SDMS US EPA REGION V -1

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REF 15j

15744

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-4727, U-4738, U-4767, and U-4819				
Sample Numbers:	DC-H2-16	DC-H3-17	DC-H3-18	DC-H4-19	DC-HB-20
	DC-H5-21	DC-H6-22	DC-H7-23	DC-H8-24	DC-K2-25
	DC-G1-26	DC-G1-27	DC-H9-28	DC-GB-29	DC-G2-30
	DC-G2-31	DC-K3-32			
Analyses:	Target Analyte List (TAL) Metals and Cyanide				
Collection Dates:	Janauary 5 through 9, 12 through 14, and 22, 1987				

The data for these 17 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.

The inductively coupled plasma raw data for barium, beryllium, cadmium, chromium, cobalt, copper, nickel, and silver for samples DC-H2-16, DC-H3-17, DC-H3-18, DC-H4-19, DC-HB-20, and DC-H5-21, and manganese for samples DC-H3-17, DC-H3-18, DC-H4-19, and DC-HB-20 are not found in the data package. All results for the analytes and samples listed above are considered estimated and qualified "UJ" if undetected and "J" if detected, until the data is submitted and verified.

2.2 HOLDING TIMES

The mercury result for sample DC-K3-32 is considered estimated and qualified "J," because the analysis was performed two days beyond the recommended holding time of 28 days. All other 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. Blank data forms were not all found in the data package, however, the raw data were reviewed and the results are acceptable.

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 results are acceptable.

2.8 MATRIX SPIKE SAMPLE ANALYSIS

The matrix spike percent recoveries (%R) for arsenic (64 %R) and lead (67 %R) are outside the acceptable QC limits. A bias low is indicated for arsenic and lead therefore, all arsenic and lead sample results are considered estimated and qualified "UJ" if undetected and "J" if positive.

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-H5-21, DC-H6-22, DC-H7-23, DC-K2-25, DC-G1-26, DC-G1-27, DC-H9-28, DC-GB-29, DC-G2-30, DC-G2-31, and DC-K3-32

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

2.10 SAMPLE RESULT VERIFICATION

All thallium results except samples DC-K3-32 amd DC-H5-21 were incorrectly reported. The correct values of have been inserted on the Form Is.

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 those 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-4727, U-4738, U-4767, AND U-4819

Form I

Sample No.
DC-H2-16

Date 3-5-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

SOW NO. 784

LAB SAMPLE ID. NO. 0097 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	2650		P	13.	Magnesium	NR		
2.	Antimony	12	U	P	14.	Manganese	410		P
3.	Arsenic	4.8 R		F J	15.	Mercury	0.066	U	CV
4.	Barium	1240		P J	16.	Nickel	197		P J
5.	Beryllium	0.99	U	P U J	17.	Potassium	NR		
6.	Cadmium	3.2		P J	18.	Selenium	0.99	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P U J
8.	Chromium	64		P J	20.	Sodium	NR		
9.	Cobalt	69		P J	21.	Thallium	1.98 0.99	U	F
10.	Copper	274		P J	22.	Tin	9.3		F
11.	Iron	55800		P	23.	Vanadium	2.0	U	P
12.	Lead	115 R		F J	24.	Zinc	164		P

Cyanide 1.2 Percent Solids (%) 66

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 D. Hale

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Form I

Sample No.
DC-H3-17

Date 3-5-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

SOW NO. 784

LAB SAMPLE ID. NO. 0098 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	351		P		13.	Magnesium	NR		
2.	Antimony	12	U	P		14.	Manganese	5.3		P J
3.	Arsenic	12	R	F	J	15.	Mercury	0.078	U	CV
4.	Barium	66		P	J	16.	Nickel	4.8		P J
5.	Beryllium	0.94	U	P	UJ	17.	Potassium	NR		
6.	Cadmium	0.94	U	P	UJ	18.	Selenium	0.94	U	F
7.	Calcium	NR				19.	Silver	1.9	U	P UJ
8.	Chromium	2.0	U	P	UJ	20.	Sodium	NR		
9.	Cobalt	2.0	U	P	UJ	21.	Thallium	1.88 0.94	U	F
10.	Copper	10		P	J	22.	Tin	7.6	U	F
11.	Iron	398		P		23.	Vanadium	2.0	U	P
12.	Lead	4.1	R	F	J	24.	Zinc	6.1		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 D. Hill

Form I

Sample No.
DC-H3-18

Date 3-5-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

SOW NO. 784

LAB SAMPLE ID. NO. 0099 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	530		P	13.	Magnesium	NR		
2.	Antimony	11	U	P	14.	Manganese	6.8	P	J
3.	Arsenic	9.6	R	F J	15.	Mercury	0.076	U CV	
4.	Barium	74		P J	16.	Nickel	3.04	P	J
5.	Beryllium	0.99	U	P UJ	17.	Potassium	NR		
6.	Cadmium	0.99	U	P UJ	18.	Selenium	0.99	U F	
7.	Calcium	NR			19.	Silver	1.9	U P	UJ
8.	Chromium	1.9	U	P UJ	20.	Sodium	NR		
9.	Cobalt	1.9	U	P UJ	21.	Thallium 1.98	0.99	U F	
10.	Copper	9.1		P J	22.	Tin	7.8	U F	
11.	Iron	429		P	23.	Vanadium	1.9	U P	
12.	Lead	3.3	R	F J	24.	Zinc	7.8	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 J. Hahn

Form I

Sample No.
DC-H4-19

Date 3-5-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

SOW NO. 784

LAB SAMPLE ID. NO. 0100 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	5160		P	13.	Magnesium	NR		
2.	Antimony	12	U	P	14.	Manganese	1650	P	J
3.	Arsenic	279	R	F J	15.	Mercury	2.8	CV	
4.	Barium	437		P J	16.	Nickel	1500	P	J
5.	Beryllium	1.0	U	P UJ	17.	Potassium	NR		
6.	Cadmium	212		P J	18.	Selenium	10	U F	
7.	Calcium	NR			19.	Silver	6.3	P	J
8.	Chromium	37		P J	20.	Sodium	NR		
9.	Cobalt	34		P J	21.	Thallium 2.0	1.0	U F	
10.	Copper	1760		P J	22.	Tin	29	F	
11.	Iron	39000		P	23.	Vanadium	20	P	
12.	Lead	3240	R	F J	24.	Zinc	2790	P	

Cyanide 1.0 U Percent Solids (%) 72

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-HB-20

Date 3-5-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

SOW NO. 784

LAB SAMPLE ID. NO. 0101 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	8560		P	13.	Magnesium	NR		
2.	Antimony	13	U	P	14.	Manganese	293	P	J
3.	Arsenic	4.7	R	F J	15.	Mercury	0.078	U CV	
4.	Barium	290		P J	16.	Nickel	13	P	J
5.	Beryllium	1.0	U	P UJ	17.	Potassium	NR		
6.	Cadmium	1.0	U	P UJ	18.	Selenium	1.0	U F	
7.	Calcium	NR			19.	Silver	2.0	U P	UJ
8.	Chromium	12		P J	20.	Sodium	NR		
9.	Cobalt	4.6		P J	21.	Thallium 2.0	1.0	U F	
10.	Copper	23		P J	22.	Tin	7.9	U F	
11.	Iron	12200		P	23.	Vanadium	21	P	
12.	Lead	34	R	F J	24.	Zinc	119	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 D Hin

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Form I

Sample No.
DC-HS-21

Date 3-5-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

SOW NO. 784

LAB SAMPLE ID. NO. 0102 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	5730		P	13.	Magnesium	NR		
2.	Antimony	12	U	P	14.	Manganese	29600		P
3.	Arsenic	34	R	F J	15.	Mercury	0.081	U	CV
4.	Barium	268		P J	16.	Nickel	34		P J
5.	Beryllium	0.97	U	P U J	17.	Potassium	NR		
6.	Cadmium	179		P J	18.	Selenium	0.97	U	F U J
7.	Calcium	NR			19.	Silver	36		P J
8.	Chromium	45		P J	20.	Sodium	NR		
9.	Cobalt	6.2		P J	21.	Thallium	1.1		F
10.	Copper	787		P J	22.	Tin	8.0	U	F
11.	Iron	22000		P	23.	Vanadium	23		P
12.	Lead	3100	R	F J	24.	Zinc	6560		P

Cyanide 1.0 U Percent Solids (%) 81

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 M. Hill

Form I

Sample No.
DC-H6-22

Date 3-5-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

SOW NO. 784

LAB SAMPLE ID. NO. 0156 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	8080		P	13.	Magnesium	NR		
2.	Antimony	12	U	P	14.	Manganese	58		P
3.	Arsenic	0.96 R	U	F UJ	15.	Mercury	0.074	U	CV
4.	Barium	41		P	16.	Nickel	6.3		P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	0.96	U	P	18.	Selenium	0.96	U	F UJ
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	4.1		P	20.	Sodium	NR		
9.	Cobalt	2.0	U	P	21.	Thallium	1.92 0.96	U	F
10.	Copper	2.0	U	P	22.	Tin	7.6	U	F
11.	Iron	4370		P	23.	Vanadium	5.8		P
12.	Lead	3.0 R		F J	24.	Zinc	17		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 D. Hall

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Form I

Sample No.
DC-H7-23

Date 3-5-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

SOW NO. 784

LAB SAMPLE ID. NO. 0157 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	1940		P	13.	Magnesium	NR		
2.	Antimony	12	U	P	14.	Manganese	60		P
3.	Arsenic	1.0 R	U	F UJ	15.	Mercury	0.085	U	CV
4.	Barium	39		P	16.	Nickel	7.7		P
5.	Beryllium	0.94	U	P	17.	Potassium	NR		
6.	Cadmium	0.94	U	P	18.	Selenium	1.0	U	F UJ
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	4.2		P	20.	Sodium	NR		
9.	Cobalt	2.0	U	P	21.	Thallium 2.0	1.0	U	F
10.	Copper	2.0	U	P	22.	Tin	7.9	U	F
11.	Iron	4030		P	23.	Vanadium	5.9		P
12.	Lead	2.7 R		F J	24.	Zinc	13		P
Cyanide		1.0	U		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

Form I

Sample No.
DC-H8-24

Date 3-5-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

SOW NO. 784

LAB SAMPLE ID. NO. 0158 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	9330		P	13.	Magnesium	NR		
2.	Antimony	12	U	P	14.	Manganese	259		P
3.	Arsenic	3.2	R	F J	15.	Mercury	1.1		CV
4.	Barium	168		P	16.	Nickel	12		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	P
8.	Chromium	14		P	20.	Sodium	NR		
9.	Cobalt	2.0	U	P	21.	Thallium	1.0 2.0	U	F
10.	Copper	39		P	22.	Tin	7.9	U	F
11.	Iron	15800		P	23.	Vanadium	21		P
12.	Lead	46	R	F J	24.	Zinc	237		P

Cyanide 1.0 U Percent Solids (%) 77

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-K2-25

Date 3-5-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

SOW NO. 784

LAB SAMPLE ID. NO. 0394 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	7440	P	13.	Magnesium	NR	
2.	Antimony	12 U	P	14.	Manganese	318	P
3.	Arsenic	6.6 R	F J	15.	Mercury	0.34	CV
4.	Barium	166	P	16.	Nickel	16	P
5.	Beryllium	1.0 U	P	17.	Potassium	NR	
6.	Cadmium	1.2	P	18.	Selenium	0.98 U	F UJ
7.	Calcium	NR		19.	Silver	2.0 U	P
8.	Chromium	18	P	20.	Sodium	NR	
9.	Cobalt	10 U	P	21.	Thallium	0.98 1.96 U	F
10.	Copper	32	P	22.	Tin	7.7 U	F
11.	Iron	18400	P	23.	Vanadium	24	P
12.	Lead	108 R	F J	24.	Zinc	201	P

Cyanide 1.0 U Percent Solids (%) 82

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 M. Hahn

Form I

Sample No.
DC-G1-26

Date 3-5-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

SOW NO. 784

LAB SAMPLE ID. NO. 0395 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	12	U	P	14.	Manganese	231		P
3.	Arsenic	3.4	R	F J	15.	Mercury	0.20		CV
4.	Barium	160		P	16.	Nickel	10		P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	0.98	U	F UJ
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	7.2		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	0.98 1.46	U	F
10.	Copper	12		P	22.	Tin	8.0	U	F
11.	Iron	16500		P	23.	Vanadium	21		P
12.	Lead	8.8	R	F J	24.	Zinc	77		P

Cyanide 1.0 U Percent Solids (%) 75

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 D. Hohn

Form I

Sample No.
DC-61-27

Date 3-5-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

SOW NO. 784

LAB SAMPLE ID. NO. 0396 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	14000		P	13.	Magnesium	NR		
2.	Antimony	12	U	P	14.	Manganese	134		P
3.	Arsenic	1.4 R		F J	15.	Mercury	0.10	U	CV
4.	Barium	126		P	16.	Nickel	8.0	U	P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	0.98	U	F UJ
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	4.8		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	0.98/1.96	U	F
10.	Copper	5.0	U	P	22.	Tin	7.8	U	F
11.	Iron	7390		P	23.	Vanadium	16		P
12.	Lead	5.8 R		F J	24.	Zinc	20		P

Cyanide 1.0 U Percent Solids (%) 75

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-H9-28

Date 3-5-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

SOW NO. 784

LAB SAMPLE ID. NO. 0397 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	1740		P	13.	Magnesium	NR		
2.	Antimony	12	U	P	14.	Manganese	52		P
3.	Arsenic	2.0	R	F J	15.	Mercury	0.10	U	CV
4.	Barium	41		P	16.	Nickel	8.0	U	P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	1.0	U	F UJ
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	2.0	U	P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	~~1.0~~ 2.0	U	F
10.	Copper	5.0	U	P	22.	Tin	8.0	U	F
11.	Iron	4120		P	23.	Vanadium	10	U	P
12.	Lead	4.1	R	F J	24.	Zinc	16		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 [signature]

Form I

Sample No.
DC-GB-29

Date 3-5-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

SOW NO. 784

LAB SAMPLE ID. NO. 0398 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	10000		P	13.	Magnesium	NR		
2.	Antimony	12	U	P	14.	Manganese	320		P
3.	Arsenic	4.9	R	F J	15.	Mercury	0.10	U	CV
4.	Barium	280		P	16.	Nickel	13		P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	1.3		P	18.	Selenium	0.94	U	F UJ
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	10		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium 1.88	0.94	U	F
10.	Copper	24		P	22.	Tin	7.7	U	F
11.	Iron	12700		P	23.	Vanadium	28		P
12.	Lead	53	R	F J	24.	Zinc	130		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-62-30

Date 3-5-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

SOW NO. 784

LAB SAMPLE ID. NO. 0399 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	4190		P	13.	Magnesium	NR		
2.	Antimony	12	U	P	14.	Manganese	191		P
3.	Arsenic	2.2 R		F J	15.	Mercury	0.10	U	CV
4.	Barium	36300		P	16.	Nickel	28		P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	1.8		P	18.	Selenium	1.0	U	F UJ
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	14		P	20.	Sodium	NR		
9.	Cobalt	44		P	21.	Thallium	1.0 2.0	U	F
10.	Copper	22		P	22.	Tin	8.0	U	F
11.	Iron	10700		P	23.	Vanadium	17		P
12.	Lead	24 R		F J	24.	Zinc	91		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 [signature]

Form I

Sample No.
DC-62-31

Date 3-5-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

SOW NO. 784

LAB SAMPLE ID. NO. 0400 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	2670		P	13.	Magnesium	NR		
2.	Antimony	12	U	P	14.	Manganese	73		P
3.	Arsenic	1.7 R		F J	15.	Mercury	0.10	U	CV
4.	Barium	12300		P	16.	Nickel	8.0	U	P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	0.95	U	F UJ
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	4.0		P	20.	Sodium	NR		
9.	Cobalt	15		P	21.	Thallium	102.0	U	F
10.	Copper	6.0		P	22.	Tin	7.8	U	F
11.	Iron	5050		P	23.	Vanadium	11		P
12.	Lead	13 R		F J	24.	Zinc	31		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 [signature]

Form I

Sample No.
DC-K3-32

Date 3-5-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

SOW NO. 784

LAB SAMPLE ID. NO. 0643 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	6650		P	13.	Magnesium	NR		
2.	Antimony	12	U	P	14.	Manganese	400		P
3.	Arsenic	6.2	R	F J	15.	Mercury	0.16		CV J
4.	Barium	127		P	16.	Nickel	14		P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	2.9		P	18.	Selenium	1.0	U	F UJ
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	10		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	2.0 ~~2.0~~ ~~1.0~~	U	F
10.	Copper	85		P	22.	Tin	8.6		F
11.	Iron	13200		P	23.	Vanadium	18		P
12.	Lead	157	R	P J	24.	Zinc	332		P

Cyanide 1.0 U Percent Solids (%) 66

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.

21 Lab Manager [signature]

ATTACHMENT A

FORMS I

CASE NUMBERS U-4727, U-4738, U-4767, AND U-4819

SUBSURFACE SOIL INORGANICS

Date 3-5-87

COVER PAGE
INORGANIC ANALYSES DATA PACKAGE

Lab Name Ecology and Environment, Inc. Case No. U-4727/U-4738/U-4767/U-4819

SOW No. 784 Q.C. Report No. _____

Sample Numbers

	Lab ID No.		Lab ID No.
DC-H2-16	0097	DC-K2-25	0394
DC-H3-17	0098	DC-G1-26	0395
DC-H3-18	0099	DC-G1-27	0396
DC-H4-19	0100	DC-H9-28	0397
DC-HB-20	0101	DC-GB-29	0398
DC-H5-21	0102	DC-G2-30	0399
DC-H6-22	0156	DC-G2-31	0400
DC-H7-23	0157	DC-K3-32	0643
DC-H8-24	0158		

Comments:

ICP Interelement and background corrections applied? Yes X No ____.

If yes, corrections applied before X or after _____ generation of raw data.

Footnotes:

NR - not required by contract at this time

Form I:

Value - If the result is a value greater than or equal to the instrument detection limit but less than the contract required detection limit, report the value in brackets (i.e., [10]). Indicate the analytical method used with P (for ICP/Flame AA) or F (for furnace).

U - Indicates element was analyzed for but not detected. Report with the detection limit value (e.g., 10U).

E - Indicates a value estimated or not reported due to the presence of interference. Explanatory note included on cover page.

s - Indicates value determined by Method of Standard Addition.

R - Indicates spike sample recovery is not within control limits.

* - Indicates duplicate analysis is not within control limits.

\+ - Indicates the correlation coefficient for method of standard addition is less than 0.995

ıarch 9, 1987

Job # U-4727
U-4738
U-4767
U-4819

CASE NARRATIVE

Enclosed are the inorganic analytical results for soil samples received on January 8, 10, 15, and 24, 1987. All samples were received in good condition.

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

Information on furnace 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 January 22 and February 2, 1987. Cyanide analysis was performed on January 12, 13, 22, and 29, 1987.

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

Samples were re-digested and re-analyzed for zinc because of blank contamination.

If you have any questions, please contact me at (716)-631-0360.

Gary Hahn / GJK

Gary Hahn, Manager
Analytical Services Center

GH/db

Enclosures

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	DEAR CREEK PROJECT	MIKE MILLER
Samplers: (Signatures)		Field Team Leader:
[signature]		DAN SEWALL

STATION NUMBER	DATE	TIME	SAMPLE TYPE: COMP	GRAB	AIR	SAMPLE INFORMATION: EXPECTED COMPOUNDS (Concentration)*	STATION LOCATION	NUMBER OF CONTAINERS	HSL ORGANICS (8.0)	METALS & CYANIDE (8.0)	VOLATILE ORGANICS (DOPOL)				REMARKS
DC-H2-16	1-5-87	1200	X			UNKNOWN / OVA SCREEN > 1000 PPM	BORING H-2 5'-20'	4	1	1	2				VERY STRONG ORGANIC ODOR
DC-H3-17	1-6-87	1000	X			UNKNOWN / OVA SCREEN 68 PPM	BORING H-3 10'-20'	4	1	1	2				
DC-H3-18	1-6-87	1000	X			UNKNOWN / OVA SCREEN 68 PPM	BORING H-3 10'-20'	4	1	1	2				DUPLICATE OF DC-H3-17
DC-H4-19	1-6-87	1500	X			UNKNOWN / OVA SCREEN > 1000 PPM	BORING H-4 10'-25'	4	1	1	2				VERY STRONG ORGANIC ODOR
DC-H8-20	1-7-87	1300	X			UNKNOWN	SOIL BLANK	4	1	1	2				BLANK
DC-H5-21	1-7-87	1330	X			UNKNOWN / OVA SCREEN 76 PPM	BORING H-5 0'-10'	4	1	1	2				SLIGHT ORGANIC ODOR

Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Ship Via:
[signature]	1-7-87 / 1750	FEDERAL EXPRESS				FEDERAL EXPRESS
Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	BL/Airbill Number: 2219748322
Relinquished By: (Signature) Fed. Express	Date/Time: 1-8-87 / 0900	Received For Laboratory By: (Signature) [signature]	Relinquished By: (Signature)	Date/Time:	Received For Laboratory By: (Signature)	Date: 1-7-87

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

*See CONCENTRATION RANGE on back of form.

234055

3

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International Specialists in the Environment

CHAIN-OF-CUSTODY RECORD

Project No.: IL3140
Project Name: DARD CREEK PROJECT
Project Manager: MIKE MILLER
Samplers: (Signatures) [signature]
Field Team Leader: DAN SAWALL

STATION NUMBER	DATE	TIME	SAMPLE TYPE COMP	GRAB	AIR	SAMPLE INFORMATION / EXPECTED COMPOUNDS (Concentration)*	STATION LOCATION	NUMBER OF CONTAINERS	HSL-CN/Bonus (4 oz)	Metals & Cyanide (5 oz)	Volatile Organics (120 ml)				REMARKS
DC-MW-32	1-8-87	0930	X			UNKNOWN / OVA SCREEN 62 PPM	BORING N-6, 35'-50'	4	1	1	2				SLIGHT ORGANIC ODOR
DC-MW-33	1-8-87	1700	X			UNKNOWN / OVA SCREEN 4.6 PPM	BORING M-6, 35'-50'	4	1	1	2				
DC-MW-34	1-9-87	1100	X			UNKNOWN / OVA SCREEN 182 PPM	BORING P-8 5'-15'	4	1	1	2				SLIGHT ORGANIC ODOR

Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Ship Via:
[signature]	1-9-87/1530	FEDERAL EXPRESS				FEDERAL EXPRESS
Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	BL/Airbill Number: 2219748333 / Date: 1/9/87
Relinquished By: (Signature) Fed Express	Date/Time: 1-12-87/0950	Received For Laboratory By: (Signature) [signature]	Relinquished By: (Signature)	Date/Time:	Received For Laboratory By: (Signature)	

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

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CHAIN-OF-CUSTODY RECORD

Project No.: IC 3-40
Project Name: SEAS CREEK PROJECT
Project Manager: MIKE MILLER
Samplers: (Signatures) Samuel T. Sewall, Kevin Phillips
Field Team Leader: SAM SEWALL

STATION NUMBER	DATE	TIME	SAMPLE TYPE COMP	GRAB	AIR	SAMPLE INFORMATION / EXPECTED COMPOUNDS (Concentration)*	STATION LOCATION	NUMBER OF CONTAINERS	HSL ORGANICS (SOIL)	METALS (CYANIDE (SOIL))	VOLATILE ORGANICS (VOAs)			REMARKS	
IC-62-25	1-14-87	1100	X			UNKNOWN / OVA SCREEN 300 PPM	BORING IC-2, 0'-10'	4	1	1	2			SLIGHT ORGANIC ODOR.	234
IC-61-26	1-14-87	1130	X			UNKNOWN / OVA SCREEN 6.2 PPM	BORING C-1, 0'-10'	4	1	1	2				235
IC-61-27	1-14-87	1145	X			UNKNOWN / OVA SCREEN (NEGATIVE RESPONSE)	BORING C-1, 10'-20'	4	1	1	2				236
IC-49-28	1-14-87	1400	X			UNKNOWN / OVA SCREEN 32 PPM	BORING D-9, 15'-25'	4	1	1	2				237
IC-68-29	1-14-87	1545	X			UNKNOWN /	SOIL BLANK	4	1	1	2			BLANK SOIL	238
IC-62-30	1-14-87	1015	X			UNKNOWN / OVA SCREEN 58 PPM	BORING G-2 5'-15'	4	1	1	2			SLIGHT ORGANIC ODOR	239
IC-62-31	1-14-87	1015	X			UNKNOWN / OVA SCREEN 58 PPM	BORING G-2 5'-15'	4	1	1	2			DUPLICATE OF IC-62-30	240

Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Ship Via:
Samuel T. Sewall	1-14-87 / 1800	FEDERAL EXPRESS				FEDERAL EXPRESS
Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	BL/Airbill Number: 228519 9011 — Date: 1-14-87
Relinquished By: (Signature) Fed Express	Date/Time: 1-15-87 / 0930	Received For Laboratory By: (Signature) [illegible]	Relinquished By: (Signature)	Date/Time:	Received For Laboratory By: (Signature)	

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

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ecology and environment, inc.
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International Specialists in the Environment

CHAIN-OF-CUSTODY RECORD

Project No.:	Project Name:	Project Manager:
IL 3140	DEAD CREEK PROJECT	MIKE MILLER
Samplers: (Signatures)		Field Team Leader:
Daniel T. Sewall		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	VOL ORGANICS - 8 oz	METALS & CYANIDE - 8 oz	VOLATILE ORGANICS - 4 oz				REMARKS
IC-K3-32	1-23-87	1500	X			UNKNOWN / OVA SCREEN 320 ppm	BORING K-3 10'-20'	4	1	1	0				

Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received By: (Signature)
Daniel T. Sewall	1-23-87/1600	FEDERAL EXPRESS			
Fed. Express	1-24-87/1000	Received For Laboratory By: (Signature) [signature]			Received For Laboratory By: (Signature)

Ship Via: FEDERAL EXPRESS

BL/Airbill Number: 2285199033

Date: 1-23-87

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

*See CONCENTRATION RANGE on back of form.

234055

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Form I

Sample No.
DC-H2-16

Date 3-5-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

SOW NO. 784

LAB SAMPLE ID. NO. 0097 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	2650		P	13.	Magnesium	NR		
2.	Antimony	12	U	P	14.	Manganese	410		P
3.	Arsenic	4.8	R	F	15.	Mercury	0.066	U	CV
4.	Barium	1240		P	16.	Nickel	197		P
5.	Beryllium	0.99	U	P	17.	Potassium	NR		
6.	Cadmium	3.2		P	18.	Selenium	0.99	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	64		P	20.	Sodium	NR		
9.	Cobalt	69		P	21.	Thallium	0.99	U	F
10.	Copper	274		P	22.	Tin	9.3		F
11.	Iron	55800		P	23.	Vanadium	2.0	U	P
12.	Lead	115	R	F	24.	Zinc	164		P

Cyanide 1.2 Percent Solids (%) 66

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 D. Hah

7

Form I

Sample No.
PC-H3-17

Date 3-5-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

SOW NO. 784

LAB SAMPLE ID. NO. 0098 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	351		P	13.	Magnesium	NR		
2.	Antimony	12	U	P	14.	Manganese	5.3		P
3.	Arsenic	12	R	F	15.	Mercury	0.078	U	CV
4.	Barium	66		P	16.	Nickel	4.8		P
5.	Beryllium	0.94	U	P	17.	Potassium	NR		
6.	Cadmium	0.94	U	P	18.	Selenium	0.94	U	F
7.	Calcium	NR			19.	Silver	1.9	U	P
8.	Chromium	2.0	U	P	20.	Sodium	NR		
9.	Cobalt	2.0	U	P	21.	Thallium	0.94	U	F
10.	Copper	10		P	22.	Tin	7.6	U	F
11.	Iron	398		P	23.	Vanadium	2.0	U	P
12.	Lead	4.1	R	F	24.	Zinc	6.1		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 D. Hoh

Form I

Sample No.
DC-H3-18

Date 3-5-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

SOW NO. 784

LAB SAMPLE ID. NO. 0099 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	530		P	13.	Magnesium	NR		
2.	Antimony	11	U	P	14.	Manganese	6.8		P
3.	Arsenic	9.6	R	F	15.	Mercury	0.076	U	CV
4.	Barium	74		P	16.	Nickel	3.04		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	1.9	U	P
8.	Chromium	1.9	U	P	20.	Sodium	NR		
9.	Cobalt	1.9	U	P	21.	Thallium	0.99	U	F
10.	Copper	9.1		P	22.	Tin	7.8	U	F
11.	Iron	429		P	23.	Vanadium	1.9	U	P
12.	Lead	3.3	R	F	24.	Zinc	7.8		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 M. Hahn

Form I

Sample No.
DC-H4-19

Date 3-5-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

SOW NO. 784

LAB SAMPLE ID. NO. 0100 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	5160	P	13.	Magnesium	NR	
2.	Antimony	12 U	P	14.	Manganese	1650	P
3.	Arsenic	279 R	F	15.	Mercury	2.8	CV
4.	Barium	437	P	16.	Nickel	1500	P
5.	Beryllium	1.0 U	P	17.	Potassium	NR	
6.	Cadmium	212	P	18.	Selenium	10 U	F
7.	Calcium	NR		19.	Silver	6.3	P
8.	Chromium	37	P	20.	Sodium	NR	
9.	Cobalt	34	P	21.	Thallium	1.0 U	F
10.	Copper	1760	P	22.	Tin	29	F
11.	Iron	39000	P	23.	Vanadium	20	P
12.	Lead	3240 R	F	24.	Zinc	2790	P

Cyanide 1.0 U Percent Solids (%) 72

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 M. Hahn

Form I

Sample No.
DC- HB-20

Date 3-5-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

SOW NO. 784

LAB SAMPLE ID. NO. 0101 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	8560		P	13.	Magnesium	NR		
2.	Antimony	13	U	P	14.	Manganese	293		P
3.	Arsenic	4.7	R	F	15.	Mercury	0.078	U	CV
4.	Barium	290		P	16.	Nickel	13		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	P
8.	Chromium	12		P	20.	Sodium	NR		
9.	Cobalt	4.6		P	21.	Thallium	1.0	U	F
10.	Copper	23		P	22.	Tin	7.9	U	F
11.	Iron	12200		P	23.	Vanadium	21		P
12.	Lead	34	R	F	24.	Zinc	119		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 D Hm

Form I

Sample No.
DC-HS-21

Date 3-5-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

SOW NO. 784

LAB SAMPLE ID. NO. 0102 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	5730		P	13.	Magnesium	NR		
2.	Antimony	12	U	P	14.	Manganese	29600		P
3.	Arsenic	34	R	F	15.	Mercury	0.081	U	CV
4.	Barium	268		P	16.	Nickel	34		P
5.	Beryllium	0.97	U	P	17.	Potassium	NR		
6.	Cadmium	179		P	18.	Selenium	0.97	U	F
7.	Calcium	NR			19.	Silver	36		P
8.	Chromium	45		P	20.	Sodium	NR		
9.	Cobalt	6.2		P	21.	Thallium	1.1		F
10.	Copper	787		P	22.	Tin	8.0	U	F
11.	Iron	22000		P	23.	Vanadium	23		P
12.	Lead	3100	R	F	24.	Zinc	6560		P

Cyanide 1.0 U Percent Solids (%) 81

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 N. Hall

Form I

Sample No.
DC-H6-22

Date 3-5-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

SOW NO. 784

LAB SAMPLE ID. NO. 0156 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	2080		P	13.	Magnesium	NR		
2.	Antimony	12	U	P	14.	Manganese	58		P
3.	Arsenic	0.96	R U	F	15.	Mercury	0.074	U	CV
4.	Barium	41		P	16.	Nickel	6.3		P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	0.96	U	P	18.	Selenium	0.96	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	4.1		P	20.	Sodium	NR		
9.	Cobalt	2.0	U	P	21.	Thallium	0.96	U	F
10.	Copper	2.0	U	P	22.	Tin	7.6	U	F
11.	Iron	4370		P	23.	Vanadium	5.8		P
12.	Lead	3.0	R	F	24.	Zinc	17		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-H7-23

Date 3-5-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

SOW NO. 784

LAB SAMPLE ID. NO. 0157 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	1940		P	13.	Magnesium	NR		
2.	Antimony	12	U	P	14.	Manganese	60		P
3.	Arsenic	1.0	R U	F	15.	Mercury	0.085	U	CV
4.	Barium	39		P	16.	Nickel	7.7		P
5.	Beryllium	0.94	U	P	17.	Potassium	NR		
6.	Cadmium	0.94	U	P	18.	Selenium	1.0	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	4.2		P	20.	Sodium	NR		
9.	Cobalt	2.0	U	P	21.	Thallium	1.0	U	F
10.	Copper	2.0	U	P	22.	Tin	7.9	U	F
11.	Iron	4030		P	23.	Vanadium	5.9		P
12.	Lead	2.7	R	F	24.	Zinc	13		P
Cyanide		1.0	U		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 D. Hill

Form I

Sample No.
DC-48-24

Date 3-5-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

SOW NO. 784

LAB SAMPLE ID. NO. 0158 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	9330		P	13.	Magnesium	NR		
2.	Antimony	12	U	P	14.	Manganese	259		P
3.	Arsenic	3.2	R	F	15.	Mercury	1.1		CV
4.	Barium	168		P	16.	Nickel	12		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	P
8.	Chromium	14		P	20.	Sodium	NR		
9.	Cobalt	2.0	U	P	21.	Thallium	1.0	U	F
10.	Copper	39		P	22.	Tin	7.9	U	F
11.	Iron	15800		P	23.	Vanadium	21		P
12.	Lead	46	R	F	24.	Zinc	237		P

Cyanide 1.0 U Percent Solids (%) 77

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 D. Hlm

Form I

Sample No.
DC-K2-25

Date 3-5-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/14767/4819

SOW NO. 784

LAB SAMPLE ID. NO. 0394 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	7440		P	13.	Magnesium	NR		
2.	Antimony	12	U	P	14.	Manganese	318		P
3.	Arsenic	6.6	R	F	15.	Mercury	0.34		CV
4.	Barium	166		P	16.	Nickel	16		P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	1.2		P	18.	Selenium	0.98	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	18		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	0.98	U	F
10.	Copper	32		P	22.	Tin	7.7	U	F
11.	Iron	18400		P	23.	Vanadium	24		P
12.	Lead	108	R	F	24.	Zinc	201		P
Cyanide		1.0	U		Percent Solids (%)		82		

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 M. Hahn

Form I

Sample No.
DC-G1-26

Date 3-5-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

SOW NO. 784

LAB SAMPLE ID. NO. 0395 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	12	U	P	14.	Manganese	231		P
3.	Arsenic	3.4	R	F	15.	Mercury	0.20		CV
4.	Barium	160		P	16.	Nickel	10		P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	0.98	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	7.2		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	0.98	U	F
10.	Copper	12		P	22.	Tin	8.0	U	F
11.	Iron	16500		P	23.	Vanadium	21		P
12.	Lead	8.8	R	F	24.	Zinc	77		P
Cyanide		1.0	U		Percent Solids (%)		75		

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 D. Hohn

Form I

Sample No.
DC-61-27

Date 3-5-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

SOW NO. 784

LAB SAMPLE ID. NO. 0396 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	14000		P	13.	Magnesium	NR		
2.	Antimony	12	U	P	14.	Manganese	134		P
3.	Arsenic	1.4	R	F	15.	Mercury	0.10	U	CV
4.	Barium	126		P	16.	Nickel	8.0	U	P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	0.98	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	4.8		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	0.98	U	F
10.	Copper	5.0	U	P	22.	Tin	7.8	U	F
11.	Iron	7390		P	23.	Vanadium	16		P
12.	Lead	5.8	R	F	24.	Zinc	20		P
Cyanide		1.6	U		Percent Solids (%)		75		

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-H9-28

Date 3-5-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

SOW NO. 784

LAB SAMPLE ID. NO. 0397 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	1740		P	13.	Magnesium	NR		
2.	Antimony	12	U	P	14.	Manganese	52		P
3.	Arsenic	2.0	R	F	15.	Mercury	0.10	U	CV
4.	Barium	41		P	16.	Nickel	8.0	U	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	P
8.	Chromium	2.0	U	P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	1.0	U	F
10.	Copper	5.0	U	P	22.	Tin	8.0	U	F
11.	Iron	4120		P	23.	Vanadium	10	U	P
12.	Lead	4.1	R	F	24.	Zinc	16		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 D. Hen

Form I

Sample No.
DC-GB-29

Date 3-5-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

SOW NO. 784

LAB SAMPLE ID. NO. 0398 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	10000		P	13.	Magnesium	NR		
2.	Antimony	12	U	P	14.	Manganese	320		P
3.	Arsenic	4.9	R	F	15.	Mercury	0.10	U	CV
4.	Barium	280		P	16.	Nickel	13		P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	1.3		P	18.	Selenium	0.94	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	10		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	0.94	U	F
10.	Copper	24		P	22.	Tin	7.7	U	F
11.	Iron	12700		P	23.	Vanadium	28		P
12.	Lead	53	R	F	24.	Zinc	130		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-62-30

Date 3-5-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

SOW NO. 784

LAB SAMPLE ID. NO. 0399 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	4190		P	13.	Magnesium	NR	
2.	Antimony	12	U	P	14.	Manganese	191	P
3.	Arsenic	2.2	R	F	15.	Mercury	0.10 U	CV
4.	Barium	36300		P	16.	Nickel	28	P
5.	Beryllium	1.0	U	P	17.	Potassium	NR	
6.	Cadmium	1.8		P	18.	Selenium	1.0 U	F
7.	Calcium	NR			19.	Silver	2.0 U	P
8.	Chromium	14		P	20.	Sodium	NR	
9.	Cobalt	44		P	21.	Thallium	1.0 U	F
10.	Copper	22		P	22.	Tin	8.0 U	F
11.	Iron	10700		P	23.	Vanadium	17	P
12.	Lead	24	R	F	24.	Zinc	91	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 [signature]

Form I

Sample No.
DC-62-31

Date 3-5-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738 /4767/4819

SOW NO. 784

LAB SAMPLE ID. NO. 0400 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	2670		P	13.	Magnesium	NR		
2.	Antimony	12	U	P	14.	Manganese	73		P
3.	Arsenic	1.7	R	F	15.	Mercury	0.10	U	CV
4.	Barium	12300		P	16.	Nickel	8.0	U	P
5.	Beryllium	1.0	U	P	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	0.95	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	4.0		P	20.	Sodium	NR		
9.	Cobalt	15		P	21.	Thallium	1.0	U	F
10.	Copper	6.6		P	22.	Tin	7.8	U	F
11.	Iron	5050		P	23.	Vanadium	11		P
12.	Lead	13	R	F	24.	Zinc	31		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 D. Hall

Form I

Sample No.
DC-K3-32

Date 3-5-87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

SOW NO. 784

LAB SAMPLE ID. NO. 0643 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	6650	P	13.	Magnesium	NR	
2.	Antimony	12 U	P	14.	Manganese	400	P
3.	Arsenic	6.2 R	F	15.	Mercury	0.16	CV
4.	Barium	127	P	16.	Nickel	14	P
5.	Beryllium	1.0 U	P	17.	Potassium	NR	
6.	Cadmium	2.9	P	18.	Selenium	1.0 U	F
7.	Calcium	NR		19.	Silver	2.0 U	P
8.	Chromium	10	P	20.	Sodium	NR	
9.	Cobalt	10 U	P	21.	Thallium	2.0 U	F
10.	Copper	85	P	22.	Tin	8.6	F
11.	Iron	13200	P	23.	Vanadium	18	P
12.	Lead	157 R	P	24.	Zinc	332	P

Cyanide 1.0 U Percent Solids (%) 66

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 II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology And Environment, Inc.

CASE NO. U-4727/U-4738 /4767/4819

SOW NO. 784

DATE 1/12/87

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									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:									
C[illegible]nia 1/15/87				48	46	96			
Cyanide				48	44	92			

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

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology And Environment, Inc.

CASE NO. U-4727/U-4738 /4767/4819

SOW NO. 784

DATE 1/22/87

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									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	2.0	2.0	100	1.0	0.96	96	1.0	100	CV
16. Nickel									P
17. Potassium									
18. Selenium	50	55	110	50	49	98	47	94	F
19. Silver									P
20. Sodium									
21. Thallium	50	48	96	50	47	94	52	104	F
22. Tin									F
23. Vanadium									P
24. Zinc									P
Other:									
Cyanide				48	42	88			

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-4727/U-4738 /4767/4819

SOW NO. 784

DATE 1/22/87

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									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				1.0	0.92	92	1.1	110	CV
16. Nickel									P
17. Potassium									
18. Selenium				50	53	106	48	96	F
19. Silver									P
20. Sodium									
21. Thallium				50	47	94			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-4727/U-4738/4767/4819

SOW NO. 784

DATE 1/22/87 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									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				1.0	0.99	99			CV
16. Nickel									P
17. Potassium									
18. Selenium				50	51	102			F
19. Silver									P
20. Sodium									
21. Thallium									F
22. Tin									F
23. Vanadium									P
24. Zinc									P
Other:									
C ide									

[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-4727/U-4738/4767/4819

SOW NO. 784

DATE 1/23/87

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									P
3. Arsenic	50	52	104	50	50	100	51	102	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									

[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-4727/U-4738 /4767/4819

SOW NO. 784

DATE 1/23/87

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									P
3. Arsenic			-	50	50	100	54	108	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:									
C, nide									

[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-4727/U-4738 14767/4819

SOW NO. 784

DATE 1/23/87

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									P
3. Arsenic				50	51	102			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									

[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-4727/U-4738 /4767/4819

SOW NO. 784

DATE 1/28/87

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	10000	10200	102	10000	10900	109	10300	103	P
2. Antimony	500	517	103	500	551	110	525	105	P
3. Arsenic									F
4. Barium	500	520	104	500	539	108	536	107	P
5. Beryllium	500	511	102	500	534	107	528	106	P
6. Cadmium	500	517	103	500	551	110	534	107	P
7. Calcium									
8. Chromium	500	517	103	500	542	108	537	107	P
9. Cobalt	500	512	102	500	539	108	520	104	P
10. Copper	500	515	103	500	507	101	506	101	P
11. Iron	10000	10100	101	50000	48200	96			P
12. Lead									P
13. Magnesium									
14. Manganese	500	518	104	500	521	104	533	107	P
15. Mercury									CV
16. Nickel	500	507	101	500	523	105	508	102	P
17. Potassium									
18. Selenium									F
19. Silver	500	527	105	500	548	110	527	105	P
20. Sodium									
21. Thallium									F
22. Tin									F
23. Vanadium	500	514	103	500	526	105	528	106	P
24. Zinc									P
Other: Aluminum	500	482	96	500	467	93	479	96	P
Iron	500	517	103	500	535	107	538	108	P
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-4727/U-4738/4767/4819

SOW NO. 784

DATE 1/28/87

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									P
3. Arsenic									F
4. Barium				500	525	105			P
5. Beryllium				500	520	104			P
6. Cadmium				506	530	106			P
7. Calcium									
8. Chromium				500	526	105			P
9. Cobalt				500	523	105			P
10. Copper				500	495	99			P
11. Iron									P
12. Lead									P
13. Magnesium									
14. Manganese									P
15. Mercury									CV
16. Nickel				500	500	100			P
17. Potassium									
18. Selenium									F
19. Silver									P
20. Sodium									
21. Thallium									F
22. Tin									F
23. Vanadium				500	529	106			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-4727/U-4738 14767/4819

SOW NO. 784

DATE 1/29/87

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									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	50	50	100	50	51	102	52	104	F
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	100	100	100	100	106	106	108	108	F
23. Vanadium									P
24. Zinc	500	502	100	500	478	96	498	100	P
Other:									
Cyanide				48	48	100			

[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-4727/U-4738 /4767/4819

SOW NO. 784

DATE 1/29/87

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									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				50	51	102			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				100	103	103	106	106	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-4727/U-4738 14767/4819

SOW NO. 784

DATE 2/3/87

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	535	107	500	491	98			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	500	539	108	500	514	103			P
20. Sodium									
21. Thallium									F
22. Tin									F
23. Vanadium									P
24. Zinc	500	514	103	500	512	102			P
Other:									
Cyanide									

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-4727/U-4738/4767/4819

SOW NO. 784

DATE 2/5/87

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									P
3. Arsenic	50	50	100	50	50	100	53	106	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	25	25	100	25	26	104			F
19. Silver									P
20. Sodium									
21. Thallium	50	51	102	50	49	98			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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology And Environment, Inc.

CASE NO. U-4727/U-4738/4767/4819

SOW NO. 784

DATE 2/5/87

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									P
3. Arsenic				50	54	108	54	108	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									

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology And Environment, Inc.

CASE NO. U-4727/U-4738/4767/4819

SOW NO. 784

DATE 2/6/87

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									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	50	50	100	50	51	102	52	104	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	100	109	109	100	106	106			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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology And Environment, Inc. CASE NO. U-4727/U-4738

SOW NO. 784

DATE 2/6/87 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									P
3. Arsenic									F
4. Barium									P
5. Beryllium									P
6. Cadmium									P
7. Calcium									
8. Chromium									P
9. Cobalt									P
0. Copper									P
1. Iron									P
2. Lead				50	51	101			P
3. Magnesium									
4. Manganese									P
5. Mercury									CV
6. Nickel									P
7. Potassium									
8. Selenium									F
9. Silver									P
0. Sodium									
1. Thallium									F
2. Tin									F
3. Vanadium									P
4. Zinc									P
ther:									
yanide									

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology And Environment, Inc.

CASE NO. U-4727/U-4738/4767/4819

SOW NO. 784

DATE 2/9/87

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	506	101	500	484	97	488	98	P
2. Antimony	500	507	101	500	535	107	498	100	P
3. Arsenic									F
4. Barium	500	527	105	500	540	108	542	108	P
5. Beryllium	500	527	105	500	533	107	534	107	P
6. Cadmium	500	534	107	500	546	109	532	106	P
7. Calcium									
8. Chromium	500	520	104	500	534	107	536	107	P
9. Cobalt	500	530	106	500	536	107	530	106	P
10. Copper	500	526	105	500	534	107	532	106	P
11. Iron	500	523	105	500	532	106	536	107	P
12. Lead									P
13. Magnesium									
14. Manganese	500	536	107	500	533	107	539	108	P
15. Mercury									CV
16. Nickel	500	513	103	500	524	105	519	104	P
17. Potassium									
18. Selenium									F
19. Silver	500	532	106	500	550	110	539	108	P
20. Sodium									
21. Thallium									F
22. Tin									F
23. Vanadium	500	531	106	500	533	107	542	108	P
24. Zinc	500	548	110	500	549	110	541	108	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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology And Environment, Inc.

CASE NO. U-4727/U-4738 14767/4819

SOW NO. 784

DATE 2/9/87

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	528	106	529	106	P
2. Antimony				500	477	95			P
3. Arsenic									F
4. Barium				500	544	109	545	109	P
5. Beryllium				500	534	107			P
6. Cadmium				500	543	109			P
7. Calcium									
8. Chromium				500	538	108			P
9. Cobalt				500	532	106			P
0. Copper				500	530	106			P
1. Iron				500	534	107	535	107	P
2. Lead									P
3. Magnesium									
4. Manganese				500	538	108			P
5. Mercury									CV
6. Nickel				500	504	101			P
7. Potassium									
8. Selenium									F
9. Silver				500	552	110			P
0. Sodium									
1. Thallium									F
2. Tin									F
3. Vanadium				500	536	107			P
4. Zinc				500	546	109			P
ther:									
yanide									

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology And Environment, Inc.

CASE NO. U-4727/U-4738 /4767/4819

SOW NO. 784

DATE 2/9/87

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	539	108			P
2. Antimony									P
3. Arsenic									F
4. Barium				500	546	109			P
5. Beryllium									P
6. Cadmium									P
7. Calcium									
8. Chromium									P
9. Cobalt									P
0. Copper									P
1. Iron				500	539	108			P
2. Lead									P
3. Magnesium									
4. Manganese									P
5. Mercury									CV
6. Nickel									P
7. Potassium									
8. Selenium									F
9. Silver									P
0. Sodium									
1. Thallium									F
2. Tin									F
3. Vanadium									P
4. Zinc									P
ther:									
yanide									

[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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology And Environment, Inc.

CASE NO. U-4727/U-4738/4767/4819

SOW NO. 784

DATE 2/11/87

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									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	500	520	104	500	547	109			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-4727/U-4738/4767/4819

DATE 2/9/87 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		200u					
2. Antimony							
3. Arsenic							
4. Barium		200u					
5. Beryllium							
6. Cadmium							
7. Calcium							
8. Chromium							
9. Cobalt							
10. Copper							
11. Iron		100u					
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							

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/481

DATE 2/11/87 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							
16. Nickel							
17. Potassium							
18. Selenium							
19. Silver							
20. Sodium							
21. Thallium							
22. Tin							
23. Vanadium							
24. Zinc	20u	20u				20u	
Other:							
Cyanide							

Form V

Q. C. Report No. _____

SPIKE SAMPLE RECOVERY

LAB NAME Ecology and Environment, Inc.

CASE NO. U-4727/U-4738 /4767/4819

DATE 3-5-87

Sample No. DC-H3-18

Lab Sample ID No. 0099

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	"	79	11 U	96	82
3. Arsenic	"	16	9.6	10	64 R
4. Barium	"	453	74	384	99
5. Beryllium	"	9.6	0.99 U	9.6	100
6. Cadmium	"	9.4	0.99 U	9.6	98
7. Calcium	"				
8. Chromium	"	40	1.9 U	39	102
9. Cobalt	"	97	1.9 U	96	101
10. Copper	"	57	9.1	48	100
11. Iron	"				
12. Lead	"	12	3.3	13	67 R
13. Magnesium	"				
14. Manganese	"	101	6.8	96	98
15. Mercury	"				
16. Nickel	"	99	3.6	96	100
17. Potassium	"				
18. Selenium	"	2.1	0.99 U	2.6	81
19. Silver	"	7.6	1.9 U	9.6	79
20. Sodium	"				
21. Thallium	"	10	0.99 U	13	77
22. Tin	"				
23. Vanadium	"	99	1.9 U	96	103
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.

CASE NO. U-4727/U-4738/4767/4819

DATE 3-5-87

Sample No. DC-HS-21

Lab Sample ID No. 0102

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	"				
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	"	5.0	1.0U	4.8	104

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

"R"- out of control

Form V

Q. C. Report No. _____

SPIKE SAMPLE RECOVERY

LAB NAME Ecology and Environment, Inc.

CASE NO. U-4727/U-4738/4767/4819

Sample No. DC-K3-32

DATE 3-5-87

Lab Sample ID No. 0643

Units mg/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	"	0.11	0.043	0.08	84
23. Vanadium	"				
24. Zinc	"				
Other:					
Cyanide	"				

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

"R" - out of control

* Results in mg/L because this is a pre-digestion spike.

Form VI

Q. C. Report No. _____

DUPLICATES

LAB NAME Ecology and Environment, Inc.

CASE NO. U-4727/U-4738/4767/4819

DATE 3-5-87

Sample No. DC-H3-18

Lab Sample ID No. 0099

Units mg/kg as received

Matrix soil

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		10U	10U	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 VI

Q. C. Report No. _____

DUPLICATES

LAB NAME Ecology and Environment, Inc.

CASE NO. U-4727/U-4738/4767/4819

Sample No. BC-HB-20

DATE 3-5-87

Lab Sample ID No. 101

Units mg/kg as received

Matrix soil

Compound	Control Limit[1]	Sample(S)	Duplicate(D)	RPD[2]
Metals:				
1. Aluminum		8560	8840	3.2
2. Antimony		13 U	15 U	NC
3. Arsenic		4.7	5.0	6.2
4. Barium		296	326	12
5. Beryllium		1.0 U	0.94 U	NC
6. Cadmium		1.0 U	1.2	NC
7. Calcium				
8. Chromium		12	11	8.7
9. Cobalt		4.6	2.0 U	NC
10. Copper		23	26	12
11. Iron		12200	12900	5.6
12. Lead		34	36	5.7
13. Magnesium				
14. Manganese		293	315	7.2
15. Mercury				
16. Nickel		13	15	14
17. Potassium				
18. Selenium		1.0 U	1.0 U	NC
19. Silver		2.0 U	1.9 U	NC
20. Sodium				
21. Thallium		1.0 U	1.0 U	NC
22. Tin				
23. Vanadium		21	23	9.1
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 VII

Q.C. Report No. _____

INSTRUMENT DETECTION LIMITS AND

LABORATORY CONTROL SAMPLE

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

DATE 1/13/87 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			
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			
20. Sodium	5000	1000				
21. Thallium	10		5			
22. Tin	40	40	5			
23. Vanadium	50	10				
24. Zinc	20	10				
Other:						
Cyanide	10			0.50	0.52	105

Form VII

Q.C. Report No. _____

INSTRUMENT DETECTION LIMITS AND

LABORATORY CONTROL SAMPLE

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

DATE 1/22/87 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			
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		4.70	4.74	101
16. Nickel	40	15				
17. Potassium	5000	1000				
18. Selenium	5		5	7.9	8.0	101
19. Silver	10	10	5			
20. Sodium	5000	1000				
21. Thallium	10		5	25	23	92
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 Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

DATE 1/23/87 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			
3. Arsenic	10		5	20	20	100
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			
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 Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

DATE 1/28/87 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		970	1075	111
2. Antimony	60	6	5			
3. Arsenic	10		5			
4. Barium	200	10		970	1140	118
5. Beryllium	5	5		960	938	98
6. Cadmium	5	5	1	940	901	96
7. Calcium	5000	1000				
8. Chromium	10	10		1030	983	95
9. Cobalt	50	10		1000	968	97
10. Copper	25	10		1030	950	92
11. Iron	100	25		1020	989	97
12. Lead	5	50	5	1010	972	96
13. Magnesium	5000	1000				
14. Manganese	15	5		1020	976	96
15. Mercury	0.2	0.2				
16. Nickel	40	15		1020	974	95
17. Potassium	5000	1000				
18. Selenium	5		5			
19. Silver	10	10	5	6000	5600	93
20. Sodium	5000	1000				
21. Thallium	10		5			
22. Tin	40	40	5			
23. Vanadium	50	10		1010	963	95
24. Zinc	20	10				
Other:						
Cyanide	10					

Form VII

Q.C. Report No. _____

INSTRUMENT DETECTION LIMITS AND

LABORATORY CONTROL SAMPLE

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

DATE 1/29/87 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			
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	17	17	100
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			
20. Sodium	5000	1000				
21. Thallium	10		5			
22. Tin	40	40	5			
23. Vanadium	50	10				
24. Zinc	20	10		1010	932	92
Other:						
				500	500	100
Cyanide	10					

Form VII

Q.C. Report No. _____

INSTRUMENT DETECTION LIMITS AND

LABORATORY CONTROL SAMPLE

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

DATE 2/3/87 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		970	1080	111
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				
16. Nickel	40	15				
17. Potassium	5000	1000				
18. Selenium	5		5			
19. Silver	10	10	5	6000	6150	102
20. Sodium	5000	1000				
21. Thallium	10		5			
22. Tin	40	40	5			
23. Vanadium	50	10				
24. Zinc	20	10		1010	1004	99
Other:						
Cyanide	10					

Form VII

Q.C. Report No. _____

INSTRUMENT DETECTION LIMITS AND

LABORATORY CONTROL SAMPLE

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738 /4767/4819

DATE 2/5/87 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			
3. Arsenic	10		5	20	20	100
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	7.9	8.4	106
19. Silver	10	10	5			
20. Sodium	5000	1000				
21. Thallium	10		5	25	25	100
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 Environment, Inc. CASE NO. U-4727/U-4738

DATE 2/6/87 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			
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	17	16	94
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			
20. Sodium	5000	1000				
21. Thallium	10		5			
22. Tin	40	40	5			
3. 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 Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

DATE 2/9/87 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		970	957	99
2. Antimony	60	6	5	990	998	101
3. Arsenic	10		5			
4. Barium	200	10		970	968	100
5. Beryllium	5	5		960	936	98
6. Cadmium	5	5	1	940	919	98
7. Calcium	5000	1000				
8. Chromium	10	10		1030	1000	97
9. Cobalt	50	10		1000	981	98
10. Copper	25	10		1030	976	95
11. Iron	100	25		1020	988	97
12. Lead	5	50	5			
13. Magnesium	5000	1000				
14. Manganese	15	5		1020	972	95
15. Mercury	0.2	0.2				
16. Nickel	40	15		1020	982	96
17. Potassium	5000	1000				
18. Selenium	5		5			
19. Silver	10	10	5	6000	5750	96
20. Sodium	5000	1000				
21. Thallium	10		5			
22. Tin	40	40	5			
23. Vanadium	50	10		1010	981	97
24. Zinc	20	10				
Other:						
Cyanide	10					

Form VII

Q.C. Report No. _____

INSTRUMENT DETECTION LIMITS AND

LABORATORY CONTROL SAMPLE

LAB NAME Ecology and Environment, Inc. CASE NO. U-4727/U-4738/4767/4819

DATE 2/11/87 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			
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			
20. Sodium	5000	1000				
21. Thallium	10		5			
22. Tin	40	40	5			
23. Vanadium	50	10				
24. Zinc	20	10		1010	973	96
Other:						
Cyanide	10					

Dead Creek

Job #4727 1/29/87

Fe, Al, Sb, Mn

87/01/28

14:08

Result Name: 8701281001

blank	500 PPM	156.0401 S	JOB#4764 B-17
standard	100/200 PPM	157.0401	386.0201
standard	99.0401	157.0401 R	386.0201
500 PPB	99.0401 S	158.0401	386.0201 R
500 PPB	100.0401	101. 0.1/10	386.0201 S
ICAP-19	101.0401	101.R 0.1/10	JOB#4755 B-19
ICAP-7	101.0401 R	102. 0.1/10	355.0101
500 PPM ICS	102.0401	500 PPM ICS	CAL BLK
500 PPM ICS	CAL BLK	CAL BLK	500 PPB
10000 PPB	500 PPB	500 PPB	
CAL BLK	500 PPB	500 PPB	
JOB#4727 B-10	500 PPB	500 PPB	
97.0401	10 PPM	10 PPM	
98.0401	156.0401	JOB#4764 B-17	

Command?

Sb_VHG

blank	69.20	intensity		13.59	cv	window edge
standard	1101.50	intensity		3.28	cv	
500 PPB	517.40	ug/L		5.22	cv	
500 PPM ICS	2012.50	ug/L		2.71	cv	
500 PPM ICS	905.05	ug/L		5.82	cv	
CAL BLK	6.76	ug/L		650.15	cv	window edge
JOB#4727 B-10	19.66	ug/L	<60.0	76.35	cv	
97.0401	-68.80	ug/L		-151.6	cv	
98.0401	12.83	ug/L		563.29	cv	
99.0401	17.34	ug/L		11.79	cv	
99.0401 S	410.80	ug/L		3.75	cv	
100.0401	-95.11	ug/L	<60.0	-66.14	cv	
101.0401	-23.09	ug/L		-357.8	cv	window edge
101.0401 R	-35.52	ug/L		-101.2	cv	window edge
102.0401	-32.78	ug/L		-109.7	cv	window edge
CAL BLK	11.26	ug/L		74.93	cv	
500 PPB	550.90	ug/L		16.30	cv	
500 PPM ICS	833.45	ug/L		6.54	cv	
CAL BLK	29.74	ug/L	<60.0	54.23	cv	
500 PPB	567.25	ug/L		1.53	cv	
500 PPB	525.20	ug/L		33.15	cv	

Mn_VHG

blank	9.81	intensity		58.64	cv	window edge
standard	8023.00	intensity		1.11	cv	
500 PPB	518.50	ug/L		0.62	cv	
ICAP-19	975.95	ug/L		0.23	cv	
500 PPM ICS	971.45	ug/L		1.68	cv	
10000 PPB	10080.00	ug/L		0.15	cv	
CAL BLK	0.63	ug/L		243.26	cv	
JOB#4727 B-10	0.10	ug/L	<5.00	2936.0	cv	
97.0401	2106.00	ug/L		0.00	cv	
102.0401	127800.0	ug/L		0.02	cv	
CAL BLK	1.70	ug/L		162.90	cv	
500 PPB	521.00	ug/L		1.66	cv	
500 PPB	0.84	ug/L		0.00	cv	
102. 0.1/10	1478.00	ug/L		0.35	cv	
500 PPM ICS	974.80	ug/L		1.46	cv	
CAL BLK	-0.96	ug/L		-51.90	cv	window edge
500 PPB	532.75	ug/L		0.81	cv	

Fe_HIGH

blank	0.62	intensity		206.20	cv	
standard	111.400	intensity		1.03	cv	
10000 PPB	10.070	mg/L		0.78	cv	
CAL BLK	0.006	mg/L		340.42	cv	
JOB#4727 B-10	0.016	mg/L	<25.0	183.56	cv	
97.0401	283.050	mg/L		0.38	cv	
98.0401	2.065	mg/L		0.31	cv	
500 PPM	482.500	mg/L		0.17	cv	
100/200 PPM	100.390	mg/L		0.58	cv	
99.0401	2.228	mg/L		0.23	cv	
99.0401 S	2.151	mg/L		0.51	cv	
100.0401	197.450	mg/L		0.67	cv	
101.0401	61.155	mg/L		0.34	cv	
101.0401 R	67.485	mg/L		0.26	cv	
102.0401	109.750	mg/L		1.10	cv	

CAL BLK	0.004	mg/L		657.14 cv	window edge
10 PPM	10.580	mg/L		1.37 cv	
101. 0.1/10	0.626	mg/L		0.00 cv	
500 PPM ICS	459.450	mg/L		3.07 cv	
CAL BLK	-0.044	mg/L		-171.6 cv	
10 PPM	10.061	mg/L		2.06 cv	

Fe_VHG

blank	43.22	intensity		25.63 cv	
standard	4508.50	intensity		0.38 cv	
500 PPB	517.45	ug/L		0.10 cv	
ICAP-19	988.90	ug/L		0.23 cv	
500 PPM ICS	225800.0	ug/L		0.43 cv	
10000 PPB	10155.00	ug/L		0.02 cv	
CAL BLK	-1.73	ug/L		-766.8 cv	
JOB#4727 B-10	6.34	ug/L		124.19 cv	
97.0401	230750.0	ug/L		0.02 cv	
98.0401	2136.50	ug/L		0.90 cv	
99.0401	2295.50	ug/L		1.00 cv	
99.0401 S	2222.50	ug/L		2.28 cv	
100.0401	218700.0	ug/L		0.36 cv	
101.0401	65655.00	ug/L		0.92 cv	
101.0401 R	72720.00	ug/L		0.37 cv	
102.0401	124950.0	ug/L		0.28 cv	
CAL BLK	-7.93	ug/L		-18.30 cv	
500 PPB	534.95	ug/L		2.72 cv	
500 PPB	10.64	ug/L		0.00 cv	
101. 0.1/10	620.65	ug/L		0.90 cv	
101.R 0.1/10	699.90	ug/L		1.15 cv	
500 PPM ICS	232850.0	ug/L		0.02 cv	
CAL BLK	5.02	ug/L		78.80 cv	
500 PPB	538.35	ug/L		2.40 cv	

Al_HIGH

blank	16.55	intensity		201.27 cv	
standard	758.900	intensity		8.70 cv	
10000 PPB	10.230	mg/L		0.18 cv	
CAL BLK	0.006	mg/L		451.60 cv	
JOB#4727 B-10	0.008	mg/L	<100.0	64.25 cv	
97.0401	13.430	mg/L		0.75 cv	
98.0401	1.825	mg/L		1.09 cv	
500 PPM	562.250	mg/L	N-G	0.45 cv	
100/200 PPM	213.800	mg/L		0.58 cv	
99.0401	2.748	mg/L		2.46 cv	
99.0401 S	2.563	mg/L		0.95 cv	
100.0401	26.155	mg/L		0.02 cv	
101.0401	42.790	mg/L		0.62 cv	
101.0401 R	46.510	mg/L		0.88 cv	
102.0401	28.660	mg/L		1.04 cv	
CAL BLK	-0.003	mg/L		-1087. cv	
10 PPM	10.875	mg/L		0.19 cv	
101. 0.1/10	0.605	mg/L		0.00 cv	
500 PPM ICS	533.700	mg/L		0.66 cv	
CAL BLK	0.063	mg/L		37.75 cv	
10 PPM	10.345	mg/L		1.71 cv	

Al_VHG

blank	323.50	intensity		647.30 cv	window edge
standard	21205.00	intensity		0.09 cv	

500 PPB	482.20	ug/L		5.84	cv	
ICAP-19	90.13	ug/L		0.00	cv	
ICAP-7	1075.50	ug/L		0.48	cv	
500 PPM ICS	43380.00	ug/L		0.10	cv	
10000 PPB	10405.00	ug/L		0.74	cv	
CAL BLK	12.95	ug/L		239.81	cv	
JOB#4727 B-10	15.13	ug/L	<100.0	139.90	cv	
97.0401	13910.00	ug/L		1.35	cv	
98.0401	1858.50	ug/L		1.65	cv	
99.0401	2799.50	ug/L		1.17	cv	
99.0401 S	2458.50	ug/L		0.10	cv	
100.0401	28630.00	ug/L		0.30	cv	
101.0401	43780.00	ug/L		0.26	cv	
101.0401 R	44430.00	ug/L		0.09	cv	
102.0401	31250.00	ug/L		0.30	cv	
CAL BLK	-34.94	ug/L		-27.74	cv	window edge
500 PPB	467.20	ug/L		2.88	cv	
101. 0.1/10	487.45	ug/L		16.35	cv	
101.R 0.1/10	596.90	ug/L		8.81	cv	
500 PPM ICS	40555.00	ug/L		0.41	cv	
CAL BLK	-6.92	ug/L		-408.3	cv	window edge
500 PPB	479.35	ug/L		4.62	cv	

Dead Check

Job #4738

Ag, Ba, Cd, Cr, Co, Be, Cu, Mn, Ni, V,

87/01/28

09:04

Result Name: 8701271035

blank	10000 PPB	156.0401	97. 1/50
standard	50 PPM	156.0401 S	98. 1/10
standard	CAL BLK	157.0401	99. 1/10
standard	JOB#4727 B-10	157.0401 R	100. 0.1/10
standard	97.0401	158.0401	100. 1/10
500 PPB	98.0401	97. 1/10	101. 0.1/10
500 PPB	99.0401	102.0401	102. 1/10
ICAP-19	99.0401 S2	156.0401	500 PPM ICS
ICAP-7	100.0401	156.0401 S	CAL BLK
EPA 283#2 1/50	101.0401	157.0401	500 PPB
ICAP-7	101.0401 R2	CAL BLK	500 PPB
500 PPM ICS	CAL BLK	500 PPB	
500 PPM ICS	500 PPB	500 PPB	
500 PPM ICS	102.0401	97. 1/10	

Command?

Cr_VHG

blank	22.21	intensity		34.22	cv
standard	6585.50	intensity		1.38	cv
500 PPB	516.95	ug/L		0.66	cv
ICAP-19	901.45	ug/L		0.59	cv
500 PPM ICS	975.35	ug/L		0.78	cv
10000 PPB	10275.00	ug/L		0.16	cv
CAL BLK	0.28	ug/L		2001.4	cv
JOB#4727 B-10	-2.15	ug/L	<5.00	-153.4	cv
CAL BLK	-0.12	ug/L		-88.67	cv
500 PPB	551.30	ug/L		2.15	cv
156.0401	-0.74	ug/L	<5.00	-134.5	cv
156.0401 S	54.03	ug/L		2.01	cv
157.0401	-2.44	ug/L	<5.00	-111.9	cv
157.0401 R	-1.39	ug/L		-154.7	cv
158.0401	2.96	ug/L		23.62	cv
CAL BLK	-2.67	ug/L		-203.6	cv window edge
500 PPB	537.95	ug/L		2.83	cv
500 PPM ICS	1005.80	ug/L		2.26	cv
CAL BLK	-1.75	ug/L		-54.93	cv window edge
500 PPB	529.85	ug/L		2.69	cv

Pb_VHG

blank	89.55	intensity		68.00	cv
standard	2357.00	intensity		0.73	cv
500 PPB	596.55	ug/L		7.46	cv
ICAP-19	972.05	ug/L		2.07	cv
500 PPM ICS	1149.00	ug/L		14.62	cv
10000 PPB	9981.50	ug/L		0.27	cv
CAL BLK	14.73	ug/L		1.25	cv
JOB#4727 B-10	-30.09	ug/L		-275.7	cv window edge
CAL BLK	8.83	ug/L		866.10	cv
500 PPB	475.55	ug/L		15.77	cv
156.0401	-48.48	ug/L		-4.90	cv window edge
156.0401 S	429.85	ug/L		5.83	cv
157.0401	78.99	ug/L		17.55	cv
157.0401 R	34.37	ug/L		258.37	cv
158.0401	390.10	ug/L		11.93	cv
CAL BLK	3.37	ug/L		1484.5	cv
500 PPB	527.70	ug/L		0.38	cv

Co_VHG

blank	40.90	intensity		33.60	cv
standard	2458.50	intensity		0.24	cv
500 PPB	512.10	ug/L		1.21	cv
ICAP-19	967.65	ug/L		0.66	cv
500 PPM ICS	962.45	ug/L		2.01	cv
10000 PPB	10180.00	ug/L		1.16	cv
CAL BLK	-13.61	ug/L		-2.58	cv
JOB#4727 B-10	-8.81	ug/L	<10.0	-51.14	cv
CAL BLK	-6.76	ug/L		-42.88	cv
500 PPB	538.60	ug/L		2.83	cv
156.0401	0.68	ug/L	<10.0	589.32	cv
156.0401 S	515.50	ug/L		2.07	cv
157.0401	-1.36	ug/L	<10.0	-1355.	cv
157.0401 R	15.29	ug/L		55.80	cv
158.0401	9.58	ug/L	<10.0	39.63	cv
CAL BLK	-9.23	ug/L		-41.58	cv

500 PPB	520.40	ug/L		3.75	cv	
500 PPM ICS	958.95	ug/L		1.97	cv	
CAL BLK	-10.26	ug/L		-21.32	cv	window edge
500 PPB	523.40	ug/L		1.16	cv	

Ni_VHG

blank	44.43	intensity		51.79	cv	
standard	6380.50	intensity		0.67	cv	
500 PPB	506.75	ug/L		1.23	cv	
ICAP-19	973.90	ug/L		0.64	cv	
500 PPM ICS	941.60	ug/L		1.02	cv	
10000 PPB	9825.00	ug/L		0.14	cv	
CAL BLK	-2.49	ug/L		-659.4	cv	
JOB#4727 B-10	7.71	ug/L	<15.0	25.21	cv	
CAL BLK	2.64	ug/L	⊥	9.65	cv	
500 PPB	523.40	ug/L		0.55	cv	
156.0401	31.32	ug/L		54.01	cv	
156.0401 S	517.90	ug/L		1.67	cv	
157.0401	40.06	ug/L		43.66	cv	
157.0401 R	20.20	ug/L		98.32	cv	
158.0401	62.46	ug/L		27.56	cv	
CAL BLK	-5.21	ug/L	<15.0	-149.8	cv	window edge
500 PPB	507.70	ug/L		0.28	cv	
500 PPM ICS	945.60	ug/L		1.06	cv	
CAL BLK	-4.12	ug/L	<15.0	-188.5	cv	window edge
500 PPB	500.30	ug/L		0.17	cv	

Mn_VHG

blank	-1.29	intensity		-481.0	cv	window edge
standard	7969.00	intensity		0.52	cv	
500 PPB	516.55	ug/L		1.14	cv	
ICAP-19	960.00	ug/L		0.32	cv	
500 PPM ICS	963.70	ug/L		1.34	cv	
10000 PPB	9870.50	ug/L		0.39	cv	
CAL BLK	0.79	ug/L		27.25	cv	
JOB#4727 B-10	1.33	ug/L	<5.00	37.22	cv	
CAL BLK	0.40	ug/L		137.86	cv	
500 PPB	517.20	ug/L		1.54	cv	
156.0401	289.80	ug/L		0.39	cv	
156.0401 S	749.60	ug/L		0.24	cv	
157.0401	308.00	ug/L		0.74	cv	
157.0401 R	302.55	ug/L		0.97	cv	
158.0401	1297.00	ug/L		0.44	cv	
CAL BLK	0.48	ug/L		26.73	cv	
500 PPB	519.80	ug/L		0.79	cv	
500 PPM ICS	955.25	ug/L		0.99	cv	
CAL BLK	2.16	ug/L		10.57	cv	
500 PPB	517.05	ug/L		1.32	cv	

Cr_VHG

blank	29.21	intensity		166.37	cv	
standard	6227.50	intensity		0.31	cv	
500 PPB	517.00	ug/L		1.10	cv	
ICAP-19	982.80	ug/L		0.60	cv	
500 PPM ICS	976.45	ug/L		0.05	cv	
10000 PPB	10185.00	ug/L		0.48	cv	
CAL BLK	1.14	ug/L		198.85	cv	
JOB#4727 B-10	-1.55	ug/L	<10.0	-93.62	cv	window edge
CAL BLK	9.50	ug/L		55.35	cv	

500 PPB	542.55	ug/L		1.50	cv	
156.0401	20.29	ug/L		42.83	cv	
156.0401 S	220.10	ug/L		4.31	cv	
157.0401	21.54	ug/L		20.70	cv	
157.0401 R	14.88	ug/L		31.81	cv	
158.0401	71.15	ug/L		11.15	cv	
CAL BLK	-9.56	ug/L	<10.0	-34.70	cv	window edge
500 PPB	536.95	ug/L		0.70	cv	
500 PPM ICS	1002.80	ug/L		0.89	cv	
CAL BLK	-2.96	ug/L		-125.9	cv	
500 PPB	525.85	ug/L		0.26	cv	

V_VHG

blank	-62.84	intensity		-186.5	cv	
standard	16895.00	intensity		0.13	cv	
500 PPB	514.40	ug/L		1.52	cv	
ICAP-19	963.10	ug/L		0.26	cv	
500 PPM ICS	1005.60	ug/L		1.89	cv	
10000 PPB	10235.00	ug/L		0.63	cv	
CAL BLK	7.80	ug/L	<10.0	41.03	cv	
JOB#4727 B-10	1.12	ug/L	<10.0	456.54	cv	
CAL BLK	-2.77	ug/L	⊥	-581.2	cv	window edge
500 PPB	525.60	ug/L		1.00	cv	
156.0401	29.29	ug/L		12.50	cv	
156.0401 S	548.75	ug/L		2.46	cv	
157.0401	30.52	ug/L		60.65	cv	
157.0401 R	25.46	ug/L		48.05	cv	
158.0401	102.06	ug/L		4.66	cv	
CAL BLK	0.52	ug/L	<10.0	683.80	cv	
500 PPB	527.70	ug/L		0.45	cv	
500 PPM ICS	1007.25	ug/L		1.05	cv	
CAL BLK	3.45	ug/L		24.98	cv	
500 PPB	528.80	ug/L		3.04	cv	

Be_VHG

blank	-0.17	intensity		-1100.	cv	window edge
standard	6986.00	intensity		0.12	cv	
500 PPB	511.20	ug/L		0.89	cv	
ICAP-19	938.20	ug/L		0.17	cv	
500 PPM ICS	988.10	ug/L		0.42	cv	
10000 PPB	10085.00	ug/L		0.64	cv	
CAL BLK	0.11	ug/L	<5.00	258.37	cv	
JOB#4727 B-10	-0.05	ug/L		-4610.	cv	
CAL BLK	0.95	ug/L	⊥	92.82	cv	
500 PPB	534.20	ug/L		0.88	cv	
156.0401	0.43	ug/L	<5.00	17.86	cv	
156.0401 S	51.75	ug/L		0.22	cv	
157.0401	0.64	ug/L	<5.00	18.91	cv	
157.0401 R	0.47	ug/L		63.52	cv	
158.0401	2.03	ug/L		14.98	cv	
CAL BLK	0.12	ug/L	⊥	290.52	cv	window edge
500 PPB	528.35	ug/L		0.38	cv	
500 PPM ICS	997.15	ug/L		1.37	cv	
CAL BLK	0.63	ug/L		75.37	cv	
500 PPB	520.50	ug/L		0.76	cv	

Cu_VHG

blank	204.60	intensity		36.09	cv	
standard	13700.00	intensity		0.82	cv	

500 PPB	515.40	ug/L		0.50	cv	
ICAP-19	949.70	ug/L		0.27	cv	
500 PPM ICS	967.25	ug/L		1.32	cv	
10000 PPB	9909.00	ug/L		0.04	cv	
CAL BLK	-1.16	ug/L	<10.0	-0.89	cv	
JOB#4727 B-10	-12.85	ug/L		-63.08	cv	
CAL BLK	-10.25	ug/L		-0.38	cv	window edge
500 PPB	507.60	ug/L		0.97	cv	
156.0401	0.73	ug/L	<10.0	346.62	cv	
156.0401 S	243.10	ug/L		0.72	cv	
157.0401	1.81	ug/L	<10.0	148.21	cv	
157.0401 R	1.06	ug/L		502.18	cv	
158.0401	192.70	ug/L		4.74	cv	
CAL BLK	-0.52	ug/L	<10.0	-833.8	cv	
500 PPB	505.90	ug/L		0.59	cv	
500 PPM ICS	966.65	ug/L		0.77	cv	
CAL BLK	-10.65	ug/L		-64.86	cv	
500 PPB	494.65	ug/L		1.76	cv	

Ag_VHG

blank	149.56	intensity		118.61	cv	window edge
standard	17680.00	intensity		1.18	cv	
standard	17615.00	intensity		0.77	cv	
500 PPB	527.40	ug/L		1.26	cv	
EPA 283#2 1/50	111.95	ug/L		0.30	cv	
500 PPM ICS	1020.50	ug/L		1.41	cv	
CAL BLK	-2.50	ug/L		-20.14	cv	window edge
JOB#4727 B-10	4.20	ug/L	<10.0	63.34	cv	
CAL BLK	2.73	ug/L		171.83	cv	window edge
LOW ~~500 PPB~~	~~-7.25~~	~~ug/L~~		0.00	cv	NO SILVER IN THIS CCV
156.0401	-5.10	ug/L	<10.0	-348.7	cv	
156.0401 S	49.29	ug/L		6.94	cv	
157.0401	2.20	ug/L	<10.0	40.92	cv	window edge
CAL BLK	0.98	ug/L		1763.4	cv	
500 PPB	547.85	ug/L		2.76	cv	
500 PPM ICS	1018.50	ug/L		0.17	cv	
CAL BLK	2.84	ug/L	<10.0	356.28	cv	window edge
500 PPB	0.24	ug/L		0.00	cv	
500 PPB	527.05	ug/L		1.48	cv	

Ba_VHG

blank	8.71	intensity		1.72	cv	
standard	3317.00	intensity		0.18	cv	
500 PPB	520.50	ug/L		0.88	cv	
ICAP-7	1135.00	ug/L		0.38	cv	
EPA 283#2 1/50	2335.50	ug/L		0.08	cv	
ICAP-7	1055.00	ug/L		0.15	cv	
500 PPM ICS	1027.00	ug/L		0.56	cv	
10000 PPB	10215.00	ug/L		0.10	cv	
CAL BLK	2.91	ug/L	<10.0	150.68	cv	
JOB#4727 B-10	-3.18	ug/L		-41.40	cv	window edge
CAL BLK	-2.66	ug/L		-18.92	cv	
500 PPB	539.05	ug/L		0.51	cv	
156.0401	203.50	ug/L		0.02	cv	
156.0401 S	2212.00	ug/L		0.06	cv	
157.0401	203.45	ug/L		0.60	cv	
157.0401 R	177.60	ug/L		0.56	cv	
158.0401	839.65	ug/L		1.02	cv	
CAL BLK	-3.03	ug/L	<10.0	-14.37	cv	window edge

500 PPB	535.75	ug/L	0.88	cv
500 PPM ICS	1018.50	ug/L	0.11	cv
CAL BLK	-0.02	ug/L	-3936.	cv
500 PPB	524.75	ug/L	1.23	cv

(Wet Wt.) Dead Creek

Job # 4738
Zn - Redigsts

87/01/29

13:39

Result Name: 8701291120

blank	100.0401X S	500 PPM ICS
standard	101.0401X	CAL BLK
standard	102.0401X	500 PPB
500 PPB	156.0401X	10000 PPB
ICAP-19	CAL BLK	
500 PPM ICS	500 PPB	
CAL BLK	156.0401X S	
JOB#4727 B-10	157.0401X	
JOB#4727 B-40	158.0401X	
97.0401X	158.0401X	
98.0401X	10000 PPB	
98.0401X R	100. 1/10	
99.0401X	102. 1/10	
100.0401X	10000 PPB	

Command?

7 _VHG

blank	20.85	intensity	35.20	cv
standard	10985.00	intensity	1.13	cv
standard	11000.00	intensity	0.02	cv
500 PPB	501.65	ug/L	0.50	cv
ICAP-19	931.50	ug/L	0.52	cv
500 PPM ICS	968.65	ug/L	0.14	cv
CAL BLK	0.26	ug/L	253.21	cv
JOB#4727 B-40	13.76	ug/L <20.0	6.78	cv
156.0401X	85.86	ug/L-16.8 mg/kg	0.20	cv
CAL BLK	2.05	ug/L	194.85	cv
500 PPB	477.50	ug/L	0.68	cv
156.0401X S	558.90	ug/L-95% rec	0.28	cv
157.0401X	66.11	ug/L-12.7 mg/kg	1.18	cv
158.0401X	1194.50	ug/L-237	0.73	cv
158.0401X	933.00	ug/L-183	0.64	cv
500 PPM ICS	958.60	ug/L	0.68	cv
CAL BLK	0.65	ug/L	477.15	cv
500 PPB	497.95	ug/L	0.58	cv
10000 PPB	10240.00	ug/L	0.04	cv

Dead Creek

Job #4738
Al, Ag

87/02/03
11:44

Result Name: 8702030831

blank	156. 1/10	279.0101	278.0106
standard	156.S 1/10	280.0101	278.0106 R
standard	157.0401	281.0101	CAL BLK
standard	157.0401	282.0101	500 PPB
500 PPB	157. 1/10	282.0101 R	
500 PPB	157.0401 R	283.0101	
ICAP-19	157.R 1/10	284.0101	
ICAP-7	158.0401	285.0101	
EPA 283#2 1/50	158. 0.1/10	286.0101	
500 PPM ICS	500 PPM ICS	CAL BLK	
10000 PPB	CAL BLK	500 PPB	
CAL BLK	500 PPB	500 PPB	
JOB#4738 B-10	500 PPB	B-21	
156.0401	JOB#4740 B-14	265.0106	

Command?

A - _VHG

blank	134.80	intensity	4.23	cv	
standard	16980.00	intensity	0.92	cv	
500 PPB	538.80	ug/L	0.67	cv	
EPA 283#2 1/50	122.80	ug/L	8.66	cv	
500 PPM ICS	1080.50	ug/L	2.39	cv	
CAL BLK	-3.94	ug/L	-211.0	cv	window edge
JOB#4738 B-10	-2.77	ug/L <10.0	-383.3	cv	window edge
157.0401	12.18	ug/L	31.74	cv	
157.0401	3.23	ug/L <10.0	89.92	cv	window edge
157.0401 R	-3.00	ug/L	-233.2	cv	window edge
158.0401	0.89	ug/L	936.11	cv	window edge
500 PPM ICS	1019.00	ug/L	0.01	cv	
CAL BLK	-4.16	ug/L	-554.0	cv	window edge
500 PPB	514.00	ug/L	2.23	cv	

AI_VHG

blank	335.25	intensity	278.27	cv	
standard	19760.00	intensity	6.14	cv	
standard	19550.00	intensity	1.95	cv	
500 PPB	535.10	ug/L	0.99	cv	
ICAP-7	1080.00	ug/L	1.71	cv	
500 PPM ICS	44065.00	ug/L	0.02	cv	
10000 PPB	10910.00	ug/L	0.55	cv	
CAL BLK	-64.18	ug/L	-103.6	cv	window edge
JOB#4738 B-10	-25.95	ug/L <200	-97.63	cv	window edge
156.0401	9446.50	ug/L	0.86	cv	
156. 1/10	1038.00	ug/L	2.55	cv	
156.S 1/10	901.55	ug/L	3.59	cv	
157.0401	9325.00	ug/L	0.09	cv	
157. 1/10	1004.05	ug/L	0.84	cv	
157.0401 R	8704.50	ug/L	0.29	cv	
157.R 1/10	892.25	ug/L	5.16	cv	
158.0401	41580.00	ug/L	0.39	cv	
158. 0.1/10	466.35	ug/L	5.36	cv	
500 PPM ICS	43545.00	ug/L	0.08	cv	
CAL BLK	-35.17	ug/L	-223.9	cv	
500 PPB	491.40	ug/L	7.36	cv	

Dead Creek

Job # 4727
Zn - Redigests (TH WT.)

87/02/03
16:43

Result Name: 8702031305

blank	JOB#4727 B-48	355.0101
standard	97.0401X2	JOB#4801 B-32
standard	98.0401X2	599.0201
standard	98.0401X2 R	600.0201
standard	99.0401X2	601.0201
500 PPB	99.0401X2 S	626.0301
500 PPB	100.0401X2	CAL BLK
ICAP-19	50 PPM	500 PPB
ICAP-19	101.0401X2	500 PPB
EPA 283#2 1/50	102.0401X2	
EPA 283#2 1/50	500 PPM ICS	
500 PPM ICS	CAL BLK	
10000 PPB	500 PPB	
CAL BLK	JOB#4755 B-19	

Command?

Z- VHG

blank	4.53	intensity		79.80	cv
standard	9917.50	intensity		0.15	cv
500 PPB	514.00	ug/L		2.47	cv
ICAP-19	874.20	ug/L		0.00	cv
ICAP-19	1004.15	ug/L		0.67	cv
500 PPM ICS	923.70	ug/L		0.74	cv
10000 PPB	10167.00	ug/L		2.51	cv
CAL BLK	1.78	ug/L		68.33	cv
JOB#4727 B-48	14.08	ug/L	<20.0	7.89	cv
97.0401X2	846.70	~~ug/L~~	164mg/kg	0.45	cv
98.0401X2	32.21	~~ug/L~~	6.14	4.74	cv
98.0401X2 R	38.90	~~ug/L~~	7.41	0.64	cv
99.0401X2	39.73	~~ug/L~~	7.79	8.28	cv
99.0401X2 S	472.25	ug/L	-87% rec	0.55	cv
100.0401X2	13945.00	~~ug/L~~	2789	0.65	cv
50 PPM	50470.00	ug/L		0.29	cv
101.0401X2	624.90	~~ug/L~~	119	0.16	cv
102.0401X2	32795.00	~~ug/L~~	6559	0.57	cv
500 PPM ICS	901.45	ug/L		1.00	cv
CAL BLK	0.36	ug/L		290.62	cv window edge
500 PPB	512.10	ug/L		0.47	cv

Dead Creek

Job #4767

Ag, Ba, Be, Cd, Cr, Co, Cu, Fe, Mn, Ni, Sb, U.

87/02/09

16:34

Result Name: 8702090937

blank	JOB#4767 B-24	400.0401	500 PPB
standard	B-24	JOB#4819 B-39	500 PPB
standard	394.0401	643.0401	394. 1/10
standard	395.0401	643.0401 R	395. 1/10
standard	395.0401 S	643.0401 S	395.S 1/10
500 PPB	396.0401	CAL BLK	396. 1/10
500 PPB	397.0401	500 PPB	398. 1/10
ICAP-19	398.0401	500 PPB	399. 1/10
ICAP-19	50 PPM	JOB#4846 B-52	399. 0.1/10
ICAP-7	CAL BLK	799.0401	399.R 1/10
EPA 283#2 1/50	500 PPB	800.0401	400. 1/10
500 PPM ICS	500 PPB	801.0401	643. 1/10
10000 PPB	399.0401	500 PPM ICS	CAL BLK
CAL BLK	399.0401 R	CAL BLK	500 PPB

Command?

- Sample 399. + 399R replicated poorly.
- The soil sample above, was very heterogeneous. (Purple spots of gelatinous material mixed with blue green sandy soil. A piece of "cloth" in the sample jar was also found)

87/02/09

16:35

Result Name: 8702090937

643.R 1/10

643.S 1/10

799. 1/10

800. 1/10

500 PPM ICS

CAL BLK

500 PPB

Command?

87

Y_VHG

blank	13.30	intensity	1809.0	cv	window edge
standard	17945.00	intensity	0.90	cv	
500 PPB	530.35	ug/L	4.01	cv	
ICAP-19	960.60	ug/L	2.31	cv	
500 PPM ICS	933.25	ug/L	1.02	cv	
10000 PPB	10605.00	ug/L	3.14	cv	
CAL BLK	1.17	ug/L	106.08	cv	
JOB#4767 B-24	4.63	ug/L <50.0	261.75	cv	
394.0401	121.85	~~ug/L~~ 23.7mg/kg	0.55	cv	
395.0401	107.55	~~ug/L~~ 21.1	7.05	cv	
395.0401 S	582.40	ug/L -95% rec	0.89	cv	
396.0401	81.52	~~ug/L~~ 15.5	2.69	cv	
397.0401	31.90	ug/L <10.0	12.68	cv	
398.0401	143.15	~~ug/L~~ 27.8	1.25	cv	
CAL BLK	5.32	ug/L	258.48	cv	
500 PPB	533.40	ug/L	0.27	cv	
399.0401	86.76	~~ug/L~~ 16.8	8.07	cv	
399.0401 R	69.92	~~ug/L~~ 13.8	12.92	cv	
400.0401	52.94	~~ug/L~~ 10.6	2.78	cv	
CAL BLK	9.54	ug/L	51.00	cv	
500 PPB	542.80	ug/L	2.11	cv	
500 PPM ICS	944.05	ug/L	2.70	cv	
CAL BLK	1.02	ug/L	1304.3	cv	window edge
500 PPB	535.60	ug/L	0.71	cv	

Sb_VHG

blank	42.12	intensity	59.54	cv	window edge
standard	1048.00	intensity	6.07	cv	
standard	1044.50	intensity	5.75	cv	
500 PPB	507.10	ug/L	3.35	cv	
ICAP-19	1190.50	ug/L	1.37	cv	
ICAP-19	998.10	ug/L	8.62	cv	
500 PPM ICS	819.00	ug/L	3.28	cv	
CAL BLK	27.25	ug/L	118.70	cv	
JOB#4767 B-24	58.10	ug/L <60.0	153.38	cv	
B-24	-68.45	ug/L <12.0 mg/kg	.70	cv	window edge
394.0401	-24.40	ug/L	-116.7	cv	
395.0401	-13.36	ug/L	-44.57	cv	
395.0401 S	408.80	ug/L -82% rec	10.99	cv	
396.0401	-3.73	ug/L <12.0	-1478.	cv	window edge
397.0401	17.18	ug/L	208.70	cv	
398.0401	-42.60	ug/L	-107.7	cv	
CAL BLK	21.87	ug/L	28.32	cv	
500 PPB	535.35	ug/L	11.27	cv	
399.0401	-15.13	ug/L	-196.0	cv	
399.0401 R	-0.07	ug/L	-38214	cv	
400.0401	15.13	ug/L	458.76	cv	
CAL BLK	60.71	ug/L	54.16	cv	
500 PPB	497.65	ug/L	5.98	cv	
500 PPM ICS	1031.80	ug/L	4.42	cv	
CAL BLK	34.65	ug/L	106.68	cv	
500 PPB	476.65	ug/L	19.27	cv	

Cd_VHG

blank	-2.17	intensity	-1118.	cv	window edge
standard	6558.50	intensity	0.45	cv	
500 PPB	533.95	ug/L	3.11	cv	

ICAP-19	919.35	ug/L		1.44	cv
500 PPM ICS	879.15	ug/L		0.35	cv
000 PPB	10166.50	ug/L		2.52	cv
CAL BLK	1.36	ug/L		88.43	cv
JOB#4767 B-24	-0.29	ug/L	<5.00	-627.7	cv window edge
394 0401	6.22	~~ug/L~~	1.21 mg/Kg	9.09	cv
395.0401	2.78	ug/L	<1.00 mg/Kg	0.92	cv
395 0401 S	48.69	ug/L	97% rec	1.35	cv
396 0401	1.01	ug/L	<1.00	160.45	cv
397.0401	0.02	ug/L	⊥	175.86	cv
398.0401	6.65	~~ug/L~~	1.29	30.00	cv
CAL BLK	0.88	ug/L		230.48	cv
500 PPB	545.60	ug/L		0.40	cv
399 0401	9.37	~~ug/L~~	1.81	4.75	cv
399 0401 R	2.63	ug/L	<1.00	92.20	cv
400 0401	-0.02	ug/L	⊥	-825.5	cv
CAL BLK	1.03	ug/L		241.09	cv
500 PPB	532.40	ug/L		0.05	cv
500 PPM ICS	887.95	ug/L		0.59	cv
CAL BLK	1.31	ug/L		179.22	cv window edge
500 PPB	542.75	ug/L		0.20	cv

Co_VHG

blank	-7.01	intensity		-492.7	cv window edge
standard	2463.00	intensity		0.52	cv
500 PPB	529.60	ug/L		2.46	cv
ICAP-19	981.15	ug/L		1.25	cv
500 PPM ICS	873.90	ug/L		1.46	cv
10000 PPB	10107.00	ug/L		1.61	cv
CAL BLK	7.48	ug/L		66.76	cv window edge
JOB#4767 B-24	2.31	ug/L	<50.0	365.79	cv
394.0401	26.50	ug/L	<10.0 mg/Kg	7.38	cv
395.0401	27.63	ug/L	⊥	9.15	cv
395.0401 S	487.95	ug/L	98% rec	3.22	cv
396.0401	18.84	ug/L	<10.0	11.48	cv
397.0401	9.81	ug/L	⊥	28.33	cv
398.0401	29.89	ug/L		22.30	cv
CAL BLK	5.42	ug/L		69.81	cv
500 PPB	536.45	ug/L		0.28	cv
399.0401	226.90	~~ug/L~~	44.1	3.94	cv
399 0401 R	113.05	~~ug/L~~	22.4	11.80	cv
400.0401	74.76	~~ug/L~~	15.1	7.75	cv
CAL BLK	0.72	ug/L		395.83	cv
500 PPB	530.20	ug/L		2.62	cv
500 PPM ICS	875.55	ug/L		0.19	cv
CAL BLK	8.09	ug/L		53.13	cv
500 PPB	531.70	ug/L		2.67	cv

Ni_VHG

blank	45.80	intensity		87.02	cv
standard	6291.50	intensity		0.56	cv
500 PPB	513.00	ug/L		1.46	cv
ICAP-19	982.15	ug/L		0.07	cv
500 PPM ICS	837.50	ug/L		0.46	cv
10000 PPB	10094.00	ug/L		1.51	cv
CAL BLK	1.36	ug/L		36.75	cv
JOB#4767 B-24	-1.04	ug/L	<40.0	-424.5	cv
394 0401	88.49	~~ug/L~~	16.2 mg/Kg	7.36	cv
395.0401	58.82	~~ug/L~~	10.2	8.76	cv

395.0401 R	711.25	ug/L	— 92% rec	1.78	cv
396.0401	31.96	ug/L	<8.00 mg/Kg	4.29	cv
397.0401	0.60	ug/L	⊥	2362.4	cv
398.0401	66.23	~~ug/L~~	12.9	9.58	cv
CAL BLK	8.56	ug/L		61.22	cv
500 PPB	524.05	ug/L		0.95	cv
399.0401	141.50	~~ug/L~~	27.5	2.49	cv
399.0401 R	42.24	~~ug/L~~	8.20	13.60	cv
400.0401	32.22	ug/L	<8.00	22.91	cv
CAL BLK	4.38	ug/L		268.10	cv
500 PPB	519.20	ug/L		1.00	cv
500 PPM ICS	855.20	ug/L		1.52	cv
CAL BLK	1.85	ug/L		41.95	cv
500 PPB	503.90	ug/L		1.37	cv

Mn_VHG

blank	2.56	intensity		397.35	cv
standard	8025.00	intensity		0.15	cv
500 PPB	536.35	ug/L		0.75	cv
ICAP-19	972.25	ug/L		0.91	cv
500 PPM ICS	892.45	ug/L		0.06	cv
10000 PPB	10225.00	ug/L		1.61	cv
CAL BLK	0.67	ug/L		186.58	cv
JOB#4767 B-24	1.31	ug/L	<15.0	61.98	cv window edge
394.0401	1639.50	~~ug/L~~	318 mg/Kg	0.72	cv
395.0401	1180.00	~~ug/L~~	231	0.49	cv
395.0401 S	1683.00	ug/L	-100% rec	0.25	cv
396.0401	703.05	~~ug/L~~	134	1.52	cv
397.0401	261.15	~~ug/L~~	52.2	0.73	cv
398.0401	1646.50	~~ug/L~~	320	1.94	cv
CAL BLK	1.77	ug/L		35.49	cv
500 PPB	533.40	ug/L		0.13	cv
399.0401	982.10	~~ug/L~~	191	0.05	cv
399.0401 R	478.20	~~ug/L~~	94.7	0.61	cv
400.0401	364.85	~~ug/L~~	73.6	0.25	cv
CAL BLK	0.35	ug/L		248.50	cv
500 PPB	538.90	ug/L		0.28	cv
500 PPM ICS	905.50	ug/L		0.69	cv
CAL BLK	1.08	ug/L		65.68	cv
500 PPB	538.50	ug/L		0.05	cv

Fe_VHG

blank	17.17	intensity		354.86	cv
standard	4412.00	intensity		0.58	cv
500 PPB	523.10	ug/L		2.22	cv
ICAP-19	987.70	ug/L		0.37	cv
500 PPM ICS	237000.0	ug/L		0.05	cv
10000 PPB	10127.00	ug/L		1.86	cv
CAL BLK	0.86	ug/L		450.96	cv
JOB#4767 B-24	12.81	ug/L	<100	63.17	cv
394.0401	~~100450.0~~	ug/L		0.34	cv
395.0401	~~55985.00~~	ug/L		0.24	cv
395.0401 S	~~52510.00~~	ug/L		0.09	cv
396.0401	38305.00	~~ug/L~~	7391 mg/Kg	0.41	cv
397.0401	20605.00	~~ug/L~~	4121	0.35	cv
398.0401	~~71995.00~~	ug/L		0.36	cv
50 PPM	50525.00	ug/L		1.17	cv
CAL BLK	7.30	ug/L		92.80	cv
500 PPB	532.15	ug/L		0.94	cv

393 0401	[illegible]	ug/L		0.42	cv
393 0401 R	[illegible]	ug/L		0.40	cv
400 0401	[illegible]	ug/L	5049mg/kg	0.36	cv
CAL BLK	2.34	ug/L		224.18	cv
500 PPB	533.55	ug/L		1.23	cv
500 PPM ICS	236850.0	ug/L		0.09	cv
CAL BLK	13.32	ug/L		99.60	cv
500 PPB	534.10	ug/L		0.43	cv
394 1/10	9493.50	ug/L	18434	0.32	cv
395 1/10	5383.50	ug/L	10515	0.49	cv
395 S 1/10	5020.00	ug/L		0.46	cv ← Not required
398 1/10	6557.50	ug/L	12733	0.33	cv
399 1/10	5505.50	ug/L	10690	1.21	cv
399 R 1/10	3192.50	ug/L	6332	0.39	cv
CAL BLK	1.41	ug/L		488.64	cv
500 PPB	535.35	ug/L		0.17	cv
500 PPM ICS	236700.0	ug/L		0.05	cv
CAL BLK	24.58	ug/L		29.26	cv
500 PPB	539.15	ug/L		1.12	cv

Cr_VHG

blank	134.62	intensity		120.79	cv	
standard	6177.00	intensity		0.74	cv	
500 PPB	519.90	ug/L		0.81	cv	
ICAP-19	1000.70	ug/L		0.21	cv	
500 PPM ICS	905.20	ug/L		1.90	cv	
10000 PPB	10460.00	ug/L		1.05	cv	
CAL BLK	-18.80	ug/L		-12.20	cv	
J0844767 B-24	-12.59	ug/L	<10.0	-3.79	cv	
B-24	-21.69	ug/L		-10.12	cv	window edge
394 0401	93.93	ug/L	18.2mg/kg	5.12	cv	
395 0401	36.96	ug/L	7.25	13.55	cv	
395 0401 S	232.50	ug/L	48% rec	1.23	cv	
396 0401	25.10	ug/L	4.98	18.25	cv	
397 0401	-4.56	ug/L	<3.00	-283.3	cv	
398 0401	51.35	ug/L	9.97	13.36	cv	
CAL BLK	-14.24	ug/L		-17.72	cv	
500 PPB	534.50	ug/L		0.66	cv	
399 0401	73.14	ug/L	14.2	1.63	cv	
399 0401 R	42.36	ug/L	8.39	7.19	cv	
400 0401	19.86	ug/L	3.97	31.30	cv	
CAL BLK	-20.79	ug/L		-70.90	cv	
500 PPB	536.45	ug/L		0.54	cv	
500 PPM ICS	929.10	ug/L		0.20	cv	
CAL BLK	-11.98	ug/L		-28.01	cv	
500 PPB	538.30	ug/L		0.95	cv	

Be_VHG

blank	1.84	intensity		4.06	cv	window edge
standard	5514.50	intensity		0.24	cv	
500 PPB	527.35	ug/L		0.48	cv	
ICAP-19	935.70	ug/L		0.62	cv	
500 PPM ICS	911.25	ug/L		0.50	cv	
10000 PPB	10115.00	ug/L		1.47	cv	
CAL BLK	0.22	ug/L		420.54	cv	
J0884767 B-24	0.14	ug/L	<5.00	114.11	cv	window edge
394 0401	1.80	ug/L	<1.04mg/kg	2.13	cv	window edge
395 0401	1.83	ug/L		14.51	cv	
395 0401 S	49.50	ug/L	99% rec	0.55	cv	

396.0401	1.05	ug/L <1.00 mg/kg	31	cv	
397.0401	0.34	ug/L	31.02	cv	
398.0401	3.58	ug/L	1.45	cv	
CAL BLK	0.39	ug/L	50.01	cv	
500 PPB	533.35	ug/L	0.44	cv	
399.0401	0.70	ug/L	28.82	cv	
399.0401 R	0.78	ug/L	16.37	cv	
400.0401	0.40	ug/L	8.46	cv	
CAL BLK	-0.25	ug/L	-85.10	cv	window edge
500 PPB	533.95	ug/L	0.27	cv	
500 PPM ICS	926.50	ug/L	0.95	cv	
CAL BLK	0.26	ug/L	83.92	cv	
500 PPB	535.55	ug/L	0.73	cv	

Cu_VHG

blank	89.40	intensity	75.58	cv	window edge
standard	14585.00	intensity	0.03	cv	
500 PPB	526.20	ug/L	1.11	cv	
ICAP-19	975.55	ug/L	1.07	cv	
500 PPM ICS	914.55	ug/L	1.20	cv	
10000 PPB	10245.00	ug/L	0.99	cv	
CAL BLK	-0.36	ug/L	-1694.	cv	
JOB#4767 B-24	-5.48	ug/L <25.0	-9.14	cv	
394.0401	165.45	~~ug/L~~ 52.1 mg/kg	.39	cv	
395.0401	60.67	~~ug/L~~ 11.9	2.76	cv	
395.0401 S	296.30	ug/L 94% rec	1.16	cv	
396.0401	21.94	ug/L <5.00	3.52	cv	
397.0401	0.02	ug/L	53906.	cv	
398.0401	122.85	~~ug/L~~ 23.9	0.37	cv	
CAL BLK	-0.53	ug/L	-2658.	cv	window edge
500 PPB	534.40	ug/L	0.48	cv	
399.0401	116.05	~~ug/L~~ 22.5	8.74	cv	
399.0401 R	64.16	~~ug/L~~ 12.7	2.43	cv	
400.0401	33.08	~~ug/L~~ 6.62	31.89	cv	
CAL BLK	3.57	ug/L	3.48	cv	
500 PPB	531.55	ug/L	0.30	cv	
500 PPM ICS	928.85	ug/L	1.42	cv	
CAL BLK	2.94	ug/L	57.16	cv	
500 PPB	529.95	ug/L	0.81	cv	

Ag_VHG

blank	247.55	intensity	0.27	cv	
standard	17800.00	intensity	0.42	cv	
500 PPB	531.70	ug/L	5.24	cv	
EPA 283#2 1/50	115.25	ug/L	3.54	cv	
500 PPM ICS	1078.00	ug/L	0.01	cv	
CAL BLK	-0.78	ug/L	-1183.	cv	
JOB#4767 B-24	-14.00	ug/L <10.0	-60.19	cv	window edge
B-24	-3.37	ug/L	-17.59	cv	
394.0401	3.57	ug/L <2.00 mg/kg	2.12	cv	
395.0401	-0.80	ug/L	-1133.	cv	
395.0401 S	99.81	ug/L 80% rec	12.46	cv	
396.0401	-6.67	ug/L <2.00	-27.72	cv	window edge
397.0401	-12.65	ug/L	-14.35	cv	window edge
398.0401	4.25	ug/L	190.37	cv	
CAL BLK	-1.64	ug/L	-596.4	cv	window edge
500 PPB	549.80	ug/L	3.17	cv	
399.0401	-7.02	ug/L	-250.2	cv	window edge
397.0401 R	3.44	ug/L	122.58	cv	

400.0401	-3.56	ug/L	<2.00 mg/Kg	36.6 cv	window edge
CAL BLK	1.10	ug/L		1119.7 cv	
500 PPB	539.45	ug/L		0.38 cv	
500 PPM ICS	1102.50	ug/L		2.52 cv	
CAL BLK	-1.63	ug/L		-278.0 cv	window edge
500 PPB	552.15	ug/L		1.47 cv	

Al_VHG

blank	111.85	intensity		770.85 cv	window edge
standard	31495.00	intensity		1.67 cv	
standard	22790.00	intensity		1.44 cv	
500 PPB	505.85	ug/L		9.41 cv	
ICAP-7	956.80	ug/L		1.05 cv	
500 PPM ICS	38110.00	ug/L		0.60 cv	
10000 PPB	10085.00	ug/L		1.06 cv	
CAL BLK	19.95	ug/L		73.93 cv	
J0044767 B-04	12.79	ug/L	<200	320.17 cv	
394 0401	~~32270.00~~	ug/L		0.36 cv	
395.0401	~~32005.00~~	ug/L		0.66 cv	
395 0401 S	~~33579.00~~	ug/L		0.37 cv	
396 0401	~~25165.00~~	ug/L		0.19 cv	
397 0401	8680.50	~~ug/L~~	1736 mg/Kg	2.12 cv	
398 0401	~~42795.00~~	ug/L		0.18 cv	
50 PPM	42160.00	ug/L		0.00 cv	
CAL BLK	32.65	ug/L		14.93 cv	
500 PPB	484.15	ug/L		4.76 cv	
399.0401	~~30740.00~~	ug/L		0.14 cv	
399.0401 R	~~28410.00~~	ug/L		0.32 cv	
400 0401	~~19315.00~~	ug/L		0.48 cv	
CAL BLK	-25.62	ug/L		-159.6 cv	window edge
500 PPB	488.55	ug/L		0.51 cv	
500 PPM ICS	38285.00	ug/L		0.36 cv	
CAL BLK	-37.45	ug/L		-140.6 cv	
500 PPB	528.30	ug/L		4.22 cv	
394 1/10	3833.00	~~ug/L~~	7443	0.08 cv	
395. 1/10	3730.50	~~ug/L~~	7324	1.28 cv	
395 S 1/10	3504.00	ug/L		1.60 cv	← not required
396. 1/10	7364.00	~~ug/L~~	14027	0.60 cv	
398. 1/10	5175.50	~~ug/L~~	10049	0.45 cv	
399. 1/10	2117.50	~~ug/L~~	4192	0.48 cv	
399.R 1/10	2099.00	~~ug/L~~	4156	1.22 cv	
400. 1/10	1333.50	~~ug/L~~	2667	6.51 cv	
CAL BLK	16.38	ug/L		89.03 cv	window edge
500 PPB	529.30	ug/L		2.01 cv	
500 PPM ICS	37890.00	ug/L		0.57 cv	
CAL BLK	63.81	ug/L		41.36 cv	
500 PPB	539.05	ug/L		2.50 cv	

Ba_VHG

blank	7.76	intensity		174.18 cv	window edge
standard	3957.00	intensity		0.23 cv	
500 PPB	527.05	ug/L		0.44 cv	
ICAP-7	967.85	ug/L		0.30 cv	
500 PPM ICS	940.15	ug/L		0.19 cv	
10000 PPB	10100.00	ug/L		0.45 cv	
CAL BLK	0.58	ug/L		62.45 cv	
J0044767 B-04	0.77	ug/L	<200	18.26 cv	
394.0401	855.00	~~ug/L~~	166 mg/Kg	2.66 cv	
397.0401	818.10	~~ug/L~~	160	2.05 cv	

395.0401 S	2635.00	ug/L	91 boxes	0.28	cv	
396.0401	160.35	~~ug/L~~	626 mg/Kg	0.54	cv	
397.0401	202.95	~~ug/L~~	40.6	0.06	cv	
398.0401	1444.00	~~ug/L~~	280	0.58	cv	
CAL BLK	0.79	ug/L		74.54	cv	
500 PPB	540.30	ug/L		0.34	cv	
399.0401	~~205500.0~~	ug/L		0.24	cv	
399.0401 R	~~105950.0~~	ug/L		1.19	cv	
400.0401	~~62185.00~~	ug/L		1.45	cv	
CAL BLK	-0.72	ug/L		-235.5	cv	window edge
500 PPB	542.40	ug/L		0.55	cv	
500 PPM ICS	975.70	ug/L		0.13	cv	
CAL BLK	-0.82	ug/L		-58.29	cv	
500 PPB	544.15	ug/L		0.22	cv	
399. 1/10	~~15000.0~~	ug/L		4.44	cv	
399. 0.1/10	1369.00	~~ug/L~~	36291	0.15	cv	
399 R 1/10	9309.50	~~ug/L~~	18435	0.45	cv	
400. 1/10	6157.00	~~ug/L~~	12314	0.19	cv	
CAL BLK	-1.05	ug/L		-106.8	cv	window edge
500 PPB	545.15	ug/L		0.11	cv	
500 PPM ICS	945.15	ug/L		1.24	cv	
CAL BLK	-0.45	ug/L		-371.3	cv	window edge
500 PPB	546.30	ug/L		0.57	cv	

Dead Creek

Job #4767
Zn-Redyed

87/02/11
11:08

Result Name: 8702111000

blank	399.0401X	750.0101X
standard	399.0401X R	750.0101X S
500 PPB	400.0401X	751.0101X
ICAP-12	500 PPM ICS	CAL BLK
500 PPM ICS	CAL BLK	500 PPB
10000 PPB	500 PPB	500 PPB
CAL BLK	658.0101X	
JOB#4767 B-70	731.0401X	
394.0101X	731.0401X R	
395.0401X	731.0401X S	
395.0401X S	JOB#4834 B-68	
396.0401X	748.0101X	
397.0401X	748.0101X R	
398.0401X	749.0101X	

Command?

Tn_VHG

blank	24.06	intensity		14.27	cv	
standard	11035.00	intensity		0.79	cv	
500 PPB	519.30	ug/L		0.86	cv	
ICAP-19	973.35	ug/L		0.40	cv	
500 PPM ICS	904.10	ug/L		0.20	cv	
10000 PPB	10430.00	ug/L		0.12	cv	
CAL BLK	-0.67	ug/L		-145.5	cv	
JOB44767 B-70	4.96	ug/L	<20.0	18.15	cv	
394.0101X	1002.80	~~ug/L~~	201 mg/kg	1.58	cv	
395.0401X	484.50	~~ug/L~~	77.0	0.53	cv	
395.0401X S	716.00	ug/L	66% rec	1.16	cv	
396.0401X	107.05	~~ug/L~~	20.4	0.58	cv	
397.0401X	82.47	~~ug/L~~	16.5	1.00	cv	
398.0401X	652.45	~~ug/L~~	130	1.01	cv	
399.0401X	475.85	~~ug/L~~	90.6	0.96	cv	
399.0401X R	433.95	~~ug/L~~	85.1	0.90	cv	
400.0401X	160.85	~~ug/L~~	30.4	0.50	cv	
500 PPM ICS	926.10	ug/L		0.37	cv	
CAL BLK	-2.90	ug/L		-95.21	cv	window edge
500 PPB	546.80	ug/L		0.83	cv	

Read Check

Job #4819

Ag, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Sb, V, Zn

87/02/[illegible]

16 [illegible]

Result Name: 8702090[illegible]

blank	JOB#4767 B-24	400.0401	500 PPB
standard	B-24	JOB#4819 B-39	500 PPB
standard	394.0401	643.0401	394. 1/10
standard	395.0401	643.0401 R	395. 1/10
standard	395.0401 S	643.0401 S	395.S 1/10
500 PPB	396.0401	CAL BLK	396. 1/10
500 PPB	397.0401	500 PPB	398. 1/10
ICAP-19	398.0401	500 PPB	399. 1/10
ICAP 19	50 PPM	JOB#4846 B-52	399. 0.1/10
ICAP-7	CAL BLK	799.0401	399.R 1/10
EPA 283#2 1/50	500 PPB	800.0401	400. 1/10
500 PPM ICS	500 PPB	801.0401	643. 1/10
10000 PPB	399.0401	500 PPM ICS	CAL BLK
CAL BLK	399.0401 R	CAL BLK	500 PPB

other client

other client

Command? — Water spike INADVERTANTLY used instead of soil spike

Sb, Zn, Cu, low spike recoveries

87/02/09

16:42

Result Name. 8702090937

643 R 1/10

643 S 1/10

799 1/10 only client

800 1/10

500 PPM ICS

CAL BLK

500 PPB

Command?

V_VHG

blank	-3.30	intensity	1509.0	cv	window edge
standard	17345.00	intensity	0.90	cv	
500 PPB	530.95	ug/L	4.01	cv	
ICAP-19	980.60	ug/L	2.31	cv	
500 PPM ICS	933.25	ug/L	1.02	cv	
10000 PPB	10605.00	ug/L	3.14	cv	
CAL BLK	1.17	ug/L	106.08	cv	
CAL BLK	5.32	ug/L	259.48	cv	
500 PPB	533.40	ug/L	0.27	cv	
JOB#4819 B-39	8.54	ug/L <50.0	28.76	cv	
643 0401	29.31	~~ug/L~~ 18.4mg/Kg	2.09	cv	
643 0401 R	93.13	~~ug/L~~ 17.2 ⊥	19.96	cv	
643 0401 S	581.80	ug/L -98%rec	0.45	cv	
CAL BLK	9.54	ug/L	51.00	cv	
500 PPB	542.80	ug/L	2.11	cv	
500 PPM ICS	944.05	ug/L	2.70	cv	
CAL BLK	1.02	ug/L	1304.3	cv	window edge
500 PPB	535.60	ug/L	0.71	cv	

Sb_VHG

blank	42.12	intensity	53.54	cv	window edge
standard	1043.00	intensity	6.07	cv	
standard	1044.50	intensity	5.75	cv	
500 PPB	507.10	ug/L	3.35	cv	
~~ICAP-19~~	~~1170.50~~	~~ug/L~~	~~1.27~~	~~cv~~	
ICAP-19	990.10	ug/L	8.62	cv	
500 PPM ICS	819.00	ug/L	3.28	cv	
CAL BLK	27.25	ug/L	119.70	cv	
CAL BLK	21.87	ug/L	28.32	cv	
500 PPB	535.35	ug/L	11.27	cv	
JOB#4819 B-39	23.73	ug/L <60.0	48.59	cv	
643 0401	-23.39	~~ug/L~~ <12.0mg/Kg	90.3	cv	
643 0401 R	-61.17	~~ug/L~~ ⊥	-47.94	cv	window edge
643 0401 S	267.05	ug/L -53%rec	5.37	cv	
CAL BLK	60.71	ug/L	54.16	cv	
500 PPB	497.65	ug/L	5.98	cv	
500 PPM ICS	1031.80	ug/L	4.42	cv	
CAL BLK	34.65	ug/L	106.68	cv	
500 PPB	476.65	ug/L	19.27	cv	

Zn_VHG

blank	41.23	intensity	68.04	cv	
standard	10765.00	intensity	2.57	cv	
standard	10675.00	intensity	1.10	cv	
500 PPB	548.25	ug/L	1.61	cv	
ICAP-19	1028.00	ug/L	1.94	cv	
500 PPM ICS	964.35	ug/L	1.86	cv	
10000 PPB	10555.00	ug/L	2.99	cv	
CAL BLK	-0.42	ug/L	-269.8	cv	
CAL BLK	-0.85	ug/L	-12.55	cv	window edge
500 PPB	549.45	ug/L	0.16	cv	
JOB#4819 B-39	3.58	ug/L <20.0	116.39	cv	
643 0401	1791.50	~~ug/L~~ 332mg/Kg	0.43	cv	
643 0401 R	2377.50	~~ug/L~~ 436 ⊥	0.38	cv	
643 0401 S	1337.00	ug/L -73%rec	1.82	cv	
CAL BLK	-0.89	ug/L	-67.00	cv	
500 PPB	541.30	ug/L	0.62	cv	

500 PPM ICS	877.20	ug/L	1.44	cv	
CAL BLK	-3.58	ug/L	-22.74	cv	
500 PPB	545.55	ug/L	0.45	cv	

Cu_VHC

blank	-2.17	intensity	-1118.	cv	window edge
standard	6258.50	intensity	0.45	cv	
500 PPB	533.95	ug/L	3.11	cv	
ICAP-19	919.35	ug/L	1.44	cv	
500 PPM ICS	879.15	ug/L	0.35	cv	
10000 PPB	10166.50	ug/L	2.52	cv	
CAL BLK	1.36	ug/L	88.43	cv	
CAL BLK	0.88	ug/L	230.48	cv	
500 PPB	545.60	ug/L	0.40	cv	
JOB#4819 B-39	-1.48	ug/L <5.00	-50.59	cv	
643.0401	15.48	~~ug/L~~ 2.90 mg/Kg	1.29	cv	
643.0401 R	20.05	~~ug/L~~ 3.66 ⊥	0.18	cv	
643.0401 S	61.51	ug/L -92% rec	1.42	cv	
CAL BLK	1.03	ug/L	241.09	cv	
500 PPB	532.40	ug/L	0.05	cv	
500 PPM ICS	887.95	ug/L	0.59	cv	
CAL BLK	1.31	ug/L	179.22	cv	window edge
500 PPB	542.75	ug/L	0.20	cv	

Co_VHC

blank	-7.01	intensity	-492.7	cv	window edge
standard	2463.00	intensity	0.52	cv	
500 PPB	529.60	ug/L	2.46	cv	
ICAP-19	981.15	ug/L	1.25	cv	
500 PPM ICS	873.90	ug/L	1.46	cv	
10000 PPB	10107.00	ug/L	1.61	cv	
CAL BLK	7.48	ug/L	66.76	cv	window edge
CAL BLK	5.42	ug/L	69.81	cv	
500 PPB	536.45	ug/L	0.28	cv	
JOB#4819 B-39	-5.99	ug/L <50.0	-102.4	cv	
643.0401	32.53	ug/L <10.0 mg/Kg	8.41	cv	
643.0401 R	18.95	ug/L ⊥	0.45	cv	
643.0401 S	513.35	ug/L -103% rec	1.39	cv	
CAL BLK	0.72	ug/L	395.83	cv	
500 PPB	530.20	ug/L	2.62	cv	
500 PPM ICS	875.55	ug/L	0.19	cv	
CAL BLK	8.09	ug/L	53.13	cv	
500 PPB	531.70	ug/L	2.67	cv	

Ni_VHC

blank	45.80	intensity	87.02	cv	
standard	6291.50	intensity	0.56	cv	
500 PPB	513.00	ug/L	1.46	cv	
ICAP-19	982.15	ug/L	0.07	cv	
500 PPM ICS	837.50	ug/L	0.46	cv	
10000 PPB	10094.00	ug/L	1.51	cv	
CAL BLK	1.36	ug/L	36.75	cv	
CAL BLK	8.56	ug/L	61.22	cv	
500 PPB	524.05	ug/L	0.95	cv	
JOB#4819 B-39	-1.89	ug/L <40.0	-73.83	cv	
643.0401	7.73	~~ug/L~~ 11.2 mg/Kg	1.15	cv	
643.0401 R	8.12	~~ug/L~~ 15.6 ⊥	1.59	cv	
643.0401 S	550.90	ug/L -95% rec	0.72	cv	
CAL BLK	4.38	ug/L	268.10	cv	

500 PPB	519.20	ug/L	1.00	cv	
100 PPM ICS	855.20	ug/L	1.52	cv	
CAL BLK	1.85	ug/L	41.95	cv	
500 PPB	503.90	ug/L	1.37	cv	

Mn_VHG

blank	2.56	intensity	397.35	cv	
standard	8027.00	intensity	0.15	cv	
500 PPB	536.35	ug/L	0.75	cv	
ICAP-19	972.25	ug/L	0.91	cv	
500 PPM ICS	892.45	ug/L	0.06	cv	
10000 PPB	10225.00	ug/L	1.61	cv	
CAL BLK	0.67	ug/L	186.58	cv	
CAL BLK	1.77	ug/L	35.49	cv	
500 PPB	533.40	ug/L	0.13	cv	
JOB#4819 B-39	1.17	ug/L <15.0	16.73	cv	window edge
643.0401	2159.00	~~ug/L~~ 400mg/Kg	0.21	cv	
643.0401_R	1350.00	~~ug/L~~ 303 ±	0.26	cv	
643.0401_S	2355.50	ug/L 98%rec	0.61	cv	
CAL BLK	0.35	ug/L	248.50	cv	
500 PPB	538.90	ug/L	0.28	cv	
500 PPM ICS	905.50	ug/L	0.69	cv	
CAL BLK	1.08	ug/L	65.68	cv	
500 PPB	538.50	ug/L	0.05	cv	

Fe_VHG

blank	17.17	intensity	354.86	cv	
standard	4412.00	intensity	0.58	cv	
500 PPB	533.10	ug/L	2.22	cv	
ICAP-19	987.70	ug/L	0.37	cv	
500 PPM ICS	237000.0	ug/L	0.05	cv	
10000 PPB	10127.00	ug/L	1.86	cv	
CAL BLK	0.86	ug/L	450.96	cv	
50 PPM	50525.00	ug/L	1.17	cv	
CAL BLK	7.30	ug/L	92.80	cv	
500 PPB	532.15	ug/L	0.94	cv	
JOB#4819 B-39	3.79	ug/L <100	112.90	cv	
643.0401	~~73520.00~~	ug/L	0.26	cv	
643.0401 R	~~75135.00~~	ug/L	1.02	cv	
643.0401 S	~~74370.00~~	ug/L	0.33	cv	
CAL BLK	2.34	ug/L	224.18	cv	
500 PPB	535.65	ug/L	1.23	cv	
500 PPM ICS	236850.0	ug/L	0.09	cv	
CAL BLK	13.32	ug/L	90.60	cv	
500 PPB	534.10	ug/L	0.43	cv	
643. 1/10	7123.50	~~ug/L~~ 13190mg/Kg	0.65	cv	
CAL BLK	1.41	ug/L	488.64	cv	
500 PPB	535.35	ug/L	0.17	cv	
643.R 1/10	5623.50	~~ug/L~~ 10153 ±	0.03	cv	
643 S 1/10	6806.50	ug/L	0.07	cv	— Not Req'd
500 PPM ICS	236700.0	ug/L	0.05	cv	
CAL BLK	24.58	ug/L	29.26	cv	
500 PPB	539.15	ug/L	1.12	cv	

C _VHG

blank	134.62	intensity	120.79	cv	
standard	6177.00	intensity	0.74	cv	
500 PPB	519.90	ug/L	0.81	cv	
ICAP-19	1000.70	ug/L	0.21	cv	

500 PPM ICS	905.20	ug/L	1.90	cv	
10000 PPB	10460.00	ug/L	1.05	cv	
CAL BLK	-18.80	ug/L	-12.30	cv	
CAL BLK	-14.24	ug/L	-17.72	cv	
500 PPB	534.50	ug/L	0.66	cv	
JOB#4819 B-39	-9.58	ug/L <10.0	-51.47	cv	
643 0401	53.79	ug/L 9.96 mg/Kg	4.22	cv	
643 0401 R	51.99	ug/L 9.54 ⊥	16.63	cv	
643.0401 S	255.90	ug/L -102% rec	0.82	cv	
CAL BLK	-20.79	ug/L	-70.90	cv	
500 PPB	536.45	ug/L	0.54	cv	
500 PPM ICS	929.10	ug/L	0.20	cv	
CAL BLK	-11.98	ug/L	-28.01	cv	
500 PPB	538.30	ug/L	0.95	cv	

Be_VHG

blank	1.84	intensity	4.06	cv	window edge
standard	5514.50	intensity	0.24	cv	
500 PPB	527.35	ug/L	0.48	cv	
ICAP-19	935.70	ug/L	0.62	cv	
500 PPM ICS	911.25	ug/L	0.50	cv	
10000 PPB	10115.00	ug/L	1.47	cv	
CAL BLK	0.22	ug/L	420.54	cv	
CAL BLK	0.69	ug/L	50.01	cv	
500 PPB	533.35	ug/L	0.44	cv	
JOB#4819 B-39	0.34	ug/L <5.00	82.83	cv	
643 0401	2.18	~~ug/L~~ <1.02 mg/Kg	2.36	cv	
643 0401 R	1.95	~~ug/L~~ ⊥	2.47	cv	
643.0401 S	52.60	ug/L -105% rec	1.79	cv	
CAL BLK	-0.25	ug/L	-85.10	cv	window edge
500 PPB	533.95	ug/L	0.27	cv	
500 PPM ICS	926.50	ug/L	0.95	cv	
CAL BLK	0.26	ug/L	83.92	cv	
500 PPB	535.55	ug/L	0.73	cv	

Cu_VHG

blank	89.40	intensity	75.58	cv	window edge
standard	14565.00	intensity	0.03	cv	
500 PPB	526.20	ug/L	1.11	cv	
ICAP-19	975.55	ug/L	1.07	cv	
500 PPM ICS	914.55	ug/L	1.20	cv	
10000 PPB	10245.00	ug/L	0.99	cv	
CAL BLK	-0.36	ug/L	-1694.	cv	
CAL BLK	-0.53	ug/L	-2658.	cv	window edge
500 PPB	534.40	ug/L	0.48	cv	
JOB#4819 B-39	3.58	ug/L <25.0	40.94	cv	
643 0401	459.10	~~ug/L~~ 85.0 mg/Kg	0.11	cv	
643.0401 R	575.60	~~ug/L~~ 106 ⊥	0.32	cv	
643.0401 S	561.80	ug/L -41% rec	1.59	cv	
CAL BLK	3.57	ug/L	8.48	cv	
500 PPB	531.55	ug/L	0.30	cv	
500 PPM ICS	928.85	ug/L	1.42	cv	
CAL BLK	2.94	ug/L	57.16	cv	
500 PPB	529.95	ug/L	0.81	cv	

Ag_VHG

blank	247.50	intensity	0.27	cv
standard	17800.00	intensity	0.42	cv
500 PPB	531.70	ug/L	5.24	cv

EPA 233#2 1/50	115.25	ug/L	3.54	cv	
500 PPM ICS	1078.00	ug/L	0.01	cv	
CAL BLK	-0.78	ug/L	-1183.	cv	
CAL BLK	-1.64	ug/L	-596.4	cv	window edge
500 PPB	549.80	ug/L	3.17	cv	
JOB#4819 B-39	-3.82	ug/L <10.0	-301.6	cv	window edge
643.0401	-19.03	ug/L <2.0 mg/kg	4.02	cv	
643.0401 R	-6.64	ug/L ⊥	-75.49	cv	window edge
643.0401 S	44.07	ug/L -88% rec	24.99	cv	
CAL BLK	1.10	ug/L	1119.7	cv	
500 PPB	539.45	ug/L	0.38	cv	
500 PPM ICS	1102.50	ug/L	2.52	cv	
CAL BLK	-1.63	ug/L	-278.0	cv	window edge
500 PPB	552.15	ug/L	1.47	cv	

Al_VHG

blank	111.85	intensity	770.85	cv	window edge
standard	21495.00	intensity	1.67	cv	
standard	22790.00	intensity	1.44	cv	
500 PPB	505.85	ug/L	9.41	cv	
ICAP-7	956.80	ug/L	1.05	cv	
500 PPM ICS	38110.00	ug/L	0.60	cv	
10000 PPB	10085.00	ug/L	1.06	cv	
CAL BLK	19.95	ug/L	73.93	cv	
50 PPM	42160.00	ug/L	0.00	cv	
CAL BLK	32.65	ug/L	14.93	cv	
500 PPB	484.15	ug/L	4.76	cv	
JOB#4819 B-39	-13.01	ug/L <200	-418.2	cv	window edge
643.0401	~~37660.00~~	ug/L	0.35	cv	
643.0401 R	~~38125.00~~	ug/L	0.02	cv	
643.0401 S	~~38385.00~~	ug/L	0.58	cv	
CAL BLK	-25.62	ug/L	-159.6	cv	window edge
500 PPB	488.55	ug/L	0.51	cv	
500 PPM ICS	38285.00	ug/L	0.36	cv	
CAL BLK	-37.45	ug/L	-140.6	cv	
500 PPB	528.30	ug/L	4.22	cv	
643. 1/10	3592.50	ug/L 6653 mg/kg	0.01	cv	
CAL BLK	16.38	ug/L	89.03	cv	window edge
500 PPB	529.30	ug/L	2.01	cv	
643.R 1/10	3276.50	ug/L 6012 ⊥	0.05	cv	
643.S 1/10	3468.50	ug/L	0.26	cv	-NR
500 PPM ICS	37890.00	ug/L	0.57	cv	
CAL BLK	63.81	ug/L	41.36	cv	
500 PPB	539.05	ug/L	2.50	cv	

Ba_VHG

blank	7.76	intensity	174.18	cv	window edge
standard	3957.00	intensity	0.23	cv	
500 PPB	527.05	ug/L	0.44	cv	
ICAP-7	967.85	ug/L	0.30	cv	
500 PPM ICS	940.15	ug/L	0.19	cv	
10000 PPB	10100.00	ug/L	0.45	cv	
CAL BLK	0.58	ug/L	62.45	cv	
CAL BLK	0.79	ug/L	74.54	cv	
500 PPB	540.30	ug/L	0.34	cv	
JOB#4819 B-39	-0.54	ug/L <200	-329.7	cv	window edge
643.0401	687.60	ug/L 121 mg/kg	0.90	cv	
643.0401 R	635.75	ug/L 128 ⊥	0.36	cv	
643.0401 S	2593.50	ug/L -95% rec	0.52	cv	

CAL BLK	-0.72	ug/L	-235.5	cv	window edge
500 PPB	542.40	ug/L	0.55	cv	
500 PPM ICS	975.70	ug/L	0.13	cv	
CAL BLK	-0.82	ug/L	-58.29	cv	
500 PPB	544.15	ug/L	0.22	cv	
CAL BLK	-1.05	ug/L	-106.8	cv	window edge
500 PPB	545.15	ug/L	0.11	cv	
500 PPM ICS	945.15	ug/L	1.24	cv	
CAL BLK	-0.45	ug/L	-371.3	cv	window edge
500 PPB	546.30	ug/L	0.57	cv	

Page No. __

Performed: As
Rec: 1/23/87
Performed By: J. OLKA

See pg 2

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	20.0ppb Spike	% Rec	DF	Sample Wgt	Units	Dry Wt basis Final Conc.
	WS 378#3				19.8				40.2	102			µg/l	19.3
	Cal Blk				0.1				20.1	101				<10.0
	50.0ppb				51.7				69.4	89			µg/l	51.7
27	0097.0403				25.0	23.0	24.0	5.89	44.5	103		1.02	mg/kg	7.2
	0098.0403				57.3	55.0	57.7	0.36	84.3	/		1.05		/
	0099.0403				48.0	48.8	48.4	1.17	74.3	/		1.02		/
	0099 S_2				79.5	79.8	79.6	0.26	104.9	/		1.03		/
	0100.0403				365.6	368.1	366.9	0.48	454.2	/		1.00		/
	0101.0403				25.0	23.3	24.1	4.92	50.1	/		1.01		/
	0101 K_2				21.5	20.9	21.2	2.00	46.3	/		1.01		/
	0102.0403				121.4	123.3	122.3	1.10	135.9	/		1.00		/
138	0156.0403				2.4	1.9	2.1	16.4	24.9	114		1.05		<1.3
	0156. S_3				34.4	33.8	34.1	1.24	65.3	/		1.00	~~µg/l~~	85% Rec
	Cal Blk				-0.2	-0.2	-0.2	0.00	19.6	98			µg/l	<10.0
	50.0ppb				51.0	49.8	50.4	1.65	73.7	115			µg/l	50.4
	0157.0403				1.6	2.8	2.2	-	24.0	109		1.01	mg/kg	<1.2
	0157. K_3				2.8	3.1	3.0	-	25.2	111		1.02		<1.1
	0158.0403				15.7	16.7	16.2	4.37	37.0	104		1.01	mg/kg	4.2
	Blk. Oil				0.1	0.1	0.1	-	19.6	19.8			µg/l	<10.0
167	0394.0403				35.5	33.3	34.4	4.52	53.1	94		1.04	mg/kg	8.0
	0395.0403				10.5	11.0	10.7	3.29	34.5	118		1.00		/
	0395 S_1				40.5	39.1	39.8	2.49	65.9	/		1.01		/
	0396.0403				8.1	6.2	7.1	18.3	23.5	107		1.02	mg/kg	1.9
	Cal Blk				0.0	0.8	0.4	-	16.8	84			µg/l	<10.0
	50.0ppb				50.9	51.1	51.0	0.28	73.0	110			µg/l	51.0
	0397.0403				9.7	10.4	10.1	4.93	29.2	96		1.00	mg/kg	2.6
	0398.0403				26.9	24.9	25.9	5.46	42.3	85		1.04		6.3
	0399.0403				12.1	10.9	11.5	7.33	23.1	33		1.00		/
	0399. K_1				12.7	12.4	12.6	1.69	31.4	94		1.00		3.3

To Page No. ___

Processed & Understood by me, [signature] Date 1/29/87 Invented by _____ Date 1/23/87

Project No.
Book No. TITLE

4

m f e No.
st Performed: As (Cont'd)
te Received: 1/3/87
ork Performed By: J. Sikk

Dry Wt Basis

Job No.	ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From		ppb Burn1	ppb Burn2	ppb Ave	CV	20.0 ppb Spike	% Rec	DF	Sample Wgt	Units	Final Conc
				In	C										
4767	0400.0403					9.4	8.6	9.0	6.27	29.0	100		1.0	mg/kg	2.2
	BLK.025					0.1	-0.0	0.1	-	18.7	94			ug/L	<100
	Cal BLK					-0.4	-0.4	-0.4	-	17.9	90				<100
	50.0ppb					50.1	50.9	50.5	1.12	66.8	82			ug/L	50.5
	WS378#3					20.3				59.6	97			ug/L	20.3
	Cal BLK					2.3				17.3	87			ug/L	<100
	50.0ppb					53.8				70.3	83			ug/L	53.8
4727	0098.0403					30.5	31.1	30.8	1.38	49.9	96	1→2	1.0	mg/kg	15.0
	0099.0403					23.7	25.2	24.5	4.34	46.2	109	1→2	1.0		12.7
	0099 S_2					39.3	40.3	39.8	1.78	60.4	105	1→2	1.0		20.4
	0100.0403					140.5	137.9	139.2	1.32	161.2	110	1→10	1.0	mg/kg	387
	0101.0403					24.4	23.0	23.7	4.13	40.3	83		1.0		6.0
	0101 R_2					26.3	24.5	25.4	5.01	42.2	84		1.0		6.4
	0102.0403					16.8	16.9	16.9	0.42	36.4	98	→1	1.0		42.
4767	0395.0403					16.7	17.0	16.9	1.26	53.3	82		1.0		4.5
	0395. S_1					48.5	49.3	48.9	1.16	65.6	84		1.0		79%
	0399.0403					11.7	10.1	10.9	10.4	27.4	93		1.0	mg/kg	2.8
	Cal BLK.					-0.4				19.0	95			ug/L	<100
	50.0ppb					51.1				71.6	102			ug/L	51.1
	0101.0403					24.4	23.0	23.7	4.13	59.5				mg/kg	
	0101. R_2					26.3	24.5	25.4	5.01	42.9	88				
	0395.0403					16.7	17.0	16.9	1.26	34.6	99				
	~~Cal BLK~~														
	~~50.0ppb~~									30.0	93	1→2			
	0101.0403					12.4				30.2	87	1→2			
	0101.0403					13.9	11.9	12.9		20.1	101				
	Cal BLK					0.3				72.2	113				
	50.0ppb					49.1									

Page No. 106

Invented by

HGA FORM #1

ELEMENT: As, DATE: 1/~~25~~-22/87

S_1 = 25.0 PPB., S_2 = 50.0 PPB.

S_3 = 100.0 PPB, BOOK NO. 209, pp 3-4.

	01	WS378#3	
	X02	Cal Blank	
	X03	50.00 ppb	
	X04	0097.0403 (4727)	
JOB #:	X05	0098.	
	X06	0099.	
	X07	0099. (S2)	
	X08	0100.	
	X09	0101.	
	X10	0101. (R2)	
	X11	0102.	
	X12	0156.0403 (4738)	
	X13	0156. (S3)	
	X14	Cal Blank	
	X15	50.00 ppb	
	X16	0157.	
	X17	0157. (R3), S_2	
	X18	0158.	
	X19	Rep Blank 011	
	X20	0394.0403 (4767)	
	X21	0395.	
	X22	0395. (S1)	
	X23	0396.	
	X24	Cal Blank	
	X25	50.00 ppb	
	X26	0397.	
	X27	0398.	
	X28	0399.	
	X29	0399. (R1)	
	X30	0400.	
	X31	Rep Blank 025	
	X32	Cal Blank	
	X33	50.00 ppb	
	X34		
	X35	, S_3	

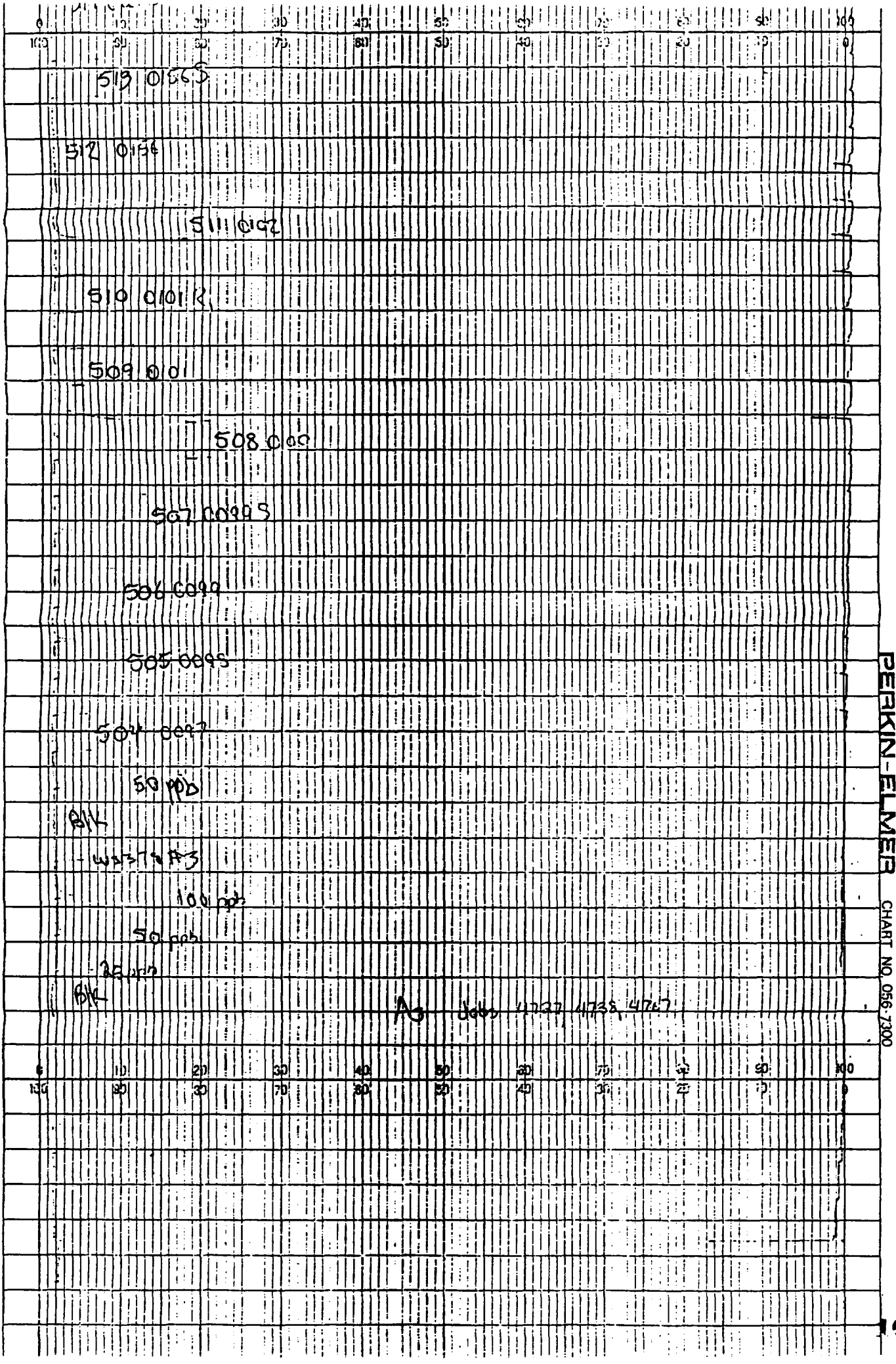
501	40.2	
502	20.1	
503	69.4	
504	43.5	
505	84.3	
506	74.3	
507	104.9	
508	454.2	C
509	50.1	
510	46.3	
511	135.5	C
512	24.9	
513	65.3	
514	19.8	
515	73.9	
516	24.0	
517	25.2	
518	37.0	
519	19.6	
520	53.1	
521	34.3	
522	65.9	
523	29.5	
524	16.8	
525	73.0	
526	29.2	
527	42.8	
528	28.1	
529	31.4	
530	29.0	
531	19.7	
532	17.9	
533	66.8	

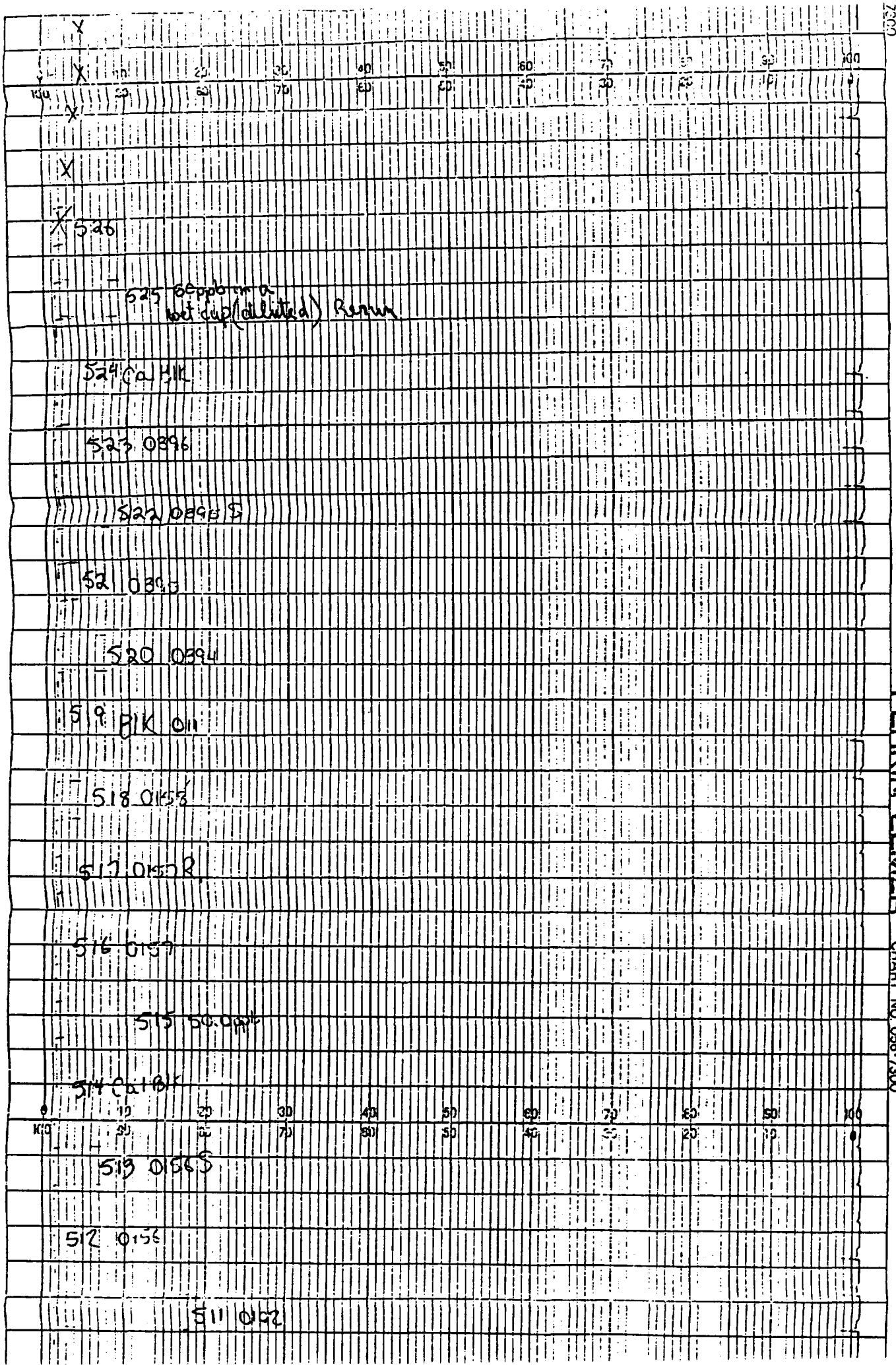
	0.029	
	0.100	AV
	0.067	
	25.0	S1
	51.4	
	50.1	S2
	50.5	C
	12	EX
	-0.042	C
	1.38	AV
	0.077	C
	25.0	S1
	44.2	C
	50.0	S2
	122.1	C
	160.0	S3
501	19.8	
502	0.1	
503	51.7	
	25.0	
	23.0	
504	24.0	AV
	5.89	CV
	57.3	
	58.0	
505	57.7	AV
	0.86	CV
	48.0	
	48.8	
506	48.4	AV
	1.17	CV
	79.5	
	79.8	
507	79.6	AV
	0.27	CV
	365.0	C
	368.1	C
508	366.9	AV
	0.48	CV
	25.0	
	23.3	
509	24.1	AV
	4.98	CV
	21.5	
	20.9	
510	21.2	AV
	2.00	CV
	121.4	C
	123.3	C
511	122.3	AV
	1.10	CV
	2.4	
	1.9	
512	2.1	AV
	16.44	CV
	34.4	
	33.8	
513	34.1	AV
	1.24	CV
	-0.2	
	-0.2	
514	-0.2	AV
	0.00	CV
	51.0	
	49.5	

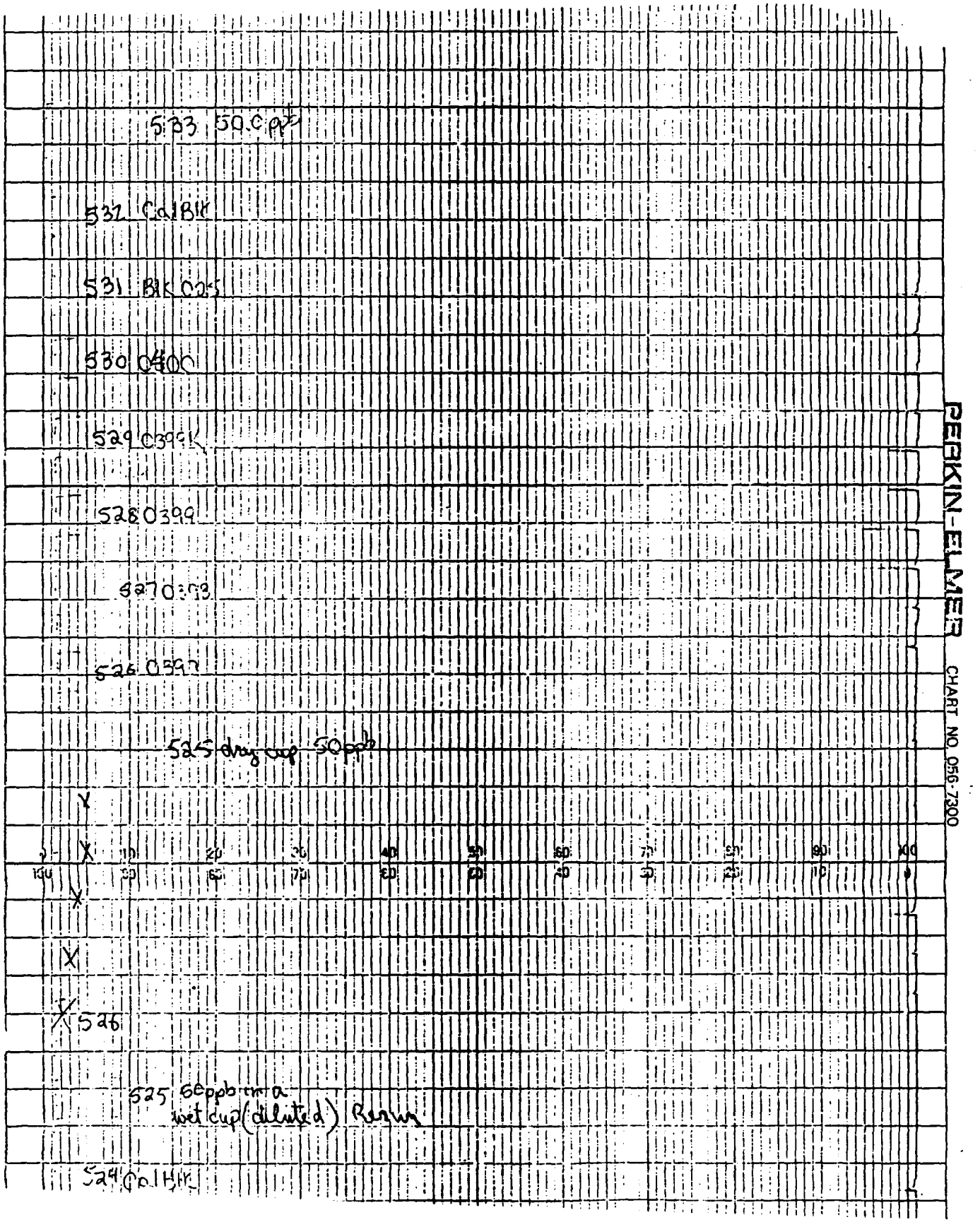
	[illegible]	
	1.68	CV
	1.5	
	2.8	
516	2.2	AV
	39.57	CV
	2.5	
	3.1	
517	3.0	AV
	7.19	CV
	15.7	
	16.7	
518	16.2	AV
	4.37	CV
	0.1	
	0.1	
519	0.1	AV
	0.00	CV
	35.5	
	33.3	
520	34.4	AV
	4.52	CV
	11.5	
	11.0	
521	10.7	AV
	3.29	CV
	40.5	
	39.1	
522	39.8	AV
	2.49	CV
	8.1	
	6.2	
523	7.1	AV
	18.79	CV
	0.0	
	0.8	
524	0.4	AV
	06	EX
	41.6	
	42.2	
~~525~~	42.4	AV
	1.67	CV
	4.2	
	4.3	AV
	1.65	CV
	15.9	
	43.2	
~~525~~	42.7	AV
	61.89	CV
	50.9	
	51.1	
525	51.0	AV
	0.28	CV
	9.7	
	10.4	
526	10.1	AV
	4.93	CV
	25.9	
	24.9	
527	25.9	AV
	5.46	CV
	12.1	
	10.9	
528	11.5	AV
	7.38	CV

50 ppb [illegible] a wet chem not run on amount so SC was diluted

529	12.6	AV
	1.69	CV
	9.4	
	8.6	
530	9.0	AV
	6.29	CV
	0.1	
	-0.0	
531	0.1	AV
	00	EX
	-0.4	
	-0.4	
532	-0.4	AV
	0.00	CV
	50.1	
	50.9	
533	50.5	AV
	1.12	CV


513 0156S
512 0156
511 0102
510 0101R
509 0101
508 0100
507 0099S
506 0099
505 0095
504 0097
50 ppb
Blk
100 ppb
50 ppb
25 ppb
Blk
Ag Jobs 4727, 4738, 4767
PERKIN-ELMER
CHART NO. 056-7300


526
525 60ppb in a wet cup (diluted) Rerun
524 Cal Blk
523 0396
522 0396 S
52 0395
520 0394
519 Blk 011
518 0158
517 0157 R
516 0157
515 50.0ppb
514 Cal Blk
513 0156 S
512 0156
511 0162
PERKIN-ELMER
CHART NO. 056-7300


533 50.0 ppb
532 Cal Blk
531 Blk 0.25
530 0.400
529 0.399
528 0.399
527 0.398
526 0.397
525 dry cup 50ppb
526
525 50ppb in a wet cup (diluted) Rerun
524 Cal Blk
PERKIN-ELMER
CHART NO. 056-7300

533 50.0ppb
532 Cal Blk
531 Blk 025
530 0400
529 0399R
528 0399E
527 0398
526 0397
525 50.0ppb
524 Cal Blk
523 0396
522 0395S
521 0395
520 0394
519 Blk 011
518 0158
517 0157R
516 0157
515 50.0ppb
514 Cal Blk
513 0156S
512 0156
511 0102
510 0101K
509 0101
508 0100
507 0099S
506 0099
505 0098
504 0097
503 50.0ppb
502 Cal Blk
501 WS3 TS#3

As + Spike Jobs 4727, 4733, 4767

PERKIN-ELMER CHART NO. 056-7300
PERKIN-ELMER CHART NO.

HGA FORM #1

ELEMENT: As, DATE: 1/23/87.

S_1 = 25.0 PPB., S_2 = 50.0 PPB.

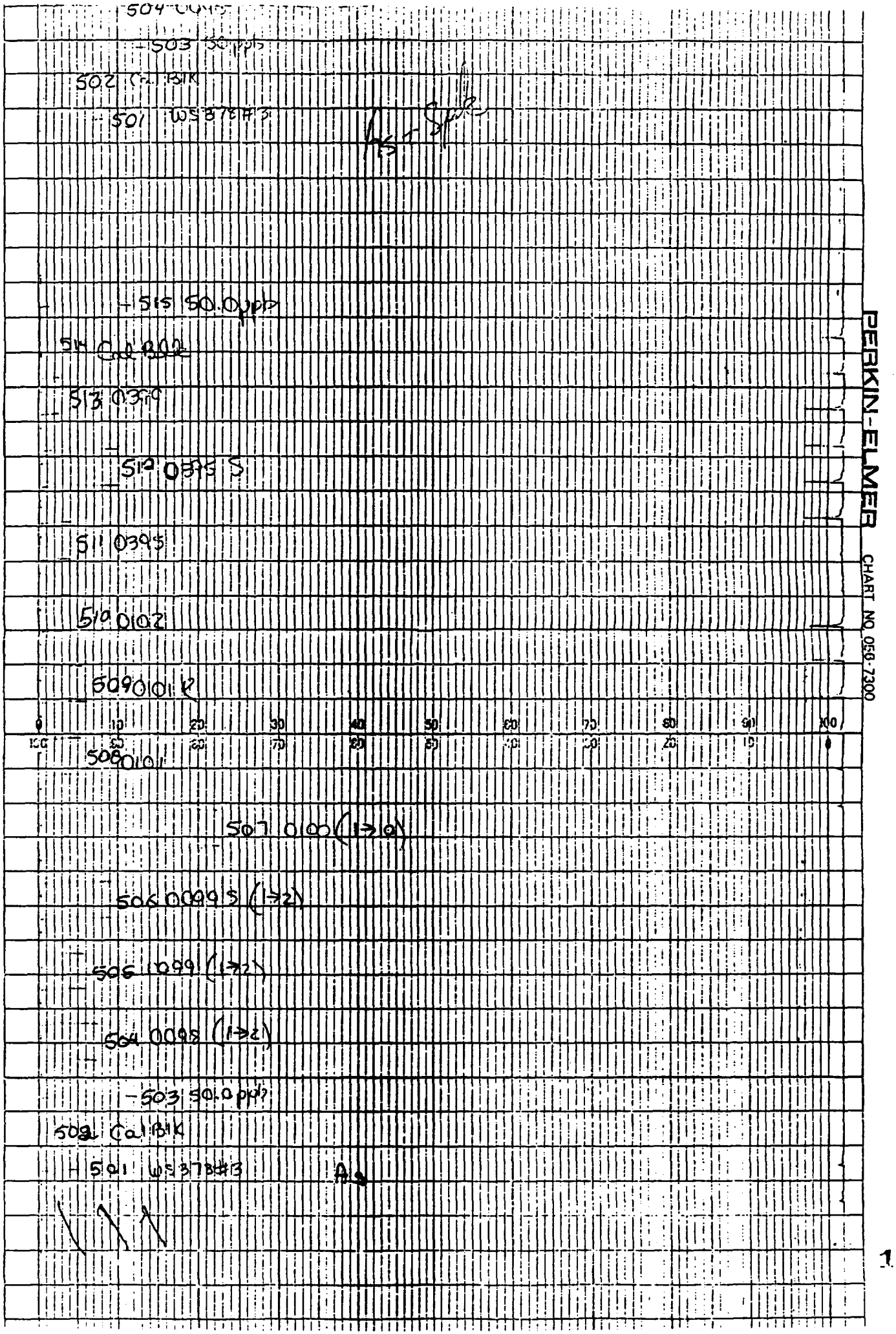
S_3 = 100 PPB, BOOK NO. [illegible].

JOB #:

	S01	WS378#3			
	X02	Cal Blk			
	X03	50.0ppb		501	20.3
	X04	0093.0403 (1→2)		502	2.8
	X05	0099 (1→2)		503	53.8
	X06	0099 S_2 (1→2)			30.5
	X07	0100 (1→10)			31.1
	X08	0101		504	30.8 AV
	X09	0101 R_2			1.39 CV
	X10	0102 (1→10)			23.7
	X11	0395.0403			25.2
	X12	0395. S_1		505	24.5 AV
	X13	0399.0403			4.34 CV
	X14	Cal Blk			39.3
	X15	50.0ppb			40.3
	X16	0101.0403 (1→2)		506	39.8 AV
	X17	0101. R_1 (1→2), S_2			1.78 CV
	X18	Cal Blk			140.5 C
	X19	50.0ppb			137.9 C
	X20			507	139.2 AV
	X21				1.32 CV
	X22				24.4
	X23				23.0
	X24			508	23.7 AV
	X25				4.19 CV
	X26				26.3
	X27				24.5
	X28			509	25.4 AV
	X29				5.01 CV
	X30				16.8
	X31				16.9
	X32			510	16.9 AV
	X33				0.42 CV
	X34				16.7
	X35				17.0
				511	16.9 AV
					1.26 CV
					48.5
					43.3
				512	48.9 AV
					1.16 CV
					11.7
					10.1
				513	10.9 AV
			S_3		10.38 CV
				514	-0.4
				515	51.1

recycled paper

			30.6	
		516	30.0	AV
			2.59	CV
			28.9	
			31.5	
501	39.6	517	30.2	AV
502	17.3		6.09	CV
503	70.3		20.8	
504	49.9		19.4	
505	46.2	518	20.1	AV
506	60.4		4.93	CV
507	101.2	[illegible]	72.2	
508	40.3			
509	42.2			
510	36.4		12.4	
511	33.3	516	40.1	AV
512	65.6		99.96	CV
513	27.4		13.9	
514	19.0		11.9	
515	71.6	517	12.9	AV
516	38.6		10.96	CV
509	42.9			
508	34.0			
508	39.5		0.3	
509	42.6			
		519	49.7	
511	34.6	520	16.3	
	[illegible] 29.5			



504 0095
503 50 ppb
502 Cal Blk
501 WS378#3
As + Spike
515 50.0 ppb
514 Cal Blk
513 0399
512 0395 S
511 0395
510 0102
509 0101 R
508 0101
507 0100 (1→10)
506 0099 S (1→2)
505 0099 (1→2)
504 0098 (1→2)
503 50.0 ppb
502 Cal Blk
501 WS378#3
As
PERKIN-ELMER
CHART NO 056-7300

517 + Spk 0101K

516 + Spk 0101

As + Spk

511 0395

509 0101R

508 0101

508 Bad injection 0101

509 0101R

508 Bad injection 0101

515 50 0ppb

514 Cal Blk

513 0399

512 03955

511 0395

510 0102

509 0101K

508 0101

507 0100

506 00995

505 0099

504 0098

503 50ppb

502 Cal Blk

501 WS 378 #3

As + Spk

PERKIN-ELMER CHART NO. 056-7300

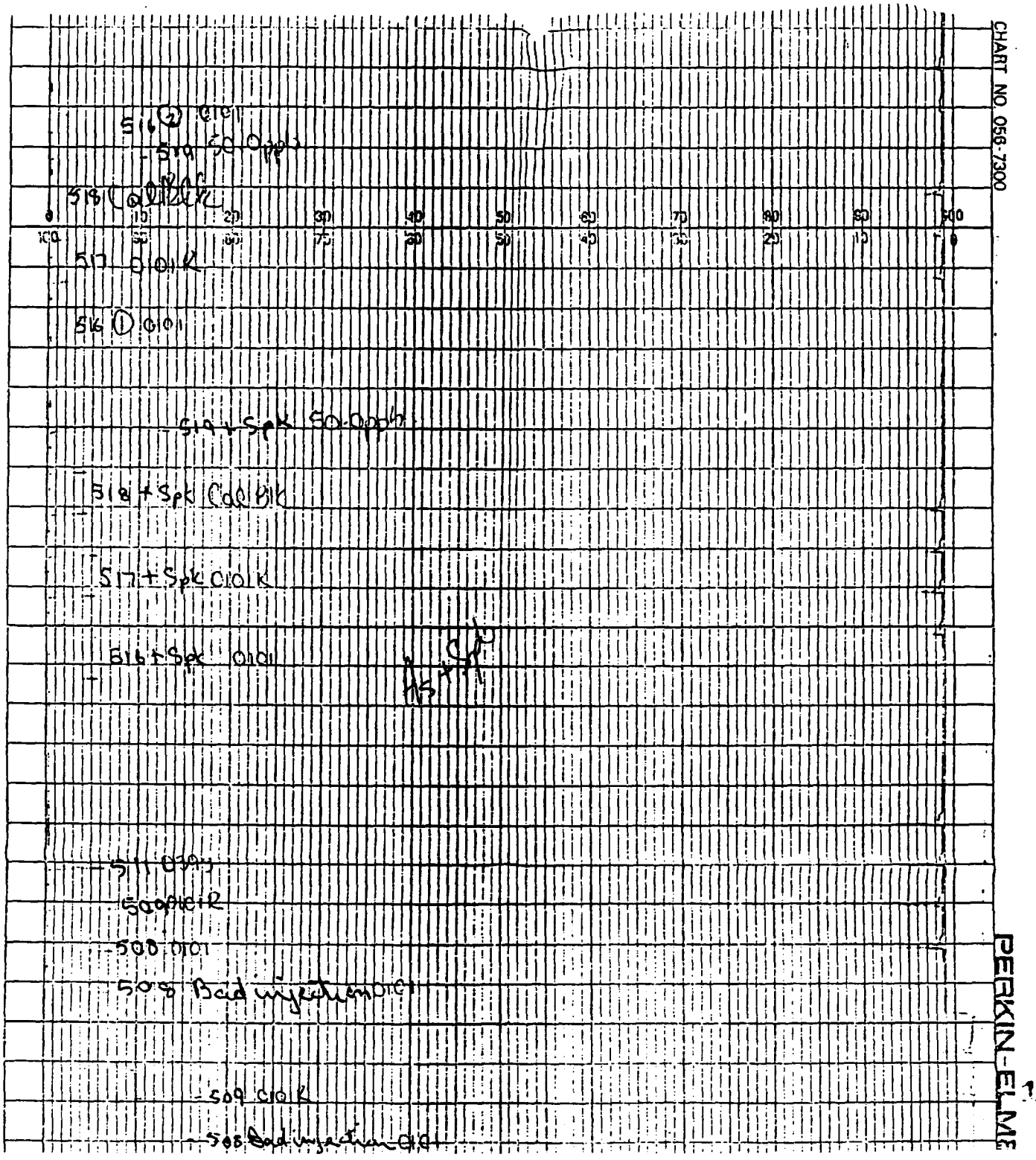


CHART NO. 056-7300
PERKIN-ELMER
516 ② 0101
519 50.0ppb
518 Cal Blk
517 0101 R
516 ① 0101
519 + Spk 50.0ppb
518 + Spk Cal Blk
517 + Spk 0101 R
516 + Spk 0101
511 0393
509 0101 R
508 0101
508 Bad injection 0101
509 0101 R
508 Bad injection 0101

Page No.

t Performed: [illegible]
e Received: [illegible]
rk Performed By: [illegible]

Job No.	ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From N	C	ppb Burn 1	ppb Burn 2	ppb Ave	% C/	20.0 ppb Spike	% Rec	DF	Sample Wgt	Units	Final Conc
	WS 578 #2					20.4				38.1	89			ug/l	20.4
	Cal Blk					1.6				26.8	107.4				<10.0
	50.0 ppb					50.1				71.84	126			ug/l	50.1
319	C643.C403					29.3	30.4	29.9	2.61	45.8	80		1.0	mg/kg	/
	C643.C403 K					23.2	23.3	23.3	0.75	48.9	103		1.00		5.34
	C643.K,S					58.4	59.3	59.1	1.63	73.9	/		1.00	mg/kg	75.81
	Blk 40					1.2	0.8	0.9	—	19.7	99			ug/l	<10.0
335	C752.C403					17.6	18.1	17.6	4.95	35.4	99		1.03	mg/kg	3.26
	C753.C403					25.9	25.8	25.8	0.27	42.9	86		1.00		5.11
	C754.C403					16.2	16.8	16.5	2.57	38.1	103		1.00		3.30
	C754.K					15.9	15.0	15.4	4.12	38.0	113		1.00		[illegible]
	C755.C403					18.3	15.9	17.4	11.3	39.9	11[illegible]		1.03		[illegible]
	C756.C403					21.3	22.6	22.2	2.55	39.6	97		1.00	mg/kg	4.31
	Cal Blk					-0.7	1.0	0.1	—	20.7	104			ug/l	<10.0
	50.0 ppb					49.9	49.6	49.8	0.43	73.5	12[illegible]				[illegible]
	C757.C403					44.1	43.9	44.0	[illegible]	60.1	/		1.00	mg/kg	[illegible]
	C757.S2					76.9	65.6	6[illegible]	5.47	75.6	/		1.00		/
	C758.C403					7.1	6.1	7.0	2.02	27.1	101		1.00	mg/kg	<1.96
	Blk 49					1.2	-0.2	0.5	—	19.5	98			ug/l	<10.0
	Cal Blk					-0.3	0.3	0.3	—	16.7	94			ug/l	<10.0
	50.0 ppb					52.6	53.4	53.0	1.07	73.2	101			ug/l	53.0
346	C799.C403					21.2	19.7	20.7	5.14	38.5	96		1.00	mg/kg	[illegible]
	C800.C403					12.9	12.3	12.6	3.37	33.3	104		1.00		2.45
	C801.C403					6.2	5.3	6.3	11.2	26.4	101		1.00	mg/kg	<2.00
	Blk 53					0.6	0.2	0.4	—	15.5	93			ug/l	<10.0
	Cal Blk					0.5	-1.0	-0.0	—	20.5	103				<10.0
	50.0 ppb					54.2	50.1	52.1	5.56	75.8				ug/l	56.[illegible]
	C643.C403					24.6	22.7	20.7	[illegible]	42.[illegible]	51			/	/

other client

Understood by [illegible]

est Performed: [illegible]
ate Received: [illegible]
ork F rmed By: [illegible]

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From		ppb Burn 1	ppb Burn 2	ppb Avg	CV	20 ppb Spike	% Rec	DF	Sample Wgt	Units	Final Conc
	C757.C403				20.0	[illegible]	[illegible]	[illegible]	46.5	101	1→2	1.01	mg/kg	8.04
	C757.S				34.4	33.3	36.4	7.59	52.0	/	1→2	1.02	⊥	81% RS
	Cal Blk				0.9				21.0	100			ug/L	<10.0
	50 ppb				53.9				72.7	95			⊥	53.9
	C643.C403				15.6	15.8	15.5	[illegible]	34.0	97	1→2	1.00		6.20
	C643.R				14.4	15.0	14.7	[illegible]	33.8	96	1→2	1.00		5.55
	C643.R,S				31.0	30.0	30.8	3.67	47.0	91	1→2	1.00		79% RS
	Cal Blk				[illegible]				[illegible]	98				<10.0
	50 ppb				54.1				73.4	1[illegible]				54.1

other client

HGA FORM #1

ELEMENT: As, ~~Se~~, DATE: 2/4-5/87.

S_1 = 25.0 PPB., S_2 = 50.0 PPB.

S_3 = 100.0 PPB, BOOK NO. 269, pg 144.

JOB #:				ATTACH TAPE	
	S01	WS378#3			
	X02	Cal Blank			
	X03	50.0 ppb			
	X04	0643.0403 (4819)			
	X05	0643. (R1)			
	X06	0643. (R1S1)		(3)	
	X07	Prep Blank 048			
	X08	0752.0403 (4835)		530	40.5
	X09	0753.		531	52.0
	X10	0754		532	21.0
	X11	0754. (R2)		533	72.9
	X12	0755.			
	X13	0756.			
	X14	Cal Blank			
	X15	50.0 ppb			
	X16	0757.			15.8
	X17	0757. (S2), S_2			15.3
	X18	0758.		534	15.5 AV
	X19	Prep Blank 049			1.37 CV
	X20	Cal Blank			14.4
	X21	50.0 ppb			15.0
	X22	0799.0403		535	14.7 AV
	X23	0800			2.59 CV
	X24	0801			31.8
	X25	Blk 53			31.0
	X26	Cal Blk		536	30.9 AV
	X27	50.0ppb			3.67 CV
	X28			537	1.3
	X29			538	56.1
	X30	0757.0403 (1→2)			
	X31	0757. S2 (1→2)		534	34.0
	X32	Cal Blk.		535	33.8
	X33	50.0ppb		536	49.0
	X34	0643.0403 (1→2)		537	13.6
	X35	0643 R1, S_3		538	73.6
	36	0643 R1 S1			
	37	Cal Blk			
	38	50.0ppb			

(1)

As

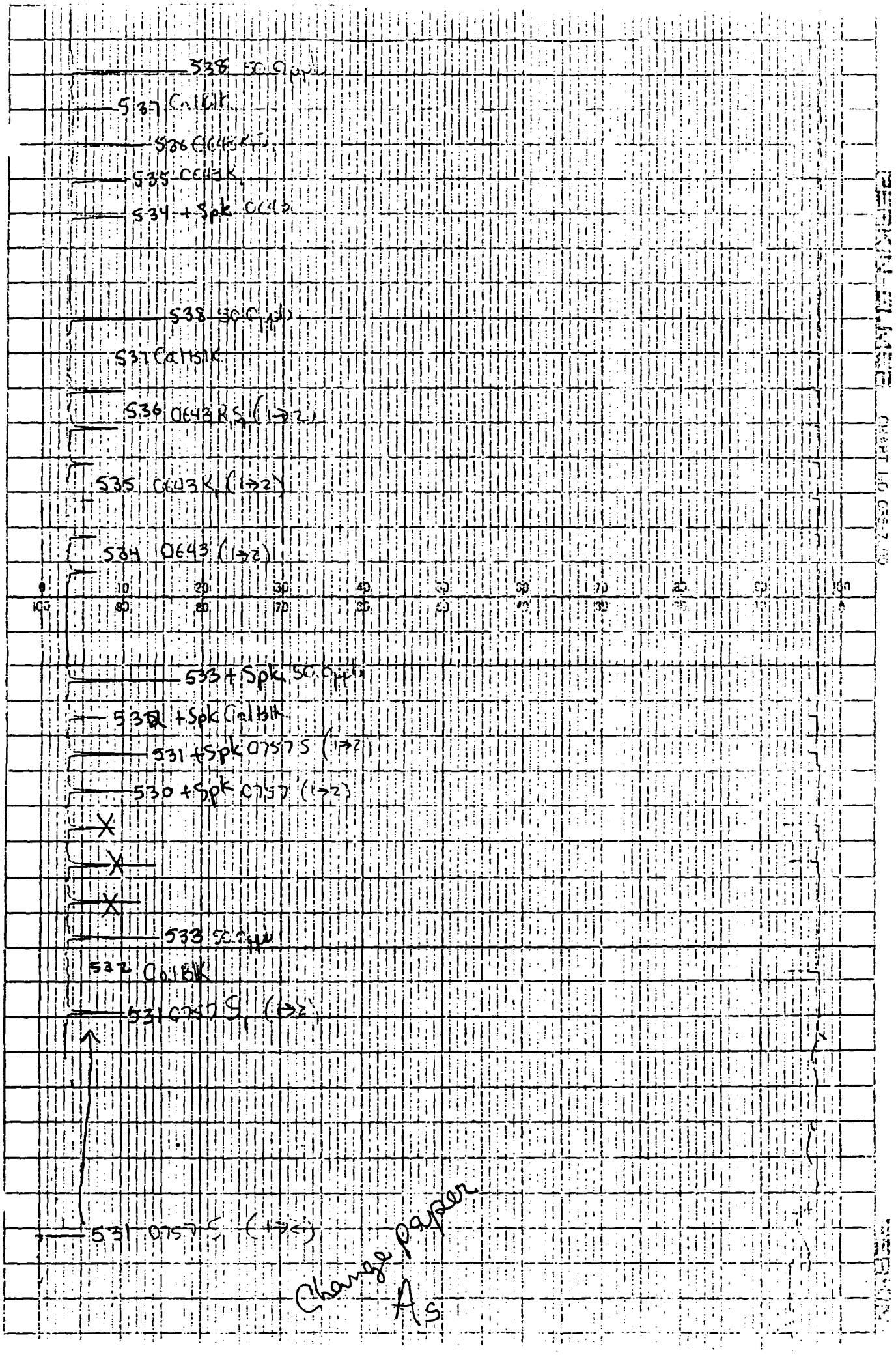
	-0.005	
	[illegible]	[illegible]
	0.092	
	[illegible]	[illegible]
	[illegible]	[illegible]
	[illegible]	[illegible]
	[illegible]	[illegible]
~~501~~	~~-17.1~~	
501	20.4	
502	1.6	
503	50.1	
	29.3	
	30.4	
504	29.9	AV
	2.61	CV
	28.2	
	28.3	
505	28.3	AV
	0.25	CV
	58.4	
	59.8	
506	59.1	AV
	1.69	CV
	1.2	
	0.5	
507	0.9	AV
	59.33	CV
	17.0	
	19.1	
508	17.6	AV
	4.43	CV
	25.9	
	25.8	
509	25.9	AV
	0.27	CV
	16.2	
	16.8	
510	16.5	AV
	2.57	CV
	15.9	
	15.0	
511	15.4	AV
	4.12	CV
	14.8	
	15.9	
512	17.4	AV
	11.82	CV
	21.9	
	22.6	
513	22.2	AV
	2.55	CV
	-0.7	
	1.0	

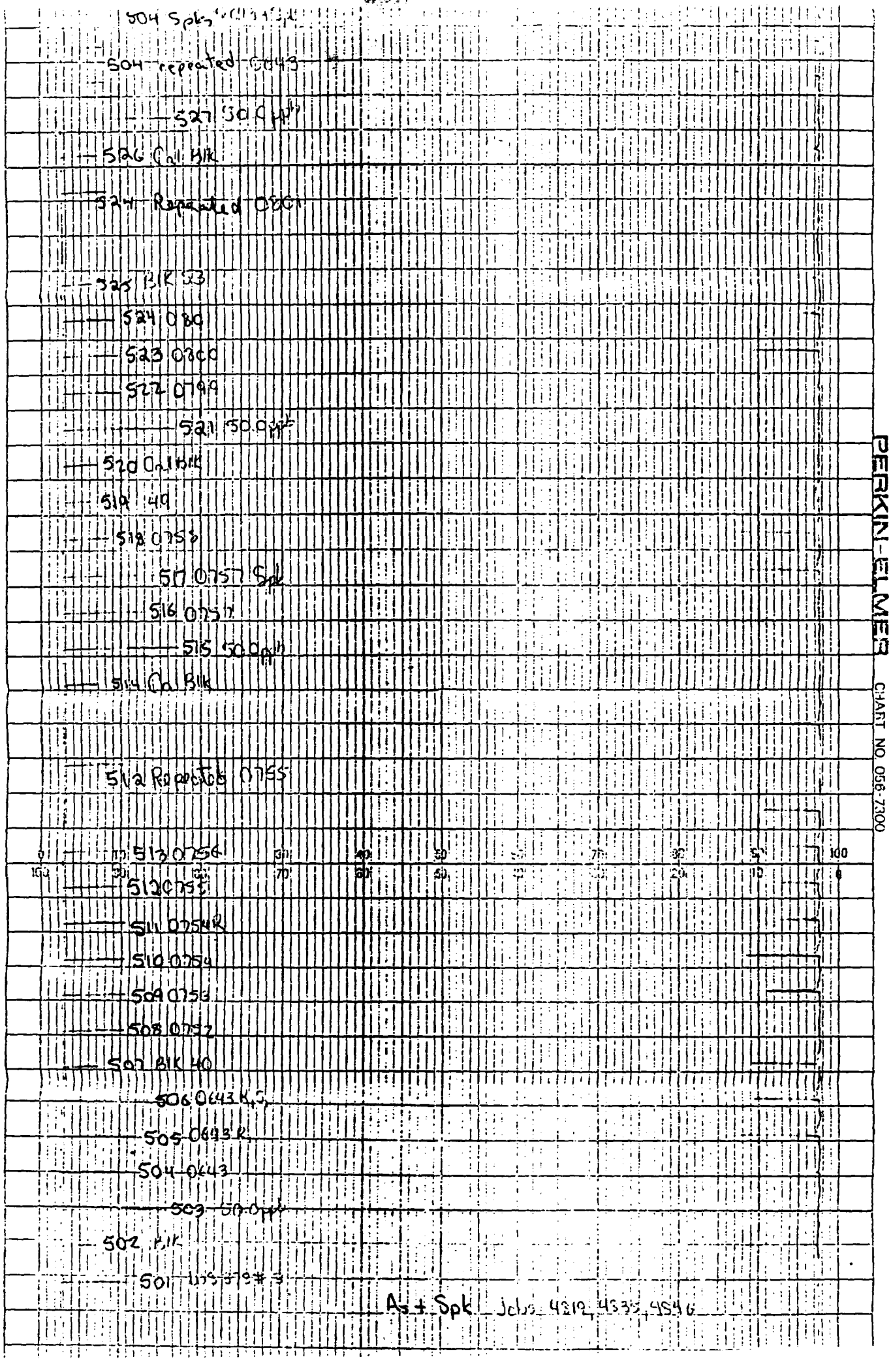
514	0.1	AV
	[illegible]	
	43.9	
	49.0	
515	43.5	AV
	0.43	CV
	44.1	
	43.9	
516	44.0	AV
	0.32	CV
	70.9	
	65.5	
517	68.2	AV
	5.49	CV
	7.1	
	6.9	
518	7.0	AV
	2.22	CV
	1.2	
	-0.2	
519	0.5	AV
	96	CV
	-0.3	
	0.9	
520	0.3	AV
	96	CV
	52.6	
	53.4	
521	53.0	AV
	1.07	CV
	21.2	
	19.7	
522	20.5	AV
	5.19	CV
	12.9	
	12.3	
523	12.6	AV
	3.37	CV
	6.8	
	5.3	
524	6.3	AV
	11.22	CV
	0.6	
	0.2	
525	0.4	AV
	70.71	CV
	0.5	
	-1.8	
526	-0.6	AV
	65	CV
	54.2	
	50.1	
527	52.1	AV
	5.5[illegible]	CV

(2)

As + Spike

501	38.1	
502	20.[illegible]	
503	73.4	
504	45.8	
505	48.3	
506	73.9	
507	12.7	
508	35.4	
509	43.9	
510	38.1	
511	38.0	
512	40.2	
513	33.6	
512 Repeat	30.0	
514	20.7	
515	73.3	
516	50.1	
517	75.6	
518	27.1	
519	19.5	
520	16.7	
521	73.2	
522	38.5	
523	33.3	
524	31.6	
525	18.5	
524 repeat	28.4	
526	20.5	
527	75.8	
	24.6	
	28.7	
504	26.7	AV
	10.88	CV
	42.8	
504	42.1	
	20.0	
	20.7	
530	20.3	AV
	2.43	CV
	34.4	
	35.3	
531	35.4	AV
	7.59	CV
532	[illegible].9	
533	53.9	


538 50.0 ppb
537 Cal 1.5K
536 0643 K S1 (1→2)
535 0643 K1 (1→2)
534 0643 (1→2)
0 10 20 30 40 50 60 70 80 90 100
100 90 80 70 60 50 40 30 20 10 0
533 + Spk 50.0 ppb
532 + Spk Cal 1.5K
531 + Spk 0757 S (1→2)
530 + Spk 0757 (1→2)
X
X
X
533 50.0 ppb
532 Cal 1.5K
531 0757 S1 (1→2)
531 0757 S1 (1→2)
Change paper
As


504 Spks
504 repeated 0643
527 50.0 ppb
526 Cal Blk
524 Repeated 0801
525 Blk 53
524 080
523 0800
522 0799
521 50.0 ppb
520 Cal Blk
519 49
518 0758
517 0757 Spk
516 0757
515 50.0 ppb
514 Cal Blk
512 Repeated 0755
513 0756
512 0755
511 0754R
510 0754
509 0753
508 0752
507 Blk 40
506 0643 R,S
505 0643 R
504 0643
503 50.0 ppb
502 Blk
501
As + Spk Jobs 4319, 4335, 4546
PERKIN-ELMER
CHART NO 056-7300

Charge pb per

530 504 0643+Spk

504 Spk 0643+Spk

504 repeated 0643

527 50.0 ppb

526 Cal Blk

524 Repeated 0801

525 Blk 53

524 0801

523 0300

522 0749

521 50.0 ppb

520 Cal Blk

519 49

518 0758

517 0757 Spk

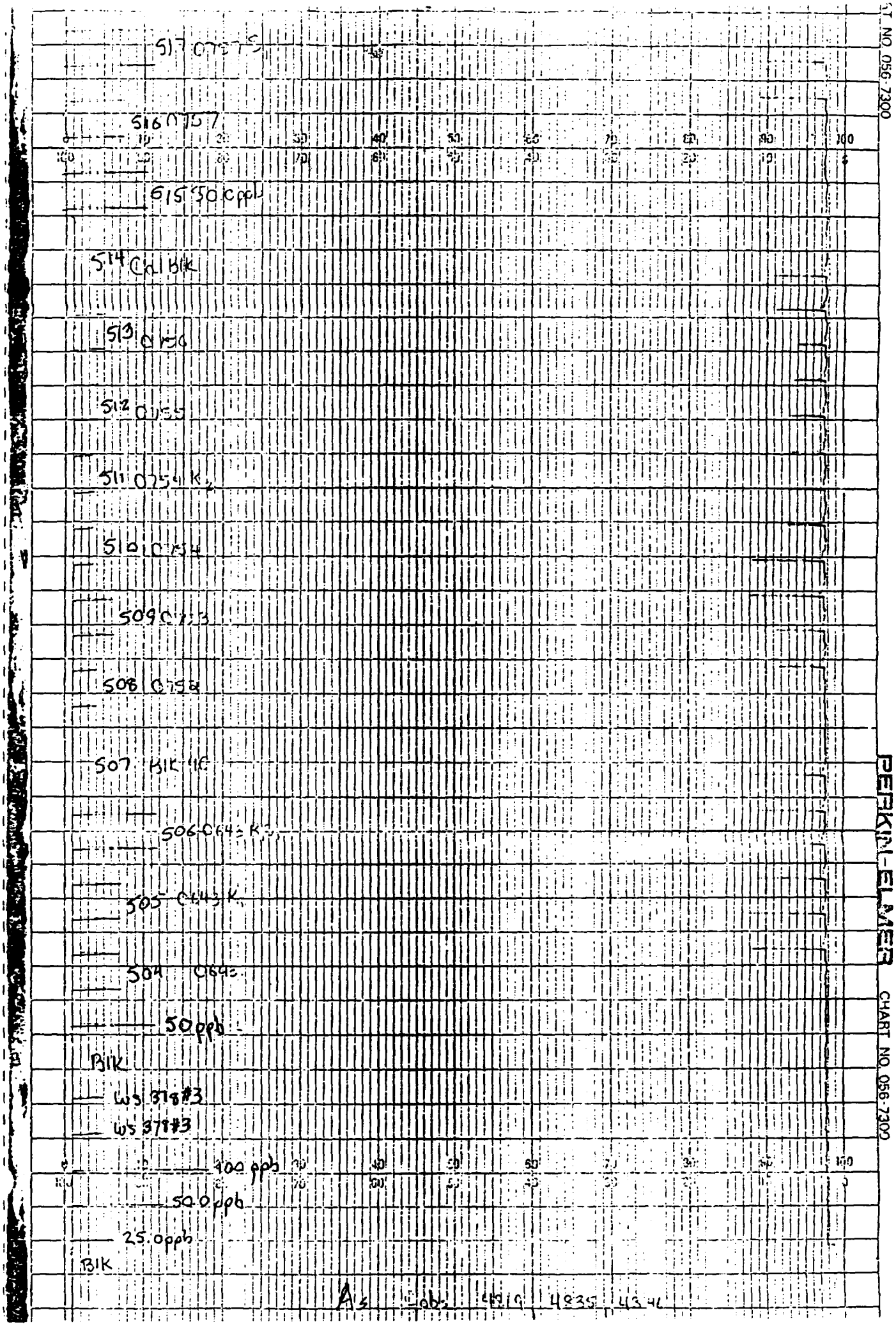
516 0757

515 50.0 ppb

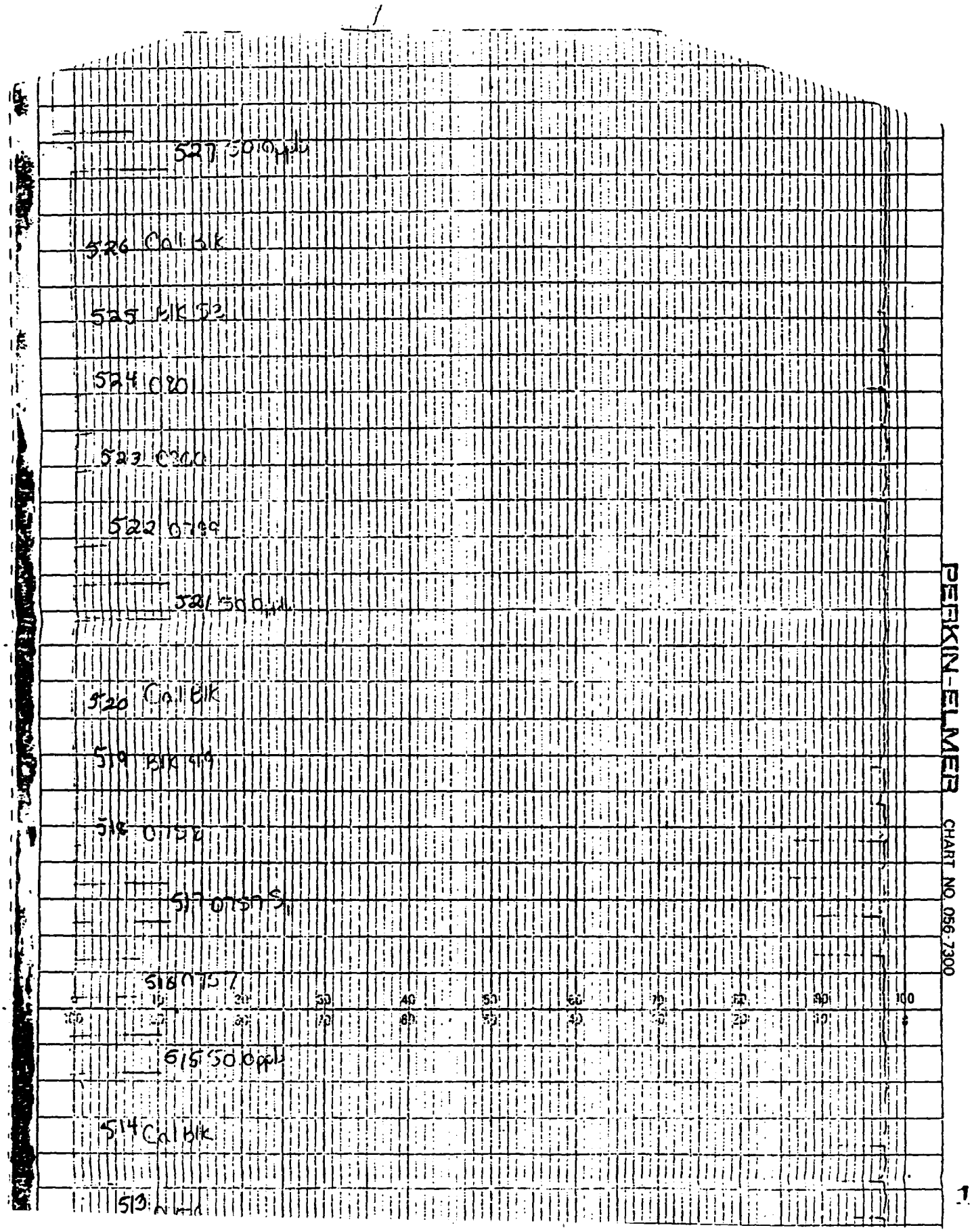
514 Cal Blk

512 Repeated 0755

PERKIN-ELMER CHART NO. 056



517 0757
516 0757
515 50 ppb
514 Cal Blk
513 0756
512 0755
511 0754 K2
510 0754
509 0753
508 0754
507 Blk 46
506 0643 K3
505 0643 K1
504 0643
50 ppb
Blk
WS 378#3
WS 378#3
100 ppb
50.0 ppb
25.0 ppb
Blk
As Lobs 4819 4835 4346
PERKIN-ELMER
CHART NO. 056-7300


527 50.0 ppb
526 Cal Blk
525 Blk 52
524 0.80
523 0.800
522 0.799
521 50.0 ppb
520 Cal Blk
519 Blk 49
518 0.758
517 0.757 S1
516 0.757
515 50.0 ppb
514 Cal Blk
513
PERKIN-ELMER
CHART NO. 056-7300

Project No. _____

118 Book No. _____ TITLE _____

Page No. 117

Test Performed: Pb (cont'd)
Date Received: 1/29/87
Work Performed By: J. [illegible]

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	Dry Wt basis Final Conc
									34.6	88			mg/l	17.1
	W5378#3				17.1				19.3	92				<10.0
	Cal Blk				0.4				70.4	101			mg/l	50.2
	50.0 ppb				50.2									
4727	0097.0403				29.1	29.2	29.2	0.24	47.3	91	0.5→10	1.01	mg/kg	174
	0100.0403				16.3	16.1	16.2	0.87	34.6	92	0.1→100	1.01		4500
	0101.0403				17.6	17.2	17.4	1.63	36.3	95	1→10	1.00		44
	0101. R2				18.1	17.9	18.0	0.79	37.5	98	1→10	1.05		46
	0102.0403				0.5 ER	0.5 ER	0.5 ER	0	0.5 ER	/	0.5→10	1.01		/
4738	0158.0403				23.5	23.5	23.5	0.00	42.1	93	1→10	1.00		60
4767	0394.0403				47.6	45.2	46.4	3.66	64.3	90	1→10	1.03		108
	0395.0403				16.3	16.2	16.5	2.57	34.5	90	1→2	1.02		88
	0395. S				42.6	42.4	42.5	0.33	59.6	86	1→2	1.02	mg/kg	22.4
	* Cal Blk				0.3				18.0	90			mg/l	<10.0
	50.0 ppb				50.7				63.3	88			mg/l	50.7
4767 *	0396.0403				10.9	11.1	11.0	1.79	28.4	87	1→2	1.05	mg/kg	58
	0400.0403				25.6	25.6	25.6	0.00	42.9	90	1→2			12.6
4727	0102.0403				15.6	15.3	15.5	1.37	33.6	91	1→10		mg/kg	3830
	Cal Blk				0.0				19.4	97			mg/l	<10.0
	50.0 ppb				51.7				68.2	83			mg/l	51.7
4767	0399.0403				9.5	9.3	9.5	1.50	23.6	96	1→10		mg/kg	24.1
	0399. R1				16.9	16.3	16.6	2.56	36.1	93	1→10		mg/kg	42
	Cal Blk				0.2									
	50.0 ppb				50.8									

Witnessed & Understood by me: B H Rohrbach

Date: 1/29/87

Invented by

Recorded by: J. [illegible]

Date: 1/29/87

To Page No. 127

HGA FORM #1

ELEMENT: Pb, DATE: 1/27-28/87

S_1 = 25.0 PPB., S_2 = 50.0 PPB.

S_3 = 100.0 PPB, BOOK NO. ,

JOB #:			
	201	WS378#3	
	X02	Cal Blank	
	X03	50.0 ppb	
	X04	Prep Blank 011	
	X05	0097.0403 (4727) (+1→10)	
	X06	0098.	
	X07	0099.	
	X08	0099. (S2)	
	X09	0100. +(1→10) +(0.5→10) +(0.1→10) +(	
	X10	0101. +(1→10) (0.5→10	
	X11	0101. (R2) +(1→10) (0.5→10)	
	X12	0102. +(1→10)	
	X13	0156.0403 (4738)	
	X14	Cal Blank	
	X15	50.0 ppb	
	X16	0156. (S3)	
	X17	0157. , S_2	
	X18	0157. (R3)	
	X19	0158. +(1→10)	
	X20	Prep Blank 025	
	X21	0394.0403 (4767) +(1→10)	
	X22	0395.	
	X23	0395. (S1)	
	X24	0396. +(1→10)	
	X25	0397.	
	X26	Cal Blank	
	X27	50.0 ppb	
	X28	0398. +(1→10)	
	X29	0399. +(1→10)	
	X30	0399. (R1) +(1→10)	
	X31	0400.	
	X32	Cal Blank	
	X33	50.0 ppb	
	X34		
	X35	, S_3	

201	37.9
202	19.9
203	78.6
204	22.4
205	93.9
206	43.2
207	39.0
208	95.6
209	1[illegible]9.3
210	39.4
211	18.6
212	95.4
213	35.4
214	17.8
215	75.6
216	97.4
217	32.9
218	34.1
219	50.8
220	18.9
221	72.3
222	61.5
223	1[illegible]4.[illegible]
224	21.6
225	44.5
226	19.8
227	72.3
228	40.0
229	29.2
230	37.5
231	96.1
232	18.4
233	71.9

recycled paper

	-0.120	
	0.000	AZ
	0.129	
	25.0	S1
	45.7	C
	50.0	S2
	54.1	C
	100.0	S3
201	17.3	
202	0.6	
203	50.5	
	1.9	
	1.7	
204	1.8	AV
	7.86	CV
	05	ER
	05	ER
205	05	ER
	0.00	CV
	22.3	
	21.3	
206	21.8	AV
	3.24	CV
	16.6	
	16.3	
207	16.4	AV
	1.29	CV
	64.2	
	63.5	
08	63.9	AV
	0.78	CV
	05	ER
	05	ER
09	05	ER
	0.00	CV
	262.7	C
	288.0	C
10	285.3	AV
	1.21	CV
	322.9	C
	337.5	C
11	330.0	AV
	3.13	CV
	05	ER
	05	ER
12	05	ER
	0.00	CV
	17.1	
	15.1	
3	16.1	AV
	8.73	CV
	1.2	
	1.3	
4	1.3	AV
	5.66	CV
	51.0	
	51.1	

215	51.0	AV
	0.14	CV
	64.3	
	44.5	
216	54.0	AV
	25.58	CV
	14.0	
	13.9	
217	13.9	AV
	0.51	CV
	12.2	
	11.6	
218	11.9	AV
	3.57	CV
	547.4	C
	05	ER
219	05	ER
	05	ER
	1.4	
	1.4	
220	1.4	AV
	0.00	CV
	05	ER
	05	ER
221	05	ER
	0.00	CV
	38.0	
	37.9	
222	37.9	AV
	0.19	CV
	1.4	
	59.1	
223	37.1	AV
	06	ER
	430.5	C
	406.2	C
224	419.0	AV
	4.11	CV
	15.9	
	15.0	
225	15.0	AV
	0.44	CV
	1.5	
	0.9	
226	1.2	AV
	35.36	CV
	42.1	
	45.5	
227	45.8	AV
	11.43	CV
	47.8	
	47.4	
227	47.6	AV
	0.59	CV
	274.0	C
	[illegible]	C

228	233.5	AV
	16.61	CV
	111.9	C
	111.2	C
229	111.6	AV
	0.44	CV
	42.5	
	42.9	
230	42.7	AV
	0.66	CV
	53.4	
	50.2	
231	51.8	AV
	3.66	CV
	-0.0	
	-0.1	
232	-0.1	AV
	06	ER
	51.7	
	53.6	
233	52.6	AV
	2.55	CV

Re Inspects

	64.2	
	51.7	
216	57.8	AV
	15.25	CV
	100.5	
	59.1	
223	83.4	AV
	26.38	CV
	70.9	
	113.4	
223	85.7	AV
	26.37	CV
	99.5	
	101.6	
223	100.5	AV
	1.34	CV
	105.3	C
	85.5	
225	94.9	AV
	14.59	CV
	[illegible]	C
	[illegible]	C
230	238.4	AV
	7.11	CV
232	0.3	
233	53.7	

205	67.5	

209 (.05→10)	99.3	
	97.3	
	99.3	AV
	1.44	CV

214	0.1
215	52.3

205 1→10	54.9	
	63.4	
	59.1	AV
	10.16	CV

209 1→10	05	ER
	05	ER
	05	ER
	0.00	CV
210 1→10	19.9	
	19.8	
	19.8	AV
	0.36	CV
211 1→10	05	ER
	05	ER
	05	ER
	0.00	CV

219 1→10	29.4	
	11.1	
	19.5	AV
	61.94	CV
219 1→10	8.5	
	-0.2	
	4.1	AV
	06	ER

230 1→10	18.9	
	19.4	
	18.7	AV
	1.90	CV
	[illegible]	
	[illegible]	AV
	[illegible]	CV

232	-0.2
~~233~~	~~31.4~~
233	48.3

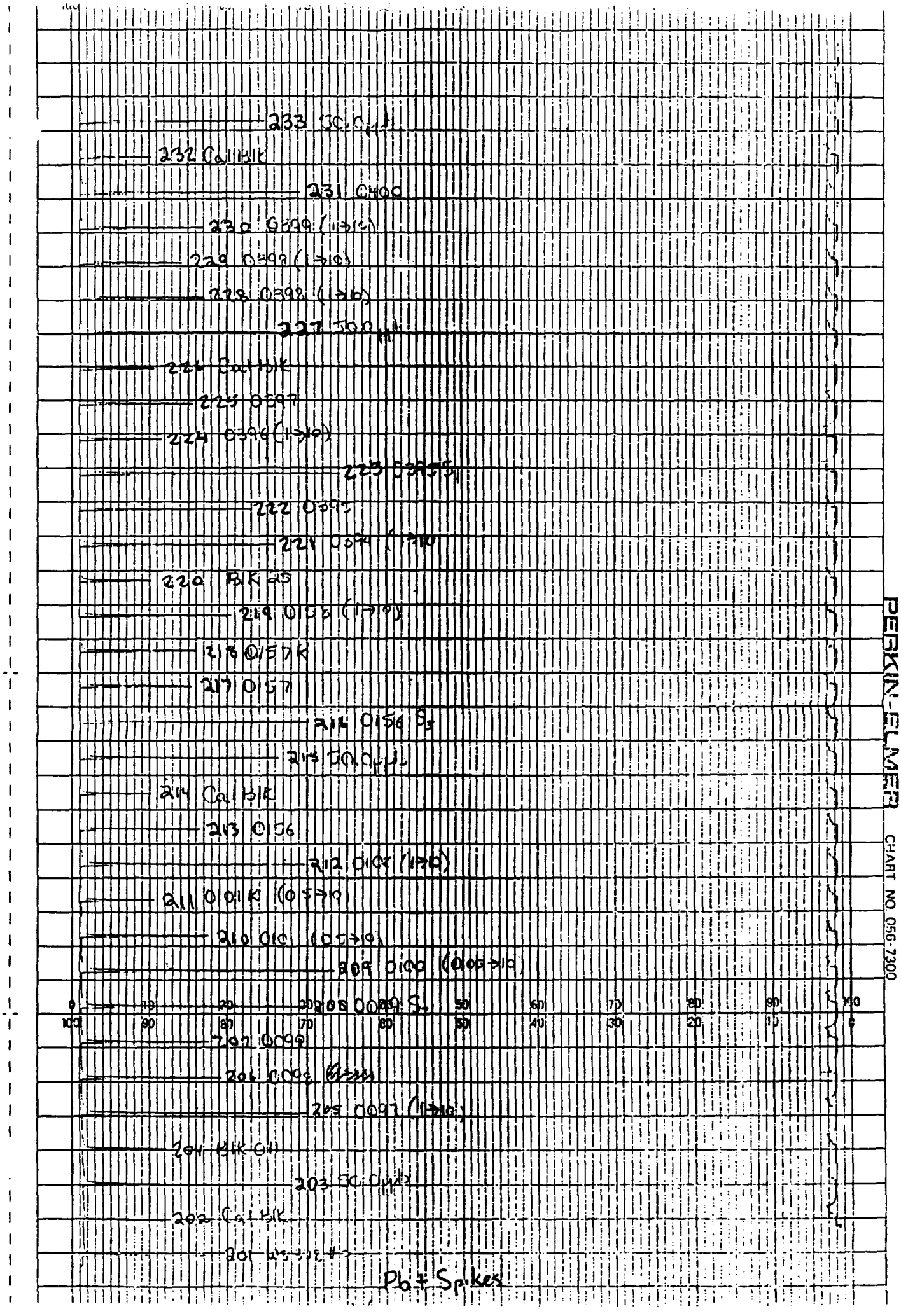
209 (0.5→10)	305.4	C
	79.9	
	139.1	AV
	82.77	CV
	114.0	
	19.6	
	16.8	AV
	23.57	CV
211 (0.5→10)	249.5	C
	149.7	C
	188.4	AV
	35.36	CV
212 (1→10)	53.5	
	68.0	
	60.5	AV
	16.88	CV

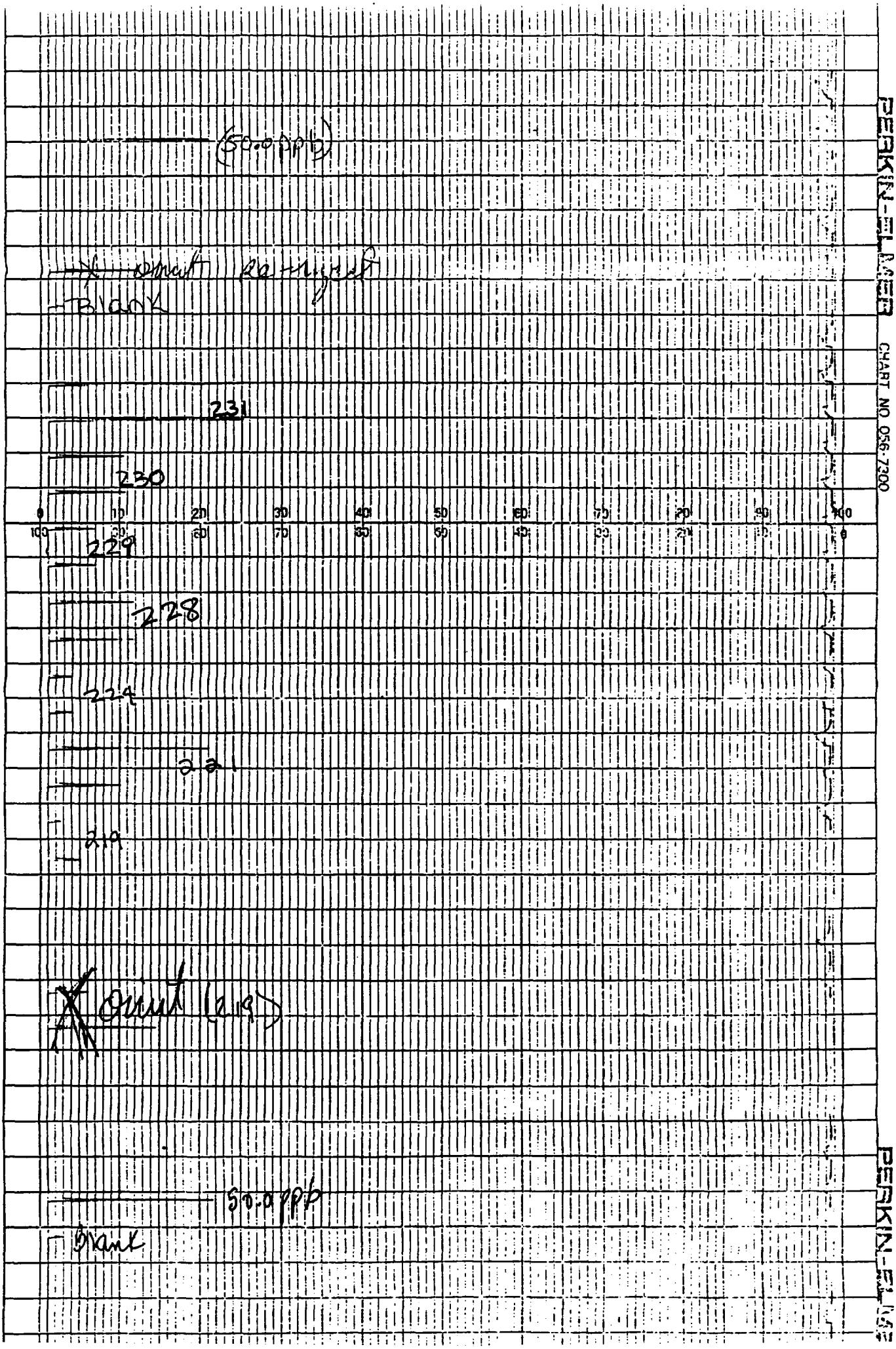
221 1→10	26.9	
	50.0	
	37.9	AV
	42.48	CV

224 1→10	2.7	
	2.6	
	2.6	AV
	2.67	CV

209 (.1→10)	103.9	C
	202.4	C
	146.3	AV
	44.35	CV
211 (.1→10)	0.9	
	0.4	
	0.7	AV
	54.39	CV

226 1→10	21.5	
	21.7	
	21.6	AV
	0.66	CV
229 1→10	2.6	
	9.3	
	9.5	AV
	2.25	CV


233 50.0 µg/l
232 Cal Blk
231 0400
230 0399 (1→10)
229 0399 (1→10)
228 0398 (1→10)
227 50.0 µg/l
226 Cal Blk
225 0397
224 0396 (1→10)
223 0395 S1
222 0395
221 0394 (1→10)
220 Blk 25
219 0158 (1→10)
218 0157 K
217 0157
216 0156 S3
215 50.0 µg/l
214 Cal Blk
213 0156
212 0105 (1→10)
211 0101 K (0.5→10)
210 010 (0.5→10)
209 0100 (0.05→10)
208 0099 S2
207 0099
206 0098
205 0097 (1→10)
204 Blk 011
203 50.0 µg/l
202 Cal Blk
201
Pb + Spikes
PERKIN-ELMER
CHART NO. 056-7300

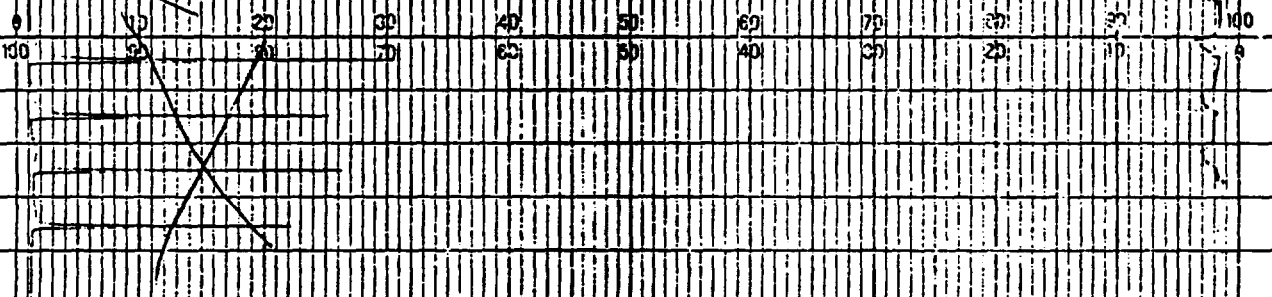

(50.0 ppb)
Re-inject
Blank
231
230
229
228
224
221
219
Quant (219)
50.0 ppb
Blank
PERKIN-ELMER
CHART NO. 056-7300
PERKIN-ELMER

50.0 ppb

Blank

209 (DF = 0.05 → 10)

211 DF = 1 → 10



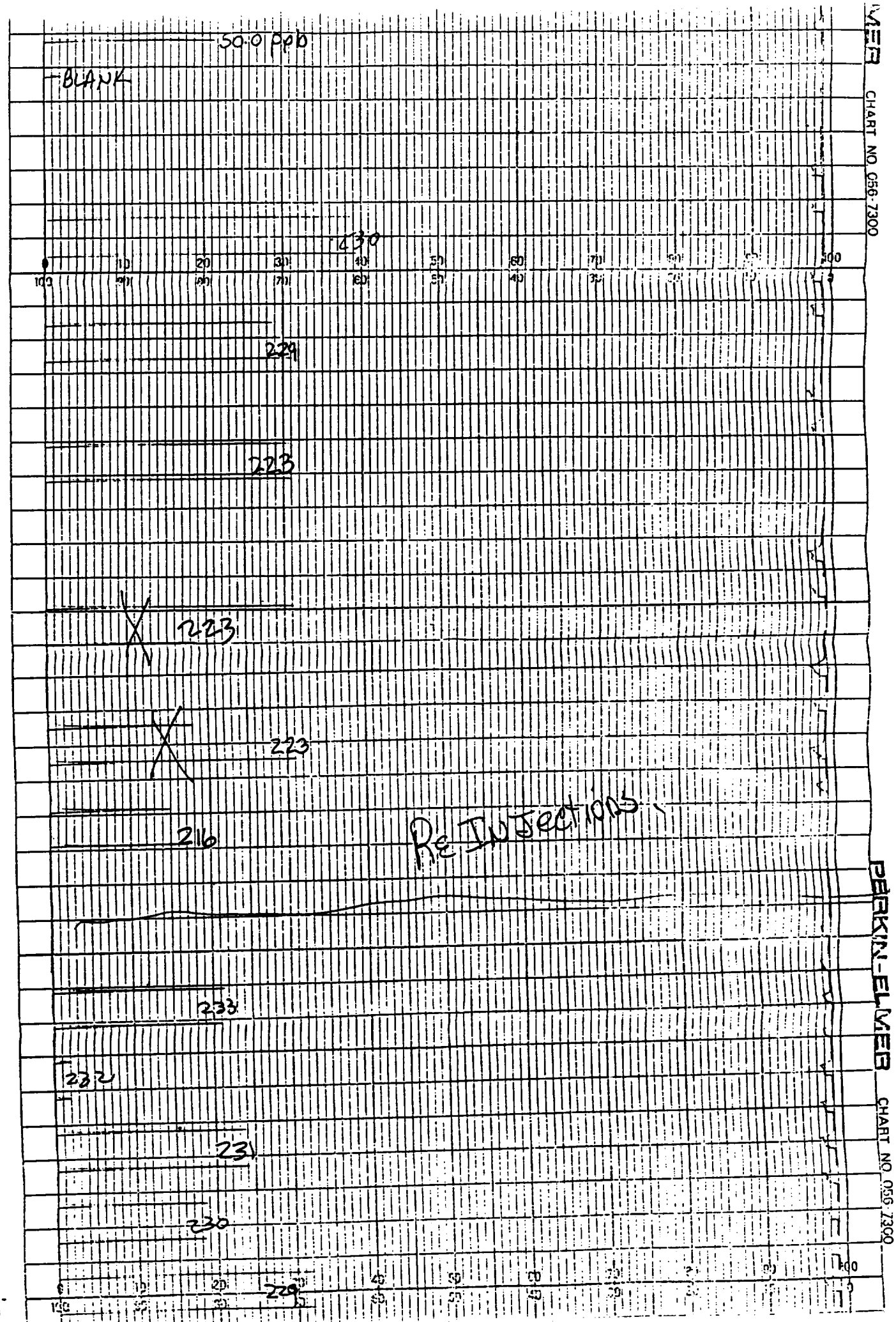
Dilute & Reran

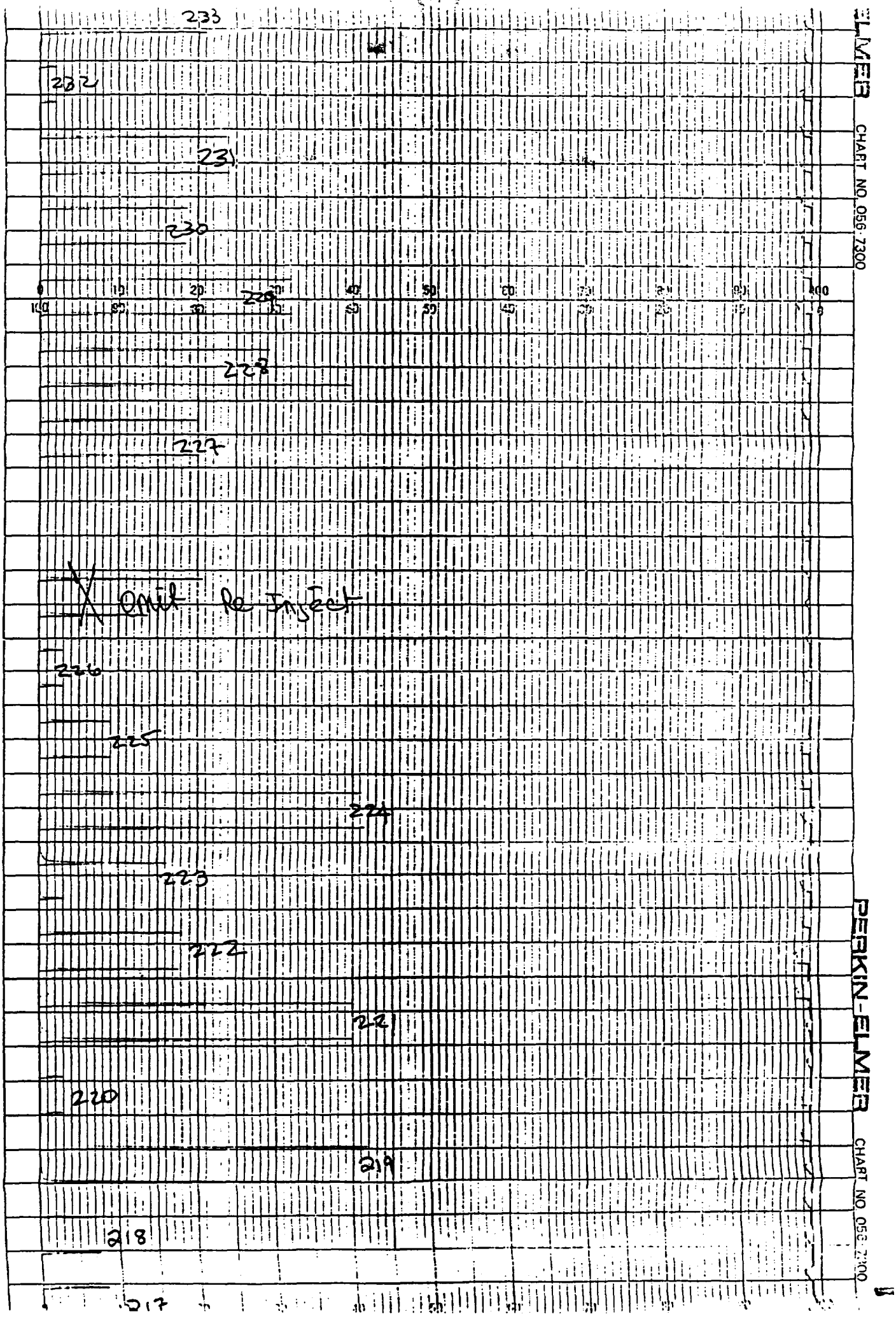
Dilutions

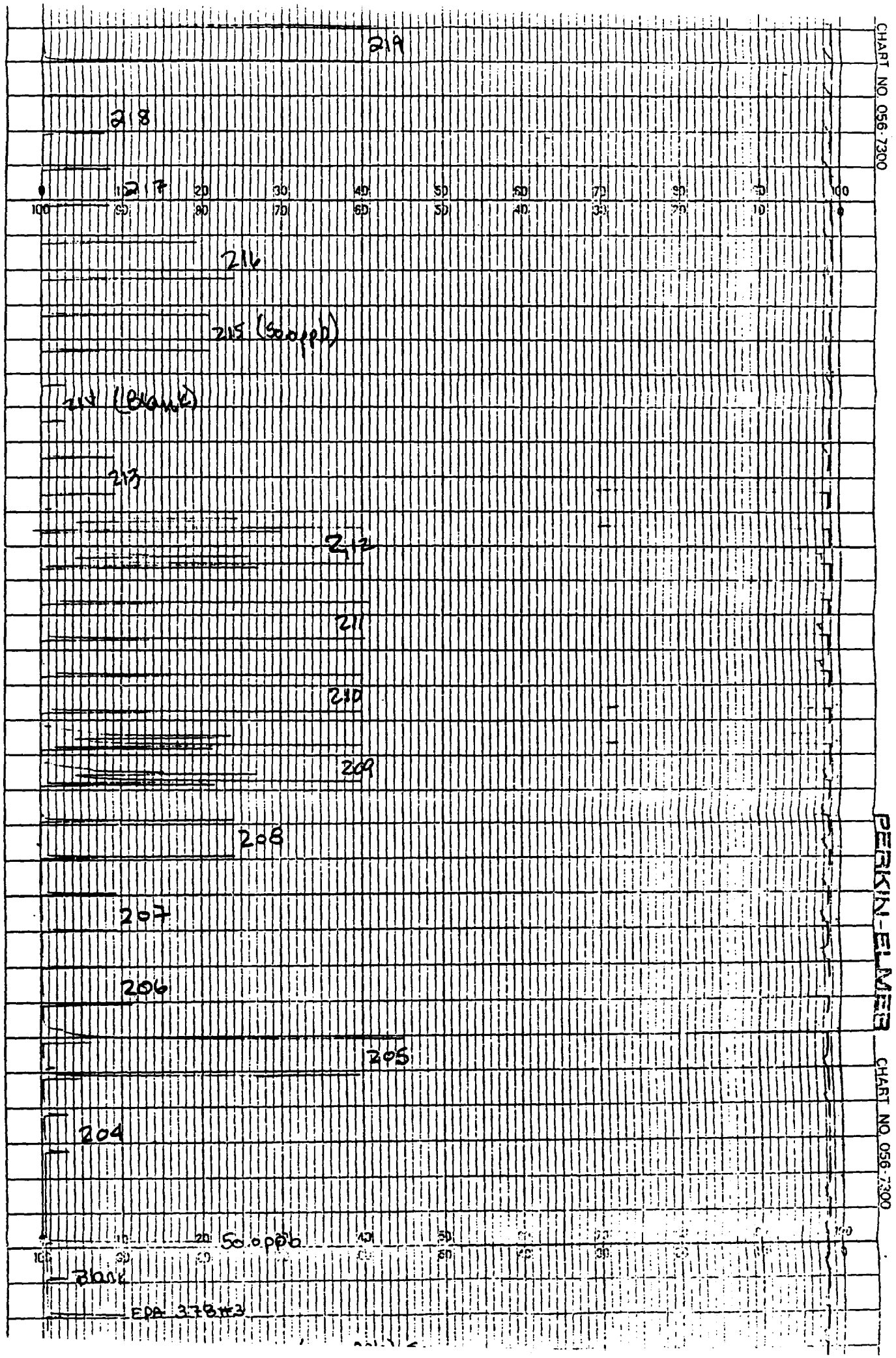
50.0 ppb

BLANK

PERKIN-ELMER CHART NO. 056-7300


50.0 ppb
BLANK
1430
229
223
223
223
216
Re Injections
233
232
231
230
229
PERKIN-ELMER
CHART NO. 056-7300


233
232
231
230
229
228
227
X Omit Re Insert
226
225
224
223
222
221
220
219
218
217
PERKIN-ELMER CHART NO. 056-7300
PERKIN-ELMER CHART NO. 056-7300


219
218
217
216
215 (50.0ppb)
214 (Blank)
213
212
211
210
209
208
207
206
205
204
50.0ppb
Blank
EPA 378#3
CHART NO. 056-7300
PERKIN-ELMER
CHART NO. 056-7300

PERKIN-ELMER
CHART NO 056-7300
204
205
206
207
208
209
50.0 ppb
Blank
EPA 238#3
(100.0 ppb) S3
(50.0 ppb) S2
(25.0 ppb) S1
Blank

HGA FORM #1

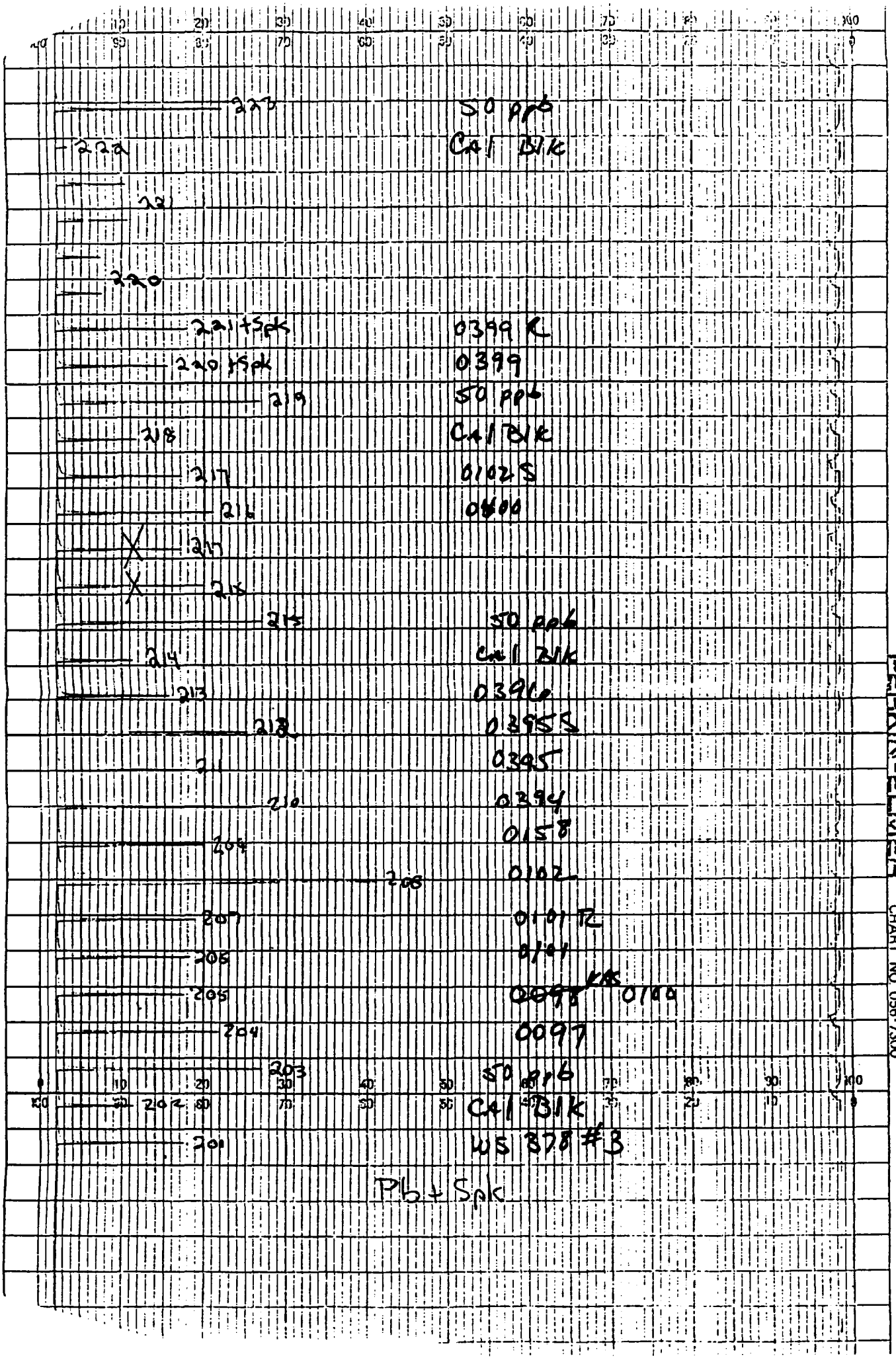
ELEMENT: Pb, DATE: 1/29/87.

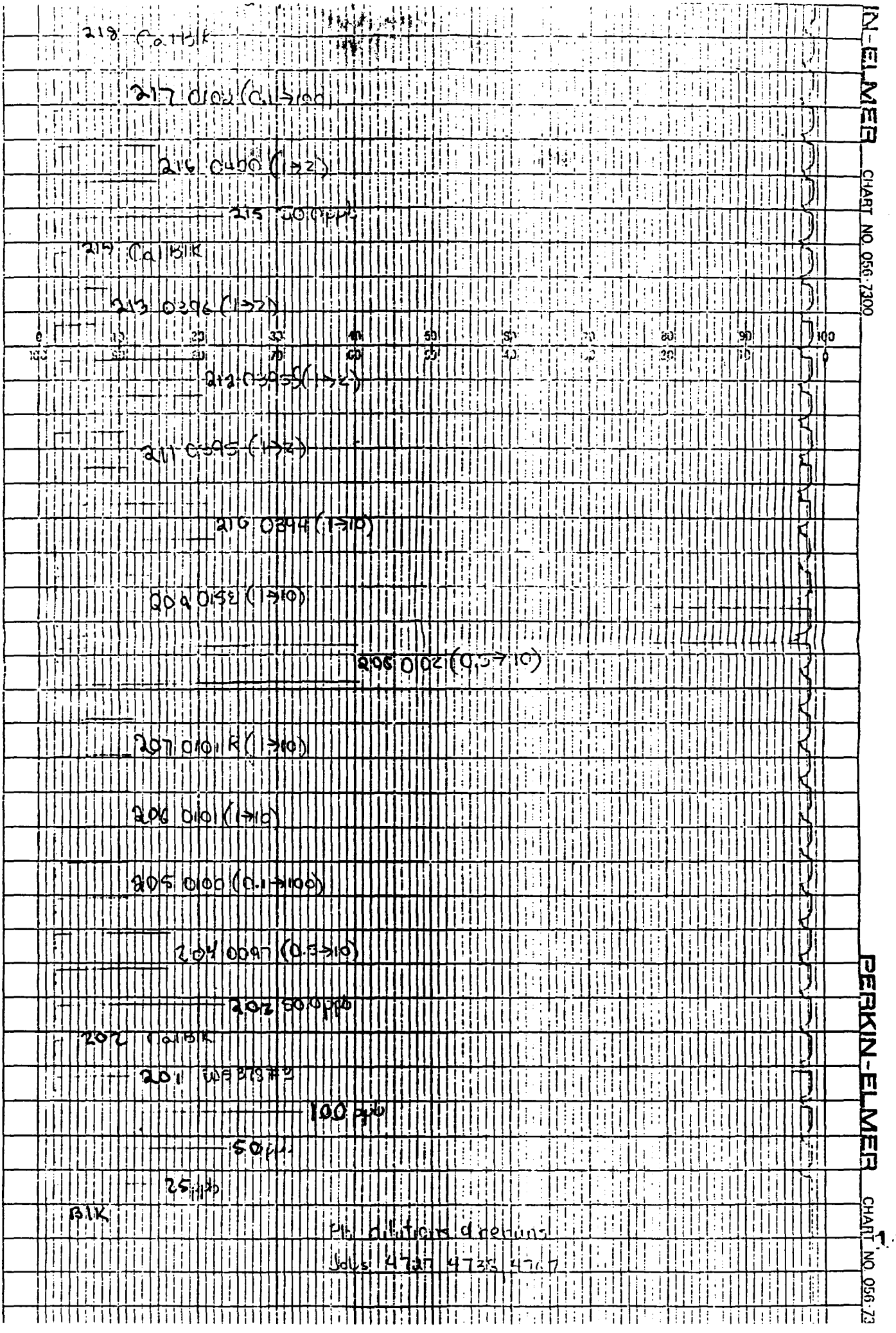
S_1 = 25.0 PPB., S_2 = 50.0 PPB.

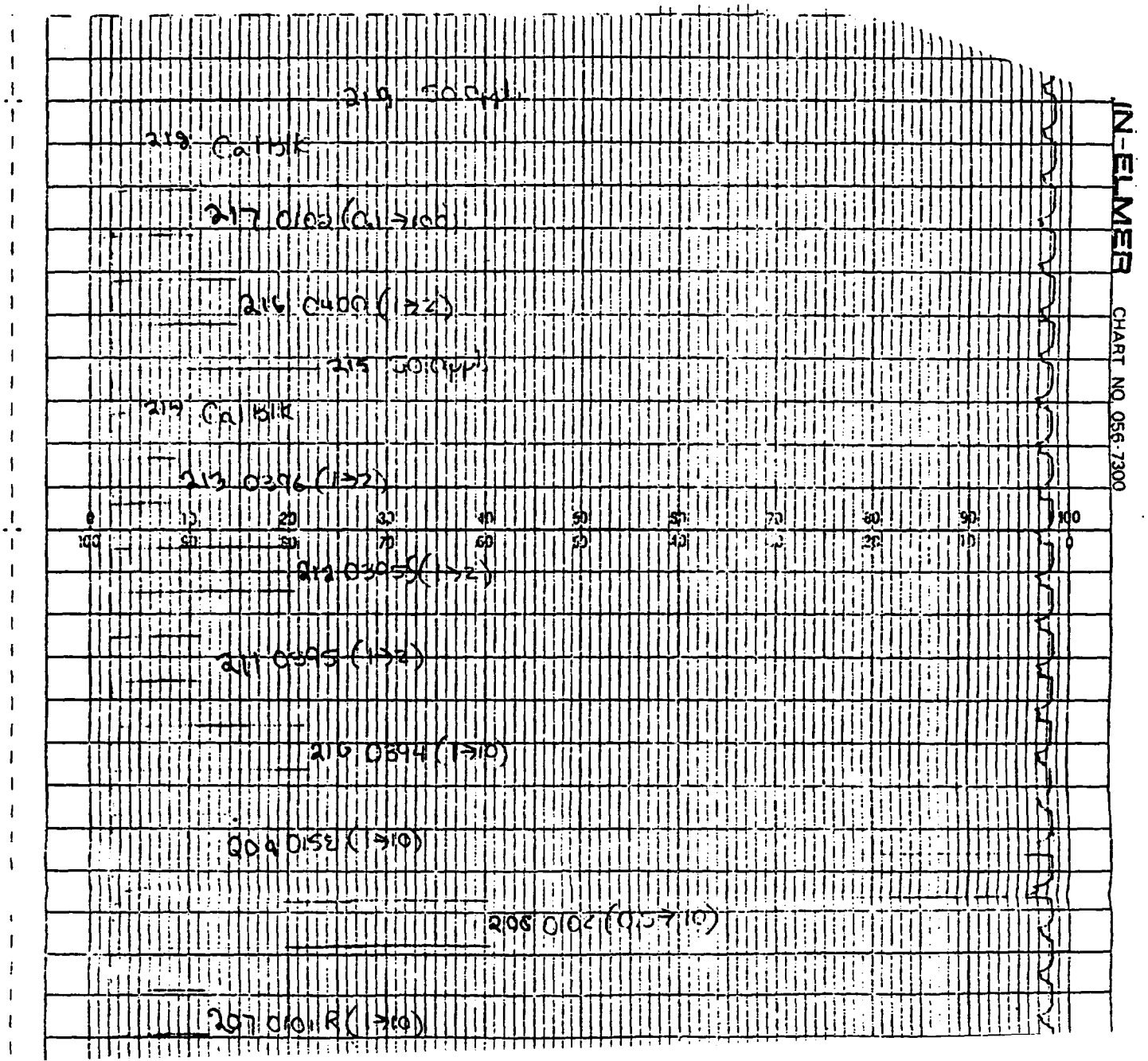
S_3 = 100 PPB, BOOK NO. 269, pg 113.

			ATTACH		
	2 01	WS 378 #3			
	X02	Cal Blk			
	X03	50.0ppb			
	X04	0097.0403 (0.5→10)	Pb + Spk		
JOB #:	X05	0100.0403 (.1→100)	201	34.6	
	X06	0101.0403 (1→10)	202	13.3	
	X07	0101 R_2 (1→10)	203	70.4	
	X08	0102.0403 (.5→10)	204	47.3	
	X09	0158.0403 (1→10)	205	35.6	
	X10	0394.0403 (1→10)	206	46.3	
	X11	0395.0403 (1→2)	207	37.5	
	X12	0395. S (1→2)	208	[illegible]	
	X13	~~Cal Blk~~ 0396.0403 (1→2)	209	42.1	
	X14	~~50.0ppb~~ Cal Blk	210	64.3	
	X15	50.0ppb	211	34.5	
	X16	0400.0403 (1→2)	212	59.6	
	X17	~~Cal Blk~~ 0402.0403 S_2 (.1→100)	213	28.4	
	X18	~~50.0ppb~~ Cal Blk	214	19.0	
	X19	50.0ppb	215	68.3	
	X20	0399.0403 (1→10)	216	42.1	
	X21	0399 K (1→10)	217	32.3	
	X22	Cal Blk	216	42.8	
	X23	50.0ppb	217	33.6	
	X24		218	19.4	
	X25		219	68.2	
	X26		220	28.6	
	X27		221	36.1	
	X28			9.5	
	X29			9.3	
	X30		220	9.4	AV
	X31			1.50	CV
	X32			16.9	
	X33			16.3	
	X34		221	16.6	AV
	X35	, S_3		2.56	CV
			222	0.2	
			223	50.8	

	-0.306	
	[illegible]	AV
	0.149	
	25.0	[illegible]
	45.[illegible]	[illegible]
	[illegible]	[illegible]
	25.[illegible]	[illegible]
	187.[illegible]	[illegible]
201	17.1	
202	0.4	
203	50.2	
	29.1	
	29.2	
204	29.2	AV
	0.24	CV
	16.3	
	16.1	
205	16.2	AV
	0.87	CV
	17.6	
	17.2	
206	17.4	AV
	1.63	CV
	19.1	
	17.9	
207	18.0	AV
	0.79	CV
	05	[illegible]
	05	[illegible]
208	05	[illegible]
	0.00	CV
	23.5	
	23.5	
209	23.5	AV
	0.00	CV
	47.6	
	45.2	
210	46.4	AV
	3.66	CV
	16.8	
	16.2	
211	16.5	AV
	2.57	CV
	42.5	
	42.4	
212	42.5	AV
	0.33	CV
	10.9	
	11.1	
213	11.0	AV
	1.23	CV
214	0.3	
215	50.7	
	25.6	
	25.6	
216	25.6	AV
	0.10	CV
	15.6	
	15.4	
217	15.5	AV
	1.37	CV
218	0.1	
219	51.7	


223
50 ppb
Cal Blk
222
221
220
221+Spk
0399 R
220+Spk
0399
219
50 ppb
218
Cal Blk
217
0102 S
216
0400
217
215
215
50 ppb
214
Cal Blk
213
0396
212
0395 S
211
0395
210
0394
209
0158
208
0102
207
0101 R
206
0101
205
0098 KS 0100
204
0097
203
50 ppb
202
Cal Blk
201
WS 378 #3
Pb + Spk
PERKIN-ELMER
CHART NO. 056-7300


218 Cal Blk
217 0102 (0.1→100)
216 0400 (1→2)
215 500 ppb
214 Cal Blk
213 0396 (1→2)
212 0395 (1→2)
211 0395 (1→2)
210 0394 (1→10)
209 0152 (1→10)
208 0102 (0.5→10)
207 0101 R (1→10)
206 0101 (1→10)
205 0100 (0.1→100)
204 0097 (0.5→10)
203 500 ppb
202 Cal Blk
201 WS 378 #9
100 ppb
50 ppb
25 ppb
Blk
Pb dilutions & remins
Jobs 4727 4735 4767
PERKIN-ELMER CHART NO. 056-7300
PERKIN-ELMER CHART NO. 056-73


219 50 ppb
218 Cal Blk
217 0102 (0.1→100)
216 0400 (1→2)
215 50 ppb
214 Cal Blk
213 0396 (1→2)
0 10 20 30 40 50 60 70 80 90 100
100 90 80 70 60 50 40 30 20 10 0
212 0395 (1→2)
211 0395 (1→2)
210 0394 (1→10)
209 0152 (1→10)
208 0102 (0.5→10)
207 0101 R (1→10)
IN-ELMER
CHART NO. 056-7300

Book No. _____ TITLE _____

...e No. _____
...rmed: Pb
...ived: FEBRUARY 6, 1987
...orm... by: [signature]

(SEE pgs. 142-143)

CLP FINAL VOLUME = 200 ml.

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	Amt of SAMPLE (GMS.)	D.F. ~~UNITS~~	UNITS	FINAL CONC.
WS378#3				16.5				25.4 ~~28.3~~	94			µg/L	16.5
Cal Blank				-0.0				10.3	103			µg/L	< 5.00
50.0 ppb				49.7				62.8	/			µg/L	49.7
0643.0403				39.5	38.9	39.2	1.08	50.7 ~~51.4~~	115	1.00	0.5→10	mg/Kg	156.8
0643.R				28.0	27.7	27.9	0.76	37.4	95	1.06	0.5→10	mg/Kg	105.3
0643.R.S.				26.3	25.5	25.9	2.18	35.1	92	1.06	0.5→10	mg/Kg	97.7
PrepBlank 040				0.1	0.3	0.2	/	10.6	106			µg/L	< 5.00
0752.0403				42.2	42.2	42.2	0.00	51.6	94	1.08		mg/Kg	7.81
0753.0403				20.3	20.5	20.4	0.69	31.3	109	1.01	1→10	mg/Kg	40.40
0754.0403				31.0	31.2	31.1	0.46	40.6	95	1.00		mg/Kg	6.22
0754.R				32.0	31.9	31.9	0.22	42.4	105	1.05		mg/Kg	6.08
0755.0403				15.7	16.1	15.9	1.78	24.9	90	1.03	1→10	mg/Kg	30.87
0756.0403				28.6	28.7	28.7	0.25	38.5	98	1.06	1→2	mg/Kg	10.83
Cal Blank				0.1	-0.1	-0.0	/	10.6	106			µg/L	< 5.00
50.0 ppb				50.6	50.5	50.6	0.14	63.9 ~~58.0~~	/			µg/L	50.6
0757.0403				6.6	6.1	6.3	5.57	15.0	87	1.01	0.1→10	mg/Kg	124.75
0757.S				11.1	11.3	11.2	1.26	20.0	88	1.03	0.1→10	mg/Kg	217.48
0758.0403				31.3	29.9	30.6	3.24	41.1	105	1.02	1→10	mg/Kg	60.00
PrepBlank 049				0.8	1.3	0.9	/	9.0	90			µg/L	< 5.00
0799.0403				524.7	495.7	509.9	4.02	/	/	1.01		mg/Kg	/
0800.0403				481.4	486.0	483.7	0.67	/	/	1.03		mg/Kg	/
0801.0403				25.3	25.0	25.1	0.84	34.1	93	1.00		mg/Kg	5.02
PrepBlank 053				0.9	1.2	1.0	/	9.5	85			µg/L	< 5.00
Cal Blank				-0.1	-0.1	-0.1	0.00	7.6	76			µg/L	< 5.00
50.0 ppb				51.5	52.5	52.0	1.36	64.7	127			µg/L	52.0
0799.0403				66.7	67.0	66.9	0.32	75.1	112	1.01	0.5→10	mg/Kg	264.95
0800.0403				47.6	46.7	47.2	1.35	57.1	99	1.03	0.5→10	mg/Kg	183.30
Cal Blk				0.1				7.6					< 5.00
50.0 ppb				51.2				64.7					51.20

only client

Understood by me: Date Invented by: Date

c/s 7

4819

HGA FORM #1

ELEMENT: Pb, DATE: 2/6/87.

S_1 = 25.0 PPB., S_2 = 50.0 PPB.

S_3 = 100 PPB, BOOK NO. 269 pg 150

JOB #:

201	WS 373#3
X02	Cal BLK
X03	50.0ppb
X04	0643.0403 (0.5→10)
X05	0643. R,
X06	0643. R, S1
X07	BLK 40
X08	0752.0403
X09	0753 (1→10)
X10	0754
X11	0754 K
X12	0755 (1→10)
X13	0756 (1→2)
X14	Cal BLK
X15	50.0ppb
X16	0757.0403 (.1→10)
X17	0757. S. (.1→10), S_2
X18	0758 (1→10)
X19	BLK 49
X20	0799.0403 +(0.5→10)
X21	0800 +(0.5→10)
X22	0801
X23	BLK 53
X24	Cal BLK
X25	50.0ppb
X26	
X27	
X28	
X29	
X30	
X31	
X32	
X33	
X34	
X35	, S_3

Other Chat

Pb SPIKES

~~201~~	~~20.3~~ REINJ.
202	10.3
203	62.8
~~204~~	~~51.4~~ REINJ
205	37.4
206	35.1
207	10.6
208	51.6
209	31.3
210	40.6
201	25.9
204	50.7
211	42.4
212	24.9
213	38.5
214	10.6
~~215~~ REINJ	~~44.1~~
215	63.9
216	15.0
217	20.0
218	41.1
219	9.0
220	78.1
221	57.1
222	34.9
223	8.5
224	7.6
225	64.7

recycled paper

ecology and environment

Pb

	-0.010	
	0.[illegible]	AZ
	0.125	
	25.0	S1
	45.5	C
	50.5	S2
	39.1	C
	100.0	S3
201	16.5	
202	-0.0	
203	49.7	
~~204~~	~~39.3~~	
	39.5	
	38.9	
204	39.2	AV
	1.08	CV
	28.0	
	27.7	
205	27.9	AV
	0.76	CV
	25.3	
	25.5	
206	25.9	AV
	2.18	CV
	0.1	
	0.3	
207	0.2	AV
	70.71	CV
	42.2	
	42.2	
208	42.2	AV
	0.00	CV
	20.3	
	20.5	
209	20.4	AV
	0.69	CV
	31.0	
	31.2	
210	31.1	AV
	0.45	CV
	32.0	
	31.9	
211	31.9	AV
	0.22	CV
	15.7	
	16.1	
212	15.9	AV
	1.78	CV
	28.6	
	28.7	
213	28.7	AV
	0.25	CV
	0.1	
	-0.1	
214	-0.0	AV
	06	ER
	50.6	
	50.5	
215	50.6	AV
	0.14	CV
	6.6	
	6.1	
216	6.3	AV
	5.57	CV
	11.1	
	11.3	
217	11.2	AV
	1.26	CV
	31.3	
	29.9	
218	30.6	AV
	3.24	CV
	0.5	
	1.3	
219	0.9	AV
	62.85	CV
	524.7	C
	495.7	C
220	509.9	AV
	4.02	CV
	481.4	C
	486.0	C
221	483.7	AV
	0.67	CV
	25.3	
	25.0	
222	25.1	AV
	0.84	CV
	0.9	
	1.2	
223	1.0	AV
	20.20	CV
	-0.1	
	-0.1	
224	-0.1	AV
	0.00	CV
	51.5	
	52.5	
225	52.0	AV
	1.36	CV
	133.[illegible]	C
	1[illegible].4	C
220	134.6	AV
	0.74	CV
	94.8	
	94.5	
221	94.7	AV
	0.22	CV
	5.3	
	5.3	
220	5.3	AV
	0.00	CV
	3.7	
	66.7	
	67.0	
220	66.9	AV
	0.32	CV
	47.6	
	46.7	
221	47.2	AV
	1.35	CV
224	0.1	
225	51.2	

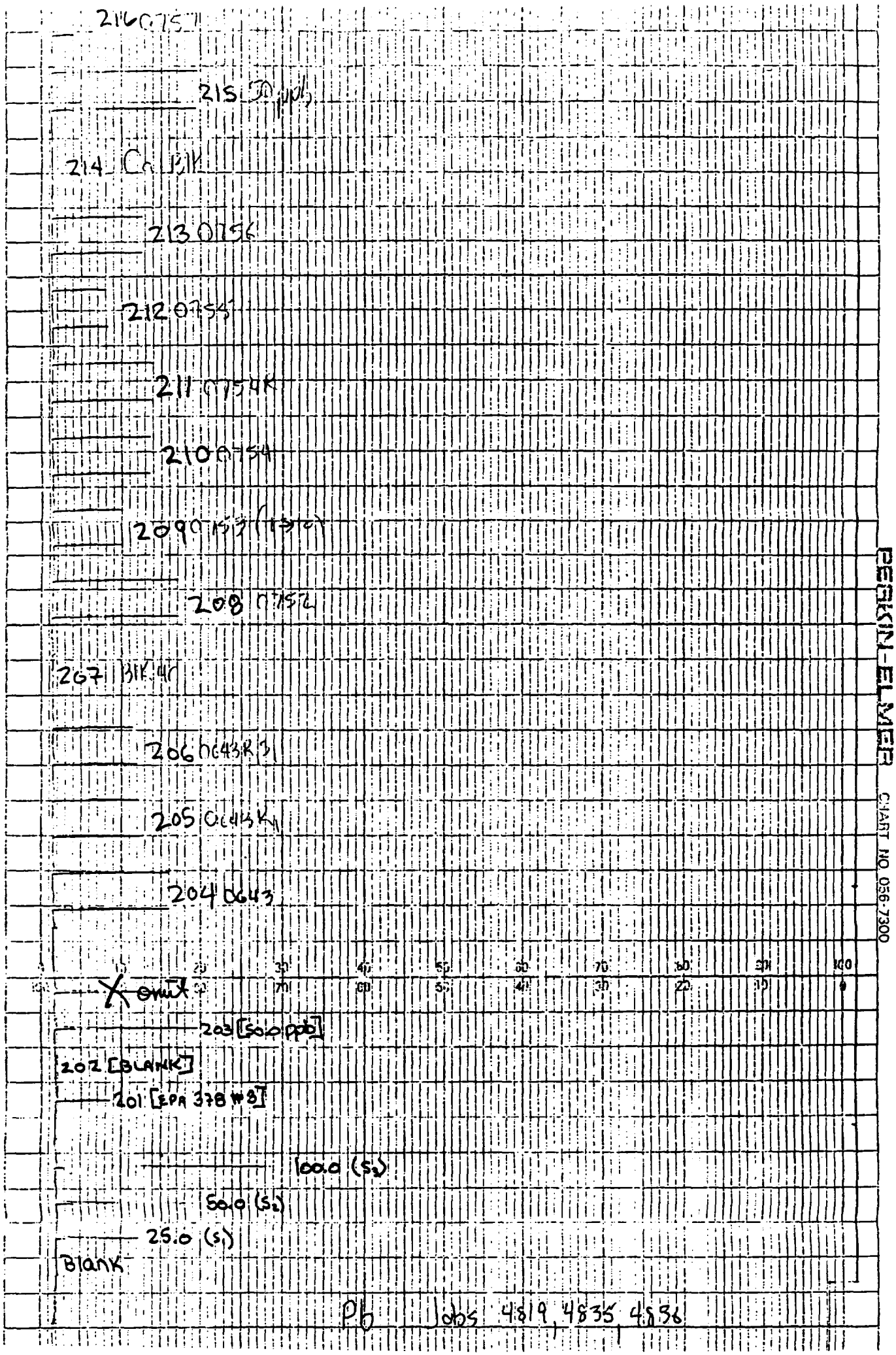
(DF = .1 → 10)

DF re inject

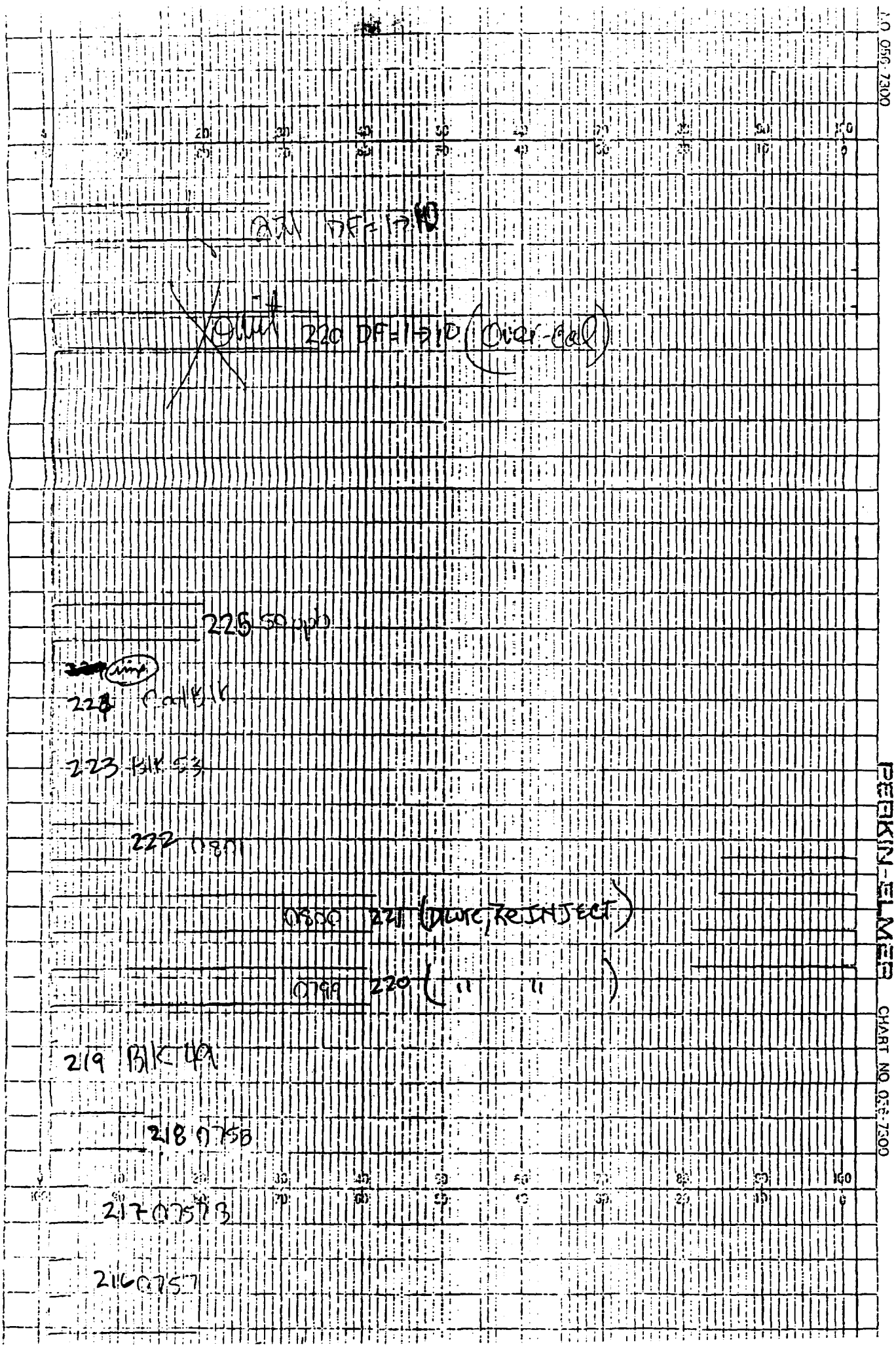
DF too great

DF = 0.5 → 10

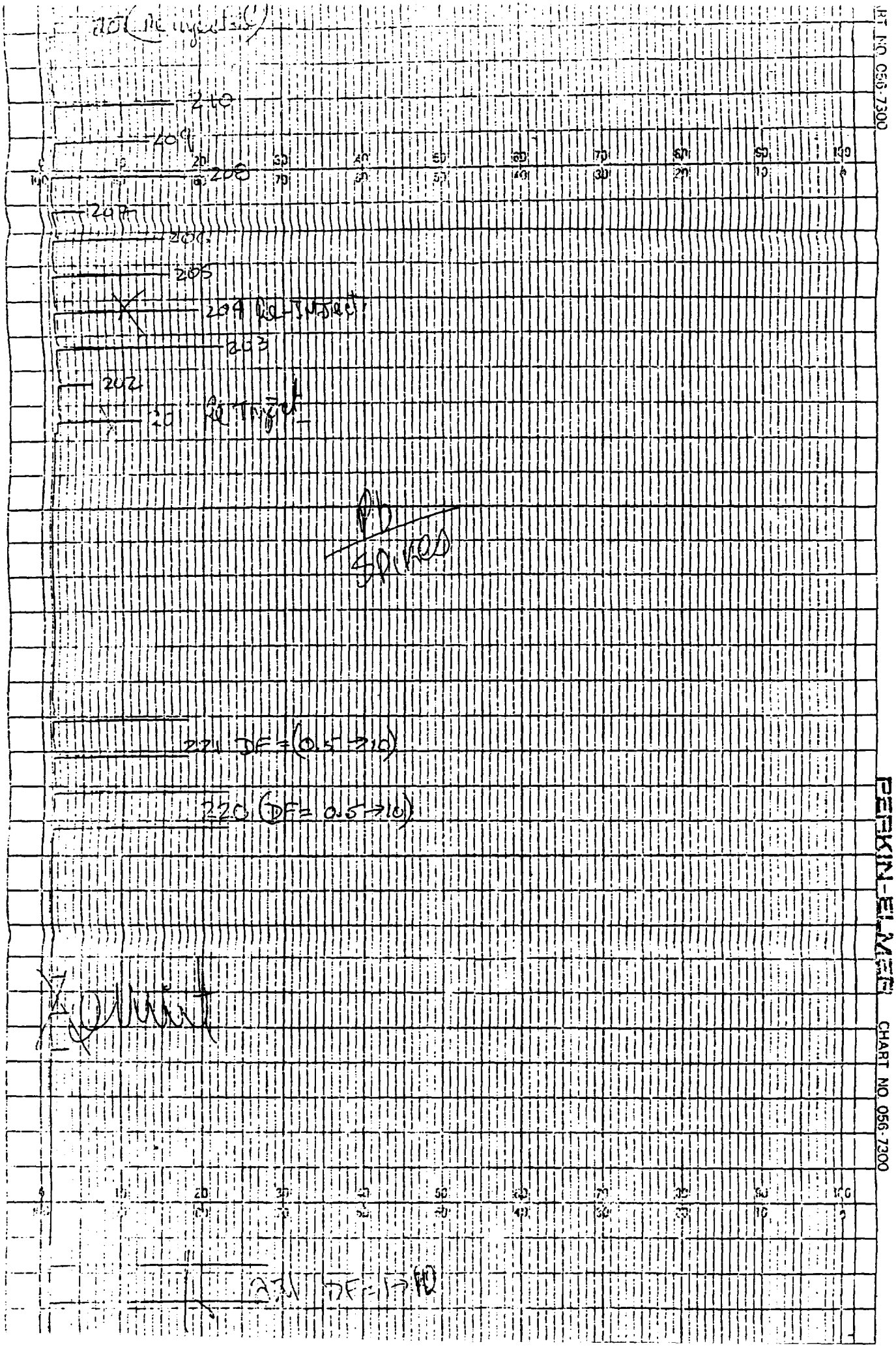
Pb

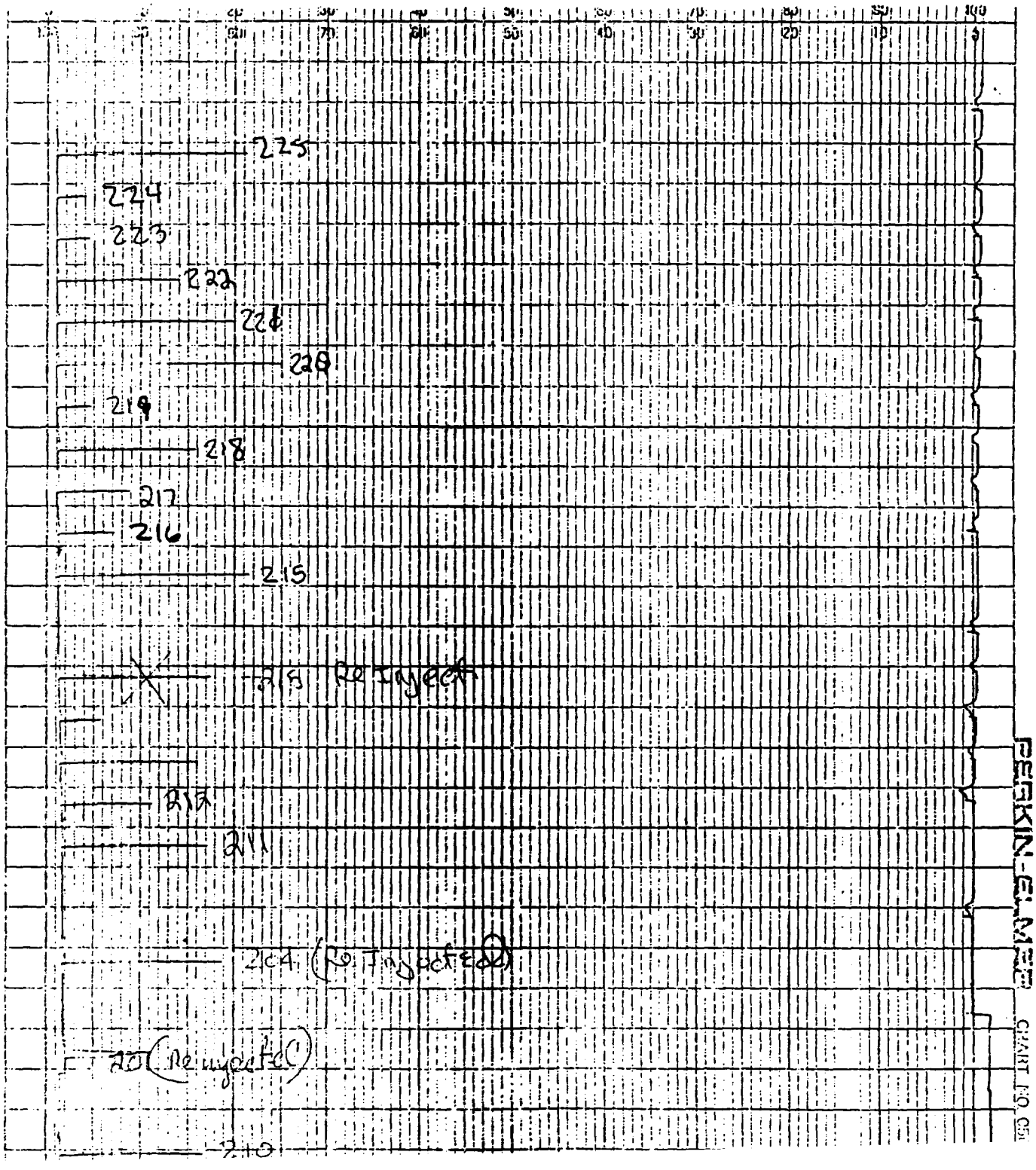


216 0757
215 50 ppb
214 Cn Blk
213 0756
212 0755
211 0754R
210 0754
209 0753 (1→10)
208 0752
207 Blk 40
206 0643R3
205 0643R1
204 0643
X omit
203 [50.0 ppb]
202 [BLANK]
201 [EPA 378 #8]
100.0 (S3)
50.0 (S2)
25.0 (S1)
Blank
Pb Jobs 4819, 4835, 4836
PERKIN-ELMER
CHART NO 056-7300



DF=1→10
220 DF=1→10 (Over-cal)
225 50 ppb
224 Cal Blk
223 Blk 53
222 0801
0800 221 (DILUTE, RE INJECT)
0799 220 (" ")
219 Blk 49
218 0758
217 0757 3
216 0757
PERKIN-ELMER
CHART NO 056-7300


210
209
208
207
206
205
204 Re-Inject
203
202
201 Re Inject
Pb
Spikes
221 DF = (0.5 → 10)
220 (DF = 0.5 → 10)
Remnant
231 DF = 1 → 10
PERKIN-ELMER
CHART NO. 056-7300


225
224
223
222
221
220
219
218
217
216
215
214 Re Injected
213
212
211
210 (Re Injected)
209 (Re injected)
210
PERKIN-ELMER
CHART NO. C5

Project No._____

Book No._____

From Page No.__

Test Performed: Hg

Dat ceived: JANUARY 22, 1987

Work Performed By: [illegible]

(SEE page 1, 37)

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From		READ	CONC.	D.F.	AMOUNT of SAMPLE	UNITS	FINAL CONC.	
	Blank				3					-0.004 ug	r = .99981
	0.2 ug/L				11					0.023 ug	y = .034x - .1
	0.4				19					0.051 ug	
	0.8				26					0.075 ug	
	2.0				61					0.195 ug	
	4.0				120					0.399 ug	
	8.0				237					0.802 ug	
	WP1183 #2				142	4.74			µg/L	4.74	(Known = 4.7
											Final Conc. Dry Wt Basis
	Blank				4	<.20			µg/L	<0.20	
	CCVS				32	0.96			µg/L	0.96	(96% REC)
								Units	AMOUNT of SAMPLE (Ug)		
4727	0097.04	No	A-21		6	<.20		mg/Kg	0.22 gm	<0.10	<0.05
	0097.04				7	<.20		mg/Kg	0.24 gm	<0.10	<0.06
	0098.04	No	A-21		5	<.20		mg/Kg	0.25 gm	<0.10	<0.05
	0098.04 µP				6	<.20		mg/Kg	0.24 gm	<0.10	<0.05
	0098.04 + 1ppb				35	1.06		mg/Kg	0.21 gm	~~1.06~~ (Ug)	(106% REC)
	0099.04	No	A-21		7	<.20		mg/Kg	0.23 gm	<0.10	<0.06
	0099.04				5	<.20		mg/Kg	0.21 gm	<0.10	<0.05
	0100.04	No	A-21		218	7.36	6.64 Avg.	mg/Kg	0.26 gm	2.83	BHR 3.94 ~~2.82 avg.~~
	0100.04				176	5.91		mg/Kg	0.21 gm	2.81	3.92
	Blank				2	<.20		µg/L		<0.20	
	CCVS				34	1.02		µg/L		1.02	(102% Rec)

To Page No.

Witnessed & Understood by me. [signature] Date 1/22/ Invented by [signature] Date 1/22/

Project No. _____

Book No. _____ TITLE _____

om Page No. 75

st Performed: Hg (cont'd)

ate F ved: January 22, 1987

ork Performed By: [signature]

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From	READ	CONC.	D.F.	Units ~~Amount of Sample~~	Amount of Sample ~~Units~~	FINAL CONC.	
	0101.04	No	A-21	10	<.20		mg/kg	0.22 gm	<0.10	
	0101.04			10	<.20		mg/kg	0.26 gm	<0.10	
	0102.04	No	A-21	5	<.20		mg/kg	0.25 gm	<0.10	
	0102.04			6	<.20		mg/kg	0.29 gm	<0.10	
738	0156.04	No	A-6	5	<.20		mg/kg	0.24 gm	<0.10	
	0156.04			5	<.20		mg/kg	0.24 gm	<0.10	
	0156 + 1.0 ppb			34	1.02		mg/kg	0.21 gm		(102% Rec)
	0157.04	No	A-6	7	<.20		mg/kg	0.23 gm	<0.10	
	0157.04			4	<.20		mg/kg	0.20 gm	<0.10	
	Blank			5	<.20		µg/L		<0.20	
	CCVS			31	.92		µg/L		0.92	(92% Rec)
	0158.04	No	A6	68	2.20	Avg = 2.34	mg/kg	0.21 gm	1.05	1.36 ~~Avg = 1.06~~ Avg 1.30
	0158.04			76	2.47		mg/kg	0.23 gm	1.07	~~BHC~~ 1.40
767	0394.04	No	A-34	26	.75	.84 Avg.	mg/kg	0.23 gm	0.33	0.395 ~~Avg = 0.335~~ Avg .404
	0394.04			31	.92		mg/kg	0.27 gm	0.34	0.414
	0395.04	No	A-34	22	.61	Avg = .60	mg/kg	0.33 gm	0.19	0.246 ~~Avg = 0.195~~ Avg .255
	0395.04			21	.58		mg/kg	0.29 gm	0.20	0.264
	0396.04	No	A34	4	<.20		mg/kg	0.26 gm	<0.10	
	0396.04			3	<.20		mg/kg	0.25 gm	<0.10	

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essed & understood by me. [signature] Date 1/23/87 Invented by [signature] Date 1/23/

Project No.
TITLE
Book No.

From Page No. 76
Test Performed: Hg (cont'd)
Date Received: JANUARY 22, 1987
Work Performed By: JMP

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From	Read	Conc.	D.F.	Amount of Sample	Units	Final Conc.	
	0397.04	No	A34	4	<.20		0.30 gm	mg/kg	<0.10	
	0397.04			5	<.20		0.26 gm	mg/kg	<0.10	
	Blank			3	<.20			µg/L	<0.20	
	CCVS			35	1.06			µg/L	1.06	(106% REC)
	0398.04	No	A34	8	<.20		0.21 gm	mg/kg	<0.10	
	0398.04			9	<.20		0.23 gm	mg/kg	<0.10	
	0399.04	No	A34	6	<.20		0.27 gm	mg/kg	<0.10	
	0399.04			6	<.20		0.25 gm	mg/kg	<0.10	
	0399.+1.0ppb			34	1.02		0.25 gm	mg/kg		(102% REC)
	0400.04	No	A34	4	<.20		0.20 gm	mg/kg	<0.10	
	0400.04			7	<.20		0.25 gm	mg/kg	<0.10	
	Blank			4				µg/L	<0.20	
	CCVS			33	.99			µg/L	0.99	(99% REC)

JMP

To Page No.

Witnessed & understood by me. Date 1/23/87 Inventor Date 1/23/87

Project No._____

8 Book No._____ TITLE _____

om ... No.___

Test Performed: Hg (con't)
Date Received: 2/2/87
Work Performed By: JH

Job No.	ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From	Read	Conc.	D.F.	Amount of Sample	Units	Final Conc.
	Blank				0					
	0.02 µg				5					
	0.04				9					
	0.08				18					
	0.20				42					
	0.40				84					
	0.80				168					
	WP 1183 #2				100	.475		100mL	µg/L	4.75
	Blank				0	0				
	CCVS				20	.093		100mL	µg/L	0.93
4844	0795.01	No	A-34		10	.045		100mL	µg/L	0.45
	0796.01				0	~~0~~ <.02				~~<0.02~~ <0.20
	0796.01				1	<.02				<0.20
	0796.01+ 4.0 ppb				95	.45				4.50
	0797.01				0	~~0~~ <.02				<0.20
4834	0748.01	No	A18		2	<.02		0.33g	mg/Kg	<0.10
	0748.01				~~3~~ 4	<.02		0.38		<0.10
	0748.01				0	<.02		0.37		<0.10
	0749.01	No	A19		4	<.02		0.33		<0.10
	0749.01				2	<.02		0.36		<0.10
	Blank				0	<.02			~~µg/L~~	<0.20
	CCVS				20	.093		100mL		0.93

r=.999975
y=.00478x-.00266

113% recovery

Other Client

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Witnessed & Understood by me. | Date 2/3/87 | Invented by | Date 2/2/87

Timothy J. Glaugh

153

TITLE

Page No. 88

Test Performed: Hg (con't)
Date Received:
Work Performed By:

Job No.	ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From	Read	Conc.	D.F.	Amount of Sample	Units	Final Conc	
4834 (con't)	0749.01		NO	A18	10	.045		0.33g	mg/Kg	0.14	<0.10 Ave
	0750.01		NO	A18	7	.031		0.32		<0.10	
	0750.01		⊥	⊥	6	.026		0.40		<0.10	
	0750.01		⊥	⊥	6	.026		0.37		<0.10	
	0751.01		NO	A18	6	.026		0.32		<0.10	
	0751.01		⊥	⊥	6	.026		0.37		<0.10	
	0751.01		⊥	⊥	6	.026		0.32		<0.10	
4819	0643.04		NO	A2	13	.059		0.39		0.153	} 0.155 Ave
	0643.04		⊥	⊥	10	.045		0.29		0.156	
	0643.04+1.0ppb		⊥	⊥	35	.16		0.37	⊥	0.44	108% recovery
	Blank				2	<0.02			mg/L	<0.20	
	CCVS				23	.11		100mL	⊥	1.07	
4835	0752.04		NO	A-18	6	.026		0.39	mg/kg	<0.10	
	0752.04		⊥	⊥	5	.021		0.36		<0.10	
	~~0752.04~~										
	0753.04		NO	A-18	6	.026		0.37		<0.10	
	0753.04		⊥	⊥	7			0.32		<0.10	
	0754.04		NO	A-18	4	<.02		0.35		<0.10	
	0754.04		⊥		4	<.02		0.36		<0.10	
	0755.04		NO	A-18	4	<.02		0.33		<0.10	
	0755.04				4	<.02		0.38		<0.10	
	0755.04+1.0ppb		⊥		18	.083		0.40	⊥	0.21	83% recovery

Other Client

Other Client

To Page No. 90

Witnessed & Understood by me, | Date 2/3/88 | Invented by | Date 2/2/87 | 154

Recorded by Timothy J. Glumyak

Project No. _____
Book No. _____ TITLE _____

From Page No. 89

Test Performed: Hg (con't)
Date Received:
Work Performed By:

Job No.	ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From	Read	Conc	D.F.	Amount of Sample	Units	Final Conc	
4835 (con't)	Blank				3	<.02			µg/L	<0.20	
	CCVS				24	.11		100mL	⊥	1.12	
	0756.04	NO	Air		3	<.02		0.33g	mg/kg	<0.10	
	0756.04	⊥	⊥		4	<.02		0.36		<0.10	
Rerun	0757.04	NO	Air		114	.54		0.37		1.46	possible BOD contamination
	0757.04	⊥	⊥		>8.0			0.31			
	0758.04	NO	Air		31	.14		0.34		0.43	
	0758.04	⊥	⊥		28	.13		0.35		0.37	
4846	0799.04	NO	Air		1	<.02		0.36		<0.10	
	0799.04	⊥	⊥		1	<.02		0.36		<0.10	
	0799.04+1.0ppb	⊥	⊥		19	.098		0.33	⊥	0.27	88% recovery
	Blank				6	<.02			µg/L	<0.20	
	CCVS				21	.098		100mL	⊥	0.98	
Rerun	0800.04	NO	Air		80	.38		0.35	mg/kg	1.08	
	0800.04	⊥	⊥		38	.18		0.37		0.48	
	0800.04	⊥	⊥		31	.14		0.24		0.61	
	0801.04	NO	Air		4	<.02		0.25		<0.10	
	0801.04	⊥	⊥		3	<.02		0.21		<0.10	
	0801.04	⊥	⊥		3	<.02		0.33	⊥	<0.10	
	Blank				3	<.02			µg/L	<0.20	
	CCVS				25	.117		100mL	⊥	1.17	

Other Alert

2/2/87 JJ.

To Page No. _____

Witnessed & Understood by me. Date 2/2/87 Invented by Date 2/2/87
Witnesses Timothy J. Hunzek

Project No.
Book No. TITLE

See pg 5

Test Performed: Se
Date Received: 1/22/87
Work Performed By: J. OLKA

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From	ppb Burn 1	ppb Burn 2	ppb Ave	CV	10.0 ppb Spike	% Rec.	DF	Samp Wgt	Units	Dry wt. Final Conc.
												µg/l	8.00
								17.9	99				
	WS 378#14			8.0									<5.00
								9.7	97				
	Cal BLK			-0.3								µg/l	54.7
								58.1	/				
	50.0 ppb			54.7								mg/kg	< 1.50
							-	11.2	89		1.02		
4727	0097.0403			2.6	2.0	2.3							< 1.20
							-	10.0	100		1.05		
	0098.0403			0.7	0.4	0.5							< 1.30
							-	9.5	95		1.02		
	0099.0403			-0.1	0.1	-0.0							(2.60) 110% Rec
							0.0	19.4	84		1.03		
	0099. S_2			11.0	11.0	11.0							/
							1.51	16.6	/		1.00		
	0100.0403			19.0	18.6	18.8							< 1.30
								8.8	88		1.01		
	0101.0403			0.8	0.6	0.7							< 1.30
								9.0	90		1.01		
	0101. R_2			0.8	0.9	0.8							/
								5.7	/		1.00		
	0102.0403			4.8	3.6	4.2							< 1.30
								7.3	73		1.05		(2.60) 95% Rec
4738	0156.0403			-0.3	-0.3	-0.3							
								15.4	/		1.00	mg/kg	
	0156.0403 S_3			9.5	9.5	9.5						µg/l	<5.00
								9.5	95			µg/l	49.1
	Cal BLK			-0.5	-0.5	-0.5							
							10.9	55.6	65			mg/kg	< 1.20
	50.0 ppb			52.9	45.3	49.1					1.01		
								7.5	75		1.02		< 1.10
	0157.0403			-0.3	-0.1	-0.2							
								8.0	80		1.01	mg/kg	< 1.30
	0157. R_3			-0.2	-0.8	-0.5							
								8.3	83			µg/l	<5.00
	0158.0403			0.3	0.6	0.7							
								9.2	92		1.04	mg/kg	< 1.20
	BLK 11			-0.4	-0.5	-0.5							
								7.4	74		1.00		< 1.30
4767	0394.0403			0.5	0.5	0.5							(1.80) 68% Rec
								5.9	59		1.01		
	0395.0403			-0.1	-0.2	-0.1							
							11.4	13.5	73		1.02	mg/kg	< 1.30
	0395. S_1			6.7	5.7	6.2							
								6.9	69			µg/l	<5.00
	0396.0403			0.3	0.2	0.2							
								7.7	77			µg/l	47.4
	Cal BLK			-0.4	-0.6	-0.5							
							2.53	56.3	89				
	50.0 ppb			46.6	48.3	47.4					1.00	mg/kg	< 1.30
								6.3	63		1.04		< 1.20
	0397.0403			0.2	0.1	0.1							
								7.5	75		1.00		< 1.30
	0398.0403			1.2	1.5	1.3							
								7.3	73		1.00	mg/kg	< 1.3
	0399.0403			0.5	0.5	0.5							
								7.3	73				
	0399. R_1			1.2	0.8	1.0							

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Witnessed & Understood by me: B. H. Rolobach
Date: 1/29/87
Invented by
Recorded by J. C. Olka
Date: 1/22/87

Page No. 98

Performed: Se (cont'd)

Rec'd: 1/22/87

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	10.0 ppb Spike	% Rec	DF	Samp Wgt	Units	DRY WT. Final Conc
167	0400.0403				0.7	0.1	0.4		7.0	70		1.02	mg/kg	< 1.20
	BLK 25				-0.5	0.2	-0.2		8.6	86			µg/l	<5.00
	Cal BLK				0.4				8.8	88				<5.00
	50.0ppb				52.6				54.9	/			µg/l	52.6
	0100.0403				10.8	10.5	10.7	1.99	14.4	/			mg/kg	/
	0102.0403				1.9	1.7	1.8	7.56	5.3	53				< 1.20
	0395.0403S				7.1	6.8	6.9	3.05	12.8	/			mg/kg	69% Rec
	Cal BLK				-0.0	0.1	0.1	—	9.3	93			µg/l	<5.00
	50.0ppb				48.3	48.2	48.3	0.15	55.2	69			µg/l	48.3
	0100.0403				2.1	1.8	2.0	10.9	9.4	94	1→10		mg/kg	< 14.0
	Cal BLK				0.1								µg/l	<5.00
	50.0ppb				50.8								µg/l	50.8

To Page No. ___

Witnessed & Understood by me: B H Rohrbach

Date: 1/29/87

Invented by

Recorded by: J. Olka

Date: 1/22/87