Y-12

OAK RIDGE Y-12 PLANT

MARTIN MARIETTA

Final Report from VFL Technologies
for the Pilot-Scale Thermal Treatment of
Lower East Fork Poplar Creek
Floodplain Soils

LEFPC Appendices
Volume 3
Appendix V-B

Prepared by VFL Technology Corporation
for
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P.O. Box 2002
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Subcontract No. 82Y-05556V

September 1994

MARTIN MARIETTA ENERGY
SYSTEMS, INC.
managing the
Oak Ridge, Y-12 Plant
Oak Ridge, Tennessee
under contract DE-AC05-84OR21400
for the
U.S. Department of Energy

MANAGED BY
MARTIN MARIETTA ENERGY SYSTEMS, INC.
FOR THE UNITED STATES
DEPARTMENT OF ENERGY

MASTER

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MARTIN MARIETTA ENERGY SYSTEMS, INC.

OAK RIDGE, TN - PADUCAH, KY

ENGINEERING TRANSMITTAL

XMTL NO.

ISSUE DATE

11/7/94

PROCUREMENT BY*

FIELD WORK BY

PROJECT TITLE

LOWER EAST FORK POPLAR CREEK

PROJECT NO.

ADS 9304

E.S.O. (W.O.) NO.

PX089A18

JOB TITLE

PILOT THERMAL DESORPTION DEMONSTRATION

BUILDING

9733-3

PLANT

Y-12

DISTRIBUTION

QUANTITIES

ISSUE FOR:

☐ Procurement☒ Info/Record☐ Comment☐ Approval☐ Approved☐ CFC☐ Design Comp.

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LIST OF ATTACHMENTS & INFORMATION

☐ RC ☒ NoRCReport Y/EN-5289 Y1, Y2, Y3, Y4, Y5, Y6

Final Report Appendices from VFL Technologies for the Pilot-Scale Thermal Treatment of Lower East Fork Poplar Creek Floodplain Soils.

FUNCTION	NAME	BLDG.	Mail Stop	Xmtl	Dwg. Red/Full	B/M	D/S Spec	
Project Manager (PM)	Becky Sams	9733-3	8035	1				
Principle Engr. (PE)	Jerome Miller	173 MIT.	8353	1				1
Project Engr. (PJ)								
Plant Div. Rep.								
Constr. Planning								
Constr. Engr. (CE)								
Systems Eng. (SE)								
Est./Sch. Engr. (ES)								
Procur. Coord.								
Y-12 ER								
Report/Analysis (RP)								
QA Specialist								
Lead PE	Paul Height	9733-4	8036	1				
Program Manager	Tom Dahl	173 MIT.	8252	1				
Struct.&Architect.								
Engr. Mechanics								
Environ. Engr.	Lisa Stinton	1000	6342	1				
Instrument Engr.								
Process Engr.	Greg Boris	9733-3	8035	1				
Site, Cvt, & Waste Mgmt								
Process Design	Ron Canon	1000	6342	1				
Process Design	Tim Hale	9733-3	8035	1				
Waste Management								
Waste Management								
HSE								
Development								
Struct. & Architect								
Civil Engr.	Steve White	K1550U	7233	1				
Y-12 Development	George Gillis	9731	8174	1				1
Procurement	Lisa Cobb	Charlot	6501	1				
ES&MC	Chris Smith	9983-AH	8247	1				
ORNL	Ralph Turner	1505	6036	1				1
ORNL	Mike Morris	105 Mit.	6495	1				
Y-12 Development	John Leckey	9202	8095	1				
Y-12 Development	Robert Krabill	9202	8094	1				
Y-12 Development	Chuck Hanser	9202	8094	1				
ORNL	Tom Conley	3017	6044	1				
HK-Ferguson	Joe Darden	1311	7471	1				
ORNL	S. Y. Lee	1505	6038	1				
ORNL	Valerie Edwards	1505	6036	1				
DOE-OSTI	A. K. LEE	9731	8175	1				1
Y-12 ER DMC		9983-AH	8247	1				1
Y-12 Central Files		9711-5	8169	1				1
DOE - ORO	David Page	FOB		1				1
SAIC	Tom Hanrahan	Jackson Plaza		1				
Jacobs	John Lea	125 Broadway		1				1
Ensearch	Bob Meccia	111 Union Val.		1				
DOE PUBLIC ROADING	Pam Buchanan	Turnpike Bld.		1				2
TOTALS				29				10

RECEIVING INSPECTION REQUIRED

☐ (1) Routine☐ (2) Special

Refer Technical Questions

To: Rebecca Sams

Phone: 6-2608

*If company, list responsible group, e.g., Engineering, Maintenance, others. Explain above.

Return originals to R. J. Sams

☐ Add disclaimer and substitute clause.

Originated By

R. J. Sams

Section (Group)

Process Design

Division (Department)

Engineering

Principal Engineer

R. J. Sams

Project Engr. (Manager)

J. Q. Miller

APPENDIX V - B

FINAL VERIFICATION RUN DATA PACKAGE

Validation Of Analytical Data For Ecotek LSI

Metals

Metals (TCLP)

Uranium

Gross Alpha/Beta

PCB

MASTER

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MEMO

To: M.A. Rush
From: J.D. Davis
Date: July 19, 1994
Subject: Validation of LEFPC Analytical Data from Ecotek Laboratory Services, Inc.

Data packages LSDG 32140 and LSDG 32136 were reviewed for compliance with the appropriate SW-846 methods.

Package LSDG 32140 contained the analytical data for the first set of Feed and Product LEFPC samples collected. This package contained all raw instrument data for samples, QC samples, and calibration standards; summaries of the raw data; and an acceptable case narrative discussing the overall performance in regards to the analysis of these samples. Chain of custody documentation was maintained correctly and all holding time requirements were met. All of the requirements of the appropriate SW-846 analytical methods concerning initial and continuing calibration and QC checks relating to the identification and quantification of target analytes were met. This package was judged to meet the requirements of an AQL-IV data package and the data contained therein to be valid.

Package LSDG 32136 contained the analytical data for the remaining LEFPC samples. This package contained data summaries for each of the samples and applicable QC samples and an acceptable case narrative discussing the overall performance in regards to the analysis of these samples. Chain of custody documentation was maintained correctly and all holding time requirements were met. All of the requirements of the appropriate SW-846 analytical methods concerning QC checks relating to the identification and quantification of target analytes were met. This package was judged to meet the requirements of an AQL-III data package and the data contained therein to be valid.

Tables 1 - 8 are summaries of the data contained in the two analytical packages. In Table 1, some of the results have been flagged as estimates due to QC sample performance. Ecotek LSI also flagged all total mercury data as estimates due to inconsistent MS and MSD recoveries. The poor performance of these QC samples can be attributed to the mercury spike being insignificant in comparison to the quantity of mercury contained in the samples. Since the mercury values reported by Ecotek LSI correlate reasonably well with the analysis performed by ARS on-site (Table 9) it is recommended that the mercury data reported in these packages be considered valid. The same holds true for the total uranium analyses reported in Table 8. The MS and MSD recoveries for these analyses were also inconsistent due to the insignificant activity of the spike in comparison to the activity contained in the samples.

The laboratory VOA blanks for both packages contained methylene chloride. The VOA blank for package 32140 also contained acetone. Both are common reagents used by contract laboratories and that often show up in trace amounts in laboratory blanks. The methylene chloride levels reported for the LEFPC samples fall within the range of methylene chloride detected in the laboratory blanks (7 to 680 ppb) when sample dilutions are taken into account. Therefore, the values reported for methylene chloride should be used cautiously. Acetone was reported at much higher levels in the samples than detected in the laboratory blanks. This fact along with the similar abundance of 2-butanone (closely

Metals

LSDG: 32136

CASE NARRATIVE
FOR TRACE METALS ANALYSIS

Client: Nuclear Fuel Services, Inc
Project ID: LEFPC
Batch ID: 32136

Analytical Summary

Thirty seven samples were received on May 17, 1994; sixteen soil samples for TCLP extraction and analysis for TCLP metals, seventeen soil samples for the analysis of Arsenic, Cadmium and Mercury and four water samples for the analysis of Mercury. The samples were analyzed by SW-846 between June 2 and June 28, 1994.

Procedural Summary

- Analysis - Metal constituents were released from the sample through an acid digestion process. The digestates were then analyzed by cold vapor atomic absorption spectrometry (CVAA), graphite furnace atomic absorption spectrometry (GFAA), and by inductively coupled plasma atomic emission spectrometry (ICP) to determine the concentration of analytes in each sample. The following methods and instruments were used for analysis:

<u>Analysis</u>	<u>Digestion</u>	<u>Instrument</u>	<u>Method</u>
ICP	3010	TJA ICAP 61E	6010A
GFAA-As	3050	TJA SH-4000	7060
GFAA-Cd	3050	TJA SH-22	7131
CVAA	7470/7471	TJA S-12	7470, 7471

- Scope and Limitations - Spectral interferences resulting from overlapping spectra and/or stray light from the emissions of high concentration elements may cause difficulties during the ICP analysis. Overlapping spectra are compensated for with the application of interelement correction factors (IECs). Interference from high concentration elements may be minimized by diluting the sample.

CASE NARRATIVE
FOR TRACE METALS ANALYSIS (cont.)

Chemical reactions occurring at elevated temperatures during the GFAA analysis may result in suppression or enhancement of analyte absorbance. These effects are minimized with the addition of matrix modifiers prior to analysis.

Interferences during the CVAA analysis can result from high sulfide and/or high chloride concentrations in the sample. These interferences are minimized with the addition of potassium permanganate and hydroxylamine sulfate during the digestion process. Interferences resulting from certain organic compounds in the sample may be reduced through dilutions.

QA/QC Summary

For the analysis, the following sample QC was performed: preparation blank, blank spike, blank spike duplicate, sample matrix duplicate, sample matrix spike, sample matrix spike duplicate and a serial dilution. All appropriate QC data was within acceptable control limits with the following exceptions:

The soil sample matrix duplicate's relative percent difference, RPD, was above the 0 - 20% control limits for Arsenic.

The soil sample matrix spike's percent recoveries for Arsenic and Cadmium were outside of the 75 - 125% control limits.

The TCLP sample matrix spike's percent recovery for Silver was outside of the 75 - 125% control limits.

General Discussion

Mercury results were reported 6/17/94.

Jessie W. Pappas

Section Supervisor (or designee)

7/1/94

Date

Trace Metals Analytical Results
Method SW-846 - Mercury Results

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 32136101
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-239 Matrix: Water

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result ug/l</i>	<i>Detection Limit ug/l</i>	<i>Note</i>
<i>Mercury</i>	<i>6/2/94</i>	<i>500</i>	<i>2870</i>	<i>75.0</i>	<i>P</i>

Trace Metals Analytical Results
Method SW-846 - Mercury Results

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 32136106
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-232 Matrix: Water

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result ug/l</i>	<i>Detection Limit ug/l</i>	<i>Note</i>
Mercury	6/2/94	16000	135000	2400	P

**Trace Metals Analytical Results - TCLP
Method SW-846**

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213655
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-67 Date Extracted: May 25, 1994
Date Collected: May 12, 1994 Matrix: TCLP Extract

Analyte	Date Analyzed	Date Digested	Dilution Factor	Maximum Concentration Limit mg/L	Sample Result mg/L	Reporting Limit mg/L	Note
Arsenic	6/27/94	6/21/94	1	5.0	<0.10	0.10	
Barium	6/27/94	6/21/94	1	100	<5.0	5.0	
Cadmium	6/27/94	6/21/94	1	1.0	<0.010	0.010	
Chromium	6/27/94	6/21/94	1	5.0	<0.050	0.050	
Lead	6/27/94	6/21/94	1	5.0	<0.050	0.050	
Mercury	6/7/94	6/6/94	1	0.20	<0.0050	0.0050	
Selenium	6/27/94	6/21/94	1	1.0	<0.10	0.10	
Silver	6/27/94	6/21/94	1	5.0	<0.050	0.050	N

Trace Metals Analytical Results - TCLP
Method SW-846

Client: Nuclear Fuel Services, Inc. **Lab Sample ID:** 3213656
Client Reference No.: LEFPC **Date Received:** May 17, 1994
Client Sample No.: 1661B-94 **Date Extracted:** May 25, 1994
Date Collected: May 12, 1994 **Matrix:** TCLP Extract

Analyte	Date Analyzed	Date Digested	Dilution Factor	Maximum Concentration Limit mg/L	Sample Result mg/L	Reporting Limit mg/L	Note
Arsenic	6/27/94	6/21/94	1	5.0	<0.10	0.10	
Barium	6/27/94	6/21/94	1	100	<5.0	5.0	
Cadmium	6/27/94	6/21/94	1	1.0	<0.010	0.010	
Chromium	6/27/94	6/21/94	1	5.0	<0.050	0.050	
Lead	6/27/94	6/21/94	1	5.0	<0.050	0.050	
Mercury	6/7/94	6/6/94	1	0.20	<0.0050	0.0050	
Selenium	6/27/94	6/21/94	1	1.0	0.15	0.10	
Silver	6/27/94	6/21/94	1	5.0	<0.050	0.050	N

Trace Metals Analytical Results - TCLP
Method SW-846

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213657
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-104 Date Extracted: May 25, 1994
Date Collected: May 12, 1994 Matrix: TCLP Extract

Analyte	Date Analyzed	Date Digested	Dilution Factor	Maximum Concentration Limit mg/L	Sample Result mg/L	Reporting Limit mg/L	Note
Arsenic	6/27/94	6/21/94	1	5.0	<0.10	0.10	
Barium	6/27/94	6/21/94	1	100	<5.0	5.0	
Cadmium	6/27/94	6/21/94	1	1.0	<0.010	0.010	
Chromium	6/27/94	6/21/94	1	5.0	<0.050	0.050	
Lead	6/27/94	6/21/94	1	5.0	<0.050	0.050	
Mercury	6/7/94	6/6/94	1	0.20	<0.0050	0.0050	
Selenium	6/27/94	6/21/94	1	1.0	<0.10	0.10	
Silver	6/27/94	6/21/94	1	5.0	<0.050	0.050	N

Trace Metals Analytical Results - TCLP
Method SW-846

Client: Nuclear Fuel Services, Inc.
Client Reference No.: LEFPC
Client Sample No.: 1661B-109
Date Collected: May 12, 1994

Lab Sample ID: 3213658
Date Received: May 17, 1994
Date Extracted: May 25, 1994
Matrix: TCLP Extract

Analyte	Date Analyzed	Date Digested	Dilution Factor	Maximum Concentration Limit mg/L	Sample Result mg/L	Reporting Limit mg/L	Note
Arsenic	6/27/94	6/21/94	1	5.0	<0.10	0.10	
Barium	6/27/94	6/21/94	1	100	<5.0	5.0	
Cadmium	6/27/94	6/21/94	1	1.0	<0.010	0.010	
Chromium	6/27/94	6/21/94	1	5.0	<0.050	0.050	
Lead	6/27/94	6/21/94	1	5.0	<0.050	0.050	
Mercury	6/7/94	6/6/94	1	0.20	<0.0050	0.0050	
Selenium	6/27/94	6/21/94	1	1.0	<0.10	0.10	
Silver	6/27/94	6/21/94	1	5.0	<0.050	0.050	N

Trace Metals Analytical Results - TCLP
Method SW-846

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213659
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-114 Date Extracted: May 25, 1994
Date Collected: May 12, 1994 Matrix: TCLP Extract

Analyte	Date Analyzed	Date Digested	Dilution Factor	Maximum Concentration Limit mg/L	Sample Result mg/L	Reporting Limit mg/L	Note
Arsenic	6/27/94	6/21/94	1	5.0	<0.10	0.10	
Barium	6/27/94	6/21/94	1	100	<5.0	5.0	
Cadmium	6/27/94	6/21/94	1	1.0	<0.010	0.010	
Chromium	6/27/94	6/21/94	1	5.0	<0.050	0.050	
Lead	6/27/94	6/21/94	1	5.0	<0.050	0.050	
Mercury	6/7/94	6/6/94	1	0.20	<0.0050	0.0050	
Selenium	6/27/94	6/21/94	1	1.0	<0.10	0.10	
Silver	6/27/94	6/21/94	1	5.0	<0.050	0.050	N

Trace Metals Analytical Results - TCLP
Method SW-846

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213660
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-119 Date Extracted: May 25, 1994
Date Collected: May 12, 1994 Matrix: TCLP Extract

Analyte	Date Analyzed	Date Digested	Dilution Factor	Maximum Concentration Limit mg/L	Sample Result mg/L	Reporting Limit mg/L	Note
Arsenic	6/27/94	6/21/94	1	5.0	<0.10	0.10	
Barium	6/27/94	6/21/94	1	100	<5.0	5.0	
Cadmium	6/27/94	6/21/94	1	1.0	<0.010	0.010	
Chromium	6/27/94	6/21/94	1	5.0	<0.050	0.050	
Lead	6/27/94	6/21/94	1	5.0	<0.050	0.050	
Mercury	6/7/94	6/6/94	1	0.20	<0.0050	0.0050	
Selenium	6/27/94	6/21/94	1	1.0	<0.10	0.10	
Silver	6/27/94	6/21/94	1	5.0	<0.050	0.050	N

Trace Metals Analytical Results - TCLP
Method SW-846

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213661
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-124 Date Extracted: May 25, 1994
Date Collected: May 12, 1994 Matrix: TCLP Extract

Analyte	Date Analyzed	Date Digested	Dilution Factor	Maximum Concentration Limit mg/L	Sample Result mg/L	Reporting Limit mg/L	Note
Arsenic	6/27/94	6/21/94	1	5.0	<0.10	0.10	
Barium	6/27/94	6/21/94	1	100	<5.0	5.0	
Cadmium	6/27/94	6/21/94	1	1.0	<0.010	0.010	
Chromium	6/27/94	6/21/94	1	5.0	<0.050	0.050	
Lead	6/27/94	6/21/94	1	5.0	<0.050	0.050	
Mercury	6/7/94	6/6/94	1	0.20	<0.0050	0.0050	
Selenium	6/27/94	6/21/94	1	1.0	<0.10	0.10	
Silver	6/27/94	6/21/94	1	5.0	<0.050	0.050	N

Trace Metals Analytical Results - TCLP
Method SW-846

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213662
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-129 Date Extracted: May 25, 1994
Date Collected: May 12, 1994 Matrix: TCLP Extract

Analyte	Date Analyzed	Date Digested	Dilution Factor	Maximum Concentration Limit mg/L	Sample Result mg/L	Reporting Limit mg/L	Note
Arsenic	6/27/94	6/21/94	1	5.0	<0.10	0.10	
Barium	6/27/94	6/21/94	1	100	<5.0	5.0	
Cadmium	6/27/94	6/21/94	1	1.0	<0.010	0.010	
Chromium	6/27/94	6/21/94	1	5.0	<0.050	0.050	
Lead	6/27/94	6/21/94	1	5.0	<0.050	0.050	
Mercury	6/7/94	6/6/94	1	0.20	<0.0050	0.0050	
Selenium	6/27/94	6/21/94	1	1.0	<0.10	0.10	
Silver	6/27/94	6/21/94	1	5.0	<0.050	0.050	N

*Trace Metals Analytical Results - TCLP
Method SW-846*

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213664
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-143 Date Extracted: May 25, 1994
Date Collected: May 12, 1994 Matrix: TCLP Extract

Analyte	Date Analyzed	Date Digested	Dilution Factor	Maximum Concentration Limit mg/L	Sample Result mg/L	Reporting Limit mg/L	Note
Arsenic	6/27/94	6/21/94	1	5.0	<0.10	0.10	
Barium	6/27/94	6/21/94	1	100	<5.0	5.0	
Cadmium	6/27/94	6/21/94	1	1.0	<0.010	0.010	
Chromium	6/27/94	6/21/94	1	5.0	<0.050	0.050	
Lead	6/27/94	6/21/94	1	5.0	<0.050	0.050	
Mercury	6/7/94	6/6/94	1	0.20	<0.0050	0.0050	
Selenium	6/27/94	6/21/94	1	1.0	<0.10	0.10	
Silver	6/27/94	6/21/94	1	5.0	<0.050	0.050	N

Trace Metals Analytical Results - TCLP
Method SW-846

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213665
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-151 Date Extracted: May 25, 1994
Date Collected: May 12, 1994 Matrix: TCLP Extract

Analyte	Date Analyzed	Date Digested	Dilution Factor	Maximum Concentration Limit mg/L	Sample Result mg/L	Reporting Limit mg/L	Note
Arsenic	6/27/94	6/21/94	1	5.0	<0.10	0.10	
Barium	6/27/94	6/21/94	1	100	<5.0	5.0	
Cadmium	6/27/94	6/21/94	1	1.0	<0.010	0.010	
Chromium	6/27/94	6/21/94	1	5.0	<0.050	0.050	
Lead	6/27/94	6/21/94	1	5.0	<0.050	0.050	
Mercury	6/7/94	6/6/94	1	0.20	<0.0050	0.0050	
Selenium	6/27/94	6/21/94	1	1.0	<0.10	0.10	
Silver	6/27/94	6/21/94	1	5.0	<0.050	0.050	N

Trace Metals Analytical Results - TCLP
Method SW-846

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213666
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-159 Date Extracted: May 25, 1994
Date Collected: May 12, 1994 Matrix: TCLP Extract

Analyte	Date Analyzed	Date Digested	Dilution Factor	Maximum Concentration Limit mg/L	Sample Result mg/L	Reporting Limit mg/L	Note
Arsenic	6/27/94	6/21/94	1	5.0	<0.10	0.10	
Barium	6/27/94	6/21/94	1	100	<5.0	5.0	
Cadmium	6/27/94	6/21/94	1	1.0	<0.010	0.010	
Chromium	6/27/94	6/21/94	1	5.0	<0.050	0.050	
Lead	6/27/94	6/21/94	1	5.0	<0.050	0.050	
Mercury	6/7/94	6/6/94	1	0.20	<0.0050	0.0050	
Selenium	6/27/94	6/21/94	1	1.0	<0.10	0.10	
Silver	6/27/94	6/21/94	1	5.0	<0.050	0.050	N

Trace Metals Analytical Results - TCLP
Method SW-846

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213667
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-168 Date Extracted: May 25, 1994
Date Collected: May 12, 1994 Matrix: TCLP Extract

Analyte	Date Analyzed	Date Digested	Dilution Factor	Maximum Concentration Limit mg/L	Sample Result mg/L	Reporting Limit mg/L	Note
Arsenic	6/27/94	6/21/94	1	5.0	<0.10	0.10	
Barium	6/27/94	6/21/94	1	100	<5.0	5.0	
Cadmium	6/27/94	6/21/94	1	1.0	<0.010	0.010	
Chromium	6/27/94	6/21/94	1	5.0	<0.050	0.050	
Lead	6/27/94	6/21/94	1	5.0	<0.050	0.050	
Mercury	6/7/94	6/6/94	1	0.20	<0.0050	0.0050	
Selenium	6/27/94	6/21/94	1	1.0	<0.10	0.10	
Silver	6/27/94	6/21/94	1	5.0	<0.050	0.050	N

Trace Metals Analytical Results - TCLP
Method SW-846

Client: Nuclear Fuel Services, Inc.
Client Reference No.: LEFPC
Client Sample No.: 1661B-175
Date Collected: May 12, 1994

Lab Sample ID: 3213668
Date Received: May 17, 1994
Date Extracted: May 25, 1994
Matrix: TCLP Extract

Analyte	Date Analyzed	Date Digested	Dilution Factor	Maximum Concentration Limit mg/L	Sample Result mg/L	Reporting Limit mg/L	Note
Arsenic	6/27/94	6/21/94	1	5.0	<0.10	0.10	
Barium	6/27/94	6/21/94	1	100	<5.0	5.0	
Cadmium	6/27/94	6/21/94	1	1.0	<0.010	0.010	
Chromium	6/27/94	6/21/94	1	5.0	<0.050	0.050	
Lead	6/27/94	6/21/94	1	5.0	<0.050	0.050	
Mercury	6/7/94	6/6/94	1	0.20	<0.0050	0.0050	
Selenium	6/27/94	6/21/94	1	1.0	<0.10	0.10	
Silver	6/27/94	6/21/94	1	5.0	<0.050	0.050	N

Trace Metals Analytical Results - TCLP
Method SW-846

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213669
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-184 Date Extracted: May 25, 1994
Date Collected: May 12, 1994 Matrix: TCLP Extract

Analyte	Date Analyzed	Date Digested	Dilution Factor	Maximum Concentration Limit mg/L	Sample Result mg/L	Reporting Limit mg/L	Note
Arsenic	6/27/94	6/21/94	1	5.0	<0.10	0.10	
Barium	6/27/94	6/21/94	1	100	<5.0	5.0	
Cadmium	6/27/94	6/21/94	1	1.0	<0.010	0.010	
Chromium	6/27/94	6/21/94	1	5.0	<0.050	0.050	
Lead	6/27/94	6/21/94	1	5.0	<0.050	0.050	
Mercury	6/7/94	6/6/94	1	0.20	<0.0050	0.0050	
Selenium	6/27/94	6/21/94	1	1.0	<0.10	0.10	
Silver	6/27/94	6/21/94	1	5.0	<0.050	0.050	N

Trace Metals Analytical Results - TCLP
Method SW-846

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213670
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-192 Date Extracted: May 25, 1994
Date Collected: May 12, 1994 Matrix: TCLP Extract

Analyte	Date Analyzed	Date Digested	Dilution Factor	Maximum Concentration Limit mg/L	Sample Result mg/L	Reporting Limit mg/L	Note
Arsenic	6/27/94	6/21/94	1	5.0	<0.10	0.10	
Barium	6/27/94	6/21/94	1	100	<5.0	5.0	
Cadmium	6/27/94	6/21/94	1	1.0	0.017	0.010	
Chromium	6/27/94	6/21/94	1	5.0	<0.050	0.050	
Lead	6/27/94	6/21/94	1	5.0	<0.050	0.050	
Mercury	6/7/94	6/6/94	1	0.20	<0.0050	0.0050	
Selenium	6/27/94	6/21/94	1	1.0	<0.10	0.10	
Silver	6/27/94	6/21/94	1	5.0	<0.050	0.050	N

Trace Metals Analytical Results - TCLP
Method SW-846

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213671
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-200 Date Extracted: May 25, 1994
Date Collected: May 12, 1994 Matrix: TCLP Extract

Analyte	Date Analyzed	Date Digested	Dilution Factor	Maximum Concentration Limit mg/L	Sample Result mg/L	Reporting Limit mg/L	Note
Arsenic	6/27/94	6/21/94	1	5.0	<0.10	0.10	
Barium	6/27/94	6/21/94	1	100	<5.0	5.0	
Cadmium	6/27/94	6/21/94	1	1.0	<0.010	0.010	
Chromium	6/27/94	6/21/94	1	5.0	<0.050	0.050	
Lead	6/27/94	6/21/94	1	5.0	<0.050	0.050	
Mercury	6/7/94	6/6/94	1	0.20	<0.0050	0.0050	
Selenium	6/27/94	6/21/94	1	1.0	<0.10	0.10	
Silver	6/27/94	6/21/94	1	5.0	<0.050	0.050	N

Trace Metals Analytical Results
Method SW-846

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213673
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-72 Matrix: Soil

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result mg/kg</i>	<i>Detection Limit mg/kg</i>	<i>Note</i>
<i>Arsenic</i>	<i>6/23/94</i>	<i>1</i>	<i>4.6</i>	<i>0.11</i>	<i>*, N</i>
<i>Cadmium</i>	<i>6/24/94</i>	<i>50</i>	<i>12.1</i>	<i>5.6</i>	<i>N</i>
<i>Mercury</i>	<i>6/2/94</i>	<i>100</i>	<i>413</i>	<i>8.4</i>	

Trace Metals Analytical Results
Method SW-846

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213674
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-97 Matrix: Soil

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result mg/kg</i>	<i>Detection Limit mg/kg</i>	<i>Note</i>
<i>Arsenic</i>	<i>6/23/94</i>	<i>1</i>	<i>5.3</i>	<i>0.12</i>	<i>*, N</i>
<i>Cadmium</i>	<i>6/24/94</i>	<i>50</i>	<i>11.7</i>	<i>6.1</i>	<i>N</i>
<i>Mercury</i>	<i>6/2/94</i>	<i>100</i>	<i>385</i>	<i>9.2</i>	

Trace Metals Analytical Results
Method SW-846

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213675
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-106 Matrix: Soil

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result mg/kg</i>	<i>Detection Limit mg/kg</i>	<i>Note</i>
<i>Arsenic</i>	<i>6/23/94</i>	<i>1</i>	<i>3.9</i>	<i>0.098</i>	<i>*, N</i>
<i>Cadmium</i>	<i>6/24/94</i>	<i>50</i>	<i>84.0</i>	<i>4.9</i>	<i>N</i>
<i>Mercury</i>	<i>6/2/94</i>	<i>200</i>	<i>866</i>	<i>15.0</i>	

Trace Metals Analytical Results
Method SW-846

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213676
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-112 Matrix: Soil

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result mg/kg</i>	<i>Detection Limit mg/kg</i>	<i>Note</i>
<i>Arsenic</i>	<i>6/23/94</i>	<i>1</i>	<i>5.2</i>	<i>0.12</i>	<i>*, N</i>
<i>Cadmium</i>	<i>6/24/94</i>	<i>50</i>	<i>9.7</i>	<i>6.2</i>	<i>N</i>
<i>Mercury</i>	<i>6/2/94</i>	<i>100</i>	<i>234</i>	<i>8.7</i>	

Trace Metals Analytical Results
Method SW-846

Client: Nuclear Fuel Services, Inc. **Lab Sample ID:** 3213677
Client Reference No.: LEFPC **Date Received:** May 17, 1994
Client Sample No.: 1661B-116 **Matrix:** Soil

Analyte	Date Analyzed	Dilution Factor	Result mg/kg	Detection Limit mg/kg	Note
Arsenic	6/23/94	1	6.9	0.15	*, N
Cadmium	6/24/94	50	14.4	7.4	N
Mercury	6/2/94	100	394	9.3	

Trace Metals Analytical Results
Method SW-846

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213678
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-122 Matrix: Soil

Analyte	Date Analyzed	Dilution Factor	Result mg/kg	Detection Limit mg/kg	Note
Arsenic	6/23/94	1	5.5	0.12	*, N
Cadmium	6/24/94	50	11.3	6.0	N
Mercury	6/2/94	100	305	9.1	

Trace Metals Analytical Results
Method SW-846

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213679
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-126 Matrix: Soil

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result mg/kg</i>	<i>Detection Limit mg/kg</i>	<i>Note</i>
<i>Arsenic</i>	<i>6/23/94</i>	<i>1</i>	<i>5.4</i>	<i>0.12</i>	<i>*, N</i>
<i>Cadmium</i>	<i>6/24/94</i>	<i>50</i>	<i>13.1</i>	<i>6.1</i>	<i>N</i>
<i>Mercury</i>	<i>6/2/94</i>	<i>100</i>	<i>405</i>	<i>9.1</i>	

Trace Metals Analytical Results
Method SW-846

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213680
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-133 Matrix: Soil

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result mg/kg</i>	<i>Detection Limit mg/kg</i>	<i>Note</i>
<i>Arsenic</i>	<i>6/23/94</i>	<i>1</i>	<i>4.9</i>	<i>0.12</i>	<i>*, N</i>
<i>Cadmium</i>	<i>6/24/94</i>	<i>50</i>	<i>9.1</i>	<i>5.9</i>	<i>N</i>
<i>Mercury</i>	<i>6/2/94</i>	<i>100</i>	<i>300</i>	<i>7.6</i>	

Trace Metals Analytical Results
Method SW-846 - Mercury Results

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213681
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-101 Matrix: Water

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result ug/l</i>	<i>Detection Limit ug/l</i>	<i>Note</i>
<i>Mercury</i>	<i>6/2/94</i>	<i>2</i>	<i>0.47</i>	<i>0.30</i>	<i>P</i>

Trace Metals Analytical Results
Method SW-846

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213682
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-149 Matrix: Soil

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result mg/kg</i>	<i>Detection Limit mg/kg</i>	<i>Note</i>
<i>Arsenic</i>	<i>6/23/94</i>	<i>2</i>	<i>6.8</i>	<i>0.19</i>	<i>*, N</i>
<i>Cadmium</i>	<i>6/24/94</i>	<i>50</i>	<i>9.6</i>	<i>4.8</i>	<i>N</i>
<i>Mercury</i>	<i>6/2/94</i>	<i>10</i>	<i>25.4</i>	<i>0.68</i>	

Trace Metals Analytical Results
Method SW-846

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213683
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-157 Matrix: Soil

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result mg/kg</i>	<i>Detection Limit mg/kg</i>	<i>Note</i>
<i>Arsenic</i>	<i>6/23/94</i>	<i>2</i>	<i>7.2</i>	<i>0.19</i>	<i>*, N</i>
<i>Cadmium</i>	<i>6/24/94</i>	<i>50</i>	<i>9.7</i>	<i>4.7</i>	<i>N</i>
<i>Mercury</i>	<i>6/2/94</i>	<i>10</i>	<i>23.0</i>	<i>0.72</i>	

Trace Metals Analytical Results
Method SW-846

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213684
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-163 Matrix: Soil

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result mg/kg</i>	<i>Detection Limit mg/kg</i>	<i>Note</i>
<i>Arsenic</i>	<i>6/23/94</i>	<i>2</i>	<i>6.8</i>	<i>0.20</i>	<i>*, N</i>
<i>Cadmium</i>	<i>6/24/94</i>	<i>50</i>	<i>9.1</i>	<i>5.0</i>	<i>N</i>
<i>Mercury</i>	<i>6/2/94</i>	<i>10</i>	<i>24.4</i>	<i>0.65</i>	

Trace Metals Analytical Results
Method SW-846

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213685
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-171 Matrix: Soil

Analyte	Date Analyzed	Dilution Factor	Result mg/kg	Detection Limit mg/kg	Note
Arsenic	6/23/94	2	7.0	0.20	*, N
Cadmium	6/24/94	50	9.2	4.9	N
Mercury	6/2/94	10	23.8	0.75	

Trace Metals Analytical Results
Method SW-846

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213686
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-179 Matrix: Soil

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result mg/kg</i>	<i>Detection Limit mg/kg</i>	<i>Note</i>
<i>Arsenic</i>	<i>6/23/94</i>	<i>2</i>	<i>7.3</i>	<i>0.19</i>	<i>*, N</i>
<i>Cadmium</i>	<i>6/24/94</i>	<i>50</i>	<i>10.1</i>	<i>4.8</i>	<i>N</i>
<i>Mercury</i>	<i>6/2/94</i>	<i>10</i>	<i>23.5</i>	<i>0.62</i>	

Trace Metals Analytical Results
Method SW-846

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213687
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-189 Matrix: Soil

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result mg/kg</i>	<i>Detection Limit mg/kg</i>	<i>Note</i>
<i>Arsenic</i>	<i>6/23/94</i>	<i>2</i>	<i>7.2</i>	<i>0.19</i>	<i>*, N</i>
<i>Cadmium</i>	<i>6/24/94</i>	<i>50</i>	<i>9.5</i>	<i>4.8</i>	<i>N</i>
<i>Mercury</i>	<i>6/2/94</i>	<i>10</i>	<i>23.7</i>	<i>0.75</i>	

Trace Metals Analytical Results
Method SW-846

Client: Nuclear Fuel Services, Inc.

Lab Sample ID: 3213688

Client Reference No.: LEFPC

Date Received: May 17, 1994

Client Sample No.: 1661B-195

Matrix: Soil

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result mg/kg</i>	<i>Detection Limit mg/kg</i>	<i>Note</i>
<i>Arsenic</i>	<i>6/23/94</i>	<i>2</i>	<i>7.2</i>	<i>0.20</i>	<i>*, N</i>
<i>Cadmium</i>	<i>6/24/94</i>	<i>50</i>	<i>9.2</i>	<i>5.0</i>	<i>N</i>
<i>Mercury</i>	<i>6/2/94</i>	<i>10</i>	<i>19.4</i>	<i>0.72</i>	

Trace Metals Analytical Results
Method SW-846

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213689
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-203 Matrix: Soil

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result mg/kg</i>	<i>Detection Limit mg/kg</i>	<i>Note</i>
<i>Arsenic</i>	<i>6/23/94</i>	<i>2</i>	<i>7.3</i>	<i>0.20</i>	<i>*, N</i>
<i>Cadmium</i>	<i>6/24/94</i>	<i>50</i>	<i>10.1</i>	<i>5.0</i>	<i>N</i>
<i>Mercury</i>	<i>6/2/94</i>	<i>10</i>	<i>22.6</i>	<i>0.58</i>	

Trace Metals Analytical Results
Method SW-846 - Mercury Results

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213690
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-206 Matrix: Water

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result ug/l</i>	<i>Detection Limit ug/l</i>	<i>Note</i>
<i>Mercury</i>	<i>6/2/94</i>	<i>2</i>	<i>0.36</i>	<i>0.30</i>	<i>P</i>

July 12, 1994

Mr. Mike Rush
Nuclear Fuel Services, Inc.
1205 Banner Hill Road
Erwin, TN 37650

Dear Mr. Rush:

Enclosed along with this letter are the hard copy results for the sample(s) received July 1, 1994.
This information was faxed to you today.

Please contact me at (404)244-0827 if you have any questions. Also, please refer to Batch ID
32318 in future correspondence.

Sincerely,

ECOTEK LABORATORY SERVICES, INC.

Craig Johnson
Manager, Project Management

Enclosures.
CCJ/crb

CASE NARRATIVE
FOR TRACE METALS ANALYSIS

Client: Nuclear Fuel Services, Inc.

Project ID: LEFPC

Batch ID: 32318

Analytical Summary

One sample was received on May 17, 1994 for TCLP extraction and metals analysis. The leachate was analyzed by SW-846 on July 5 and July 11, 1994 for TCLP metals.

Procedural Summary

- Analysis - Metal constituents were released from the leachate through an acid digestion process. The digested leachate was then analyzed by cold vapor atomic absorption spectrometry (CVAA) and by inductively coupled plasma atomic emission spectrometry (ICP) to determine the concentration of analytes in the leachate. The following methods and instruments were used for analysis:

<u>Analysis</u>	<u>Digestion</u>	<u>Instrument</u>	<u>Method</u>
ICP	3010	TJA ICAP 61E	6010
CVAA	7470	TJA S-12	7470

- Scope and Limitations - Spectral interferences resulting from overlapping spectra and/or stray light from the emissions of high concentration elements may cause difficulties during the ICP analysis. Overlapping spectra are compensated for with the application of interelement correction factors (IECs). Interference from high concentration elements may be minimized by diluting the leachate.

Interferences during the CVAA analysis can result from high sulfide and/or high chloride concentrations in the leachate. These interferences are minimized with the addition of potassium permanganate and hydroxylamine sulfate during the digestion process. Interferences resulting from certain organic compounds in the leachate may be reduced through dilutions.

CASE NARRATIVE
FOR TRACE METALS ANALYSIS (cont.)

QA/QC Summary

For the analysis, the following QC was performed: preparation blank, extraction blank, blank spike, blank spike duplicate, matrix duplicate, and matrix spike. All appropriate QC data was within acceptable control limits.

General Discussion

No analytical difficulties were encountered during the analysis.

Brian D. Marshall
Section Supervisor (or designee)

11 July 1994
Date

Trace Metals Analytical Results - TCLP
Method SW-846

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 32318-1
Client Reference No.: LEFPC Date Received: 5/17/94
Client Sample No.: 1661B-224 Matrix: TCLP Extract
Date Collected: 5/12/94

Analyte	Date Analyzed	Date Digested	Dilution Factor	Maximum Concentration Limit mg/L	Sample Result mg/L	Reporting Limit mg/L	Note
Arsenic	7/11/94	7/7/94	1	5.0	<0.10	0.10	
Barium	7/11/94	7/7/94	1	100	<5.0	5.0	
Cadmium	7/11/94	7/7/94	1	1.0	0.038	0.010	
Chromium	7/11/94	7/7/94	1	5.0	<0.050	0.050	
Lead	7/11/94	7/7/94	1	5.0	<0.050	0.050	
Mercury	7/5/94	7/5/94	50	0.20	0.24	0.010	
Selenium	7/11/94	7/7/94	1	1.0	<0.10	0.10	
Silver	7/11/94	7/7/94	1	5.0	<0.050	0.050	

Trace Metals Analytical Results
Method SW-846

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213695
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-221 Matrix: Soil

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result mg/kg</i>	<i>Detection Limit mg/kg</i>	<i>Note</i>
<i>Arsenic</i>	<i>6/23/94</i>	<i>1</i>	<i>7.4</i>	<i>0.16</i>	<i>*, N</i>
<i>Cadmium</i>	<i>6/24/94</i>	<i>50</i>	<i>13.2</i>	<i>8.0</i>	<i>N</i>
<i>Mercury</i>	<i>6/2/94</i>	<i>300</i>	<i>1950</i>	<i>37.3</i>	

Trace Metals Analytical Results
TCLP Blank Spike and Blank Spike Duplicate Results

Client: Nuclear Fuel Services, Inc.
Client Reference No.: LEFPC
Client Sample No.: Not Applicable

Lab Sample ID: LCSMS, LCSMSD
Date Received: Not Applicable
Matrix: Water

Analyte	LCSMS ug/l	LCSMSD ug/l	Spike Added ug/l	LCSMS % Recovery	LCSMSD % Recovery	% RPD	Note
Arsenic	877.8	855.2	1000	87.8	85.5	2.6	
Barium	1014.3	987.3	1000	101.4	98.7	2.7	
Cadmium	860.5	853.9	1000	86.0	85.4	0.8	
Chromium	881.4	869.3	1000	88.1	86.9	1.4	
Lead	875.6	870.1	1000	87.6	87.0	0.6	
Mercury	1.2	NA	1	120.0	NA	NA	
Selenium	893.9	855.6	1000	89.4	85.6	4.4	
Silver	883.9	870.7	1000	88.4	87.1	1.5	

Trace Metals Analytical Results
Soil Blank Spike and Blank Spike Duplicate Results

Client: Nuclear Fuel Services, Inc. Lab Sample ID: LCSMS, LCSMSD
Client Reference No.: LEFPC Date Received: Not Applicable
Client Sample No.: Not Applicable Matrix: Water

Analyte	LCSMS ug/l	LCSMSD ug/l	Spike Added ug/l	LCSMS % Recovery	LCSMSD % Recovery	% RPD	Note
Arsenic	37.0	37.4	100G	3.7	3.7	1.0	
Cadmium	22.5	24.3	1000	2.3	2.4	7.7	
Mercury	0.91	NA	1	91.0	NA	NA	

Trace Metals Analytical Results
Blank Spike Results - Soil

Client: Nuclear Fuel Services, Inc. Lab Sample ID: LCSMS
Client Reference No.: LEFPC Date Received: Not Applicable
Client Sample No.: Not Applicable Matrix: Water

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result ug/l</i>	<i>True Value ug/l</i>	<i>% Recovery</i>
<i>Arsenic</i>	<i>6/23/94</i>	<i>1</i>	<i>37.0</i>	<i>40</i>	<i>92.5</i>
<i>Cadmium</i>	<i>6/24/94</i>	<i>5</i>	<i>22.5</i>	<i>20</i>	<i>112.5</i>
<i>Mercury</i>	<i>6/2/94</i>	<i>1</i>	<i>0.91</i>	<i>1</i>	<i>91.0</i>

Limits = 75 - 125%

Trace Metals Analytical Results
Blank Spike Results - TCLP #1

Client: Nuclear Fuel Services, Inc. Lab Sample ID: LCSMS
Client Reference No.: LEFPC Date Received: Not Applicable
Client Sample No.: Not Applicable Matrix: Water

Analyte	Date Analyzed	Dilution Factor	Result ug/l	True Value ug/l	% Recovery
Arsenic	6/27/94	1	878	1000	87.8
Barium	6/27/94	1	1010	1000	101.0
Cadmium	6/27/94	1	860	1000	86.0
Chromium	6/27/94	1	881	1000	88.1
Lead	6/27/94	1	876	1000	87.6
Mercury	6/7/94	1	1.2	1	120.0
Selenium	6/27/94	1	894	1000	89.4
Silver	6/27/94	1	884	1000	88.4

Limits = 75 - 125%

Trace Metals Analytical Results
Blank Spike Results - Water

Client: Nuclear Fuel Services, Inc. Lab Sample ID: LCSMS-A
Client Reference No.: LEFPC Date Received: Not Applicable
Client Sample No.: Not Applicable Matrix: Water

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result ug/l</i>	<i>True Value ug/l</i>	<i>% Recovery</i>
<i>Mercury</i>	<i>6/1/94</i>	<i>1</i>	<i>0.94</i>	<i>1</i>	<i>94.0</i>

Limits = 75 - 125%

Trace Metals Analytical Results
Blank Spike Results - Water

Client: Nuclear Fuel Services, Inc.

Lab Sample ID: LCSMS-B

Client Reference No.: LEFPC

Date Received: Not Applicable

Client Sample No.: Not Applicable

Matrix: Water

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result ug/l</i>	<i>True Value ug/l</i>	<i>% Recovery</i>
<i>Mercury</i>	<i>6/1/94</i>	<i>1</i>	<i>1.0</i>	<i>1</i>	<i>100.0</i>

Limits = 75 - 125%

Trace Metals Analytical Results
Blank Spike Results - Water

Client: Nuclear Fuel Services, Inc. Lab Sample ID: LCSMS
Client Reference No.: LEFPC Date Received: Not Applicable
Client Sample No.: Not Applicable Matrix: Water

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result ug/l</i>	<i>True Value ug/l</i>	<i>% Recovery</i>
<i>Mercury</i>	<i>6/2/94</i>	<i>1</i>	<i>0.92</i>	<i>1</i>	<i>92.0</i>

Limits = 75 - 125%

Trace Metals Analytical Results
Blank Spike Results - TCLP

Client: Nuclear Fuel Services, Inc. Lab Sample ID: LCSMS-A
Client Reference No.: LEFPC Date Received: Not Applicable
Client Sample No.: Not Applicable Matrix: Water

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result ug/l</i>	<i>True Value ug/l</i>	<i>% Recovery</i>
<i>Mercury</i>	<i>6/7/94</i>	<i>1</i>	<i>1.2</i>	<i>1</i>	<i>120.0</i>

Limits = 75 - 125%

Trace Metals Analytical Results
Blank Spike Results - TCLP

Client: Nuclear Fuel Services, Inc.

Lab Sample ID: LCSMS-B

Client Reference No.: LEFPC

Date Received: Not Applicable

Client Sample No.: Not Applicable

Matrix: Water

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result ug/l</i>	<i>True Value ug/l</i>	<i>% Recovery</i>
<i>Mercury</i>	<i>6/7/94</i>	<i>1</i>	<i>1.2</i>	<i>1</i>	<i>120.0</i>

Limits = 75 - 125%

Trace Metals Analytical Results
Blank Spike Results - Soil

Client: Nuclear Fuel Services, Inc. Lab Sample ID: LCSMS
Client Reference No.: LEFPC Date Received: Not Applicable
Client Sample No.: Not Applicable Matrix: Water

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result mg/kg</i>	<i>True Value mg/kg</i>	<i>% Recovery</i>
<i>Mercury</i>	<i>6/4/94</i>	<i>1</i>	<i>0.46</i>	<i>0.50</i>	<i>92.0</i>

Limits = 75 - 125%

*Trace Metals Analytical Results - TCLP
Method SW-846*

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213655
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-67 Date Extracted: May 25, 1994
Date Collected: May 12, 1994 Matrix: TCLP Extract

Analyte	Date Analyzed	Date Digested	Dilution Factor	Maximum Concentration Limit mg/L	Sample Result mg/L	Reporting Limit mg/L	Note
Mercury	6/7/94	6/6/94	1	0.20	<0.0050	0.0050	P

Trace Metals Analytical Results - TCLP
Method SW-846

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213656
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-94 Date Extracted: May 25, 1994
Date Collected: May 12, 1994 Matrix: TCLP Extract

Analyte	Date Analyzed	Date Digested	Dilution Factor	Maximum Concentration Limit mg/L	Sample Result mg/L	Reporting Limit mg/L	Note
Mercury	6/7/94	6/6/94	1	0.20	<0.0050	0.0050	P

*Trace Metals Analytical Results - TCLP
Method SW-846*

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213657
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-104 Date Extracted: May 25, 1994
Date Collected: May 12, 1994 Matrix: TCLP Extract

Analyte	Date Analyzed	Date Digested	Dilution Factor	Maximum Concentration Limit mg/L	Sample Result mg/L	Reporting Limit mg/L	Note
Mercury	6/7/94	6/6/94	1	0.20	<0.0050	0.0050	P

Trace Metals Analytical Results - TCLP
Method SW-846

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213658
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-109 Date Extracted: May 25, 1994
Date Collected: May 12, 1994 Matrix: TCLP Extract

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Date Digested</i>	<i>Dilution Factor</i>	<i>Maximum Concentration Limit mg/L</i>	<i>Sample Result mg/L</i>	<i>Reporting Limit mg/L</i>	<i>Note</i>
<i>Mercury</i>	<i>6/7/94</i>	<i>6/6/94</i>	<i>1</i>	<i>0.20</i>	<i><0.0050</i>	<i>0.0050</i>	<i>P</i>

*Trace Metals Analytical Results - TCLP
Method SW-846*

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213659
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-114 Date Extracted: May 25, 1994
Date Collected: May 12, 1994 Matrix: TCLP Extract

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Date Digested</i>	<i>Dilution Factor</i>	<i>Maximum Concentration Limit mg/L</i>	<i>Sample Result mg/L</i>	<i>Reporting Limit mg/L</i>	<i>Note</i>
<i>Mercury</i>	<i>6/7/94</i>	<i>6/6/94</i>	<i>1</i>	<i>0.20</i>	<i><0.0050</i>	<i>0.0050</i>	<i>P</i>

Trace Metals Analytical Results - TCLP
Method SW-846

Client: Nuclear Fuel Services, Inc. **Lab Sample ID:** 3213660
Client Reference No.: LEFPC **Date Received:** May 17, 1994
Client Sample No.: 1661B-119 **Date Extracted:** May 25, 1994
Date Collected: May 12, 1994 **Matrix:** TCLP Extract

Analyte	Date Analyzed	Date Digested	Dilution Factor	Maximum Concentration Limit mg/L	Sample Result mg/L	Reporting Limit mg/L	Note
Mercury	6/7/94	6/6/94	1	0.20	<0.0050	0.0050	P

Trace Metals Analytical Results - TCLP
Method SW-846

Client: Nuclear Fuel Services, Inc.

Lab Sample ID: 3213661

Client Reference No.: LEFPC

Date Received: May 17, 1994

Client Sample No.: 1661B-124

Date Extracted: May 25, 1994

Date Collected: May 12, 1994

Matrix: TCLP Extract

Analyte	Date Analyzed	Date Digested	Dilution Factor	Maximum Concentration Limit mg/L	Sample Result mg/L	Reporting Limit mg/L	Note
Mercury	6/7/94	6/6/94	1	0.20	<0.0050	0.0050	P

Trace Metals Analytical Results - TCLP
Method SW-846

Client: Nuclear Fuel Services, Inc. **Lab Sample ID:** 3213662
Client Reference No.: LEFPC **Date Received:** May 17, 1994
Client Sample No.: 1661B-129 **Date Extracted:** May 25, 1994
Date Collected: May 12, 1994 **Matrix:** TCLP Extract

Analyte	Date Analyzed	Date Digested	Dilution Factor	Maximum Concentration Limit mg/L	Sample Result mg/L	Reporting Limit mg/L	Note
Mercury	6/7/94	6/6/94	1	0.20	<0.0050	0.0050	P

Trace Metals Analytical Results - TCLP
Method SW-846

Client: Nuclear Fuel Services, Inc. **Lab Sample ID:** 3213664
Client Reference No.: LEFPC **Date Received:** May 17, 1994
Client Sample No.: 1661B-143 **Date Extracted:** May 25, 1994
Date Collected: May 12, 1994 **Matrix:** TCLP Extract

Analyte	Date Analyzed	Date Digested	Dilution Factor	Maximum Concentration Limit mg/L	Sample Result mg/L	Reporting Limit mg/L	Note
Mercury	6/7/94	6/6/94	1	0.20	<0.0050	0.0050	P

Trace Metals Analytical Results - TCLP
Method SW-846

Client: Nuclear Fuel Services, Inc. **Lab Sample ID:** 3213665
Client Reference No.: LEFPC **Date Received:** May 17, 1994
Client Sample No.: 1661B-151 **Date Extracted:** May 25, 1994
Date Collected: May 12, 1994 **Matrix:** TCLP Extract

Analyte	Date Analyzed	Date Digested	Dilution Factor	Maximum Concentration Limit mg/L	Sample Result mg/L	Reporting Limit mg/L	Note
Mercury	6/7/94	6/6/94	2	0.20	<0.0050	0.0050	P

*Trace Metals Analytical Results - TCLP
Method SW-846*

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213666
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-159 Date Extracted: May 25, 1994
Date Collected: May 12, 1994 Matrix: TCLP Extract

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Date Digested</i>	<i>Dilution Factor</i>	<i>Maximum Concentration Limit mg/L</i>	<i>Sample Result mg/L</i>	<i>Reporting Limit mg/L</i>	<i>Note</i>
<i>Mercury</i>	<i>6/7/94</i>	<i>6/6/94</i>	<i>1</i>	<i>0.20</i>	<i><0.0050</i>	<i>0.0050</i>	<i>P</i>

*Trace Metals Analytical Results - TCLP
Method SW-846*

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213667
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-168 Date Extracted: May 25, 1994
Date Collected: May 12, 1994 Matrix: TCLP Extract

Analyte	Date Analyzed	Date Digested	Dilution Factor	Maximum Concentration Limit mg/L	Sample Result mg/L	Reporting Limit mg/L	Note
Mercury	6/7/94	6/6/94	1	0.20	<0.0050	0.0050	P

*Trace Metals Analytical Results - TCLP
Method SW-846*

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213668
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-175 Date Extracted: May 25, 1994
Date Collected: May 12, 1994 Matrix: TCLP Extract

Analyte	Date Analyzed	Date Digested	Dilution Factor	Maximum Concentration Limit mg/L	Sample Result mg/L	Reporting Limit mg/L	Note
Mercury	6/7/94	6/6/94	1	0.20	<0.0050	0.0050	P

*Trace Metals Analytical Results - TCLP
Method SW-846*

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213669
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-184 Date Extracted: May 25, 1994
Date Collected: May 12, 1994 Matrix: TCLP Extract

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Date Digested</i>	<i>Dilution Factor</i>	<i>Maximum Concentration Limit mg/L</i>	<i>Sample Result mg/L</i>	<i>Reporting Limit mg/L</i>	<i>Note</i>
Mercury	6/7/94	6/6/94	1	0.20	<0.0050	0.0050	P

*Trace Metals Analytical Results - TCLP
Method SW-846*

Client: Nuclear Fuel Services, Inc.
Client Reference No.: LEFPC
Client Sample No.: 1661B-192
Date Collected: May 12, 1994

Lab Sample ID: 3213670
Date Received: May 17, 1994
Date Extracted: May 25, 1994
Matrix: TCLP Extract

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Date Digested</i>	<i>Dilution Factor</i>	<i>Maximum Concentration Limit mg/L</i>	<i>Sample Result mg/L</i>	<i>Reporting Limit mg/L</i>	<i>Note</i>
<i>Mercury</i>	<i>6/7/94</i>	<i>6/6/94</i>	<i>1</i>	<i>0.20</i>	<i><0.0050</i>	<i>0.0050</i>	<i>P</i>

Trace Metals Analytical Results - TCLP
Method SW-846

Client: Nuclear Fuel Services, Inc. **Lab Sample ID:** 3213671
Client Reference No.: LEFPC **Date Received:** May 17, 1994
Client Sample No.: 1661B-200 **Date Extracted:** May 25, 1994
Date Collected: May 12, 1994 **Matrix:** TCLP Extract

Analyte	Date Analyzed	Date Digested	Dilution Factor	Maximum Concentration Limit mg/L	Sample Result mg/L	Reporting Limit mg/L	Note
Mercury	6/7/94	6/6/94	1	0.20	<0.0050	0.0050	P

Trace Metals Analytical Results Method SW-846 - Mercury Results - Soils					
Client: Nuclear Fuel Services, Inc.			Lab Sample ID: 3213673		
Client Reference No.: LEFPC			Date Received: May 17, 1994		
Client Sample No.: 1661B-72			Matrix: Soil		
Analyte	Date Analyzed	Dilution Factor	Result mg/kg	Detection Limit mg/kg	Note
Mercury	6/3/93	100	413	8.4	

Trace Metals Analytical Results
Method SW-846 - Mercury Results - Soils

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213674
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-97 Matrix: Soil

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result mg/kg</i>	<i>Detection Limit mg/kg</i>	<i>Note</i>
<i>Mercury</i>	<i>6/3/93</i>	<i>100</i>	<i>385</i>	<i>9.2</i>	

Trace Metals Analytical Results
Method SW-846 - Mercury Results - Soils

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213675
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-106 Matrix: Soil

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result mg/kg</i>	<i>Detection Limit mg/kg</i>	<i>Note</i>
<i>Mercury</i>	<i>6/3/93</i>	<i>200</i>	<i>866</i>	<i>15.0</i>	

Trace Metals Analytical Results
Method SW-846 - Mercury Results - Soils

Client: Nuclear Fuel Services, Inc.

Lab Sample ID: 3213676

Client Reference No.: LEFPC

Date Received: May 17, 1994

Client Sample No.: 1661B-112

Matrix: Soil

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result mg/kg</i>	<i>Detection Limit mg/kg</i>	<i>Note</i>
<i>Mercury</i>	<i>6/3/93</i>	<i>100</i>	<i>234</i>	<i>8.7</i>	

Trace Metals Analytical Results Method SW-846 - Mercury Results - Soils					
Client: Nuclear Fuel Services, Inc.			Lab Sample ID: 3213677		
Client Reference No.: LEFPC			Date Received: May 17, 1994		
Client Sample No.: 1661B-116			Matrix: Soil		
Analyte	Date Analyzed	Dilution Factor	Result mg/kg	Detection Limit mg/kg	Note
Mercury	6/3/93	100	394	9.3	

Trace Metals Analytical Results Method SW-846 - Mercury Results - Soils					
Client: Nuclear Fuel Services, Inc.			Lab Sample ID: 3213678		
Client Reference No.: LEFPC			Date Received: May 17, 1994		
Client Sample No.: 1661B-122			Matrix: Soil		
Analyte	Date Analyzed	Dilution Factor	Result mg/kg	Detection Limit mg/kg	Note
Mercury	6/3/93	100	305	9.1	

Trace Metals Analytical Results					
Method SW-846 - Mercury Results - Soils					
Client: Nuclear Fuel Services, Inc.			Lab Sample ID: 3213679		
Client Reference No.: LEFPC			Date Received: May 17, 1994		
Client Sample No.: 1661B-126			Matrix: Soil		
Analyte	Date Analyzed	Dilution Factor	Result mg/kg	Detection Limit mg/kg	Note
Mercury	6/3/93	100	405	9.1	

Trace Metals Analytical Results Method SW-846 - Mercury Results - Soils					
Client: Nuclear Fuel Services, Inc.			Lab Sample ID: 3213680		
Client Reference No.: LEFPC			Date Received: May 17, 1994		
Client Sample No.: 1661B-133			Matrix: Soil		
Analyte	Date Analyzed	Dilution Factor	Result mg/kg	Detection Limit mg/kg	Note
Mercury	6/3/93	100	300	7.6	

Trace Metals Analytical Results
Method SW-846 - Mercury Results - Soils

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213682
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-149 Matrix: Soil

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result mg/kg</i>	<i>Detection Limit mg/kg</i>	<i>Note</i>
<i>Mercury</i>	<i>6/3/94</i>	<i>100</i>	<i>254</i>	<i>6.8</i>	

Trace Metals Analytical Results					
Method SW-846 - Mercury Results - Soils					
Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213683 Client Reference No.: LEFPC Date Received: May 17, 1994 Matrix: Soil					
Analyte	Date Analyzed	Dilution Factor	Result mg/kg	Detection Limit mg/kg	Note
Mercury	6/3/94	10	23.0	0.72	

Trace Metals Analytical Results Method SW-846 - Mercury Results - Soils					
Client: Nuclear Fuel Services, Inc.			Lab Sample ID: 3213684		
Client Reference No.: LEFPC			Date Received: May 17, 1994		
Client Sample No.: 1661B-163			Matrix: Soil		
Analyte	Date Analyzed	Dilution Factor	Result mg/kg	Detection Limit mg/kg	Note
Mercury	6/3/94	10	24.4	0.65	

Trace Metals Analytical Results Method SW-846 - Mercury Results - Soils					
Client: Nuclear Fuel Services, Inc.			Lab Sample ID: 3213685		
Client Reference No.: LEFPC			Date Received: May 17, 1994		
Client Sample No.: 1661B-171			Matrix: Soil		
Analyte	Date Analyzed	Dilution Factor	Result mg/kg	Detection Limit mg/kg	Note
Mercury	6/3/94	10	23.8	0.75	

Trace Metals Analytical Results
Method SW-846 - Mercury Results - Soils

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213686
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-179 Matrix: Soil

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result mg/kg</i>	<i>Detection Limit mg/kg</i>	<i>Note</i>
<i>Mercury</i>	<i>6/3/94</i>	<i>10</i>	<i>23.5</i>	<i>0.62</i>	

Trace Metals Analytical Results
Method SW-846 - Mercury Results - Soils

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213687
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-189 Matrix: Soil

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result mg/kg</i>	<i>Detection Limit mg/kg</i>	<i>Note</i>
<i>Mercury</i>	<i>6/3/94</i>	<i>10</i>	<i>23.7</i>	<i>0.75</i>	

Trace Metals Analytical Results
Method SW-846 - Mercury Results - Soils

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213688
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-195 Matrix: Soil

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result mg/kg</i>	<i>Detection Limit mg/kg</i>	<i>Note</i>
<i>Mercury</i>	<i>6/3/94</i>	<i>10</i>	<i>19.4</i>	<i>0.72</i>	

Trace Metals Analytical Results Method SW-846 - Mercury Results - Soils					
Client: Nuclear Fuel Services, Inc.			Lab Sample ID: 3213689		
Client Reference No.: LEFPC			Date Received: May 17, 1994		
Client Sample No.: 1661B-203			Matrix: Soil		
Analyte	Date Analyzed	Dilution Factor	Result mg/kg	Detection Limit mg/kg	Note
Mercury	6/3/94	10	22.6	0.58	

Trace Metals Analytical Results
Method SW-846 - Mercury Results - Soils

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3213695
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-221 Matrix: Soil

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result mg/kg</i>	<i>Detection Limit mg/kg</i>	<i>Note</i>
<i>Mercury</i>	<i>6/3/94</i>	<i>300</i>	<i>1950</i>	<i>37.3</i>	

CASE NARRATIVE
FOR TRACE METALS ANALYSIS

Client: Nuclear Fuel Services, Inc.
Project ID: LEFPC
Batch ID: 32140

Analytical Summary

Four soil samples were received on May 17, 1994; two for TCLP extraction and analysis for TCLP metals and two for Arsenic, Cadmium and Mercury analysis. The samples were analyzed by SW-846 between May 31 and June 27, 1994.

Procedural Summary

- Analysis - Metal constituents were released from the sample through an acid digestion process. The digestates were then analyzed by cold vapor atomic absorption spectrometry (CVAA), graphite furnace atomic absorption spectrometry (GFAA), and by inductively coupled plasma atomic emission spectrometry (ICP) to determine the concentration of analytes in each sample. The following methods and instruments were used for analysis:

<u>Analysis</u>	<u>Digestion</u>	<u>Instrument</u>	<u>Method</u>
ICP	3010	TJA ICAP 61E	6010A
GFAA-As	3050	TJA SH-4000	7060
GFAA-Cd	3050	TJA SH-22	7131
CVAA	7470/7471	TJA S-12	7470, 7471

- Scope and Limitations - Spectral interferences resulting from overlapping spectra and/or stray light from the emissions of high concentration elements may cause difficulties during the ICP analysis. Overlapping spectra are compensated for with the application of interelement correction factors (IECs). Interference from high concentration elements may be minimized by diluting the sample.

Chemical reactions occurring at elevated temperatures during the GFAA analysis may result in suppression or enhancement of analyte absorbance. These effects are minimized with the addition of matrix modifiers prior to analysis.

CASE NARRATIVE
FOR TRACE METALS ANALYSIS (cont.)

Interferences during the CVAA analysis can result from high sulfide and/or high chloride concentrations in the sample. These interferences are minimized with the addition of potassium permanganate and hydroxylamine sulfate during the digestion process. Interferences resulting from certain organic compounds in the sample may be reduced through dilutions.

QA/QC Summary

For the analysis, the following sample QC was performed: preparation blank, blank spike, blank spike duplicate, sample matrix duplicate, sample matrix spike, sample matrix spike duplicate, TCLP matrix spike, TCLP matrix spike duplicate and a serial dilution. All appropriate QC data was within acceptable control limits with the following exceptions:

The soil sample matrix duplicate's relative percent difference, RPD, for sample 1661B-64 was above the 0 - 20% control limits for Arsenic.

The TCLP sample matrix spike's percent recovery for Barium and Silver for sample 1661B-61 was outside of the 75 - 125% control limits.

The TCLP sample matrix spike's percent recovery for Barium, Lead and Silver for sample 1661B-135 was outside of the 75 - 125% control limits.

The soil sample matrix spike's percent recoveries for Arsenic, Cadmium and Mercury for sample 1661B-64 was outside of the 75 - 125% control limits.

The soil sample matrix spike's percent recovery for Mercury for sample 1661B-141 was outside of the 75 - 125% control limits.

Section Supervisor (or designee)

6/30/94

Date

Trace Metals Analytical Results - TCLP
Method SW-846

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3214004
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-61 Date Extracted: May 24, 1994
Date Collected: May 12, 1994 Matrix: TCLP Extract

Analyte	Date Analyzed	Date Digested	Dilution Factor	Maximum Concentration Limit mg/L	Sample Result mg/L	Reporting Limit mg/L	Note
Arsenic	6/27/94	6/23/94	1	5.0	<0.10	0.10	
Barium	6/27/94	6/23/94	1	100	<5.0	5.0	N
Cadmium	6/27/94	6/23/94	1	1.0	<0.010	0.010	
Chromium	6/27/94	6/23/94	1	5.0	<0.050	0.050	
Lead	6/27/94	6/23/94	1	5.0	<0.050	0.050	
Mercury	5/31/94	5/31/94	1	0.20	<0.0050	0.0050	
Selenium	6/27/94	6/23/94	1	1.0	<0.10	0.10	
Silver	6/27/94	6/23/94	1	5.0	<0.050	0.050	N

**Trace Metals Analytical Results - TCLP
Method SW-846**

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3214009
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-135 Date Extracted: May 24, 1994
Date Collected: May 12, 1994 Matrix: TCLP Extract

Analyte	Date Analyzed	Date Digested	Dilution Factor	Maximum Concentration Limit mg/L	Sample Result mg/L	Reporting Limit mg/L	Note
Arsenic	6/27/94	6/23/94	1	5.0	<0.10	0.10	
Barium	6/27/94	6/23/94	1	100	15.6	5.0	N
Cadmium	6/27/94	6/23/94	1	1.0	0.013	0.010	
Chromium	6/27/94	6/23/94	1	5.0	<0.050	0.050	
Lead	6/27/94	6/23/94	1	5.0	<0.050	0.050	N
Mercury	5/31/94	5/31/94	1	0.20	<0.0050	0.0050	
Selenium	6/27/94	6/23/94	1	1.0	<0.10	0.10	
Silver	6/27/94	6/23/94	1	5.0	<0.050	0.050	N

Trace Metals Analytical Results
Blank Spike Results - TCLP

Client: Nuclear Fuel Services, Inc.

Lab Sample ID: LCSMS

Client Reference No.: LEFPC

Date Received: Not Applicable

Client Sample No.: Not Applicable

Matrix: Water

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result ug/l</i>	<i>True Value ug/l</i>	<i>% Recovery</i>
<i>Arsenic</i>	<i>6/27/94</i>	<i>1</i>	<i>878</i>	<i>1000</i>	<i>87.8</i>
<i>Barium</i>	<i>6/27/94</i>	<i>1</i>	<i>1010</i>	<i>1000</i>	<i>101.0</i>
<i>Cadmium</i>	<i>6/27/94</i>	<i>1</i>	<i>860</i>	<i>1000</i>	<i>86.0</i>
<i>Chromium</i>	<i>6/27/94</i>	<i>1</i>	<i>881</i>	<i>1000</i>	<i>88.1</i>
<i>Lead</i>	<i>6/27/94</i>	<i>1</i>	<i>876</i>	<i>1000</i>	<i>87.6</i>
<i>Mercury</i>	<i>5/31/94</i>	<i>1</i>	<i>1.2</i>	<i>1</i>	<i>120.0</i>
<i>Selenium</i>	<i>6/27/94</i>	<i>1</i>	<i>894</i>	<i>1000</i>	<i>89.4</i>
<i>Silver</i>	<i>6/27/94</i>	<i>1</i>	<i>884</i>	<i>1000</i>	<i>88.4</i>

Limits = 75 - 125%

Trace Metals Analytical Results
Blank Spike Results - TCLP

Client: Nuclear Fuel Services, Inc.

Lab Sample ID: LCSMS

Client Reference No.: LEFPC

Date Received: Not Applicable

Client Sample No.: Not Applicable

Matrix: Water

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result ug/l</i>	<i>True Value ug/l</i>	<i>% Recovery</i>
<i>Mercury</i>	<i>5/31/94</i>	<i>1</i>	<i>1.2</i>	<i>1</i>	<i>120.0</i>

Limits = 75 - 125%

*Trace Metals Analytical Results - TCLP
 Matrix Spike & Matrix Spike Duplicate Results*

Client: Nuclear Fuel Services, Inc.
 Client Reference No.: LEFPC
 Client Sample No.: 1661B-61

Lab Sample ID: 3214004
 Date Received: May 17, 1994
 Matrix: TCLP Extract

Analyte	Sample mg/L	Spike mg/L	Spike Added mg/L	% Recovery	Spike Duplicate mg/L	% Recovery	% RPD	Note
Arsenic	<0.015	3.9872	5	79.7	3.8899	77.8	2.5	
Barium	3.4205	17.2410	20	69.1	17.9630	72.7	4.1	N
Cadmium	0.0062	0.7811	1	77.5	0.7680	76.2	1.7	
Chromium	0.0140	3.8262	5	76.2	3.7583	74.9	1.8	
Lead	<0.019	3.7980	5	76.0	3.7717	75.4	0.7	
Mercury	0.0030	0.1698	0.2	83.4	0.1492	73.1	12.9	
Selenium	0.0382	0.9209	1	88.3	0.8885	85.0	3.6	
Silver	<0.002	3.0252	5	60.5	2.8803	57.6	4.9	N

Trace Metals Analytical Results
Method SW-846

Client: Nuclear Fuel Services, Inc. Lab Sample ID: 3214005
Client Reference No.: LEFPC Date Received: May 17, 1994
Client Sample No.: 1661B-64 Matrix: Soil

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result mg/kg</i>	<i>Detection Limit mg/kg</i>	<i>Note</i>
<i>Arsenic</i>	<i>6/23/94</i>	<i>2</i>	<i>7.3</i>	<i>0.24</i>	<i>*, N</i>
<i>Cadmium</i>	<i>6/24/94</i>	<i>50</i>	<i>7.9</i>	<i>6.1</i>	<i>N</i>
<i>Mercury</i>	<i>6/4/94</i>	<i>100</i>	<i>327</i>	<i>8.2</i>	<i>N</i>

Trace Metals Analytical Results
Method SW-846

Client: Nuclear Fuel Services, Inc.

Lab Sample ID: 3214010

Client Reference No.: LEFPC

Date Received: May 17, 1994

Client Sample No.: 1661B-141

Matrix: Soil

<i>Analyte</i>	<i>Date Analyzed</i>	<i>Dilution Factor</i>	<i>Result mg/kg</i>	<i>Detection Limit mg/kg</i>	<i>Note</i>
<i>Arsenic</i>	<i>6/23/94</i>	<i>2</i>	<i>7.3</i>	<i>0.19</i>	
<i>Cadmium</i>	<i>6/24/94</i>	<i>50</i>	<i>10.0</i>	<i>4.8</i>	
<i>Mercury</i>	<i>6/4/94</i>	<i>100</i>	<i>29.2</i>	<i>6.0</i>	<i>N</i>

Trace Metals Analytical Results Blank Spike Results - Soil					
Client: Nuclear Fuel Services, Inc.			Lab Sample ID: LCSMS		
Client Reference No.: LEFPC			Date Received: Not Applicable		
Client Sample No.: Not Applicable			Matrix: Water		
Analyte	Date Analyzed	Dilution Factor	Result ug/l	True Value ug/l	% Recovery
Arsenic	6/23/94	1	37.0	40	92.5
Cadmium	6/24/94	5	22.5	20	112.5
Mercury	6/3/94	1	0.91	1	91.0

Limits = 75 - 125%

Trace Metals Analytical Results Duplicate and Spike Results							
Client: Nuclear Fuel Services, Inc.				Lab Sample ID: 3214010			
Client Reference No.: LEFPC				Date Received: May 17, 1994			
Client Sample No.: 1661B-141				Matrix: Soil			
Analyte	Sample mg/kg	Duplicate mg/kg	% RPD	Spike Result mg/kg	Spike Added mg/kg	% Recovery	Note
Mercury			#VALUE!		1	#VALUE!	

NA = Not Applicable

Trace Metals Analytical Results
Blank Spike Results - Soil

Client: Nuclear Fuel Services, Inc.
Lab Sample ID: LCSMS
Client Reference No.: LEFPC
Date Received: Not Applicable
Matrix: Water

Analyte	Date Analyzed	Dilution Factor	Result mg/kg	True Value mg/kg	% Recovery
Mercury	6/3/94	1	0.46	0.5	92.0

Limits = 75 - 125%

File : 62794B.WSL

File Record	Laboratory Sample Name	Customer/EPA Sample Name	Type Matrix	Instrument Dil.	Date	Time	Flags
1	STD1-BLANK .		0	1.0	06/27/94	14:01:00	
2	STD3		0	1.0	06/27/94	14:03:00	
3	STD4		0	1.0	06/27/94	14:07:00	
4	STD2		0	1.0	06/27/94	14:09:00	
5	STD6		0	1.0	06/27/94	14:11:00	
6	STD5		0	1.0	06/27/94	14:13:00	
7	STD7		0	1.0	06/27/94	14:16:00	
8	STD8		0	1.0	06/27/94	14:19:00	
9	STD3		0	1.0	06/27/94	14:21:00	
10	STD2		0	1.0	06/27/94	14:26:00	
11	STD3		0	1.0	06/27/94	14:29:00	
12	STD4		0	1.0	06/27/94	14:32:00	
13	STD5		0	1.0	06/27/94	14:36:00	
14	STD8		0	1.0	06/27/94	14:39:00	
15	STD5		0	1.0	06/27/94	14:43:00	
16	STD5		0	1.0	06/27/94	14:45:00	
17	ICV		0	1.0	06/27/94	14:48:00	
18	ICB		0	1.0	06/27/94	14:52:00	
19	ICSABI		0	1.0	06/27/94	15:07:00	
20	PBW_ABO15		0	1.0	06/27/94	15:16:00	
21	LCSMS		0	1.0	06/27/94	15:19:00	
22	LCSMSD		0	1.0	06/27/94	15:22:00	
23	3198214		0	1.0	06/27/94	15:30:00	
24	3192805		0	1.0	06/27/94	15:33:00	
25	3214009		0	1.0	06/27/94	15:36:00	
26	3214009MS		0	1.0	06/27/94	15:39:00	
27	3214009MSD		0	1.0	06/27/94	15:41:00	
28	CCV1		0	1.0	06/27/94	15:47:00	
29	CCB1		0	1.0	06/27/94	15:51:00	
30	CCV2		0	1.0	06/27/94	16:55:00	
31	CCB2		0	1.0	06/27/94	17:09:00	
32	3214004		0	1.0	06/27/94	17:15:00	
33	3214004MS		0	1.0	06/27/94	17:17:00	
34	3214004MSD		0	1.0	06/27/94	17:20:00	
35	3214009L		0	1.0	06/27/94	17:25:00	
36	3214009A		0	1.0	06/27/94	17:28:00	
37	3214004L		0	1.0	06/27/94	17:32:00	
38	3213655		0	1.0	06/27/94	17:37:00	
39	3213656		0	1.0	06/27/94	17:39:00	
40	3213657		0	1.0	06/27/94	17:42:00	
41	3213657		0	1.0	06/27/94	17:45:00	
42	CCV4		0	1.0	06/27/94	17:59:00	
43	CCB4		0	1.0	06/27/94	18:11:00	
44	STD1-BLANK		0	1.0	06/27/94	18:17:00	
45	STD1-BLANK		0	1.0	06/27/94	18:22:00	
46	STD1-BLANK		0	1.0	06/27/94	18:25:00	
47	STD3		0	1.0	06/27/94	18:28:00	
48	STD2		0	1.0	06/27/94	18:33:00	
49	STD4		0	1.0	06/27/94	18:35:00	
50	STD5		0	1.0	06/27/94	18:37:00	
51	CCV5		0	1.0	06/27/94	18:50:00	
52	CCB5		0	1.0	06/27/94	18:53:00	
53	3213658		0	1.0	06/27/94	18:57:00	
54	3213659		0	1.0	06/27/94	19:00:00	
55	3213659		0	1.0	06/27/94	19:00:00	

55	3213660	0	1.0 06/27/94 19:03:00
56	3213661	0	1.0 06/27/94 19:05:00
57	3213662	0	1.0 06/27/94 19:08:00
58	3213664	0	1.0 06/27/94 19:11:00
59	3213665	0	1.0 06/27/94 19:13:00
60	3213666	0	1.0 06/27/94 19:16:00
61	3213667	0	1.0 06/27/94 19:19:00
62	3213668	0	1.0 06/27/94 19:22:00
63	CCV6	0	1.0 06/27/94 19:25:00
64	CCB6	0	1.0 06/27/94 19:28:00
65	3213669	0	1.0 06/27/94 19:31:00
66	3213670	0	1.0 06/27/94 19:33:00
67	3213671	0	1.0 06/27/94 19:36:00
68	Q1452529	0	1.0 06/27/94 19:39:00
69	Q1452529BS	0	1.0 06/27/94 19:42:00
70	Q1452529BSD	0	1.0 06/27/94 19:45:00
71	Q1452426	0	1.0 06/27/94 19:48:00
72	Q1452426BS	0	1.0 06/27/94 19:50:00
73	ICSABF	0	1.0 06/27/94 19:59:00
74	CCV7	0	1.0 06/27/94 20:02:00
75	CCB7	0	1.0 06/27/94 20:06:00
76	Q1452426BSD	0	1.0 06/27/94 20:10:00
77	ICSABF	0	1.0 06/27/94 20:13:00
78	CCV8	0	1.0 06/27/94 20:17:00
79	CCB8	0	1.0 06/27/94 20:20:00

ICP Standard Data Worksheet

Standard	Preparation ID	Concentration (mg/l)	Element List
Standard 2;	S-I-ME-4-262	2	Ba, Cd, Ca, Co, Cu, Pb, Mg, Mn, Zn
Standard 3;	S-I-ME-4-263	2	Al, Sb, Be, Fe, Ni, Ti, Mo
Standard 4;	S-I-ME-4-263	2	As, Cr, Se, V, Li
Standard 5;	S-I-ME-4-264	2	Ag
Standard 6;	S-I-ME-4-269	20	Na, K
Standard 7;	S-I-ME-4-212	2	B, Si
STD 8	SWR4 267		
ICV/CCV;	S-I-ME-4-266	See QC pages	See QC pages
ICSABI/F;	S-I-ME-4-267	See QC pages	See QC pages

Analyst Initials: ME

Date: 06.27.94

Method: ICP

Standard: STD1-Blank

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Avge	.27350	.00000	-.03700	.00000	.03900	.00000	.00800
SDev	.02899	.00000	.02546	.00141	.00000	.00000	.00566
%RSD	10.600	.00000	68.800	.00000	.00000	.00000	70.711
#1	.25300	.00000	-.05500	-.00100	.03900	.00000	.00400
#2	.29400	.00000	-.01900	.00100	.03900	.00000	.01200
Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Avge	.01400	.00100	.00450	.00300	.01200	.00100	.00200
SDev	.00424	.00000	.00212	.00283	.00566	.00990	.00141
%RSD	30.305	.00000	47.140	94.281	47.140	989.95	70.711
#1	.01700	.00100	.00300	.00100	.00800	-.00600	.00100
#2	.01100	.00100	.00600	.00500	.01600	.00800	.00300
Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Avge	.00500	.10300	-.02000	-.02300	.95700	-.00410	.00100
SDev	.00707	.02970	.00566	.00424	.07071	.00025	.00141
%RSD	141.42	28.833	28.284	18.446	7.3888	6.2085	141.42
#1	.00000	.08200	-.01600	-.02000	.90700	-.00392	.00000
#2	.01000	.12400	-.02400	-.02600	1.0070	-.00428	.00200
Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Avge	-.00100	-.00450	.00050	.01000	.04050	.00650	-.01850
SDev	.00283	.00354	.00071	.00000	.00212	.00495	.01626
%RSD	282.84	78.567	141.42	.00000	5.2378	76.150	87.911
#1	-.00300	-.00700	.00100	.01000	.03900	.00300	-.03000
#2	.00100	-.00200	.00000	.01000	.04200	.01000	-.00700
Elem	Ti3349						
Avge	.00900						
SDev	.00141						
%RSD	15.713						
#1	.00800						
#2	.01000						

Standardization Rpt.

Mon 06-27-94 02:05:42 PM

page 1

Method: ICP

Standard: STD3

Elem	Al3082	Sb2068	Be3130	Fe2599	Ni2316	Tl1908	Mo2020
Avge	6.2540	.96400	21.141	2.8245	7.9165	.53401	2.4275
SDev	.0537	.00566	.181	.0148	.0898	.01441	.0318
%RSD	.85929	.58681	.85624	.52573	1.1344	2.6986	1.3108
#1	6.2920	.96800	21.269	2.8350	7.9800	.54420	2.4050
#2	6.2160	.96000	21.013	2.8140	7.8530	.52382	2.4500

Method: ICP

Standard: STD4

Elem	As1936	Cr2677	Se1960	V_2924	Li6707
Avge	5.5930	11.743	1.0290	4.5150	9.0195
SDev	.0594	.070	.0184	.0297	.1280
%RSD	1.0620	.59610	1.7867	.65777	1.4190
#1	5.5510	11.694	1.0160	4.4940	8.9290
#2	5.6350	11.793	1.0420	4.5360	9.1100

Method: ICP

Standard: STD2

Elem	Ba4934	Cd2288	Ca3179	Co2286	Cu3247	Pb2203	Mg2790
Avge	8.8060	4.2510	3.7495	2.7260	2.2370	1.4950	1.1360
SDev	.1188	.0028	.0007	.0127	.0212	.0099	.0071
%RSD	1.3490	.06653	.01886	.46691	.94829	.66217	.62245

#1	8.7220	4.2490	3.7490	2.7170	2.2220	1.4880	1.1410
#2	8.8900	4.2530	3.7500	2.7350	2.2520	1.5020	1.1310

Elem	Mn2576	Zn2138
Avge	14.739	6.7025
SDev	.079	.0106
%RSD	.53732	.15825

#1	14.683	6.6950
#2	14.795	6.7100

Standardization Rpt.

Mon 06-27-94 02:13:27 PM

page 1

Method: ICP

Standard: STD6

Elem	K_7664	Na5889
Avge	2.5005	79.677
SDev	.0163	.434
%RSD	.65041	.54490

#1	2.4890	79.370
#2	2.5120	79.984

Standardization Rpt.

Mon 06-27-94 02:15:18 PM

page 1

Method: ICP

Standard: STD5

Elem	Ag3280
Avge	10.560
SDev	.334
%RSD	3.1605

#1	10.796
#2	10.324

Method: ICP

Standard: STD7

Elem	B_2496	Si2516
Avge	3.7810	5.4315
SDev	.0198	.0276
%RSD	.52365	.50773

#1	3.7950	5.4120
#2	3.7670	5.4510

Standardization Rpt.

Mon 06-27-94 02:21:19 PM

page 1

Method: ICP

Standard: STD8

Elem	Sn1899	Sr4215	Ti3349
Avge	3.8135	.05600	.00900
SDev	.0064	.02121	.00141
%RSD	.16688	37.881	15.713
#1	3.8090	.07100	.00800
#2	3.8180	.04100	.01000

Method: ICP

Standard: STD3

Elem	Al3082	Sb2068	Be3130	Fe2599	Ni2316	Tl1908	Mo2020
Avge	7.1295	1.0735	24.470	3.2390	8.8890	.60561	2.8090
SDev	.0205	.0092	.081	.0085	.0240	.00887	.0057
%RSD	.28763	.85630	.32943	.26197	.27047	1.4642	.20138
#1	7.1440	1.0800	24.527	3.2450	8.9060	.59934	2.8050
#2	7.1150	1.0670	24.413	3.2330	8.8720	.61188	2.8130

Method: ICP

Slope = Conc(SIR)/IR

Element	Wavelen	High std	Low std	Slope	Y-intercept	Date Standardized
Al3082	308.215	STD3	STD1-Blank	.291715	-.079784	06/27/94 02:21:56
Sb2068	206.838	STD3	STD1-Blank	1.84431	.000000	06/27/94 02:21:56
As1936	193.696	STD4	STD1-Blank	.355240	.013144	06/27/94 02:21:56
Ba4934	493.409	STD2	STD1-Blank	.227118	.000000	06/27/94 02:21:56
Be3130	313.042	STD3	STD1-Blank	.081863	-.003193	06/27/94 02:21:56
Cd2288	228.802	STD2	STD1-Blank	.470478	.000000	06/27/94 02:21:56
Ca3179	317.933	STD2	STD1-Blank	.534545	-.004276	06/27/94 02:21:56
Cr2677	267.716	STD4	STD1-Blank	.170510	-.002387	06/27/94 02:21:56
Co2286	228.616	STD2	STD1-Blank	.733945	-.000734	06/27/94 02:21:56
Cu3247	324.754	STD2	STD1-Blank	.895857	-.004031	06/27/94 02:21:56
Fe2599	259.940	STD3	STD1-Blank	.618077	-.001854	06/27/94 02:21:56
Pb2203	220.353	STD2	STD1-Blank	1.34862	-.016183	06/27/94 02:21:56
Mg2790	279.078	STD2	STD1-Blank	1.76211	-.001762	06/27/94 02:21:56
Mn2576	257.610	STD2	STD1-Blank	.135713	-.000271	06/27/94 02:21:56
Ni2316	231.604	STD3	STD1-Blank	.225124	-.001126	06/27/94 02:21:56
K_7664	766.491	STD6	STD1-Blank	8.34202	-.859228	06/27/94 02:21:56
Se1960	196.026	STD4	STD1-Blank	1.90658	.038132	06/27/94 02:21:56
Ag3280	328.068	STD5	STD1-Blank	.188982	.004347	06/27/94 02:21:56
Na5889	588.995	STD6	STD1-Blank	.254065	-.243140	06/27/94 02:21:56
Tl1908	190.864	STD3	STD1-Blank	3.44509	.014125	06/27/94 02:21:56
V_2924	292.402	STD4	STD1-Blank	.443066	-.000443	06/27/94 02:21:56
Zn2138	213.856	STD2	STD1-Blank	.298352	.000298	06/27/94 02:21:56
Li6707	670.784	STD4	STD1-Blank	.221631	.000997	06/27/94 02:21:56
Mo2020	202.030	STD3	STD1-Blank	.712124	-.000356	06/27/94 02:21:56
B 2496	249.678	STD7	STD1-Blank	.530363	-.005304	06/27/94 02:21:56
Si2516	251.611	STD7	STD1-Blank	.370989	-.015025	06/27/94 02:21:56
Sn1899	189.999	STD8	STD1-Blank	.525348	-.003415	06/27/94 02:21:56
Sr4215	421.500	STD8	STD1-Blank	26.8456	.496644	06/27/94 02:21:56
Ti3349	334.941	STD8	STD1-Blank	.337467	-.003375	*06/27/94 02:21:56

Analysis Report

QC Standard

Mon 06-27-94 02:29:08 PM

page 1

Method: ICP Sample Name: STD2

Operator: DKL

Run Time: 06/27/94 14:26:59

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00899	.00638	.01177	2.0379	.00012	1.9996	1.9972
SDev	.00390	.00527	.00799	.0058	.00006	.0044	.0098
%RSD	43.387	82.527	67.859	.28370	46.489	.22138	.49261
#1	.00623	.01011	.00612	2.0420	.00017	2.0027	2.0041
#2	.01175	.00266	.01742	2.0338	.00008	1.9964	1.9902
Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00075	2.0090	2.0343	.00314	1.9961	2.0287	2.0097
SDev	.00084	.0078	.0076	.00044	.0172	.0062	.0073
%RSD	112.15	.38826	.37372	13.883	.86067	.30787	.36289
#1	-.00016	2.0145	2.0397	.00283	2.0083	2.0331	2.0149
#2	-.00135	2.0034	2.0290	.00345	1.9840	2.0242	2.0046
Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00540	-.32117	.03045	.01328	-.01067	.04504	-.00046
SDev	.00223	.06489	.00266	.00080	.00395	.00075	.00000
%RSD	41.246	20.203	8.7343	6.0268	37.039	1.6700	.06772
#1	-.00383	-.36705	.02857	.01385	-.01347	.04451	-.00046
#2	-.00698	-.27529	.03233	.01272	-.00788	.04557	-.00046
Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.9961	-.00100	.00320	-.00035	.00346	-.00373	1.0604
SDev	.0078	.00063	.00302	.00224	.00237	.00081	.8352
%RSD	.38947	62.854	94.281	630.64	68.411	21.679	78.766
#1	2.0016	-.00144	.00534	.00123	.00179	-.00316	.46980
#2	1.9906	-.00055	.00107	-.00194	.00513	-.00430	1.6510
Elem	Ti3349						
Units	ppm						
Avge	.00047						
SDev	.00024						
%RSD	50.459						
#1	.00030						
#2	.00064						

Analysis Report

QC Standard

Mon 06-27-94 02:31:47 PM

page 1

Method: ICP Sample Name: STD3

Operator: DKL

Run Time: 06/27/94 14:29:37

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.9915	1.9824	.01063	.00000	1.9805	.01299	-.00214
SDev	.0105	.0208	.01124	.00000	.0006	.00010	.00000
%RSD	.52741	1.0483	105.70	.00000	.03233	.76687	.03402

#1	1.9989	1.9677	.01858	.00000	1.9800	.01292	-.00214
#2	1.9841	1.9971	.00269	.00000	1.9809	.01306	-.00214

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mn2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00222	.00052	.00086	1.9842	-.00408	-.03626	-.00003
SDev	.00133	.00043	.00127	.0013	.00382	.00750	.00019
%RSD	59.599	83.814	147.24	.06604	93.565	20.679	614.92

#1	-.00129	.00021	.00176	1.9852	-.00678	-.03096	.00010
#2	-.00316	.00083	-.00004	1.9833	-.00138	-.04156	-.00017

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.9886	-.33368	-.01271	.00246	-.02236	2.0170	-.01488
SDev	.0103	.08258	.01213	.00041	.00287	.0156	.00094
%RSD	.52032	24.749	95.467	16.563	12.856	.77211	6.3167

#1	1.9959	-.27529	-.02129	.00274	-.02033	2.0280	-.01422
#2	1.9813	-.39208	-.00413	.00217	-.02439	2.0060	-.01555

Elem	Zn2138	Li6707	Mo2020	B 2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00277	-.00066	2.0000	-.00255	.01414	-.00746	-.06711
SDev	.00025	.00016	.0040	.00000	.00157	.00595	.03797
%RSD	9.1721	23.570	.20142	.02535	11.135	79.739	56.569

#1	-.00295	-.00055	1.9972	-.00254	.01525	-.00325	-.04027
#2	-.00259	-.00078	2.0028	-.00255	.01302	-.01166	-.09396

Elem	Ti3349
Units	ppm
Avge	.00000
SDev	.00048
%RSD	213520.

#1	-.00034
#2	.00034

Analysis Report

QC Standard

Mon 06-27-94 02:34:42 PM

page 1

Method: ICP Sample Name: STD4

Operator: DKL

Run Time: 06/27/94 14:32:33

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00860	-.00066	1.9737	.00000	.00128	.00013	.00164
SDev	.00130	.00509	.0214	.00000	.00003	.00021	.00001
%RSD	15.148	768.32	1.0825	.00000	2.4915	159.57	.53591
#1	.00768	-.00426	1.9888	.00000	.00130	-.00002	.00165
#2	.00952	.00294	1.9586	.00000	.00126	.00028	.00164
Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.9874	.00132	.00134	.00327	-.00176	.01555	.00082
SDev	.0104	.00001	.00000	.00088	.00192	.00890	.00000
%RSD	.52160	.55547	.01356	26.828	108.73	57.225	.05680
#1	1.9801	.00131	.00134	.00389	-.00312	.00926	.00082
#2	1.9948	.00132	.00134	.00265	-.00041	.02184	.00081
Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00203	-.22523	2.0261	.02193	-.01664	.01445	2.0026
SDev	.00143	.02359	.0027	.00072	.00629	.02908	.0085
%RSD	70.487	10.476	.13167	3.2920	37.784	201.17	.42232
#1	-.00305	-.20855	2.0280	.02142	-.02109	.03501	1.9966
#2	-.00102	-.24192	2.0242	.02244	-.01220	-.00611	2.0086
Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00189	2.0613	.01389	.00055	.01133	.00107	-.06711
SDev	.00021	.0110	.00403	.00262	.00342	.00086	.34169
%RSD	11.287	.53220	29.010	481.23	30.134	80.249	509.12
#1	.00204	2.0535	.01673	-.00131	.00892	.00046	-.30872
#2	.00174	2.0690	.01104	.00240	.01375	.00167	.17450
Elem	Ti3349						
Units	ppm						
Avge	.00016						
SDev	.00047						
%RSD	303.28						
#1	-.00018						
#2	.00049						

Method: ICP Sample Name: STD5

Operator: DKL

Run Time: 06/27/94 14:36:15

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00701	.00461	.00544	.00000	.00017	.00136	.00588
SDev	.00144	.01438	.00578	.00000	.00012	.00072	.00076
%RSD	20.562	312.16	106.21	.00000	68.933	53.405	12.849
#1	.00803	.01478	.00136	.00000	.00025	.00187	.00642
#2	.00599	-.00556	.00953	.00000	.00009	.00084	.00535
Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00179	-.00149	.00090	-.00031	-.01147	-.00531	.00007
SDev	.00012	.00107	.00063	.00044	.00668	.00748	.00010
%RSD	6.7408	71.684	70.727	141.45	58.204	140.97	141.71
#1	-.00188	-.00073	.00134	.00000	-.01619	-.00002	.00014
#2	-.00171	-.00224	.00045	-.00062	-.00675	-.01060	-.00000
Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00236	-.22941	.03336	01.8618	.01575	.04120	-.00066
SDev	.00334	.07668	.00135	.0329	.00791	.02068	.00031
%RSD	141.43	33.427	4.0574	1.7657	50.182	50.186	47.176
#1	.00000	-.28363	.03431	01.8851	.02134	.05582	-.00044
#2	-.00473	-.17518	.03240	01.8386	.01016	.02658	-.00089
Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00329	-.00033	.00534	.00106	.02411	-.00741	.14765
SDev	.00044	.00031	.00000	.00225	.00026	.00926	.83524
%RSD	13.297	94.281	.00000	211.47	1.0899	125.00	565.69
#1	.00298	-.00011	.00534	.00265	.02393	-.00086	.73826
#2	.00360	-.00055	.00534	-.00053	.02430	-.01396	-.44295
Elem	Ti3349						
Units	ppm						
Avge	.00017						
SDev	.00072						
%RSD	420.73						
#1	.00068						
#2	-.00034						

Analysis Report

QC Standard

Mon 06-27-94 02:41:50 PM

page 1

Method: ICP Sample Name: STD8

Operator: DKL

Run Time: 06/27/94 14:39:41

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00495	.00734	.00599	.00000	.00012	.00064	-.00481
SDev	.00598	.01046	.00548	.00000	.00006	.00028	.00076
%RSD	120.86	142.45	91.487	.00000	48.434	43.625	15.731

#1	.00917	.01474	.00987	.00000	.00008	.00084	-.00427
#2	.00072	-.00005	.00212	.00000	.00016	.00045	-.00534

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00119	-.00370	-.00000	-.00155	-.01147	-.00001	-.00000
SDev	.00048	.00105	.00063	.00044	.00668	.00748	.00019
%RSD	40.421	28.496	197120.	28.275	58.275	70574.	31586.

#1	-.00153	-.00295	.00045	-.00124	-.01619	.00528	.00014
#2	-.00085	-.00444	-.00045	-.00185	-.00674	-.00530	-.00014

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00360	-.15016	.02572	.00085	-.03379	.00433	.00022
SDev	.00191	.07078	.00135	.00014	.00431	.02974	.00031
%RSD	53.038	47.140	5.2615	15.918	12.760	687.18	141.53

#1	-.00225	-.10010	.02668	.00095	-.03074	.02535	.00044
#2	-.00495	-.20021	.02476	.00076	-.03684	-.01670	-.00000

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00121	Q-.00055	.00107	-.00477	-.01076	1.9490	2.3221
SDev	.00001	.00031	.00101	.00075	.00236	.0041	.1139
%RSD	.82407	56.569	94.281	15.700	21.952	.21103	4.9048

#1	.00120	Q-.00033	.00036	-.00424	-.01243	1.9461	2.4027
#2	.00121	Q-.00078	.00178	-.00530	-.00909	1.9519	2.2416

Elem	Ti3349
Units	ppm
Avge	Q.00034
SDev	.00048
%RSD	141.67

#1	Q.00067
#2	Q-.00000

Standardization Rpt.

Mon 06-27-94 02:44:52 PM

page 1

Method: ICP

Standard: STD5

Elem	Ag3280
Avge	11.122
SDev	.286
%RSD	2.5750

#1	11.324
#2	10.919

Method: ICP

Slope = Conc(SIR)/IR

Element	Wavelen	High std	Low std	Slope	Y-intercept	Date Standardized
Al3082	308.215	STD3	STD1-Blank	.291715	-.079784	06/27/94 02:43:26
Sb2068	206.838	STD3	STD1-Blank	1.86306	.000000	06/27/94 02:43:26
As1936	193.696	STD4	STD1-Blank	.355240	.013144	06/27/94 02:43:26
Ba4934	493.409	STD2	STD1-Blank	.227118	.000000	06/27/94 02:43:26
Be3130	313.042	STD3	STD1-Blank	.081863	-.003193	06/27/94 02:43:26
Cd2288	228.802	STD2	STD1-Blank	.470478	.000000	06/27/94 02:43:26
Ca3179	317.933	STD2	STD1-Blank	.534545	-.004276	06/27/94 02:43:26
Cr2677	267.716	STD4	STD1-Blank	.170510	-.002387	06/27/94 02:43:26
Co2286	228.616	STD2	STD1-Blank	.733945	-.000734	06/27/94 02:43:26
Cu3247	324.754	STD2	STD1-Blank	.895857	-.004031	06/27/94 02:43:26
Fe2599	259.940	STD3	STD1-Blank	.618047	-.001854	06/27/94 02:43:26
Pb2203	220.353	STD2	STD1-Blank	1.34862	-.016183	06/27/94 02:43:26
Mg2790	279.078	STD2	STD1-Blank	1.76211	-.001762	06/27/94 02:43:26
Mn2576	257.610	STD2	STD1-Blank	.135713	-.000271	06/27/94 02:43:26
Ni2316	231.604	STD3	STD1-Blank	.225124	-.001126	06/27/94 02:43:26
K_7664	766.491	STD6	STD1-Blank	8.34202	-.859228	06/27/94 02:43:26
Se1960	196.026	STD4	STD1-Blank	1.90658	.038132	06/27/94 02:43:26
Ag3280	328.068	STD5	STD1-Blank	.179461	.004128	06/27/94 02:43:26
Na5889	588.995	STD6	STD1-Blank	.254065	-.243140	06/27/94 02:43:26
Tl1908	190.864	STD3	STD1-Blank	3.28025	.013449	06/27/94 02:43:26
V 2924	292.402	STD4	STD1-Blank	.443066	-.000443	06/27/94 02:43:26
Zn2138	213.856	STD2	STD1-Blank	.298352	.000298	06/27/94 02:43:26
Li6707	670.784	STD4	STD1-Blank	.221631	.000997	06/27/94 02:43:26
Mo2020	202.030	STD3	STD1-Blank	.712124	-.000356	06/27/94 02:43:26
B_2496	249.678	STD7	STD1-Blank	.530363	-.005304	06/27/94 02:43:26
Si2516	251.611	STD7	STD1-Blank	.370989	-.015025	06/27/94 02:43:26
Sn1899	189.999	STD8	STD1-Blank	.525348	-.003415	06/27/94 02:43:26
Sr4215	421.500	STD8	STD1-Blank	26.8456	.496644	06/27/94 02:43:26
Ti3349	334.941	STD8	STD1-Blank	.337467	-.003375	06/27/94 02:43:26

Method: ICP Sample Name: STD5

Operator: DKL

Run Time: 06/27/94 14:45:32

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01194	.00376	.01145	.00000	.00016	.00130	.01657
SDev	.00474	.00529	.00172	.00000	.00000	.00065	.00227
%RSD	39.656	140.70	15.049	.00000	1.4910	49.947	13.682

#1	.01529	.00750	.01267	.00000	.00016	.00176	.01817
#2	.00859	.00002	.01323	.00000	.00016	.00084	.01497

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00026	.00222	.00224	.00062	.00268	.01236	.00020
SDev	.00036	.00105	.00127	.00175	.00953	.01247	.00010
%RSD	140.80	47.481	56.581	283.02	355.00	100.95	47.340

#1	-.00000	.00296	.00314	.00185	.00942	.02118	.00027
#2	-.00051	.00147	.00134	-.00062	-.00405	.00354	.00014

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00169	.16267	.02480	1.9809	.04611	.03839	.00133
SDev	.00175	.27724	.01888	.0025	.01240	.03063	.00063
%RSD	103.70	170.43	76.130	.12792	26.882	79.784	47.151

#1	.00293	.35871	.03815	1.9791	.05488	.01673	.00177
#2	.00045	-.03337	.01145	1.9827	.03735	.06005	.00089

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00342	.00033	.00142	.00079	.00445	-.00341	1.3826
SDev	.00020	.00031	.00050	.00187	.00603	.00004	1.3668
%RSD	5.8387	94.281	35.355	236.65	135.67	1.0301	98.858

#1	.00356	.00011	.00107	.00212	.00871	-.00338	2.3490
#2	.00328	.00055	.00178	-.00053	.00018	-.00343	.41611

Elem	Ti3349
Units	ppm
Avge	.00017
SDev	.00024
%RSD	139.30

#1	.00034
#2	.00000

alysis Report

QC Standard

Mon 06-27-94 02:51:03 PM

page 1

Method: ICP

Sample Name: ICV

Operator: DKL

Run Time: 06/27/94 14:48:53

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.98918	.99981	.98626	1.0513	.97361	1.0315	1.0729
SDev	.00873	.01052	.01703	.0128	.00900	.0072	.0038
%RSD	.88273	1.0524	1.7265	1.2221	.92410	.69392	.35297

#1	.99535	1.0073	.99830	1.0604	.97997	1.0365	1.0756
#2	.98301	.99237	.97422	1.0422	.96725	1.0264	1.0703

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0268	1.0253	1.0516	.97488	1.0026	1.0336	1.0291
SDev	.0066	.0037	.0101	.01005	.0000	.0039	.0089
%RSD	.64547	.35714	.96410	1.0310	.00219	.37921	.86757

#1	1.0315	1.0279	1.0588	.98198	1.0026	1.0363	1.0354
#2	1.0221	1.0227	1.0445	.96777	1.0026	1.0308	1.0228

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.96504	10.386	1.0035	.96751	Q1.1654	.91876	1.0169
SDev	.00462	.106	.0351	.00868	.0176	.06010	.0088
%RSD	.47844	1.0223	3.4976	.89752	1.5107	6.5419	.86277

#1	.96831	10.461	1.0283	.97365	Q1.1778	Q.87626	1.0231
#2	.96178	10.311	.97868	.96137	Q1.1529	.96126	1.0107

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0213	.00033	.97062	1.0310	.54895	.96972	17.248
SDev	.0075	.00031	.00655	.0090	.00184	.00119	.000
%RSD	.73916	94.281	.67442	.87250	.33469	.12218	.00000

#1	1.0266	.00011	.97525	1.0374	.54765	.97055	17.248
#2	1.0159	.00055	.96600	1.0246	Q.55025	.96888	17.248

Elem	Ti3349
Units	ppm
Avge	1.0244
SDev	.0095
%RSD	.93161

#1	1.0312
#2	1.0177

Analysis Report

Mon 06-27-94 02:55:42 PM

page 1

Method: ICP Sample Name: ICB
Run Time: 06/27/94 14:52:38
Comment:
Mode: CONC Corr. Factor: 1

Operator: DKL

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00655	-.00093	.01255	.00000	.00012	-.00059	-.00053
SDev	.00495	.00927	.01678	.00000	.00006	.00016	.00076
%RSD	75.584	991.91	133.68	.00000	47.793	27.818	142.03

#1	.01006	-.00749	H.02442	.00000	.00016	-.00071	-.00107
#2	.00305	.00562	.00069	.00000	.00008	-.00048	.00000

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00085	-.00147	-.00045	H.00216	-.00135	-.00352	.00000
SDev	.00193	.00102	.00000	.00131	.00190	.00749	.00019
%RSD	226.23	69.080	.06701	60.583	140.37	212.68	27801.

#1	.00051	-.00075	-.00045	H.00309	-.00001	.00177	.00014
#2	L-.00222	-.00220	-.00045	.00124	-.00270	-.00882	-.00014

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00090	-.07508	.01906	.00180	L-.02744	.00537	.00044
SDev	.00223	.00000	.00539	.00228	.00036	.00337	.00000
%RSD	247.56	.00000	28.272	127.08	1.3095	62.742	.00123

#1	-.00248	-.07508	.01525	H.00341	L-.02718	.00299	.00044
#2	.00068	-.07508	.02287	.00018	L-.02769	.00776	.00044

Elem	Zn2138	Li6707	Mo2020	B 2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00090	.00000	.00320	-.00212	H.00556	-.00422	H.16107
SDev	.00001	.00047	.00201	.00150	.00289	.00480	.66440
%RSD	.92553	808e6	62.854	70.715	51.876	113.92	412.48

#1	.00091	.00033	.00178	-.00106	H.00761	-.00761	H.63087
#2	.00089	-.00033	H.00463	-.00318	.00352	-.00082	L-.30872

Elem	Ti3349
Units	ppm
Avge	-.00017
SDev	.00024
%RSD	141.17

#1	-.00000
#2	-.00034

alysis Report

Mon 06-27-94 03:09:43 PM

page 1

Method: ICP Sample Name: ICSABI

Operator: DKL

Run Time: 06/27/94 15:07:16

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	495.31	.02407	-.20313	.50806	.43401	.92789	458.58
SDev	1.40	.01588	.05785	.00000	.00058	.00290	.48
%RSD	.28219	65.965	28.478	.00000	.13389	.31203	.10418

#1	494.32	.01284	-.16223	.50806	.43360	.92584	458.92
#2	496.30	.03529	-.24403	.50806	.43442	.92994	458.24

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.42633	.44664	.49472	170.81	.96660	502.78	.44972
SDev	.00038	.00045	.00129	.11	.01282	.27	.00001
%RSD	.09017	.10008	.26052	.06162	1.3258	.05455	.00206

#1	.42660	.44695	.49381	170.74	.95754	502.59	.44972
#2	.42606	.44632	.49563	170.89	.97566	502.98	.44973

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.82454	-.43796	.09722	.82445	.45884	-.21822	.46284
SDev	.00557	.11208	.06072	.00228	.00791	.02018	.00059
%RSD	.67570	25.591	62.455	.27661	1.7227	9.2486	.12642

#1	.82060	-.51721	.14016	.82284	.45325	-.23249	.46326
#2	.82848	-.35871	.05429	.82606	.46443	-.20395	.46243

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.90859	.00288	.00712	-.01840	-.03258	.00526	130.12
SDev	.00196	.00047	.00453	.00298	.00407	.01305	.36
%RSD	.21513	16.318	63.640	16.205	12.483	248.12	.27718

#1	.90997	.00255	.00392	-.01629	-.02971	-.00397	130.38
#2	.90720	.00321	.01033	-.02051	-.03546	.01449	129.87

Elem	Ti3349
Units	ppm
Avge	-.00320
SDev	.00056
%RSD	17.347

#1	-.00281
#2	-.00360

alysis Report

Mon 06-27-94 03:18:47 PM

page 1

Method: ICP Sample Name: PBW_ABO15

Operator: DKL

Run Time: 06/27/94 15:16:29

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00890	-.00001	.00916	.00000	.00004	.00038	-.00160
SDev	.00785	.01055	.00144	.00000	.00006	.00135	.00076
%RSD	88.165	184200.	15.698	.00000	130.33	354.62	47.223

#1	H.01445	-.00746	.01018	.00000	.00000	-.00057	-.00107
#2	.00335	.00745	.00814	.00000	.00008	.00133	-.00214

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00119	-.00038	.00000	H.00309	-.01080	-.00265	.00020
SDev	.00096	.00050	.00063	.00087	.00001	.00123	.00010
%RSD	80.816	130.85	94312.	28.280	.09850	46.530	46.845

#1	-.00188	-.00003	.00045	H.00371	-.01081	-.00178	.00014
#2	-.00051	-.00074	-.00045	H.00247	-.01079	-.00352	.00027

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00203	-.18770	.01906	-.00036	L-.03773	.03163	-.00044
SDev	.00223	.02949	.00539	.00077	.00844	.01262	.00063
%RSD	110.00	15.713	28.290	211.56	22.380	39.894	141.62

#1	-.00360	-.20855	.01525	-.00090	L-.03176	.02271	-.00088
#2	-.00045	-.16684	.02288	.00018	L-.04370	.04055	.00000

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	-.00066	.00107	-.00265	H.03376	.00153	L-.02685
SDev	.00043	.00047	.00101	.00075	.01233	.00779	.66440
%RSD	140.02	70.711	94.281	28.269	36.518	509.69	2474.9

#1	.00061	-.00100	.00036	-.00212	H.04248	.00704	H.44295
#2	.00000	-.00033	.00178	-.00318	H.02504	-.00398	L-.49664

Elem	Ti3349
Units	ppm
Avg	-.00034
SDev	.00048
%RSD	141.55

#1	.00000
#2	-.00068

alysis Report

Mon 06-27-94 03:22:16 PM

page 1

Method: ICP Sample Name: LCSMS
Run Time: 06/27/94 15:19:24
Comment:
Mode: CONC Corr. Factor: 1

Operator: DKL

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.96191	.86477	.87777	1.0143	.89255	.86047	.91758
SDev	.00170	.00920	.00952	.0029	.00277	.00176	.00265
%RSD	.17639	1.0645	1.0846	.28500	.31024	.20438	.28858

#1	.96310	.85826	.88450	1.0123	.89059	.85922	.91571
#2	.96071	.87128	.87104	1.0164	.89451	.86171	.91945

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.88143	.89781	.94858	.90412	.87555	.91470	.90440
SDev	.00349	.00205	.00127	.00175	.00761	.00119	.00422
%RSD	.39655	.22878	.13366	.19336	.86917	.13037	.46694

#1	.87895	.89926	.94768	.90289	.88093	.91554	.90141
#2	.88390	.89636	.94948	.90536	.87017	.91386	.90738

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.84303	9.5474	.89386	.88386	1.0108	.81894	.91188
SDev	.00302	.0885	.03236	.00293	.0081	.00970	.00251
%RSD	.35878	.92674	3.6199	.33194	.79980	1.1848	.27483

#1	.84089	9.6100	.91674	.88179	1.0165	.82580	.91011
#2	.84517	9.4849	.87098	.88594	1.0051	.81207	.91366

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.86493	.00000	.86986	.97181	.66099	.86901	5.7450
SDev	.00484	.00047	.00604	.00900	.00393	.01078	.5505
%RSD	.55939	808e6	.69466	.92654	.59521	1.2410	9.5823

#1	.86150	.00033	.86559	.96544	.66377	.86138	6.1342
#2	.86835	-.00033	.87413	.97818	.65821	.87663	5.3557

Elem	Ti3349
Units	ppm
Avge	.93149
SDev	.00310
%RSD	.33298

#1	.92929
#2	.93368

alysis Report

Mon 06-27-94 03:26:34 PM

page 1

Method: ICP Sample Name: LCSMSD
Run Time: 06/27/94 15:22:43
Comment:
Mode: CONC Corr. Factor: 1

Operator: DKL

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.94394	.84333	.85515	.98728	.86282	.85385	.89538
SDev	.00228	.01060	.01755	.00450	.00289	.00115	.00151
%RSD	.24169	1.2569	2.0522	.45546	.33490	.13522	.16881

#1	.94556	.83583	.86755	.98410	.86078	.85467	.89645
#2	.94233	.85082	.84274	.99046	.86486	.85304	.89431

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.86933	.88343	.92842	.90628	.87012	.91259	.88805
SDev	.00157	.00368	.00317	.00218	.00571	.00626	.00182
%RSD	.18026	.41698	.34123	.24112	.65677	.68650	.20539

#1	.86822	.88082	.92618	.90474	.87416	.90816	.88676
#2	.87044	.88603	.93066	.90783	.86608	.91702	.88934

Elem	Ni2316	K 7664	Se1960	Aq3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.83199	9.5016	.85560	.87065	.99301	.75332	.89372
SDev	.00653	.1298	.01076	.00115	.00269	.02146	.00125
%RSD	.78446	1.3658	1.2581	.13206	.27138	2.8481	.14024

#1	.82738	9.5933	.86321	.86983	.99492	.73815	.89283
#2	.83661	9.4098	.84799	.87146	.99111	.76849	.89461

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.85324	.00033	.85277	.96202	.70589	.85941	5.3020
SDev	.00123	.00031	.00302	.00562	.00394	.00037	.0380
%RSD	.14432	94.281	.35429	.58414	.55744	.04299	.71606

#1	.85237	.00055	.85063	.95805	.70311	.85915	5.3289
#2	.85411	.00011	.85490	.96600	.70867	.85967	5.2752

Elem	Ti3349
Units	ppm
Avge	.91191
SDev	.00310
%RSD	.34010

#1	.90972
#2	.91411

Analysis Report

Mon 06-27-94 03:33:33 PM

page 1

Method: ICP Sample Name: 3198214

Operator: DKL

Run Time: 06/27/94 15:30:14

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.04068	-.00094	.00617	.01385	.00008	.00065	3.2562
SDev	.00371	.00922	.00650	.00032	.00000	.00160	.0140
%RSD	9.1206	984.29	105.41	2.3184	.00239	248.33	.42954

#1	.04331	.00558	.01077	.01408	.00008	.00178	3.2463
#2	.03806	-.00745	.00157	.01363	.00008	-.00049	3.2661

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00396	-.00148	.00405	.07447	.00401	1.6829	.00108
SDev	.00181	.00102	.00000	.00131	.00572	.0100	.00019
%RSD	45.728	68.815	.00607	1.7612	142.72	.59262	17.650

#1	.00523	-.00221	.00405	.07354	.00805	1.6900	.00122
#2	.00268	-.00076	.00405	.07540	-.00004	1.6759	.00095

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00079	.39208	.00645	.00009	2.0920	.01028	.00045
SDev	.00207	.00000	.00675	.00089	.0190	.01348	.00000
%RSD	262.49	.00000	104.68	961.34	.91030	131.08	.11316

#1	.00067	.39208	.00167	.00072	2.0785	.00075	.00044
#2	-.00225	.39208	.01122	-.00054	2.1054	.01981	.00045

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01058	.00765	.00285	.02804	1.9241	-.01228	H679.61
SDev	.00001	.00031	.00151	.00150	.0100	.00442	6.23
%RSD	.07641	4.0992	53.033	5.3566	.51787	35.984	.91617

#1	.01058	.00787	.00392	.02910	1.9170	-.01541	H675.21
#2	.01059	.00742	.00178	.02698	1.9311	-.00916	H684.01

Elem	Ti3349
Units	ppm
Avge	.00087
SDev	.00047
%RSD	54.511

#1	.00121
#2	.00053

alysis Report

Mon 06-27-94 03:36:03 PM

page 1

Method: ICP Sample Name: 3192805

Operator: DKL

Run Time: 06/27/94 15:33:54

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.04566	.00750	.00294	.01408	.00008	.00091	3.5678
SDev	.00122	.00002	.00203	.00000	.00000	.00065	.0042
%RSD	2.6815	.32136	68.806	.00000	4.2899	71.077	.11651

#1	.04479	.00752	.00438	.01408	.00009	.00137	3.5708
#2	.04652	.00748	.00151	.01408	.00008	.00045	3.5649

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00224	-.00001	.00584	.05995	-.00072	1.8292	.00087
SDev	.00036	.00101	.00000	.00087	.00286	.0075	.00010
%RSD	16.134	14185.	.00288	1.4580	397.17	.40804	10.974

#1	.00250	-.00072	.00584	.06057	-.00274	1.8344	.00080
#2	.00199	.00071	.00584	.05933	.00130	1.8239	.00094

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00022	.32951	.02741	-.00072	2.3131	.04431	-.00022
SDev	.00318	.02949	.00945	.00051	.0052	.00148	.00094
%RSD	1415.9	8.9507	34.468	71.388	.22524	3.3375	421.98

#1	.00248	.30865	.02073	-.00108	2.3168	.04327	-.00089
#2	-.00203	.35036	.03409	-.00036	2.3095	.04536	.00044

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.02100	.00709	-.00000	.02697	1.9314	-.00759	H718.13
SDev	.00001	.00016	.00151	.00075	.0073	.00742	3.80
%RSD	.06097	2.2097	2595e6	2.7872	.38026	97.808	.52867

#1	.02099	.00720	.00107	.02750	1.9366	-.00234	H720.82
#2	.02101	.00698	-.00107	.02643	1.9262	-.01284	H715.45

Elem	Ti3349
Units	ppm
Avge	.00025
SDev	.00000
%RSD	.24302

#1	.00025
#2	.00025

alysis Report

Mon 06-27-94 03:38:46 PM

page 1

Method: ICP Sample Name: 3214009

Operator: DKL

Run Time: 06/27/94 15:36:36

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.7952	.02529	.03284	15.659	.00082	.01265	H629.19
SDev	.0547	.00125	.00416	.212	.00011	.00103	3.44
%RSD	.94402	4.9490	12.663	1.3549	12.886	8.1477	.54740

#1	5.7565	.02617	.03578	15.509	.00089	.01192	H626.75
#2	5.8339	.02440	.02990	15.809	.00074	.01338	H631.62

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00413	.00258	.06361	.17293	.00045	7.9149	6.0952
SDev	.00441	.00068	.00063	.00132	.02475	.0959	.0462
%RSD	106.64	26.311	.98510	.76195	5460.6	1.2114	.75726

#1	.00725	.00306	.06405	.17200	.01795	7.8471	6.0625
#2	.00102	.00210	.06317	.17386	-.01705	7.9827	6.1278

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.03692	18.999	.02187	-.00105	S2001.1	.03094	.00074
SDev	.00828	.478	.02160	.00117	.3	.02277	.00282
%RSD	22.421	2.5149	98.733	110.74	.01664	73.603	381.24

#1	.04277	19.337	.03714	-.00023	S2001.4	.01483	.00273
#2	.03107	18.661	.00660	-.00188	S2000.9	.04704	-.00125

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	16.801	.02028	.02172	18.446	8.4072	-.00729	H9962.0
SDev	.073	.00188	.00101	.186	.0650	.00693	125.3
%RSD	.43210	9.2735	4.6368	1.0060	.77297	95.041	1.2580

#1	16.749	.02161	.02101	18.315	8.3613	-.01219	H9873.4
#2	16.852	.01895	.02243	18.577	8.4532	-.00239	H10051.

Elem	Ti3349
Units	ppm
Avge	-.00075
SDev	.00039
%RSD	51.522

#1	-.00048
#2	-.00103

Analysis Report

Mon 06-27-94 03:41:32 PM

page 1

Method: ICP Sample Name: 3214009MS

Operator: DKL

Run Time: 06/27/94 15:39:22

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.08967	.01630	4.0483	14.421	.00024	.81819	H629.89
SDev	.00246	.00424	.0456	.198	.00000	.00388	3.92
%RSD	2.7463	25.988	1.1254	1.3732	1.0008	.47456	.62294
%rec			80.7%	72%		81%	
#1	.08793	.01330	4.0805	14.561	.00024	.82093	H632.67
#2	.09141	.01929	4.0161	14.280	.00024	.81544	H627.12

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.8714	.00096	.03498	.01978	3.5850	6.6107	6.6030
SDev	.0246	.00094	.00063	.00044	.0027	.0487	.0530
%RSD	.63652	98.035	1.7890	2.2300	.07622	.73684	.80222
%rec	77%				71.6%		
#1	3.8889	.00163	.03454	.02009	3.5830	6.6451	6.6405
#2	3.8540	.00029	.03543	.01947	3.5869	6.5762	6.5656

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.03695	4.2086	.86667	2.9084	S2001.7	.05955	.00208
SDev	.00032	.0177	.00000	.0842	.3	.03996	.00063
%RSD	.85411	.42048	.00044	2.8967	.01262	67.102	30.373
%rec			86.7%	58.7%			
#1	.03717	4.2211	.86667	2.9680	S2001.5	.03130	.00163
#2	.03673	4.1960	.86667	2.8488	S2001.8	.08781	.00252

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.05183	.01219	.02101	.16047	8.1796	.00097	H7191.4
SDev	.00021	.00047	.00201	.01191	.0575	.00941	90.2
%RSD	.41453	3.8570	9.5879	7.4220	.70338	972.02	1.2544
#1	.05198	.01252	.02243	.16890	8.2203	-.00569	H7255.2
#2	.05168	.01186	.01958	.15205	8.1389	.00762	H7127.6

Elem	Ti3349
Units	ppm
Avge	L-.00502
SDev	.00064
%RSD	12.684

Pb + Ba failed run post d.g spike

#1	L-.00457
#2	L-.00547

527 78

Analysis Report

Mon 06-27-94 03:43:58 PM

page 1

Method: ICP Sample Name: 3214009MSD

Operator: DKL

Run Time: 06/27/94 15:41:48

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.37294	.00940	4.0979	12.054	.00020	.83229	H614.69
SDev	.00248	.00527	.0073	.029	.00006	.00440	.02
%RSD	.66405	56.014	.17716	.24382	29.165	.52841	.00246

#1	.37119	.00568	4.0928	12.033	.00024	.83540	H614.70
#2	.37469	.01313	4.1030	12.075	.00016	.82918	H614.68

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.9322	.00016	.04393	.06237	3.8034	6.7176	6.4462
SDev	.0017	.00048	.00063	.00044	.0019	.0199	.0012
%RSD	.04293	303.33	1.4414	.70146	.05018	.29688	.01936

#1	3.9334	-.00018	.04438	.06206	3.8048	6.7317	6.4453
#2	3.9310	.00050	.04348	.06268	3.8021	6.7035	6.4471

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.03649	4.7216	.96579	3.4460	S2002.5	.00574	.00164
SDev	.00286	.0708	.00270	.0006	.1	.02089	.00000
%RSD	7.8515	1.4992	.27968	.01842	.00748	364.28	.03053

#1	.03852	4.6715	.96388	3.4464	S2002.6	.02051	.00164
#2	.03447	4.7716	.96770	3.4455	S2002.4	-.00904	.00164

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.65105	.01186	.02136	.62196	8.0894	.00810	H7078.1
SDev	.00255	.00000	.00151	.00413	.0094	.00295	13.2
%RSD	.39100	.00000	7.0711	.66326	.11678	36.394	.18612

#1	.64925	.01186	.02243	.62488	8.0827	.00602	H7068.8
#2	.65285	.01186	.02030	.61904	8.0961	.01018	H7087.4

Elem	Ti3349
Units	ppm
Avge	L-.00399
SDev	.00072
%RSD	17.997

#1	L-.00348
#2	L-.00450

Ag, Cd, Ba failed on post dig. Spke

Analysis Report

QC Standard

Mon 06-27-94 03:49:29 PM

page 1

Method: ICP Sample Name: CCV1
Run Time: 06/27/94 15:47:13
Comment:
Mode: CONC Corr. Factor: 1

Operator: DKL

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0171	.99149	.99565	1.0303	.98120	1.0509	1.0358
SDev	.0010	.00142	.00101	.0095	.00312	.0003	.0049
%RSD	.10323	.14332	.10128	.91964	.31809	.03201	.47463

#1	1.0179	.99250	.99636	1.0236	.97899	1.0507	1.0393
#2	1.0164	.99049	.99493	1.0370	.98341	1.0512	1.0323

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0412	1.0420	1.0400	.98940	1.0316	1.0302	1.0324
SDev	.0031	.0010	.0038	.00262	.0010	.0013	.0015
%RSD	.30104	.09390	.36554	.26499	.09278	.12475	.14881

#1	1.0390	1.0413	1.0373	.98754	1.0309	1.0293	1.0313
#2	1.0434	1.0427	1.0427	.99125	1.0323	1.0312	1.0335

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.98215	10.519	1.0455	.96898	1.0673	.91281	1.0226
SDev	.00653	.177	.0054	.00534	.0111	.02033	.0013
%RSD	.66453	1.6823	.51495	.55083	1.0436	2.2276	.12255

#1	.98677	10.644	1.0494	.96521	1.0595	0.89843	1.0218
#2	.97754	10.394	1.0417	.97276	1.0752	.92719	1.0235

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0430	.00022	.98309	1.0350	0.58310	.98100	8.4430
SDev	.0013	.00078	.00101	.0101	.00131	.00628	1.0251
%RSD	.12000	353.55	.10244	.97823	.22471	.64006	12.141

#1	1.0439	.00078	.98237	1.0278	0.58403	.98544	9.1678
#2	1.0421	-.00033	.98380	1.0421	0.58218	.97656	7.7181

Elem	Ti3349
Units	ppm
Avge	1.0246
SDev	.0041
%RSD	.39577

#1	1.0217
#2	1.0275

alysis Report

Mon 06-27-94 03:54:48 PM

page 1

Method: ICP Sample Name: CCB1

Operator: DKL

Run Time: 06/27/94 15:51:48

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01297	.00372	.00895	.00000	.00024	-.00079	H.01176
SDev	.00907	.00266	.01073	.00000	.00000	.00023	.00151
%RSD	69.961	71.505	119.88	.00000	.00001	28.793	12.847

#1	H.01939	.00184	H.01653	.00000	.00024	-.00063	H.01283
#2	.00655	.00559	.00136	.00000	.00024	-.00096	H.01069

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00102	-.00112	.00000	H.00680	-.00338	-.00175	.00041
SDev	.00169	.00052	.00063	.00087	.00285	.01247	.00019
%RSD	164.92	46.352	43043.	12.846	84.310	711.26	46.882

#1	.00017	-.00148	.00045	H.00742	-.00137	.00706	.00054
#2	L-.00222	-.00075	-.00045	H.00618	-.00540	-.01057	.00027

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00214	-.13347	.00190	.00018	.00699	.04506	.00044
SDev	.00016	.07078	.01078	.00000	.00269	.03726	.00000
%RSD	7.4353	53.033	566.82	.01676	38.569	82.676	.00155

#1	-.00203	-.08342	.00953	.00018	.00889	.01872	.00044
#2	-.00225	-.18352	-.00572	.00018	.00508	H.07141	.00044

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	H.00165	.00033	.00142	H.00849	H.01298	-.00869	H.36242
SDev	.00021	.00094	.00050	.00075	.00603	.00300	.79727
%RSD	12.987	282.84	35.355	8.8446	46.478	34.512	219.99

#1	H.00150	.00100	.00107	H.00902	H.01725	-.00657	H.92617
#2	H.00180	-.00033	.00178	H.00796	H.00872	L-.01081	L-.20134

Elem	Ti3349
Units	ppm
Avge	.00000
SDev	.00095
%RSD	43173.

#1	.00068
#2	-.00067

alysis Report

QC Standard

Mon 06-27-94 04:58:05 PM

page 1

Method: ICP Sample Name: CCV2

Operator: DKL

Run Time: 06/27/94 16:55:22

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0166	1.0009	1.0120	1.0681	1.0057	1.0461	1.0647
SDev	.0010	.0093	.0065	.0003	.0014	.0031	.0026
%RSD	.09929	.92859	.64445	.03007	.14342	.29302	.24857

#1	1.0159	.99431	1.0167	1.0679	1.0047	1.0439	1.0628
#2	1.0173	1.0075	1.0074	1.0684	1.0068	1.0482	1.0665

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0514	1.0535	1.0669	.99372	1.0296	1.0447	1.0486
SDev	.0011	.0004	.0013	.00087	.0114	.0038	.0003
%RSD	.10316	.04262	.11874	.08798	1.1119	.35992	.02742

#1	1.0506	1.0538	1.0660	.99434	1.0215	1.0420	1.0484
#2	1.0521	1.0532	1.0678	.99310	1.0377	1.0473	1.0488

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.99870	10.482	1.0190	.93436	01.1291	.90750	1.0390
SDev	.00860	.077	.0108	.00699	.0119	.00733	.0013
%RSD	.86073	.73159	1.0583	.74782	1.0502	.80755	.12059

#1	.99262	10.428	1.0266	.92942	01.1374	.90232	1.0382
#2	1.0048	10.536	1.0113	.93930	01.1207	.91268	1.0399

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0412	.00011	1.0016	1.0487	0.56788	.98110	6.2148
SDev	.0019	.00031	.0050	.0034	.00236	.00042	.1139
%RSD	.17886	282.84	.50274	.32178	.41588	.04283	1.8327

#1	1.0399	-.00011	.99804	1.0511	0.56955	.98080	6.2953
#2	1.0426	.00033	1.0052	1.0463	0.56621	.98139	6.1342

Elem	Ti3349
Units	ppm
Avge	1.0435
SDev	.0017
%RSD	.16009

#1	1.0423
#2	1.0447

Na-Si failed / only running App. IX & H⁺ ⁰⁶⁻²⁷⁻⁹⁴
TCLP

Analysis Report

Mon 06-27-94 05:12:35 PM

page 1

Method: ICP Sample Name: CCB2
Run Time: 06/27/94 17:09:46
Comment:
Mode: CONC Corr. Factor: 1

Operator: DKL

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00918	-.00095	.01413	.00000	.00024	.00057	-.00053
SDev	.00455	.00921	.01102	.00000	.00000	.00023	.00227
%RSD	49.588	970.68	77.969	.00000	.97615	39.904	424.36

#1	.01239	-.00746	H.02192	.00000	.00024	.00073	-.00214
#2	.00596	.00556	.00634	.00000	.00024	.00041	.00107

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00017	.00035	.00000	.00154	-.00743	L-.01760	.00000
SDev	.00024	.00052	.00063	.00044	.00095	.00001	.00000
%RSD	141.67	148.10	197040.	28.282	12.757	.05099	11.574

#1	-.00000	.00072	-.00045	.00185	-.00676	L-.01761	.00000
#2	.00034	-.00002	.00045	.00124	-.00810	L-.01760	.00000

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00158	-.06257	.02193	.00010	L-.04179	.04553	.00089
SDev	.00064	.05309	.00135	.00089	.00557	.00035	.00063
%RSD	40.405	84.853	6.1481	935.46	13.325	.76614	70.646

#1	-.00113	-.10010	.02289	-.00054	L-.04573	.04577	.00044
#2	-.00203	-.02503	.02098	.00073	L-.03786	.04528	H.00133

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00031	-.00022	.00178	-.00133	H.00445	-.00134	L-.32215
SDev	.00000	.00016	.00101	.00038	.00079	.00520	.20881
%RSD	.22779	70.711	56.569	28.328	17.659	389.31	64.818

#1	.00031	-.00033	.00107	-.00159	.00390	-.00501	L-.46980
#2	.00031	-.00011	.00249	-.00106	H.00501	.00234	L-.17450

Elem	Ti3349
Units	ppm
Avge	-.00068
SDev	.00000
%RSD	.04678

#1	-.00068
#2	-.00067

alysis Report

Mon 06-27-94 05:17:26 PM

page 1

Method: ICP Sample Name: 3214004

Operator: DKL

Run Time: 06/27/94 17:15:16

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.85371	.00956	-.00194	3.4205	.00028	.00615	H545.04
SDev	.00042	.01053	.00477	.0075	.00006	.00204	1.27
%RSD	.04866	110.16	246.56	.22067	20.789	33.248	.23371

#1	.85342	.01701	.00144	3.4258	.00024	.00470	H544.14
#2	.85400	.00211	-.00531	3.4152	.00033	.00759	H545.94

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01397	.00593	.14067	.02717	-.00394	7.4116	.12975
SDev	.00058	.00102	.00063	.00087	.00095	.0125	.00019
%RSD	4.1618	17.221	.45020	3.2159	24.208	.16809	.14783

#1	.01356	.00666	.14112	.02656	-.00326	7.4028	.12989
#2	.01438	.00521	.14023	.02779	-.00461	7.4204	.12962

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01396	4.1043	.03818	-.00064	S2001.5	.03060	.00063
SDev	.00159	.0472	.00675	.00038	.1	.08395	.00031
%RSD	11.405	1.1498	17.676	58.742	.00730	274.39	49.703

#1	.01283	4.0709	.04295	-.00091	S2001.4	-.02877	.00085
#2	.01508	4.1376	.03341	-.00038	S2001.6	.08996	.00041

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.1075	.01430	.00783	2.2869	10.182	-.00144	H7544.6
SDev	.0036	.00063	.00050	.0042	.005	.01449	11.1
%RSD	.16993	4.3852	6.4282	.18166	.04842	1006.2	.14744

#1	2.1050	.01474	.00819	2.2898	10.178	-.01169	H7552.4
#2	2.1100	.01385	.00748	2.2839	10.185	.00881	H7536.7

Elem	Ti3349
Units	ppm
Avge	-.00140
SDev	.00021
%RSD	14.949

#1	-.00154
#2	-.00125

alysis Report

Mon 06-27-94 05:19:49 PM

page 1

Method: ICP Sample Name: 3214004MS

Operator: DKL

Run Time: 06/27/94 17:17:39

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.07614	.01006	3.9872	17.241	.00032	.78112	H547.70
SDev	.00062	.00008	.0246	.054	.00000	.00257	1.74
%RSD	.80973	.79715	.61743	.31577	.72679	.32903	.31794
#1	.07571	.01011	4.0046	17.203	.00033	.77930	H546.47
#2	.07658	.01000	3.9698	17.280	.00032	.78294	H548.94

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.8262	.00467	.13843	.01586	3.7980	7.4007	.13003
SDev	.0083	.00001	.00127	.00088	.0153	.0374	.00019
%RSD	.21664	.12259	.91508	5.5235	.40179	.50575	.14690
#1	3.8204	.00468	.13754	.01648	3.7872	7.3743	.12990
#2	3.8321	.00467	.13933	.01524	3.8088	7.4272	.13017

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01478	3.5370	.92092	3.0252	S2001.5	.07169	.00075
SDev	.00270	.1534	.00405	.0100	.2	.06055	.00063
%RSD	18.306	4.3360	.43944	.33151	.01071	84.467	83.786
#1	.01287	3.4286	.92378	3.0182	S2001.7	.11451	.00030
#2	.01669	3.6455	.91806	3.0323	S2001.4	.02887	.00119

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.04690	.01385	.00819	.08822	10.217	.00014	H7258.5
SDev	.00002	.00000	.00000	.00221	.009	.00061	29.1
%RSD	.03124	.00000	.00000	2.5020	.09078	432.02	.40091
#1	.04691	.01385	.00819	.08666	10.211	.00057	H7238.0
#2	.04689	.01385	.00819	.08978	10.224	-.00029	H7279.1

Elem	Ti3349
Units	ppm
Avge	L-.00448
SDev	.00043
%RSD	9.6425

#1	L-.00418
#2	L-.00479

Ag failed low.

Analysis Report

Mon 06-27-94 05:22:54 PM

page 1

Method: ICP Sample Name: 3214004MSD

Operator: DKL

Run Time: 06/27/94 17:20:44

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.07656	.00257	3.8899	17.963	.00036	.76795	H541.67
SDev	.00332	.01181	.0246	.109	.00006	.00143	.59
%RSD	4.3357	459.86	.63220	.60529	15.329	.18556	.10970

#1	.07891	.01092	3.9073	18.040	.00032	.76896	H542.09
#2	.07422	-.00578	3.8725	17.886	.00040	.76694	H541.25

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.7583	.00438	.13709	.04183	3.7717	7.3502	.12943
SDev	.0040	.00005	.00190	.00000	.0029	.0486	.00067
%RSD	.10559	1.0910	1.3863	.00220	.07580	.66127	.51834

#1	3.7611	.00434	.13844	.04183	3.7737	7.3846	.12991
#2	3.7555	.00441	.13575	.04183	3.7696	7.3159	.12896

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01490	3.6830	.88851	2.8803	S2002.1	.06958	.00165
SDev	.00032	.0059	.03909	.0033	.3	.01039	.00063
%RSD	2.1333	.16016	4.3992	.11442	.01715	14.931	38.100

#1	.01512	3.6788	.91615	2.8827	S2001.9	.07692	.00120
#2	.01467	3.6872	.86087	2.8780	S2002.4	.06223	.00209

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.05568	.01341	.00855	.09766	10.082	.00092	H7173.6
SDev	.00022	.00000	.00151	.00186	.026	.00154	39.8
%RSD	.39675	.00000	17.678	1.9052	.26134	166.50	.55464

#1	.05553	.01341	.00748	.09897	10.101	.00201	H7201.8
#2	.05584	.01341	.00961	.09634	10.063	-.00016	H7145.5

Elem	Ti3349
Units	ppm
Avge	L-.00444
SDev	.00014
%RSD	3.1997

#1	L-.00454
#2	L-.00434

Analysis Report

Mon 06-27-94 05:28:05 PM

page 1

Method: ICP Sample Name: 3214009L

Operator: DKL

Run Time: 06/27/94 17:25:56

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.2806	.01180	.00859	3.4734	.00037	.00369	144.29
SDev	.0006	.00001	.00325	.0207	.00006	.00130	.44
%RSD	.04837	.10654	37.819	.59644	15.501	35.188	.30780
#1	1.2811	.01179	.01089	3.4588	.00041	.00461	143.98
#2	1.2802	.01181	.00630	3.4881	.00033	.00277	144.60

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00336	-.00037	.01410	.05520	-.00737	1.8160	1.4235
SDev	.00011	.00259	.00000	.00088	.00380	.0137	.0039
%RSD	3.3489	707.57	.00525	1.5848	51.603	.75436	.27640
#1	.00328	.00147	.01410	.05458	-.00468	1.8063	1.4207
#2	.00344	-.00220	.01410	.05582	-.01005	1.8257	1.4263

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00788	3.9833	.02360	.00992	H239.99	.03434	.00068
SDev	.00159	.0059	.00945	.00114	1.84	.02559	.00031
%RSD	20.204	.14809	40.059	11.542	.76745	.74.520	45.834
#1	.00675	3.9791	.03028	.01073	H238.68	.05244	.00090
#2	.00900	3.9875	.01691	.00911	H241.29	.01625	.00046

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.9297	.00443	.00498	4.1943	1.9374	-.00918	H2251.4
SDev	.0051	.00078	.00050	.0199	.0075	.00593	14.2
%RSD	.12866	17.678	10.102	.47375	.38698	64.645	.63235
#1	3.9261	.00499	.00534	4.1803	1.9321	-.01337	H2241.4
#2	3.9332	.00388	.00463	4.2084	1.9427	-.00498	H2261.5

Elem	Ti3349
Units	ppm
Avge	.00021
SDev	.00031
%RSD	149.20

#1	-.00001
#2	.00043

Analysis Report

Mon 06-27-94 05:30:57 PM

page 1

Method: ICP Sample Name: 3214009A

Operator: DKL

Run Time: 06/27/94 17:28:48

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	6.5170	.89822	.89201	15.878	.89606	.87914	H597.64
SDev	.0226	.00013	.01897	.091	.00392	.00681	2.26
%RSD	.34740	.01461	2.1269	.57451	.43797	.77431	.37791

#1	6.5009	.89813	.87859	15.813	.89329	.87433	H596.04
#2	6.5330	.89832	.90542	15.942	.89884	.88395	H599.24

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.86050	.85009	1.0130	1.0390	.85605	8.6924	6.7195
SDev	.00116	.00104	.0051	.0044	.00674	.0287	.0360
%RSD	.13490	.12280	.50085	.42110	.78776	.33037	.53556

#1	.85968	.84935	1.0095	1.0359	.85128	8.6721	6.6940
#2	.86132	.85083	1.0166	1.0421	.86082	8.7127	6.7449

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.83256	28.551	.99266	.99471	S2002.2	.85503	.89290
SDev	.00573	.053	.03911	.01194	.2	.03305	.00313
%RSD	.68838	.18594	3.9397	1.2006	.01023	3.8658	.35097

#1	.82850	28.513	.96501	.98626	S2002.0	.87840	.89068
#2	.83661	28.588	1.0203	1.0032	S2002.3	.83165	.89512

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	16.905	.02028	.86238	18.658	8.4942	.00559	H9608.8
SDev	.073	.00000	.00655	.058	.0443	.01222	47.1
%RSD	.43281	.00000	.75908	.30927	.52146	218.56	.49014

#1	16.853	.02028	.85775	18.618	8.4629	.01424	H9575.5
#2	16.956	.02028	.86701	18.699	8.5255	-.00305	H9642.1

Elem	Ti3349
Units	ppm
Avge	.90736
SDev	.00466
%RSD	.51416

#1	.90406
#2	.91066

Analysis Report

Mon 06-27-94 05:35:03 PM

page 1

Method: ICP Sample Name: 3214004L

Operator: DKL

Run Time: 06/27/94 17:32:53

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.02291	.00659	.92485	3.9446	.00021	.18768	131.01
SDev	.00123	.00514	.01709	.0549	.00006	.00050	1.22
%RSD	5.3801	78.032	1.8476	1.3924	28.892	.26615	.92841

#1	.02204	.01022	.93693	3.9834	.00025	.18804	131.87
#2	.02378	.00295	.91276	3.9057	.00016	.18733	130.15

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.92841	.00077	.03136	.00351	.91173	1.7580	.03594
SDev	.01011	.00003	.00063	.00088	.01145	.0250	.00019
%RSD	1.0886	3.7789	2.0194	24.981	1.2553	1.4201	.53218

#1	.93556	.00075	.03181	.00289	.91982	1.7756	.03607
#2	.92127	.00079	.03091	.00413	.90364	1.7403	.03580

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00057	.58811	.20283	.70895	H240.13	.04765	-.00036
SDev	.00000	.02949	.01753	.00799	3.64	.01410	.00032
%RSD	.20073	5.0149	8.6428	1.1274	1.5141	29.597	86.850

#1	.00057	.60897	.19044	.71460	H242.70	.03768	-.00059
#2	.00057	.56726	.21523	.70330	H237.56	.05763	-.00014

Elem	Zn2138	Li6707	Mo2020	B 2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.02420	.00255	.00249	.06039	2.4063	-.00702	H1686.7
SDev	.00127	.00000	.00000	.00447	.0115	.00980	23.7
%RSD	5.2264	.00000	.00000	7.4019	.47817	139.72	1.4068

#1	.02510	.00255	.00249	.06355	2.4145	-.00008	H1703.5
#2	.02331	.00255	.00249	.05723	2.3982	-.01395	H1669.9

Elem	Ti3349
Units	ppm
Avge	-.00052
SDev	.00052
%RSD	99.275

#1	-.00089
#2	-.00016

alysis Report

Mon 06-27-94 05:39:16 PM

page 1

Method: ICP Sample Name: 3213655

Operator: DKL

Run Time: 06/27/94 17:37:06

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.52284	.00846	.00473	.73041	.00027	.00162	467.83
SDev	.00164	.00002	.00752	.00353	.00006	.00026	1.37
%RSD	.31356	.27267	158.82	.48372	22.335	15.888	.29377

#1	.52168	.00848	-.00058	.73291	.00031	.00144	466.85
#2	.52400	.00845	.01005	.72791	.00023	.00181	468.80

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01719	.00797	.40092	.09701	-.00245	2.1184	.01438
SDev	.00058	.00001	.00000	.00000	.00095	.0025	.00038
%RSD	3.3702	.16352	.00002	.00014	38.962	.11821	2.6696

#1	.01678	.00797	.40092	.09701	-.00312	2.1166	.01411
#2	.01760	.00796	.40092	.09701	-.00177	2.1201	.01465

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.02668	4.3545	.02170	-.00033	S1993.9	-.00457	.00444
SDev	.00175	.1770	.01213	.00077	.3	.01256	.00063
%RSD	6.5642	4.0638	55.924	229.90	.01271	274.64	14.110

#1	.02791	4.2294	.01312	-.00087	S1994.0	-.01345	.00400
#2	.02544	4.4797	.03028	.00021	S1993.7	.00431	.00488

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.99993	.00532	.00890	.90391	1.9386	-.01584	H5800.7
SDev	.00233	.00110	.00101	.00866	.0053	.00150	34.8
%RSD	.23275	20.624	11.314	.95790	.27474	9.4376	.59919

#1	.99828	.00454	.00961	.91003	1.9424	-.01690	H5825.3
#2	1.0016	.00609	.00819	.89778	1.9349	-.01478	H5776.1

Elem	Ti3349
Units	ppm
Avge	-.00006
SDev	.00001
%RSD	24.331

#1	-.00005
#2	-.00006

alysis Report

Mon 06-27-94 05:41:49 PM

page 1

Method: ICP Sample Name: 3213656

Operator: DKL

Run Time: 06/27/94 17:39:40

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.27350	.08267	.08707	.85305	.00044	.00599	460.47
SDev	.12129	.09495	.10649	.09764	.00039	.00330	29.94
%RSD	44.346	114.85	122.30	11.446	88.565	55.001	6.5017

#1	.35926	.14981	.16237	.78401	.00072	.00832	439.30
#2	.18774	.01553	.01178	.92210	.00017	.00366	481.64

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01227	.02141	.20921	.05840	.02492	5.2813	.09364
SDev	.00219	.02345	.01267	.01004	.03893	.1469	.00662
%RSD	17.877	109.51	6.0564	17.198	156.26	2.7819	7.0670

#1	.01383	.03799	.21817	.06551	.05245	5.1774	.08896
#2	.01072	.00483	.20025	.05130	-.00261	5.3852	.09832

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01745	5.3347	.15101	.01435	S1990.5	.09647	.00197
SDev	.00589	2.1058	.19293	.02109	.3	.07861	.00345
%RSD	33.760	39.474	127.76	146.91	.01544	81.487	175.12

#1	.02161	6.8238	.28743	.02927	S1990.2	.15206	.00441
#2	.01328	3.8457	.01459	-.00056	S1990.7	.04089	-.00047

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.44877	.01252	.01139	.48323	5.6630	.00678	H5953.1
SDev	.00806	.00533	.00151	.03007	.3428	.00684	764.1
%RSD	1.7969	42.552	13.258	6.2232	6.0525	100.82	12.835

#1	.44306	.01629	.01246	.46196	5.4207	.01162	H5412.8
#2	.45447	.00875	.01033	.50449	5.9054	.00195	H6493.4

Elem	Ti3349
Units	ppm
Avge	L-.00261
SDev	.00535
%RSD	204.96

#1	.00117
#2	L-.00639

Analysis Report

Mon 06-27-94 05:44:13 PM

page 1

Method: ICP Sample Name: 3213657

Operator: DKL

Run Time: 06/27/94 17:42:03

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.32583	.00831	.00694	1.1484	.00024	.00489	450.71
SDev	.00144	.00003	.00979	.0011	.00000	.00242	.97
%RSD	.44279	.37616	141.07	.09789	.00044	49.556	.21612

#1	.32481	.00828	.00002	1.1492	.00024	.00660	450.02
#2	.32685	.00833	.01386	1.1476	.00024	.00317	451.40

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01977	.00437	.15144	.10599	.00059	6.1651	.09459
SDev	.00026	.00049	.00063	.00131	.00095	.0037	.00010
%RSD	1.3029	11.323	.41848	1.2370	160.98	.06064	.10106

#1	.01996	.00472	.15099	.10506	-.00008	6.1624	.09466
#2	.01959	.00402	.15188	.10692	.00127	6.1677	.09452

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01463	4.5214	.03260	L-.00754	S1994.8	.01971	.00131
SDev	.00286	.0354	.00135	.01041	.7	.00754	.00000
%RSD	19.584	.78278	4.1448	137.93	.03560	38.251	.02126

#1	.01260	4.5464	.03355	-.00019	S1994.3	.02504	.00131
#2	.01666	4.4963	.03164	L-.01490	S1995.3	.01438	.00131

Elem	Zn2138	Li6707	Mo2020	B 2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.81555	.01086	.00677	.73488	8.9065	-.00109	H6501.7
SDev	.00083	.00016	.00201	.00302	.0063	.00594	4.1
%RSD	.10184	1.4431	29.773	.41131	.07091	543.17	.06364

#1	.81496	.01075	.00534	.73702	8.9020	.00311	H6504.7
#2	.81613	.01097	.00819	.73275	8.9109	-.00530	H6498.8

Elem	Ti3349
Units	ppm
Avge	L-.00286
SDev	.00135
%RSD	47.264

#1	L-.00382
#2	-.00191

Analysis Report

Mon 06-27-94 05:47:16 PM

page 1

Method: ICP Sample Name: 3213657

Operator: DKL

Run Time: 06/27/94 17:45:07

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.34247	.01582	.00878	1.1610	.00032	.00558	479.81
SDev	.00228	.00002	.00001	.0039	.00000	.00333	.08
%RSD	.66594	.11963	.14179	.33198	.73400	59.718	.01655

#1	.34086	.01581	.00879	1.1638	.00032	.00322	479.87
#2	.34408	.01584	.00877	1.1583	.00032	.00793	479.76

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.02201	.00733	.15368	.11001	.00598	6.3078	.10002
SDev	.00121	.00055	.00000	.00175	.01049	.0062	.00010
%RSD	5.4850	7.4956	.00025	1.5894	175.45	.09869	.09667

#1	.02115	.00694	.15368	.11124	.01340	6.3034	.10009
#2	.02286	.00771	.15368	.10877	-.00144	6.3122	.09995

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01778	4.6840	.01353	-.00046	S1993.8	.04255	.00131
SDev	.00350	.0767	.01753	.00012	.0	.04295	.00063
%RSD	19.693	1.6371	129.54	26.942	.00186	100.93	47.934

#1	.01531	4.7383	.02592	-.00054	S1993.8	.01218	.00175
#2	.02026	4.6298	.00114	-.00037	S1993.7	.07292	.00086

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.86639	.01097	.00783	.76919	9.2819	.00289	H6610.4
SDev	.00318	.00031	.00050	.00375	.0194	.00258	11.0
%RSD	.36681	2.8570	6.4282	.48765	.20893	89.304	.16627

#1	.86863	.01119	.00748	.76653	9.2956	.00106	H6618.2
#2	.86414	.01075	.00819	.77184	9.2682	.00471	H6602.6

Elem	Ti3349
Units	ppm
Avge	-.00062
SDev	.00046
%RSD	74.691

#1	-.00095
#2	-.00029

alysis Report

QC Standard

Mon 06-27-94 06:01:58 PM

page 1

Method: ICP Sample Name: CCV4

Operator: DKL

Run Time: 06/27/94 17:59:39

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0092	.99617	.99891	1.0617	.99207	1.0349	1.0216
SDev	.0003	.00529	.00353	.0120	.00588	.0050	.0038
%RSD	.02825	.53124	.35367	1.1345	.59324	.47928	.36952

#1	1.0094	.99243	.99641	1.0531	.98791	1.0314	1.0243
#2	1.0090	.99991	1.0014	1.0702	.99623	1.0384	1.0190

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0355	1.0412	1.0637	.97982	1.0134	1.0444	1.0346
SDev	.0025	.0021	.0095	.00131	.0019	.0038	.0036
%RSD	.24434	.20238	.89335	.13382	.18660	.36666	.35252

#1	1.0337	1.0397	1.0570	.97889	1.0147	1.0417	1.0320
#2	1.0373	1.0427	1.0705	.98075	1.0121	1.0471	1.0371

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.97878	10.561	1.0475	1.0097	01.1131	.94226	1.0271
SDev	.00462	.165	.0458	.0037	.0104	.02293	.0050
%RSD	.47171	1.5639	4.3734	.36759	.93613	2.4338	.48805

#1	.97551	10.678	1.0799	1.0070	01.1204	.95848	1.0235
#2	.98204	10.444	1.0151	1.0123	01.1057	.92604	1.0306

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0237	-.00078	.98878	1.0442	0.59385	.95802	3.7315
SDev	.0006	.00031	.00705	.0023	.00289	.01038	.6264
%RSD	.05742	40.406	.71297	.21577	.48621	1.0836	16.787

#1	1.0233	-.00055	.98380	1.0458	0.59589	.96536	4.1745
#2	1.0241	-.00100	.99377	1.0426	0.59181	.95068	3.2886

Elem	Ti3349
Units	ppm
Avge	1.0334
SDev	.0055
%RSD	.53100

#1	1.0295
#2	1.0373

alysis Report

Mon 06-27-94 06:14:44 PM

page 1

Method: ICP Sample Name: CCB4

Operator: DKL

Run Time: 06/27/94 18:11:49

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.07964	.00001	.01452	-.00011	L-.00270	.00080	L-.00427
SDev	.00020	.00001	.00050	.00016	.00000	.00066	.00000
%RSD	.25245	33.066	3.4558	141.42	.04393	82.742	.00212

#1	L-.07949	.00002	.01487	.00000	L-.00270	.00127	L-.00427
#2	L-.07978	.00001	.01416	-.00023	L-.00270	.00033	L-.00427

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.00238	-.00075	L-.00403	-.00185	L-.01610	-.00178	-.00027
SDev	.00000	.00000	.00000	.00000	.00000	.00000	.00000
%RSD	.00388	.51672	.00000	.00052	.00200	.25815	.00122

#1	L-.00239	-.00074	L-.00403	-.00185	L-.01610	-.00178	-.00027
#2	L-.00238	-.00075	L-.00403	-.00185	L-.01610	-.00178	-.00027

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00146	L-.85923	H.03717	H.00413	L-.24327	-.01936	-.00022
SDev	.00048	.00000	.00135	.00000	.00018	.00060	.00031
%RSD	32.644	.00000	3.6297	.04857	.07385	3.1196	140.57

#1	-.00113	L-.85923	H.03813	H.00413	L-.24339	-.01978	-.00000
#2	-.00180	L-.85923	H.03622	H.00412	L-.24314	-.01893	-.00044

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00017	.00100	-.00036	L-.00557	L-.01521	-.00323	H.51007
SDev	.00021	.00000	.00000	.00038	.00026	.00037	.01898
%RSD	127.89	.00000	.00000	6.7362	1.7248	11.501	3.7216

#1	.00002	.00100	-.00036	L-.00583	L-.01539	-.00297	H.52349
#2	.00032	.00100	-.00036	L-.00530	L-.01502	-.00349	H.49664

Elem	Ti3349
Units	ppm
Avge	L-.00337
SDev	.00000
%RSD	.00000

#1	L-.00337
#2	L-.00337

Method: ICP

Standard: STD1-Blank

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Avge	.32400	.00250	-.03150	.00000	.04000	.00250	.00800
SDev	.01131	.00354	.00495	.00000	.00000	.00212	.00283
%RSD	3.4919	141.42	15.713	.00000	.00000	84.853	35.355
#1	.31600	.00000	-.03500	.00000	.04000	.00400	.01000
#2	.33200	.00500	-.02800	.00000	.04000	.00100	.00600
Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Avge	.01100	-.00100	.00550	.00750	.00750	.00300	.00350
SDev	.00000	.00141	.00071	.00071	.00071	.00141	.00071
%RSD	.00000	141.42	12.856	9.4281	9.4281	47.140	20.203
#1	.01100	-.00200	.00500	.00700	.00700	.00200	.00300
#2	.01100	.00000	.00600	.00800	.00800	.00400	.00400
Elem	Ni2316	K_7664	Se1960	Aq3280	Na5889	Tl1908	V_2924
Avge	-.00300	.08350	-.00850	-.01800	.86850	.00793	.00050
SDev	.00849	.00212	.00919	.00000	.01768	.00468	.00212
%RSD	282.84	2.5405	108.15	.00000	2.0354	59.030	424.26
#1	-.00900	.08500	-.00200	-.01800	.85600	.01124	.00200
#2	.00300	.08200	-.01500	-.01800	.88100	.00462	-.00100
Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Avge	.00200	-.00500	.00300	.01300	.05150	-.01250	-.00650
SDev	.00000	.00141	.00141	.00141	.00071	.01344	.02333
%RSD	.00000	28.284	47.140	10.879	1.3730	107.48	358.99
#1	.00200	-.00400	.00200	.01400	.05100	-.00300	-.02300
#2	.00200	-.00600	.00400	.01200	.05200	-.02200	.01000
Elem	Ti3349						
Avge	.01000						
SDev	.00000						
%RSD	.00000						
#1	.01000						
#2	.01000						

Method: ICP

Standard: STD3

Elem	Al3082	Sb2068	Be3130	Fe2599	Ni2316	Tl1908	Mo2020
Avge	7.0845	1.0625	24.295	3.1915	8.8745	.60789	2.7880
SDev	.0332	.0092	.086	.0050	.0403	.01515	.0269
%RSD	.46911	.86517	.35509	.15509	.45417	2.4916	.96377
#1	7.1080	1.0690	24.356	3.1950	8.8460	.61860	2.7690
#2	7.0610	1.0560	24.234	3.1880	8.9030	.59718	2.8070

Method: ICP

Standard: STD2

Elem	Ba4934	Cd2288	Ca3179	Co2286	Cu3247	Pb2203	Mg2790
Avge	8.7505	4.2315	3.6605	2.7595	2.2300	1.4945	1.1360
SDev	.0573	.0007	.0007	.0092	.0127	.0050	.0028
%RSD	.65454	.01671	.01932	.33312	.57076	.33120	.24899

#1	8.7910	4.2320	3.6610	2.7660	2.2390	1.4980	1.1380
#2	8.7100	4.2310	3.6600	2.7530	2.2210	1.4910	1.1340

Elem	Mn2576	Zn2138
Avge	14.689	6.7195
SDev	.038	.0092
%RSD	.25995	.13680

#1	14.716	6.7260
#2	14.662	6.7130

Method: ICP

Standard: STD4

Elem	As1936	Cr2677	Se1960	V_2924	Li6707
Avge	5.6290	11.862	1.0405	4.5425	8.9765
SDev	.0028	.038	.0219	.0262	.0983
%RSD	.05025	.32190	2.1067	.57595	1.0949
#1	5.6270	11.889	1.0560	4.5610	9.0460
#2	5.6310	11.835	1.0250	4.5240	8.9070

Method: ICP

Slope = Conc(SIR)/IR

Element	Wavelen	High std	Low std	Slope	Y-intercept	Date Standardized
Al3082	308.215	STD3	STD1-Blank	.295836	-.095851	06/27/94 06:37:40
Sb2068	206.838	STD3	STD1-Blank	1.88679	-.004717	06/27/94 06:37:40
As1936	193.696	STD4	STD1-Blank	.353326	.011130	06/27/94 06:37:40
Ba4934	493.409	STD2	STD1-Blank	.228558	.000000	06/27/94 06:37:40
Be3130	313.042	STD3	STD1-Blank	.082457	-.003298	06/27/94 06:37:40
Cd2288	228.802	STD2	STD1-Blank	.472925	-.001182	06/27/94 06:37:40
Ca3179	317.933	STD2	STD1-Blank	.547570	-.004381	06/27/94 06:37:40
Cr2677	267.716	STD4	STD1-Blank	.168762	-.001856	06/27/94 06:37:40
Co2286	228.616	STD2	STD1-Blank	.724506	.000725	06/27/94 06:37:40
Cu3247	324.754	STD2	STD1-Blank	.899078	-.004945	06/27/94 06:37:40
Fe2599	259.940	STD3	STD1-Blank	.628141	-.004711	06/27/94 06:37:40
Pb2203	220.353	STD2	STD1-Blank	1.34499	-.010087	06/27/94 06:37:40
Mg2790	279.078	STD2	STD1-Blank	1.76523	-.005296	06/27/94 06:37:40
Mn2576	257.610	STD2	STD1-Blank	.136189	-.000477	06/27/94 06:37:40
Ni2316	231.604	STD3	STD1-Blank	.225289	.000676	06/27/94 06:37:40
K_7664	766.491	STD6	STD1-Blank	8.27472	-.690939	06/27/94 06:37:40
Se1960	196.026	STD4	STD1-Blank	1.90658	.016206	06/27/94 06:37:40
Ag3280	328.068	STD5	STD1-Blank	.176367	.003175	06/27/94 06:37:40
Na5889	588.995	STD6	STD1-Blank	.253780	-.220408	06/27/94 06:37:40
Tl1908	190.864	STD3	STD1-Blank	3.33356	-.026435	06/27/94 06:37:40
2924	292.402	STD4	STD1-Blank	.440335	-.000220	06/27/94 06:37:40
2138	213.856	STD2	STD1-Blank	.297730	-.000595	06/27/94 06:37:40
Li6707	670.784	STD4	STD1-Blank	.222680	.001113	06/27/94 06:37:40
Mo2020	202.030	STD3	STD1-Blank	.718133	-.002154	06/27/94 06:37:40
B_2496	249.678	STD7	STD1-Blank	.530786	-.006900	06/27/94 06:37:40
Si2516	251.611	STD7	STD1-Blank	.371747	-.019145	06/27/94 06:37:40
Sn1899	189.999	STD8	STD1-Blank	.522739	.006534	06/27/94 06:37:40
Sr4215	421.500	STD8	STD1-Blank	32.0000	.208000	06/27/94 06:37:40
Ti3349	334.941	STD8	STD1-Blank	.337467	-.003375	06/27/94 06:37:40

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QC Standard

Mon 06-27-94 06:52:34 PM

page 1

Method: ICP Sample Name: CCV5

Operator: DKL

Run Time: 06/27/94 18:50:12

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.91923	1.0420	1.0210	.95846	1.0048	1.0707	Q1.1446
SDev	.00288	.0054	.0140	.00210	.0034	.0032	.0000
%RSD	.31291	.51383	1.3716	.21921	.34109	.29420	.00021

#1	.91719	1.0458	1.0310	.95697	1.0024	1.0684	Q1.1446
#2	.92126	1.0383	1.0111	.95995	1.0072	1.0729	Q1.1446

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0649	1.0595	1.0757	1.0184	1.0506	1.0643	1.0653
SDev	.0058	.0021	.0032	.0018	.0095	.0012	.0024
%RSD	.54898	.19679	.29558	.17436	.90593	.10926	.22605

#1	1.0608	1.0580	1.0734	1.0172	1.0438	1.0651	1.0636
#2	1.0690	1.0610	1.0779	1.0197	1.0573	1.0635	1.0670

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0238	9.7476	1.0266	.98631	Q1.1761	.91534	1.0463
SDev	.0048	.0761	.0014	.00289	.0230	.00453	.0034
%RSD	.46682	.78034	.13346	.29299	1.9530	.49512	.32730

#1	1.0204	9.6938	1.0257	.98426	Q1.1924	.91213	1.0439
#2	1.0271	9.8014	1.0276	.98835	Q1.1599	.91854	1.0487

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0583	-.00011	1.0190	.93836	.51456	.98513	2.9440
SDev	.0031	.00016	.0020	.00750	.00263	.01414	1.0182
%RSD	.29598	141.42	.19933	.79956	.51117	1.4352	34.587

#1	1.0561	-.00022	1.0176	.93305	.51270	.97514	2.2240
#2	1.0605	-.00000	1.0205	.94366	.51642	.99513	3.6640

Elem	Ti3349
Units	ppm
Avge	1.0508
SDev	.0043
%RSD	.40861

#1	1.0477
#2	1.0538

Analysis Report

Mon 06-27-94 06:56:03 PM

page 1

Method: ICP Sample Name: CCB5
Run Time: 06/27/94 18:53:19
Comment:
Mode: CONC Corr. Factor: 1

Operator: DKL

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00459	.00662	-.00455	.00000	.00004	-.00090	-.00164
SDev	.00106	.00531	.00576	.00000	.00006	.00028	.00077
%RSD	23.056	80.164	126.43	.00000	156.27	31.040	47.104

#1	-.00384	.01037	-.00863	.00000	.00008	-.00110	-.00110
#2	-.00534	.00287	-.00048	.00000	-.00000	-.00070	-.00219

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00025	.00182	-.00045	-.00126	-.00336	-.00617	-.00020
SDev	.00084	.00155	.00000	.00044	.00761	.00124	.00000
%RSD	330.03	85.300	.02056	35.381	226.44	20.021	.09225

#1	.00034	.00072	-.00045	-.00157	.00202	-.00530	-.00020
#2	-.00084	.00291	-.00045	-.00094	-.00874	-.00705	-.00020

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00056	.11585	.01050	-.00123	.00140	.00743	.00044
SDev	.00143	.11117	.00808	.00075	.00431	.01713	.00093
%RSD	254.56	95.964	76.952	61.232	308.55	230.65	212.29

#1	-.00045	.19446	.01621	-.00177	-.00165	-.00469	-.00022
#2	.00158	.03724	.00479	-.00070	.00444	.01954	H.00110

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00030	-.00011	H.00539	.00132	.00167	.00365	L-.19200
SDev	.00042	.00016	.00254	.00112	.00105	.00558	.06788
%RSD	139.47	141.42	47.140	84.865	62.850	153.02	35.355

#1	-.00059	-.00000	H.00718	.00053	.00242	.00759	L-.24000
#2	-.00000	-.00022	.00359	.00212	.00093	-.00030	L-.14400

Elem	Ti3349
Units	ppm
Avge	-.00000
SDev	.00000
%RSD	31.288

#1	-.00000
#2	-.00000

alysis Report

Mon 06-27-94 06:59:44 PM

page 1

Method: ICP Sample Name: 3213658

Operator: DKL

Run Time: 06/27/94 18:57:35

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.32587	.00769	-.00150	1.2658	.00012	.00523	H502.64
SDev	.01111	.01601	.00159	.0003	.00017	.00032	2.08
%RSD	3.4085	208.21	106.21	.02554	142.32	6.1361	.41350

#1	.31801	-.00363	-.00037	1.2655	.00024	.00546	H501.17
#2	.33372	.01901	-.00263	1.2660	-.00000	.00501	H504.11

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01473	.00682	.14749	.13725	.00872	6.6799	.12128
SDev	.00075	.00203	.00064	.00000	.00953	.0000	.00067
%RSD	5.1028	29.798	.43109	.00018	109.21	.00021	.55568

#1	.01526	.00538	.14705	.13725	.01546	6.6800	.12080
#2	.01420	.00825	.14794	.13725	.00199	6.6799	.12176

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01757	4.6214	.00108	-.00151	S1991.1	-.02645	.00086
SDev	.00223	.1053	.00675	.00037	.5	.05535	.00093
%RSD	12.693	2.2789	623.51	24.329	.02357	209.27	108.21

#1	.01915	4.6959	-.00369	-.00177	S1991.4	.01269	.00152
#2	.01599	4.5470	.00585	-.00125	S1990.8	-.06558	.00020

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.92589	.01091	.00646	.80403	10.588	.00908	H8467.5
SDev	.00274	.00063	.00102	.00558	.036	.00255	4.3
%RSD	.29626	5.7723	15.713	.69360	.33772	28.058	.05131

#1	.92395	.01136	.00718	.80009	10.562	.00728	H8470.6
#2	.92783	.01047	.00575	.80798	10.613	.01088	H8464.4

Elem	Ti3349
Units	ppm
Avge	.00346
SDev	.00034
%RSD	9.8530

#1	.00322
#2	.00370

Analysis Report

Mon 06-27-94 07:02:14 PM

page 1

Method: ICP Sample Name: 3213659

Operator: DKL

Run Time: 06/27/94 19:00:05

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.1287	.00272	-.00533	.59162	.00010	-.00108	482.67
SDev	.0339	.00136	.00796	.00824	.00000	.00208	2.66
%RSD	.82115	49.995	149.51	1.3932	3.5306	193.43	.55149

#1	4.1527	.00368	.00030	.59745	.00010	-.00255	484.56
#2	4.1047	.00176	-.01096	.58580	.00010	.00040	480.79

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01910	.00647	.57767	.05225	.00723	.14871	.01187
SDev	.00064	.00050	.00763	.00000	.01145	.00751	.00019
%RSD	3.3634	7.7620	1.3206	.00291	158.39	5.0480	1.6267

#1	.01865	.00611	.58306	.05225	-.00087	.14340	.01173
#2	.01956	.00682	.57228	.05225	.01532	.15402	.01200

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.05993	2.9168	-.00756	-.00139	S1991.4	.01777	.01725
SDev	.00159	.1287	.02292	.00063	.1	.03132	.00093
%RSD	2.6582	4.4131	303.20	45.252	.00644	176.28	5.4111

#1	.06105	2.8258	-.02377	-.00184	S1991.5	-.00438	.01659
#2	.05880	3.0079	.00865	-.00095	S1991.3	.03992	.01791

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.51965	.00245	.01077	.52609	2.2145	.00206	H6178.7
SDev	.00460	.00063	.00000	.00744	.0138	.00966	80.6
%RSD	.88578	25.713	.00000	1.4148	.62276	469.09	1.3041

#1	.52291	.00200	.01077	.53136	2.2243	-.00477	H6235.6
#2	.51640	.00289	.01077	.52083	2.2048	.00888	H6121.7

Elem	Ti3349
Units	ppm
Avge	.00221
SDev	.00044
%RSD	19.753

#1	.00252
#2	.00190

Analysis Report

Mon 06-27-94 07:05:22 PM

page 1

Method: ICP Sample Name: 3213660

Operator: DKL

Run Time: 06/27/94 19:03:12

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.6917	.01511	-.00728	.63973	.00011	-.00059	466.66
SDev	.0027	.00533	.01496	.00097	.00000	.00015	.36
%RSD	.10084	35.276	205.44	.15157	1.1034	25.100	.07700

#1	2.6936	.01888	.00330	.64042	.00011	-.00069	466.40
#2	2.6898	.01134	-.01787	.63905	.00011	-.00048	466.91

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.02051	.00822	.61454	.06928	.02222	.26610	.01605
SDev	.00095	.00001	.00127	.00089	.00000	.00125	.00010
%RSD	4.6253	.17421	.20687	1.2821	.01195	.46960	.59808

#1	.01984	.00821	.61544	.06865	.02222	.26522	.01611
#2	.02118	.00823	.61364	.06991	.02223	.26699	.01598

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.05959	3.5043	.00005	-.00202	S1992.8	-.04985	.01547
SDev	.00175	.0936	.00944	.00025	.0	.02880	.00031
%RSD	2.9405	2.6715	18503.	12.248	.00232	57.787	2.0134

#1	.05835	3.5705	.00672	-.00220	S1992.9	-.02948	.01569
#2	.06083	3.4381	-.00662	-.00185	S1992.8	-.07021	.01525

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.67510	.00267	.01149	.61485	1.9306	-.00415	H6558.1
SDev	.00063	.00032	.00102	.00113	.0062	.00664	3.1
%RSD	.09314	11.785	8.8388	.18455	.32221	160.11	.04692

#1	.67465	.00289	.01077	.61565	1.9262	.00055	H6560.3
#2	.67554	.00245	.01221	.61405	1.9350	-.00885	H6555.9

Elem	Ti3349
Units	ppm
Avge	.00279
SDev	.00030
%RSD	10.657

#1	.00258
#2	.00300

Analysis Report

Mon 06-27-94 07:07:57 PM

page 1

Method: ICP Sample Name: 3213661

Operator: DKL

Run Time: 06/27/94 19:05:47

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.9433	.00681	-.00888	.69676	.00011	.00040	H501.98
SDev	.0186	.00396	.01234	.00242	.00000	.00256	.25
%RSD	.31346	58.115	138.95	.34793	1.1026	632.83	.04968

#1	5.9301	.00961	-.01761	.69505	.00011	-.00140	H501.81
#2	5.9564	.00401	-.00016	.69847	.00011	.00221	H502.16

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01881	.00997	.59476	.05060	.00939	.13103	.03485
SDev	.00096	.00309	.00381	.00222	.00953	.01248	.00038
%RSD	5.1002	31.003	.64144	4.3881	101.50	9.5247	1.1060

#1	.01949	.00778	.59206	.04903	.01613	.12221	.03458
#2	.01813	.01215	.59745	.05217	.00265	.13986	.03513

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.09023	2.9417	.01057	-.00017	S1992.3	-.00439	.01552
SDev	.00207	.0585	.00001	.00038	.6	.06290	.00031
%RSD	2.2953	1.9891	.11363	219.80	.03012	1431.2	2.0014

#1	.08876	2.9830	.01056	.00009	S1992.7	-.04887	.01574
#2	.09169	2.9003	.01057	-.00044	S1991.9	.04008	.01530

Elem	Zn2138	Li6707	Mo2020	B 2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.49537	.00301	.01041	.44654	3.0395	.01147	H6341.0
SDev	.00040	.00079	.00051	.00301	.0002	.00596	17.0
%RSD	.08078	26.189	4.8766	.67481	.00653	51.913	.26871

#1	.49509	.00356	.01077	.44867	3.0393	.01568	H6328.9
#2	.49566	.00245	.01005	.44441	3.0396	.00726	H6353.0

Elem	Ti3349
Units	ppm
Avge	.00183
SDev	.00115
%RSD	62.806

#1	.00265
#2	.00102

Analysis Report

Mon 06-27-94 07:10:45 PM

page 1

Method: ICP Sample Name: 3213662
Run Time: 06/27/94 19:08:35
Comment:
Mode: CONC Corr. Factor: 1

Operator: DKL

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.40510	.00011	.00517	.76613	.00019	-.00026	H542.59
SDev	.00395	.00535	.00403	.00388	.00005	.00004	.45
%RSD	.97568	4719.8	77.845	.50629	28.162	16.213	.08356

#1	.40789	.00389	.00233	.76338	.00023	-.00023	H542.27
#2	.40230	-.00367	.00802	.76887	.00015	-.00029	H542.91

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01735	.00825	.40236	.08792	-.00098	2.5528	.00992
SDev	.00132	.00049	.00000	.00044	.00951	.0150	.00010
%RSD	7.6086	5.8948	.00002	.50463	971.73	.58578	.96703

#1	.01828	.00790	.40236	.08823	.00575	2.5422	.00986
#2	.01641	.00859	.40236	.08760	-.00770	2.5634	.00999

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.03188	4.4022	.00067	-.00297	S1985.0	-.00035	.00419
SDev	.00303	.0761	.00000	.00001	.0	.01545	.00125
%RSD	9.4956	1.7279	.56863	.26763	.00093	4432.2	29.754

#1	.03402	4.4559	.00068	-.00297	S1985.0	.01058	.00507
#2	.02974	4.3484	.00067	-.00298	S1985.0	-.01127	.00331

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.98156	.00657	.00898	.87391	1.9739	.00280	H7213.1
SDev	.00001	.00079	.00254	.00076	.0075	.00254	33.9
%RSD	.00099	11.985	28.284	.08721	.37864	90.783	.46929

#1	.98155	.00713	.00718	.87445	1.9791	.00100	H7189.1
#2	.98156	.00601	.01077	.87337	1.9686	.00460	H7237.0

Elem	Ti3349
Units	ppm
Avge	.00326
SDev	.00007
%RSD	2.2891

#1	.00321
#2	.00332

alysis Report

Mon 06-27-94 07:13:27 PM

page 1

Method: ICP Sample Name: 3213664

Operator: DKL

Run Time: 06/27/94 19:11:18

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.18302	.01141	.00008	.70407	.00022	.00263	H612.44
SDev	.00708	.00136	.01815	.00857	.00011	.00183	5.41
%RSD	3.8691	11.870	22159.	1.2166	49.069	69.557	.88307

#1	.18803	.01045	.01292	.69802	.00030	.00393	H608.62
#2	.17802	.01237	-.01275	.71013	.00015	.00134	H616.27

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00350	.00289	.05829	.17651	.00295	5.2528	1.8476
SDev	.00224	.00002	.00000	.00178	.00471	.0486	.0165
%RSD	64.022	.78731	.00465	1.0087	159.79	.92605	.89126

#1	.00509	.00290	.05829	.17525	.00628	5.2184	1.8360
#2	.00192	.00287	.05829	.17777	-.00038	5.2872	1.8593

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.03774	4.6297	-.01590	-.00272	S1985.4	.00744	.00638
SDev	.00239	.1053	.00942	.00176	.3	.08852	.00187
%RSD	6.3326	2.2749	59.262	64.670	.01481	1189.9	29.263

#1	.03943	4.7042	-.02257	-.00148	S1985.2	.07003	.00770
#2	.03605	4.5552	-.00924	-.00397	S1985.6	-.05515	.00506

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.43867	.00891	.02083	.46464	2.9456	.01470	H7934.8
SDev	.00421	.00000	.00203	.00700	.0263	.00558	90.4
%RSD	.96072	.00000	9.7532	1.5075	.89125	37.979	1.1398

#1	.43569	.00891	.01939	.45968	2.9271	.01865	H7870.8
#2	.44165	.00891	.02226	.46959	2.9642	.01075	H7998.7

Elem	Ti3349
Units	ppm
Avge	.00106
SDev	.00113
%RSD	106.68

#1	.00026
#2	.00185

alysis Report

Mon 06-27-94 07:16:08 PM

page 1

Method: ICP Sample Name: 3213665

Operator: DKL

Run Time: 06/27/94 19:13:59

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.20875	.01232	.00433	.74670	.00014	.00567	H637.20
SDev	.00125	.00002	.01127	.00453	.00000	.00223	1.48
%RSD	.59988	.13598	259.92	.60602	.84900	39.386	.23200

#1	.20787	.01234	.01230	.74990	.00014	.00725	H638.24
#2	.20964	.01231	-.00363	.74350	.00014	.00409	H636.15

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00519	.00434	.06724	.04647	.02086	5.4513	1.7579
SDev	.00038	.00102	.00000	.00089	.00192	.0200	.0052
%RSD	7.3880	23.464	.00137	1.9139	9.1898	.36623	.29582

#1	.00492	.00362	.06724	.04710	.02222	5.4654	1.7616
#2	.00546	.00506	.06724	.04584	.01951	5.4372	1.7542

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.03931	4.9110	-.00160	-.00138	S1983.5	.00391	.00702
SDev	.00112	.0000	.01617	.00012	.2	.04646	.00031
%RSD	2.8365	.00000	1010.0	8.8259	.00818	1188.1	4.4354

#1	.04010	4.9110	.00983	-.00129	S1983.4	-.02894	.00680
#2	.03852	4.9110	-.01303	-.00147	S1983.6	.03676	.00724

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.45798	.00902	.02370	.52718	3.1233	-.00040	H8035.3
SDev	.00042	.00016	.00000	.00485	.0059	.00037	43.2
%RSD	.09059	1.7459	.00000	.91929	.19020	94.029	.53757

#1	.45827	.00913	.02370	.53061	3.1275	-.00013	H8065.8
#2	.45769	.00891	.02370	.52375	3.1191	-.00066	H8004.8

Elem	Ti3349
Units	ppm
Avge	.00090
SDev	.00023
%RSD	26.170

#1	.00073
#2	.00106

alysis Report

Mon 06-27-94 07:18:46 PM

page 1

Method: ICP Sample Name: 3213666

Operator: DKL

Run Time: 06/27/94 19:16:36

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.25921	.00116	.01536	.77824	.00072	.00509	H611.24
SDev	.00734	.00533	.00159	.00873	.00011	.00099	3.63
%RSD	2.8297	460.67	10.326	1.1214	15.730	19.426	.59373

#1	.26439	.00493	.01424	.77207	.00064	.00439	H608.68
#2	.25402	-.00261	.01648	.78441	.00080	.00579	H613.81

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00417	.00359	.06098	.05750	.01055	5.2439	1.9670
SDev	.00113	.00103	.00000	.00044	.00947	.0212	.0149
%RSD	27.086	28.546	.00332	.76770	89.713	.40506	.75881

#1	.00337	.00287	.06098	.05781	.01725	5.2288	1.9565
#2	.00497	.00432	.06098	.05719	.00386	5.2589	1.9776

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.03852	4.5966	-.00635	-.00213	S1985.0	-.00222	.00614
SDev	.00064	.1404	.00135	.00286	.4	.00485	.00093
%RSD	1.6541	3.0550	21.321	134.78	.02049	218.36	15.199

#1	.03807	4.4973	-.00731	-.00010	S1984.7	-.00565	.00548
#2	.03897	4.6959	-.00539	L-.00415	S1985.3	.00121	.00680

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.49538	.00891	.02118	.50210	3.4556	.01106	H7643.1
SDev	.00273	.00000	.00152	.00892	.0230	.00774	87.1
%RSD	.55171	.00000	7.1909	1.7768	.66609	70.001	1.1401

#1	.49345	.00891	.02011	.49579	3.4393	.00559	H7581.5
#2	.49732	.00891	.02226	.50840	3.4719	.01654	H7704.8

Elem	Ti3349
Units	ppm
Avge	.00120
SDev	.00083
%RSD	69.668

#1	.00061
2	.00179

Analysis Report

Mon 06-27-94 07:21:15 PM

page 1

Method: ICP Sample Name: 3213667

Operator: DKL

Run Time: 06/27/94 19:19:05

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.20048	.01607	.00701	.75801	.00014	.00280	H618.83
SDev	.00543	.00536	.00647	.00404	.00000	.00106	3.03
%RSD	2.7066	33.333	92.283	.53302	1.6694	37.979	.48985

#1	.19664	.01228	.00243	.75516	.00014	.00356	H616.68
#2	.20431	.01986	.01158	.76087	.00014	.00205	H620.97

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00264	.00214	.06140	.08855	.00604	5.1362	1.7436
SDev	.00041	.00102	.00191	.00178	.00950	.0337	.0064
%RSD	15.542	47.411	3.1082	2.0074	157.18	.65632	.36452

#1	.00293	.00286	.06005	.08730	.01276	5.1124	1.7391
#2	.00235	.00142	.06275	.08981	-.00067	5.1600	1.7481

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.03762	4.7125	-.01397	-.00271	S1984.2	.02598	.00637
SDev	.00128	.0468	.01484	.00075	.2	.03982	.00062
%RSD	3.3878	.99330	106.19	27.545	.01168	153.28	9.7822

#1	.03672	4.7456	-.00348	-.00218	S1984.4	.05413	.00593
#2	.03852	4.6794	-.02446	-.00323	S1984.1	-.00218	.00681

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.43897	.00824	.02262	.49233	3.0273	.00973	H7729.4
SDev	.00167	.00000	.00051	.00894	.0121	.00218	54.7
%RSD	.38056	.00000	2.2448	1.8154	.40051	22.439	.70815

#1	.43779	.00824	.02298	.48601	3.0187	.00818	H7690.7
#2	.44015	.00824	.02226	.49865	3.0359	.01127	H7768.1

Elem	Ti3349
Units	ppm
Avge	.00075
SDev	.00026
%RSD	34.346

#1	.00057
#2	.00094

alysis Report

Mon 06-27-94 07:24:28 PM

page 1

Method: ICP Sample Name: 3213668

Operator: DKL

Run Time: 06/27/94 19:22:19

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.27103	.01289	.00929	.62671	.00014	.00373	H618.15
SDev	.00232	.00127	.00250	.00032	.00011	.00035	1.33
%RSD	.85541	9.8455	26.872	.05158	80.389	9.4806	.21522

#1	.27267	.01199	.01106	.62694	.00006	.00348	H619.09
#2	.26939	.01379	.00753	.62648	.00022	.00398	H617.21

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00527	.00474	.06581	.07493	.00512	4.9164	1.1158
SDev	.00062	.00149	.00064	.00133	.00475	.0075	.0033
%RSD	11.746	31.441	.96721	1.7791	92.644	.15188	.29346

#1	.00484	.00368	.06626	.07588	.00177	4.9217	1.1181
#2	.00571	.00579	.06536	.07399	.00848	4.9112	1.1135

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.03762	5.0765	-.00154	-.00154	S1984.3	.04393	.00681
SDev	.00573	.0000	.01889	.00124	.1	.02367	.00125
%RSD	15.243	.00000	1229.4	80.175	.00526	53.885	18.288

#1	.04168	5.0765	-.01489	-.00067	S1984.2	.06067	.00593
#2	.03357	5.0765	.01182	-.00242	S1984.4	.02719	.00769

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.50076	.00913	.02011	.52117	2.3583	.03092	H7722.2
SDev	.00229	.00032	.00102	.00035	.0089	.00557	25.0
%RSD	.45751	3.4493	5.0508	.06648	.37606	18.002	.32437

#1	.50238	.00891	.02083	.52141	2.3646	.02698	H7739.9
#2	.49914	.00935	.01939	.52092	2.3521	.03486	H7704.5

Elem	Ti3349
Units	ppm
Avge	.00132
SDev	.00050
%RSD	37.813

#1	.00096
#2	.00167

alysis Report

QC Standard

Mon 06-27-94 07:27:15 PM

page 1

Method: ICP Sample Name: CCV6

Operator: DKL

Run Time: 06/27/94 19:25:05

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.92047	1.0523	1.0078	.96943	1.0093	1.0833	1.0819
SDev	.00232	.0014	.0032	.00275	.0005	.0060	.0066
%RSD	.25171	.12831	.32083	.28341	.04609	.55283	.60863

#1	.92210	1.0533	1.0101	.96749	1.0089	1.0875	1.0865
#2	.91883	1.0514	1.0055	.97137	1.0096	1.0791	1.0772

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0710	1.0707	1.0869	1.0178	1.0640	1.0742	1.0718
SDev	.0014	.0046	.0025	.0018	.0019	.0075	.0015
%RSD	.13368	.43167	.23391	.17453	.17831	.69834	.14380

#1	1.0721	1.0739	1.0851	1.0191	1.0654	1.0795	1.0729
#2	1.0700	1.0674	1.0887	1.0166	1.0627	1.0689	1.0707

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0202	9.5449	1.0248	1.0020	1.0397	.95700	1.0533
SDev	.0013	.1053	.0040	.0031	.0066	.02685	.0003
%RSD	.12491	1.1034	.39270	.31092	.63859	2.8058	.02955

#1	1.0211	9.4704	1.0220	1.0043	1.0444	.97599	1.0531
#2	1.0193	9.6194	1.0277	.99985	1.0350	.93801	1.0535

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0614	-.00022	1.0215	.94073	.51941	.98838	.46400
SDev	.0051	.00000	.0046	.00414	.00894	.02590	.31678
%RSD	.47625	.00000	.44738	.43967	1.7207	2.6200	68.272

#1	1.0650	-.00022	1.0248	.93780	.52573	1.0067	.68800
#2	1.0578	-.00022	1.0183	.94365	.51309	.97007	.24000

Elem	Ti3349
Units	ppm
Avge	1.0612
SDev	.0000
%RSD	.00006

#1	1.0612
#2	1.0612

alysis Report

QC Standard

Mon 06-27-94 07:30:18 PM

page 1

Method: ICP Sample Name: CCB6

Operator: DKL

Run Time: 06/27/94 19:28:08

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	Q-.00192	Q-.00564	Q.00143	Q.00000	Q-.00004	Q-.00025	Q.00000
SDev	.00356	.00931	.00928	.00000	.00006	.00343	.00000
%RSD	185.63	165.17	648.20	.00000	144.27	1373.3	546.98

#1	Q.00060	Q.00095	Q-.00513	Q.00000	Q.00000	Q.00218	Q.00000
#2	Q-.00444	Q-.01222	Q.00799	Q.00000	Q-.00008	Q-.00268	Q-.00000

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	Q-.00093	Q.00109	Q-.00000	Q-.00094	Q-.01009	Q.00617	Q.00007
SDev	.00036	.00151	.00064	.00178	.00191	.00374	.00019
%RSD	38.561	137.79	341150.	188.62	18.929	60.626	285.20

#1	Q-.00118	Q.00216	Q-.00045	Q.00031	Q-.01144	Q.00882	Q.00020
#2	Q-.00068	Q.00003	Q.00045	Q-.00220	Q-.00874	Q.00353	Q-.00007

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	Q.00068	Q.00827	Q.00858	Q-.00035	Q.02550	Q-.02453	Q-.00000
SDev	.00382	.08777	.01888	.00000	.00323	.04659	.00031
%RSD	565.60	1060.7	219.93	.57076	12.665	189.93	256750.

#1	Q-.00203	Q-.05379	Q.02193	Q-.00035	Q.02779	Q-.05747	Q-.00022
#2	Q.00338	Q.07034	Q-.00477	Q-.00035	Q.02322	Q.00841	Q.00022

Elem	Zn2138	Li6707	Mo2020	B 2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	Q-.00030	-.00033	Q.00072	Q.00318	Q.00706	.00728	.57600
SDev	.00044	.00016	.00000	.00075	.00131	.00408	.52043
%RSD	145.13	47.140	.00000	23.510	18.614	56.020	90.353

#1	Q.00001	-.00045	Q.00072	Q.00371	Q.00799	.00439	.94400
#2	Q-.00061	-.00022	Q.00072	Q.00265	Q.00613	.01016	.20800

Elem	Ti3349
Units	ppm
Avg	Q.00017
SDev	.00024
%RSD	141.19

#1	Q.00000
#2	Q.00034

*disregard Q flags
ran in wrong Ck table.*

analysis Report

Mon 06-27-94 07:33:18 PM

page 1

Method: ICP Sample Name: 3213669

Operator: DKL

Run Time: 06/27/94 19:31:09

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.04550	.00151	-.00644	.62682	.00023	.00743	H586.72
SDev	.00961	.00534	.00268	.00049	.00000	.00003	1.50
%RSD	21.121	354.09	41.656	.07735	1.0079	.34023	.25565

#1	.03871	-.00227	-.00833	.62716	.00024	.00744	H585.66
#2	.05230	.00529	-.00454	.62648	.00023	.00741	H587.78

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00339	.00329	.04677	.03544	.00650	5.0143	3.2618
SDev	.00021	.00051	.00000	.00089	.00286	.0038	.0068
%RSD	6.2454	15.375	.00247	2.5086	44.019	.07489	.20962

#1	.00324	.00364	.04677	.03481	.00448	5.0116	3.2570
#2	.00354	.00293	.04677	.03607	.00852	5.0170	3.2666

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.03773	3.9926	-.01967	-.00252	S1985.7	.02910	.00371
SDev	.00080	.0585	.02022	.00137	.4	.06844	.00062
%RSD	2.1110	1.4655	102.79	54.483	.02160	235.18	16.772

#1	.03717	3.9512	-.03397	-.00350	S1986.0	-.01929	.00327
#2	.03830	4.0339	-.00537	-.00155	S1985.4	.07750	.00416

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.02132	.00969	.02083	.08410	3.9987	.00607	H7679.0
SDev	.00042	.00047	.00102	.00222	.0065	.00442	11.8
%RSD	1.9599	4.8766	4.8766	2.6372	.16159	72.861	.15411

#1	.02102	.00935	.02154	.08253	3.9941	.00920	H7687.3
#2	.02161	.01002	.02011	.08567	4.0033	.00294	H7670.6

Elem	Ti3349
Units	ppm
Avge	.00038
SDev	.00071
%RSD	185.97

#1	.00088
#2	-.00012

Analysis Report

Mon 06-27-94 07:36:01 PM

page 1

Method: ICP Sample Name: 3213670

Operator: DKL

Run Time: 06/27/94 19:33:52

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.21698	.01313	.01237	1.0007	.00016	.01743	H607.66
SDev	.00564	.00530	.00975	.0050	.00000	.00024	1.78
%RSD	2.6009	40.345	78.842	.50064	1.4922	1.3771	.29312

#1	.22097	.00938	.01926	1.0043	.00016	.01760	H608.91
#2	.21299	.01687	.00547	.99720	.00016	.01726	H606.40

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00273	.00911	.06600	.06155	.01368	5.7813	8.8211
SDev	.00051	.00256	.00064	.00088	.00768	.0050	.0337
%RSD	18.765	28.153	.97024	1.4338	56.163	.08652	.38209

#1	.00237	.01092	.06645	.06092	.01911	5.7848	8.8449
#2	.00310	.00729	.06555	.06217	.00825	5.7778	8.7972

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.06049	5.3165	.00980	-.00210	S1985.1	.08240	.00196
SDev	.00048	.0468	.01080	.00000	.7	.02242	.00062
%RSD	.79033	.88045	110.19	.06627	.03656	27.211	31.839

#1	.06083	5.3496	.01744	-.00210	S1984.6	.06654	.00240
#2	.06015	5.2834	.00216	-.00209	S1985.6	.09825	.00152

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.58218	.01091	.01795	.56723	8.1931	.00557	H8993.8
SDev	.00021	.00000	.00203	.00108	.0138	.00737	38.4
%RSD	.03689	.00000	11.314	.19118	.16782	132.41	.42644

#1	.58202	.01091	.01939	.56800	8.2028	.00035	H9020.9
#2	.58233	.01091	.01652	.56646	8.1834	.01078	H8966.7

Elem	Ti3349
Units	ppm
Avge	.00196
SDev	.00042
%RSD	21.639

#1	.00166
#2	.00226

Method: ICP Sample Name: 3213671

Operator: DKL

Run Time: 06/27/94 19:36:45

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.17253	-.00106	.01161	.77870	.00023	.00654	H604.48
SDev	.00311	.00134	.01030	.00937	.00011	.00177	3.63
%RSD	1.8046	125.90	88.758	1.2038	49.370	27.104	.60051

#1	.17473	-.00201	.00432	.77207	.00031	.00780	H601.92
#2	.17033	-.00012	.01890	.78533	.00015	.00529	H607.05

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00354	.00178	.04765	.06398	-.00221	5.0558	3.0520
SDev	.00029	.00152	.00000	.00044	.00280	.0249	.0227
%RSD	8.2891	85.558	.00658	.68781	126.78	.49347	.74464

#1	.00333	.00070	.04765	.06429	-.00023	5.0382	3.0359
#2	.00375	.00285	.04765	.06367	-.00419	5.0735	3.0681

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.03841	4.8366	-.02159	-.00221	51985.9	-.01848	.00548
SDev	.00143	.0585	.00944	.00176	.1	.00084	.00125
%RSD	3.7332	1.2098	43.710	79.382	.00627	4.5262	22.721

#1	.03943	4.8779	-.01492	-.00097	51985.8	-.01907	.00636
#2	.03740	4.7952	-.02826	-.00346	51986.0	-.01789	.00460

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.46329	.00991	.02226	.49686	3.9272	.01650	H8204.7
SDev	.00064	.00016	.00203	.00705	.0172	.00592	96.2
%RSD	.13703	1.5890	9.1240	1.4179	.43884	35.875	1.1724

#1	.46284	.01002	.02370	.49188	3.9150	.02069	H8136.7
#2	.46373	.00980	.02083	.50184	3.9394	.01232	H8272.7

Elem	Ti3349
Units	ppm
Avge	.00110
SDev	.00012
%RSD	10.970

#1	.00119
#2	.00101

Analysis Report

Mon 06-27-94 07:41:49 PM

page 1

Method: ICP Sample Name: Q1452529

Operator: DKL

Run Time: 06/27/94 19:39:39

Comment: BLANK

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.18976	.00241	-.00263	.85127	.00008	-.00044	.77523
SDev	.01151	.00135	.00266	.00630	.00000	.00165	.01162
%RSD	6.0662	55.941	101.05	.74042	1.5171	371.85	1.4986

#1	.19790	.00337	-.00075	.84681	.00008	.00072	.78344
#2	.18162	.00146	-.00451	.85572	.00008	-.00161	.76701

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00952	.00183	.01036	.08228	.02940	.09286	.00248
SDev	.00060	.00001	.00127	.00044	.00477	.01123	.00029
%RSD	6.2712	.53897	12.278	.53939	16.215	12.090	11.664

#1	.00910	.00184	.01126	.08259	.02603	.10080	.00268
#2	.00994	.00182	.00946	.08196	.03277	.08492	.00227

Elem	Ni2316	K_7664	Se1960	Aq3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00507	1.2453	-.00382	-.00034	S1984.7	-.05570	.00134
SDev	.00080	.0702	.00135	.00000	.3	.00565	.00031
%RSD	15.716	5.6381	35.334	.58890	.01306	10.144	23.257

#1	.00563	1.1957	-.00478	-.00035	S1984.5	-.05969	.00112
#2	.00450	1.2950	-.00287	-.00034	S1984.9	-.05170	.00156

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.67861	.00067	-.00072	.52466	.33179	.00465	H135.52
SDev	.00106	.00032	.00102	.00488	.00395	.00594	.02
%RSD	.15629	47.140	141.42	.93000	1.1895	127.73	.01670

#1	.67786	.00089	.00000	.52121	.32900	.00045	H135.50
#2	.67936	.00045	-.00144	.52811	.33458	.00884	H135.54

Elem	Ti3349
Units	ppm
Avge	.00215
SDev	.00000
%RSD	.09589

#1	.00215
#2	.00215

Analysis Report

Mon 06-27-94 07:44:49 PM

page 1

Method: ICP Sample Name: Q1452529BS

Operator: DKL

Run Time: 06/27/94 19:42:39

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.04228	.00185	4.0823	17.652	.00012	.81590	.29085
SDev	.00128	.00203	.0689	.341	.00006	.01037	.00538
%RSD	3.0197	109.71	1.6887	1.9319	46.000	1.2708	1.8489
<i>90 rec</i>			<i>816</i>	<i>88</i>		<i>81</i>	
#1	.04319	.00328	4.0335	17.410	.00008	.80857	.28705
#2	.04138	.00041	4.1310	17.893	.00016	.82323	.29465

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mn2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.0456	-.00061	.00315	.03804	4.0020	.03626	.00110
SDev	.0538	.00272	.00127	.00043	.0590	.00971	.00010
%RSD	1.3303	448.74	40.300	1.1362	1.4736	26.766	8.7151
<i>90 rec</i>	<i>809</i>				<i>809</i>		
#1	4.0076	.00132	.00405	.03774	3.9603	.04312	.00117
#2	4.0837	-.00253	.00226	.03835	4.0437	.02940	.00103

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00170	.11585	.91615	2.7333	S1989.2	-.01397	.00120
SDev	.00206	.19309	.07010	.0316	.1	.03251	.00093
%RSD	121.52	166.68	7.6511	1.1546	.00723	232.67	77.064
			<i>912</i>	<i>542</i>			
#1	.00024	-.02069	.86659	2.7109	S1989.3	.00902	.00055
#2	.00316	.25238	.96572	2.7556	S1989.1	-.03696	.00186

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.06001	-.00011	-.00072	.03266	.30167	.01016	H52.880
SDev	.00022	.00047	.00000	.00187	.00528	.00076	1.358
%RSD	.37288	424.26	.00000	5.7377	1.7510	7.4361	2.5674
#1	.05985	-.00045	-.00072	.03134	.29794	.00962	H51.920
#2	.06017	.00022	-.00072	.03399	.30541	.01069	H53.840

Elem	Ti3349
Units	ppm
Avge	.00119
SDev	.00025
%RSD	21.239
#1	.00136
#2	.00101

alysis Report

Mon 06-27-94 07:47:21 PM

page 1

Method: ICP Sample Name: Q1452529BSD

Operator: DKL

Run Time: 06/27/94 19:45:12

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.02424	-.00435	4.0150	17.410	.00012	.79645	.18854
SDev	.00292	.00124	.0250	.036	.00006	.00176	.00155
%RSD	12.042	28.448	.62273	.20886	46.033	.22136	.82411

#1	.02631	-.00523	3.9973	17.385	.00016	.79521	.18964
#2	.02218	-.00348	4.0327	17.436	.00008	.79770	.18744

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.9410	-.00191	.00407	.09554	3.8735	.01550	.00146
SDev	.0066	.00054	.00000	.00089	.0029	.00622	.00019
%RSD	.16654	28.142	.00522	.93118	.07372	40.114	13.184

#1	3.9364	-.00153	.00407	.09617	3.8715	.01990	.00160
#2	3.9457	-.00229	.00407	.09491	3.8756	.01111	.00133

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00081	.16549	.90565	3.6795	S1985.3	.03290	.00057
SDev	.00080	.12287	.00405	.0123	.0	.00217	.00062
%RSD	98.484	74.246	.44699	.33544	.00184	6.5883	109.99

#1	.00137	.25238	.90852	3.6707	S1985.3	.03444	.00101
#2	.00025	.07861	.90279	3.6882	S1985.3	.03137	.00013

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.04926	.00011	-.00144	.02101	.33567	.01518	H31.344
SDev	.00022	.00016	.00000	.00188	.00290	.00325	.453
%RSD	.43865	141.42	.00000	8.9327	.86244	21.395	1.4438

#1	.04911	.00022	-.00144	.02234	.33362	.01748	H31.664
#2	.04941	-.00000	-.00144	.01968	.33771	.01289	H31.024

Elem	Ti3349
Units	ppm
Avge	.00001
SDev	.00048
%RSD	3250.7

#1	.00035
#2	-.00032

Analysis Report

Mon 06-27-94 07:50:14 PM

page 1

Method: ICP Sample Name: Q1452426
Run Time: 06/27/94 19:48:04
Comment: BLANK
Mode: CONC Corr. Factor: 1

Operator: DKL

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.4102	.01837	-.00828	15.921	.00061	.00056	5.6008
SDev	.0212	.00543	.00882	.092	.00005	.00092	.0077
%RSD	.47968	29.557	106.59	.57657	8.7309	165.13	.13784

#1	4.4251	.02221	-.00204	15.986	.00058	.00121	5.6063
#2	4.3952	.01453	-.01452	15.856	.00065	-.00009	5.5954

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00822	.00060	.02204	.03371	.02356	.69031	.00701
SDev	.00119	.00255	.00000	.00044	.02000	.00497	.00067
%RSD	14.512	421.71	.00002	1.3151	84.875	.72043	9.6177

#1	.00738	.00241	.02204	.03402	.00942	.69383	.00653
#2	.00907	-.00120	.02204	.03339	.03771	.68679	.00749

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00462	12.590	-.00104	.00018	S1999.0	.01565	.00118
SDev	.00334	.082	.01349	.00175	.1	.04645	.00125
%RSD	72.445	.65064	1299.7	959.65	.00450	296.81	105.85

#1	.00698	12.532	.00850	-.00106	S1998.9	-.01719	.00030
#2	.00225	12.648	-.01058	.00142	S1999.0	.04849	.00206

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	13.593	.00779	-.00072	14.733	1.1360	.01114	H2855.9
SDev	.039	.00000	.00000	.099	.0026	.00045	17.8
%RSD	.28950	.00000	.00000	.66996	.23119	4.0151	.62354

#1	13.621	.00779	-.00072	14.803	1.1378	.01083	H2868.5
#2	13.566	.00779	-.00072	14.663	1.1341	.01146	H2843.3

Elem	Ti3349
Units	ppm
Avge	.00109
SDev	.00024
%RSD	21.848

#1	.00092
#2	.00125

alysis Report

Mon 06-27-94 07:52:55 PM

page 1

Method: ICP Sample Name: Q1452426BS

Operator: DKL

Run Time: 06/27/94 19:50:46

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.03503	.02284	4.2903	17.871	.00016	.85527	.09685
SDev	.00147	.00012	.0085	.064	.00000	.00059	.00231
%RSD	4.1948	.51102	.19757	.35902	.74321	.06852	2.3883

#1	.03607	.02276	4.2963	17.916	.00016	.85568	.09849
#2	.03399	.02292	4.2843	17.826	.00016	.85485	.09521

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.2454	.00034	.00225	.03109	4.2938	.00814	.00055
SDev	.0086	.00004	.00000	.00045	.0019	.00877	.00010
%RSD	.20237	10.553	.00473	1.4350	.04424	107.86	17.418

#1	4.2515	.00032	.00225	.03078	4.2952	.01434	.00049
#2	4.2393	.00037	.00225	.03141	4.2925	.00193	.00062

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00776	.18204	1.0058	2.8027	S1990.7	.00527	.00161
SDev	.00048	.02926	.0027	.0069	.2	.02885	.00031
%RSD	6.1709	16.071	.26786	.24466	.00881	547.71	19.378

#1	.00742	.16136	1.0077	2.8076	S1990.6	-.01513	.00139
#2	.00810	.20273	1.0039	2.7979	S1990.8	.02567	.00183

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.01257	.00011	.00072	.04697	.31613	.01503	H20.016
SDev	.00042	.00047	.00203	.01314	.00867	.00101	.543
%RSD	3.3801	424.26	282.84	27.963	2.7429	6.7397	2.7131

#1	.01287	-.00022	.00215	.05626	.30999	.01431	H20.400
#2	.01227	.00045	-.00072	.03769	.32226	.01575	H19.632

Elem	Ti3349
Units	ppm
Avge	.00076
SDev	.00024
%RSD	30.994

#1	.00093
#2	.00060

Analysis Report

Mon 06-27-94 08:01:50 PM

page 1

Method: ICP Sample Name: ICSABF

Operator: DKL

Run Time: 06/27/94 19:59:31

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	494.95	.01178	-.20746	.49300	.43484	.92564	463.64
SDev	.01	.00535	.00011	.00679	.00575	.01004	.10
%RSD	.00289	45.367	.05412	1.3768	1.3220	1.0842	.02071

#1	494.94	.01557	-.20738	.48820	.43077	.91854	463.71
#2	494.96	.00800	-.20754	.49780	.43890	.93274	463.58

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.42239	.44555	.47649	172.48	.97841	503.64	.44695
SDev	.00585	.00617	.00829	.12	.01427	.07	.00592
%RSD	1.3858	1.3839	1.7398	.06849	1.4582	.01431	1.3236

#1	.41825	.44119	.47063	172.40	.96832	503.69	.44276
#2	.42653	.44991	.48235	172.57	.98850	503.59	.45113

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.81174	-.41787	.07494	.84942	.26330	-.33036	.45941
SDev	.00350	.11702	.04714	.01052	.00718	.13602	.00625
%RSD	.43180	28.004	62.903	1.2379	2.7262	41.174	1.3603

#1	.80926	-.33513	.10828	.84198	.25822	-.42654	.45499
#2	.81421	-.50062	.04161	.85685	.26837	-.23418	.46383

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.89949	.00167	.00898	-.01473	-.06196	.01127	137.49
SDev	.01133	.00047	.00965	.00451	.00398	.02119	.72
%RSD	1.2597	28.284	107.48	30.583	6.4231	188.00	.52665

#1	.89148	.00200	.00215	-.01154	-.06477	-.00371	136.98
#2	.90750	.00134	.01580	-.01792	-.05914	.02625	138.00

Elem	Ti3349
Units	ppm
Avge	-.00051
SDev	.00026
%RSD	49.716

#1	-.00033
#2	-.00070

alysis Report

QC Standard

Mon 06-27-94 08:05:24 PM

page 1

Method: ICP Sample Name: CCV7

Operator: DKL

Run Time: 06/27/94 20:02:34

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.96434	1.0381	1.0023	.95937	.99976	1.0758	1.0737
SDev	.01016	.0001	.0126	.00695	.00610	.0081	.0043
%RSD	1.0537	.00730	1.2548	.72437	.61013	.75712	.39687

#1	.97153	1.0381	.99336	.96429	1.0041	1.0815	1.0767
#2	.95716	1.0382	1.0111	.95446	.99545	1.0700	1.0706

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0592	1.0564	1.0784	1.0410	1.0545	1.0608	1.0608
SDev	.0052	.0041	.0083	.0071	.0000	.0139	.0052
%RSD	.49548	.38508	.76662	.68257	.00041	1.3065	.49042

#1	1.0629	1.0593	1.0842	1.0461	1.0545	1.0706	1.0644
#2	1.0555	1.0535	1.0725	1.0360	1.0545	1.0510	1.0571

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0041	9.6235	1.0495	.99539	1.0026	.92514	1.0458
SDev	.0030	.0644	.0095	.00702	.0036	.05879	.0059
%RSD	.30141	.66880	.90279	.70533	.35798	6.3544	.56573

#1	1.0019	9.6690	1.0562	1.0004	1.0051	0.88357	1.0500
#2	1.0062	9.5780	1.0428	.99042	1.0000	.96670	1.0417

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0518	-.00011	1.0147	.93996	.51254	.98091	1.2000
SDev	.0078	.00016	.0071	.01050	.00605	.01040	.3168
%RSD	.73936	141.42	.70060	1.1174	1.1798	1.0608	26.399

#1	1.0573	-.00000	1.0197	.94738	.50826	.98826	.97600
#2	1.0463	-.00022	1.0097	.93253	.51681	.97355	1.4240

Elem	Ti3349
Units	ppm
Avge	1.0519
SDev	.0103
%RSD	.97535

#1	1.0592
#2	1.0447

alysis Report

Mon 06-27-94 08:09:08 PM

page 1

Method: ICP Sample Name: CCB7

Operator: DKL

Run Time: 06/27/94 20:06:50

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00265	.00286	.00108	.00000	-.00004	.00023	.00000
SDev	.00167	.00000	.00023	.00000	.00006	.00067	.00000
%RSD	62.910	.14048	21.594	.00000	144.39	293.79	1284.4
#1	-.00383	.00286	.00092	.00000	-.00008	-.00024	-.00000
#2	-.00147	.00286	.00125	.00000	.00000	.00070	.00000
Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.00135	.00146	.00000	.00094	-.00471	-.00619	.00000
SDev	.00072	.00001	.00064	.00089	.01331	.00125	.00010
%RSD	53.058	.69293	323940.	94.228	282.86	20.167	20687.
#1	-.00084	.00146	-.00045	.00157	-.01412	-.00707	-.00007
#2	-.00186	.00145	.00045	.00031	.00471	-.00531	.00007
Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00068	-.07447	-.01620	-.00159	.00330	-.02371	-.00044
SDev	.00127	.00585	.01348	.00025	.00269	.00009	.00031
%RSD	188.52	7.8568	83.227	15.562	81.589	.38068	70.759
#1	.00158	-.07861	-.02573	-.00142	.00140	-.02378	-.00066
#2	-.00023	-.07034	-.00667	-.00177	.00520	-.02365	-.00022
Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00015	-.00045	.00180	.00424	.00335	.00415	H.20800
SDev	.00063	.00000	.00254	.00075	.00026	.00181	.36204
%RSD	429.85	.00000	141.42	17.688	7.8367	43.641	174.06
#1	.00059	-.00045	.00000	.00371	.00316	.00543	L-.04800
#2	-.00030	-.00045	.00359	.00477	.00353	.00287	H.46400
Elem	Ti3349						
Units	ppm						
Avge	-.00017						
SDev	.00024						
%RSD	141.81						
#1	-.00034						
#2	.00000						

AK

alysis Report

Mon 06-27-94 08:12:45 PM

page 1

Method: ICP Sample Name: Q1452426BSD
Run Time: 06/27/94 20:10:04
Comment:
Mode: CONC Corr. Factor: 1

Operator: DKL

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	H.01819	-.00072	H3.9707	H17.193	.00008	H.79949	H.05712
SDev	.01486	.00415	.0084	.223	.00000	.00242	.00001
%RSD	81.693	578.54	.21068	1.2953	1.4091	.30258	.01962

#1	.00768	-.00365	H3.9766	H17.350	.00008	H.79778	H.05711
#2	H.02870	.00222	H3.9648	H17.035	.00008	H.80120	H.05713

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	H3.9506	-.00179	.00180	H.02111	H3.8883	.00220	.00062
SDev	.0130	.00162	.00191	.00045	.0104	.01741	.00058
%RSD	.32926	90.100	105.81	2.1151	.26861	791.01	93.174

#1	H3.9598	-.00294	.00045	H.02079	H3.8810	-.01011	.00021
#2	H3.9414	-.00065	H.00315	H.02142	H3.8957	.01451	H.00103

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.00340	.10757	H.83607	H2.7138	S1990.8	.01312	-.00011
SDev	.00318	.08777	.00000	.0097	.5	.00064	.00031
%RSD	93.688	81.589	.00049	.35853	.02467	4.8785	285.00

#1	H.00565	.04551	H.83607	H2.7206	S1991.2	.01267	.00011
#2	.00115	.16963	H.83607	H2.7069	S1990.5	.01357	-.00033

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	H.00639	-.00011	.00144	H.01278	H.21302	H.02003	H18.144
SDev	.00021	.00016	.00102	.00000	.00762	.00121	2.059
%RSD	3.2803	141.42	70.711	.00702	3.5753	6.0440	11.349

#1	H.00654	-.00000	.00072	H.01278	H.20763	H.02089	H16.688
#2	H.00624	-.00022	.00215	H.01278	H.21841	H.01917	H19.600

Elem	Ti3349
Units	ppm
Avge	.00016
SDev	.00072
%RSD	451.20

#1	-.00035
#2	.00067

alysis Report

Mon 06-27-94 08:16:13 PM

page 1

Method: ICP Sample Name: ICSABF

Operator: DKL

Run Time: 06/27/94 20:13:04

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	495.40	.01289	-.20060	.50557	.44613	.95137	463.46
SDev	1.16	.00667	.04012	.00259	.00105	.00262	.86
%RSD	.23487	51.769	20.002	.51148	.23574	.27583	.18480

#1	494.58	.00817	-.17223	.50374	.44538	.95323	464.07
#2	496.22	.01760	-.22897	.50740	.44687	.94952	462.86

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.43280	.45484	.49030	171.86	.99412	502.85	.45859
SDev	.00060	.00152	.00258	.18	.01931	1.00	.00012
%RSD	.13910	.33409	.52618	.10310	1.9429	.19912	.02666

#1	.43323	.45377	.48847	171.73	1.0078	502.14	.45850
#2	.43237	.45592	.49212	171.98	.98046	503.56	.45867

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.83764	-.43856	.11526	.86414	.28906	-.37121	.47208
SDev	.00414	.15798	.03115	.00175	.01812	.09811	.00058
%RSD	.49447	36.022	27.029	.20247	6.2702	26.430	.12221

#1	.84057	-.32685	.13728	.86537	.30187	-.44058	.47249
#2	.83472	-.55027	.09323	.86290	.27624	-.30184	.47167

Elem	Zn2138	Li6707	Mo2020	B 2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.92403	.00156	.00610	-.02167	-.06068	.00170	137.42
SDev	.00114	.00000	.00051	.00153	.00608	.00966	.18
%RSD	.12368	.00000	8.3189	7.0545	10.014	569.16	.13172

#1	.92483	.00156	.00575	-.02276	-.05639	.00853	137.30
#2	.92322	.00156	.00646	-.02059	-.06498	-.00513	137.55

Elem	Ti3349
Units	ppm
Avge	-.00021
SDev	.00038
%RSD	180.40

#1	.00006
#2	-.00048

Method: ICP Sample Name: CCV8
Run Time: 06/27/94 20:17:04
Comment:
Mode: CONC Corr. Factor: 1

Operator: DKL

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.94922	1.0306	.97867	.94132	.98206	1.0625	1.0452
SDev	.00064	.0001	.00549	.00081	.00000	.0057	.0004
%RSD	.06771	.00519	.56150	.08584	.00024	.53997	.03725

#1	.94967	1.0306	.98255	.94075	.98206	1.0585	1.0454
#2	.94876	1.0306	.97478	.94189	.98206	1.0666	1.0449

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0441	1.0462	1.0608	1.0263	1.0363	1.0472	1.0447
SDev	.0024	.0021	.0013	.0013	.0048	.0025	.0000
%RSD	.22857	.19701	.11988	.12989	.45916	.23685	.00004

#1	1.0424	1.0477	1.0617	1.0272	1.0330	1.0489	1.0447
#2	1.0457	1.0447	1.0599	1.0253	1.0397	1.0454	1.0447

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.99222	9.2553	1.0132	.98585	.94114	.90665	1.0289
SDev	.00128	.0585	.0067	.00286	.00144	.06762	.0006
%RSD	.12846	.63219	.66605	.29055	.15254	7.4582	.06046

#1	.99312	9.2966	1.0179	.98787	.94216	.95447	1.0285
#2	.99132	9.2139	1.0084	.98382	.94013	0.85884	1.0293

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.0381	-.00022	1.0011	.92856	.50157	.97468	1.5200
SDev	.0021	.00031	.0051	.00113	.00368	.00411	.4073
%RSD	.20187	141.42	.50725	.12158	.73403	.42130	26.796

#1	1.0395	-.00045	.99749	.92776	.49897	.97177	1.8080
#2	1.0366	-.00000	1.0047	.92936	.50418	.97758	1.2320

Elem	Ti3349
Units	ppm
Avge	1.0344
SDev	.0002
%RSD	.02314

#1	1.0346
#2	1.0342

alysis Report

Mon 06-27-94 08:23:00 PM

page 1

Method: ICP Sample Name: CCB8
Run Time: 06/27/94 20:20:36
Comment:
Mode: CONC Corr. Factor: 1

Operator: DKL

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2288	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00266	-.00094	.01274	.00000	-.00004	-.00083	.00109
SDev	.00253	.00535	.00822	.00000	.00005	.00059	.00155
%RSD	95.400	570.78	64.531	.00000	132.70	70.623	141.40

#1	-.00445	-.00472	.00693	.00000	-.00000	-.00125	.00219
#2	-.00086	.00284	H.01856	.00000	-.00008	-.00042	.00000

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.00145	-.00090	.00031	-.00471	-.00530	.00000
SDev	.00095	.00102	.00064	.00089	.02282	.01001	.00010
%RSD	565.93	70.379	70.694	282.73	484.82	188.89	41209.

#1	.00051	.00073	-.00045	-.00031	L-.02084	.00178	-.00007
#2	-.00084	.00217	-.00135	.00094	.01143	-.01237	.00007

Elem	Ni2316	K_7664	Se1960	Ag3280	Na5889	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	-.14067	.01145	-.00159	.00127	-.00982	-.00022
SDev	.00064	.06436	.00404	.00101	.00126	.07516	.00125
%RSD	3733600.	45.754	35.319	63.299	98.994	765.61	565.69

#1	.00045	-.09516	.01430	-.00088	.00216	-.06296	.00066
#2	-.00045	-.18618	.00859	L-.00230	.00038	.04333	L-.00110

Elem	Zn2138	Li6707	Mo2020	B_2496	Si2516	Sn1899	Sr4215
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00059	-.00022	.00144	.00212	.00372	.00652	L-.32000
SDev	.00000	.00063	.00102	.00075	.00184	.00733	.02263
%RSD	.79219	282.84	70.711	35.326	49.488	112.44	7.0711

#1	-.00060	.00022	.00215	.00159	H.00502	H.01170	L-.30400
#2	-.00059	-.00067	.00072	.00265	.00242	.00134	L-.33600

Elem	Ti3349
Units	ppm
Avg	-.00051
SDev	.00024
%RSD	47.156

#1	-.00067
#2	-.00034

Sample Name	Hg
1 S0	.03875
2 S0	.00033
3 S0	.00033
4 S0	.00237
5 S0	-.00033
6 S0.5	.01427
7 S1	.02753
8 S5	.13769
9 S10	.28491
10 ICV	5.308
11 ICB	.1695
12 PBW	.1453
13 LCSMS	1.222
14 LCSMSD	1.259
15 32186002	.2060
16 2109003	8.680
17 3209009	.3761
18 3214004	2.996
19 3214004BS	3.369
20 3214004BSD	2.983
21 3214009	.7302
22 CCV1	5.916
CCB1	.8282
24 CCB1	.0605
25 3214009MS	3.071
26 3214009MSD	3.133
27 3212201	.0121
28 3212202	.0484
29 3212203	.0363
30 3212203D	.0726
31 3212203S	1.135
32 3212203MS	2.809
33 3212203MSD	2.797
34 3212204	.1211
35 CCV2	5.430
CCB2	.2181
37 CCB2	.0968
38 3211801	.0605
39 3211801D	.0726
40 3211801S	1.160
41 3211801SD	1.160
42 3211804	.1211
43 3211807	.1211
44 3211810	.1453
45 3211813	.3518
46 3211816	.1574
47 CCV3	5.235
CCB3	.0968
3204807	-.0363
50 CCV4	4.990
51 CCB4	-.0242

Sample Name	File	Method	Date	Time	OpID	Type	Mode
1 S0	53194	HG	05/31/94	12:03		X	ABS/E
2 S0	53194	HG	05/31/94	12:05		X	ABS/E
3 S0	53194	HG	05/31/94	12:06		X	ABS/E
4 S0	53194	HG	05/31/94	12:08		X	ABS/E
5 S0	53194	HG	05/31/94	12:10		X	ABS/E
6 S0.5	53194	HG	05/31/94	12:11		X	ABS/E
7 S1	53194	HG	05/31/94	12:13		X	ABS/E
8 S5	53194	HG	05/31/94	12:15		X	ABS/E
9 S10	53194	HG	05/31/94	12:16		X	ABS/E
10 ICV	53194	HG	05/31/94	12:22	AGV	Q	CONC
11 ICB	53194	HG	05/31/94	12:26	AGV	S	CONC
12 PBW	53194	HG	05/31/94	12:28	AGV	S	CONC
13 LCSMS	53194	HG	05/31/94	12:29	AGV	S	CONC
14 LCSMSD	53194	HG	05/31/94	12:32	AGV	S	CONC
15 32186002	53194	HG	05/31/94	12:35	AGV	S	CONC
16 2109003	53194	HG	05/31/94	12:37	AGV	S	CONC
17 3209009	53194	HG	05/31/94	12:40	AGV	S	CONC
18 3214004	53194	HG	05/31/94	12:44	AGV	S	CONC
19 3214004BS	53194	HG	05/31/94	12:46	AGV	S	CONC
20 3214004BSD	53194	HG	05/31/94	12:47	AGV	S	CONC
21 3214009	53194	HG	05/31/94	12:50	AGV	S	CONC
22 CCV1	53194	HG	05/31/94	12:52	AGV	Q	CONC
CCB1	53194	HG	05/31/94	12:57	AGV	S	CONC
24 CCB1	53194	HG	05/31/94	13:07	AGV	S	CONC
25 3214009MS	53194	HG	05/31/94	13:09	AGV	S	CONC
26 3214009MSD	53194	HG	05/31/94	13:10	AGV	S	CONC
27 3212201	53194	HG	05/31/94	13:14	AGV	S	CONC
28 3212202	53194	HG	05/31/94	13:15	AGV	S	CONC
29 3212203	53194	HG	05/31/94	13:17	AGV	S	CONC
30 3212203D	53194	HG	05/31/94	13:18	AGV	S	CONC
31 3212203S	53194	HG	05/31/94	13:19	AGV	S	CONC
32 3212203MS	53194	HG	05/31/94	13:21	AGV	S	CONC
33 3212203MSD	53194	HG	05/31/94	13:22	AGV	S	CONC
34 3212204	53194	HG	05/31/94	13:25	AGV	S	CONC
35 CCV2	53194	HG	05/31/94	13:27	AGV	Q	CONC
36 CCB2	53194	HG	05/31/94	13:32	AGV	S	CONC
37 CCB2	53194	HG	05/31/94	13:38	AGV	S	CONC
38 3211801	53194	HG	05/31/94	13:40	AGV	S	CONC
39 3211801D	53194	HG	05/31/94	13:41	AGV	S	CONC
40 3211801S	53194	HG	05/31/94	13:42	AGV	S	CONC
41 3211801SD	53194	HG	05/31/94	13:43	AGV	S	CONC
42 3211804	53194	HG	05/31/94	13:47	AGV	S	CONC
43 3211807	53194	HG	05/31/94	13:48	AGV	S	CONC
44 3211810	53194	HG	05/31/94	13:50	AGV	S	CONC
45 3211813	53194	HG	05/31/94	13:51	AGV	S	CONC
46 3211816	53194	HG	05/31/94	13:53	AGV	S	CONC
47 CCV3	53194	HG	05/31/94	13:54	AGV	Q	CONC
CCB3	53194	HG	05/31/94	14:03	AGV	S	CONC
3204807	53194	HG	05/31/94	14:05	AGV	S	CONC
50 CCV4	53194	HG	05/31/94	14:06	AGV	Q	CONC
51 CCB4	53194	HG	05/31/94	14:10	AGV	S	CONC

Atomizer: Flame
Matrix: ULTRAPURE WATER

METHOD INFORMATION **

Default Setup:

Number of Repeats : 1
Flush Time (sec) : 0.0
Auto-Increment Sample Names? No

Auto-print Calibration Curves? : Yes
Analysis Graphics Display : Absorbances
Auto-print Analysis Graphics? : No
Auto-save Analysis Graphics? : No.

Default File Names:

Analysis Data File : 53194	Sample Limits Table : HG
Autosampler Table : AUTOTAB	Blank (AZ) Limits Table : CCBQC
	QC Check Table : CCVQC
	Recovery Check Table : RECQC

INPUT INFORMATION **

Output Mode:	Concentration
Override Print Limits?	Yes
Override Significant Figures?	No
Limits Table: HG	Check? Yes
Correction Factor:	1

Auto-print data?	Yes
Condensed report format?	Yes
Auto-store data?	Yes
Store individual repeats?	No

Report to:

Screen	Avgs, Stats, Reps, Checks, Units
Printer	Avgs, Stats, Reps, Checks, Units

Elements : Hg

Mode : Double Beam Absorption

Integ Type : Peak Height Integ Time : 25.0 Sec. Delay Time : 0.0 Sec.

Graph Scale: 0.50

Comment : COLD VAPOR ATOMIC ABSORPTION

Flame Information:

Flame Type : Air/Acetylene

Oxidant Flow (SCFH) : 0.0

Oxidant Flow (SCFH) : 0.0

Flame Type : Air/Acetylene

Element : Hg

Element Name : Hg

Wavelength : 253.70

Bandpass : 1.0

High Voltage : 530

BKG Method : None

Lamp Current : 3.0

Signif Figs : 4

Print Units : ppb

Print Limits Low : 10

Print Limits High: .2

Stdzn Method: Multipoint Stdn.

Std Names	Std Conc	Abs.
A/Z#1: S0	= 0.00	= 0.0000
#2: S0.5	= 0.50	= 0.0156
#3: S1	= 1.00	= 0.0323
A/C#4: S5	= 5.00	= 0.1486
#5: S10	= 10.00	= 0.3016

Stdzn Method: Standard Additions

Addn Name	Std Addn
#1: ADD1	= 10.00
#2: ADD2	= 20.00
#3: ADD3	= 30.00

Method: HG

Standard: S0

Date: 05/31/94 12:03

Elem Hg
Avge .039
SDev .000
%RSD .0000

#1 .039

Method: HG

Standard: S0

Date: 05/31/94 12:05

Elem Hg
Avge .000
SDev .000
%RSD .0000

#1 .000

Method: HG

Standard: S0

Date: 05/31/94 12:06

Elem Hg
Avge .000
SDev .000
%RSD .0000

#1 .000

Method: HG

Standard: S0

Date: 05/31/94 12:08

Elem Hg
Avge .002
SDev .000
%RSD .0000

#1 .002

Method: HG

Standard: S0

Date: 05/31/94 12:10

Elem Hg
Avge -.000
SDev .000
%RSD .0000

#1 -.000

Method: HG

Standard: S0.5

Date: 05/31/94 12:11

Elem Hg
Avge .014
SDev .000
%RSD .0000

Method: HG Standard: S1 Date: 05/31/94 12:13

Elem Hg
Avge .028
SDev .000
%RSD .0000

#1 .028

Method: HG Standard: S5 Date: 05/31/94 12:15

Elem Hg
Avge .138
SDev .000
%RSD .0000

#1 .138

Method: HG Standard: S10 Date: 05/31/94 12:16

Elem Hg
Avge .285
SDev .000
%RSD .0000

#1 .285

Method: HG Element: Hg Wavelength: 253.78 Element 1 of 1

Correlation Coefficient: .999855

Coefficients

a1 = .028121
a2 = -.000275 Abs : .022418
a3 = .000031 Conc : .00292

Fit Cubic

Date: 31 May 94 12:16

Slope corr.: 1

Standard:	S0	S0.5	S1	S5	S10
Absorbance:	0.0000	.01428	.02754	.1377	.28492
Known conc.: 0		.5	1	5	10
Calc. conc.:	0.0000	.51021	.987811	5.00243	9.99967
Residual:	0.0000	.01021	-.012189	.002426	-.000333

Method: HG Sample Name: IGV
Run Time: 05/31/94 12:22:44
Comment:
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avge 5.308
SDev .000
%RSD .0000

#1 5.308

Quality 106.2%OK
Standard 5.000
Range 20.0%

Method: HG Sample Name: ICB
Run Time: 05/31/94 12:26:22
Comment:
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avge .1695
SDev .0000
%RSD .0000

#1 .1695

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: FBW
Run Time: 05/31/94 12:28:13
Comment:
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avge .1453
SDev .0000
%RSD .0000

#1 .1453

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: LCSMS
Run Time: 05/31/94 12:29:42
Comment:

Operator: AGV

4

Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avge 1.222
SDev .000
%RSD .0000

#1 1.222

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: LCSMSD

Operator: AGV

Run Time: 05/31/94 12:32:18

Comment:

Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avge 1.259
SDev .000
%RSD .0000

RPD = 3.0%

1.259

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 32186002

Operator: AGV

Run Time: 05/31/94 12:35:00

Comment:

Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avge .2060
SDev .0000
%RSD .0000

#1 .2060

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 32109003

Operator: AGV

Time: 05/31/94 12:37:18

Comment: 1.5ML SAMPLE DF=500

Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb

586

5

ie 8.680 $\times 500 = 4,340.00$
SDev .000
%RSD .0000

#1 8.680

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3209009 Operator: AGV
Run Time: 05/31/94 12:40:49
Comment: 20ML SAMPLE DF=5
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avge .3761 $\times 5 = 1.8805 \text{ ppb}$
SDev .0000
%RSD .0000

#1 .3761

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3214004 Operator: AGV
Run Time: 05/31/94 12:44:30
Comment:
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avge 2.996
SDev .000
%RSD .0000

#1 2.996

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3214004BS Operator: AGV
Run Time: 05/31/94 12:46:12
Comment: 2ML SAMPLE DF=50
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avge 3.369 $\times 50 = 168.45$
SDev .000
%RSD .0000

$\% \text{Rec} = 82.7\%$

587

6

3.369

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3214004BSD
Run Time: 05/31/94 12:47:32
Comment: 2ML SAMPLE DF=50
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avge 2.983 $\times 50 =$
SDev .000
%RSD .0000
 $\% Rec = 73.870$
 $RPD = 12.15$

#1 2.983
Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3214009
Run Time: 05/31/94 12:50:59
Comment:
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avge .7302
SDev .0000
%RSD .0000

#1 .7302
Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: CCV1
Run Time: 05/31/94 12:52:24
Comment:
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avge 5.916
SDev .000
%RSD .0000

#1 5.916

7

ality 118.3%OK
Standard 5.000
Range 20.0%

Method: HG Sample Name: CCB1
Run Time: 05/31/94 12:57:49
Comment:
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avge .8282
SDev .0000
%RSD .0000

*Carry over
#5-31-94*

#1 .8282

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: CCB1
Run Time: 05/31/94 13:07:19
Comment:
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avge .0605
SDev .0000
%RSD .0000

#1 .0605

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3214009MS
Run Time: 05/31/94 13:09:16
Comment: *OF = 50*
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avge 3.071 *X 50 = 153.55*
SDev .000
%RSD .0000

% Rec = 76.4%

#1 3.071

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3214009MSD
Run Time: 05/31/94 13:10:30
Comment: *0.260*
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avge 3.133 *150 = 156.65*
SDev .000
%RSD .0000

%RSD = 78.3%

#1 3.133

Limit LC Pass
Upper 10.00
Lower -.2000

%RPD = 2.0%

Method: HG Sample Name: 3212201
Run Time: 05/31/94 13:14:05
Comment:
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avge .0121
SDev .0000
%RSD .0000

#1 .0121

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3212202
Run Time: 05/31/94 13:15:34
Comment:
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avge .0484
SDev .0000
%RSD .0000

#1 .0484

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3212203
Run Time: 05/31/94 13:17:00
Comment: 50ML SAMPLE DF=2
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avge .0363
SDev .0000
%RSD .0000

#1 .0363

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3212203D
Run Time: 05/31/94 13:18:12
Comment: 50ML SAMPLE DF=2
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avge .0726
SDev .0000
%RSD .0000

#1 .0726

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3212203S
Run Time: 05/31/94 13:19:40
Comment: 50ML SAMPLE DF=2
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avge 1.135
SDev .000
%RSD .0000

#1 1.135

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3212203MS
Run Time: 05/31/94 13:21:16
Comment: 50ML SAMPLE DF=2

Operator: AGV

Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avge 2.809 $\times 50 = 140.45$
SDev .000
%RSD .0000

#1 2.809

$\%RC = 70.26$

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3212203MSD

Operator: AGV

Run Time: 05/31/94 13:22:40

Comment: 50ML SAMPLE DF=2

Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avge 2.797 $\times 50 = 139.85$
SDev .000
%RSD .0000

1 2.797

$\%RC = 70.0\%$

$\%RPD = 0.496$

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3212204

Operator: AGV

Run Time: 05/31/94 13:25:37

Comment:

Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avge .1211
SDev .0000
%RSD .0000

#1 .1211

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: CCV2

Operator: AGV

Run Time: 05/31/94 13:27:02

Comment:

Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb

ie 5.430
sdev .000
%RSD .0000

#1 5.430

Quality 108.6%OK
Standard 5.000
Range 20.0%

Method: HG Sample Name: CCB2 Operator: AGV
Run Time: 05/31/94 13:32:28
Comment:
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avge .2181
SDev .0000
%RSD .0000

#1 .2181

Limit LC Pass
Upper 10.00
Lower -.2000

05.31.94

Method: HG Sample Name: CCB2 Operator: AGV
Run Time: 05/31/94 13:38:28
Comment:
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avge .0968
SDev .0000
%RSD .0000

#1 .0968

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3211801 Operator: AGV
Run Time: 05/31/94 13:40:09
Comment:
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avge .0605
SDev .0000
%RSD .0000

12

#1 .0605

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3211801D
Run Time: 05/31/94 13:41:23
Comment:
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avge .0726
SDev .0000
%RSD .0000

RPD - NA

#1 .0726

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3211801S
Run Time: 05/31/94 13:42:40
Comment:
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avge 1.160
SDev .000
%RSD .0000

#1 1.160

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3211801SD
Run Time: 05/31/94 13:43:56
Comment:
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avge 1.160
SDev .000
%RSD .0000

RPD = 0.090

#1 1.160

594

13

nit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3211804
Run Time: 05/31/94 13:47:27
Comment:
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avge .1211
SDev .0000
%RSD .0000

#1 .1211

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3211807
Run Time: 05/31/94 13:48:51
Comment:
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avge .1211
SDev .0000
%RSD .0000

#1 .1211

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3211810
Run Time: 05/31/94 13:50:10
Comment:
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avge .1453
SDev .0000
%RSD .0000

#1 .1453

Limit LC Pass
Upper 10.00
Lower -.2000

595

Method: HG Sample Name: 3211813 Operator: AGV
 Run Time: 05/31/94 13:51:59
 Comment:
 Mode: Conc Corr. Factor: 1

Elem Hg
 Units ppb
 Avge .3518
 SDev .0000
 %RSD .0000

#1 .3518

Limit LC Pass
 Upper 10.00
 Lower -.2000

Method: HG Sample Name: 3211816 Operator: AGV
 Run Time: 05/31/94 13:53:14
 Comment:
 Mode: Conc Corr. Factor: 1

Elem Hg
 Units ppb
 Avge .1574
 SDev .0000
 %RSD .0000

#1 .1574

Limit LC Pass
 Upper 10.00
 Lower -.2000

Method: HG Sample Name: CCV3 Operator: AGV
 Run Time: 05/31/94 13:54:56
 Comment:
 Mode: Conc Corr. Factor: 1

Elem Hg
 Units ppb
 Avge 5.235
 SDev .000
 %RSD .0000

#1 5.235

Quality 104.7%OK
 Standard 5.000
 Range 20.0%

15

Method: HG Sample Name: CCB3
Run Time: 05/31/94 14:03:45
Comment:
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avge .0968
SDev .0000
%RSD .0000

#1 .0968

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3204807
Run Time: 05/31/94 14:05:40
Comment: 2ML SAMPLE DF=50
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avge -.0363
SDev .0000
%RSD .0000

#1 -.0363

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: CCV4
Run Time: 05/31/94 14:06:50
Comment:
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avge 4.990
SDev .000
%RSD .0000

#1 4.990

Quality 99.8% OK
Standard 5.000
Range 20.0%

Method: HG Sample Name: CCB4
Run Time: 05/31/94 14:10:23
Comment:

Operator: AGV

596A

#	Sample Name	AS
1	S0	.95209
2	S0	-.00226
3	S0	.00276
4	S5	.02356
5	S10	.05156
6	S25	.12249
7	S50	.22327
8	ICV	23.71
9	CCB	-.1203
10	CRA	9.465
11	CCV	22.10
12	S25	.10859
13	ICV	25.58
14	CCB ICB	-.0803
15	CRA	9.761
16	CCV1	23.35
17	CCB1	-.6953
18	PBS	-.3448
19	LCSMS	37.00
20	LCSMSD	37.38
21	3213673	40.69
22	3213674	43.42
23	3213675	39.45
24	3213676	42.36
25	3213677	46.96
26	3213678	45.67
27	3213679	44.41
28	CCV2	26.29
29	CCB2	-.0898
30	3213680	41.72
31	3213682	C61.52
32	3213683	C55.21
33	3213684	C58.49
34	3213685	H53.89
35	3213686	C52.54
36	3213687	R58.43
37	3213688	C53.11
38	3213689	H53.02
39	3213695	46.44
40	CCV3	27.38
41	CCB3	.2361
42	3214005	R49.20
43	3214005D	40.72
44	3214005S	C65.04
45	3214005SD	R68.23
46	3214010	C61.62
47	3214010D	C61.31
48	3214010S	C78.71
49	3214010SD	R79.24
50	PBS	1.178
51	PBS	1.775
52	CCV4	25.41
53	CCB4	.4591

#	Sample Name	AS
54	LCSMS	39.41
55	LCSMSD	41.18
56	3188301	11.64
57	3188301D	12.85
58	3188301S	16.53
59	3188301SD	26.24
60	3188302	9.997
61	3189511	9.103
62	CCV ⁵ BCT6/23/94	25.75
63	CCB ⁵	.1149
64	3189511D	11.60
65	3189511S	37.05
66	CCV ⁶	25.50
67	CCB ⁶	.1227
68	3189511SD	31.05
69	PBS	-.2497
70	LCSMS	41.25
71	LCSMSD	41.43
72	3188215	31.23
73	CCV ⁷	26.36
74	CCB ⁷	-.6496
75	S0 BCT6/23/94	1.16829
76	S0	-.00145
77	S25	.11306
78	CCV ⁸	25.32
79	CCB ⁸	.5635
80	3213682	35.42 DF=2
81	3213683	38.58
82	3213684	34.16
83	3213685	35.56
84	3213686	37.99
85	3213687	37.34
86	3213688	36.31
87	3213689	36.79
88	3214005	30.07
89	3214005S	39.72
90	CCV ⁹	26.33
91	CCB ⁹	.5847
92	3214005SD	41.84 DF=2
93	3214010	38.22
94	3214010D	37.32
95	3214010S	1150.41
96	3214010SD BCT6/23/94	R52.49
97	3188301	10.92 DF=
98	3188301A	25.92
99	3189511	7.984
100	3189511A	24.16
101	CCV ¹⁰	25.78
102	CCB ¹⁰	.6913

#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
1	S0	62394A	AS	06/23/94	10:39	B	ABS/E	
2	S0	62394A	AS	06/23/94	10:44	B	ABS/E	
3	S0	62394A	AS	06/23/94	10:48	B	ABS/E	
4	S5	62394A	AS	06/23/94	10:53	X	ABS/E	
5	S10	62394A	AS	06/23/94	10:57	X	ABS/E	
6	S25	62394A	AS	06/23/94	11:02	X	ABS/E	
7	S50	62394A	AS	06/23/94	11:06	X	ABS/E	
8	ICV	62394A	AS	06/23/94	11:11	Q	CONC	
9	CCB	62394A	AS	06/23/94	11:16	Q	CONC	
10	CRA	62394A	AS	06/23/94	11:20	Q	CONC	
11	CCV	62394A	AS	06/23/94	11:24	Q	CONC	
12	S25	62394A	AS	06/23/94	11:30	X	ABS/E	
13	ICV	62394A	AS	06/23/94	11:38	Q	CONC	
14	CCB	62394A	AS	06/23/94	11:42	Q	CONC	
15	CRA	62394A	AS	06/23/94	11:47	Q	CONC	
16	CCV	62394A	AS	06/23/94	11:51	Q	CONC	
17	CCB	62394A	AS	06/23/94	11:56	Q	CONC	
18	PBS	62394A	AS	06/23/94	12:00	S	CONC	
19	LCSMS	62394A	AS	06/23/94	12:04	S	CONC	
20	LCSMSD	62394A	AS	06/23/94	12:09	S	CONC	
21	3213673	62394A	AS	06/23/94	12:13	S	CONC	
22	3213674	62394A	AS	06/23/94	12:18	S	CONC	
23	3213675	62394A	AS	06/23/94	12:22	S	CONC	
24	3213676	62394A	AS	06/23/94	12:27	S	CONC	
25	3213677	62394A	AS	06/23/94	12:31	S	CONC	
26	3213678	62394A	AS	06/23/94	12:35	S	CONC	
27	3213679	62394A	AS	06/23/94	12:40	S	CONC	
28	CCV	62394A	AS	06/23/94	12:44	Q	CONC	
29	CCB	62394A	AS	06/23/94	12:49	Q	CONC	
30	3213680	62394A	AS	06/23/94	12:53	S	CONC	
31	3213682	62394A	AS	06/23/94	12:57	S	CONC	
32	3213683	62394A	AS	06/23/94	13:02	S	CONC	
33	3213684	62394A	AS	06/23/94	13:06	S	CONC	
34	3213685	62394A	AS	06/23/94	13:11	S	CONC	
35	3213686	62394A	AS	06/23/94	13:15	S	CONC	
36	3213687	62394A	AS	06/23/94	13:19	S	CONC	
37	3213688	62394A	AS	06/23/94	13:24	S	CONC	
38	3213689	62394A	AS	06/23/94	13:28	S	CONC	
39	3213695	62394A	AS	06/23/94	13:33	S	CONC	
40	CCV	62394A	AS	06/23/94	13:37	Q	CONC	
41	CCB	62394A	AS	06/23/94	13:42	Q	CONC	
42	3214005	62394A	AS	06/23/94	13:46	S	CONC	
43	3214005D	62394A	AS	06/23/94	13:50	S	CONC	
44	3214005S	62394A	AS	06/23/94	13:55	S	CONC	
45	3214005SD	62394A	AS	06/23/94	13:59	S	CONC	
46	3214010	62394A	AS	06/23/94	14:04	S	CONC	
47	3214010D	62394A	AS	06/23/94	14:08	S	CONC	
48	3214010S	62394A	AS	06/23/94	14:12	S	CONC	
49	3214010SD	62394A	AS	06/23/94	14:17	S	CONC	
50	PBS	62394A	AS	06/23/94	14:21	S	CONC	
51	PBS	62394A	AS	06/23/94	14:26	S	CONC	
52	CCV	62394A	AS	06/23/94	14:30	Q	CONC	
53	CCB	62394A	AS	06/23/94	14:35	Q	CONC	

#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
54	LCSMS	62394A	AS	06/23/94	14:39	S	CONC	
55	LCSMSD	62394A	AS	06/23/94	14:43	S	CONC	
56	3188301	62394A	AS	06/23/94	14:48	S	CONC	
57	3188301D	62394A	AS	06/23/94	14:52	S	CONC	
58	3188301S	62394A	AS	06/23/94	14:57	S	CONC	
59	3188301SD	62394A	AS	06/23/94	15:01	S	CONC	
60	3188302	62394A	AS	06/23/94	15:06	S	CONC	
61	3189511	62394A	AS	06/23/94	15:10	S	CONC	
62	CCV	62394A	AS	06/23/94	15:29	Q	CONC	
63	CCB	62394A	AS	06/23/94	15:35	S	CONC	
64	3189511D	62394A	AS	06/23/94	15:40	S	CONC	
65	3189511S	62394A	AS	06/23/94	15:45	S	CONC	
66	CCV	62394A	AS	06/23/94	15:49	Q	CONC	
67	CCB	62394A	AS	06/23/94	15:54	Q	CONC	
68	3189511SD	62394A	AS	06/23/94	15:58	S	CONC	
69	PBS	62394A	AS	06/23/94	16:03	S	CONC	
70	LCSMS	62394A	AS	06/23/94	16:07	S	CONC	
71	LCSMSD	62394A	AS	06/23/94	16:11	S	CONC	
72	3188215	62394A	AS	06/23/94	16:16	S	CONC	
73	CCV	62394A	AS	06/23/94	16:20	Q	CONC	
74	CCB	62394A	AS	06/23/94	16:25	Q	CONC	
75	S0	62394A	AS	06/23/94	16:53	B	ABS/E	
76	S0	62394A	AS	06/23/94	16:57	B	ABS/E	
77	S25	62394A	AS	06/23/94	17:02	X	ABS/E	
78	CCV	62394A	AS	06/23/94	17:12	Q	CONC	
79	CCB	62394A	AS	06/23/94	17:17	Q	CONC	
80	3213682	62394A	AS	06/23/94	17:21	S	CONC	
81	3213683	62394A	AS	06/23/94	17:26	S	CONC	
82	3213684	62394A	AS	06/23/94	17:30	S	CONC	
83	3213685	62394A	AS	06/23/94	17:34	S	CONC	
84	3213686	62394A	AS	06/23/94	17:39	S	CONC	
85	3213687	62394A	AS	06/23/94	17:43	S	CONC	
86	3213688	62394A	AS	06/23/94	17:48	S	CONC	
87	3213689	62394A	AS	06/23/94	17:52	S	CONC	
88	3214005	62394A	AS	06/23/94	17:56	S	CONC	
89	3214005S	62394A	AS	06/23/94	18:01	S	CONC	
90	CCV	62394A	AS	06/23/94	18:05	Q	CONC	
91	CCB	62394A	AS	06/23/94	18:10	Q	CONC	
92	3214005SD	62394A	AS	06/23/94	18:14	S	CONC	
93	3214010	62394A	AS	06/23/94	18:18	S	CONC	
94	3214010D	62394A	AS	06/23/94	18:23	S	CONC	
95	3214010S	62394A	AS	06/23/94	18:27	S	CONC	
96	3214010SD	62394A	AS	06/23/94	18:32	S	CONC	
97	3188301	62394A	AS	06/23/94	18:36	S	CONC	
98	3188301A	62394A	AS	06/23/94	18:40	S	CONC	
99	3189511	62394A	AS	06/23/94	18:45	S	CONC	
100	3189511A	62394A	AS	06/23/94	18:49	S	CONC	
101	CCV	62394A	AS	06/23/94	18:54	Q	CONC	
102	CCB	62394A	AS	06/23/94	18:58	Q	CONC	

Method: AS

Method Report

Thu 06-23-94 08:25:22 AM

page 1

Atomizer: Furnace

Matrix: WASTE

METHOD INFORMATION **

Default Setup:

Number of Repeats : 2

Flush Time (sec) : 5.0

Auto-Increment Sample Names? No

Auto-print Calibration Curves? : Yes

Analysis Graphics Display : Corr'd Absorbance & Temp Profile

Auto-print Analysis Graphics? : No

Auto-save Analysis Graphics? : No

Default File Names:

Analysis Data File : 62394A

Autosampler Table : BATCH

Sample Limits Table : LCTAB

Blank (AZ) Limits Table : CCBQC

QC Check Table : CCV10

Recovery Check Table : RQCTAB

OUTPUT INFORMATION **

Output Mode: Concentration

Override Print Limits? Yes

Override Significant Figures? No

Limits Table: LCTAB Check? Yes

Correction Factor: 1

Auto-print data? Yes

Condensed report format? Yes

Auto-store data? Yes

Store individual repeats? Yes

Report to:

Screen Avgs, Stats, Reps, Checks, Units

Printer Avgs, Stats, Reps, Checks, Units

Elements : As

Mode : Single Beam Absorption

Integ Type : Peak Area Integ Time : 2.9 Sec. Delay Time : 0.2 Sec.

Graph Scale: 0.50

Comment : Nickel Nitrate Matrix Modifier

Furnace Information:

	Dry	Pyrol	Pyro2	Atom	Clean
Temp	150	750	1200	2300	2600
Ramp	2	20	20	0	-
Hold	0	0	0	4	3
Purge	Low	Medium	Medium	Off	High

Integ Stage : Atom Air Ash : Off Auto-Baseline Corr.? Yes Economizer? No
Deposit Time: 20.0 Delay Time: 6 Auto-Deposit Adjust? No

Element : As
Element Name : AS
Wavelength : 193.70
Bandpass : 1.0
Lamp Pos. : 4
High Voltage : Auto
BKG Method : SH
Lamp Current : norm: 5.0 bkg: 2.5
Signif Figs : 4
Print Units : ppb
Print Limits Low : 0
Print Limits High: 0

Stdzn Method: Multipoint Stdn.

Std Names	Std Conc	Abs.
A/Z#1: S0	= 0.00	= 0.0000
#2: S5	= 5.00	= 0.0252
#3: S10	= 10.00	= 0.0535
A/C#4: S25	= 25.00	= 0.1267
#5: S50	= 50.00	= 0.2349

Stdzn Method: Standard Additions

Addn Name	Std Addn
#1: ADD1	= 10.00
#2: ADD2	= 20.00
#3: ADD3	= 30.00

Method: AS Sample Name: S0
Run Time: 06/23/94 10:39:36
Comment:
Mode: Abs/Ei Corr. Factor: 1

Operator:

Elem AS
Avge .952
SDev .000
%RSD .0416

#1 .952
#2 .952

Method: AS Sample Name: S0
Run Time: 06/23/94 10:44:12
Comment:
Mode: Abs/Ei Corr. Factor: 1

Operator:

Elem AS
Avge -.002
SDev .000
%RSD 9.210

#1 -.002
#2 -.002

Method: AS Sample Name: S0
Run Time: 06/23/94 10:48:39
Comment:
Mode: Abs/Ei Corr. Factor: 1

Operator:

Elem AS
Avge .003
SDev .001
%RSD 45.45

#1 .002
#2 .004

Method: AS Standard: S5 Date: 06/23/94 10:53

Elem AS
Avge .024
SDev .002
%RSD 9.577

#1 .025
#2 .022

Method: AS Standard: S10 Date: 06/23/94 10:57

Elem AS
Avge .052
SDev .002

%RSD 4.031

#1 .053
#2 .050

Method: AS

Standard: S25

Date: 06/23/94 11:02

Elem AS
Avge .122
SDev .004
%RSD 3.155

#1 .125
#2 .120

Method: AS

Standard: S50

Date: 06/23/94 11:06

Elem AS
Avge .223
SDev .006
%RSD 2.697

#1 .228
#2 .219

Method: AS

Element: AS

Wavelength: 193.70

Element 1 of 1

Correlation Coefficient: .998423

Coefficients

a1 = .004912

a2 = .00001

a3 = -

Abs : .01986

Conc : 4.0146

Fit Cubic

Date: 23 Jun 94 11:06

Slope corr.: 1

Standard: S0

S5

S10

S25

S50

Absorbance: 0.0000

.023566

.051568

.122499

.223274

Known conc.: 0

5

10

25

50

Calc. conc.: 0.0000

4.75877

10.3606

24.8468

50.0369

Residual: 0.0000

-.241234

.360587

-.153202

.036858

Thu 06-23-94 11:15:56 AM

page 3

Method: AS Sample Name: ICV
Run Time: 06/23/94 11:11:37
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 23.71
SDev .44
%RSD 1.862

#1 24.02
#2 23.40

Quality 94.8% OK
Standard 25.00
Range 10.0%

BGT 6/23/94
ccv failed

Method: AS Sample Name: ~~ICV~~ ICB
Run Time: 06/23/94 11:16:00
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge -.1203
SDev .4617
%RSD 383.8

#1 .2062
#2 -.4467

Quality OK
Standard .0000
Range 10.00

BGT 6/23/94

Method: AS Sample Name: CRA
Run Time: 06/23/94 11:20:23
Comment: 10PPB
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 9.465
SDev .469
%RSD 4.958

#1 9.797
#2 9.134

Quality 94.7% OK
Standard 10.00
Range 100.0%

94.7%

Method: AS Sample Name: CCV1

Run Time: 06/23/94 11:24:50

Comment:

Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge Q22.10
SDev .72
%RSD 3.240

#1 22.61
#2 Q21.59

Quality 88.4% LO
Standard 25.00
Range 10.0%

BCT 6/23/94
ccv failed

Method: AS

Standard: S25

Date: 06/23/94 11:30

Elem AS
Avge .109
SDev .003
%RSD 2.631

#1 .111
#2 .107

Method: AS Element: AS Wavelength: 193.70 Element 1 of 1

Correlation Coefficient: .998423

Coefficients

a1 = .004912

a2 = .00001

a3 = -

Abs : .01986

Conc : 4.57729

Fit Cubic

Date: 23 Jun 94 11:30

Slope corr.: .877068

Standard: S0	S5	S10	S25	S50
Absorbance: 0.0000	.023566	.051568	.122499	.223274
Known conc.: 0	5	10	25	50
Calc. conc.: 0.0000	4.75877	10.3606	24.8468	50.0369
Residual: 0.0000	-.241233	.360587	-.153202	.036858

Method: AS Sample Name: ICV
Run Time: 06/23/94 11:38:23
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 25.58
SDev .50
%RSD 1.961

#1 25.93
#2 25.23

Quality 102.3%OK
Standard 25.00
Range 10.0%

Method: AS Sample Name: ~~ICV~~ ICB
Run Time: 06/23/94 11:42:49
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge -.0803
SDev .1584
%RSD 197.3

#1 .0317
#2 -.1923

Quality OK
Standard .0000
Range 10.00

Method: AS Sample Name: CRA
Run Time: 06/23/94 11:47:14
Comment: 10PPB
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 9.761
SDev .404
%RSD 4.134

97.6%

#1 9.475
#2 10.05

Quality 97.6% OK
Standard 10.00
Range 100.0%

Method: AS Sample Name: CCV
Run Time: 06/23/94 11:51:39
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 23.35
SDev .16
%RSD .6703

#1 23.24
#2 23.46

Quality 93.4% OK
Standard 25.00
Range 10.0%

Method: AS Sample Name: CCB
Run Time: 06/23/94 11:56:02
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge -.6953
SDev .6133
%RSD 88.21

#1 -.2616
#2 -1.129

Quality OK
Standard .0000
Range 10.00

Method: AS Sample Name: PBS
Run Time: 06/23/94 12:00:28
Comment: 32136.32140
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge -.3448
SDev .3544
%RSD 102.8

#1 -.0943
#2 -.5954

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: LCSMS
Run Time: 06/23/94 12:04:55
Comment: 32136,32140
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 37.00
SDev 1.47
%RSD 3.982

#1 38.05
#2 35.96

Limit LC Pass
Upper 50.00
Lower 30.00

92.5%

Method: AS Sample Name: LCSMSD
Run Time: 06/23/94 12:09:21
Comment: 32136,32140
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 37.38
SDev 2.25
%RSD 6.017

Rec = 93.5%
RSD = 1.02%

#1 38.97
#2 35.79

Limit LC Pass
Upper 50.00
Lower 30.00

Method: AS Sample Name: 3213673
Run Time: 06/23/94 12:13:48
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 40.69
SDev 3.30
%RSD 8.100

#1 43.02
#2 38.36

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3213674
Run Time: 06/23/94 12:18:11
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 43.42
SDev .14
%RSD .3205

#1 43.32
#2 43.52

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3213675
Run Time: 06/23/94 12:22:36
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 39.45
SDev 1.86
%RSD 4.705

#1 40.76
#2 38.13

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3213676
Run Time: 06/23/94 12:27:02
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 42.36
SDev 1.54
%RSD 3.633

#1 43.45
#2 41.28

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3213677
Run Time: 06/23/94 12:31:26
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 46.96
SDev .25
%RSD .5234

#1 47.14
#2 46.79

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3213678
Run Time: 06/23/94 12:35:49
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 45.67
SDev 1.17
%RSD 2.565

#1 46.50
#2 44.84

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3213679
Run Time: 06/23/94 12:40:12
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 44.41
SDev .59
%RSD 1.323

#1 44.83
#2 44.00

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: CCV2
Run Time: 06/23/94 12:44:37
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 26.29
SDev .39
%RSD 1.480

#1 26.01
#2 26.56

Quality 105.2%OK
Standard 25.00
Range 10.0%

Method: AS Sample Name: CCB2
Run Time: 06/23/94 12:49:00
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge -.0898
SDev .4981
%RSD 554.5

#1 .2624
#2 -.4420

Quality OK
Standard .0000
Range 10.00

Method: AS Sample Name: 3213680
Run Time: 06/23/94 12:53:23
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 41.72
SDev 1.67
%RSD 3.992

#1 40.54
#2 42.90

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3213682
Run Time: 06/23/94 12:57:47
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge C61.52
SDev .97
%RSD 1.574

#1 C62.20
#2 C60.83

Limit LC High
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3213683
Run Time: 06/23/94 13:02:13
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge C55.21
SDev 2.97
%RSD 5.377

BCT 6/23/94 dilute + rerun

#1 C57.31
#2 H53.11

Limit LC High
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3213684
Run Time: 06/23/94 13:06:38
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge C58.49
SDev .35
%RSD .5982

#1 C58.25
#2 C58.74

Limit LC High
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3213685
Run Time: 06/23/94 13:11:06
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge H53.89
SDev 1.42
%RSD 2.626

#1 H52.89
#2 H54.89

Limit LC High
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3213686
Run Time: 06/23/94 13:15:32
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge C52.54
SDev 4.18
%RSD 7.959

BGT 6/23/94

rerun
at
a dilution

#1 49.58
#2 C55.49

Limit LC High
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3213687 Operator:
Run Time: 06/23/94 13:19:56
Comment:
Mode: Conc Corr. Factor: 1

Elem AS
Units ppb
Avge R58.43
SDev 1.08
%RSD 1.840

#1 R57.67
#2 C59.19

Limit LC High
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3213688 Operator:
Run Time: 06/23/94 13:24:22
Comment:
Mode: Conc Corr. Factor: 1

Elem AS
Units ppb
Avge C53.11
SDev 3.04
%RSD 5.724

#1 H50.96
#2 C55.26

Limit LC High
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3213689 Operator:
Run Time: 06/23/94 13:28:48
Comment:
Mode: Conc Corr. Factor: 1

Elem AS
Units ppb
Avge H53.02
SDev 1.17
%RSD 2.201

dilute
+ rerun

BC-T 6/23/94

rerun

#1 H52.19
#2 H53.84

Limit LC High
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3213695
Run Time: 06/23/94 13:33:12
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 46.44
SDev 4.08
%RSD 8.782

#1 43.56
#2 49.33

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: CCV 3
Run Time: 06/23/94 13:37:37
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 27.38
SDev .83
%RSD 3.041

#1 26.80
#2 27.97

Quality 109.5%OK
Standard 25.00
Range 20.0%

Method: AS Sample Name: CCB 3
Run Time: 06/23/94 13:42:02
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge .2361
SDev .3796
%RSD 160.8

#1 .5045
#2 -.0323

Quality OK
Standard .0000
Range 10.00

Method: AS Sample Name: 3214005
Run Time: 06/23/94 13:46:29
Comment:
Mode: Conc Corr. Factor: BCT 6/23/94

Operator:

Dilute + rerun

Elem AS
Units ppb
Avge R49.20
SDev 2.94
%RSD 5.983

#1 R51.29
#2 47.12

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3214005D
Run Time: 06/23/94 13:50:54
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 40.72
SDev .06
%RSD .1404

#1 40.68
#2 40.76

Limit LC Pass
Upper 50.00
Lower -10.00

RSD = 38.5%

Method: AS Sample Name: 3214005S
Run Time: 06/23/94 13:55:19
Comment:
Mode: Conc Corr. Factor: 1 BCT 6/23/94

Operator:

Dilute + rerun

Elem AS
Units ppb
Avge C65.84
SDev 1.79
%RSD 2.717

#1 C67.10
 #2 C64.57
 Limit LC High
 Upper 50.00
 Lower -10.00

Method: AS Sample Name: 3214005SD Operator:
 Run Time: 06/23/94 13:59:45
 Comment:
 Mode: Conc Corr. Factor: 1

Elem AS
 Units ppb
 Avge R68.23
 SDev 1.90
 %RSD 2.778

#1 C66.89
 #2 R69.57

Limit LC High
 Upper 50.00
 Lower -10.00

Method: AS Sample Name: 3214010 Operator:
 Run Time: 06/23/94 14:04:08
 Comment:
 Mode: Conc Corr. Factor: 1

Elem AS
 Units ppb
 Avge C61.62
 SDev 3.04
 %RSD 4.933

#1 C59.47
 #2 C63.77

Limit LC High
 Upper 50.00
 Lower -10.00

Method: AS Sample Name: 3214010D Operator:
 Run Time: 06/23/94 14:08:33
 Comment:
 Mode: Conc Corr. Factor: 1

Elem AS
 Units ppb
 Avge C61.31
 SDev .34
 %RSD .5614

6/23/94

Dilute + Rerm

#1 C61.56
 #2 C61.07
 Limit LC High
 Upper 50.00
 Lower -10.00

Method: AS Sample Name: 3214010S Operator:
 Run Time: 06/23/94 14:12:59
 Comment:
 Mode: Conc Corr. Factor: 1

Elem AS
 Units ppb
 Avge C78.71
 SDev 1.47
 %RSD 1.870

#1 C79.75
 #2 C77.67

Limit LC High
 Upper 50.00
 Lower -10.00

Method: AS Sample Name: 3214010SD Operator:
 Run Time: 06/23/94 14:17:26
 Comment:
 Mode: Conc Corr. Factor: 1

Elem AS
 Units ppb
 Avge R79.24
 SDev .83
 %RSD 1.052

#1 C78.65
 #2 R79.83

Limit LC High
 Upper 50.00
 Lower -10.00

Method: AS Sample Name: PBS Operator:
 Run Time: 06/23/94 14:21:52
 Comment:
 Mode: Conc Corr. Factor: 1

Elem AS
 Units ppb
 Avge 1.178
 SDev .963
 %RSD 81.74

#1 1.858
 #2 .4969
 Limit LC Pass
 Upper 50.00
 Lower -10.00

Method: AS Sample Name: PBS Operator:
 Run Time: 06/23/94 14:26:18
 Comment: 31883,31895
 Mode: Conc Corr. Factor: 1

Elem AS
 Units ppb
 Avge 1.775
 SDev .083
 %RSD 4.701

#1 1.716
 #2 1.834

Limit LC Pass
 Upper 50.00
 Lower -10.00

Method: AS Sample Name: CCV⁴ Operator:
 Run Time: 06/23/94 14:30:44
 Comment:
 Mode: Conc Corr. Factor: 1

Elem AS
 Units ppb
 Avge 25.41
 SDev 1.35
 %RSD 5.305

#1 24.45
 #2 26.36

Quality 101.6%OK
 Standard 25.00
 Range 10.0%

Method: AS Sample Name: CCB⁴ Operator:
 Run Time: 06/23/94 14:35:08
 Comment:
 Mode: Conc Corr. Factor: 1

Elem AS
 Units ppb
 Avge .4591
 SDev .1911
 %RSD 41.63

#1 .3240
#2 .5943

Quality OK
Standard .0000
Range 10.00

Method: AS Sample Name: LCSMS .
Run Time: 06/23/94 14:39:31
Comment: 31883,31895
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 39.41
SDev 1.30
%RSD 3.292

98.5%

#1 40.33
#2 38.49

Limit LC Pass
Upper 50.00
Lower 30.00

Method: AS Sample Name: LCSMSD
Run Time: 06/23/94 14:43:58
Comment: 31883,31895
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 41.18
SDev 1.75
%RSD 4.259

Rec = 102.95%
RSD = 4.39%

#1 42.42
#2 39.94

Limit LC Pass
Upper 50.00
Lower 30.00

Method: AS Sample Name: 3188301
Run Time: 06/23/94 14:48:26
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 11.64
SDev .27
%RSD 2.277

#1 11.83
 #2 11.46
 Limit LC Pass
 Upper 50.00
 Lower -10.00

Method: AS Sample Name: 3188301D
 Run Time: 06/23/94 14:52:50
 Comment:
 Mode: Conc Corr. Factor: 1

Operator:

Elem AS
 Units ppb
 Avge 12.85
 SDev .23
 %RSD 1.773

RSD = 9.88%

#1 12.69
 #2 13.01

Limit LC Pass
 Upper 50.00
 Lower -10.00

Method: AS Sample Name: 3188301S
 Run Time: 06/23/94 14:57:17
 Comment:
 Mode: Conc Corr. Factor: 1

Operator:

Elem AS
 Units ppb
 Avge 16.53
 SDev .12
 %RSD .7442

12.23%

#1 16.44
 #2 16.62

Limit LC Pass
 Upper 50.00
 Lower -10.00

Method: AS Sample Name: 3188301SD
 Run Time: 06/23/94 15:01:43
 Comment:
 Mode: Conc Corr. Factor: 1

Operator:

Elem AS
 Units ppb
 Avge 26.24
 SDev .34
 %RSD 1.290

Rec = 36.5%

#1 26.48
#2 26.00

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3188302
Run Time: 06/23/94 15:06:07
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 9.997
SDev .638
%RSD 6.386

#1 10.45
#2 9.546

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3189511
Run Time: 06/23/94 15:10:34
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 9.103
SDev .988
%RSD 10.85

#1 9.802
#2 8.405

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: CCV⁵
Run Time: 06/23/94 15:29:23
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 25.75
SDev .94
%RSD 3.666

#1 26.42
#2 25.09

Quality 103.0%OK
Standard 25.00
Range 20.0%

Method: AS Sample Name: CCB 5
Run Time: 06/23/94 15:35:18
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge .1149
SDev .4452
%RSD 387.3

#1 .4297
#2 -.1999

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3189511D
Run Time: 06/23/94 15:40:55
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 11.60
SDev .13
%RSD 1.155

#1 11.70
#2 11.51

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3189511S
Run Time: 06/23/94 15:45:22
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 37.05
SDev .88
%RSD 2.375

RSD=NA

69.9%

#1 36.43
#2 37.68

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: CCV 6
Run Time: 06/23/94 15:49:47
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 25.50
SDev .18
%RSD .7192

#1 25.63
#2 25.37

Quality 102.0%OK
Standard 25.00
Range 10.0%

Method: AS Sample Name: CCB 6
Run Time: 06/23/94 15:54:11
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge .1227
SDev .3891
%RSD 317.1

#1 .3978
#2 -.1524

Quality OK
Standard .0000
Range 10.00

Method: AS Sample Name: 3189511SD
Run Time: 06/23/94 15:58:37
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 31.05
SDev .91
%RSD 2.934

REC = 54.9%
RSD = 15.8%

#1 30.41
#2 31.69

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: PBS Operator:
Run Time: 06/23/94 16:03:01
Comment:
Mode: Conc Corr. Factor: 1

Elem AS
Units ppb
Avge -.2497
SDev .6054
%RSD 242.5

#1 -.6777
#2 .1784

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: LCSMS Operator:
Run Time: 06/23/94 16:07:25
Comment:
Mode: Conc Corr. Factor: 1

Elem AS
Units ppb
Avge 41.25
SDev .28
%RSD .6813

#1 41.45
#2 41.05

Limit LC Pass
Upper 50.00
Lower 30.00

Method: AS Sample Name: LCSMSD Operator:
Run Time: 06/23/94 16:11:51
Comment:
Mode: Conc Corr. Factor: 1

Elem AS
Units ppb
Avge 41.43
SDev .92
%RSD 2.213

Rec = 103.1%

Rec = 103.6%

RSD = 0.44%

#1 40.78
#2 42.08

Limit LC Pass
Upper 50.00
Lower 30.00

Method: AS Sample Name: 3188215
Run Time: 06/23/94 16:16:18
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 31.23
SDev .34
%RSD 1.098

#1 31.47
#2 30.98

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: CCV 7
Run Time: 06/23/94 16:20:43
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 26.36
SDev .67
%RSD 2.538

#1 26.83
#2 25.88

Quality 105.4%OK
Standard 25.00
Range 10.0%

Method: AS Sample Name: CCB 7
Run Time: 06/23/94 16:25:09
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge -.6496
SDev .2731
%RSD 42.04

#1 -.4565
#2 -.8427

Quality OK
Standard .0000
Range 10.00

Method: AS Sample Name: S0
Run Time: 06/23/94 16:53:10
Comment:
Mode: Abs/Ei Corr. Factor: 1

Operator:

Elem AS
Avge 1.168
SDev .003
%RSD .2867

#1 1.171
#2 1.166

Method: AS Sample Name: S0
Run Time: 06/23/94 16:57:57
Comment:
Mode: Abs/Ei Corr. Factor: 1

Operator:

Elem AS
Avge -.001
SDev .001
%RSD 90.74

#1 -.002
#2 -.001

Method: AS Standard: S25

Date: 06/23/94 05:02

Elem AS
Avge .113
SDev .000
%RSD .0047

#1 .113
#2 .113

Method: AS Element: AS Wavelength: 193.70 Element 1 of 1

Correlation Coefficient: .998423

Coefficients

a1 = .004912
a2 = .00001 Abs : .01986
a3 = - Conc : 4.39076

Fit Cubic

Date: 23 Jun 94 17:02

Slope corr.: .914328

Standard:	S0	S5	S10	S25	S50
Absorbance:	0.0000	.023566	.051568	.122499	.223274
Known conc.:	0	5	10	25	50
Calc. conc.:	0.0000	4.75877	10.3606	24.8468	50.0369
Residual:	0.0000	-.241234	.360587	-.153204	.036858

Method: AS Sample Name: CCV8
Run Time: 06/23/94 17:12:46
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 25.32
SDev .06
%RSD .2365

#1 25.28
#2 25.37

Quality 101.3%OK
Standard 25.00
Range 10.0%

Method: AS Sample Name: CCB8
Run Time: 06/23/94 17:17:10
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge .5635
SDev .5601
%RSD 99.40

#1 .9595
#2 .1675

Quality OK
Standard .0000
Range 10.00

Method: AS Sample Name: 3213682
Run Time: 06/23/94 17:21:36
Comment: DF=2
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 35.42
SDev 1.47
%RSD 4.138

#1 36.45
#2 34.38

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3213683
Run Time: 06/23/94 17:26:00
Comment: DF=2
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 38.58
SDev .33
%RSD .8584

#1 38.35
#2 38.82

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3213684
Run Time: 06/23/94 17:30:24
Comment: DF=2
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 34.16
SDev .11
%RSD .3236

#1 34.24
#2 34.08

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3213685
Run Time: 06/23/94 17:34:49
Comment: DF=2
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 35.56
SDev .91
%RSD 2.548

#1 36.20
#2 34.92

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3213686
Run Time: 06/23/94 17:39:12
Comment: DF=2
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 37.99
SDev 1.55
%RSD 4.088

#1 39.09
#2 36.89

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3213687
Run Time: 06/23/94 17:43:37
Comment: DF=2
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 37.34
SDev .81
%RSD 2.168

#1 37.91
#2 36.77

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3213688
Run Time: 06/23/94 17:48:03
Comment: DF=2
Mode: Conc Corr. Factor: 1

Operator:

3 Elem AS
Units ppb
Avge 36.31
SDev .16
%RSD .4516

#1 36.19
#2 36.42

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3213689
Run Time: 06/23/94 17:52:29
Comment: DF=2
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 36.79
SDev 1.16
%RSD 3.150

#1 37.61
#2 35.97

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3214005
Run Time: 06/23/94 17:56:52
Comment: DF=2
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 30.07
SDev .92
%RSD 3.069

#1 30.72
#2 29.41

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3214005S
Run Time: 06/23/94 18:01:15
Comment: DF=2
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 39.72
SDev .96
%RSD 2.407

48.3%

#1 40.40
#2 39.04

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: CCV 9
Run Time: 06/23/94 18:05:39
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 26.33
SDev .55
%RSD 2.093

#1 25.94
#2 26.72

Quality 105.3%OK
Standard 25.00
Range 10.0%

Method: AS Sample Name: CCB 9
Run Time: 06/23/94 18:10:02
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge .5847
SDev .5287
%RSD 90.43

#1 .9586
#2 .2108

Quality OK
Standard .0000
Range 10.00

Method: AS Sample Name: 3214005SD
Run Time: 06/23/94 18:14:27
Comment: DF=2
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 41.84
SDev 1.62
%RSD 3.869

58.9%

#1 42.99
#2 40.70

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3214010
Run Time: 06/23/94 18:18:53
Comment: DF=2
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 38.22
SDev .37
%RSD .9761

#1 38.49
#2 37.96

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3214010D
Run Time: 06/23/94 18:23:17
Comment: DF=2
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 37.32
SDev .66
%RSD 1.779

2.38%

#1 37.79
#2 36.85

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3214010S Operator:
Run Time: 06/23/94 18:27:41
Comment: DF=2
Mode: Conc Corr. Factor: 1

Elem AS
Units ppb
Avge H50.41
SDev 1.43
%RSD 2.829

#1 H51.42
#2 49.40

Limit LC High
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3214010SD Operator:
Run Time: 06/23/94 18:32:05
Comment: DF=2
Mode: Conc Corr. Factor: 1

Elem AS
Units ppb
Avge R52.49
SDev .64
%RSD 1.227

#1 R52.95
#2 H52.04

Limit LC High
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3188301 Operator:
Run Time: 06/23/94 18:36:29
Comment:
Mode: Conc Corr. Factor: 1

Elem AS
Units ppb
Avge 10.92
SDev .11
%RSD 1.034

#1 11.00
#2 10.84

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3188301A Operator:
Run Time: 06/23/94 18:40:55
Comment:
Mode: Conc Corr. Factor: 1

Elem AS
Units ppb
Avge 25.92
SDev .67
%RSD 2.588

75%

#1 25.45
#2 26.40

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3189511 Operator:
Run Time: 06/23/94 18:45:18
Comment:
Mode: Conc Corr. Factor: 1

Elem AS
Units ppb
Avge 7.984
SDev .082
%RSD 1.033

#1 8.043
#2 7.926

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3189511A Operator:
Run Time: 06/23/94 18:49:42
Comment:
Mode: Conc Corr. Factor: 1

Elem AS
Units ppb
Avge 24.16
SDev .19
%RSD .8027

80.9%

#1 24.02
#2 24.29

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: CCV 10
Run Time: 06/23/94 18:54:06
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 25.78
SDev .65
%RSD 2.519

#1 25.32
#2 26.24

Quality 103.1%OK
Standard 25.00
Range 10.0%

Method: AS Sample Name: CCB 10
Run Time: 06/23/94 18:58:29
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge .6913
SDev .4410
%RSD 63.79

#1 1.003
#2 .3795

Quality OK
Standard .0000
Range 10.00

Sample Name	AS
1 S0	1.18704
2 S0	-.00895
3 S0	.00086
4 S5	.02408
5 S10	.04441
6 S25	.10775
7 S50 BGT 6/23/94	-.00112
8 S50	.21167
9 ICV	26.40
10 CCB ICB BGT 6/23/94	.0684
11 CRA	10.14
12 CCV1	26.60
13 CCB1	.0624
14 3214010S	23.16 DF=5
15 3214010SD	23.94 <u>1</u>
16 CCV2	26.70
17 CCB2	.0037

"	Sample Name	File	Method	Date	Time	OpID	Type	Mode
1	S0	62494A	AS	06/24/94	08:40	B	ABS/E	
2	S0	62494A	AS	06/24/94	08:45	B	ABS/E	
3	S0	62494A	AS	06/24/94	08:49	B	ABS/E	
4	S5	62494A	AS	06/24/94	08:54	X	ABS/E	
5	S10	62494A	AS	06/24/94	08:58	X	ABS/E	
6	S25	62494A	AS	06/24/94	09:02	X	ABS/E	
7	S50	62494A	AS	06/24/94	09:07	X	ABS/E	
8	S50	62494A	AS	06/24/94	09:18	X	ABS/E	
9	ICV	62494A	AS	06/24/94	09:24	Q	CONC	
10	CCB	62494A	AS	06/24/94	09:28	Q	CONC	
11	CRA	62494A	AS	06/24/94	09:33	Q	CONC	
12	CCV	62494A	AS	06/24/94	09:37	Q	CONC	
13	CCB	62494A	AS	06/24/94	09:41	Q	CONC	
14	3214010S	62494A	AS	06/24/94	09:46	S	CONC	
15	3214010SD	62494A	AS	06/24/94	09:50	S	CONC	
16	CCV	62494A	AS	06/24/94	09:55	Q	CONC	
17	CCB	62494A	AS	06/24/94	09:59	Q	CONC	

Atomizer: Furnace

Matrix: WASTE

METHOD INFORMATION **

Default Setup:

Number of Repeats : 2

Flush Time (sec) : 5.0

Auto-Increment Sample Names? No

Auto-print Calibration Curves? : Yes

Analysis Graphics Display : Corr'd Absorbance & Temp Profile

Auto-print Analysis Graphics? : No

Auto-save Analysis Graphics? : No

Default File Names:

Analysis Data File : 62494A

Autosampler Table : BATCH

Sample Limits Table : LCTAB

Blank (AZ) Limits Table : CCBQC

QC Check Table : CCV10

Recovery Check Table : RQCTAB

OUTPUT INFORMATION **

Output Mode: Concentration

Override Print Limits? Yes

Override Significant Figures? No

Limits Table: LCTAB Check? Yes

Correction Factor: 1

Auto-print data? Yes

Condensed report format? Yes

Auto-store data? Yes

Store individual repeats? Yes

Report to:

Screen Avgs, Stats, Reps, Checks, Units

Printer Avgs, Stats, Reps, Checks, Units

Elements : As

le : Single Beam Absorption

Integ Type : Peak Area Integ Time : 2.9 Sec. Delay Time : 0.2 Sec.

Graph Scale: 0.50

Comment : Nickel Nitrate Matrix Modifier

Furnace Information:

	Dry	Pyrol	Pyro2	Atom	Clean
Temp	150	750	1200	2300	2600
Ramp	2	20	20	0	-
Hold	0	0	0	4	3
Purge	Low	Medium	Medium	Off	High

Integ Stage : Atom Air Ash : Off Auto-Baseline Corr.? Yes Economizer? No
Deposit Time: 20.0 Delay Time: 6 Auto-Deposit Adjust? No

Element : As
Element Name : AS
Wavelength : 193.70
Bandpass : 1.0
Lamp Pos. : 4
High Voltage : Auto
BKG Method : SH
Lamp Current : norm: 5.0 bkg: 2.5
Signif Figs : 4
Unit Units : ppb
Print Limits Low : 0
Print Limits High: 0

Stdzn Method: Multipoint Stdn.

Std Names	Std Conc	Abs.
A/Z#1: S0	= 0.00	= 0.0000
#2: S5	= 5.00	= 0.0236
#3: S10	= 10.00	= 0.0516
A/C#4: S25	= 25.00	= 0.1225
#5: S50	= 50.00	= 0.2233

Stdzn Method: Standard Additions

Addn Name	Std Addn
#1: ADD1	= 10.00
#2: ADD2	= 20.00
#3: ADD3	= 30.00

Method: AS Sample Name: S0
Run Time: 06/24/94 08:40:31
Comment:
Mode: Abs/Ei Corr. Factor: 1

Operator:

Elem AS
Avge 1.187
SDev .012
%RSD 1.029

#1 1.196
#2 1.178

Method: AS Sample Name: S0
Run Time: 06/24/94 08:45:08
Comment:
Mode: Abs/Ei Corr. Factor: 1

Operator:

Elem AS
Avge -.009
SDev .000
%RSD .3035

#1 -.009
#2 -.009

Method: AS Sample Name: S0
Run Time: 06/24/94 08:49:33
Comment:
Mode: Abs/Ei Corr. Factor: 1

Operator:

Elem AS
Avge .001
SDev .002
%RSD 250.2

#1 .002
#2 -.001

Method: AS Standard: S5 Date: 06/24/94 08:54

Elem AS
Avge .024
SDev .002
%RSD 9.018

#1 .026
#2 .023

Method: AS Standard: S10 Date: 06/24/94 08:58

Elem AS
Avge .044
SDev .002

%RSD 3.536
 .046
 #2 .043

Method: AS Standard: S25 Date: 06/24/94 09:02

Elem AS
 Avge .108
 SDev .002
 %RSD 2.211

#1 .109
 #2 .106

Method: AS Standard: S50 Date: 06/24/94 09:07

Elem AS
 Avge -.001
 SDev .000
 %RSD 33.79

#1 -.001
 #2 -.001

run
 missed sample

Method: AS Element: AS Wavelength: 193.70 Element 1 of 1

Correlation Coefficient: .623745

Coefficients

a1 = .006568
 a2 = -.000128 Abs : .024307
 a3 = 0 Conc : 4.0146

Fit Quadratic

Date: 24 Jun 94 09:07

Slope corr.: 1

Standard:	S0	S5	S10	S25	S50
Absorbance:	0.0000	.024087	.044412	.10776	-.001124
n conc.:	0	5	10	25	50
Calc. conc.:	51.3748	47.4422	44.1236	33.7809	-.172485
Residual:	51.3748	42.4422	34.1236	8.78094	-50.1725

Method: AS

Standard: S50

Date: 06/24/94 09:18

Elem AS
 Avge .212
 SDev .002
 %RSD 1.161

#1 .213
 #2 .210

Method: AS

Element: AS

Wavelength: 193.70

Element 1 of 1

Correlation Coefficient: .999479

Coefficients

a1 = .004814

a2 = -.00003

a3 =

Abs : .018864

Conc : 4.0146

Cubic

Date: 24 Jun 94 09:18

Slope corr.: 1

	S5	S10	S25	S50
Standard: S0				
Absorbance: 0.0000	.024087	.044412	.10776	.211671
Known conc.: 0	5	10	25	50
Calc. conc.: 0.0000	5.15974	9.74915	25.1086	49.9849
Residual: 0.0000	.159737	-.250849	.108557	-.015133

Method: AS

Sample Name: ICV

Operator:

Run Time: 06/24/94 09:24:11

Comment:

Mode: Conc Corr. Factor: 1

Elem AS
 Units ppb
 Avge 26.40
 SDev .16
 SD .6132

#1 26.28
 #2 26.51

Quality 105.6%OK
 Standard 25.00

Range 10.0%

EC 6/23/94

Method: AS Sample Name: ~~CRA~~ ICB Operator:
 Run Time: 06/24/94 09:28:36
 Comment:
 Mode: Conc Corr. Factor: 1

Elem AS
 Units ppb
 Avge .0684
 SDev .0603
 %RSD 88.18

#1 .1111
 #2 .0258

Quality OK
 Standard .0000
 Range 10.00

Method: AS Sample Name: CRA Operator:
 Run Time: 06/24/94 09:33:01
 Comment: 10PPB
 Mode: Conc Corr. Factor: 1

m AS
 Units ppb
 Avge 10.14
 SDev .10
 %RSD 1.003

101.4%

#1 10.21
 #2 10.06

Quality 101.4%OK
 Standard 10.00
 Range 100.0%

Method: AS Sample Name: CCV Operator:
 Run Time: 06/24/94 09:37:25
 Comment:
 Mode: Conc Corr. Factor: 1

Elem AS
 Units ppb
 Avge 26.60
 SDev .02
 %RSD .0760

1 26.61
 2 26.58

Quality 106.4%OK
 Standard 25.00

Range 10.0%

Method: AS Sample Name: CCB1
Run Time: 06/24/94 09:41:50
Comment:
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge .0624
SDev .1608
%RSD 257.8

#1 .1760
#2 -.0513

Quality OK
Standard .0000
Range 10.00

Method: AS Sample Name: 3214010S
Run Time: 06/24/94 09:46:16
Comment: DF=5
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 23.16
SDev 1.08
%RSD 4.655

#1 23.92
#2 22.40

Limit LC Pass
Upper 50.00
Lower -10.00

Method: AS Sample Name: 3214010SD
Run Time: 06/24/94 09:50:40
Comment: DF=5
Mode: Conc Corr. Factor: 1

Operator:

Elem AS
Units ppb
Avge 23.94
SDev .33
%RSD 1.373

#1 24.18
#2 23.71

Limit LC Pass
Upper 50.00

98.4%

Rec=108.2%

RSD 3.31%

Lower -10.00

Method: AS Sample Name: CCV 2

Operator:

Run Time: 06/24/94 09:55:05

Comment:

Mode: Conc Corr. Factor: 1

Elem AS
Units ppb
Avge 26.70
SDev .94
%RSD 3.504

#1 27.36
#2 26.04

Quality 106.8%OK

Standard 25.00

Range 10.0%

Method: AS Sample Name: CCB 2

Operator:

Run Time: 06/24/94 09:59:30

Comment:

Mode: Conc Corr. Factor: 1

m AS
Units ppb
Avge .0037
SDev .3986
%RSD 10650.

#1 .2856
#2 -.2781

Quality OK

Standard .0000

Range 10.00

#	Sample Name	Cd
1	S0	.06517
2	S0	-.04368
3	S0	-.00008
4	S0	-.0004
5	S1	.02716
6	S2	.05067
7	S5	.11869
8	S10	.21714
9	ICV	4.794
10	CCB ICB BGT 6/24/94	.0062
11	PBS	.0365
12	LCSMS	4.506 DF=5
13	LCSMSD	4.846 I
14	3213673	2.150 DF=50
15	3213674	1.919
16	3213675	1.710
17	3213676	1.571
18	3213677	1.952
19	3213678	1.861
20	3213679	2.127 I
21	CCV1	5.496
22	CCB1	-.0241
23	S5	.13465
24	CCV2	4.985
25	CCB2	.0283
26	3213680	1.544 DF=50
27	3213682	2.007
28	3123683	2.076
29	3213684	1.823
30	3213685	1.859
31	3213686	2.107
32	3213687	1.955
33	3213688	1.839
34	3213689	2.038
35	3213695	1.662 I
36	CCV3	4.871
37	CCB3	.0331
38	3214005	1.300 DF=50
39	3214005D	1.429
40	3214005S	1.904
41	3214005SD	2.017
42	3214010	2.081
43	3214010D	2.132
44	3214010S	2.438
45	3214010SD	2.411 I
46	CCV4	4.986
47	CCB4	.0283

#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
1	S0	52394D	CD	06/24/94	09:16		X	ABS/E
2	S0	52394D	CD	06/24/94	09:24		X	ABS/E
3	S0	52394D	CD	06/24/94	09:30		X	ABS/E
4	S0	52394D	CD	06/24/94	09:34		X	ABS/E
5	S1	52394D	CD	06/24/94	09:38		X	ABS/E
6	S2	52394D	CD	06/24/94	09:42		X	ABS/E
7	S5	52394D	CD	06/24/94	09:47		X	ABS/E
8	S10	52394D	CD	06/24/94	09:53		X	ABS/E
9	ICV	52394D	CD	06/24/94	09:57	BGT	Q	CONC
10	CCB	52394D	CD	06/24/94	10:01	BGT	S	CONC
11	PBS	52394D	CD	06/24/94	10:06	BGT	S	CONC
12	LCSMS	52394D	CD	06/24/94	10:22	BGT	S	CONC
13	LCSMSD	52394D	CD	06/24/94	10:26	BGT	S	CONC
14	3213673	52394D	CD	06/24/94	10:41	BGT	S	CONC
15	3213674	52394D	CD	06/24/94	10:47	BGT	S	CONC
16	3213675	52394D	CD	06/24/94	10:53	BGT	S	CONC
17	3213676	52394D	CD	06/24/94	10:57	BGT	S	CONC
18	3213677	52394D	CD	06/24/94	11:01	BGT	S	CONC
19	3213678	52394D	CD	06/24/94	11:09	BGT	S	CONC
20	3213679	52394D	CD	06/24/94	11:13	BGT	S	CONC
21	CCV	52394D	CD	06/24/94	11:17	BGT	Q	CONC
22	CCB	52394D	CD	06/24/94	11:21	BGT	S	CONC
23	S5	52394D	CD	06/24/94	11:27		X	ABS/E
24	CCV	52394D	CD	06/24/94	11:32	BGT	Q	CONC
25	CCB	52394D	CD	06/24/94	11:36	BGT	S	CONC
26	3213680	52394D	CD	06/24/94	11:41	BGT	S	CONC
27	3213682	52394D	CD	06/24/94	11:45	BGT	S	CONC
28	3123683	52394D	CD	06/24/94	11:50	BGT	S	CONC
29	3213684	52394D	CD	06/24/94	11:54	BGT	S	CONC
30	3213685	52394D	CD	06/24/94	11:58	BGT	S	CONC
31	3213686	52394D	CD	06/24/94	12:02	BGT	S	CONC
32	3213687	52394D	CD	06/24/94	12:05	BGT	S	CONC
33	3213688	52394D	CD	06/24/94	12:10	BGT	S	CONC
34	3213689	52394D	CD	06/24/94	12:14	BGT	S	CONC
35	3213695	52394D	CD	06/24/94	12:18	BGT	S	CONC
36	CCV	52394D	CD	06/24/94	12:22	BGT	Q	CONC
37	CCB	52394D	CD	06/24/94	12:26	BGT	S	CONC
38	3214005	52394D	CD	06/24/94	12:31	BGT	S	CONC
39	3214005D	52394D	CD	06/24/94	12:35	BGT	S	CONC
40	3214005S	52394D	CD	06/24/94	12:39	BGT	S	CONC
41	3214005SD	52394D	CD	06/24/94	12:43	BGT	S	CONC
42	3214010	52394D	CD	06/24/94	12:47	BGT	S	CONC
43	3214010D	52394D	CD	06/24/94	12:51	BGT	S	CONC
44	3214010S	52394D	CD	06/24/94	12:55	BGT	S	CONC
45	3214010SD	52394D	CD	06/24/94	12:59	BGT	S	CONC
46	CCV	52394D	CD	06/24/94	13:02	BGT	Q	CONC
47	CCB	52394D	CD	06/24/94	13:06	BGT	S	CONC

Method: CD

Method Report

Fri 06-24-94 01:19:19 PM

page 1

Atomizer: Furnace

Matrix: ULTRAPURE WATER

METHOD INFORMATION **

Default Setup:

Number of Repeats : 2

Flush Time (sec) : 4.0

Auto-Increment Sample Names? No

Auto-print Calibration Curves? : Yes

Analysis Graphics Display : Corr'd Absorbance & Temp Profile

Auto-print Analysis Graphics? : No

Auto-save Analysis Graphics? : No

Default File Names:

Analysis Data File : 52394D

Autosampler Table : CD1

Sample Limits Table : LCTAB

Blank (AZ) Limits Table : CCBQC

QC Check Table : CCVQC

Recovery Check Table : RQCTAB

OUTPUT INFORMATION **

Output Mode: Concentration

Override Print Limits? Yes

Override Significant Figures? No

Limits Table: LCTAB Check? Yes

Correction Factor: 1

Auto-print data? Yes

Condensed report format? Yes

Auto-store data? Yes

Store individual repeats? Yes

Report to:

Screen Avgs, Stats, Reps, Checks, Units

Printer Avgs, Stats, Reps, Checks, Units

Elements : Cd

Mode : Single Beam Absorption

Integ Type : Peak Area Integ Time : 3.5 Sec. Delay Time : 0.0 Sec.

Graph Scale: 1.0

Comment : No Matrix Modifier

Furnace Information:

	Dry	Pyrol	Pyro2	Atom	Clean
Temp	150	500	700	1600	2200
Ramp	2	15	10	1	-
Hold	0	0	0	4	2
Purge	Low	Medium	Low	Off	High

Integ Stage : Atom Air Ash : Off Auto-Baseline Corr.? Yes Economizer? No
Deposit Time: 15.0 Delay Time: 6 Auto-Deposit Adjust? No

Element : Cd
Element Name : Cd
Wavelength : 228.80
Bandpass : 0.30
High Voltage : 620
BKG Method : SH
Lamp Current : norm: 3.5 bkg: 1.0
Signif Figs : 4
Print Units : ppb
Print Limits Low : 0
Print Limits High: 0

Stdzn Method: Multipoint Stdn.		
Std Names	Std Conc	Abs.
A/Z#1: S0	= 0.00	= 0.0000
#2: S1	= 1.00	= 0.0272
#3: S2	= 2.00	= 0.0507
A/C#4: S5	= 5.00	= 0.1187
#5: S10	= 10.00	= 0.2171

Stdzn Method: Standard Additions	
Addn Name	Std Addn
#1: Spikel	= 1.00
#2: Spike2	= 2.00
#3: Spike3	= 3.00

Method: CD

Standard: S0

06/24/94 09:16

xCd

#1 .0652

Corrected ———
Uncorrected - - - -

Method: CD

Standard: S0

Date: 06/24/94 09:16

Elem Cd

Avge .065
SDev .000
%RSD .0000

#1 .065

Method: CD Standard: S0 Date: 06/24/94 09:24

Elem Cd
Avge -.044
SDev .000
%RSD .0000

#1 -.044

Method: CD Standard: S0 Date: 06/24/94 09:30

Elem Cd
Avge -.000
SDev .001
%RSD 933.4

#1 .000
#2 -.001

Method: CD Standard: S0 Date: 06/24/94 09:34

Elem Cd
Avge -.000
SDev .001
%RSD 277.0

#1 .000
#2 -.001

Method: CD Standard: S1 Date: 06/24/94 09:38

Elem Cd
Avge .027
SDev .003
%RSD 10.18

#1 .029
#2 .025

Method: CD Standard: S2 Date: 06/24/94 09:42

Elem Cd
Avge .051
SDev .001
%RSD 2.372

#1 .052
#2 .050

Method: CD Standard: S5 Date: 06/24/94 09:47

Elem Cd
Avge .119
SDev .004
%RSD 3.747

#1 .122
#2 .116

Method: CD Standard: S10 Date: 06/24/94 09:53

Elem Cd
Avge .217
SDev .000
%RSD .2214

#1 .217
#2 .217

Method: CD Element: Cd Wavelength: 228.80 Element 1 of 1

Correlation Coefficient: .997462

Coefficients

a1 = .027531
a2 = -.000963 Abs : .021504
a3 = .000038 Conc : .00292

Fit Cubic

Date: 24 Jun 94 09:53

Slope corr.: 1

Standard: S0	S1	S2	S5	S10
Absorbance: 0.0000	.027166	.050677	.118694	.217141
Known conc.: 0	1	2	5	10
Calc. conc.: 0.0000	1.02182	1.96531	5.01621	9.99721
Residual: 0.0000	.021817	-.034692	.016205	-.002792

Method: CD Sample Name: ICV
Run Time: 06/24/94 09:57:42
Comment:
Mode: Conc Corr Factor: 1

Operator: BGT

6531F

Elem Cd

Units ppb
Avge 4.794
SDev .230
%RSD 4.791

#1 4.956
#2 4.632

Quality 95.9% OK
Standard 5.000
Range 10.0%

Method: CD Sample Name: ~~TCB~~ ICB
Run Time: 06/24/94 10:01:47
Comment:
Mode: Conc Corr. Factor: 1

Operator: BGT

Elem Cd
Units ppb
Avge .0062
SDev .0009
%RSD 14.14

#1 .0068
#2 .0056

Limit LC Pass
Upper 10.00
Lower -1.000

Method: CD Sample Name: PBS
Run Time: 06/24/94 10:06:50
Comment: 32136,32140
Mode: Conc Corr. Factor: 1

Operator: BGT

Elem Cd
Units ppb
Avge .0365
SDev .0385
%RSD 105.5

#1 .0093
#2 .0638

Limit LC Pass
Upper 10.00
Lower -1.000

Method: CD Sample Name: LCSMS
Run Time: 06/24/94 10:22:21
Comment: 32136,32140 DF=5
Mode: Conc Corr. Factor: 1

Operator: BGT

Elem Cd

Units ppb
Avge 4.506
SDev .061
%RSD 1.360

112.7%

#1 4.549
#2 4.463

Limit LC Pass
Upper 10.00
Lower -1.000

Method: CD Sample Name: LCSMSD
Run Time: 06/24/94 10:26:34
Comment: 32136,32140 DF=5
Mode: Conc Corr. Factor: 1

Operator: BGT

Elem Cd
Units ppb
Avge 4.846
SDev .239
%RSD 4.940

121.2%
RSD = N A

#1 5.015
#2 4.677

Limit LC Pass
Upper 10.00
Lower -1.000

Method: CD Sample Name: 3213673
Run Time: 06/24/94 10:41:34
Comment: DF=50
Mode: Conc Corr. Factor: 1

Operator: BGT

Elem Cd
Units ppb
Avge 2.150
SDev .132
%RSD 6.123

#1 2.057
#2 2.243

Limit LC Pass
Upper 10.00
Lower -1.000

Method: CD Sample Name: 3213674
Run Time: 06/24/94 10:47:06
Comment: DF=50
Mode: Conc Corr. Factor: 1

Operator: BGT

Elem Cd

Units ppb
Avge 1.919
SDev .038
%RSD 1.962

#1 1.892
#2 1.946

Limit LC Pass
Upper 10.00
Lower -1.000

Method: CD Sample Name: 3213675
Run Time: 06/24/94 10:53:25
Comment: DF=50
Mode: Conc Corr. Factor: 1

Operator: BGT

Elem Cd
Units ppb
Avge 1.710
SDev .086
%RSD 5.033

#1 1.649
#2 1.771

Limit LC Pass
Upper 10.00
Lower -1.000

Method: CD Sample Name: 3213676
Run Time: 06/24/94 10:57:15
Comment: DF=50
Mode: Conc Corr. Factor: 1

Operator: BGT

Elem Cd
Units ppb
Avge 1.571
SDev .195
%RSD 12.41

#1 1.709
#2 1.433

Limit LC Pass
Upper 10.00
Lower -1.000

Method: CD Sample Name: 3213677
Run Time: 06/24/94 11:01:07
Comment: DF=50
Mode: Conc Corr. Factor: 1

Operator: BGT

Elem Cd

Units ppb
Avge 1.952
SDev .057
%RSD 2.900

#1 1.992
#2 1.912

Limit LC Pass
Upper 10.00
Lower -1.000

Method: CD Sample Name: 3213678
Run Time: 06/24/94 11:09:03
Comment: DF=50
Mode: Conc Corr. Factor: 1

Operator: BGT

Elem Cd
Units ppb
Avge 1.861
SDev .108
%RSD 5.783

#1 1.785
#2 1.937

Limit LC Pass
Upper 10.00
Lower -1.000

Method: CD Sample Name: 3213679
Run Time: 06/24/94 11:13:09
Comment: DF=50
Mode: Conc Corr. Factor: 1

Operator: BGT

Elem Cd
Units ppb
Avge 2.127
SDev .110
%RSD 5.192

#1 2.205
#2 2.048

Limit LC Pass
Upper 10.00
Lower -1.000

Method: CD Sample Name: CCV 2
Run Time: 06/24/94 11:17:30
Comment:
Mode: Conc Corr. Factor: 1

Operator: BGT

Elem Cd

Units ppb
Avge 5.496
SDev .075
%RSD 1.372

#1 Q5.550
#2 5.443

Quality 109.9%OK
Standard 5.000
Range 10.0%

Method: CD Sample Name: CCB 2
Run Time: 06/24/94 11:21:42
Comment:
Mode: Conc Corr. Factor: 1

Operator: BGT

Elem Cd
Units ppb
Avge -.0241
SDev .0718
%RSD 297.3

#1 -.0266
#2 -.0749

Limit LC Pass
Upper 10.00
Lower -1.000

Method: CD Standard: S5 Date: 06/24/94 11:27

Elem Cd
Avge .135
SDev .003
%RSD 1.928

#1 .136
#2 .133

Method: Cd Element: Cd Wavelength: 228.80 Element 1 of 1

Correlation Coefficient: .997462

Coefficients

a1 = .027531
a2 = -.000963
a3 = .000038
Abs : .021504
Conc : .692665

Fit Cubic

Date: 24 Jun 94 11:27

Slope corr.: 1.15917

Concentration

11.0

Standard: S0	S1	S2	S5	S10
Absorbance: 0.0000	.027166	.050677	.110694	.217141
Known conc.: 0	1	2	5	10
Calc. conc.: 0.0000	1.02182	1.96531	5.01621	9.99721
Residual: 0.0000	.021817	-.034692	.016205	-.002792

Method: CD Sample Name: CCV 3 Operator: BGT

Run Time: 06/24/94 11:32:31

Comment:
Mode: Conc Corr. Factor: 1

Elem Cd
Units ppb
Avg 4.985
SDev .009
%RSD .1851
#1 4.991
#2 4.978

Quality 99.7% OK
Standard 5.000
Range 10.0%

Method: CD Sample Name: CCB 3 Operator: BGT
Run Time: 06/24/94 11:36:21
Comment:
Mode: Conc Corr. Factor: 1

Elem Cd
Units ppb
Avg .0283
SDev .0181
%RSD 64.04
#1 .0411
#2 .0155

Limit LC Pass
Upper 10.00

10

Lower -1.000

Method: CD Sample Name: 3213680
Run Time: 06/24/94 11:41:11
Comment: DF=50 BGT 6/23/94
Mode: Conc Corr. Factor: 1

Operator: BGT

Elem Cd
Units ppb
Avge 1.544
SDev .038
%RSD 2.473

#1 1.517
#2 1.571

Limit LC Pass
Upper 10.00
Lower -1.000

Method: CD Sample Name: 3213682
Run Time: 06/24/94 11:45:43
Comment: DF=50 BGT 6/23/94
Mode: Conc Corr. Factor: 1

Operator: BGT

Elem Cd
Units ppb
Avge 2.007
SDev .222
%RSD 11.04

#1 2.164
#2 1.850

Limit LC Pass
Upper 10.00
Lower -1.000

Method: CD Sample Name: 3123683
Run Time: 06/24/94 11:50:46
Comment: DF=50 BGT 6/23/94
Mode: Conc Corr. Factor: 1

Operator: BGT

Elem Cd
Units ppb
Avge 2.076
SDev .096
%RSD 4.622

#1 2.144
#2 2.008

Limit LC Pass
Upper 10.00

660

Lower -1.000

Method: CD Sample Name: 3213684
Run Time: 06/24/94 11:54:35
Comment: DF=50 BGT 6/23/94
Mode: Conc Corr. Factor: 1

Operator: BGT

Elem Cd
Units ppb
Avge 1.823
SDev .081
%RSD 4.459

#1 1.881
#2 1.766

Limit LC Pass
Upper 10.00
Lower -1.000

Method: CD Sample Name: 3213685
Run Time: 06/24/94 11:58:27
Comment: DF=50 BGT 6/23/94
Mode: Conc Corr. Factor: 1

Operator: BGT

Elem Cd
Units ppb
Avge 1.859
SDev .177
%RSD 9.517

#1 1.985
#2 1.734

Limit LC Pass
Upper 10.00
Lower -1.000

Method: CD Sample Name: 3213686
Run Time: 06/24/94 12:02:12
Comment: DF=50 BGT 6/23/94
Mode: Conc Corr. Factor: 1

Operator: BGT

Elem Cd
Units ppb
Avge 2.107
SDev .117
%RSD 5.568

#1 2.190
#2 2.024

Limit LC Pass
Upper 10.00

Lower -1.000

Method: CD Sample Name: 3213687
 Run Time: 06/24/94 12:05:58
 Comment: $DF=50$ BGT 6/23/94
 Mode: Conc Corr. Factor: 1

Operator: BGT

Elem Cd
 Units ppb
 Avge 1.955
 SDev .137
 %RSD 7.013

#1 2.051
 #2 1.858

Limit LC Pass
 Upper 10.00
 Lower -1.000

Method: CD Sample Name: 3213688
 Run Time: 06/24/94 12:10:24
 Comment: $DF=50$ BGT 6/24/94
 Mode: Conc Corr. Factor: 1

Operator: BGT

Elem Cd
 Units ppb
 Avge 1.839
 SDev .040
 %RSD 2.166

#1 1.867
 #2 1.811

Limit LC Pass
 Upper 10.00
 Lower -1.000

Method: CD Sample Name: 3213689
 Run Time: 06/24/94 12:14:43
 Comment: $DF=50$ BGT 6/24/94
 Mode: Conc Corr. Factor: 1

Operator: BGT

Elem Cd
 Units ppb
 Avge 2.038
 SDev .024
 %RSD 1.163

#1 2.055
 #2 2.022

Limit LC Pass
 Upper 10.00

Lower -1.000

Method: CD Sample Name: 3213695
 Run Time: 06/24/94 12:18:38
 Comment: $\Delta F = 50$ BGT 6/24/94
 Mode: Conc Corr. Factor: 1

Operator: BGT

Elem Cd
 Units ppb
 Avge 1.662
 SDev .099
 %RSD 5.971

#1 1.732
 #2 1.592

Limit LC Pass
 Upper 10.00
 Lower -1.000

Method: CD Sample Name: CCV4
 Run Time: 06/24/94 12:22:31
 Comment:
 Mode: Conc Corr. Factor: 1

Operator: BGT

Elem Cd
 Units ppb
 Avge 4.871
 SDev .161
 %RSD 3.312

#1 4.985
 #2 4.757

Quality 97.4% OK
 Standard 5.000
 Range 10.0%

Method: CD Sample Name: CCB4
 Run Time: 06/24/94 12:26:34
 Comment:
 Mode: Conc Corr. Factor: 1

Operator: BGT

Elem Cd
 Units ppb
 Avge .0331
 SDev .0643
 %RSD 193.8

#1 .0786
 #2 -.0123

Limit LC Pass
 Upper 10.00

Lower -1.000

Method: CD Sample Name: 3214005
Run Time: 06/24/94 12:31:26
Comment: DF=50
Mode: Conc Corr. Factor: 1

Operator: BGT

Elem Cd
Units ppb
Avge 1.300
SDev .037
%RSD 2.883

#1 1.274
#2 1.327

Limit LC Pass
Upper 10.00
Lower -1.000

Method: CD Sample Name: 3214005D
Run Time: 06/24/94 12:35:22
Comment: DF=50
Mode: Conc Corr. Factor: 1

Operator: BGT

Elem Cd
Units ppb
Avge 1.429
SDev .192
%RSD 13.42

#1 1.565
#2 1.294

Limit LC Pass
Upper 10.00
Lower -1.000

Method: CD Sample Name: 3214005S
Run Time: 06/24/94 12:39:27
Comment: DF=50
Mode: Conc Corr. Factor: 1

Operator: BGT

Elem Cd
Units ppb
Avge 1.904
SDev .144
%RSD 7.539

#1 2.006
#2 1.803

Limit LC Pass
Upper 10.00

RSD = NA

151%
(118.8% calculated w/Dup)

Lower -1.000

Method: CD Sample Name: 3214005SD
Run Time: 06/24/94 12:43:25
Comment: DF=50
Mode: Conc Corr. Factor: 1

Operator: BGT

Elem Cd
Units ppb
Avge 2.017
SDev .142
%RSD 7.042

179.3%
RSD=NA

#1 2.117
#2 1.917

Limit LC Pass
Upper 10.00
Lower -1.000

Method: CD Sample Name: 3214010
Run Time: 06/24/94 12:47:20
Comment: DF=50
Mode: Conc Corr. Factor: 1

Operator: BGT

Elem Cd
Units ppb
Avge 2.081
SDev .103
%RSD 4.952

#1 2.154
#2 2.008

Limit LC Pass
Upper 10.00
Lower -1.000

Method: CD Sample Name: 3214010D
Run Time: 06/24/94 12:51:06
Comment: DF=50
Mode: Conc Corr. Factor: 1

Operator: BGT

Elem Cd
Units ppb
Avge 2.132
SDev .011
%RSD .5381

RSD=NA

#1 2.124
#2 2.140

Limit LC Pass
Upper 10.00

BC-T
6/24/94 17
16

Lower -1.000

Method: CD Sample Name: 3214010S
Run Time: 06/24/94 12:55:08
Comment: DF=50
Mode: Conc Corr. Factor: 1

Operator: BGT

Elem Cd
Units ppb
Avge 2.438
SDev .070
%RSD 2.884

89.3%

#1 2.488
#2 2.388

Limit LC Pass
Upper 10.00
Lower -1.000

Method: CD Sample Name: 3214010SD
Run Time: 06/24/94 12:59:03
Comment: DF=50
Mode: Conc Corr. Factor: 1

Operator: BGT

Elem Cd
Units ppb
Avge 2.411
SDev .110
%RSD 4.553

82.5%

#1 2.334
#2 2.489

Limit LC Pass
Upper 10.00
Lower -1.000

Method: CD Sample Name: CCV 5
Run Time: 06/24/94 13:02:51
Comment:
Mode: Conc Corr. Factor: 1

Operator: BGT

Elem Cd
Units ppb
Avge 4.986
SDev .104
%RSD 2.077

#1 5.060
#2 4.913

Quality 99.7% OK
Standard 5.000

666

Range 10.0%

Method: CD Sample Name: CCB 5
Run Time: 06/24/94 13:06:44
Comment:
Mode: Conc Corr. Factor: 1

Operator: BGT

Elem	Cd
Units	ppb
Avge	.0283
SDev	.0091
%RSD	32.02

#1	.0219
#2	.0347

Limit	LC Pass
Upper	10.00
Lower	-1.000

Sample Name	File	Method	Date	Time	OnID	Type	Mode
1 S1	6394	HG	06/02/94	16:14		X	ABS/E
2 S0	6394	HG	06/03/94	16:16		X	ABS/E
3 S0	6394	HG	06/03/94	16:17		X	ABS/E
4 S0	6394	HG	06/03/94	16:19		X	ABS/E
5 S0	6394	HG	06/03/94	16:21		X	ABS/E
6 S0.5	6394	HG	06/03/94	16:22		X	ABS/E
7 S1	6394	HG	06/03/94	16:25		X	ABS/E
8 S5	6394	HG	06/03/94	16:27		X	ABS/E
9 S10	6394	HG	06/03/94	16:28		X	ABS/E
10 IGV	6394	HG	06/03/94	16:37	AGV	B	CONC
11 S0	6394	HG	06/03/94	17:04	AGV	B	ABS/E
12 S0	6394	HG	06/03/94	17:06	AGV	B	ABS/E
13 S5	6394	HG	06/03/94	17:08		X	ABS/E
14 IGV	6394	HG	06/03/94	17:12	AGV	B	CONC
15 ICB	6394	HG	06/03/94	17:13	AGV	S	CONC
16 PBS	6394	HG	06/03/94	17:15	AGV	S	CONC
17 LCSMS	6394	HG	06/03/94	17:17	AGV	S	CONC
18 LCSMSD	6394	HG	06/03/94	17:18	AGV	S	CONC
19 3210801	6394	HG	06/03/94	17:21	AGV	S	CONC
20 3216802	6394	HG	06/03/94	17:22	AGV	S	CONC
21 3216804	6394	HG	06/03/94	17:25	AGV	S	CONC
22 RINSE BLANK	6394	HG	06/03/94	17:40	AGV	S	CONC
23 RINSE BLANK	6394	HG	06/03/94	17:46	AGV	S	CONC
24 RINSE BLANK	6394	HG	06/03/94	18:23	AGV	S	CONC
25 3216810	6394	HG	06/03/94	18:25	AGV	S	CONC
26 CCV1	6394	HG	06/03/94	18:27	AGV	B	CONC
27 CCB1	6394	HG	06/03/94	18:51	AGV	S	CONC
28 3216810	6394	HG	06/03/94	18:52	AGV	S	CONC
29 3213105	6394	HG	06/03/94	18:55	AGV	S	CONC
30 3213105D	6394	HG	06/03/94	18:56	AGV	S	CONC
31 3213105S	6394	HG	06/03/94	18:58	AGV	S	CONC
32 3213105SD	6394	HG	06/03/94	18:59	AGV	S	CONC
33 3213901	6394	HG	06/03/94	19:04	AGV	S	CONC
34 3213901D	6394	HG	06/03/94	19:06	AGV	S	CONC
35 3213901S	6394	HG	06/03/94	19:07	AGV	S	CONC
36 3213901SD	6394	HG	06/03/94	19:08	AGV	S	CONC
37 CCV2	6394	HG	06/03/94	19:11	AGV	B	CONC
38 CCR2	6394	HG	06/03/94	19:14	AGV	S	CONC
39 3214005	6394	HG	06/03/94	19:15	AGV	S	CONC
40 RINSE BLANK	6394	HG	06/03/94	19:21	AGV	S	CONC
41 RINSE BLANK	6394	HG	06/03/94	19:24	AGV	S	CONC
42 RINSE BLANK	6394	HG	06/03/94	19:27	AGV	S	CONC
43 3214005D	6394	HG	06/03/94	19:29	AGV	S	CONC
44 3214005S	6394	HG	06/03/94	19:31	AGV	S	CONC
45 3214005SD	6394	HG	06/03/94	19:32	AGV	S	CONC
46 3214005SD	6394	HG	06/03/94	19:38	AGV	S	CONC
47 RINSE BLANK	6394	HG	06/03/94	19:44	AGV	S	CONC
48 CCV3	6394	HG	06/03/94	19:45	AGV	B	CONC
49 CCB3	6394	HG	06/03/94	19:55	AGV	S	CONC
50 3214010	6394	HG	06/03/94	19:57	AGV	S	CONC
51 RINSE BLANK	6394	HG	06/03/94	19:59	AGV	S	CONC
52 RINSE BLANK	6394	HG	06/03/94	20:00	AGV	S	CONC
53 RINSE BLANK	6394	HG	06/03/94	20:07	AGV	S	CONC

Sample Name	File	Method	Date	Time	CoID	Type	Mode
3214010	6394	HG	06/03/94	20:09	ABV	S	CONC
3214010D	6394	HG	06/03/94	20:10	ABV	S	CONC
3214010S	6394	HG	06/03/94	20:12	ABV	S	CONC
3214010SD	6394	HG	06/03/94	20:13	ABV	S	CONC
3214005	6394	HG	06/03/94	20:15	ABV	S	CONC
RINSE BLANK	6394	HG	06/03/94	20:17	ABV	S	CONC
CCV4	6394	HG	06/03/94	20:19	ABV	Q	CONC
CCB4	6394	HG	06/03/94	20:22	ABV	S	CONC
CCB4	6394	HG	06/03/94	20:55	ABV	S	CONC
3213672	6394	HG	06/03/94	21:04	ABV	S	CONC
RINSE BLANK	6394	HG	06/03/94	21:09	ABV	S	CONC
RINSE BLANK	6394	HG	06/03/94	21:11	ABV	S	CONC
RINSE BLANK	6394	HG	06/03/94	21:14	ABV	S	CONC
3213674	6394	HG	06/03/94	21:16	ABV	S	CONC
RINSE BLANK	6394	HG	06/03/94	21:21	ABV	S	CONC
3213675	6394	HG	06/03/94	21:23	ABV	S	CONC
RINSE	6394	HG	06/03/94	21:25	ABV	S	CONC
3213675	6394	HG	06/03/94	21:27	ABV	S	CONC
RINSE	6394	HG	06/03/94	21:32	ABV	S	CONC
CCV5	6394	HG	06/03/94	21:34	ABV	Q	CONC
CCV5	6394	HG	06/03/94	21:39	ABV	S	CONC
3213676	6394	HG	06/03/94	21:48	ABV	S	CONC
3213677	6394	HG	06/03/94	21:54	ABV	S	CONC
3213678	6394	HG	06/03/94	22:00	ABV	S	CONC
3213679	6394	HG	06/03/94	22:06	ABV	S	CONC
3213680	6394	HG	06/03/94	22:11	ABV	S	CONC
3213682	6394	HG	06/03/94	22:17	ABV	S	CONC
3213682	6394	HG	06/03/94	22:21	ABV	S	CONC
3213683	6394	HG	06/03/94	22:27	ABV	S	CONC
3213683	6394	HG	06/03/94	22:30	ABV	S	CONC
3213684	6394	HG	06/03/94	22:32	ABV	S	CONC
CCV6	6394	HG	06/03/94	22:34	ABV	Q	CONC
CCB6	6394	HG	06/03/94	22:39	ABV	S	CONC
CCB6	6394	HG	06/03/94	23:03	ABV	S	CONC
3213684	6394	HG	06/03/94	23:07	ABV	S	CONC
3213673	6394	HG	06/03/94	23:11	ABV	S	CONC
3213685	6394	HG	06/03/94	23:18	ABV	S	CONC
3213685	6394	HG	06/03/94	23:20	ABV	S	CONC
3213685	6394	HG	06/03/94	23:27	ABV	S	CONC
3213686	6394	HG	06/03/94	23:29	ABV	S	CONC
3213687	6394	HG	06/03/94	23:35	ABV	S	CONC
3213687	6394	HG	06/03/94	23:38	ABV	S	CONC
3213688	6394	HG	06/03/94	23:42	ABV	S	CONC
3213688	6394	HG	06/03/94	23:44	ABV	S	CONC
CCV7	6394	HG	06/03/94	23:49	ABV	Q	CONC
CCB7	6394	HG	06/03/94	23:56	ABV	S	CONC
3213689	6394	HG	06/03/94	23:58	ABV	S	CONC
3213689	6394	HG	06/03/94	23:59	ABV	S	CONC
3213695	6394	HG	06/04/94	00:04	ABV	S	CONC
3213695	6394	HG	06/04/94	00:12	ABV	S	CONC
RINSE	6394	HG	06/04/94	00:14	ABV	S	CONC
3216804	6394	HG	06/04/94	00:17	ABV	S	CONC
3216804	6394	HG	06/04/94	00:26	ABV	S	CONC
RINSE	6394	HG	06/04/94	00:31	ABV	S	CONC

668A

N	Sample Name	File	Method	Date	Time	OpID	Type	Mode
1	3216804	6394	HG	06/04/94	00:32	AGV	S	CONC
2	BLINSE BLANK	6394	HG	06/04/94	00:35	AGV	S	CONC
3	BLINSE BLANK	6394	HG	06/04/94	00:45	AGV	S	CONC
4	BLINSE BLANK	6394	HG	06/04/94	00:52	AGV	S	CONC
5	CCV8	6394	HG	06/04/94	00:53	AGV	Q	CONC
6	CCB8	6394	HG	06/04/94	01:16	AGV	S	CONC
7	3213810	6394	HG	06/04/94	01:19	AGV	S	CONC
8	CCV9	6394	HG	06/04/94	01:21	AGV	Q	CONC
9	CCB9	6394	HG	06/04/94	01:25	AGV	S	CONC
10	1	6394	HG	06/04/94	01:27	AGV	S	CONC
11	2	6394	HG	06/04/94	01:28	AGV	S	CONC
12	3	6394	HG	06/04/94	01:29	AGV	S	CONC
13	4	6394	HG	06/04/94	01:31	AGV	S	CONC
14	5	6394	HG	06/04/94	01:32	AGV	S	CONC
15	6	6394	HG	06/04/94	01:33	AGV	S	CONC
16	7	6394	HG	06/04/94	01:35	AGV	S	CONC

Sample Name	Hd	
1 S0	.21113	
2 S0	-.14313	
3 S0	-.04011	
4 S0	-.00917	
5 S0	-.00237	
6 S0.5	.01257	
7 S1	.02787	
8 S5	.11627	
9 S10	.28287	
10 ICV	06.249	
11 S0	.00102	
12 S0	.00034	
13 S5	.15741	
14 ICV	4.935	
15 ICB	.0731	
16 PBS	.0547	
17 LCSMS	.9121	
18 LCSMSD	.8806	
19 3210801	.0456	
20 3216802	4.851	
21 3216804	042.15	over cal. SWP 6/6/94
22 RINSE BLANK	1.941	
23 RINSE BLANK	1.224	
24 RINSE BLANK	.4437	
25 3216810	.4230	SWP 6/6/94
26 CCV1	5.055	
27 CCB1	.0916	
28 3216810 Df=2	.0547	
29 3213105	.2317	
30 3213105D	.2128	
31 3213105D	1.148	
32 3213105SD	1.137	
33 3213901	.1379	
34 3213901D	.0721	
35 3213901S	.9864	
36 3213901SD	.9757	
37 CCV2	4.737	
38 CCB2	.0456	
39 3214015	042.72	over cal. SWP 6/6/94
40 RINSE BLANK	.7146	
41 RINSE BLANK	.3754	
42 RINSE BLANK	.2034	
43 3214005D Df=100	6.323	
44 3214005S Df=100	6.337	
45 3214005SD	410.24	over cal. SWP 6/6/94
46 3214005SD Df=200	4.982	
47 RINSE BLANK	.1285	
48 CCV3	4.879	
49 CCB3	.1845	
50 3214010	022.51	over cal. SWP 6/6/94
51 RINSE BLANK	.5327	
52 RINSE BLANK	.2887	
53 RINSE BLANK	.1752	

Sample Name Hg

3214010	Df=100	.7242	
3214010D	Df=100	.6230	
3214010S	Df=100	.5535	
3214010SD	Df=100	.5829	
3214005	Df=100	5.959	
RINSE BLANK		.2034	
CCV4		4.926	
3213674		.2317	Swp 6/6/94
CCB4		.1472	
3213675		042.58	over Cal. Swp 6/6/94
RINSE BLANK		.8179	
RINSE BLANK		.4830	
RINSE BLANK		.2697	
3213674	Df=100	6.316	
RINSE BLANK		.1379	
3213675		512.85	Swp 6/6/94
RINSE		.1939	
3213675	Df=200	8.669	
RINSE		.1472	
CCV5		4.963	
CCV5		.1285	
3213676	Df=100	4.046	
3213677	Df=100	6.337	
3213678	Df=100	5.000	
3213679	Df=100	6.647	
3213680	Df=100	5.898	
3213682		5.281	Swp 6/6/94
3213682	Df=10	5.529	
3213683		.5235	Swp 6/6/94
3213683	Df=10	4.823	
3213684	Df=100	.5531	Swp 6/6/94
CCV6		4.832	
CCB6		.2411	Swp 6/6/94
CCB6		.1472	
3213684	Df=10	5.606	
3213673	Df=100	7.336	
3213685		.4240	Swp 6/6/94
3213685	Df=10	4.747	
3213686		.5525	Swp 6/6/94
3213686	Df=10	5.678	
3213687		.4535	Swp 6/6/94
3213687	Df=10	4.727	
3213688		.4535	Swp 6/6/94
3213688	Df=10	4.067	
CCV7		4.945	
CCB7		.1472	
3213689		.5527	Swp 6/6/94
3213689	Df=10	5.867	
3213695		315.30	Swp 6/6/94
3213695	Df=300	7.869	
RINSE		.2317	
3213684		512.63	over Cal. Swp 6/6/94
3213684		515.29	
RINSE		.3367	

Sample Name	Hg
8016504 OF-1500	4.380
RINSE BLANK	.3078
RINSE BLANK	.2697
RINSE BLANK	.2792
CCV8	5.145
CCB8	.1008
3212816 3216810 SUP 6/6/84	.1192
CCV9	4.889
CCB9	.0365
1	.8596
2	.7866
3	.8806
4	.8701
5	.8596
6	.7248
7	.7351

Oxidizer: Flame

Reagent: ULTRAPURE WATER

METHOD INFORMATION **

Default Setup:

Number of Repeats : 1
Flush Time (sec) : 0.0
Auto-Increment Sample Names? No

Auto-print Calibration Curves? : Yes
Analysis Graphics Display : Absorbances
Auto-print Analysis Graphics? : No
Auto-save Analysis Graphics? : No

Default File Names:

Analysis Data File : 6394	Sample Limits Table : HG
Autosampler Table : AUTOTAB	Blank (AZ) Limits Table : CCBQC
	QC Check Table : CCVQC
	Recovery Check Table : RECQC

OUTPUT INFORMATION **

Print Mode:	Concentration
Override Print Limits?	Yes
Override Significant Figures?	No
Limits Table: HG	Check? Yes
Correction Factor:	1

Auto-print data?	Yes
Condensed report format?	Yes
Auto-store data?	Yes
Store individual repeats?	No

Report to:

Screen	Avg, Stats, Reps, Checks, Units
Printer	Avg, Stats, Reps, Checks, Units

Element : Hg

Mode : Double Beam Absorption

Flame Type : Pop Height Integ Time : 25.0 Sec. Delay Time : 0.0 Sec.

Graph Scale: 0.50

Element : COLD VAPOR ATOMIC ABSORPTION

Flame Information:

Flame Type : Air/Acetylene

Oxidant Flow (SCFH) : 0.0

Fuel Flow (SCFH) : 0.0

Flame Type : Air/Acetylene

Element : Hg

Element Name : Hg

Wavelength : 253.70

Bandpass : 1.0

High Voltage : 530

RFB Method : None

Lamp Current : 3.0

Signif Figs : 4

Print Units : ppb

Print Limits Low : 10

Print Limits High : .2

Stdzn Method: Multipoint Stdn.		
Std Names	Std Conc	Abs.
#1: S0	= 0.00	= 0.0000
#2: S0.5	= 0.50	= 0.0088
#3: S1	= 1.00	= 0.0252
#4: S5	= 5.00	= 0.1261
#5: S10	= 10.00	= 0.2502

Stdzn Method: Standard Additions	
Addn Name	Std Addn
#1: ADD1	= 10.00
#2: ADD2	= 20.00
#3: ADD3	= 30.00

Method: HG

Standard: S0

Date: 06/03/94 04:14

Elem	Hg
Avg	.211
SD	.000
%RSD	.0000

#1 .211

Method: HG

Standard: S0

Date: 06/03/94 04:16

Elem	Hg
Avg	-.143
SD	.000
%RSD	.0000

#1 -.143

Method: HG

Standard: S0

Date: 06/03/94 04:17

Elem	Hg
Avg	-.040
SD	.000
%RSD	.0000

#1 -.040

Method: HG

Standard: S0

Date: 06/03/94 04:19

Elem	Hg
Avg	-.009
SD	.000
%RSD	.0000

#1 -.009

Method: HG

Standard: S0

Date: 06/03/94 04:21

Elem	Hg
Avg	-.002
SD	.000
%RSD	.0000

#1 -.002

Method: HG

Standard: S0.5

Date: 06/03/94 04:22

Elem	Hg
Avg	.013
SD	.000
%RSD	.0000

#1 .013

2

Method: HG Standard: S1 Date: 06/03/94 04:25

Elem Hg
Avg .028
SDev .000
VRSD .0000

#1 .028

Method: HG Standard: S5 Date: 06/03/94 04:27

Elem Hg
Avg .116
SDev .000
VRSD .0000

#1 .116

Method: HG Standard: S10 Date: 06/03/94 04:28

Elem Hg
Avg .283
SDev .000
VRSD .0000

1 .283

Method: HG Element: Hg Wavelength: 253.78 Element 1 of 1

Correlation Coefficient: .995995

Coefficients

a1 = .02836
a2 = -.002012 Abs : .021577
a3 = .0002 Conc : .80292

Fit Cubic

Date: 3 Jun 94 16:28

Slope corr.: 1

Standard:	S0	S0.5	S1	S5	S10
Absorbance:	0.0000	.01258	.02788	.11628	.28288
Known conc.:	0	.5	1	5	10
Calc. conc.:	0.0000	.457867	1.05362	4.98851	10.0016
Residual:	0.0000	-.042133	.053623	-.011487	.001632

Method: HG Sample Name: ICV
 Run Time: 06/03/94 15:37:00
 Comment:
 Code: Conc Corr. Factor: 1

Elem Hg
 Units ppb
 Ave 06.249
 SDev .000
 %RSD .0000

#1 06.249

Quality 125.0%HI
 Standard 5.000
 Range 20.0%

Method: HG Sample Name: SO Operator: AGV
 Run Time: 06/03/94 17:04:46
 Comment:
 Code: Abs/E1 Corr. Factor: 1

Elem Hg
 Ave .001
 SDev .000
 %RSD .0000

1 .001

Method: HG Sample Name: SO Operator: AGV
 Run Time: 06/03/94 17:06:11
 Comment:
 Code: Abs/E1 Corr. Factor: 1

Elem Hg
 Ave .000
 SDev .000
 %RSD .0000

#1 .000

Method: HG Standard: SS Date: 06/03/94 05:08

Elem Hg
 Ave .157
 SDev .000
 %RSD .0000

#1 .157

Method: HG Element: Hg Wavelength: 253.70 Element 1 of 1

4

Correlation Coefficient: .995995

Coefficients

a1 = .02836

a2 = -.002012 Abs : .021577

a3 = .0002 Conc : .607384

Fit Cubic

Date: 3 Jun 94 17:08

Slope corr.: 1.32193

Standard: S0	S0.5	S1	S5	S10
Absorbance: 0.0000	.01250	.02700	.11620	.20200
Known conc.: 0	.5	1	5	10
Calc. conc.: 0.0000	.457067	1.05362	4.90051	10.0016
Residual: 0.0000	-.042133	.053623	-.011487	.001632

Method: HG Sample Name: ICV

Operator: AGV

Run Time: 06/03/94 17:12:08

Comments:

Mode: Conc Corr. Factor: 1

em Hg
Units ppb
Avge 4.935
SDev .000
%RSD .0000

#1 4.935

Quality 98.7% OK

Standard 5.000

Range 20.0%

Method: HG Sample Name: ICB

Operator: AGV

Run Time: 06/03/94 17:13:49

Comments:

Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avge .0731
SDev .0000
%RSD .0000

#1 .0731

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: PBS
 Run Time: 05/03/94 17:15:55
 Comment:
 Code: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
 Units ppb
 Ave .0547
 SDev .0000
 %RSD .0000

#1 .0547

Limit LC Pass
 Upper 10.00
 Lower -.2000

Method: HG Sample Name: LCSMS
 Run Time: 06/03/94 17:17:11
 Comment:
 Code: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
 Units ppb
 Ave .9121
 SDev .0000
 %RSD .0000

#1 .9121

Limit LC Pass
 Upper 10.00
 Lower -.2000

Method: HG Sample Name: LCSMSD
 Run Time: 05/03/94 17:18:29
 Comment:
 Code: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
 Units ppb
 Ave .8806
 SDev .0000
 %RSD .0000

#1 .8806

Limit LC Pass
 Upper 10.00
 Lower -.2000

RPD = 3.5%

Method: HG

Sample Name: 3210801

Operator: AGV

678A
4867

6
Run Time: 06/03/94 17:21:04

Comment:

Method: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg .0456
SDev .0000
%RSD .0000

#1 .0456

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3216802

Run Time: 06/03/94 17:22:32

Comment:

Method: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avg 4.851
SDev .000
%RSD .0000

#1 4.851

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3216804

Run Time: 06/03/94 17:25:58

Comment:

Method: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avg 043.19
SDev .00
%RSD .0000

#1 043.19

Limit LC High
Upper 10.00
Lower -.2000

Method: HG Sample Name: RINSE BLANK

Run Time: 06/03/94 17:40:56

Comment:

Method: Conc Corr. Factor: 1

Operator: AGV

7

Elem Hg
Units ppb
Avg 1.941
SEv .000
SPSD .0000

#1 1.941

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: RINSE BLANK
Run Time: 06/03/94 17:46:16
Comment:
Mode: Conc Corr. Factor: 1

Operator: ABV

Elem Hg
Units ppb
Avg 1.224
SEv .000
SPSD .0000

#1 1.224

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: RINSE BLANK
Run Time: 06/03/94 18:23:46
Comment:
Mode: Conc Corr. Factor: 1

Operator: ABV

Elem Hg
Units ppb
Avg .4437
SEv .0000
SPSD .0000

#1 .4437

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3216810
Run Time: 06/03/94 18:25:27
Comment: 70 ML DIGESTATE DF=2
Mode: Conc Corr. Factor: 1

Operator: ABV

Elem Hg
Units ppb
Avg .4830

26-3-94

8

SDev .0000
%SD .0000
#1 .4230
Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: CCV1 Operator: AGV
Run Time: 06/03/94 18:27:23
Comment:
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg 5.055
SDev .000
%SD .0000

#1 5.055

Quality 101.1%OK
Standard 5.000
Range 20.0%

Method: HG Sample Name: CCB1 Operator: AGV
Run Time: 06/03/94 18:51:00
Comment:
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg .0916
SDev .0000
%SD .0000

#1 .0916

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3216810 Operator: AGV
Run Time: 06/03/94 18:52:59
Comment: 70ML DIGESTATE DF=2
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg .0547
SDev .0000
%SD .0000

9

11 .0547
LC Pass
10.00
-1.2000

Method: HG Sample Name: 3213105
Run Time: 06/03/94 18:55:40
Comment:
Mode: Conc Corr. Factor: 1

Operator: AGV

Item Hg
Units ppb
Avg 2317
SDev 0.0000
RPD 0.0000

#1 2317

Limit LC Pass
Upper 10.00
Lower -1.2000

Method: HG Sample Name: 3213105D
Run Time: 06/03/94 18:56:55
Comment:
Mode: Conc Corr. Factor: 1

Operator: AGV

Item Hg
Units ppb
Avg 2128
SDev 0.0000
RPD 0.0000

#1 2128

RPD = 8.5%

Limit LC Pass
Upper 10.00
Lower -1.2000

Method: HG Sample Name: 3213105D
Run Time: 06/03/94 19:58:23
Comment:
Mode: Conc Corr. Factor: 1

Operator: AGV

Item Hg
Units ppb
Avg 1.148
SDev 0.000
RPD 0.0000

#1 1.148

% Rec = 91.6%

Limit LC Pass

Upper 10.00
Lower -1.2000

Method: HG Sample Name: 2212105SD
Run Time: 06/03/94 18:59:59
Comment:
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avg 1.137
StDev .000
%RSD .0000

% Rec = 90.5%

#1 1.137

RPD = 1.2%

Limit LC Pass
Upper 10.00
Lower -1.2000

Method: HG Sample Name: 3213901
Run Time: 06/03/94 19:04:13
Comment:
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avg .1379
StDev .0000
%RSD .0000

#1 .1379

Limit LC Pass
Upper 10.00
Lower -1.2000

Method: HG Sample Name: 3213901D
Run Time: 06/03/94 19:06:02
Comment:
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avg .0731
StDev .0000
%RSD .0000

RPD = NA

#1 .0731

Limit LC Pass
Upper 10.00
Lower -1.2000

Method: HG Sample Name: 3213901E
 Run Time: 06/03/94 19:07:34
 Comment:
 Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
 Units ppb
 Ave .9864
 StDev .0000
 %RSD .0000

#1 .9864

Limit LC Pass
 Upper 10.00
 Lower -.2000

Method: HG Sample Name: 3213901SD
 Run Time: 06/03/94 19:08:57
 Comment:
 Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
 Units ppb
 Ave .9757
 StDev .0000
 %RSD .0000

#1 .9757

$RPD = 1.1\%$

Limit LC Pass
 Upper 10.00
 Lower -.2000

Method: HG Sample Name: CCB2
 Run Time: 06/03/94 19:11:17
 Comment:
 Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
 Units ppb
 Ave 4.737
 StDev .000
 %RSD .0000

#1 4.737

Quality 94.7% OK
 Standard 5.000
 Tge 20.0%

Method: HG Sample Name: CCB2

Operator: AGV

Run Time: 06/03/94 19:14:24
Comment:
Code: Conc Corr. Factor: 1

12

Elem Hg
Units ppb
Conc .0456
SDev .0000
MRSD .0000

#1 .0456

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3214005 Operator: AGV
Run Time: 06/03/94 19:16:24
Comment:
Code: Conc Corr. Factor: 1

Elem Hg
Units ppb
Conc 042.73
SDev .00
MRSD .0000

#1 042.73

Limit LC High
Upper 10.00
Lower -.2000

Method: HG Sample Name: RINSE BLANK Operator: AGV
Run Time: 06/03/94 19:21:34
Comment:
Code: Conc Corr. Factor: 1

Elem Hg
Units ppb
Conc .7146
SDev .0000
MRSD .0000

#1 .7146

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: RINSE BLANK Operator: AGV
Run Time: 06/03/94 19:24:07
Comment:
Code: Conc Corr. Factor: 1

over and over again AG 3.94

13

Elem Hg
Units ppb
Avg .3754
SD .0000
RPD .0000

#1 .3754

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: RINSE BLANK Operator: AGV
Run Time: 06/03/94 19:27:27
Comment:
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg .2034
SD .0000
RPD .0000

#1 .2034

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3214005D Operator: AGV
Run Time: 06/03/94 19:29:35
Comment: DF=100
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg 6.323
SD .000
RPD .0000

#1 6.323

Limit LC Pass
Upper 10.00
Lower -.2000

$63.23 \times 100 = 6323$
 632.3
 $\% RPD = 5.9\%$

Method: HG Sample Name: 3214005S Operator: AGV
Run Time: 06/03/94 19:31:11
Comment: DF=100
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg 6.337

$6.337 \times 100 = 633.7$
 $\% Rec = 3780.0\%$

Stdv .0000
 %RSD .0000
 0.337

Limit LC Pass
 Upper 10.00
 Lower -.2000

Method: HG Sample Name: 3214005SD Operator: AGV
 Run Time: 06/03/94 19:33:12
 Comment: DF=100
 Mode: Conc Corr. Factor: 1

Elem Hg
 Units ppb
 Avg H10.34
 SDev .00
 %RSD .0000

N 6.3.94

#1 H10.34

Limit LC High
 Upper 10.00
 Lower -.2000

Method: HG Sample Name: 3214005SD Operator: AGV
 Run Time: 06/03/94 19:38:26
 Comment: DF=200
 Mode: Conc Corr. Factor: 1

Elem Hg
 Units ppb
 Avg 4.982
 SDev .000
 %RSD .0000

x 200 = 997.0

#1 4.982

RPD = 44.6%

Limit LC Pass
 Upper 10.00
 Lower -.2000

Method: HG Sample Name: RINSE BLANK Operator: AGV
 Run Time: 06/03/94 19:44:00
 Comment:
 Mode: Conc Corr. Factor: 1

Elem Hg
 Units ppb
 Avg .1285
 SDev .0000
 %RSD .0000

N 6.3.94

15

11 .1235
LC Pass
10.00
-1.2000

Method: HG Sample Name: CCV3 Operator: AGV
Run Time: 06/02/94 19:45:15
Comment:
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg 4.879
StDev .000
%RSD .0000

#1 4.879

Quality 97.6% OK
Standard 5.000
Range 20.0%

Method: HG Sample Name: CCB3 Operator: AGV
Run Time: 06/02/94 19:55:26
Comment:
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg .1845
StDev .0000
%RSD .0000

#1 .1845

Limit LC Pass
Upper 10.00
Lower -1.2000

Method: HG Sample Name: 3214010 Operator: AGV
Run Time: 06/03/94 19:57:08
Comment:
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg 022.61
StDev .00
%RSD .0000

022.61

Limit LC High

Re-run at 6-3-94

Upper 10.00
Lower -.2000

Method: HG Sample Name: RINSE BLANK Operator: AGV
Run Time: 06/03/94 19:59:17
Comment:
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avge .5327
SDev .0000
%RSD .0000

#1 .5327

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: RINSE BLANK Operator: AGV
Run Time: 06/03/94 20:00:31
Comment:
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avge .2887
SDev .0000
%RSD .0000

#1 .2887

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: RINSE BLANK Operator: AGV
Run Time: 06/03/94 20:07:40
Comment:
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avge .1752
SDev .0000
%RSD .0000

#1 .1752

Limit LC Pass
Upper 10.00
Lower -.2000

6-3-94

Method: HG Sample Name: 3214010
Run Time: 06/03/94 20:09:23
Comment: DF=100
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avgc .7248 $\times 100 = 72.48$
SDev .0000
%RSD .0000

#1 .7248

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3214010D
Run Time: 06/03/94 20:10:47
Comment: DF=100
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avgc .6230 $\times 100 = 62.30$
SDev .0000
%RSD .0000

#1 .6230 $RPD = 15.1\%$

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3214010S
Run Time: 06/03/94 20:12:25
Comment: DF=100
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avgc .6635 $\times 100 = 66.35\%$
SDev .0000
%RSD .0000

#1 .6635 $\%Rec = 0$

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3214010SD

Operator: AGV

156

Run Time: 06/03/94 20:13:43
Comment: DF=100
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg .6839 $\times 100 = 68.39$
SDev .0000
RPD .0000

#1 .6839

$\% \text{ Rec} = 0$

Limit LC Pass
Upper 10.00
Lower -.2000

$\text{RPD} = 3.0\%$

Method: HG Sample Name: 3214005 Operator: AGV
Run Time: 06/03/94 20:15:01
Comment: DF=100
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg 5.959 $\times 100 = 595.9$
SDev .000
RPD .0000

#1 5.959

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: RINSE BLANK Operator: AGV
Run Time: 06/03/94 20:17:52
Comment:
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg .2034
SDev .0000
RPD .0000

#1 .2034

Limit LC Pass
Upper 10.00
Lower -.2000

AG-3-94

Method: HG Sample Name: CCV4 Operator: AGV
Run Time: 06/03/94 20:19:09
Comment:
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg 4.926
SDev .0000
%RSD .0000

#1 4.926

Quality 98.5% OK
Standard 5.000
Range 20.0%

Method: HG Sample Name: CCB4 Operator: AGV
Run Time: 06/03/94 20:22:17
Comment:
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg .2317
SDev .0000
%RSD .0000
#1 .2317

Limit LC Pass
Upper 10.00
Lower -.2000

carry over *AG-3.94*

Method: HG Sample Name: CCB4 Operator: AGV
Run Time: 06/03/94 20:55:34
Comment:
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg .1472
SDev .0000
%RSD .0000
#1 .1472

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3213673 Operator: AGV
Run Time: 06/03/94 21:04:05
Comment:
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg 042.68

AG-3.94

SDV .00
RSD .0000

042 68

Limit LC High
Upper 10.00
Lower -.2000

Method: HG Sample Name: RINSE BLANK
Run Time: 06/03/94 21:09:24
Comment:
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avg .8179
SDV .0000
RSD .0000

#1 .8179

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: RINSE BLANK
Run Time: 06/03/94 21:11:09
Comment:
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avg .4830
SDV .0000
RSD .0000

#1 .4830

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: RINSE BLANK
Run Time: 06/03/94 21:14:44
Comment:
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avg .2637
SDV .0000
RSD .0000

1 .2597
Unit LC Pass
Val 10.00
Dev -.2000

Method: HG Sample Name: 2213674 Operator: ABV
Run Time: 06/03/94 21:16:58
Comment: DF=100
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppt
Value 6.316 $\times 100 = 631.6$
CDev .000
%RSD .0000

1 6.316

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: RINSE BLANK Operator: ABV
Run Time: 06/03/94 21:21:35
Comment: DF=100
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Value .1379
CDev .0000
%RSD .0000

1 .1379

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 2213675 Operator: ABV
Run Time: 06/03/94 21:23:00
Comment: DF=100
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Value C12.88
CDev .00
%RSD .0000

1 C12.88

Limit LC High

Handwritten: 3.94

22

Upper 10.00
Lower -.2000

Method: HG Sample Name: RINSE
Run Time: 06/03/94 21:25:10
Comment: DF=100
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avg .1939
SD .0000
MSD .0000

#1 .1939

Limit LC Pass
Upper 10.00
Lower -.2000

AG-3.94

Method: HG Sample Name: 3213675
Run Time: 06/03/94 21:27:27
Comment: DF=200
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avg 8.669 $\times 200 = 1,733.80$
SD .000
MSD .0000

#1 8.669

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: RINSE
Run Time: 06/03/94 21:32:29
Comment:
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avg .1472
SD .0000
MSD .0000

#1 .1472

Limit LC Pass
Upper 10.00
Lower -.2000

AG-3.94

Method: HG Sample Name: CCV5
Run Time: 06/03/94 21:34:11
Comment:
Mode: Conc Corr. Factor: 1

Operator: ABV

Elem Hg
Units ppb
Avg 4.963
SDev .000
%RSD .0000

#1 4.963

Quality 99.3% OK
Standard 5.000
Range 20.0%

Method: HG Sample Name: CCV5
Run Time: 06/03/94 21:39:20
Comment:
Mode: Conc Corr. Factor: 1

Operator: ABV

Elem Hg
Units ppb
Avg .1285
SDev .0000
%RSD .0000

#1 .1285

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3213676
Run Time: 06/03/94 21:48:20
Comment: DF=100
Mode: Conc Corr. Factor: 1

Operator: ABV

Elem Hg
Units ppb
Avg 4.046 $\times 100 = 404.6$
SDev .000
%RSD .0000

#1 4.046

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3213677

Operator: ABV

24

Run Time: 06/03/94 21:54:33
Comment: DF=100
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Value 6.337 $\times 100 = 633.7$
SDev .000
RPD .0000

#1 6.337

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3213678 Operator: ASV
Run Time: 06/03/94 22:00:11
Comment: DF=100
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Value 5.000 $\times 100 = 500.0$
SDev .000
RPD .0000

#1 5.000

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3213679 Operator: ASV
Run Time: 06/03/94 22:06:22
Comment: DF=100
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Value 6.647 $\times 100 = 664.7$
SDev .000
RPD .0000

#1 6.647

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3213680 Operator: ASV
Run Time: 06/03/94 22:11:37
Comment: DF=100
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg 5.898 $\times 100 = 589.8$
SDev .0000
%RSD .0000

#1 5.898

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3213682 Operator: AGV
Run Time: 06/03/94 22:17:01
Comment: DF=100
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg .6331 $\times 100 = 63.31$
SDev .0000
%RSD .0000

#1 .6331

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3213682 Operator: AGV
Run Time: 06/02/94 22:21:36
Comment: DF=10
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg 5.589 $\times 10 = 55.89$
SDev .000
%RSD .0000

#1 5.589

RSD = 12.4%

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3213693 Operator: AGV
Run Time: 05/03/94 22:27:52
Comment: DF=100
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg .6230 $\times 100 = 62.30$

SDev .0000
SESD .0000

.6230

Unit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3213673 Operator: AGV
Run Time: 06/03/94 22:30:00
Comment: DF=10
Mode: Conc Corr. Factor: 1

7
46.3.94

Elem Hg
Units ppb
Avg 4.823 $\times 10 = 48.23$
SDev .000
SESD .0000

+1 4.823
 $RPD = 25\%$

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3213684 Operator: AGV
Run Time: 06/03/94 22:32:54
Comment: DF=100
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg .6331 $\times 100 = 63.31\%$
SDev .0000
SESD .0000

+1 .6331

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: CCV6 Operator: AGV
Run Time: 06/03/94 22:34:59
Comment:
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg 4.832
SDev .000
SESD .0000

11 4.832
Quality 96.6% OK
Standard 5.000
Range 20.0%

Method: HG Sample Name: CCB6 Operator: AGV
Run Time: 06/03/94 22:39:12
Comment: DF=100
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg .2411
SDev .0000
%RSD .0000

AG-3.94

11 .2411
Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: CCB6 Operator: AGV
Run Time: 06/03/94 23:03:18
Comment: DF=100
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg .1472
SDev .0000
%RSD .0000

11 .1472
Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3213684 Operator: AGV
Run Time: 06/03/94 23:07:02
Comment: DF=10
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg 5.606
SDev .000
%RSD .0000

x10 = 56.06

1 5.606
Limit LC Pass

RPD = 12.1%

Upper: 10.00
Lower: -1.2000

Method: HG Sample Name: 3213673
Run Time: 06/03/94 23:11:03
Comment: DF=100
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avg 7.336 $\times 100 = 733.6$
RDev .000
RPD .0000

#1 7.336

Limit LC Pass
Upper 10.00
Lower -1.2000

Method: HG Sample Name: 3213685
Run Time: 06/03/94 23:18:51
Comment: DF=100
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avg .4240 $\times 100 = 42.4\%$
RDev .0000
RPD .0000

#1 .4240

Limit LC Pass
Upper 10.00
Lower -1.2000

AGV 3.94

Method: HG Sample Name: 2213685
Run Time: 06/03/94 23:20:31
Comment: DF=10
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avg 4.747 $\times 10 = 47.45$
RDev .000
RPD .0000

#1 4.747

Limit LC Pass
Upper 10.00
Lower -1.2000

RPD = 11.3%

Method: HG Sample Name: 3213686
 Run Time: 06/03/94 23:27:31
 Comment: DF=100
 Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
 Units ppb
 Aveg .5626 $\times 100 = 56.26$
 SDev .0000
 %RSD .0000

#1 .5626

Limit LC Pass
 Upper 10.00
 Lower -.2000

Method: HG Sample Name: 3213686
 Run Time: 06/03/94 23:29:41
 Comment: DF=10
 Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
 Units ppb
 Aveg 5.678 $\times 10 = 56.78$
 SDev .000
 %RSD .0000

#1 5.678

RPD = 0.9%

Limit LC Pass
 Upper 10.00
 Lower -.2000

Method: HG Sample Name: 3213687
 Run Time: 06/03/94 23:35:43
 Comment: DF=100
 Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
 Units ppb
 Aveg .4339 $\times 100 = 43.39$
 SDev .0000
 %RSD .0000

#1 .4339

Limit LC Pass
 Upper 10.00
 Lower -.2000

Method: HG Sample Name: 3213687

Operator: AGV

Run Time: 06/03/94 23:39:18
 Comment: DF=10
 Mode: Conc Corr. Factor: 1

Elem Hg
 Units ppb
 Ave 4.727 $\times 10 = 47.27$
 SDev .000
 %RSD .0000

#1 4.727

Limit LC Pass
 Upper 10.00
 Lower -.2000

RPD = 8.6%

Method: HG Sample Name: 3213688 Operator: AGV
 Run Time: 06/03/94 23:42:45
 Comment: DF=100
 Mode: Conc Corr. Factor: 1

Elem Hg
 Units ppb
 Ave .4535 $\times 100 = 45.35$
 SDev .0000
 %RSD .0000

#1 .4535

Limit LC Pass
 Upper 10.00
 Lower -.2000

$\times 6 = 3.94$

Method: HG Sample Name: 3213688 Operator: AGV
 Run Time: 06/03/94 23:44:50
 Comment: DF=10
 Mode: Conc Corr. Factor: 1

Elem Hg
 Units ppb
 Ave 4.067 $\times 10 = 40.67$
 SDev .000
 %RSD .0000

#1 4.067

Limit LC Pass
 Upper 10.00
 Lower -.2000

RPD = 10.9%

Method: HG Sample Name: CCV7 Operator: AGV
 Run Time: 06/03/94 23:49:00
 Comment:
 Mode: Conc Corr. Factor: 1

Elem Hg
 Units ppb
 Ave 4.945
 SDev .000
 %RSD .0000

#1 4.945

Quality 98.9% OK
 Standard 5.000
 Range 20.0%

Method: HG Sample Name: CCB7 Operator: AGV
 Run Time: 06/03/94 23:56:03
 Comment: DF=10
 Mode: Conc Corr. Factor: 1

Elem Hg
 Units ppb
 Ave .1472
 SDev .0000
 %RSD .0000

#1 .1472

Limit LC Pass
 Upper 10.00
 Lower -.2000

Method: HG Sample Name: 3213689 Operator: AGV
 Run Time: 06/03/94 23:58:15
 Comment: DF=100
 Mode: Conc Corr. Factor: 1

Elem Hg
 Units ppb
 Ave .5827
 SDev .0000
 %RSD .0000

#1 .5827

Limit LC Pass
 Upper 10.00
 Lower -.2000

Handwritten:
 $4.945 \times 100 = 58.27$
 $\uparrow$
 $0.5827 \times 10 = 5.827$
 $RPD = 0.7\%$

Method: HG Sample Name: 3213689 Operator: AGV
 Run Time: 06/03/94 23:59:37
 Comment: DF=10
 Mode: Conc Corr. Factor: 1

Elem Hg
 Units ppb
 Ave 5.867

Handwritten:
 $5.867 \times 10 = 58.67$
 $RPD = 0.7\%$

Stdev .0000
%RSD .0000

5.867

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3213695 Operator: AGV
Run Time: 06/04/94 00:04:34
Comment: DF=100
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg 15.90
Stdev .00
%RSD .0000

#1 15.90

Limit LC High
Upper 10.00
Lower -.2000

AG-3.94

Method: HG Sample Name: 3213695 Operator: AGV
Run Time: 06/04/94 00:12:06
Comment: DF=300
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg 7.869
Stdev .0000
%RSD .0000

#1 7.869

Limit LC Pass
Upper 10.00
Lower -.2000

$7.869 \times 300 = 2360.7$

Method: HG Sample Name: RINSE Operator: AGV
Run Time: 06/04/94 00:14:31
Comment: DF=300
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg .2317
Stdev .0000
%RSD .0000

AG-3.94

33

#1 .2317

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3216804 Operator: AGV
Run Time: 06/04/94 00:17:29
Comment: DF=10
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg 042.63
SDev .00
%RSD .0000

#1 042.63

Limit LC High
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3216804 Operator: AGV
Run Time: 06/04/94 00:26:28
Comment: DF=300
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg 012.38
SDev .00
%RSD .0000

#1 012.38

Limit LC High
Upper 10.00
Lower -.2000

Method: HG Sample Name: RINSE Operator: AGV
Run Time: 06/04/94 00:31:10
Comment: DF=300
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg .3367
SDev .0000
%RSD .0000

1 .3367

Limit LC Pass

704K

Upper 10.00
Lower -0.2000

Method: HG Sample Name: 3215804 Operator: AGV
Time: 06/04/94 00:32:35
Comment: DF=1500
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg 4.380
SDev .000
%RSD .0000

$\times 1500 = 6,570$

#1 4.380

Limit LC Pass
Upper 10.00
Lower -0.2000

Method: HG Sample Name: RINSE BLANK Operator: AGV
Run Time: 06/04/94 00:35:11
Comment:
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg .3078
SDev .0000
%RSD .0000

#1 .3078

Limit LC Pass
Upper 10.00
Lower -0.2000

94

Method: HG Sample Name: RINSE BLANK Operator: AGV
Run Time: 06/04/94 00:45:28
Comment:
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg .2697
SDev .0000
%RSD .0000

#1 .2697

Limit LC Pass
Upper 10.00
Lower -0.2000

3.10

Method: HG Sample Name: DINSE BLANK
Run Time: 06/04/94 00:50:00
Comment:
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avg .2792
SDev .0000
%RSD .0000

#1 .2792

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: CCVB
Run Time: 06/04/94 00:53:42
Comment:
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avg 5.145
SDev .000
%RSD .0000

#1 5.145

Quality 102.9%OK
Standard 5.000
Range 20.0%

Method: HG Sample Name: CCB8
Run Time: 06/04/94 01:16:49
Comment:
Mode: Conc Corr. Factor: 1

Operator: AGV

Elem Hg
Units ppb
Avg .1008
SDev .0000
%RSD .0000

#1 .1008

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 3213810

Operator: AGV

36

Time: 06/04/94 01:18:07
Comment:
Mode: Conc Corr. Factor: 1

Item	Hg
Units	ppb
Age	1192
SLov	.0000
SPSD	.0000
#1	1192
Limit	LC Pass
Upper	10.00
Lower	-1.2000

Method: HG Sample Name: CCV9 Operator: AGV
Run Time: 06/04/94 01:21:41
Comment:
Mode: Conc Corr. Factor: 1

Item	Hg
Units	ppb
Age	4.889
SLov	.000
SPSD	.0000
#1	4.889
Quality	97.8% OK
Standard	5.000
Range	20.0%

Method: HG Sample Name: CCB9 Operator: AGV
Run Time: 06/04/94 01:25:26
Comment:
Mode: Conc Corr. Factor: 1

Item	Hg
Units	ppb
Age	.0365
SLov	.0000
SPSD	.0000
#1	.0365
Limit	LC Pass
Upper	10.00
Lower	-1.2000

Method: HG Sample Name: 1 Operator: AGV
Run Time: 06/04/94 01:27:16
Comment: IDL
Mode: Conc Corr. Factor: 1

57

Method: HG
 Units: ppb
 Ave: .8596
 StDev: .0000
 MSD: .0000

Limit: LC Pass
 Upper: 10.00
 Lower: -.2000

Method: HG Sample Name: 2 Operator: AGV
 Run Time: 06/04/94 01:28:28
 Comment: IDL
 Mode: Conc Corr. Factor: 1

Method: HG
 Units: ppb
 Ave: .7866
 StDev: .0000
 MSD: .0000

Limit: LC Pass
 Upper: 10.00
 Lower: -.2000

Method: HG Sample Name: 3 Operator: AGV
 Run Time: 06/04/94 01:29:52
 Comment: IDL
 Mode: Conc Corr. Factor: 1

Method: HG
 Units: ppb
 Ave: .8806
 StDev: .0000
 MSD: .0000

Limit: LC Pass
 Upper: 10.00
 Lower: -.2000

Method: HG Sample Name: 4 Operator: AGV
 Run Time: 06/04/94 01:31:05
 Comment: IDL
 Mode: Conc Corr. Factor: 1

Units: ppb
 Ave: .8701

38

StDev .00000
%RSD .00000

 .3701

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 5 Operator: AGV
Run Time: 06/04/94 01:32:24
Comment: IDL
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg .8596
StDev .00000
%RSD .00000

#1 .8596

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 6 Operator: AGV
Run Time: 06/04/94 01:33:51
Comment: IDL
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg .7248
StDev .00000
%RSD .00000

#1 .7248

Limit LC Pass
Upper 10.00
Lower -.2000

Method: HG Sample Name: 7 Operator: AGV
Run Time: 06/04/94 01:35:14
Comment: IDL
Mode: Conc Corr. Factor: 1

Elem Hg
Units ppb
Avg .7351
StDev .00000
%RSD .00000

39

"1 .7351
mit LC Pass
21 10.00
25. -2000

LSDG:	Matrix	Method
31928	Water (1)	3010
31982	water (1)	3010
32136	leachate (16) + QC	3010
32140	leachate (2) + QC	3010

Spiked Sample	Spike Solution	mls added	Spike Solution ID# *
—	—	—	—
—	—	—	—
—	—	—	—
DN109	812846	0.5mls	S-I-ME-4-165

S-I-ME-4-164

SAMPLE	Initial pH**	Initial Wt/Vol (g)(ml)	Final Volume (ml)	Before		Texture	Artifacts (v/n)	After	
				Color	Clarity			Color	Clarity
PBW	n/a	50ml	50ml	colorless	clear	n/a	no	colorless	clear
LCSMS	1								
LCSMSD	1								
31928-5	1.2							yellow	
31982-14	1								
32136-55				yellow					
-56				yellow					
-57									
-58									
-59									
-60									
-61									
-62									
-64									
-65									
-66				yellow					
-67									
-68									

COMMENTS

Spike Solutions

Sn spike = 100 ppm S-I-ME-4-261 6/23/94 JBA	CLP***	SW 846***
	200 ppm Al, As, Ba, Se	100 ppm Ag, Al, As, B, Ba, Be,
	100 ppm Fe, Li*, Mo*	Cs, Cd, Cr, Co, Cu, Fe,
	50 ppm Sb, Co, Pb, Mn, Ni, V, Zn	Mg, Mn, Mo, Pb, Sb, Se,
	25 ppm Cu	Ti, Ti, V, Zn,
	20 ppm Cr	50 ppm Si
	5.0 ppm Be, Cd, Ag	1000 ppm K

- If separate spike solution for Li and Mo, note in Comments Section.
- ** Initial pH must be less than 2 for preserved samples.
- *** Enter in Comments Section, all elements/concentrations not listed.

Analyst: JBA
 Date: 6/23/94
 DIGICP02.XLS Rev02 (8/92)

Reviewer: SWP
 Date: 6/23/94

LSDG:	Matrix	Method
32140	Leachate	3010
31928	Water	1
31928	Water	1
32136	Leachate	1

Spiked Sample	Spike Solution	mls added	Spike Solution ID#
6/23/94			
JOA		SEE PAGE #4.	

SAMPLE	Initial pH**	Initial Wt/Vol (g)(ml)	Final Volume (ml)	Before		Texture	Artifacts (y/n)	After	
				Color	Clarity			Color	Clarity
32136-69	~2	50ml	50ml	yellow	clear	nla	no	yellow	clear
↓ -70				↓	↓				
↓ -71				yellow	clear				
32140-04				↓	↓				
32140-04 MS				↓	↓				
32140-04 MSD				↓	↓				
32140-09				yellow					
32140-09 MS				↓	↓				
32140-09 MSD				↓	↓				
Q1452426				colorless				colorless	
Q1452426 BS				↓	↓				
Q1452426 BSD				↓	↓				
Q1452409				colorless	clear				
↓ BS				↓	↓				
↓ BSD				↓	↓				
6/23/94									
Q3A									
COMMENTS				Spike Solutions					
6/23/94				CLP***			SW 846***		
				200 ppm Al, As, Ba, Se			100 ppm Ag, Al, As, B, Ba, Be,		
				100 ppm Fe, Li*, Mo*			Ca, Cd, Cr, Co, Cu, Fe, *		
				50 ppm Sb, Co, Pb, Mn, Ni, V, Zn			Mg, Mn, Mo, Pb, Sb, Se,		
				25 ppm Cu			Ti, Ti, V, Zn,		
				20 ppm Cr			50 ppm Si		
Q3A				5.0 ppm Be, Cd, Ag			1000 ppm K		

- If separate spike solution for Li and Mo, note in Comments Section.
- Initial pH must be less than 2 for preserved samples.
- Enter in Comments Section, all elements/concentrations not listed.

Analyst: 137
Date: 10/23/94
DIGICP02.XLS Rev02 (8/92)

Reviewer: Sup
Date: 10/23/94

Page 2 of 2

Spiked Sample	mLs Added	Spiked Solution ID#
0.5, 10	0.5mLs	S-G-ME-4
11/22/94		
JSK		

SAMPLE	Initial pH	Initial Wt/Vol (g)(ml)	Final Volume (ml)	Before		Texture	Attracts (y/n)	After	
				Color	Clarity			Color	Clarity
3213695	n/a	0.5194	50mL	brown	n/a	med	no	yellow	clear
3214005		0.5193				coarse	yes		
05D		0.5425							
05s		0.5116							
05SD		0.5240							
10		0.5233				Fine	no		
10D		0.5125							
10S		0.5106							
10SD		0.5199							
<div style="position: relative; height: 100px;"> 6/23/94 W32 </div>									

COMMENTS

- Spike Solution Concentration: As: 4ppm; Se: 1ppm; Pb: 2ppm; TI: 5ppm (notate other elements).
- Initial pH must be less than 2 for preserved samples.

Analyst:

Date:

JBA

10/22/94

Reviewer:

2148

Date:

10 (23/9)

DIGGFA02.XLS

Rev02 (8/92)

Page 2 of 2

AB-013

LSDG:	Matrix:	Method:
32140	SOIL	3050
32136	L	L
6/22/94		
JBA		

Spiked Sample	mls added	Spike Solution ID#
D5,10	0.5mls	S-G-ME-4-
6/22/94		
JBA		

SAMPLE	Initial pH**	Initial Wt/Vol (g/ml)	Final Volume (ml)	Before		Texture	Artifacts (Y/N)	After	
				Color	Clarity			Color	Clarity
PBS	n/a	0.5000g	50ml	Colorless	clear	n/a	n/a	Colorless	clear
LCSMS		0.5000g		L	L	L	L	L	L
LCSMSD		0.5000g		L	L	L	L	L	L
32136-753		0.5000g		brown	n/a	coarse	yes	yellow	
74		0.5214		grey					
75		0.5343		brown					
76		0.5168		L					
77		0.5290		L					
78		0.5285		grey					
79		0.5208		L					
80		0.5372		L					
82		0.5209		brown		Fine	no		
83		0.5331							
84		0.5000g							
85		0.5000g							
86		0.5000g							
87		0.5169							
88		0.5018							
89		0.5047							

COMMENTS

Cd spike = 2ppm S-G-ME-4-261, artifacts = rocks, roots

6/22/94

JBA

- * Spike Solution Concentration: As: 4ppm; Se: 1ppm; Pb: 2ppm; Tl: 5ppm (note other elements).
- ** Initial pH must be less than 2 for preserved samples.

Analyst:
Date:

JBA
6/22/94

Reviewer:
Date:

Sur
6/23/94

LSDG:	Matrix	Protocol
32146	<i>Soil</i>	<i>SW846</i>
32136		
32168		
32108		
32131		
32139	<i>Soil</i>	<i>SW846</i>

Water Bath Temperature	
Before	<i>95°</i>
After	<i>95°</i>

STANDARD	ID#
ICV	<i>S.C.Hg. 4.907</i>
*Spike	<i>S.C.Hg. 4.908</i>
LCSMS	
LCSMSD	

- Spike Preparation: add 1ml of 100 ppb spiking solution to 100 ml final volume. Final concentration = 1ppb.

SAMPLE	Initial pH**	Initial Wt/Vol (g)(ml)	Final Volume (ml)	Before		Texture	Artifacts (y/n)	After	
				Color	Clarity			Color	Clarity
LCSMS A	NA	0.20g	100ml	SEE ICP DIGESTION SHEET				colorless	clear
LCSMSDA									
LCSMSB									
LCSMSDB									
PBSA									
PBSB									
3213901									
01D									
015									
015D		0.21g							
3210801		0.25g						Brown	cloudy
3214005		0.23g							
05D									
055									
055D									
10		0.25g							
10D		0.23g							

COMMENTS

no problems

** Initial pH must be less than 2 for preserved samples.

Analyst:

Date:

DIGCVA02.XLS

Rev02 (8/92)

Reviewer:

Date:

Page *1* of *3*
7.5

LSDG:	Matrix	Protocol
32H0	Soil	SW846
32136		
32168		
32108		

32131 & 32139	Soil	SW846
Water Bath Temperature		
Before	950	
After	950	

STANDARD	ID#
ICV	94
*Spike	
LCSMS	
LCSMSD	

- Spike Preparation: add 1ml of 100 ppb spiking solution to 100 ml final volume. Final concentration = 1ppb.

SAMPLE	Initial pH**	Initial Wt/Vol (g)(ml)	Final Volume (ml)	Before		Texture	Artifacts (y/n)	After	
				Color	Clarity			Color	Clarity
32140 105	NA	0.25	100ml	SEE ICP DIGESTION SHEET				Brown	cloudy
1050		0.25							
32131 05		0.24							
050		0.25							
055		0.22							
0550		0.21							
3216802		0.20						Yellow	
04		0.22						Brown	
10		0.23						Yellow	
32136 73		0.20						Brown	
74		0.21							
75		0.21							
76		0.22							
77		0.25							
78		0.21							
79		0.21							
80		0.25							

COMMENTS

* Initial pH must be less than 2 for preserved samples.

Analyst:

Date:

Mark
6-3-94

Reviewer:

Date:

JWP
6/6/94

LSDG:	Matrix	Protocol
32140	Soil	SW846
32136		
32168		
32108		

32131 & 32139 Soil 3W846

Water Bath Temperature	
Before	95°
After	95°

STANDARD	ID#
ICV	
*Spike	
LCSMS	
LCSMSD	

* Spike Preparation: add 1ml of 100 ppb spiking solution to 100 ml final volume.
Final concentration = 1ppb.

SAMPLE	Initial pH**	Initial Wt/Vol (g)(ml)	Final Volume (ml)	Before		Texture	Artifacts (y/n)	After	
				Color	Clarity			Color	Clarity
3218682	NA	0.22g	100ml	SEE ICD DIGESTION SHEET				Brown	cloudy
83		0.21							
84		0.23							
85		0.20							
86		0.25							
87		0.20							
88		0.21							
89		0.26							
95		0.20							
32168034	NA	0.22							
3216810		0.23							
32140085		0.23							
3214010		0.25						yellow	
3213673		0.20g						Brown	

COMMENTS

** Initial pH must be less than 2 for preserved samples.

Analyst: Wick
Date: 6-3-94

Reviewer: Sup
Date: 6/6/94

LSDG:	Matrix	Protocol
31860	leachate	SW846
32090		
32118	water	
32122	leachate	
32048	leachate	SW846

Water Bath Temperature Celsius	
Before	95°
After	95°

STANDARD	ID#
ICV	S.C. 11g. 4. 901
*Spike	S.C. 11g. 4. 902
LCS	

- Spike Preparation: add 1ml of 100 ppb spiking solution to 100 ml final volume. Final concentration = 1ppb.

SAMPLE	Initial pH**	Initial Wt/Vol (g)(ml)	Final Volume (ml)	Before		Texture	Artifacts (y/n)	After	
				Color	Clarity			Color	Clarity
PBU	NA	100ml	100ml	See ICP DIGESTION LOG				colorless	clear
ALSMS									
ALSMO									
3186002	L2								
3209003		20ml							
09								white	cloudy
32118 01		100ml						colorless	clear
010									
015									
015D									
04									
07									
10									
13									
16									
3212201									
02									

COMMENTS

- Initial pH must be less than 2 for preserved samples.

Analyst:

Date:

DIGCVA02.XLS

Rev02 (8/92)

Reviewer:

Date:

Page

1 of 2
75.8

LSDG:	Matrix	Protocol
31860	leachate	SW846
32090	d	
32118	water	
32122	leachate	
32098	leachate	SW846

Water Bath Temperature	
Before	85°
After	85°

STANDARD	ID#
ICV	
*Spike	
LCSMS	
LCSMSD	

- Spike Preparation: add 1ml of 100 ppb spiking solution to 100 ml final volume. Final concentration = 1ppb.

SAMPLE	Initial pH**	Initial Wt/Vol (g)(ml)	Final Volume (ml)	Before		Texture	Artifacts (y/n)	After	
				Color	Clarity			Color	Clarity
3 212203	L2	50mM	100mL	SEE ICP DIG SHEET				colorless	clear
030		┃	┃	┃	┃	┃	┃	┃	┃
035		┃	┃	┃	┃	┃	┃	┃	┃
03ms		2mL	┃	┃	┃	┃	┃	┃	┃
03msD		┃	┃	┃	┃	┃	┃	┃	┃
04		100mL	┃	┃	┃	┃	┃	┃	┃
3 214004		┃	┃	┃	┃	┃	┃	┃	┃
0405		2mL	┃	┃	┃	┃	┃	┃	┃
0405D		┃	┃	┃	┃	┃	┃	┃	┃
09		100mL	┃	┃	┃	┃	┃	┃	┃
09ms		2mL	┃	┃	┃	┃	┃	┃	┃
09msD		2mL	┃	┃	┃	┃	┃	┃	┃
3204807		2mL	┃	┃	┃	┃	┃	┃	┃
Q1452017		100mL	┃	┃	┃	┃	┃	┃	┃
Q1452017AS		2mL	┃	┃	┃	┃	┃	┃	┃
Q1452017ASD		2mL	┃	┃	┃	┃	┃	┃	┃
Q1451622		100mL	┃	┃	┃	┃	┃	┃	┃

COMMENTS

Q145162205 <2 2ml 100ml SEE ICP DIG SHEET colorless clear
 Q1451622ASD <2 2ml 100ml

* Initial pH must be less than 2 for preserved samples.

Analyst:

Date:

DIGCVA02.XLS

Rev02 (8/92) 5-31-94

Reviewer:

Date:

Page 2 of 2

Control Chart for Mercury by Method 7470/7471

Warning Limits 13.87%, Control Limits 20.80%

Control Chart for Arsenic by Method 7060

Control Chart for Week of 24 June 1994

Control Chart for Cadmium by Method 6010

Warning Limits 0.113 mg/l, Control Limits 0.169 mg/l

Uranium

LSDG: 32140

June 30, 1994

Mr. Doug Davis
Nuclear Fuel Services, Inc.
1205 Banner Hill Road
Erwin, TN 37650

Dear Mr. Davis:

Enclosed along with this letter are the partial results for the sample(s) received May 17, 1994. The Radiochemical and Semivolatile results will follow July 5, 1994.

Please contact Craig Johnson at (404)244-0827 if you have any questions. Also, please refer to Batch ID 32136 in future correspondence.

Sincerely,

ECOTEK LABORATORY SERVICES, INC.

Craig Johnson
Senior Project Manager

Enclosures.
CCJ/crb

June 30, 1994

Mr. Doug Davis
Nuclear Fuel Services, Inc.
1205 Banner Hill Road
Erwin, TN 37650

Dear Mr. Davis:

Enclosed along with this letter are the Radiochemical and Semivolatile results for the sample(s) received May 17, 1994.

Please contact Craig Johnson at (404)244-0827 if you have any questions. Also, please refer to Batch ID 32136 in future correspondence.

Sincerely,

ECOTEK LABORATORY SERVICES, INC.

Craig Johnson
Senior Project Manager

Enclosures.
CCJ/crb

June 30, 1994

Mr. Doug Davis
Nuclear Fuel Services, Inc.
1205 Banner Hill Road
Erwin, TN 37650

Dear Mr. Davis:

Enclosed along with this letter are the partial results for the sample(s) received May 17, 1994. The radiochemical results will be sent July 5, 1994.

Please contact Craig Johnson at (404)244-0827 if you have any questions. Also, please refer to Batch ID 32140 in future correspondence.

Sincerely,

ECOTEK LABORATORY SERVICES, INC.

Craig Johnson
Senior Project Manager

Enclosures.
CCJ/crb

June 30, 1994

Mr. Doug Davis
Nuclear Fuel Services, Inc.
1205 Banner Hill Road
Erwin, TN 37650

Dear Mr. Davis:

Enclosed along with this letter are the Radiochemical results for the sample(s) received May 17, 1994.

Please contact Craig Johnson at (404)244-0827 if you have any questions. Also, please refer to Batch ID 32140 in future correspondence.

Sincerely,

ECOTEK LABORATORY SERVICES, INC.

Craig Johnson
Senior Project Manager

Enclosures.
CCJ/crb

ECOTEK LSI'S FLAG DEFINITION LIST

B	This flag is used when the analyte is found in the blank.
C	See case narrative for further explanation.
D	Surrogate diluted out.
E	Analyte exceeds the calibration range.
EICP	Determination of the presence of this analyte is based upon the presence of a peak, searched for utilizing extracted ion current profiles, with a spectrum matching the NBS library reference spectrum for this analyte.
J	Indicates an estimated value.
M	Target MDA not achieved
N	The sample matrix spike's percent recovery was outside of the 75 - 125% control limits.
NA	Not Applicable
ND	Not Detected
P	Preliminary Data
*	The sample matrix duplicate's relative percent difference, RPD, was above the 0 - 20% control limits.
***	Surrogate recovery outside QC limits.

CASE NARRATIVE FOR
TOTAL URANIUM ANALYSIS by LASER PHOSPHORIMETRY

Client: Nuclear Fuel Services, Inc.

Project ID: LEFPC

Batch ID: 32136

Analytical Summary

Sixteen (16) soil samples were received on May 17, 1994 for total uranium analysis. The soil samples were batched with samples of like matrix (Batch ID No. 32140) and analyzed on June 29, 1994.

Procedural Summary

- **Analysis** - The sample aliquot is digested and filtered to remove any suspended interferences that may be present in the samples. The uranium in the prepared sample is analyzed with a kinetic phosphorescence analyzer. The KPA-11 uses a pulsed laser to phosphoresce the uranium in the sample. The phosphorescence is received by the detector and, over a series of time gates, a decay curve is generated. A linear regression is performed on the data and the uranium concentration is determined. The activity reported as picocuries (pCi) per unit mass (volume) is computed based on the natural U-238 abundance using a value of 0.68 pCi/microgram (ug) equivalent as a multiplier of the sample concentration adjusted to similar units. Prior to sample analysis, several NIST traceable standards are analyzed to determine the linearity of the instrument. The Minimum Detectable Concentration (MDC) is equal to that of the lowest concentration standard.
- **Scope and Limitations** - The Minimum Detectable Activity (MDA) is calculated based on the MDC. If sample concentrations are outside the concentration range of the standards analyzed to produce the calibration curve, R^2 and intensity criteria are inspected to demonstrate linear response is maintained.

QA/QC Summary

A method blank, duplicate method spikes and a duplicate of sample 32136-89 (Client ID No. 1661B-203) were also analyzed.

CASE NARRATIVE FOR
TOTAL URANIUM ANALYSIS by LASER PHOSPHORIMETRY (cont.)

Client: Nuclear Fuel Services, Inc.
Project ID: LEFPC
Batch ID: 32136

The total uranium detected in the method blank was less than 10% of the total uranium detected in the samples, which was acceptable. The method spike recoveries were 111% and 102% with a duplicate Relative Percent Difference (RPD) of 8%. The sample duplicate RPD was 1%, which was within the laboratory control limit of 50%.

General Discussion

There were no significant observations outside the scope of the analysis.

Joseph M. Rubtsov
Section Supervisor or designee

7/5/98
Date

NATURAL URANIUM

Client: Nuclear Fuel Services, Inc.

Client Reference No.: LEFPC

LSDG: 32136

Date Received: 5/17/94

Method: RL-2323

Lab Sample ID	Client Sample ID	Date Analyzed	Analyte	Matrix	Units	Result	2 Sigma Error	Detection Limit	Qualifier
32136-73	1661B-72	6/29/94	U-NAT	Soil	pCi/g	2.37E+01	7.55E-01	6.13E-02	
32136-74	1661B-97	6/29/94	U-NAT	Soil	pCi/g	3.34E+01	4.44E-01	6.07E-01	
32136-75	1661B-106	6/29/94	U-NAT	Soil	pCi/g	3.13E+01	4.15E-01	6.07E-01	
32136-76	1661B-112	6/29/94	U-NAT	Soil	pCi/g	4.18E+01	5.59E-01	6.07E-01	
32136-77	1661B-116	6/29/94	U-NAT	Soil	pCi/g	3.85E+01	5.13E-01	6.07E-01	
32136-78	1661B-122	6/29/94	U-NAT	Soil	pCi/g	3.64E+01	4.90E-01	6.07E-01	
32136-79	1661B-126	6/29/94	U-NAT	Soil	pCi/g	3.85E+01	5.21E-01	6.07E-01	
32136-80	1661B-133	6/29/94	U-NAT	Soil	pCi/g	3.90E+01	5.18E-01	6.02E-01	
32136-82	1661B-149	6/29/94	U-NAT	Soil	pCi/g	3.52E+01	4.70E-01	6.24E-01	
32136-83	1661B-157	6/29/94	U-NAT	Soil	pCi/g	4.03E+01	5.45E-01	6.24E-01	
32136-84	1661B-163	6/29/94	U-NAT	Soil	pCi/g	3.52E+01	4.71E-01	6.30E-01	
32136-85	1661B-171	6/29/94	U-NAT	Soil	pCi/g	3.52E+01	4.69E-01	6.30E-01	
32136-86	1661B-179	6/29/94	U-NAT	Soil	pCi/g	3.76E+01	5.04E-01	6.30E-01	
32136-87	1661B-189	6/29/94	U-NAT	Soil	pCi/g	3.88E+01	5.16E-01	6.30E-01	
32136-88	1661B-195	6/29/94	U-NAT	Soil	pCi/g	3.70E+01	5.03E-01	6.36E-01	
32136-89	1661B-203	6/29/94	U-NAT	Soil	pCi/g	3.90E+01	5.23E-01	6.30E-01	

ND = Not Detected Above MDA

NA = Not Applicable

EcoTek Laboratory Services Inc.

3342 International Park Drive, SE
Atlanta, GA 30316
(404)244-0827 Fax (404)243-5355

Q C INFORMATION

LSDG # 32136/32140
BATCH ID W1133

ANALYSIS Total U

No of Samples in Batch 18

DATE 6/30/94

SPIKE RECOVERY

Spike 1.00E+03 ng
Spike 1.00E+03 ng

Results Spike - A 1.11E+03 ng
Results Spike - B 1.02E+03 ng

SPIKE A (NAT U)

$$\text{SPIKE \% RECOVERY} = \left(\frac{1.11\text{E}+03 \text{ ng}}{1.00\text{E}+03 \text{ ng}} \right) * (100) = 111 \quad (75 - 125)$$

SPIKE B (NAT U)

$$\text{SPIKE \% RECOVERY} = \left(\frac{1.02\text{E}+03 \text{ ng}}{1.00\text{E}+03 \text{ ng}} \right) * (100) = 102 \quad (75 - 125)$$

SPIKE DUPLICATE REPRODUCIBILITY

Sample 1.11E+03 ng/spike
Sample Dup 1.02E+03 ng/spike
Dup Sample (ave) 1.07E+03 ng/spike

SAMPLE NO. SPIKE A
SAMPLE NO. SPIKE B

$$\text{DUPLICATE RPD} = \text{ABS} \left| \frac{1.11\text{E}+03 - 1.02\text{E}+03}{1.07\text{E}+03 \text{ (ave)}} \right| * 100 = 8 \quad (50\% \text{ max})$$

EcoTek Laboratory Services Inc.

3342 International Park Drive, SE
Atlanta, GA 30316
(404)244-0827 Fax (404)243-5355

Q C INFORMATION

LSDG # 32136/32140
BATCH ID W1133

ANALYSIS Total U

No of Samples in Batch 18

DATE 6/30/94

SAMPLE DUPLICATE REPRODUCIBILITY

Sample 5.73E+04 ng/g
Sample Dup 5.67E+04 ng/g
Dup Sample (ave) 5.70E+04 ng/g

SAMPLE NO. 32136-89A

SAMPLE NO. 32136-89B

DUPLICATE RPD = ABS
$$\frac{5.73E+04 - 5.67E+04}{5.70E+04 \text{ (ave)}} * 100 = 1 \quad (50\% \text{ max})$$

BLANK RESULTS

BLANK IS LESS THAN 10% OF SAMPLE ACTIVITIES

ACCEPTABLE

0
57

CASE NARRATIVE FOR
TOTAL URANIUM ANALYSIS by LASER PHOSPHORIMETRY

Client: Nuclear Fuel Services, Inc.

Project ID: LEFPC

Batch ID: 32140

Analytical Summary

Two (2) soil samples were received on May 17, 1994 for total uranium analysis. The soil samples were batched with samples of like matrix (Batch ID No. 32136) and analyzed on June 29, 1994.

Procedural Summary

- **Analysis** - The sample aliquot is digested and filtered to remove any suspended interferences that may be present in the samples. The uranium in the prepared sample is analyzed with a kinetic phosphorescence analyzer. The KPA-11 uses a pulsed laser to phosphoresce the uranium in the sample. The phosphorescence is received by the detector and, over a series of time gates, a decay curve is generated. A linear regression is performed on the data and the uranium concentration is determined. The activity reported as picocuries (pCi) per unit mass (volume) is computed based on the natural U-238 abundance using a value of 0.68 pCi/microgram (ug) equivalent as a multiplier of the sample concentration adjusted to similar units. Prior to sample analysis, several NIST traceable standards are analyzed to determine the linearity of the instrument. The Minimum Detectable Concentration (MDC) is equal to that of the lowest concentration standard.
- **Scope and Limitations** - The Minimum Detectable Activity (MDA) is calculated based on the MDC. If sample concentrations are outside the concentration range of the standards analyzed to produce the calibration curve, R^2 and intensity criteria are inspected to demonstrate linear response is maintained.

CASE NARRATIVE FOR
TOTAL URANIUM ANALYSIS by LASER PHOSPHORIMETRY (cont.)

Client: Nuclear Fuel Services, Inc.
Project ID: LEFPC
Batch ID: 32140

QA/QC Summary

A method blank, duplicate method spikes, a duplicate of sample 32136-89 and matrix spikes (MS) and matrix spike duplicates (MSD) of samples 32140-05 and 10 (Client ID Nos. 1661B-64 and 1661B-141) were also analyzed. The total uranium detected in the method blank was less than 10% of the total uranium detected in the samples, which was acceptable. The method spike recoveries were 111% and 102% with a duplicate Relative Percent Difference (RPD) of 8%. The sample duplicate RPD was 1%, which was within the laboratory control limit of 50%. The MS and MSD recoveries for sample 05 were 164% and 197%, and for sample 10 were 174% and 63% respectively.

General Discussion

The unusually high and inconsistent MS and MSD recoveries were due to the spike activity being insignificant when compared the activity in the samples.

Section Supervisor or designee

7/5/94

Date

NATURAL URANIUM

Client: Nuclear Fuel Services, Inc.

Client Reference No.: LEFPC

LSDG: 32140

Date Received: 5/17/94

Method: RL-2323

Lab Sample ID	Client Sample ID	Date Analyzed	Analyte	Matrix	Units	Result	2 Sigma Error	Detection Limit	Qualifier
32140-05	1661B-64	6/29/94	U-NAT	Soil	pCi/g	3.47E+01	4.69E-01	6.13E-01	
32140-10	1661B-141	6/29/94	U-NAT	Soil	pCi/g	3.73E+01	4.96E-01	6.36E-01	

ND = Not Detected Above MDA

NA = Not Applicable

EcoTek Laboratory Services Inc.

3342 International Park Drive, SE
Atlanta, GA 30316
(404)244-0827 Fax (404)243-5355

Q C INFORMATION

LSDG # 32136/32140
BATCH ID W1133

ANALYSIS Total U

No of Samples in Batch 18

DATE 6/30/94

SPIKE RECOVERY

Spike 1.00E+03 ng
Spike 1.00E+03 ng

Results Spike - A 1.11E+03 ng
Results Spike - B 1.02E+03 ng

SPIKE A (NAT U)

$$\text{SPIKE \% RECOVERY} = \left(\frac{1.11\text{E}+03 \text{ ng}}{1.00\text{E}+03 \text{ ng}} \right) * (100) = 111 \quad (75 - 125)$$

SPIKE B (NAT U)

$$\text{SPIKE \% RECOVERY} = \left(\frac{1.02\text{E}+03 \text{ ng}}{1.00\text{E}+03 \text{ ng}} \right) * (100) = 102 \quad (75 - 125)$$

SPIKE DUPLICATE REPRODUCIBILITY

Sample 1.11E+03 ng/spike
Sample Dup 1.02E+03 ng/spike
Dup Sample (ave) 1.07E+03 ng/spike

SAMPLE NO. SPIKE A
SAMPLE NO. SPIKE B

$$\text{DUPLICATE RPD} = \text{ABS} \left| \frac{1.11\text{E}+03 - 1.02\text{E}+03}{1.07\text{E}+03 \text{ (ave)}} \right| * 100 = 8 \quad (50\% \text{ max})$$

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Q C INFORMATION

LSDG # 32136/32140
BATCH ID W1133

ANALYSIS Total U

No of Samples In Batch 18

DATE 6/30/94

SAMPLE DUPLICATE REPRODUCIBILITY

Sample 5.73E+04 ng/g
Sample Dup 5.67E+04 ng/g
Dup Sample (ave) 5.70E+04 ng/g

SAMPLE NO. 32136-89A

SAMPLE NO. 32136-89B

DUPLICATE RPD = ABS
$$\frac{5.73E+04 - 5.67E+04}{5.70E+04 \text{ (ave)}} * 100 = 1 \quad (50\% \text{ max})$$

BLANK RESULTS

BLANK IS LESS THAN 10% OF SAMPLE ACTIVITIES

ACCEPTABLE

EcoTek Laboratory Services Inc.

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MATRIX Q C INFORMATION

LSDG # 32136/32140
WORKLIST W1133

ANALYSIS TOTAL-U

No of Samples in Batch 18

DATE 7/1/94

MATRIX SPIKE RECOVERY

32140-05MS 1.50E+00 dpm

Results Matrix Spike 3.57E+01 pCi/g
Sample Activity 3.47E+01 pCi/g
Sample Volume 1.11E+00 g

$$\% \text{ RECOVERY} = \left(\frac{3.57E+01 - 3.47E+01}{1.50E+00} \right) \text{ pCi/g} \cdot 2.22 \text{ dpm/pCi} \cdot 1.11 \text{ g} \cdot 100 = 164$$

32140-05MSD 1.50E+00 dpm

Results Matrix Spike 3.59E+01 pCi/g
Sample Activity 3.47E+01 pCi/g
Sample Volume 1.11E+00 g

$$\% \text{ RECOVERY} = \left(\frac{3.59E+01 - 3.47E+01}{1.50E+00} \right) \text{ pCi/g} \cdot 2.22 \text{ dpm/pCi} \cdot 1.11 \text{ g} \cdot 100 = 197$$

MATRIX SPIKE DUPLICATE RPD

32140-05MS 3.57E+01 - 3.47E+01 = 1.00E+00 pCi/g
32140-05MSD 3.59E+01 - 3.47E+01 = 1.20E+00 pCi/g

Sample 1.00E+00 pCi/g
Sample Dup 1.20E+00 pCi/g
Sample / Dup (ave) 1.10E+00 pCi/g

SAMPLE NO. 32140-05MS

SAMPLE NO. 32140-05MSD

$$\text{DUPLICATE RPD} = \text{ABS} \left| \frac{1.00E+00 - 1.20E+00}{1.10E+00 (\text{ave})} \right| \cdot 100 = 18 \quad (50\% \text{ max})$$

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MATRIX Q C INFORMATION

LSDG # 32136/32140 ANALYSIS TOTAL-U No of Samples in Batch 18 DATE 7/1/94
WORKLIST W1133

MATRIX SPIKE RECOVERY

32140-10MS 1.50E+00 dpm

Results Matrix Spike 3.84E+01 pCi/g
Sample Activity 3.73E+01 pCi/g
Sample Volume 1.07E+00 g

$$\% \text{ RECOVERY} = \left(\frac{3.84E+01 - 3.73E+01}{1.50E+00} \right) \text{pCi/g} \cdot 2.22 \text{ dpm/pCi} \cdot \frac{1.07 \text{ g}}{1.07 \text{ g}} \cdot 100 = 174$$

32140-10MSD 1.50E+00 dpm

Results Matrix Spike 3.77E+01 pCi/g
Sample Activity 3.73E+01 pCi/g
Sample Volume 1.07E+00 g

$$\% \text{ RECOVERY} = \left(\frac{3.77E+01 - 3.73E+01}{1.50E+00} \right) \text{pCi/g} \cdot 2.22 \text{ dpm/pCi} \cdot \frac{1.07 \text{ g}}{1.07 \text{ g}} \cdot 100 = 63$$

MATRIX SPIKE DUPLICATE RPD

32140-10MS 3.84E+01 - 3.73E+01 = 1.10E+00 pCi/g
32140-10MSD 3.77E+01 - 3.73E+01 = 4.00E-01 pCi/g

Sample 1.10E+00 pCi/g
Sample Dup 4.00E-01 pCi/g
Sample / Dup (ave) 7.50E-01 pCi/g

SAMPLE NO. 32140-10MS
SAMPLE NO. 32140-10MSD

DUPLICATE RPD = ABS $\left| \frac{1.10E+00 - 4.00E-01}{7.50E-01} \right| \cdot 100 = 93$ (50% max)

TOTAL - U

Batch ID: W1133
Filename: 1133TU.XLS
Report Date: 6/27/94

Sample ID	Sample Result (ng/g)	Sample Error (ng/g)	LLD* (ng/g)	Dilution Factor	Sample MDC** (ng/g)	Sample Result (ug/g)	Sample Error (ug/g)	Sample MDC** (ug/g)	Sample Result (pCi/g)	Sample Error (pCi/g)	Sample MDA*** (pCi/g)
32136-73	3.49E+04	1.11E+03	1.00E-01	9.01E+02	9.01E+01	3.49E+01	1.11E+00	9.01E-02	2.37E+01	7.55E-01	6.13E-02
32136-74	4.91E+04	6.53E+02	1.00E-01	8.93E+03	8.93E+02	4.91E+01	6.53E-01	8.93E-01	3.34E+01	4.44E-01	6.07E-01
32136-75	4.60E+04	6.11E+02	1.00E-01	8.93E+03	8.93E+02	4.60E+01	6.11E-01	8.93E-01	3.13E+01	4.15E-01	6.07E-01
32136-76	6.15E+04	8.23E+02	1.00E-01	8.93E+03	8.93E+02	6.15E+01	8.23E-01	8.93E-01	4.18E+01	5.59E-01	6.07E-01
32136-77	5.66E+04	7.54E+02	1.00E-01	8.93E+03	8.93E+02	5.66E+01	7.54E-01	8.93E-01	3.85E+01	5.13E-01	6.07E-01
32136-78	5.36E+04	7.20E+02	1.00E-01	8.93E+03	8.93E+02	5.36E+01	7.20E-01	8.93E-01	3.64E+01	4.90E-01	6.07E-01
32136-79	5.66E+04	7.66E+02	1.00E-01	8.93E+03	8.93E+02	5.66E+01	7.66E-01	8.93E-01	3.85E+01	5.21E-01	6.07E-01
32136-80	5.74E+04	7.62E+02	1.00E-01	8.85E+03	8.85E+02	5.74E+01	7.62E-01	8.85E-01	3.90E+01	5.18E-01	6.02E-01
32136-82	5.17E+04	6.91E+02	1.00E-01	9.17E+03	9.17E+02	5.17E+01	6.91E-01	9.17E-01	3.52E+01	4.70E-01	6.24E-01
32136-83	5.93E+04	8.01E+02	1.00E-01	9.17E+03	9.17E+02	5.93E+01	8.01E-01	9.17E-01	4.03E+01	5.45E-01	6.24E-01
32136-84	5.17E+04	6.93E+02	1.00E-01	9.26E+03	9.26E+02	5.17E+01	6.93E-01	9.26E-01	3.52E+01	4.71E-01	6.30E-01
32136-85	5.18E+04	6.89E+02	1.00E-01	9.26E+03	9.26E+02	5.18E+01	6.89E-01	9.26E-01	3.52E+01	4.69E-01	6.30E-01
32136-86	5.53E+04	7.41E+02	1.00E-01	9.26E+03	9.26E+02	5.53E+01	7.41E-01	9.26E-01	3.76E+01	5.04E-01	6.30E-01
32136-87	5.71E+04	7.59E+02	1.00E-01	9.26E+03	9.26E+02	5.71E+01	7.59E-01	9.26E-01	3.88E+01	5.16E-01	6.30E-01
32136-88	5.44E+04	7.40E+02	1.00E-01	9.35E+03	9.35E+02	5.44E+01	7.40E-01	9.35E-01	3.70E+01	5.03E-01	6.36E-01
32136-89A	5.73E+04	7.69E+02	1.00E-01	9.26E+03	9.26E+02	5.73E+01	7.69E-01	9.26E-01	3.90E+01	5.23E-01	6.30E-01
32140-05	5.11E+04	6.89E+02	1.00E-01	9.01E+03	9.01E+02	5.11E+01	6.89E-01	9.01E-01	3.47E+01	4.69E-01	6.13E-01
32140-10	5.49E+04	7.29E+02	1.00E-01	9.35E+03	9.35E+02	5.49E+01	7.29E-01	9.35E-01	3.73E+01	4.96E-01	6.36E-01
32136-89B	5.67E+04	7.60E+02	1.00E-01	9.26E+03	9.26E+02	5.67E+01	7.60E-01	9.26E-01	3.86E+01	5.17E-01	6.30E-01
BLANK	5.04E-01	8.00E-03	1.00E-01	1.00E+00	1.00E-01	5.04E-04	8.00E-06	1.00E-04	3.43E-04	5.44E-06	6.80E-05
SPIKE A	1.11E+03	3.48E+01	1.00E-01	1.00E+01	1.00E+00	1.11E+00	3.48E-02	1.00E-03	7.55E-01	2.37E-02	6.80E-04
SPIKE B	1.02E+03	3.19E+01	1.00E-01	1.00E+01	1.00E+00	1.02E+00	3.19E-02	1.00E-03	6.94E-01	2.17E-02	6.80E-04

TOTAL - U

Batch ID: W1133
Filename: 1133TU.XLS
Report Date: 6/27/94

Sample ID	Sample Result (ng/g)	Sample Error (ng/g)	LLD* (ng/g)	Dilution Factor	Sample MDC** (ng/g)	Sample Result (ug/g)	Sample Error (ug/g)	Sample MDC** (ug/g)	Sample Result (pCi/g)	Sample Error (pCi/g)	Sample MDA*** (pCi/g)
32140-05MS	5.25E+04	6.98E+02	1.00E-01	9.01E+03	9.01E+02	5.25E+01	6.98E-01	9.01E-01	3.57E+01	4.75E-01	6.13E-01
32140-05MSD	5.28E+04	7.03E+02	1.00E-01	9.01E+03	9.01E+02	5.28E+01	7.03E-01	9.01E-01	3.59E+01	4.78E-01	6.13E-01
32140-10MS	5.64E+04	7.50E+02	1.00E-01	9.35E+03	9.35E+02	5.64E+01	7.50E-01	9.35E-01	3.84E+01	5.10E-01	6.36E-01
32140-10MSD	5.55E+04	7.37E+02	1.00E-01	9.35E+03	9.35E+02	5.55E+01	7.37E-01	9.35E-01	3.77E+01	5.01E-01	6.36E-01

Calibration

Range: LOW

Background Measured Intensity 381

Concentration	Intercept	Uncert.	% Disc.	Intensity	Lifetime	R ²
✓ .1 ng/mL	1575.72	39.7	-0.01	1325	329.5192	.9981
✓ 1 ng/mL	1.19E+04	109.23	0	10208	338.4557	.9996
✓ 10 ng/mL	1.16E+05	340.7	0	54435	309.6744	1.0001
			Alt+H For Help			
Zero Point NOT Included.				Y=6.716X ² +1.15E+04X +425.973		

Calibration

Range: HIGH

Background Measured Intensity 7

Concentration	Intercept	Uncert.	% Disc.	Intensity	Lifetime	R ²
✓ 10 ng/mL	1208.95	34.77	0	1007	301.9662	.9984
✓ 100 ng/mL	1.23E+04	110.9	0	10087	325.6326	.9997
✓ 500 ng/mL	6.40E+04	252.89	0	52333	328.4763	1
		Alt+H For Help				
Zero Point NOT Included.				Y=0.012X ² +121.904X -11.296		

Sample ID .1 ng/ml

Description Std

Ref. Ratio 1.049

Laser Pulses 1000

Lifetime 326 ± 3.021 µs

R² .9963

Integrated 26305

Range: LOW

Date/Time 06-29-94/09:47:15

Cal Y=6.716X²+1.15E+04X+425.973

Intensity 1328 (t= 65 µs)

Conc .09408 ± .0016 ng/mL

Dilution Factor 1 mL/mL

FINAL RESULT .094 ± .002 ng/mL

Sample ID 10 ng/ml

Description Std

Ref. Ratio 1.06

Laser Pulses 1000

Lifetime 320 ± .721 µs

R² .9998

Integrated 1162165

Range: LOW

Date/Time 06-29-94/09:48:44

Cal Y=6.716X²+1.15E+04X+425.973

Intensity 55293 (t= 234 µs)

Conc 9.91337 ± .1373 ng/mL

Dilution Factor 1 mL/mL

FINAL RESULT 9.913 ± .137 ng/mL

Sample ID 10 ng/ml

Description Std

Ref. Ratio .965

Laser Pulses 1000

Lifetime 306 ± 3.058 µs

R² .9957

Integrated 20853

Range: HIGH

Date/Time 06-29-94/09:50:05

Cal Y=0.012X²+121.904X-11.296

Intensity 1050 (t= 65 µs)

Conc 10.41383 ± .3507 ng/mL

Dilution Factor 1 mL/mL

FINAL RESULT 10.414 ± .351 ng/mL

Sample ID 500 ng/ml

Description Std

Ref. Ratio .955

Laser Pulses 1000

Lifetime 337 ± .597 µs

R² .9999

Integrated 1195422

Range: HIGH

Date/Time 06-29-94/09:51:45

Cal Y=0.012X²+121.904X-11.296

Intensity 55503 (t= 65 µs)

Conc 521.34894 ± 16.2849 ng/mL

Dilution Factor 1 mL/mL

FINAL RESULT 521.349 ± 16.285 ng/mL

LOW Range Calibration Curve

HIGH Range Calibration Cur

Sample ID Reagent Blank
Description DI Water/Test
Ref. Ratio
Laser Pulses 1000
Lifetime $\pm$ μ s
R²

Date/Time 06-29-94/10:09:41
Cal $Y=6.716X^2+1.15E+04X+425.973$
Intensity 79 (t= 65 μ s)
Conc $\pm$ ng/mL
Dilution Factor X

Integrated 79
Range: LOW

FINAL RESULT

Sample ID 10 ng/ml
Description Std/Test
Ref. Ratio .995
Laser Pulses 1000
Lifetime 319 $\pm$.416 μ s
R² 1

Date/Time 06-29-94/10:11:47
Cal $Y=6.716X^2+1.15E+04X+425.973$
Intensity 58897 (t= 234 μ s)
Conc 10.54418 $\pm$.141 ng/mL
Dilution Factor 1 mL/mL

Integrated 1235328
Range: LOW

FINAL RESULT 10.544 $\pm$.141 ng/mL

Sample ID W1133-Blank
Description 1 Dilution
Ref. Ratio 1
Laser Pulses 1000
Lifetime 247 $\pm$ 1.327 μ s
R² .9988

Date/Time 06-29-94/10:16:36
Cal $Y=6.716X^2+1.15E+04X+425.973$
Intensity 5096 (t= 65 μ s)
Conc .50393 $\pm$.0079 ng/mL
Dilution Factor 1 mL/mL

Integrated 84568
Range: LOW

FINAL RESULT .504 $\pm$.008 ng/mL

Sample ID W1133-Spike A
Description 1/10 Dilution
Ref. Ratio .903
Laser Pulses 1000
Lifetime 259 $\pm$.495 μ s
R² .9998

Date/Time 06-29-94/10:18:20
Cal $Y=0.012X^2+121.904X-11.296$
Intensity 10488 (t= 65 μ s)
Conc 111.07864 $\pm$ 3.4788 ng/mL
Dilution Factor 10 mL/mL

Integrated 194138
Range: HIGH

FINAL RESULT 1.11E+03 $\pm$ 34.788 ng/mL

Sample ID W1133-Spike B
Description 1/10 Dilution
Ref. Ratio .935
Laser Pulses 1000
Lifetime 263 $\pm$.646 μ s
R² .9997

Date/Time 06-29-94/10:21:49
Cal $Y=0.012X^2+121.904X-11.296$
Intensity 9870 (t= 65 μ s)
Conc 101.70467 $\pm$ 3.1936 ng/mL
Dilution Factor 10 mL/mL

Integrated 180379
Range: HIGH

FINAL RESULT 1.02E+03 $\pm$ 31.936 ng/mL

Sample ID 32136-73
Description 1/10 Dilution
Ref. Ratio .892
Laser Pulses 1000
Lifetime 241 $\pm$ 13.345 μ s
R² .8836

Date/Time 06-29-94/10:24:16
Cal $Y=0.012X^2+121.904X-11.296$
Intensity 1733 (t= 65 μ s)
Conc 6.96503 $\pm$.6609 ng/mL
Dilution Factor 9.00901 mL/mL

Integrated 12423
Range: HIGH

FINAL RESULT 62.748 $\pm$ 5.954 ng/mL

Sample ID 32136-89A	Date/Time 06-29-94/11:41:57
Description 1/10000 Dilution	Cal Y=6.716X ² +1.15E+04X+425.973
Ref. Ratio .901	Intensity 59724 (t= 65 µs)
Laser Pulses 1000	Conc 6.18998 ± .083 ng/mL
Lifetime 334 ± .432 µs	Dilution Factor 9259.25879 mL/mL
R ² .9999	
Integrated 1278402	FINAL RESULT 5.73E+04 ± 7.69E+02 ng/mL
Range: LOW	

Sample ID 32136-89B	Date/Time 06-29-94/11:44:16
Description 1/10000 Dilution	Cal Y=6.716X ² +1.15E+04X+425.973
Ref. Ratio .908	Intensity 59054 (t= 65 µs)
Laser Pulses 1000	Conc 6.12818 ± .082 ng/mL
Lifetime 337 ± .547 µs	Dilution Factor 9259.25879 mL/mL
R ² .9999	
Integrated 1273185	FINAL RESULT 5.67E+04 ± 7.60E+02 ng/mL
Range: LOW	

Sample ID 32149-05	Date/Time 06-29-94/11:56:16
Description 1/10000 Dilution	Cal Y=6.716X ² +1.15E+04X+425.973
Ref. Ratio .949	Intensity 54328 (t= 65 µs)
Laser Pulses 1000	Conc 5.66743 ± .0764 ng/mL
Lifetime 335 ± .731 µs	Dilution Factor 9009.00879 mL/mL
R ² .9998	
Integrated 1171083	FINAL RESULT 5.11E+04 ± 6.89E+02 ng/mL
Range: LOW	

Sample ID 32149-MS05	Date/Time 06-29-94/11:59:42
Description 1/10000 Dilution	Cal Y=6.716X ² +1.15E+04X+425.973
Ref. Ratio .946	Intensity 55961 (t= 65 µs)
Laser Pulses 1000	Conc 5.83211 ± .0775 ng/mL
Lifetime 335 ± .409 µs	Dilution Factor 9009.00879 mL/mL
R ² 1.0001	
Integrated 1206032	FINAL RESULT 5.25E+04 ± 6.98E+02 ng/mL
Range: LOW	

Sample ID 32149-MSD05	Date/Time 06-29-94/12:02:00
Description 1/10000 Dilution	Cal Y=6.716X ² +1.15E+04X+425.973
Ref. Ratio .944	Intensity 55812 (t= 65 µs)
Laser Pulses 1000	Conc 5.86142 ± .0781 ng/mL
Lifetime 325 ± .223 µs	Dilution Factor 9009.00879 mL/mL
R ² 1	
Integrated 1183744	FINAL RESULT 5.28E+04 ± 703.16 ng/mL
Range: LOW	

Sample ID 32140-10	Date/Time 06-29-94/12:05:33
Description 1/10000 Dilution	Cal Y=6.716X ² +1.15E+04X+425.973
Ref. Ratio .937	Intensity 56280 (t= 65 µs)
Laser Pulses 1000	Conc 5.87138 ± .078 ng/mL
Lifetime 326 ± .553 µs	Dilution Factor 9345.79395 mL/mL
R ² 1.0001	
Integrated 1187493	FINAL RESULT 5.49E+04 ± 7.29E+02 ng/mL
Range: LOW	

Sample ID 32140-MS10
Description 1/10000 Dilution
Ref. Ratio .905
Laser Pulses 1000
Lifetime 336 ± .581 µs
R² 1.0001
Integrated 1251727
Range: LOW

Date/Time 06-29-94/12:08:46
Cal Y=6.716X²+1.15E+04X+425.973
Intensity 58178 (t= 65 µs)
Conc 6.03897 ± .0802 ng/mL
Dilution Factor 9345.79395 mL/mL

FINAL RESULT 5.64E+04 ± 7.50E+02 ng/mL

Sample ID 32140-MSD10
Description 1/10000 Dilution
Ref. Ratio .937
Laser Pulses 1000
Lifetime 332 ± .296 µs
R² 1
Integrated 1219797
Range: LOW

Date/Time 06-29-94/12:11:57
Cal Y=6.716X²+1.15E+04X+425.973
Intensity 56911 (t= 65 µs)
Conc 5.94023 ± .0789 ng/mL
Dilution Factor 9345.79395 mL/mL

FINAL RESULT 5.55E+04 ± 7.37E+02 ng/mL

Sample ID Reagent Blank
Description DI Water
Ref. Ratio .917
Laser Pulses 1000
Lifetime 320 ± 2.62E+02 µs
R² .1993
Integrated 465
Range: LOW

Date/Time 06-29-94/12:15:40
Cal Y=6.716X²+1.15E+04X+425.973
Intensity 48 (t= 65 µs)
Conc -.03003 ± .0089 ng/mL
Dilution Factor 1 mL/mL

FINAL RESULT -.03 ± .009 ng/mL

Sample ID 10 ng/ml
Description Std/Test
Ref. Ratio .949
Laser Pulses 1000
Lifetime 320 ± .186 µs
R² 1
Integrated 1269351
Range: LOW

Date/Time 06-29-94/12:19:41
Cal Y=6.716X²+1.15E+04X+425.973
Intensity 60385 (t= 208 µs)
Conc 9.96972 ± .1333 ng/mL
Dilution Factor 1 mL/mL

FINAL RESULT 9.97 ± .133 ng/mL

Gross Alpha/Beta

LSDG: 32136

CASE NARRATIVE
FOR GROSS ALPHA / GROSS BETA ANALYSIS

Client: Nuclear Fuel Services, Inc.

Project ID: LEFPC

Batch ID: 32136

Analytical Summary

Sixteen (16) soil samples and two (2) water samples were received on May 17, 1994 for gross alpha and beta analysis. The soil samples were analyzed on July 2, 1994. The water samples were analyzed in two batches between June 22 and 30, 1994.

Procedural Summary

- **Analysis** - The prepared sample is evaporated on a 5 cm stainless steel planchet. The activity of the deposited residue is then measured using a gas flow proportional counter which has been calibrated with NIST traceable standards. Gross alpha and beta determinations are expressed as an equivalency to Am-241 and Sr-90, respectively. The volume/weight of 1.000 listed on the data sheet for the method blank and method spikes is an arbitrary number used for calculation purposes only.
- **Scope and Limitations** - This procedure provides for the analysis of samples for gross alpha and beta radioactivity in sample matrices such as: groundwater, drinking water, soil, sediment, agricultural and dairy products, air filters, mixed waste and other samples of similar or like components. This method is generally not applicable to highly organic or combustible compounds. Volatile radionuclides (i.e. ^{137}Cs , ^3H , ^{99}Tc) cannot be analyzed with sufficient reproducibility due to the radionuclide loss during the preparation process.

This method is not applicable to the to the identification of specific alpha or beta emitters in a sample that contains several different radionuclides. Without preliminary chemical separation of the element of interest the specific radionuclides cannot be identified. The sample radioactivity is measured and quantified using gas flow proportional counting techniques. Gas flow proportional counters allow the measurement of alpha particles with energies greater than 3.9 million electron volts (MeV) and beta particles with energies greater than 0.1 MeV.

CASE NARRATIVE
FOR GROSS ALPHA / GROSS BETA ANALYSIS (cont.)

Client: Nuclear Fuel Services, Inc.
Project ID: LEFPC
Batch ID: 32136

The absorption effects for both alpha and beta emitting radionuclides are corrected using an applicable counting efficiency/absorption (weight) calibration relationship. All sample specific activities reported are corrected for absorption effects. Sample size processed, total dissolved solids (TDS) and count time are used to determine the Minimum Detectable Activity (MDA) in terms of picocuries per unit volume (pCi/L or pCi/g).

QA/QC Summary

The soil samples were analyzed on July 2, 1994. A method blank, duplicate alpha and beta method spikes and a duplicate of sample 32136-89 (Client ID No. 1661B-203) were also analyzed. The method blank alpha activity was less than 10% of the activity in the samples, which was acceptable. The method blank yielded no measurable beta activity greater than the MDA of 1 pCi. The alpha method spike recoveries were 69% and 79% with a duplicate Relative Percent Difference (RPD) of 13%. The beta method spike recoveries were 102% and 107% with an RPD of 4%. The primary alpha spike was below the laboratory lower limit of 75% for method spike recovery. However, since the secondary alpha spike recovery and both beta spike recoveries were within the laboratory control limits, the data is considered acceptable. The alpha and beta sample duplicate RPDs were 4% and 13%, respectively, which were within the laboratory control limit of 50%.

Water sample 32136-98 (Client ID No. 1661B-236) was multi-client batched with samples of like matrix (Batch ID No. 32075) and analyzed between June 22 and 23, 1994. A method blank, duplicate alpha and beta method spikes and a duplicate of sample 32136-98 (Client ID No. 1661B-236) were also analyzed. The method blank yielded no measurable alpha or beta activity greater than the MDAs of 0.2 pCi and 0.4 pCi, respectively. The alpha method spike recoveries were 114% and 116% with a duplicate RPD of 2%. The beta method spike recoveries were both 103% with an RPD of 0%. The alpha and beta sample duplicate RPDs were 22% and 0%, respectively, which were within the laboratory control limit of 50%.

CASE NARRATIVE
FOR GROSS ALPHA / GROSS BETA ANALYSIS (cont.)

Client: Nuclear Fuel Services, Inc.
Project ID: LEFPC
Batch ID: 32136

Water sample 32136-109 (Client ID No. B-235) was multi-client batched with samples of like matrix (Batch ID No. 32075) and analyzed between June 29 and 30, 1994. A method blank, duplicate alpha and beta method spikes and a duplicate of sample 32136-109 (Client ID No. 1661B-235) were also analyzed. The method blank yielded no measurable alpha activity greater than the MDA of 0.6 pCi. The method blank beta activity was less than two times the MDA of 2 pCi and less than the requested detection limit of 7 pCi/L. The alpha method spike recoveries were 93% and 110% with a duplicate RPD of 16%. The beta method spike recoveries were 103% and 110% with an RPD of 6%. The alpha and beta sample duplicate RPDs were 26% and 20%, respectively, which were within the laboratory control limit of 50%. However, the RPDs were not applicable since MDAs and activity less than five times the MDA were used in the calculations.

General Discussion

The results for water sample 109 were flagged 'M' due to elevated MDAs. The high MDAs for this sample were caused by excessive TDS in the sample which severely reduced the sample volume analyzed.

Section Supervisor or designee

Date

GROSS ALPHA / BETA

Client: Nuclear Fuel Services, Inc.

Client Reference No.: LEFPC

LSDG: 32136

Date Received: 5/17/94

Method: RL-2302

Lab Sample ID	Client Sample ID	Date Analyzed	Analyte	Matrix	Units	Result	2 Sigma Error	Detection Limit	Qualifier
32136-73	1661B-72	7/2/94	Gross Alpha	Soil	pCi/g	3.70E+01	5.34E+00	2.78E+00	
32136-74	1661B-97	7/2/94	Gross Alpha	Soil	pCi/g	3.65E+01	5.51E+00	3.76E+00	
32136-75	1661B-106	7/2/94	Gross Alpha	Soil	pCi/g	2.74E+01	4.43E+00	2.78E+00	
32136-76	1661B-112	7/2/94	Gross Alpha	Soil	pCi/g	4.14E+01	5.21E+00	2.51E+00	
32136-77	1661B-116	7/2/94	Gross Alpha	Soil	pCi/g	4.21E+01	5.77E+00	3.51E+00	
32136-78	1661B-122	7/2/94	Gross Alpha	Soil	pCi/g	3.09E+01	4.85E+00	3.27E+00	
32136-79	1661B-126	7/2/94	Gross Alpha	Soil	pCi/g	3.22E+01	4.84E+00	2.60E+00	
32136-80	1661B-133	7/2/94	Gross Alpha	Soil	pCi/g	3.44E+01	5.74E+00	4.28E+00	
32136-82	1661B-149	7/2/94	Gross Alpha	Soil	pCi/g	3.62E+01	5.42E+00	3.17E+00	
32136-83	1661B-157	7/2/94	Gross Alpha	Soil	pCi/g	3.81E+01	4.63E+00	2.16E+00	
32136-84	1661B-163	7/2/94	Gross Alpha	Soil	pCi/g	4.94E+01	6.87E+00	4.23E+00	
32136-85	1661B-171	7/2/94	Gross Alpha	Soil	pCi/g	3.81E+01	5.90E+00	3.94E+00	
32136-86	1661B-179	7/2/94	Gross Alpha	Soil	pCi/g	3.58E+01	5.43E+00	3.92E+00	
32136-87	1661B-189	7/2/94	Gross Alpha	Soil	pCi/g	3.87E+01	6.01E+00	4.29E+00	
32136-88	1661B-195	7/2/94	Gross Alpha	Soil	pCi/g	2.88E+01	5.31E+00	3.45E+00	
32136-89	1661B-203	7/2/94	Gross Alpha	Soil	pCi/g	4.09E+01	5.86E+00	3.82E+00	
32136-98	1661B-236	6/22/94	Gross Alpha	Water	pCi/L	3.37E+02	8.14E+00	2.15E+00	
32136-109	1661-B-235	6/30/94	Gross Alpha	Water	pCi/L	ND	NA	1.04E+02	M
32136-73	1661B-72	7/2/94	Gross Beta	Soil	pCi/g	4.01E+01	4.34E+00	4.86E+00	
32136-74	1661B-97	7/2/94	Gross Beta	Soil	pCi/g	5.16E+01	4.65E+00	3.59E+00	
32136-75	1661B-106	7/2/94	Gross Beta	Soil	pCi/g	4.11E+01	3.84E+00	3.45E+00	
32136-76	1661B-112	7/2/94	Gross Beta	Soil	pCi/g	3.84E+01	3.58E+00	3.67E+00	
32136-77	1661B-116	7/2/94	Gross Beta	Soil	pCi/g	4.64E+01	4.31E+00	4.19E+00	
32136-78	1661B-122	7/2/94	Gross Beta	Soil	pCi/g	4.37E+01	4.12E+00	4.14E+00	
32136-79	1661B-126	7/2/94	Gross Beta	Soil	pCi/g	3.57E+01	4.14E+00	4.85E+00	
32136-80	1661B-133	7/2/94	Gross Beta	Soil	pCi/g	4.58E+01	4.97E+00	4.43E+00	
32136-82	1661B-149	7/2/94	Gross Beta	Soil	pCi/g	4.27E+01	4.39E+00	4.24E+00	
32136-83	1661B-157	7/2/94	Gross Beta	Soil	pCi/g	3.20E+01	3.08E+00	3.22E+00	

GROSS ALPHA / BETA

Client: Nuclear Fuel Services, Inc.

Client Reference No.: LEFPC

LSDG: 32136

Date Received: 5/17/94

Method: RL-2302

Lab Sample ID	Client Sample ID	Date Analyzed	Analyte	Matrix	Units	Result	2 Sigma Error	Detection Limit	Qualifier
32136-84	1661B-163	7/2/94	Gross Beta	Soil	pCi/g	4.68E+01	5.05E+00	5.42E+00	
32136-85	1661B-171	7/2/94	Gross Beta	Soil	pCi/g	4.25E+01	4.77E+00	5.35E+00	
32136-86	1661B-179	7/2/94	Gross Beta	Soil	pCi/g	4.44E+01	4.22E+00	4.09E+00	
32136-87	1661B-189	7/2/94	Gross Beta	Soil	pCi/g	4.44E+01	4.92E+00	5.45E+00	
32136-88	1661B-195	7/2/94	Gross Beta	Soil	pCi/g	4.72E+01	5.44E+00	6.35E+00	
32136-89	1661B-203	7/2/94	Gross Beta	Soil	pCi/g	3.90E+01	4.20E+00	3.72E+00	
32136-98	1661B-236	6/22/94	Gross Beta	Water	pCi/L	1.39E+02	4.45E+00	2.98E+00	
32136-109	1661-B-235	6/30/94	Gross Beta	Water	pCi/L	ND	NA	1.67E+02	M

ND = Not Detected Above MDA

NA = Not Applicable

QC INFORMATION

LSDG # 32136 ANALYSIS Gross Alpha/Beta NO of SAMPLES In BATCH 16 DATE 7/2/94
WORKLIST W1162

SPIKE RECOVERY

Spike (Am)	<u>1.11E+02</u> dpm	/	Results Spike - A	<u>3.47E+01</u> pCi	ANALYSIS <u>Am-241</u>
Spike (Am)	<u>1.11E+02</u> dpm	/	Results Spike - B	<u>3.95E+01</u> pCi	ANALYSIS <u>Am-241</u>

SPIKE A (Am-241)

SPIKE % RECOVERY = $\left(\frac{3.47E+01 \text{ pCi} \times 2.22 \text{ dpm/pCi} \times 100}{1.11E+02 \text{ dpm}} \right) = 69 \quad (75 - 125)$

SPIKE B (Am-241)

SPIKE % RECOVERY = $\left(\frac{3.95E+01 \text{ pCi} \times 2.22 \text{ dpm/pCi} \times 100}{1.11E+02 \text{ dpm}} \right) = 79 \quad (75 - 125)$

Spike (Sr)	<u>2.10E+02</u> dpm	/	Results Spike - A	<u>9.70E+01</u> pCi	ANALYSIS <u>Sr-90</u>
Spike (Sr)	<u>2.10E+02</u> dpm	/	Results Spike - B	<u>1.01E+02</u> pCi	ANALYSIS <u>Sr-90</u>

SPIKE A (Sr-90)

SPIKE % RECOVERY = $\left(\frac{9.70E+01 \text{ pCi} \times 2.22 \text{ dpm/pCi} \times 100}{2.10E+02 \text{ dpm}} \right) = 102 \quad (75 - 125)$

SPIKE B (Sr-90)

SPIKE % RECOVERY = $\left(\frac{1.01E+02 \text{ pCi} \times 2.22 \text{ dpm/pCi} \times 100}{2.10E+02 \text{ dpm}} \right) = 107 \quad (75 - 125)$

SPIKE DUPLICATE REPRODUCIBILITY

Sample	<u>3.47E+01</u> pCi/spike	SAMPLE NO.	<u>SPIKE A (AM-241)</u>
Sample Dup	<u>3.95E+01</u> pCi/spike	SAMPLE NO.	<u>SPIKE B (AM-241)</u>
Sample / Dup (ave)	<u>3.71E+01</u> pCi/spike	ANALYSIS	<u>Gross Alpha</u>
DUPLICATE RPD =	ABS	$\frac{3.47E+01 - 3.95E+01}{3.71E+01} \times 100 = 13$	(50% max)

Sample	<u>9.70E+01</u> pCi/spike	SAMPLE NO.	<u>SPIKE A (SR-90)</u>
Sample Dup	<u>1.01E+02</u> pCi/spike	SAMPLE NO.	<u>SPIKE B (SR-90)</u>
Sample / Dup (ave)	<u>9.90E+01</u> pCi/spike	ANALYSIS	<u>Gross Beta</u>
DUPLICATE RPD =	ABS	$\frac{9.70E+01 - 1.01E+02}{9.90E+01} \times 100 = 4$	(50% max)

QC INFORMATION

LSDG # 32136 ANALYSIS Gross Alpha/Beta NO of SAMPLES In BATCH 16 DATE 7/2/94
WORKLIST W1162

SAMPLE DUPLICATE REPRODUCIBILITY

Sample	<u>4.09E+01</u>	pCi/g	SAMPLE NO.	<u>32136-89A</u>
Sample Dup	<u>4.27E+01</u>	pCi/g	SAMPLE NO.	<u>32136-89B</u>
Sample / Dup (ave)	<u>4.18E+01</u>	pCi/g	ANALYSIS	<u>Gross Alpha</u>
DUPLICATE RPD = ABS				
	<u>4.09E+01</u>	-	<u>4.27E+01</u>	*100 = <u>4</u> (50% max)
		<u>4.18E+01</u>	(ave)	
Sample	<u>3.90E+01</u>	pCi/g	SAMPLE NO.	<u>32136-89A</u>
Sample Dup	<u>4.43E+01</u>	pCi/g	SAMPLE NO.	<u>32136-89B</u>
Sample / Dup (ave)	<u>4.17E+01</u>	pCi/g	ANALYSIS	<u>Gross Beta</u>
DUPLICATE RPD = ABS				
	<u>3.90E+01</u>	-	<u>4.43E+01</u>	*100 = <u>13</u> (50% max)
		<u>4.17E+01</u>	(ave)	

BLANK STATUS

GROSS ALPHA BLANK ACTIVITY IS LESS THAN 10% OF SAMPLES ACTIVITY - ACCEPTABLE
GROSS BETA BLANK RESULTS ARE LESS THAN MDA - ACCEPTABLE

QC INFORMATION

LSDG # 32075/32136 ANALYSIS Gross Alpha/Beta NO of SAMPLES in BATCH 17 DATE 7/5/94
WORKLIST W1091

SPIKE RECOVERY

Spike (Am)	<u>1.11E+02</u> dpm	/	Results Spike - A	<u>5.70E+01</u> pCi	ANALYSIS <u>Am-241</u>
Spike (Am)	<u>1.11E+02</u> dpm	/	Results Spike - B	<u>5.82E+01</u> pCi	ANALYSIS <u>Am-241</u>

SPIKE A (Am-241)

SPIKE % RECOVERY = ($\frac{5.70E+01 \text{ pCi} \times 2.22 \text{ dpm/pCi} \times 100}{1.11E+02 \text{ dpm}}$) = **114** (75 - 125)

SPIKE B (Am-241)

SPIKE % RECOVERY = ($\frac{5.82E+01 \text{ pCi} \times 2.22 \text{ dpm/pCi} \times 100}{1.11E+02 \text{ dpm}}$) = **116** (75 - 125)

Spike (Sr)	<u>2.10E+02</u> dpm	/	Results Spike - A	<u>9.75E+01</u> pCi	ANALYSIS <u>Sr-90</u>
Spike (Sr)	<u>2.10E+02</u> dpm	/	Results Spike - B	<u>9.77E+01</u> pCi	ANALYSIS <u>Sr-90</u>

SPIKE A (Sr-90)

SPIKE % RECOVERY = ($\frac{9.75E+01 \text{ pCi} \times 2.22 \text{ dpm/pCi} \times 100}{2.10E+02 \text{ dpm}}$) = **103** (75 - 125)

SPIKE B (Sr-90)

SPIKE % RECOVERY = ($\frac{9.77E+01 \text{ pCi} \times 2.22 \text{ dpm/pCi} \times 100}{2.10E+02 \text{ dpm}}$) = **103** (75 - 125)

SPIKE DUPLICATE REPRODUCIBILITY

Sample	<u>5.70E+01</u> pCi/spike	SAMPLE NO.	<u>SPIKE A (AM-241)</u>
Sample Dup	<u>5.82E+01</u> pCi/spike	SAMPLE NO.	<u>SPIKE B (AM-241)</u>
Sample / Dup (ave)	<u>5.76E+01</u> pCi/spike	ANALYSIS	<u>Gross Alpha</u>
DUPLICATE RPD =	ABS	$\frac{5.70E+01 - 5.82E+01}{5.76E+01} \times 100$	= 2 (50% max)

Sample	<u>9.75E+01</u> pCi/spike	SAMPLE NO.	<u>SPIKE A (SR-90)</u>
Sample Dup	<u>9.77E+01</u> pCi/spike	SAMPLE NO.	<u>SPIKE B (SR-90)</u>
Sample / Dup (ave)	<u>9.76E+01</u> pCi/spike	ANALYSIS	<u>Gross Beta</u>
DUPLICATE RPD =	ABS	$\frac{9.75E+01 - 9.77E+01}{9.76E+01} \times 100$	= 0 (50% max)

QC INFORMATION

LSDG # 32075/32136 ANALYSIS Gross Alpha/Beta NO of SAMPLES in BATCH 17 DATE 7/5/94
WORKLIST W1091

SAMPLE DUPLICATE REPRODUCIBILITY

Sample	<u>3.37E+02</u>	pCi/L	SAMPLE NO.	<u>32136-98A</u>
Sample Dup	<u>2.70E+02</u>	pCi/L	SAMPLE NO.	<u>32136-98B</u>
Sample / Dup (ave)	<u>3.04E+02</u>	pCi/L	ANALYSIS	<u>Gross Alpha</u>

DUPLICATE RPD =	ABS	<u>3.37E+02</u>	-	<u>2.70E+02</u>	*100	=	<u>22</u>	(50% max)
				<u>3.04E+02 (ave)</u>				

Sample	<u>1.39E+02</u>	pCi/L	SAMPLE NO.	<u>32136-98A</u>
Sample Dup	<u>1.39E+02</u>	pCi/L	SAMPLE NO.	<u>32136-98B</u>
Sample / Dup (ave)	<u>1.39E+02</u>	pCi/L	ANALYSIS	<u>Gross Beta</u>

DUPLICATE RPD =	ABS	<u>1.39E+02</u>	-	<u>1.39E+02</u>	*100	=	<u>0</u>	(50% max)
				<u>1.39E+02 (ave)</u>				

BLANK STATUS

BLANK IS LESS THAN MDA

ACCEPTABLE

014

QC INFORMATION

LSDG # 32075/32136
WORKLIST W1092

ANALYSIS Gross Alpha/Beta

NO of SAMPLES in BATCH 16

DATE 6/30/94

SPIKE RECOVERY

Spike (Am) 1.11E+02 dpm
Spike (Am) 1.11E+02 dpm

/ Results Spike - A
/ Results Spike - B

4.68E+01 pCi
5.50E+01 pCi

ANALYSIS Am-241
ANALYSIS Am-241

SPIKE A (Am-241)

SPIKE % RECOVERY = (4.68E+01) pCi * 2.22dpm/pCi * 100 = 93 (75 - 125)
(1.11E+02) dpm

SPIKE B (Am-241)

SPIKE % RECOVERY = (5.50E+01) pCi * 2.22dpm/pCi * 100 = 110 (75 - 125)
(1.11E+02) dpm

Spike (Sr) 2.10E+02 dpm
Spike (Sr) 2.10E+02 dpm

/ Results Spike - A
/ Results Spike - B

9.75E+01 pCi
1.04E+02 pCi

ANALYSIS Sr-90
ANALYSIS Sr-90

SPIKE A (Sr-90)

SPIKE % RECOVERY = (9.75E+01) pCi * 2.22dpm/pCi * 100 = 103 (75 - 125)
(2.10E+02) dpm

SPIKE B (Sr-90)

SPIKE % RECOVERY = (1.04E+02) pCi * 2.22dpm/pCi * 100 = 110 (75 - 125)
(2.10E+02) dpm

SPIKE DUPLICATE REPRODUCIBILITY

Sample	<u>4.68E+01</u> pCi/spike	SAMPLE NO.	<u>SPIKE A (AM-241)</u>
Sample Dup	<u>5.50E+01</u> pCi/spike	SAMPLE NO.	<u>SPIKE B (AM-241)</u>
Sample / Dup (ave)	<u>5.09E+01</u> pCi/spike	ANALYSIS	<u>Gross Alpha</u>
DUPLICATE RPD =	ABS	<u>4.68E+01</u> - <u>5.50E+01</u> * 100 = <u>16</u> (50% max)	
		<u>5.09E+01</u> (ave)	

Sample	<u>9.75E+01</u> pCi/spike	SAMPLE NO.	<u>SPIKE A (SR-90)</u>
Sample Dup	<u>1.04E+02</u> pCi/spike	SAMPLE NO.	<u>SPIKE B (SR-90)</u>
Sample / Dup (ave)	<u>1.01E+02</u> pCi/spike	ANALYSIS	<u>Gross Beta</u>
DUPLICATE RPD =	ABS	<u>9.75E+01</u> - <u>1.04E+02</u> * 100 = <u>6</u> (50% max)	
		<u>1.01E+02</u> (ave)	

FILENAME: 1092GAB.XLS

QC INFORMATION

LSDG # 32075/32136 ANALYSIS Gross Alpha/Beta NO of SAMPLES in BATCH 16 DATE 6/30/94
WORKLIST W1092

SAMPLE DUPLICATE REPRODUCIBILITY

Sample	<u>1.04E+02</u> pCi/L	SAMPLE NO.	<u>32136-109A</u>	USED MDA
Sample Dup	<u>1.35E+02</u> pCi/L	SAMPLE NO.	<u>32136-109B</u>	USED MDA
Sample / Dup (ave)	<u>1.20E+02</u> pCi/L	ANALYSIS	<u>Gross Alpha</u>	
DUPLICATE RPD =	ABS	<u>1.04E+02</u> - <u>1.35E+02</u>	*100 = <u>26</u>	(50% max)
		<u>1.20E+02</u> (ave)		
Sample	<u>1.67E+02</u> pCi/L	SAMPLE NO.	<u>32136-109A</u>	USED MDA
Sample Dup	<u>1.37E+02</u> pCi/L	SAMPLE NO.	<u>32136-109B</u>	< 5 X MDA
Sample / Dup (ave)	<u>1.52E+02</u> pCi/L	ANALYSIS	<u>Gross Beta</u>	
DUPLICATE RPD =	ABS	<u>1.67E+02</u> - <u>1.37E+02</u>	*100 = <u>20</u>	(50% max)
		<u>1.52E+02</u> (ave)		

BLANK STATUS

GROSS ALPHA BLANK IS LESS THAN MDA
GROSS BETA BLANK ACTIVITY PRESENT

CASE NARRATIVE
FOR GROSS ALPHA / GROSS BETA ANALYSIS

Client: Nuclear Fuel Services, Inc.

Project ID: LEFPC

Batch ID: 32140

Analytical Summary

Two (2) soil samples were received on May 17, 1994 for gross alpha and beta analysis. The samples were analyzed between July 1 and 2, 1994.

Procedural Summary

- Analysis - The prepared sample is evaporated on a 5 cm stainless steel planchet. The activity of the deposited residue is then measured using a gas flow proportional counter which has been calibrated with NIST traceable standards. Gross alpha and beta determinations are expressed as an equivalency to Am-241 and Sr-90, respectively. The volume/weight of 1.000 listed on the data sheet for the method blank and method spikes is an arbitrary number used for calculation purposes only.
- Scope and Limitations - This procedure provides for the analysis of samples for gross alpha and beta radioactivity in sample matrices such as: groundwater, drinking water, soil, sediment, agricultural and dairy products, air filters, mixed waste and other samples of similar or like components. This method is generally not applicable to highly organic or combustible compounds. Volatile radionuclides (i.e. ^{137}Cs , ^3H , ^{99}Tc) cannot be analyzed with sufficient reproducibility due to the radionuclide loss during the preparation process.

This method is not applicable to the to the identification of specific alpha or beta emitters in a sample that contains several different radionuclides. Without preliminary chemical separation of the element of interest the specific radionuclides cannot be identified. The sample radioactivity is measured and quantified using gas flow proportional counting techniques. Gas flow proportional counters allow the measurement of alpha particles with energies greater than 3.9 million electron volts (MeV) and beta particles with energies greater than 0.1 MeV.

CASE NARRATIVE
FOR GROSS ALPHA / GROSS BETA ANALYSIS (cont.)

Client: Nuclear Fuel Services, Inc.
Project ID: LEFPC
Batch ID: 32140

The absorption effects for both alpha and beta emitting radionuclides are corrected using an applicable counting efficiency/absorption (weight) calibration relationship. All sample specific activities reported are corrected for absorption effects. Sample size processed, total dissolved solids (TDS) and count time are used to determine the Minimum Detectable Activity (MDA) in terms of picocuries per unit volume (pCi/L or pCi/g).

QA/OC Summary

A method blank, duplicate alpha and beta method spikes, a duplicate of sample 32140-05 (Client ID No. 1661B-64), matrix spikes (MS) and matrix spike duplicates (MSD) of samples 32140-05 and 32140-10 (Client ID No. 1661B-141) were also analyzed. The method blank yielded no measurable alpha or beta activity greater than the MDAs of 0.6 pCi and 2 pCi, respectively. The alpha method spike recoveries were both 96% with a duplicate Relative Percent Difference (RPD) of 0%. The beta method spike recoveries were 101% and 105% with an RPD of 4%. The alpha and beta sample duplicate RPDs were 16% and 18%, respectively, which were within the laboratory control limit of 50%. The alpha MS and MSD recoveries were 74% and 65% for sample 05, and 114% and 89% for sample 10, respectively. The beta MS and MSD recoveries were 91% and 97% for sample 05, and 98% and 94% for sample 10, respectively.

General Discussion

There were no significant observations outside the scope of the analysis.

Section Supervisor or designee

7/5/94

Date

GROSS ALPHA/BETA

Client: Nuclear Fuel Services, Inc.

Client Reference No.: LEFPC

LSDG: 32140

Date Received: 5/17/94

Method: RL-2302

Lab Sample ID	Client Sample ID	Date Analyzed	Analyte	Matrix	Units	Result	2 Sigma Error	Detection Limit	Qualifier
32140-05	1661B-64	7/1/94	Gross Alpha	Soil	pCi/g	4.81E+01	6.58E+00	3.24E+00	
32140-10	1661B-141	7/1/94	Gross Alpha	Soil	pCi/g	4.11E+01	7.19E+00	5.57E+00	
32140-05	1661B-64	7/1/94	Gross Beta	Soil	pCi/g	4.26E+01	5.13E+00	6.12E+00	
32140-10	1661B-141	7/1/94	Gross Beta	Soil	pCi/g	5.52E+01	6.54E+00	6.23E+00	

ND = Not Detected Above MDA

NA = Not Applicable

QC INFORMATION

LSDG # 32140 ANALYSIS Gross Alpha/Beta NO of SAMPLES in BATCH 2 DATE 7/2/94
WORKLIST W1163

SPIKE RECOVERY

Spike (Am) 1.11E+02 dpm / Results Spike - A 4.81E+01 pCi ANALYSIS Am-241
Spike (Am) 1.11E+02 dpm / Results Spike - B 4.81E+01 pCi ANALYSIS Am-241

SPIKE A (Am-241)

SPIKE % RECOVERY = $\left(\frac{4.81E+01 \text{ pCi} \times 2.22 \text{ dpm/pCi} \times 100}{1.11E+02 \text{ dpm}} \right) = 96 \quad (75 - 125)$

SPIKE B (Am-241)

SPIKE % RECOVERY = $\left(\frac{4.81E+01 \text{ pCi} \times 2.22 \text{ dpm/pCi} \times 100}{1.11E+02 \text{ dpm}} \right) = 96 \quad (75 - 125)$

Spike (Sr) 2.10E+02 dpm / Results Spike - A 9.55E+01 pCi ANALYSIS Sr-90
Spike (Sr) 2.10E+02 dpm / Results Spike - B 9.94E+01 pCi ANALYSIS Sr-90

SPIKE A (Sr-90)

SPIKE % RECOVERY = $\left(\frac{9.55E+01 \text{ pCi} \times 2.22 \text{ dpm/pCi} \times 100}{2.10E+02 \text{ dpm}} \right) = 101 \quad (75 - 125)$

SPIKE B (Sr-90)

SPIKE % RECOVERY = $\left(\frac{9.94E+01 \text{ pCi} \times 2.22 \text{ dpm/pCi} \times 100}{2.10E+02 \text{ dpm}} \right) = 105 \quad (75 - 125)$

SPIKE DUPLICATE REPRODUCIBILITY

Sample	<u>4.81E+01</u> pCi/spike	SAMPLE NO.	<u>SPIKE A (AM-241)</u>
Sample Dup	<u>4.81E+01</u> pCi/spike	SAMPLE NO.	<u>SPIKE B (AM-241)</u>
Sample / Dup (ave)	<u>4.81E+01</u> pCi/spike	ANALYSIS	<u>Gross Alpha</u>
DUPLICATE RPD =	ABS	<u>4.81E+01</u> *100 = <u>0</u>	(50% max)
		<u>4.81E+01</u> (ave)	

Sample	<u>9.55E+01</u> pCi/spike	SAMPLE NO.	<u>SPIKE A (SR-90)</u>
Sample Dup	<u>9.94E+01</u> pCi/spike	SAMPLE NO.	<u>SPIKE B (SR-90)</u>
Sample / Dup (ave)	<u>9.75E+01</u> pCi/spike	ANALYSIS	<u>Gross Beta</u>
DUPLICATE RPD =	ABS	<u>9.55E+01</u> *100 = <u>4</u>	(50% max)
		<u>9.94E+01</u> (ave)	
		<u>9.75E+01</u> (ave)	

QC INFORMATION

LSDG # 32140 ANALYSIS Gross Alpha/Beta NO of SAMPLES in BATCH 2 DATE 7/2/94
WORKLIST W1163

SAMPLE DUPLICATE REPRODUCIBILITY

Sample	<u>4.81E+01</u>	pCi/g	SAMPLE NO.	<u>32140-05A</u>
Sample Dup	<u>4.09E+01</u>	pCi/g	SAMPLE NO.	<u>32140-05B</u>
Sample / Dup (ave)	<u>4.45E+01</u>	pCi/g	ANALYSIS	<u>Gross Alpha</u>
DUPLICATE RPD =	ABS	<u>4.81E+01</u> - <u>4.09E+01</u>	*100 =	16 (50% max)
		<u>4.45E+01</u> (ave)		
Sample	<u>4.26E+01</u>	pCi/g	SAMPLE NO.	<u>32140-05A</u>
Sample Dup	<u>3.55E+01</u>	pCi/g	SAMPLE NO.	<u>32140-05B</u>
Sample / Dup (ave)	<u>3.91E+01</u>	pCi/g	ANALYSIS	<u>Gross Beta</u>
DUPLICATE RPD =	ABS	<u>4.26E+01</u> - <u>3.55E+01</u>	*100 =	18 (50% max)
		<u>3.91E+01</u> (ave)		

BLANK STATUS

BLANK RESULTS ARE LESS THAN MDA
ACCEPTABLE

EcoTek Laboratory Services Inc.

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Atlanta, GA 30316

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MATRIX Q C INFORMATION

LSDG # 32140
BATCH ID W1163

ANALYSIS G-A/B

No of Samples in Batch 2

DATE 7/2/94

MATRIX SPIKE RECOVERY

32140-05MS 1.11E+02 dpm /

Results Matrix Spike 8.14E+01 pCi/G
Sample 3240-05A Activity 4.81E+01 pCi/G
Sample Volume 3.33E-01 G
Volume Analyzed 30 %

ANALYSIS G-A

$$\% \text{ RECOVERY} = \left(\frac{8.14\text{E}+01 - 4.81\text{E}+01}{1.11\text{E}+02} \right) \text{pCi/G} \cdot 2.22 \text{ dpm/pCi} \cdot \frac{0.33}{0.30} \text{ G} \cdot 100 = 74$$

32140-05MSD 1.11E+02 dpm /

Results Matrix Spike 7.74E+01 pCi/G
Sample 3240-05A Activity 4.81E+01 pCi/G
Sample Volume 2.22E-01 G
Volume Analyzed 20 %

ANALYSIS G-A

$$\% \text{ RECOVERY} = \left(\frac{7.74\text{E}+01 - 4.81\text{E}+01}{1.11\text{E}+02} \right) \text{pCi/G} \cdot 2.22 \text{ dpm/pCi} \cdot \frac{0.22}{0.20} \text{ G} \cdot 100 = 65$$

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MATRIX Q C INFORMATION

LSDG # 32140
BATCH ID W1163

ANALYSIS G-A/B

No of Samples in Batch 2

DATE 7/2/94

MATRIX SPIKE RECOVERY

32140-05MS 2.10E+02 dpm /

Results Matrix Spike 1.20E+02 pCi/G
Sample 3240-05A Activity 4.26E+01 pCi/G
Sample Volume 3.33E-01 G
Volume Analyzed 30 %

ANALYSIS G-B

$$\% \text{ RECOVERY} = \left(\frac{1.20\text{E}+02 - 4.26\text{E}+01}{2.10\text{E}+02} \right) \text{pCi/G} * 2.22 \text{ dpm/pCi} * \frac{0.33 \text{ G}}{0.30} * 100 = 91$$

32140-05MSD 2.10E+02 dpm /

Results Matrix Spike 1.25E+02 pCi/G
Sample 3240-05A Activity 4.26E+01 pCi/G
Sample Volume 2.22E-01 G
Volume Analyzed 20 %

ANALYSIS G-B

$$\% \text{ RECOVERY} = \left(\frac{1.25\text{E}+02 - 4.26\text{E}+01}{2.10\text{E}+02} \right) \text{pCi/G} * 2.22 \text{ dpm/pCi} * \frac{0.22 \text{ G}}{0.20} * 100 = 97$$

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MATRIX Q C INFORMATION

LSDG # 32140
BATCH ID W1163

ANALYSIS G-A/B

No of Samples in Batch 2

DATE 7/5/94

MATRIX SPIKE RECOVERY

32140-10MS 1.11E+02 dpm

/

Results Matrix Spike 9.45E+01 pCi/G
Sample 3240-10 Activity 4.11E+01 pCi/G
Sample Volume 2.14E-01 G
Volume Analyzed 20 %

ANALYSIS G-A

$$\% \text{ RECOVERY} = \left(\frac{9.45\text{E}+01 - 4.11\text{E}+01}{1.11\text{E}+02} \right) \text{pCi/G} \cdot 2.22 \text{ dpm/pCi} \cdot \frac{0.21 \text{ G} \cdot 100}{0.20} = 114$$

32140-10MSD 1.11E+02 dpm

/

Results Matrix Spike 8.29E+01 pCi/G
Sample 3240-10 Activity 4.11E+01 pCi/G
Sample Volume 2.14E-01 G
Volume Analyzed 20 %

ANALYSIS G-A

$$\% \text{ RECOVERY} = \left(\frac{8.29\text{E}+01 - 4.11\text{E}+01}{1.11\text{E}+02} \right) \text{pCi/G} \cdot 2.22 \text{ dpm/pCi} \cdot \frac{0.21 \text{ G} \cdot 100}{0.20} = 89$$

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MATRIX Q C INFORMATION

LSDG # 32140
BATCH ID W1163

ANALYSIS G-A/B

No of Samples in Batch 2

DATE 7/2/94

MATRIX SPIKE RECOVERY

32140-10MS 2.10E+02 dpm /

Results Matrix Spike 1.42E+02 pCi/G
Sample 3240-10 Activity 5.52E+01 pCi/G
Sample Volume 2.14E-01 G
Volume Analyzed 20 %

ANALYSIS G-B

$$\% \text{ RECOVERY} = \left(\frac{1.42\text{E}+02 - 5.52\text{E}+01}{2.10\text{E}+02} \right) \text{pCi/G} \cdot 2.22 \text{ dpm/pCi}^* \cdot \frac{0.21}{0.20} \text{ G} \cdot 100 = 98$$

32140-10MSD 2.10E+02 dpm /

Results Matrix Spike 1.38E+02 pCi/G
Sample 3240-10 Activity 5.52E+01 pCi/G
Sample Volume 2.14E-01 G
Volume Analyzed 20 %

ANALYSIS G-B

$$\% \text{ RECOVERY} = \left(\frac{1.38\text{E}+02 - 5.52\text{E}+01}{2.10\text{E}+02} \right) \text{pCi/G} \cdot 2.22 \text{ dpm/pCi}^* \cdot \frac{0.21}{0.20} \text{ G} \cdot 100 = 94$$

GROSS ALPHA

LOW LEVEL COUNTING ROOM

Date: 7/2/94

Counted by: CMA

Count Time (min): 60

Reviewed by:

Data File: 1163 GAB.SLK

Det. No.	Alpha Eff (%)	Sample Count Date/Time	Vol. (G)	Sample I.D.	Alpha Gross Counts	Planchet weight (mg)	Alpha Abs. Fact.	Alpha Bkg. (cpm)	Net alpha CPM	Alpha Activity (dpm)	Alpha Activity (pCi)	Alpha Activity (pCi/G)	Alpha Error ($\pm 2s$)	Alpha MDA (pCi/G)
Det A/1	19.44%	7/1/94 17:56	0.222	32140-05A	228	68	0.80	0.11	3.69	2.37E+01	1.07E+01	4.81E+01	6.58E+00	3.24E+00
Det A/3	19.11%	7/1/94 17:56	0.161	32140-10	156	53	0.85	0.21	2.39	1.47E+01	6.60E+00	4.11E+01	7.19E+00	5.57E+00
Det A/4	19.23%	7/1/94 17:56	0.222	32140-05B	202	58	0.83	0.14	3.22	2.02E+01	9.09E+00	4.09E+01	6.03E+00	3.47E+00
Det B/1	19.45%	7/1/94 17:56	1.000	BLANK	14	2	1.00	0.15	0.09	4.54E-01	2.05E-01	2.05E-01	2.94E-01	6.35E-01
Det C/1	20.17%	7/1/94 17:56	1.000	SPIKE-A AM241	1300	3	1.00	0.13	21.54	1.07E+02	4.81E+01	4.81E+01	2.68E+00	5.88E-01
Det C/2	20.08%	7/1/94 17:56	1.000	SPIKE-B AM241	1303	7	1.00	0.27	21.44	1.07E+02	4.81E+01	4.81E+01	2.70E+00	8.06E-01
Det C/3	19.62%	7/1/94 17:56	1.000	SPIKE-A SR90	419	3	1.00	0.20	6.79	3.46E+01	1.56E+01	1.56E+01	1.57E+00	7.18E-01
Det C/4	20.65%	7/1/94 17:56	1.000	SPIKE-B SR90	397	2	1.00	0.19	6.43	3.11E+01	1.40E+01	1.40E+01	1.45E+00	6.69E-01
Det D/1	20.02%	7/1/94 17:56	0.333	32140-05MS	516	100	0.69	0.25	8.35	6.02E+01	2.71E+01	8.14E+01	7.38E+00	3.35E+00
Det D/3	20.24%	7/1/94 17:56	0.222	32140-05MSD	379	71	0.79	0.23	6.09	3.81E+01	1.72E+01	7.74E+01	8.26E+00	4.21E+00
Det D/1	20.02%	7/2/94 9:19	0.214	32140-10 MS	444	69	0.80	0.25	7.15	4.49E+01	2.02E+01	9.45E+01	9.29E+00	4.54E+00
Det D/3	20.24%	7/2/94 9:19	0.214	32140-10 MSD	396	68	0.80	0.23	6.37	3.94E+01	1.78E+01	8.29E+01	8.64E+00	4.31E+00

GROSS BETA

LOW LEVEL COUNTING ROOM

Date: 7/2/94

Counted by: CMA

Count Time (min): 60

Reviewed by:

Data File: 1163_GAB.SLK

Det. No.	Beta Eff (%)	Sample Count Date/Time	Vol. (G)	Sample I.D.	Beta Gross Counts	planchet weight (mg)	Beta Abs. Fact.	Beta Bkg (cpm)	Alpha Xtalk (%)	Net Beta CPM corr	Beta Activity DPM	Beta Activity (pCi)	Beta Activity (pCi/G)	Beta Error ($\pm 2s$)	Beta MDA (pCi/G)
Det A/1	31.42%	7/1/94 17:56	0.222	32140-05A	525	68	0.94	1.99	14.5	6.23	2.10E+01	9.46E+00	4.26E+01	5.13E+00	6.12E+00
Det A/3	30.42%	7/1/94 17:56	0.161	32140-10	419	53	0.95	0.97	14.8	5.66	1.97E+01	8.86E+00	5.52E+01	6.54E+00	6.23E+00
Det A/4	31.09%	7/1/94 17:56	0.222	32140-05B	420	58	0.94	1.38	14.7	5.14	1.75E+01	7.89E+00	3.55E+01	4.61E+00	5.20E+00
Det B/1	31.98%	7/1/94 17:56	1.000	BLANK	218	2	0.95	2.75	15.1	0.87	2.87E+00	1.29E+00	1.29E+00	7.44E-01	1.54E+00
Det C/1	36.09%	7/1/94 17:56	1.000	SPIKE-A AM241	369	3	0.95	2.15	26.1	-1.61	-4.70E+00	-2.12E+00	-2.12E+00	6.56E-01	1.22E+00
Det C/2	36.39%	7/1/94 17:56	1.000	SPIKE-B AM241	389	7	0.95	2.41	29.0	-2.15	-6.21E+00	-2.80E+00	-2.80E+00	7.04E-01	1.27E+00
Det C/3	35.18%	7/1/94 17:56	1.000	SPIKE-A SR90	4479	3	0.95	1.84	26.8	70.99	2.12E+02	9.55E+01	9.55E+01	2.98E+00	1.16E+00
Det C/4	36.19%	7/1/94 17:56	1.000	SPIKE-B SR90	4756	2	0.95	1.91	21.9	75.95	2.21E+02	9.94E+01	9.94E+01	2.99E+00	1.15E+00
Det D/1	36.06%	7/1/94 17:56	0.333	32140-05MS	2030	100	0.94	1.71	23.8	30.13	8.89E+01	4.01E+01	1.20E+02	5.87E+00	3.32E+00
Det D/3	35.37%	7/1/94 17:56	0.222	32140-05MSD	1433	71	0.94	1.89	24.5	20.50	6.15E+01	2.77E+01	1.25E+02	7.51E+00	5.31E+00
Det D/1	36.06%	7/2/94 9:19	0.214	32140-10 MS	1582	69	0.94	1.71	23.8	22.95	6.75E+01	3.04E+01	1.42E+02	8.02E+00	5.15E+00
Det D/3	35.37%	7/2/94 9:19	0.214	32140-10 MSD	1522	68	0.94	1.89	24.5	21.91	6.57E+01	2.96E+01	1.38E+02	8.03E+00	5.50E+00

ALPBET00.BKD

Drawer	Detector	Sample	Sample Date	Alpha Gross	Alpha CPM	Beta Gross	Beta CPM	Count Time	Extra Text 3
A	1	GAB BKG	6/26/94 4:53	114	0.11	1988.5	1.99	60000	TLV
A	2	GAB BKG	6/26/94 4:53	416	0.42	8304	8.30	60000	TLV
A	3	GAB BKG	6/26/94 4:53	214	0.21	972	0.97	60000	TLV
A	4	GAB BKG	6/26/94 4:53	143.5	0.14	1382.5	1.38	60000	TLV
B	1	GAB BKG	6/26/94 4:53	145	0.15	2746	2.75	60000	TLV
B	2	GAB BKG	6/26/94 4:53	214.5	0.21	7407.5	7.41	60000	TLV
B	3	GAB BKG	6/26/94 4:53	284.5	0.28	18832	18.83	60000	TLV
B	4	GAB BKG	6/26/94 4:53	150.5	0.15	6221	6.22	60000	TLV
C	1	GAB BKG	6/26/94 4:53	131.5	0.13	2151	2.15	60000	TLV
C	2	GAB BKG	6/26/94 4:53	273	0.27	2411	2.41	60000	TLV
C	3	GAB BKG	6/26/94 4:53	197.5	0.20	1842	1.84	60000	TLV
C	4	GAB BKG	6/26/94 4:53	189	0.19	1907.5	1.91	60000	TLV
D	1	GAB BKG	6/26/94 4:53	246.5	0.25	1712.5	1.71	60000	TLV
D	2	GAB BKG	6/26/94 4:53	243.5	0.24	130684	130.68	60000	TLV
D	3	GAB BKG	6/26/94 4:53	226.5	0.23	1890.5	1.89	60000	TLV
D	4	GAB BKG	6/26/94 4:53	258.5	0.26	31660.5	31.66	60000	TLV

Analysis: **GAB**

Radiochemistry Worklist (Soil)

Worklist ID: **W1163**

LSDG(s): **32140**

Client(s): **NFS**

Matrix: **Soil**

Level: **EL**

NA

NA

NA

Procedure: **RL-2302**

NA

NA

NA

Prep Due: **6/30/94**

NA

NA

NA

Chem Due: **7/1/94**

	Sample ID	Tare Wt. (g)	Gross Wt. (g)	Digest Wt.* (g)	Aliquot ** dry (g)	Tracer	Spike
✓1	32140-05A	0.5074	1.5082	1.0008	1.11		
✓2	32140-10	0.4970	1.4978	1.0008	1.07		
✓3	DUP 32140-05B	0.5072	1.5085	1.0013	1.11		
✓4	BLANK	NA	NA	NA	NA		
✓5	SPIKE A Am-241	NA	NA	NA	NA		✓
✓6	SPIKE B Am-241	NA	NA	NA	NA		✓
✓7	SPIKE A Sr-90	NA	NA	NA	NA		✓
✓8	SPIKE B Sr-90	NA	NA	NA	NA		✓
✓9	32140-05 MS	0.5073	1.5087	1.0014	1.11		✓
✓10	32140-05 MSD	0.5074	1.5095	1.0021	1.11		✓
✓11	32140-10 MS	0.4972	1.4989	1.0017	1.07		✓
✓12	32140-10 MSD	0.4968	1.4983	1.0015	1.07		✓
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							

Analyst

Date

K8013

6-30-94

K8013

6-30-94

K8013

6-30-94

K8013

6-30-94

K8013

6-30-94

Sample Digestion Preparation	Done	Times	Initials/Date	Calculations
1 Add approx 15 mL HNO ₃ / 15 mL HCl, evaporate to approx 5 mL	✓	1	QA 17/1	Digest Weight* =
2 Add approx 100 mL HF / 20mL HNO ₃ , evaporate to approx 5 mL	✓	2	QA 17/1	Gross Wt - Tare Wt
3 Add approx 100 mL HNO ₃ , evaporate to near dryness	✓	2	QA 17/1	Aliquot** =
4 Add approx 50 mL HCl, evaporate to approx 1-3 mL	✓	2	QA 17/1	Conv. Factor * Digest Wt

Comments: after digested down transferred to glass beakers with 8 mL HNO₃ and ashed with conc HNO₃ 7/1/94 QA.
processed per RL-2302. TC 7-1-94

Radiochemistry Tracking Sheet Prepared by: **K8013**

Tracking Sheet Preparation Reviewed by: **NA**

Physical Preparation Reviewed by: **NA**

Sample Digestion Preparation Reviewed by: **NA**

Date: **6-30-94**

Date: **7-2-94**

Date: **NA**

Date: **NA**

SPIKE ADDITION RECORD

LSDG

32140

ISOTOPE

G-A/B

	ANALYTE	ID NUMBER	DECAY DATE	ACTIVITY OR CONC.	VOLUME	DATE	ANALYST	WITNESS
SPIKE	Am-241	S-RC-Am-91-143-182	10/30/90	111.8 dpm/mL	1.0 mL	6/30/94	K80'B	91
SPIKE	Sr-90	S-RC-Sr-91-158-85	4/1/91	113.60 dpm/mL	1.0 mL	6/30/94	K80'B	91
MS/MSD	Am-241	S-RC-Am-91-143-182	10/30/90	111.8 dpm/mL	1.0 mL	6/30/94	K80'B	91
MS/MSD	Sr-90	S-RC-Sr-91-158-41	4/1/91	113.60 dpm/mL	1.0 mL	6/30/94	K80'B	91
Handwritten: K80'B 6/30/94								

COMMENTS:

Am241: Decay Corrected to 111.4 dpm/mL @ 7/1/94 Lev
 Sr90: Decay Corrected to 210.2 dpm/mL @ 7/1/94 Lev

REVIEWED BY

Lev

DATE:

7-2-94

Weight Sheet

Matrix: Soil

LSDGs: 32110

Sample ID	Physical Characteristics (Wet Sample)	Tare Weight (g)	Wet Weight (g)	Dry Weight (g)
1			gross 31.07	gross 26.90
32140-05	Brown Soil	10.66	net 20.41	net 16.24
2			gross 26.03	gross 26.03
32140-10	Brown Powder	10.64	net 15.39	net 15.39
3			gross	gross
			net	net
4			gross	gross
			net	net
5			gross	gross
			net	net
6			gross	gross
			net	net
7			gross	gross
			net	net
8			gross	gross
			net	net
9			gross	gross
			net	net
10			gross	gross
			net	net
11			gross	gross
			net	net
12			gross	gross
			net	net
13			gross	gross
			net	net
14			gross	gross
			net	net
15			gross	gross
			net	net
16			gross	gross
			net	net
17			gross	gross
			net	net
18			gross	gross
			net	net
19			gross	gross
			net	net
20			gross	gross
			net	net

Balance ID: 6202310

Analyst: JA

Analyst: JA

Date: 6/29/94

Date: 6/29/94

Analyst: JA

Date: 6/29/94

Analyst: JA

Date: 6/29/94

Analyst: JA

Date: 6/29/94

Date: 6-29-94

Samples ground. Ball Mill / Food Processor / Tissue Homogenizer

Samples sieved. Sieve size: 2mm

Transferred to bags. 18013

Reviewed by: SL000.XLS REV 0 (5/93)

Muffle Weight Sheet

Matrix: 30.1

LSDG: 32140

Sample ID	Physical Characteristics (PostMuffle)	Tare Weight (g)	PreMuffle Weight (g)	PostMuffle Weight (g)	Conversion Factor
1			gross 36.59	gross 35.01	
32140-05	red	20.62	net 15.97	net 14.39	1.11
2			gross 34.33	gross 33.31	
32140-10	red	19.01	net 15.32	net 14.30	1.07
3			gross	gross	
			net	net	
4			gross	gross	
			net	net	
5			gross	gross	
			net	net	
6			gross	gross	
			net	net	
7			gross	gross	
			net	net	
8			gross	gross	
			net	net	
9			gross	gross	
			net	net	
10			gross	gross	
			net	net	
11			gross	gross	
			net	net	
12			gross	gross	
			net	net	
13			gross	gross	
			net	net	
14			gross	gross	
			net	net	
15			gross	gross	
			net	net	
16			gross	gross	
			net	net	
17			gross	gross	
			net	net	
18			gross	gross	
			net	net	
19			gross	gross	
			net	net	
20			gross	gross	
			net	net	

Balance ID: W000360

Analyst: K808

Analyst: K808

Analyst: K808

Transferred to bags.

Analyst: Q1

Date: 6-29-94

Date: 6-29-94

Date: 6-29-94

Date: 6-29-94

Reviewed by: RDF

Date: 6-30-94

Conversion Factor = PreMuffle Wt/PostMuffle Wt.

Gross Alpha / Beta Worksheet

LSDG (s): 32140

Procedure: GL -2302 - A

Procedures	Done	Initials/Date	Comments#
A Sample and Planchet Preparation	/	TG 1-7-94	
1. Engrave Planchets	/		
2. Clean Planchets	/		
3. Weigh planchets, record tare weight	/	TG 1-7-94	
4. Add approx. 5 ml 1N HNO ₃ , few drops H ₂ O ₂ , evaporate to dryness	NA		
5. Evaluate condition of digested sample, document as necessary	/		
6. Place inverted planchets on hot plate, adjust to low heat	NA		
7. Examine beaker for accumulated solids	/		
B Sample Transfer (accumulated solids present)	/	TG 1-7-94	
1. Add known amt of 1N HNO ₃ to dissolve sample, record volume		1	
2. Pipet 1 mL to planchet, evaporate to dryness, record volume		1	
3. Record gross weight of accumulated solids in 1 mL aliquot		1	
4. Calculate net weight of accumulated solids in 1 mL aliquot		1	
5. Calculate volume required to achieve 100 mg solids		1	
6. Transfer remaining volume of sample to achieve volume required			
7. Flame planchet			
8. Cool planchet, weigh, record gross weight		TG 1-7-94	
9. Calculate net weight of accumulated solids		1	
10. Calculate adjust sample aliquot		1	
C Sample Transfer (accumulated solids not present)		1	
1. Add 5 mL of 1N HNO ₃ , rinse sides of beaker, repeat			
2. Transfer volume to planchet, evaporate to dryness			
3. Flame planchet			
4. Cool planchet, weigh, record gross weight		TG 1-7-94	
5. Calculate new weight of accumulated solids		1	

Reviewed By: TG Date: 7-2-94

Comments/Exceptions:

Weight of Accumulated Solids		
Sample ID	Tare Weight (g)	Acc. Solid Weight (g)
1		gross 10.2476
32140-05A	10.1799	net 0.0677
2		gross 10.4231
32140-10	10.3702	net 0.0529
3		gross 10.1556
32140-05B	10.0976	net 0.0580
4 H1163		gross 10.4620
Blank	10.4605	net 0.0015
5 H1163		gross 10.2062
XA Am241	10.2037	net 0.0025
6 H1163		gross 10.3432
X13 Am241	10.3366	net 0.0066
7 H1163		gross 10.0975
XA Sr90	10.0944	net 0.0031
8 H1163		gross 10.1063
X13 Sr90	10.1047	net 0.0016
9 MS		gross 10.5146
32140-05	10.4143	net 0.1003
10 MSD		gross 10.2526
32140-05	10.1819	net 0.0707
11 MS		gross 10.4258
32140-10	10.3572	net 0.0686
12 MSD		gross 10.4502
32140-10	10.3827	net 0.0675
13		gross
		net
14		gross
		net
15		gross
		net
16		gross
		net
17		gross
		net
18		gross
		net
19		gross
		net
20		gross
		net

Supplemental Gross Alpha / Beta Worksheet

LSDGs: 32140

Sample ID	Weight of Accumulated Solids in known aliquot		Volume required to achieve 100 mg solids		Adjusted Sample Aliquot (g)
1	tare wt.	gross			
32140-05A	10.1799	10.2171	4.034 mL/20mL	0.222	
2	tare wt.	gross			
32140-10	10.3702	10.4135	3.463 mL/20mL	0.1605	
3	tare wt.	gross			
32140-05B	10.0976	10.1316	4.414 mL/20mL	0.222	
4	tare wt.	gross			
W1163	10.4605	NA	NA	NA	
Blank					
5	tare wt.	gross			
W1163	10.2037				
XA Am 241					
6	tare wt.	gross			
W1163	10.3366				
XB Am 241					
7	tare wt.	gross			
W1163	10.0944				
XA Sr 90					
8	tare wt.	gross			
W1163	10.1047				
XB Sr 90					
9	tare wt.	gross			
MS	10.4143	10.4412	6 mL/20mL	0.333	
32140-05		0.0269			
10	tare wt.	gross			
MSD	10.1819	10.2202	4 mL/20mL	0.222	
32140-05		0.0383			
11	tare wt.	gross			
MS	10.3572	10.3976	4 mL/20mL	0.214	
32140-10		0.0404			
12	tare wt.	gross			
MSD	10.3827	10.4232	4 mL/20mL	0.214	
32140-10		0.0405			
13	tare wt.	gross			
14	tare wt.	gross			
15	tare wt.	gross			
16	tare wt.	gross			
17	tare wt.	gross			
18	tare wt.	gross			
19	tare wt.	gross			
20	tare wt.	gross			

net weight = gross weight - tare weight

transfer volume = 100 mg solid /

Aliquot =

(wt of solid in known aliquot/known aliquot)

orig. aliquot * vol trans. / vol of HNO3 added

Reviewed By: Jav

Date: 7-2-94

Gross Alpha/Beta Validation Package

QC Control Charts

QA filename :DKA300:[ALPHA.QAF]GAB.QAF;1
Parameter Name : A_REC (ALPHA SPIKE % RECOVERY)
Start/End Dates :3-JUN-1993 00:00:00 through 23-MAY-1994 00:00:00
Mean +- Std Dev : 89.0018 +- 29.0759 (32.67 %)

QA filename :DKA300:[ALPHA.QAF]GAB.QAF;1
Parameter Name : B_REC (BETA SPIKE % RECOVERY)
Start/End Dates :3-JUN-1993 00:00:00 through 23-MAY-1994 00:00:00
Mean +- Std Dev : 92.1943 +- 28.5330 (30.95 %)

QA filename :DKA300:[ALPHA.QAF]GAB.QAF;1
Parameter Name : A_DUP (Alpha % RPD)
Start/End Dates :3-JUN-1993 00:00:00 through 23-MAY-1994 00:00:00
Mean +- Std Dev : 16.2044 +- 24.1080 (148.77 %)

QA filename :DKA300:[ALPHA.QAF]GAB.QAF;1
Parameter Name : B_DUP (Beta % RPD)
Start/End Dates :3-JUN-1993 00:00:00 through 23-MAY-1994 00:00:00
Mean +- Std Dev : 12.1535 +- 20.3901 (167.77 %)

GAS FLOW PROPORTIONAL COUNTER SAMPLE LOG

Date: 7/1/94		Date: 7/1/94		Date: 7/2/94	
Detector	Sample ID	Detector	Sample ID	Detector	Sample ID
(A1)	Blank W1145 S889	C1	Spike A AM211 W1163	A-D	Daily Bkg
(A2)	Spike A	C2	Spike B AM211	A-D	9' Eff Check
(A3)	Spike B	C3	Spike A S890	A-D	3' Eff Check
(C1)	32075-37 W1109 S890	C4	Spike B S890	A1	Plating Waste A
(C2)	-38	D1	32140-05MS	A3	B
(C3)	-39	D3	32140-05MSD	A4	e
(C4)	-40				P
(D1)	-41A				E
(D2)	-42				F
(A2)	-43			D1	32140-10 MS W1163
(A3)	-41B			D3	32140-10 MSD
(C1)	Blank			A1	32136-73 W1162
(C2)	Spike A			A3	32136-74
(C3)	Spike B			A4	32136-75
(D1)	32072-42 MS			C1	32136-76
(D2)	32072-30			C3	32136-77
A1	32140-05A W1163			C4	32136-78
A2	-10			A1	32136-79 W1162
A4	-05B			A3	80
B1	Blank			A4	82

Analyst: GB

Analyst: GB

Analyst: JLV

PCB

LSDG: 32136

CASE NARRATIVE FOR PCB ANALYSIS
USING SW-846, METHOD 8080

Client: Nuclear Fuel Services, Inc.

Project ID: LEFPC

Batch ID: 32136

Analytical Summary

Seventeen (17) soil samples and two (2) water samples were received on 5/17/94. The samples were analyzed using a Hewlett-Packard gas chromatograph equipped with an electron capture detector.

Procedural Summary

- Analysis - Chromatography was performed on a RTX-5 and RTX-50 column using a temperature program suitable for resolving the target analytes. Quantitation of sample concentrations were performed using a five point calibration. Tentative identification of compounds is supported by at least one other qualitative analysis (either GC/EC or GC/MS when the concentration of the analytes permits). All appropriate control samples were analyzed with the sample batch.
- Scope and Limitations - The initial sample was approximately 30 grams for solid matrices and 1000 mls for aqueous matrices.

The samples were extracted with methylene chloride or a methylene chloride/acetone mix exchanged to hexane and brought to 10 ml final effective volume.

Practical Quantitation Limits (PQL) are based upon the lowest standard and then factored for the initial sample amount, final sample extract volume, any necessary dilution, and percent moisture (for solids).

QA/QC Summary

A method blank was extracted and analyzed with sample batch and found to be free of target analyte contamination.

Sample 1661B-223 required a 20 fold dilution to bring a target analyte within the instrument calibration range. Sample 1661B-233 required a 100 fold dilution due to matrix interferences.

CASE NARRATIVE FOR PCB ANALYSIS
USING SW-846, METHOD 8080

Client: Nuclear Fuel Services, Inc.

Project ID: LEFPC

Batch ID: 32136

General Discussion

Method QC, consisting of a blank spike and blank spike duplicate analyses, was performed. Accuracy and precision were within acceptable QC limits.

There were no significant observations outside of the scope of the analysis except those mentioned under the QA/QC summary.

Scott Selman for E.T.
GC Section Supervisor (designee)

6/29/94
Date

PCB Organic Analytical Results
SW-846 Method 8080

Client: Nuclear Fuel Service, Inc.
Lab Sample ID: 3213619
Matrix: Soil

Client Sample No.: 1661B-69
Client Reference No.: LEFPC
Date Extracted: 5/24/94

CAS Number	Compound Name	Diluton	Date of Analysis	Result ug/kg	PQL ug/kg	Note
12674112	Aroclor 1016	1	6/23/94	BQL	34.2	
1104282	Aroclor 1221	1	6/23/94	BQL	68.4	
11141165	Aroclor 1232	1	6/23/94	BQL	34.2	
53469219	Aroclor 1242	1	6/23/94	BQL	34.2	
12672296	Aroclor 1248	1	6/23/94	BQL	34.2	
111097691	Aroclor 1254	1	6/23/94	BQL	34.2	
11096825	Aroclor 1260	1	6/23/94	689	34.2	

PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

PCB Surrogate Recovery Data

Lab Sample ID: 3213619

Client Sample No.: 1661B-69

<i>Surrogate Compound</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>TCMX</i>	<i>90</i>	<i>60-150</i>	
<i>DCB</i>	<i>133</i>	<i>60-150</i>	

D = Surrogate diluted out

**** = Surrogate recovery outside QC Limits*

Recovery limits: TCMX and DCB from CLP SOW OLM01.8

Surrogate recovery limits are advisory only.

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency and matrix effect. Lower surrogate recoveries may indicate possible matrix effect and/or decreased extraction efficiency.

DCB=Decachlorobiphenyl

TCMX = Tetrachlorometaxylene

PCB Organic Analytical Results
SW-846 Method 8080

Client: Nuclear Fuel Service, Inc.
Lab Sample ID: 3213620
Matrix: Soil

Client Sample No.: 1661B-95
Client Reference No.: LEFPC
Date Extracted: 5/24/94

CAS Number	Compound Name	Dilution	Date of Analysis	Result ug/kg	PQL ug/kg	Note
12674112	Aroclor 1016	1	6/23/94	BQL	41.5	
1104282	Aroclor 1221	1	6/23/94	BQL	83.0	
11141165	Aroclor 1232	1	6/23/94	BQL	41.5	
53469219	Aroclor 1242	1	6/23/94	BQL	41.5	
12672296	Aroclor 1248	1	6/23/94	BQL	41.5	
111097691	Aroclor 1254	1	6/23/94	BQL	41.5	
11096825	Aroclor 1260	1	6/23/94	1020	41.5	

PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

PCB Surrogate Recovery Data

Lab Sample ID: 3213620

Client Sample No.: 1661B-95

<i>Surrogate Compound</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>TCMX</i>	<i>90</i>	<i>60-150</i>	
<i>DCB</i>	<i>138</i>	<i>60-150</i>	

D = Surrogate diluted out

**** = Surrogate recovery outside QC Limits*

Recovery limits: TCMX and DCB from CLP SOW OLM01.8

Surrogate recovery limits are advisory only.

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency and matrix effect. Lower surrogate recoveries may indicate possible matrix effect and/or decreased extraction efficiency.

DCB=Decachlorobiphenyl

TCMX = Tetrachlorometaxylene

PCB Organic Analytical Results
SW-846 Method 8080

Client: Nuclear Fuel Service, Inc.
Lab Sample ID: 3213621
Matrix: Soil

Client Sample No.: 1661B-105
Client Reference No.: LEFPC
Date Extracted: 5/24/94

CAS Number	Compound Name	Diluton	Date of Analysis	Result ug/kg	PQL ug/kg	Note
12674112	Aroclor 1016	1	6/23/94	BQL	44.3	
1104282	Aroclor 1221	1	6/23/94	BQL	88.6	
11141165	Aroclor 1232	1	6/23/94	BQL	44.3	
53469219	Aroclor 1242	1	6/23/94	BQL	44.3	
12672296	Aroclor 1248	1	6/23/94	BQL	44.3	
111097691	Aroclor 1254	1	6/23/94	BQL	44.3	
11096825	Aroclor 1260	1	6/23/94	824	44.3	

PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

PCB Surrogate Recovery Data

Lab Sample ID: 3213621

Client Sample No.: 1661B-105

<i>Surrogate Compound</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>TCMX</i>	<i>87</i>	<i>60-150</i>	
<i>DCB</i>	<i>128</i>	<i>60-150</i>	

D = Surrogate diluted out

**** = Surrogate recovery outside QC Limits*

Recovery limits: TCMX and DCB from CLP SOW OLM01.8

Surrogate recovery limits are advisory only.

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency and matrix effect. Lower surrogate recoveries may indicate possible matrix effect and/or decreased extraction efficiency.

DCB=Decachlorobiphenyl

TCMX = Tetrachlorometaxylene

PCB Organic Analytical Results
SW-846 Method 8080

Client: Nuclear Fuel Service, Inc.
Lab Sample ID: 3213622
Matrix: Soil

Client Sample No.: 1661B-110
Client Reference No.: LEFPC
Date Extracted: 5/24/94

CAS Number	Compound Name	Dilution	Date of Analysis	Result ug/kg	PQL ug/kg	Note
12674112	Aroclor 1016	1	6/23/94	BQL	41.1	
1104282	Aroclor 1221	1	6/23/94	BQL	82.3	
11141165	Aroclor 1232	1	6/23/94	BQL	41.1	
53469219	Aroclor 1242	1	6/23/94	BQL	41.1	
12672296	Aroclor 1248	1	6/23/94	BQL	41.1	
111097691	Aroclor 1254	1	6/23/94	BQL	41.1	
11096825	Aroclor 1260	1	6/23/94	854	41.1	

PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

<i>PCB Surrogate Recovery Data</i>			
<i>Lab Sample ID: 3213622</i>		<i>Client Sample No.: 1661B-110</i>	
<i>Surrogate Compound</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>TCMX</i>	<i>96</i>	<i>60-150</i>	
<i>DCB</i>	<i>136</i>	<i>60-150</i>	

D = Surrogate diluted out

**** = Surrogate recovery outside QC Limits*

Recovery limits: TCMX and DCB from CLP SOW OLM01.8

Surrogate recovery limits are advisory only.

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency and matrix effect. Lower surrogate recoveries may indicate possible matrix effect and/or decreased extraction efficiency.

DCB=Decachlorobiphenyl

TCMX = Tetrachlorometaxylene

PCB Organic Analytical Results
SW-846 Method 8080

Client: Nuclear Fuel Service, Inc.
Lab Sample ID: 3213623
Matrix: Soil

Client Sample No.: 1661B-115
Client Reference No.: LEFPC
Date Extracted: 5/24/94

CAS Number	Compound Name	Dilution	Date of Analysis	Result ug/kg	PQL ug/kg	Note
12674112	Aroclor 1016	1	6/23/94	BQL	42.3	
1104282	Aroclor 1221	1	5/23/94	BQL	84.5	
11141165	Aroclor 1232	1	6/23/94	BQL	42.3	
53469219	Aroclor 1242	1	6/23/94	BQL	42.3	
12672296	Aroclor 1248	1	6/23/94	BQL	42.3	
111097691	Aroclor 1254	1	6/23/94	BQL	42.3	
11096825	Aroclor 1260	1	6/23/94	920	42.3	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

<i>PCB Surrogate Recovery Data</i>			
<i>Lab Sample ID: 3213623</i>		<i>Client Sample No.: 1661B-115</i>	
<i>Surrogate Compound</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>TCMX</i>	<i>80</i>	<i>60-150</i>	
<i>DCB</i>	<i>126</i>	<i>60-150</i>	

D = Surrogate diluted out

**** = Surrogate recovery outside QC Limits*

Recovery limits: TCMX and DCB from CLP SOW OLM01.8

Surrogate recovery limits are advisory only.

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency and matrix effect. Lower surrogate recoveries may indicate possible matrix effect and/or decreased extraction efficiency.

DCB=Decachlorobiphenyl

TCMX = Tetrachlorometaxylene

PCB Organic Analytical Results
SW-846 Method 8080

Client: Nuclear Fuel Service, Inc.
Lab Sample ID: 3213624
Matrix: Soil

Client Sample No.: 1661B-120
Client Reference No.: LEFPC
Date Extracted: 5/24/94

<i>CAS Number</i>	<i>Compound Name</i>	<i>Diluton</i>	<i>Date of Analysis</i>	<i>Result ug/kg</i>	<i>PQL ug/kg</i>	<i>Note</i>
12674112	Aroclor 1016	1	6/23/94	BQL	51.4	
1104282	Aroclor 1221	1	6/23/94	BQL	103	
11141165	Aroclor 1232	1	6/23/94	BQL	51.4	
53469219	Aroclor 1242	1	6/23/94	BQL	51.4	
12672296	Aroclor 1248	1	6/23/94	BQL	51.4	
111097691	Aroclor 1254	1	6/23/94	BQL	51.4	
11096825	Aroclor 1260	1	6/23/94	1300	51.4	

PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

PCB Surrogate Recovery Data

Lab Sample ID: 3213624

Client Sample No.: 1661B-120

<i>Surrogate Compound</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>TCMX</i>	<i>83</i>	<i>60-150</i>	
<i>DCB</i>	<i>135</i>	<i>60-150</i>	

D = Surrogate diluted out

**** = Surrogate recovery outside QC Limits*

Recovery limits: TCMX and DCB from CLP SOW OLM01.8

Surrogate recovery limits are advisory only.

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency and matrix effect. Lower surrogate recoveries may indicate possible matrix effect and/or decreased extraction efficiency.

DCB=Decachlorobiphenyl

TCMX = Tetrachlorometaxylene

PCB Organic Analytical Results
SW-846 Method 8080

Client: Nuclear Fuel Service, Inc.
Lab Sample ID: 3213625
Matrix: Soil

Client Sample No.: 1661B-125
Client Reference No.: LEFPC
Date Extracted: 5/24/94

CAS Number	Compound Name	Diluton	Date of Analysis	Result ug/kg	PQL ug/kg	Note
12674112	Aroclor 1016	1	6/24/94	BQL	42.3	
1104282	Aroclor 1221	1	5/24/94	BQL	84.5	
11141165	Aroclor 1232	1	6/24/94	BQL	42.3	
53469219	Aroclor 1242	1	6/24/94	BQL	42.3	
12672296	Aroclor 1248	1	6/24/94	BQL	42.3	
111097691	Aroclor 1254	1	6/24/94	BQL	42.3	
11096825	Aroclor 1260	1	6/24/94	666	42.3	

PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

PCB Surrogate Recovery Data

Lab Sample ID: 3213625

Client Sample No.: 1661B-125

<i>Surrogate Compound</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>TCMX</i>	<i>87</i>	<i>60-150</i>	
<i>DCB</i>	<i>122</i>	<i>60-150</i>	

D = Surrogate diluted out

**** = Surrogate recovery outside QC Limits*

Recovery limits: TCMX and DCB from CLP SOW OLM01.8

Surrogate recovery limits are advisory only.

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency and matrix effect. Lower surrogate recoveries may indicate possible matrix effect and/or decreased extraction efficiency.

DCB=Decachlorobiphenyl

TCMX = Tetrachlorometaxylene

PCB Organic Analytical Results
SW-846 Method 8080

Client: Nuclear Fuel Service, Inc.
Lab Sample ID: 3213626
Matrix: Soil

Client Sample No.: 1661B-130
Client Reference No.: LEFPC
Date Extracted: 5/24/94

CAS Number	Compound Name	Diluton	Date of Analysis	Result ug/kg	PQL ug/kg	Note
12674112	Aroclor 1016	1	6/24/94	BQL	42.2	
1104282	Aroclor 1221	1	6/24/94	BQL	84.4	
11141165	Aroclor 1232	1	6/24/94	BQL	42.2	
53469219	Aroclor 1242	1	6/24/94	BQL	42.2	
12672296	Aroclor 1248	1	6/24/94	BQL	42.2	
111097691	Aroclor 1254	1	6/24/94	BQL	42.2	
11096825	Aroclor 1260	1	6/24/94	873	42.2	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

PCB Surrogate Recovery Data

Lab Sample ID: 3213626

Client Sample No.: 1661B-130

<i>Surrogate Compound</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>TCMX</i>	<i>85</i>	<i>60-150</i>	
<i>DCB</i>	<i>125</i>	<i>60-150</i>	

D = Surrogate diluted out

**** = Surrogate recovery outside QC Limits*

Recovery limits: TCMX and DCB from CLP SOW OLM01.8

Surrogate recovery limits are advisory only.

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency and matrix effect. Lower surrogate recoveries may indicate possible matrix effect and/or decreased extraction efficiency.

DCB=Decachlorobiphenyl

TCMX = Tetrachlorometaxylene

PCB Organic Analytical Results
SW-846 Method 8080

Client: Nuclear Fuel Service, Inc.
Lab Sample ID: 3213628
Matrix: Soil

Client Sample No.: 1661B-145
Client Reference No.: LEFPC
Date Extracted: 5/24/94

CAS Number	Compound Name	Dilution	Date of Analysis	Result ug/kg	PQL ug/kg	Note
12674112	Aroclor 1016	1	6/24/94	BQL	33.3	
1104282	Aroclor 1221	1	6/24/94	BQL	66.6	
11141165	Aroclor 1232	1	6/24/94	BQL	33.3	
53469219	Aroclor 1242	1	6/24/94	BQL	33.3	
12672296	Aroclor 1248	1	6/24/94	BQL	33.3	
111097691	Aroclor 1254	1	6/24/94	BQL	33.3	
11096825	Aroclor 1260	1	6/24/94	BQL	33.3	

PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

PCB Surrogate Recovery Data

Lab Sample ID: 3213628

Client Sample No.: 1661B-145

<i>Surrogate Compound</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>TCMX</i>	<i>85</i>	<i>60-150</i>	
<i>DCB</i>	<i>147</i>	<i>60-150</i>	

D = Surrogate diluted out

**** = Surrogate recovery outside QC Limits*

Recovery limits: TCMX and DCB from CLP SOW OLM01.8

Surrogate recovery limits are advisory only.

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency and matrix effect. Lower surrogate recoveries may indicate possible matrix effect and/or decreased extraction efficiency.

DCB=Decachlorobiphenyl

TCMX = Tetrachlorometaxylene

PCB Organic Analytical Results
SW-846 Method 8080

Client: Nuclear Fuel Service, Inc.
Lab Sample ID: 3213629
Matrix: Soil

Client Sample No.: 1661B-154
Client Reference No.: LEFPC
Date Extracted: 5/24/94

CAS Number	Compound Name	Diluton	Date of Analysis	Result ug/kg	PQL ug/kg	Note
12674112	Aroclor 1016	1	6/24/94	BQL	32.9	
1104282	Aroclor 1221	1	6/24/94	BQL	65.8	
11141165	Aroclor 1232	1	6/24/94	BQL	32.9	
53469219	Aroclor 1242	1	6/24/94	BQL	32.9	
12672296	Aroclor 1248	1	6/24/94	BQL	32.9	
111097691	Aroclor 1254	1	6/24/94	BQL	32.9	
11096825	Aroclor 1260	1	6/24/94	BQL	32.9	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

PCB Surrogate Recovery Data

Lab Sample ID: 3213629

Client Sample No.: 1661B-154

<i>Surrogate Compound</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>TCMX</i>	<i>81</i>	<i>60-150</i>	
<i>DCB</i>	<i>151</i>	<i>60-150</i>	<i>***</i>

D = Surrogate diluted out

**** = Surrogate recovery outside QC Limits*

Recovery limits: TCMX and DCB from CLP SOW OLM01.8

Surrogate recovery limits are advisory only.

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency and matrix effect. Lower surrogate recoveries may indicate possible matrix effect and/or decreased extraction efficiency.

DCB=Decachlorobiphenyl

TCMX = Tetrachlorometaxylene

PCB Organic Analytical Results
SW-846 Method 8080

Client: Nuclear Fuel Service, Inc.
Lab Sample ID: 3213630
Matrix: Soil

Client Sample No.: 1661B-162
Client Reference No.: LEFPC
Date Extracted: 5/24/94

CAS Number	Compound Name	Dilution	Date of Analysis	Result ug/kg	PQL ug/kg	Note
12674112	Aroclor 1016	1	6/24/94	BQL	33.3	
1104282	Aroclor 1221	1	6/24/94	BQL	66.7	
11141165	Aroclor 1232	1	6/24/94	BQL	33.3	
53469219	Aroclor 1242	1	6/24/94	BQL	33.3	
12672296	Aroclor 1248	1	6/24/94	BQL	33.3	
111097691	Aroclor 1254	1	6/24/94	BQL	33.3	
11096825	Aroclor 1260	1	6/24/94	BQL	33.3	

PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

PCB Surrogate Recovery Data

Lab Sample ID: 3213630

Client Sample No.: 1661B-162

<i>Surrogate Compound</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>TCMX</i>	<i>78</i>	<i>60-150</i>	
<i>DCB</i>	<i>148</i>	<i>60-150</i>	

D = Surrogate diluted out

**** = Surrogate recovery outside QC Limits*

Recovery limits: TCMX and DCB from CLP SOW OLM01.8

Surrogate recovery limits are advisory only.

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency and matrix effect. Lower surrogate recoveries may indicate possible matrix effect and/or decreased extraction efficiency.

DCB=Decachlorobiphenyl

TCMX = Tetrachlorometaxylene

PCB Organic Analytical Results
SW-846 Method 8080

Client: Nuclear Fuel Service, Inc.
Lab Sample ID: 3213631
Matrix: Soil

Client Sample No.: 1661B-172
Client Reference No.: LEFPC
Date Extracted: 5/24/94

CAS Number	Compound Name	Diluton	Date of Analysis	Result ug/kg	PQL ug/kg	Note
12674112	Aroclor 1016	1	6/24/94	BQL	33.4	
1104282	Aroclor 1221	1	6/24/94	BQL	66.7	
11141165	Aroclor 1232	1	6/24/94	BQL	33.4	
53469219	Aroclor 1242	1	6/24/94	BQL	33.4	
12672296	Aroclor 1248	1	6/24/94	BQL	33.4	
111097691	Aroclor 1254	1	6/24/94	BQL	33.4	
11096825	Aroclor 1260	1	6/24/94	BQL	33.4	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

PCB Surrogate Recovery Data

Lab Sample ID: 3213631

Client Sample No.: 1661B-172

<i>Surrogate Compound</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>TCMX</i>	<i>83</i>	<i>60-150</i>	
<i>DCB</i>	<i>155</i>	<i>60-150</i>	<i>***</i>

D = Surrogate diluted out

**** = Surrogate recovery outside QC Limits*

Recovery limits: TCMX and DCB from CLP SOW OLM01.8

Surrogate recovery limits are advisory only.

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency and matrix effect. Lower surrogate recoveries may indicate possible matrix effect and/or decreased extraction efficiency.

DCB=Decachlorobiphenyl

TCMX = Tetrachlorometaxylene

PCB Organic Analytical Results
SW-846 Method 8080

Client: Nuclear Fuel Service, Inc.
Lab Sample ID: 3213632
Matrix: Soil

Client Sample No.: 1661B-178
Client Reference No.: LEFPC
Date Extracted: 5/24/94

<i>CAS Number</i>	<i>Compound Name</i>	<i>Dilution</i>	<i>Date of Analysis</i>	<i>Result ug/kg</i>	<i>PQL ug/kg</i>	<i>Note</i>
12674112	Aroclor 1016	1	6/24/94	BQL	33.2	
1104282	Aroclor 1221	1	6/24/94	BQL	66.4	
11141165	Aroclor 1232	1	6/24/94	BQL	33.2	
53469219	Aroclor 1242	1	6/24/94	BQL	33.2	
12672296	Aroclor 1248	1	6/24/94	BQL	33.2	
111097691	Aroclor 1254	1	6/24/94	BQL	33.2	
11096825	Aroclor 1260	1	6/24/94	BQL	33.2	

PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

PCB Surrogate Recovery Data

Lab Sample ID: 3213632

Client Sample No.: 1661B-178

<i>Surrogate Compound</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>TCMX</i>	<i>83</i>	<i>60-150</i>	
<i>DCB</i>	<i>155</i>	<i>60-150</i>	<i>***</i>

D = Surrogate diluted out

**** = Surrogate recovery outside QC Limits*

Recovery limits: TCMX and DCB from CLP SOW OLM01.8

Surrogate recovery limits are advisory only.

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency and matrix effect. Lower surrogate recoveries may indicate possible matrix effect and/or decreased extraction efficiency.

DCB=Decachlorobiphenyl

TCMX = Tetrachlorometaxylene

PCB Organic Analytical Results
SW-846 Method 8080

Client: Nuclear Fuel Service, Inc.
Lab Sample ID: 3213633
Matrix: Soil

Client Sample No.: 1661B-185
Client Reference No.: LEFPC
Date Extracted: 5/24/94

<i>CAS Number</i>	<i>Compound Name</i>	<i>Dilution</i>	<i>Date of Analysis</i>	<i>Result ug/kg</i>	<i>PQL ug/kg</i>	<i>Note</i>
12674112	Aroclor 1016	1	6/24/94	BQL	33.3	
1104282	Aroclor 1221	1	6/24/94	BQL	66.5	
11141165	Aroclor 1232	1	6/24/94	BQL	33.3	
53469219	Aroclor 1242	1	6/24/94	BQL	33.3	
12672296	Aroclor 1248	1	6/24/94	BQL	33.3	
111097691	Aroclor 1254	1	6/24/94	BQL	33.3	
11096825	Aroclor 1260	1	6/24/94	BQL	33.3	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

PCB Surrogate Recovery Data

Lab Sample ID: 3213633

Client Sample No.: 1661B-185

<i>Surrogate Compound</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>TCMX</i>	<i>82</i>	<i>60-150</i>	
<i>DCB</i>	<i>150</i>	<i>60-150</i>	

D = Surrogate diluted out

**** = Surrogate recovery outside QC Limits*

Recovery limits: TCMX and DCB from CLP SOW OLM01.8

Surrogate recovery limits are advisory only.

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency and matrix effect. Lower surrogate recoveries may indicate possible matrix effect and/or decreased extraction efficiency.

DCB=Decachlorobiphenyl

TCMX = Tetrachlorometaxylene

PCB Organic Analytical Results
SW-846 Method 8080

Client: Nuclear Fuel Service, Inc.
Lab Sample ID: 3213634
Matrix: Soil

Client Sample No.: 1661B-193
Client Reference No.: LEFPC
Date Extracted: 5/24/94

<i>CAS Number</i>	<i>Compound Name</i>	<i>Dilution</i>	<i>Date of Analysis</i>	<i>Result ug/kg</i>	<i>PQL ug/kg</i>	<i>Note</i>
12674112	Aroclor 1016	1	6/24/94	BQL	33.2	
1104282	Aroclor 1221	1	6/24/94	BQL	66.4	
11141165	Aroclor 1232	1	6/24/94	BQL	33.2	
53469219	Aroclor 1242	1	6/24/94	BQL	33.2	
12672296	Aroclor 1248	1	6/24/94	BQL	33.2	
111097691	Aroclor 1254	1	6/24/94	BQL	33.2	
11096825	Aroclor 1260	1	6/24/94	BQL	33.2	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

PCB Surrogate Recovery Data

Lab Sample ID: 3213634

Client Sample No.: 1661B-193

<i>Surrogate Compound</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>TCMX</i>	<i>78</i>	<i>60-150</i>	
<i>DCB</i>	<i>144</i>	<i>60-150</i>	

D = Surrogate diluted out

**** = Surrogate recovery outside QC Limits*

Recovery limits: TCMX and DCB from CLP SOW OLM01.8

Surrogate recovery limits are advisory only.

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency and matrix effect. Lower surrogate recoveries may indicate possible matrix effect and/or decreased extraction efficiency.

DCB=Decachlorobiphenyl

TCMX = Tetrachlorometaxylene

PCB Organic Analytical Results
SW-846 Method 8080

Client: Nuclear Fuel Service, Inc.
Lab Sample ID: 3213635
Matrix: Soil

Client Sample No.: 1661B-201
Client Reference No.: LEFPC
Date Extracted: 5/24/94

CAS Number	Compound Name	Dilution	Date of Analysis	Result ug/kg	PQL ug/kg	Note
12674112	Aroclor 1016	1	6/24/94	BQL	33.4	
1104282	Aroclor 1221	1	5/24/94	BQL	66.7	
11141165	Aroclor 1232	1	6/24/94	BQL	33.4	
53469219	Aroclor 1242	1	6/24/94	BQL	33.4	
12672296	Aroclor 1248	1	6/24/94	BQL	33.4	
111097691	Aroclor 1254	1	6/24/94	BQL	33.4	
11096825	Aroclor 1260	1	6/24/94	BQL	33.4	

PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

PCB Surrogate Recovery Data

Lab Sample ID: 3213635

Client Sample No.: 1661B-201

<i>Surrogate Compound</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>TCMX</i>	<i>84</i>	<i>60-150</i>	
<i>DCB</i>	<i>155</i>	<i>60-150</i>	<i>***</i>

D = Surrogate diluted out

**** = Surrogate recovery outside QC Limits*

Recovery limits: TCMX and DCB from CLP SOW OLM01.8

Surrogate recovery limits are advisory only.

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency and matrix effect. Lower surrogate recoveries may indicate possible matrix effect and/or decreased extraction efficiency.

DCB=Decachlorobiphenyl

TCMX = Tetrachlorometaxylene

PCB Organic Analytical Results
SW-846 Method 8080

Client: Nuclear Fuel Service, Inc.
Lab Sample ID: 3213696
Matrix: Soil

Client Sample No.: 1661B-223
Client Reference No.: LEFPC
Date Extracted: 5/24/94

CAS Number	Compound Name	Diluton	Date of Analysis	Result ug/kg	PQL ug/kg	Note
12674112	Aroclor 1016	1	6/24/94	BQL	53.0	
1104282	Aroclor 1221	1	6/24/94	BQL	106	
11141165	Aroclor 1232	1	6/24/94	BQL	53.0	
53469219	Aroclor 1242	1	6/24/94	1310	53.0	
12672296	Aroclor 1248	1	6/24/94	BQL	53.0	
111097691	Aroclor 1254	1	6/24/94	BQL	53.0	
11096825	Aroclor 1260	20	6/28/94	1450	1060	

PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

PCB Surrogate Recovery Data

Lab Sample ID: 3213696

Client Sample No.: 1661B-223

<i>Surrogate Compound</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>TCMX</i>	<i>5</i>	<i>60-150</i>	<i>***</i>
<i>DCB</i>	<i>13</i>	<i>60-150</i>	<i>***</i>

D = Surrogate diluted out

**** = Surrogate recovery outside QC Limits*

Recovery limits: TCMX and DCB from CLP SOW OLM01.8

Surrogate recovery limits are advisory only.

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency and matrix effect. Lower surrogate recoveries may indicate possible matrix effect and/or decreased extraction efficiency.

DCB=Decachlorobiphenyl

TCMX = Tetrachlorometaxylene

PCB Organic Analytical Results
SW-846 Method 8080

Client: Nuclear Fuel Service, Inc.
Lab Sample ID: 3213699
Matrix: Water

Client Sample No.: 1661B-237
Client Reference No.: LEFPC
Date Extracted: 5/19/94

<i>CAS Number</i>	<i>Compound Name</i>	<i>Dilution</i>	<i>Date of Analysis</i>	<i>Result ug/l</i>	<i>PQL ug/l</i>	<i>Note</i>
12674112	Aroclor 1016	1	6/24/94	BQL	1.00	
1104282	Aroclor 1221	1	6/24/94	BQL	2.00	
11141165	Aroclor 1232	1	6/24/94	BQL	1.00	
53469219	Aroclor 1242	1	6/24/94	BQL	1.00	
12672296	Aroclor 1248	1	6/24/94	BQL	1.00	
111097691	Aroclor 1254	1	6/24/94	BQL	1.00	
11096825	Aroclor 1260	1	6/24/94	BQL	1.00	

PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

PCB Surrogate Recovery Data

Lab Sample ID: 3213699

Client Sample No.: 1661B-237

<i>Surrogate Compound</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>TCMX</i>	<i>71</i>	<i>60-150</i>	
<i>DCB</i>	<i>169</i>	<i>60-150</i>	<i>***</i>

D = Surrogate diluted out

**** = Surrogate recovery outside QC Limits*

Recovery limits: TCMX and DCB from CLP SOW OLM01.8

Surrogate recovery limits are advisory only.

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency and matrix effect. Lower surrogate recoveries may indicate possible matrix effect and/or decreased extraction efficiency.

DCB=Decachlorobiphenyl

TCMX = Tetrachlorometaxylene

PCB Organic Analytical Results
SW-846 Method 8080

Client: Nuclear Fuel Service, Inc.
Lab Sample ID: 32136107
Matrix: Water

Client Sample No.: 1661B-233
Client Reference No.: LEFPC
Date Extracted: 5/19/94

<i>CAS Number</i>	<i>Compound Name</i>	<i>Dilution</i>	<i>Date of Analysis</i>	<i>Result ug/l</i>	<i>PQL ug/l</i>	<i>Note</i>
12674112	Aroclor 1016	100	6/27/94	BQL	100	
1104282	Aroclor 1221	100	6/27/94	BQL	200	
11141165	Aroclor 1232	100	6/27/94	BQL	100	
53469219	Aroclor 1242	100	6/27/94	BQL	100	
12672296	Aroclor 1248	100	6/27/94	BQL	100	
111097691	Aroclor 1254	100	6/27/94	BQL	100	
11096825	Aroclor 1260	100	6/27/94	BQL	100	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

PCB Surrogate Recovery Data

Lab Sample ID: 32136107

Client Sample No.: 1661B-233

<i>Surrogate Compound</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>TCMX</i>	<i>D</i>	<i>60-150</i>	<i>***</i>
<i>DCB</i>	<i>D</i>	<i>60-150</i>	<i>***</i>

D = Surrogate diluted out

**** = Surrogate recovery outside QC Limits*

Recovery limits: TCMX and DCB from CLP SOW OLM01.8

Surrogate recovery limits are advisory only.

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency and matrix effect. Lower surrogate recoveries may indicate possible matrix effect and/or decreased extraction efficiency.

DCB=Decachlorobiphenyl

TCMX = Tetrachlorometaxylene

PCB Organic Analytical Results
SW-846 Method 8080

Client: Nuclear Fuel Service, Inc.
Lab Sample ID: Q1452403
Matrix: Soil

Client Sample No.: Method Blank
Client Reference No.: LEFPC
Date Extracted: 5/24/94

CAS Number	Compound Name	Diluton	Date of Analysis	Result ug/kg	PQL ug/kg	Note
12674112	Aroclor 1016	1	6/21/94	BQL	33.3	
1104282	Aroclor 1221	1	5/21/94	BQL	66.7	
11141165	Aroclor 1232	1	6/21/94	BQL	33.3	
53469219	Aroclor 1242	1	6/21/94	BQL	33.3	
12672296	Aroclor 1248	1	6/21/94	BQL	33.3	
111097691	Aroclor 1254	1	6/21/94	BQL	33.3	
11096825	Aroclor 1260	1	6/21/94	BQL	33.3	

PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

PCB Surrogate Recovery Data

Lab Sample ID: Q1452403

Client Sample No.: Method Blank

<i>Surrogate Compound</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>TCMX</i>	<i>82</i>	<i>60-150</i>	
<i>DCB</i>	<i>151</i>	<i>60-150</i>	<i>***</i>

D = Surrogate diluted out

**** = Surrogate recovery outside QC Limits*

Recovery limits: TCMX and DCB from CLP SOW OLM01.8

Surrogate recovery limits are advisory only.

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency and matrix effect. Lower surrogate recoveries may indicate possible matrix effect and/or decreased extraction efficiency.

DCB=Decachlorobiphenyl

TCMX = Tetrachlorometaxylene

PCB Organic Analytical Results
SW-846 Method 8080

Client: Nuclear Fuel Service, Inc.
Lab Sample ID: Q1452405
Matrix: Soil

Client Sample No.: Method Blank
Client Reference No.: LEFPC
Date Extracted: 5/24/94

CAS Number	Compound Name	Dilution	Date of Analysis	Result ug/kg	PQL ug/kg	Note
12674112	Aroclor 1016	1	6/23/94	BQL	33.3	
1104282	Aroclor 1221	1	6/23/94	BQL	66.7	
11141165	Aroclor 1232	1	6/23/94	BQL	33.3	
53469219	Aroclor 1242	1	6/23/94	BQL	33.3	
12672296	Aroclor 1248	1	6/23/94	BQL	33.3	
111097691	Aroclor 1254	1	6/23/94	BQL	33.3	
11096825	Aroclor 1260	1	6/23/94	BQL	33.3	

PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

PCB Surrogate Recovery Data

Lab Sample ID: Q1452405

Client Sample No.: Method Blank

<i>Surrogate Compound</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>TCMX</i>	<i>92</i>	<i>60-150</i>	
<i>DCB</i>	<i>110</i>	<i>60-150</i>	

D = Surrogate diluted out

**** = Surrogate recovery outside QC Limits*

Recovery limits: TCMX and DCB from CLP SOW OLM01.8

Surrogate recovery limits are advisory only.

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency and matrix effect. Lower surrogate recoveries may indicate possible matrix effect and/or decreased extraction efficiency.

DCB=Decachlorobiphenyl

TCMX = Tetrachlorometaxylene

AROCLOR QC Spike Result

Method 8080

Client: Nuclear Fuel Service, Inc.

Lab Sample ID: 3214002MS/3214002MSD

Matrix: Soil

Dilution: 1

Client Sample ID: 1661B-63

Client Reference No.: LEFPC

Date of Extraction: 5/25/94

Date of Analysis: 6/22/94

Compound	Sample Concentration µg/kg	MS Spike Amount µg/kg	MS Concentration µg/kg	Matrix Spike % Recovery	MSD Spike Amount µg/kg	MSD Concentration µg/kg	Matrix Spike Duplicate % Recovery	QC Limits	RPD
Aroclor -1254	0	421	668	159	421	774	184	8-127	14.7

AROCLOR QC Spike Result

Method 8080

Client: Nuclear Fuel Services, Inc.

Lab Sample ID: Q1452401/Q1452402

Matrix: Soil

Dilution: 1

Client Sample ID: Blank Spike/Blank Spike Duplicate

Client Reference No.: LEFPC

Date of Extraction: 5/24/94

Date of Analysis: 6/22/94

Compound	Sample Concentration µg/kg	BS Spike Amount µg/kg	BS Concentration µg/kg	Blank Spike % Recovery	BSD Spike Amount µg/kg	BSD Concentration µg/kg	Blank Spike Duplicate % Recovery	QC Limits	RPD
Aroclor -1254	0	333	253	76	333	264	79	8-127	4.2

CASE NARRATIVE FOR PCB ANALYSIS
USING SW-846, METHOD 8080

Client: Nuclear Fuel Services, Inc.

Project ID: LEFPC

Batch ID: 32140

Analytical Summary

Two (2) soil samples were received on 5/17/94. The samples were analyzed using a Hewlett-Packard gas chromatograph equipped with an electron capture detector.

Procedural Summary

- Analysis - Chromatography was performed on a RTX-5 and RTX-50 column using a temperature program suitable for resolving the target analytes. Quantitation of sample concentrations were performed using a five point calibration. Tentative identification of compounds is supported by at least one other qualitative analysis (either GC/EC or GC/MS when the concentration of the analytes permits). All appropriate control samples were analyzed with the sample batch.
- Scope and Limitations - The initial sample was approximately 30 grams for solid matrices and 1000 mls for aqueous matrices.

The samples were extracted with methylene chloride or a methylene chloride/acetone mix exchanged to hexane and brought to 10 ml final effective volume.

Practical Quantitation Limits (PQL) are based upon the lowest standard and then factored for the initial sample amount, final sample extract volume, any necessary dilution, and percent moisture (for solids).

QA/QC Summary

A method blank was extracted and analyzed with sample batch and found to be free of target analyte contamination.

Method QC, consisting of a matrix spike and matrix spike duplicate analyses, was performed on sample 1661B-63 and a matrix spike performed on sample 1661B-138. Due to insufficient sample volume only a matrix spike was performed on 1661B-138. Percent recovery for sample 1661B-138 was within acceptable. Accuracy and precision for sample 1661B-63 was outside of QC limits due to matrix interference.

CASE NARRATIVE FOR PCB ANALYSIS
USING SW-846, METHOD 8080

Client: Nuclear Fuel Services, Inc.

Project ID: LEFPC

Batch ID: 32140

General Discussion

There were no significant observations outside of the scope of the analysis except those mention under the QA/QC summary.

GC Section Supervisor (designee)

Date

PCB Organic Analytical Results
SW-846 Method 8080

Client: Nuclear Fuel Services, Inc. Client Sample No.: 1661B-138
Lab Sample ID: 3214007 Client Reference No.: LEFPC
Matrix: Soil Date Extracted: 5/25/94

CAS Number	Compound Name	Dilution	Date of Analysis	Result ug/kg	PQL ug/kg	Note
12674112	Aroclor 1016	1	6/22/94	BQL	33.1	
1104282	Aroclor 1221	1	6/22/94	BQL	66.2	
11141165	Aroclor 1232	1	6/22/94	BQL	33.1	
53469219	Aroclor 1242	1	6/22/94	BQL	33.1	
12672296	Aroclor 1248	1	6/22/94	BQL	33.1	
111097691	Aroclor 1254	1	6/22/94	BQL	33.1	
11096825	Aroclor 1260	1	6/22/94	BQL	33.1	

PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

<i>PCB Surrogate Recovery Data</i>			
<i>Lab Sample ID: 3214007</i>		<i>Client Sample No.: 1661B-138</i>	
<i>Surrogate Compound</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>TCMX</i>	<i>80</i>	<i>60-150</i>	
<i>DCB</i>	<i>150</i>	<i>60-150</i>	

D = Surrogate diluted out

**** = Surrogate recovery outside QC Limits*

Recovery limits: TCMX and DCB from CLP SOW OLM01.8

Surrogate recovery limits are advisory only.

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency and matrix effect. Lower surrogate recoveries may indicate possible matrix effect and/or decreased extraction efficiency.

DCB=Decachlorobiphenyl

TCMX = Tetrachlorometaxylene

AROCLOR QC Spike Result

Method 8080

Client: Nuclear Fuel Service, Inc.

Client Sample ID: 1661B-138

Lab Sample ID: 3214007MS

Client Reference No.: LEFPC

Matrix: Soil

Date of Extraction: 5/25/94

Dilution: 1

Date of Analysis: 6/22/94

<i>Compound</i>	<i>Sample Concentration µg/kg</i>	<i>MS Spike Amount µg/kg</i>	<i>MS Concentration µg/kg</i>	<i>Matrix Spike % Recovery</i>	<i>MSD Spike Amount µg/kg</i>	<i>MSD Concentration µg/kg</i>	<i>Matrix Spike Duplicate % Recovery</i>	<i>QC Limits</i>	<i>RPD</i>
<i>Aroclor -1254</i>	<i>0</i>	<i>327</i>	<i>238</i>	<i>73</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>8-127</i>	<i>NA</i>

PCB Organic Analytical Results
SW-846 Method 8080

Client: Nuclear Fuel Services, Inc. Client Sample No.: 1661B-138
Lab Sample ID: 3214007MS Client Reference No.: LEFPC
Matrix: Soil Date Extracted: 5/25/94

CAS Number	Compound Name	Dilution	Date of Analysis	Result ug/kg	PQL ug/kg	Note
12674112	Aroclor 1016	1	6/22/94	BQL	32.7	
1104282	Aroclor 1221	1	6/22/94	BQL	65.4	
11141165	Aroclor 1232	1	6/22/94	BQL	32.7	
53469219	Aroclor 1242	1	6/22/94	BQL	32.7	
12672296	Aroclor 1248	1	6/22/94	BQL	32.7	
111097691	Aroclor 1254	1	6/22/94	238	32.7	
11096825	Aroclor 1260	1	6/22/94	BQL	32.7	

PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

PCB Surrogate Recovery Data

Lab Sample ID: 3214007MS

Client Sample No.: 1661B-138

<i>Surrogate Compound</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>TCMX</i>	<i>74</i>	<i>60-150</i>	
<i>DCB</i>	<i>133</i>	<i>60-150</i>	

D = Surrogate diluted out

**** = Surrogate recovery outside QC Limits*

Recovery limits: TCMX and DCB from CLP SOW OLM01.8

Surrogate recovery limits are advisory only.

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency and matrix effect. Lower surrogate recoveries may indicate possible matrix effect and/or decreased extraction efficiency.

DCB=Decachlorobiphenyl

TCMX = Tetrachlorometaxylene

PCB Organic Analytical Results
SW-846 Method 8080

Client: Nuclear Fuel Services, Inc.
Lab Sample ID: 3214002
Matrix: Soil

Client Sample No.: 1661B-63
Client Reference No.: LEFPC
Date Extracted: 5/25/94

CAS Number	Compound Name	Dilution	Date of Analysis	Result ug/kg	PQL ug/kg	Note
12674112	Aroclor 1016	1	6/28/94	BQL	42.3	
1104282	Aroclor 1221	1	6/28/94	BQL	84.6	
11141165	Aroclor 1232	1	6/28/94	BQL	42.3	
53469219	Aroclor 1242	1	6/28/94	BQL	42.3	
12672296	Aroclor 1248	1	6/28/94	BQL	42.3	
111097691	Aroclor 1254	1	6/28/94	BQL	42.3	
11096825	Aroclor 1260	1	6/28/94	751	42.3	

PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

<i>PCB Surrogate Recovery Data</i>			
<i>Lab Sample ID: 3214002</i>		<i>Client Sample No.: 1661B-63</i>	
<i>Surrogate Compound</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>TCMX</i>	<i>77</i>	<i>60-150</i>	
<i>DCB</i>	<i>110</i>	<i>60-150</i>	

D = Surrogate diluted out

**** = Surrogate recovery outside QC Limits*

Recovery limits: TCMX and DCB from CLP SOW OLM01.8

Surrogate recovery limits are advisory only.

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency and matrix effect. Lower surrogate recoveries may indicate possible matrix effect and/or decreased extraction efficiency.

DCB=Decachlorobiphenyl

TCMX = Tetrachlorometaxylene

PCB Organic Analytical Results
SW-846 Method 8080

Client: Nuclear Fuel Services, Inc.
Lab Sample ID: 3214002MSD
Matrix: Soil

Client Sample No.: 1661B-63
Client Reference No.: LEFPC
Date Extracted: 5/25/94

CAS Number	Compound Name	Diluton	Date of Analysis	Result ug/kg	PQL ug/kg	Note
12674112	Aroclor 1016	1	6/22/94	BQL	42.1	
1104282	Aroclor 1221	1	6/22/94	BQL	84.3	
11141165	Aroclor 1232	1	6/22/94	BQL	42.1	
53469219	Aroclor 1242	1	6/22/94	BQL	42.1	
12672296	Aroclor 1248	1	6/22/94	BQL	42.1	
111097691	Aroclor 1254	1	6/22/94	774	42.1	
11096825	Aroclor 1260	1	6/22/94	1130	42.1	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

<i>PCB Surrogate Recovery Data</i>			
<i>Lab Sample ID: 3214002MSD</i>		<i>Client Sample No.: 1661B-63</i>	
<i>Surrogate Compound</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>TCMX</i>	<i>78</i>	<i>60-150</i>	
<i>DCB</i>	<i>173</i>	<i>60-150</i>	<i>***</i>

D = Surrogate diluted out

**** = Surrogate recovery outside QC Limits*

Recovery limits: TCMX and DCB from CLP SOW OLM01.8

Surrogate recovery limits are advisory only.

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency and matrix effect. Lower surrogate recoveries may indicate possible matrix effect and/or decreased extraction efficiency.

DCB=Decachlorobiphenyl

TCMX = Tetrachlorometaxylene

PCB Organic Analytical Results
SW-846 Method 8080

Client: Nuclear Fuel Services, Inc.
Lab Sample ID: 3214002MS
Matrix: Soil

Client Sample No.: 1661B-63
Client Reference No.: LEFPC
Date Extracted: 5/25/94

CAS Number	Compound Name	Dilution	Date of Analysis	Result ug/kg	PQL ug/kg	Note
12674112	Aroclor 1016	1	6/22/94	BQL	42.0	
1104282	Aroclor 1221	1	6/22/94	BQL	84.1	
11141165	Aroclor 1232	1	6/22/94	BQL	42.0	
53469219	Aroclor 1242	1	6/22/94	BQL	42.0	
12672296	Aroclor 1248	1	6/22/94	BQL	42.0	
111097691	Aroclor 1254	1	6/22/94	655	42.0	
11096825	Aroclor 1260	1	6/22/94	809	42.0	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

PCB Surrogate Recovery Data

Lab Sample ID: 3214002MS

Client Sample No.: 1661B-63

<i>Surrogate Compound</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Note</i>
<i>TCMX</i>	<i>75</i>	<i>60-150</i>	
<i>DCB</i>	<i>160</i>	<i>60-150</i>	<i>***</i>

D = Surrogate diluted out

**** = Surrogate recovery outside QC Limits*

Recovery limits: TCMX and DCB from CLP SOW OLM01.8

Surrogate recovery limits are advisory only.

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency and matrix effect. Lower surrogate recoveries may indicate possible matrix effect and/or decreased extraction efficiency.

DCB=Decachlorobiphenyl

TCMX = Tetrachlorometaxylene

AROCLOR QC Spike Result

Method 8080

Client: Nuclear Fuel Service, Inc.

Client Sample ID: 1661B-63

Lab Sample ID: 3214002MS/3214002MSD

Client Reference No.: LEFPC

Matrix: Soil

Date of Extraction: 5/25/94

Dilution: 1

Date of Analysis: 6/22/94

Compound	Sample Concentration µg/kg	MS Spike Amount µg/kg	MS Concentration µg/kg	Matrix Spike % Recovery	MSD Spike Amount µg/kg	MSD Concentration µg/kg	Matrix Spike Duplicate % Recovery	QC Limits	RPD
Aroclor -1254	0	421	668	159	421	774	184	8-127	14.7

Result File : /DATA/RESULT/AF06346.RES
Sample Name : 3214002MS
Sample Comment : 1661B-63
Injection Time : 0727 22Jun1994
Instrument : HPAF
Column/Amt Inj : RTX5 .53MM / 1.5ul
Temp Program : 160 C (1MIN)-5C/MIN-270C(8MIN)
Calib Method : /DATA/METHOD/AF'AR12540616.MTH
Sequence : /DATA/SEQUENCE/AF'0621.SEQ
Subseq/Sample : 1/ 25
%Dil-Fact : 100.000 Smp-Amt : 0.000

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	3.19	0.00	8897	BB	.646	
2	3.32	0.00	42886	BB	3.115	
3	3.61	0.00	21203	BB	1.540	
4	3.88	0.00	16338	BB	1.187	
5	4.29	0.00	22953	BB	1.667	
6	4.76	0.00	180306	BB	13.098	
7	5.09	0.00	13852	BB	1.006	
8	5.55	0.00	25717	BB	1.868	
9	5.75	0.00	3993	BB	.653	
10	6.00	#5.99	390054	BB	14.998	Tetrachloro-m-xylene
11	6.95	0.00	21667	BB	1.574	
12	7.35	0.00	117837	BB	8.560	
13	7.55	0.00	80972	BB	5.882	
14	7.95	0.00	33382	BB	2.425	
15	8.21	0.00	19720	BB	1.432	
16	8.37	0.00	20302	BB	1.475	
17	8.59	0.00	7871	BB	.572	
18	8.77	0.00	26082	BB	1.895	
19	9.77	0.00	74643	BB	5.422	
20	10.13	0.00	22320	BB	1.621	
21	10.27	0.00	110394	BB	8.019	
22	10.59	0.00	83437	BB	6.061	
23	10.90	0.00	805895	BB	58.542	
24	11.05	0.00	98926	BB	7.186	
25	11.59	11.59	195435	BB	106.545	Aroclor-1254
26	12.01	0.00	135821	BB	9.866	
27	12.28	0.00	54059	BB	3.927	
28	12.47	0.00	17593	BB	1.278	
29	12.63	0.00	314709	BB	22.861	
30	12.78	0.00	115688	BB	8.404	
31	12.91	0.00	311757	BB	22.647	
32	13.06	13.04	1716226	BB	380.811	Aroclor-1254
33	13.27	0.00	461860	BB	33.551	
34	13.62	0.00	979013	BB	71.118	
35	13.82	0.00	2345027	BB	170.348	
36	14.01	0.00	1163418	BB	84.513	
37	14.24	0.00	251291	BB	18.254	
38	14.38	0.00	118245	BB	8.590	
39	14.56	0.00	570656	BB	41.454	

1260

AR1254 = 1588.549 ppb

```

Result File      : /DATA/RESULT/AF06346.NES
Sample Name      : 3214002MS
Sample Comment   : 1661B-b3
Injection Time    : 07/27 22Jun1994
Instrument        : HPAP
Column/Aml Inj   : RTX5 .53MM / 1.5ul
Pk# Acl RT Exp RT Area Code UG/L Name
40 14.74 0.00 1149892 BB 83.531
41 14.89 0.00 312917 BB 22.731
42 15.07 15.06 2757947 BB 322.274 Aroclor-1254
43 15.48 0.00 1533655 BB 111.408
44 15.64 0.00 794489 BB 57.714
45 15.90 15.93 5015299 BS 378.161 Aroclor-1254
46 16.26 0.00 334086 BB 24.269
47 16.51 0.00 900268 BB 65.398
48 16.71 0.00 3265363 GS 237.204
49 17.15 0.00 1741624 BB 126.516
50 17.47 0.00 866517 BB 62.946
51 17.65 0.00 6540990 GS 475.153
52 17.94 0.00 768809 BB 55.848
53 18.22 0.00 2331503 BB 169.366
54 18.39 0.00 1176501 BB 85.464
55 18.59 18.58 1349330 BB 400.758 Aroclor-1254
56 18.75 0.00 282773 BB 20.541
57 19.01 0.00 1989767 BB 144.541
58 19.20 0.00 934928 BB 67.915
59 19.36 0.00 942483 BB 68.464
60 19.56 0.00 288112 BB 20.929
61 19.71 0.00 348413 BB 25.310
62 19.93 0.00 5262397 GS 382.273
63 20.35 0.00 94627 BB 6.874
64 20.93 0.00 2814962 BB 204.487
65 21.20 0.00 923156 BB 67.060
66 21.38 0.00 1115427 BB 81.027
67 21.71 0.00 15795 BB 1.147
68 21.86 0.00 85925 BB 6.242
69 22.37 0.00 562791 BB 40.882
70 22.58 0.00 22829 BB 1.658
71 22.81 0.00 33788 BB 2.454
72 23.02 0.00 1068546 BB 77.622
73 23.72 0.00 251593 BB 18.276
74 24.13 0.00 26516 BB 1.926
75 24.33 0.00 267857 BB 19.458
76 24.88 0.00 22149 BB 1.609
77 25.27 0.00 200711 BB 14.580
78 25.56 #25.54 571228 BB 31.964 Decachlorobiphenyl
79 25.85 0.00 18577 BB 1.349
80 26.12 0.00 40853 BB 2.968
81 26.96 0.00 86626 BB 6.293
82 27.45 0.00 10678 BB .776
83 28.12 0.00 13566 BB .986
84 28.40 0.00 11386 BB .827
85 28.72 0.00 7944 BB .577

```

Result File : /DATA/RESULT/AF06346.RES
Sample Name : 3214002MS
Sample Comment : 1661B-63
Injection Time : 0727 22Jun1994
Instrument : HPAF
Column/Amt Inj : RTX5 .53MM / 1.5ul

3.885

4.287

4.757

5.092

5.553

5.754

Tetrachloro-m-xylene

6.954

7.348

7.951

8.340

8.595

8.767

9.770

10.135

10.592

11.051 10.898

Aroclor-1254

12.009

12.483

12.763

12.907

Aroclor-1254

13.274

13.619

14.010

13.818

14.388

14.562

14.888

14.738

Aroclor-1254

15.639

15.484

16.263

16.507

Aroclor-1254

17.465

17.936

17.148

16.711

18.220

18.761

19.009

19.356

19.934

20.350

20.927

21.202

21.363

21.880

22.372

22.809

23.016

23.721

24.128

24.329

24.879

25.272

25.849

26.118

26.957

27.451

Decachlorobiphenyl

Result File : /DATA/RESULT/AF06412.RES
 Sample Name : 3214002MS
 Sample Comment : 1661B-63
 Injection Time : 1921 28Jun1994
 Instrument : HPAF
 Column/Amt Inj : RTX5 .53MM / 1.5ul
 Temp Program : 160 C (1MIN)-5C/MIN-270C(8MIN)
 Calib Method : /DATA/METHOD/AF'AR16600623.MTH
 Sequence : /DATA/SEQUENCE/AF'0628.SEQ
 Subseq/Sample : 1/ 5
 %Dil-Fact : 100.000 Smp-Amt: 0.000

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	3.33	0.00	49252	BB	3.578	
2	3.62	0.00	18965	BB	1.378	
3	4.29	0.00	19002	BB	1.380	
4	4.76	0.00	202760	BB	14.729	
5	5.09	0.00	33203	BB	2.412	
6	5.55	0.00	22904	BB	1.664	
7	5.75	0.00	7995	BB	.581	
8	6.00	#5.99	380768	BB	15.377	Tetrachloro-m-xylene
9	6.95	0.00	19771	BB	1.436	
10	7.35	0.00	157323	BB	11.428	
11	7.54	0.00	102107	BB	7.417	
12	7.95	0.00	34413	BB	2.500	
13	8.21	0.00	19266	BB	1.400	
14	8.34	8.33	12949	BB	2.294	Aroclor-1016
15	8.59	0.00	7929	BB	.576	
16	8.76	0.00	25040	BB	1.819	
17	8.91	8.91	6780	BB	2.080	Aroclor-1016
18	9.19	0.00	7755	BB	.563	
19	9.54	0.00	13128	BB	.954	
20	9.76	9.76	70689	BB	7.301	Aroclor-1016
21	10.12	0.00	24764	BB	1.799	
22	10.27	0.00	60847	BB	4.420	
23	10.59	0.00	80638	BB	5.858	
24	10.89	0.00	807264	BB	58.642	
25	11.04	0.00	87640	BB	6.366	
26	11.59	0.00	200838	BB	14.589	
27	12.00	11.99	139566	BB	38.516	Aroclor-1016
28	12.28	0.00	43909	BB	3.190	
29	12.63	0.00	164741	BB	11.967	
30	12.78	0.00	106277	BB	7.720	
31	12.90	0.00	301800	BB	21.924	
32	13.05	13.04	1687074	BB	611.444	Aroclor-1016
33	13.27	0.00	448030	BB	32.546	
34	13.61	0.00	958504	BB	69.628	
35	13.81	0.00	2325872	BB	168.957	
36	14.00	0.00	1130629	BB	82.132	
37	14.23	0.00	238402	BB	17.318	
38	14.37	0.00	113393	BB	8.237	
39	14.55	0.00	566904	BB	41.181	

AC
 SLS
 6/29/94

AR1260 = 1923.97 ppb

Result File : /DATA/RESULT/AF06412.RES
 Sample Name : 3214002MS
 Sample Comment : 1661B-63
 Injection Time : 1921 28Jun1994
 Instrument : HPAF
 Column/Amt Inj : RTX5 .53MM / 1.5ul

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
40	14.73	0.00	1148535	BB	83.432	
41	14.88	0.00	308919	BB	22.441	
42	15.06	0.00	2756850	BB	200.264	
43	15.47	15.47	1539321	BB	467.476	Aroclor-1260
44	15.63	0.00	794944	BB	57.747	
45	15.89	0.00	4999168	BS	363.152	
46	16.25	0.00	342806	BB	24.902	
47	16.50	0.00	896099	BB	65.095	
48	16.70	16.69	3224722	GS	218.651	Aroclor-1260
49	17.14	0.00	1806886	BB	131.257	
50	17.45	0.00	852974	BB	61.962	
51	17.64	17.63	6518531	GS	525.771	Aroclor-1260
52	17.92	0.00	767140	BB	55.727	
53	18.21	18.20	2345301	BB	326.684	Aroclor-1260
54	18.38	0.00	1177483	BB	85.535	
55	18.58	0.00	1335602	BB	97.021	
56	18.74	0.00	278221	BB	20.211	
57	19.00	0.00	2001168	BB	145.370	
58	19.18	0.00	951918	BB	69.150	
59	19.34	0.00	954431	BB	69.332	
60	19.55	0.00	285824	BB	20.763	
61	19.70	0.00	350188	BB	25.438	
62	19.92	0.00	5258270	GS	381.973	
63	20.34	0.00	60378	BB	4.386	
64	20.91	20.91	2764641	BB	385.388	Aroclor-1260
65	21.19	0.00	908111	BB	65.967	
66	21.37	0.00	1130625	BB	82.131	
67	21.70	0.00	15619	BB	1.135	
68	21.85	0.00	82946	BB	6.025	
69	22.36	0.00	561730	BB	40.805	
70	22.57	0.00	20119	BB	1.461	
71	22.80	0.00	22921	BB	1.665	
72	23.00	0.00	1078321	BB	78.332	
73	23.71	0.00	164605	BB	11.957	
74	24.11	0.00	27276	BB	1.981	
75	24.31	0.00	255956	BB	18.593	
76	24.91	0.00	35634	BB	2.589	
77	25.25	0.00	173340	BB	12.592	
78	25.55	#25.54	575786	BB	23.643	Decachlorobiphenyl
79	25.79	0.00	9183	BB	.667	
80	26.05	0.00	61128	BB	4.440	
81	26.58	0.00	48951	BB	3.556	
82	26.93	0.00	44656	BB	3.244	
83	27.42	0.00	9708	BB	.705	
84	27.84	0.00	30682	BB	2.229	
85	28.39	0.00	280869	BB	20.403	


```
= /DATA/RESULT/AF06412.RES
Sample Name      = J214002MS
Sample Comment   = 1661B-63
Injection Time   = 1921.280min1994
Injection Comment = HFHF
Column/Alt Inj  = RTX5.52MM / 1.5u1
```

[illegible]

Result File : /DATA/RESULT/AB06346.RES
 Sample Name : 3214002MS
 Sample Comment : 1661B-63
 Injection Time : 0727 22Jun1994
 Instrument : HPAB
 Column/Aml Inj : RTX50 .53MM / 1.5ul
 Temp Program : 160 C (1MIN)-5C/MIN-270C(8MIN)
 Calib Method : /DATA/METHOD/AB'AR12540616.MTH
 Sequence : /DATA/SEQUENCE/AB'0621.SEQ
 Subseq/Sample : 1/ 25
 %Dil-Fact : 100.000
 Smp-Aml : 0.000

PK#	ACL	RT	Exp	RT	Area	Code	UG/L	Name
1	3.09	0.00			5417	BB	.394	
2	3.45	0.00			5794	BB	.421	
3	3.63	0.00			5612	BB	.408	
4	4.11	0.00			23681	BB	1.720	
5	5.16	0.00			9611	BB	.698	
6	5.77	0.00			44704	BB	3.247	
7	6.79	0.00			10184	BB	.740	
8	7.13	#7.12			293795	BB	15.878	Telrachloro-m-xylene
9	8.06	0.00			12507	BB	.909	
10	8.59	0.00			125110	BB	9.088	
11	9.21	0.00			.9556	BB	.694	
12	9.38	0.00			16191	BB	1.176	
13	9.67	0.00			28741	BB	2.088	
14	10.07	0.00			21457	BB	1.559	
15	10.86	0.00			17612	BB	1.279	
16	11.12	0.00			83719	BB	6.082	
17	11.58	0.00			74632	BB	5.421	
18	12.12	0.00			9407	BB	.683	
19	12.29	0.00			377092	BB	27.393	
20	12.45	0.00			85360	BB	6.201	
21	13.01	0.00			55335	BB	4.020	
22	13.44	0.00			121129	BB	8.799	
23	13.73	0.00			43305	BB	3.146	
24	13.92	0.00			23270	BB	1.690	
25	14.22	0.00			105106	BB	7.635	
26	14.35	0.00			258203	BB	18.757	
27	14.51	0.00			1414590	BB	102.759	
28	14.73	0.00			311791	BB	22.649	
29	15.07	0.00			790267	BB	57.407	
30	15.27	15.26			1785839	BB	301.180	Aroclor-1254
31	15.47	0.00			585438	BB	42.528	
32	15.86	0.00			88534	BB	6.431	
33	16.04	0.00			478088	BB	.34.729	
34	16.22	0.00			997508	BB	72.461	
35	16.37	0.00			334527	BB	24.301	
36	16.56	16.55			2381871	BB	354.920	Aroclor-1254
37	16.97	0.00			1006046	BB	73.082	
38	17.13	0.00			600696	BB	43.636	
39	17.39	17.42			3604564	BB	394.052	Aroclor-1254

1260

AR1254
2075.815 ppb

Result File : /DATA/RESULT/AB06346.RES
 Sample Name : 3214002MS
 Sample Comment : 1861B-83
 Injection Time : 0727 22Jun1994
 Instrument : HPAB
 Column/Amt Inj : RTX50 .53MM / 1.5ul

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
40	17.77	0.00	272781	BB	19.815	
41	17.99	0.00	716182	BB	52.025	
42	18.20	0.00	2613174	BS	189.827	
43	18.34	0.00	1059510	BB	76.965	
44	18.65	0.00	1741474	BB	126.505	
45	18.98	0.00	676397	BB	49.135	
46	19.16	19.16	5304100	BS	580.098	Aroclor-1254
47	19.45	0.00	595297	BB	43.244	
48	19.73	0.00	1758042	BB	127.708	
49	19.90	0.00	909404	BB	66.061	
50	20.12	20.11	1092563	BB	445.565	Aroclor-1254
51	20.28	0.00	220206	BB	15.996	
52	20.53	0.00	1486791	BB	108.004	
53	20.73	0.00	729114	BB	52.965	
54	20.89	0.00	694378	BB	50.441	
55	21.10	0.00	188154	BB	13.668	
56	21.23	0.00	284769	BB	20.686	
57	21.45	0.00	4324209	BS	314.121	
58	21.69	0.00	87474	BB	6.354	
59	21.89	0.00	108595	BB	7.889	
60	22.47	0.00	2183633	BB	158.624	
61	22.74	0.00	741441	BB	53.860	
62	22.92	0.00	917101	BB	66.620	
63	23.25	0.00	12482	BB	.907	
64	23.40	0.00	70920	BB	5.152	
65	23.72	0.00	9680	BB	.703	
66	23.98	0.00	479152	BB	34.807	
67	24.21	0.00	18162	BB	1.319	
68	24.71	0.00	927067	BB	67.344	
69	25.68	0.00	218392	BB	15.865	
70	26.34	0.00	229924	BB	16.702	
71	26.62	0.00	8630	BB	.627	
72	27.05	0.00	26736	BB	1.942	
73	27.50	0.00	163061	BB	11.845	
74	27.89	#27.88	504953	BB	31.124	Decachlorobiphenyl

Result File : /DATA/RESULT/AB06346.RES
Sample Name : 3214002MS
Sample Comment : 1661B-63
Injection Time : 07/27 22Jun1994
Instrument : HPAB
Column/Amt Inj : RTX50 .53MM / 1.5ul

3.090

3.429

4.106

5.164

5.767

6.789

Tetrachloro-m-xylene

8.078

8.594

8.313

8.666

10.073

10.860

11.124

11.583

12.122

12.448

13.013

13.441

13.915

14.123

14.234

14.735

15.075

15.469

15.858

16.039

16.374

16.217

17.125

17.767

17.993

18.341

18.646

18.980

19.450

19.901

20.277

20.889

21.023

21.690

21.894

22.227

22.917

23.257

23.718

24.209

24.708

25.683

26.338

26.621

27.055

27.505

Decachlorobiphenyl

14.506

Aroclor-1254

Aroclor-1254

Aroclor-1254

18.199

Aroclor-1254

Aroclor-1254

20.535

21.452

22.467

Result File : /DATA/RESULT/AB06412.RES
 Sample Name : 3214002MS
 Sample Comment : 1661B-63
 Injection Time : 1921 28Jun1994
 Instrument : HPAB
 Column/Amt Inj : RTX50 .53MM / 1.5u1
 Temp Program : 160 C (1MIN)-5C/MIN-270C(8MIN)
 Calib Method : /DATA/METHOD/AB'AR16600623.MTH
 Sequence : /DATA/SEQUENCE/AB'0628.SEQ
 Subseq/Sample : 1/ 5
 %Dil-Fact : 100.000 Smp-Amt: 0.000

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	3.09	0.00	5948	BB	.432	
2	3.46	0.00	6234	BB	.453	
3	3.63	0.00	5029	BB	.365	
4	4.11	0.00	20605	BB	1.497	
5	5.17	0.00	13317	BB	.967	
6	5.77	0.00	47676	BB	3.463	
7	7.13	#7.11	291236	BB	15.447	Tetrachloro-m-xylene
8	8.07	0.00	12062	BB	.876	
9	8.59	0.00	120863	BB	8.780	
10	9.21	0.00	9727	BB	.707	
11	9.37	0.00	14361	BB	1.043	
12	9.62	9.62	12297	BB	2.495	Aroclor-1016
13	10.07	0.00	27998	BB	2.034	
14	10.85	0.00	17918	BB	1.302	
15	11.12	11.12	81916	BB	11.235	Aroclor-1016
16	11.57	0.00	69497	BB	5.048	
17	11.92	0.00	11870	BB	.862	
18	12.12	0.00	10831	BB	.787	
19	12.28	0.00	383144	BB	27.832	
20	12.44	0.00	87231	BB	6.337	
21	13.00	0.00	52364	BB	3.804	
22	13.43	13.43	118992	BB	42.863	Aroclor-1016
23	13.72	0.00	42723	BB	3.104	
24	13.91	0.00	22768	BB	1.654	
25	14.21	0.00	168675	BB	12.253	
26	14.34	0.00	258471	BB	18.776	
27	14.50	0.00	1422184	BB	103.311	
28	14.73	0.00	313931	BB	22.805	
29	15.07	0.00	794952	BB	57.747	
30	15.26	0.00	1797044	BB	130.542	
31	15.46	0.00	584230	BB	42.440	
32	15.85	0.00	86017	BB	6.249	
33	16.03	0.00	479972	BB	34.866	
34	16.21	0.00	997161	BB	72.436	
35	16.36	0.00	326006	BB	23.682	
36	16.55	0.00	2365797	BB	171.857	
37	16.96	0.00	1000147	BB	72.653	
38	17.11	0.00	599589	BB	43.556	
39	17.38	17.37	3599658	BB	608.313	Aroclor-1260

Handwritten notes:
 nc
 388
 6/22/94
 AR1260 = 2348.42 ppb

Result File : /DATA/RESULT/AB06412.RES
 Sample Name : 3214002MS
 Sample Comment : 1661B-63
 Injection Time : 1921 28Jun1994
 Instrument : HFAB
 Column/Amb Inj : RTX50 .53MM / 1.5ul

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
40	17.76	0.00	274539	BB	19.943	
41	17.98	0.00	708661	BB	51.479	
42	18.19	0.00	2619883	BS	190.315	
43	18.33	0.00	1044113	BB	75.847	
44	18.63	0.00	1725539	BB	125.347	
45	18.97	0.00	674593	BB	49.004	
46	19.15	0.00	5344672	GS	388.250	
47	19.44	0.00	589490	BB	42.822	
48	19.72	19.71	1753218	BB	348.470	Aroclor-1260
49	19.89	0.00	908317	BB	65.982	
50	20.11	0.00	1083119	BB	78.680	
51	20.26	0.00	215667	BB	15.667	
52	20.52	20.52	1492455	BB	354.718	Aroclor-1260
53	20.72	0.00	725321	BB	52.689	
54	20.88	0.00	704933	BB	51.208	
55	21.09	0.00	177371	BB	12.885	
56	21.22	0.00	286998	BB	20.848	
57	21.44	21.44	4313124	BS	370.246	Aroclor-1260
58	21.67	0.00	79232	BB	5.756	
59	21.89	0.00	172098	BB	12.502	
60	22.45	22.45	3488192	BB	666.673	Aroclor-1260
61	22.72	0.00	708395	BB	51.460	
62	22.90	0.00	901308	BB	65.473	
63	23.23	0.00	10993	BB	.799	
64	23.39	0.00	66618	BB	4.839	
65	23.70	0.00	9118	BB	.662	
66	23.96	0.00	476340	BB	34.603	
67	24.19	0.00	8363	BB	.607	
68	24.69	0.00	975862	BB	70.889	
69	25.67	0.00	119449	BB	8.677	
70	26.32	0.00	271126	BB	19.695	
71	26.61	0.00	17968	BB	1.305	
72	27.05	0.00	19970	BB	1.451	
73	27.48	0.00	158237	BB	11.495	
74	27.86	#27.86	494773	BB	22.505	Decachlorobiphenyl
75	28.13	0.00	9631	BB	.700	
76	28.48	0.00	5811	BB	.422	
77	29.13	0.00	14207	BB	1.032	
78	29.63	0.00	86970	BB	6.318	
79	30.63	0.00	167381	BB	12.159	

Result File : /DATA/RESULT/AB06412.RES
Sample Name : 3214002MS
Sample Comment : 1661B-63
Injection Time : 1921 28Jun1994
Instrument : HPAB
Column/Amt Inj : RTX50 .53MM / 1.5ul

3.094

3.453

4.110

5.165

5.770

Tetrachloro-m-xylene

8.074

8.592

8.308

Aroclor-1016

10.067

10.853

Aroclor-1016

11.570

11.918

12.118

12.442

12.284

13.005

Aroclor-1016

13.907

14.121

14.338

14.497

14.728

15.065

15.459

15.262

15.850

16.029

16.363

16.206

16.546

17.114

16.959

Aroclor-1260

17.756

17.981

18.330

18.187

18.968

19.458

19.801

Aroclor-1260

20.265

20.108

20.718

Aroclor-1260

21.220

21.020

21.886

Aroclor-1260

22.964

Aroclor-1260

23.238

23.700

24.192

23.963

24.692

25.667

26.317

26.813

27.053

27.482

28.135

28.483

Decachlorobiphenyl

1254 1260

Result File : /DATA/RESULT/AF06347.RES
 Sample Name : 3214002MSD
 Sample Comment : 1661B-63
 Injection Time : 0802 22Jun1994
 Instrument : HPAF
 Column/Amt Inj : RTX5 .53MM / 1.5ul
 Temp Program : 160 C (1MIN)-5C/MIN-270C(8MIN)
 Calib Method : /DATA/METHOD/AF'AR12540616.MTH
 Sequence : /DATA/SEQUENCE/AF'0621.SEQ
 Subseq/Sample : 1/ 26
 %Dil-Fact : 100.000 Smp-Amt: 0.000

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	4.05	0.00	10196	BB	.741	
2	4.29	0.00	18648	BB	1.355	
3	4.77	0.00	48194	BB	3.501	
4	5.09	0.00	17964	BB	1.305	
5	5.55	0.00	19932	BB	1.448	
6	5.75	0.00	10909	BB	.792	
7	6.00	#5.99	404799	BB	15.599	Tetrachloro-m-xylene
8	6.95	0.00	22706	BB	1.649	
9	7.35	0.00	145067	BB	10.538	
10	7.95	0.00	37062	BB	2.692	
11	8.21	0.00	26346	BB	1.914	
12	8.38	0.00	41451	BB	3.011	
13	8.92	0.00	17864	BB	1.298	
14	9.13	0.00	9511	BB	.691	
15	9.54	0.00	8445	BB	.613	
16	9.77	0.00	81492	BB	5.920	
17	9.96	0.00	17819	BB	1.294	
18	10.12	0.00	30766	BB	2.235	
19	10.30	0.00	92244	BB	6.701	
20	10.54	0.00	47407	BB	.3444	
21	10.90	0.00	811266	BB	58.932	
22	11.05	0.00	112574	BB	8.178	
23	11.59	11.59	201083	BB	109.610	Aroclor-1254
24	12.01	0.00	158121	BB	11.486	
25	12.28	0.00	56461	BB	4.101	
26	12.47	0.00	26201	BB	1.903	
27	12.63	0.00	224199	BB	16.286	
28	12.78	0.00	121330	BB	8.814	
29	12.91	0.00	337495	BB	24.516	
30	13.05	13.04	1958621	BB	435.734	Aroclor-1254
31	13.27	0.00	498688	BB	36.226	
32	13.62	0.00	1121458	BB	81.465	
33	13.82	0.00	2695069	BB	195.776	
34	14.01	0.00	1278351	BB	92.862	
35	14.23	0.00	322836	BB	23.452	
36	14.38	0.00	130762	BB	9.499	
37	14.56	0.00	644818	BB	46.841	
38	14.74	0.00	1302510	BB	94.617	
39	14.89	0.00	364364	BB	26.468	

1260

Aroclor 1254 1838.471ppb

Result File	:	/DATA/RESULT/AF06347.RES						
Sample Name	:	3214002MSD						
Sample Comment	:	1661B-63						
Injection Time	:	0802 22Jun1994						
Instrument	:	HPAF						
Column/Amt Inj	:	RTX5 .53MM / 1.5ul						
PK#	AcL	RT	Exp	RT	Area	Code	UG/L	Name
40	15.07	15.06			3131616	BB	366.545	Aroclor-1254
41	15.48	0.00			1831912	BB	133.075	
42	15.64	0.00			938074	BB	68.144	
43	15.90	15.93			5920966	BS	446.719	Aroclor-1254
44	16.26	0.00			407781	BB	29.622	
45	16.51	0.00			1089847	BB	79.169	
46	16.71	0.00			3553184	GS	258.112	
47	17.15	0.00			2183364	BB	158.605	
48	17.47	0.00			1080449	BB	78.486	
49	17.65	0.00			7081414	GS	514.411	
50	17.93	0.00			929157	BB	67.496	
51	18.22	0.00			2839727	BB	206.285	
52	18.39	0.00			1442967	BB	104.821	
53	18.59	18.58			1618040	BB	479.863	Aroclor-1254
54	18.75	0.00			348979	BB	25.351	
55	19.01	0.00			2441961	BB	177.390	
56	19.20	0.00			1155504	BB	83.939	
57	19.35	0.00			1128816	BB	82.000	
58	19.56	0.00			347883	BB	25.271	
59	19.71	0.00			439214	BB	31.906	
60	19.93	0.00			5953714	GS	432.492	
61	20.35	0.00			104261	BB	7.574	
62	20.65	0.00			14550	BB	1.057	
63	20.93	0.00			3545531	BB	257.556	
64	21.20	0.00			1107237	BB	80.432	
65	21.38	0.00			1373251	BB	99.756	
66	21.71	0.00			15214	BB	1.105	
67	21.86	0.00			108137	BB	7.855	
68	22.16	0.00			11197	BB	.813	
69	22.37	0.00			709438	BB	51.535	
70	22.59	0.00			36505	BB	2.652	
71	22.81	0.00			17856	BB	1.297	
72	23.01	0.00			1370984	BB	99.592	
73	23.67	0.00			44028	BB	3.198	
74	24.12	0.00			15152	BB	1.101	
75	24.33	0.00			344781	BB	25.046	
76	24.89	0.00			36757	BB	2.670	
77	25.27	0.00			272299	BB	19.780	
78	25.56	#25.54			619568	BB	34.669	Decachlorobiphenyl
79	25.81	0.00			12084	BB	.878	
80	26.10	0.00			54953	BB	3.992	
81	26.28	0.00			9215	BB	.669	
82	26.96	0.00			118233	BB	8.589	
83	27.46	0.00			13079	BB	.950	
84	27.69	0.00			13183	BB	.958	
85	28.08	0.00			49468	BB	3.593	
86	28.41	0.00			19574	BB	1.422	

Result File : /DATA/RESULT/AF06347.RES
 Sample Name : 3214002MSD
 Sample Comment : 1661E-63
 Injection Time : 0802 22Jun1994
 Instrument : HPAF
 Column/Amt Inj : RTX5 .53MM / 1.5ul

4.053
 4.286

4.771
 5.092

5.551
 5.754

Tetrachloro-m-xylene

6.954

7.347

7.949
 8.211
 8.380

8.934
 9.134

9.544
 9.965
 10.094
 10.304
 10.544

11.049 10.897

Aroclor-1254

12.007
 12.488
 12.689

12.981 12.906

Aroclor-1254

13.274

13.618

13.817

14.010

14.379 14.560

14.887 14.736

Aroclor-1254

15.637 15.483

Aroclor-1254

16.262

16.506

16.711

17.147

17.467

17.654

17.935

18.219

18.398 Aroclor-1254

18.750

19.008

19.384 19.008

19.594

19.933

20.349

20.654

20.925

21.202 21.382

21.713 21.860

22.157 22.372

22.591 22.809

23.015

23.667

24.124 24.328

24.893

25.269

Decachlorobiphenyl

25.808

26.096

26.962

27.456

Result File : /DATA/RESULT/AF06413.RES
 Sample Name : 3214002MSD
 Sample Comment : 1661B-63
 Injection Time : 1956 28Jun1994
 Instrument : HPAF
 Column/Amt Inj : RTX5 .53MM / 1.5ul
 Temp Program : 160 C (1MIN)-5C/MIN-270C(8MIN)
 Calib Method : /DATA/METHOD/AF'AR16600623.MTH
 Sequence : /DATA/SEQUENCE/AF'0628.SEQ
 Subseq/Sample : 1/ 6
 %Dil-Fact : 100.000 Smp-Amt: 0.000

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	3.50	0.00	538429	BB	39.113	
2	4.05	0.00	9881	BB	.718	
3	4.28	0.00	12683	BB	.921	
4	4.77	0.00	45860	BB	3.331	
5	5.09	0.00	256047	BB	18.600	
6	5.75	0.00	11852	BB	.861	
7	6.00	#5.99	386967	BB	15.627	Tetrachloro-m-xylene
8	6.66	0.00	7342	BB	.533	
9	6.95	0.00	24214	BB	1.759	
10	7.20	0.00	53973	BB	3.921	
11	7.35	0.00	184584	BB	13.409	
12	7.95	0.00	84900	BB	6.167	
13	8.20	0.00	56071	BB	4.073	
14	8.63	0.00	7702	BB	.559	
15	8.77	0.00	6190	BB	.450	
16	8.92	8.91	13386	BB	4.107	Aroclor 1016
17	9.27	0.00	40008	BB	2.906	
18	9.75	9.76	147605	BB	15.244	Aroclor 1016
19	10.12	0.00	32309	BB	2.347	
20	10.29	0.00	57233	BB	4.158	
21	10.53	0.00	29666	BB	2.155	
22	10.89	0.00	771974	BB	56.078	
23	11.05	0.00	94136	BB	6.838	
24	11.59	0.00	213842	BB	15.534	
25	12.00	11.99	187732	BB	51.808	Aroclor 1016
26	12.28	0.00	77642	BB	5.640	
27	12.46	0.00	33709	BB	2.449	
28	12.63	0.00	94952	BB	6.898	
29	12.78	0.00	90187	BB	6.551	
30	12.90	0.00	349253	BB	25.371	
31	13.05	13.04	2028199	BB	735.078	Aroclor 1016
32	13.27	0.00	495128	BB	35.967	
33	13.61	0.00	1165403	BB	84.658	
34	13.81	0.00	2783882	BB	202.228	
35	14.00	0.00	1374237	BB	99.828	
36	14.23	0.00	260530	BB	18.926	
37	14.37	0.00	136072	BB	9.885	
38	14.55	0.00	670846	BB	48.732	
39	14.73	0.00	1335130	BB	96.987	

nc
 SS
 4/29/94

AR 1260 = 233.864 ppb

```

Result File      = /DATA/RESULT/AF06417.RES
Sample Name      = 3214002MSD
Sample Comment   = 1661B-63
Injection Time    = 1956 28Jun1994
Instrument        = HPFAP
Column/Amul Inj  = RTX5 .53MM / 1.5u1

Pk#  Aul RT Exp RT      Area      Code      UG/L      Name
40   14.88      0.00      379408      BB      27.561
41   15.07      0.00      3131905     BS      227.509
42   15.48      15.47      1906262     BB      578.912  Ar u1ur-1260
43   15.63      0.00      962203      BS      67.897
44   15.89      0.00      6133739     GS      445.570
45   16.26      0.00      422554      BS      30.695
46   16.50      0.00      1135252     BS      82.467
47   16.70      16.69      3554245     GS      240.995  Ar u1ur-1260
48   17.14      0.00      2278788     BS      165.537
49   17.46      0.00      1128504     BS      81.977
50   17.65      17.63      7166451     GS      578.031  Ar u1ur-1260
51   17.93      0.00      962898      BS      67.947
52   18.21      18.20      2973741     BS      414.222  Ar u1ur-1260
53   18.38      0.00      1503414     BS      109.212
54   18.58      0.00      1678129     BS      121.903
55   18.74      0.00      361079      BS      26.230
56   19.00      0.00      2556378     BS      185.701
57   19.19      0.00      1213784     BS      88.172
58   19.35      0.00      1171555     BS      85.105
59   19.55      0.00      360635      BS      26.197
60   19.70      0.00      460200      BS      37.430
61   19.92      0.00      6075901     GS      441.368
62   20.34      0.00      112490      BS      8.172
63   20.67      0.00      16627       BS      1.208
64   20.92      20.91      3728176     BS      519.704  Ar u1ur-1260
65   21.19      0.00      1150147     BS      87.549
66   21.37      0.00      1479654     BS      107.486
67   21.71      0.00      6570        BS      .477
68   21.85      0.00      123807      BS      8.994
69   22.36      0.00      739354      BS      53.708
70   22.57      0.00      32404       BS      2.354
71   22.80      0.00      24921       BS      1.810
72   23.00      0.00      1440112     BS      104.613
73   24.12      0.00      12524       BS      .910
74   24.32      0.00      372206      BS      27.036
75   24.69      0.00      36074       BS      2.620
76   25.26      0.00      274087      BS      19.910
77   25.55      #25.54      641111      BS      26.326  Deuach1ur ub1ph1eny1
78   25.79      0.00      12146       BS      .662
79   26.09      0.00      62527       BS      4.542
80   26.26      0.00      9733        BS      .707
81   26.52      0.00      16487       BS      1.196
82   26.94      0.00      103325      BS      7.506
83   27.42      0.00      15517       BS      1.127
84   27.90      0.00      49270       BS      3.579
85   28.38      0.00      31486       BS      2.287

```

Result File : /DATA/RESULT/AF06413.RES
Sample Name : 3214002MSD
Sample Comment : 1661B-63
Injection Time : 1956 28Jun1994
Instrument : HPAF
Column/Amt Inj : RTX5 .53MM / 1.5ul

4.053

4.282

4.773

5.090

5.752

Tetrachloro-m-xylene

6.660

6.846

7.196347

7.951

8.201

Aroclor-1016

9.274

Aroclor-1016

10.121

10.527

11.0470.894

11.589

Aroclor-1016

12.484

12.761

12.900

Aroclor-1016

13.268

13.613

14.003

14.375

14.554

14.881

15.066

15.631

15.892

16.256

16.498

17.139

17.459

17.927

18.301

18.581

18.741

19.000

19.346

19.5705

19.924

20.340

20.666

21.182

21.372

21.851

22.362

22.795

23.005

24.112

24.315

24.892

25.256

25.790

26.092

26.529

26.942

27.419

27.896

Decachlorobiphenyl

Result File : /DATA/RESULT/AB06347.RES
 Sample Name : 3214002M3D
 Sample Comment : 1661E-63
 Injection Time : 0602 22Jun1994
 Instrument : HFAB
 Column/Amt Inj : RTX50 .53MM / 1.5ul
 Temp Program : 160 C (1MIN)-5C/MIN-270C(8MIN)
 Calib Method : /DATA/METHOD/AB'AR12540616.MTH
 Sequence : /DATA/SEQUENCE/AB'0621.SEQ
 Subseq/Sample : 1/ 26
 %Dil-Fact : 100.000 Smp-Amt : 0.000

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	3.09	0.00	6432	BB	.467	
2	3.45	0.00	7584	BB	.551	
3	3.63	0.00	5838	BB	.424	
4	4.10	0.00	18532	BB	1.346	
5	5.16	0.00	10972	BB	.797	
6	5.77	0.00	32908	BB	2.390	
7	6.79	0.00	20260	BB	1.472	
8	7.13	#7.12	311512	BB	16.706	Tetrachloro-m-xylene
9	8.08	0.00	13889	BB	1.009	
10	8.59	0.00	156453	BB	11.365	
11	9.21	0.00	26071	BB	1.894	
12	9.38	0.00	19539	BB	1.419	
13	9.67	0.00	51673	BB	3.754	
14	10.86	0.00	17378	BB	1.262	
15	11.12	0.00	88631	BB	6.438	
16	11.51	0.00	48260	BB	3.506	
17	11.72	0.00	20328	BB	1.477	
18	11.92	0.00	16724	BB	1.215	
19	12.13	0.00	10766	BB	.782	
20	12.29	0.00	402088	BB	29.209	
21	12.45	0.00	89727	BB	6.518	
22	13.01	0.00	37255	BB	2.706	
23	13.44	0.00	134627	BB	9.780	
24	13.73	0.00	46656	BB	3.389	
25	13.91	0.00	27600	BB	2.005	
26	14.22	0.00	77792	BB	5.651	
27	14.35	0.00	284357	BB	20.656	
28	14.51	0.00	1610731	BB	117.007	
29	14.73	0.00	365321	BB	26.538	
30	15.07	0.00	923245	BB	67.067	
31	15.27	15.26	2032430	BB	343.451	Aroclor-1254
32	15.47	0.00	661205	BB	48.032	
33	15.86	0.00	99877	BB	7.255	
34	16.04	0.00	541054	BB	39.303	
35	16.22	0.00	1139573	BB	82.781	
36	16.37	0.00	385586	BB	28.010	
37	16.56	16.55	2719679	BB	405.363	Aroclor-1254
38	16.97	0.00	1178923	BB	85.640	
39	17.12	0.00	713788	BB	51.851	

1260

Area = 2419.818 ppb

Result File : /DATA/RESULT/AB06047.RES
 Sample Name : 3214002MSD
 Sample Comment : 1661B-63
 Injection Time : 0802 22Jun1994
 Instrument : HPAB
 Column/Amt Inj : RTX50 .53MM / 1.5ul

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
40	17.39	17.42	4210927	BB	460.465	Aroclor-1254
41	17.77	0.00	334808	BB	24.321	
42	17.99	0.00	867748	BB	63.035	
43	18.20	0.00	3167837	BS	230.119	
44	18.34	0.00	1203018	BB	87.390	
45	18.64	0.00	2121710	BB	154.126	
46	18.98	0.00	857880	BB	62.318	
47	19.16	19.16	6168391	GS	673.551	Aroclor-1254
48	19.45	0.00	723339	BB	52.545	
49	19.73	0.00	2155755	BB	156.599	
50	19.90	0.00	1125294	BB	81.744	
51	20.12	20.11	1320309	BB	536.988	Aroclor-1254
52	20.28	0.00	285208	BB	20.718	
53	20.53	0.00	1837065	BB	133.449	
54	20.73	0.00	891511	BB	64.761	
55	20.89	0.00	867905	BB	63.047	
56	21.10	0.00	229111	BB	16.643	
57	21.23	0.00	354235	BB	25.732	
58	21.45	0.00	5291794	GS	384.409	
59	21.69	0.00	103138	BB	7.492	
60	21.90	0.00	246329	BB	17.894	
61	22.47	0.00	2792380	BB	202.845	
62	22.73	0.00	926081	BB	67.273	
63	22.92	0.00	1205162	BB	87.546	
64	23.25	0.00	13989	BB	1.016	
65	23.40	0.00	90621	BB	6.583	
66	23.72	0.00	13203	BB	.959	
67	23.98	0.00	605110	BB	43.957	
68	24.21	0.00	14102	BB	1.024	
69	24.43	0.00	10136	BB	.736	
70	24.71	0.00	1239339	BB	90.029	
71	25.61	0.00	21991	BB	1.597	
72	26.34	0.00	309482	BB	22.482	
73	26.61	0.00	14199	BB	1.031	
74	27.04	0.00	18144	BB	1.318	
75	27.50	0.00	231732	BB	16.834	
76	27.88	#27.88	519573	BB	32.026	Decachlorobiphenyl
77	28.64	0.00	23263	BB	1.690	

Result File : /DATA/RESULT/AB06347.RES
 Sample Name : 3214002MSD
 Sample Comment : 1061B-63
 Injection Time : 0602 22Jun1994
 Instrument : HPAB
 Column/Ampl Inj : RTX50 .53MM / 1.5ul

3.087	
3.849	
4.105	
5.163	
5.767	
6.792	Tetrachloro-m-xylene
8.077	
8.593	
9.665	
10.862	
11.122	
11.508	
11.938	
12.129	
12.442	
13.012	
13.441	
13.918	
14.224	
14.347	
14.734	
15.074	
15.468	
15.859	
16.039	
16.216	
16.969	ArcoIor-1254
17.125	
17.769	
17.992	
18.339	
18.645	
18.981	
19.448	
19.727	
19.904	
20.270	ArcoIor-1254
20.533	
21.888	
21.993	
21.856	
22.465	
22.916	
23.716	
23.977	
24.707	
25.611	
26.337	
26.609	
27.037	
27.504	
28.643	Decachlorobiphenyl

Result File : /DATA/RESULT/AB06413.RES
 Sample Name : 3214002MSD
 Sample Comment : 1661B-63
 Injection Time : 1956 28Jun1994
 Instrument : HPAB
 Column/Amt Inj : RTX50 .53MM / 1.5ul
 Temp Program : 160 C (1MIN)-5C/MIN-270C(6MIN)
 Calib Method : /DATA/METHOD/AB'AR16600623.MTH
 Sequence : /DATA/SEQUENCE/AB'0628.SEQ
 Subseq/Sample : 1/ 6
 %Dil-Fact : 100.000 Smp-Amt: 0.000

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	3.12	0.00	285699	BB	20.754	
2	3.46	0.00	36568	BB	2.656	
3	4.11	0.00	18482	BB	1.343	
4	4.29	0.00	458073	BB	33.276	
5	5.16	0.00	10633	BB	.772	
6	5.77	0.00	33472	BB	2.432	
7	6.09	0.00	97871	BB	7.110	
8	7.13	#7.11	309028	BB	16.391	Tetrachloro-m-xylene
9	8.08	0.00	14642	BB	1.064	
10	8.33	0.00	35264	BB	2.562	
11	8.59	0.00	155142	BB	11.270	
12	9.20	0.00	57358	BB	4.167	
13	9.37	0.00	21494	BB	1.561	
14	9.63	9.62	11909	BB	2.417	Aroclor-1016
15	9.99	0.00	18922	BB	1.375	
16	10.24	0.00	7092	BB	.515	
17	10.88	0.00	22195	BB	1.612	
18	11.12	11.12	85499	BB	11.726	Aroclor-1016
19	11.50	0.00	54197	BB	3.937	
20	11.92	0.00	18397	BB	1.336	
21	12.11	0.00	14069	BB	1.022	
22	12.29	0.00	429192	BB	31.178	
23	12.44	0.00	97456	BB	7.079	
24	13.01	0.00	182541	BB	13.260	
25	13.44	13.43	122662	BB	44.184	Aroclor-1016
26	13.61	0.00	9386	BB	.682	
27	13.72	0.00	23903	BB	1.736	
28	13.91	0.00	28046	BB	2.037	
29	14.08	0.00	9666	BB	.702	
30	14.21	0.00	177790	BB	12.915	
31	14.34	0.00	303111	BB	22.019	
32	14.50	0.00	1690841	BB	122.827	
33	14.73	0.00	383263	BB	27.841	
34	15.07	0.00	962262	BB	69.901	
35	15.27	0.00	2122754	BB	154.202	
36	15.46	0.00	717080	BB	52.090	
37	15.85	0.00	100392	BB	7.293	
38	16.03	0.00	562009	BB	40.826	
39	16.21	0.00	1188191	BB	86.313	

AR 260 = 2677.884 ppb
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Result File : /DATA/RESULT/AB06413.RES
 Sample Name : 3214002MSD
 Sample Comment : 1661B-63
 Injection Time : 1956 28Jun1994
 Instrument : HPAB
 Column/Amt Inj : RTX50 .53MM / 1.5ul

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
40	16.37	0.00	399048	BB	28.988	
41	16.55	0.00	2834396	BB	205.897	
42	16.96	0.00	1220734	BB	88.677	
43	17.12	0.00	750151	BB	54.493	
44	17.38	17.37	4365589	BS	737.749	Aroclor-1260
45	17.76	0.00	345098	BB	25.069	
46	17.98	0.00	902150	BB	65.534	
47	18.19	0.00	3317943	BS	241.023	
48	18.33	0.00	1284046	BB	93.276	
49	18.64	0.00	2222495	BB	161.447	
50	18.97	0.00	894207	BB	64.957	
51	19.15	0.00	6360298	GS	462.027	
52	19.44	0.00	760253	BB	55.227	
53	19.72	19.71	2263307	BB	449.855	Aroclor-1260
54	19.89	0.00	1186698	BB	86.205	
55	20.11	0.00	1382572	BB	100.433	
56	20.27	0.00	301041	BB	21.868	
57	20.52	20.52	1934388	BB	459.754	Aroclor-1260
58	20.72	0.00	934618	BB	67.893	
59	20.88	0.00	913104	BB	66.330	
60	21.09	0.00	238121	BB	17.298	
61	21.22	0.00	371445	BB	26.983	
62	21.44	21.44	5461660	GS	468.838	Aroclor-1260
63	21.68	0.00	100460	BB	7.298	
64	21.89	0.00	279480	BB	20.302	
65	22.46	22.45	2938889	BB	561.688	Aroclor-1260
66	22.72	0.00	967484	BB	70.280	
67	22.91	0.00	1230834	BB	89.411	
68	23.24	0.00	12705	BB	.923	
69	23.39	0.00	93810	BB	6.815	
70	23.71	0.00	12813	BB	.931	
71	23.97	0.00	637033	BB	46.276	
72	24.19	0.00	12604	BB	.916	
73	24.41	0.00	12081	BB	.878	
74	24.69	0.00	1287222	BB	93.507	
75	26.32	0.00	313089	BB	22.744	
76	26.62	0.00	18090	BB	1.314	
77	27.01	0.00	20703	BB	1.504	
78	27.49	0.00	241939	BB	17.575	
79	27.87	#27.86	536036	BB	24.382	Decachlorobiphenyl
80	28.15	0.00	11095	BB	.806	
81	28.47	0.00	166853	BB	.12.121	
82	29.11	0.00	15168	BB	1.102	
83	29.64	0.00	66279	BB	4.815	
84	30.62	0.00	213578	BB	15.515	

```
Result File      : /DATA/RESULT/AB06413.RES
Sample Name     : 3214002MSD
Sample Comment  : 1661B-63
Injection Time  : 1956 28Jun1994
Instrument      : HPAB
Column/Amb Inj : RTX50 .53MM / 1.5ul
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Result File : /DATA/RESULT/AF06348.RES
Sample Name : 3214007
Sample Comment : 1661B-138
Injection Time : 0837 22Jun1994
Instrument : HPAF
Column/Amt Inj : RTX5 .53MM / 1.5ul
Temp Program : 160 C (1MIN)-5C/MIN-270C(8MIN)
Calib Method : /DATA/METHOD/AF'AR12540616.MTH
Sequence : /DATA/SEQUENCE/AF'0621.SEQ
Subseq/Sample : 1/ 27
%Dil-Fact : 100.000 Smp-Amt: 0.000

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	3.15	0.00	14867	BB	1.080	
2	3.66	0.00	35563	BB	2.583	
3	4.00	0.00	25678	BB	1.865	
4	4.61	0.00	6959	BB	.506	
5	4.78	0.00	5352	BB	.389	
6	4.99	0.00	15913	BB	1.156	
7	5.18	0.00	15432	BB	1.121	
8	5.42	0.00	77112	BB	5.602	
9	6.00	#5.99	417002	BB	16.098	Tetrachloro-m-xylene
10	6.37	0.00	33336	BB	2.422	
11	6.85	0.00	16823	BB	1.222	
12	7.47	0.00	20797	BB	1.511	
13	7.74	0.00	332678	BB	24.167	
14	8.08	0.00	6942	BB	.504	
15	8.35	0.00	40981	BB	2.977	
16	8.77	0.00	597535	BB	43.406	
17	9.37	0.00	7129	BB	.518	
18	9.48	0.00	28849	BB	2.096	
19	9.64	0.00	21339	BB	1.550	
20	9.84	0.00	19275	BB	1.400	
21	10.11	0.00	37838	BB	2.749	
22	10.83	0.00	240847	BB	17.496	
23	11.03	0.00	716115	BB	52.020	
24	11.45	0.00	126907	BB	9.219	
25	11.85	0.00	42245	BB	3.069	
26	12.62	0.00	69159	BB	5.024	
27	13.03	13.04	37939	BB	.536	Aroclor-1254
28	13.64	0.00	36722	BB	2.668	
29	13.82	0.00	14454	BB	1.050	
30	14.21	0.00	158841	BB	11.539	
31	14.80	0.00	33059	BB	2.401	
32	15.08	15.06	15669	BB	-2.620	Aroclor-1254
33	15.48	0.00	9199	BB	.668	
34	15.71	0.00	7568	BB	.550	
35	15.89	15.93	28030	BB	.632	Aroclor-1254
36	16.67	0.00	54881	BB	3.987	
37	17.14	0.00	8227	BB	.598	
38	17.40	0.00	141446	BB	10.275	
39	17.62	0.00	111442	BB	8.095	

Result File : /DATA/RESULT/AF06348.RES

Sample Name : 3214007

Sample Comment : 1661B-138

Injection Time : 0837 22Jun1994

Instrument : HP4F

Column/Amt Inj : RTX5 .53MM / 1.5ul

PK#	Acq RT	Exp RT	Area	Code	UG/L	Name
40	18.10	0.00	35985	BB	2.614	
41	18.31	0.00	10613	BB	.771	
42	18.59	18.58	15598	BB	8.124	Acceptor-1254
43	19.01	0.00	28061	BB	2.038	
44	19.48	0.00	25663	BB	1.864	
45	20.34	0.00	47345	BB	3.439	
46	20.56	0.00	15395	BB	1.118	
47	21.02	0.00	10383	BB	.754	
48	21.21	0.00	21102	BB	1.533	
49	21.36	0.00	9237	BB	.671	
50	22.59	0.00	46711	BB	3.393	
51	22.77	0.00	33561	BB	2.438	
52	23.14	0.00	15139	BB	1.100	
53	23.46	0.00	18752	BB	1.362	
54	23.72	0.00	30439	BB	2.211	
55	24.33	0.00	7510	BB	.546	
56	24.91	0.00	181806	BB	13.207	
57	25.56	#25.54	534414	BB	29.904	Decachlorobiphenyl
58	26.21	0.00	13020	BB	.946	
59	26.53	0.00	27275	BB	1.981	
60	27.49	0.00	11589	BB	.842	
61	27.98	0.00	57854	BB	4.203	
62	28.32	0.00	125655	BB	9.128	

828/4/22/24

171

Result File : /DATA/RESULT/AF06348.RES
Sample Name : 3214007
Sample Comment : 1661B-138
Injection Time : 0837 22Jun1994
Instrument : HPAF
Column/Amt Inj : RTX5 .53MM / 1.5ul

3.999

4.699
4.991
5.183
5.421

Tetrachloro-m-xylene

6.371

6.853

7.467

7.736

8.079

8.345

8.766

8.865
9.035
9.339
10.109

10.827

11.033

11.453

11.853

12.621

Aroclor-1254

13.638

14.207

14.802

Aroclor-1254

15.482

15.708

Aroclor-1254

16.670

17.142

17.397

17.617

18.097

18.307

19.011

19.475

20.342

20.558

21.018

21.358

21.358

22.589

22.774

23.138

23.456

23.722

24.330

24.908

Decachlorobiphenyl

26.206

26.533

27.486

27.977

Result File : /DATA/RESULT/AB06348.RES
 Sample Name : 3214007
 Sample Comment : 1661B-138
 Injection Time : 0837 22Jun1994
 Instrument : HPAB
 Column/Ampl Inj : RTX50 .53MM / 1.5uL
 Temp Program : 160 C (1MIN)-5C/MIN-270C(8MIN)
 Calib Method : /DATA/METHOD/AB'AR12540616.MTH
 Sequence : /DATA/SEQUENCE/AB'0621.SEQ
 Subseq/Sample : 1 / 27
 %Dil-Fact : 100.000
 Smp-Ampl : 0.000

PK#	AcI	RT	Exp	RT	Area	Code	UG/L	Name
1	3.08	0.00			10489	BB	.762	
2	4.79	0.00			5571	BB	.405	
3	6.22	0.00			15486	BB	1.125	
4	7.13	#7.12			302449	BB	16.283	Tetrachloro-m-xylene
5	9.00	0.00			419216	BB	30.453	
6	9.66	0.00			10571	BB	.768	
7	10.07	0.00			514841	BB	37.399	
8	10.39	0.00			31628	BB	2.298	
9	10.77	0.00			34662	BB	2.518	
10	10.99	0.00			42307	BB	3.073	
11	11.50	0.00			66529	BB	4.833	
12	12.11	0.00			25585	BB	1.859	
13	12.37	0.00			567598	BB	41.232	
14	12.71	0.00			12845	BB	.933	
15	12.89	0.00			57294	BB	4.162	
16	13.27	0.00			14738	BB	1.071	
17	13.56	0.00			17590	BB	1.278	
18	14.18	0.00			19103	BB	1.388	
19	14.51	0.00			30621	BB	2.224	
20	15.14	0.00			11239	BB	.816	
21	15.27	15.26			10202	BB	-3.207	
22	16.20	0.00			238762	BB	17.344	
23	16.99	0.00			10513	BB	.764	
24	17.16	0.00			5950	BB	.432	
25	17.38	17.42			17743	BB	1.201	
26	18.02	0.00			8486	BB	.616	
27	18.19	0.00			8601	BB	.625	
28	18.85	0.00			125967	BB	9.151	
29	19.17	19.16			80880	BB	15.331	
30	19.68	0.00			31430	BB	2.283	
31	20.10	20.11			7060	BB	9.816	
32	21.75	0.00			9663	BB	.702	
33	22.02	0.00			259994	BB	18.887	
34	22.56	0.00			9609	BB	.698	
35	22.77	0.00			37028	BB	2.690	
36	23.17	0.00			11732	BB	.852	
37	24.30	0.00			7484	BB	.544	
38	24.69	0.00			32562	BB	2.365	
39	25.69	0.00			30231	BB	2.196	

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Result File : /DATA/RESULT/AB06348.RES
Sample Name : S214007
Sample Comment : 1661B-138
Injection Time : 0837 22Jun1994
Instrument : HPAB
Column/Amt Inj : RTX50 .53MM / 1.5ul

Pk#	AcL	RT	Exp	RT	Area	Code	UG/L	Name
40	27.04		0.00		10997	BB	.799	
41	27.88	#27.88			450792	BB	27.786	Decachlorobiphenyl
42	28.61		0.00		52861	BB	3.840	

Result File : /DATA/RESULT/AB06343.RES
Sample Name : 3214007
Sample Comment : 1661B-138
Injection Time : 0837 22Jun1994
Instrument : HPAB
Column/Amt Inj : RTX50 .53MM / 1.5ul

Result File : /DATA/RESULT/AF06349.RES
 Sample Name : 3214007MS
 Sample Comment : 1661B-138
 Injection Time : 0912 22Jun1994
 Instrument : HPAF
 Column/Amt Inj : RTX5 .53MM / 1.5ul
 Temp Program : 160 C (1MIN)-5C/MIN-270C(8MIN)
 Calib Method : /DATA/METHOD/AF'AR12540616.MTH
 Sequence : /DATA/SEQUENCE/AF'0621.SEQ
 Subseq/Sample : 1/ 28
 %Dil-Fact : 100.000 Smp-Amt: 0.000

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	3.22	0.00	12071	BB	.877	
2	3.85	0.00	38838	BB	2.821	
3	4.96	0.00	12271	BB	.891	
4	5.40	0.00	7580	BB	.551	
5	6.00	#5.99	387040	BB	14.875	Tetrachloro-m-xylene
6	6.22	0.00	11387	BB	.827	
7	6.59	0.00	5880	BB	.427	
8	6.85	0.00	18934	BB	1.375	
9	7.06	0.00	11536	BB	.838	
10	7.34	0.00	5935	BB	.431	
11	7.75	0.00	8813	BB	.640	
12	8.37	0.00	14478	BB	1.052	
13	8.77	0.00	17276	BB	1.255	
14	9.23	0.00	26095	BB	1.896	
15	9.54	0.00	9851	BB	.716	
16	9.75	0.00	69905	BB	5.078	
17	10.14	0.00	62484	BB	4.539	
18	10.36	0.00	19229	BB	1.397	
19	10.52	0.00	10725	BB	.779	
20	10.89	0.00	641169	BB	46.576	
21	11.04	0.00	50870	BB	3.695	
22	11.58	11.59	274442	BB	149.428	Aroclor-1254
23	12.00	0.00	161659	BB	11.743	
24	12.28	0.00	28733	BB	2.087	
25	12.62	0.00	30363	BB	2.206	
26	12.78	0.00	61848	BB	4.493	
27	12.90	0.00	309406	BB	22.476	
28	13.05	13.04	768573	BB	166.087	Aroclor-1254
29	13.27	0.00	152016	BB	11.043	
30	13.62	0.00	239413	BB	17.392	
31	13.81	0.00	1265018	BB	91.894	
32	14.00	0.00	418179	BB	30.378	
33	14.21	0.00	80791	BB	5.869	
34	14.37	0.00	63226	BB	4.593	
35	14.55	0.00	329037	BB	23.902	
36	14.73	0.00	669267	BB	48.617	
37	14.88	0.00	132664	BB	9.637	
38	15.07	15.06	1281207	BB	147.316	Aroclor-1254
39	15.47	0.00	315867	BB	22.945	

727.310 ppb

Result File : /DATA/RESULT/AF06349.RES
Sample Name : 3214007M3
Sample Comment : 1661B-138
Injection Time : 0912 22Jun1994
Instrument : HPAF
Column/Amt Inj : RTX5 .53MM / 1.5ul

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
40	15.63	0.00	181956	BB	13.218	
41	15.94	15.93	1982730	BB	148.600	Aroclor-1254
42	16.26	0.00	107133	BB	7.782	
43	16.50	0.00	135116	BB	9.815	
44	16.70	0.00	523226	BB	38.008	
45	16.84	0.00	494440	BB	35.917	
46	17.13	0.00	328508	BB	23.864	
47	17.46	0.00	196791	BB	14.295	
48	17.65	0.00	1645835	BB	119.557	
49	17.92	0.00	125889	BB	9.145	
50	18.21	0.00	113272	BB	8.228	
51	18.38	0.00	72733	BB	5.283	
52	18.58	18.58	381631	BB	115.879	Aroclor-1254
53	19.00	0.00	81312	BB	5.907	
54	19.18	0.00	56294	BB	4.089	
55	19.37	0.00	287346	BB	20.873	
56	19.56	0.00	46606	BB	3.386	
57	19.70	0.00	12263	BB	.891	
58	19.92	0.00	276767	BB	20.105	
59	20.15	0.00	5122	BB	.372	
60	20.34	0.00	17573	BB	1.277	
61	20.53	0.00	39503	BB	2.870	
62	20.92	0.00	224167	BB	16.284	
63	21.19	0.00	11861	BB	.862	
64	21.36	0.00	27634	BB	2.007	
65	21.86	0.00	8780	BB	.638	
66	22.81	0.00	9342	BB	.679	
67	23.00	0.00	10031	BB	.729	
68	23.14	0.00	21777	BB	1.582	
69	23.49	0.00	18126	BB	1.317	
70	23.72	0.00	39278	BB	2.853	
71	24.14	0.00	6647	BB	.483	
72	24.59	0.00	7762	BB	.564	
73	25.14	0.00	16935	BB	1.230	
74	25.56	#25.54	474936	BB	26.576	Decachlorobiphenyl
75	26.20	0.00	22483	BB	1.633	
76	26.68	0.00	46744	BB	3.396	
77	27.76	0.00	6768	BB	.492	

Result File : /DATA/RESULT/AF06349.RES
Sample Name : 3214007MS
Sample Comment : 1661B-138
Injection Time : 0912 22Jun1994
Instrument : HPAF
Column/Amt Inj : RTX5 .53MM / 1.5ul
3.851

4.961

5.402

Tetrachloro-m-xylene

6.218

6.589

6.849

7.062

7.337

7.750

8.367

8.767

9.226

9.542

9.755

10.138

10.322

11.042 10.891

Aroclor-1254

12.002

12.276

12.523

12.778

13.265

13.617

13.999

14.393

14.553

14.878

15.183

15.468

16.256

16.497

17.134

17.456

17.920

18.386

18.899

19.189

19.698

20.146

20.323

20.916

21.384

21.856

22.813

23.188

23.490

23.724

24.139

24.589

25.140

Decachlorobiphenyl

26.202

26.682

27.760

Result File : /DATA/RESULT/AB06349.RES
 Sample Name : 321400713
 Sample Comment : 1661B-138
 Injection Time : 0912 22Jun1994
 Instrument : HPAB
 Column/Amt Inj : RTX50 .53MM / 1.5ul
 Temp Program : 160 C (1MIN)-5C/MIN-270C(8MIN)
 Calib Method : /DATA/METHOD/AB'AR12540616.MTH
 Sequence : /DATA/SEQUENCE/AB'0621.SEQ
 Subseq/Sample : 1/ 28
 %Dil-Fact : 100.000 Smp-Amt : 0.000

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	4.45	0.00	11547	BB	.839	
2	6.73	0.00	23746	BB	1.725	
3	7.13	#7.12	278400	BB	15.158	Tetrachloro-m-xylene
4	9.01	0.00	6620	BB	.481	
5	9.66	0.00	19131	BB	1.390	
6	10.07	0.00	28853	BB	2.096	
7	10.87	0.00	11607	BB	.843	
8	11.11	0.00	37264	BB	2.707	
9	11.51	0.00	32229	BB	2.341	
10	11.71	0.00	15869	BB	1.153	
11	11.92	0.00	7057	BB	.513	
12	12.11	0.00	10088	BB	.733	
13	12.28	0.00	332290	BB	24.138	
14	12.44	0.00	76505	BB	5.558	
15	13.00	0.00	167710	BB	12.183	
16	13.43	0.00	96568	BB	7.015	
17	13.72	0.00	24706	BB	1.795	
18	14.22	0.00	11814	BB	.858	
19	14.34	0.00	272729	BB	19.812	
20	14.50	0.00	610816	BB	44.371	
21	14.73	0.00	105732	BB	7.681	
22	15.07	0.00	242714	BB	17.631	
23	15.26	15.26	938764	BB	155.971	Aroclor-1254
24	15.46	0.00	324493	BB	23.572	
25	15.68	0.00	11907	BB	.865	
26	15.85	0.00	55596	BB	4.039	
27	16.03	0.00	262266	BB	19.052	
28	16.21	0.00	521785	BB	37.904	
29	16.37	0.00	112433	BB	8.167	
30	16.55	16.55	987872	BB	146.765	Aroclor-1254
31	16.96	0.00	228732	BB	16.616	
32	17.12	0.00	134212	BB	9.750	
33	17.42	17.42	1362574	BB	148.495	Aroclor-1254
34	17.76	0.00	56611	BB	4.112	
35	17.98	0.00	107923	BB	7.840	
36	18.19	0.00	454289	BB	33.001	
37	18.35	0.00	568019	BB	41.262	
38	18.64	0.00	216058	BB	15.695	
39	18.97	0.00	140844	BB	10.231	

701,740ppb

Result File : /DATA/RESULT/AB06349.RES
Sample Name : 3214007MS
Sample Comment : 1661B-138
Injection Time : 0912 22Jun1994
Instrument : HPAB
Column/Amt Inj : RTX50 .53MM / 1.5ul

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
40	19.16	19.16	1142576	BB	130.128	Aroclor-1254
41	19.44	0.00	84431	BB	6.133	
42	19.72	0.00	73983	BB	5.374	
43	19.89	0.00	49099	BB	3.567	
44	20.11	20.11	282491	BB	120.381	Aroclor-1254
45	20.53	0.00	53018	BB	3.851	
46	20.72	0.00	39106	BB	2.841	
47	20.89	0.00	203050	BB	14.750	
48	21.09	0.00	31410	BB	2.282	
49	21.22	0.00	13267	BB	.964	
50	21.44	0.00	189770	BB	13.785	
51	21.74	0.00	9058	BB	.658	
52	21.97	0.00	14343	BB	1.042	
53	22.46	0.00	182340	BB	13.246	
54	22.73	0.00	14578	BB	1.059	
55	22.91	0.00	10787	BB	.784	
56	23.40	0.00	7625	BB	.554	
57	23.95	0.00	25876	BB	1.880	
58	24.29	0.00	6418	BB	.466	
59	24.70	0.00	72359	BB	5.256	
60	25.68	0.00	98742	BB	7.173	
61	27.02	0.00	33684	BB	2.447	
62	27.87	#27.88	371645	BB	22.908	Decachlorobiphenyl
63	28.36	0.00	32726	BB	2.377	

Result File : /DATA/RESULT/AB06349.RES
Sample Name : 3214007MS
Sample Comment : 1661B-138
Injection Time : 0912 22Jun1994
Instrument : HPAB
Column/Amt Inj : RTX50 .53MM / 1.5ul

4.446

6.728

Tetrachloro-m-xylene

9.006

9.659

10.067

10.873

11.107

11.506

11.914

12.114

12.440

12.284

13.005

13.435

13.722

14.220

14.340

14.497

14.729

15.072

15.460

15.851

16.032

16.207

Aroclor-1254

16.365

Aroclor-1254

17.120

16.961

Aroclor-1254

17.761

17.985

18.192

18.351

18.637

18.971

Aroclor-1254

19.441

19.894

Aroclor-1254

20.528

20.728

20.895

21.221

21.444

21.944

22.457

22.988

23.396

23.954

24.294

24.696

25.678

27.024

Decachlorobiphenyl

28.357

PCB Organic Analytical Results
SW-846 Method 8080

Client: Nuclear Fuel Services, Inc. **Client Sample No.:** Method Blank
Lab Sample ID: Q1452507 **Client Reference No.:** LEFPC
Matrix: Soil **Date Extracted:** 5/25/94

CAS Number	Compound Name	Dilution	Date of Analysis	Result ug/kg	PQL ug/kg	Note
12674112	Aroclor 1016	1	6/21/94	BQL	33.3	
1104282	Aroclor 1221	1	6/21/94	BQL	66.7	
11141165	Aroclor 1232	1	6/21/94	BQL	33.3	
53469219	Aroclor 1242	1	6/21/94	BQL	33.3	
12672296	Aroclor 1248	1	6/21/94	BQL	33.3	
111097691	Aroclor 1254	1	6/21/94	BQL	33.3	
11096825	Aroclor 1260	1	6/21/94	BQL	33.3	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

PCB Surrogate Recovery Data

Lab Sample ID: Q1452507

Client Sample No.: Method Blank

<i>Surrogate Compound</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Note</i>
TCMX	82	60-150	
DCB	154	60-150	***

D = Surrogate diluted out

**** = Surrogate recovery outside QC Limits*

Recovery limits: TCMX and DCB from CLP SOW OLM01.8

Surrogate recovery limits are advisory only.

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency and matrix effect. Lower surrogate recoveries may indicate possible matrix effect and/or decreased extraction efficiency.

DCB=Decachlorobiphenyl

TCMX = Tetrachlorometaxylene

PCB Organic Analytical Results
SW-846 Method 8080

Client: Nuclear Fuel Services, Inc. **Client Sample No.:** Method Blank
Lab Sample ID: Q1452507 **Client Reference No.:** LEFPC
Matrix: Soil **Date Extracted:** 5/25/94

CAS Number	Compound Name	Dilution	Date of Analysis	Result ug/kg	PQL ug/kg	Note
12674112	Aroclor 1016	1	6/21/94	BQL	33.3	
1104282	Aroclor 1221	1	6/21/94	BQL	66.7	
11141165	Aroclor 1232	1	6/21/94	BQL	33.3	
53469219	Aroclor 1242	1	6/21/94	BQL	33.3	
12672296	Aroclor 1248	1	6/21/94	BQL	33.3	
111097691	Aroclor 1254	1	6/21/94	BQL	33.3	
11096825	Aroclor 1260	1	6/21/94	BQL	33.3	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

PCB Surrogate Recovery Data

Lab Sample ID: Q1452507

Client Sample No.: Method Blank

<i>Surrogate Compound</i>	<i>% Recovery</i>	<i>QC Limits</i>	<i>Note</i>
TCMX	82	60-150	
DCB	154	60-150	***

D = Surrogate diluted out

***** = Surrogate recovery outside QC Limits**

Recovery limits: TCMX and DCB from CLP SOW OLM01.8

Surrogate recovery limits are advisory only.

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency and matrix effect. Lower surrogate recoveries may indicate possible matrix effect and/or decreased extraction efficiency.

DCB=Decachlorobiphenyl

TCMX = Tetrachlorometaxylene

Result File : /DATA/RESULT/AF06328.RES
 Sample Name : Q1452507
 Sample Comment : FBILK
 Injection Time : 2101 21Jun1994
 Instrument : HPAF
 Column/Amt Inj : RTX5 .53MM / 1.5ul
 Temp Program : 160 C (1MIN)-5C/MIN-270C(8MIN)
 Calib Method : /DATA/METHOD/AF'AR12540616.MTH
 Sequence : /DATA/SEQUENCE/AF'0621.SEQ
 Subseq/Sample : 1/ 7
 %Dil-Fact : 100.000 Smp-Amt: 0.000

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	6.01	#5.99	423813	EE	16.376	Tetrachloro-m-xylene
2	8.39	0.00	28818	EE	2.093	
3	8.78	0.00	49814	EE	3.819	
4	9.22	0.00	7105	EE	.516	
5	10.37	0.00	14674	EE	1.066	
6	10.83	0.00	424744	EE	30.854	
7	12.57	0.00	6389	EE	.463	
8	14.21	0.00	164943	EE	11.982	
9	15.71	0.00	238585	EE	17.331	
10	24.32	0.00	293586	EE	21.327	
11	25.56	#25.54	548874	EE	30.713	Decachlorobiphenyl
12	26.11	0.00	9091	EE	.660	
13	28.06	0.00	36856	EE	2.677	

Result File : /DATA/RESULT/AF06328.RES
 Sample Name : Q1452507
 Sample Comment : FBLK
 Injection Time : 2101 21Jun1994
 Instrument : HP4F
 Column/Amt Inj : RTX5 .53MM / 1.5ul

189A

Result File : /DATA/RESULT/AB06328.RES
Sample Name : Q14525.07
Sample Comment : FLDK
Injection Time : 1101 21Jun1994
Instrument : HPAL
Column/Amt Inj : RTX50 .53MM / 1.5ul
Temp Program : 160 C (1MIN)-5C/MIN-270C(8MIN)
Calib Method : /DATA/METHOD/AB'AR12540616.MTH
Sequence : /DATA/SEQUENCE/AB'0621.SEQ
Subseq/Sample : 1/ 7
%Dil-Fact : 100.000 Smp-Amt: 0.000

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	4.28	0.00	21418	BB	1.556	
2	7.14	#7.12	320818	BB	17.141	Tetrachloro-m-xylene
3	9.67	0.00	20516	BB	1.490	
4	10.08	0.00	39706	BB	2.884	
5	11.71	0.00	8357	BB	.607	
6	12.13	0.00	12403	BB	.901	
7	12.38	0.00	8589	BB	.624	
8	13.92	0.00	7285	BB	.529	
9	17.19	0.00	128227	BB	9.315	
10	22.75	0.00	78597	BB	5.709	
11	23.35	0.00	99779	BB	7.248	
12	25.74	0.00	13278	BB	.965	
13	27.88	#27.88	460010	BB	28.354	Decachlorobiphenyl

Result File : /DATA/RESULT/AB00320.RES
Sample Name : Q1452507
Sample Comment : PSLK
Injection Time : 2101 21Jun1994
Instrument : HPAB
Column/Amt Inj : RTX50 .53MM / 1.5ul

Result File = /DATA/RESULT/AF06411.RES
 Sample Name = 3214002
 Sample Comment = 1661B-63
 Injection Time = 1846 28Jun1994
 Instrument = HP4F
 Column/Amt Inj = RTX5 .53MM / 1.5ul
 Temp Program = 160 C (1MIN)-5C/MIN-270C(8MIN)
 Calib Method = /DATA/METHOD/AF'AR16600623.MTH
 Sequence = /DATA/SEQUENCE/AF'0628.SEQ
 Subseq/Sample = 1/ 4
 %Dil-Fact = 100.000 Smp-Amt = 0.000

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	3.33	0.00	40405	BB	2.935	
2	3.50	0.00	17928	BB	1.302	
3	4.01	0.00	45251	BB	3.287	
4	4.29	0.00	26156	BB	1.900	
5	4.60	0.00	99785	BB	7.249	
6	4.78	0.00	38957	BB	2.830	
7	5.13	0.00	53579	BB	3.892	
8	5.43	0.00	23311	BB	1.693	
9	5.55	0.00	14096	BB	1.024	
10	6.01	45.99	379283	BB	15.317	Tetrachloro-m-xylene
11	6.37	0.00	12537	BB	.911	
12	6.95	0.00	14620	BB	1.062	
13	7.35	0.00	150945	BB	10.965	
14	7.74	0.00	9042	BB	.657	
15	7.95	0.00	12296	BB	.893	
16	8.20	0.00	51172	BB	3.717	
17	8.77	0.00	483542	BB	35.126	
18	9.48	0.00	11116	BB	.807	
19	9.77	9.76	52881	BB	5.461	Aroclor-1016
20	10.12	0.00	22640	BB	1.645	
21	10.28	0.00	34946	BB	2.539	
22	10.59	0.00	102223	BB	7.426	
23	10.88	0.00	175528	BB	12.751	
24	11.03	0.00	446892	BB	32.463	
25	11.43	0.00	265481	BB	19.285	
26	12.00	11.99	65670	BB	18.123	Aroclor-1016
27	12.17	0.00	5553	BB	.403	
28	12.28	0.00	12598	BB	.915	
29	12.46	0.00	19645	BB	1.427	
30	12.67	0.00	338286	BB	24.574	
31	13.05	13.04	1412898	BB	512.075	Aroclor-1018
32	13.27	0.00	297391	BB	21.603	
33	13.61	0.00	724494	BB	52.629	
34	13.81	0.00	1357995	BB	98.648	
35	14.00	0.00	850265	BB	61.765	
36	14.24	0.00	179246	BB	13.021	
37	14.37	0.00	71062	BB	5.162	
38	14.55	0.00	309594	BB	22.490	
39	14.73	0.00	586169	BB	42.581	

AR1260 = 1775.349 ppb

Result File : /DATA/RESULT/AF06411.RES

Sample Name : 3214002

Sample Comment : 1661B-63

Injection Time : 1846 28Jun1994

Instrument : HPAF

Column/Amt Inj : RTX5 .53MM / 1.5ul

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
40	14.88	0.00	273455	BB	19.864	
41	15.06	0.00	1798514	BB	130.648	
42	15.48	15.47	1280750	BB	388.951	Aroclor-1260
43	15.63	0.00	691923	BB	50.263	
44	15.88	0.00	3425212	BB	248.816	
45	16.25	0.00	321675	BB	23.367	
46	16.50	0.00	798922	BB	58.036	
47	16.70	16.69	2943071	BS	199.554	Aroclor-1260
48	17.14	0.00	1845152	BB	134.036	
49	17.46	0.00	606166	BB	44.033	
50	17.64	17.63	6053680	GS	488.277	Aroclor-1260
51	17.93	0.00	626257	BB	45.493	
52	18.21	18.20	2317645	BB	322.832	Aroclor-1260
53	18.38	0.00	1034050	BB	75.116	
54	18.58	0.00	1061310	BB	77.096	
55	18.74	0.00	269177	BB	19.554	
56	19.00	0.00	1931971	BB	140.343	
57	19.19	0.00	908535	BB	65.998	
58	19.34	0.00	726322	BB	52.762	
59	19.55	0.00	272232	BB	19.776	
60	19.70	0.00	334862	BB	24.325	
61	19.92	0.00	5074679	GS	368.637	
62	20.33	0.00	110895	BB	8.056	
63	20.92	20.91	2695393	BB	375.735	Aroclor-1260
64	21.19	0.00	1288338	BB	93.588	
65	21.37	0.00	1010914	BB	73.435	
66	21.70	0.00	14046	BB	1.020	
67	21.85	0.00	76066	BB	5.526	
68	22.14	0.00	13679	BB	.994	
69	22.36	0.00	568865	BB	41.324	
70	22.57	0.00	27419	BB	1.992	
71	22.77	0.00	29504	BB	2.143	
72	23.00	0.00	1138094	BB	82.674	
73	23.68	0.00	557073	BB	40.467	
74	24.10	0.00	87587	BB	6.363	
75	24.31	0.00	265164	BB	19.262	
76	24.87	0.00	38232	BB	2.777	
77	25.05	0.00	44214	BB	3.212	
78	25.25	0.00	161371	BB	11.722	
79	25.55	#25.54	533482	BB	21.906	Decachlorobiphenyl
80	25.78	0.00	11594	BB	.842	
81	26.05	0.00	30344	BB	2.204	
82	26.54	0.00	8393	BB	.610	
83	26.93	0.00	107032	BB	7.775	
84	27.43	0.00	39872	BB	2.896	
85	27.81	0.00	43348	BB	3.149	
86	28.67	0.00	33266	BB	2.417	

Result File : /DATA/RESULT/AF06411.RES
Sample Name : 3214002
Sample Comment : 1661B-63
Injection Time : 1846 28Jun1994
Instrument : HPAF
Column/Amt Inj : RTX5 .53MM / 1.5ul

Result File : /DATA/RESULT/AB06411.RES
 Sample Name : 3214002
 Sample Comment : 1661B-63
 Injection Time : 1846 28Jun1994
 Instrument : HPAB
 Column/Amt Inj : RTX50 .53MM / 1.5u1
 Temp Program : 160 C (1MIN)-5C/MIN-270C(8MIN)
 Calib Method : /DATA/METHOD/AB'AR16600623.MTH
 Sequence : /DATA/SEQUENCE/AB'0628.SEQ
 Subseq/Sample : 1/ 4
 %Dil-Fact : 100.000 Smp-Amt: 0.000

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	3.10	0.00	18477	BB	1.342	
2	3.46	0.00	19398	BB	1.409	
3	3.63	0.00	5527	BB	.401	
4	4.11	0.00	16133	BB	1.172	
5	4.79	0.00	5084	BB	.369	
6	5.57	0.00	16809	BB	1.221	
7	5.77	0.00	28490	BB	2.070	
8	6.64	0.00	6609	BB	.480	
9	7.13	#7.11	270459	BB	14.345	Tetrachloro-m-xylene
10	8.07	0.00	8916	BB	.648	
11	8.59	0.00	92865	BB	6.746	
12	9.01	0.00	45151	BB	3.280	
13	9.37	0.00	12534	BB	.910	
14	10.07	0.00	409375	BB	29.738	
15	10.39	0.00	6506	BB	.473	
16	10.77	0.00	11557	BB	.840	
17	11.12	11.12	25198	BB	3.456	Aroclor-1016
18	11.51	0.00	49596	BB	3.603	
19	11.92	0.00	5024	BB	.365	
20	12.15	0.00	5419	BB	.394	
21	12.36	0.00	357481	BB	25.968	
22	12.55	0.00	35968	BB	2.613	
23	12.88	0.00	174623	BB	12.685	
24	13.43	13.43	48718	BB	17.549	Aroclor-1016
25	13.91	0.00	17343	BB	1.260	
26	14.18	0.00	320407	BB	23.275	
27	14.50	0.00	1064824	BB	77.351	
28	14.73	0.00	235954	BB	17.140	
29	15.07	0.00	557657	BB	40.510	
30	15.26	0.00	1009214	BB	73.312	
31	15.46	0.00	364117	BB	26.450	
32	16.03	0.00	195783	BB	14.222	
33	16.21	0.00	538928	BB	39.149	
34	16.37	0.00	257265	BB	18.688	
35	16.55	0.00	1521056	BB	110.493	
36	16.96	0.00	825014	BB	59.931	
37	17.12	0.00	508164	BB	36.914	
38	17.37	17.37	2515762	BB	425.143	Aroclor-1260
39	17.76	0.00	250790	BB	18.218	

AR1260 = 1868.325
 ppb

Result File : /DATA/RESULT/AB06411.RES

Sample Name : 3214002

Sample Comment : 1661B-63

Injection Time : 1846 28Jun1994

Instrument : HPAB

Column/Amt Inj : RTX50 .53MM / 1.5ul

Pk#	Ret RT	Exp RT	Area	Code	UG/L	Name
40	17.98	0.00	634740	BB	46.109	
41	18.19	0.00	2334674	BB	169.596	
42	18.32	0.00	569281	BB	41.354	
43	18.64	0.00	1542055	BB	112.019	
44	18.97	0.00	557603	BB	40.506	
45	19.15	0.00	4869278	BB	353.716	
46	19.44	0.00	507778	BB	36.886	
47	19.72	19.71	1755597	BB	348.943	Arucetur-1260
48	19.89	0.00	845987	BB	61.454	
49	20.11	0.00	961171	BB	69.822	
50	20.26	0.00	213590	BB	15.516	
51	20.52	20.52	1422781	BB	338.158	Arucetur-1260
52	20.72	0.00	675914	BB	49.100	
53	20.87	0.00	504204	BB	36.627	
54	21.08	0.00	163797	BB	11.899	
55	21.22	0.00	255607	BB	18.568	
56	21.44	21.44	4151355	BB	356.359	Arucetur-1260
57	21.70	0.00	133255	BB	9.680	
58	21.88	0.00	77264	BB	5.613	
59	22.03	0.00	11676	BB	.848	
60	22.21	0.00	8650	BB	.628	
61	22.46	22.45	2091439	BB	399.722	Arucetur-1260
62	22.74	0.00	907964	BB	65.957	
63	22.90	0.00	646968	BB	46.997	
64	23.23	0.00	12067	BB	.877	
65	23.39	0.00	59946	BB	4.355	
66	23.70	0.00	17425	BB	1.266	
67	23.96	0.00	458369	BB	33.297	
68	24.19	0.00	12558	BB	.912	
69	24.44	0.00	23012	BB	1.672	
70	24.69	0.00	1201128	BB	87.253	
71	25.20	0.00	54209	BB	3.938	
72	25.63	0.00	500312	BB	36.344	
73	26.32	0.00	258813	BB	18.801	
74	27.08	0.00	59928	BB	4.353	
75	27.48	0.00	195530	BB	14.204	
76	27.86	427.86	470046	BB	21.380	Deucehurubiphenyl
77	28.13	0.00	24327	BB	1.767	
78	28.63	0.00	25653	BB	1.863	
79	29.10	0.00	16389	BB	1.191	
80	29.62	0.00	87806	BB	6.378	
81	30.28	0.00	47395	BB	3.443	
82	30.84	0.00	8093	BB	.588	

Result File : /DATA/RESULT/AB06411.RES
Sample Name : 3214002
Sample Comment : 1661B-63
Injection Time : 1846 28Jun1994
Instrument : HPAB
Column/Amt Inj : RTX50 .53MM / 1.5ul

3.098

3.899

4.111

4.791

5.573

6.641

Tetrachloro-m-xylene

8.074

8.594

9.010

9.372

10.068

10.391

10.772

Aroclor-1016

11.512

11.919

12.142

12.548

12.877

Aroclor-1016

13.910

14.176

14.728

15.067

15.461

16.031

16.389

16.548

17.116

17.984

18.324

18.636

18.971

19.438

19.882

20.108

20.717

21.221

21.989

22.215

22.984

23.238

23.701

24.188

24.438

25.204

25.631

26.319

27.081

27.478

28.132

28.631

Decachlorobiphenyl

AROCLOR QC Spike Result

Method 8080

Client: Nuclear Fuel Services

Client Sample ID: Blank Spike/Blank Spike Duplica

Lab Sample ID: Q1452505/Q1452506

Client Reference No.: LEFPC

Matrix: Soil

Date of Extraction: 5/25/94

Dilution: 1

Date of Analysis: 6/22/94

Compound	Sample Concentration µg/kg	BS Spike Amount µg/kg	BS Concentration µg/kg	Blank Spike % Recovery	BSD Spike Amount µg/kg	BSD Concentration µg/kg	Blank Spike Duplicate % Recovery	QC Limits	RPD
Aroclor -1254	0	333	260	78	333	278	84	8-127	6.7

Result File : /DATA/RESULT/AF06352.RES

Sample Name : Q1452505

Sample Comment : BS

Injection Time : 1056 22Jun1994

Instrument : HPAL

Column/Amt Inj : RTX5 .53MM / 1.5ul

Temp Program : 160 C (1MIN)-5C/MIN-270C(8MIN)

Calib Method : /DATA/METHOD/AF'AR12540616.MTH

Sequence : /DATA/SEQUENCE/AF'0621.SEQ

Subseq/Sample : 1/31

%Dil-Fact : 100.000

Smp-Amt : 0.000

Pk#	Act	RT	Exp	RT	Area	Code	UG/L	Name
1	5.19	0.00			10532	BB	.765	
2	5.43	0.00			26261	BB	1.908	
3	5.69	0.00			13152	BB	.955	
4	6.00	#5.99			427447	BB	16.524	Tetrachloro-m-xylene
5	6.85	0.00			7123	BB	.517	
6	8.01	0.00			20118	BB	1.461	
7	8.37	0.00			22251	BB	1.616	
8	8.77	0.00			20426	BB	1.484	
9	9.21	0.00			8260	BB	.600	
10	9.54	0.00			9444	BB	.686	
11	9.75	0.00			43168	BB	3.136	
12	9.96	0.00			12513	BB	.909	
13	10.11	0.00			20156	BB	1.464	
14	10.36	0.00			10672	BB	.775	
15	10.48	0.00			17605	BB	1.279	
16	10.89	0.00			576008	BB	41.843	
17	11.04	0.00			49654	BB	3.607	
18	11.59	11.59			368039	BB	200.230	Aroclor-1254
19	12.00	0.00			160923	BB	11.690	
20	12.27	0.00			30104	BB	2.187	
21	12.62	0.00			82790	BB	6.014	
22	12.78	0.00			61986	BB	4.503	
23	12.90	0.00			327323	BB	23.778	
24	13.04	13.04			765493	BB	165.389	Aroclor-1254
25	13.26	0.00			138408	BB	10.054	
26	13.61	0.00			303097	BB	22.018	
27	13.81	0.00			1312697	BB	95.357	
28	14.00	0.00			414580	BB	30.116	
29	14.21	0.00			45390	BB	3.297	
30	14.37	0.00			63170	BB	4.589	
31	14.55	0.00			329810	BB	23.958	
32	14.72	0.00			681401	BB	49.499	
33	14.87	0.00			119778	BB	8.701	
34	15.06	15.06			1307925	BB	150.481	Aroclor-1254
35	15.46	0.00			331473	BB	24.079	
36	15.63	0.00			180292	BB	13.097	
37	15.93	15.93			1971219	BB	147.729	Aroclor-1254
38	16.25	0.00			104085	BB	7.561	
39	16.49	0.00			138756	BB	10.080	

779.796 ppb

Result File : /DATA/RESULT/AF06352.RES
Sample Name : Q1452505
Sample Comment : BS
Injection Time : 1056 22Jun1994
Instrument : HPAF

Column/Amt Inj : RTX5 53MM / 1.5ul

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
40	16.70	0.00	534940	BB	38.859	
41	16.83	0.00	504055	BB	36.616	
42	17.13	0.00	309968	BB	22.517	
43	17.45	0.00	193294	BB	14.041	
44	17.64	0.00	1656284	BB	120.316	
45	17.92	0.00	121457	BB	8.823	
46	18.20	0.00	104825	BB	7.615	
47	18.38	0.00	60220	BB	4.375	
48	18.58	18.58	381929	BB	115.967	Aroclor-1254
49	18.99	0.00	105839	BB	7.688	
50	19.18	0.00	55356	BB	4.021	
51	19.36	0.00	289627	BB	21.039	
52	19.56	0.00	49885	BB	3.624	
53	19.92	0.00	258450	BB	18.774	
54	20.91	0.00	224548	BB	16.312	
55	21.19	0.00	10737	BB	.780	
56	21.36	0.00	23185	BB	1.684	
57	21.85	0.00	5699	BB	.414	
58	22.36	0.00	11194	BB	.813	
59	23.00	0.00	12599	BB	.915	
60	23.65	0.00	65017	BB	4.723	
61	24.32	0.00	9647	BB	.701	
62	24.96	0.00	78529	BB	5.705	
63	25.22	0.00	17549	BB	1.275	
64	25.55	#25.54	542099	BB	30.334	Decachlorobiphenyl
65	26.14	0.00	37185	BB	2.701	
66	26.49	0.00	26878	BB	1.952	
67	26.97	0.00	17245	BB	1.253	
68	27.37	0.00	34438	BB	2.502	
69	27.93	0.00	79940	BB	5.807	
70	28.45	0.00	104968	BB	7.625	

Result File : /DATA/RESULT/AF06352.RES
Sample Name : Q1452505
Sample Comment : BS
Injection Time : 1056 22Jun1994
Instrument : HPAF
Column/Amt Inj : RTX5 53MM -/ 1.5ul

5.187
5.427
5.693

Tetrachloro-m-xylene

6.855

8.009

8.372

8.766

9.207

9.542

9.950

10.363

10.776

11.189

11.602

12.015

12.428

12.841

13.254

13.667

14.080

14.493

14.906

15.319

15.732

16.145

16.558

16.971

17.384

17.797

18.210

18.623

19.036

19.449

19.862

20.275

20.688

21.101

21.514

21.927

22.340

22.753

23.166

23.579

23.992

24.405

24.818

25.231

25.644

26.057

26.470

26.883

27.296

27.709

28.122

28.535

28.948

29.361

29.774

30.187

30.600

31.013

31.426

31.839

32.252

32.665

33.078

33.491

33.904

34.317

34.730

35.143

35.556

35.969

36.382

36.795

37.208

37.621

38.034

38.447

38.860

39.273

39.686

40.099

40.512

40.925

41.338

41.751

42.164

42.577

42.990

43.403

43.816

44.229

44.642

45.055

45.468

45.881

46.294

46.707

47.120

47.533

47.946

48.359

48.772

49.185

49.598

50.011

50.424

50.837

51.250

51.663

52.076

52.489

52.902

53.315

53.728

54.141

54.554

54.967

55.380

55.793

56.206

56.619

57.032

57.445

57.858

58.271

58.684

59.097

59.510

59.923

60.336

60.749

61.162

61.575

61.988

62.401

62.814

63.227

63.640

64.053

64.466

64.879

65.292

65.705

66.118

66.531

66.944

67.357

67.770

68.183

68.596

69.009

69.422

69.835

70.248

70.661

71.074

71.487

71.900

72.313

72.726

73.139

73.552

73.965

74.378

74.791

75.204

75.617

76.030

76.443

76.856

77.269

77.682

78.095

78.508

78.921

79.334

79.747

80.160

80.573

80.986

81.399

81.812

82.225

82.638

83.051

83.464

83.877

84.290

84.703

85.116

85.529

85.942

86.355

86.768

87.181

87.594

88.007

88.420

88.833

89.246

89.659

90.072

90.485

90.898

91.311

91.724

92.137

92.550

92.963

93.376

93.789

94.202

94.615

95.028

95.441

95.854

96.267

96.680

97.093

97.506

97.919

98.332

98.745

99.158

99.571

99.984

100.397

100.810

101.223

101.636

102.049

102.462

102.875

103.288

103.701

104.114

104.527

104.940

105.353

105.766

106.179

106.592

107.005

107.418

107.831

108.244

108.657

109.070

109.483

109.896

110.309

110.722

111.135

111.548

111.961

112.374

112.787

113.200

113.613

114.026

114.439

114.852

115.265

115.678

116.091

116.504

116.917

117.330

117.743

118.156

118.569

118.982

119.395

119.808

120.221

120.634

121.047

121.460

121.873

122.286

122.699

123.112

123.525

123.938

124.351

124.764

125.177

125.590

126.003

126.416

126.829

127.242

127.655

128.068

128.481

128.894

129.307

Result File : /DATA/RESULT/AF06353.RES

Sample Name : Q1452506

Sample Comment : BSD

Injection Time : 1131 22Jun1994

Instrument : HPAL

Column/Amt Inj : RTX5 53MM / 1.5ul

Temp Program : 160 C (1MIN)-5C/MIN-270C(8MIN)

Calib Method : /DATA/METHOD/AF'AR12540616.MTH

Sequence : /DATA/SEQUENCE/AF'0621.SEQ

Subseq/Sample : 1/32

%Dil-Fact : 100.000 Smp-Amt : 0.000

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	3.47	0.00	6636	BB	.482	
2	3.91	0.00	9687	BB	.704	
3	5.19	0.00	9285	BB	.674	
4	5.80	0.00	13570	BB	.986	
5	6.00	#5.99	440545	BB	17.059	Tetrachloro-m-xylene
6	7.01	0.00	13692	BB	.995	
7	7.95	0.00	28652	BB	2.081	
8	8.32	0.00	23485	BB	1.706	
9	8.76	0.00	253313	BB	18.401	
10	9.20	0.00	10984	BB	.798	
11	9.54	0.00	10079	BB	.732	
12	9.77	0.00	62243	BB	4.522	
13	10.14	0.00	40789	BB	2.963	
14	10.35	0.00	14630	BB	1.063	
15	10.52	0.00	10777	BB	.783	
16	10.89	0.00	660087	BB	47.950	
17	11.04	0.00	21892	BB	1.590	
18	11.59	11.59	393514	BB	214.057	Aroclor-1254
19	12.00	0.00	188151	BB	13.668	
20	12.27	0.00	29570	BB	2.148	
21	12.63	0.00	9085	BB	.660	
22	12.78	0.00	61955	BB	4.501	
23	12.90	0.00	348789	BB	25.337	
24	13.04	13.04	808917	BB	175.228	Aroclor-1254
25	13.26	0.00	146326	BB	10.630	
26	13.62	0.00	316714	BB	23.007	
27	13.81	0.00	1390322	BB	100.996	
28	14.00	0.00	446629	BB	32.444	
29	14.20	0.00	82199	BB	5.971	
30	14.37	0.00	65699	BB	4.773	
31	14.55	0.00	354233	BB	25.732	
32	14.73	0.00	722131	BB	52.457	
33	14.88	0.00	126570	BB	9.194	
34	15.06	15.06	1390721	BB	160.291	Aroclor-1254
35	15.47	0.00	353680	BB	25.692	
36	15.63	0.00	192068	BB	13.952	
37	15.94	15.93	2125564	BB	159.412	Aroclor-1254
38	16.25	0.00	99959	BB	7.261	
39	16.49	0.00	140120	BB	10.179	

834.224 ppb

Result File : /DATA/RESULT/AF06353.RES
Sample Name : Q1452506
Sample Comment : BSD
Injection Time : 1131 22Jun1994
Instrument : HPAF

Column/Amt - Inj - RTX5 - 53MM - / - 1.5ul

Pk#	Act	RT	Exp	RT	Area	Code	UG/L	Name
40	16.70	0.00			559720	BB	40.659	
41	16.84	0.00			511649	BB	37.167	
42	17.13	0.00			358409	BB	26.036	
43	17.45	0.00			206249	BB	14.982	
44	17.64	0.00			1766626	BB	128.332	
45	17.92	0.00			120689	BB	8.767	
46	18.20	0.00			130789	BB	9.501	
47	18.38	0.00			74948	BB	5.444	
48	18.58	18.58			413414	BB	125.236	Aroclor-1254
49	19.00	0.00			101209	BB	7.352	
50	19.18	0.00			60086	BB	4.365	
51	19.36	0.00			298179	BB	21.660	
52	19.55	0.00			42133	BB	3.061	
53	19.70	0.00			19058	BB	1.384	
54	19.92	0.00			281763	BB	20.468	
55	20.14	0.00			5881	BB	4.427	
56	20.34	0.00			19351	BB	1.406	
57	20.55	0.00			41749	BB	3.033	
58	20.92	0.00			250605	BB	18.205	
59	21.19	0.00			9110	BB	6.662	
60	21.37	0.00			21566	BB	1.567	
61	21.85	0.00			5618	BB	4.408	
62	23.00	0.00			31705	BB	2.303	
63	23.82	0.00			6723	BB	4.488	
64	24.31	0.00			8487	BB	6.616	
65	24.41	0.00			9487	BB	6.689	
66	25.55	#25.54			532506	BB	29.797	Decachlorobiphenyl
67	26.51	0.00			57159	BB	4.152	
68	27.07	0.00			19575	BB	1.422	
69	27.90	0.00			81281	BB	5.904	
70	28.59	0.00			19854	BB	1.442	

Result File : /DATA/RESULT/AF06353.RES
Sample Name : Q1452506
Sample Comment : BSD
Injection Time : 1131 22Jun1994
Instrument : HPAF

Column/Amt/Inj : RTX5 53MM / 1.5ul

3.908

5.191

5.804

Tetrachloro-m-xylene

7.010

7.953

8.324

8.764

9.199

9.544

9.771

10.145

10.519

11.039

10.889

Aroclor-1254

12.001

12.274

12.628

12.778

12.898

Aroclor-1254

13.264

13.615

14.371

14.551

14.876

14.726

Aroclor-1254

15.146

15.466

Aroclor-1254

16.250

16.495

16.783

17.134

17.452

17.918

18.379

18.896

19.183

19.783

20.343

20.547

21.386

21.855

23.000

23.815

24.405

Decachlorobiphenyl

26.513

27.070

27.904

Result File : /DATA/RESULT/AB06352.RES
 Sample Name : Q1452505
 Sample Comment : BS
 Injection Time : 1056 22Jun1994

Instrument : HPAB
 Column/Amt Inj : RTX50 53MM / 1.5ul
 Temp Program : 160 C (1MIN)-5C/MIN-270C(8MIN)
 Calib Method : /DATA/METHOD/AB'AR12540616.MTH
 Sequence : /DATA/SEQUENCE/AB'0621.SEQ
 Subseq/Sample : 1/ 31
 %Dil-Fact : 100.000 Smp-Amt : 0.000

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	4.27	0.00	13484	BB	.980	
2	7.12	#7.12	319213	BB	17.066	Tetrachloro-m-xylene
3	9.65	0.00	19654	BB	1.428	
4	10.06	0.00	26132	BB	1.898	
5	11.10	0.00	34756	BB	2.525	
6	11.49	0.00	19133	BB	1.390	
7	11.71	0.00	12741	BB	.926	
8	11.91	0.00	5120	BB	.372	
9	12.28	0.00	304888	BB	22.148	
10	12.44	0.00	72129	BB	5.240	
11	13.00	0.00	174848	BB	12.701	
12	13.43	0.00	98252	BB	7.137	
13	13.72	0.00	24308	BB	1.766	
14	14.22	0.00	12648	BB	.919	
15	14.34	0.00	275961	BB	20.046	
16	14.49	0.00	622143	BB	45.194	
17	14.72	0.00	106761	BB	7.755	
18	15.07	0.00	248635	BB	18.061	
19	15.26	15.26	961716	BB	159.905	Aroclor-1254
20	15.46	0.00	325682	BB	23.658	
21	15.68	0.00	12306	BB	.894	
22	15.85	0.00	54336	BB	3.947	
23	16.03	0.00	263349	BB	19.130	
24	16.20	0.00	534924	BB	38.858	
25	16.36	0.00	112798	BB	8.194	
26	16.55	16.55	1017243	BB	151.151	Aroclor-1254
27	16.96	0.00	230704	BB	16.759	
28	17.12	0.00	133867	BB	9.724	
29	17.42	17.42	1395973	BB	152.153	Aroclor-1254
30	17.76	0.00	58221	BB	4.229	
31	17.98	0.00	103390	BB	7.511	
32	18.19	0.00	457044	BB	33.201	
33	18.35	0.00	592092	BB	43.011	
34	18.63	0.00	211061	BB	15.332	
35	18.89	0.00	26188	BB	1.902	
36	19.15	19.16	1093933	BB	124.868	Aroclor-1254
37	19.44	0.00	82790	BB	6.014	
38	19.72	0.00	78667	BB	5.715	
39	19.89	0.00	50568	BB	3.673	

711.988 ppb

Result File : /DATA/RESULT/AB06352.RES
Sample Name : Q1452505
Sample Comment : BS
Injection Time : 1056 22Jun1994
Instrument : HPAB

--Column/Amt Inj-- RTX50-53MM--1.5ul

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
40	20.11	20.11	291285	BB	123.911	Aroclor-1254
41	20.52	0.00	61549	BB	4.471	
42	20.72	0.00	37491	BB	2.723	
43	20.89	0.00	212748	BB	15.455	
44	21.09	0.00	32791	BB	2.382	
45	21.22	0.00	13429	BB	0.976	
46	21.44	0.00	200825	BB	14.588	
47	22.03	0.00	65678	BB	4.771	
48	22.46	0.00	157934	BB	11.473	
49	22.73	0.00	19088	BB	1.387	
50	22.90	0.00	7316	BB	0.531	
51	23.19	0.00	35456	BB	2.576	
52	23.65	0.00	12633	BB	0.918	
53	24.11	0.00	10623	BB	0.772	
54	24.32	0.00	14750	BB	1.072	
55	24.69	0.00	13665	BB	0.993	
56	26.05	0.00	41072	BB	2.984	
57	27.87	#27.88	510301	BB	31.454	Decachlorobiphenyl
58	28.60	0.00	22500	BB	1.634	

Result File : /DATA/RESULT/AB06352.RES
Sample Name : Q1452505
Sample Comment : BS
Injection Time : 1056 22Jun1994
Instrument : HPAB
Column/Amt. Inj.: RTX50 53MM / 1.5ul

4.272

Tetrachloro-m-xylene

9.652

10.064

11.101

11.481

11.914

12.436

12.280

13.004

13.718

14.215

14.337

14.494

14.724

15.069

15.457

Aroclor-1254

15.847

16.029

16.204

16.362

Aroclor-1254

17.161

17.58

Aroclor-1254

17.982

18.188

18.348

18.885

18.833

Aroclor-1254

19.433

19.891

Aroclor-1254

20.717

20.892

21.229

21.442

22.033

22.456

22.933

23.188

23.646

24.313

24.685

26.047

Decachlorobiphenyl

28.600

Control - Instrument 01 will not continue, LAS A/D not ready
Instrument status is 07

EcoTek LSI

Page 1

Result File /DATA/RESULT/AB06353.RES
Sample Name Q1452506
Sample Comment BSD
Injection Time 1131 22Jun1994
Instrument HPAB
Column/Amt Inj RTX50 53MM / 1.5ul
Temp Program 160 C (1MIN)-5C/MIN-270C(8MIN)
Calib Method /DATA/METHOD/AB'AR12540616.MTH
Sequence /DATA/SEQUENCE/AB'0621.SEQ
Subseq/Sample 1/ 32
%Dil-Fact 100.000 Smp-Amt 0.000

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	3.08	0.00	5054	BB	.367	
2	4.78	0.00	7785	BB	.566	
3	6.71	0.00	19895	BB	1.445	
4	7.12	#7.12	329012	BB	17.524	Tetrachloro-m-xylene
5	9.62	0.00	8008	BB	.582	
6	10.06	0.00	171030	BB	12.424	
7	11.10	0.00	37695	BB	2.738	
8	11.51	0.00	35208	BB	2.558	
9	11.71	0.00	12396	BB	.900	
10	11.91	0.00	6517	BB	.473	
11	12.11	0.00	9648	BB	.701	
12	12.28	0.00	349783	BB	25.409	
13	12.44	0.00	74574	BB	5.417	
14	13.01	0.00	186437	BB	13.543	
15	13.43	0.00	104714	BB	7.607	
16	13.72	0.00	26649	BB	1.936	
17	14.34	0.00	292829	BB	21.272	
18	14.50	0.00	660141	BB	47.954	
19	14.72	0.00	116053	BB	8.430	
20	15.07	0.00	260038	BB	18.890	
21	15.26	15.26	1016199	BB	169.245	Aroclor-1254
22	15.46	0.00	345577	BB	25.104	
23	15.68	0.00	13197	BB	.959	
24	15.85	0.00	60321	BB	4.382	
25	16.03	0.00	284457	BB	20.664	
26	16.21	0.00	568886	BB	41.325	
27	16.36	0.00	118308	BB	8.594	
28	16.55	16.55	1067835	BB	158.705	Aroclor-1254
29	16.96	0.00	246113	BB	17.878	
30	17.12	0.00	143178	BB	10.401	
31	17.42	17.42	1469006	BB	160.152	Aroclor-1254
32	17.76	0.00	56404	BB	4.097	
33	17.98	0.00	115068	BB	8.359	
34	18.19	0.00	490180	BB	35.608	
35	18.35	0.00	620764	BB	45.094	
36	18.63	0.00	232253	BB	16.871	
37	18.97	0.00	154524	BB	11.225	
38	19.15	19.16	1241963	BB	140.874	Aroclor-1254
39	19.44	0.00	89322	BB	6.489	

760.912 ppb

Result File : /DATA/RESULT/AB06353.RES
Sample Name : Q1452506
Sample Comment : BSD
Injection Time : 1131 22Jun1994
Instrument : HPAB

Column/Amt. Inj. : RTX50 53MM / 1.5ul

PK#	ACT RT	Exp RT	Area	Code	UG/L	Name
40	19.72	0.00	78704	BB	5.717	
41	19.89	0.00	52855	BB	3.840	
42	20.11	20.11	311277	BB	131.936	Aroclor 1254
43	20.53	0.00	52434	BB	3.809	
44	20.72	0.00	40402	BB	2.935	
45	20.89	0.00	226147	BB	16.428	
46	21.09	0.00	34782	BB	2.527	
47	21.22	0.00	13558	BB	.985	
48	21.44	0.00	200926	BB	14.596	
49	21.75	0.00	8754	BB	.636	
50	21.97	0.00	23004	BB	1.671	
51	22.46	0.00	181663	BB	13.196	
52	22.73	0.00	10179	BB	.739	
53	22.91	0.00	12050	BB	.875	
54	23.39	0.00	9990	BB	.726	
55	24.29	0.00	5973	BB	.434	
56	24.69	0.00	64972	BB	4.720	
57	25.72	0.00	47813	BB	3.473	
58	26.84	0.00	61857	BB	4.493	
59	27.87	#27.88	470579	BB	29.006	Decachlorobiphenyl

Result File : /DATA/RESULT/AB06353.RES
Sample Name : Q1452506
Sample Comment : BSD
Injection Time : 1131 22Jun1994
Instrument : HPAB
Column/Amt-Inj : RTX50 53MM / 1.5ul

3.076

4.782

6.715

Tetrachloro-m-xylene

9.615

10.064

11.101

11.506

11.910

12.110

12.437

12.282

13.006

13.433

13.720

14.338

14.495

14.725

15.070

15.188

15.849

15.458

16.030

16.206

Aroclor-1254

16.563

Aroclor-1254

17.119

16.959

Aroclor-1254

17.758

17.983

18.190

18.349

18.968

19.246

19.893

Aroclor-1254

Aroclor-1254

20.291

20.526

20.893

21.290

21.443

21.745

21.972

22.456

22.969

23.394

24.287

24.693

25.721

26.841

Decachlorobiphenyl

Organic Sample Preparation Extraction Worksheet

Page #: 16, 17, 78

Worksheet #: E46012

OSP Daily Logbook #: 22

Analysis:	PCB
Matrix:	Soil
IQC Batch ID:	ARSI 076

SURROGATE SPIKE

REAGENTS USED

D.I. Water Conductivity:

Sodium Sulfate ID #: 4442

Temp of Water Bath: 95

ADDITIONAL COMMENTS ON BACK

REVIEWED BY: _____

APPROVED BY: *VL*

DATE: _____

DATE: 5/71/94

% SOLID / % MOISTURE DATA WORKSHEET

Sample ID	Dish Tare Weight (g)	Wet Weight Sample + Dish (g)	Dry Weight Sample + Dish (g)	% Moisture	% Solid
3214001	1.33	7.36	6.17	19.73	80.27
3214002	1.33	7.53	6.2	21.45	78.55
3214005	1.35	7.15	5.94	20.86	79.14
3214005D	1.34	7.19	5.9	22.05	77.95
3214006	1.34	7.31	6.05	21.11	78.89
3214007	1.31	7.62	7.61	0.16	99.84
3214010	1.32	8.28	8.24	0.57	99.43

Oven Temperature (°c)

Start: 104

End: 104

Sample: 79.14 (%)

Duplicate: 77.95 (%)

% RPD: 1.5

Analyst: MH 6/6

Reviewed: JS 6/30

Result File : /DATA/RESULT/AF06343.RES
 Sample Name : 3214002
 Sample Comment : 1661E-63
 Injection Time : 0543 22Jun1994
 Instrument : HPAF
 Column/Amt Inj : RTX5 .53MM / 1.5ul
 Temp Program : 160 C (1MIN)-5C/MIN-270C(8MIN)
 Calib Method : /DATA/METHOD/AF'AR12540616.MTH
 Sequence : /DATA/SEQUENCE/AF'0621.SEQ
 Subseq/Sample : 1/ 22
 %Dil-Fact : 100.000 Smp-Amt : 0.000

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	3.32	0.00	40961	BB	2.975	
2	3.60	0.00	17385	BB	1.263	
3	4.01	0.00	54491	BB	3.958	
4	4.29	0.00	29039	BB	2.109	
5	4.60	0.00	95215	BB	6.917	
6	4.77	0.00	43489	BB	3.159	
7	5.18	0.00	33953	BB	2.466	
8	5.43	0.00	29491	BB	2.142	
9	6.00	#5.99	403657	BB	15.553	Tetrachloro-m-xylene
10	6.37	0.00	14623	BB	1.062	
11	6.96	0.00	16638	BB	1.209	
12	7.35	0.00	148999	BB	10.824	
13	7.75	0.00	13888	BB	1.009	
14	7.95	0.00	10332	BB	.751	
15	8.21	0.00	26386	BB	1.917	
16	8.37	0.00	7089	BB	.515	
17	8.77	0.00	497273	BB	36.123	
18	9.48	0.00	8190	BB	.595	
19	9.78	0.00	54960	BB	3.992	
20	10.12	0.00	21503	BB	1.562	
21	10.36	0.00	53468	BB	3.884	
22	10.60	0.00	91909	BB	6.677	
23	10.87	0.00	211465	BB	15.361	
24	11.04	0.00	458046	BB	33.274	
25	11.44	0.00	247905	BB	18.008	
26	12.01	0.00	65345	BB	4.747	
27	12.18	0.00	5429	BB	.394	
28	12.28	0.00	11910	BB	.865	
29	12.47	0.00	16398	BB	1.191	
30	12.68	0.00	410510	BB	29.820	
31	13.06	13.04	1407506	BB	310.859	Aroclor-1254
32	13.28	0.00	289230	BB	21.010	
33	13.62	0.00	706622	BB	51.331	
34	13.82	0.00	1366179	BB	99.243	
35	14.01	0.00	828864	BB	60.211	
36	14.24	0.00	183580	BB	13.336	
37	14.38	0.00	68385	BB	4.968	
38	14.56	0.00	306916	BB	22.295	
39	14.74	0.00	569387	BB	41.362	

1266

Result File : /DATA/RESULT/AF06343.RES
 Sample Name : 3214002
 Sample Comment : 1661B-63
 Injection Time : 0543 22Jun1994
 Instrument : HPAP
 Column/Amt Inj : RTX5 .53MM / 1.5ul

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
40	14.89	0.00	281135	BB	20.422	
41	15.07	15.06	1758953	BB	203.917	Aroclor-1254
42	15.49	0.00	1275555	BB	92.659	
43	15.64	0.00	681578	BB	49.511	
44	15.90	15.93	3397216	BB	255.674	Aroclor-1254
45	16.26	0.00	309854	BB	22.509	
46	16.51	0.00	779414	BB	56.619	
47	16.71	0.00	2891245	BS	210.027	
48	17.15	0.00	484046	BB	35.162	
49	17.47	0.00	623356	BB	45.282	
50	17.65	0.00	6030235	GS	438.051	
51	17.94	0.00	614433	BB	44.634	
52	18.22	0.00	2275852	BB	165.323	
53	18.39	0.00	1000489	BB	72.678	
54	18.59	18.58	1061734	BB	316.093	Aroclor-1254
55	18.75	0.00	268547	BB	19.508	
56	19.01	0.00	1887530	BB	137.115	
57	19.20	0.00	868555	BB	63.094	
58	19.35	0.00	716851	BB	52.074	
59	19.56	0.00	262938	BB	19.100	
60	19.72	0.00	326471	BB	23.716	
61	19.94	0.00	4982864	GS	361.967	
62	20.16	0.00	59200	BB	4.300	
63	20.35	0.00	230722	BB	16.760	
64	20.73	0.00	7239	BB	.526	
65	20.93	0.00	2668755	BB	193.865	
66	21.20	0.00	1304198	BB	94.740	
67	21.38	0.00	974705	BB	70.805	
68	21.71	0.00	12694	BB	.922	
69	21.86	0.00	72993	BB	5.302	
70	22.15	0.00	14308	BB	1.039	
71	22.37	0.00	546565	BB	39.704	
72	22.59	0.00	28684	BB	2.084	
73	22.79	0.00	32260	BB	2.343	
74	23.02	0.00	1105351	BB	80.295	
75	23.69	0.00	632488	BB	45.945	
76	24.12	0.00	64942	BB	4.718	
77	24.33	0.00	258239	BB	18.759	
78	24.88	0.00	36746	BB	2.669	
79	25.07	0.00	68056	BB	4.944	
80	25.27	0.00	151086	BB	10.975	
81	25.57	#25.54	517935	BB	28.982	Decachlorobiphenyl
82	25.81	0.00	8838	BB	.642	
83	26.09	0.00	25411	BB	1.846	
84	26.51	0.00	18360	BB	1.334	
85	26.96	0.00	103928	BB	7.550	
86	27.47	0.00	36144	BB	2.626	

Result File : /DATA/RESULT/AF06343.RES
Sample Name : 3214002
Sample Comment : 1661B-63
Injection Time : 0543 22Jun1994
Instrument : HPAF
Column/Amt Inj : RTX5 .53MM / 1.5ul

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
87	27.83	0.00	45017	BB	3.270	
88	28.58	0.00	13686	BB	.994	

Result File : /DATA/RESULT/AF06343.RFS
 Sample Name : 3214002
 Sample Comment : 1661B-63
 Injection Time : 0543 22Jun1994
 Instrument : HP4F
 Column/Int Inj : RTX5 .53MM / 1.5ul

ECOTek LSI

Page 4

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Result File : /DATA/RESULT/AB06343.RES
 Sample Name : 3214002
 Sample Comment : 1601B-63
 Injection Time : 0543 22Jun1994
 Instrument : HPAB
 Column/Amt Inj : RTX50 .53MM / 1.5ul
 Temp Program : 160 C (1MIN)-5C/MIN-270C(8MIN)
 Calib Method : /DATA/METHOD/AB'AR12540616.MTH
 Sequence : /DATA/SEQUENCE/AB'0621.SEQ
 Subseq/Sample : 1/ 22
 %Dil-Fact : 100.000 Smp-Amt: 0.000

1260

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
1	3.08	0.00	16707	BB	1.214	
2	3.45	0.00	16373	BB	1.189	
3	3.63	0.00	7875	BB	.572	
4	4.11	0.00	18017	BB	1.309	
5	4.79	0.00	6157	BB	.447	
6	5.57	0.00	15408	BB	1.119	
7	5.77	0.00	29870	BB	2.170	
8	6.21	0.00	11814	BB	.858	
9	6.79	0.00	20639	BB	1.499	
10	7.13	#7.12	289465	BB	15.676	Tetrachloro-m-xylene
11	8.08	0.00	11840	BB	.860	
12	8.60	0.00	99629	BB	7.237	
13	9.01	0.00	60174	BB	4.371	
14	9.38	0.00	13495	BB	.980	
15	9.67	0.00	13603	BB	.988	
16	10.07	0.00	418825	BB	30.424	
17	10.40	0.00	9202	BB	.668	
18	10.78	0.00	9013	BB	.655	
19	11.00	0.00	6277	BB	.456	
20	11.13	0.00	24145	BB	1.754	
21	11.52	0.00	47647	BB	3.461	
22	11.71	0.00	12929	BB	.939	
23	12.14	0.00	7938	BB	.577	
24	12.37	0.00	355655	BB	25.836	
25	12.55	0.00	35522	BB	2.580	
26	12.88	0.00	166829	BB	12.119	
27	13.44	0.00	47623	BB	3.459	
28	13.92	0.00	17339	BB	1.260	
29	14.18	0.00	308652	BB	22.421	
30	14.51	0.00	1070210	BB	77.743	
31	14.74	0.00	231889	BB	16.845	
32	15.08	0.00	547743	BB	39.789	
33	15.27	15.26	999757	BB	166.427	Aroclor-1254
34	15.47	0.00	358857	BB	26.068	
35	15.86	0.00	46927	BB	3.409	
36	16.04	0.00	259335	BB	18.839	
37	16.22	0.00	531482	BB	38.608	
38	16.38	0.00	262887	BB	19.097	
39	16.56	16.55	1478703	BB	220.057	Aroclor-1254

Result File : /DATA/RESULT/AB06343.RES
 Sample Name : 3214002
 Sample Comment : 1661B-63
 Injection Time : 0543 22Jun1994
 Instrument : HPAB
 Column/Amt Inj : RTX50 .53MM / 1.5ul

Pk#	Act RT	Exp RT	Area	Code	UG/L	Name
40	16.97	0.00	830581	BB	60.335	
41	17.13	0.00	498383	BB	36.204	
42	17.39	17.42	2497520	BB	272.802	Aroclor-1254
43	17.77	0.00	245292	BB	17.819	
44	18.00	0.00	621830	BB	45.171	
45	18.20	0.00	2293570	BS	166.610	
46	18.65	0.00	1017246	BB	73.895	
47	18.98	0.00	558803	BB	40.593	
48	19.17	19.16	4801711	BS	525.777	Aroclor-1254
49	19.45	0.00	500713	BB	36.373	
50	19.73	0.00	1740921	BB	126.465	
51	19.90	0.00	827874	BB	60.139	
52	20.12	20.11	962615	BB	393.400	Aroclor-1254
53	20.28	0.00	209250	BB	15.200	
54	20.54	0.00	1399297	BB	101.648	
55	20.73	0.00	674188	BB	48.975	
56	20.89	0.00	497704	BB	36.154	
57	21.10	0.00	162465	BB	11.802	
58	21.23	0.00	254632	BB	18.497	
59	21.45	0.00	4107824	BS	298.402	
60	21.71	0.00	126027	BB	9.155	
61	21.90	0.00	76260	BB	5.540	
62	22.05	0.00	13175	BB	.957	
63	22.22	0.00	9177	BB	.667	
64	22.47	0.00	2083421	BB	151.345	
65	22.75	0.00	925089	BB	67.201	
66	22.92	0.00	648052	BB	47.076	
67	23.25	0.00	12716	BB	.924	
68	23.40	0.00	60955	BB	4.428	
69	23.72	0.00	17134	BB	1.245	
70	23.98	0.00	459853	BB	33.405	
71	24.20	0.00	14540	BB	1.056	
72	24.46	0.00	22290	BB	1.619	
73	24.71	0.00	1187877	BB	86.290	
74	25.22	0.00	55294	BB	4.017	
75	25.65	0.00	548116	BB	39.816	
76	26.34	0.00	243605	BB	17.696	
77	27.10	0.00	64234	BB	4.666	
78	27.50	0.00	202700	BB	14.725	
79	27.89	#27.88	463393	BB	28.563	Decachlorobiphenyl
80	28.17	0.00	23278	BB	1.691	
81	28.66	0.00	28104	BB	2.042	

Result File : /DATA/RESULT/AB06343.RES
Sample Name : 3214002
Sample Comment : 1661E-63
Injection Time : 0543 22Jun1994
Instrument : HPAB
Column/Amt Inj : RTX50 .53MM / 1.5ul

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6.790

Tetrachloro-m-xylene

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23.245

23.718

24.205

24.456

24.713

25.223

25.653

26.341

27.104

27.505

28.165

28.661

Decachlorobiphenyl

GC-ECD Instrument Logsheet-Inst A

Pest/PCB ☒Herb ☐TPH ☐Nitroaromatics ☐Other ☐Date: 6/21/94Analyst(s): SESFront Col. ID: RTX-5Back Col. ID: DB-608-RTX50Front Col. Meth. File AF' A121240616Back Col. Meth. File AB' A121240616Inj/Det Temp (°C): 250°C/300°CStandard GC Program (°C): 160(0.5)-2-193(1.5)-3.5-262(11)Alternate GC Program (°C): 160(1) - 5-270 (E)ul Inj Front/Back: 3/3

Filename Front Inj	BTL #	Laboratory Sample ID	Client Sample ID	Filename Back Inj	BTL #	Df	Comments	S1/S2 Note	Run Notes
AF 06 322	1	Rev	—	AB 06 322	1				
AF 323	2	Inv ABH	PS-4-060	AB 323	2				
AF 324	3	Inv ABH	PS-4-060	AB 324	3				
AF 325	4	A12124 #3	MC-94-066	AB 325	4				
AF 326	5	Q145108	Pbk	AB 326	5				
AF 327	6	Q1452403	Pbk	AB 327	6				
AF 328	7	Q1452807	Pbk	AB 328	7				
AF 329	8	Q1452409	Pbk	AB 329	8				
AF 330	9	3212001	MMSD 2009001	AB 330	9				
AF 331	10	3212001MS	MMSD 2009001	AB 331	10				
AF 332	11	3212001MSD	MMSD 2009001	AB 332	11				
AF 333	12	3212002	MMSD 2009002	AB 333	12				
AF 334	13	Q1452401	BS	AB 334	13				
AF 335	14	A12124 #3	MC-94-066	AB 335	14				
AF 336	15	3212003	MMSD 2009003	AB 336	15				
AF 337	16	3212006	MMSD 2009002	AB 337	16				
AF 338	17	3212007	MMSD 2009001	AB 338	17				
AF 339	18	3212008	MMSD 2009001	AB 339	18				
AF 340	19	3212009	MMSD 2009001	AB 340	19				
AF 341	20	3212010	MMSD 2009002	AB 341	20				
AF 342	21	3212011	MMSD 2009001	AB 342	21				
AF 343	22	3214022	1661 B-63	AB 343	22				
AF 344	23	Q1452402	BSO	AB 344	23				
AF 345	24	A12124 #3	MC-94-066	AB 345	24				

Signature or Initials/Date: SES 6/21/94

Approved/Date: _____

Surrogate Limits: (OLM01.8)	TCX (S1)	DCB (S2)
Water/Soil	60-150	60-150

RE = Reextraction
RIN = Reinjection
DL = Dilution
M = Matrix effect

RE = Reextraction Analysis
RIN = Reinjection Analysis
DL = Dilution Analysis
M = Matrix effect

Surr Notes:

W = Within limits
L = Below lower limit
H = Above upper limit
D = Dilution; not usable

GC-ECD Instrument Logsheet-Inst A

Pest/PCB ✓

Herb

TPH

Nitroaromatics

Other

Date: 10/25/94

Inj/Det Temp (°C): 250°C/300° C

Analyst(s): SES

Standard GC Program (°C): 160(0.5)-2-193(1.5)-3.5-262(11)

Front Col. ID: RTX-5

Alternate GC Program (°C): 160(1) - 5 - 270/8

Back Col ID: DB-608-127X50

ul Inj Front/Back: 3/3

Front Col. Meth. File AF/ AK12540616

Back Col. Meth. File AB 1254 0616

[illegible]

Signature or Initials/Date: SES 6/21/94

Approved/Date:

Surrogate Limits: (OLM01.8)	TCX (S1)	DC8 (S2)
Water/Soil	80-150	80-150

- Simple Restriction
- Simple Restriction
- Simple Restriction

RE = Reextraction Analysis

RIN = Reinjection Analysis

DL = Dilution Analysis

M = Matrix effect

Surr Notes:

W = Within limits

L = Below lower limit

H = Above upper limit

D = Dilution; not usable

Rev2 (4/94)

GC-ECD Instrument Logsheet-Inst A

Pest/PCB ☒ Herb ☐ TPH ☐ Nitroaromatics ☐ Other ☐

Date: 6/28/94
Analyst(s): SEA
Front Col. ID: RTX-5
Back Col. ID: DB-608-RTX50
Front Col. Meth. File AF1 HEN1600623
Back Col. Meth. File AB: AR11400623

Inj/Det Temp (°C): 250°C/300° C
 Standard GC Program (°C): 160(0.5)-2-193(1.5)-3.5-262(11)
 Alternate GC Program (°C): 160(1) - 5 - 270 (5)
 ul Inj Front/Back: 3/3

[illegible]

Signature or Initials/Date: SES 6/28/94

Approved/Date:

Surrogate Limits: (OLM01.B)	TCX (S1)	DC8 (S2)
Water/Soil	60-150	60-150

- ☐ Health Insurance
- ☐ Health Protection
- ☐ Health Status

RE = Reextraction Analysis
RIN = Reinjection Analysis
DL = Dilution Analysis
M = Matrix effect

Surr Notes:
W = Within limits
L = Below lower limit
H = Above upper limit
D = Dilution; not usable