SDMS US EPA REGION V -1

SOME IMAGES WITHIN THIS DOCUMENT MAY BE ILLEGIBLE DUE TO BAD SOURCE DOCUMENTS.

REF 15n

197464

INORGANIC DATA VALIDATION REPORT

1.0 INTRODUCTION

Site:	Sauget Area 1				
Laboratory:	Ecology and Environment, Inc.				
Validation:	PRC Environmental Management, Inc.				
Review Date:	July 1993				
Case Numbers:	U-4618 and U-4651				
Sample Numbers:	DC-LB-01	DC-L1-02	DC-L2-03	DC-L3-04	DC-N1-05
	DC-N2-06	DC-NB-07	DC-K1-08	DC-L4-09	DC-L4-10
	DC-J1-11	DC-J2-12	DC-J3-13	DC-H1-14	DC-H1-15
Analyses:	Target Analyte List (TAL) Metals and Cyanide				
Collection Dates:	December 11 through 13 and 15 through 17, 1986				

The data for these 15 samples were reviewed according to the EPA document "Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses" (July 1988). Data sheets (Form Is) with appropriate data validation qualifiers are provided in Appendix A. The justifications for qualification of sample results are discussed in the following section.

2.0 DATA REVIEW REQUIREMENTS

The quality control (QC) criteria reviewed include data completeness, holding times, calibrations, blanks, interference check sample (ICS) results, laboratory control sample (LCS) results, duplicate sample results, matrix spike sample results, furnace QC, and sample results verification. The criteria are discussed below.

2.1 DATA COMPLETENESS

The laboratory failed to complete the appropriate report form for the analysis of the ICS; however, the raw data were reviewed, and the results are within acceptable QC limits.

2.2 HOLDING TIMES

All holding time requirements were met.

2.3 CALIBRATIONS

All calibrations are acceptable and meet QC requirements for initial and continuing calibration checks.

2.4 BLANKS

All blank results are less than the contract required detection limit (CRDL) and therefore do not indicate any presence of contamination.

2.5 INTERFERENCE CHECK SAMPLES

The ICSs analyzed by inductively coupled plasma (ICP) generally meet the QC requirements. The laboratory failed to report the results on the appropriate form; however, the raw data were reviewed, and the results are within acceptable limits.

2.6 LABORATORY CONTROL SAMPLES

The LCSs prepared and analyzed with the sample batch are within acceptable QC limits.

2.7 DUPLICATE SAMPLE ANALYSIS

The laboratory duplicate sample precision for lead is above the established control limit of 35 relative percent difference. All positive lead results for all samples in this sample delivery group are considered estimated and qualified "J."

2.8 MATRIX SPIKE SAMPLE ANALYSIS

The matrix spike percent recovery (%R) for silver (130 %R) is above the acceptable QC limits. A high bias is indicated for silver, however, all sample results are undetected and therefore no qualifiers are required.

2.9 FURNACE ATOMIC ABSORPTION QC

To determine the extent of matrix interference in graphite furnace analyses, a post-digestion spike (PDS) was analyzed for each sample. Initially, the sample digest was analyzed, followed by a second analysis to which a known amount of analyte was added. The %R of the spike indicates the extent of matrix interference and bias. The following samples have PDS recoveries less than the lower QC limit of 85 %R.

Analyte	Samples
Selenium	DC-L1-02, DC-N1-05, DC-N2-06, DC-J3-13, and DC-H1-14

The results for the analytes and sample numbers listed above are considered estimated and qualified "UJ" if undetected and "J" if positive. The sample results are biased low.

2.10 SAMPLE RESULT VERIFICATION

The vanadium result for sample DC-H1-15 was incorrectly reported as 1.0U. The correct value of 10U has been inserted on the Form I.

The analytical results are reported on an as-received basis instead of on a dry-weight basis. Conversion factors are included in the organic data validation report for these cases.

3.0 OVERALL ASSESSMENT

Generally, the data are acceptable Level IV data with the exceptions noted in Section 2.0. The data are qualified due to matrix interference, possibly caused by high organic content. This matrix interference may contribute to biased data. The qualified data are biased as indicated in Sections 2.8 and 2.9 and may be used for scoring.

APPENDIX A

CORRECTED FORMS I

CASE NUMBERS U-4618 AND U-4651

Form I

Sample No.
DC-LB-01

Date 2-6-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

SOW NO. 784

LAB SAMPLE ID. NO. 10462 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	7330	P	13.	Magnesium	NR	
2.	Antimony	12 U	P	14.	Manganese	269	P
3.	Arsenic	4.7 ✗	F	15.	Mercury	0.078 U	CV
4.	Barium	320	P	16.	Nickel	11	P
5.	Beryllium	1.0 U	P	17.	Potassium	NR	
6.	Cadmium	1.0 U	P	18.	Selenium	0.94 U	F
7.	Calcium	NR		19.	Silver	0.47 U R	P
8.	Chromium	11 U	P	20.	Sodium	NR	
9.	Cobalt	4.6 U	P	21.	Thallium	1.9 U	F
10.	Copper	25 U	P	22.	Tin	7.5 U	F
11.	Iron	10800	P	23.	Vanadium	17	P
12.	Lead	34 ✗	F J	24.	Zinc	139	P
Cyanide		1.0 U		Percent Solids (%)		78	

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager _____

Form I

Sample No.
DC-L1-02

Date 2-6-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

SOW NO. 784

LAB SAMPLE ID. NO. 10463 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	8130	P	13.	Magnesium	NR	
2.	Antimony	11 U	P	14.	Manganese	194	P
3.	Arsenic	3.5 *	F	15.	Mercury	0.06 U	CV
4.	Barium	150	P	16.	Nickel	16	P
5.	Beryllium	0.99 U	P	17.	Potassium	NR	
6.	Cadmium	0.99 U	P	18.	Selenium	0.94 U	F UJ
7.	Calcium	NR		19.	Silver	2.0 U R	P
8.	Chromium	12	P	20.	Sodium	NR	
9.	Cobalt	4.8	P	21.	Thallium	1.9 U	F
10.	Copper	9.1	P	22.	Tin	7.6 U	F
11.	Iron	12200	P	23.	Vanadium	19	P
12.	Lead	6.8 *	F J	24.	Zinc	45	P

Cyanide 1.0 U Percent Solids (%) 76

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager _____

Form I

Sample No.
DC-L2-03

Date 2-6-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

SOW NO. 784

LAB SAMPLE ID. NO. 10464 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	4060	P	13.	Magnesium	NR	
2.	Antimony	25	P	14.	Manganese	34	P
3.	Arsenic	12 U *	F	15.	Mercury	0.078 U	CV
4.	Barium	150	P	16.	Nickel	318	P
5.	Beryllium	1.0 U	P	17.	Potassium	NR	
6.	Cadmium	4.8	P	18.	Selenium	0.96 U	F
7.	Calcium	NR		19.	Silver	1.9 U R	P
8.	Chromium	12	P	20.	Sodium	NR	
9.	Cobalt	7.3	P	21.	Thallium	1.9 U	F
10.	Copper	82	P	22.	Tin	7.6 U	F
11.	Iron	4340	P	23.	Vanadium	7.8	P
12.	Lead	83 *	F J	24.	Zinc	112	P

Cyanide 1.0 U Percent Solids (%) 78

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager _____

Form I

Sample No.
DC-L3-04

Date 2-6-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

SOW NO. 784

LAB SAMPLE ID. NO. 10465 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	5830	P	13.	Magnesium	NR	
2.	Antimony	12 U	P	14.	Manganese	118	P
3.	Arsenic	136 *	F	15.	Mercury	0.079	CV
4.	Barium	152	P	16.	Nickel	1890	P
5.	Beryllium	0.95 U	P	17.	Potassium	NR	
6.	Cadmium	0.95 U	P	18.	Selenium	0.95 U	F
7.	Calcium	NR		19.	Silver	1.9 U R	P
8.	Chromium	7.9	P	20.	Sodium	NR	
9.	Cobalt	7.1	P	21.	Thallium	1.9 U	F
10.	Copper	111	P	22.	Tin	7.5 U	F
11.	Iron	9400	P	23.	Vanadium	15	P
12.	Lead	32 *	F J	24.	Zinc	131	P

Cyanide 1.0 U Percent Solids (%) 79

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager _____

Form I

Sample No.
DC-N1-05

Date 2-6-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

SOW NO. 784

LAB SAMPLE ID. NO. 106M QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	3620	P	13.	Magnesium	NR	
2.	Antimony	11 U	P	14.	Manganese	125	P
3.	Arsenic	2.4 *	F	15.	Mercury	0.076 U	CV
4.	Barium	99	P	16.	Nickel	8.4	P
5.	Beryllium	0.99 U	P	17.	Potassium	NR	
6.	Cadmium	0.99 U	P	18.	Selenium	1.1 U	F UJ
7.	Calcium	NR		19.	Silver	1.9 U R	P
8.	Chromium	6.1	P	20.	Sodium	NR	
9.	Cobalt	3.0	P	21.	Thallium	2.1 U	F
10.	Copper	7.6	P	22.	Tin	8.4 U	F
11.	Iron	623	P	23.	Vanadium	9.9 U	P
12.	Lead	18 *	P J	24.	Zinc	32	P
Cyanide		1.0 U		Percent Solids (%)		76	

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [signature]

Form I

Sample No.
DC-N2-06

Date 2-6-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

SOW NO. 784

LAB SAMPLE ID. NO. 10615 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	1520	P	13.	Magnesium	NR	
2.	Antimony	11 U	P	14.	Manganese	65	P
3.	Arsenic	1.5 *	F	15.	Mercury	0.079 U	CV
4.	Barium	36	P	16.	Nickel	6.9	P
5.	Beryllium	0.95U	P	17.	Potassium	NR	
6.	Cadmium	0.95U	P	18.	Selenium	0.95U	F UJ
7.	Calcium	NR		19.	Silver	1.9 U R	P
8.	Chromium	3.7	P	20.	Sodium	NR	
9.	Cobalt	2.3	P	21.	Thallium	2.0 U	F
10.	Copper	4.1	P	22.	Tin	7.9 U	F
11.	Iron	4940	P	23.	Vanadium	9.5 U	P
12.	Lead	27 *	F J	24.	Zinc	51	P

Cyanide 1.0 U Percent Solids (%) 79

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager _____

Form I

Sample No.
DC-NB-07

Date 2-6-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

SOW NO. 784

LAB SAMPLE ID. NO. 10616 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	7320	P	13.	Magnesium	NR	
2.	Antimony	11 U	P	14.	Manganese	335	P
3.	Arsenic	4.6 *	F	15.	Mercury	0.078 U	CV
4.	Barium	279	P	16.	Nickel	14	P
5.	Beryllium	0.94 U	P	17.	Potassium	NR	
6.	Cadmium	1.9	P	18.	Selenium	1.0 U	F
7.	Calcium	NR		19.	Silver	1.9 U R	P
8.	Chromium	10	P	20.	Sodium	NR	
9.	Cobalt	5.5	P	21.	Thallium	2.0 U	F
10.	Copper	26	P	22.	Tin	8.6 U	F
11.	Iron	12500	P	23.	Vanadium	16	P
12.	Lead	61 *	P J	24.	Zinc	142	P

Cyanide 1.0 U Percent Solids (%) 78

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [illegible]

Form I

Sample No.
DC-K1-08

Date 2-6-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

SOW NO. 784

LAB SAMPLE ID. NO. 10617 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	4070	P	13.	Magnesium	NR	
2.	Antimony	12 U	P	14.	Manganese	424	P
3.	Arsenic	8.0 *	F	15.	Mercury	1.9	CV
4.	Barium	95	P	16.	Nickel	17	P
5.	Beryllium	1.0 U	P	17.	Potassium	NR	
6.	Cadmium	1.5	P	18.	Selenium	1.0 U	F
7.	Calcium	NR		19.	Silver	2.0 U R	P
8.	Chromium	298	P	20.	Sodium	NR	
9.	Cobalt	9.4	P	21.	Thallium	2.0 U	F
10.	Copper	37	P	22.	Tin	8.3 U	F
11.	Iron	15100	P	23.	Vanadium	14	P
12.	Lead	91 *	P J	24.	Zinc	200	P

Cyanide 7.8 Percent Solids (%) 85

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [signature]

Form I

Sample No.
DC-24-09

Date 2-6-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

SOW NO. 784

LAB SAMPLE ID. NO. 10618 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	851	P	13.	Magnesium	NR	
2.	Antimony	12 U	P	14.	Manganese	7.4	P
3.	Arsenic	42 *	F	15.	Mercury	0.076 U	CV
4.	Barium	87	P	16.	Nickel	63	P
5.	Beryllium	0.99 U	P	17.	Potassium	NR	
6.	Cadmium	0.99 U	P	18.	Selenium	0.99 U	F
7.	Calcium	NR		19.	Silver	2.0 U R	P
8.	Chromium	2.0 U	P	20.	Sodium	NR	
9.	Cobalt	2.0 U	P	21.	Thallium	2.0 U	F
10.	Copper	62	P	22.	Tin	7.6 U	F
11.	Iron	1140	P	23.	Vanadium	9.9 U	P
12.	Lead	3.4 *	F J	24.	Zinc	8.4	P

Cyanide 1.0 U Percent Solids (%) 76

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager _____

Form I

Sample No.
DC-24-10

Date 2-6-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

SOW NO. 784

LAB SAMPLE ID. NO. 10619 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	1020	P	13.	Magnesium	NR	
2.	Antimony	11 U	P	14.	Manganese	7.4	P
3.	Arsenic	50 *	F	15.	Mercury	0.074 U	CV
4.	Barium	105	P	16.	Nickel	69	P
5.	Beryllium	0.96 U	P	17.	Potassium	NR	
6.	Cadmium	0.96 U	P	18.	Selenium	1.0 U	F
7.	Calcium	NR		19.	Silver	1.8 U R	P
8.	Chromium	2.3	P	20.	Sodium	NR	
9.	Cobalt	1.8 U	P	21.	Thallium	2.0 U	F
10.	Copper	75	P	22.	Tin	8.1 U	F
11.	Iron	1070	P	23.	Vanadium	9.6 U	P
12.	Lead	3.9 *	F J	24.	Zinc	7.0	P

Cyanide 1.0 U Percent Solids (%) 74

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [signature]

Form I

Sample No.
DC-J1-11

Date 2-6-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

SOW NO. 784

LAB SAMPLE ID. NO. 10620 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	5040	P	13.	Magnesium	NR	
2.	Antimony	12 U	P	14.	Manganese	174	P
3.	Arsenic	2.4 *	F	15.	Mercury	0.073 U	CV
4.	Barium	114	P	16.	Nickel	8.0	P
5.	Beryllium	1.0 U	P	17.	Potassium	NR	
6.	Cadmium	0.95 U	P	18.	Selenium	1.0 U	F
7.	Calcium	NR		19.	Silver	2.0 U R	P
8.	Chromium	6.2	P	20.	Sodium	NR	
9.	Cobalt	3.0	P	21.	Thallium	2.0 U	F
10.	Copper	6.6	P	22.	Tin	8.0 U	F
11.	Iron	7300	P	23.	Vanadium	11	P
12.	Lead	5.0 *	F J	24.	Zinc	26	P

Cyanide 1.0 U Percent Solids (%) 73

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [signature]

Form I

Sample No.
DC-J2-12

Date 2-6-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

SOW NO. 784

LAB SAMPLE ID. NO. 10621 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	3920	P	13.	Magnesium	NR	
2.	Antimony	12 U	P	14.	Manganese	88	P
3.	Arsenic	1.5 *	F	15.	Mercury	0.078 U	CV
4.	Barium	83	P	16.	Nickel	6.5	P
5.	Beryllium	1.0 U	P	17.	Potassium	NR	
6.	Cadmium	1.0 U	P	18.	Selenium	1.0 U	F
7.	Calcium	NR		19.	Silver	2.0 U R	P
8.	Chromium	5.4	P	20.	Sodium	NR	
9.	Cobalt	2.8	P	21.	Thallium	2.1 U	F
10.	Copper	4.4	P	22.	Tin	8.6 U	F
11.	Iron	5710	P	23.	Vanadium	10 U	P
12.	Lead	3.7 *	F J	24.	Zinc	19	P

Cyanide 1.0 U Percent Solids (%) 78

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager _____

Form I

Sample No.
DC-J3-13

Date 2-6-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

SOW NO. 784

LAB SAMPLE ID. NO. 10622 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	2270	P	13.	Magnesium	NR	
2.	Antimony	11 U	P	14.	Manganese	744	P
3.	Arsenic	5.7 *	F	15.	Mercury	0.090 U	CV
4.	Barium	40	P	16.	Nickel	65	P
5.	Beryllium	0.90 U	P	17.	Potassium	NR	
6.	Cadmium	3.6	P	18.	Selenium	0.99 U	F UJ
7.	Calcium	NR		19.	Silver	1.9 U R	P
8.	Chromium	50	P	20.	Sodium	NR	
9.	Cobalt	4.1	P	21.	Thallium	2.0 U	F
10.	Copper	75	P	22.	Tin	7.9 U	F
11.	Iron	4940	P	23.	Vanadium	13 U	P
12.	Lead	8.7 *	F J	24.	Zinc	63	P

Cyanide 1.0 U Percent Solids (%) 90

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager _____

Form I

Sample No.
DC-H1-14

Date 2-6-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

SOW NO. 784

LAB SAMPLE ID. NO. 10623 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	1490	P	13.	Magnesium	NR	
2.	Antimony	11 U	P	14.	Manganese	1490	P
3.	Arsenic	16 *	F	15.	Mercury	0.51	CV
4.	Barium	2010	P	16.	Nickel	9360	P
5.	Beryllium	0.93 U	P	17.	Potassium	NR	
6.	Cadmium	144	P	18.	Selenium	1.0	F J
7.	Calcium	NR		19.	Silver	2.2 R	P
8.	Chromium	62	P	20.	Sodium	NR	
9.	Cobalt	12	P	21.	Thallium	1.9 U	F
10.	Copper	232	P	22.	Tin	69	F
11.	Iron	29900	P	23.	Vanadium	59	P
12.	Lead	713 *	P J	24.	Zinc	24500	P

Cyanide 1.3 Percent Solids (%) 62

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager _____

Form I

Sample No.
DC-H1-15

Date 2-6-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

SOW NO. 784

LAB SAMPLE ID. NO. 10624 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	1220	P	13.	Magnesium	NR	
2.	Antimony	13U	P	14.	Manganese	43	P
3.	Arsenic	2.2 *	F	15.	Mercury	0.084 U	CV
4.	Barium	32	P	16.	Nickel	76	P
5.	Beryllium	1.0U	P	17.	Potassium	NR	
6.	Cadmium	1.0 U	P	18.	Selenium	1.0U	F
7.	Calcium	NR		19.	Silver	2.0 U R	P
8.	Chromium	3.3	P	20.	Sodium	NR	
9.	Cobalt	2.6	P	21.	Thallium	2.1 U	F
10.	Copper	2.4	P	22.	Tin	8.3 U	F
11.	Iron	3200	P	23.	Vanadium	10 ~~1.0~~ U	P
12.	Lead	3.2 *	F J	24.	Zinc	33	P

Cyanide 1.0 U Percent Solids (%) 84

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager _____

ATTACHMENT A

FORMS I

CASE NUMBERS U-4618 AND U-4651

SUBSURFACE SOIL - INORGANIC

ecology and environment, inc.

ANALYTICAL SERVICES CENTER, P.O. BOX D, BUFFALO, NEW YORK 14225, TEL. 716-631-0360
International Specialists in the Environment

February 12, 1987

Job # U-4618
U-4651

Sample # DC-LB-01	DC-N2-06	DC-J1-11
DC-L1-02	DC-NB-07	DC-J2-12
DC-L2-03	DC-K1-08	DC-J3-13
DC-L3-04	DC-L4-09	DC-H1-14
DC-N1-05	DC-L4-10	DC-H1-15

CASE NARRATIVE

Enclosed are the inorganic analytical results for soil samples received on December 13 and December 19, 1986. All sample containers received on December 19 were leaking due to sediments under the container caps.

Interference Check Sample (ICS) information has not been reported as sequential ICP was used.

Information on furance AA strip chart recordings and ICP printouts is identified by laboratory sample numbers. The cover page contains the necessary cross reference information.

Mercury analysis was performed on December 31, 1986. Cyanide analysis was performed on December 18 and December 22, 1986.

Approximately one gram of sample was digested and brought to a final volume of 200 mL in preparation for ICP/furance AA analysis.

Pre-digestion spike recoveries on E & E samples 10462-10465 were poor. These samples were re-digested with acceptable results. Results from the re-digested samples has been reported. Both sets of results will be found in the raw data.

Gary Hahn / GH

Gary Hahn, Manager
Analytical Services Center

GH/db
Enclosures

recycled paper

ecology and environment, inc.
195 SUGG ROAD, P.O. BOX D, BUFFALO, N.Y., 14225, TEL 716 632 4491
International Specialists in the Environment

CHAIN-OF-CUSTODY RECORD

Project No.	Project Name	Project Manager
1L3140	DEAD CREEK	M. MILLER

Samplers (Signatures)	Field Team Leader
Kevin Phillips	A. SEWALL

STATION NUMBER	DATE	TIME	SAMPLE TYPE: COMP	GRAB	AIR	SAMPLE INFORMATION / EXPECTED COMPOUNDS (Concentration)*	STATION LOCATION	NUMBER OF CONTAINERS	1-8 oz HSL ORGANICS	1-8 oz METALS & CYANIDE	2-120 ml VOA				REMARKS
DC-L1-02	12-11-86	1530	X			UNKNOWN. OVA SCREENING - 23 ppm	SITE L BORING 1, 5'-10'	4	1	1	2				
DC-L2-03	12-12-86	1100	X			OVA SCREENING - 690 ppm	SITE L BORING 2 5'-15'	4	1	1	2				STRONG ORGANIC ODOR
DC-L3-04	12-12-86	1400	X			OVA SCREENING - >1000 ppm	SITE L BORING 3	4	1	1	2				STRONG ORGANIC ODOR
DC-L3-05	12-12-86	[illegible]		X			BLANK	4	1	1	2				

Relinquished By (Signature)	Date/Time	Received By (Signature)	Relinquished By (Signature)	Date/Time	Received By (Signature)	Ship Via
Kevin Phillips	12-12-86 / 1700	FEDERAL EXPRESS				FEDERAL EXPRESS
Fed Express	[illegible]	[illegible]				BL/Airbill Number: 338139944 — Date: 12-12-86

Distribution: Original Accompanies Shipment, Copy to Coordinator Field Files

*See CONCENTRATION RANGE on back of form.

234055

ecology and environment, inc.
195 SUGG ROAD P.O. BOX D, BUFFALO N.Y., 14225, TEL 716 632 4491
International Specialists in the Environment

CHAIN-OF-CUSTODY RECORD

Project No: IL3140
Project Name: DEAD CREEK PROJECT
Project Manager: MIKE MILLER
Samplers (Signatures): Kevin Philby, Emil P. Sewall
Field Team Leader: DAN SEWALL

STATION NUMBER	DATE	TIME	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE TYPE AIR	SAMPLE INFORMATION / EXPECTED COMPOUNDS (Concentration)*	STATION LOCATION	NUMBER OF CONTAINERS	Lab: Hal. Organics	Lab: Metals & Cyanide	Lab: Pest. & Volatile Organics				REMARKS / E-E Sample No.
DC-N1-05	12-15	1100	X			unknown / OVA screening = 46 ppm	BORING N1 (0'-10')	4	1	1	2				10614
DC-N2-06	12-15	1530	X			unknown / OVA screening = 340 ppm	BORING N2 (5'-15')	4	1	1	2				10615
DC-NG-07	12-16	0945	X			NONE- SOIL BLANK	SOIL BLANK	4	1	1	2				SOIL BLANK 10616
DC-K1-08	12-16	0930	X			unknown / OVA screening = 70 ppm	BORING K1 (0'-10')	4	1	1	2				10617
DC-L4-09	12-17	1130	X			unknown / OVA screening = 140 ppm	BORING L4 (10'-20')	4	1	1	2				10618
DC-L4-10	12-17	1135	X			unknown / OVA screening = 140 ppm	BORING L4 (10'-20')	4	1	1	2				Duplicate of DC-L4-09 10619
DC-J1-11	12-17	0900	X			unknown / OVA screening = 8.2 ppm	BORING J1 (10'-20')	4	1	1	2				10620
DC-J2-12	12-17	1115	X			gasoline odors / OVA screening = >1000 ppm	BORING J2 (15'-25')	4	1	1	2				Gasoline Odor / Suspected hydrocarbons 10621
DC-J3-13	12-17	1300	X			unknown / OVA screening = 24 ppm	BORING J3 (0'-10')	4	1	1	2				10622
DC-H1-14	12-13	1415	X			unknown / OVA screening >1000 ppm	BORING H1 (15'-25')	4	1	1	2				Very strong organic odor 10623
DC-H1-15	12-13	1630	X			unknown NO OVA SCREEN AVAILABLE	BORING H1 (35'-50')	4	1	1	2				STRONG ORGANIC ODOR 10624

Relinquished By (Signature)	Date/Time	Received By (Signature)	Relinquished By (Signature)	Date/Time	Received By (Signature)	Ship Via
Emil P. Sewall	12/15/86 1550	FEDERAL EXPRESS				FEDERAL EXPRESS
Relinquished By (Signature)	Date/Time	Received By (Signature)	Relinquished By (Signature)	Date/Time	Received By (Signature)	BL Airbill Number: #333 131 955
Relinquished By (Signature)	Date/Time	Received For Laboratory By (Signature)	Relinquished By (Signature)	Date/Time	Received For Laboratory By (Signature)	Date: 12-18-86

Distribution: Original Accompanies Shipment. Copy to Coordinator Field Files
*See CONCENTRATION RANGE on back of form.

234055

Page 3

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original

Form I

Sample No.
DC-LB-01

Date 2-6-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

SOW NO. 784

LAB SAMPLE ID. NO. 10462 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	7330	P	13.	Magnesium	NR	
2.	Antimony	12 U	P	14.	Manganese	269	P
3.	Arsenic	4.7 *	F	15.	Mercury	0.078 U	CV
4.	Barium	320	P	16.	Nickel	11	P
5.	Beryllium	1.0 U	P	17.	Potassium	NR	
6.	Cadmium	1.0 U	P	18.	Selenium	0.94 U	F
7.	Calcium	NR		19.	Silver	0.47 U R	P
8.	Chromium	11 U	P	20.	Sodium	NR	
9.	Cobalt	4.6 U	P	21.	Thallium	1.9 U	F
10.	Copper	25 U	P	22.	Tin	7.5 U	F
11.	Iron	10800	P	23.	Vanadium	17	P
12.	Lead	34 *	F	24.	Zinc	139	P

Cyanide 1.0 U Percent Solids (%) 78

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [signature]

Form I

Sample No.
DC-L1-02

Date 2-6-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

SOW NO. 784

LAB SAMPLE ID. NO. 10463 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	8130	P	13.	Magnesium	NR	
2.	Antimony	11 U	P	14.	Manganese	194	P
3.	Arsenic	3.5 *	F	15.	Mercury	0.06 U	CV
4.	Barium	150	P	16.	Nickel	16	P
5.	Beryllium	0.99 U	P	17.	Potassium	NR	
6.	Cadmium	0.99 U	P	18.	Selenium	0.99 U	F
7.	Calcium	NR		19.	Silver	2.0 U R	P
8.	Chromium	12	P	20.	Sodium	NR	
9.	Cobalt	4.8	P	21.	Thallium	1.9 U	F
10.	Copper	9.1	P	22.	Tin	7.6 U	F
11.	Iron	12200	P	23.	Vanadium	19	P
12.	Lead	6.8 *	F	24.	Zinc	85	P
Cyanide		1.0 U		Percent Solids (%)		76	

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager _____

Form I

Sample No.
DC-L2-03

Date 2-6-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

SOW NO. 784

LAB SAMPLE ID. NO. 10464 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	4060	P	13.	Magnesium	NR	
2.	Antimony	25	P	14.	Manganese	34	P
3.	Arsenic	12 U *	F	15.	Mercury	0.078 U	CV
4.	Barium	150	P	16.	Nickel	318	P
5.	Beryllium	1.0 U	P	17.	Potassium	NR	
6.	Cadmium	4.8	P	18.	Selenium	0.96 U	F
7.	Calcium	NR		19.	Silver	1.9 U R	P
8.	Chromium	12	P	20.	Sodium	NR	
9.	Cobalt	7.3	P	21.	Thallium	1.9 U	F
10.	Copper	82	P	22.	Tin	7.6 U	F
11.	Iron	4340	P	23.	Vanadium	7.8	P
12.	Lead	83 *	F	24.	Zinc	112	P

Cyanide 1.0 U Percent Solids (%) 78

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager _____

6

Form I

Sample No.
DC-L3-04

Date 2-6-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

SOW NO. 784

LAB SAMPLE ID. NO. 10465 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	5830	P	13.	Magnesium	NR	
2.	Antimony	12 U	P	14.	Manganese	118	P
3.	Arsenic	136 *	F	15.	Mercury	0.079	CV
4.	Barium	152	P	16.	Nickel	1890	P
5.	Beryllium	0.95 U	P	17.	Potassium	NR	
6.	Cadmium	0.95 U	P	18.	Selenium	0.95 U	F
7.	Calcium	NR		19.	Silver	1.9 U R	P
8.	Chromium	7.9	P	20.	Sodium	NR	
9.	Cobalt	7.1	P	21.	Thallium	1.9 U	F
10.	Copper	111	P	22.	Tin	7.5 U	F
11.	Iron	9400	P	23.	Vanadium	15	P
12.	Lead	32 *	F	24.	Zinc	131	P

Cyanide 1.0 U Percent Solids (%) 79

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager _____

Form I

Sample No.
DC-N1-05

Date 2-6-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

SOW NO. 784

LAB SAMPLE ID. NO. 1064 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	3620	P	13.	Magnesium	NR	
2.	Antimony	11 U	P	14.	Manganese	125	P
3.	Arsenic	2.4 *	F	15.	Mercury	0.076 U	CV
4.	Barium	99	P	16.	Nickel	8.4	P
5.	Beryllium	0.99 U	P	17.	Potassium	NR	
6.	Cadmium	0.99 U	P	18.	Selenium	1.1 U	F
7.	Calcium	NR		19.	Silver	1.9 U R	P
8.	Chromium	6.1	P	20.	Sodium	NR	
9.	Cobalt	30	P	21.	Thallium	2.1 U	F
10.	Copper	7.6	P	22.	Tin	8.4 U	F
11.	Iron	623	P	23.	Vanadium	9.9 U	P
12.	Lead	18 *	P	24.	Zinc	32	P

Cyanide 1.0 U Percent Solids (%) 76

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [signature]

B

Form I

Sample No.
DC-N2-06

Date 2-6-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

SOW NO. 784

LAB SAMPLE ID. NO. 10615 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	1520	P	13.	Magnesium	NR	
2.	Antimony	11 U	P	14.	Manganese	65	P
3.	Arsenic	1.5 *	F	15.	Mercury	0.079 U	CV
4.	Barium	36	P	16.	Nickel	6.9	P
5.	Beryllium	0.95U	P	17.	Potassium	NR	
6.	Cadmium	0.95U	P	18.	Selenium	0.95U	F
7.	Calcium	NR		19.	Silver	1.9 U R	P
8.	Chromium	3.7	P	20.	Sodium	NR	
9.	Cobalt	2.3	P	21.	Thallium	2.0 U	F
10.	Copper	4.1	P	22.	Tin	7.9 U	F
11.	Iron	4940	P	23.	Vanadium	9.5 U	P
12.	Lead	27 *	F	24.	Zinc	51	P
Cyanide		1.0 U		Percent Solids (%)		79	

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager _____

Form I

Sample No.
DC-NB-07

Date 2-6-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

SOW NO. 784

LAB SAMPLE ID. NO. 10616 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	7320	P	13.	Magnesium	NR	
2.	Antimony	11 U	P	14.	Manganese	335	P
3.	Arsenic	4.6 *	F	15.	Mercury	0.078 U	CV
4.	Barium	279	P	16.	Nickel	14	P
5.	Beryllium	0.94 U	P	17.	Potassium	NR	
6.	Cadmium	1.9	P	18.	Selenium	1.0 U	F
7.	Calcium	NR		19.	Silver	1.9 U R	P
8.	Chromium	10	P	20.	Sodium	NR	
9.	Cobalt	5.5	P	21.	Thallium	2.0 U	F
10.	Copper	26	P	22.	Tin	8.6 U	F
11.	Iron	12500	P	23.	Vanadium	16	P
12.	Lead	61 *	P	24.	Zinc	142	P

Cyanide 1.0 U Percent Solids (%) 78

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [illegible]

Form I

Sample No.
DC-K1-08

Date 2-6-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

SOW NO. 784

LAB SAMPLE ID. NO. 10617 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	4070	P	13.	Magnesium	NR	
2.	Antimony	12 U	P	14.	Manganese	424	P
3.	Arsenic	8.0 *	F	15.	Mercury	1.9	CV
4.	Barium	95	P	16.	Nickel	17	P
5.	Beryllium	1.0 U	P	17.	Potassium	NR	
6.	Cadmium	1.5	P	18.	Selenium	1.0 U	F
7.	Calcium	NR		19.	Silver	2.0 U R	P
8.	Chromium	298	P	20.	Sodium	NR	
9.	Cobalt	9.4	P	21.	Thallium	2.0 U	F
10.	Copper	37	P	22.	Tin	8.3 U	F
11.	Iron	15100	P	23.	Vanadium	14	P
12.	Lead	91 *	P	24.	Zinc	200	P

Cyanide 7.8 Percent Solids (%) 85

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [signature]

Form I

Sample No.
DC-24-09

Date 2-6-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

SOW NO. 784

LAB SAMPLE ID. NO. 10618 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	851	P	13.	Magnesium	NR	
2.	Antimony	12 U	P	14.	Manganese	7.4	P
3.	Arsenic	42 *	F	15.	Mercury	0.076 U	CV
4.	Barium	87	P	16.	Nickel	63	P
5.	Beryllium	0.99 U	P	17.	Potassium	NR	
6.	Cadmium	0.99 U	P	18.	Selenium	0.99 U	F
7.	Calcium	NR		19.	Silver	2.0 U R	P
8.	Chromium	2.0 U	P	20.	Sodium	NR	
9.	Cobalt	2.0 U	P	21.	Thallium	2.0 U	F
10.	Copper	62	P	22.	Tin	7.6 U	F
11.	Iron	1140	P	23.	Vanadium	9.9 U	P
12.	Lead	3.4 *	F	24.	Zinc	8.4	P

Cyanide 1.0 U Percent Solids (%) 76

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager _____

Form I

Sample No.
DC-L4-10

Date 2-6-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

SOW NO. 784

LAB SAMPLE ID. NO. 10619 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	1020	P	13.	Magnesium	NR	
2.	Antimony	11 U	P	14.	Manganese	7.4	P
3.	Arsenic	50 *	F	15.	Mercury	0.074 U	CV
4.	Barium	105	P	16.	Nickel	69	P
5.	Beryllium	0.96 U	P	17.	Potassium	NR	
6.	Cadmium	0.96 U	P	18.	Selenium	1.0 U	F
7.	Calcium	NR		19.	Silver	1.8 U R	P
8.	Chromium	2.3	P	20.	Sodium	NR	
9.	Cobalt	1.8 U	P	21.	Thallium	2.0 U	F
10.	Copper	75	P	22.	Tin	8.1 U	F
11.	Iron	1070	P	23.	Vanadium	9.6 U	P
12.	Lead	3.9 *	F	24.	Zinc	7.0	P
Cyanide		1.0 U		Percent Solids (%)		74	

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [signature]

Form I

Sample No.
DC-J1-11

Date 2-6-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

SOW NO. 784

LAB SAMPLE ID. NO. 10620 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	5040	P	13.	Magnesium	NR	
2.	Antimony	12 U	P	14.	Manganese	174	P
3.	Arsenic	2.4 *	F	15.	Mercury	0.073 U	CV
4.	Barium	114	P	16.	Nickel	8.0	P
5.	Beryllium	1.0 U	P	17.	Potassium	NR	
6.	Cadmium	0.95 U	P	18.	Selenium	1.0 U	F
7.	Calcium	NR		19.	Silver	2.0 U R	P
8.	Chromium	6.2	P	20.	Sodium	NR	
9.	Cobalt	3.0	P	21.	Thallium	2.0 U	F
10.	Copper	6.6	P	22.	Tin	8.0 U	F
11.	Iron	7300	P	23.	Vanadium	11	P
12.	Lead	5.0 *	F	24.	Zinc	26	P

Cyanide 1.0 U Percent Solids (%) 73

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [signature]

Form I

Sample No.
DC-J2-12

Date 2-6-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

SOW NO. 784

LAB SAMPLE ID. NO. 10621 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	3920	P	13.	Magnesium	NR	
2.	Antimony	12 U	P	14.	Manganese	88	P
3.	Arsenic	1.5 *	F	15.	Mercury	0.078 U	CV
4.	Barium	83	P	16.	Nickel	6.5	P
5.	Beryllium	1.0 U	P	17.	Potassium	NR	
6.	Cadmium	1.0 U	P	18.	Selenium	1.0 U	F
7.	Calcium	NR		19.	Silver	2.0 U R	P
8.	Chromium	5.4	P	20.	Sodium	NR	
9.	Cobalt	2.8	P	21.	Thallium	2.1 U	F
10.	Copper	4.4	P	22.	Tin	8.6 U	F
11.	Iron	5710	P	23.	Vanadium	10 U	P
12.	Lead	3.7 *	F	24.	Zinc	19	P

Cyanide 1.0 U Percent Solids (%) 78

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager _____

Form I

Sample No.
DC-J3-13

Date 2-6-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

SOW NO. 784

LAB SAMPLE ID. NO. 10622 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	2270	P	13.	Magnesium	NR	
2.	Antimony	11 U	P	14.	Manganese	744	P
3.	Arsenic	5.7 *	F	15.	Mercury	0.090 U	CV
4.	Barium	40	P	16.	Nickel	65	P
5.	Beryllium	0.90 U	P	17.	Potassium	NR	
6.	Cadmium	3.6	P	18.	Selenium	0.99 U	F
7.	Calcium	NR		19.	Silver	1.9 U R	P
8.	Chromium	50	P	20.	Sodium	NR	
9.	Cobalt	4.1	P	21.	Thallium	2.0 U	F
10.	Copper	75	P	22.	Tin	7.9 U	F
11.	Iron	4940	P	23.	Vanadium	13 U	P
12.	Lead	8.7 *	F	24.	Zinc	63	P

Cyanide 1.0 U Percent Solids (%) 90

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager _____

Form I

Sample No.
DC-H1-14

Date 2-6-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

SOW NO. 784

LAB SAMPLE ID. NO. 10623 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	1490	P	13.	Magnesium	NR	
2.	Antimony	11 U	P	14.	Manganese	1490	P
3.	Arsenic	16 *	F	15.	Mercury	0.51	CV
4.	Barium	2010	P	16.	Nickel	9360	P
5.	Beryllium	0.93 U	P	17.	Potassium	NR	
6.	Cadmium	144	P	18.	Selenium	1.0	F
7.	Calcium	NR		19.	Silver	2.2 B	P
8.	Chromium	62	P	20.	Sodium	NR	
9.	Cobalt	12	P	21.	Thallium	1.9 U	F
10.	Copper	232	P	22.	Tin	69	F
11.	Iron	29900	P	23.	Vanadium	59	P
12.	Lead	713 *	P	24.	Zinc	24500	P

Cyanide 1.3 Percent Solids (%) 62

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager

Form I

Sample No.
DC-H1-15

Date 2-6-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

SOW NO. 784

LAB SAMPLE ID. NO. 10624 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg as received (Circle One)

1.	Aluminum	1220	P	13.	Magnesium	NR	
2.	Antimony	13U	P	14.	Manganese	43	P
3.	Arsenic	2.2 *	F	15.	Mercury	0.084 U	CV
4.	Barium	32	P	16.	Nickel	76	P
5.	Beryllium	1.0U	P	17.	Potassium	NR	
6.	Cadmium	1.0 U	P	18.	Selenium	1.0U	F
7.	Calcium	NR		19.	Silver	2.0 U R	P
8.	Chromium	3.3	P	20.	Sodium	NR	
9.	Cobalt	2.6	P	21.	Thallium	2.1 U	F
10.	Copper	2.4	P	22.	Tin	8.3 U	F
11.	Iron	3200	P	23.	Vanadium	1.0 U	P
12.	Lead	3.2 *	F	24.	Zinc	33	P

Cyanide 1.0 U Percent Solids (%) 84

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: NR: Analysis not requested.

Lab Manager [illegible]

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc.

CASE NO. U-4618 & U-4651

SOW NO. 784

DATE 12/18/86

UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									P
2. Antimony									P
3. Arsenic									F
4. Barium									P
5. Beryllium									P
6. Cadmium									P
7. Calcium									
8. Chromium									P
9. Cobalt									P
10. Copper									P
11. Iron									P
12. Lead									P
13. Magnesium									
14. Manganese									P
15. Mercury									CV
16. Nickel									P
17. Potassium									
18. Selenium									F
19. Silver									P
20. Sodium									
21. Thallium									F
22. Tin									F
23. Vanadium									P
24. Zinc									P
Other:									
Cyanide				48	46	96			

[1] Initial Calibration Source _____ [2] Continuing Calibration Source _____

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

[4] Indicate Analytical Method Used: P - ICP/Flame AA; F - Furnace

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc.

CASE NO. U-4618 & U-4651

SOW NO. 784

DATE 12/22/86

UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									P
2. Antimony									P
3. Arsenic									F
4. Barium									P
5. Beryllium									P
6. Cadmium									P
7. Calcium									
8. Chromium									P
9. Cobalt									P
10. Copper									P
11. Iron									P
12. Lead									P
13. Magnesium									
14. Manganese									P
15. Mercury									CV
16. Nickel									P
17. Potassium									
18. Selenium									F
19. Silver									P
20. Sodium									
21. Thallium									F
22. Tin									F
23. Vanadium									P
24. Zinc									P
Other:									
Cyanide				48	43	90			

[1] Initial Calibration Source _____ [2] Continuing Calibration Source _____

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

[4] Indicate Analytical Method Used: P - ICP/Flame AA; F - Furnace

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc.

CASE NO. U-4618 & U-4651

SOW NO. 784

DATE 12/30/86

UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum	500	517	103	500	513	103	522	104	P
2. Antimony									P
3. Arsenic									F
4. Barium	500	527	105	500	514	103	527	105	P
5. Beryllium	500	527	105	500	499	100	510	102	P
6. Cadmium	500	536	107	500	489	98	504	101	P
7. Calcium									
8. Chromium	500	518	104	500	501	100	509	102	P
9. Cobalt	500	528	106	500	497	99	513	103	P
10. Copper	500	524	105	500	506	101	515	103	P
11. Iron	500	522	104	500	494	99	492	98	P
12. Lead	500	547	109	500	484	97	512	102	P
13. Magnesium									
14. Manganese	500	530	106	500	488	98	497	99	P
15. Mercury									CV
16. Nickel	500	534	107	500	496	99	507	101	P
17. Potassium									
18. Selenium									F
19. Silver	500	533	107	500	529	106	549	110	P
20. Sodium									
21. Thallium									F
22. Tin									F
23. Vanadium	500	519	104	500	490	98	499	100	P
24. Zinc	500	537	107	500	494	99	506	100	P
Other:									
Cyanide									

[1] Initial Calibration Source VHG .1 [2] Continuing Calibration Source VHG .2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

[4] Indicate Analytical Method Used: P - ICP/Flame AA; F - Furnace

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc.

CASE NO. U-4618 & U-4651

SOW NO. 784

DATE 12/30/86

UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum				500	505	101	514	103	P
2. Antimony									P
3. Arsenic									F
4. Barium				500	517	103			P
5. Beryllium									P
6. Cadmium									P
7. Calcium									
8. Chromium									P
9. Cobalt									P
10. Copper									P
11. Iron				500	492	98	493	99	P
12. Lead									P
13. Magnesium									
14. Manganese									P
15. Mercury									CV
16. Nickel									P
17. Potassium									
18. Selenium									F
19. Silver									P
20. Sodium									
21. Thallium									F
22. Tin									F
23. Vanadium									P
24. Zinc				500	498	100			P
Other:									
Cyanide									

[1] Initial Calibration Source VHG .1 [2] Continuing Calibration Source VHG .2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

[4] Indicate Analytical Method Used: P - ICP/Flame AA; F - Furnace

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc.

CASE NO. U-4618 & U-4651

SOW NO. 784

DATE 12/30/86

UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									P
2. Antimony									P
3. Arsenic									F
4. Barium									P
5. Beryllium									P
6. Cadmium									P
7. Calcium									
8. Chromium									P
9. Cobalt									P
10. Copper									P
11. Iron				500	501	100			P
12. Lead									P
13. Magnesium									
14. Manganese									P
15. Mercury									CV
16. Nickel									P
17. Potassium									
18. Selenium									F
19. Silver									P
20. Sodium									
21. Thallium									F
22. Tin									F
23. Vanadium									P
24. Zinc									P
Other:									
Cyanide									

[1] Initial Calibration Source VHG .1 [2] Continuing Calibration Source VHG .2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

[4] Indicate Analytical Method Used: P - ICP/Flame AA; F - Furnace

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

SOW NO. 784

DATE 12/31/86 UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									P
2. Antimony									P
3. Arsenic									F
4. Barium									P
5. Beryllium									P
6. Cadmium									P
7. Calcium									
8. Chromium									P
9. Cobalt									P
10. Copper									P
11. Iron									P
12. Lead									P
13. Magnesium									
14. Manganese									P
15. Mercury	0.2	0.2	100	1.0	1.0	100	103	103	CV
16. Nickel									P
17. Potassium									
18. Selenium									F
19. Silver									P
20. Sodium									
21. Thallium									F
22. Tin									F
23. Vanadium									P
24. Zinc									P
Other:									
Cyanide									

[1] Initial Calibration Source VHG .1 [2] Continuing Calibration Source VHG .2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

[4] Indicate Analytical Method Used: P - ICP/Flame AA; F - Furnace

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc. CASE NO. 4-4618/4-4651

SOW NO. 784

DATE 12/31/86 UNITS µg/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									
2. Antimony									
3. Arsenic									
4. Barium									
5. Beryllium									
6. Cadmium									
7. Calcium									
8. Chromium									
9. Cobalt									
10. Copper									
11. Iron									
12. Lead									
13. Magnesium									
14. Manganese									
15. Mercury				1.0	1.03	103	1.0	100	
16. Nickel									
17. Potassium									
18. Selenium									
19. Silver									
20. Sodium									
21. Thallium									
22. Tin									
23. Vanadium									
24. Zinc									
Other:									
Cyanide									

[1] Initial Calibration Source _____ [2] Continuing Calibration Source _____

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

[4] Indicate Analytical Method Used: P - ICP/Flame AA; F - Furnace

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc.

CASE NO. U-4618 & U-4651

SOW NO. 784

DATE 1/13/87

UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum	500	538	108	500	508	102	511	102	P
2. Antimony									P
3. Arsenic	50	50	100	50	48	96	52	104	F
4. Barium	500	532	106	500	538	108	509	102	P
5. Beryllium	500	532	106	500	529	106	502	100	P
6. Cadmium	500	532	106	500	533	107	506	101	P
7. Calcium									
8. Chromium	500	532	106	500	536	107	502	100	P
9. Cobalt	500	524	105	500	546	109	510	102	P
10. Copper	500	529	106	500	526	105	490	98	P
11. Iron	500	548	110	500	527	105	498	100	P
12. Lead	500	540	108	500	535	107	459	92	P
13. Magnesium									
14. Manganese	500	532	106	500	512	102	492	98	P
15. Mercury									CV
16. Nickel	500	549	110	500	517	103	501	100	P
17. Potassium									
18. Selenium	50	53	106	50	50	100	52	104	F
19. Silver									P
20. Sodium									
21. Thallium	50	47	94	50	50	100	50	100	F
22. Tin									F
23. Vanadium	500	534	107	500	516	103	484	97	P
24. Zinc	500	532	106	500	543	109	513	103	P
Other:									
LEAD	50	51	102	50	52	104	51	102	F
Cyanide									

[1] Initial Calibration Source VHG .1 [2] Continuing Calibration Source VHG .2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

[4] Indicate Analytical Method Used: P - ICP/Flame AA; F - Furnace

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc.

CASE NO. U-4618 & U-4651

SOW NO. 784

DATE 1/13/87

UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum				500	546	109	548	110	P
2. Antimony									P
3. Arsenic				50	50	100			F
4. Barium									P
5. Beryllium									P
6. Cadmium									P
7. Calcium									
8. Chromium									P
9. Cobalt									P
10. Copper				500	540	108			P
11. Iron				500	536	108	491	98	P
12. Lead									P
13. Magnesium									
14. Manganese									P
15. Mercury									CV
16. Nickel									P
17. Potassium									
18. Selenium									F
19. Silver									P
20. Sodium									
21. Thallium									F
22. Tin									F
23. Vanadium									P
24. Zinc				500	506	101			P
Other:									
LEAD				50	48	96			F
Cyanide									

[1] Initial Calibration Source VHG .1 [2] Continuing Calibration Source VHG .2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

[4] Indicate Analytical Method Used: P - ICP/Flame AA; F - Furnace

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc.

CASE NO. U-4618 & U-4651

SOW NO. 784

DATE 1/14/87

UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									P
2. Antimony	506	513	103	500	541	108	517	103	P
3. Arsenic									F
4. Barium									P
5. Beryllium									P
6. Cadmium									P
7. Calcium									
8. Chromium									P
9. Cobalt									P
10. Copper									P
11. Iron									P
12. Lead									P
13. Magnesium									
14. Manganese									P
15. Mercury									CV
16. Nickel									P
17. Potassium									
18. Selenium									F
19. Silver	500	524	105	500	522	104	526	105	P
20. Sodium									
21. Thallium									F
22. Tin	100	96	96	100	108	108	101	101	F
23. Vanadium									P
24. Zinc									P
Other:									
Cyanide									

[1] Initial Calibration Source VHG .1 [2] Continuing Calibration Source VHG .2

[3] Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

[4] Indicate Analytical Method Used: P - ICP/Flame AA; F - Furnace

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

DATE 12/18/86 UNITS ug/L

Matrix water for soil

Preparation Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4	Preparation Blank 1	2
Metals:							
1. Aluminum							
2. Antimony							
3. Arsenic							
4. Barium							
5. Beryllium							
6. Cadmium							
7. Calcium							
8. Chromium							
9. Cobalt							
10. Copper							
11. Iron							
12. Lead							
13. Magnesium							
14. Manganese							
15. Mercury							
16. Nickel							
17. Potassium							
18. Selenium							
19. Silver							
20. Sodium							
21. Thallium							
22. Tin							
23. Vanadium							
24. Zinc							
Other:							
Cyanide		10U				10U	

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

DATE 12/22/86 UNITS ug/L

Matrix water for soil

Preparation Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4	Preparation Blank 1	2
Metals:							
1. Aluminum							
2. Antimony							
3. Arsenic							
4. Barium							
5. Beryllium							
6. Cadmium							
7. Calcium							
8. Chromium							
9. Cobalt							
10. Copper							
11. Iron							
12. Lead							
13. Magnesium							
14. Manganese							
15. Mercury							
16. Nickel							
17. Potassium							
18. Selenium							
19. Silver							
20. Sodium							
21. Thallium							
22. Tin							
23. Vanadium							
24. Zinc							
Other:							
Cyanide		10u				10u	

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

DATE 12/30/86 UNITS ug/L

Matrix water for soil

Preparation Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4	Preparation Blank 1	2
Metals:							
1. Aluminum	200U	200U	200U	200U	200U	200U	
2. Antimony	60U	60U	60U			60U	
3. Arsenic							
4. Barium	200U	200U	200U	200U		200U	
5. Beryllium	5U	5U	5U			5U	
6. Cadmium	5U	5U	5U			5U	
7. Calcium							
8. Chromium	10U	10U	10U			10U	
9. Cobalt	50U	50U	50U			50U	
10. Copper	25U	25U	25U			25U	
11. Iron	100U	100U	100U	100U	100U	100U	
12. Lead	50U	50U	50U			50U	
13. Magnesium							
14. Manganese	15U	15U	15U			15U	
15. Mercury							
16. Nickel	40U	40U	40U			40U	
17. Potassium							
18. Selenium							
19. Silver	10U	10U	10U			10U	
20. Sodium							
21. Thallium							
22. Tin							
23. Vanadium	50U	50U	50U			50U	
24. Zinc	20U	20U	20U	20U		20U	
Other:							
Cyanide							

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618/U-4651

DATE 12/31/86 UNITS ug/L

Matrix water for soils

Preparation Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4	Preparation Blank 1	2
Metals:							
1. Aluminum							
2. Antimony							
3. Arsenic							
4. Barium							
5. Beryllium							
6. Cadmium							
7. Calcium							
8. Chromium							
9. Cobalt							
10. Copper							
11. Iron							
12. Lead							
13. Magnesium							
14. Manganese							
15. Mercury	0.2 U	0.2U	0.2U	0.2U			
16. Nickel							
17. Potassium							
18. Selenium							
19. Silver							
20. Sodium							
21. Thallium							
22. Tin							
23. Vanadium							
24. Zinc							
Other:							
Cyanide							

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

DATE 1/13/87 UNITS ug/L

Matrix water for soil

Preparation Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4	Preparation Blank 1	2
Metals:							
1. Aluminum	200U	200U	200U	200U	200U	200U	200U
2. Antimony							
3. Arsenic	10U	10U	10U	10U		10U	
4. Barium	200U	200U	200U			200U	200U
5. Beryllium	5U	5U	5U			5U	5U
6. Cadmium	5U	5U	5U			5U	5U
7. Calcium							
8. Chromium	10U	10U	10U			10U	10U
9. Cobalt	50U	50U	50U			50U	50U
10. Copper	25U	25U	25U	25U		25U	25U
11. Iron	100U	100U	100U	100U	100U	100U	100U
12. Lead	50U	50U	50U			50U	50U
13. Magnesium							
14. Manganese	15U	15U	15U			15U	15U
15. Mercury							
16. Nickel	50U	50U	50U			50U	50U
17. Potassium							
18. Selenium	5U	5U	5U			5U	
19. Silver							
20. Sodium							
21. Thallium	10U	10U	10U			10U	
22. Tin							
23. Vanadium	50U	50U	50U			50U	50U
24. Zinc	20U	20U	20U	20U		20U	20U
Other:							
Lead	5U	5U	5U	5U		5U	
Cyanide							

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

DATE 1/14/87 UNITS ug/L

Matrix water for soil

Preparation Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4	Preparation Blank 1	2
Metals:							
1. Aluminum							
2. Antimony	60U	60U	60U			60U	60U
3. Arsenic							
4. Barium							
5. Beryllium							
6. Cadmium							
7. Calcium							
8. Chromium							
9. Cobalt							
10. Copper							
11. Iron							
12. Lead							
13. Magnesium							
14. Manganese							
15. Mercury							
16. Nickel							
17. Potassium							
18. Selenium							
19. Silver	10U	10U	10U			10U	10U
20. Sodium							
21. Thallium							
22. Tin	40U	40U	40U			40U	
23. Vanadium							
24. Zinc							
Other:							
Cyanide							

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4618 & U-4651

DATE 12/31/86 UNITS ug/L

Matrix water for soil

Preparation Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4	Preparation Blank 1	2
Metals:							
1. Aluminum							
2. Antimony							
3. Arsenic							
4. Barium							
5. Beryllium							
6. Cadmium							
7. Calcium							
8. Chromium							
9. Cobalt							
10. Copper							
11. Iron							
12. Lead							
13. Magnesium							
14. Manganese							
15. Mercury	0.2U					0.2U	
16. Nickel							
17. Potassium							
18. Selenium							
19. Silver							
20. Sodium							
21. Thallium							
22. Tin							
23. Vanadium							
24. Zinc							
Other:							
Cyanide							

Form V

Q. C. Report No. _____

SPIKE SAMPLE RECOVERY

LAB NAME Ecology and Environment, Inc.

DATE 2-6-87

CASE NO. U-4618 & U-4651
Sample No. DC-23-03
Lab Sample ID No. 10464
Units mg/kg dry weight

Matrix soil

Compound	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spiked Added (SA)	%R[1]
Metals:					
1. Aluminum	75-125				
2. Antimony	"				
3. Arsenic	"				
4. Barium	"				
5. Beryllium	"				
6. Cadmium	"				
7. Calcium	"				
8. Chromium	"				
9. Cobalt	"				
10. Copper	"				
11. Iron	"				
12. Lead	"				
13. Magnesium	"				
14. Manganese	"				
15. Mercury	"	0.094	0.078 U	0.094	100
16. Nickel	"				
17. Potassium	"				
18. Selenium	"				
19. Silver	"				
20. Sodium	"				
21. Thallium	"				
22. Tin	"				
23. Vanadium	"				
24. Zinc	"				
Other:					
Cyanide	"				

1 %R = [(SSR - SR)/SA] x 100 "R"- out of control

Comments: _____

Form V

Q. C. Report No. _____

SPIKE SAMPLE RECOVERY

LAB NAME Ecology and Environment, Inc.

DATE 2-6-87

CASE NO. U-4618 & U-4651

Sample No. DC-C4-10

Lab Sample ID No. 10619

Units mg/kg dry weight

Matrix soil

Compound	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spiked Added (SA)	%R[1]
Metals:					
1. Aluminum	75-125				
2. Antimony	"				
3. Arsenic	"				
4. Barium	"				
5. Beryllium	"				
6. Cadmium	"				
7. Calcium	"				
8. Chromium	"				
9. Cobalt	"				
10. Copper	"				
11. Iron	"				
12. Lead	"				
13. Magnesium	"				
14. Manganese	"				
15. Mercury	"	0.10	0.074 U	0.10	100
16. Nickel	"				
17. Potassium	"				
18. Selenium	"				
19. Silver	"				
20. Sodium	"				
21. Thallium	"				
22. Tin	"				
23. Vanadium	"				
24. Zinc	"				
Other:					
Cyanide	"				

1 %R = [(SSR - SR)/SA] x 100

"R"- out of control

Comments: _____

Form V

Q. C. Report No. _____

SPIKE SAMPLE RECOVERY

LAB NAME Ecology and Environment, Inc.

DATE 2/6/87

CASE NO. U-4618/U-4651

Sample No. DC-H1-15

Lab Sample ID No. 10624

Units µg/L *

Matrix soil

Compound	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spiked Added (SA)	%R[1]
Metals:					
1. Aluminum	75-125				
2. Antimony	"				
3. Arsenic	"				
4. Barium	"				
5. Beryllium	"				
6. Cadmium	"				
7. Calcium	"				
8. Chromium	"				
9. Cobalt	"				
10. Copper	"				
11. Iron	"				
12. Lead	"				
13. Magnesium	"				
14. Manganese	"				
15. Mercury	"				
16. Nickel	"				
17. Potassium	"				
18. Selenium	"				
19. Silver	"				
20. Sodium	"				
21. Thallium	"				
22. Tin	"	89	5.9	80	104
23. Vanadium	"				
24. Zinc	"				
Other:					
Cyanide	"				

35A

1 %R = [(SSR - SR)/SA] x 100 "R" - out of control

Comments: * Results in µg/L because this is a post-digestion spike.

Form V

Q. C. Report No. _____

SPIKE SAMPLE RECOVERY

LAB NAME Ecology and Environment, Inc.

DATE 2-6-87

CASE NO. U-4618 & U-4651
Sample No. DC-H1-15
Lab Sample ID No. 10624
Units mg/kg as received

Matrix soil

Compound	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spiked Added (SA)	%R[1]
Metals:					
1. Aluminum	75-125				
2. Antimony	"	95	13U	100	95
3. Arsenic	"	10	2.2	7.7	101
4. Barium	"	454	32	400	106
5. Beryllium	"	11	1.0U	10	110
6. Cadmium	"	12	1.0U	10	120
7. Calcium	"				
8. Chromium	"	45	3.3	40	104
9. Cobalt	"	105	2.6	100	102
10. Copper	"	54	2.4	50	103
11. Iron	"				
12. Lead	"	12	3.2	10	88
13. Magnesium	"				
14. Manganese	"	150	43	100	107
15. Mercury	"				
16. Nickel	"	168	76	100	92
17. Potassium	"				
18. Selenium	"	1.6	1.0U	1.9	84
19. Silver	"	13	2.0U	10	130 R
20. Sodium	"				
21. Thallium	"	9.2	2.1U	10	92
22. Tin	"				
23. Vanadium	"	110	10	100	100
24. Zinc	"	149	33	100	116
Other:					
Cyanide	"	7.4	1.0U	7.8	95

1 %R = [(SSR - SR)/SA] x 100

"R"- out of control

Comments: _____

Form VI

Q. C. Report No. _____

DUPLICATES

LAB NAME Ecology and Environment, Inc.

DATE 2-6-87

CASE NO. U-4618 & U-4651

Sample No. DC-LB-01

Lab Sample ID No. 10462

Units mg/kg as received

Matrix _____

Compound	Control Limit[1]	Sample(S)	Duplicate(D)	RPD[2]
Metals:				
1. Aluminum		7330	7320	0.1
2. Antimony		12U	12U	NC
3. Arsenic				
4. Barium		320	319	0.3
5. Beryllium		1.0U	1.0U	NC
6. Cadmium		1.0U	1.6	NC
7. Calcium				
8. Chromium		11	10	9.5
9. Cobalt		4.6	4.4	4.4
10. Copper		25	25	0
11. Iron		10800	10800	0
12. Lead		44	45	2.2
13. Magnesium				
14. Manganese		269	276	2.6
15. Mercury				
16. Nickel		11	12	8.7
17. Potassium				
18. Selenium				
19. Silver		2.07	2.0U	NC
20. Sodium				
21. Thallium				
22. Tin				
23. Vanadium		17	19	11
24. Zinc		147	142	3.5
Other:				
Cyanide				

* Out of Control

[1] To be added at a later date.

[2] RPD = [|S - D|/((S + D)/2)] x 100

NC - Non calculable RPD due to value(s) less than CRDL

Form VI

Q. C. Report No. _____

DUPLICATES

LAB NAME Ecology and Environment, Inc.

DATE 2-6-87

CASE NO. U-4618 & U-4651

Sample No. DC-L3-04

Lab Sample ID No. 10465

Units mg/kg as received

Matrix _____

Compound	Control Limit[1]	Sample(S)	Duplicate(D)	RPD[2]
Metals:				
1. Aluminum				
2. Antimony				
3. Arsenic		136	181	28*
4. Barium				
5. Beryllium				
6. Cadmium				
7. Calcium				
8. Chromium				
9. Cobalt				
10. Copper				
11. Iron				
12. Lead		13	32	84*
13. Magnesium				
14. Manganese				
15. Mercury				
16. Nickel				
17. Potassium				
18. Selenium		0.95U	0.95U	NC
19. Silver				
20. Sodium				
21. Thallium		1.9U	2.0U	NC
22. Tin		7.5U	7.8U	NC
23. Vanadium				
24. Zinc				
Other:				
Cyanide				

* Out of Control

[1] To be added at a later date.

[2] RPD = [|S - D|/((S + D)/2)] x 100

NC - Non calculable RPD due to value(s) less than CRDL

Form VI

Q. C. Report No. _____

DUPLICATES

LAB NAME Ecology and Environment, Inc.

CASE NO. U-4618 & U-4651

DATE 2-6-87

Sample No. DC-L4-10

Lab Sample ID No. 10619

Units mg/kg as received

Matrix _____

Compound	Control Limit[1]	Sample(S)	Duplicate(D)	RPD[2]
Metals:				
1. Aluminum				
2. Antimony				
3. Arsenic				
4. Barium				
5. Beryllium				
6. Cadmium				
7. Calcium				
8. Chromium				
9. Cobalt				
10. Copper				
11. Iron				
12. Lead				
13. Magnesium				
14. Manganese				
15. Mercury				
16. Nickel				
17. Potassium				
18. Selenium				
19. Silver				
20. Sodium				
21. Thallium				
22. Tin				
23. Vanadium				
24. Zinc				
Other:				
Cyanide		1.0 U	1.0 U	NC

* Out of Control

[1] To be added at a later date.

[2] RPD = [|S - D|/((S + D)/2)] x 100

NC - Non calculable RPD due to value(s) less than CRDL

Form VII

Q.C. Report No. _____

INSTRUMENT DETECTION LIMITS AND

LABORATORY CONTROL SAMPLE

LAB NAME Ecology and Environement, Inc. CASE NO. U-4618 & U-4651

DATE 12/30/86 LCS UNITS ug/L mg/kg

(Circle One)

Compound	Required Detection Limits (CRDL)-ug/l	Instrument Detection Limits (IDL)-ug/l		Lab Control Sample		
Metals:		ICP/AA	Furnace	True	Found	%R
1. Aluminum	200	100		970	1130	116
2. Antimony	60	6	5	990	1040	105
3. Arsenic	10		5			
4. Barium	200	10		970	1130	116
5. Beryllium	5	5		960	954	99
6. Cadmium	5	5	1	940	898	96
7. Calcium	5000	1000				
8. Chromium	10	10		1030	984	96
9. Cobalt	50	10		1000	978	98
10. Copper	25	10		1030	970	94
11. Iron	100	25		1020	973	95
12. Lead	5	50	5	1010	953	94
13. Magnesium	5000	1000				
14. Manganese	15	5		1020	961	94
15. Mercury	0.2	0.2				
16. Nickel	40	15		1020	972	95
17. Potassium	5000	1000				
18. Selenium	5		5			
19. Silver	10	10	5	6000	6000	100
20. Sodium	5000	1000				
21. Thallium	10		5			
22. Tin	40	40	5			
23. Vanadium	50	10		1010	962	95
24. Zinc	20	10		1010	973	96
Other:						
Cyanide	10					

Form VII

Q.C. Report No. _____

INSTRUMENT DETECTION LIMITS AND

LABORATORY CONTROL SAMPLE

LAB NAME Ecology and Environement, Inc. CASE NO. U-4618 & U-4651

DATE 12/31/86 LCS UNITS ug/L mg/kg

(Circle One)

Compound	Required Detection Limits (CRDL)-ug/l	Instrument Detection Limits (IDL)-ug/l		Lab Control Sample		
Metals:		ICP/AA	Furnace	True	Found	%R
1. Aluminum	200	100				
2. Antimony	60	6	5			
3. Arsenic	10		5			
4. Barium	200	10				
5. Beryllium	5	5				
6. Cadmium	5	5	1			
7. Calcium	5000	1000				
8. Chromium	10	10				
9. Cobalt	50	10				
10. Copper	25	10				
11. Iron	100	25				
12. Lead	5	50	5			
13. Magnesium	5000	1000				
14. Manganese	15	5				
15. Mercury	0.2	0.2		4.4	4.4	100
16. Nickel	40	15				
17. Potassium	5000	1000				
18. Selenium	5		5			
19. Silver	10	10	5			
20. Sodium	5000	1000				
21. Thallium	10		5			
22. Tin	40	40	5			
23. Vanadium	50	10				
24. Zinc	20	10				
Other:						
Cyanide	10					

Form VII

Q.C. Report No. _____

INSTRUMENT DETECTION LIMITS AND

LABORATORY CONTROL SAMPLE

LAB NAME Ecology and Environement, Inc. CASE NO. U-4618 & U-4651

DATE 1/13/87 LCS UNITS ug/L mg/kg (Circle One)

Compound Metals:	Required Detection Limits (CRDL)-ug/l	Instrument Detection Limits (IDL)-ug/l ICP/AA	Furnace	Lab Control Sample True	Found	%R
1. Aluminum	200	100		970	1000	103
2. Antimony	60	6	5			
3. Arsenic	10		5	20	20	100
4. Barium	200	10		970	999	103
5. Beryllium	5	5		960	944	98
6. Cadmium	5	5	1	940	926	98
7. Calcium	5000	1000				
8. Chromium	10	10		1030	968	94
9. Cobalt	50	10		1000	1010	101
10. Copper	25	10		1030	973	94
11. Iron	100	25		1020	987	96
12. Lead	5	50	5	1010	978	97
13. Magnesium	5000	1000				
14. Manganese	15	5		1020	963	94
15. Mercury	0.2	0.2				
16. Nickel	40	15		1020	988	97
17. Potassium	5000	1000				
18. Selenium	5		5	7.9	8.4	110
19. Silver	10	10	5			
20. Sodium	5000	1000				
21. Thallium	10		5	25	24	96
22. Tin	40	40	5			
23. Vanadium	50	10		1010	970	96
24. Zinc	20	10		1010	1030	102
Other:						
LEAD				17	17	100
Cyanide	10					

Form VII

Q.C. Report No. _____

INSTRUMENT DETECTION LIMITS AND

LABORATORY CONTROL SAMPLE

LAB NAME Ecology and Environement, Inc. CASE NO. U-4618 & U-4651

DATE 1/14/87 LCS UNITS ug/L mg/kg

(Circle One)

Compound	Required Detection Limits (CRDL)-ug/l	Instrument Detection Limits (IDL)-ug/l		Lab Control Sample		
Metals:		ICP/AA	Furnace	True	Found	%R
1. Aluminum	200	100				
2. Antimony	60	6	5	990	1160	117
3. Arsenic	10		5			
4. Barium	200	10				
5. Beryllium	5	5				
6. Cadmium	5	5	1			
7. Calcium	5000	1000				
8. Chromium	10	10				
9. Cobalt	50	10				
10. Copper	25	10				
11. Iron	100	25				
12. Lead	5	50	5			
13. Magnesium	5000	1000				
14. Manganese	15	5				
15. Mercury	0.2	0.2				
16. Nickel	40	15				
17. Potassium	5000	1000				
18. Selenium	5		5			
19. Silver	10	10	5	6000	5500	92
20. Sodium	5000	1000				
21. Thallium	10		5			
22. Tin	40	40	5			
23. Vanadium	50	10				
24. Zinc	20	10				
Other:						
Cyanide	10					

87/02/06

09 36

Result Name: 8612300849

blank	10000 PPB	10616.0401	10462. 1/10
standard	JOB#4618 B-990	10617.0401	10463. 1/10
standard	10462.0401	10618.0401	10464. 1/10
standard	50 PPM	10619.0401	10465. 1/10
standard	10463.0401	10620.0401	10465.R 1/10
500 PPB	10464.0401	10621.0401	10614. 1/10
500 PPB	10465.0401	10622.0401	10615. 1/10
ICAP-19	10465.0401 R	10623.0401	10616. 1/10
ICAP-19	10614.0401	10624.0401	10617. 1/10
ICAP-7	10615.0401	10624.0401S	10620. 1/10
EPA 283#2 1/50	CAL BLK	500 PPM ICS	CAL BLK
500 PPM ICS	500 PPB	CAL BLK	500 PPB
10000 PPB	500 PPB	500 PPB	10621. 1/10
CAL BLK	50 PPM	500 PPB	10622. 1/10

Displaying page 1 of 2.

Command?

Result Name 8612300849

10623 0 1/10	BLK #912
10623 1/10	CAL BLK
10623 0 1/10	500 PPB
10624 1/10	
10624 S 1/10	
500 PPM ICS	
CAL BLK	
500 PPB	
~~9666.0401~~	other client
~~9666. 1/10~~	
BLK #911	
CAL BLK	
500 PPB	other client
~~9683.0401~~	

Displaying page 2 of 2.

Command?

Zn_VHG

blank	33.53	intensity	154.43	cv	window edge
standard	16190.00	intensity	2.74	cv	
standard	16635.00	intensity	0.22	cv	
500 PPB	536.85	ug/L	3.42	cv	
ICAP-19	1204.00	ug/L	0.00	cv	
ICAP-19	973.10	ug/L	1.39	cv	
500 PPM ICS	984.55	ug/L	0.41	cv	
10000 PPB	11290.00	ug/L	0.00	cv	
CAL BLK	-0.04	ug/L	-3466.	cv	
10000 PPB	9904.50	ug/L	2.67	cv	
JOB#4618 B-990	7.93	ug/L	30.72	cv	
10462.0401	688.35	ug/L	0.24	cv	
10463.0401	203.35	ug/L	1.43	cv	
10464.0401	839.30	ug/L	0.00	cv	
10465.0401	653.55	ug/L	0.55	cv	
10465.0401 R	618.00	ug/L	1.03	cv	
10614.0401	165.30	ug/L	0.28	cv	
10615.0401	267.45	ug/L	0.24	cv	
CAL BLK	-0.44	ug/L	-24.39	cv	
500 PPB	494.00	ug/L	1.23	cv	
10616.0401	773.75	ug/L	0.49	cv	
10617.0401	994.70	ug/L	0.46	cv	
10618.0401	42.80	ug/L	1.02	cv	
10619.0401	37.03	ug/L	1.52	cv	
10620.0401	127.30	ug/L	0.87	cv	
10621.0401	95.32	ug/L	0.73	cv	
10622.0401	336.85	ug/L	0.95	cv	
10623.0401	62555.00	ug/L	0.04	cv	
10624.0401	159.90	ug/L	9.64	cv	
10624.0401S	744.25	ug/L	1.17	cv	
500 PPM ICS	936.65	ug/L	1.54	cv	
CAL BLK	-0.25	ug/L	-619.0	cv	
500 PPB	499.75	ug/L	2.47	cv	
10623. 1/10	15645.00	ug/L	0.86	cv	
10623. 0.1/10	1322.50	ug/L	1.21	cv	
500 PPM ICS	935.80	ug/L	0.39	cv	
CAL BLK	0.07	ug/L	368.82	cv	
500 PPB	497.60	ug/L	0.83	cv	

Cd_VHG

blank	3.31	intensity	61.20	cv	
standard	10020.50	intensity	1.52	cv	
standard	10225.00	intensity	2.01	cv	
500 PPB	536.40	ug/L	3.06	cv	
ICAP-19	1121.00	ug/L	0.00	cv	
ICAP-19	897.55	ug/L	0.53	cv	
500 PPM ICS	895.00	ug/L	1.52	cv	
10000 PPB	11180.00	ug/L	0.00	cv	
CAL BLK	0.44	ug/L	27.61	cv	
10000 PPB	9791.50	ug/L	1.10	cv	
JOB#4618 B-990	1.05	ug/L	32.13	cv	window edge
10462.0401	6.90	ug/L	1.96	cv	
10463.0401	3.86	ug/L	27.80	cv	
10464.0401	12.68	ug/L	3.35	cv	
10465.0401	6.85	ug/L	23.11	cv	
10465.0401 R	14.50	ug/L	14.67	cv	
10614.0401	2.53	ug/L	49.73	cv	

10615.0401	1.27	ug/L	44.95	cv	
CAL BLK	0.21	ug/L	124.84	cv	window edge
500 PPB	498.95	ug/L	0.85	cv	
10616.0401	10.51	ug/L	20.32	cv	
10617.0401	7.61	ug/L	5.67	cv	
10618.0401	1.09	ug/L	105.93	cv	window edge
10619.0401	2.18	ug/L	20.62	cv	
10620.0401	2.09	ug/L	12.38	cv	
10621.0401	1.49	ug/L	130.12	cv	
10622.0401	19.18	ug/L	5.56	cv	
10623.0401	791.75	ug/L	0.08	cv	
10624.0401	-1.01	ug/L	-229.8	cv	window edge
10624.0401S	56.93	ug/L	0.18	cv	
500 PPM ICS	846.90	ug/L	2.25	cv	
CAL BLK	-0.31	ug/L	-78.66	cv	window edge
500 PPB	504.55	ug/L	2.65	cv	

Sb_VHG

blank	29.30	intensity	436.10	cv	window edge
standard	2472.00	intensity	5.49	cv	
standard	2651.00	intensity	2.25	cv	
500 PPB	466.65	ug/L	14.35	cv	
ICAP-19	1180.00	ug/L	0.00	cv	
ICAP-19	1042.00	ug/L	3.24	cv	
500 PPM ICS	1084.50	ug/L	4.13	cv	
CAL BLK	53.14	ug/L	49.99	cv	
JOB#4618 B-990	25.68	ug/L	249.54	cv	
10462.0401	-23.51	ug/L	-293.7	cv	window edge
10463.0401	29.14	ug/L	151.69	cv	
10464.0401	36.54	ug/L	88.83	cv	
10465.0401	36.12	ug/L	100.28	cv	
10465.0401 R	42.79	ug/L	64.80	cv	
10614.0401	-2.18	ug/L	-803.2	cv	window edge
10615.0401	8.49	ug/L	99.19	cv	
CAL BLK	11.11	ug/L	29.41	cv	
500 PPB	508.25	ug/L	5.38	cv	
10616.0401	-49.03	ug/L	-16.78	cv	window edge
10617.0401	3.06	ug/L	1212.4	cv	window edge
10618.0401	38.54	ug/L	15.01	cv	
10619.0401	15.49	ug/L	10.55	cv	
10620.0401	-21.64	ug/L	-194.6	cv	window edge
10621.0401	-8.87	ug/L	-354.5	cv	
10622.0401	-20.50	ug/L	-162.2	cv	window edge
10623.0401	-2.16	ug/L	-1166.	cv	window edge
10624.0401	-22.28	ug/L	-74.60	cv	
10624.0401S	476.10	ug/L	8.35	cv	
500 PPM ICS	1137.00	ug/L	3.44	cv	
CAL BLK	32.37	ug/L	85.86	cv	
500 PPB	460.45	ug/L	9.72	cv	

Pb_VHG

blank	79.80	intensity	8.64	cv	window edge
standard	3917.50	intensity	2.96	cv	
standard	3794.50	intensity	0.59	cv	
500 PPB	547.00	ug/L	1.91	cv	
ICAP-19	1261.00	ug/L	0.00	cv	
ICAP-19	952.60	ug/L	3.16	cv	
500 PPM ICS	1209.00	ug/L	3.07	cv	
10000 PPB	11140.00	ug/L	0.00	cv	

CAL BLK	-22.66	ug/L	-372.6	cv	
10000 PPB	10160.00	ug/L	1.51	cv	
JOB#4618 B-990	-5.40	ug/L	-90.14	cv	
10462.0401	211.85	ug/L	24.67	cv	
10463.0401	69.87	ug/L	49.25	cv	
10464.0401	141.65	ug/L	35.19	cv	
10465.0401	107.14	ug/L	65.05	cv	
10465.0401 R	183.25	ug/L	5.60	cv	
10614.0401	94.64	ug/L	49.57	cv	
10615.0401	52.49	ug/L	98.23	cv	
CAL BLK	45.55	ug/L	125.59	cv	
500 PPB	484.00	ug/L	1.90	cv	
10616.0401	330.10	ug/L	9.51	cv	
10617.0401	444.90	ug/L	5.27	cv	
10618.0401	-0.79	ug/L	-2485.	cv	
10619.0401	4.34	ug/L	96.97	cv	
10620.0401	45.36	ug/L	23.21	cv	
10621.0401	12.85	ug/L	350.56	cv	
10622.0401	147.90	ug/L	32.87	cv	
10623.0401	3857.00	ug/L	1.16	cv	
10624.0401	42.81	ug/L	125.69	cv	
10624.0401S	526.10	ug/L	8.52	cv	
500 PPM ICS	1102.50	ug/L	0.36	cv	
CAL BLK	-5.57	ug/L	-518.2	cv	
500 PPB	511.50	ug/L	2.49	cv	

Cc_VHC

blank	6.77	intensity	551.85	cv	window edge
standard	4709.00	intensity	1.92	cv	
standard	4782.00	intensity	0.70	cv	
500 PPB	527.50	ug/L	2.18	cv	
ICAP-19	978.20	ug/L	1.01	cv	
500 PPM ICS	878.75	ug/L	0.62	cv	
10000 PPB	10660.00	ug/L	0.00	cv	
CAL BLK	6.08	ug/L	67.02	cv	window edge
10000 PPB	9696.50	ug/L	0.82	cv	
JOB#4618 B-990	4.51	ug/L	40.55	cv	
10462.0401	25.44	ug/L	0.95	cv	
10463.0401	23.42	ug/L	4.63	cv	
10464.0401	28.37	ug/L	5.13	cv	
10465.0401	19.86	ug/L	26.39	cv	
10465.0401 R	36.07	ug/L	22.94	cv	
10614.0401	15.51	ug/L	19.62	cv	
10615.0401	12.22	ug/L	17.67	cv	
CAL BLK	2.89	ug/L	120.75	cv	
500 PPB	497.00	ug/L	4.18	cv	
10616.0401	30.00	ug/L	11.54	cv	
10617.0401	43.81	ug/L	16.73	cv	
10618.0401	8.36	ug/L	18.21	cv	
10619.0401	3.33	ug/L	20.53	cv	
10620.0401	14.66	ug/L	0.77	cv	
10621.0401	14.11	ug/L	15.07	cv	
10622.0401	22.14	ug/L	14.95	cv	
10623.0401	66.56	ug/L	2.49	cv	
10624.0401	12.67	ug/L	4.40	cv	
10624.0401S	525.15	ug/L	0.69	cv	
500 PPM ICS	838.00	ug/L	0.96	cv	
CAL BLK	-0.75	ug/L	-324.4	cv	
500 PPB	513.25	ug/L	1.26	cv	

Ni_VHG

blank	12.73	intensity	216.80	cv
standard	11370.00	intensity	0.60	cv
500 PPB	534.25	ug/L	2.63	cv
ICAP-19	972.25	ug/L	0.06	cv
500 PPM ICS	858.35	ug/L	1.16	cv
CAL BLK	1.67	ug/L	103.93	cv
10000 PPB	9833.50	ug/L	1.25	cv
JOB#4618 B-990	3.08	ug/L	290.41	cv
10462.0401	62.34	ug/L	0.54	cv
10463.0401	80.40	ug/L	7.81	cv
10464.0401	1675.50	ug/L	0.89	cv
10465.0401	5191.00	ug/L	1.30	cv
10465.0401 R	4280.00	ug/L	0.03	cv
10614.0401	43.25	ug/L	0.48	cv
10615.0401	36.07	ug/L	5.58	cv
CAL BLK	2.08	ug/L	73.29	cv
500 PPB	496.50	ug/L	1.43	cv
10616.0401	76.79	ug/L	7.04	cv
10617.0401	84.31	ug/L	0.25	cv
10618.0401	309.60	ug/L	0.05	cv
10619.0401	365.90	ug/L	0.84	cv
10620.0401	38.46	ug/L	22.94	cv
10621.0401	32.44	ug/L	6.42	cv
10622.0401	343.50	ug/L	3.13	cv
10623.0401	5064.50	ug/L	0.19	cv
10624.0401	373.30	ug/L	0.15	cv
10624.0401S	841.80	ug/L	0.20	cv
500 PPM ICS	831.15	ug/L	0.89	cv
CAL BLK	4.95	ug/L	133.63	cv
500 PPB	507.00	ug/L	0.81	cv

Mn_VHG

blank	-2.16	intensity	-332.1	cv
standard	16885.00	intensity	0.97	cv
500 PPB	530.25	ug/L	2.52	cv
ICAP-19	960.70	ug/L	0.22	cv
500 PPM ICS	876.70	ug/L	0.73	cv
CAL BLK	0.73	ug/L	50.97	cv
10000 PPB	9793.50	ug/L	1.18	cv
JOB#4618 B-990	0.46	ug/L	100.65	cv
10462.0401	1483.00	ug/L	1.52	cv
10463.0401	1046.50	ug/L	0.19	cv
10464.0401	454.40	ug/L	0.18	cv
10465.0401	406.70	ug/L	0.56	cv
10465.0401 R	526.90	ug/L	0.21	cv
10614.0401	653.70	ug/L	0.18	cv
10615.0401	339.85	ug/L	0.48	cv
CAL BLK	0.09	ug/L	79.76	cv
500 PPB	488.30	ug/L	1.22	cv
10616.0401	1824.00	ug/L	0.44	cv
10617.0401	2070.50	ug/L	0.37	cv
10618.0401	36.64	ug/L	0.31	cv
10619.0401	40.90	ug/L	0.29	cv
10620.0401	859.15	ug/L	0.45	cv
10621.0401	441.40	ug/L	0.12	cv
10622.0401	3968.50	ug/L	0.17	cv
10623.0401	8049.50	ug/L	0.06	cv

10624 0401	210 25	ug/L	0.58	cv	
10624 0401S	751 20	ug/L	0.07	cv	
500 PPM ICS	862.80	ug/L	0.05	cv	
CAL BLK	-0.08	ug/L	-23.54	cv	window edge
500 PPB	497 25	ug/L	1.80	cv	
9683 0401	1633.50	ug/L	0.22	cv	
BLK #912	2.84	ug/L	5.70	cv	
CAL BLK	0 31	ug/L	266.45	cv	window edge
500 PPB	495.50	ug/L	0.15	cv	

Fe_VHG

blank	21.41	intensity	7.77	cv
standard	9632.50	intensity	0.33	cv
500 PPB	522.30	ug/L	1.39	cv
ICAP-19	972.80	ug/L	0.36	cv
500 PPM ICS	107700.0	ug/L	0.00	cv
CAL BLK	7.08	ug/L	36.10	cv
10000 PPB	9601.50	ug/L	1.33	cv
JOB#4618 B-990	9.82	ug/L	10.06	cv
10462.0401	57390.00	ug/L	0.20	cv
10463.0401	58870.00	ug/L	0.91	cv
10464 0401	41490.00	ug/L	0.04	cv
10465.0401	47800.00	ug/L	1.81	cv
10465.0401 R	42995.00	ug/L	0.45	cv
10614.0401	33605.00	ug/L	0.15	cv
10615.0401	24890.00	ug/L	0.61	cv
CAL BLK	4.36	ug/L	89.60	cv
500 PPB	494.10	ug/L	1.60	cv
50 PPM	55850.00	ug/L	0.77	cv
10616.0401	72305.00	ug/L	0.06	cv
10617.0401	75875.00	ug/L	1.80	cv
10618.0401	5625.50	ug/L	0.43	cv
10619.0401	5688.50	ug/L	0.23	cv
10620.0401	36560.00	ug/L	1.13	cv
10621.0401	27960.00	ug/L	0.07	cv
10622.0401	107950.0	ug/L	0.01	cv
10623.0401	108050.0	ug/L	0.16	cv
10624.0401	15205.00	ug/L	0.36	cv
10624.0401S	17630.00	ug/L	0.73	cv
500 PPM ICS	107550.0	ug/L	0.18	cv
CAL BLK	3.51	ug/L	258.93	cv
500 PPB	492.40	ug/L	3.45	cv
10462. 1/10	5811.00	ug/L	2.92	cv
10463. 1/10	5719.00	ug/L	0.36	cv
10464. 1/10	4124.50	ug/L	0.01	cv
10465. 1/10	4816.00	ug/L	0.34	cv
10465.R 1/10	4295.50	ug/L	0.51	cv
10614. 1/10	3522.50	ug/L	0.06	cv
10615. 1/10	2592.00	ug/L	0.54	cv
10616. 1/10	6806.00	ug/L	0.54	cv
10617. 1/10	7379.50	ug/L	0.11	cv
10620. 1/10	3609.00	ug/L	1.06	cv
CAL BLK	0.41	ug/L	487.52	cv
500 PPB	493.10	ug/L	1.15	cv
10621. 1/10	2853.50	ug/L	1.70	cv
10622. 1/10	29675.00	ug/L	0.22	cv
10622. 0.1/10	2636.50	ug/L	0.24	cv
10623. 1/10	18430.00	ug/L	0.39	cv
10623. 0.1/10	1615.50	ug/L	0.06	cv

10624. 1/10	1561.00	ug/L	0.29	cv
10624.5 1/10	1827.50	ug/L	0.22	cv
500 PPM ICS	107500.0	ug/L	0.03	cv
CAL BLK	26.30	ug/L	29.42	cv
500 PPB	501.10	ug/L	1.22	cv
9656.0401	49580.00	ug/L	0.19	cv
9666 1/10	5073.00	ug/L	0.99	cv
BLK #911	11.96	ug/L	0.73	cv
CAL BLK	20.50	ug/L	10.95	cv
500 PPB	506.25	ug/L	0.11	cv

V_VHG

blank	76.05	intensity	64.76	cv
standard	26945.00	intensity	0.23	cv
500 PPB	518.75	ug/L	1.19	cv
ICAP-19	962.05	ug/L	0.53	cv
500 PPM ICS	385.15	ug/L	0.78	cv
CAL BLK	-0.20	ug/L	-13.66	cv
10000 PPB	10160.00	ug/L	1.13	cv
JOB#4618 B-990	0.64	ug/L	238.52	cv
10462.0401	72.86	ug/L	3.21	cv
10463.0401	75.22	ug/L	2.78	cv
10464.0401	63.28	ug/L	1.70	cv
10465.0401	96.26	ug/L	1.89	cv
10465.0401 R	83.48	ug/L	5.16	cv
10614.0401	42.79	ug/L	7.59	cv
10615.0401	22.71	ug/L	1.98	cv
CAL BLK	-1.27	ug/L	-56.39	cv
500 PPB	490.45	ug/L	1.43	cv
10616.0401	88.37	ug/L	0.12	cv
10617.0401	72.01	ug/L	1.87	cv
10618.0401	9.02	ug/L	10.74	cv
10619.0401	13.36	ug/L	4.31	cv
10620.0401	53.78	ug/L	0.68	cv
10621.0401	45.29	ug/L	9.00	cv
10622.0401	-13.05	ug/L	-19.11	cv window edge
10623.0401	316.85	ug/L	1.66	cv
10624.0401	17.58	ug/L	8.57	cv
10624.0401S	551.25	ug/L	1.50	cv
500 PPM ICS	874.55	ug/L	0.61	cv
CAL BLK	-1.53	ug/L	-64.50	cv
500 PPB	499.15	ug/L	0.81	cv

Be_VHG

blank	-1.44	intensity	-227.8	cv window edge
standard	12825.00	intensity	0.40	cv
500 PPB	526.95	ug/L	1.55	cv
ICAP-19	954.05	ug/L	0.88	cv
500 PPM ICS	940.55	ug/L	0.71	cv
CAL BLK	-0.08	ug/L	-267.0	cv window edge
10000 PPB	10135.00	ug/L	1.26	cv
JOB#4618 B-990	0.08	ug/L	101.15	cv
10462.0401	1.86	ug/L	5.69	cv
10463.0401	2.27	ug/L	30.70	cv
10464.0401	0.87	ug/L	50.44	cv
10465.0401	1.32	ug/L	0.48	cv
10465.0401 R	1.60	ug/L	8.78	cv
10614.0401	0.88	ug/L	20.81	cv
10615.0401	0.27	ug/L	68.78	cv

10464.0401	-2.23	ug/L	-218.4	cv	
10465.0401	0.50	ug/L	406.40	cv	
10465.0401 R	0.03	ug/L	5162.7	cv	
10614.0401	-2.03	ug/L	-59.66	cv	window edge
10615.0401	-4.18	ug/L	-76.46	cv	window edge
CAL BLK	0.41	ug/L	719.85	cv	
500 PPB	528.95	ug/L	0.78	cv	
10616.0401	-2.72	ug/L	-71.12	cv	window edge
10617.0401	-2.66	ug/L	-117.4	cv	
10618.0401	-1.66	ug/L	-178.2	cv	
10619.0401	-2.98	ug/L	-15.43	cv	
10620.0401	0.64	ug/L	1548.1	cv	window edge
10621.0401	-7.13	ug/L	-71.75	cv	window edge
10622.0401	2.25	ug/L	37.36	cv	
10623.0401	12.49	ug/L	11.04	cv	
10624.0401	-0.98	ug/L	-65.30	cv	
10624.0401S	66.94	ug/L	6.64	cv	
500 PPM ICS	1014.00	ug/L	0.73	cv	
CAL BLK	1.18	ug/L	262.85	cv	
500 PPB	548.90	ug/L	1.26	cv	

AI_VHC

blank	0.21	intensity	13268.	cv	
standard	9945.00	intensity	0.82	cv	
500 PPB	516.60	ug/L	3.01	cv	
ICAP-7	1126.50	ug/L	0.93	cv	
500 PPM ICS	97960.00	ug/L	0.07	cv	
CAL BLK	7.31	ug/L	121.49	cv	
10000 PPB	9922.00	ug/L	0.80	cv	
JOB#4618 B-990	8.02	ug/L	216.34	cv	window edge
10462.0401	31180.00	ug/L	0.67	cv	
50 PPM	53180.00	ug/L	0.13	cv	
10463.0401	31410.00	ug/L	0.41	cv	
10464.0401	28755.00	ug/L	0.51	cv	
10465.0401	30250.00	ug/L	0.63	cv	
10465.0401 R	28970.00	ug/L	0.35	cv	
10614.0401	16660.00	ug/L	0.09	cv	
10615.0401	8017.50	ug/L	0.22	cv	
CAL BLK	20.66	ug/L	27.28	cv	
500 PPB	512.70	ug/L	1.10	cv	
10616.0401	39810.00	ug/L	0.07	cv	
10617.0401	18410.00	ug/L	0.26	cv	
10618.0401	4211.00	ug/L	0.14	cv	
10619.0401	5457.50	ug/L	0.45	cv	
10620.0401	23845.00	ug/L	0.08	cv	
10621.0401	17910.00	ug/L	0.17	cv	
10622.0401	10260.00	ug/L	0.42	cv	
10623.0401	8044.50	ug/L	0.55	cv	
10624.0401	5934.50	ug/L	0.30	cv	
10624.0401S	6651.00	ug/L	0.67	cv	
500 PPM ICS	98050.00	ug/L	0.14	cv	
CAL BLK	0.67	ug/L	1109.7	cv	
500 PPB	522.50	ug/L	1.06	cv	
10462. 1/10	3379.00	ug/L	2.05	cv	
10463. 1/10	3286.00	ug/L	0.40	cv	
10464. 1/10	3036.00	ug/L	1.21	cv	
10465. 1/10	3247.00	ug/L	0.49	cv	
10465.R 1/10	3067.00	ug/L	0.00	cv	
10614. 1/10	1381.00	ug/L	0.44	cv	

10616 1/10	3999.00	ug/L	0.27	cv	
10617 1/10	1988.50	ug/L	0.31	cv	
10620 1/10	2482.50	ug/L	1.12	cv	
CAL BLK	2.85	ug/L	51.99	cv	
500 PPB	504.85	ug/L	1.33	cv	
10621 1/10	1958.50	ug/L	0.46	cv	
10622 1/10	1209.00	ug/L	0.31	cv	
500 PPM ICS	98000.00	ug/L	0.02	cv	
CAL BLK	23.93	ug/L	42.79	cv	
500 PPB	513.55	ug/L	0.04	cv	

Ba_VHG

blank	10.68	intensity	41.54	cv	
standard	15080.00	intensity	0.65	cv	
500 PPB	526.75	ug/L	0.71	cv	
ICAP-7	1129.00	ug/L	0.72	cv	
EPA 283#2 1/50	2264.50	ug/L	1.36	cv	
500 PPM ICS	922.35	ug/L	0.57	cv	
CAL BLK	-0.31	ug/L	-18.81	cv	
10000 PPB	10020.00	ug/L	0.70	cv	
JOB#4618 B-990	-0.31	ug/L	-64.53	cv	
10462.0401	1243.50	ug/L	0.07	cv	
10463.0401	609.30	ug/L	0.50	cv	
10464.0401	1137.50	ug/L	0.40	cv	
10465.0401	2455.50	ug/L	0.27	cv	
10465.0401 R	1353.50	ug/L	0.57	cv	
10614.0401	511.70	ug/L	0.97	cv	
10615.0401	187.35	ug/L	0.65	cv	
CAL BLK	-0.50	ug/L	-25.00	cv	
500 PPB	514.50	ug/L	0.30	cv	
10616.0401	1519.50	ug/L	0.39	cv	
10617.0401	464.30	ug/L	0.86	cv	
10618.0401	432.60	ug/L	0.13	cv	
10619.0401	562.25	ug/L	0.47	cv	
10620.0401	560.55	ug/L	0.34	cv	
10621.0401	418.10	ug/L	0.53	cv	
10622.0401	209.25	ug/L	0.99	cv	
10623.0401	10595.00	ug/L	0.61	cv	
10624.0401	156.90	ug/L	0.61	cv	
10624.0401S	2268.50	ug/L	0.01	cv	
500 PPM ICS	894.40	ug/L	1.66	cv	
CAL BLK	-0.62	ug/L	-47.65	cv	window edge
500 PPB	526.90	ug/L	0.73	cv	
10623 1/10	1085.00	ug/L	1.14	cv	
500 PPM ICS	876.10	ug/L	0.06	cv	
CAL BLK	-0.33	ug/L	-6.25	cv	
500 PPB	516.95	ug/L	0.88	cv	

Cr_VHG

blank	24.73	intensity	31.47	cv
standard	14350.00	intensity	1.06	cv
standard	14445.00	intensity	0.22	cv
500 PPB	518.40	ug/L	1.38	cv
ICAP-19	983.85	ug/L	0.12	cv
500 PPM ICS	900.95	ug/L	1.53	cv
CAL BLK	1.08	ug/L	59.68	cv
10000 PPB	10012.50	ug/L	1.26	cv
JOB#4618 B-990	0.81	ug/L	135.71	cv
10462.0401	48.27	ug/L	4.93	cv

10463.0401	46.11	ug/L	3.78	cv	
10464.0401	67.17	ug/L	4.54	cv	
10465.0401	45.54	ug/L	6.45	cv	
10465.0401 R	47.06	ug/L	0.07	cv	
10614.0401	31.45	ug/L	5.65	cv	
10615.0401	19.69	ug/L	4.37	cv	
CAL BLK	-0.26	ug/L	-195.4	cv	
500 PPB	501.25	ug/L	0.58	cv	
10616.0401	55.34	ug/L	6.15	cv	
10617.0401	1454.50	ug/L	0.16	cv	
10618.0401	9.39	ug/L	9.46	cv	
10619.0401	12.08	ug/L	0.80	cv	
10620.0401	30.70	ug/L	5.14	cv	
10621.0401	27.01	ug/L	6.75	cv	
10622.0401	266.05	ug/L	0.24	cv	
10623.0401	331.30	ug/L	1.71	cv	
10624.0401	15.91	ug/L	14.54	cv	
10624.0401S	227.80	ug/L	0.08	cv	
500 PPM ICS	861.65	ug/L	1.63	cv	
CAL BLK	-2.99	ug/L	-108.3	cv	window edge
500 PPB	509.35	ug/L	0.70	cv	

Job # 4618

Al, Ba, Be, Cd, Cr, Co, Cu, Fe, Mn, Ni, Pb, V, Zn

87/01/13

14:54

Result Name: 8701130838

blank	50 PPM	10464.0401X R	10462. 1/10
standard	10462.0401X R	10464.0401X S	10462. 1/10
standard	10462.0401X S	10465.0401X	10462.R 1/10
500 PPB	10463.0401X	10465.0401X R	10462.S 1/10
500 PPB	10463.0401X R	10465.0401XS	10463. 1/10
500 PPB	10463.0401X S	BLK 1010	10463.R 1/10
ICAP-19	CAL BLK	MDS 01	10463.S 1/10
ICAP-7	500 PPB	MDS 01R1	10464. 1/10
EPA 283#2 1/50	500 PPB	MDS 01R1S1	10464.R 1/10
500 PPM ICS	500 PPB	10000 PPB	10464.S 1/10
CAL BLK	500 PPB	10000 PPB	CAL BLK
#4618 B-1014	10000 PPB	500 PPM ICS	500 PPB
B-1017	10464.0401X	CAL BLK	10465. 1/10
10462.0401X	10464.0401X	500 PPB	10465.R 1/10

Command?

Redigested data

87/01/13

15:07

Result Name: 8701130838

10465.S 1/10

MDS 1/10

MDS R 1/10

MDS S 1/10

500 PPM ICS

CAL BLK

500 PPB

500 PPB

Displaying page 2 of 2.

Command?

Zn_VHG

blank	16.50	intensity	223.89	cv	
standard	16635.00	intensity	0.97	cv	
500 PPB	565.60	ug/L	5.78	cv	
500 PPB	532.45	ug/L	1.02	cv	
ICAP-19	1028.00	ug/L	2.89	cv	
500 PPM ICS	949.60	ug/L	2.14	cv	
CAL BLK	-0.23	ug/L	-154.3	cv	
#4618 B-1014	6.87	ug/L	2.09	cv	
B-1017	16.09	ug/L	6.57	cv	
10462.0401X	736.30	ug/L	0.23	cv	
10462.0401X R	720.15	ug/L	2.20	cv	
10462.0401X S	1248.00	ug/L	0.36	cv	
10463.0401X	229.10	ug/L	0.43	cv	
10463.0401X R	212.55	ug/L	1.70	cv	
10463.0401X S	661.00	ug/L	0.39	cv	
CAL BLK	2.43	ug/L	51.60	cv	
500 PPB	543.35	ug/L	0.17	cv	
10464.0401X	570.25	ug/L	0.31	cv	
10464.0401X R	1075.00	ug/L	0.96	cv	
10464.0401X S	7179.00	ug/L	0.32	cv	
10465.0401X	682.05	ug/L	2.02	cv	
10465.0401X R	729.45	ug/L	1.73	cv	
10465.0401XS	1364.50	ug/L	2.44	cv	
BLK 1010	0.76	ug/L	132.43	cv	
MDS 01	11150.00	ug/L	0.24	cv	
MDS 01R1	10845.00	ug/L	0.35	cv	
MDS 01R1S1	11120.00	ug/L	0.12	cv	
10000 PPB	10001.00	ug/L	1.42	cv	
500 PPM ICS	880.15	ug/L	3.98	cv	
CAL BLK	-0.13	ug/L	-1644.	cv	
500 PPB	513.20	ug/L	0.60	cv	
MDS 1/10	1323.50	ug/L	0.83	cv	
MDS R 1/10	1286.50	ug/L	0.59	cv	
MDS S 1/10	1368.00	ug/L	0.32	cv	
500 PPM ICS	939.45	ug/L	0.78	cv	
CAL BLK	2.13	ug/L	70.29	cv	
500 PPB	554.75	ug/L	0.22	cv	
500 PPB	506.10	ug/L	0.36	cv	

Cd_VHG

blank	20.17	intensity	37.74	cv	
standard	10710.00	intensity	0.78	cv	
500 PPB	557.00	ug/L	5.18	cv	
500 PPB	531.60	ug/L	0.72	cv	
ICAP-19	925.60	ug/L	3.86	cv	
500 PPM ICS	832.15	ug/L	2.78	cv	
CAL BLK	-0.20	ug/L	-434.2	cv	
#4618 B-1014	0.28	ug/L	812.08	cv	window edge
B-1017	0.53	ug/L	110.32	cv	
10462.0401X	4.86	ug/L	5.00	cv	
10462.0401X R	8.17	ug/L	63.83	cv	
10462.0401X S	56.34	ug/L	8.92	cv	
10463.0401X	0.63	ug/L	1.52	cv	
10463.0401X R	2.28	ug/L	84.94	cv	
10463.0401X S	44.94	ug/L	2.68	cv	
CAL BLK	-1.09	ug/L	-255.4	cv	window edge
500 PPB	533.35	ug/L	1.08	cv	

10464.0401X	24.51	ug/L	14.10	cv	
10464.0401X R	24.82	ug/L	7.32	cv	
10464.0401X S	60.75	ug/L	0.28	cv	
10465.0401X	3.24	ug/L	7.72	cv	
10465.0401X R	2.52	ug/L	30.26	cv	
10465.0401XS	42.79	ug/L	4.73	cv	
BLK 1010	-0.54	ug/L	-181.3	cv	
MDS 01	137.85	ug/L	1.97	cv	
MDS 01R1	133.40	ug/L	1.84	cv	
MDS 01R1S1	161.30	ug/L	0.51	cv	
10000 PPB	9704.00	ug/L	1.73	cv	
500 PPM ICS	776.30	ug/L	2.93	cv	
CAL BLK	-2.00	ug/L	-73.85	cv	
500 PPB	505.65	ug/L	1.31	cv	

Pb_VHG

blank	185.35	intensity	43.61	cv	
standard	4014.00	intensity	1.17	cv	
500 PPB	540.45	ug/L	2.73	cv	
ICAP-19	978.55	ug/L	2.48	cv	
500 PPM ICS	1099.00	ug/L	4.03	cv	
CAL BLK	-24.21	ug/L	-208.7	cv	window edge
#4618 B-1014	14.52	ug/L	68.96	cv	
B-1017	-29.52	ug/L	-61.38	cv	
10462.0401X	222.80	ug/L	3.42	cv	
10462.0401X R	231.25	ug/L	0.90	cv	
10462.0401X S	724.05	ug/L	2.33	cv	
10463.0401X	42.74	ug/L	17.40	cv	
10463.0401X R	-0.13	ug/L	-1037.	cv	
10463.0401X S	487.00	ug/L	3.33	cv	
CAL BLK	-45.30	ug/L	-155.1	cv	window edge
500 PPB	534.75	ug/L	1.98	cv	
10464.0401X	21.35	ug/L	246.60	cv	
10464.0401X R	209.70	ug/L	7.63	cv	
10464.0401X S	495.35	ug/L	6.12	cv	
10465.0401X	20.89	ug/L	66.75	cv	
10465.0401X R	46.90	ug/L	37.89	cv	
10465.0401XS	443.80	ug/L	1.82	cv	
BLK 1010	-38.45	ug/L	-88.48	cv	
MDS 01	4291.50	ug/L	0.81	cv	
MDS 01R1	4030.50	ug/L	2.09	cv	
MDS 01R1S1	4263.00	ug/L	2.15	cv	
10000 PPB	9901.50	ug/L	2.57	cv	
500 PPM ICS	989.70	ug/L	1.38	cv	
CAL BLK	17.10	ug/L	131.66	cv	
500 PPB	458.65	ug/L	3.45	cv	

Co_VHG

blank	14.76	intensity	212.14	cv	window edge
standard	4821.00	intensity	1.74	cv	
500 PPB	559.05	ug/L	4.65	cv	
500 PPB	523.90	ug/L	0.32	cv	
ICAP-19	1014.00	ug/L	1.53	cv	
500 PPM ICS	836.50	ug/L	2.52	cv	
CAL BLK	2.52	ug/L	177.87	cv	
#4618 B-1014	-4.23	ug/L	-175.8	cv	window edge
B-1017	5.73	ug/L	29.29	cv	
10462.0401X	22.92	ug/L	34.43	cv	
10462.0401X R	22.04	ug/L	16.65	cv	

10462.0401X S	523.40	ug/L	0.35	cv
10463.0401X	24.59	ug/L	35.23	cv
10463.0401X R	29.95	ug/L	15.89	cv
10463.0401X S	494.25	ug/L	1.25	cv
CAL BLK	1.73	ug/L	244.12	cv
500 PPB	545.65	ug/L	0.08	cv
10464.0401X	37.11	ug/L	0.06	cv
10464.0401X R	50.42	ug/L	13.12	cv
10464.0401X S	459.65	ug/L	0.26	cv
10465.0401X	36.71	ug/L	0.30	cv
10465.0401X R	26.49	ug/L	5.93	cv
10465.0401XS	426.10	ug/L	1.86	cv
BLK 1010	2.71	ug/L	25.67	cv
MDS 01	45.43	ug/L	7.43	cv
MDS 01R1	44.93	ug/L	7.09	cv
MDS 01R1S1	424.60	ug/L	1.14	cv
10000 PPB	9702.00	ug/L	1.28	cv
500 PPM ICS	797.75	ug/L	4.48	cv
CAL BLK	-0.73	ug/L	-835.8	cv
500 PPB	510.25	ug/L	0.93	cv

Ni_VHG

blank	32.82	intensity	70.87	cv
standard	11870.00	intensity	0.43	cv
500 PPB	548.70	ug/L	2.97	cv
ICAP-19	987.70	ug/L	4.45	cv
500 PPM ICS	819.65	ug/L	0.12	cv
CAL BLK	0.56	ug/L	1445.0	cv
#4618 B-1014	1.33	ug/L	66.66	cv
B-1017	4.94	ug/L	54.93	cv
10462.0401X	55.62	ug/L	7.45	cv
10462.0401X R	59.52	ug/L	2.20	cv
10462.0401X S	539.45	ug/L	0.85	cv
10463.0401X	82.27	ug/L	1.38	cv
10463.0401X R	124.35	ug/L	1.43	cv
10463.0401X S	532.85	ug/L	1.24	cv
CAL BLK	4.25	ug/L	7.08	cv
500 PPB	517.15	ug/L	1.49	cv
10464.0401X	1610.00	ug/L	0.27	cv
10464.0401X R	1111.00	ug/L	0.02	cv
10464.0401X S	1709.50	ug/L	0.56	cv
10465.0401X	9791.00	ug/L	0.43	cv
10465.0401X R	5064.50	ug/L	0.74	cv
10465.0401XS	8869.50	ug/L	2.92	cv
BLK 1010	2.73	ug/L	19.44	cv
MDS 01	1373.00	ug/L	1.14	cv
MDS 01R1	1372.00	ug/L	4.12	cv
MDS 01R1S1	1645.00	ug/L	0.06	cv
10000 PPB	9215.67	ug/L	5.25	cv
500 PPM ICS	766.90	ug/L	5.54	cv
CAL BLK	0.64	ug/L	780.24	cv
500 PPB	500.90	ug/L	2.42	cv

Mn_VHG

blank	5.97	intensity	2.88	cv
standard	17350.00	intensity	0.01	cv
500 PPB	532.20	ug/L	1.87	cv
ICAP-19	963.45	ug/L	1.31	cv
500 PPM ICS	838.45	ug/L	1.06	cv

CAL BLK	-0.72	ug/L	-8.41	cv	window edge
#4618 B-1014	0.32	ug/L	114.42	cv	
B-1017	0.43	ug/L	13.52	cv	
10462.0401X	1345.50	ug/L	0.19	cv	
10462.0401X R	1398.50	ug/L	0.86	cv	
10462.0401X S	1956.50	ug/L	0.85	cv	
10463.0401X	998.05	ug/L	0.22	cv	
10463.0401X R	942.25	ug/L	1.96	cv	
10463.0401X S	1475.00	ug/L	0.30	cv	
CAL BLK	0.48	ug/L	18.98	cv	
500 PPB	511.60	ug/L	1.15	cv	
10464.0401X R	498.75	ug/L	0.99	cv	
10464.0401X S	2325.00	ug/L	0.43	cv	
10465.0401X	614.85	ug/L	2.41	cv	
10465.0401X R	777.45	ug/L	1.04	cv	
10465.0401XS	923.35	ug/L	0.19	cv	
BLK 1010	-0.18	ug/L	-144.1	cv	window edge
MDS 01	1683.50	ug/L	1.23	cv	
MDS 01R1	1607.00	ug/L	1.96	cv	
MDS 01R1S1	1950.50	ug/L	0.24	cv	
10000 PPB	9456.50	ug/L	2.31	cv	
500 PPM ICS	778.75	ug/L	3.17	cv	
CAL BLK	0.16	ug/L	118.42	cv	
500 PPB	491.55	ug/L	0.39	cv	

Fe_VHG

blank	78.79	intensity	43.80	cv
standard	9699.00	intensity	0.19	cv
500 PPB	548.55	ug/L	1.04	cv
ICAP-19	987.00	ug/L	1.16	cv
500 PPM ICS	107350.0	ug/L	0.03	cv
CAL BLK	7.12	ug/L	154.74	cv
#4618 B-1014	8.87	ug/L	27.06	cv
B-1017	4.74	ug/L	21.80	cv
10462.0401X	61560.00	ug/L	0.24	cv
50 PPM	50985.00	ug/L	0.79	cv
10462.0401X R	62815.00	ug/L	0.29	cv
10462.0401X S	65305.00	ug/L	0.23	cv
10463.0401X	64520.00	ug/L	1.57	cv
10463.0401X R	60245.00	ug/L	0.51	cv
10463.0401X S	59090.00	ug/L	0.00	cv
CAL BLK	-3.92	ug/L	-82.24	cv
500 PPB	527.40	ug/L	1.72	cv
10464.0401X R	48140.00	ug/L	0.82	cv
10464.0401X S	56680.00	ug/L	1.05	cv
10465.0401X	48675.00	ug/L	0.30	cv
10465.0401X R	46490.00	ug/L	1.22	cv
10465.0401XS	43715.00	ug/L	0.02	cv
BLK 1010	0.03	ug/L	8287.7	cv
MDS 01	107050.0	ug/L	0.14	cv
MDS 01R1	106700.0	ug/L	0.14	cv
MDS 01R1S1	106600.0	ug/L	0.07	cv
10000 PPB	9411.00	ug/L	0.71	cv
500 PPM ICS	107650.0	ug/L	0.03	cv
CAL BLK	-0.04	ug/L	-2106.	cv
500 PPB	498.05	ug/L	0.50	cv
10462. 1/10	5399.50	ug/L	0.11	cv
10462.R 1/10	5441.00	ug/L	0.93	cv
10462.S 1/10	6196.00	ug/L	0.27	cv

10463. 1/10	6281.00	ug/L	0.29	cv	
10463.R 1/10	5876.50	ug/L	0.69	cv	
10463.S 1/10	5689.00	ug/L	2.07	cv	
10464. 1/10	2201.00	ug/L	0.26	cv	
10464.R 1/10	5308.00	ug/L	0.32	cv	
10464.S 1/10	6145.50	ug/L	0.17	cv	
CAL BLK	-1.26	ug/L	-106.8	cv	
500 PPB	536.50	ug/L	0.26	cv	
MDS 1/10	17465.00	ug/L	0.03	cv	
MDS R 1/10	16825.00	ug/L	0.27	cv	
MDS S 1/10	17435.00	ug/L	0.70	cv	
500 PPM ICS	107350.0	ug/L	0.02	cv	
CAL BLK	13.84	ug/L	41.75	cv	
500 PPB	554.95	ug/L	0.17	cv	
500 PPB	491.20	ug/L	0.90	cv	

V_VHG

blank	62.19	intensity	177.35	cv	window edge
standard	27060.00	intensity	0.14	cv	
500 PPB	533.65	ug/L	1.57	cv	
ICAP-19	970.00	ug/L	1.98	cv	
500 PPM ICS	868.45	ug/L	1.07	cv	
CAL BLK	-0.02	ug/L	-9572.	cv	
#4618 B-1014	-1.04	ug/L	-313.7	cv	window edge
B-1017	-1.71	ug/L	-8.42	cv	window edge
10462.0401X	87.24	ug/L	0.90	cv	
10462.0401X R	93.32	ug/L	3.02	cv	
10462.0401X S	563.70	ug/L	0.49	cv	
10463.0401X	96.28	ug/L	2.49	cv	
10463.0401X R	98.25	ug/L	0.60	cv	
10463.0401X S	545.10	ug/L	0.44	cv	
CAL BLK	-3.28	ug/L	-83.52	cv	window edge
500 PPB	516.20	ug/L	0.36	cv	
10464.0401X	40.19	ug/L	3.49	cv	
10464.0401X R	82.16	ug/L	1.88	cv	
10464.0401X S	512.85	ug/L	1.23	cv	
10465.0401X	77.97	ug/L	2.91	cv	
10465.0401X R	91.27	ug/L	0.10	cv	
10465.0401XS	463.25	ug/L	0.48	cv	
BLK 1010	-4.56	ug/L	-50.14	cv	window edge
MDS 01	76.53	ug/L	0.84	cv	
MDS 01R1	73.70	ug/L	3.05	cv	
MDS 01R1S1	472.20	ug/L	1.20	cv	
10000 PPB	9637.50	ug/L	1.24	cv	
500 PPM ICS	789.75	ug/L	0.99	cv	
CAL BLK	-1.49	ug/L	-255.4	cv	window edge
500 PPB	484.45	ug/L	0.58	cv	

Be_VHG

blank	-1.91	intensity	-75.57	cv	
standard	13170.00	intensity	0.41	cv	
500 PPB	532.45	ug/L	1.95	cv	
ICAP-19	943.95	ug/L	1.64	cv	
500 PPM ICS	889.20	ug/L	1.72	cv	
CAL BLK	0.06	ug/L	270.81	cv	
#4618 B-1014	-0.03	ug/L	-490.8	cv	
B-1017	-0.08	ug/L	-166.0	cv	window edge
10462.0401X	2.07	ug/L	0.85	cv	
10462.0401X R	2.51	ug/L	16.28	cv	

10462.0401X S	51.18	ug/L	0.97	cv	
10463.0401X	2.09	ug/L	2.58	cv	
10463.0401X R	1.80	ug/L	9.62	cv	
10463.0401X S	49.46	ug/L	1.18	cv	
CAL BLK	-0.01	ug/L	-2145.	cv	
500 PPB	529.40	ug/L	0.28	cv	
10464.0401X	0.64	ug/L	31.56	cv	
10464.0401X R	1.13	ug/L	31.15	cv	
10464.0401X S	44.51	ug/L	0.66	cv	
10465.0401X	1.62	ug/L	3.31	cv	
10465.0401X R	1.55	ug/L	0.04	cv	
10465.0401XS	41.56	ug/L	0.75	cv	
BLK 1010	-0.15	ug/L	-60.62	cv	window edge
MDS 01	1.16	ug/L	33.40	cv	
MDS 01R1	1.42	ug/L	4.16	cv	
MDS 01R1S1	41.52	ug/L	0.73	cv	
10000 PPB	9789.50	ug/L	0.47	cv	
500 PPM ICS	843.20	ug/L	1.00	cv	
CAL BLK	0.23	ug/L	23.34	cv	
500 PPB	502.00	ug/L	0.19	cv	

Cu_VHG

blank	236.60	intensity	31.91	cv
standard	32255.00	intensity	0.15	cv
500 PPB	529.30	ug/L	1.23	cv
ICAP-19	973.10	ug/L	0.83	cv
500 PPM ICS	902.70	ug/L	1.27	cv
CAL BLK	-5.42	ug/L	-18.86	cv
#4618 B-1014	-4.41	ug/L	-155.9	cv
B-1017	-0.28	ug/L	-323.6	cv
10462.0401X	123.40	ug/L	3.90	cv
10462.0401X R	128.30	ug/L	0.47	cv
10462.0401X S	377.10	ug/L	1.10	cv
10463.0401X	45.28	ug/L	2.50	cv
10463.0401X R	51.33	ug/L	0.62	cv
10463.0401X S	270.20	ug/L	0.76	cv
CAL BLK	0.88	ug/L	102.25	cv
500 PPB	525.85	ug/L	0.48	cv
10464.0401X	415.30	ug/L	0.34	cv
10464.0401X R	452.60	ug/L	0.41	cv
10464.0401X S	456.60	ug/L	0.25	cv
10465.0401X	577.65	ug/L	1.28	cv
10465.0401X R	451.65	ug/L	0.33	cv
10465.0401XS	1218.50	ug/L	0.68	cv
BLK 1010	-1.53	ug/L	-37.71	cv
MDS 01	10210.00	ug/L	1.96	cv
MDS 01R1	9704.00	ug/L	0.75	cv
MDS 01R1S1	10015.50	ug/L	0.76	cv
10000 PPB	9832.50	ug/L	0.21	cv
500 PPM ICS	848.80	ug/L	2.22	cv
CAL BLK	-2.57	ug/L	-97.90	cv
500 PPB	490.20	ug/L	0.26	cv
10462. 1/10	9.31	ug/L	28.10	cv
MDS 1/10	1071.50	ug/L	1.63	cv
MDS R 1/10	1020.00	ug/L	0.95	cv
MDS S 1/10	1080.00	ug/L	0.24	cv
500 PPM ICS	901.00	ug/L	0.56	cv
CAL BLK	-3.44	ug/L	-81.04	cv
500 PPB	540.15	ug/L	0.23	cv

Al VHG

blank	233.80	intensity	34.06	cv	
standard	9972.00	intensity	0.71	cv	
500 PPB	537.65	ug/L	0.43	cv	
ICAP-7	1001.15	ug/L	0.42	cv	
500 PPM ICS	99820.00	ug/L	0.06	cv	
CAL BLK	-6.16	ug/L	-287.6	cv	
#4618 B-1014	11.90	ug/L	104.93	cv	
B-1017	-9.23	ug/L	-54.76	cv	
10462.0401X	39160.00	ug/L	0.58	cv	
50 PPM	53430.00	ug/L	0.64	cv	
10462.0401X	R40775.00	ug/L	0.65	cv	
10462.0401X	S41815.00	ug/L	0.31	cv	
10463.0401X	41210.00	ug/L	0.17	cv	
10463.0401X	R38860.00	ug/L	0.76	cv	
10463.0401X	S38215.00	ug/L	0.47	cv	
CAL BLK	3.46	ug/L	46.08	cv	
500 PPB	508.55	ug/L	0.73	cv	
10464.0401X	R38950.00	ug/L	0.04	cv	
10464.0401X	S44600.00	ug/L	0.44	cv	
10465.0401X	28250.00	ug/L	0.97	cv	
10465.0401X	R37600.00	ug/L	0.16	cv	
10465.0401XS	32035.00	ug/L	0.02	cv	
BLK 1010	-20.60	ug/L	-13.64	cv	
MDS 01	44695.00	ug/L	1.24	cv	
MDS 01R1	44190.00	ug/L	1.61	cv	
MDS 01R1S1	45050.00	ug/L	0.63	cv	
10000 PPB	10015.50	ug/L	1.17	cv	
500 PPM ICS	100400.0	ug/L	0.02	cv	
CAL BLK	-15.24	ug/L	-104.6	cv	window edge
500 PPB	510.95	ug/L	2.45	cv	
10462. 1/10	3665.50	ug/L	0.60	cv	
10462.R 1/10	3710.50	ug/L	0.06	cv	
10462.S 1/10	4202.50	ug/L	0.03	cv	
10463. 1/10	4186.00	ug/L	0.31	cv	
10463.R 1/10	3959.50	ug/L	1.87	cv	
10463.S 1/10	3782.50	ug/L	0.96	cv	
10464. 1/10	2059.00	ug/L	0.22	cv	
10464.R 1/10	4039.00	ug/L	0.48	cv	
10464.S 1/10	4491.00	ug/L	0.31	cv	
CAL BLK	-23.25	ug/L	-43.54	cv	
500 PPB	545.60	ug/L	0.44	cv	
10465. 1/10	3026.50	ug/L	0.60	cv	
10465.R 1/10	4008.00	ug/L	0.25	cv	
10465.S 1/10	3599.00	ug/L	0.18	cv	
MDS 1/10	4642.00	ug/L	1.04	cv	
MDS R 1/10	4584.50	ug/L	0.51	cv	
MDS S 1/10	4828.50	ug/L	0.63	cv	
500 PPM ICS	99865.00	ug/L	0.12	cv	
CAL BLK	0.08	ug/L	10383.	cv	
500 PPB	548.05	ug/L	0.33	cv	

Ba_VHG

blank	20.63	intensity	13.49	cv
standard	14890.00	intensity	1.09	cv
500 PPB	532.35	ug/L	0.62	cv
ICAP-7	998.75	ug/L	0.78	cv
500 PPM ICS	894.15	ug/L	0.11	cv

CAL BLK	0.26	ug/L	1.47	cv	
#4618 B-1014	-0.04	ug/L	-436.5	cv	
B-1017	0.12	ug/L	306.01	cv	
10462.0401X	1600.00	ug/L	0.30	cv	
10462.0401X R	1617.50	ug/L	0.28	cv	
10462.0401X S	3622.50	ug/L	0.29	cv	
10463.0401X	772.75	ug/L	0.49	cv	
10463.0401X R	852.95	ug/L	0.60	cv	
10463.0401X S	2567.00	ug/L	0.23	cv	
CAL BLK	-0.41	ug/L	-92.68	cv	
500 PPB	538.10	ug/L	0.42	cv	
10464.0401X R	1464.00	ug/L	1.06	cv	
10464.0401X S	2749.00	ug/L	0.30	cv	
10465.0401X	792.00	ug/L	1.11	cv	
10465.0401X R	991.70	ug/L	0.37	cv	
10465.0401XS	2576.50	ug/L	0.89	cv	
BLK 1010	-0.80	ug/L	-8.92	cv	
MDS 01	4667.00	ug/L	1.69	cv	
MDS 01R1	4435.00	ug/L	2.24	cv	
MDS 01R1S1	6347.00	ug/L	0.45	cv	
10000 PPB	9762.00	ug/L	0.19	cv	
500 PPM ICS	848.45	ug/L	1.19	cv	
CAL BLK	-0.92	ug/L	-82.40	cv	
500 PPB	508.60	ug/L	0.55	cv	

Cr_VHG

blank	-11.18	intensity	-17.10	cv	window edge
standard	14720.00	intensity	1.28	cv	
500 PPB	531.80	ug/L	1.99	cv	
ICAP-19	968.55	ug/L	1.04	cv	
500 PPM ICS	860.40	ug/L	0.89	cv	
CAL BLK	2.72	ug/L	30.93	cv	
#4618 B-1014	0.42	ug/L	829.49	cv	window edge
B-1017	-0.85	ug/L	-313.4	cv	
10462.0401X	53.28	ug/L	8.76	cv	
10462.0401X R	52.99	ug/L	3.04	cv	
10462.0401X S	253.30	ug/L	1.10	cv	
10463.0401X	62.68	ug/L	0.99	cv	
10463.0401X R	55.93	ug/L	4.43	cv	
10463.0401X S	240.80	ug/L	1.12	cv	
CAL BLK	1.42	ug/L	5.58	cv	window edge
500 PPB	535.55	ug/L	0.24	cv	
10464.0401X	59.26	ug/L	0.91	cv	
10464.0401X R	83.60	ug/L	4.08	cv	
10464.0401X S	254.40	ug/L	1.00	cv	
10465.0401X	42.65	ug/L	11.23	cv	
10465.0401X R	49.05	ug/L	6.84	cv	
10465.0401XS	199.95	ug/L	0.72	cv	
BLK 1010	1.14	ug/L	309.57	cv	window edge
MDS 01	1524.50	ug/L	1.75	cv	
MDS 01R1	1453.50	ug/L	4.04	cv	
MDS 01R1S1	1583.50	ug/L	0.23	cv	
10000 PPB	9676.00	ug/L	1.73	cv	
500 PPM ICS	814.60	ug/L	0.57	cv	
CAL BLK	2.85	ug/L	29.15	cv	
500 PPB	502.55	ug/L	0.44	cv	

Lead Line

Job # 4618
Ag, Sb

87/01/14
11:24

Result Name: 8701140956

blank	10463.0401X	B-1010
blank	10463.0401X R	500 PPM ICS
standard	10463.0401X S	CAL BLK
500 PPB	10464.0401X	500 PPB
ICAP-19	10464.0401X R	
EPA 283#2 1/50	CAL BLK	
EPA 283#2 1/50	500 PPB	
500 PPM ICS	10464.0401X S	
CAL BLK	10465.0401X	
JOB#4618 B1014	10465.0401X R	
B-1017	10465.0401X S	
10462.0401X	MDS	
10462.0401X R	MDS R	
10462.0401X S	MDS S	

Displaying page 1 of 1.

Command?

Rectified data

Sb_VHG

blank	103.26	intensity	120.48	cv	
blank	48.86	intensity	56.36	cv	
standard	2608.00	intensity	0.37	cv	
500 PPB	513.25	ug/L	15.00	cv	
ICAP-19	1163.50	ug/L	2.26	cv	
500 PPM ICS	1113.50	ug/L	12.36	cv	
CAL BLK	-12.61	ug/L	-475.8	cv	window edge
JOB#4618 B1014	10.58	ug/L	180.26	cv	
B-1017	-30.13	ug/L	-19.60	cv	
10462.0401X	13.12	ug/L	268.29	cv	window edge
10462.0401X R	1.25	ug/L	881.34	cv	window edge
10462.0401X S	302.40	ug/L	2.00	cv	
10463.0401X	30.70	ug/L	171.66	cv	window edge
10463.0401X R	-14.46	ug/L	-92.81	cv	window edge
10463.0401X S	254.30	ug/L	17.92	cv	
10464.0401X	-44.08	ug/L	-13.38	cv	window edge
10464.0401X R	-21.32	ug/L	-89.11	cv	window edge
CAL BLK	16.52	ug/L	332.71	cv	
500 PPB	540.65	ug/L	5.88	cv	
10464.0401X S	331.20	ug/L	12.52	cv	
10465.0401X	42.83	ug/L	41.35	cv	window edge
10465.0401X R	48.96	ug/L	25.10	cv	window edge
10465.0401X S	387.05	ug/L	9.56	cv	
MDS	60.08	ug/L	2.09	cv	window edge
MDS R	36.11	ug/L	5.96	cv	window edge
MDS S	419.65	ug/L	2.07	cv	
B-1010	-19.05	ug/L	-71.01	cv	
500 PPM ICS	1065.00	ug/L	4.41	cv	
CAL BLK	-33.77	ug/L	-176.0	cv	window edge
500 PPB	516.70	ug/L	1.53	cv	

Ag_VHG

blank	171.01	intensity	112.92	cv	window edge
blank	239.25	intensity	16.23	cv	
standard	38765.00	intensity	0.79	cv	
500 PPB	523.50	ug/L	0.46	cv	
EPA 283#2 1/50	110.45	ug/L	0.60	cv	
500 PPM ICS	973.10	ug/L	0.32	cv	
CAL BLK	-2.56	ug/L	-4.35	cv	
JOB#4618 B1014	-5.42	ug/L	-80.84	cv	
B-1017	-2.49	ug/L	-133.9	cv	
10462.0401X	-0.11	ug/L	-1758.	cv	
10462.0401X R	2.14	ug/L	48.13	cv	
10462.0401X S	46.52	ug/L	13.79	cv	
10463.0401X	-4.18	ug/L	-2.37	cv	
10463.0401X R	-2.28	ug/L	-280.2	cv	window edge
10463.0401X S	38.67	ug/L	5.72	cv	
10464.0401X	2.07	ug/L	87.24	cv	
10464.0401X R	-3.29	ug/L	-44.89	cv	
CAL BLK	-3.13	ug/L	-166.0	cv	
500 PPB	522.50	ug/L	0.17	cv	
10464.0401X S	50.95	ug/L	2.17	cv	
10465.0401X	-2.70	ug/L	-13.98	cv	window edge
10465.0401X R	-5.26	ug/L	-9.69	cv	window edge
10465.0401X S	43.09	ug/L	1.95	cv	
MDS	791.40	ug/L	1.00	cv	
MDS R	759.00	ug/L	0.60	cv	

MDS S	803.45	ug/L	1.52	cv	
B-1010	-0.28	ug/L	-388.1	cv	
500 PPM ICS	979.55	ug/L	0.85	cv	
CAL BLK	-3.44	ug/L	-110.1	cv	window edge
500 PPB	526.45	ug/L	0.20	cv	

Test Performed: As

Date Received: JANUARY 12, 1987 1/13/87

W Performed By: [signature] J. OLKA

(SEE PAGE 1)

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From No	C	ppb BURN 1	ppb Burn 2	ppb Avg.	C.Y.	20.0 ppb Spike	% REC	D.F.	Amt. of SAMPLE	UNITS	Fi Co
	WS 378 #3				19.8				42.5	114			µg/l	19
	Cal Blk				0.3				21.1	106				<1(
	50.0ppb				50.4				72.3	110				5(
	Blk 991				0.6	0.7	0.6		17.6	88			µg/l	<1(
4618	10462.0402				23.7	25.8	24.8	6.00	46.2	107		1.07	mg/kg	6
	10463.0402				18.2	18.3	18.3	0.39	41.0	114		1.04		4
	10464.0402				103.2	107.0	105.1	2.56	118.0	/		1.06		/
	10465.0402				212.0	217.3	214.6	1.75	243.6	/		1.06		/
	10465 R_1				272.3	258.6	265.4	3.65	303.1	/		1.02		/
4651	10614.0402				11.5	11.0	11.3	3.14	33.0	109		0.93		3
	10615.0402				7.9	7.5	7.7	3.67	30.7	115		1.01		1
	10616.0402				24.1	23.9	24.0	0.59	42.4	92		0.98		5
	10617.0402				39.1	39.0	39.1	0.18	57.2	91		0.96	mg/kg	9
	Cal Blk				0.8	0.3	0.6	–	20.1	101			µg/l	<1(
	50.0ppb				50.0	47.0	48.5	4.37	67.3	94			µg/l	48
	10618.0402				190.8	185.0	187.9	2.18	193.7	/		1.03	mg/kg	/
	10619.0402				203.9	201.7	202.8	0.77	209.0	/		1.00		/
	10620.0402				13.6	11.0	12.3	14.95	31.1	94		1.02		5
	10621.0402				7.0	7.0	7.0	0.00	27.0	100		0.96		1.
	10622.0402				28.3	28.9	28.6	1.48	50.4	109		1.01		6
	10623.0402				102.7	104.6	103.6	1.30	113.4	/		1.06		/
	10624.0402				10.4	10.3	10.4	0.68	30.6	101		0.97		2
	10624 S_1				51.3	56.4	53.8	6.70	68.2	/		1.04	mg/kg	1(
	Cal Blk				1.1	1.0	1.0	6.73	20.4	102			µg/l	<1(
	50.0ppb				51.7	52.7	52.2	1.36	69.3	86			µg/l	5
4618	10464.0402				26.2	26.6	26.4	1.07	48.4	110	2→10	1.06	mg/kg	3
	10465.0402				71.4	72.9	72.1	1.47	90.7	93	1→10	1.06		1
	10465 R_1				94.2	91.0	92.6	2.44	109.3	84	1→10	1.02	mg/kg	2

To Page He

Bth Rohrbach | Date 1/19/87 | Invented by | Recorded by J. Olka | Date 1/13/87

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Test Performed: As (cont'd)
Date Received: 1/13/87
Work Performed By: J. Olka

Job No.	ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From N	C	ppb Burn 1	ppb Burn 2	ppb Ave	CV	20.0 ppb Spike	% Rec	DF	Samp Wgt	Units	Final Conc
4651	10613.0402					22.6	21.2	21.9	4.52	46.3	/	1→10	1.03	mg/kg	/
	10619.0402					24.4	25.5	24.9	3.12	46.7	109	1→10	1.00	mg/kg	67
	Cal BIK					0.7	0.5	0.6	–	19.0	95			µg/l	<10.0
	50.0ppb					49.1	51.3	50.2	3.10	67.0	84			µg/l	50.2
4651	10623.0402					16.5	16.9	16.7	1.69	39.3	113	2→10	1.06	mg/kg	25
4618	10465.0402R1					89.4	88.1	88.8	1.04	107.4	93	1→10	1.02	1	219
4651	10613.0402					22.2	22.3	22.3	0.32	45.3	115	1→10	1.03	mg/kg	57

To Page No.

B.H. Rehrhard 1/19/87 J. Olka 1/13/87 69

HGA FORM #1

ELEMENT: As, DATE: 1/12/87.

S_1 = 25.0 PPB., S_2 = 50.0 PPB.

S_3 = 100.0 PPB, BOOK NO. 266 pp 46-47

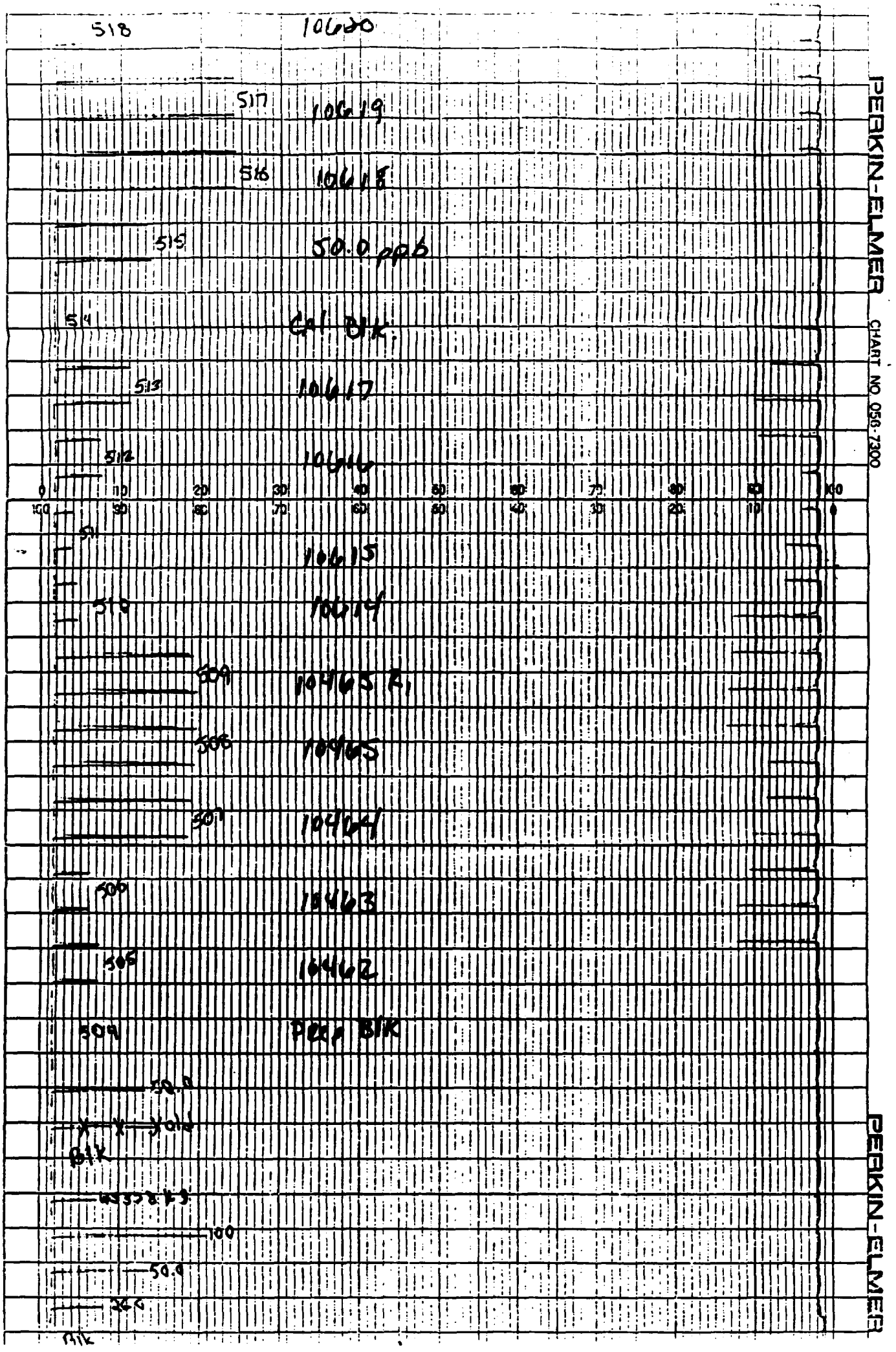
	501	WS378#3			
	X02	Cal Blank			
	X03	50.0 ppb		505	46.2
	X04	PrepBlank 991		506	41.0
JOB #:	X05	10462.0402 (4618)		507	113.[illegible] C
	X06	10463.		508	243.5 C
	X07	10464.		509	303.1 C
	X08	10465.		510	33.0
	X09	10465. (R1)		511	30.7
	X10	10614.0402 (4651)		512	47.3
	X11	10615.		512	42.4
	X12	10616.		513	57.2
	X13	10617.		514	20.1
	X14	Cal Blank		515	67.3
	X15	50.0 ppb		516	193.7 C
	X16	10618.0402		517	209.0 C
	X17	10619. , S_2		518	31.1
	X18	10620.		519	27.0
	X19	10621.		520	50.4
	X20	10622.		521	113.[illegible] C
	X21	10623.		522	30.6
	X22	10624.		523	68.2
	X23	10624. (S1)		524	20.4
	X24	Cal Blank		525	69.3
	X25	50.0 ppb		526	48.4
	X26	10464.0402 (2→10)		527	90.7
	X27	10465 ⊥ (1→10)		528	109.[illegible] C
	X28	10465 ⊥ (1→10)		529	46.3
	X29	10618.0402 (1→10)		530	46.7
	X30	10619.0402 (1→10)		531	19.0
	X31	Cal Blk		532	67.0
	X32	50.0 ppb			
	X33	10623.0402 (2→10)			16.5
	X34	10465. ⊥ (1→10)			16.9
	X35	10618 ⊥ (1→10) , S_3		533	16.7 A
					1.69 C
					89.4
					83.1
				534	88.8 A
					1.04 C
					22.2
					22.3
				535	22.3 A
					0.32 C
				533	39.3
				534	107.4 C
				535	45.3

recycled paper

ecology and

As

	-0.013	C
	0.000	AZ
	0.106	C
	25.0	S1
	44.7	C
	50.0	S2
	102.8	C
	100.0	S3
5[redacted]01	19.8	
5[redacted]02	0.3	
5[redacted]03	57.3 old	
503	50.4	
	0.6	
	0.7	
504	0.6	AV
	10.88	CV
	23.7	
	25.8	
505	24.8	AV
	6.00	CV
	18.2	
	18.3	
506	18.3	AV
	0.39	CV
	103.2	
	107.0	C
507	105.1	AV
	2.56	CV
	212.0	C
	217.3	C
508	214.6	AV
	1.75	CV
	272.3	C
	258.6	C
509	265.4	AV
	3.65	CV
	11.5	
	11.0	
510	11.3	AV
	3.14	CV
	7.9	
	7.5	
511	7.7	AV
	3.67	CV
	24.1	
	23.9	
512	24.0	AV
	0.59	CV
	39.1	
	39.0	
513	39.1	AV
	0.18	CV
	0.8	
	0.3	
514	0.6	AV
	64.23	CV
	50.0	
	47.0	
515	48.5	AV
	4.37	CV
	190.8	C
	185.0	C
516	187.9	AV
	2.18	CV
	203.9	C
	201.7	C
517	202.8	AV
	0.77	CV
	13.6	
	11.0	
518	12.3	AV
	14.95	CV
	7.0	
	7.0	
519	7.0	AV
	0.00	CV
	28.3	
	28.9	
520	28.6	AV
	1.48	CV
	102.7	
	104.6	
521	103.6	AV
	1.30	CV
	10.4	
	10.3	
522	10.4	AV
	0.68	CV
	51.3	
	56.4	
523	53.8	AV
	6.70	CV
	1.1	
	1.0	
524	1.0	AV
	6.73	CV
	51.7	
	52.7	
525	52.2	AV
	1.36	CV
	26.2	
	26.6	
526	26.4	AV
	1.07	CV
	71.4	
	72.9	
527	72.1	AV
	1.47	CV
	94.2	
	91.0	
528	92.6	AV
	2.44	CV
	22.6	
	21.2	
529	21.9	AV
	4.52	CV
	24.4	
	25.5	
530	24.9	AV
	3.12	CV
	0.7	
	0.5	
531	0.6	AV
	23.57	CV
	49.1	
	51.3	
532	50.2	AV
	3.10	CV


518
10620
517
10619
516
10618
515
50.0 ppb
514
Cal Blk
513
10617
512
10616
0 10 20 30 40 50 60 70 80 90 100
100 90 80 70 60 50 40 30 20 10 0
511
10615
510
10614
509
10465 R1
508
10465
507
10464
506
10463
505
10462
504
Prep Blk
50.0
Yold
Blk
100
50.0
Blk
PERKIN-ELMER
CHART NO 056-7300
PERKIN-ELMER

HS + spike

532 50.0 ppb

531 Cal Blk

530 106619 (1 → 10)

529 106618 (1 → 10)

528 106615 (1 → 10)

527 106615 (1 → 10)

526 106614 (2 → 10)

525 50.0 ppb

524 Cal Blk

523 106611 S1

522 106611

521 106613

520 106612

519 106611

518

517

516

PERKIN-ELMER CHART NO. 056-7300

PERKI

532	
531	
530	10619 (1 → 10)
529	10618 (1 → 10)
528	10465 (1 → 10)
527	10465 (1 → 10)
526	10464 (2 → 10)
525	50.0 ppb
524	Cal Blk
523	10624S
522	10624
521	10623
520	10622
519	10621
518	10620
517	10619
516	10618
515	50.0 ppb
514	Cal Blk
513	10617
512 Rep	
512	10616
511	10615
510	10614
509	10465 SR
508	10465
507	10464
506	10463
505	10462
504	Blk Blk
503	50.0 ppb
502	Cal Blk
501	WS 378 #3
	As + spike

PERKIN-ELMER CHART NO. 059-7300

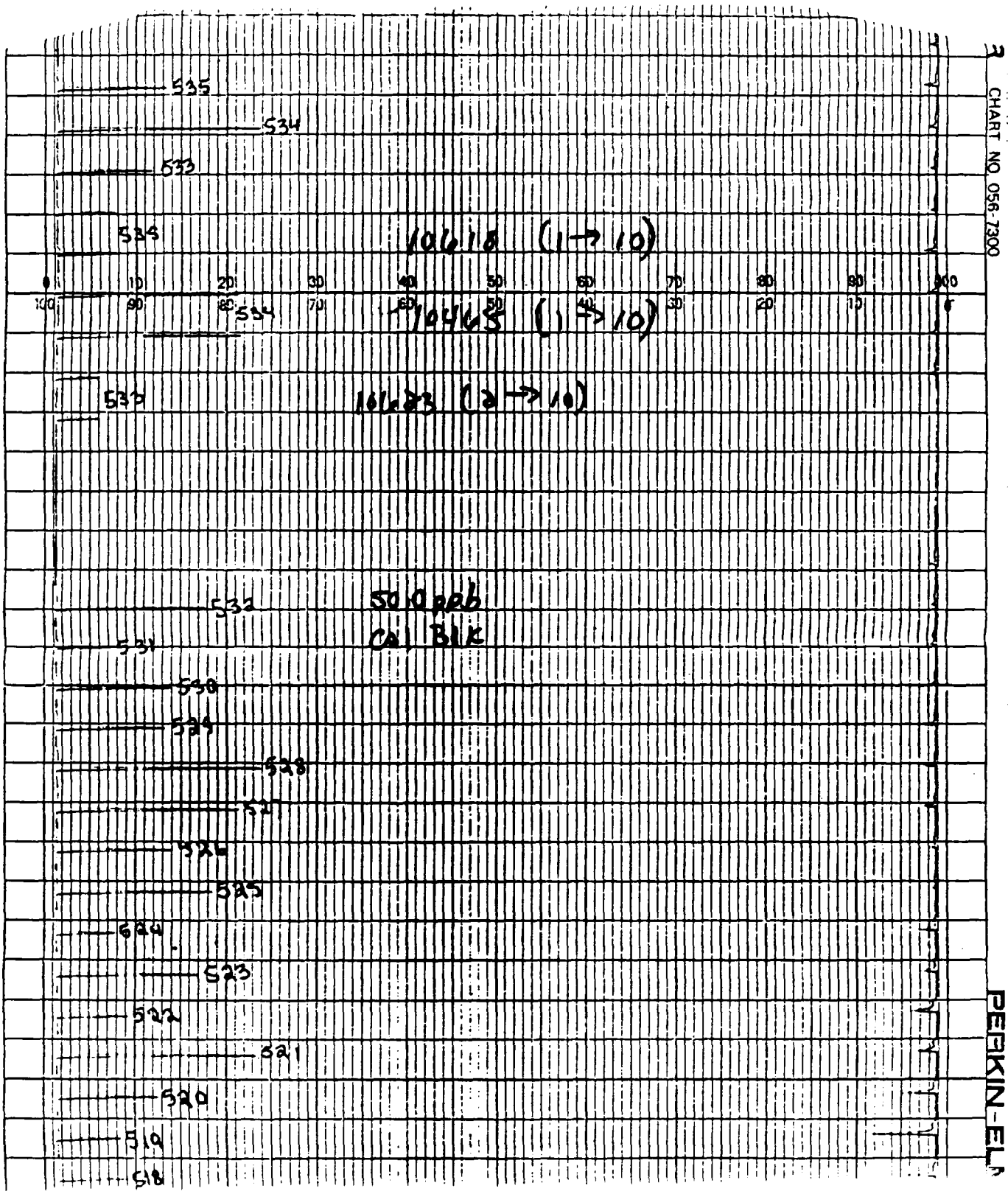


CHART NO. 056-7300
PERKIN-EL
535
534
533
10618 (1→10)
10465 (1→10)
10623 (2→10)
5010 ppb
Cal Blk
532
531
530
529
528
527
526
525
524
523
522
521
520
519
518

Page No.

t Performed: Pb
e Received: JANUARY 13, 1987
rk Performed By: [signature] JAMES W. OLKA

λ = 283.3
Energy = 56
Time = 5.0 sec.

S_1 = 25.0 ppb
S_2 = 50.0 ppb
S_3 = 100.0 ppb

See Std Log # 88 page 87

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From No	C	ppb Burn 1	ppb Burn 2	ppb Avg	C.V.	10.0 ppb Spike	% Rec.	D.F.	Wet Wt Amt. of Sample	Units	Dry Wt Basis Final Conc.
	WS378-3				16.9				28.2	113			µg/L	16.9
	Cal Blank				-0.6				11.3	113			µg/L	<5.00
	50.0 ppb				51.2				63.1	119			µg/L	51.2
	Prep Blank 991				1.2	1.3	1.2	—	11.7	105			µg/L	<5.00
4618	10462.0402				OSER	OSER	OSER	—	OSER	—		1.07	mg/kg	—
	10463.0402				34.9	35.6	35.3	1.40	45.0	97		1.04	mg/Kg	8.9
	10464.0402				104.3	107.3	105.8	2.01	111.9	/		1.06		/
	10465.0402				167.1	172.4	169.7	2.21	179.6	99		1.06		40.4
	10465.(R1)				68.6	69.2	68.9	0.62	78.0	91		1.02		17.1
4651	10614.0402				58.5	57.0	57.7	1.34	65.8	81		0.93		/
	10615.0402				65.9	66.8	66.4	0.96	73.4	/		1.01		/
	10616.0402				OSER	OSER	OSER	0.00	OSER	/		0.98		ICP
	10617.0402				OSER	OSER	OSER	0.00	OSER	/		0.96		ICP
	Cal Blank				-0.9	-0.8	-0.8	—	12.0	120			µg/L	<5.00
	50.0 ppb				53.6	51.5	52.5	2.83	59.2	67			µg/L	52.5
	10618.0402				17.6	17.6	17.6	0.00	26.3 ~~25.9~~ JO	87 ~~83~~ JO		1.03	mg/Kg	4.5
	10619.0402				19.8	19.5	19.7	1.08	28.8 ~~31.9~~ JO	91 ~~97~~ JO		1.00		5.3
	10620.0402				25.4	25.1	25.3	0.84	36.7	114		1.02		6.8
	10621.0402				17.8	18.2	18.0	1.57	28.3	103		0.96		4.8
	10622.0402				44.0	43.6	43.8	0.65	52.5	87		1.01		9.7
	10623.0402				OSER	OSER	OSER	0.00	OSER	OSER		1.06		ICP
	10624.0402				16.1	14.8	15.4	5.95	25.8	104		0.97		3.8
	10624.(S1)				62.9	62.8	62.8	0.11	73.0	102		1.04		95% Rec
	Cal Blank				-0.8	-0.9	-0.8	—	10.0	100			µg/L	<5.00
	50.0 ppb				52.4	49.6	51.0	3.88	64.3	133			µg/L	51.0
4618	10462.0402				18.6	18.1	18.3	1.93	29.4	111	1→10	1.07	mg/kg	44.0
	10464.0402				17.7	17.7	17.7	0.00	28.2	105	2→10	1.06		107
4651	10614.0402				25.0	23.7	24.4	3.78	33.4	90	1→2	0.93		34.5
	10615.0402				25.9	28.2	27.0	6.01	36.4	94	1→2	1.01	mg/kg	33.8
	Cal Blk				-1.9	-1.3	-1.6	—	8.7	87			µg/L	<5.00
	50.0 ppb				48.9	48.0	48.4	1.31	60.0					48.4

To Page No.

Witnessed & Understood by me: Bill Rohrbach
Date: 1/19/87
Invented by:
Recorded by: J. O. M. P.
Date: 1/13-14/87

HGA FORM #1

ELEMENT: Pb, DATE: 1/13/86.

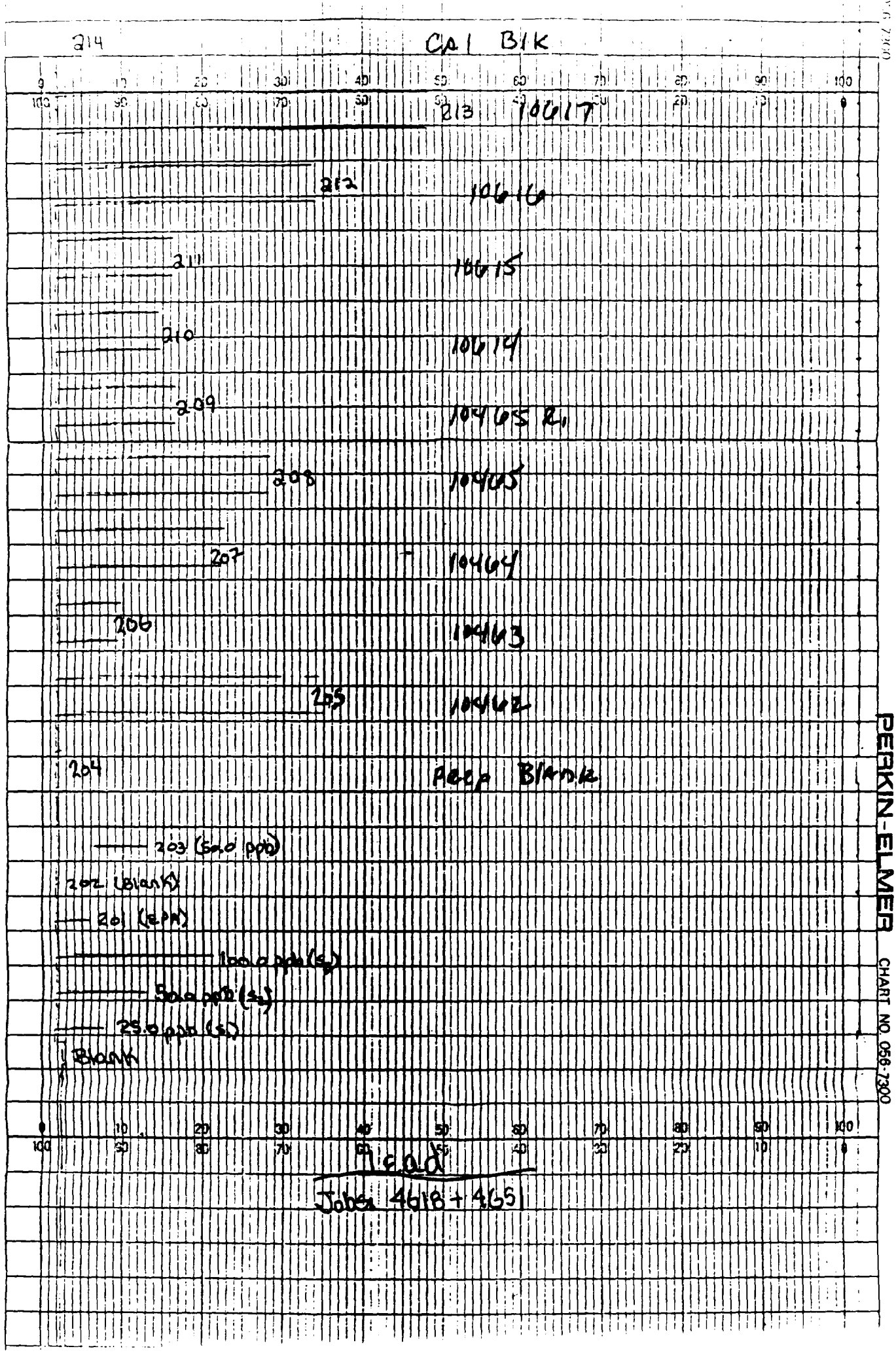
S_1 = 25.0 PPB., S_2 = 50.0 PP

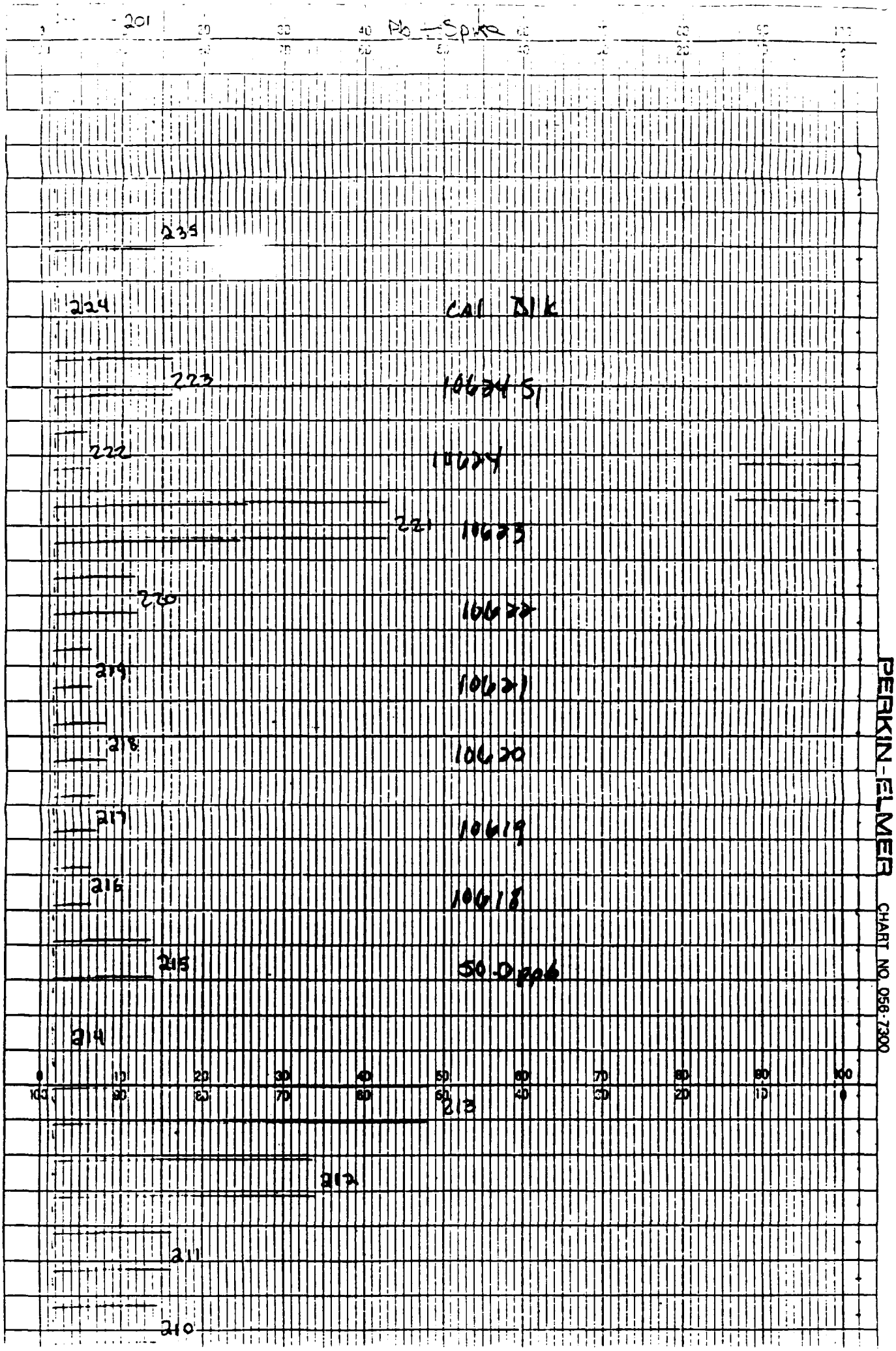
S_3 = 100.0 PPB, BOOK NO. 281 pg 1

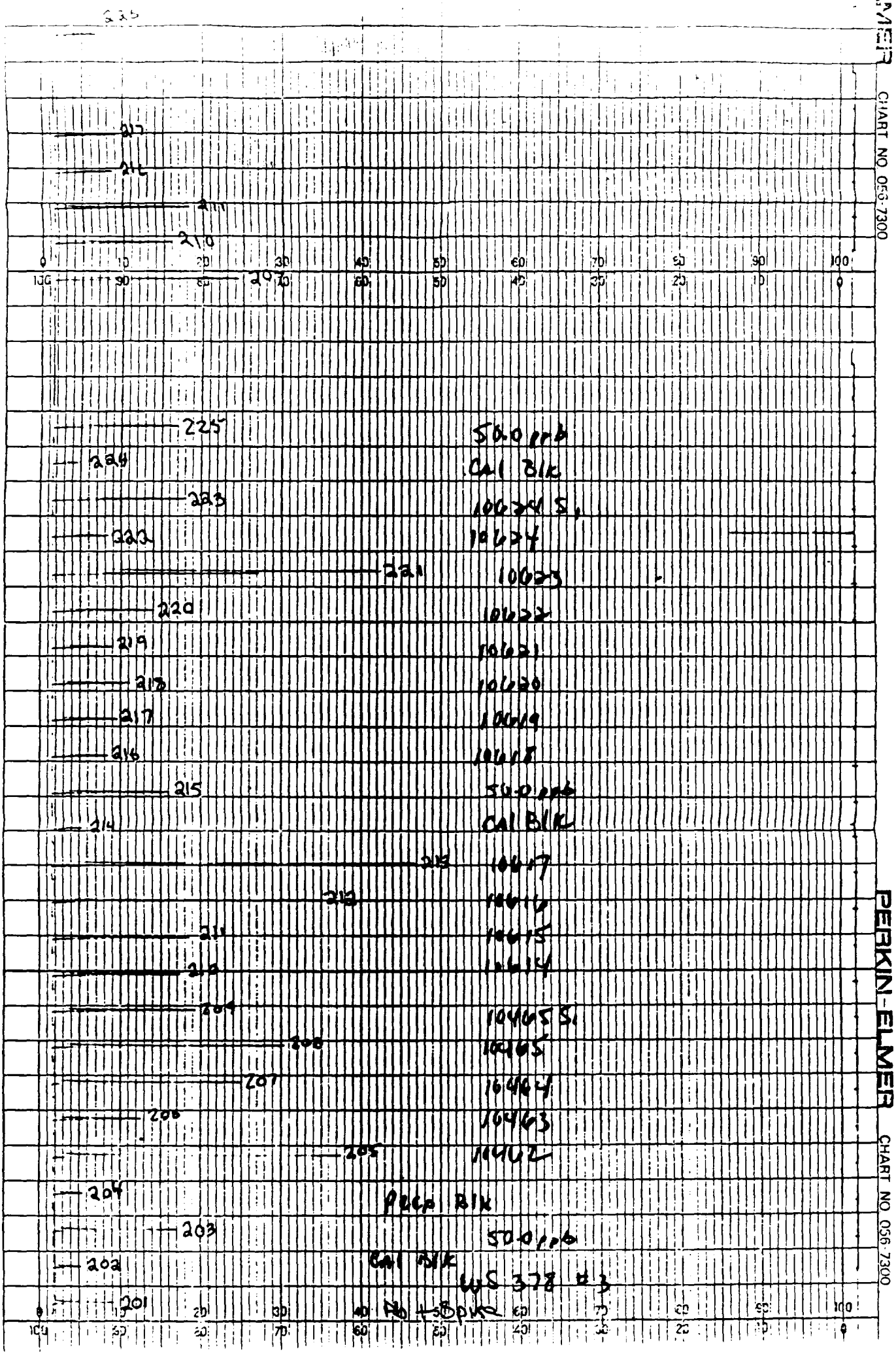
	201	WS 378#3	
	X02	Cal Blank	
	X03	50.0 ppb	
	X04	Prep Blank 991	
JOB #:	X05	10462.0402 (4618)	
	X06	10463.	
	X07	10464.	
	X08	10465.	
	X09	10465. (R1)	
	X10	10614.0402 (4651)	
	X11	10615.	
	X12	10616.	
	X13	10617.	
	X14	Cal Blank	
	X15	50.0 ppb	
	X16	10618.0402	
	X17	10619. , S_2	
	X18	10620.	
	X19	10621.	
	X20	10622.	
	X21	10623.	
	X22	10624.	
	X23	10624. (S1)	
	X24	Cal Blank	
	X25	50.0 ppb	
	X26	10463.0402 (1→10)	
	X27	10464.0402 (2→10)	
	X28	10614.0402 (1→2)	
	X29	10615.0402 (1→2)	
	X30	~~[illegible]~~ Cal/Blk	
	X31	~~[illegible]~~ 50.0 ppb	
	X32		
	X33		
	X34		
	X35	, S_3	

201	[illegible]	
202	11.3	
203	63.1	
204	11.7	
205	[illegible]	[illegible]
206	45.0	
207	111.[illegible]	C
208	17[illegible]	[illegible]
209	78.0	
210	65.8	
211	73.4	
212	[illegible]	[illegible]
213	[illegible]	[illegible]
214	12.0	
215	59.2	
216	25.9	
217	31.4	
218	36.7	
219	28.3	
220	52.5	
221	[illegible]	[illegible]
222	25.8	
223	73.0	
224	10.0	
225	64.3	
207	110.1	C
210	62.6	
211	72.5	
216	26.3	
217	28.8	
	18.6	
	18.1	
226	18.3	AV
	1.93	CV
	17.7	
	17.7	
227	17.7	AV
	0.00	CV
	25.0	
	23.7	
228	24.4	A
	3.78	C
	25.9	
	28.2	
229	27.0	A
	6.01	C
	-1.9	
	-1.3	
230	-1.6	A
	26.52	C
	43.9	
	48.0	
231	45.4	A
	1.31	C

226	29.4	
227	28.2	
228	33.4	
229	36.4	
230	8.7	
231	60.0	
	0.037	
	0.060	AZ
	0.078	
	25.0	S1
	49.1	C
	50.0	S2
	96.8	C
	100.0	S3
201	16.9	
202	-0.6	
203	51.2	
	1.2	
	1.3	
204	1.2	AV
	5.66	CV
	05	ER
	05	ER
205	05	ER
	0.00	CV
	34.9	
	35.6	
206	35.3	AV
	1.40	CV
	104.3	
	107.3	C
207	105.8	AV
	2.01	CV
	167.1	C
	172.4	C
208	169.7	AV
	2.21	CV
	68.6	
	69.2	
209	68.9	AV
	0.62	CV
	58.5	
	57.0	
210	57.7	AV
	1.84	CV
	65.9	
	66.8	
211	66.4	AV
	0.96	CV
	05	ER
212	05	ER
	0.00	CV
	05	ER
	05	ER
213	05	ER
	0.00	CV
	-0.9	
	-0.8	
214	-0.8	AV
	8.32	CV
	53.6	
	51.5	
215	52.5	AV
	2.83	CV
	17.6	
	17.6	
216	17.6	AV
	0.00	CV
	19.8	
	19.5	
217	19.7	AV
	1.08	CV
	25.4	
	25.1	
218	25.3	AV
	0.84	CV
	17.8	
	18.2	
219	18.0	AV
	1.57	CV
	44.0	
	43.6	
220	43.8	AV
	0.65	CV
	05	ER
	05	ER
221	05	ER
	0.00	CV
	16.1	
	14.8	
222	15.4	AV
	5.95	CV
	62.9	
	62.8	
223	62.8	AV
	0.11	CV
	-0.8	
	-0.9	
224	-0.8	AV
	8.32	CV
	52.4	
	49.6	
225	51.0	AV
	3.88	CV

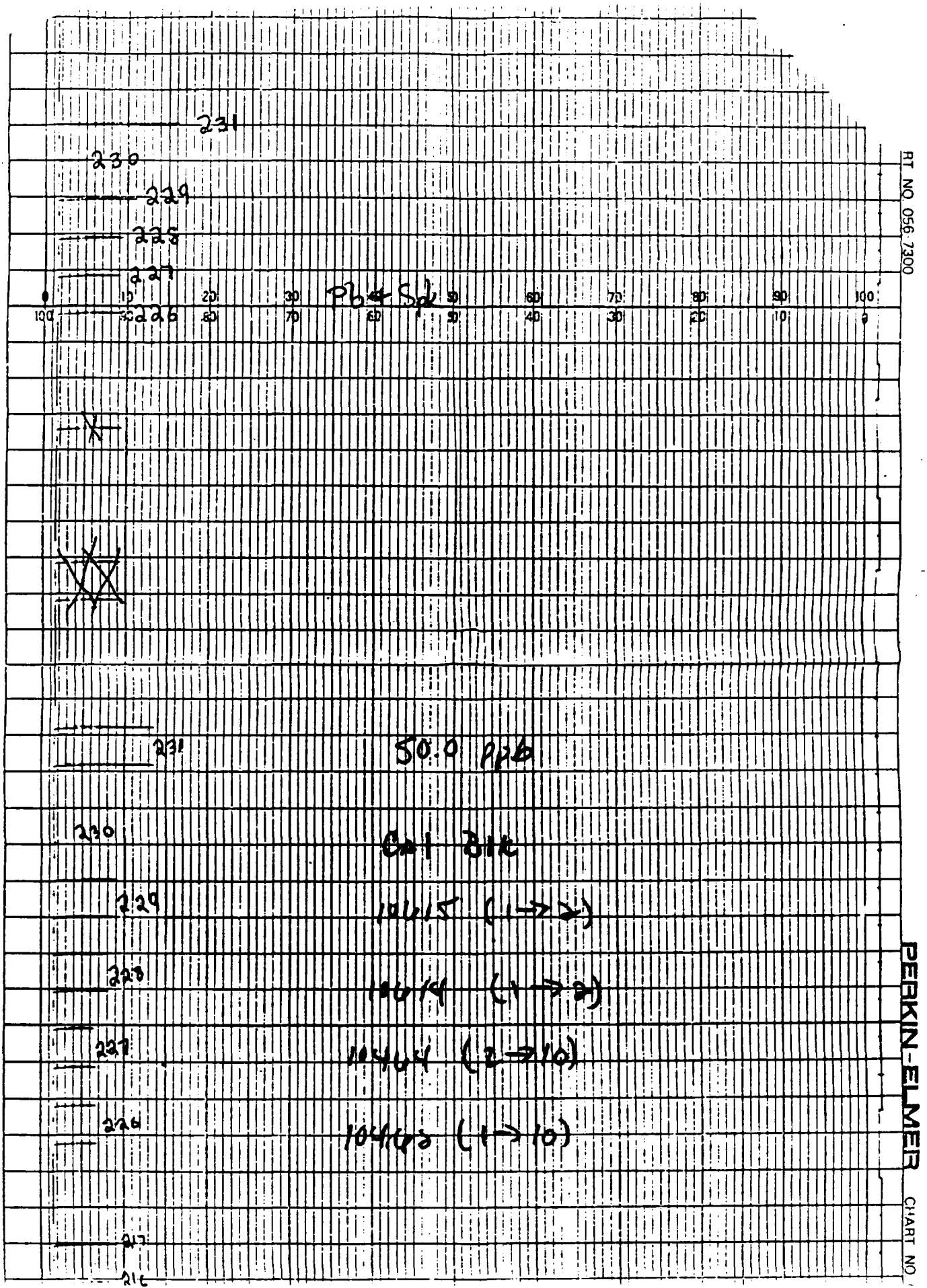

214
Cal Blk
213 10617
212 10616
211 10615
210 10614
209 10465 R1
208 10465
207 10464
206 10463
205 10462
204 Prep Blank
203 (50.0 ppb)
202 (Blank)
201 (EPA)
100.0 ppb (S2)
50.0 ppb (S2)
25.0 ppb (S1)
Blank
Lead
Jobs 4618 + 4651
PERKIN-ELMER
CHART NO. 056-7300


201
Pb - Spike
235
224
CAL BLK
223
10624 S1
222
10624
221
10623
220
10622
219
10621
218
10620
217
10619
216
10618
215
50.0 ppb
214
213
212
211
210
PERKIN-ELMER
CHART NO. 058-7300



PERKIN-ELMER CHART NO 056-7300

PERKIN-ELMER CHART NO 056-7300


231
230
229
228
227
226
Pb + Sp
0 10 20 30 40 50 60 70 80 90 100
100 90 80 70 60 50 40 30 20 10 0
231
50.0 ppb
230
Cal Blk
229
10615 (1→2)
228
10614 (1→2)
227
10464 (2→10)
226
10463 (1→10)
217
216
RT NO 056-7300
PERKIN-ELMER
CHART NO

Book No. _____

Cv

1/13/87

Reviewed By: J.O.M.P.

See pg. 24

Job No.	ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From N	C	ppb Burn 1	ppb Burn 2	ppb Ave	CV	10.0ppb Spike	% Rec	DF	Samp Wgt	Units	Final Conc
	WS378#14					8.36				20.6	122			µg/L	8.36
	Cal BIK					0.23				11.1	111			µg/L	<5.0
	50.0ppb					52.76				61.2	84			µg/L	52.7
	BIK991					0.07	-0.07	-0.00	–	10.9	109			µg/L	<5.0
4618	10462.0402					0.97	1.06	1.01	–	9.2	92		1.07	mg/Kg	<1.2
	10463.0402					0.33	0.09	0.21	–	7.6	76		1.04		<1.3
	10464.0402					0.34	0.50	0.42	–	8.8	88		1.06		<1.2
	10465.0402					1.19	0.77	0.98	–	8.7	87		1.06		<1.2
	10465.R1					0.86	0.63	0.74	–	9.2	92		1.02		<1.2
4651	10614.0402					0.28	0.03	0.16	–	4.6	46		0.93		<1.4
	10615.0402					-0.05	-0.16	-0.11	–	7.5	75		1.01		<1.2
	10616.0402					0.97	0.93	0.95	2.98	9.4	94		0.98		<1.3
	10617.0402					1.59	1.29	1.44	–	8.7	87		0.96		<1.2
	Cal BIK					-0.11	0.12	0.01	–	11.5	115			µg/L	<5.0
	50.0ppb					49.98	50.41 50.20	50.20	0.61	64.1	–			µg/L	50.2
	10618.0402					0.53	0.32	0.42	–	9.2	92		1.03	mg/Kg	<1.3
	10619.0402					0.50	0.30	0.40	–	9.0	90		1.00		<1.4
	10620.0402					0.32	0.83	0.58	–	8.7	87		1.02		<1.4
	10621.0402					0.78	0.49	0.63	–	9.2	92		0.96		<1.3
	10622.0402					-0.11	0.14	0.01	–	7.8	78		1.01		<1.1
	10623.0402					5.70	5.61	5.66	1.13	12.9	73		1.06		1.7
	10624.0402					0.12	-0.04	0.04	–	9.3	93		0.97		<1.2
	10624.S1					6.82	6.57	6.70	2.64	17.3	106		1.04		1.5
	Cal BIK					-0.14	0.15	0.01	–	11.2	112			µg/L	<5.00
	50.0ppb					52.12	51.27	51.69	1.16	62.2	105			µg/L	51.7

To Page No. ____

Initiated by: Bill Rothbach — Date: 1/19/87

Reviewed by: J.O.M.P. — Date: 1/13/87

HGA FORM #1

ELEMENT: Se, DATE: 1/12/87.

S_1 = 10.00 PPB., S_2 = 25.00 PPB.

S_3 = 50.00 PPB, BOOK NO. , .

ATTACH TAPE HERE

	01	WS378#3 14	
	X02	Cal Blank	
	X03	50.0 ppb	
	X04	PrepBlank 991	
JOB #:	X05	10462.0402 (4618)	
	X06	10463.	
	X07	10464.	
	X08	10465.	
	X09	10465. R1	
	X10	10614.0402 (4651)	
	X11	10615.	
	X12	10616.	
	X13	10617.	
	X14	Cal Blank	
	X15	50.0 ppb	
	X16	10618.0402	
	X17	10619.	S_2
	X18	10620.	
	X19	10621.	
	X20	10622.	
	X21	10623.	
	X22	10624.	
	X23	10624. S1	
	X24	Cal Blank	
	X25	50.0 ppb	
	X26		
	X27		
	X28		
	X29		
	X30		
	X31		
	X32		
	X33		
	X34		
	X35		S_3

601	20.6
602	11.1
603	61.2
604	10.9
605	9.2
606	7.6
607	8.8
608	8.7
609	9.2
610	4.6
611	7.5
612	9.4
613	8.7
614	11.5
615	64.1
616	9.2
617	9.0
618	8.7
619	9.2
620	7.8
621	12.9
622	9.3
623	17.3
624	11.2
625	62.2

recycled paper

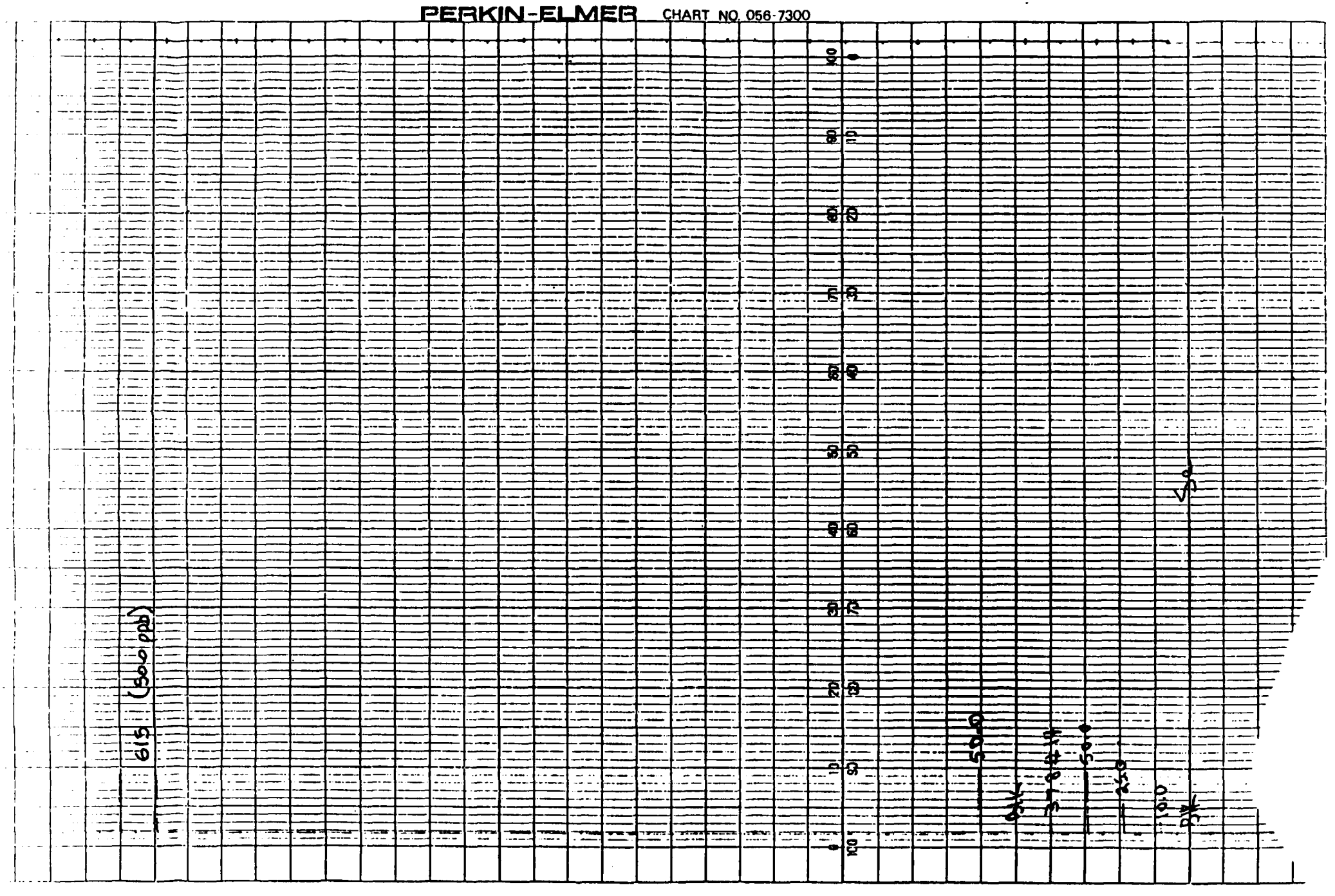
ecology and environment

	0.026	C
	0.000	AZ
	0.031	C
	10.00	S1
	24.18	C
	25.00	S2
	52.06	C
	50.00	S3
601	8.36	
602	0.23	
603	52.76	C
	0.07	
	-0.07	
604	-0.00	AV
	06	ER
	0.97	
	1.06	
605	1.01	AV
	6.27	CV
	0.33	
	0.09	
606	0.21	AV
	80.81	CV
	0.34	
	0.50	
607	0.42	AV
	26.94	CV
	1.19	
	0.77	
608	0.98	AV
	30.30	CV
	0.86	
	0.63	
609	0.74	AV
	21.83	CV
	0.28	
	0.03	
610	0.16	AV
	06	ER
	-0.05	
	-0.16	
611	-0.11	AV
	74.08	CV
	0.97	
	0.93	
612	0.95	AV
	2.98	CV
	1.59	
	1.29	
613	1.44	AV
	14.73	CV
	-0.11	
	0.12	

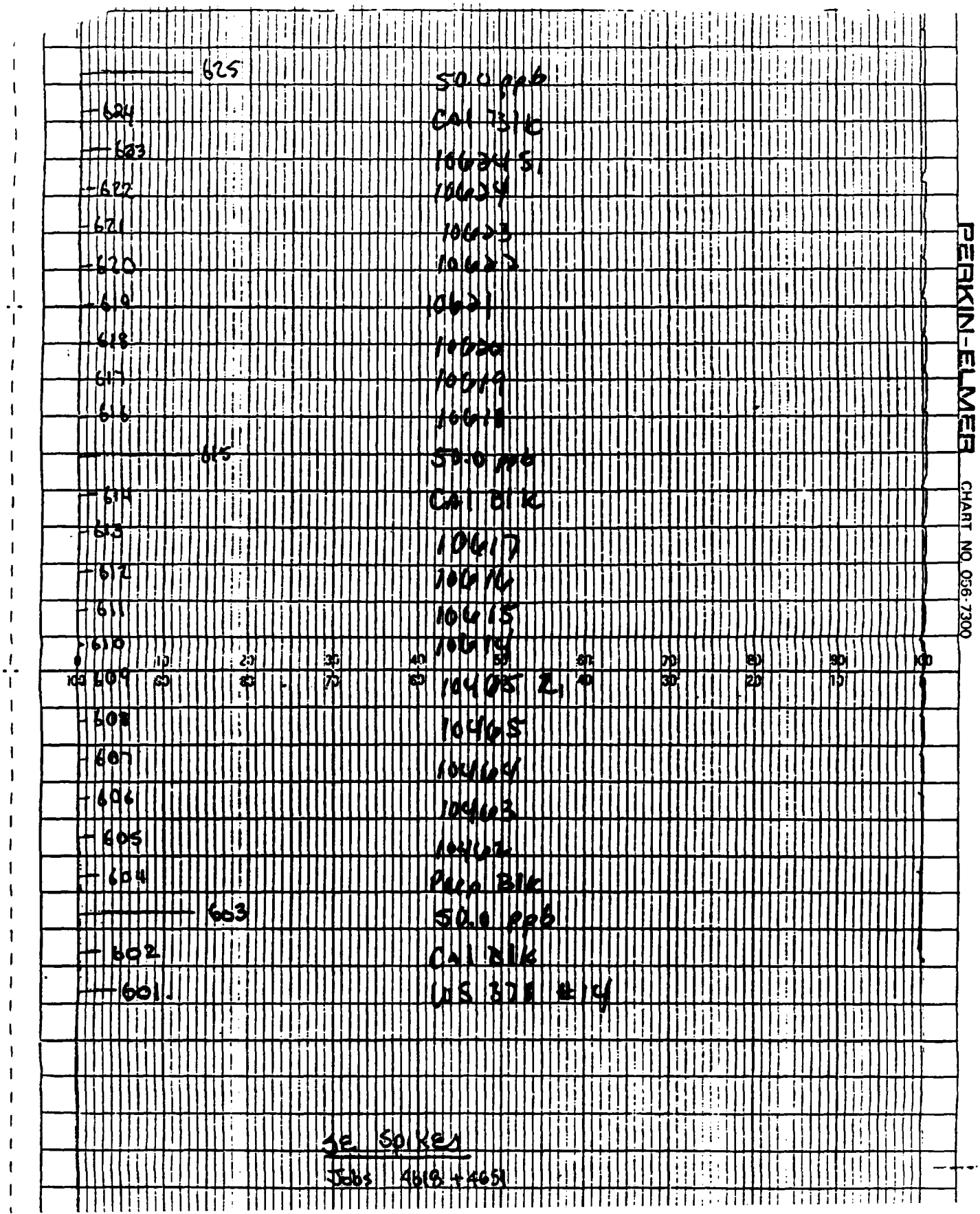
614	0.01	AV
	06	ER
	49.98	
	50.41	
615	50.20	AV
	0.61	CV
	0.53	
	0.32	
616	0.42	AV
	34.94	CV
	0.50	
	0.30	
617	0.40	AV
	35.35	CV
	0.32	
	0.83	
618	0.58	AV
	62.72	CV
	0.78	
	0.49	
619	0.63	AV
	32.29	CV
	-0.11	
	0.14	
620	0.01	AV
	05	ER
	5.70	
	5.61	
621	5.65	AV
	1.13	CV
	0.12	
	-0.04	
622	0.04	AV
	05	ER
	6.82	
	6.57	
623	6.70	AV
	2.64	CV
	-0.14	
	0.15	
624	0.01	AV
	05	ER
	~~6.35~~	

NO MTX MODIFICATION

	52.12	
	51.27	
625	51.69	AV
	1.16	CV


PERKIN-ELMER CHART NO. 056-7300
615 (500 ppb)
100
90
80
70
60
50
40
30
20
10
0
10
20
30
40
50
60
70
80
90
100
50.0
50.0
25.0
10.0

PERKIN-ELMER
CHART NO. 056-7300
615 (500 ppb)
625 (500 ppb)


PERKIN-ELMER
CHART NO. 056-7300
625
50.0 ppb
624
Cal Blk
623
10624 S1
622
10624
621
10623
620
10622
619
10621
618
10620
617
10619
616
10618
615
50.0 ppb
614
Cal Blk
613
10617
612
10616
611
10615
610
10614
609
10465 Z1
608
10465
607
10464
606
10463
605
10462
604
Prep Blk
603
50.0 ppb
602
Cal Blk
601
WS 378 #14
SE SPIKES
Jobs 4618 + 4651

TLE _____ Book No. _____

om Page No. __

Test Performed: Sn
Dat eived: 1/14/87
Work Performed By: J. OLKA

λ 236.3
Energy: 46
Time: 5 sec

S_1 50.0 ppb
S_2 100
S_3 200

See Std Log #038 pg 87

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From N	C	ppb Burn 1	ppb Burn 2	ppb Ave	CV	80.0 ppb Spike	% Rec	DF	Samp Wgt	Units	Final Conc
	100 ppb				98.0				195.8	110			µg/l	98.0
	Cal BLK				0.2				86.4	108				<40.0
	100 ppb				96.0				175.1	103				96.0
	BLK 991				10.5	10.2	10.4		90.5	100			µg/l	<40.0
4618	10462.0402				2.8	2.5	2.6	8.01	81.9	99		1.07	mg/kg	<9.6
	10463.0402				2.3	2.1	2.2	6.43	79.3	96		1.04		<10
	10464.0402				2.0	2.2	2.1	6.73	67.8	85		1.06		<9.7
	10465.0402				-0.1	0.1	0.0	-	79.9	100		1.06		<9.5
	10465. R_1				0.1	0.3	0.2	-	80.1	100		1.02		<9.9
4651	10614.0402				3.8	3.6	3.7	3.82	76.8	91		0.93		<11.3
	10615.0402				7.8	5.8	6.8	20.8	77.6	89		1.01		<10.0
	10616.0402				2.9	0.4	1.6	-	76.7	96		0.98		<10.5
	10617.0402				8.5	0.2	4.0	-	75.0	89		0.96	mg/kg	<9.8
	Cal BLK				-0.0	-0.1	-0.1	-	78.0	98			µg/l	<40.0
	100 ppb				108.3	106.9	107.6	0.92	179.0	89			µg/l	108
	10618.0402				5.8	6.0	5.9	2.40	79.9	93		1.03	mg/kg	<10..
	10619.0402				-0.2	0.3	0.1	-	75.3	94		1.00		<10.8
	10620.0402				2.1	0.2	1.1	-	76.4	96		1.02		<10.8
	10621.0402				-0.2	0.2	-0.0	-	75.4	94		0.96		<10.7
	10622.0402				14.3	11.1	12.7	-	75.3	94		1.01		<8.8
	10623.0402				258.3	265.2	261.7	1.86	398.9	/		1.06		/
	10624.0402				5.7	5.4	5.5	3.82	86.5	101		0.97		<9.9
	10624 S_1				5.7	6.1	5.9	4.79	88.8	104		1.04	mg/kg	<9.2
	Cal BLK				-1.2	-1.0	-1.1	-	79.7	100			µg/l	<40.0
	100 ppb				102.3	99.4	100.9	2.03	187.1	108			µg/l	101
	10623.0402				73.2	73.8	73.5	0.58	150.1	96	2→10	1.06	mg/kg	112

To Page No. 2

Witnessed & Understood by me, Bill Polkoback

Date 1/19/87

Invented by

Recorded by J. Olka

Date 1/14/87

HGA FORM #1

ELEMENT: Sn, DATE: 1/14/87.

S_1 = 50.0 PPB., S_2 = 100 PPB.

S_3 = 200 PPB, BOOK NO. 281, pg 2.

JOB #:

301	100.0 ppb		
X02	Cal Blk		
X03	100 ppb		
X04	Blk 991		
X05	10462.0402		
X06	10463		
X07	10464		
X08	10465		
X09	10465 R1		
X10	10614.0402		
X11	10615		
X12	10616		
X13	10617		
X14	Cal Blk		
X15	100 ppb		
X16	10618.0402		
X17	10619	S_2	
X18	10620		
X19	10621		
X20	10622		
X21	10623		
X22	10624		
X23	10624 S_1		
X24	Cal Blk		
X25	100 ppb		
X26			
X27	10633.0402 (2→10)		
X28			
X29			
X30			
X31			
X32			
X33			
X34			
X35		S_3	

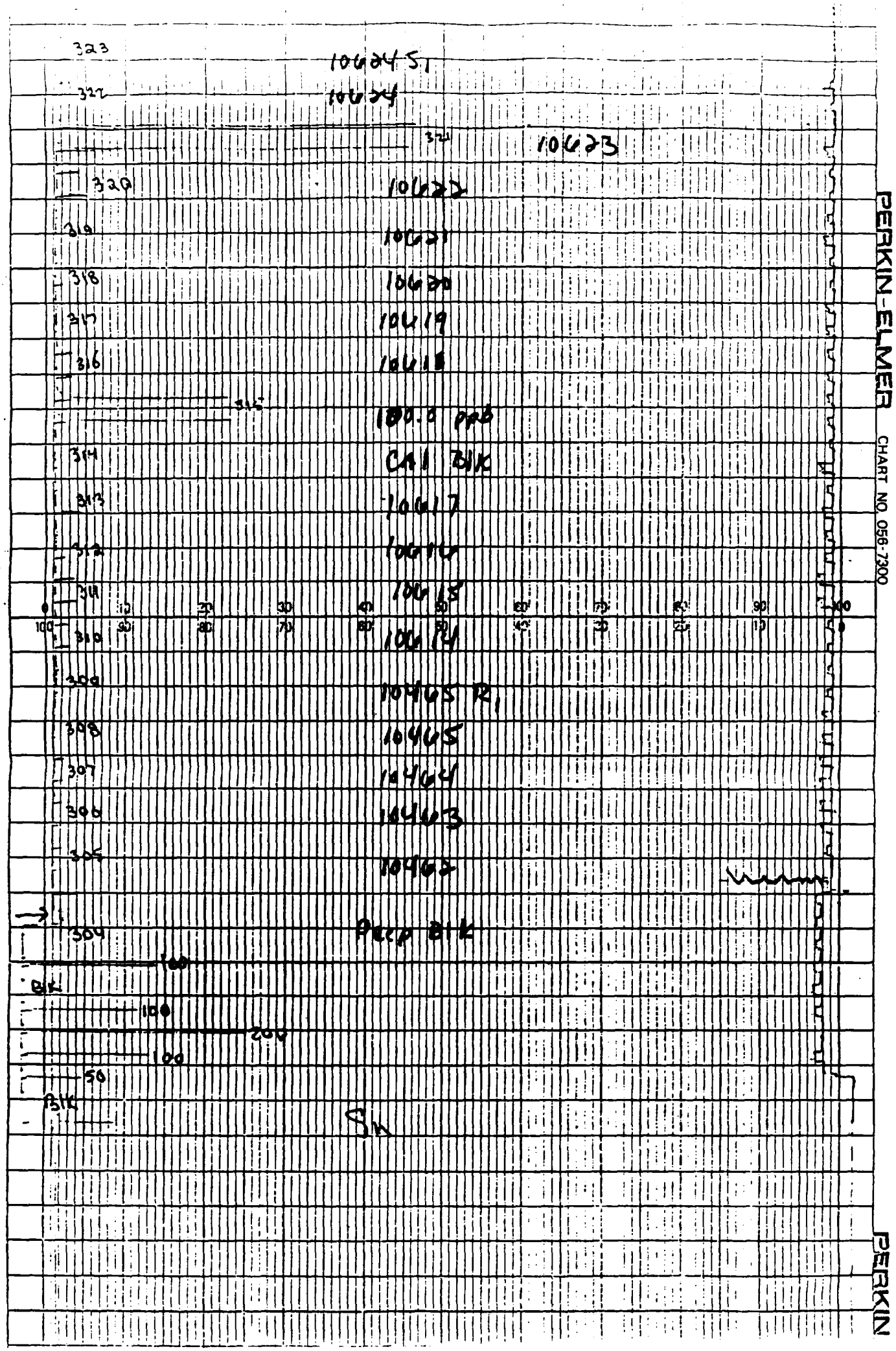
ATTACH TAPE

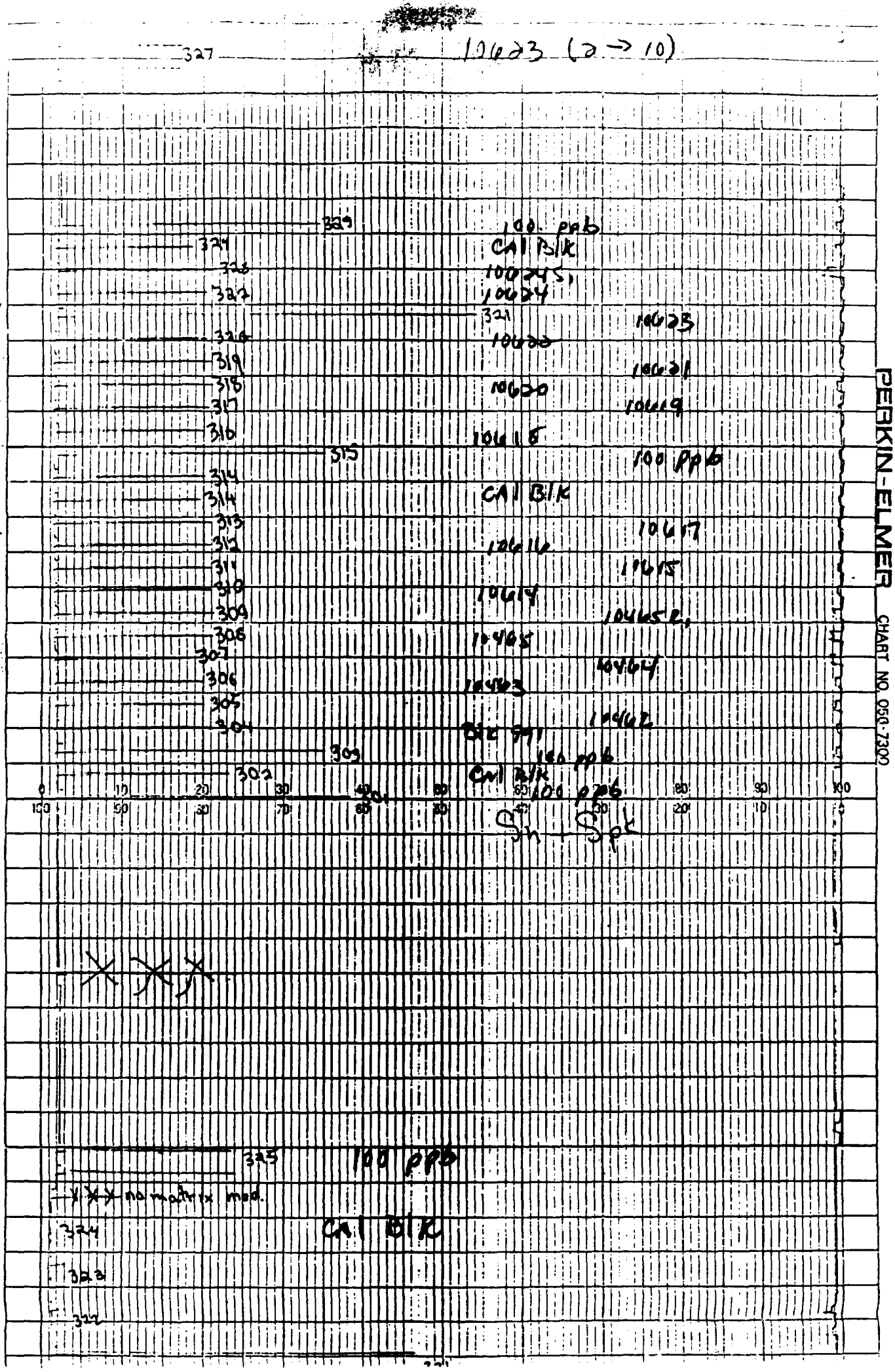
301	185.8	
302	56.4	
303	178.1	
304	90.5	
305	81.9	
306	79.3	
307	67.8	
308	79.9	
309	80.1	
310	75.8	
311	77.6	
312	76.7	
313	75.0	
314	78.0	
315	74.7	
315	179.0	
316	79.9	
317	75.3	
318	76.4	
319	75.4	
320	75.3	
321	398.9	C
322	86.5	
323	88.8	
324	79.7	
325	187.1	
	73.2	
	73.8	
227	73.5	A
	0.58	C
327	150.1	

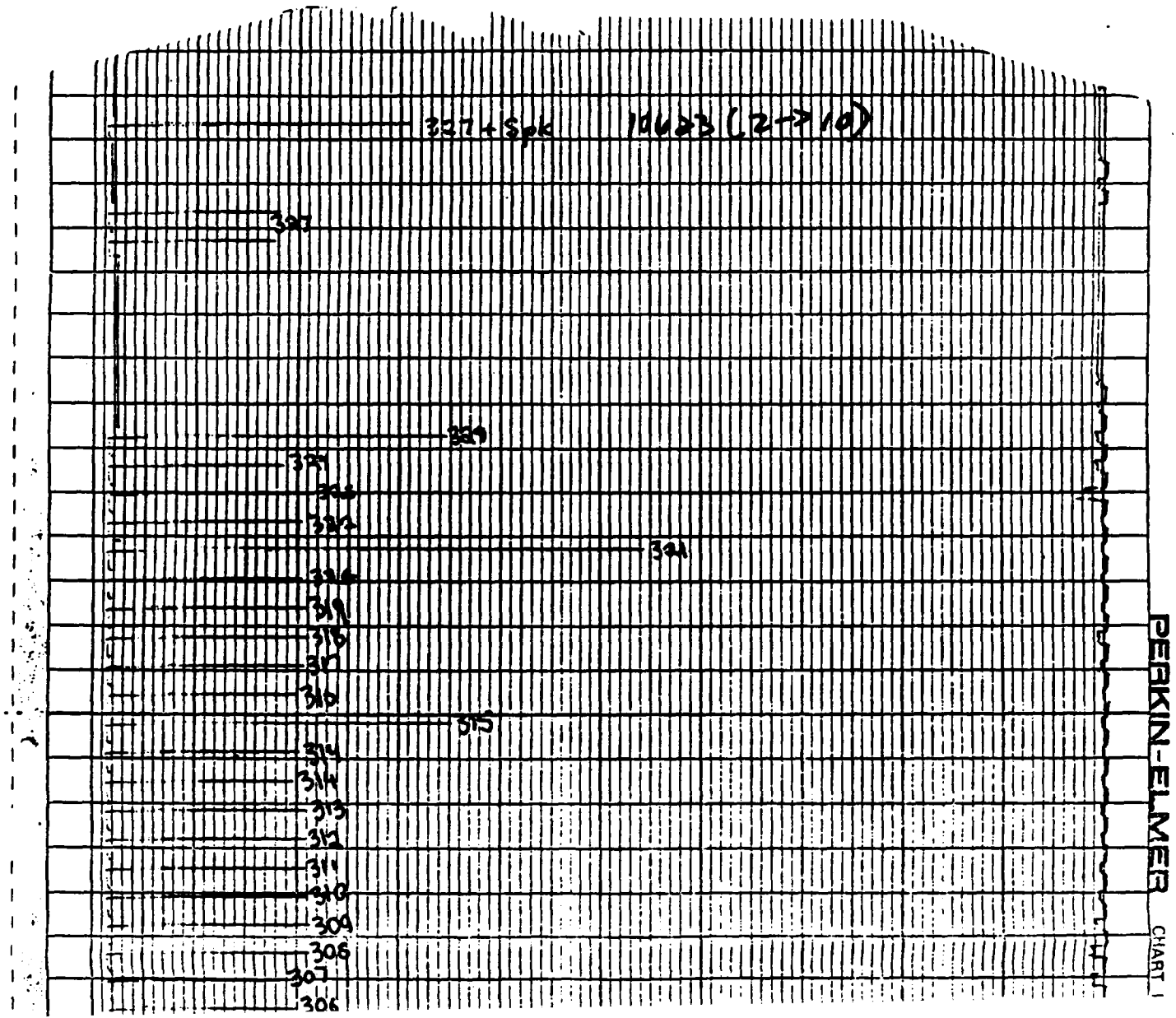
recycled paper

ecology and environment

	-2.042	
	0.000	AZ
	0.149	
	50.0	S1
	86.7	C
	100.0	S2
	236.6	C
	200.0	S3
301	98.0	
302	0.2	
303	96.0	
304	10.5	
304	10.2	
	2.8	
	2.5	
305	2.6	AV
	8.01	CV
	2.3	
	2.1	
306	2.2	AV
	6.43	CV
	2.0	
	2.2	
307	2.1	AV
	6.73	CV
	-0.1	
	0.1	
308	0.0	AV
	06	ER
	0.1	
	0.3	
309	0.2	AV
	70.71	CV
	3.8	
	3.6	
310	3.7	AV
	3.82	CV
	7.8	
	5.8	
311	6.8	AV
	20.60	CV
	2.9	
	0.4	
312	1.6	AV
	06	ER
	8.5	
	0.2	
313	4.0	AV
	06	ER
	-0.0	
	-0.1	
314	-0.1	AV
	06	ER
	108.3	
	106.9	
315	107.6	AV
	0.92	CV
	5.8	
	6.0	
316	5.9	AV
	2.40	CV
	-0.2	
	0.3	
317	0.1	AV
	06	ER
	2.1	
	0.2	
318	1.1	AV
	06	ER
	-0.2	
	0.2	
319	-0.0	AV
	06	ER
	14.3	
	11.1	
320	12.7	AV
	17.62	CV
	258.3	C
	265.2	C
321	261.7	AV
	1.86	CV
	5.7	
	5.4	
322	5.5	AV
	3.82	CV
	5.7	
	6.1	
323	5.9	AV
	4.79	CV
	-1.2	
	-1.0	
324	-1.1	AV
	12.86	CV
	37.9	
	102.3	
	99.4	
325	100.9	AV
	2.03	CV


323
10624 5,
322
10624
321
10623
320
10622
319
10621
318
10620
317
10619
316
10618
315
100.0 PPB
314
CAL BLK
313
10617
312
10616
311
10615
310
10614
309
10465 R,
308
10465
307
10464
306
10463
305
10462
304
PECP BLK
100
BLK
100
200
100
50
BLK
Sn
PERKIN-ELMER
CHART NO. 056-7300
PERKIN


10623 (2 → 10)
327
329
100 ppb
324
CAl Blk
328
10624S1
322
10624
321
10623
326
10622
319
10621
318
10620
317
10619
316
10618
315
100 ppb
314
CAl Blk
314
313
10617
312
10616
311
10615
310
10614
309
10465R1
308
10465
307
10464
306
10463
305
10462
304
Blk 991
303
100 ppb
302
CAl Blk
301
100 ppb
Sn + Spk
325
100 ppb
no matrix mod.
324
CAl Blk
323
322
PERKIN-ELMER
CHART NO. 050-7300


327 + Spk
10623 (2->10)
327
329
321
315
314
313
312
311
310
309
308
307
306
PERKIN-ELMER
CHART 1

Test Performed: Tl
D Received: JANUARY 13, 1987
Wc Performed By: [illegible]

(SEE PAGE 7)

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From No	C	ppb BURN 1	ppb BURN 2	ppb Avg.	C.V.	20.0 ppb SPIKE	% REC.	D.F.	Amt. of SAMPLE	UNITS	Fi CC
	WP1183(II)*1				24.6	24.8	24.3	1.75	45.7	107			µg/L	2
	Cal Blank				-0.0	0.1	0.1	–	22.2	111			µg/L	<1
	50.0 ppb				46.8	47.4	47.1	0.90	73.6				µg/L	4
	PrepBlank 991				0.3	-0.1	0.1	–	21.2	106			µg/L	<1
4618	10462.0402				1.0	1.3	1.2	–	21.1	106		1.07	mg/kg	<2
	10463.0402				0.9	0.7	0.8	–	19.6	98		1.04		<2
	10464.0402				0.6	0.3	0.5	–	20.5	103		1.06		<2
	10465.0402				0.7	0.5	0.6	–	19.4	97		1.06		<2
	10465.R1				1.0	0.4	0.7	–	20.4	102		1.02		<2
4651	10614.0402				0.1	0.3	0.2	–	20.1	101		0.93		<2
	10615.0402				0.5	0.1	0.3	–	21.0	105		1.01		<2
	10616.0402				1.1	0.8	1.0	–	20.2	101		0.93		<2
	10617.0402				1.6	1.7	1.6	–	21.7	109		0.96		<2
	Cal Blank				0.2	0.1	0.1	–	22.1	111			µg/L	<1
	50.0 ppb				50.2	49.5	49.8	0.99	72.4	113			µg/L	4
	10618.0402				0.3	0.5	0.4	–	19.5	98		1.03	mg/kg	<2
	10619.0402				-0.0	0.3	0.1	–	20.6	103		1.00		<2
	10620.0402				0.3	0.6	0.4	–	19.8	99		1.02		<2
	10621.0402				0.6	0.3	0.5	–	20.3	102		0.96		<2
	10622.0402				0.3	-0.2	0.0	–	18.7	94		1.01		<2
	10623.0402				1.6	2.0	1.8	–	19.7	99		1.06		<3
	10624.0402				0.1	0.3	0.2	–	19.3	97		0.97		<2
	10624.S1				47.0	45.8	46.4	1.83	63.9	88		1.04		10.
	Cal Blank				0.1	0.2	0.2	–	21.3	107			µg/L	<1
	50.0 ppb				50.5	50.0	50.2	0.70	70.1	100			µg/L	5

To Page No.

Date 1/19/87 Date 1/13/86

HGA FORM #1

ELEMENT: Tl, DATE: 1/12/88.

S_1 = 25.0 PPB., S_2 = 50.0 PPB.

S_3 = 100.0 PPB, BOOK NO. , .

	401	WP 1183 (II) #1	
	X02	Cal Blank	
	X03	50.0 ppb	
	X04	PrepBlank 991	
JOB #:	X05	10462.0402	(4618)
	X06	10463.	
	X07	10464.	
	X08	10465.	
	X09	10465. (R1)	
	X10	10614.0402	(4661)
	X11	10615.	
	X12	10616.	
	X13	10617.	
	X14	Cal Blank	
	X15	50.0 ppb	
	X16	10618.	
	X17	10619.	, S_2
	X18	10620.	
	X19	10621.	
	X20	10622.	
	X21	10623.	
	X22	10624.	
	X23	10624. (S1)	
	X24	Cal Blank	
	X25	50.0 ppb	
	X26		
	X27		
	X28		
	X29		
	X30		
	X31		
	X32		
	X33		
	X34		
	X35		, S_3

Tl / spike up

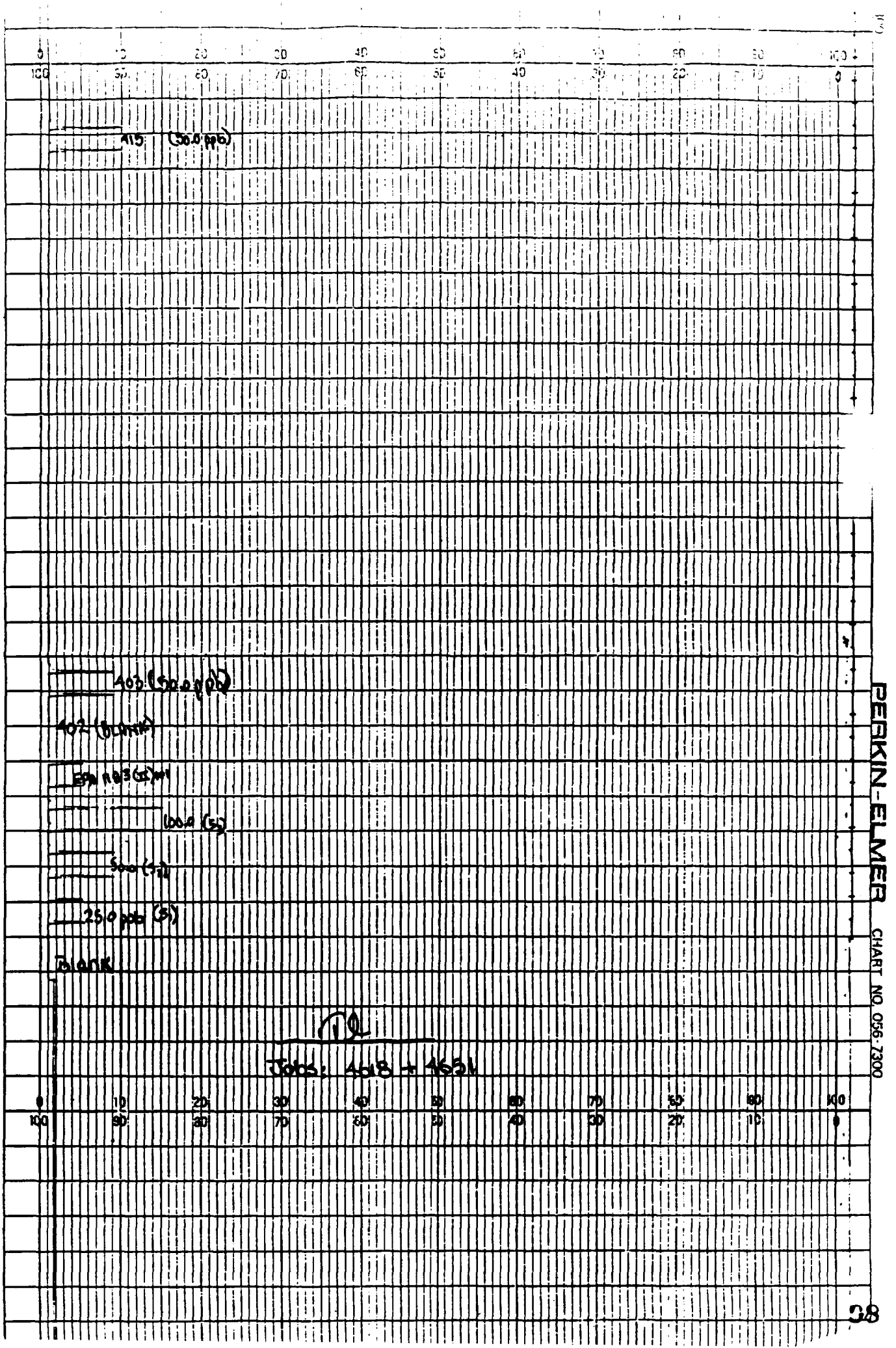
401	45.7
402	22.2
403	73.6
404	21.2
405	21.1
406	19.6
407	20.5
408	19.4
409	20.4
410	20.1
411	21.0
412	20.2
413	21.7
414	22.1
415	72.4
416	19.5
417	20.6
418	19.8
419	20.3
420	18.7
421	19.7
422	19.3
423	63.9
424	21.3
425	70.1

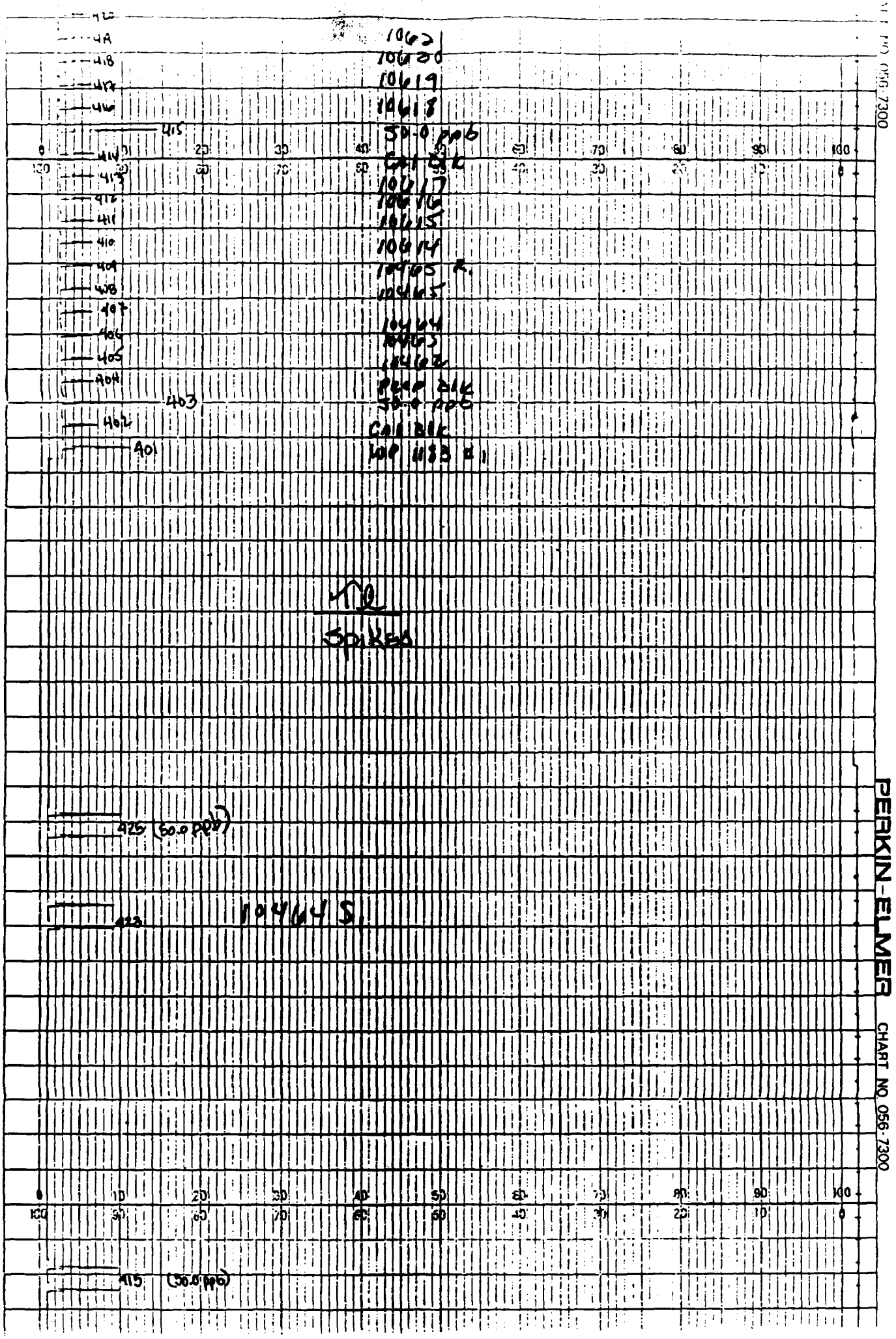
recycled paper

ecology and environment

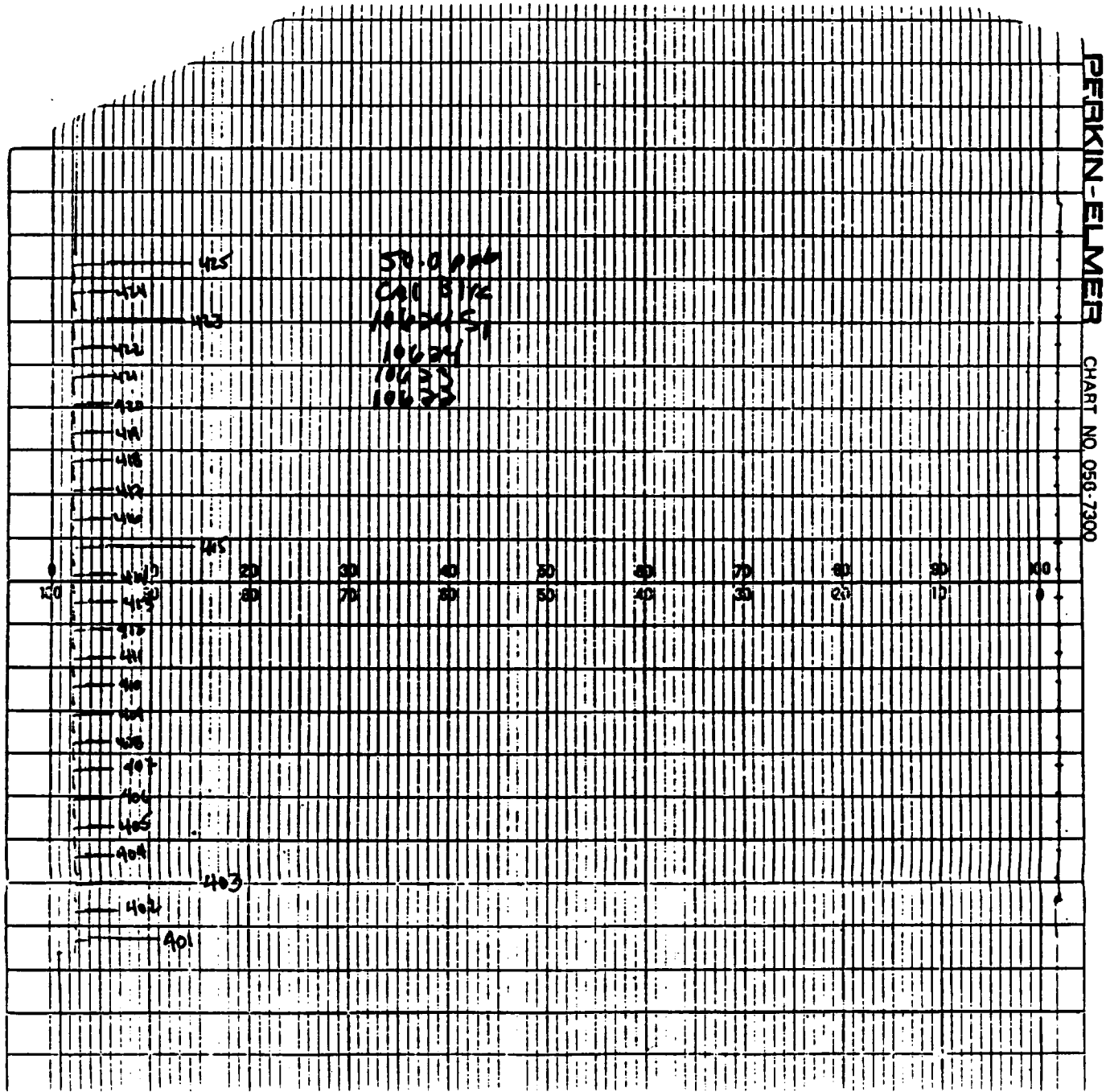
	0.026	
	0.025	
	0.026	AV
	2.77	CV
	[illegible]	AZ
	0.069	
	0.065	
	0.067	AV
	4.22	CV
	25.0	S1
	46.7	C
	46.7	C
	46.7	AV
	0.00	CV
	50.0	S2
	101.8	C
	99.1	C
	100.4	AV
	1.90	CV
	100.0	S3
	24.6	
	24.0	
401	24.3	AV
	1.75	CV
	-0.0	
	0.1	
402	0.1	AV
	06	ER
	46.8	
	47.4	
403	47.1	AV
	0.90	CV
	0.3	
	-0.1	
404	0.1	AV
	06	ER
	1.0	
	1.3	
405	1.2	AV
	18.45	CV
	0.9	
	0.7	
406	0.8	AV
	17.68	CV
	0.6	
	0.3	
407	0.5	AV
	47.14	CV
	0.7	
	0.5	
408	0.6	AV
	23.57	CV
	1.0	
	0.4	
409	0.7	AV
	60.61	CV
	0.1	
	0.3	

410	[illegible]	[illegible]
	[illegible]	[illegible]
	0.5	
	0.1	
411	0.3	AV
	94.28	CV
	1.1	
	0.9	
412	1.0	AV
	22.33	CV
	1.6	
	1.7	
413	1.6	AV
	4.29	CV
	0.2	
	0.1	
414	0.1	AV
	47.14	CV
	50.2	
	49.5	
415	49.8	AV
	0.99	CV
	0.3	
	0.5	
416	0.4	AV
	35.36	CV
	-0.0	
	0.3	
417	0.1	AV
	06	ER
	0.3	
	0.6	
418	0.4	AV
	47.14	CV
	0.6	
	0.3	
419	0.5	AV
	47.14	CV
	0.3	
	-0.2	
420	0.0	AV
	06	ER
	1.6	
	2.0	
421	1.8	AV
	15.71	CV
	0.1	
	0.3	
422	0.2	AV
	70.71	CV
	47.0	
	45.8	
423	46.4	AV
	1.83	CV
	0.1	
	0.2	
424	0.2	AV
	47.14	CV
	50.5	
	50.0	
425	50.2	AV
	0.70	CV


415 (50.0 ppb)
403 (500.0 ppb)
402 (blank)
1000 (5)
500 (7.5)
250 ppb (5)
Blank
Jobs: 4018 + 4651
PERKIN-ELMER
CHART NO. 056-7300



10621
10620
10619
10618
50.0 ppb
Cal Blk
10617
10616
10615
10614
10465 R.
10465
10464
10463
10462
Prep Blk
50.0 ppb
Cal Blk
WP 1183 #1
415
403
401
Spikes
425 (50.0 ppb)
423
10464 S1
415 (50.0 ppb)
PERKIN-ELMER
CHART NO. 056-7300


PERKIN-ELMER
CHART NO. 056-7300
0
10
20
30
40
50
60
70
80
90
100
425
424
423
422
421
420
419
418
417
416
415
414
413
412
411
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409
408
407
406
405
404
403
402
401

From Page No.

Test Performed: Hg (SEE pages 1, 37)
Date Received: December 31, 1986
Work Performed By: [illegible]

Job No.	ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From		Read	µg Conc.	D.F.	Amount of Sample	Units	Final Conc.	
	Blank					3					-0.0004	r = .999978
	0.02 µg					9					0.0197	y = .003x - .0
	0.04 µg					15					0.0398	
	0.08 µg					27					0.0799	
	0.20 µg					63					0.2004	
	0.40 µg					123					0.4012	
	0.80 µg					242					0.7993	
	WS378#14					134	.438		100 ml.	µg/L	4.38	(Known = 4.40)
	Blank					4	<.02			µg/L	<0.20	
	CCVS					33	.100			µg/L	(1.00)	(100% Rec)
4618	10462.04	No		A-3		7	<.02		0.26	mg/Kg	<0.10	
	10462.04	No		A-3		5	<.02		0.21		<0.10	
	10463.04	No		A-3		3	<.02		0.26		<0.10	
	10463.04	No		A-3		3	<.02		0.25		<0.10	
	10464.04	No		A-3		3	<.02		0.25		<0.10	
	10464.04	No		A-3		4	<.02		0.27		<0.10	
	10464.+1.0ppb	No		A-3		32	.097		0.22		(0.97)	(97% Rec)
	10465.04	No		A-3		6	<.02		0.21		<0.10	
	10465.04	No		A-3		7	<.02		0.21		<0.10	

To Page No.

Witnessed & Understood by me. B H Pokrzach Date 1/2/87 Invented by [illegible] Date 12/31/86

Project No. _____

LE _____ Book No. _____ S

om Page No. 62

st Performed: Hg (cont'd)

te F ved: December 31, 1986

rk Performed By: [illegible]

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From	Read	µg Conc.	D.F.	Amount of Sample	Units	Final Conc.	
4628	10535.01	No	A-1	5	<.02		0.25	mg/Kg	<0.10	
	Blank			3	<.02			µg/L	<0.20	
	CCVS			34	.103			µg/L	(1.03)	(103% Rec.)
	10535.01	No	A-1	4	<.02		0.22	mg/Kg	<0.10	
	10536.01	No	A-1	3	<.02		0.24	mg/Kg	<0.10	
	10536.01	No	A-1	3	<.02		0.22		<0.10	
	10537.01	No	A-1	4	<.02		0.23		<0.10	
	10537.01	No	A-1	5	<.02		0.29		<0.10	
	10537 +1.0 ppb	No	A-1	32	.097		0.28		(0.97)	(97% Rec.)
	10538.01	No	A-1	4	<.02		0.22		<0.10	
	10538.01	No	A-1	5	<.02		0.29		<0.10	
	10539.01	No	A-1	5	<.02		0.30		<0.10	
	10539.01	No	A-1	3	<.02		0.28		<0.10	
	Blank			2	<.02			µg/L	<0.20	
	CCVS			34	.103			µg/L	(1.03)	(103% Rec.)
	10540.01	No	A-1	4	<.02		0.28	mg/Kg	<0.10	
	10540.01	No	A-1	5	<.02		0.27	mg/Kg	<0.10	
4651	10614.01	No	A-27	5	<.02		0.28	mg/Kg	<0.10	
	10614.01	No	A-27	5	<.02		0.29	mg/Kg	<0.10	

OTHER CLIENT

To Page No. 6

Witnessed & Understood by me. B A Pohshack

Date 1/2/87

Invented by [illegible]

Date 12/31/86

Book No. _____ TRLS

Form Page No. 63

Test Performed: Hg (cont'd)

Date Received: DECEMBER 31, 1986

Work Performed By: [illegible]

Job No.	ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From	Read	µg Conc.	D.F.	Amount of Sample	Units	Final Conc.	Dry Wt Basis
1651 (cont'd)	10615.04		No	A-27	6	<.02		0.33	mg/Kg	<0.10	
	10615.04		No	A-27	5	<.02		0.24		<0.10	
	10616.04		No	A-27	5	<.02		0.22		<0.10	
	10616.04		No	A-27	4	<.02		0.24		<0.10	
	10617.04		No	A-27	/	/		0.28		/	
	10617.04		No	A-27	18	.05	1→10	0.26		1.93	2.26 mg/kg (8.5)
	Blank				4	<.02			µg/L	<0.20	
	CCVS				33	.100			µg/L	(1.00)	(100% Rec.)
	10618.04		No	A-27	5	<.02		0.28	mg/Kg	<0.10	
	10618.04		No	A-27	4	<.02		0.26		<0.10	
	10619.04		No	A-27	2	<.02		0.25		<0.10	
	10619.04		No	A-27	3	<.02		0.29		<0.10	
	10619 + 1.0 ppb		No	A-27	34	.103		0.29		(1.03)	(103% Rec)
	10620.04		No	A-27	5	<.02		0.24		<0.10	
	10620.04		No	A-27	5	<.02		0.28		<0.10	
	10621.04		No	A-27	7	<.02		0.34		<0.10	
	10621.04		No	A-27	6	<.02		0.23		<0.10	

To Page No. 64

Witnessed & Understood by me. [signature] Date 1/2/87 Invented by [signature] Date 12/31/86

Recorded by [signature]

TITLE _____ Book No. _____

From Page No. 64

Test Performed: Hg (cont'd)

D Received: December 31, 1986

W. Performed By: [illegible]

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From	Read	Conc.	D.F.	Amount of Sample	Units	Final Conc.	Dry Wt Basis
4651	10622.04	No	A-27	8	<.02		0.31	mg/Kg	<0.10	
(cont'd)	Blank			2	<.02			µg/L	<0.20	
	CCVS			32	.097			µg/L	(0.97)	(97% Rec)
	10622.04	No	A-27	5	<.02		0.22	mg/Kg	<0.10	
	10623.04	No	A-27	35	.107 ~~.106~~		0.21	mg/Kg	0.50	0.824
	10623.04	No	A-27	45	.140		0.27		0.52	0.839
	10624.04	No	A-27	9	<.02		0.26		<0.10	
	10624.04	No	A-27	8	<.02		0.24		<0.10	
	Blank			4	<.02			µg/L	<0.20	
	CCVS			33	.100			µg/L	(1.00)	(100%

To Page

Witnessed & Understood by me: B H Rohrbach

Date: 1/2/87

Invented by: [illegible]

Date: 12/31/[illegible]

Book No. _____ TITLE _____

Test Performed: Digestions CLP
Date Received: 12/23/86
Work Performed By: [illegible]

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From	Amount of Sample	Digestion	Final Volume
1618	10462.04	NO	A-3	.98g	01	200mL
	10463.04			.97g		
	10464.04			1.06g		
	10465.04			1.01g		
	10465.04R1			1.05g		
~~1651~~ 1D	~~10529.03~~ 1D					
	~~1/63~~ 1D					
4651	10614.04	NO	~~A-1~~ 1D. Frank B.	1.04g	01	200mL
	10615.04			1.05g		
	10616.04			1.09g		
	10617.04			.98g		
	10618.04			.98g		
	10619.04			1.06g		
	10620.04			.99g		
	10621.04			1.00g		
	10622.04			1.07g		
	10623.04			1.09g		
	10624.04			.98g		
	10624.04S1			1.01g		
4618	10462.04	NO	~~Frank B.~~ 1D. A-3	1.07g	02	200mL
	10463.04			1.04g		
	10464.04			1.06g		
	10465.04			1.06g		
	10465.04R1			1.02g		

To Page No.

Witnessed & Understood by me, [signature] | Date 12/22/86 | Invented by | Date

Book No.

From Page No. 116

Test Performed: Digestions (Con't)
Date Received:
Work Performed By:

Job No.	ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From	Amount of Sample	Digestion	Final Volume
4651	10614.04	NO		Frank B.	.93g	02	200mL
	10615.04				1.01g		
	10616.04				.98g		
	10617.04				.96g		
	10618.04				1.03g		
	10619.04				1.00g		
	10620.04				1.02g		
	10621.04				.96g		
	10622.04				1.01g		
	10623.04				1.06g		
	10624.04				.97g		
	10624.04S1				1.04g		
4625 ~~4651~~	10529.03	NO		A-1	1.03g	01	200mL
	10530.03				1.00g		
	10531.03				1.02g		
	10532.03				1.03g		
	10533.03				1.03g		
	10534.03				1.02g		
	10535.01				.99g		
	10536.01				1.00g		
	10537.01				1.00g		
	10537.01R3				1.02g		
	10538.01				1.04g		
	10538.01S3				1.03g		
	10539.01				1.01g		
	10540.01				1.01g		
	10530.0301 R2				1.01g		
	10531.0301 R2 S2				1.00g		

To Page No.

Witnessed & Understood by me, | Date | Invented by | Date

m e No.

Method EPA-335.2
Instrument Spec 88
Stock CN^- 0.0185N .963mg/ml
Prepared 11/5/96 Book, page 251.19
Stand. 11/7/96 Book, page 210.61
Curve Date 11/7/96 Expires 12/7/96
Other:

STD① = 100ml Stock/1000
STD② = 100ml STD①/1000

Test Performed: CN^- Curve
Date Received: 11-7-96
Work Performed By: [illegible]

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From	Dilution	mls for Color	Abs
	Blank				50	set @ 0.000
	4.82 ug			0.5ml STD②/250	50	0.029
	9.63 ug			1.0ml STD②/250	50	0.060
	19.26 ug			2.0ml STD②/250	50	0.119
	48.15 ug			5.0ml STD②/250	50	0.295
	96.3 ug			10.0ml STD②/250	50	0.581
	144.45 ug			15.0ml STD②/250	50	0.829

Corr. = 0.9995 ✓

Witnessed & Understood by me. Date Invented by Da

Project No. _____
Book No. _____ TITLE _____

From Page No. ___

Method EPA 335.1
Instrument Spec 88
Stock Cadmium 0.5-12 mg/ml
Prepared 12/10/86 Book, page 251,27
Stand. 12/11/86 Book, page 310,66
Curve Date 12/11/86 Expires 1/11/86
Other: _____

STD① = 100 ml Stock / 1000
STD② = 100 ml STD① / 1000

Cn, mg/L = $\frac{A+50}{B+C}$

Test Performed: Cn
Date Received: 12/18/86
Work Performed By: A. Tegel

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From	② ml distilled	① ml for color	Abs	Avg from curve	Results (mg/L)
DI	SPIKE			5 ml STD②/500	50	0.278	46.53	98.8 % rec
4609	10424.06	Y	A-29	500	50	0.010	1.23	<0.02
4609	10425.06	Y	A-29	500	50	1.010	1.23	<0.02
4609	10426.06	Y	A-29	500	50	0.010	1.23	<0.02
4609	10427.06	Y	A-29	500	50	0.015	2.08	<0.02
4609	10428.06	Y	A-29	500	50	0.005	0.39	<0.02
4609	10429.06	Y	A-29	500	50	0.009	1.07	<0.02
4599	10389.06	Y	A-11	500	50	0.010	1.23	<0.02
4599	10390.06	Y	A-11	500	50	0.004	0.27	<0.02
4599	10391.06	Y	A-11	250 ml/500	50	0.002	-0.12	<0.02 } 0.0 RPD
4599	10391.06	REP	A-11	250 ml/500	50	0.008	0.847	<0.02
UNDISTILLED BLANK				—	50	set @ 0.000	-0.45	<0.02
DI	SPIKE			5 ml STD②/500	50	0.280	46.87	99.5 % rec
4609	10430.06	Y	A-29	500	50	0.002	-0.12	<0.02
4618	10462.04	N	A-3	6.149 g/500	50	0.009	1.07	<1 mg/kg
4618	10463.04	N	A-3	6.295 g/500	50	0.010	1.23	<1 mg/kg
4618	10464.04	N	A-3	6.159 g/500	50	0.010	1.23	<1 mg/kg
4618	10465.04	N	A-3	6.050 g/500	50	0.005	0.39	<1 mg/kg
4618	10465.04	SPIKE	A-3	5 ml STD②+6.097 g/500	50	0.285	47.71	100.5 % rec

Other Clients

To Page No. ___

Witnessed & Understood by me. Date

Invented by

Recorded by

Date 108

Project No. _____

TITLE _____ Book No. 258

From Page No. ___

Method EPA 335.1
Instrument SPEC 88
Stock Cn 0.018 N 0.742 mg/ml
Prepared 12/1/86 Book, page 25/27
Stand 12/1/86 Book, page 20/66
Curve Date 12/1/86 Expires 1/1/86
Other: _____

Test Performed: Cn
Date Received: 12/22/86
Work Performed By: [illegible]

STD ① = 100 ml STOCK / 100
STD ② = 100 ml STD ① / 100

Cn, mg/ml = A×50 / B×C

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From	① ml distilled	② ml for color	Abs	③ µg from curve	Results (mg/L)
UNDISTILLED		BLANK				[illegible]	—	< 0.01
	BLANK			500	50	0.000	-0.45	< 0.02 mg/L
D1	SPIKE			5 ml STD ② / 500	50	0.259	43.32	92.0% rec
4597	10383.01	N	A-2	6.147 g/500	5 ml/50	0.243	40.61	66.1 mg/kg
4597	10383.01	AMENABLE		6.115 g/500	10 ml/50	0.320	53.63	43.9 mg/kg
N/A	10614.04	Y	A-27	6.295 g/500	50	0.001	-0.29	< 1 mg/kg
	10615.04	Y	A-27	6.474 g/500	50	0.000	-0.45	< 1 mg/kg
	10616.04	Y	A-27	6.032 g/500	50	0.003	0.05	< 1 mg/kg
	10617.04	Y	A-27	6.099 g/500	50	0.284	47.54	7.79 mg/kg
	10618.04	Y	A-27	6.170 g/500	50	0.000	-0.45	< 1 mg/kg
	10619.04	Y	A-27	6.230 g/500	50	0.000	-0.45	< 1 mg/kg
N/A	10619.04	REP	A-27	6.016 g/500	50	0.000	-0.45	< 1 mg/kg } 0.0 RPD
D1	SPIKE			5 ml STD ② / 500	50	0.261	43.66	92.7% rec
N/A	10518.01	N	A-1	5.000 g/500	50	0.008	0.90	< 1 mg/kg
	10591.01	Y	A-32	500 ml	50	0.040	6.30	< 0.02 mg/L
	10586.01	N	A-32	6.001 g/500	50	0.028	4.28	< 1 mg/kg
	10620.04	Y	A-27	6.609 g/500	50	0.000	-0.45	< 1 mg/kg
	10621.04	Y	A-27	6.604 g/500	50	0.002	-0.12	< 1 mg/kg
	10622.04	Y	A-27	6.003 g/500	50	0.009	1.07	< 1 mg/kg
	10623.04	Y	A-27	6.106 g/500	50	0.049	7.83	1.28 mg/kg
	10624.04	Y	A-27	6.235 g/500	50	0.000	-0.45	< 1 mg/kg
N/A	10624.04	SPIKE	A-27	5 ml STD ② / 500 g/500	50	0.269	45.01	95.6% rec
				7.757 mg/kg			7.415 mg/kg	

To Page No. ___

Witnessed & Understood by me. | Date | Invented by | Date

Recorded by