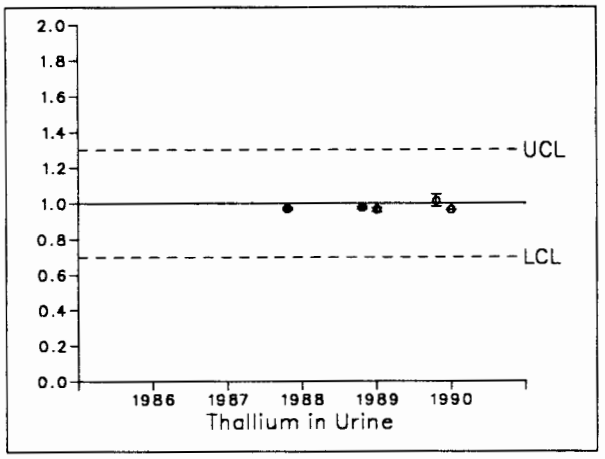
Fig. D-1. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Ytterbium in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Zinc in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Zirconium in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Mercury in Tubes and Badges


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Thallium in Urine

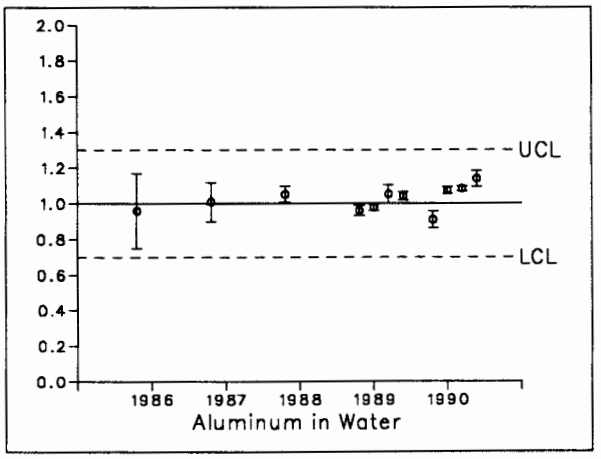
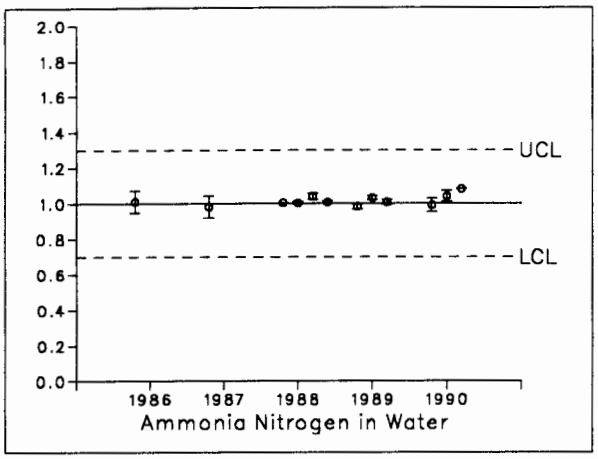
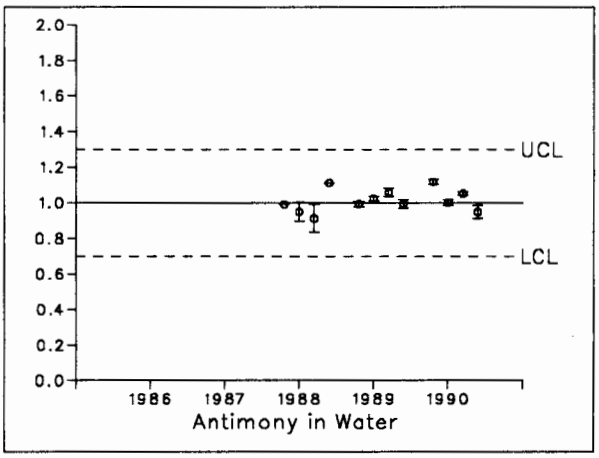
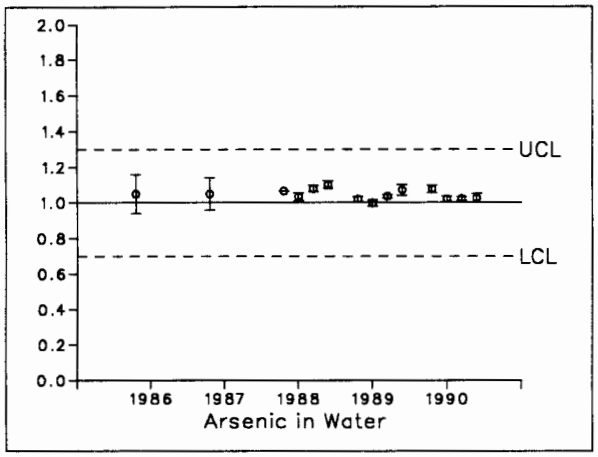
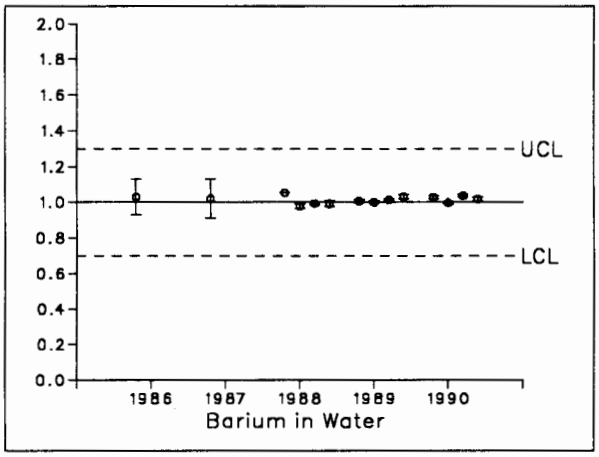

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Aluminum in Water

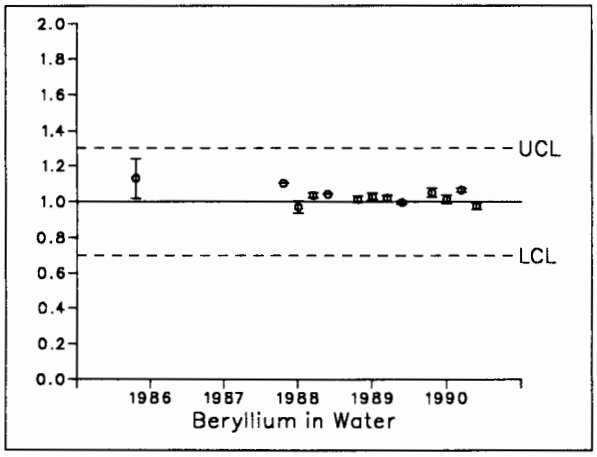
Fig. D-1. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Ammonia Nitrogen in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Antimony in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Arsenic in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Barium in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Beryllium in Water

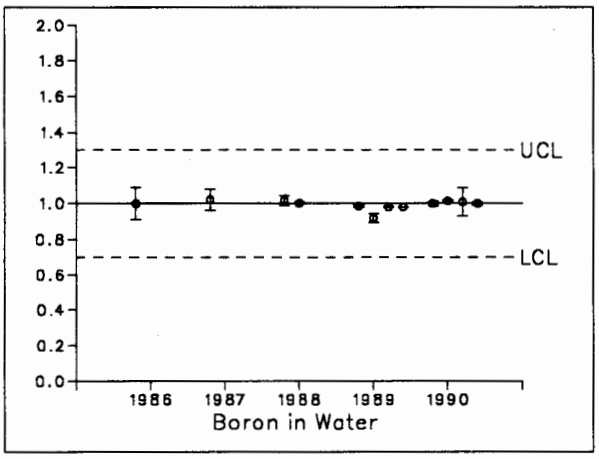
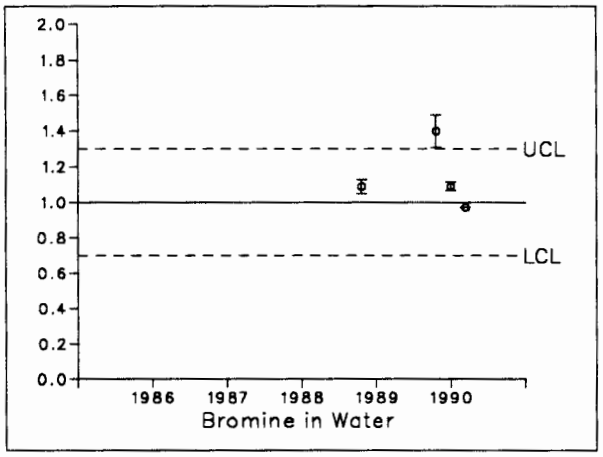
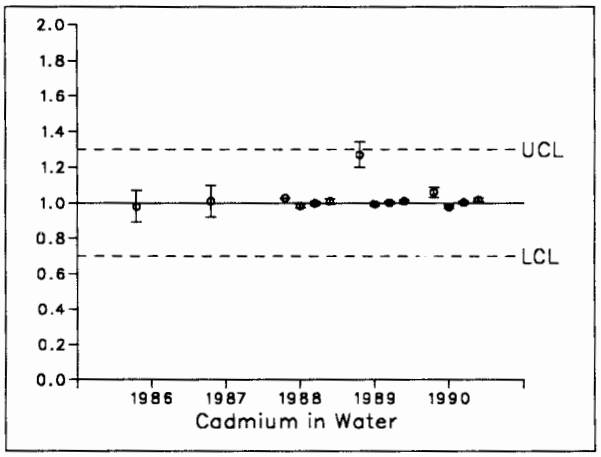
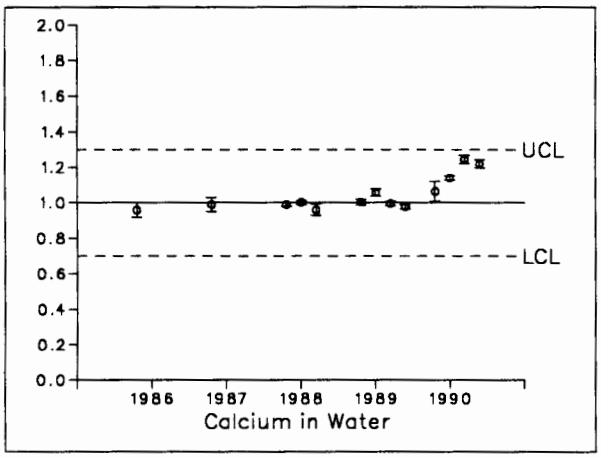
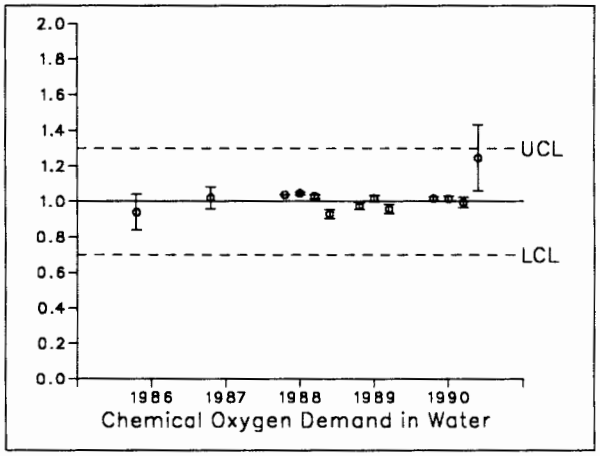

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Boron in Water

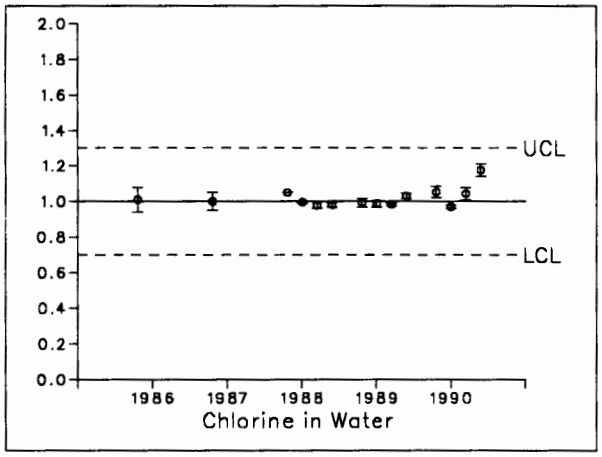
Fig. D-1. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Bromine in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Cadmium in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Calcium in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Chemical Oxygen Demand in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Chlorine in Water

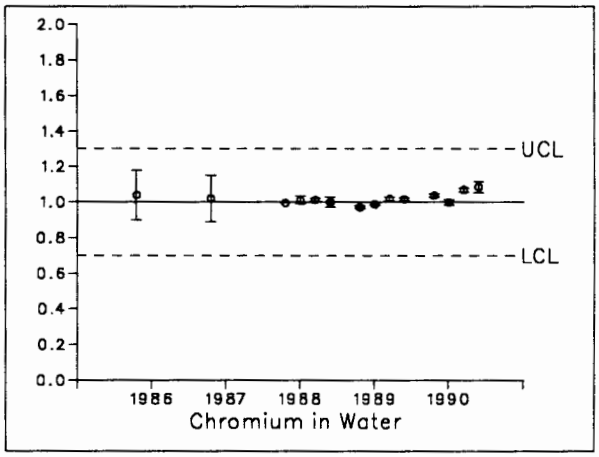
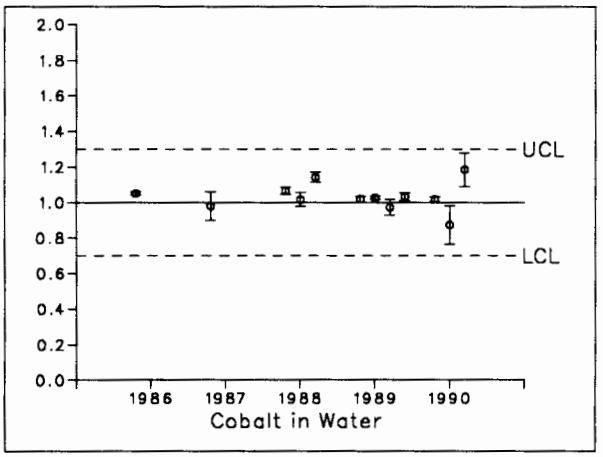
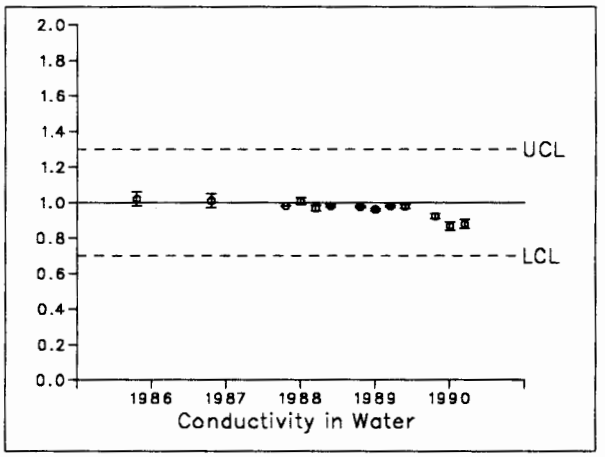
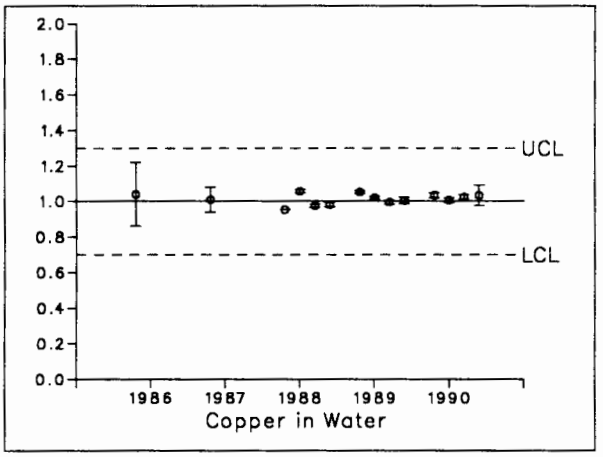
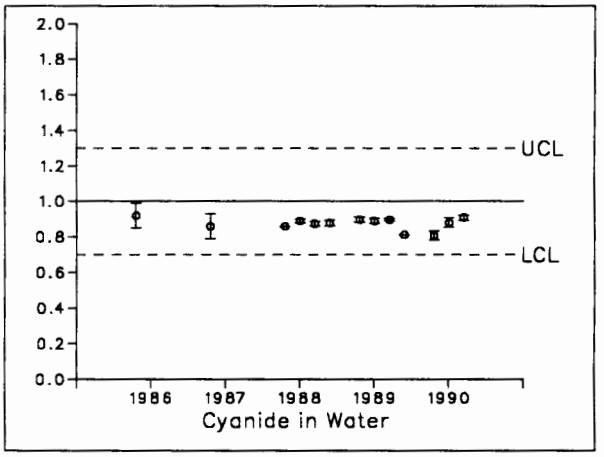

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Chromium in Water

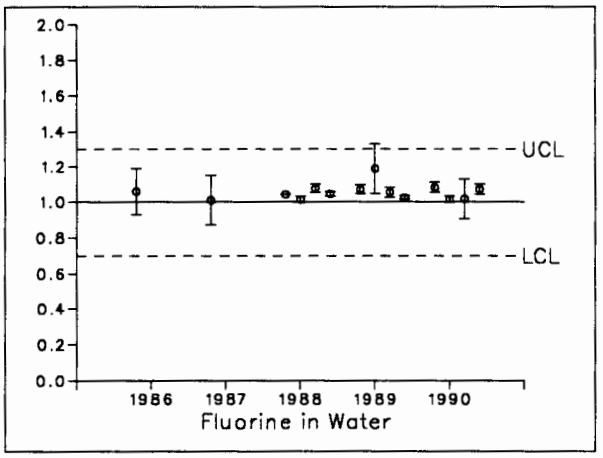
Fig. D-1. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Cobalt in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Conductivity in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Copper in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Cyanide in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Fluorine in Water

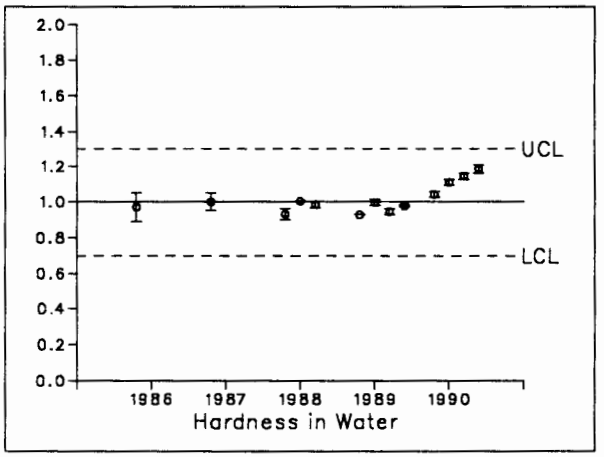

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Hardness in Water

Fig. D-1. (cont)

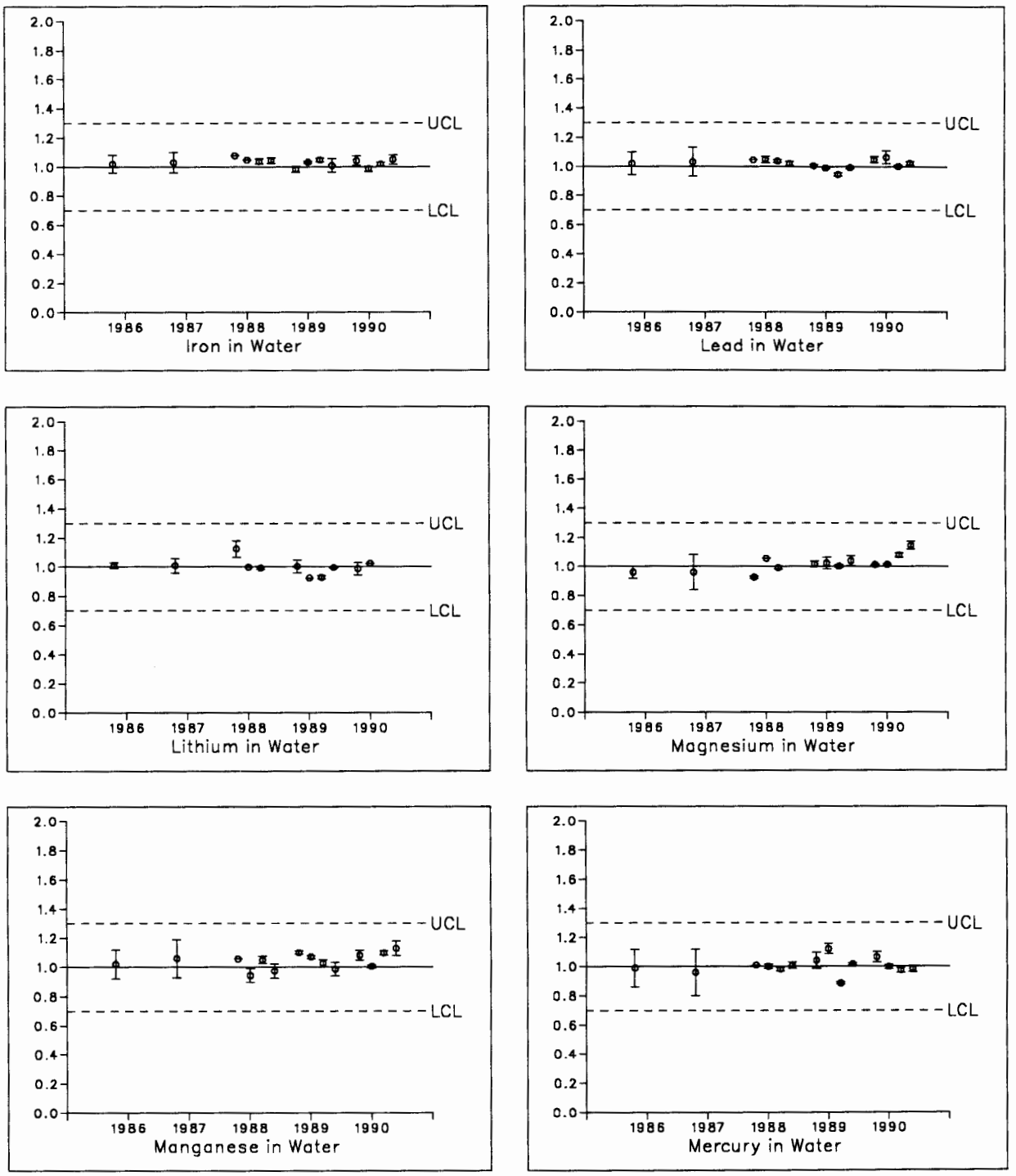
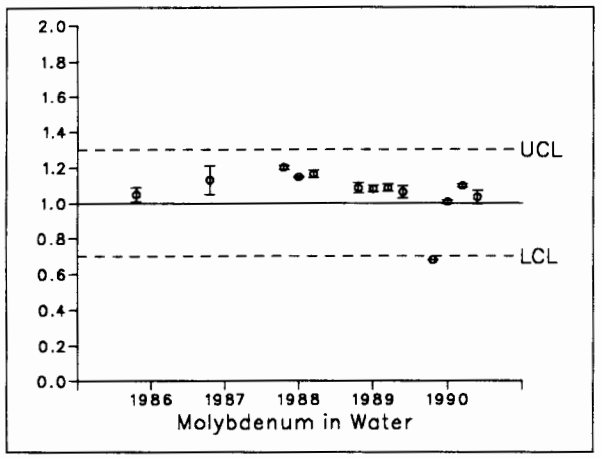
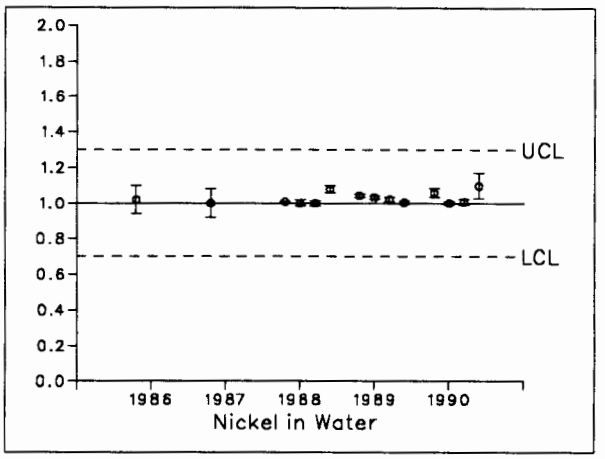
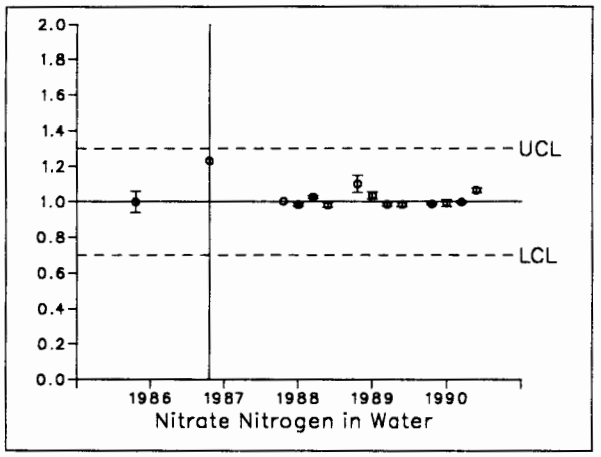
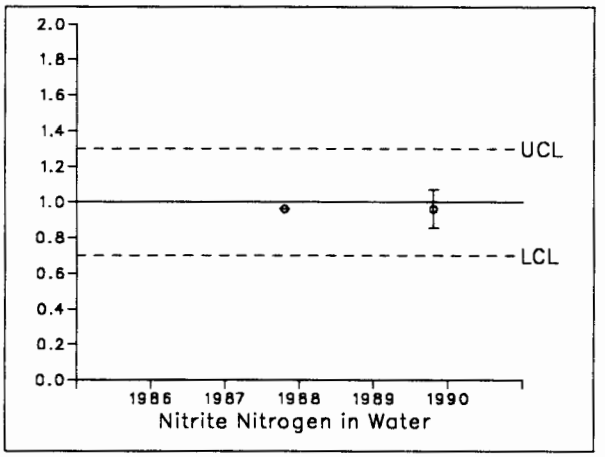

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Iron in Water
Lead in Water
Lithium in Water
Magnesium in Water
Manganese in Water
Mercury in Water

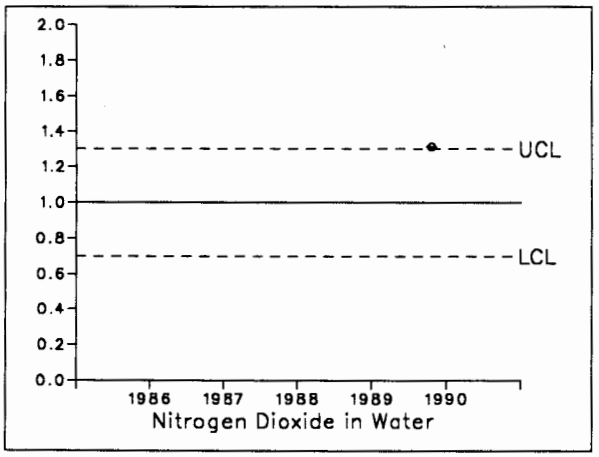
Fig. D-1. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Molybdenum in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Nickel in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Nitrate Nitrogen in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Nitrite Nitrogen in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Nitrogen Dioxide in Water

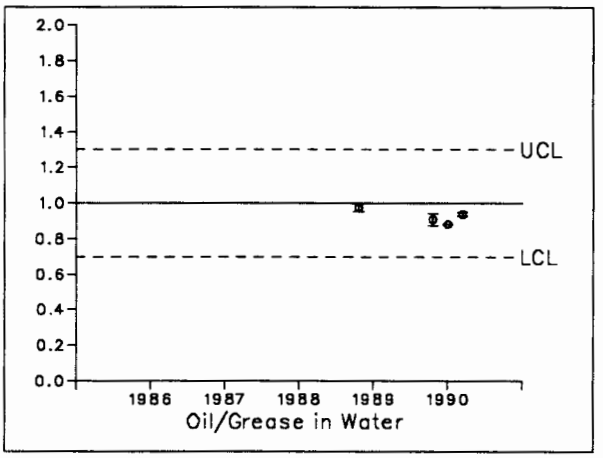
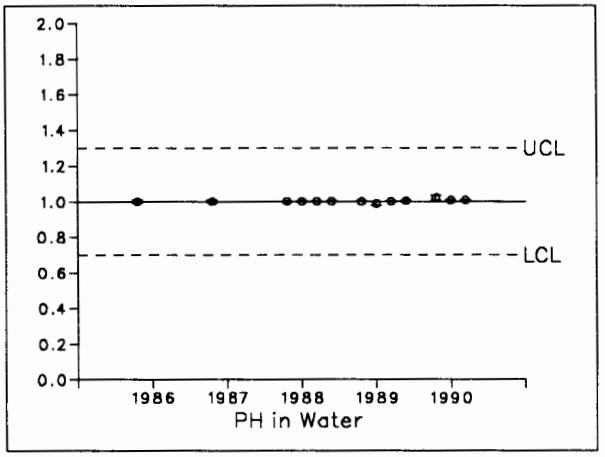
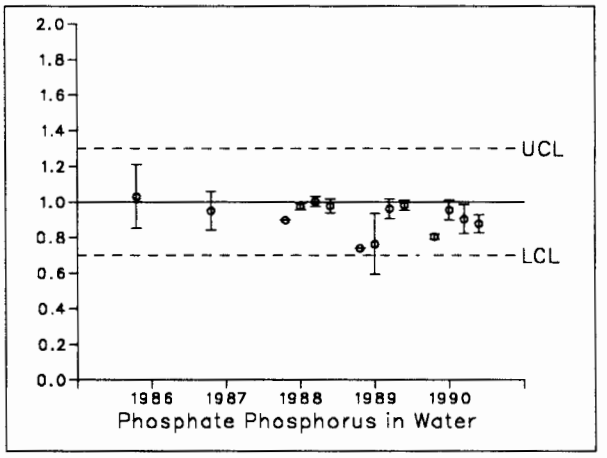
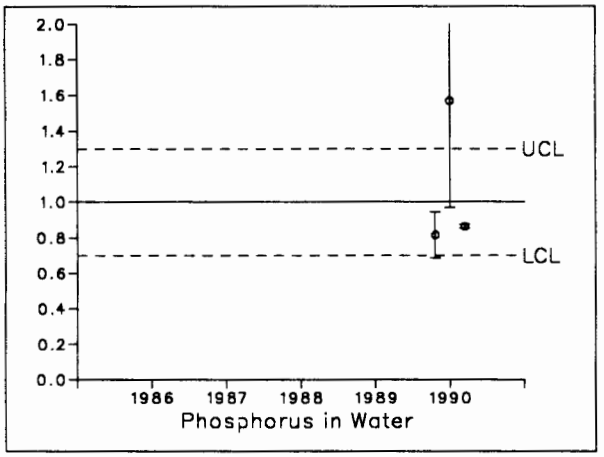
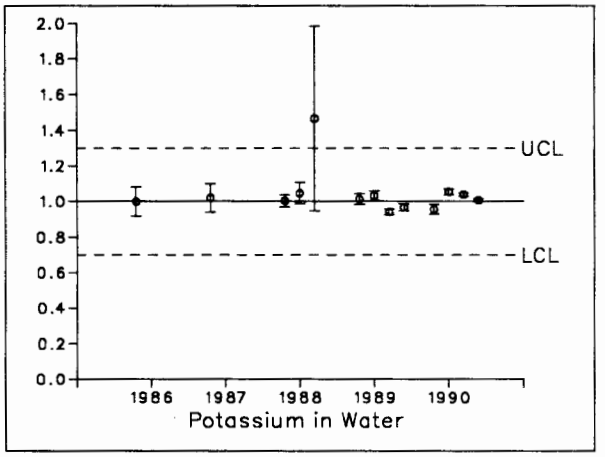

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Oil/Grease in Water

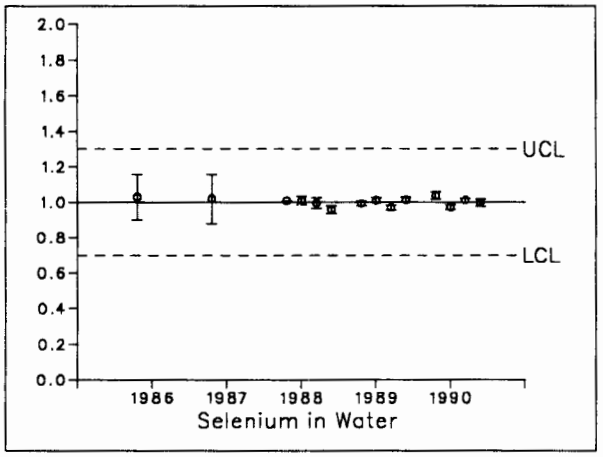
Fig. D-1. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
PH in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Phosphate Phosphorus in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Phosphorus in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Potassium in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Selenium in Water

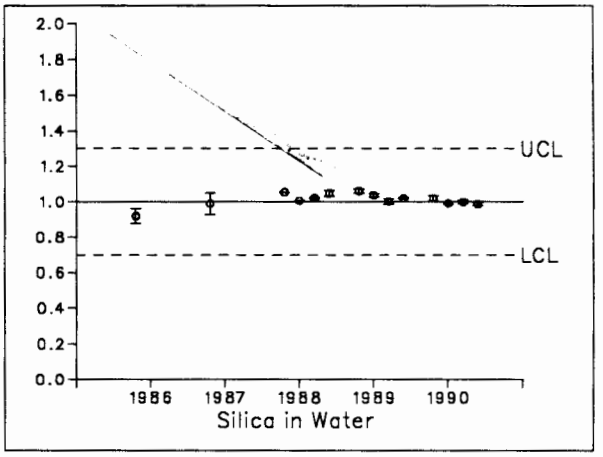

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Silica in Water

Fig. D-1. (cont)

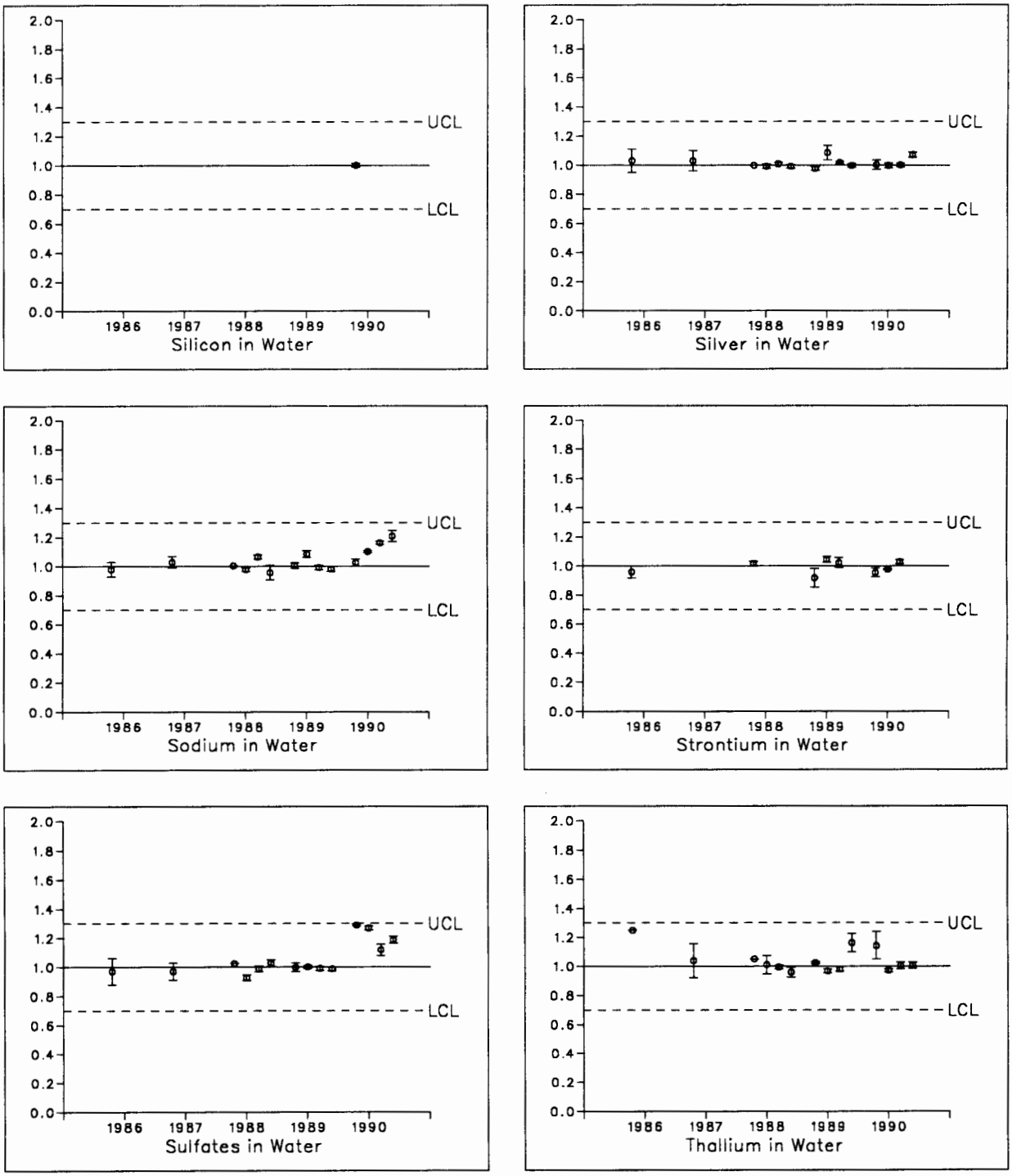
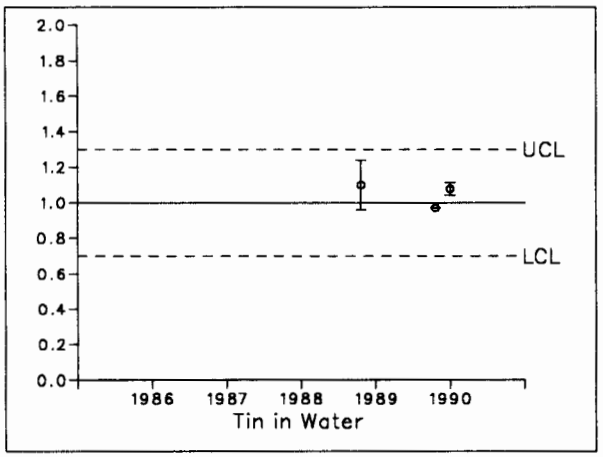
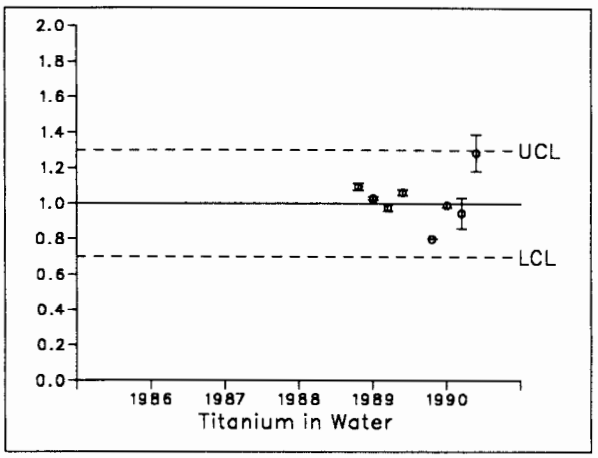
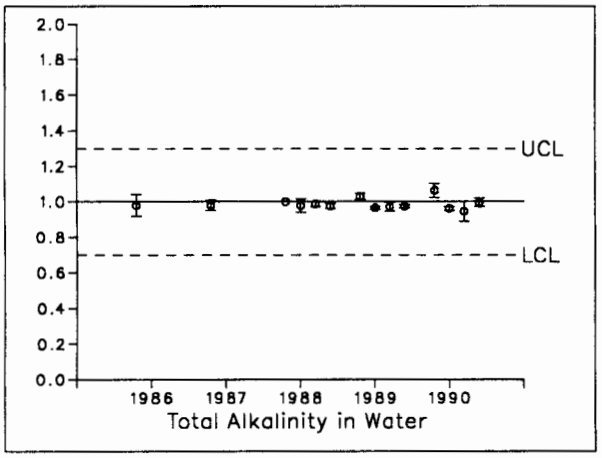
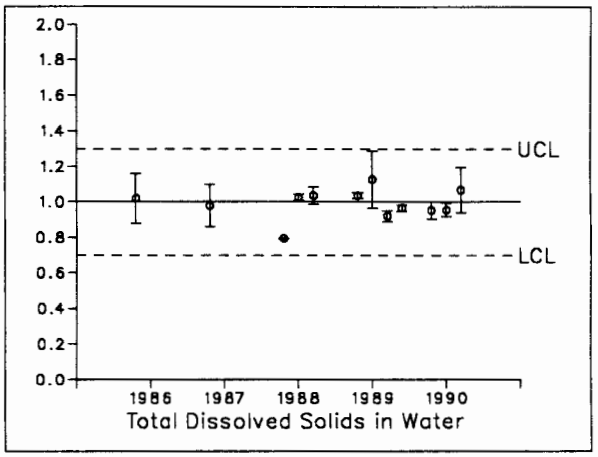

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Silicon in Water
Silver in Water
Sodium in Water
Strontium in Water
Sulfates in Water
Thallium in Water

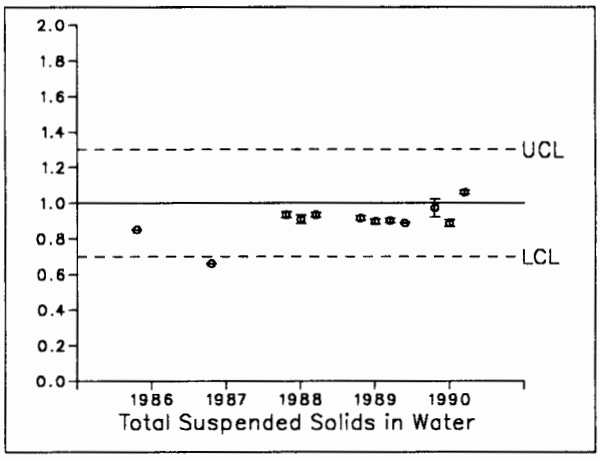
Fig. D-1. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Tin in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Titanium in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Total Alkalinity in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Total Dissolved Solids in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Total Suspended Solids in Water

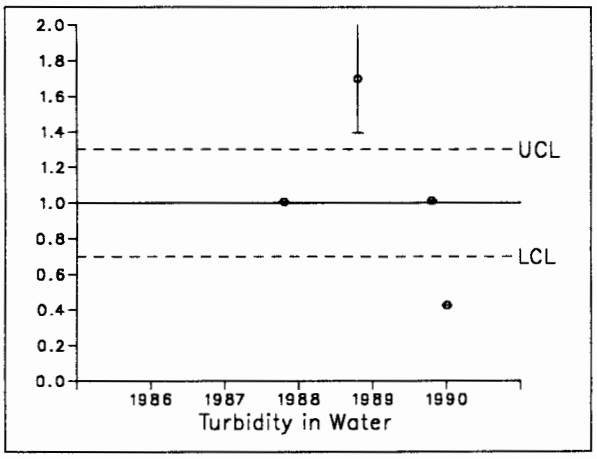
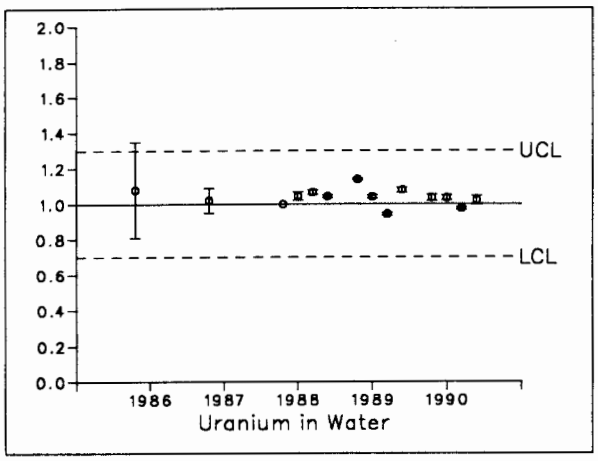
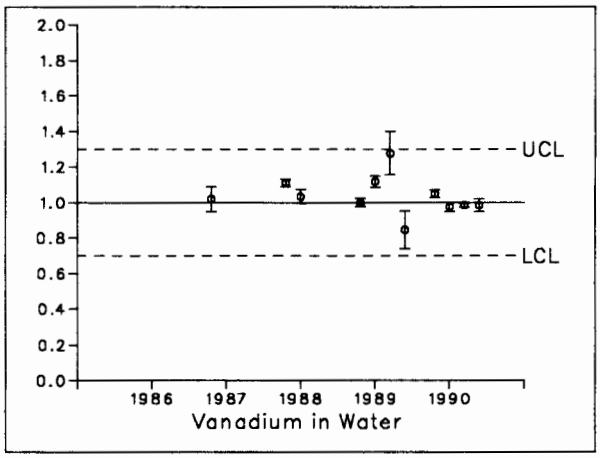

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Turbidity in Water

Fig. D-1. (cont)





NOTE: △ ▽ indicates data points beyond the ± 3 σ control limits.

Fig. D-1. (cont)

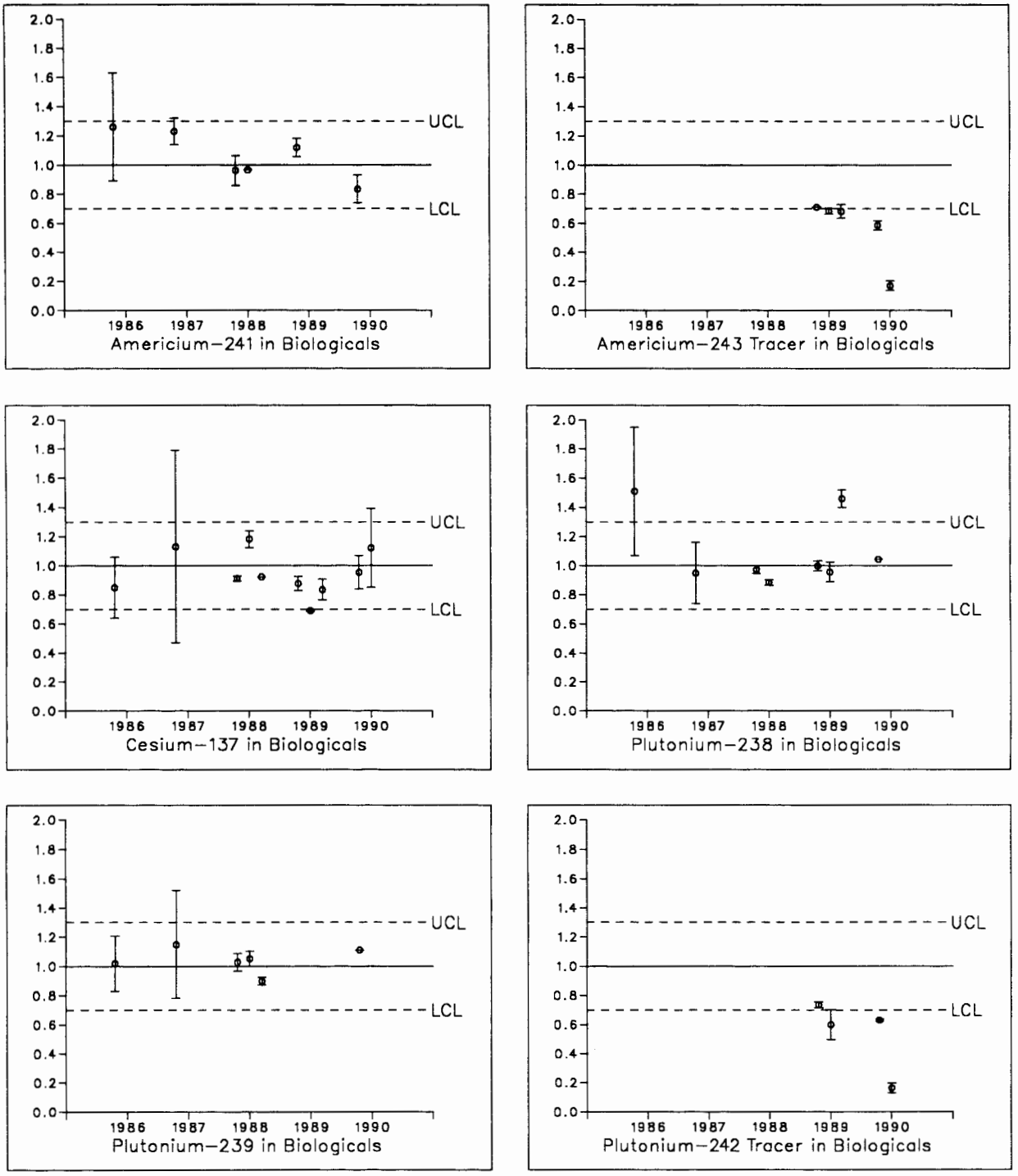


Fig. D-2. Five-year trends in quality assurance data for radiochemical analyses.

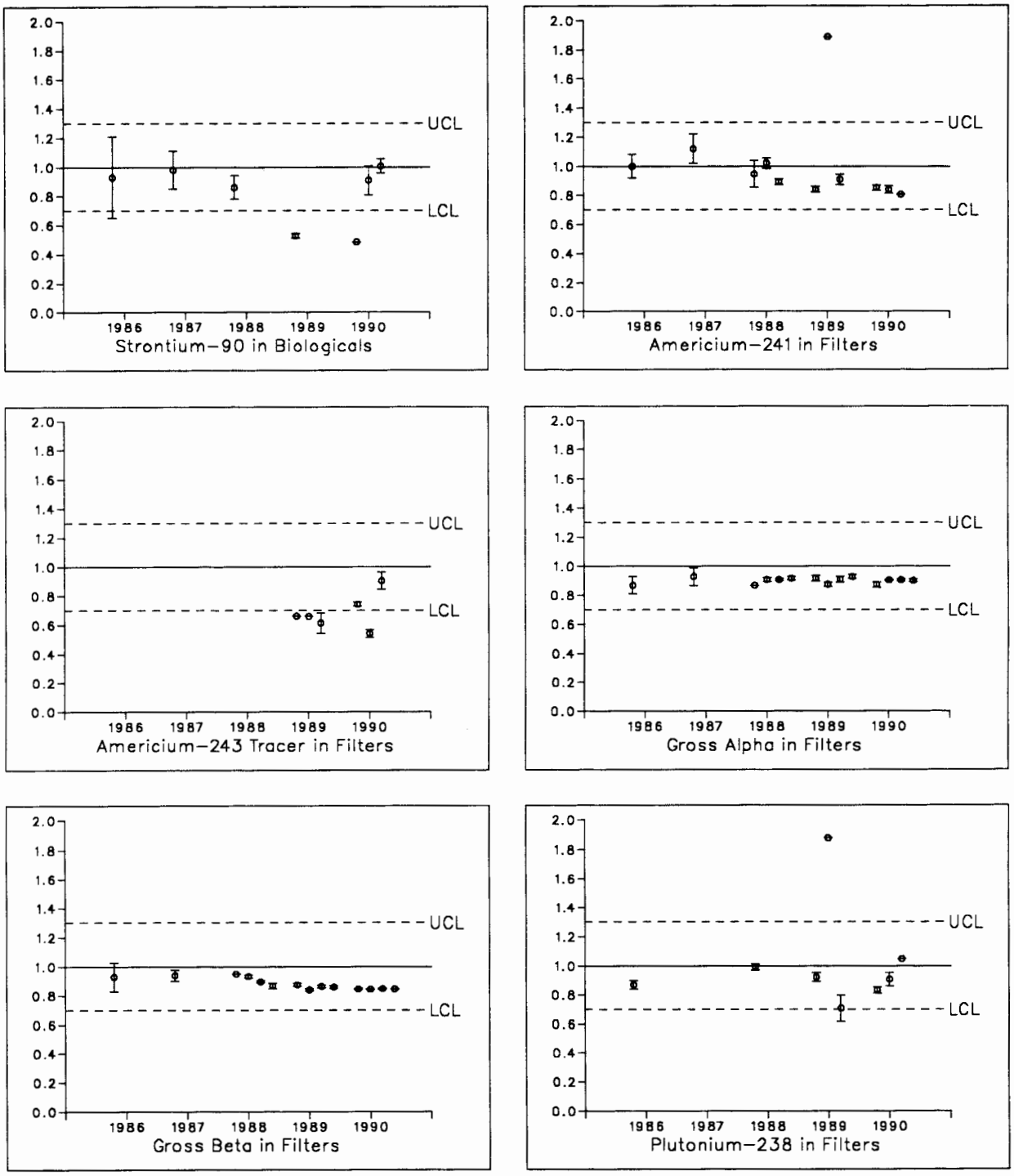

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Strontium-90 in Biologicals
Americium-241 in Filters
Americium-243 Tracer in Filters
Gross Alpha in Filters
Gross Beta in Filters
Plutonium-238 in Filters

Fig. D-2. (cont)

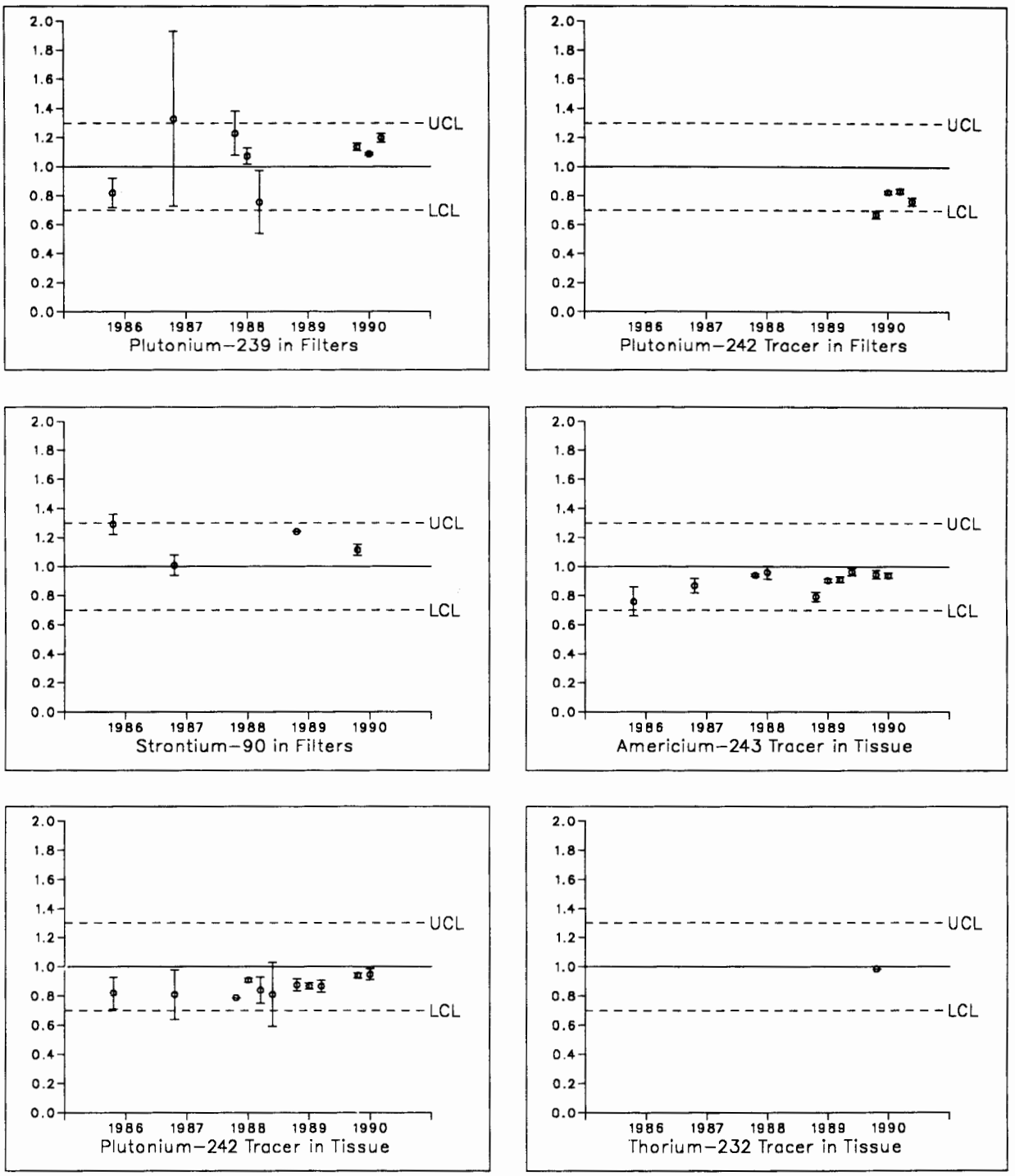
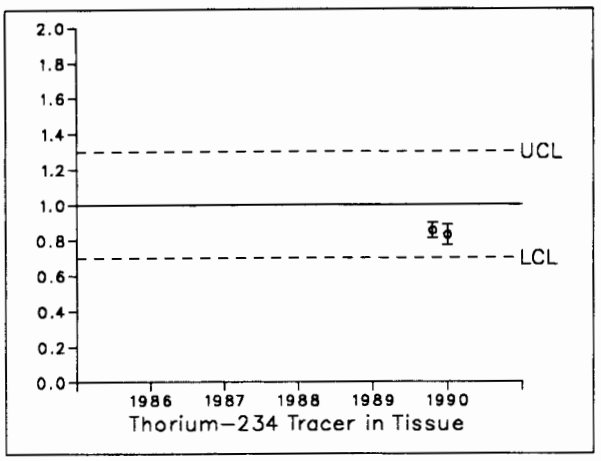
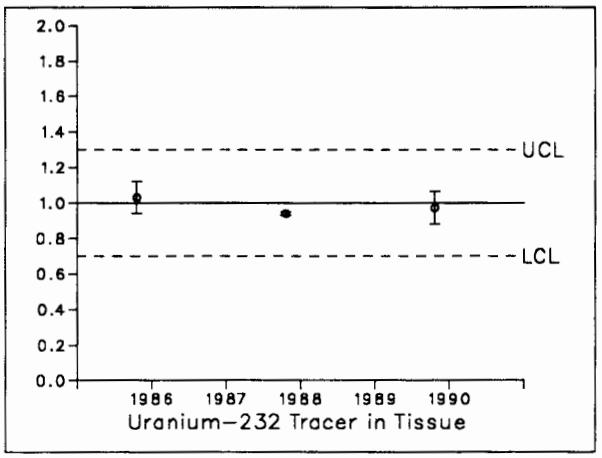
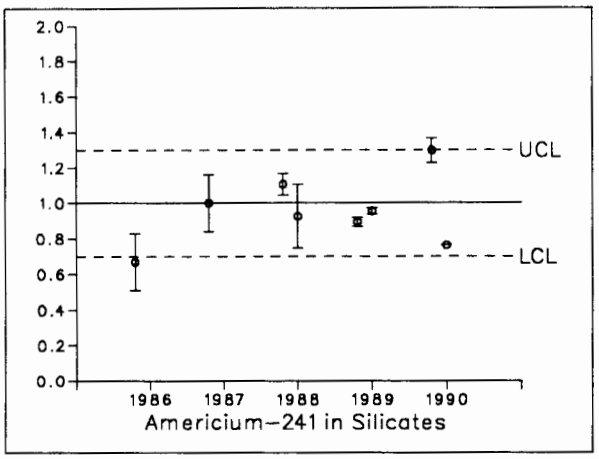
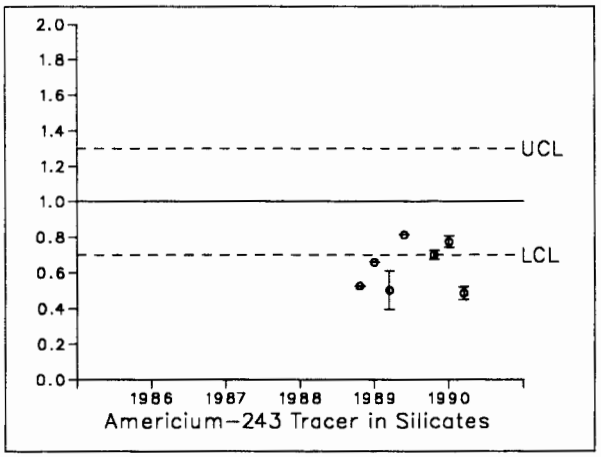

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Plutonium-239 in Filters
Plutonium-242 Tracer in Filters
Strontium-90 in Filters
Americium-243 Tracer in Tissue
Plutonium-242 Tracer in Tissue
Thorium-232 Tracer in Tissue

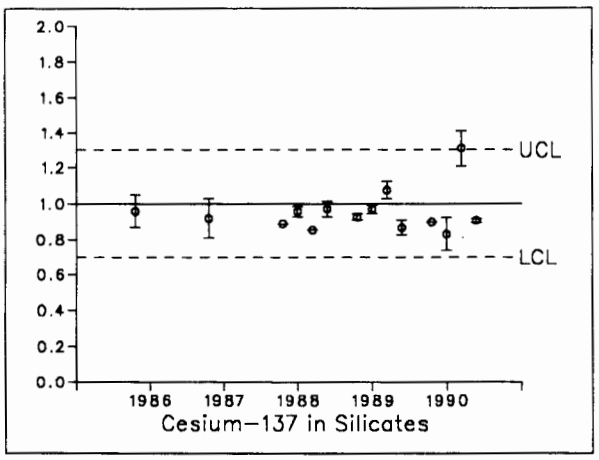
Fig. D-2. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Thorium–234 Tracer in Tissue


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Uranium–232 Tracer in Tissue


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Americium–241 in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Americium–243 Tracer in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Cesium–137 in Silicates

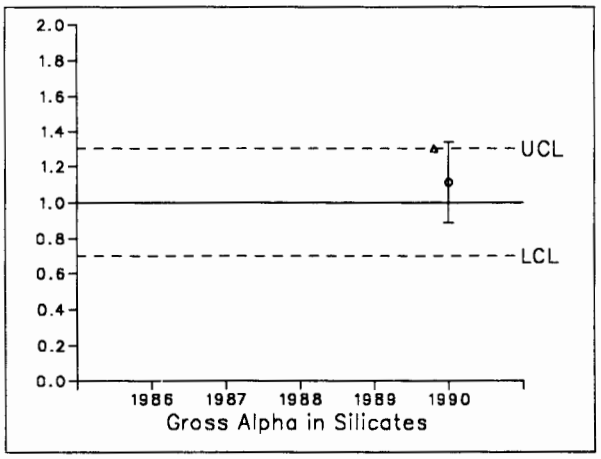
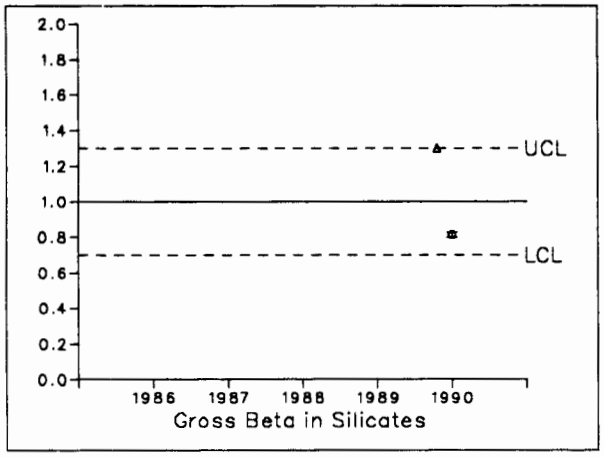
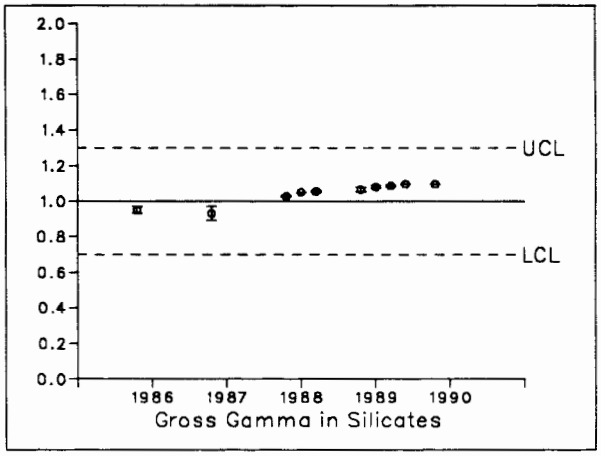
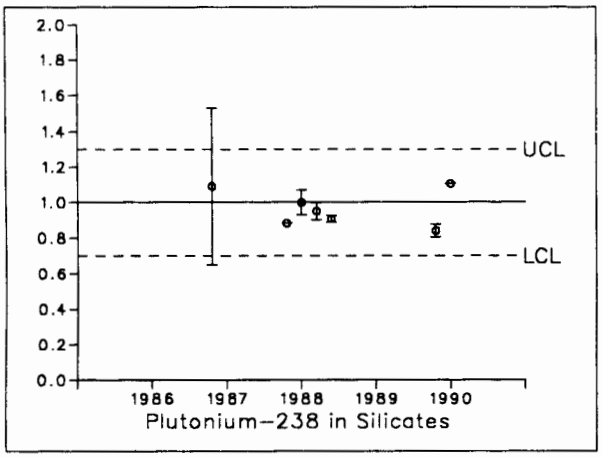
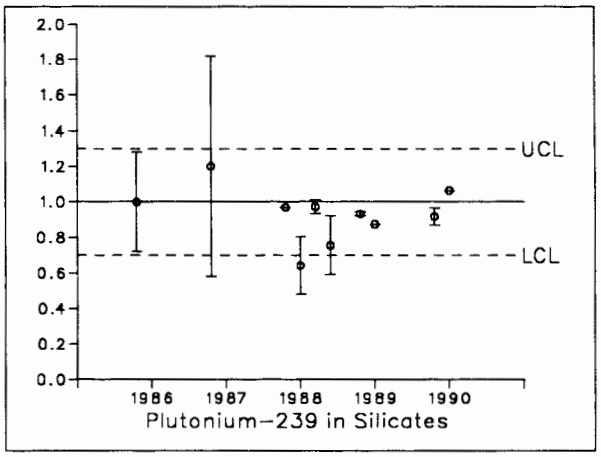

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Gross Alpha in Silicates

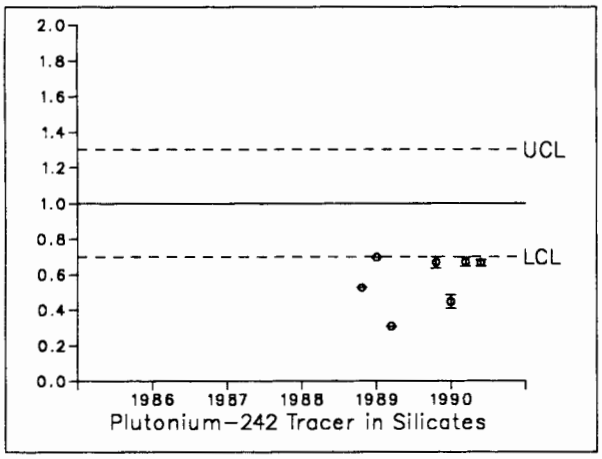
Fig. D-2. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Gross Beta in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Gross Gamma in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Plutonium-238 in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Plutonium-239 in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Plutonium-242 Tracer in Silicates

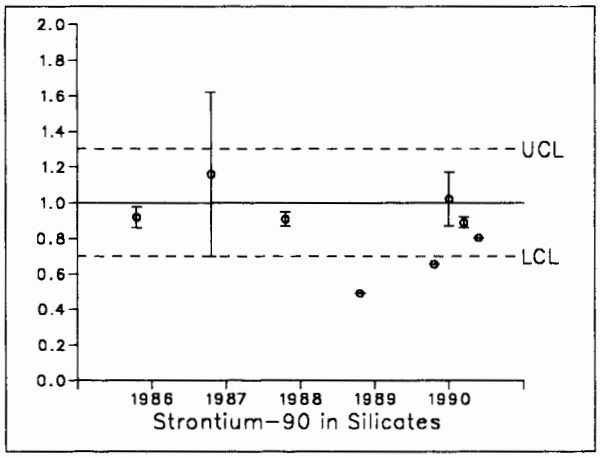

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Strontium-90 in Silicates

Fig. D-2. (cont)

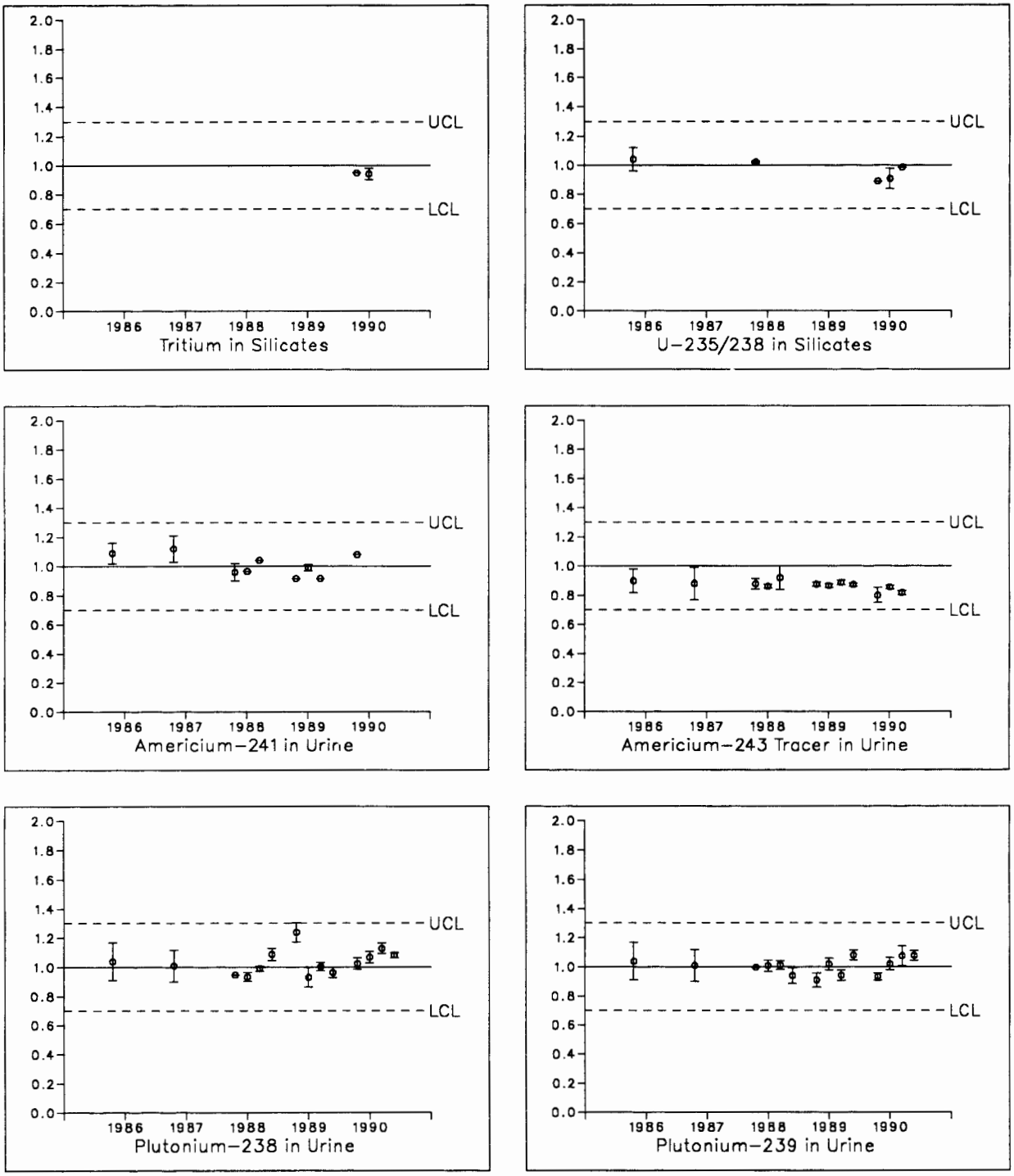
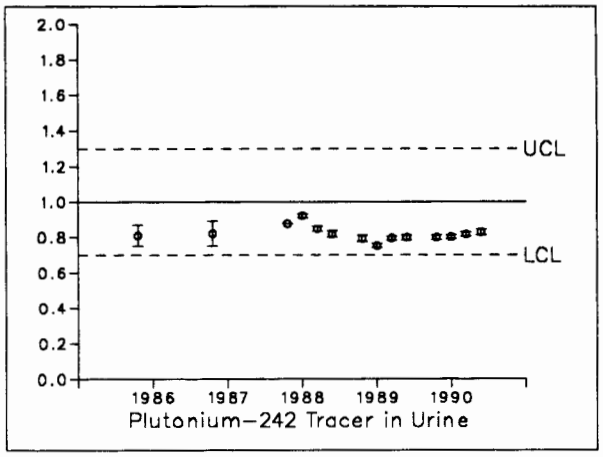
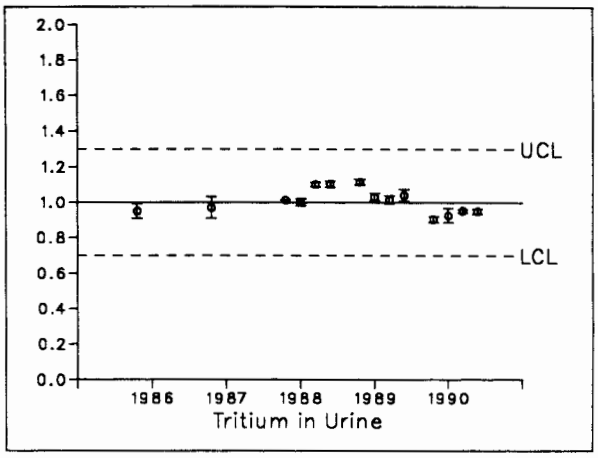
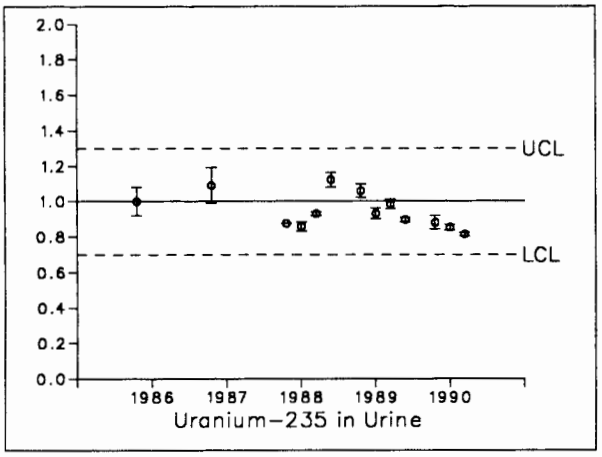
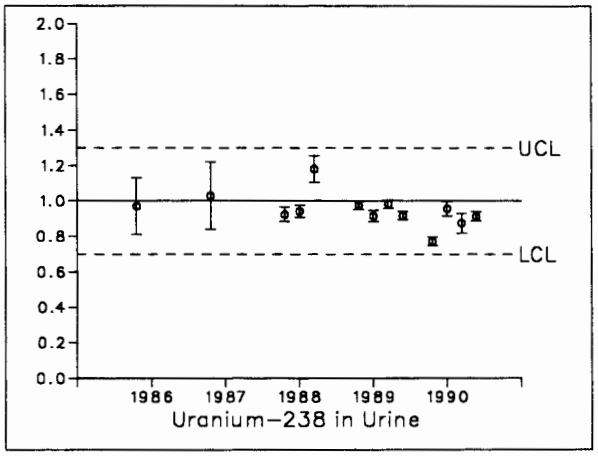

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Tritium in Silicates
U-235/238 in Silicates
Americium-241 in Urine
Americium-243 Tracer in Urine
Plutonium-238 in Urine
Plutonium-239 in Urine

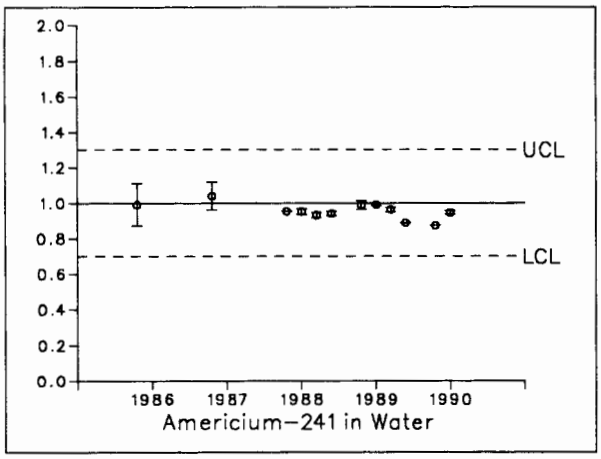
Fig. D-2. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Plutonium-242 Tracer in Urine


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Tritium in Urine


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Uranium-235 in Urine


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Uranium-238 in Urine


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Americium-241 in Water

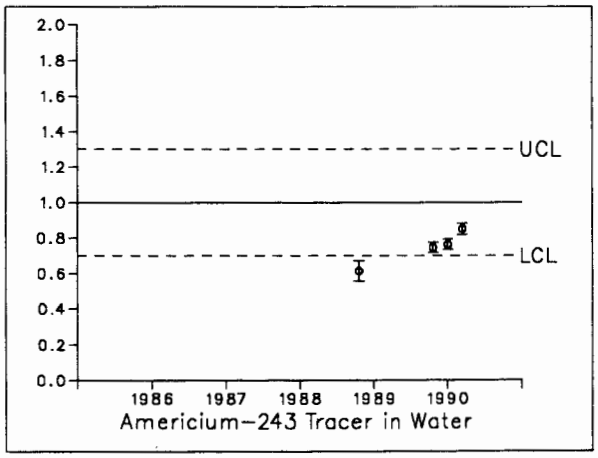

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Americium-243 Tracer in Water

Fig. D-2. (cont)

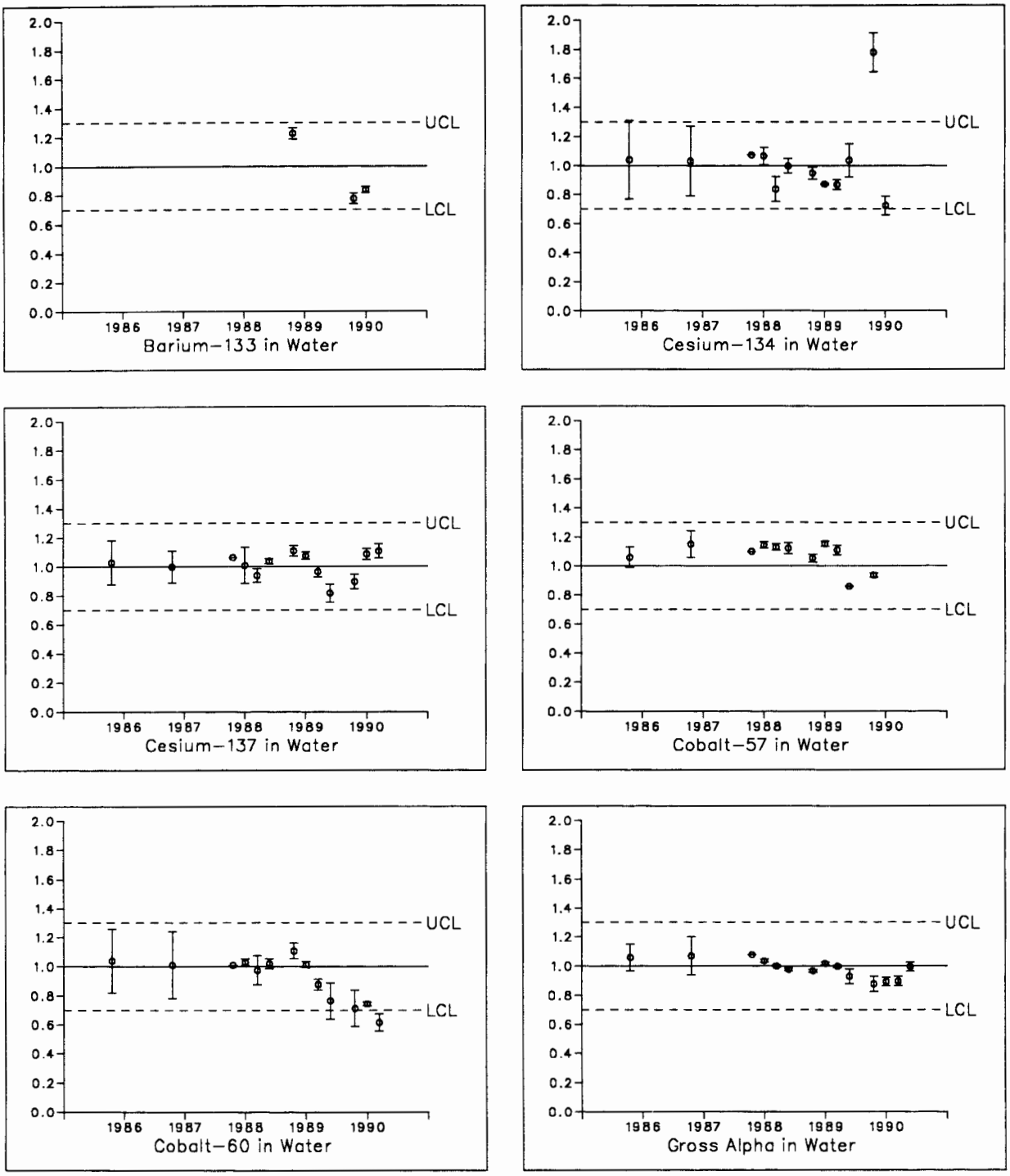
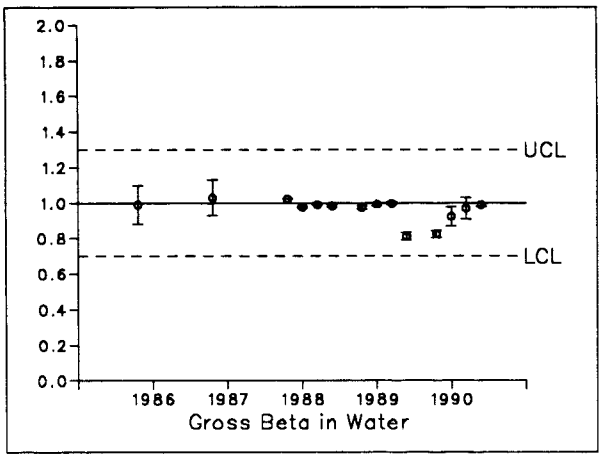
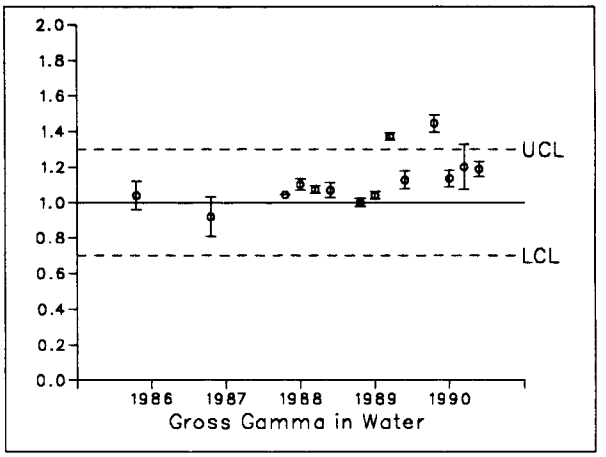
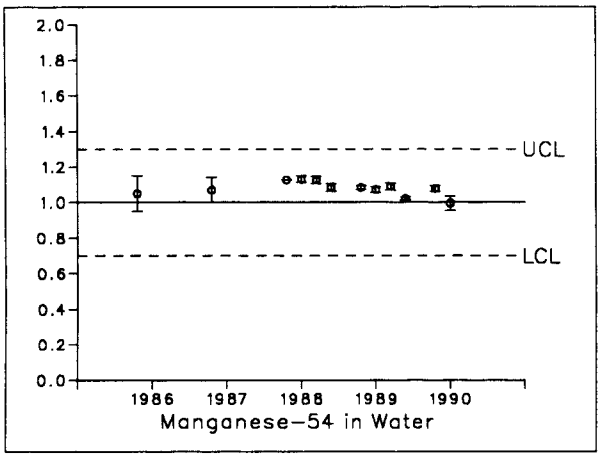
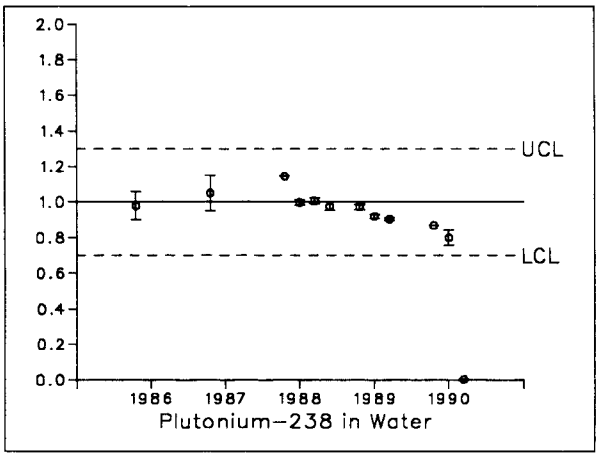

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Barium-133 in Water
Cesium-134 in Water
Cesium-137 in Water
Cobalt-57 in Water
Cobalt-60 in Water
Gross Alpha in Water

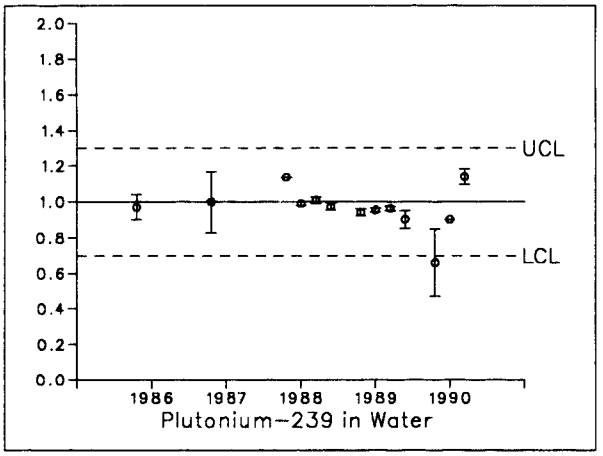
Fig. D-2. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Gross Beta in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Gross Gamma in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Manganese-54 in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Plutonium-238 in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Plutonium-239 in Water

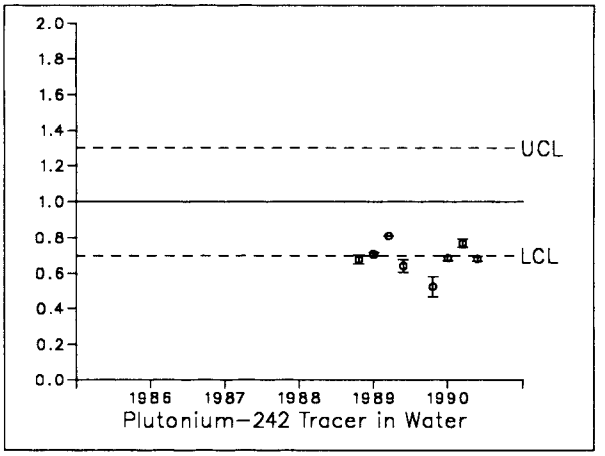
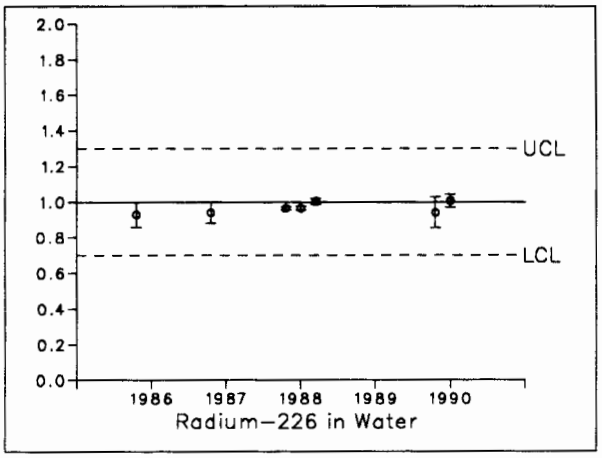
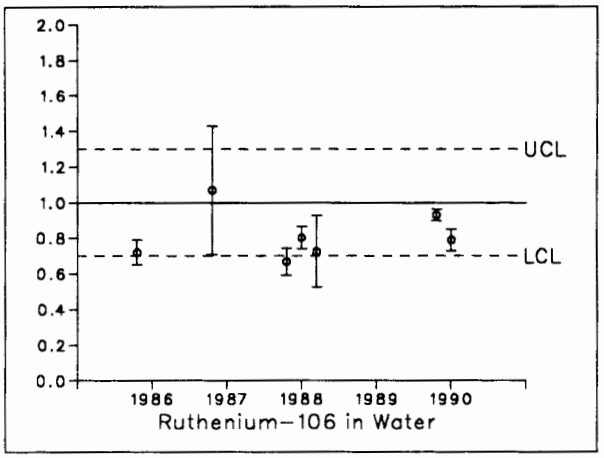
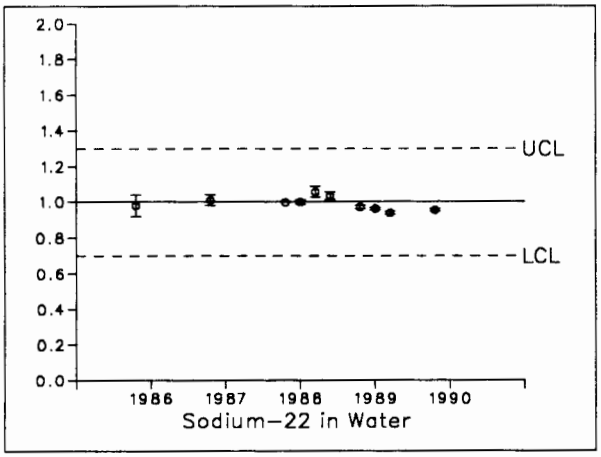
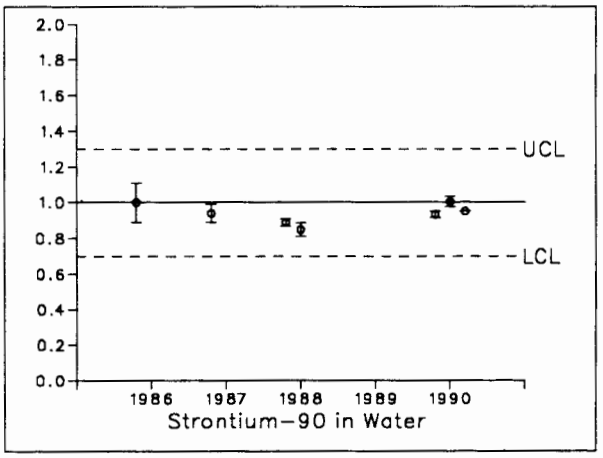

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Plutonium-242 Tracer in Water

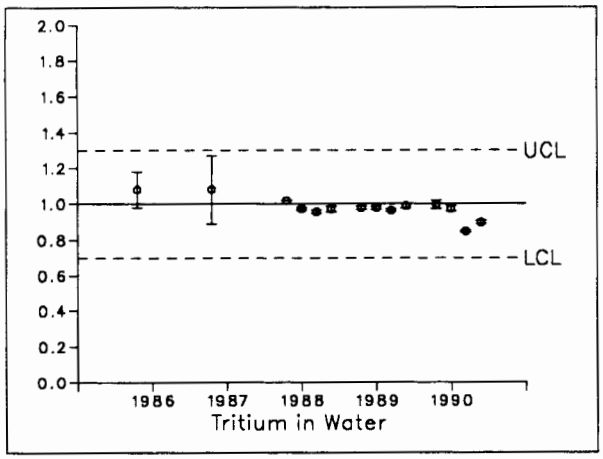
Fig. D-2. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Radium-226 in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Ruthenium-106 in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Sodium-22 in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Strontium-90 in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Tritium in Water

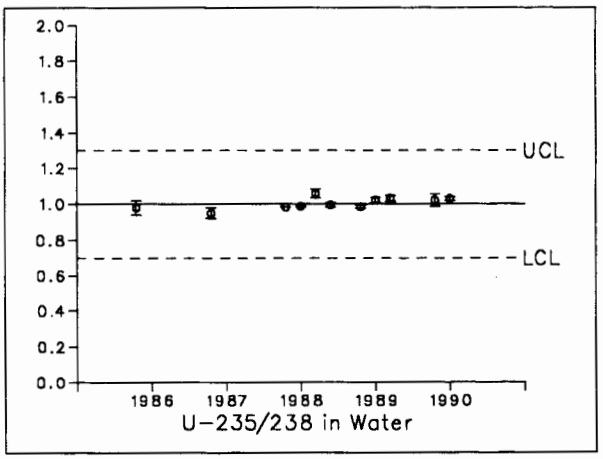
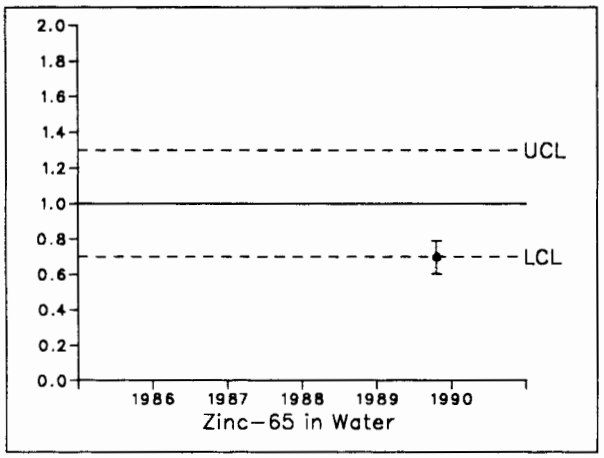

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
U-235/238 in Water

Fig. D-2. (cont)



NOTE: △ ▽ indicates data points beyond the ± 3 σ control limits.

Fig. D-2. (cont)

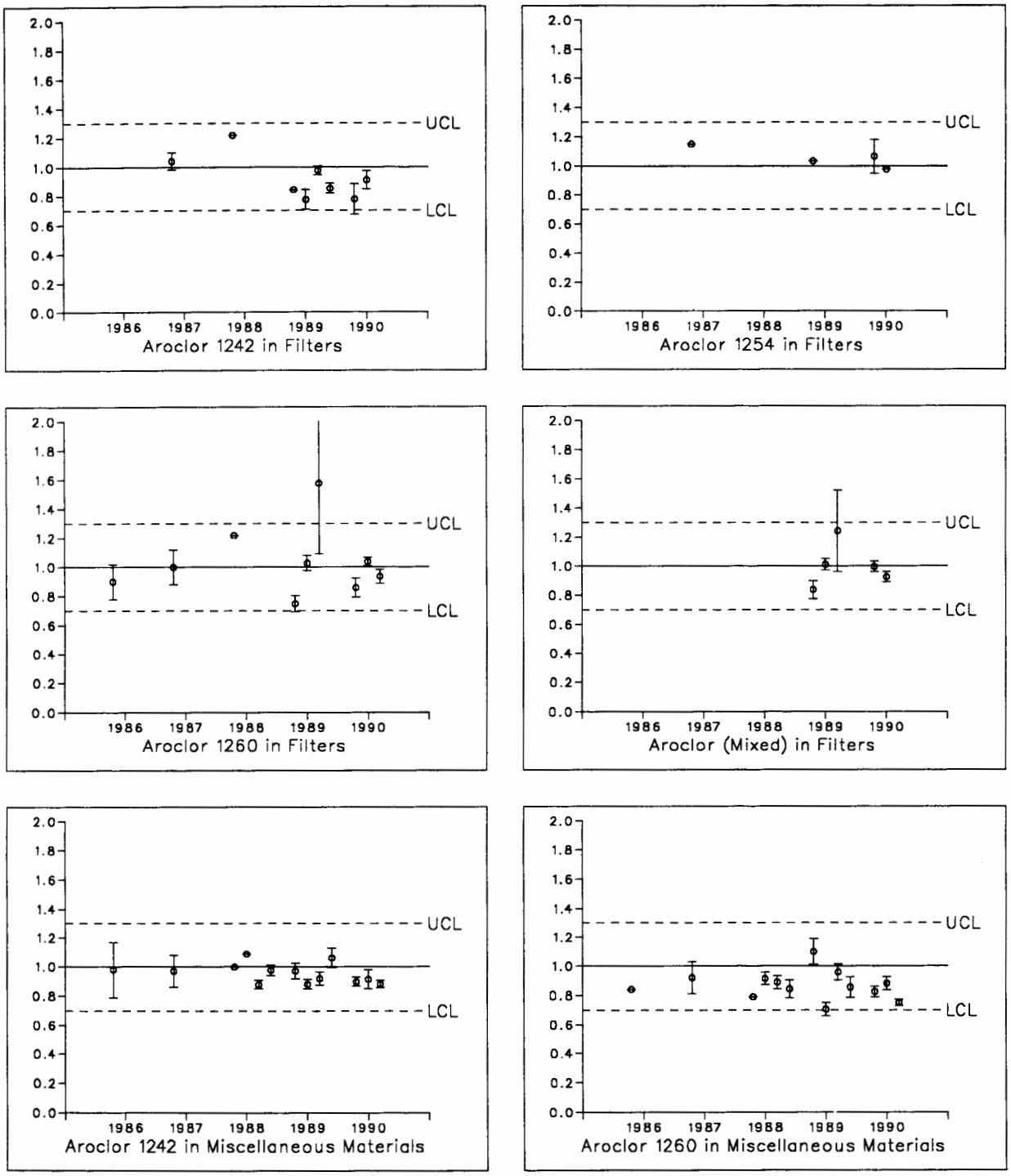
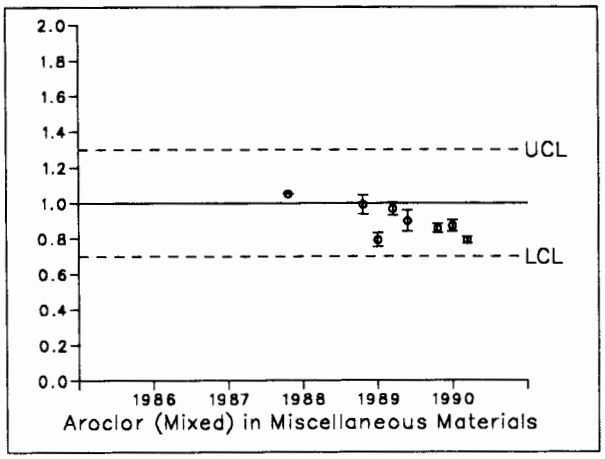
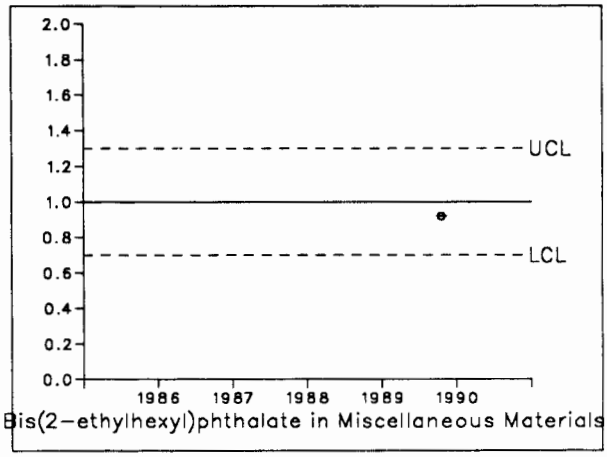
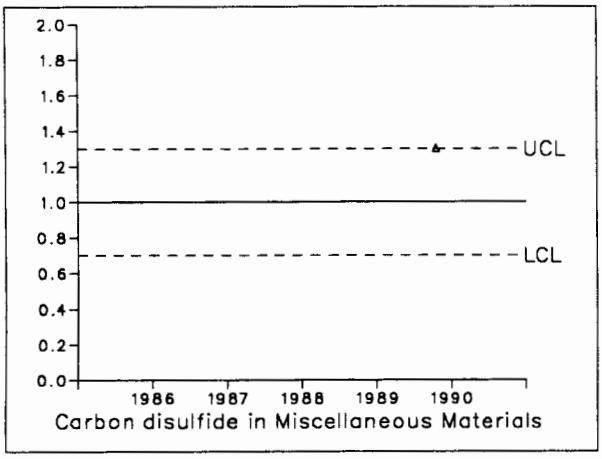
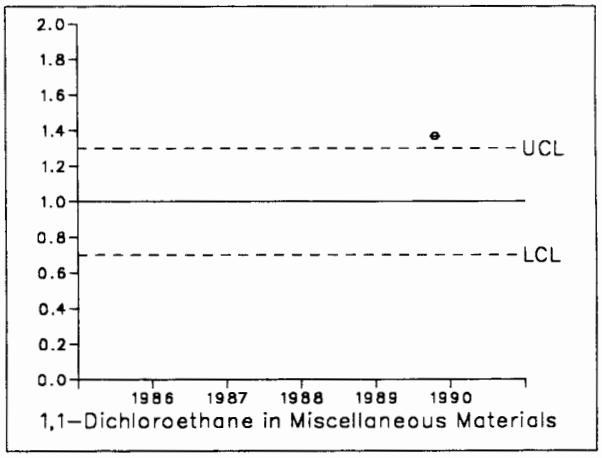


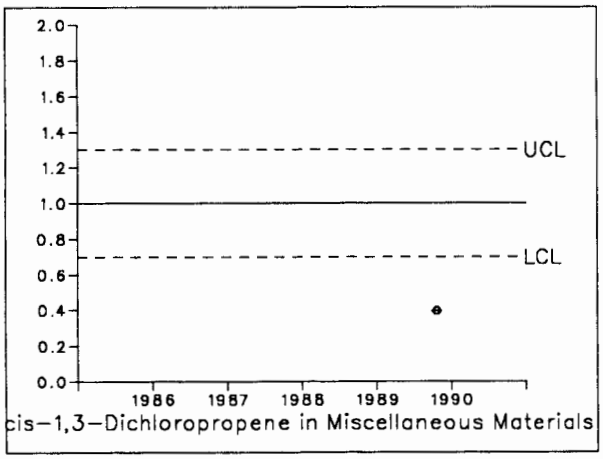
Fig. D-3. Five-year trends in quality assurance data for organic analyses.


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Aroclor (Mixed) in Miscellaneous Materials


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Bis(2-ethylhexyl)phthalate in Miscellaneous Materials


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Carbon disulfide in Miscellaneous Materials


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
1,1-Dichloroethane in Miscellaneous Materials


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
cis-1,3-Dichloropropene in Miscellaneous Materials

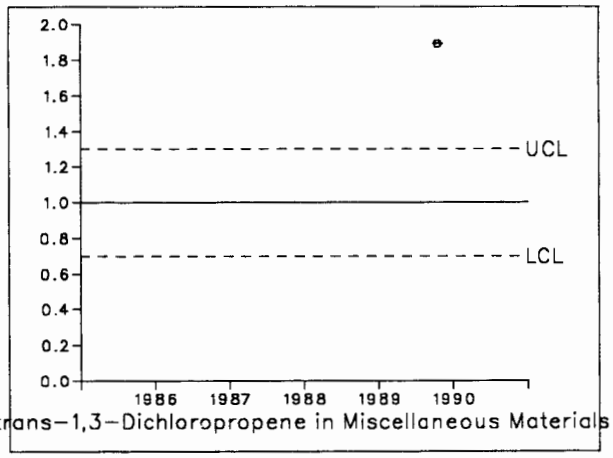
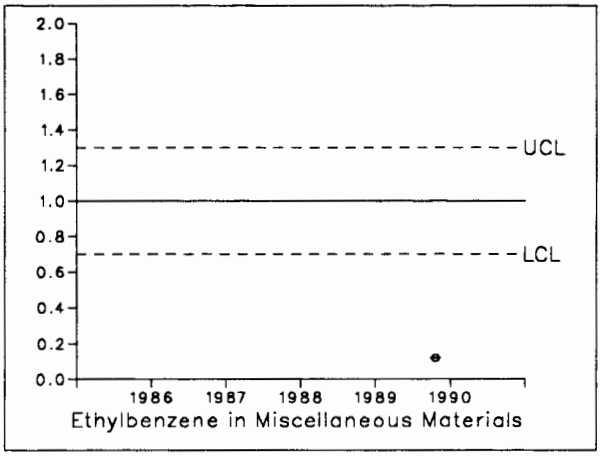
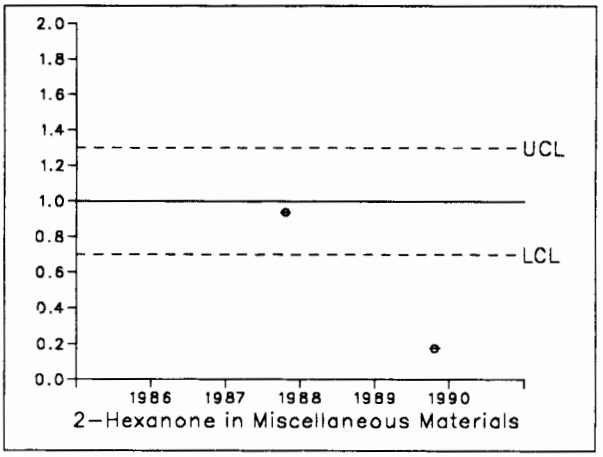
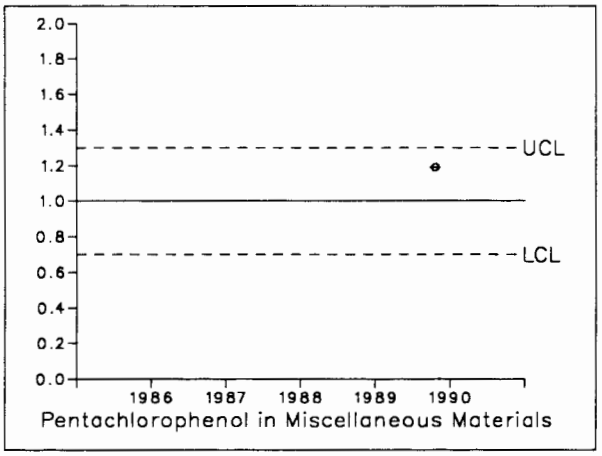
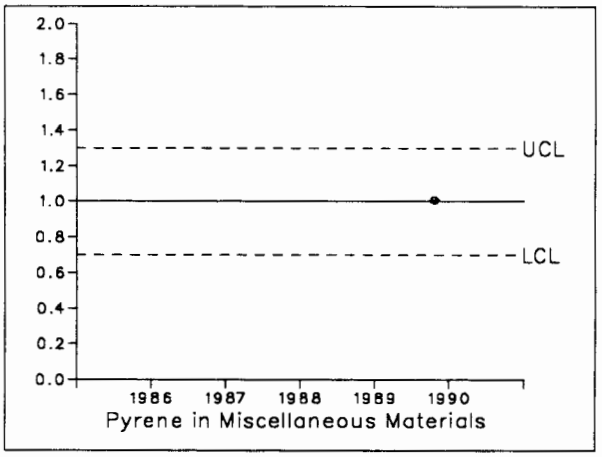

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
trans-1,3-Dichloropropene in Miscellaneous Materials

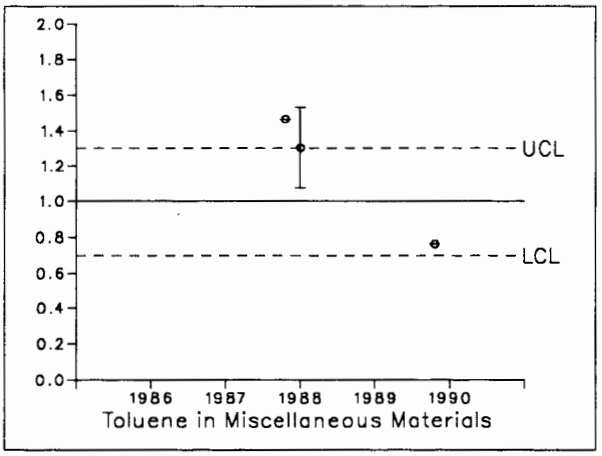
Fig. D-3. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Ethylbenzene in Miscellaneous Materials


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
2-Hexanone in Miscellaneous Materials


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Pentachlorophenol in Miscellaneous Materials


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Pyrene in Miscellaneous Materials


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Toluene in Miscellaneous Materials

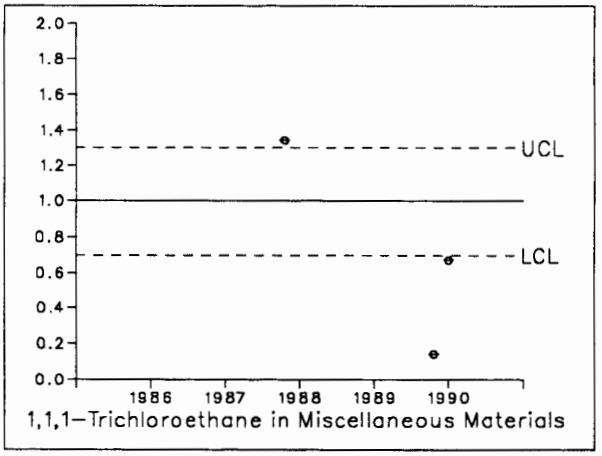

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
1,1,1-Trichloroethane in Miscellaneous Materials

Fig. D-3. (cont)

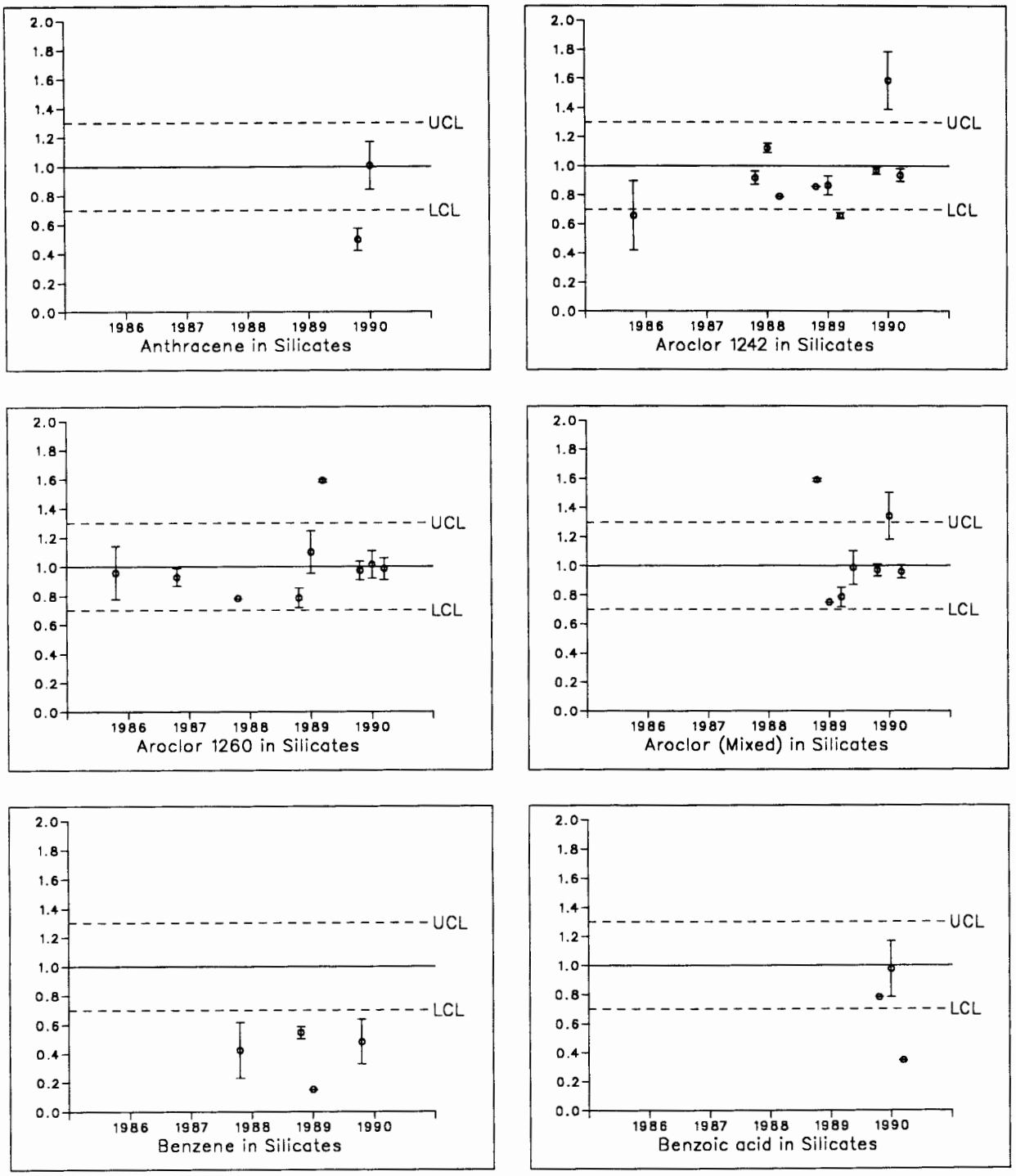
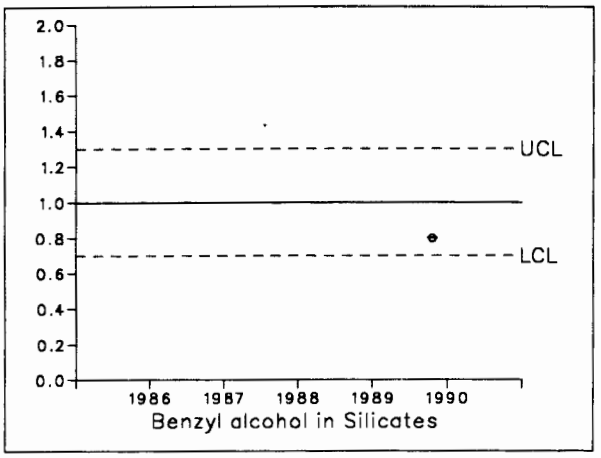
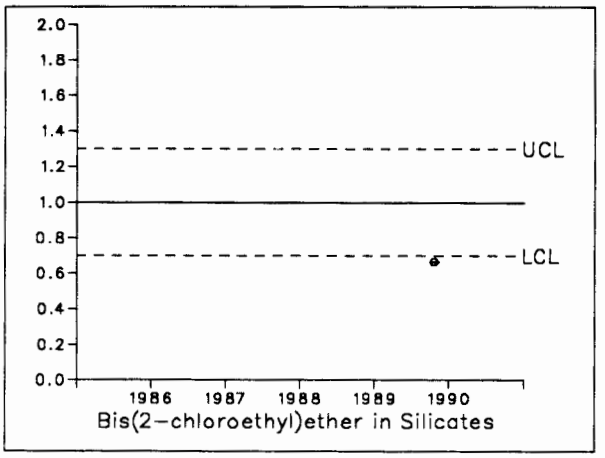
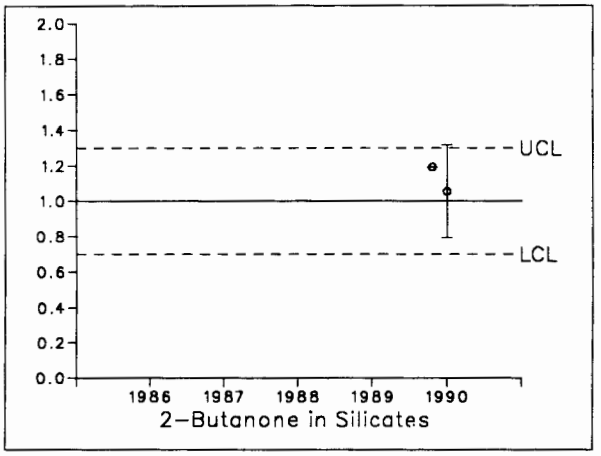
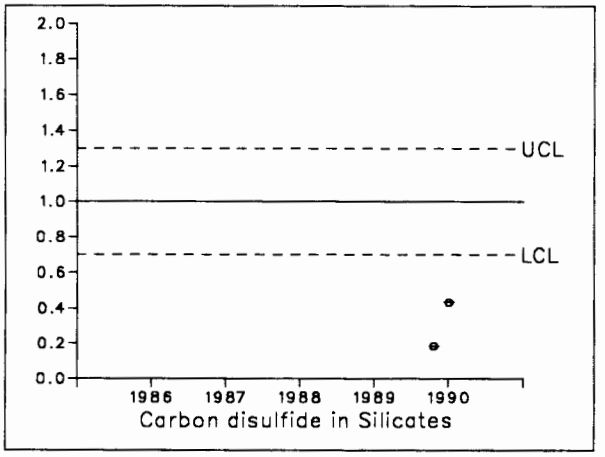

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Anthracene in Silicates
Aroclor 1242 in Silicates
Aroclor 1260 in Silicates
Aroclor (Mixed) in Silicates
Benzene in Silicates
Benzoic acid in Silicates

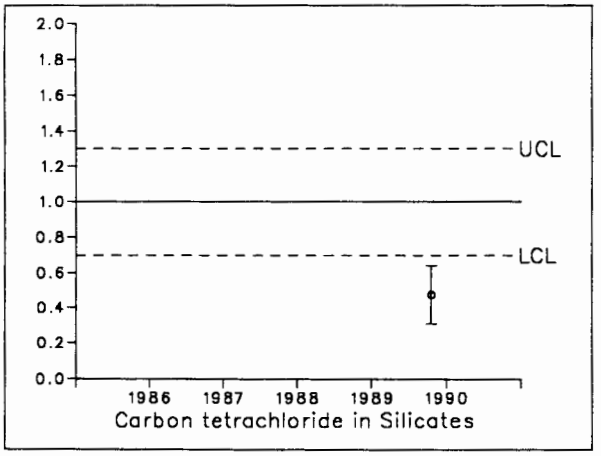
Fig. D-3. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Benzyl alcohol in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Bis(2-chloroethyl)ether in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
2-Butanone in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Carbon disulfide in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Carbon tetrachloride in Silicates

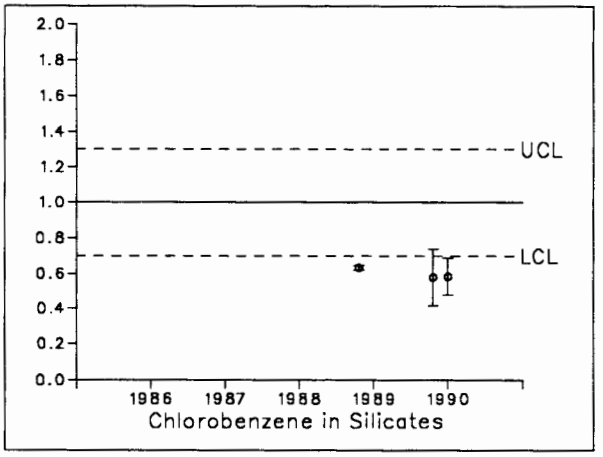
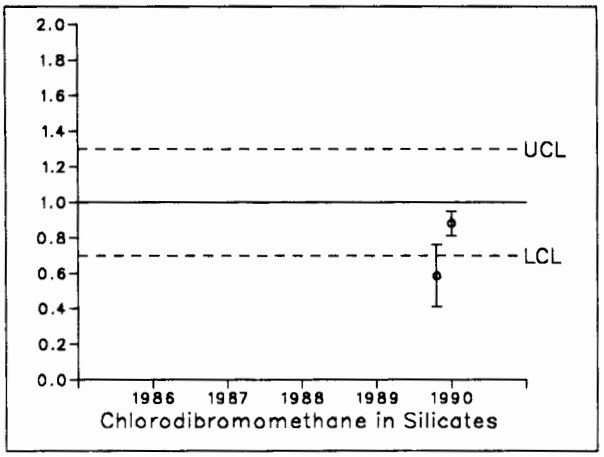
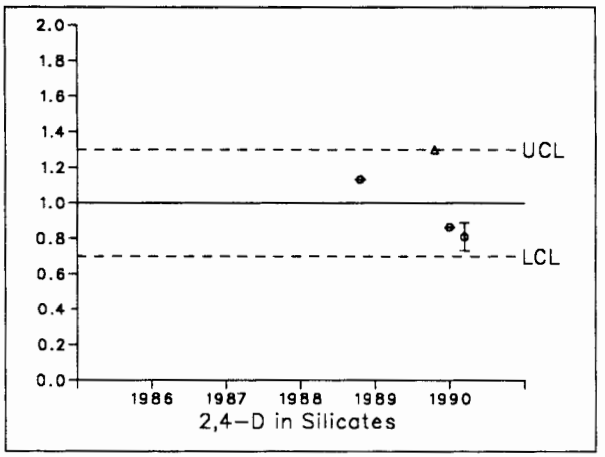
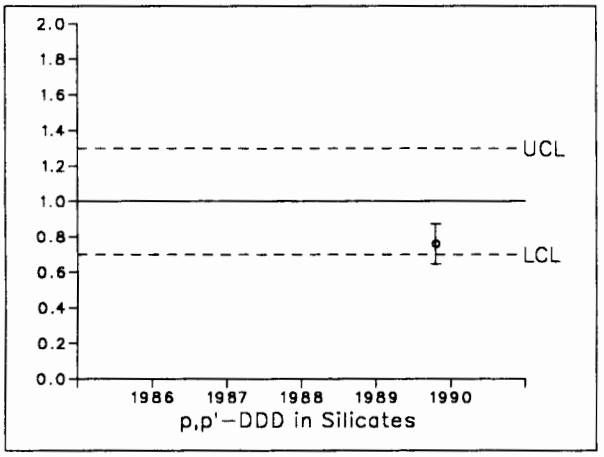
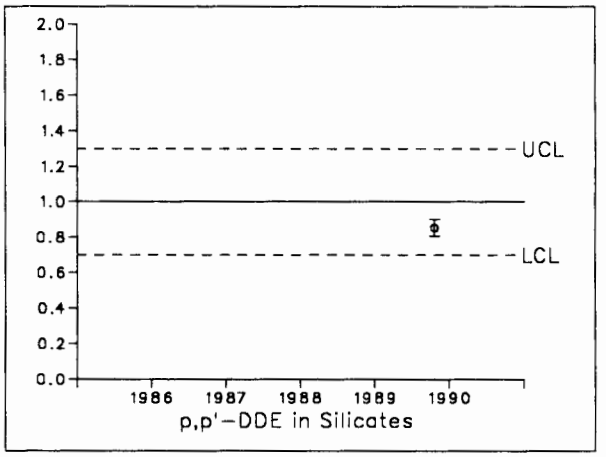

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Chlorobenzene in Silicates

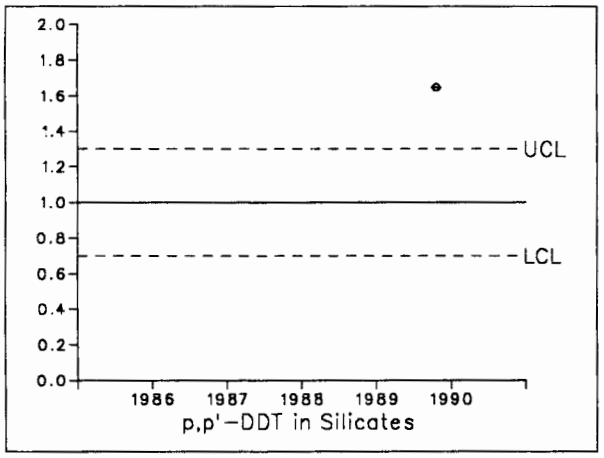
Fig. D-3. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Chlorodibromomethane in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
2,4-D in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
p,p'-DDD in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
p,p'-DDE in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
p,p'-DDT in Silicates

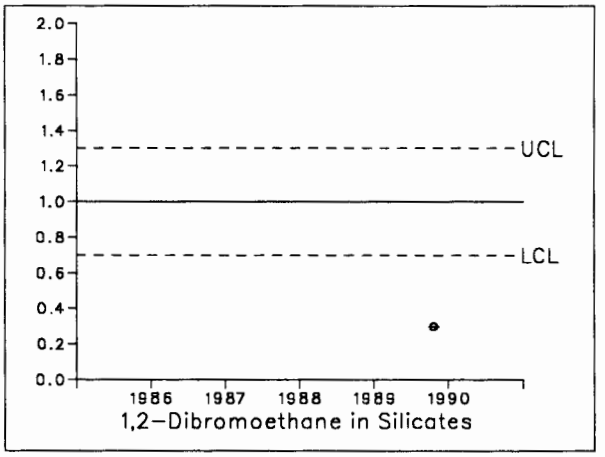
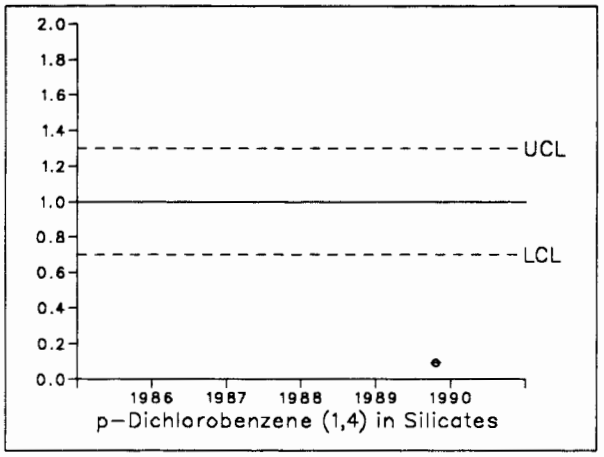
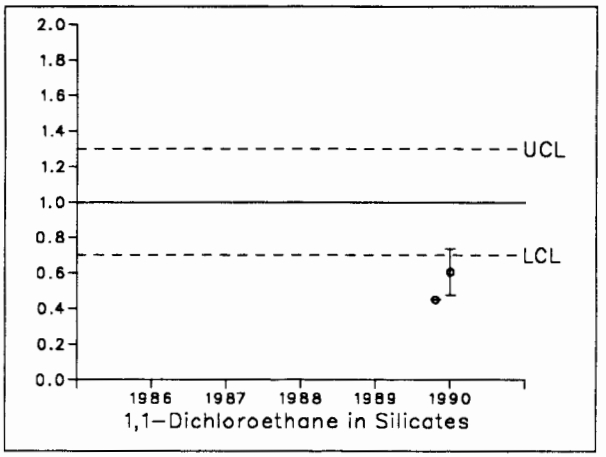
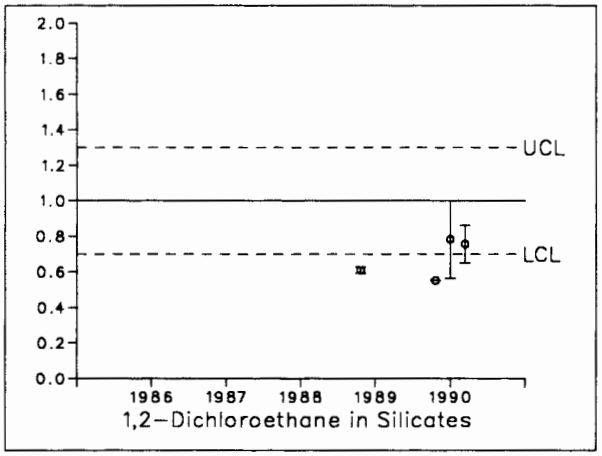
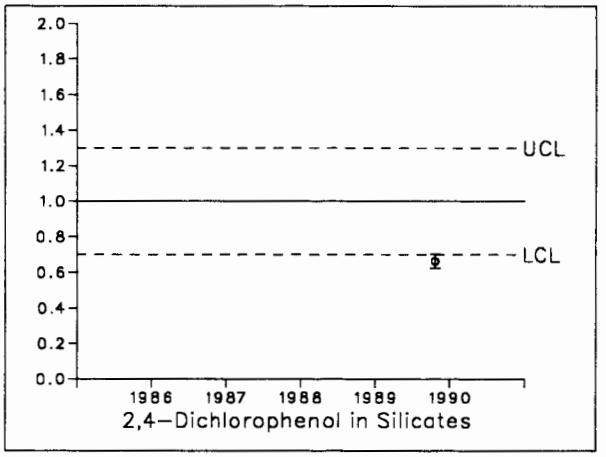

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
1,2-Dibromoethane in Silicates

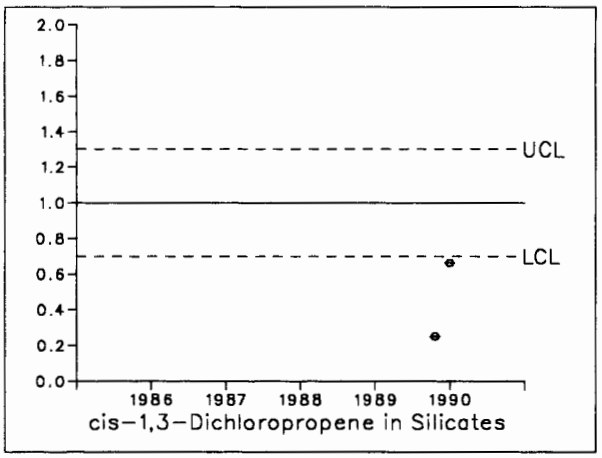
Fig. D-3. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
p-Dichlorobenzene (1,4) in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
1,1-Dichloroethane in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
1,2-Dichloroethane in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
2,4-Dichlorophenol in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
cis-1,3-Dichloropropene in Silicates

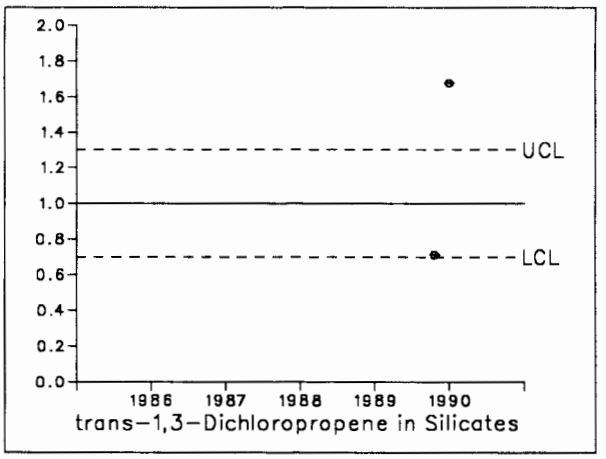
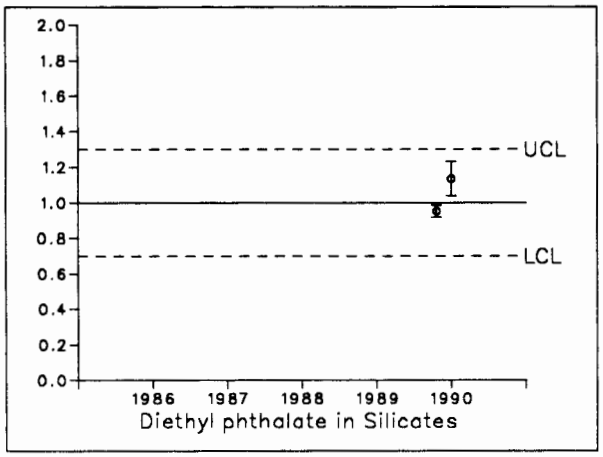
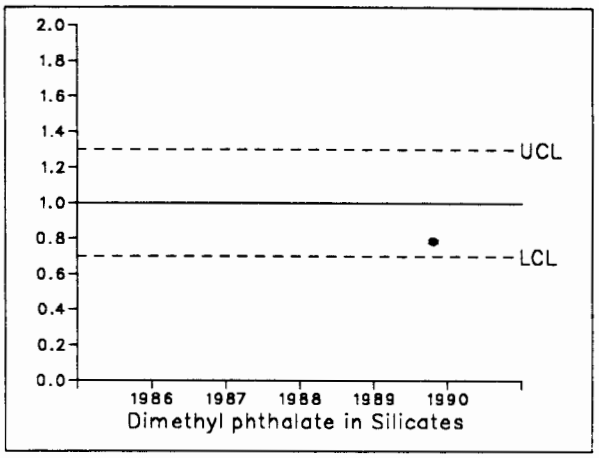
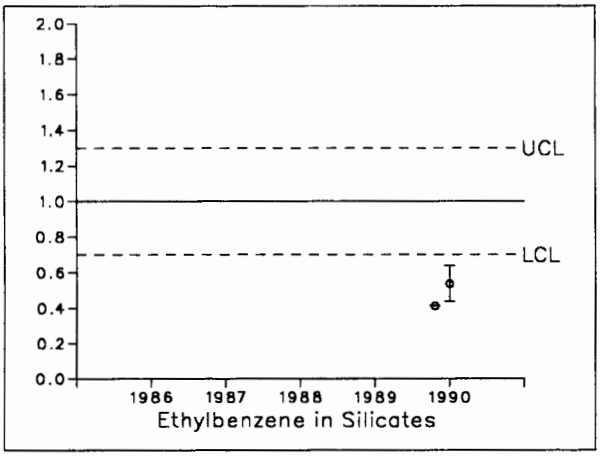
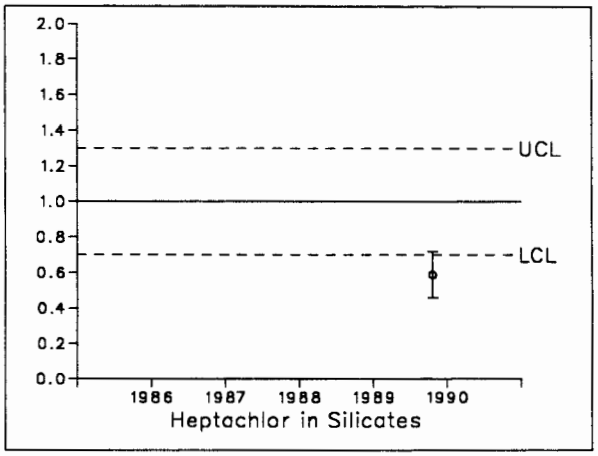

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
trans-1,3-Dichloropropene in Silicates

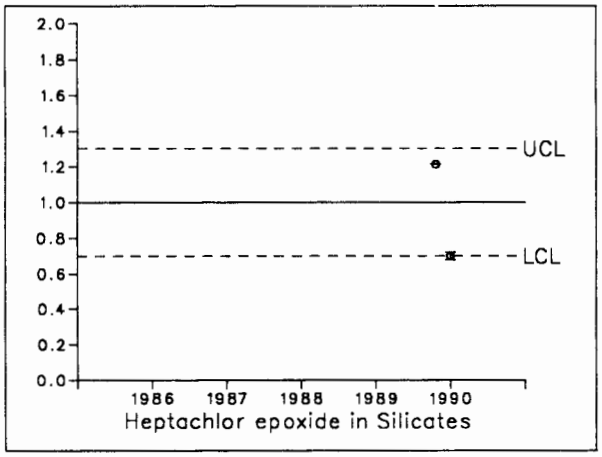
Fig. D-3. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Diethyl phthalate in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Dimethyl phthalate in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Ethylbenzene in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Heptachlor in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Heptachlor epoxide in Silicates

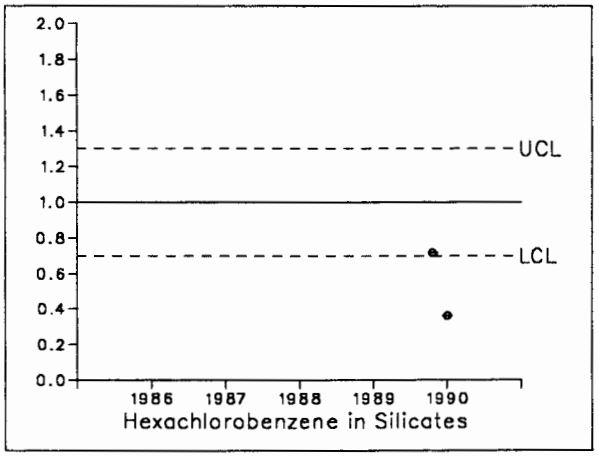
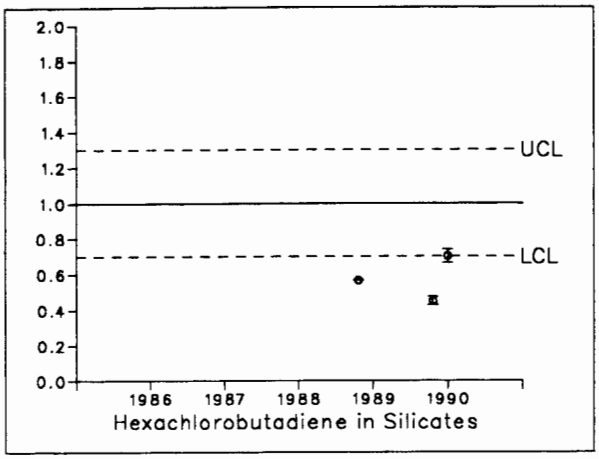
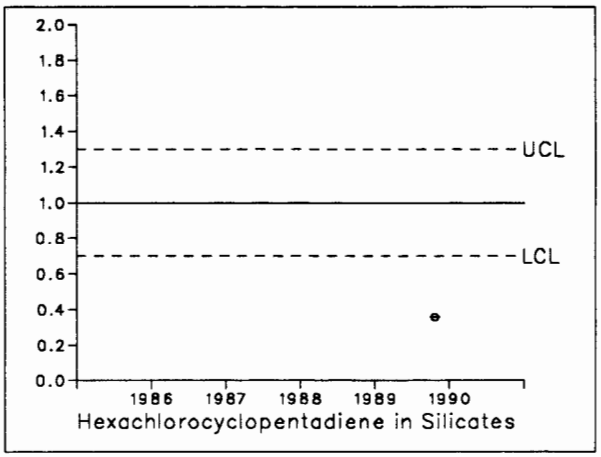
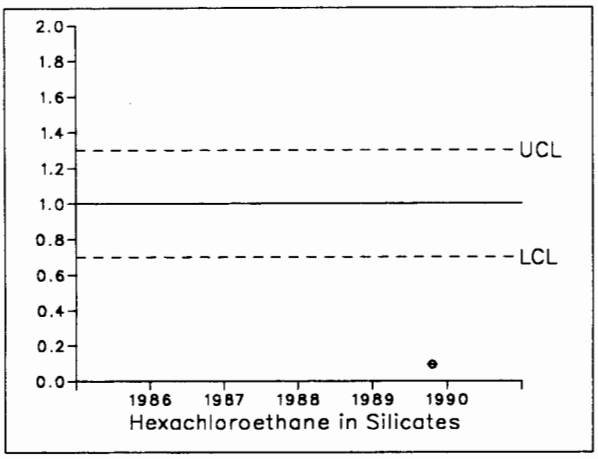
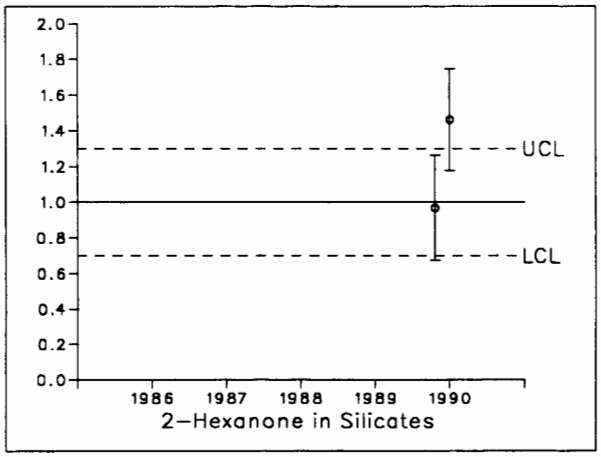

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Hexachlorobenzene in Silicates

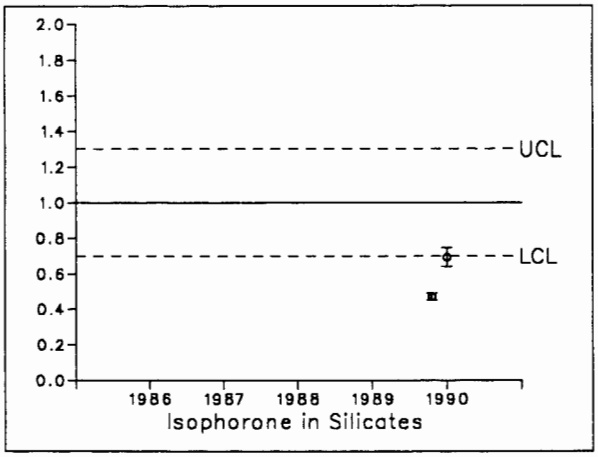
Fig. D-3. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Hexachlorobutadiene in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Hexachlorocyclopentadiene in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Hexachloroethane in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
2–Hexanone in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Isophorone in Silicates

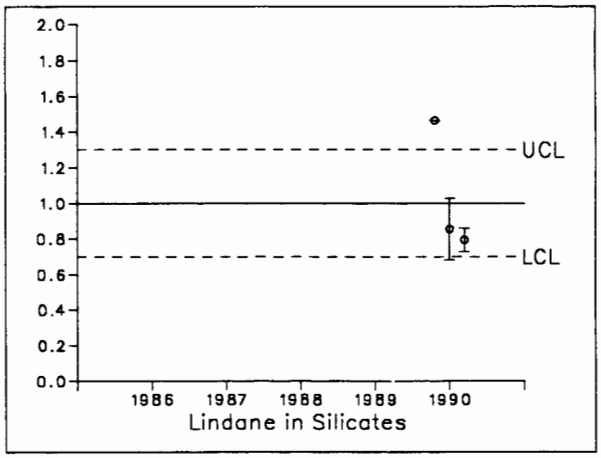
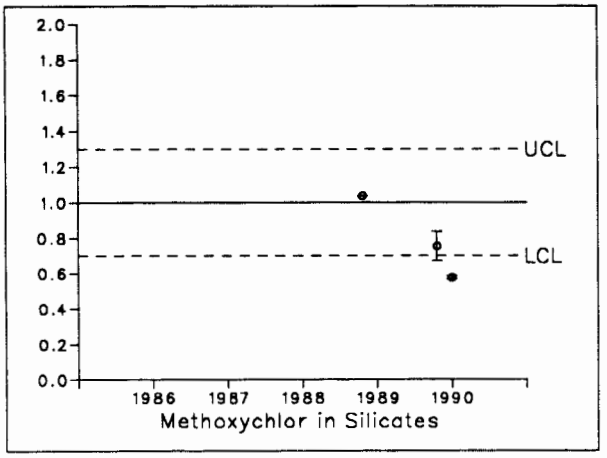
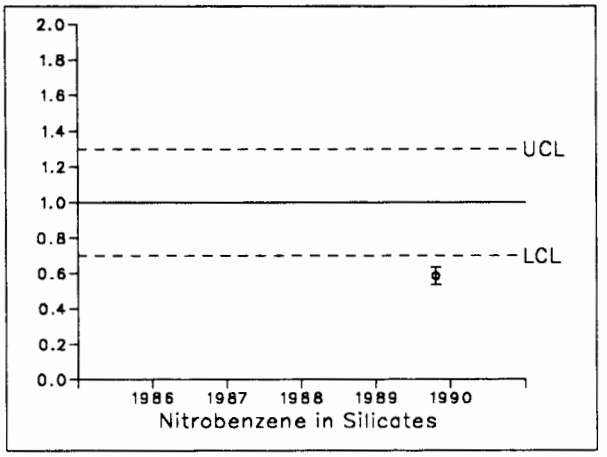
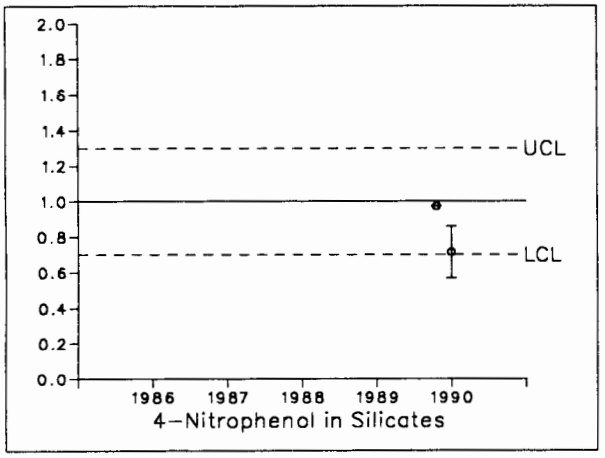
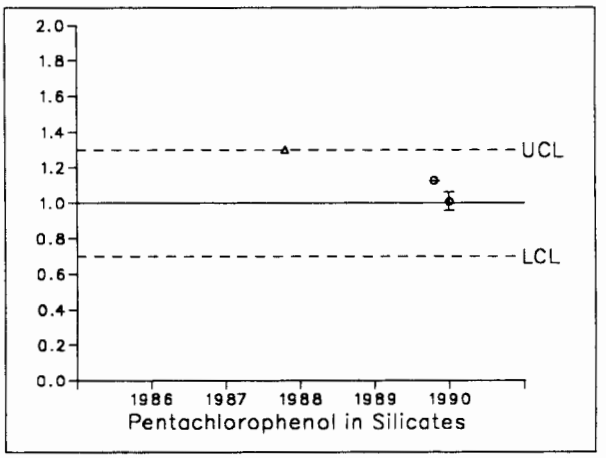

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Lindane in Silicates

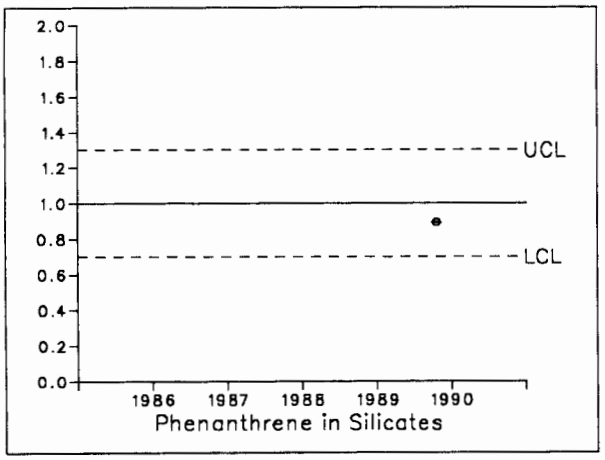
Fig. D-3. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Methoxychlor in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Nitrobenzene in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
4-Nitrophenol in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Pentachlorophenol in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Phenanthrene in Silicates

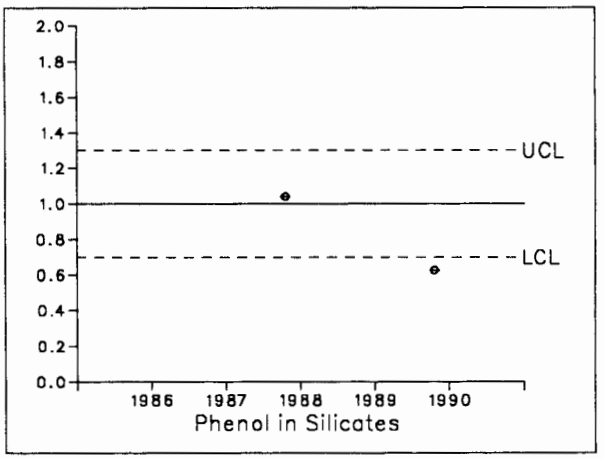
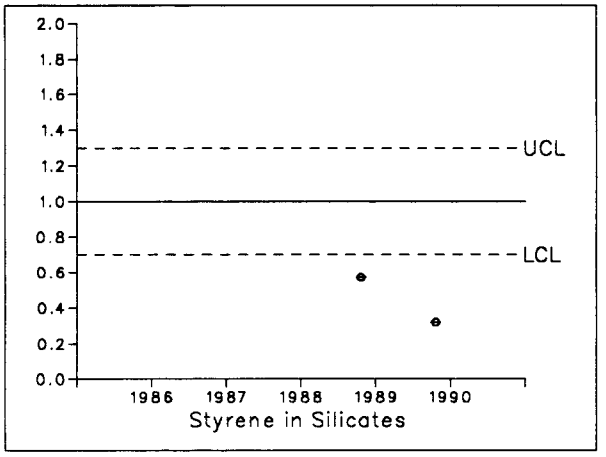
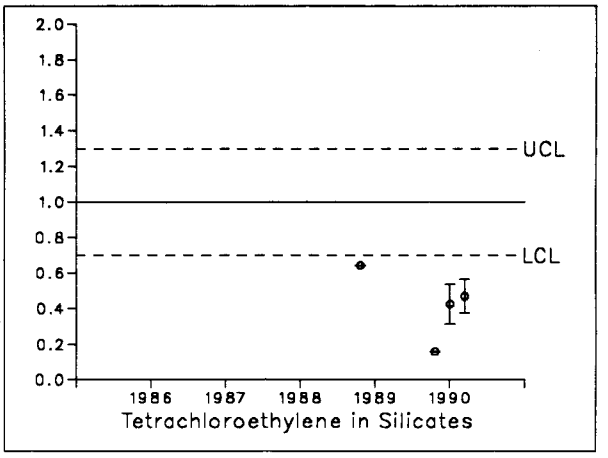
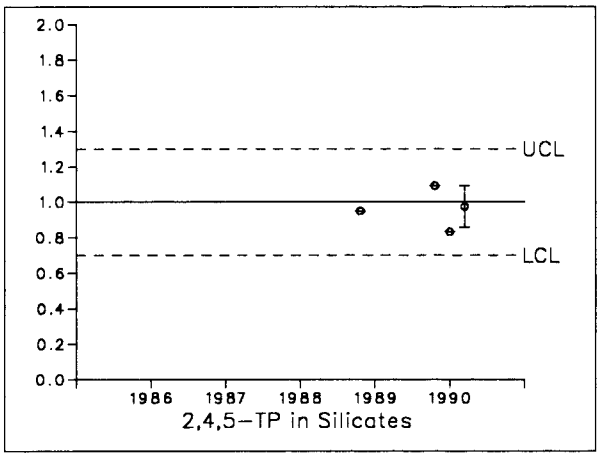
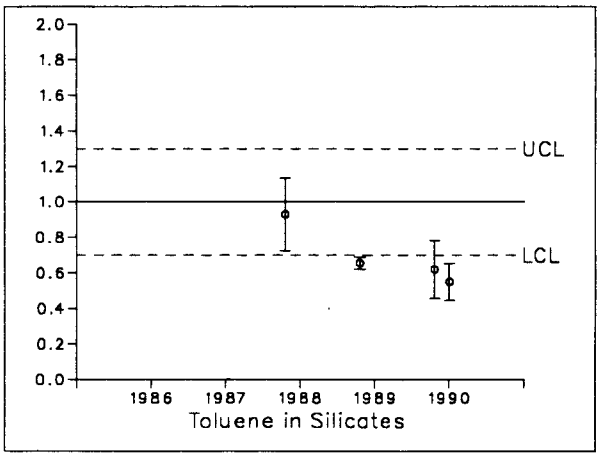

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Phenol in Silicates

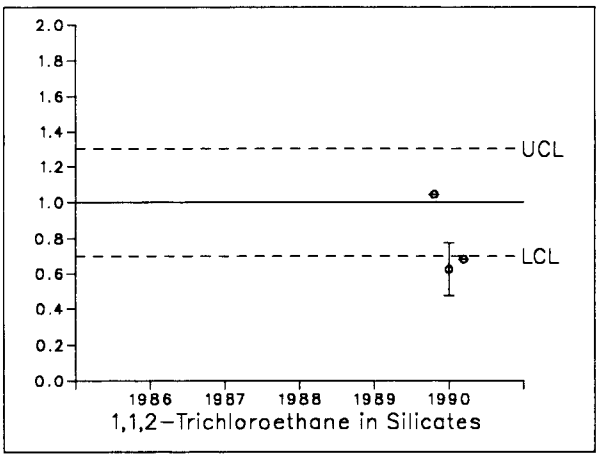
Fig. D-3. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Styrene in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Tetrachloroethylene in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
2,4,5-TP in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Toluene in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
1,1,2-Trichloroethane in Silicates

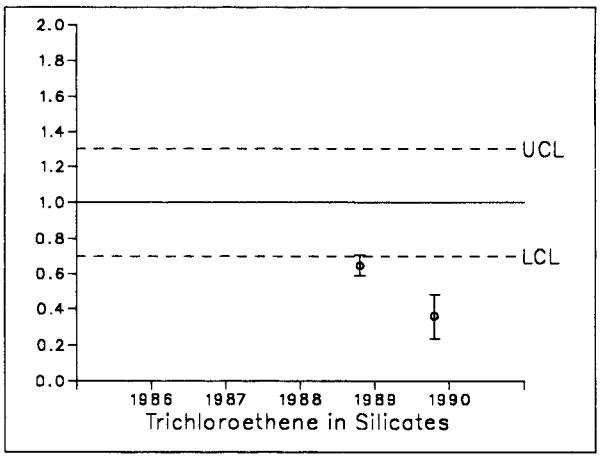
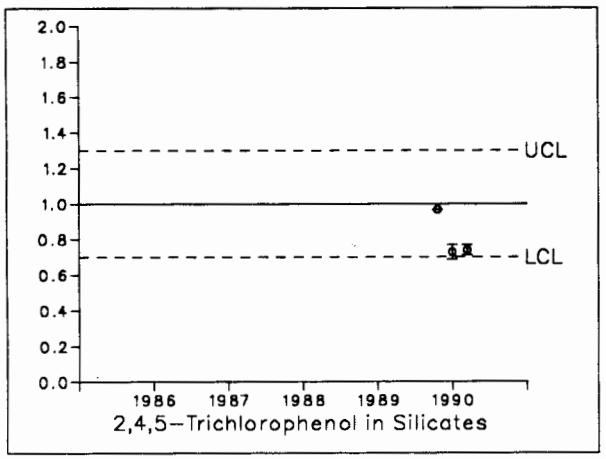
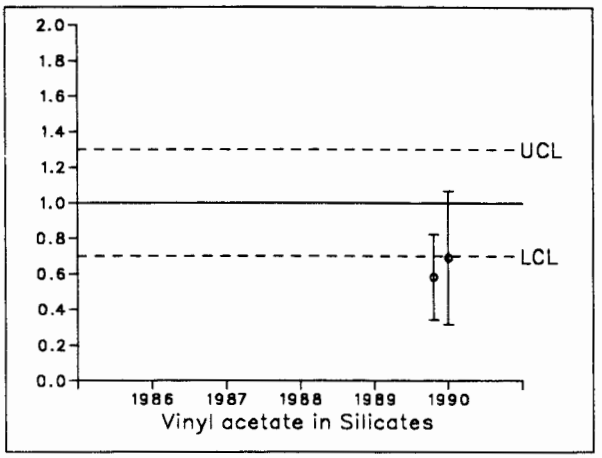
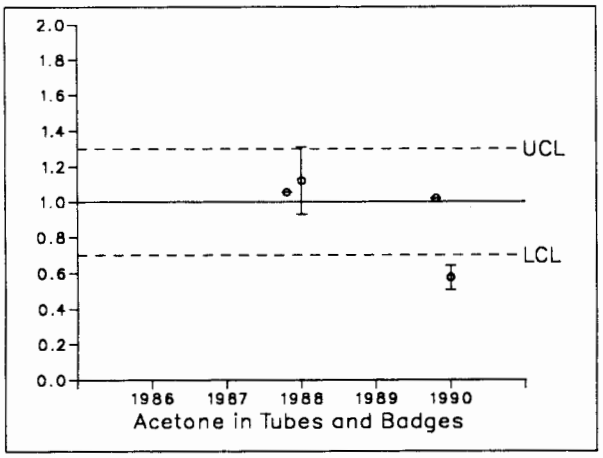
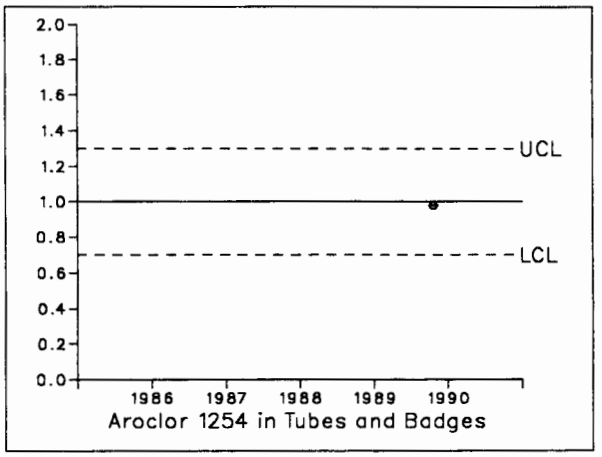

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Trichloroethene in Silicates

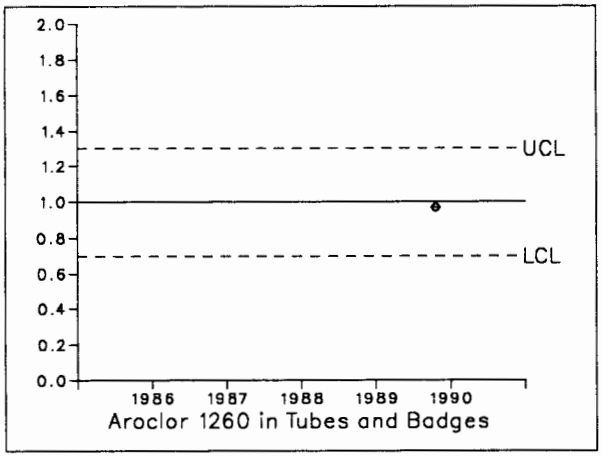
Fig. D-3. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
2,4,5–Trichlorophenol in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Vinyl acetate in Silicates


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Acetone in Tubes and Badges


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Aroclor 1254 in Tubes and Badges


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Aroclor 1260 in Tubes and Badges

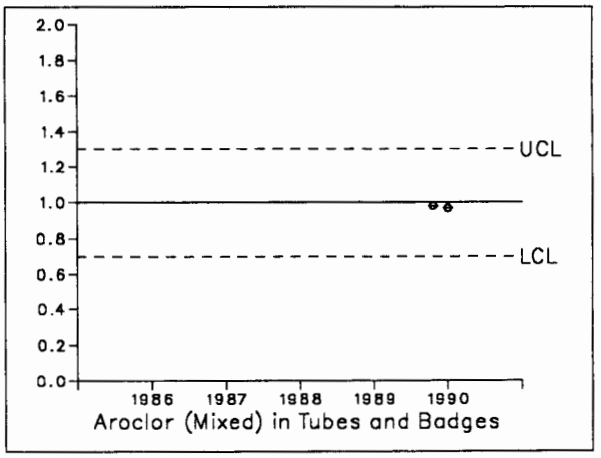
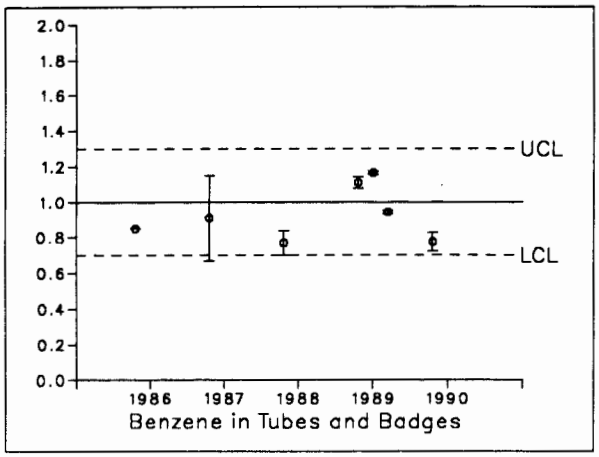
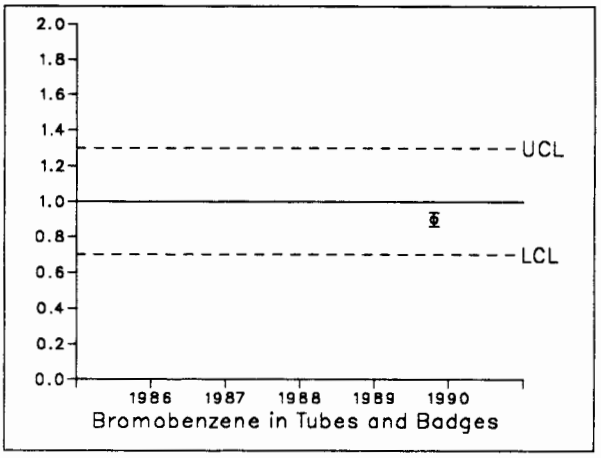
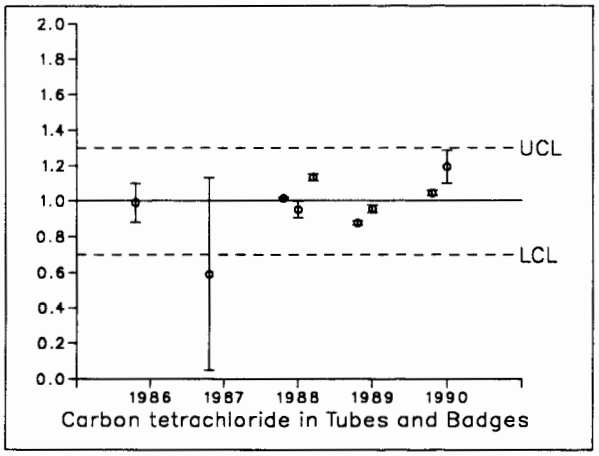
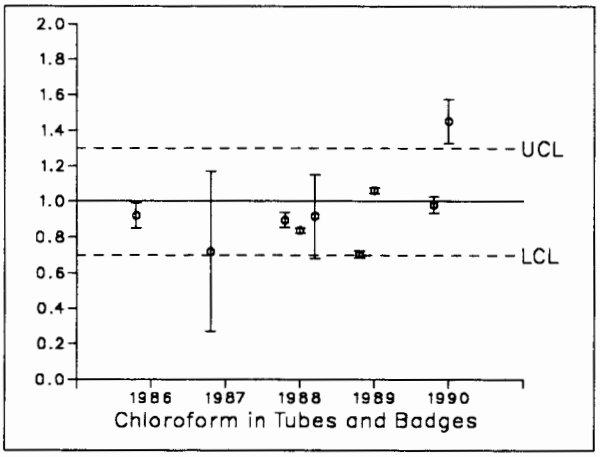

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Aroclor (Mixed) in Tubes and Badges

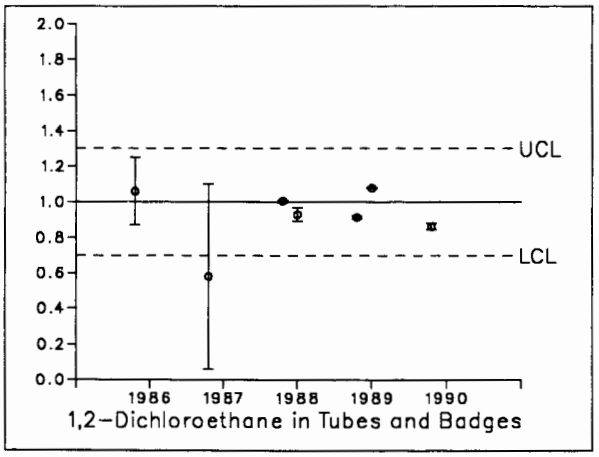
Fig. D-3. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Benzene in Tubes and Badges


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Bromobenzene in Tubes and Badges


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Carbon tetrachloride in Tubes and Badges


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Chloroform in Tubes and Badges


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
1,2-Dichloroethane in Tubes and Badges

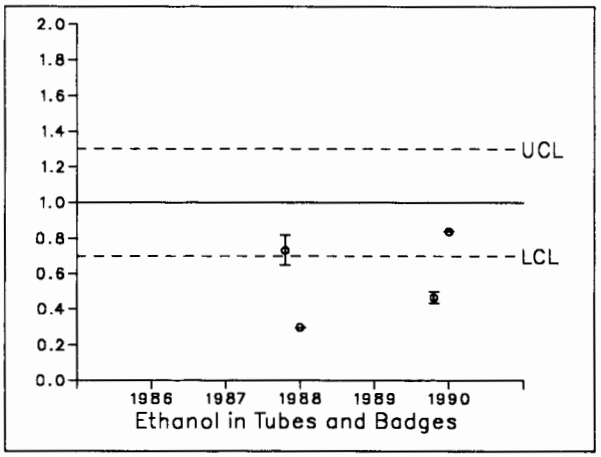
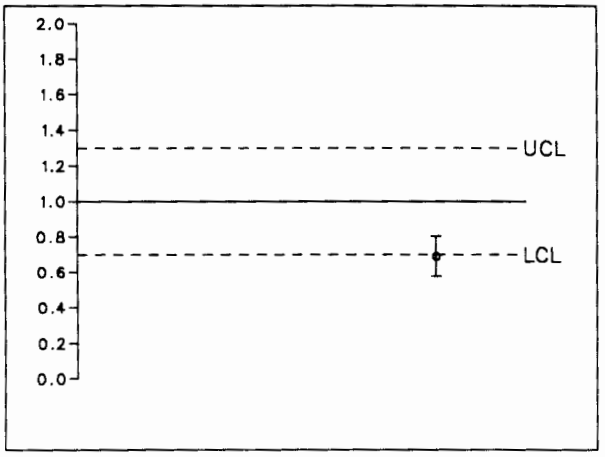
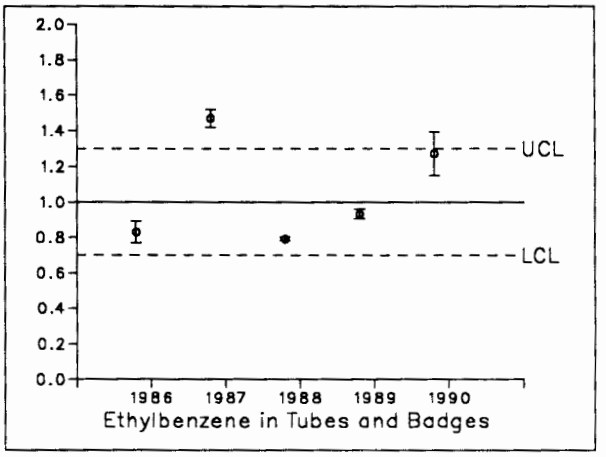
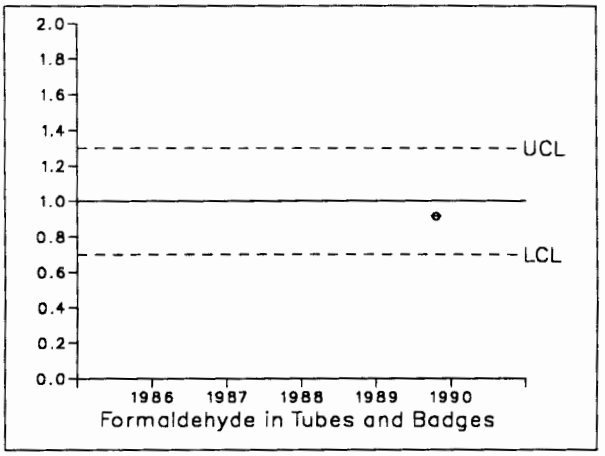
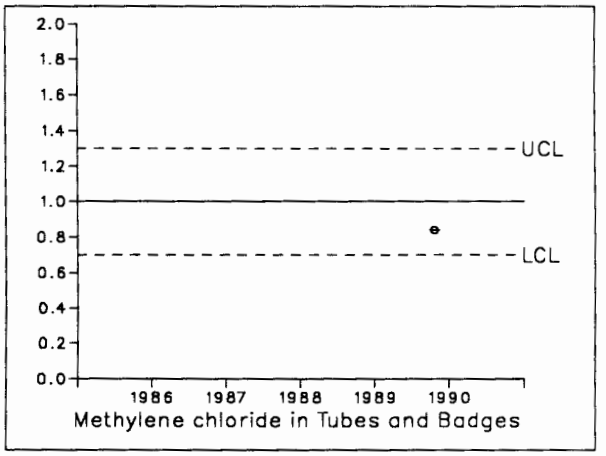

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Ethanol in Tubes and Badges

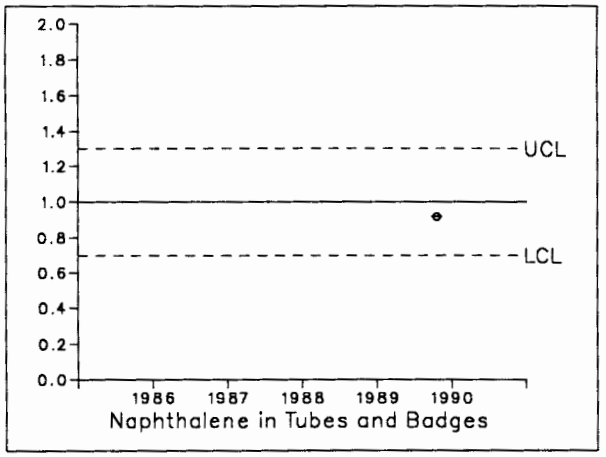
Fig. D-3. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Ethylbenzene in Tubes and Badges


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Formaldehyde in Tubes and Badges


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Methylene chloride in Tubes and Badges


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Naphthalene in Tubes and Badges

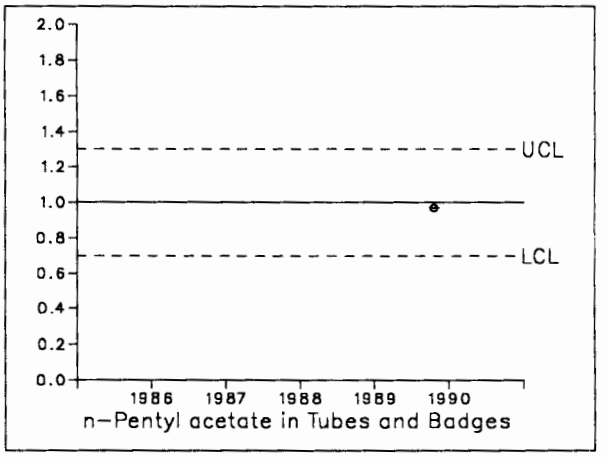
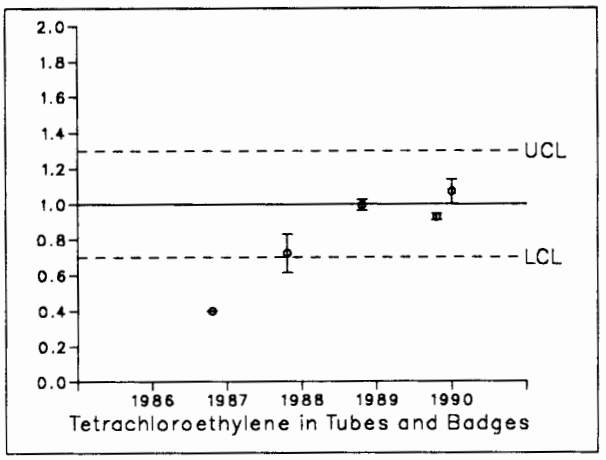
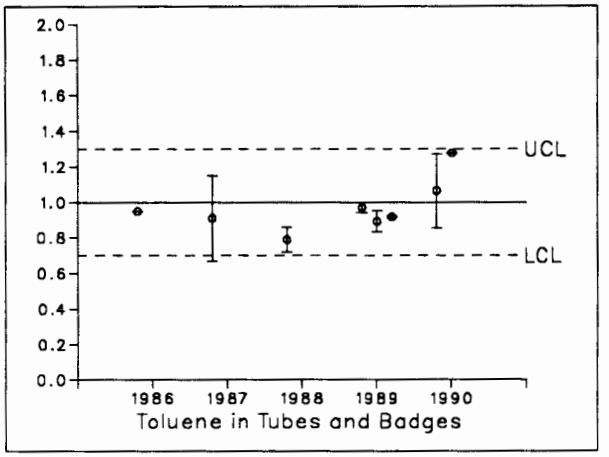
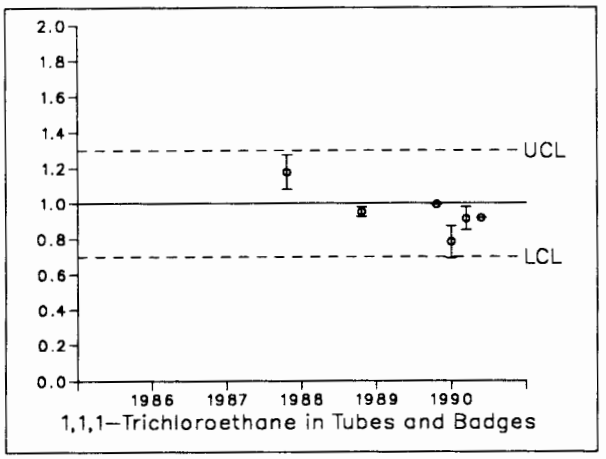
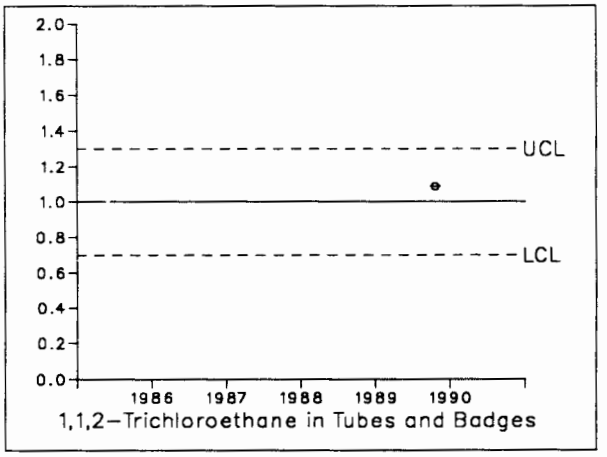

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
n-Pentyl acetate in Tubes and Badges

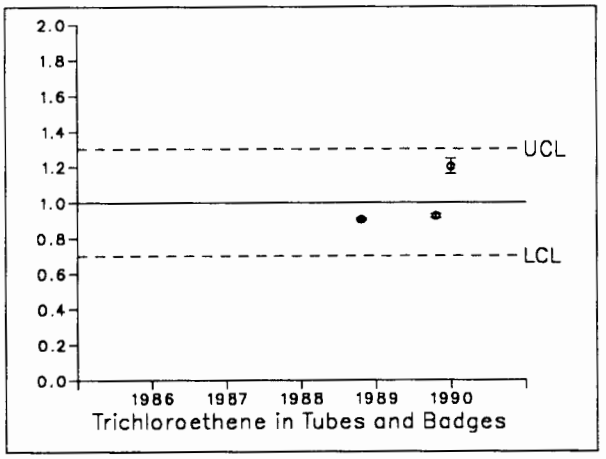
Fig. D-3. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Tetrachloroethylene in Tubes and Badges


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Toluene in Tubes and Badges


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
1,1,1–Trichloroethane in Tubes and Badges


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
1,1,2–Trichloroethane in Tubes and Badges


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Trichloroethene in Tubes and Badges

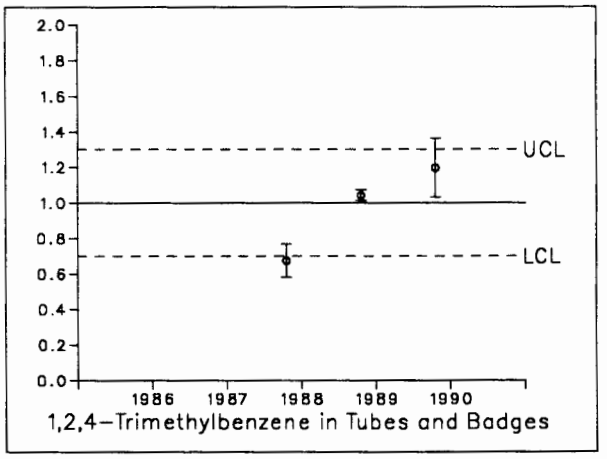
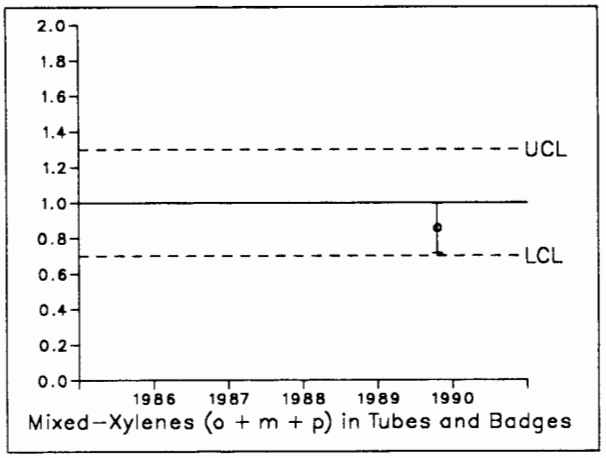
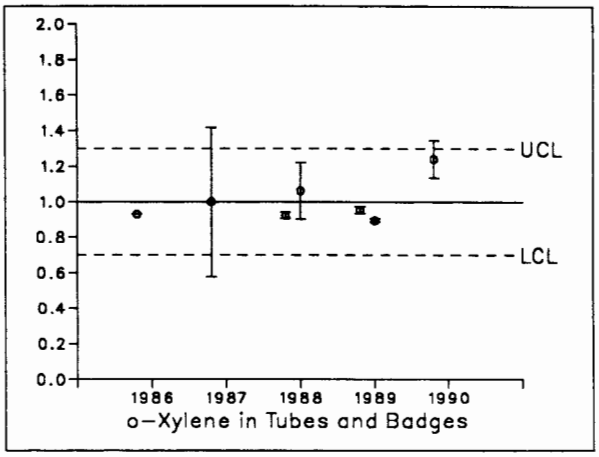
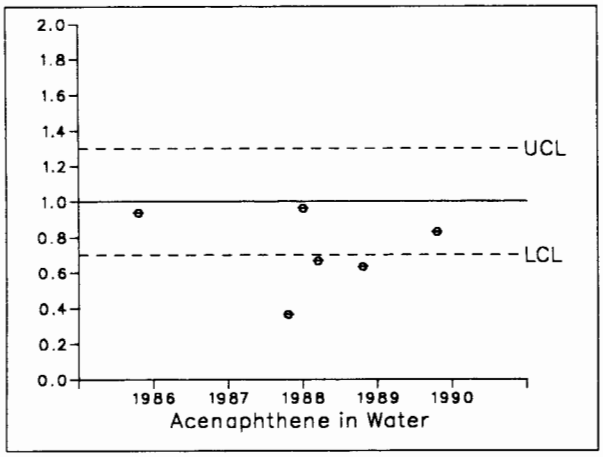
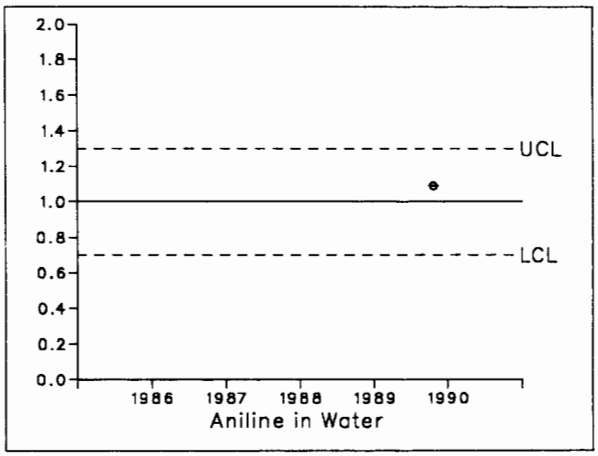

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
1,2,4–Trimethylbenzene in Tubes and Badges

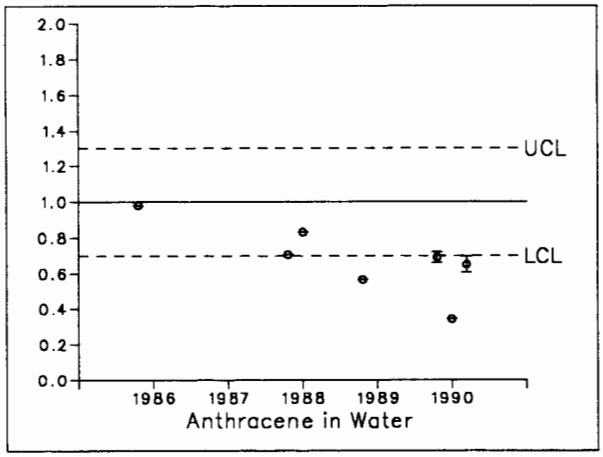
Fig. D-3. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Mixed-Xylenes (o + m + p) in Tubes and Badges


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
o-Xylene in Tubes and Badges


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Acenaphthene in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Aniline in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Anthracene in Water

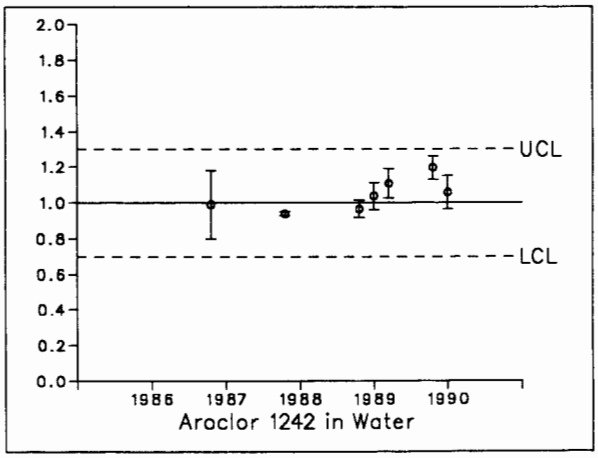

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Aroclor 1242 in Water

Fig. D-3. (cont)

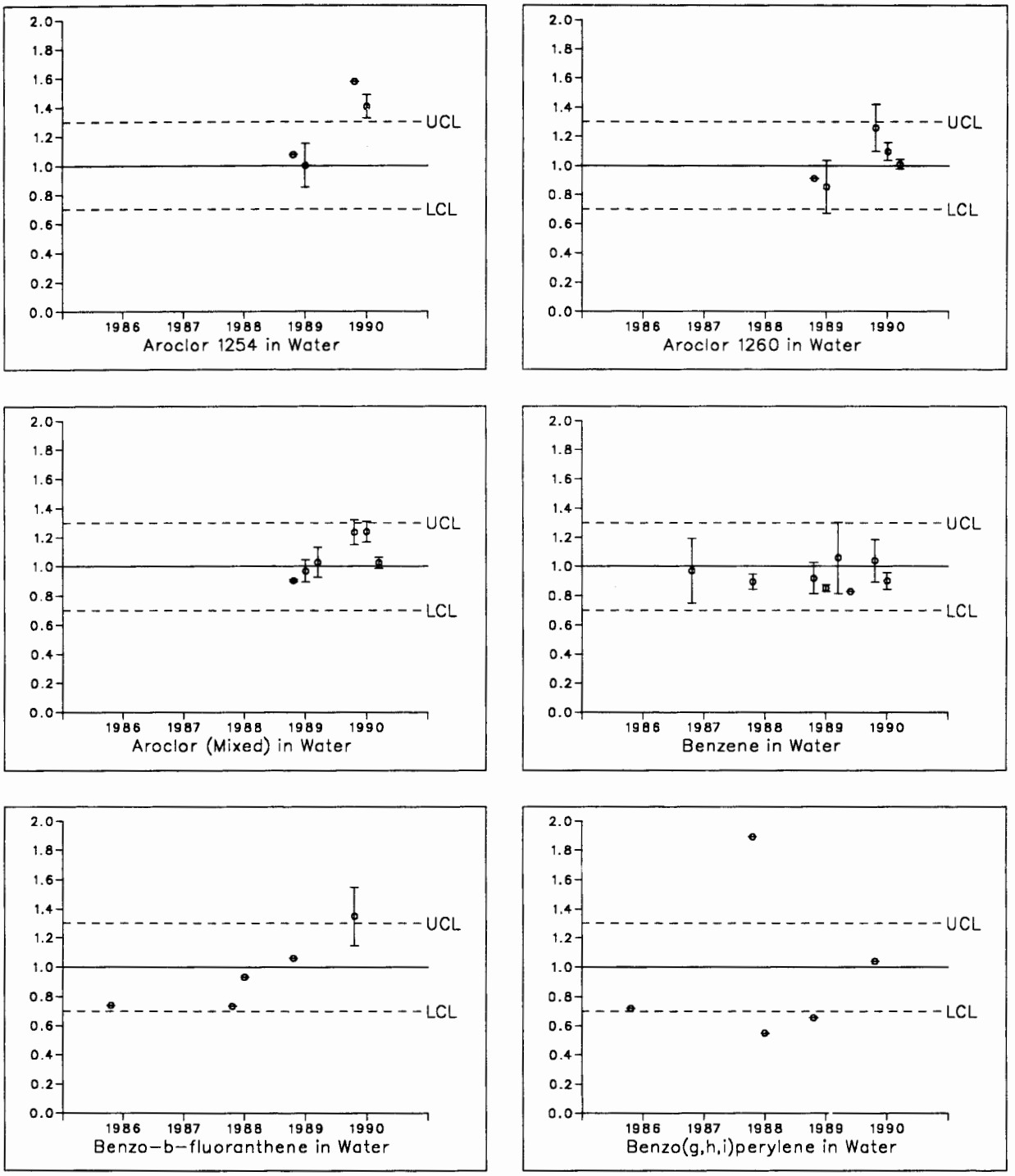
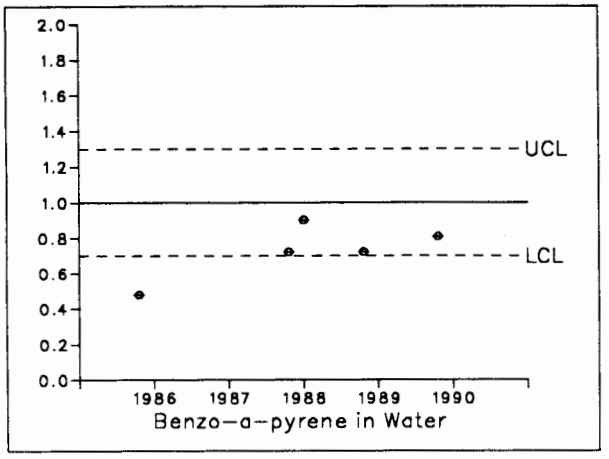
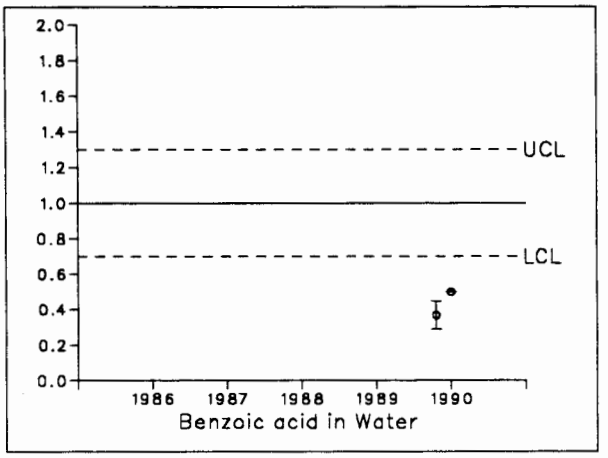
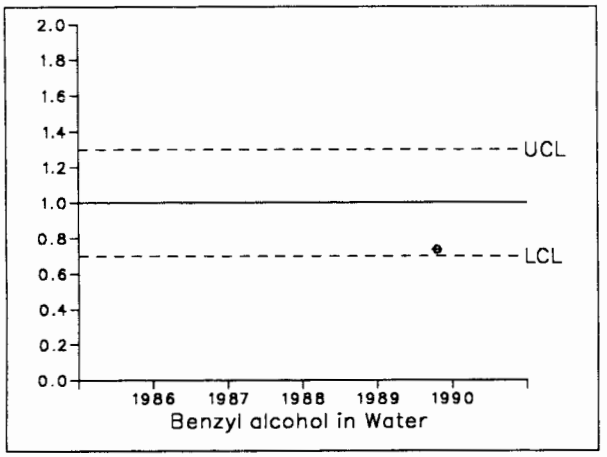
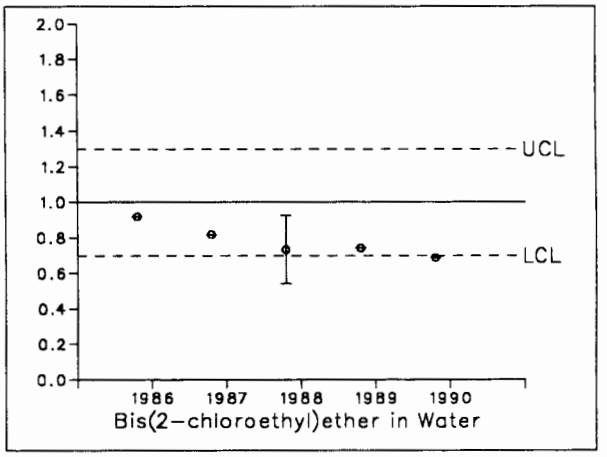

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Aroclor 1254 in Water
Aroclor 1260 in Water
Aroclor (Mixed) in Water
Benzene in Water
Benzo-b-fluoranthene in Water
Benzo(g,h,i)perylene in Water

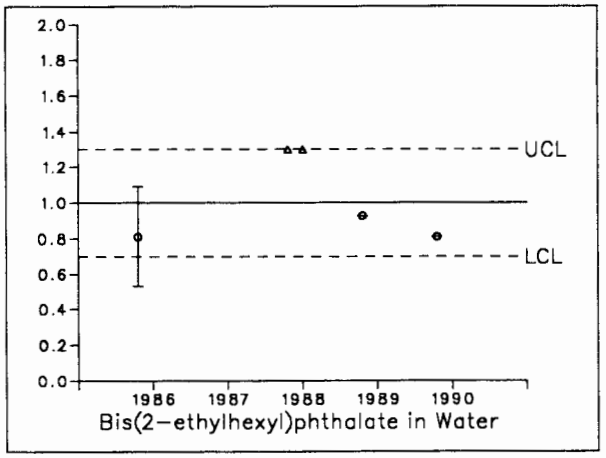
Fig. D-3. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Benzo-a-pyrene in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Benzoic acid in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Benzyl alcohol in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Bis(2-chloroethyl)ether in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Bis(2-ethylhexyl)phthalate in Water

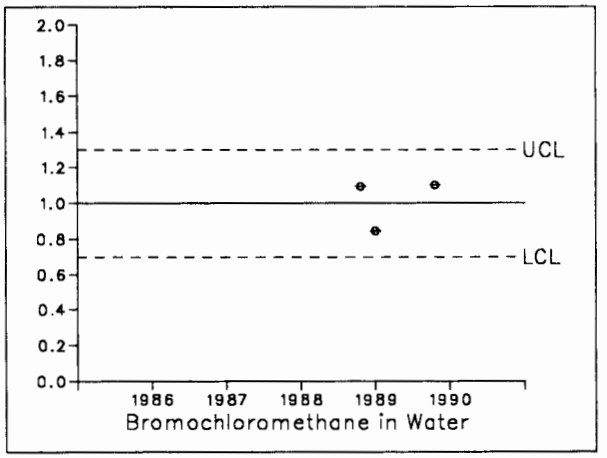
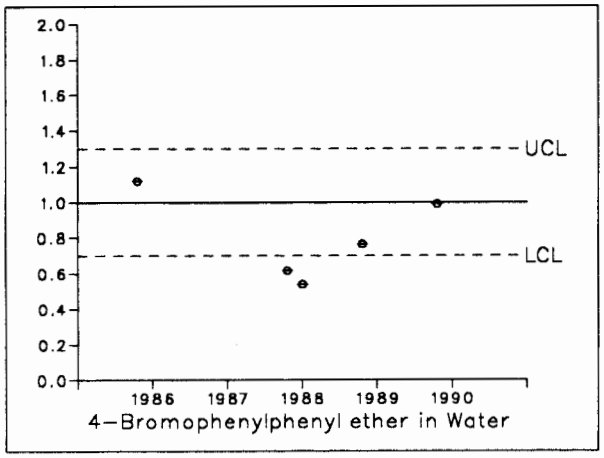
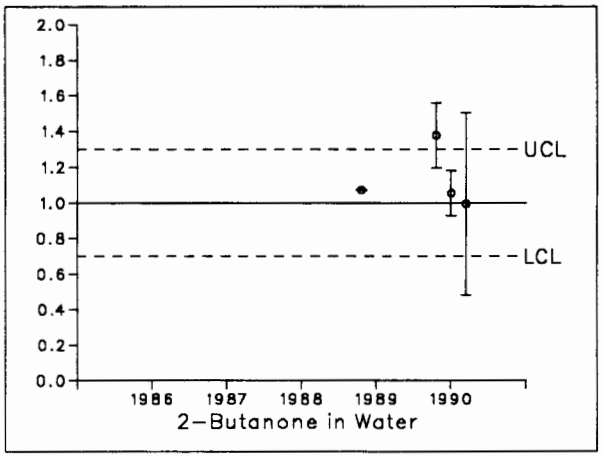
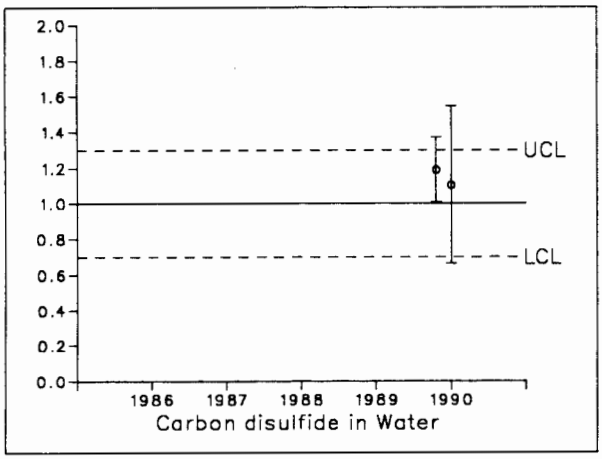
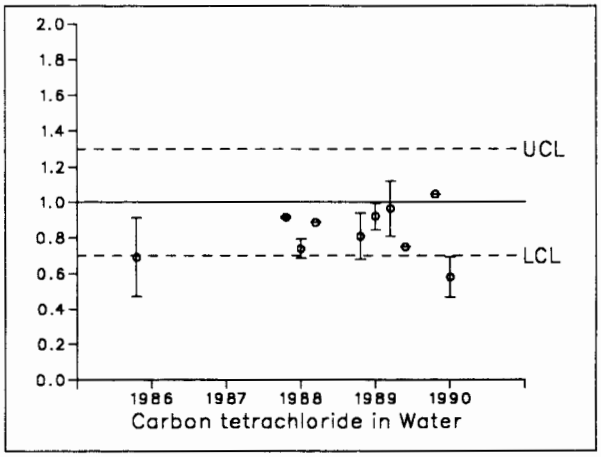

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Bromochloromethane in Water

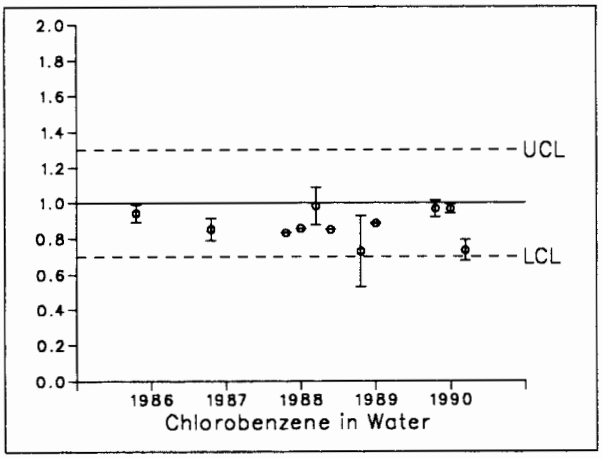
Fig. D-3. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
4-Bromophenylphenyl ether in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
2-Butanone in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Carbon disulfide in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Carbon tetrachloride in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Chlorobenzene in Water

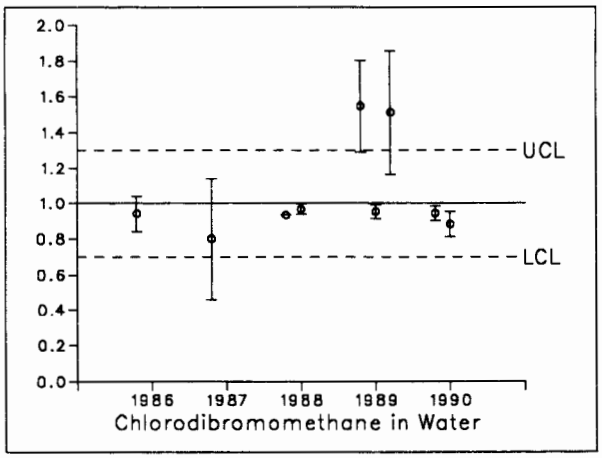
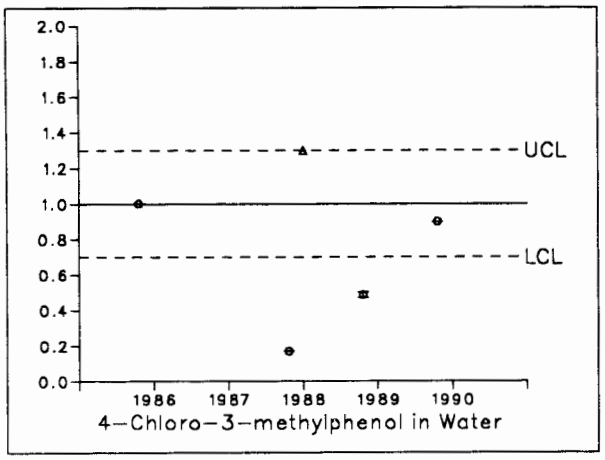
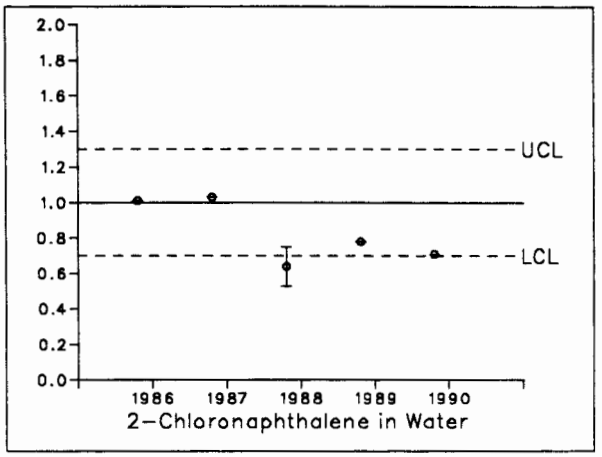
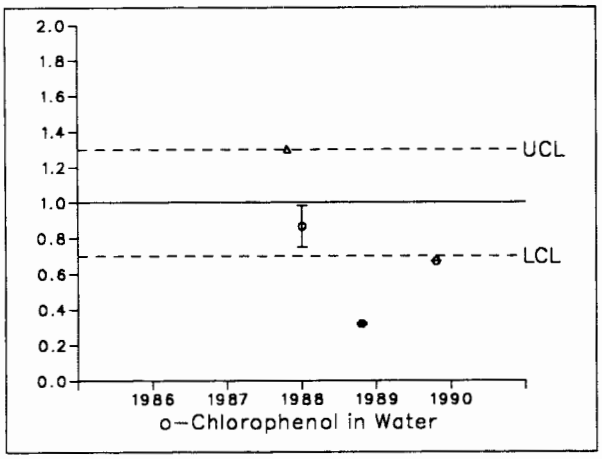
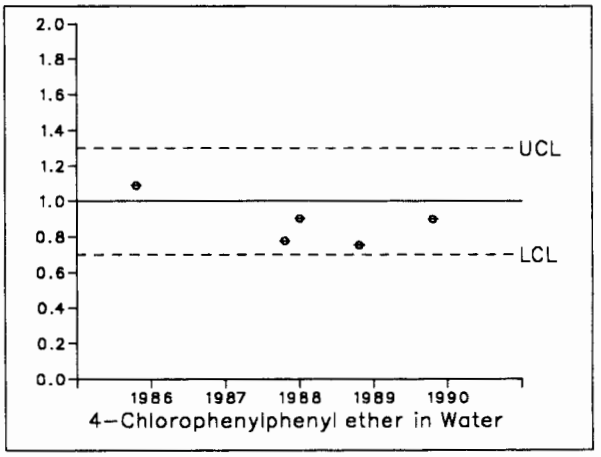

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Chlorodibromomethane in Water

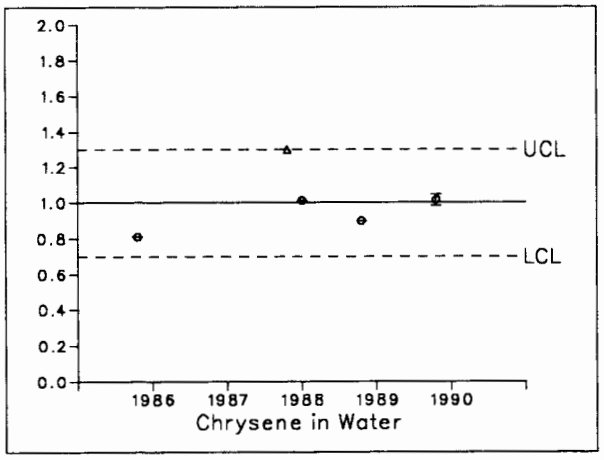
Fig. D-3. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
4-Chloro-3-methylphenol in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
2-Chloronaphthalene in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
o-Chlorophenol in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
4-Chlorophenylphenyl ether in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Chrysene in Water

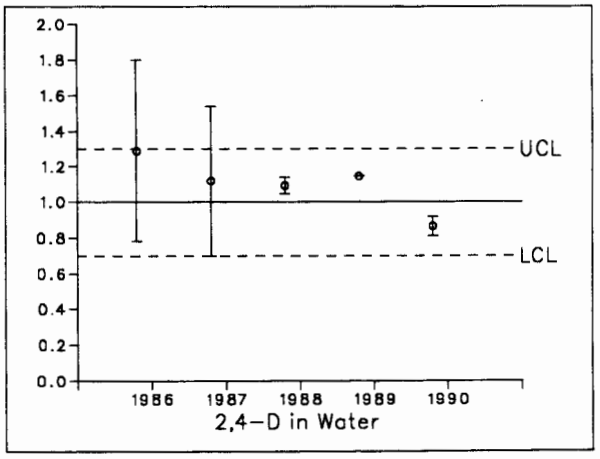
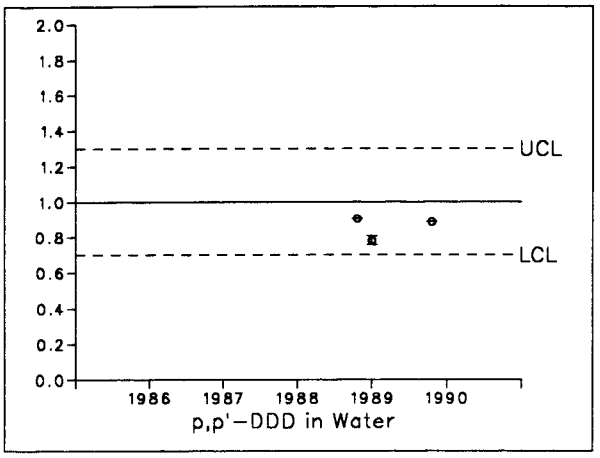
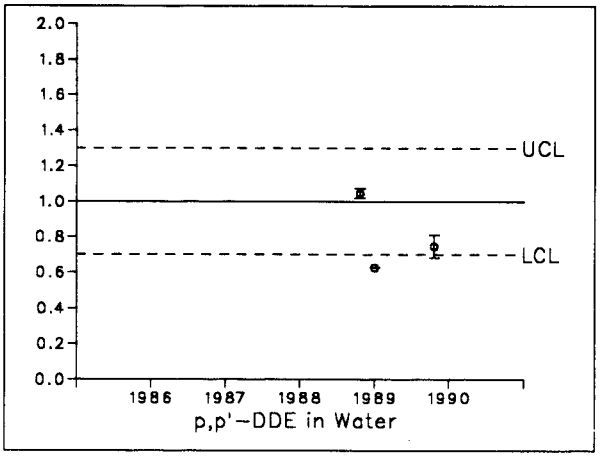
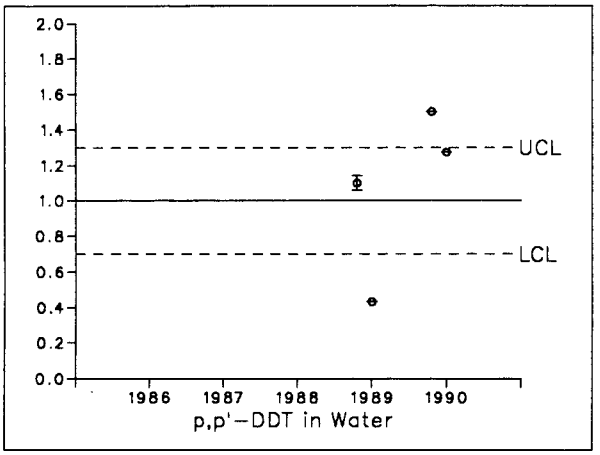
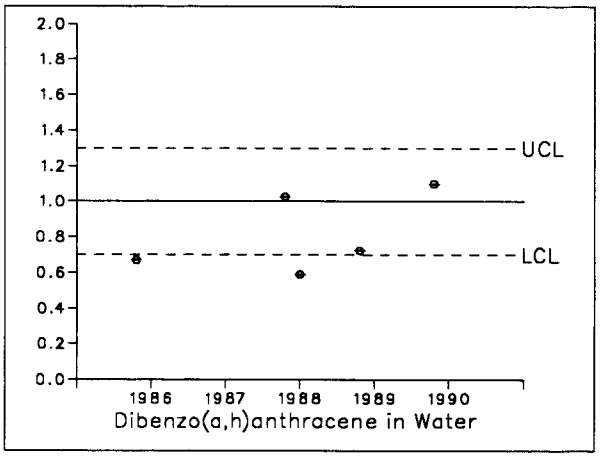

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
2,4-D in Water

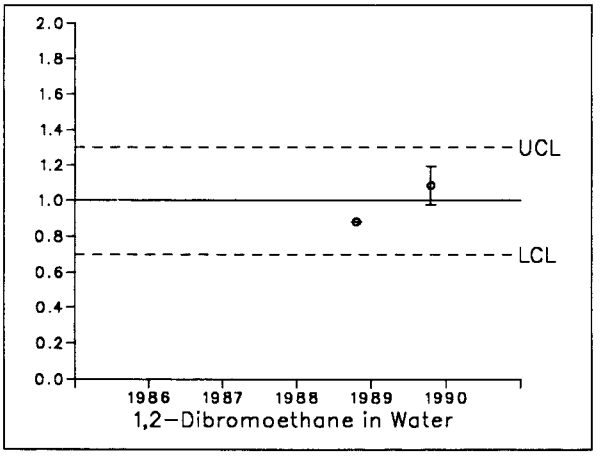
Fig. D-3. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
p,p'-DDD in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
p,p'-DDE in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
p,p'-DDT in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Dibenzo(a,h)anthracene in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
1,2-Dibromoethane in Water

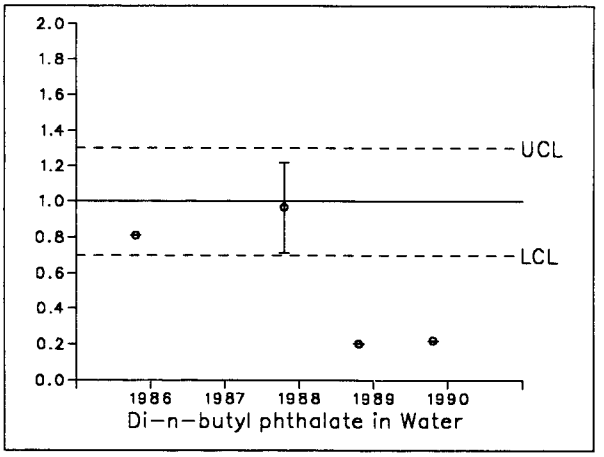
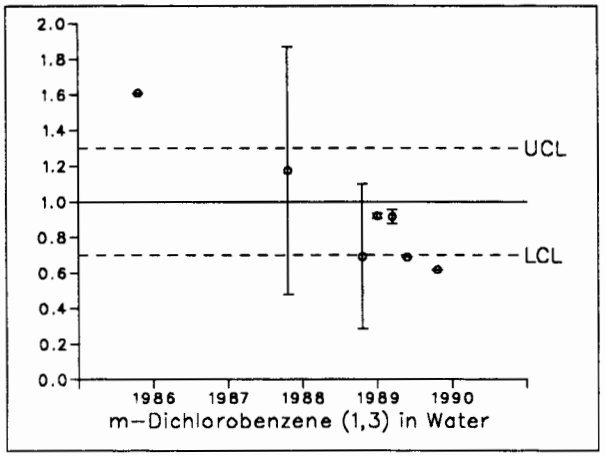
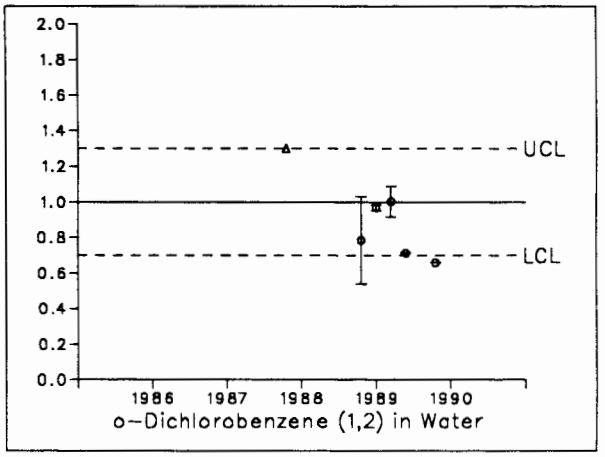
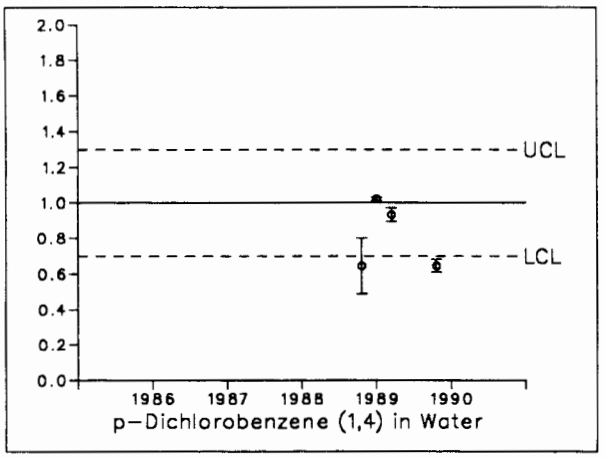
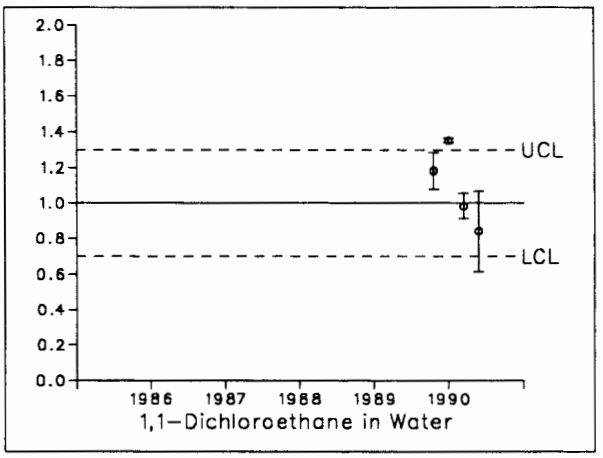

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Di-n-butyl phthalate in Water

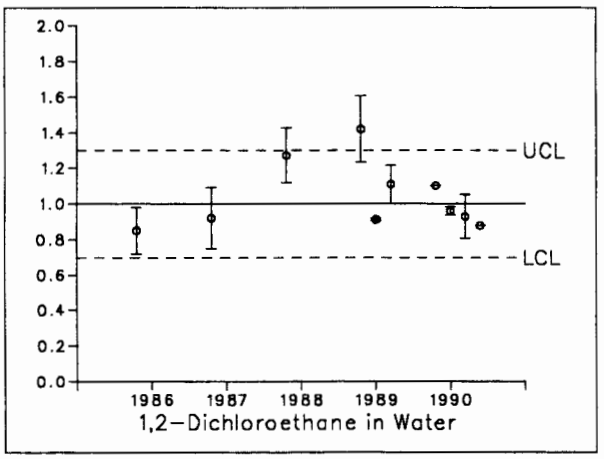
Fig. D-3. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
m-Dichlorobenzene (1,3) in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
o-Dichlorobenzene (1,2) in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
p-Dichlorobenzene (1,4) in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
1,1-Dichloroethane in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
1,2-Dichloroethane in Water

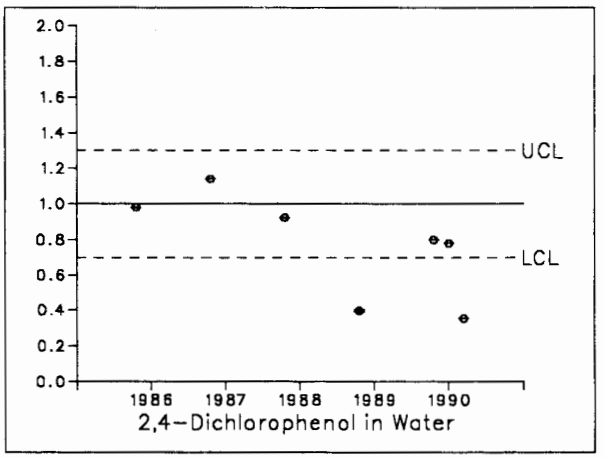

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
2,4-Dichlorophenol in Water

Fig. D-3. (cont)

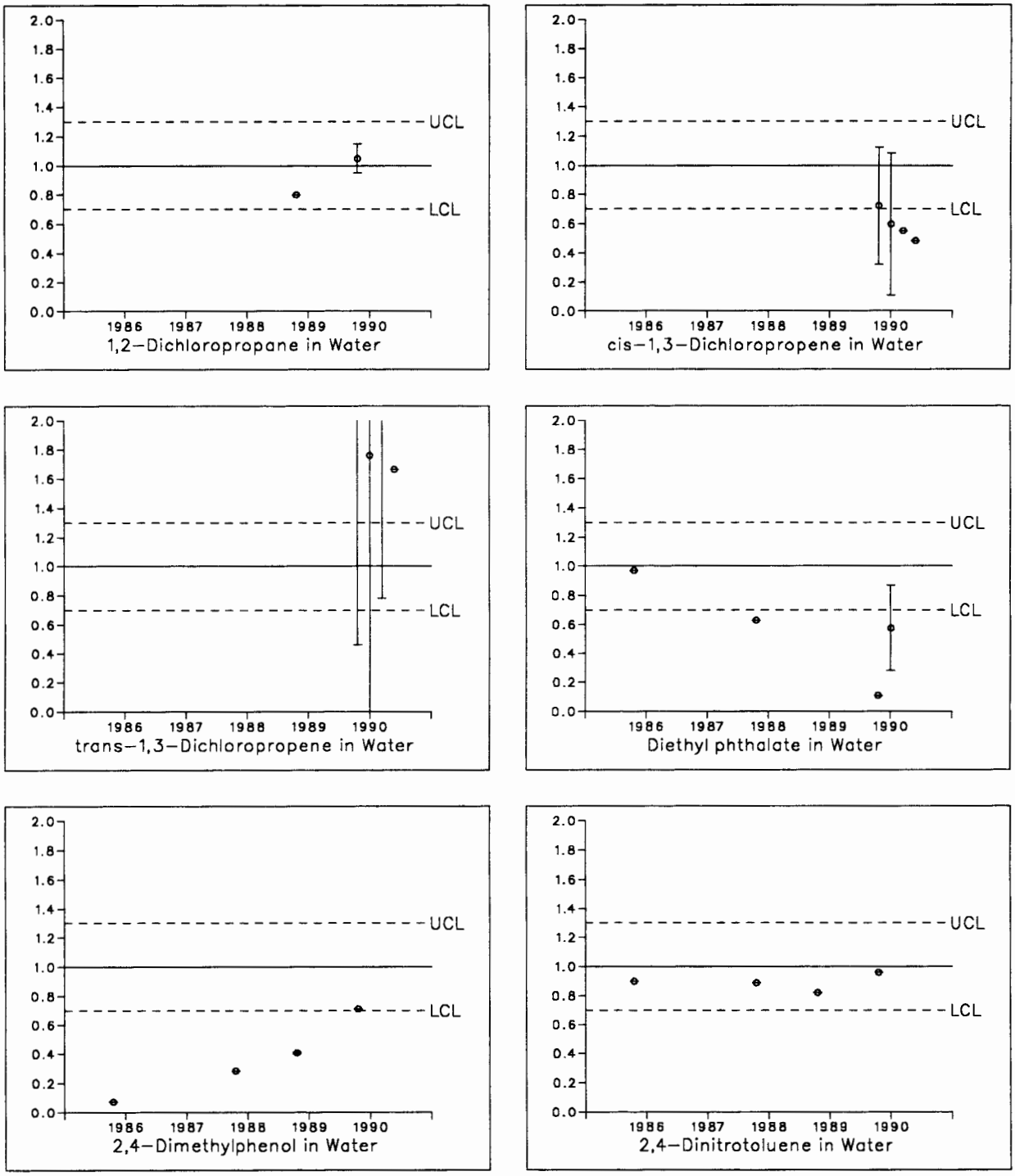
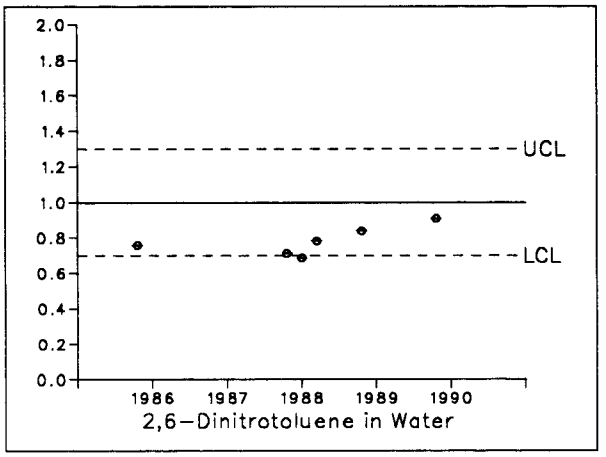
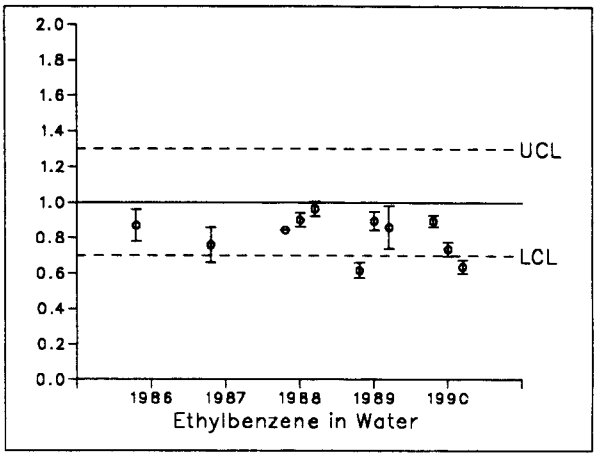
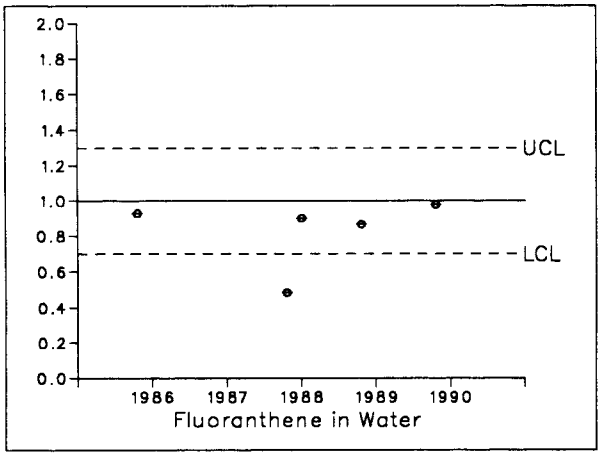
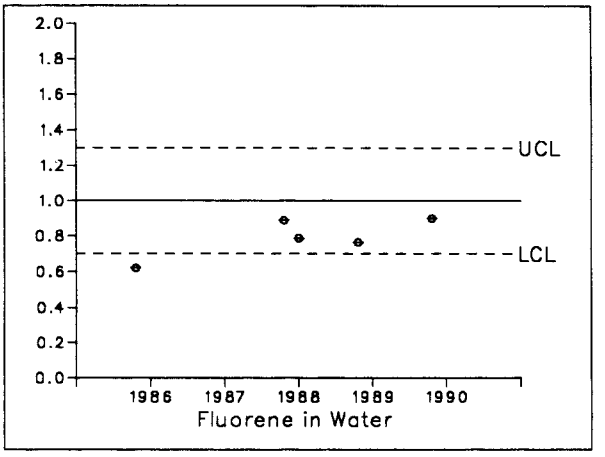

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
1,2-Dichloropropane in Water
cis-1,3-Dichloropropene in Water
trans-1,3-Dichloropropene in Water
Diethyl phthalate in Water
2,4-Dimethylphenol in Water
2,4-Dinitrotoluene in Water

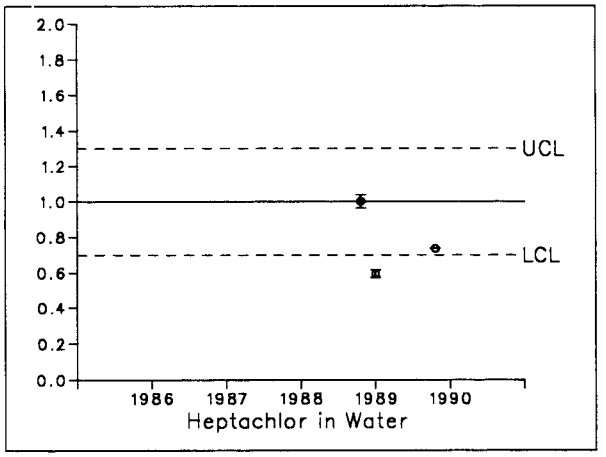
Fig. D-3. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
2,6–Dinitrotoluene in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Ethylbenzene in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Fluoranthene in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Fluorene in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Heptachlor in Water

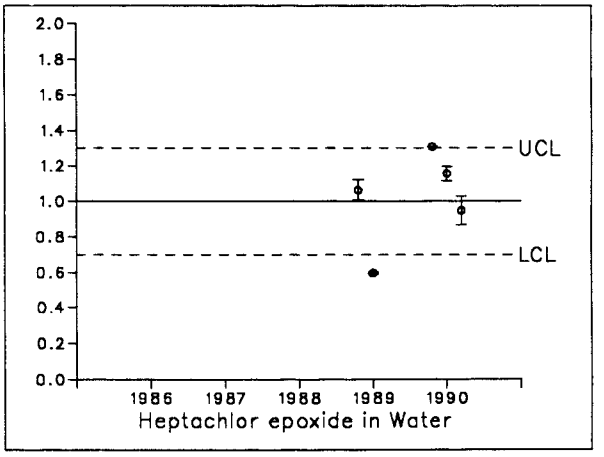

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Heptachlor epoxide in Water

Fig. D-3. (cont)

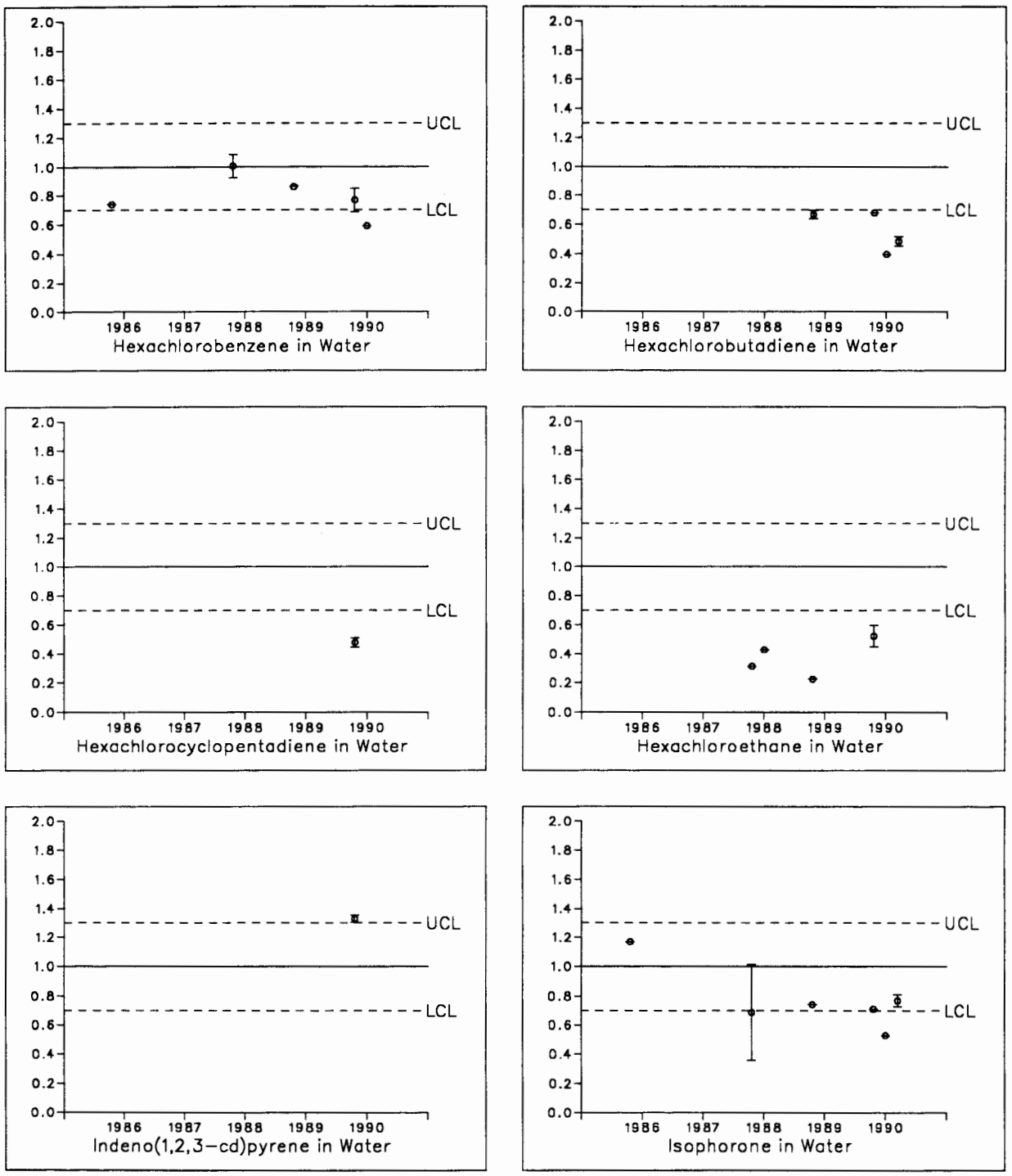
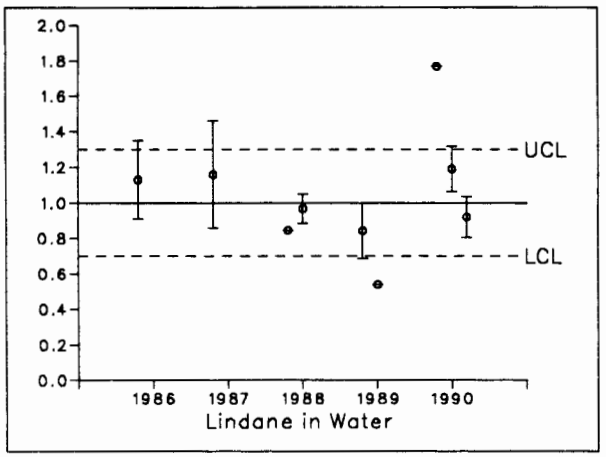
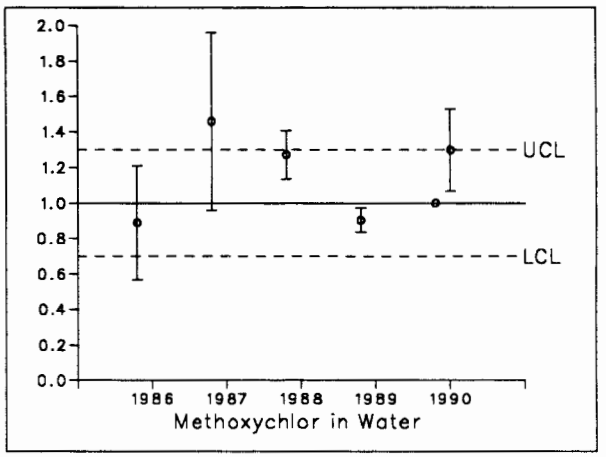
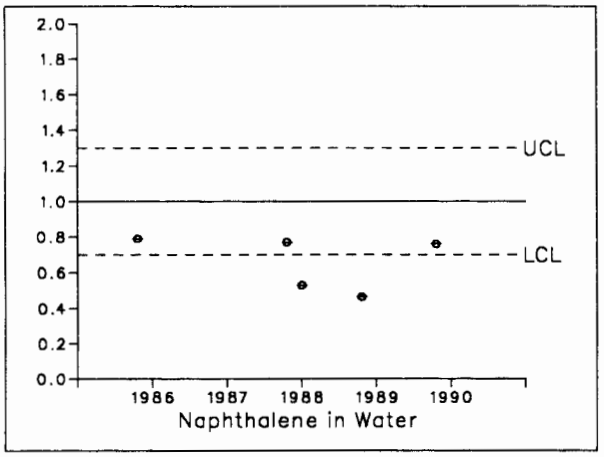
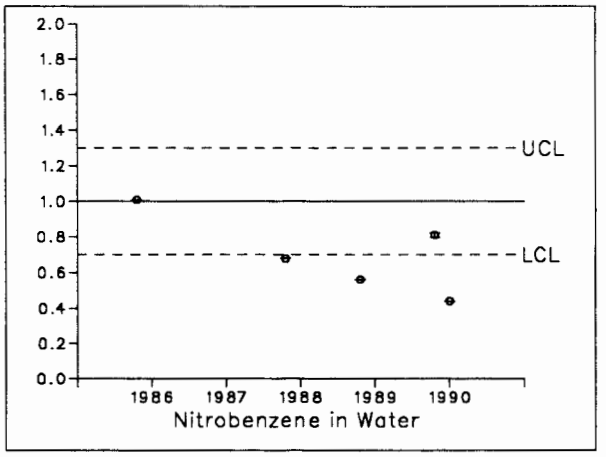

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986 1987 1988 1989 1990
Hexachlorobenzene in Water
Hexachlorobutadiene in Water
Hexachlorocyclopentadiene in Water
Hexachloroethane in Water
Indeno(1,2,3-cd)pyrene in Water
Isophorone in Water

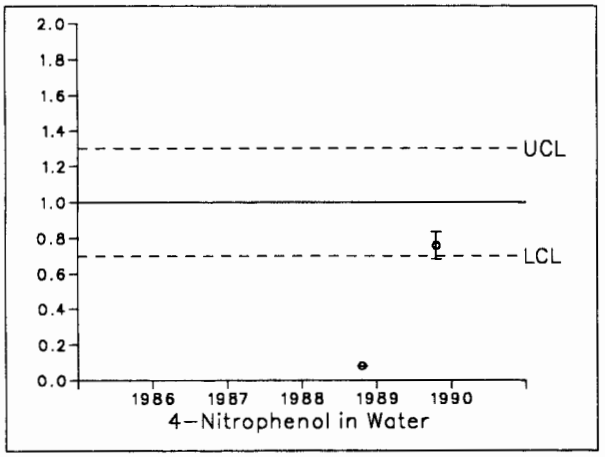
Fig. D-3. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Lindane in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Methoxychlor in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Naphthalene in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Nitrobenzene in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
4-Nitrophenol in Water

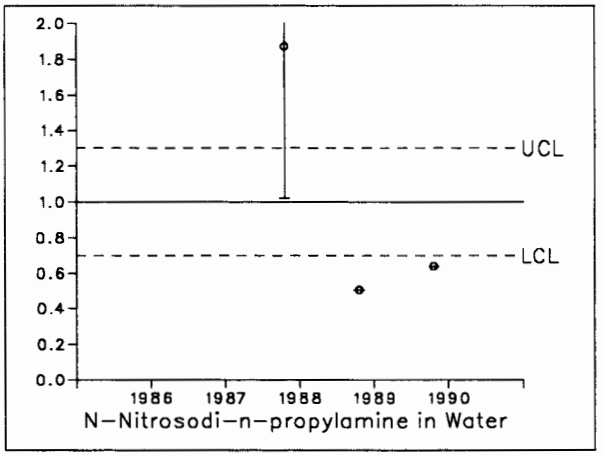
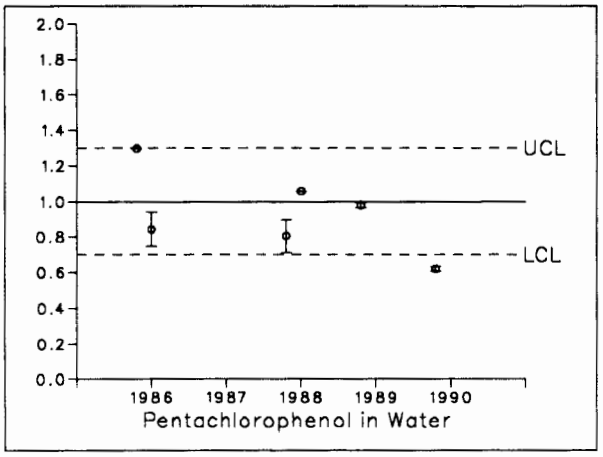
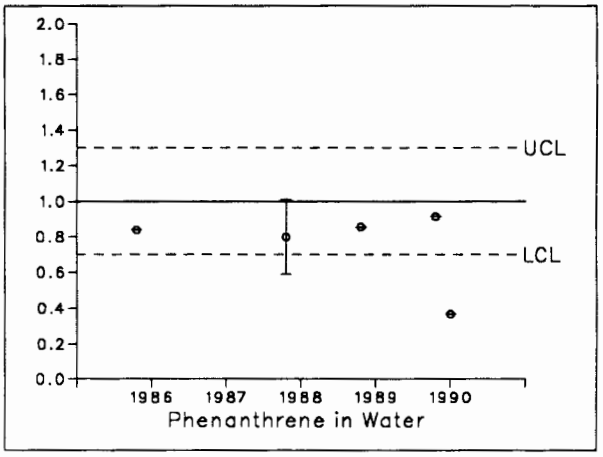
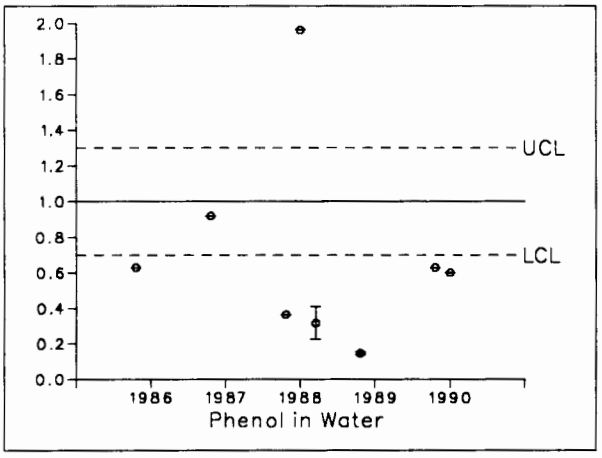
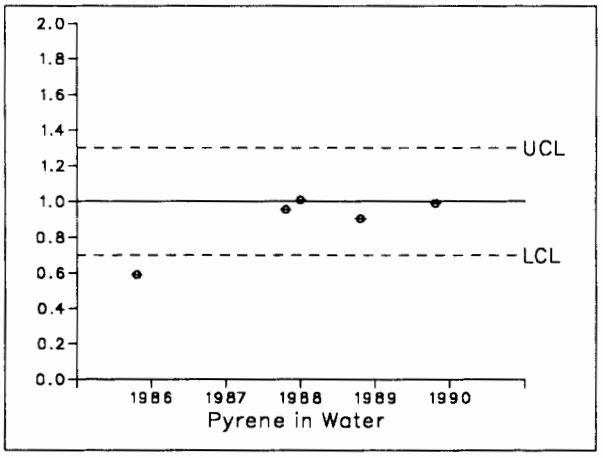

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
N-Nitrosodi-n-propylamine in Water

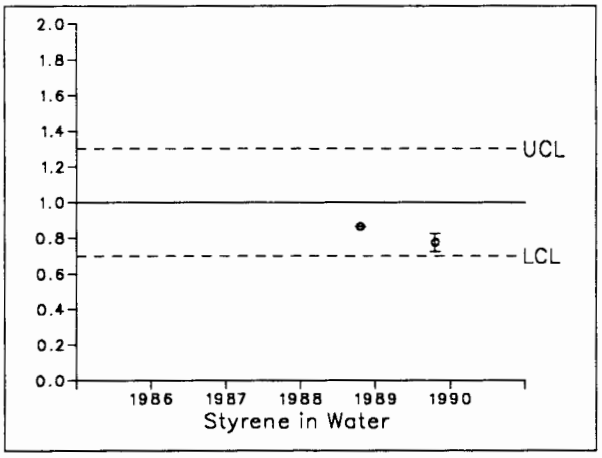
Fig. D-3. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Pentachlorophenol in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Phenanthrene in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Phenol in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Pyrene in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Styrene in Water

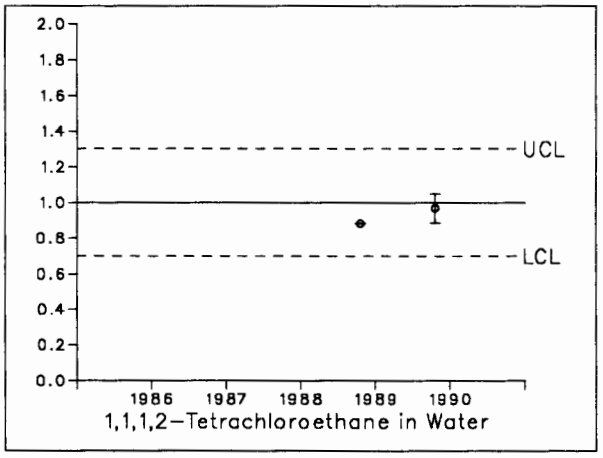
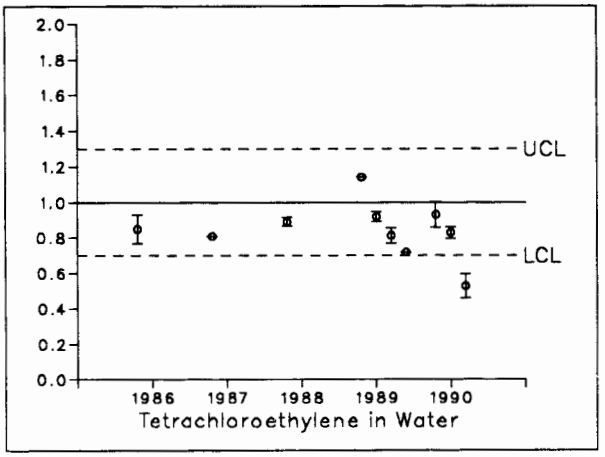
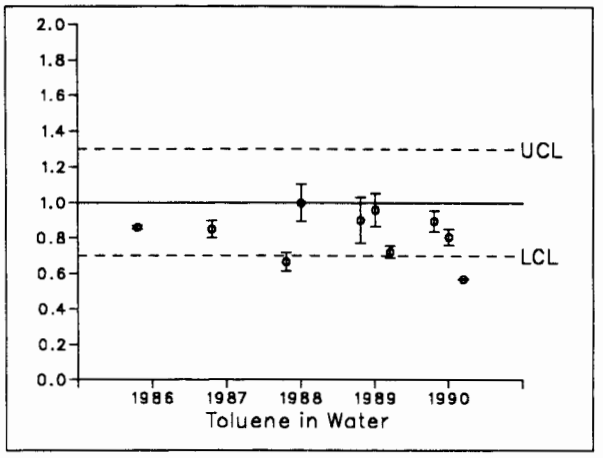
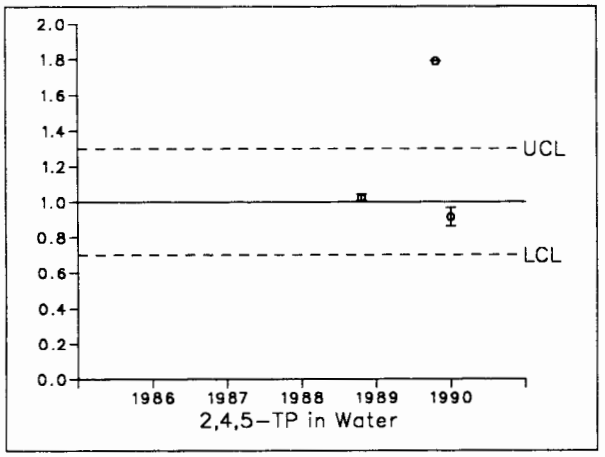
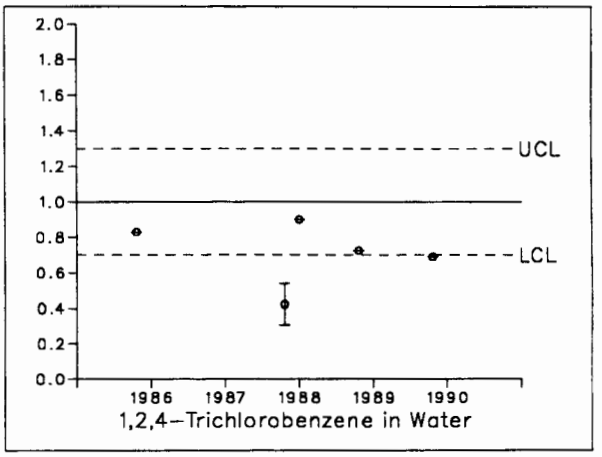

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
1,1,1,2–Tetrachloroethane in Water

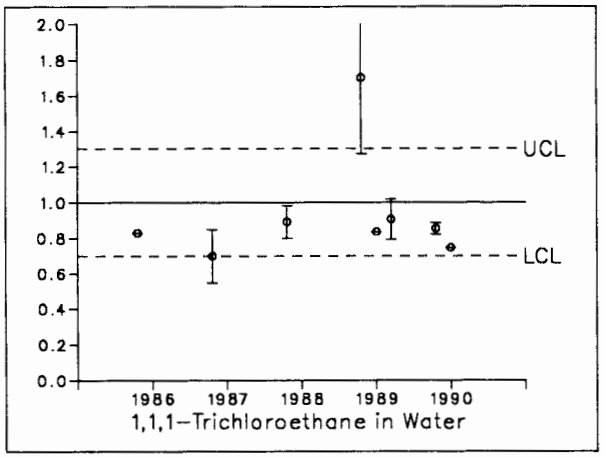
Fig. D-3. (cont)


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Tetrachloroethylene in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
Toluene in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
2,4,5–TP in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
1,2,4–Trichlorobenzene in Water


2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
1,1,1–Trichloroethane in Water

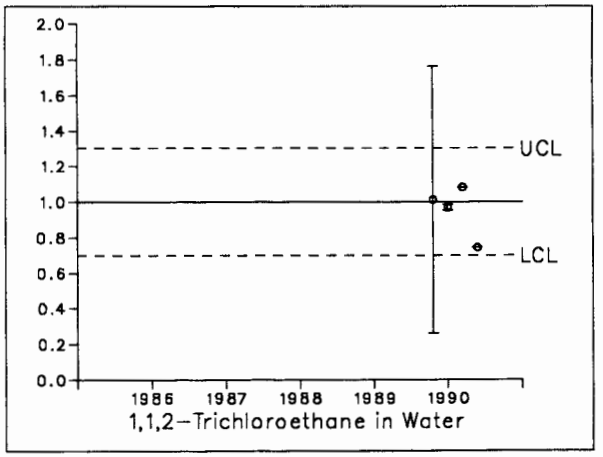
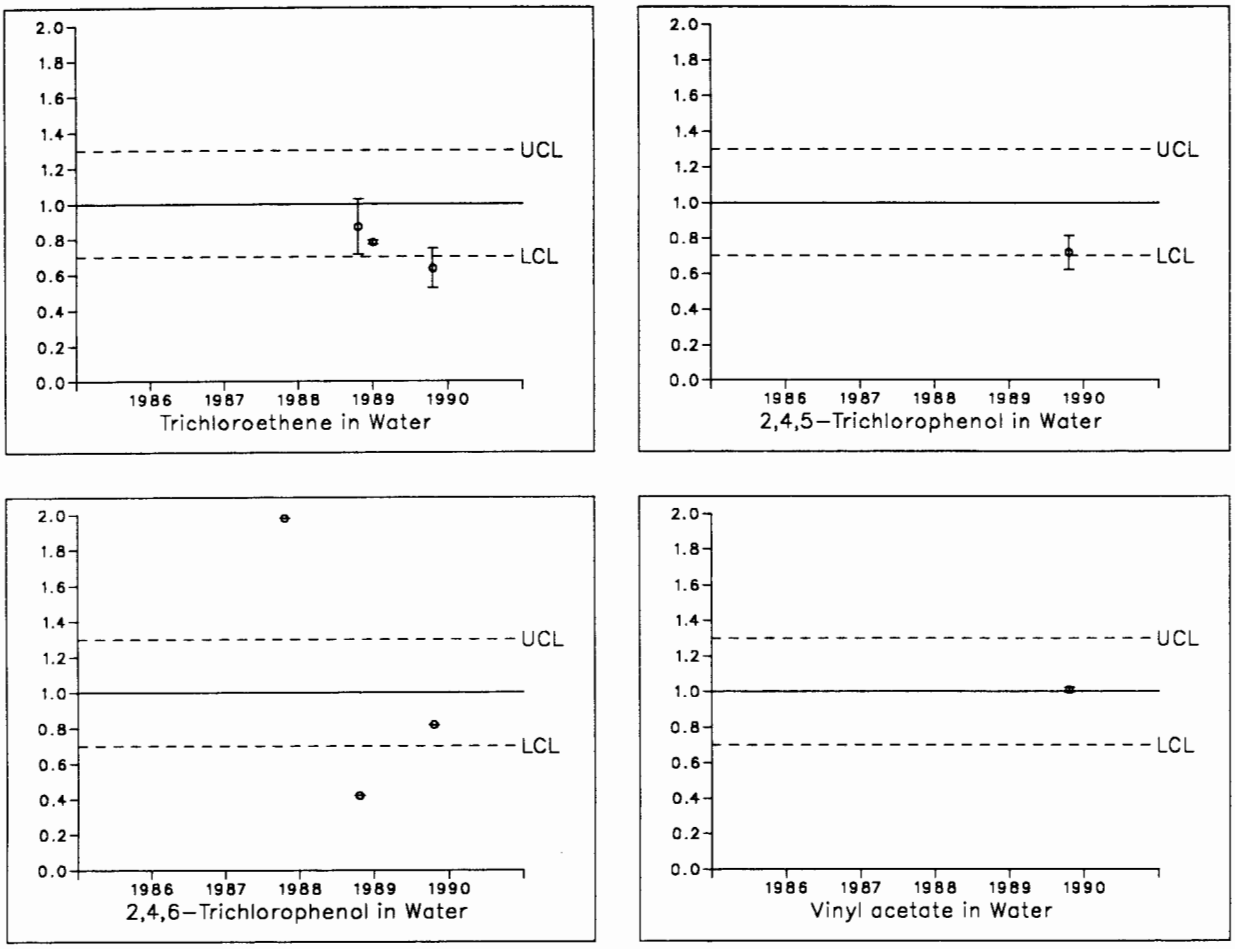

2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
UCL
LCL
1986
1987
1988
1989
1990
1,1,2–Trichloroethane in Water

Fig. D-3. (cont)



NOTE: △ ▽ indicates data points beyond the ± 3 σ control limits.

Fig. D-3. (cont)

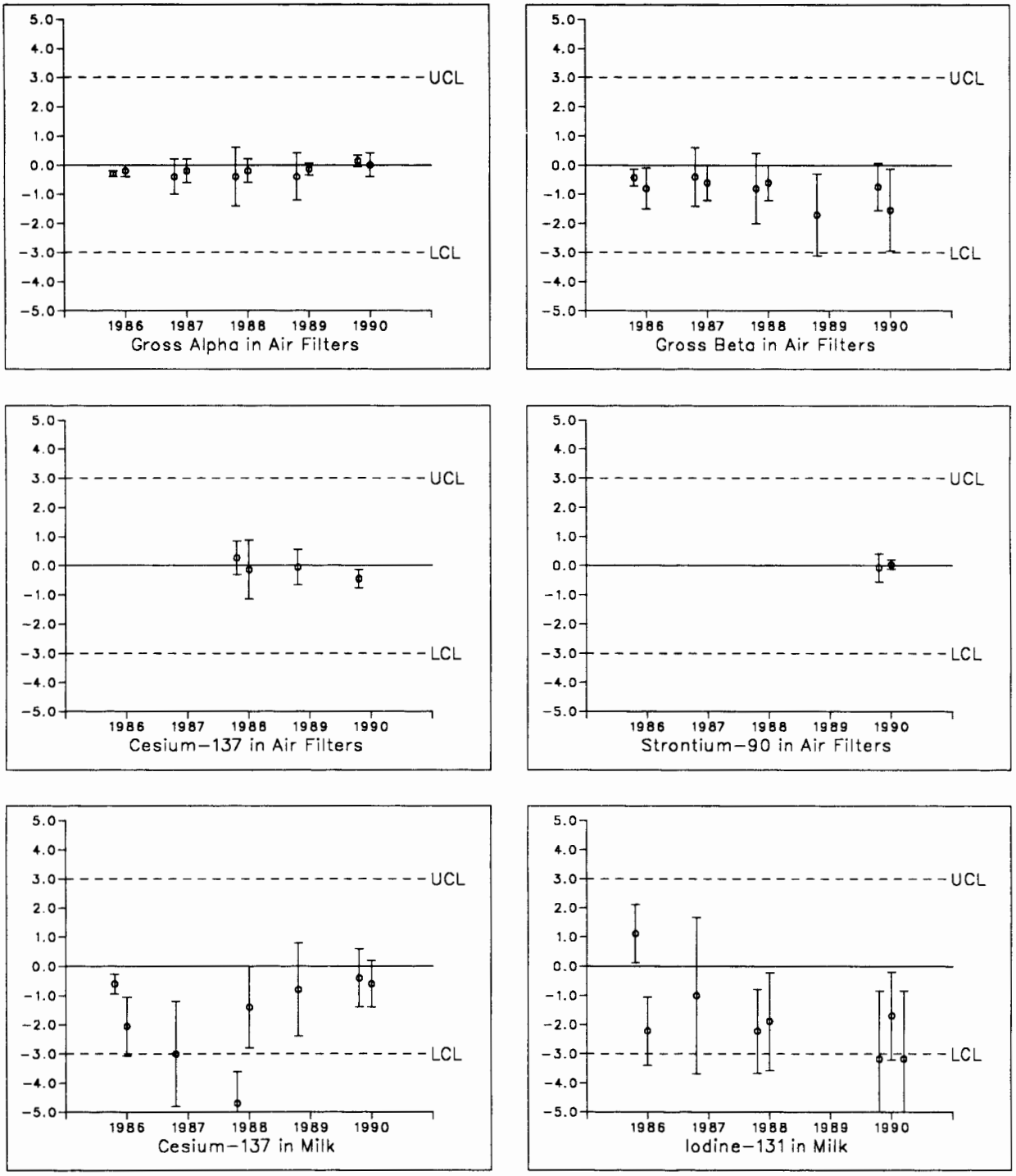


Fig. D-4. Five-year trends in EPA radiochemical quality assurance program for air filters, milk, and water.

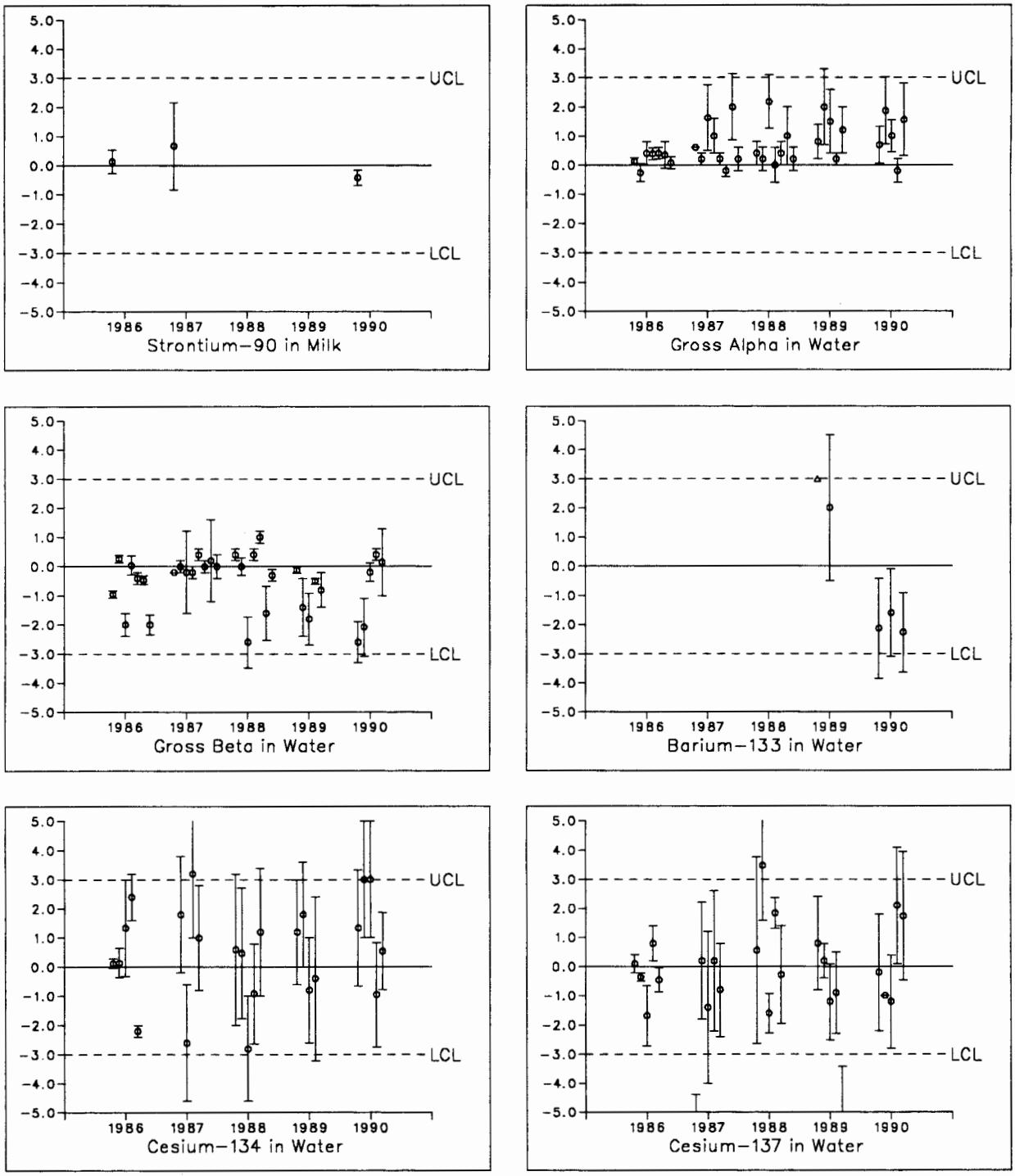

5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Strontium-90 in Milk
Gross Alpha in Water
Gross Beta in Water
Barium-133 in Water
Cesium-134 in Water
Cesium-137 in Water

Fig. D-4. (cont)

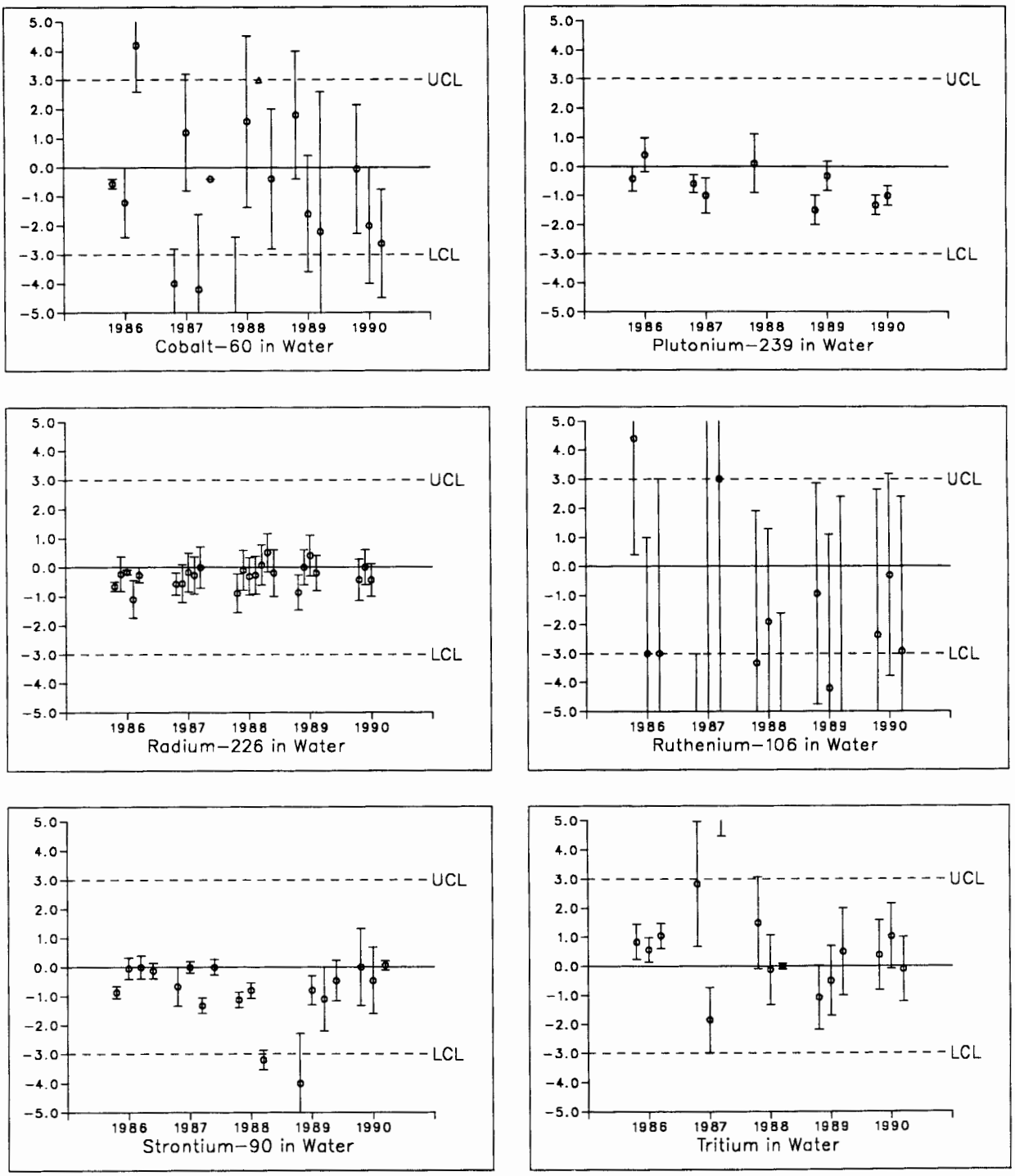
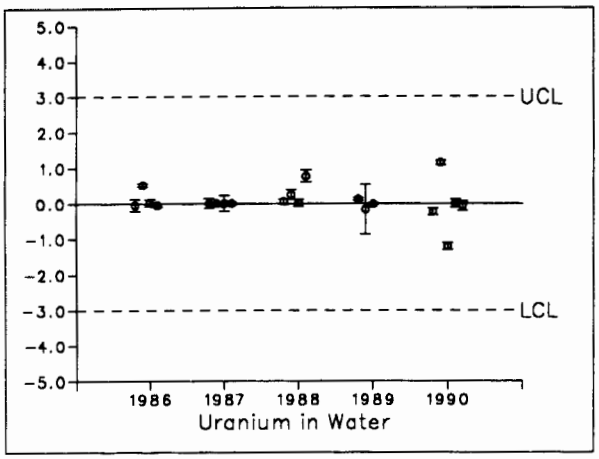
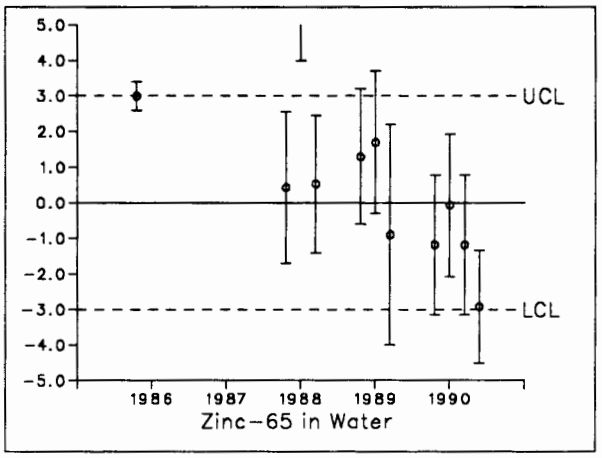

5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Cobalt-60 in Water
Plutonium-239 in Water
Radium-226 in Water
Ruthenium-106 in Water
Strontium-90 in Water
Tritium in Water

Fig. D-4. (cont)





NOTE: The position of each data point is determined by dividing the difference between the HSE-9 and agency values by the expected standard deviation given by the agency. The size of the error bar is determined by dividing the HSE-9 standard deviation by the agency standard deviation. In most cases, the HSE-9 mean is within one standard deviation of the agency value and our error bars overlap the agency mean value. For environmental levels of radioactivity, this record is good.

△ ▽ indicates data points beyond the ± 3 σ control limits.

Fig. D-4. (cont)

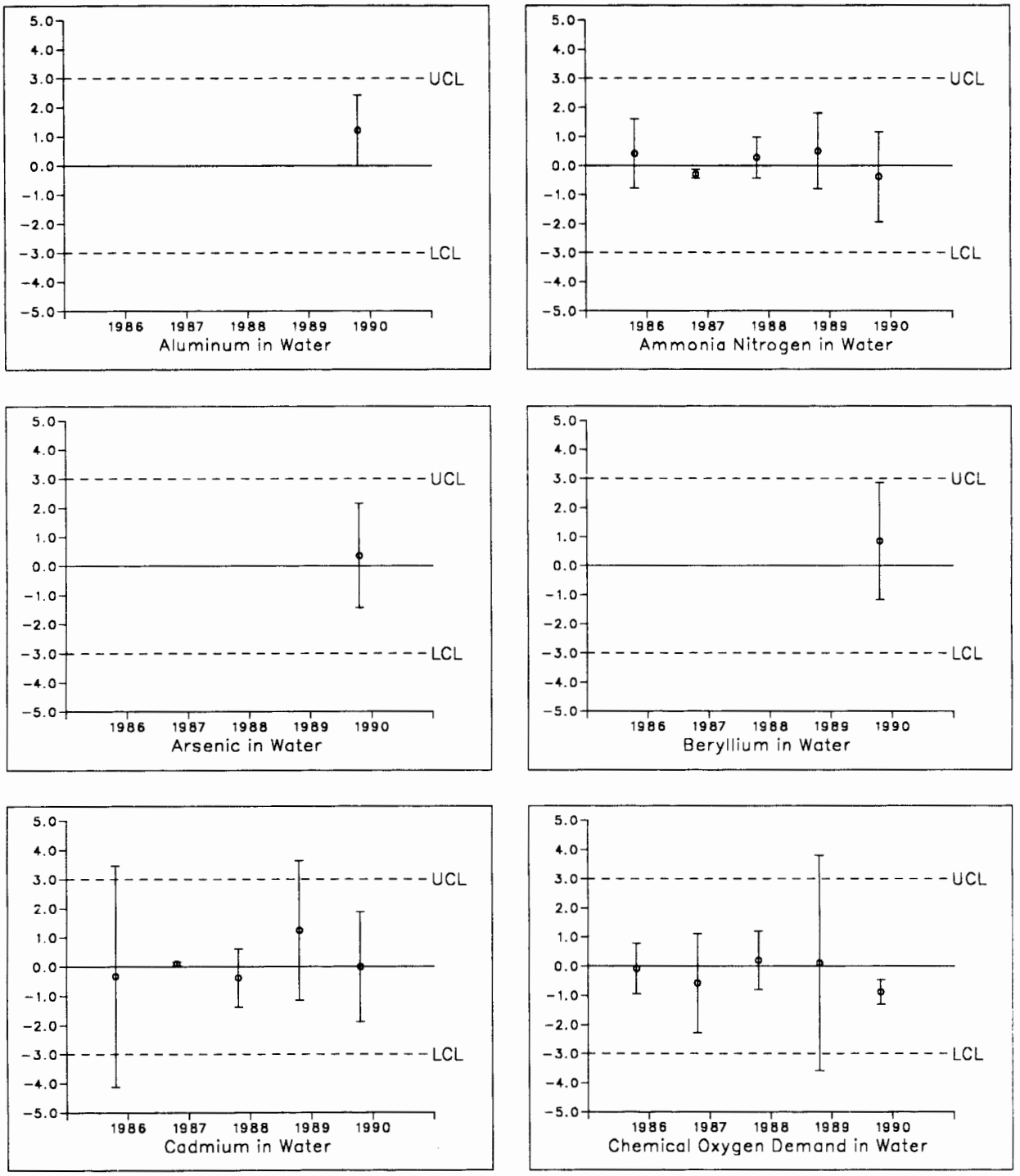
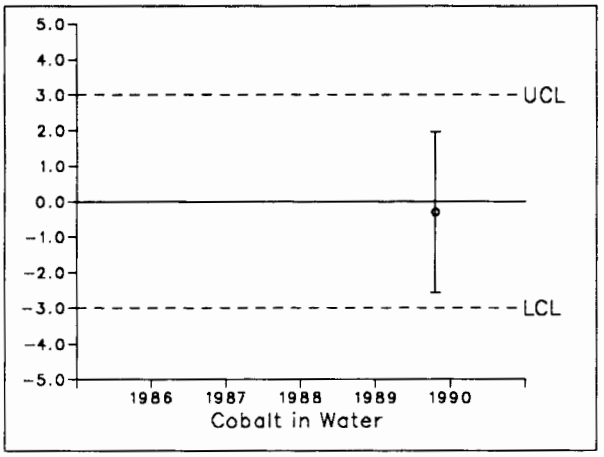
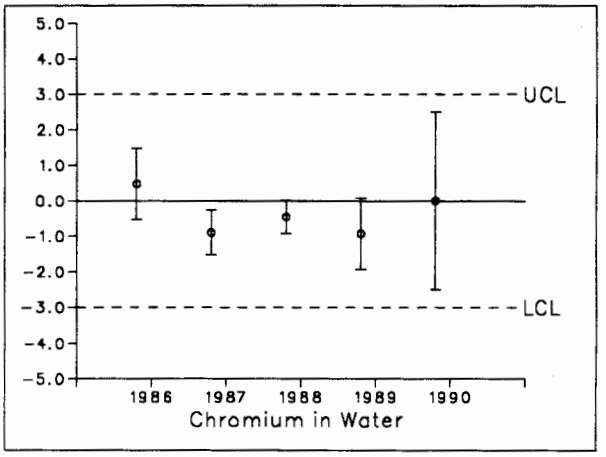
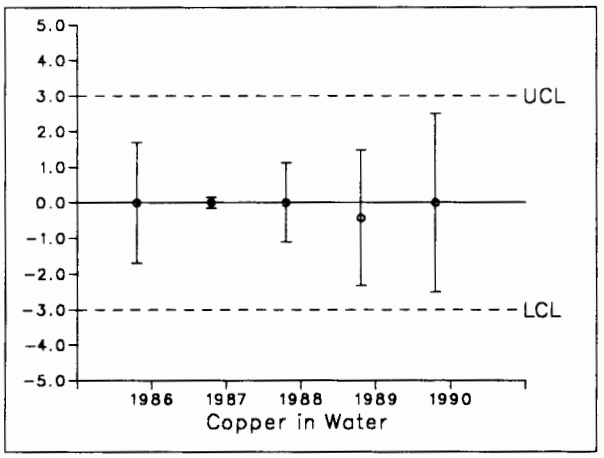
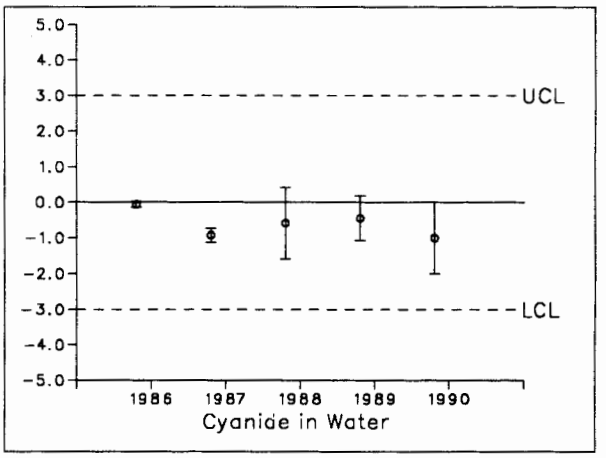


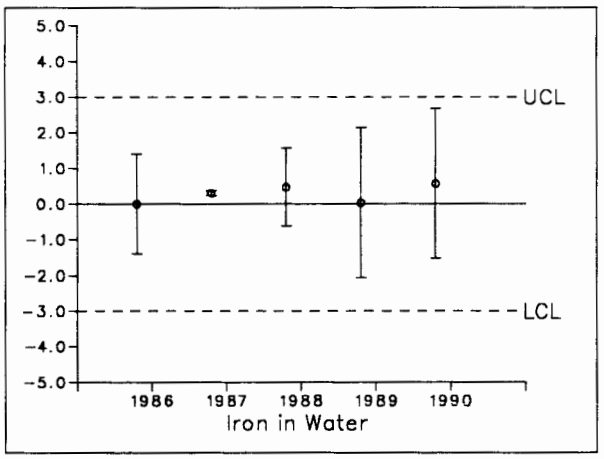
Fig. D-5. **Five-year trends in National Pollutant Discharge Elimination System quality assurance program for industrial and municipal wastewaters.**


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Cobalt in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Chromium in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Copper in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Cyanide in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Iron in Water

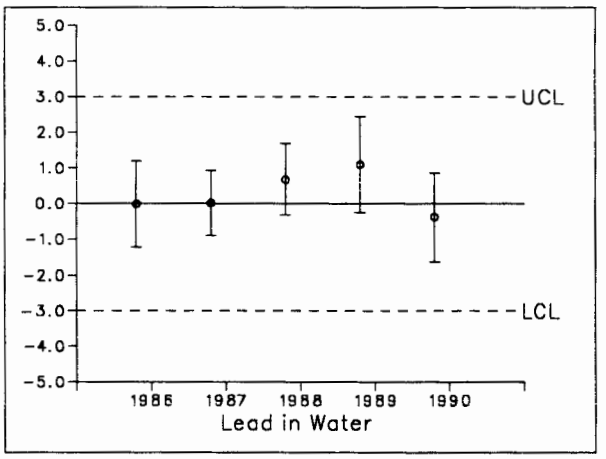
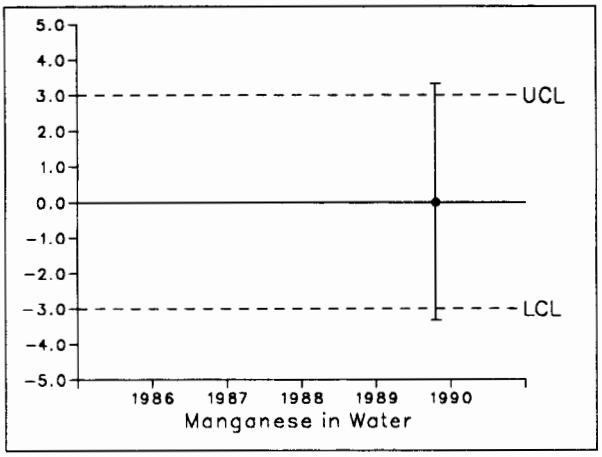
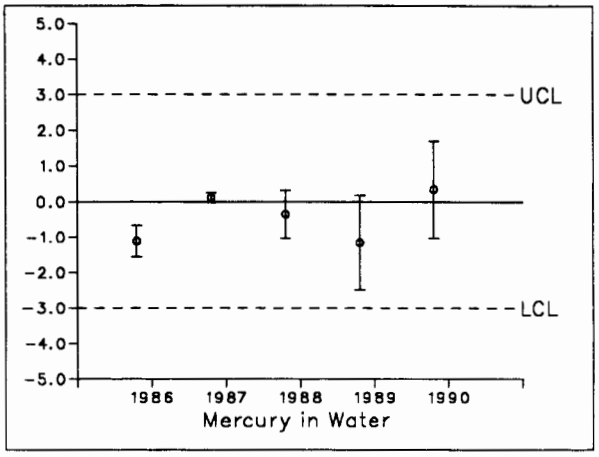
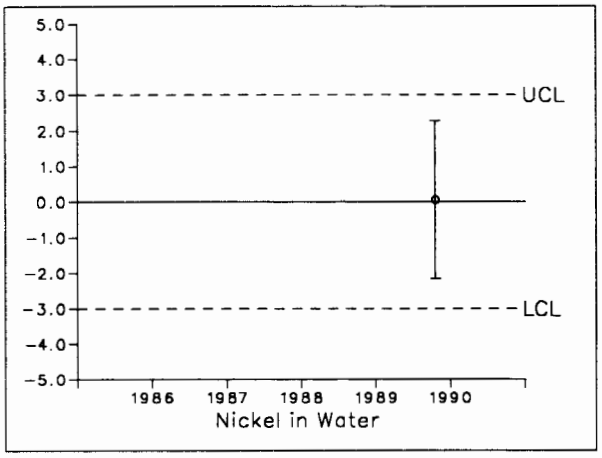
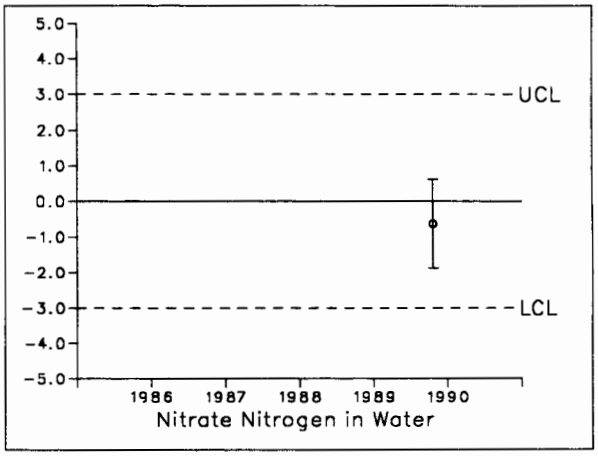

5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Lead in Water

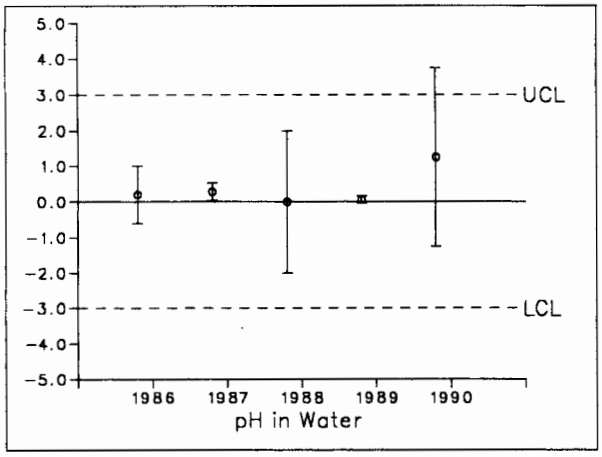
Fig. D-5. (cont)


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Manganese in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Mercury in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Nickel in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Nitrate Nitrogen in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
pH in Water

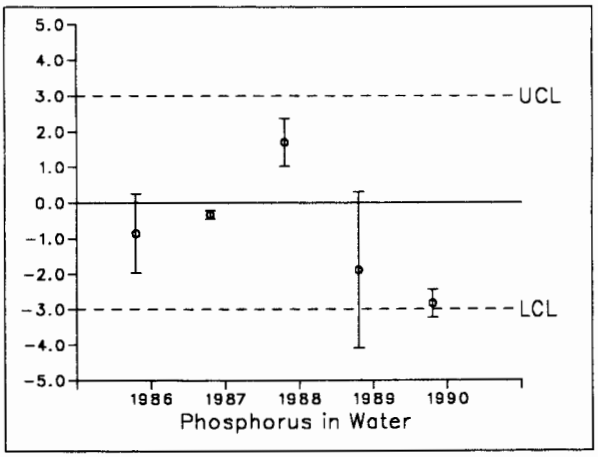
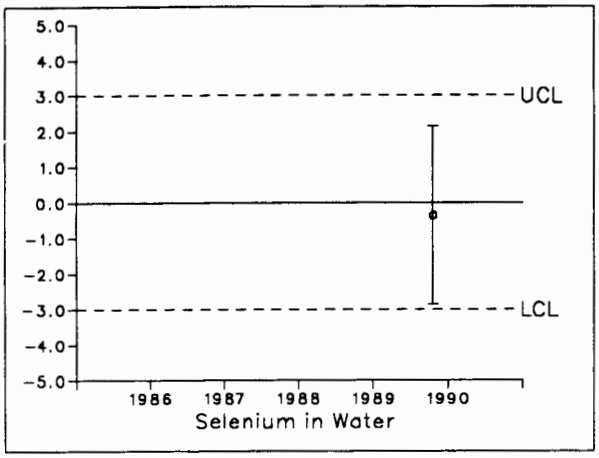
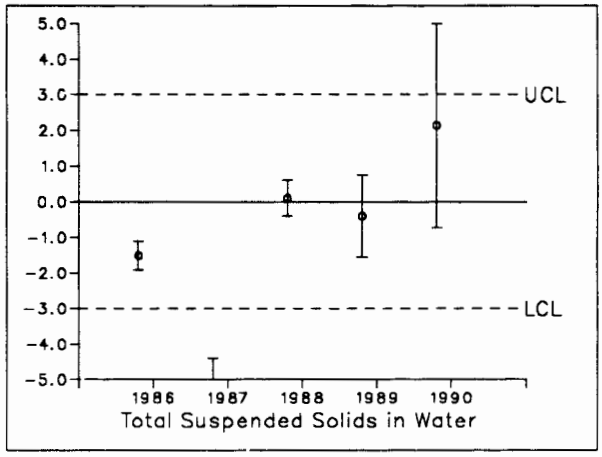
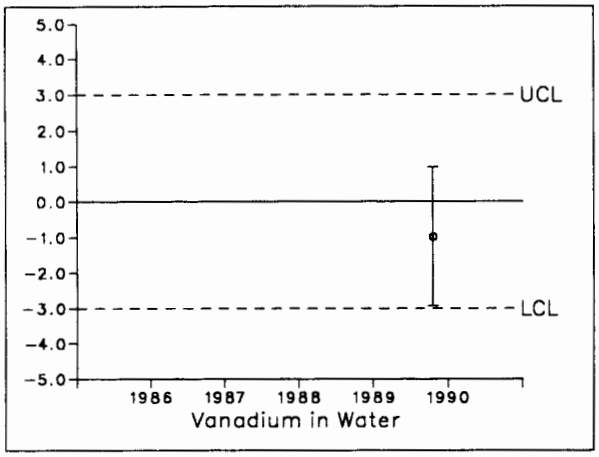
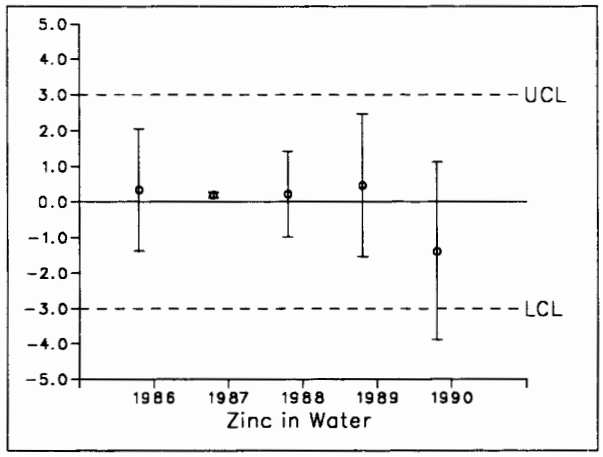

5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Phosphorus in Water

Fig. D-5. (cont)









NOTE: The position of each data point is determined by dividing the difference between the HSE-9 and agency values by the expected standard deviation given by the agency. The size of the error bar is determined by dividing the HSE-9 standard deviation by the agency standard deviation. In most cases, the HSE-9 mean is within one standard deviation of the agency value and our error bars overlap the agency mean value.

△ ▽ indicates data points beyond the ± 3 σ control limits.

Fig. D-5. (cont)

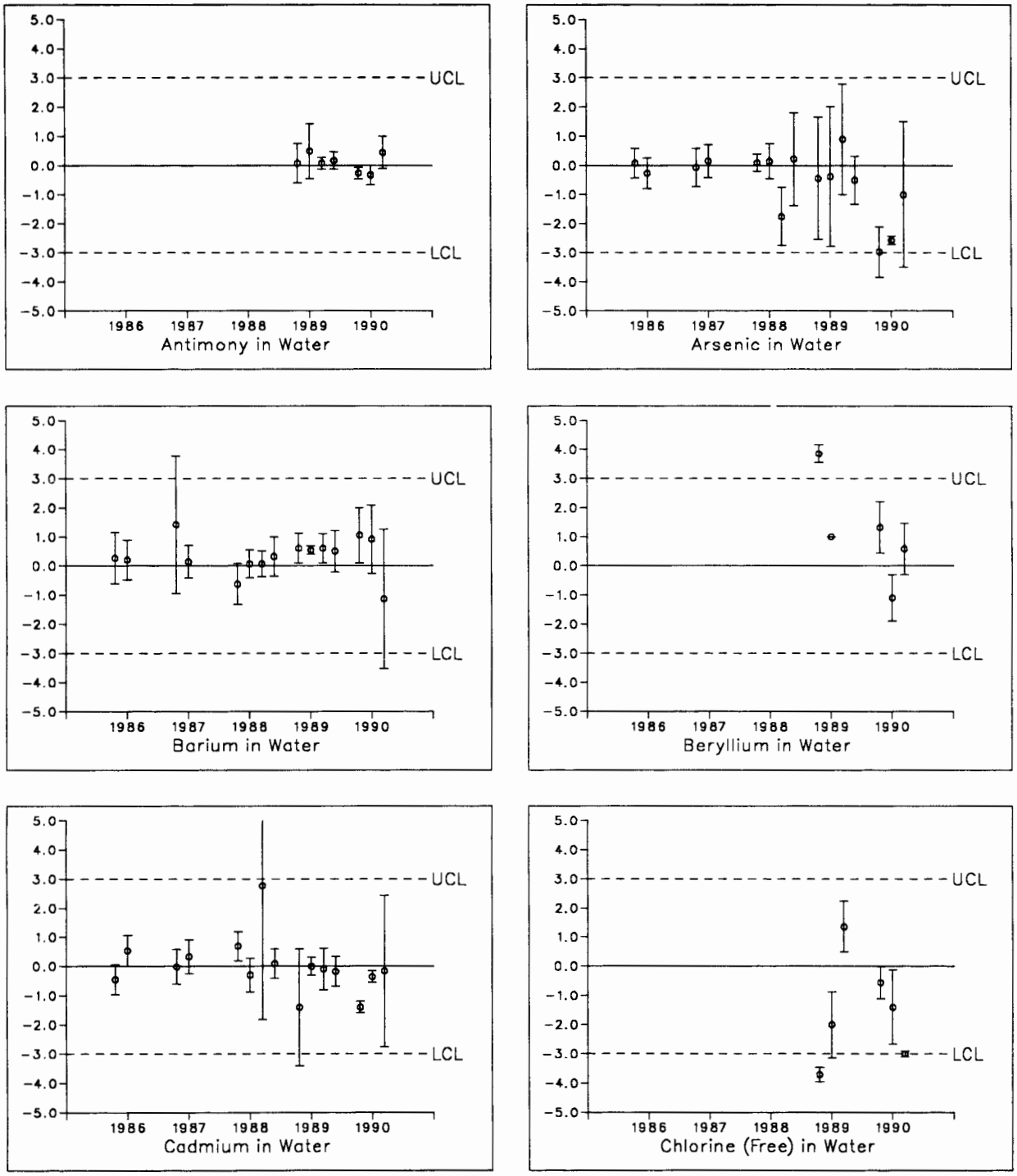
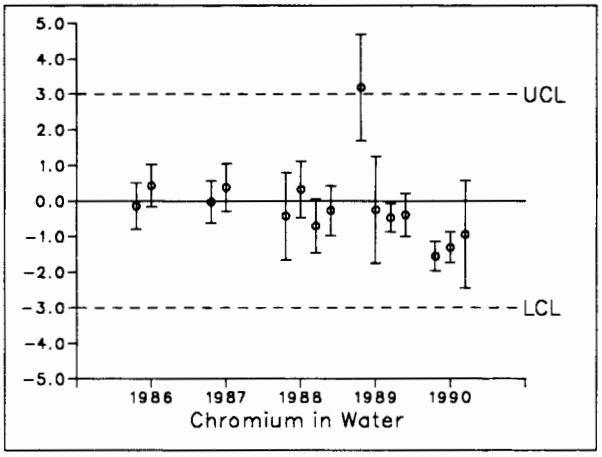
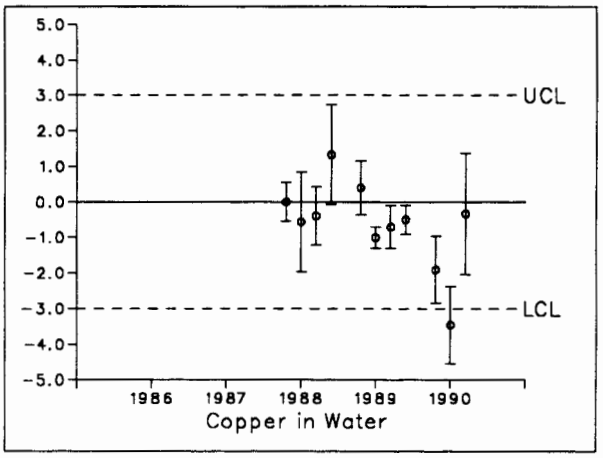
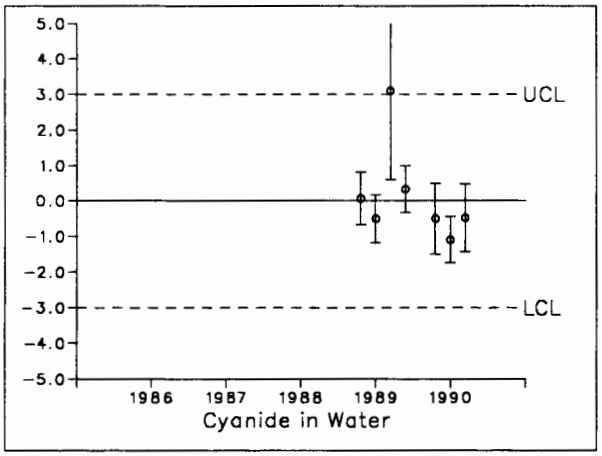
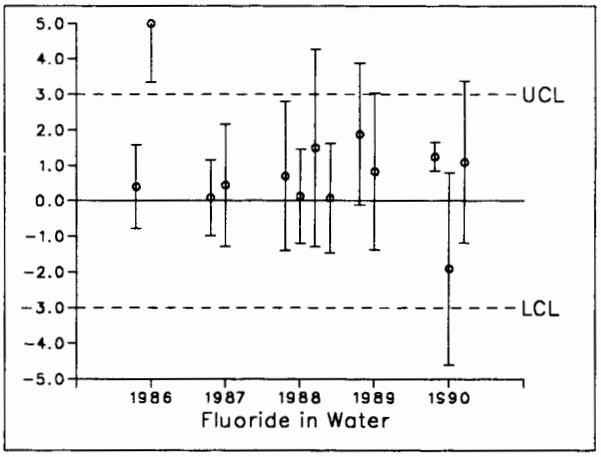


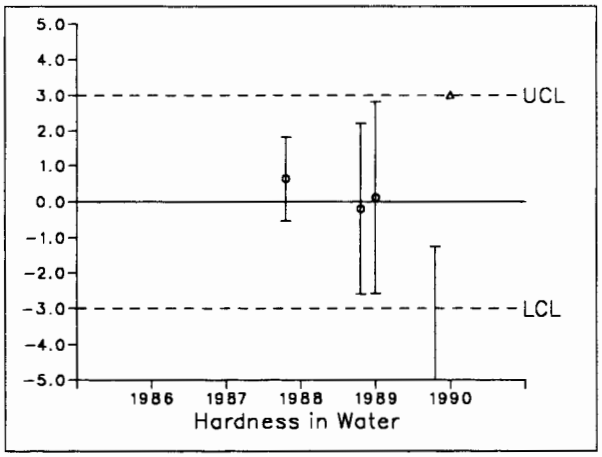
Fig. D-6. Five-year trends in EPA Water Supply Performance Evaluation Studies.


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Chromium in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Copper in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Cyanide in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Fluoride in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Hardness in Water

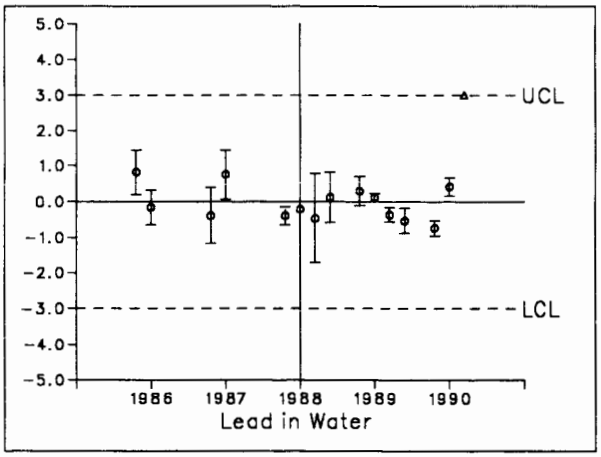
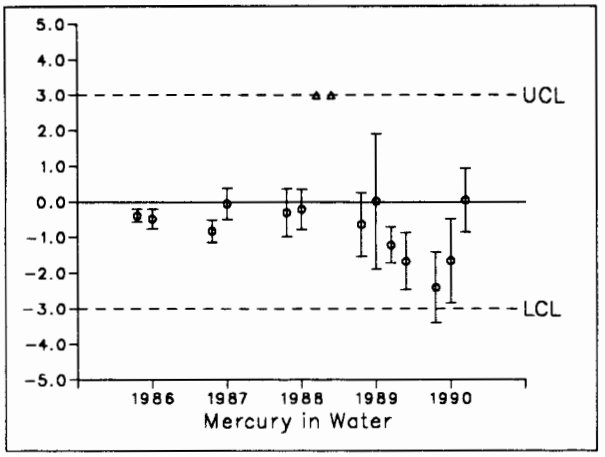
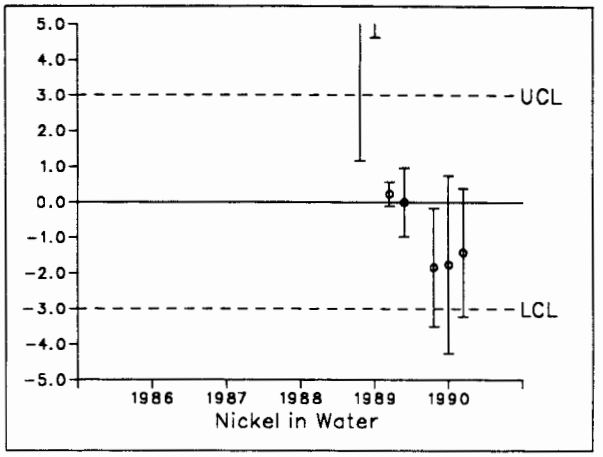
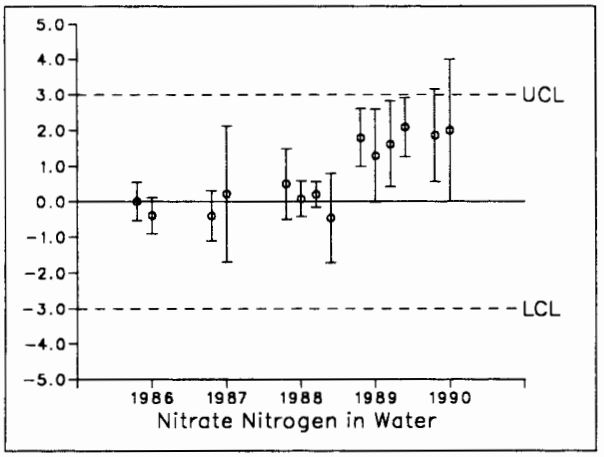
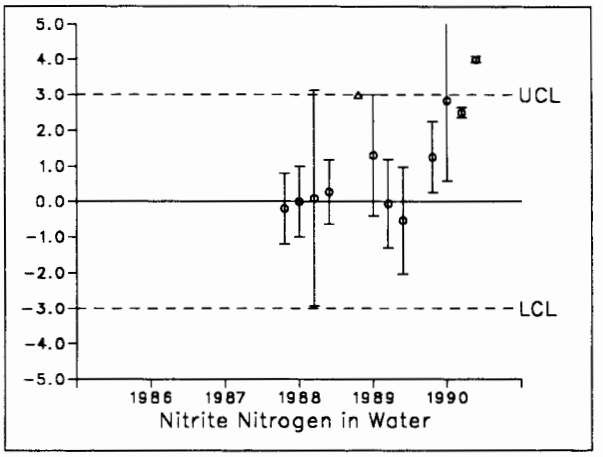

5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Lead in Water

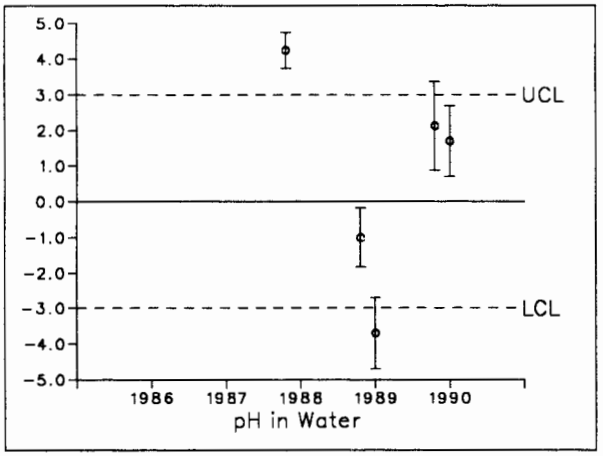
Fig. D-6. (cont)


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Mercury in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Nickel in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Nitrate Nitrogen in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Nitrite Nitrogen in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
pH in Water

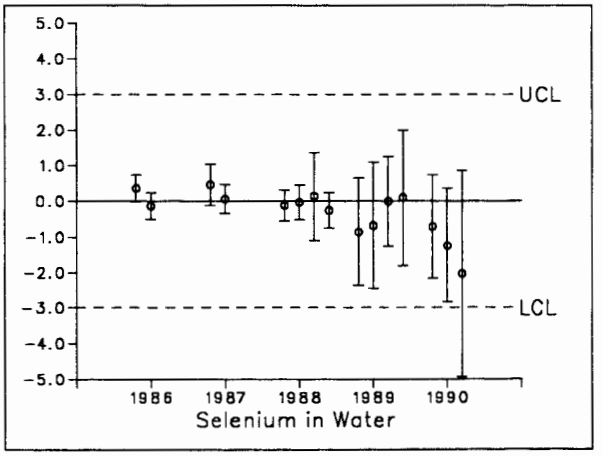
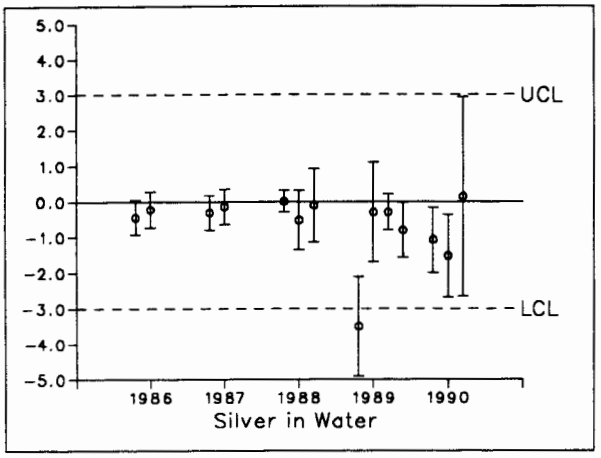
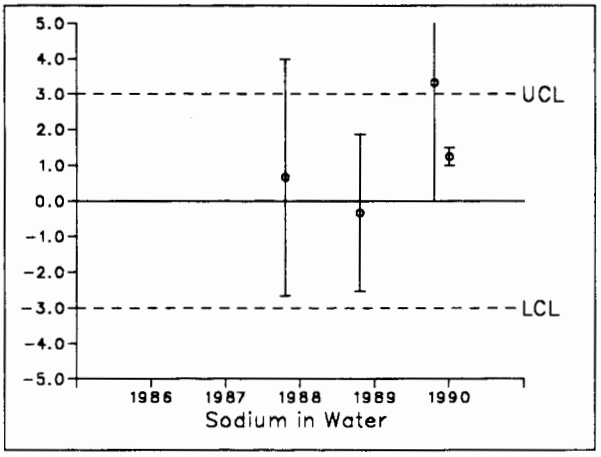
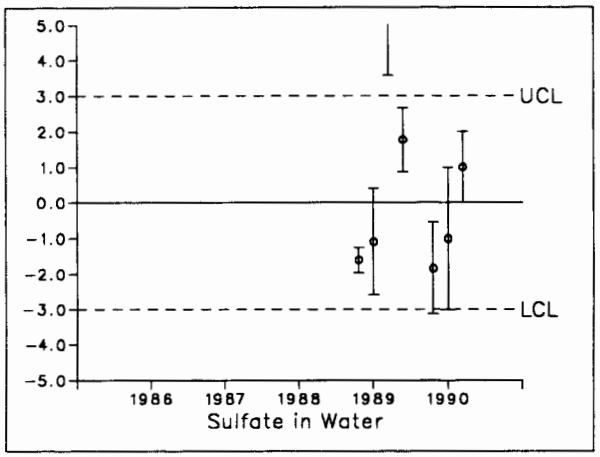
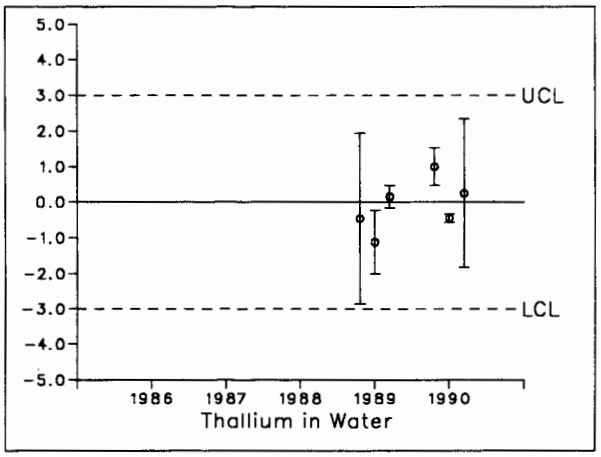

5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Selenium in Water

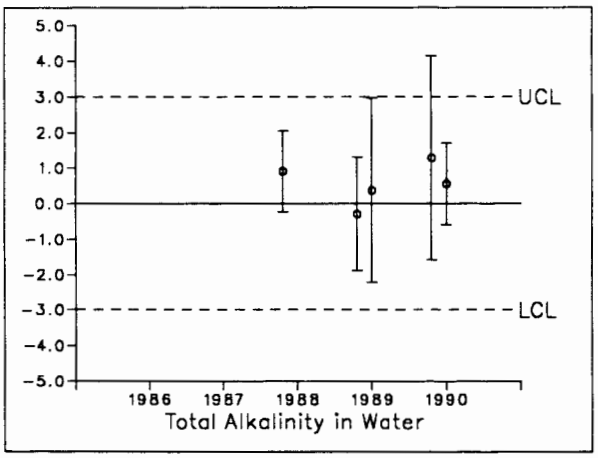
Fig. D-6. (cont)


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Silver in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Sodium in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Sulfate in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Thallium in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Total Alkalinity in Water

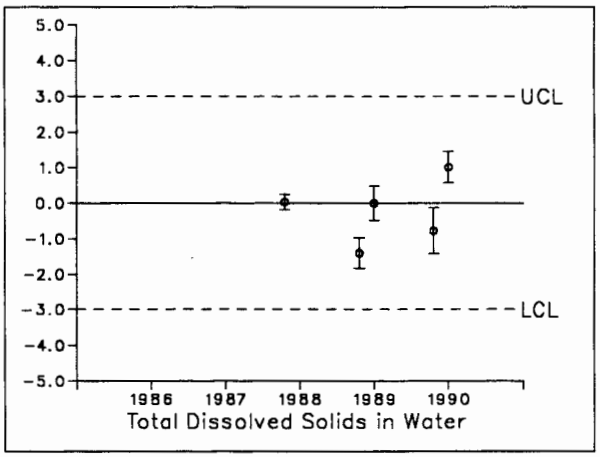
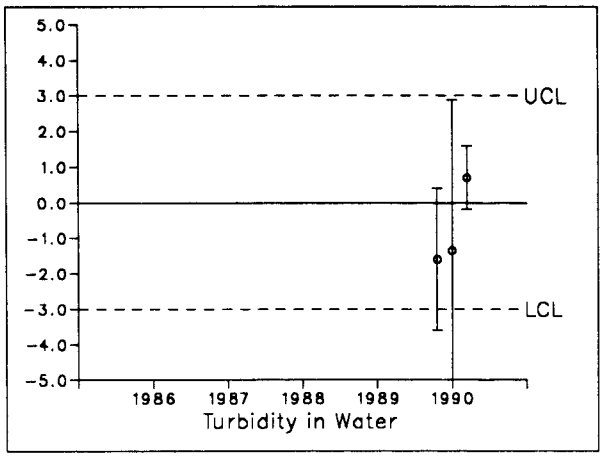
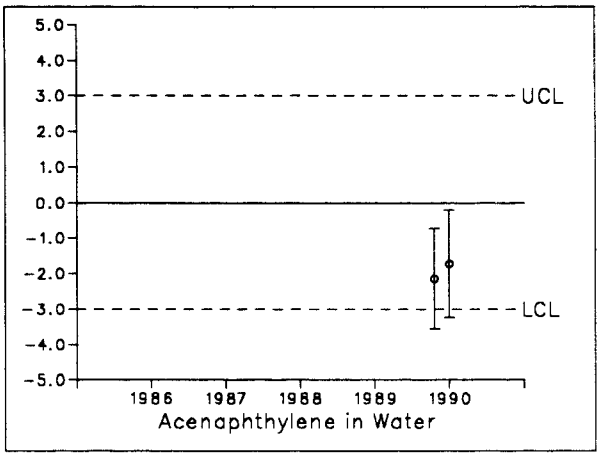
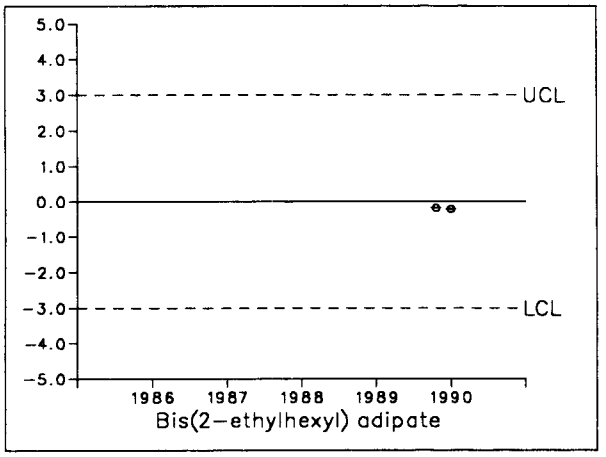
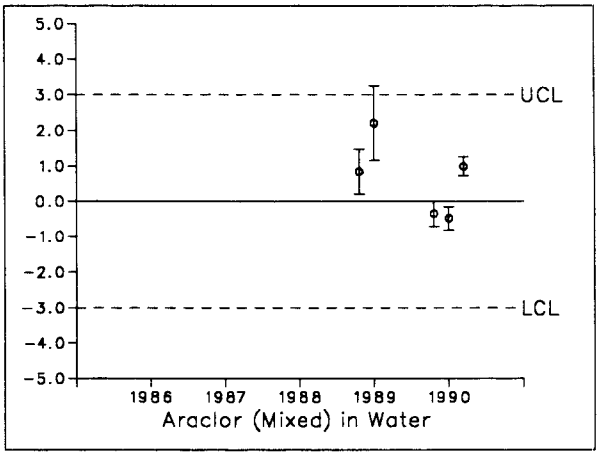

5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Total Dissolved Solids in Water

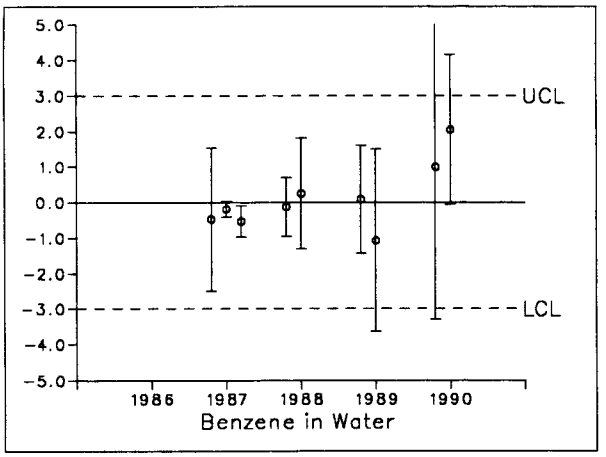
Fig. D-6. (cont)


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Turbidity in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Acenaphthylene in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Bis(2-ethylhexyl) adipate


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Aroclor (Mixed) in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Benzene in Water

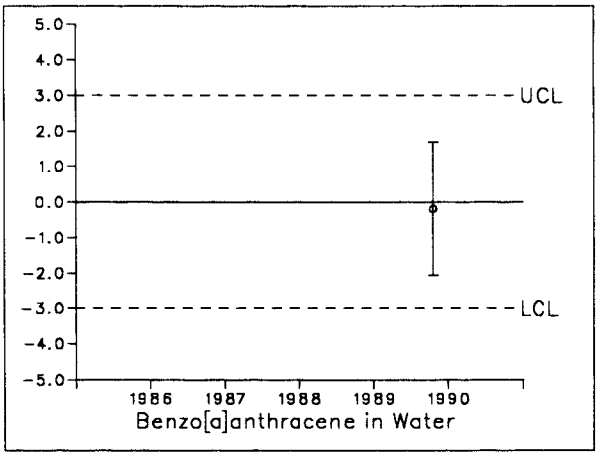
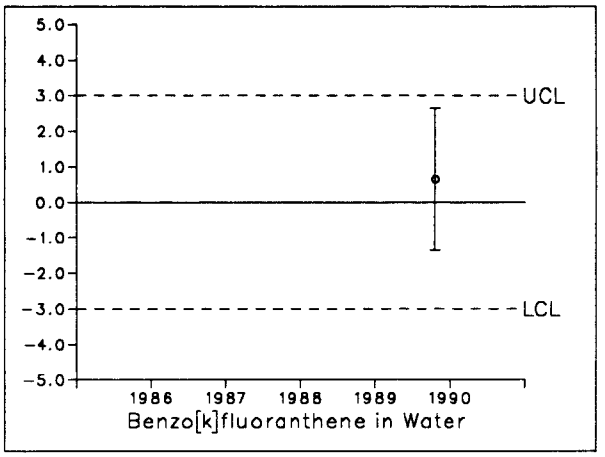
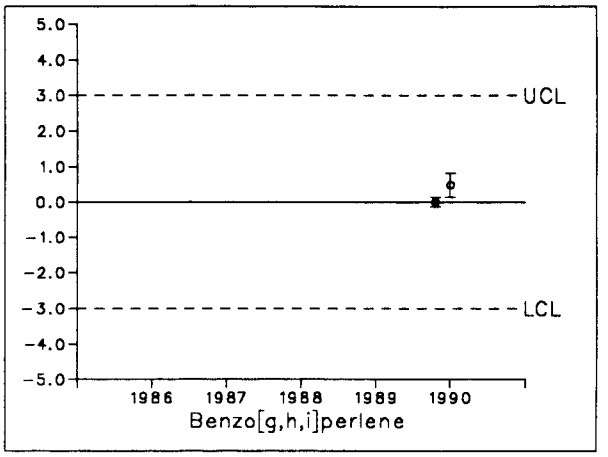
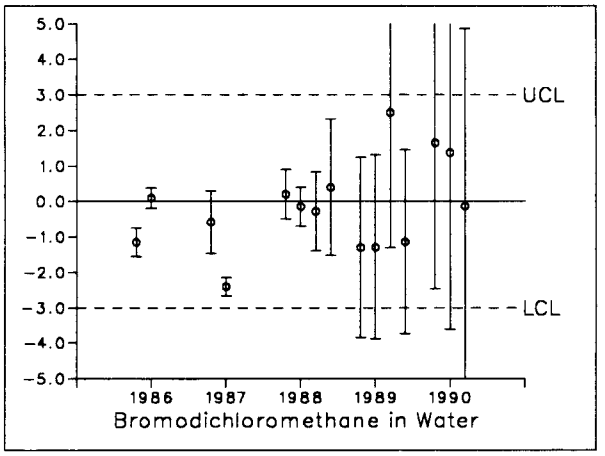
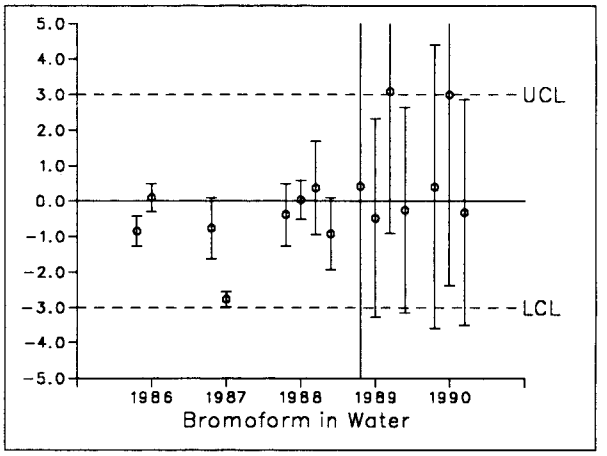

5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Benzo[a]anthracene in Water

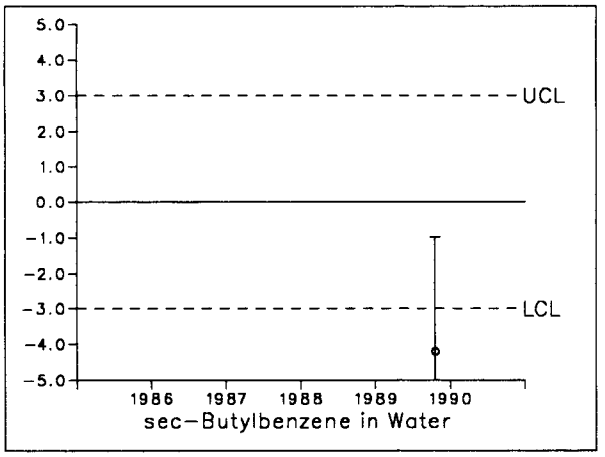
Fig. D-6. (cont)


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Benzo[k]fluoranthene in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Benzo[g,h,i]perlene


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Bromodichloromethane in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Bromoform in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
sec-Butylbenzene in Water

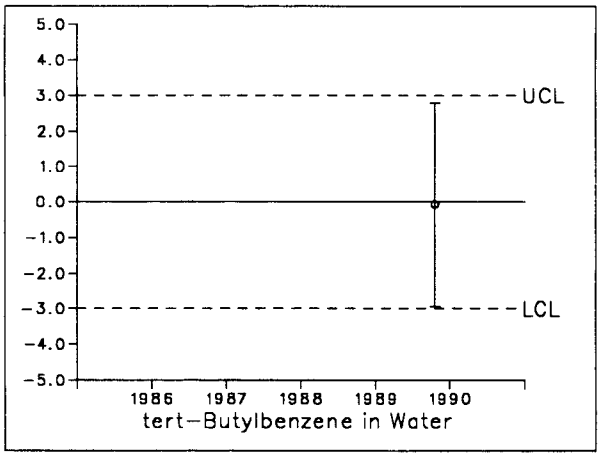
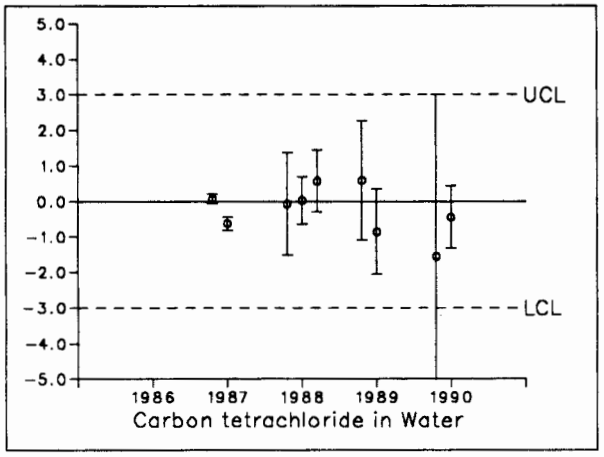
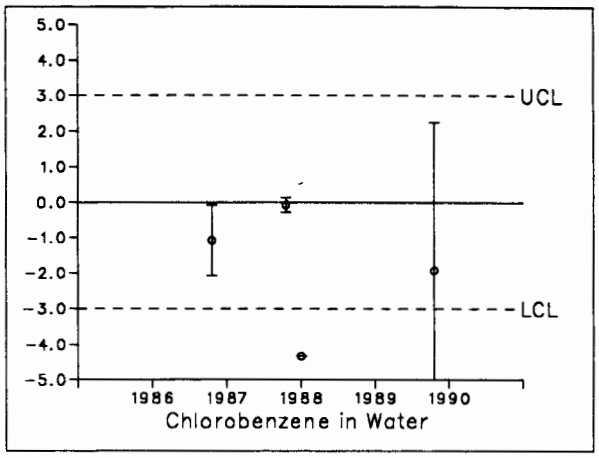
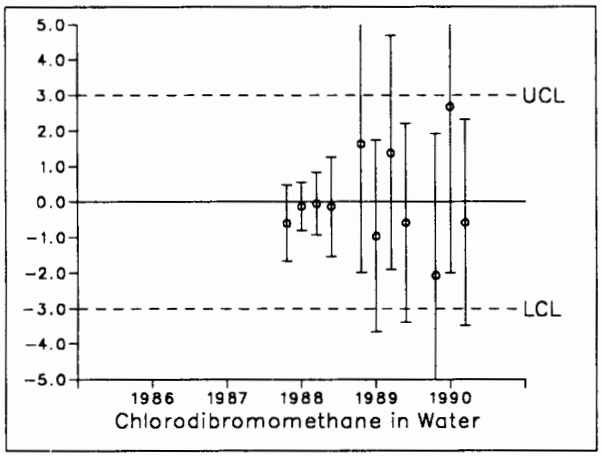
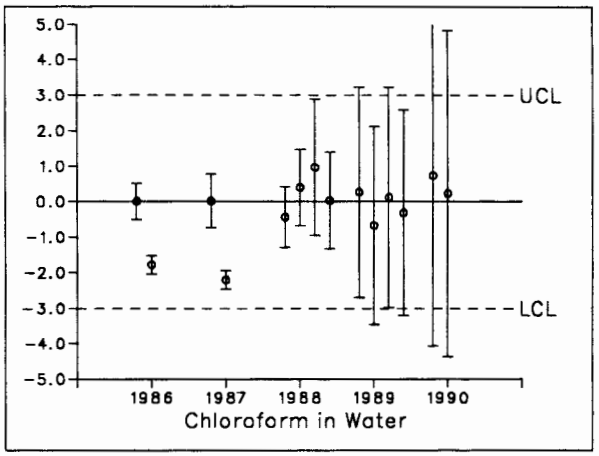

5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
tert-Butylbenzene in Water

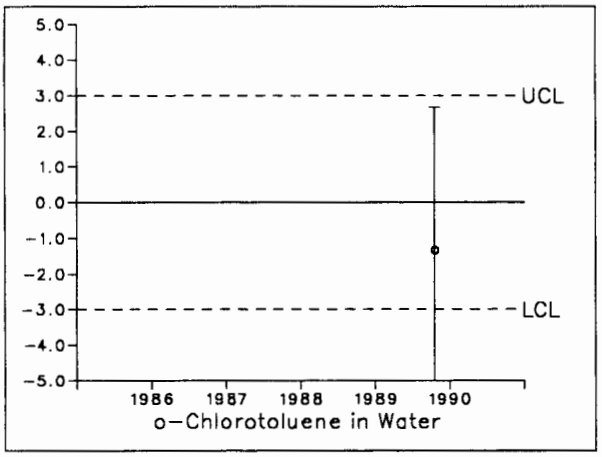
Fig. D-6. (cont)


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Carbon tetrachloride in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Chlorobenzene in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Chlorodibromomethane in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Chloroform in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
o-Chlorotoluene in Water

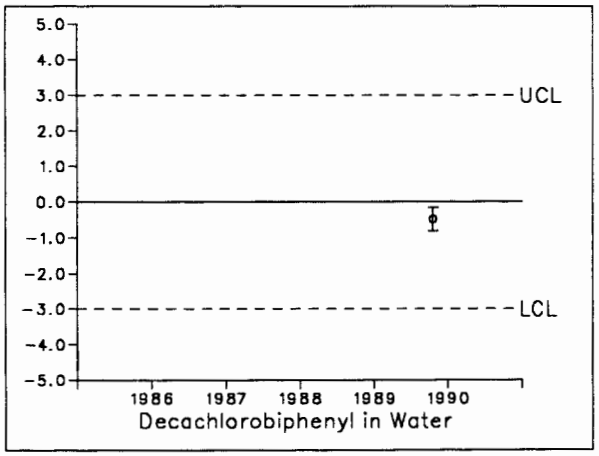
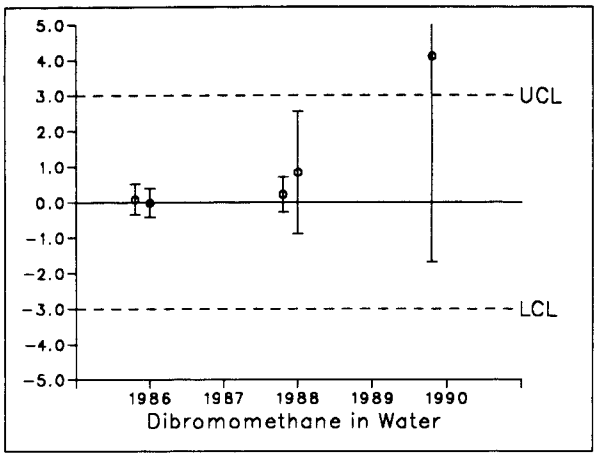
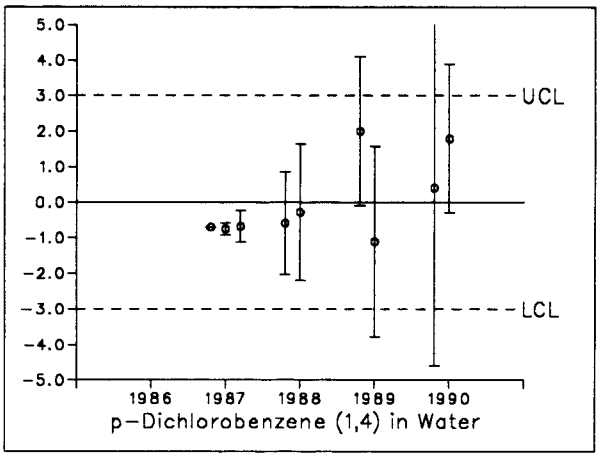
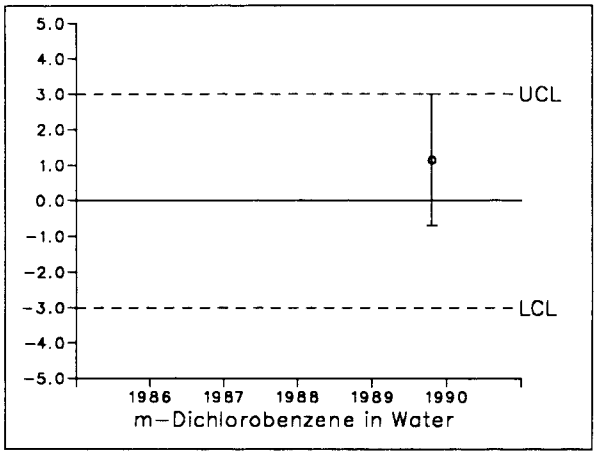
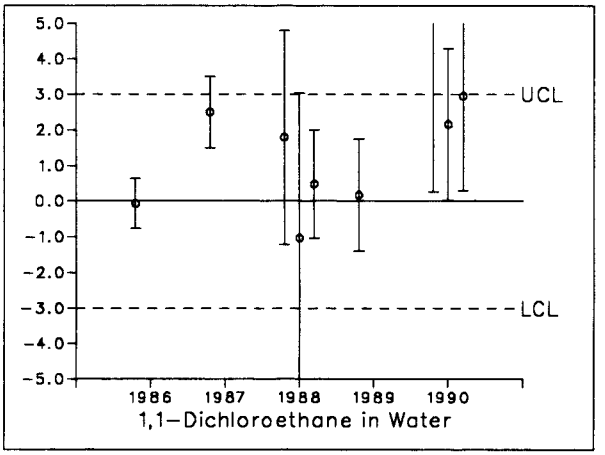

5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Decachlorobiphenyl in Water

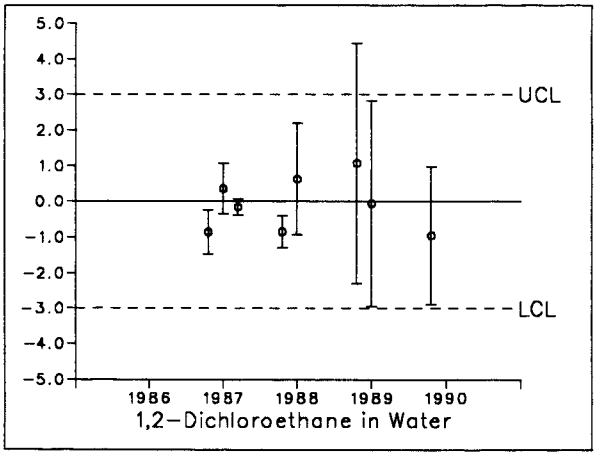
Fig. D-6. (cont)


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Dibromomethane in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
p-Dichlorobenzene (1,4) in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
m-Dichlorobenzene in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
1,1-Dichloroethane in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
1,2-Dichloroethane in Water

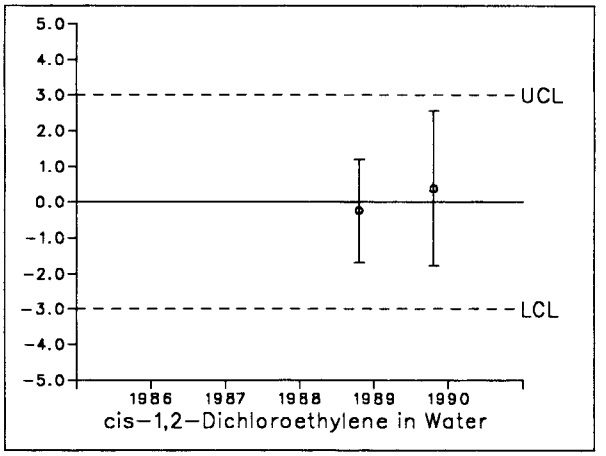
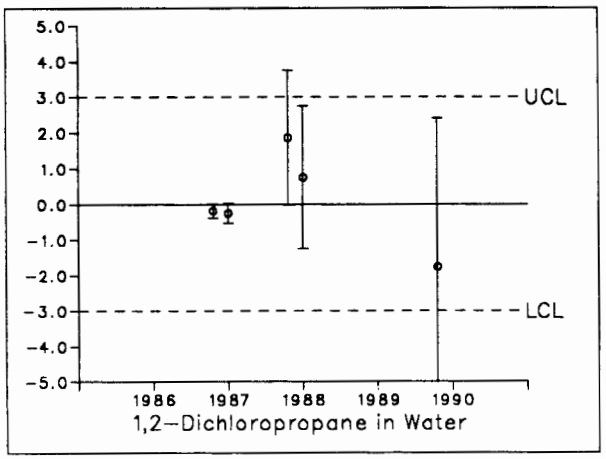
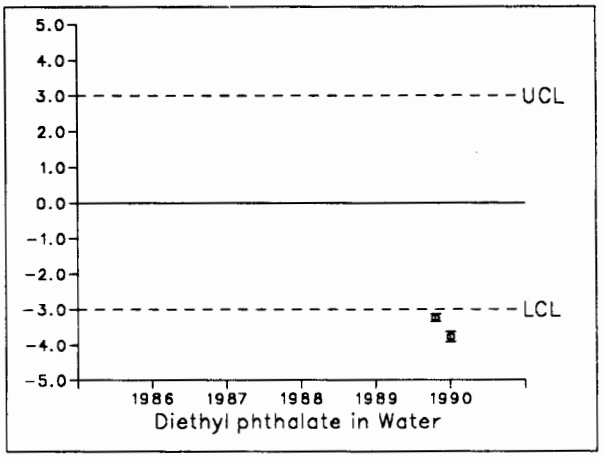
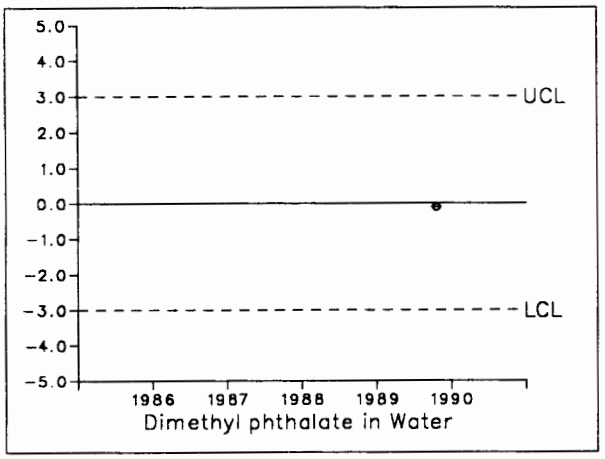
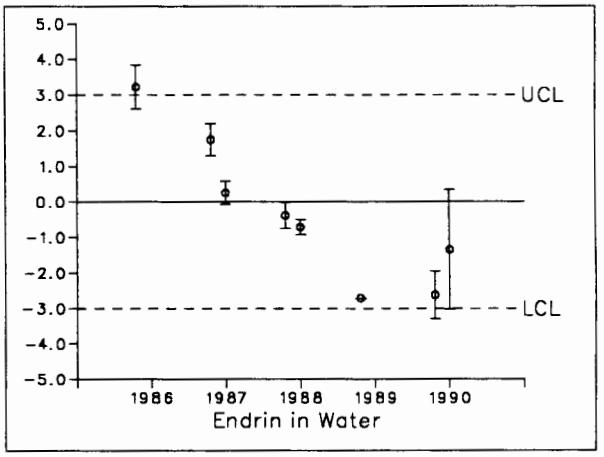

5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
cis-1,2-Dichloroethylene in Water

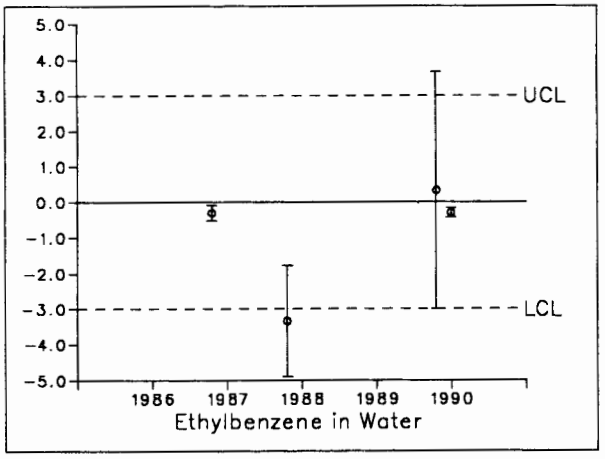
Fig. D-6. (cont)


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986 1987 1988 1989 1990
1,2-Dichloropropane in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986 1987 1988 1989 1990
Diethyl phthalate in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986 1987 1988 1989 1990
Dimethyl phthalate in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986 1987 1988 1989 1990
Endrin in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986 1987 1988 1989 1990
Ethylbenzene in Water

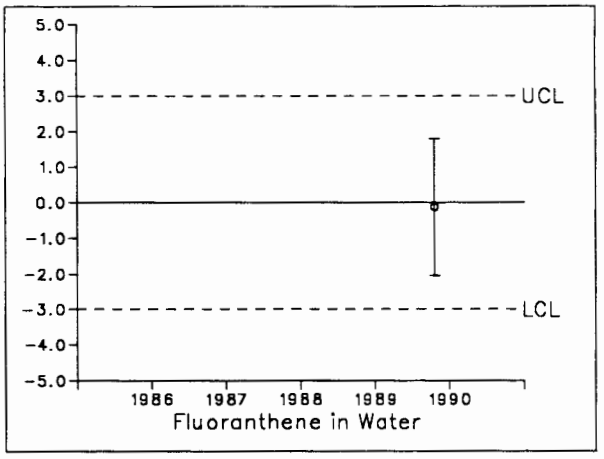

5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986 1987 1988 1989 1990
Fluoranthene in Water

Fig. D-6. (cont)

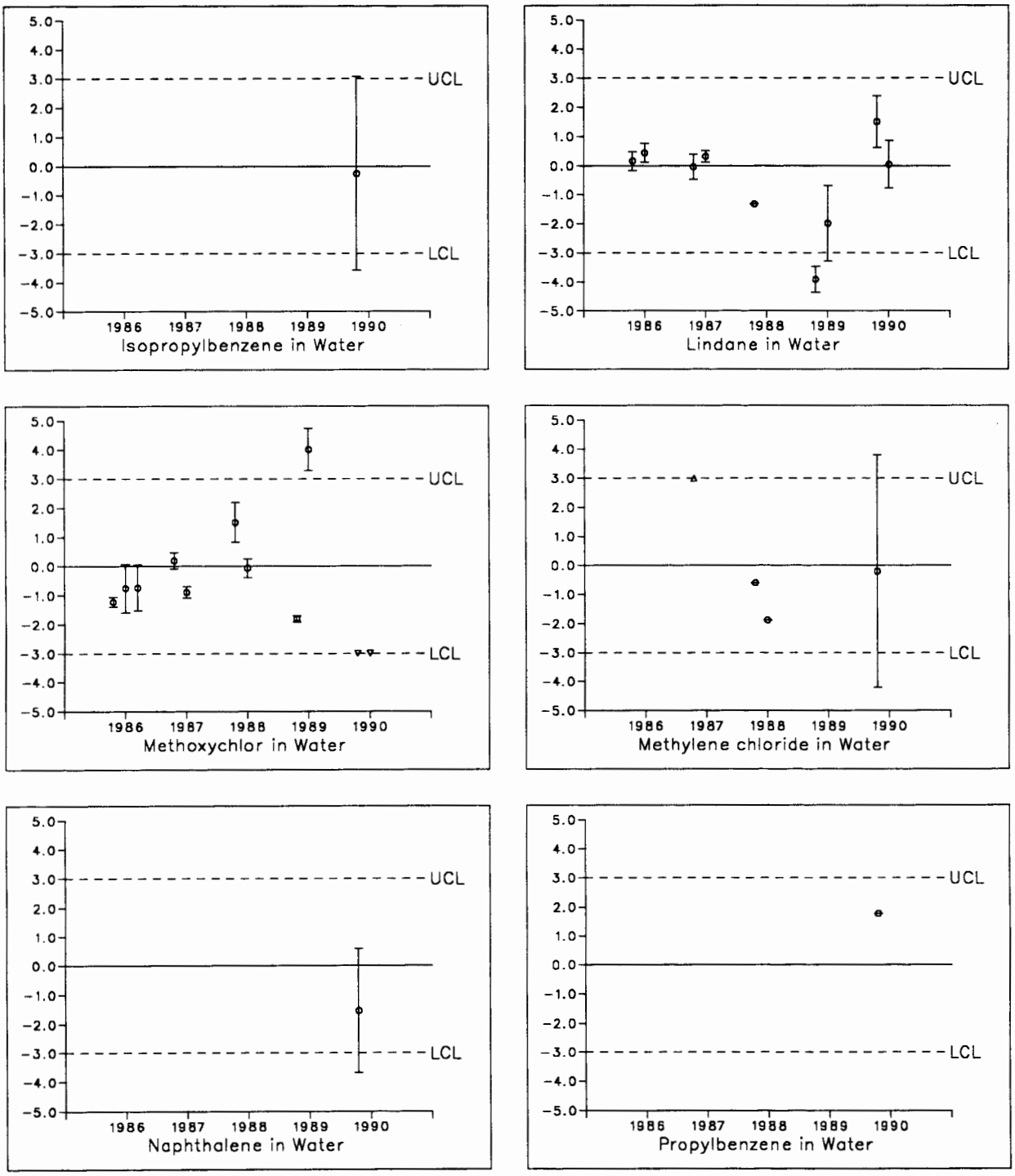
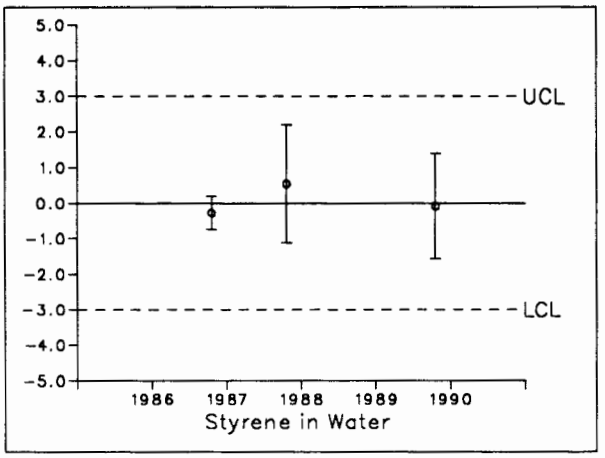
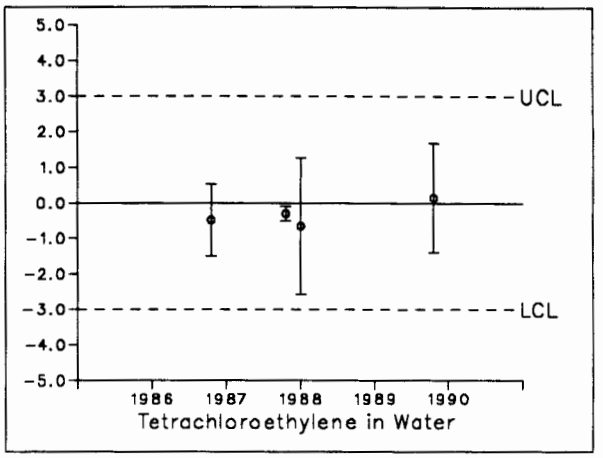
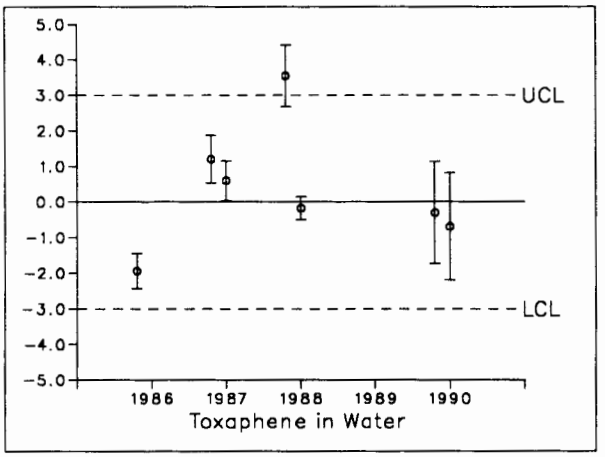
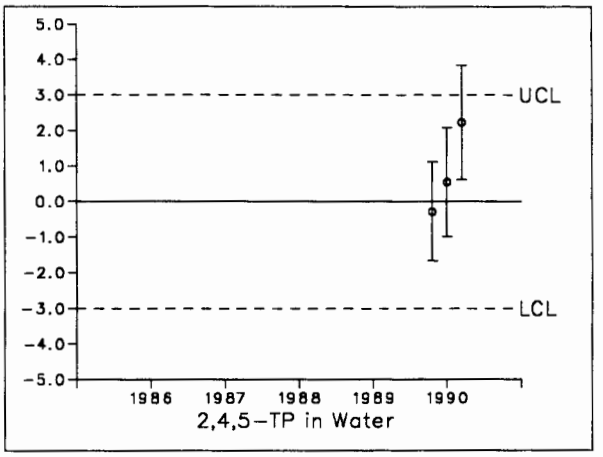

5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Isopropylbenzene in Water
Lindane in Water
Methoxychlor in Water
Methylene chloride in Water
Naphthalene in Water
Propylbenzene in Water

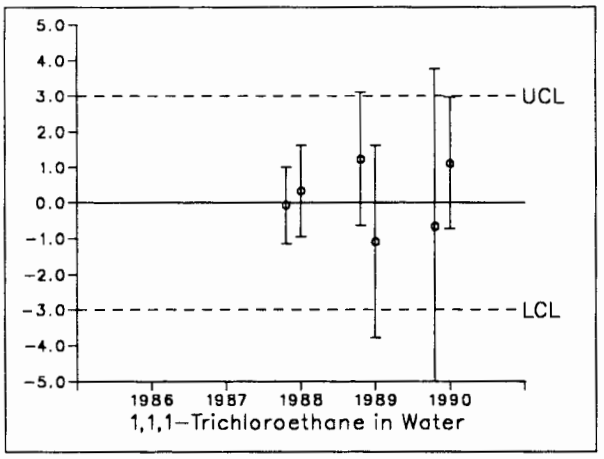
Fig. D-6. (cont)


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Styrene in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Tetrachloroethylene in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Toxaphene in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
2,4,5-TP in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
1,1,1-Trichloroethane in Water

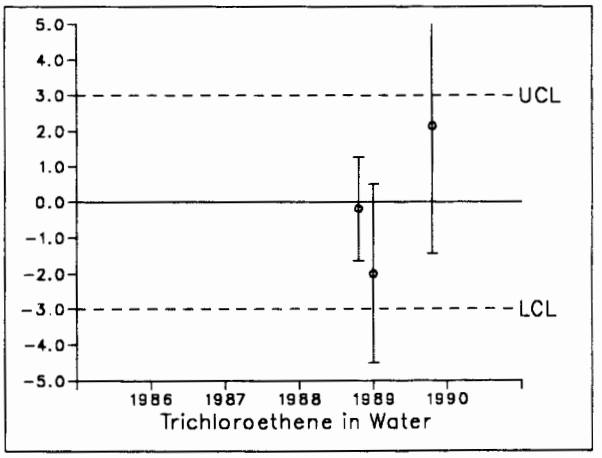
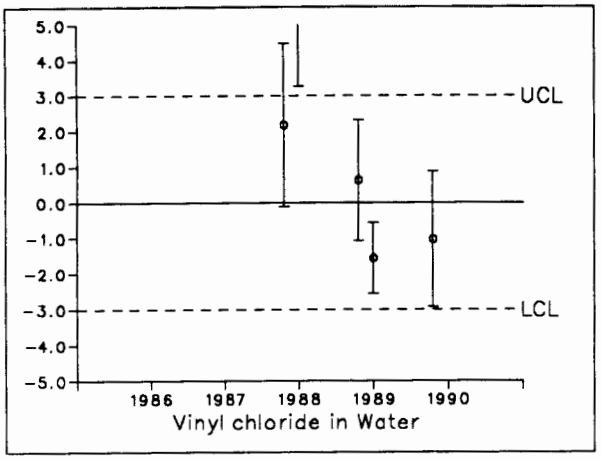

5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Trichloroethene in Water

Fig. D-6. (cont)



NOTE: The position of each data point is determined by dividing the difference between the HSE-9 and agency values by the expected standard deviation given by the agency. The size of the error bar is determined by dividing the HSE-9 standard deviation by the agency standard deviation. In most cases, the HSE-9 mean is within one standard deviation of the agency value and our error bars overlap the agency mean value.

△ ▽ indicates data points beyond the ± 3 σ control limits.

Fig. D-6. (cont)

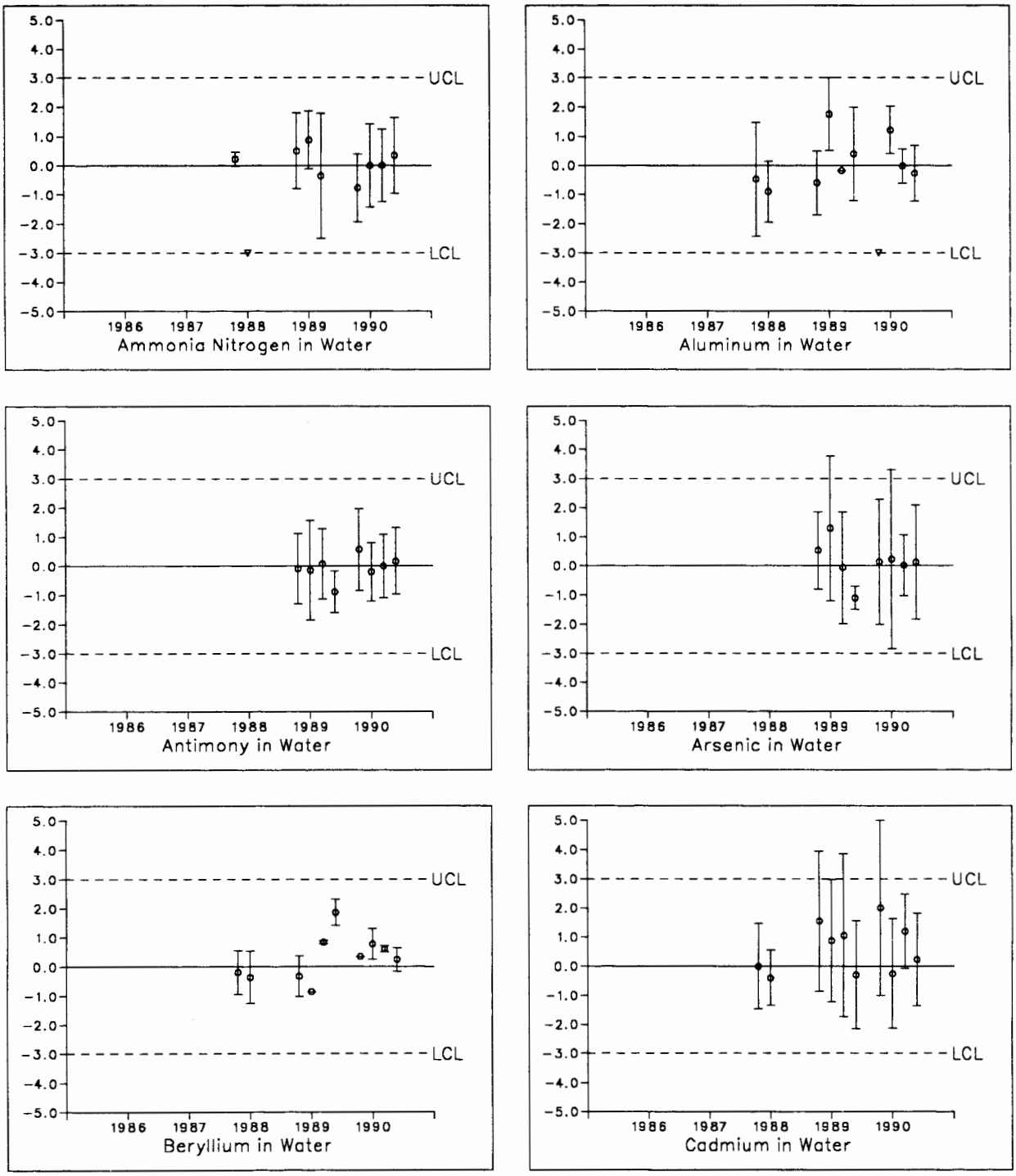


Fig. D-7. Five-year trends in EPA Water Pollution Performance Evaluation Studies.

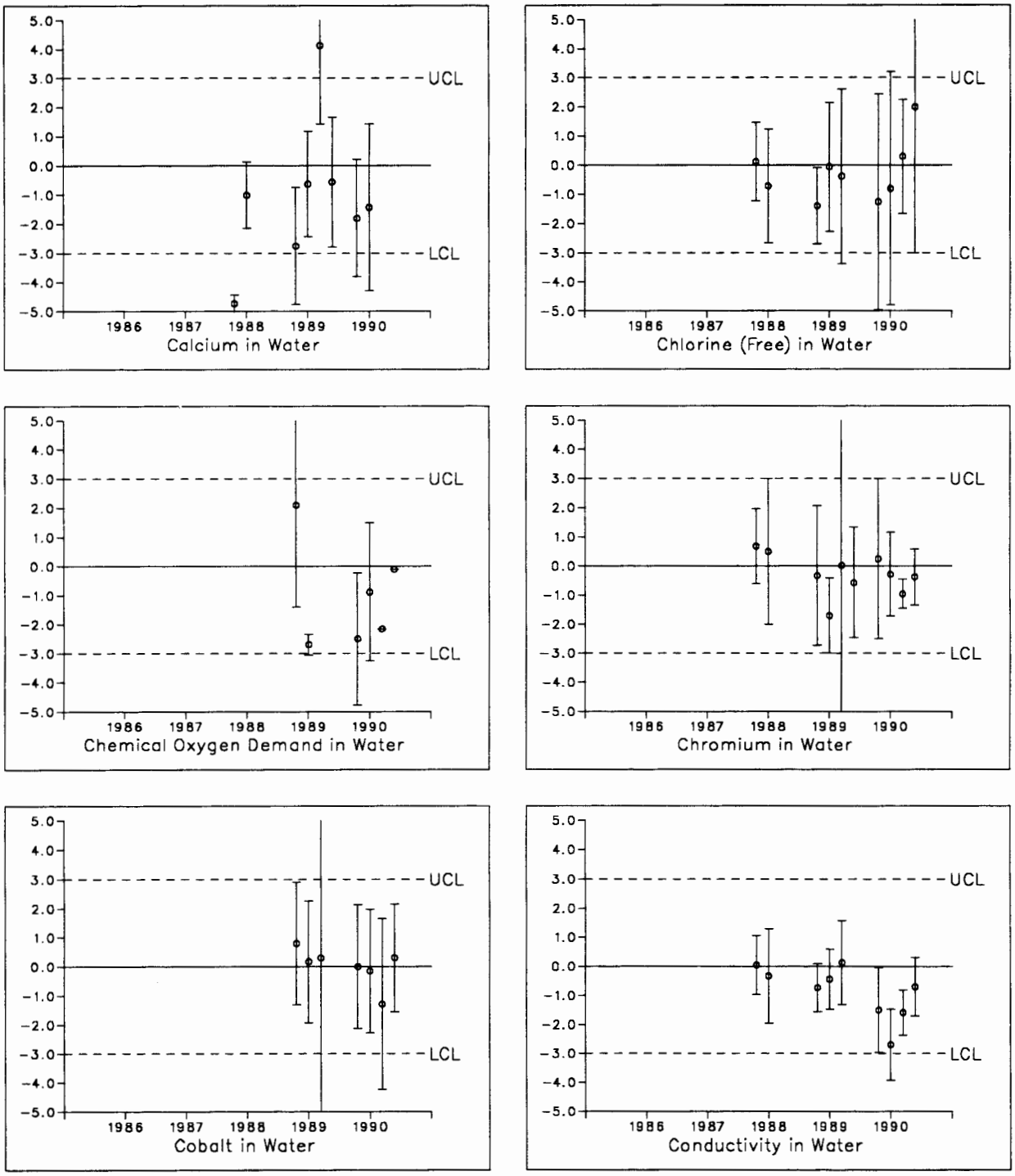
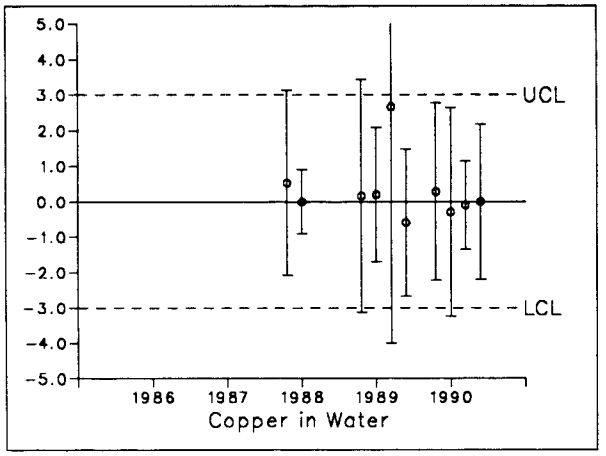
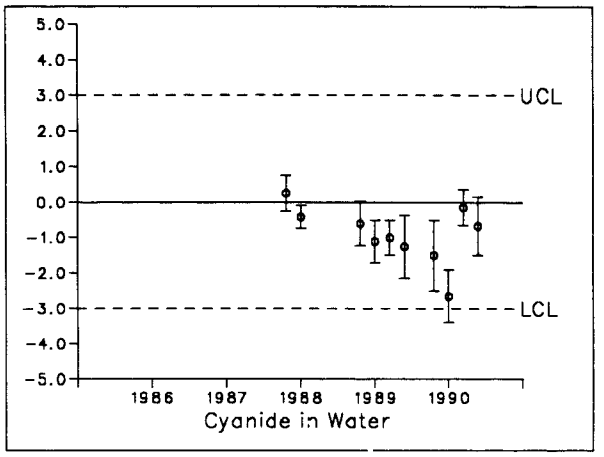
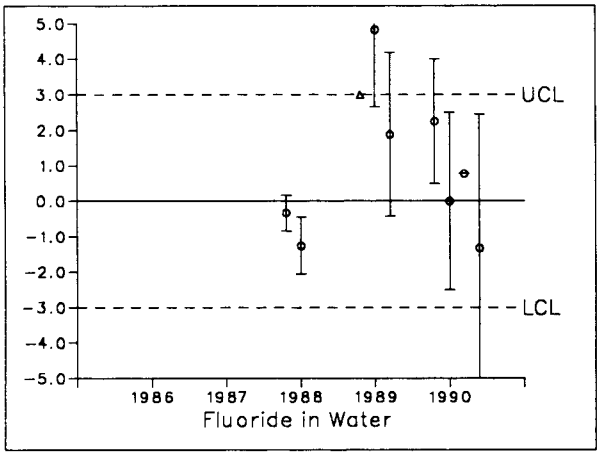
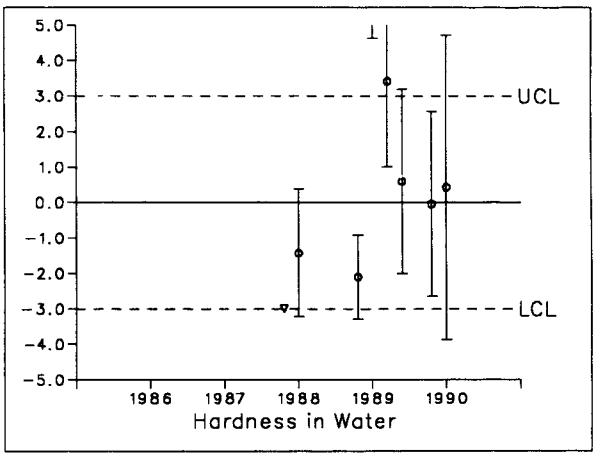

5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Calcium in Water
Chlorine (Free) in Water
Chemical Oxygen Demand in Water
Chromium in Water
Cobalt in Water
Conductivity in Water

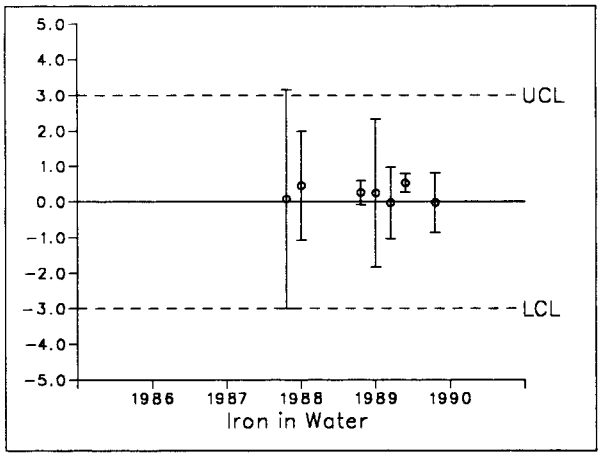
Fig. D-7. (cont)


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Copper in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Cyanide in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Fluoride in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Hardness in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Iron in Water

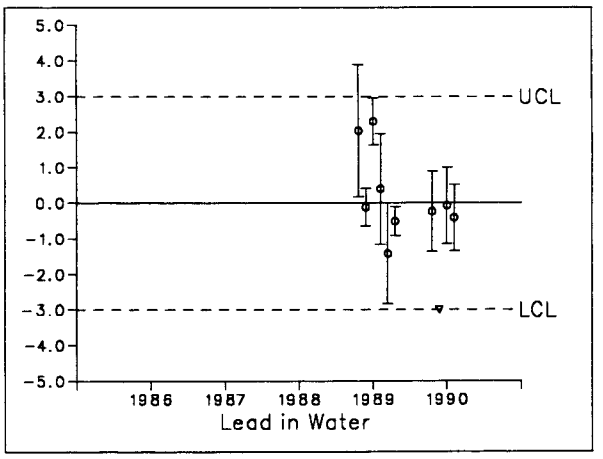
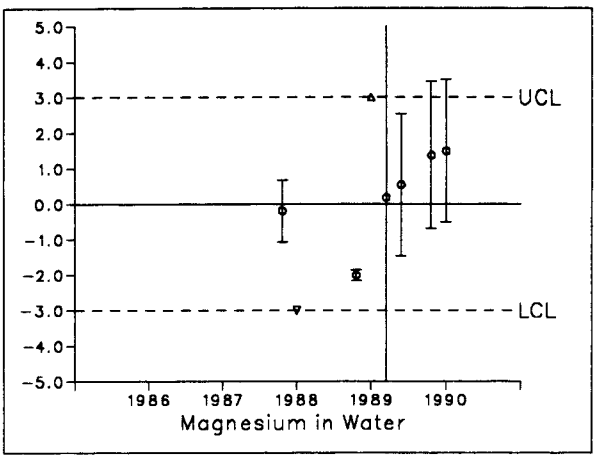
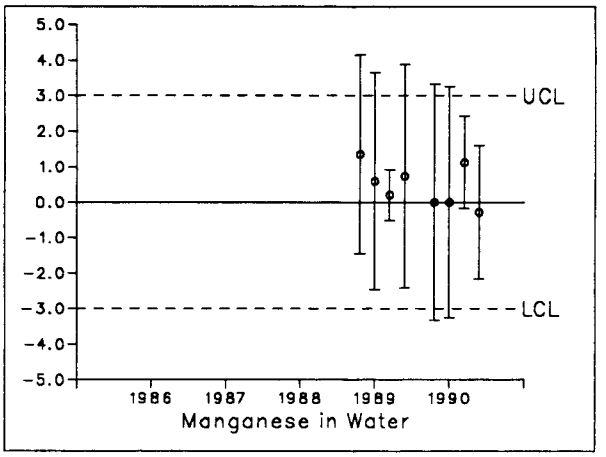
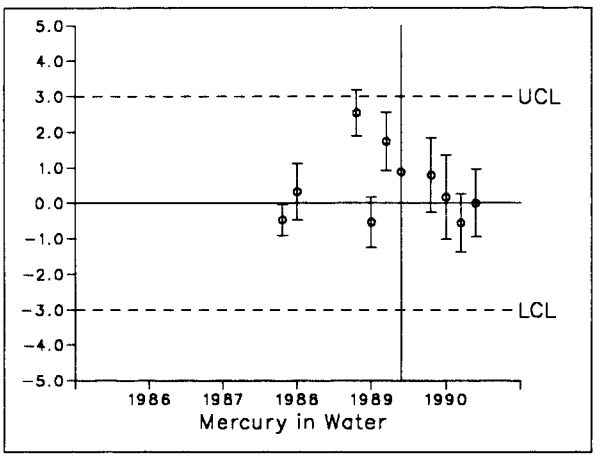
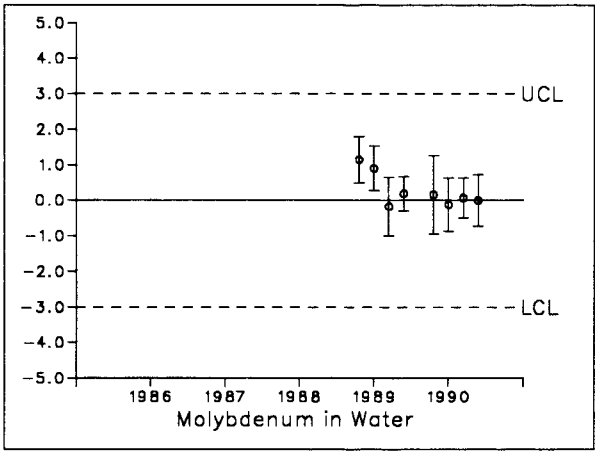

5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Lead in Water

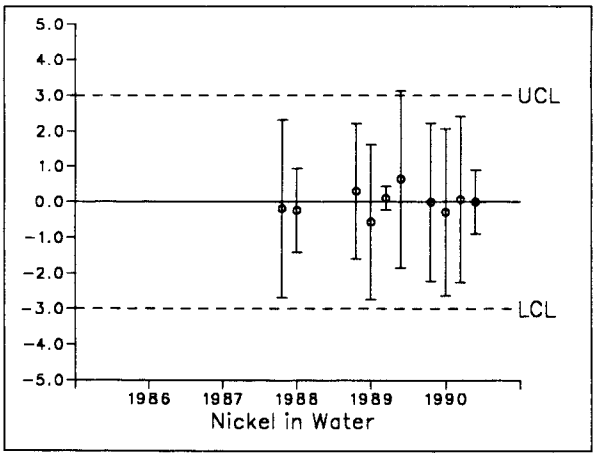
Fig. D-7. (cont)


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Magnesium in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Manganese in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Mercury in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Molybdenum in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Nickel in Water

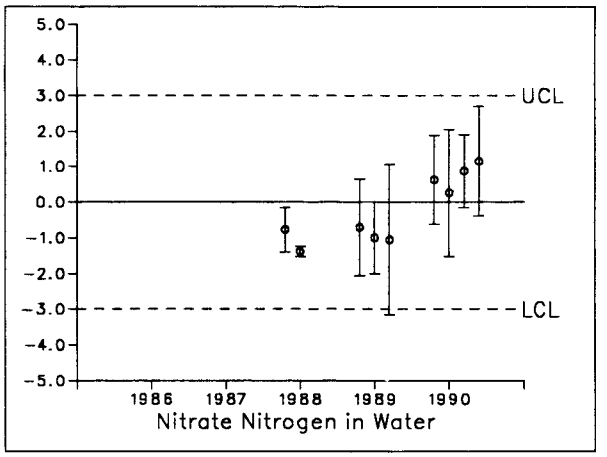
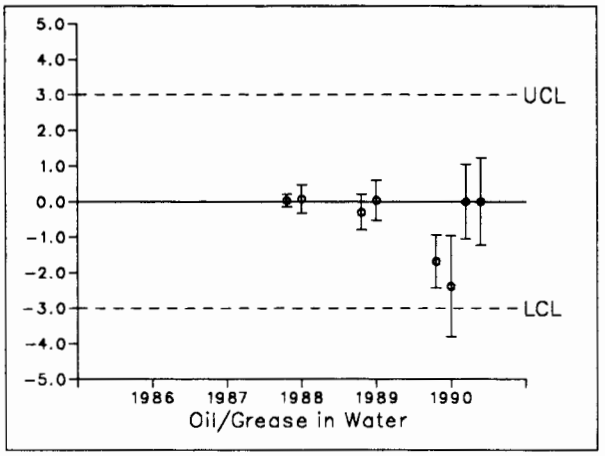
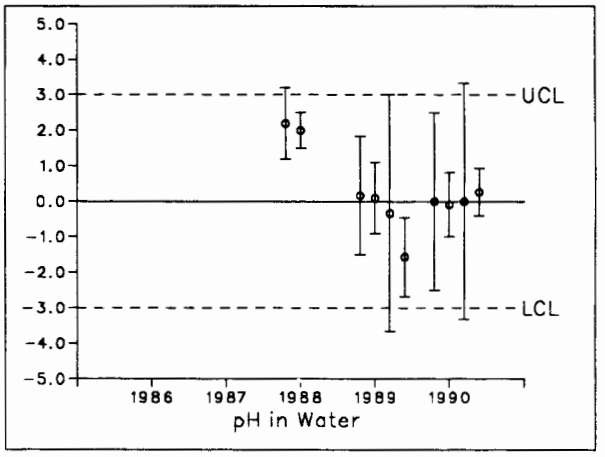
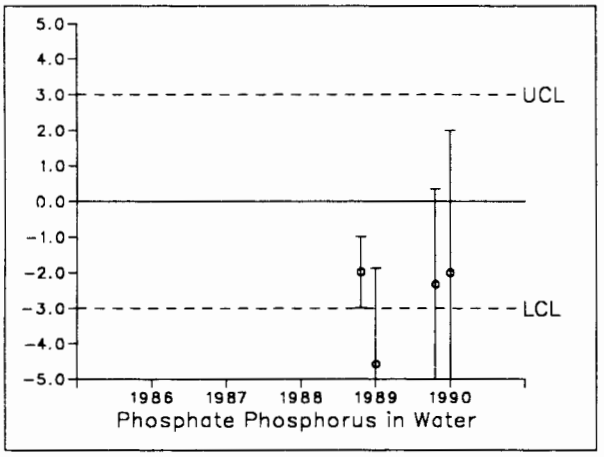
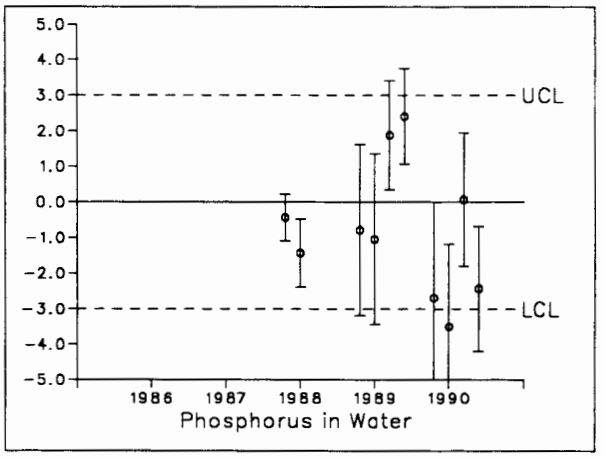

5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Nitrate Nitrogen in Water

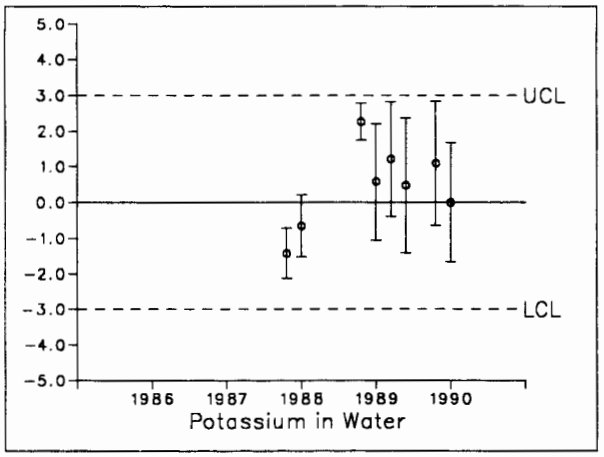
Fig. D-7. (cont)


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Oil/Grease in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
pH in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Phosphate Phosphorus in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Phosphorus in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Potassium in Water

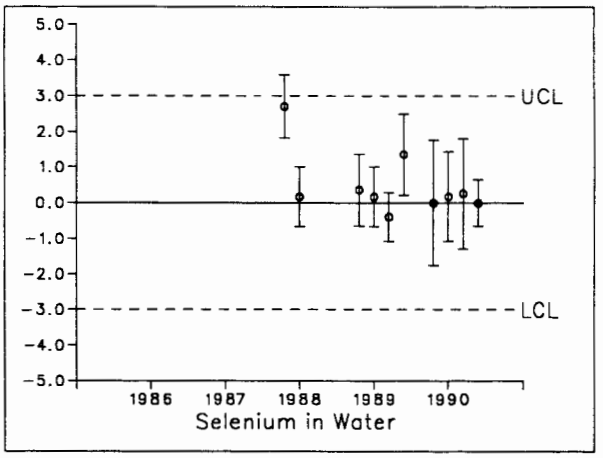
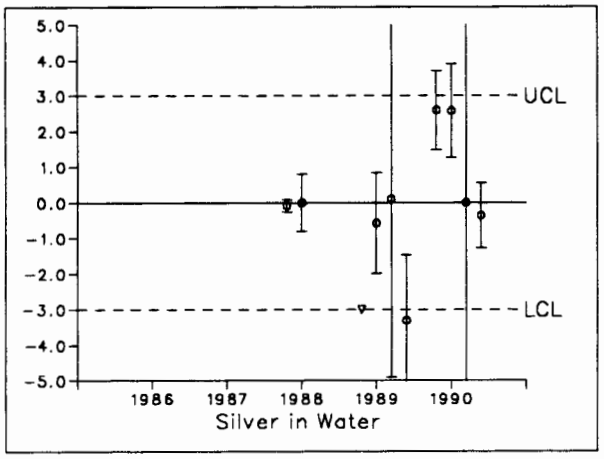
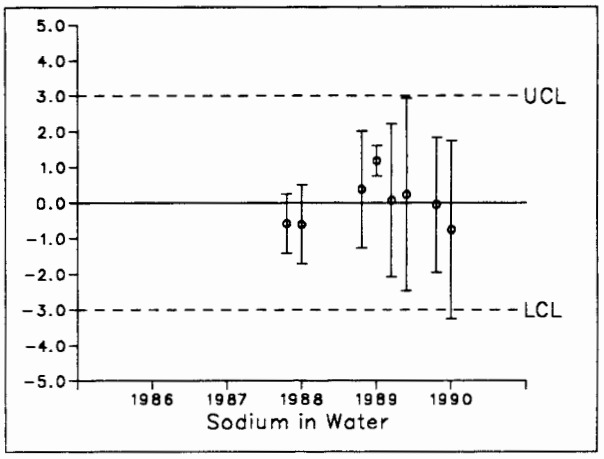
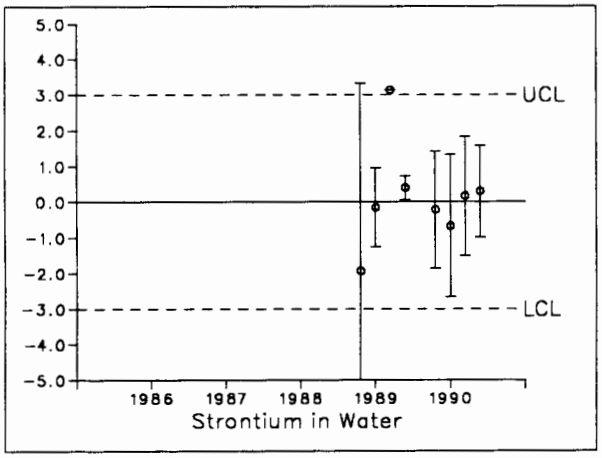
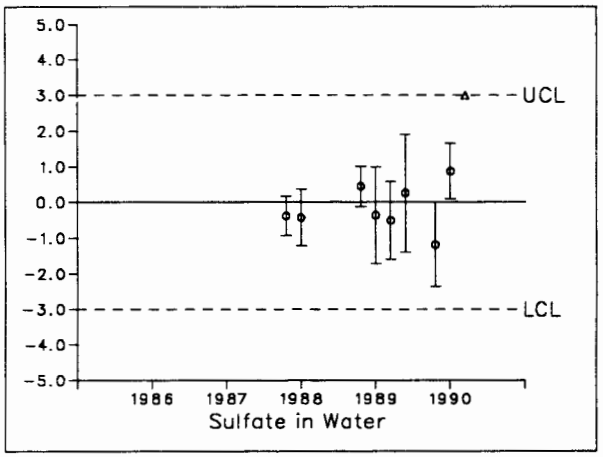

5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Selenium in Water

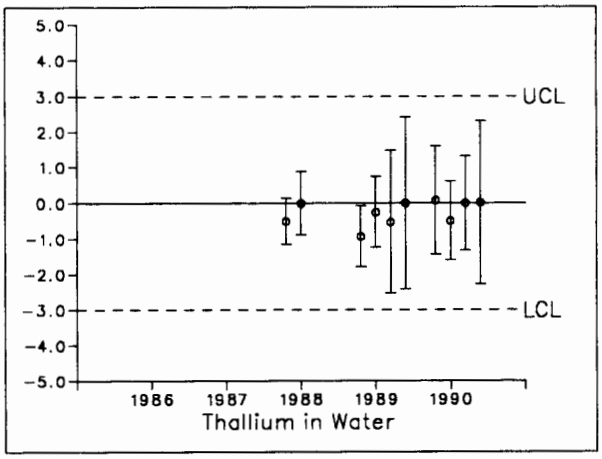
Fig. D-7. (cont)


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Silver in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Sodium in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Strontium in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Sulfate in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Thallium in Water

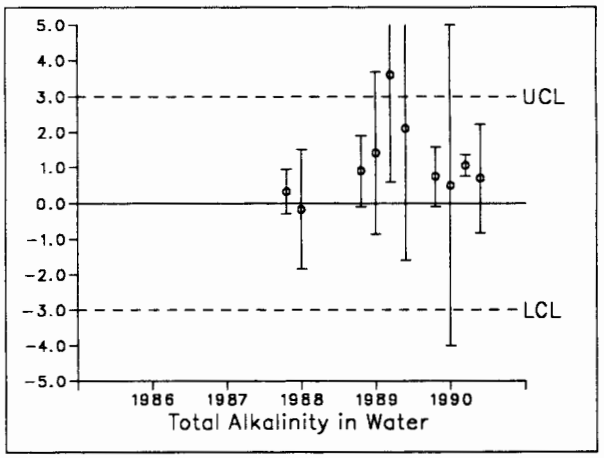
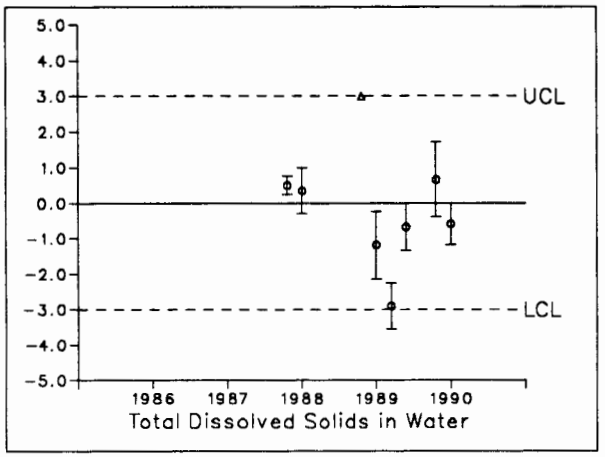
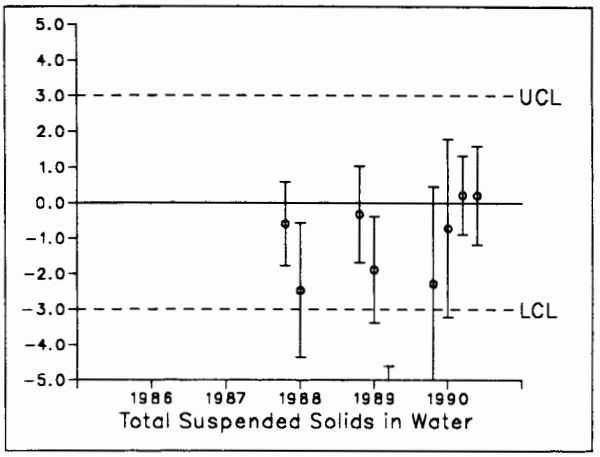
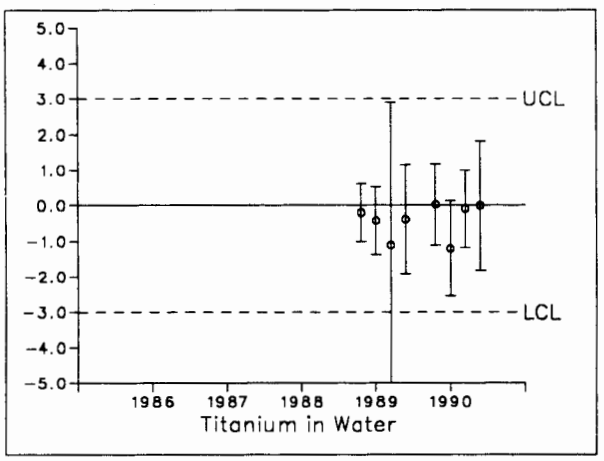
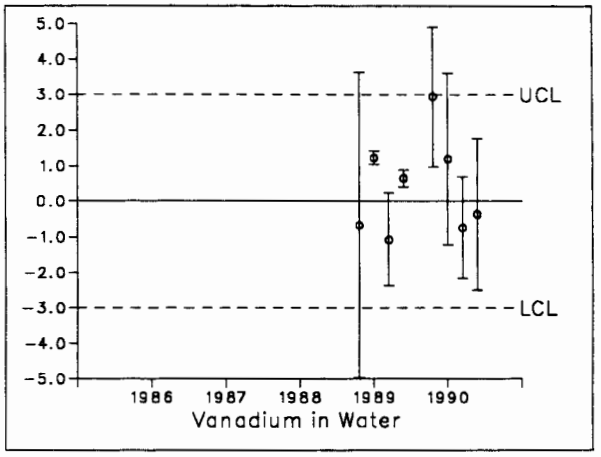

5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Total Alkalinity in Water

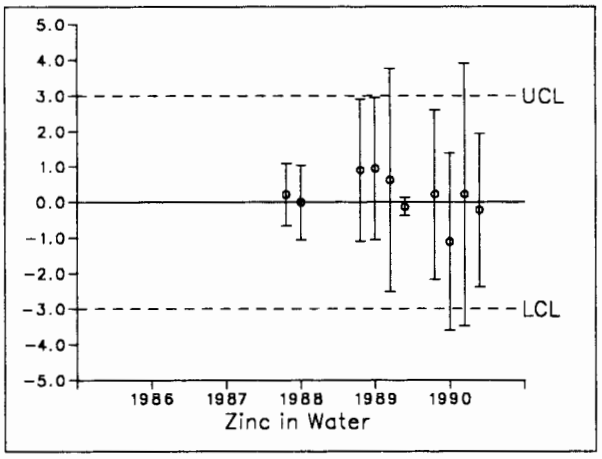
Fig. D-7. (cont)


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Total Dissolved Solids in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Total Suspended Solids in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Titanium in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Vanadium in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Zinc in Water

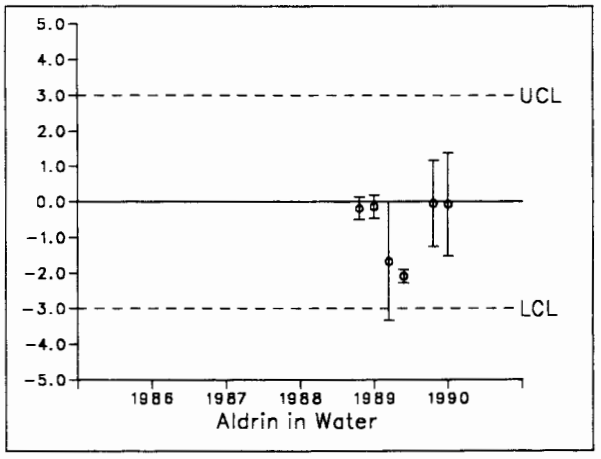
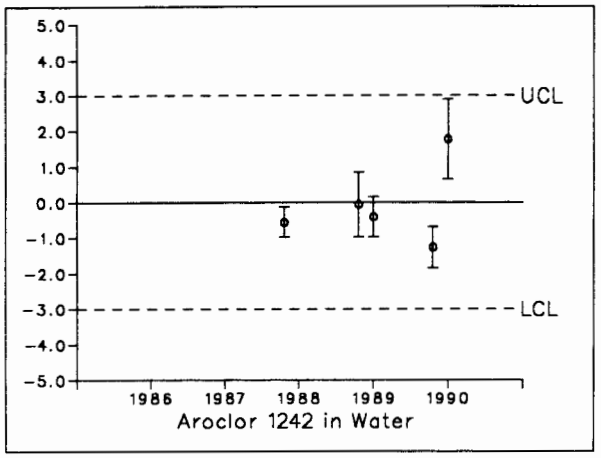
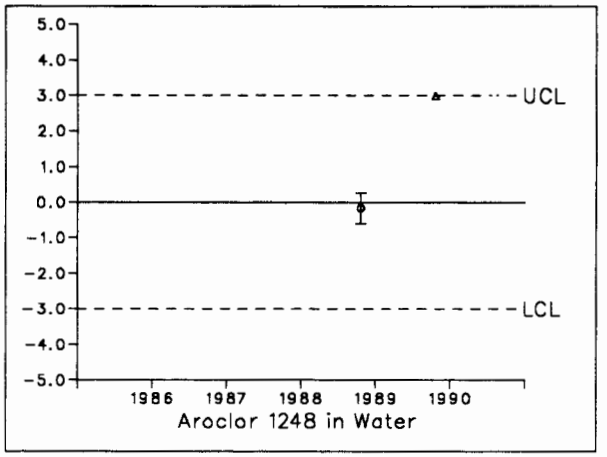
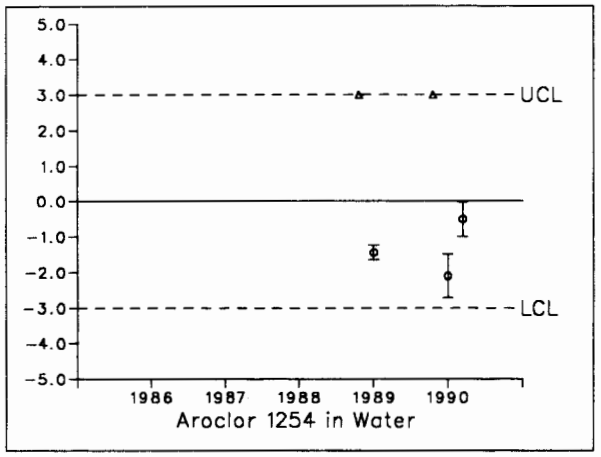
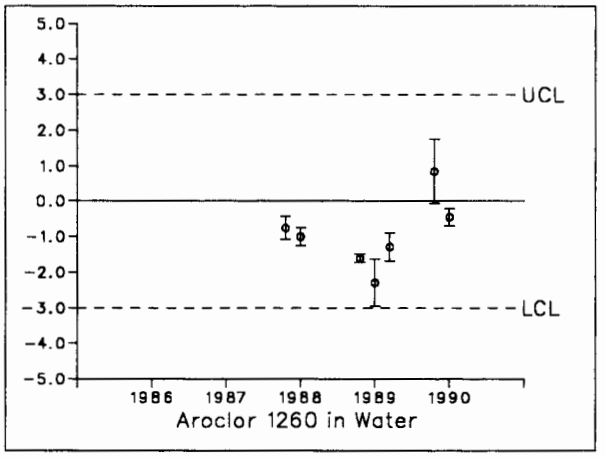

5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Aldrin in Water

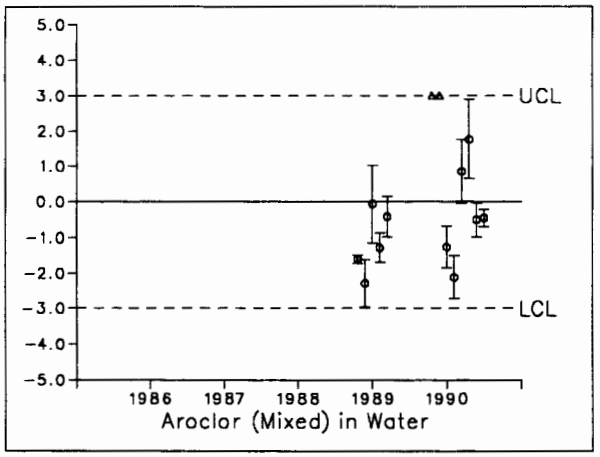
Fig. D-7. (cont)


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Aroclor 1242 in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Aroclor 1248 in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Aroclor 1254 in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Aroclor 1260 in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Aroclor (Mixed) in Water

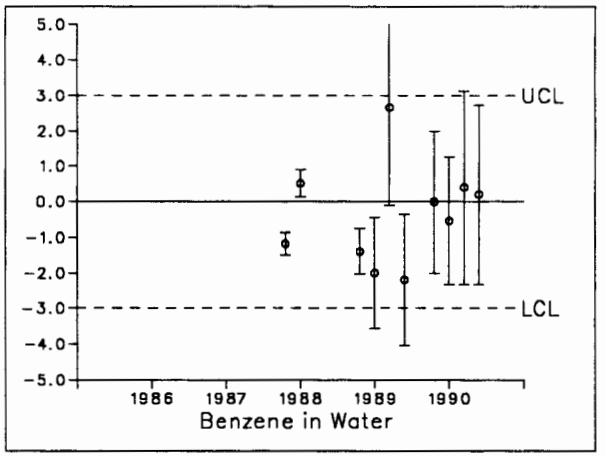
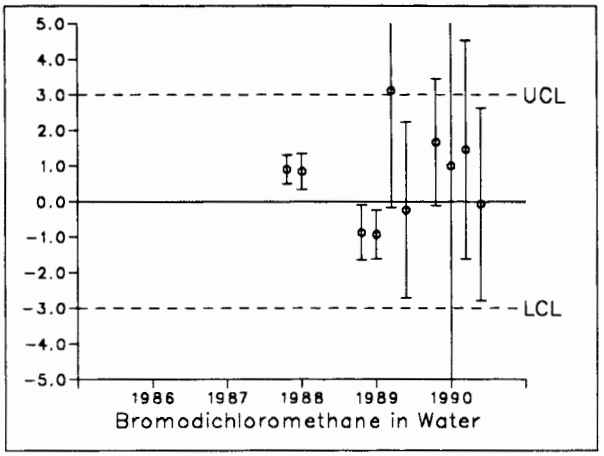
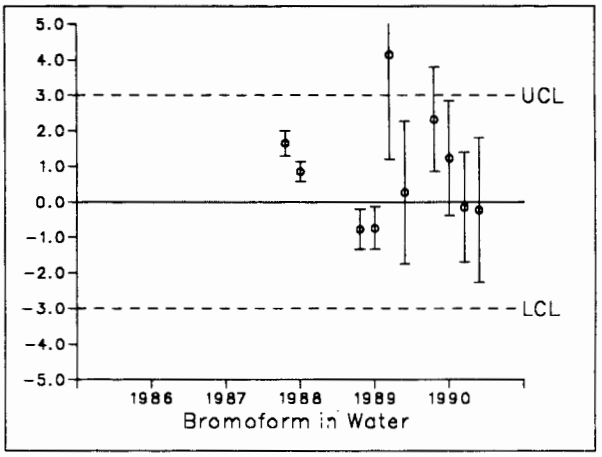
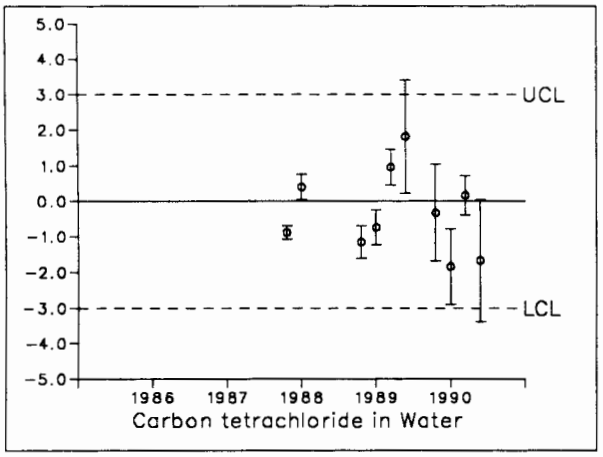
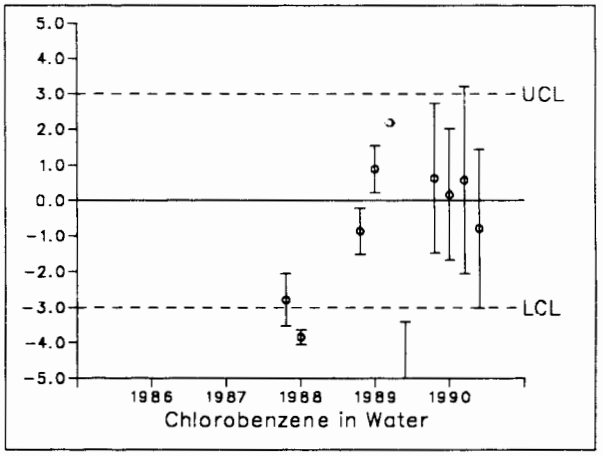

5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Benzene in Water

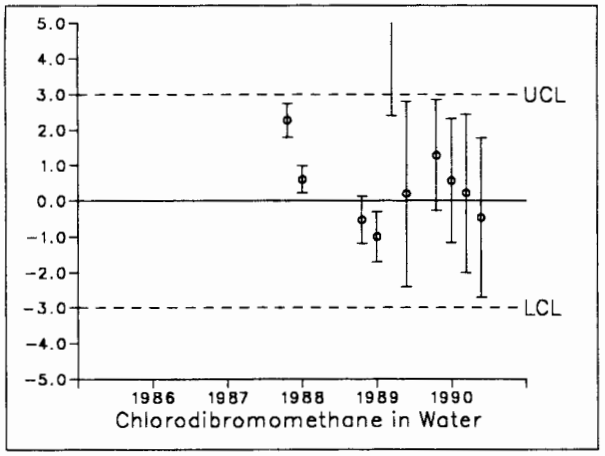
Fig. D-7. (cont)


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Bromodichloromethane in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Bromoform in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Carbon tetrachloride in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Chlorobenzene in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Chlorodibromomethane in Water

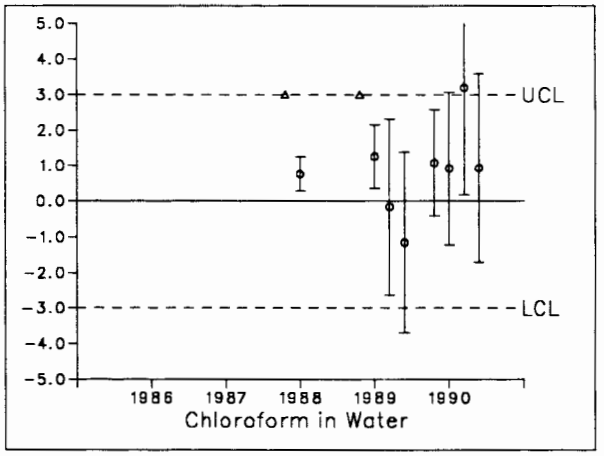
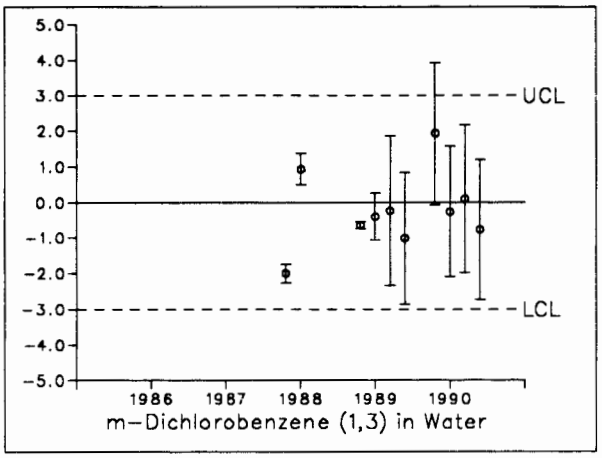
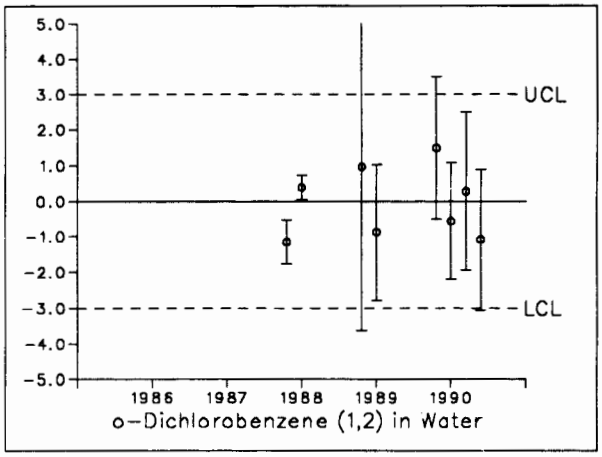
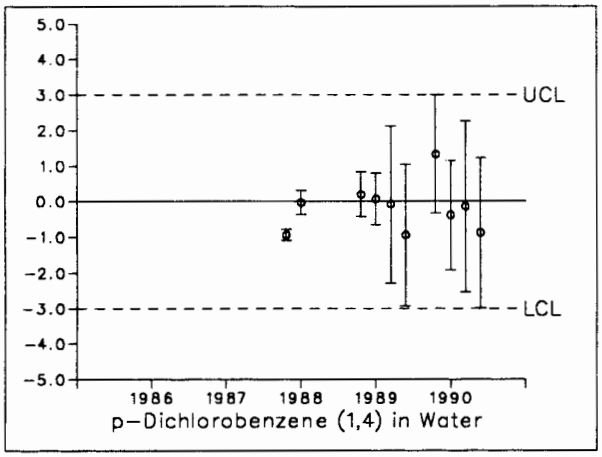
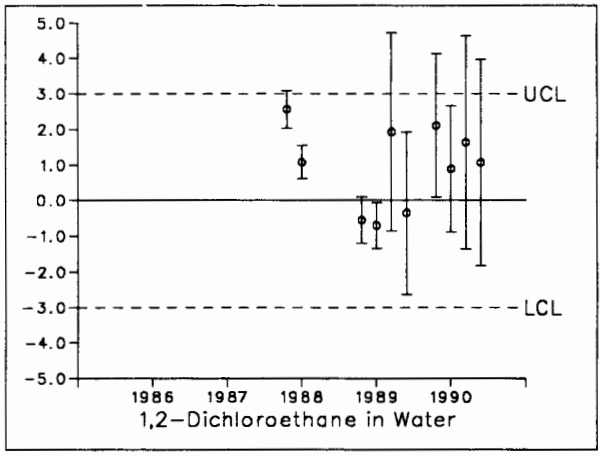

5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Chloroform in Water

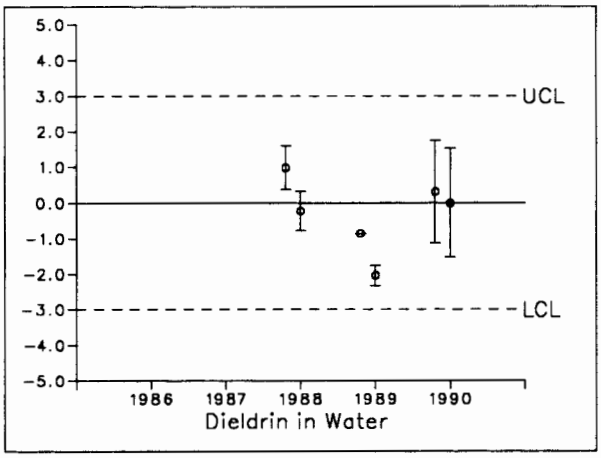
Fig. D-7. (cont)


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
m-Dichlorobenzene (1,3) in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
o-Dichlorobenzene (1,2) in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
p-Dichlorobenzene (1,4) in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
1,2-Dichloroethane in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Dieldrin in Water

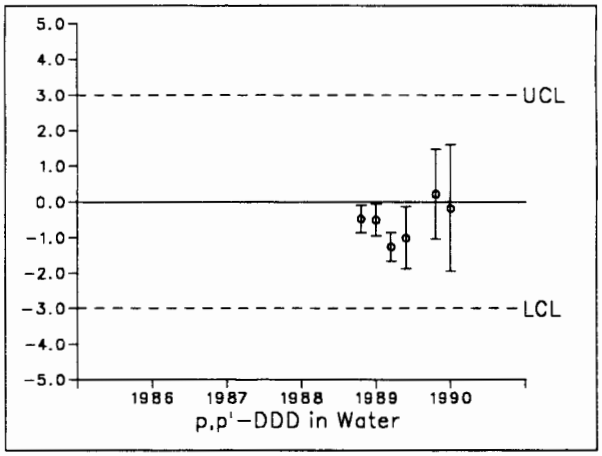
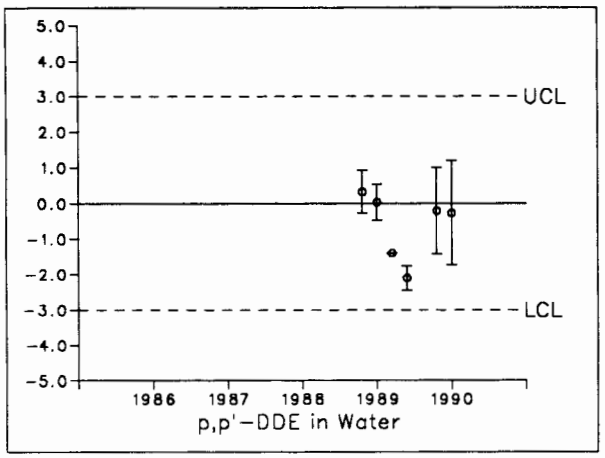
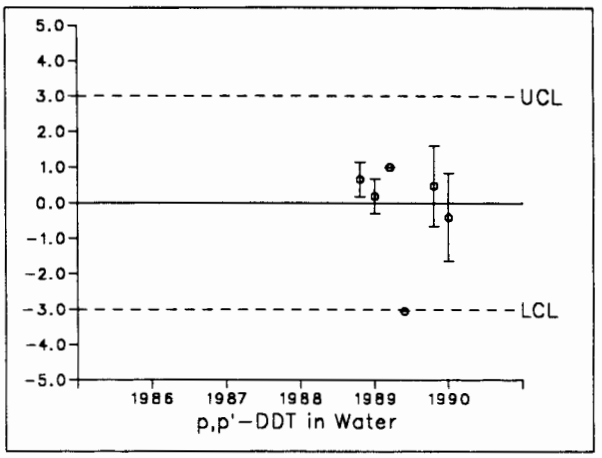
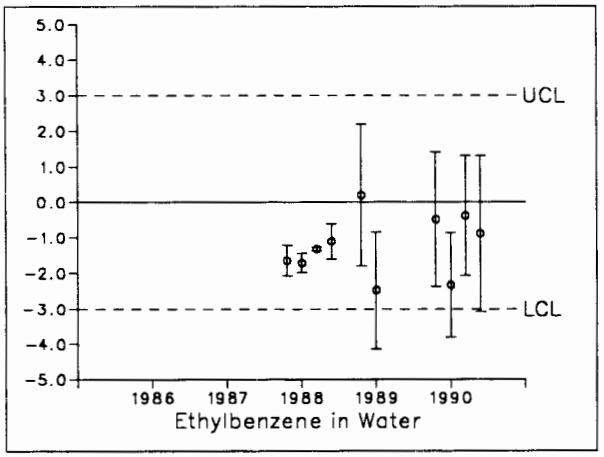
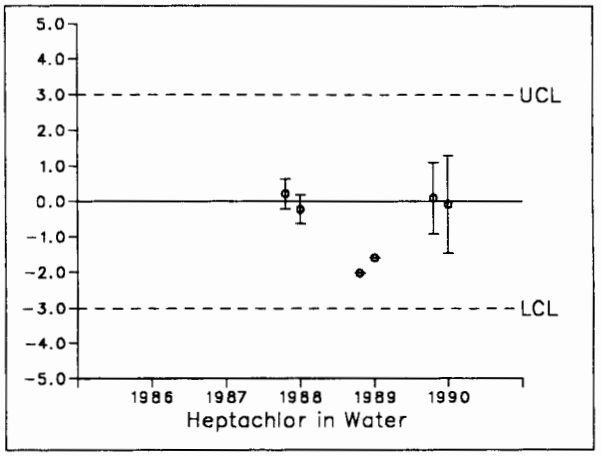

5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
p,p'-DDD in Water

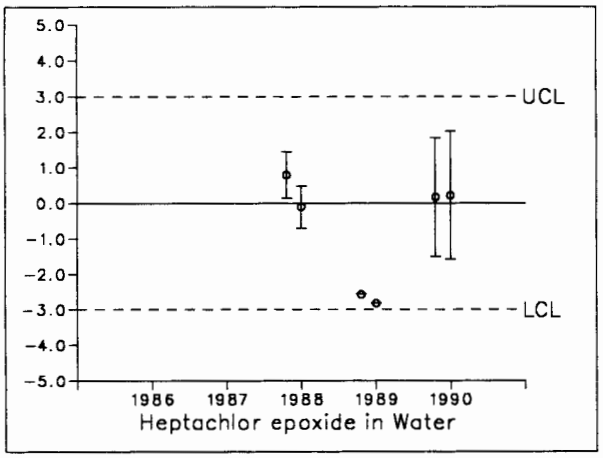
Fig. D-7. (cont)


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
p,p'-DDE in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
p,p'-DDT in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Ethylbenzene in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Heptachlor in Water


5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Heptachlor epoxide in Water

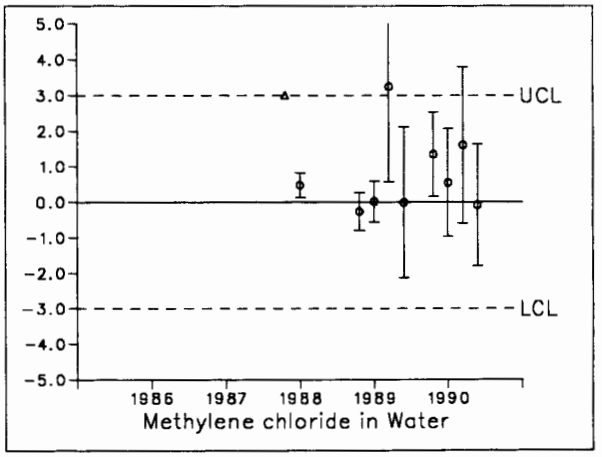
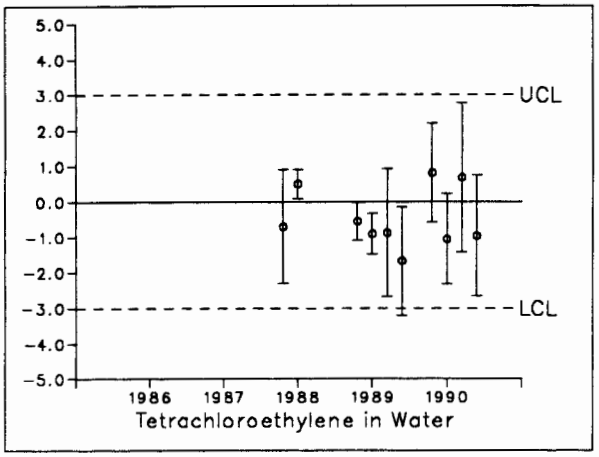
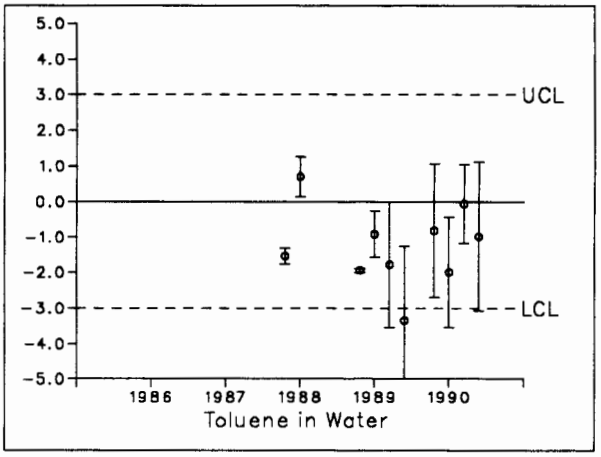
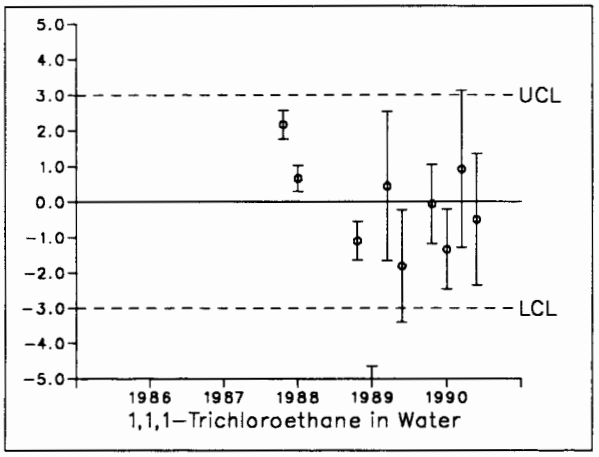
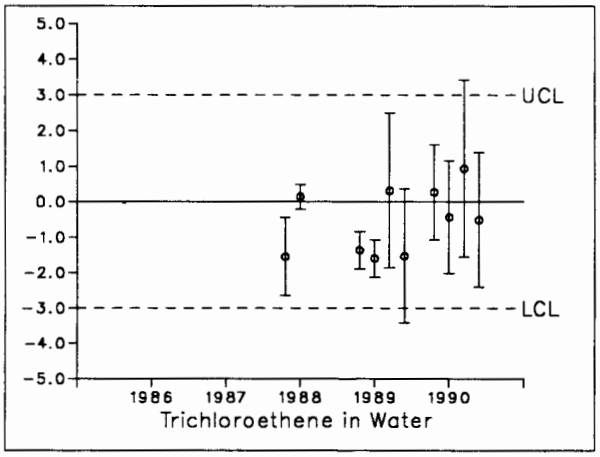

5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
UCL
LCL
1986
1987
1988
1989
1990
Methylene chloride in Water

Fig. D-7. (cont)









NOTE: The position of each data point is determined by dividing the difference between the HSE-9 and agency values by the expected standard deviation given by the agency. The size of the error bar is determined by dividing the HSE-9 standard deviation by the agency standard deviation. In most cases, the HSE-9 mean is within one standard deviation of the agency value and our error bars overlap the agency mean value.

△ ▽ indicates data points beyond the ± 3 σ control limits.

Fig. D-7. (cont)

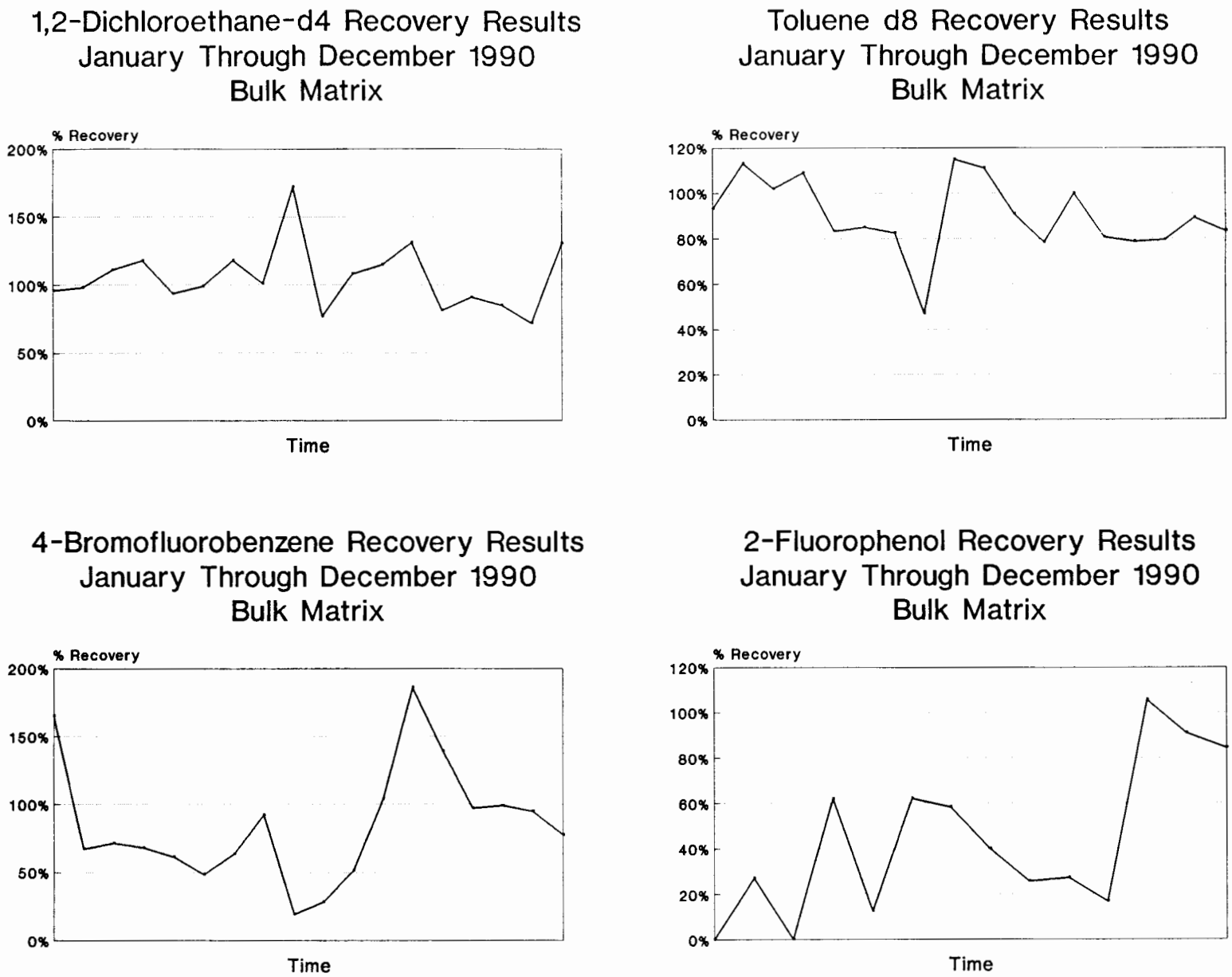
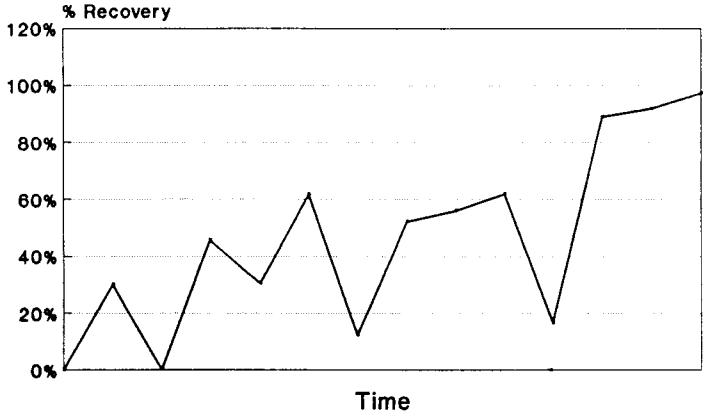
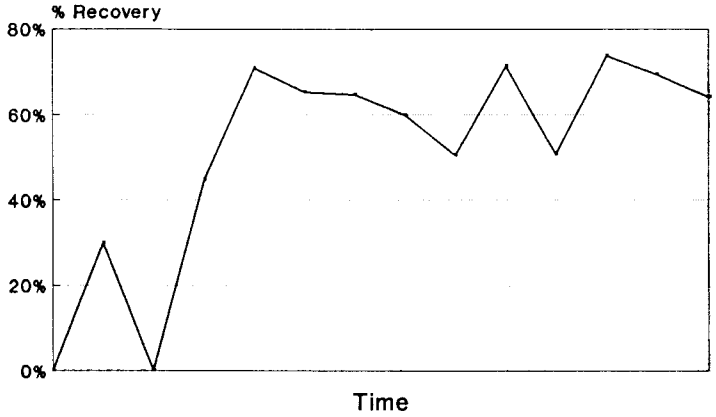


Fig. D-8. Organic surrogate data for bulk, sludge, soil, water, and charcoal tube matrices.

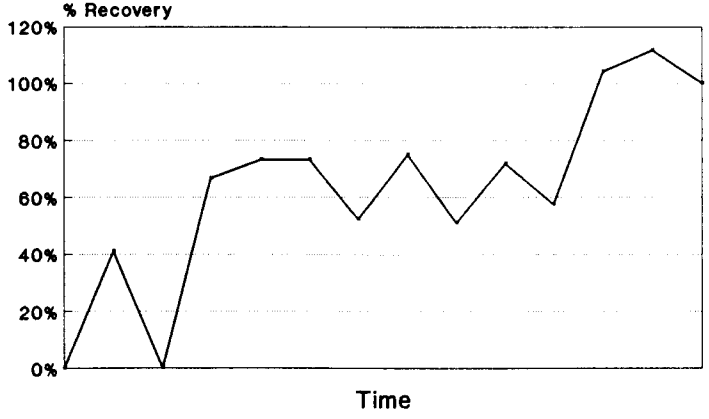
Phenol-d5 Recovery Results
January Through December 1990
Bulk Matrix



Nitrobenzene-d5 Recovery Results
January Through December 1990
Bulk Matrix



2-Fluorobiphenyl Recovery Results
January Through December 1990
Bulk Matrix



2,4,6-Tribromophenol Recovery Results
January Through December 1990
Bulk Matrix

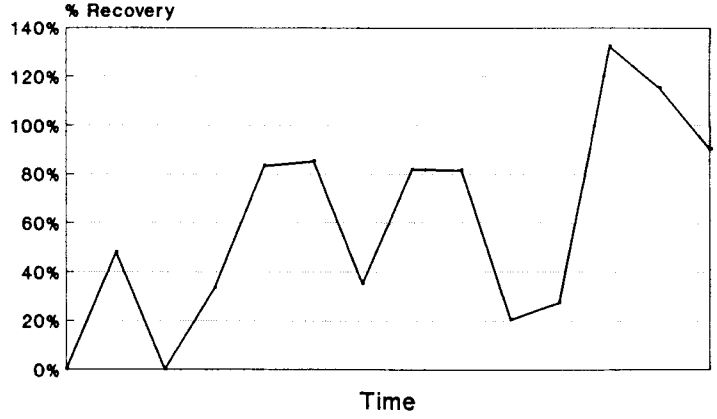
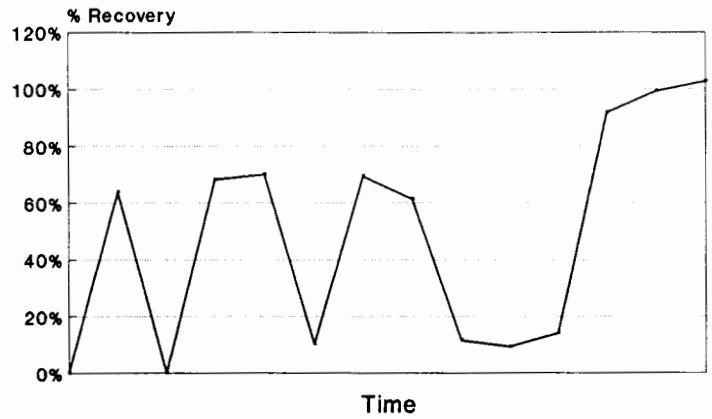
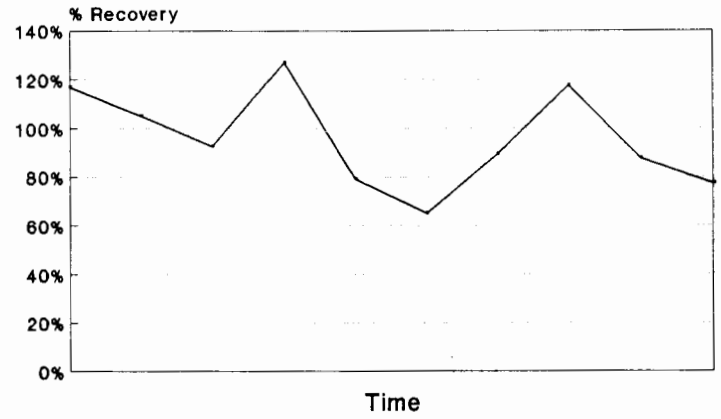


Fig. D-8. (cont)

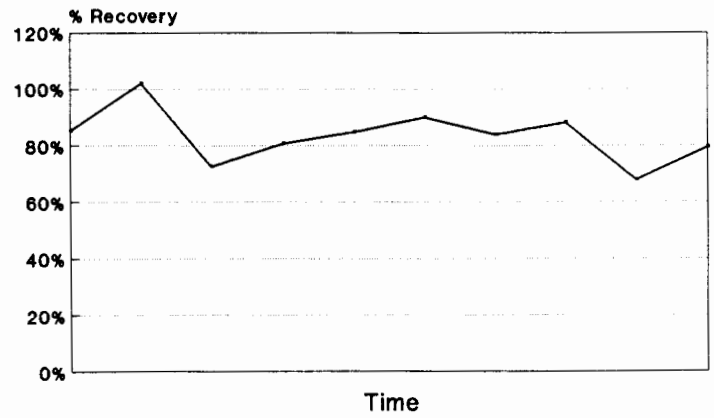
p-Terphenyl-d14 Recovery Results
January Through December 1990
Bulk Matrix



1,2-Dichloroethane-d4 Recovery Results
January Through December 1990
Sludge Matrix



Toluene d8 Recovery Results
January Through December 1990
Sludge Matrix



4-Bromofluorobenzene Recovery Results
January Through December 1990
Sludge Matrix

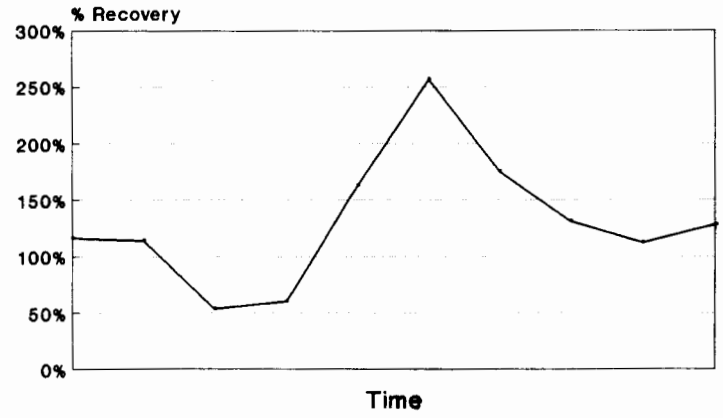
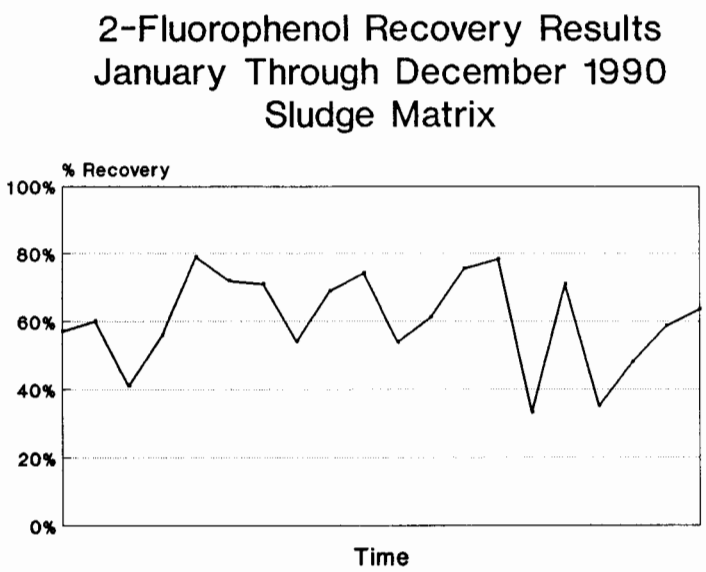
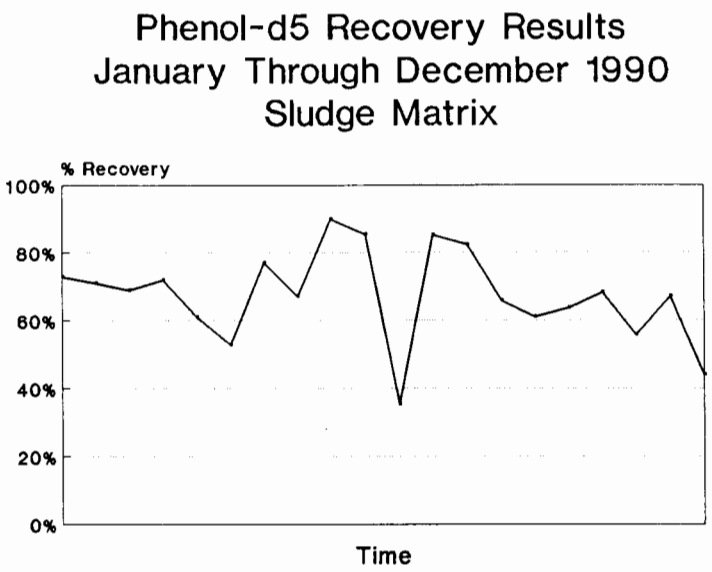
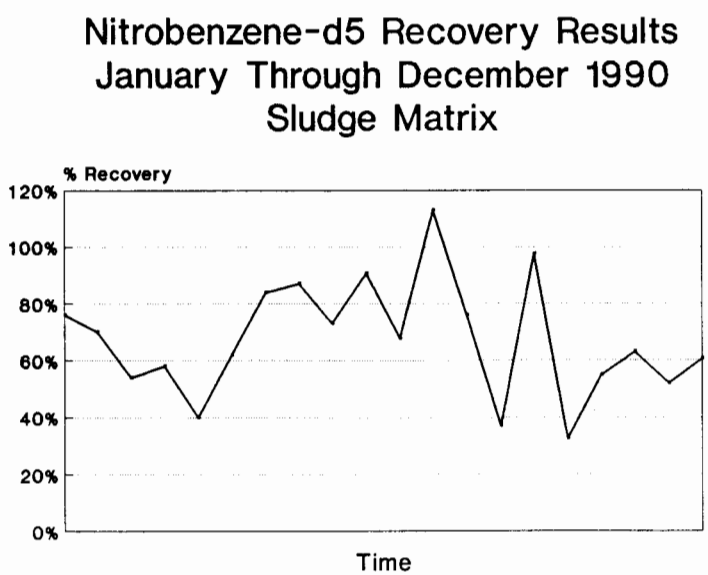


Fig. D-8. (cont)


2-Fluorophenol Recovery Results
January Through December 1990
Sludge Matrix
% Recovery
100%
80%
60%
40%
20%
0%
Time


Phenol-d5 Recovery Results
January Through December 1990
Sludge Matrix
% Recovery
100%
80%
60%
40%
20%
0%
Time


Nitrobenzene-d5 Recovery Results
January Through December 1990
Sludge Matrix
% Recovery
120%
100%
80%
60%
40%
20%
0%
Time

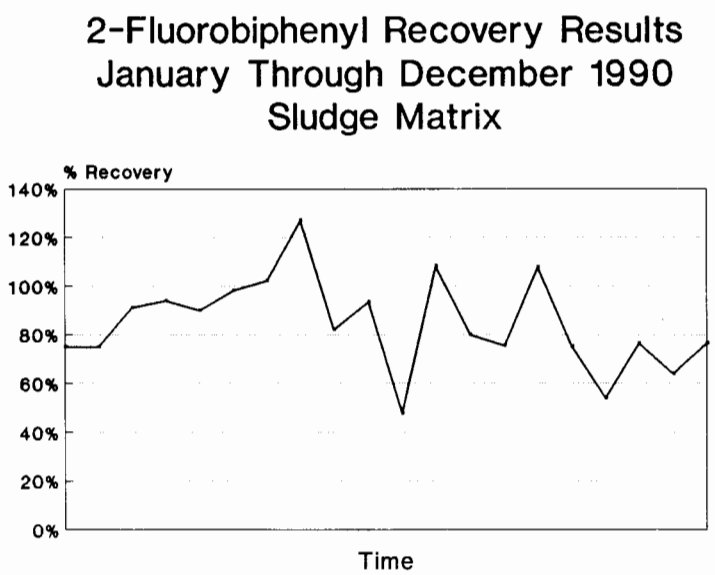
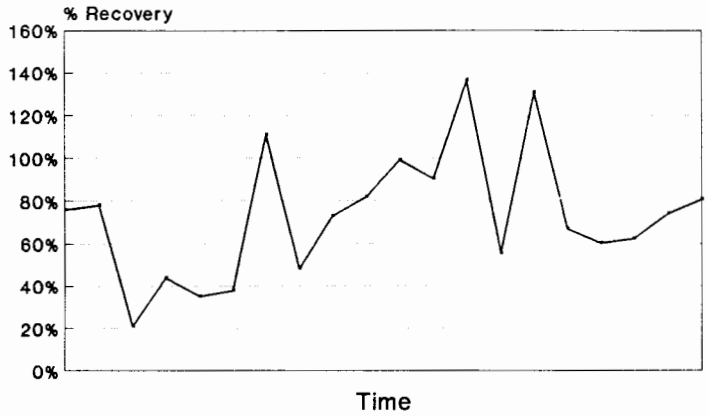
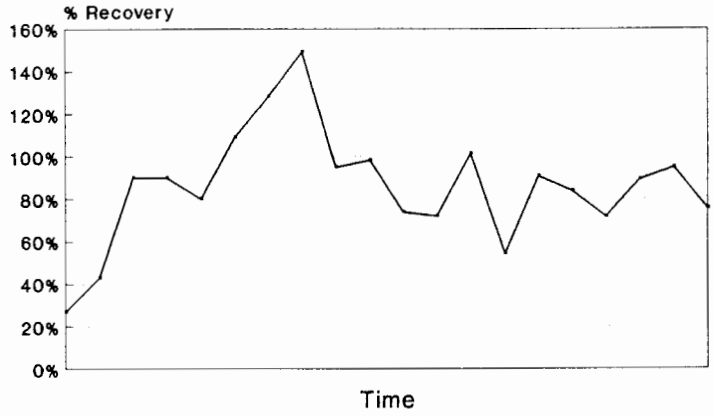

2-Fluorobiphenyl Recovery Results
January Through December 1990
Sludge Matrix
% Recovery
140%
120%
100%
80%
60%
40%
20%
0%
Time

Fig. D-8. (cont)

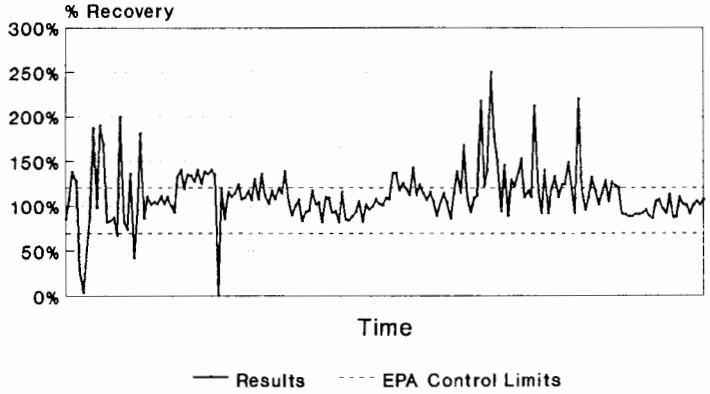
2,4,6-Tribromophenol Recovery Results
January Through December 1990
Sludge Matrix



p-Terphenyl-d14 Recovery Results
January Through December 1990
Sludge Matrix



1,2-Dichloroethane-d4 Recovery Results
January Through June 1990
Soil Matrix



1,2-Dichloroethane-d4 Recovery Results
July Through December 1990
Soil Matrix

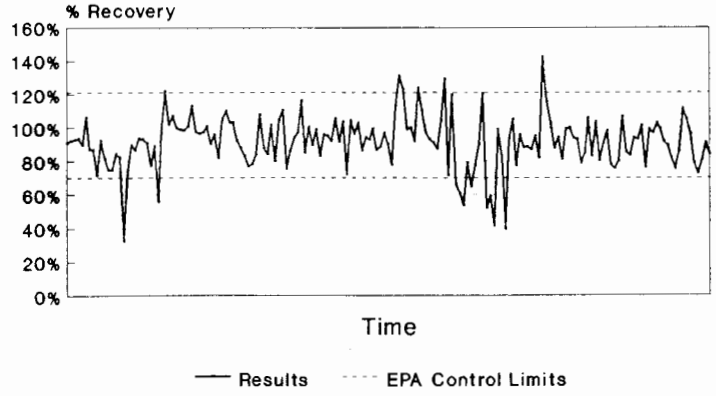
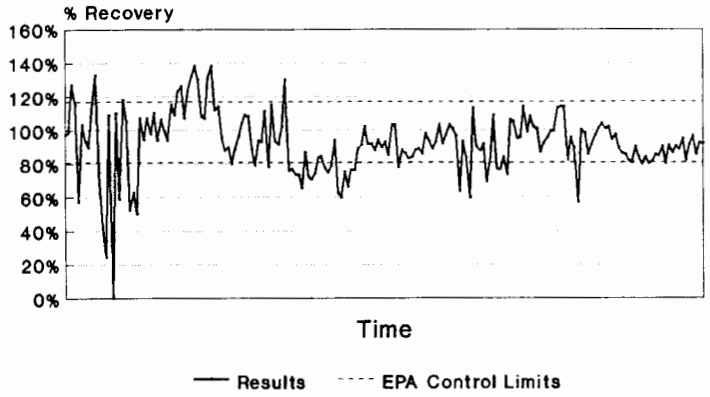
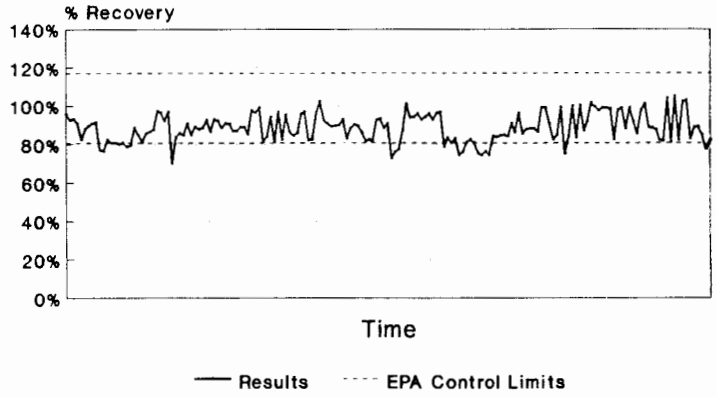


Fig. D-8. (cont)

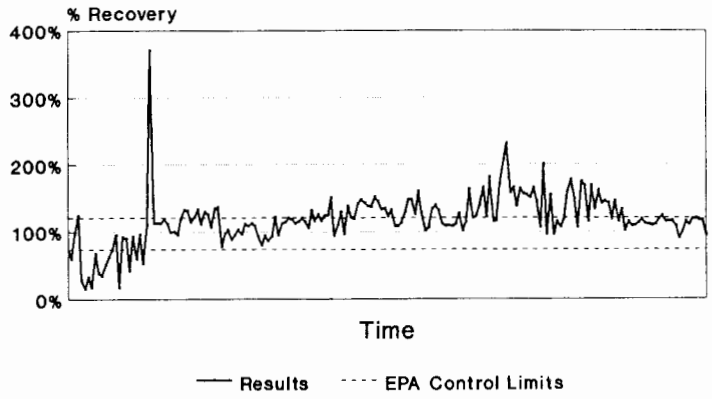
Toluene-d8 Recovery Results
January Through June 1990
Soil Matrix



Toluene-d8 Recovery Results
July Through December 1990
Soil Matrix



4-Bromofluorobenzene Recovery Results
January Through June 1990
Soil Matrix



4-Bromofluorobenzene Recovery Results
July Through December 1990
Soil Matrix

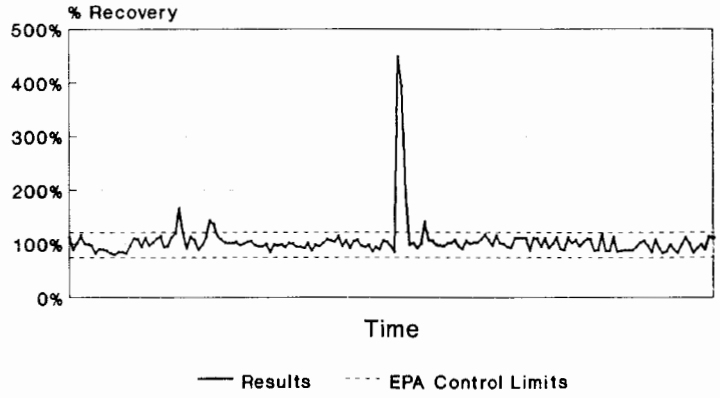
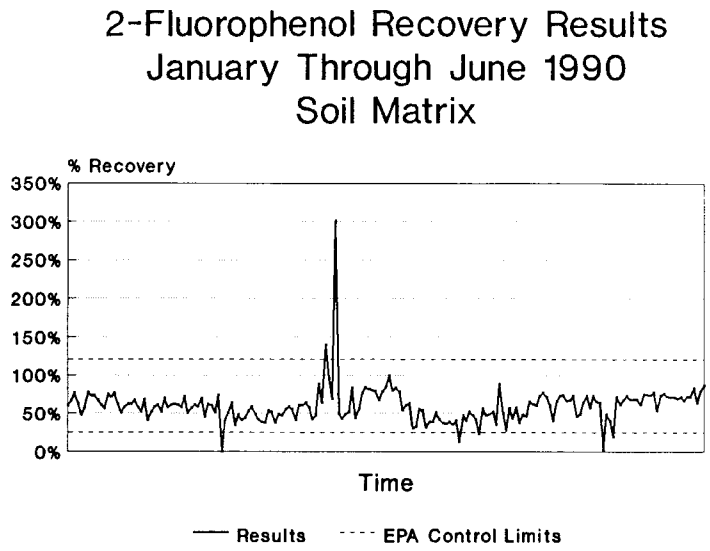
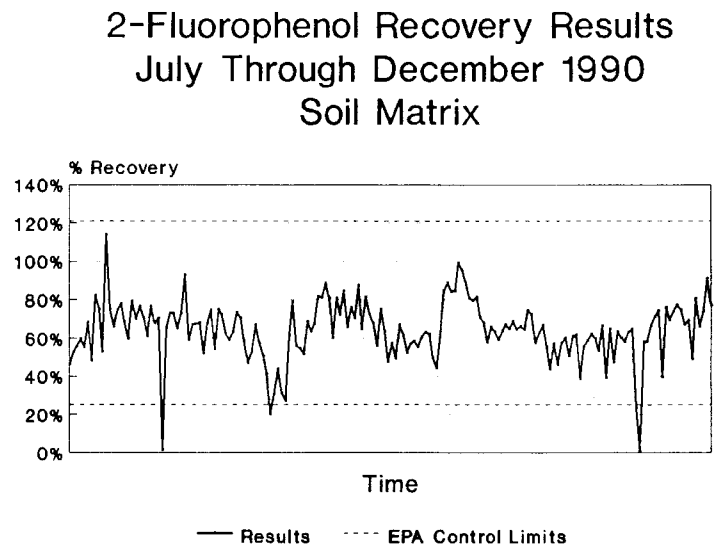
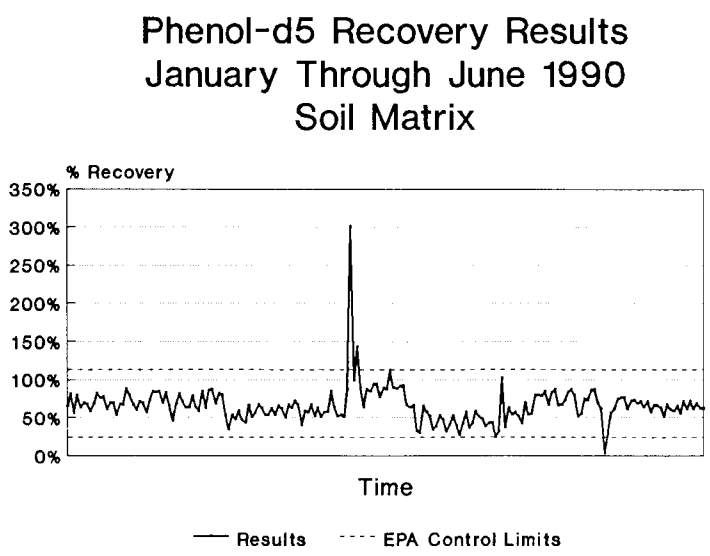


Fig. D-8. (cont)


2-Fluorophenol Recovery Results
January Through June 1990
Soil Matrix
% Recovery
350%
300%
250%
200%
150%
100%
50%
0%
Time
Results
EPA Control Limits


2-Fluorophenol Recovery Results
July Through December 1990
Soil Matrix
% Recovery
140%
120%
100%
80%
60%
40%
20%
0%
Time
Results
EPA Control Limits


Phenol-d5 Recovery Results
January Through June 1990
Soil Matrix
% Recovery
350%
300%
250%
200%
150%
100%
50%
0%
Time
Results
EPA Control Limits

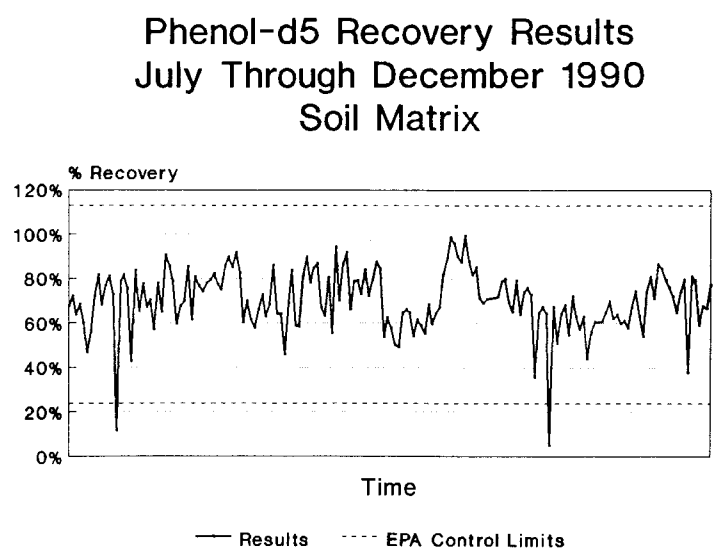
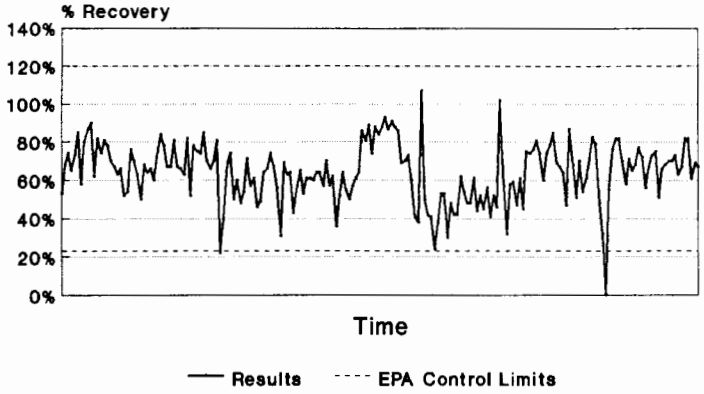
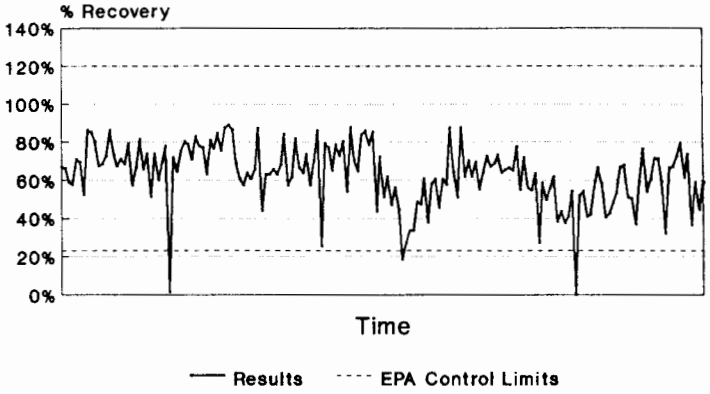

Phenol-d5 Recovery Results
July Through December 1990
Soil Matrix
% Recovery
120%
100%
80%
60%
40%
20%
0%
Time
Results
EPA Control Limits

Fig. D-8. (cont)

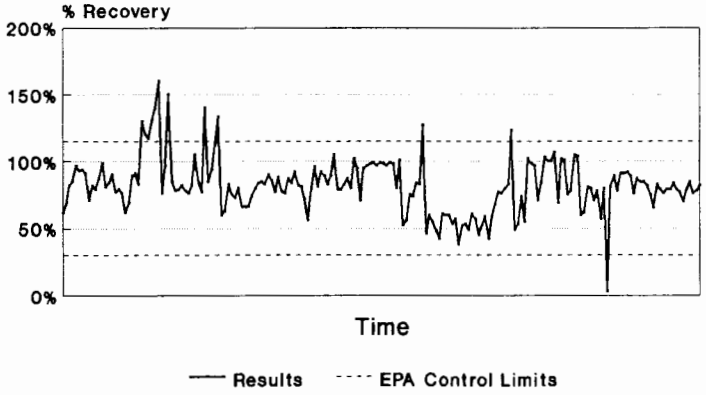
Nitrobenzene-d5 Recovery Results
January Through June 1990
Soil Matrix



Nitrobenzene-d5 Recovery Results
July Through December 1990
Soil Matrix



2-Fluorobiphenyl Recovery Results
January Through June 1990
Soil Matrix



2-Fluorobiphenyl Recovery Results
July Through December 1990
Soil Matrix

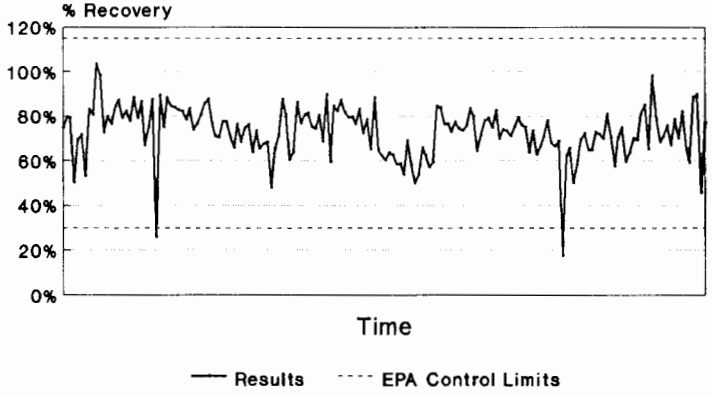
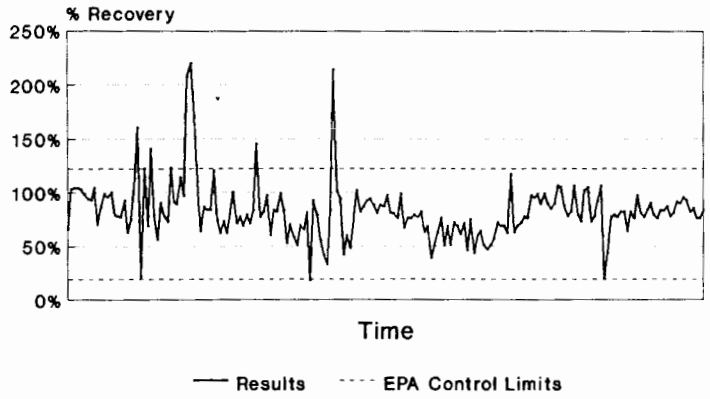
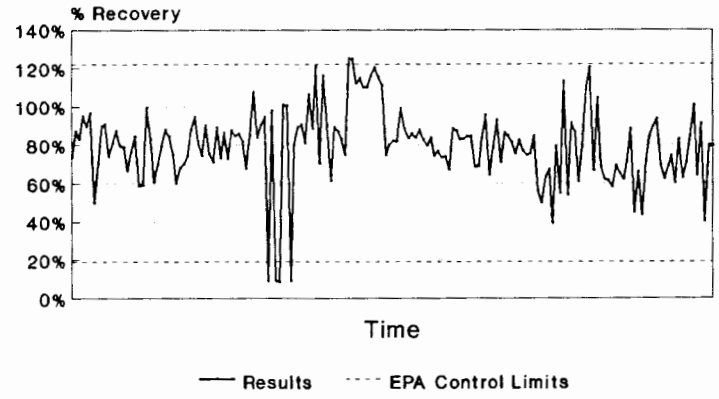


Fig. D-8. (cont)

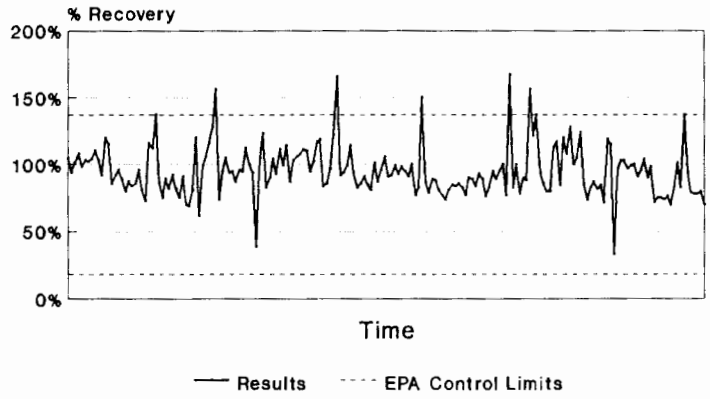
2,4,6-Tribromophenol Recovery Results
January Through June 1990
Soil Matrix



2,4,6-Tribromophenol Recovery Results
July Through December 1990
Soil Matrix



p-Terphenyl-d14 Recovery Results
January Through June 1990
Soil Matrix



p-Terphenyl-d14 Recovery Results
July Through December 1990
Soil Matrix

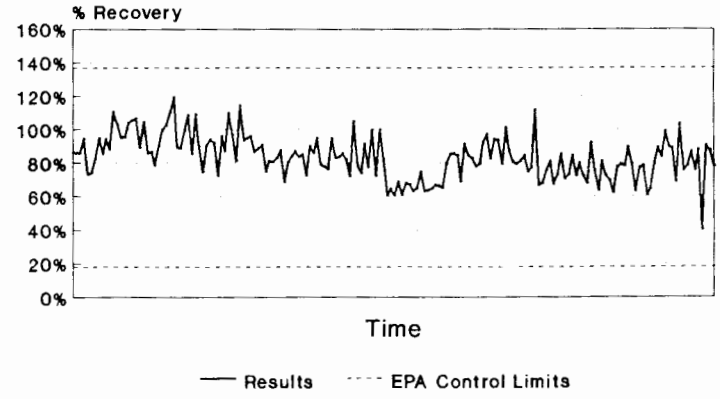
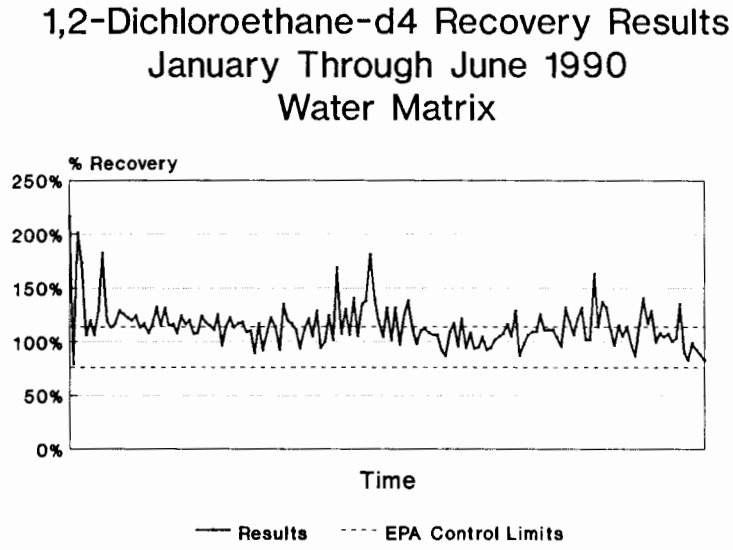
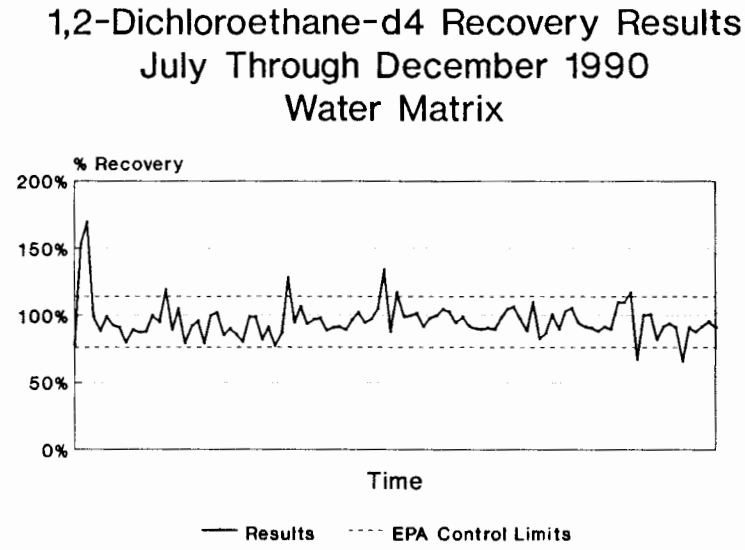
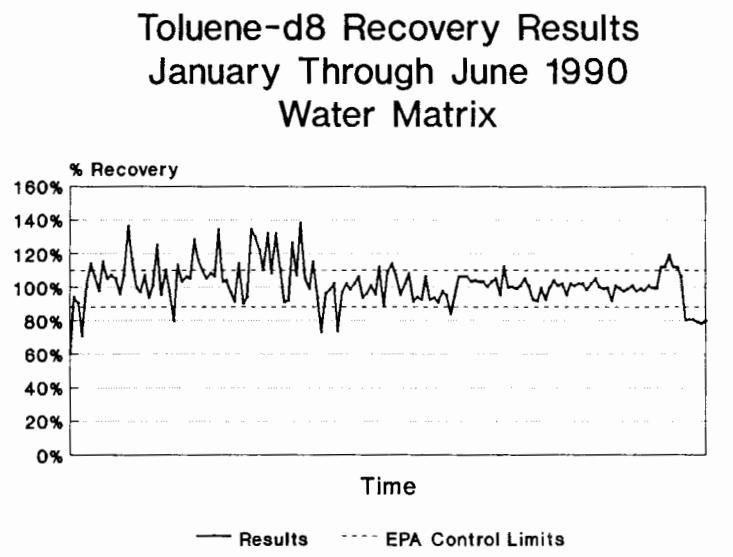


Fig. D-8. (cont)


1,2-Dichloroethane-d4 Recovery Results
January Through June 1990
Water Matrix
% Recovery
250%
200%
150%
100%
50%
0%
Time
Results
EPA Control Limits


1,2-Dichloroethane-d4 Recovery Results
July Through December 1990
Water Matrix
% Recovery
200%
150%
100%
50%
0%
Time
Results
EPA Control Limits


Toluene-d8 Recovery Results
January Through June 1990
Water Matrix
% Recovery
160%
140%
120%
100%
80%
60%
40%
20%
0%
Time
Results
EPA Control Limits

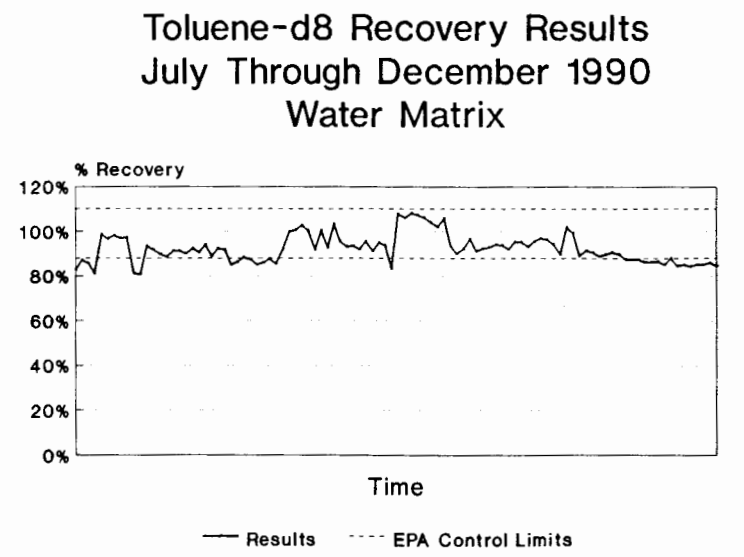

Toluene-d8 Recovery Results
July Through December 1990
Water Matrix
% Recovery
120%
100%
80%
60%
40%
20%
0%
Time
Results
EPA Control Limits

Fig. D-8. (cont)

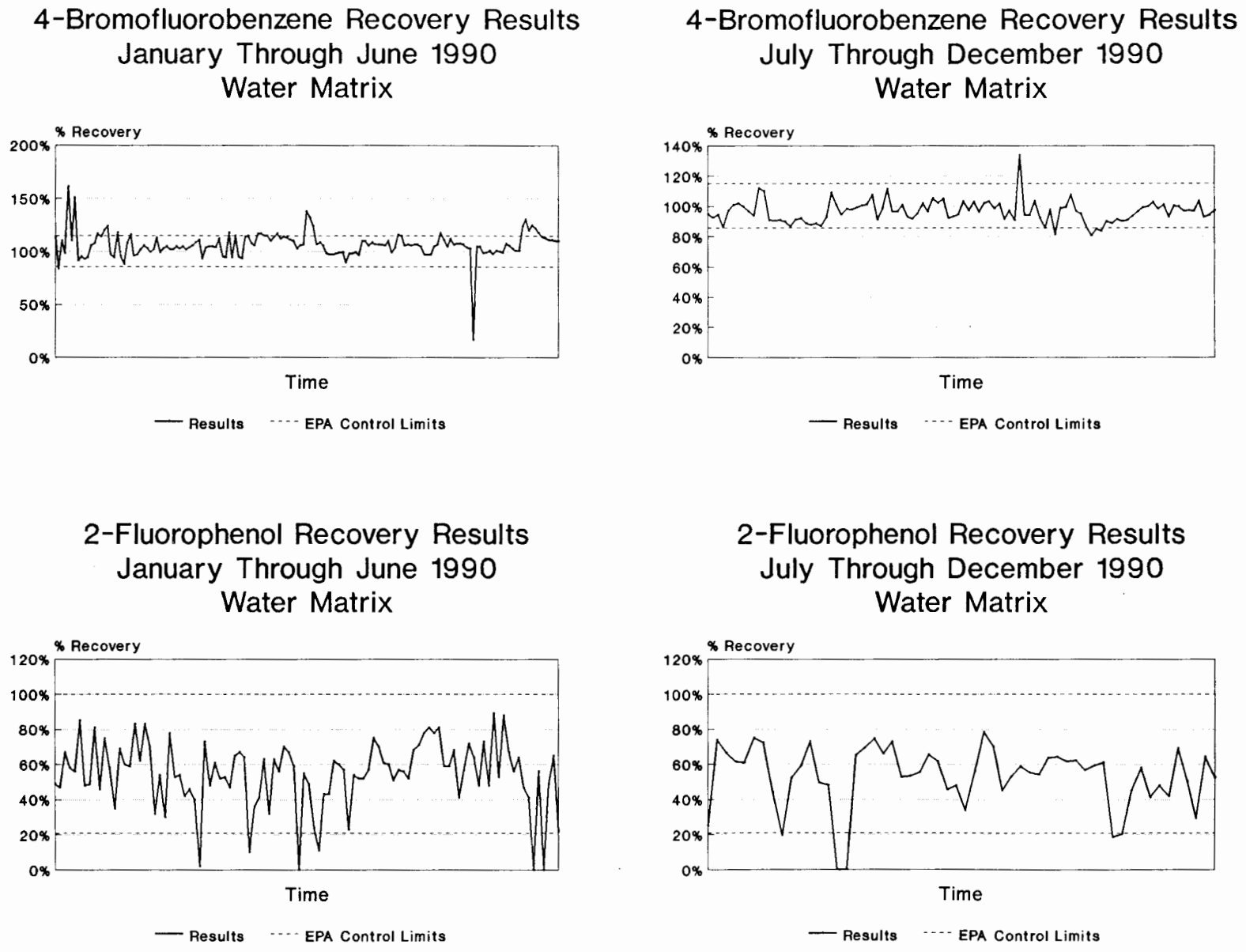
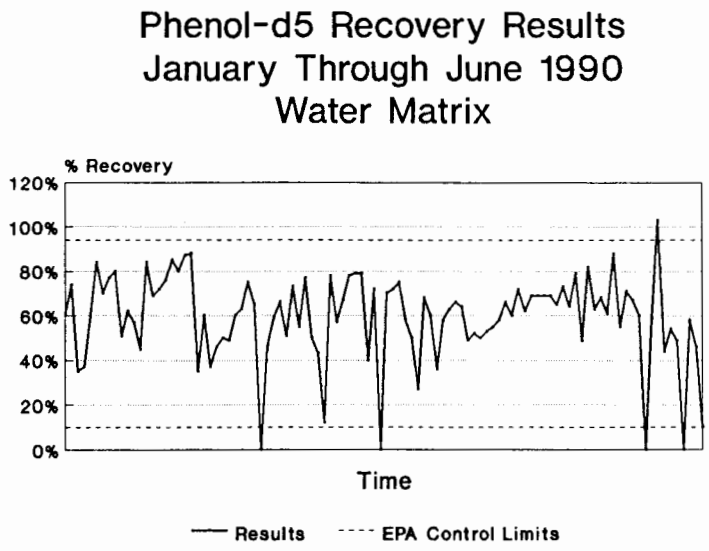
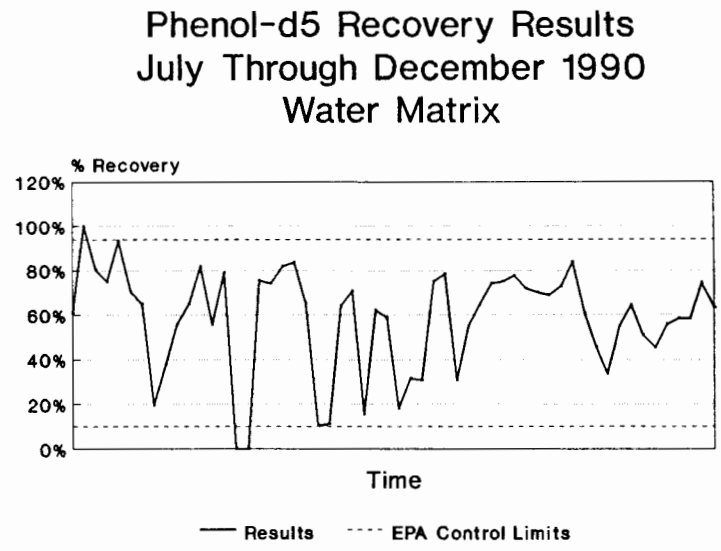
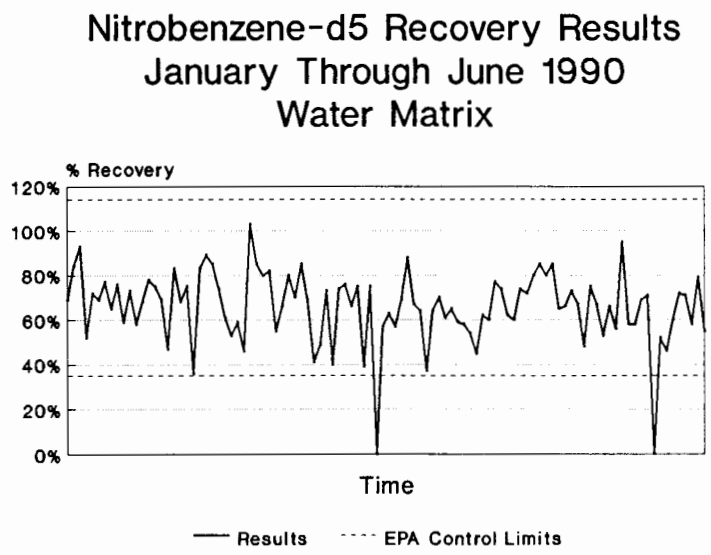

4-Bromofluorobenzene Recovery Results
January Through June 1990
Water Matrix
% Recovery
200%
150%
100%
50%
0%
Time
Results
EPA Control Limits
4-Bromofluorobenzene Recovery Results
July Through December 1990
Water Matrix
% Recovery
140%
120%
100%
80%
60%
40%
20%
0%
Time
Results
EPA Control Limits
2-Fluorophenol Recovery Results
January Through June 1990
Water Matrix
% Recovery
120%
100%
80%
60%
40%
20%
0%
Time
Results
EPA Control Limits
2-Fluorophenol Recovery Results
July Through December 1990
Water Matrix
% Recovery
120%
100%
80%
60%
40%
20%
0%
Time
Results
EPA Control Limits

Fig. D-8. (cont)


Phenol-d5 Recovery Results
January Through June 1990
Water Matrix
% Recovery
120%
100%
80%
60%
40%
20%
0%
Time
Results
EPA Control Limits


Phenol-d5 Recovery Results
July Through December 1990
Water Matrix
% Recovery
120%
100%
80%
60%
40%
20%
0%
Time
Results
EPA Control Limits


Nitrobenzene-d5 Recovery Results
January Through June 1990
Water Matrix
% Recovery
120%
100%
80%
60%
40%
20%
0%
Time
Results
EPA Control Limits

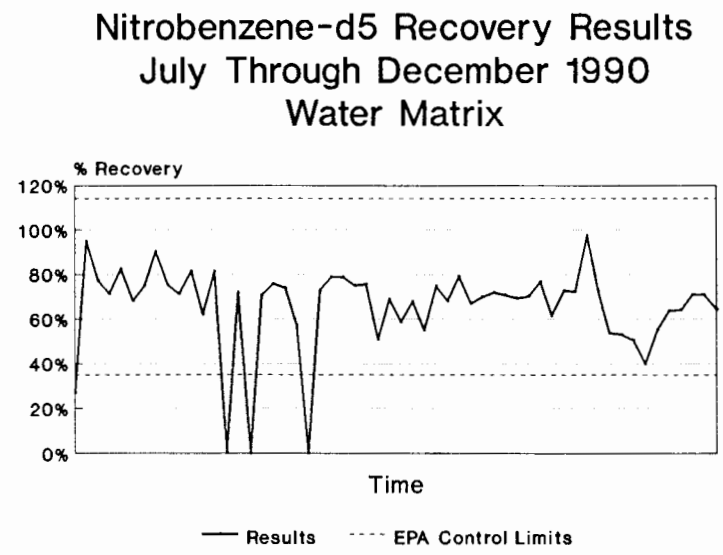
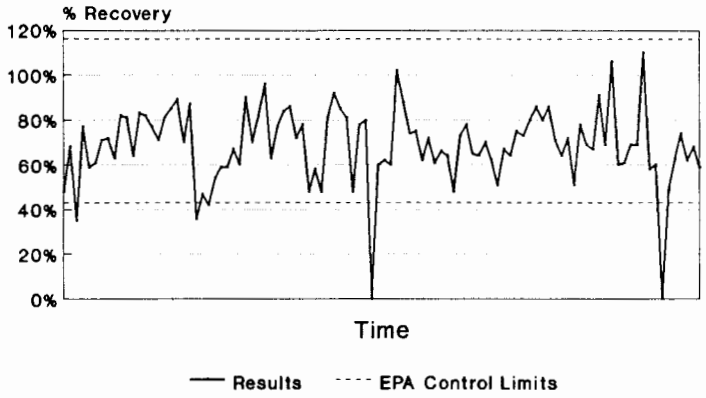
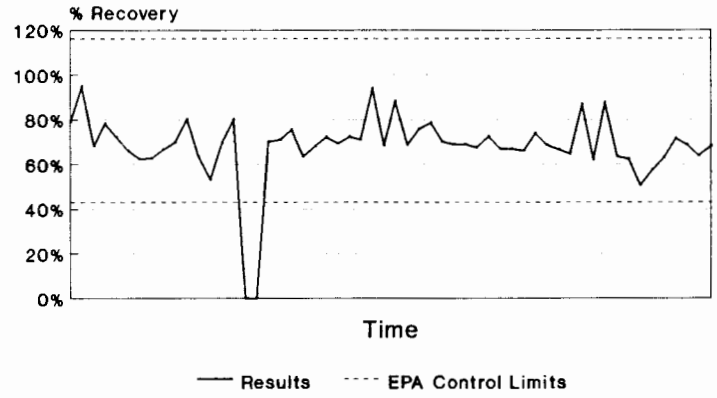

Nitrobenzene-d5 Recovery Results
July Through December 1990
Water Matrix
% Recovery
120%
100%
80%
60%
40%
20%
0%
Time
Results
EPA Control Limits

Fig. D-8. (cont)

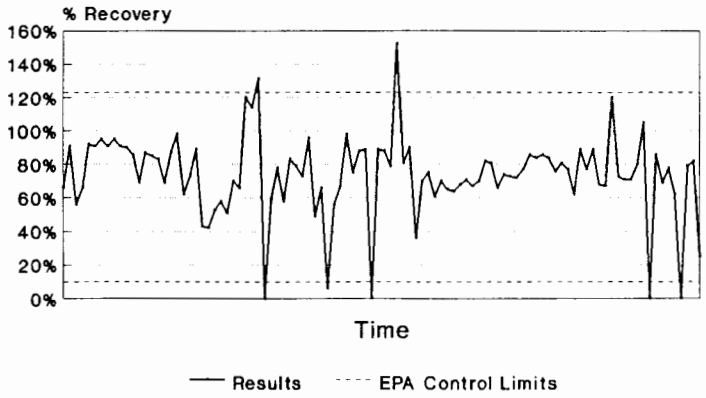
2-Fluorobiphenyl Recovery Results
January Through June 1990
Water Matrix



2-Fluorobiphenyl Recovery Results
July Through December 1990
Water Matrix



2,4,6-Tribromophenol Recovery Results
January Through June 1990
Water Matrix



2,4,6-Tribromophenol Recovery Results
July Through December 1990
Water Matrix

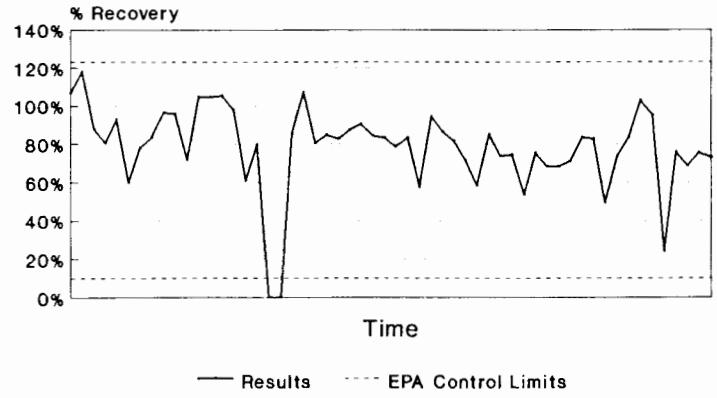


Fig. D-8. (cont)

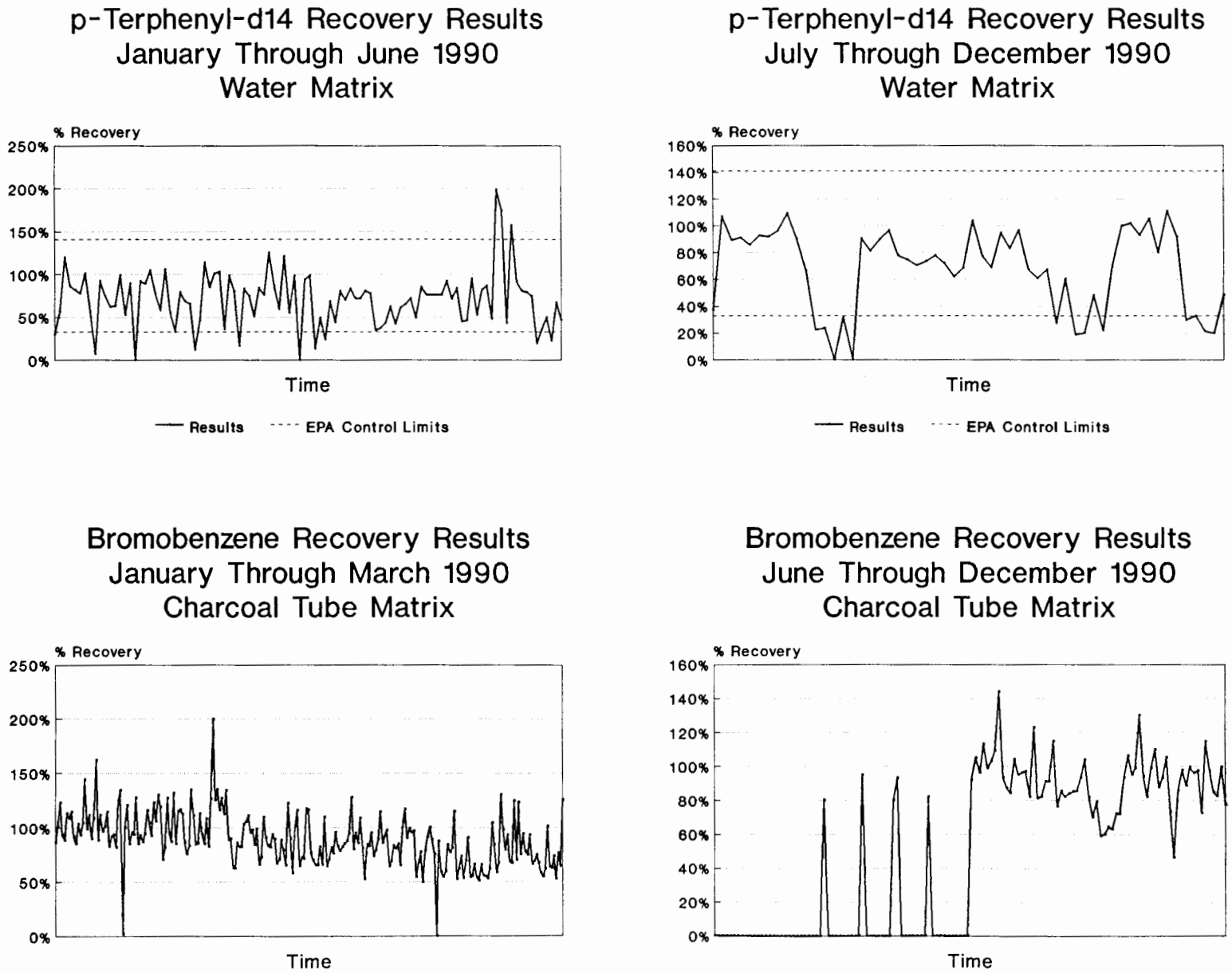

p-Terphenyl-d14 Recovery Results
January Through June 1990
Water Matrix
% Recovery
250%
200%
150%
100%
50%
0%
Time
Results
EPA Control Limits
p-Terphenyl-d14 Recovery Results
July Through December 1990
Water Matrix
% Recovery
160%
140%
120%
100%
80%
60%
40%
20%
0%
Time
Results
EPA Control Limits
Bromobenzene Recovery Results
January Through March 1990
Charcoal Tube Matrix
% Recovery
250%
200%
150%
100%
50%
0%
Time
Bromobenzene Recovery Results
June Through December 1990
Charcoal Tube Matrix
% Recovery
160%
140%
120%
100%
80%
60%
40%
20%
0%
Time

Fig. D-8. (cont)

APPENDIX E

SUMMARY OF ANALYSES COMPLETED BY HSE-9

TABLE E-I

RADIOCHEMICAL ANALYSES COMPLETED BY HSE-9 IN 1990

ANALYSIS	SILICATE	SLUDGE	WATER	BIOLOGICAL	FILTER	BULK	TUBE	BIOASSAY	TISSUE	TOTAL
Alpha	197	16	2118	-	322	239	-	-	-	2892
Am-241	181	19	609	6	60	-	-	46	55	976
As-72	-	-	-	11	20	-	-	-	-	31
As-73	1	-	1	208	220	-	-	-	-	430
As-74	1	-	1	185	197	-	-	-	-	384
Ba-133	-	-	10	-	-	-	-	-	-	10
Be-7	-	1	36	237	204	-	-	-	-	478
Beta	193	1	1823	-	313	234	-	-	-	2564
Cd-109	1	-	1	208	211	-	-	-	-	421
Ce-144	-	-	6	-	6	-	-	-	-	12
Co-56	-	1	38	-	-	-	-	-	-	39
Co-57	41	2	148	260	230	-	-	-	-	681
Co-58	-	2	55	-	-	-	-	-	-	57
Co-60	50	2	128	217	231	-	-	-	-	628
Cr-51	-	-	9	-	-	-	-	-	-	9
Cs-134	41	-	87	217	230	-	-	-	-	575
Cs-137	317	3	476	434	233	-	-	15	-	1478
Cu-64	-	-	-	5	5	-	-	-	-	10
Eu-152	26	-	-	-	-	-	-	-	-	26
Fe-59	-	-	7	-	-	-	-	-	-	7
Ga-68	-	-	-	11	20	-	-	-	-	31
Gamma	218	-	1136	-	-	232	-	-	-	1586
GSCAN	10	-	-	-	-	-	-	-	-	10
H-3	211	-	1168	55	1	30	-	2837	-	4302
I-131	1	-	1	195	195	-	-	-	-	392
K-40	6	-	-	-	-	-	-	-	-	6
Mn-52	-	-	8	-	-	-	-	-	-	8
Mn-54	1	4	143	260	232	-	-	-	-	640
Na-22	1	-	74	260	223	-	-	-	-	558
Na-24	-	-	-	5	5	-	-	-	-	10
Nb-95	-	4	39	-	-	-	-	-	-	43
Pu-238	220	27	323	55	146	3	-	3523	60	4357
Pu-239	226	27	346	61	149	3	-	3533	60	4405
Ra-226	5	-	88	-	-	-	-	-	-	93
Rb-83	1	-	37	260	224	-	-	-	-	522
Rb-84	-	-	51	-	-	-	-	-	-	51
Rb-86	1	-	2	185	188	-	-	-	-	376
Ru-103	1	-	1	217	224	-	-	-	-	443
Ru-106	-	-	10	-	-	-	-	-	-	10
Sc-46	-	-	23	-	-	-	-	-	-	23
Sc-48	-	-	9	-	-	-	-	-	-	9
Se-72	1	-	1	194	197	-	-	-	-	393
Se-75	41	8	149	208	220	-	-	-	-	626
Sr-82	-	1	34	-	-	-	-	-	-	35
Sr-85	-	4	75	-	-	-	-	-	-	79
Sr-89	-	-	63	-	-	-	-	-	-	63
Sr-90	251	-	130	161	14	-	-	-	-	556
Th-228	10	-	-	-	-	-	-	-	453	463
Th-230	-	-	-	2	-	-	-	-	453	455

TABLE E-I (cont)

ANALYSIS	SILICATE	SLUDGE	WATER	BIOLOGICAL	FILTER	BULK	TUBE	BIOASSAY	TISSUE	TOTAL
Th-232	-	-	-	-	-	-	-	-	453	453
U-234	-	28	68	-	-	-	-	-	42	138
U-235	-	29	105	15	-	-	-	575	42	766
U-235/238	411	-	151	-	-	-	-	-	-	562
U-238	-	-	-	15	-	-	-	1114	42	1171
V-48	-	-	20	-	-	-	-	-	-	20
Y-88	-	3	60	-	-	-	-	-	-	63
Zn-65	1	3	33	217	224	-	-	-	-	478
Zr-88	-	3	33	-	-	-	-	-	-	36
Zr-95	-	-	2	-	-	-	-	-	-	2

TOTAL RADIOCHEMICAL ANALYSES 35,942

TABLE E-II

INORGANIC ANALYSES COMPLETED BY HSE-9 IN 1990

ANALYSIS	SILICATE	SLUDGE	WATER	BIOLOGICAL	FILTER	BULK	TUBE	BIOASSAY	TISSUE	TOTAL
Ag	1483	36	1053	96	6	79	-	-	-	2753
Al	1130	3	338	96	2	1	-	-	-	1570
As	1484	41	881	163	6	135	-	-	-	2710
Au	1253	3	35	96	8	6	-	-	-	1401
B	144	-	260	15	2	6	-	-	-	427
Ba	1618	34	913	96	16	77	-	-	-	2754
Be	277	3	600	55	1274	12	-	-	-	2221
Bi	158	3	34	-	6	6	-	-	-	207
Bio O2 Demand	-	-	3	-	-	-	-	-	-	3
Br	1094	-	70	129	4	5	-	-	-	1302
C	1	-	-	-	-	-	-	-	-	1
Ca	1094	-	297	96	12	-	-	-	-	1499
Cd	357	39	1049	85	55	121	-	-	-	1706
Ce	1252	3	34	96	7	6	-	-	-	1398
Cl	1136	-	389	96	-	9	-	-	-	1631
Cl2(Free)	-	-	7	-	-	-	-	-	-	7
CN	12	-	470	-	-	-	-	-	-	489
CO	-	-	-	-	-	8	-	-	-	8
CO2	-	-	-	-	-	8	-	-	-	8
Co	1252	3	154	5	7	6	-	-	-	1427
Chem O2 Demand	-	4	453	-	-	-	-	-	-	457
Conductivity	-	-	226	-	-	-	-	-	-	226
Cr	1405	36	1083	123	63	105	-	-	-	2818
Cs	1252	3	34	131	6	6	-	-	-	1432
Cu	1362	3	801	96	29	6	-	-	-	2300
Dy	1252	3	34	96	6	6	-	-	-	1397
Er	158	3	34	-	6	6	-	-	-	207
Eu	1252	3	34	96	6	6	-	-	-	1397
F	73	-	415	94	-	5	-	-	-	593
Fe	1188	-	591	96	52	-	-	-	-	1927
Flash Point	-	-	4	-	-	47	-	-	-	51
Ga	1252	3	34	96	6	6	-	-	-	1397
Gd	158	3	34	-	5	6	-	-	-	206
Ge	158	3	34	-	6	6	-	-	-	207
H2O-	35	-	-	-	1	-	-	-	-	36
Hardness	-	-	204	-	-	-	-	-	-	204
Hf	1252	3	34	96	6	6	-	-	-	1397
Hg	1418	37	701	155	6	108	8	-	-	2433
Ho	158	3	35	-	6	6	-	-	-	208
I	1094	-	9	96	4	5	-	-	-	1208
In	1251	3	27	96	2	6	-	-	-	1385
Ir	158	3	34	-	6	6	-	-	-	207
K	1094	-	298	96	-	-	-	-	-	1492
La	1252	3	33	96	6	6	-	-	-	1396
Li	190	3	92	19	6	6	-	-	-	316
Lu	1252	3	34	96	6	6	-	-	-	1397
Mg	1094	-	339	96	-	-	-	-	-	1529
Mn	1267	3	312	96	27	6	-	-	-	1711
Mo	199	3	311	95	6	6	-	-	-	620

TABLE E-II (cont)

ANALYSIS	SILICATE	SLUDGE	WATER	BIOLOGICAL	FILTER	BULK	TUBE	BIOASSAY	TISSUE	TOTAL
Na	1094	-	300	96	11	-	-	-	-	1509
Nb	158	3	34	-	6	6	-	-	-	207
Nd	1252	3	34	96	6	6	-	-	-	1397
NH3	-	-	-	-	-	-	-	-	-	2
NH3-N	9	-	547	-	-	-	-	-	-	556
Ni	305	33	588	-	42	6	-	-	-	974
N2O	-	-	-	-	-	8	-	-	-	8
NO2	-	-	1	-	-	8	-	-	-	10
NO2-N	-	-	153	-	-	-	-	-	-	153
NO3	-	-	3	-	-	-	-	-	-	4
NO3-N	61	-	444	-	-	-	-	-	-	509
Normality	-	-	56	-	-	17	-	-	-	73
O2	-	-	-	-	-	8	-	-	-	8
Oil/Grease	-	-	125	-	-	3	-	-	-	128
P	9	-	535	-	-	-	-	-	-	544
P Alkalinity	-	-	223	-	-	-	-	-	-	223
Pb	428	36	1088	27	571	120	-	-	-	2272
Pd	158	3	34	-	6	6	-	-	-	207
pH	53	4	1489	-	-	-	-	-	-	1546
Phase	-	-	13	-	-	20	-	-	-	35
PO4-P	-	-	275	-	-	-	-	-	-	275
Pr	158	3	34	-	6	6	-	-	-	207
Pt	158	3	34	-	6	6	-	-	-	207
Rb	1252	3	34	96	6	6	-	-	-	1397
Re	1	-	11	-	4	-	-	-	-	16
Rh	158	3	35	-	6	6	-	-	-	208
Ru	158	3	34	-	6	6	-	-	-	207
S	-	-	-	-	-	5	-	-	-	5
Sb	1350	3	301	96	6	6	-	-	-	1762
Sc	1094	-	1	96	3	-	-	-	-	1194
Se	1486	39	812	111	7	74	-	-	-	2529
Si	-	-	14	-	-	-	-	-	-	14
SiO2	-	-	314	-	-	1	-	-	-	315
Sm	1252	3	34	96	6	6	-	-	-	1397
Sn	158	3	71	-	15	6	-	-	-	255
SO2	-	-	2	-	-	8	-	-	-	10
SO4	21	-	408	-	-	-	-	-	-	429
Solids	-	51	-	-	-	-	-	-	-	51
Sp Gravity	-	4	-	-	-	-	-	-	-	4
Sr	1252	3	208	96	6	6	-	-	-	1571
Ta	1335	3	34	96	6	6	-	-	-	1480
Tot Alkalinity	-	-	334	-	-	-	-	-	-	334
Tb	1252	3	34	96	7	6	-	-	-	1398
Total Cations	-	-	35	-	-	-	-	-	-	35
Tot Dis Solids	-	-	237	-	-	-	-	-	-	237
Te	158	3	34	-	7	6	-	-	-	208
Th	1353	3	69	96	6	6	-	-	-	1533
Ti	1252	3	103	96	6	6	-	-	-	1466
Tl	181	33	558	-	193	6	-	93	-	1064
Tm	158	3	34	-	6	6	-	-	-	207

TABLE E-II (cont)

ANALYSIS	SILICATE	SLUDGE	WATER	BIOLOGICAL	FILTER	BULK	TUBE	BIOASSAY	TISSUE	TOTAL
Tot Org Halides	-	-	2	-	-	38	-	-	-	40
Tot Susp Solids	1	-	472	-	-	-	-	-	-	473
Turbidity	-	-	6	-	-	-	-	-	-	6
U	2010	3	759	185	216	6	-	-	-	3179
V	1253	3	253	96	6	6	-	-	-	1617
W	1335	3	34	5	6	6	-	-	-	1389
Y	158	3	35	-	6	6	-	-	-	208
Yb	1252	3	34	96	6	6	-	-	-	1397
Zn	1260	3	579	96	43	6	-	-	-	1987
Zr	1252	3	33	96	6	6	-	-	-	1396
TOTAL INORGANIC ANALYSES										95,748

12600 of the 95696 analytes were from MSCAN: 210 samples x 60 analytes/sample = 12600

ANALYSIS	SILICATE	SLUDGE	WATER	BIOLOGICAL	FILTER	BULK	TUBE	BIOASSAY	TISSUE	TOTAL
Mass Scan	158	3	30	-	13	6	-	-	-	210

TABLE E-III

ORGANIC ANALYSES COMPLETED BY HSE-9 IN 1990

ANALYSIS	SIL	SLU	WAT	BIOL	FIL	BULK	TUBE	BIOA	TIS	TOT
2-(2-Butoxyethoxy)ethyl acetate	-	-	15	-	-	-	-	-	-	15
N,N-(2-Hydroxyethyl)-Dodecanamide	-	-	2	-	-	-	-	-	-	2
1-(2-Methoxy-1-methylethoxy)-2-propanol	-	-	1	-	-	-	-	-	-	1
6-Amino-Hexanoic Acid	-	-	6	-	-	-	3	-	-	9
Acenaphthene	373	20	161	-	2	14	-	-	-	570
Acenaphthylene	344	16	151	-	2	14	-	-	-	527
Acetic acid	-	-	-	-	-	-	3	-	-	3
Acetone	329	8	209	-	2	18	32	-	-	598
Acetylene	-	-	-	-	-	8	-	-	-	8
Acrolein	238	4	145	-	-	6	-	-	-	393
Acrylamide	-	-	-	-	2	-	2	-	-	4
Acrylonitrile	238	4	145	-	-	6	-	-	-	393
Adipic ester	6	-	-	-	-	-	-	-	-	6
Alcohols	11	-	13	-	-	-	1	-	-	25
Aldrin	75	-	94	-	-	1	-	-	-	170
Aliphatic Hydrocarbons	40	-	-	-	-	-	-	-	-	40
Aniline	344	16	151	-	2	14	-	-	-	527
Anthracene	344	16	151	-	2	14	8	-	-	535
Mixed-Aroclor	232	-	150	-	597	1131	14	-	-	2124
Aroclor 1242	231	-	150	-	596	669	14	-	-	1660
Aroclor 1248	-	-	1	-	-	-	-	-	-	1
Aroclor 1254	231	-	150	-	596	670	14	-	-	1661
Aroclor 1260	231	-	150	-	596	669	14	-	-	1660
Aromatic hydrocarbons	10	3	16	-	-	1	60	-	-	90
Azido Benzene	-	-	1	-	-	-	-	-	-	1
Azobenzene	343	16	151	-	2	14	-	-	-	526
delta-BHC	74	-	94	-	-	1	-	-	-	169
beta-BHC	74	-	94	-	-	1	-	-	-	169
alpha-BHC	74	-	94	-	-	1	-	-	-	169
Benzene	365	10	258	-	4	19	913	-	-	1569
Benzene Acetic Acid	1	-	-	-	-	-	-	-	-	1
1,2-Benzene dicarboxylic acid, diisononylester	-	-	1	-	-	-	-	-	-	1
Benzenes, substituted	13	11	8	-	-	-	1	-	-	33
m-Benzidine	345	16	151	-	2	14	-	-	-	528
1,2-Benzisothiazole	-	1	-	-	-	-	-	-	-	1
Benzo[a]anthracene	345	16	151	-	2	14	8	-	-	536
Benzo[a]pyrene	346	16	151	-	2	14	8	-	-	537
Benzo[b]fluoranthene	346	16	151	-	2	14	-	-	-	529
Benzo[g,h,i]perylene	343	16	151	-	2	14	-	-	-	526
Benzo[k]fluoranthene	345	16	151	-	2	14	8	-	-	536
Benzoic acid	345	16	151	-	2	14	-	-	-	528
Benzophenone	-	-	1	-	-	-	-	-	-	1
Benzothiazole	-	1	-	-	-	-	1	-	-	2
2(3H)-Benzothiazolone	-	2	-	-	-	-	-	-	-	2
Benzyl alcohol	344	16	151	-	2	14	-	-	-	527
Bis(2-chloroethoxy)methane	343	16	151	-	2	14	-	-	-	526
Bis(2-chloroethyl)ether	346	16	151	-	2	14	-	-	-	529
Bis(2-chloroisopropyl)ether	343	16	151	-	2	14	-	-	-	526
Bis(2-ethylhexyl)adipate	-	-	2	-	-	-	-	-	-	2

TABLE E-III (cont)

ANALYSIS	SIL	SLU	WAT	BIOL	FIL	BULK	TUBE	BIOA	TIS	TOT
Bis(2-ethylhexyl)phthalate	343	16	151	-	2	14	-	-	-	526
Bromobenzene	330	8	209	-	2	18	673	-	-	1240
Bromochloromethane	329	8	209	-	2	18	-	-	-	566
Bromodichloromethane	330	8	209	-	2	18	-	-	-	567
Bromoform	330	8	209	-	2	18	-	-	-	567
Bromomethane	329	8	209	-	2	18	-	-	-	566
4-Bromophenylphenyl ether	345	16	151	-	2	14		-	-	528
2-Butanone	330	8	209	-	2	18	4	-	-	571
Butoxy-2-ethanol	1	-	8	-	-	4	14	-	-	27
Butoxy-2-ethoxy-2-ethanol	-	-	10	-	-	-	-	-	-	10
1-(2-Butoxyethoxy)ethanol	-	-	1	-	-	-	-	-	-	1
n-Butyl acetate	-	-	-	-	-	-	14	-	-	14
tert-Butylbenzene	330	8	209	-	2	18	-	-	-	567
sec-Butylbenzene	330	8	209	-	2	18	-	-	-	567
n-Butylbenzene	330	8	209	-	2	18	-	-	-	567
n-Butylbenzenesulfonamide	-	-	-	-	-	-	3	-	-	3
Butylbenzyl phthalate	343	16	151	-	2	14	-	-	-	526
n-Butyric acid	-	-	-	-	-	-	1	-	-	1
Caffeine	-	-	5	-	-	-	-	-	-	5
Carbon disulfide	329	8	209	-	2	18	5	-	-	571
Carbon tetrachloride	330	8	209	-	2	19	928	-	-	1496
2-Carboxylic acid	-	-	6	-	-	-	-	-	-	6
3-Carene	1	-	-	-	-	-	-	-	-	1
Chlordane	74	-	94	-	-	1	-	-	-	169
4-Chloro-3-methylphenol	372	20	161	-	2	14	-	-	-	569
4-Chloroaniline	346	16	151	-	2	14	-	-	-	529
Chlorobenzene	365	10	258	-	4	18	901	-	-	1556
Chlorodibromomethane	330	8	209	-	2	18	-	-	-	567
Chloroethane	329	8	209	-	2	18	-	-	-	566
2-Chloroethylvinyl ether	238	4	145	-	-	6	-	-	-	393
Chloroform	329	8	209	-	2	18	924	-	-	1490
Chloromethane	328	8	209	-	2	18	-	-	-	565
2-Chloronaphthalene	344	16	154	-	2	14	-	-	-	530
p-Chlorophenol	2	-	-	-	-	-	-	-	-	2
o-Chlorophenol	371	20	161	-	2	14	-	-	-	568
4-Chlorophenylphenyl ether	345	16	151	-	2	14	-	-	-	528
p-Chlorotoluene	330	8	209	-	2	18	-	-	-	567
o-Chlorotoluene	330	8	209	-	2	18	-	-	-	567
Chrysene	344	16	151	-	2	14	8	-	-	535
Cyclic Hydrocarbons	12	4	5	-	-	-	2	-	-	23
Cyclohexane, trans-1-(cyclohexylmethyl)-3-methyl-	1	-	-	-	-	-	-	-	-	1
Cyclohexane, trans-1-(cyclohexylmethyl)-4-methyl-	1	-	-	-	-	-	-	-	-	1
Cyclohexanes, alkylated	-	-	-	-	-	-	7	-	-	7
Cyclohexanone	-	-	2	-	-	-	-	-	-	2
Cyclohexanone, 3,3,5-Trimethyl-	1	-	-	-	-	-	-	-	-	1
Cyclohexylamine	-	-	2	-	-	-	-	-	-	2
Cyclopropane, 1,1-dimethyl-2-(2-methyl-2-propenyl)	1	-	-	-	-	-	-	-	-	1
Mixed-Cymenes	1	-	-	-	-	-	-	-	-	1
2,4-D	102	-	50	-	-	-	-	-	-	152
p,p'-DDE	82	-	94	-	-	2	-	-	-	178
o,p'-DDE	9	-	-	-	-	-	-	-	-	9

TABLE E-III (cont)

ANALYSIS	SIL	SLU	WAT	BIOL	FIL	BULK	TUBE	BIOA	TIS	TOT
p,p'-DDT	82	-	94	-	-	2	-	-	-	178
p,p'-DDD	82	-	94	-	-	2	-	-	-	178
o,p'-DDT	9	-	-	-	-	-	-	-	-	9
Decachlorobiphenyl (2,2',3,3',4,4',5,5',6,6'-)	-	-	1	-	-	-	-	-	-	1
Decanal	1	-	-	-	-	-	-	-	-	1
n-Decane	-	-	-	-	-	-	1	-	-	1
Di(2-ethylhexyl) sebacate (DEHS) (DOS)	-	-	1	-	1	-	-	-	-	2
Di-n-butyl phthalate	344	16	151	-	2	14	-	-	-	527
Di-n-octyl phthalate	346	16	151	-	2	14	-	-	-	529
Dibenzo[a,h]anthracene	346	16	151	-	2	14	-	-	-	529
Dibenzofuran	346	16	151	-	2	14	-	-	-	529
1,2-Dibromo-3-chloropropane	330	8	209	-	2	18	-	-	-	567
1,2-Dibromoethane	330	8	209	-	2	18	-	-	-	567
Dibromomethane	330	8	209	-	2	18	-	-	-	567
o-Dichlorobenzene (1,2)	673	24	363	-	4	32	-	-	-	1096
m-Dichlorobenzene (1,3)	674	24	363	-	4	32	-	-	-	1097
p-Dichlorobenzene (1,4)	701	28	373	-	4	32	-	-	-	1138
3,3'-Dichlorobenzidine	343	16	151	-	2	14	-	-	-	526
Dichlorodifluoromethane	238	4	145	-	-	6	-	-	-	393
1,1-Dichloroethane	347	10	225	-	2	18	-	-	-	602
1,2-Dichloroethane	329	8	209	-	2	18	44	-	-	610
trans-1,2-Dichloroethene	329	8	209	-	2	18	-	-	-	566
1,1-Dichloroethene	347	8	242	-	4	18	-	-	-	619
cis-1,2-Dichloroethylene	329	8	209	-	2	18	-	-	-	566
2,4-Dichlorophenol	343	16	151	-	2	14	-	-	-	526
1,2-Dichloropropane	330	8	209	-	2	18	-	-	-	567
1,3-Dichloropropane	330	8	209	-	2	18	-	-	-	567
2,2-Dichloropropane	330	8	209	-	2	18	-	-	-	567
cis-1,3-Dichloropropene	324	8	209	-	2	18	-	-	-	561
trans-1,3-Dichloropropene	324	8	209	-	2	18	-	-	-	561
1,1-Dichloropropene	329	8	209	-	2	18	-	-	-	566
Dieldrin	74	-	94	-	-	1	-	-	-	169
Diethyl ether	-	-	3	-	-	-	1	-	-	4
Diethyl phthalate	343	16	151	-	2	14	-	-	-	526
Diethylene glycol	-	-	-	-	-	-	3	-	-	3
Diethylhydroxylamine	-	-	2	-	-	-	-	-	-	2
Dimethyl phthalate	343	16	151	-	2	14	-	-	-	526
5,5-Dimethyl-2,4-Imadazolidinedione	-	-	1	-	-	-	-	-	-	1
3,7-Dimethyl-nonane	1	-	-	-	-	-	-	-	-	1
2,5-Dimethylbenzaldehyde	-	-	-	-	-	1	-	-	-	1
3,4-Dimethylbenzaldehyde	-	-	-	-	-	1	-	-	-	1
2,4-Dimethylbenzaldehyde	-	-	-	-	-	1	-	-	-	1
3-(1,1-Dimethylethyl)phenol	-	-	1	-	-	-	-	-	-	1
3,4-Dimethylheptane	-	1	-	-	-	1	-	-	-	2
2,4-Dimethylphenol	343	16	151	-	2	14	-	-	-	526
Dimethylsulfoxide	-	-	1	-	-	-	-	-	-	1
2,4-Dinitrophenol	343	16	151	-	2	14	-	-	-	526
2,6-Dinitrotoluene	344	16	151	-	2	14	-	-	-	527
2,4-Dinitrotoluene	387	20	161	-	2	14	-	-	-	584
Dioctyl adipate	-	-	1	-	-	-	-	-	-	1
1,4-Dioxane	-	-	-	-	-	-	19	-	-	19

TABLE E-III (cont)

ANALYSIS	SIL	SLU	WAT	BIOL	FIL	BULK	TUBE	BIOA	TIS	TOT
2,5-Diphenyloxazole	-	-	1	-	-	-	-	-	-	1
Dipropyleneglycol-monomethyl-ether	-	-	-	-	-	-	6	-	-	6
2,2'-Dithiobis-Benzothiazole	-	1	-	-	-	-	-	-	-	1
n-Dodecane	1	-	-	-	-	-	-	-	-	1
Endosulfan I	27	-	94	-	-	1	-	-	-	122
Endosulfan II	27	-	94	-	-	1	-	-	-	122
Endosulfan sulfate	74	-	94	-	-	1	-	-	-	169
Endrin	74	-	94	-	-	1	-	-	-	169
Endrin aldehyde	74	-	94	-	-	1	-	-	-	169
Esters	15	1	2	-	-	-	-	-	-	18
Ethane, 2-chloro-1,1,2-trifluoro-1-methoxy	-	-	1	-	-	-	-	-	-	1
Ethanol	-	-	-	-	-	-	14	-	-	14
Ethanone, 1-(2,2-dimethylcyclopentyl)-	2	-	-	-	-	-	-	-	-	2
2-Ethoxy ethanol	-	-	1	-	-	-	-	-	-	1
Ethoxyethyl acetate	-	-	-	-	-	-	5	-	-	5
Ethyl acetate	-	-	-	-	-	-	20	-	-	20
2-Ethyl-1-hexanol	3	1	-	-	-	1	-	-	-	5
Ethylbenzene	324	8	209	-	2	18	901	-	-	1462
Ethylisothiocyanate	-	-	2	-	-	-	-	-	-	2
Fluoranthene	344	16	151	-	2	14	8	-	-	535
Fluorene	344	16	151	-	2	14	-	-	-	527
Formaldehyde	-	-	-	-	-	-	29	-	-	29
HMX	12	-	-	-	-	-	-	-	-	12
Halogenated Hydrocarbon	2	-	3	-	-	-	-	-	-	5
Halogenated hydrocarbons	-	-	2	-	-	8	-	-	-	10
Heptachlor	74	-	96	-	-	1	-	-	-	171
Heptachlor epoxide	74	-	96	-	-	1	-	-	-	171
n-Heptane	1	-	-	-	-	2	-	-	-	3
Heptane, 2-methyl-7-Pentyl-bicyclo[4.1.0]-	1	-	-	-	-	-	-	-	-	1
2-Heptanone	1	-	-	-	-	-	-	-	-	1
3-Heptanone	-	-	3	-	-	-	-	-	-	3
2-Heptanone, 6-Methyl-	3	-	-	-	-	-	-	-	-	3
1-Heptene	-	2	-	-	-	-	-	-	-	2
Hexachlorobenzene	343	16	154	-	2	14	-	-	-	529
Hexachlorobutadiene	670	21	350	-	4	32	-	-	-	1077
Hexachlorocyclopentadiene	345	16	154	-	2	14	-	-	-	531
Hexachloroethane	344	16	154	-	2	14	-	-	-	530
Hexadecanoic acid	1	1	3	-	-	-	-	-	-	5
2-Hexanone	330	8	209	-	2	18	-	-	-	567
3-Hexanone	-	-	1	-	-	-	-	-	-	1
4-Hexen-1-ol, 2-ethenyl-2,5-dimethyl-	2	-	-	-	-	-	-	-	-	2
Hydrocarbon, Terpene	-	-	-	-	-	-	24	-	-	24
Hydrocarbons	47	8	22	-	5	13	109	-	-	204
4-Hydroxy-3-Methoxy Benzaldehyde	1	-	-	-	-	-	-	-	-	1
Indeno[1,2,3-cd]pyrene	343	16	151	-	2	14	-	-	-	526
1-Iodo-octane	-	-	1	-	-	-	-	-	-	1
Iso-pentyl acetate	-	-	-	-	-	-	3	-	-	3
Isobutyl acetate	-	-	-	-	-	-	4	-	-	4
Isophorone	344	16	151	-	2	14	-	-	-	527
Isopropylbenzene	330	8	209	-	2	18	-	-	-	567
4-Isopropyltoluene	330	8	209	-	2	18	-	-	-	567

TABLE E-III (cont)

ANALYSIS	SIL	SLU	WAT	BIOL	FIL	BULK	TUBE	BIOA	TIS	TOT
2-Isothiocyanato-2-Methyl Propane	-	2	-	-	-	-	-	-	-	2
Ketones	2	-	5	-	-	-	-	-	-	7
a-Limonene	-	-	1	-	-	-	6	-	-	7
Lindane	74	-	96	-	-	1	-	-	-	171
Methane	-	-	-	-	-	8	-	-	-	8
Methanol	-	-	-	-	1	-	2	-	-	3
Methoxychlor	67	-	77	-	-	1	-	-	-	145
2-Methoxyethyl acetate	-	-	-	-	-	-	4	-	-	4
Methyl iodide	238	4	145	-	-	6	-	-	-	393
4-Methyl-2-pentanone	330	8	209	-	2	18	19	-	-	586
2-Methyl-2-propenoic acid	-	-	1	-	-	-	-	-	-	1
1-Methyl-2-pyrrolidinone	-	-	1	-	-	-	-	-	-	1
4-Methyl-3-nitro Benzoic Acid	-	-	1	-	-	-	-	-	-	1
6-Methyl-3-undecene	-	1	-	-	-	1	-	-	-	2
2-Methyl-4,6-dinitrophenol	344	16	151	-	2	14	-	-	-	527
1-ethyl-2-Methylbenzene	2	-	1	-	-	-	-	-	-	3
Methylcyclohexane	-	-	-	-	-	2	1	-	-	3
6-ethyl-2-Methyldecane	1	-	-	-	-	-	-	-	-	1
Methylene chloride	329	8	209	-	2	18	13	-	-	579
2-Methylnaphthalene	345	16	151	-	2	14	-	-	-	528
3-Methylpentane	-	-	1	-	-	-	-	-	-	1
2-Methylphenol	344	16	151	-	2	14	-	-	-	527
4-Methylphenol	346	16	151	-	2	14	-	-	-	529
alpha-Methylstyrene	-	-	-	-	-	-	1	-	-	1
Mineral oil	-	-	-	-	-	1	-	-	-	1
Morpholine	-	-	3	-	-	-	-	-	-	3
Naphthalene	670	21	347	-	4	32	12	-	-	1086
3-Nitroaniline	345	16	151	-	2	14	-	-	-	528
4-Nitroaniline	345	16	151	-	2	14	-	-	-	528
2-Nitroaniline	344	16	151	-	2	14	-	-	-	527
Nitrobenzene	344	16	151	-	2	14	-	-	-	527
Nitrogenous Hydrocarbon	10	1	12	-	-	-	1	-	-	24
m-Nitrophenol	2	-	-	-	-	-	-	-	-	2
4-Nitrophenol	369	20	161	-	2	14	-	-	-	566
2-Nitrophenol	345	16	151	-	2	14	-	-	-	528
N-Nitrosodi-n-propylamine	373	20	161	-	2	14	-	-	-	570
N-Nitrosodimethylamine	344	16	151	-	2	14	-	-	-	527
N-Nitrosodiphenylamine	345	16	151	-	2	14	-	-	-	528
n-Nonane	1	-	-	-	1	-	-	-	-	2
Octamethylcyclotetrasiloxane	3	-	-	-	-	-	-	-	-	3
Octanoic Acid	-	-	1	-	-	-	-	-	-	1
Oxidized Aliphatic Hydrocarbons	8	1	36	-	-	-	4	-	-	49
Oxidized Aromatic Hydrocarbons	4	-	5	-	-	-	-	-	-	9
Oxygenated Hydrocarbon	45	2	28	-	-	3	-	-	-	78
Pentachlorophenol	373	20	161	-	2	14	-	-	-	570
3-Pentanone	-	-	1	-	-	-	-	-	-	1
1-Penten-3-ol	-	-	1	-	-	-	-	-	-	1
n-Pentyl acetate	-	-	-	-	-	-	4	-	-	4
Petroleum Hydrocarbons, Total Recoverable	16	-	-	-	3	1	3	-	-	23
Phenanthrene	345	16	151	-	2	14	-	-	-	528
Phenol	371	20	161	-	2	14	1	-	-	569

TABLE E-III (cont)

ANALYSIS	SIL	SLU	WAT	BIOL	FIL	BULK	TUBE	BIOA	TIS	TOT
1-Phenyl-1,2-Propanedione	-	1	-	-	-	3	-	-	-	4
Phthalate & Succinate Esters	1	-	-	-	-	-	-	-	-	1
Phthalate ester	-	-	2	-	-	-	1	-	-	3
Phthalic anhydride	-	-	1	-	-	-	-	-	-	1
Picric Acid	-	-	-	-	-	1	-	-	-	1
alpha-Pinene	-	-	1	-	-	-	-	-	-	1
Polyethylene glycol	-	-	-	-	-	-	3	-	-	3
Polynuclear Aromatic Hydrocarbons (total)	4	-	-	-	-	-	-	-	-	4
Pristane	-	-	1	-	-	-	-	-	-	1
1-Propanamine, N,N-dimethyl-3-(trimethoxysilyl)-	1	-	-	-	-	-	-	-	-	1
1,2-Propanediol	-	-	-	-	-	-	4	-	-	4
2-Propanol	-	-	-	-	-	-	10	-	-	10
n-Propyl acetate	-	-	-	-	-	-	4	-	-	4
Propylbenzene	330	8	209	-	2	18	-	-	-	567
Pyrene	371	20	161	-	2	14	8	-	-	576
Pyridine	-	-	-	-	-	-	3	-	-	3
RDX	13	-	-	-	-	-	-	-	-	13
Saturated Hydrocarbons	65	13	14	-	-	12	-	-	-	104
Styrene	324	8	209	-	2	18	-	-	-	561
2,4,5-T	60	-	13	-	-	-	-	-	-	73
2,4,5-TP	102	-	50	-	-	-	-	-	-	152
Terpene Hydrocarbons	-	-	2	-	-	-	13	-	-	15
Terphenyl	-	-	-	-	-	1	-	-	-	1
1,1,2,2-Tetrabromoethane	-	-	-	-	-	-	16	-	-	16
1,1,1,2-Tetrachloroethane	330	8	209	-	2	18	-	-	-	567
1,1,2,2-Tetrachloroethane	334	8	210	-	2	18	-	-	-	572
Tetrachloroethylene	330	8	209	-	2	18	912	-	-	1479
Tetrahydrofuran	7	-	2	-	-	-	-	-	-	9
Tetrahydrofurfuryl alcohol	-	-	2	-	-	-	-	-	-	2
Tetramethyl Thiourea	-	1	-	-	-	-	-	-	-	1
Tetramethyl urea	-	1	-	-	-	-	-	-	-	1
Tetryl(methyl-2,4,6-trinitrophenylnitramine)	13	-	-	-	-	-	-	-	-	13
Thiourea	-	-	1	-	-	-	-	-	-	1
p-Tolualdehyde	-	-	-	-	-	1	-	-	-	1
Toluene	365	10	258	-	4	23	1025	-	-	1685
Tolyltriazole	-	-	2	-	-	-	-	-	-	2
Total organics, Identification	1	-	12	-	13	32	344	-	-	402
Toxaphene	74	-	96	-	-	1	-	-	-	171
Tri-2-butoxyethyl phosphate	-	-	1	-	-	-	-	-	-	1
Tributyl phosphate	-	-	-	-	-	-	3	-	-	3
1,1,2-Trichloro-1,2,2-trifluoroethane	242	4	145	-	-	6	-	-	-	397
1,2,3-Trichlorobenzene	327	5	196	-	2	18	-	-	-	548
1,2,4-Trichlorobenzene	700	25	360	-	4	32	5	-	-	1126
Trichlorobenzene	-	-	-	-	-	-	3	-	-	3
1,1,2-Trichloroethane	330	8	209	-	2	18	1	-	-	568
1,1,1-Trichloroethane	330	8	209	-	2	18	1026	-	-	1593
Trichloroethene	365	10	258	-	4	18	1001	-	-	1656
Trichlorofluoromethane	329	8	209	-	2	26	6	-	-	580
2,4,6-Trichlorophenol	344	16	151	-	2	14	-	-	-	527
2,4,5-Trichlorophenol	344	16	151	-	2	14	-	-	-	527

TABLE E-III (cont)

ANALYSIS	SIL	SLU	WAT	BIOL	FIL	BULK	TUBE	BIOA	TIS	TOT
1,2,3-Trichloropropane	330	8	209	-	2	18	-	-	-	567
2,2,4-Trimethyl-1,3-Pentanediol Monoisobutyrate	-	-	-	-	-	1	4	-	-	5
1,2,4-Trimethylbenzene	329	8	209	-	2	18	901	-	-	1467
1,3,5-Trimethylbenzene	330	8	209	-	2	18	-	-	-	567
1,2,3-Trimethylbenzene	-	-	-	-	-	2	-	-	-	2
2,4,6-Trinitrotoluene	13	-	1	-	-	-	-	-	-	14
n-Undecane	3	-	-	-	1	-	-	-	-	4
Unidentified sulfur compounds	-	-	-	-	-	2	-	-	-	2
Unknown Alcohol	4	-	9	-	-	-	-	-	-	13
Unknown Ketone	3	-	2	-	-	-	-	-	-	5
Unknown Polynuclear Aromatic Hydrocarbon	12	2	2	-	-	-	-	-	-	16
Unknown alkanes	1	-	-	-	-	-	-	-	-	1
Unknown ester	-	-	2	-	-	1	9	-	-	12
Unknown organic acid	21	4	5	-	-	3	-	-	-	33
Unknown organic compound	62	5	73	-	-	-	-	-	-	140
Unsaturated Hydrocarbons	5	1	4	-	-	-	-	-	-	10
Vinyl acetate	329	8	209	-	2	18	-	-	-	566
Vinyl chloride	329	8	209	-	2	18	-	-	-	566
m-Xylene	-	-	-	-	-	-	62	-	-	62
p-Xylene	-	-	-	-	-	-	3	-	-	3
o-Xylene	74	4	31	-	-	14	911	-	-	1034
Mixed-Xylenes (o + m + p)	330	8	209	-	2	20	930	-	-	1499

TOTAL ORGANIC ANALYSES 100,187

96871 of the 100187 analytes were from the following categories:

Herbicides	151	samples x	3	analytes/sample	=	453
High Explosives	12	samples x	8	analytes/sample	=	96
Pesticides	182	samples x	18	analytes/sample	=	3276
Phenols (Method 604)	9	samples x	8	analytes/sample	=	72
Poregas	883	samples x	13	analytes/sample	=	11479
Semivolatiles	565	samples x	69	analytes/sample	=	38985
Volatiles	654	samples x	65	analytes/sample	=	42510

ANALYSIS	SIL	SLU	WAT	BIOL	FIL	BULK	TUBE	BIOA	TIS	TOT
Herbicides	102	-	49	-	-	-	-	-	-	151
High Explosives	11	-	1	-	-	-	-	-	-	12
Pesticides	82	-	98	-	-	2	-	-	-	182
Phenols (Method 604)	-	4	4	-	-	1	-	-	-	9
Poregas	-	-	-	-	-	-	883	-	-	883
Semivolatiles	370	20	159	-	2	14	-	-	-	565
Volatiles	363	12	257	-	4	18	-	-	-	654

GRAND TOTAL HSE-9 RADIOCHEMICAL, INORGANIC, AND ORGANIC ANALYSES IN 1990 231,877

APPENDIX F

NUCLEAR SPECTROMETRY

Alpha Spectrometer Calibration

and Background Data

TABLE F-I

ALPHA SPECTROMETER CALIBRATION AND BACKGROUND DATA
FIRST QUARTER 1990

16 ALPHA SPECTROMETER

Calibration (17 min) N=10		Background (70 000 s) N=10 Mean Counts Per 20 Channels		
Detector	Mean Eff. ± 3 Std Dev	Pu-242	Pu-239	Pu-238
1	30.40 ± 1.82	0	1	1
2	27.85 ± 1.67	1	0	2
3	36.56 ± 2.19	1	0	2
4	31.89 ± 1.91	1	1	3
5	33.96 ± 2.04	1	1	4
6	36.87 ± 2.21	1	1	3
7	36.43 ± 2.19	1	0	1
8	35.28 ± 2.12	0	0	2
9	33.19 ± 1.99	1	1	3
10	32.48 ± 1.95	1	1	1
11	33.26 ± 2.00	0	0	2
12	35.64 ± 2.14	2	1	2
13	35.03 ± 2.10	1	0	2
14	33.48 ± 2.01	1	0	1
15	33.92 ± 2.04	1	1	2
16	33.65 ± 2.02	1	1	2

48 ALPHA SPECTROMETER

Calibration (17 min) N=10		Background (70 000 s) N=10 Mean Counts Per 20 Channels		
Detector	Mean Eff. ± 3 Std Dev	Pu-242	Pu-239	Pu-238
1	30.61 ± 1.84	4	1	6
2	31.44 ± 1.89	1	1	4
3	37.95 ± 2.28	1	4	3
4	31.66 ± 1.90	1	1	2
5	33.78 ± 2.03	2	1	3
6	33.37 ± 2.00	1	0	3
7	36.05 ± 2.16	1	1	2
8	32.09 ± 1.93	1	1	4
9	33.33 ± 2.00	1	2	2
10	35.84 ± 2.15	2	1	3
11	34.02 ± 2.04	1	0	4
12	34.98 ± 2.10	1	1	3
13	34.89 ± 2.09	0	0	1
14	36.54 ± 2.19	1	2	3
15	34.24 ± 2.05	1	1	1
16	34.33 ± 2.06	1	0	2

32 ALPHA SPECTROMETER

Calibration (17 min) N=10		Background (70 000 s) N=10 Mean Counts Per 20 Channels		
Detector	Mean Eff. ± 3 Std Dev	Pu-242	Pu-239	Pu-238
1	31.69 ± 1.90	1	1	3
2	28.98 ± 1.74	1	1	5
3	31.13 ± 1.87	1	1	2
4	30.13 ± 1.81	1	0	2
5	32.12 ± 1.93	0	1	2
6	32.24 ± 1.93	1	1	2
7	31.05 ± 1.86	1	1	3
8	32.85 ± 1.97	1	1	4
9	34.58 ± 2.07	1	1	2
10	33.72 ± 2.02	2	2	2
11	30.32 ± 1.82	0	1	1
12	34.26 ± 2.06	2	2	2
13	34.51 ± 2.07	2	1	3
14	35.53 ± 2.13	1	1	2
15	34.34 ± 2.06	3	1	5
16	30.48 ± 1.83	1	1	1

64 ALPHA SPECTROMETER

Calibration (17 min) N=10		Background (80 000 s) N=10 Mean Counts Per 20 Channels		
Detector	Mean Eff. ± 3 Std Dev	Pu-242	Pu-239	Pu-238
1	18.06 ± 1.08	2	2	6
2	15.69 ± .94	1	1	2
3	12.95 ± .78	1	1	1
4	12.77 ± .77	1	1	1
5	21.31 ± 1.28	2	3	4
6	19.67 ± 1.18	1	1	2
7	19.44 ± 1.17	1	1	2
8	20.34 ± 1.22	1	0	1
9	23.01 ± 1.38	3	2	6
10	22.58 ± 1.35	1	1	3
11	22.50 ± 1.35	1	3	2
12	22.02 ± 1.32	1	0	2
13	23.65 ± 1.42	1	1	1
14	21.62 ± 1.30	1	2	2
15	22.71 ± 1.36	1	0	1
16	23.49 ± 1.35	1	0	1

TABLE F-I (cont)

80 ALPHA SPECTROMETER

Calibration (17 min) N=10		Background (80 000 s) N=10 Mean Counts Per 20 Channels		
Detector	Mean Eff. ± 3 Std Dev	Pu-242	Pu-239	Pu-238
1	19.42 ± 1.17	1	1	3
2	19.01 ± 1.14	0	1	1
3	20.34 ± 1.22	1	3	2
4	19.93 ± 1.20	0	1	3
5	20.04 ± 1.20	1	1	1
6	20.08 ± 1.20	2	3	2
7	19.96 ± 1.20	1	4	1
8	20.92 ± 1.26	1	4	5
9	21.94 ± 1.32	2	3	6
10	20.69 ± 1.24	2	2	4
11	21.95 ± 1.32	0	0	0
12	20.52 ± 1.23	1	1	1
13	20.67 ± 1.24	1	0	0
14	21.37 ± 1.28	1	1	0
15	22.09 ± 1.33	1	1	5
16	19.92 ± 1.20	1	0	1

DETECTOR REPLACEMENT

System	Detector	Date
Alpha 16	3,4	01-08-90

TABLE F-II

ALPHA SPECTROMETER CALIBRATION AND BACKGROUND DATA
SECOND QUARTER 1990

16 ALPHA SPECTROMETER

Calibration (17 min) N=10		Background (70 000 s) N=10 Mean Counts Per 20 Channels		
Detector	Mean Eff. ± 3 Std Dev	Pu-242	Pu-239	Pu-238
1	30.31 ± 1.82	1	2	2
2	27.97 ± 1.68	1	1	2
3	36.73 ± 2.20	0	0	2
4	32.09 ± 1.93	1	0	3
5	34.37 ± 2.06	1	0	5
6	36.79 ± 2.21	1	1	4
7	36.42 ± 2.19	1	1	2
8	35.04 ± 2.10	0	0	1
9	33.14 ± 1.99	3	2	3
10	32.85 ± 1.97	0	0	0
11	33.39 ± 2.00	1	1	3
12	35.73 ± 2.14	2	1	2
13	35.42 ± 2.13	1	1	3
14	33.66 ± 2.02	1	0	1
15	33.96 ± 2.04	1	1	2
16	33.20 ± 1.99	1	1	1

48 ALPHA SPECTROMETER

Calibration (17 min) N=10		Background (70 000 s) N=10 Mean Counts Per 20 Channels		
Detector	Mean Eff. ± 3 Std Dev	Pu-242	Pu-239	Pu-238
1	30.64 ± 1.84	0	0	2
2	31.18 ± 1.87	2	0	3
3	37.75 ± 2.27	1	4	6
4	31.73 ± 1.90	0	1	2
5	33.86 ± 2.03	0	1	2
6	33.45 ± 2.01	1	0	2
7	35.74 ± 2.14	1	1	2
8	31.40 ± 1.88	1	1	2
9	33.33 ± 2.00	2	2	3
10	35.99 ± 2.16	1	1	2
11	34.09 ± 2.05	1	1	3
12	35.06 ± 2.10	2	1	3
13	34.88 ± 2.09	1	0	1
14	36.62 ± 2.20	0	0	1
15	34.52 ± 2.07	1	1	3
16	34.75 ± 2.03	1	1	2

32 ALPHA SPECTROMETER

Calibration (17 min) N=10		Background (70 000 s) N=10 Mean Counts Per 20 Channels		
Detector	Mean Eff. ± 3 Std Dev	Pu-242	Pu-239	Pu-238
1	31.54 ± 1.90	1	1	2
2	28.78 ± 1.74	1	0	4
3	31.08 ± 1.87	1	1	3
4	30.36 ± 1.81	1	0	2
5	32.23 ± 1.93	1	1	1
6	32.22 ± 1.93	1	2	3
7	30.96 ± 1.86	1	0	2
8	32.30 ± 1.97	1	2	5
9	34.48 ± 2.07	1	1	2
10	34.28 ± 2.02	3	1	4
11	30.39 ± 1.82	0	0	2
12	34.08 ± 2.06	2	1	2
13	34.34 ± 2.07	2	1	3
14	35.58 ± 2.13	1	1	3
15	34.60 ± 2.06	2	1	4
16	30.02 ± 1.83	1	1	2

64 ALPHA SPECTROMETER

Calibration (17 min) N=10		Background (80 000 s) N=10 Mean Counts Per 20 Channels		
Detector	Mean Eff. ± 3 Std Dev	Pu-242	Pu-239	Pu-238
1	18.07 ± 1.08	2	2	6
2	15.65 ± .94	2	2	3
3	15.27 ± .78	1	1	3
4	12.69 ± .77	1	1	2
5	21.33 ± 1.28	2	3	5
6	19.87 ± 1.18	2	0	1
7	19.34 ± 1.17	1	1	1
8	19.81 ± 1.22	1	0	1
9	22.94 ± 1.38	4	2	6
10	22.75 ± 1.35	2	1	3
11	22.16 ± 1.35	2	4	3
12	22.31 ± 1.32	1	0	1
13	23.77 ± 1.42	1	1	1
14	21.56 ± 1.30	0	2	2
15	22.94 ± 1.36	2	0	2
16	22.05 ± 1.35	1	0	2

TABLE F-II (cont)

80 ALPHA SPECTROMETER

Calibration (17 min) N=10		Background (80 000 s) N=10 Mean Counts Per 20 Channels		
Detector	Mean Eff. ± 3 Std Dev	Pu-242	Pu-239	Pu-238
1	19.58 ± 1.17	1	2	3
2	18.91 ± 1.13	0	1	1
3	20.22 ± 1.21	1	2	2
4	20.13 ± 1.21	2	1	5
5	20.07 ± 1.20	1	1	1
6	20.38 ± 1.22	3	2	4
7	19.77 ± 1.19	3	4	4
8	20.46 ± 1.23	2	2	6
9	21.80 ± 1.31	2	2	6
10	20.64 ± 1.24	2	3	4
11	22.01 ± 1.32	0	1	0
12	20.44 ± 1.23	0	1	1
13	20.55 ± 1.23	1	1	1
14	21.57 ± 1.29	0	1	1
15	22.03 ± 1.32	1	2	6
16	19.41 ± 1.16	0	1	1

DETECTOR REPLACEMENT

System	Detector	Date
Alpha 64	3	06-04-90

TABLE F-III

ALPHA SPECTROMETER CALIBRATION AND BACKGROUND DATA
THIRD QUARTER 1990

16 ALPHA SPECTROMETER

Calibration (17 min) N=10		Background (70 000 s) N=10 Mean Counts Per 20 Channels		
Detector	Mean Eff. ± 3 Std Dev	Pu-242	Pu-239	Pu-238
1	30.23 ± 1.81	2	2	5
2	27.63 ± 1.66	0	0	1
3	36.31 ± 2.18	1	0	2
4	31.47 ± 1.89	2	0	3
5	34.02 ± 2.04	2	1	5
6	36.83 ± 2.21	2	2	3
7	36.30 ± 2.18	1	1	3
8	34.26 ± 2.06	0	0	1
9	33.07 ± 1.98	2	2	3
10	32.50 ± 1.95	0	0	1
11	33.35 ± 2.00	1	1	2
12	35.06 ± 2.10	3	2	2
13	35.35 ± 2.12	2	1	3
14	33.29 ± 2.00	1	1	2
15	33.97 ± 2.04	1	1	2
16	33.25 ± 1.99	2	1	1

48 ALPHA SPECTROMETER

Calibration (17 min) N=10		Background (70 000 s) N=10 Mean Counts Per 20 Channels		
Detector	Mean Eff. ± 3 Std Dev	Pu-242	Pu-239	Pu-238
1	30.57 ± 1.83	1	1	1
2	30.95 ± 1.86	1	0	3
3	37.70 ± 2.26	1	3	5
4	31.58 ± 1.89	1	1	1
5	34.08 ± 2.04	0	1	3
6	33.57 ± 2.01	0	0	1
7	35.68 ± 2.14	1	1	2
8	30.83 ± 1.85	1	1	3
9	33.28 ± 2.00	2	2	3
10	35.97 ± 2.16	2	1	2
11	34.24 ± 2.05	1	1	3
12	34.99 ± 2.10	2	0	3
13	34.93 ± 2.10	0	1	1
14	36.32 ± 2.18	0	0	1
15	34.65 ± 2.08	2	1	2
16	33.48 ± 2.01	1	1	1

32 ALPHA SPECTROMETER

Calibration (17 min) N=10		Background (70 000 s) N=10 Mean Counts Per 20 Channels		
Detector	Mean Eff. ± 3 Std Dev	Pu-242	Pu-239	Pu-238
1	31.48 ± 1.89	2	2	2
2	28.51 ± 1.71	1	1	5
3	30.92 ± 1.86	1	0	3
4	30.31 ± 1.82	2	1	2
5	32.31 ± 1.94	2	1	2
6	32.28 ± 1.94	1	0	2
7	30.83 ± 1.85	1	1	2
8	32.72 ± 1.90	1	1	4
9	34.68 ± 2.08	1	1	2
10	34.22 ± 2.05	2	2	4
11	30.41 ± 1.82	1	0	0
12	34.03 ± 2.04	2	1	4
13	34.61 ± 2.08	2	2	2
14	35.47 ± 2.13	2	1	3
15	34.71 ± 2.08	3	2	5
16	30.17 ± 1.81	2	1	3

64 ALPHA SPECTROMETER

Calibration (17 min) N=10		Background (80 000 s) N=10 Mean Counts Per 20 Channels		
Detector	Mean Eff. ± 3 Std Dev	Pu-242	Pu-239	Pu-238
1	17.75 ± 1.06	2	2	6
2	15.20 ± .91	1	1	3
3	20.47 ± 1.23	1	1	4
4	12.43 ± .75	1	1	2
5	21.15 ± 1.27	2	2	4
6	19.83 ± 1.19	1	1	1
7	19.48 ± 1.17	1	1	2
8	19.45 ± 1.17	1	0	2
9	23.06 ± 1.38	3	3	6
10	22.59 ± 1.36	2	2	5
11	22.18 ± 1.33	2	4	4
12	22.18 ± 1.33	1	0	2
13	23.90 ± 1.43	1	1	2
14	21.38 ± 1.28	1	3	1
15	22.95 ± 1.38	2	1	2
16	21.93 ± 1.32	1	1	2

TABLE F-III (cont)

80 ALPHA SPECTROMETER

Calibration (17 min) N=10		Background (80 000 s) N=10 Mean Counts Per 20 Channels		
Detector	Mean Eff. ± 3 Std Dev	Pu-242	Pu-239	Pu-238
1	19.55 ± 1.17	1	2	3
2	18.94 ± 1.14	0	0	1
3	20.63 ± 1.24	2	3	3
4	20.01 ± 1.20	0	1	3
5	20.29 ± 1.22	1	1	1
6	20.46 ± 1.23	4	2	4
7	19.69 ± 1.18	3	4	4
8	20.17 ± 1.21	1	3	7
9	21.84 ± 1.31	2	3	6
10	20.08 ± 1.27	2	2	3
11	22.22 ± 1.33	1	1	0
12	20.76 ± 1.25	1	1	1
13	20.95 ± 1.26	2	1	1
14	21.54 ± 1.29	1	1	1
15	22.43 ± 1.35	1	1	5
16	19.58 ± 1.17	0	0	1

DETECTOR REPLACEMENT

System	Detector	Date

No detectors replaced

TABLE F-IV

ALPHA SPECTROMETER CALIBRATION AND BACKGROUND DATA
FOURTH QUARTER 1990

16 ALPHA SPECTROMETER

Calibration (17 min) N=10		Background (70 000 s) N=10 Mean Counts Per 20 Channels		
Detector	Mean Eff. ± 3 Std Dev	Pu-242	Pu-239	Pu-238
1	30.13 ± 1.81	2	1	4
2	28.73 ± 1.72	1	1	2
3	36.54 ± 2.19	1	1	2
4	31.58 ± 1.89	1	1	2
5	34.19 ± 2.05	2	2	5
6	36.99 ± 2.22	2	1	3
7	36.14 ± 2.17	1	1	2
8	34.52 ± 2.07	0	0	0
9	33.07 ± 1.98	2	2	5
10	32.39 ± 1.94	1	0	1
11	32.95 ± 1.98	1	1	3
12	35.76 ± 2.15	2	1	3
13	35.20 ± 2.11	3	1	3
14	33.12 ± 1.99	1	1	2
15	34.08 ± 2.04	1	2	2
16	32.82 ± 1.97	2	1	1

48 ALPHA SPECTROMETER

Calibration (17 min) N=10		Background (70 000 s) N=10 Mean Counts Per 20 Channels		
Detector	Mean Eff. ± 3 Std Dev	Pu-242	Pu-239	Pu-238
1	30.75 ± 1.84	2	1	3
2	31.09 ± 1.87	1	0	2
3	37.72 ± 2.26	1	3	5
4	31.58 ± 1.89	1	1	2
5	34.07 ± 2.04	0	1	3
6	33.63 ± 2.02	1	1	1
7	35.73 ± 2.14	2	2	4
8	31.10 ± 1.87	2	2	3
9	33.47 ± 2.01	2	3	2
10	35.65 ± 2.14	2	2	3
11	33.96 ± 2.04	1	1	3
12	34.94 ± 2.10	2	1	2
13	34.97 ± 2.10	1	0	1
14	36.69 ± 2.20	4	1	4
15	31.83 ± 1.91	1	0	1
16	33.28 ± 2.00	1	1	2

32 ALPHA SPECTROMETER

Calibration (17 min) N=10		Background (70 000 s) N=10 Mean Counts Per 20 Channels		
Detector	Mean Eff. ± 3 Std Dev	Pu-242	Pu-239	Pu-238
1	31.46 ± 1.89	1	1	1
2	28.48 ± 1.71	1	1	4
3	31.00 ± 1.86	0	0	1
4	30.28 ± 1.82	1	1	2
5	32.24 ± 1.93	1	1	2
6	32.29 ± 1.94	1	1	1
7	30.80 ± 1.85	1	1	2
8	32.04 ± 1.92	1	1	2
9	34.53 ± 2.07	2	1	2
10	34.05 ± 2.04	2	2	3
11	30.30 ± 1.82	1	1	3
12	34.08 ± 2.04	2	2	3
13	34.54 ± 2.07	2	1	3
14	35.49 ± 2.13	2	1	3
15	34.63 ± 2.08	3	2	5
16	29.91 ± 1.79	2	0	2

64 ALPHA SPECTROMETER

Calibration (17 min) N=10		Background (80 000 s) N=10 Mean Counts Per 20 Channels		
Detector	Mean Eff. ± 3 Std Dev	Pu-242	Pu-239	Pu-238
1	17.19 ± 1.03	1	2	6
2	15.38 ± .92	1	1	3
3	20.75 ± 1.24	2	1	3
4	12.52 ± .75	0	1	2
5	20.96 ± 1.26	1	1	1
6	19.92 ± 1.20	1	1	2
7	19.55 ± 1.17	1	0	2
8	19.63 ± 1.18	1	0	1
9	23.08 ± 1.38	3	2	4
10	22.60 ± 1.36	2	2	3
11	22.51 ± 1.35	2	3	1
12	22.21 ± 1.33	0	1	1
13	23.85 ± 1.43	1	1	1
14	21.67 ± 1.30	1	2	1
15	22.91 ± 1.37	1	0	1
16	21.92 ± 1.32	1	1	1

TABLE F-IV (cont)

80 ALPHA SPECTROMETER

Calibration (17 min) N=10		Background (80 000 s) N=10 Mean Counts Per 20 Channels		
Detector	Mean Eff. ± 3 Std Dev	Pu-242	Pu-239	Pu-238
1	19.47 ± 1.17	1	1	3
2	19.16 ± 1.15	1	1	3
3	20.52 ± 1.23	1	3	3
4	20.14 ± 1.21	0	1	4
5	20.23 ± 1.21	1	1	1
6	20.63 ± 1.24	4	2	4
7	19.82 ± 1.19	3	4	4
8	20.38 ± 1.22	1	2	7
9	21.84 ± 1.31	3	2	7
10	20.81 ± 1.25	2	2	3
11	22.12 ± 1.33	1	1	0
12	20.88 ± 1.25	0	0	1
13	20.02 ± 1.26	2	1	2
14	21.44 ± 1.29	1	1	2
15	22.37 ± 1.34	1	2	4
16	19.52 ± 1.17	1	1	1

DETECTOR REPLACEMENT

System	Detector	Date
Alpha 16	2	11-13-90
Alpha 48	15	10-01-90
Alpha 64	5	11-13-90

TABLE F-V

CALIBRATION DATA FOR THE 16 ROUTINE CALIBRATION PLATES

Plate No.	D/M/30 min Mean ± Std Dev[a]	D/M/30 min Mean ± Std Dev[b]	D/M/30 min Mean ± Std Dev[c]	D/M/30 min Mean ± Std Dev[d]
1	1977 ± 9	1968 ± 16	1959 ± 23	1967 ± 12
2	2013 ± 6	1987 ± 18	1980 ± 28	1993 ± 13
3	2006 ± 17	1999 ± 17	1992 ± 8	2003 ± 10
4	2018 ± 11	2004 ± 15	2005 ± 19	2003 ± 10
5	2024 ± 15	2014 ± 7	2008 ± 36	2006 ± 11
6	2025 ± 10	2018 ± 13	2021 ± 19	2021 ± 8
7	2052 ± 17	2042 ± 14	2033 ± 39	2035 ± 10
8	2072 ± 12	2072 ± 14	2044 ± 22	2045 ± 15
9	2072 ± 13	2056 ± 23	2059 ± 18	2063 ± 7
10	2079 ± 16	2078 ± 11	2061 ± 18	2063 ± 10
11	2091 ± 12	2076 ± 28	2078 ± 21	2084 ± 15
12	2114 ± 10	2086 ± 35	2095 ± 47	2104 ± 19
13	2159 ± 9	2137 ± 27	2134 ± 37	2147 ± 13
14	2150 ± 24	2137 ± 10	2124 ± 27	2129 ± 10
15	2157 ± 20	2157 ± 10	2141 ± 51	2158 ± 8
16	2003 ± 12	2001 ± 11	1988 ± 19	1992 ± 9

$$\text{D/M of std plate} = \frac{\text{counts}}{\text{time x eff}} = \frac{\text{counts}}{30 \times 0.5119}$$

[a]First quarter 1990. Ten calibrations included in the mean.
[b]Second quarter 1990. Ten calibrations included in the mean.
[c]Third quarter 1990. Ten calibrations included in the mean.
[d]Fourth quarter 1990. Ten calibrations included in the mean.

Note: The calibration plates were prepared in 1989 and are electropolished/electroplated plates that approximate the routine samples submitted for counting. The standard plates contain 718 D/M Pu-242, 336 D/M Pu-239, and 1009 D/M Am-241 and Pu-238, and are being routinely counted on the gas-flow proportional counter, which is calibrated with NBS SRM 4906-B33. Because these plates contain a trace amount (< 1%) of Pu-238, they are reevaluated each year for Pu-238 decay. The 1990 data are recorded on pages 8 to 11 and 146 to 149 of Notebook 8184.

TABLE F-VI

CALIBRATION DATA FOR THE 16 PLATES AS A SET

Date	No. of Calibrations	Eff. (%)	D/M/30 min Mean ± Std Dev[a]
2-02-90	10	50.49	2063 ± 58
4-04-90	10	50.49	2059 ± 57
5-02-90	10	50.53	2052 ± 58
7-06-90	11	50.33	2060 ± 59
8-13-90	13	50.59	2045 ± 57
10-02-90	10	50.62	2053 ± 60
10-23-90	11	50.78	2044 ± 60
12-03-90	10	50.66	2051 ± 59

[a]All 16 plates.

TABLE F-VII

ESTIMATES OF ALPHA ACTIVITY FOR HSE-9 STANDARD NO. 2B

Calibration Date	Calibration Group	Units C/M	Units D/M
11-30-53	CMB-Div.	9730	19460[a]
11-30-53	J-Div.	9889	19778[a]
11-30-53	H-Div.	9768	19536[a]
6-02-61	CMB-Div.	9799	19598[a]
9-20-73	INC-Div.	9858	19716[a]
9-20-73	INC-Div.	9885	19770[a]
9-20-73	INC-Div.	9688	19376[a]
5-13-86	INC-Div.	10119	19764[b]
5-19-86	HSE-9	10097	19667[c]
5-11-88	HSE-9	10057	19743[d]
4-02-90	HSE-9	9863	19450[e]
3-21-91	HSE-9	9884	19533[f]

[a] 50% counting efficiency used to calculate D/M.
[b] 51.2% counting efficiency used to calculate D/M.
[c] 51.34% counting efficiency used to calculate D/M.
[d] 50.94% counting efficiency used to calculate D/M.
[e] 50.71% counting efficiency used to calculate D/M.
[f] 50.60% counting efficiency used to calculate D/M.

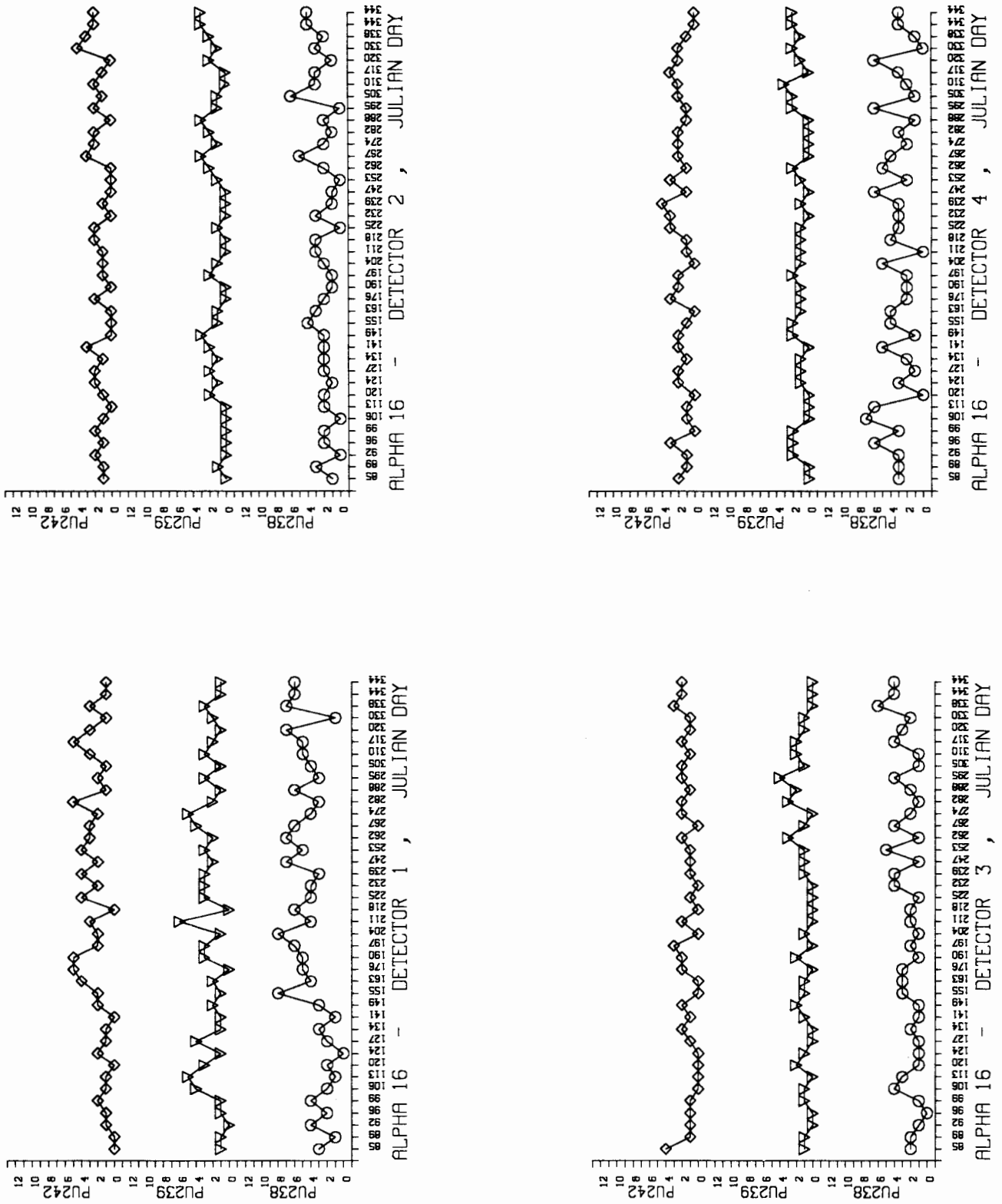
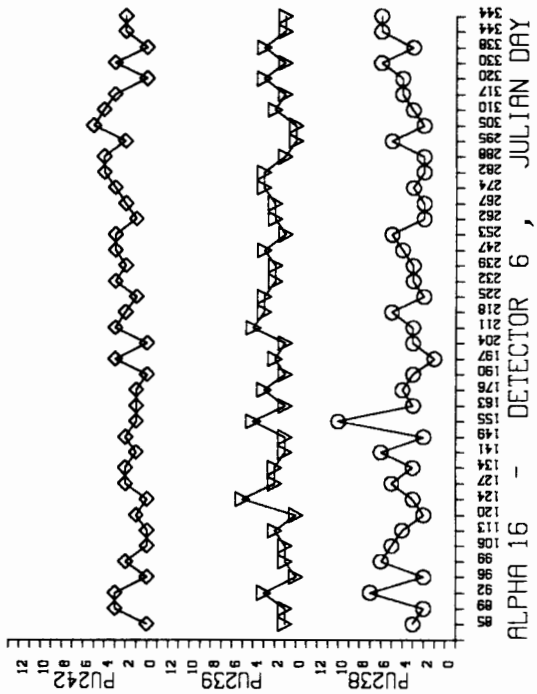
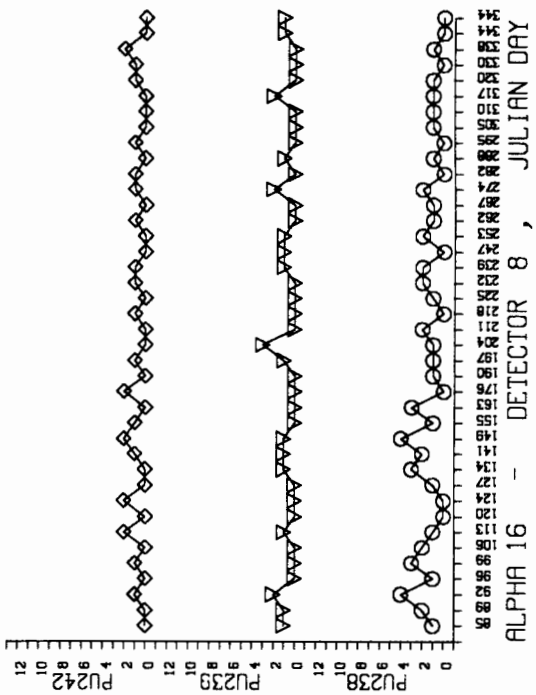
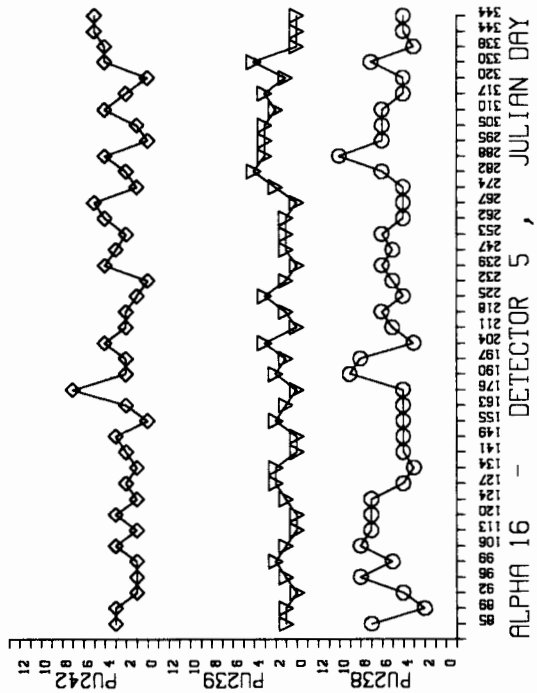


Fig. F-1. Plots of alpha spectrometer background data.


ALPHA 16 - DETECTOR 6 , JULIAN DAY
PU238
PU239
PU242


ALPHA 16 - DETECTOR 8 , JULIAN DAY
PU238
PU239
PU242


ALPHA 16 - DETECTOR 5 , JULIAN DAY
PU238
PU239
PU242

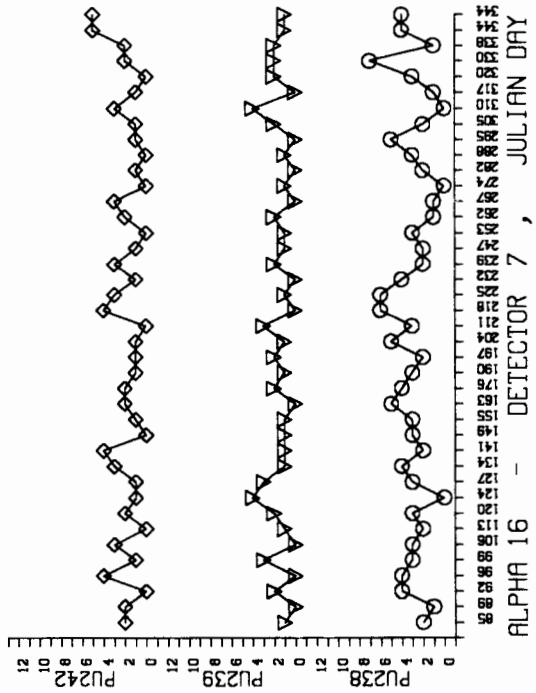
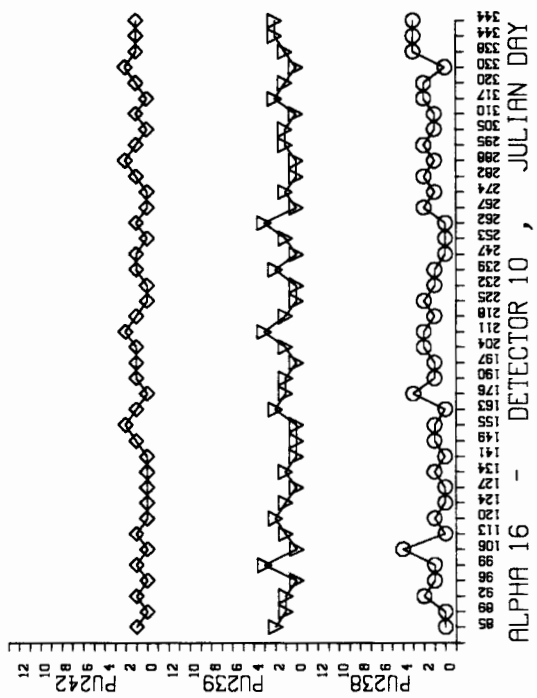
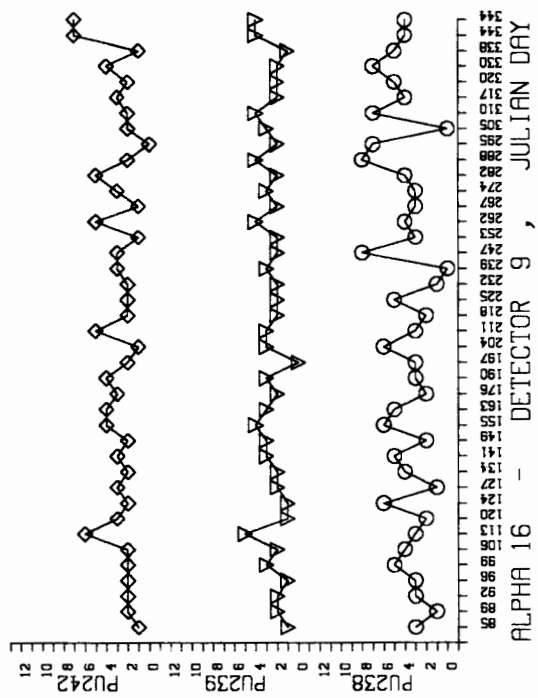
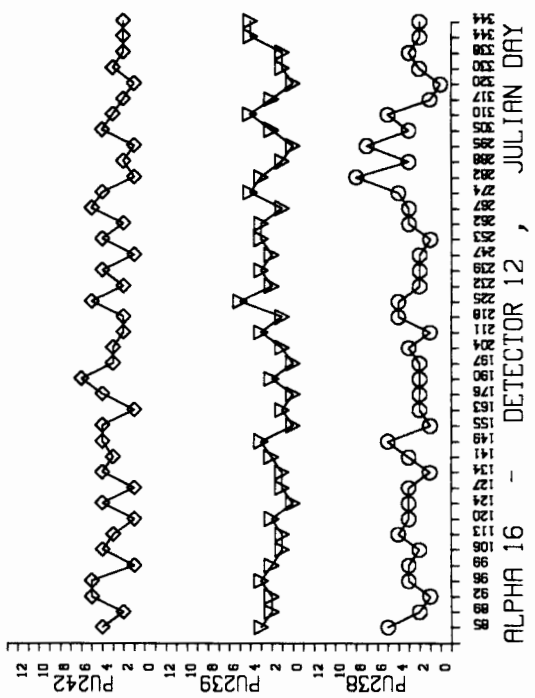

ALPHA 16 - DETECTOR 7 , JULIAN DAY
PU238
PU239
PU242

Fig. F-1. (cont)


ALPHA 16 - DETECTOR 10 , JULIAN DAY
PU238
PU239
PU242


ALPHA 16 - DETECTOR 9 , JULIAN DAY
PU238
PU239
PU242


ALPHA 16 - DETECTOR 12 , JULIAN DAY
PU238
PU239
PU242

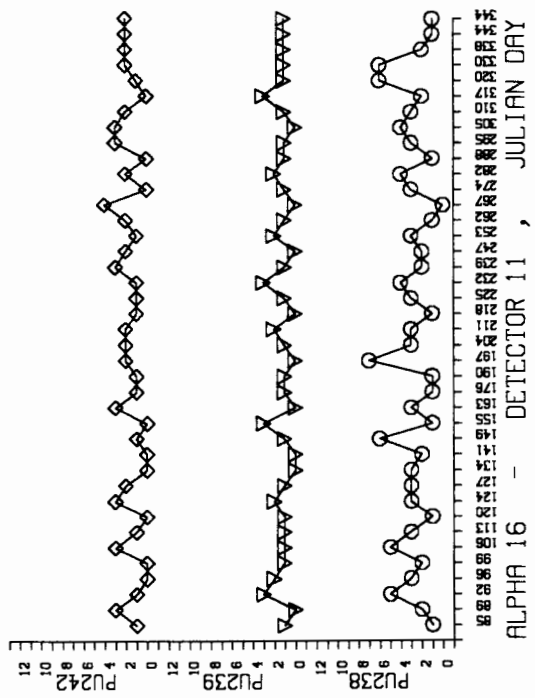
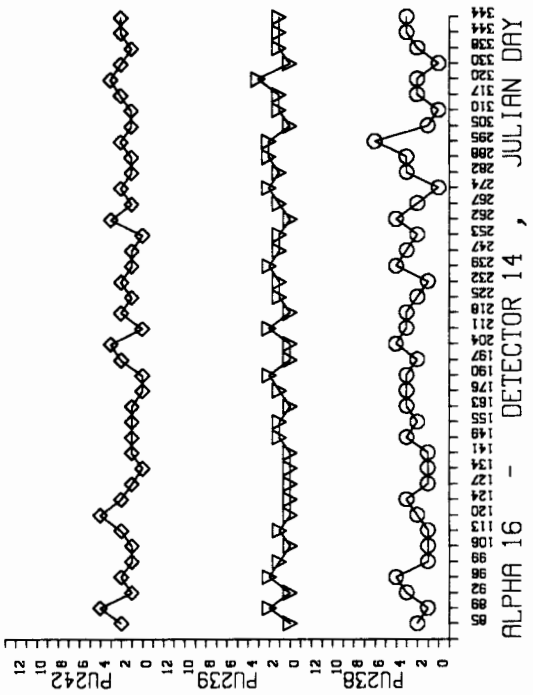
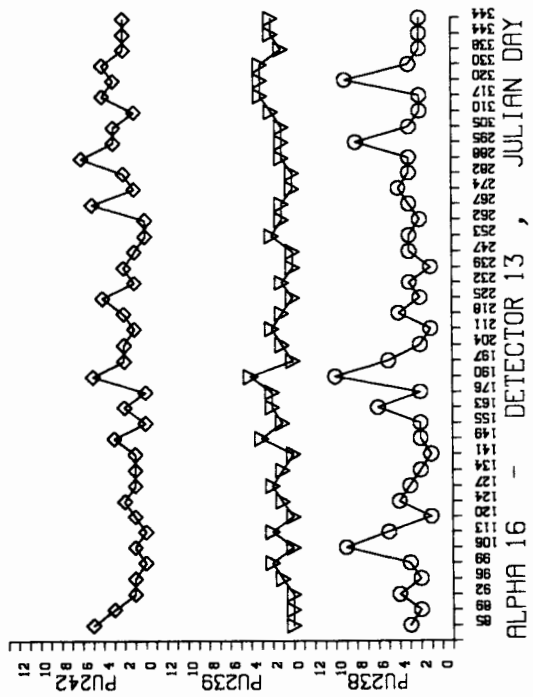
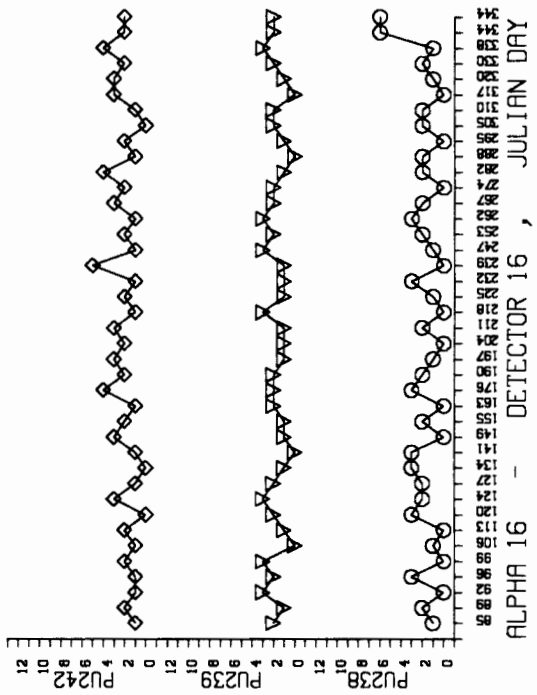

ALPHA 16 - DETECTOR 11 , JULIAN DAY
PU238
PU239
PU242

Fig. F-1. (cont)


ALPHA 16 - DETECTOR 14 , JULIAN DAY
PU238
PU239
PU242


ALPHA 16 - DETECTOR 13 , JULIAN DAY
PU238
PU239
PU242


ALPHA 16 - DETECTOR 16 , JULIAN DAY
PU238
PU239
PU242

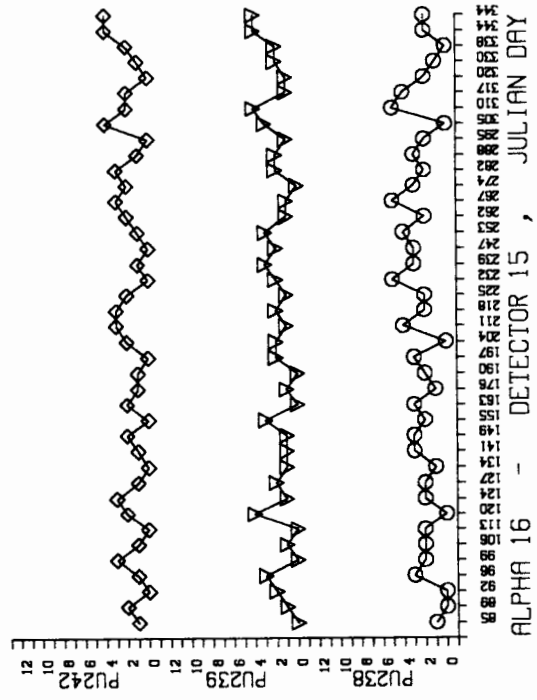

ALPHA 16 - DETECTOR 15 , JULIAN DAY
PU238
PU239
PU242

Fig. F-1. (cont)

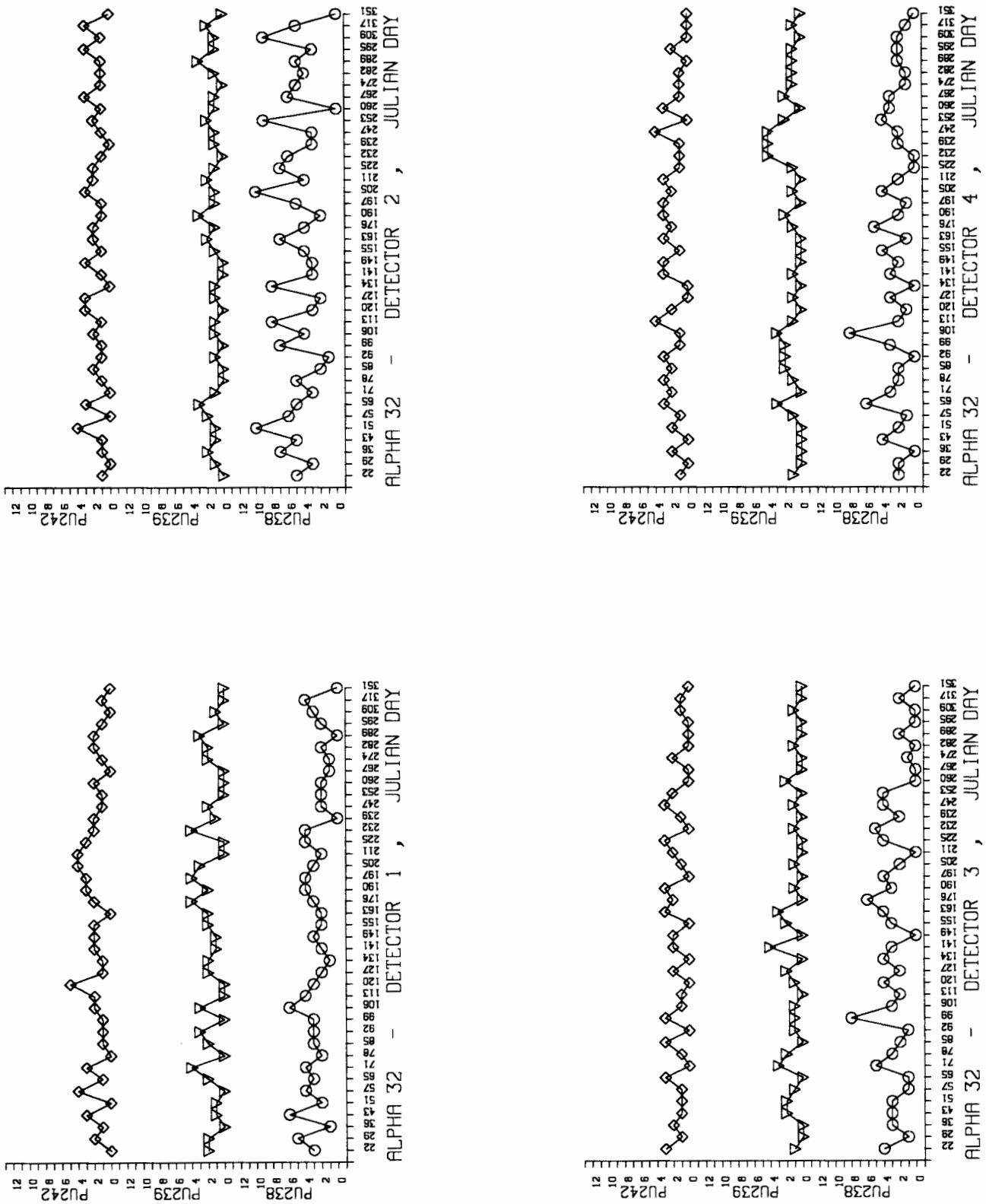
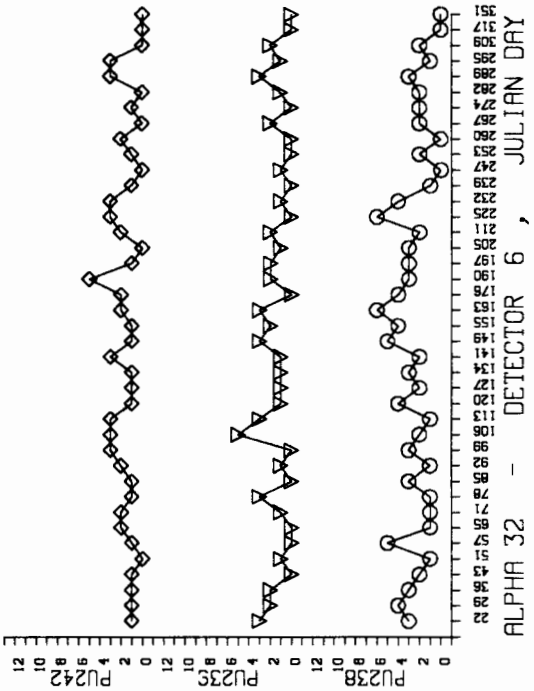
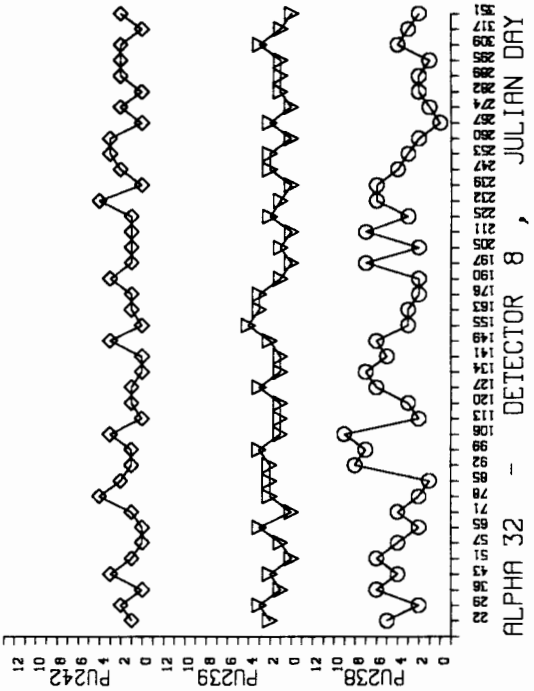
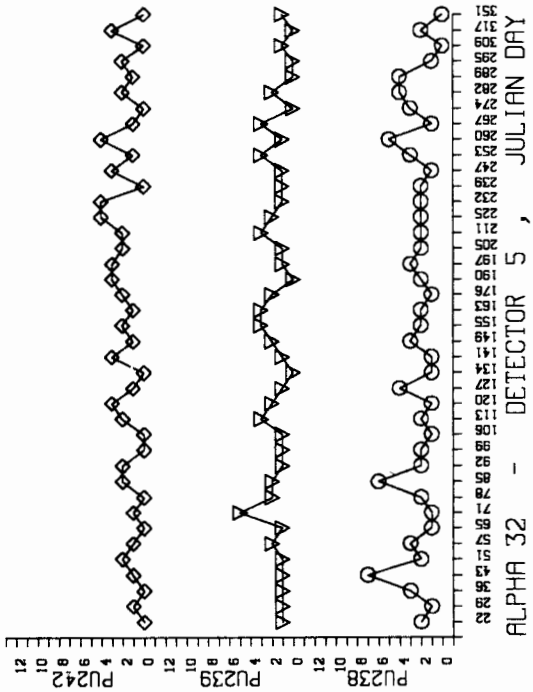

ALPHA 32 - DETECTOR 1 , JULIAN DAY
ALPHA 32 - DETECTOR 2 , JULIAN DAY
ALPHA 32 - DETECTOR 3 , JULIAN DAY
ALPHA 32 - DETECTOR 4 , JULIAN DAY
PU238
PU239
PU242

Fig. F-1. (cont)


ALPHA 32 - DETECTOR 6 , JULIAN DAY
PU238
PU235
PU242


ALPHA 32 - DETECTOR 8 , JULIAN DAY
PU238
PU239
PU242


ALPHA 32 - DETECTOR 5 , JULIAN DAY
PU238
PU239
PU242

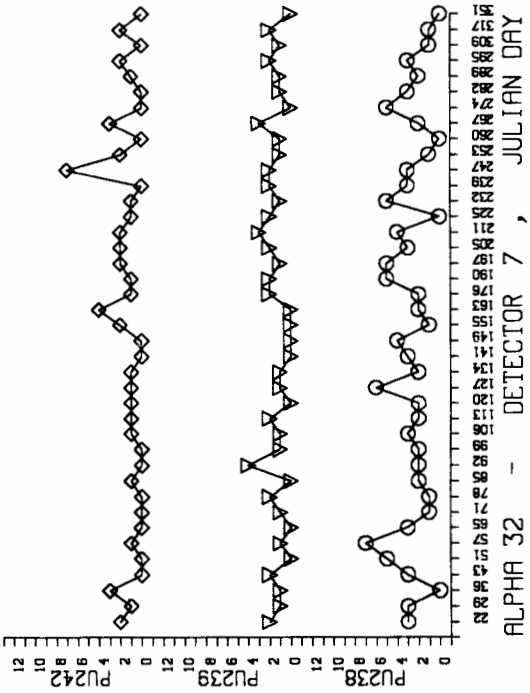
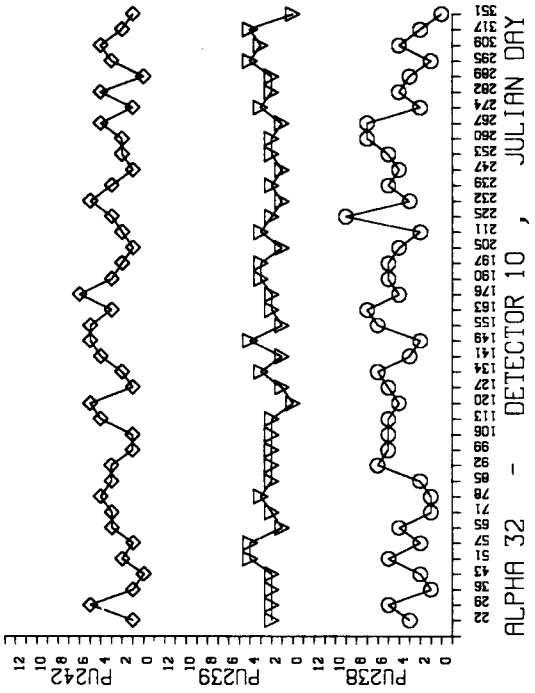
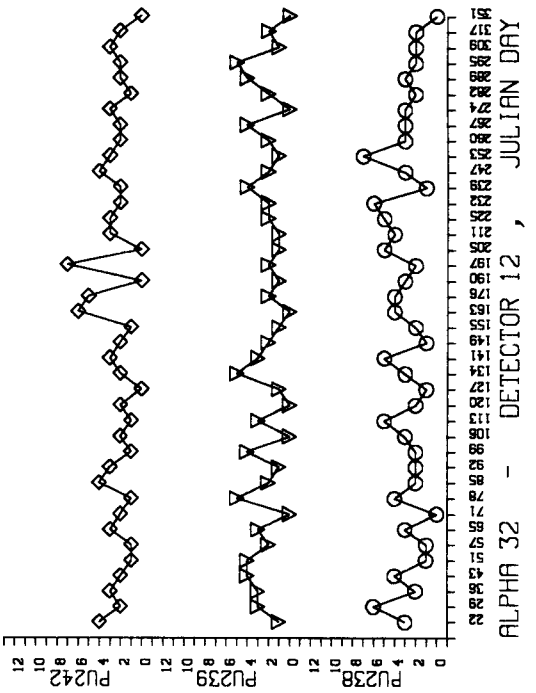
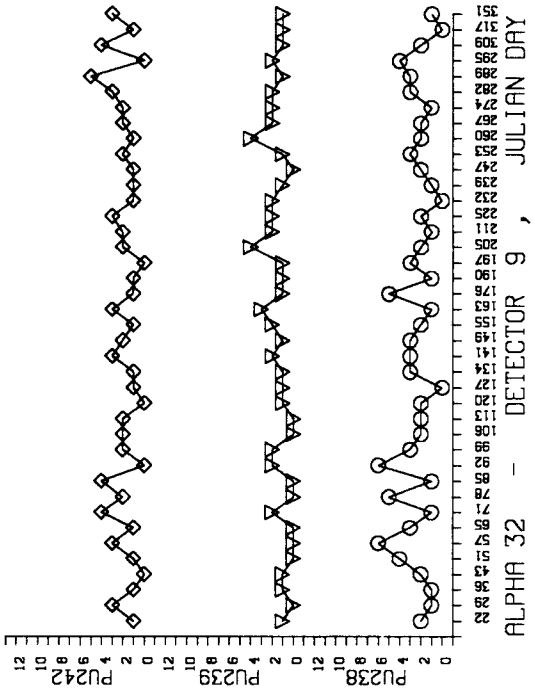

ALPHA 32 - DETECTOR 7 , JULIAN DAY
PU238
PU239
PU242

Fig. F-1. (cont)


ALPHA 32 - DETECTOR 10 , JULIAN DAY
PU238
PU239
PU242


ALPHA 32 - DETECTOR 12 , JULIAN DAY
PU238
PU239
PU242


ALPHA 32 - DETECTOR 9 , JULIAN DAY
PU238
PU239
PU242

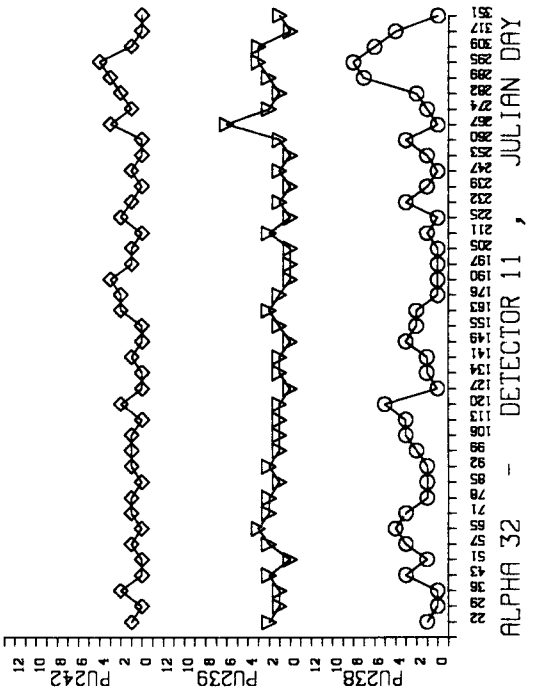
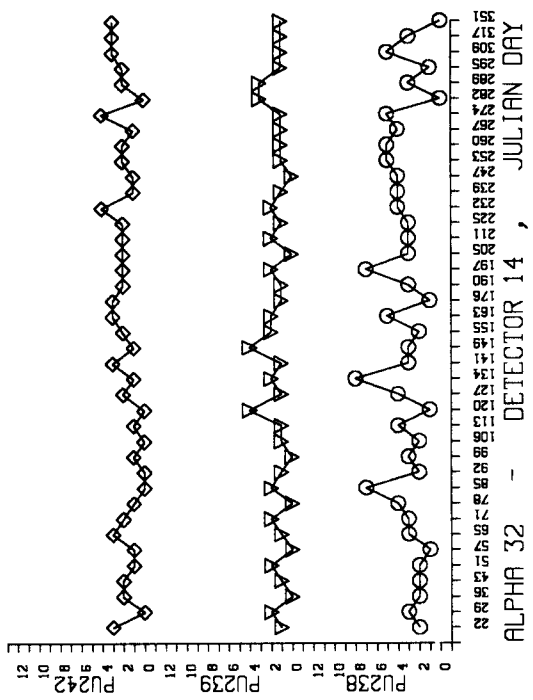
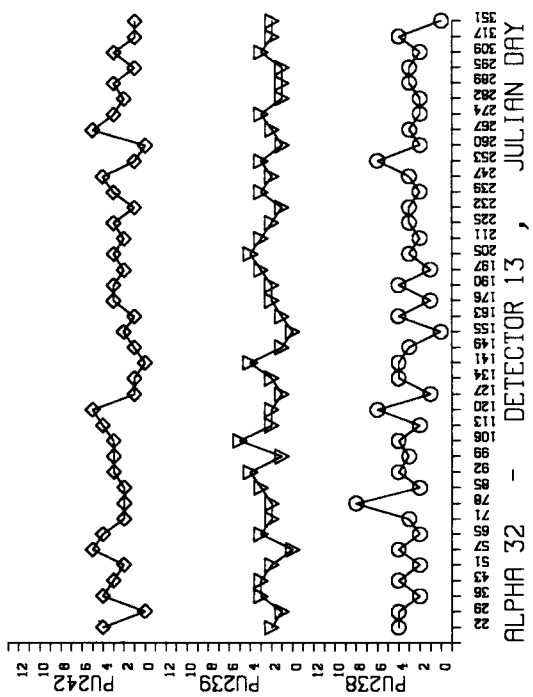
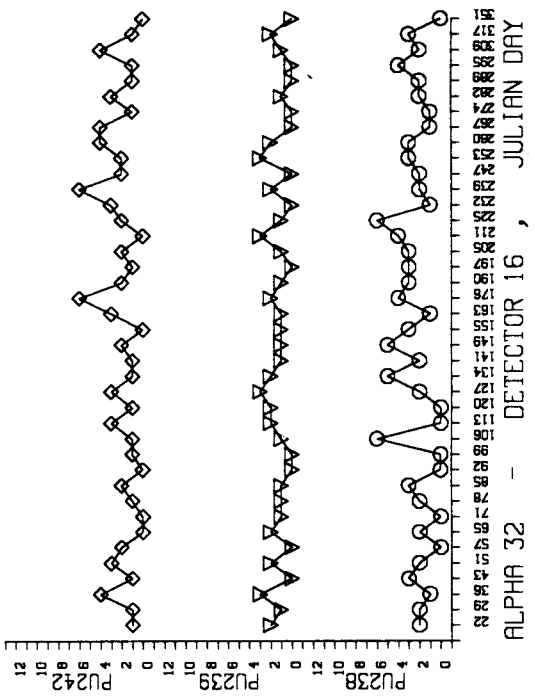

ALPHA 32 - DETECTOR 11 , JULIAN DAY
PU238
PU239
PU242

Fig. F-1. (cont)


ALPHA 32 - DETECTOR 14 , JULIAN DAY
PU238
PU239
PU242


ALPHA 32 - DETECTOR 13 , JULIAN DAY
PU238
PU239
PU242


ALPHA 32 - DETECTOR 16 , JULIAN DAY
PU238
PU239
PU242

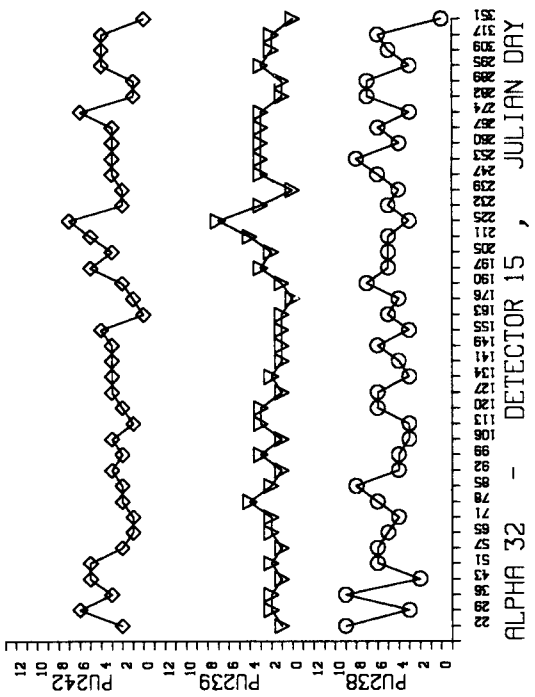
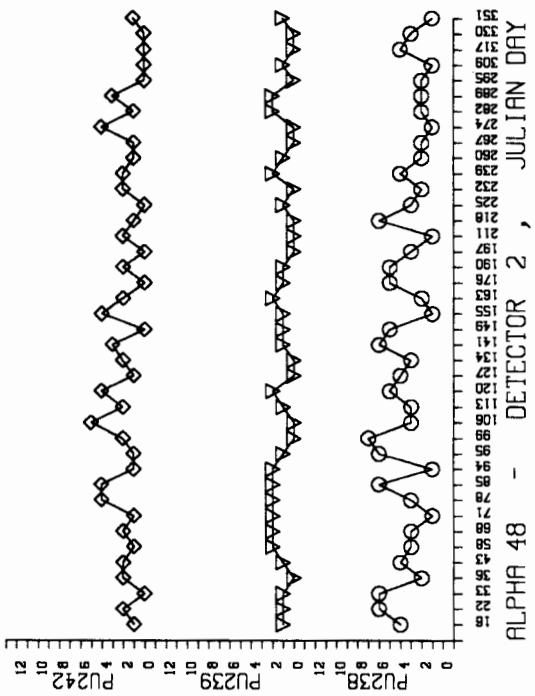
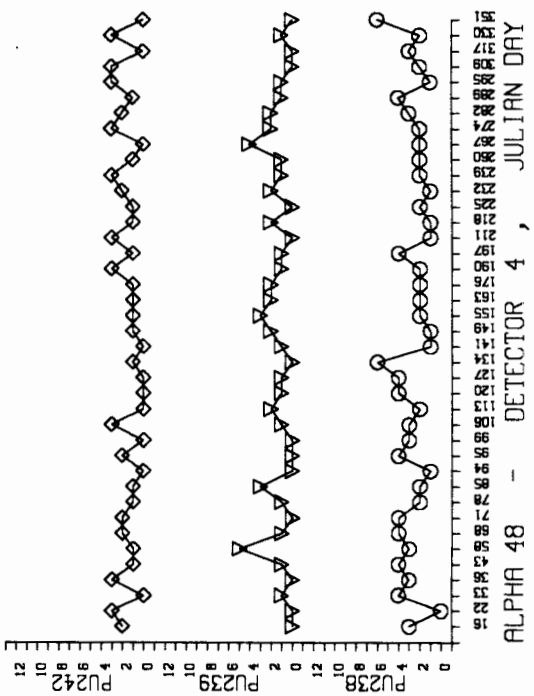
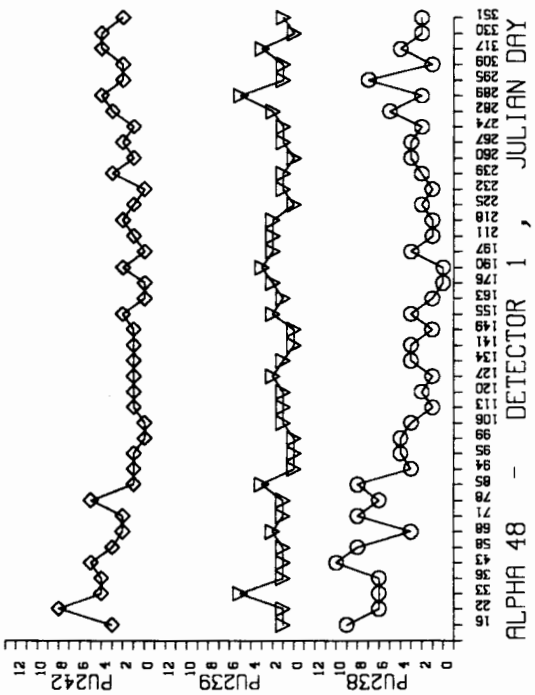

ALPHA 32 - DETECTOR 15 , JULIAN DAY
PU238
PU239
PU242

Fig. F-1. (cont)


ALPHA 48 - DETECTOR 2 , JULIAN DAY
PU238
PU239
PU242


ALPHA 48 - DETECTOR 4 , JULIAN DAY
PU238
PU239
PU242


ALPHA 48 - DETECTOR 1 , JULIAN DAY
PU238
PU239
PU242

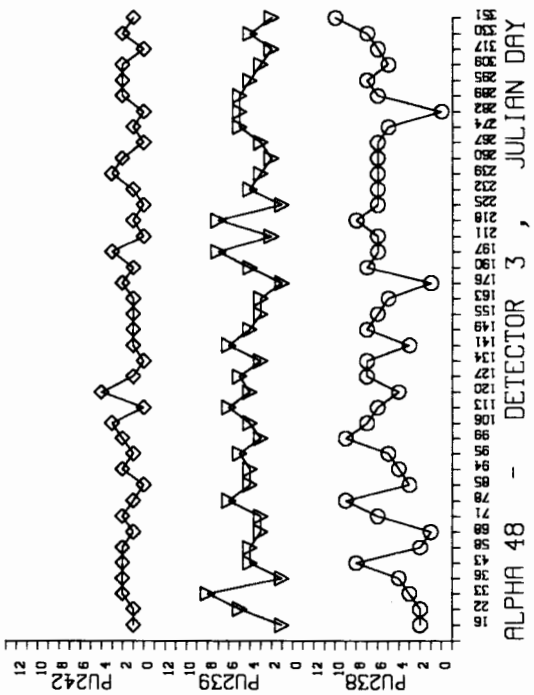

ALPHA 48 - DETECTOR 3 , JULIAN DAY
PU238
PU239
PU242

Fig. F-1. (cont)

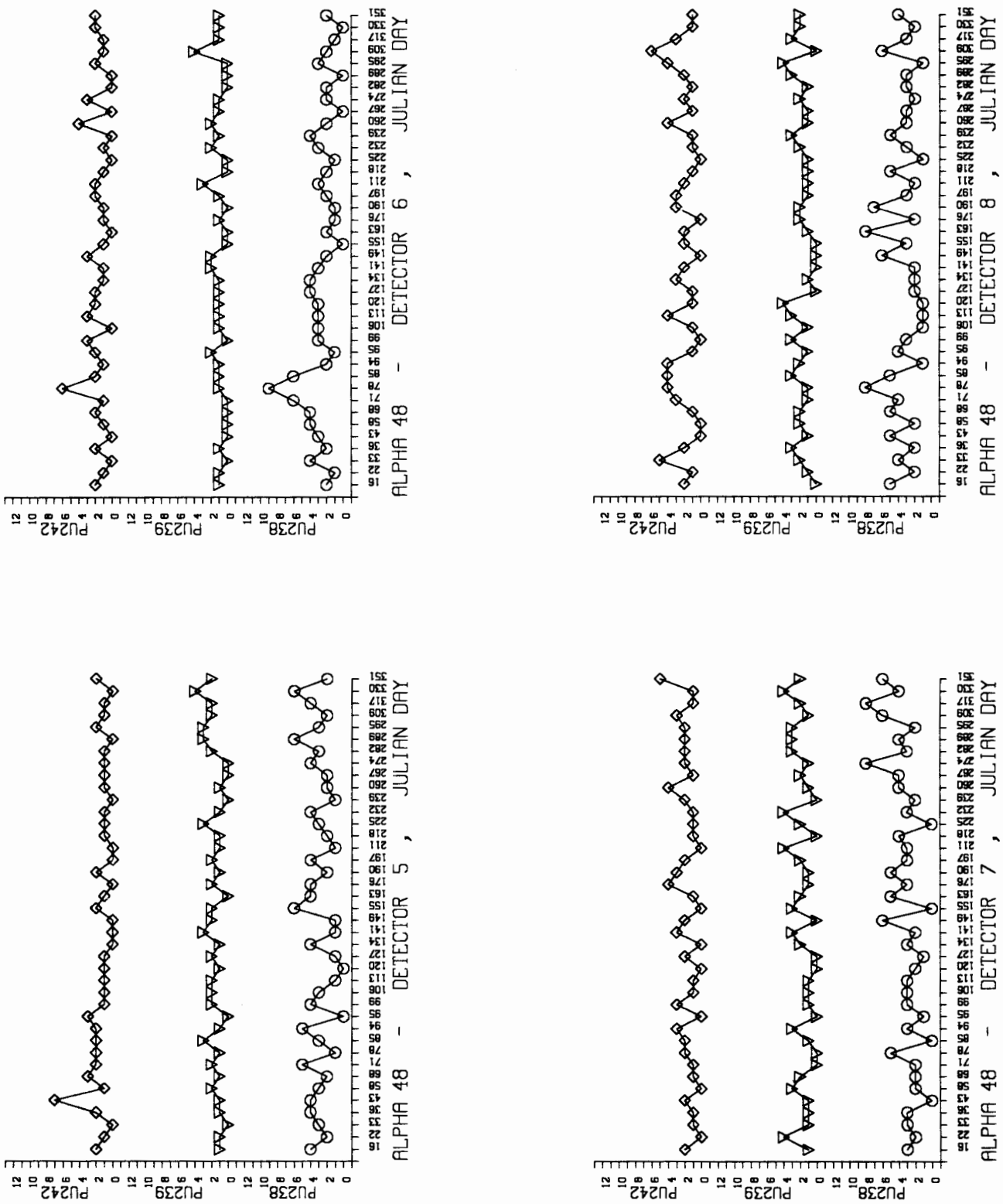
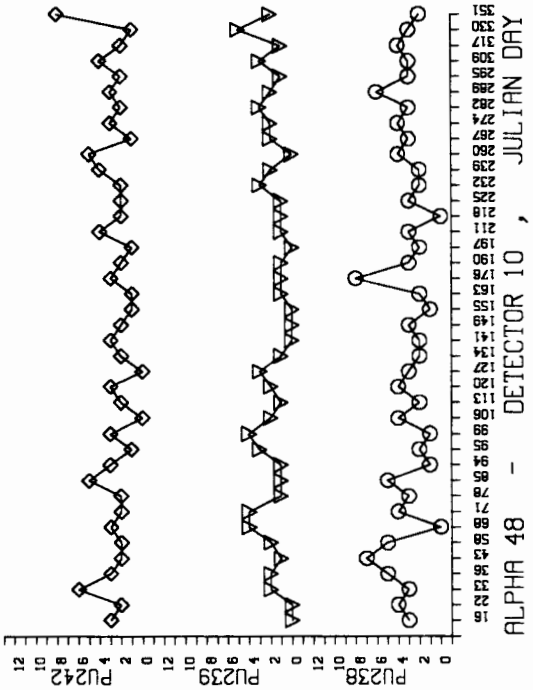
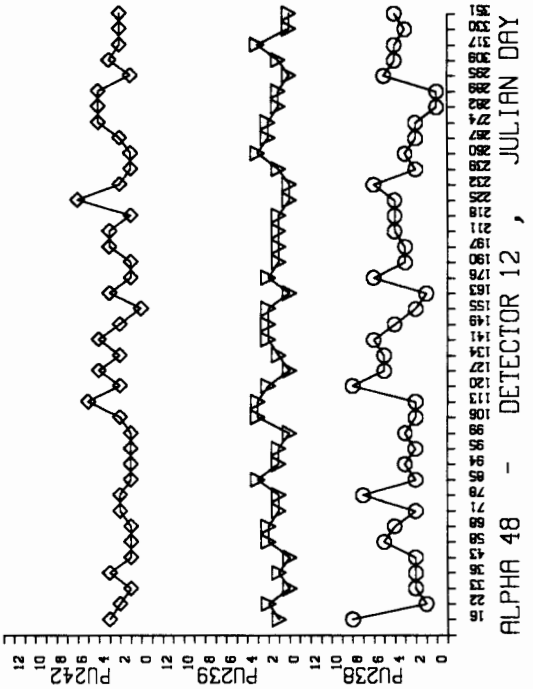
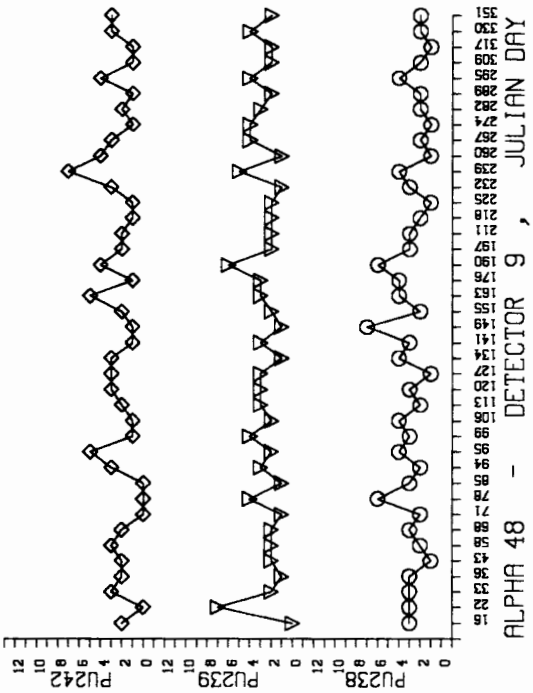

ALPHA 48 - DETECTOR 5 , JULIAN DAY
ALPHA 48 - DETECTOR 6 , JULIAN DAY
ALPHA 48 - DETECTOR 7 , JULIAN DAY
ALPHA 48 - DETECTOR 8 , JULIAN DAY
PU238
PU239
PU242

Fig. F-1. (cont)


ALPHA 48 - DETECTOR 10 , JULIAN DAY
PU238
PU239
PU242


ALPHA 48 - DETECTOR 12 , JULIAN DAY
PU238
PU239
PU242


ALPHA 48 - DETECTOR 9 , JULIAN DAY
PU238
PU239
PU242

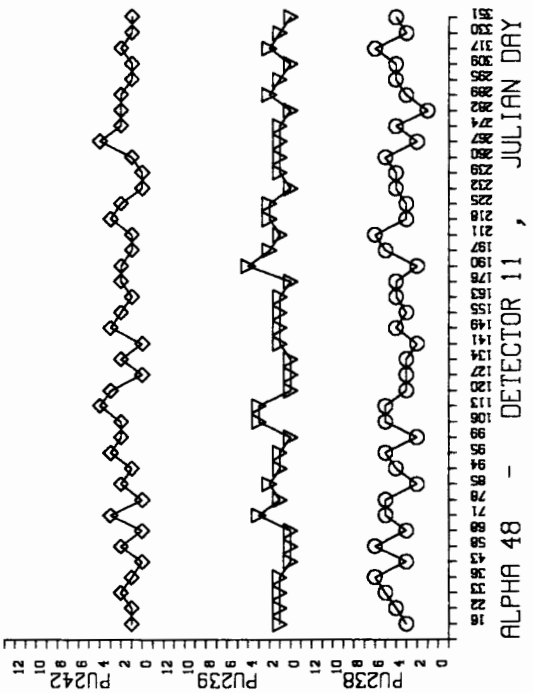
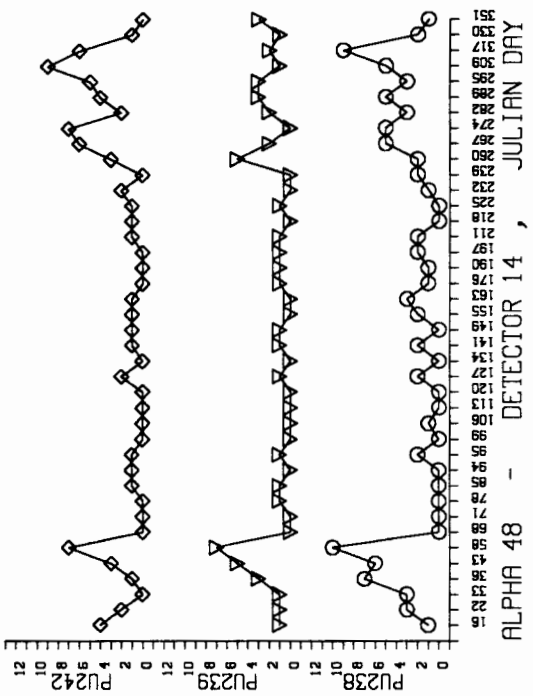
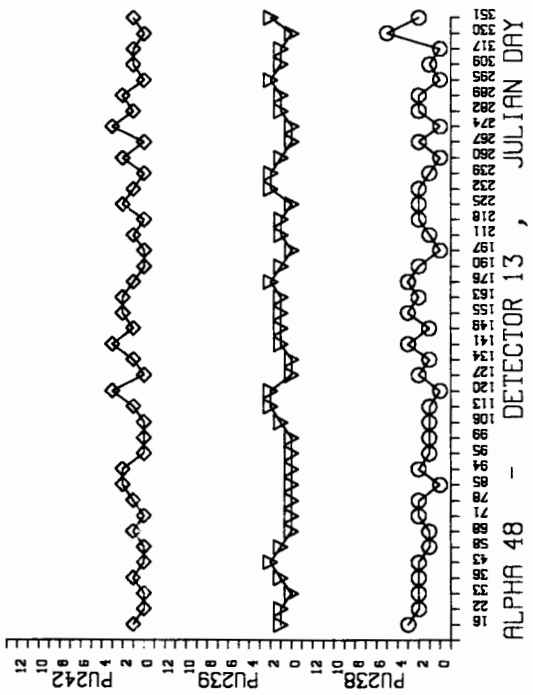
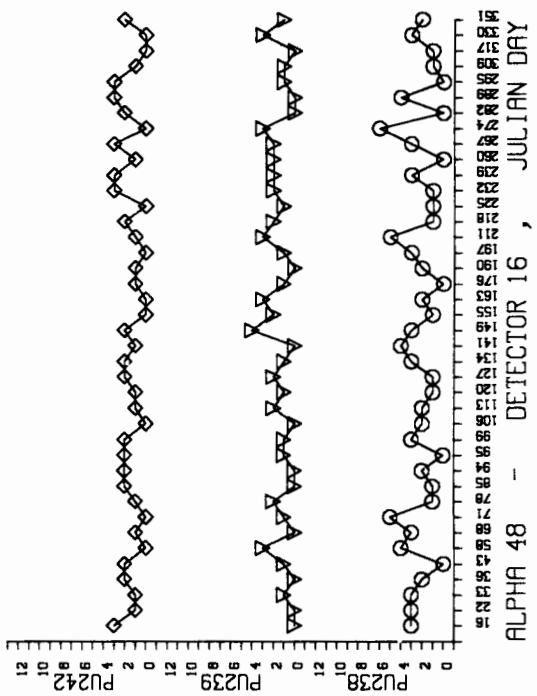

ALPHA 48 - DETECTOR 11 , JULIAN DAY
PU238
PU239
PU242

Fig. F-1. (cont)


ALPHA 48 - DETECTOR 14 , JULIAN DAY
PU238
PU239
PU242


ALPHA 48 - DETECTOR 13 , JULIAN DAY
PU238
PU239
PU242


ALPHA 48 - DETECTOR 16 , JULIAN DAY
PU238
PU239
PU242

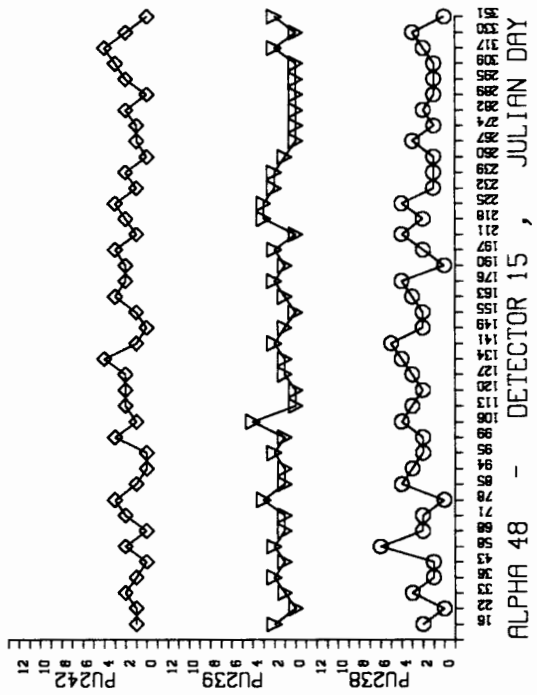

ALPHA 48 - DETECTOR 15 , JULIAN DAY
PU238
PU239
PU242

Fig. F-1. (cont)

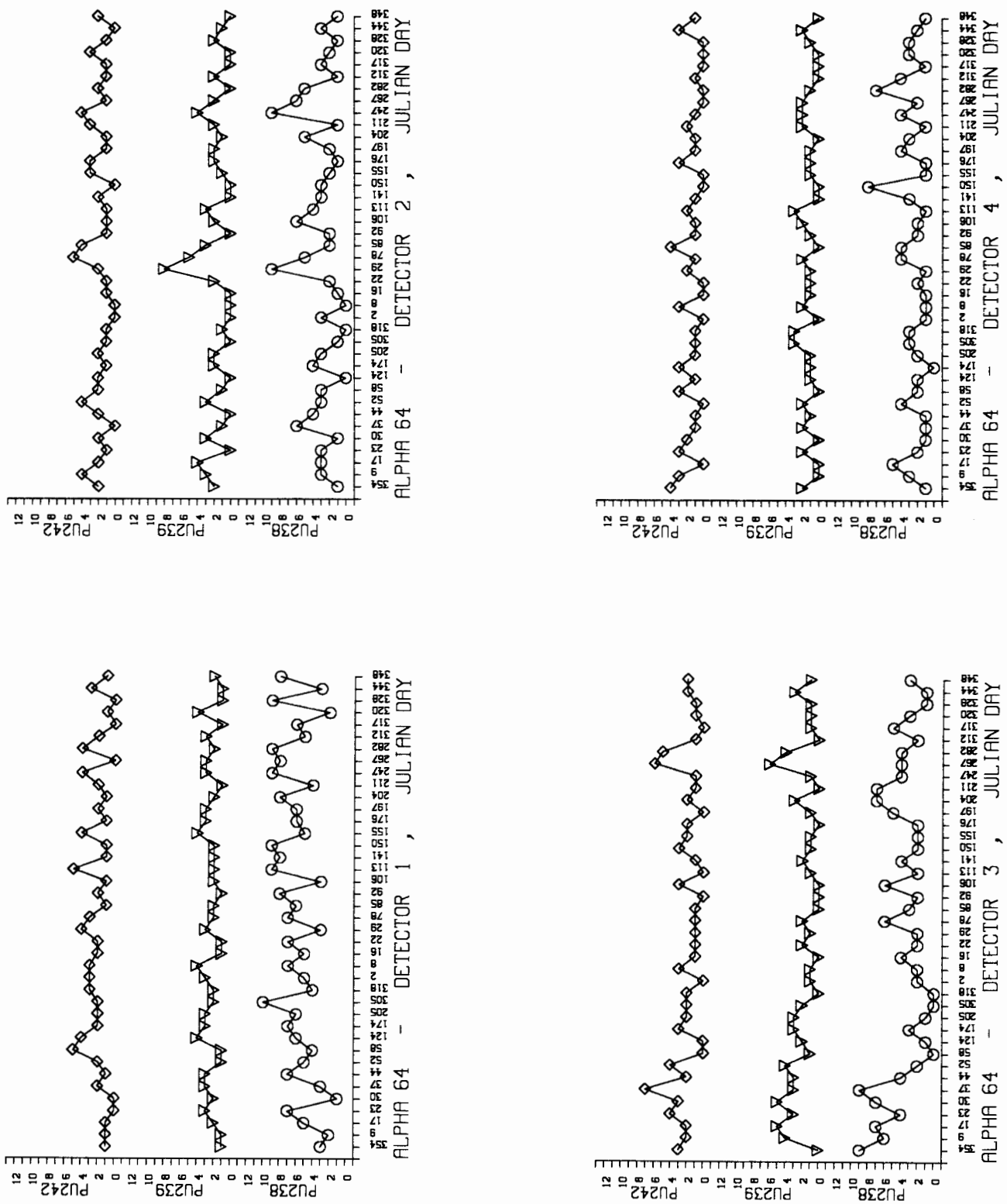
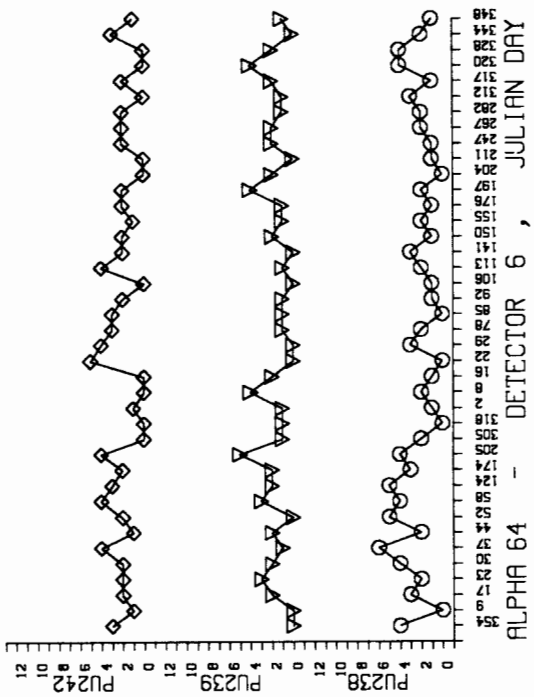
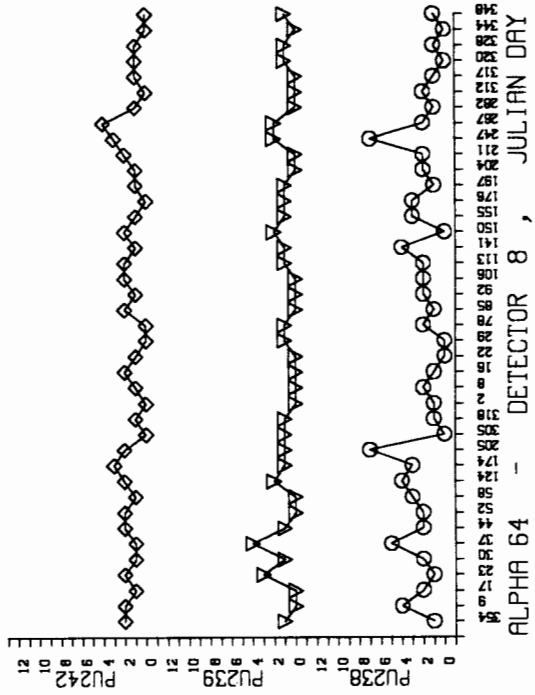
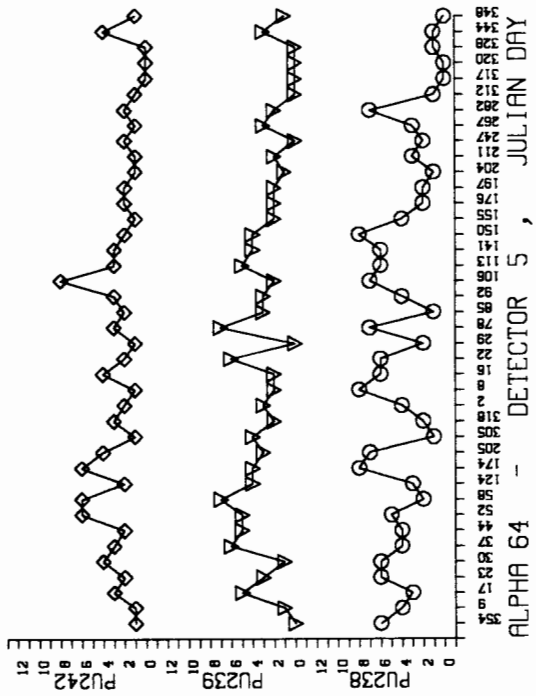

ALPHA 64 - DETECTOR 1 , JULIAN DAY
ALPHA 64 - DETECTOR 2 , JULIAN DAY
ALPHA 64 - DETECTOR 3 , JULIAN DAY
ALPHA 64 - DETECTOR 4 , JULIAN DAY
PU238
PU239
PU242

Fig. F-1. (cont)


ALPHA 64 - DETECTOR 6 , JULIAN DAY
PU238
PU239
PU242


ALPHA 64 - DETECTOR 8 , JULIAN DAY
PU238
PU239
PU242


ALPHA 64 - DETECTOR 5 , JULIAN DAY
PU238
PU239
PU242

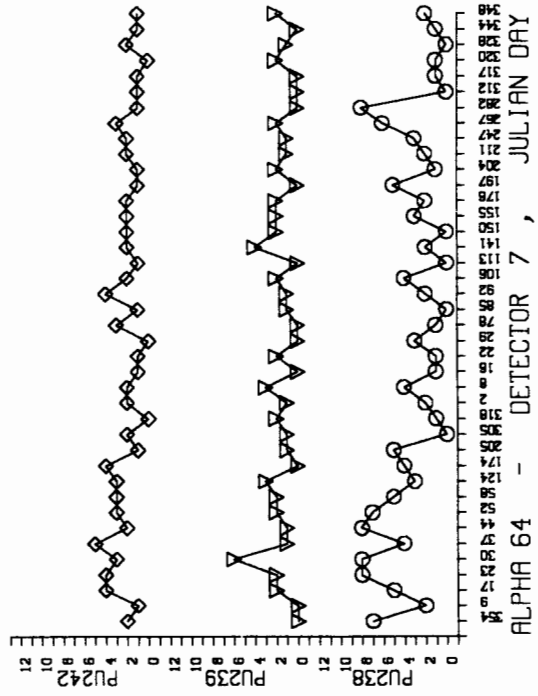
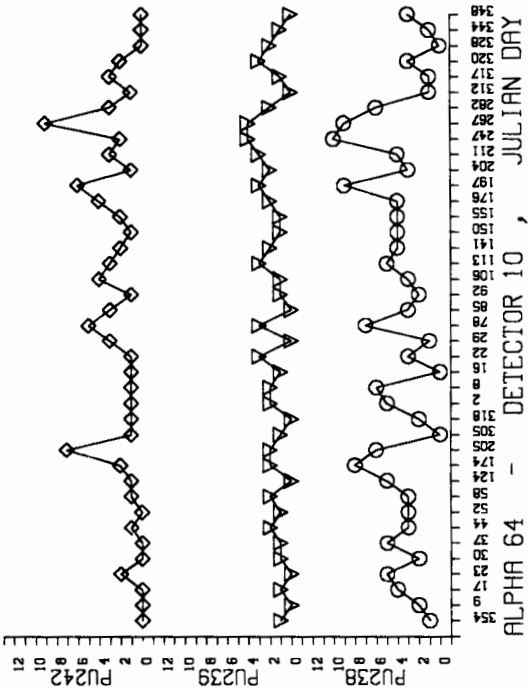
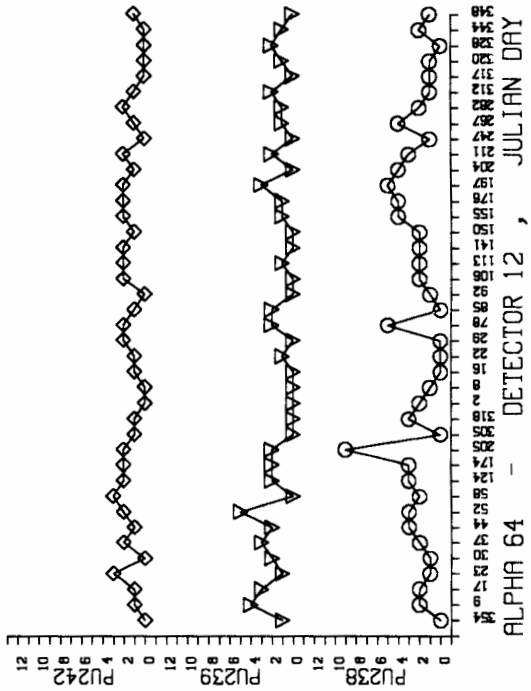
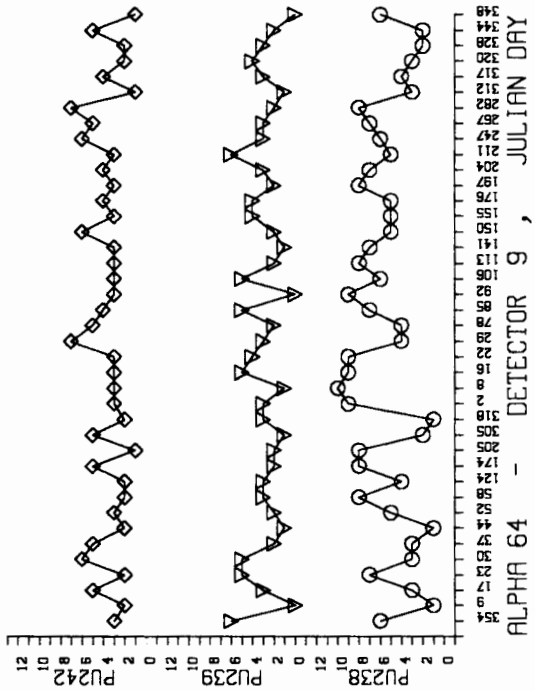

ALPHA 64 - DETECTOR 7 , JULIAN DAY
PU238
PU239
PU242

Fig. F-1. (cont)


ALPHA 64 - DETECTOR 10 , JULIAN DAY
PU238
PU239
PU242


ALPHA 64 - DETECTOR 12 , JULIAN DAY
PU238
PU239
PU242


ALPHA 64 - DETECTOR 9 , JULIAN DAY
PU238
PU239
PU242

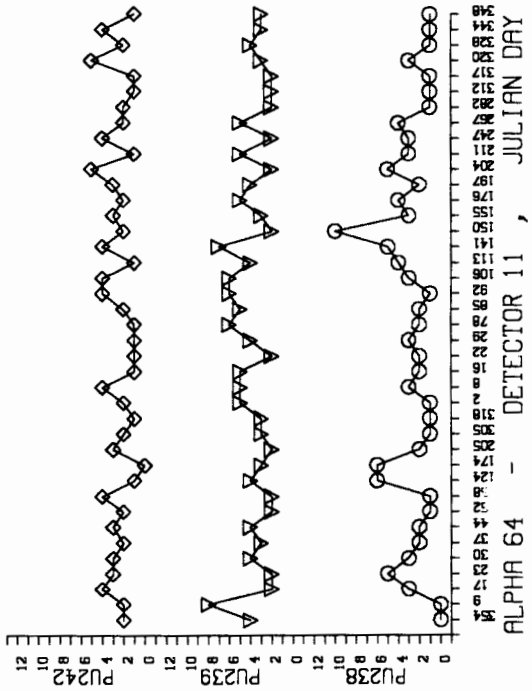
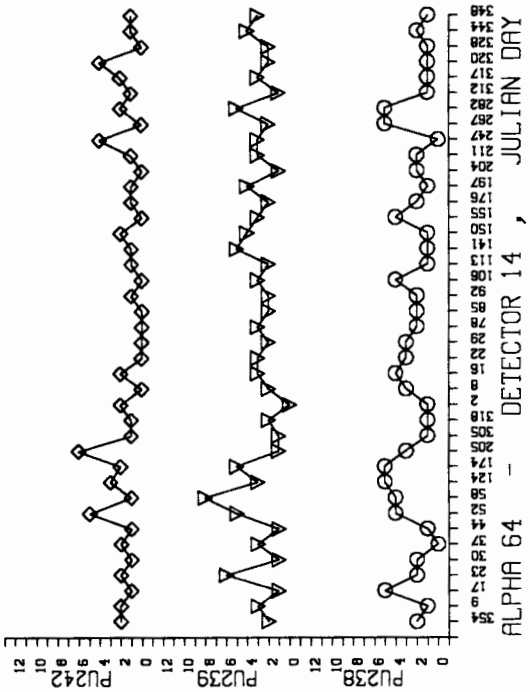
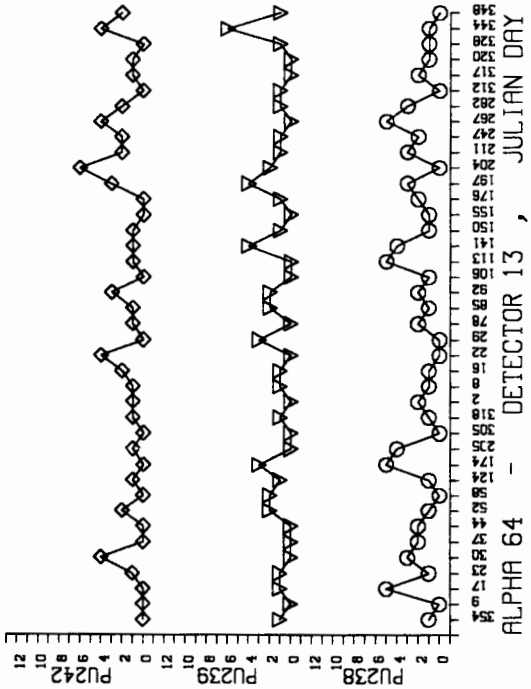
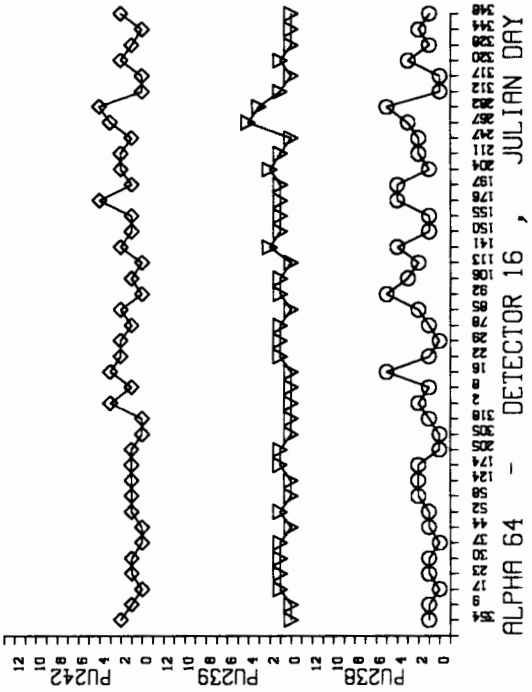

ALPHA 64 - DETECTOR 11 , JULIAN DAY
PU238
PU239
PU242

Fig. F-1. (cont)


ALPHA 64 - DETECTOR 14 , JULIAN DAY
PU238
PU239
PU242


ALPHA 64 - DETECTOR 13 , JULIAN DAY
PU238
PU239
PU242


ALPHA 64 - DETECTOR 16 , JULIAN DAY
PU238
PU239
PU242

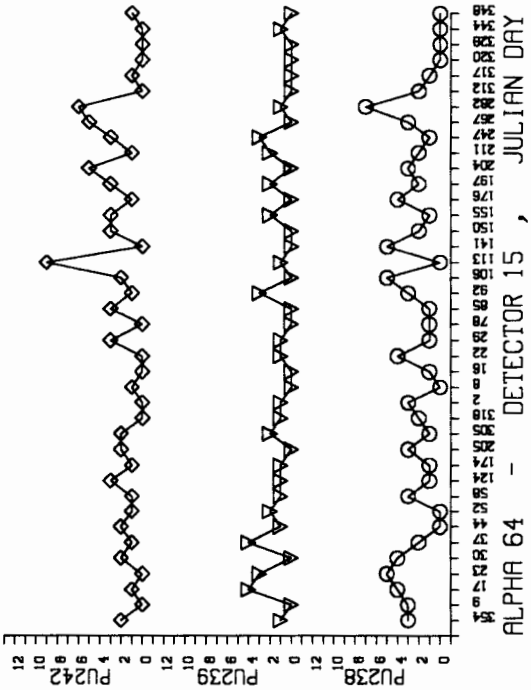

ALPHA 64 - DETECTOR 15 , JULIAN DAY
PU238
PU239
PU242

Fig. F-1. (cont)

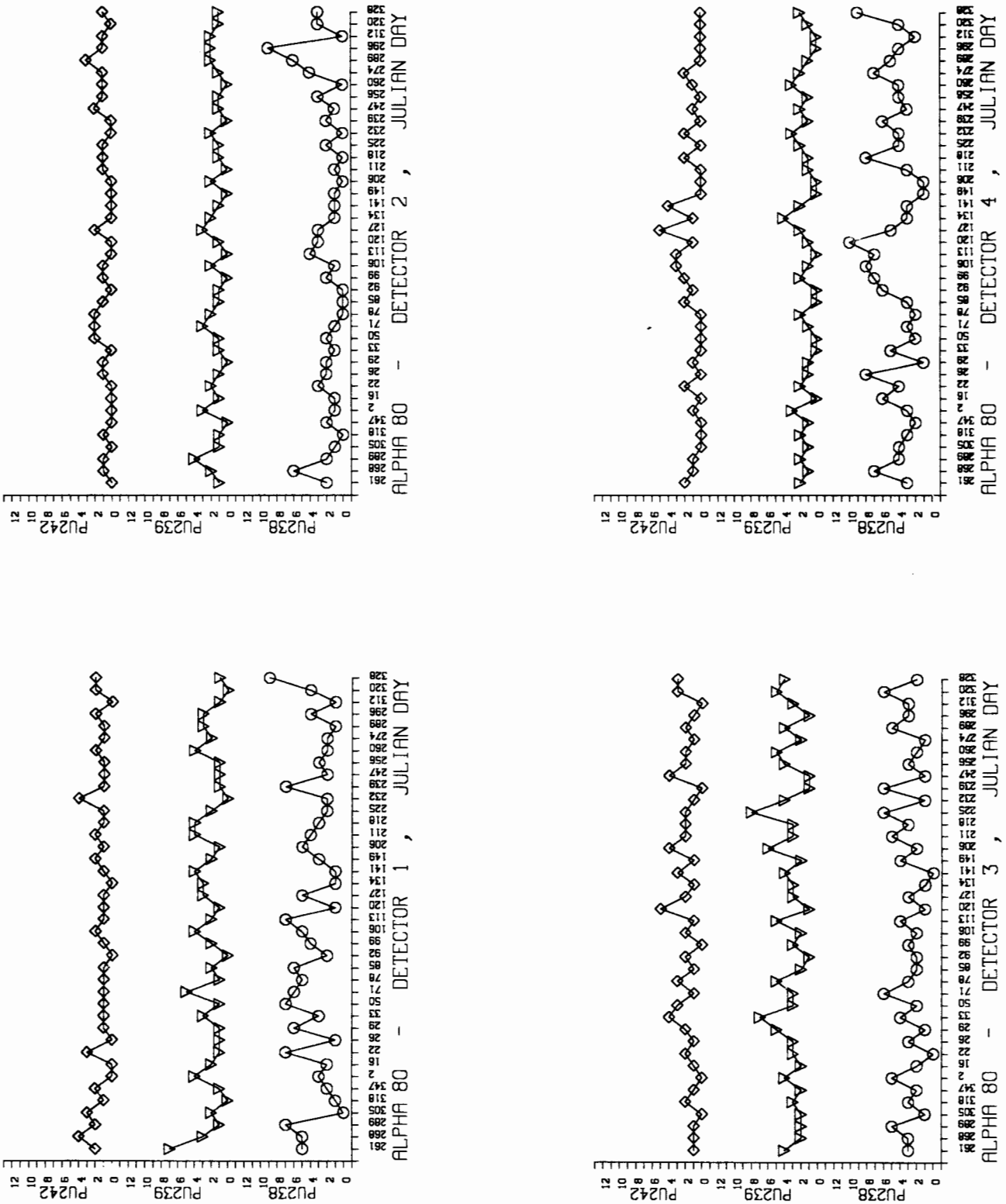
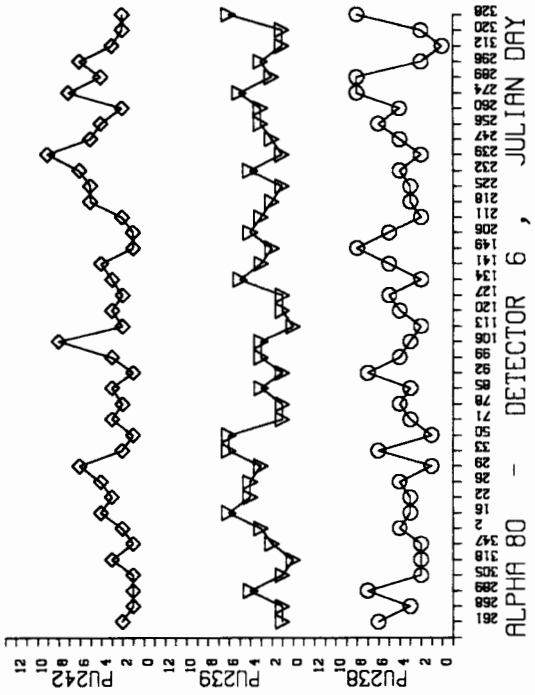
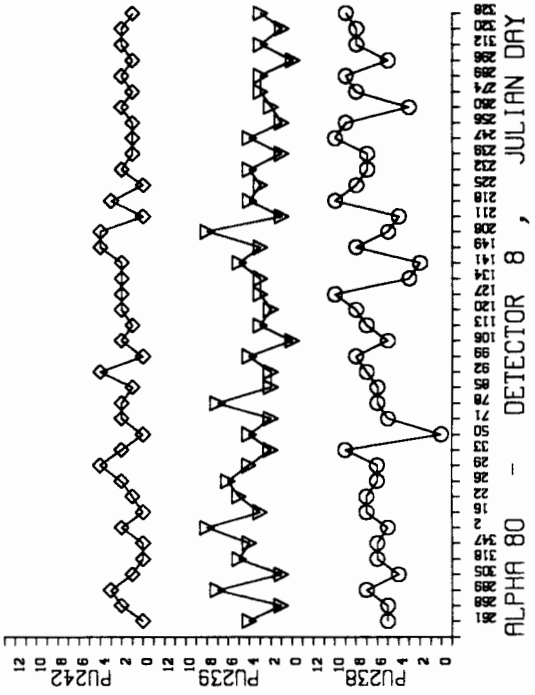
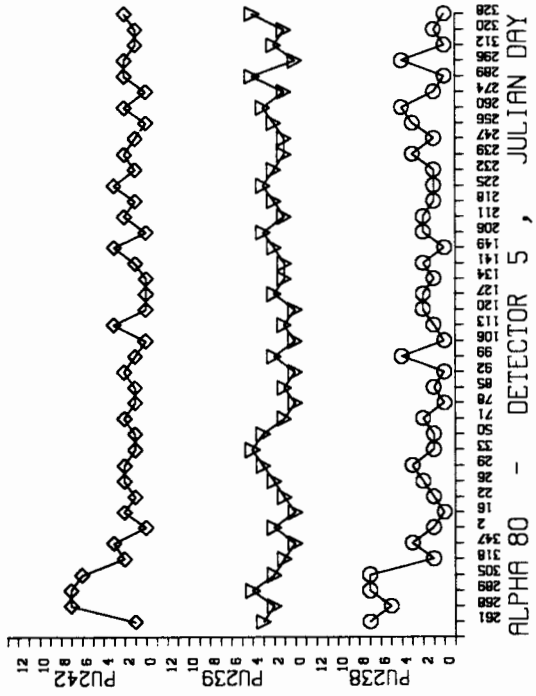

ALPHA 80 - DETECTOR 1 , JULIAN DAY
ALPHA 80 - DETECTOR 2 , JULIAN DAY
ALPHA 80 - DETECTOR 3 , JULIAN DAY
ALPHA 80 - DETECTOR 4 , JULIAN DAY
PU238
PU239
PU242

Fig. F-1. (cont)


ALPHA 80 - DETECTOR 6 , JULIAN DAY
PU238
PU239
PU242


ALPHA 80 - DETECTOR 8 , JULIAN DAY
PU238
PU239
PU242


ALPHA 80 - DETECTOR 5 , JULIAN DAY
PU238
PU239
PU242

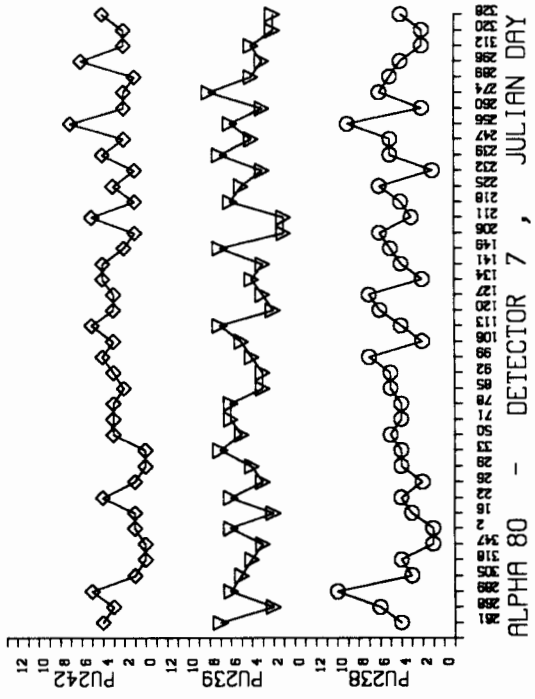
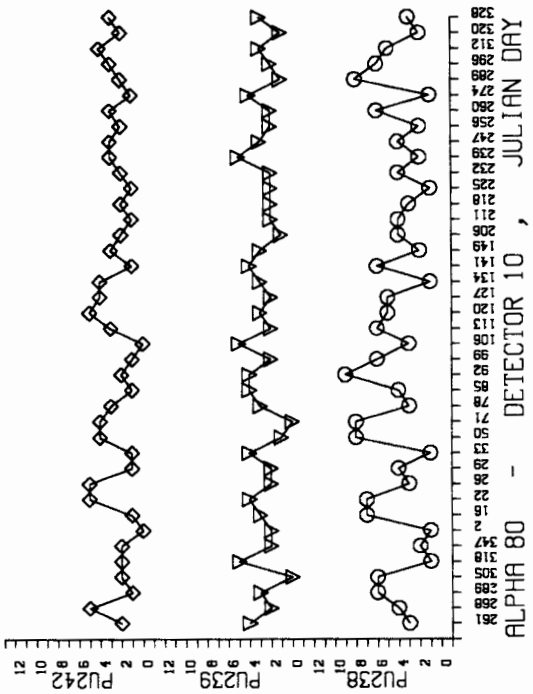
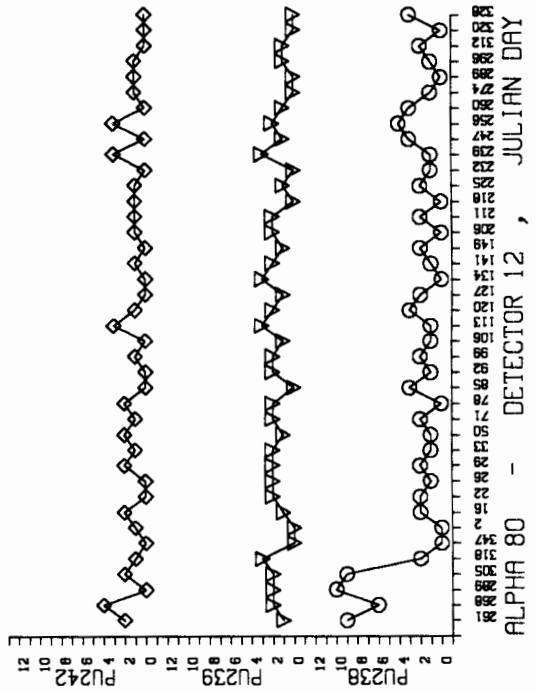
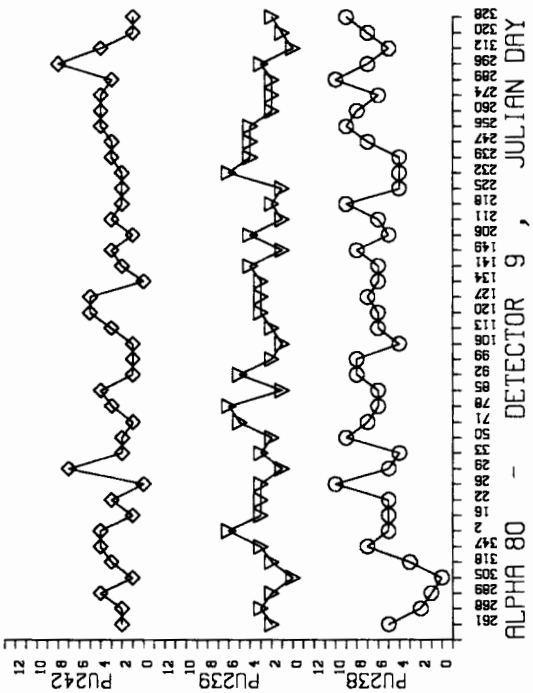

ALPHA 80 - DETECTOR 7 , JULIAN DAY
PU238
PU239
PU242

Fig. F-1. (cont)


PU242
PU239
PU238
ALPHA 80 - DETECTOR 10 , JULIAN DAY


PU242
PU239
PU238
ALPHA 80 - DETECTOR 12 , JULIAN DAY


PU242
PU239
PU238
ALPHA 80 - DETECTOR 9 , JULIAN DAY

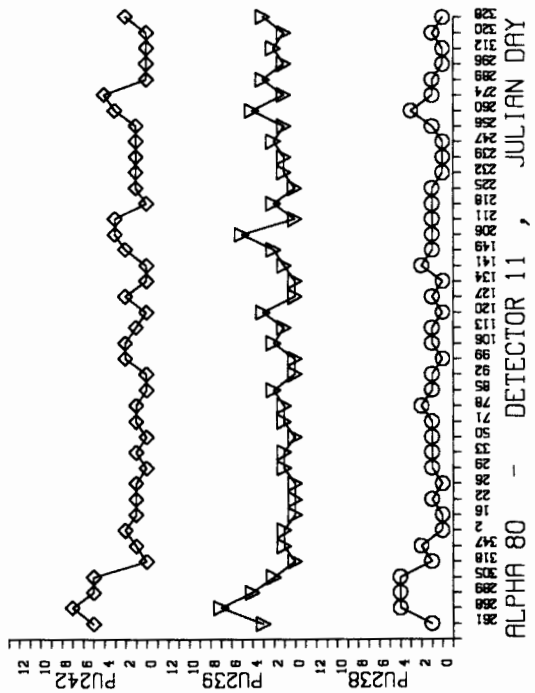
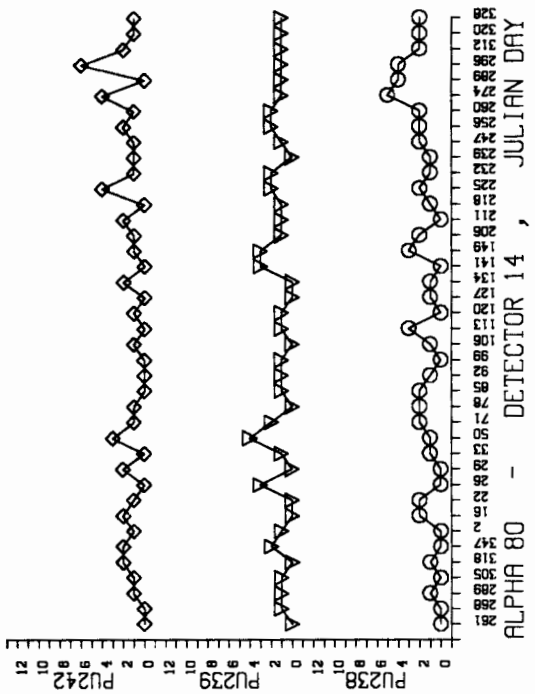
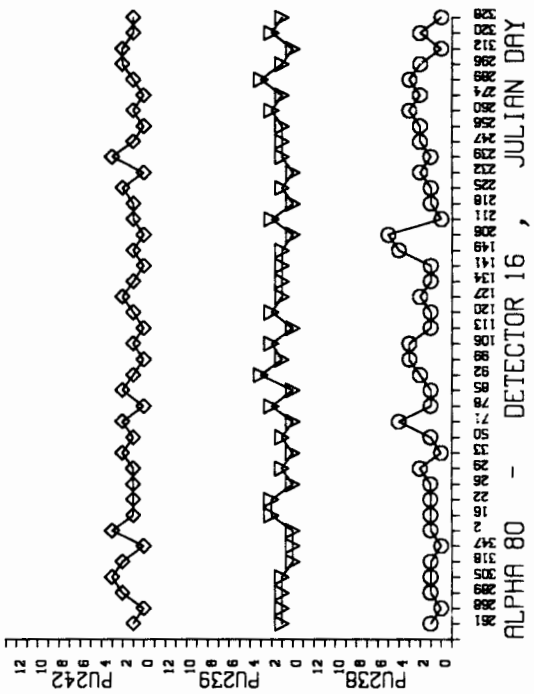
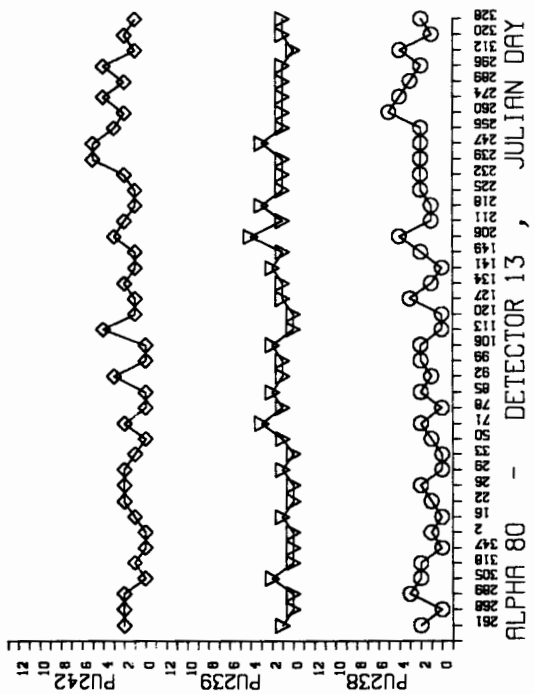
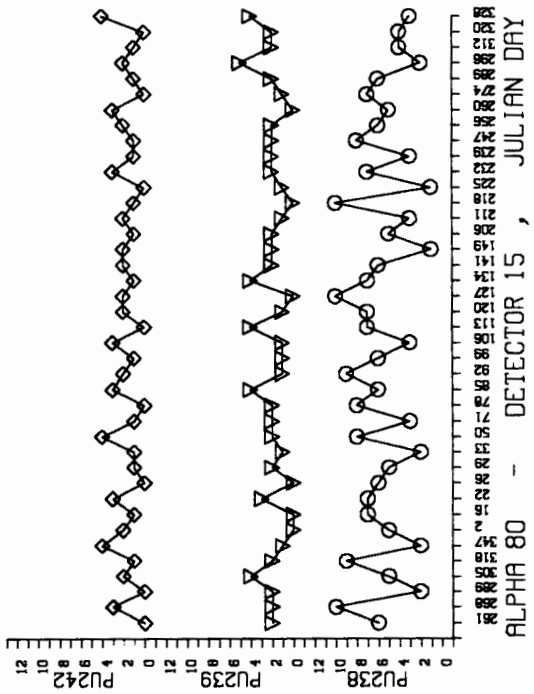

PU242
PU239
PU238
ALPHA 80 - DETECTOR 11 , JULIAN DAY

Fig. F-1. (cont)









NOTE: Fluctuations in these data are documented in Laboratory notebook A8192 and are generally due to a detector being replaced or needing cleaning, electrical power surges and failures, vacuum system leaks, and electronic noise.

Fig. F-1. (cont)

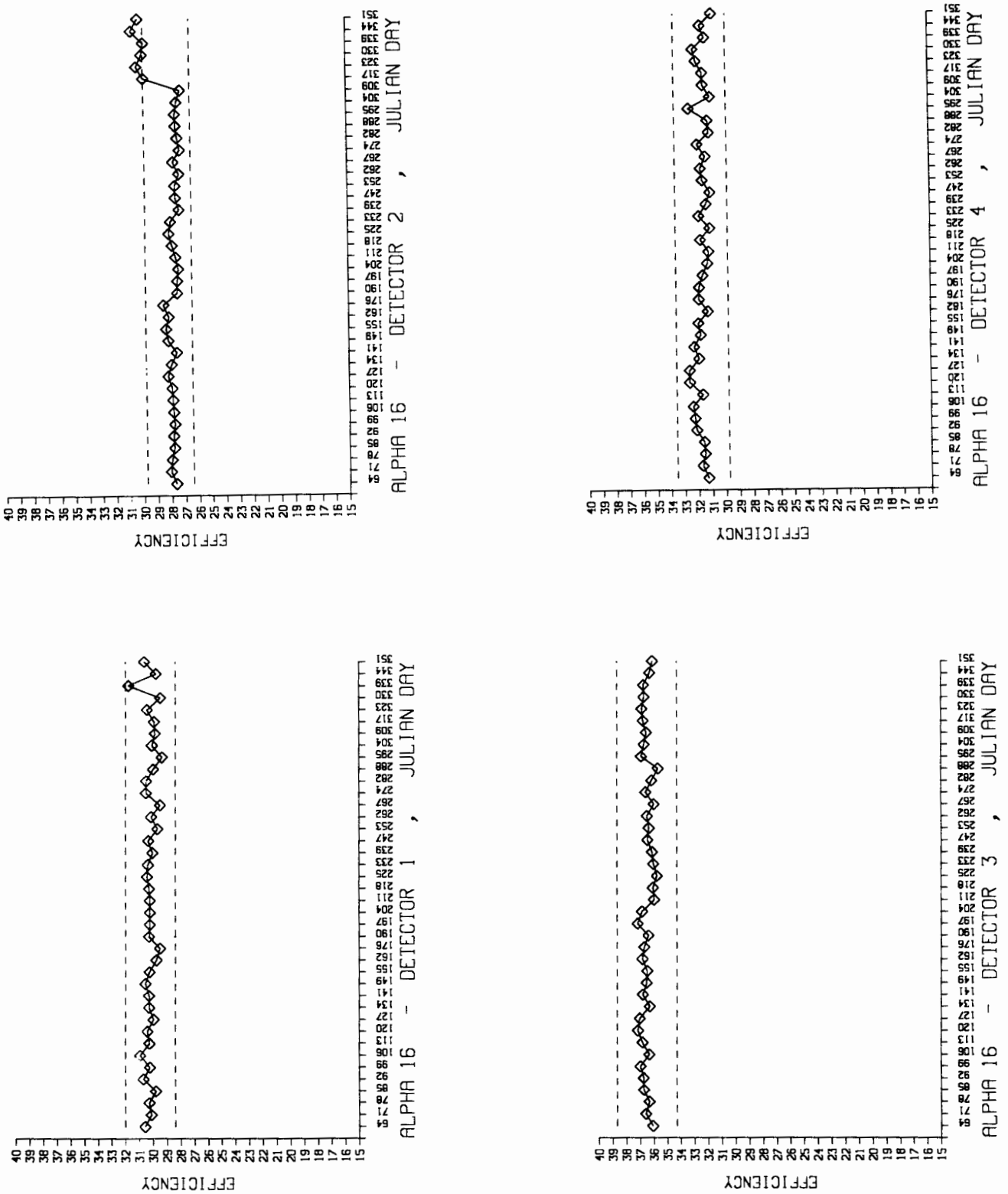
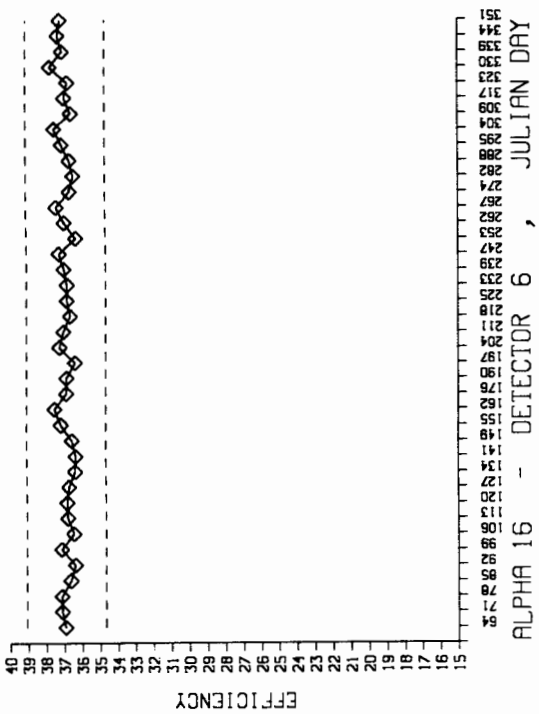
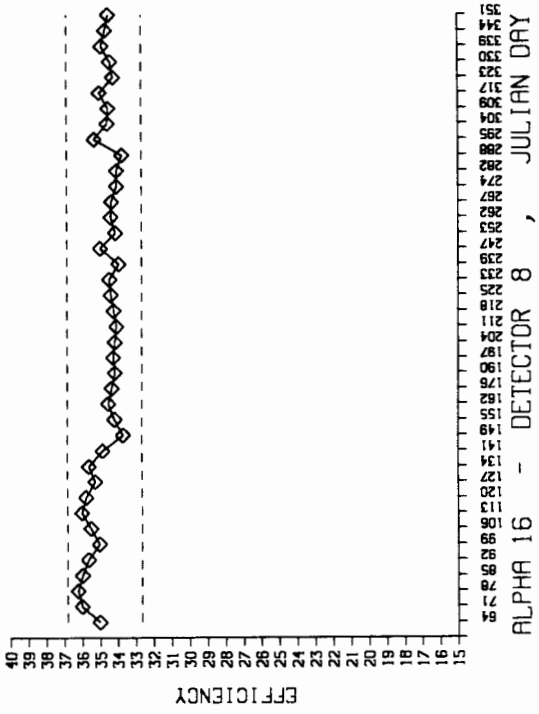
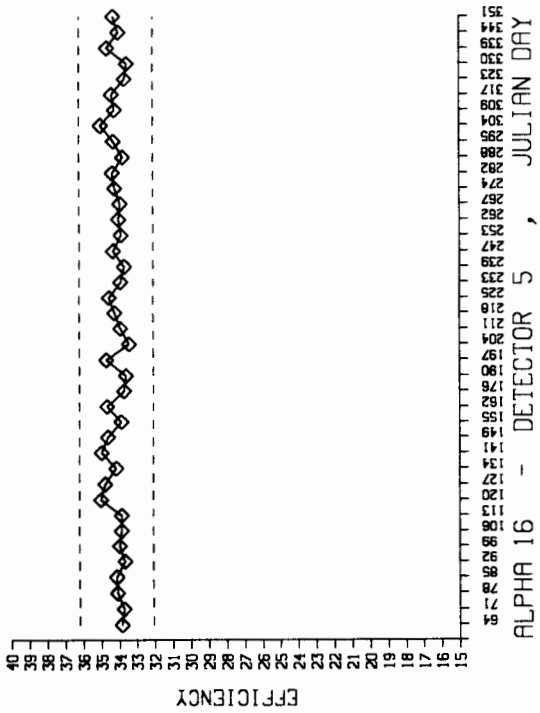


Fig. F-2. Plots of alpha spectrometer calibration data.


ALPHA 16 - DETECTOR 6 , JULIAN DAY
EFFICIENCY


ALPHA 16 - DETECTOR 8 , JULIAN DAY
EFFICIENCY


ALPHA 16 - DETECTOR 5 , JULIAN DAY
EFFICIENCY

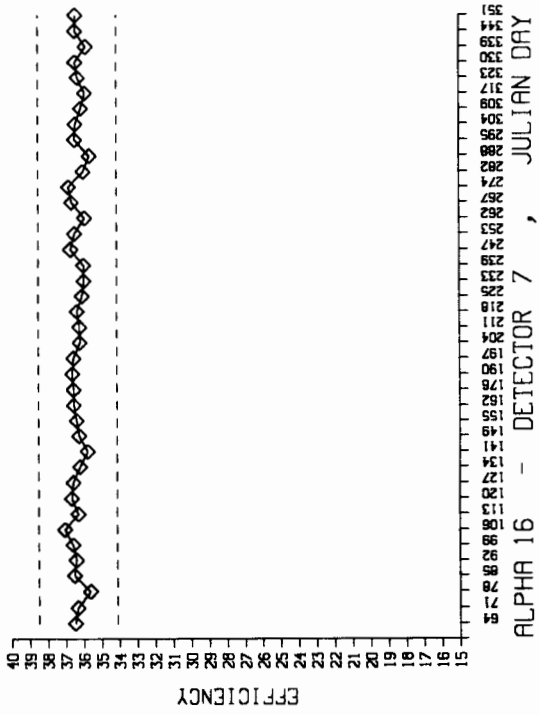
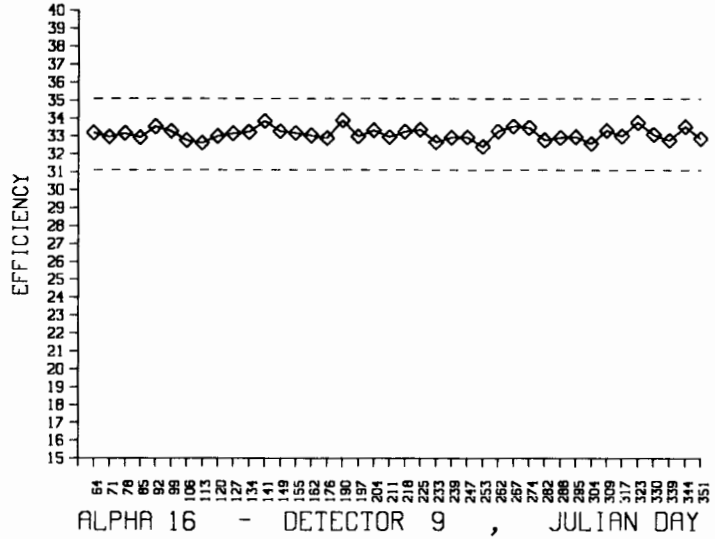
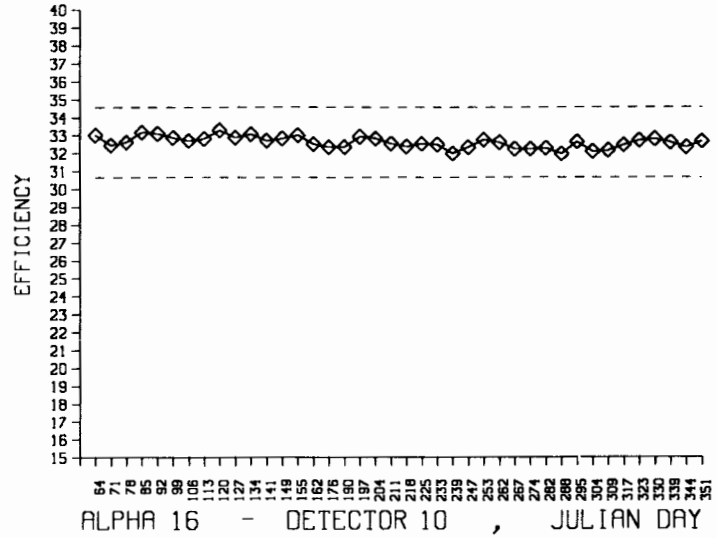
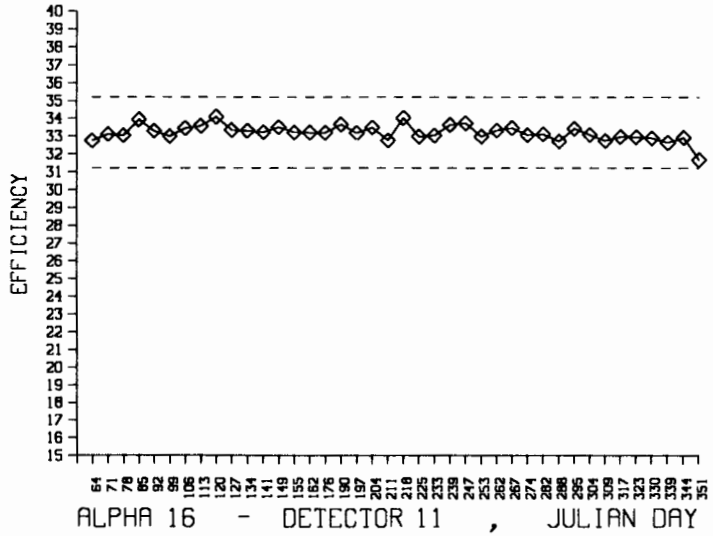

ALPHA 16 - DETECTOR 7 , JULIAN DAY
EFFICIENCY

Fig. F-2. (cont)


EFFICIENCY
ALPHA 16 - DETECTOR 9 , JULIAN DAY


EFFICIENCY
ALPHA 16 - DETECTOR 10 , JULIAN DAY


EFFICIENCY
ALPHA 16 - DETECTOR 11 , JULIAN DAY

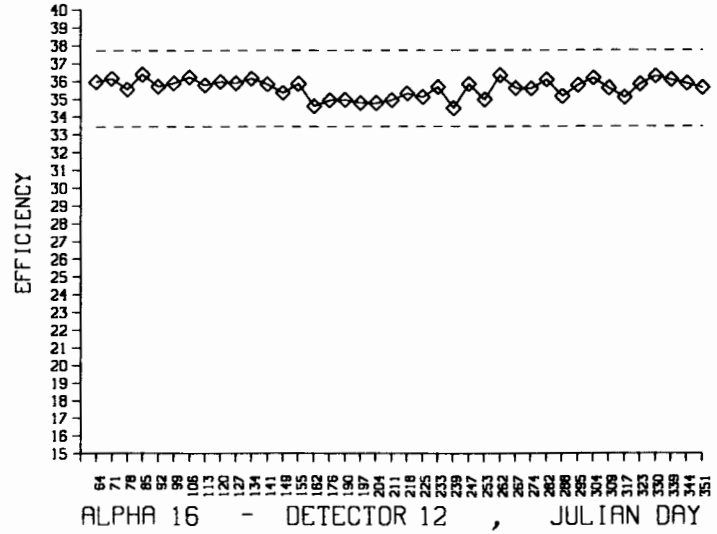
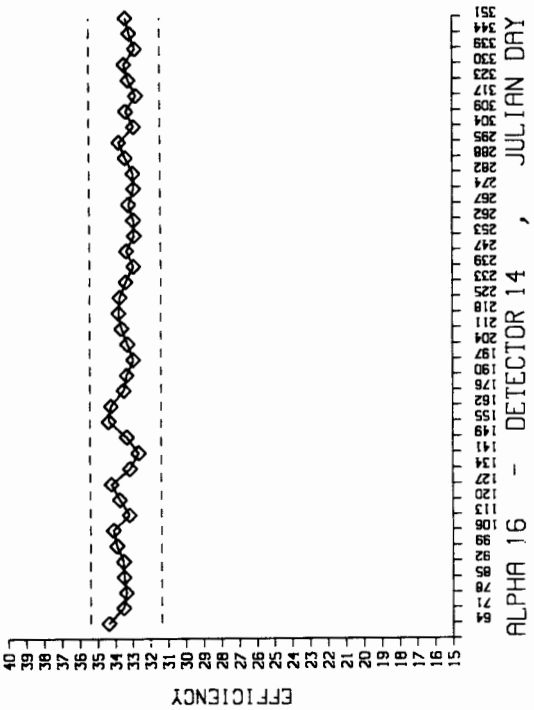
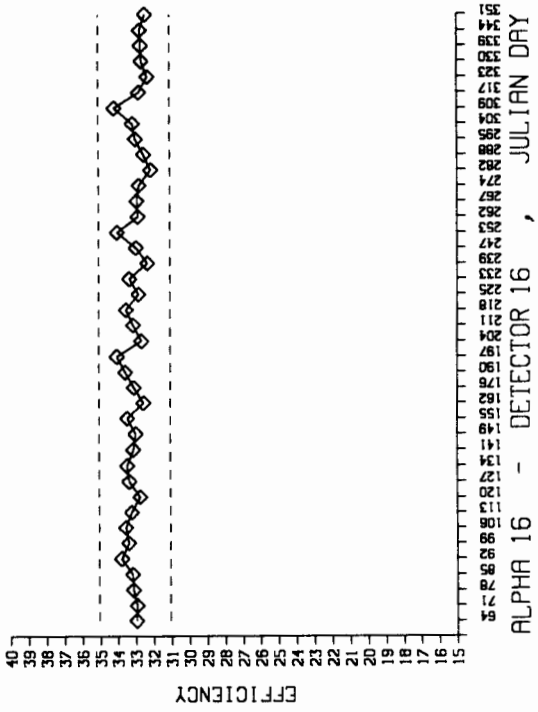
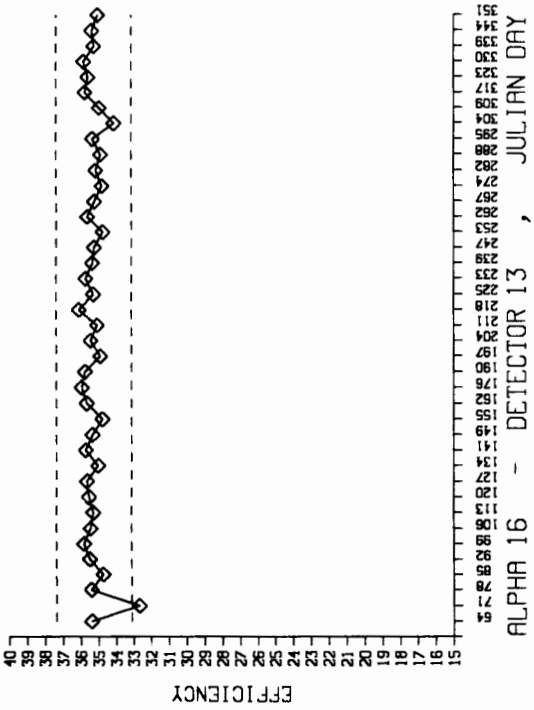

EFFICIENCY
ALPHA 16 - DETECTOR 12 , JULIAN DAY

Fig. F-2. (cont)


ALPHA 16 - DETECTOR 14 , JULIAN DAY
EFFICIENCY


ALPHA 16 - DETECTOR 16 , JULIAN DAY
EFFICIENCY


ALPHA 16 - DETECTOR 13 , JULIAN DAY
EFFICIENCY

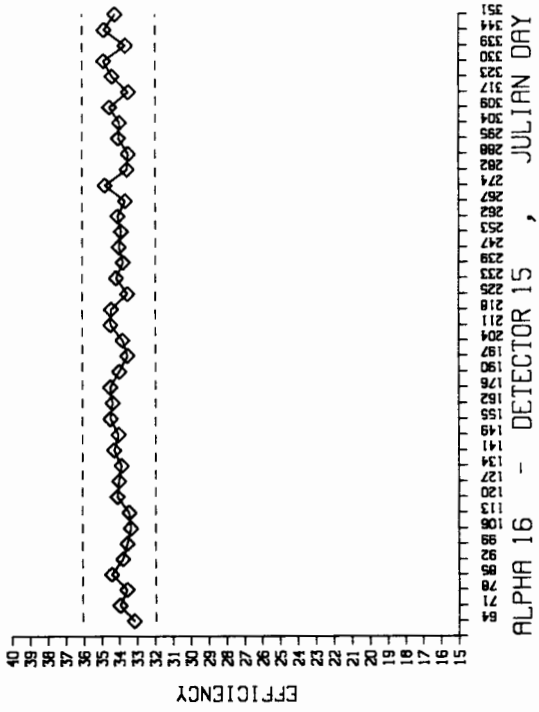

ALPHA 16 - DETECTOR 15 , JULIAN DAY
EFFICIENCY

Fig. F-2. (cont)

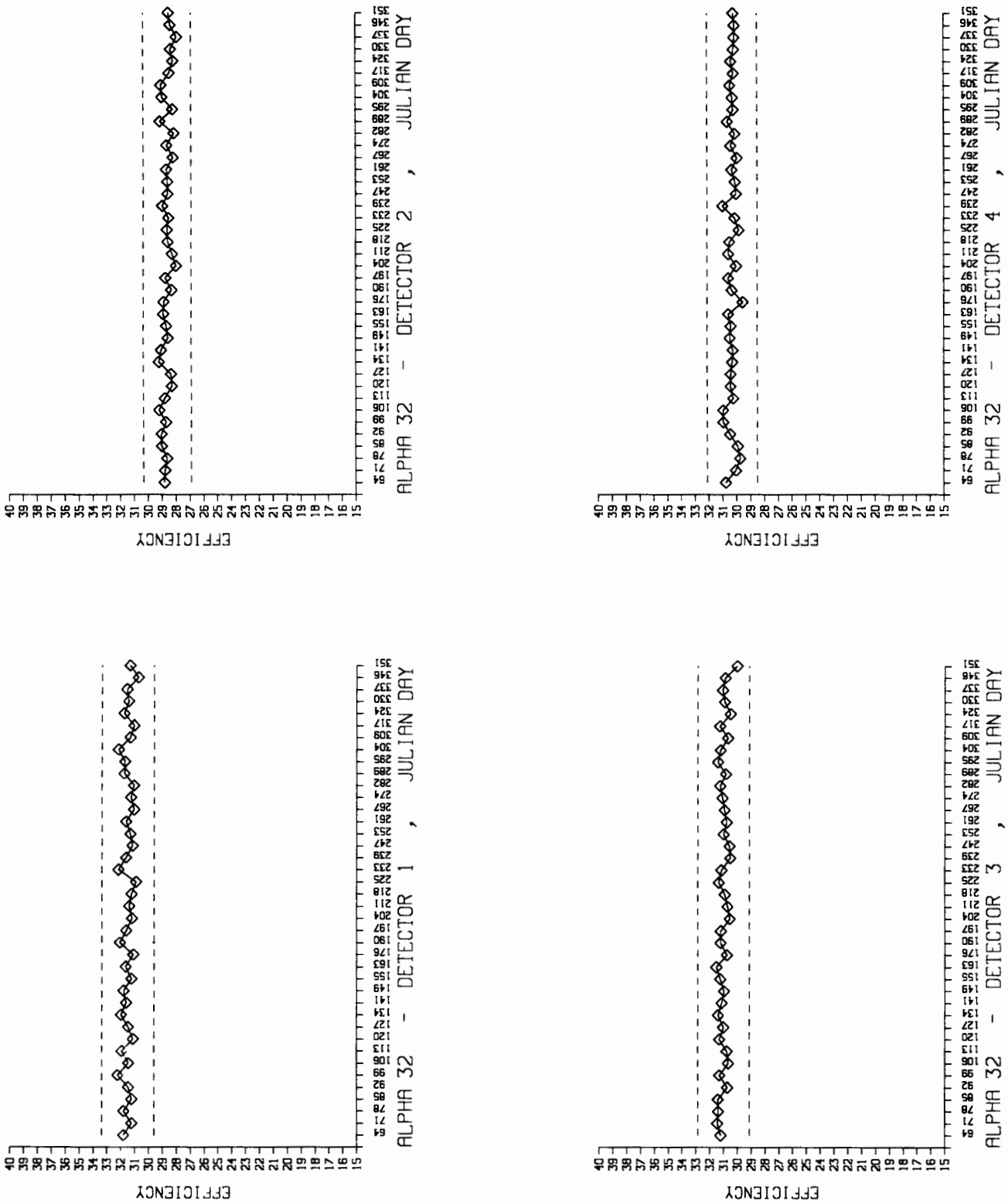
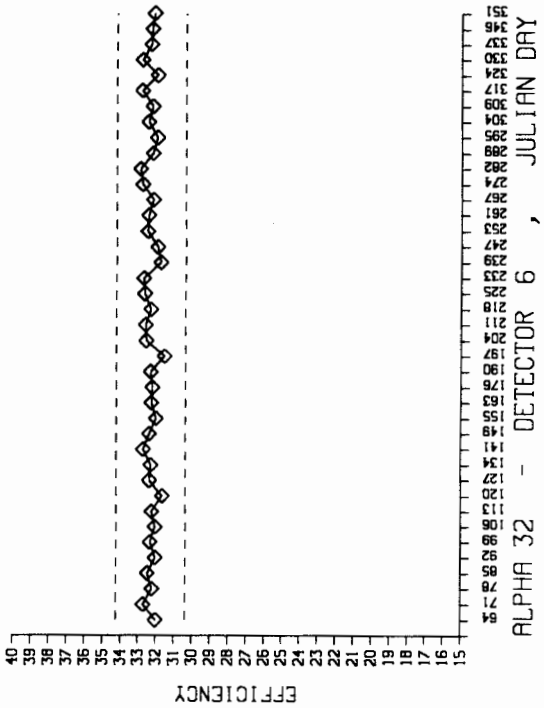
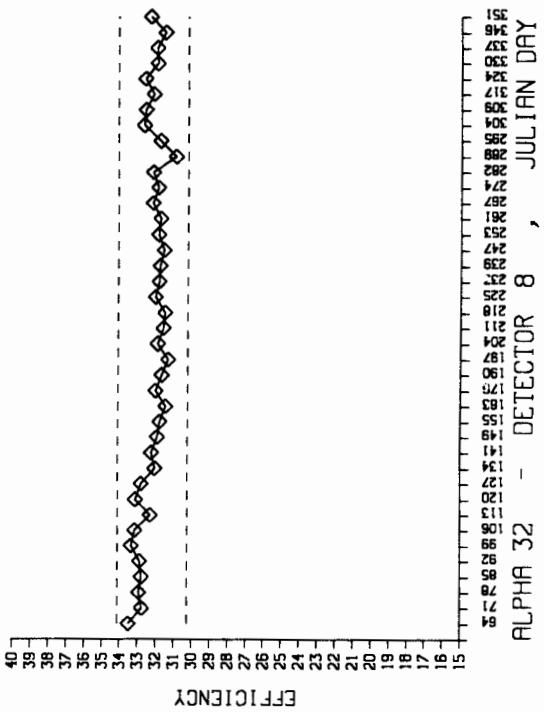
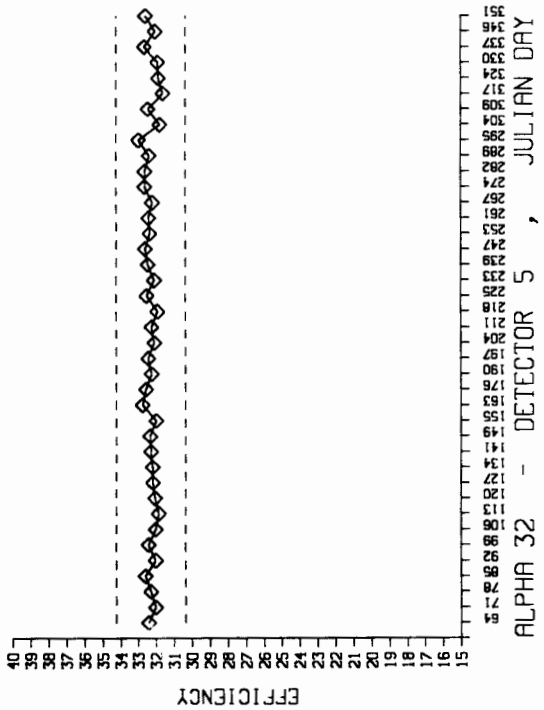

ALPHA 32 - DETECTOR 1 , JULIAN DAY
ALPHA 32 - DETECTOR 2 , JULIAN DAY
ALPHA 32 - DETECTOR 3 , JULIAN DAY
ALPHA 32 - DETECTOR 4 , JULIAN DAY
EFFICIENCY

Fig. F-2. (cont)


ALPHA 32 - DETECTOR 6 , JULIAN DAY
EFFICIENCY


ALPHA 32 - DETECTOR 8 , JULIAN DAY
EFFICIENCY


ALPHA 32 - DETECTOR 5 , JULIAN DAY
EFFICIENCY

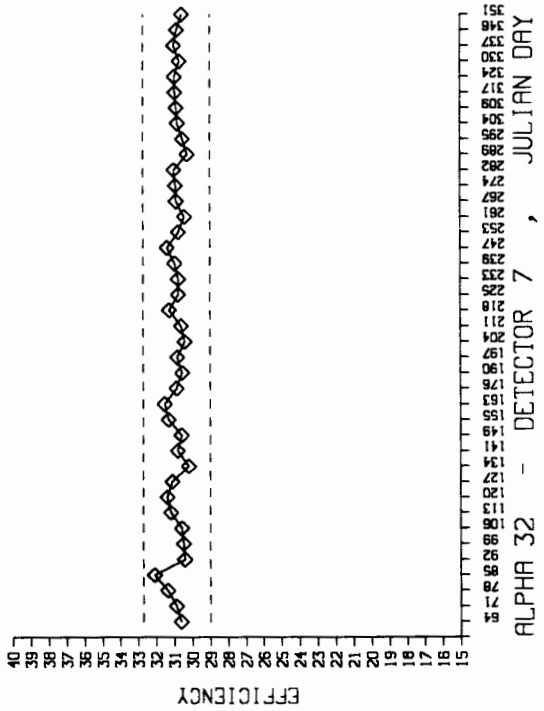

ALPHA 32 - DETECTOR 7 , JULIAN DAY
EFFICIENCY

Fig. F-2. (cont)

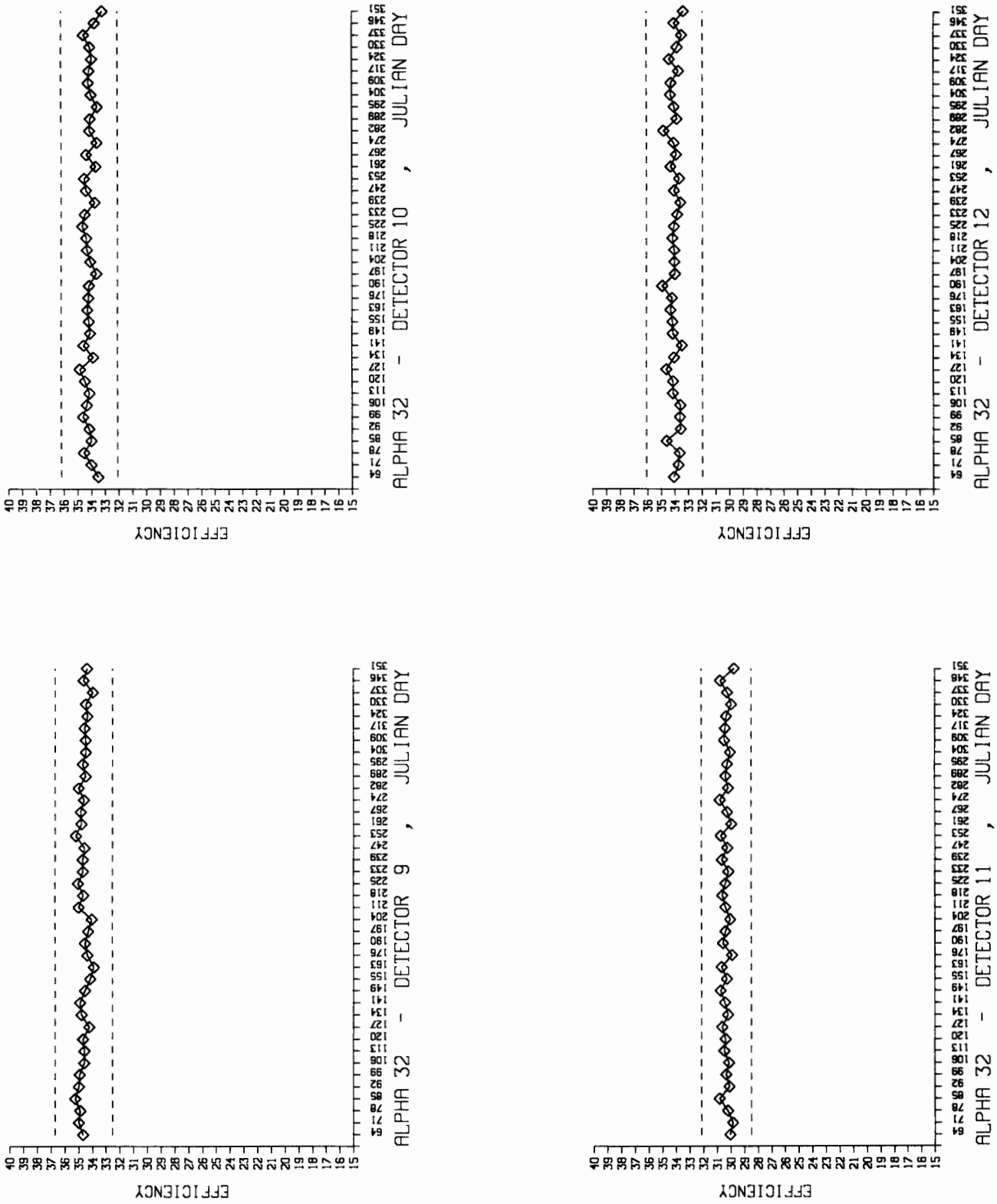
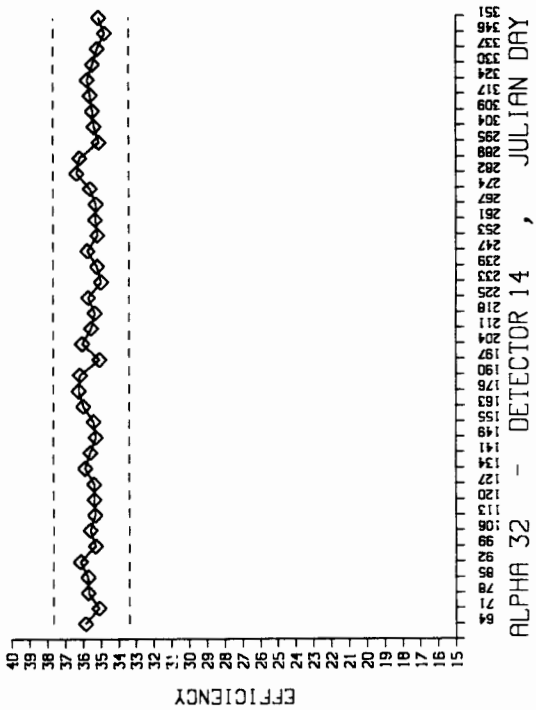
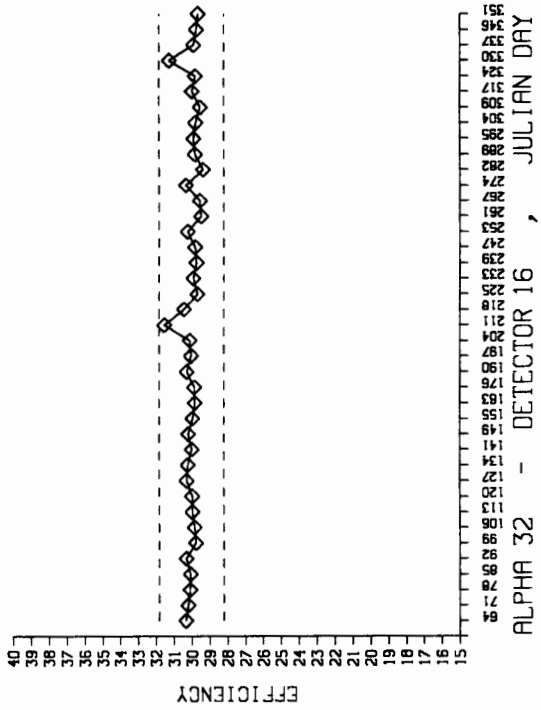
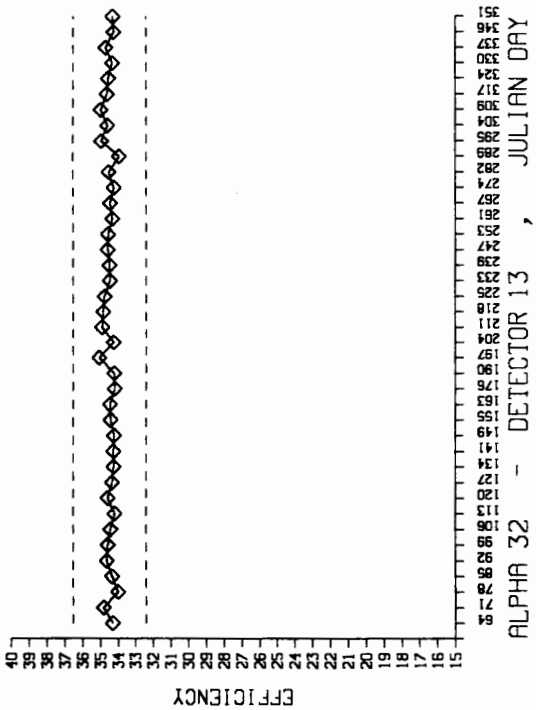

ALPHA 32 - DETECTOR 10 , JULIAN DAY
EFFICIENCY
ALPHA 32 - DETECTOR 12 , JULIAN DAY
EFFICIENCY
ALPHA 32 - DETECTOR 9 , JULIAN DAY
EFFICIENCY
ALPHA 32 - DETECTOR 11 , JULIAN DAY
EFFICIENCY

Fig. F-2. (cont)


ALPHA 32 - DETECTOR 14 , JULIAN DAY
EFFICIENCY


ALPHA 32 - DETECTOR 16 , JULIAN DAY
EFFICIENCY


ALPHA 32 - DETECTOR 13 , JULIAN DAY
EFFICIENCY

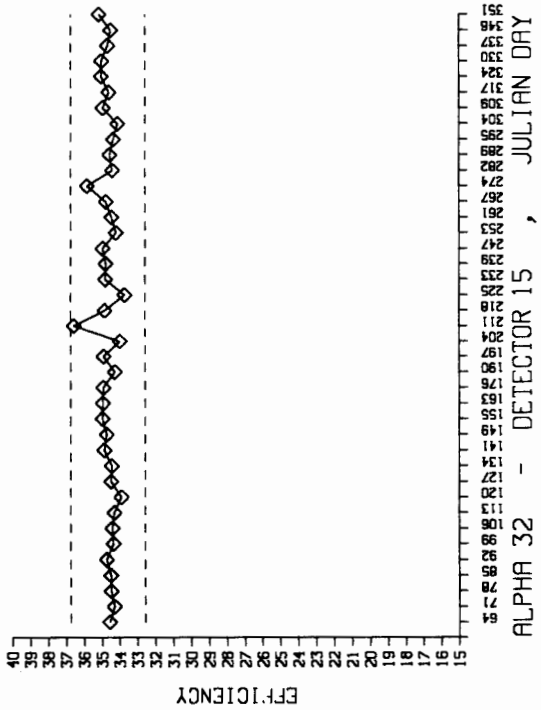
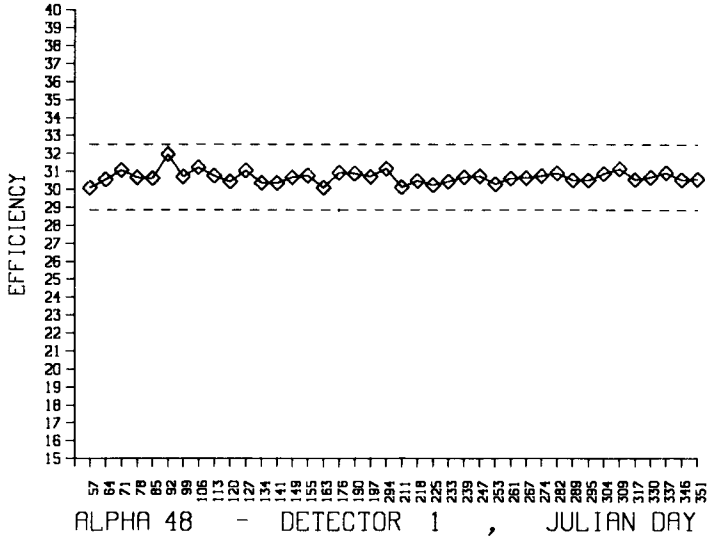
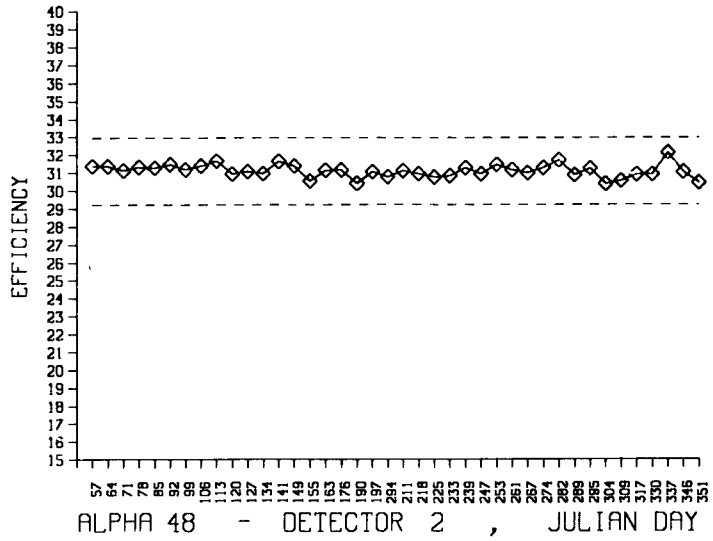
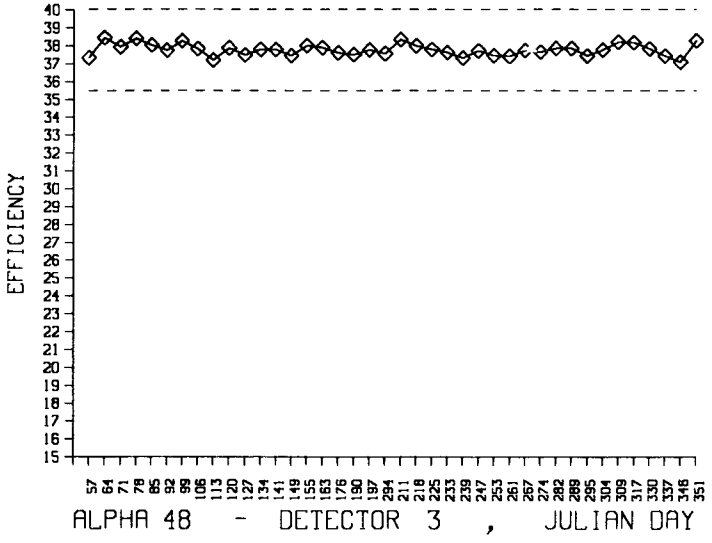

ALPHA 32 - DETECTOR 15 , JULIAN DAY
EFFICIENCY

Fig. F-2. (cont)


EFFICIENCY
ALPHA 48 - DETECTOR 1 , JULIAN DAY


EFFICIENCY
ALPHA 48 - DETECTOR 2 , JULIAN DAY


EFFICIENCY
ALPHA 48 - DETECTOR 3 , JULIAN DAY

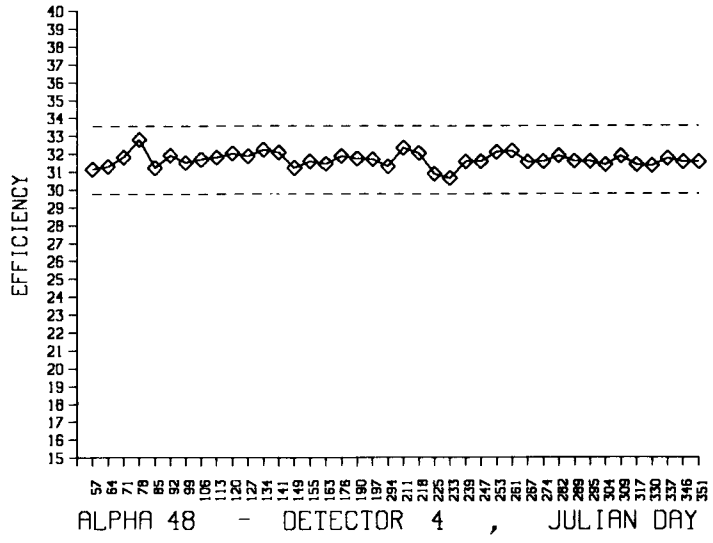
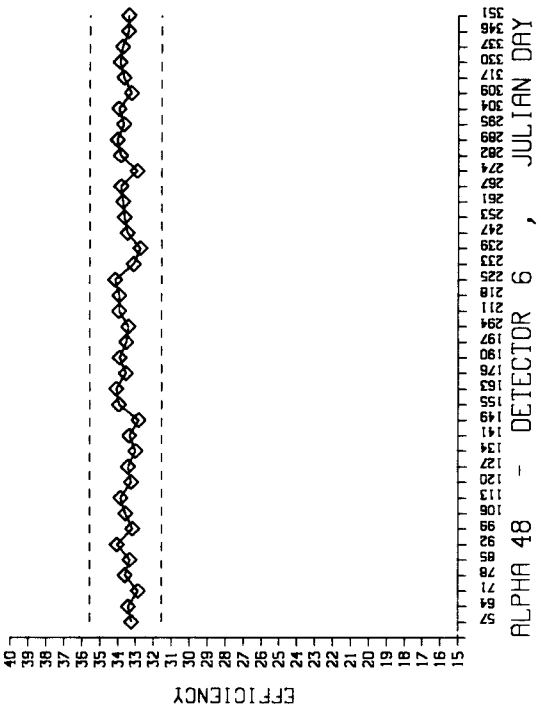
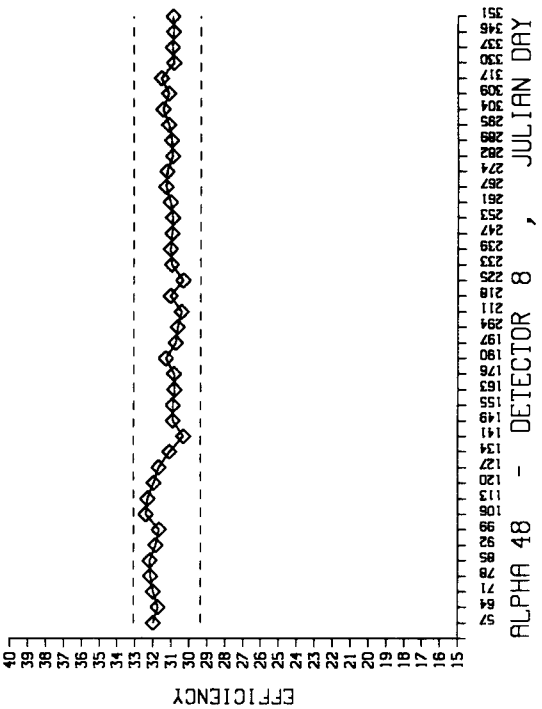
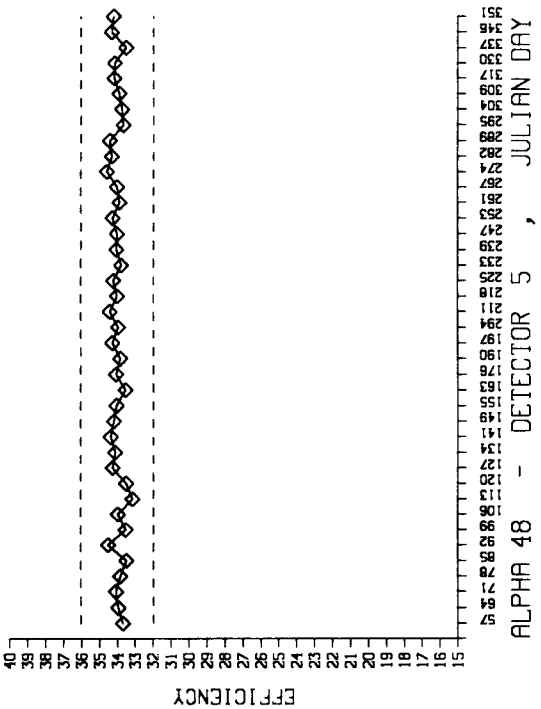

EFFICIENCY
ALPHA 48 - DETECTOR 4 , JULIAN DAY

Fig. F-2. (cont)


ALPHA 48 - DETECTOR 6 , JULIAN DAY
EFFICIENCY


ALPHA 48 - DETECTOR 8 , JULIAN DAY
EFFICIENCY


ALPHA 48 - DETECTOR 5 , JULIAN DAY
EFFICIENCY

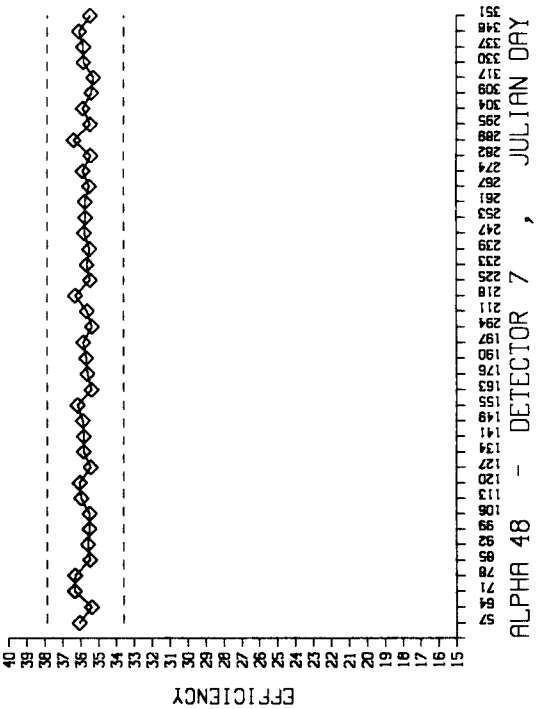

ALPHA 48 - DETECTOR 7 , JULIAN DAY
EFFICIENCY

Fig. F-2. (cont)

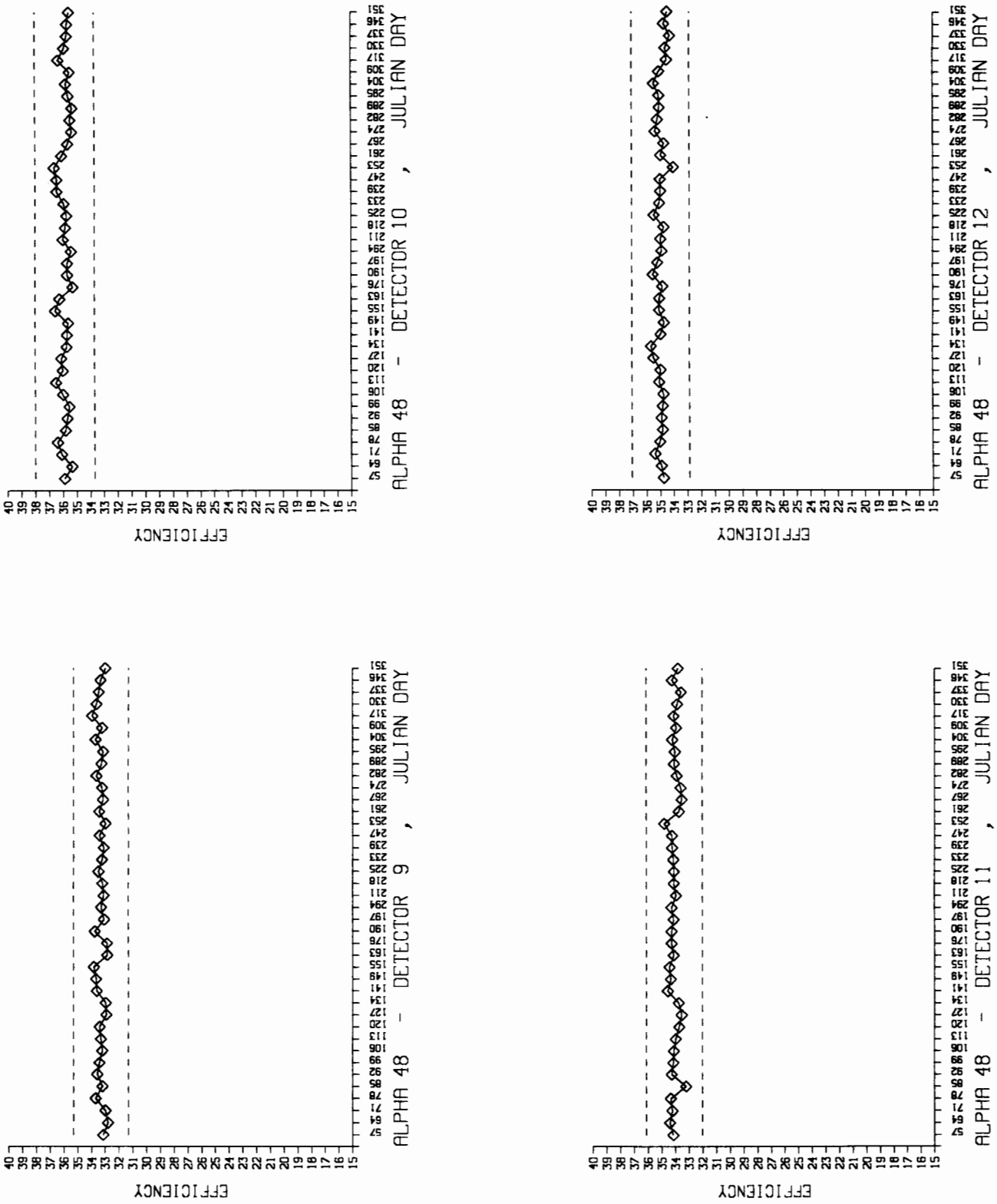
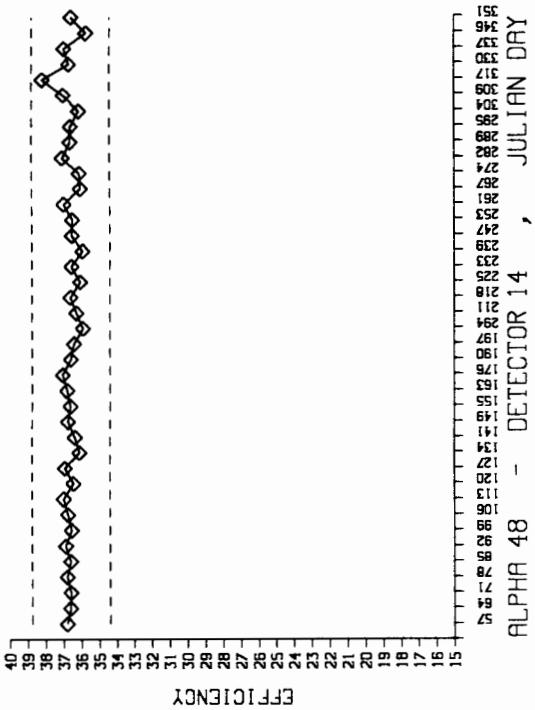
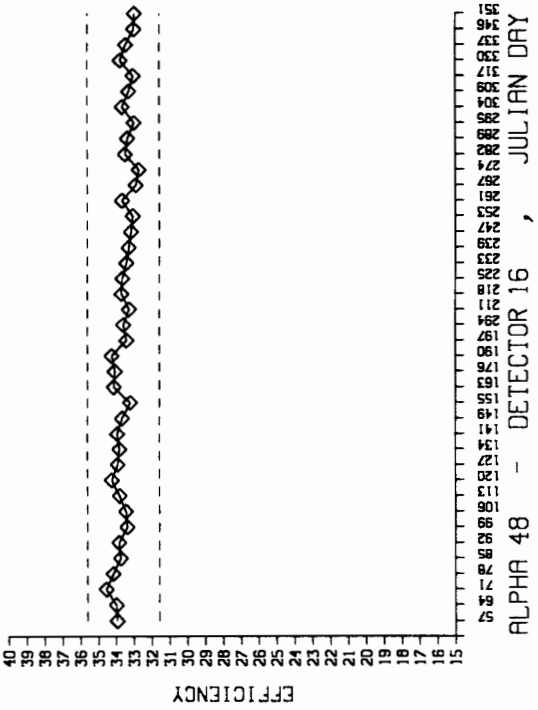
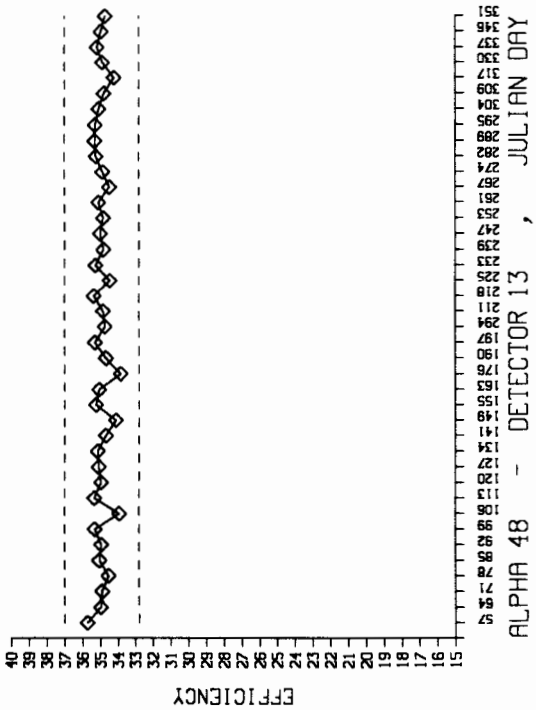

ALPHA 48 - DETECTOR 10 , JULIAN DAY
ALPHA 48 - DETECTOR 12 , JULIAN DAY
ALPHA 48 - DETECTOR 9 , JULIAN DAY
ALPHA 48 - DETECTOR 11 , JULIAN DAY
EFFICIENCY

Fig. F-2. (cont)


ALPHA 48 - DETECTOR 14 , JULIAN DAY
EFFICIENCY


ALPHA 48 - DETECTOR 16 , JULIAN DAY
EFFICIENCY


ALPHA 48 - DETECTOR 13 , JULIAN DAY
EFFICIENCY

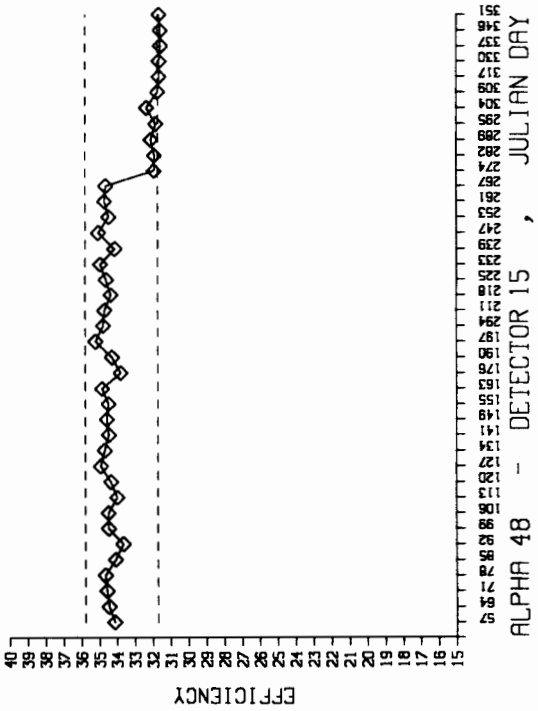

ALPHA 48 - DETECTOR 15 , JULIAN DAY
EFFICIENCY

Fig. F-2. (cont)

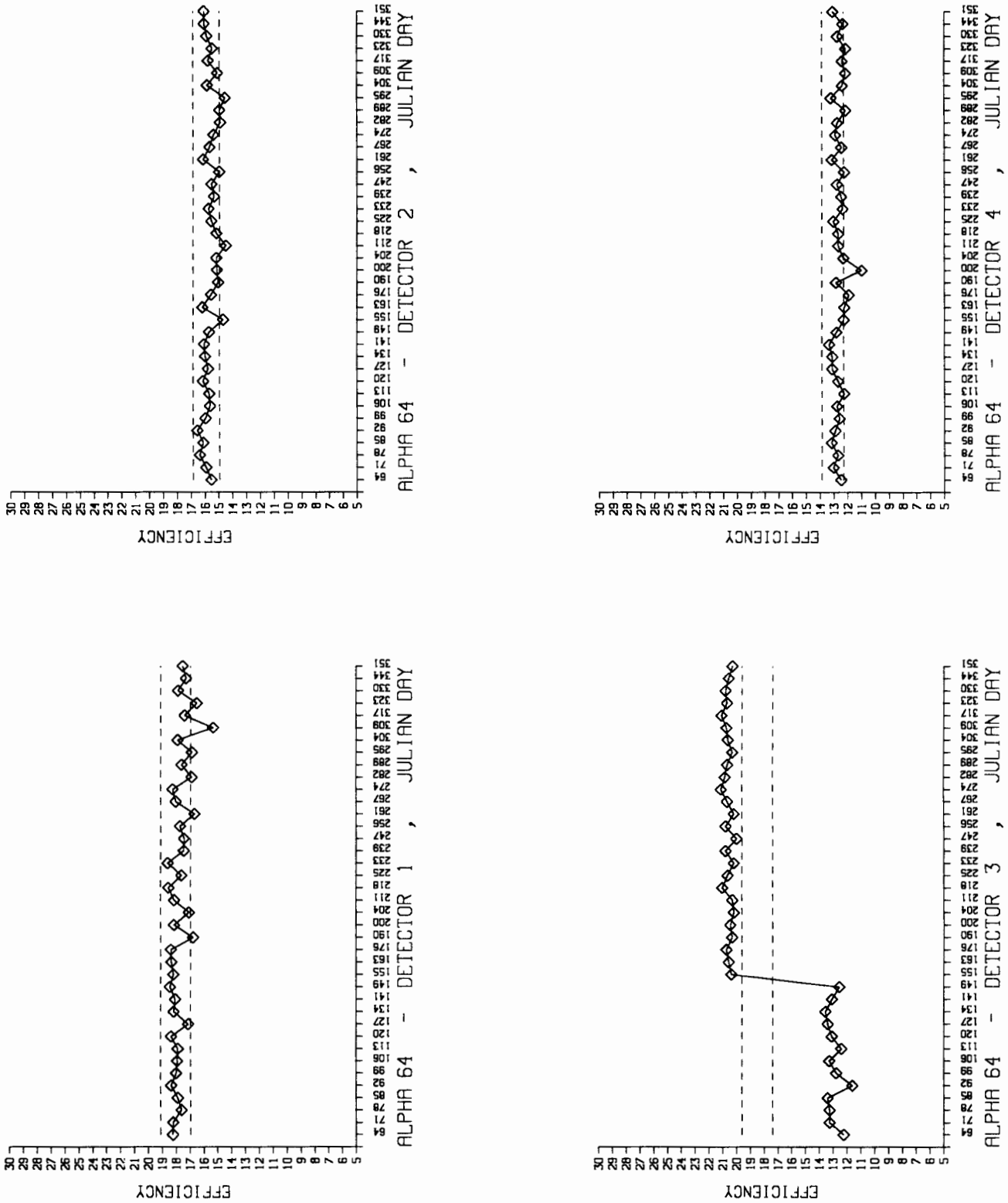
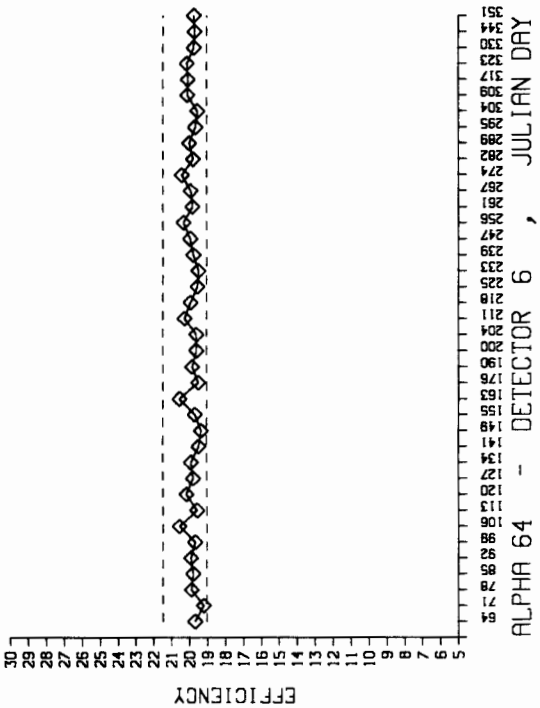
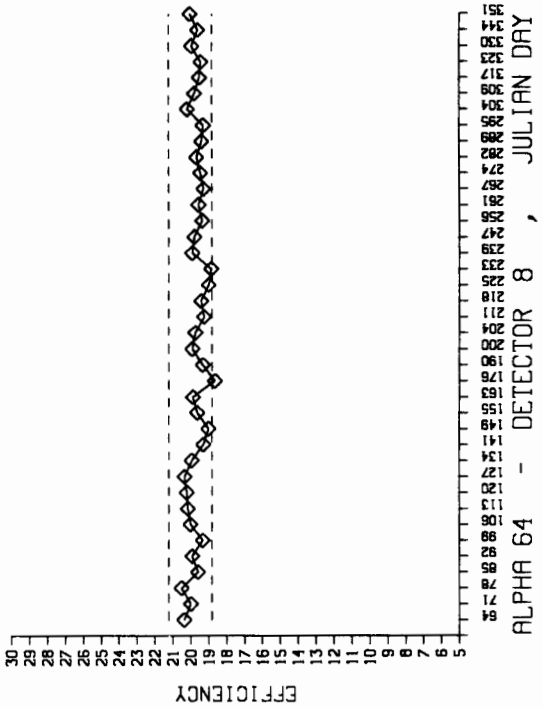
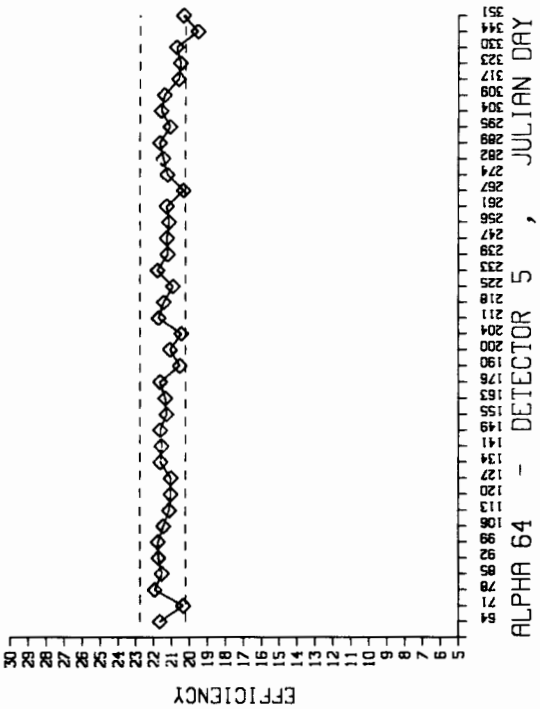

ALPHA 64 - DETECTOR 1 , JULIAN DAY
EFFICIENCY
ALPHA 64 - DETECTOR 2 , JULIAN DAY
EFFICIENCY
ALPHA 64 - DETECTOR 3 , JULIAN DAY
EFFICIENCY
ALPHA 64 - DETECTOR 4 , JULIAN DAY
EFFICIENCY

Fig. F-2. (cont)


ALPHA 64 - DETECTOR 6 , JULIAN DAY
EFFICIENCY


ALPHA 64 - DETECTOR 8 , JULIAN DAY
EFFICIENCY


ALPHA 64 - DETECTOR 5 , JULIAN DAY
EFFICIENCY

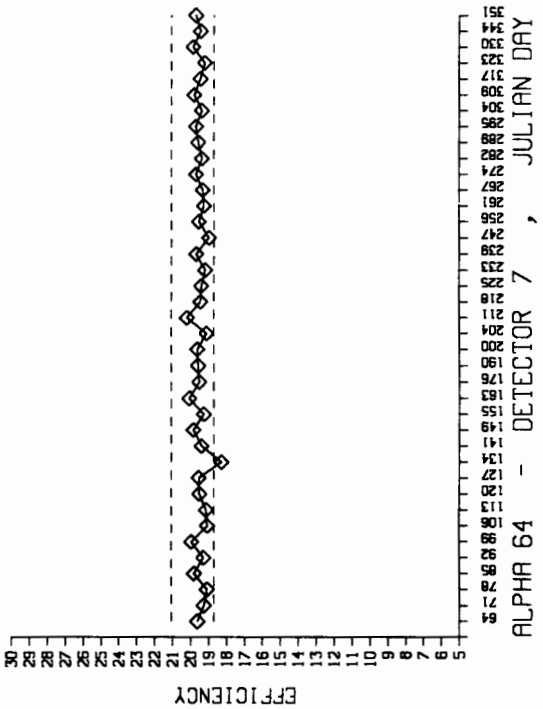

ALPHA 64 - DETECTOR 7 , JULIAN DAY
EFFICIENCY

Fig. F-2. (cont)

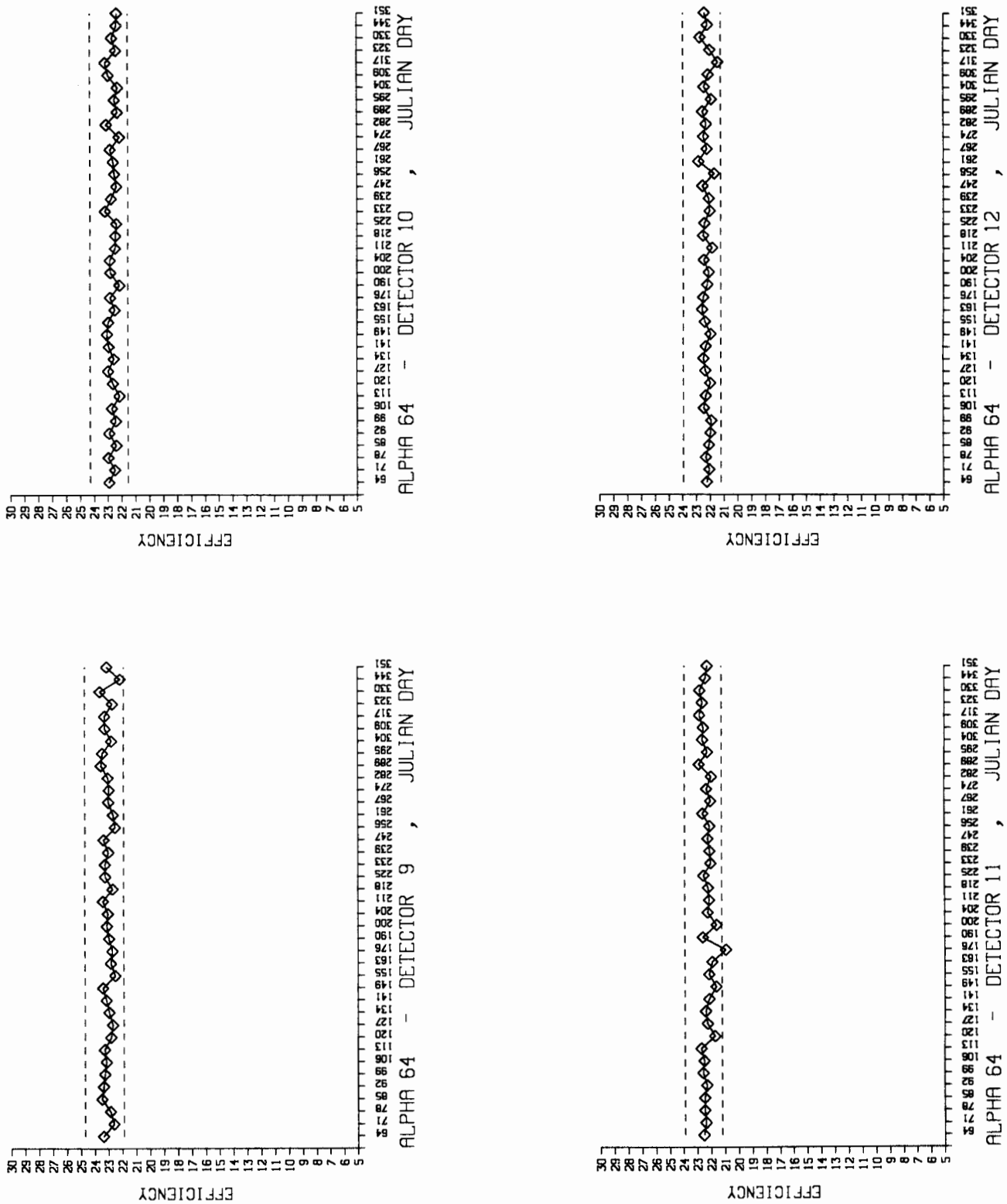
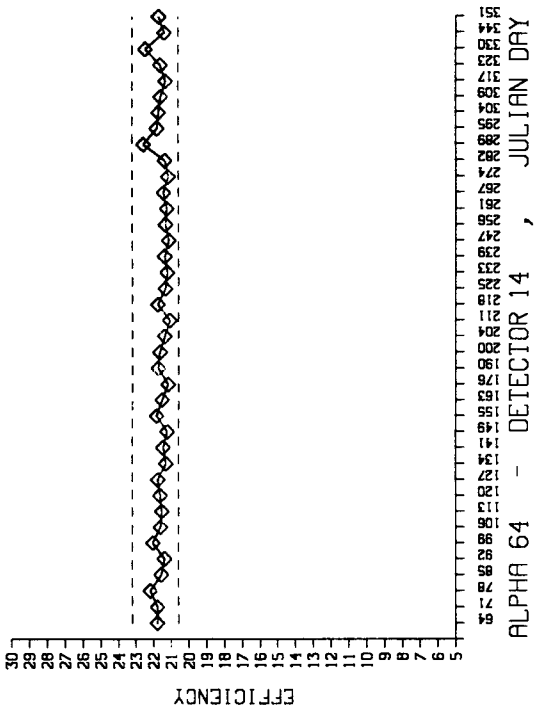
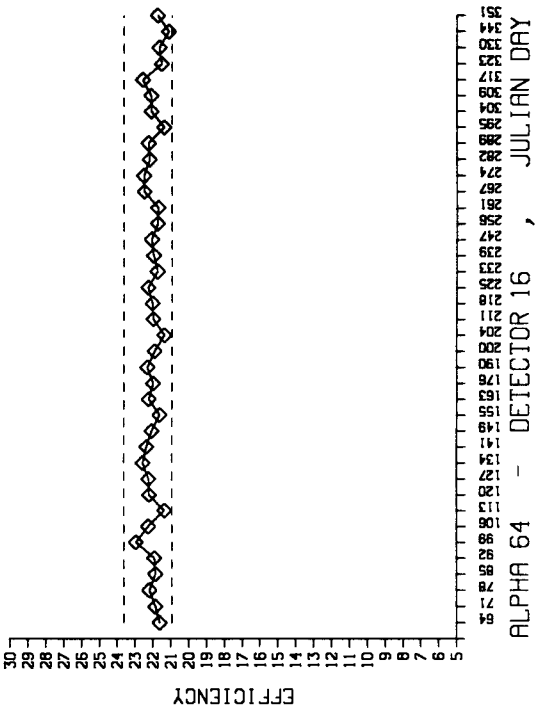
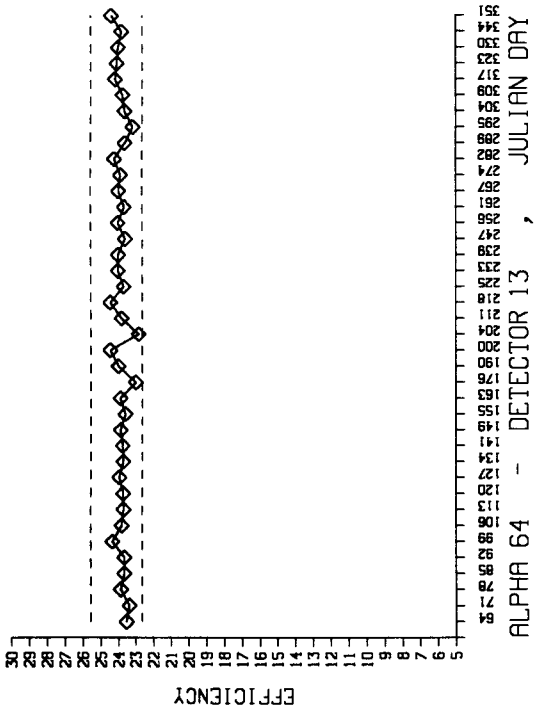

ALPHA 64 - DETECTOR 9 , JULIAN DAY
EFFICIENCY
ALPHA 64 - DETECTOR 10 , JULIAN DAY
EFFICIENCY
ALPHA 64 - DETECTOR 11 , JULIAN DAY
EFFICIENCY
ALPHA 64 - DETECTOR 12 , JULIAN DAY
EFFICIENCY

Fig. F-2. (cont)


ALPHA 64 - DETECTOR 14 , JULIAN DAY
EFFICIENCY


ALPHA 64 - DETECTOR 16 , JULIAN DAY
EFFICIENCY


ALPHA 64 - DETECTOR 13 , JULIAN DAY
EFFICIENCY

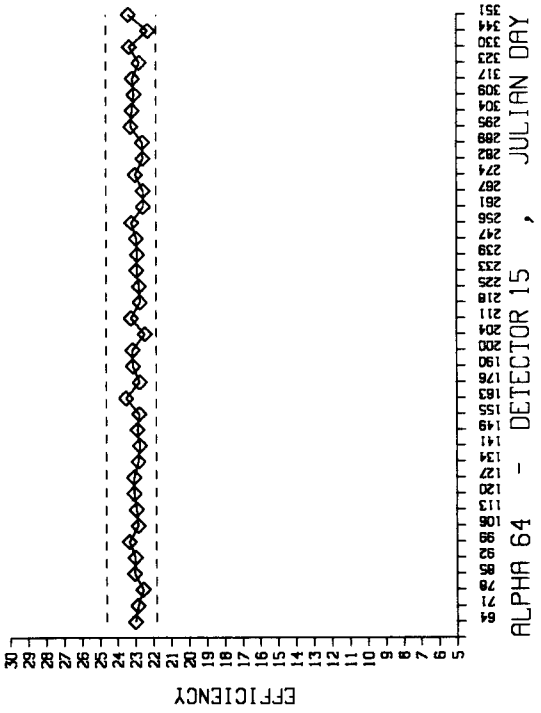
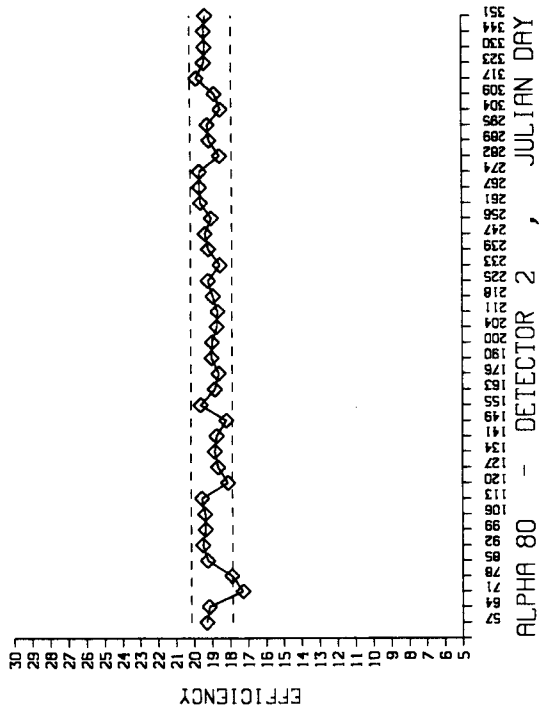
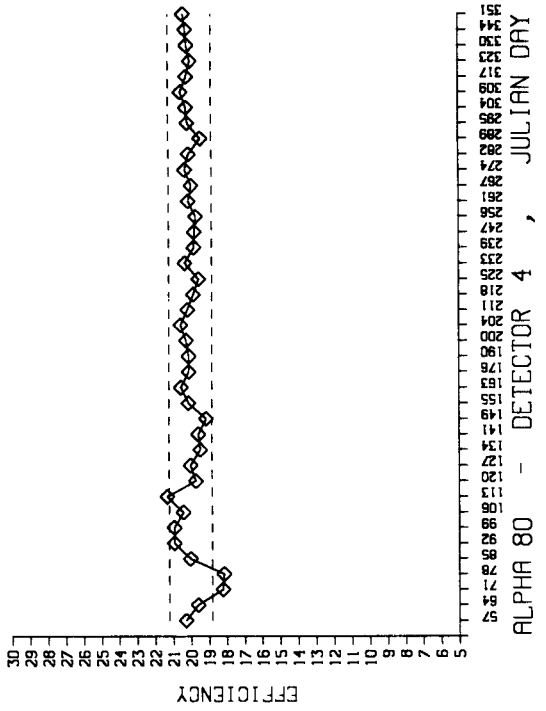
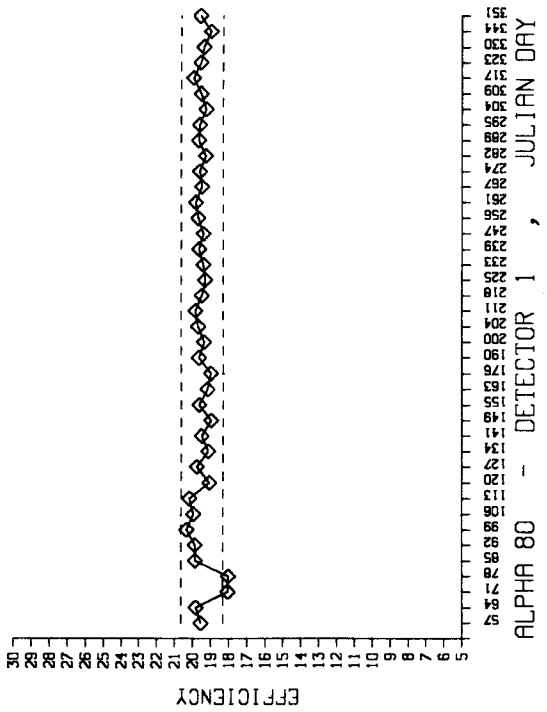

ALPHA 64 - DETECTOR 15 , JULIAN DAY
EFFICIENCY

Fig. F-2. (cont)


ALPHA 80 - DETECTOR 2 , JULIAN DAY
EFFICIENCY


ALPHA 80 - DETECTOR 4 , JULIAN DAY
EFFICIENCY


ALPHA 80 - DETECTOR 1 , JULIAN DAY
EFFICIENCY

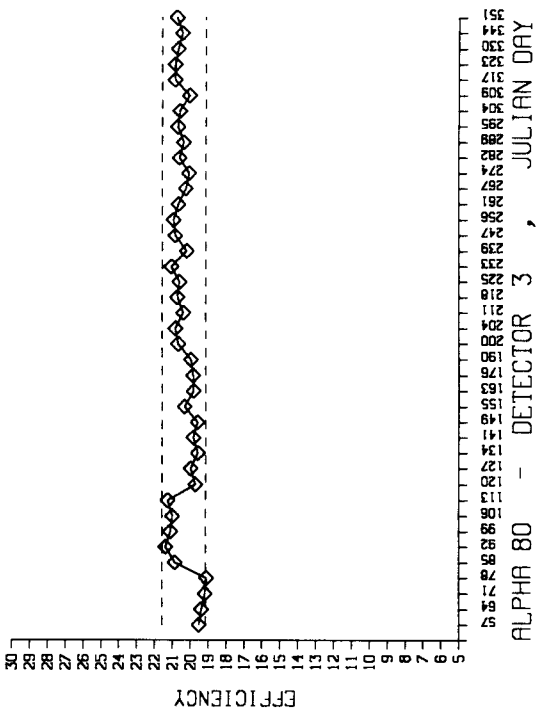
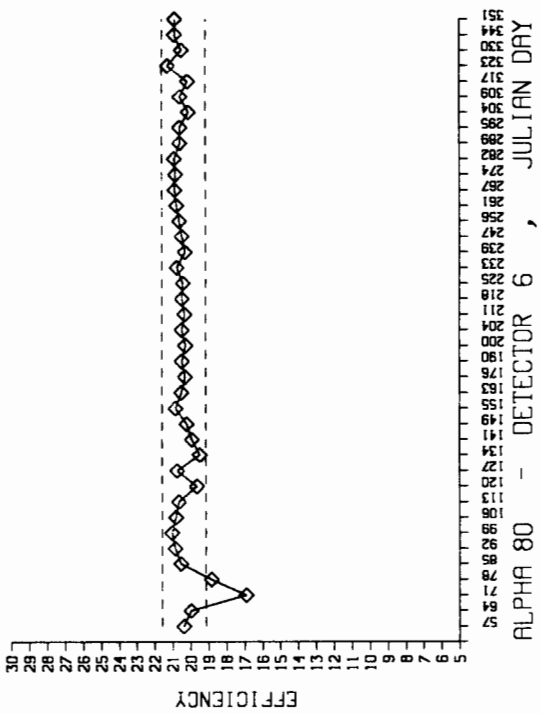
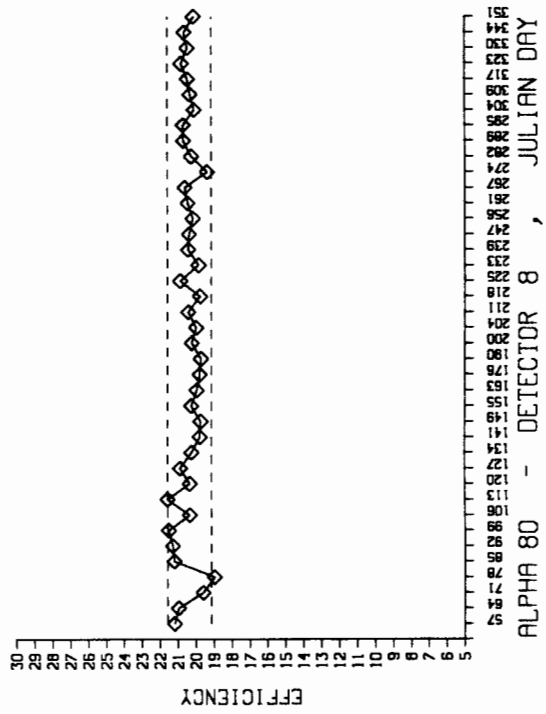
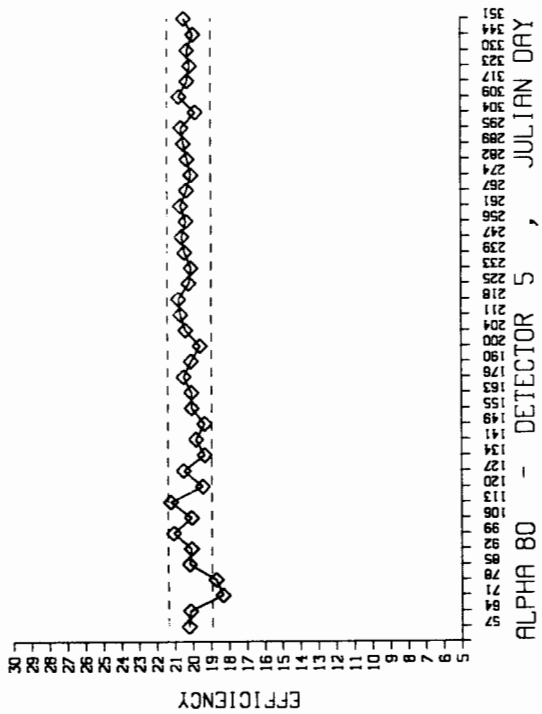

ALPHA 80 - DETECTOR 3 , JULIAN DAY
EFFICIENCY

Fig. F-2. (cont)


ALPHA 80 - DETECTOR 6 , JULIAN DAY
EFFICIENCY


ALPHA 80 - DETECTOR 8 , JULIAN DAY
EFFICIENCY


ALPHA 80 - DETECTOR 5 , JULIAN DAY
EFFICIENCY

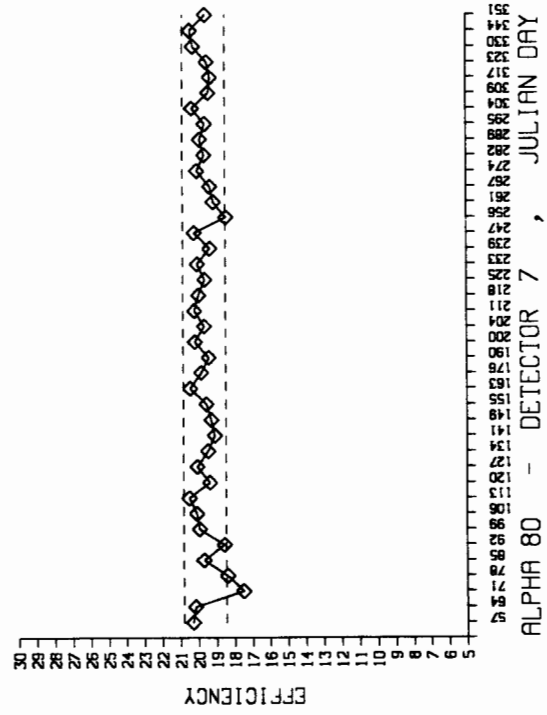
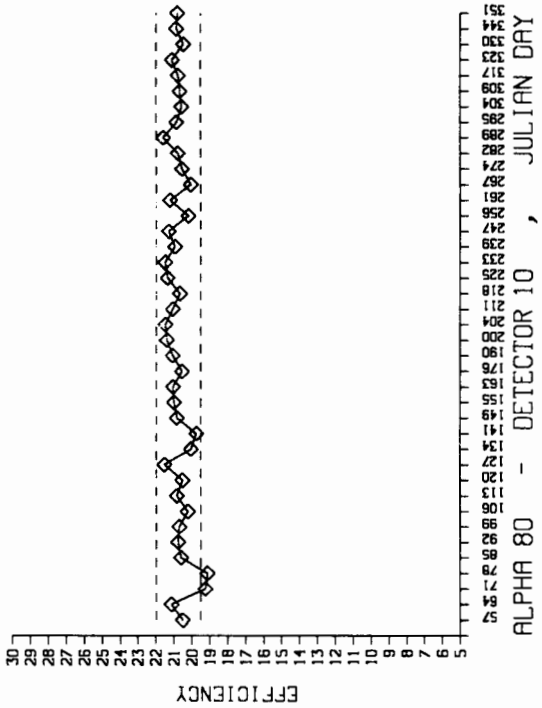
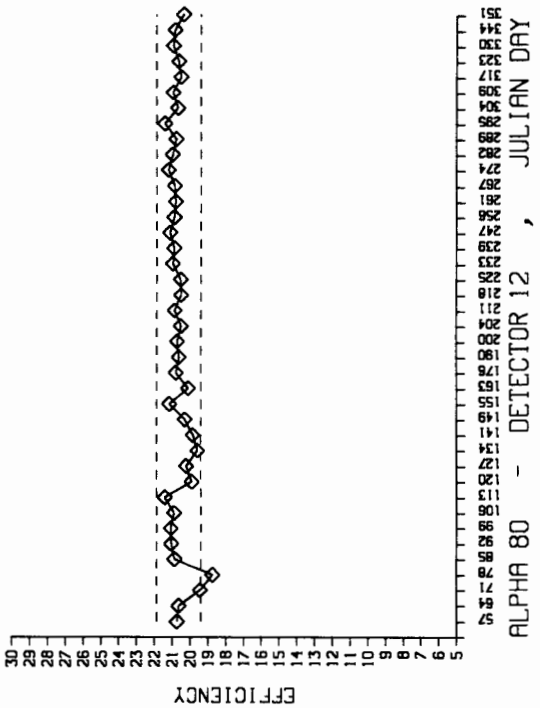
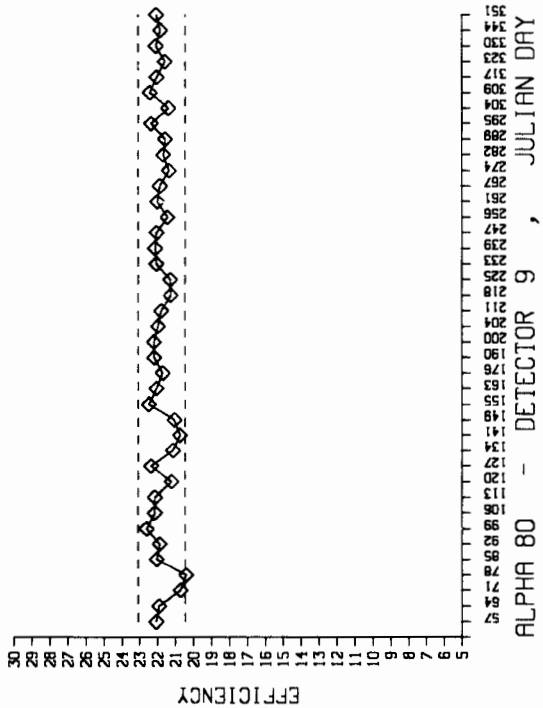

ALPHA 80 - DETECTOR 7 , JULIAN DAY
EFFICIENCY

Fig. F-2. (cont)


ALPHA 80 - DETECTOR 10 , JULIAN DAY
EFFICIENCY


ALPHA 80 - DETECTOR 12 , JULIAN DAY
EFFICIENCY


ALPHA 80 - DETECTOR 9 , JULIAN DAY
EFFICIENCY

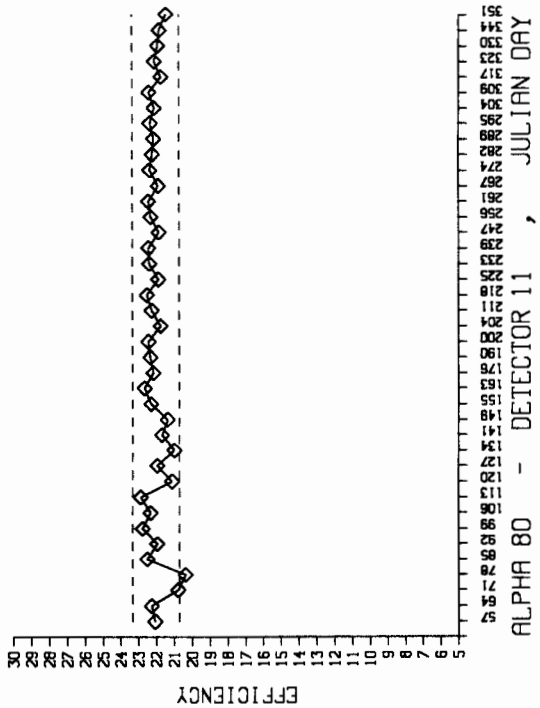
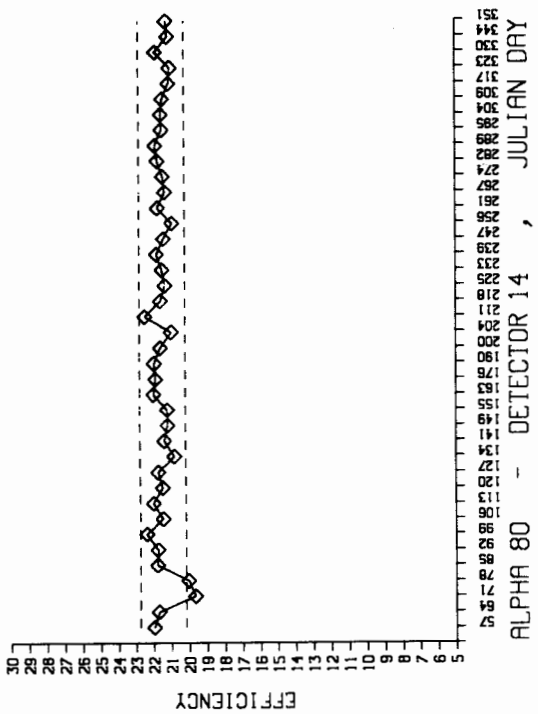
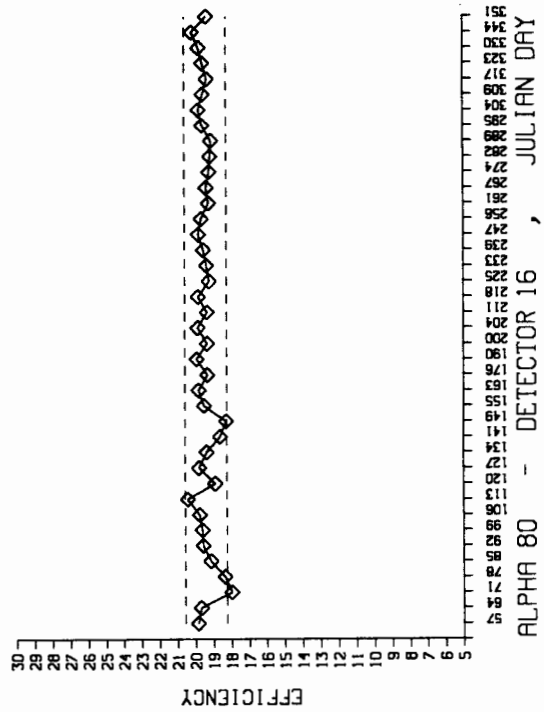
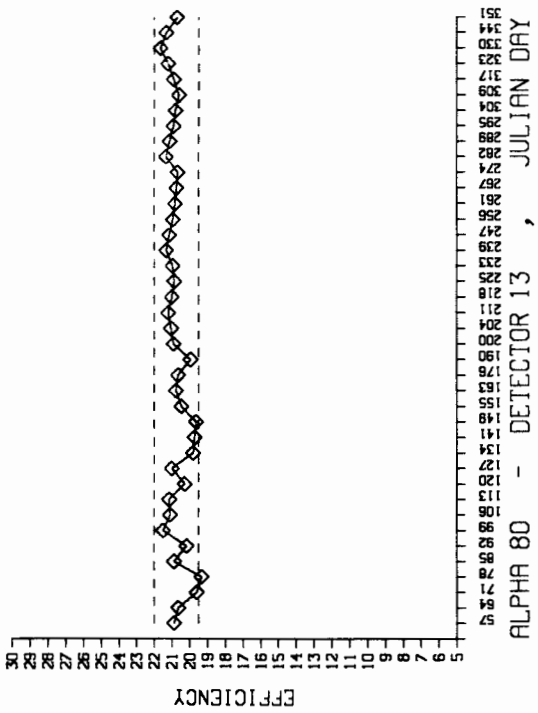
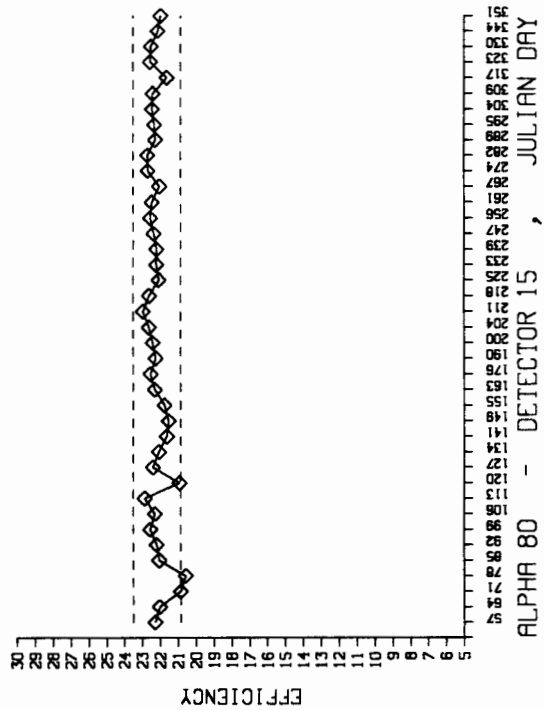

ALPHA 80 - DETECTOR 11 , JULIAN DAY
EFFICIENCY

Fig. F-2. (cont)







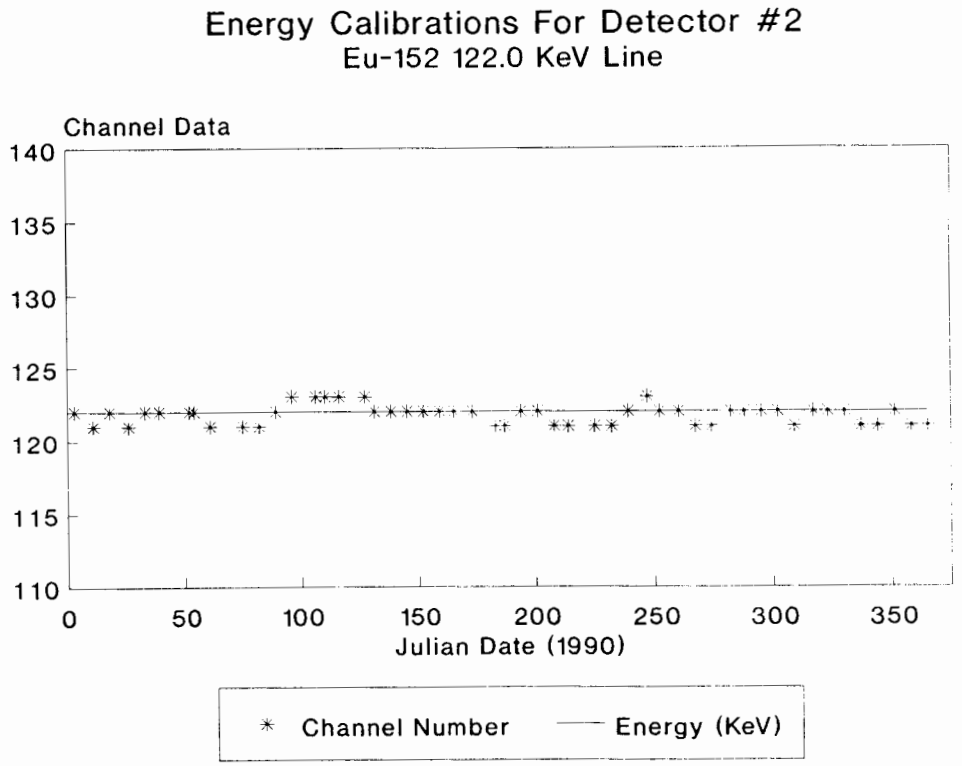


NOTE: Fluctuations in these data are documented in Laboratory notebook A8192 and are generally due to a detector being replaced or needing cleaning, electrical power surges and failures, vacuum system leaks, and electronic noise.

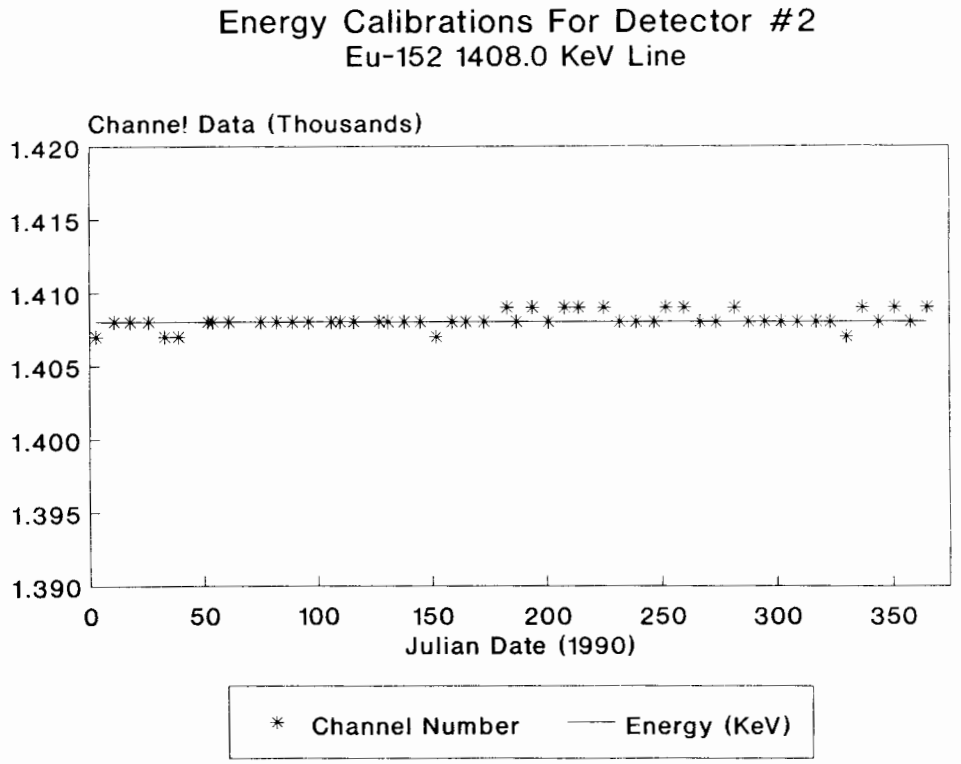
Fig. F-2. (cont)

Gamma Spectrometer and Liquid Scintillation

Background and Efficiency Data

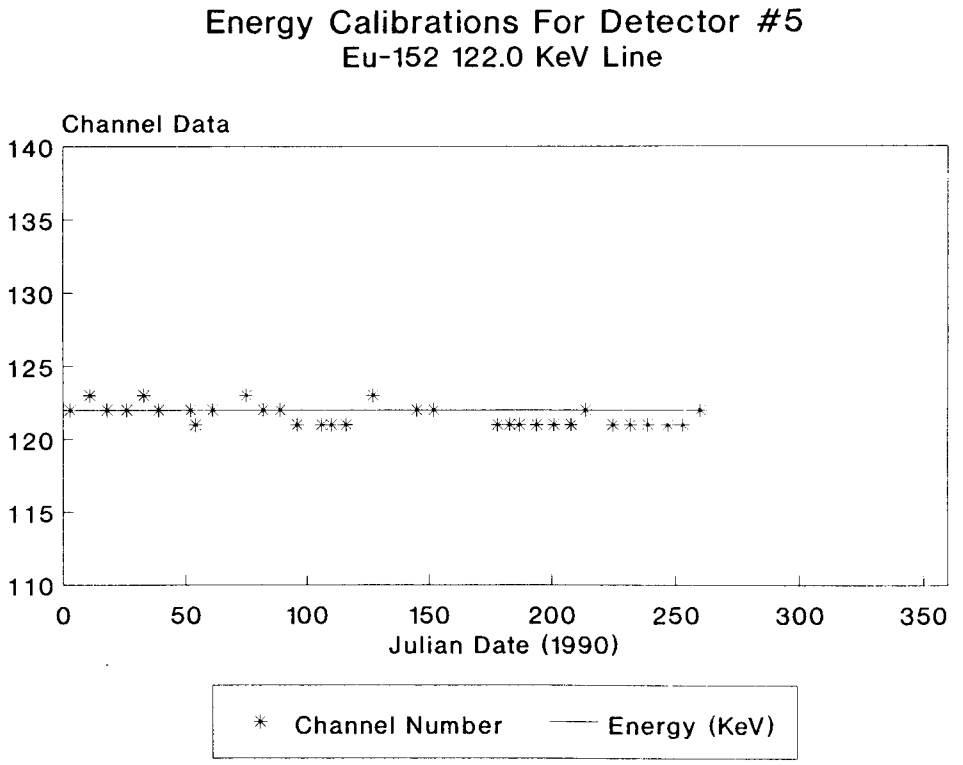


(1990 Data)

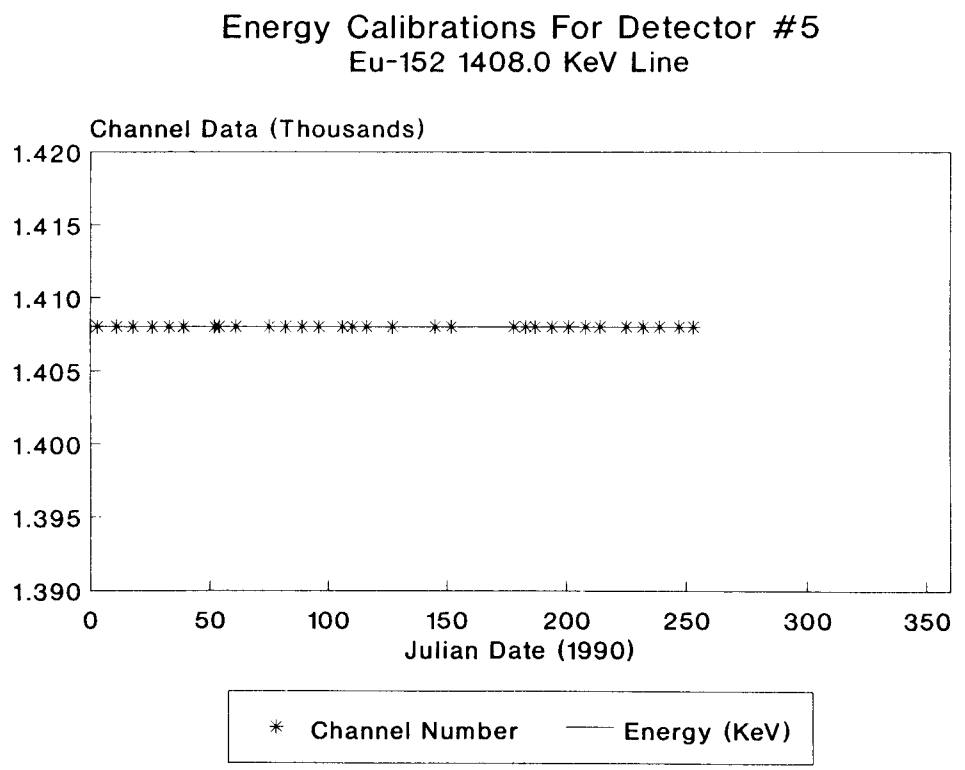


(1990 Data)

Fig. F-3. Energy calibrations for gamma detectors.

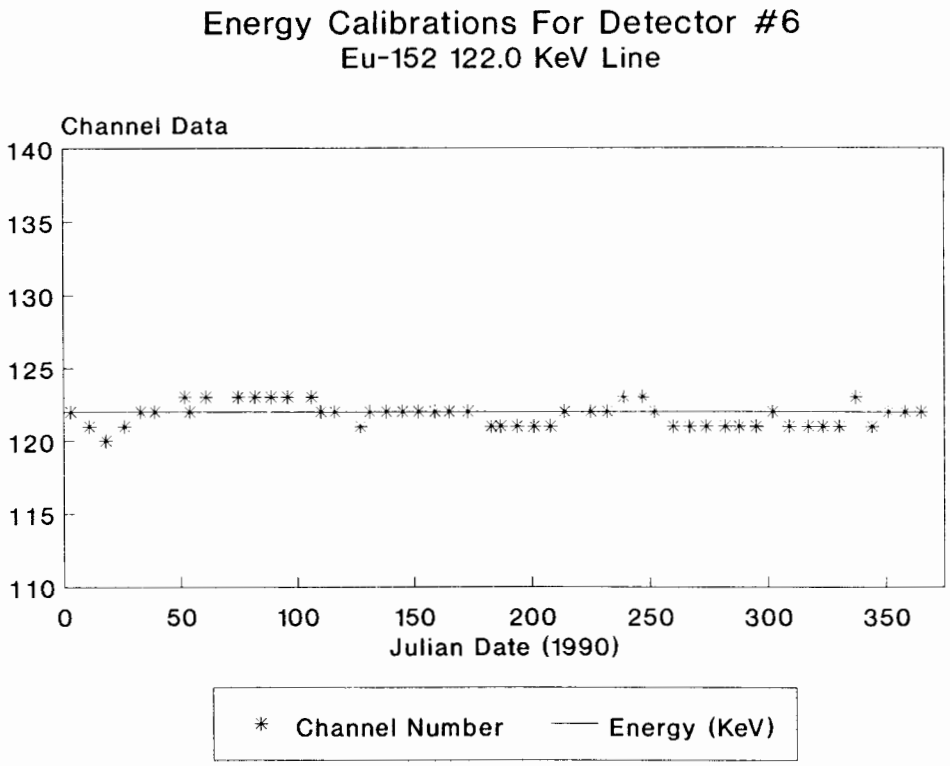


(1990 Data)

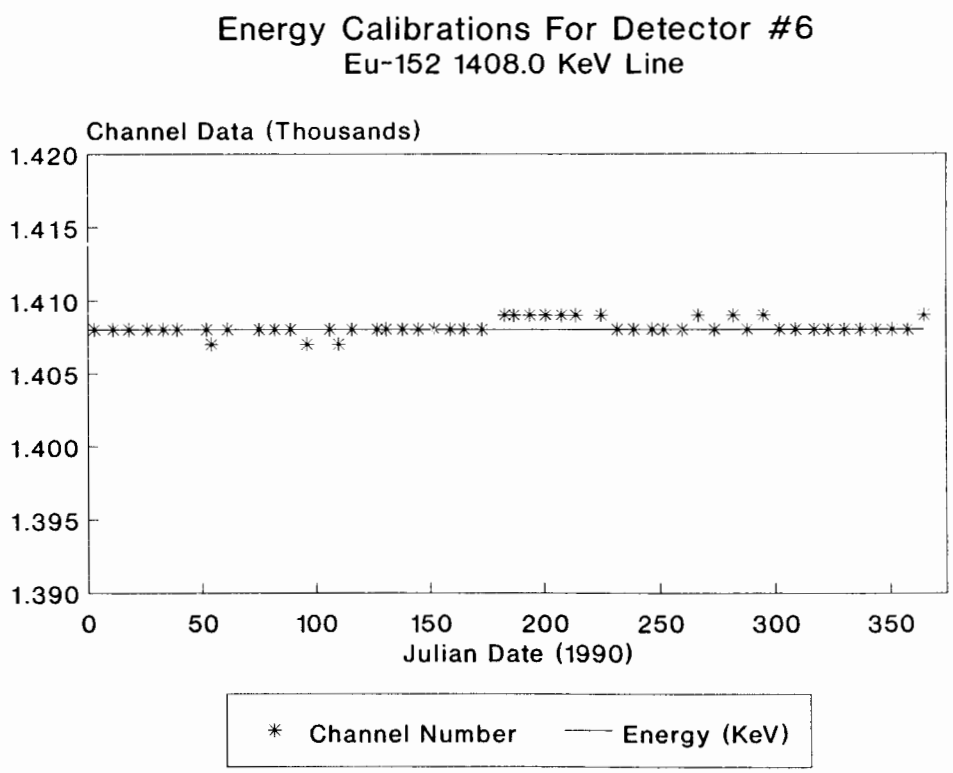


(1990 Data)

Fig. F-3. (cont)

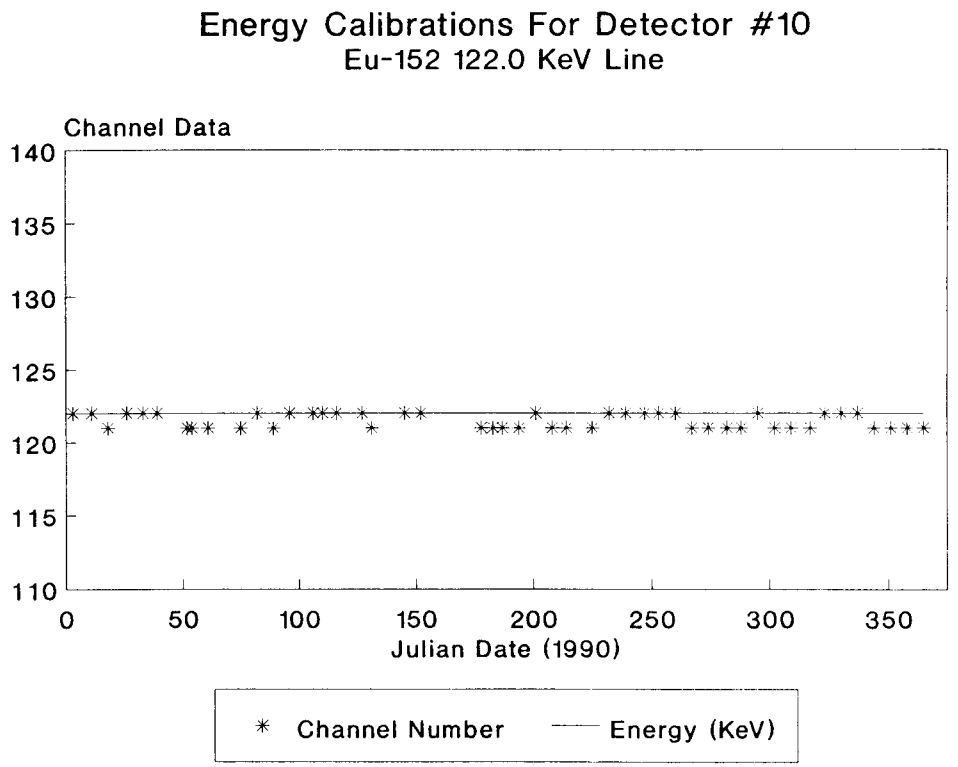


(1990 Data)

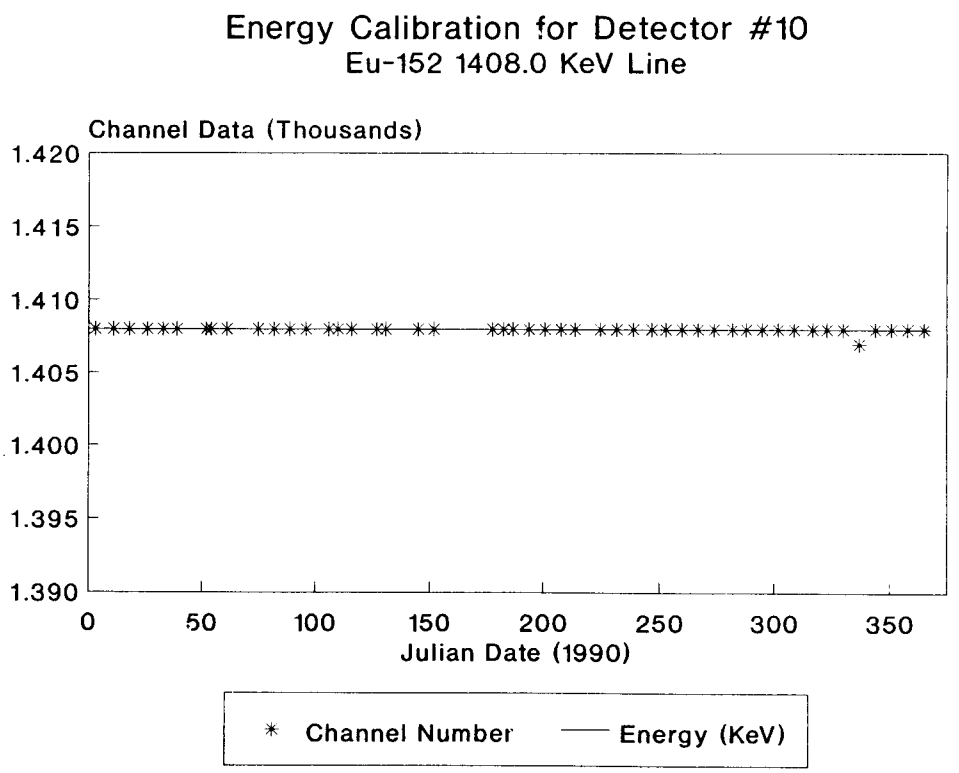


(1990 Data)

Fig. F-3. (cont)

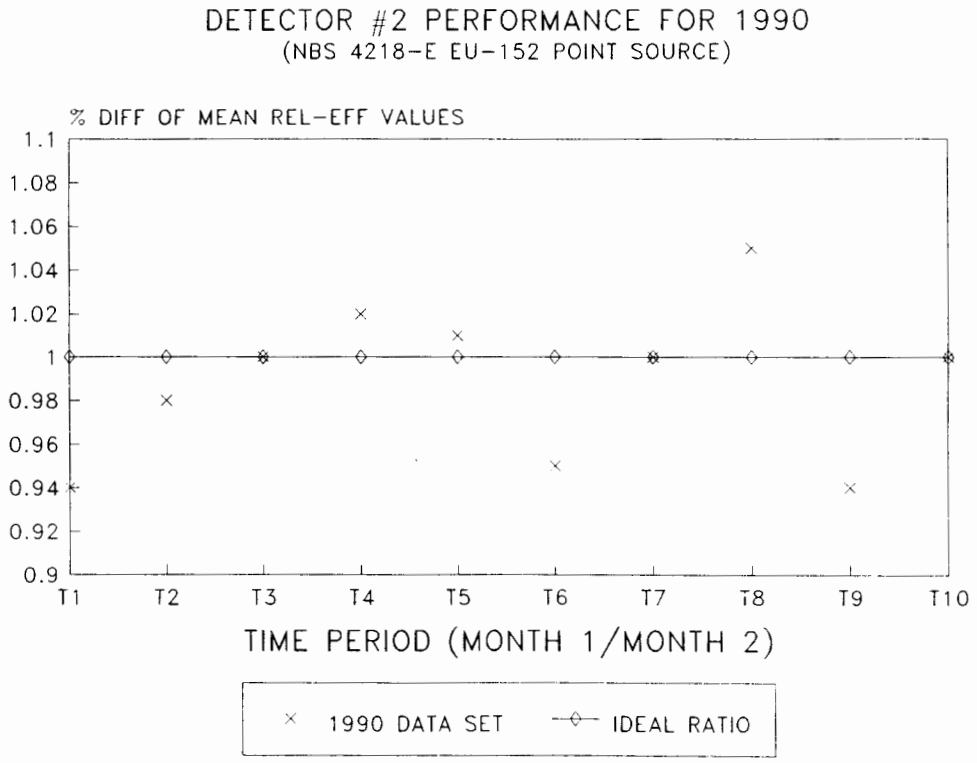


(1990 Data)



(1990 Data)

Fig. F-3. (cont)



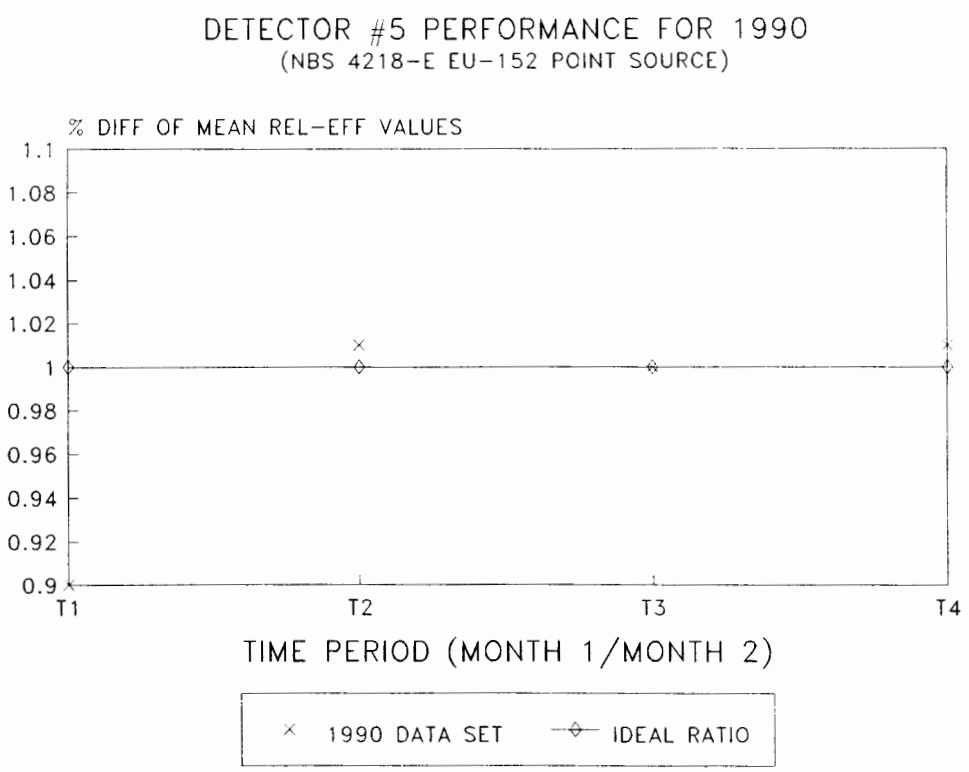
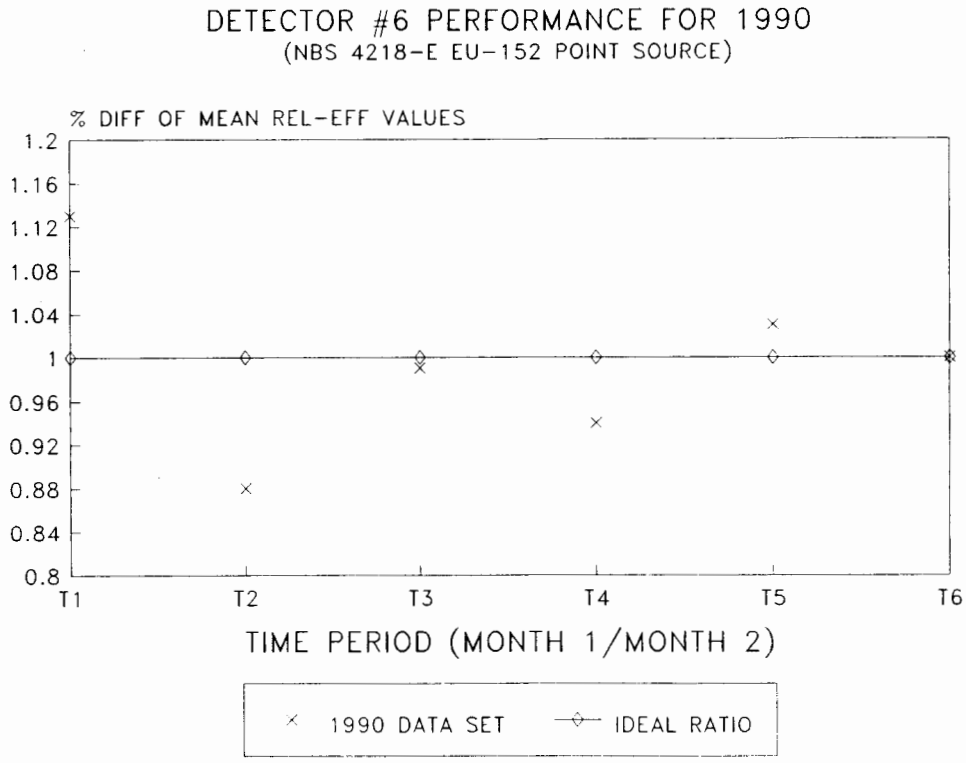


Fig. F-4. Gamma spectrometer relative efficiencies.


DETECTOR #6 PERFORMANCE FOR 1990
(NBS 4218-E EU-152 POINT SOURCE)
% DIFF OF MEAN REL-EFF VALUES
1.2
1.16
1.12
1.08
1.04
1
0.96
0.92
0.88
0.84
0.8
T1
T2
T3
T4
T5
T6
TIME PERIOD (MONTH 1/MONTH 2)
1990 DATA SET
IDEAL RATIO

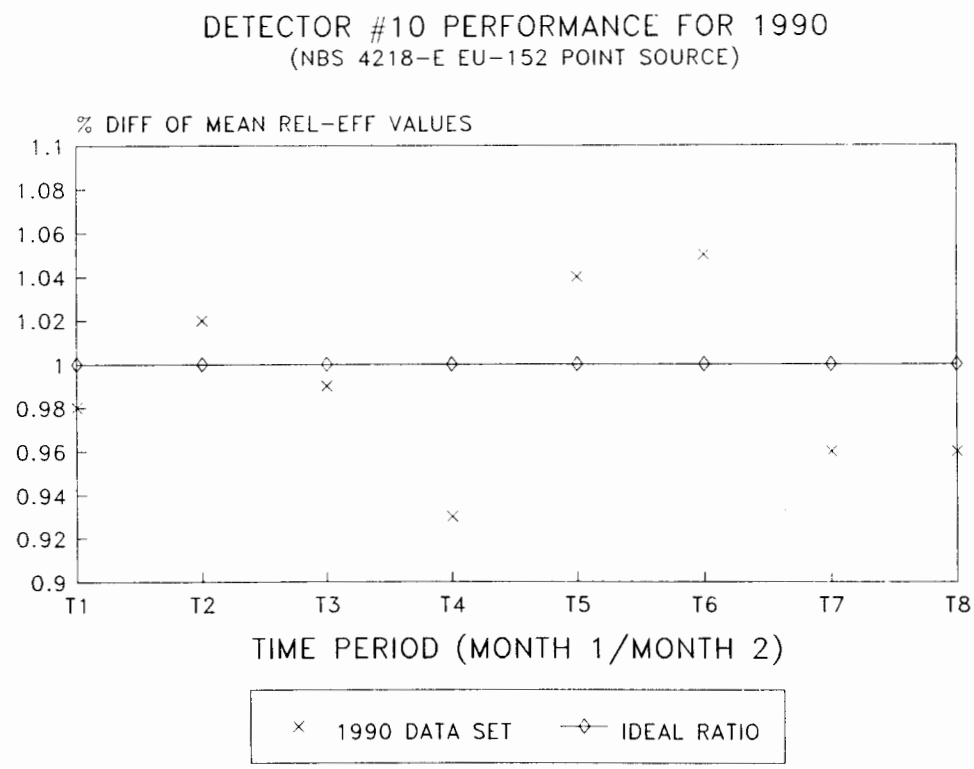

DETECTOR #10 PERFORMANCE FOR 1990
(NBS 4218-E EU-152 POINT SOURCE)
% DIFF OF MEAN REL-EFF VALUES
1.1
1.08
1.06
1.04
1.02
1
0.98
0.96
0.94
0.92
0.9
T1
T2
T3
T4
T5
T6
T7
T8
TIME PERIOD (MONTH 1/MONTH 2)
1990 DATA SET
IDEAL RATIO

Fig. F-4. (cont)

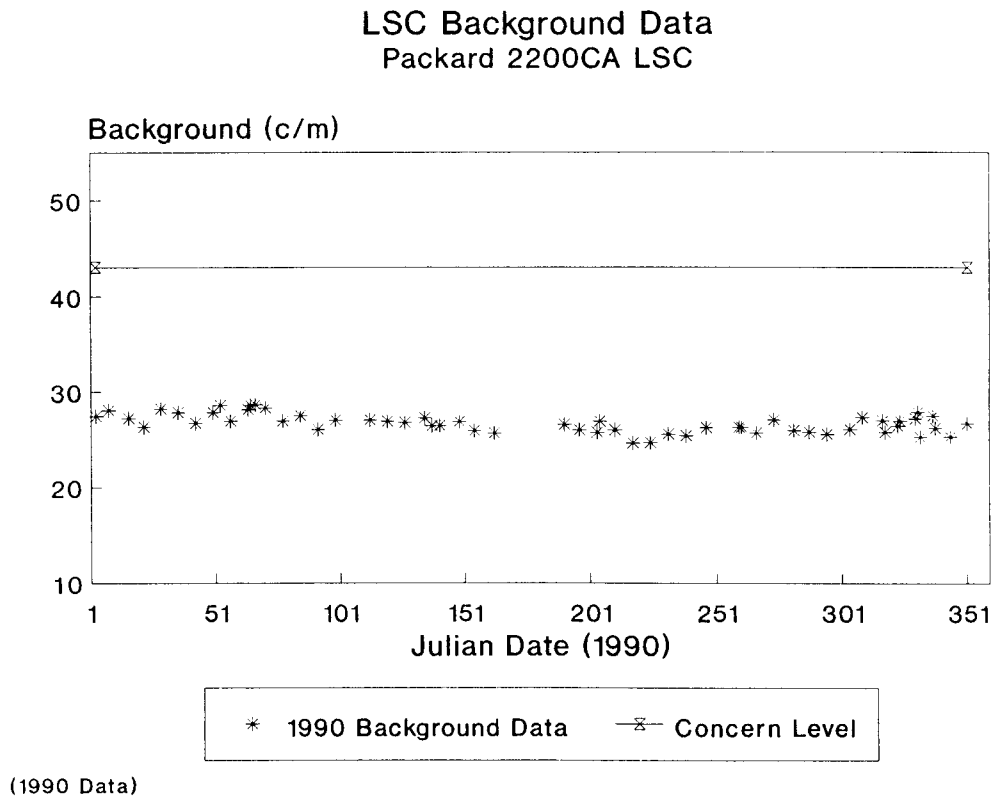


Fig. F-5. Liquid scintillation counter background data.

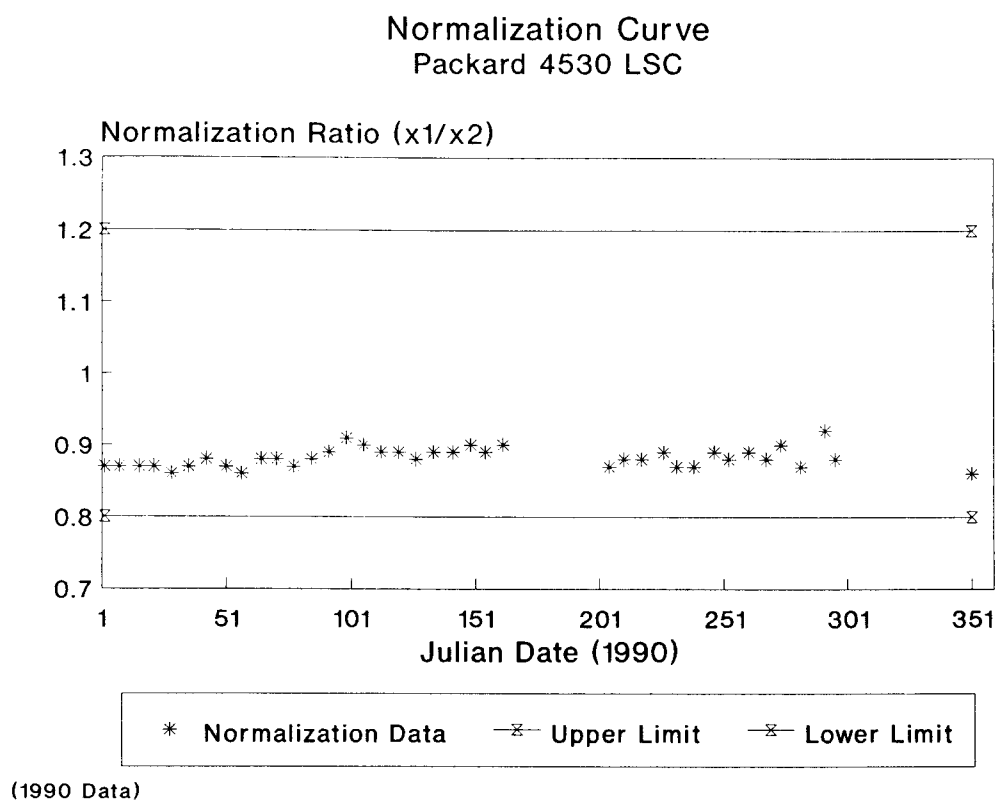
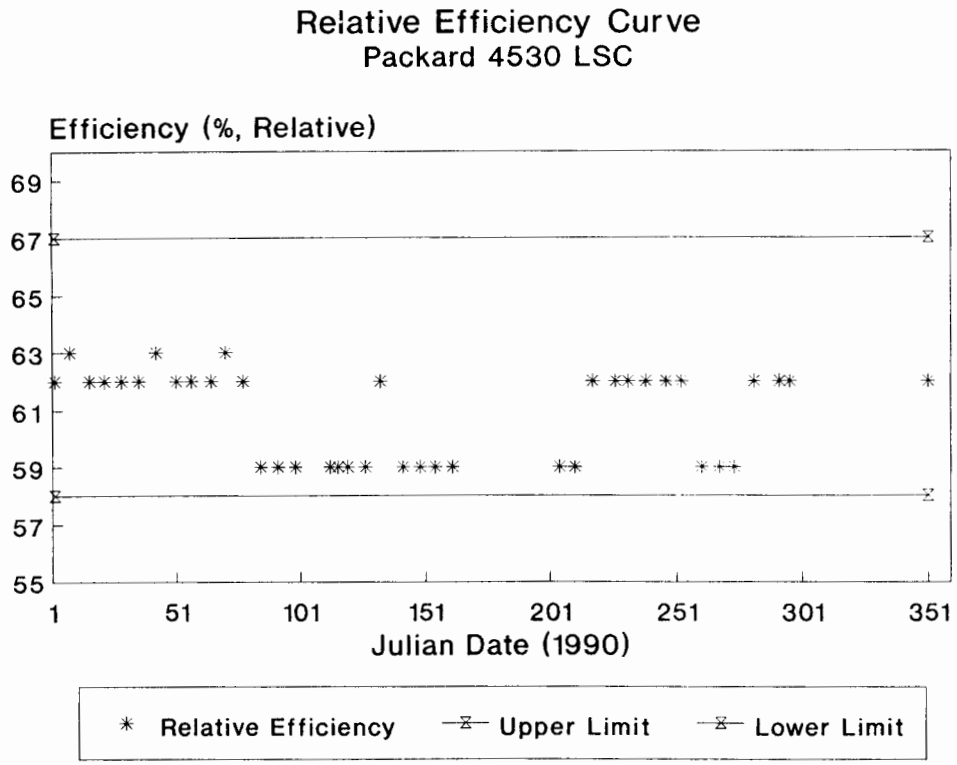
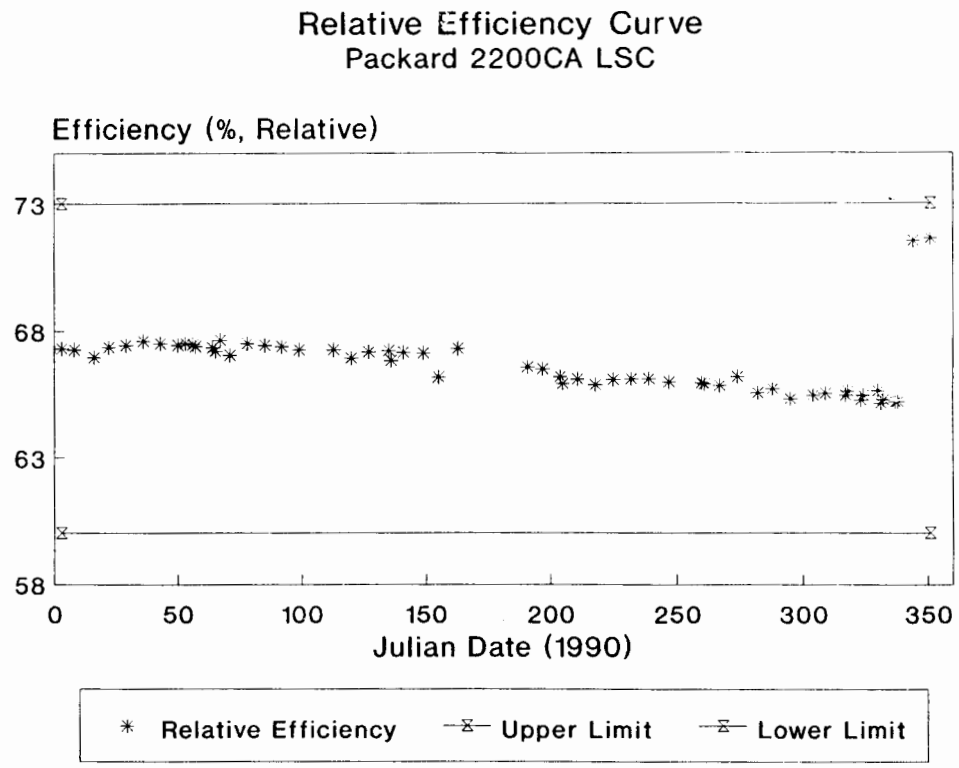


Fig. F-6. Liquid scintillation counter normalization curve.

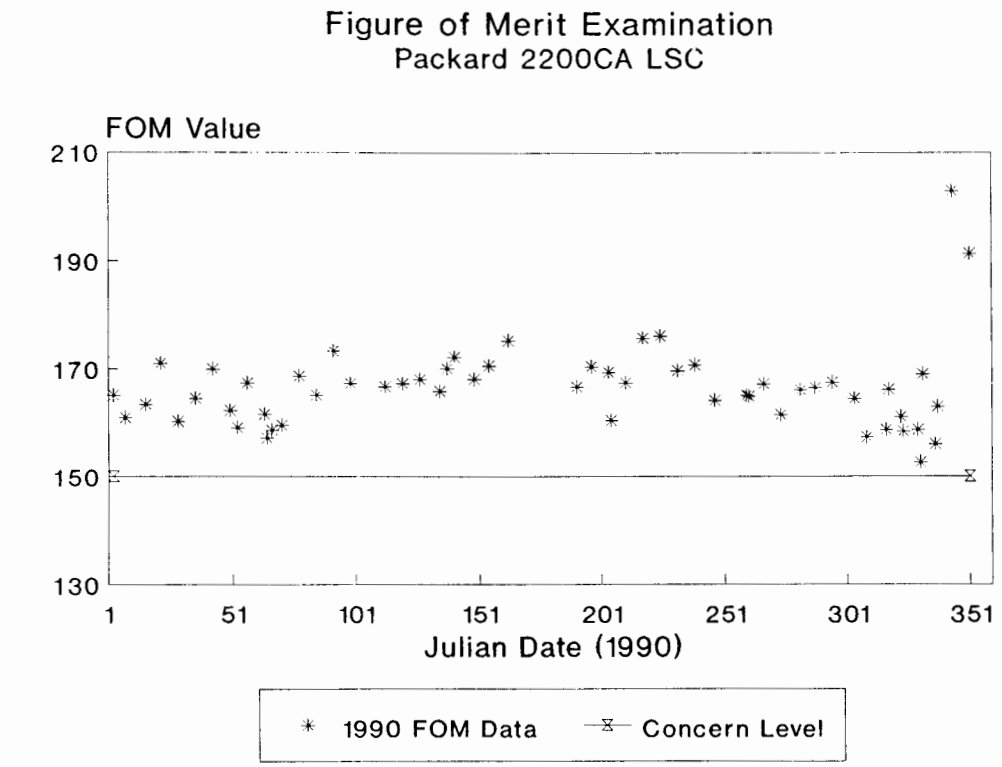


(1990 Data)



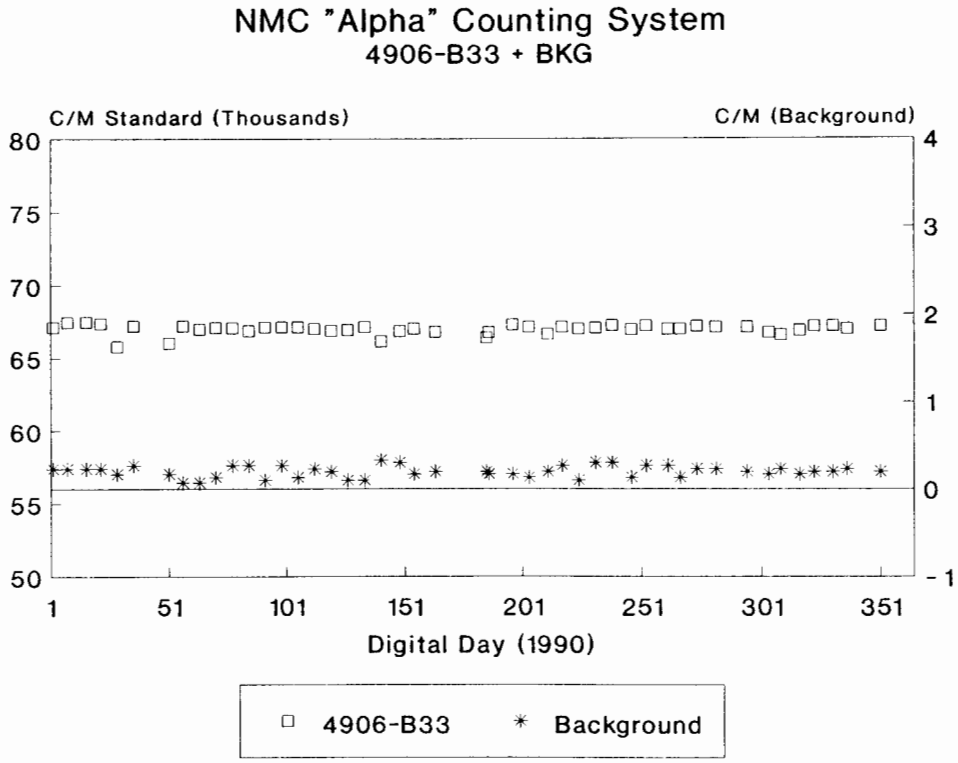
(1990 Data)

Fig. F-7. Relative efficiency curves for liquid scintillation counters.

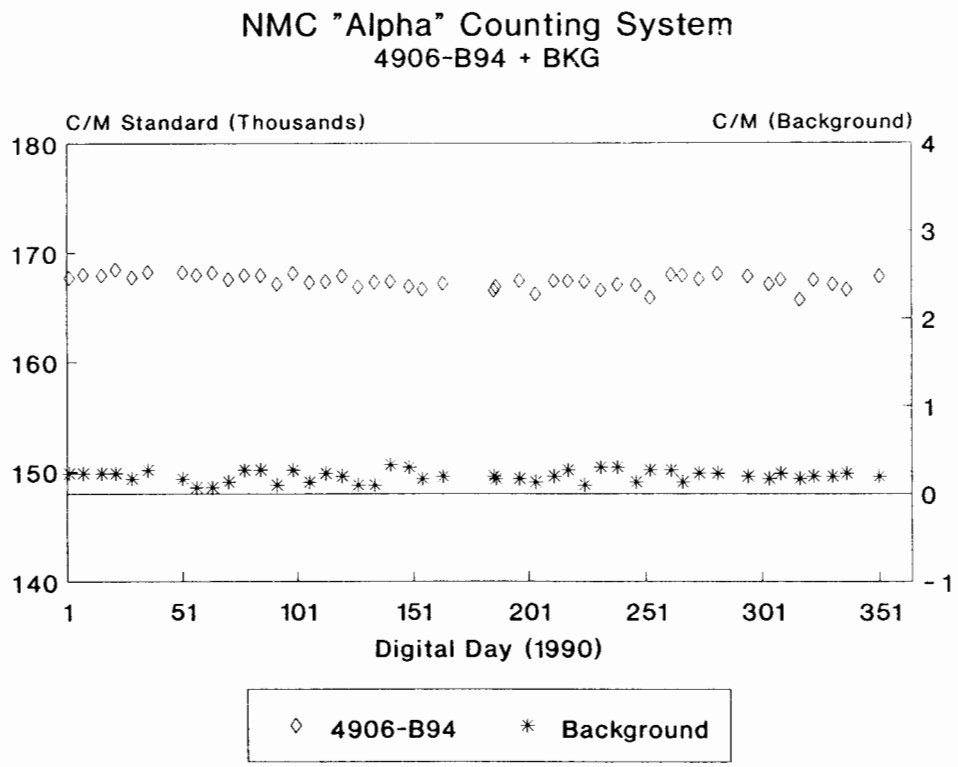


(1990 Data)

Fig. F-8. Figure of merit chart for the Packard 2200CA liquid scintillation counter.

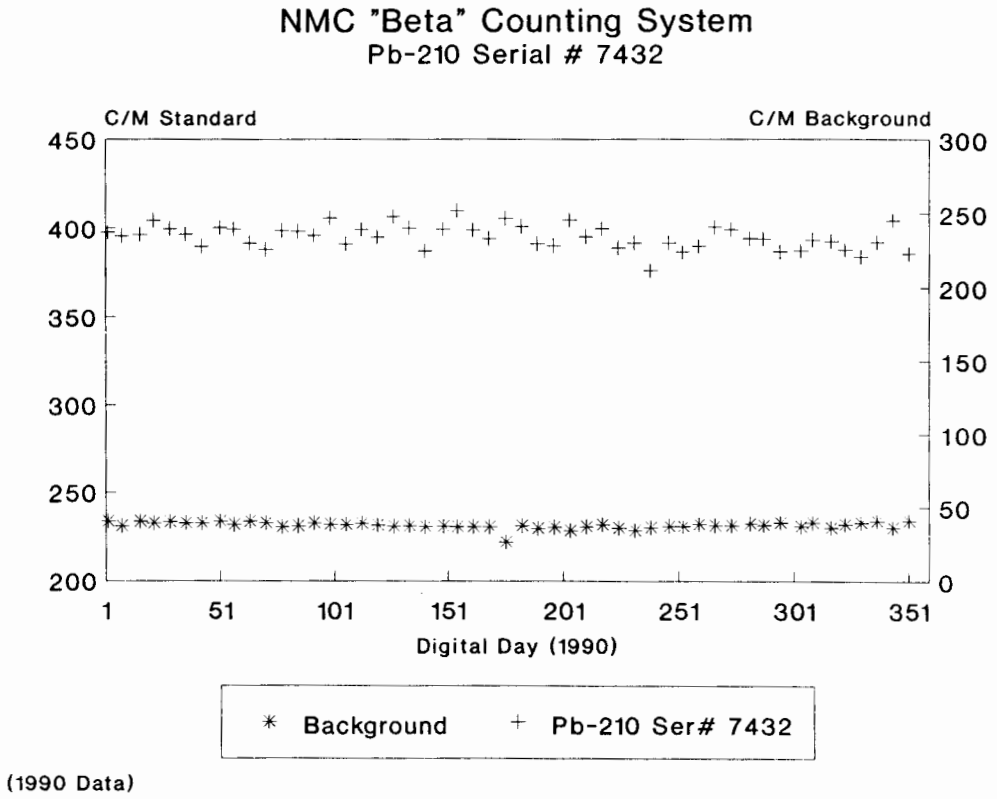


(1990 Data)



(1990 Data)

Fig. F-9. Efficiency values for the alpha windowless gas-flow proportional system.



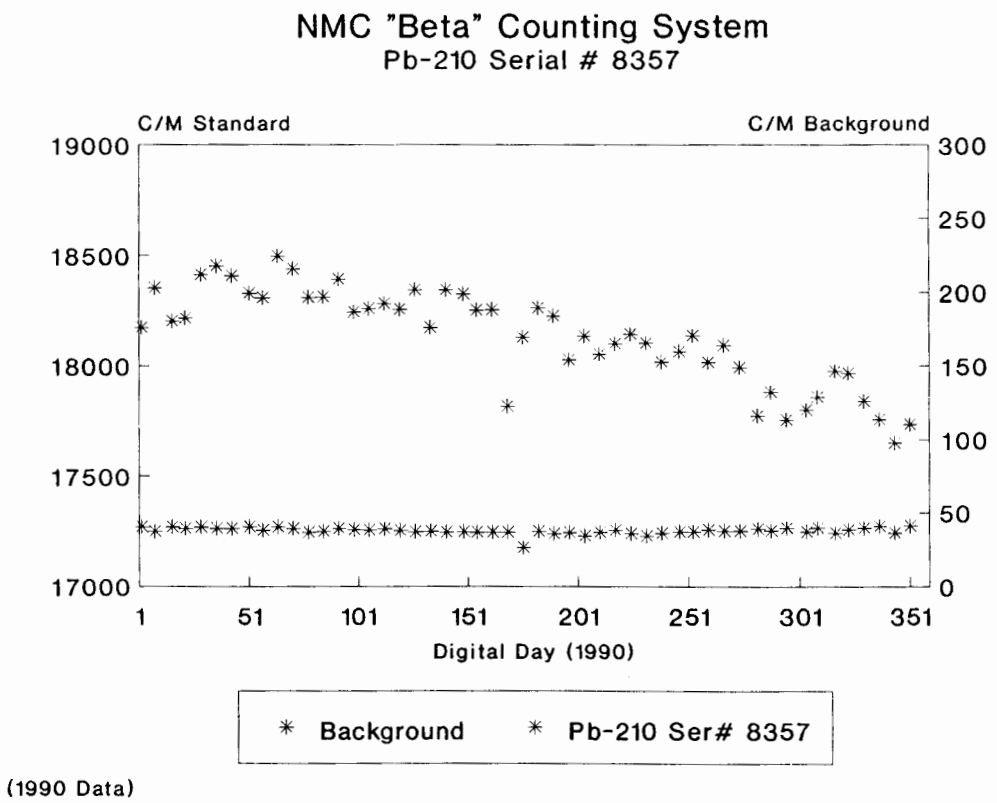
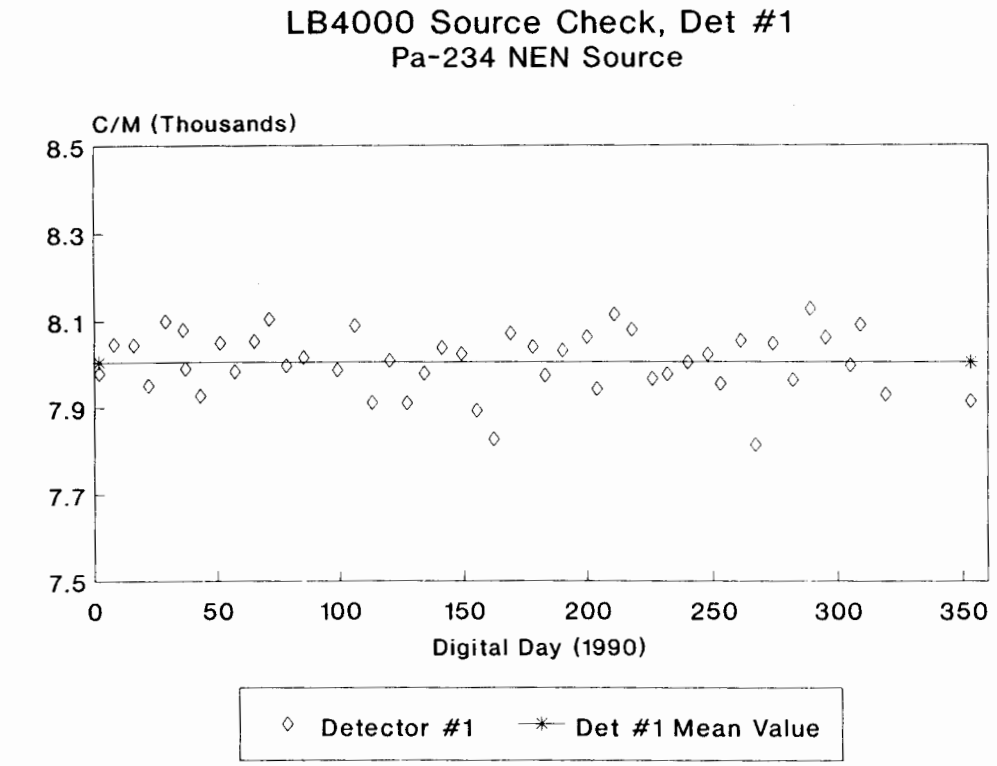
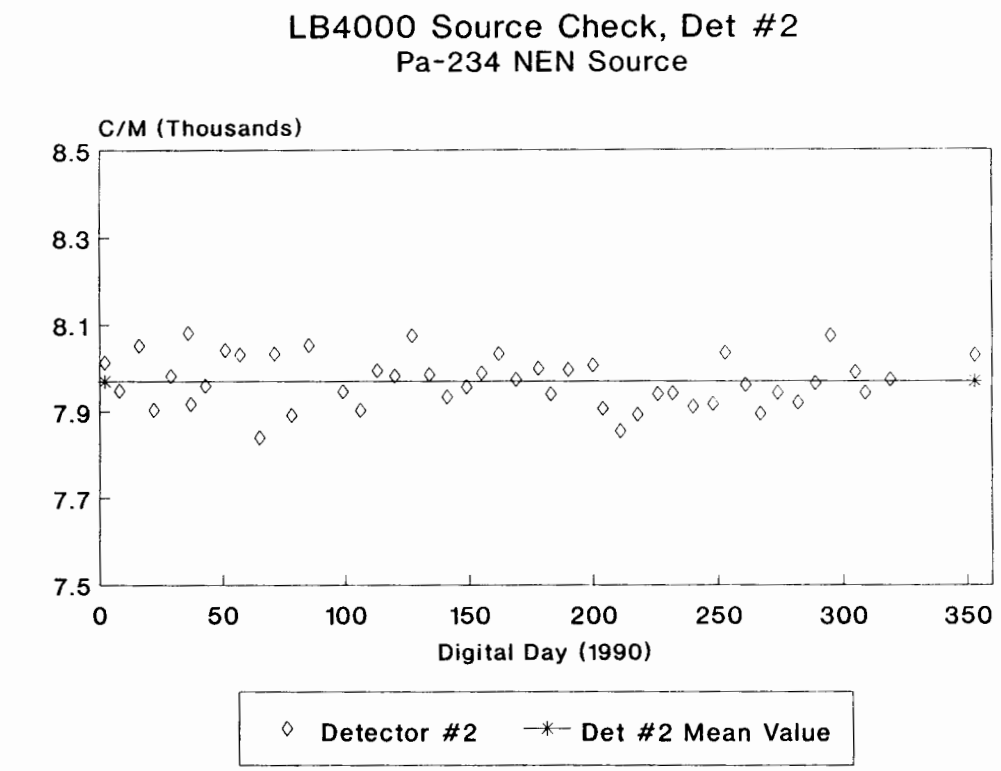


Fig. F-10. Efficiency values for the beta windowless gas-flow proportional system.

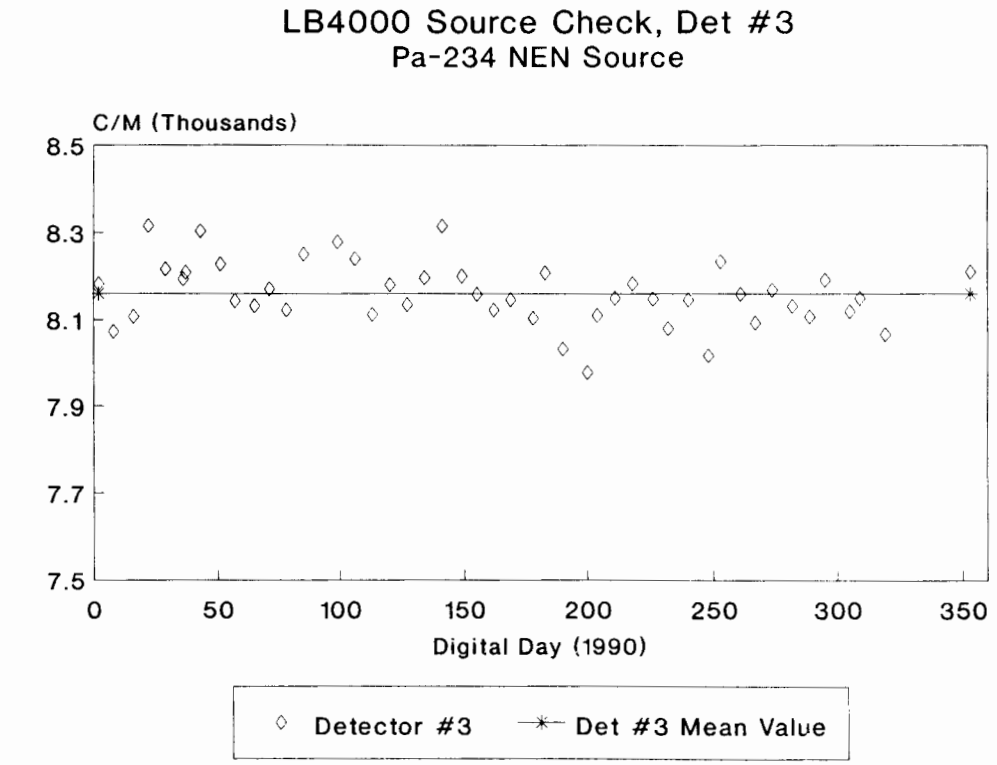


(1990 Data)

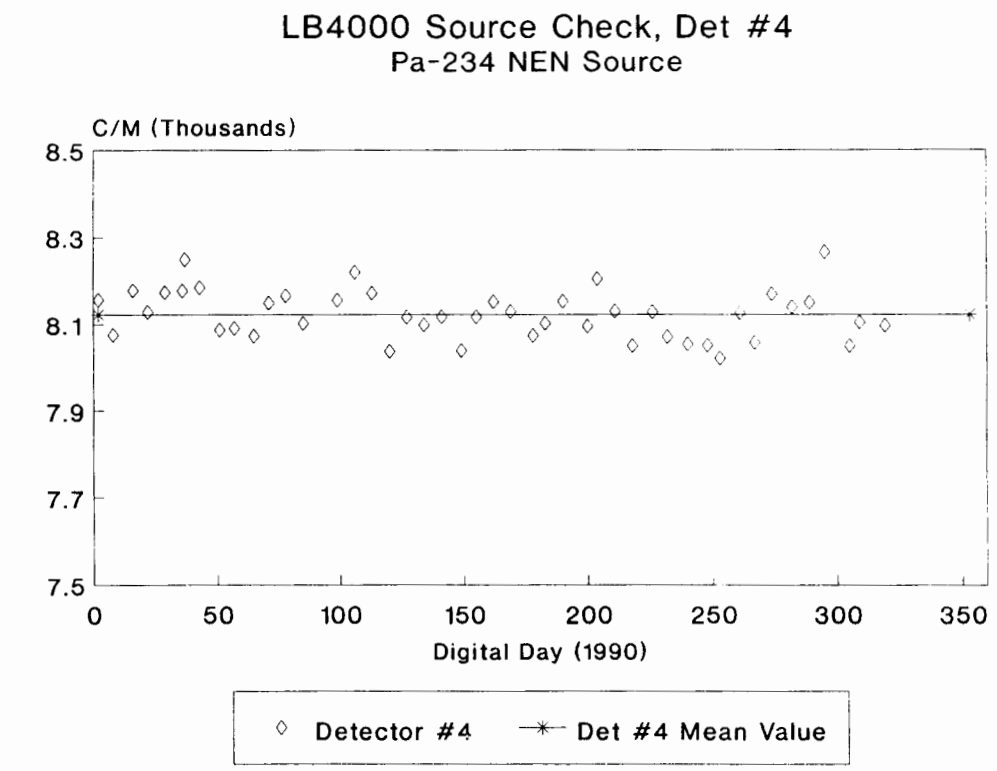


(1990 Data)

Fig. F-11. Relative efficiencies of the windowed gas-flow counting system.



(1990 Data)



(1990 Data)

Fig. F-11. (cont)

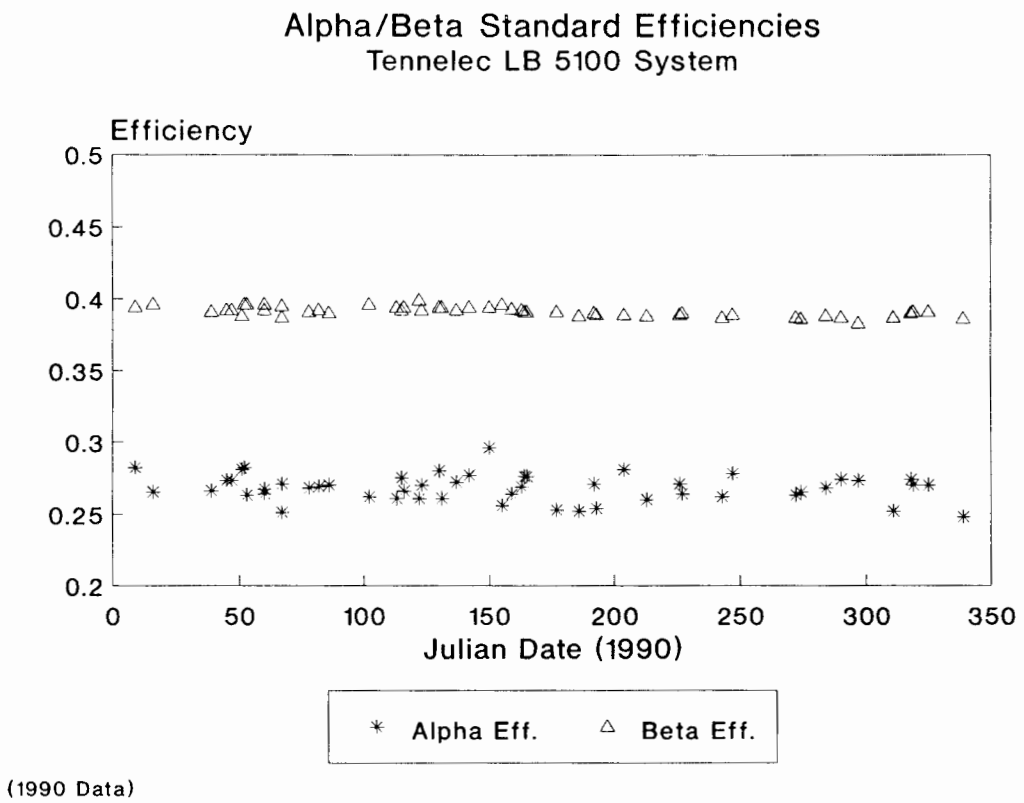


Fig. F-12. Relative efficiencies for the Tennelec LB 5100 system.

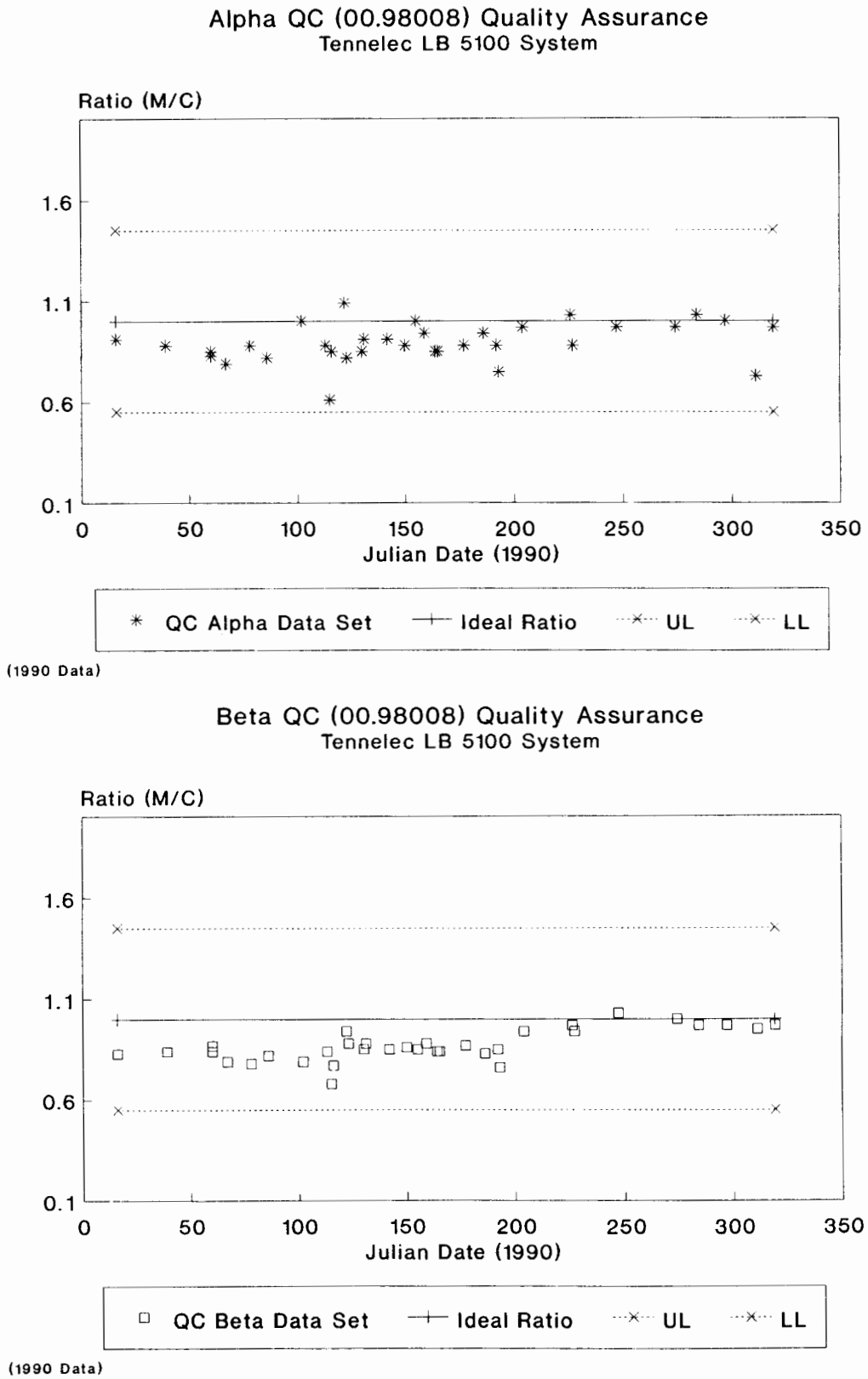


Fig. F-13. Quality control charts for alpha and beta measurements.

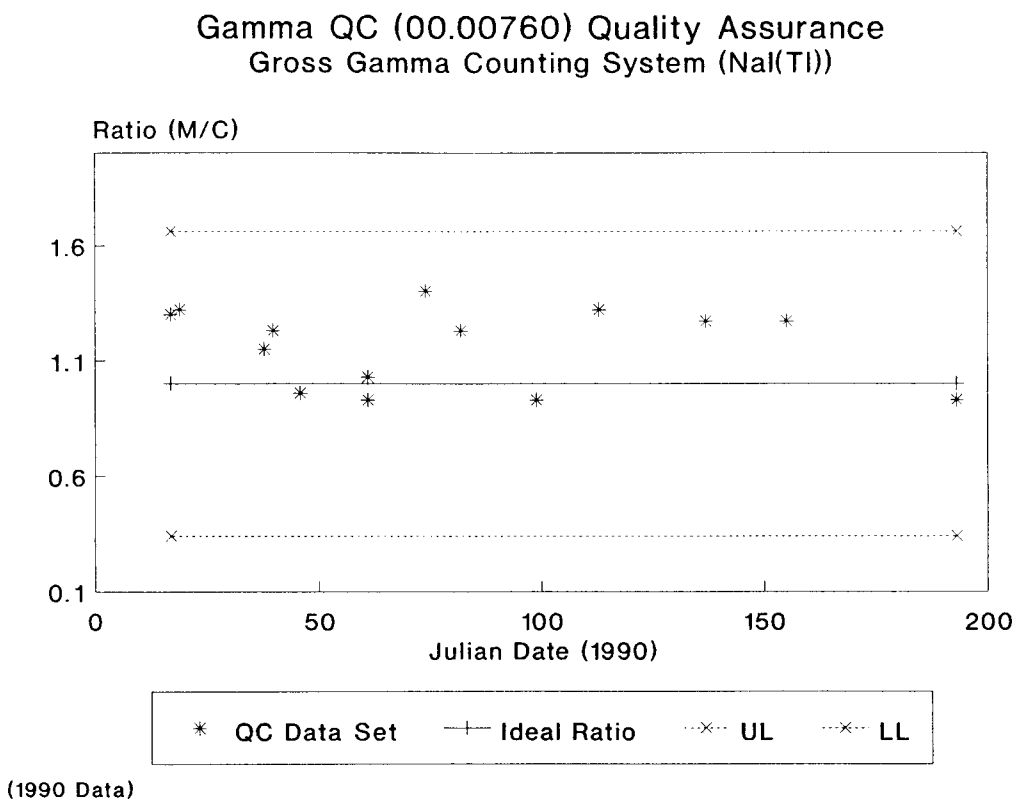


Fig. F-14. Quality control charts for gamma measurements.

APPENDIX G

SUMMARY OF SPIKE RECOVERY DATA

TABLE G-I

PLUTONIUM-238 SPIKE RECOVERY IN URINE AS A FUNCTION OF CONCENTRATION AFTER CORRECTION FOR PLUTONIUM-242 TRACER RECOVERY

Spike Level pCi/Sample	Mean ± Std Dev	No. of Samples	RSD (%)
0.05	118 ± 18	25	15
0.11	104 ± 13	23	13
0.19	107 ± 12	26	11
0.39	105 ± 8	19	15

TABLE G-II

PLUTONIUM-239 SPIKE RECOVERY IN URINE AS A FUNCTION OF CONCENTRATION AFTER CORRECTION FOR PLUTONIUM-242 TRACER RECOVERY

Spike Level pCi/Sample	Mean ± Std Dev	No. of Samples	RSD (%)
0.05	99 ± 17	26	17
0.14	104 ± 11	24	11
0.21	105 ± 12	25	11
0.41	106 ± 9	22	8

TABLE G-III

AMERICIUM-241 SPIKE RECOVERY IN URINE AS A FUNCTION OF CONCENTRATION AFTER CORRECTION FOR AMERICIUM-243 TRACER RECOVERY

Spike Level pCi/Sample	Mean ± Std Dev	No. of Samples	RSD (%)
0.12	92 ± 0	1	
0.25	108 ± 0	1	
0.50	112 ± 0	1	

TABLE G-IV

THALLIUM SPIKE RECOVERY IN URINE AS A FUNCTION OF CONCENTRATION

Spike Level ug/L	Mean ± Std Dev	No. of Samples	RSD (%)
15.0	103 ± 13	6	13
40.0	103 ± 14	5	14

TABLE G-V

TRITIUM SPIKE RECOVERY IN URINE AS A FUNCTION OF CONCENTRATION

Spike Level uCi/L	Mean ± Std Dev	No. of Samples	RSD (%)
0.44	90 ± 10	41	11
0.74	96 ± 7	37	7
4.29	96 ± 7	35	7
8.58	96 ± 5	34	5
29.83	100 ± 5	40	5

TABLE G-VI

URANIUM-235 SPIKE RECOVERY IN URINE AS A FUNCTION OF CONCENTRATION

Spike Level pCi/L	Mean ± Std Dev	No. of Samples	RSD (%)
5.68	97 ± 10	10	10
8.52	79 ± 7	10	9
11.36	92 ± 13	18	14
17.04	84 ± 14	4	17
22.72	93 ± 13	11	14
28.40	87 ± 6	8	7

TABLE G-VII

URANIUM-238 SPIKE RECOVERY IN URINE AS A FUNCTION OF CONCENTRATION

Spike Level ug/L	Mean ± Std Dev	No. of Samples	RSD (%)
8.48	85 ± 23	16	27
12.72	85 ± 9	11	11
16.96	83 ± 11	13	13
21.20	81 ± 15	11	19
25.44	84 ± 11	15	13
33.92	87 ± 10	17	11

TABLE G-VIII

SPIKE RECOVERIES FOR WASTE-WATER, SLUDGE, AND SOIL ANALYSES

Analyte	No. of Samples	Technique	Spike Level [a]	Recovery (%) Mean ± Std Dev	Range
4-Nitrophenol	28	GCMS	100 - 4000	63 + 16	30 - 89
p-Dichlorobenzene	33	GCMS	50 - 2000	62 + 12	30 - 92
p-Chlorophenol	2	GCMS	3300	58	57 - 58
Toluene	86	PTGC	40 - 60	102 + 29	36 - 265
Chlorobenzene	86	PTGC	40 - 60	94 + 14	20 - 121
Phenol	33	GCMS	100 - 4000	64 + 12	30 - 95
Bis(2-ethylhexyl)phthalate	1	GCMS	1800 - 1800	30	30
1,2,4-Trichlorobenzene	33	GCMS	50 - 2000	67 + 12	30 - 92
2,4-Dinitrotoluene	31	GCMS	50 - 2000	60 + 12	30 - 79
Pyrene	33	GCMS	50 - 2000	87 + 21	30 - 166
m-Nitrophenol	2	GCMS	3300	54 + 8.9	48 - 61
4-Chloro-3-methylphenol	33	GCMS	100 - 4000	72 + 12	30 - 91
N-Nitrosodi-n-propylamine	33	GCMS	50 - 2000	61 + 13	30 - 81
Benzene	86	PTGC	40 - 60	95 + 18	54 - 137
1,1-Dichlorethane	36	PTGC	40 - 60	87 + 37	10 - 154
1,1-Dichloroethene	48	PTGC	50 - 50	87 + 39	13 - 212
Trichloroethene	86	PTGC	40 - 60	90 + 16	58 - 161
Acenaphthene	33	GCMS	50 - 2000	74 + 13	30 - 97
Pentachlorophenol	30	GCMS	100 - 4000	60 + 23	22 - 96
o-Chlorophenol	31	GCMS	100 - 4000	62 + 12	30 - 86
Ag	106	FAA	0.4 - 404	95 + 15	62 - 172
	26	ICPMS	0.4 - 500	98 + 13	80 - 125
As	131	ETVAA	20 - 100	87 + 21	22 - 120
	15	ICPMS	10 - 200	102 + 17	53 - 125
B	12	FIA	0.4 - 2	97 + 5	86 - 105
Ba	7	FAA	0.5	108 + 11	84 - 118
	1	ICPES	1	100	100
	30	ICPMS	0.5 - 500	102 + 12	82 - 129
Be	9	ICPMS	50 - 500	92 + 13	72 - 113
Ca	7	IC	2 - 20	96 + 8	85 - 110
Cd	23	ETVAA	4 - 50	93 + 16	72 - 130
	30	FAA	0.2 - 100	90 + 13	60 - 112
	1	ICPES	0.89	112	112
	31	ICPMS	5 - 500	98 + 13	80 - 130
Cl	3	FIA	40	142 + 90	85 - 246
	12	IC	3 - 30	94 + 9	83 - 110
CN	31	ACOLR	0.2 - 0.2060	98 + 6.2	84 - 108
Chemical Oxygen Demand	40	COLOR	40	98 + 8	83 - 115
Cr	28	ETVAA	50 - 200	91 + 19	60 - 129
	31	FAA	0.05 - 200	84 + 14	45 - 108
	1	ICPES	0.9	111	111
	21	ICPMS	10 - 500	96 + 20	56 - 136
Cu	53	FAA	0.2 - 100	96 + 6	85 - 110
	12	ICPMS	0.4 - 500	96 + 14	60 - 109
F	35	ISE	0.3 - 6.85	103 + 13	36 - 115
Fe	49	FAA	0.05 - 0.8	97 + 17	65 - 185
Hg	92	CVAA	1 - 2	94 + 10	70 - 110
	3	ETVAA	1	90 + 2	88 - 92
	18	ICPMS	10 - 20	106 + 25	75 - 150
K	8	IC	5	102 + 5	94 - 110
Li	2	ICPMS	100	100	100 - 101
Mg	8	IC	10 - 10	99 + 8	85 - 110
Na	6	IC	0.4 - 4	110 + 11	95 - 125
NH3-N	26	FIA	0.8 - 8	95 + 7	85 - 114
Ni	8	FAA	0.4 - 400	100 + 10	80 - 113
	13	ICPMS	50 - 500	94 + 10	75 - 108
NO2-N	10	FIA	0.4	97 + 9	85 - 112
NO3-N	3	FIA	0.8	90 + 7	85 - 98
P	32	ACOLR	0.4	94 + 6	85 - 105
Pb	21	ETVAA	50 - 100	93 + 17	62 - 138
	30	FAA	0.2 - 200	88 + 35	40 - 200
	1	ICPES	12.7	118	118
	29	ICPMS	10 - 500	105 + 22	76 - 180
PO4-P	3	ACOLR	0.4	107 + 4	102 - 110

TABLE G-VIII (cont)

Analyte	No. of Samples	Technique	Spike Level [a]	% Recovery Mean ± Std Dev	Range
Se	99	ETVAA	10 - 100	88 + 10	54 - 110
	11	ICPMS	10 - 200	103 + 10	85 - 114
Si	16	FIA	20	98 + 6	92 - 114
SO4	3	FIA	40	116 + 14	101 - 124
	14	IC	15	102 + 4	96 - 110
Sr-89	13	PC	1.15 - 985	94 + 11	71 - 110
Sr-90	13	PC	1.83	101 + 6	92 - 110
Total Alkalinity	24	TITR	64 - 70	95 + 6	86 - 104
Total Dissolved Solids	10	GRAV	1 - 1000	104 + 4	99 - 109
Tl	5	ETVAA	50	84 + 12	68 - 100
	17	ICPMS	50 - 500	101 + 9	80 - 122
Total Suspended Solids	34	GRAV	252 - 253	98 + 7	82 - 115
U	19	ICPMS	5 - 500	99 + 12	74 - 130
Zn	17	FAA	0.2 - 100	94 + 6	85 - 105
	12	ICPMS	0.2 - 500	95 + 15	80 - 135

[a] ug/L except as noted.
ACOLR - Automated Colorimetry
COLOR - Spectrophotometry (Colorimetry)
CVAA - Cold Vapor Atomic Absorption
ETVAA - Electrothermal Vaporization Atomic Absorption
FAA - Flame Atomic Absorption
FIA - Flow Injection Analysis
GCMS - Gas Chromatography/Mass Spectrometry
GRAV - Gravimetry
IC - Ion Chromatography
ICPES - Inductively Coupled Plasma Atomic Emission Spectrometry
ICPMS - Inductively Coupled Plasma Mass Spectrometry
ISE - Ion Selective Electrodes
PC - Proportional Counting
PTGC - Purge and Trap/Gas Chromatography
TITR - Titrimetry

TABLE G-IX

COMPARISON OF HSE-9 SPIKED SAMPLES WITH NIOSH PAT SAMPLES

ROUND 100 - FIRST QUARTER 1990

METALS

	Lead		Cadmium		Zinc	
	HSE-9	PAT	HSE-9	PAT	HSE-9	PAT
	100	102	102	100	102	99
	99	103	100	102	102	101
	101	100	101	101	93	101
	101	102	100	101	98	99
$\bar{X}$	100 ± 3	102 ± 1	101 ± 1	101 ± 1	99 ± 4	100 ± 1

SOLVENTS

	Chloroform		Carbon tetrachloride		1,2-Dichloroethane	
	HSE-9	PAT	HSE-9	PAT	HSE-9	PAT
	91	103	101	107	81	100
	113	103	--	116	90	104
	96	98	106	121	85	104
	91	104	107	111	89	98
$\bar{X}$	98 ± 10	102 ± 3	105 ± 3	114 ± 6	86 ± 4	102 ± 3

ROUND 101 - SECOND QUARTER 1990

METALS

	Lead		Cadmium		Zinc	
	HSE-9	PAT	HSE-9	PAT	HSE-9	PAT
	98	97	105	101	115	97
	98	98	108	101	104	98
	97	100	103	101	99	99
	101	98	104	102	101	97
$\bar{X}$	99 ± 2	98 ± 1	105 ± 2	101 ± 1	105 ± 7	98 ± 1

SOLVENTS

	Tetrachloroethylene		1,1,-Trichloroethane		Trichloroethylene	
	HSE-9	PAT	HSE-9	PAT	HSE-9	PAT
	90	94	88	91	89	95
	96	99	90	93	95	95
	89	99	89	92	91	94
	96	97	91	93	95	96
$\bar{X}$	93 ± 4	97 ± 2	90 ± 1	92 ± 1	93 ± 3	95 ± 1

TABLE G-IX (cont)

ROUND 102 - THIRD QUARTER 1990

METALS

	Lead		Cadmium		Zinc	
	HSE-9	PAT	HSE-9	PAT	HSE-9	PAT
	97	100	96	99	95	97
	97	97	133	97	101	95
	98	99	98	99	90	93
	96	96	98	96	91	92
$\bar{X}$	97 ± 1	98 ± 2	106 ± 18	98 ± 2	105 ± 7	94 ± 2

SOLVENTS

	Benzene		o-Xylene		Toluene	
	HSE-9	PAT	HSE-9	PAT	HSE-9	PAT
	94	100	98	106	95	103
	92	98	97	98	95	100
	94	100	101	100	97	99
	--	95	101	99	95	98
$\bar{X}$	93 ± 1	98 ± 2	99 ± 2	101 ± 4	93 ± 3	100 ± 2

ROUND 103 - FOURTH QUARTER 1990

METALS

	Lead		Cadmium		Chromium	
	HSE-9	PAT	HSE-9	PAT	HSE-9	PAT
	103	106	100	104	101	112
	98	107	98	103	96	108
	103	107	101	91	109	107
	106	105	101	103	114	114
$\bar{X}$	103 ± 3	106 ± 1	100 ± 1	101 ± 2	105 ± 8	110 ± 3

SOLVENTS

	Carbon tetrachloride		1,2-Dichloroethane		Trichloroethane	
	HSE-9	PAT	HSE-9	PAT	HSE-9	PAT
	99	100	96	112	102	105
	107	99	96	107	89	115
	96	98	102	96	105	102
	101	101	101	102	106	109
$\bar{X}$	101 ± 5	100 ± 1	99 ± 3	104 ± 7	101 ± 8	108 ± 6

This report has been reproduced directly from the
best available copy.

It is available to DOE and DOE contractors from the
Office of Scientific and Technical Information,
P.O. Box 62,
Oak Ridge, TN 37831.
Prices are available from
(615) 576-8401, FTS 626-8401.

It is available to the public from the
National Technical Information Service,
U.S. Department of Commerce,
5285 Port Royal Rd.,
Springfield, VA 22161.

Los Alamos
NATIONAL LABORATORY

Los Alamos, New Mexico 87545