UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

MEMORANDUM

Date: 1-16-1997

Subject: **Contract Laboratory Program Data Review**

From: Melvin L. Ritter, ESAT RPO, 6MD-HC M. Humphrey for

To: L. Biasco , 6SF-RA

Site: WILCOX OIL

Case#: 25159

SDG#: MFG-Z44

The EPA Region 6 Houston Branch ESAT data validation team has completed a review of the submitted Contract Laboratory Program (CLP) data package for the referenced site. The samples analyzed and reviewed are detailed in the attached Regional data review and assessment report for this case.

The data package was found to be:

( ) Acceptable: No major problems with data package.

(X) Provisional: Use of data requires caution.
Data is acceptable for Regional use. Problems are noted in the review report.

( ) Unacceptable: Some or all of data should not be used.
Problems are noted in the review report.

Questions regarding the data review report can be addressed to me.

Attachments

cc: R. Flores, Region 6 CLP/TPO
M. El-feky, Region 6 Data Coordinator

Files (2)

9417627

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LOCKHEED MARTIN SERVICES GROUP
10101 SOUTHWEST FREEWAY, SUITE 500
HOUSTON, TEXAS 77074

MEMORANDUM

DATE: January 7, 1997

TO: Dr. Melvin Ritter, ESAT RPO, Region VI

FROM: Dr. Tom Chiang, ESAT ETM, Region VI

SUBJECT: CLP Data Review

REF: TDF # 6-7111A, ESAT File No. I2073

Attached is the data review summary for Case #25159
SDG #MFGZ44
Site WILCOX OIL

COMMENTS:

I. CONTRACTUAL ASSESSMENT OF DATA PACKAGE:

The reviewer detected the following contractual noncompliance. The CCS report was not available at the time of this report preparation.

The laboratory failed to encase the sample tags in a clear plastic bag (ILM04.0, Exhibit F, F-13).

II. TECHNICAL/USABILITY ASSESSMENT OF DATA PACKAGE:

A total of 480 results were reviewed for this data package. The package is technically provisional for the problems summarized below.

A. The reviewer qualified approximately nine percent of the results because of technical problems.

B. The antimony matrix spike recovery failed to meet QC criteria.

C. Four selenium analyses failed FAA QC criteria.

D. Lead field duplicate results were inconsistent.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

INORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 25159
LABORATORY ARI
CONTRACT # 68-D5-0134
SDG # MFGZ44
SOW# ILM04.0
ACCT # 7FAXJN28 SF # FAXUZZ

SITE WILCOX OIL
NO. OF SAMPLES 20
MATRIX SOIL
REVIEWER (IF NOT ESD) ESAT
REVIEWER'S NAME Linda Hoffman
COMPLETION DATE January 7, 1997

SAMPLE NO.:					
	MFG-Z44	MFG-Z48	MFG-Z52	MFG-Z56	MFG-Z60
	MFG-Z45	MFG-Z49	MFG-Z53	MFG-Z57	MFG-Z63
	MFG-Z46	MFG-Z50	MFG-Z54	MFG-Z58	MFG-Z64
	MFG-Z47	MFG-Z51	MFG-Z55	MFG-Z59	MFG-Z65

DATA ASSESSMENT SUMMARY

	ICP	FAA	HG	CYANIDE
1. HOLDING TIMES	O	O	O	O
2. CALIBRATIONS	O	O	O	O
3. BLANKS	O	O	O	O
4. MATRIX SPIKES	M	O	O	O
5. DUPLICATE ANALYSIS	O	O	O	O
6. ICP QC	M			
7. FAA QC		M		
8. LCS	O	O	O	O
9. SAMPLE VERIFICATION	O	O	O	O
10. OTHER QC	O	M	O	O
11. OVERALL ASSESSMENT	M	M	O	O

O = Data had no problems.
M = Data qualified because of major or minor problems.
Z = Data unacceptable.
N/A= Not applicable

ACTION ITEMS: The sample tags were not encased in the required plastic bags.

AREAS OF CONCERN: The matrix spike recovery for antimony was less than 75 percent. Four selenium analyses had FAA analytical spike recoveries below 85 percent. The lead field duplicate results were inconsistent. One nickel analysis had a correlation coefficient greater than 20 percent.

NOTABLE PERFORMANCE:

INORGANIC QA REVIEW
CONTINUATION PAGE

Case 25159 SDG MFGZ44 Site WILCOX OIL Lab ARI

COMMENTS: The package consisted of data for 20 soil samples for total metals and cyanide analyses by ILM04.0. The sampler designated samples MFG-Z49/MFG-Z50, MFG-Z59/MFG-Z60, and MFG-Z65/MFG-Z65 as field duplicate pairs and sample MFG-Z44 as the QC sample. The laboratory met the 35-day turnaround time requirement but did not enclose the sample tags in plastic bags. Thirty-two percent of the reported results were above the CRDL's.

The laboratory incorrectly reported the lead results ,which was 55,000 mg/Kg, for sample MFG-Z58. On the Data Summary Table, the reviewer recorded the correct concentration.

The data package is technically provisional because of problems with matrix and FAA analytical spike recoveries, field duplicate differences, and inconsistent instrument readings. The technical usability of all reported results is indicated in the attached Data Summary Table.

An Evidence Audit was conducted for the Complete Sample Delivery Group File (CSF), and the Evidence Inventory Checklist is attached to this report.

NOTE: THE FOLLOWING REVIEW NARRATIVE ADDRESSES BOTH CONTRACTUAL AND TECHNICAL ISSUES. THE ASSESSMENT MADE FOR EACH QC PARAMETER IS SOLELY BASED ON THE TECHNICAL DATA USABILITY, WHICH MAY NOT NECESSARILY BE AFFECTED BY CONTRACTUAL PROBLEMS.

1. **Holding Times:** Acceptable. Contractual holding time and sample preservation criteria were met. Technical holding time criteria have not been established for soil samples.

2. **Calibrations:** Acceptable. All calibrations met contractual requirements. The CRDL standard results indicated that instrument performance near the CRDL's was acceptable.

3. **Blanks:** Acceptable. Preparation and calibration blanks met contractual requirements although the laboratory reported calcium, copper, vanadium, and zinc in the blanks. The copper and vanadium blank concentrations only affected sample results below the CRDL's. The following zinc results were above the CRDL's and affected as indicated by the blanks.

   The results for samples MFG-Z44, MFG-Z49, and MFG-Z50 are high biased.

3. **Blanks, continued:**

The results for samples MFG-Z45 and MFG-Z52 are considered undetected.

4. **Pre-digestion/Pre-distillation Matrix Spike Recovery:** Provisional. The laboratory reported an antimony matrix spike recovery that was below the QC limit, so the reviewer qualified as estimated and biased low all antimony results.

5. **Duplicate Analysis:** Acceptable. The laboratory reported duplicate differences above the SOW QC limits for aluminum and iron. Since the aluminum difference was only marginally high and the iron difference met technical QC criteria, no results were qualified.

6. **ICP Quality Control:**

Serial Dilution: Acceptable. The laboratory reported acceptable serial dilution differences.

Interference Check Sample: Acceptable. Acceptable ICS results indicated satisfactory interelement and background correction.

Coefficient of Variation: Provisional. The reviewer qualified as estimated the nickel result for sample MFG-Z65 because replicate ICP readings were inconsistent.

7. **Furnace Atomic Absorption Quality Control:**

FAA Analytical Spike Recovery: Provisional. The reviewer qualified as estimated and biased low the selenium results for samples MFG-Z58, MFG-Z59, MFG-Z60, and MFG-Z64 because FAA QC criteria were not met. The reviewer did not qualify six other selenium and two thallium results because the analytical spike recoveries were only marginally below the QC limits.

Duplicate Injection Coefficient of Variation: Acceptable. Replicate injections were consistent.

Method of Standard Addition: MSA analysis was not required.

INORGANIC QA REVIEW
CONTINUATION PAGE

Case 25159 SDG MFGZ44 Site WILCOX OIL Lab ARI

8. **Laboratory Control Sample:** Acceptable. Acceptable LCS results indicated satisfactory sample preparation and analysis.

9. **Sample Verification:** The reviewer detected a few reporting errors and contacted the laboratory for resubmission (see attached FAX Record Log).

10. **Other QC:**

    Field Duplicate: Provisional. The reviewer qualified all lead results because two of the three field duplicate pairs had inconsistent lead results.

11. **Overall Assessment:** The data package is technically provisional for the following reasons.

    The reviewer qualified all antimony and four selenium results because of matrix related problems.

    The reviewer qualified one nickel result because of inconsistent instrument readings.

    The reviewer qualified all lead results because of poor precision.

INORGANIC DATA QUALIFIER DEFINITIONS

The following definitions provide brief explanations of the ESAT-Region 6 qualifiers assigned to results in the inorganic data review process.

U Undetected at the laboratory reported detection limit (IDL).

L Reported concentration is between the IDL and the CRDL.

J Result is estimated because of outlying quality control parameters such as matrix spike, serial dilution, FAA spike recovery, etc.

R Result is unusable.

F A possibility of a false negative exists.

UC Reported concentration should be used as a raised detection limit because of apparent blank contamination.

^ High bias. Actual concentration may be lower than the concentration reported.

v Low bias. Actual concentration may be higher than the concentration reported.

DATA SUMMARY

Case No.: 25159 SDG. No.: MFGZ44 Reviewer: L. Hoffman

Laboratory: ARI Matrix: SOIL Units: mg/Kg

EPA TR #=>	MFG-Z44	FLAG	MFG-Z45	FLAG	MFG-Z46	FLAG	MFG-Z47	FLAG	MFG-Z48	FLAG	COMMENTS
ALUMINUM	2200		1400		2170		2550		1610		
ANTIMONY	12.2	UJv	11.5	UJv	12.4	UJv	12.1	UJv	12.4	UJv	
ARSENIC	1.3	L	0.93	L	2.1	L	3.9		0.90	L	
BARIUM	21.4	L	15.4	L	30.9	L	35.8	L	15.3	L	
BERYLLIUM	0.24	U	0.23	U	0.25	U	0.24	U	0.25	U	
CADMIUM	0.49	U	0.46	U	0.50	U	0.48	U	0.50	U	
CALCIUM	406	L	368	L	808	L	12600		576	L	
CHROMIUM	5.6		3.3		4.0		6.1		3.8		
COBALT	2.3	L	1.4	L	2.7	L	2.1	L	1.2	L	
COPPER	2.7	LUC	1.6	LUC	3.0	LJ^	5.5	L	2.9	L	
IRON	4340		2880		4870		5690		2630		
LEAD	6.0	J	4.0	J	33.9	J	117	J	54.0	J	
MAGNESIUM	333	L	247	L	425	L	6260		317	L	
MANGANESE	112		67.0		168		319		72.3		
MERCURY	0.05	U	0.05	U	0.05	U	0.05	U	0.06	U	
NICKEL	3.4	L	3.4	L	3.1	L	4.7	L	3.2	L	
POTASSIUM	373	L	190	L	362	L	436	L	284	L	
SELENIUM	0.24	U	0.23	U	0.25	U	0.24	U	0.24	U	
SILVER	0.73	U	0.69	U	0.74	U	0.73	U	0.74	U	
SODIUM	12.2	U	11.5	U	12.4	U	49.9	L	12.4	U	
THALLIUM	0.31	L	0.23	L	0.25	U	0.29	L	0.24	U	
VANADIUM	6.5	LJv	4.5	LJv	6.8	LJv	7.0	LJv	5.1	LJv	
ZINC	7.6	J^	6.2	UC	11.6		31.7		11.6		
CYANIDE	0.30	U	0.30	U	0.31	U	0.31	U	0.31	U	
% SOLIDS	81.9		82.7		80.0		81.8		80.0		

DATA SUMMARY

Case No.: 25159 SDG. No.: MFGZ44 Reviewer: L. Hoffman

Laboratory: ARI Matrix: SOIL Units: mg/Kg

EPA TR #=>	MFG-Z49	FLAG	MFG-Z50	FLAG	MFG-Z51	FLAG	MFG-Z52	FLAG	MFG-Z53	FLAG	COMMENTS
ALUMINUM	1850		1790		2720		1670		3630		
ANTIMONY	12.0	UJv	12.0	UJv	12.4	UJv	12.1	UJv	11.6	UJv	
ARSENIC	1.1	L	1.3	L	1.6	L	1.4	L	1.5	L	
BARIUM	21.8	L	24.0	L	32.7	L	15.4	L	46.6		
BERYLLIUM	0.24	U	0.24	U	0.25	U	0.24	U	0.23	U	
CADMIUM	0.48	U	0.48	U	0.50	U	0.48	U	0.68	L	
CALCIUM	557	L	628	L	859	L	315	L	1590		
CHROMIUM	2.8		2.9		4.6		4.0		5.7		
COBALT	1.6	L	1.9	L	2.6	L	1.6	L	2.4	L	
COPPER	1.8	LUC	1.7	LUC	3.0	L	1.5	L	5.2	L	
IRON	3400		3550		5000		3560		4850		
LEAD	5.0	J	15.8	J	18.4	J	4.6	J	26.3	J	
MAGNESIUM	324	L	337	L	465	L	228	L	577	L	
MANGANESE	93.1		113		284		73.0		191		
MERCURY	0.06	U	0.05	U	0.05	U	0.05	U	0.06	U	
NICKEL	3.8	L	3.6	L	4.3	L	2.4	U	5.3	L	
POTASSIUM	280	L	313	L	417	L	289	L	704	L	
SELENIUM	0.25	U	0.24	U	0.24	U	0.24	U	0.24	U	
SILVER	0.72	U	0.72	U	0.74	U	0.72	U	0.70	U	
SODIUM	12.0	U	12.0	U	12.4	U	12.1	U	11.6	U	
THALLIUM	0.25	U	0.24	L	0.24	U	0.24	U	0.26	L	
VANADIUM	4.9	LJv	5.0	LJv	6.6	LJv	5.5	LJv	8.7	L	
ZINC	8.0	J^	8.0	J^	21.7		6.0	UC	24.3		
CYANIDE	0.30	U	0.30	U	0.32	U	0.30	U	0.30	U	
% SOLIDS	81.6		82.5		77.6		82		83.4		

DATA SUMMARY

Case No.: 25159 SDG. No.: MFGZ44 Reviewer: L. Hoffman

Laboratory: ARI Matrix: SOIL Units: mg/Kg

EPA TR #=>	MFG-Z54	FLAG	MFG-Z55	FLAG	MFG-Z56	FLAG	MFG-Z57	FLAG	MFG-Z58	FLAG	COMMENTS
ALUMINUM	5580		3550		3430		4060		9090		
ANTIMONY	11.0	UJv	12.5	UJv	12.2	UJv	11.5	UJv	12.7	UJv	
ARSENIC	1.3	L	1.5	L	1.3	L	2.3		1.5	L	
BARIUM	58.2		31.8	L	31.8	L	34.8	L	89.0		
BERYLLIUM	0.28	L	0.26	L	0.24	U	0.23	U	0.40	L	
CADMIUM	0.44	U	0.50	U	0.49	U	0.72	L	0.51	U	
CALCIUM	1510		516	L	947	L	1750		1240	L	
CHROMIUM	8.2		6.7		4.4		7.2		11.0		
COBALT	3.3	L	4.6	L	1.8	L	2.5	L	5.6	L	
COPPER	5.3	L	4.4	L	4.5	L	11.4		127		
IRON	6340		7430		4570		6910		11200		
LEAD	19.5	J	6.6	J	116	J	369	J	55000	J	
MAGNESIUM	693	L	744	L	423	L	774	L	1050	L	
MANGANESE	233		80.7		96.4		209		414		
MERCURY	0.05	U	0.06	U	0.05	U	0.18		0.06	U	
NICKEL	7.3	L	10.4		5.9	L	5.4	L	10.1		
POTASSIUM	961	L	840	L	480	L	680	L	1150	L	
SELENIUM	0.23	U	0.24	U	0.25	U	0.23	U	0.26	UJv	
SILVER	0.66	U	0.75	U	0.73	U	0.69	U	0.76	U	
SODIUM	20.5	L	17.7	L	17.8	L	14.2	L	2330		
THALLIUM	0.23	U	0.39	L	0.25	U	0.27	L	1.3	U	
VANADIUM	11.2		8.0	L	7.2	LJv	9.8	L	19.5		
ZINC	34.8		23.5		36.3		132		25.7		
CYANIDE	0.29	U	0.31	U	0.31	U	0.29	U	0.35	U	
% SOLIDS	85.4		79.8		79.1		86.1		72.4		

DATA SUMMARY

Case No.: 25159 SDG. No.: MFGZ44 Reviewer: L. Hoffman

Laboratory: ARI Matrix: SOIL Units: mg/Kg

EPA TR #=>	MFG-Z59	FLAG	MFG-Z60	FLAG	MFG-Z63	FLAG	MFG-Z64	FLAG	MFG-Z65	FLAG	COMMENTS
ALUMINUM	7060		5720		2000		5350		5110		
ANTIMONY	11.9	UJv	11.5	UJv	10.7	UJv	11.8	UJv	12.0	UJv	
ARSENIC	1.5	L	1.7	L	1.0	L	1.8	L	2.0	L	
BARIUM	54.6		52.6		35.7	L	47.6		46.2	L	
BERYLLIUM	0.31	L	0.23	U	0.21	U	0.25	L	0.24	U	
CADMIUM	0.47	U	0.46	U	0.43	U	0.47	U	0.48	U	
CALCIUM	2830		2810		767	L	4950		4540		
CHROMIUM	11.7		9.2		2.7		7.7		7.0		
COBALT	3.1	L	2.4	L	1.3	L	3.0	L	3.0	L	
COPPER	6.9		6.2		5.2	L	10.6		11.4		
IRON	8790		7570		2970		9570		6330		
LEAD	26.6	J	67.9	J	25.9	J	251	J	260	J	
MAGNESIUM	963	L	902	L	338	L	957	L	1030	L	
MANGANESE	134		127		163		174		164		
MERCURY	0.05	U	0.05	U	0.05	U	0.08	L	0.09	L	
NICKEL	6.8	L	6.4	L	2.1	U	8.6	L	8.9	LJ	
POTASSIUM	1070	L	778	L	377	L	795	L	762	L	
SELENIUM	0.22	UJv	0.24	UJv	0.21	U	0.23	UJv	0.23	U	
SILVER	0.71	U	0.69	U	0.64	U	0.71	U	0.72	U	
SODIUM	23.1	L	18.0	L	10.7	U	70.6	L	56.1	L	
THALLIUM	0.29	L	0.36	L	0.21	U	0.39	L	0.35	L	
VANADIUM	15.6		13.5		4.0	LJv	16.8		14.7		
ZINC	26.2		24.1		50.7		70.1		69.7		
CYANIDE	0.30	U	0.30	U	0.28	U	0.30	U	0.30	U	
% SOLIDS	83.5		82.7		88.4		83.1		83.6		

INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

Case No.	25159	SDG No.	MFGZ44	SDG Nos. To Follow		SAS No.		Date Rec	12/26/96

EPA Lab ID: ARI

Lab Location: Seattle, WA

Region: 6 Audit No.: 25159/MFGZ44

Re_Submitted CSF? Yes _____ No X

Box No(s): 1

COMMENTS:

3. The laboratory failed to paginate the page between pages 154 and 155. The reviewer added the appropriate page number to this page.

4. Page 316 was not listed on Form DC-2-2. The reviewer made the appropriate correction.

14/15. The laboratory failed to sign and date Airbill #7802823346, however, the airbill does not provide a section for the laboratory receipt date and signature.

Over for additional comments.

ORIGINALS	YES	NO	N/A
CUSTODY SEALS			
1. Present on package?	X		
2. Intact upon receipt?	X		
FORM DC-2			
3. Numbering scheme accurate?		X	
4. Are enclosed documents listed?		X	
5. Are listed documents enclosed?	X		
FORM DC-1			
6. Present?	X		
7. Complete?	X		
8. Accurate?	X		
CHAIN-OF-CUSTODY RECORD(s)			
9. Signed?	X		
10. Dated?	X		
TRAFFIC REPORT(s) PACKING LIST(s)			
11. Signed?	X		
12. Dated?	X		
AIRBILLS/AIRBILL STICKER			
13. Present?	X		
14. Signed?		X	
15. Dated?		X	
SAMPLE TAGS			
16. Does DC-1 list tags as being included?	X		
17. Present?	X		
OTHER DOCUMENTS			
18. Complete?	X		
19. Legible?	X		
20. Original?		X	
20a. If "NO", does the copy indicate where original documents are located?	X		

	Signature	Printed Name/Title	Date
Audited by:	Linda Hoffman	Linda Hoffman / ESAT Data Reviewer	01/02/97
Audited by:			
Audited by:			

TO BE COMPLETED BY CEAT

Date Recvd by CEAT: _____ Date Entered: _____ Date Reviewed: _____

Entered by: _____ _____

Reviewed by: _____ _____

Signature Printed Name/Title

In Reference to
Case 25159/SDG MFGZ44
Page 1 of 2 pages
ESAT File No.: I2073

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

FAX Record Log

Date of FAX: January 7, 1997

Laboratory Name: ARI

Lab Contact: Jeff Reitan

Region: 6

Regional Contact: Linda Hoffman (ESAT)

FAX Initiated by: Region

In reference to data for the following sample number(s):

All samples in this SDG.

Summary of Questions/Issues:

1. The sample tags were not encased in the contractually required clear plastic bags (ILM04.0, Exhibit F, F-13, 5th bullet). Please acknowledge this requirement and note for the future.

2. On the SDG/TR Cover Sheet (p. 365), the last sample in the SDG is also listed as the SDG number. Please correct this discrepancy and resubmit page 365.

3. The SDG number was not recorded on the traffic reports under the "Lab Receipt Date" (ILM04.0, Exhibit B, B-6, 2nd paragraph from bottom of page). Please acknowledge and note for the future.

4. On the Form 1's, the "Date Received" is incorrect for the samples on pages 7, 8, 9, 10, 12, 13, 19, 20, 21, 25, and 26. The received date for these samples is 11/19/96, not 11/20/96. Please make the necessary corrections and resubmit the listed pages.

5. On Form 1 (p. 21), the lead result is incorrectly reported. The correct result should be 55,000, not 55,049. Please correct the lead concentration and resubmit page 21.

6. In the lead instrument raw data, time of analysis was not recorded for the initial and continuing calibration verifications and blanks (ILM04.0, Exhibit B, B-11, d, #9). Please add the time of each ICV, ICB, CCV, and CCB analysis to the lead instrument raw data and resubmit.

7. Please explain why the ICV/CCV concentrations in the cyanide raw data do not always agree with the concentrations reported on the Form 2's and make any necessary corrections and resubmissions.

8. The instrument ID was not recorded in the cyanide raw data (ILM04.0, Exhibit B, B-9, C.2.d and B-11, #7). Please record the instrument ID, as it appears on Form 14, on the first page of the cyanide raw data and resubmit.

The EPA expects the laboratory to look into items and submit data within seven days to Mahmoud El-Feky, U.S. EPA, 10625 Fallstone Road, Houston TX 77099.

Signature

01/07/97
Date

Distribution: (1) Lab Copy, (2) Region Copy

Lockheed Martin Services Group
ESAT Region 6

10101 S. W. Freeway, Suite 500, Houston, TX 77074 TEL:(713) 988-2983

FACSIMILE COVER SHEET

Please deliver the following pages to:

Name Jeff Reitan

Firm ARI

City Seattle **State** WA

Telephone 206-621-6490 **Ext.** _____

FAX Telephone No. 206-621-7523 **Ext.** _____

Sender:

Name Linda Hoffman ESAT

Date 01/07/97 **Time** _____

Total Number of pages including this Cover Sheet 3

If you do not receive all the pages or if any pages are unclear, please call: (713) 988-2983.

MESSAGES: _____

FAX No. (713) 988-2994

EPA United States Environmental Protection Agency
Contract Laboratory Program

Inorganic Traffic Report & Chain of Custody Record
(For Inorganic CLP Analysis)

Case No. 25159

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
—	—	6	Roy F. Weston	11/19/96	Fed Ex

Regional Information: —

Sampler (Name): Eric Tate

Airbill Number: 7802823346

Non-Superfund Program: —

Sampler Signature: Eric Tate

5. Ship To: ART, 400 9th Avenue North, Seattle, WA 98109, (206) 621-6490, ATTN: Jay Kuhn

Site Name: Wilcox Oil

City, State: Bristow, OK

Site Spill ID: ZZ

3. Purpose*
- Lead: SF, PRP, ST, FED
- Early Action: CLEM, PA, REM, RI, SI, ESI
- Long-Term Action: FS, RD, RA, O&M, NPLD

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaOH
4. H_2SO_4
5. $K_2CR_2O_7$
6. Ice only
7. Other (specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) Other:	E – RAS Analysis: Diss. Metals	Total Metals	Cyanide	Low only: NO_2/NO_3	Fluoride	High only: pH	Conduct.	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank, S = Spike, D = Duplicate, R = Rinsate, PE = Perform. Eval., — = Not a QC Sample)
MFGZ48	5	L	G	6		X	X					6-015020	SED05	11/19/96 1430	FFG06	ECT	—
MFGZ51	5	L	G	6		X	X					6-015032	SED08	11/19/96 1020	FFG09	ECT	—
MFGZ52	5	L	G	6		X	X					6-015036	SED09	11/19/96 1105	FFG10	ECT	—
MFGZ53	5	L	G	6		X	X					6-015040	SS01	11/19/96 1210	FFG11	ECT	—
MFGZ54	5	L	G	6		X	X					6-015044	SS02	11/19/96 1215	FFG12	ECT	—
MFGZ55	5	L	G	6		X	X					6-015048	SS03	11/19/96 1230	FFG13	ECT	—
MFGZ59	5	L	G	6		X	X					6-015064	SS07	11/19/96 1405	FFG17	ECT	—
MFGZ60	5	L	G	6		X	X					6-015068	SS08	11/19/96 1415	FFG18	ECT	D(MFGZ59)
MFGZ63	5	L	G	6		X	X					6-015080	SS11	11/19/96 1350	FFG21	ECT	—
MFGZ66	5	L	G	6		X	X					6-015092	SED10	11/19/96 1535	FFG24	ECT	—

Shipment for Case Complete? (Y/N): Y

Page 1 of 1

Sample(s) to be Used for Laboratory QC: MFGZ66

Additional Sampler Signatures: [illegible]

Chain of Custody Seal Number(s): —

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Eric Tate	11/19/96 1800	Fed Ex Tulsa, OK			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

A21-012-13 REV.

DISTRIBUTION: Green - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-1

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

369024

Inorganic Traffic Report/Chain of Custody Form Instructions

This form replaces both the individual Traffic Report and EPA Chain of Custody Record.

Water Samples	Required Volume	Container Type
Metals Analysis (Low Level)	1 Liter	1 X 1-Liter Polyethylene Bottle OR 2 X 500-ml. Polyethylene Bottle
Metals Analysis (Medium Level*)	16 oz.	1 X 16-oz Wide-Mouth Glass Jar
Cyanide Analysis (Low Level)	1 Liter	1 X 1-Liter Polyethylene Bottle OR 2 X 500-ml. Polyethylene Bottle
Cyanide Analysis (Medium Level*)	16 oz.	1 X 16-oz Wide-Mouth Glass Jar

Soil/Sediment Samples	Required Volume	Container Type
Metals and Cyanide (CN^-) Analysis (Low or Medium Level*)	6 oz.	1 X 8-oz. Wide-Mouth Glass Jar OR 2 X 4-oz. Wide-Mouth Glass Jars

HIGH CONCENTRATION SAMPLE COLLECTION REQUIREMENTS

Liquid or Solid Samples	Required Volume	Container Type
Metals and Cyanide* Analysis	6 oz.	1 X 8-oz. Wide-Mouth Glass Jar

*All Medium and High Level Samples Must be Sealed In Metal Can for Shipment

1. Inorganic Sample Collection Requirements

- Please indicate which sample(s) are to be used for laboratory QC (Matrix Spike/Duplicate).
- Aqueous samples require one double-volume sample per twenty for laboratory Matrix/Spike Duplicate.
- Preserve low level water samples:

Total metals	Preserve with HNO_3 to pH ≤ 2
Dissolve metals	Preserve with HNO_3 to pH ≤ 2 after filtering through a 0.45 μm filter.
Cyanide	Preserve with 10 N NaOH to pH ≥ 12

- Oily samples can not be analyzed under the Contract Laboratory Program Analytical Services (CLPAS) program.
- Ship medium and high concentration samples in metal cans.

2. Cooler and Sample Documentation

- Complete all sections of the Traffic Report/Chain of Custody Form - Press firmly with a ball point pen to ensure that carbon copies are legible. Check the information and correct any errors.
- Please remember to complete the Chain of Custody information on the form.
- Seal the two sets of laboratory Traffic Report/Chain of Custody Form copies in a plastic bag. Include a return address and a method for returning the cooler. Tape bag under cooler lid.
- Seal each container in a plastic bag.
- Pack medium and high concentration samples in metal cans.
- Cool low waters to 4° C. Cooling of low soils is optional. Do not cool medium or high concentration waters and soils.
- Separate and surround cooler contents with vermiculite or equivalent packaging.
- Seal the cooler, overlapping the lid and body with custody seals.
- Mail CLASS the pink copy of the Traffic Report/Chain of Custody Form within 5 days.

3. Sample Shipment and Reporting

- All relevent Department of Transportation regulations must be followed when shipping samples.
- PHONE IN ALL SHIPMENTS IMMEDIATELY TO CLASS (or to RSCC, if instructed)

  Required information:
  - Case Number
  - Date shipped
  - Number of samples by concentration, matrix and analyses.
  - Carrier and airbill number
  - Next planned shipment

  Leave your name and a number where you can be reached.
- Information for SATURDAY DELIVERIES must be phoned in by 3:00 PM (Eastern) the preceding FRIDAY.
- Report any delays or changes of scope (i.e., changes in number of samples to be collected, matrix changes, etc.)
- CALL IF YOU HAVE ANY QUESTIONS

  Contract Laboratory Analytical Services Support
  300 North Lee Street
  Alexandria, VA 22314
  Phone: (703) 519-1200
  FAX: (703) 519-8626

Purpose Codes

Lead	Early Action		Long-Term Action
SF = Superfund	CLEM = Classical Emergency	SI = Site Inspection	FS = Feasibility Study
PRP = Commercial Potentially Responsible Party	PA = Early Action Preliminary Assessment	ESI = Expanded Site Inspection	RD = Remedial Design
ST = State	REM = Removal	RI = Remedial Investigation	RA = Remedial Action
FED = Federal Facility			O&M = Operation & Maintenance
			NPLD = National Priorities List Deletion

★ U.S. GPO: 1995-394-780

EPA United States Environmental Protection Agency
Contract Laboratory Program

Inorganic Traffic Report & Chain of Custody Record
(For Inorganic CLP Analysis)

Case No. 25159

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
—	—	6	Roy F. Weston	11/18/96	Fed Ex

Regional Information: —

Sampler (Name): Eric Tate

Airbill Number: 7802823335

Non-Superfund Program: —

Sampler Signature: Eric Tate

5. Ship To: ARI, 400 9th Avenue North, Seattle, WA 98109, (206) 621-6490, ATTN: Jay Kuhn

Site Name: Wilcox Oil

City, State: Bristow, OK

Site Spill ID: ZZ

3. Purpose*

Lead	Early Action	Long-Term Action
☐ SF	☐ CLEM	☐ FS
☐ PRP	☐ PA	☐ RD
☐ ST	☐ REM	☐ RA
☐ FED	☐ RI	☐ O&M
	☐ SI	☐ NPLD
	☒ ESI	

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaOH
4. H_2SO_4
5. $K_2CR_2O_7$
6. Ice only
7. Other (specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) Other:	E – RAS Analysis: Diss. Metals	Total Metals	Cyanide	Low only: NO_2/NO_3	Fluoride	High only: pH	Conduct.	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
MFG265	5	L	G	6		X	X					6-015088	SS13	11/18/96 1225	FFG23	ECT	D(MFG264)

Shipment for Case Complete? (Y/N): N

Page 2 of 2

Sample(s) to be Used for Laboratory QC: MFG244

Additional Sampler Signatures: [illegible]

Chain of Custody Seal Number(s):

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Eric Tate	11/18/96 1930	Fed Ex Tulsa, OK			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

A21-012-13 REV.

DISTRIBUTION: Green - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-1

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

369026

Inorganic Traffic Report/Chain of Custody Form Instructions

This form replaces both the individual Traffic Report and EPA Chain of Custody Record.

Water Samples	Required Volume	Container Type
Metals Analysis (Low Level)	1 Liter	1 X 1-Liter Polyethylene Bottle OR 2 X 500-ml. Polyethylene Bottle
Metals Analysis (Medium Level*)	16 oz.	1 X 16-oz Wide-Mouth Glass Jar
Cyanide Analysis (Low Level)	1 Liter	1 X 1-Liter Polyethylene Bottle OR 2 X 500-ml. Polyethylene Bottle
Cyanide Analysis (Medium Level*)	16 oz.	1 X 16-oz Wide-Mouth Glass Jar

Soil/Sediment Samples	Required Volume	Container Type
Metals and Cyanide (CN^-) Analysis (Low or Medium Level*)	6 oz.	1 X 8-oz. Wide-Mouth Glass Jar OR 2 X 4-oz. Wide-Mouth Glass Jars

HIGH CONCENTRATION SAMPLE COLLECTION REQUIREMENTS

Liquid or Solid Samples	Required Volume	Container Type
Metals and Cyanide* Analysis	6 oz.	1 X 8-oz. Wide-Mouth Glass Jar

*All Medium and High Level Samples Must be Sealed In Metal Can for Shipment

1. Inorganic Sample Collection Requirements

- Please indicate which sample(s) are to be used for laboratory QC (Matrix Spike/Duplicate).
- Aqueous samples require one double-volume sample per twenty for laboratory Matrix/Spike Duplicate.
- Preserve low level water samples:

Total metals	Preserve with HNO_3 to pH ≤ 2
Dissolve metals	Preserve with HNO_3 to pH ≤ 2 after filtering through a 0.45 µm filter.
Cyanide	Preserve with 10 N NaOH to pH ≥ 12

- Oily samples can not be analyzed under the Contract Laboratory Program Analytical Services (CLPAS) program.
- Ship medium and high concentration samples in metal cans.

2. Cooler and Sample Documentation

- Complete all sections of the Traffic Report/Chain of Custody Form - Press firmly with a ball point pen to ensure that carbon copies are legible. Check the information and correct any errors.
- Please remember to complete the Chain of Custody information on the form.
- Seal the two sets of laboratory Traffic Report/Chain of Custody Form copies in a plastic bag. Include a return address and a method for returning the cooler. Tape bag under cooler lid.
- Seal each container in a plastic bag.
- Pack medium and high concentration samples in metal cans.
- Cool low waters to 4° C. Cooling of low soils is optional. Do not cool medium or high concentration waters and soils.
- Separate and surround cooler contents with vermiculite or equivalent packaging.
- Seal the cooler, overlapping the lid and body with custody seals.
- Mail CLASS the pink copy of the Traffic Report/Chain of Custody Form within 5 days.

3. Sample Shipment and Reporting

- All relevent Department of Transportation regulations must be followed when shipping samples.
- PHONE IN ALL SHIPMENTS IMMEDIATELY TO CLASS (or to RSCC, if instructed)

  Required information:
  - Case Number
  - Date shipped
  - Number of samples by concentration, matrix and analyses.
  - Carrier and airbill number
  - Next planned shipment

  Leave your name and a number where you can be reached.
- Information for SATURDAY DELIVERIES must be phoned in by 3:00 PM (Eastern) the preceding FRIDAY.
- Report any delays or changes of scope (i.e., changes in number of samples to be collected, matrix changes, etc.)
- CALL IF YOU HAVE ANY QUESTIONS

  Contract Laboratory Analytical Services Support
  300 North Lee Street
  Alexandria, VA 22314
  Phone: (703) 519-1200
  FAX: (703) 519-8626

Purpose Codes

Lead	Early Action		Long-Term Action
SF = Superfund	CLEM = Classical Emergency	SI = Site Inspection	FS = Feasibility Study
PRP = Commercial Potentially Responsible Party	PA = Early Action Preliminary Assessment	ESI = Expanded Site Inspection	RD = Remedial Design
ST = State	REM = Removal	RI = Remedial Investigation	RA = Remedial Action
FED = Federal Facility			O&M = Operation & Maintenance
			NPLD = National Priorities List Deletion

★ U.S. GPO: 1995-394-780

EPA United States Environmental Protection Agency Contract Laboratory Program

Inorganic Traffic Report & Chain of Custody Record
(For Inorganic CLP Analysis)

Case No. 25159

1. Project Code: —
Account Code: —
2. Region No.: 6
Sampling Co.: Roy F. Weston
4. Date Shipped: 11/18/96
Carrier: Fed Ex

Regional Information: —
Sampler (Name): Eric Tate
Airbill Number: 7802823335

Non-Superfund Program: —
Sampler Signature: Eric Tate
5. Ship To: ARI, 4009th Avenue North, Seattle, WA 98109, (206) 621-6490, ATTN: Jay Kuhn

Site Name: Wilcox Oil
City, State: Bristow (Ect) ~~Broken Arrow~~, OK
Site Spill ID: ZZ

3. Purpose*
Lead: [ ] SF [ ] PRP [ ] ST [ ] FED
Early Action: [ ] CLEM [ ] PA [ ] REM [ ] RI [ ] SI [X] ESI
Long-Term Action: [ ] FS [ ] RD [ ] RA [ ] O&M [ ] NPLD

6. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (specify in Column A)

7. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaOH
4. H_2SO_4
5. $K_2CR_2O_7$
6. Ice only
7. Other (specify in Column D)
N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) / Other:	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) / Other:	E – RAS Analysis: Diss. Metals	Total Metals	Cyanide	Low only: NO_2/NO_3	Fluoride	High only: pH	Conduct.	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank, S = Spike, D = Duplicate, R = Rinsate, PE = Perform. Eval., — = Not a QC Sample)
MFGZ44	S	L	G	6		X	X					6-015004	SED01	11/18/96 1055	FFG02	ECT	—
MFGZ45	S	L	G	6		X	X					6-015008	SED02	11/18/96 1105	FFG03	ECT	—
MFGZ46	S	L	G	6		X	X					6-015012	SED03	11/18/96 1120	FFG04	ECT	—
MFGZ47	S	L	G	6		X	X					6-015016	SED04	11/18/96 1140	FFG05	ECT	—
MFGZ49	S	L	G	6		X	X					6-015024	SED06	11/18/96 1520	FFG07	ECT	—
MFGZ50	S	L	G	6		X	X					6-015028	SED07	11/18/96 1530	FFG08	ECT	D(MFGZ49)
MFGZ56	S	L	G	6		X	X					6-015052	SS04	11/18/96 1210	FFG14	ECT	—
MFGZ57	S	L	G	6		X	X					6-015056	SS05	11/18/96 1615	FFG15	ECT	—
MFGZ58	S	L	C	6		X	X					6-015060	SS06	11/18/96 1415	FFG16	ECT	—
MFGZ64	S	L	G	6		X	X					6-015084	SS12	11/18/96 1220	FFG22	ECT	—

Shipment for Case Complete? (Y/N): Y
Page 1 of 2
Sample(s) to be Used for Laboratory QC: MFGZ44
Additional Sampler Signatures: [illegible]
Chain of Custody Seal Number(s): —

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Eric Tate	11/18/96 1930	Fedex Tulsa, OK	[illegible]		
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

A21-012-13 REV.

DISTRIBUTION: Green - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-1

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

369505

Inorganic Traffic Report/Chain of Custody Form Instructions

This form replaces both the individual Traffic Report and EPA Chain of Custody Record.

Water Samples	Required Volume	Container Type
Metals Analysis (Low Level)	1 Liter	1 X 1-Liter Polyethylene Bottle OR 2 X 500-ml. Polyethylene Bottle
Metals Analysis (Medium Level*)	16 oz.	1 X 16-oz Wide-Mouth Glass Jar
Cyanide Analysis (Low Level)	1 Liter	1 X 1-Liter Polyethylene Bottle OR 2 X 500-ml. Polyethylene Bottle
Cyanide Analysis (Medium Level*)	16 oz.	1 X 16-oz Wide-Mouth Glass Jar

Soil/Sediment Samples	Required Volume	Container Type
Metals and Cyanide (CN^-) Analysis (Low or Medium Level*)	6 oz.	1 X 8-oz. Wide-Mouth Glass Jar OR 2 X 4-oz. Wide-Mouth Glass Jars

HIGH CONCENTRATION SAMPLE COLLECTION REQUIREMENTS

Liquid or Solid Samples	Required Volume	Container Type
Metals and Cyanide* Analysis	6 oz.	1 X 8-oz. Wide-Mouth Glass Jar

*All Medium and High Level Samples Must be Sealed In Metal Can for Shipment

1. **Inorganic Sample Collection Requirements**
   - Please indicate which sample(s) are to be used for laboratory QC (Matrix Spike/Duplicate).
   - Aqueous samples require one double-volume sample per twenty for laboratory Matrix/Spike Duplicate.
   - Preserve low level water samples:

Total metals	Preserve with HNO_3 to pH ≤ 2
Dissolve metals	Preserve with HNO_3 to pH ≤ 2 after filtering through a 0.45 µm filter.
Cyanide	Preserve with 10 N NaOH to pH ≥ 12
   - Oily samples can not be analyzed under the Contract Laboratory Program Analytical Services (CLPAS) program.
   - Ship medium and high concentration samples in metal cans.

2. **Cooler and Sample Documentation**
   - Complete all sections of the Traffic Report/Chain of Custody Form - Press firmly with a ball point pen to ensure that carbon copies are legible. Check the information and correct any errors.
   - Please remember to complete the Chain of Custody information on the form.
   - Seal the two sets of laboratory Traffic Report/Chain of Custody Form copies in a plastic bag. Include a return address and a method for returning the cooler. Tape bag under cooler lid.
   - Seal each container in a plastic bag.
   - Pack medium and high concentration samples in metal cans.
   - Cool low waters to 4° C. Cooling of low soils is optional. Do not cool medium or high concentration waters and soils.
   - Separate and surround cooler contents with vermiculite or equivalent packaging.
   - Seal the cooler, overlapping the lid and body with custody seals.
   - Mail CLASS the pink copy of the Traffic Report/Chain of Custody Form within 5 days.

3. **Sample Shipment and Reporting**
   - All relevent Department of Transportation regulations must be followed when shipping samples.
   - PHONE IN ALL SHIPMENTS IMMEDIATELY TO CLASS (or to RSCC, if instructed)

     Required information:
     - Case Number
     - Date shipped
     - Number of samples by concentration, matrix and analyses.
     - Carrier and airbill number
     - Next planned shipment

     Leave your name and a number where you can be reached.
   - Information for SATURDAY DELIVERIES must be phoned in by 3:00 PM (Eastern) the preceding FRIDAY.
   - Report any delays or changes of scope (i.e., changes in number of samples to be collected, matrix changes, etc.)
   - CALL IF YOU HAVE ANY QUESTIONS

     Contract Laboratory Analytical Services Support
     300 North Lee Street
     Alexandria, VA 22314
     Phone: (703) 519-1200
     FAX: (703) 519-8626

Purpose Codes

Lead	Early Action		Long-Term Action
SF = Superfund	CLEM = Classical Emergency	SI = Site Inspection	FS = Feasibility Study
PRP = Commercial Potentially Responsible Party	PA = Early Action Preliminary Assessment	ESI = Expanded Site Inspection	RD = Remedial Design
ST = State	REM = Removal	RI = Remedial Investigation	RA = Remedial Action
FED = Federal Facility			O&M = Operation & Maintenance
			NPLD = National Priorities List Deletion

★ U.S. GPO: 1995-394-780

EPA United States Environmental Protection Agency Contract Laboratory Program

Inorganic Traffic Report & Chain of Custody Record
(For Inorganic CLP Analyis)

Case No. 25159

1. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (specify in Column A)

2. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaOH
4. H_2SO_4
5. $K_2CR_2O_7$
6. Ice only
7. Other (specify in Column D)
N. Not preserved

2. Region No. 6
Sampling Co. Roy F. Weston
4. Date Shipped 11/18/96
Carrier Fed Ex
6. Date Received -- Received by: Mary Lou Fox 11/19/96
Sampler (Name) Eric Tate
Airbill Number 7802823335
Laboratory Contract Number 68-D5-0134
Unit Price 77.65
Sampler Signature Eric Tate
5. Ship To ARI 4009th Avenue North Seattle, WA 98109 (206) 621-6490 ATTN: Jay Kuhn
7. Transfer to:
Date Received 11/19/96
Received by
Contract Number
Price

3. Purpose*
Lead: SF, PRP, ST, FED
Early Action: CLEM, PA, REM, RI, SI, ESI
Long-Term Action: FS, RD, RA, O&M, NPLD

CLP Sample Numbers (from labels)	A Matrix (from Box 1) Other:	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 2) Other:	E – RAS Analysis: Diss. Metals	Total Metals	Cyanide	Low only: NO_2/NO_3	Fluoride	High only: pH	Conduct.	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K High Phases: Solids	Water-Miscible Liq.	Water-Immis. Liq.
MFGZ44	5	L	G	6		X	X					6-015004	SED01	11/18/96 1055	FFG02	ECT			
MFGZ45	5	L	G	6		X	X					6-015008	SED02	11/18/96 1105	FFG03	ECT			
MFGZ46	5	L	G	6		X	X					6-015012	SED03	11/18/96 1120	FFG04	ECT			
MFGZ47	5	L	G	6		X	X					6-015016	SED04	11/18/96 1140	FFG05	ECT			
MFGZ49	5	L	G	6		X	X					6-015024	SED06	11/18/96 1520	FFG07	ECT			
MFGZ50	5	L	G	6		X	X					6-015028	SED07	11/18/96 1530	FFG08	ECT			
MFGZ56	5	L	G	6		X	X					6-015052	SS04	11/18/96 1210	FFG14	ECT			
MFGZ57	5	L	G	6		X	X					6-015056	SS05	11/18/96 1615	FFG15	ECT			
MFGZ58	5	L	C	6		X	X					6-015060	SS06	11/18/96 1415	FFG16	ECT			
MFGZ64	5	L	G	6		X	X					6-015084	SS12	11/18/96 1220	FFG22	ECT			

Shipment for Case Complete? (Y/N) Y
Page 1 of 2
Sample(s) to be Used for Laboratory QC: MFGZ44
Additional Sampler Signatures
Chain of Custody Seal Number(s)

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Eric Tate	11/18/96 1930	Fedex Tulsa, OK			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	
		Mary Lou Fox	11/19/96 1300		

0003321

DISTRIBUTION: Green - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to SMO

EPA Form 9110-1

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

A21-012-14 REV.

369505

Inorganic Traffic Report/Chain of Custody Form Instructions

This form replaces both the individual Traffic Report and EPA Chain of Custody Record.

Water Samples	Required Volume	Container Type
Metals Analysis (Low Level)	1 Liter	1 X 1-Liter Polyethylene Bottle OR 2 X 500-ml. Polyethylene Bottle
Metals Analysis (Medium Level*)	16 oz.	1 X 16-oz Wide-Mouth Glass Jar
Cyanide Analysis (Low Level)	1 Liter	1 X 1-Liter Polyethylene Bottle OR 2 X 500-ml. Polyethylene Bottle
Cyanide Analysis (Medium Level*)	16 oz.	1 X 16-oz Wide-Mouth Glass Jar

Soil/Sediment Samples	Required Volume	Container Type
Metals and Cyanide (CN⁻) Analysis (Low or Medium Level*)	6 oz.	1 X 8-oz. Wide-Mouth Glass Jar OR 2 X 4-oz. Wide-Mouth Glass Jars

HIGH CONCENTRATION SAMPLE COLLECTION REQUIREMENTS

Liquid or Solid Samples	Required Volume	Container Type
Metals and Cyanide* Analysis	6 oz.	1 X 8-oz. Wide-Mouth Glass Jar

*All Medium and High Level Samples Must be Sealed in Metal Can for Shipment

1. Inorganic Sample Collection Requirements

- Please indicate which sample(s) are to be used for laboratory QC (Matrix Spike/Duplicate).
- Aqueous samples require one double-volume sample per twenty for laboratory Matrix/Spike Duplicate.
- Preserve low level water samples:

Total metals	Preserve with HNO_3 to pH ≤ 2
Dissolve metals	Preserve with HNO_3 to pH ≤ 2 after filtering through a 0.45 µm filter.
Cyanide	Preserve with 10 N NaOH to pH ≥ 12

- Oily samples can not be analyzed under the Contract Laboratory Program Analytical Services (CLPAS) program.
- Ship medium and high concentration samples in metal cans.

2. Cooler and Sample Documentation

- Complete all sections of the Traffic Report/Chain of Custody Form - Press firmly with a ball point pen to ensure that carbon copies are legible. Check the information and correct any errors.
- Please remember to complete the Chain of Custody information on the form.
- Seal the two sets of laboratory Traffic Report/Chain of Custody Form copies in a plastic bag. Include a return address and a method for returning the cooler. Tape bag under cooler lid.
- Seal each container in a plastic bag.
- Pack medium and high concentration samples in metal cans.
- Cool low waters to 4° C. Cooling of low soils is optional. Do not cool medium or high concentration waters and soils.
- Separate and surround cooler contents with vermiculite or equivalent packaging.
- Seal the cooler, overlapping the lid and body with custody seals.
- Mail CLASS the pink copy of the Traffic Report/Chain of Custody Form within 5 days.

3. Sample Shipment and Reporting

- All relevent Department of Transportation regulations must be followed when shipping samples.
- PHONE IN ALL SHIPMENTS IMMEDIATELY TO CLASS (or to RSCC, if instructed)

  Required information:
  - Case Number
  - Date shipped
  - Number of samples by concentration, matrix and analyses.
  - Carrier and airbill number
  - Next planned shipment

  Leave your name and a number where you can be reached.
- Information for SATURDAY DELIVERIES must be phoned in by 3:00 PM (Eastern) the preceding FRIDAY.
- Report any delays or changes of scope (i.e., changes in number of samples to be collected, matrix changes, etc.)
- CALL IF YOU HAVE ANY QUESTIONS

  Contract Laboratory Analytical Services Support
  300 North Lee Street
  Alexandria, VA 22314
  Phone: (703) 519-1200
  FAX: (703) 519-8626

000322

Purpose Codes

Lead		Early Action				Long-Term Action	
SF	= Superfund	CLEM	= Classical Emergency	SI	= Site Inspection	FS	= Feasibility Study
PRP	= Commercial Potentially Responsible Party	PA	= Early Action Preliminary Assessment	ESI	= Expanded Site Inspection	RD	= Remedial Design
ST	= State	REM	= Removal	RI	= Remedial Investigation	RA	= Remedial Action
FED	= Federal Facility					O&M	= Operation & Maintenance
						NPLD	= National Priorities List Deletion

★ U.S. GPO: 1995-394-780

EPA United States Environmental Protection Agency Contract Laboratory Program

Inorganic Traffic Report & Chain of Custody Record
(For Inorganic CLP Analyis)

Case No. 25159

1. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (specify in Column A)

2. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaOH
4. H_2SO_4
5. $K_2CR_2O_7$
6. Ice only
7. Other (specify in Column D)
N. Not preserved

2. Region No. 6
Sampling Co. Roy F. Weston
4. Date Shipped 11/18/96
Carrier Fed Ex
6. Date Received -- Received by: 11/19/96 Mary Lou Fox
Sampler (Name) Eric Tate
Airbill Number 7802823335
Laboratory Contract Number 68-D5-0134
Unit Price 77.65
Sampler Signature Eric Tate
5. Ship To ARI 4009th Avenue North Seattle, WA 98109 (206) 621-6490 ATTN: Jay Kuhn
7. Transfer to:
Date Received
Received by
Contract Number
Price

3. Purpose*
Lead: SF, PRP, ST, FED
Early Action: CLEM, PA, REM, RI, SI, ESI (X)
Long-Term Action: FS, RD, RA, O&M, NPLD

CLP Sample Numbers (from labels)	A Matrix (from Box 1) Other:	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 2) Other:	E – RAS Analysis: Diss. Metals	Total Metals	Cyanide	Low only: NO_2/NO_3	Fluoride	High only: pH	Conduct.	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K High Phases: Solids	Water-Miscible Liq.	Water-Immis. Liq.
MFG265	5	L	G	6		X	X					6-015088	SS13	11/18/96 1225	FFG23	ECT			

Shipment for Case Complete? (Y/N) Y
Page 2 of 2
Sample(s) to be Used for Laboratory QC: MFG244
Additional Sampler Signatures
Chain of Custody Seal Number(s)

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Eric Tate	11/18/96 1930	Fed Ex Tulsa, OK			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	
		Mary Lou Fox	11/19/96 1300		

000323

A21-012-14 REV.

DISTRIBUTION: Green - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to SMO

EPA Form 9110-1

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

369026

Inorganic Traffic Report/Chain of Custody Form Instructions

This form replaces both the individual Traffic Report and EPA Chain of Custody Record.

Water Samples	Required Volume	Container Type
Metals Analysis (Low Level)	1 Liter	1 X 1-Liter Polyethylene Bottle OR 2 X 500-ml. Polyethylene Bottle
Metals Analysis (Medium Level*)	16 oz.	1 X 16-oz Wide-Mouth Glass Jar
Cyanide Analysis (Low Level)	1 Liter	1 X 1-Liter Polyethylene Bottle OR 2 X 500-ml. Polyethylene Bottle
Cyanide Analysis (Medium Level*)	16 oz.	1 X 16-oz Wide-Mouth Glass Jar

Soil/Sediment Samples	Required Volume	Container Type
Metals and Cyanide (CN⁻) Analysis (Low or Medium Level*)	6 oz.	1 X 8-oz. Wide-Mouth Glass Jar OR 2 X 4-oz. Wide-Mouth Glass Jars

HIGH CONCENTRATION SAMPLE COLLECTION REQUIREMENTS

Liquid or Solid Samples	Required Volume	Container Type
Metals and Cyanide* Analysis	6 oz.	1 X 8-oz. Wide-Mouth Glass Jar

*All Medium and High Level Samples Must be Sealed in Metal Can for Shipment

1. Inorganic Sample Collection Requirements

- Please indicate which sample(s) are to be used for laboratory QC (Matrix Spike/Duplicate).
- Aqueous samples require one double-volume sample per twenty for laboratory Matrix/Spike Duplicate.
- Preserve low level water samples:

Total metals	Preserve with HNO_3 to pH ≤ 2
Dissolve metals	Preserve with HNO_3 to pH ≤ 2 after filtering through a 0.45 µm filter.
Cyanide	Preserve with 10 N NaOH to pH ≥ 12

- Oily samples can not be analyzed under the Contract Laboratory Program Analytical Services (CLPAS) program.
- Ship medium and high concentration samples in metal cans.

2. Cooler and Sample Documentation

- Complete all sections of the Traffic Report/Chain of Custody Form - Press firmly with a ball point pen to ensure that carbon copies are legible. Check the information and correct any errors.
- Please remember to complete the Chain of Custody information on the form.
- Seal the two sets of laboratory Traffic Report/Chain of Custody Form copies in a plastic bag. Include a return address and a method for returning the cooler. Tape bag under cooler lid.
- Seal each container in a plastic bag.
- Pack medium and high concentration samples in metal cans.
- Cool low waters to 4° C. Cooling of low soils is optional. Do not cool medium or high concentration waters and soils.
- Separate and surround cooler contents with vermiculite or equivalent packaging.
- Seal the cooler, overlapping the lid and body with custody seals.
- Mail CLASS the pink copy of the Traffic Report/Chain of Custody Form within 5 days.

3. Sample Shipment and Reporting

- All relevent Department of Transportation regulations must be followed when shipping samples.
- PHONE IN ALL SHIPMENTS IMMEDIATELY TO CLASS (or to RSCC, if instructed)

  Required information:
  - Case Number
  - Date shipped
  - Number of samples by concentration, matrix and analyses.
  - Carrier and airbill number
  - Next planned shipment
- Leave your name and a number where you can be reached.
- Information for SATURDAY DELIVERIES must be phoned in by 3:00 PM (Eastern) the preceding FRIDAY.
- Report any delays or changes of scope (i.e., changes in number of samples to be collected, matrix changes, etc.)
- CALL IF YOU HAVE ANY QUESTIONS

  Contract Laboratory Analytical Services Support
  300 North Lee Street
  Alexandria, VA 22314
  Phone: (703) 519-1200
  FAX: (703) 519-8626

000324

Purpose Codes

Lead		Early Action				Long-Term Action	
SF	= Superfund	CLEM	= Classical Emergency	SI	= Site Inspection	FS	= Feasibility Study
PRP	= Commercial Potentially Responsible Party	PA	= Early Action Preliminary Assessment	ESI	= Expanded Site Inspection	RD	= Remedial Design
ST	= State	REM	= Removal	RI	= Remedial Investigation	RA	= Remedial Action
FED	= Federal Facility					O&M	= Operation & Maintenance
						NPLD	= National Priorities List Deletion

★ U.S. GPO: 1995-394-780

EPA United States Environmental Protection Agency Contract Laboratory Program

Inorganic Traffic Report & Chain of Custody Record
(For Inorganic CLP Analysis)

Case No. 25159

1. Matrix (Enter in Column A)
   1. Surface Water
   2. Ground Water
   3. Leachate
   4. Field QC
   5. Soil/Sediment
   6. Oil (High only)
   7. Waste (High only)
   8. Other (specify in Column A)

2. Preservative (Enter in Column D)
   1. HCl
   2. HNO3
   3. NaOH
   4. H_2SO_4
   5. $K_2CR_2O_7$
   6. Ice only
   7. Other (specify in Column D)
   N. Not preserved

2. Region No.: 6
Sampling Co.: Roy F. Weston
4. Date Shipped: 11/19/96
Carrier: Fed Ex
6. Date Received — Received by: 11/20/96 Janet Felkins

Sampler (Name): Eric Tate
Airbill Number: 7802823346
Laboratory Contract Number: 68-D5-0134
Unit Price: 77.65

Sampler Signature: Eric Tate
5. Ship To: ART, 400 9th Avenue North, Seattle, WA 98109, (206) 621-6490, ATTN: Jay Kuhn
7. Transfer to:
Date Received
Received by
Contract Number
Price

3. Purpose*
Lead: [ ] SF [ ] PRP [ ] ST [ ] FED
Early Action: [ ] CLEM [ ] PA [ ] REM [ ] RI [ ] SI [X] ESI
Long-Term Action: [ ] FS [ ] RD [ ] RA [ ] O&M [ ] NPLD

CLP Sample Numbers (from labels)	A Matrix (from Box 1) Other:	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 2) Other:	E – RAS Analysis: Diss. Metals	Total Metals	Cyanide	Low only: NO_2/NO_3	Fluoride	High only: pH	Conduct.	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K High Phases: Solids	Water-Miscible Liq.	Water-Immis. Liq.
MFG248	5	L	G	6		X	X					6-015020	SED05	11/19/96 1430	FFG06	ECT			
MFG251	5	L	G	6		X	X					6-015032	SED08	11/19/96 1020	FFG09	ECT			
MFG252	5	L	G	6		X	X					6-015036	SED09	11/19/96 1105	FFG10	ECT			
MFG253	5	L	G	6		X	X					6-015040	SS01	11/19/96 1210	FFG11	ECT			
MFG254	5	L	G	6		X	X					6-015044	SS02	11/19/96 1215	FFG12	ECT			
MFG255	5	L	G	6		X	X					6-015048	SS03	11/19/96 1230	FFG13	ECT			
MFG259	5	L	G	6		X	X					6-015064	SS07	11/19/96 1405	FFG17	ECT			
MFG260	5	L	G	6		X	X					6-015068	SS08	11/19/96 1415	FFG18	ECT			
MFG263	5	L	G	6		X	X					6-015080	SS11	11/19/96 1350	FFG21	ECT			
MFG266	5	L	G	6		X	X					6-015092	SED10	11/19/96 1535	FFG24	ECT			

Shipment for Case Complete? (Y/N) Y
Page 1 of 1
Sample(s) to be Used for Laboratory QC: MFG266
Additional Sampler Signatures: [illegible]
Chain of Custody Seal Number(s):

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Eric Tate	11/19/96 1800	Fed Ex Tulsa, OK			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	
		Janet Felkins	11/20/96 0 11:00		

A21-012-14 REV.

DISTRIBUTION: Green - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to SMO

EPA Form 9110-1

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

000325

369024

Inorganic Traffic Report/Chain of Custody Form Instructions

This form replaces both the individual Traffic Report and EPA Chain of Custody Record.

Water Samples	Required Volume	Container Type
Metals Analysis (Low Level)	1 Liter	1 X 1-Liter Polyethylene Bottle OR 2 X 500-ml. Polyethylene Bottle
Metals Analysis (Medium Level*)	16 oz.	1 X 16-oz Wide-Mouth Glass Jar
Cyanide Analysis (Low Level)	1 Liter	1 X 1-Liter Polyethylene Bottle OR 2 X 500-ml. Polyethylene Bottle
Cyanide Analysis (Medium Level*)	16 oz.	1 X 16-oz Wide-Mouth Glass Jar

Soil/Sediment Samples	Required Volume	Container Type
Metals and Cyanide (CN^-) Analysis (Low or Medium Level*)	6 oz.	1 X 8-oz.Wide-Mouth Glass Jar OR 2 X 4-oz. Wide-Mouth Glass Jars

HIGH CONCENTRATION SAMPLE COLLECTION REQUIREMENTS

Liquid or Solid Samples	Required Volume	Container Type
Metals and Cyanide* Analysis	6 oz.	1 X 8-oz.Wide-Mouth Glass Jar

*All Medium and High Level Samples Must be Sealed in Metal Can for Shipment

1. Inorganic Sample Collection Requirements

- Please indicate which sample(s) are to be used for laboratory QC (Matrix Spike/Duplicate).
- Aqueous samples require one double-volume sample per twenty for laboratory Matrix/Spike Duplicate.
- Preserve low level water samples:

Total metals	Preserve with HNO_3 to pH ≤ 2
Dissolve metals	Preserve with HNO_3 to pH ≤ 2 after filtering through a 0.45 µm filter.
Cyanide	Preserve with 10 N NaOH to pH ≥ 12

- Oily samples can not be analyzed under the Contract Laboratory Program Analytical Services (CLPAS) program.
- Ship medium and high concentration samples in metal cans.

2. Cooler and Sample Documentation

- Complete all sections of the Traffic Report/Chain of Custody Form - Press firmly with a ball point pen to ensure that carbon copies are legible. Check the information and correct any errors.
- Please remember to complete the Chain of Custody information on the form.
- Seal the two sets of laboratory Traffic Report/Chain of Custody Form copies in a plastic bag. Include a return address and a method for returning the cooler. Tape bag under cooler lid.
- Seal each container in a plastic bag.
- Pack medium and high concentration samples in metal cans.
- Cool low waters to 4° C. Cooling of low soils is optional. Do not cool medium or high concentration waters and soils.
- Separate and surround cooler contents with vermiculite or equivalent packaging.
- Seal the cooler, overlapping the lid and body with custody seals.
- Mail CLASS the pink copy of the Traffic Report/Chain of Custody Form within 5 days.

3. Sample Shipment and Reporting

- All relevent Department of Transportation regulations must be followed when shipping samples.
- PHONE IN ALL SHIPMENTS IMMEDIATELY TO CLASS (or to RSCC, if instructed)

  Required information:
  - Case Number
  - Date shipped
  - Number of samples by concentration, matrix and analyses.
  - Carrier and airbill number
  - Next planned shipment

  Leave your name and a number where you can be reached.
- Information for SATURDAY DELIVERIES must be phoned in by 3:00 PM (Eastern) the preceding FRIDAY.
- Report any delays or changes of scope (i.e., changes in number of samples to be collected, matrix changes, etc.)
- CALL IF YOU HAVE ANY QUESTIONS

  Contract Laboratory Analytical Services Support
  300 North Lee Street
  Alexandria, VA 22314
  Phone: (703) 519-1200
  FAX: (703) 519-8626

000326

Purpose Codes

Lead	Early Action		Long-Term Action
SF = Superfund	CLEM = Classical Emergency	SI = Site Inspection	FS = Feasibility Study
PRP = Commercial Potentially Responsible Party	PA = Early Action Preliminary Assessment	ESI = Expanded Site Inspection	RD = Remedial Design
ST = State	REM = Removal	RI = Remedial Investigation	RA = Remedial Action
FED = Federal Facility			O&M = Operation & Maintenance
			NPLD = National Priorities List Deletion

★ U.S. GPO: 1995-394-780

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGZ44

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

Matrix (soil/water): SOIL_ Lab Sample ID: 5373A

Level (low/med): LOW__ Date Received: 11/20/96

% Solids: _81.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	2200		*	P
7440-36-0	Antimony_	12.2	U	N	P
7440-38-2	Arsenic__	1.3	B		F
7440-39-3	Barium___	21.4	B		P
7440-41-7	Beryllium	0.24	U		P
7440-43-9	Cadmium__	0.49	U		P
7440-70-2	Calcium__	406	B		P
7440-47-3	Chromium_	5.6			P
7440-48-4	Cobalt___	2.3	B		P
7440-50-8	Copper___	2.7	B		P
7439-89-6	Iron_____	4340		*	P
7439-92-1	Lead_____	6.0			F
7439-95-4	Magnesium	333	B		P
7439-96-5	Manganese	112			P
7439-97-6	Mercury__	0.05	U		CV
7440-02-0	Nickel___	3.4	B		P
7440-09-7	Potassium	373	B		P
7782-49-2	Selenium_	0.24	U		F
7440-22-4	Silver___	0.73	U		P
7440-23-5	Sodium___	12.2	U		P
7440-28-0	Thallium_	0.31	B		F
7440-62-2	Vanadium_	6.5	B		P
7440-66-6	Zinc_____	7.6			P
	Cyanide__	0.30	U		CA

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: ORANGE___ Clarity After: CLOUDY Artifacts: _____

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGZ45

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

Matrix (soil/water): SOIL_ Lab Sample ID: 5373B

Level (low/med): LOW__ Date Received: 11/20/96

% Solids: _82.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	1400		*	P
7440-36-0	Antimony_	11.5	U	N	P
7440-38-2	Arsenic__	0.93	B		F
7440-39-3	Barium___	15.4	B		P
7440-41-7	Beryllium	0.23	U		P
7440-43-9	Cadmium__	0.46	U		P
7440-70-2	Calcium__	368	B		P
7440-47-3	Chromium_	3.3			P
7440-48-4	Cobalt___	1.4	B		P
7440-50-8	Copper___	1.6	B		P
7439-89-6	Iron_____	2880		*	P
7439-92-1	Lead_____	4.0			F
7439-95-4	Magnesium	247	B		P
7439-96-5	Manganese	67.0			P
7439-97-6	Mercury__	0.05	U		CV
7440-02-0	Nickel___	3.4	B		P
7440-09-7	Potassium	190	B		P
7782-49-2	Selenium_	0.23	U		F
7440-22-4	Silver___	0.69	U		P
7440-23-5	Sodium___	11.5	U		P
7440-28-0	Thallium_	0.23	B		F
7440-62-2	Vanadium_	4.5	B		P
7440-66-6	Zinc_____	6.2			P
	Cyanide__	0.30	U		CA

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: ORANGE___ Clarity After: CLOUDY Artifacts: _____

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGZ46

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

Matrix (soil/water): SOIL_ Lab Sample ID: 5373C

Level (low/med): LOW__ Date Received: 11/20/96

% Solids: _80.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	2170		*	P
7440-36-0	Antimony_	12.4	U	N	P
7440-38-2	Arsenic__	2.1	B		F
7440-39-3	Barium___	30.9	B		P
7440-41-7	Beryllium	0.25	U		P
7440-43-9	Cadmium__	0.50	U		P
7440-70-2	Calcium__	808	B		P
7440-47-3	Chromium_	4.0			P
7440-48-4	Cobalt___	2.7	B		P
7440-50-8	Copper___	3.0	B		P
7439-89-6	Iron_____	4870		*	P
7439-92-1	Lead_____	33.9			F
7439-95-4	Magnesium	425	B		P
7439-96-5	Manganese	168			P
7439-97-6	Mercury__	0.05	U		CV
7440-02-0	Nickel___	3.1	B		P
7440-09-7	Potassium	362	B		P
7782-49-2	Selenium_	0.25	U		F
7440-22-4	Silver___	0.74	U		P
7440-23-5	Sodium___	12.4	U		P
7440-28-0	Thallium_	0.25	U		F
7440-62-2	Vanadium_	6.8	B		P
7440-66-6	Zinc_____	11.6			P
	Cyanide__	0.31	U		CA

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: ORANGE___ Clarity After: CLOUDY Artifacts: _____

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGZ47

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

Matrix (soil/water): SOIL_ Lab Sample ID: 5373D

Level (low/med): LOW__ Date Received: 11/20/96

% Solids: _81.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	2550		*	P
7440-36-0	Antimony_	12.1	U	N	P
7440-38-2	Arsenic__	3.9			F
7440-39-3	Barium___	35.8	B		P
7440-41-7	Beryllium	0.24	U		P
7440-43-9	Cadmium__	0.48	U		P
7440-70-2	Calcium__	12600			P
7440-47-3	Chromium_	6.1			P
7440-48-4	Cobalt___	2.1	B		P
7440-50-8	Copper___	5.5	B		P
7439-89-6	Iron_____	5690		*	P
7439-92-1	Lead_____	117			F
7439-95-4	Magnesium	6260			P
7439-96-5	Manganese	319			P
7439-97-6	Mercury__	0.05	U		CV
7440-02-0	Nickel___	4.7	B		P
7440-09-7	Potassium	436	B		P
7782-49-2	Selenium_	0.24	U	W	F
7440-22-4	Silver___	0.73	U		P
7440-23-5	Sodium___	49.9	B		P
7440-28-0	Thallium_	0.29	B	W	F
7440-62-2	Vanadium_	7.0	B		P
7440-66-6	Zinc_____	31.7			P
	Cyanide__	0.31	U		CA

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: ORANGE___ Clarity After: CLOUDY Artifacts: _____

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGZ48

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

Matrix (soil/water): SOIL_ Lab Sample ID: 5373L

Level (low/med): LOW__ Date Received: 11/20/96

% Solids: _80.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	1610		*	P
7440-36-0	Antimony_	12.4	U	N	P
7440-38-2	Arsenic__	0.90	B		F
7440-39-3	Barium___	15.3	B		P
7440-41-7	Beryllium	0.25	U		P
7440-43-9	Cadmium__	0.50	U		P
7440-70-2	Calcium__	576	B		P
7440-47-3	Chromium_	3.8			P
7440-48-4	Cobalt___	1.2	B		P
7440-50-8	Copper___	2.9	B		P
7439-89-6	Iron_____	2630		*	P
7439-92-1	Lead_____	54.0			F
7439-95-4	Magnesium	317	B		P
7439-96-5	Manganese	72.3			P
7439-97-6	Mercury__	0.06	U		CV
7440-02-0	Nickel___	3.2	B		P
7440-09-7	Potassium	284	B		P
7782-49-2	Selenium_	0.24	U		F
7440-22-4	Silver___	0.74	U		P
7440-23-5	Sodium___	12.4	U		P
7440-28-0	Thallium_	0.24	U		F
7440-62-2	Vanadium_	5.1	B		P
7440-66-6	Zinc_____	11.6			P
_____	Cyanide__	0.31	U		CA

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: ORANGE___ Clarity After: CLOUDY Artifacts: _____

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGZ49

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

Matrix (soil/water): SOIL_ Lab Sample ID: 5373E

Level (low/med): LOW__ Date Received: 11/20/96

% Solids: _81.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	1850		*	P
7440-36-0	Antimony_	12.0	U	N	P
7440-38-2	Arsenic__	1.1	B		F
7440-39-3	Barium__	21.8	B		P
7440-41-7	Beryllium	0.24	U		P
7440-43-9	Cadmium__	0.48	U		P
7440-70-2	Calcium__	557	B		P
7440-47-3	Chromium_	2.8			P
7440-48-4	Cobalt___	1.6	B		P
7440-50-8	Copper___	1.8	B		P
7439-89-6	Iron____	3400		*	P
7439-92-1	Lead____	5.0			F
7439-95-4	Magnesium	324	B		P
7439-96-5	Manganese	93.1			P
7439-97-6	Mercury__	0.06	U		CV
7440-02-0	Nickel___	3.8	B		P
7440-09-7	Potassium	280	B		P
7782-49-2	Selenium_	0.25	U	W	F
7440-22-4	Silver___	0.72	U		P
7440-23-5	Sodium___	12.0	U		P
7440-28-0	Thallium_	0.25	U		F
7440-62-2	Vanadium_	4.9	B		P
7440-66-6	Zinc____	8.0			P
	Cyanide__	0.30	U		CA

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: ORANGE___ Clarity After: CLOUDY Artifacts: _____

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGZ50

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

Matrix (soil/water): SOIL_ Lab Sample ID: 5373F

Level (low/med): LOW__ Date Received: 11/20/96

% Solids: _82.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	1790		*	P
7440-36-0	Antimony_	12.0	U	N	P
7440-38-2	Arsenic__	1.3	B		F
7440-39-3	Barium___	24.0	B		P
7440-41-7	Beryllium	0.24	U		P
7440-43-9	Cadmium__	0.48	U		P
7440-70-2	Calcium__	628	B		P
7440-47-3	Chromium_	2.9			P
7440-48-4	Cobalt___	1.9	B		P
7440-50-8	Copper___	1.7	B		P
7439-89-6	Iron_____	3550		*	P
7439-92-1	Lead_____	15.8			F
7439-95-4	Magnesium	337	B		P
7439-96-5	Manganese	113			P
7439-97-6	Mercury__	0.05	U		CV
7440-02-0	Nickel___	3.6	B		P
7440-09-7	Potassium	313	B		P
7782-49-2	Selenium_	0.24	U		F
7440-22-4	Silver___	0.72	U		P
7440-23-5	Sodium___	12.0	U		P
7440-28-0	Thallium_	0.24	B		F
7440-62-2	Vanadium_	5.0	B		P
7440-66-6	Zinc_____	8.0			P
_____	Cyanide__	0.30	U		CA
_____	_____	_____			

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: ORANGE___ Clarity After: CLOUDY Artifacts: _____

Comments:

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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGZ51

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

Matrix (soil/water): SOIL_ Lab Sample ID: 5373M

Level (low/med): LOW__ Date Received: 11/20/96

% Solids: _77.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	2720		*	P
7440-36-0	Antimony_	12.4	U	N	P
7440-38-2	Arsenic__	1.6	B		F
7440-39-3	Barium___	32.7	B		P
7440-41-7	Beryllium	0.25	U		P
7440-43-9	Cadmium__	0.50	U		P
7440-70-2	Calcium__	859	B		P
7440-47-3	Chromium_	4.6			P
7440-48-4	Cobalt___	2.6	B		P
7440-50-8	Copper___	3.0	B		P
7439-89-6	Iron_____	5000		*	P
7439-92-1	Lead_____	18.4			F
7439-95-4	Magnesium	465	B		P
7439-96-5	Manganese	284			P
7439-97-6	Mercury__	0.05	U		CV
7440-02-0	Nickel___	4.3	B		P
7440-09-7	Potassium	417	B		P
7782-49-2	Selenium_	0.24	U		F
7440-22-4	Silver___	0.74	U		P
7440-23-5	Sodium___	12.4	U		P
7440-28-0	Thallium_	0.24	U		F
7440-62-2	Vanadium_	6.6	B		P
7440-66-6	Zinc_____	21.7			P
	Cyanide__	0.32	U		CA

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: ORANGE___ Clarity After: CLOUDY Artifacts: _____

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGZ52

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

Matrix (soil/water): SOIL_ Lab Sample ID: 5373N

Level (low/med): LOW__ Date Received: 11/20/96

% Solids: _82.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	1670		*	P
7440-36-0	Antimony_	12.1	U	N	P
7440-38-2	Arsenic__	1.4	B		F
7440-39-3	Barium___	15.4	B		P
7440-41-7	Beryllium	0.24	U		P
7440-43-9	Cadmium__	0.48	U		P
7440-70-2	Calcium__	315	B		P
7440-47-3	Chromium_	4.0			P
7440-48-4	Cobalt___	1.6	B		P
7440-50-8	Copper___	1.5	B		P
7439-89-6	Iron_____	3560		*	P
7439-92-1	Lead_____	4.6			F
7439-95-4	Magnesium	228	B		P
7439-96-5	Manganese	73.0			P
7439-97-6	Mercury__	0.05	U		CV
7440-02-0	Nickel___	2.4	U		P
7440-09-7	Potassium	289	B		P
7782-49-2	Selenium_	0.24	U		F
7440-22-4	Silver___	0.72	U		P
7440-23-5	Sodium___	12.1	U		P
7440-28-0	Thallium_	0.24	U		F
7440-62-2	Vanadium_	5.5	B		P
7440-66-6	Zinc_____	6.0			P
	Cyanide__	0.30	U		CA

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: ORANGE___ Clarity After: CLOUDY Artifacts: _____

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGZ53

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

Matrix (soil/water): SOIL_ Lab Sample ID: 53730

Level (low/med): LOW__ Date Received: 11/20/96

% Solids: _83.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	3630		*	P
7440-36-0	Antimony_	11.6	U	N	P
7440-38-2	Arsenic__	1.5	B		F
7440-39-3	Barium___	46.6			P
7440-41-7	Beryllium	0.23	U		P
7440-43-9	Cadmium__	0.68	B		P
7440-70-2	Calcium__	1590			P
7440-47-3	Chromium_	5.7			P
7440-48-4	Cobalt___	2.4	B		P
7440-50-8	Copper___	5.2	B		P
7439-89-6	Iron_____	4850		*	P
7439-92-1	Lead_____	26.3			F
7439-95-4	Magnesium	577	B		P
7439-96-5	Manganese	191			P
7439-97-6	Mercury__	0.06	U		CV
7440-02-0	Nickel___	5.3	B		P
7440-09-7	Potassium	704	B		P
7782-49-2	Selenium_	0.24	U	W	F
7440-22-4	Silver___	0.70	U		P
7440-23-5	Sodium___	11.6	U		P
7440-28-0	Thallium_	0.26	B		F
7440-62-2	Vanadium_	8.7	B		P
7440-66-6	Zinc_____	24.3			P
	Cyanide__	0.30	U		CA

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: ORANGE___ Clarity After: CLOUDY Artifacts: _____

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGZ54

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

Matrix (soil/water): SOIL_ Lab Sample ID: 5373P

Level (low/med): LOW__ Date Received: 11/20/96

% Solids: _85.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	5580		*	P
7440-36-0	Antimony_	11.0	U	N	P
7440-38-2	Arsenic__	1.3	B		F
7440-39-3	Barium___	58.2			P
7440-41-7	Beryllium	0.28	B		P
7440-43-9	Cadmium__	0.44	U		P
7440-70-2	Calcium__	1510			P
7440-47-3	Chromium_	8.2			P
7440-48-4	Cobalt___	3.3	B		P
7440-50-8	Copper___	5.3	B		P
7439-89-6	Iron_____	6340		*	P
7439-92-1	Lead_____	19.5			F
7439-95-4	Magnesium	693	B		P
7439-96-5	Manganese	233			P
7439-97-6	Mercury__	0.05	U		CV
7440-02-0	Nickel___	7.3	B		P
7440-09-7	Potassium	961	B		P
7782-49-2	Selenium_	0.23	U	W	F
7440-22-4	Silver___	0.66	U		P
7440-23-5	Sodium___	20.5	B		P
7440-28-0	Thallium_	0.23	U		F
7440-62-2	Vanadium_	11.2			P
7440-66-6	Zinc_____	34.8			P
	Cyanide__	0.29	U		CA

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: ORANGE___ Clarity After: CLOUDY Artifacts: _____

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGZ55

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

Matrix (soil/water): SOIL_ Lab Sample ID: 5373Q

Level (low/med): LOW__ Date Received: 11/20/96

% Solids: _79.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	3550		*	P
7440-36-0	Antimony_	12.5	U	N	P
7440-38-2	Arsenic__	1.5	B		F
7440-39-3	Barium___	31.8	B		P
7440-41-7	Beryllium	0.26	B		P
7440-43-9	Cadmium__	0.50	U		P
7440-70-2	Calcium__	516	B		P
7440-47-3	Chromium_	6.7			P
7440-48-4	Cobalt___	4.6	B		P
7440-50-8	Copper___	4.4	B		P
7439-89-6	Iron_____	7430		*	P
7439-92-1	Lead_____	6.6			F
7439-95-4	Magnesium	744	B		P
7439-96-5	Manganese	80.7			P
7439-97-6	Mercury__	0.06	U		CV
7440-02-0	Nickel___	10.4			P
7440-09-7	Potassium	840	B		P
7782-49-2	Selenium_	0.24	U		F
7440-22-4	Silver___	0.75	U		P
7440-23-5	Sodium___	17.7	B		P
7440-28-0	Thallium_	0.39	B		F
7440-62-2	Vanadium_	8.0	B		P
7440-66-6	Zinc_____	23.5			P
_____	Cyanide__	0.31	U		CA

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: ORANGE___ Clarity After: CLOUDY Artifacts: _____

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGZ56

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

Matrix (soil/water): SOIL_ Lab Sample ID: 5373G

Level (low/med): LOW__ Date Received: 11/20/96

% Solids: _79.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	3430		*	P
7440-36-0	Antimony_	12.2	U	N	P
7440-38-2	Arsenic__	1.3	B		F
7440-39-3	Barium___	31.8	B		P
7440-41-7	Beryllium	0.24	U		P
7440-43-9	Cadmium__	0.49	U		P
7440-70-2	Calcium__	947	B		P
7440-47-3	Chromium_	4.4			P
7440-48-4	Cobalt___	1.8	B		P
7440-50-8	Copper___	4.5	B		P
7439-89-6	Iron_____	4570		*	P
7439-92-1	Lead_____	116			F
7439-95-4	Magnesium	423	B		P
7439-96-5	Manganese	96.4			P
7439-97-6	Mercury__	0.05	U		CV
7440-02-0	Nickel___	5.9	B		P
7440-09-7	Potassium	480	B		P
7782-49-2	Selenium_	0.25	U		F
7440-22-4	Silver___	0.73	U		P
7440-23-5	Sodium___	17.8	B		P
7440-28-0	Thallium_	0.25	U		F
7440-62-2	Vanadium_	7.2	B		P
7440-66-6	Zinc_____	36.3			P
_____	Cyanide__	0.31	U		CA

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: ORANGE___ Clarity After: CLOUDY Artifacts: _____

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGZ57

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

Matrix (soil/water): SOIL_ Lab Sample ID: 5373H

Level (low/med): LOW__ Date Received: 11/20/96

% Solids: _86.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	4060		*	P
7440-36-0	Antimony_	11.5	U	N	P
7440-38-2	Arsenic__	2.3			F
7440-39-3	Barium___	34.8	B		P
7440-41-7	Beryllium	0.23	U		P
7440-43-9	Cadmium__	0.72	B		P
7440-70-2	Calcium__	1750			P
7440-47-3	Chromium_	7.2			P
7440-48-4	Cobalt___	2.5	B		P
7440-50-8	Copper___	11.4			P
7439-89-6	Iron_____	6910		*	P
7439-92-1	Lead_____	369			F
7439-95-4	Magnesium	774	B		P
7439-96-5	Manganese	209			P
7439-97-6	Mercury__	0.18			CV
7440-02-0	Nickel___	5.4	B		P
7440-09-7	Potassium	680	B		P
7782-49-2	Selenium_	0.23	U	W	F
7440-22-4	Silver___	0.69	U		P
7440-23-5	Sodium___	14.2	B		P
7440-28-0	Thallium_	0.27	B		F
7440-62-2	Vanadium_	9.8	B		P
7440-66-6	Zinc_____	132			P
	Cyanide__	0.29	U		CA

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: ORANGE___ Clarity After: CLOUDY Artifacts: _____

Comments:

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGZ58

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

Matrix (soil/water): SOIL_ Lab Sample ID: 5373I

Level (low/med): LOW__ Date Received: 11/20/96

% Solids: _72.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	9090		*	P
7440-36-0	Antimony_	12.7	U	N	P
7440-38-2	Arsenic__	1.5	B		F
7440-39-3	Barium___	89.0			P
7440-41-7	Beryllium	0.40	B		P
7440-43-9	Cadmium__	0.51	U		P
7440-70-2	Calcium__	1240	B		P
7440-47-3	Chromium_	11.0			P
7440-48-4	Cobalt___	5.6	B		P
7440-50-8	Copper___	127			P
7439-89-6	Iron_____	11200		*	P
7439-92-1	Lead_____	55049			F
7439-95-4	Magnesium	1050	B		P
7439-96-5	Manganese	414			P
7439-97-6	Mercury__	0.06	U		CV
7440-02-0	Nickel___	10.1			P
7440-09-7	Potassium	1150	B		P
7782-49-2	Selenium_	0.26	U	W	F
7440-22-4	Silver___	0.76	U		P
7440-23-5	Sodium___	2330			P
7440-28-0	Thallium_	1.3	U		F
7440-62-2	Vanadium_	19.5			P
7440-66-6	Zinc_____	25.7			P
	Cyanide__	0.35	U		CA

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: ORANGE___ Clarity After: CLOUDY Artifacts: _____

Comments:

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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGZ59

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

Matrix (soil/water): SOIL_ Lab Sample ID: 5373R

Level (low/med): LOW__ Date Received: 11/20/96

% Solids: _83.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	7060		*	P
7440-36-0	Antimony_	11.9	U	N	P
7440-38-2	Arsenic__	1.5	B		F
7440-39-3	Barium___	54.6			P
7440-41-7	Beryllium	0.31	B		P
7440-43-9	Cadmium__	0.47	U		P
7440-70-2	Calcium__	2830			P
7440-47-3	Chromium_	11.7			P
7440-48-4	Cobalt___	3.1	B		P
7440-50-8	Copper___	6.9			P
7439-89-6	Iron_____	8790		*	P
7439-92-1	Lead_____	26.6			F
7439-95-4	Magnesium	963	B		P
7439-96-5	Manganese	134			P
7439-97-6	Mercury__	0.05	U		CV
7440-02-0	Nickel___	6.8	B		P
7440-09-7	Potassium	1070	B		P
7782-49-2	Selenium_	0.22	U	W	F
7440-22-4	Silver___	0.71	U		P
7440-23-5	Sodium___	23.1	B		P
7440-28-0	Thallium_	0.29	B		F
7440-62-2	Vanadium_	15.6			P
7440-66-6	Zinc_____	26.2			P
	Cyanide__	0.30	U		CA

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: ORANGE___ Clarity After: CLOUDY Artifacts: _____

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGZ60

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

Matrix (soil/water): SOIL_ Lab Sample ID: 5373S

Level (low/med): LOW__ Date Received: 11/20/96

% Solids: _82.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	5720		*	P
7440-36-0	Antimony_	11.5	U	N	P
7440-38-2	Arsenic__	1.7	B		F
7440-39-3	Barium___	52.6			P
7440-41-7	Beryllium	0.23	U		P
7440-43-9	Cadmium__	0.46	U		P
7440-70-2	Calcium__	2810			P
7440-47-3	Chromium_	9.2			P
7440-48-4	Cobalt___	2.4	B		P
7440-50-8	Copper___	6.2			P
7439-89-6	Iron_____	7570		*	P
7439-92-1	Lead_____	67.9			F
7439-95-4	Magnesium	902	B		P
7439-96-5	Manganese	127			P
7439-97-6	Mercury__	0.05	U		CV
7440-02-0	Nickel___	6.4	B		P
7440-09-7	Potassium	778	B		P
7782-49-2	Selenium_	0.24	U	W	F
7440-22-4	Silver___	0.69	U		P
7440-23-5	Sodium___	18.0	B		P
7440-28-0	Thallium_	0.36	B		F
7440-62-2	Vanadium_	13.5			P
7440-66-6	Zinc_____	24.1			P
	Cyanide__	0.30	U		CA

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: ORANGE___ Clarity After: CLOUDY Artifacts: _____

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGZ63

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

Matrix (soil/water): SOIL_ Lab Sample ID: 5373T

Level (low/med): LOW__ Date Received: 11/20/96

% Solids: _88.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	2000		*	P
7440-36-0	Antimony_	10.7	U	N	P
7440-38-2	Arsenic__	1.0	B		F
7440-39-3	Barium___	35.7	B		P
7440-41-7	Beryllium	0.21	U		P
7440-43-9	Cadmium__	0.43	U		P
7440-70-2	Calcium__	767	B		P
7440-47-3	Chromium_	2.7			P
7440-48-4	Cobalt___	1.3	B		P
7440-50-8	Copper___	5.2	B		P
7439-89-6	Iron_____	2970		*	P
7439-92-1	Lead_____	25.9			F
7439-95-4	Magnesium	338	B		P
7439-96-5	Manganese	163			P
7439-97-6	Mercury__	0.05	U		CV
7440-02-0	Nickel___	2.1	U		P
7440-09-7	Potassium	377	B		P
7782-49-2	Selenium_	0.21	U		F
7440-22-4	Silver___	0.64	U		P
7440-23-5	Sodium___	10.7	U		P
7440-28-0	Thallium_	0.21	U		F
7440-62-2	Vanadium_	4.0	B		P
7440-66-6	Zinc_____	50.7			P
	Cyanide__	0.28	U		CA

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: ORANGE___ Clarity After: CLOUDY Artifacts: _____

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGZ64

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

Matrix (soil/water): SOIL_ Lab Sample ID: 5373J

Level (low/med): LOW__ Date Received: 11/20/96

% Solids: _83.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	5350		*	P
7440-36-0	Antimony_	11.8	U	N	P
7440-38-2	Arsenic__	1.8	B		F
7440-39-3	Barium___	47.6			P
7440-41-7	Beryllium	0.25	B		P
7440-43-9	Cadmium__	0.47	U		P
7440-70-2	Calcium__	4950			P
7440-47-3	Chromium_	7.7			P
7440-48-4	Cobalt___	3.0	B		P
7440-50-8	Copper___	10.6			P
7439-89-6	Iron_____	9570		*	P
7439-92-1	Lead_____	251			F
7439-95-4	Magnesium	957	B		P
7439-96-5	Manganese	174			P
7439-97-6	Mercury__	0.08	B		CV
7440-02-0	Nickel___	8.6	B		P
7440-09-7	Potassium	795	B		P
7782-49-2	Selenium_	0.23	U	W	F
7440-22-4	Silver___	0.71	U		P
7440-23-5	Sodium___	70.6	B		P
7440-28-0	Thallium_	0.39	B	W	F
7440-62-2	Vanadium_	16.8			P
7440-66-6	Zinc_____	70.1			P
	Cyanide__	0.30	U		CA

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: ORANGE___ Clarity After: CLOUDY Artifacts: _____

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGZ65

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

Matrix (soil/water): SOIL_ Lab Sample ID: 5373K

Level (low/med): LOW__ Date Received: 11/20/96

% Solids: _83.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	5110		*	P
7440-36-0	Antimony_	12.0	U	N	P
7440-38-2	Arsenic__	2.0	B		F
7440-39-3	Barium___	46.2	B		P
7440-41-7	Beryllium	0.24	U		P
7440-43-9	Cadmium__	0.48	U		P
7440-70-2	Calcium__	4540			P
7440-47-3	Chromium_	7.0			P
7440-48-4	Cobalt___	3.0	B		P
7440-50-8	Copper___	11.4			P
7439-89-6	Iron____	6330		*	P
7439-92-1	Lead____	260			F
7439-95-4	Magnesium	1030	B		P
7439-96-5	Manganese	164			P
7439-97-6	Mercury__	0.09	B		CV
7440-02-0	Nickel___	8.9	B		P
7440-09-7	Potassium	762	B		P
7782-49-2	Selenium_	0.23	U	W	F
7440-22-4	Silver___	0.72	U		P
7440-23-5	Sodium___	56.1	B		P
7440-28-0	Thallium_	0.35	B		F
7440-62-2	Vanadium_	14.7			P
7440-66-6	Zinc____	69.7			P
	Cyanide__	0.30	U		CA

Color Before: BROWN____ Clarity Before: _____ Texture: FINE__

Color After: ORANGE___ Clarity After: CLOUDY Artifacts: _____

Comments:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

RECEIPT OF PACKAGE FROM USEPA

I ACKNOWLEDGE RECEIPT OF THE FOLLOWING CONTRACT LABORATORY PROGRAM DATA PACKAGE FROM THE USEPA - HOUSTON:

SITE : WILCOX OIL
CASE NO.: 25159
SDG NO. : MFG-Z44

RECEIVED BY: P. SBL DATE: 2/16/97

REPRESENTING: ROY F. WESTON, INC.

ADDRESS/PHONE: 5599 SAN FELIPE # 700
HOUSTON, TEXAS 77056

CONCURRENCE BY EPA REPRESENTATIVE:

MAHMOUD ELFEKY M Elfeky DATE: 1-17-1997

CC: USEPA PROJECT OFFICER
ESAT FILE

A COPY OF THIS RECEIPT SHALL BE SENT TO THE EPA PROGRAM OFFICE ALONG WITH A COPY OF THE ENCLOSED DATA REVIEW.

Recycled/Recyclable
Printed with Soy/Canola Ink on paper that contains at least 50% recycled fiber

FULL INORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET

LABORATORY NAME ARI
CITY/STATE Seattle, WA

CASE NO. 25159 SDG NO. MFGZ44
SDG NOS. TO FOLLOW _____ _____ _____
SAS NO. _____

CONTRACT NO. 68-D5-0134
SOW NO. ILM04.0

All documents delivered in the Complete SDG File must be original documents where possible. (Reference Exhibit B, Section II F and Section III U.)

		Page Nos. From	Page Nos. To	(Please Check:) Lab	(Please Check:) Region
1.	Inventory Sheet (DC-2) (Do not number)		0005		✓
2.	Cover Page	0001	~~0004~~	✓	✓
3.	Inorganic Analysis Data Sheet (Form I-IN)	0006	0026	✓	✓
4.	Initial & Continuing Calibration Verification (Form IIA-IN)	0027	0032	✓	✓
5.	CRDL Standards For AA and ICP (Form IIB-IN)	0033	0034	✓	✓
6.	Blanks (Form III-IN)	0035	0038	✓	✓
7.	ICP Interference Check Sample (Form IV-IN)	0039	0040	✓	✓
8.	Spike Sample Recovery (Form VA-IN)	0041	0041	✓	✓
9.	Post Digest Spike Sample Recovery (Form VB-IN)	0042	0042	✓	✓
10.	Duplicates (Form VI-IN)	0043	0043	✓	✓
11.	Laboratory Control Sample (Form VII-IN)	0044	0046	✓	✓
12.	Standard Addition Results (Form VIII-IN)	—	—		✓
13.	ICP Serial Dilutions (Form IX-IN)	0047	0047	✓	✓
14.	Instrument Detection Limits (Form X-IN)	0073	0079	✓	✓
15.	ICP Interelement Correction Factors (Form XIA-IN)	0080	0080	✓	✓
16.	ICP Interelement Correction Factors (Form XIB-IN)	0081	0083	✓	✓
17.	ICP Linear Ranges (Form XII-IN)	0084	0084	✓	✓
18.	Preparation Log (Form XIII-IN)	0048	0052	✓	✓
19.	Analysis Run Log (Form XIV-IN)	0053	0072	✓	✓
20.	ICP Raw Data	~~0073~~ 0085	~~0079~~ 0159	✓	✓
21.	Furnace AA Raw Data	~~0080~~ 0160	0288	✓	✓
22.	Mercury Raw Data	0289	0301	✓	✓
23.	Cyanide Raw Data	0301A	0309	✓	✓
24.	Preparation Logs Raw Data	0310	0313	✓	✓
25.	Percent Solids Determination Log	0314	0315	✓	✓

	Page Nos. From	Page Nos. To	(Please Check:) Lab	(Please Check:) Region
26. Traffic Report	0321	0326	✓	✓
27. EPA Shipping/Receiving Documents				
Airbill (No. of Shipments 2) 1/2/97	~~0317~~ 0316	0320	✓	✓
Chain-of-Custody Records	0321	0326	✓	✓
Sample Tags	0327	0346	✓	✓
Sample Log-in Sheet (Lab & DCI)	0347	0364	✓	✓
SDG Cover Sheet	0365	0365	✓	✓
28. Misc. Shipping/Receiving Records (list all individual records)				
Telephone Logs	0366	0367	✓	✓
scheduling notification				
shipping notification	0368	0369	✓	✓
29. Internal Lab Sample Transfer Records & Tracking Sheets (describe or list)				
sample log form	0370	0371	✓	✓
30. Internal Original Sample Prep & Analysis Records (describe or list)				
Prep Records spiking log	0372	0372	✓	✓
Analysis Records standard prep log	0373	0381	✓	✓
Description				
31. Other Records (describe or list)				
Telephone Communications Log				
special instructions	0382	0385	✓	✓
	0386	–	✓	✓

32. Comments:

Completed by (CLP Lab):

(Signature) Jeff J. Reitan PM (Print Name & Title) 12/24/96 (Date)

Audited by (EPA):

(Signature) LINDA HOFFMAN / ESAT DATA REVIEWER (Print Name & Title) 1/12/97 (Date)

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Sample Data Package

Case No: 25159

SDG: MFGZ44

ANALYTICAL RESOURCES, INC.
Contract: 68-D5-0134

000001

333 Ninth Avenue North • Seattle WA 98109-5187 • **206-621-6490** • **206-621-7523** fax

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SDG Narrative and Cover Page

Case No: 25159

SDG: MFGZ44

ANALYTICAL RESOURCES, INC.
Contract: 68-D5-0134

~~000005~~
00001A

DM 12/24/96

333 Ninth Avenue North • Seattle WA 98109-5187 • **206-621-6490** • **206-621-7523** fax

Analytical Resources, Incorporated
Analytical Chemists and Consultants

24 December 1996

Myra Perez
USEPA Region VI
10625 Fallstone Road
Houston, TX 77099

RE: CLP Inorganic Case No. 25159 / SDG# MFGZ44 / Contract: 68-D5-0134
ARI Job No. 5373

Dear Ms. Perez,

Enclosed please find the results for the above referenced samples received on November 19 and November 20, 1996 for inorganics analysis. This SDG consists of the following listed field soil samples:

MFGZ44 MFGZ45 MFGZ46 MFGZ47 MFGZ48 MFGZ49 MFGZ50 MFGZ51 MFGZ52 MFGZ53 MFGZ54 MFGZ55 MFGZ56 MFGZ57 MFGZ58 MFGZ59 MFGZ60 MFGZ63 MFGZ64 MFGZ65

No discrepancies were noted between the sample labels, sample tags, and the traffic report.

Sample Preparation

Samples were prepared for analysis according to the methods specified in the SOW ILM04.0, with the exceptions of four graphite furnace elements. These were prepared according to the instrument manufacturer recommendations: lead was prepared using palladium and magnesium; and arsenic, selenium and thallium were prepared using palladium, magnesium and citric acid.

Sample Analysis

Sample **MFGZ44** was designated as the soil QC sample for spike and duplicate analysis. The following spike recoveries were outside CLP control limits: Sb @ 47%. A post digest spike analysis was completed with the following recoveries: Sb @ 98%. Duplicate RPDs were elevated for aluminum (38%) and iron (24%).

No other analytical complications were noted for this delivery group. Copies of the reports and all associated raw data will be kept on file at ARI. If you have any questions or require additional information, please contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

Jeff J. Reitan
EPA Inorganics Project Manager
jeff@arilabs.com

000002

Enclosures: Complete SDG File (including diskette)

333 Ninth Avenue North • Seattle WA 98109-5187 • **206-621-6490** • **206-621-7523** fax

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159 SAS No.: _____ SDG No.:MFGZ44

SOW No.: ILM04.0

EPA Sample No.	Lab Sample ID
_MFGZ44_____	_5373A_____
_MFGZ44D_____	_5373ADUP_____
_MFGZ44S_____	_5373ASPK_____
_MFGZ45_____	_5373B_____
_MFGZ46_____	_5373C_____
_MFGZ47_____	_5373D_____
_MFGZ48_____	_5373L_____
_MFGZ49_____	_5373E_____
_MFGZ50_____	_5373F_____
_MFGZ51_____	_5373M_____
_MFGZ52_____	_5373N_____
_MFGZ53_____	_5373O_____
_MFGZ54_____	_5373P_____
_MFGZ55_____	_5373Q_____
_MFGZ56_____	_5373G_____
_MFGZ57_____	_5373H_____
_MFGZ58_____	_5373I_____
_MFGZ59_____	_5373R_____
_MFGZ60_____	_5373S_____
_MFGZ63_____	_5373T_____

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES
If yes - were raw data generated before application of background corrections ? Yes/No NO_

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: PAUL JAY KUHN_____

Date: 12/24/96 Title: INORGANICS LAB MANAGER__

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159 SAS No.: _____ SDG No.:MFGZ44

SOW No.: ILM04.0

EPA Sample No.	Lab Sample ID
_MFGZ64_____	_5373J_____
_MFGZ65_____	_5373K_____

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES
If yes - were raw data generated before application of background corrections ? Yes/No NO_

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: PAUL JAY KUHN_____

Date: 12/24/96 Title: INORGANICS LAB MANAGER__

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Analytical Resources, Incorporated
Analytical Chemists and Consultants

Sample Data

Case No: 25159

SDG: MFGZ44

ANALYTICAL RESOURCES, INC.
Contract: 68-D5-0134

000006

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Analytical Resources, Incorporated
Analytical Chemists and Consultants

Quality Control Data

Case No: 25159

SDG: MFGZ44

ANALYTICAL RESOURCES, INC.
Contract: 68-D5-0134

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U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

Initial Calibration Source: EPA-ICV_____

Continuing Calibration Source: I.V._____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	1956.0	2021.45	103.3	5000.0	4847.13	96.9	4822.51	96.5	P
Antimony	970.0	1054.62	108.7	2000.0	1944.60	97.2	1920.76	96.0	P
Arsenic	50.9	53.40	104.9	25.0	26.40	105.6	27.00	108.0	F
Barium	2009.0	2019.35	100.5	1000.0	962.85	96.3	976.42	97.6	P
Beryllium	476.0	442.01	92.9	1000.0	937.35	93.7	928.51	92.9	P
Cadmium	510.0	508.80	99.8	1000.0	981.18	98.1	981.56	98.2	P
Calcium	50711.0	49734.83	98.1	5000.0	4893.69	97.9	4878.48	97.6	P
Chromium	471.0	474.39	100.7	1000.0	969.54	97.0	962.16	96.2	P
Cobalt	520.0	528.77	101.7	1000.0	970.54	97.1	959.67	96.0	P
Copper	497.0	490.32	98.7	1000.0	990.71	99.1	976.62	97.7	P
Iron	1985.0	1972.47	99.4	5000.0	4864.88	97.3	4845.16	96.9	P
Lead	98.8	108.75	110.1	40.0	39.70	99.2	41.40	103.5	F
Magnesium	24588.0	25443.20	103.5	5000.0	4875.31	97.5	4842.79	96.9	P
Manganese	491.0	483.73	98.5	1000.0	969.96	97.0	954.87	95.5	P
Mercury	4.9	4.56	93.1	3.0	2.99	99.7	2.96	98.7	CV
Nickel	497.0	483.70	97.3	1000.0	971.32	97.1	968.10	96.8	P
Potassium	49603.0	52589.80	106.0	20000.0	19649.13	98.2	19312.04	96.6	P
Selenium	50.7	50.80	100.2	25.0	25.90	103.6	25.30	101.2	F
Silver	487.0	495.64	101.8	1000.0	985.65	98.6	974.76	97.5	P
Sodium	48786.0	51594.26	105.8	2000.0	1954.39	97.7	1954.49	97.7	P
Thallium	98.9	104.00	105.2	25.0	24.80	99.2	23.50	94.0	F
Vanadium	492.0	482.07	98.0	1000.0	964.60	96.5	954.84	95.5	P
Zinc	3012.0	2996.51	99.5	1000.0	981.01	98.1	976.21	97.6	P
Cyanide	90.0	103.47	115.0	100.0	96.19	96.2	94.73	94.7	CA

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

Initial Calibration Source: EPA-ICV_____

Continuing Calibration Source: I.V._____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum_				5000.0	4866.82	97.3	4942.15	98.8	P
Antimony_				2000.0	1963.58	98.2	2025.66	101.3	P
Arsenic__				25.0	26.60	106.4	25.80	103.2	F
Barium___				1000.0	967.20	96.7	988.17	98.8	P
Beryllium				1000.0	939.16	93.9	951.72	95.2	P
Cadmium__				1000.0	982.88	98.3	1008.61	100.9	P
Calcium__				5000.0	4851.38	97.0	4942.72	98.9	P
Chromium_				1000.0	968.45	96.8	979.93	98.0	P
Cobalt___				1000.0	966.66	96.7	982.03	98.2	P
Copper___				1000.0	964.15	96.4	983.87	98.4	P
Iron_____				5000.0	4860.91	97.2	4926.46	98.5	P
Lead_____				40.0	40.85	102.1	42.05	105.1	F
Magnesium				5000.0	4910.74	98.2	4988.05	99.8	P
Manganese				1000.0	965.03	96.5	977.34	97.7	P
Mercury__				3.0	3.03	101.0	3.01	100.3	CV
Nickel___				1000.0	977.18	97.7	995.28	99.5	P
Potassium				20000.0	19591.14	98.0	19779.62	98.9	P
Selenium_				25.0	25.40	101.6	24.30	97.2	F
Silver___				1000.0	986.89	98.7	999.70	100.0	P
Sodium___				2000.0	1960.30	98.0	1998.58	99.9	P
Thallium_				25.0	24.50	98.0	23.50	94.0	F
Vanadium_				1000.0	966.13	96.6	975.36	97.5	P
Zinc_____				1000.0	983.98	98.4	1002.78	100.3	P
Cyanide__				100.0	96.19	96.2	96.19	96.2	CA

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

Initial Calibration Source: EPA-ICV_____

Continuing Calibration Source: I.V._____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum_				5000.0	4851.38	97.0	4810.81	96.2	P
Antimony_				2000.0	1984.18	99.2	1937.54	96.9	P
Arsenic__				25.0	26.30	105.2	25.10	100.4	F
Barium___				1000.0	965.54	96.6	959.63	96.0	P
Beryllium				1000.0	933.99	93.4	931.61	93.2	P
Cadmium__				1000.0	970.74	97.1	968.47	96.8	P
Calcium__				5000.0	4878.26	97.6	4821.52	96.4	P
Chromium_				1000.0	970.65	97.1	967.11	96.7	P
Cobalt___				1000.0	964.10	96.4	963.39	96.3	P
Copper___				1000.0	980.16	98.0	949.30	94.9	P
Iron____				5000.0	4887.90	97.8	4841.67	96.8	P
Lead____				40.0	39.65	99.1	41.10	102.8	F
Magnesium				5000.0	4867.26	97.3	4793.22	95.9	P
Manganese				1000.0	961.95	96.2	960.88	96.1	P
Mercury__				3.0	2.88	96.0			CV
Nickel___				1000.0	967.45	96.7	964.38	96.4	P
Potassium				20000.0	19453.40	97.3	19493.27	97.5	P
Selenium_				25.0	25.00	100.0	25.30	101.2	F
Silver___				1000.0	978.10	97.8	971.21	97.1	P
Sodium___				2000.0	1939.96	97.0	1927.41	96.4	P
Thallium_				25.0	24.90	99.6	25.50	102.0	F
Vanadium_				1000.0	962.92	96.3	958.25	95.8	P
Zinc____				1000.0	982.50	98.2	978.25	97.8	P
Cyanide__	90.0	100.04	111.2	100.0	96.26	96.3	95.31	95.3	CA

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

Initial Calibration Source: EPA-ICV_____

Continuing Calibration Source: I.V._____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum_				5000.0	4897.47	97.9			P
Antimony_				2000.0	2003.69	100.2			P
Arsenic__				25.0	26.10	104.4	26.30	105.2	F
Barium___				1000.0	971.29	97.1			P
Beryllium				1000.0	946.02	94.6			P
Cadmium__				1000.0	987.54	98.8			P
Calcium__				5000.0	4863.03	97.3			P
Chromium_				1000.0	972.30	97.2			P
Cobalt___				1000.0	973.26	97.3			P
Copper___				1000.0	929.84	93.0			P
Iron____				5000.0	4893.18	97.9			P
Lead____				40.0	39.65	99.1	40.80	102.0	F
Magnesium				5000.0	4907.79	98.2			P
Manganese				1000.0	967.49	96.7			P
Mercury__									NR
Nickel___				1000.0	984.99	98.5			P
Potassium				20000.0	19591.14	98.0			P
Selenium_				25.0	25.10	100.4	25.10	100.4	F
Silver___				1000.0	988.13	98.8			P
Sodium___				2000.0	1973.06	98.7			P
Thallium_				25.0	26.00	104.0	26.20	104.8	F
Vanadium_				1000.0	967.43	96.7			P
Zinc____				1000.0	997.64	99.8			P
Cyanide__				100.0	93.42	93.4	92.47	92.5	CA

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

Initial Calibration Source: EPA-ICV_____

Continuing Calibration Source: I.V._____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum_									NR
Antimony_									NR
Arsenic__				25.0	25.80	103.2	26.00	104.0	F_
Barium___									NR
Beryllium									NR
Cadmium__									NR
Calcium__									NR
Chromium_									NR
Cobalt___									NR
Copper___									NR
Iron____									NR
Lead____									NR
Magnesium									NR
Manganese									NR
Mercury__									NR
Nickel___									NR
Potassium									NR
Selenium_				25.0	26.10	104.4	25.60	102.4	F_
Silver___									NR
Sodium___									NR
Thallium_				25.0	27.00	108.0	27.10	108.4	F_
Vanadium_									NR
Zinc____									NR
Cyanide__									NR

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

AA CRDL Standard Source: I.V._____

ICP CRDL Standard Source: I.V._____

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
					Initial		Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum								
Antimony				120.0	117.60	98.0	126.83	105.7
Arsenic	10.0	10.60	106.0					
Barium								
Beryllium				10.0	9.27	92.7	9.18	91.8
Cadmium				10.0	9.65	96.5	10.64	106.4
Calcium								
Chromium				20.0	16.30	81.5	22.85	114.2
Cobalt				100.0	99.07	99.1	98.14	98.1
Copper				50.0	51.43	102.9	51.21	102.4
Iron								
Lead	3.0	3.40	113.3					
Magnesium								
Manganese				30.0	29.55	98.5	30.01	100.0
Mercury	0.2	0.20	100.0					
Nickel				80.0	83.80	104.8	88.18	110.2
Potassium								
Selenium	5.0	5.00	100.0					
Silver				20.0	18.02	90.1	19.55	97.8
Sodium								
Thallium	10.0	10.20	102.0					
Vanadium				100.0	95.71	95.7	97.07	97.1
Zinc				40.0	43.21	108.0	43.68	109.2

Control Limits: no limits have been established by EPA at this time

U.S. EPA - CLP

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

AA CRDL Standard Source: I.V._____

ICP CRDL Standard Source: I.V._____

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
					Initial		Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum								
Antimony				120.0			122.49	102.1
Arsenic								
Barium								
Beryllium				10.0			9.11	91.1
Cadmium				10.0			10.64	106.4
Calcium								
Chromium				20.0			22.58	112.9
Cobalt				100.0			99.07	99.1
Copper				50.0			48.48	97.0
Iron								
Lead								
Magnesium								
Manganese				30.0			29.39	98.0
Mercury								
Nickel				80.0			83.10	103.9
Potassium								
Selenium								
Silver				20.0			19.13	95.6
Sodium								
Thallium								
Vanadium				100.0			95.71	95.7
Zinc				40.0			43.22	108.0

Control Limits: no limits have been established by EPA at this time

U.S. EPA - CLP

3
BLANKS

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

Preparation Blank Matrix (soil/water): SOIL_

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	20.0	U	20.0	U	20.0	U	20.0	U	4.00	U	P
Antimony	50.0	U	50.0	U	50.0	U	50.0	U	10.00	U	P
Arsenic	1.0	U	1.0	U	1.0	U	1.0	U	0.20	U	F
Barium	1.0	U	1.0	U	1.0	U	1.0	U	0.20	U	P
Beryllium	1.0	U	1.0	U	1.0	U	1.0	U	0.20	U	P
Cadmium	2.0	U	2.0	U	2.0	U	2.0	U	0.40	U	P
Calcium	20.0	U	20.0	U	25.3	B	20.0	U	4.00	U	P
Chromium	5.0	U	5.0	U	5.0	U	5.0	U	1.00	U	P
Cobalt	3.0	U	3.0	U	3.0	U	3.0	U	0.60	U	P
Copper	2.0	U	2.0	U	2.0	U	2.3	B	0.44	B	P
Iron	20.0	U	20.0	U	22.6	B	20.0	U	4.00	U	P
Lead	1.0	U	1.0	U	1.0	U	1.0	U	0.20	U	F
Magnesium	20.0	U	20.0	U	20.0	U	20.0	U	4.00	U	P
Manganese	1.0	U	1.0	U	1.0	U	1.0	U	0.20	U	P
Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.05	U	CV
Nickel	10.0	U	10.0	U	10.0	U	10.0	U	2.00	U	P
Potassium	-445.8	B	400.0	U	400.0	U	400.0	U	80.00	U	P
Selenium	1.0	U	1.0	U	1.0	U	1.0	U	0.20	U	F
Silver	3.0	U	3.0	U	3.0	U	3.0	U	0.60	U	P
Sodium	50.0	U	50.0	U	50.0	U	50.0	U	10.00	U	P
Thallium	1.0	U	1.0	U	1.0	U	1.0	U	0.20	U	F
Vanadium	-5.0	B	-4.8	B	-5.0	B	2.0	U	-0.60	B	P
Zinc	5.8	B	4.8	B	5.8	B	4.0	U	0.80	U	P
Cyanide	5.0	U	5.0	U	5.0	U	5.0	U	0.25	U	CA

U.S. EPA - CLP

3
BLANKS

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

Preparation Blank Matrix (soil/water): SOIL_

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum			20.0	U	20.0	U	20.0	U			P
Antimony			50.0	U	50.0	U	50.0	U			P
Arsenic			1.0	U	1.0	U	1.0	U			F
Barium			1.0	U	1.0	U	1.0	U			P
Beryllium			1.0	U	1.0	U	1.0	U			P
Cadmium			2.0	U	2.0	U	2.0	U			P
Calcium			20.0	U	31.4	B	20.0	U			P
Chromium			5.0	U	5.0	U	5.0	U			P
Cobalt			3.0	U	3.0	U	3.0	U			P
Copper			2.0	U	2.0	U	2.0	U			P
Iron			20.0	U	20.0	U	20.0	U			P
Lead			1.0	U	1.0	U	1.0	U			F
Magnesium			-21.2	B	20.0	U	20.0	U			P
Manganese			1.0	U	1.0	U	1.0	U			P
Mercury			0.1	U	0.1	U					CV
Nickel			10.0	U	10.0	U	10.0	U			P
Potassium			400.0	U	400.0	U	400.0	U			P
Selenium			-1.0	B	1.0	U	1.0	U			F
Silver			3.0	U	3.0	U	3.0	U			P
Sodium			50.0	U	50.0	U	50.0	U			P
Thallium			1.0	U	1.0	U	1.0	U			F
Vanadium			-5.3	B	-2.9	B	-4.7	B			P
Zinc			4.0	U	5.8	B	5.8	B			P
Cyanide			5.0	U					0.25	U	CA

U.S. EPA - CLP

3
BLANKS

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

Preparation Blank Matrix (soil/water): _____

Preparation Blank Concentration Units (ug/L or mg/kg): _____

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum			20.0	U							P
Antimony			50.0	U							P
Arsenic			1.0	U	1.0	U	1.0	U			F
Barium			1.0	U							P
Beryllium			1.0	U							P
Cadmium			2.0	U							P
Calcium			20.0	U							P
Chromium			5.0	U							P
Cobalt			3.0	U							P
Copper			2.0	U							P
Iron			20.0	U							P
Lead			1.0	U	1.0	U					F
Magnesium			20.0	U							P
Manganese			1.0	U							P
Mercury											NR
Nickel			10.0	U							P
Potassium			400.0	U							P
Selenium			1.0	U	1.0	U	1.0	U			F
Silver			3.0	U							P
Sodium			50.0	U							P
Thallium			1.0	U	1.0	U	1.0	U			F
Vanadium			-2.6	B							P
Zinc			4.0	U							P
Cyanide	5.0	U	5.0	U	5.0	U	5.0	U			CA

U.S. EPA - CLP

3
BLANKS

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

Preparation Blank Matrix (soil/water): _____

Preparation Blank Concentration Units (ug/L or mg/kg): _____

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											NR
Antimony											NR
Arsenic			1.0	U							F
Barium											NR
Beryllium											NR
Cadmium											NR
Calcium											NR
Chromium											NR
Cobalt											NR
Copper											NR
Iron											NR
Lead											NR
Magnesium											NR
Manganese											NR
Mercury											NR
Nickel											NR
Potassium											NR
Selenium			1.0	U							F
Silver											NR
Sodium											NR
Thallium			1.0	U							F
Vanadium											NR
Zinc											NR
Cyanide			5.0	U							CA

U.S. EPA - CLP

4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No: _____ SDG No.: MFGZ44

ICP ID Number: TJA ICP 61__ ICS Source: EPA(0194)___

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum	495800	505595	521835	514647.0	101.8	516896	512766.4	101.4
Antimony		541	23	599.0	110.7	76	603.2	111.5
Arsenic								
Barium		467	2	465.8	99.7	2	466.6	99.9
Beryllium		444	-0	423.4	95.4	-0	422.2	95.1
Cadmium		871	-2	885.4	101.7	0	897.1	103.0
Calcium	457200	467921	466761	456719.4	97.6	457641	456265.9	97.5
Chromium	38	456	32	445.2	97.6	32	442.5	97.0
Cobalt		427	3	424.7	99.5	2	425.8	99.7
Copper		507	17	480.8	94.8	16	470.6	92.8
Iron	186000	177250	179184	177065.4	99.9	176269	176550.0	99.6
Lead								
Magnesium	490700	532422	475289	466970.9	87.7	470357	466820.5	87.7
Manganese	45	484	45	472.2	97.6	44	468.2	96.7
Mercury								
Nickel		857	4	819.9	95.7	6	835.3	97.5
Potassium			-855	-427.7		-739	-598.1	
Selenium								
Silver		207	-8	175.1	84.6	-8	175.2	84.6
Sodium			96	87.3		94	91.4	
Thallium								
Vanadium		460	-3	430.7	93.6	-5	426.4	92.7
Zinc		1008	33	900.6	89.3	33	911.8	90.5

U.S. EPA - CLP

4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No: _____ SDG No.: MFGZ44

ICP ID Number: TJA ICP 61__ ICS Source: EPA(0194)___

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum	495800	505595				505301	489060.0	96.7
Antimony		541				80	567.0	104.8
Arsenic								
Barium		467				2	446.3	95.6
Beryllium		444				0	409.9	92.3
Cadmium		871				2	856.7	98.4
Calcium	457200	467921				455275	440296.8	94.1
Chromium	38	456				36	429.1	94.1
Cobalt		427				3	413.7	96.9
Copper		507				17	438.6	86.5
Iron	186000	177250				175312	171358.0	96.7
Lead								
Magnesium	490700	532422				459624	445727.2	83.7
Manganese	45	484				44	454.0	93.8
Mercury								
Nickel		857				14	792.3	92.5
Potassium						-544	-724.9	
Selenium								
Silver		207				-6	167.1	80.7
Sodium						100	91.3	
Thallium								
Vanadium		460				-4	414.0	90.0
Zinc		1008				32	884.0	87.7

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5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MFGZ44S

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134

Lab Code: ARI Case No.: 25159 SAS No.: SDG No.: MFGZ44

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 81.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	56.7863		12.2100	U	122.10	46.5	N	P
Arsenic	75-125	10.8214		1.3407	B	9.58	99.0		F
Barium	75-125	493.2332		21.4042	B	488.40	96.6		P
Beryllium	75-125	11.0403		0.2442	U	12.21	90.4		P
Cadmium	75-125	11.3065		0.4884	U	12.21	92.6		P
Calcium									NR
Chromium	75-125	51.2405		5.5922		48.84	93.5		P
Cobalt	75-125	119.7827		2.3223	B	122.10	96.2		P
Copper	75-125	61.7338		2.6984	B	61.05	96.7		P
Iron									NR
Lead	75-125	10.5581		5.9853		4.79	95.5		F
Magnesium									NR
Manganese	75-125	238.6813		111.9609		122.10	103.8		P
Mercury	75-125	0.4757		0.0509	U	0.51	93.3		CV
Nickel	75-125	121.6654		3.4359	B	122.10	96.8		P
Potassium									NR
Selenium	75-125	2.0350		0.2394	U	2.39	85.1		F
Silver	75-125	11.1355		0.7326	U	12.21	91.2		P
Sodium									NR
Thallium	75-125	10.9651		0.3112	B	11.97	89.0		F
Vanadium	75-125	122.5470		6.5397	B	122.10	95.0		P
Zinc	75-125	121.5531		7.5946		122.10	93.3		P
Cyanide	75-125	8.9548		0.3022	U	9.16	97.8		CA

Comments:

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5B
POST DIGEST SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MFGZ44A

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

Matrix (soil/water) : SOIL__ Level (low/med): LOW___

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Added (SA)	%R	Q	M
Aluminum									NR
Antimony		117.57		50.00	U	120.0	98.0		P
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

Comments:

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6
DUPLICATES

EPA SAMPLE NO.

MFGZ44D

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

Matrix (soil/water): SOIL_ Level (low/med): _LOW__

% Solids for Sample: _81.9 % Solids for Duplicate: __82.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		2204.2418		1503.6606		37.8	*	P
Antimony		12.2100	U	12.2100	U			P
Arsenic		1.3407	B	1.3407	B	0.0		F
Barium		21.4042	B	20.1905	B	5.8		P
Beryllium		0.2442	U	0.2442	U			P
Cadmium		0.4884	U	0.4884	U			P
Calcium		406.3687	B	421.6190	B	3.7		P
Chromium	2.4420	5.5922		3.4628		47.0		P
Cobalt		2.3223	B	1.9927	B	15.3		P
Copper		2.6984	B	2.8694	B	6.1		P
Iron		4338.9768		3414.0733		23.9	*	P
Lead		5.9853		6.3444		5.8		F
Magnesium		332.5788	B	270.8254	B	20.5		P
Manganese		111.9609		100.7937		10.5		P
Mercury		0.0509	U	0.0509	U			CV
Nickel		3.4359	B	3.2625	B	5.2		P
Potassium		372.6422	B	191.1893	B	64.4		P
Selenium		0.2394	U	0.2394	U			F
Silver		0.7326	U	0.7326	U			P
Sodium		12.2100	U	12.2100	U			P
Thallium		0.3112	B	0.2873	B	8.0		F
Vanadium		6.5397	B	5.0501	B	25.7		P
Zinc	4.8840	7.5946		6.7399		11.9		P
Cyanide		0.3022	U	0.3053	U			CA

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7
LABORATORY CONTROL SAMPLE

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

Solid LCS Source: LCS (0287)__

Aqueous LCS Source: _____

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum				325.0	295.3		193.1	424.2	90.9
Antimony				211.0	195.7		129.4	297.2	92.7
Arsenic				917.0	1064.0		613.6	1247.2	116.0
Barium				4.8	4.9	B	2.5	8.1	102.1
Beryllium				19.4	16.6		15.3	22.2	85.6
Cadmium				45.4	38.8		32.1	51.1	85.5
Calcium				196200.0	176189.1		142933.0	225376.0	89.8
Chromium				99.6	89.6		77.8	115.2	90.0
Cobalt				144.0	125.8		115.4	165.6	87.4
Copper				6910.0	6521.7		5727.3	7633.1	94.4
Iron				22430.0	18367.9		16831.3	25193.0	81.9
Lead				236.0	257.0		167.6	280.5	108.9
Magnesium				118100.0	100571.9		97493.0	128886.0	85.2
Manganese				208.0	186.5		167.9	234.4	89.7
Mercury				12.7	10.9		7.8	16.9	85.8
Nickel				60.9	50.5		43.5	70.1	82.9
Potassium				50.0	80.0	U		379.3	0.0
Selenium				39.2	38.0		17.6	56.4	96.9
Silver				22.2	23.9		13.2	28.5	107.7
Sodium				50.0	29.0	B		277.4	58.0
Thallium				39.0	34.6		24.6	51.6	88.7
Vanadium				65.8	61.6		53.0	78.6	93.6
Zinc				187.0	147.5		127.7	222.1	78.9
Cyanide									

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7
LABORATORY CONTROL SAMPLE

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

Solid LCS Source: LCS (0689)__

Aqueous LCS Source: _____

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide				5.6	5.3		4.1	7.1	94.6

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LABORATORY CONTROL SAMPLE

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

Solid LCS Source: LCS (0689)__

Aqueous LCS Source: _____

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide				5.6	5.1		4.1	7.1	91.1

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9
ICP SERIAL DILUTION

EPA SAMPLE NO.

MFGZ44L

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

Matrix (soil/water): SOIL_ Level (low/med): LOW__

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	9026.37		9188.20		1.8		P
Antimony	50.00	U	250.00	U			P
Arsenic							NR
Barium	87.65	B	90.05	B	2.7		P
Beryllium	1.00	U	5.00	U			P
Cadmium	2.00	U	10.00	U			P
Calcium	1664.08	B	1702.00	B	2.3		P
Chromium	22.90		25.00	U	100.0		P
Cobalt	9.51	B	15.00	U	100.0		P
Copper	11.05	B	11.90	B	7.7		P
Iron	17768.11		18102.90		1.9		P
Lead							NR
Magnesium	1361.91	B	1324.40	B	2.8		P
Manganese	458.48		463.65		1.1		P
Mercury							NR
Nickel	14.07	B	50.00	U	100.0		P
Potassium	1525.97	B	2000.00	U	100.0		P
Selenium							NR
Silver	3.00	U	15.00	U			P
Sodium	50.00	U	250.00	U			P
Thallium							NR
Vanadium	26.78	B	21.20	B	20.8		P
Zinc	31.10		51.40	B	65.3		P

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PREPARATION LOG

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.:_25159_ SAS No.: _____ SDG No.:MFGZ44

Method: P_

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSS	12/03/96	1.00	200
MFGZ44	12/03/96	1.00	200
MFGZ44D	12/03/96	1.00	200
MFGZ44S	12/03/96	1.00	200
MFGZ45	12/03/96	1.05	200
MFGZ46	12/03/96	1.01	200
MFGZ47	12/03/96	1.01	200
MFGZ48	12/03/96	1.01	200
MFGZ49	12/03/96	1.02	200
MFGZ50	12/03/96	1.01	200
MFGZ51	12/03/96	1.04	200
MFGZ52	12/03/96	1.01	200
MFGZ53	12/03/96	1.03	200
MFGZ54	12/03/96	1.06	200
MFGZ55	12/03/96	1.00	200
MFGZ56	12/03/96	1.04	200
MFGZ57	12/03/96	1.01	200
MFGZ58	12/03/96	1.09	200
MFGZ59	12/03/96	1.01	200
MFGZ60	12/03/96	1.05	200
MFGZ63	12/03/96	1.06	200
MFGZ64	12/03/96	1.02	200
MFGZ65	12/03/96	1.00	200
PBS	12/03/96	1.00	200

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PREPARATION LOG

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.:_25159_ SAS No.: _____ SDG No.:MFGZ44

Method: F_

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSS	12/03/96	1.00	200
MFGZ44	12/03/96	1.02	200
MFGZ44D	12/03/96	1.02	200
MFGZ44S	12/03/96	1.02	200
MFGZ45	12/03/96	1.04	200
MFGZ46	12/03/96	1.02	200
MFGZ47	12/03/96	1.00	200
MFGZ48	12/03/96	1.06	200
MFGZ49	12/03/96	1.00	200
MFGZ50	12/03/96	1.02	200
MFGZ51	12/03/96	1.06	200
MFGZ52	12/03/96	1.02	200
MFGZ53	12/03/96	1.00	200
MFGZ54	12/03/96	1.02	200
MFGZ55	12/03/96	1.04	200
MFGZ56	12/03/96	1.00	200
MFGZ57	12/03/96	1.03	200
MFGZ58	12/03/96	1.07	200
MFGZ59	12/03/96	1.08	200
MFGZ60	12/03/96	1.01	200
MFGZ63	12/03/96	1.06	200
MFGZ64	12/03/96	1.04	200
MFGZ65	12/03/96	1.02	200
PBS	12/03/96	1.00	200

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PREPARATION LOG

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.:_25159_ SAS No.: _____ SDG No.:MFGZ44

Method: CV

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSS	12/03/96	0.20	100
MFGZ44	12/03/96	0.24	100
MFGZ44D	12/03/96	0.24	100
MFGZ44S	12/03/96	0.24	100
MFGZ45	12/03/96	0.23	100
MFGZ46	12/03/96	0.23	100
MFGZ47	12/03/96	0.26	100
MFGZ48	12/03/96	0.22	100
MFGZ49	12/03/96	0.21	100
MFGZ50	12/03/96	0.24	100
MFGZ51	12/03/96	0.24	100
MFGZ52	12/03/96	0.23	100
MFGZ53	12/03/96	0.21	100
MFGZ54	12/03/96	0.22	100
MFGZ55	12/03/96	0.22	100
MFGZ56	12/03/96	0.25	100
MFGZ57	12/03/96	0.22	100
MFGZ58	12/03/96	0.25	100
MFGZ59	12/03/96	0.22	100
MFGZ60	12/03/96	0.23	100
MFGZ63	12/03/96	0.24	100
MFGZ64	12/03/96	0.25	100
MFGZ65	12/03/96	0.22	100
PBS	12/03/96	0.20	100

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PREPARATION LOG

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.:_25159_ SAS No.: _____ SDG No.:MFGZ44

Method: CA

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSS	11/25/96	1.00	50
MFGZ44	11/25/96	1.01	50
MFGZ44D	11/25/96	1.00	50
MFGZ44S	11/25/96	1.00	50
MFGZ45	11/25/96	1.01	50
MFGZ46	11/25/96	1.00	50
MFGZ47	11/25/96	1.00	50
MFGZ49	11/25/96	1.01	50
MFGZ50	11/25/96	1.00	50
MFGZ56	11/25/96	1.01	50
MFGZ57	11/25/96	1.01	50
MFGZ58	11/25/96	1.00	50
PBS	11/25/96	1.00	50
ICV	11/25/96		50
DMLS	11/25/96		50

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PREPARATION LOG

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.:_25159_ SAS No.: _____ SDG No.:MFGZ44

Method: CA

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSS	11/26/96	1.00	50
MFGZ48	11/26/96	1.00	50
MFGZ51	11/26/96	1.00	50
MFGZ52	11/26/96	1.01	50
MFGZ53	11/26/96	1.00	50
MFGZ54	11/26/96	1.00	50
MFGZ55	11/26/96	1.01	50
MFGZ59	11/26/96	1.00	50
MFGZ60	11/26/96	1.00	50
MFGZ63	11/26/96	1.01	50
MFGZ64	11/26/96	1.01	50
MFGZ65	11/26/96	1.01	50
PBS	11/26/96	1.00	50
ICV	11/26/96		50
DMLS	11/26/96		50

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ANALYSIS RUN LOG

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.:MFGZ44

Instrument ID Number: TJA ICP 61___ Method: P_

Start Date: 12/12/96 End Date: 12/12/96

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1229		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
S	1.00	1234					X		X	X	X	X	X				X								X		
S	1.00	1239																		X							
S	1.00	1243			X																						
S	1.00	1248		X		X		X						X	X	X			X		X	X	X	X		X	
S	1.00	1254		X		X		X						X	X	X			X		X	X	X	X		X	
ICV	1.00	1306		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
ICB	1.00	1311		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CCV	1.00	1317		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CCB	1.00	1323		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CRI	1.00	1329			X			X	X		X	X	X				X		X			X			X	X	
ICSA	1.00	1338		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
ICSAB	1.00	1346		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CCV	1.00	1355		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CCB	1.00	1401		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
LCSS	1.00	1408		X	X		X	X	X		X	X	X	X		X	X		X	X		X	X		X	X	
LCSS	2.00	1414								X																	
MFGZ44S	1.00	1420			X		X	X	X		X	X	X				X		X			X			X	X	
MFGZ44D	1.00	1425		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MFGZ44	1.00	1429		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MFGZ44L	5.00	1434		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
PBS	1.00	1438		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CCV	1.00	1443		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CCB	1.00	1447		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MFGZ45	1.00	1452		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MFGZ46	1.00	1457		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MFGZ47	1.00	1501		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MFGZ49	1.00	1506		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MFGZ50	1.00	1510		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MFGZ56	1.00	1515		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MFGZ57	1.00	1519		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MFGZ58	1.00	1524		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	

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ANALYSIS RUN LOG

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.:MFGZ44

Instrument ID Number: TJA ICP 61___ Method: P_

Start Date: 12/12/96 End Date: 12/12/96

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
MFGZ64	1.00	1528		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MFGZ65	1.00	1533		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CCV	1.00	1537		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CCB	1.00	1542		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CRI	1.00	1548			X			X	X		X	X	X				X		X			X			X	X	
ICSA	1.00	1557		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
ICSAB	1.00	1605		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CCV	1.00	1614		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CCB	1.00	1620		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MFGZ48	1.00	1628		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MFGZ51	1.00	1632		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MFGZ52	1.00	1637		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MFGZ53	1.00	1641		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MFGZ54	1.00	1645		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MFGZ55	1.00	1650		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MFGZ59	1.00	1654		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MFGZ60	1.00	1659		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MFGZ63	1.00	1703		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MFGZ44A	1.00	1708			X																						
CCV	1.00	1712		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CCB	1.00	1717		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CRI	1.00	1722			X			X	X		X	X	X				X		X			X			X	X	
ICSA	1.00	1731		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
ICSAB	1.00	1742		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CCV	1.00	1751		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CCB	1.00	1757		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	

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ANALYSIS RUN LOG

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.:MFGZ44

Instrument ID Number: VARIAN2 300 _ Method: F_

Start Date: 12/14/96 End Date: 12/14/96

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	0948				X																					
S10	1.00	0952				X																					
S20	1.00	0957				X																					
S50	1.00	1002				X																					
ICV	2.00	1008				X																					
ICB	1.00	1012				X																					
CRA	1.00	1016				X																					
CRAA	1.00	1020	99.0			X																					
CCV	1.00	1025				X																					
CCB	1.00	1029				X																					
S0	1.00	1034				X																					
CCV	1.00	1039				X																					
CCB	1.00	1043				X																					
S0	1.00	1048				X																					
S20	1.00	1053				X																					
CCV	1.00	1058				X																					
CCB	1.00	1102				X																					
PBS	1.00	1107				X																					
PBSA	1.00	1111	110.5			X																					
LCSS	200.00	1116				X																					
LCSSA	200.00	1120	105.0			X																					
MFGZ44	1.00	1125				X																					
MFGZ44A	1.00	1129	105.0			X																					
MFGZ44D	1.00	1134				X																					
MFGZ44DA	1.00	1138	104.5			X																					
MFGZ44S	2.00	1143				X																					
MFGZ44SA	2.00	1147	104.0			X																					
CCV	1.00	1152				X																					
CCB	1.00	1156				X																					
MFGZ45	1.00	1201				X																					
MFGZ45A	1.00	1205	106.5			X																					
MFGZ46	1.00	1210				X																					

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ANALYSIS RUN LOG

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.:MFGZ44

Instrument ID Number: VARIAN2 300 _ Method: F_

Start Date: 12/14/96 End Date: 12/14/96

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
MFGZ46A_	1.00	1214	104.5			X																					
MFGZ47__	1.00	1219				X																					
MFGZ47A_	1.00	1223	101.5			X																					
MFGZ49__	1.00	1228				X																					
MFGZ49A_	1.00	1232	101.5			X																					
MFGZ50__	1.00	1237				X																					
MFGZ50A_	1.00	1241	100.5			X																					
CCV_____	1.00	1246				X																					
CCB_____	1.00	1250				X																					
MFGZ56__	1.00	1255				X																					
MFGZ56A_	1.00	1259	105.0			X																					
MFGZ57__	1.00	1304				X																					
MFGZ57A_	1.00	1308	94.5			X																					
MFGZ58__	1.00	1313				X																					
MFGZ58A_	1.00	1318	98.0			X																					
MFGZ64__	1.00	1322				X																					
MFGZ64A_	1.00	1327	100.5			X																					
MFGZ65__	1.00	1331				X																					
MFGZ65A_	1.00	1336	100.5			X																					
CCV_____	1.00	1341				X																					
CCB_____	1.00	1345				X																					
MFGZ48__	1.00	1350				X																					
MFGZ48A_	1.00	1354	106.0			X																					
MFGZ51__	1.00	1359				X																					
MFGZ51A_	1.00	1403	104.0			X																					
MFGZ52__	1.00	1408				X																					
MFGZ52A_	1.00	1413	106.0			X																					
MFGZ53__	1.00	1417				X																					
MFGZ53A_	1.00	1422	101.5			X																					
MFGZ54__	1.00	1426				X																					
MFGZ54A_	1.00	1431	97.0			X																					
CCV_____	1.00	1436				X																					

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ANALYSIS RUN LOG

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.:MFGZ44

Instrument ID Number: VARIAN2 300 _ Method: F_

Start Date: 12/14/96 End Date: 12/14/96

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
CCB	1.00	1440				X																					
MFGZ55	1.00	1445				X																					
MFGZ55A	1.00	1449	101.0			X																					
MFGZ59	1.00	1454				X																					
MFGZ59A	1.00	1458	98.0			X																					
MFGZ60	1.00	1503				X																					
MFGZ60A	1.00	1508	97.0			X																					
MFGZ63	1.00	1512				X																					
MFGZ63A	1.00	1517	103.0			X																					
ZZZZZZ	1.00	1521																									
ZZZZZZA	1.00	1526	100.5																								
CCV	1.00	1531				X																					
CCB	1.00	1536				X																					
S0	1.00	1541				X																					
CCV	1.00	1546				X																					
CCB	1.00	1550				X																					
ZZZZZZ	1.00	1555																									
ZZZZZZA	1.00	1559	102.5																								
ZZZZZZ	2.00	1604																									
ZZZZZZA	2.00	1608	102.5																								
ZZZZZZ	1.00	1613																									
ZZZZZZA	1.00	1617	109.5																								
ZZZZZZ	200.00	1622																									
ZZZZZZA	200.00	1626	102.5																								
CCV	1.00	1631				X																					
CCB	1.00	1635				X																					

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ANALYSIS RUN LOG

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.:MFGZ44

Instrument ID Number: TJA SH11 GFA_ Method: F_

Start Date: 12/15/96 End Date: 12/15/96

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1037													X												
S3	1.00	1045													X												
S10	1.00	1049													X												
S20	1.00	1053													X												
S75	1.00	1057													X												
S50	1.00	1102													X												
ICV	5.00	1106													X												
ICB	1.00	1110													X												
CRA	1.00	1115													X												
CRAA	1.00	1119	98.8												X												
CCV	1.00	1124													X												
CCB	1.00	1128													X												
PBS	1.00	1132													X												
PBSA	1.00	1136	108.3												X												
LCSS	50.00	1141													X												
LCSSA	50.00	1145	90.3												X												
MFGZ44	1.00	1149													X												
MFGZ44A	1.00	1153	96.3												X												
MFGZ44D	1.00	1158													X												
MFGZ44DA	1.00	1202	105.0												X												
MFGZ44S	2.00	1206													X												
MFGZ44SA	2.00	1210	105.3												X												
CCV	1.00	1215													X												
CCB	1.00	1219													X												
MFGZ58	10000.00	1223													X												
MFGZ58A	10000.00	1227	100.0												X												
MFGZ57	50.00	1231													X												
MFGZ57A	50.00	1235	98.3												X												
MFGZ64	50.00	1240													X												
MFGZ64A	50.00	1244	95.5												X												
MFGZ65	50.00	1248													X												
MFGZ65A	50.00	1252	103.8												X												

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ANALYSIS RUN LOG

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.:MFGZ44

Instrument ID Number: TJA SH11 GFA_ Method: F_

Start Date: 12/15/96 End Date: 12/15/96

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	1256																									
ZZZZZZA	1.00	1300	109.8																								
CCV	1.00	1305													X												
CCB	1.00	1309													X												
MFGZ45	1.00	1313													X												
MFGZ45A	1.00	1317	104.0												X												
MFGZ46	1.00	1321																									
MFGZ46A	1.00	1325	-9999.9																								
MFGZ49	1.00	1330													X												
MFGZ49A	1.00	1334	105.5												X												
MFGZ50	1.00	1338																									
MFGZ50A	1.00	1342	-9999.9																								
MFGZ56	20.00	1346													X												
MFGZ56A	20.00	1350	98.3												X												
CCV	1.00	1355													X												
CCB	1.00	1359													X												
S50	1.00	1403													X												
CCV	1.00	1407													X												
CCB	1.00	1412													X												
MFGZ52	1.00	1417													X												
MFGZ52A	1.00	1422	98.5												X												
MFGZ55	1.00	1427													X												
MFGZ55A	1.00	1432	93.5												X												
MFGZ51	2.00	1437																									
MFGZ51A	2.00	1442	-9999.9																								
MFGZ53	5.00	1447													X												
MFGZ53A	5.00	1452	92.8												X												
MFGZ54	2.00	1457																									
MFGZ54A	2.00	1502	-9999.9																								
CCV	1.00	1508													X												
CCB	1.00	1511													X												
MFGZ47	20.00	1514													X												

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ANALYSIS RUN LOG

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.:MFGZ44

Instrument ID Number: TJA SH11 GFA_ Method: F_

Start Date: 12/15/96 End Date: 12/15/96

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
MFGZ47A_	20.00	1518	87.8												X												
MFGZ48__	10.00	1521													X												
MFGZ48A_	10.00	1524	95.5												X												
MFGZ59__	5.00	1528													X												
MFGZ59A_	5.00	1531	90.0												X												
MFGZ60__	10.00	1534													X												
MFGZ60A_	10.00	1538	90.5												X												
MFGZ63__	5.00	1541													X												
MFGZ63A_	5.00	1544	89.5												X												
CCV_____	1.00	1548													X												
CCB_____	1.00	1552													X												
MFGZ46__	5.00	1556													X												
MFGZ46A_	5.00	1600	92.3												X												
MFGZ50__	5.00	1604													X												
MFGZ50A_	5.00	1609	100.0												X												
MFGZ51__	5.00	1613													X												
MFGZ51A_	5.00	1617	98.5												X												
MFGZ54__	5.00	1621													X												
MFGZ54A_	5.00	1625	103.0												X												
CCV_____	1.00	1630													X												
CCB_____	1.00	1634													X												

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ANALYSIS RUN LOG

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.:MFGZ44

Instrument ID Number: VARIAN1 300 _ Method: F_

Start Date: 12/14/96 End Date: 12/14/96

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	0957																			X						
S5	1.00	1001																			X						
S10	1.00	1006																			X						
S20	1.00	1010																			X						
S50	1.00	1015																			X						
ICV	2.00	1020																			X						
ICB	1.00	1024																			X						
CRA	1.00	1029																			X						
CRAA	1.00	1033	99.0																		X						
CCV	1.00	1038																			X						
CCB	1.00	1042																			X						
S0	1.00	1047																			X						
CCV	1.00	1052																			X						
CCB	1.00	1056																			X						
PBS	1.00	1101																			X						
PBSA	1.00	1105	100.0																		X						
LCSS	20.00	1110																			X						
LCSSA	20.00	1114	89.0																		X						
MFGZ44	1.00	1119																			X						
MFGZ44A	1.00	1124	88.0																		X						
MFGZ44D	1.00	1128																			X						
MFGZ44DA	1.00	1133	95.0																		X						
MFGZ44S	1.00	1137																			X						
MFGZ44SA	1.00	1142	88.0																		X						
CCV	1.00	1147																			X						
CCB	1.00	1151																			X						
MFGZ45	1.00	1156																			X						
MFGZ45A	1.00	1200	90.0																		X						
MFGZ46	1.00	1205																			X						
MFGZ46A	1.00	1209	89.0																		X						
MFGZ47	1.00	1214																			X						
MFGZ47A	1.00	1218	78.0																		X						

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ANALYSIS RUN LOG

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.:MFGZ44

Instrument ID Number: VARIAN1 300 _ Method: F_

Start Date: 12/14/96 End Date: 12/14/96

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
MFGZ49	1.00	1223																			X						
MFGZ49A	1.00	1227	82.0																		X						
MFGZ50	1.00	1232																			X						
MFGZ50A	1.00	1236	91.0																		X						
CCV	1.00	1241																			X						
CCB	1.00	1245																			X						
S0	1.00	1250																			X						
CCV	1.00	1255																			X						
CCB	1.00	1259																			X						
MFGZ56	1.00	1304																			X						
MFGZ56A	1.00	1309	88.0																		X						
MFGZ57	1.00	1313																			X						
MFGZ57A	1.00	1318	81.0																		X						
MFGZ58	1.00	1323																			X						
MFGZ58A	1.00	1327	62.0																		X						
MFGZ64	1.00	1332																			X						
MFGZ64A	1.00	1337	75.0																		X						
MFGZ65	1.00	1341																			X						
MFGZ65A	1.00	1346	79.0																		X						
CCV	1.00	1351																			X						
CCB	1.00	1355																			X						
MFGZ48	1.00	1400																			X						
MFGZ48A	1.00	1404	92.0																		X						
MFGZ51	1.00	1409																			X						
MFGZ51A	1.00	1413	93.0																		X						
MFGZ52	1.00	1418																			X						
MFGZ52A	1.00	1423	93.0																		X						
MFGZ53	1.00	1427																			X						
MFGZ53A	1.00	1432	84.0																		X						
MFGZ54	1.00	1436																			X						
MFGZ54A	1.00	1441	79.0																		X						
CCV	1.00	1446																			X						

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ANALYSIS RUN LOG

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.:MFGZ44

Instrument ID Number: VARIAN1 300 _ Method: F_

Start Date: 12/14/96 End Date: 12/14/96

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
CCB	1.00	1450																			X						
MFGZ55	1.00	1455																			X						
MFGZ55A	1.00	1500	90.0																		X						
MFGZ59	1.00	1504																			X						
MFGZ59A	1.00	1509	60.0																		X						
MFGZ60	1.00	1514																			X						
MFGZ60A	1.00	1518	63.0																		X						
MFGZ63	1.00	1523																			X						
MFGZ63A	1.00	1528	91.0																		X						
ZZZZZZ	1.00	1532																									
ZZZZZZA	1.00	1537	92.0																								
CCV	1.00	1542																			X						
CCB	1.00	1547																			X						
S0	1.00	1552																			X						
CCV	1.00	1557																			X						
CCB	1.00	1601																			X						
ZZZZZZ	1.00	1606																									
ZZZZZZA	1.00	1610	98.0																								
ZZZZZZ	1.00	1615																									
ZZZZZZA	1.00	1619	94.0																								
ZZZZZZ	1.00	1624																									
ZZZZZZA	1.00	1628	107.0																								
ZZZZZZ	10.00	1633																									
ZZZZZZA	10.00	1637	83.0																								
CCV	1.00	1642																			X						
CCB	1.00	1646																			X						

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ANALYSIS RUN LOG

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.:MFGZ44

Instrument ID Number: VARIAN2 300 _ Method: F_

Start Date: 12/15/96 End Date: 12/15/96

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1014																						X			
S10	1.00	1018																						X			
S20	1.00	1023																						X			
S50	1.00	1028																						X			
ICV	5.00	1028																						X			
ICB	1.00	1033																						X			
CRA	1.00	1039																						X			
CRAA	1.00	1044	95.5																					X			
CCV	1.00	1050																						X			
CCB	1.00	1055																						X			
S0	1.00	1100																						X			
CCV	1.00	1105																						X			
CCB	1.00	1109																						X			
PBS	1.00	1113																						X			
PBSA	1.00	1118	102.0																					X			
LCSS	10.00	1122																						X			
LCSSA	10.00	1127	86.5																					X			
MFGZ44	1.00	1131																						X			
MFGZ44A	1.00	1135	93.0																					X			
MFGZ44D	1.00	1140																						X			
MFGZ44DA	1.00	1144	93.5																					X			
MFGZ44S	5.00	1149																									
MFGZ44SA	5.00	1153	91.5																								
CCV	1.00	1158																						X			
CCB	1.00	1203																						X			
S0	1.00	1208																						X			
CCV	1.00	1213																						X			
CCB	1.00	1217																						X			
S0	1.00	1222																						X			
S20	1.00	1227																						X			
CCV	1.00	1232																						X			
CCB	1.00	1236																						X			

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14
ANALYSIS RUN LOG

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.:MFGZ44

Instrument ID Number: VARIAN2 300 _ Method: F_

Start Date: 12/15/96 End Date: 12/15/96

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
MFGZ44S_	2.00	1241																						X			
MFGZ44SA	2.00	1245	97.0																					X			
MFGZ45__	1.00	1250																						X			
MFGZ45A_	1.00	1254	98.0																					X			
MFGZ46__	1.00	1259																						X			
MFGZ46A_	1.00	1303	103.5																					X			
MFGZ47__	1.00	1308																						X			
MFGZ47A_	1.00	1312	80.5																					X			
MFGZ49__	1.00	1317																						X			
MFGZ49A_	1.00	1321	103.5																					X			
CCV_____	1.00	1326																						X			
CCB_____	1.00	1330																						X			
MFGZ50__	1.00	1335																						X			
MFGZ50A_	1.00	1339	99.5																					X			
MFGZ56__	1.00	1344																						X			
MFGZ56A_	1.00	1348	102.5																					X			
MFGZ57__	1.00	1353																						X			
MFGZ57A_	1.00	1357	89.0																					X			
MFGZ58__	1.00	1402																									
MFGZ58A_	1.00	1406	1.0																								
MFGZ64__	1.00	1411																						X			
MFGZ64A_	1.00	1415	83.0																					X			
CCV_____	1.00	1420																						X			
CCB_____	1.00	1424																						X			
MFGZ65__	1.00	1429																						X			
MFGZ65A_	1.00	1433	91.5																					X			
MFGZ48__	1.00	1438																						X			
MFGZ48A_	1.00	1442	105.5																					X			
MFGZ51__	1.00	1447																						X			
MFGZ51A_	1.00	1452	105.0																					X			
MFGZ52__	1.00	1456																						X			
MFGZ52A_	1.00	1501	106.5																					X			

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14
ANALYSIS RUN LOG

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.:MFGZ44

Instrument ID Number: VARIAN2 300 _ Method: F_

Start Date: 12/15/96 End Date: 12/15/96

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
MFGZ53__	1.00	1505																						X			
MFGZ53A_	1.00	1510	98.0																					X			
CCV_____	1.00	1515																						X			
CCB_____	1.00	1519																						X			
MFGZ54__	1.00	1524																						X			
MFGZ54A_	1.00	1528	103.0																					X			
MFGZ55__	1.00	1533																						X			
MFGZ55A_	1.00	1537	91.5																					X			
MFGZ59__	1.00	1542																						X			
MFGZ59A_	1.00	1547	85.0																					X			
MFGZ60__	1.00	1551																						X			
MFGZ60A_	1.00	1556	95.5																					X			
MFGZ63__	1.00	1600																						X			
MFGZ63A_	1.00	1605	103.5																					X			
CCV_____	1.00	1610																						X			
CCB_____	1.00	1614																						X			
MFGZ58__	5.00	1618																						X			
MFGZ58A_	5.00	1622	91.5																					X			
CCV_____	1.00	1627																						X			
CCB_____	1.00	1632																						X			

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14
ANALYSIS RUN LOG

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.:MFGZ44

Instrument ID Number: BUCK MERCURY_ Method: CV

Start Date: 12/04/96 End Date: 12/04/96

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1338																X									
S0.2	1.00	1341																X									
S0.5	1.00	1342																X									
S1	1.00	1345																X									
S5	1.00	1347																X									
S10	1.00	1348																X									
ICV	1.00	1351																X									
ICB	1.00	1353																X									
CCV	1.00	1354																X									
CCB	1.00	1356																X									
CRA	1.00	1358																X									
PBS	1.00	1400																X									
LCSS	5.00	1402																X									
MFGZ44	1.00	1405																X									
MFGZ44D	1.00	1406																X									
MFGZ44S	1.00	1408																X									
MFGZ45	1.00	1421																X									
MFGZ46	1.00	1423																X									
MFGZ47	1.00	1425																X									
MFGZ49	1.00	1427																X									
CCV	1.00	1429																X									
CCB	1.00	1431																X									
CCV	1.00	1442																X									
CCB	1.00	1444																X									
MFGZ50	1.00	1447																X									
MFGZ56	1.00	1449																X									
MFGZ57	1.00	1451																X									
MFGZ58	1.00	1453																X									
MFGZ64	1.00	1455																X									
MFGZ65	1.00	1457																X									
MFGZ48	1.00	1459																X									
MFGZ51	1.00	1501																X									

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ANALYSIS RUN LOG

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.:MFGZ44

Instrument ID Number: BUCK MERCURY_ Method: CV

Start Date: 12/04/96 End Date: 12/04/96

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
MFGZ52	1.00	1503																X									
MFGZ53	1.00	1505																X									
CCV	1.00	1507																X									
CCB	1.00	1509																X									
MFGZ54	1.00	1511																X									
MFGZ55	1.00	1513																X									
MFGZ59	1.00	1515																X									
MFGZ60	1.00	1518																X									
MFGZ63	1.00	1520																X									
ZZZZZZ	1.00	1522																									
ZZZZZZ	5.00	1524																									
ZZZZZZ	1.00	1526																									
ZZZZZZ	1.00	1528																									
ZZZZZZ	1.00	1531																									
CCV	1.00	1532																X									
CCB	1.00	1534																X									

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ANALYSIS RUN LOG

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.:MFGZ44

Instrument ID Number: CYANIDE SPEC_ Method: CA

Start Date: 11/26/96 End Date: 11/26/96

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1148																									X
S5	1.00	1149																									X
S10	1.00	1150																									X
S50	1.00	1151																									X
S100	1.00	1152																									X
S200	1.00	1153																									X
ICV	1.00	1153																									X
ICB	1.00	1154																									X
CCV	1.00	1155																									X
CCB	1.00	1155																									X
PBS	1.00	1156																									X
DMLS	1.00	1157																									X
LCSS	1.00	1157																									X
ZZZZZZ	1.00	1158																									
ZZZZZZ	1.00	1159																									
ZZZZZZ	1.00	1200																									
ZZZZZZ	1.00	1200																									
MFGZ44	1.00	1201																									X
MFGZ44D	1.00	1202																									X
CCV	1.00	1203																									X
CCB	1.00	1203																									X
MFGZ44S	1.00	1204																									
MFGZ44S	1.00	1205																									X
MFGZ45	1.00	1206																									X
MFGZ46	1.00	1207																									X
MFGZ47	1.00	1207																									X
MFGZ49	1.00	1208																									X
MFGZ50	1.00	1209																									X
MFGZ56	1.00	1210																									X
CCV	1.00	1211																									X
CCB	1.00	1211																									X
MFGZ57	1.00	1212																									X

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ANALYSIS RUN LOG

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.:MFGZ44

Instrument ID Number: CYANIDE SPEC_ Method: CA

Start Date: 11/26/96 End Date: 11/26/96

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
MFGZ58	1.00	1213																									X
CCV	1.00	1214																									X
CCB	1.00	1215																									X

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ANALYSIS RUN LOG

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.:MFGZ44

Instrument ID Number: CYANIDE SPEC_ Method: CA

Start Date: 11/26/96 End Date: 11/26/96

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1452																									X
S5	1.00	1453																									X
S10	1.00	1454																									X
S50	1.00	1455																									X
S100	1.00	1456																									X
S200	1.00	1457																									X
ICV	1.00	1457																									X
ICB	1.00	1458																									X
CCV	1.00	1459																									X
CCB	1.00	1459																									X
ZZZZZZ	1.00	1500																									
DMLS	1.00	1501																									X
ZZZZZZ	1.00	1502																									
ZZZZZZ	1.00	1503																									
ZZZZZZ	1.00	1503																									
ZZZZZZ	1.00	1504																									
PBS	1.00	1505																									X
LCSS	1.00	1506																									X
MFGZ64	1.00	1507																									X
CCV	1.00	1508																									X
CCB	1.00	1508																									X
MFGZ65	1.00	1509																									X
MFGZ48	1.00	1510																									X
MFGZ51	1.00	1510																									X
MFGZ52	1.00	1511																									X
MFGZ53	1.00	1512																									X
MFGZ54	1.00	1513																									X
MFGZ55	1.00	1513																									X
MFGZ59	1.00	1514																									X
MFGZ60	1.00	1515																									X
CCV	1.00	1516																									X
CCB	1.00	1516																									X

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14
ANALYSIS RUN LOG

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.:MFGZ44

Instrument ID Number: CYANIDE SPEC_ Method: CA

Start Date: 11/26/96 End Date: 11/26/96

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
MFGZ63	1.00	1517																									X
CCV	1.00	1518																									X
CCB	1.00	1519																									X

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Quarterly Verification of Instrument Parameters

Case No: 25159

SDG: MFGZ44

ANALYTICAL RESOURCES, INC.
Contract: 68-D5-0134

000073

333 Ninth Avenue North • Seattle WA 98109-5187 • **206-621-6490** • **206-621-7523** fax

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10
Instrument Detection Limits (Quarterly)

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

ICP ID Number: TJA_ICP_61__ Date: 10/15/96

Flame AA ID Number : _____

Furnace AA ID Number : _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.22		200	20.0	P
Antimony	206.84		60	50.0	P
Arsenic			10		NR
Barium	455.50		200	1.0	P
Beryllium	313.04		5	1.0	P
Cadmium	228.80		5	2.0	P
Calcium	317.93		5000	20.0	P
Chromium	267.72		10	5.0	P
Cobalt	228.62		50	3.0	P
Copper	324.75		25	2.0	P
Iron	259.94		100	20.0	P
Lead			3		NR
Magnesium	279.08		5000	20.0	P
Manganese	257.61		15	1.0	P
Mercury			0.2		NR
Nickel	231.60		40	10.0	P
Potassium	766.49		5000	400.0	P
Selenium			5		NR
Silver	328.07		10	3.0	P
Sodium	589.00		5000	50.0	P
Thallium			10		NR
Vanadium	292.40		50	2.0	P
Zinc	213.86		20	4.0	P
Cyanide			10		NR

Comments:

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10
Instrument Detection Limits (Quarterly)

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

ICP ID Number: _____ Date: 10/15/96

Flame AA ID Number : _____

Furnace AA ID Number : TJA_SH11_GFA

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic			10		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead	283.30	BS	3	1.0	F
Magnesium			5000		NR
Manganese			15		NR
Mercury			0.2		NR
Nickel			40		NR
Potassium			5000		NR
Selenium			5		NR
Silver			10		NR
Sodium			5000		NR
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR
Cyanide			10		NR

Comments:

U.S. EPA - CLP

10
Instrument Detection Limits (Quarterly)

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

ICP ID Number: _____ Date: 10/15/96

Flame AA ID Number : _____

Furnace AA ID Number : VARIAN1_300_

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic			10		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			3		NR
Magnesium			5000		NR
Manganese			15		NR
Mercury			0.2		NR
Nickel			40		NR
Potassium			5000		NR
Selenium	196.00	BZ	5	1.0	F
Silver			10		NR
Sodium			5000		NR
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR
Cyanide			10		NR

Comments:

10
Instrument Detection Limits (Quarterly)

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

ICP ID Number: _____ Date: 10/15/96

Flame AA ID Number : BUCK_MERCURY

Furnace AA ID Number : _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic			10		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			3		NR
Magnesium			5000		NR
Manganese			15		NR
Mercury	253.70		0.2	0.1	CV
Nickel			40		NR
Potassium			5000		NR
Selenium			5		NR
Silver			10		NR
Sodium			5000		NR
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR
Cyanide			10		NR

Comments:

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10
Instrument Detection Limits (Quarterly)

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

ICP ID Number: _____ Date: 10/15/96

Flame AA ID Number : _____

Furnace AA ID Number : VARIAN2_300_

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic	193.70	BZ	10	1.0	F
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			3		NR
Magnesium			5000		NR
Manganese			15		NR
Mercury			0.2		NR
Nickel			40		NR
Potassium			5000		NR
Selenium			5		NR
Silver			10		NR
Sodium			5000		NR
Thallium	276.80	BZ	10	1.0	F
Vanadium			50		NR
Zinc			20		NR
Cyanide			10		NR

Comments:

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10
Instrument Detection Limits (Quarterly)

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

ICP ID Number: _____ Date: 10/15/96

Flame AA ID Number : CYANIDE_SPEC

Furnace AA ID Number : _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic			10		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			3		NR
Magnesium			5000		NR
Manganese			15		NR
Mercury			0.2		NR
Nickel			40		NR
Potassium			5000		NR
Selenium			5		NR
Silver			10		NR
Sodium			5000		NR
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR
Cyanide	620.00		10	5.0	CA

Comments:

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11A
ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

ICP ID Number: TJA ICP 61__ Date: 10/27/96

Analyte	Wave-length (nm)	Interelement Correction Factors for : Al	Ca	Fe	Mg	AS_
Aluminum_	308.22	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony_	206.84	0.0000000	0.0001250	-0.0010330	0.0000907	0.0000000
Arsenic__	197.20	0.0006500	0.0000000	0.0006860	0.0000000	0.0000000
Barium___	455.50	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium__	228.80	0.0000000	0.0000000	0.0000000	-0.0000070	0.0061540
Calcium__	317.93	0.0000000	0.0000000	0.0001450	0.0000000	0.0000000
Chromium_	267.72	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cobalt___	228.62	0.0000000	0.0000000	0.0000656	0.0000000	0.0000000
Copper___	324.75	0.0000000	0.0000000	-0.0001400	0.0000000	0.0000000
Iron____	259.94	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead____	220.35	0.0015820	0.0000000	0.0001250	0.0000000	0.0000000
Magnesium	279.08	0.0000000	0.0000000	0.0001250	0.0000000	0.0000000
Manganese	257.61	0.0000072	0.0000000	0.0001580	0.0000185	0.0000000
Mercury__						
Nickel___	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium_	196.02	0.0001170	0.0001040	-0.0014160	0.0004450	0.0000000
Silver___	328.07	0.0000000	0.0000000	-0.0001970	0.0000000	0.0000000
Sodium___	589.00	0.0000000	-0.0027600	0.0000000	0.0000000	0.0000000
Thallium_	190.86	-0.0002800	0.0000000	0.0037240	0.0003040	0.0000000
Vanadium_	292.40	0.0000000	0.0000000	0.0001550	0.0000000	0.0000000
Zinc____	213.86	0.0000000	0.0000000	0.0001010	0.0000000	0.0000000

Comments:

U.S. EPA - CLP

11B
ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

ICP ID Number: TJA ICP 61__ Date: 10/27/96

Analyte	Wave-length (nm)	Interelement Correction Factors for : BA_	BE_	CD_	CO_	CR_
Aluminum	308.22	0.0000000	0.0000000	0.0000000	-0.0092870	0.0000000
Antimony	206.84	0.0000000	0.0000000	0.0000000	0.0000000	0.0010240
Arsenic	197.20	0.0000000	0.0000000	0.0000000	0.0080230	0.0000000
Barium	455.50	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000090
Cadmium	228.80	0.0000000	0.0043650	0.0000000	0.0007290	0.0000000
Calcium	317.93	0.0000000	0.0000000	0.0000000	0.0000000	0.0006970
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cobalt	228.62	0.0007680	0.0000000	0.0008230	0.0000000	0.0003270
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000130	0.0000000
Iron	259.94	0.0000000	0.0000000	0.0000000	0.0000000	0.0000540
Lead	220.35	0.0000000	0.0000000	0.0000000	-0.0340380	-0.0020700
Magnesium	279.08	0.0000000	0.0000000	0.0000000	-0.0016420	-0.0010290
Manganese	257.61	0.0000000	0.0000000	0.0000000	0.0003330	0.0000220
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0019020	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.02	0.0000000	0.0000000	0.0000000	-0.0011060	0.0000000
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	0.0000130
Sodium	589.00	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.86	0.0000000	0.0000000	0.0000000	0.0059240	0.0007010
Vanadium	292.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0002770
Zinc	213.86	0.0000000	0.0000000	-0.0001850	-0.0000660	0.0000204

Comments:

U.S. EPA - CLP

11B
ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

ICP ID Number: TJA ICP 61__ Date: 10/27/96

Analyte	Wave-length (nm)	Interelement Correction Factors for : CU_	MN_	MO_	NI_	PB_
Aluminum_	308.22	0.0000000	0.0015000	0.0097740	0.0000000	0.0000000
Antimony_	206.84	0.0000000	0.0000000	0.0019160	0.0000000	0.0000000
Arsenic__	197.20	0.0000000	0.0000000	0.0042420	0.0000000	0.0094070
Barium___	455.50	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Beryllium	313.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium__	228.80	0.0000000	0.0000000	0.0000000	-0.0002400	0.0000000
Calcium__	317.93	0.0000000	0.0000000	0.0003410	0.0000000	0.0000000
Chromium_	267.72	0.0000000	0.0000000	-0.0025290	0.0000000	0.0000000
Cobalt___	228.62	0.0000000	0.0000000	0.0001610	0.0005820	0.0000000
Copper___	324.75	0.0000000	0.0000000	0.0003160	0.0000000	0.0000000
Iron_____	259.94	0.0000000	-0.0103530	0.0004229	0.0000000	0.0000000
Lead_____	220.35	-0.0021300	0.0000000	-0.0008810	0.0000000	0.0000000
Magnesium	279.08	0.0000000	-0.0032930	-0.0104470	0.0000000	0.0000000
Manganese	257.61	0.0000000	0.0000000	-0.0002253	0.0000000	0.0000000
Mercury__						
Nickel___	231.60	0.0000000	0.0000000	-0.0001900	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium_	196.02	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silver___	328.07	0.0000000	0.0001600	0.0000570	0.0000000	0.0000000
Sodium___	589.00	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium_	190.86	0.0000000	-0.0113100	-0.0012500	0.0000000	0.0000000
Vanadium_	292.40	0.0000000	-0.0001200	-0.0105230	0.0000000	0.0000000
Zinc_____	213.86	0.0031750	0.0000000	-0.0000720	0.0033520	0.0000000

Comments:

U.S. EPA - CLP

11B
ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

ICP ID Number: TJA ICP 61__ Date: 10/27/96

Analyte	Wave-length (nm)	Interelement Correction Factors for : SB_	TI_	TL_	V__	___
Aluminum_	308.22	0.0000000	0.0000000	0.0000000	-0.0246900	
Antimony_	206.84	0.0000000	0.0000000	0.0000000	0.0000000	
Arsenic__	197.20	0.0008600	0.0000000	0.0000000	0.0052830	
Barium___	455.50	0.0000000	0.0000000	0.0000000	0.0000000	
Beryllium	313.04	0.0000000	0.0000000	0.0000000	0.0041490	
Cadmium__	228.80	0.0000000	0.0000000	0.0000000	0.0000000	
Calcium__	317.93	0.0000000	0.0000000	0.0000000	0.0000000	
Chromium_	267.72	0.0000000	0.0000000	0.0000000	0.0007600	
Cobalt___	228.62	0.0000000	0.0017500	0.0000000	0.0000000	
Copper___	324.75	0.0000000	-0.0008740	0.0000000	0.0000000	
Iron____	259.94	0.0000000	0.0000000	0.0000000	0.1429330	
Lead____	220.35	-0.0017550	0.0000000	0.0000000	0.0000000	
Magnesium	279.08	0.0000000	0.0000000	0.0000000	0.0000000	
Manganese	257.61	0.0000000	0.0000000	0.0000000	-0.0001770	
Mercury__						
Nickel___	231.60	0.0000000	0.0000000	0.0006580	0.0000000	
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	
Selenium_	196.02	0.0000000	0.0000000	0.0000000	0.0000000	
Silver___	328.07	0.0000000	0.0000000	0.0000000	-0.0050300	
Sodium___	589.00	0.0000000	-0.2905300	0.0000000	0.0000000	
Thallium_	190.86	0.0000000	0.0000000	0.0000000	0.0038570	
Vanadium_	292.40	0.0000000	0.0004600	0.0000000	0.0000000	
Zinc____	213.86	0.0000000	0.0000000	0.0000000	0.0000000	

Comments:

U.S. EPA - CLP

12
ICP LINEAR RANGES (QUARTERLY)

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68D50134__

Lab Code: ARI___ Case No.: 25159_ SAS No.: _____ SDG No.: MFGZ44

ICP ID Number: TJA ICP 61__ Date: 10/15/96

Analyte	Integ. Time (sec.)	Concentration (ug/L)	M
Aluminum	7.00	650000.0	P
Antimony	7.00	500000.0	P
Arsenic	7.00	750000.0	P
Barium	7.00	250000.0	P
Beryllium	7.00	20000.0	P
Cadmium	7.00	150000.0	P
Calcium	7.00	500000.0	P
Chromium	7.00	500000.0	P
Cobalt	7.00	300000.0	P
Copper	7.00	40000.0	P
Iron	7.00	500000.0	P
Lead	7.00	600000.0	P
Magnesium	7.00	750000.0	P
Manganese	7.00	40000.0	P
Mercury			NR
Nickel	7.00	50000.0	P
Potassium	7.00	500000.0	P
Selenium	7.00	300000.0	P
Silver	7.00	8000.0	P
Sodium	7.00	500000.0	P
Thallium	7.00	250000.0	P
Vanadium	7.00	30000.0	P
Zinc	7.00	100000.0	P

Comments:

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Raw Data

Case No: 25159

SDG: MFGZ44

ANALYTICAL RESOURCES, INC.
Contract: 68-D5-0134

333 Ninth Avenue North • Seattle WA 98109-5187 • **206-621-6490** • **206-621-7523** fax

CALCULATED DATA FROM FILE: C:\LIMS\IP961212.DBF

7 5373

JOB	SAMP	ELEMENT	PREPCODE			RAWVALUE	CALCULATED	UNITS	DILUTION	MASS	INITVOL	FINLVOL	%SOLIDS
5373	REF1	AG	SCC	I		0.1197300	23.8743769	mg/kg-dry	1.00	1.0030	0.00	200.00	100.00
5373	REF1	AL	SCC	I		1.4766000	294.4366899	mg/kg-dry	1.00	1.0030	0.00	200.00	100.00
5373	REF1	AS	SCC	I		4.3647400	870.3369890	mg/kg-dry	1.00	1.0030	0.00	200.00	100.00
5373	REF1	B	SCC	I		0.0418000	8.3349950	mg/kg-dry	1.00	1.0030	0.00	200.00	100.00
5373	REF1	BA	SCC	I		0.0242800	4.8414756	mg/kg-dry	1.00	1.0030	0.00	200.00	100.00
5373	REF1	BE	SCC	I		0.0827800	16.5064806	mg/kg-dry	1.00	1.0030	0.00	200.00	100.00
5373	REF1	CA	SCC	I		~~807.0584100~~ 440.5	~~160938.8953141~~ 175679.0810868	mg/kg-dry	~~1.00~~ 2.00	1.0030	0.00	200.00	100.00
5373	REF1	CD	SCC	I		0.1939000	38.6640080	mg/kg-dry	1.00	1.0030	0.00	200.00	100.00
5373	REF1	CO	SCC	I		0.6289600	125.4157527	mg/kg-dry	1.00	1.0030	0.00	200.00	100.00
5373	REF1	CR	SCC	I		0.4477800	89.2881356	mg/kg-dry	1.00	1.0030	0.00	200.00	100.00
5373	REF1	CU	SCC	I		32.6084500	6502.1834497	mg/kg-dry	1.00	1.0030	0.00	200.00	100.00
5373	REF1	FE	SCC	I		91.8394600	18312.9531406	mg/kg-dry	1.00	1.0030	0.00	200.00	100.00
5373	REF1	K	SCC	I	U	0.4000000	79.7607178	mg/kg-dry	1.00	1.0030	0.00	200.00	100.00
5373	REF1	MG	SCC	I		502.8594000	100271.0667996	mg/kg-dry	1.00	1.0030	0.00	200.00	100.00
5373	REF1	MN	SCC	I		0.9325400	185.9501496	mg/kg-dry	1.00	1.0030	0.00	200.00	100.00
5373	REF1	MO	SCC	I		0.2205700	43.9820538	mg/kg-dry	1.00	1.0030	0.00	200.00	100.00
5373	REF1	NA	SCC	I		0.1450400	28.9212363	mg/kg-dry	1.00	1.0030	0.00	200.00	100.00
5373	REF1	NI	SCC	I		0.2526000	50.3688933	mg/kg-dry	1.00	1.0030	0.00	200.00	100.00
5373	REF1	PB	SCC	I		0.9597300	191.3718843	mg/kg-dry	1.00	1.0030	0.00	200.00	100.00
5373	REF1	SB	SCC	I		0.9787300	195.1605184	mg/kg-dry	1.00	1.0030	0.00	200.00	100.00
5373	REF1	SE	SCC	I		0.1116500	22.2632104	mg/kg-dry	1.00	1.0030	0.00	200.00	100.00
5373	REF1	SI	SCC	I		2.1602100	430.7497507	mg/kg-dry	1.00	1.0030	0.00	200.00	100.00
5373	REF1	SN	SCC	I		0.0235900	4.7038883	mg/kg-dry	1.00	1.0030	0.00	200.00	100.00
5373	REF1	SR	SCC	I		0.2488000	49.6111665	mg/kg-dry	1.00	1.0030	0.00	200.00	100.00
5373	REF1	TI	SCC	I		0.0857400	17.0967099	mg/kg-dry	1.00	1.0030	0.00	200.00	100.00
5373	REF1	TL	SCC	I		0.1981000	39.5014955	mg/kg-dry	1.00	1.0030	0.00	200.00	100.00
5373	REF1	V	SCC	I		0.3081700	61.4496510	mg/kg-dry	1.00	1.0030	0.00	200.00	100.00
5373	REF1	ZN	SCC	I		0.7376200	147.0827517	mg/kg-dry	1.00	1.0030	0.00	200.00	100.00
5373	ASPK	AG	SCC	I		0.0456000	11.0911665	mg/kg-dry	1.00	1.0040	0.00	200.00	81.90
5373	ASPK	AL	SCC	I		9.5495000	2322.6994343	mg/kg-dry	1.00	1.0040	0.00	200.00	81.90
5373	ASPK	AS	SCC	I		1.8583500	452.0015177	mg/kg-dry	1.00	1.0040	0.00	200.00	81.90
5373	ASPK	B	SCC	I		0.0109800	2.6706361	mg/kg-dry	1.00	1.0040	0.00	200.00	81.90
5373	ASPK	BA	SCC	I		2.0197900	491.2681387	mg/kg-dry	1.00	1.0040	0.00	200.00	81.90
5373	ASPK	BE	SCC	I		0.0452100	10.9963078	mg/kg-dry	1.00	1.0040	0.00	200.00	81.90
5373	ASPK	CA	SCC	I		1.7049100	414.6807155	mg/kg-dry	1.00	1.0040	0.00	200.00	81.90
5373	ASPK	CD	SCC	I		0.0463000	11.2614256	mg/kg-dry	1.00	1.0040	0.00	200.00	81.90
5373	ASPK	CO	SCC	I		0.4905100	119.3054400	mg/kg-dry	1.00	1.0040	0.00	200.00	81.90
5373	ASPK	CR	SCC	I		0.2098300	51.0363917	mg/kg-dry	1.00	1.0040	0.00	200.00	81.90
5373	ASPK	CU	SCC	I		0.2528000	61.4878703	mg/kg-dry	1.00	1.0040	0.00	200.00	81.90
5373	ASPK	FE	SCC	I		17.5855900	4277.2961877	mg/kg-dry	1.00	1.0040	0.00	200.00	81.90
5373	ASPK	K	SCC	I		1.1598800	282.1145212	mg/kg-dry	1.00	1.0040	0.00	200.00	81.90
5373	ASPK	MG	SCC	I		1.2513900	304.3722546	mg/kg-dry	1.00	1.0040	0.00	200.00	81.90
5373	ASPK	MN	SCC	I		0.9774000	237.7303971	mg/kg-dry	1.00	1.0040	0.00	200.00	81.90
5373	ASPK	MO	SCC	I	U	0.0050000	1.2161367	mg/kg-dry	1.00	1.0040	0.00	200.00	81.90
5373	ASPK	NA	SCC	I	U	0.0500000	12.1613667	mg/kg-dry	1.00	1.0040	0.00	200.00	81.90
5373	ASPK	NI	SCC	I		0.4982200	121.1807228	mg/kg-dry	1.00	1.0040	0.00	200.00	81.90
5373	ASPK	PB	SCC	I		0.4911000	119.4489442	mg/kg-dry	1.00	1.0040	0.00	200.00	81.90
5373	ASPK	SB	SCC	I		0.2325400	56.5600844	mg/kg-dry	1.00	1.0040	0.00	200.00	81.90
5373	ASPK	SE	SCC	I		1.8950700	460.9328255	mg/kg-dry	1.00	1.0040	0.00	200.00	81.90
5373	ASPK	SI	SCC	I		4.9689000	1208.5723042	mg/kg-dry	1.00	1.0040	0.00	200.00	81.90
5373	ASPK	SN	SCC	I	U	0.0100000	2.4322733	mg/kg-dry	1.00	1.0040	0.00	200.00	81.90
5373	ASPK	SR	SCC	I		0.0157300	3.8259660	mg/kg-dry	1.00	1.0040	0.00	200.00	81.90

BH 12/5/96

JOB	SAMP	ELEMENT	PREPCODE			RAWVALUE	CALCULATED	UNITS	DILUTION	MASS	INITVOL	FINVOL	%SOLIDS
5373	ASPK	TI	SCC	I		0.1343700	32.6824570	mg/kg-dry	1.00	1.0040	0.00	200.00	81.90
5373	ASPK	TL	SCC	I		1.8142300	441.2703277	mg/kg-dry	1.00	1.0040	0.00	200.00	81.90
5373	ASPK	V	SCC	I		0.5018300	122.0587735	mg/kg-dry	1.00	1.0040	0.00	200.00	81.90
5373	ASPK	ZN	SCC	I		0.4977600	121.0688382	mg/kg-dry	1.00	1.0040	0.00	200.00	81.90
5373	ADUP	AG	SCC	I	U	0.0030000	0.7311385	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	ADUP	AL	SCC	I		6.1574900	1500.6592432	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	ADUP	AS	SCC	I	U	0.0500000	12.1856409	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	ADUP	B	SCC	I		0.0078700	1.9180199	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	ADUP	BA	SCC	I		0.0826800	20.1501758	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	ADUP	BE	SCC	I	U	0.0010000	0.2437128	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	ADUP	CA	SCC	I		1.7265300	420.7774926	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	ADUP	CD	SCC	I	U	0.0020000	0.4874256	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	ADUP	CO	SCC	I		0.0081600	1.9886966	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	ADUP	CR	SCC	I		0.0141800	3.4558478	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	ADUP	CU	SCC	I		0.0117500	2.8636256	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	ADUP	FE	SCC	I		13.9806300	3407.2587426	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	ADUP	K	SCC	I		0.7829200	190.8076399	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	ADUP	MG	SCC	I		1.1090300	270.2848272	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	ADUP	MN	SCC	I		0.4127500	100.5924659	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	ADUP	MO	SCC	I	U	0.0050000	1.2185641	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	ADUP	NA	SCC	I	U	0.0500000	12.1856409	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	ADUP	NI	SCC	I		0.0133600	3.2560033	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	ADUP	PB	SCC	I	U	0.0200000	4.8742564	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	ADUP	SB	SCC	I	U	0.0500000	12.1856409	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	ADUP	SE	SCC	I	U	0.0500000	12.1856409	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	ADUP	SI	SCC	I		4.7393000	1155.0281610	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	ADUP	SN	SCC	I	U	0.0100000	2.4371282	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	ADUP	SR	SCC	I		0.0146000	3.5582072	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	ADUP	TI	SCC	I		0.1389000	33.8517105	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	ADUP	TL	SCC	I	U	0.0500000	12.1856409	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	ADUP	V	SCC	I		0.0206800	5.0399811	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	ADUP	ZN	SCC	I		0.0276000	6.7264738	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	A	AG	SCC	I	U	0.0030000	0.7311385	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	A	AL	SCC	I		9.0263700	2199.8420741	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	A	AS	SCC	I	U	0.0500000	12.1856409	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	A	B	SCC	I		0.0095600	2.3298945	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	A	BA	SCC	I		0.0876500	21.3614285	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	A	BE	SCC	I	U	0.0010000	0.2437128	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	A	CA	SCC	I		1.6640800	405.5576271	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	A	CD	SCC	I	U	0.0020000	0.4874256	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	A	CO	SCC	I		0.0095100	2.3177089	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	A	CR	SCC	I		0.0229000	5.5810235	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	A	CU	SCC	I		0.0110500	2.6930266	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	A	FE	SCC	I		17.7681100	4330.3161686	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	A	K	SCC	I		1.5259700	371.8984497	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	A	MG	SCC	I		1.3619100	331.9149247	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	A	MN	SCC	I		0.4584800	111.7374531	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	A	MO	SCC	I	U	0.0050000	1.2185641	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	A	NA	SCC	I	U	0.0500000	12.1856409	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	A	NI	SCC	I		0.0140700	3.4290394	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	A	PB	SCC	I	U	0.0200000	4.8742564	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	A	SB	SCC	I	U	0.0500000	12.1856409	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	A	SE	SCC	I	U	0.0500000	12.1856409	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	A	SI	SCC	I		5.0099600	1220.9914725	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	A	SN	SCC	I	U	0.0100000	2.4371282	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90

JOB	SAMP	ELEMENT	PREPCODE			RAWVALUE	CALCULATED	UNITS	DILUTION	MASS	INITVOL	FINVOL	%SOLIDS
5373	A	SR	SCC	I		0.0160200	3.9042794	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	A	TI	SCC	I		0.1680400	40.9535020	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	A	TL	SCC	I	U	0.0500000	12.1856409	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	A	V	SCC	I		0.0267800	6.5266293	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	A	ZN	SCC	I		0.0311000	7.5794687	mg/kg-dry	1.00	1.0020	0.00	200.00	81.90
5373	MB	AG	SCC	I	U	0.0030000	0.6000000	mg/kg-dry	1.00	1.0000	0.00	200.00	100.00
5373	MB	AL	SCC	I	U	0.0200000	4.0000000	mg/kg-dry	1.00	1.0000	0.00	200.00	100.00
5373	MB	AS	SCC	I	U	0.0500000	10.0000000	mg/kg-dry	1.00	1.0000	0.00	200.00	100.00
5373	MB	B	SCC	I	U	0.0060000	1.2000000	mg/kg-dry	1.00	1.0000	0.00	200.00	100.00
5373	MB	BA	SCC	I	U	0.0010000	0.2000000	mg/kg-dry	1.00	1.0000	0.00	200.00	100.00
5373	MB	BE	SCC	I	U	0.0010000	0.2000000	mg/kg-dry	1.00	1.0000	0.00	200.00	100.00
5373	MB	CA	SCC	I	U	0.0200000	4.0000000	mg/kg-dry	1.00	1.0000	0.00	200.00	100.00
5373	MB	CD	SCC	I	U	0.0020000	0.4000000	mg/kg-dry	1.00	1.0000	0.00	200.00	100.00
5373	MB	CO	SCC	I	U	0.0030000	0.6000000	mg/kg-dry	1.00	1.0000	0.00	200.00	100.00
5373	MB	CR	SCC	I	U	0.0050000	1.0000000	mg/kg-dry	1.00	1.0000	0.00	200.00	100.00
5373	MB	CU	SCC	I		0.0022100	0.4420000	mg/kg-dry	1.00	1.0000	0.00	200.00	100.00
5373	MB	FE	SCC	I	U	0.0200000	4.0000000	mg/kg-dry	1.00	1.0000	0.00	200.00	100.00
5373	MB	K	SCC	I	U	0.4000000	80.0000000	mg/kg-dry	1.00	1.0000	0.00	200.00	100.00
5373	MB	MG	SCC	I	U	0.0200000	4.0000000	mg/kg-dry	1.00	1.0000	0.00	200.00	100.00
5373	MB	MN	SCC	I	U	0.0010000	0.2000000	mg/kg-dry	1.00	1.0000	0.00	200.00	100.00
5373	MB	MO	SCC	I	U	0.0050000	1.0000000	mg/kg-dry	1.00	1.0000	0.00	200.00	100.00
5373	MB	NA	SCC	I	U	0.0500000	10.0000000	mg/kg-dry	1.00	1.0000	0.00	200.00	100.00
5373	MB	NI	SCC	I	U	0.0100000	2.0000000	mg/kg-dry	1.00	1.0000	0.00	200.00	100.00
5373	MB	PB	SCC	I	U	0.0200000	4.0000000	mg/kg-dry	1.00	1.0000	0.00	200.00	100.00
5373	MB	SB	SCC	I	U	0.0500000	10.0000000	mg/kg-dry	1.00	1.0000	0.00	200.00	100.00
5373	MB	SE	SCC	I	U	0.0500000	10.0000000	mg/kg-dry	1.00	1.0000	0.00	200.00	100.00
5373	MB	SI	SCC	I	U	0.0600000	12.0000000	mg/kg-dry	1.00	1.0000	0.00	200.00	100.00
5373	MB	SN	SCC	I	U	0.0100000	2.0000000	mg/kg-dry	1.00	1.0000	0.00	200.00	100.00
5373	MB	SR	SCC	I	U	0.0010000	0.2000000	mg/kg-dry	1.00	1.0000	0.00	200.00	100.00
5373	MB	TI	SCC	I	U	0.0050000	1.0000000	mg/kg-dry	1.00	1.0000	0.00	200.00	100.00
5373	MB	TL	SCC	I	U	0.0500000	10.0000000	mg/kg-dry	1.00	1.0000	0.00	200.00	100.00
5373	MB	V	SCC	I	U	0.0020000	0.4000000	mg/kg-dry	1.00	1.0000	0.00	200.00	100.00
5373	MB	ZN	SCC	I	U	0.0040000	0.8000000	mg/kg-dry	1.00	1.0000	0.00	200.00	100.00
5373	B	AG	SCC	I	U	0.0030000	0.6914571	mg/kg-dry	1.00	1.0490	0.00	200.00	82.72
5373	B	AL	SCC	I		6.0863300	1402.8120177	mg/kg-dry	1.00	1.0490	0.00	200.00	82.72
5373	B	AS	SCC	I	U	0.0500000	11.5242849	mg/kg-dry	1.00	1.0490	0.00	200.00	82.72
5373	B	B	SCC	I		0.0078000	1.7977884	mg/kg-dry	1.00	1.0490	0.00	200.00	82.72
5373	B	BA	SCC	I		0.0667600	15.3872252	mg/kg-dry	1.00	1.0490	0.00	200.00	82.72
5373	B	BE	SCC	I	U	0.0010000	0.2304857	mg/kg-dry	1.00	1.0490	0.00	200.00	82.72
5373	B	CA	SCC	I		1.5968200	368.0441721	mg/kg-dry	1.00	1.0490	0.00	200.00	82.72
5373	B	CD	SCC	I	U	0.0020000	0.4609714	mg/kg-dry	1.00	1.0490	0.00	200.00	82.72
5373	B	CO	SCC	I		0.0060600	1.3967433	mg/kg-dry	1.00	1.0490	0.00	200.00	82.72
5373	B	CR	SCC	I		0.0144500	3.3305183	mg/kg-dry	1.00	1.0490	0.00	200.00	82.72
5373	B	CU	SCC	I		0.0070300	1.6203145	mg/kg-dry	1.00	1.0490	0.00	200.00	82.72
5373	B	FE	SCC	I		12.5235100	2886.4899425	mg/kg-dry	1.00	1.0490	0.00	200.00	82.72
5373	B	K	SCC	I		0.8227900	189.6413274	mg/kg-dry	1.00	1.0490	0.00	200.00	82.72
5373	B	MG	SCC	I		1.0733400	247.3895190	mg/kg-dry	1.00	1.0490	0.00	200.00	82.72
5373	B	MN	SCC	I		0.2910100	67.0736429	mg/kg-dry	1.00	1.0490	0.00	200.00	82.72
5373	B	MO	SCC	I	U	0.0050000	1.1524285	mg/kg-dry	1.00	1.0490	0.00	200.00	82.72
5373	B	NA	SCC	I	U	0.0500000	11.5242849	mg/kg-dry	1.00	1.0490	0.00	200.00	82.72
5373	B	NI	SCC	I		0.0145900	3.3627863	mg/kg-dry	1.00	1.0490	0.00	200.00	82.72
5373	B	PB	SCC	I	U	0.0200000	4.6097140	mg/kg-dry	1.00	1.0490	0.00	200.00	82.72
5373	B	SB	SCC	I	U	0.0500000	11.5242849	mg/kg-dry	1.00	1.0490	0.00	200.00	82.72
5373	B	SE	SCC	I	U	0.0500000	11.5242849	mg/kg-dry	1.00	1.0490	0.00	200.00	82.72
5373	B	SI	SCC	I		4.1041400	945.9455722	mg/kg-dry	1.00	1.0490	0.00	200.00	82.72

JOB	SAMP	ELEMENT	PREPCODE			RAWVALUE	CALCULATED	UNITS	DILUTION	MASS	INITVOL	FINVOL	%SOLIDS
5373	B	SN	SCC	I	U	0.0100000	2.3048570	mg/kg-dry	1.00	1.0490	0.00	200.00	82.72
5373	B	SR	SCC	I		0.0113000	2.6044884	mg/kg-dry	1.00	1.0490	0.00	200.00	82.72
5373	B	TI	SCC	I		0.1316800	30.3503567	mg/kg-dry	1.00	1.0490	0.00	200.00	82.72
5373	B	TL	SCC	I	U	0.0500000	11.5242849	mg/kg-dry	1.00	1.0490	0.00	200.00	82.72
5373	B	V	SCC	I		0.0195700	4.5106051	mg/kg-dry	1.00	1.0490	0.00	200.00	82.72
5373	B	ZN	SCC	I		0.0267900	6.1747118	mg/kg-dry	1.00	1.0490	0.00	200.00	82.72
5373	C	AG	SCC	I	U	0.0030000	0.7414775	mg/kg-dry	1.00	1.0120	0.00	200.00	79.96
5373	C	AL	SCC	I		8.7714400	2167.9416783	mg/kg-dry	1.00	1.0120	0.00	200.00	79.96
5373	C	AS	SCC	I	U	0.0500000	12.3579576	mg/kg-dry	1.00	1.0120	0.00	200.00	79.96
5373	C	B	SCC	I		0.0163700	4.0459953	mg/kg-dry	1.00	1.0120	0.00	200.00	79.96
5373	C	BA	SCC	I		0.1248100	30.8479338	mg/kg-dry	1.00	1.0120	0.00	200.00	79.96
5373	C	BE	SCC	I	U	0.0010000	0.2471592	mg/kg-dry	1.00	1.0120	0.00	200.00	79.96
5373	C	CA	SCC	I		3.2652200	807.0290086	mg/kg-dry	1.00	1.0120	0.00	200.00	79.96
5373	C	CD	SCC	I	U	0.0020000	0.4943183	mg/kg-dry	1.00	1.0120	0.00	200.00	79.96
5373	C	CO	SCC	I		0.0108400	2.6792052	mg/kg-dry	1.00	1.0120	0.00	200.00	79.96
5373	C	CR	SCC	I		0.0163500	4.0410521	mg/kg-dry	1.00	1.0120	0.00	200.00	79.96
5373	C	CU	SCC	I		0.0122700	3.0326428	mg/kg-dry	1.00	1.0120	0.00	200.00	79.96
5373	C	FE	SCC	I		19.6925900	4867.2038588	mg/kg-dry	1.00	1.0120	0.00	200.00	79.96
5373	C	K	SCC	I		1.4643500	361.9275053	mg/kg-dry	1.00	1.0120	0.00	200.00	79.96
5373	C	MG	SCC	I		1.7170600	424.3870947	mg/kg-dry	1.00	1.0120	0.00	200.00	79.96
5373	C	MN	SCC	I		0.6791600	167.8606101	mg/kg-dry	1.00	1.0120	0.00	200.00	79.96
5373	C	MO	SCC	I	U	0.0050000	1.2357958	mg/kg-dry	1.00	1.0120	0.00	200.00	79.96
5373	C	NA	SCC	I	U	0.0500000	12.3579576	mg/kg-dry	1.00	1.0120	0.00	200.00	79.96
5373	C	NI	SCC	I		0.0123900	3.0623019	mg/kg-dry	1.00	1.0120	0.00	200.00	79.96
5373	C	PB	SCC	I	U	0.0200000	4.9431831	mg/kg-dry	1.00	1.0120	0.00	200.00	79.96
5373	C	SB	SCC	I	U	0.0500000	12.3579576	mg/kg-dry	1.00	1.0120	0.00	200.00	79.96
5373	C	SE	SCC	I	U	0.0500000	12.3579576	mg/kg-dry	1.00	1.0120	0.00	200.00	79.96
5373	C	SI	SCC	I		5.7860000	1430.0628575	mg/kg-dry	1.00	1.0120	0.00	200.00	79.96
5373	C	SN	SCC	I	U	0.0100000	2.4715915	mg/kg-dry	1.00	1.0120	0.00	200.00	79.96
5373	C	SR	SCC	I		0.0248600	6.1443765	mg/kg-dry	1.00	1.0120	0.00	200.00	79.96
5373	C	TI	SCC	I		0.1604400	39.6542145	mg/kg-dry	1.00	1.0120	0.00	200.00	79.96
5373	C	TL	SCC	I	U	0.0500000	12.3579576	mg/kg-dry	1.00	1.0120	0.00	200.00	79.96
5373	C	V	SCC	I		0.0274700	6.7894619	mg/kg-dry	1.00	1.0120	0.00	200.00	79.96
5373	C	ZN	SCC	I		0.0469100	11.5942359	mg/kg-dry	1.00	1.0120	0.00	200.00	79.96
5373	D	AG	SCC	I	U	0.0030000	0.7239063	mg/kg-dry	1.00	1.0130	0.00	200.00	81.82
5373	D	AL	SCC	I		10.5301400	2540.9447411	mg/kg-dry	1.00	1.0130	0.00	200.00	81.82
5373	D	AS	SCC	I	U	0.0500000	12.0651043	mg/kg-dry	1.00	1.0130	0.00	200.00	81.82
5373	D	B	SCC	I		0.0133200	3.2141438	mg/kg-dry	1.00	1.0130	0.00	200.00	81.82
5373	D	BA	SCC	I		0.1479700	35.7054696	mg/kg-dry	1.00	1.0130	0.00	200.00	81.82
5373	D	BE	SCC	I	U	0.0010000	0.2413021	mg/kg-dry	1.00	1.0130	0.00	200.00	81.82
5373	D	CA	SCC	I		52.1033000	12572.6349440	mg/kg-dry	1.00	1.0130	0.00	200.00	81.82
5373	D	CD	SCC	I	U	0.0020000	0.4826042	mg/kg-dry	1.00	1.0130	0.00	200.00	81.82
5373	D	CO	SCC	I		0.0085600	2.0655459	mg/kg-dry	1.00	1.0130	0.00	200.00	81.82
5373	D	CR	SCC	I		0.0253600	6.1194209	mg/kg-dry	1.00	1.0130	0.00	200.00	81.82
5373	D	CU	SCC	I		0.0227600	5.4920355	mg/kg-dry	1.00	1.0130	0.00	200.00	81.82
5373	D	FE	SCC	I		23.5003500	5670.6834616	mg/kg-dry	1.00	1.0130	0.00	200.00	81.82
5373	D	K	SCC	I		1.8014400	434.6912286	mg/kg-dry	1.00	1.0130	0.00	200.00	81.82
5373	D	MG	SCC	I		25.8563600	6239.1935877	mg/kg-dry	1.00	1.0130	0.00	200.00	81.82
5373	D	MN	SCC	I		1.3165800	317.6934995	mg/kg-dry	1.00	1.0130	0.00	200.00	81.82
5373	D	MO	SCC	I	U	0.0050000	1.2065104	mg/kg-dry	1.00	1.0130	0.00	200.00	81.82
5373	D	NA	SCC	I		0.2062600	49.7709681	mg/kg-dry	1.00	1.0130	0.00	200.00	81.82
5373	D	NI	SCC	I		0.0194800	4.7005646	mg/kg-dry	1.00	1.0130	0.00	200.00	81.82
5373	D	PB	SCC	I		0.3984000	96.1347508	mg/kg-dry	1.00	1.0130	0.00	200.00	81.82
5373	D	SB	SCC	I	U	0.0500000	12.0651043	mg/kg-dry	1.00	1.0130	0.00	200.00	81.82
5373	D	SE	SCC	I	U	0.0500000	12.0651043	mg/kg-dry	1.00	1.0130	0.00	200.00	81.82

JOB	SAMP	ELEMENT	PREPCODE			RAWVALUE	CALCULATED	UNITS	DILUTION	MASS	INITVOL	FINVOL	%SOLIDS
5373	D	SI	SCC	I		6.1352800	1480.4558582	mg/kg-dry	1.00	1.0130	0.00	200.00	81.82
5373	D	SN	SCC	I		0.0103800	2.5047156	mg/kg-dry	1.00	1.0130	0.00	200.00	81.82
5373	D	SR	SCC	I		0.0386800	9.3335647	mg/kg-dry	1.00	1.0130	0.00	200.00	81.82
5373	D	TI	SCC	I		0.1533800	37.0109139	mg/kg-dry	1.00	1.0130	0.00	200.00	81.82
5373	D	TL	SCC	I	U	0.0500000	12.0651043	mg/kg-dry	1.00	1.0130	0.00	200.00	81.82
5373	D	V	SCC	I		0.0291000	7.0218907	mg/kg-dry	1.00	1.0130	0.00	200.00	81.82
5373	D	ZN	SCC	I		0.1308600	31.5767909	mg/kg-dry	1.00	1.0130	0.00	200.00	81.82
5373	E	AG	SCC	I	U	0.0030000	0.7243389	mg/kg-dry	1.00	1.0150	0.00	200.00	81.61
5373	E	AL	SCC	I		7.7040100	1860.1047998	mg/kg-dry	1.00	1.0150	0.00	200.00	81.61
5373	E	AS	SCC	I	U	0.0500000	12.0723156	mg/kg-dry	1.00	1.0150	0.00	200.00	81.61
5373	E	B	SCC	I		0.0106100	2.5617454	mg/kg-dry	1.00	1.0150	0.00	200.00	81.61
5373	E	BA	SCC	I		0.0907800	21.9184962	mg/kg-dry	1.00	1.0150	0.00	200.00	81.61
5373	E	BE	SCC	I	U	0.0010000	0.2414463	mg/kg-dry	1.00	1.0150	0.00	200.00	81.61
5373	E	CA	SCC	I		2.3183800	559.7643001	mg/kg-dry	1.00	1.0150	0.00	200.00	81.61
5373	E	CD	SCC	I	U	0.0020000	0.4828926	mg/kg-dry	1.00	1.0150	0.00	200.00	81.61
5373	E	CO	SCC	I		0.0066500	1.6056180	mg/kg-dry	1.00	1.0150	0.00	200.00	81.61
5373	E	CR	SCC	I		0.0117200	2.8297508	mg/kg-dry	1.00	1.0150	0.00	200.00	81.61
5373	E	CU	SCC	I		0.0076500	1.8470643	mg/kg-dry	1.00	1.0150	0.00	200.00	81.61
5373	E	FE	SCC	I		14.1693700	3421.1421256	mg/kg-dry	1.00	1.0150	0.00	200.00	81.61
5373	E	K	SCC	I		1.1671300	281.7992338	mg/kg-dry	1.00	1.0150	0.00	200.00	81.61
5373	E	MG	SCC	I		1.3497000	325.8800869	mg/kg-dry	1.00	1.0150	0.00	200.00	81.61
5373	E	MN	SCC	I		0.3872900	93.5097421	mg/kg-dry	1.00	1.0150	0.00	200.00	81.61
5373	E	MO	SCC	I	U	0.0050000	1.2072316	mg/kg-dry	1.00	1.0150	0.00	200.00	81.61
5373	E	NA	SCC	I	U	0.0500000	12.0723156	mg/kg-dry	1.00	1.0150	0.00	200.00	81.61
5373	E	NI	SCC	I		0.0156400	3.7762203	mg/kg-dry	1.00	1.0150	0.00	200.00	81.61
5373	E	PB	SCC	I	U	0.0200000	4.8289262	mg/kg-dry	1.00	1.0150	0.00	200.00	81.61
5373	E	SB	SCC	I	U	0.0500000	12.0723156	mg/kg-dry	1.00	1.0150	0.00	200.00	81.61
5373	E	SE	SCC	I	U	0.0500000	12.0723156	mg/kg-dry	1.00	1.0150	0.00	200.00	81.61
5373	E	SI	SCC	I		5.1504700	1243.5619850	mg/kg-dry	1.00	1.0150	0.00	200.00	81.61
5373	E	SN	SCC	I	U	0.0100000	2.4144631	mg/kg-dry	1.00	1.0150	0.00	200.00	81.61
5373	E	SR	SCC	I		0.0168500	4.0683704	mg/kg-dry	1.00	1.0150	0.00	200.00	81.61
5373	E	TI	SCC	I		0.1448500	34.9734982	mg/kg-dry	1.00	1.0150	0.00	200.00	81.61
5373	E	TL	SCC	I	U	0.0500000	12.0723156	mg/kg-dry	1.00	1.0150	0.00	200.00	81.61
5373	E	V	SCC	I		0.0202600	4.8917023	mg/kg-dry	1.00	1.0150	0.00	200.00	81.61
5373	E	ZN	SCC	I		0.0334100	8.0667213	mg/kg-dry	1.00	1.0150	0.00	200.00	81.61
5373	F	AG	SCC	I	U	0.0030000	0.7230228	mg/kg-dry	1.00	1.0060	0.00	200.00	82.49
5373	F	AL	SCC	I		7.4771600	1802.0522760	mg/kg-dry	1.00	1.0060	0.00	200.00	82.49
5373	F	AS	SCC	I	U	0.0500000	12.0503793	mg/kg-dry	1.00	1.0060	0.00	200.00	82.49
5373	F	B	SCC	I		0.0083300	2.0075932	mg/kg-dry	1.00	1.0060	0.00	200.00	82.49
5373	F	BA	SCC	I		0.1001800	24.1441399	mg/kg-dry	1.00	1.0060	0.00	200.00	82.49
5373	F	BE	SCC	I	U	0.0010000	0.2410076	mg/kg-dry	1.00	1.0060	0.00	200.00	82.49
5373	F	CA	SCC	I		2.6151200	630.2637563	mg/kg-dry	1.00	1.0060	0.00	200.00	82.49
5373	F	CD	SCC	I	U	0.0020000	0.4820152	mg/kg-dry	1.00	1.0060	0.00	200.00	82.49
5373	F	CO	SCC	I		0.0080800	1.9473413	mg/kg-dry	1.00	1.0060	0.00	200.00	82.49
5373	F	CR	SCC	I		0.0122600	2.9547530	mg/kg-dry	1.00	1.0060	0.00	200.00	82.49
5373	F	CU	SCC	I		0.0072200	1.7400748	mg/kg-dry	1.00	1.0060	0.00	200.00	82.49
5373	F	FE	SCC	I		14.7920100	3564.9866108	mg/kg-dry	1.00	1.0060	0.00	200.00	82.49
5373	F	K	SCC	I		1.3048600	314.4811577	mg/kg-dry	1.00	1.0060	0.00	200.00	82.49
5373	F	MG	SCC	I		1.4033800	338.2252250	mg/kg-dry	1.00	1.0060	0.00	200.00	82.49
5373	F	MN	SCC	I		0.4705100	113.3964789	mg/kg-dry	1.00	1.0060	0.00	200.00	82.49
5373	F	MO	SCC	I	U	0.0050000	1.2050379	mg/kg-dry	1.00	1.0060	0.00	200.00	82.49
5373	F	NA	SCC	I	U	0.0500000	12.0503793	mg/kg-dry	1.00	1.0060	0.00	200.00	82.49
5373	F	NI	SCC	I		0.0151100	3.6416246	mg/kg-dry	1.00	1.0060	0.00	200.00	82.49
5373	F	PB	SCC	I	U	0.0200000	4.8201517	mg/kg-dry	1.00	1.0060	0.00	200.00	82.49
5373	F	SB	SCC	I	U	0.0500000	12.0503793	mg/kg-dry	1.00	1.0060	0.00	200.00	82.49

JOB	SAMP	ELEMENT	PREPCODE			RAWVALUE	CALCULATED	UNITS	DILUTION	MASS	INITVOL	FINVOL	%SOLIDS
5373	F	SE	SCC	I	U	0.0500000	12.0503793	mg/kg-dry	1.00	1.0060	0.00	200.00	82.49
5373	F	SI	SCC	I		5.2682100	1269.6785706	mg/kg-dry	1.00	1.0060	0.00	200.00	82.49
5373	F	SN	SCC	I	U	0.0100000	2.4100759	mg/kg-dry	1.00	1.0060	0.00	200.00	82.49
5373	F	SR	SCC	I		0.0190200	4.5839643	mg/kg-dry	1.00	1.0060	0.00	200.00	82.49
5373	F	TI	SCC	I		0.1428900	34.4375739	mg/kg-dry	1.00	1.0060	0.00	200.00	82.49
5373	F	TL	SCC	I	U	0.0500000	12.0503793	mg/kg-dry	1.00	1.0060	0.00	200.00	82.49
5373	F	V	SCC	I		0.0208100	5.0153678	mg/kg-dry	1.00	1.0060	0.00	200.00	82.49
5373	F	ZN	SCC	I		0.0333500	8.0376030	mg/kg-dry	1.00	1.0060	0.00	200.00	82.49
5373	G	AG	SCC	I	U	0.0030000	0.7322678	mg/kg-dry	1.00	1.0360	0.00	200.00	79.09
5373	G	AL	SCC	I		14.0880100	3438.7318880	mg/kg-dry	1.00	1.0360	0.00	200.00	79.09
5373	G	AS	SCC	I	U	0.0500000	12.2044628	mg/kg-dry	1.00	1.0360	0.00	200.00	79.09
5373	G	B	SCC	I		0.0157900	3.8541694	mg/kg-dry	1.00	1.0360	0.00	200.00	79.09
5373	G	BA	SCC	I		0.1309900	31.9732517	mg/kg-dry	1.00	1.0360	0.00	200.00	79.09
5373	G	BE	SCC	I	U	0.0010000	0.2440893	mg/kg-dry	1.00	1.0360	0.00	200.00	79.09
5373	G	CA	SCC	I		3.8950000	950.7276545	mg/kg-dry	1.00	1.0360	0.00	200.00	79.09
5373	G	CD	SCC	I	U	0.0020000	0.4881785	mg/kg-dry	1.00	1.0360	0.00	200.00	79.09
5373	G	CO	SCC	I		0.0072400	1.7672062	mg/kg-dry	1.00	1.0360	0.00	200.00	79.09
5373	G	CR	SCC	I		0.0182600	4.4570698	mg/kg-dry	1.00	1.0360	0.00	200.00	79.09
5373	G	CU	SCC	I		0.0185700	4.5327375	mg/kg-dry	1.00	1.0360	0.00	200.00	79.09
5373	G	FE	SCC	I		18.7871800	4585.7487999	mg/kg-dry	1.00	1.0360	0.00	200.00	79.09
5373	G	K	SCC	I		1.9754200	482.1787993	mg/kg-dry	1.00	1.0360	0.00	200.00	79.09
5373	G	MG	SCC	I		1.7399000	424.6908976	mg/kg-dry	1.00	1.0360	0.00	200.00	79.09
5373	G	MN	SCC	I		0.3966800	96.8253263	mg/kg-dry	1.00	1.0360	0.00	200.00	79.09
5373	G	MO	SCC	I	U	0.0050000	1.2204463	mg/kg-dry	1.00	1.0360	0.00	200.00	79.09
5373	G	NA	SCC	I		0.0732400	17.8770972	mg/kg-dry	1.00	1.0360	0.00	200.00	79.09
5373	G	NI	SCC	I		0.0243900	5.9533370	mg/kg-dry	1.00	1.0360	0.00	200.00	79.09
5373	G	PB	SCC	I		0.3954100	96.5153330	mg/kg-dry	1.00	1.0360	0.00	200.00	79.09
5373	G	SB	SCC	I	U	0.0500000	12.2044628	mg/kg-dry	1.00	1.0360	0.00	200.00	79.09
5373	G	SE	SCC	I	U	0.0500000	12.2044628	mg/kg-dry	1.00	1.0360	0.00	200.00	79.09
5373	G	SI	SCC	I		7.8673200	1920.3282903	mg/kg-dry	1.00	1.0360	0.00	200.00	79.09
5373	G	SN	SCC	I	U	0.0100000	2.4408926	mg/kg-dry	1.00	1.0360	0.00	200.00	79.09
5373	G	SR	SCC	I		0.0376000	9.1777560	mg/kg-dry	1.00	1.0360	0.00	200.00	79.09
5373	G	TI	SCC	I		0.2448100	59.7554909	mg/kg-dry	1.00	1.0360	0.00	200.00	79.09
5373	G	TL	SCC	I	U	0.0500000	12.2044628	mg/kg-dry	1.00	1.0360	0.00	200.00	79.09
5373	G	V	SCC	I		0.0294600	7.1908695	mg/kg-dry	1.00	1.0360	0.00	200.00	79.09
5373	G	ZN	SCC	I		0.1492800	36.4376442	mg/kg-dry	1.00	1.0360	0.00	200.00	79.09
5373	H	AG	SCC	I	U	0.0030000	0.6875621	mg/kg-dry	1.00	1.0140	0.00	200.00	86.06
5373	H	AL	SCC	I		17.6464200	4044.3367569	mg/kg-dry	1.00	1.0140	0.00	200.00	86.06
5373	H	AS	SCC	I	U	0.0500000	11.4593690	mg/kg-dry	1.00	1.0140	0.00	200.00	86.06
5373	H	B	SCC	I		0.0154500	3.5409450	mg/kg-dry	1.00	1.0140	0.00	200.00	86.06
5373	H	BA	SCC	I		0.1514500	34.7104286	mg/kg-dry	1.00	1.0140	0.00	200.00	86.06
5373	H	BE	SCC	I	U	0.0010000	0.2291874	mg/kg-dry	1.00	1.0140	0.00	200.00	86.06
5373	H	CA	SCC	I		7.6127200	1744.7393475	mg/kg-dry	1.00	1.0140	0.00	200.00	86.06
5373	H	CD	SCC	I		0.0031300	0.7173565	mg/kg-dry	1.00	1.0140	0.00	200.00	86.06
5373	H	CO	SCC	I		0.0107100	2.4545968	mg/kg-dry	1.00	1.0140	0.00	200.00	86.06
5373	H	CR	SCC	I		0.0310900	7.1254356	mg/kg-dry	1.00	1.0140	0.00	200.00	86.06
5373	H	CU	SCC	I		0.0495200	11.3493590	mg/kg-dry	1.00	1.0140	0.00	200.00	86.06
5373	H	FE	SCC	I		30.0410700	6885.0341100	mg/kg-dry	1.00	1.0140	0.00	200.00	86.06
5373	H	K	SCC	I		2.9577000	677.8675123	mg/kg-dry	1.00	1.0140	0.00	200.00	86.06
5373	H	MG	SCC	I		3.3654100	771.3094988	mg/kg-dry	1.00	1.0140	0.00	200.00	86.06
5373	H	MN	SCC	I		0.9072000	207.9187907	mg/kg-dry	1.00	1.0140	0.00	200.00	86.06
5373	H	MO	SCC	I	U	0.0050000	1.1459369	mg/kg-dry	1.00	1.0140	0.00	200.00	86.06
5373	H	NA	SCC	I		0.0618300	14.1706557	mg/kg-dry	1.00	1.0140	0.00	200.00	86.06
5373	H	NI	SCC	I		0.0234100	5.3652766	mg/kg-dry	1.00	1.0140	0.00	200.00	86.06
5373	H	PB	SCC	I		1.3862100	317.7018373	mg/kg-dry	1.00	1.0140	0.00	200.00	86.06

JOB	SAMP	ELEMENT	PREPCODE			RAWVALUE	CALCULATED	UNITS	DILUTION	MASS	INITVOL	FINVOL	%SOLIDS
5373	H	SB	SCC	I	U	0.0500000	11.4593690	mg/kg-dry	1.00	1.0140	0.00	200.00	86.06
5373	H	SE	SCC	I	U	0.0500000	11.4593690	mg/kg-dry	1.00	1.0140	0.00	200.00	86.06
5373	H	SI	SCC	I		8.5927200	1969.3429794	mg/kg-dry	1.00	1.0140	0.00	200.00	86.06
5373	H	SN	SCC	I	U	0.0100000	2.2918738	mg/kg-dry	1.00	1.0140	0.00	200.00	86.06
5373	H	SR	SCC	I		0.0270500	6.1995186	mg/kg-dry	1.00	1.0140	0.00	200.00	86.06
5373	H	TI	SCC	I		0.2517600	57.7002147	mg/kg-dry	1.00	1.0140	0.00	200.00	86.06
5373	H	TL	SCC	I	U	0.0500000	11.4593690	mg/kg-dry	1.00	1.0140	0.00	200.00	86.06
5373	H	V	SCC	I		0.0424500	9.7290043	mg/kg-dry	1.00	1.0140	0.00	200.00	86.06
5373	H	ZN	SCC	I		0.5743500	131.6337714	mg/kg-dry	1.00	1.0140	0.00	200.00	86.06
5373	I	AG	SCC	I	U	0.0030000	0.7625058	mg/kg-dry	1.00	1.0870	0.00	200.00	72.39
5373	I	AL	SCC	I		35.8690900	9116.7959305	mg/kg-dry	1.00	1.0870	0.00	200.00	72.39
5373	I	AS	SCC	I	U	0.0500000	12.7084294	mg/kg-dry	1.00	1.0870	0.00	200.00	72.39
5373	I	B	SCC	I		0.0188300	4.7859945	mg/kg-dry	1.00	1.0870	0.00	200.00	72.39
5373	I	BA	SCC	I		0.3512100	89.2665495	mg/kg-dry	1.00	1.0870	0.00	200.00	72.39
5373	I	BE	SCC	I		0.0015800	0.4015864	mg/kg-dry	1.00	1.0870	0.00	200.00	72.39
5373	I	CA	SCC	I		4.8984600	1245.0346578	mg/kg-dry	1.00	1.0870	0.00	200.00	72.39
5373	I	CD	SCC	I	U	0.0020000	0.5083372	mg/kg-dry	1.00	1.0870	0.00	200.00	72.39
5373	I	CO	SCC	I		0.0222400	5.6527094	mg/kg-dry	1.00	1.0870	0.00	200.00	72.39
5373	I	CR	SCC	I		0.0433400	11.0156666	mg/kg-dry	1.00	1.0870	0.00	200.00	72.39
5373	I	CU	SCC	I		0.4993500	126.9190840	mg/kg-dry	1.00	1.0870	0.00	200.00	72.39
5373	I	FE	SCC	I		44.2091200	11236.5695730	mg/kg-dry	1.00	1.0870	0.00	200.00	72.39
5373	I	K	SCC	I		4.5199100	1148.8191391	mg/kg-dry	1.00	1.0870	0.00	200.00	72.39
5373	I	MG	SCC	I		4.1331500	1050.5168963	mg/kg-dry	1.00	1.0870	0.00	200.00	72.39
5373	I	MN	SCC	I		1.6352300	415.6240989	mg/kg-dry	1.00	1.0870	0.00	200.00	72.39
5373	I	MO	SCC	I	U	0.0050000	1.2708429	mg/kg-dry	1.00	1.0870	0.00	200.00	72.39
5373	I	NA	SCC	I		9.1846000	2334.4368063	mg/kg-dry	1.00	1.0870	0.00	200.00	72.39
5373	I	NI	SCC	I		0.0400100	10.1692852	mg/kg-dry	1.00	1.0870	0.00	200.00	72.39
5373	I	PB	SCC	I		201.5045600	51216.1293352	mg/kg-dry	1.00	1.0870	0.00	200.00	72.39
5373	I	SB	SCC	I	U	0.0500000	12.7084294	mg/kg-dry	1.00	1.0870	0.00	200.00	72.39
5373	I	SE	SCC	I	U	0.0500000	12.7084294	mg/kg-dry	1.00	1.0870	0.00	200.00	72.39
5373	I	SI	SCC	I		8.6666700	2202.7952699	mg/kg-dry	1.00	1.0870	0.00	200.00	72.39
5373	I	SN	SCC	I	U	0.0100000	2.5416859	mg/kg-dry	1.00	1.0870	0.00	200.00	72.39
5373	I	SR	SCC	I		0.0576000	14.6401106	mg/kg-dry	1.00	1.0870	0.00	200.00	72.39
5373	I	TI	SCC	I		0.4103900	104.3082465	mg/kg-dry	1.00	1.0870	0.00	200.00	72.39
5373	I	TL	SCC	I	U	0.0500000	12.7084294	mg/kg-dry	1.00	1.0870	0.00	200.00	72.39
5373	I	V	SCC	I		0.0769600	19.5608145	mg/kg-dry	1.00	1.0870	0.00	200.00	72.39
5373	I	ZN	SCC	I		0.1014800	25.7930282	mg/kg-dry	1.00	1.0870	0.00	200.00	72.39
5373	J	AG	SCC	I	U	0.0030000	0.7063941	mg/kg-dry	1.00	1.0220	0.00	200.00	83.11
5373	J	AL	SCC	I		22.6747100	5339.0938989	mg/kg-dry	1.00	1.0220	0.00	200.00	83.11
5373	J	AS	SCC	I	U	0.0500000	11.7732352	mg/kg-dry	1.00	1.0220	0.00	200.00	83.11
5373	J	B	SCC	I		0.0212600	5.0059796	mg/kg-dry	1.00	1.0220	0.00	200.00	83.11
5373	J	BA	SCC	I		0.2019300	47.5473879	mg/kg-dry	1.00	1.0220	0.00	200.00	83.11
5373	J	BE	SCC	I		0.0010500	0.2472379	mg/kg-dry	1.00	1.0220	0.00	200.00	83.11
5373	J	CA	SCC	I		20.9604200	4935.4391099	mg/kg-dry	1.00	1.0220	0.00	200.00	83.11
5373	J	CD	SCC	I	U	0.0020000	0.4709294	mg/kg-dry	1.00	1.0220	0.00	200.00	83.11
5373	J	CO	SCC	I		0.0128900	3.0351400	mg/kg-dry	1.00	1.0220	0.00	200.00	83.11
5373	J	CR	SCC	I		0.0327100	7.7020505	mg/kg-dry	1.00	1.0220	0.00	200.00	83.11
5373	J	CU	SCC	I		0.0449000	10.5723653	mg/kg-dry	1.00	1.0220	0.00	200.00	83.11
5373	J	FE	SCC	I		40.5448100	9546.8717219	mg/kg-dry	1.00	1.0220	0.00	200.00	83.11
5373	J	K	SCC	I		3.3709000	793.7279737	mg/kg-dry	1.00	1.0220	0.00	200.00	83.11
5373	J	MG	SCC	I		4.0560500	955.0566163	mg/kg-dry	1.00	1.0220	0.00	200.00	83.11
5373	J	MN	SCC	I		0.7391700	174.0484459	mg/kg-dry	1.00	1.0220	0.00	200.00	83.11
5373	J	MO	SCC	I	U	0.0050000	1.1773235	mg/kg-dry	1.00	1.0220	0.00	200.00	83.11
5373	J	NA	SCC	I		0.2993200	70.4792955	mg/kg-dry	1.00	1.0220	0.00	200.00	83.11
5373	J	NI	SCC	I		0.0366100	8.6203628	mg/kg-dry	1.00	1.0220	0.00	200.00	83.11

JOB	SAMP	ELEMENT	PREPCODE			RAWVALUE	CALCULATED	UNITS	DILUTION	MASS	INITVOL	FINVOL	%SOLIDS
5373	J	PB	SCC	I		1.1401400	268.4627286	mg/kg-dry	1.00	1.0220	0.00	200.00	83.11
5373	J	SB	SCC	I	U	0.0500000	11.7732352	mg/kg-dry	1.00	1.0220	0.00	200.00	83.11
5373	J	SE	SCC	I	U	0.0500000	11.7732352	mg/kg-dry	1.00	1.0220	0.00	200.00	83.11
5373	J	SI	SCC	I		6.9094500	1626.9316053	mg/kg-dry	1.00	1.0220	0.00	200.00	83.11
5373	J	SN	SCC	I		0.0132400	3.1175527	mg/kg-dry	1.00	1.0220	0.00	200.00	83.11
5373	J	SR	SCC	I		0.0461600	10.8690508	mg/kg-dry	1.00	1.0220	0.00	200.00	83.11
5373	J	TI	SCC	I		0.3747200	88.2333342	mg/kg-dry	1.00	1.0220	0.00	200.00	83.11
5373	J	TL	SCC	I	U	0.0500000	11.7732352	mg/kg-dry	1.00	1.0220	0.00	200.00	83.11
5373	J	V	SCC	I		0.0712800	16.7839242	mg/kg-dry	1.00	1.0220	0.00	200.00	83.11
5373	J	ZN	SCC	I		0.2973000	70.0036568	mg/kg-dry	1.00	1.0220	0.00	200.00	83.11
5373	K	AG	SCC	I	U	0.0030000	0.7168149	mg/kg-dry	1.00	1.0010	0.00	200.00	83.62
5373	K	AL	SCC	I		21.3700400	5106.1208583	mg/kg-dry	1.00	1.0010	0.00	200.00	83.62
5373	K	AS	SCC	I	U	0.0500000	11.9469146	mg/kg-dry	1.00	1.0010	0.00	200.00	83.62
5373	K	B	SCC	I		0.0178000	4.2531016	mg/kg-dry	1.00	1.0010	0.00	200.00	83.62
5373	K	BA	SCC	I		0.1929700	46.1079222	mg/kg-dry	1.00	1.0010	0.00	200.00	83.62
5373	K	BE	SCC	I	U	0.0010000	0.2389383	mg/kg-dry	1.00	1.0010	0.00	200.00	83.62
5373	K	CA	SCC	I		18.9564500	4529.4217861	mg/kg-dry	1.00	1.0010	0.00	200.00	83.62
5373	K	CD	SCC	I	U	0.0020000	0.4778766	mg/kg-dry	1.00	1.0010	0.00	200.00	83.62
5373	K	CO	SCC	I		0.0125800	3.0058437	mg/kg-dry	1.00	1.0010	0.00	200.00	83.62
5373	K	CR	SCC	I		0.0294300	7.0319539	mg/kg-dry	1.00	1.0010	0.00	200.00	83.62
5373	K	CU	SCC	I		0.0475500	11.3615158	mg/kg-dry	1.00	1.0010	0.00	200.00	83.62
5373	K	FE	SCC	I		26.4528800	6320.6059666	mg/kg-dry	1.00	1.0010	0.00	200.00	83.62
5373	K	K	SCC	I		3.1860500	761.2693453	mg/kg-dry	1.00	1.0010	0.00	200.00	83.62
5373	K	MG	SCC	I		4.2965200	1026.6031505	mg/kg-dry	1.00	1.0010	0.00	200.00	83.62
5373	K	MN	SCC	I		0.6845800	163.5723760	mg/kg-dry	1.00	1.0010	0.00	200.00	83.62
5373	K	MO	SCC	I	U	0.0050000	1.1946915	mg/kg-dry	1.00	1.0010	0.00	200.00	83.62
5373	K	NA	SCC	I		0.2346800	56.0740384	mg/kg-dry	1.00	1.0010	0.00	200.00	83.62
5373	K	NI	SCC	I		0.0371200	8.8693894	mg/kg-dry	1.00	1.0010	0.00	200.00	83.62
5373	K	PB	SCC	I		1.0137700	242.2284723	mg/kg-dry	1.00	1.0010	0.00	200.00	83.62
5373	K	SB	SCC	I	U	0.0500000	11.9469146	mg/kg-dry	1.00	1.0010	0.00	200.00	83.62
5373	K	SE	SCC	I	U	0.0500000	11.9469146	mg/kg-dry	1.00	1.0010	0.00	200.00	83.62
5373	K	SI	SCC	I		7.8923100	1885.7750716	mg/kg-dry	1.00	1.0010	0.00	200.00	83.62
5373	K	SN	SCC	I		0.0133200	3.1826580	mg/kg-dry	1.00	1.0010	0.00	200.00	83.62
5373	K	SR	SCC	I		0.0418500	9.9995675	mg/kg-dry	1.00	1.0010	0.00	200.00	83.62
5373	K	TI	SCC	I		0.3465100	82.7945076	mg/kg-dry	1.00	1.0010	0.00	200.00	83.62
5373	K	TL	SCC	I	U	0.0500000	11.9469146	mg/kg-dry	1.00	1.0010	0.00	200.00	83.62
5373	K	V	SCC	I		0.0613600	14.6612536	mg/kg-dry	1.00	1.0010	0.00	200.00	83.62
5373	K	ZN	SCC	I		0.2914400	69.6361758	mg/kg-dry	1.00	1.0010	0.00	200.00	83.62
5373	L	AG	SCC	I	U	0.0030000	0.7434031	mg/kg-dry	1.00	1.0090	0.00	200.00	79.99
5373	L	AL	SCC	I		6.5033800	1611.5443568	mg/kg-dry	1.00	1.0090	0.00	200.00	79.99
5373	L	AS	SCC	I	U	0.0500000	12.3900522	mg/kg-dry	1.00	1.0090	0.00	200.00	79.99
5373	L	B	SCC	I		0.0112200	2.7803277	mg/kg-dry	1.00	1.0090	0.00	200.00	79.99
5373	L	BA	SCC	I		0.0616200	15.2695004	mg/kg-dry	1.00	1.0090	0.00	200.00	79.99
5373	L	BE	SCC	I	U	0.0010000	0.2478010	mg/kg-dry	1.00	1.0090	0.00	200.00	79.99
5373	L	CA	SCC	I		2.3279900	576.8783536	mg/kg-dry	1.00	1.0090	0.00	200.00	79.99
5373	L	CD	SCC	I	U	0.0020000	0.4956021	mg/kg-dry	1.00	1.0090	0.00	200.00	79.99
5373	L	CO	SCC	I		0.0047200	1.1696209	mg/kg-dry	1.00	1.0090	0.00	200.00	79.99
5373	L	CR	SCC	I		0.0155400	3.8508282	mg/kg-dry	1.00	1.0090	0.00	200.00	79.99
5373	L	CU	SCC	I		0.0117900	2.9215743	mg/kg-dry	1.00	1.0090	0.00	200.00	79.99
5373	L	FE	SCC	I		10.6328200	2634.8239020	mg/kg-dry	1.00	1.0090	0.00	200.00	79.99
5373	L	K	SCC	I		1.1490000	284.7234001	mg/kg-dry	1.00	1.0090	0.00	200.00	79.99
5373	L	MG	SCC	I		1.2788900	316.9102778	mg/kg-dry	1.00	1.0090	0.00	200.00	79.99
5373	L	MN	SCC	I		0.2919200	72.3380809	mg/kg-dry	1.00	1.0090	0.00	200.00	79.99
5373	L	MO	SCC	I	U	0.0050000	1.2390052	mg/kg-dry	1.00	1.0090	0.00	200.00	79.99
5373	L	NA	SCC	I	U	0.0500000	12.3900522	mg/kg-dry	1.00	1.0090	0.00	200.00	79.99

JOB	SAMP	ELEMENT	PREPCODE			RAWVALUE	CALCULATED	UNITS	DILUTION	MASS	INITVOL	FINVOL	%SOLIDS
5373	L	NI	SCC	I		0.0131100	3.2486717	mg/kg-dry	1.00	1.0090	0.00	200.00	79.99
5373	L	PB	SCC	I		0.1845700	45.7366388	mg/kg-dry	1.00	1.0090	0.00	200.00	79.99
5373	L	SB	SCC	I	U	0.0500000	12.3900522	mg/kg-dry	1.00	1.0090	0.00	200.00	79.99
5373	L	SE	SCC	I	U	0.0500000	12.3900522	mg/kg-dry	1.00	1.0090	0.00	200.00	79.99
5373	L	SI	SCC	I		3.8724500	959.5971548	mg/kg-dry	1.00	1.0090	0.00	200.00	79.99
5373	L	SN	SCC	I	U	0.0100000	2.4780104	mg/kg-dry	1.00	1.0090	0.00	200.00	79.99
5373	L	SR	SCC	I		0.0120400	2.9835246	mg/kg-dry	1.00	1.0090	0.00	200.00	79.99
5373	L	TI	SCC	I		0.1333300	33.0393133	mg/kg-dry	1.00	1.0090	0.00	200.00	79.99
5373	L	TL	SCC	I	U	0.0500000	12.3900522	mg/kg-dry	1.00	1.0090	0.00	200.00	79.99
5373	L	V	SCC	I		0.0204300	5.0625753	mg/kg-dry	1.00	1.0090	0.00	200.00	79.99
5373	L	ZN	SCC	I		0.0468500	11.6094789	mg/kg-dry	1.00	1.0090	0.00	200.00	79.99
5373	M	AG	SCC	I	U	0.0030000	0.7402275	mg/kg-dry	1.00	1.0440	0.00	200.00	77.64
5373	M	AL	SCC	I		10.9923200	2712.2725774	mg/kg-dry	1.00	1.0440	0.00	200.00	77.64
5373	M	AS	SCC	I	U	0.0500000	12.3371253	mg/kg-dry	1.00	1.0440	0.00	200.00	77.64
5373	M	B	SCC	I		0.0115200	2.8424737	mg/kg-dry	1.00	1.0440	0.00	200.00	77.64
5373	M	BA	SCC	I		0.1318600	32.5354668	mg/kg-dry	1.00	1.0440	0.00	200.00	77.64
5373	M	BE	SCC	I	U	0.0010000	0.2467425	mg/kg-dry	1.00	1.0440	0.00	200.00	77.64
5373	M	CA	SCC	I		3.4670500	855.4686035	mg/kg-dry	1.00	1.0440	0.00	200.00	77.64
5373	M	CD	SCC	I	U	0.0020000	0.4934850	mg/kg-dry	1.00	1.0440	0.00	200.00	77.64
5373	M	CO	SCC	I		0.0104100	2.5685895	mg/kg-dry	1.00	1.0440	0.00	200.00	77.64
5373	M	CR	SCC	I		0.0185400	4.5746061	mg/kg-dry	1.00	1.0440	0.00	200.00	77.64
5373	M	CU	SCC	I		0.0120600	2.9757146	mg/kg-dry	1.00	1.0440	0.00	200.00	77.64
5373	M	FE	SCC	I		20.1829500	4979.9916502	mg/kg-dry	1.00	1.0440	0.00	200.00	77.64
5373	M	K	SCC	I		1.6818200	414.9764805	mg/kg-dry	1.00	1.0440	0.00	200.00	77.64
5373	M	MG	SCC	I		1.8765800	463.0320509	mg/kg-dry	1.00	1.0440	0.00	200.00	77.64
5373	M	MN	SCC	I		1.1452200	282.5744521	mg/kg-dry	1.00	1.0440	0.00	200.00	77.64
5373	M	MO	SCC	I	U	0.0050000	1.2337125	mg/kg-dry	1.00	1.0440	0.00	200.00	77.64
5373	M	NA	SCC	I	U	0.0500000	12.3371253	mg/kg-dry	1.00	1.0440	0.00	200.00	77.64
5373	M	NI	SCC	I		0.0172000	4.2439711	mg/kg-dry	1.00	1.0440	0.00	200.00	77.64
5373	M	PB	SCC	I		0.0413400	10.2003352	mg/kg-dry	1.00	1.0440	0.00	200.00	77.64
5373	M	SB	SCC	I	U	0.0500000	12.3371253	mg/kg-dry	1.00	1.0440	0.00	200.00	77.64
5373	M	SE	SCC	I	U	0.0500000	12.3371253	mg/kg-dry	1.00	1.0440	0.00	200.00	77.64
5373	M	SI	SCC	I		6.4626900	1594.6203225	mg/kg-dry	1.00	1.0440	0.00	200.00	77.64
5373	M	SN	SCC	I	U	0.0100000	2.4674251	mg/kg-dry	1.00	1.0440	0.00	200.00	77.64
5373	M	SR	SCC	I		0.0236300	5.8305254	mg/kg-dry	1.00	1.0440	0.00	200.00	77.64
5373	M	TI	SCC	I		0.1768600	43.6388795	mg/kg-dry	1.00	1.0440	0.00	200.00	77.64
5373	M	TL	SCC	I	U	0.0500000	12.3371253	mg/kg-dry	1.00	1.0440	0.00	200.00	77.64
5373	M	V	SCC	I		0.0265700	6.5559484	mg/kg-dry	1.00	1.0440	0.00	200.00	77.64
5373	M	ZN	SCC	I		0.0875800	21.6097086	mg/kg-dry	1.00	1.0440	0.00	200.00	77.64
5373	N	AG	SCC	I	U	0.0030000	0.7259001	mg/kg-dry	1.00	1.0080	0.00	200.00	82.00
5373	N	AL	SCC	I		6.8961000	1668.6265970	mg/kg-dry	1.00	1.0080	0.00	200.00	82.00
5373	N	AS	SCC	I	U	0.0500000	12.0983353	mg/kg-dry	1.00	1.0080	0.00	200.00	82.00
5373	N	B	SCC	I		0.0100800	2.4390244	mg/kg-dry	1.00	1.0080	0.00	200.00	82.00
5373	N	BA	SCC	I		0.0636200	15.3939218	mg/kg-dry	1.00	1.0080	0.00	200.00	82.00
5373	N	BE	SCC	I	U	0.0010000	0.2419667	mg/kg-dry	1.00	1.0080	0.00	200.00	82.00
5373	N	CA	SCC	I		1.3056000	315.9117305	mg/kg-dry	1.00	1.0080	0.00	200.00	82.00
5373	N	CD	SCC	I	U	0.0020000	0.4839334	mg/kg-dry	1.00	1.0080	0.00	200.00	82.00
5373	N	CO	SCC	I		0.0066300	1.6042393	mg/kg-dry	1.00	1.0080	0.00	200.00	82.00
5373	N	CR	SCC	I		0.0163600	3.9585753	mg/kg-dry	1.00	1.0080	0.00	200.00	82.00
5373	N	CU	SCC	I		0.0063300	1.5316492	mg/kg-dry	1.00	1.0080	0.00	200.00	82.00
5373	N	FE	SCC	I		14.7237300	3562.6524390	mg/kg-dry	1.00	1.0080	0.00	200.00	82.00
5373	N	K	SCC	I		1.1961200	289.4212156	mg/kg-dry	1.00	1.0080	0.00	200.00	82.00
5373	N	MG	SCC	I		0.9461600	228.9392180	mg/kg-dry	1.00	1.0080	0.00	200.00	82.00
5373	N	MN	SCC	I		0.3022100	73.1247580	mg/kg-dry	1.00	1.0080	0.00	200.00	82.00
5373	N	MO	SCC	I	U	0.0050000	1.2098335	mg/kg-dry	1.00	1.0080	0.00	200.00	82.00

JOB	SAMP	ELEMENT	PREPCODE			RAWVALUE	CALCULATED	UNITS	DILUTION	MASS	INITVOL	FINVOL	%SOLIDS
5373	N	NA	SCC	I	U	0.0500000	12.0983353	mg/kg-dry	1.00	1.0080	0.00	200.00	82.00
5373	N	NI	SCC	I	U	0.0100000	2.4196671	mg/kg-dry	1.00	1.0080	0.00	200.00	82.00
5373	N	PB	SCC	I	U	0.0200000	4.8393341	mg/kg-dry	1.00	1.0080	0.00	200.00	82.00
5373	N	SB	SCC	I	U	0.0500000	12.0983353	mg/kg-dry	1.00	1.0080	0.00	200.00	82.00
5373	N	SE	SCC	I	U	0.0500000	12.0983353	mg/kg-dry	1.00	1.0080	0.00	200.00	82.00
5373	N	SI	SCC	I		4.9529500	1198.4489934	mg/kg-dry	1.00	1.0080	0.00	200.00	82.00
5373	N	SN	SCC	I	U	0.0100000	2.4196671	mg/kg-dry	1.00	1.0080	0.00	200.00	82.00
5373	N	SR	SCC	I		0.0110200	2.6664731	mg/kg-dry	1.00	1.0080	0.00	200.00	82.00
5373	N	TI	SCC	I		0.1495400	36.1837011	mg/kg-dry	1.00	1.0080	0.00	200.00	82.00
5373	N	TL	SCC	I	U	0.0500000	12.0983353	mg/kg-dry	1.00	1.0080	0.00	200.00	82.00
5373	N	V	SCC	I		0.0228700	5.5337786	mg/kg-dry	1.00	1.0080	0.00	200.00	82.00
5373	N	ZN	SCC	I		0.0246500	5.9644793	mg/kg-dry	1.00	1.0080	0.00	200.00	82.00
5373	O	AG	SCC	I	U	0.0030000	0.6998292	mg/kg-dry	1.00	1.0280	0.00	200.00	83.40
5373	O	AL	SCC	I		15.6019900	3639.5762767	mg/kg-dry	1.00	1.0280	0.00	200.00	83.40
5373	O	AS	SCC	I	U	0.0500000	11.6638207	mg/kg-dry	1.00	1.0280	0.00	200.00	83.40
5373	O	B	SCC	I		0.0193000	4.5022348	mg/kg-dry	1.00	1.0280	0.00	200.00	83.40
5373	O	BA	SCC	I		0.2002800	46.7206002	mg/kg-dry	1.00	1.0280	0.00	200.00	83.40
5373	O	BE	SCC	I	U	0.0010000	0.2332764	mg/kg-dry	1.00	1.0280	0.00	200.00	83.40
5373	O	CA	SCC	I		6.8388700	1595.3470686	mg/kg-dry	1.00	1.0280	0.00	200.00	83.40
5373	O	CD	SCC	I		0.0029100	0.6788344	mg/kg-dry	1.00	1.0280	0.00	200.00	83.40
5373	O	CO	SCC	I		0.0103200	2.4074126	mg/kg-dry	1.00	1.0280	0.00	200.00	83.40
5373	O	CR	SCC	I		0.0242700	5.6616186	mg/kg-dry	1.00	1.0280	0.00	200.00	83.40
5373	O	CU	SCC	I		0.0222700	5.1950657	mg/kg-dry	1.00	1.0280	0.00	200.00	83.40
5373	O	FE	SCC	I		20.8213200	4857.1228620	mg/kg-dry	1.00	1.0280	0.00	200.00	83.40
5373	O	K	SCC	I		3.0229400	705.1806026	mg/kg-dry	1.00	1.0280	0.00	200.00	83.40
5373	O	MG	SCC	I		2.4783600	578.1429331	mg/kg-dry	1.00	1.0280	0.00	200.00	83.40
5373	O	MN	SCC	I		0.8207500	191.4616167	mg/kg-dry	1.00	1.0280	0.00	200.00	83.40
5373	O	MO	SCC	I	U	0.0050000	1.1663821	mg/kg-dry	1.00	1.0280	0.00	200.00	83.40
5373	O	NA	SCC	I	U	0.0500000	11.6638207	mg/kg-dry	1.00	1.0280	0.00	200.00	83.40
5373	O	NI	SCC	I		0.0226200	5.2767125	mg/kg-dry	1.00	1.0280	0.00	200.00	83.40
5373	O	PB	SCC	I		0.0848200	19.7865054	mg/kg-dry	1.00	1.0280	0.00	200.00	83.40
5373	O	SB	SCC	I	U	0.0500000	11.6638207	mg/kg-dry	1.00	1.0280	0.00	200.00	83.40
5373	O	SE	SCC	I	U	0.0500000	11.6638207	mg/kg-dry	1.00	1.0280	0.00	200.00	83.40
5373	O	SI	SCC	I		7.5626100	1764.1785404	mg/kg-dry	1.00	1.0280	0.00	200.00	83.40
5373	O	SN	SCC	I	U	0.0100000	2.3327641	mg/kg-dry	1.00	1.0280	0.00	200.00	83.40
5373	O	SR	SCC	I		0.0349000	8.1413468	mg/kg-dry	1.00	1.0280	0.00	200.00	83.40
5373	O	TI	SCC	I		0.2696500	62.9029850	mg/kg-dry	1.00	1.0280	0.00	200.00	83.40
5373	O	TL	SCC	I	U	0.0500000	11.6638207	mg/kg-dry	1.00	1.0280	0.00	200.00	83.40
5373	O	V	SCC	I		0.0372400	8.6872137	mg/kg-dry	1.00	1.0280	0.00	200.00	83.40
5373	O	ZN	SCC	I		0.1044500	24.3657214	mg/kg-dry	1.00	1.0280	0.00	200.00	83.40
5373	P	AG	SCC	I	U	0.0030000	0.6606253	mg/kg-dry	1.00	1.0640	0.00	200.00	85.36
5373	P	AL	SCC	I		25.2763300	5566.0612109	mg/kg-dry	1.00	1.0640	0.00	200.00	85.36
5373	P	AS	SCC	I	U	0.0500000	11.0104220	mg/kg-dry	1.00	1.0640	0.00	200.00	85.36
5373	P	B	SCC	I		0.0206000	4.5362939	mg/kg-dry	1.00	1.0640	0.00	200.00	85.36
5373	P	BA	SCC	I		0.2636400	58.0557533	mg/kg-dry	1.00	1.0640	0.00	200.00	85.36
5373	P	BE	SCC	I		0.0012700	0.2796647	mg/kg-dry	1.00	1.0640	0.00	200.00	85.36
5373	P	CA	SCC	I		6.8515600	1508.7713426	mg/kg-dry	1.00	1.0640	0.00	200.00	85.36
5373	P	CD	SCC	I	U	0.0020000	0.4404169	mg/kg-dry	1.00	1.0640	0.00	200.00	85.36
5373	P	CO	SCC	I		0.0151000	3.3251475	mg/kg-dry	1.00	1.0640	0.00	200.00	85.36
5373	P	CR	SCC	I		0.0370800	8.1653290	mg/kg-dry	1.00	1.0640	0.00	200.00	85.36
5373	P	CU	SCC	I		0.0238400	5.2497692	mg/kg-dry	1.00	1.0640	0.00	200.00	85.36
5373	P	FE	SCC	I		28.7119900	6322.6225416	mg/kg-dry	1.00	1.0640	0.00	200.00	85.36
5373	P	K	SCC	I		4.3495500	957.8076224	mg/kg-dry	1.00	1.0640	0.00	200.00	85.36
5373	P	MG	SCC	I		3.1364200	690.6661570	mg/kg-dry	1.00	1.0640	0.00	200.00	85.36
5373	P	MN	SCC	I		1.0548900	232.2956818	mg/kg-dry	1.00	1.0640	0.00	200.00	85.36

JOB	SAMP	ELEMENT	PREPCODE			RAWVALUE	CALCULATED	UNITS	DILUTION	MASS	INITVOL	FINVOL	%SOLIDS
5373	P	MO	SCC	I	U	0.0050000	1.1010422	mg/kg-dry	1.00	1.0640	0.00	200.00	85.36
5373	P	NA	SCC	I		0.0926500	20.4023120	mg/kg-dry	1.00	1.0640	0.00	200.00	85.36
5373	P	NI	SCC	I		0.0330900	7.2866973	mg/kg-dry	1.00	1.0640	0.00	200.00	85.36
5373	P	PB	SCC	I		0.0730400	16.0840245	mg/kg-dry	1.00	1.0640	0.00	200.00	85.36
5373	P	SB	SCC	I	U	0.0500000	11.0104220	mg/kg-dry	1.00	1.0640	0.00	200.00	85.36
5373	P	SE	SCC	I	U	0.0500000	11.0104220	mg/kg-dry	1.00	1.0640	0.00	200.00	85.36
5373	P	SI	SCC	I		9.0198700	1986.2515062	mg/kg-dry	1.00	1.0640	0.00	200.00	85.36
5373	P	SN	SCC	I		0.0100200	2.2064886	mg/kg-dry	1.00	1.0640	0.00	200.00	85.36
5373	P	SR	SCC	I		0.0448100	9.8675402	mg/kg-dry	1.00	1.0640	0.00	200.00	85.36
5373	P	TI	SCC	I		0.3696900	81.4088584	mg/kg-dry	1.00	1.0640	0.00	200.00	85.36
5373	P	TL	SCC	I	U	0.0500000	11.0104220	mg/kg-dry	1.00	1.0640	0.00	200.00	85.36
5373	P	V	SCC	I		0.0507000	11.1645679	mg/kg-dry	1.00	1.0640	0.00	200.00	85.36
5373	P	ZN	SCC	I		0.1574400	34.6696169	mg/kg-dry	1.00	1.0640	0.00	200.00	85.36
5373	Q	AG	SCC	I	U	0.0030000	0.7477642	mg/kg-dry	1.00	1.0050	0.00	200.00	79.84
5373	Q	AL	SCC	I		14.1510000	3527.2036611	mg/kg-dry	1.00	1.0050	0.00	200.00	79.84
5373	Q	AS	SCC	I	U	0.0500000	12.4627364	mg/kg-dry	1.00	1.0050	0.00	200.00	79.84
5373	Q	B	SCC	I		0.0230600	5.7478140	mg/kg-dry	1.00	1.0050	0.00	200.00	79.84
5373	Q	BA	SCC	I		0.1269900	31.6528580	mg/kg-dry	1.00	1.0050	0.00	200.00	79.84
5373	Q	BE	SCC	I		0.0010500	0.2617175	mg/kg-dry	1.00	1.0050	0.00	200.00	79.84
5373	Q	CA	SCC	I		2.0608300	513.6716219	mg/kg-dry	1.00	1.0050	0.00	200.00	79.84
5373	Q	CD	SCC	I	U	0.0020000	0.4985095	mg/kg-dry	1.00	1.0050	0.00	200.00	79.84
5373	Q	CO	SCC	I		0.0184900	4.6087199	mg/kg-dry	1.00	1.0050	0.00	200.00	79.84
5373	Q	CR	SCC	I		0.0267200	6.6600863	mg/kg-dry	1.00	1.0050	0.00	200.00	79.84
5373	Q	CU	SCC	I		0.0175100	4.3644503	mg/kg-dry	1.00	1.0050	0.00	200.00	79.84
5373	Q	FE	SCC	I		29.6626100	7393.5457981	mg/kg-dry	1.00	1.0050	0.00	200.00	79.84
5373	Q	K	SCC	I		3.3527800	835.6962682	mg/kg-dry	1.00	1.0050	0.00	200.00	79.84
5373	Q	MG	SCC	I		2.9683900	739.8852431	mg/kg-dry	1.00	1.0050	0.00	200.00	79.84
5373	Q	MN	SCC	I		0.3220900	80.2824555	mg/kg-dry	1.00	1.0050	0.00	200.00	79.84
5373	Q	MO	SCC	I	U	0.0050000	1.2462736	mg/kg-dry	1.00	1.0050	0.00	200.00	79.84
5373	Q	NA	SCC	I		0.0707500	17.6347720	mg/kg-dry	1.00	1.0050	0.00	200.00	79.84
5373	Q	NI	SCC	I		0.0415900	10.3665042	mg/kg-dry	1.00	1.0050	0.00	200.00	79.84
5373	Q	PB	SCC	I	U	0.0200000	4.9850946	mg/kg-dry	1.00	1.0050	0.00	200.00	79.84
5373	Q	SB	SCC	I	U	0.0500000	12.4627364	mg/kg-dry	1.00	1.0050	0.00	200.00	79.84
5373	Q	SE	SCC	I	U	0.0500000	12.4627364	mg/kg-dry	1.00	1.0050	0.00	200.00	79.84
5373	Q	SI	SCC	I		6.0826000	1516.1168107	mg/kg-dry	1.00	1.0050	0.00	200.00	79.84
5373	Q	SN	SCC	I		0.0113600	2.8315337	mg/kg-dry	1.00	1.0050	0.00	200.00	79.84
5373	Q	SR	SCC	I		0.0196000	4.8853927	mg/kg-dry	1.00	1.0050	0.00	200.00	79.84
5373	Q	TI	SCC	I		0.2494100	62.1666218	mg/kg-dry	1.00	1.0050	0.00	200.00	79.84
5373	Q	TL	SCC	I	U	0.0500000	12.4627364	mg/kg-dry	1.00	1.0050	0.00	200.00	79.84
5373	Q	V	SCC	I		0.0318400	7.9362706	mg/kg-dry	1.00	1.0050	0.00	200.00	79.84
5373	Q	ZN	SCC	I		0.0938000	23.3800935	mg/kg-dry	1.00	1.0050	0.00	200.00	79.84
5373	R	AG	SCC	I	U	0.0030000	0.7138244	mg/kg-dry	1.00	1.0070	0.00	200.00	83.47
5373	R	AL	SCC	I		29.7727400	7084.1690531	mg/kg-dry	1.00	1.0070	0.00	200.00	83.47
5373	R	AS	SCC	I	U	0.0500000	11.8970727	mg/kg-dry	1.00	1.0070	0.00	200.00	83.47
5373	R	B	SCC	I		0.0227800	5.4203063	mg/kg-dry	1.00	1.0070	0.00	200.00	83.47
5373	R	BA	SCC	I		0.2301300	54.7574669	mg/kg-dry	1.00	1.0070	0.00	200.00	83.47
5373	R	BE	SCC	I		0.0012900	0.3069445	mg/kg-dry	1.00	1.0070	0.00	200.00	83.47
5373	R	CA	SCC	I		11.9140400	2834.8440038	mg/kg-dry	1.00	1.0070	0.00	200.00	83.47
5373	R	CD	SCC	I	U	0.0020000	0.4758829	mg/kg-dry	1.00	1.0070	0.00	200.00	83.47
5373	R	CO	SCC	I		0.0129000	3.0694448	mg/kg-dry	1.00	1.0070	0.00	200.00	83.47
5373	R	CR	SCC	I		0.0493600	11.7447902	mg/kg-dry	1.00	1.0070	0.00	200.00	83.47
5373	R	CU	SCC	I		0.0291500	6.9359934	mg/kg-dry	1.00	1.0070	0.00	200.00	83.47
5373	R	FE	SCC	I		37.0682200	8820.0661739	mg/kg-dry	1.00	1.0070	0.00	200.00	83.47
5373	R	K	SCC	I		4.5054100	1072.0238075	mg/kg-dry	1.00	1.0070	0.00	200.00	83.47
5373	R	MG	SCC	I		4.0621400	966.5514990	mg/kg-dry	1.00	1.0070	0.00	200.00	83.47

JOB	SAMP	ELEMENT	PREPCODE			RAWVALUE	CALCULATED	UNITS	DILUTION	MASS	INITVOL	FINVOL	%SOLIDS
5373	R	MN	SCC	I		0.5670400	134.9223222	mg/kg-dry	1.00	1.0070	0.00	200.00	83.47
5373	R	MO	SCC	I	U	0.0050000	1.1897073	mg/kg-dry	1.00	1.0070	0.00	200.00	83.47
5373	R	NA	SCC	I		0.0974200	23.1802565	mg/kg-dry	1.00	1.0070	0.00	200.00	83.47
5373	R	NI	SCC	I		0.0288100	6.8550933	mg/kg-dry	1.00	1.0070	0.00	200.00	83.47
5373	R	PB	SCC	I		0.0989700	23.5490657	mg/kg-dry	1.00	1.0070	0.00	200.00	83.47
5373	R	SB	SCC	I	U	0.0500000	11.8970727	mg/kg-dry	1.00	1.0070	0.00	200.00	83.47
5373	R	SE	SCC	I	U	0.0500000	11.8970727	mg/kg-dry	1.00	1.0070	0.00	200.00	83.47
5373	R	SI	SCC	I		7.9706900	1896.5575701	mg/kg-dry	1.00	1.0070	0.00	200.00	83.47
5373	R	SN	SCC	I		0.0105700	2.5150412	mg/kg-dry	1.00	1.0070	0.00	200.00	83.47
5373	R	SR	SCC	I		0.0933500	22.2118348	mg/kg-dry	1.00	1.0070	0.00	200.00	83.47
5373	R	TI	SCC	I		0.3808500	90.6200029	mg/kg-dry	1.00	1.0070	0.00	200.00	83.47
5373	R	TL	SCC	I	U	0.0500000	11.8970727	mg/kg-dry	1.00	1.0070	0.00	200.00	83.47
5373	R	V	SCC	I		0.0658400	15.6660653	mg/kg-dry	1.00	1.0070	0.00	200.00	83.47
5373	R	ZN	SCC	I		0.1105200	26.2972895	mg/kg-dry	1.00	1.0070	0.00	200.00	83.47
5373	S	AG	SCC	I	U	0.0030000	0.6897354	mg/kg-dry	1.00	1.0520	0.00	200.00	82.69
5373	S	AL	SCC	I		24.8202300	5706.4637864	mg/kg-dry	1.00	1.0520	0.00	200.00	82.69
5373	S	AS	SCC	I	U	0.0500000	11.4955901	mg/kg-dry	1.00	1.0520	0.00	200.00	82.69
5373	S	B	SCC	I		0.0190400	4.3775207	mg/kg-dry	1.00	1.0520	0.00	200.00	82.69
5373	S	BA	SCC	I		0.2282200	52.4704713	mg/kg-dry	1.00	1.0520	0.00	200.00	82.69
5373	S	BE	SCC	I	U	0.0010000	0.2299118	mg/kg-dry	1.00	1.0520	0.00	200.00	82.69
5373	S	CA	SCC	I		12.2006100	2805.0642213	mg/kg-dry	1.00	1.0520	0.00	200.00	82.69
5373	S	CD	SCC	I	U	0.0020000	0.4598236	mg/kg-dry	1.00	1.0520	0.00	200.00	82.69
5373	S	CO	SCC	I		0.0103200	2.3726898	mg/kg-dry	1.00	1.0520	0.00	200.00	82.69
5373	S	CR	SCC	I		0.0398100	9.1527888	mg/kg-dry	1.00	1.0520	0.00	200.00	82.69
5373	S	CU	SCC	I		0.0271200	6.2352080	mg/kg-dry	1.00	1.0520	0.00	200.00	82.69
5373	S	FE	SCC	I		32.8872400	7561.1645860	mg/kg-dry	1.00	1.0520	0.00	200.00	82.69
5373	S	K	SCC	I		3.3781500	776.6765513	mg/kg-dry	1.00	1.0520	0.00	200.00	82.69
5373	S	MG	SCC	I		3.9151300	900.1345904	mg/kg-dry	1.00	1.0520	0.00	200.00	82.69
5373	S	MN	SCC	I		0.5523400	126.9894843	mg/kg-dry	1.00	1.0520	0.00	200.00	82.69
5373	S	MO	SCC	I	U	0.0050000	1.1495590	mg/kg-dry	1.00	1.0520	0.00	200.00	82.69
5373	S	NA	SCC	I		0.0780200	17.9377187	mg/kg-dry	1.00	1.0520	0.00	200.00	82.69
5373	S	NI	SCC	I		0.0279600	6.4283340	mg/kg-dry	1.00	1.0520	0.00	200.00	82.69
5373	S	PB	SCC	I		0.1873000	43.0624804	mg/kg-dry	1.00	1.0520	0.00	200.00	82.69
5373	S	SB	SCC	I	U	0.0500000	11.4955901	mg/kg-dry	1.00	1.0520	0.00	200.00	82.69
5373	S	SE	SCC	I	U	0.0500000	11.4955901	mg/kg-dry	1.00	1.0520	0.00	200.00	82.69
5373	S	SI	SCC	I		9.0128600	2072.1628769	mg/kg-dry	1.00	1.0520	0.00	200.00	82.69
5373	S	SN	SCC	I		0.0109600	2.5198333	mg/kg-dry	1.00	1.0520	0.00	200.00	82.69
5373	S	SR	SCC	I		0.0941900	21.6553926	mg/kg-dry	1.00	1.0520	0.00	200.00	82.69
5373	S	TI	SCC	I		0.3341700	76.8296266	mg/kg-dry	1.00	1.0520	0.00	200.00	82.69
5373	S	TL	SCC	I	U	0.0500000	11.4955901	mg/kg-dry	1.00	1.0520	0.00	200.00	82.69
5373	S	V	SCC	I		0.0586600	13.4866263	mg/kg-dry	1.00	1.0520	0.00	200.00	82.69
5373	S	ZN	SCC	I		0.1046500	24.0602700	mg/kg-dry	1.00	1.0520	0.00	200.00	82.69
5373	T	AG	SCC	I	U	0.0030000	0.6431034	mg/kg-dry	1.00	1.0560	0.00	200.00	88.35
5373	T	AL	SCC	I		9.3800400	2010.7784123	mg/kg-dry	1.00	1.0560	0.00	200.00	88.35
5373	T	AS	SCC	I	U	0.0500000	10.7183893	mg/kg-dry	1.00	1.0560	0.00	200.00	88.35
5373	T	B	SCC	I		0.0090600	1.9421721	mg/kg-dry	1.00	1.0560	0.00	200.00	88.35
5373	T	BA	SCC	I		0.1673800	35.8808801	mg/kg-dry	1.00	1.0560	0.00	200.00	88.35
5373	T	BE	SCC	I	U	0.0010000	0.2143678	mg/kg-dry	1.00	1.0560	0.00	200.00	88.35
5373	T	CA	SCC	I		3.5925500	770.1269915	mg/kg-dry	1.00	1.0560	0.00	200.00	88.35
5373	T	CD	SCC	I	U	0.0020000	0.4287356	mg/kg-dry	1.00	1.0560	0.00	200.00	88.35
5373	T	CO	SCC	I		0.0061800	1.3247929	mg/kg-dry	1.00	1.0560	0.00	200.00	88.35
5373	T	CR	SCC	I		0.0128100	2.7460513	mg/kg-dry	1.00	1.0560	0.00	200.00	88.35
5373	T	CU	SCC	I		0.0242500	5.1984188	mg/kg-dry	1.00	1.0560	0.00	200.00	88.35
5373	T	FE	SCC	I		13.9018900	2980.1173878	mg/kg-dry	1.00	1.0560	0.00	200.00	88.35
5373	T	K	SCC	I		1.7651900	378.3998731	mg/kg-dry	1.00	1.0560	0.00	200.00	88.35

JOB	SAMP	ELEMENT	PREPCODE			RAWVALUE	CALCULATED	UNITS	DILUTION	MASS	INITVOL	FINVOL	%SOLIDS
5373	T	MG	SCC	I		1.5830400	339.3527808	mg/kg-dry	1.00	1.0560	0.00	200.00	88.35
5373	T	MN	SCC	I		0.7644600	163.8755981	mg/kg-dry	1.00	1.0560	0.00	200.00	88.35
5373	T	MO	SCC	I	U	0.0050000	1.0718389	mg/kg-dry	1.00	1.0560	0.00	200.00	88.35
5373	T	NA	SCC	I	U	0.0500000	10.7183893	mg/kg-dry	1.00	1.0560	0.00	200.00	88.35
5373	T	NI	SCC	I	U	0.0100000	2.1436779	mg/kg-dry	1.00	1.0560	0.00	200.00	88.35
5373	T	PB	SCC	I		0.0996700	21.3660373	mg/kg-dry	1.00	1.0560	0.00	200.00	88.35
5373	T	SB	SCC	I	U	0.0500000	10.7183893	mg/kg-dry	1.00	1.0560	0.00	200.00	88.35
5373	T	SE	SCC	I	U	0.0500000	10.7183893	mg/kg-dry	1.00	1.0560	0.00	200.00	88.35
5373	T	SI	SCC	I		5.5099100	1181.1472106	mg/kg-dry	1.00	1.0560	0.00	200.00	88.35
5373	T	SN	SCC	I		0.0138300	2.9647065	mg/kg-dry	1.00	1.0560	0.00	200.00	88.35
5373	T	SR	SCC	I		0.0157000	3.3655742	mg/kg-dry	1.00	1.0560	0.00	200.00	88.35
5373	T	TI	SCC	I		0.1829200	39.2121555	mg/kg-dry	1.00	1.0560	0.00	200.00	88.35
5373	T	TL	SCC	I	U	0.0500000	10.7183893	mg/kg-dry	1.00	1.0560	0.00	200.00	88.35
5373	T	V	SCC	I		0.0188600	4.0429765	mg/kg-dry	1.00	1.0560	0.00	200.00	88.35
5373	T	ZN	SCC	I		0.2375800	50.9294987	mg/kg-dry	1.00	1.0560	0.00	200.00	88.35

ANALYTICAL RESOURCES INCORPORATED

EPA ICP SAMPLE LOGBOOK

Page 1 of 3 Date: 12-12-96 Analyst: NSJ

All corrections made by analyst unless otherwise noted.

Sample Number	EPA ID	Prep. Code	Dilution	Comments	Edit Label
STD. 1 (BLANK)	SO				
2	S			STD. # 703-1	
5	S			-4	
4	S			-3	
3 / 3	S / S			-2	
ICV				588-12	
ICB					
CCV 1				STD. #686-1	
CCB 1					
CR1					
ICSA					
ICSAB					
CCV 2					
CCB 2					
5373 REF 1	LCSS	SCC		✓ Cu BAT 12/15/96	
REF 1	LCSS		1/2	✓ (Cu only)	
ASPK	MFGZ44S			Sb 46.5% R	
ADUP	MFGZ44D			Al, Fe - high RPD	
A	MFGZ44				
A-L	MFGZ44L		1/5	✓ - CLP SERIAL DILUTION	
MB	PBS			Cu 0.0022	
CCV 3					
CCB 3					
5373 B	MFGZ45	SCC			
C	MFGZ46				

5000F

Rev.2
11/25/96

ANALYTICAL RESOURCES INCORPORATED

EPA ICP SAMPLE LOGBOOK

Page 2 of 3 Date: 12-12-96 Analyst: NSJ

All corrections made by analyst unless otherwise noted.

Sample Number	EPA ID	Prep. Code	Dilution	Comments	Edit Label
5373 D	MFGZ47	SCC			
E	MFGZ 49				
F	MFGZ 50				
G	MFGZ 56				
H	MFGZ 57				
I	MFGZ 58				
J	MFGZ 64				
K	MFGZ 65				
CCV 4					
CCB 4					
CRI					
ICSA					
ICSAB					
CCV 5					
CCB 5					
5373 L	MFGZ 48	SCC			
M	MFGZ 51				
N	MFGZ 52				
O	MFGZ 53				
P	MFGZ 54				
Q	MFGZ 55				
R	MFGZ 59				
S	MFGZ 60				
T	MFGZ 63				
APOST	MFGZ44A			✓ +0.012 mL 56100 to 10 mL sample	(98.0%)

ANALYTICAL
RESOURCES
INCORPORATED

EPA ICP SAMPLE LOGBOOK

Page 3 of 3 Date: 12-12-96 Analyst: NSJ

All corrections made by analyst unless otherwise noted.

Sample Number	EPA ID	Prep. Code	Dilution	Comments	Edit Label
CCV 6					
CCB 6					
CRI					
ICSA					
ICSAB					
CCV 7					
CCB 7					
NSJ 12/12/96					

5000F

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11/25/96

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INSTRUMENT: TJA ICP 61

Standardization Rpt. Thu 12-12-96 12:31:53 PM page 1

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Method: ICPCLP1 Standard: STD1-Blank

Elem	AG	AL	AS	B	BA	BE	CA
Avge	-.0333	.4719	.0733	.0195	.0014	.0962	.0205
SDev	.0044	.0392	.0044	.0030	.0014	.0016	.0054
%RSD	13.09	8.303	5.951	15.23	100.0	1.715	26.41
#1	-.0343	.4271	.0743	.0229	.0000	.0943	.0143
#2	-.0371	.5000	.0686	.0186	.0014	.0971	.0243
#3	-.0286	.4886	.0771	.0171	.0029	.0971	.0229

Elem	CD	CO	CR	CU	FE	K	MG
Avge	.0143	.0095	.0133	.0581	.0376	-.1029	.0105
SDev	.0050	.0008	.0016	.0016	.0046	.0330	.0016
%RSD	34.64	8.660	12.37	2.839	12.21	32.03	15.75
#1	.0171	.0100	.0143	.0571	.0429	-.1371	.0086
#2	.0086	.0100	.0143	.0571	.0357	-.0714	.0114
#3	.0171	.0086	.0114	.0600	.0343	-.1000	.0114

Elem	MN	MO	NA	NI	PB	SB	SE
Avge	.0057	.0038	.5810	-.0786	.0352	.0257	.0338
SDev	.0014	.0033	.0081	.0076	.0064	.0422	.0175
%RSD	25.00	86.60	1.398	9.621	18.28	164.0	51.63
#1	.0043	.0000	.5900	-.0757	.0286	.0671	.0186
#2	.0071	.0057	.5743	-.0729	.0357	.0271	.0300
#3	.0057	.0057	.5786	-.0871	.0414	-.0171	.0529

Elem	SI	SN	SR	TI	TL	V	ZN
Avge	.1571	.0029	.0586	.0190	-.0505	-.0095	.0114
SDev	.0124	.0103	.0000	.0016	.0059	.0165	.0000
%RSD	7.925	360.6	.0000	8.660	11.78	173.2	.0000
#1	.1486	-.0057	.0586	.0200	-.0457	-.0286	.0114
#2	.1514	.0143	.0586	.0171	-.0486	.0000	.0114
#3	.1714	.0000	.0586	.0200	-.0571	.0000	.0114

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S

Method: ICPCLP1 Standard: STD2

Elem	BA	CA	CD	CO	CR	CU	MN
Avge	54.71	24.12	56.54	25.92	17.47	64.59	30.93
SDev	.35	.05	.07	.08	.05	.41	.12
%RSD	.6318	.2177	.1233	.2950	.3014	.6386	.3921
#1	54.59	24.13	56.61	25.91	17.45	64.37	30.86
#2	54.44	24.06	56.47	25.84	17.43	64.33	30.87
#3	55.10	24.16	56.55	25.99	17.53	65.07	31.07

Elem	V
Avge	65.02
SDev	.26
%RSD	.3963
#1	64.89
#2	64.84
#3	65.31

5

Method: ICPCLP1 Standard: STD5

Elem	K
Avge	13.03
SDev	.04
%RSD	.2933
#1	13.08
#2	13.02
#3	13.00

Standardization Rpt. Thu 12-12-96 12:48:00 PM page 1

S

Method: ICPCLP1 Standard: STD4

Elem	MO	SB	SI	SN	TI
Avge	20.61	17.63	29.16	9.991	57.52
SDev	.11	.09	.08	.028	.21
%RSD	.5264	.5315	.2882	.2839	.3583
#1	20.50	17.52	29.17	9.969	57.34
#2	20.72	17.70	29.23	10.02	57.74
#3	20.63	17.67	29.07	9.981	57.47

NOISY : RERUN STD. 3

Standardization Rpt. Thu 12-12-96 12:53:01 PM page 1

Method: ICPCLP1 Standard: STD3

Elem	AG	AL	AS	B	BE	FE	MG
Avge	3.417	30.63	10.04	24.88	171.6	25.43	7.649
SDev	.038	.43	.07	.38	2.8	.31	.190
%RSD	1.123	1.408	.7103	1.540	1.615	1.221	2.490
#1	3.444	30.90	10.07	25.05	173.2	25.60	7.803
#2	3.373	30.14	9.960	24.44	168.4	25.07	7.436
#3	3.433	30.86	10.09	25.15	173.1	25.61	7.707

Elem	NA	NI	PB	SE	SR	TL	ZN
Avge	46.51	54.27	13.37	7.251	50.40	10.36	9.810
SDev	.67	.80	.12	.152	.79	.16	.096
%RSD	1.441	1.482	.9144	2.093	1.558	1.568	.9737
#1	46.96	54.93	13.49	7.354	50.81	10.43	9.887
#2	45.74	53.37	13.24	7.077	49.49	10.17	9.703
#3	46.84	54.50	13.37	7.323	50.89	10.47	9.839

Standardization Rpt. S Thu 12-12-96 12:56:50 PM page 1

Method: ICPCLP1 Standard: STD3

Elem	AG	AL	AS	B	BE	FE	MG
Avge	3.432	30.73	10.19	25.16	172.9	25.59	7.665
SDev	.013	.06	.07	.09	.5	.06	.047
%RSD	.3777	.2103	.7220	.3439	.2909	.2482	.6075
#1	3.437	30.74	10.16	25.11	172.7	25.58	7.703
#2	3.417	30.66	10.13	25.12	172.5	25.53	7.613
#3	3.441	30.79	10.27	25.26	173.4	25.65	7.679

Elem	NA	NI	PB	SE	SR	TL	ZN
Avge	46.48	54.44	13.45	7.376	50.49	10.54	9.864
SDev	.09	.18	.05	.042	.15	.10	.027
%RSD	.1898	.3308	.3731	.5706	.2905	.9299	.2764
#1	46.57	54.31	13.49	7.330	50.46	10.44	9.884
#2	46.40	54.37	13.39	7.384	50.36	10.53	9.833
#3	46.46	54.65	13.45	7.413	50.65	10.64	9.874

Standardization Report Thu 12-12-96 12:57:31 PM page 1

Method: ICPCLP1 Slope = IR/Conc(SIR)

Element	Wavelen	High std	Low std	Slope	BEC	Date Standardized
AG	328.068	STD3	STD1-Blank	3.47208	.009600	12/12/96 12:54:12
AL	308.215	STD3	STD1-Blank	3.02590	.155955	12/12/96 12:54:12
AS	197.197	STD3	STD1-Blank	1.00054	.073294	12/12/96 12:54:12
B	249.678	STD3	STD1-Blank	2.50917	.007781	12/12/96 12:54:12
BA	455.495	STD2	STD1-Blank	5.47086	.000261	12/12/96 12:54:12
BE	313.042	STD3	STD1-Blank	17.2763	.005568	12/12/96 12:54:12
CA	317.933	STD2	STD1-Blank	2.40799	.008503	12/12/96 12:54:12
CD	228.802	STD2	STD1-Blank	5.64869	.002529	12/12/96 12:54:12
CO	228.616	STD2	STD1-Blank	2.58400	.003686	12/12/96 12:54:12
CR	267.716	STD2	STD1-Blank	1.74425	.007644	12/12/96 12:54:12
CU	324.754	STD2	STD1-Blank	6.45311	.009003	12/12/96 12:54:12
FE	259.940	STD3	STD1-Blank	2.55486	.014725	12/12/96 12:54:12
K	766.491	STD5	STD1-Blank	.131376	.782921	12/12/96 12:54:12
MG	279.079	STD3	STD1-Blank	.765333	.013688	12/12/96 12:54:12
MN	257.610	STD2	STD1-Blank	3.09216	.001848	12/12/96 12:54:12
MO	202.030	STD4	STD1-Blank	2.06110	.001848	12/12/96 12:54:12
NA	588.995	STD3	STD1-Blank	4.58967	.126578	12/12/96 12:54:12
NI	231.604	STD3	STD1-Blank	5.44851	.014421	12/12/96 12:54:12
PB	220.353	STD3	STD1-Blank	1.33886	.026320	12/12/96 12:54:12
SB	206.838	STD4	STD1-Blank	1.75701	.014635	12/12/96 12:54:12
SE	196.022	STD3	STD1-Blank	.734818	.046011	12/12/96 12:54:12
SI	288.158	STD4	STD1-Blank	2.89995	.054188	12/12/96 12:54:12
SN	189.989	STD4	STD1-Blank	.998187	.002862	12/12/96 12:54:12
SR	421.552	STD3	STD1-Blank	5.04319	.011614	12/12/96 12:54:12
TI	334.941	STD4	STD1-Blank	5.74986	.003313	12/12/96 12:54:12
TL	190.864	STD3	STD1-Blank	1.05500	.047845	12/12/96 12:54:12
V	292.402	STD2	STD1-Blank	6.50160	.001465	12/12/96 12:54:12
ZN	213.856	STD3	STD1-Blank	.981848	.011640	12/12/96 12:54:12

Analysis Report QC Standard Thu 12-12-96 01:11:51 PM page 1

Method: ICPCLP1 Sample Name: ICV Operator: NSJ
Run Time: 12/12/96 13:06:11
Comment:
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.4956	2.021	-.0216	.0066	2.019	.4420	49.73
SDev	.0024	.019	.0151	.0010	.015	.0029	.19
%RSD	.4861	.9364	69.75	14.97	.7260	.6521	.3902
#1	.4974	2.007	-.0387	.0060	2.003	.4389	49.57
#2	.4966	2.043	-.0159	.0060	2.031	.4446	49.95
#3	.4929	2.015	-.0102	.0077	2.024	.4426	49.69

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.5088	.5288	.4744	.4903	1.972	52.59	25.44
SDev	.0018	.0017	.0024	.0031	.011	.10	.16
%RSD	.3598	.3164	.5174	.6345	.5419	.1807	.6319
#1	.5068	.5270	.4719	.4874	1.961	52.56	25.28
#2	.5092	.5302	.4768	.4936	1.983	52.51	25.60
#3	.5104	.5291	.4744	.4900	1.974	52.69	25.45

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.4837	.0012	51.59	.4837	4.938	1.055	.0156
SDev	.0021	.0008	.32	.0025	.008	.023	.0251
%RSD	.4367	68.58	.6239	.5121	.1582	2.201	160.7
#1	.4819	.0007	51.25	.4809	4.941	1.035	.0364
#2	.4860	.0007	51.88	.4856	4.929	Q1.080	.0227
#3	.4833	.0021	51.66	.4846	4.944	1.049	-.0122

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0133	-.0080	.0592	.0001	-.0031	.4821	2.997
SDev	.0013	.0001	.0004	.0001	.0154	.0035	.009
%RSD	9.648	.8704	.7245	109.7	499.0	.7329	.3116
#1	-.0118	-.0080	.0588	.0003	.0038	.4788	2.990
#2	-.0143	-.0079	.0597	.0001	.0077	.4858	3.007
#3	-.0138	-.0080	.0591	.0000	-.0207	.4816	2.993

Analysis Report Blank Sample Thu 12-12-96 01:17:37 PM page 1

Method: ICPCLP1 Sample Name: Blank ICB Operator: NSJ
Run Time: 12/12/96 13:11:57
Comment:
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0014	-.0096	-.0179	.0051	.0006	-.0000	.0067
SDev	.0010	.0006	.0132	.0007	.0003	.0000	.0022
%RSD	68.81	6.011	73.87	12.79	49.49	143.4	33.38
#1	-.0020	-.0093	-.0331	.0047	.0008	-.0000	.0093
#2	-.0003	-.0092	-.0102	.0047	.0003	-.0000	.0057
#3	-.0020	-.0102	-.0103	.0059	.0008	.0000	.0051

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0013	-.0017	-.0016	-.0000	-.0062	L-.4458	-.0093
SDev	.0014	.0008	.0005	.0007	.0012	.1282	.0092
%RSD	105.1	51.06	29.11	79480.	18.88	28.76	98.40
#1	H.0025	-.0009	-.0011	-.0001	-.0052	L-.4785	-.0156
#2	.0016	-.0026	-.0019	.0007	-.0075	-.3045	.0012
#3	-.0002	-.0015	-.0019	-.0006	-.0058	L-.5546	-.0137

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0003	-.0012	.0154	.0019	-.0146	-.0030	.0013
SDev	.0005	.0012	.0074	.0059	.0098	.0023	.0092
%RSD	173.7	103.2	47.93	320.2	67.01	78.68	711.9
#1	.0000	.0002	.0206	-.0037	-.0125	-.0016	-.0091
#2	.0000	-.0019	.0185	.0081	L-.0253	-.0057	.0084
#3	-.0009	-.0019	.0070	.0011	-.0061	-.0016	.0045

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0002	-.0029	.0008	-.0004	-.0252	L-.0050	H.0058
SDev	.0069	.0029	.0000	.0004	.0072	.0024	.0000
%RSD	3555.	99.42	.0049	91.90	28.41	47.39	.3717
#1	-.0069	-.0057	.0008	-.0008	-.0225	L-.0060	H.0058
#2	.0069	-.0029	.0008	-.0001	-.0198	L-.0023	H.0058
#3	-.0005	-.0000	.0008	-.0003	-.0334	L-.0067	H.0058

Analysis Report QC Standard Thu 12-12-96 01:23:25 PM page 1

Method: ICPCLP1 Sample Name: CV CCV 1 Operator: NSJ
Run Time: 12/12/96 13:17:43
Comment:
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9857	4.847	1.920	.9726	.9629	.9374	4.894
SDev	.0010	.014	.014	.0021	.0043	.0016	.009
%RSD	.1048	.2897	.7231	.2203	.4459	.1708	.1761
#1	.9846	4.863	1.935	.9735	.9677	.9391	4.902
#2	.9866	4.838	1.916	.9741	.9612	.9370	4.894
#3	.9858	4.840	1.908	.9701	.9596	.9360	4.885

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9812	.9705	.9695	.9907	4.865	19.65	4.875
SDev	.0075	.0028	.0008	.0028	.014	.27	.068
%RSD	.7663	.2850	.0839	.2800	.2852	1.357	1.397
#1	.9896	.9735	.9704	.9935	4.881	19.39	4.952
#2	.9789	.9702	.9687	.9906	4.859	19.64	4.853
#3	.9751	.9680	.9696	.9880	4.855	19.92	4.821

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9700	.9780	1.954	.9713	1.955	1.945	1.944
SDev	.0015	.0039	.004	.0062	.006	.014	.012
%RSD	.1526	.3951	.2121	.6376	.2997	.7441	.6081
#1	.9717	.9739	1.955	.9643	1.949	1.957	1.949
#2	.9693	.9787	1.950	.9761	1.953	1.929	1.951
#3	.9689	.9815	1.958	.9735	1.961	1.948	1.930

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.979	.9404	.9649	.9537	1.889	.9646	.9810
SDev	.003	.0066	.0040	.0030	.013	.0020	.0017
%RSD	.1527	.7002	.4155	.3109	.7003	.2085	.1698
#1	1.981	.9328	.9695	.9570	1.874	.9655	.9801
#2	1.979	.9442	.9625	.9527	1.892	.9660	.9829
#3	1.975	.9443	.9627	.9513	1.900	.9623	.9800

Analysis Report Blank Sample Thu 12-12-96 01:29:11 PM page 1

Method: ICPCLP1 Sample Name: Blank CCB 1 Operator: NSJ
Run Time: 12/12/96 13:23:30
Comment:
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0011	-.0048	-.0126	.0053	.0006	.0001	-.0016
SDev	.0014	.0032	.0233	.0025	.0003	.0001	.0015
%RSD	126.5	65.38	185.1	46.68	49.49	73.97	94.50
#1	-.0019	-.0022	.0127	.0042	.0008	.0002	-.0032
#2	.0005	-.0083	-.0330	H.0082	.0008	.0001	-.0002
#3	-.0019	-.0040	-.0174	.0036	.0003	.0001	-.0014

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0001	-.0000	-.0008	-.0004	-.0047	-.1849	-.0013
SDev	.0015	.0013	.0005	.0010	.0019	.1849	.0114
%RSD	1900.	127800.	57.45	230.6	41.62	100.0	905.6
#1	-.0001	-.0015	-.0003	-.0010	-.0024	-.3697	-.0137
#2	-.0013	.0007	-.0011	.0007	-.0058	.0000	.0087
#3	.0016	.0007	-.0011	-.0010	-.0058	-.1849	.0012

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0003	-.0014	.0028	.0033	L-.0267	.0081	.0065
SDev	.0003	.0014	.0032	.0057	.0071	.0163	.0085
%RSD	86.52	103.6	115.6	172.2	26.75	200.1	131.0
#1	-.0000	-.0025	-.0008	.0045	L-.0349	.0244	.0162
#2	-.0005	-.0019	.0054	.0084	L-.0231	-.0081	.0006
#3	-.0005	.0002	.0038	-.0029	L-.0220	.0081	.0026

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0005	-.0048	.0008	-.0004	-.0085	L-.0048	H.0048
SDev	.0073	.0101	.0000	.0001	.0170	.0013	.0008
%RSD	1565.	211.7	.0033	34.71	199.3	27.99	17.32
#1	-.0030	.0058	.0008	-.0006	-.0266	L-.0049	H.0058
#2	.0088	-.0058	.0008	-.0003	-.0063	L-.0060	H.0043
#3	-.0045	L-.0143	.0008	-.0003	.0072	L-.0034	H.0044

Analysis Report QC Standard Thu 12-12-96 01:34:57 PM page 1

Method: ICPCLP1 Sample Name: CRI Operator: NSJ
Run Time: 12/12/96 13:29:16
Comment:
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0180	-.0210	.0049	.0035	.0003	.0093	.0002
SDev	.0017	.0049	.0157	.0011	.0000	.0001	.0027
%RSD	9.190	23.58	318.0	32.96	.0000	1.307	1421.
#1	.0183	-.0158	.0225	.0023	.0003	.0093	.0004
#2	.0195	-.0215	-.0074	.0046	.0003	.0092	.0028
#3	.0163	-.0257	-.0003	.0035	.0003	.0094	-.0026

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0097	.0991	.0163	.0514	-.0090	-.4386	-.0228
SDev	.0004	.0011	.0009	.0007	.0012	.2509	.0019
%RSD	3.791	1.115	5.809	1.292	12.91	57.20	8.205
#1	.0094	.0980	.0168	.0514	-.0094	-.6198	-.0246
#2	.0101	.0991	.0169	.0521	-.0077	-.1522	-.0228
#3	.0095	.1002	.0152	.0508	-.0099	-.5437	-.0209

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0296	-.0016	-.0086	.0838	-.0115	.1176	-.0083
SDev	.0000	.0004	.0038	.0050	.0034	.0179	.0225
%RSD	.0011	24.27	43.82	5.937	29.30	15.25	271.0
#1	.0296	-.0019	-.0052	.0787	-.0077	.1024	-.0051
#2	.0296	-.0012	-.0080	.0887	-.0139	.1374	.0124
#3	.0296	-.0019	-.0127	.0840	-.0129	.1130	-.0323

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0150	-.0054	-.0000	-.0003	-.0101	.0957	.0432
SDev	.0062	.0028	.0000	.0003	.0133	.0012	.0014
%RSD	41.60	52.18	1316.	113.3	131.9	1.275	3.344
#1	-.0083	-.0026	-.0000	-.0001	-.0177	.0955	.0432
#2	-.0161	-.0082	-.0000	-.0001	.0053	.0946	.0447
#3	-.0206	-.0054	.0000	-.0006	-.0178	.0970	.0418

Analysis Report QC Standard Thu 12-12-96 01:43:41 PM page 1

Method: ICPCLP1 Sample Name: ICSA Operator: NSJ
Run Time: 12/12/96 13:38:00
Comment:
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0078	521.8	-.0602	.1058	.0020	-.0000	466.8
SDev	.0010	7.6	.0469	.0057	.0001	.0001	4.3
%RSD	12.71	1.456	77.80	5.428	7.531	614.0	.9315
#1	-.0066	513.1	-.1039	.0992	.0018	-.0000	461.7
#2	-.0084	526.5	-.0107	.1089	.0021	-.0001	469.3
#3	-.0083	525.9	-.0662	.1094	.0021	.0001	469.2

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0018	.0026	.0325	.0168	179.2	-.8554	475.3
SDev	.0010	.0010	.0028	.0004	2.2	.1476	5.1
%RSD	55.19	36.83	8.723	2.608	1.229	17.26	1.080
#1	-.0009	.0035	.0292	.0168	176.6	-1.011	469.4
#2	-.0016	.0016	.0341	.0171	180.4	-.8373	478.9
#3	-.0028	.0027	.0341	.0163	180.5	-.7177	477.5

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0452	.0019	.0955	.0041	-.0222	.0226	-.0393
SDev	.0013	.0029	.0077	.0155	.0127	.0394	.0580
%RSD	2.786	149.9	8.122	376.4	57.12	174.3	147.8
#1	.0437	.0030	.1044	.0123	-.0126	.0586	-.0975
#2	.0457	.0041	.0916	.0138	-.0366	.0289	-.0388
#3	.0461	-.0013	.0904	-.0137	-.0175	-.0196	.0185

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0393	-.0119	.2128	.0043	.1152	-.0034	.0332
SDev	.0058	.0043	.0034	.0005	.0933	.0008	.0018
%RSD	14.67	36.32	1.581	11.12	80.96	22.45	5.283
#1	.0330	-.0121	.2090	.0037	.0076	-.0039	.0344
#2	.0444	-.0075	.2145	.0046	.1720	-.0025	.0341
#3	.0404	-.0162	.2151	.0046	.1662	-.0037	.0312

Analysis Report QC Standard Thu 12-12-96 01:52:25 PM page 1

Method: ICPCLP1 Sample Name: ICSAB Operator: NSJ
Run Time: 12/12/96 13:46:45
Comment:
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1751	514.6	.0151	.1099	.4658	.4234	456.7
SDev	.0014	3.9	.0313	.0022	.0031	.0029	2.2
%RSD	.8164	.7636	207.4	1.977	.6689	.6941	.4803
#1	.1747	518.4	.0499	.1104	.4679	.4259	458.1
#2	.1767	515.1	.0062	.1076	.4672	.4240	457.9
#3	.1739	510.5	-.0108	.1119	.4622	.4202	454.2

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.8854	.4247	.4452	.4808	177.1	-.4277	467.0
SDev	.0016	.0033	.0019	.0034	.9	.1444	3.2
%RSD	.1827	.7761	.4260	.7141	.4839	33.76	.6947
#1	.8852	.4268	.4441	.4836	177.6	-.5111	469.8
#2	.8872	.4263	.4474	.4818	177.5	-.5111	467.7
#3	.8840	.4209	.4441	.4770	176.1	-.2610	463.4

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.4722	.0007	.0873	.8199	.0072	.5990	.0321
SDev	.0014	.0030	.0049	.0115	.0248	.0232	.0695
%RSD	.2983	424.0	5.572	1.398	343.8	3.875	216.3
#1	.4736	-.0027	.0841	.8286	.0059	.5759	.0712
#2	.4723	.0030	.0929	.8241	.0326	.6223	-.0481
#3	.4708	.0018	.0848	.8069	-.0169	.5989	.0733

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0300	-.0008	.2107	.0044	.2373	.4307	.9006
SDev	.0007	.0219	.0014	.0002	.0388	.0029	.0013
%RSD	2.449	2798.	.6712	4.130	16.37	.6822	.1479
#1	.0292	-.0015	.2119	.0045	.2562	.4337	.9020
#2	.0302	.0214	.2110	.0042	.2631	.4305	.9006
#3	.0306	-.0223	.2091	.0045	.1926	.4279	.8993

Analysis Report QC Standard Thu 12-12-96 02:01:11 PM page 1

Method: ICPCLP1 Sample Name: CV Operator: NSJ
Run Time: 12/12/96 13:55:29 CCV 2
Comment:
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9748	4.823	1.894	.9633	.9764	.9285	4.878
SDev	.0028	.028	.020	.0069	.0049	.0057	.016
%RSD	.2827	.5782	1.072	.7160	.5006	.6197	.3221
#1	.9717	4.794	1.890	.9553	.9709	.9220	4.860
#2	.9771	4.850	1.875	.9673	.9800	.9328	4.890
#3	.9755	4.824	1.915	.9673	.9784	.9308	4.885

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9816	.9597	.9622	.9766	4.845	19.31	4.843
SDev	.0008	.0036	.0029	.0057	.014	.20	.031
%RSD	.0812	.3758	.2969	.5837	.2828	1.043	.6482
#1	.9819	.9558	.9589	.9700	4.830	19.16	4.836
#2	.9822	.9602	.9638	.9796	4.857	19.24	4.815
#3	.9807	.9630	.9638	.9802	4.848	19.54	4.877

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9549	.9688	1.954	.9681	1.920	1.921	1.938
SDev	.0043	.0088	.003	.0144	.007	.006	.019
%RSD	.4468	.9089	.1433	1.492	.3576	.3383	.9735
#1	.9499	.9586	1.954	.9518	1.920	1.921	1.934
#2	.9573	.9739	1.952	.9793	1.927	1.914	1.922
#3	.9573	.9739	1.957	.9732	1.914	1.927	1.959

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.934	.9337	.9692	.9515	1.892	.9548	.9762
SDev	.003	.0087	.0054	.0048	.045	.0033	.0030
%RSD	.1408	.9349	.5533	.5084	2.390	.3445	.3039
#1	1.932	.9241	.9630	.9460	1.852	.9511	.9729
#2	1.937	.9413	.9729	.9552	1.884	.9563	.9771
#3	1.932	.9356	.9715	.9532	1.941	.9572	.9786

Analysis Report Blank Sample Thu 12-12-96 02:06:57 PM page 1

Method: ICPCLP1 Sample Name: Blank Operator: NSJ
Run Time: 12/12/96 14:01:16 CCB 2
Comment:
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0021	.0003	-.0127	.0028	.0008	.0001	H.0253
SDev	.0006	.0146	.0106	.0017	.0000	.0001	.0006
%RSD	30.14	4330.	84.15	61.48	.0000	72.36	2.345
#1	-.0028	.0153	-.0018	.0024	.0008	.0002	H.0253
#2	-.0019	-.0140	-.0131	.0047	.0008	.0001	H.0259
#3	-.0015	-.0002	-.0231	.0013	.0008	.0001	H.0247

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0007	-.0007	.0000	-.0010	H.0226	-.3371	.0143
SDev	.0001	.0008	.0013	.0000	.0162	.2705	.0086
%RSD	14.02	113.5	28240.	.1444	71.74	80.26	59.74
#1	.0008	-.0015	-.0003	-.0010	H.0412	L-.5763	.0162
#2	.0006	-.0009	-.0011	-.0010	.0144	-.3915	.0050
#3	.0006	.0002	.0014	-.0010	.0121	-.0435	H.0218

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0000	.0002	-.0050	.0071	-.0182	-.0097	.0143
SDev	.0000	.0021	.0042	.0037	.0050	.0122	.0459
%RSD	46.32	916.1	85.32	51.72	27.57	125.3	321.8
#1	-.0000	.0023	-.0099	.0087	-.0125	.0025	-.0051
#2	-.0000	.0002	-.0021	.0029	-.0200	-.0219	-.0188
#3	-.0000	-.0019	-.0030	.0097	L-.0221	-.0097	H.0668

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0035	-.0077	.0008	-.0002	-.0326	L-.0051	H.0058
SDev	.0031	.0043	.0000	.0004	.0056	.0009	.0000
%RSD	88.61	56.77	.0013	154.4	17.29	17.40	.2225
#1	-.0059	-.0086	.0008	-.0006	-.0308	L-.0049	H.0058
#2	-.0045	-.0029	.0008	-.0003	-.0280	L-.0060	H.0058
#3	-.0000	L-.0115	.0008	.0002	-.0389	L-.0043	H.0058

Analysis Report Thu 12-12-96 02:12:50 PM page 1

Method: ICPCLP1 Sample Name: 5373 REF1 SCC LCSS Operator: NSJ
Run Time: 12/12/96 14:08:26
Comment:
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS - DUT REQ'D	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1197	1.477	4.365	.0418	.0243	.0828	H807.1
SDev	.0007	.016	.048	.0037	.0000	.0005	3.6
%RSD	.5495	1.057	1.108	8.964	.0000	.6486	.4519
#1	.1205	1.485	4.338	.0378	.0243	.0833	H809.0
#2	.1192	1.486	4.335	.0453	.0243	.0829	H809.3
#3	.1195	1.459	4.421	.0423	.0243	.0822	H802.9

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1939	.6290	.4478	32.61	91.84	-.1160	502.9
SDev	.0023	.0051	.0019	.28	.49	.2805	3.9
%RSD	1.193	.8042	.4231	.8557	.5356	241.8	.7852
#1	.1941	.6319	.4489	32.80	92.14	-.1957	505.4
#2	.1961	.6319	.4489	32.74	92.10	-.3480	504.9
#3	.1915	.6231	.4456	32.29	91.27	.1957	498.3

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9325	.2206	.1450	.2526	.9597	.9787	.1117
SDev	.0048	.0039	.0077	.0213	.0138	.0521	.0793
%RSD	.5134	1.766	5.345	8.423	1.439	5.325	71.06
#1	.9355	.2181	.1361	.2612	.9560	1.027	.0491
#2	.9351	.2251	.1489	.2682	.9750	.9856	.2009
#3	.9270	.2186	.1501	.2284	.9482	.9235	.0849

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.160	.0236	.2488	.0857	.1981	.3082	.7376
SDev	.007	.0031	.0014	.0005	.0480	.0016	.0040
%RSD	.3073	13.10	.5486	.5927	24.25	.5100	.5478
#1	2.158	.0200	.2501	.0856	.1502	.3087	.7399
#2	2.168	.0256	.2490	.0863	.1979	.3094	.7400
#3	2.155	.0251	.2474	.0854	.2463	.3064	.7330

Analysis Report Thu 12-12-96 02:18:59 PM page 1

Method: ICPCLP1 Sample Name: 5373 REF1 SCC Operator: NSJ
Run Time: 12/12/96 14:14:36
Comment: 1/2 DILUTION
LCSS
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0622	.7659	2.318	.0205	.0132	.0450	440.5
SDev	.0001	.0031	.050	.0026	.0001	.0003	4.1
%RSD	.1677	.4004	2.165	12.57	1.140	.7302	.9350
#1	.0620	.7624	2.260	.0229	.0131	.0447	435.8
#2	.0622	.7681	2.341	.0207	.0133	.0451	442.0
#3	.0622	.7673	2.352	.0178	.0133	.0453	443.6

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1070	.3455	.2396	16.81	50.01	-.1522	275.9
SDev	.0020	.0026	.0021	.18	.50	.1495	3.1
%RSD	1.894	.7445	.8596	1.049	1.003	98.20	1.139
#1	.1052	.3426	.2374	16.61	49.43	.0109	272.3
#2	.1067	.3464	.2399	16.90	50.22	-.2827	277.4
#3	.1092	.3475	.2415	16.93	50.37	-.1849	278.1

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.5031	.1154	.0648	.1389	.5141	.5397	.0863
SDev	.0053	.0026	.0019	.0085	.0132	.0635	.0437
%RSD	1.049	2.232	2.998	6.130	2.577	11.77	50.68
#1	.4971	.1145	.0664	.1296	.5132	.4804	.0819
#2	.5052	.1183	.0655	.1464	.5278	.5320	.0449
#3	.5070	.1135	.0627	.1406	.5014	.6067	.1321

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.157	.0150	.1322	.0454	.1235	.1636	.4082
SDev	.012	.0070	.0018	.0002	.0549	.0013	.0032
%RSD	1.063	46.33	1.369	.3528	44.44	.7738	.7941
#1	1.148	.0070	.1301	.0456	.0861	.1622	.4046
#2	1.152	.0189	.1331	.0452	.0980	.1639	.4108
#3	1.171	.0192	.1334	.0454	.1865	.1647	.4093

Analysis Report Thu 12-12-96 02:25:09 PM page 1

Method: ICPCLP1 Sample Name: 5373 ASPK SCC Operator: NSJ
Run Time: 12/12/96 14:20:46 MFGZ445
Comment:
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0456	9.550	1.858	.0110	2.020	.0452	1.705
SDev	.0002	.041	.058	.0006	.009	.0001	.001
%RSD	.4454	.4314	3.129	5.200	.4321	.1768	.0807
#1	.0458	9.502	1.795	.0110	2.010	.0451	1.706
#2	.0455	9.568	1.909	.0115	2.027	.0453	1.706
#3	.0455	9.579	1.872	.0104	2.022	.0453	1.703

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0463	.4905	.2098	.2528	17.59	1.160	1.251
SDev	.0007	.0020	.0014	.0012	.08	.083	.012
%RSD	1.526	.4034	.6754	.4669	.4748	7.160	.9490
#1	.0467	.4883	.2090	.2519	17.49	1.250	1.245
#2	.0455	.4911	.2115	.2541	17.63	1.087	1.245
#3	.0467	.4922	.2090	.2524	17.63	1.142	1.265

46.5%

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9774	-.0003	.0328	.4982	.4911	.2325	1.895
SDev	.0050	.0014	.0050	.0029	.0037	.0207	.012
%RSD	.5100	475.4	15.28	.5856	.7584	8.917	.6176
#1	.9719	-.0017	.0343	.4950	.4932	.2322	1.896
#2	.9788	-.0003	.0368	.5007	.4933	.2535	1.883
#3	.9816	.0011	.0272	.4989	.4868	.2120	1.906

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.969	.0030	.0157	.1344	1.814	.5018	.4978
SDev	.021	.0087	.0002	.0016	.040	.0037	.0025
%RSD	.4212	290.4	1.039	1.203	2.201	.7459	.5022
#1	4.945	.0049	.0155	.1327	1.770	.4975	.4949
#2	4.981	-.0065	.0158	.1359	1.848	.5041	.4992
#3	4.981	.0106	.0158	.1345	1.824	.5039	.4992

Analysis Report Thu 12-12-96 02:29:37 PM page 1

Method: ICPCLP1 Sample Name: 5373 ADUP SCC Operator: NSJ
Run Time: 12/12/96 14:25:14
Comment: MFG2440
Mode: CONC Corr. Factor: 1

Elem	AG	AL 387.RPD	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0021	6.157	-.0223	.0079	.0827	.0005	1.727
SDev	.0013	.052	.0218	.0023	.0006	.0000	.008
%RSD	58.34	.8406	97.55	29.12	.7293	.4708	.4860
#1	-.0024	6.104	-.0270	.0066	.0820	.0005	1.717
#2	L-.0032	6.208	-.0414	.0065	.0830	.0005	1.733
#3	-.0008	6.160	.0014	.0105	.0830	.0005	1.729

12-5-96

Elem	CD	CO	CR	CU	FE 247.RPD	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0009	.0082	.0142	.0118	13.98	.7829	1.109
SDev	.0002	.0011	.0009	.0011	.13	.2352	.018
%RSD	27.18	14.03	6.683	9.640	.9546	30.05	1.660
#1	.0012	.0078	.0136	.0114	13.84	.9787	1.097
#2	.0008	.0094	.0136	.0108	14.10	.8482	1.130
#3	.0008	.0072	.0153	.0130	14.00	.5219	1.100

12-5-96

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.4128	.0016	.0255	.0134	-.0026	.0128	.0048
SDev	.0044	.0010	.0061	.0021	.0061	.0141	.0354
%RSD	1.070	65.31	23.85	15.61	234.0	110.9	744.3
#1	.4080	.0018	.0272	.0157	-.0043	.0262	-.0006
#2	.4167	.0005	.0188	.0118	-.0077	-.0020	.0425
#3	.4135	.0025	.0306	.0125	.0041	.0141	-.0276

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.739	.0082	.0146	.1389	-.0064	.0207	.0276
SDev	.046	.0057	.0002	.0010	.0417	.0005	.0014
%RSD	.9753	70.11	1.119	.7453	649.8	2.557	5.251
#1	4.687	.0082	.0144	.1377	-.0222	.0213	.0262
#2	4.776	.0025	.0147	.1397	-.0380	.0204	.0276
#3	4.754	.0139	.0147	.1392	.0409	.0204	.0291

Analysis Report Thu 12-12-96 02:34:05 PM page 1

Method: ICPCLP1 Sample Name: 5373 A SCC Operator: NSJ
Run Time: 12/12/96 14:29:42
Comment: MFGZ44
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0027	9.026	-.0022	.0096	.0877	.0004	1.664
SDev	.0006	.032	.0230	.0014	.0005	.0000	.006
%RSD	22.37	.3595	1060.	14.31	.6202	.0395	.3704
#1	L-.0033	9.019	-.0060	.0088	.0875	.0004	1.666
#2	-.0029	9.062	-.0230	.0088	.0883	.0004	1.669
#3	-.0021	8.998	.0225	.0111	.0872	.0004	1.657

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0013	.0095	.0229	.0111	17.77	1.526	1.362
SDev	.0004	.0013	.0019	.0007	.09	.183	.005
%RSD	34.40	13.48	8.284	6.018	.5029	12.02	.3471
#1	.0008	.0102	.0218	.0105	17.79	1.653	1.358
#2	.0017	.0080	.0218	.0109	17.84	1.316	1.361
#3	.0014	.0103	.0251	.0118	17.67	1.609	1.367

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.4585	-.0026	.0372	.0141	.0092	.0036	.0032
SDev	.0023	.0025	.0060	.0017	.0156	.0141	.0145
%RSD	.4941	96.82	16.06	12.02	169.9	387.2	453.7
#1	.4600	-.0046	.0319	.0160	.0088	.0083	-.0110
#2	.4595	-.0033	.0362	.0134	-.0062	.0148	.0026
#3	.4559	.0002	.0437	.0128	.0249	-.0122	.0180

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.010	.0011	.0160	.1680	-.0320	.0268	.0311
SDev	.019	.0057	.0003	.0004	.0103	.0000	.0017
%RSD	.3889	533.8	2.041	.2565	32.19	.1415	5.435
#1	5.011	.0011	.0158	.1678	-.0438	.0268	.0301
#2	5.029	-.0046	.0164	.1685	-.0250	.0268	.0301
#3	4.990	.0067	.0158	.1678	-.0271	.0268	.0331

Analysis Report Thu 12-12-96 02:38:33 PM page 1

Method: ICPCLP1 Sample Name: 5373 A-L SCC Operator: NSJ
Run Time: 12/12/96 14:34:10
Comment: 1/5 CLP SERIAL DILUTION MFE244L
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0028	1.838	-.0169	.0012	.0180	-.0001	.3404
SDev	.0016	.011	.0113	.0020	.0000	.0001	.0012
%RSD	57.69	.5860	66.87	163.2	.0000	143.6	.3490
#1	-.0029	1.828	-.0084	.0014	.0180	.0000	.3416
#2	L-.0045	1.836	-.0126	-.0009	.0180	-.0001	.3404
#3	-.0012	1.849	-.0298	.0031	.0180	-.0001	.3392

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0016	.0012	-.0014	.0024	3.621	-.2573	.2649
SDev	.0007	.0013	.0012	.0010	.010	.0740	.0077
%RSD	44.62	109.3	90.69	42.57	.2764	28.76	2.927
#1	L-.0022	.0004	-.0027	.0022	3.610	-.3153	.2624
#2	-.0017	.0004	-.0003	.0015	3.629	-.1740	.2736
#3	-.0008	.0026	-.0011	.0035	3.623	-.2827	.2587

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0927	-.0024	-.0028	.0029	-.0104	-.0036	-.0082
SDev	.0000	.0016	.0051	.0061	.0043	.0144	.0097
%RSD	.0018	67.79	181.0	211.6	40.81	395.1	118.3
#1	.0927	-.0014	.0007	-.0039	-.0062	.0118	.0015
#2	.0927	-.0042	-.0086	.0079	-.0105	-.0166	-.0082
#3	.0927	-.0014	-.0005	.0047	-.0147	-.0061	-.0179

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.024	-.0072	.0034	.0341	-.0098	.0042	.0103
SDev	.010	.0000	.0000	.0010	.0044	.0022	.0009
%RSD	.9886	.5471	.0007	2.946	45.06	52.80	8.373
#1	1.019	-.0072	.0034	.0335	-.0047	.0018	.0113
#2	1.018	-.0073	.0034	.0335	-.0130	.0061	.0098
#3	1.036	-.0072	.0034	.0352	-.0116	.0048	.0098

Analysis Report Thu 12-12-96 02:43:01 PM page 1

Method: ICPCLP1 Sample Name: 5373 MB SCC Operator: NSJ
Run Time: 12/12/96 14:38:37
Comment: PBS
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0017	-.0101	-.0183	.0057	.0000	-.0001	.0174
SDev	.0005	.0053	.0084	.0020	.0000	.0001	.0021
%RSD	28.81	51.89	46.02	35.13	.0000	98.38	11.97
#1	-.0019	-.0158	-.0215	.0076	.0000	-.0001	.0152
#2	-.0019	-.0092	-.0246	.0059	.0000	-.0003	.0176
#3	-.0011	-.0054	-.0087	.0036	.0000	-.0000	.0194

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0016	-.0022	-.0044	.0022	-.0086	-.3226	-.0181
SDev	.0001	.0006	.0000	.0007	.0034	.0126	.0071
%RSD	3.217	28.87	.0939	30.59	39.72	3.892	39.01
#1	.0017	-.0026	-.0044	.0016	-.0103	-.3371	-.0100
#2	.0017	-.0026	-.0044	.0021	-.0108	-.3153	L-.0230
#3	.0016	-.0015	-.0044	.0030	-.0047	-.3153	L-.0212

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0006	-.0028	-.0062	-.0039	L-.0228	.0022	-.0169
SDev	.0005	.0014	.0028	.0034	.0101	.0203	.0159
%RSD	86.69	52.00	44.81	87.83	44.27	937.3	94.44
#1	-.0009	-.0039	-.0077	-.0008	L-.0307	.0016	-.0305
#2	-.0009	-.0012	-.0080	-.0076	-.0114	.0228	-.0207
#3	.0000	-.0032	-.0030	-.0034	L-.0264	-.0179	.0006

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0382	.0019	-.0005	-.0004	-.0198	L-.0030	.0015
SDev	.0045	.0032	.0002	.0004	.0241	.0008	.0025
%RSD	11.70	171.2	34.62	92.37	121.5	25.07	172.1
#1	.0364	-.0000	-.0003	-.0003	-.0388	L-.0030	-.0000
#2	.0349	.0001	-.0006	-.0008	-.0279	L-.0038	.0000
#3	.0433	.0057	-.0006	-.0001	.0073	L-.0023	.0044

Analysis Report QC Standard Thu 12-12-96 02:47:31 PM page 1

Method: ICPCLP1 Sample Name: CV Operator: NSJ
Run Time: 12/12/96 14:43:07
Comment: CCV 3
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9869	4.867	1.931	.9701	.9672	.9392	4.851
SDev	.0053	.026	.017	.0024	.0085	.0054	.032
%RSD	.5319	.5443	.8909	.2520	.8752	.5778	.6631
#1	.9916	4.886	1.912	.9718	.9748	.9433	4.879
#2	.9879	4.878	1.945	.9712	.9688	.9412	4.859
#3	.9812	4.837	1.937	.9673	.9581	.9330	4.816

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9829	.9667	.9685	.9642	4.861	19.59	4.911
SDev	.0108	.0072	.0070	.0050	.031	.17	.084
%RSD	1.102	.7419	.7188	.5231	.6400	.8623	1.711
#1	.9920	.9723	.9736	.9656	4.888	19.45	4.995
#2	.9857	.9690	.9712	.9683	4.868	19.54	4.911
#3	.9709	.9586	.9605	.9585	4.827	19.78	4.827

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9650	.9769	1.960	.9772	1.929	1.964	1.984
SDev	.0058	.0036	.016	.0121	.014	.017	.020
%RSD	.6016	.3647	.8284	1.236	.7122	.8416	1.033
#1	.9712	.9739	1.978	.9761	1.944	1.983	2.006
#2	.9643	.9808	1.957	.9897	1.927	1.956	1.982
#3	.9597	.9760	1.946	.9657	1.917	1.952	1.965

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.980	.9433	.9669	.9559	1.900	.9661	.9840
SDev	.014	.0129	.0074	.0067	.022	.0067	.0089
%RSD	.6876	1.368	.7641	.7026	1.146	.6961	.8998
#1	1.994	.9443	.9724	.9609	1.877	.9719	.9917
#2	1.979	.9557	.9698	.9585	1.921	.9678	.9859
#3	1.966	.9299	.9585	.9483	1.902	.9587	.9743

Analysis Report Blank Sample Thu 12-12-96 02:52:01 PM page 1

Method: ICPCLP1 Sample Name: Blank Operator: NSJ
Run Time: 12/12/96 14:47:37 CCB 3
Comment:
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0001	.0012	-.0256	.0047	.0005	.0003	-.0002
SDev	.0004	.0057	.0228	.0011	.0003	.0001	.0006
%RSD	313.1	470.7	89.24	24.06	50.00	29.93	303.6
#1	.0005	.0012	-.0474	.0036	.0008	.0004	.0004
#2	.0001	-.0045	-.0274	.0059	.0005	.0003	-.0002
#3	-.0003	.0069	-.0019	.0047	.0003	.0002	-.0008

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0018	-.0004	-.0019	H.0023	-.0043	-.1015	-.0093
SDev	.0007	.0015	.0008	.0002	.0003	.0950	.0233
%RSD	35.68	393.1	43.00	9.679	7.482	93.61	250.0
#1	H.0026	.0013	-.0027	H.0023	-.0047	-.0761	L-.0361
#2	.0017	-.0015	-.0011	H.0025	-.0041	-.0217	.0068
#3	.0013	-.0009	-.0019	H.0021	-.0041	-.2066	.0012

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0002	-.0005	-.0013	.0032	-.0089	-.0098	.0039
SDev	.0003	.0012	.0015	.0063	.0062	.0137	.0149
%RSD	173.9	257.8	113.8	198.9	69.77	140.2	382.4
#1	.0000	-.0019	-.0024	-.0037	-.0135	.0008	.0201
#2	-.0005	.0002	.0004	.0087	-.0115	-.0252	-.0091
#3	.0000	.0002	-.0021	.0045	-.0018	-.0049	.0006

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0033	-.0039	.0003	.0002	-.0117	-.0018	.0039
SDev	.0015	.0060	.0005	.0000	.0102	.0028	.0008
%RSD	45.64	154.9	173.2	.1647	87.33	158.8	21.84
#1	.0049	-.0086	.0008	.0002	-.0022	L-.0034	H.0044
#2	.0029	-.0058	.0000	.0002	-.0225	L-.0034	H.0043
#3	.0020	.0028	.0000	.0002	-.0104	.0015	.0029

PART ② OF ②
NSJ 12-12-96

Analysis Report Thu 12-12-96 02:57:18 PM page 1

Method: ICPCLP1 Sample Name: 5373 B SCC Operator: NSJ
Run Time: 12/12/96 14:52:55 MFG245
Comment:
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0015	6.086	-.0071	.0078	.0668	.0005	1.597
SDev	.0012	.076	.0293	.0013	.0011	.0002	.016
%RSD	83.19	1.257	415.2	17.20	1.628	35.17	1.025
#1	-.0003	5.999	.0055	.0064	.0655	.0006	1.578
#2	-.0027	6.118	.0139	.0080	.0671	.0005	1.602
#3	-.0014	6.142	-.0406	.0091	.0676	.0003	1.610

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0013	.0061	.0145	.0070	12.52	.8228	1.073
SDev	.0006	.0008	.0008	.0009	.15	.1067	.021
%RSD	43.20	13.76	5.671	12.34	1.210	12.97	1.914
#1	.0015	.0052	.0153	.0079	12.35	.9460	1.050
#2	.0007	.0068	.0145	.0062	12.58	.7612	1.083
#3	.0018	.0062	.0136	.0071	12.64	.7612	1.087

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2910	.0010	.0262	.0146	.0097	-.0215	-.0089
SDev	.0033	.0018	.0017	.0071	.0113	.0142	.0312
%RSD	1.140	187.9	6.602	48.80	116.9	66.17	349.5
#1	.2872	.0023	.0281	.0170	.0140	-.0372	.0245
#2	.2932	-.0011	.0259	.0202	-.0032	-.0093	-.0140
#3	.2927	.0017	.0247	.0066	.0181	-.0182	-.0373

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.104	.0056	.0113	.1317	-.0340	.0196	.0268
SDev	.037	.0108	.0000	.0029	.0315	.0003	.0008
%RSD	.8972	192.0	.0027	2.180	92.71	1.435	3.157
#1	4.063	.0131	.0113	.1300	L-.0587	.0198	.0278
#2	4.114	-.0067	.0113	.1300	.0015	.0192	.0263
#3	4.135	.0104	.0113	.1350	-.0447	.0197	.0263

Analysis Report Thu 12-12-96 03:01:46 PM page 1

Method: ICPCLP1 Sample Name: 5373 C SCC Operator: NSJ
Run Time: 12/12/96 14:57:23 MFG24L
Comment:
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0016	8.771	-.0153	.0164	.1248	.0005	3.265
SDev	.0002	.002	.0255	.0006	.0000	.0001	.008
%RSD	14.73	.0274	166.8	3.925	.0000	16.34	.2318
#1	-.0013	8.769	-.0214	.0156	.1248	.0006	3.263
#2	-.0017	8.774	.0127	.0168	.1248	.0004	3.259
#3	-.0017	8.771	-.0372	.0167	.1248	.0005	3.274

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0006	.0108	.0164	.0123	19.69	1.464	1.717
SDev	.0011	.0003	.0013	.0004	.03	.145	.013
%RSD	179.7	2.953	7.653	3.103	.1404	9.889	.7407
#1	-.0006	.0112	.0161	.0127	19.67	1.370	1.731
#2	.0014	.0107	.0153	.0121	19.69	1.392	1.713
#3	.0010	.0107	.0177	.0121	19.72	1.631	1.707

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.6792	-.0012	.0367	.0124	.0151	.0100	.0153
SDev	.0017	.0014	.0020	.0014	.0072	.0204	.0348
%RSD	.2446	117.5	5.382	11.57	48.03	204.1	227.5
#1	.6778	.0004	.0356	.0123	.0069	.0230	-.0145
#2	.6787	-.0024	.0356	.0110	.0208	.0206	.0535
#3	.6810	-.0017	.0390	.0139	.0175	-.0135	.0069

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.786	.0028	.0249	.1604	-.0034	.0275	.0469
SDev	.013	.0033	.0000	.0009	.0184	.0007	.0008
%RSD	.2257	116.4	.0006	.5862	538.2	2.546	1.779
#1	5.783	-.0010	.0249	.1615	-.0160	.0272	.0474
#2	5.775	.0048	.0249	.1600	-.0120	.0283	.0460
#3	5.800	.0047	.0249	.1598	.0177	.0270	.0474

Analysis Report Thu 12-12-96 03:06:14 PM page 1

Method: ICPCLP1 Sample Name: 5373 D SCC Operator: NSJ
Run Time: 12/12/96 15:01:51
Comment: MFG247
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0028	10.53	.0016	.0133	.1480	.0004	52.10
SDev	.0003	.04	.0115	.0012	.0009	.0001	.18
%RSD	8.793	.3990	720.9	8.974	.6197	19.02	.3363
#1	-.0027	10.52	-.0088	.0134	.1481	.0003	52.05
#2	-.0027	10.58	-.0003	.0121	.1488	.0004	52.30
#3	L-.0031	10.50	.0140	.0145	.1470	.0005	51.96

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0004	.0086	.0254	.0228	23.50	1.801	25.86
SDev	.0005	.0013	.0005	.0002	.11	.387	.17
%RSD	118.2	14.98	1.873	1.036	.4673	21.47	.6551
#1	.0010	.0093	.0259	.0228	23.45	2.077	25.84
#2	.0002	.0071	.0251	.0230	23.63	1.359	26.03
#3	.0001	.0093	.0251	.0225	23.43	1.968	25.69

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.317	-.0001	.2063	.0195	.3984	.0262	.0123
SDev	.006	.0011	.0019	.0073	.0065	.0174	.0423
%RSD	.4627	1484.	.9096	37.37	1.642	66.14	344.9
#1	1.314	.0009	.2043	.0278	.3984	.0170	.0608
#2	1.323	.0002	.2065	.0141	.3918	.0155	-.0168
#3	1.312	-.0012	.2080	.0165	.4049	.0462	-.0072

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	6.135	.0104	.0387	.1534	-.0222	.0291	.1309
SDev	.025	.0017	.0000	.0006	.0320	.0004	.0009
%RSD	.4040	16.20	.0084	.4194	144.3	1.451	.6565
#1	6.120	.0094	.0387	.1535	-.0121	.0287	.1299
#2	6.164	.0094	.0387	.1540	.0036	.0295	.1314
#3	6.122	.0123	.0387	.1527	L-.0581	.0291	.1314

Analysis Report Thu 12-12-96 03:10:43 PM page 1

Method: ICPCLP1 Sample Name: 5373 E SCC Operator: NSJ
Run Time: 12/12/96 15:06:19
Comment: MFG249
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0020	7.704	-.0182	.0106	.0908	.0004	2.318
SDev	.0015	.048	.0230	.0018	.0006	.0001	.008
%RSD	75.54	.6225	126.5	17.23	.6643	25.82	.3488
#1	-.0003	7.708	-.0209	.0127	.0911	.0003	2.322
#2	-.0024	7.750	-.0397	.0093	.0911	.0003	2.324
#3	L-.0032	7.654	.0061	.0099	.0901	.0005	2.309

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0008	.0067	.0117	.0077	14.17	1.167	1.350
SDev	.0001	.0015	.0013	.0010	.07	.120	.019
%RSD	7.375	22.07	10.65	13.39	.5203	10.26	1.385
#1	-.0009	.0061	.0104	.0088	14.19	1.044	1.371
#2	-.0008	.0055	.0120	.0071	14.23	1.174	1.343
#3	-.0008	.0083	.0128	.0070	14.09	1.283	1.335

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.3873	-.0000	.0383	.0156	-.0020	-.0086	.0021
SDev	.0023	.0031	.0054	.0032	.0125	.0078	.0112
%RSD	.5975	26770.	14.02	20.17	637.1	91.26	546.0
#1	.3876	-.0002	.0431	.0160	-.0155	-.0134	.0150
#2	.3894	.0032	.0393	.0123	.0004	.0005	-.0043
#3	.3848	-.0030	.0325	.0186	.0092	-.0127	-.0045

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.150	.0034	.0169	.1449	-.0278	.0203	.0334
SDev	.038	.0060	.0002	.0018	.0035	.0008	.0000
%RSD	.7327	173.9	.9692	1.205	12.74	4.016	.0198
#1	5.153	-.0033	.0170	.1450	-.0315	.0199	.0334
#2	5.187	.0083	.0170	.1465	-.0275	.0197	.0334
#3	5.112	.0053	.0167	.1430	-.0244	.0212	.0334

Analysis Report Thu 12-12-96 03:15:11 PM page 1

Method: ICPCLP1 Sample Name: 5373 F SCC Operator: NSJ
Run Time: 12/12/96 15:10:48
Comment:
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0027	7.477	-.0271	.0083	.1002	.0004	2.615
SDev	.0012	.021	.0192	.0012	.0006	.0000	.004
%RSD	45.99	.2858	70.88	13.87	.6019	.7409	.1711
#1	L-.0039	7.480	-.0057	.0072	.1005	.0004	2.616
#2	-.0014	7.455	-.0328	.0095	.0995	.0004	2.610
#3	-.0027	7.497	-.0428	.0083	.1005	.0004	2.619

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0003	.0081	.0123	.0072	14.79	1.305	1.403
SDev	.0005	.0006	.0013	.0014	.03	.223	.011
%RSD	146.8	7.878	10.21	18.68	.2339	17.10	.7563
#1	-.0005	.0077	.0112	.0060	14.81	1.087	1.406
#2	.0002	.0088	.0120	.0087	14.75	1.533	1.412
#3	-.0007	.0077	.0136	.0069	14.82	1.294	1.392

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.4705	-.0020	.0340	.0151	.0019	.0056	.0036
SDev	.0012	.0008	.0008	.0048	.0029	.0199	.0148
%RSD	.2461	39.64	2.420	31.47	148.8	355.5	415.8
#1	.4716	-.0029	.0343	.0107	.0030	-.0063	.0139
#2	.4693	-.0016	.0331	.0202	.0042	.0286	-.0134
#3	.4707	-.0016	.0347	.0144	-.0013	-.0055	.0101

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.268	.0085	.0190	.1429	-.0189	.0208	.0334
SDev	.004	.0058	.0002	.0007	.0065	.0007	.0000
%RSD	.0730	67.76	.8593	.5017	34.13	3.276	.0513
#1	5.270	.0085	.0189	.1421	-.0140	.0202	.0334
#2	5.264	.0143	.0189	.1433	-.0165	.0216	.0333
#3	5.271	.0028	.0192	.1433	-.0262	.0207	.0334

Analysis Report Thu 12-12-96 03:19:40 PM page 1

Method: ICPCLP1 Sample Name: 5373 G SCO Operator: NSJ
Run Time: 12/12/96 15:15:16
Comment:
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0024	14.09	-.0160	.0158	.1310	.0005	3.895
SDev	.0015	.05	.0128	.0003	.0007	.0001	.012
%RSD	64.78	.3666	79.96	2.200	.5017	17.44	.2987
#1	L-.0031	14.07	-.0308	.0162	.1311	.0006	3.888
#2	-.0006	14.05	-.0094	.0156	.1303	.0004	3.888
#3	L-.0035	14.15	-.0079	.0156	.1316	.0006	3.908

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0002	.0072	.0183	.0186	18.79	1.975	1.740
SDev	.0009	.0006	.0013	.0009	.07	.270	.006
%RSD	409.1	7.594	6.835	4.765	.3704	13.64	.3203
#1	-.0006	.0078	.0194	.0184	18.76	2.023	1.734
#2	.0008	.0067	.0169	.0195	18.74	1.685	1.740
#3	-.0010	.0072	.0185	.0178	18.87	2.218	1.745

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.3967	.0004	.0732	.0244	.3954	.0217	.0172
SDev	.0011	.0026	.0063	.0054	.0086	.0147	.0156
%RSD	.2660	696.9	8.530	22.21	2.167	67.88	90.86
#1	.3961	.0015	.0726	.0252	.3987	.0098	.0321
#2	.3961	.0022	.0798	.0186	.4019	.0382	.0009
#3	.3979	-.0026	.0673	.0294	.3857	.0172	.0186

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	7.867	.0025	.0376	.2448	-.0351	.0295	.1493
SDev	.023	.0033	.0005	.0007	.0125	.0005	.0000
%RSD	.2913	129.3	1.304	.2690	35.63	1.842	.0149
#1	7.847	.0044	.0373	.2446	-.0495	.0293	.1493
#2	7.863	-.0013	.0373	.2443	-.0264	.0291	.1493
#3	7.892	.0045	.0382	.2456	-.0296	.0301	.1493

Analysis Report Thu 12-12-96 03:24:09 PM page 1

Method: ICPCLP1 Sample Name: 5373 H SCC Operator: NSJ
Run Time: 12/12/96 15:19:45
Comment: MFGZ57
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0031	17.65	-.0131	.0155	.1515	.0008	7.613
SDev	.0016	.19	.0201	.0010	.0014	.0001	.074
%RSD	53.21	1.050	153.9	6.496	.8959	5.625	.9760
#1	-.0022	17.43	-.0040	.0164	.1499	.0008	7.529
#2	L-.0049	17.78	.0009	.0155	.1522	.0009	7.670
#3	-.0021	17.73	-.0361	.0144	.1522	.0009	7.640

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0031	.0107	.0311	.0495	30.04	2.958	3.365
SDev	.0001	.0009	.0009	.0007	.30	.255	.009
%RSD	4.021	8.067	3.047	1.488	1.011	8.614	.2621
#1	.0031	.0115	.0316	.0490	29.69	2.795	3.359
#2	.0030	.0109	.0316	.0493	30.24	3.251	3.375
#3	.0033	.0098	.0300	.0504	30.19	2.827	3.362

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9072	.0029	.0618	.0234	1.386	-.0006	.0153
SDev	.0097	.0007	.0057	.0072	.016	.0167	.0137
%RSD	1.068	23.85	9.286	30.69	1.175	2717.	89.62
#1	.8960	.0029	.0633	.0220	1.367	-.0080	.0071
#2	.9126	.0036	.0555	.0170	1.396	.0186	.0311
#3	.9130	.0022	.0667	.0312	1.396	-.0124	.0077

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	8.593	.0094	.0271	.2518	-.0149	.0425	.5744
SDev	.064	.0001	.0000	.0024	.0127	.0004	.0050
%RSD	.7433	1.637	.0051	.9515	85.23	1.047	.8712
#1	8.520	.0093	.0271	.2492	-.0002	.0424	.5686
#2	8.638	.0096	.0271	.2539	-.0223	.0421	.5773
#3	8.621	.0095	.0271	.2522	-.0221	.0429	.5772

Analysis Report Thu 12-12-96 03:28:38 PM page 1

Method: ICPCLP1 Sample Name: 5373 I SCC Operator: NSJ
Run Time: 12/12/96 15:24:14 MFGZSB
Comment:
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0008	35.87	L-.1693	.0188	.3512	.0016	4.898
SDev	.0013	.06	.0148	.0041	.0000	.0001	.012
%RSD	167.0	.1614	8.720	21.94	.0000	7.543	.2526
#1	-.0022	35.81	L-.1825	.0168	.3512	.0016	4.890
#2	.0004	35.92	L-.1534	.0161	.3512	.0017	4.913
#3	-.0005	35.88	L-.1720	.0236	.3512	.0015	4.893

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0016	.0222	.0433	.4994	44.21	4.520	4.133
SDev	.0010	.0020	.0029	.0021	.09	.400	.023
%RSD	63.15	8.916	6.651	.4212	.2043	8.860	.5453
#1	.0011	.0206	.0431	.4970	44.13	4.458	4.151
#2	.0010	.0244	.0464	.5010	44.31	4.948	4.108
#3	.0028	.0217	.0406	.5001	44.19	4.154	4.141

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.635	-.0038	9.185	.0400	201.5	.0116	-.0089
SDev	.003	.0037	.002	.0049	.3	.0018	.0302
%RSD	.1695	97.89	.0238	12.15	.1676	15.28	340.8
#1	1.632	L-.0066	9.183	.0396	201.2	.0096	-.0096
#2	1.638	.0004	9.187	.0451	201.9	.0130	.0217
#3	1.636	L-.0052	9.184	.0354	201.4	.0121	-.0387

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	8.667	.0072	.0576	.4104	-.0480	.0770	.1015
SDev	.015	.0027	.0002	.0009	.0015	.0017	.0025
%RSD	.1721	36.70	.2837	.2099	3.050	2.261	2.497
#1	8.650	.0099	.0574	.4099	-.0464	.0761	.1044
#2	8.672	.0046	.0577	.4114	-.0483	.0790	.1000
#3	8.678	.0072	.0577	.4099	-.0493	.0759	.1000

Analysis Report Thu 12-12-96 03:33:07 PM page 1

Method: ICPCLP1 Sample Name: 5373 J SCC Operator: NSJ
Run Time: 12/12/96 15:28:43 MFG264
Comment:
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0018	22.67	-.0043	.0213	.2019	.0011	20.96
SDev	.0015	.19	.0132	.0002	.0013	.0001	.12
%RSD	84.10	.8383	309.1	.8515	.6379	4.353	.5856
#1	-.0007	22.59	-.0069	.0214	.2013	.0010	20.86
#2	-.0011	22.54	.0100	.0213	.2011	.0011	20.93
#3	L-.0035	22.89	-.0160	.0211	.2034	.0011	21.10

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0014	.0129	.0327	.0449	40.54	3.371	4.056
SDev	.0004	.0018	.0013	.0008	.30	.457	.040
%RSD	31.08	13.90	3.820	1.897	.7495	13.56	.9826
#1	.0011	.0122	.0324	.0457	40.32	3.230	4.040
#2	.0012	.0149	.0341	.0450	40.42	3.882	4.027
#3	.0019	.0116	.0316	.0440	40.89	3.001	4.101

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.7392	.0020	.2993	.0366	1.140	.0036	.0022
SDev	.0060	.0004	.0045	.0055	.010	.0090	.0239
%RSD	.8093	21.74	1.505	15.14	.8890	247.7	1086.
#1	.7335	.0017	.2964	.0417	1.138	.0061	-.0195
#2	.7386	.0017	.3045	.0307	1.151	.0111	-.0018
#3	.7454	.0025	.2970	.0375	1.131	-.0063	.0279

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	6.909	.0132	.0462	.3747	-.0223	.0713	.2973
SDev	.034	.0058	.0004	.0018	.0271	.0010	.0008
%RSD	.4934	43.94	.9334	.4733	121.4	1.445	.2724
#1	6.881	.0074	.0461	.3744	.0082	.0707	.2968
#2	6.900	.0132	.0458	.3732	-.0436	.0725	.2969
#3	6.947	.0191	.0466	.3766	-.0316	.0706	.2982

Analysis Report Thu 12-12-96 03:37:36 PM page 1

Method: ICPCLP1 Sample Name: 5373 K SCO Operator: NSJ
Run Time: 12/12/96 15:33:12
Comment:
Mode: CONC Corr. Factor: 1

MF6Z65

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0009	21.37	-.0368	.0178	.1930	.0008	18.96
SDev	.0008	.33	.0338	.0010	.0031	.0001	.24
%RSD	88.66	1.547	91.83	5.514	1.624	11.32	1.273
#1	-.0003	21.02	-.0376	.0175	.1898	.0008	18.69
#2	-.0006	21.41	-.0026	.0189	.1930	.0010	19.02
#3	-.0018	21.68	L-.0701	.0170	.1961	.0008	19.16

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0018	.0126	.0294	.0476	26.45	3.186	4.297
SDev	.0002	.0010	.0013	.0013	.35	.320	.081
%RSD	11.73	7.824	4.243	2.631	1.339	10.06	1.890
#1	.0018	.0132	.0283	.0463	26.07	3.012	4.217
#2	.0016	.0131	.0292	.0488	26.51	2.990	4.293
#3	.0020	.0115	.0308	.0475	26.78	3.556	4.379

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.6846	-.0005	.2347	.0371	1.014	.0004	.0104
SDev	.0106	.0017	.0060	.0085	.010	.0134	.0290
%RSD	1.545	379.2	2.576	22.97	.9812	3229.	278.2
#1	.6729	-.0007	.2295	.0296	1.003	-.0083	-.0120
#2	.6872	.0014	.2413	.0464	1.017	-.0063	.0001
#3	.6936	-.0020	.2332	.0354	1.022	.0159	.0432

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	7.892	.0133	.0419	.3465	-.0038	.0614	.2914
SDev	.084	.0050	.0008	.0052	.0088	.0005	.0030
%RSD	1.061	37.25	1.781	1.502	230.7	.8406	1.020
#1	7.810	.0103	.0413	.3409	.0060	.0619	.2881
#2	7.890	.0190	.0416	.3476	-.0063	.0612	.2924
#3	7.977	.0106	.0427	.3511	-.0112	.0609	.2938

Analysis Report QC Standard Thu 12-12-96 03:42:06 PM page 1

Method: ICPCLP1 Sample Name: CV Operator: NSJ
Run Time: 12/12/96 15:37:42 CCV 4
Comment:
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9997	4.942	1.945	.9843	.9882	.9517	4.943
SDev	.0056	.023	.034	.0056	.0059	.0049	.023
%RSD	.5635	.4735	1.764	.5676	.5958	.5172	.4679
#1	1.001	4.953	1.934	.9860	.9886	.9521	4.950
#2	1.005	4.958	1.917	.9888	.9938	.9564	4.961
#3	.9937	4.915	1.983	.9780	.9821	.9466	4.917

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.009	.9820	.9799	.9839	4.926	19.78	4.988
SDev	.006	.0051	.0040	.0032	.022	.07	.071
%RSD	.5769	.5210	.4130	.3285	.4498	.3433	1.423
#1	1.012	.9806	.9818	.9842	4.940	19.70	5.060
#2	1.012	.9877	.9827	.9869	4.939	19.83	4.986
#3	1.002	.9778	.9753	.9805	4.901	19.80	4.918

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9773	.9856	1.999	.9953	1.971	2.026	2.019
SDev	.0042	.0054	.021	.0054	.016	.031	.019
%RSD	.4284	.5488	1.039	.5428	.8185	1.540	.9293
#1	.9804	.9829	2.004	.9918	1.986	2.031	1.998
#2	.9790	.9919	2.016	.9925	1.972	2.054	2.033
#3	.9726	.9822	1.976	1.002	1.954	1.992	2.027

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.995	.9425	.9835	.9713	1.966	.9754	1.003
SDev	.004	.0101	.0055	.0055	.030	.0027	.004
%RSD	.1865	1.075	.5631	.5637	1.508	.2751	.3658
#1	1.995	.9416	.9840	.9716	1.949	.9755	1.003
#2	1.998	.9531	.9888	.9766	2.000	.9780	1.006
#3	1.991	.9329	.9777	.9657	1.949	.9726	.9989

Analysis Report Blank Sample Thu 12-12-96 03:46:36 PM page 1

Method: ICPCLP1 Sample Name: Blank Operator: NSJ
Run Time: 12/12/96 15:42:12 CCB 4
Comment:
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0024	-.0083	-.0132	-.0009	.0005	.0003	-.0043
SDev	.0015	.0086	.0323	.0023	.0003	.0002	.0033
%RSD	62.92	103.5	244.6	241.3	50.00	64.25	75.94
#1	L-.0040	-.0036	.0095	-.0009	.0008	.0004	-.0008
#2	-.0019	-.0031	.0011	-.0032	.0005	.0003	-.0049
#3	-.0011	-.0182	L-.0502	.0013	.0003	.0001	-.0073

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0009	.0006	-.0030	-.0004	-.0062	-.3045	L-.0212
SDev	.0002	.0019	.0017	.0009	.0034	.2899	.0019
%RSD	21.68	349.1	56.87	201.5	54.83	95.23	8.828
#1	.0007	.0024	-.0011	-.0006	-.0058	.0217	L-.0211
#2	.0010	.0007	-.0035	-.0013	-.0030	L-.4023	L-.0230
#3	.0011	-.0015	-.0044	.0005	-.0097	L-.5328	-.0193

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0002	-.0000	-.0125	-.0066	-.0099	.0209	.0013
SDev	.0003	.0004	.0029	.0053	.0092	.0108	.0074
%RSD	172.8	9336.	23.63	80.67	92.46	51.88	566.6
#1	-.0000	.0002	-.0102	L-.0113	-.0006	.0333	-.0071
#2	-.0000	-.0005	-.0158	-.0079	-.0103	.0155	.0065
#3	-.0005	.0002	-.0114	-.0008	-.0189	.0138	.0045

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0048	-.0066	.0003	-.0004	-.0167	L-.0053	.0024
SDev	.0027	.0033	.0005	.0006	.0136	.0004	.0008
%RSD	56.60	50.43	173.1	151.1	81.44	7.170	33.73
#1	-.0035	-.0028	.0008	-.0003	-.0307	L-.0056	.0015
#2	-.0030	-.0085	.0000	-.0011	-.0036	L-.0056	.0029
#3	-.0079	-.0086	.0000	.0002	-.0157	L-.0049	.0029

Analysis Report QC Standard Thu 12-12-96 03:54:01 PM page 1

Method: ICPCLP1 Sample Name: CRI Operator: NSJ
Run Time: 12/12/96 15:48:20
Comment:
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0196	-.0016	.0221	.0019	.0001	.0092	-.0014
SDev	.0004	.0082	.0142	.0026	.0003	.0001	.0036
%RSD	2.139	520.9	64.41	133.4	346.4	.9774	253.6
#1	.0195	-.0087	.0112	.0046	.0003	.0091	.0022
#2	.0200	.0074	.0382	.0017	.0003	.0092	-.0014
#3	.0191	-.0035	.0168	-.0005	-.0003	.0092	-.0050

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0106	.0981	.0229	.0512	.0152	-.4821	-.0116
SDev	.0013	.0025	.0048	.0009	.0185	.1528	.0067
%RSD	12.52	2.547	21.00	1.730	121.5	31.69	58.00
#1	.0107	.0957	.0283	.0512	.0354	-.4676	-.0060
#2	.0093	.1007	.0209	.0521	.0113	-.3371	-.0190
#3	.0119	.0980	.0193	.0503	-.0010	-.6416	-.0097

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0300	-.0033	.0019	.0882	-.0186	.1268	.0118
SDev	.0005	.0012	.0019	.0071	.0045	.0277	.0181
%RSD	1.536	36.71	101.8	8.029	24.30	21.83	153.1
#1	.0300	-.0040	.0035	.0961	-.0237	.0951	.0241
#2	.0305	-.0019	.0023	.0824	-.0171	.1463	-.0089
#3	.0296	-.0040	-.0002	.0861	-.0151	.1390	.0202

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0035	-.0092	.0000	.0001	-.0156	.0971	.0437
SDev	.0052	.0017	.0000	.0001	.0320	.0018	.0008
%RSD	148.5	18.82	256.3	189.8	205.2	1.844	1.957
#1	-.0033	-.0112	-.0000	-.0001	-.0490	.0955	.0432
#2	-.0087	-.0082	.0000	.0002	.0147	.0990	.0447
#3	.0016	-.0082	.0000	.0002	-.0124	.0968	.0432

Analysis Report QC Standard Thu 12-12-96 04:02:46 PM page 1

Method: ICPCLP1 Sample Name: ICSA Operator: NSJ
Run Time: 12/12/96 15:57:05
Comment:
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0078	516.9	-.0642	.0970	.0018	-.0001	457.6
SDev	.0006	5.1	.0052	.0032	.0000	.0000	3.8
%RSD	8.061	.9862	8.171	3.340	.0000	2.358	.8350
#1	-.0082	518.3	-.0688	.0973	.0018	-.0001	459.5
#2	-.0081	521.1	-.0653	.0936	.0018	-.0001	460.2
#3	-.0071	511.2	-.0585	.1000	.0018	-.0001	453.2

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0002	.0024	.0322	.0165	176.3	-.7394	470.4
SDev	.0008	.0007	.0009	.0007	1.7	.0661	3.7
%RSD	325.4	27.31	2.928	4.054	.9395	8.945	.7840
#1	-.0003	.0024	.0317	.0164	176.9	-.8155	471.5
#2	-.0001	.0018	.0333	.0158	177.5	-.7068	473.3
#3	.0011	.0031	.0317	.0172	174.4	-.6959	466.2

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0441	.0052	.0944	.0064	-.0125	.0759	-.0024
SDev	.0011	.0050	.0068	.0152	.0205	.0354	.0422
%RSD	2.605	95.98	7.230	238.4	164.0	46.63	1723.
#1	.0450	.0008	.0929	.0180	-.0209	.0866	-.0401
#2	.0444	.0042	.0885	.0119	-.0275	.1048	.0432
#3	.0428	.0106	.1019	-.0108	.0109	.0364	-.0104

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0330	-.0121	.2094	.0031	.1452	-.0050	.0326
SDev	.0051	.0094	.0023	.0006	.0485	.0005	.0019
%RSD	15.58	77.85	1.093	19.90	33.42	10.21	5.814
#1	.0296	-.0118	.2101	.0030	.1672	-.0044	.0315
#2	.0305	-.0029	.2113	.0026	.1788	-.0054	.0315
#3	.0389	-.0217	.2069	.0038	.0896	-.0052	.0347

Analysis Report QC Standard Thu 12-12-96 04:11:30 PM page 1

Method: ICPCLP1 Sample Name: ICSAB Operator: NSJ
Run Time: 12/12/96 16:05:49
Comment:
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1752	512.8	-.0264	.0977	.4666	.4223	456.3
SDev	.0009	5.4	.0245	.0012	.0051	.0034	2.7
%RSD	.5123	1.045	92.69	1.184	1.102	.7962	.5829
#1	.1762	517.3	-.0284	.0991	.4708	.4250	458.8
#2	.1749	514.1	-.0010	.0972	.4682	.4232	456.5
#3	.1746	506.9	-.0498	.0970	.4609	.4185	453.5

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.8971	.4258	.4425	.4706	176.5	-.5981	466.8
SDev	.0054	.0010	.0030	.0045	1.1	.3848	5.1
%RSD	.5981	.2401	.6704	.9576	.6492	64.33	1.095
#1	.9013	.4268	.4458	.4734	177.5	-.9460	471.7
#2	.8989	.4257	.4417	.4729	176.9	-.6633	467.2
#3	.8911	.4248	.4400	.4654	175.3	-.1849	461.5

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.4682	.0050	.0914	.8353	.0323	.6032	.0169
SDev	.0032	.0063	.0045	.0058	.0269	.0503	.0951
%RSD	.6820	125.7	4.962	.6931	83.35	8.348	564.0
#1	.4703	.0110	.0882	.8289	.0536	Q.6592	-.0756
#2	.4696	.0057	.0894	.8403	.0020	.5617	.0118
#3	.4645	-.0016	.0966	.8366	.0414	.5886	.1144

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0324	-.0096	.2099	.0039	.0862	.4264	.9118
SDev	.0059	.0190	.0019	.0001	.0613	.0023	.0036
%RSD	18.03	197.5	.9222	2.486	71.18	.5443	.3901
#1	.0361	-.0013	.2113	.0038	.1569	.4286	.9122
#2	.0356	.0038	.2108	.0038	.0486	.4267	.9152
#3	.0257	-.0313	.2077	.0040	.0529	.4240	.9081

Analysis Report QC Standard Thu 12-12-96 04:20:15 PM page 1

Method: ICPCLP1 Sample Name: CV Operator: NSJ
Run Time: 12/12/96 16:14:34 CCV 5
Comment:
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9781	4.851	1.948	.9659	.9655	.9340	4.878
SDev	.0044	.038	.016	.0058	.0054	.0059	.040
%RSD	.4493	.7814	.8228	.6017	.5558	.6329	.8146
#1	.9788	4.851	1.965	.9610	.9651	.9334	4.897
#2	.9821	4.890	1.933	.9723	.9711	.9402	4.905
#3	.9734	4.814	1.945	.9644	.9604	.9284	4.833

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9707	.9641	.9707	.9802	4.888	19.45	4.867
SDev	.0066	.0078	.0058	.0076	.047	.04	.047
%RSD	.6747	.8103	.5996	.7732	.9655	.2236	.9568
#1	.9768	.9613	.9696	.9751	4.883	19.45	4.890
#2	.9717	.9729	.9769	.9889	4.937	19.50	4.898
#3	.9638	.9581	.9655	.9765	4.843	19.41	4.814

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9620	.9850	1.940	.9675	1.933	1.984	2.017
SDev	.0063	.0055	.009	.0068	.019	.025	.039
%RSD	.6593	.5624	.4744	.7073	1.005	1.250	1.916
#1	.9606	.9850	1.939	.9617	1.934	2.013	2.033
#2	.9689	.9905	1.950	.9750	1.952	1.973	2.045
#3	.9564	.9794	1.931	.9656	1.914	1.967	1.973

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.966	.9606	.9659	.9517	1.948	.9629	.9825
SDev	.012	.0118	.0061	.0060	.039	.0053	.0065
%RSD	.6313	1.233	.6305	.6276	1.995	.5527	.6641
#1	1.972	.9473	.9644	.9520	1.903	.9628	.9830
#2	1.973	.9644	.9726	.9575	1.966	.9683	.9888
#3	1.951	.9701	.9608	.9455	1.973	.9577	.9757

Analysis Report Blank Sample Thu 12-12-96 04:26:02 PM page 1

Method: ICPCLP1 Sample Name: Blank Operator: NSJ
Run Time: 12/12/96 16:20:21 CCB 5
Comment:
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0008	.0034	-.0170	.0006	.0008	.0001	H.0314
SDev	.0005	.0119	.0114	.0024	.0000	.0001	.0027
%RSD	57.92	349.1	66.62	422.6	.0000	133.0	8.511
#1	-.0011	-.0101	-.0273	.0024	.0008	-.0000	H.0342
#2	-.0003	.0121	-.0190	.0013	.0008	.0001	H.0289
#3	-.0011	.0083	-.0048	-.0021	.0008	.0002	H.0312

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0020	-.0002	-.0003	-.0004	.0130	-.1957	.0124
SDev	.0002	.0022	.0000	.0009	.0064	.4028	.0160
%RSD	12.21	1181.	3.946	203.4	49.31	205.8	128.7
#1	.0017	-.0026	-.0003	.0001	.0194	L-.6089	-.0044
#2	H.0021	.0002	-.0003	.0001	.0132	-.1740	.0143
#3	H.0021	.0018	-.0003	-.0015	.0065	.1957	H.0274

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0000	-.0014	-.0013	.0019	-.0096	.0146	-.0142
SDev	.0000	.0046	.0039	.0032	.0183	.0211	.0132
%RSD	35.10	331.1	286.7	163.0	190.7	144.0	92.80
#1	-.0000	L-.0067	.0010	.0050	L-.0306	.0212	-.0188
#2	-.0000	.0009	-.0058	.0021	-.0007	-.0089	-.0246
#3	-.0000	.0016	.0007	-.0013	.0026	.0317	.0006

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0053	-.0028	.0008	-.0002	-.0185	L-.0029	H.0058
SDev	.0025	.0057	.0000	.0001	.0153	.0017	.0000
%RSD	46.98	202.4	.0059	88.33	82.25	60.53	.2457
#1	-.0030	.0029	.0008	-.0003	-.0280	L-.0043	H.0058
#2	-.0049	-.0029	.0008	-.0001	-.0009	-.0009	H.0058
#3	-.0079	-.0085	.0008	-.0001	-.0267	L-.0034	H.0058

Analysis Report Thu 12-12-96 04:32:27 PM page 1

Method: ICPCLP1 Sample Name: 5373 L SCC Operator: NSJ
Run Time: 12/12/96 16:28:03 MFG248
Comment:
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0014	6.503	.0014	.0112	.0616	.0005	2.328
SDev	.0033	.034	.0180	.0053	.0004	.0002	.029
%RSD	231.0	.5163	1330.	47.37	.7339	32.88	1.261
#1	L-.0047	6.542	.0044	.0068	.0621	.0006	2.361
#2	-.0014	6.484	.0176	.0097	.0614	.0003	2.320
#3	.0019	6.484	-.0180	.0171	.0614	.0006	2.304

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0007	.0047	.0155	.0118	10.63	1.149	1.279
SDev	.0011	.0020	.0005	.0009	.06	.348	.093
%RSD	163.6	42.24	3.001	7.761	.5960	30.30	7.251
#1	-.0005	.0064	.0153	.0108	10.70	1.164	1.386
#2	.0009	.0025	.0153	.0125	10.61	.7938	1.227
#3	.0016	.0053	.0161	.0121	10.58	1.490	1.223

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2919	-.0002	.0303	.0131	.1846	-.0000	.0063
SDev	.0011	.0035	.0117	.0030	.0153	.0202	.0243
%RSD	.3949	1501.	38.54	22.56	8.266	233900.	386.7
#1	.2930	.0035	.0169	.0115	.2013	.0155	.0336
#2	.2921	-.0007	.0356	.0165	.1810	.0073	-.0015
#3	.2907	-.0035	.0384	.0113	.1714	-.0228	-.0132

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.872	.0069	.0120	.1333	-.0291	.0204	.0469
SDev	.010	.0050	.0002	.0007	.0082	.0029	.0015
%RSD	.2460	72.71	1.355	.4920	28.17	14.33	3.115
#1	3.867	.0127	.0121	.1328	-.0199	.0238	.0454
#2	3.867	.0041	.0121	.1341	-.0317	.0182	.0468
#3	3.883	.0040	.0119	.1331	-.0357	.0193	.0483

Analysis Report Thu 12-12-96 04:36:56 PM page 1

Method: ICPCLP1 Sample Name: 5373 M SCC Operator: NSJ
Run Time: 12/12/96 16:32:32
Comment:
Mode: CONC Corr. Factor: 1

MFG 251

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0028	10.99	-.0097	.0115	.1319	.0005	3.467
SDev	.0002	.08	.0210	.0047	.0007	.0001	.008
%RSD	7.576	.7723	216.6	40.51	.5239	15.26	.2324
#1	-.0025	10.90	-.0063	.0166	.1311	.0005	3.458
#2	-.0029	11.00	-.0322	.0073	.1321	.0006	3.470
#3	-.0029	11.07	.0094	.0107	.1324	.0004	3.473

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0007	.0104	.0185	.0121	20.18	1.682	1.877
SDev	.0004	.0017	.0016	.0007	.13	.560	.004
%RSD	65.27	16.31	8.846	5.828	.6552	33.31	.1982
#1	.0011	.0123	.0185	.0123	20.03	2.251	1.877
#2	.0007	.0100	.0202	.0126	20.25	1.664	1.873
#3	.0002	.0089	.0169	.0113	20.27	1.131	1.880

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.145	-.0012	.0360	.0172	.0413	.0067	.0312
SDev	.008	.0015	.0025	.0063	.0168	.0157	.0031
%RSD	.6969	117.9	6.934	36.65	40.53	234.9	9.942
#1	1.136	-.0024	.0384	.0212	.0537	.0201	.0284
#2	1.150	.0004	.0362	.0099	.0481	.0105	.0345
#3	1.150	-.0017	.0334	.0205	.0223	-.0106	.0306

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	6.463	.0049	.0236	.1769	-.0147	.0266	.0876
SDev	.041	.0076	.0002	.0010	.0314	.0007	.0008
%RSD	.6398	153.5	.6913	.5684	212.7	2.689	.9580
#1	6.416	-.0037	.0234	.1759	-.0035	.0263	.0866
#2	6.480	.0078	.0237	.1767	.0094	.0274	.0881
#3	6.493	.0106	.0237	.1779	L-.0502	.0260	.0881

Analysis Report Thu 12-12-96 04:41:24 PM page 1

Method: ICPCLP1 Sample Name: 5373 N SCC Operator: NSJ
Run Time: 12/12/96 16:37:00
Comment: MF6252
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0010	6.896	-.0034	.0101	.0636	.0005	1.306
SDev	.0011	.029	.0139	.0015	.0003	.0000	.003
%RSD	106.6	.4170	411.4	15.10	.4739	2.208	.2327
#1	-.0022	6.921	-.0194	.0084	.0640	.0005	1.306
#2	-.0006	6.903	.0032	.0112	.0635	.0004	1.308
#3	-.0002	6.865	.0060	.0107	.0635	.0005	1.302

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0011	.0066	.0164	.0063	14.72	1.196	.9462
SDev	.0008	.0006	.0024	.0009	.05	.198	.0075
%RSD	68.86	8.386	14.49	14.44	.3564	16.54	.7939
#1	.0016	.0061	.0136	.0056	14.76	.9678	.9542
#2	.0002	.0066	.0177	.0060	14.75	1.316	.9449
#3	.0015	.0072	.0177	.0074	14.66	1.305	.9394

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.3022	-.0001	.0366	.0087	.0053	.0000	-.0078
SDev	.0014	.0025	.0027	.0051	.0220	.0213	.0151
%RSD	.4646	1892.	7.228	58.78	414.2	56130.	194.2
#1	.3025	-.0029	.0347	.0142	-.0175	-.0021	-.0246
#2	.3034	.0006	.0396	.0039	.0071	.0223	.0046
#3	.3007	.0019	.0356	.0081	.0263	-.0201	-.0033

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.953	.0065	.0110	.1495	-.0310	.0229	.0247
SDev	.006	.0073	.0000	.0005	.0205	.0024	.0000
%RSD	.1175	111.7	.0005	.3455	66.26	10.62	.0709
#1	4.954	.0056	.0110	.1494	-.0428	.0233	.0246
#2	4.958	.0142	.0110	.1491	-.0428	.0251	.0247
#3	4.947	-.0002	.0110	.1501	-.0073	.0203	.0247

Analysis Report Thu 12-12-96 04:45:53 PM page 1

Method: ICPCLP1 Sample Name: 5373 0 SCC Operator: NSJ
Run Time: 12/12/96 16:41:29
Comment: MFG253
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0024	15.60	-.0055	.0193	.2003	.0009	6.839
SDev	.0014	.04	.0034	.0012	.0009	.0000	.010
%RSD	59.54	.2601	61.68	6.050	.4516	5.085	.1432
#1	-.0010	15.64	-.0075	.0189	.2013	.0008	6.845
#2	-.0023	15.56	-.0016	.0184	.1998	.0009	6.828
#3	L-.0039	15.60	-.0075	.0206	.1998	.0009	6.844

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0029	.0103	.0243	.0223	20.82	3.023	2.478
SDev	.0013	.0017	.0022	.0008	.06	.427	.029
%RSD	43.71	16.15	8.932	3.564	.2932	14.13	1.169
#1	.0041	.0087	.0218	.0225	20.87	2.555	2.476
#2	.0031	.0120	.0251	.0229	20.75	3.121	2.450
#3	.0016	.0103	.0259	.0214	20.84	3.393	2.508

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.8208	.0006	.0493	.0226	.0848	-.0121	.0023
SDev	.0017	.0010	.0034	.0074	.0074	.0101	.0233
%RSD	.2017	167.5	6.947	32.84	8.726	83.69	1002.
#1	.8221	-.0003	.0459	.0312	.0854	-.0129	.0283
#2	.8189	.0018	.0493	.0183	.0772	-.0016	-.0165
#3	.8212	.0004	.0527	.0183	.0919	-.0219	-.0048

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	7.563	.0097	.0349	.2697	-.0143	.0372	.1045
SDev	.013	.0017	.0002	.0008	.0167	.0009	.0017
%RSD	.1719	17.14	.4680	.2820	117.0	2.503	1.637
#1	7.577	.0107	.0350	.2705	-.0334	.0362	.1025
#2	7.551	.0107	.0347	.2690	-.0073	.0380	.1054
#3	7.560	.0078	.0350	.2695	-.0022	.0375	.1054

Analysis Report Thu 12-12-96 04:50:21 PM page 1

Method: ICPCLP1 Sample Name: 5373 P SCC Operator: NSJ
Run Time: 12/12/96 16:45:57
Comment:
Mode: CONC Corr. Factor: 1

MFG254

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0021	25.28	-.0186	.0206	.2636	.0013	6.852
SDev	.0018	.05	.0255	.0026	.0006	.0001	.009
%RSD	89.01	.1981	136.5	12.64	.2287	7.483	.1302
#1	-.0003	25.23	-.0463	.0233	.2640	.0013	6.843
#2	-.0019	25.33	-.0135	.0204	.2640	.0013	6.861
#3	L-.0040	25.28	.0039	.0181	.2630	.0012	6.851

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0016	.0151	.0371	.0238	28.71	4.350	3.136
SDev	.0006	.0006	.0009	.0017	.06	.350	.022
%RSD	37.44	3.700	2.540	7.010	.2041	8.047	.6889
#1	.0023	.0157	.0366	.0250	28.64	4.306	3.126
#2	.0011	.0146	.0382	.0246	28.75	4.719	3.122
#3	.0015	.0151	.0365	.0219	28.74	4.023	3.161

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.055	-.0018	.0927	.0331	.0730	.0174	.0179
SDev	.003	.0044	.0053	.0075	.0123	.0129	.0373
%RSD	.2556	253.6	5.714	22.63	16.89	74.27	208.2
#1	1.052	.0033	.0947	.0249	.0803	.0317	-.0165
#2	1.057	-.0036	.0966	.0396	.0800	.0066	.0575
#3	1.056	-.0050	.0866	.0348	.0588	.0139	.0127

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	9.020	.0100	.0448	.3697	-.0012	.0507	.1574
SDev	.021	.0033	.0002	.0004	.0117	.0004	.0042
%RSD	.2304	32.93	.3649	.1025	1000.	.7402	2.669
#1	8.998	.0081	.0449	.3701	-.0140	.0511	.1599
#2	9.022	.0081	.0449	.3696	.0087	.0503	.1598
#3	9.039	.0138	.0446	.3694	.0019	.0507	.1526

Analysis Report Thu 12-12-96 04:54:50 PM page 1

Method: ICPCLP1 Sample Name: 5373 Q SCC Operator: NSJ
Run Time: 12/12/96 16:50:26 MFGZ55
Comment:
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0024	14.15	.0029	.0231	.1270	.0011	2.061
SDev	.0013	.14	.0104	.0005	.0011	.0001	.016
%RSD	52.97	1.003	361.9	2.046	.8561	11.83	.7773
#1	L-.0038	14.02	-.0089	.0234	.1261	.0012	2.047
#2	-.0021	14.30	.0108	.0225	.1282	.0011	2.078
#3	-.0013	14.13	.0068	.0233	.1266	.0009	2.057

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0013	.0185	.0267	.0175	29.66	3.353	2.968
SDev	.0005	.0006	.0008	.0002	.25	.213	.037
%RSD	36.78	3.513	3.068	1.350	.8392	6.342	1.255
#1	.0016	.0192	.0275	.0173	29.44	3.588	2.944
#2	.0015	.0181	.0259	.0176	29.93	3.175	3.011
#3	.0007	.0181	.0267	.0177	29.61	3.295	2.950

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.3221	-.0018	.0708	.0416	.0123	-.0095	.0083
SDev	.0021	.0021	.0069	.0056	.0094	.0224	.0296
%RSD	.6505	119.9	9.707	13.55	76.36	236.8	355.9
#1	.3209	.0001	.0636	.0474	.0222	.0112	.0041
#2	.3245	-.0013	.0714	.0412	.0035	-.0062	.0398
#3	.3209	-.0041	.0773	.0362	.0112	-.0334	-.0190

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	6.083	.0114	.0196	.2494	-.0480	.0318	.0938
SDev	.046	.0049	.0003	.0017	.0183	.0009	.0008
%RSD	.7587	42.78	1.668	.6788	38.10	2.935	.8749
#1	6.038	.0142	.0192	.2481	-.0324	.0329	.0943
#2	6.130	.0057	.0198	.2513	-.0436	.0310	.0943
#3	6.079	.0141	.0198	.2488	L-.0682	.0317	.0929

Analysis Report Thu 12-12-96 04:59:18 PM page 1

Method: ICPCLP1 Sample Name: 5373 R SCC Operator: NSJ
Run Time: 12/12/96 16:54:55
Comment: MFG259
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0032	29.77	-.0000	.0228	.2301	.0013	11.91
SDev	.0012	.18	.0192	.0024	.0016	.0001	.07
%RSD	39.37	.5977	314500.	10.47	.6933	9.585	.5515
#1	L-.0035	29.59	-.0193	.0200	.2287	.0014	11.84
#2	L-.0042	29.95	.0001	.0244	.2319	.0013	11.97
#3	-.0018	29.77	.0191	.0239	.2298	.0012	11.92

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0009	.0129	.0494	.0292	37.07	4.505	4.062
SDev	.0019	.0000	.0021	.0007	.19	.038	.041
%RSD	199.5	.1620	4.174	2.415	.5066	.8476	1.008
#1	.0004	.0129	.0513	.0284	36.89	4.469	4.017
#2	.0031	.0129	.0496	.0298	37.26	4.502	4.071
#3	-.0006	.0129	.0472	.0293	37.05	4.545	4.098

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.5670	.0007	.0974	.0288	.0990	.0063	.0190
SDev	.0032	.0015	.0028	.0048	.0100	.0048	.0168
%RSD	.5668	223.7	2.881	16.57	10.09	76.31	87.98
#1	.5640	-.0005	.1003	.0259	.0989	.0118	.0383
#2	.5704	.0023	.0947	.0262	.1090	.0040	.0076
#3	.5667	.0002	.0972	.0343	.0890	.0030	.0112

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	7.971	.0106	.0934	.3809	.0001	.0658	.1105
SDev	.040	.0016	.0006	.0031	.0086	.0005	.0017
%RSD	.5008	15.06	.6304	.8166	6276.	.7127	1.506
#1	7.930	.0115	.0927	.3784	.0075	.0664	.1096
#2	8.010	.0087	.0938	.3843	.0022	.0657	.1095
#3	7.972	.0115	.0935	.3799	-.0093	.0655	.1124

Analysis Report Thu 12-12-96 05:03:47 PM page 1

Method: ICPCLP1 Sample Name: 5373 S SCC Operator: NSJ
Run Time: 12/12/96 16:59:23
Comment: MFE760
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0022	24.82	-.0423	.0190	.2282	.0010	12.20
SDev	.0004	.10	.0029	.0012	.0014	.0001	.07
%RSD	17.29	.4193	6.763	6.284	.6054	12.99	.5862
#1	-.0019	24.71	-.0455	.0203	.2267	.0010	12.12
#2	-.0022	24.91	-.0415	.0190	.2293	.0011	12.25
#3	-.0026	24.85	-.0399	.0179	.2287	.0009	12.24

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0003	.0103	.0398	.0271	32.89	3.378	3.915
SDev	.0015	.0008	.0014	.0002	.15	.218	.032
%RSD	534.7	8.132	3.564	.7932	.4635	6.448	.8134
#1	.0003	.0105	.0382	.0271	32.72	3.153	3.889
#2	-.0012	.0110	.0406	.0269	33.03	3.588	3.951
#3	.0018	.0094	.0406	.0273	32.91	3.393	3.906

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.5523	-.0003	.0780	.0280	.1873	.0377	.0021
SDev	.0021	.0012	.0035	.0120	.0045	.0064	.0271
%RSD	.3727	396.9	4.484	42.73	2.394	16.90	1312.
#1	.5504	-.0010	.0789	.0325	.1925	.0335	.0135
#2	.5545	.0011	.0742	.0370	.1847	.0346	-.0289
#3	.5522	-.0010	.0810	.0144	.1848	.0451	.0215

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	9.013	.0110	.0942	.3342	-.0250	.0587	.1047
SDev	.030	.0017	.0003	.0024	.0125	.0016	.0030
%RSD	.3340	15.42	.3458	.7191	50.05	2.802	2.883
#1	8.982	.0099	.0938	.3314	-.0272	.0571	.1013
#2	9.042	.0129	.0944	.3352	-.0363	.0584	.1070
#3	9.015	.0100	.0944	.3359	-.0116	.0604	.1057

Analysis Report Thu 12-12-96 05:08:16 PM page 1

Method: ICPCLP1 Sample Name: 5373 T SCC Operator: NSJ
Run Time: 12/12/96 17:03:52
Comment: MFG263
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0029	9.380	-.0210	.0091	.1674	.0003	3.593
SDev	.0018	.068	.0007	.0012	.0014	.0001	.018
%RSD	60.99	.7267	3.501	13.61	.8255	26.71	.5074
#1	-.0009	9.302	-.0215	.0101	.1658	.0003	3.572
#2	L-.0041	9.427	-.0202	.0077	.1684	.0004	3.601
#3	L-.0037	9.411	-.0214	.0094	.1679	.0002	3.605

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0005	.0062	.0128	.0243	13.90	1.765	1.583
SDev	.0005	.0018	.0014	.0016	.11	.382	.008
%RSD	116.3	28.86	11.13	6.532	.7760	21.63	.5169
#1	.0001	.0082	.0145	.0261	13.78	2.023	1.587
#2	-.0006	.0049	.0120	.0235	13.98	1.946	1.589
#3	-.0009	.0054	.0120	.0232	13.95	1.327	1.574

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.7645	-.0008	.0248	.0095	.0997	.0051	-.0020
SDev	.0059	.0047	.0050	.0027	.0114	.0154	.0128
%RSD	.7748	586.2	20.02	28.10	11.47	302.4	628.8
#1	.7577	.0029	.0281	.0118	.1102	-.0116	-.0152
#2	.7688	.0008	.0191	.0066	.1013	.0187	.0104
#3	.7669	L-.0061	.0272	.0102	.0875	.0081	-.0013

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.510	.0138	.0157	.1829	-.0203	.0189	.2376
SDev	.029	.0029	.0006	.0015	.0277	.0006	.0022
%RSD	.5238	20.87	3.754	.8275	136.1	3.379	.9369
#1	5.477	.0137	.0152	.1812	.0112	.0196	.2356
#2	5.526	.0168	.0155	.1839	-.0314	.0186	.2400
#3	5.527	.0110	.0164	.1837	-.0408	.0184	.2371

x 0.012 mL
56 100 to
10mL sample

Analysis Report Thu 12-12-96 05:12:45 PM page 1

Method: ICPCLP1 Sample Name: 5373 APOST SCC Operator: NSJ
Run Time: 12/12/96 17:08:21
Comment:
Mode: CONC Corr. Factor: 1

MFG-Z44A

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0013	8.876	-.0130	.0119	.0870	.0005	1.668
SDev	.0011	.027	.0112	.0027	.0000	.0000	.007
%RSD	84.49	.3073	85.57	22.22	.0000	2.096	.4098
#1	-.0009	8.861	-.0203	.0135	.0870	.0005	1.661
#2	-.0025	8.860	-.0186	.0135	.0870	.0004	1.667
#3	-.0005	8.908	-.0002	.0089	.0870	.0005	1.675

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0006	.0088	.0164	.0059	17.61	1.443	1.334
SDev	.0005	.0006	.0019	.0010	.04	.113	.015
%RSD	87.40	7.363	11.57	16.89	.2491	7.845	1.140
#1	-.0009	.0080	.0153	.0060	17.58	1.479	1.317
#2	-.0009	.0092	.0153	.0049	17.59	1.533	1.341
#3	.0000	.0092	.0186	.0069	17.66	1.316	1.345

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.4553	.0009	.0393	.0097	.0128	.1176	-.0067
SDev	.0005	.0012	.0019	.0073	.0173	.0269	.0423
%RSD	.1157	137.7	4.815	75.17	135.7	22.88	629.4
#1	.4550	.0002	.0403	.0134	.0316	.1203	-.0385
#2	.4550	.0002	.0371	.0013	-.0024	.1430	-.0229
#3	.4559	.0023	.0406	.0144	.0091	.0894	.0413

98.0%

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.988	.0080	.0162	.1695	-.0152	.0231	.0331
SDev	.016	.0017	.0003	.0055	.0101	.0023	.0000
%RSD	.3291	21.44	2.017	3.230	66.76	9.944	.0893
#1	4.975	.0070	.0158	.1758	-.0268	.0205	.0331
#2	4.983	.0100	.0164	.1658	-.0106	.0246	.0331
#3	5.007	.0070	.0164	.1668	-.0081	.0242	.0331

Analysis Report QC Standard Thu 12-12-96 05:17:15 PM page 1

Method: ICPCLP1 Sample Name: CV Operator: NSJ
Run Time: 12/12/96 17:12:50 CCV 4
Comment:
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9712	4.811	1.921	.9654	.9596	.9316	4.822
SDev	.0058	.032	.035	.0107	.0084	.0085	.019
%RSD	.5976	.6714	1.803	1.108	.8746	.9151	.3966
#1	.9647	4.774	1.881	.9531	.9500	.9218	4.801
#2	.9759	4.828	1.944	.9724	.9651	.9358	4.824
#3	.9730	4.831	1.938	.9707	.9638	.9372	4.839

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9685	.9634	.9671	.9493	4.842	19.49	4.793
SDev	.0050	.0074	.0079	.0103	.039	.37	.036
%RSD	.5217	.7718	.8196	1.082	.8010	1.903	.7542
#1	.9630	.9559	.9581	.9375	4.800	19.30	4.752
#2	.9729	.9636	.9704	.9561	4.848	19.26	4.819
#3	.9696	.9707	.9729	.9543	4.877	19.92	4.808

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9609	.9857	1.927	.9644	1.941	1.938	1.979
SDev	.0073	.0132	.013	.0101	.021	.031	.017
%RSD	.7540	1.341	.6925	1.044	1.070	1.616	.8489
#1	.9527	.9718	1.916	.9680	1.949	1.938	1.988
#2	.9633	.9870	1.942	.9530	1.918	1.969	1.988
#3	.9666	.9981	1.924	.9721	1.958	1.906	1.959

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.966	.9509	.9604	.9469	1.964	.9583	.9783
SDev	.006	.0087	.0086	.0079	.019	.0068	.0060
%RSD	.3184	.9156	.8899	.8307	.9600	.7118	.6177
#1	1.961	.9414	.9506	.9378	1.942	.9510	.9715
#2	1.964	.9529	.9661	.9522	1.978	.9646	.9831
#3	1.973	.9585	.9644	.9505	1.972	.9592	.9801

Analysis Report Blank Sample Thu 12-12-96 05:21:46 PM page 1

Method: ICPCLP1 Sample Name: Blank Operator: NSJ
Run Time: 12/12/96 17:17:21
Comment: CCB 6
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0013	-.0034	-.0161	.0004	.0007	.0002	-.0030
SDev	.0006	.0118	.0297	.0012	.0001	.0001	.0007
%RSD	50.41	345.9	184.8	311.8	21.65	55.47	23.08
#1	-.0011	-.0007	.0182	-.0009	.0008	.0002	-.0026
#2	-.0007	.0068	-.0333	.0008	.0008	.0001	-.0038
#3	-.0020	-.0164	-.0332	.0013	.0005	.0002	-.0026

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0006	-.0004	-.0008	-.0009	-.0004	-.2646	.0062
SDev	.0004	.0005	.0005	.0005	.0009	.2261	.0060
%RSD	59.69	148.4	58.42	51.98	229.1	85.45	96.22
#1	.0009	.0002	-.0003	-.0004	.0004	L-.5219	-.0006
#2	.0007	-.0004	-.0011	-.0010	-.0013	-.1740	.0087
#3	.0002	-.0009	-.0011	-.0013	-.0002	-.0979	.0106

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0000	-.0005	-.0004	.0004	-.0092	.0095	.0091
SDev	.0000	.0018	.0027	.0072	.0043	.0109	.0088
%RSD	36.56	390.5	646.6	1622.	46.17	115.1	96.63
#1	-.0000	.0016	-.0033	.0086	-.0135	.0016	.0006
#2	-.0000	-.0019	.0020	-.0024	-.0050	.0220	.0084
#3	-.0000	-.0012	.0001	-.0050	-.0093	.0049	.0181

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0012	-.0028	.0008	-.0004	-.0113	L-.0047	H.0058
SDev	.0042	.0000	.0000	.0001	.0246	.0012	.0000
%RSD	356.2	1.173	.0015	34.61	218.1	24.84	.4374
#1	-.0054	-.0029	.0008	-.0003	.0113	L-.0042	H.0058
#2	.0029	-.0028	.0008	-.0003	-.0077	L-.0038	H.0058
#3	-.0010	-.0029	.0008	-.0006	-.0374	L-.0060	H.0058

154A
1/2/97

Analysis Report QC Standard Thu 12-12-96 05:28:11 PM page 1

Method: ICPCLP1 Sample Name: CRI Operator: NSJ
Run Time: 12/12/96 17:22:30
Comment:
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0191	-.0079	.0092	.0017	.0003	.0091	.0028
SDev	.0023	.0142	.0348	.0043	.0004	.0003	.0036
%RSD	12.02	179.7	379.1	248.8	173.2	3.265	131.1
#1	.0195	-.0063	.0169	.0023	.0005	.0091	.0004
#2	.0167	-.0229	-.0288	-.0028	-.0003	.0094	.0010
#3	.0212	.0054	.0395	.0057	.0005	.0088	.0069

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0106	.0991	.0226	.0485	.0137	-.0906	-.0028
SDev	.0010	.0011	.0008	.0003	.0014	.3726	.0251
%RSD	9.420	1.119	3.652	.6976	10.26	411.2	883.0
#1	.0117	.0991	.0218	.0488	.0152	-.3915	-.0209
#2	.0097	.1002	.0226	.0481	.0135	-.2066	-.0134
#3	.0105	.0980	.0234	.0486	.0124	.3262	.0258

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0294	-.0010	.0003	.0831	-.0122	.1225	.0163
SDev	.0003	.0028	.0075	.0013	.0143	.0068	.0206
%RSD	.9096	293.2	2411.	1.567	117.0	5.528	125.9
#1	.0295	-.0026	-.0005	.0840	-.0225	.1171	.0008
#2	.0291	-.0026	-.0067	.0816	-.0182	.1301	.0086
#3	.0295	.0023	.0082	.0837	.0041	.1203	.0396

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0101	.0013	-.0000	-.0002	-.0084	.0957	.0432
SDev	.0096	.0116	.0000	.0007	.0107	.0018	.0000
%RSD	95.63	881.5	130.4	417.6	128.4	1.842	.0119
#1	-.0058	.0032	-.0000	-.0006	-.0165	.0964	.0432
#2	-.0211	-.0111	-.0000	-.0006	.0038	.0937	.0432
#3	-.0033	.0118	-.0000	.0007	-.0124	.0971	.0432

Analysis Report QC Standard Thu 12-12-96 05:36:56 PM page 1

Method: ICPCLP1 Sample Name: ICSA Operator: NSJ
Run Time: 12/12/96 17:31:15
Comment:
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0061	505.3	-.1172	.1021	.0018	.0000	455.3
SDev	.0008	1.8	.0093	.0069	.0000	.0000	1.4
%RSD	13.50	.3553	7.964	6.789	.0000	252.2	.2999
#1	-.0070	505.2	-.1125	.0968	.0018	.0001	455.0
#2	-.0060	507.2	-.1111	.1099	.0018	-.0000	456.7
#3	-.0053	503.6	-.1279	.0996	.0018	-.0000	454.0

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0017	.0028	.0355	.0167	175.3	-.5437	459.6
SDev	.0016	.0018	.0005	.0001	.5	.4630	1.6
%RSD	94.36	63.98	1.359	.6395	.2693	85.16	.3449
#1	.0004	.0036	.0358	.0168	175.0	-.7720	460.0
#2	.0034	.0008	.0358	.0167	175.9	-.8482	461.0
#3	.0012	.0042	.0350	.0166	175.1	-.0109	457.9

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0445	.0078	.0999	.0141	.0074	.0797	-.0460
SDev	.0011	.0042	.0013	.0155	.0309	.0510	.0429
%RSD	2.454	54.30	1.297	110.4	417.8	64.00	93.42
#1	.0433	.0112	.1010	.0185	.0366	.1366	-.0899
#2	.0455	.0092	.0985	.0269	.0107	.0380	-.0041
#3	.0447	.0031	.1003	-.0032	-.0250	.0646	-.0439

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0337	-.0157	.2071	.0044	.0950	-.0038	.0317
SDev	.0075	.0059	.0007	.0006	.0361	.0021	.0001
%RSD	22.36	37.38	.3498	13.64	37.99	55.54	.2891
#1	.0252	-.0099	.2068	.0037	.1334	-.0014	.0317
#2	.0365	-.0155	.2079	.0047	.0900	-.0053	.0316
#3	.0394	-.0216	.2066	.0049	.0617	-.0048	.0317

Analysis Report QC Standard Thu 12-12-96 05:48:13 PM page 1

Method: ICPCLP1 Sample Name: ICSAB Operator: NSJ
Run Time: 12/12/96 17:42:32
Comment:
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.1671	489.1	.0331	.0982	.4463	.4099	440.3
SDev	.0012	6.7	.0541	.0077	.0056	.0059	3.6
%RSD	.7243	1.374	163.5	7.891	1.251	1.439	.8222
#1	.1684	496.8	.0676	.1072	.4528	.4166	444.4
#2	.1660	485.2	.0610	.0945	.4429	.4055	437.6
#3	.1670	485.2	-.0293	.0931	.4434	.4077	438.8

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.8567	.4137	.4291	.4386	171.4	-.7249	445.7
SDev	.0042	.0032	.0050	.0059	1.9	.5828	6.3
%RSD	.4896	.7817	1.154	1.347	1.130	80.39	1.424
#1	.8615	.4172	.4343	.4454	173.6	-1.327	453.0
#2	.8536	.4108	.4245	.4347	170.0	-.1631	441.8
#3	.8549	.4130	.4286	.4357	170.5	-.6851	442.3

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.4540	.0038	.0913	.7923	.0450	.5670	.0549
SDev	.0056	.0084	.0132	.0133	.0192	.0532	.0784
%RSD	1.243	218.4	14.47	1.675	42.59	9.387	142.8
#1	.4604	.0134	.0761	.8071	.0668	.6123	.1453
#2	.4497	.0001	.0991	.7884	.0309	.5804	.0134
#3	.4519	-.0020	.0988	.7815	.0372	.5084	.0060

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0320	-.0019	.2016	.0045	.1793	.4140	.8840
SDev	.0039	.0211	.0027	.0003	.0718	.0057	.0075
%RSD	12.30	1083.	1.353	5.746	40.08	1.367	.8425
#1	.0350	.0222	.2048	.0047	.2500	.4205	.8924
#2	.0276	-.0169	.1998	.0042	.1063	.4101	.8783
#3	.0335	-.0112	.2003	.0046	.1815	.4113	.8812

Analysis Report QC Standard Thu 12-12-96 05:56:58 PM page 1

Method: ICPCLP1 Sample Name: CV Operator: NSJ
Run Time: 12/12/96 17:51:16 CCV 7
Comment:
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9881	4.897	1.977	.9739	.9713	.9460	4.863
SDev	.0006	.008	.030	.0009	.0014	.0039	.006
%RSD	.0639	.1613	1.538	.0887	.1481	.4086	.1233
#1	.9883	4.893	1.942	.9746	.9706	.9417	4.859
#2	.9887	4.907	1.999	.9741	.9729	.9491	4.870
#3	.9875	4.892	1.989	.9729	.9703	.9473	4.860

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9875	.9733	.9723	.9298	4.893	19.59	4.908
SDev	.0042	.0016	.0024	.0009	.010	.10	.028
%RSD	.4292	.1647	.2461	.0991	.2120	.4975	.5674
#1	.9898	.9723	.9695	.9291	4.883	19.70	4.877
#2	.9902	.9723	.9737	.9309	4.904	19.53	4.932
#3	.9827	.9751	.9737	.9295	4.893	19.54	4.915

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9675	.9900	1.973	.9850	1.952	2.004	2.070
SDev	.0040	.0123	.003	.0074	.006	.023	.024
%RSD	.4164	1.244	.1548	.7480	.3003	1.150	1.154
#1	.9629	.9759	1.971	.9934	1.951	1.996	2.043
#2	.9693	.9988	1.971	.9797	1.958	2.030	2.080
#3	.9703	.9953	1.977	.9818	1.946	1.986	2.087

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.991	.9473	.9726	.9602	1.959	.9674	.9976
SDev	.007	.0001	.0016	.0015	.045	.0035	.0029
%RSD	.3696	.0074	.1604	.1616	2.281	.3626	.2937
#1	1.999	.9472	.9710	.9585	1.915	.9636	.9947
#2	1.989	.9473	.9741	.9614	2.004	.9704	1.001
#3	1.985	.9472	.9726	.9607	1.958	.9684	.9977

Analysis Report Blank Sample Thu 12-12-96 06:02:45 PM page 1

Method: ICPCLP1 Sample Name: Blank Operator: NSJ
Run Time: 12/12/96 17:57:04 CCB 7
Comment:
Mode: CONC Corr. Factor: 1

Elem	AG	AL	AS	B	BA	BE	CA
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0017	-.0018	-.0102	.0004	.0002	.0001	-.0030
SDev	.0044	.0126	.0062	.0048	.0004	.0000	.0022
%RSD	266.4	700.0	60.11	1299.	229.1	14.65	75.59
#1	H.0034	.0065	-.0032	.0059	.0005	.0001	-.0014
#2	L-.0044	-.0163	-.0130	-.0032	-.0003	.0001	-.0055
#3	L-.0040	.0045	-.0145	-.0015	.0003	.0001	-.0020

Elem	CD	CO	CR	CU	FE	K	MG
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0003	-.0006	.0016	-.0013	.0138	-.2320	.0031
SDev	.0020	.0014	.0013	.0033	.0063	.3755	.0086
%RSD	621.7	248.4	76.01	260.4	46.08	161.9	274.7
#1	H.0026	.0007	.0030	H.0025	H.0211	.1849	.0012
#2	-.0012	-.0004	.0006	L-.0032	.0093	L-.5437	-.0043
#3	-.0004	-.0020	.0014	L-.0030	.0110	-.3371	.0124

Elem	MN	MO	NA	NI	PB	SB	SE
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0003	.0005	-.0052	.0048	L-.0235	.0062	-.0045
SDev	.0003	.0008	.0152	.0074	.0059	.0134	.0214
%RSD	85.54	173.3	292.5	154.1	25.08	214.8	474.1
#1	-.0000	-.0005	.0122	H.0134	-.0178	.0025	-.0032
#2	-.0005	.0009	-.0155	.0005	L-.0295	-.0049	.0162
#3	-.0005	.0009	-.0123	.0005	L-.0232	.0211	-.0266

Elem	SI	SN	SR	TI	TL	V	ZN
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0025	-.0019	.0000	-.0006	-.0064	L-.0026	.0034
SDev	.0167	.0043	.0000	.0015	.0027	.0023	.0008
%RSD	676.1	229.7	75.97	260.3	42.08	90.56	23.80
#1	.0168	.0029	.0000	.0012	-.0037	-.0001	H.0043
#2	-.0138	-.0029	.0000	-.0013	-.0090	L-.0047	.0029
#3	-.0104	-.0057	.0000	-.0016	-.0063	L-.0029	.0029

AS1214A.WSL

10 5373

CALCULATED DATA FROM FILE: [illegible]S\AS961214

ANALYTICAL RESOURCES INCORPORATED

JOB	SAMP	ELEMENT	PREPCODE		RAWVALUE	CALCULATED	UNITS	DILUTION	MASS	INITVOL	FINLVOL	%SOLIDS
5373	MB	AS	SCN	U	0.0010000	0.2000000	mg/kg-dry	1.00	1.0000	0.00	200.00	100.00
5373	REF1	AS	SCN		0.0266000	1064.0000000	mg/kg-dry	200.00	1.0000	0.00	200.00	100.00
5373	A	AS	SCN		0.0056000	1.3459856	mg/kg-dry	1.00	1.0160	0.00	200.00	81.90
5373	ADUP	AS	SCN		0.0056000	1.3459856	mg/kg-dry	1.00	1.0160	0.00	200.00	81.90
5373	ASPK	AS	SCN		0.0226000	10.8640266	mg/kg-dry	2.00	1.0160	0.00	200.00	81.90
5373	B	AS	SCN		0.0040000	0.9326114	mg/kg-dry	1.00	1.0370	0.00	200.00	82.72
5373	C	AS	SCN		0.0086000	2.0986103	mg/kg-dry	1.00	1.0250	0.00	200.00	79.96
5373	D	AS	SCN		0.0158000	3.8429218	mg/kg-dry	1.00	1.0050	0.00	200.00	81.82
5373	E	AS	SCN		0.0045000	1.1006048	mg/kg-dry	1.00	1.0020	0.00	200.00	81.61
5373	F	AS	SCN		0.0055000	1.3022412	mg/kg-dry	1.00	1.0240	0.00	200.00	82.49
5373	G	AS	SCN		0.0051000	1.2845319	mg/kg-dry	1.00	1.0040	0.00	200.00	79.09
5373	H	AS	SCN		0.0104000	2.3533772	mg/kg-dry	1.00	1.0270	0.00	200.00	86.06
5373	I	AS	SCN		0.0058000	1.4990003	mg/kg-dry	1.00	1.0690	0.00	200.00	72.39
5373	J	AS	SCN		0.0079000	1.8244673	mg/kg-dry	1.00	1.0420	0.00	200.00	83.11
5373	K	AS	SCN		0.0084000	1.9774495	mg/kg-dry	1.00	1.0160	0.00	200.00	83.62
5373	L	AS	SCN		0.0038000	0.8980329	mg/kg-dry	1.00	1.0580	0.00	200.00	79.99
5373	M	AS	SCN		0.0064000	1.5567844	mg/kg-dry	1.00	1.0590	0.00	200.00	77.64
5373	N	AS	SCN		0.0057000	1.3670048	mg/kg-dry	1.00	1.0170	0.00	200.00	82.00
5373	O	AS	SCN		0.0062000	1.4794135	mg/kg-dry	1.00	1.0050	0.00	200.00	83.40
5373	P	AS	SCN		0.0057000	1.3144883	mg/kg-dry	1.00	1.0160	0.00	200.00	85.36
5373	Q	AS	SCN		0.0064000	1.5474965	mg/kg-dry	1.00	1.0360	0.00	200.00	79.84
5373	R	AS	SCN		0.0069000	1.5365136	mg/kg-dry	1.00	1.0760	0.00	200.00	83.47
5373	S	AS	SCN		0.0072000	1.7310576	mg/kg-dry	1.00	1.0060	0.00	200.00	82.69
5373	T	AS	SCN		0.0048000	1.0212288	mg/kg-dry	1.00	1.0640	0.00	200.00	88.35
5374	A	AS	SCN		0.0047000	1.0299754	mg/kg-dry	1.00	1.0060	0.00	200.00	90.72
5374	ADUP	AS	SCN		0.0050000	1.0968087	mg/kg-dry	1.00	1.0050	0.00	200.00	90.72
5374	ASPK	AS	SCN		0.0213000	9.3355213	mg/kg-dry	2.00	1.0060	0.00	200.00	90.72
5374	MB	AS	SCN	U	0.0010000	0.2000000	mg/kg-dry	1.00	1.0000	0.00	200.00	100.00
5374	REF1	AS	SCN		0.0251000	1002.9970030	mg/kg-dry	200.00	1.0010	0.00	200.00	100.00

Element: As

ANALYTICAL RESOURCES INCORPORATED

VARIAN 2 - EPA CLP GRAPHITE FURNACE SUMMARY LOGBOOK

ALL CORRECTIONS MADE BY ANALYST UNLESS OTHERWISE NOTED.

IDL/Reporting Limit: 1.0 µg/L **Date:** 12-14-96 **Analyst:** Ant

Edit Label/ Dil.	Load Data	Sample ID	EPA ID	Prep Code	Dilution Used	Calculated Value (µg/L)	Analytical Spike (µg/L)	Analytical Spike % R or MSA r	Flag	Comments	Time
		S0									0948
		S10									
		S20									
		S50									1002
		ICV			2X	26.7				105.7% ✓	1008
		ICB				0.2				✓	
		CRA 10 µg/L				10.6	30.4	99.0		✓	
		CCV1				26.4				105.6% ✓	1025
		CCB1				0.1				✓	
		S0									
		CCV2				27.0				107.9% ✓	1039
		CCB2				0.0				✓	
		S0									
		S20				98.6%	S20				

U = Undetected (See IDL/Reporting Limit Above)

000006

000161

5053F

Rev. 1
12/02/96

Element: As

ANALYTICAL RESOURCES INCORPORATED

VARIAN 2 - EPA CLP GRAPHITE FURNACE SUMMARY LOGBOOK

ALL CORRECTIONS MADE BY ANALYST UNLESS OTHERWISE NOTED.

IDL/Reporting Limit: 1.0 µg/L **Date:** 12-14-96 **Analyst:** Aw

Edit Label/ Dil.	Load Data	Sample ID	EPA ID	Prep Code	Dilution Used	Calculated Value (µg/L)	Analytical Spike (µg/L)	Analytical Spike % R or MSA r	Flag	Comments	Time
		CCV3				26.6				106.2%	1058
		CCB3				0.1					
	✓	5373 MB	PBS	SCN	1x	U	22.1	110.5			
✓	✓	Rebl	LCSS		200x	26.6	47.6	105.3		1,064 mg/kg	
	✓	A	MFGZ44		1x	5.6	26.6	105.3			
	✓	ADup	MFGZ44D			5.6	26.5	104.3			
	✓	Aspk	MFGZ44S		2x	22.6	43.4	104.2		99.0% R	
		CCV4				25.8				103.0%	1152
		CCB4				-0.0					
	✓	5373 B	MFGZ45	SCN	1x	4.0	25.3	106.7			
	✓	C	MFGZ46			8.6	29.5	104.5			
	✓	D	MFGZ47			15.8	36.1	101.6			
	✓	E	MFGZ49			4.5	24.8	101.5			
	✓	F	MFGZ50			5.5	25.6	100.2			

U=Undetected (See IDL/Reporting Limit Above)

001162

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000007

Rev. 1
12/02/96

Element: As

ANALYTICAL RESOURCES INCORPORATED

VARIAN 2 - EPA CLP GRAPHITE FURNACE SUMMARY LOGBOOK

ALL CORRECTIONS MADE BY ANALYST UNLESS OTHERWISE NOTED.

IDL/Reporting Limit: 1.0 µg/L **Date:** 12-14-96 **Analyst:** [illegible]

Edit Label/ Dil.	Load Data	Sample ID	EPA ID	Prep Code	Dilution Used	Calculated Value (µg/L)	Analytical Spike (µg/L)	Analytical Spike % R or MSA r	Flag	Comments	Time
		CCV5				26.3				105.0% ✓	1246
		CCB5				0.1				✓	
	✓	5373 G	MFGZ56	SCW	1X	5.1	26.1	105.1			
	✓	H	MFGZ57			10.4	29.3	94.2			
	✓	I	MFGZ58			5.8	25.4	97.9			
	✓	J	MFGZ64			7.9	28.0	100.5			
	✓	K	MFGZ65			8.4	28.5	100.1			
		CCV6				25.1				100.5% ✓	1341
		CCB6				0.4				✓	
	✓	5373 L	MFGZ48	SCW	1X	3.8	25.0	106.2			
	✓	M	MFGZ51			6.4	27.2	103.5			
	✓	N	MFGZ52			5.7	26.9	105.8			
	✓	O	MFGZ53			6.2	26.5	101.5			
	✓	P	MFGZ54			5.7	25.1	96.7			

U = Undetected (See IDL/Reporting Limit Above)

000008

5053F

Rev. 1
12/02/96

Element: As

ANALYTICAL RESOURCES INCORPORATED

VARIAN 2 - EPA CLP GRAPHITE FURNACE SUMMARY LOGBOOK

ALL CORRECTIONS MADE BY ANALYST UNLESS OTHERWISE NOTED. 12/14/96

IDL/Reporting Limit: 1.0 µg/L | Date: 12-14-96 | Analyst: AMA

Edit Label/ Dil.	Load Data	Sample ID	EPA ID	Prep Code	Dilution Used	Calculated Value (µg/L)	Analytical Spike (µg/L)	Analytical Spike % R or MSA r	Flag	Comments	Time
		CCV7	~~26.1~~			26.1				104.4% ✓	1436
		CCB7	~~0.1~~			0.1				✓	
	✓	5373 Q	MFGZ55	SCN	1X	6.4	26.6	100.8			
	✓	R	MFGZ59			6.9	26.5	98.2			
	✓	S	MFGZ60			7.2	26.6	97.4			
	✓	T	MFGZ63			4.8	25.4	103.1			
X	✓	5374 A	MFGZ66			4.7	24.8	100.5			
		CCV8				26.3				105.0% ✓	1531
		CCB8				0.2				✓	
		SO									
		CCV9				25.8				103.3% ✓	1546
		CCB9				-0.0				✓	
	✓	5374 ADup	MFGZ66D	SCN	1X	5.0	25.5	102.2		✓ 6.2% RPD	
	✓	↑ Aspk	MFGZ66S	↓	2X	21.3	41.8	102.7		94.8% R ✓	

U Undetected (See IDL/Reporting Limit Above)

001164

5053F

000009

Rev. 1
12/02/96

Element: As

ANALYTICAL RESOURCES INCORPORATED

VARIAN 2 - EPA CLP GRAPHITE FURNACE SUMMARY LOGBOOK

ALL CORRECTIONS MADE BY ANALYST UNLESS OTHERWISE NOTED.

IDL/Reporting Limit: 1.0 µg/L **Date:** 12-14-96 **Analyst:** AA

Edit Label/ Dil.	Load Data	Sample ID	EPA ID	Prep Code	Dilution Used	Calculated Value (µg/L)	Analytical Spike (µg/L)	Analytical Spike % R or MSA r	Flag	Comments	Time
	✓	5374 MB	PBS	SCN	1y	U	21.9	109.9			
X	✓	↓ Ref 1	LCSS	↓	200x	25.1	45.6	102.9		1,004 mg/kg ✓ AA 12-17-96	
		CCV 10				26.0				103.9% ✓	1631
		CCB 10				0.1				—	1635

end Run AA

U = Undetected (See IDL/Reporting Limit Above)

000165

000010

5053F

Rev. 1
12/02/96

ANALYTICAL
RESOURCES
INCORPORATED

VARIAN GRAPHITE FURNACE INSTRUMENT LOG

Varian 1 Varian 2

Element: As	Date: 12-14-96	Analyst: AA
Wavelength: 193.7 nm	Slit: 1.0 nm	Program No.: 21
Lamp: Photron 8346	HCL Current: 12 mA	Boost Current: 20 mA
Cuvette Type: platform	Cuvette Condit: used	Platform Condition: used

Calibration: Curve, Single Additions, MSA, CLP-EPA

Intermediate Standard
Concentration and Source: 2.0 mg/L IV Std.# 755-9

Autosampler Calibration
Stock Std. Concentration: 50 ug/L Std.# 755-10

Calibration Verification
Standard Concentration and Source: ICV 50.9 ug/L EPA ICV-2 539-5
CCV 25.0 ug/L IVCV-GFA Std.# 755-14

Matrix Modifier: 5uL Pd/Mg/CA mod to 15uL sample

Program Number and Comments:

Integration: Peak Area

ABS for 10 µg/L: 0.034

ABS for 1.0 µg/L:

Notes:

001104

5004F

000166

Rev. 1
02/17/94

QC Protocol Report

ANALYTICAL RESOURCES INC.
VARIAN 2 300

✓ 12-16-96

OPERATOR	ALA
DATE	12/14/96
BATCH	As961214

QC PROTOCOL PARAMETERS

QC STANDARD POSITION	45
IF THERE IS AN ERROR	STOP
QC SPIKE POSITION	44
RECOVERY LIMITS (%)	85 TO 115
RECOVERY MINIMUM LIMIT (%)	40
CORRELATION COEFFICIENT (r)	0.995
OVERRANGE VOLUME REDUCTION	1
REPLICATE RSD LIMIT (%)	100.0

PROGRAM 21 As CLP

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	PEAK AREA
LAMP POSITION	1
LAMP CURRENT (mA)	12
SLIT WIDTH (nm)	1.0
SLIT HEIGHT	NORMAL
WAVELENGTH (nm)	193.7
SAMPLE INTRODUCTION	SAMPLER AUTOMIXING
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	1.0
REPLICATES	2
BACKGROUND CORRECTION	ON
MAXIMUM ABSORBANCE	0.95

FURNACE PARAMETERS

STEP NO.	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
1	300	35.0	3.0	ALTERNATE	NO
2	600	10.0	3.0	ALTERNATE	NO
3	1300	5.0	3.0	ALTERNATE	NO
4	1300	5.0	3.0	ALTERNATE	NO
5	1300	1.0	0.0	NORMAL	NO
6	2500	0.6	0.0	NORMAL	YES
7	2500	2.0	0.0	NORMAL	YES
8	2500	1.0	3.0	NORMAL	NO
9	2600	2.0	3.0	NORMAL	NO
10	40	12.8	3.0	NORMAL	NO

SAMPLER PARAMETERS
VOLUMES (µL)

	SOLUTION	BLANK	MODIFIER
BLANK	--	15	5
STANDARD 1	3	12	5
STANDARD 2	6	9	5
STANDARD 3	15	0	5
SAMPLE	15	0	5

RECALIBRATION RATE 0
RESLOPE RATE 0

MULTIPLE INJECT NO HOT INJECT YES PRE INJECT NO
TEMPERATURE 150
INJECT RATE 5

QC PROTOCOL PARAMETERS

QC STANDARD RATE	0
QC STANDARD VOLUME (µL)	15
QC STANDARD CONCENTRATION	25.0 ug/L
QC STANDARD LIMITS (%)	90 TO 110
QC SPIKE RATE	0
QC SPIKE VOLUME (µL)	6
QC SPIKE CONCENTRATION	50.0 ug/L
MATRIX SPIKE CONCENTRATION	0.1 ug/L
REQUIRED DETECTION LIMIT	4.0 ug/L

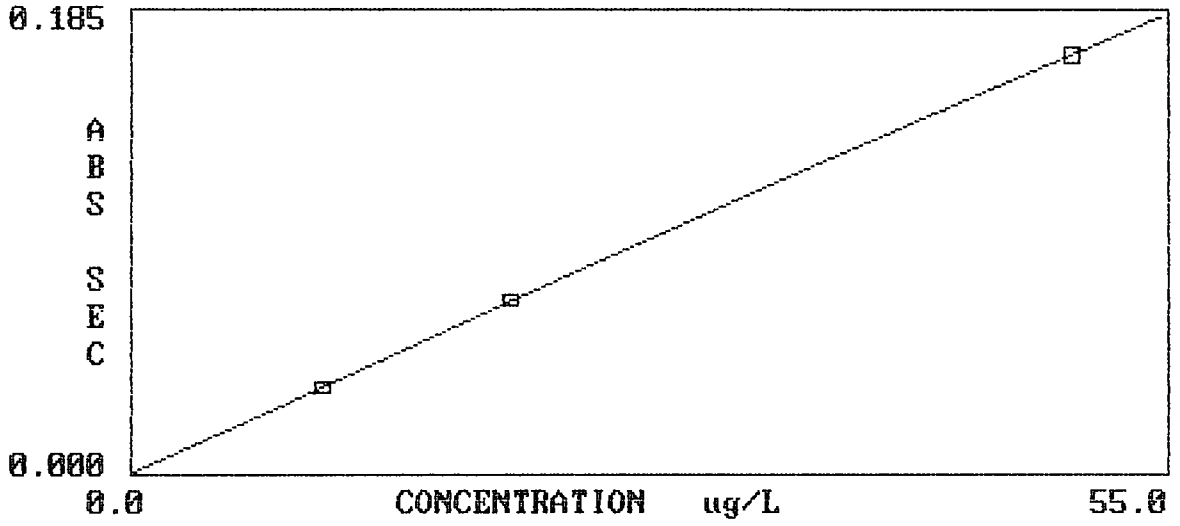
MIXED MODIFIER SOLUTION: 500 mg/L Pd from Pd(NO3)2, 1000 mg/L Mg from Mg(NO3)2 and 1% citric acid

CUVETTE TYPE: Platform

LAMP TYPE: Photron Super Lamp

SAMPLE	CONC ug/L	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.000	0.000	0.000
QC S0				14Sep96	09:48
STANDARD 1	10.0	1.7	0.034	0.034	0.035
QC S10				14Sep96	09:53
STANDARD 2	20.0	1.6	0.069	0.068	0.070
QC S20				14Sep96	09:58

SAMPLE	CONC ug/L	%RSD	MEAN ABS	READINGS	
STANDARD 3 QC S SO	50.0	1.1	0.168	0.166 14Sep96	0.169 10:02



ICV QC	26.7	0.6	0.091	0.092 14Sep96	0.091 10:08
ICB QC	0.2	99.9	0.001	0.000 14Sep96 ~~RPD = 197.7~~	0.001 10:12 AA 12/14/96
CRA 10 ug/L QC	10.6	2.5	0.036	0.037 14Sep96 ~~%R = 10409.6~~	0.036 10:16 AA 12/14/96
CRAA QC	30.4	0.0	0.104	0.104 14Sep96	0.104 10:21
CCV 1 QC	26.4	0.8	0.090	0.090 14Sep96	0.091 10:25
CCB 1 QC	0.1	93.0	0.000	0.000 14Sep96	0.000 10:29
BLANK QC SO	0.0		0.001	0.001 14Sep96	0.001 10:35

SAMPLE	CONC ug/L	%RSD	MEAN ABS	READINGS	
QCSTANDARD QC CCV2	27.0	1.9	0.092	0.091 14Sep96 %R =	0.094 10:39 107.9
QCBLANK QC CCB2	0.0	99.9	0.000	0.001 14Sep96 ABS =	-0.001 10:44 0.000
BLANK QC SO	0.0		-0.001	-0.001 14Sep96	-0.001 10:49
RESLOPE 2 QC S20	20.0	0.7	0.068	0.068 14Sep96	0.068 10:54
QCSTANDARD QC CCV3	26.6	1.0	0.090	0.089 14Sep96 %R =	0.090 10:58 106.2
QCBLANK QC CCB3	0.1	99.9	0.000	0.000 14Sep96 ABS =	0.001 11:02 0.000
5373 MB 1 QC PBS	-0.1	99.9	-0.000	-0.001 14Sep96	0.001 11:07
QCSPIKE QC PBSA	22.1	1.1	0.075	0.074 14Sep96 %R =	0.076 11:11 ~~110.9~~ 110.5 AA 12/14/96
Reb AA 12/14/96 5373 ~~RF~~1 200 QC LCSS	26.6	1.4	0.090	0.089 14Sep96 ~~RPD =~~	0.091 11:16 ~~201.2~~ AA 12/14/96
QCSPIKE QC LCSSA	47.6	0.9	0.158	0.159 14Sep96 %R =	0.157 11:20 105.3
5373 A 1 QC MFGZ44	5.6	2.2	0.019	0.019 14Sep96 ~~%R =~~	0.019 11:25 ~~-21005.6~~ AA 12/14/96
QCSPIKE QC MFGZ44A	26.6	0.3	0.090	0.090 14Sep96 %R =	0.090 11:29 105.3
5373 ADUP 1 QC MFGZ 44D	5.6	2.1	0.019	0.019 14Sep96	0.019 11:34
QCSPIKE QC MFGZ 44DA	26.5	0.7	0.089	0.090 14Sep96 %R =	0.089 11:38 104.3
5373 ASPK 2 QC MFGZ44S	22.6	1.2	0.077	0.076 14Sep96	0.077 11:43
QCSPIKE QC MFGZ44SA	43.4	0.6	0.145	0.144 14Sep96 %R =	0.145 11:47 104.2

SAMPLE	CONC ug/L	%RSD	MEAN ABS	READINGS	
QCSTANDARD QC CCV4	25.8	0.2	0.087	0.087 14Sep96 %R =	0.087 11:52 103.0
QCBLANK QC CCB4	-0.0	99.9	-0.000	0.001 14Sep96 ABS =	-0.001 11:56 -0.000
5373 B 1 QC MFGZ45	4.0	3.5	0.013	0.013 14Sep96	0.014 12:00
QCSPIKE QC MFGZ45A	25.3	1.5	0.086	0.087 14Sep96 %R =	0.085 12:05 106.7
5373 C 1 QC MFGZ46	8.6	0.2	0.029	0.029 14Sep96	0.029 12:09
QCSPIKE QC MFGZ46A	29.5	0.1	0.099	0.099 14Sep96 %R =	0.099 12:14 104.5
5373 D 1 QC MFGZ47	15.8	1.5	0.053	0.054 14Sep96	0.053 12:19
QCSPIKE QC MFGZ47A	36.1	0.2	0.121	0.121 14Sep96 %R =	0.121 12:23 101.6
5373 E 1 QC MFGZ49	4.5	2.2	0.015	0.016 14Sep96	0.015 12:28
QCSPIKE QC MFGZ49A	24.8	2.5	0.084	0.083 14Sep96 %R =	0.085 12:32 101.5
5373 F 1 QC MFGZ50	5.5	3.7	0.019	0.019 14Sep96	0.018 12:37
QCSPIKE QC MFGZ50A	25.6	1.7	0.087	0.085 14Sep96 %R =	0.088 12:41 100.2
QCSTANDARD QC CCV5	26.3	0.5	0.089	0.088 14Sep96 %R =	0.089 12:46 105.0
QCBLANK QC CCB5	0.1	99.9	0.000	0.000 14Sep96 ABS =	0.000 12:50 0.000
5373 G 1 QC MFGZ56	5.1	0.0	0.017	0.017 14Sep96	0.017 12:55
QCSPIKE QC MFGZ56A	26.1	0.3	0.088	0.088 14Sep96 %R =	0.088 12:59 105.1

SAMPLE	CONC ug/L	%RSD	MEAN ABS	READINGS	
5373 H 1 QC MFGZ57	10.4	0.6	0.035	0.035 14Sep96	0.036 13:04
QCSPIKE QC MFGZ57A	29.3	1.0	0.099	0.098 14Sep96 %R =	0.099 13:08 94.2
5373 I 1 QC MFGZ58	5.8	2.7	0.020	0.019 14Sep96	0.020 13:13
QCSPIKE QC MFGZ58A	25.4	0.5	0.086	0.086 14Sep96 %R =	0.086 13:18 97.9
5373 J 1 QC MFGZ64	7.9	2.2	0.027	0.026 14Sep96	0.027 13:22
QCSPIKE QC MFGZ64A	28.0	0.2	0.095	0.094 14Sep96 %R =	0.095 13:27 100.5
5373 K 1 QC MFGZ65	8.4	2.2	0.029	0.029 14Sep96	0.028 13:31
QCSPIKE QC MFGZ65A	28.5	0.6	0.096	0.096 14Sep96 %R =	0.096 13:36 100.1
QCSTANDARD QC CCV6	25.1	2.1	0.085	0.084 14Sep96 %R =	0.086 13:41 100.5
QCBLANK QC CCB6	0.4	23.5	0.001	0.001 14Sep96 ABS =	0.001 13:45 0.001
5373 L 1 QC MFGZ48	3.8	2.2	0.013	0.013 14Sep96	0.013 13:49
QCSPIKE QC MFGZ48A	25.0	1.9	0.085	0.086 14Sep96 %R =	0.083 13:54 106.2
5373 M 1 QC MFGZ51	6.4	2.6	0.022	0.022 14Sep96	0.021 13:59
QCSPIKE QC MFGZ51A	27.2	1.6	0.092	0.091 14Sep96 %R =	0.093 14:04 103.5
5373 N 1 QC MFGZ52	5.7	2.6	0.019	0.020 14Sep96	0.019 14:08
QCSPIKE QC MFGZ52A	26.9	1.5	0.091	0.092 14Sep96 %R =	0.090 14:13 105.8

SAMPLE	CONC ug/L	%RSD	MEAN ABS	READINGS	
5373 Q 1 QC MFGZ53	6.2	2.3	0.021	0.021 14Sep96	0.021 14:17
QCSPIKE QC MFGZ53A	26.5	1.6	0.089	0.088 14Sep96 %R =	0.091 14:22 101.5
5373 P 1 QC MFGZ54	5.7	2.0	0.019	0.020 14Sep96	0.019 14:27
QCSPIKE QC MFGZ54A	25.1	0.7	0.085	0.085 14Sep96 %R =	0.084 14:31 96.7
QCSTANDARD QC CCV7	26.1	0.4	0.088	0.088 14Sep96 %R =	0.088 14:36 104.4
QCBLANK QC CCB7	0.1	99.9	0.000	0.001 14Sep96 ABS =	-0.000 14:40 0.000
5373 Q 1 QC MFGZ55	6.4	0.0	0.022	0.022 14Sep96	0.022 14:45
QCSPIKE QC MFGZ55A	26.6	0.3	0.090	0.090 14Sep96 %R =	0.089 14:50 100.8
5373 R 1 QC MFGZ59	6.9	2.2	0.023	0.023 14Sep96	0.024 14:54
QCSPIKE QC MFGZ59A	26.5	0.0	0.090	0.090 14Sep96 %R =	0.090 14:59 98.2
5373 S 1 QC MFGZ60	7.2	1.2	0.024	0.024 14Sep96	0.024 15:03
QCSPIKE QC MFGZ60A	26.6	0.0	0.090	0.090 14Sep96 %R =	0.090 15:08 97.4
5373 T 1 QC MFGZ63	4.8	0.6	0.016	0.016 14Sep96	0.016 15:12
QCSPIKE QC MFGZ63A	25.4	0.0	0.086	0.086 14Sep96 %R =	0.086 15:17 103.1
5374 A 1 QC MFGZ66	4.7	1.8	0.016	0.016 14Sep96	0.016 15:21
QCSPIKE QC MFGZ66A	24.8	1.3	0.084	0.083 14Sep96 %R =	0.085 15:26 100.5

SAMPLE	CONC ug/L	%RSD	MEAN ABS	READINGS	
QCSTANDARD QC CCV8	26.3	0.8	0.089	0.089 14Sep96 %R =	0.088 15:31 105.0
QCBLANK QC CCB8	0.2	49.4	0.001	0.001 14Sep96 ABS =	0.001 15:35 0.001
BLANK QC SO	0.0		0.002	0.002 14Sep96	0.002 15:41
QCSTANDARD QC CCV9	25.8	1.1	0.087	0.087 14Sep96 %R =	0.088 15:46 103.3
QCBLANK QC CCB9	-0.0	99.9	-0.000	0.000 14Sep96 ABS =	-0.000 15:50 0.001
5374 ADUP 1 QC MFGZ66D	5.0	0.5	0.017	0.017 14Sep96	0.017 15:54
QCSPIKE QC MFGZ66DA	25.5	1.5	0.086	0.085 14Sep96 %R =	0.087 15:59 102.2
5374 ASPK 2 QC MFGZ66S	21.3	0.5	0.072	0.072 14Sep96	0.072 16:03
QCSPIKE QC MFGZ66SA	41.8	0.0	0.139	0.139 14Sep96 %R =	0.140 16:08 102.7
5374 MB 1 QC PBS	-0.2	68.6	-0.001	-0.000 14Sep96	-0.001 16:12
QCSPIKE QC PBSA	21.9	0.7	0.074	0.074 14Sep96 %R =	0.075 16:17 ~~110.4~~ 109.9
5374 ~~RF~~ Reb 1 200 QC LCSS	25.1	0.1	0.085	0.085 14Sep96	0.085 16:21
QCSPIKE QC LCSSA	45.6	3.9	0.152	0.148 14Sep96 %R =	0.156 16:26 102.9
QCSTANDARD QC CCV10	26.0	1.9	0.088	0.089 14Sep96 %R =	0.087 16:31 103.9
QCBLANK QC CCB10	0.1	41.6	0.000	0.000 14Sep96 ABS =	0.000 16:35 0.001

12-16-96

8 5373

CALCULATED DATA FROM FILE: [illegible]S\PB961215.DBF

ANALYTICAL RESOURCES INCORPORATED

JOB	SAMP	ELEMENT	PREPCODE		RAWVALUE	CALCULATED	UNITS	DILUTION	MASS	INITVOL	FINLVOL	%SOLIDS
5373	MB	PB	SCN	U	0.0010000	0.2000000	mg/kg-dry	1.00	1.0000	0.00	200.00	100.00
5373	REF1	PB	SCN		0.0257000	257.0000000	mg/kg-dry	50.00	1.0000	0.00	200.00	100.00
5373	A	PB	SCN		0.0250000	6.0088643	mg/kg-dry	1.00	1.0160	0.00	200.00	81.90
5373	ADUP	PB	SCN		0.0265000	6.3693961	mg/kg-dry	1.00	1.0160	0.00	200.00	81.90
5373	ASPK	PB	SCN		0.0220000	10.5756011	mg/kg-dry	2.00	1.0160	0.00	200.00	81.90
5373	I	PB	SCN		0.0213000	55049.4922072	mg/kg-dry	10000.00	1.0690	0.00	200.00	72.39
5373	H	PB	SCN		0.0327000	369.9780570	mg/kg-dry	50.00	1.0270	0.00	200.00	86.06
5373	J	PB	SCN		0.0217000	250.5755732	mg/kg-dry	50.00	1.0420	0.00	200.00	83.11
5373	K	PB	SCN		0.0221000	260.1287790	mg/kg-dry	50.00	1.0160	0.00	200.00	83.62
5373	B	PB	SCN		0.0172000	4.0102289	mg/kg-dry	1.00	1.0370	0.00	200.00	82.72
5373	E	PB	SCN		0.0202000	4.9404927	mg/kg-dry	1.00	1.0020	0.00	200.00	81.61
5373	G	PB	SCN		0.0230000	115.8597372	mg/kg-dry	20.00	1.0040	0.00	200.00	79.09
5373	N	PB	SCN		0.0193000	4.6286304	mg/kg-dry	1.00	1.0170	0.00	200.00	82.00
5373	Q	PB	SCN		0.0272000	6.5768603	mg/kg-dry	1.00	1.0360	0.00	200.00	79.84
5373	O	PB	SCN		0.0219000	26.1283511	mg/kg-dry	5.00	1.0050	0.00	200.00	83.40
5373	D	PB	SCN		0.0238000	115.7740994	mg/kg-dry	20.00	1.0050	0.00	200.00	81.82
5373	L	PB	SCN		0.0229000	54.1182960	mg/kg-dry	10.00	1.0580	0.00	200.00	79.99
5373	R	PB	SCN		0.0240000	26.7219752	mg/kg-dry	5.00	1.0760	0.00	200.00	83.47
5373	S	PB	SCN		0.0283000	68.0401807	mg/kg-dry	10.00	1.0060	0.00	200.00	82.69
5373	T	PB	SCN		0.0243000	25.8498538	mg/kg-dry	5.00	1.0640	0.00	200.00	88.35
5373	C	PB	SCN		0.0276000	33.6753743	mg/kg-dry	5.00	1.0250	0.00	200.00	79.96
5373	F	PB	SCN		0.0133000	15.7452797	mg/kg-dry	5.00	1.0240	0.00	200.00	82.49
5373	M	PB	SCN		0.0151000	18.3651915	mg/kg-dry	5.00	1.0590	0.00	200.00	77.64
5373	P	PB	SCN		0.0169000	19.4867131	mg/kg-dry	5.00	1.0160	0.00	200.00	85.36

Element: Pb

NOTE: ALL PREDILUTIONS BASED ON 12/12/96 ICP DATA. NSJ 12-15-96

ANALYTICAL RESOURCES INCORPORATED

TJA-SMITH HIEFTJE 11 - EPA CLP GRAPHITE FURNACE SUMMARY LOGBOOK

ALL CORRECTIONS MADE BY ANALYST UNLESS OTHERWISE NOTED. NSJ 12-15-96

IDL/Reporting Limit: 1.0 µg/L | Date: 12-15-96 | Analyst: NSJ

Sample Sequence No.	Load Data	Sample ID	EPA ID	Prep Code	Dilution Used	Calculated Value (µg/L)	Analytical Spike (µg/L)	Analytical Spike % R or MSA r	Flag	Comments	Time
		SO (BLANK)									10:37
		SSO								STD. # 756-6 THIS SSB NOT used BH 12/21/96	
		S3								-2	10:45
		S10								-3	10:49
		S20								-4	10:53
		S75								-~~5~~ 7	10:57
		SSO								-6	11:02
1		ICV			5x	21.7				109.8% ✓	11:06
2		ICB				-0.3				✓	
3		CRI 3µg/L				3.4	23.1	98.5		✓	
5		CCV 1				39.7				99.2% ✓	11:24
6		CCB 1				0.2				✓	
7	✓	5373 MB	PBS	SCN	1x	U	21.6	108.0			
8	✓	↓ REF1	LCSS	↓	50x	25.7	43.7	90.0		257 mg/kg ✓	

U Undetected (See IDL/Reporting Limit Above)

BH 12/19/96

Element: Pb

ANALYTICAL RESOURCES INCORPORATED

TJA-SMITH HIEFTJE 11 - EPA CLP GRAPHITE FURNACE SUMMARY LOGBOOK

ALL CORRECTIONS MADE BY ANALYST UNLESS OTHERWISE NOTED. NSJ 12-15-96

IDL/Reporting Limit: 1.0 µg/L | Date: 12-15-96 | Analyst: NSJ

Sample Sequence No.	Load Data	Sample ID	EPA ID	Prep Code	Dilution Used	Calculated Value (µg/L)	Analytical Spike (µg/L)	Analytical Spike % R or MSA r	Flag	Comments	Time
11	✓	5373 A	MFGZ44	SCN	1x	25.0	44.2	96.0			
13	✓	↓ ADUP	↓ -D	↓	↓	26.5	47.5	105.0		✓	
15	✓	↓ ASPK	↓ -5	↓	2x	22.0	43.1	105.5		95.0% ✓	
17		CCV 2				41.4				103.5% ✓	12:15
18		CCB 2				-0.2				✓	
19	✓	5373 I	MFGZ 58	SCN	10,000x	21.3	41.3	100.0			
21	✓	↓ H	↓ 57	↓	50x	32.7	52.4	98.5			
23	✓	↓ J	↓ 64	↓	↓	21.7	40.8	95.5			
25	✓	↓ K	↓ 65	↓	↓	22.1	42.9	104.0			
27		DILUENT ~~ZZZZZ~~ D	~~ZZZZZ~~	✓	~~20x~~	U	21.9	109.5			
29		CCV3				40.8				102.0% ✓	13:05
30		CCB3				-0.2				✓	
31	✓	5373 B	MFGZ 45	SCN	1x	17.2	38.0	104.0			
33		↓ C	↓ 46	↓	↓	HIGH	HIGH	—		5x	

U Undetected (See IDL/Reporting Limit Above)

5054F

Rev. 1
12/02/96

Element: Pb

ANALYTICAL RESOURCES INCORPORATED

TJA-SMITH HIEFTJE 11 - EPA CLP GRAPHITE FURNACE SUMMARY LOGBOOK

ALL CORRECTIONS MADE BY ANALYST UNLESS OTHERWISE NOTED. NSJ 12-15-96

IDL/Reporting Limit: 1.0 µg/L | Date: 12-15-96 | Analyst: NSJ

Sample Sequence No.	Load Data	Sample ID	EPA ID	Prep Code	Dilution Used	Calculated Value (µg/L)	Analytical Spike (µg/L)	Analytical Spike % R or MSA r	Flag	Comments	Time
35	✓	5373 E	MFGZ 49	SCN	1x	20.2	41.3	105.5	0		
37		F	50		↓	HIGH	HIGH	—		5x	
39	✓	G	56		20x	23.0	42.6	98.0	0		
41		CCV 4				42.0				105.0% ✓	13:55
42		CCB 4				0.0				✓	
		550	RESLOPE =		106.2% of 550						
43		CCV 5				39.6				99.0% ✓	14:07
44		CCB 5				0.0				✓	
45	✓	5373 N	MFGZ 52	SCN	1x	19.3	39.0	98.5	0		
47	✓	Q	55		↓	27.2	45.9	93.5	0		
49		M	51		2x	36.1	HIGH	—		5x	
51	✓	O	53		5x	21.9	40.4	92.5			
53		P	54		2x	40.0	HIGH	—		5x	BH 12/21/96
55		CCV 6				41.1				102.8% ✓	15 ~~14~~:08

U = Undetected (See IDL/Reporting Limit Above)

000178

5054F

000007

Rev. 1
12/02/96

Element: Pb

ANALYTICAL RESOURCES INCORPORATED

TJA-SMITH HIEFTJE 11 - EPA CLP GRAPHITE FURNACE SUMMARY LOGBOOK

ALL CORRECTIONS MADE BY ANALYST UNLESS OTHERWISE NOTED. NSJ 12-15-96

IDL/Reporting Limit: 1.0 µg/L | Date: 12-15-96 | Analyst: NSJ

Sample Sequence No.	Load Data	Sample ID	EPA ID	Prep Code	Dilution Used	Calculated Value (µg/L)	Analytical Spike (µg/L)	Analytical Spike % R or MSA r	Flag	Comments	Time
56		CCB 6				0.4				✓	
57	✓	5373 D	MFGZ 47	SCN	20x	23.8	41.4	88.0			
59	✓	L	48		10x	22.9	42.0	95.5			
61	✓	R	59		5x	24.0	42.0	90.0			
63	✓	S	60		10x	28.3	46.4	90.5			
65	✓	T	63		5x	24.3	42.2	89.5			
67		CCV 7				39.6				99.0% ✓	15:48
68		CCB 7				-0.3				✓	
69	✓	5373 C	MFGZ 46	SCN	5x	27.6	46.1	92.5			
71	✓	F	50			13.3	33.3	100.0			
73	✓	M	51			15.1	34.8	98.5			
75	✓	P	54			16.9	37.5	103.0			
77		CCV 8				40.8				102.0% ✓	16:30
~~78~~		CCB 8				-0.2				✓	16:34

U = Undetected (See IDL/Reporting Limit Above)

— END CLP —

000179

5054F

000008

Rev. 1
12/02/96

ANALYTICAL
RESOURCES
INCORPORATED

THERMO JARRELL ASH GRAPHITE FURNACE INSTRUMENT LOGBOOK

SMITH-HIEFTJE 11 VIDEO 22E

Element: Pb	Date: 12-15-96	Analyst: NSJ
Wavelength: 283.3 nm	Slit: 0.5 nm	BKG Method: SH
Lamp: 9201-9720	HCL Current: 2.6 mA	BKG Voltage: 700
Cuvette Type: Uncoated	BKG Current: 1.5 mA	HCL Voltage: 700
Cuvette Condit: Used	Filters: —	S/E: 1.0

Calibration: ✓ Curve, Single Additions, MSA, ✓ CLP – EPA

Intermediate Standard
Concentration and Source: 2 mg/L IV Std. # 756-1

Calibration Verification
Standard Concentration and Source: 98.8 µg/L EPA ICV-4 539-4
40.0 " IVCV Std. # 756-9

Matrix Modifier: 20 µL Pd/Mg to 2 mL sample

Program Number and Comments: #175

Integration: ✓ Peak Area, Peak Height

Integration Time: 2.4	Integration Delay Time: 1.6
Fastac Delay Time: 12	Fastac Deposit Time: 7

ABS for 10 µg/L: 0.045

ABS for 1.0 µg/L:

Notes:

TJA SH-11 GFA

12-17-96

Pb-S
MODE: AA, SB ,ABC
CTF
Stats #2
RECALLED METHOD #175
Pb
in Environmental
Ready for
Pb
in Environmental

EPA CLP

NSJ
12/15/96

Pb in Environmental # 175

	Dry	Pyr1	Pyr2	Atom	Clean
Temp	150	600	200	2000	2500
Ramp	2	15	10	1	
Hold	0	5	5	3	3
Purge	1	2	2	0	3
				INT	

Pk Area 02.4 sec Delay= 1.6
FASTAC Delay 12.0 Dep 007.0

FURNACE READY

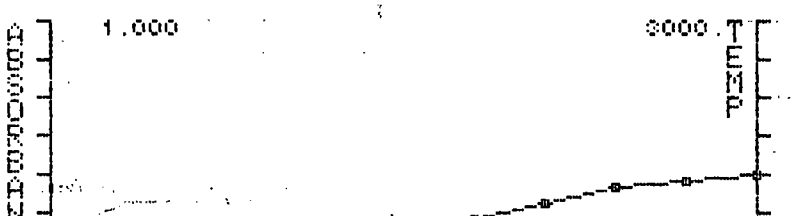
Temp <100 C

Normal Calibration

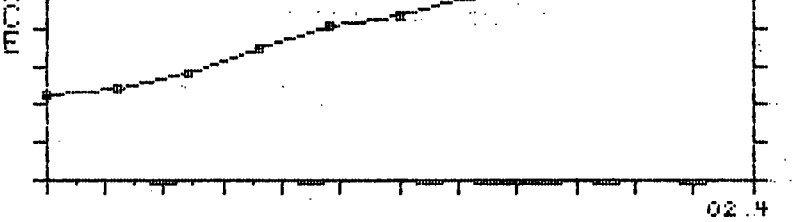
RINSE

Pb-S
Standard Z

02 Pb-S #01
Abs 0.001
Mean 0.001
P/H 0.001

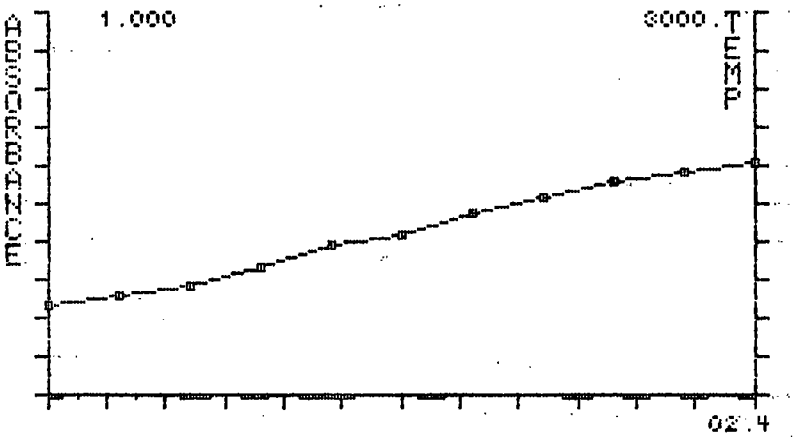


000181



Temp 201 C

02 Pb-S #02
Abs 0.001
Mean 0.001
P/H 0.000



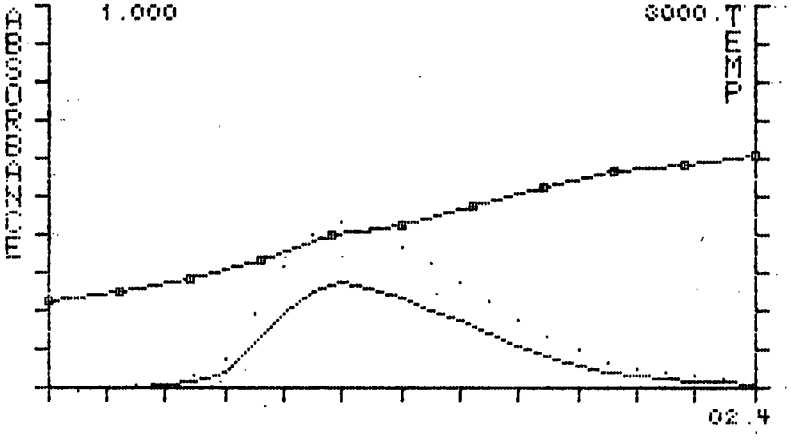
SO

Temp 231 C

AUTO ZERO
10:37:00
Sun 15 DEC 1996
Pb-S
Standard C

02 Pb-S #01
Abs 0.239
Mean 0.239
P/H 0.274

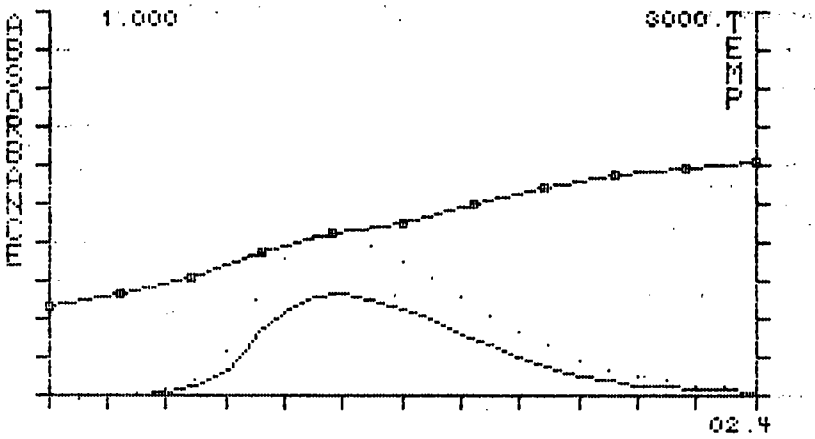
This S5P not used 12/21/96 fbk



Temp 217 C

02 Pb-S #02
Abs 0.242
Mean 0.240
P/H 0.265

This SSD not used 12/21/96

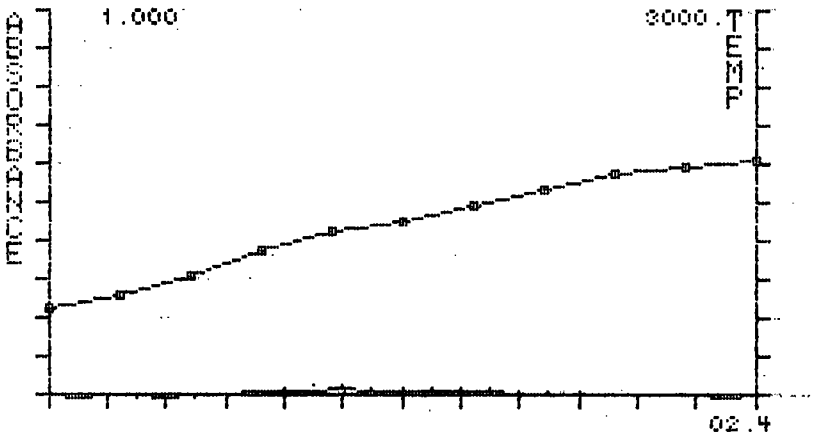


SSO

Temp 201 C

Pb-S
Mean 0.240
SD 0.002
RSD 00.91
Pb-S
Standard 1

02 Pb-S #01
Abs 0.014
Mean 0.014
P/H 0.014

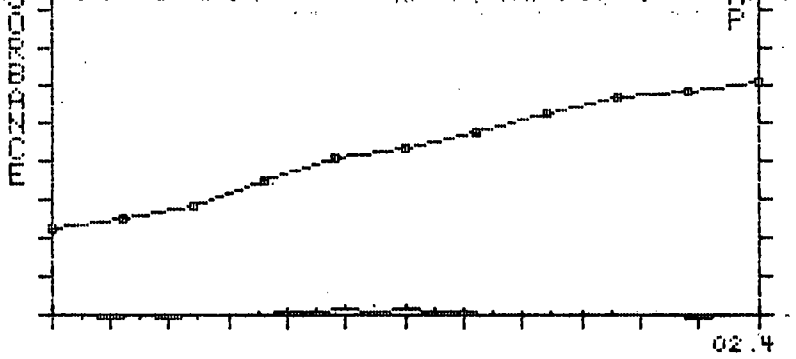


Temp 201 C

02 Pb-S #02
Abs 0.013
Mean 0.013
P/H 0.015

S3

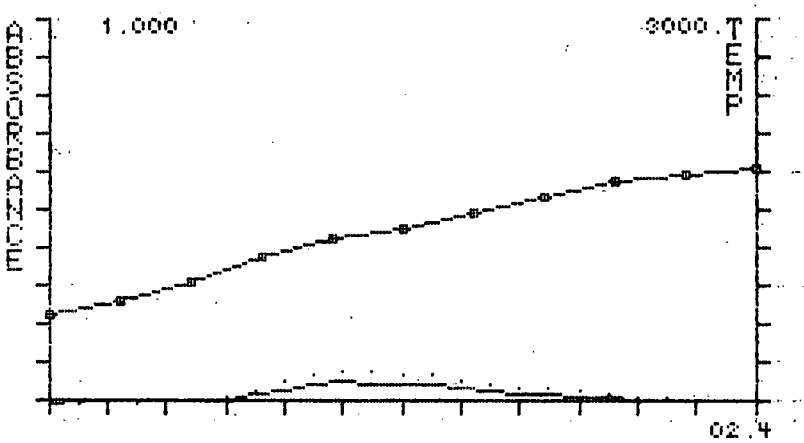
000183



Temp 207 C

Pb-S
Mean 0.013
SD 0.001
RSD 07.69
Pb-S
Standard 2

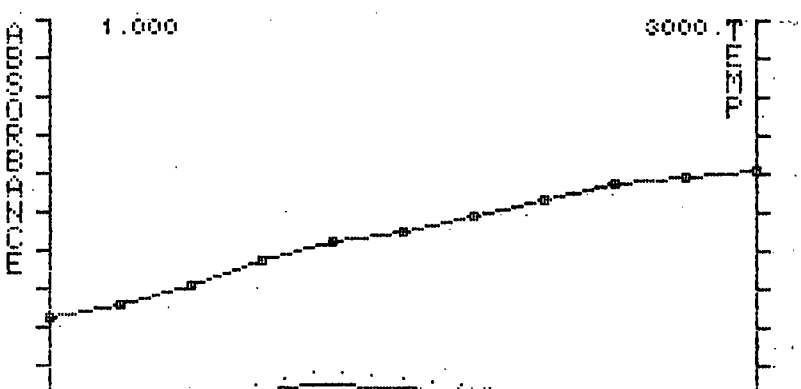
02 Pb-S #01
Abs 0.044
Mean 0.044
P/H 0.048



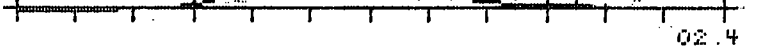
Temp 200 C

02 Pb-S #02
Abs 0.046
Mean 0.045
P/H 0.052

510



000184

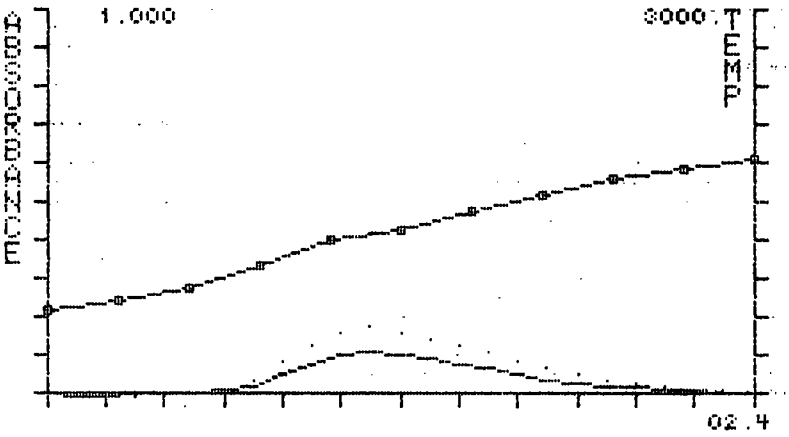


Temp 200 C

	Pb-S
Mean	0.045
SD	0.001
RSD	03.11

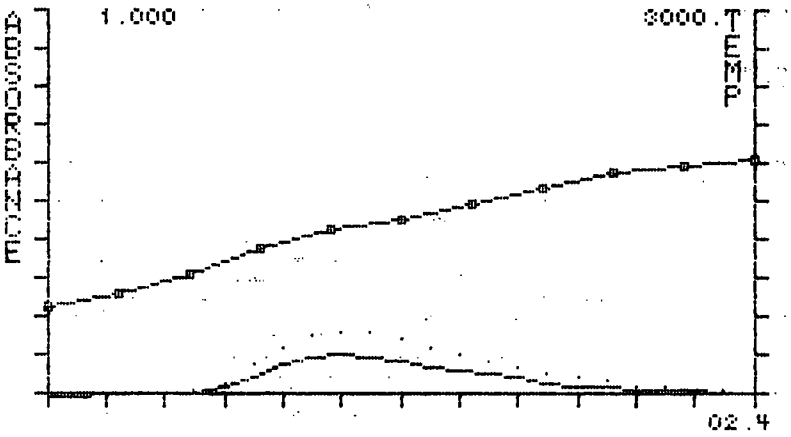
Pb-S
Standard 3

02 Pb-S #01
Abs 0.093
Mean 0.093
P/H 0.109



Temp 203 C

02 Pb-S #02
Abs 0.088
Mean 0.090
P/H 0.100



520

Temp 200 C

000185

	Pb-S
Mean	0.090
SD	0.004

RSD 04.00

Pb-S

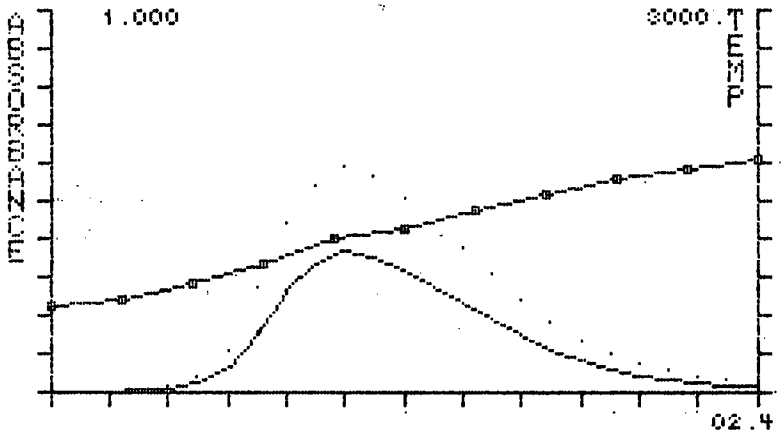
Standard 4

02 Pb-S #01

Abs 0.325

Mean 0.325

P/H 0.368



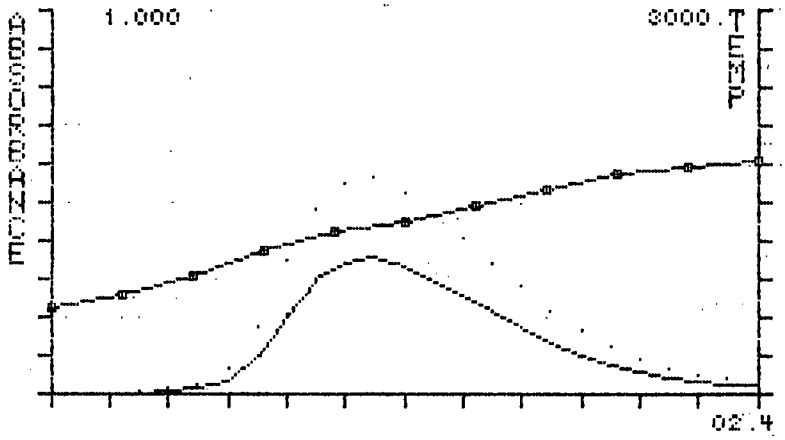
Temp 212 C

02 Pb-S #02

Abs 0.322

Mean 0.323

P/H 0.358



575

Temp 198 C

Pb-S

Mean 0.323

SD 0.002

RSD 00.68

Pb-S

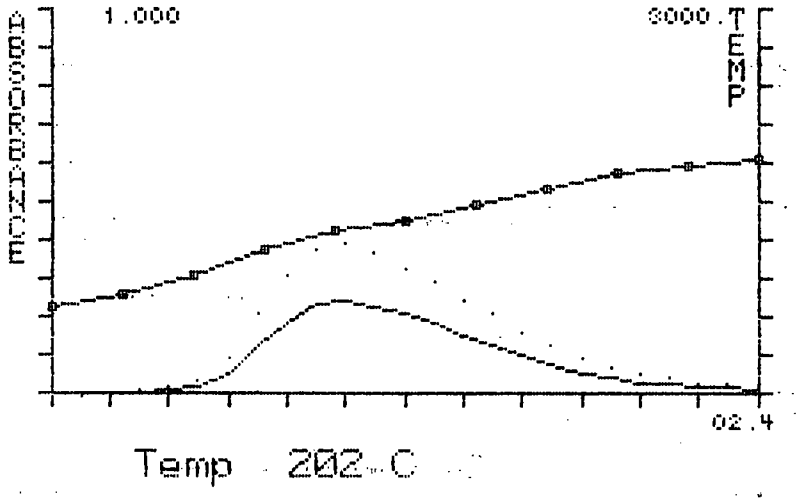
Standard C

02 Pb-S #01 000186

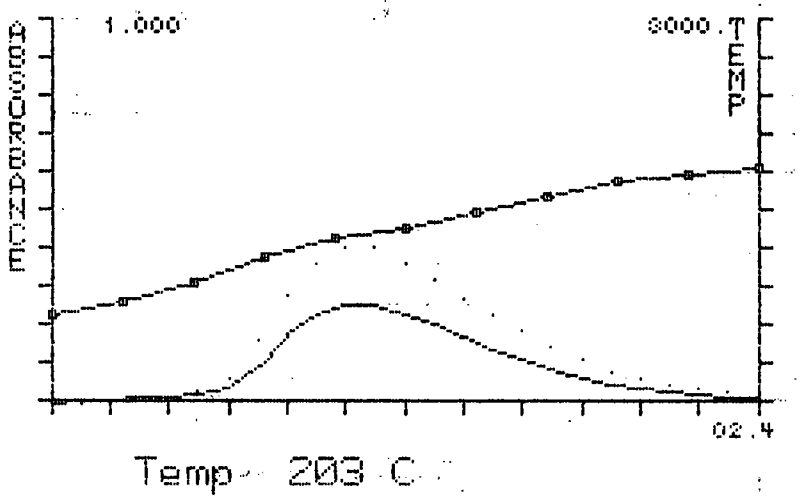
Abs 0.221

Mean 0.221

P/H 0.247



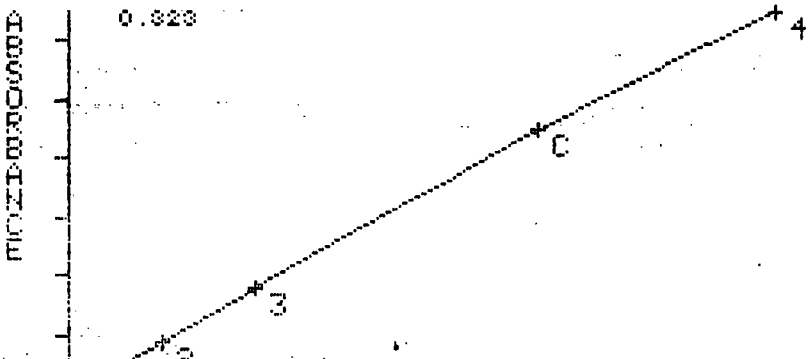
02 Pb-S #02
Abs 0.227
Mean 0.224
P/H 0.252



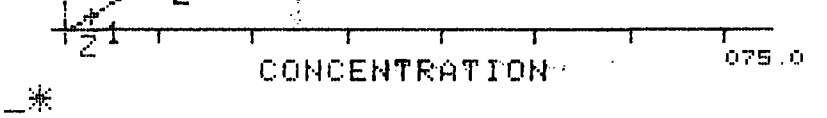
550

	Pb-S
Mean	0.224
SD	0.004
RSD	01.87

Pb-S



000187



CALIBRATE A

STD	CONC	MEAN
Z	000.0	0.000
C	050.0	0.224
1	003.0	0.013
2	010.0	0.045
3	020.0	0.090
4	075.0	0.323

APP CONC

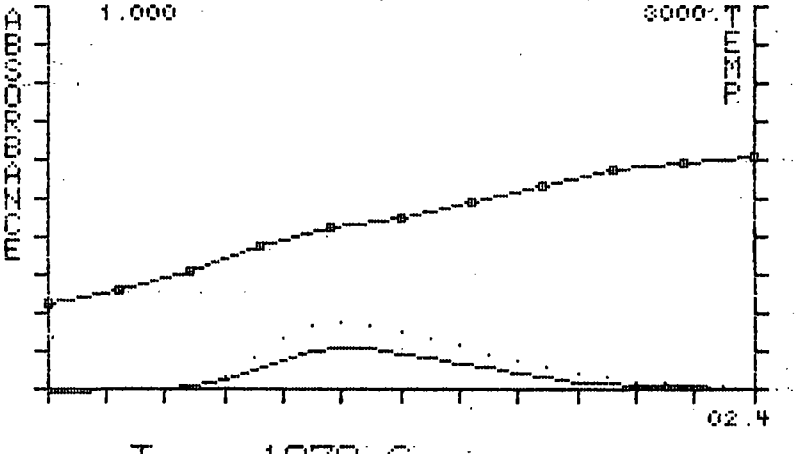
STD Z 000.0
STD C 050.0
STD 1 002.9
STD 2 010.0
STD 3 019.9
STD 4 075.0
Dilution factor: 01.00
Normal Operation
AZ after 0
AC after 0

SN of Sample #1 000001
Starting location 1
Number of Samples 6

RINSE

Pb-S
SN= 000001

02 Pb-S #01
Conc 022.2
Mean 022.2
P/H 0.110

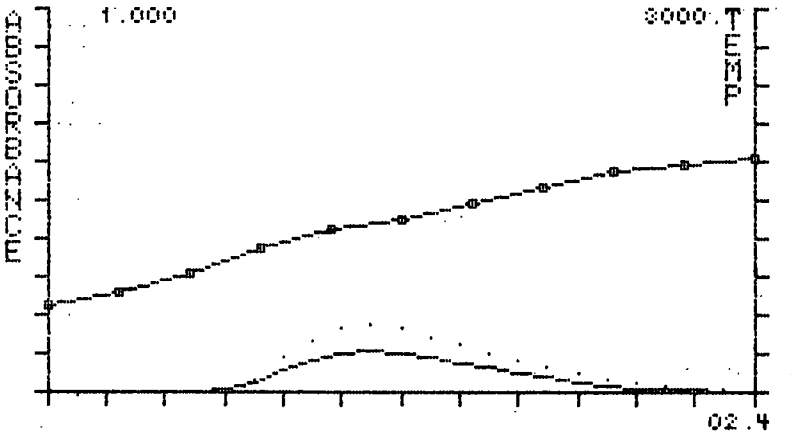


Temp 1979 C

000188

02 Pb-S #02
Conc 021.3
Mean 021.7
P/H 0.110

ICW 5+

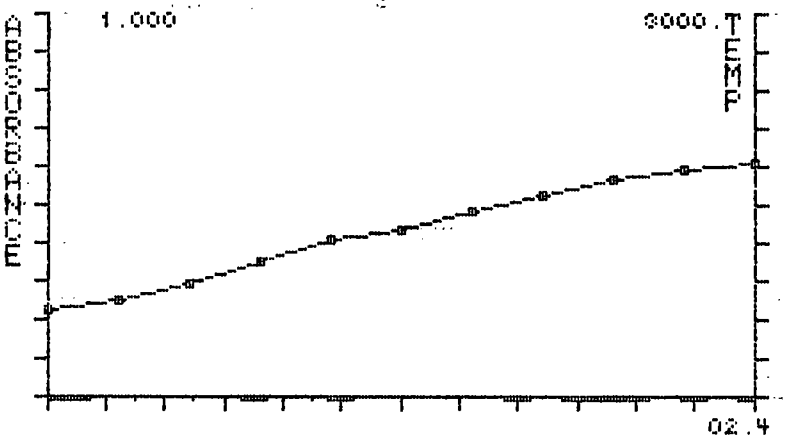


Temp 200 C

Pb-S
Mean 021.7
SD 000.6
RSD 02.94
Pb-S
SN= 000002

02 Pb-S #01
Conc 000.0
Mean 000.0
P/H 0.000

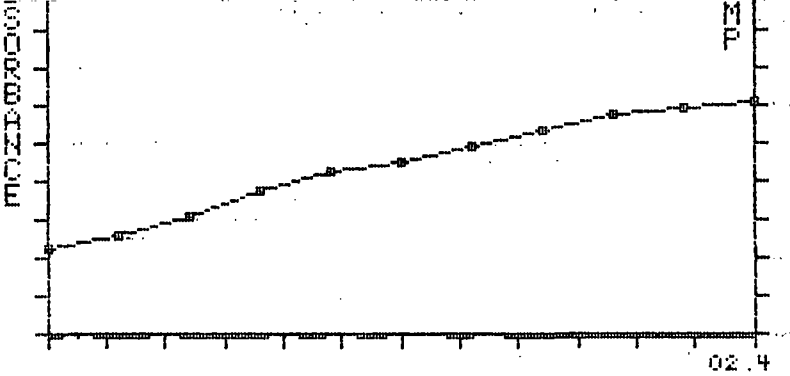
ICB



Temp 1976 C

02 Pb-S #02
Conc -000.5
Mean -000.3
P/H -0.002

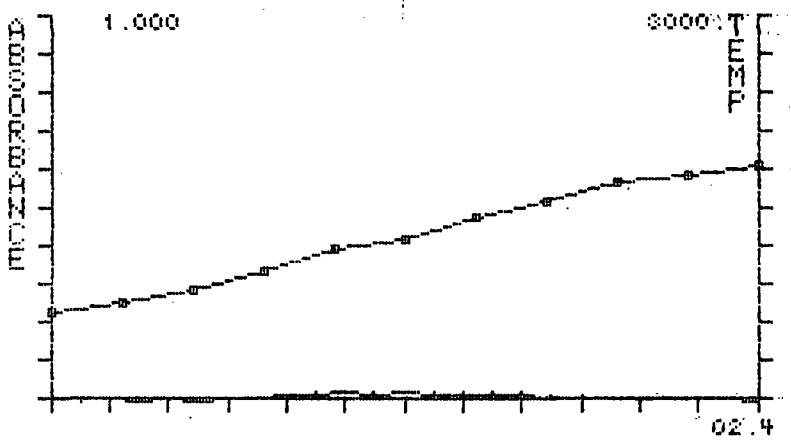
000189



Temp 199 C

Pb-S
Mean -000.3
SD 000.4
RSD DIG HI
Pb-S
SN= 000003

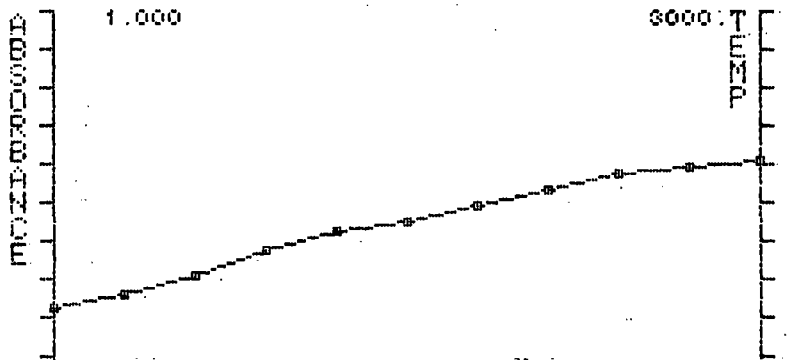
02 Pb-S #01
Conc 003.2
Mean 003.2
P/H 0.014



Temp 1993 C

CRA 3µg/L

02 Pb-S #02
Conc 003.6
Mean 003.4
P/H 0.015

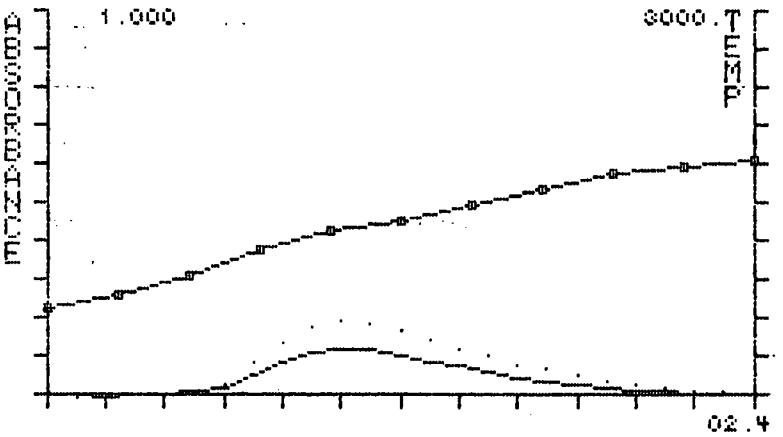


000190

Temp 209 C

Pb-S
Mean 003.4
SD 000.3
RSD 08.23
Pb-S
SN= 000004

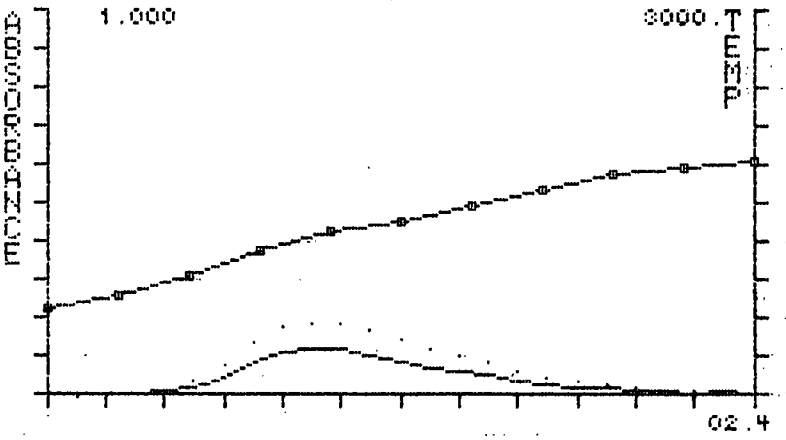
02 Pb-S #01
Conc 023.1
Mean 023.1
P/H 0.118



Temp 1967 C

CRAA

02 Pb-S #02
Conc 023.2
Mean 023.1
P/H 0.115



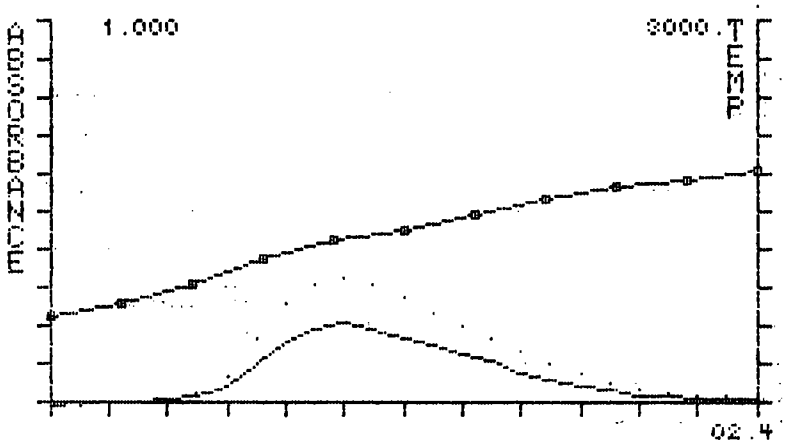
Temp 199 C

000191

Pb-S
Mean 023.1

SD 000.1
RSD 00.43
Pb-S
SN= 000005

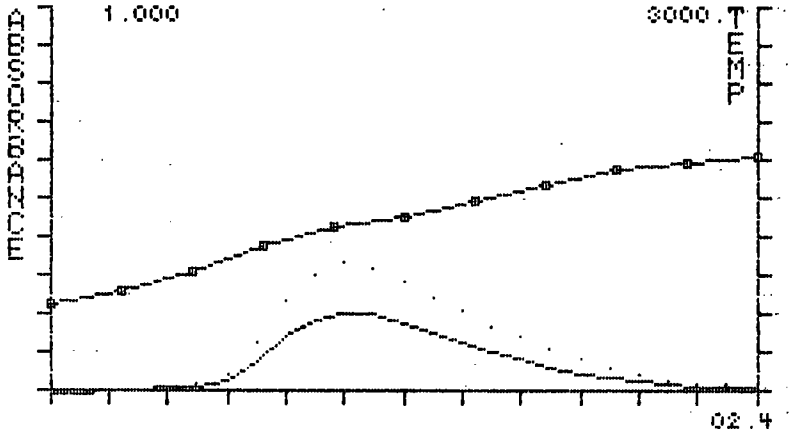
02 Pb-S #01
Conc 040.3
Mean 040.3
P/H 0.205



Temp 1965 C

02 Pb-S #02
Conc 039.1
Mean 039.7
P/H 0.204

CW 1

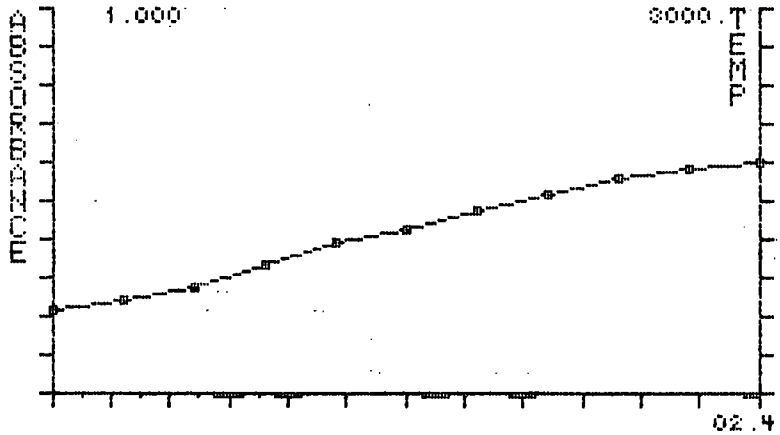


Temp 199 C

Pb-S
Mean 039.7
SD 000.8
RSD 02.11
Pb-S
SN= 000006

02 Pb-S #01 000192
Conc 000.3
Mean 000.3

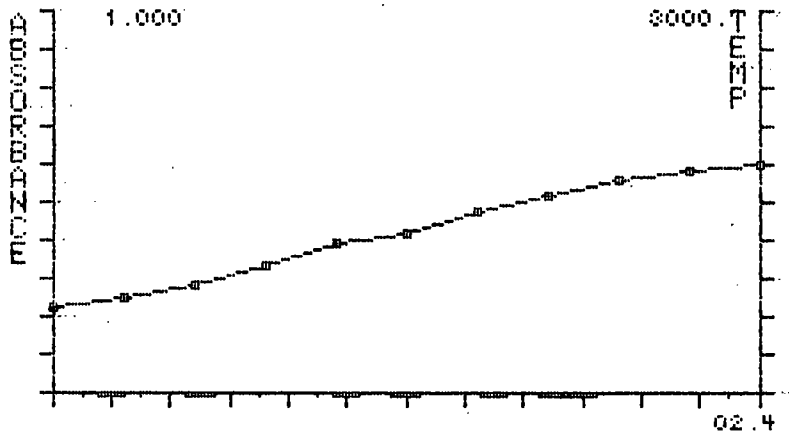
P/H 0.000



Temp 2012 C

02 Pb-S #02
Conc 000.2
Mean 000.2
P/H -0.001

CCB 1



Temp 215 C

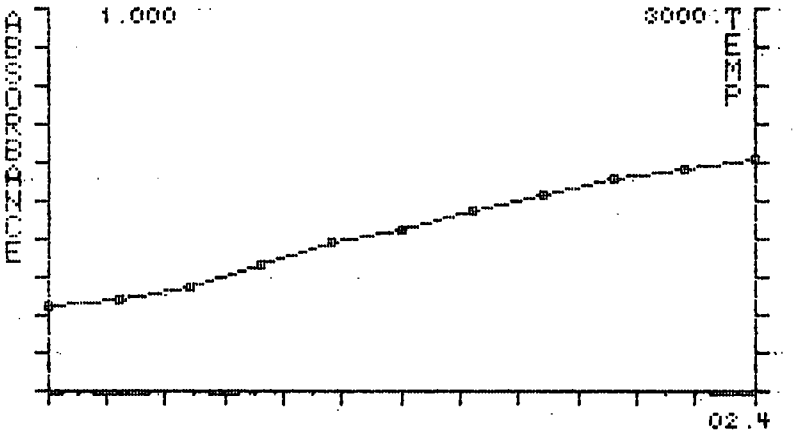
Pb-S
Mean 000.2
SD 000.1
RSD 50.00
Dilution factor: 01.00
Normal Operation
AZ after 0
AC after 0

SN of Sample #1 000007
Starting location 1
Number of Samples 12

RINSE

Pb-S
SN= 000007

02 Pb-S #01
Conc 000.5
Mean 000.5
P/H 0.002

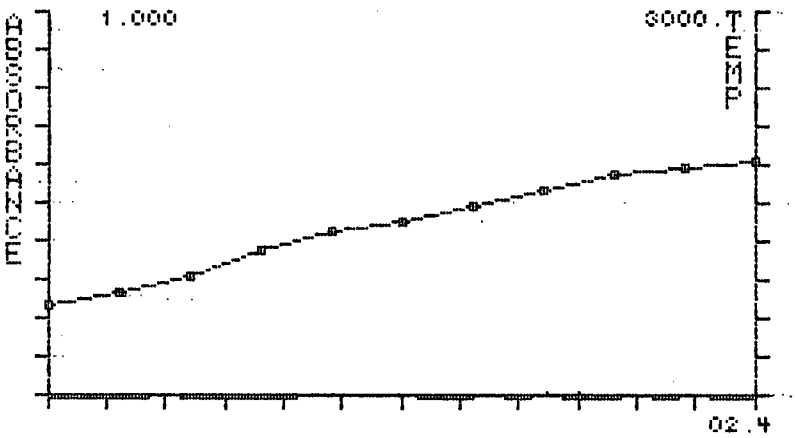


Temp 1993 C

02 Pb-S #02
Conc -000.2
Mean 000.1
P/H 0.000

5373
MB
1X

PBS

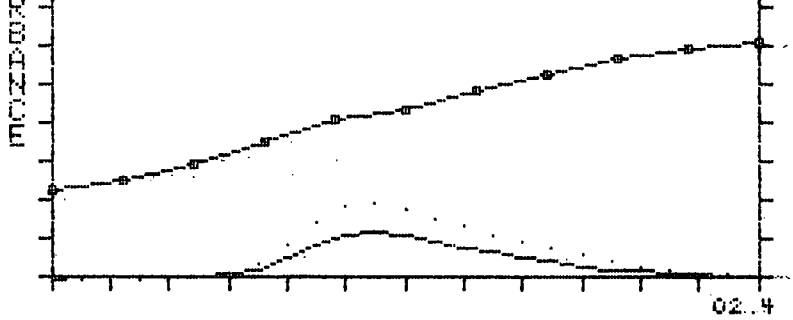


Temp 223 C

Pb-S
Mean 000.1
SD 000.5
RSD DIG HI
Pb-S
SN= 000008

02 Pb-S #01
Conc 021.8
Mean 021.8
P/H 0.119

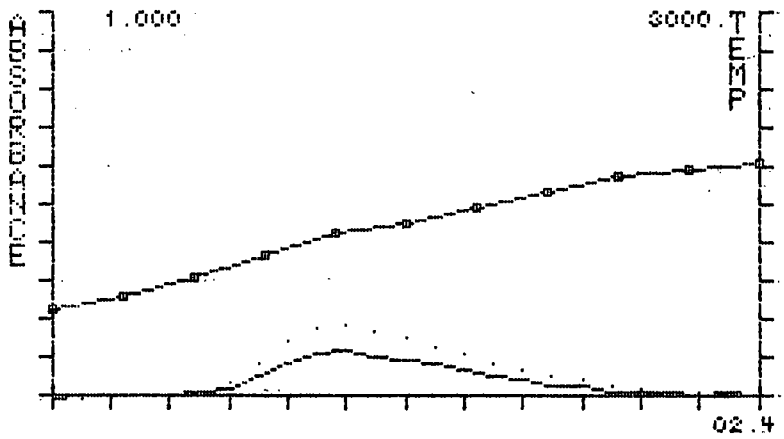
000194



Temp 1976 C

PBSA

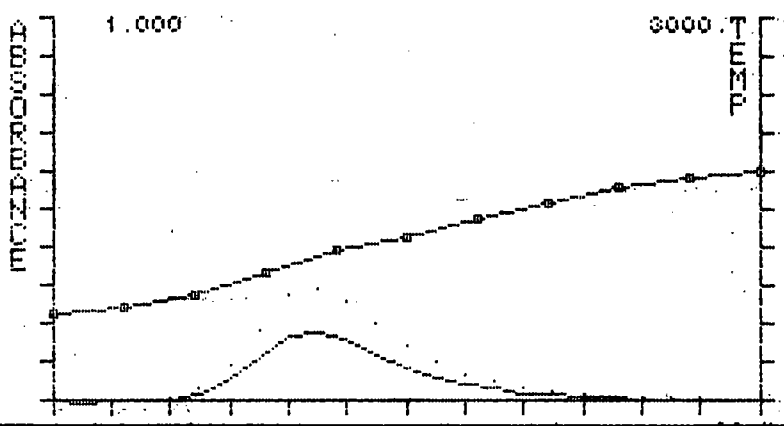
02 Pb-S #02
Conc 021.5
Mean 021.6
P/H 0.114



Temp 199 C

Pb-S
Mean 021.6
SD 000.2
RSD 01.01
Pb-S
SN= 000009

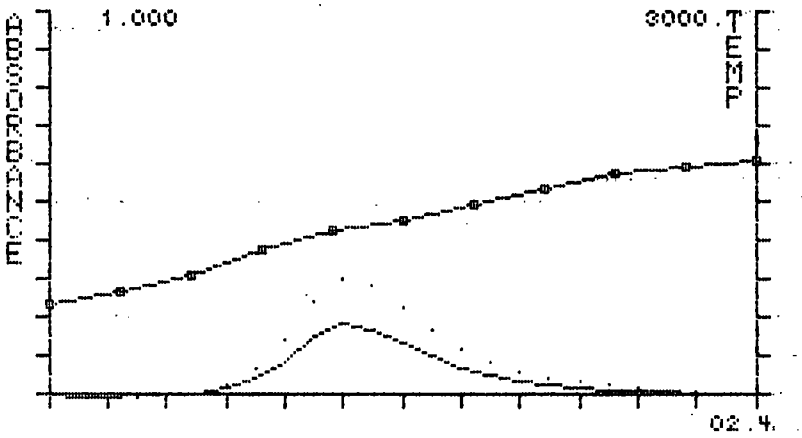
02 Pb-S #01
Conc 025.6
Mean 025.6
P/H 0.179



000195

Temp 1993 C

02 Pb-S #02
Conc 025.8
Mean 025.7
P/H 0.182



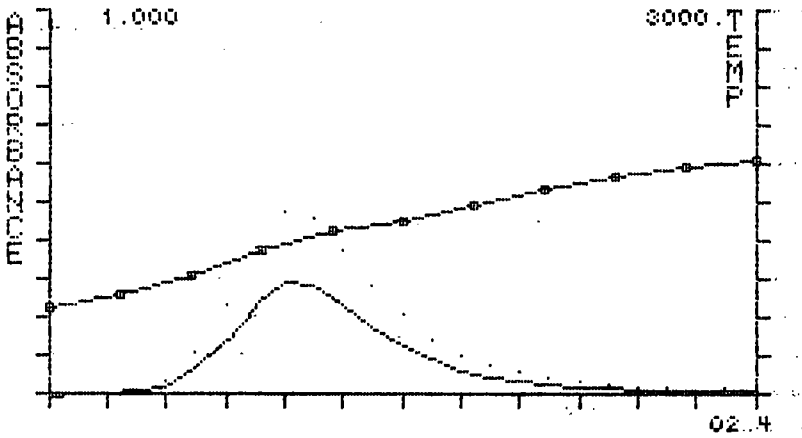
5373
REF1
50x

LCSS

Temp 229 C

Pb-S
Mean 025.7
SD 000.1
RSD 00.54
Pb-S
SN= 000010

02 Pb-S #01
Conc 044.0
Mean 044.0
P/H 0.291



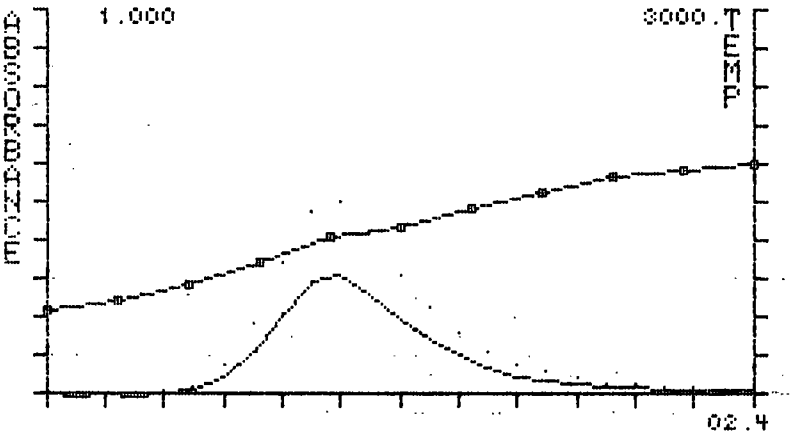
LCSSA

Temp 1995 C

000196

02 Pb-S #02
Conc 043.5
Mean 043.7

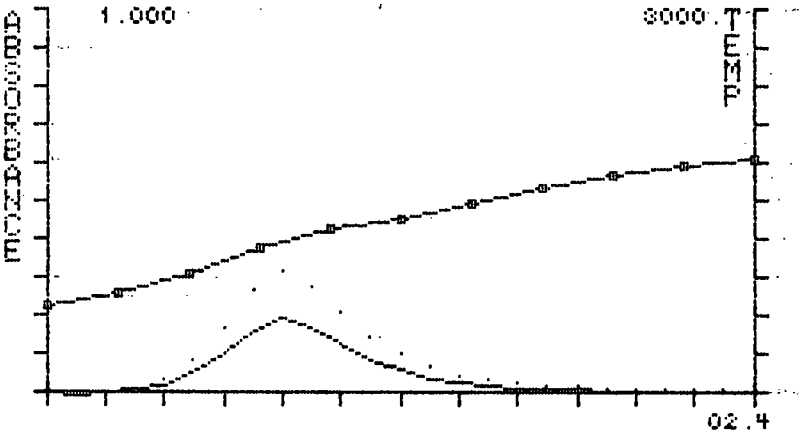
P/H 0.308



Temp 193 C

Pb-S
Mean 043.7
SD 000.4
RSD 00.82
Pb-S
SN= 000011

02 Pb-S #01
Conc 025.6
Mean 025.6
P/H 0.195

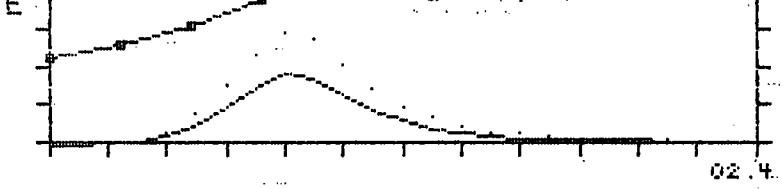


Temp 1974 C

5373
A
1x
MFG244

02 Pb-S #02
Conc 024.4
Mean 025.0
P/H 0.184

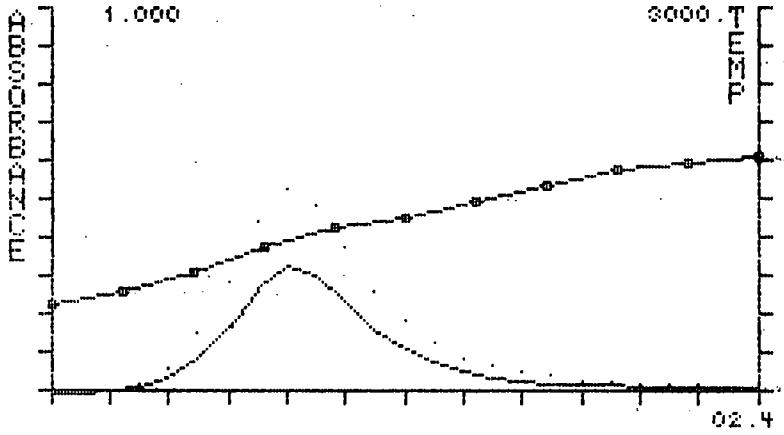
000197



Temp 200 C

Pb-S
Mean 025.0
SD 000.8
RSD 03.36
Pb-S
SN= 000012

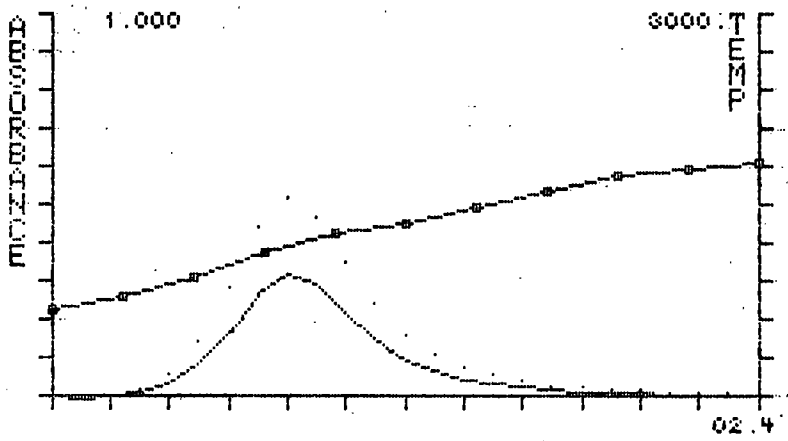
02 Pb-S #01
Conc 045.4
Mean 045.4
P/H 0.324



Temp 1979 C

MF6Z44A

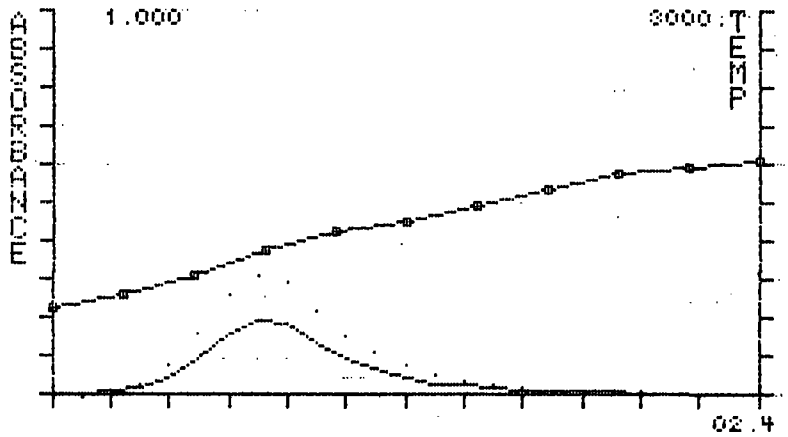
02 Pb-S #02
Conc 043.1
Mean 044.2
P/H 0.320



Temp 209 C

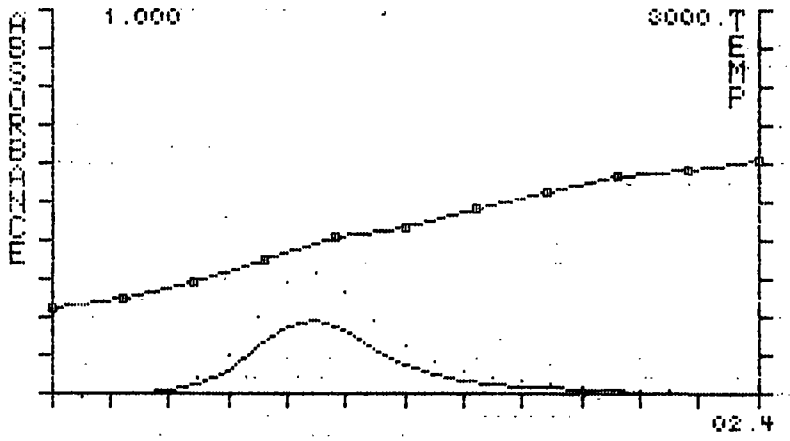
Pb-S
Mean 044.2
SD 001.6
RSD 03.66
Pb-S
SN= 000013

02 Pb-S #01
Conc 026.7
Mean 026.7
P/H 0.189



Temp 1981 C

02 Pb-S #02
Conc 026.3
Mean 026.5
P/H 0.196



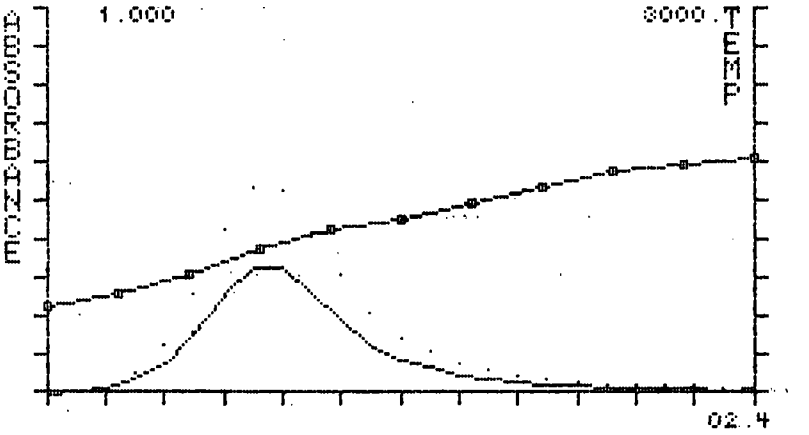
Temp 209 C

5373
ADP
NSJ 11/15/96 ~~27~~ 1x
MFGZ44D

Pb-S
Mean 026.5
SD 000.3
RSD 01.05
Pb-S
SN= 000014

000199

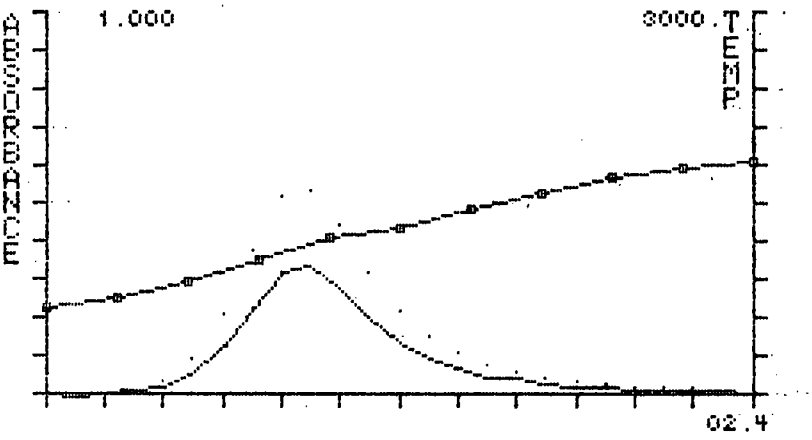
02 Pb-S #01
Conc 048.3
Mean 048.3
P/H 0.329



Temp 1981 C

02 Pb-S #02
Conc 046.7
Mean 047.5
P/H 0.333

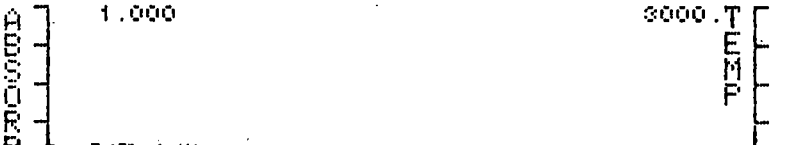
MFE244A
NSJ 12/15/96



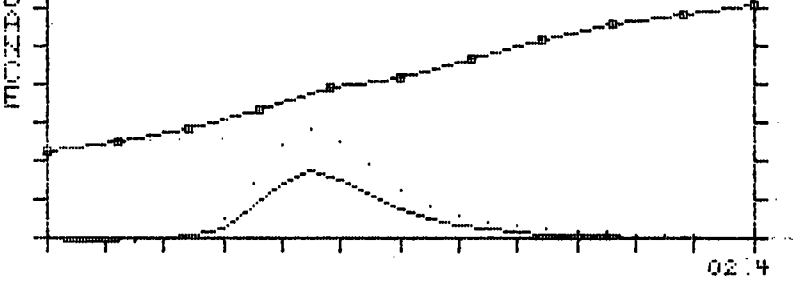
Temp 222 C

Pb-S
Mean 047.5
SD 001.1
RSD 02.37
Pb-S
SN= 000015

02 Pb-S #01
Conc 022.4
Mean 022.4
P/H 0.176



000200

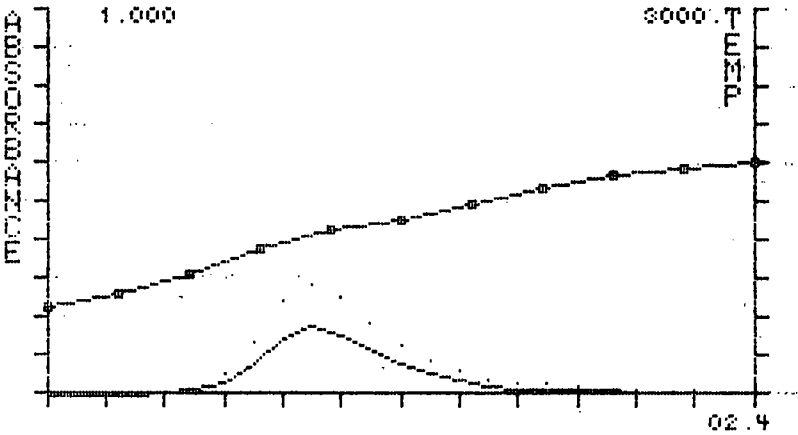


Temp 1993 C

02 Pb-S #02
Conc 021.7
Mean 022.0
P/H 0.175

5373
ASPK
2x

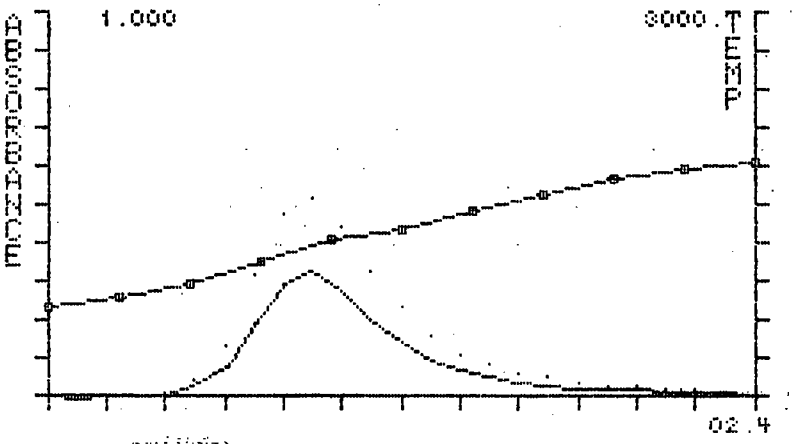
MFG2445



Temp 202 C

Pb-S
Mean 022.0
SD 000.5
RSD 02.27
Pb-S
SN= 000016

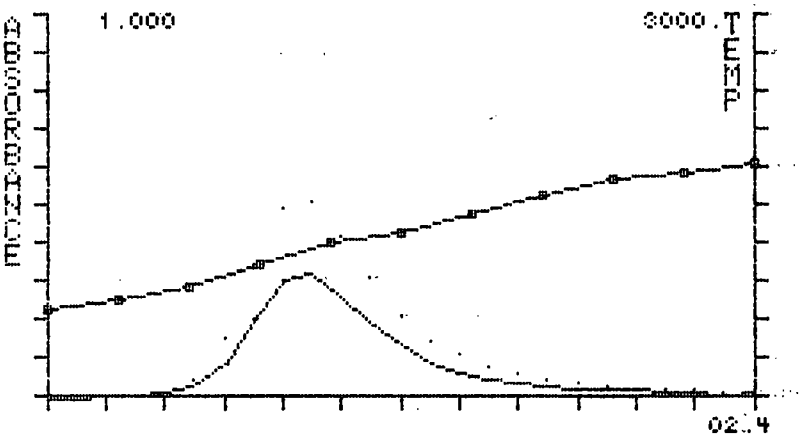
02 Pb-S #01
Conc 043.6
Mean 043.6
P/H 0.323



000201

Temp 1981 C

02 Pb-S #02
Conc 042.6
Mean 043.1
P/H 0.314

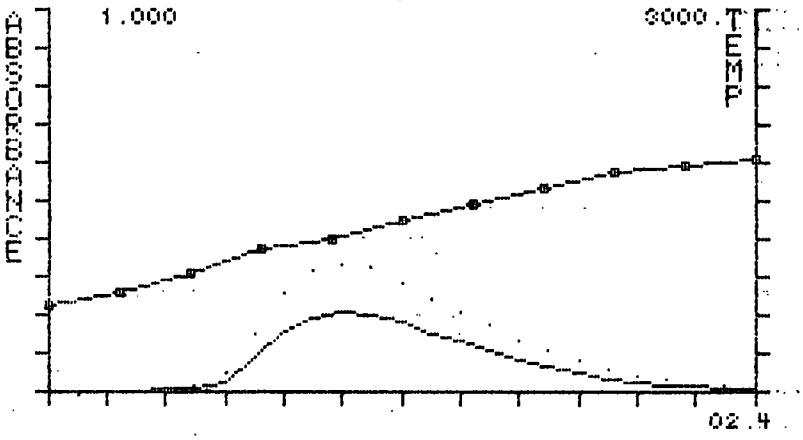


Temp 205 C

MF6245A

Pb-S
Mean 043.1
SD 000.7
RSD 01.62
Pb-S
SN= 000017

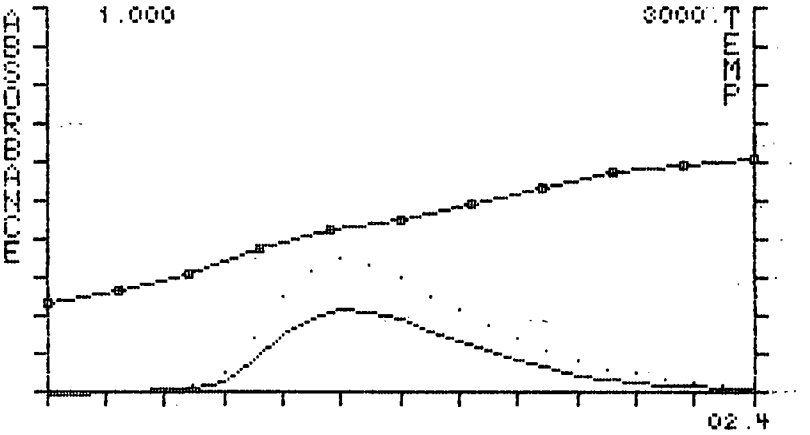
02 Pb-S #01
Conc 041.5
Mean 041.5
P/H 0.211



Temp 1965 C

CCW 2

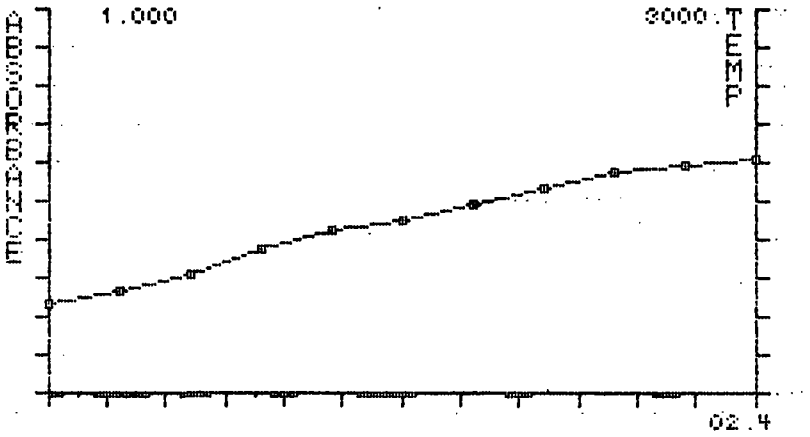
02 Pb-S #02 000202
Conc 041.3
Mean 041.4
P/H 0.216



Temp 197 C

Pb-S
Mean 041.4
SD 000.1
RSD 00.33
Pb-S
SN= 000018

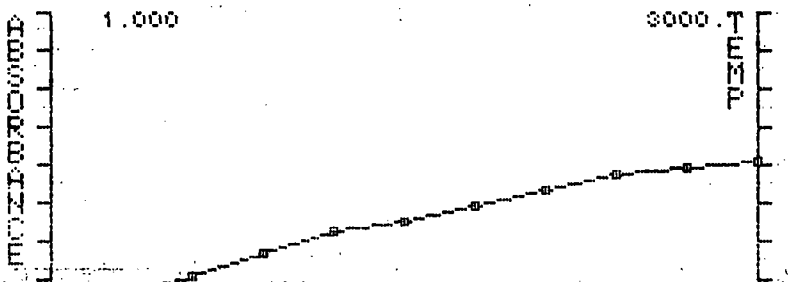
02 Pb-S #01
Conc 000.0
Mean 000.0
P/H -0.001



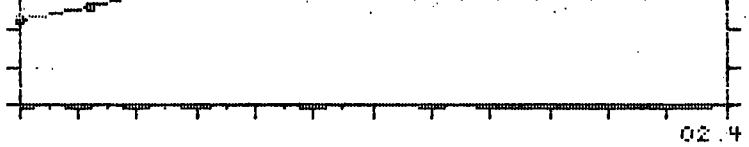
Temp 1981 C

CCB7

02 Pb-S #02
Conc -000.3
Mean -000.2
P/H 0.001



000203



Temp 199 C

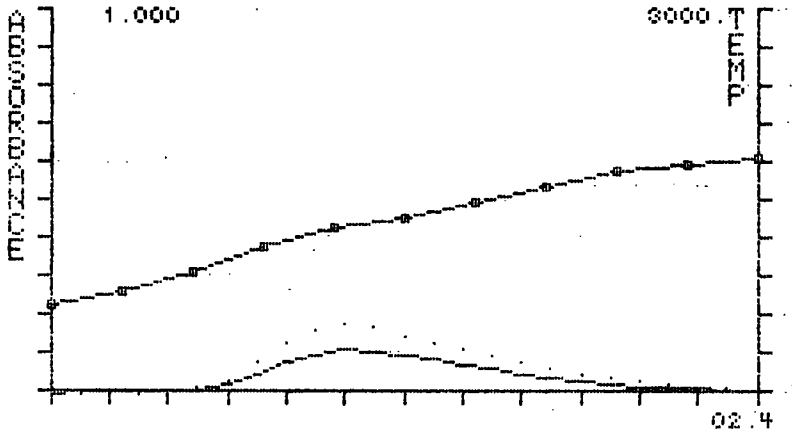
Pb-S
Mean -000.2
SD 000.2
RSD DIG HI
Dilution factor: 01:00
Normal Operation
AZ after 0
AC after 0

SN of Sample #1 000019
Starting location 1
Number of Samples 12

RINSE

Pb-S
SN= 000019

02 Pb-S #01
Conc 021.3
Mean 021.3
P/H 0.105

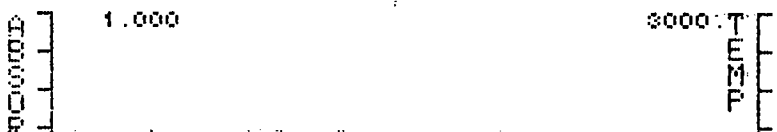


Temp 1981 C

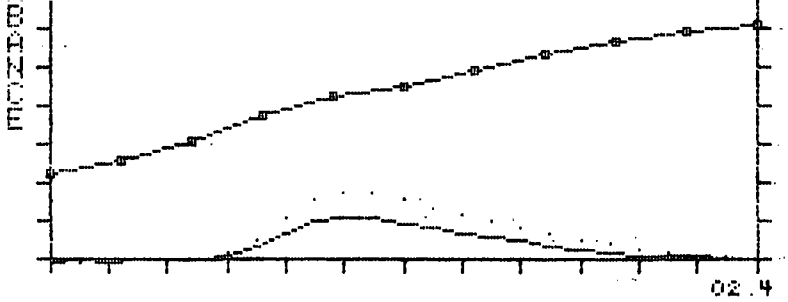
5373
I
10,000x

02 Pb-S #02
Conc 021.4
Mean 021.3
P/H 0.111

000204



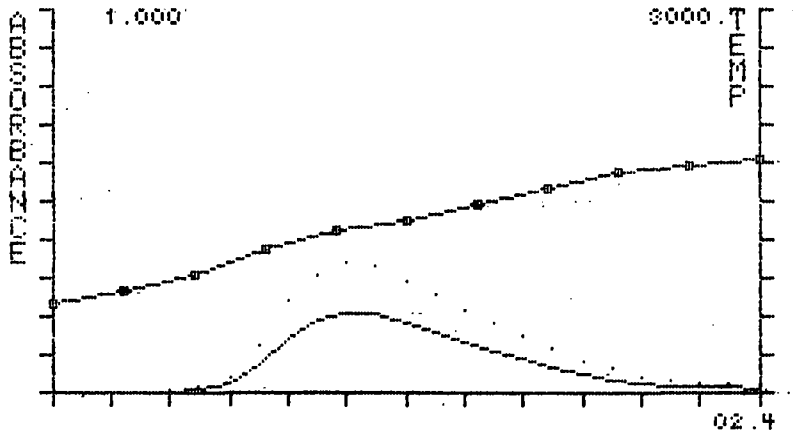
MFG250



Temp 200 C

Pb-S
Mean 021.3
SD 000.1
RSD 00.46
Pb-S
SN= 000020

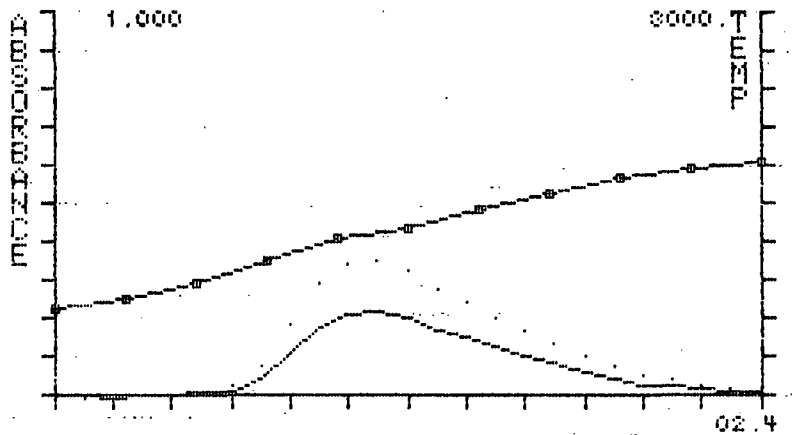
02 Pb-S #01
Conc 041.5
Mean 041.5
P/H 0.213



Temp 1965 C

MFG258A

02 Pb-S #02
Conc 041.2
Mean 041.3
P/H 0.221

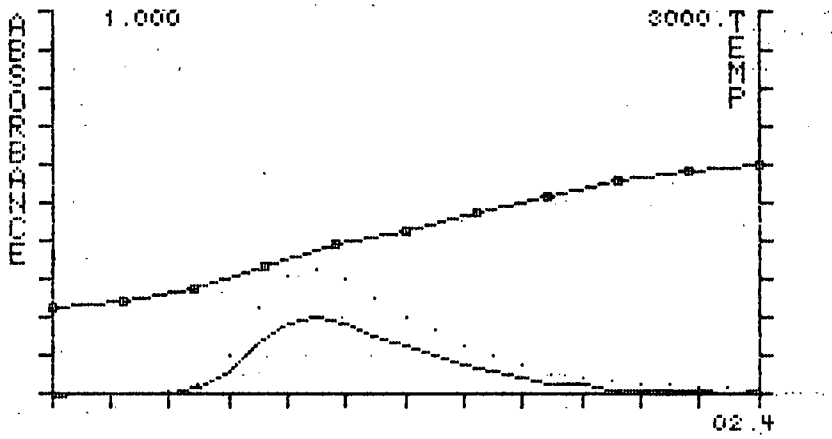


000205

Temp 223 C

Pb-S
Mean 041.3
SD 000.2
RSD 00.53
Pb-S
SN= 000021

02 Pb-S #01
Conc 033.2
Mean 033.2
P/H 0.200

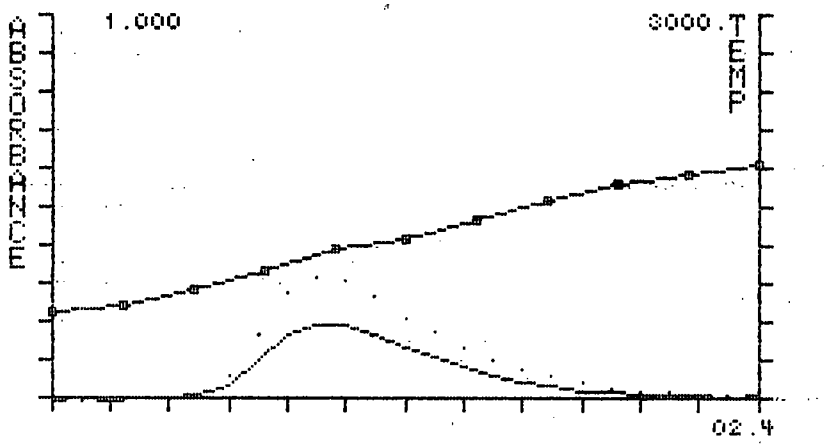


Temp 2017 C

02 Pb-S #02
Conc 032.3
Mean 032.7
P/H 0.196

5373
H
50X

MFE257



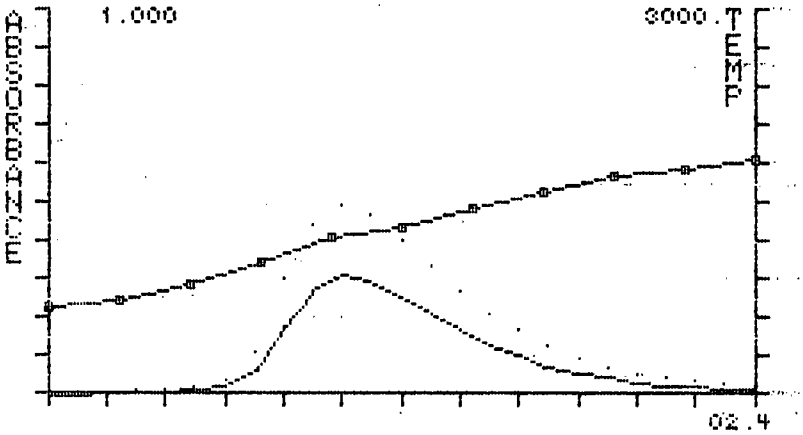
Temp 208 C

000206

Pb-S
Mean 032.7
SD 000.6
RSD 01.95

Pb-S
SN= 000022

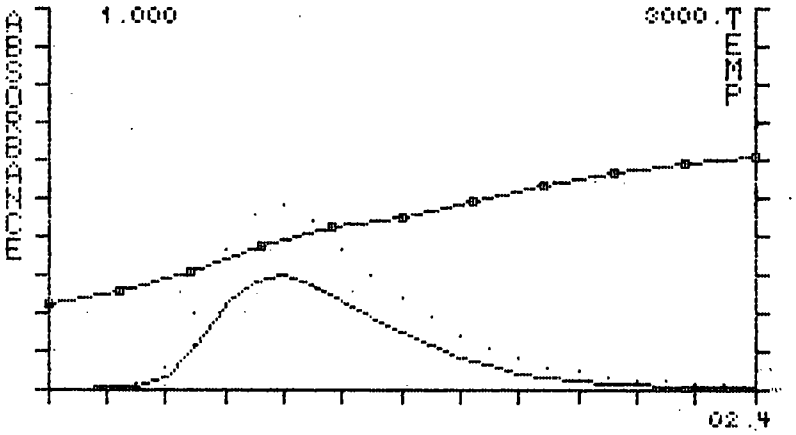
02 Pb-S #01
Conc 051.8
Mean 051.8
P/H 0.306



Temp 1972 C

MFE257A

02 Pb-S #02
Conc 053.0
Mean 052.4
P/H 0.303

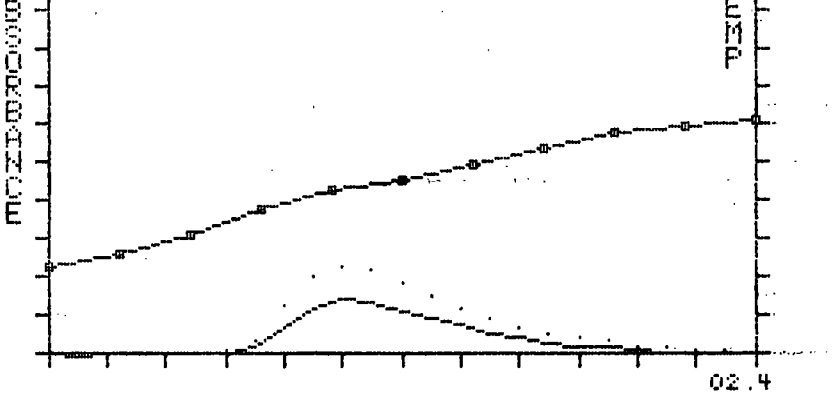


Temp 199 C

Pb-S
Mean 052.4
SD 000.8
RSD 01.60
Pb-S
SN= 000023

02 Pb-S #01
Conc 022.2
Mean 022.2
P/H 0.140

000207

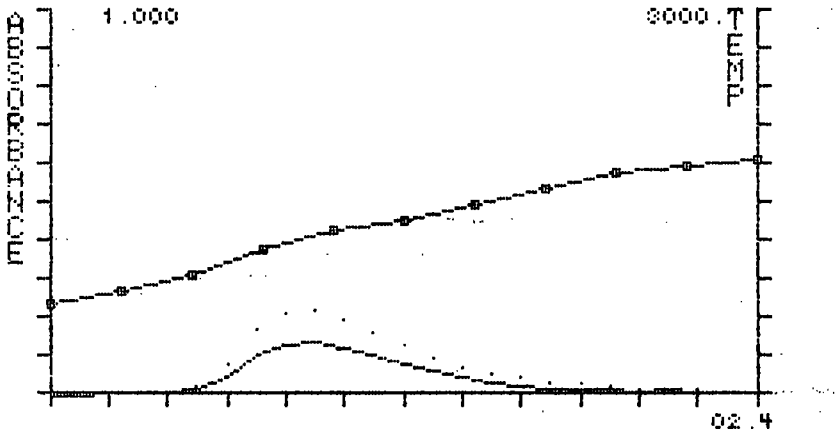


Temp 1962 C

02 Pb-S #02
Conc 021.2
Mean 021.7
P/H 0.137

5373
J
Dx

MFG264

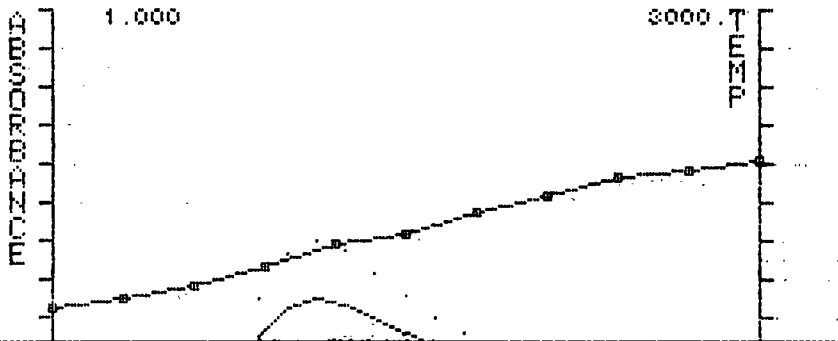


Temp 198 C

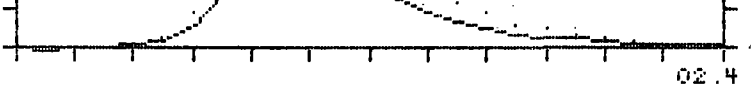
	Pb-S
Mean	021.7
SD	000.7
RSD	03.22

Pb-S
SN= 000024

02 Pb-S #01
Conc 041.0
Mean 041.0
P/H 0.247



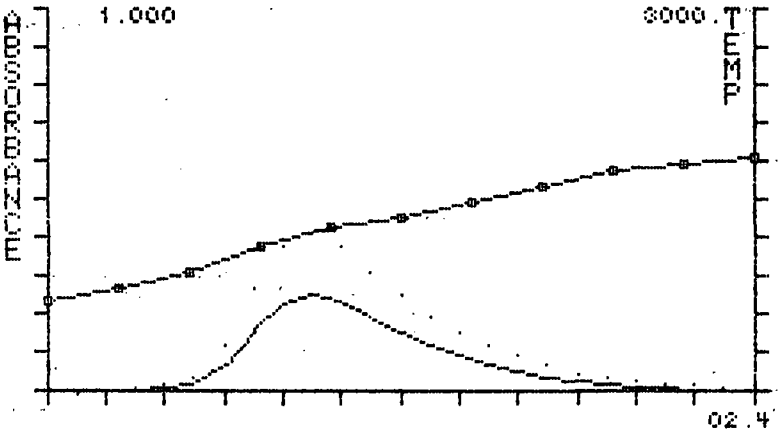
000208



Temp 2015 C

02 Pb-S #02
Conc 040.6
Mean 040.8
P/H 0.251

MFGZ64A

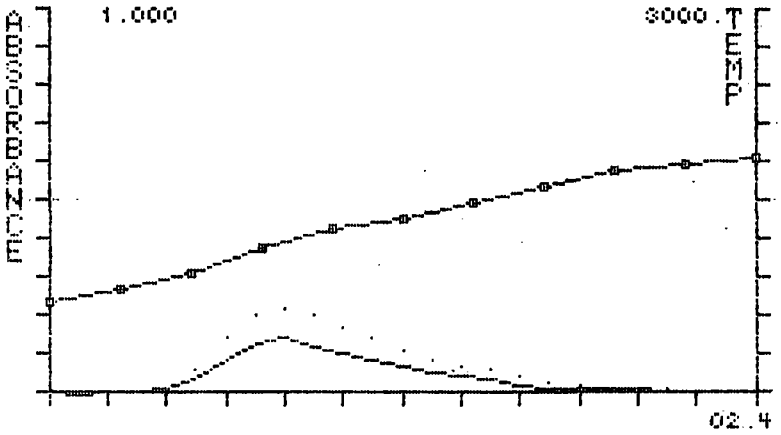


Temp 198 C

	Pb-S
Mean	040.8
SD	000.3
RSD	00.68

Pb-S
SN= 000025

02 Pb-S #01
Conc 022.6
Mean 022.6
P/H 0.139



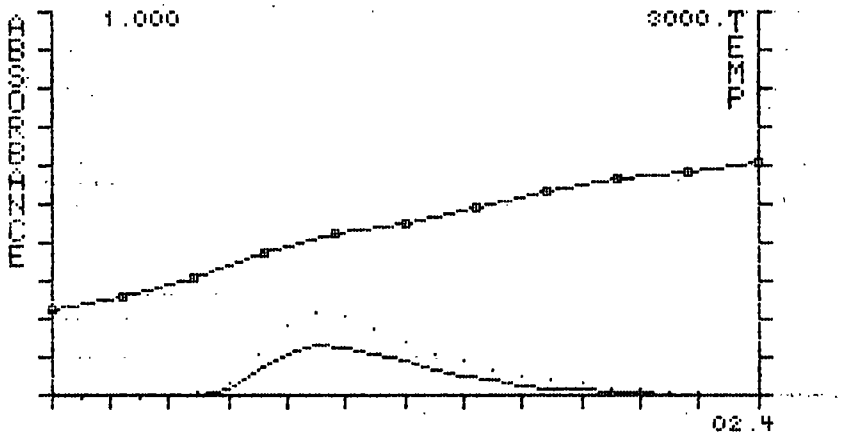
Temp 1979 C

000209

02 Pb-S #02

Conc 021.7
Mean 022.1
P/H 0.132

5373
K
50x

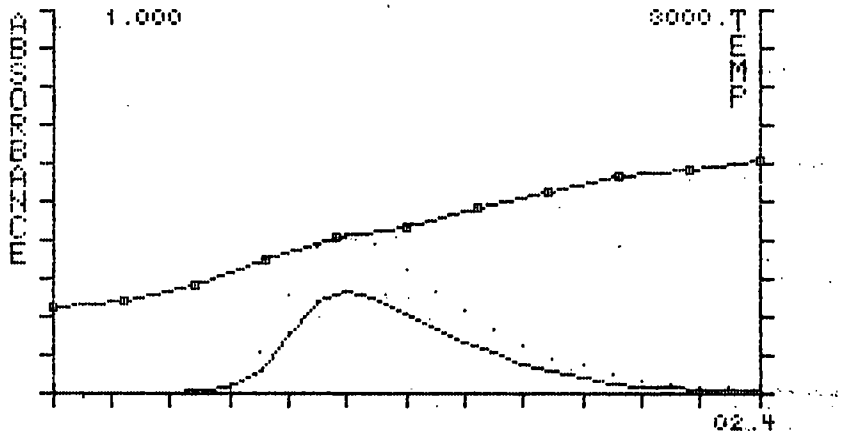


MFG265

Temp 210 C

Pb-S
Mean 022.1
SD 000.6
RSD 02.89
Pb-S
SN= 000026

02 Pb-S #01
Conc 043.6
Mean 043.6
P/H 0.264

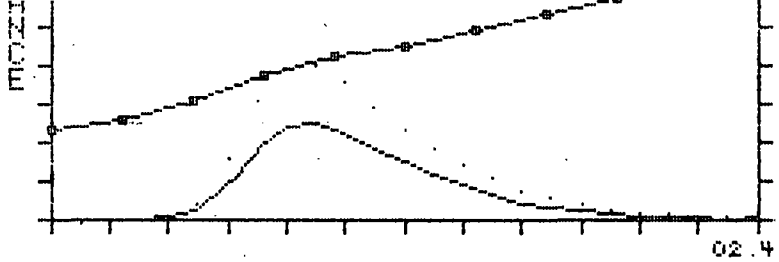


MFG265A

Temp 1979 C

02 Pb-S #02
Conc 042.2
Mean 042.9
P/H 0.255

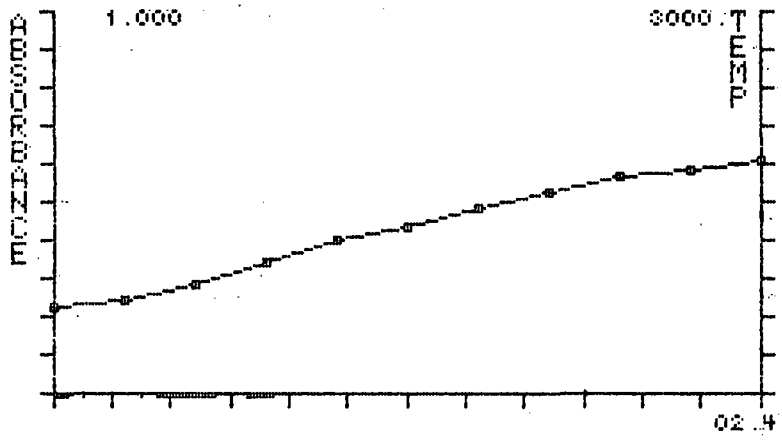
000210



Temp 200 C

Pb-S
Mean 042.9
SD 001.0
RSD 02.28
Pb-S
SN= 000027

02 Pb-S #01
Conc 000.9
Mean 000.9
P/H 0.002

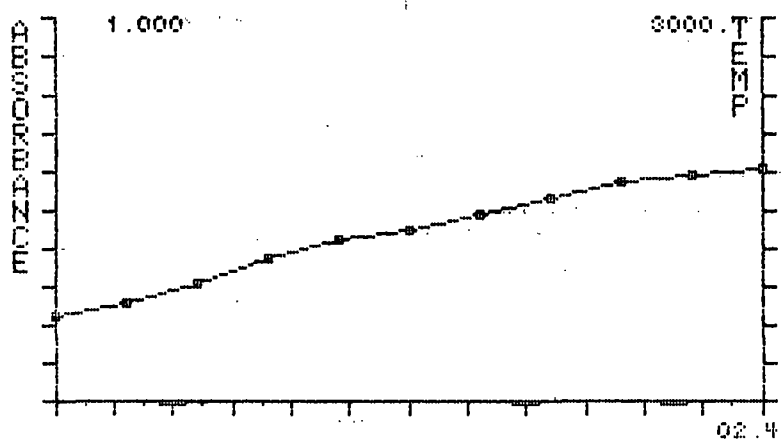


Temp 1976 C

NSJ 12/15/94

~~537300~~
~~20x~~
ZZZZZZ
(diluent H_2O only!)

02 Pb-S #02
Conc 000.7
Mean 000.8
P/H 0.003

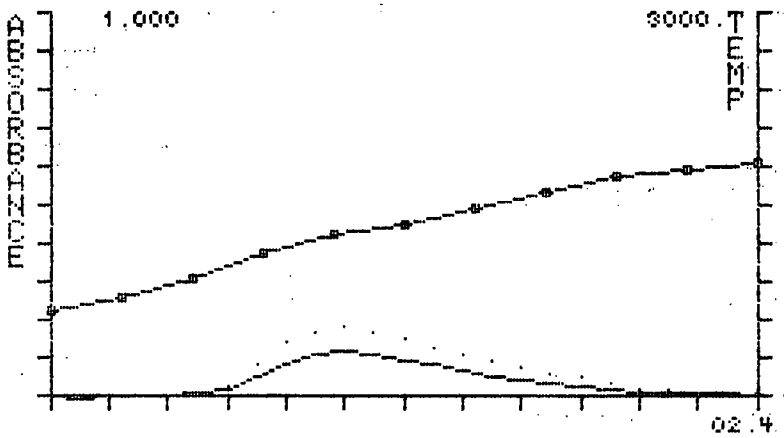


Temp 200 C

000211

Pb-S
Mean 000.8
SD 000.1
RSD 17.50
Pb-S
SN= 000028

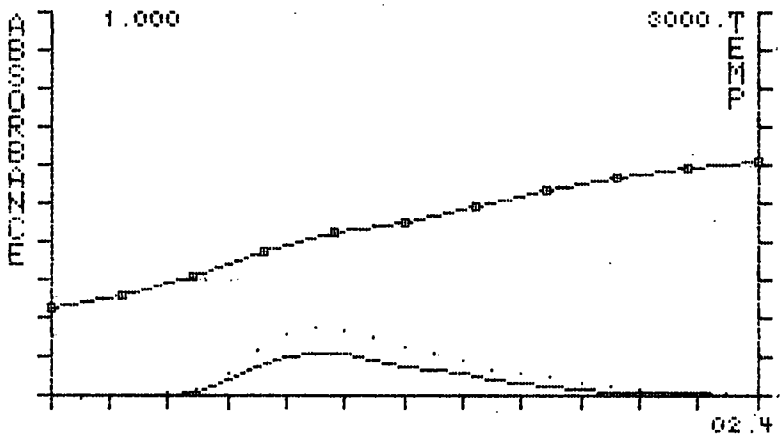
02 Pb-S #01
Conc 022.3
Mean 022.3
P/H 0.114



Temp 1960 C

zzzzA

02 Pb-S #02
Conc 021.6
Mean 021.9
P/H 0.111



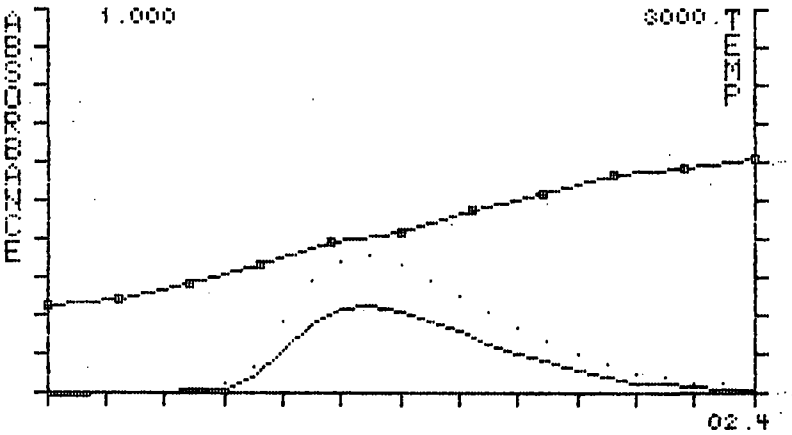
Temp 198 C

Pb-S
Mean 021.9
SD 000.5
RSD 02.28
Pb-S

000212

SN= 000029

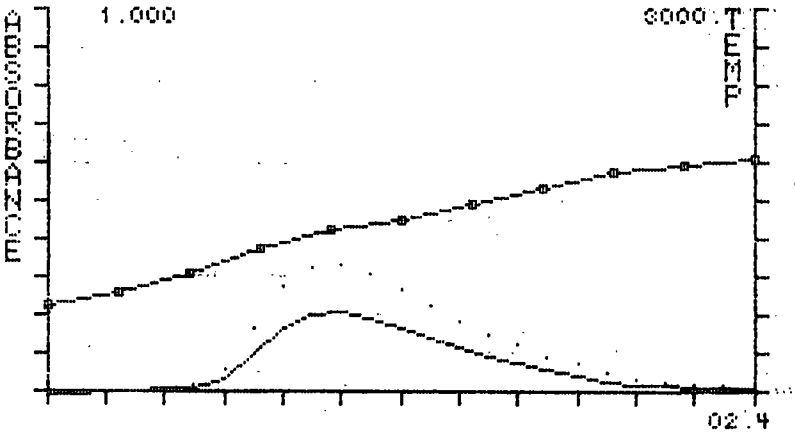
02 Pb-S #01
Conc 042.4
Mean 042.4
P/H 0.227



Temp 1995 C

CW3

02 Pb-S #02
Conc 039.3
Mean 040.8
P/H 0.210

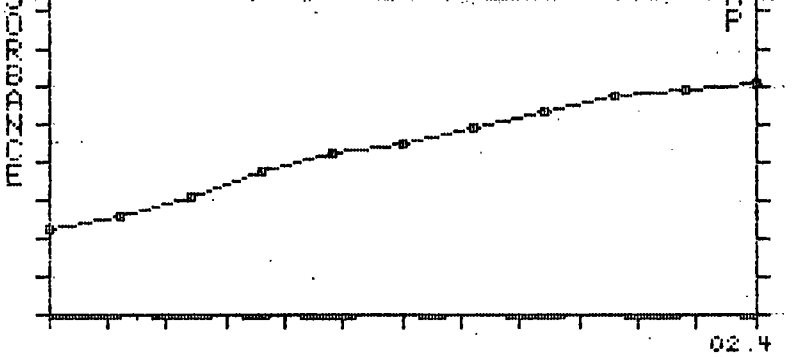


Temp 201 C

Pb-S
Mean 040.8
SD 002.2
RSD 05.36
Pb-S
SN= 000030

02 Pb-S #01
Conc 000.0
Mean 000.0
P/H 0.000

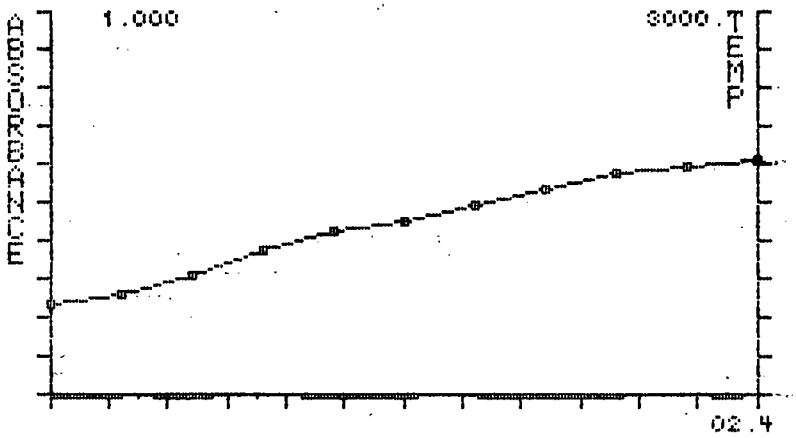
000213



Temp 1981 C

CB3

02 Pb-S #02
Conc. -000.4
Mean -000.2
P/H 0.000



Temp 201 C

Pb-S
Mean -000.2
SD 000.3
RSD DIG HI
Dilution factor: 01.00
Normal Operation
AZ after 0
AC after 0

SN of Sample #1 000031
Starting location 1
Number of Samples 12

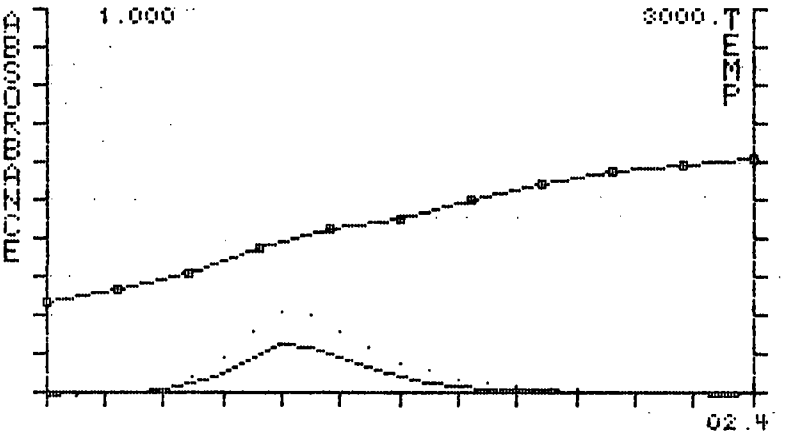
RINSE

Pb-S
SN= 000031

000214

02 Pb-S #01
Conc 017.2

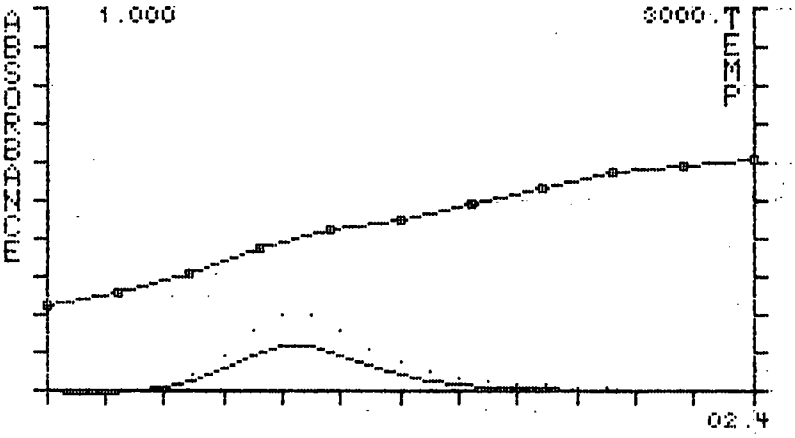
Mean 017.2
P/H 0.126



Temp 1967 C

02 Pb-S #02
Conc 017.2
Mean 017.2
P/H 0.121

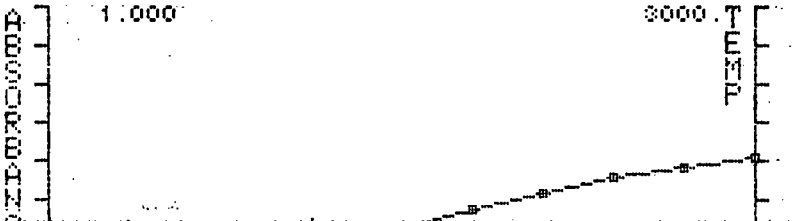
5373
B
1x
MFE245



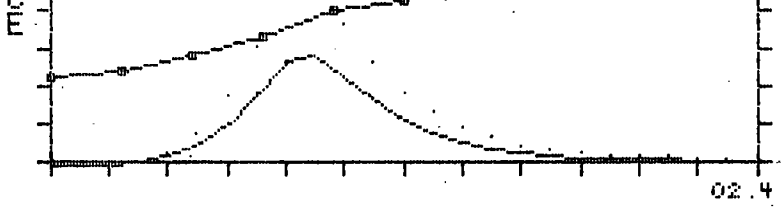
Temp 200 C

Pb-S
Mean 017.2
SD 000.0
RSD 00.00
Pb-S
SN= 000032

02 Pb-S #01
Conc 038.1
Mean 038.1
P/H 0.281

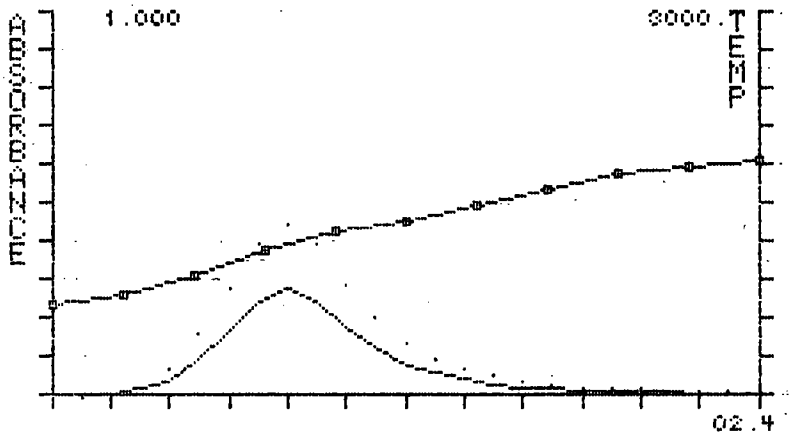


000215



Temp 1991 C

02 Pb-S #02
Conc 037.9
Mean 038.0
P/H 0.273

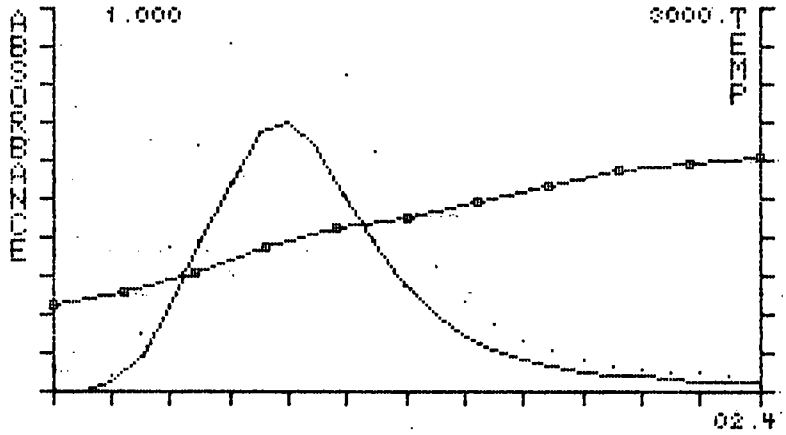


Temp 200 C

MF6245A

Pb-S
Mean 038.0
SD 000.1
RSD 00.36
Pb-S
SN= 000033

02 Pb-S #01
Conc HIGH
Mean HIGH
P/H 0.703



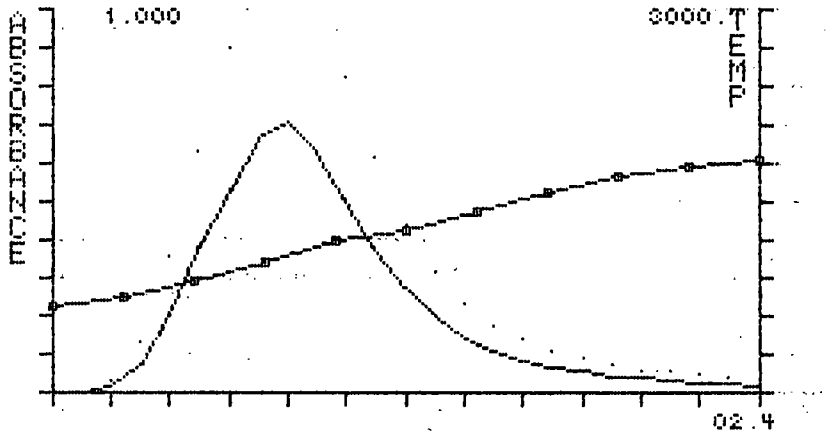
Temp 1979 C

000216

5373
C
1x

MF6246

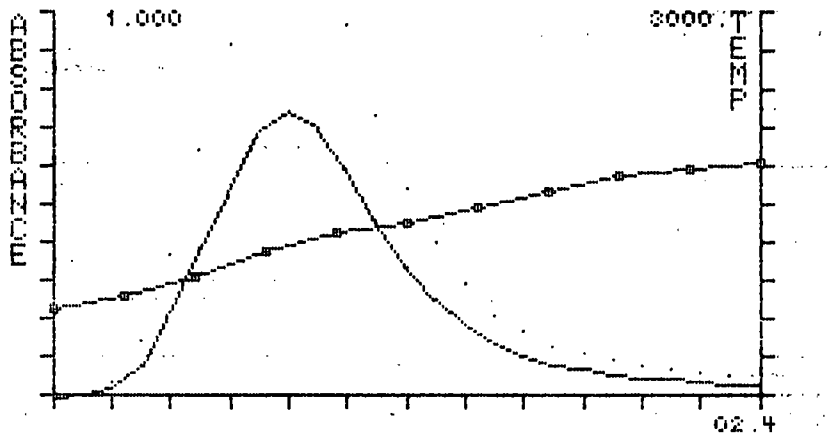
02 Pb-S #02
Conc HIGH
Mean HIGH
P/H 0.708



Temp 213 C

Pb-S
Mean HIGH
SD
RSD
Pb-S
SN= 000034

02 Pb-S #01
Conc HIGH
Mean HIGH
P/H 0.746

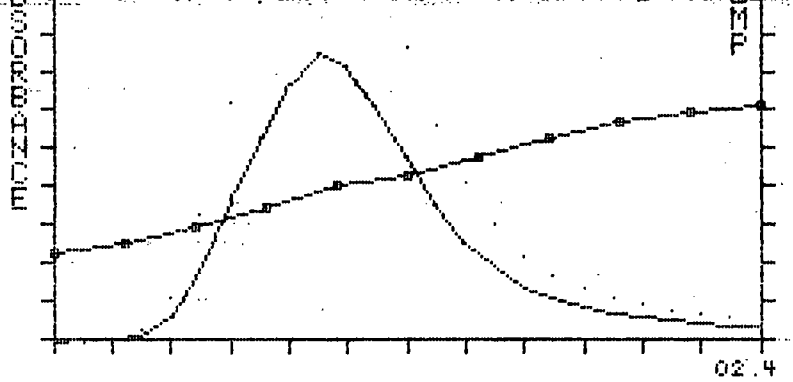


Temp 1967 C

MF6246A

02 Pb-S #02
Conc HIGH
Mean HIGH
P/H 0.749

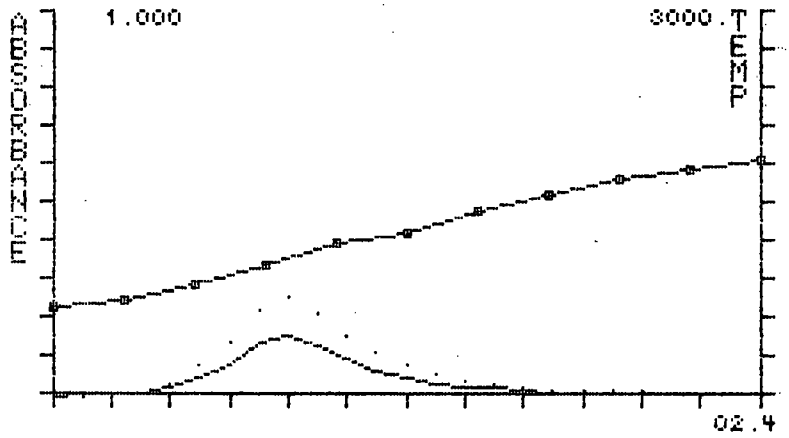
000217



Temp 215 C

Pb-S
Mean HIGH
SD
RSD
Pb-S
SN= 000035

02 Pb-S #01
Conc 020.1
Mean 020.1
P/H 0.151

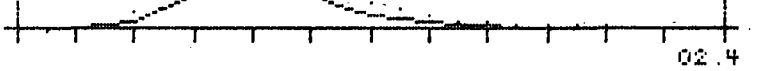


Temp 2010 C

02 Pb-S #02
Conc 020.3
Mean 020.2
P/H 0.149

5373
E
1x
MFG24 ~~7~~ 9
NSJ
12/15/94

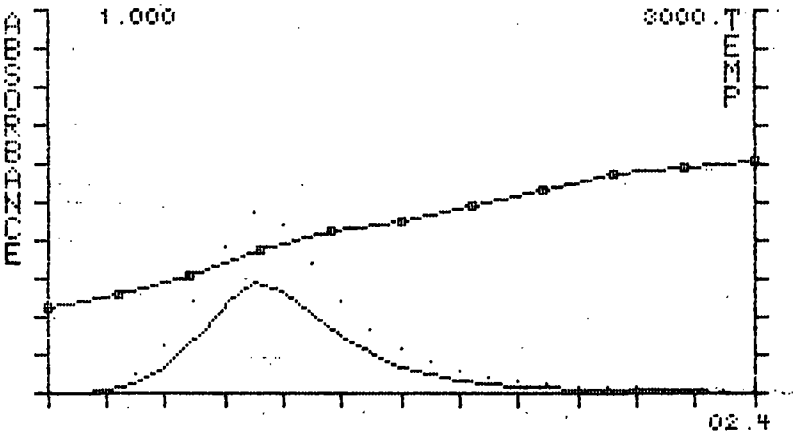
000218



Temp 200 C

Pb-S
Mean 020.2
SD 000.1
RSD 00.69
Pb-S
SN= 000036

02 Pb-S #01
Conc 040.9
Mean 040.9
P/H 0.293

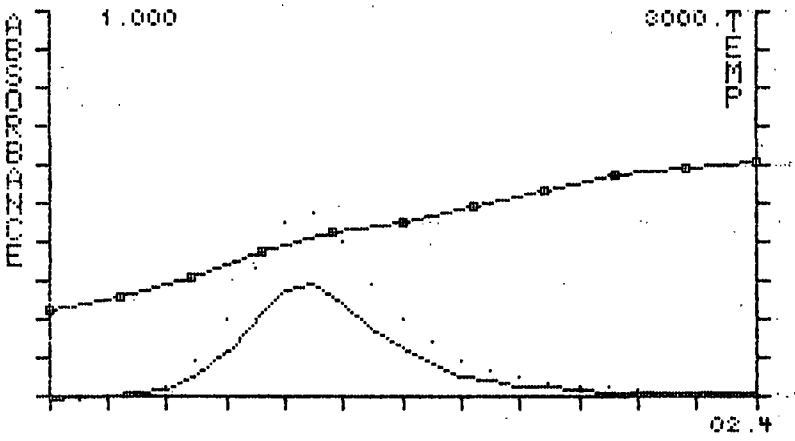


Temp 1979 C

NSJ 12/15/86

MFE-Z4 9 ~~7A~~

02 Pb-S #02
Conc 041.7
Mean 041.3
P/H 0.296



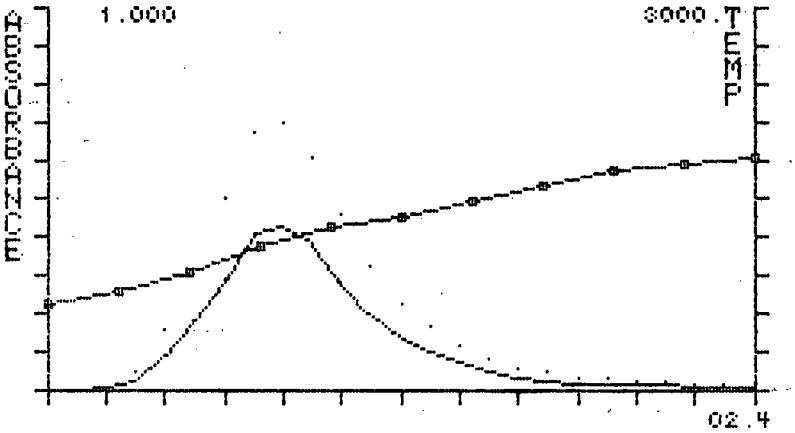
Temp 199 C

000219

Pb-S
Mean 041.3

SD 000.6
RSD 01.35
Pb-S
SN= 000037

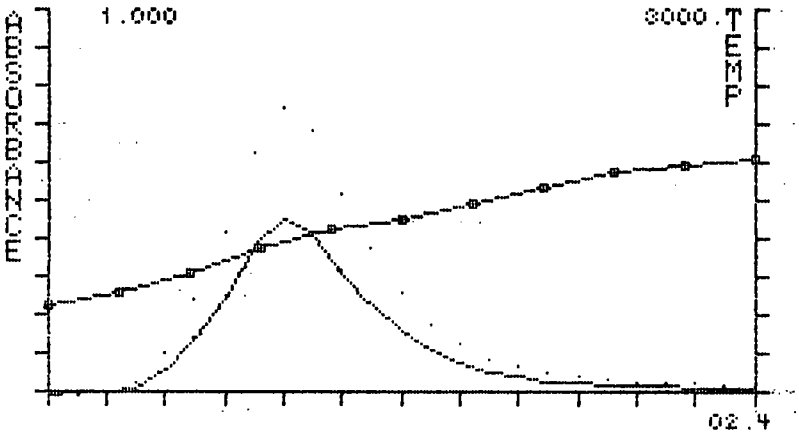
02 Pb-S #01
Conc HIGH
Mean HIGH
P/H 0.429



Temp 1979 C

02 Pb-S #02
Conc HIGH
Mean HIGH
P/H 0.452

5373
F
1x
MFG250

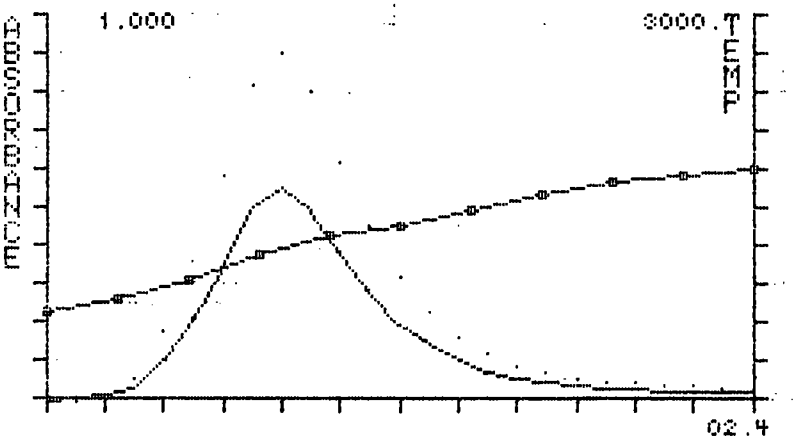


Temp 198 C

Pb-S
Mean HIGH
SD
RSD
Pb-S
SN= 000038

02 Pb-S #01 000220
Conc HIGH
Mean HIGH

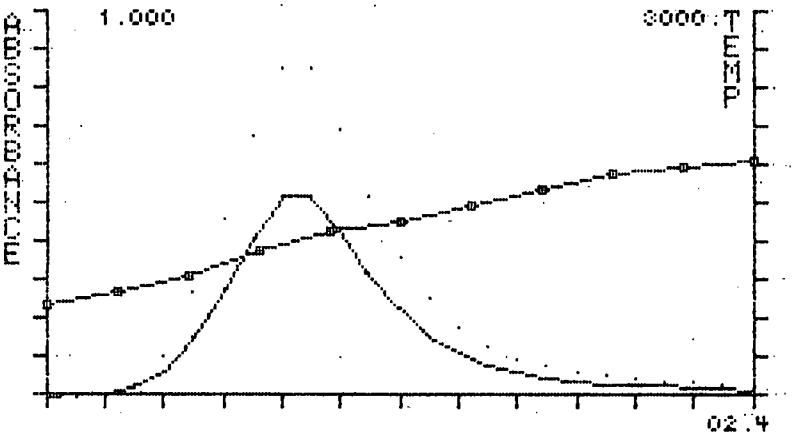
P/H 0.549



Temp 1979 C

MFEZ50A

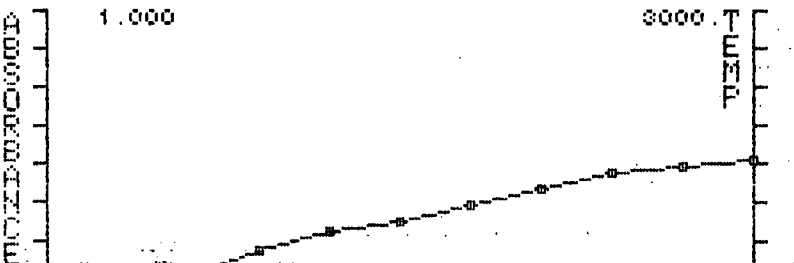
02 Pb-S #02
Conc HIGH
Mean HIGH
P/H 0.521



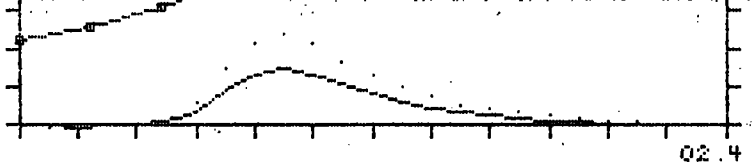
Temp 226 C

Pb-S
Mean HIGH
SD
RSD
Pb-S
SN= 000039

02 Pb-S #01
Conc 022.8
Mean 022.8
P/H 0.149



000221

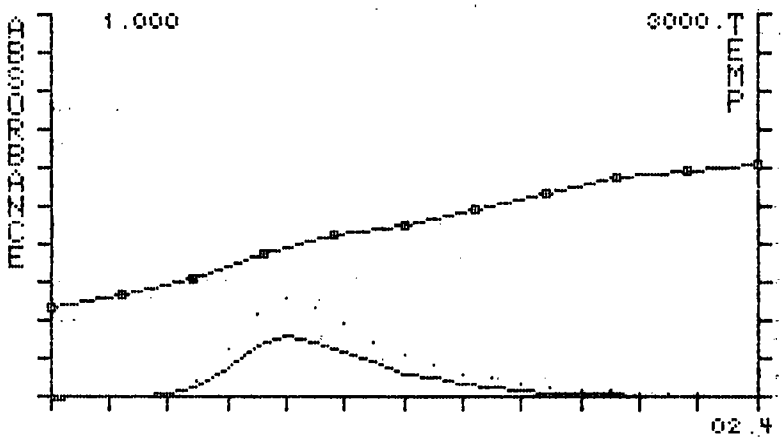


Temp 1962 C

02 Pb-S #02
Conc 023.2
Mean 023.0
P/H 0.157

5373
G
20x

MFG254

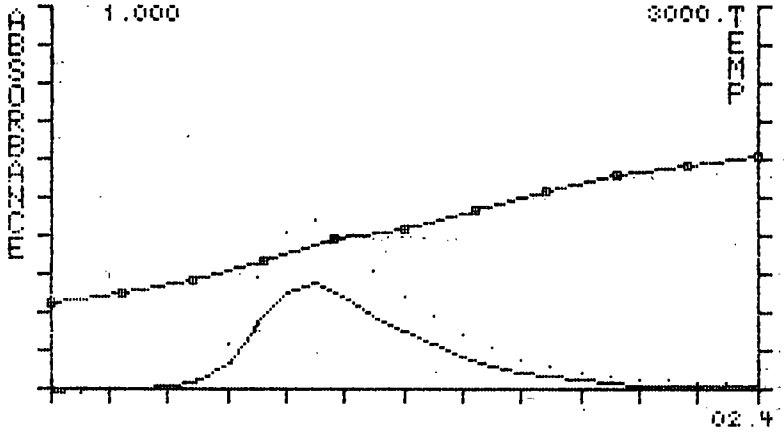


Temp 198 C

	Pb-S
Mean	023.0
SD	000.3
RSD	01.21
	Pb-S

SN= 000040

02 Pb-S #01
Conc 042.2
Mean 042.2
P/H 0.274

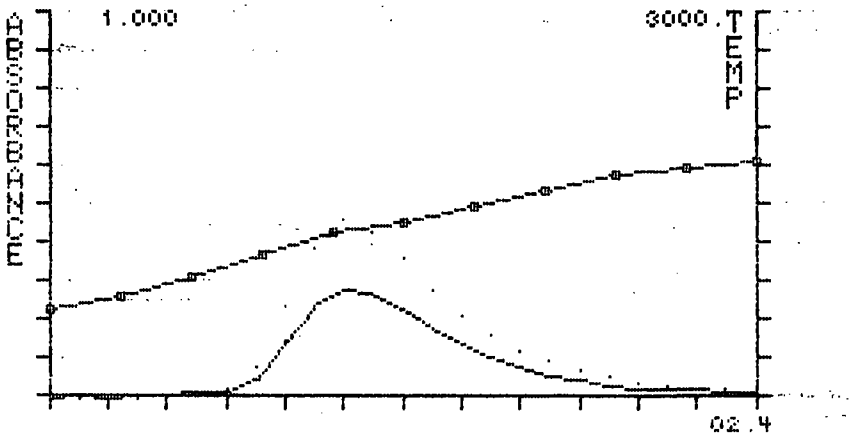


Temp 1993 C

000222

02 Pb-S #02
Conc 043.1
Mean 042.6
P/H 0.280

MFE256A

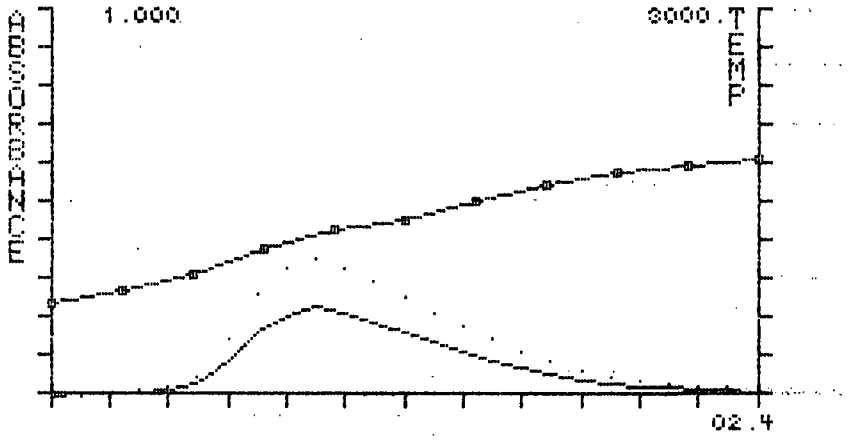


Temp 200 C

Pb-S
Mean 042.6
SD 000.6
RSD 01.50
Pb-S
SN= 000041

02 Pb-S #01
Conc 041.7
Mean 041.7
P/H 0.223

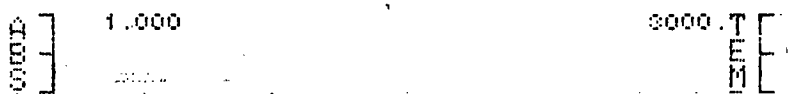
CCW4

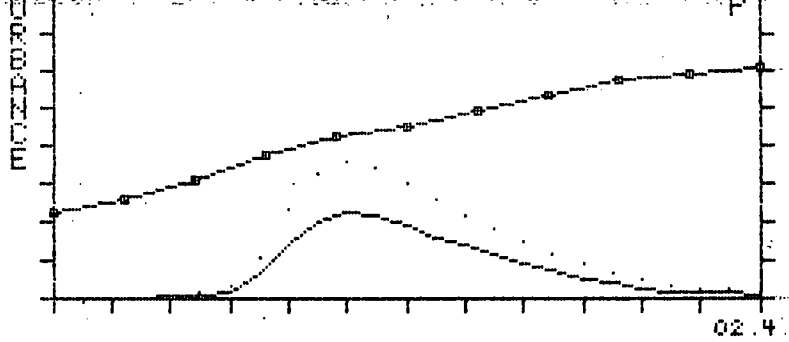


Temp 2002 C

02 Pb-S #02
Conc 042.4
Mean 042.0
P/H 0.224

000223

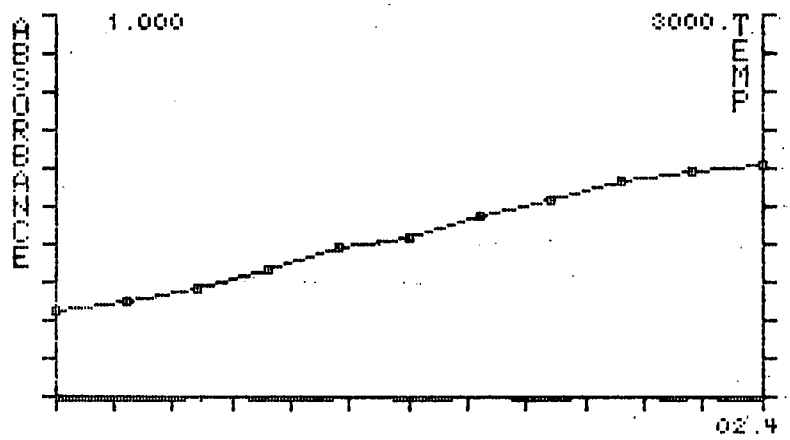




Temp 200 C

Pb-S
Mean 042.0
SD 000.5
RSD 01.19
Pb-S
SN= 000042

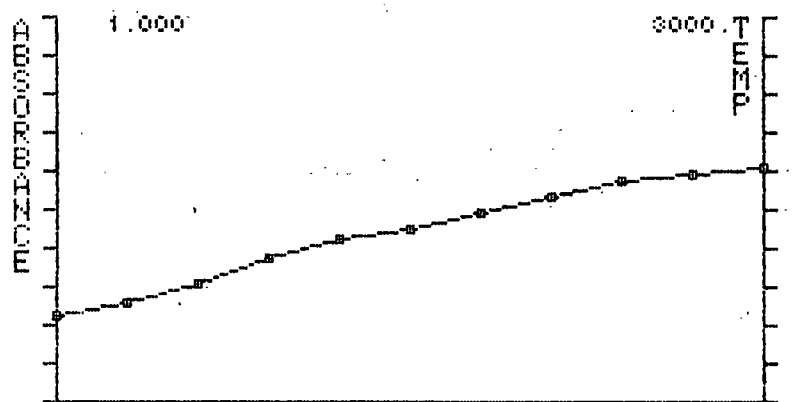
02 Pb-S #01
Conc -000.1
Mean -000.1
P/H 0.000



Temp 1993 C

CCB4

02 Pb-S #02
Conc 000.2
Mean 000.0
P/H 0.001



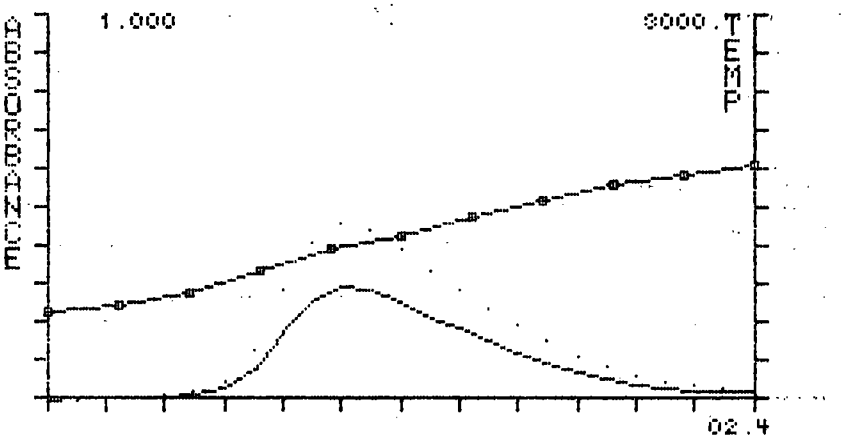
000224

02.4

Temp 202 C

Pb-S
Mean 000.0
SD 000.2
RSD DIG HI
Pb-S
MODE: AA, SB ,ABC
CTF
Stats #2
Pb-S

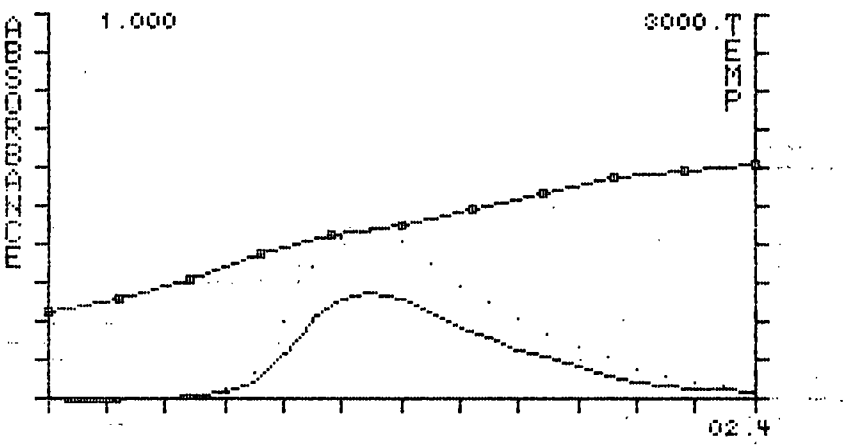
02 Pb-S #01
Conc 054.1
Mean 054.1
P/H 0.289



Temp 209 C

02 Pb-S #02
Conc 052.2
Mean 053.1
P/H 0.274

550



Temp 199 C

000225

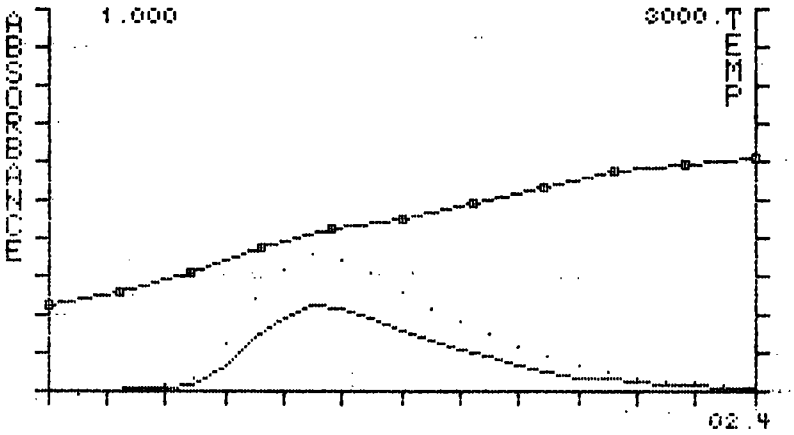
AUTO CAL STD C
MEAN CONC 053.1
RECAL TO 050.0
Dilution factor: 01.00
Normal Operation
AZ after 0
AC after 0

SN of Sample #1 000043
Starting location 1
Number of Samples 14

RINSE

Pb-S
SN= 000043

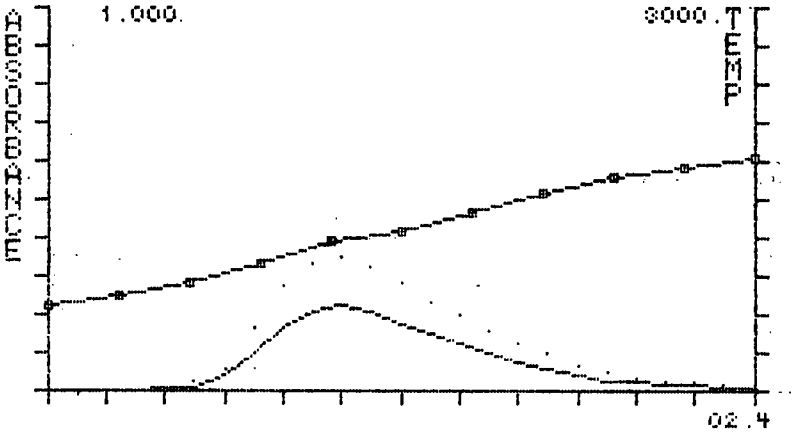
02 Pb-S #01
Conc 040.2
Mean 040.2
P/H 0.224



Temp 1981 C

CCV 5

02 Pb-S #02
Conc 039.1
Mean 039.6
P/H 0.225

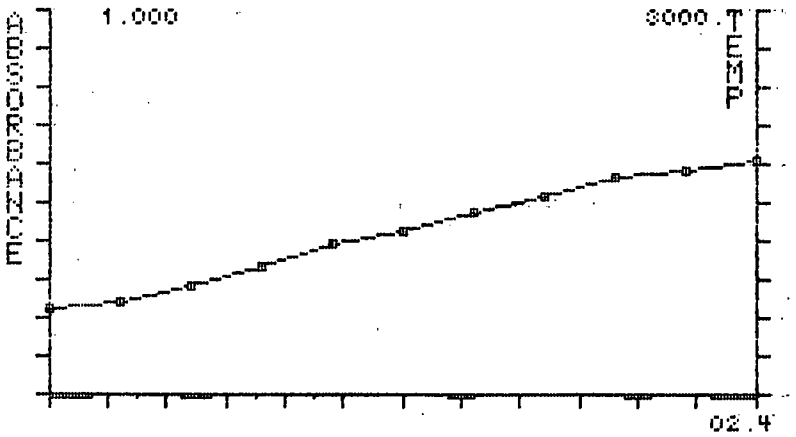


Temp. 216 C

000226

Pb-S
Mean 039.6
SD 000.8
RSD 01.96
Pb-S
SN= 000044

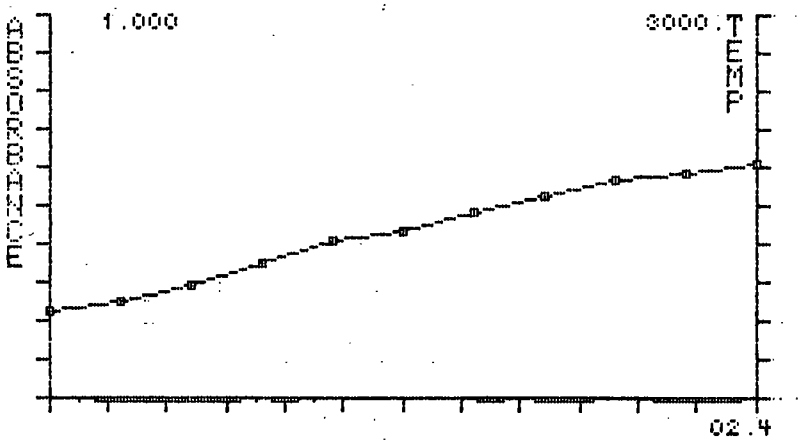
02 Pb-S #01
Conc 000.2
Mean 000.2
P/H 0.000



Temp 1991 C

02 Pb-S #02
Conc -000.2
Mean 000.0
P/H 0.002

CCB 5

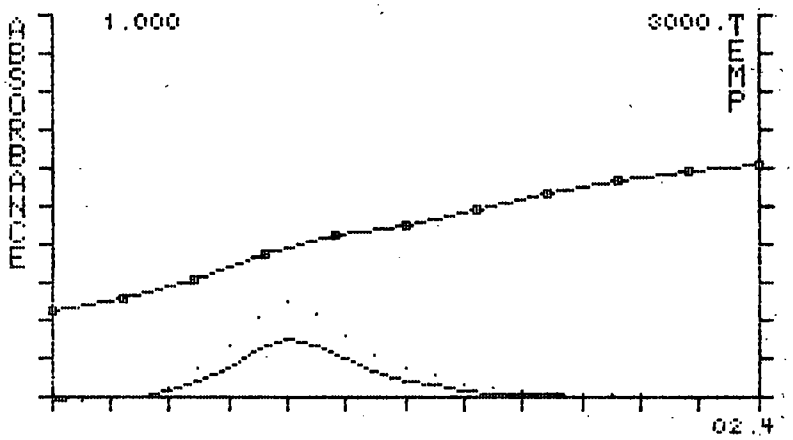


Temp 210 C

Pb-S
Mean 000.0
SD 000.3
RSD DIG HI
Pb-S

SN= 000045

02 Pb-S #01
Conc 019.3
Mean 019.3
P/H 0.151

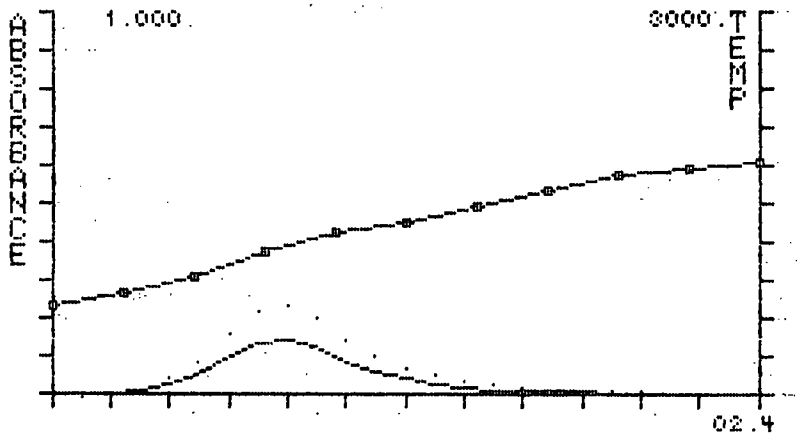


Temp 1965 C

5373
N
1x

02 Pb-S #02
Conc 019.3
Mean 019.3
P/H 0.145

MFE252

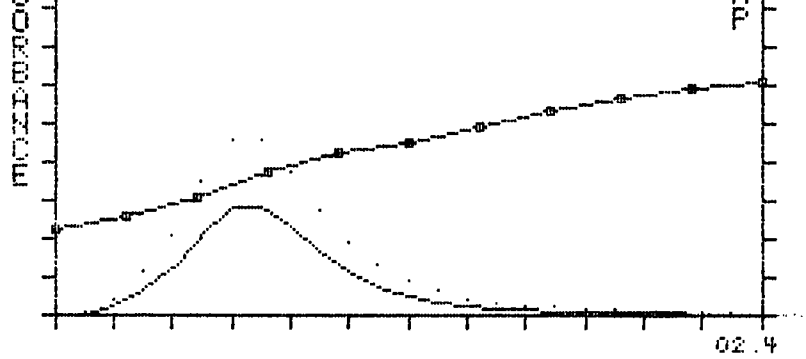


Temp 198 C

Pb-S
Mean 019.3
SD 000.0
RSD 00.00
Pb-S
SN= 000046

02 Pb-S #01
Conc 039.3
Mean 039.3
P/H 0.286

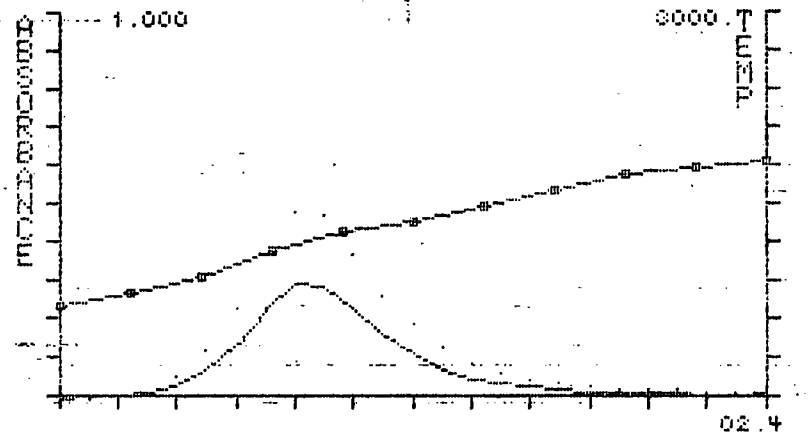
000228



Temp 2002 C

MFE252A

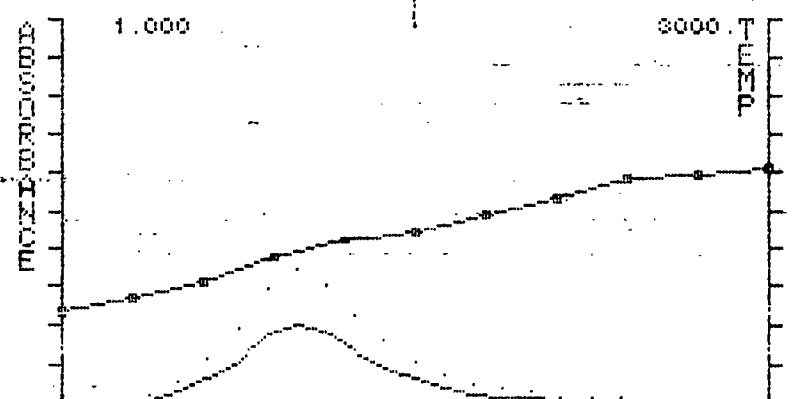
02 Pb-S #02
Conc 038.7
Mean 039.0
P/H 0.289



Temp 199 C

Pb-S
Mean 039.0
SD 000.4
RSD 01.07
Pb-S
SN= 000047

02 Pb-S #01
Conc 027.1
Mean 027.1
P/H 0.204



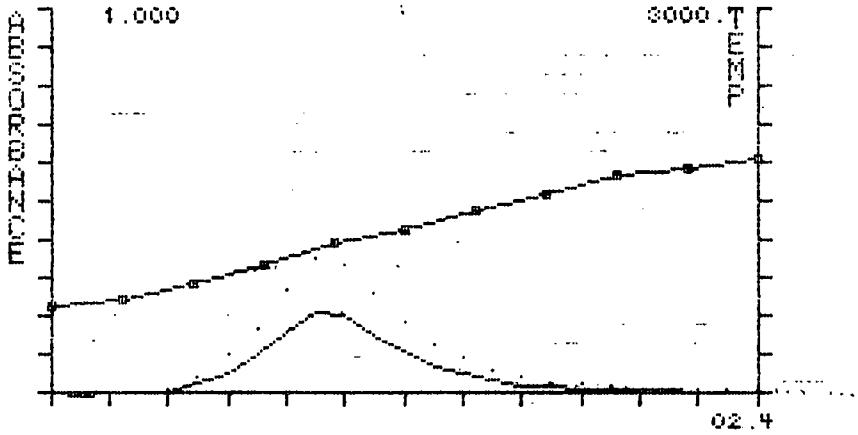
000229

Temp 1983 C

53730
1x

02 Pb-S #02
Conc 027.3
Mean 027.2
P/H 0.210

MFG235

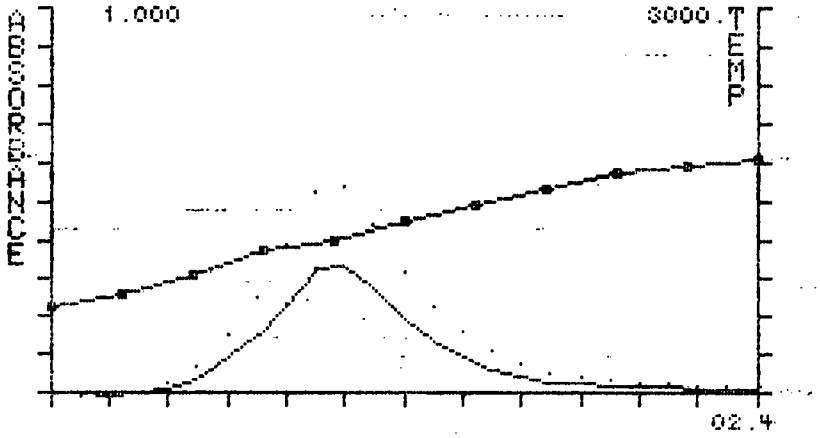


Temp 211 C

Pb-S
Mean 027.2
SD 000.1
RSD 00.51
Pb-S
SN= 000048

02 Pb-S #01
Conc 045.7
Mean 045.7
P/H 0.334

MFG235A

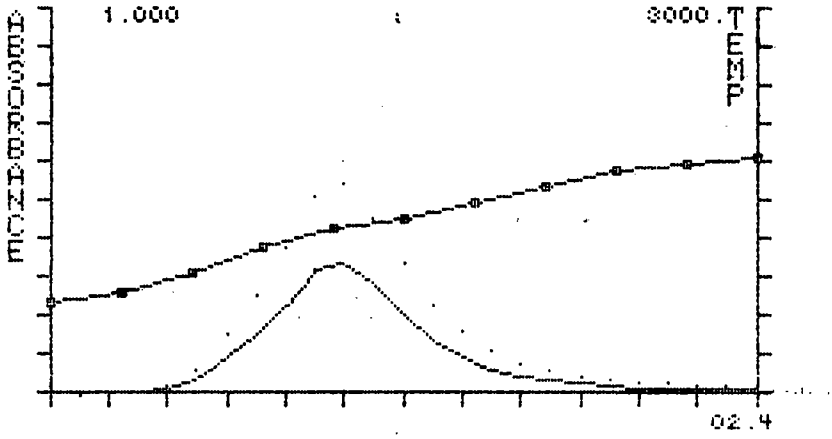


Temp 1967 C

000230

02 Pb-S #02
Conc 046.1

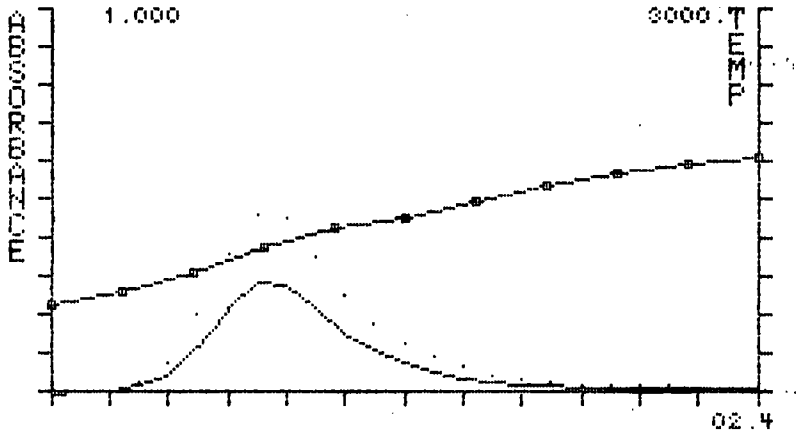
Mean 045.9
P/H 0.338



Temp 220 C

Pb-S
Mean 045.9
SD 000.3
RSD 00.61
Pb-S
SN= 000049

02 Pb-S #01
Conc 037.5
Mean 037.5
P/H 0.285

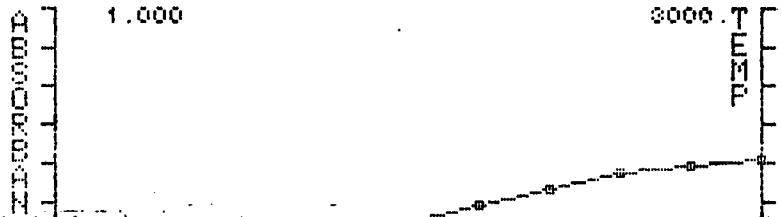


Temp 1998 C

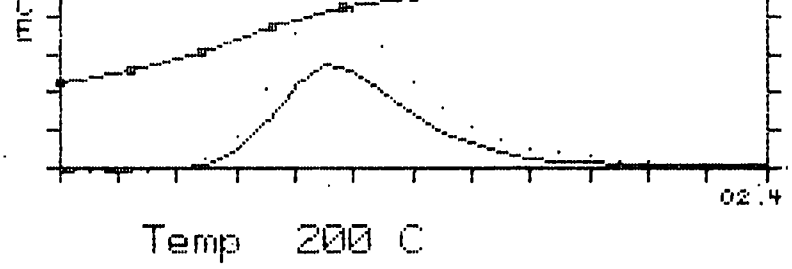
5373
M
Jt

02 Pb-S #02
Conc 034.8
Mean 036.1
P/H 0.280

MFG251



000231



	Pb-S
Mean	036.1
SD	001.9
RSD	05.29

Pb-S

1ST BURN "HIGH" —

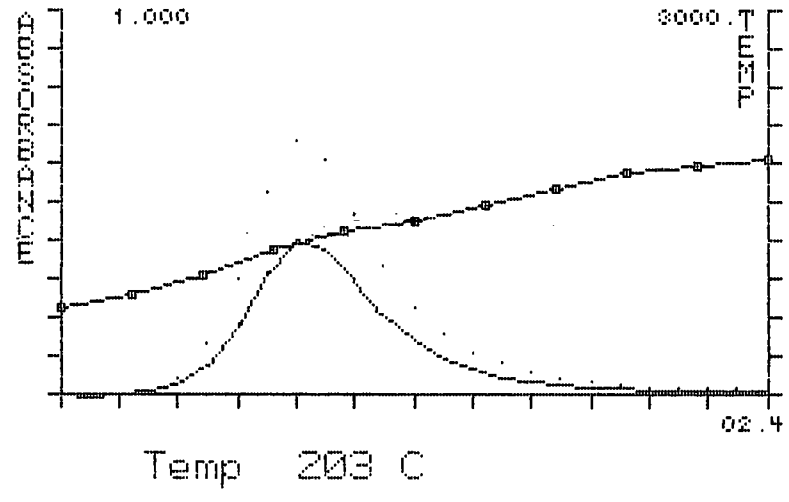
MFGZSIA

- changed printer ribbon... new ribbon was not loaded right & printed lightly

NSJ 12/15/94

Pb-S

Conc HIGH
Mean HIGH
P/H 0.404

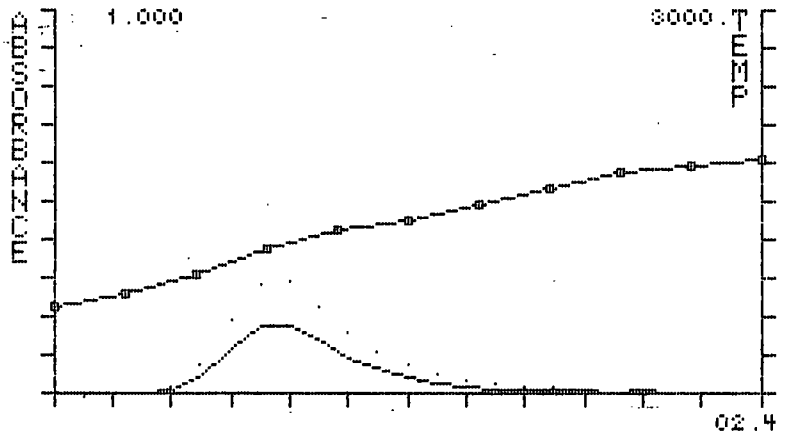


000232

Pb-S
Mean HIGH
SD
RSD

Pb-S
SN= 000051

02 Pb-S #01
Conc 021.8
Mean 021.8
P/H 0.180

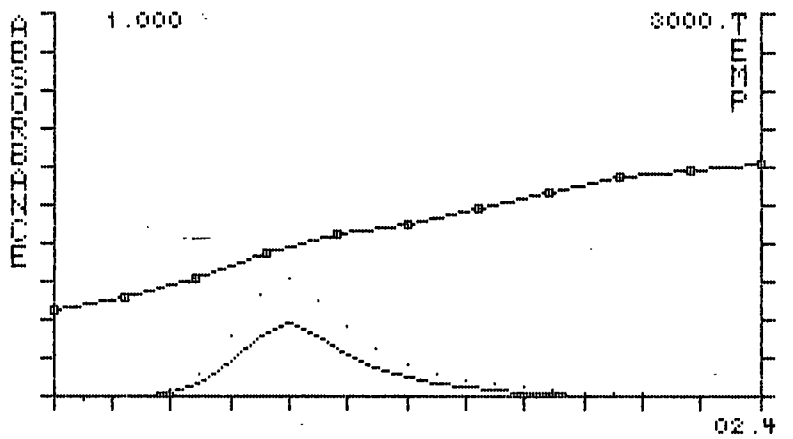


Temp 1976 C

5373
0
5+

02 Pb-S #02
Conc 022.0
Mean 021.9
P/H 0.191

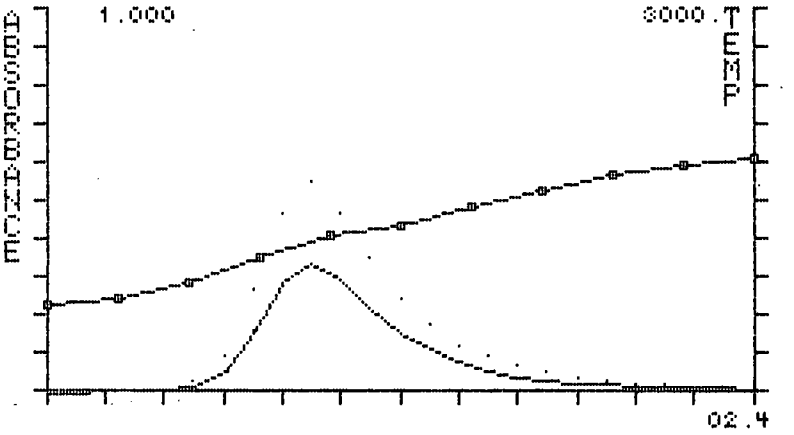
MFE253



Temp 200 C

Pb-S
Mean 021.9
SD 000.1
RSD 00.63
Pb-S
SN= 000052

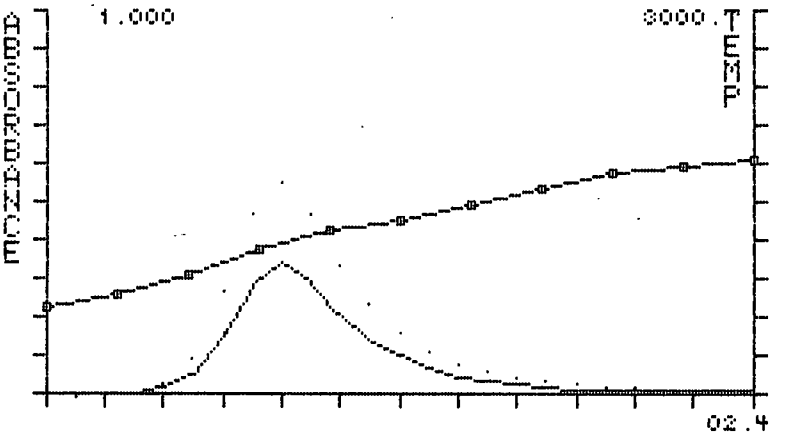
02 Pb-S #01
Conc 040.8
Mean 040.8
P/H 0.337



Temp 1976 C

MFE253A

02 Pb-S #02
Conc 040.1
Mean 040.4
P/H 0.342



Temp 201 C

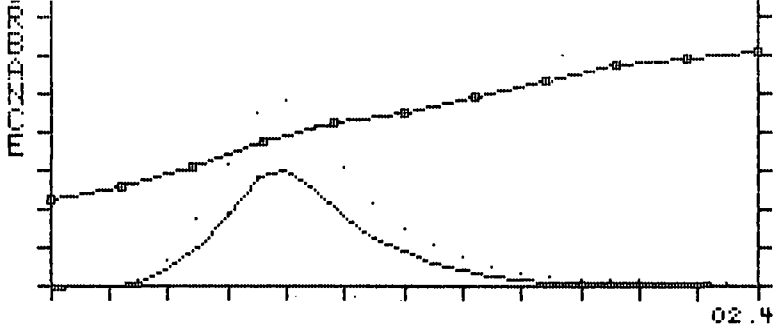
	Pb-S
Mean	040.4
SD	000.5
RSD	01.23

Pb-S
SN= 000053

02 Pb-S #01
Conc 039.2
Mean 039.2
P/H 0.301

000234

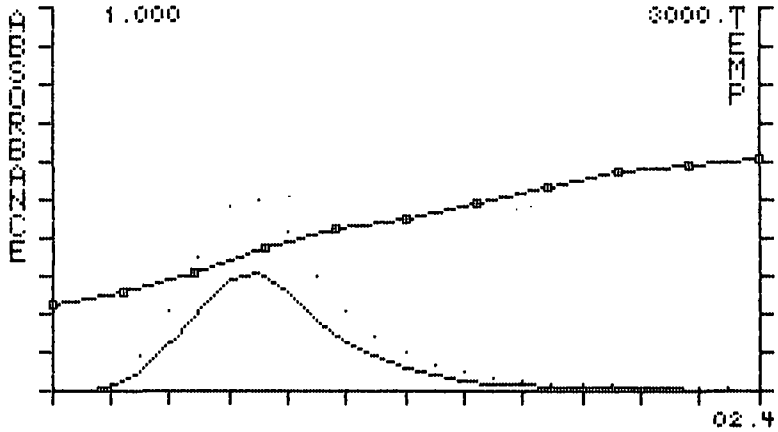
5373
P
2+



Temp 1965 C

MFE254

02 Pb-S #02
Conc 040.8
Mean 040.0
P/H 0.312

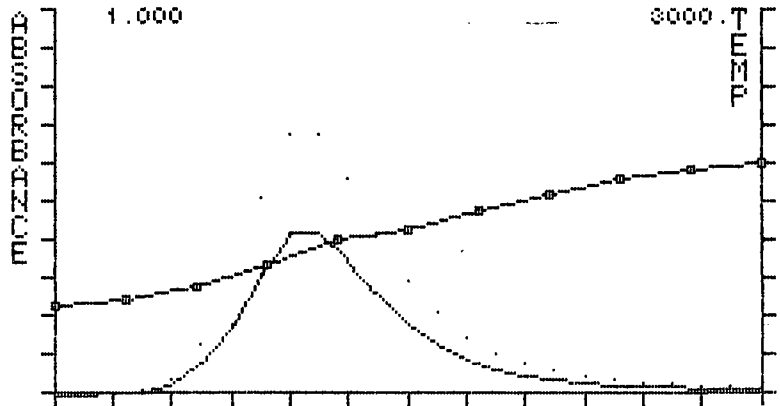


Temp 198 C

	Pb-S
Mean	040.0
SD	001.1
RSD	02.82

Pb-S
SN= 000054

02 Pb-S #01
Conc HIGH
Mean HIGH
P/H 0.418

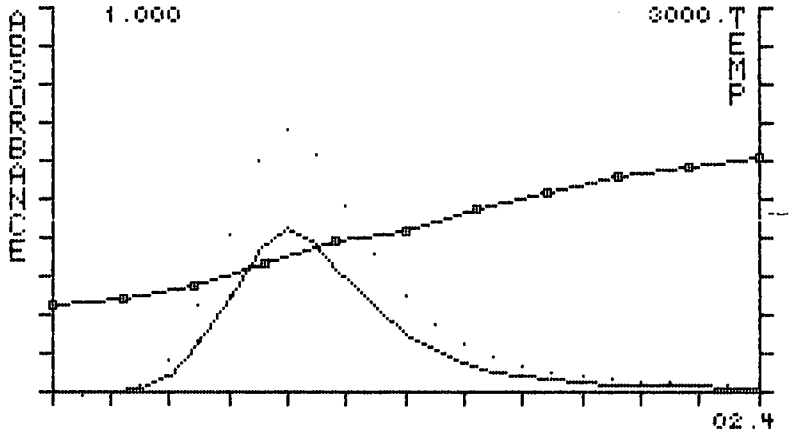


000235

02.4

Temp 1991 C

02 Pb-S #02
Conc HIGH
Mean HIGH
P/H 0.422

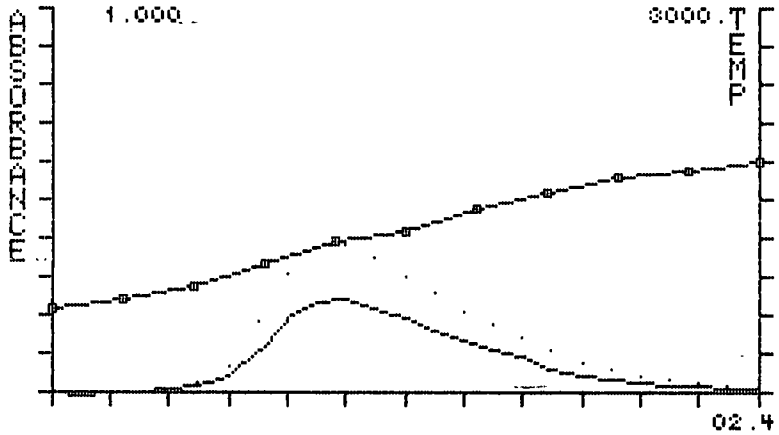


Temp 211 C

MFE254A

Pb-S
Mean HIGH
SD
RSD
Pb-S
SN= 000055

02 Pb-S #01
Conc 042.7
Mean 042.7
P/H 0.243

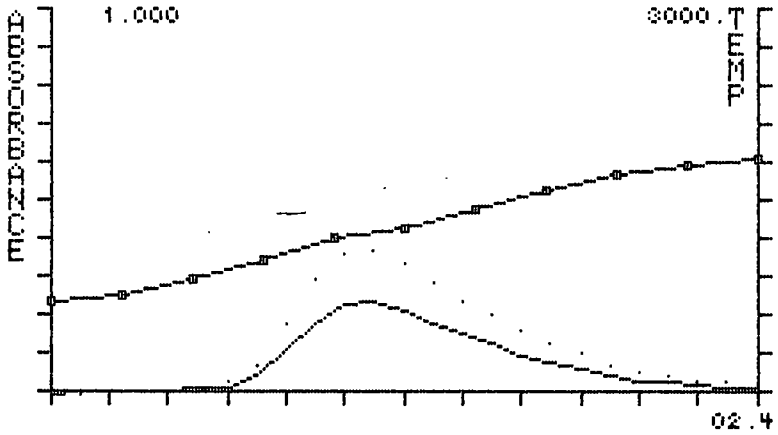


Temp 1991 C

CW 6

02 Pb-S #02 000230
Conc 039.5
Mean 041.1

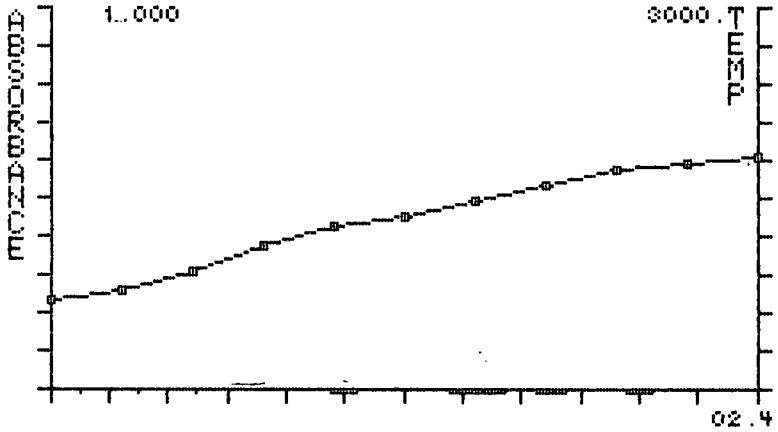
P/H 0.234



Temp 225 C

Pb-S
Mean 041.1
SD 002.3
RSD 05.49
Pb-S
SN= 000056

02 Pb-S #01
Conc 000.6
Mean 000.6
P/H 0.001

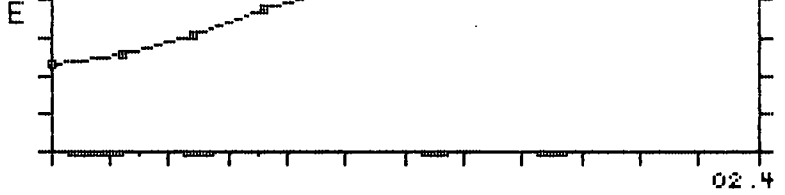


Temp 1983 C

CCB 6

02 Pb-S #02
Conc 000.2
Mean 000.4
P/H 0.000

000237



Temp 198 C

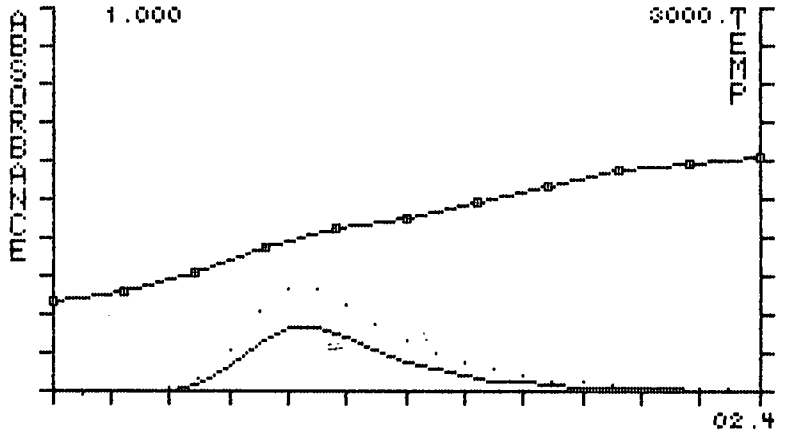
Pb-S
Mean 000.4
SD 000.3
RSD 70.00
Dilution factor: 01.00
Normal Operation
AZ after 0
AC after 0

SN of Sample #1 000057
Starting location 1
Number of Samples 12

RINSE

Pb-S
SN= 000057

02 Pb-S #01
Conc 023.7
Mean 023.7
P/H 0.165



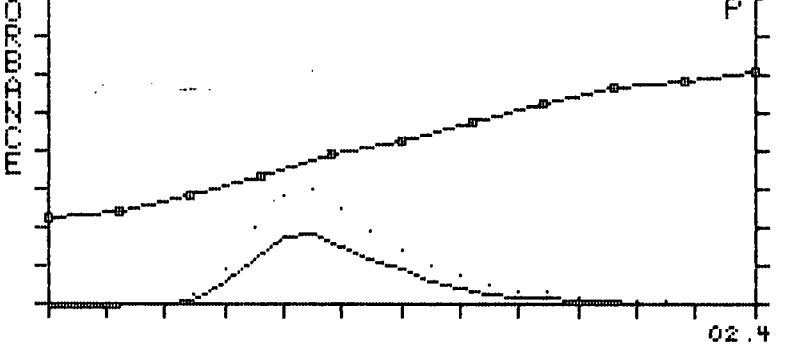
Temp 1979 C

5373
D
20t

02 Pb-S #02
Conc 024.0
Mean 023.8
P/H 0.183

000238

MF6247

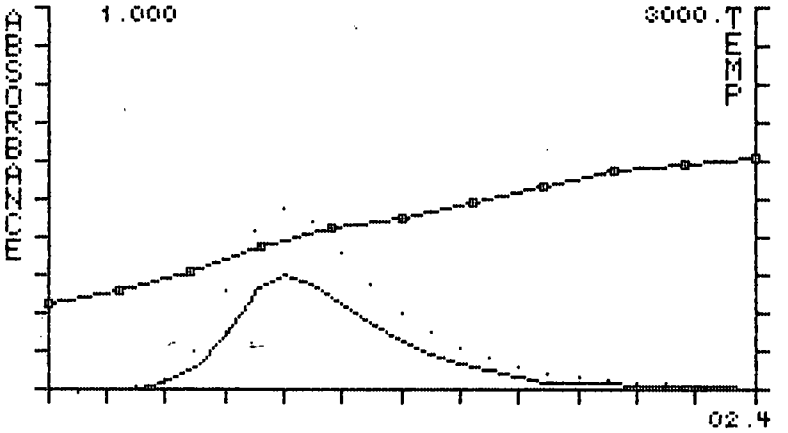


Temp 211 C

	Pb-S
Mean	023.8
SD	000.2
RSD	00.92

Pb-S
SN= 000058

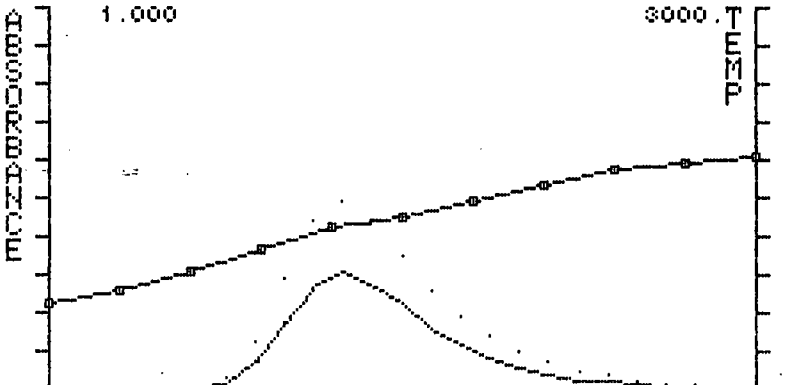
02 Pb-S #01
Conc 041.5
Mean 041.5
P/H 0.299



Temp 1988 C

MF6247A

02 Pb-S #02
Conc 041.3
Mean 041.4
P/H 0.305

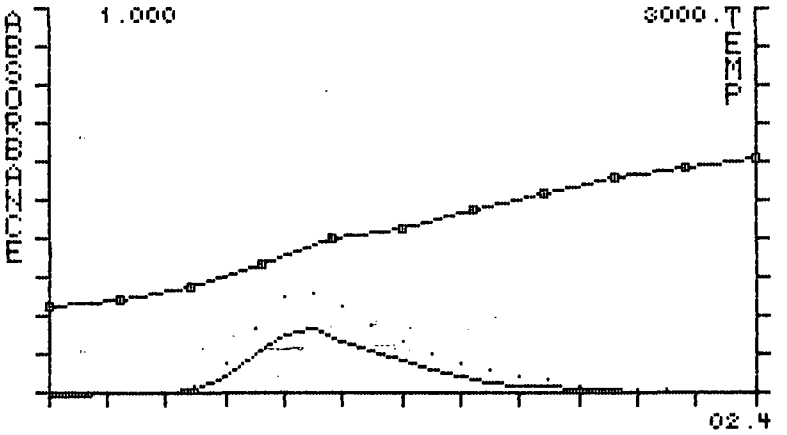


000239

Temp 213 C

Pb-S
Mean 041.4
SD 000.1
RSD 00.33
Pb-S
SN= 000059

02 Pb-S #01
Conc 022.1
Mean 022.1
P/H 0.164

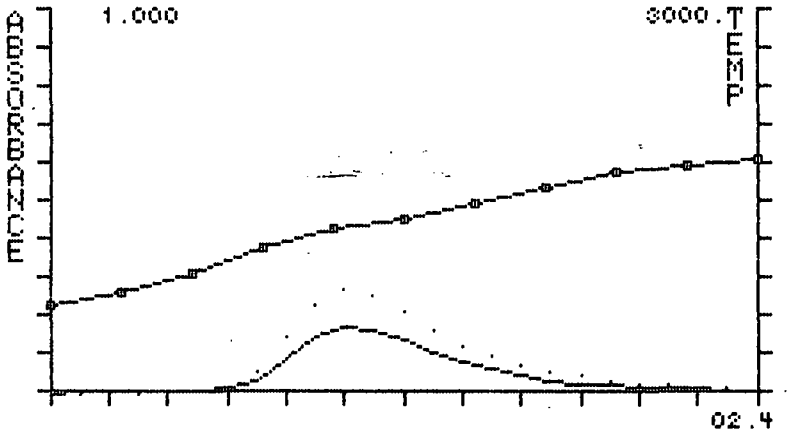


Temp 1995 C

5373
L
10x

MF6248

02 Pb-S #02
Conc 023.7
Mean 022.9
P/H 0.165



Temp 204 C

000240

Pb-S
Mean 022.9
SD 001.1

RSD 04.93

Pb-S

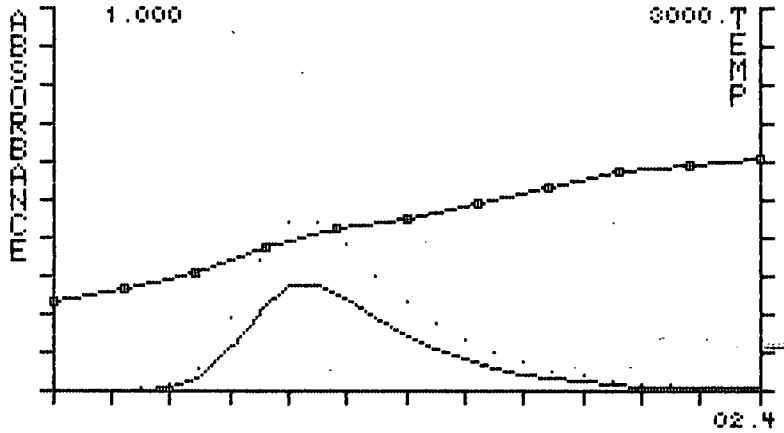
SN= 000060

02 Pb-S #01

Conc 041.8

Mean 041.8

P/H 0.278



Temp 1979 C

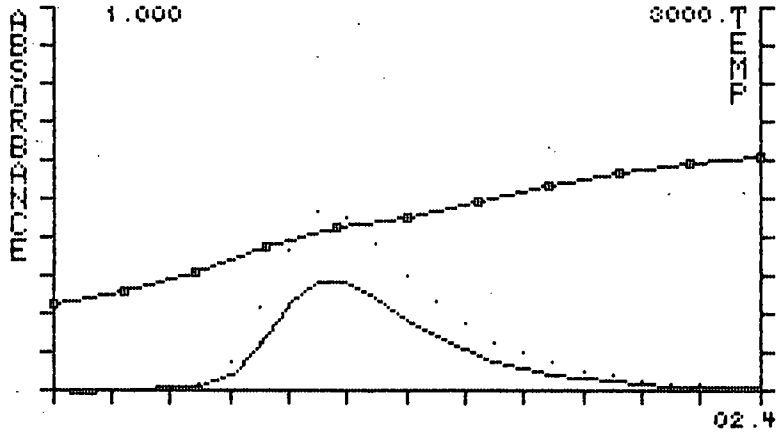
MF6248A

02 Pb-S #02

Conc 042.2

Mean 042.0

P/H 0.287



Temp 199 C

Pb-S

Mean 042.0

SD 000.3

RSD 00.66

Pb-S

SN= 000061

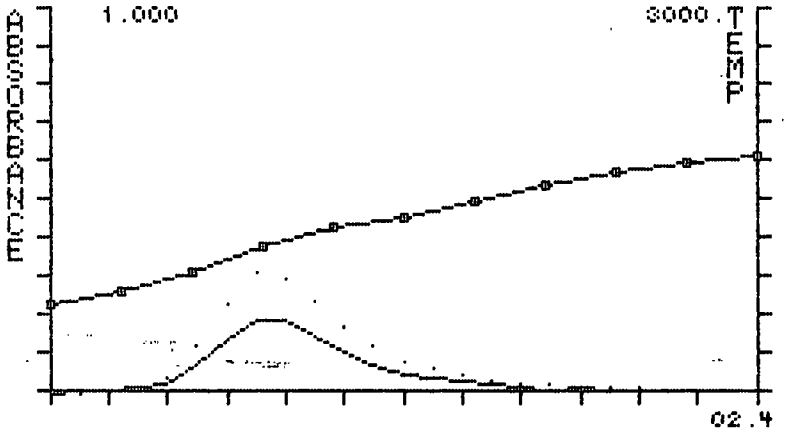
02 Pb-S #01

Conc 023.5

Mean 023.5

P/H 0.186

000241



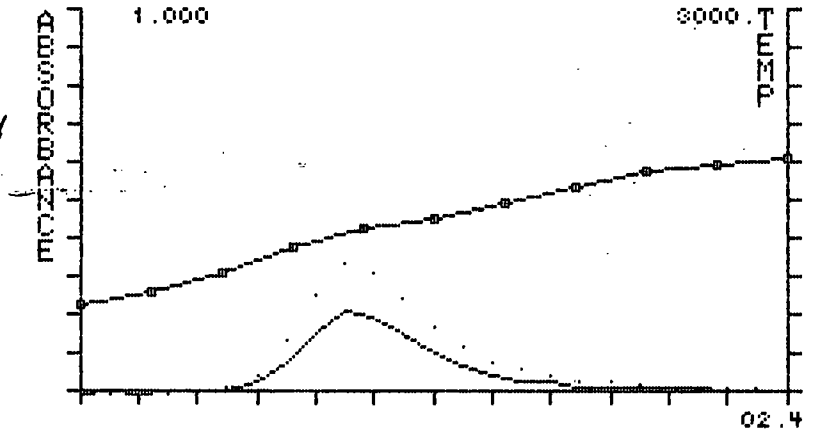
Temp 1981 C

02 Pb-S #02
Conc 024.5
Mean 024.0
P/H 0.207

5373
R
5x

NSJ
12/15/8

5
MFG ~~2X~~ 9

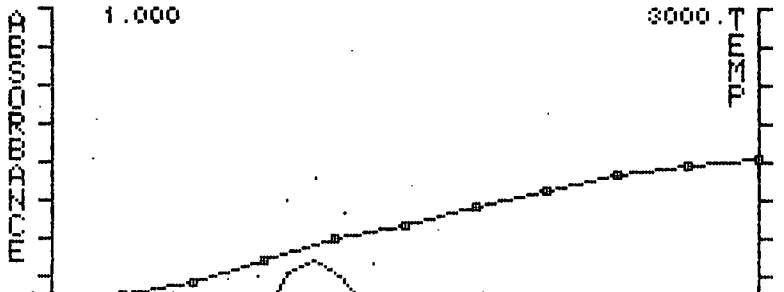


Temp 210 C

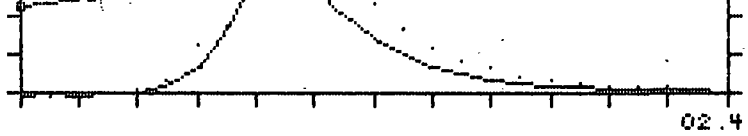
	Pb-S
Mean	024.0
SD	000.7
RSD	02.91
	Pb-S

SN= 000062

02 Pb-S #01
Conc 041.6
Mean 041.6
P/H 0.347



000242

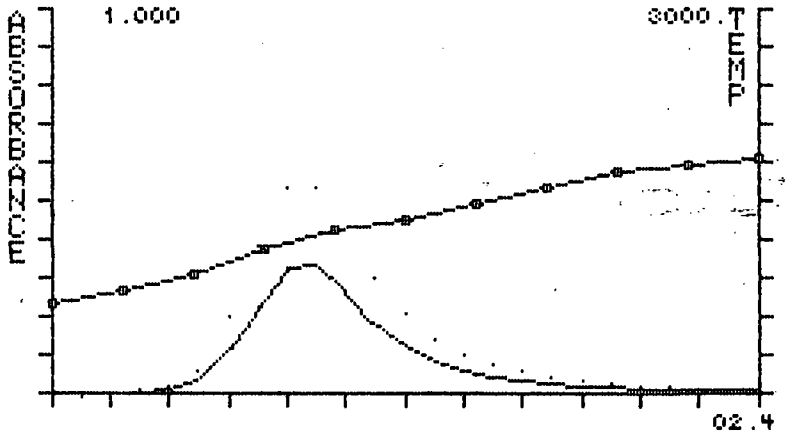


Temp 1979 C

NSJ 12/15/96

5 MFG 2X9A

02 Pb-S #02
Conc 042.4
Mean 042.0
P/H 0.331

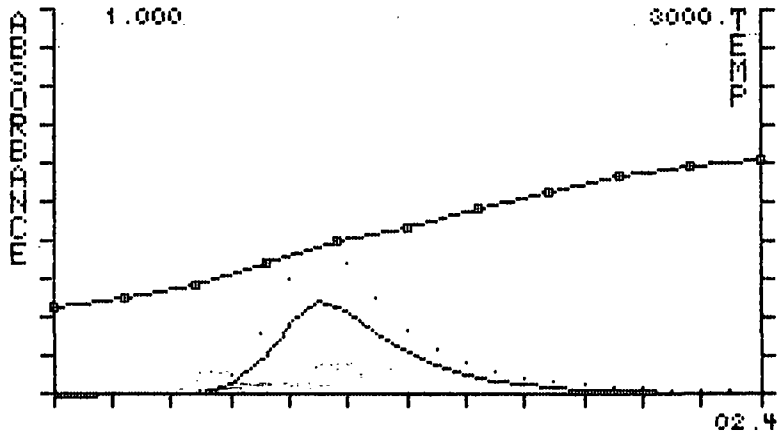


Temp 200 C

	Pb-S
Mean	042.0
SD	000.6
RSD	01.33
	Pb-S

SN= 000063

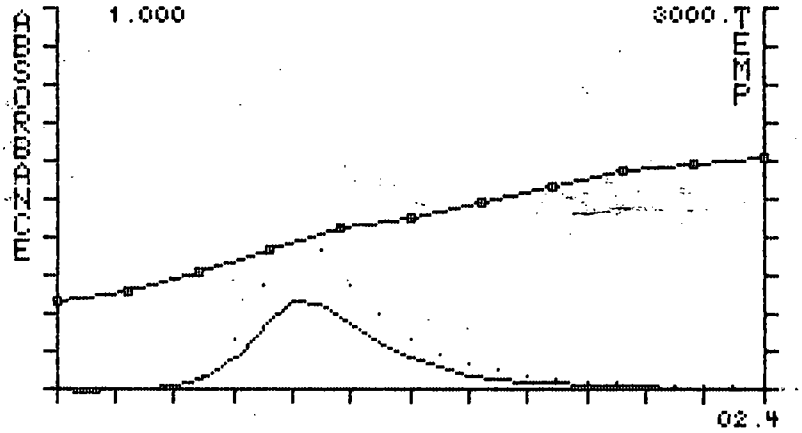
02 Pb-S #01
Conc 027.8
Mean 027.8
P/H 0.240



Temp 1976 C

5373 S 10x

02 Pb-S #02
Conc 028.9
Mean 028.3
P/H 0.238



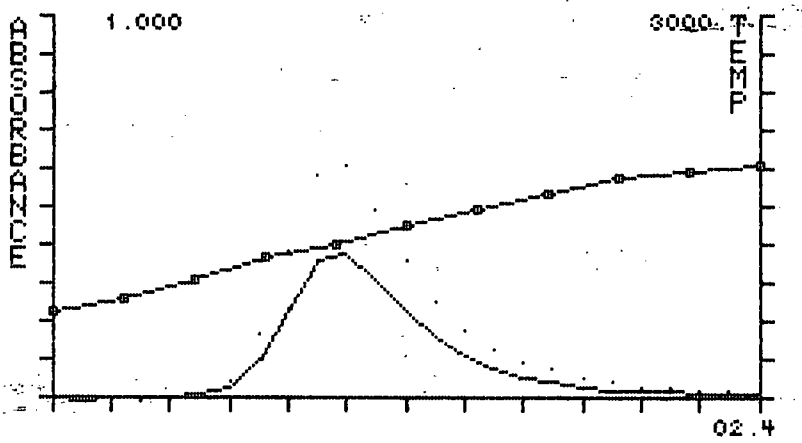
Temp 198 C

MF6260

	Pb-S
Mean	028.3
SD	000.8
RSD	02.75

Pb-S
SN= 000064

02 Pb-S #01
Conc 047.2
Mean 047.2
P/H 0.375

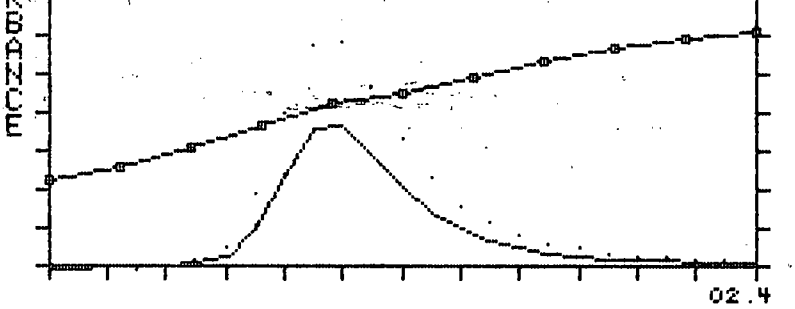


Temp 1962 C

MF6260A

02 Pb-S #02
Conc 045.7
Mean 046.4
P/H 0.366

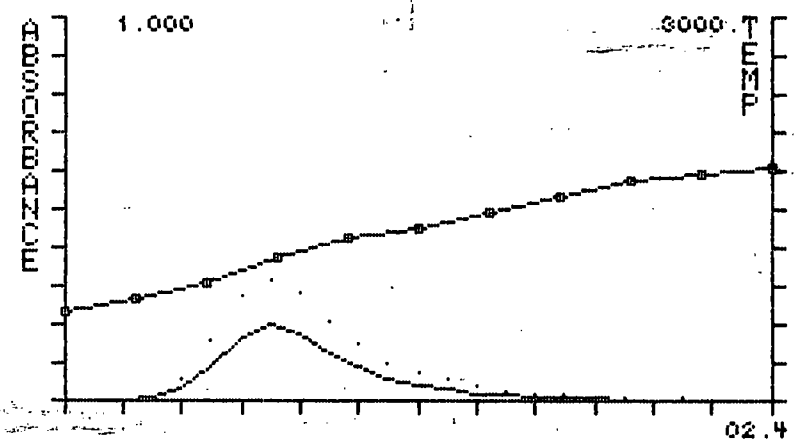
000244



Temp 207 C

Pb-S
Mean 046.4
SD 001.1
RSD 02.28
Pb-S
SN= 000065

02 Pb-S #01
Conc 024.7
Mean 024.7
P/H 0.200

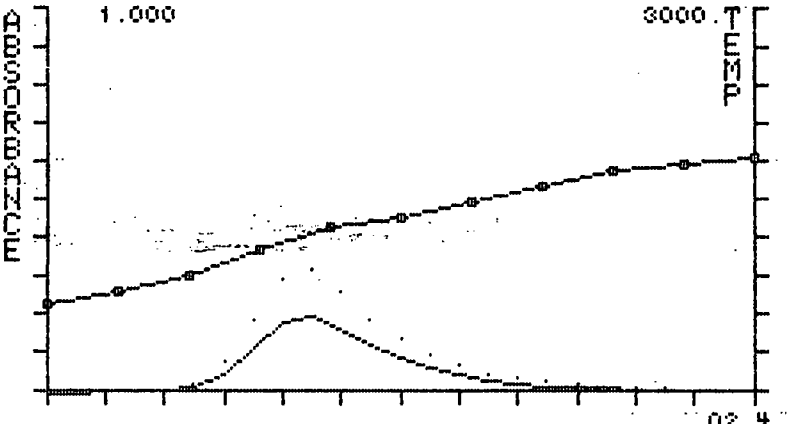


Temp 1995 C

5373T
5+

02 Pb-S #02
Conc 023.9
Mean 024.3
P/H 0.192

MFE263



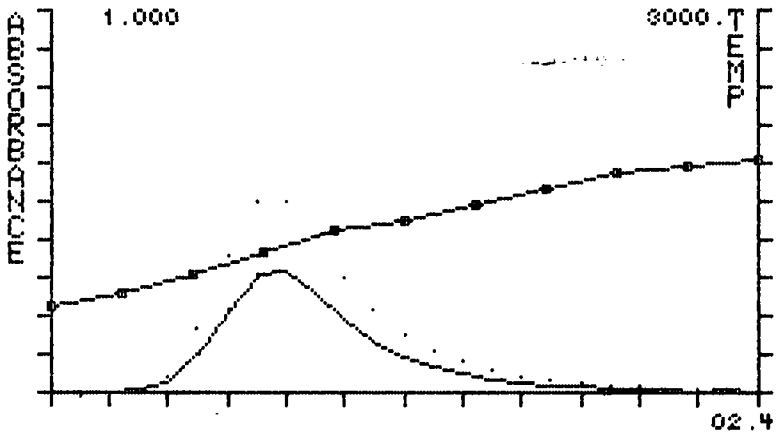
000245

Temp 201 C

	Pb-S
Mean	024.3
SD	000.6
RSD	02.30

Pb-S
SN= 000066

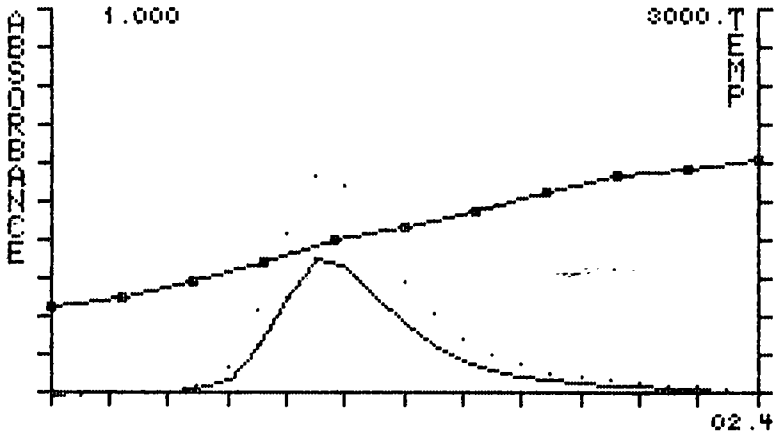
02 Pb-S #01
Conc 041.3
Mean 041.3
P/H 0.318



Temp 1983 C

MF6263A

02 Pb-S #02
Conc 043.1
Mean 042.2
P/H 0.351



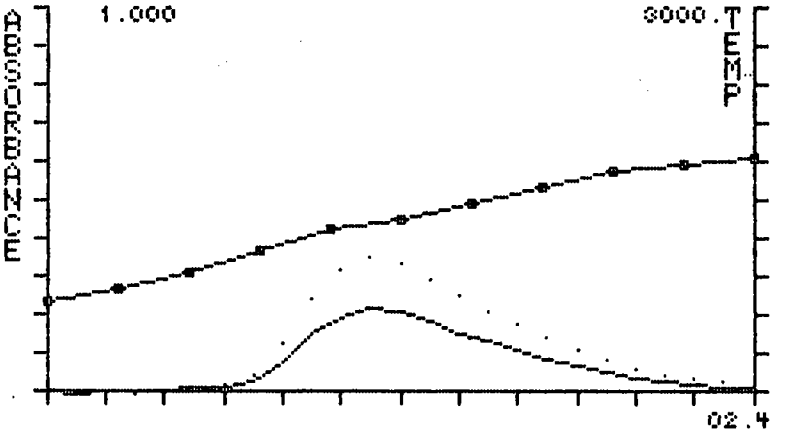
Temp 217 C

	Pb-S
Mean	042.2
SD	001.3
RSD	03.00

000246

Pb-S
SN= 000067

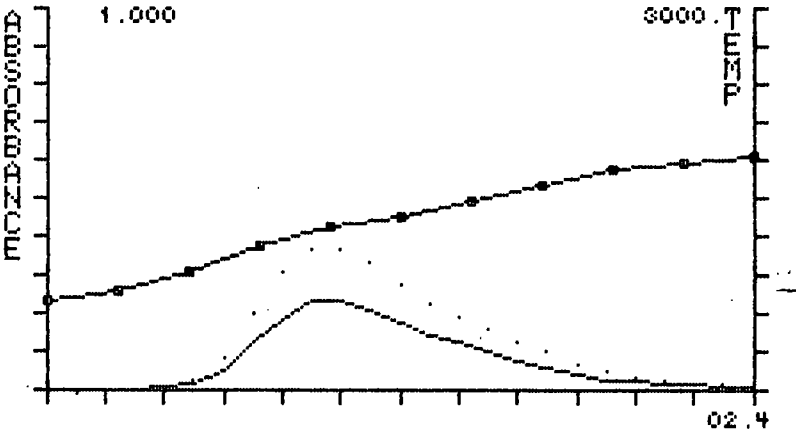
02 Pb-S #01
Conc 038.5
Mean 038.5
P/H 0.216



Temp 1967 C

CW 7

02 Pb-S #02
Conc 040.8
Mean 039.6
P/H 0.235

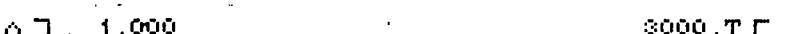


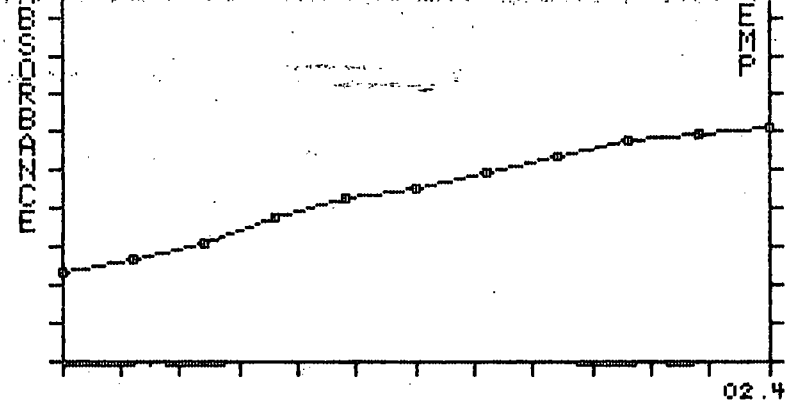
Temp 199 C

Pb-S
Mean 039.6
SD 001.6
RSD 04.09
Pb-S
SN= 000068

02 Pb-S #01
Conc 000.1
Mean 000.1
P/H 0.001

000247

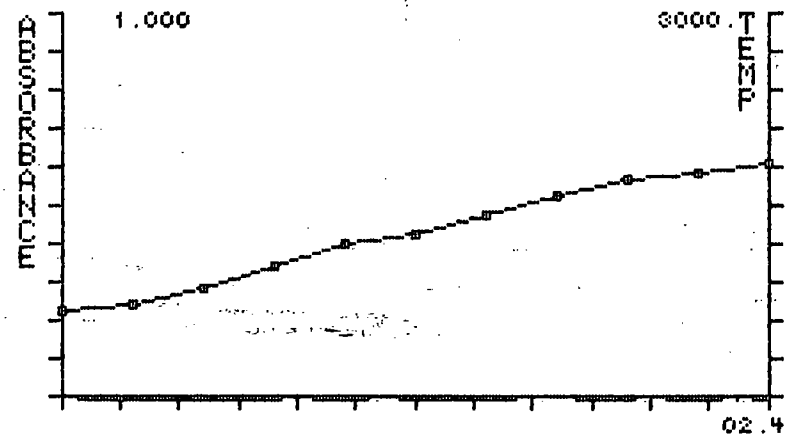




Temp 1981 C

02 Pb-S #02
Conc -000.6
Mean -000.3
P/H -0.001

CCB 7



Temp 203 C

Pb-S
Mean -000.3
SD 000.5
RSD DIG HI
Dilution factor: 01.00
Normal Operation
AZ after 0
AC after 0

SN of Sample #1 000069
Starting location 1
Number of Samples 10

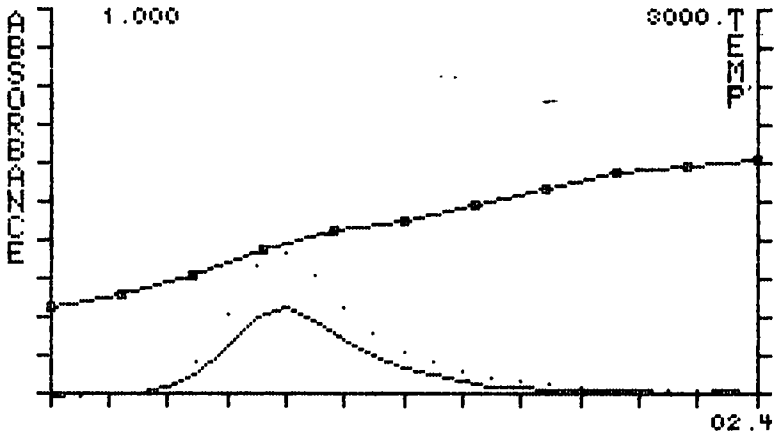
RINSE

Pb-S
SN= 000069

000248

02 Pb-S #01

Conc 028.3
Mean 028.3
P/H 0.226

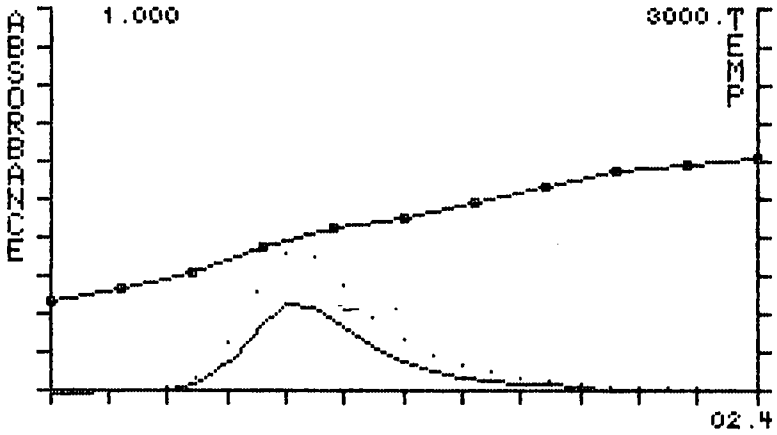


Temp 1981 C

02 Pb-S #02
Conc 027.0
Mean 027.6
P/H 0.224

5373 C 5x

MF6246



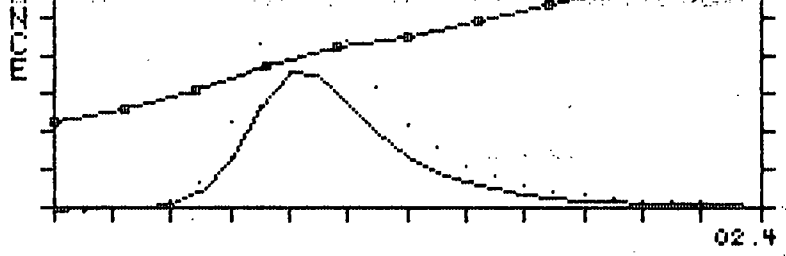
Temp 199 C

	Pb-S
Mean	027.6
SD	000.9
RSD	03.33

Pb-S
SN= 000070

02 Pb-S #01
Conc 046.2
Mean 046.2
P/H 0.355

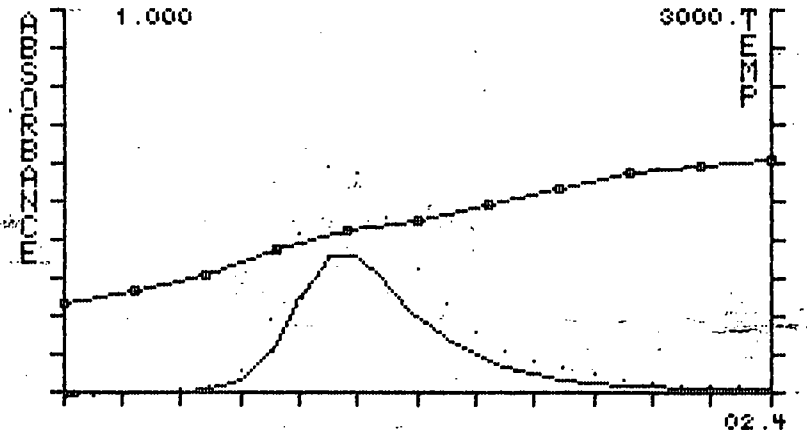
000249



Temp 1979 C

02 Pb-S #02
Conc 046.0
Mean 046.1
P/H 0.362

MFG246A

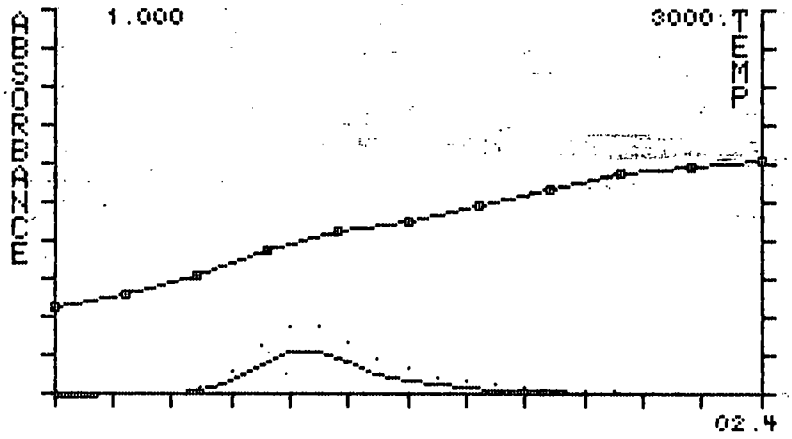


Temp 232 C

	Pb-S
Mean	046.1
SD	000.1
RSD	00.30

Pb-S
SN= 000071

02 Pb-S #01
Conc 013.4
Mean 013.4
P/H 0.109

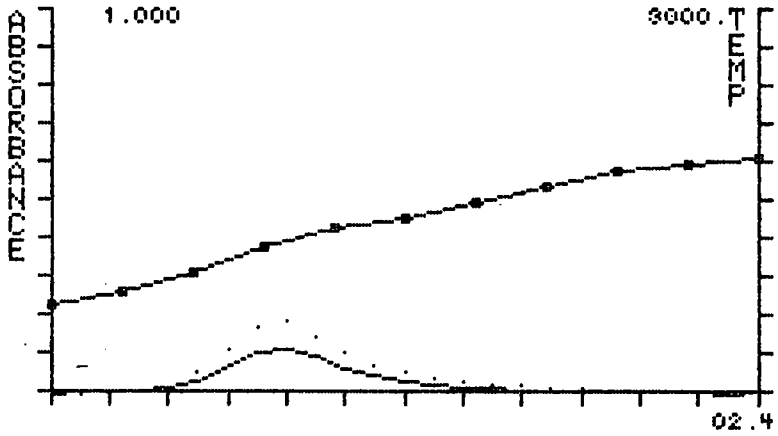


Temp 1965 C

5373F
5x

MFG250

02 Pb-S #02
Conc 013.2
Mean 013.3
P/H 0.108



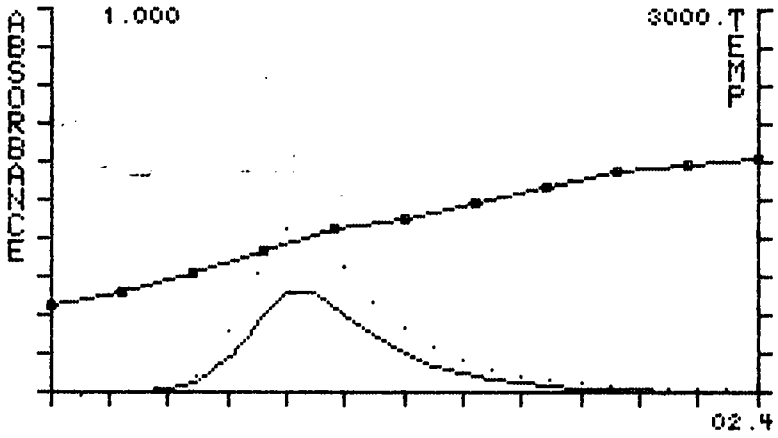
Temp 199 C

	Pb-S
Mean	013.3
SD	000.1
RSD	01.05

Pb-S
SN= 000072

MFG250A

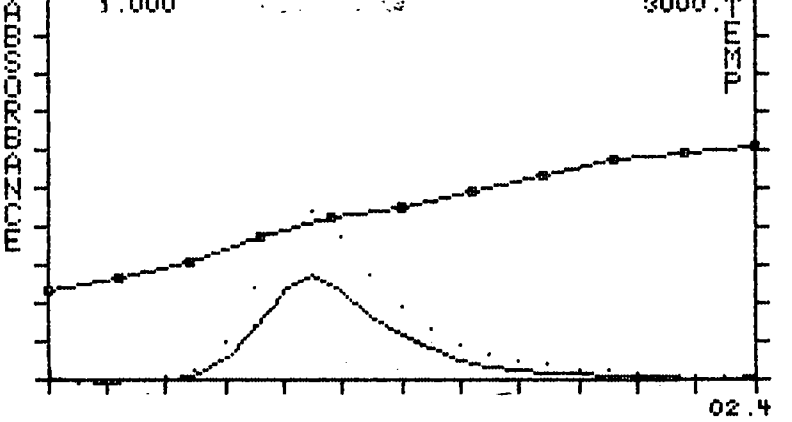
02 Pb-S #01
Conc 033.4
Mean 033.4
P/H 0.263



Temp 1967 C

02 Pb-S #02
Conc 033.2
Mean 033.3
P/H 0.275

000251

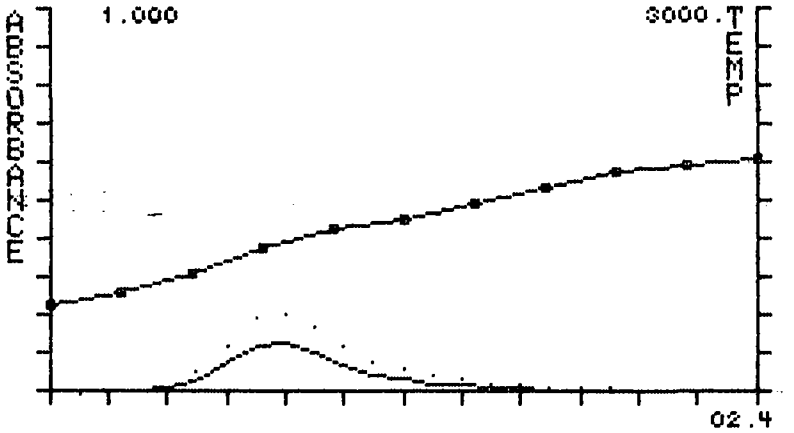


Temp 222 C

	Pb-S
Mean	033.3
SD	000.1
RSD	00.42

Pb-S
SN= 000073

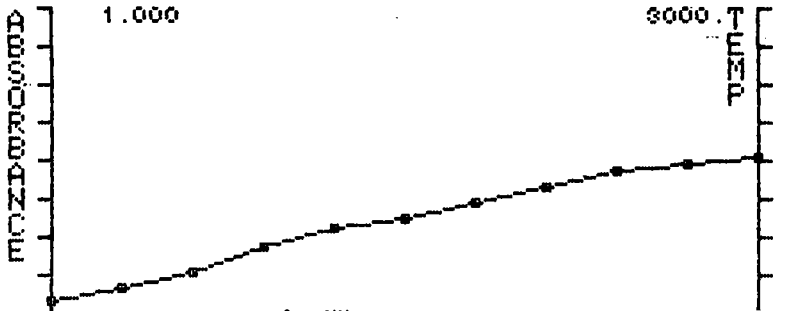
02 Pb-S #01
Conc 015.1
Mean 015.1
P/H 0.123



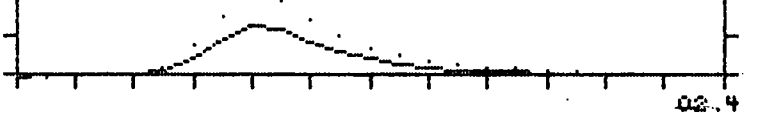
Temp 1998 C

02 Pb-S #02
Conc 015.1
Mean 015.1
P/H 0.125

5373
M
5+
MFG251



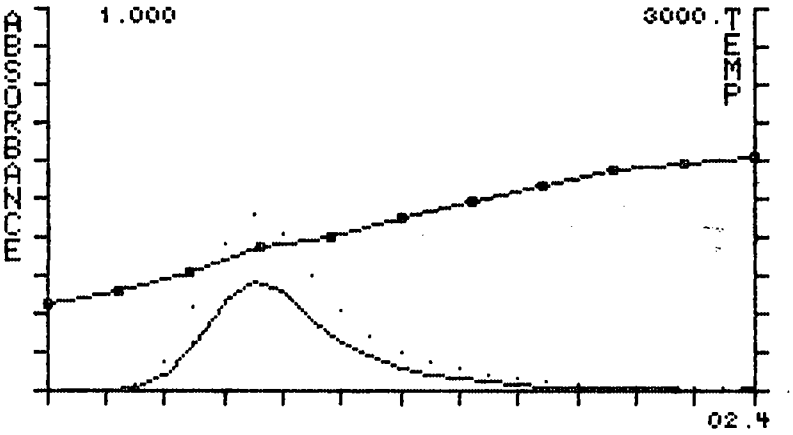
000252



Temp 201 C

Pb-S
Mean 015.1
SD 000.0
RSD 00.00
Pb-S
SN= 000074

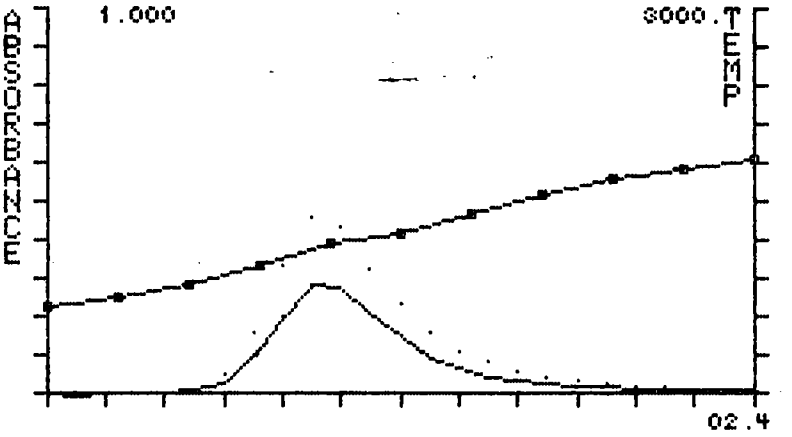
02 Pb-S #01
Conc 035.1
Mean 035.1
P/H 0.286



Temp 1993 C

MFG251A

02 Pb-S #02
Conc 034.5
Mean 034.8
P/H 0.283



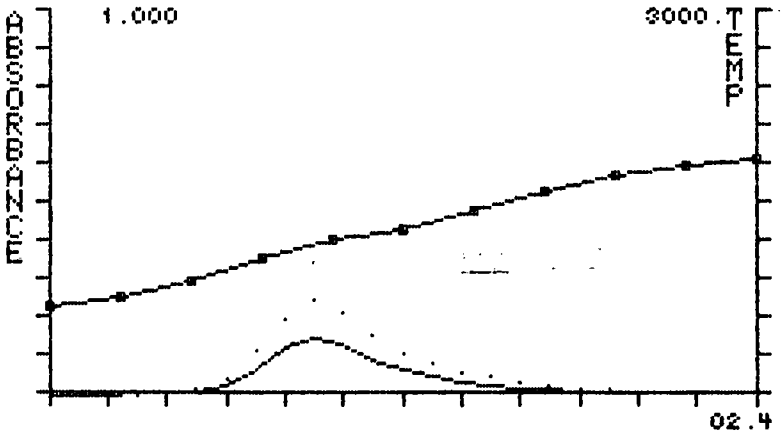
Temp 220 C

000253

Pb-S

Mean 034.8
SD 000.4
RSD 01.20
Pb-S
SN= 000075

02 Pb-S #01
Conc 016.7
Mean 016.7
P/H 0.145

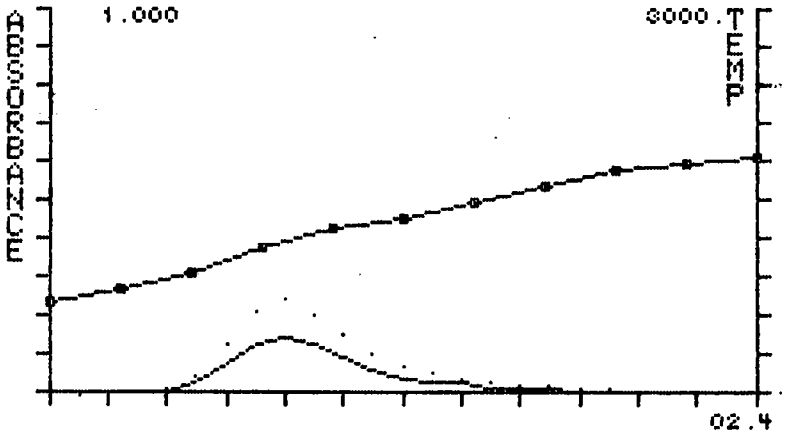


Temp 1967 C

5373
P
5x

02 Pb-S #02
Conc 017.2
Mean 016.9
P/H 0.146

MFEESH



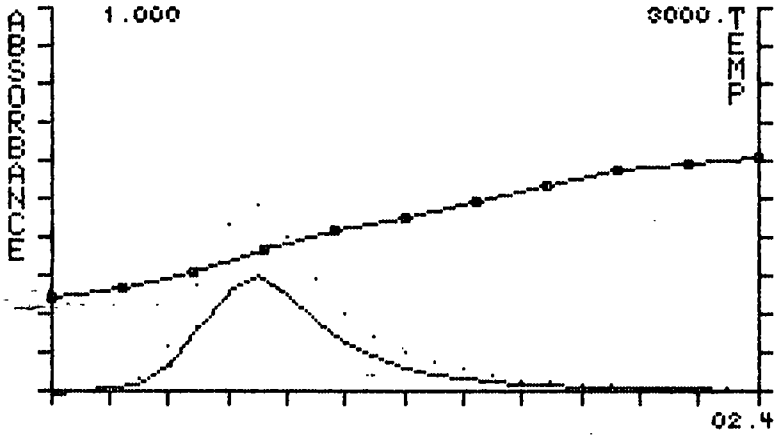
Temp 201 C

Pb-S
Mean 016.9
SD 000.4
RSD 02.13
Pb-S
SN= 000076

000254

02 Pb-S #01
Conc 037.3

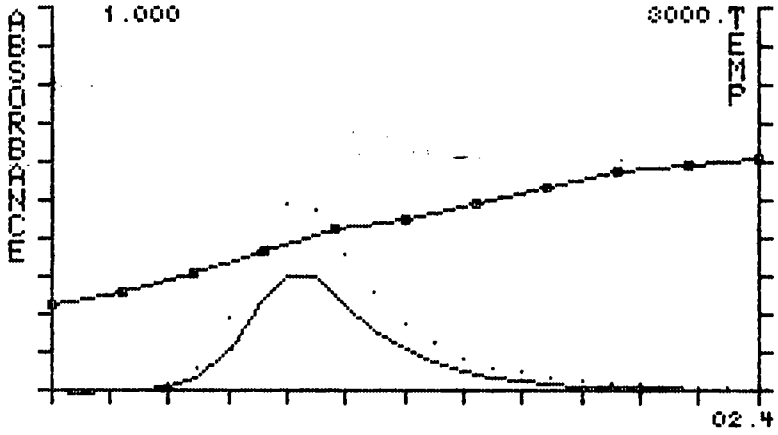
Mean 037.3
P/H 0.302



Temp 1995 C

MFG254A

02 Pb-S #02
Conc 037.8
Mean 037.5
P/H 0.304



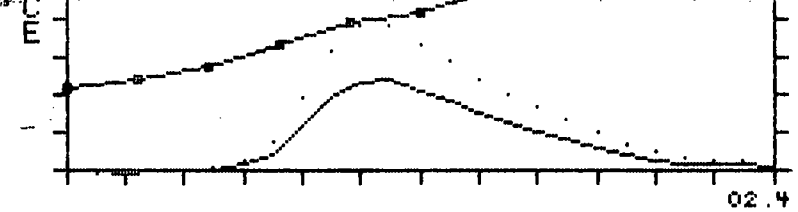
Temp 198 C

	Pb-S
Mean	037.5
SD	000.4
RSD	00.96

Pb-S
SN= 000077

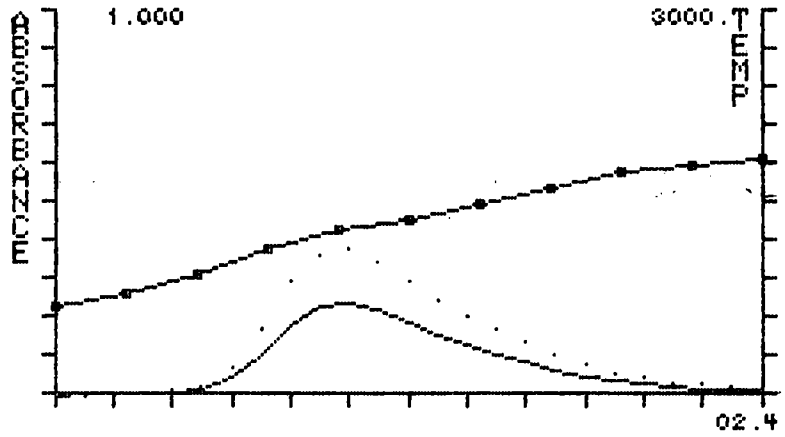
02 Pb-S #01
Conc 041.3
Mean 041.3
P/H 0.242

000255



Temp 1993 C

02 Pb-S #02
Conc 040.3
Mean 040.8
P/H 0.234



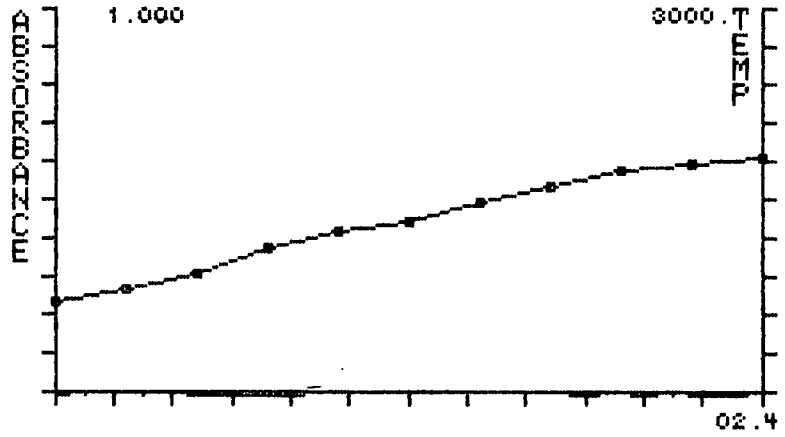
Temp 199 C

CW 8

	Pb-S
Mean	040.8
SD	000.7
RSD	01.71

Pb-S
SN= 000078

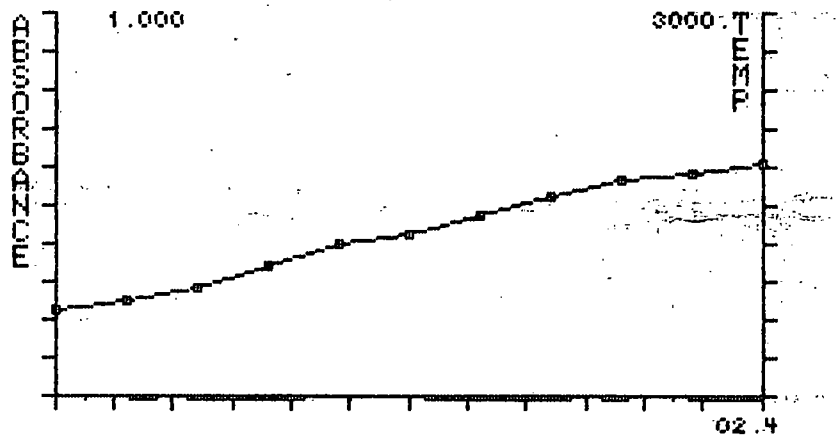
02 Pb-S #01
Conc 000.1
Mean 000.1
P/H 0.000



Temp 1991 C

000250

02 Pb-S #02
Conc -000.4
Mean -000.2
P/H 0.000



Temp 207 C

CCB 8

	Pb-S
Mean	-000.2
SD	000.4
RSD	DIG HI

10 5373

CALCULATED DATA FROM FILE: [illegible]S\SE961214

ANALYTICAL RESOURCES INCORPORATED

JOB	SAMP	ELEMENT	PREPCODE		RAWVALUE	CALCULATED	UNITS	DILUTION	MASS	INITVOL	FINLVOL	%SOLIDS
5373	MB	SE	SCN	U	0.0010000	0.2000000	mg/kg-dry	1.00	1.0000	0.00	200.00	100.00
5373	REF1	SE	SCN		0.0095000	38.0000000	mg/kg-dry	20.00	1.0000	0.00	200.00	100.00
5373	A	SE	SCN	U	0.0010000	0.2403546	mg/kg-dry	1.00	1.0160	0.00	200.00	81.90
5373	ADUP	SE	SCN	U	0.0010000	0.2403546	mg/kg-dry	1.00	1.0160	0.00	200.00	81.90
5373	ASPK	SE	SCN		0.0085000	2.0430139	mg/kg-dry	1.00	1.0160	0.00	200.00	81.90
5373	B	SE	SCN	U	0.0010000	0.2331528	mg/kg-dry	1.00	1.0370	0.00	200.00	82.72
5373	C	SE	SCN	U	0.0010000	0.2440245	mg/kg-dry	1.00	1.0250	0.00	200.00	79.96
5373	D	SE	SCN	U	0.0010000	0.2432229	mg/kg-dry	1.00	1.0050	0.00	200.00	81.82
5373	E	SE	SCN	U	0.0010000	0.2445788	mg/kg-dry	1.00	1.0020	0.00	200.00	81.61
5373	F	SE	SCN	U	0.0010000	0.2367711	mg/kg-dry	1.00	1.0240	0.00	200.00	82.49
5373	G	SE	SCN	U	0.0010000	0.2518690	mg/kg-dry	1.00	1.0040	0.00	200.00	79.09
5373	H	SE	SCN	U	0.0010000	0.2262863	mg/kg-dry	1.00	1.0270	0.00	200.00	86.06
5373	I	SE	SCN	U	0.0010000	0.2584483	mg/kg-dry	1.00	1.0690	0.00	200.00	72.39
5373	J	SE	SCN	U	0.0010000	0.2309452	mg/kg-dry	1.00	1.0420	0.00	200.00	83.11
5373	K	SE	SCN	U	0.0010000	0.2354107	mg/kg-dry	1.00	1.0160	0.00	200.00	83.62
5373	L	SE	SCN	U	0.0010000	0.2363244	mg/kg-dry	1.00	1.0580	0.00	200.00	79.99
5373	M	SE	SCN	U	0.0010000	0.2432476	mg/kg-dry	1.00	1.0590	0.00	200.00	77.64
5373	N	SE	SCN	U	0.0010000	0.2398254	mg/kg-dry	1.00	1.0170	0.00	200.00	82.00
5373	O	SE	SCN	U	0.0010000	0.2386151	mg/kg-dry	1.00	1.0050	0.00	200.00	83.40
5373	P	SE	SCN	U	0.0010000	0.2306120	mg/kg-dry	1.00	1.0160	0.00	200.00	85.36
5373	Q	SE	SCN	U	0.0010000	0.2417963	mg/kg-dry	1.00	1.0360	0.00	200.00	79.84
5373	R	SE	SCN	U	0.0010000	0.2226831	mg/kg-dry	1.00	1.0760	0.00	200.00	83.47
5373	S	SE	SCN	U	0.0010000	0.2404247	mg/kg-dry	1.00	1.0060	0.00	200.00	82.69
5373	T	SE	SCN	U	0.0010000	0.2127560	mg/kg-dry	1.00	1.0640	0.00	200.00	88.35
5374	A	SE	SCN	U	0.0010000	0.2191437	mg/kg-dry	1.00	1.0060	0.00	200.00	90.72
5374	ADUP	SE	SCN	U	0.0010000	0.2193617	mg/kg-dry	1.00	1.0050	0.00	200.00	90.72
5374	ASPK	SE	SCN		0.0094000	2.0599507	mg/kg-dry	1.00	1.0060	0.00	200.00	90.72
5374	MB	SE	SCN	U	0.0010000	0.2000000	mg/kg-dry	1.00	1.0000	0.00	200.00	100.00
5374	REF1	SE	SCN		0.0191000	38.1618382	mg/kg-dry	10.00	1.0010	0.00	200.00	100.00

Element: Se

ANALYTICAL RESOURCES INCORPORATED

VARIAN 1 - EPA CLP GRAPHITE FURNACE SUMMARY LOGBOOK

ALL CORRECTIONS MADE BY ANALYST UNLESS OTHERWISE NOTED. AA 12-14-96 AA 12-14-96 14

IDL/Reporting Limit: 1.0 µg/L | Date: 12-~~12~~-96 | Analyst: AA

Edit Label/ Dil.	Load Data	Sample ID	EPA ID	Prep Code	Dilution Used	Calculated Value (µg/L)	Analytical Spike (µg/L)	Analytical Spike % R or MSA r	Flag	Comments	Time
		S0									0957
		S5								Std 755-10 at 10X	
		S10								755-12	
		S20								755-11	
		S50								755-10	1015
		ICV			2X	25.4				100.2% ✓	1020
		ICB				0.3				✓	
		CRA 5.0 µg/L				5.0	14.9	99.0		✓	
		CCV1				25.9				103.6% ✓	1038
		CCB1				-0.6				✓	
		S0									
		CCV2				25.3				101.4% ✓	1052
		CCB2				-0.1				✓	
	✓	5373 MB	PBS	SCN	1X	U	10.0	100.0			

U Undetected (See IDL/Reporting Limit Above)

000253

000010

5055F

Rev.1
12/02/96

Element: Se

ANALYTICAL RESOURCES INCORPORATED

VARIAN 1 - EPA CLP GRAPHITE FURNACE SUMMARY LOGBOOK

ALL CORRECTIONS MADE BY ANALYST UNLESS OTHERWISE NOTED.

IDL/Reporting Limit: 1.0 µg/L **Date:** 12/14/96 **Analyst:** [illegible]

Edit Label/ Dil.	Load Data	Sample ID	EPA ID	Prep Code	Dilution Used	Calculated Value (µg/L)	Analytical Spike (µg/L)	Analytical Spike % R or MSA r	Flag	Comments	Time
	✓	5373 Refl	LCSS	SCN	20x	9.5	18.4	89.2		38 mg/kg ✓	
	✓	A	MFGZ44		1x	U	8.8	88.0			
	✓	ADup	MFGZ44D			U	9.5	95.0		✓	
	✓	Aspk	MFGZ44S			8.5	17.3	88.5		85% R ✓	
		CCV 3				25.4				101.8% ✓	1147
		CCB 3				-0.7				✓	
	✓	5373 B	MFGZ45	SCN	1x	U	9.0	90.0			
	✓	C	MFGZ46			U	8.9	89.0			
	✓	D	MFGZ47			U	7.8	78.0	W		
	✓	E	MFGZ~~48~~ 49			U	8.2	82.0	W		
	✓	F	MFGZ50			U	9.1	91.0			
		CCV 4				24.3				97.0% ✓	1241
		CCB 4				-1.0				✓	
		SO									

U = Undetected (See IDL/Reporting Limit Above)

000011

000200

5055F

Rev.1
12/02/96

Element: Se

ANALYTICAL RESOURCES INCORPORATED

VARIAN 1 - EPA CLP GRAPHITE FURNACE SUMMARY LOGBOOK

ALL CORRECTIONS MADE BY ANALYST UNLESS OTHERWISE NOTED.

IDL/Reporting Limit: 1.0 µg/L **Date:** 12-14-96 **Analyst:** AK

Edit Label/ Dil.	Load Data	Sample ID	EPA ID	Prep Code	Dilution Used	Calculated Value (µg/L)	Analytical Spike (µg/L)	Analytical Spike % R or MSA r	Flag	Comments	Time
		CCV 5				25.0				100.1% ✓	1255
		CCB 5				0.1				✓	
	✓	5373 G	MFGZ56	SCN	1X	U	8.8	88.0			
	✓	H	MFGZ57			U	8.1	81.0	W		
	✓	I	MFGZ58			U	6.2	62.0	W		
	✓	J	MFGZ64			U	7.5	75.0	W		
	✓	K	MFGZ65			U	7.9	79.0	W		
		CCV 6				25.3				101.3% ✓	1351
		CCB 6				-0.2				✓	
	✓	5373 L	MFGZ48	SCN	1X	U	9.2	92.0			
	✓	M	MFGZ51			U	9.3	93.0			
	✓	N	MFGZ52			U	9.3	93.0			
	✓	O	MFGZ53			U	8.4	84.0	W		
	✓	P	MFGZ54			U	7.9	79.0	W		

U = Undetected (See IDL/Reporting Limit Above)

000012

000261

5055F

Rev.1
12/02/96

Element: Se

ANALYTICAL RESOURCES INCORPORATED

VARIAN 1 - EPA CLP GRAPHITE FURNACE SUMMARY LOGBOOK

ALL CORRECTIONS MADE BY ANALYST UNLESS OTHERWISE NOTED.

IDL/Reporting Limit: 1.0 µg/L **Date:** 12-14-96 **Analyst:** AA

Edit Label/ Dil.	Load Data	Sample ID	EPA ID	Prep Code	Dilution Used	Calculated Value (µg/L)	Analytical Spike (µg/L)	Analytical Spike % R or MSA r	Flag	Comments	Time
		CCV 7				25.1				100.4% ✓	1446
		CCB 7				-0.2				✓	
	✓	5373 Q	MFGZ55	SCN	1X	U	9.0	90.0			
	✓	R	MFGZ59			U	6.0	60.0	W		
	✓	S	MFGZ60			U	6.3	63.0	W		
	✓	T	MFGZ63			U	9.1	91.0			
✓ 12-14	✓	5374 A	MFGZ66			U	9.2	92.0			
		CCV 8				25.1				100.5% ✓	1542
		CCB 8				-0.1				✓	
		SO									
12/16/96		CCV 9				26.1				104.3% ✓	1557
		CCB 9				0.3				✓	
✓	✓	5374 ADup	MFGZ66D	SCN	1X	U	9.8	98.0		✓	
✓	✓	Aspk	MFGZ66S			9.4	18.8	94.3		94% R ✓	

U = Undetected (See IDL/Reporting Limit Above)

000013

5055F

Rev.1 12/02/96

Element: Se

ANALYTICAL RESOURCES INCORPORATED

VARIAN 1 - EPA CLP GRAPHITE FURNACE SUMMARY LOGBOOK

ALL CORRECTIONS MADE BY ANALYST UNLESS OTHERWISE NOTED. Aa 12-16-96

IDL/Reporting Limit: 1.0 µg/L | Date: 12-14-96 | Analyst: Aa

Edit Label/ Dil.	Load Data	Sample ID	EPA ID	Prep Code	Dilution Used	Calculated Value (µg/L)	Analytical Spike (µg/L)	Analytical Spike % R or MSA r	Flag	Comments	Time
	✓	5374 MB	PBS	SCN	1X	U	10.7	107.0 ~~103.~~			
	✓	Ref 1	LCSS		10X	19.1	27.4	83.5		12-16 38.2 mg/kg ✓ ~~38.2 mg~~	
		CCV 10				25.6				102.5% ✓	1642
		CCB 10				0.3				✓	1646

second Run

Aa

U=Undetected (See IDL/Reporting Limit Above)

000014

000063

5055F

Rev.1
12/02/96

000264

ANALYTICAL
RESOURCES
INCORPORATED

VARIAN GRAPHITE FURNACE INSTRUMENT LOG

Varian 1 Varian 2

Element: Se	Date: 12-14-96	Analyst: AA
Wavelength: 196.0 nm	Slit: 1.0 nm	Program No.: 25
Lamp: Photron 36.7	HCL Current: 8 mA	Boost Current: 25 mA
Cuvette Type: platform	Cuvette Condit: new	Platform Condition: used

Calibration: Curve, Single Additions, MSA, CLP-EPA

Intermediate Standard
Concentration and Source: 2.0 ug/L Std.# 755-9

Autosampler Calibration
Stock Std. Concentration: See Summary logbook Std.#

Calibration Verification ICV 50.7 ug/L EPA ICV-2 539-5
Standard Concentration and Source: CCV 25.0 ug/L IVCV GFA Std.# 755-14

Matrix Modifier: 5 uL Pd/Mg/Ct mod to 15 uL sample

Program Number and Comments:

Integration: Peak Area

ABS for 10 µg/L: 0.024

ABS for 1.0 µg/L:

Notes:

001270

5004F

Rev. 1
02/17/94

✓ 43
12-16-96

Varian SpectrAA 300/400 Zeeman
QC Protocol Report

ANALYTICAL RESOURCES INC.
VARIAN 1 300

OPERATOR	ALA
DATE	12/14/96
BATCH	Se961214

QC PROTOCOL PARAMETERS

QC STANDARD POSITION	45
IF THERE IS AN ERROR	STOP
QC SPIKE POSITION	44
RECOVERY LIMITS (%)	85 TO 115
RECOVERY MINIMUM LIMIT (%)	40
CORRELATION COEFFICIENT (r)	0.995
OVERRANGE VOLUME REDUCTION	1
REPLICATE RSD LIMIT (%)	100.0

PROGRAM 25 Se CLP

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	PEAK AREA
LAMP POSITION	1
LAMP CURRENT (mA)	8
SLIT WIDTH (nm)	1.0
SLIT HEIGHT	NORMAL
WAVELENGTH (nm)	196.0
SAMPLE INTRODUCTION	SAMPLER PREMIXED
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	1.0
REPLICATES	2
BACKGROUND CORRECTION	ON
MAXIMUM ABSORBANCE	1.20

FURNACE PARAMETERS

STEP NO.	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
1	300	35.0	3.0	ALTERNATE	NO
2	600	10.0	3.0	ALTERNATE	NO
3	1300	5.0	3.0	ALTERNATE	NO
4	1300	5.0	3.0	ALTERNATE	NO
5	1300	1.0	0.0	NORMAL	NO
6	2500	0.6	0.0	NORMAL	YES
7	2500	2.0	0.0	NORMAL	YES
8	2500	1.0	3.0	NORMAL	NO
9	2600	2.0	3.0	NORMAL	NO
10	40	12.8	3.0	NORMAL	NO

SAMPLER PARAMETERS
VOLUMES (µL)

	SOLUTION	BLANK	MODIFIER
BLANK	--	15	5
STANDARD 1	15	0	5
STANDARD 2	15	0	5
STANDARD 3	15	0	5
STANDARD 4	15	0	5
SAMPLE	15	0	5

RECALIBRATION RATE 0
RESLOPE RATE 0

MULTIPLE INJECT NO HOT INJECT YES PRE INJECT NO
TEMPERATURE 150
INJECT RATE 5

QC PROTOCOL PARAMETERS

QC STANDARD RATE	0
QC STANDARD VOLUME (µL)	15
QC STANDARD CONCENTRATION	25.0 ug/L
QC STANDARD LIMITS (%)	90 TO 110
QC SPIKE RATE	0
QC SPIKE VOLUME (µL)	6
QC SPIKE CONCENTRATION	25.0 ug/L
MATRIX SPIKE CONCENTRATION	0.1 ug/L
REQUIRED DETECTION LIMIT	4.0 ug/L

MIXED MODIFIER SOLUTION: 500 mg/L Pd from Pd(NO3)2, 1000 mg/L Mg from Mg(NO3)2 and 1% citric acid

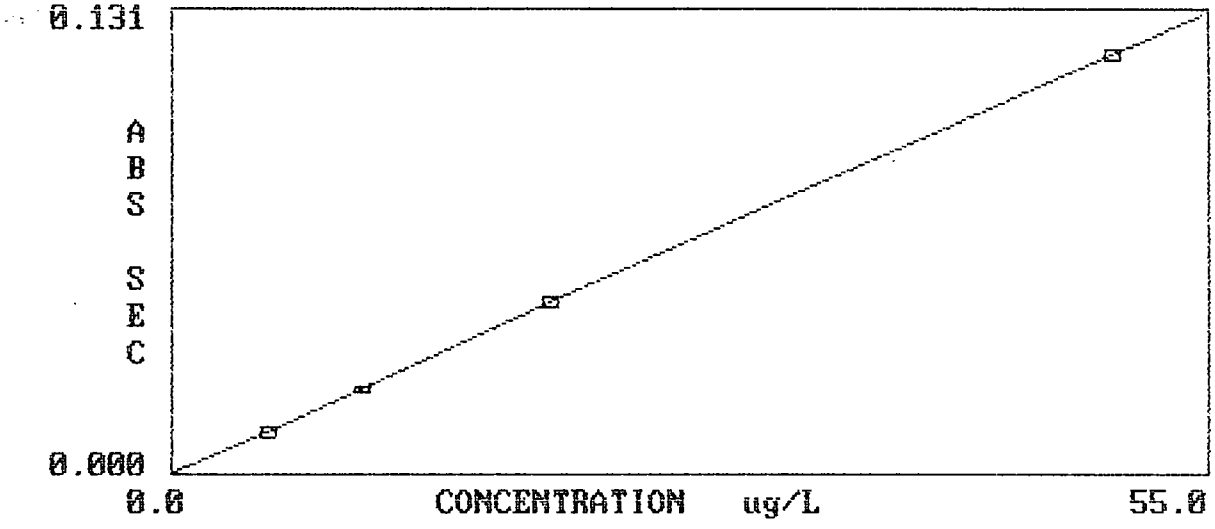
CUVETTE TYPE: Platform

LAMP TYPE: Photron Super Lamp

SAMPLE	CONC ug/L	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.007	0.007	0.006
QC 50				14Sep96	09:57
STANDARD 1	5.0	4.8	0.012	0.012	0.011
QC 55				14Sep96	10:02
STANDARD 2	10.0	1.4	0.024	0.024	0.024
QC 510				14Sep96	10:06

000266

SAMPLE	CONC ug/L	%RSD	MEAN ABS	READINGS	
STANDARD 3 QC S20	20.0	1.9	0.049	0.049	0.048
				14Sep96	10:11
STANDARD 4 QC S50	50.0	0.5	0.119	0.120	0.119
				14Sep96	10:15



Crossouts by AG 12/14/96

ICV QC	25.4	2.7	0.061	0.063	0.060
				14Sep96	10:20
ICB QC	0.3	0.0	0.001	0.001	0.001
				14Sep96	10:25
				~~RPD =~~	~~195.3~~
CRA 5.0 ug/L QC	5.0	3.4	0.012	0.012	0.011
				14Sep96	10:29
				~~%R =~~	~~4713.2~~
CRAA QC	14.9	2.8	0.036	0.035	0.037
				14Sep96	10:33
CCV1 QC	25.9	2.6	0.063	0.064	0.062
				14Sep96	10:38
CCB1 QC	-0.6	0.0	-0.001	-0.001	-0.001
				14Sep96	10:42

crossouts by AM 12/14/96

SAMPLE	CONC ug/L	%RSD	MEAN ABS	READINGS	
BLANK QC SO	0.0		0.003	0.003 14Sep96	0.003 10:48
QCSTANDARD QC CCV2	25.3	2.5	0.061	0.060 14Sep96 %R =	0.062 10:52 101.4
QCBLANK QC CCB2	-0.1	99.9	-0.000	-0.001 14Sep96 ABS =	0.001 10:57 0.003
5373 MB 1 QC PBS	-0.4	66.1	-0.001	-0.001 14Sep96	-0.001 11:01
QCSPIKE QC PBSA	10.0	3.5	0.024	0.024 14Sep96 %R =	0.023 11:06 ~~104.1~~ 100.0
5373 REF1 20 QC LCSS	9.5	3.1	0.022	0.022 14Sep96 ~~RPD =~~	0.023 11:10 ~~217.9~~
QCSPIKE QC LCSSA	18.4	3.6	0.045	0.043 14Sep96 %R =	0.046 11:15 89.2
5373 A 1 QC MFGZ44	-0.1	0.0	-0.000	-0.000 14Sep96 ~~%R =~~	-0.000 11:20 ~~-9609.9~~
QCSPIKE QC MFGZ44A	8.8	2.8	0.021	0.021 14Sep96 %R =	0.020 11:24 ~~89.5~~ 88.0
5373 ADUP 1 QC MFGZ44D	-0.3	67.3	-0.001	-0.000 14Sep96	-0.001 11:29
QCSPIKE QC MFGZ44DA	9.5	4.9	0.022	0.022 14Sep96 %R =	0.023 11:33 ~~97.1~~ 95.0
5373 ASPK 1 QC MFGZ44S	8.5	0.0	0.020	0.020 14Sep96	0.020 11:38
QCSPIKE QC MFGZ44SA	17.3	4.9	0.042	0.040 14Sep96 %R =	0.043 11:42 88.5
QCSTANDARD QC CCV3	25.4	0.7	0.062	0.062 14Sep96 %R =	0.061 11:47 101.8
QCBLANK QC CCB3	-0.7	66.2	-0.002	-0.001 14Sep96 ABS =	-0.002 11:51 0.002
5373 B 1 QC MFGZ45	-0.8	13.3	-0.002	-0.002 14Sep96	-0.002 11:56

Crossouts by AA 12/14/96

SAMPLE	CONC ug/L	%RSD	MEAN ABS	READINGS	
QCSPIKE QC MFGZ45A	9.0	1.6	0.021	0.021 14Sep96 %R =	0.022 12:00 ~~97.8~~ 90.0
5373 C 1 QC MFGZ46	-0.1	99.9	-0.000	0.001 14Sep96	-0.002 12:05
QCSPIKE QC MFGZ46A	8.9	1.3	0.021	0.021 14Sep96 %R =	0.021 12:09 ~~89.3~~ 89.0
5373 D 1 QC MFGZ47	-0.4	33.9	-0.001	-0.001 14Sep96	-0.001 12:14
QCSPIKE QC MFGZ47A	7.8	0.5 N	0.018	0.018 14Sep96 %R =	0.018 12:19 ~~81.3~~ 78.0
				%R FAILED. REPEAT BY STANDARD ADDITIONS	
5373 E 1 QC MFGZ49	-0.8	56.4	-0.002	-0.001 14Sep96	-0.002 12:23
QCSPIKE QC MFGZ49A	8.2	1.1	0.019	0.019 14Sep96 %R =	0.020 12:28 ~~89.9~~ 82.0
5373 F 1 QC MFGZ50	-0.6	47.6	-0.001	-0.001 14Sep96	-0.002 12:32
QCSPIKE QC MFGZ50A	9.1	2.3	0.022	0.021 14Sep96 %R =	0.022 12:37 ~~97.2~~ 91.0
QCSTANDARD QC CCV4	24.3	0.9	0.059	0.059 14Sep96 %R =	0.058 12:41 97.0
QCBLANK QC CCB4	-1.0	41.0	-0.002	-0.003 14Sep96 ABS =	-0.002 12:46 0.001
BLANK QC So	0.0		-0.003	-0.002 14Sep96	-0.004 12:51
QCSTANDARD QC CCV5	25.0	0.9	0.061	0.061 14Sep96 %R =	0.060 12:55 100.1
QCBLANK QC CCB5	0.1	99.9	0.000	0.001 14Sep96 ABS =	-0.000 13:00 0.003
5373 G 1 QC MFGZ56	-0.3	99.9	-0.001	-0.001 14Sep96	-0.000 13:04
QCSPIKE QC MFGZ56A	8.8	0.9	0.021	0.021 14Sep96 %R =	0.021 13:09 ~~91.1~~ 86.0

SAMPLE	CONC ug/L	%RSD	MEAN ABS	READINGS	
5373 H 1 QC MFGZ57	0.2	99.9	0.000	0.001 14Sep96	0.000 13:13
QCSPIKE QC MFGZ57A	8.1	5.6 N	0.019	0.018 14Sep96 %R =	0.020 13:18 ~~79.0~~ 79 81.0
				%R FAILED, REPEAT BY STANDARD ADDITIONS	
5373 I 1 QC MFGZ58	0.3	99.9	0.001	0.001 14Sep96	-0.000 13:23
QCSPIKE QC MFGZ58A	6.2	8.7 N	0.014	0.015 14Sep96 %R =	0.014 13:27 ~~59.3~~ 62.0
				%R FAILED, REPEAT BY STANDARD ADDITIONS	
5373 J 1 QC MFGZ64	0.0	0.0	0.000	0.000 14Sep96	0.000 13:32
QCSPIKE QC MFGZ64A	7.5	5.9 N	0.018	0.017 14Sep96 %R =	0.018 13:37 ~~74.8~~ 75.0
				%R FAILED, REPEAT BY STANDARD ADDITIONS	
5373 K 1 QC MFGZ65	0.1	99.9	0.000	0.001 14Sep96	-0.001 13:41
QCSPIKE QC MFGZ65A	7.9	2.1 N	0.019	0.019 14Sep96 %R =	0.018 13:46 ~~78.0~~ 79.0
				%R FAILED, REPEAT BY STANDARD ADDITIONS	
QCSTANDARD QC CONC	25.3	0.2	0.061	0.061 14Sep96 %R =	0.061 13:51 101.3
QCBLANK QC CCB6	-0.2	95.7	-0.000	-0.000 14Sep96 ABS =	-0.001 13:55 0.002
5373 L 1 QC MFGZ48	-0.1	99.9	-0.000	-0.001 14Sep96	0.000 14:00
QCSPIKE QC MFGZ48A	9.2	9.4	0.022	0.023 14Sep96 %R =	0.020 14:04 ~~93.2~~ 92.0
5373 M 1 QC MFGZ51	-0.4	21.4	-0.001	-0.001 14Sep96	-0.001 14:09
QCSPIKE QC MFGZ51A	9.3	2.1	0.022	0.022 14Sep96 %R =	0.022 14:14 ~~97.4~~ 93.0
5373 N 1 QC MFGZ52	-0.3	16.9	-0.001	-0.001 14Sep96	-0.001 14:18

Crossouts by AMA 12/14/96

SAMPLE	CONC ug/L	%RSD	MEAN ABS	READINGS	
QCSPIKE QC MFGZ52A	9.3	4.7	0.022	0.023 14Sep96 %R =	0.021 14:23 ~~95.7~~ 93.0
5373 O 1 QC MFGZ53	-0.3	99.9	-0.001	-0.001 14Sep96	0.000 14:28
QCSPIKE QC MFGZ53A	8.4	12.6	0.020	0.018 14Sep96 %R =	0.022 14:33 ~~86.6~~ 84.0
5373 P 1 QC MFGZ54	0.1	99.9	0.000	0.001 14Sep96	-0.001 14:37
QCSPIKE QC MFGZ54A	7.9	7.4 N	0.019	0.018 14Sep96 %R =	0.020 14:42 ~~78.0~~ 79.0
				%R FAILED, REPEAT BY STANDARD ADDITIONS	
QCSTANDARD QC CCV7	25.1	2.4	0.061	0.060 14Sep96 %R =	0.062 14:46 100.4
QCBLANK QC CCB7	-0.2	79.0	-0.000	-0.001 14Sep96 ABS =	-0.000 14:51 0.002
5373 Q 1 QC MFGZ55	-0.9	29.0	-0.002	-0.002 14Sep96	-0.002 14:55
QCSPIKE QC MFGZ55A	9.0	2.9	0.021	0.022 14Sep96 %R =	0.021 15:00 ~~98.8~~ 90.0
5373 R 1 QC MFGZ59	-0.2	99.9	-0.001	-0.000 14Sep96	-0.001 15:05
QCSPIKE QC MFGZ59A	6.0	5.0 N	0.014	0.015 14Sep96 %R =	0.014 15:09 ~~62.1~~ 60.0
				%R FAILED, REPEAT BY STANDARD ADDITIONS	
5373 S 1 QC MFGZ60	-0.1	75.4	-0.000	-0.000 14Sep96	-0.000 15:14
QCSPIKE QC MFGZ60A	6.3	1.9 N	0.015	0.015 14Sep96 %R =	0.014 15:19 ~~63.6~~ 63.0
				%R FAILED, REPEAT BY STANDARD ADDITIONS	
5373 T 1 QC MFGZ63	-0.6	33.7	-0.002	-0.001 14Sep96	-0.002 15:23
QCSPIKE QC MFGZ63A	9.1	2.8	0.022	0.022 14Sep96 %R =	0.021 15:28 ~~98.9~~ 91.0

Crosscalcs by RA 12/14/96

Crossouts by AA

SAMPLE	CONC ug/L	%RSD	MEAN ABS	READINGS	
5374 A 1 QC mFGZ66	-0.6	53.8	-0.001	-0.002 14Sep96	-0.001 15:33
QCSPIKE QC mFGZ66A	9.2	2.0	0.022	0.022 14Sep96 %R =	0.022 15:37 ~~98.8~~ 92.0
QCSTANDARD QC CCV8	25.1	3.8	0.061	0.059 14Sep96 %R =	0.062 15:42 100.5
QCBLANK QC CCB8	-0.1	89.3	-0.000	-0.000 14Sep96 ABS =	-0.000 15:46 0.002
BLANK QC SO	0.0		0.001	0.003 14Sep96	-0.001 15:52
QCSTANDARD QC CCV9	26.1	0.3	0.063	0.063 14Sep96 %R =	0.063 15:57 104.3
QCBLANK QC CCB9	0.3	99.9	0.001	0.001 14Sep96 ABS =	0.000 16:01 0.004
5374 BH 12/16/96 ~~5373~~ ADUP 1 QC mFGZ66D	0.2	99.2	0.001	0.000 14Sep96	0.001 16:05
QCSPIKE QC mFGZ66DA	9.8	5.5	0.023	0.022 14Sep96 %R =	0.024 16:10 ~~96.1~~ 98.0
5374 BH 12/16/96 ~~5372~~ ASPK 1 QC mFGZ66S	9.4	2.7	0.022	0.023 14Sep96	0.022 16:14
QCSPIKE QC mFGZ66SA	18.8	0.2	0.046	0.046 14Sep96 %R =	0.046 16:19 94.3
5374 MB 1 QC PBS	0.4	71.1	0.001	0.000 14Sep96	0.001 16:24
QCSPIKE QC PBSA	10.7	5.1	0.025	0.025 14Sep96 %R =	0.026 16:28 ~~107.0~~ 107.0
5374 REF1 10 QC LCSS	19.1	0.8	0.046	0.046 14Sep96	0.047 16:33
QCSPIKE QC LCSSA	27.4	0.0 N	0.066	0.066 14Sep96 %R =	0.066 16:37 83.5
				%R FAILED, REPEAT BY STANDARD ADDITIONS	
QCSTANDARD QC ~~CCB~~ 10 CCV 12/21/96 BH	25.6	0.4	0.062	0.062 14Sep96 %R =	0.062 16:42 102.5

000272

SAMPLE	CONC ug/L	%RSD	MEAN ABS	READINGS	
QCBLANK	0.3	77.4	0.001	0.000	0.001
QC ~~CCV~~ ID				14Sep96	16:46
CCB				ABS =	0.004

BH 12/21/96

CALCULATED DATA FROM FILE: [illegible]15

ANALYTICAL RESOURCES INCORPORATED

JOB	SAMP	ELEMENT	PREPCODE		RAWVALUE	CALCULATED	UNITS	DILUTION	MASS	INITVOL	FINLVOL	%SOLIDS
5373	MB	TL	SCN	U	0.0010000	0.2000000	mg/kg-dry	1.00	1.0000	0.00	200.00	100.00
5373	REF1	TL	SCN		0.0173000	34.6000000	mg/kg-dry	10.00	1.0000	0.00	200.00	100.00
5373	A	TL	SCN		0.0013000	0.3124609	mg/kg-dry	1.00	1.0160	0.00	200.00	81.90
5373	ADUP	TL	SCN		0.0012000	0.2884255	mg/kg-dry	1.00	1.0160	0.00	200.00	81.90
5373	ASPK	TL	SCN		0.0229000	11.0082394	mg/kg-dry	2.00	1.0160	0.00	200.00	81.90
5373	B	TL	SCN		0.0010000	0.2331528	mg/kg-dry	1.00	1.0370	0.00	200.00	82.72
5373	C	TL	SCN	U	0.0010000	0.2440245	mg/kg-dry	1.00	1.0250	0.00	200.00	79.96
5373	D	TL	SCN		0.0012000	0.2918675	mg/kg-dry	1.00	1.0050	0.00	200.00	81.82
5373	E	TL	SCN	U	0.0010000	0.2445788	mg/kg-dry	1.00	1.0020	0.00	200.00	81.61
5373	F	TL	SCN		0.0010000	0.2367711	mg/kg-dry	1.00	1.0240	0.00	200.00	82.49
5373	G	TL	SCN	U	0.0010000	0.2518690	mg/kg-dry	1.00	1.0040	0.00	200.00	79.09
5373	H	TL	SCN		0.0012000	0.2715435	mg/kg-dry	1.00	1.0270	0.00	200.00	86.06
5373	J	TL	SCN		0.0017000	0.3926069	mg/kg-dry	1.00	1.0420	0.00	200.00	83.11
5373	K	TL	SCN		0.0015000	0.3531160	mg/kg-dry	1.00	1.0160	0.00	200.00	83.62
5373	L	TL	SCN	U	0.0010000	0.2363244	mg/kg-dry	1.00	1.0580	0.00	200.00	79.99
5373	M	TL	SCN	U	0.0010000	0.2432476	mg/kg-dry	1.00	1.0590	0.00	200.00	77.64
5373	N	TL	SCN	U	0.0010000	0.2398254	mg/kg-dry	1.00	1.0170	0.00	200.00	82.00
5373	O	TL	SCN		0.0011000	0.2624766	mg/kg-dry	1.00	1.0050	0.00	200.00	83.40
5373	P	TL	SCN	U	0.0010000	0.2306120	mg/kg-dry	1.00	1.0160	0.00	200.00	85.36
5373	Q	TL	SCN		0.0016000	0.3868741	mg/kg-dry	1.00	1.0360	0.00	200.00	79.84
5373	R	TL	SCN		0.0013000	0.2894881	mg/kg-dry	1.00	1.0760	0.00	200.00	83.47
5373	S	TL	SCN		0.0015000	0.3606370	mg/kg-dry	1.00	1.0060	0.00	200.00	82.69
5373	T	TL	SCN	U	0.0010000	0.2127560	mg/kg-dry	1.00	1.0640	0.00	200.00	88.35
5373	I	TL	SCN	U	0.0010000	1.2922416	mg/kg-dry	5.00	1.0690	0.00	200.00	72.39

Element: Tl

ANALYTICAL RESOURCES INCORPORATED

VARIAN 2 - EPA CLP GRAPHITE FURNACE SUMMARY LOGBOOK

ALL CORRECTIONS MADE BY ANALYST UNLESS OTHERWISE NOTED.

IDL/Reporting Limit: 1.0 µg/L **Date:** 12-15-96 **Analyst:** NSJ

Edit Label/ Dil.	Load Data	Sample ID	EPA ID	Prep Code	Dilution Used	Calculated Value (µg/L)	Analytical Spike (µg/L)	Analytical Spike % R or MSA r	Flag	Comments	Time
		SO									10:14
		S10									
		S20									
		S50									10:28
		ICV			5x	20.8				105.2% ✓ (SW 1216)	10:33
		ICB				0.2				✓	
		CRA 10µg/L				10.2	29.3	95.5		✓	
		CCV 1				24.8				99.2% ✓	10:50
		CCB 1				-0.1				✓	
		SO									
		CCV 2				23.5				94.2% ✓	11:05
		CCB 2				0.3				✓	
	✓	5373 MB	PBS	SCN	1x	U	20.4	102			
	✓	↓ REF1	LCSS	↓	10x	17.3	34.6	86.2		34.6 mg/kg ✓	

U = Undetected (See IDL/Reporting Limit Above)

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Rev. 1
12/02/96

Element: Tl

ANALYTICAL RESOURCES INCORPORATED

VARIAN 2 - EPA CLP GRAPHITE FURNACE SUMMARY LOGBOOK

ALL CORRECTIONS MADE BY ANALYST UNLESS OTHERWISE NOTED.

IDL/Reporting Limit: 1.0 µg/L **Date:** 12-15-96 **Analyst:** NSJ

Edit Label/ Dil.	Load Data	Sample ID	EPA ID	Prep Code	Dilution Used	Calculated Value (µg/L)	Analytical Spike (µg/L)	Analytical Spike % R or MSA r	Flag	Comments	Time
	✓	5373 A	MFGZ44	SCN	1x	1.3	19.9	93.1			
	✓	↓ ABUP	↓ -D	↓	↓	1.2	19.9	93.5		✓	
		↓ ASPK	↓ -S	↓	5x	9.4	27.7	91.4		2x - overdiluted	
		CCV 3				24.5				98.0% ✓	11:58
		CCB 3				0.5				✓	
		SO									
		CCV 4				23.5				93.9% ✓	12:13
		CCB 4				-0.4				✓	
		SO									
		S20	RESLOPE =		95.7% OF S20						
		CCV 5				24.9				99.4% ✓	12:32
		CCB 5				-0.1				✓	
	✓	5373 ASPK	MFGZ44S	SCN	2x	22.9	42.3	97.0		89.0% ✓	
	✓	↓ B	MFGZ45	↓	1x	1.0	20.6	97.7			

U = Undetected (See IDL/Reporting Limit Above)

5053F

Rev. 1
12/02/96

Element: Tl

ANALYTICAL RESOURCES INCORPORATED

VARIAN 2 - EPA CLP GRAPHITE FURNACE SUMMARY LOGBOOK

ALL CORRECTIONS MADE BY ANALYST UNLESS OTHERWISE NOTED.

IDL/Reporting Limit: 1.0 µg/L **Date:** 12-15-96 **Analyst:** NSJ

Edit Label/ Dil.	Load Data	Sample ID	EPA ID	Prep Code	Dilution Used	Calculated Value (µg/L)	Analytical Spike (µg/L)	Analytical Spike % R or MSA r	Flag	Comments	Time
	✓	5373 C	MFGZ 46	SCN	1x	U	20.7	103.5			
	✓	D	47			1.2	17.3	80.5	W		
	✓	E	49			U	20.7	103.5			
		CCV 6				25.5				102.1% ✓	13:26
		CCB 6				-0.1				✓	
	✓	5373 F	MFGZ 50	SCN	1x	1.0	20.9	99.0			
	✓	G	56			U	20.5	102.5			
	✓	H	57			1.2	19.0	88.7			
		I	58			1.7	1.9	1.0		5x	
	✓	J	64			1.7	18.3	82.9	W		
		CCV 7				26.0				104.1% ✓	14:20
		CCB 7				-0.1				✓	
	✓	5373 K	MFGZ 65	SCN	1x	1.5	19.8	91.6			
	✓	L	48			U	21.1	105.5			

U = Undetected (See IDL/Reporting Limit Above)

Element: Tl

ANALYTICAL RESOURCES INCORPORATED

VARIAN 2 - EPA CLP GRAPHITE FURNACE SUMMARY LOGBOOK

ALL CORRECTIONS MADE BY ANALYST UNLESS OTHERWISE NOTED. NSJ 12-15-96

IDL/Reporting Limit: 1.0 µg/L | Date: 12-15-96 | Analyst: NSJ

Edit Label/ Dil.	Load Data	Sample ID	EPA ID	Prep Code	Dilution Used	Calculated Value (µg/L)	Analytical Spike (µg/L)	Analytical Spike % R or MSA r	Flag	Comments	Time
	✓	5373 M	MFGZ51	SCN	1x	U	21.0	105.0			
	✓	N	52			U	21.3	106.5			
	✓	O	53			1.1	20.7	98.1			
		CCV 8				26.2				104.8% ✓	15:15
		CCB 8				-0.3				✓	
	✓	5373 P	MFGZ 54	SCN	1x	U	20.6	103.0			
	✓	Q	55			1.6	19.9	91.1			
	✓	R	59			1.3	18.3	84.6			
	✓	S	60			1.5	20.6	95.1			
	✓	T	63			U	20.7	103.5			
		CCV 9				27.0				108.1% ✓	16:10
		CCB 9				-0.1				✓	
X	✓	5373 I	MFGZ 58	SCN	5x	U	18.3	91.5			
	X	CCV 10				27.1				108.4% ✓	16:27

U = undetected (See IDL/Reporting Limit Above)

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Rev. 1
12/02/96

Element: Tl

ANALYTICAL RESOURCES INCORPORATED

VARIAN 2 - EPA CLP GRAPHITE FURNACE SUMMARY LOGBOOK

ALL CORRECTIONS MADE BY ANALYST UNLESS OTHERWISE NOTED. NSJ 12-15-96

IDL/Reporting Limit: 1.0 µg/L | Date: 12-15-96 | Analyst: NSJ

Edit Label/ Dil.	Load Data	Sample ID	EPA ID	Prep Code	Dilution Used	Calculated Value (µg/L)	Analytical Spike (µg/L)	Analytical Spike % R or MSA r	Flag	Comments	Time
X		~~CCB~~ CCB10				-0.1				✓	16:32
		NSJ 12/15/96									

U = Undetected (See IDL/Reporting Limit Above)

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Rev. 1
12/02/96

000270

ANALYTICAL
RESOURCES
INCORPORATED

VARIAN GRAPHITE FURNACE INSTRUMENT LOG

Varian 1 Varian 2

Element: Tl	Date: 12-15-96	Analyst: NSJ
Wavelength: 276.8 nm	Slit: 0.5 nm	Program No.: 13
Lamp: Photron 3955	HCL Current: 10 mA	Boost Current: 15 mA
Cuvette Type: Platform	Cuvette Condit: New	Platform Condition: Used

Calibration: ✓ Curve, Single Additions, MSA, ✓ CLP - EPA

Intermediate Standard
Concentration and Source: 2 mg/L IV Std.# 756-1

Autosampler Calibration
Stock Std. Concentration: 50 µg/L Std.# 756-5

Calibration Verification
Standard Concentration and Source: 98.9 µg/L EPA ICV-4 Std.# 539-4
25.0 " IVCV Std.# 756-8

Matrix Modifier: 5µL Pd/Mg/Citric Acid to 15 µL sample

Program Number and Comments:

Integration: Peak Area

ABS for 10 µg/L: 0.024

ABS for 1.0 µg/L:

Notes:

5004F

Rev. 1
02/17/94

001105

✓ 12-16-96

Varian SpectrAA 300/400 Zeeman
QC Protocol Report

ANALYTICAL RESOURCES INC.
VARIAN 2 300

OPERATOR NSJ
DATE 12/15/96
BATCH T1961215

All crossouts by NSJ. 12/15/96

QC PROTOCOL PARAMETERS

QC STANDARD POSITION	45
IF THERE IS AN ERROR	STOP
QC SPIKE POSITION	44
RECOVERY LIMITS (%)	85 TO 115
RECOVERY MINIMUM LIMIT (%)	40
CORRELATION COEFFICIENT (r)	0.995
OVERRANGE VOLUME REDUCTION	1
REPLICATE RSD LIMIT (%)	100.0

PROGRAM 13 T1 CLP

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	PEAK AREA
LAMP POSITION	1
LAMP CURRENT (mA)	10
SLIT WIDTH (nm)	0.5
SLIT HEIGHT	NORMAL
WAVELENGTH (nm)	276.8
SAMPLE INTRODUCTION	SAMPLER AUTOMIXING
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	1.0
REPLICATES	2
BACKGROUND CORRECTION	ON
MAXIMUM ABSORBANCE	0.55

FURNACE PARAMETERS

STEP NO.	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
1	300	35.0	3.0	ALTERNATE	NO
2	600	10.0	3.0	ALTERNATE	NO
3	1100	5.0	3.0	ALTERNATE	NO
4	1100	5.0	3.0	ALTERNATE	NO
5	1100	1.0	0.0	NORMAL	NO
6	2300	0.6	0.0	NORMAL	YES
7	2300	2.0	0.0	NORMAL	YES
8	2300	1.0	3.0	NORMAL	NO
9	2600	2.0	3.0	NORMAL	NO
10	40	12.8	3.0	NORMAL	NO

SAMPLER PARAMETERS
VOLUMES (µL)

	SOLUTION	BLANK	MODIFIER
BLANK	--	15	5
STANDARD 1	3	12	5
STANDARD 2	6	9	5
STANDARD 3	15	0	5
SAMPLE	15	0	5

RECALIBRATION RATE 0
RESLOPE RATE 0

MULTIPLE INJECT NO HOT INJECT YES PRE INJECT NO
TEMPERATURE 150
INJECT RATE 5

QC PROTOCOL PARAMETERS

QC STANDARD RATE	0
QC STANDARD VOLUME (µL)	15
QC STANDARD CONCENTRATION	25.0 ug/L
QC STANDARD LIMITS (%)	90 TO 110
QC SPIKE RATE	0
QC SPIKE VOLUME (µL)	6
QC SPIKE CONCENTRATION	50.0 ug/L
MATRIX SPIKE CONCENTRATION	1.0 ug/L
REQUIRED DETECTION LIMIT	4.0 ug/L

MIXED MODIFIER SOLUTION: 500 mg/L Pd from Pd(NO3)2, 1000 mg/L Mg from Mg(NO3)2 and 1% citric acid

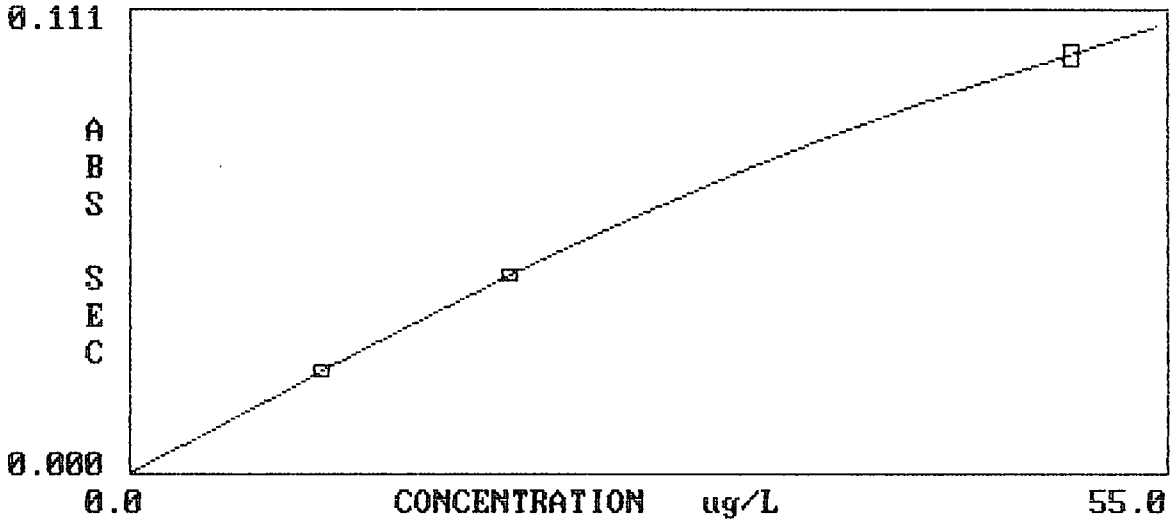
CUVETTE TYPE: Platform

LAMP TYPE: Photron Super Lamp

SAMPLE	CONC ug/L	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.002	0.002	0.002
QC S0				15Sep96	10:14
STANDARD 1	10.0	1.7	0.024	0.025	0.024
QC S10				15Sep96	10:18
STANDARD 2	20.0	1.5	0.047	0.048	0.047
QC S20				15Sep96	10:23

000282

SAMPLE	CONC ug/L	%RSD	MEAN ABS	READINGS	
STANDARD 3	50.0	1.9	0.101	0.102	0.100
QC SSO				15Sep96	10:28



ICV	20.8	1.7	0.049	0.049	0.050
QC				15Sep96	10:33
ICB	0.2	99.9	0.000	-0.000	0.001
QC				15Sep96	10:37
				~~RFD =~~	~~176.9~~
CRA 10 ug/L	10.2	5.4	0.025	0.026	0.024
QC				15Sep96	10:42
				~~%R =~~	~~1006.4~~
CRAA	29.3	0.3	0.067	0.067	0.067
QC				15Sep96	10:46
CCV 1	24.8	1.1	0.058	0.058	0.057
QC				15Sep96	10:50
CCB 1	-0.1	99.9	-0.000	-0.000	-0.000
QC				15Sep96	10:55
BLANK	0.0		-0.004	-0.004	-0.005
QC SO				15Sep96	11:00

000283

SAMPLE	CONC ug/L	%RSD	MEAN ABS	READINGS	
QCSTANDARD QC CCV 2	23.5	1.3	0.055	0.055 15Sep96 %R =	0.056 11:05 94.2
QCBLANK QC CCB 2	0.3	90.3	0.001	0.001 15Sep96 ABS =	0.000 11:09 -0.000
5373 MB 1 QC PBS	0.2	69.1	0.000	0.001 15Sep96	0.000 11:13
QCSPIKE QC PBSA	20.4	1.0	0.048	0.049 15Sep96 %R =	0.048 11:18 ~~101.2~~ 102
5373 REF1 10 QC LCSS	17.3	3.0	0.041	0.042 15Sep96	0.040 11:22
QCSPIKE QC LCSSA	34.6	8.7	0.077	0.081 15Sep96 %R =	0.072 11:27 86.2
5373 A 1 QC MFGZ44	1.3	0.0	0.003	0.003 15Sep96	0.003 11:31
QCSPIKE QC MFGZ44A	19.9	5.2	0.047	0.046 15Sep96 %R =	0.049 11:36 93.1
5373 ADUP 1 QC MFGZ44D EW 12-16	1.2	30.1	0.003	0.004 15Sep96	0.002 11:40
QCSPIKE QC MFGZ44DA	19.9	0.5	0.047	0.047 15Sep96 %R =	0.047 11:45 93.5
5373 ASPK 5 QC MFGZ44S	9.4	1.0	0.023	0.023 15Sep96	0.023 11:49
QCSPIKE QC MFGZ44SA	27.7	0.7	0.064	0.064 15Sep96 %R =	0.063 11:54 91.4
QCSTANDARD QC CCV 3	24.5	2.1	0.057	0.056 15Sep96 %R =	0.058 11:58 98.0
QCBLANK QC CCB 3	0.5	17.9	0.001	0.001 15Sep96 ABS =	0.001 12:03 0.000
BLANK QC 50	0.0		0.002	0.003 15Sep96	0.001 12:09
QCSTANDARD QC CCV 4	23.5	1.4	0.055	0.054 15Sep96 %R =	0.055 12:13 93.9

SAMPLE	CONC ug/L	%RSD	MEAN ABS	READINGS	
QCBLANK QC CCB4	-0.4	99.9	-0.001	-0.000 15Sep96 ABS =	-0.002 12:17 -0.001
BLANK QC 50	0.0		-0.002	-0.003 15Sep96	-0.002 12:23
RESLOPE 2 QC 520	20.0	2.4	0.045	0.044 15Sep96	0.046 12:27
QCSTANDARD QC CCV 5	24.9	0.5	0.055	0.055 15Sep96 %R =	0.055 12:32 99.4
QCBLANK QC CCB 5	-0.1	99.9	-0.000	-0.001 15Sep96 ABS =	0.001 12:36 -0.001
5373 ASPK 2 QC MFGZ44S	22.9	1.2	0.051	0.051 15Sep96	0.051 12:41
QCSPIKE QC MFGZ44SA	42.3	1.8	0.086	0.085 15Sep96 %R =	0.087 12:45 97.0
5373 B 1 QC MFGZ45	1.0	4.4	0.002	0.002 15Sep96	0.002 12:49
QCSPIKE QC MFGZ45A	20.6	0.0	0.046	0.046 15Sep96 %R =	0.046 12:54 97.7
5373 C 1 QC MFGZ46	0.9	33.7	0.002	0.003 15Sep96	0.002 12:58
QCSPIKE QC MFGZ46A	20.7	3.2	0.046	0.045 15Sep96 %R =	0.048 13:03 ~~99.1~~ 103.5
5373 D 1 QC MFGZ47	1.2	42.4	0.003	0.004 15Sep96	0.002 13:07
QCSPIKE QC MFGZ47A	17.3	2.3 N	0.039	0.040 15Sep96 %R =	0.039 13:12 80.5
				%R FAILED, REPEAT BY STANDARD ADDITIONS	
5373 E 1 QC MFGZ49	0.7	20.6	0.002	0.002 15Sep96	0.001 13:16
QCSPIKE QC MFGZ49A	20.7	1.6	0.046	0.047 15Sep96 %R =	0.046 13:21 ~~99.8~~ 103.5
QCSTANDARD QC CCV 6	25.5	2.5	0.056	0.055 15Sep96 %R =	0.057 13:26 102.1

SAMPLE	CONC ug/L	%RSD	MEAN ABS	READINGS	
QCBLANK QC CCB6	-0.1	99.9	-0.000	0.000 15Sep96 ABS =	-0.001 13:30 -0.001
5373 F 1 QC MFG250	1.0	9.1	0.002	0.002 15Sep96	0.003 13:34
QCSPIKE QC MFG250A	20.9	2.2	0.047	0.046 15Sep96 %R =	0.048 13:39 99.0
5373 G 1 QC MFG256	0.8	58.6	0.002	0.003 15Sep96	0.001 13:43
QCSPIKE QC MFG256A	20.5	4.6	0.046	0.047 15Sep96 %R =	0.045 13:48 ~~78.3~~ 102.5
5373 H 1 QC MFG257	1.2	7.7	0.003	0.003 15Sep96	0.003 13:52
QCSPIKE QC MFG257A	19.0	8.4	0.043	0.045 15Sep96 %R =	0.040 13:57 88.7
5373 I 1 QC MFG258	1.7	23.0	0.004	0.003 15Sep96	0.005 14:02
QCSPIKE QC MFG258A	1.9	0.0 E	0.004	0.004 15Sep96 %R =	0.004 14:06 1.0
				%R LESS THAN MINIMUM LIMIT	
5373 J 1 QC MFG264	1.7	12.6	0.004	0.004 15Sep96	0.004 14:11
QCSPIKE QC MFG264A	18.3	0.3 N	0.041	0.041 15Sep96 %R =	0.041 14:15 82.9
				%R FAILED, REPEAT BY STANDARD ADDITIONS	
QCSTANDARD QC CCV7	26.0	1.6	0.057	0.057 15Sep96 %R =	0.058 14:20 104.1
QCBLANK QC CCB7	-0.1	99.9	-0.000	-0.000 15Sep96 ABS =	-0.000 14:24 -0.001
5373 K 1 QC MFG265	1.5	0.0	0.003	0.004 15Sep96	0.003 14:29
QCSPIKE QC MFG265A	19.8	1.5	0.045	0.044 15Sep96 %R =	0.045 14:33 91.6
5373 L 1 QC MFG268	0.6	51.3	0.001	0.001 15Sep96	0.002 14:38

000280

SAMPLE	CONC ug/L	%RSD	MEAN ABS	READINGS	
QCSPIKE QC MFG248A	21.1	2.0	0.047	0.047 15Sep96 %R =	0.048 14:43 ~~102.7~~ 105.5
5373 M 1 QC MFG251	0.9	10.7	0.002	0.002 15Sep96	0.002 14:47
QCSPIKE QC MFG251A	21.0	5.5	0.047	0.049 15Sep96 %R =	0.045 14:52 ~~100.8~~ 105
5373 N 1 QC MFG252	0.5	72.8	0.001	0.002 15Sep96	0.001 14:57
QCSPIKE QC MFG252A	21.3	0.6	0.048	0.048 15Sep96 %R =	0.047 15:01 ~~103.7~~ 106.5
5373 O 1 QC MFG253	1.1	41.5	0.003	0.003 15Sep96	0.002 15:06
QCSPIKE QC MFG253A	20.7	2.1	0.047	0.047 15Sep96 %R =	0.046 15:11 98.1
QCSTANDARD QC CCV 8	26.2	2.9	0.058	0.056 15Sep96 %R =	0.059 15:15 104.8
QCBLANK QC CCB8	-0.3	74.8	-0.001	-0.001 15Sep96 ABS =	-0.000 15:19 -0.002
5373 P 1 QC MFG254	0.9	32.4	0.002	0.003 15Sep96	0.002 15:24
QCSPIKE QC MFG254A	20.6	3.1	0.046	0.047 15Sep96 %R =	0.045 15:29 ~~98.4~~ 103
5373 Q 1 QC MFG255	1.6	58.2	0.004	0.002 15Sep96	0.005 15:33
QCSPIKE QC MFG255A	19.9	2.9	0.045	0.044 15Sep96 %R =	0.046 15:38 91.1
5373 R 1 QC MFG259	1.3	26.7	0.003	0.004 15Sep96	0.002 15:42
QCSPIKE QC MFG259A	18.3	6.8 N	0.041	0.043 15Sep96 %R =	0.039 15:47 84.6
				%R FAILED, REPEAT BY STANDARD ADDITIONS	
5373 S 1 QC MFG260	1.5	1.7	0.004	0.004 15Sep96	0.003 15:51

SAMPLE	CONC ug/L	%RSD	MEAN ABS	READINGS	
QCSPIKE QC MFGZ60A	20.6	0.3	0.046	0.046 15Sep96 %R =	0.046 15:56 95.1
5373 T 1 QC MFGZ63	0.4	70.2	0.001	0.001 15Sep96	0.001 16:01
QCSPIKE QC MFGZ63A	20.7	0.6	0.047	0.046 15Sep96 %R =	0.047 16:05 ~~101.5~~ 103.5
QCSTANDARD QC CCV 9	27.0	0.2	0.059	0.059 15Sep96 %R =	0.059 16:10 108.1
QCBLANK QC CCB9	-0.1	70.4	-0.000	-0.000 15Sep96 ABS =	-0.000 16:14 -0.002
5373 I 5x QC MFGZ58	0.2	99.9	0.000	0.000 15Sep96	0.001 16:18
QCSPIKE QC MFGZ58A	18.3	3.1	0.041	0.042 15Sep96 %R =	0.040 16:23 ~~90.5~~ 91.5
CCV 10 QC	27.1	2.4	0.059	0.058 15Sep96	0.060 16:27
CCB 10 ~~QCSPIKE~~ QC	-0.1	80.4 ~~E~~	-0.000	-0.000 15Sep96 ~~%R = -135.8~~ ~~%R LESS THAN MINIMUM LIMIT~~	-0.000 16:32

5373

CALCULATED DATA FROM FILE: [illegible]S\HG961204 5

ANALYTICAL RESOURCES INCORPORATED

JOB	SAMP	ELEMENT	PREPCODE		RAWVALUE	CALCULATED	UNITS	DILUTION	MASS	INITVOL	FINLVOL	%SOLIDS
5373	MB	HG	SCM	U	0.0001000	0.0500000	mg/kg-dry	1.00	0.2000	0.00	100.00	100.00
5373	REF1	HG	SCM		0.0043654	10.9135000	mg/kg-dry	5.00	0.2000	0.00	100.00	100.00
5373	A	HG	SCM	U	0.0001000	0.0517373	mg/kg-dry	1.00	0.2360	0.00	100.00	81.90
5373	ADUP	HG	SCM	U	0.0001000	0.0519575	mg/kg-dry	1.00	0.2350	0.00	100.00	81.90
5373	ASPK	HG	SCM		0.0009349	0.4836924	mg/kg-dry	1.00	0.2360	0.00	100.00	81.90
5373	B	HG	SCM	U	0.0001000	0.0527903	mg/kg-dry	1.00	0.2290	0.00	100.00	82.72
5373	C	HG	SCM	U	0.0001000	0.0534455	mg/kg-dry	1.00	0.2340	0.00	100.00	79.96
5373	D	HG	SCM	U	0.0001000	0.0477420	mg/kg-dry	1.00	0.2560	0.00	100.00	81.82
5373	E	HG	SCM	U	0.0001000	0.0583495	mg/kg-dry	1.00	0.2100	0.00	100.00	81.61
5373	F	HG	SCM	U	0.0001000	0.0515859	mg/kg-dry	1.00	0.2350	0.00	100.00	82.49
5373	G	HG	SCM	U	0.0001000	0.0511896	mg/kg-dry	1.00	0.2470	0.00	100.00	79.09
5373	H	HG	SCM		0.0003445	0.1779121	mg/kg-dry	1.00	0.2250	0.00	100.00	86.06
5373	I	HG	SCM	U	0.0001000	0.0554782	mg/kg-dry	1.00	0.2490	0.00	100.00	72.39
5373	J	HG	SCM		0.0001728	0.0841770	mg/kg-dry	1.00	0.2470	0.00	100.00	83.11
5373	K	HG	SCM		0.0001625	0.0891429	mg/kg-dry	1.00	0.2180	0.00	100.00	83.62
5373	L	HG	SCM	U	0.0001000	0.0563133	mg/kg-dry	1.00	0.2220	0.00	100.00	79.99
5373	M	HG	SCM	U	0.0001000	0.0532230	mg/kg-dry	1.00	0.2420	0.00	100.00	77.64
5373	N	HG	SCM	U	0.0001000	0.0523396	mg/kg-dry	1.00	0.2330	0.00	100.00	82.00
5373	O	HG	SCM	U	0.0001000	0.0573704	mg/kg-dry	1.00	0.2090	0.00	100.00	83.40
5373	P	HG	SCM	U	0.0001000	0.0520671	mg/kg-dry	1.00	0.2250	0.00	100.00	85.36
5373	Q	HG	SCM	U	0.0001000	0.0579863	mg/kg-dry	1.00	0.2160	0.00	100.00	79.84
5373	R	HG	SCM	U	0.0001000	0.0539656	mg/kg-dry	1.00	0.2220	0.00	100.00	83.47
5373	S	HG	SCM	U	0.0001000	0.0525798	mg/kg-dry	1.00	0.2300	0.00	100.00	82.69
5373	T	HG	SCM	U	0.0001000	0.0469652	mg/kg-dry	1.00	0.2410	0.00	100.00	88.35
5374	MB	HG	SCM	U	0.0001000	0.0500000	mg/kg-dry	1.00	0.2000	0.00	100.00	100.00
5374	REF1	HG	SCM		0.0046502	11.5676617	mg/kg-dry	5.00	0.2010	0.00	100.00	100.00
5374	A	HG	SCM	U	0.0001000	0.0512694	mg/kg-dry	1.00	0.2150	0.00	100.00	90.72
5374	ADUP	HG	SCM	U	0.0001000	0.0512694	mg/kg-dry	1.00	0.2150	0.00	100.00	90.72
5374	ASPK	HG	SCM		0.0009109	0.4627090	mg/kg-dry	1.00	0.2170	0.00	100.00	90.72

ANALYTICAL RESOURCES INCORPORATED

MERCURY ANALYSIS LOGBOOK

Page 1 of 2 Date: 12/04/96 Analyst: TM

Std # 701-8 ICV # 12-14 CCV# 701-9

Sample ID				CV/CB	
ARI ID	Client ID	Prep. Code	Dilution	(ppb)	Comments
	S0	SCM	1X		
	S0.2				
	S0.5				
	S1				
	S5				
	S10				
ICV	ICV			4.56	93% R
ICB	ICB			0.00	
CCV	CCV			2.99	99% R
CCB	~~CRA~~ CCB			0.01	
CRA	CRA			0.20	100 R
5373 MB	PBS		1X		
" Ref1	LCSS		5X	4.37	10.9 Mg/kg ✓
" A	MFGZ 44		1X	0.02	→ NO RPD undetected
" ADup	MFGZ 44D			0.02	
" ASpK	MFGZ44S			0.93	93% R
" B	MFGZ 45				change DATA DISK soft error ware
" C	MFGZ46				
" D	MFGZ47				
" E	MFGZ49				
CCV	CCV			2.96	98% R
CCB	CCB			0.01	
CCV	CCV			3.03	change tube 101% R
CCB	CCB			0.01	
5373 F	MFGZ50				
" G	MFGZ 56				
" H	MFGZ57				
" I	MFGZ58				
" J	MFGZ64				
" K	MFGZ65	SCM	1X		

ANALYTICAL RESOURCES INCORPORATED

MERCURY ANALYSIS LOGBOOK

Page 2 of 2 Date: 12/04/96 Analyst: TM

Std # 701-8 ICV # 12-14 CCV# 701-9

Sample ID		Prep. Code	Dilution	CV/CB (ppb)	Comments
ARI ID	Client ID				
5373 L	MFGZ48	SCM	1X		
" M	MFGZ51				
" N	MFGZ52				EdIT N
" D	MFGZ53				
CCV	CCV			3.01	100% R
CCB	CCB			0.01	
5373 P	MFGZ54				
" Q	MFGZ55				
" R	MFGZ59				
" S	MFGZ60				
" T	MFGZ63				
5374 MB	PBS		1X		
" Ref1	LCSS		5X	4.65	11.56 mg/kg ✓
" A	MFGZ66		1X	0.01	NORPD - Undetected
" ADup	MFGZ66D			0.02	
" Aspk	MFGZ66S			0.91	91% R
CCV	CCV			2.88	96% R
CCB	CCB	SCM	1X	0.01	~~96%~~ TM 12/4/96
			TM	12/04/96	

ANALYTICAL RESOURCES INCORPORATED

MERCURY STANDARD PREP LOG

ANALYST: TTM DATE: 12/04/96

MATRIX: SOIL PREP CODE: SCM

Standard ID #	Stock Standard ID #	Intermediate Volume Added (mL)	Standard Conc. (ug/L)	Number Made	Digest Start	Digest End
* STD0	701-8	0.00	0.0	2	1200	1230
* STD1		0.02	0.2	2		
* STD2		0.05	0.5	2		
* STD3		0.10	1.0	2		
STD —	—	— 0.20	2.0	—		
* STD4		0.50	5.0	2		
* STD 5		1.00	10.0	2		
CRA	701-8	0.02	0.2	1		
ICB/CCB	—	0.00	0.0	1/5		
ICV/LCS	12-14	1.00	4.9	1		
CCV	701-9	0.30	3.0	5	1200	1230

ANALYST: DATE:

MATRIX: PREP CODE:

Standard ID #	Stock Standard ID #	Intermediate Volume Added (mL)	Standard Conc. (ug/L)	Number Made	Digest Start	Digest End
* STD0		0.00	0.0	1		
* STD1		0.02	0.2			
* STD2		0.05	0.5			
* STD		0.10	1.0			
STD		0.20	2.0			
* STD		0.50	5.0			
* STD		1.00	10.0			
CRA		0.02	0.2			
ICB/CCB		0.00	0.0			
ICV/LCS						
CCV		0.30	3.0			

* Calibration standard required by EPA CLP

12/04/96
Buck Mercury
TTM Data Disk 7
Buck Mercury 12/05/96

MERCURY ANALYSIS RESULTS
12-04-1996

ANALYST: TTM

SAMPLE RESULTS FILE: B:\HG961204.TXT
CLP RESULTS FILE: B:\HG961204.CLP

CONDITIONING SAMPLE RESULT

BASELINE: 29.0
RAW PEAK: 867.0
PEAK HEIGHT: 838.0

CONDITIONING SAMPLE RESULT

BASELINE: 24.1
RAW PEAK: 394.0
PEAK HEIGHT: 369.9

CONDITIONING SAMPLE RESULT

BASELINE: 19.7
RAW PEAK: 211.2
PEAK HEIGHT: 191.5

CONDITIONING SAMPLE RESULT

BASELINE: 14.4
RAW PEAK: 109.4
PEAK HEIGHT: 95.0

CONDITIONING SAMPLE RESULT

BASELINE: 12.6
RAW PEAK: 56.4
PEAK HEIGHT: 43.9

CONDITIONING SAMPLE RESULT

BASELINE: 13.0
RAW PEAK: 18.4
PEAK HEIGHT: 5.4

BEGINNING CALIBRATION PROCEDURE

All corrections on this page made by BH 12/07/96

CALIBRATION BLANK RESULT
12-04-1996 13:38:10

BASELINE: 16.7 S0
RAW PEAK: 23.0
PEAK HEIGHT: 6.3

STANDARD CONCENTRATIONS

STANDARD # 1 = .2 ppb
STANDARD # 2 = .5 ppb
STANDARD # 3 = 1 ppb
STANDARD # 4 = 5 ppb
STANDARD # 5 = 10 ppb

STANDARD # 1 RESULT
12-04-1996 13:40:40

BASELINE: 24.4 S0.2
RAW PEAK: 70.4
PEAK HEIGHT: 46.0

STANDARD # 2 RESULT
12-04-1996 13:42:17

BASELINE: 29.9 S0.5
RAW PEAK: 137.0
PEAK HEIGHT: 107.1

STANDARD # 3 RESULT
12-04-1996 13:43:56

BASELINE: 35.5 S1
RAW PEAK: 245.2
PEAK HEIGHT: 209.7

STANDARD # 4 RESULT
12-04-1996 13:46:15

BASELINE: 48.7 S5
RAW PEAK: 955.4
PEAK HEIGHT: 906.7

STANDARD # 5 RESULT
12-04-1996 13:47:52

BASELINE: 64.5 S10
RAW PEAK: 1658.2
PEAK HEIGHT: 1593.7

STANDARD CURVE EQUATION:
CONC(ppb) = 1.084702E-06 X2 + 4.552175E-03 X + -1.197135E-02

000294

Apparent standard concentrations:
BLANK: 1.679606E-02

Standard # 1 = .1997704
Standard # 2 = .4880564
Standard # 3 = .9901681
Standard # 4 = 5.007355
Standard # 5 = 9.997761
Calibration curve saved to file: B:\HG961204.CUV

ANALYTICAL RESULTS:

CLIENT ID : ICV
RESULTS FOR SAMPLE ICV
12-04-1996 13:51:36

BASELINE: 31.47
RAW PEAK: 868.6
PEAK HEIGHT: 837.13
CONCENTRATION = 4.56 ppb

CLIENT ID : ICB
RESULTS FOR SAMPLE ICB
12-04-1996 13:53:12

BASELINE: 28.35
RAW PEAK: 31
PEAK HEIGHT: 2.65
CONCENTRATION = 0.00 ppb U

CLIENT ID : CCV
RESULTS FOR SAMPLE CCV
12-04-1996 13:54:53

BASELINE: 25.13
RAW PEAK: 605
PEAK HEIGHT: 579.87
CONCENTRATION = 2.99 ppb

CLIENT ID : CCB
RESULTS FOR SAMPLE CCB
12-04-1996 13:56:45

BASELINE: 22.75
RAW PEAK: 27.4
PEAK HEIGHT: 4.649998
CONCENTRATION = 0.01 ppb U

CLIENT ID : CRA
RESULTS FOR SAMPLE CRA
12-04-1996 13:58:24

BASELINE: 19.32
RAW PEAK: 65.2
PEAK HEIGHT: 45.88
CONCENTRATION = 0.20 ppb

CLIENT ID : PBS
RESULTS FOR SAMPLE 5373 MB SCM
12-04-1996 14:00:35

BASELINE: 21.01
RAW PEAK: 28.6
PEAK HEIGHT: 7.59
CONCENTRATION = 0.02 ppb U

CLIENT ID : LCSS
RESULTS FOR SAMPLE 5373 REF1 SCM 5X 10.9 mg/kg ✓ 12/02/96 TTM
12-04-1996 14:02:32

BASELINE: 28.02
RAW PEAK: 834.6
PEAK HEIGHT: 806.58
CONCENTRATION = 4.37 ppb

CLIENT ID : MFGZ44
RESULTS FOR SAMPLE 5373 A SCM
12-04-1996 14:05:01

BASELINE: 33.26
RAW PEAK: 40.8
PEAK HEIGHT: 7.539997
CONCENTRATION = 0.02 ppb U

CLIENT ID : MFGZ44D
RESULTS FOR SAMPLE 5373 ADUP SCM
12-04-1996 14:06:51

BASELINE: 34.48
RAW PEAK: 42
PEAK HEIGHT: 7.519997
CONCENTRATION = 0.02 ppb U

CLIENT ID : MFGZ44S
RESULTS FOR SAMPLE 5373 ASPK SCM
12-04-1996 14:08:42

BASELINE: 33.8
RAW PEAK: 232.4
PEAK HEIGHT: 198.6
CONCENTRATION = 0.93 ppb ⇐ Software Error Here

Change to Disk 8

Continue from File (File curve)

12/04/96
DATA Disk 8
Back Mercury TTM

MERCURY ANALYSIS RESULTS
12-04-1996

ANALYST: TTM

SAMPLE RESULTS FILE: B:\HG961204.TXT
CLP RESULTS FILE: B:\HG961204.CLP

STANDARD CURVE EQUATION:
CONC(ppb) = 1.101336E-06 X2 + 4.519903E-03 X + -1.237018E-03

Apparent standard concentrations:
BLANK: -1.237018E-03
Standard # 1 = .2090551
Standard # 2 = .495525
Standard # 3 = .9948674
Standard # 4 = 5.002504
Standard # 5 = 9.999312
Calibration curve saved to file: B:\HG961204.CUV

BM 12/05/96

ANALYTICAL RESULTS:

000296

CLIENT ID : MFGZ45
RESULTS FOR SAMPLE 5373 B SCM
12-04-1996 14:21:12

BASELINE: 18.38
RAW PEAK: 21.6
PEAK HEIGHT: 3.219999
CONCENTRATION = 0.01 ppb U

CLIENT ID : MFGZ46
RESULTS FOR SAMPLE 5373 C SCM
12-04-1996 14:23:48

BASELINE: 24.63
RAW PEAK: 31.6
PEAK HEIGHT: 6.97
CONCENTRATION = 0.03 ppb U

CLIENT ID : MFGZ47
RESULTS FOR SAMPLE 5373 D SCM
12-04-1996 14:25:34

BASELINE: 31.25
RAW PEAK: 45.4
PEAK HEIGHT: 14.15001
CONCENTRATION = 0.06 ppb U

CLIENT ID : MFGZ49
RESULTS FOR SAMPLE 5373 E SCM
12-04-1996 14:27:50

BASELINE: 36.71
RAW PEAK: 40.4
PEAK HEIGHT: 3.690003
CONCENTRATION = 0.02 ppb U

CLIENT ID : CCV
RESULTS FOR SAMPLE CCV
12-04-1996 14:29:27

BASELINE: 42.47
RAW PEAK: 617.6
PEAK HEIGHT: 575.13
CONCENTRATION = 2.96 ppb

CLIENT ID : CCB
RESULTS FOR SAMPLE CCB
12-04-1996 14:31:11

BASELINE: 41.46
RAW PEAK: 40
PEAK HEIGHT: -1.459999
CONCENTRATION = -0.01 ppb U

CLIENT ID : CCV
RESULTS FOR SAMPLE CCV
12-04-1996 14:42:56

BASELINE: 2.4
RAW PEAK: 589
PEAK HEIGHT: 586.6
CONCENTRATION = 3.03 ppb

CLIENT ID : CCB

RESULTS FOR SAMPLE CCB
12-04-1996 14:44:43

BASELINE: 1.06
RAW PEAK: 2.8
PEAK HEIGHT: 1.74
CONCENTRATION = 0.01 ppb U

CLIENT ID : MFGZ50
RESULTS FOR SAMPLE 5373 F SCM
12-04-1996 14:47:07

BASELINE: 1.54
RAW PEAK: 6.6
PEAK HEIGHT: 5.06
CONCENTRATION = 0.02 ppb U

CLIENT ID : MFGZ56
RESULTS FOR SAMPLE 5373 G SCM
12-04-1996 14:49:10

BASELINE: 2.63
RAW PEAK: 15
PEAK HEIGHT: 12.37
CONCENTRATION = 0.05 ppb U

CLIENT ID : MFGZ57
RESULTS FOR SAMPLE 5373 H SCM
12-04-1996 14:51:22

BASELINE: 2.89
RAW PEAK: 78
PEAK HEIGHT: 75.11
CONCENTRATION = 0.34 ppb

CLIENT ID : MFGZ58
RESULTS FOR SAMPLE 5373 I SCM
12-04-1996 14:53:32

BASELINE: 3.46
RAW PEAK: 13.4
PEAK HEIGHT: 9.939999
CONCENTRATION = 0.04 ppb U

CLIENT ID : MFGZ64
RESULTS FOR SAMPLE 5373 J SCM
12-04-1996 14:55:41

BASELINE: 1.85
RAW PEAK: 40
PEAK HEIGHT: 38.15
CONCENTRATION = 0.17 ppb

CLIENT ID : MFGZ65
RESULTS FOR SAMPLE 5373 K SCM
12-04-1996 14:57:34

BASELINE: -2.51
RAW PEAK: 33.4
PEAK HEIGHT: 35.91
CONCENTRATION = 0.16 ppb

CLIENT ID : MFGZ48
RESULTS FOR SAMPLE 5373 L SCM
12-04-1996 14:59:27

BASELINE: -6.35
RAW PEAK: 2
PEAK HEIGHT: 8.350001
CONCENTRATION = 0.04 ppb U

CLIENT ID : MFGZ51
RESULTS FOR SAMPLE 5373 M SCM
12-04-1996 15:01:27

BASELINE: -8.040001
RAW PEAK: .8
PEAK HEIGHT: 8.840001
CONCENTRATION = 0.04 ppb U

CLIENT ID : MFGZ52
RESULTS FOR SAMPLE 5373 ~~M~~ N SCM Edit N
12-04-1996 15:03:28

BASELINE: -9
RAW PEAK: -4.6 BH 12/07/96
PEAK HEIGHT: 4.4
CONCENTRATION = 0.02 ppb U

CLIENT ID : MFGZ53
RESULTS FOR SAMPLE 5373 O SCM
12-04-1996 15:05:27

BASELINE: -8.640001
RAW PEAK: 3.6
PEAK HEIGHT: 12.24
CONCENTRATION = 0.05 ppb U

CLIENT ID : CCV
RESULTS FOR SAMPLE CCV
12-04-1996 15:07:57

BASELINE: 2.55
RAW PEAK: 585.2
PEAK HEIGHT: 582.65
CONCENTRATION = 3.01 ppb

CLIENT ID : CCB
RESULTS FOR SAMPLE CCB
12-04-1996 15:09:37

BASELINE: 2.37
RAW PEAK: 5.4
PEAK HEIGHT: 3.03
CONCENTRATION = 0.01 ppb U

CLIENT ID : MFGZ54
RESULTS FOR SAMPLE 5373 P SCM
12-04-1996 15:11:34

BASELINE: 2.33
RAW PEAK: 11.4
PEAK HEIGHT: 9.07
CONCENTRATION = 0.04 ppb U

CONCENTRATION = 0.04 ppb U

CLIENT ID : MFGZ55
RESULTS FOR SAMPLE 5373 Q SCM
12-04-1996 15:13:31

BASELINE: 2.49
RAW PEAK: 6.2
PEAK HEIGHT: 3.71
CONCENTRATION = 0.02 ppb U

CLIENT ID : MFGZ59
RESULTS FOR SAMPLE 5373 R SCM
12-04-1996 15:15:31

BASELINE: .3800001
RAW PEAK: 6.2
PEAK HEIGHT: 5.82
CONCENTRATION = 0.03 ppb U

CLIENT ID : MFGZ60
RESULTS FOR SAMPLE 5373 S SCM
12-04-1996 15:18:36

BASELINE: -6.8
RAW PEAK: 3
PEAK HEIGHT: 9.8
CONCENTRATION = 0.04 ppb U

CLIENT ID : MFGZ63
RESULTS FOR SAMPLE 5373 T SCM
12-04-1996 15:20:43

BASELINE: -10.71
RAW PEAK: 6
PEAK HEIGHT: 16.71
CONCENTRATION = 0.07 ppb U

CLIENT ID : PBS
RESULTS FOR SAMPLE 5374 MB SCM
12-04-1996 15:22:49

BASELINE: -11.28
RAW PEAK: -8.600001
PEAK HEIGHT: 2.679999
CONCENTRATION = 0.01 ppb U

CLIENT ID : LCSS
RESULTS FOR SAMPLE 5374 REF1 SCM 5X 11.5 mg/kg ✓ TM 12/07/96
12-04-1996 15:24:42

BASELINE: -5.160001
RAW PEAK: 847
PEAK HEIGHT: 852.16
CONCENTRATION = 4.65 ppb

CLIENT ID : MFGZ66
RESULTS FOR SAMPLE 5374 A SCM
12-04-1996 15:26:46

BASELINE: .5000001
RAW PEAK: 3.6
PEAK HEIGHT: 3.1
CONCENTRATION = 0.01 ppb U

CLIENT ID : MFGZ66D
RESULTS FOR SAMPLE 5374 ADUP SCM
12-04-1996 15:28:47

BASELINE: -1.08
RAW PEAK: 4
PEAK HEIGHT: 5.08
CONCENTRATION = 0.02 ppb U

CLIENT ID : MFGZ66S
RESULTS FOR SAMPLE 5374 ASPK SCM
12-04-1996 15:31:04

BASELINE: 3.05
RAW PEAK: 195.8
PEAK HEIGHT: 192.75
CONCENTRATION = 0.91 ppb

CLIENT ID : CCV
RESULTS FOR SAMPLE CCV
12-04-1996 15:32:41

BASELINE: 7.010001
RAW PEAK: 567.6
PEAK HEIGHT: 560.59
CONCENTRATION = 2.88 ppb

CLIENT ID : CCB
RESULTS FOR SAMPLE CCB
12-04-1996 15:34:52

BASELINE: 2.34
RAW PEAK: 5.2
PEAK HEIGHT: 2.86
CONCENTRATION = 0.01 ppb U

CN1126 5373 4

CLP CN BENCHSHEET (Distillate Analysis)
PBA SPECTROPHOTOMETRIC
ONLY ONE SHEET FOR EACH CLP BATCH DATE/TIME !!!

ARI Job #:	5374/5373	EPA SDG #:	MFGZ 66/44
Analyst:	SRS		
Distill Batch Date/time:	11/25/96 16:20		
Analysis Date/time:	11/26/96 11:48		

CRDL = 10 µg/L IDL = 5 µg/L IDL date: 10/15/96 *IDL OK !*

KCN Stock Standard Preparation

ARI Number: CN#5 Prep Date: *8/29/96* Concentration 1.0 mg/mL

Standardization of Stock (Rhodanine titration)

AgNO3 standardization		ml AgNO3 TITRANT		
	BLANK	0.24	0.20	0.21
ml NaCl STD =	2.00	1.72	1.73	1.75

Normality AgNO3 = **0.0186**

NaCl Primary Standard
grams NaCl to 1000mL 0.8233
Prep Date 8/29/96
Normality NaCl 0.0141

Stock KCN Standard		ml AgNO3 TITRANT		
	BLANK	0.03	0.03	0.05
ml KCN Stock =	3.00	3.31	3.12	3.04

mg CN /ml = 1.01

KCN Stock
1.0 mg/mL

Intermediate KCN Std (1 ml/100 ml) = 10.00 ***mg CN /l*** *Used to prepare curve standards and matrix spikes*

STANDARD CURVE DATA *all stds prepared to a volume of* **200** *mL*

ml INTERMEDIATE	CONC (µg/l)	ABS @ 578		AVG	*Regressed µg/L*		**Regresssion Data** *CONC = (ABS-intercept)/ slope*
0.0	50 0.0	0.011	11:48	0.011	*-0.4*	*<IDL*	intercept = 0.0119
0.1	55 5.0	0.022		0.022	*4.9*	*98%*	slope = 0.0021
0.2	510 10	0.032		0.032	*9.8*	*98%*	r2 = 1.0000
1.0	550 50	0.116		0.116	*51*	*101%*	
2.0	5100 100	0.219		0.219	*101*	*101%*	*Comment: Calibration OK!*
4.0	5200 200	0.423	11:53	0.423	*200*	*100%*	

Bic 11/19/96

Calibration Verification Standards

ICV Source	EPA ICV-6(1191)			*Stock Conc*	9,000	*µg/L CN*	**Distilled Mid-Level Standard**
Dilution	1.0	*mL stock to*	100	*mL =*	90	*µg/L CN*	*A mid-range calibration standard must be distilled along with*
ICV	50	*mL to*	50	*mL =*	**90**	***µg/L CN***	*each distillation batch. Use the 50 µg/L std for this purpose.*
CCV Source	SPEX #1099-AS			*Stock Conc*	1,000	*mg/L CN*	*It is identified as the DMLS.*
Dilution	2.5	*mL stock to*	250	*mL =*	10	*mg/L CN*	
CCV	2.00	*mL dilution to*	200	*mL =*	**100**	***µg/L CN***	**DMLS = 50 µg/L**
LCSS Source	EPA Lot #0689			*Cert. Conc.*	**5.62**	*mg/kg*	
			Certified Limits	**4.1**	to	**7.1**	

Initial QC Data

Dilution = mL final vol / mL distillate added

EPA Sample ID	24 hr time		Spectrophotometric data Abs	Dilution	µg/L	CONC (µg/l)	NOTES		
ICV (LCSW)	11:53		0.225	1	103.5	103		**115%**	*OK !*
ICB			0.013	1	0.6	<5	< IDL	**U**	*OK!*
CCV	11:55		0.210	1	96.2	96		**96%**	*OK !*
CCB			0.011	1	-0.4	<5	< IDL	**U**	*OK!*
PBS			0.012	1	0.1	<5	< IDL	**U**	*#DIV/0!*
DMLS			0.106	1	45.7	46		**91%**	*OK !*
LCSS	*g distilled =*	1.0033	0.230	1	105.9	106	5.28 mg/kg	**93.91%**	*OK !*
Sample Data Follows (no more than 10 analyses between CB's)							Range	"C" code	
MFGZ 66			0.014	1	1.0	<5	< IDL	**U**	
MFGZ 66D			0.014	1	1.0	<5	*NA*		
MFGZ 66S			0.311	1	145.2	145	*% Recov =*	*96.81%*	*OK*
spike =	0.75	*ml of intermediate Std =*		8	*µg CN =*	150.00	*µg/L distillate*		
MFGZ 66S			0.309	1	144.3	144	*% Recov =*	*96.17%*	*OK*
spike =	0.75	*ml of intermediate Std =*		8	*µg CN =*	150.00	*µg/L distillate*		
MFGZ 44 ✓			0.013	1	0.6	<5	< IDL	**U**	
MFGZ 44D			0.013	1	0.6	<5	*NA*		
CCV	12:03		0.207	1	94.7	95		**95%**	*OK !*
CCB			0.011	1	-0.4	<5	< IDL	**U**	*OK!*
MFGZ 44S			0.308	1	143.8	144	*% Recov =*	*95.84%*	*OK*
spike =	0.75	*ml of intermediate Std =*		8	*µg CN =*	150.00	*µg/L distillate*		
MFGZ 44S			0.314	1	146.7	147	*% Recov =*	*97.79%*	*OK*
spike =	0.75	*ml of intermediate Std =*		8	*µg CN =*	150.00	*µg/L distillate*		
MFGZ 45 /			0.013	1	0.6	<5	< IDL	**U**	
MFGZ 46			0.014	1	1.0	<5	< IDL	**U**	
MFGZ 47 ✓			0.013	1	0.6	<5	< IDL	**U**	
MFGZ 49 ✓			0.012	1	0.1	<5	< IDL	**U**	
MFGZ 50 /			0.013	1	0.6	<5	< IDL	**U**	
MFGZ 56 /			0.020	1	4.0	<5	< IDL	**U**	
CCV	12:11		0.210	1	96.2	96		**96%**	*OK !*
CCB			0.015	1	1.5	<5	< IDL	**U**	*OK!*
MFGZ ~~50~~ 57	MAP 11-27		0.021	1	4.4	<5	< IDL	**U**	
MFGZ ~~56~~ 58	MAP 11-27		0.014	1	1.0	<5	< IDL	**U**	
CCV	12:14		0.210	1	96.2	96		**96%**	*OK !*
CCB			0.010	1	-0.9	<5	< IDL	**U**	*OK!*

ARI 6122 CLP CN
Rev: 11/22/96

MISSING MFGZ 57, 58 000302
OK just miss-entered

NOV 25 96 CLP CN SOIL
Date Printed: 8/27/56

CLP CN BENCHSHEET (Aqueous samples)
SPECTROPHOTOMETRIC
ONLY ONE SHEET FOR EACH CLP BATCH DATE/TIME !!!

ARI Job #: 5374/5373 EPA SDG #: MFGZ 66/ 44
Analyst: CRS
Batch Date/time: 11/25/96 - 16:20

CRDL = 10 µg/L IDL = 5 µg/L IDL date: 10/15/96 *new IDL required !*

KCN Stock Standard Preparation

ARI Number: CN #5 | Prep Date: 8/29/96 | Concentration 1.0 mg/mL

Standardization of Stock (Rhodanine titration)

AgNO3 standardization		ml AgNO3 TITRANT		
	BLANK	.24	.20	.21
ml NaCl STD =	2.00	~~1.73~~	1.73	1.75

Normality AgNO3 = CRS/11/26/96 1.72

NaCl Primary Standard
grams NaCl to 1000mL 0.8233
Prep Date 8/29/96
Normality NaCl 0.0141

Stock KCN Standard		ml AgNO3 TITRANT		
	BLANK	.03	.03	.05
ml KCN Stock =	3.00	3.31	3.12	3.04

mg CN /ml = **KCN Stock mg/mL**

Intermediate KCN Std (1 ml/100 ml) = 0.00 mg CN /l *Used to prepare curve standards and matrix spikes*

STANDARD CURVE DATA *(all stds prepared to 200 mL volume except 50 Std which is 1000mL)* **Analysis Date/Time:** 11 48 11/26/96

ml INTERMEDIATE		CONC (µg/l)	ABS @ 578		AVG	% Recovery
0.0	5	0 0.0	.011	11:48		
0.1	5	5 ~~0.0~~	.022			
0.2	5	10 ~~0.0~~	.032			
1.0 ~~5.0~~	5	50 ~~0.0~~	.116			
2.0	5	100 ~~0.0~~	.219			
4.0	5	200 ~~0.0~~	.423	11:53		

Regresssion Data
CONC = (ABS-intercept)/ slope
intercept =
slope =
r2 =
Comment:

Calibration Verification Standards

Source	SPEX	AS	*Stock Conc*	1,000	*mg/L CN*	LCSS
Dilution	2.5	*mL stock to*	250	*mL =*	10	*mg/L CN* EPA REF MATL 0689
ICV	EPA ICV-6 (1191)				**90**	***µg/L CN***
CCV	2.00	*mL init. to*	200	*mL =*	**100**	***µg/L CN***

Sample Data
Distill ratio = mL sample distilled / mL final volume *Dilution = mL final vol / mL distillate added*

EPA Sample ID	24 hr time	Distill ratio	Spectrophotometric data Abs	Dilution	µg/L	CONC (µg/l)	NOTES Range
ICV (LCSW)	11:53	1.00	.225	1			
ICB		na	.013	1			
CCV	11:55	na	.210	1			
CCB		na	~~.012~~	.011 CRS 1	11/26/96		
~~DMLS~~ PBS		1.00	.012	1			

Sample Data Follows (no more than 10 analyses between CB's)							Range	"C" code
DMLS		1.00	.106	1				
LCSS		1.00	.230	1				
MFGZ 66		1.00	.014	1				
MFGZ 66D		1.00	.014	1				
MFGZ 66S		1.00	.311	1				
CRS 11/26/96 MFGZ 66D-S		1.00	.309	1				
MFGZ 44		1.00	.013	1				
MFGZ 44D		1.00	.013	1				
CCV	12:03	1.00	.207	1				
CCB		1.00	.011	1				
MFGZ 44S		1.00	.308	1				
MFGZ 44S		1.00	.314	1				
MFGZ 45		1.00	.013	1				
MFGZ 46		1.00	.014	1				
MFGZ 47		1.00	.013	1				
MFGZ 49		1.00	.012	1				
MFGZ 50		1.00	.013	1				
MFGZ 56		1.00	.020	1				
CCV	12:11	1.00	.210	1				
CCB		1.00	.015	1				
CRS 11/26/96 MFGZ 657		1.00	.021	1				
MFGZ 58		1.00	~~.015~~ .014	CRS 1	11/26/96			
CCV	12:14	1.00	.210	1				
CCB		1.00	.010	1				
		1.00		1				
		1.00		1				
		1.00		1				
		1.00		1				
		1.00		1				
		1.00		1				

PHOTOMETRY/CN 11/26/96 10:55

ID	ABS	CONC

PHOTOMETRY/CLP CN 11/26/96 11:48

ID	ABS	CONC	
STD 1	0.011	0.000	50
STD 2	0.022	5.000	55
STD 3	0.032	10.00	510
STD 4	0.116	50.00	550
STD 5	0.219	100.0	5100
STD 6	0.423	200.0	6200

K= 485.5 A0= 0.012

BK 12/19/96

PHOTOMETRY/CLP CN 11/26/96 11:53

ID	ABS	CONC	F	
ICV 7	0.225	103.3		ICV

PHOTOMETRY/CLP CN 11/26/96 11:53

N= 299 MEAN= 15.01 SD= 39.63 CV= 264.0

ICB 8	0.013	0.503	LO	ICB
CCV 9	0.210	96.27		CCV

PHOTOMETRY/CLP CN 11/26/96 11:55

N= 301 MEAN= 15.23 SD= 39.78 CV= 261.1

CCB 10	0.011	0.207	LO		CCB
PBS 11	0.012	0.148	LO	5373 5374	MB
DMLS 12	0.106	45.90			DMLS
LCSS 13	0.230	106.[illegible]		5373 5374	REF2
MFGZ66 14	0.[illegible]4	0.[illegible]	LO	5374	A
MFGZ66D 15	0.[illegible]4	1	LO		ADUP
MFGZ66S 16	0.[illegible]11	1			ASPL
MFGZ66S 17	0.[illegible]9				ASPL
MFGZ44 18	0.[illegible]		LO	5373	A
MFGZ44D 19	0.013	0.[illegible]0	LO		ADUP
CCV 20	0.207	94.73			

PHOTOMETRY/CLP CN 11/26/96 12:03

N= 312 MEAN= 16.43 SD= 41.07 CV= 250.0

BK 12/23/96

301A

CCB 21	0.011	-0.444	LO		
MFGZ44S 22	0.308	143.6		5373	ASPL
MFGZ44S 23	0.314	146.8			ASPL
MFGZ45 24	0.013	0.740	LO		B
MFGZ46 25	0.014	0.977	LO		C
MFGZ47 26	0.013	0.622	LO		D
MFGZ49 27	0.012	0.266	LO		E
MFGZ50 28	0.013	0.622	LO		F
MFGZ60 29	0.020	3.822	LO		G
CCV 30	0.210	96.[illegible]			

PHOTOMETRY/CLP CN 11/26/96 12:11

N= 322 MEAN= 17.14 SD= 41.98 CV= 245.0

CCB 31	[illegible]	[illegible]			
MFGZ57 [illegible]	[illegible]	[illegible]		5373	H
MFGZ58 33	0.01[illegible]	0.[illegible]	LO		I
CCV 34	0.2[illegible]	96.27			

PHOTOMETRY/CLP CN 11/26/96 12:14

N= 326 MEAN= 17.24 SD= 41.97 CV= 243.4

CCB 35	0.010	-0.800	LO

PHOTOMETRY/CLP CN 11/26/96 12:15

N= 327 MEAN= 17.19 SD= 41.92 CV= 243.9

PHOTOMETRY/CN 11/26/96 10:55

ID	ABS	CONC

PHOTOMETRY/CLP CN 11/26/96 11:48

ID	ABS	CONC	
STD 1	0.011	0.000	S0
STD 2	0.022	5.000	S5
STD 3	0.032	10.00	S10
STD 4	0.116	50.00	S50
STD 5	0.219	100.0	S100
STD 6	0.423	200.0	S200

K= 485.5 A0= 0.012

PHOTOMETRY/CLP CN 11/26/96 11:53

ID	ABS	CONC	F
ICV 7	0.225	103.3	

PHOTOMETRY/CLP CN 11/26/96 11:53

N= 299 MEAN= 15.01 SD= 39.63 CV= 264.0

ICB 8	0.013	0.503	LO	
CCV 9	0.210	96.27		

PHOTOMETRY/CLP CN 11/26/96 11:55

N= 301 MEAN= 15.23 SD= 39.78 CV= 261.1

CCB 10	0.011	-0.207	LO		
PBS 11	0.012	0.148	LO		
DMLS 12	0.106	45.90			
LCS 13	0.230	106.1			
MFG2661 14	0.014	0.859	LO	5374	A
MFG2661D 15	0.014	1.096	LO		ADUP
MFG2665 16	0.311	145.1			ASPK
MFG2665D 17	0.309	144.0			ASPK
MFG244 18	0.013	0.740	LO	5373	A
MFG244D 19	0.013	0.740	LO		ADUP
CCV 20	0.207	94.73			

PHOTOMETRY/CLP CN 11/26/96 12:03

N= 312 MEAN= 16.43 SD= 41.07 CV= 250.0

CCB 21	0.011	-0.444	LO		
MFG244S 22	0.308	143.6		5373	ASPK
MFG244SD 23	0.314	146.8			ASPK
MFG245 24	0.013	0.740	LO		B
MFG246 25	0.014	0.977	LO		C
MFG247 26	0.013	0.622	LO		D
MFG249 27	0.012	0.266	LO		E
MFG250 28	0.013	0.622	LO		F
MFG251 29	0.020	3.822	LO		G
CCV 30	0.210	96.03			

PHOTOMETRY/CLP CN 11/26/96 12:11

N= 322 MEAN= 17.14 SD= 41.98 CV= 245.0

CCB 31	0.015	1.570	LO		
MFG252 32	0.021	4.652	LO	5373	H
MFG253 33	0.014	0.977	LO		I
CCV 34	0.210	96.27			

PHOTOMETRY/CLP CN 11/26/96 12:14

N= 326 MEAN= 17.24 SD= 41.97 CV= 243.4

CCB 35	0.010	-0.800	LO

PHOTOMETRY/CLP CN 11/26/96 12:15

N= 327 MEAN= 17.19 SD= 41.92 CV= 243.9

00030.1

CLP CN Distillation Log | **Batch Date/time:** 11/25/96 | **SDG #:** MFGZ 66 / 44 | **ARI #:** 5374/5373 | **Analyst:** SRS

Comments and notes regarding distillation procedure: 16:20
- *all distillations = 500 mL sample unless midi*
- *all spikes at 2.5 mL 10 mg/L Std*

Physical descriptors:
Color: red, yellow, green, white, brown, black, colorless, etc.
Clarity: clear, cloudy, opaque
Texture: fine (powdery), medium (sand), coarse (rocks etc.)
Artifacts: yes or leave blank if none

Sample ID ARI #	Sample ID Client #	Sample Pre-testing pH	Chlorine	Sulfide	Distillation Volume (mL) Weight (g)	Final Volume (ml)	Spikes & Standards mL added	Std Conc. (µg/L)	NOTES: enter brief physical description of sample	Color	Clarity	Texture	Artifacts
matrix	~~BLANK~~ ICV	N APPLIC	N. APPLIC	N. APPLIC	50 mL	50 mL	.5 mL	ICV-6	before / after	EPA	REF MATL	ICV 6	(1141)
matrix	PBS								before / after				
matrix	DMLS						50 mL	50 µg/L	before / after	N HSE STD.			
matrix	LLSS				1.0033 g				before / after	EPA	REF MATL	0089	
5374 A1 matrix	MFGZ 66				1.0012				before / after				
A1dup matrix	MFGZ 66D				1.0056				before / after				
A1spk matrix	MFGZ 66S				1.0028		.75 mL	10 ppm	before / after	N HSE STD.			
5374 A1spk matrix	MFGZ 66S				1.0029		.75 mL	10 ppm	before / after	N HSE STD.			
5373 A1 matrix	MFGZ 44				1.0073				before / after				
A1 dup matrix	MFGZ 44D				1.0025				before / after				
A1spk matrix	MFGZ 44S				1.0038		.75 mL	10 ppm	before / after	N HSE STD.			
A1spk matrix	MFGZ 44S				1.0032		.75 mL	10 ppm	before / after	N HSE STD.			
B matrix	MFGZ ~~44S~~ 45				1.0064				before / after				
C matrix	MFGZ 46				1.0009				before / after				
D matrix	MFGZ 47				1.0027				before / after				
E matrix	MFGZ 49				1.0071				before / after				
F matrix	MFGZ 50				1.0035				before / after				
G matrix	MFGZ 56				1.0099				before / after				
H matrix	MFGZ 57				1.0057				before / after				
5373 I matrix	MFGZ 58				1.0027				before / after				
matrix	SRS 11/25/96				SRS 11/25/96				before / after				
matrix									before / after				

SRS 11/25/96

ERUN W/ PERATE ICV S, DMLS, LLSS on S 25/96 NW

SRS 11/25/96

00043000

000305

4

6149F

CN1126 A 5373

CLP CN BENCHSHEET (Distillate Analysis)
PBA SPECTROPHOTOMETRIC
ONLY ONE SHEET FOR EACH CLP BATCH DATE/TIME !!!

ARI Job #:	5374/5373	EPA SDG #:	MFGZ 66/64
Analyst: SRS			
Distill Batch Date/time:	11/26/96 8:25		
Analysis Date/time:	11/26/96 14:52		

CRDL = 10 µg/L IDL = 5 µg/L IDL date: 10/15/96 *IDL OK !*

KCN Stock Standard Preparation

ARI Number:	CN#5	Prep Date:	*8/29/96*	Concentration 1.0 mg/mL

Standardization of Stock (Rhodanine titration)

AgNO3 standardization		ml AgNO3 TITRANT		
	BLANK	0.24	0.20	0.21
ml NaCl STD =	2.00	1.72	1.73	1.75
Normality AgNO3 =		**0.0186**		

NaCl Primary Standard
grams NaCl to 1000mL 0.8233
Prep Date 8/29/96
Normality NaCl 0.0141

Stock KCN Standard		ml AgNO3 TITRANT		
	BLANK	0.03	0.03	0.05
ml KCN Stock =	3.00	3.31	3.12	3.04

mg CN /ml = 1.01

KCN Stock
1.0 mg/mL

Intermediate KCN Std (1 ml/100 ml) = 10.00 *mg CN /l* *Used to prepare curve standards and matrix spikes*

STANDARD CURVE DATA *all stds prepared to a volume of* **200** *mL*

ml INTERMEDIATE	CONC (µg/l)	ABS @ 578		AVG	*Regressed µg/L*	
0.0	50 0.0	0.010	14:52	0.010	*-0.3*	*<IDL*
0.1	55 5.0	0.021		0.021	*4.9*	*98%*
0.2	510 10	0.031		0.031	*9.6*	*96%*
1.0	650 50	0.117		0.117	*50*	*101%*
2.0	6100 100	0.224		0.224	*101*	*101%*
4.0	6200 200	0.432	14:57	0.432	*199*	*100%*

Regresssion Data
CONC = (ABS-intercept)/ slope
intercept = 0.0106
slope = 0.0021
r2 = 0.9999

Comment: Calibration OK!

Calibration Verification Standards

ICV Source	EPA ICV-6(1191)			*Stock Conc*	9,000	*µg/L CN*
Dilution	1.0	*mL stock to*	100	*mL =*	90	*µg/L CN*
ICV	50	*mL to*	50	*mL =*	**90**	***µg/L CN***
CCV Source	SPEX #1099-AS			*Stock Conc*	1,000	*mg/L CN*
Dilution	2.5	*mL stock to*	250	*mL =*	10	*mg/L CN*
CCV	2.00	*mL dilution to*	200	*mL =*	**100**	***µg/L CN***
LCSS Source	EPA Lot #0689			*Cert. Conc.*	**5.62**	*mg/kg*
			Certified Limits	**4.1**	to	**7.1**

Distilled Mid-Level Standard
A mid-range calibration standard must be distilled along with each distillation batch. Use the 50 µg/L std for this purpose. It is identified as the DMLS.

DMLS = 50 µg/L

Initial QC Data

Dilution = mL final vol / mL distillate added

EPA Sample ID	24 hr time		Spectrophotometric data Abs	Dilution	µg/L	CONC (µg/l)	NOTES		
ICV (LCSW)			0.222	1	100.0	100		**111%**	*OK !*
ICB			0.010	1	-0.3	<5	< IDL	U	*OK!*
CCV	14:59		0.214	1	96.3	96		**96%**	*OK !*
CCB			0.012	1	0.6	<5	< IDL	U	*OK!*
PBS			0.013	1	1.1	<5	< IDL	U	*#DIV/0!*
DMLS			0.110	1	47.0	47		**94%**	*OK !*
LCSS	*g distilled =*	1.0042	0.225	1	101.5	101	5.05 mg/kg	**89.89%**	*OK !*
Sample Data Follows (no more than 10 analyses between CB's)							Range	"C" code	
MFGZ 66			0.012	1	0.6	<5	< IDL	U	
MFGZ 66D			0.011	1	0.2	<5	*NA*		
MFGZ 66S			0.313	1	143.1	143	*% Recov =*	*95.41%*	*OK*
spike =	0.75	*ml of intermediate Std =*		8	*µg CN =*	150.00	*µg/L distillate*		
PBS 2			0.011	1	0.2	<5	< IDL	U	*#DIV/0!*
LCSS 2	*g distilled =*	1.0052	0.226	1	101.9	102	5.07 mg/kg	**90.22%**	*OK !*
MFGZ 64			0.015	1	2.1	<5	< IDL	U	
CCV	15:08		0.212	1	95.3	95		**95%**	*OK !*
CCB			0.010	1	-0.3	<5	< IDL	U	*OK!*
MFGZ 65			0.015	1	2.1	<5	< IDL	U	
MFGZ 48			0.012	1	0.6	<5	< IDL	U	
MFGZ 51			0.013	1	1.1	<5	< IDL	U	
MFGZ 52			0.013	1	1.1	<5	< IDL	U	
MFGZ 53			0.014	1	1.6	<5	< IDL	U	
MFGZ 54			0.016	1	2.5	<5	< IDL	U	
MFGZ 55			0.013	1	1.1	<5	< IDL	U	
MFGZ 59			0.014	1	1.6	<5	< IDL	U	
MFGZ 60			0.013	1	1.1	<5	< IDL	U	
CCV	15:16		0.208	1	93.4	93		**93%**	*OK !*
CCB			0.014	1	1.6	<5	< IDL	U	*OK!*
MFGZ 63			0.013	1	1.1	<5	< IDL	U	
CCV	15:18		0.206	1	92.5	92		**92%**	*OK !*
CCB			0.011	1	0.2	<5	< IDL	U	*OK!*

CLP CN BENCHSHEET (Aqueous samples)
SPECTROPHOTOMETRIC
ONLY ONE SHEET FOR EACH CLP BATCH DATE/TIME !!!

ARI Job #: 5374/5373 EPA SDG #: MFGZ 66/64
Analyst: SRS
Batch Date/time: 11/26/96 8:25

CRDL = 10 µg/L IDL = 5 µg/L IDL date: 10/15/96 *new IDL required !*

KCN Stock Standard Preparation

ARI Number: CN #5 | Prep Date: 8/29/96 | Concentration 1.0 mg/mL

Standardization of Stock (Rhodanine titration)

AgNO3 standardization		ml AgNO3 TITRANT		
	BLANK	.24	.20	.21
ml NaCl STD =	2.00	1.72	1.73	1.75

Normality AgNO3 =

NaCl Primary Standard
grams NaCl to 1000mL 0.8233
Prep Date 8/29/96
Normality NaCl 0.0141

Stock KCN Standard		ml AgNO3 TITRANT		
	BLANK	.03	.03	.05
ml KCN Stock =	3.00	3.31	3.12	3.04

mg CN /ml = **KCN Stock mg/mL**

Intermediate KCN Std (1 ml/100 ml) = 0.00 *mg CN /l* *Used to prepare curve standards and matrix spikes*

STANDARD CURVE DATA *(all stds prepared to 200 mL volume except 50 Std which is 1000mL)* **Analysis Date/Time:** 11/26/96 14:52

ml INTERMEDIATE	CONC (µg/l)	ABS @ 578		AVG	% Recovery
0.0	0.0	.010			
0.1	5 ~~0.0~~	.021			
0.2	10 ~~0.0~~	.031			
1.0 ~~5.0~~	50 ~~0.0~~	.117			
2.0	100 ~~0.0~~	.224			
4.0	200 ~~0.0~~	.432			

Regresssion Data
CONC = (ABS-intercept)/ slope
intercept =
slope =
r2 =
Comment:

Calibration Verification Standards

Source	SPEX	AS		*Stock Conc*	1,000	*mg/L CN*
Dilution	2.5	*mL stock to*	250	*mL =*	10	*mg/L CN*
ICV	EPA ICV-6 (1191)				90	*µg/L CN*
CCV	2.00	*mL init. to*	200	*mL =*	100	*µg/L CN*

LCSS EPA REF MATL 0689

Sample Data
Distill ratio = mL sample distilled / mL final volume *Dilution = mL final vol / mL distillate added*

EPA Sample ID	24 hr time	Distill ratio	Spectrophotometric data Abs	Dilution	µg/L	CONC (µg/l)	NOTES Range
ICV (LCSW)		1.00	.222	1			
ICB		na	.010	1			
CCV	14:59	na	.214	1			
CCB		na	.012	1			
DMLS PBS		1.00	.013	1			
Sample Data Follows (no more than 10 analyses between CB's)							Range / "C" code
DMLS		1.00	.110	1			
LCSS		1.00	.225	1			
MFGZ 66		1.00	.012	1			
MFGZ 66D		1.00	.011	1			
MFGZ 66S		1.00	.313	1			
PBS 2		1.00	.011	1			
LCSS 2		1.00	.226	1			
MFGZ 64		1.00	.015	1			
CCV	15:08	1.00	.217	1			
CCB		1.00	.0~~15~~10 SRS 11/26/96	1			
MFGZ 65		1.00	.015	1			
MFGZ 48		1.00	.012	1			
MFGZ 51		1.00	.013	1			
MFGZ 52		1.00	.013	1			
MFGZ 53		1.00	.014	1			
MFGZ 54		1.00	.016	1			
MFGZ 55		1.00	.013	1			
MFGZ 59		1.00	.014	1			
MFGZ 60		1.00	.013	1			
CCV	15:16	1.00	.208	1			
CCB		1.00	.014	1			
MFGZ 63		1.00	.013	1			
CCV	15:18	1.00	.206	1			
CCB		1.00	.011	1			
		1.00		1			
		1.00		1			
		1.00		1			
		1.00		1			
		1.00		1			
		1.00		1			

11/26/96 11/26/96

PHOTOMETRY/CLP CN 11/26/96 14:52

AR1 ID

ID	ABS	CONC	
STD 1	0.010	0.000	S0
STD 2	0.021	5.000	S5
STD 3	0.031	10.00	S10
STD 4	0.117	50.00	S50
STD 5	0.224	100.0	S100
STD 6	0.432	200.0	S200

K= 473.7 A0= 0.011

PHOTOMETRY/CLP CN 11/26/96 14:57

ID	ABS	CONC	F
ICV 7	0.222	100.2	
ICB 8	0.010	-0.655	LO
CCV 9	0.214	96.25	

PHOTOMETRY/CLP CN 11/26/96 14:59

N= 330 MEAN= 17.63 SD= 42.21 CV= 239.5

CCB 10	0.012	0.733	LO	
PBS 11	0.013	0.964	LO	5374 MB
DMLS 12	0.110	47.11		DMLS
LCSS 13	0.225	101.2		5374 REF2
MFG2660 14	0.012	0.501	LO	5374 A
MFG2660D 15	0.011	0.270	LO	ADUP
MFG2660S 16	0.313	143.3		ASPK
PBS2 17	0.011	0.039	LO	5373 MB1
LCSS2 18	0.226	102.0		5373 REF3
MFG2641 19	0.015	1.889	LO	5373 J
CCV 20	0.212	95.33		

PHOTOMETRY/CLP CN 11/26/96 15:08

N= 341 MEAN= 18.50 SD= 42.86 CV= 231.6

COPY ORIGINAL WITH SDG MFG2660 BAH 12/23/96

CCB 21	0.010	-0.308	LO	
MFG2665 22	0.015	2.120	LO	5373 K
MFG2A8 23	0.012	0.733	LO	5373 L
MFG251 24	0.013	0.964	LO	M
MFG2572 25	0.013	1.079	LO	N
MFG2573 26	0.014	1.542	LO	O
MFG2574 27	0.016	2.583	LO	P
MFG2575 28	0.013	1.079	LO	Q
MFG2579 29	0.014	1.426	LO	R
MFG2660 30	0.013	0.964	LO	S
CCV 31	0.208	93.13		

PHOTOMETRY/CLP CN 11/26/96 15:16

N= 352 MEAN= 18.22 SD= 42.47 CV= 233.0

CCB 32	0.014	1.658	LO	
MFG2663 33	0.013	0.964	LO	5373 T
CCV 34	0.206	92.55		

PHOTOMETRY/CLP CN 11/26/96 15:18

N= 355 MEAN= 18.34 SD= 42.49 CV= 231.7

000303

CCB 35	0.011	0.154	LO

PHOTOMETRY/CLP CN 11/26/96 15:19

CLP CN Distillation Log | Batch Date/time: 11/26/96 | SDG #: MFGZ 66/64 | ARI #: 5374/5373 | Analyst: RS

Comments and notes regarding distillation procedure: 8:25
- all distillations = 500 mL sample unless mldl
- all spikes at 2.5 mL 10 mg/L Std

Physical descriptors:
Color: red, yellow, green, white, brown, black, colorless, etc.
Clarity: clear, cloudy, opaque
Texture: fine (powdery), medium (sand), coarse (rocks etc.)
Artifacts: yes or leave blank if none

Sample ID ARI #	Sample ID Client #	Sample Pre-testing pH	Chlorine	Sulfide	Distillation Volume (mL) Weight (g)	Final Volume (ml)	Spikes & Standards mL added	Std Conc. (µg/L)	NOTES: enter brief physical description of sample	Color	Clarity	Texture	Artifacts
matrix	ICV	N. APPLIC	N. APPLIC	N. APPLIC	50 mL	50 mL	5 mL	ICV 6	before / after	EPA REF MATL		ICV 6 (1191)	
matrix	PBS								before / after				
matrix	DMLS						50 mL	50 µg/L	before / after	N WSE STD.			
matrix	LCSS				1.0042 g				before / after	EPA REF MATL. 0689			
5374 A#1 matrix	MFGZ 66				1.0096				before / after				
A#1 dup matrix	MFGZ 66 D				1.0019				before / after				
A#1 spk matrix	MFGZ 66 S				1.0049 g		75 mL	10 ppm	before / after	N WSE STD.			
matrix	PBS 2				50 mL				before / after				
matrix	LCSS 2				1.0052 g				before / after	EPA REF MATL 0689			
5373 J#1 matrix	MFGZ 64				1.0066				before / after				
K#1 matrix	MFGZ 65				1.0077				before / after				
L#1 matrix	MFGZ 48				1.0033				before / after				
M#1 matrix	MFGZ 51				1.0015				before / after				
N#1 matrix	MFGZ 52				1.0092				before / after				
O#1 matrix	MFGZ 53				1.0045				before / after				
P#1 matrix	MFGZ 54				1.0027				before / after				
Q#1 matrix	MFGZ 55				1.0058				before / after				
R#1 matrix	MFGZ 59				1.0044				before / after				
S#1 matrix	MFGZ 60				1.0019				before / after				
T#1 matrix	MFGZ 63				1.0076				before / after				
matrix	RS 11/26/96				RS 11/26/96				before / after				
matrix									before / after				

6149F

ANALYTICAL RESOURCES, INCORPORATED

Revision 1
1/15/96

00044

000309

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Digestion and Distillation Logs

Case No: 25159

SDG: MFGZ44

ANALYTICAL RESOURCES, INC.
Contract: 68-D5-0134

000310

333 Ninth Avenue North • Seattle WA 98109-5187 • **206-621-6490** • **206-621-7523** fax

ANALYTICAL RESOURCES INCORPORATED

CLP DIGESTION LOG

ANALYST: TTM

DATE: 12/03/96

MATRIX: Soil

START TIME: 1715

ARI Sample ID	Client Sample ID	*pH <2	ICP Prep Code: SCC Initial Weight (g) Vol. (mL)	ICP Final Volume (mL)	GFA Prep Code: SCN Initial Weight (g) Vol. (mL)	GFA Final Volume (mL)	**Appearance Predigest Color/Clarity Texture	**Appearance Postdigest Color/Clarity	Comments
5373A	MFGZ44	–	1.002	200.0	1.016	200.0	Brown Fine cloudy	orange cloudy	Btl# 1
" ADup	MFGZ44D	–	1.002		1.016		" "		
" AspK	MFGZ44S	–	1.004		1.016		" "		
" B	MFGZ45	–	1.049		1.037		Brown Fine cloudy		
" C	MFGZ46	–	1.012		1.025				
" D	MFGZ47	–	1.013		1.005				
" E	MFGZ49	–	1.015		1.002				
" F	MFGZ50	–	1.006		1.024				
" G	MFGZ56	–	1.036		1.004				
" H	MFGZ57	–	1.014		1.027				
" I	MFGZ58	–	1.087		1.069				
" J	MFGZ64	–	1.022		1.042				
" K	MFGZ65	–	1.001		1.016				
" L	MFGZ48	–	1.009		1.058				
" M	MFGZ51	–	1.044		1.059				
" N	MFGZ52	–	1.008		1.017				
" O	MFGZ53	–	1.028		1.005				
" P	MFGZ54	–	1.064		1.016				
" Q	MFGZ55	–	1.005		1.036				
" R	MFGZ59	–	1.007		1.076				
" S	MFGZ60	–	1.052		1.006				
" T	MFGZ63	–	1.056		1.064				BTL#1
" Refl	LCSS	–	1.003		1.000		Brown Fine cloudy	orange cloudy	0287
" MB	PBS	–	—	200.0	—	200.0	colorless clear	colorless clear	
				TTM 12/03/96					24

* pH <2 - required for water samples only

** Color - red, blue, yellow, green, orange, violet, white, brown, gray, black, colorless

Clarity - clear, cloudy, opaque

Texture - fine (powdery), medium (sand), coarse (large crystals or rocks)

ANALYTICAL RESOURCES INCORPORATED

CLP MERCURY DIGESTION LOG

ANALYST: TM

DATE: 12/03/96

MATRIX: Soil

DIGEST START/END TIME: 1800-1830

ILM40 EPA CLP

ARI Sample ID	Client Sample ID	*pH <2	Btl #	Prep Code: SCM Initial Weight (g) Vol. (mL)	Final Volume (mL)	# KMnO4 Aliquots	**Appearance Predigest Color/Clarity Texture	Postdigest Color/Clarity	Comments
5373A	MFGZ44	–	A2	0.236	100.0	12/1	Brown Fine Cloudy	Violet Opaque	TM 12/3/96 Btl#1
" ADup	MFGZ44D	–	A22	0.235		1	" "		
" ASpK	MFGZ44S	–	B1	0.236		1	" "		
" B	MFGZ45	–	B9	0.229		1			
" C	MFGZ46	–	B11	0.234		1			
" D	MFGZ47	–	C9	0.256		1			
" E	MFGZ49	–	C24	0.210		1			
" F	MFGZ50	–	F3	0.235		1			
" G	MFGZ56	–	F4	0.247		1			
" H	MFGZ57	–	F13	0.225		1			
" I	MFGZ58	–	G2	0.249		1			
" J	MFGZ64	–	G3	0.247		1			
" K	MFGZ65	–	G4	0.218		1			
" L	MFGZ48	–	G5	0.222		1			
" M	MFGZ51	–	G6	0.242		1			
" N	MFGZ52	–	G7	0.233		1			
" O	MFGZ53	–	G8	0.209		1			
" P	MFGZ54	–	G9	0.225		1			
" Q	MFGZ55	–	G11	0.216		1			
" R	MFGZ59	–	G12	0.222		1			
" S	MFGZ60	–	G15	0.230		1			
" T	MFGZ63	–	G17	0.241	100.0	1	Brown Fine Cloudy	Violet ~~cloudy~~ Opaque 12/3/96	Btl #1

*pH<2 - required for water samples only

** Color - red, blue, yellow, green, orange, violet, white, brown, gray, black, colorless

Clarity - clear, cloudy, opaque

Texture - fine (powdery), medium (sand), coarse (large crystals or rocks)

ANALYTICAL RESOURCES INCORPORATED

CLP MERCURY DIGESTION LOG

ANALYST: TTM

DATE: 12/03/96

MATRIX: SOIL

DIGEST START/END TIME: 1800-1830

ARI Sample ID	Client Sample ID	*pH <2	Btl #	Prep Code: SCM Initial Weight (g) Vol. (mL)	Final Volume (mL)	# KMnO4 Aliquots	**Appearance Predigest Color/Clarity Texture	Postdigest Color/Clarity	Comments
5373 MB	PBB	–	G19	—	100.0	12/1 Y	colorless clear	violet opaque	
" Ref 1	LCSS	–	G23	0.200		1	Brown Fine cloudy		0287
5374 A	MFGZ66	–	I11	0.215		12/1 Y			BTL #1
" ADup	MFGZ66D	–	I14	0.215		1			
" ASpK	MFGZ66S	–	I15	0.217		1			BTL #1
" Ref 1	LCSS	–	I16	0.201		1	Brown Fine cloudy		0287
" MB	PBS	–	I20	—	100.0	1	Colorless Clear	violet opaque	

TTM 12/3/96

*pH<2 - required for water samples only

** Color - red, blue, yellow, green, orange, violet, white, brown, gray, black, colorless

Clarity - clear, cloudy, opaque

Texture - fine (powdery), medium (sand), coarse (large crystals or rocks)

000313

ANALYTICAL RESOURCES INCORPORATED

Date: 12/04/96 Analyst: TTM

JOB	SAMPLE	CLIENTID	TAREWEIGHT	SAMPDISH	DRYWEIGHT	SOLIDS
5373	A	MFGZ44	1.292	9.891	8.335	81.90
5373	B	MFGZ45	1.289	9.907	8.418	82.72
5373	C	MFGZ46	1.284	9.945	8.209	79.96
5373	D	MFGZ47	1.294	9.935	8.364	81.82
5373	E	MFGZ49	1.290	9.191	7.738	81.61
5373	F	MFGZ50	1.296	9.218	7.831	82.49
5373	G	MFGZ56	1.280	9.855	8.062	79.09
5373	H	MFGZ57	1.291	9.340	8.218	86.06
5373	I	MFGZ58	1.301	10.216	7.755	72.39
5373	J	MFGZ64	1.293	10.198	8.694	83.11
5373	K	MFGZ65	1.294	9.566	8.211	83.62
5373	L	MFGZ48	1.301	10.067	8.313	79.99
5373	M	MFGZ51	1.287	9.847	7.933	77.64
5373	N	MFGZ52	1.285	10.136	8.543	82.00
5373	O	MFGZ53	1.292	9.749	8.345	83.40
5373	P	MFGZ54	1.288	9.842	8.590	85.36
5373	Q	MFGZ55	1.292	9.843	8.119	79.84
5373	R	MFGZ59	1.282	9.892	8.469	83.47
5373	S	MFGZ60	1.280	10.945	9.272	82.69
5373	T	MFGZ63	1.286	9.414	8.467	88.35
5373	ADUP	MFGZ44D	1.540	9.707	8.246	82.11

BH 12/14/96

ANALYTICAL RESOURCES INCORPORATED

Percent Total Solids

OVEN IN		
Analyst: TM	Date: 12/03/96	Time: 1700
OVEN OUT		
Analyst: JLN	Date: 12/04/96	Time: 0930

ARI Sample ID	Client Sample ID	Tare Weight (g)	Tare + Sample Wet (g)	Tare + Sample Dry (g)	% Total Solids
5373 A	MFGZ44	1.292 g	9.891 g	8.335 g	
" ADup	MFGZ44D	1.540	9.707	8.246	
" B	MFGZ 45	1.289	9.407	8.418	
" C	MFGZ 46	1.284	9.945	8.209	
" D	MFGZ 47	1.294	9.935	8.364	
" E	MFGZ 49	1.290	9.191	7.738	
" F	MFGZ 50	1.296	9.218	7.831	
" G	MFGZ 56	1.280	9.855	8.062	
" H	MFGZ 57	1.291	9.340	8.218	
" I	MFGZ 58	1.301	10.216	7.755	
" J	MFGZ 64	1.293	10.198	8.674	
" K	MFGZ 65	1.294	9.566	8.211	
" L	MFGZ 48	1.301	10.067	8.313	
" M	MFGZ 51	1.287	9.847	7.933	
" N	MFGZ 52	1.285	10.136	8.543	
" O	MFGZ 53	1.292	9.749	8.345	
" P	MFGZ 54 TM 12/3/96 ~~1.288~~	(1.288)	9.842	8.590	
" Q	MFGZ 55	1.292	9.843	8.119	
" R	MFGZ 59	1.282	9.892	8.469	
" S	MFGZ 60	1.280	10.945	9.272	
" T	MFGZ 63	1.286	9.414	8.467	
5374 A	MFGZ66	1.549 g	9.224 g	8.512 g	
" ADup	MFGZ66D	1.290	9.720	8.937	

Comments:

5050F

Rev. 0
04/26/95

Analytical Resources, Incorporated
Analytical Chemists and Consultants

EPA Shipping/Receiving Documents

Case No: 25159

SDG: MFGZ44

ANALYTICAL RESOURCES, INC.
Contract: 68-D5-0134

000316

333 Ninth Avenue North • Seattle WA 98109-5187 • **206-621-6490** • **206-621-7523** fax

FedEx *USA Airbill*

Tracking Number 7802823335

Recipient's Copy

357 500 23789889 5293M

1 From

Date 11/18/96

Sender's Name Eric Tate Phone (713+957-3267

Company ROY F WESTON INC Dept./Floor Suite/Room

Address 1234 N POST OAK STE 120

City HOUSTON State TX Zip 77055

2 Your Internal Billing Reference Information 000910046060560210600 05

3 To

Recipient's Name Jay Kuhn Phone (206) 621-6490

Company ARI Dept./Floor Suite/Room

Address (To "HOLD" at FedEx location, print FedEx address here) 400 9th Avenue North

City Seattle State WA Zip 98109

For "HOLD" Service check here

☐ Weekday ☐ Saturday (Not available at all locations)

(Not available with FedEx First Overnight)

For Saturday Delivery check here

☐ (Extra Charge. Not available to all locations) (Not available with FedEx First Overnight or FedEx Standard Overnight)

Received Mary Lou Fox, ARI 11/19/96 1300

7 8 0 2 8 2 3 3 3 5

4 Service*

☒ FedEx Priority Overnight (Next business morning)

☐ FedEx Standard Overnight (Next business afternoon)

☐ FedEx 2Day (Second business day)

☐ FedEx Govt. Overnight (Authorized user only)

☐ DESCRIPTION

☐ FedEx Overnight Freight ☐ FedEx 2Day Freight

(For packages over 150 pounds. Call for delivery schedule.)

☐ NEW FedEx First Overnight (Earliest next business morning delivery to select locations) (Higher rates apply)

*Delivery commitment may be later in some areas.

5 Packaging

☐ FedEx Letter* ☐ FedEx Pak* ☐ FedEx Box ☐ FedEx Tube ☒ Other Packaging

*Declared value limit $500.

6 Special Handling

Does this shipment contain dangerous goods? ☐ Yes (As per attached Shipper's Declaration) ☐ Yes (Shipper's Declaration not required)

☐ Dry Ice — Dry Ice, 9, UN 1845 III ____ x ____ kg. 904 (Dangerous Goods Shipper's Declaration not required)

CA ☐ Cargo Aircraft Only

7 Payment

Bill to: ☒ Sender (Account no. in section 1 will be billed) ☐ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check

☐ Obtain Recipient FedEx Account No.

(Enter FedEx account no. or Credit Card no. below)

Total Packages	Total Weight	Total Declared Value	Total Charges
1	40	$ .00	$

*When declaring a value higher than $100 per package, you pay an additional charge. See SERVICE CONDITIONS, DECLARED VALUE AND LIMIT OF LIABILITY section for further information.

Credit Card Auth.

8 Release Signature

Your signature authorizes Federal Express to deliver this shipment without obtaining a signature and agrees to indemnify and hold harmless Federal Express from any resulting claims.

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000317

WCSL 0995

Rev. Date 7/95 • PART #147381

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FedEx USA Airbill

Tracking Number 7802823346

Recipient's Copy

358 500 23789889 5293M

1 From

Date 11/19/96 [redacted]

Sender's Name Eric Tate Phone 713-957-3267

Company ROY F WESTON INC Dept./Floor Suite/Room

Address 1234 N POST OAK STE 120

City HOUSTON State TX Zip 77055

2 Your Internal Billing Reference Information 0009100460605602106000 0

3 To

Recipient's Name Jay Kuhn Phone (206) 621-6490

Company ARI Dept./Floor Suite/Room

Address (To "HOLD" at FedEx location, print FedEx address here) 400 9th Avenue North

City Seattle State WA Zip 98109

For "HOLD" Service check here

☐ Weekday ☐ Saturday (Not available at all locations)

(Not available with FedEx First Overnight)

For Saturday Delivery check here

☐ (Extra Charge. Not available to all locations) (Not available with FedEx First Overnight or FedEx Standard Overnight)

4 Service*

☒ FedEx Priority Overnight (Next business morning) ☐ FedEx Standard Overnight (Next business afternoon) ☐ FedEx 2Day (Second business day)

☐ FedEx Govt. Overnight (Authorized user only) ☐ DESCRIPTION

☐ FedEx Overnight Freight ☐ FedEx 2Day Freight

(For packages over 150 pounds. Call for delivery schedule.)

☐ NEW FedEx First Overnight (Earliest next business morning delivery to select locations) (Higher rates apply)

*Delivery commitment may be later in some areas.

5 Packaging

☐ FedEx Letter* ☐ FedEx Pak* ☐ FedEx Box ☐ FedEx Tube ☒ Other Packaging

*Declared value limit $500.

6 Special Handling

Does this shipment contain dangerous goods? ☐ Yes (As per attached Shipper's Declaration) ☐ Yes (Shipper's Declaration not required)

☐ Dry Ice Dry Ice, 9, UN 1845 III ____ x ____ kg. 904 (Dangerous Goods Shipper's Declaration not required)

CA ☐ Cargo Aircraft Only

7 Payment

☐ Obtain Recipient FedEx Account No.

Bill to: ☒ Sender (Account no. in section 1 will be billed) ☐ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check

(Enter FedEx account no. or Credit Card no. below)

[redacted]

Total Packages	Total Weight	Total Declared Value*	Total Charges
1	4	$ .00	$

*When declaring a value higher than $100 per package, you pay an additional charge. See SERVICE CONDITIONS, DECLARED VALUE AND LIMIT OF LIABILITY section for further information.

Credit Card Auth.

8 Release Signature

Your signature authorizes Federal Express to deliver this shipment without obtaining a signature and agrees to indemnify and hold harmless Federal Express from any resulting claims.

232

000319

7 8 0 2 8 2 3 3 4 6

WCSL 0995

Rev. Date 7/95 • PART #147381

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SAMPLE LOG-IN SHEET

Lab Name: Analytical Resources Inc. 333 9th Ave North, Seattle, WA 98109

Page 1 of 1

Received By (Print Name): Janet Felkins

Log-In Date: 11/19/96

Received By (Signature): Janet Felkins

Case Number: 25159

Sample Delivery Group No.: MFGZ44

SAS Number: N.F.

REMARKS:

1. Custody Seal(s) — Present/Absent* Intact/Broken
2. Custody Seal Nos.: NONE N.F.
3. Chain of Custody Records — Present/Absent*
4. Traffic Reports or Packing List — Present/Absent*
5. Airbill — Airbill Sticker Present/Absent*
6. Airbill No.: 7802823335 N.F.
7. Sample Tags — Present/Absent*
   Sample Tag Numbers — Listed/Not Listed on Chain-of-Custody
8. Sample Condition: Intact/Broken*/Leaking
   Cooler temp. 2°C
9. Does information on custody records, traffic reports, and sample tags agree? Yes/No*
10. Date Received at Lab: 11/19/96
11. Time Received: 13:00

	CORRESPONDING		
EPA SAMPLE #	SAMPLE TAG #	ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC.
MFGZ44	6-015004	5373 A	OK
MFGZ45	6-015008	5373 B	OK
MFGZ46	6-015012	5373 C	OK
MFGZ47	6-015016	5373 D	OK
MFGZ49	6-015024	5373 E	OK
MFGZ50	6-015028	5373 F	OK
MFGZ56	6-015052	5373 G	OK
MFGZ57	6-015056	5373 H	OK
MFGZ58	6-015060	5373 I	OK
MFGZ64	6-015084	5373 J	OK
MFGZ65	6-015088	5373 K	OK

SAMPLE TRANSFER

Fraction:	Metals	Conv
Area:	Metals Lab	Conv Lab
By:	Janet	Janet
On:	11/19/96	11/19/96

* Contact SMO and attach record of resolution

Reviewed By: [signature]

Date: November 22, 1996

Logbook No: #2

Logbook Page No.: 1017 - 1019

11/19/96 N.F.

0007F

FORM DC-1

Rev. 1 02/21/94

SAMPLE LOG-IN SHEET

Lab Name: Analytical Resources Inc. 333 9th Ave North, Seattle, WA 98109

Page 1 of 1

Received By (Print Name): Janet Felkins

Log-In Date: 11/20/96

Received By (Signature): Janet Felkins

Case Number: 25159

Sample Delivery Group No.: MFB244

SAS Number: N/A

REMARKS:

1. Custody Seal(s) — Present/Absent* Intact/Broken
2. Custody Seal Nos.: none
3. Chain of Custody Records — Present/Absent*
4. Traffic Reports or Packing List — Present/Absent*
5. Airbill — Airbill/Sticker Present/Absent*
6. Airbill No.: 7802823346
7. Sample Tags — Present/Absent*
   Sample Tag Numbers — Listed/Not Listed on Chain-of-Custody
8. Sample Condition: Intact/Broken*/Leaking
   Cooler temp. 2°C
9. Does information on custody records, traffic reports, and sample tags agree? Yes/No*
10. Date Received at Lab: 11/20/96
11. Time Received: 0 11:00

EPA SAMPLE #	CORRESPONDING SAMPLE TAG #	CORRESPONDING ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC.
MFB248	6-015020	5373 L	OK
MFB251	6-015032	5373 M	OK
MFB252	6-015036	5373 N	OK
MFB253	6-015040	5373 O	OK
MFB254	6-015044	5373 P	OK
MFB255	6-015048	5373 Q	OK
MFB259	6-015064	5373 R	OK
MFB260	6-015068	5373 S	OK
MFB263	6-015080	5373 T	OK

SAMPLE TRANSFER

Fraction:	Metals	Conv
Area:	Metals Lab	Conv Lab
By:	Janet	Janet
On:	11/20/96	11/20/96

11/20/96 JF.

* Contact SMO and attach record of resolution

Reviewed By: [signature]

Date: November 22, 1996

Logbook No: #2

Logbook Page No.: 1023-1024

000343

0007F

FORM DC-1

Rev. 1
02/21/94

Reviewed By: Jeff 11/22/96	
Authorized By: ↓	
SMO CONTACT: Mishie	

USEPA CLP
RAS / SAS
SERVICE REQUEST

Page 1 of 2

EPA PROJECT: 25159	ARI JOB NUMBER: 5373
SDG NUMBER: MFGZ44	Corresponding Job No.: NONE
VTSR: 11/19/96 13:00	Due Date 12/19/96

Cooler Temp: 2.00

CASE COMPLETE: Y / (N) MS/MSD ASSIGNED (Y) / N

RAD Survey: Background

(✓) RAS
( ) SAS

ASSIGNED MS/MSD SAMPLE: MFGZ44

	SMO SAMPLE ID	ARI SAMPLE ID	SAMPLE MATRIX	Analysis Requested: ABNs	CN - ~~VOAS~~	PEST/ PCBs	Tot Metals	MS/ MSD	REMARKS & COMMENTS
1	MFGZ44	5373A	Soil		✓		✓	✓	OK
2	MFGZ45	5373B	↓		✓		✓		OK
3	MFGZ46	5373C			✓		✓		OK
4	MFGZ47	5373D			✓		✓		OK
5	MFGZ49	5373E			✓		✓		OK
6	MFGZ50	5373F			✓		✓		OK
7	MFGZ59	5373G			✓		✓		OK
8	MFGZ58	5373H			✓		✓		OK
9	MFGZ58	5373I			✓		✓		OK
10	MFGZ64	5373J	↓		✓		✓		OK

Instructions/Comments: Return Tags to Jeff as soon as done!

000349

Analytical Resources Incorporated
333 Ninth Ave. North
Seattle, WA 98109-5187

PHONE: (206) 621-6490
FAX: (206) 621-7523

Reviewed By: Jeff 11/22/96	
Authorized By: ↓	
SMO CONTACT: Kristie	

Cooler Temp: 2.0°C

USEPA CLP
RAS / SAS
SERVICE REQUEST

Page 2 of 2

EPA PROJECT: 25159	ARI JOB NUMBER: 5373
SDG NUMBER: MFEZ44	Corresponding Job No.: None
VTSR: 11/18/96 13:00	Due Date 12/19/96

CASE COMPLETE: Y / (N) MS/MSD ASSIGNED (Y) / N

RAD Survey: Background

(✓) RAS
( ) SAS

ASSIGNED MS/MSD SAMPLE: MFEZ44

	SMO SAMPLE ID	ARI SAMPLE ID	SAMPLE MATRIX	Analysis Requested: ABNs	CN- ~~VOAs~~	PEST/ PCBs	Tot metals	MS/ MSD	REMARKS & COMMENTS
1	MFE265	5373K	Soil		✓		✓		OK
2									
3									
4									
5									
6									
7									
8									
9									
10									

Instructions/Comments: Return Tags to Jeff as soon as done! 11/19/96 R.F.

000350

Analytical Resources Incorporated
333 Ninth Ave. North
Seattle, WA 98109-5187

PHONE: (206) 621-6490
FAX: (206) 621-7523

USEPA CLP/RAS/SAS Service Request ARI Form #0016f

0016F

1020

Rev. 3
06/29/95

Reviewed By: Jeff 11/22/96	
Authorized By: ↓	
SMO CONTACT: Mistie	

Cooler Temp: 2.0°C

USEPA CLP
RAS / SAS
SERVICE REQUEST

Page 1 of 1

EPA PROJECT: 25159	ARI JOB NUMBER: 5373 II
SDG NUMBER: MFB244	Corresponding Job No.: 5373
VTSR: 11/20/96 011:00	Due Date 12/20/96

CASE COMPLETE: Y / (N) MS/MSD ASSIGNED: Y / (N)

RAD Survey: Background

(✓) RAS
( ) SAS

ASSIGNED MS/MSD SAMPLE:

	SMO SAMPLE ID	ARI SAMPLE ID	SAMPLE MATRIX	Analysis Requested: ABNs	VOAs	PEST/ PCBs	Tot metals	CN-	REMARKS & COMMENTS
1	MFB248	5373 L	Soil				✓	✓	OK
2	MFB251	5373 M	↓				✓	✓	OK
3	MFB252	5373 N					✓	✓	OK
4	MFB253	5373 O					✓	✓	OK
5	MFB254	5373 P					✓	✓	OK
6	MFB255	5373 Q					✓	✓	OK
7	MFB259	5373 R					✓	✓	OK
8	MFB260	5373 S					✓	✓	OK
9	MFB263	5373 T	↓				✓	✓	OK
10									

Instructions/Comments: Return Tags to Jeff as soon as done!

000351

Analytical Resources Incorporated
333 Ninth Ave. North
Seattle, WA 98109-5187

PHONE: (206) 621-6490
FAX: (206) 621-7523

0016F

1024

Rev. 3
06/29/95

ANALYSIS SUMMARY 11/20/96

NEWSUM.rpt

Logged by: Jan

Analysis Requested: 11/19/96

ODiscard: 2/17/97

MDiscard:

ARI Job No: 5373

PC: Jeff

VTSR: 11/19/96

Data Due: 12/19/96

Project No: 25159

Inquiry Number: Form

Contact: Llewellyn, Mistie

Client: USEPA

Validatable Data Pkg: YES

Special Instructions:

SDG No:MF6Z44

Analytical Protocol:

Deliverables: FORMSMASTER DELIVERABLES

PM OK Date 11/22/96

Cooler Temp. Deg. C: 2

FOLDERS DONE (date) 11-22-96

2 by

Deliverables Require Spectra (Circle one) YES NO

See enclosed instructions

~~No~~ enclosed instructions

11 Samples

	LIMS ID	ARI ID	Client ID	Sampled	Matrix	TOT MET	Conv	WARD Metals	
1.	96-19793	5373A	MF6Z44	11/18/96	Soil/Sed	X	X	X	
						MS/MSD this sample. Metals/Conv sharing one jar.			Okay
2.	96-19794	5373B	MF6Z45	11/18/96	Soil/Sed	X	X	X	
									Okay
3.	96-19795	5373C	MF6Z46	11/18/96	Soil/Sed	X	X	X	
									Okay
4.	96-19796	5373D	MF6Z47	11/18/96	Soil/Sed	X	X	X	
									Okay
5.	96-19797	5373E	MF6Z49	11/18/96	Soil/Sed	X	X	X	
									Okay
	96-19798	5373F	MF6Z50	11/18/96	Soil/Sed	X	X	X	
									Okay

000352

ANALYSIS SUMMARY 11/20/96

NEWSUM.rpt

Logged by: Jan

Analysis Requested: 11/19/96

ODiscard: 2/17/97

MDiscard:

ARI Job No: 5373

PC: Jeff

VTSR: 11/19/96

Data Due: 12/19/96

Project No: 25159

Inquiry Number: Form

Contact: Llewellyn, Mistie

Client: USEPA

Validatable Data Pkg: YES

Special Instructions:

SDG No:MF6Z44

Analytical Protocol:

Deliverables: FORMSMASTER DELIVERABLES

PM OK _____ Date _____

Cooler Temp. Deg. C: 2

FOLDERS DONE (date) _____

#_____ by _____

Deliverables Require Spectra (Circle one) YES NO

___See enclosed instructions

___No enclosed instructions

11 Samples

	LIMS ID	ARI ID	Client ID	Sampled	Matrix	TOT MET	Conv	WARD Metals	
7.	96-19799	5373G	MF6Z56	11/18/96	Soil/Sed	X	X	X	Okay
8.	96-19800	5373H	MF6Z57	11/18/96	Soil/Sed	X	X	X	Okay
9.	96-19801	5373I	MF6Z58	11/18/96	Soil/Sed	X	X	X	Okay
10.	96-19802	5373J	MF6Z64	11/18/96	Soil/Sed	X	X	X	Okay
11.	96-19803	5373K	MF6Z65	11/18/96	Soil/Sed	X	X	X	Okay

000353

II

ANALYSIS SUMMARY 11/20/96

NEWSUM.rpt
Logged by: Jan
Analysis Requested: 11/20/96
ODiscard: 2/18/97
MDiscard:

ARI Job No: 5373
PC: Jeff
VTSR: 11/20/96
Data Due: 12/20/96
Project No: 25159

Inquiry Number: Form

Contact: Llewellyn, Mistie
Client: USEPA

Validatable Data Pkg: YES
Special Instructions:

SDG No:MFGZ44

Analytical Protocol:
Deliverables: FORMSMASTER DELIVERABLES

PM OK [illegible] Date 11/22/96

Cooler Temp. Deg. C: 2

FOLDERS DONE (date) 11-22-96
2 by [illegible]

Deliverables Require Spectra (Circle one) YES NO

✓ See enclosed instructions
___ No enclosed instructions

9 Samples

	LIMS ID	ARI ID	Client ID	Sampled	Matrix	TOT MET	Conv	WARD Metals	
1.	96-19820	5373L	MFGZ48	11/19/96	Soil/Sed	X	X	X	
						Metals/Conv sharing one jar.			Okay
2.	96-19821	5373M	MFGZ51	11/19/96	Soil/Sed	X	X	X	
						Metals/Conv sharing one jar.			Okay
3.	96-19822	5373N	MFGZ52	11/19/96	Soil/Sed	X	X	X	
						Metals/Conv sharing one jar.			Okay
4.	96-19823	5373O	MFGZ53	11/19/96	Soil/Sed	X	X	X	
						Metals/Conv sharing one jar.			Okay
5.	96-19824	5373P	MFGZ54	11/19/96	Soil/Sed	X	X	X	
						Metals/Conv sharing one jar.			Okay
6.	96-19825	5373Q	MFGZ55	11/19/96	Soil/Sed	X	X	X	
						Metals/Conv sharing one jar.			Okay

000035.1

5373II

ANALYSIS SUMMARY 11/20/96

NEWSUM.rpt

Logged by: Jan

Analysis Requested: 11/20/96

ODiscard: 2/18/97

MDiscard:

ARI Job No: 5373

PC: Jeff

VTSR: 11/20/96

Data Due: 12/20/96

Project No: 25159

Inquiry Number: Form

Contact: Llewellyn, Mistie

Client: USEPA

Validatable Data Pkg: YES

Special Instructions:

SDG No:MF6Z44

Analytical Protocol:

Deliverables: FORMSMASTER DELIVERABLES

PM OK _____ Date _____

Cooler Temp. Deg. C: 2

FOLDERS DONE (date) _____

#_____ by _____

Deliverables Require Spectra (Circle one) YES NO

___See enclosed instructions

___No enclosed instructions

9 Samples

	LIMS ID	ARI ID	Client ID	Sampled	Matrix	TOT MET	Conv	WARD Metals	
7.	96-19826	5373R	MF6Z59	11/19/96	Soil/Sed	X	X	X	Okay
						Metals/Conv sharing one jar.			
8.	96-19827	5373S	MF6Z60	11/19/96	Soil/Sed	X	X	X	Okay
						Metals/Conv sharing one jar.			
9.	96-19828	5373T	MF6Z63	11/19/96	Soil/Sed	X	X	X	Okay
						Metals/Conv sharing one jar.			

000355

METALS ANALYSIS SUMMARY 11/20/96

Contact: Llewellyn, Mistie
Validatable Package: YES
Protocol:

Project No: 25159

SEE ENCLOSED INSTRUCTIONS ✓

No enclosed instructions ____

ARI Job NO: 5373
PC: Jeff
VTSR: 11/19/96
Due to PM: 12/15/96

11 Samples

PM OK [signature] Date 11/22/96

LIMS ID	ARI ID	CLIENT ID		DATE SAMPLED	MATRIX	COND	FIELD FLTR	TOT DISS	TCLP	SPLP	pH	HARD	ORG LEN	CNV LEN	CNV CEC	COMMENTS
96-19793	5373A	MF6Z44	✓	11/18/96	Soil/Sed	Okay		WARD+CN								MS/MSD this sample. Metals/Conv sharing one jar.
96-19794	5373B	MF6Z45	✓	11/18/96	Soil/Sed	Okay		WARD+CN								
96-19795	5373C	MF6Z46	✓	11/18/96	Soil/Sed	Okay		WARD+CN								
96-19796	5373D	MF6Z47	✓	11/18/96	Soil/Sed	Okay		WARD+CN								
96-19797	5373E	MF6Z49	✓	11/18/96	Soil/Sed	Okay		WARD+CN								
96-19798	5373F	MF6Z50	✓	11/18/96	Soil/Sed	Okay		WARD+CN								
96-19799	5373G	MF6Z56	✓	11/18/96	Soil/Sed	Okay		WARD+CN								
96-19800	5373H	MF6Z57	✓	11/18/96	Soil/Sed	Okay		WARD+CN								
96-19801	5373I	MF6Z58	✓	11/18/96	Soil/Sed	Okay		WARD+CN								
96-19802	5373J	MF6Z64	✓	11/18/96	Soil/Sed	Okay		WARD+CN								
96-19803	5373K	MF6Z65	✓	11/18/96	Soil/Sed	Okay		WARD+CN								

000350

METALS ANALYSIS SUMMARY 11/20/96

Project No: 25159

ARI Job NO: 5373
PC: Jeff
VTSR: 11/20/96
Due to PM: 12/16/96

Contact: Llewellyn, Mistie
Validatable Package: YES
Protocol:

SEE ENCLOSED INSTRUCTIONS ✓

No enclosed instructions ___

9 Samples

PM OK [signature] Date 11/22/96

LIMS ID	ARI ID	CLIENT ID		DATE SAMPLED	MATRIX	COND	FIELD FLTR	TOT	DISS	TCLP	SPLP	pH	HARD	ORG LEN	CNV LEN	CNV CEC	COMMENTS
96-19820	5373L	MF6Z48	✓	11/19/96	Soil/Sed	Okay		WARD+CN									Metals/Conv sharing one jar.
96-19821	5373M	MF6Z51	✓	11/19/96	Soil/Sed	Okay		WARD+CN									Metals/Conv sharing one jar.
96-19822	5373N	MF6Z52	✓	11/19/96	Soil/Sed	Okay		WARD+CN									Metals/Conv sharing one jar.
96-19823	5373O	MF6Z53	✓	11/19/96	Soil/Sed	Okay		WARD+CN									Metals/Conv sharing one jar.
96-19824	5373P	MF6Z54	✓	11/19/96	Soil/Sed	Okay		WARD+CN									Metals/Conv sharing one jar.
96-19825	5373Q	MF6Z55	✓	11/19/96	Soil/Sed	Okay		WARD+CN									Metals/Conv sharing one jar.
96-19826	5373R	MF6Z59	✓	11/19/96	Soil/Sed	Okay		WARD+CN									Metals/Conv sharing one jar.
96-19827	5373S	MF6Z60	✓	11/19/96	Soil/Sed	Okay		WARD+CN									Metals/Conv sharing one jar.
96-19828	5373T	MF6Z63	✓	11/19/96	Soil/Sed	Okay		WARD+CN									Metals/Conv sharing one jar.

000357

Metals Analyses to complete 11/20/96

ARI Job NO: 5373
VTSR: 11/19/96
Due to PM: 12/15/96

PC: Jeff

Contact: Llewellyn, Mistie
Client: USEPA

Project No: 25159

Protocol:
Validatable Package: YES
Deliverables - Special Inst: FORMSMASTER DELIVERABLES

11/22/96

ID	SAMPLE	MATRIX	ANALYSIS	AG	AL	AS	AU	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	LI	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	SR	TH	TI	TL	U	V	W	ZN
96-19793-A	MFGZ44	Soil/Sed	TOTAL	I	I	G			I	I	I	I	I	I	I	I	C	I		I	I		I	I	G	I	G						G		I		I
96-19794-B	MFGZ45	Soil/Sed	TOTAL	I	I	G			I	I	I	I	I	I	I	I	C	I		I	I		I	I	G	I	G						G		I		I
96-19795-C	MFGZ46	Soil/Sed	TOTAL	I	I	G			I	I	I	I	I	I	I	I	C	I		I	I		I	I	G	I	G						G		I		I
96-19796-D	MFGZ47	Soil/Sed	TOTAL	I	I	G			I	I	I	I	I	I	I	I	C	I		I	I		I	I	G	I	G						G		I		I
96-19797-E	MFGZ49	Soil/Sed	TOTAL	I	I	G			I	I	I	I	I	I	I	I	C	I		I	I		I	I	G	I	G						G		I		I
96-19798-F	MFGZ50	Soil/Sed	TOTAL	I	I	G			I	I	I	I	I	I	I	I	C	I		I	I		I	I	G	I	G						G		I		I
96-19799-G	MFGZ56	Soil/Sed	TOTAL	I	I	G			I	I	I	I	I	I	I	I	C	I		I	I		I	I	G	I	G						G		I		I
96-19800-H	MFGZ57	Soil/Sed	TOTAL	I	I	G			I	I	I	I	I	I	I	I	C	I		I	I		I	I	G	I	G						G		I		I
96-19801-I	MFGZ58	Soil/Sed	TOTAL	I	I	G			I	I	I	I	I	I	I	I	C	I		I	I		I	I	G	I	G						G		I		I
96-19802-J	MFGZ64	Soil/Sed	TOTAL	I	I	G			I	I	I	I	I	I	I	I	C	I		I	I		I	I	G	I	G						G		I		I
96-19803-K	MFGZ65	Soil/Sed	TOTAL	I	I	G			I	I	I	I	I	I	I	I	C	I		I	I		I	I	G	I	G						G		I		I

000358

Metals Analyses to complete 11/20/96

ARI Job NO: 5373
VTSR: 11/20/96
Due to PM: 12/16/96

PC: Jeff

Contact: Llewellyn, Mistie
Client: USEPA

Project No: 25159

Protocol:
Validatable Package: YES
Deliverables - Special Inst: FORMSMASTER DELIVERABLES

OW/MM 11/22/96

ID	SAMPLE	MATRIX	ANALYSIS	AG	AL	AS	AU	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	LI	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	SR	TH	TI	TL	U	V	W	ZN
96-19820-L	MFGZ48	Soil/Sed	TOTAL	I	I	G			I	I	I	I	I	I	I	I	C	I		I	I		I	I	G	I	G						G		I		I
96-19821-M	MFGZ51	Soil/Sed	TOTAL	I	I	G			I	I	I	I	I	I	I	I	C	I		I	I		I	I	G	I	G						G		I		I
96-19822-N	MFGZ52	Soil/Sed	TOTAL	I	I	G			I	I	I	I	I	I	I	I	C	I		I	I		I	I	G	I	G						G		I		I
96-19823-O	MFGZ53	Soil/Sed	TOTAL	I	I	G			I	I	I	I	I	I	I	I	C	I		I	I		I	I	G	I	G						G		I		I
96-19824-P	MFGZ54	Soil/Sed	TOTAL	I	I	G			I	I	I	I	I	I	I	I	C	I		I	I		I	I	G	I	G						G		I		I
96-19825-Q	MFGZ55	Soil/Sed	TOTAL	I	I	G			I	I	I	I	I	I	I	I	C	I		I	I		I	I	G	I	G						G		I		I
96-19826-R	MFGZ59	Soil/Sed	TOTAL	I	I	G			I	I	I	I	I	I	I	I	C	I		I	I		I	I	G	I	G						G		I		I
96-19827-S	MFGZ60	Soil/Sed	TOTAL	I	I	G			I	I	I	I	I	I	I	I	C	I		I	I		I	I	G	I	G						G		I		I
96-19828-T	MFGZ63	Soil/Sed	TOTAL	I	I	G			I	I	I	I	I	I	I	I	C	I		I	I		I	I	G	I	G						G		I		I

000359

Conv Analyses to complete 11/20/96 Client: USEPA ✓ See enclosed instructions Page: 1
cnvlist2.rpt Project: 25159 ___ No enclosed instructions
Date Received: 11/19/96 Protocol:

Validatable Data Package (Raw Data): YES
Special Instructions:
Deliverables - Special Inst: FORMSMASTER DELIVERABLES

PM OK [signature] Date 11/22/96

LIMS ID	ARI ID	CLIENT ID	MATRIX	SAMPLED	DATA DUE	RT	COMMENTS - CONVENTIONALS	COMMENTS - ALL LABS
96-19793	5373A	MFGZ44	Soil/Sed	11/18/96	12/11/96	20		MS/MSD this sample. Metals/Conv sharing one jar.
			Soil Total Cyanide					
96-19794	5373B	MFGZ45	Soil/Sed	11/18/96	12/11/96	20		
			Soil Total Cyanide					
96-19795	5373C	MFGZ46	Soil/Sed	11/18/96	12/11/96	20		
			Soil Total Cyanide					
96-19796	5373D	MFGZ47	Soil/Sed	11/18/96	12/11/96	20		
			Soil Total Cyanide					
96-19797	5373E	MFGZ49	Soil/Sed	11/18/96	12/11/96	20		
			Soil Total Cyanide					
96-19798	5373F	MFGZ50	Soil/Sed	11/18/96	12/11/96	20		
			Soil Total Cyanide					
96-19799	5373G	MFGZ56	Soil/Sed	11/18/96	12/11/96	20		
			Soil Total Cyanide					
96-19800	5373H	MFGZ57	Soil/Sed	11/18/96	12/11/96	20		
			Soil Total Cyanide					
96-19801	5373I	MFGZ58	Soil/Sed	11/18/96	12/11/96	20		
			Soil Total Cyanide					

000360

Conv Analyses to complete 11/20/96 Client: USEPA ✓ See enclosed instructions

cnvlist2.rpt Project: 25159 ___ No enclosed instructions

Date Received: 11/19/96 Protocol:

Validatable Data Package (Raw Data): YES

Special Instructions:

PM OK [signature] Date 11/22/96

Deliverables - Special Inst: FORMSMASTER DELIVERABLES

LIMS ID	ARI ID	CLIENT ID	MATRIX	SAMPLED	DATA DUE	RT	COMMENTS - CONVENTIONALS	COMMENTS - ALL LABS
96-19802	5373J	MF6Z64	Soil/Sed	11/18/96	12/11/96	20		
			Soil Total Cyanide					
96-19803	5373K	MF6Z65	Soil/Sed	11/18/96	12/11/96	20		
			Soil Total Cyanide					

000361

**** LAST PAGE OF THIS SAMPLE SET ****

Conv Analyses to complete 11/20/96 Client: USEPA ✓See enclosed instructions Page: 1
cnvlist2.rpt Project: 25159 ___No enclosed instructions
Date Received: 11/20/96 Protocol:

Validatable Data Package (Raw Data): YES
Special Instructions:
Deliverables - Special Inst: FORMSMASTER DELIVERABLES

PM OK [signature] Date 11/22/96

LIMS ID	ARI ID	CLIENT ID	MATRIX	SAMPLED	DATA DUE	RT	COMMENTS - CONVENTIONALS	COMMENTS - ALL LABS
96-19820	5373L	MFGZ48	Soil/Sed	11/19/96	12/12/96	20		Metals/Conv sharing one jar.
			Soil Total Cyanide					
96-19821	5373M	MFGZ51	Soil/Sed	11/19/96	12/12/96	20		Metals/Conv sharing one jar.
			Soil Total Cyanide					
96-19822	5373N	MFGZ52	Soil/Sed	11/19/96	12/12/96	20		Metals/Conv sharing one jar.
			Soil Total Cyanide					
96-19823	5373O	MFGZ53	Soil/Sed	11/19/96	12/12/96	20		Metals/Conv sharing one jar.
			Soil Total Cyanide					
96-19824	5373P	MFGZ54	Soil/Sed	11/19/96	12/12/96	20		Metals/Conv sharing one jar.
			Soil Total Cyanide					
96-19825	5373Q	MFGZ55	Soil/Sed	11/19/96	12/12/96	20		Metals/Conv sharing one jar.
			Soil Total Cyanide					
96-19826	5373R	MFGZ59	Soil/Sed	11/19/96	12/12/96	20		Metals/Conv sharing one jar.
			Soil Total Cyanide					
96-19827	5373S	MFGZ60	Soil/Sed	11/19/96	12/12/96	20		Metals/Conv sharing one jar.
			Soil Total Cyanide					
96-19828	5373T	MFGZ63	Soil/Sed	11/19/96	12/12/96	20		Metals/Conv sharing one jar.
			Soil Total Cyanide					

**** LAST PAGE OF THIS SAMPLE SET ****

00038

Conventionals Summary 11/20/96
convlist.rpt

Contact: Llewellyn, Mistie
Client: USEPA

Protocol:

ARI Job NO: 5373
VTSR: 11/19/96
Report Due: 12/11/96
PC: Jeff

Project No: 25159

5373 A Sampled: 11/18/96

Deliverables - Special Inst: FORMSMASTER DELIVERABLES

*** = See "Conv Analyses to Complete" Sheet

ID	MATR	PH	COND	DO	BOD	COD	TOC	DOC	TCOL	FCOL	STRP	COLR	TURB	SS	TS	TSPR	TDS	TSS	TVS	VSS	ALK	CARB	BIC	ACID	NH3	NO2	NO3	N2N3	TKN	CL	F	BR	I	S=	AVS	SOLS	SO4	SO3	TOTP	SRP	O&G	NPOG	CN-t	CN-a	CN-w	Cr6	Phnl	ChlA	TOX	CEC	MISC
A	S																																											X								
B	S																																											X								
C	S																																											X								
D	S																																											X								
E	S																																											X								
F	S																																											X								
G	S																																											X								
H	S																																											X								
I	S																																											X								
J	S																																											X								
K	S																																											X								

Validatable Data Package: YES
Comments:

**** LAST PAGE OF THIS SAMPLE SET ****

Conventionals Summary 11/20/96
convlist.rpt

Contact: Llewellyn, Mistie
Client: USEPA

Protocol:

ARI Job NO: 5373
VTSR: 11/20/96
Report Due: 12/12/96
PC: Jeff

Project No: 25159

5373 L Sampled: 11/19/96

Deliverables - Special Inst: FORMSMASTER DELIVERABLES

*** = See "Conv Analyses to Complete" Sheet

ID	MATR	PH	COND	DO	BOD	COD	TOC	DOC	TCOL	FCOL	STRP	COLR	TURB	SS	TS	TSPR	TDS	TSS	TVS	VSS	ALK	CARB	BIC	ACID	NH3	NO2	NO3	N2N3	TKN	CL	F	BR	I	S=	AVS	SOLS	SO4	SO3	TOTP	SRP	O&G	NPOG	CN-t	CN-a	CN-w	Cr6	Phnl	ChlA	TOX	CEC	MISC
L	S																																										X								
M	S																																										X								
N	S																																										X								
O	S																																										X								
P	S																																										X								
Q	S																																										X								
R	S																																										X								
S	S																																										X								
T	S																																										X								

Validatable Data Package: YES
Comments: _____

**** LAST PAGE OF THIS SAMPLE SET ****

000364

ANALYTICAL
RESOURCES
INCORPORATED

SAMPLE DELIVERY GROUP (SDG)
TRAFFIC REPORT (TR) COVER SHEET

Lab Name: **ANALYTICAL RESOURCES INC.** Contract No: **68-D5-0134**

Lab Code: **ARI** Case No: **25159**

Full Sample Analysis Price in Contract: **$77.65**

SDG No/first sample in SDG: **MFGZ44** Sample Receipt Date: **11/19/96**
(Lowest EPA Sample No. of first shipment)

SDG No/last sample in SDG: **MFGZ63** Sample Receipt Date: **11/20/96**
(Highest EPA Sample No. of last shipment)

	CLP Sample Numbers	ARI Lab ID	Matrix	VTSR
1	MFGZ44	5373A	Soil/Sed	11/19/96
2	MFGZ45	5373B	Soil/Sed	11/19/96
3	MFGZ46	5373C	Soil/Sed	11/19/96
4	MFGZ47	5373D	Soil/Sed	11/19/96
5	MFGZ49	5373E	Soil/Sed	11/19/96
6	MFGZ50	5373F	Soil/Sed	11/19/96
7	MFGZ56	5373G	Soil/Sed	11/19/96
8	MFGZ57	5373H	Soil/Sed	11/19/96
9	MFGZ58	5373I	Soil/Sed	11/19/96
10	MFGZ64	5373J	Soil/Sed	11/19/96
11	MFGZ65	5373K	Soil/Sed	11/19/96
12	MFGZ48	5373L	Soil/Sed	11/20/96
13	MFGZ51	5373M	Soil/Sed	11/20/96
14	MFGZ52	5373N	Soil/Sed	11/20/96
15	MFGZ53	5373O	Soil/Sed	11/20/96
16	MFGZ54	5373P	Soil/Sed	11/20/96
17	MFGZ55	5373Q	Soil/Sed	11/20/96
18	MFGZ59	5373R	Soil/Sed	11/20/96
19	MFGZ60	5373S	Soil/Sed	11/20/96
20	MFGZ63	5373T	Soil/Sed	11/20/96

Janet Felkins
Sample Custodian

12/24/96
Date

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Additional Records

Case No: 25159

SDG: MFGZ44

ANALYTICAL RESOURCES, INC.

Contract: 68-D5-0134

000366

333 Ninth Avenue North • Seattle WA 98109-5187 • **206-621-6490** • **206-621-7523** fax

CLPAS Scheduling Notification Form

Please contact Carol *to confirm receipt of this fax*

Laboratory: ARI (206)621-6490 Contact Person: Jeff Reitan Week Of: 11/18/96

Reg.	Contract #	Cost Lot-DO #	Case#	Samples Scheduled	Coordinator	Comments
III	68-D5-0134	A 3	25145	5 LW TM/CN	Carol	two-week event/week ~~1~~ 2 of 2/half scheduled each week
III	68-D5-0134	A 3	25145	5 LW DM	Carol	two-week event/week ~~1~~ 2 of 2/half scheduled each week
III	68-D5-0134	A 3	25154	3 LS TM/CN	Carol	2 week case / week ~~1~~ 2 = 11/~~11~~ 18/96 / half sent per week
VI	68-D5-0134	A 3	25159	21 LS TM/CN	Mistie	

MATRIX: LE = Leachate; LW = Low Conc. Water; LS = Low Conc. Soil; MS = Medium Conc. Soil; LD = Low Sediment; SW = Surface Water; AR = Air

COORDINATOR:	REGIONS	TELEPHONE
Carol Shaeffer:	3, 4, 8	(703) 519-1461
Mistie Llewellyn:	5, 6, 7	(703) 519-1084
Neil Rogers:	1, 2, 9, 10	(703) 519-1019

ANALYSIS: FTCL = Full Target Compound List (Full Organics: VOA, BNA, PEST/PCB)

TMCN = Target Analyte List (Metals and Cyanide)

DM = Dissolved Metals

DDT = Dioxin

*** * * Please remember to invoice with the appropriate "DO #" Delivery Order numbers for each case have been listed above, next to the Cost Lot. PLEASE INVOICE ACCORDINGLY! * * ***

When sending data packages to CLASS, Please direct them to the "CLASS MAILROOM" and not specific DynCorp personnel.

000367

CLPAS SHIPPING

TO: ARI Jeff Reitan

DATE: 11/19/96

FROM: RAS COORDINATORS

Case No	Coordinator	Region	Shipping Date	Airbill Number	Samples Shipped	Ship info called in by sampler complete? Y/N	Does lab TR match? Y/N
25159	Mistie	VI	11/18/96	7802823335	11 LS TM/CN	Y	

MATRIX: LW = Low Conc. Water LS = Low Conc. Soil MS = Medium Conc. Soil

ANALYSIS: FTCL = Full Target Compound List; VOA; BNA; PEST/PCB (P/P)

TMCN = Total Metals and Cyanide; TM = Total Metals; CN = Cyanide; DM = Dissolved Metals

Lab should determine whether TR received matches shipping info. provided by CLASS and should call appropriate coordinator if there is a problem with the above information.

000363

CLPAS SHIPPING

TO: ARI Jeff Reidan

DATE: 11/21/96

FROM: RAS COORDINATORS

Case No	Coordinator	Region	Shipping Date	Airbill Number	Samples Shipped	Ship info called in by sampler complete? Y/N	Does lab TR match? Y/N
25159	Mistie	VI	11/19/96	7802823346	10 LS TM/CN	Y	

MATRIX: LW=Low Conc. Water LS=Low Conc. Soil MS=Medium Conc. Soil

ANALYSIS: FTCL=Full Target Compound List; VOA; BNA; PEST/PCB (P/P)

TMCN=Total Metals and Cyanide; TM=Total Metals; CN=Cyanide; DM=Dissolved Metals

Lab should determine whether TR received matches shipping info. provided by CLASS and should call appropriate coordinator if there is a problem with the above information.

000369

~~3~~ 1/2
BH 11/25/96

TOTAL METALS SAMPLE LOGFORM

USE EPA ICV/LCSS
ILM04.0 CLP

PM OK ____ Date _____

ARI JOB NO: 5373 | Client Name: USEPA | Project: 25159

Prep Due Date: 12/03 | Analysis Due Date 12/11 | Data Due Date 12/15 | Surcharge/Discount: _____

Prep Memo: EPA CLP | Analysis Memo EPA CLP | General Memo EPA CLP | Prepared by: BH | Date: 11/25/96

	ARI SMP ID	METALS MATRIX	Ag	Al	As	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	Hg	K	Mg	Mn	Mo	Na	Ni	Pb	Sb	Se	Sn	Tl	V	Zn	B	Si	Preparation Codes ① SCC	② SCN	③ SCM			
1	A	Soil/S T	I	I	G	I	I	I	I	I	I	I	I	C	I	I	I		I	I	G	I	G		G	I	I			✓	✓	✓			
2	B	Soil/S T	I	I	G	I	I	I	I	I	I	I	I	C	I	I	I		I	I	G	I	G		G	I	I			✓	✓	✓			
3	C	Soil/S T	I	I	G	I	I	I	I	I	I	I	I	C	I	I	I		I	I	G	I	G		G	I	I			✓	✓	✓			
4	D	Soil/S T	I	I	G	I	I	I	I	I	I	I	I	C	I	I	I		I	I	G	I	G		G	I	I			✓	✓	✓			
5	E	Soil/S T	I	I	G	I	I	I	I	I	I	I	I	C	I	I	I		I	I	G	I	G		G	I	I			✓	✓	✓			
6	F	Soil/S T	I	I	G	I	I	I	I	I	I	I	I	C	I	I	I		I	I	G	I	G		G	I	I			✓	✓	✓			
7	G	Soil/S T	I	I	G	I	I	I	I	I	I	I	I	C	I	I	I		I	I	G	I	G		G	I	I			✓	✓	✓			
8	H	Soil/S T	I	I	G	I	I	I	I	I	I	I	I	C	I	I	I		I	I	G	I	G		G	I	I			✓	✓	✓			
9	I	Soil/S T	I	I	G	I	I	I	I	I	I	I	I	C	I	I	I		I	I	G	I	G		G	I	I			✓	✓	✓			
10	J	Soil/S T	I	I	G	I	I	I	I	I	I	I	I	C	I	I	I		I	I	G	I	G		G	I	I			✓	✓	✓			
11	K	Soil/S T	I	I	G	I	I	I	I	I	I	I	I	C	I	I	I		I	I	G	I	G		G	I	I			✓	✓	✓			

000370

Computer Generated Replacement for 5019F (Rev.1 02/17/94)

3/3 2/2
PH 11/25/96

TOTAL METALS SAMPLE LOGFORM

PM OK ____ Date _____

ARI JOB NO: 5373 | Client Name: USEPA | Project: 25159

Prep Due Date: See p. 1 | Analysis Due Date _____ | Data Due Date _____ | Surcharge/Discount: _____

Prep Memo: _____ | Analysis Memo _____ | General Memo _____ | Prepared by: _____ | Date: 11/25/96

	ARI SMP ID	METALS MATRIX	Ag	Al	As	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	Hg	K	Mg	Mn	Mo	Na	Ni	Pb	Sb	Se	Sn	Tl	V	Zn	B	Si	Preparation Codes SCC	SCN	SCM			
1	L	Soil/S T	I	I	G	I	I	I	I	I	I	I	I	C	I	I	I		I	I	G	I	G		G	I	I			✓	✓	✓			
2	M	Soil/S T	I	I	G	I	I	I	I	I	I	I	I	C	I	I	I		I	I	G	I	G		G	I	I			✓	✓	✓			
3	N	Soil/S T	I	I	G	I	I	I	I	I	I	I	I	C	I	I	I		I	I	G	I	G		G	I	I			✓	✓	✓			
4	O	Soil/S T	I	I	G	I	I	I	I	I	I	I	I	C	I	I	I		I	I	G	I	G		G	I	I			✓	✓	✓			
5	P	Soil/S T	I	I	G	I	I	I	I	I	I	I	I	C	I	I	I		I	I	G	I	G		G	I	I			✓	✓	✓			
6	Q	Soil/S T	I	I	G	I	I	I	I	I	I	I	I	C	I	I	I		I	I	G	I	G		G	I	I			✓	✓	✓			
7	R	Soil/S T	I	I	G	I	I	I	I	I	I	I	I	C	I	I	I		I	I	G	I	G		G	I	I			✓	✓	✓			
8	S	Soil/S T	I	I	G	I	I	I	I	I	I	I	I	C	I	I	I		I	I	G	I	G		G	I	I			✓	✓	✓			
9	T	Soil/S T	I	I	G	I	I	I	I	I	I	I	I	C	I	I	I		I	I	G	I	G		G	I	I			✓	✓	✓			
	AOUP																													✓	✓	✓			
	ASPK																													✓	✓	✓			
	MB																													✓	✓	✓			
	REF1	EPA 0287																												✓	✓	✓			

1-3 0003

Computer Generated Replacement for 5019F (Rev.1 02/17/94)

SOP Rev. Date: _____

ANALYTICAL RESOURCES INCORPORATED

SPIKING LOG

Sample ID: 5373ASPK Sample Volume: 200 mL Date: 12/3/96 Spiked By: NSJ

All cross-outs made by analyst unless otherwise noted.

100 mL for SCM digest

Prep. Code				SCC	SCN
Spike Solution Added	ICP ROUTINE	GFA ROUTINE	ICP MINUS	ICP CLP	GFA CLP
Standard No.				617-4	615-2
Vol. Added: mL				2.0	2.0

ELEMENT REQUESTED						
	Ag					
	Al					
	As					
	Ba					
	Be					
	Ca					
	Cd					
	Co					
	Cr					
	Cu					
	Fe					
	K					
	Mg					
	Mn					
	Na					
	Ni					
	Pb					
	Se					
	Tl					
	V					
	Zn					
	Li					
	Sr					

Single Element Spikes

Element	Prep. Code	Anal. Code	Stock Conc. mg/L	Stock Added mL	Spike Added mg/L	Spike Added Plus Solution mg/L	Std. No.
Hg	SCM	CVA	1	0.1	0.001		544-3
Sb		ICP	2500	0.1	2.5		
Sb		GFA	100	0.1	0.1		
Sb CLP	RCC	ICP	1000	0.05	0.5		
Sb CLP	SCC	ICP	1000	0.1	0.5		610-8
Ag		ICP	250	0.1	0.25		
Cd		ICP	100	0.1	0.1		
As		ICP	1000	0.25	2.5		
Pb		ICP	1000	0.1	1		
Se		ICP	1000	0.25	2.5		
Tl		ICP	1000	0.25	2.5		
B		ICP	300	0.1	0.3		
Mo		ICP	250	0.1	0.25		
Si		ICP	5000	0.1	5		
Sn		ICP	500	0.1	0.5		
Ti		ICP	2500	0.1	2.5		

Notes:

WITNESSED LW

003422

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5033F

Rev. 6
2/26/96

082

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ANALYTICAL RESOURCES INCORPORATED

METALS WORKING STANDARD PREPARATION LOG

Standard Number	Solution Name	Stock Number	Stock Soln. Conc. or Name	Stock Soln. Volume	Final Volume	Matrix	Final Conc.	Preparation Date	Expiration Date	Analyst Initials	Analytical Verification
686-1	EPA CCV	13-1	ARICPCV-1	10.0ml	1000ml	5% HCl, 1% HNO3	SEE ICP SOP	15:45 11-1-96		LG	
		13-2	-2								
		13-3	-3								
		STD616-4	Al 1000mg/L	3.0ml			TOTAL 5.0mg/L				
		-5	Ca								
		-6	Fe								
		-8	Mg								
686-2	EPA ICSA	12-19	Part A	20.0ml	200ml	5% HCl 1% HNO3	SEE CERT	11/2/96		AA	
686-3	EPA ICSA B	12-19	Part A								
		12-20	Part B								
686-4	ICP STD 2	STD 611-1	ICP STD2 stock	2.00ml	100ml	5% HCl 1% HNO3	See ICP SOP	7:15 11/4/96		AM	
686-5	3	611-2	3								
686-6	4	612-1	4								
686-7	5	612-2	5	4.00ml							
686-8	GFA CAL INT	STD 613-8	GFA CAL STK	1.00 mL	100.0mL	2% HNO3	See GFA SOP	11/4/96		NSJ	
		610-8	SG 1000	0.20							

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Rev. 2
05/23/94

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METALS WORKING STANDARD PREPARATION LOG

Standard Number	Solution Name	Stock Number	Stock Soln. Conc. or Name	Stock Soln. Volume	Final Volume	Matrix	Final Conc.	Preparation Date	Expiration Date	Analyst Initials	Analytical Verification
703-1	GFA CU 25	STD 613-6	GFA CU int	0.50 mL	100 mL	0.5% HNO_3	25 µg/L	0845 12/6/96		AA	
703-2	〃 40	〃	〃	0.80 〃	〃	〃	40 〃	〃		〃	
703-3	Hg Inst STD	12-17	Hg AA Grade	0.1 mL	100.0 mL	0.5% HNO_3	1.0 mg/L	850 12/9/96		DM	
703-4	Hg Inst CV	12-16	Hg CG Grade	0.1 mL	100.0 mL	0.5% HNO_3	1.0 mg/L	850 12/9/96		DM	
703-5	GFA CAL INT	STD CAL-2	GFA CAL STOCK	1.00 mL		2% HNO_3	See GFA	10:00 12-9-96		NSJ	
↓	↓	STD CAL-3	Sb 1000	0.20		↓	SOP				
703-6	GFA CAL -2	STD 703-5	GFA CAL INT	0.10		0.5% HNO_3	2 µg/L				
703-7	-10			0.50			10				
703-8	-20			1.00			20				
703-9	-25			1.25			25				
703-10	-50			2.50			50				
703-11	GFA CU -25	STD 613-6	GFA CU INT	0.50			25				
703-12	↓ -30	↓	↓	0.60 mL	100.0 mL	0.5% HNO_3	30 µg/L	5:00 pm (17:00) 12-9-96		NSJ	
703-13	GFA CAL -0.4	STD 703-5	GFA CAL INT	0.20			0.4				
703-14	Hg Inst STD	12-17	Hg AA Grade	0.1 mL	100.0 mL	0.5% HNO_3	01.0 mg/L	810 12/10/96		DM	
703-15	Hg Inst CV	12-16	Hg CG Grade	0.1 mL	100.0 mL	0.5% HNO_3	1.0 mg/L	810 12/10/96		DM	

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METALS WORKING STANDARD PREPARATION LOG

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Standard Number	Solution Name	Stock Number	Stock Soln. Conc. or Name	Stock Soln. Volume	Final Volume	Matrix	Final Conc.	Preparation Date	Expiration Date	Analyst Initials	Analytical Verification
588-1	GFA CV 40	580-7	GFA CV INT	0.8 ml	100.0	0.5% HNO_3	40 µg/L	9:10 6-10-96		Sem/AA	
588-2	↓ 25	↓	↓	0.5 ↓	↓	↓	25 ↓	↓		↓	
588-3	ICV-5 EPA	12-14	ICV-5 CONC	20.0	2000 ml	2% HNO_3	SEE CERT	11:96 6-10-96		CTG	
588-4	Hg int. STD	12-17	Hg AA grade	0.1 mL	100.0 mL	0.5% HNO_3	1.0 mg/L	1200 06/10/96		BH	
588-5	Hg int. CV	12-16	Hg CG grade	0.1 mL	100.0 mL	0.5% HNO_3	1.0 mg/L	1200 06/10/96		BH	
588-6	GFA CV 40	STD 580-7	GFA CV INT	0.80 mL	100 mL	0.5% HNO_3	40 µg/L	9:00 6/11/96		AM	
588-7	↓ 25	↓	↓	0.50	↓	↓	25	↓		↓	
588-8	↓ 3.0	↓	↓	0.30	↓	↓	3.0	↓		↓	
588-9	↓ 2.5	↓	↓	0.25	↓	↓	2.5	↓		↓	
588-10	↓ 25	↓	↓	0.5	↓	↓	25 µg/L	9:00 6-12-96		Sem	
588-11	↓ 3.0	↓	↓	0.3	↓	↓	3.0	↓		↓	
588-12	ICP ICV EPA	12-10	ICV-1 CONC	100.0 ml	1000 ml	2% HNO_3	SEE CERT	11:20 6-12-96		CTG	AA 6/13
↓	↓	12-11	ICV-3 CONC	↓	↓	↓	↓	↓		↓	↓
588-13	GFA CV - 25	STD 580-7	GFA CV INT	0.50 mL	100.0 mL	0.5% HNO_3	25 µg/L	13 6-14-96	NSJ 6-13-96	NSJ	
588-14	GFA CAL INT	515-10	GFA CAL STOCK	1.0	↓	2% HNO_3	2 mg/L	Sem 9:30 6-13-96		Sem	
↓	↓ 80	546-5	561000	0.2 ↓	↓	↓	↓	↓		↓	

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METALS WORKING STANDARD PREPARATION LOG

Standard Number	Solution Name	Stock Number	Stock Soln. Conc. or Name	Stock Soln. Volume	Final Volume	Matrix	Final Conc.	Preparation Date	Expiration Date	Analyst Initials	Analytical Verification
701-1	GFA MOD 50	STD 698-5	GFA Cal int	2.50 mL	100 mL	0.5% HNO_3	50 ug/L	9:45 12/4/96		Am	
701-2	GFA cal int	STD 691-2	GFA cal stock	1.00		2.0% HNO_3	SEE GFA SOP				
↓	↓	↓ 691-3	Sb 1000	0.20		↓					
701-3	GFA cal 50	STD 701-2	GFA Cal int	2.50		0.5% HNO_3	50 ug/L				
701-4	CRA 0.4	↓	↓	0.20			0.4				
701-5	ICV 2.5	STD 613-6	GFA CV int	0.25			2.5				
701-6	CV 3.0			0.3			3.0				
701-7	CV 40	↓	↓	0.8	↓	↓	40	↓		↓	
701-8	Hg INST STD	12-17	Hg AA grade	0.1 ml	100.0	0.5% HNO_3	1.0 mg/L	12/04/96		TTM	
701-9	Hg INST CV	12-16	Hg CG grade	0.1 ml	100.0	0.5% HNO_3	1.0 mg/L	12/04/96		TTM	
701-10	Sb Flame -0.5	STD 691-3	Sb 1000	0.05 mL		2% HNO_3	0.5 mg/L	10:00 12-4-96		NSJ	
701-11	-2.0			0.20			2.0				
701-12	-5.0			0.50			5.0				
702-13	-10.0	↓	↓	1.00			10.0				
701-14	Flame CV - 4.0	—	AR GFA CV-1	8.00	↓	↓	4.0				
701-15	GFA CV - 25	STD 613-6	GFA CV INT	0.50 mL	100.0 mL	0.5% HNO_3	25 ug/L	↓		↓	

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701

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05/23/94

ANALYTICAL RESOURCES INCORPORATED

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METALS WORKING STANDARD PREPARATION LOG

All corrections made by analyst unless otherwise noted.

Standard Number	Solution Name	Stock Number	Stock Soln. Conc. or Name	Stock Soln. Volume	Final Volume	Matrix	Final Conc.	Prep. Date	Prep. Time	Expiration Date	Analyst Initials
756-1	GFA CAL INT	STD 691-2	GFA CAL STK	1.00 mL	100.0 mL	2% HNO_3	See GFA	12-15-96	9:15		NSJ
↓	↓	STD 691-3	56 1000	0.20		↓	50P				
756-2	GFA CAL - 3	STD 756-1	GFA CAL INT	0.15		0.5% HNO_3	3 µg/L				
756-3	-10			0.50			10				
756-4	-20			1.00			20				
756-5	-50			2.50			50				
756-6	-50 (mod)			2.50			50				
756-7	-75			3.75			75				
756-8	GFA CU -25	STD 613-6	GFA CU INT	0.50			25				
756-9	-40			0.80			40				
756-10	Hg Inst STD	12-17	Hg AA Grade	0.1 mL	100.0 mL	0.5% HNO_3	1.0 mg/L	12-16-96	0825		DM
756-11	Hg Inst CV	12-16	Hg CG Grade	0.1 mL	100.0 mL	0.5% HNO_3	1.0 mg/L	12-16-96	0825		DM
756-12	ICP Std 2	STD 611-1	ICP STD 2 STOCK	2.00 mL	100 mL	5% HCl 1% HNO_3	See ICP SOP	12-16-96	0830		[illegible]
756-13	3	611-2	3								
756-14	4	612-1	4								
756-15	5	612-2	5	4.00 mL							

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Rev. 3
12/3/96

ANALYTICAL RESOURCES INCORPORATED

METALS WORKING STANDARD PREPARATION LOG

All corrections made by analyst unless otherwise noted.

Standard Number	Solution Name	Stock Number	Stock Soln. Conc. or Name	Stock Soln. Volume	Final Volume	Matrix	Final Conc.	Prep. Date	Prep. Time	Expiration Date	Analyst Initials
755-1	EPA CLP ICV	15-11A	EPA ICV-1 conc	100 mL	1000 mL	5% HCl 1% HNO3	SEE CERT	12-11-96	12:55		[illegible]
↓	↓	15-12A	EPA ICV-2 conc	↓	↓	↓	↓	↓			↓
755-2	GFA CV 25	STD 613-6	GFA CV mt	0.5 mL ~~100 mL~~	100 mL	0.5% HNO3	25 ug/L	12-12-96	0725		[illegible]
755-3	Hg Inst STD	12-17	Hg AA Grade	0.1 mL	100.0 mL	0.5% HNO3	1.0 mg/L	12-12-96	0815		DM
755-4	Hg Inst CV	12-16	Hg CG Grade	0.1 mL	100.0 mL	0.5% HNO3	1.0 mg/L	12-12-96	0815		DM
755-5	GFA CRI 0.1	STD 704-5	GFA cal mt	0.20 mL	100 mL	0.5% HNO3	0.4 ug/L	12-13-96	0815		[illegible]
755-6	CV 40	STD 613-6	GFA CV mt	0.80	↓	↓	40 ug/L	↓	↓		↓
755-7	CV 25	↓	↓	0.50 ↓	↓	↓	25 ug/L	↓	↓		↓
755-8	GFA CV-25	STD 613-6	GFA CV INT	0.50 mL	100.0 mL	0.5% HNO3	25 ↓	12-13-96	11:30		NSJ
755-9	GFA cal mt	STD 691-2	GFA cal stock	1.00 mL	100 mL	2% HNO3	SEE GFA SOP	12-14-96 ~~0905~~	0905 ~~12~~		[illegible]
↓	↓	691-3	Sb 1000	0.20	↓	↓	↓	12-14-96	↓		↓
755-10	GFA cal 50	755-9	GFA cal mt	2.50	↓	0.5% HNO3	50 ug/L	↓	↓		↓
755-11	↓ 20	↓	↓	1.00	↓	↓	20 ↓	↓	↓		↓
755-12	↓ 10	↓	↓	0.50	↓	↓	10	↓	↓		↓
755-13	spk 25	↓	↓	1.25	↓	↓	25	↓	↓		↓
755-14	CV 25	613-6	GFA CV mt	0.50 ↓	↓	↓	25 ↓	↓	↓		↓

ANALYTICAL
RESOURCES
INCORPORATED

METALS WORKING STANDARD PREPARATION LOG

Standard Number	Solution Name	Stock Number	Stock Soln. Conc. or Name	Stock Soln. Volume	Final Volume	Matrix	Final Conc.	Preparation Date	Expiration Date	Analyst Initials	Analytical Verification
539-1	SPEX ICP 2	12-9	SPEX ICP2 CONC	5.0 ml	500 ml	5% HCl, 1% HNO_3	SEE CERT	3-6-96	2-15-97	LG	
539-2	EPA ICV-1	12-10	ICV-1 CONC	100.0 ml	1000.0 ml	2% HNO_3	SEE CERT	3-6-96		LG	
539-3	ICV-3	12-11	-3								
539-4	ICV-4	12-12	-4								
539-5	ICV-2	12-13	-2	100.0 ml	2000 ml						
539-6	ICV-5	12-14	-5	20.0 ml	2000 ml						
539-7	GFA CAL INT	515-10	GFA CAL STOCK	1.0	100 ml	2% HNO_3	2 ug/L	3/7/96	time 9:15	SCM	
	Sb	435-1	Sb 1000	0.2							
539-8	GFA CAL 50	539-7	GFA CAL INT	2.5		0.5% HNO_3	50 ug/L				
539-9	25			1.25			25				
539-10	20			1.0			20				
539-11	10			0.5			10				
539-12	GFA CV 30	486-9	GFA CV INT	0.6			30				
539-13	25			0.5			25				
539-14	Hg int. STD	10-3	Hg AA grade	0.1 mL	100.0 mL	0.5% HNO_3	1.0 mg/L	1025 03-07-96		BH	
539-15	Hg int. CV	10-4	Hg CG grade	0.1 mL	100.0 mL	0.5% HNO_3	1.0 mg/L	1025 03-07-96		BH	

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ANALYTICAL RESOURCES INCORPORATED

METALS STOCK SOLUTION PREPARATION LOG

Standard Number	Solution Name	Source	Lot Number	~~ARI Log Number~~ Date Logged in	Matrix	Concentration	~~Preparation~~ opened Date	Prep. Analyst Initials	Analytical Verification	
12-1	ERA CATS STOCK 425	ERA	425	N/A		SEE CERT	8-31-95			8-31-96
12-2	SPEX ICP1	SPEX	Z-3 ICP1			SEE CERT	9/28/95			9-30-96
12-3	SPEX ICP2	↓	Z-4 ICP2			↓	↓	↓		↓
12-4	Li Custom Grade	IV	K-LI0107		1.4% HNO_3	9957 mg/mL	11/8/95			11-8-96
12-5	ERA TR. METALS CONC	ERA	428		DIL. HNO_3	SEE CERT	12-1-95			11-30-96
12-6	Li CUSTOM GRADE	IV	K-LJ01107		DIL. HNO_3	9957 mg/L	2-9-96			2-9-~~96~~ 97
12-7	ERA Cations Conc	ERA	A27			SEE CERT	2-14-96			2-9-97
12-8	SPEX ICP1	SPEX	2-3 ICP1			SEE CERT	3-6-96			2-15-97
12-9	↓ ↓2	↓	2-4 ICP2			↓	↓	↓		↓
12-10	EPA CONC ICV-1	EPA	0195/ICV195			↓				
12-11	-3	↓	0694/ICV694			↓		↓		
12-12	-4	↓	0692/ICV499			↓		↓		
12-13	-2	↓	0692/ICV296			↓		↓		
12-14	-5	↓	0791/ICV592			↓		↓		
12-15	IV Na CUSTOM GR.	IV	K-NA02042		1.4% HNO_3	9997 mg/L	3-27-96			3-13-97
12-16	Hg CUST. GR	↓	K-HG01126		3.5% HNO_3	1007	3-15-96	↓		3-15-97
12-17	Hg AA GR.	↓	K-HG2012		↓	1003	↓	↓		↓
12-18	ERA TR. METALS CONC	ERA	429		DIL. HNO_3	SEE CERT	5-17-96			5-17-97
12-19	EPA ICSA CONC.	EPA	0194/ICSA0194			SEE CERT				
12-20	" ICSAB "	↓	0596/ICSB0596			↓		↓		
12-21	AR-GFA CV-1	~~ERA~~ IV	LMEB57013	7/17/96	3.5% HNO_3	SEE CERT	7-19-96			8-1-97

7/17/94

000012

5016F

Rev. 1
02/17/94

ANALYTICAL
RESOURCES
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CONVENTIONALS STOCK SOLUTION PREPARATION LOG

Dissolve 0.8 g NaOH and 2.51 g KCN in 1000 mL. DI.
Determine the cyande concentration of the stock solution by standardizion against silver nitrate titrant.

STOC.Log Number	Solution Name	Source	Lot Number	Date Received	Date of Expiration	ARI Log No.	Matrix	Concentration (ppm)	Date Prepared	Date Disposed	Analyst Initials	Notes
CN-1	Cyanide	SM	CJ458	—	—	—	H2O	1,000 ppm (approximate)	~~12/4/94~~ 12/16/93	4.26.95	BSO	
CN-2	"	SM	CJ458	—	—	—	H_2O	~1000	4.26.95	10/23/95	PJZ	
CN#3	"	SM	CJ458	—	—	—	H_2O	~1000	10/23/95	4/23/96	PJZ	
CN#4	"	SM	CJ458	—	—	—	H_2O	~1000	4/23/96	8/29/96	PJZ	
CN#5	"	SM	CJ458	—	—	—	H_2O	~1000	8/29/96		PJZ	

SM: spectrum

000031

6076F

000001

Rev. 0
02/03/94

ARI Job No.: 5373 I

VTSR: 11/19/96

TAT: 35 days

Requested TAT: 35 days

Client Name: USEPA

Client Project: CLP Case #25159 / SDG # MFGZ44

Prepared By: Jeff

Project Manager: Jeff

ANALYTICAL RESOURCES INCORPORATED

SPECIAL ANALYSIS AND REPORTING REQUIREMENTS

ANALYSIS (Specify Method)	ABN	VOA	GC	Metals CLP-TAL	Convent. CLP-CN-	Radchem	(Additional Analyses)	
Calibration - (In-House)								
(PSEP)/(PSDDA)								
(EPA-CLP)				X	X			
(Other)								
Deliverables FORM 1 (basic report)				X	X			
FORM 2 (Surr. % Rec. summ.)								
FORM 3 (ms/msd)				X	X			
FORM 4 (MB associate)								
FORM 5 (Inst. check)								
FORM 6 (Curve)								
FORM 7 (Cont. Std.)								
FORM 8 (IS Summary)			(Run log RTs)					
FORM 9 (GPC & Florisil Check)								
FORM 10 (% D / Columns)								
Full CLP Deliverables				X	X			
Disk Deliverables				X	X			

0002F

***SEE REVERSE SIDE FOR ADDITIONAL INFORMATION**

Rev. 5
6/12/96

ANALYTICAL
RESOURCES
INCORPORATED

00038

SPECIAL ANALYSIS AND REPORTING REQUIREMENTS

ANALYSIS (Specify Method)	ABN	VOA	GC	Metals CLP-TAL	Convent. CLP-CN-	Radchem		
Extractables (Low,Med,CLP,PSEP/PSDDA)								
Duplicate				X	X			
Triplicate								
Matrix Spike				X	X			
Matrix Spike Dup.								
Lab Control Sample (LCS)				X	X			
Special Analytes								
Special Det. Limit				CRDL	CRDL			
Special Spike Compounds								
Special Surrogates								
QC Limits**				CLP	CLP			
Splits/Composites								
Unknowns (TICs)								
Verification Std./SRM								

**Specify limits to be used: In-House, CLP, or Other. If "Other", see attached paperwork for required limits.

Additional Requirements

Use sample 5373A (MFGZ44) for soil spk/dup/serial dilution

0002F

*SEE REVERSE SIDE FOR ADDITIONAL INFORMATION

Rev. 5
6/12/96

ARI Job No.: 5373II

VTSR: 11/20/96

TAT: 35 days

Requested TAT: 35 days

Client Name: USEPA

Client Project: Case # 25159 / SDG # MFG244

Prepared By: Jeff

Project Manager: J

ANALYTICAL RESOURCES INCORPORATED

SPECIAL ANALYSIS AND REPORTING REQUIREMENTS

ANALYSIS (Specify Method)	ABN	VOA	GC	Metals CLP-TAL	Convent. CLP-CN-	Radchem	(Additional Analyses)	
Calibration - (In-House)								
(PSEP)/(PSDDA)								
(EPA-CLP)				X	X			
(Other)								
Deliverables FORM 1 (basic report)				X	X			
FORM 2 (Surr. % Rec. summ.)								
FORM 3 (ms/msd)				X	X			
FORM 4 (MB associate)								
FORM 5 (Inst. check)								
FORM 6 (Curve)								
FORM 7 (Cont. Std.)								
FORM 8 (IS Summary)			(Run log RTs)					
FORM 9 (GPC & Florisil Check)								
FORM 10 (% D / Columns)								
Full CLP Deliverables				X	X			
Disk Deliverables				X	X			

000381

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***SEE REVERSE SIDE FOR ADDITIONAL INFORMATION**

Rev. 5
6/12/96

ANALYTICAL
RESOURCES
INCORPORATED

0003850

SPECIAL ANALYSIS AND REPORTING REQUIREMENTS

ANALYSIS (Specify Method)	ABN	VOA	GC	Metals CLP-TAL	Convent. CLP-CN-	Radchem		
Extractables (Low,Med,CLP,PSEP/PSDDA)								
Duplicate				X	X			
Triplicate								
Matrix Spike				X	X			
Matrix Spike Dup.								
Lab Control Sample (LCS)				X	X			
Special Analytes								
Special Det. Limit				CRDL	CRDL			
Special Spike Compounds								
Special Surrogates								
QC Limits**				CLP	CLP			
Splits/Composites								
Unknowns (TICs)								
Verification Std./SRM								

**Specify limits to be used: In-House, CLP, or Other. If "Other", see attached paperwork for required limits.

Additional Requirements

Batch w/ 5373I (part 1)

0002F

*SEE REVERSE SIDE FOR ADDITIONAL INFORMATION

Rev. 5
6/12/96

ANALYTICAL RESOURCES INCORPORATED

Summary
~~ANALYST NOTES - Metals~~

ARI Job No: 5373 Client Name: USEPA

Parameter: Metal + CN Case ~~Client Project:~~ 25159

☐ Job OK, no corrective action required

Case was 20 soils for TAL metals + CN

Sample MFGZ44 was chosen for QC all of which was in control with the following exceptions.

Spike recovery for Sb by ICP was low @ 46.5% recovery a post spike was done with recovery of 98.0%

Duplicate RPDs were high for Al 37.8% and Fe at 23.9% all ~~data~~ data is appropriately flagged.

Analyst: [signature] 12/24/96 Date Analyzed:

5048F

Rev. 4
04/18/95

000386

Preservative: ICE

Yes ☒ No ☐

Designate		
Grab. X	Volatile Organics	
	Semi Volatiles (ABN)	
Comp.	Pesticides/PCB	
	TOTAL Metals	X
	Cyanide	X
	Alkalinity/Hardness	
	TCLP	
	☐ VOA	
	☐ ABN	
	☐ METALS	
	Asbestos	
	Dioxin	
	Oil and Grease	
	000338	

Time: 1055

Month/Day/Year: 11/8/96

Station #: SED-01

Remarks: MFG244

Project Code 1 CLP Case #: 25159

Concentration: ☒ L ☐ M

96-19793

5373A#2

Tag Number: 6- 015004

Number: EF602

DEFULT

Preservative: ICE

Yes ☒ No ☐

Designate			
Grab.	Y	Volatile Organics	
		Semi Volatiles (ABN)	
Comp.		Pesticides/PCB	
		TOTAL Metals	X
		Cyanide	X
		Alkalinity/Hardness	
Time	1105	TCLP	
		☐ VOA	
		☐ ABN	
Month/Day/Year	11/18/96	☐ METALS	
		Asbestos	
		Dioxin	
		Oil and Grease	
Station #	SED-02	000339	

Remarks: MFGZ45

Concentration: ☒ L ☐

96-19794

5373B#2

Project Code 1 CLP Case # 25159

Tag Number 6- 015008

Number MF6245

Preservative: ICE

Yes ☒ No ☐

Designate			
Grab.	X	Volatile Organics	
		Semi Volatiles (ABN)	
Comp.		Pesticides/PCB	
		TOTAL Metals	X
		Cyanide	X
		Alkalinity/Hardness	
Time	1220	TCLP	
		☐ VOA	
		☐ ABN	
		☐ METALS	
Month/Day/Year	11/18/96	Asbestos	
		Dioxin	
		Oil and Grease	
Station #	SS-12	000327	
		Remarks: MFGZ64	

Project Code 1 CLP Case # 25159

Concentration: ☒ L ☐ M 96-19802

Tag Number 6- 015084

5373J#2

MFGZ64

Preservative: ICE

Yes ☒ No ☐

Designate			
Grab. X	Volatile Organics		
	Semi Volatiles (ABN)		
Comp.	Pesticides/PCB		
	TOTAL Metals	X	
	Cyanide	X	
	Alkalinity/Hardness		
Time 1225	TCLP		
	☐ VOA		
	☐ ABN		
	☐ METALS		
Month/Day/Year 11/18/96	Asbestos		
	Dioxin		
	Oil and Grease		
Station # 33-13	000323		

Remarks: MFGZ65

Concentration: ☒ L ☐ I

96-19803

5373K#2

Project Code 1 CLP Case # 25159

Tag Number 6- 015088

MFGZ65

Designate			
		Preservative: CE	
		Yes ☒ No ☐	
	Grab. X	Volatile Organics	
		Semi Volatiles (ABN)	
	Comp.	Pesticides/PCB	
		TOTAL Metals	X
		Cyanide	X
		Alkalinity/Hardness	
Time 1430		TCLP	
		☐ VOA	
		☐ ABN	
		☐ METALS	
Month/Day/Year 11/19/96		Asbestos	
		Dioxin	
		Oil and Grease	
Station # SED-05		000329	
		Remarks: MFG248	
Project Code # CLP Case # 25159		Concentration: ☒ L ☐ M ☐ H	
		Tag Number 6- 015020	96-19320 5372LME

Preservative: KE

Yes ☒ No ☐

Designate			
Grab. X	Volatile Organics		
	Semi Volatiles (ABN)		
Comp.	Pesticides/PCB		
	TOTAL Metals	X	
	Cyanide	X	
	Alkalinity/Hardness		
Time 1028	TCLP		
	☐ VOA		
	☐ ABN		
	☐ METALS		
Month/Day/Year 11/19/96	Asbestos		
	Dioxin		
	Oil and Grease		
Station # SED-08	000330		

Remarks: MFGZ51

Concentration: ☒ L ☐ M ☐ H

Project Code 1 CLP Case # 25159

Tag Number 6- 015032

96-19821

5373M#2

Designate	Grab.	Preservative: ICE	
		Yes ☒ No ☐	
		Volatile Organics	
		Semi Volatiles (ABN)	
	Comp.	Pesticides/PCB	
		TOTAL Metals	X
		Cyanide	X
		Alkalinity/Hardness	
Time 1105		TCLP	
		☐ VOA	
		☐ ABN	
		☐ METALS	
Month/Day/Year 11/19/96		Asbestos	
		Dioxin	
		Oil and Grease	
Station # SED-09		000331	
		Remarks: MFGZ52	
Project Code 1 CLP Case # 25159		Concentration: ☒ L ☐ M ☐ H	
		Tag Number 6- 015036	96-19822 5373N#2

		Preservative: ICE	
		Yes ☒ **No** ☐	
Designate	Grab. X	Volatile Organics	
		Semi Volatiles (ABN)	
	Comp.	Pesticides/PCB	
		TOTAL Metals	X
		Cyanide	X
		Alkalinity/Hardness	
Time 1210		TCLP	
		☐ VOA	
		☐ ABN	
		☐ METALS	
Month/Day/Year 11/19/96		Asbestos	
		Dioxin	
		Oil and Grease	
Station # 95-01		000332	
		Remarks: MFG253	
Project Code 1 Case # 325159		**Concentration:** ☒ L ☐ M ☐ H	
		Tag Number 6-015040	L 96-19823 53730#2

Preservative: ICE

Yes ☒ No ☐

Designate			
Grab.	Y	Volatile Organics	
		Semi Volatiles (ABN)	
Comp.		Pesticides/PCB	
		TOTAL Metals	Y
		Cyanide	X
		Alkalinity/Hardness	
		TCLP	
		☐ VOA	
		☐ ABN	
		☐ METALS	
		Asbestos	
		Dioxin	
		Oil and Grease	
		000339	

Time: 1215

Month/Day/Year: 11/19/96

Station #: SS-02

Remarks: MFGZ54

Project Code 1 CLP Case #: 25159

Concentration: ☒ L ☐ M ☐ H

Tag Number: 6-015044

96-19824

5373P#2

Designate		**Preservative:** ICE	
		Yes ☒ **No** ☐	
	Grab. X	Volatile Organics	
		Semi Volatiles (ABN)	
	Comp.	Pesticides/PCB	
		TOTAL Metals	X
		Cyanide	X
		Alkalinity/Hardness	
Time 1230		TCLP	
		☐ VOA	
		☐ ABN	
		☐ METALS	
Month/Day/Year 11/19/96		Asbestos	
		Dioxin	
		Oil and Grease	
Station # SS-03		000334	
		Remarks: MFGZSS	
Project Code 1 CLP Case # 25154		**Concentration:** ☒ L ☐ M ☐ H	
		Tag Number 96-19825	
		6- 015048 53730#2	

Preservative: ICE

Yes ☒ No ☐

Designate			
Grab.	X	Volatile Organics	
		Semi Volatiles (ABN)	
Comp.		Pesticides/PCB	
		TOTAL Metals	X
		Cyanide	X
		Alkalinity/Hardness	
		TCLP	
		☐ VOA	
		☐ ABN	
		☐ METALS	
		Asbestos	
		Dioxin	
		Oil and Grease	
		000335	

Time: 1405

Month/Day/Year: 11/19/96

Station #: 35-07

Remarks: MFG259

Project Code 1 CLP Case #: 25159

Concentration:

☒ L ☐ M ☐ H

Tag Number: 6- 015064

96-19826

5373R#2

Preservative: ICE

Yes ☒ No ☐

Designate		
Grab.	Volatile Organics	
	Semi Volatiles (ABN)	
Comp.	Pesticides/PCB	
	TOTAL Metals	X
	Cyanide	X
	Alkalinity/Hardness	
	TCLP	
	☐ VOA	
	☐ ABN	
	☐ METALS	
	Asbestos	
	Dioxin	
	Oil and Grease	
	000330	

Time: 1415

Month/Day/Year: 11/19/96

Station #: SS-08

Remarks: MFG260

Project Code 1 CLP Case #: 25159

Concentration: ☒ L ☐ M ☐ H

Tag Number: 6- 015068

96-19827

53735#2

		Preservative: ICE	
		Yes ☒ **No** ☐	
Designate	Grab. X	Volatile Organics	
		Semi Volatiles (ABN)	
	Comp.	Pesticides/PCB	
		TOTAL Metals	X
		Cyanide	X
		Alkalinity/Hardness	
Time 1850		TCLP	
		☐ VOA	
		☐ ABN	
		☐ METALS	
Month/Day/Year 6/19/96		Asbestos	
		Dioxin	
		Oil and Grease	
Station # SS-11		000337	
		Remarks: MFG263	
Project Code 1 CLP Case # 25159		Concentration: ☒ L ☐ M ☐ H	
		Tag Number 6- 015080	96-19828 5373T#2

Designate	Preservative: ICE	
	Yes ☒ No ☐	
Grab. X	Volatile Organics	
	Semi Volatiles (ABN)	
Comp.	Pesticides/PCB	
	~~TOTAL~~ Metals	X
	Cyanide	X
	Alkalinity/Hardness	
Time	TCLP	
	☐ VOA	
	☐ ABN	
	☐ METALS	
Month/Day/Year	Asbestos	
	Dioxin	
	Oil and Grease	
Station # SED-03	000340	
	Remarks: MFGZ46	
Project Code 1 CLP Case # 25159	Concentration: ☒ L ☐ M	96-19795
	Tag Number 6- 015012	5373C#2 MF6246

Preservative: ICE

Yes ☒ No ☐

Designate			
	Grab.	Volatile Organics	
		Semi Volatiles (ABN)	
	Comp.	Pesticides/PCB	
		TOTAL Metals	X
		Cyanide	X
		Alkalinity/Hardness	
		TCLP	
		☐ VOA	
		☐ ABN	
		☐ METALS	
		Asbestos	
		Dioxin	
		Oil and Grease	

Time: 1140

Month/Day/Year: 11/18/96

Station #: SED-04

000341

Remarks: MFGZ47

Project Code 1 CLP Case #: 25159

Concentration: ☒ L ☐ M

96-19796

5373D#2

Tag Number: 6-015016

MFGZ47

Preservative: ICE

Yes ☒ No ☐

Designate			
Grab.	X	Volatile Organics	
		Semi Volatiles (ABN)	
Comp.		Pesticides/PCB	
		TOTAL Metals	X
		Cyanide	X
		Alkalinity/Hardness	
		TCLP	
		☐ VOA	
		☐ ABN	
		☐ METALS	
		Asbestos	
		Dioxin	
		Oil and Grease	
		000342	

Time: 1520

Month/Day/Year: 11/18/96

Station #: SED-06

Remarks: MFG249

Project Code 1 CLP Case #: 25159

Concentration: ☒ L ☐ M ☐ H

Tag Number: 6-015024

96-19797

5373E#2

Designate	Preservative: ICE	
	Yes ☒ No ☐	
Grab. X	Volatile Organics	
	Semi Volatiles (ABN)	
Comp.	Pesticides/PCB	
	TOTAL Metals	X
	Cyanide	X
	Alkalinity/Hardness	
Time 1530	TCLP	
	☐ VOA	
	☐ ABN	
	☐ METALS	
Month/Day/Year 11/16/96	Asbestos	
	Dioxin	
	Oil and Grease	
Station # SED 07	000343	
	Remarks: HFG250	
Project Code 1 CLP Case # 25159	Concentration: ☒ L ☐ M ☐ H	
	Tag Number 6-015028	96-19798 5373F#2

Designate		Preservative: ICE
		Yes ☒ No ☐
	Grab. X	Volatile Organics — X SLJ
		Semi Volatiles (ABN)
	Comp.	Pesticides/PCB
		TOTAL Metals — X
		Cyanide — X
		Alkalinity/Hardness
Time 1210		TCLP
		☐ VOA
		☐ ABN
		☐ METALS
Month/Day/Year 11/18/96		Asbestos
		Dioxin
		Oil and Grease
		000341
Station # 35-04		
		Remarks: MFG256
Project Code 1 CLP Case # 25159		Concentration: ☒ L ☐ M
		96-19799
		5373G#2
	Tag Number	6- 015052 MFG256

Designate		**Preservative:** ICE	
		Yes ☒ **No** ☐	
	Grab. X	Volatile Organics	
		Semi Volatiles (ABN)	
	Comp.	Pesticides/PCB	
		~~TOTAL~~ Metals	X
		Cyanide	X
		Alkalinity/Hardness	
Time 1615		TCLP	
		☐ VOA	
		☐ ABN	
Month/Day/Year 11/18/96		☐ METALS	
		Asbestos	
		Dioxin	
		Oil and Grease	
Station # 95-05		000345	
		Remarks: HFG257	
Project Code 1 CLP Case # 25159		**Concentration:** ☒ L ☐ 96-19800	
		Tag Number 6-015056	5373H#2 MFG257

Preservative: ICE

Yes ☒ No ☐

Designate			
Grab.	X	Volatile Organics	
		Semi Volatiles (ABN)	
Comp.	X	Pesticides/PCB	
		TOTAL Metals	X
		Cyanide	X
		Alkalinity/Hardness	
Time	1415	TCLP	
		☐ VOA	
		☐ ABN	
		☐ METALS	
Month/Day/Year	11/18/96	Asbestos	
		Dioxin	
		Oil and Grease	
Station #	35-06	000346	

Remarks: MFGZ58

Concentration:

☒ L ☐ M ☐ H

Project Code / CLP Case # 25159

Tag Number 6-015060

96-19801

5373I#2