SDMS US EPA REGION V -1

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

REF 15d

15 1132

INORGANIC DATA VALIDATION REPORT

1.0 INTRODUCTION

Site:	Sauget Area 1				
Laboratory:	Ecology and Environment, Inc.				
Validation:	PRC Environmental Management, Inc.				
Review Date:	May 1993				
Case Numbers:	U-4906, U-4928, U-4971, and U-4989				
Sample Numbers:	DC-P1-53	DC-P2-54	DC-P5-55	DC-P5-56	DC-I12-57
	DC-I12-58	DC-01-59	DC-02-60	DC-03-61	DC-04-62
	DC-05-63	DC-05-64	DC-0B-65	DC-06-66	DC-G6-67
	DC-GB-68	DC-G7-69	DC-G8-70	DC-G9-71	DC-09-72
	DC-09-73	DC-010-74	DC-010-75		
Analyses:	Target Analyte List (TAL) Metals and Cyanide				
Collection Dates:	February 11 through 13, 16 through 18, 23, 24, and 26, 1987				

The data for these 23 samples were reviewed according to the EPA document "Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses" (July 1988). Data sheets (Form I) with appropriate data validation qualifiers are provided in Appendix A. The justifications for qualification of sample results are discussed in the following section.

2.0 DATA REVIEW REQUIREMENTS

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

2.1 DATA COMPLETENESS

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

2.2 HOLDING TIMES

All holding time requirements were met.

2.3 CALIBRATIONS

The percent recoveries (%R) for one mercury (77 %R) and one lead (114 %R) continuing calibration check are out of the acceptable limits of 80 - 120 and 90 - 110 %R for mercury and lead, respectively. The mercury results for samples DC-01-59, DC-02-60, DC-03-61, DC-04-62, DC-05-63, DC-05-64, DC-08-65, and DC-06-66 are qualified "UJ" if undetected and "J" if positive, because the results may be biased low. No samples in this case are associated with the lead continuing calibration check; therefore, no data are affected.

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

2.4 BLANKS

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

2.5 INTERFERENCE CHECK SAMPLES

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

2.6 LABORATORY CONTROL SAMPLES

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

2.7 DUPLICATE SAMPLE ANALYSIS

The lead, manganese, nickel and zinc laboratory duplicate sample results are above the acceptable QC limit for precision. All positive lead, manganese, nickel, and zinc results for all samples in this case are considered estimated and qualified "J." A bias cannot be determined.

2.8 MATRIX SPIKE SAMPLE ANALYSIS

The matrix spike %R for antimony (40 %R), arsenic (65 %R), lead (161 %R), and selenium (55 %R) are outside the acceptable QC limits of 75 - 125 %R. Since a high bias is indicated for lead, only the positive lead results for all samples are qualified "J." Since a low bias is indicated for antimony, arsenic and selenium, all antimony, arsenic, and selenium results, both positive and undetected, for all samples in this case are considered estimated and qualified "UJ" or "J."

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
Lead	DC-G9-71
Selenium	DC-P5-55, DC-P5-56, DC-I12-57, DC-02-60, DC-03-61, DC-04-62, DC-05-64, DC-08-65, DC-G6-67, DC-G8-68, DC-G7-69, DC-G8-70, and DC-G9-71
Tin	DC-G9-71

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

2.10 SAMPLE RESULT VERIFICATION

The laboratory reported the samples results for all samples in this case on a wet weight basis instead of a dry weight basis. To convert the results reported here to dry weight, divide the result value by the percent solid and multiply by 100.

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 false negatives or biased low data. The qualified data are biased low and may be used for scoring.

APPENDIX A

CORRECTED FORMS I

CASE NUMBERS U-4906, U-4928, U-4971, AND U-4989

Form I

Sample No.
DC-P1-53

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1032 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	4010			P	13.	Magnesium	NR			
2.	Antimony	12	R	U	P UJ	14.	Manganese	161	*	P	J
3.	Arsenic	0.96	R	U	F UJ	15.	Mercury	3.1		CV	
4.	Barium	101			P	16.	Nickel	20	*	P	J
5.	Beryllium	1.0		U	F	17.	Potassium	NR			
6.	Cadmium	3.1			P	18.	Selenium	0.96	R	U F	UJ
7.	Calcium	NR				19.	Silver	2.0		U P	
8.	Chromium	13			P	20.	Sodium	NR			
9.	Cobalt	10		U	P	21.	Thallium	1.9		U F	
10.	Copper	40			P	22.	Tin	7.7		U F	
11.	Iron	10200			P	23.	Vanadium	15		P	
12.	Lead	0.96	*	U	F	24.	Zinc	370	*	P	J
	Cyanide	1.0		U			Percent Solids (%)	80			

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. [illegible]

Form I

Sample No.
DC-P2-54

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1033 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	1070		P	13.	Magnesium	NR		
2.	Antimony	12	R U	P U J	14.	Manganese	78 *	P	J
3.	Arsenic	1.9	R U	F U J	15.	Mercury	0.54	CV	
4.	Barium	40	U	P	16.	Nickel	8.0 *	U P	
5.	Beryllium	1.0	U	F	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	0.95 R	U F	U J
7.	Calcium	NR			19.	Silver	2.0	U P	
8.	Chromium	2.6		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	1.9	U F	
10.	Copper	5.0	U	P	22.	Tin	7.6	U F	
11.	Iron	3470		P	23.	Vanadium	10	U P	
12.	Lead	3.0 *		F	24.	Zinc	14 *	P	J

Cyanide 11 Percent Solids (%) 84

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

Comments: NR: Analysis not requested.

Lab Manager M. K

Form I

Sample No.
DC-P5-55

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1034 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	4970		P	13.	Magnesium	NR		
2.	Antimony	12 R	U	P UJ	14.	Manganese	505 *		P J
3.	Arsenic ✓	2.5 R		F J	15.	Mercury	0.10	U	CV
4.	Barium	66		P	16.	Nickel	12 *		P J
5.	Beryllium ✓	1.0	U	F	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	1.0 R	U	F UJ
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	11		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	2.0	U	F
10.	Copper	13		P	22.	Tin	8.0	U	F
11.	Iron	12400		P	23.	Vanadium ✓	18		P
12.	Lead	426 *		F J	24.	Zinc	40 *		P J

Cyanide 12 ✓ 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 D. [illegible]

Form I

Sample No.
DC-PS-56

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1035 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	4430			P	13.	Magnesium	NR			
2.	Antimony	12	R	U	P U J	14.	Manganese	568	*		P J
3.	Arsenic	3.2	R		F J	15.	Mercury	0.10		U	CV
4.	Barium	95			P	16.	Nickel	18	*		P J
5.	Beryllium	1.0		U	F	17.	Potassium	NR			
6.	Cadmium	1.0		U	P	18.	Selenium	0.98	R	U	F U J
7.	Calcium	NR				19.	Silver	2.0		U	P
8.	Chromium	8.1			P	20.	Sodium	NR			
9.	Cobalt	10		U	P	21.	Thallium	2.0		U	F
10.	Copper	19			P	22.	Tin	7.8		U	F
11.	Iron	10400			P	23.	Vanadium	13			P
12.	Lead	72	*		F J	24.	Zinc	59	*		P J

Cyanide 1.0 U Percent Solids (%) 80

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-I12-57

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1036 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	1290		P	13.	Magnesium	NR		
2.	Antimony	12 R	U	P UJ	14.	Manganese	87 *		P J
3.	Arsenic	1.9 R		F J	15.	Mercury	0.10	U	CV
4.	Barium	40	U	P	16.	Nickel	8.0 *	U	P
5.	Beryllium	1.0	U	F	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	0.95 R	U	F UJ
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	3.4		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	1.9	U	F
10.	Copper	5.0	U	P	22.	Tin	7.6	U	F
11.	Iron	4360		P	23.	Vanadium	10	U	P
12.	Lead	5.9 *		F J	24.	Zinc	19 *		P J

Cyanide 1.0 U Percent Solids (%) 89

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. [illegible]

Form I

Sample No.
DC-I12-58

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1037 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	988			P		13.	Magnesium	NR		
2.	Antimony	12	R	U	P	UJ	14.	Manganese	52	*	P J
3.	Arsenic	2.0	R	U	F	UJ	15.	Mercury	0.10	U	CV
4.	Barium	40		U	P		16.	Nickel	8.0	* U	P
5.	Beryllium	1.0		U	F		17.	Potassium	NR		
6.	Cadmium	1.0		U	P		18.	Selenium	1.0	R U	F UJ
7.	Calcium	NR					19.	Silver	2.0	U	P
8.	Chromium	3.2			P		20.	Sodium	NR		
9.	Cobalt	10		U	P		21.	Thallium	2.0	U	F
10.	Copper	5.0		U	P		22.	Tin	8.0	U	F
11.	Iron	3450			P		23.	Vanadium	10	U	P
12.	Lead	2.8	*		F	J	24.	Zinc	116	*	P J

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 D. K

Form I

Sample No.
DC-01-59

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1110 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	1760		P	13.	Magnesium	NR		
2.	Antimony	12 R	U	P UJ	14.	Manganese	92 *		P J
3.	Arsenic	1.9 R	U	F UJ	15.	Mercury	0.10	U	CV UJ
4.	Barium	50		P	16.	Nickel	8.0 *	U	P
5.	Beryllium	1.0	U	F	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	0.95 R	U	F UJ
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	3.9		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	2.0	U	F
10.	Copper	5.0	U	P	22.	Tin	7.6	U	F
11.	Iron	4550		P	23.	Vanadium	10	U	P
12.	Lead	2.7 *		F J	24.	Zinc	16 *		P J

Cyanide 1.0 U Percent Solids (%) 87

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.K.

Form I

Sample No.
DC-02-60

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1111 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	1500		P	13.	Magnesium	NR		
2.	Antimony	12	R U	P UJ	14.	Manganese	✓ 84	*	P J
3.	Arsenic	2.0	R U	F UJ	15.	Mercury	0.11	U	CV UJ
4.	Barium	40	U	P	16.	Nickel	8.0	* U	P
5.	Beryllium	1.0	U	F	17.	Potassium	NR		
6.	Cadmium	1.0	✓ U	P	18.	Selenium	0.99	R U	F UJ
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	✓ 4.3		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	2.0	U	F
10.	Copper	5.0	U	P	22.	Tin	7.8	U	F
11.	Iron	✓ 4450		P	23.	Vanadium	10	U	P
12.	Lead	✓ 4.5	*	F J	24.	Zinc	14	*	P J

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 DH

Form I

Sample No.
DC-03-61

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1112 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	3180		P	13.	Magnesium	NR		
2.	Antimony	12 R	U	P UJ	14.	Manganese	196 *		P J
3.	Arsenic	2.9 R		F J	15.	Mercury	0.10	U	CV UJ
4.	Barium	110		P	16.	Nickel	8.0 *	U	P
5.	Beryllium	1.0	U	F	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	0.97 R	U	F UJ
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	7.4		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	2.0	U	F
10.	Copper	6.8		P	22.	Tin	7.8	U	F
11.	Iron	8020		P	23.	Vanadium	11		P
12.	Lead	5.6 *		F J	24.	Zinc	45 *		P J

Cyanide 1.0 U Percent Solids (%) 84

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

Comments: NR: Analysis not requested.

Lab Manager DiK

Form I

Sample No.
DC-04-62

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1113 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	4590		P	13.	Magnesium	NR		
2.	Antimony	12	R U	P UJ	14.	Manganese	257 *	P	J
3.	Arsenic	0.98	R U	F UJ	15.	Mercury	4.9	CV	J
4.	Barium	167		P	16.	Nickel	35 *	P	J
5.	Beryllium	1.0	U	F	17.	Potassium	NR		
6.	Cadmium	24		P	18.	Selenium	0.98 R	U F	UJ
7.	Calcium	NR			19.	Silver	2.0	U P	
8.	Chromium	14		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	2.0	U F	
10.	Copper	160		P	22.	Tin	7.8	U F	
11.	Iron	9250		P	23.	Vanadium	14	P	
12.	Lead	115 *		F J	24.	Zinc	1090 *	P	J
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. H

Form I

Sample No.
DC-05-63

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1114 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 R	U	P UJ	14.	Manganese	170 *		P J
3.	Arsenic	2.4 R		F J	15.	Mercury	0.10	U	CV UJ
4.	Barium	87		P	16.	Nickel	9.4 *		P J
5.	Beryllium	1.0	U	F	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	0.97 R	U	F UJ
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	5.8		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	2.0	U	F
10.	Copper	5.4		P	22.	Tin	7.8	U	F
11.	Iron	7300		P	23.	Vanadium	10	U	P
12.	Lead	5.8 *		F J	24.	Zinc	30 *		P J

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 D.H.

Form I

Sample No.
DC-05-64

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1115 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	2510		P	13.	Magnesium	NR		
2.	Antimony	12 R	U	P UJ	14.	Manganese	153 *		P J
3.	Arsenic	2.2 R		F J	15.	Mercury	0.10	U	CV UJ
4.	Barium	83		P	16.	Nickel	7.9 *		P J
5.	Beryllium	1.0	U	F	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	1.0 R	U	F UJ
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	5.2		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	2.0	U	F
10.	Copper	5.0	U	P	22.	Tin	8.0	U	F
11.	Iron	6750		P	23.	Vanadium	10	U	P
12.	Lead	7.1 *		F J	24.	Zinc	29 *		P J

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 [signature]

Form I

Sample No.
DC-08-65

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1116 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	4910		P	13.	Magnesium	NR		
2.	Antimony	12 R	U	P UJ	14.	Manganese	282 *		P J
3.	Arsenic	6.1 R		F J	15.	Mercury	0.10	U	CV UJ
4.	Barium	325		P	16.	Nickel	12 *		P J
5.	Beryllium	1.0	U	F	17.	Potassium	NR		
6.	Cadmium	1.2		P	18.	Selenium	0.99 R	U	F UJ
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	8.0		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	2.0	U	F
10.	Copper	26		P	22.	Tin	7.9	U	F
11.	Iron	10000		P	23.	Vanadium	12		P
12.	Lead	43 *		F J	24.	Zinc	143 *		P J
	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. [illegible]

Form I

Sample No.
DC-06-66

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1117 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 R	U	P UJ	14.	Manganese	64 *		P J
3.	Arsenic	1.8 R		F J	15.	Mercury	0.10	U	CV UJ
4.	Barium	40	U	P	16.	Nickel	8.0 *	U	P
5.	Beryllium	1.0	U	F	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	0.97 R	U	F UJ
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	3.9		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	2.0	U	F
10.	Copper	5.0	U	P	22.	Tin	7.8	U	F
11.	Iron	3900		P	23.	Vanadium	10	U	P
12.	Lead	3.5 *		F J	24.	Zinc	14 *		P J

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 [signature]

Form I

Sample No.
DC-66-67

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1274 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	1580			P	13.	Magnesium	NR			
2.	Antimony	12	R	U	P UJ	14.	Manganese	102	*		P J
3.	Arsenic	2.0	R	U	F UJ	15.	Mercury	0.10		U	CV
4.	Barium	121			P	16.	Nickel	8.5	*		P J
5.	Beryllium	1.0		U	F	17.	Potassium	NR			
6.	Cadmium	1.0		U	P	18.	Selenium	0.99	R	U	F UJ
7.	Calcium	NR				19.	Silver	2.0		U	P
8.	Chromium	9.8			P	20.	Sodium	NR			
9.	Cobalt	10		U	P	21.	Thallium	2.0		U	F
10.	Copper	15			P	22.	Tin	7.6		U	F
11.	Iron	5130			P	23.	Vanadium	26			P
12.	Lead	21	*		F J	24.	Zinc	73	*		P J

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 [signature]

Form I

Sample No.
DC-GB-68

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1275 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	5360		P	13.	Magnesium	NR		
2.	Antimony	12 R	U	P UJ	14.	Manganese	282 *		P J
3.	Arsenic	4.4 R		F J	15.	Mercury	0.10	U	CV
4.	Barium	287		P	16.	Nickel	11 *		P J
5.	Beryllium	1.0	U	F	17.	Potassium	NR		
6.	Cadmium	1.4		P	18.	Selenium	0.95 R	U	F UJ
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	8.4		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	1.9	U	F
10.	Copper	24		P	22.	Tin	8.0	U	F
11.	Iron	9760		P	23.	Vanadium	13		P
12.	Lead	45 *		P J	24.	Zinc	133 *		P J

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-G7-69

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1276 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	10800		P	13.	Magnesium	NR		
2.	Antimony	12 R	U	P UJ	14.	Manganese	183 *		P J
3.	Arsenic	80 R		F J	15.	Mercury	0.65	U	CV
4.	Barium	1010		P	16.	Nickel	80 *		P J
5.	Beryllium	1.0	U	F	17.	Potassium	NR		
6.	Cadmium	8.8		P	18.	Selenium	9.7 R	U	F UJ
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	640		P	20.	Sodium	NR		
9.	Cobalt	20	U	P	21.	Thallium	1.9	U	F
10.	Copper	1440		P	22.	Tin	52		F
11.	Iron	34900		P	23.	Vanadium	855		P
12.	Lead	2030 *		P J	24.	Zinc	1920 *		P J

Cyanide 1.0 U Percent Solids (%) 65

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]

~~24~~

Form I

Sample No.
DC-68-70

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1277 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	3040		P	13.	Magnesium	NR		
2.	Antimony	12	R U	P UJ	14.	Manganese	135 *	P	J
3.	Arsenic	11	R	F J	15.	Mercury	24	CV	
4.	Barium	199		P	16.	Nickel	279 *	P	J
5.	Beryllium	1.0	U	F	17.	Potassium	NR		
6.	Cadmium	3.5		P	18.	Selenium	9.9 R	U F	UJ
7.	Calcium	NR			19.	Silver	8.3	P	
8.	Chromium	76		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	2.0	U F	
10.	Copper	355		P	22.	Tin	18	F	
11.	Iron	8570		P	23.	Vanadium	76	P	
12.	Lead	583 *		P J	24.	Zinc	2980 *	P	J

Cyanide 1.0 U Percent Solids (%) 70

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 DAK

Form I

Sample No.
DC-69-71

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1278 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	831		P	13.	Magnesium	NR		
2.	Antimony	12 R	U	P UJ	14.	Manganese ✓	37 *		P J
3.	Arsenic	2.0 R	U	F UJ	15.	Mercury	0.10	U	CV
4.	Barium ✓	114		P	16.	Nickel	8.0 *	U	P
5.	Beryllium	1.0	U	F	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	1.0 R	U	F UJ
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	9.3		P	20.	Sodium	NR		
9.	Cobalt	11		P	21.	Thallium	2.0	U	F
10.	Copper	8.2		P	22.	Tin ✓	7.6	U	F UJ
11.	Iron ✓	3490		P	23.	Vanadium	10	U	P
12.	Lead ✓	19 *		P J	24.	Zinc	44 *		P J

Cyanide 1.0 U Percent Solids (%) 86

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. [illegible]

Form I

Sample No.
DC-09-72

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1427 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	4020		P	13.	Magnesium	NR		
2.	Antimony	12 R	U	P UJ	14.	Manganese ✓	156 *		P J
3.	Arsenic	4.6 R		F J	15.	Mercury	1.4		CV
4.	Barium	135		P	16.	Nickel	31 *		P J
5.	Beryllium	1.0 ✓	U	F	17.	Potassium	NR		
6.	Cadmium	3.6		P	18.	Selenium	0.94 R	U	F UJ
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	11		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	0.94	U	F
10.	Copper	48		P	22.	Tin ✓	7.6	U	F
11.	Iron	9670		P	23.	Vanadium	16		P
12.	Lead	15 *		F J	24.	Zinc ✓	227 *		P J

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 DK

Form I

Sample No.
DC-09-73

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1428 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		2710			P	13.	Magnesium	NR		
2.	Antimony		12	R	U	P UJ	14.	Manganese	123	*	P J
3.	Arsenic	✓	2.5	R		F J	15.	Mercury	0.27		CV
4.	Barium		101			P	16.	Nickel	8.0	* U	P
5.	Beryllium		1.0		U	F	17.	Potassium	NR		
6.	Cadmium		1.0	✓	U	P	18.	Selenium	0.99	R U	F UJ
7.	Calcium		NR				19.	Silver	✓ 2.0		U P
8.	Chromium		4.9			P	20.	Sodium	NR		
9.	Cobalt		10		U	P	21.	Thallium	0.99		U F
10.	Copper		5.0	✓	U	P	22.	Tin	7.9		U F
11.	Iron	✓	6140			P	23.	Vanadium	10		U P
12.	Lead		3.7	*		F J	24.	Zinc	24	*	P J

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 D.K.

Form I

Sample No.
DC-010-74

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1429 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		3930			P	13.	Magnesium	NR		
2.	Antimony		12	R	U	P UJ	14.	Manganese	161	*	P J
3.	Arsenic	✓	5.5	R		F J	15.	Mercury	1.5		CV
4.	Barium		123			P	16.	Nickel	106	*	P J
5.	Beryllium		1.0		U	F	17.	Potassium	NR		
6.	Cadmium	✓	8.5			P	18.	Selenium	0.96	R U	F UJ
7.	Calcium		NR				19.	Silver	2.0	U	P
8.	Chromium	✓	17			P	20.	Sodium	NR		
9.	Cobalt		10	✓	U	P	21.	Thallium	0.96	U	F
10.	Copper	✓	266			P	22.	Tin	7.7	U	F
11.	Iron		9290			P	23.	Vanadium	12		P
12.	Lead		55	*		F J	24.	Zinc	537	*	P J

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-010-75

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1430 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	1860		P	13.	Magnesium	NR		
2.	Antimony	12 R	U	P UJ	14.	Manganese	89 *		P J
3.	Arsenic	2.2 R		F J	15.	Mercury	0.10	U	CV
4.	Barium	40		P	16.	Nickel	9.7 *		P J
5.	Beryllium	1.0	U	F	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	0.94 R	U	F UJ
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	3.8		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	0.94	U	F
10.	Copper	13		P	22.	Tin	7.6	U	F
11.	Iron	4970		P	23.	Vanadium	10	U	P
12.	Lead	5.5 *		F J	24.	Zinc	38 *		P J

Cyanide 1.0 U Percent Solids (%) 88

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]

ATTACHMENT A

FORMS I

CASE NUMBERS U-4906, U-4928, U-4971, AND U-4989

SUBAQUATIC SOIL INORGANIC

Date 5/11/87

COVER PAGE
INORGANIC ANALYSES DATA PACKAGE

Lab Name Ecology and Environment, Inc. Case No. U-4906/U-4928/U-4971/U-4989

SOW No. 784 Q.C. Report No.

Sample Numbers

	Lab ID No.		Lab ID No.
DC-P1-53	1032	DC-04-62	1113
DC-P2-54	1033	DC-05-63	1114
DC-P5-55	1034	DC-05-64	1115
DC-P5-56	1035	DC-08-65	1116
DC-I12-57	1036	DC-06-66	1117
DC-I12-58	1037	DC-66-67	1274
DC-01-59	1110	DC-68-68	1275
DC-02-60	1111	DC-67-69	1276
DC-03-61	1112	DC-68-70	1277

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

Date 5/11/87

COVER PAGE
INORGANIC ANALYSES DATA PACKAGE

Lab Name Ecology and Environment, Inc. Case No. U-4906/U-4928/U-4971/U-4989

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

Sample Numbers

	Lab ID No.		Lab ID No.
DC-09-71	1278		
DC-09-72	1427		
DC-09-73	1428		
DC-010-74	1429		
DC-010-75	1430		

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.

; - 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

ecology and environment, inc.
ANALYTICAL SERVICES CENTER, P.O. BOX D, BUFFALO, NEW YORK 14225, TEL. 716-631-0360
International Specialists in the Environmental Sciences

May 12, 1987

Job # U-4906
U-4928
U-4971
U-4989

CASE NARRATIVE

Enclosed are the inorganic analytical results for soil samples received on February 14, 19, 26, and 28, 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 February 23 and March 6 and 11, 1987. Cyanide analysis was performed on February 18, 19, 23, 24, and March 2, 5, 9, 10, 1987.

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

Results of multiple lead analyses for sample DC-PS-56 ranged from 26 to 91 mg/kg because of the heterogeneous nature of the sample. Calculation of lead spike recovery was not possible. Other elements in the sample yielded consistent results and acceptable quality control.

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

Gary Hahn, Manager
Analytical Services Center

GH/db

3

recycled paper

ecology and environment, inc.
196 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:
IL 3140	ARAB CREEK / SALGAT SITES	MIKE MILLER
Samplers: (Signatures) Daniel T Sewall		Field Team Leader: 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%)	PEPPLE & CYANIDE (8.0%)	VOLATILE ORGANICS (120ml)				REMARKS
DC-P1-53	2-11-87	0930	X			UNKNOWN / OVA SCREEN >1000 PPM	BORINGS P1-P4 0'-10'	4	1	1	2				SCREEN POSSIBLY DUE TO METHANE
DC-P2-54	2-11-87	1030	X			UNKNOWN / OVA SCREEN 260 PPM	BORINGS P1-P4 25'-35'	4	1	1	2				SLIGHT ORGANIC ODOR
DC-P5-55	2-12-87	1230	X			UNKNOWN / OVA SCREEN 180 PPM	BORING P-5 10'-25'	4	1	1	2				SLIGHT ORGANIC ODOR
DC-P5-56	2-12-87	1230	X			UNKNOWN / OVA SCREEN 180 PPM	BORING P-5 10'-25'	4	1	1	2				DUPLICATE OF DC-P5-55
DC-B2-57	2-13-87	0800	X			UNKNOWN - SUSPECTED LOW	BORING I-12 3½-12½ FT	4	1	1	2				BACKGROUND LOCATION
DC-I12-58	2-13-87	0830	X			UNKNOWN - SUSPECTED LOW	BORING I-12 18½-27½ FT.	4	1	1	2				BACKGROUND LOCATION

Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Ship Via:
Daniel T Sewall	2-13-87/1400	FEDERAL EXPRESS				FEDERAL EXPRESS
Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	BL/Airbill Number: 2285199066
Relinquished By: (Signature) Fed Express	Date/Time: 2-14-87/1000	Received For Laboratory By: (Signature) [signature]	Relinquished By: (Signature)	Date/Time:	Received For Laboratory By: (Signature)	Date: 2-13-87

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*See CONCENTRATION RANGE on back of form.

23405

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International Specialists in the Environment

CHAIN-OF-CUSTODY RECORD

Project No.:	Project Name:	Project Manager:
IC 3140	DEAD CREEK / SAUGET SITES	MIKE MILLER
Samplers: (Signatures)		Field Team Leader:
Daniel T Sewall		DAN SEWALL

STATION NUMBER	DATE	TIME	SAMPLE TYPE: COMP	GRAB	AIR	SAMPLE INFORMATION / EXPECTED COMPOUNDS (Concentration)*	STATION LOCATION	NUMBER OF CONTAINERS	VOL ORGANICS - 802	METALS & CYANIDE - 803	VOLATILE ORGANICS - 120 ML				REMARKS
AC-01-59	2-6-87	1445	X			UNKNOWN / OVA SCREEN 85 PPM	BORING 0-1, 15'-25'	4	1	1	2				
AC-02-60	2-17-87	1000	X			UNKNOWN / OVA SCREEN 740 PPM.	BORING 0-2, 20'-30'	4	1	1	2				SLIGHT ORGANIC ODOR
AC-03-61	2-17-87	1300	X			UNKNOWN / OVA SCREEN - 420 PPM	BORING 0-3, 10'-20'	4	1	1	2				SLIGHT ORGANIC ODOR
AC-04-62	2-17-87	1500	X			UNKNOWN / OVA SCREEN - >1000 PPM	BORING 0-4, 0'-10'	4	1	1	2				STRONG ORGANIC ODOR
AC-05-63	2-17-87	1630	X			UNKNOWN / OVA SCREEN - >1000 PPM	BORING 0-5, 8.5'-20'	4	1	1	2				STRONG ORGANIC ODOR
AC-05-64	2-17-87	1630	X			UNKNOWN / OVA SCREEN >1000 PPM	BORING 0-5, 8.5'-20'	4	1	1	2				DUPLICATE OF AC-05-63
AC-06-65	2-18-87	0900	X			UNKNOWN / BLANK	SOIL BLANK	4	1	1	2				
AC-06-66	2-18-87	1400	X			UNKNOWN / NOT SCREENED (LOW)	BORING 0-6, 15'-25'	4	1	1	2				

Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Ship Via:
Daniel T Sewall	2-18-87/1700	FEDERAL EXPRESS				FEDERAL EXPRESS
Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	
Relinquished By: (Signature)	Date/Time:	Received For Laboratory By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received For Laboratory By: (Signature)	BL/Airbill Number: 2285199070 — Date: 2-18-87
Fed. Express	2-19-87/0845	[signature]				

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

*See CONCENTRATION RANGE on back of form.

234055

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CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project No.:	Project Name:	Project Manager:
IL 3140	DEAD CREEK / SAUGET SITES	MIKE MILLER
Samplers: (Signatures) Daniel T Sewall		Field Team Leader: DAN SEWALL

STATION NUMBER	DATE	TIME	SAMPLE TYPE: COMP	GRAB	AIR	SAMPLE INFORMATION / EXPECTED COMPOUNDS (Concentration)*	STATION LOCATION	NUMBER OF CONTAINERS	VOL ORGANICS - 9oz	METALS & CYANIDE - 9oz	VOLATILE ORGANICS - 120ml				REMARKS
DC-66-67	2-23-87	1215	X			UNKNOWN / OVA SCREEN >1000 PPM	BORING G-6 20'-30'	4	1	1	2				STRONG HYDROCARBON ODOR
DC-68-68	2-24-87	0900	X			UNKNOWN / BLANK (EXPECTED LOW)	SOIL BLANK	4	1	1	2				
DC-67-69	2-24-87	0915	X			UNKNOWN / OVA SCREEN >1000 PPM	BORING G-7, 10'-25'	4	1	1	2				VERY STRONG ORGANIC ODOR
DC-68-70	2-24-87	1200	X			UNKNOWN / OVA SCREEN >1000 PPM	BORING G-8, 10'-20'	4	1	1	2				VERY STRONG ORGANIC ODOR
DC-69-71	2-24-87	1545	X			UNKNOWN / OVA SCREEN >1000 PPM	BORING G-9, 35'-40'	4	1	1	2				STRONG ORGANIC ODOR

Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Ship Via:
Daniel T. Sewall	2-25-87/1730	FEDERAL EXPRESS				FEDERAL EXPRESS
Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	BL/Airbill Number: 2285199081
Relinquished By: (Signature) Fed. Express	Date/Time: 2-26-87/0845	Received For Laboratory By: (Signature) William H. Howard	Relinquished By: (Signature)	Date/Time:	Received For Laboratory By: (Signature)	Date: 2/25/87

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

234055

6

Form I

Sample No.
DC-P1-53

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1032 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	4010			P	13.	Magnesium	NR			
2.	Antimony	12	R	U	P	14.	Manganese	161	*		P
3.	Arsenic	0.916	R	U	F	15.	Mercury	3.1			CV
4.	Barium	101			P	16.	Nickel	20	*		P
5.	Beryllium	1.0		U	F	17.	Potassium	NR			
6.	Cadmium	3.1			P	18.	Selenium	0.96	R	U	F
7.	Calcium	NR				19.	Silver	2.0		U	P
8.	Chromium	13			P	20.	Sodium	NR			
9.	Cobalt	10		U	P	21.	Thallium	1.9		U	F
10.	Copper	40			P	22.	Tin	7.7		U	F
11.	Iron	10200			P	23.	Vanadium	15			P
12.	Lead	0.96	*	U	F	24.	Zinc	370	*		P
Cyanide		1.0		U		Percent Solids (%)		80			

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. [illegible]

Form I

Sample No.
DC-P2-54

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1033 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	1070		P	13.	Magnesium	NR		
2.	Antimony	12	R U	P	14.	Manganese	78	*	P
3.	Arsenic	1.9	R U	F	15.	Mercury	0.54		CV
4.	Barium	40	U	P	16.	Nickel	8.0	* U	P
5.	Beryllium	1.0	U	F	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	0.95	R U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	2.6		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	1.9	U	F
10.	Copper	5.0	U	P	22.	Tin	7.6	U	F
11.	Iron	3470		P	23.	Vanadium	10	U	P
12.	Lead	3.0	*	F	24.	Zinc	14	*	P

Cyanide 11 Percent Solids (%) 84

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

Comments: NR: Analysis not requested.

Lab Manager M. K

Form I

Sample No.
DC-P5-55

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1034 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	4970			P	13.	Magnesium	NR			
2.	Antimony	12	R	U	P	14.	Manganese	505	*		P
3.	Arsenic	2.5	R		F	15.	Mercury	0.10		U	CV
4.	Barium	66			P	16.	Nickel	12	*		P
5.	Beryllium	1.0		U	F	17.	Potassium	NR			
6.	Cadmium	1.0		U	P	18.	Selenium	1.0	R	U	F
7.	Calcium	NR				19.	Silver	2.0		U	P
8.	Chromium	11			P	20.	Sodium	NR			
9.	Cobalt	10		U	P	21.	Thallium	2.0		U	F
10.	Copper	13			P	22.	Tin	8.0		U	F
11.	Iron	12400			P	23.	Vanadium	18			P
12.	Lead	426	*		F	24.	Zinc	40	*		P

Cyanide 12 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 D. [illegible]

Form I

Sample No.
DC-PS-56

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1035 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	4430			P	13.	Magnesium	NR		
2.	Antimony	12	R	U	P	14.	Manganese	568	*	P
3.	Arsenic	3.2	R		F	15.	Mercury	0.10	U	CV
4.	Barium	95			P	16.	Nickel	18	*	P
5.	Beryllium	1.0		U	F	17.	Potassium	NR		
6.	Cadmium	1.0		U	P	18.	Selenium	0.98	R U	F
7.	Calcium	NR				19.	Silver	2.0	U	P
8.	Chromium	8.1			P	20.	Sodium	NR		
9.	Cobalt	10		U	P	21.	Thallium	2.0	U	F
10.	Copper	19			P	22.	Tin	7.8	U	F
11.	Iron	10400			P	23.	Vanadium	13		P
12.	Lead	72	*		F	24.	Zinc	59	*	P
Cyanide		1.0		U		Percent Solids (%)		80		

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-I12-57

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1036 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	1290		P	13.	Magnesium	NR		
2.	Antimony	12 R	U	P	14.	Manganese	87 *		P
3.	Arsenic	1.9 R		F	15.	Mercury	0.10	U	CV
4.	Barium	40	U	P	16.	Nickel	8.0 *	U	P
5.	Beryllium	1.0	U	F	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	0.95 R	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	3.4		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	1.9	U	F
10.	Copper	5.0	U	P	22.	Tin	7.6	U	F
11.	Iron	43600		P	23.	Vanadium	10	U	P
12.	Lead	5.9 *		F	24.	Zinc	19 *		P
Cyanide		1.0	U		Percent Solids (%)		89		

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. [illegible]

ecology and environment, inc.

196 SUGG ROAD, P.O. BOX D, BUFFALO, N.Y., 14225, TEL. 716-632-4491
International Specialists in the Environment

CHAIN-OF-CUSTODY RECORD

Project No.: IL3140
Project Name: ALPA CREEK / SANGAT SITES
Project Manager: MIKE MILLER
Samplers: (Signatures) [signature]
Field Team Leader: SAM SENAKE

STATION NUMBER	DATE	TIME	SAMPLE TYPE COMP	GRAB	AIR	SAMPLE INFORMATION / EXPECTED COMPOUNDS (Concentration)*	STATION LOCATION	NUMBER OF CONTAINERS	USE ORIGINAL BOX	INTERNAL FOR. BOX	VOCS - 1 CONT.			REMARKS	ETC
AC-09-72	2-26-87	1430	X			UNKNOWN / OVA SCREEN 2200PPM	BORING 0-9 0'-10'	4	1	1	2				1427
AC-09-73	2-26-87	1545	X			UNKNOWN / OVA SCREEN 600PPM	BORING 0-9 10'-15'	4	1	1	2				1429
AC-09-74	2-26-87	1620	X			UNKNOWN / OVA SCREEN >1000PPM	BORING 2-10 5'-10'	4	1	1	2			STRONG ORGANIC ODOR	1429
AC-09-75	2-26-87	1700	X			UNKNOWN / OVA SCREEN 840PPM	BORING 2-10 10'-15'	4	1	1	2			ORGANIC ODOR	1430

Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Ship Via:
[signature]	2-27-87 1130	FEDERAL EXPRESS				FEDERAL EXPRESS
Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	Relinquished By: (Signature)	Date/Time:	Received By: (Signature)	BL/Airbill Number: 2285199092
Relinquished By: (Signature)	Date/Time: 2-28-87	Received For Laboratory By: (Signature) [signature]	Relinquished By: (Signature)	Date/Time:	Received For Laboratory By: (Signature)	Date: 2-27-87

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

234055

Form I

Sample No.
DC-02-60

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1111 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	1500			P	13.	Magnesium	NR			
2.	Antimony	12	R	U	P	14.	Manganese	84	*		P
3.	Arsenic	2.0	R	U	F	15.	Mercury	0.11		U	CV
4.	Barium	40		U	P	16.	Nickel	8.0	*	U	P
5.	Beryllium	1.0		U	F	17.	Potassium	NR			
6.	Cadmium	1.0		U	P	18.	Selenium	0.99	R	U	F
7.	Calcium	NR				19.	Silver	2.0		U	P
8.	Chromium	4.3			P	20.	Sodium	NR			
9.	Cobalt	10		U	P	21.	Thallium	2.0		U	F
10.	Copper	5.0		U	P	22.	Tin	7.8		U	F
11.	Iron	4450			P	23.	Vanadium	10		U	P
12.	Lead	4.5	*		F	24.	Zinc	14	*		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 DH

Form I

Sample No.
DC-01-59

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1110 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	1760		P	13.	Magnesium	NR		
2.	Antimony	12 R	U	P	14.	Manganese	92 *		P
3.	Arsenic	1.9 R	U	F	15.	Mercury	0.10	U	CV
4.	Barium	50		P	16.	Nickel	8.0 *	U	P
5.	Beryllium	1.0	U	F	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	0.95 R	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	3.9		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	2.0	U	F
10.	Copper	5.0	U	P	22.	Tin	7.6	U	F
11.	Iron	4550		P	23.	Vanadium	10	U	P
12.	Lead	2.7 *		F	24.	Zinc	16 *		P
Cyanide		1.0	U		Percent Solids (%)		87		

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.K.

Form I

Sample No.
DC-I12-57

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1036 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	1290		P	13.	Magnesium	NR		
2.	Antimony	12 R	U	P	14.	Manganese	87 *		P
3.	Arsenic	1.9 R		F	15.	Mercury	0.10	U	CV
4.	Barium	40	U	P	16.	Nickel	8.0 *	U	P
5.	Beryllium	1.0	U	F	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	0.95 R	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	3.4		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	1.9	U	F
10.	Copper	5.0	U	P	22.	Tin	7.6	U	F
11.	Iron	4360		P	23.	Vanadium	10	U	P
12.	Lead	5.9 *		F	24.	Zinc	19 *		P
Cyanide		1.0	U		Percent Solids (%)		89		

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. [illegible]

Form I

Sample No.
DC-I12-58

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1037 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	988			P	13.	Magnesium	NR			
2.	Antimony	12	R	U	P	14.	Manganese	52	*		P
3.	Arsenic	2.0	R	U	F	15.	Mercury	0.10		U	CV
4.	Barium	40		U	P	16.	Nickel	8.0	*	U	P
5.	Beryllium	1.0		U	F	17.	Potassium	NR			
6.	Cadmium	1.0		U	P	18.	Selenium	1.0	R	U	F
7.	Calcium	NR				19.	Silver	2.0		U	P
8.	Chromium	3.2			P	20.	Sodium	NR			
9.	Cobalt	10		U	P	21.	Thallium	2.0		U	F
10.	Copper	5.0		U	P	22.	Tin	8.0		U	F
11.	Iron	3450			P	23.	Vanadium	10		U	P
12.	Lead	2.8	*		F	24.	Zinc	116	*		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 [illegible]

Form I

Sample No.
DC-03-61

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1112 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	3180		P	13.	Magnesium	NR		
2.	Antimony	12 R	U	P	14.	Manganese	196 *		P
3.	Arsenic	2.9 R		F	15.	Mercury	0.10	U	CV
4.	Barium	110		P	16.	Nickel	8.0 *	U	P
5.	Beryllium	1.0	U	F	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	0.97 R	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	7.4		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	2.0	U	F
10.	Copper	6.8		P	22.	Tin	7.8	U	F
11.	Iron	8020		P	23.	Vanadium	11		P
12.	Lead	5.6 *		F	24.	Zinc	45 *		P
Cyanide		1.0	U		Percent Solids (%)		84		

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

Comments: NR: Analysis not requested.

Lab Manager [signature]

Form I

Sample No.
DC-04-62

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1113 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	4590		P	13.	Magnesium	NR		
2.	Antimony	12	R U	P	14.	Manganese	257 *		P
3.	Arsenic	0.98	R U	F	15.	Mercury	4.9		CV
4.	Barium	167		P	16.	Nickel	35 *		P
5.	Beryllium	1.0	U	F	17.	Potassium	NR		
6.	Cadmium	24		P	18.	Selenium	0.98 R	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	14		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	2.0	U	F
10.	Copper	160		P	22.	Tin	7.8	U	F
11.	Iron	9250		P	23.	Vanadium	14		P
12.	Lead	115 *		F	24.	Zinc	1090 *		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. H

Form I

Sample No.
DC-05-63

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1114 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 R	U	P	14.	Manganese	170 *		P
3.	Arsenic	2.4 R		F	15.	Mercury	0.10	U	CV
4.	Barium	87		P	16.	Nickel	9.4 *		P
5.	Beryllium	1.0	U	F	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	0.97 R	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	5.8		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	2.0	U	F
10.	Copper	5.4		P	22.	Tin	7.8	U	F
11.	Iron	7300		P	23.	Vanadium	10	U	P
12.	Lead	5.8 *		F	24.	Zinc	30 *		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 D.H.

Form I

Sample No.
DC-05-64

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1115 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	2510		P	13.	Magnesium	NR		
2.	Antimony	12 R	U	P	14.	Manganese	153 *		P
3.	Arsenic	2.2 R		F	15.	Mercury	0.10	U	CV
4.	Barium	83		P	16.	Nickel	7.9 *		P
5.	Beryllium	1.0	U	F	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	1.0 R	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	5.2		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	2.0	U	F
10.	Copper	5.0	U	P	22.	Tin	8.0	U	F
11.	Iron	6750		P	23.	Vanadium	10	U	P
12.	Lead	7.1 *		F	24.	Zinc	29 *		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 [signature]

Form I

Sample No.
DC-08-65

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1116 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	4910	P	13.	Magnesium	NR	
2.	Antimony	12 R	U P	14.	Manganese	252 *	P
3.	Arsenic	6.1 R	F	15.	Mercury	0.10	U CV
4.	Barium	325	P	16.	Nickel	12 *	P
5.	Beryllium	1.0	U F	17.	Potassium	NR	
6.	Cadmium	1.2	P	18.	Selenium	0.99 R	U F
7.	Calcium	NR		19.	Silver	2.0	U P
8.	Chromium	8.0	P	20.	Sodium	NR	
9.	Cobalt	10	U P	21.	Thallium	2.0	U F
10.	Copper	26	P	22.	Tin	7.9	U F
11.	Iron	10000	P	23.	Vanadium	12	P
12.	Lead	43 *	F	24.	Zinc	143 *	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. [illegible]

Form I

Sample No.
DC-06-66

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1117 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 R	U	P	14.	Manganese	64 *		P
3.	Arsenic	1.8 R		F	15.	Mercury	0.10	U	CV
4.	Barium	40	U	P	16.	Nickel	8.0 *	U	P
5.	Beryllium	1.0	U	F	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	0.97 R	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	3.9		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	2.0	U	F
10.	Copper	5.0	U	P	22.	Tin	7.8	U	F
11.	Iron	3900		P	23.	Vanadium	10	U	P
12.	Lead	3.5 *		F	24.	Zinc	14 *		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 [signature]

Form I

Sample No.
DC-66-67

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1274 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	1580			P	13.	Magnesium	NR			
2.	Antimony	12	R	U	P	14.	Manganese	162	*		P
3.	Arsenic	2.0	R	U	F	15.	Mercury	0.10		U	CV
4.	Barium	121			P	16.	Nickel	8.5	*		P
5.	Beryllium	1.0		U	F	17.	Potassium	NR			
6.	Cadmium	1.0		U	P	18.	Selenium	0.99	R	U	F
7.	Calcium	NR				19.	Silver	2.0		U	P
8.	Chromium	9.8			P	20.	Sodium	NR			
9.	Cobalt	10		U	P	21.	Thallium	2.0		U	F
10.	Copper	15			P	22.	Tin	7.6		U	F
11.	Iron	5130			P	23.	Vanadium	26			P
12.	Lead	21	*		F	24.	Zinc	73	*		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 M/K

Form I

Sample No.
DC-GB-68

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1275 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	5360		P	13.	Magnesium	NR		
2.	Antimony	12 R	U	P	14.	Manganese	282 *		P
3.	Arsenic	4.4 R		F	15.	Mercury	0.10	U	CV
4.	Barium	287		P	16.	Nickel	11 *		P
5.	Beryllium	1.0	U	F	17.	Potassium	NR		
6.	Cadmium	1.4		P	18.	Selenium	0.95 R	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	8.4		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	1.9	U	F
10.	Copper	24		P	22.	Tin	8.0	U	F
11.	Iron	9760		P	23.	Vanadium	13		P
12.	Lead	45 *		P	24.	Zinc	133 *		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-G7-69

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1276 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	10800		P	13.	Magnesium	NR		
2.	Antimony	12	R U	P	14.	Manganese	183 *		P
3.	Arsenic	80	R	F	15.	Mercury	0.65	U	CV
4.	Barium	1010		P	16.	Nickel	80 *		P
5.	Beryllium	1.0	U	F	17.	Potassium	NR		
6.	Cadmium	8.8		P	18.	Selenium	9.7 R	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	640		P	20.	Sodium	NR		
9.	Cobalt	20	U	P	21.	Thallium	1.9	U	F
10.	Copper	1440		P	22.	Tin	52		F
11.	Iron	34900		P	23.	Vanadium	855		P
12.	Lead	2030 *		P	24.	Zinc	1920 *		P
Cyanide		1.0	U		Percent Solids (%)		65		

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. [illegible]

Form I

Sample No.
DC-68-70

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1277 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	3040		P	13.	Magnesium	NR		
2.	Antimony	12	R U	P	14.	Manganese	135 *		P
3.	Arsenic	11	R	F	15.	Mercury	24		CV
4.	Barium	199		P	16.	Nickel	279 *		P
5.	Beryllium	1.0	U	F	17.	Potassium	NR		
6.	Cadmium	3.5		P	18.	Selenium	9.9	R U	F
7.	Calcium	NR			19.	Silver	8.3		P
8.	Chromium	76		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	2.0	U	F
10.	Copper	355		P	22.	Tin	18		F
11.	Iron	8570		P	23.	Vanadium	76		P
12.	Lead	583 *		P	24.	Zinc	2980 *		P
Cyanide		1.0	U		Percent Solids (%)		70		

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 DK

Form I

Sample No.
DC-69-71

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1278 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	831		P	13.	Magnesium	NR		
2.	Antimony	12 R	U	P	14.	Manganese	37 *		P
3.	Arsenic	2.0 R	U	F	15.	Mercury	0.10	U	CV
4.	Barium	114		P	16.	Nickel	8.0 *	U	P
5.	Beryllium	1.0	U	F	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	1.0 R	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	9.3		P	20.	Sodium	NR		
9.	Cobalt	11		P	21.	Thallium	2.0	U	F
10.	Copper	8.2		P	22.	Tin	7.6	U	F
11.	Iron	3490		P	23.	Vanadium	10	U	P
12.	Lead	19 *		P	24.	Zinc	44 *		P

Cyanide 1.0 U Percent Solids (%) 86

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. [illegible]

Form I

Sample No.
DC-09-72

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1427 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	4020		P	13.	Magnesium	NR		
2.	Antimony	12	R U	P	14.	Manganese	156	*	P
3.	Arsenic	4.6	R	F	15.	Mercury	1.4		CV
4.	Barium	135		P	16.	Nickel	31	*	P
5.	Beryllium	1.0	U	F	17.	Potassium	NR		
6.	Cadmium	3.6		P	18.	Selenium	0.94	R U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	11		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	0.94	U	F
10.	Copper	48		P	22.	Tin	7.6	U	F
11.	Iron	9670		P	23.	Vanadium	16		P
12.	Lead	15	*	F	24.	Zinc	227	*	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 DK

Form I

Sample No.
DC-09-73

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1428 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	2710		P	13.	Magnesium	NR		
2.	Antimony	12 R	U	P	14.	Manganese	123 *		P
3.	Arsenic	2.5 R		F	15.	Mercury	0.27		CV
4.	Barium	101		P	16.	Nickel	8.0 *	U	P
5.	Beryllium	1.0	U	F	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	0.99 R	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	4.9		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	0.99	U	F
10.	Copper	5.0	U	P	22.	Tin	7.9	U	F
11.	Iron	6140		P	23.	Vanadium	10	U	P
12.	Lead	3.7 *		F	24.	Zinc	24 *		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 D.K.

Form I

Sample No.
DC-010-74

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1429 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	3930		P	13.	Magnesium	NR		
2.	Antimony	12 R	U	P	14.	Manganese	161 *		P
3.	Arsenic	5.5 R		F	15.	Mercury	1.5		CV
4.	Barium	123		P	16.	Nickel	106 *		P
5.	Beryllium	1.0	U	F	17.	Potassium	NR		
6.	Cadmium	8.5		P	18.	Selenium	0.96 R	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	17		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	0.96	U	F
10.	Copper	266		P	22.	Tin	7.7	U	F
11.	Iron	9290		P	23.	Vanadium	12		P
12.	Lead	55 *		F	24.	Zinc	537 *		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-010-75

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1430 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	1860		P	13.	Magnesium	NR		
2.	Antimony	12 R	U	P	14.	Manganese	89 *		P
3.	Arsenic	2.2 R		F	15.	Mercury	0.10	U	CV
4.	Barium	40		P	16.	Nickel	9.7 *		P
5.	Beryllium	1.0	U	F	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	0.94 R	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	3.8		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	0.94	U	F
10.	Copper	13		P	22.	Tin	7.6	U	F
11.	Iron	4970		P	23.	Vanadium	10	U	P
12.	Lead	5.5 *		F	24.	Zinc	38 *		P

Cyanide 1.0 U Percent Solids (%) 88

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-I12-58

Date 5/11/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

LAB SAMPLE ID. NO. 1037 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	988		P	13.	Magnesium	NR		
2.	Antimony	12	R U	P	14.	Manganese	52 *		P
3.	Arsenic	2.0	R U	F	15.	Mercury	0.10	U	CV
4.	Barium	40	U	P	16.	Nickel	8.0 *	U	P
5.	Beryllium	1.0	U	F	17.	Potassium	NR		
6.	Cadmium	1.0	U	P	18.	Selenium	1.0 R	U	F
7.	Calcium	NR			19.	Silver	2.0	U	P
8.	Chromium	3.2		P	20.	Sodium	NR		
9.	Cobalt	10	U	P	21.	Thallium	2.0	U	F
10.	Copper	5.0	U	P	22.	Tin	8.0	U	F
11.	Iron	3450		P	23.	Vanadium	10	U	P
12.	Lead	2.8 *		F	24.	Zinc	16 *		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 D. K

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc.

CASE NO. U-4906/U-4928/U-4971/U-4989

SOW NO. 784

DATE 2/18/87

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									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									F
23. Vanadium									P
24. Zinc									P
Other:									
Cyanide 2/19/87				48	44	92			
Cyanide				48	45	94			

[1] Initial Calibration Source ASC.1 [2] Continuing Calibration Source ASC.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-4906/U-4928/U-4971/U-4989

SOW NO. 784

DATE 2/23/87

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									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									F
13. Magnesium									
14. Manganese									P
15. Mercury	1.0	0.91	91	1.0	0.91	91	0.84	84	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 2/24/87				48	46	96			
nide				48	44	92			

[1] Initial Calibration Source ASC .1 [2] Continuing Calibration Source ASC .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-4906/U-4928/U-4971/U-4989

SOW NO. 784

DATE 2/23/87

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									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									F
13. Magnesium									
14. Manganese									P
15. Mercury				1.0	0.91	91	0.77	77	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:									
Mercury				1.0	0.91	91			
.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-4906/U-4928/U-4971/U-4989

SOW NO. 784

DATE 3/2/87

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	49	98	50	50	100	50	100	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									F
13. Magnesium									
14. Manganese									P
15. Mercury	1.0	1.0	100	1.0	1.0	100			CV
16. Nickel									P
17. Potassium									
18. Selenium	50	50	100	50	51	102	50	100	F
19. Silver									P
20. Sodium									
21. Thallium									F
22. Tin									F
23. Vanadium									P
24. Zinc									P
Other:									
Cyanide				48	43	90			

[1] Initial Calibration Source 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-4906/U-4928/U-4971/U-4989

SOW NO. 784

DATE 3/3/87

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									P
2. Antimony									P
3. Arsenic	50	50	100	50	52	104			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									F
13. Magnesium									
14. Manganese									P
15. Mercury									CV
16. Nickel									P
17. Potassium									
18. Selenium									F
19. Silver									P
20. Sodium									
21. Thallium	50	52	104	50	48	96	48	96	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-4906/U-4928/U-4971/U-4989

SOW NO. 784

DATE 3/3/87

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									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									F
13. Magnesium									
14. Manganese									P
15. Mercury									CV
16. Nickel									P
17. Potassium									
18. Selenium									F
19. Silver									P
20. Sodium									
21. Thallium				50	48	96			F
22. Tin									F
23. Vanadium									P
24. Zinc									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-4906/U-4928/U-4971/U-4989

SOW NO. 784

DATE 3/4/87

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	52	104	50	50	100	49	98	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	102	102	100	102	102	98	98	F
23. Vanadium									P
24. Zinc									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-4906/U-4928/U-4971/U-4989

SOW NO. 784

DATE 3/4/87

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	47	94			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	102	102	103	103	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-4906/U-4928/U-4971/U-4989

SOW NO. 784

DATE 3/5/87

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	51	102	50	52	104	50	100	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									F
13. Magnesium									
14. Manganese									P
15. Mercury									CV
16. Nickel									P
17. Potassium									
18. Selenium	50	49	98	50	49	98	53	106	F
19. Silver									P
20. Sodium									
21. Thallium	50	46	92	50	54	108	54	108	F
22. Tin									F
23. Vanadium									P
24. Zinc									P
Other:									
Cyanide				48	40	83			

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-4906/U-4928/U-4971/U-4989

SOW NO. 784

DATE 3/5/87

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			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									F
13. Magnesium									
14. Manganese									P
15. Mercury									CV
16. Nickel									P
17. Potassium									
18. Selenium				50	46	92			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-4906/U-4928/U-4971/U-4989

SOW NO. 784

DATE 3/6/87

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									F
13. Magnesium									
14. Manganese									P
15. Mercury	1.0	0.85	85	1.0	0.96	96	1.0	100	CV
16. Nickel									P
17. Potassium									
18. Selenium									F
19. Silver									P
20. Sodium									
21. Thallium									F
22. Tin	100	104	104	100	106	106	97	97	F
23. Vanadium									P
24. Zinc									P
Other:									
Mercury				1.0	1.0	100			
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-4906/U-4928/U-4971/U-4989

SOW NO. 784

DATE 3/9/87

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									P
2. Antimony	500	457	91	500	457	91	465	93	P
3. Arsenic									F
4. Barium	10000	10700	107	500	551	110	544	109	P
5. Beryllium	10000	10200	102	500	525	106	526	105	P
6. Cadmium	10000	10100	101	500	522	104	522	104	P
7. Calcium									
8. Chromium	10000	10300	103	500	538	108	532	106	P
9. Cobalt	10000	9880	99	500	519	104	518	104	P
10. Copper	10000	10500	105	500	530	106	530	106	P
11. Iron									P
12. Lead	50	48	96	50	49	98	51	102	F
13. Magnesium									
14. Manganese	10000	10300	103	500	532	106	532	106	P
15. Mercury									CV
16. Nickel	10000	10200	102	500	526	105	517	103	P
17. Potassium									
18. Selenium									F
19. Silver	500	522	104	500	522	104	522	104	P
20. Sodium									
21. Thallium									F
22. Tin									F
23. Vanadium	10000	10800	108	500	538	108	537	107	P
24. Zinc	10000	10300	103	500	532	106	533	107	P
Other: LeAb				50	57	114			F
Cyanide				48	45	94			

[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-4906/U-4928/U-4971/U-4989

SOW NO. 784

DATE 3/10/87

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	9940	99	1000	1020	102	1040	104	P
2. Antimony									P
3. Arsenic	50	52	104	50	51	102	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	100000	96400	96	1000	1020	102	1050	105	P
12. Lead	50	52	104	50	51	102			F
13. Magnesium									
14. Manganese									P
15. Mercury									CV
16. Nickel									P
17. Potassium									
18. Selenium									F
19. Silver									P
20. Sodium									
21. Thallium	50	47	94	50	46	92	45	90	F
22. Tin									F
23. Vanadium									P
24. Zinc									P
Other:									
Cyanide				48	45				

[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-4906/U-4928/U-4971/U-4989

SOW NO. 784

DATE 3/11/87

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									F
13. Magnesium									
14. Manganese									P
15. Mercury	1.0	1.0	100	1.0	1.0	100	1.0	100	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:									
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-4906/U-4928/U-4971/U-4989

SOW NO. 784

DATE 3/12/87

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									F
13. Magnesium									
14. Manganese									P
15. Mercury									CV
16. Nickel									P
17. Potassium									
18. Selenium	50	50	100	50	49	98	49	98	F
19. Silver									P
20. Sodium									
21. Thallium									F
22. Tin	100	105	105	100	110	110			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-4906/U-4928/U-4971/U-4989

SOW NO. 784

DATE 3/13/87

UNITS ug/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum	500	519	104	500	491	98	526	105	P
2. Antimony	500	467	93	500	486	97	467	93	P
3. Arsenic									F
4. Barium	500	508	102	500	497	99	517	103	P
5. Beryllium	500	503	101	500	487	97	498	100	P
6. Cadmium	500	509	102	500	489	98	500	100	P
7. Calcium									
8. Chromium	500	512	102	500	498	100	513	103	P
9. Cobalt	500	509	102	500	498	100	500	100	P
10. Copper	500	504	101	500	496	99	508	102	P
11. Iron	500	519	104	500	509	102	522	104	P
12. Lead	500	531	106	500	527	105	533	107	P
13. Magnesium									
14. Manganese	500	512	102	500	498	100	510	102	P
15. Mercury									CV
16. Nickel	500	511	102	500	487	97	493	99	P
17. Potassium									
18. Selenium									F
19. Silver	500	492	98	500	509	102	486	97	P
20. Sodium									
21. Thallium									F
22. Tin									F
23. Vanadium	500	502	100	500	489	98	508	102	P
24. Zinc	500	513	103	500	488	98	504	101	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-4906/U-4928/U-4971/U-4989

SOW NO. 784

DATE 3/24/87

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	50	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									F
23. Vanadium									P
24. Zinc									P
Other:									
inide									

[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-4906/U-4928/U-4971/U-4989

SOW NO. 784

DATE 4/20/87

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	54	108	50	51	102	50	100	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									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-4906/U-4928/U-4971/U-4989

SOW NO. 784

DATE 4/20/87

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	49	98	54	108	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									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-4906/U-4928/U-4971/U-4989

SOW NO. 784

DATE 4/22/87

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	50	49	98	50	48	96			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									F
23. Vanadium									P
24. Zinc									P
Other:									
Cyanide									

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

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

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

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4

DATE 2/18/87 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							
Other:							
Cyanide 2/19/87		10 U				10 U	
Cyanide		10 U				10 U	

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4

DATE 2/23/87 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	0.2 U	0.2U	0.2U	0.2U	0.2U	0.2U	
16. Nickel							
17. Potassium							
18. Selenium							
19. Silver							
20. Sodium							
21. Thallium							
22. Tin							
23. Vanadium							
24. Zinc							
Other: Mercury		0.2U	0.2U				
Cyanide 2/24/87		10U				10U	
Cyanide		10U				10U	

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-49

DATE 3/2/87 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	10U	10U	10U	10U	10U	10U	10U
4. Barium							
5. Beryllium							
6. Cadmium							
7. Calcium							
8. Chromium							
9. Cobalt							
10. Copper							
11. Iron							
12. Lead							
13. Magnesium							
14. Manganese							
15. Mercury	0.2U	0.2U	0.2U			0.2U	
16. Nickel							
17. Potassium							
18. Selenium	5U	5U	5U			5U	5U
19. Silver							
20. Sodium							
21. Thallium							
22. Tin							
23. Vanadium							
24. Zinc							
Other:							
Cyanide		10U				10U	

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4

DATE 3/3/87 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	10U	10U	10U	10U		10U	10U
22. Tin							
23. Vanadium							
24. Zinc							
Other:							
Cyanide							

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-49

DATE 3/4/87 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	5U	5U	5U	5U		5U	
13. Magnesium							
14. Manganese							
15. Mercury							
16. Nickel							
17. Potassium							
18. Selenium							
19. Silver							
20. Sodium							
21. Thallium							
22. Tin	40 U	40U	40U	40U		40U	40U
23. Vanadium							
24. Zinc							
Other:							
Cyanide							

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-49

DATE 3/5/87 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	10 U	10U	10U	10U		10U	10U
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	5U	5U	5U			5U	
19. Silver							
20. Sodium							
21. Thallium	10 U	10U	10U			10U	
22. Tin							
23. Vanadium							
24. Zinc							
Other:							
Cyanide		10U				10U	

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-49

DATE 3/6/87 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	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	
16. Nickel							
17. Potassium							
18. Selenium							
19. Silver							
20. Sodium							
21. Thallium							
22. Tin	40U	40U	40U			40U	
23. Vanadium							
24. Zinc							
Other:							
Cyanide							

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-49

DATE 3/9/87 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							
2. Antimony	60U	60U	60U			60U	
3. Arsenic							
4. Barium	200U	200U	200U			200U	
5. Beryllium	5U	5U	5U			5U	
6. Cadmium	5U	5U	5U			5U	
7. Calcium							
8. Chromium	10U	10U	10U			10U	
9. Cobalt	50U	50U	50U			50U	
10. Copper	25U	25U	25U			25U	
11. Iron							
12. Lead	5U	5U	5U			5U	
13. Magnesium							
14. Manganese	15U	15U	15U			15U	
15. Mercury							
16. Nickel	40U	40U	40U			40U	
17. Potassium							
18. Selenium							
19. Silver	10U	10U	10U			10U	
20. Sodium							
21. Thallium							
22. Tin							
23. Vanadium	50U	50U	50U			50U	
24. Zinc	20U	20U	20U			20U	
Other:							
Cyanide		10U				10U	

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4

DATE 3/10/87 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	200U	200U			200U	
2. Antimony							
3. Arsenic	10U	10U	10U			10U	
4. Barium							
5. Beryllium							
6. Cadmium							
7. Calcium							
8. Chromium							
9. Cobalt							
10. Copper							
11. Iron	100U	100U	100U			100U	
12. Lead	5U	5U				5U	
13. Magnesium							
14. Manganese							
15. Mercury							
16. Nickel							
17. Potassium							
18. Selenium							
19. Silver							
20. Sodium							
21. Thallium	10U	10U	10U			10U	
22. Tin							
23. Vanadium							
24. Zinc							
Other:							
Cyanide		10U				10U	

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-

DATE 3/11/87 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	0.24	0.24	0.24	0.24		0.24	
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-4906/U-4928/U-4971/U-4

DATE 3/12/87 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	5 U	5U	5U			5U	
19. Silver							
20. Sodium							
21. Thallium							
22. Tin	40 U	40U				40U	
23. Vanadium							
24. Zinc							
Other:							
Cyanide							

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4

DATE 3/13/87 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	200 U	200U	200U			200U	
2. Antimony	60U	60U	60U			60U	
3. Arsenic							
4. Barium	200U	200U	200U			200U	
5. Beryllium	5.0 U	5.0U	5.0U			5.0U	
6. Cadmium	5.0 U	5.0U	5.0U			5.0U	
7. Calcium							
8. Chromium	10U	10U	10U			10U	
9. Cobalt	50 U	50U	50U			50U	
10. Copper	25 U	25U	25U			25U	
11. Iron	100 U	100U	100U			100U	
12. Lead	50 U	50U	50 U			50.U	
13. Magnesium							
14. Manganese	15U	15U	15U			15U	
15. Mercury							
16. Nickel	40U	40U	40U			40U	
17. Potassium							
18. Selenium							
19. Silver	10 U	10U	10U			10U	
20. Sodium							
21. Thallium							
22. Tin							
23. Vanadium	50U	50U	50U			50U	
24. Zinc	20U	20U	20U			20U	
Other:							
Cyanide							

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-

DATE 3/24/87 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	5.0 U	5.0 U				5.0 U	
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-4906/U-4928/U-4971/U-

DATE 4/20/87 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	5.0 u	5.0u	5.0u	5.0u	5.0u	5.0u	
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-4906/U-4928/U-4971/U-4

DATE 4/22/87 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	5.0 U	5.0U					
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 V

Q. C. Report No. _____

SPIKE SAMPLE RECOVERY

LAB NAME Ecology & Environment Inc.

DATE 5/11/87

CASE NO. U-4906, 4928, 4971, 4989
EPA Sample No. DC-P5-55
Lab Sample ID No. 1034
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	"	19.6	12	7.9	96

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

Comments: _____

Form V

Q. C. Report No. _____

SPIKE SAMPLE RECOVERY

LAB NAME Ecology and Environment, Inc.

DATE 5/11/87

CASE NO. U-4906/U-4928/U-4971/U-4989

Sample No. DC-PS-56

Lab Sample ID No. 1035

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	"	40	12U	100	40R
3. Arsenic	"	8.3	3.2	7.8	65R
4. Barium	"	487	95	400	98
5. Beryllium	"	9.8	1U	10	98
6. Cadmium	"	9.7	1.0U	10	97
7. Calcium	"				
8. Chromium	"	45	8.1	40	92
9. Cobalt	"	95	10U	100	95
10. Copper	"	58	19	50	78
11. Iron	"				
12. Lead	"	233	72	100	+
13. Magnesium	"				
14. Manganese	"				
15. Mercury	"				
16. Nickel	"	107	12	100	95
17. Potassium	"				
18. Selenium	"	1.05	0.98U	1.9	55R
19. Silver	"	10	20U	10	100
20. Sodium	"				
21. Thallium	"	8.66	2.0U	9.7	89
22. Tin	"				
23. Vanadium	"	104	13	100	91
24. Zinc	"	150	59	100	91
Other:					
Cyanide	"				

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

Comments: Mn, Fe, AL values are 4X the spike amount.

+- Calculation of Pb spike recovery is not possible because of the heterogenous nature of the sample.

Form V

Q. C. Report No. _____

SPIKE SAMPLE RECOVERY

LAB NAME Ecology and Environment, Inc.

DATE 5/11/87

CASE NO. U-4906/U-4928/U-4971/U-498

Sample No. DC-PS-56

Lab Sample ID No. 1035*

Units µg/L

Matrix soil

Compound	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spiked Added (SA)	%R[1]
Metals:					
1. Aluminum	75-125				
2. Antimony	"				
3. Arsenic	"				
4. Barium	"				
5. Beryllium	"				
6. Cadmium	"				
7. Calcium	"				
8. Chromium	"				
9. Cobalt	"				
10. Copper	"				
11. Iron	"				
12. Lead	"				
13. Magnesium	"				
14. Manganese	"				
15. Mercury	"				
16. Nickel	"				
17. Potassium	"				
18. Selenium	"				
19. Silver	"				
20. Sodium	"				
21. Thallium	"				
22. Tin	"	81	7.4	80	92
23. Vanadium	"				
24. Zinc	"				
Other:					
Cyanide	"				

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

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

Form V

Q. C. Report No. _____

SPIKE SAMPLE RECOVERY

LAB NAME Ecology and Environment, Inc.

DATE 5/1/87

CASE NO. U-4906/U-4928/U-4971/U-498

Sample No. DC-03-01

Lab Sample ID No. 1112

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	"	1.3	0.1 U	1.3	100
16. Nickel	"				
17. Potassium	"				
18. Selenium	"				
19. Silver	"				
20. Sodium	"				
21. Thallium	"				
22. Tin	"				
23. Vanadium	"				
24. Zinc	"				
Other:					
Cyanide	"				

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

"R"- out of control

Form VI

Q. C. Report No. _____

DUPLICATES

LAB NAME Ecology and Environment, Inc.

CASE NO. U-4906/U-4928/U-4971/U-4989

DATE 5/11/87

Sample No. DC-PS-56

Lab Sample ID No. 1035

Units mg/kg as received

Matrix soil

Compound	Control Limit[1]	Sample(S)	Duplicate(D)	RPD[2]
Metals:				
1. Aluminum		4430	4620	4.2
2. Antimony		12U	12U	NC
3. Arsenic		3.2	2.5	
4. Barium		95	100	5.1
5. Beryllium		1.0U	1.0U	NC
6. Cadmium		1.0U	3.2	NC
7. Calcium				
8. Chromium		8.1	7.7	5.1
9. Cobalt		10U	10U	NC
10. Copper		19	18	5.4
11. Iron		10400	12000	14
12. Lead		72	26	94*
13. Magnesium				
14. Manganese		568	908	46*
15. Mercury		0.10U	0.10	NC
16. Nickel		18	12	40*
17. Potassium				
18. Selenium		0.98U	0.98 U	NC
19. Silver		2.0U	2.0U	NC
20. Sodium				
21. Thallium		2.0U	2.0U	NC
22. Tin		7.8U	7.8U	NC
23. Vanadium		13	13	0
24. Zinc		59	99	51*
Other:				
Cyanide				

* Out of Control

[1] To be added at a later date.

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

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

Form VI

Q. C. Report No. _____

DUPLICATES

LAB NAME Ecology & Environment Inc.

DATE 6/11/87

CASE NO. U-4906/4928/4971/4989

EPA Sample No. DC-06-66

Lab Sample ID No. 1117

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		1 u	1 u	NC

* Out of Control

[1] To be added at a later date.

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

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

Form VII

Q.C. Report No. _____

INSTRUMENT DETECTION LIMITS AND

LABORATORY CONTROL SAMPLE

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-498

DATE 2/23/87 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			
4. Barium	200	10				
5. Beryllium	5	5				
6. Cadmium	5	5	1			
7. Calcium	5000	1000				
8. Chromium	10	10				
9. Cobalt	50	10				
10. Copper	25	10				
11. Iron	100	25				
12. Lead	5	50	5			
13. Magnesium	5000	1000				
14. Manganese	15	5				
15. Mercury	0.2	0.2		4.4	4.4	100
16. Nickel	40	15				
17. Potassium	5000	1000				
18. Selenium	5		5			
19. Silver	10	10	5			
20. Sodium	5000	1000				
21. Thallium	10		5			
22. Tin	40	40	5			
23. Vanadium	50	10				
24. Zinc	20	10				
Other:						
Mercury				1.3	1.04	80
Cyanide	10					

Form VII

Q.C. Report No. _____

INSTRUMENT DETECTION LIMITS AND

LABORATORY CONTROL SAMPLE

LAB NAME Ecology and Environment, Inc. CASE NO. U-4906/U-4928/U-4971/U-4989

DATE 3/2/87 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	21	105
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		1.3	1.2	92
16. Nickel	40	15				
17. Potassium	5000	1000				
18. Selenium	5		5	7.9	8.8	111
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-4906/U-4928/U-4971/U-4989

DATE 3/3/87 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				
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	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-4906/U-4928/U-4971/U-4989

DATE 3/4/87 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	15	88
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-4906/U-4928/U-4971/U-498

DATE 3/5/87 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	7.7	97
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-4906/U-4928/U-4971/U-498

DATE 3/6/87 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			
13. Magnesium	5000	1000				
14. Manganese	15	5				
15. Mercury	0.2	0.2		1.3	1.1	85
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-4906/U-4928/U-4971/U-4989

DATE 3/9/87 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				
2. Antimony	60	6	5	102	94	92
3. Arsenic	10		5			
4. Barium	200	10		119600	108450	91
5. Beryllium	5	5		1000	960	96
6. Cadmium	5	5	1	250	245	98
7. Calcium	5000	1000				
8. Chromium	10	10		1000	971	97
9. Cobalt	50	10		1000	954	95
10. Copper	25	10		1000	957	96
11. Iron	100	25				
12. Lead	5	50	5	17	16	94
13. Magnesium	5000	1000				
14. Manganese	15	5		1000	978	98
15. Mercury	0.2	0.2				
16. Nickel	40	15		1000	975	98
17. Potassium	5000	1000				
18. Selenium	5		5			
19. Silver	10	10	5	6000	5540	92
20. Sodium	5000	1000				
21. Thallium	10		5			
22. Tin	40	40	5			
23. Vanadium	50	10		2500	2460	98
24. Zinc	20	10		1000	972	97
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-4906/U-4928/U-4971/U-4989

DATE 3/10/87 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		5000	4840	97
2. Antimony	60	6	5			
3. Arsenic	10		5	20	21	105
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		1000	977	98
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	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-4906/U-4928/U-4971/U-498

DATE 3/11/87 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		1.3	1.2	92
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-4906/U-4928/U-4971/U-4989

DATE 3/12/87 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	7.9	7.8	99
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-4906/U-4928/U-4971/U-4989

DATE 3/13/87 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		5000	4880	98
2. Antimony	60	6	5	102	88	86
3. Arsenic	10		5			
4. Barium	200	10		120,000	104000	87
5. Beryllium	5	5		1000	929	93
6. Cadmium	5	5	1	250	239	96
7. Calcium	5000	1000				
8. Chromium	10	10		1000	959	96
9. Cobalt	50	10		1000	947	95
10. Copper	25	10		1000	942	94
11. Iron	100	25		1000	977	98
12. Lead	5	50	5	1000	1000	100
13. Magnesium	5000	1000				
14. Manganese	15	5		1000	955	96
15. Mercury	0.2	0.2				
16. Nickel	40	15		1000	964	96
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		2500	2350	94
24. Zinc	20	10		1000	951	95
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-4906/U-4928/U-4971/U-498

DATE 3/24/87 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	18	106
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-4906/U-4928/U-4971/U-4989

DATE 4/20/87 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			
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-4906/U-4928/U-4971/U-4989

DATE 4/22/87 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	17	15	88
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					

REPORT > SELECT RESULT

ANALYZE > MANUAL MODE

Job #4906

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

87/03/09

15:54

Result Name: 8703090844

blank	1035.0401	1116.0401	BLK 122
standard	1035.0401 R	1117.0401	CAL BLK
standard	1035.0401 R	500 PPM ICS	500 PPB
standard	1036.0401	CAL BLK	500 PPB
EPA 386#1 10x	CAL BLK	500 PPB	500 PPM ICS
EPA 283#2 1/50	500 PPB	500 PPB	JOB#4932 B-140
EPA 1183#2	500 PPB	4936 1154.	JOB#4932 B-138
500 PPM ICS	1037.0401	1163.0101	1132.0101
CAL BLK	1110.0401	4943 1186.	1132. 1/10
10000 PPB	1111.0401	1186.0101 R1	JOB#4985 B-141
JOB#4986 B-142	1112.0401	1186.0101 RE	1422.0101
1032.0401	1113.0401	4952 1219.	1423.0101
1033.0401	1114.0401	1220.0101	1424.0101
1034.0401	1115.0401	BLK 115	CAL BLK

Command?

Sb_VHG

blank	57.23	intensity	53.79	cv	
standard	1476.00	intensity	8.41	cv	
standard	1545.00	intensity	2.75	cv	
EPA 1183#2	93.56	ug/L	38.18	cv	
500 PPM ICS	910.25	ug/L	4.52	cv	
CAL BLK	-14.69	ug/L	-215.0	cv	
JOB#4906 B-102	27.65	ug/L <60.0	14.99	cv	
1032.0401	-36.71	ug/L <12.0 mg/Kg	1.14	cv	
1033.0401	-27.15	ug/L	-54.30	cv	
1034.0401	-41.06	ug/L	-42.67	cv	
1035.0401	-30.07	ug/L	-39.13	cv	window edge
1035.0401 R	-47.13	ug/L	-105.8	cv	window edge
1035.0401 S	212.80	ug/L -44% rec	6.65	cv	40.5
1036.0401	-3.45	ug/L	-71.99	cv	100
CAL BLK	11.93	ug/L	53.14	cv	
500 PPB	457.10	ug/L	4.15	cv	
1037.0401	-25.62	ug/L	-244.8	cv	window edge
500 PPM ICS	928.45	ug/L	7.70	cv	
CAL BLK	-41.13	ug/L	-21.04	cv	window edge
500 PPB	465.20	ug/L	6.27	cv	

Zn_VHG

blank	15.41	intensity	7.59	cv	
standard	12835.00	intensity	0.13	cv	
EPA 386#1 10x	971.70	ug/L	2.31	cv	
500 PPM ICS	981.95	ug/L	5.35	cv	
CAL BLK	0.16	ug/L	812.88	cv	
10000 PPB	10285.00	ug/L	1.14	cv	
JOB#4906 B-102	2.30	ug/L <20.0	48.38	cv	
1032.0401	[illegible]	ug/L 370 mg/Kg	0.12	cv	
1033.0401	[illegible]	ug/L 14.4	1.60	cv	
1034.0401	[illegible]	ug/L 39.5	0.22	cv	
1035.0401	[illegible]	ug/L 58.9	0.50	cv	
1035.0401 R	[illegible]	ug/L 99.2	0.58	cv	150 - 58.9
1035.0401 S	787.65	ug/L -97%	1.55	cv	100
1036.0401	96.61	ug/L 19.1	0.21	cv	
CAL BLK	-0.11	ug/L	-413.6	cv	
500 PPB	531.50	ug/L	0.05	cv	
1037.0401	95.88	ug/L 16.5	0.71	cv	
500 PPM ICS	1000.25	ug/L	5.06	cv	
CAL BLK	0.97	ug/L	104.98	cv	
500 PPB	532.80	ug/L	0.56	cv	

Cd_VHG

blank	14.95	intensity	78.99	cv	
standard	7065.50	intensity	0.63	cv	
EPA 386#1 10x	244.80	ug/L	3.07	cv	
500 PPM ICS	881.30	ug/L	5.38	cv	
CAL BLK	-2.40	ug/L	-22.85	cv	window edge
10000 PPB	10071.50	ug/L	1.13	cv	
JOB#4906 B-102	-1.08	ug/L <5.00	-84.32	cv	
1032.0401	15.73	ug/L 3.11 mg/Kg	8.52	cv	
1033.0401	-1.27	ug/L <1.00	-70.36	cv	
1034.0401	3.78	ug/L	26.45	cv	
1035.0401	3.64	ug/L	5.26	cv	
1035.0401 R	15.99	ug/L 3.20	7.04	cv	9.66
1035.0401 S	48.29	ug/L -97% rec	6.65	cv	10

1036.0401	0.21	ug/L <1.00mg/Kg	5.74	cv	
CAL BLK	-1.58	ug/L	-28.83	cv	
500 PPB	521.55	ug/L	0.23	cv	
1037.0401	-1.83	ug/L ⊥	-21.18	cv	
500 PPM ICS	895.85	ug/L	4.89	cv	
CAL BLK	-1.18	ug/L	-212.5	cv	window edge
500 PPB	522.40	ug/L	0.72	cv	

Co_VHG

blank	2.85	intensity	316.38	cv	window edge
standard	3441.50	intensity	0.28	cv	
EPA 386#1 10x	953.75	ug/L	1.57	cv	
500 PPM ICS	880.40	ug/L	4.55	cv	
CAL BLK	-0.68	ug/L	-931.0	cv	window edge
10000 PPB	9878.50	ug/L	0.61	cv	
JOB#4906 B-102	3.89	ug/L <50.0	20.12	cv	
1032.0401	32.31	ug/L <10.0mg/Kg	2.74	cv	
1033.0401	13.08	ug/L	12.37	cv	
1034.0401	34.25	ug/L	5.31	cv	
1035.0401	25.38	ug/L	0.10	cv	
1035.0401 R	37.38	ug/L	1.44	cv	
1035.0401 S	498.55	ug/L -95%rec	0.13	cv	95.0
1036.0401	13.62	ug/L <10.0	34.54	cv	100
CAL BLK	2.79	ug/L	10.98	cv	
500 PPB	518.90	ug/L	0.44	cv	
1037.0401	12.27	ug/L ⊥	⊥ 30.13	cv	
500 PPM ICS	889.25	ug/L	2.91	cv	
CAL BLK	1.58	ug/L	125.77	cv	window edge
500 PPB	518.10	ug/L	0.44	cv	

Ni_VHG

blank	37.47	intensity	31.31	cv	
standard	8400.50	intensity	0.14	cv	
EPA 386#1 10x	974.65	ug/L	1.46	cv	
500 PPM ICS	888.95	ug/L	4.39	cv	
CAL BLK	-2.54	ug/L	-32.81	cv	window edge
10000 PPB	10175.00	ug/L	0.42	cv	
JOB#4906 B-102	-2.09	ug/L <40.0	-206.9	cv	
1032.0401	101.68	→ 20.1mg/Kg	5.87	cv	
1033.0401	19.46	ug/L <8.00	29.05	cv	
1034.0401	60.36	→ 11.8	5.15	cv	
1035.0401	92.07	→ 17.7	4.39	cv	
1035.0401 R	59.75	→ 12.0	6.97	cv	107-12.0
1035.0401 S	562.45	ug/L -95%rec	1.42	cv	10P
1036.0401	33.91	ug/L <8.00	3.89	cv	
CAL BLK	-0.76	ug/L	-117.8	cv	
500 PPB	526.20	ug/L	0.00	cv	
1037.0401	31.33	ug/L ⊥	⊥ 16.59	cv	
500 PPM ICS	900.60	ug/L	2.39	cv	
CAL BLK	-0.00	ug/L	-64960	cv	window edge
500 PPB	517.15	ug/L	1.67	cv	

Mn_VHG

blank	2.08	intensity	220.25	cv	
standard	12285.00	intensity	0.19	cv	
EPA 386#1 10x	977.65	ug/L	1.52	cv	
500 PPM ICS	932.15	ug/L	4.66	cv	
CAL BLK	0.05	ug/L	508.12	cv	
10000 PPB	10285.00	ug/L	0.59	cv	

JOB#4906 B-102	0.53	ug/L	<15.0	34.32	cv
1032.0401	813.55	ug/L	161mg/Kg	0.10	cv
1033.0401	399.55	ug/L	78.3	0.61	cv
1034.0401	2577.50	ug/L	505	0.67	cv
1035.0401	2955.00	ug/L	568	0.34	cv
1035.0401 R	4640.50	ug/L	908	0.29	cv
1035.0401 S	3929.50	ug/L	-N.A.	0.92	cv
1036.0401	443.10	ug/L	87.2	0.35	cv
CAL BLK	0.01	ug/L		3868.3	cv
500 PPB	531.95	ug/L		0.03	cv
1037.0401	271.95	ug/L	52.3 ⊥	0.24	cv
500 PPM ICS	946.00	ug/L		3.23	cv
CAL BLK	-0.29	ug/L		-165.6	cv
500 PPB	531.90	ug/L		0.08	cv

Sample value is 3-5x greater than the spike amm

Fe_VHG

blank	37.38	intensity	73.62	cv
standard	6688.00	intensity	0.46	cv
EPA 386#1 10x	985.15	ug/L	1.45	cv
500 PPM ICS	156050.0	ug/L	0.04	cv
CAL BLK	-0.15	ug/L	-2232.	cv
10000 PPB	10370.00	ug/L	0.95	cv
JOB#4906 B-102	10.59	ug/L	9.85	cv
1032.0401	56800.00	ug/L	0.89	cv
1033.0401	13950.00	ug/L	0.15	cv
1034.0401	69950.00	ug/L	0.91	cv
1035.0401	60215.00	ug/L	0.48	cv
1035.0401 R	67510.00	ug/L	0.17	cv
1035.0401 S	61490.00	ug/L	1.17	cv
1036.0401	24325.00	ug/L	0.04	cv
CAL BLK	0.32	ug/L	197.02	cv
500 PPB	540.95	ug/L	0.01	cv
1037.0401	19305.00	ug/L	1.04	cv
500 PPM ICS	156150.0	ug/L	0.11	cv
CAL BLK	2.35	ug/L	8.74	cv
500 PPB	547.15	ug/L	0.34	cv

Refers to dilutions

Cr_VHG

blank	-1.63	intensity		-1364.	cv window edge
standard	9314.00	intensity		0.24	cv
EPA 386#1 10x	971.05	ug/L		0.28	cv
500 PPM ICS	928.50	ug/L		4.90	cv
CAL BLK	2.71	ug/L		-45.47	cv
10000 PPB	10265.00	ug/L		0.03	cv
JOB#4906 B-102	0.77	ug/L	<10.0	103.05	cv
1032.0401	64.49	ug/L	12.8mg/Kg	1.99	cv
1033.0401	13.45	ug/L	2.64	26.69	cv
1034.0401	53.45	ug/L	10.5	1.50	cv
1035.0401	42.19	ug/L	8.11	5.66	cv
1035.0401 R	38.70	ug/L	7.74	3.97	cv
1035.0401 S	238.00	ug/L	93% rec	0.47	cv
1036.0401	17.54	ug/L	3.41	7.47	cv
CAL BLK	-1.19	ug/L		-175.7	cv window edge
500 PPB	537.90	ug/L		0.63	cv
1037.0401	16.66	ug/L	3.20 ⊥	4.77	cv
500 PPM ICS	938.25	ug/L		3.16	cv
CAL BLK	2.78	ug/L		107.44	cv
500 PPB	531.65	ug/L		0.09	cv

$$\frac{45.3 - 8.11}{40}$$

V_VHG

blank	50.53	intensity	148.54	cv	
standard	29080.00	intensity	0.40	cv	
EPA 386#1 10x	2463.50	ug/L	1.01	cv	
500 PPM ICS	966.85	ug/L	3.75	cv	
CAL BLK	0.27	ug/L	723.53	cv	
10000 PPB	10805.00	ug/L	0.10	cv	
JOB#4906 B-102	-0.46	ug/L <50.0	-539.8	cv	
1032.0401	75.81	ug/L → 15.0 mg/kg	[illegible]	cv	
1033.0401	20.42	ug/L <10.0	4.90	cv	
1034.0401	91.71	ug/L → 17.6	1.75	cv	
1035.0401	67.96	ug/L → 13.1	0.01	cv	
1035.0401 R	54.13	ug/L → 12.8	7.36	cv	$\frac{104 - 13.1}{100}$
1035.0401 S	544.40	ug/L -91% rec	0.34	cv	
1036.0401	27.26	ug/L <10.0	7.08	cv	
CAL BLK	-1.77	ug/L	-248.7	cv	window edge
500 PPB	537.85	ug/L	0.59	cv	
1037.0401	19.57	ug/L ⊥	⊥ 0.17	cv	
500 PPM ICS	982.90	ug/L	3.03	cv	
CAL BLK	-0.80	ug/L	-148.4	cv	window edge
500 PPB	536.60	ug/L	0.05	cv	

Be_VHG

blank	2.25	intensity	139.97	cv	window edge
standard	8169.50	intensity	0.13	cv	
EPA 386#1 10x	959.60	ug/L	1.56	cv	
500 PPM ICS	974.65	ug/L	3.41	cv	
CAL BLK	0.27	ug/L	29.91	cv	
10000 PPB	10190.00	ug/L	0.59	cv	
JOB#4906 B-102	0.12	ug/L <5.00	8.11	cv	
1032.0401	2.97	ug/L <1.00 mg/kg	[illegible]	cv	
1033.0401	0.51	ug/L	8.94	cv	
1034.0401	2.08	ug/L	3.01	cv	
1035.0401	3.26	ug/L	2.29	cv	
1035.0401 R	2.67	ug/L	15.99	cv	
1035.0401 S	51.26	ug/L -98% rec	0.32	cv	$\frac{9.76}{10}$
1036.0401	0.71	ug/L	6.69	cv	
CAL BLK	0.19	ug/L	16.99	cv	
500 PPB	527.65	ug/L	0.10	cv	
1037.0401	0.32	ug/L ⊥	69.35	cv	
500 PPM ICS	982.15	ug/L	1.79	cv	
CAL BLK	0.19	ug/L	78.40	cv	
500 PPB	526.45	ug/L	0.68	cv	

Cu_VHG

blank	103.84	intensity	9.49	cv	window edge
standard	26410.00	intensity	0.18	cv	
EPA 386#1 10x	956.95	ug/L	0.36	cv	
500 PPM ICS	986.50	ug/L	3.50	cv	
CAL BLK	1.19	ug/L	43.05	cv	
10000 PPB	10545.00	ug/L	0.45	cv	
JOB#4906 B-102	0.25	ug/L <25.0	118.62	cv	
1032.0401	200.40	ug/L → 39.6 mg/kg	[illegible]	cv	
1033.0401	6.56	ug/L <5.00	1.11	cv	
1034.0401	64.80	ug/L → 12.7	0.91	cv	
1035.0401	97.64	ug/L → 18.7	1.29	cv	$\frac{58.5 - 18.7}{50}$
1035.0401 R	88.29	ug/L → 17.7	2.25	cv	
1035.0401 S	307.15	ug/L -80% rec	0.99	cv	
1036.0401	15.24	ug/L <5.00	7.00	cv	

CAL BLK	-0.18	ug/L	-516.6	cv	
500 PPB	529.95	ug/L	0.12	cv	
1037.0401	12.42	ug/L <500mg/Kg	2.63	cv	
500 PPM ICS	1005.70	ug/L	1.88	cv	
CAL BLK	-0.43	ug/L	-536.8	cv	
500 PPB	530.50	ug/L	1.30	cv	

Ag_VHG

blank	87.37	intensity	39.20	cv	
standard	29910.00	intensity	0.63	cv	
EPA 283#2 1/50	110.90	ug/L	2.55	cv	
500 PPM ICS	1079.50	ug/L	3.29	cv	
CAL BLK	-2.62	ug/L	-65.07	cv	window edge
JOB#4906 B-102	-0.10	ug/L <10.0	-1250.	cv	window edge
1032.0401	5.18	ug/L <2.00mg/Kg	.30	cv	
1033.0401	-2.63	ug/L	-78.43	cv	window edge
1034.0401	1.45	ug/L	79.48	cv	
1035.0401	-0.49	ug/L	-483.7	cv	window edge
1035.0401 R	-0.00	ug/L	-14770	cv	
1035.0401 S	52.25	ug/L -100%rec	6.37	cv	9.95
1036.0401	0.96	ug/L	116.95	cv	window edge 10
CAL BLK	-0.77	ug/L	-603.1	cv	window edge
500 PPB	521.85	ug/L	1.16	cv	
1037.0401	-2.53	ug/L	-70.01	cv	window edge
500 PPM ICS	1087.00	ug/L	1.26	cv	
CAL BLK	-2.53	ug/L	-28.09	cv	window edge
500 PPB	522.35	ug/L	0.87	cv	

Al_VHG

blank	49.12	intensity	4.87	cv	
standard	17655.00	intensity	1.15	cv	
EPA 386#1 10x	5012.00	ug/L	0.85	cv	
500 PPM ICS	52620.00	ug/L	0.32	cv	
CAL BLK	-11.01	ug/L	-33.20	cv	window edge
10000 PPB	10740.00	ug/L	0.14	cv	
JOB#4906 B-102	8.17	ug/L	3.42	cv	
1032.0401	23115.00	ug/L	0.02	cv	
1033.0401	5884.50	ug/L	0.37	cv	
1034.0401	28775.00	ug/L	0.03	cv	
1035.0401	26335.00	ug/L	0.72	cv	
1035.0401 R	26690.00	ug/L	0.62	cv	
1035.0401 S	29185.00	ug/L	0.02	cv	
1036.0401	7263.50	ug/L	0.07	cv	
CAL BLK	5.64	ug/L	66.16	cv	
500 PPB	546.40	ug/L	1.17	cv	
1037.0401	5602.00	ug/L	0.05	cv	
500 PPM ICS	52650.00	ug/L	0.16	cv	
CAL BLK	-6.41	ug/L	-25.76	cv	window edge
500 PPB	544.35	ug/L	0.87	cv	

Refer to dilutions

Ba_VHG

blank	3.93	intensity	22.75	cv	
standard	10775.00	intensity	0.40	cv	
EPA 283#2 1/50	2169.50	ug/L	0.87	cv	
500 PPM ICS	1006.15	ug/L	2.95	cv	
CAL BLK	0.19	ug/L	33.70	cv	
10000 PPB	10670.00	ug/L	0.54	cv	
JOB#4906 B-102	0.14	ug/L <200	14.81	cv	
1032.0401	509.60	→ 10.19mg/Kg	2.21	cv	

1033.0401		159.60	ug/L	<40.0 mg/Kg	.46	cv
1034.0401		342.90	ug/L	→ 65.9	0.58	cv
1035.0401		495.60	ug/L	→ 95.3	0.40	cv
1035.0401	R	503.10	ug/L	→ 100	0.25	cv
1035.0401	S	2556.00	ug/L	-98% rec	0.65	cv
1036.0401		162.55	ug/L	<40.0	0.27	cv
CAL BLK		0.27	ug/L		14.47	cv
500 PPB		551.05	ug/L		0.61	cv
1037.0401		107.20	ug/L	⊥	⊥ 0.30	cv
500 PPM ICS		1018.50	ug/L		1.28	cv
CAL BLK		0.60	ug/L		60.12	cv
500 PPB		544.10	ug/L		0.16	cv

$$\frac{487 - 95.3}{400}$$

REPORT > SELECT RESULT

ANALYZE > MANUAL MODE

Job #4906
Al, Fe

Dead Creek

87/03/10

11:13

Result Name: 8703101014

blank	1036.0401
standard	CAL BLK
EPA 3864#1 10x	1.00 PPM
10.0 PPM	1037.0401
500 PPM	1110.0401
100 PPM	1111.0401
CAL BLK	1112.0401
JOB#4906 B-102	1113.0401
1032.0401	1114.0401
1033.0401	1115.0401
1034.0401	1116.0401
1035.0401	1117.0401
1035.0401 B	CAL BLK
1035.0401 S	1.00 PPM

Command?

Fe_HIGH

blank	4.46	intensity	38.29	cv	
standard	2387.500	intensity	1.57	cv	
EPA 386#1 10x	0.977	mg/L	0.45	cv	
10.0 PPM	9.978	mg/L	0.19	cv	
~~500 PPM~~	~~[illegible]~~	~~mg/L~~	~~0.40~~	~~cv~~	
100 PPM	96.385	mg/L	0.11	cv	
CAL BLK	-0.000	mg/L	-709.7	cv	
JOB#4906 B-102	0.014	mg/L	<0.100 mg/L	0.12	cv
1032.0401	51.290	mg/L	10156 mg/Kg	0.00	cv
1033.0401	17.485	mg/L	3468	0.06	cv
1034.0401	63.050	mg/L	12363	0.34	cv
1035.0401	52.940	mg/L	10377	1.33	cv
1035.0401 R	60.130	mg/L	12026	0.63	cv
1035.0401 S	54.455	mg/L	N.C	0.51	cv
1036.0401	22.435	mg/L	4356	1.04	cv
CAL BLK	-0.002	mg/L	-282.6	cv	
1.00 PPM	1.018	mg/L	0.38	cv	
1037.0401	17.930	mg/L	3448 ⊥	0.70	cv
CAL BLK	-0.003	mg/L	-26.03	cv	window edge
1.00 PPM	1.046	mg/L	1.24	cv	

Al_HIGH

blank	-53.77	intensity	-139.4	cv	
standard	3432.500	intensity	1.31	cv	
EPA 386#1 10x	4.841	mg/L	0.31	cv	
10.0 PPM	9.936	mg/L	0.13	cv	
~~500 PPM~~	~~[illegible]~~	~~mg/L~~	~~2.24~~	~~cv~~	
100 PPM	220.100	mg/L	0.21	cv	
CAL BLK	-0.004	mg/L	-13.15	cv	
JOB#4906 B-102	-0.003	mg/L	<0.200 mg/L	0.9	cv
1032.0401	20.055	mg/L	4013 mg/Kg	0.18	cv
1033.0401	5.335	mg/L	1067	1.00	cv
1034.0401	24.848	mg/L	4970	0.52	cv
1035.0401	22.035	mg/L	4430	0.01	cv
1035.0401 R	23.090	mg/L	4618	1.02	cv
1035.0401 S	24.470	mg/L	N.C	0.46	cv
1036.0401	6.451	mg/L	1291	0.24	cv
CAL BLK	-0.010	mg/L	-135.7	cv	
1.00 PPM	1.017	mg/L	1.80	cv	
1037.0401	5.135	mg/L	988 ⊥	1.03	cv
CAL BLK	0.002	mg/L	1111.4	cv	
1.00 PPM	1.035	mg/L	0.54	cv	

REPORT > SELECT RESULT

ANALYZE > MANUAL MODE

Job #4928

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

87/03/07

16:01

Result Name: 8703090844

blank	1035.0401	1116.0401	BLK 122
standard	1035.0401 R	1117.0401	CAL BLK
standard	1035.0401 S	500 PPM ICS	500 PPB
standard	1036.0401	CAL BLK	500 PPB
EPA 386#1 10x	CAL BLK	500 PPB	500 PPM ICS
EPA 293#2 1/50	500 PPB	500 PPB	JOB#4932 B-130
EPA 1183#2	500 PPB	4936 1154.	JOB#4932 B-138
500 PPM ICS	1037.0401	1163.0101	1132.0101
CAL BLK	1110.0401	4943 1186.	1132. 1/10
10000 PPB	1111.0401	1186.0101 R1	JOB#4932 B-141
JOB#4904 B-100	1112.0401	1186.0101 R2	1402.0101
1032.0401	1113.0401	4952 1219.	1403.0101
1033.0401	1114.0401	1220.0101	1404.0101
1034.0401	1115.0401	BLK 115	CAL BLK

Command?

Sb_VHG

blank	57.23	intensity	53.79	cv	
standard	1476.00	intensity	8.41	cv	
standard	1545.00	intensity	2.75	cv	
EPA 1183#2	93.56	ug/L	38.18	cv	
500 PPM ICS	910.25	ug/L	4.52	cv	
CAL BLK	-14.69	ug/L	-215.0	cv	
JOB#4906 B-102	27.65	ug/L <60.0	14.99	cv	
CAL BLK	11.93	ug/L	53.14	cv	
500 PPB	457.10	ug/L	4.15	cv	
1110.0401	-31.67	ug/L <50.0 mg/kg	1.16	cv	window edge
1111.0401	-19.72	ug/L	-75.18	cv	
1112.0401	-1.60	ug/L	-470.9	cv	
1113.0401	-44.52	ug/L	-145.7	cv	window edge
1114.0401	-22.56	ug/L	-112.2	cv	
1115.0401	0.79	ug/L	2216.3	cv	
1116.0401	-23.77	ug/L	-3.34	cv	
1117.0401	19.27	ug/L	67.72	cv	
500 PPM ICS	928.45	ug/L	7.70	cv	
CAL BLK	-41.13	ug/L	-21.04	cv	window edge
500 PPB	465.20	ug/L	6.27	cv	

Zn_VHG

blank	15.41	intensity	7.59	cv	
standard	12395.00	intensity	0.13	cv	
EPA 386#1 10x	971.70	ug/L	2.31	cv	
500 PPM ICS	981.95	ug/L	5.35	cv	
CAL BLK	0.16	ug/L	812.88	cv	
10000 PPB	10285.00	ug/L	1.14	cv	
JOB#4906 B-102	2.30	ug/L <10.0	43.38	cv	
CAL BLK	-0.11	ug/L	-413.6	cv	
500 PPB	531.50	ug/L	0.05	cv	
1110.0401	30.40	→ 15.5 mg/kg	2.22	cv	
1111.0401	3.27	→ 14.1	4.11	cv	
1112.0401	223.23	→ 44.8	0.45	cv	
1113.0401	5445.00	→ 1093	1.99	cv	
1114.0401	155.70	→ 29.9	0.63	cv	
1115.0401	151.00	→ 29.2	0.29	cv	
1116.0401	756.20	→ 146	1.12	cv	
1117.0401	75.07	→ 14.3	0.51	cv	
500 PPM ICS	1000.25	ug/L	5.06	cv	
CAL BLK	0.97	ug/L	104.98	cv	
500 PPB	532.80	ug/L	0.56	cv	

Cd_VHG

blank	14.95	intensity	78.99	cv	
standard	7065.50	intensity	0.63	cv	
EPA 386#1 10x	244.80	ug/L	3.07	cv	
500 PPM ICS	881.30	ug/L	5.38	cv	
CAL BLK	-2.40	ug/L	-22.85	cv	window edge
10000 PPB	10071.50	ug/L	1.13	cv	
JOB#4906 B-102	-1.08	ug/L <5.00	-84.32	cv	
CAL BLK	-1.58	ug/L	-28.83	cv	
500 PPB	521.55	ug/L	0.23	cv	
1110.0401	-0.97	ug/L <1.00 mg/kg	42.7	cv	
1111.0401	-0.43	ug/L	-128.3	cv	
1112.0401	-0.12	ug/L	-190.2	cv	
1113.0401	119.05	→ 23.8	1.03	cv	

1114.0401	0.15	ug/L <1.00 mg/Kg	.16	cv	
1115.0401	0.80	ug/L	205.06	cv	
1116.0401	5.54	ug/L → 1.23	10.82	cv	
1117.0401	-0.79	ug/L	-152.3	cv	
500 PPM ICS	895.85	ug/L	4.89	cv	
CAL BLK	-1.18	ug/L	-212.5	cv	window edge
500 PPB	522.40	ug/L	0.72	cv	

Co_VHG

blank	2.85	intensity	316.38	cv	window edge
standard	3441.50	intensity	0.28	cv	
EPA 386#1 10x	953.75	ug/L	1.57	cv	
500 PPM ICS	880.40	ug/L	4.55	cv	
CAL BLK	-0.68	ug/L	-931.0	cv	window edge
10000 PPB	9878.50	ug/L	0.61	cv	
JOB#4906 B-102	3.89	ug/L <50.0	20.12	cv	
CAL BLK	2.79	ug/L	10.98	cv	
500 PPB	518.90	ug/L	0.44	cv	
1110.0401	7.03	ug/L <10.0 mg/Kg	81	cv	
1111.0401	15.57	ug/L	47.42	cv	
1112.0401	20.99	ug/L	14.54	cv	
1113.0401	25.52	ug/L	5.38	cv	
1114.0401	21.89	ug/L	10.15	cv	
1115.0401	15.44	ug/L	15.56	cv	
1116.0401	24.13	ug/L	0.92	cv	
1117.0401	14.93	ug/L	4.25	cv	
500 PPM ICS	889.25	ug/L	2.91	cv	
CAL BLK	1.58	ug/L	125.77	cv	window edge
500 PPB	518.10	ug/L	0.44	cv	

Ni_VHG

blank	37.47	intensity	31.31	cv	
standard	8400.50	intensity	0.14	cv	
EPA 386#1 10x	974.65	ug/L	1.46	cv	
500 PPM ICS	888.95	ug/L	4.39	cv	
CAL BLK	-2.54	ug/L	-32.81	cv	window edge
10000 PPB	10175.00	ug/L	0.42	cv	
JOB#4906 B-102	-2.09	ug/L <40.0	-206.9	cv	
CAL BLK	-0.76	ug/L	-117.8	cv	
500 PPB	526.20	ug/L	0.00	cv	
1110.0401	21.48	ug/L <8.00 mg/Kg	.31	cv	
1111.0401	28.04	ug/L	0.19	cv	
1112.0401	44.25	ug/L	1.09	cv	
1113.0401	176.75	ug/L → 35.4	1.32	cv	
1114.0401	48.92	ug/L → 9.41	5.16	cv	
1115.0401	41.19	ug/L → 7.92	12.30	cv	
1116.0401	61.91	ug/L → 11.7	11.04	cv	
1117.0401	33.86	ug/L <8.00	25.35	cv	
500 PPM ICS	900.60	ug/L	2.39	cv	
CAL BLK	-0.00	ug/L	-64960	cv	window edge
500 PPB	517.15	ug/L	1.67	cv	

Mn_VHG

blank	2.08	intensity	220.25	cv	
standard	12285.00	intensity	0.19	cv	
EPA 386#1 10x	977.65	ug/L	1.52	cv	
500 PPM ICS	932.15	ug/L	4.66	cv	
CAL BLK	0.05	ug/L	508.12	cv	
10000 PPB	10285.00	ug/L	0.59	cv	

JOB#4906 B-102	0.58	ug/L	<15.0	34.32	cv
CAL BLK	0.01	ug/L		3368.3	cv
500 PPB	531.95	ug/L		0.03	cv
1110.0401	[illegible]	ug/L	92.1 mg/Kg	0.30	cv
1111.0401	438.35	ug/L	84.3	0.45	cv
1112.0401	997.75	ug/L	196.	0.86	cv
1113.0401	[illegible]	ug/L	257.	1.15	cv
1114.0401	[illegible]	ug/L	170	0.98	cv
1115.0401	793.69	ug/L	153	0.35	cv
1116.0401	[illegible]	ug/L	282	0.73	cv
1117.0401	[illegible]	ug/L	64.0	0.80	cv
500 PPM ICS	946.00	ug/L		3.23	cv
CAL BLK	-0.29	ug/L		-165.6	cv
500 PPB	531.90	ug/L		0.08	cv

Fe_VHG

blank	37.38	intensity	73.62	cv
standard	6636.00	intensity	0.46	cv
EPA 386#1 10x	985.15	ug/L	1.45	cv
500 PPM ICS	156050.0	ug/L	0.04	cv
CAL BLK	-0.15	ug/L	-2232.	cv
10000 PPB	10370.00	ug/L	0.95	cv
JOB#4906 B-102	10.52	ug/L	9.85	cv
CAL BLK	0.32	ug/L	197.02	cv
500 PPB	543.95	ug/L	0.01	cv
1110.0401	25450.00	ug/L	0.16	cv
1111.0401	24533.00	ug/L	0.29	cv
1112.0401	44240.00	ug/L	1.57	cv
1113.0401	49395.00	ug/L	0.19	cv
1114.0401	40585.00	ug/L	0.47	cv
1115.0401	37710.00	ug/L	0.00	cv
1116.0401	56250.00	ug/L	0.23	cv
1117.0401	20715.00	ug/L	0.55	cv
500 PPM ICS	156150.0	ug/L	0.11	cv
CAL BLK	2.35	ug/L	8.74	cv
500 PPB	547.15	ug/L	0.34	cv

Refer to dilutions

Cr_VHG

blank	-1.63	intensity		-1364.	cv window edge
standard	9314.00	intensity		0.24	cv
EPA 386#1 10x	971.05	ug/L		0.28	cv
500 PPM ICS	928.50	ug/L		4.90	cv
CAL BLK	2.71	ug/L		45.47	cv
10000 PPB	10265.00	ug/L		0.03	cv
JOB#4906 B-102	0.77	ug/L	<10.0	103.05	cv
CAL BLK	-1.19	ug/L		-175.7	cv window edge
500 PPB	537.90	ug/L		0.63	cv
1110.0401	[illegible]	ug/L	3.9 mg/Kg	7.06	cv
1111.0401	[illegible]	ug/L	4.27	0.23	cv
1112.0401	[illegible]	ug/L	7.46	0.11	cv
1113.0401	[illegible]	ug/L	13.5	3.14	cv
1114.0401	[illegible]	ug/L	5.95	3.02	cv
1115.0401	[illegible]	ug/L	5.20	0.26	cv
1116.0401	[illegible]	ug/L	8.05	8.28	cv
1117.0401	[illegible]	ug/L	3.89	8.44	cv
500 PPM ICS	938.25	ug/L		3.16	cv
CAL BLK	2.78	ug/L		107.44	cv
500 PPB	531.65	ug/L		0.09	cv

V_VHC

blank	50.52	intensity	148.54	cv	
standard	29080.00	intensity	0.40	cv	
EPA 386#1 10x	2463.50	ug/L	1.01	cv	
500 PPM ICS	966.85	ug/L	3.75	cv	
CAL BLK	0.27	ug/L	723.53	cv	
10000 PPB	10805.00	ug/L	0.10	cv	
JOB#4906 B-102	-0.46	ug/L <50.0	-539.8	cv	
CAL BLK	-1.77	ug/L	-248.7	cv	window edge
500 PPB	537.85	ug/L	0.59	cv	
1110.0401	30.80	ug/L <100mg/Kg	2.97	cv	
1111.0401	29.74	ug/L <10.0	1.84	cv	
1112.0401	54.61	ug/L → 10.7	4.62	cv	
1113.0401	68.19	ug/L → 13.6	5.15	cv	
1114.0401	46.45	ug/L <10.0	0.66	cv	
1115.0401	44.47	ug/L ⊥	0.14	cv	
1116.0401	56.23	ug/L → 12.5	0.05	cv	
1117.0401	26.67	ug/L <10.0	9.51	cv	
500 PPM ICS	982.90	ug/L	3.03	cv	
CAL BLK	-0.80	ug/L	-148.4	cv	window edge
500 PPB	536.60	ug/L	0.05	cv	

Be_VHC

blank	2.25	intensity	139.97	cv	window edge
standard	3169.50	intensity	0.13	cv	
EPA 386#1 10x	959.60	ug/L	1.56	cv	
500 PPM ICS	974.65	ug/L	3.41	cv	
CAL BLK	0.27	ug/L	29.91	cv	
10000 PPB	10190.00	ug/L	0.59	cv	
JOB#4906 B-102	0.12	ug/L <5.00	8.11	cv	
CAL BLK	0.19	ug/L	16.99	cv	
500 PPB	527.65	ug/L	0.10	cv	
1110.0401	0.89	ug/L <1.00mg/Kg	3.75	cv	
1111.0401	0.52	ug/L	55.75	cv	window edge
1112.0401	1.35	ug/L	3.05	cv	
1113.0401	1.69	ug/L	14.82	cv	
1114.0401	1.28	ug/L	17.00	cv	
1115.0401	1.14	ug/L	2.79	cv	
1116.0401	1.98	ug/L	5.79	cv	
1117.0401	0.11	ug/L	861.76	cv	
500 PPM ICS	982.15	ug/L	1.79	cv	
CAL BLK	0.19	ug/L	78.40	cv	
500 PPB	526.45	ug/L	0.68	cv	

Cu_VHC

blank	103.84	intensity	9.49	cv	window edge
standard	26410.00	intensity	0.18	cv	
EPA 386#1 10x	956.95	ug/L	0.36	cv	
500 PPM ICS	986.50	ug/L	3.50	cv	
CAL BLK	1.19	ug/L	43.05	cv	
10000 PPB	10545.00	ug/L	0.45	cv	
JOB#4906 B-102	0.25	ug/L <25.0	118.62	cv	
CAL BLK	-0.18	ug/L	-516.6	cv	
500 PPB	529.95	ug/L	0.12	cv	
1110.0401	13.07	ug/L <5.00mg/Kg	2.21	cv	
1111.0401	6.04	ug/L ⊥	1.41	cv	
1112.0401	34.88	ug/L → 6.84	0.73	cv	
1113.0401	798.90	ug/L → 160	0.66	cv	
1114.0401	27.95	ug/L → 5.38	2.78	cv	

1115.0401	22.19	ug/L <5.00 mg/Kg	1.05	cv	
1116.0401	133.95	ug/L ≥ 26.2	1.30	cv	
1117.0401	12.80	ug/L <5.00	21.55	cv	
500 PPM ICS	1005.70	ug/L	1.88	cv	
CAL BLK	-0.43	ug/L	-536.8	cv	
500 PPB	530.50	ug/L	1.30	cv	

Ag_VHG

blank	87.37	intensity	39.20	cv	
standard	29910.00	intensity	0.63	cv	
EPA 283#2 1/50	110.90	ug/L	2.55	cv	
500 PPM ICS	1079.50	ug/L	3.29	cv	
CAL BLK	-2.62	ug/L	-65.07	cv	window edge
JOB#4906 B-102	-0.10	ug/L <10.0	-1250.	cv	window edge
CAL BLK	-0.77	ug/L	-603.1	cv	window edge
500 PPB	521.85	ug/L	1.16	cv	
1110.0401	0.68	ug/L <2.00 mg/Kg	4.99	cv	window edge
1111.0401	-3.51	ug/L	-7.83	cv	window edge
1112.0401	1.03	ug/L	150.74	cv	
1113.0401	5.25	ug/L	4.16	cv	
1114.0401	2.83	ug/L	23.95	cv	
1115.0401	-1.47	ug/L	-199.9	cv	window edge
1116.0401	-0.66	ug/L	-343.5	cv	
1117.0401	-0.24	ug/L	-103.9	cv	window edge
500 PPM ICS	1087.00	ug/L	1.26	cv	
CAL BLK	-2.53	ug/L	-28.09	cv	window edge
500 PPB	522.35	ug/L	0.87	cv	

Al_VHG

blank	49.12	intensity	4.87	cv	
standard	17655.00	intensity	1.15	cv	
EPA 386#1 10x	5012.00	ug/L	0.85	cv	
500 PPM ICS	52620.00	ug/L	0.32	cv	
CAL BLK	-11.01	ug/L	-33.20	cv	window edge
10000 PPB	10740.00	ug/L	0.14	cv	
JOB#4906 B-102	8.17	ug/L	3.42	cv	
CAL BLK	5.64	ug/L	66.16	cv	
500 PPB	546.40	ug/L	1.17	cv	
1110.0401	10075.00	ug/L	0.37	cv	
1111.0401	8530.00	ug/L	0.38	cv	
1112.0401	17805.00	ug/L	0.18	cv	
1113.0401	25075.00	ug/L	0.27	cv	
1114.0401	14770.00	ug/L	0.73	cv	
1115.0401	14000.00	ug/L	0.19	cv	
1116.0401	28490.00	ug/L	0.14	cv	
1117.0401	9222.00	ug/L	0.38	cv	
500 PPM ICS	52650.00	ug/L	0.16	cv	
CAL BLK	-6.41	ug/L	-25.76	cv	window edge
500 PPB	544.35	ug/L	0.87	cv	

Refer to dilations

Ba_VHG

blank	3.93	intensity	22.75	cv	
standard	10775.00	intensity	0.40	cv	
EPA 283#2 1/50	2169.50	ug/L	0.87	cv	
500 PPM ICS	1006.15	ug/L	2.95	cv	
CAL BLK	0.19	ug/L	33.70	cv	
10000 PPB	10670.00	ug/L	0.54	cv	
JOB#4906 B-102	0.14	ug/L <200	14.81	cv	
CAL BLK	0.27	ug/L	14.47	cv	

500 PPB	551.05	ug/L		0.61 cv
1110.0401	259.99	ug/L	50.0	0.50 cv
1111.0401	199.85	ug/L	<40.0	0.66 cv
1112.0401	558.52	ug/L	110	0.75 cv
1113.0401	837.03	ug/L	167	0.22 cv
1114.0401	434.95	ug/L	86.7	0.80 cv
1115.0401	431.65	ug/L	83.0	0.05 cv
1116.0401	1724.07	ug/L	325	0.60 cv
1117.0401	175.45	ug/L	<40.0	0.51 cv
500 PPM ICS	1018.50	ug/L		1.28 cv
CAL BLK	0.60	ug/L		60.12 cv
500 PPB	544.10	ug/L		0.16 cv

Dead Creek

REPORT > SELECT RESULT

ANALYZE > MANUAL MODE

Job #4928
Fe, Al

87/03/10

11:16

Result Name: 8703101014

blank	1036.0401
standard	CAL BLK
EPA 33641 10K	1.00 PPM
10.0 PPM	1037.0401
500 PPM	1110.0401
100 PPM	1111.0401
CAL BLK	1112.0401
JOB#4906 S-102	1113.0401
1032.0401	1114.0401
1033.0401	1115.0401
1034.0401	1116.0401
1035.0401	1117.0401
1035.0401 R	CAL BLK
1035.0401 S	1.00 PPM

Command?

Fe_HIGH

blank	4.46	intensity	33.29	cv	
standard	2387.500	intensity	1.57	cv	
EPA 386#1 10x	0.977	mg/L	0.45	cv	
10.0 PPM	9.978	mg/L	0.19	cv	
500 PPM	404.250	mg/L	0.40	cv	
100 PPM	96.385	mg/L	0.11	cv	
CAL BLK	-0.000	mg/L	-709.7	cv	
JOB#4906 B-102	0.014	mg/L <0.100	0.12	cv	
CAL BLK	-0.002	mg/L	-282.6	cv	
1.00 PPM	1.018	mg/L	0.38	cv	
1110.0401	33.660	→ 4550mg/Kg	0.52	cv	
1111.0401	33.130	→ 4448	0.43	cv	
1112.0401	40.930	→ 8025	0.65	cv	
1113.0401	47.180	→ 9251	0.04	cv	
1114.0401	37.285	→ 7305	0.14	cv	
1115.0401	35.110	→ 6752	0.12	cv	
1116.0401	53.015	→ 10003	0.07	cv	
1117.0401	20.462	→ 3895	0.04	cv	
CAL BLK	-0.003	mg/L	-26.03	cv	window edge
1.00 PPM	1.048	mg/L	1.24	cv	

Al_HIGH

blank	-53.77	intensity	-139.4	cv	
standard	3432.500	intensity	1.31	cv	
EPA 386#1 10x	4.841	mg/L	0.31	cv	
10.0 PPM	9.936	mg/L	0.13	cv	
500 PPM	300.500	mg/L	0.04	cv	
100 PPM	220.100	mg/L	0.21	cv	
CAL BLK	-0.004	mg/L	-13.15	cv	
JOB#4906 B-102	-0.003	mg/L <0.200	-130.9	cv	
CAL BLK	-0.010	mg/L	-135.7	cv	
1.00 PPM	1.017	mg/L	1.80	cv	
1110.0401	9.166	→ 1763mg/Kg	2.04	cv	
1111.0401	7.812	→ 1497	0.47	cv	
1112.0401	16.215	→ 3179	0.13	cv	
1113.0401	21.955	→ 4593	0.02	cv	
1114.0401	13.750	→ 2646	0.19	cv	
1115.0401	13.035	→ 2507	0.05	cv	
1116.0401	24.010	→ 4908	0.11	cv	
1117.0401	9.124	→ 1738	0.21	cv	
CAL BLK	0.002	mg/L	1111.4	cv	
1.00 PPM	1.035	mg/L	0.54	cv	

REPORT > SELECT RESULT

Job # 4971

87/03/13

08:45

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

Result Name: 8703120831

blank	CAL BLK	1278.0401	JOB#4995 B-160
standard	JOB#4971 B-124	JOB#4989 B-144	1450.0701X
standard	1274.0401	1427.0401	1451.0701X
standard	100 PPM	1428.0401	1452.0701X
500 PPB	500 PPM	1428.0401 R	1452.0701RX
500 PPB	50 PPM	1429.0401	500 PPM ICS
EPA 386#1 10x	1275.0401	1429.0401 S	CAL BLK
EPA 283#2 1/50	1275.0401 R	1430.0401	500 PPB
EPA 1183#2	1275.0401 S	1276. 1/10	5043 BLK 156
EPA 1183#2	1276.0401	1277. 1/10	5043 BLK 156
EPA 1183#2	CAL BLK	500 PPM ICS	1652.0301
500 PPM ICS	500 PPB	CAL BLK	1653.0301
10000 PPB	500 PPB	500 PPB	1653.0301 R
10000 PPB	1277.0401	500 PPB	1654.0301

Command?

Sb_VHG

blank	44.06	intensity		37.63	cv
standard	1540.50	intensity		1.31	cv
500 PPB	467.25	ug/L		6.83	cv
EPA 1183#2	88.48	ug/L		16.05	cv
500 PPM ICS	867.70	ug/L		13.12	cv
CAL BLK	-4.14	ug/L		-88.92	cv
JOB#4971 B-106	13.41	ug/L	<60.0	84.44	cv
1274.0401	9.85	ug/L	<12.0mg/kg	1.19	cv
1275.0401	-7.58	ug/L		-42.10	cv
1275.0401 R	6.90	ug/L		244.23	cv
1275.0401 S	131.35	ug/L	26% rec	11.23	cv
1276.0401	16.29	ug/L		29.62	cv
CAL BLK	-9.27	ug/L		-104.2	cv
500 PPB	486.30	ug/L		8.78	cv
1277.0401	48.63	ug/L		4.57	cv
1278.0401	14.65	ug/L		6.72	cv
500 PPM ICS	824.50	ug/L		11.96	cv
CAL BLK	22.87	ug/L		21.53	cv
500 PPB	466.75	ug/L		3.99	cv

$\frac{25.7}{100.0}$

Zn_VHG

blank	28.07	intensity		22.30	cv
standard	13370.00	intensity		1.19	cv
standard	13450.00	intensity		0.30	cv
500 PPB	513.40	ug/L		1.65	cv
EPA 386#1 10x	950.75	ug/L		0.03	cv
500 PPM ICS	918.60	ug/L		8.40	cv
10000 PPB	9990.50	ug/L		1.54	cv
CAL BLK	0.16	ug/L		59.03	cv
JOB#4971 B-106	0.91	ug/L	<20.0	134.62	cv
1274.0401	[illegible]	[illegible]	73.2mg/kg	3.73	cv
1275.0401	[illegible]	[illegible]	133	0.69	cv
1275.0401 R	[illegible]	[illegible]	132	0.52	cv
1275.0401 S	1109.00	ug/L	-85% rec	0.56	cv
1276.0401	[illegible]	[illegible]	1917	1.58	cv
CAL BLK	-0.88	ug/L		-215.7	cv
500 PPB	487.95	ug/L		0.95	cv
1277.0401	[illegible]	ug/L		2.94	cv
1278.0401	[illegible]	[illegible]	436	0.04	cv
1277. 1/10	1535.00	[illegible]	2981	0.09	cv
500 PPM ICS	935.05	ug/L		2.46	cv
CAL BLK	-0.47	ug/L		-454.0	cv
500 PPB	504.10	ug/L		0.82	cv

$\frac{217-132}{100}$

Cd_VHG

blank	4.87	intensity		140.06	cv
standard	7610.50	intensity		1.43	cv
standard	7640.00	intensity		0.46	cv
500 PPB	509.25	ug/L		1.45	cv
EPA 386#1 10x	238.55	ug/L		2.56	cv
500 PPM ICS	832.15	ug/L		6.75	cv
10000 PPB	9820.00	ug/L		0.61	cv
CAL BLK	-1.96	ug/L		-70.65	cv
JOB#4971 B-106	0.54	ug/L	<5.00	334.76	cv
1274.0401	0.49	ug/L	<1.00mg/kg	2.71	cv
1275.0401	[illegible]	[illegible]	1.43	12.40	cv
1275.0401 R	[illegible]	[illegible]	1.59	24.14	cv

window edge

1275.0401 S	51.13	ug/L	-86% rec	0.30	cv
1276.0401	[illegible]	[illegible]	8.85 mg/Kg	3.76	cv
CAL BLK	0.91	ug/L		77.09	cv
500 PPB	488.65	ug/L		0.83	cv
1277.0401	13.14	[illegible]	3.52	13.20	cv
1278.0401	0.95	ug/L	<1.00	13.04	cv
500 PPM ICS	838.55	ug/L		2.96	cv
CAL BLK	-0.08	ug/L		-8.41	cv
500 PPB	500.30	ug/L		0.59	cv

$\frac{10.0 - 1.4}{10}$

Fe_VHC

blank	10.63	intensity		1112.4	cv
standard	3295.00	intensity		3.57	cv
standard	3216.00	intensity		0.63	cv
500 PPB	531.10	ug/L		2.19	cv
EPA 386#1 10x	1003.00	ug/L		0.37	cv
500 PPM ICS	850.85	ug/L		6.24	cv
10000 PPB	10135.00	ug/L		0.51	cv
CAL BLK	14.98	ug/L		35.57	cv
JOB#4971 E-126	25.97	ug/L	<100	23.75	cv
1274.0401	[illegible]	[illegible]	21.5 mg/Kg	7.91	cv
1275.0401	[illegible]	[illegible]	44.6	1.20	cv
1275.0401 R	[illegible]	[illegible]	42.8	13.72	cv
1275.0401 S	[illegible]	ug/L	-86% rec	1.15	cv
1276.0401	[illegible]	[illegible]	2026	1.41	cv
CAL BLK	31.60	ug/L		3.38	cv
500 PPB	526.75	ug/L		1.17	cv
1277.0401	[illegible]	[illegible]	583	4.21	cv
1278.0401	[illegible]	[illegible]	19.1	2.29	cv
500 PPM ICS	793.60	ug/L		2.15	cv
CAL BLK	13.80	ug/L		55.58	cv
500 PPB	533.05	ug/L		5.56	cv

$\frac{129 - 42.8}{100}$

Co_VHC

blank	11.92	intensity		69.58	cv
standard	3694.50	intensity		2.51	cv
standard	3610.50	intensity		0.06	cv
500 PPB	509.25	ug/L		2.21	cv
EPA 386#1 10x	947.30	ug/L		1.72	cv
500 PPM ICS	854.00	ug/L		5.49	cv
10000 PPB	9949.50	ug/L		-0.13	cv
CAL BLK	5.48	ug/L		117.32	cv
JOB#4971 B-126	-0.76	ug/L	<50.0	-764.8	cv
1274.0401	16.28	ug/L	<10.0 mg/Kg	35.95	cv
1275.0401	25.79	ug/L		4.22	cv
1275.0401 R	23.89	ug/L		5.70	cv
1275.0401 S	476.55	ug/L	-95% rec	0.97	cv
1276.0401	104.49	[illegible]	20.1	6.91	cv
CAL BLK	0.84	ug/L		424.54	cv
500 PPB	497.75	ug/L		0.49	cv
1277.0401	21.35	ug/L	<10.0	9.86	cv
1278.0401	39.93	[illegible]	11.4	1.05	cv
500 PPM ICS	836.25	ug/L		1.64	cv
CAL BLK	-3.11	ug/L		-44.41	cv
500 PPB	500.00	ug/L		0.03	cv

$\frac{95.3}{100}$

Ni_VHC

blank	24.71	intensity		402.10	cv
standard	8925.00	intensity		0.77	cv

window edge

window edge

500 PPB	511.65	ug/L		0.07	cv
EPA 336#1 10x	963.65	ug/L		2.13	cv
500 PPM ICS	856.20	ug/L		4.25	cv
10000 PPB	9925.50	ug/L		0.00	cv
CAL BLK	4.56	ug/L		158.21	cv
JOB#4971 B-126	-1.03	ug/L	<40.0	-62.78	cv
1274.0401	[illegible]		8.49 mg/kg	[illegible]	cv
1275.0401	[illegible]		10.9	0.09	cv
1275.0401 R	[illegible]		10.9	5.83	cv
1275.0401 S	510.15	ug/L	-89% rec	0.87	cv
1276.0401	[illegible]		79.6	0.50	cv
CAL BLK	-1.05	ug/L		-360.5	cv
500 PPB	487.40	ug/L		0.98	cv
1277.0401	[illegible]		279	2.14	cv
1278.0401	35.17	ug/L	<8.00	4.71	cv
500 PPM ICS	826.60	ug/L		0.87	cv
CAL BLK	1.13	ug/L		896.67	cv window edge
500 PPB	493.35	ug/L		0.70	cv

$\frac{100-10.9}{100}$

Mn_VHG

blank	4.51	intensity		172.82	cv
standard	12910.00	intensity		3.63	cv
500 PPB	512.50	ug/L		0.30	cv
EPA 336#1 10x	954.65	ug/L		1.35	cv
500 PPM ICS	887.95	ug/L		4.89	cv
10000 PPB	9943.00	ug/L		0.23	cv
CAL BLK	-0.11	ug/L		-568.3	cv
JOB#4971 B-126	-0.13	ug/L	<5.0	-32.69	cv
1274.0401	[illegible]		625 mg/kg	[illegible]	cv
1275.0401	[illegible]		282	0.43	cv
1275.0401 R	[illegible]		283	0.07	cv
1275.0401 S	1865.50	ug/L	-93% rec	0.57	cv
1276.0401	[illegible]		183	1.10	cv
CAL BLK	-0.15	ug/L		-210.3	cv
500 PPB	498.05	ug/L		1.12	cv
1277.0401	[illegible]		135	1.50	cv
1278.0401	[illegible]		36.9	0.41	cv
500 PPM ICS	878.50	ug/L		1.98	cv
CAL BLK	0.07	ug/L		702.53	cv
500 PPB	509.85	ug/L		0.20	cv

$\frac{366-283}{100}$

Fe_HIGH

blank	9.13	intensity		71.35	cv
standard	2497.500	intensity		2.71	cv
standard	2426.500	intensity		0.91	cv
500 PPB	0.519	mg/L		0.54	cv
EPA 336#1 10x	0.977	mg/L		1.41	cv
500 PPM ICS	411.050	mg/L		1.22	cv
10000 PPB	9.880	mg/L		0.92	cv
CAL BLK	0.004	mg/L		25.82	cv
JOB#4971 B-126	-0.002	mg/L	<0.100	-57.05	cv
1274.0401	[illegible]		5733 mg/kg	[illegible]	cv
100 PPM	89.955	mg/L		0.04	cv
50 PPM	49.635	mg/L		0.26	cv
1275.0401	[illegible]		9760	[illegible]	cv
1275.0401 R	[illegible]		9447	1.41	cv
1275.0401 S	[illegible]		N.A	0.06	cv
1276.0401	[illegible]	mg/L		1.33	cv
CAL BLK	0.000	mg/L		66.59	cv

Sample amount is 3-5x greater than the spike amount.

500 PPB	0.509	mg/L	0.45	cv
1277.0401	[illegible]	[illegible]	.73	cv
1278.0401	[illegible]	[illegible]	0.23	cv
1276. 1/10	[illegible]	[illegible]	0.02	cv
500 PPM ICS	414.100	mg/L	0.51	cv
CAL BLK	0.002	mg/L	78.73	cv
500 PPB	0.522	mg/L	1.59	cv

8566 mg/Kg
3490
34856

Cr_VHG

blank	5.00	intensity	437.81	cv
standard	9786.00	intensity	0.73	cv
500 PPB	511.90	ug/L	1.39	cv
EPA 386#1 10x	959.00	ug/L	1.18	cv
500 PPM ICS	898.40	ug/L	4.09	cv
10000 PPB	10035.00	ug/L	0.21	cv
CAL BLK	-0.75	ug/L	-275.5	cv
JOB#4971 B-126	1.01	ug/L <10.0	35.30	cv
1274.0401	51.53	[illegible] 9.81 mg/Kg	4.27	cv
1275.0401	41.83	[illegible] 8.36	0.79	cv
1275.0401 R	39.00	[illegible] 7.76	2.23	cv
1275.0401 S	222.10	ug/L -89% rec	1.09	cv
1276.0401	3327.00	[illegible] 640	1.79	cv
CAL BLK	1.22	ug/L	121.34	cv
500 PPB	498.35	ug/L	0.78	cv
1277.0401	389.40	[illegible] 75.7	2.41	cv
1278.0401	49.02	[illegible] 9.34	0.38	cv
500 PPM ICS	875.10	ug/L	2.84	cv
CAL BLK	0.62	ug/L	52.89	cv
500 PPB	513.10	ug/L	0.60	cv

$\frac{43.5 - 7.76}{48}$

V_VHG

blank	12.09	intensity	17.74	cv
standard	30835.00	intensity	0.74	cv
500 PPB	502.45	ug/L	0.16	cv
EPA 386#1 10x	2347.00	ug/L	0.98	cv
500 PPM ICS	889.65	ug/L	3.54	cv
10000 PPB	10175.00	ug/L	0.05	cv
CAL BLK	-0.71	ug/L	-24.98	cv
JOB#4971 B-126	-1.88	ug/L <50.0	-28.52	cv
1274.0401	138.75	[illegible] 26.4 mg/Kg	0.19	cv
1275.0401	65.38	[illegible] 13.1	1.28	cv
1275.0401 R	67.24	[illegible] 13.1	2.52	cv
1275.0401 S	493.90	ug/L -96% rec	0.52	cv
1276.0401	4449.50	[illegible] 855	1.95	cv
CAL BLK	0.74	ug/L	267.13	cv
500 PPB	488.80	ug/L	1.04	cv
1277.0401	392.90	[illegible] 76.3	2.59	cv
1278.0401	33.77	ug/L <10.0	12.87	cv
500 PPM ICS	900.35	ug/L	1.82	cv
CAL BLK	0.36	ug/L	12.07	cv window edge
500 PPB	507.60	ug/L	0.39	cv

$\frac{98.8 - 13.1}{100}$

Ba_VHG

blank	7.45	intensity	88.42	cv window edge
standard	8558.00	intensity	0.07	cv
500 PPB	502.75	ug/L	0.51	cv
EPA 386#1 10x	929.00	ug/L	0.78	cv
500 PPM ICS	932.70	ug/L	4.54	cv
10000 PPB	10030.00	ug/L	0.01	cv

CAL BLK	-0.35	ug/L		-13.03	cv	
JOB#4971 B-126	-1.32	ug/L	<5.00	-67.28	cv	
1274.0401	0.17	ug/L	<1.00 mg/kg	5.33	cv	9.44
1275.0401	2.08	ug/L		13.99	cv	10
1275.0401 R	1.73	ug/L		3.88	cv	
1275.0401 S	47.18	ug/L	94% rec	0.59	cv	
1276.0401	2.35	ug/L		5.13	cv	
CAL BLK	-0.42	ug/L		-25.22	cv	
500 PPB	486.90	ug/L		0.26	cv	
1277.0401	0.05	ug/L		9.90	cv	
1278.0401	-0.50	ug/L		-87.64	cv	window edge
500 PPM ICS	895.10	ug/L		1.31	cv	
CAL BLK	-0.23	ug/L		-25.92	cv	
500 PPB	497.95	ug/L		0.60	cv	

Cu_VHG

blank	168.70	intensity		13.15	cv	
standard	26930.00	intensity		0.15	cv	
500 PPB	503.75	ug/L		0.09	cv	
EPA 386#1 10x	942.20	ug/L		0.65	cv	
500 PPM ICS	928.80	ug/L		3.33	cv	
10000 PPB	10330.00	ug/L		0.70	cv	
CAL BLK	-3.92	ug/L		-75.79	cv	window edge
JOB#4971 B-126	-4.49	ug/L	<25.0	-65.83	cv	window edge
1274.0401	[illegible]	[illegible]	14.6 mg/kg	1.05	cv	
1275.0401	[illegible]	[illegible]	245	0.13	cv	
1275.0401 R	[illegible]	[illegible]	23.7	0.27	cv	67.7 − 23.7
1275.0401 S	345.50	ug/L	98% rec	1.06	cv	50
1276.0401	7490.00	[illegible]	1440	0.64	cv	
CAL BLK	-1.99	ug/L		-95.36	cv	
500 PPB	496.25	ug/L		0.22	cv	
1277.0401	[illegible]	[illegible]	355	2.41	cv	
1278.0401	[illegible]	[illegible]	8.23	1.45	cv	
500 PPM ICS	920.80	ug/L		1.74	cv	
CAL BLK	-2.14	ug/L		-31.55	cv	
500 PPB	507.85	ug/L		0.32	cv	

Ag_VHG

blank	2.35	intensity		1309.5	cv	window edge
standard	30520.00	intensity		0.20	cv	
500 PPB	492.25	ug/L		0.59	cv	
EPA 283#2 1/50	111.55	ug/L		0.56	cv	
500 PPM ICS	1053.00	ug/L		3.65	cv	
CAL BLK	4.72	ug/L		44.90	cv	
JOB#4971 B-126	3.76	ug/L	<10.0	60.79	cv	
1274.0401	2.88	ug/L	<2.00 mg/kg	9.71	cv	
1275.0401	3.06	ug/L		15.24	cv	
1275.0401 R	3.71	ug/L		17.87	cv	window edge
1275.0401 S	49.21	ug/L	97% rec	3.25	cv	9.65
1276.0401	9.01	ug/L		22.69	cv	10
CAL BLK	4.44	ug/L		1.41	cv	
500 PPB	509.10	ug/L		1.58	cv	
1277.0401	[illegible]	[illegible]	8.26	10.89	cv	
1278.0401	5.96	ug/L	<5.00	14.59	cv	
500 PPM ICS	1008.50	ug/L		1.07	cv	
CAL BLK	2.18	ug/L		40.86	cv	window edge
500 PPB	485.95	ug/L		1.24	cv	

Al_HIGH

blank	-76.0[illegible]	intensity	-90.00	cv	
standard	3398.500	intensity	0.35	cv	
500 PPB	0.519	mg/L	6.11	cv	
EPA 386#1 10x	4.876	mg/L	1.12	cv	
500 PPM ICS	301.900	mg/L	0.00	cv	
10000 PPB	10.080	mg/L	0.27	cv	
CAL BLK	0.011	mg/L	19.76	cv	
JOB#4971 B-126	0.010	mg/L <0.200	164.79	cv	
1274.0401	5.278	mg/L 1577 mg/Kg	[illegible].48	cv	
200 ~~[illegible]~~ PPM	213.400	mg/L	1.84	cv	
1275.0401	[illegible].775	mg/L 5355	1.30	cv	
1275.0401 R	[illegible].5[illegible]	mg/L 4956	0.14	cv	
1275.0401 S	25.230	mg/L N.A.	0.34	cv	
1276.0401	56.365	mg/L 10839	0.55	cv	
CAL BLK	0.025	mg/L	69.41	cv	
500 PPB	0.491	mg/L	0.41	cv	
1277.0401	15.660	mg/L 3041	1.99	cv	
1278.0401	4.364	mg/L 831	0.12	cv	
500 PPM ICS	301.950	mg/L	0.02	cv	
CAL BLK	-0.018	mg/L	-173.2	cv	window edge
500 PPB	0.526	mg/L	6.54	cv	

Ba_VHG

blank	6.59	intensity	124.96	cv	
standard	11085.00	intensity	0.06	cv	
500 PPB	507.55	ug/L	0.47	cv	
EPA 283#2 1/502075.00		ug/L	1.52	cv	
500 PPM ICS	953.10	ug/L	0.21	cv	
10000 PPB	10040.00	ug/L	0.68	cv	
CAL BLK	-0.08	ug/L	-554.3	cv	
JOB#4971 B-126	-0.18	ug/L <200	-9.36	cv	
1274.0401	[illegible]	ug/L 121 mg/Kg	0.28	cv	
1275.0401	[illegible]	ug/L 287	0.21	cv	
1275.0401 R	[illegible]	ug/L 271	0.12	cv	$\frac{627-271}{400}$
1275.0401 S	3196.00	ug/L -89% rec	0.09	cv	
1276.0401	5259.50	ug/L 1011	0.60	cv	
CAL BLK	-0.21	ug/L	-55.12	cv	
500 PPB	497.30	ug/L	0.90	cv	
1277.0401	[illegible]	ug/L 119	2.38	cv	
1278.0401	[illegible]	ug/L 114	0.01	cv	
500 PPM ICS	920.85	ug/L	1.49	cv	
CAL BLK	-0.25	ug/L	-71.97	cv	
500 PPB	516.60	ug/L	0.25	cv	

Dead Creek

REPORT > SELECT RESULT

Job #4989

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

Result Name: 8703120831

blank	CAL BLK	1278.0401	JOB#4995 B-160
standard	JOB#4971 B-126	JOB#4989 B-144	1450.0701X
standard	1274.0401	1427.0401	1451.0701X
standard	100 PPM	1428.0401	1452.0701X
500 PPB	500 PPM	1428.0401 R	1452.0701RX
500 PPB	50 PPM	1429.0401	500 PPM ICS
EPA 386#1 10x	1275.0401	1429.0401 S	CAL BLK
EPA 293#2 1/50	1275.0401 R	1430.0401	500 PPB
EPA 118340	1275.0401 S	1276. 1/10	5043 BLK 156
EPA 118340	1276.0401	1277. 1/10	5043 BLK 156
EPA 118340	CAL BLK	500 PPM ICS	1652.0301
500 PPM ICS	500 PPB	CAL BLK	1653.0301
10000 PPB	500 PPB	500 PPB	1653.0301 R
10000 PPB	1277.0401	500 PPB	1654.0301

Command?

Sb_VHG

blank	46.06	intensity		37.63	cv
standard	1540.50	intensity		1.31	cv
500 PPB	467.25	ug/L		6.83	cv
EPA 1193#2	88.48	ug/L		16.05	cv
500 PPM ICS	867.70	ug/L		13.12	cv
CAL BLK	-4.14	ug/L		-88.92	cv
CAL BLK	-9.27	ug/L		-104.2	cv
500 PPB	436.30	ug/L		8.78	cv
JCD#4989 B-144	24.94	ug/L	<60.0	164.70	cv
1427.0401	-16.54	ug/L	<40.0mg/Kg	7.85	cv
1428.0401	-12.40	ug/L		-352.6	cv
1428.0401 R	-18.92	ug/L		-65.34	cv
1429.0401	9.44	ug/L		98.34	cv
1429.0401 S	253.20	ug/L	47%rec	8.75	cv
1430.0401	0.03	ug/L		37928.	cv
500 PPM ICS	824.50	ug/L		11.96	cv
CAL BLK	22.87	ug/L		21.53	cv
500 PPB	466.75	ug/L		3.99	cv

window edge
window edge

47.3-
100

Zn_VHG

blank	28.07	intensity		22.30	cv
standard	13877.00	intensity		1.19	cv
standard	13450.00	intensity		0.30	cv
500 PPB	513.40	ug/L		1.65	cv
EPA 386#1 10x	950.75	ug/L		0.03	cv
500 PPM ICS	918.60	ug/L		8.40	cv
10000 PPB	9990.50	ug/L		1.54	cv
CAL BLK	0.16	ug/L		59.03	cv
CAL BLK	-0.88	ug/L		-215.7	cv
500 PPB	487.95	ug/L		0.95	cv
JCD#4989 B-144	1.46	ug/L	<20.0	24.47	cv
1427.0401	[illegible]	[illegible]	227mg/Kg	1.12	cv
1428.0401	[illegible]	[illegible]	23.9	1.28	cv
1428.0401 R	[illegible]	[illegible]	22.3	0.37	cv
1429.0401	[illegible]	[illegible]	537	0.02	cv
1429.0401 S	[illegible]	[illegible]	-N.A.	1.12	cv
1430.0401	[illegible]	[illegible]	38.1	1.16	cv
500 PPM ICS	935.05	ug/L		2.46	cv
CAL BLK	-0.47	ug/L		-454.0	cv
500 PPB	504.10	ug/L		0.82	cv

Sample value 3-5x greater than the spike amnt.

Cd_VHG

blank	4.87	intensity		140.06	cv
standard	7610.50	intensity		1.43	cv
standard	7642.00	intensity		0.46	cv
500 PPB	509.25	ug/L		1.45	cv
EPA 386#1 10x	238.55	ug/L		2.56	cv
500 PPM ICS	832.15	ug/L		6.75	cv
10000 PPB	9820.00	ug/L		0.61	cv
CAL BLK	-1.96	ug/L		-70.65	cv
CAL BLK	0.91	ug/L		77.09	cv
500 PPB	483.65	ug/L		0.85	cv
JCD#4989 B-144	0.59	ug/L	<5.00	106.48	cv
1427.0401	[illegible]	[illegible]	3.25Jmg/Kg	2.09	cv
1428.0401	[illegible]	ug/L	<1.00	53.17	cv
1428.0401 R	1.16	ug/L		101.09	cv
1429.0401	[illegible]	[illegible]	8.48	2.49	cv

window edge

1429.0401 S	66.16	ug/L-38%rec	3.28	cv	12.3 - 8.48
1430.0401	2.37	ug/L<1.00mg/kg	5.02	cv	70
500 PPM ICS	932.55	ug/L	2.96	cv	
CAL BLK	-0.03	ug/L	-2.41	cv	
500 PPB	500.30	ug/L	0.59	cv	

Pb_VHG

blank	10.63	intensity	1112.4	cv	window edge
standard	3295.00	intensity	3.57	cv	
standard	3216.00	intensity	0.65	cv	
500 PPB	531.10	ug/L	2.19	cv	
EPA 386#1 10x	1003.00	ug/L	0.37	cv	
500 PPM ICS	650.85	ug/L	6.24	cv	
10000 PPB	10135.00	ug/L	0.51	cv	See furnace data
CAL BLK	1[illegible].93	ug/L	35.57	cv	
CAL BLK	31.[illegible]	ug/L	3.38	cv	
500 PPB	526.75	ug/L	1.17	cv	
JOB#4989 B-144	12.86	ug/L<100	18.44	cv	
1427.0401	112.09	ug/L	15.56	cv	
1428.0401	34.75	ug/L	21.78	cv	
1428.0401 R	32.05	ug/L	41.56	cv	
1429.0401	[illegible]	ug/L	5.68	cv	
1429.0401 S	625.85	ug/L	3.53	cv	
1430.0401	27.69	ug/L	12.47	cv	
500 PPM ICS	790.60	ug/L	2.15	cv	
CAL BLK	13.80	ug/L	55.58	cv	
500 PPB	533.05	ug/L	5.[illegible]	cv	

Co_VHG

blank	11.92	intensity	69.58	cv	
standard	3694.50	intensity	2.51	cv	
standard	3610.50	intensity	0.06	cv	
500 PPB	509.35	ug/L	2.21	cv	
EPA 386#1 10x	947.30	ug/L	1.72	cv	
500 PPM ICS	854.00	ug/L	5.49	cv	
10000 PPB	9949.50	ug/L	0.13	cv	
CAL BLK	5.43	ug/L	117.32	cv	
CAL BLK	0.84	ug/L	424.54	cv	
500 PPB	497.75	ug/L	0.49	cv	
JOB#4989 B-144	1.02	ug/L<50.0	177.61	cv	
1427.0401	18.10	ug/L<10.0mg/kg	6.99	cv	
1428.0401	11.94	ug/L	10.56	cv	
1428.0401 R	12.26	ug/L	40.68	cv	
1429.0401	29.48	ug/L	12.47	cv	
1429.0401 S	477.25	ug/L-88%rec	1.41	cv	88.4
1430.0401	13.27	ug/L	35.18	cv	100
500 PPM ICS	836.25	ug/L	1.64	cv	
CAL BLK	-3.11	ug/L	-44.41	cv	window edge
500 PPB	500.00	ug/L	0.03	cv	

Ni_VHG

blank	24.71	intensity	402.10	cv	window edge
standard	8925.00	intensity	0.77	cv	
500 PPB	511.65	ug/L	0.07	cv	
EPA 386#1 10x	963.65	ug/L	2.15	cv	
500 PPM ICS	856.20	ug/L	4.25	cv	
10000 PPB	9925.50	ug/L	0.00	cv	
CAL BLK	4.56	ug/L	158.21	cv	
CAL BLK	-1.05	ug/L	-360.5	cv	

500 PPB	487.40	ug/L	0.98	cv
JOB#4989 B-144	0.50	ug/L <40.0	22.72	cv
1427.0401	159.35	→ 30.9 mg/Kg	2.09	cv
1428.0401	33.49	ug/L <8.00	7.04	cv
1428.0401 R	34.24	ug/L ⊥	9.75	cv
1429.0401	579.15	→ 106 mg/Kg	2.72	cv
1429.0401 S	760.75	ug/L -35% rec	1.40	cv
1430.0401	52.50	→ 9.72 ⊥	7.60	cv
500 PPM ICS	826.60	ug/L	0.87	cv
CAL BLK	1.13	ug/L	896.67	cv
500 PPB	493.35	ug/L	0.70	cv

$\frac{141-106}{100}$ window edge

Mn_VHG

blank	4.51	intensity	178.80	cv
standard	12910.00	intensity	0.63	cv
500 PPB	512.50	ug/L	0.30	cv
EPA 386#1 10x	954.65	ug/L	1.35	cv
500 PPM ICS	887.95	ug/L	4.89	cv
10000 PPB	9943.00	ug/L	0.23	cv
CAL BLK	-0.11	ug/L	-568.3	cv
CAL BLK	-0.15	ug/L	-210.3	cv
500 PPB	498.05	ug/L	1.12	cv
JOB#4989 B-144	0.03	ug/L <15.0	51.30	cv
1427.0401	[illegible]	→ 156 mg/Kg	0.52	cv
1428.0401	412.05	→ 123	0.47	cv
1428.0401 R	377.40	→ 129	0.75	cv
1429.0401	876.70	→ 161	0.15	cv
1429.0401 S	1350.50	ug/L -89% rec	0.13	cv
1430.0401	445.60	→ 84.1 ⊥	1.28	cv
500 PPM ICS	878.50	ug/L	1.98	cv
CAL BLK	0.07	ug/L	702.53	cv
500 PPB	509.85	ug/L	0.20	cv

$\frac{250-161}{100}$

Fe_HIGH

blank	9.18	intensity	71.35	cv
standard	2497.500	intensity	2.71	cv
standard	2426.500	intensity	0.91	cv
500 PPB	0.519	mg/L	0.54	cv
EPA 386#1 10x	0.977	mg/L	1.41	cv
500 PPM ICS	411.050	mg/L	1.22	cv
10000 PPB	9.880	mg/L	0.92	cv
CAL BLK	0.004	mg/L	25.82	cv
100 PPM	89.955	mg/L	0.04	cv
50 PPM	49.635	mg/L	0.26	cv
CAL BLK	0.000	mg/L	66.59	cv
500 PPB	0.509	mg/L	0.45	cv
JOB#4989 B-144	0.006	mg/L <0.100	137.42	cv
1427.0401	49.815	→ 9673 mg/Kg	0.10	cv
1428.0401	31.000	→ 6139	0.82	cv
1428.0401 R	31.515	→ 6003	1.49	cv
1429.0401	50.620	→ 9288	0.02	cv
1429.0401 S	52.555	mg/L -NA-	0.18	cv
1430.0401	24.860	→ 4972 ⊥	0.92	cv
500 PPM ICS	414.100	mg/L	0.51	cv
CAL BLK	0.002	mg/L	78.73	cv
500 PPB	0.523	mg/L	1.59	cv

Cr_VHG

blank	5.03	intensity	437.81	cv

standard	9786.00	intensity	0.73	cv	
500 PPB	511.90	ug/L	1.39	cv	
EPA 386#1 10x	959.00	ug/L	1.13	cv	
500 PPM ICS	868.40	ug/L	4.09	cv	
10000 PPB	10035.00	ug/L	0.21	cv	
CAL BLK	-0.75	ug/L	-275.5	cv	
CAL BLK	1.22	ug/L	121.34	cv	
500 PPB	498.35	ug/L	0.78	cv	
JOB#4989 B-144	1.69	ug/L <10.0	96.25	cv	
1427.0401	54.26	10.7 mg/kg	3.72	cv	
1428.0401	24.78	4.91	2.86	cv	
1428.0401 R	24.53	4.67	6.67	cv	
1429.0401	93.33	17.1	1.06	cv	47.1 − 17.1
1429.0401 S	254.20	ug/L −66% rec	0.71	cv	50
1430.0401	19.99	3.80 ⊥	5.47	cv	
500 PPM ICS	875.10	ug/L	2.84	cv	
CAL BLK	0.62	ug/L	52.89	cv	
500 PPB	513.10	ug/L	0.60	cv	

V_VHG

blank	12.09	intensity	17.74	cv	
standard	30835.00	intensity	0.74	cv	
500 PPB	502.45	ug/L	0.16	cv	
EPA 386#1 10x	2347.00	ug/L	0.93	cv	
500 PPM ICS	839.65	ug/L	3.54	cv	
10000 PPB	10175.00	ug/L	0.05	cv	
CAL BLK	-0.71	ug/L	-24.98	cv	
CAL BLK	0.74	ug/L	267.13	cv	
500 PPB	488.80	ug/L	1.04	cv	
JOB#4989 B-144	0.78	ug/L <50.0	90.80	cv	
1427.0401	20.52	15.6 mg/kg	.90	cv	
1428.0401	44.29	ug/L <10.0 mg/kg	.95	cv	
1428.0401 R	41.10	ug/L ⊥	1.15	cv	
1429.0401	11.45	12.2	5.81	cv	99.8 − 12.2
1429.0401 S	538.75	ug/L −88% rec	0.49	cv	100
1430.0401	31.74	ug/L <10.0 ⊥	2.94	cv	
500 PPM ICS	900.35	ug/L	1.82	cv	
CAL BLK	0.36	ug/L	12.07	cv	window edge
500 PPB	507.60	ug/L	0.39	cv	

Be_VHG

blank	7.45	intensity	88.42	cv	window edge
standard	8558.00	intensity	0.07	cv	
500 PPB	502.75	ug/L	0.51	cv	
EPA 386#1 10x	929.00	ug/L	0.78	cv	
500 PPM ICS	932.70	ug/L	4.54	cv	
10000 PPB	10030.00	ug/L	0.01	cv	
CAL BLK	-0.35	ug/L	-13.03	cv	
CAL BLK	-0.42	ug/L	-25.22	cv	
500 PPB	486.90	ug/L	0.26	cv	
JOB#4989 B-144	-0.44	ug/L <5.00	-13.36	cv	
1427.0401	1.05	ug/L <1.00 mg/kg	.98	cv	
1428.0401	0.33	ug/L	36.63	cv	
1428.0401 R	0.36	ug/L	72.94	cv	8.87
1429.0401	1.33	ug/L	3.57	cv	10.0
1429.0401 S	47.94	ug/L −89% rec	2.04	cv	
1430.0401	0.11	ug/L	105.22	cv	
500 PPM ICS	895.10	ug/L	1.31	cv	
CAL BLK	-0.23	ug/L	-25.92	cv	

500 PPB	497.95	ug/L		0.60	cv

Cu_VHG

blank	168.70	intensity		12.15	cv	
standard	26930.00	intensity		0.15	cv	
500 PPB	503.75	ug/L		0.09	cv	
EPA 386#1 10x	942.20	ug/L		0.65	cv	
500 PPM ICS	928.80	ug/L		3.33	cv	
10000 PPB	10330.00	ug/L		0.70	cv	
CAL BLK	-3.92	ug/L		-75.79	cv	window edge
CAL BLK	-1.99	ug/L		-95.36	cv	
500 PPB	496.25	ug/L		0.22	cv	
JOB#4989 B-144	-2.15	ug/L	<25.0	-46.26	cv	
1427.0401	245.75	[illegible]	47.7 mg/Kg	.74	cv	
1428.0401	15.05	ug/L	<5.00	2.92	cv	
1428.0401 R	18.59	ug/L	⊥	4.53	cv	
1429.0401	1450.00	[illegible]	266	0.09	cv	174
1429.0401 S	937.25	ug/L	-N.A-	0.82	cv	
1430.0401	56.43	[illegible]	13.3 ⊥	1.00	cv	
500 PPM ICS	923.80	ug/L		1.74	cv	
CAL BLK	-2.14	ug/L		-31.55	cv	
500 PPB	507.85	ug/L		0.32	cv	

Ag_VHG

blank	2.37	intensity		1309.5	cv	window edge
standard	30320.00	intensity		0.20	cv	
500 PPB	492.25	ug/L		0.59	cv	
EPA 280#2 1/50	111.55	ug/L		0.56	cv	
500 PPM ICS	1053.00	ug/L		3.65	cv	
CAL BLK	4.72	ug/L		44.90	cv	
CAL BLK	4.44	ug/L		1.41	cv	
500 PPB	509.10	ug/L		1.58	cv	
JOB#4989 B-144	2.73	ug/L	<10.0	71.58	cv	window edge
1427.0401	3.41	ug/L	<2.0 mg/Kg	.54	cv	window edge
1428.0401	3.03	ug/L		4.19	cv	
1428.0401 R	3.11	ug/L		30.43	cv	
1429.0401	2.24	ug/L		232.06	cv	wi 9.44/10.0 edge
1429.0401 S	50.95	ug/L	94% rec	6.17	cv	
1430.0401	1.85	ug/L	⊥	45.41	cv	window edge
500 PPM ICS	1008.50	ug/L		1.07	cv	
CAL BLK	2.18	ug/L		40.86	cv	window edge
500 PPB	485.95	ug/L		1.24	cv	

Al_HIGH

blank	-76.09	intensity		-90.00	cv	
standard	3398.500	intensity		0.35	cv	
500 PPB	0.519	mg/L		6.11	cv	
EPA 386#1 10x	4.876	mg/L		1.12	cv	
500 PPM ICS	301.900	mg/L		0.00	cv	
10000 PPB	10.080	mg/L		0.27	cv	
CAL BLK	0.011	mg/L		19.76	cv	
100 PPM	213.400	mg/L		1.84	cv	
CAL BLK	0.025	mg/L		69.41	cv	
500 PPB	0.471	mg/L		0.41	cv	
JOB#4989 B-144	0.007	mg/L	<0.200	61.07	cv	window edge
1427.0401	[illegible]	[illegible]	401 mg/Kg	.05	cv	
1428.0401	[illegible]	[illegible]	2707	1.42	cv	
1428.0401 R	[illegible]	[illegible]	2386	0.31	cv	
1429.0401	[illegible]	[illegible]	3932 ⊥	1.23	cv	

1429.0401 S	[illegible]	mg/L	0.63	cv	N.A
1430.0401	[illegible]	mg/L	1.16	cv	1862 mg/Kg
500 PPM ICS	301.950	mg/L	0.02	cv	
CAL BLK	-0.018	mg/L	-173.2	cv	window edge
500 PPB	0.526	mg/L	6.54	cv	

E2_VHC

blank	6.58	intensity	124.96	cv	
standard	11095.00	intensity	0.06	cv	
500 PPB	507.55	ug/L	0.47	cv	
EPA 283#2 1/50	2075.00	ug/L	1.52	cv	
500 PPM ICS	953.10	ug/L	0.21	cv	
10000 PPB	10040.00	ug/L	0.68	cv	
CAL BLK	-0.03	ug/L	-554.3	cv	
CAL BLK	-0.21	ug/L	-55.12	cv	
500 PPB	497.30	ug/L	0.90	cv	
JOB#4989 B-144	33.17	ug/L	0.38	cv	<200
1427 0401	[illegible]	ug/L	0.79	cv	135 mg/Kg
1428.0401	[illegible]	ug/L	0.15	cv	101
1428.0401 R	[illegible]	ug/L	0.49	cv	86.1
1429.0401	[illegible]	ug/L	0.57	cv	123
1429 0401 S	2664.00	ug/L	0.07	cv	936 rec
1430.0401	[illegible]	ug/L	0.27	cv	40.3 ±
500 PPM ICS	930.85	ug/L	1.49	cv	
CAL BLK	-0.[illegible]	ug/L	-71.97	cv	
500 PPB	516.60	ug/L	0.25	cv	

$\frac{493-123}{400}$

Project No.

TITLE

Book No.

From Page No.

Test Performed: AS

Date Received: MARCH 2-3, 1987

Work Performed By:

(SEE page 4)

S_1 = 25.0 p

S_2 = 50.0 p

S_3 = 100.0

CLP Final Volume = 200.0

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From No	C	ppb Burn 1	ppb Burn 2	ppb Avg	C.V.	20.0 ppb Spike	% Rec	D.F.	Amt. of Sample (Grms.)	Units	Final Conc.
	WS 378#3				20.6	21.3	21.0	2.36	39.1	91			µg/L	21.0
	Cal Blank				0.8	0.6	0.7	–	20.2	101			µg/L	<10.0
	50.0 ppb				50.1	47.8	48.9	3.32	66.8	90			µg/L	48.9
4906	Prep Blank 103				0.1	0.2	0.2	–	19.6	98			µg/L	<10.0
	1032.0403				37.0	36.9	37.0	0.19	52.3	/		1.04	mg/kg	/
	1033.0403				7.8	8.4	8.1	5.24	26.8	94		1.05		<1.90
	1034.0403				12.9	12.3	12.6	3.37	32.3	99		1.00		2.52
	1035.0403				17.3	15.4	16.3	8.22	34.4	91		1.02		3.20
	1035. R1				12.0	13.4	12.7	7.80	31.0	92		1.02		2.49
	1035. R1S1				42.9	42.7	42.8	0.33	57.8	75		1.03		8.31
	1036.0403				10.2	10.3	10.2	0.69	29.0	94		1.05		1.94
	1037.0403				7.2	5.5	6.3	18.9	25.9	98		1.00	mg/kg	<2.00
	Cal Blank				1.1	-0.1	0.2	–	19.1	96			µg/L	<10.0
	50.0 ppb				49.8	51.0	50.4	1.68	64.9	73			µg/L	50.4
4928	Prep Blank 107				0.7	-0.6	0.1	–	20.4	102			µg/L	<10.0
	1110.0403A				6.0	5.6	5.8	4.88	24.0	91		1.05	mg/kg	<1.90
	1111.0403A				7.5	7.6	7.5	0.94	26.5	95		1.02		<1.96
	1112.0403A				15.1	14.7	14.9	1.90	32.2	87		1.03		2.89
	1113.0403A				31.4	32.0	31.7	1.34	44.3	~~95~~		1.02		/
	1114.0403A				13.1	12.1	12.6	5.61	32.1	98		1.03		2.45
	1115.0403A				11.3	11.2	11.2	0.63	28.3	86		1.00		2.24
	1116.0403A				22.3	24.6	23.4	6.94	39.9	/		1.01		/
	1117.0403A				9.3	9.5	9.4	1.50	25.5	/		1.03	mg/kg	/
	Cal Blank				-0.0	0.3	0.1	–	18.6	93			µg/L	<10.0
	50.0 ppb				49.8	49.2	49.5	0.86	64.9	77			µg/L	49.5

To Page No.

Witnessed & Understood by me,

Date

Invented by

Date 3/2-3/87

Recorded by

Project No._____

Book No._____ TITLE _____

Page No. 9

Performed: As

Received: 3/3/87

Performed By: J. CLKA

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From N	C	ppb Burn 1	ppb Burn 2	ppb Ave	CV	20.0 ppb Spike	% Rec	DF	Samp Wgt	Units	Final Conc
	WS 378#3				20.4				40.3	100			µg/L	20.4
	Cal Blk				-1.0				19.2	96			µg/L	<10.0
	50.0ppb				49.6				70.5	105			µg/L	49.6
	Blk 103				-1.1	-1.2	-1.2	/	18.1	91			~~mg/kg~~ µg/L	<10.0
906	1032.0403				-2.1	-3.0	-2.6	/	19.8	99		1.04		~~<10.0~~ <0.962 µg
1928	1113.0403A				-2.0	-2.7	-2.4	/	20.8	104		1.02		~~<10.0~~ <0.980 µg
	1116.0403A				30.9	30.4	30.7	1.15	54.7	120		1.01		~~30.9~~ 6.08 µg
	1117.0403A				9.4	9.3	9.3	0.76	29.9	103		1.03	mg/kg	~~<10.0~~ ~~<0.971~~ 1.81 µg
	Cal Blk				-1.7				17.7	89			µg/L	<10.0
	50.0ppb				52.0				68.1	81			µg/L	52.0

To Page No._____

Witnessed & Understood by [signature] Date

Invented by

Recorded by J. Clka

Date 3/9/87

HGA FORM #1

ELEMENT: Se, As, DATE: 3/2-3/87.

S_1 = 25.0 PPB., S_2 = 50.0 PPB.

S_3 = 100.0 PPB, BOOK NO. 287, pp 8-9.

		Se	As
	6,5_01	WS378#14	WS378#3
	X02	Cal Blank	
	X03	50.0 ppb	
	X04	PREP Blank 103 (4906)	
JOB #:	X05	1032.0403	
	X06	1033.	
	X07	1034.	
	X08	1035.	
	X09	1035. R1	
	X10	1035. R1S1	
	X11	1036.	
	X12	1037.	
	X13	Cal Blank	
	X14	50.0 ppb	
	X15	PREP Blank 107 (4928)	
	X16	1110.0403 BA	
	X17	1111. , S_2	
	X18	1112.	
	X19	1113.	
	X20	1114.	
	X21	1115.	
	X22	1116.	
	X23	1117.	
	X24	Cal Blank	
	X25	50.0 ppb	
	X26		
	X27		
	X28		
	X29		
	X30		
	X31		
	X32		
	X33		
	X34		
	X35	, S_3	

As + Spike

501	39.1
502	20.2
503	66.8
504	19.6
505	52.3
506	26.8
507	32.3
508	34.4
509	31.0
510	57.8
511	29.0
512	25.9
513	19.1
514	64.9
515	20.4
516	24.0
517	26.5
518	32.2
519	44.3
520	32.1
521	28.3
522	39.9
523	25.5
524	18.6
525	64.9.

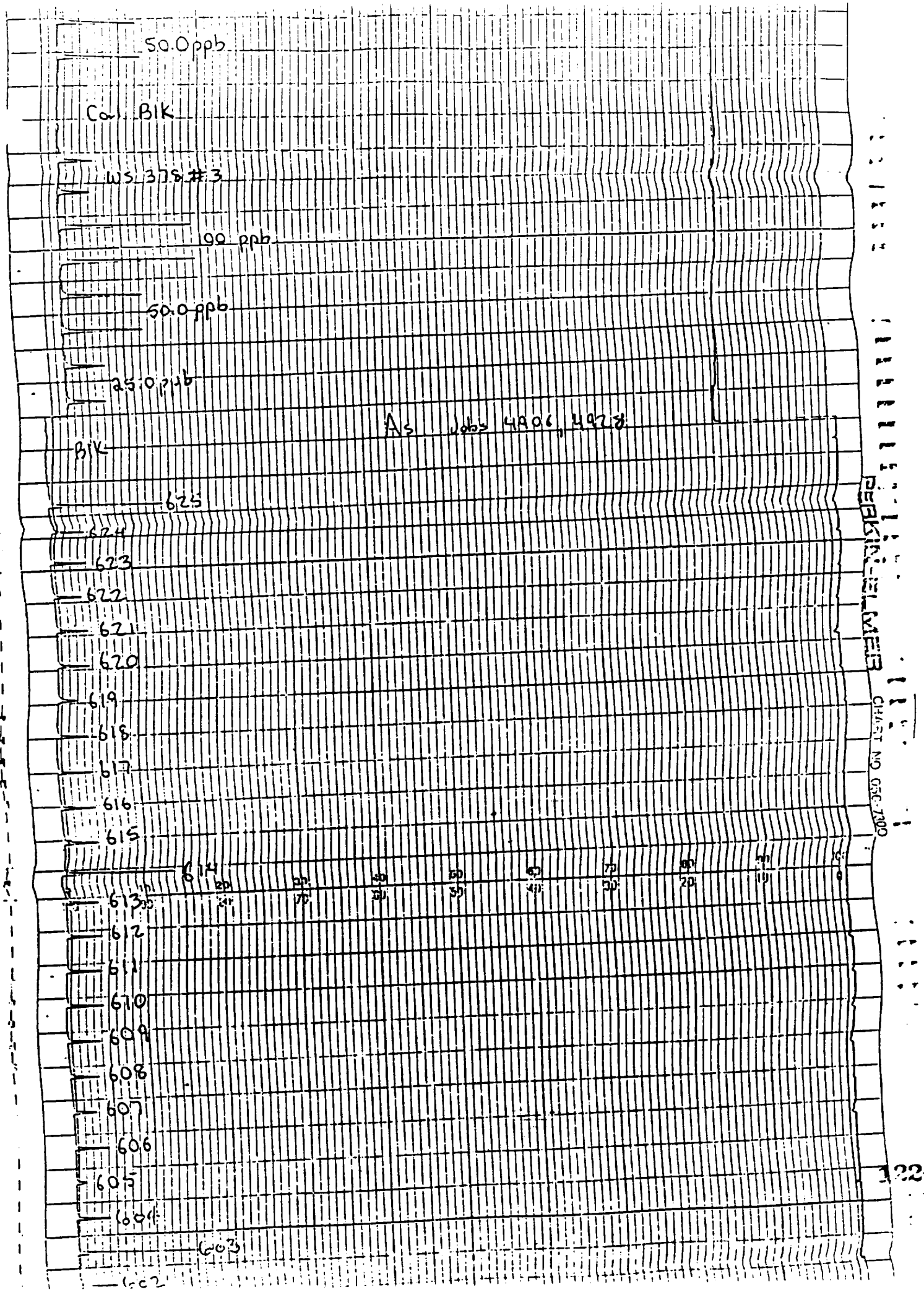
recycled paper

ecology and environment

	-0.322	
	-0.321	
	-0.321	AV
	0.22	CV
	[illegible]	AZ
	0.103	
	0.104	
	0.104	AV
	0.68	CV
	25.0	S1
	[illegible]	C
	[illegible]	C
	49.1	AV
	0.43	CV
	50.0	S2
	[illegible]	C
	[illegible]	C
	87.6	AV
	1.54	CV
	100.0	S3
	20.6	
	21.3	
501	21.0	AV
	2.36	CV
	0.6	
	0.6	
502	0.7	AV
	20.20	CV
	50.1	
	47.8	
503	48.9	AV
	3.32	CV
	0.1	
	0.2	
504	0.2	AV
	47.14	CV
	37.0	
	36.9	
505	37.0	AV
	0.19	CV
	7.6	
	9.4	
506	8.1	AV
	5.24	CV
	12.9	
	12.3	
507	12.6	AV
	3.37	CV
	17.3	
	15.4	
508	16.3	AV
	9.22	CV
	12.0	
	13.4	
509	12.7	AV
	7.60	CV
	42.9	
	42.7	

As

	[illegible]	AV
	0.33	CV
	10.2	
	10.3	
511	10.2	AV
	0.69	CV
	7.2	
	5.5	
512	6.3	AV
	18.93	CV
	1.1	
	-0.7	
513	0.2	AV
	06	ER
	49.8	
	51.0	
514	50.4	AV
	1.68	CV
	0.7	
	-0.6	
515	0.1	AV
	06	ER
	6.0	
	5.6	
516	5.8	AV
	4.88	CV
	7.5	
	7.6	
517	7.5	AV
	0.94	CV
	15.1	
	14.7	
518	14.9	AV
	1.90	CV
	31.4	
	32.0	
519	31.7	AV
	1.34	CV
	13.1	
	12.1	
520	12.6	AV
	5.61	CV
	11.3	
	11.2	
521	11.2	AV
	0.63	CV
	22.3	
	24.6	
522	23.4	AV
	6.94	CV
	9.3	
	9.5	
523	9.4	AV
	1.50	CV
	-0.0	
	0.3	
524	0.1	AV
	[illegible]	[illegible]
	49.8	
	49.2	
525	49.5	AV
	0.86	CV


50.0ppb
Cal. Blk
WS 378 #3
100 ppb
50.0 ppb
25.0 ppb
As Jobs 4906, 4928
Blk
625
624
623
622
621
620
619
618
617
616
615
614
613
612
611
610
609
608
607
606
605
604
603
602
PERKIN-ELMER
CHART NO 050-7300

520

519 1113

518 1112

517 1111

516 1110

515 BLK

514 50 ppb

513 Cal BLK

512 1037

511 1036

510 1035 RS

509 1035 R

508 1035

507 1034

506 1033

505 1032

504 BLK 103

50.0 ppb

Cal BLK

PERKIN-ELMER CHART NO 056-7200

525 50.0 ppb
524 CAL BLK
523 1117
522 1116
521 1115
520 1114
519 1113
518 1112
517 1111
516 1110
515 BLK
514 50.0 ppb
513 CAL BLK
512 1137
511 1036
510 1035 25
509 1035 2
508 1035
507 1034
506 1033
505 1032
504 BLK
503 50.0 ppb
502 CAL BLK
501 WS 378 #3
As + 20.0 ppb Spk.

525 50.0 ppb

524 CAL BLK

523 1117

PERKIN-ELMER CHART NO. 056-7200

HGA FORM #1

ELEMENT: As, DATE: 3/3/87.

S_1 = 25.0 PPB., S_2 = 50.0

S_3 = 100 PPB, BOOK NO. 287, pp 9-1

	501	WS 378 #3
	X02	Cal Blk
	X03	50.0 ppb
	X04	~~[illegible]~~ Blk 103
JOB #:	X05	1032.0403
	X06	1113.0403 A
	X07	1116.0403 A
	X08	1117.0403 A
	X09	Cal Blk
	X10	50.0 ppb
	X11	
	X12	
	X13	
	X14	
	X15	
	X16	
	X17	, S_2
	X18	
	X19	
	X20	
	X21	
	X22	
	X23	
	X24	
	X25	
	X26	
	X27	
	X28	
	X29	
	X30	
	X31	
	X32	
	X33	
	X34	
	X35	, S_3

	0.067	
	-0.017	
	[illegible]	AZ
	0.094	
	25.0	S1
	[illegible]	C
	50.0	S2
	84.0	C
	100.0	S3
501	21.2	
502	-0.3	
503	52.1	
	-0.6	
	-0.6	
504	-0.6	AV
	0.00	CV
	37.9	
	30.1	
505	34.0	AV
	16.22	CV
	31.8	
	28.9	
506	30.3	AV
	7.00	CV
	25.6	
	24.8	
507	25.2	AV
	2.25	CV
	7.6	
	7.8	
508	7.7	AV
	1.84	CV
	0.6	
	-0.4	
509	0.1	AV
	06	ER
	~~39.3~~	
[illegible]	~~40.8~~	
~~510~~	~~40.0~~	~~AV~~
	~~2.65~~	~~CV~~
	48.3	
	46.2	
510	47.3	AV
	3.14	CV

recycled paper

ecology and environment

	0.499	
	0.000	AZ
	0.081	
	25.0	S1
	50.1	C
	50.0	S2
	88.4	C
	12	ER
	-0.390	C
	0.000	AZ
	0.095	C
	25.0	S1
	52.0	C
	50.0	C
	50.0	S2
	65.4	C
	99.9	S3
501	20.4	
502	-1.0	
503	49.6	
	-1.1	
	-1.2	
504	-1.2	AV
	6.15	CV
	-2.1	
	-3.0	
505	-2.6	AV
	24.96	CV
	-2.0	
	-2.7	
506	-2.4	AV
	21.06	CV
	30.9	
	30.4	
507	30.7	AV
	1.15	CV
	9.4	
	9.3	
508	9.3	AV
	0.76	CV

AS

509	-1.7
~~510~~	~~55.2~~
510	52.0

AS
Spikes

501	40.3
502	19.2
503	70.5
504	18.1
505	19.8
506	20.8
~~507~~	~~45.7~~
~~508~~	~~19.4~~
509	17.7

~~Quest~~
Re Inject.

510	68.1

REINJECTS

507	54.7
508	29.9
509	-2.4
510	54.6

507 1116
506 1113
505 1032
504 Blk
503 50.0 ppb
502 Cal Blk
501 WS 378 #3

AS
Spiked

50.0 ppb (510)

X omit
509 Blank

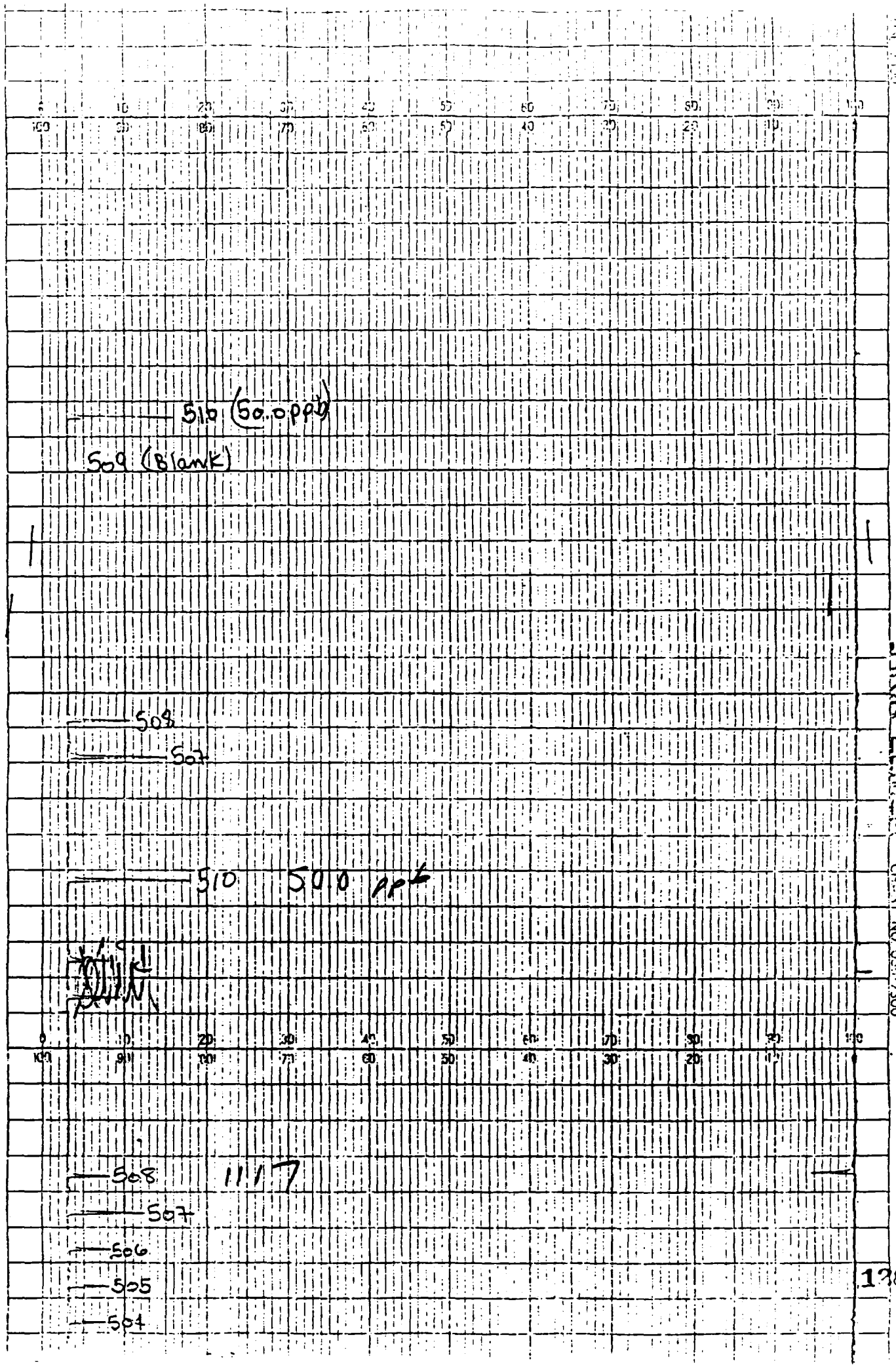
508 1117

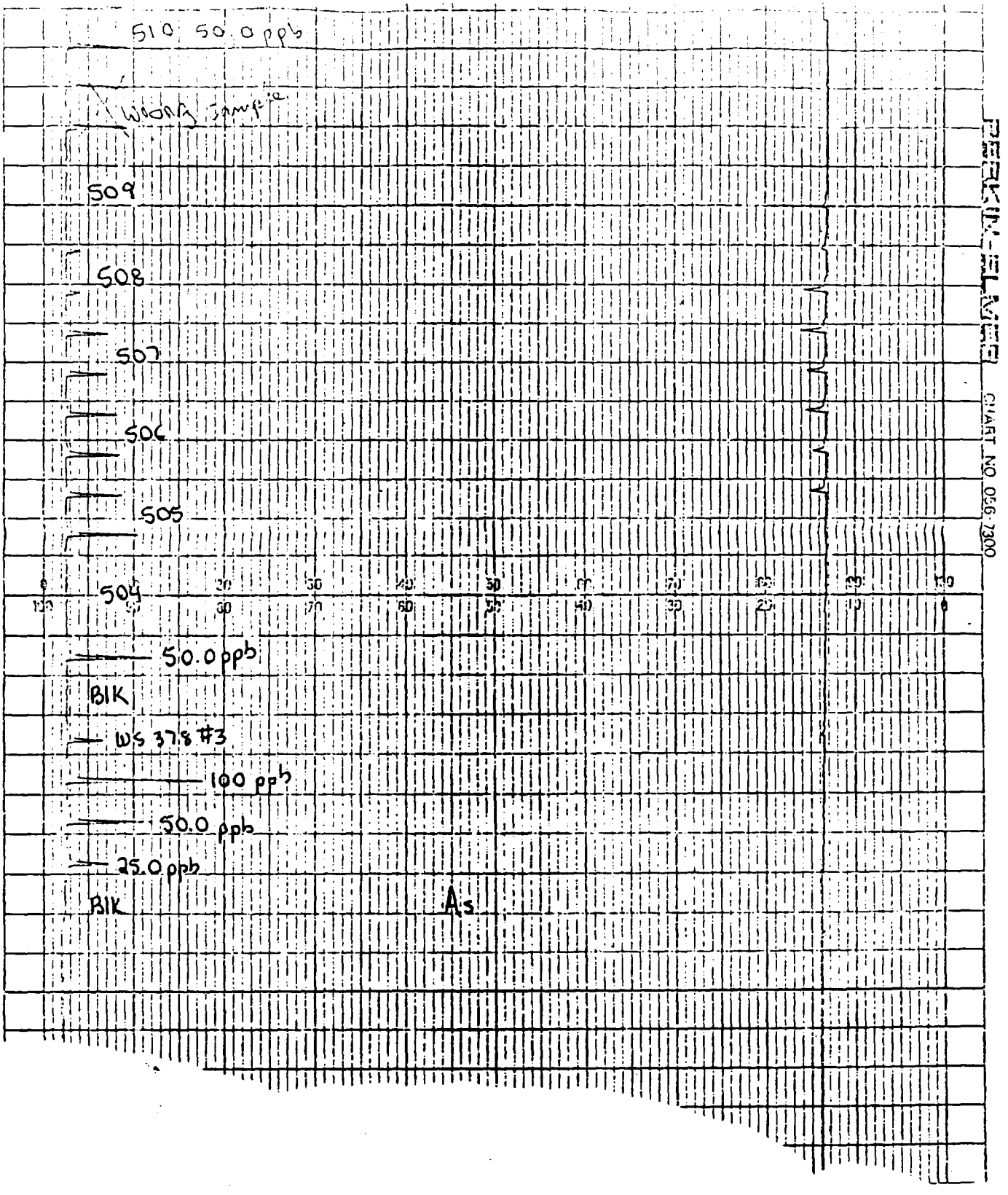
507 1116

503 (50.0 ppb)
502 (Blank)
501 (EPA 37843)
100.0 ppb (S3)
50.0 ppb (S2)
X omit
25.0 ppb (S1)
Blank

AS

PERKIN-ELMER CHART 10 06 300


510 (50.0 ppb)
509 (Blank)
508
507
510 50.0 ppb
508 1117
507
506
505
504
ERKIN-ELMER
CHART NO. 056-7300


510 50.0 ppb
Wrong Sample
509
508
507
506
505
504
50.0 ppb
BLK
WS 378 #3
100 ppb
50.0 ppb
25.0 ppb
BLK
As
PERKIN-ELMER CHART NO 056-7300

Project No._____

Book No._____ TITLE _____

From Page No.__ A3

Test Performed: 3/5/87

Date Received:

Work Performed By: [illegible]

See pg 4

		N	C	ppb found 1	ppb Burn 2	ppb Ave	CV	200 ppb Spike	% Rec	DF	Samp Wgt	Units	Final Conc
	W3378#3			19.5				40.6	100			ug/l	19.5
	Cal Blk			1.2				20.1	101				<10.0
	50.0ppb			50.9				74.8	120			ug/l	50.9
4936	1154.0103			5.3	4.2	4.8	16.4	25.4	103		1.03	mg/kg	<1.94
	1155.0103			3.4	3.2	3.3	4.29	23.6	102		1.05		<1.90
	1156.0103			4.0	3.4	3.7	11.5	24.3	103		1.03		<1.94
	1163.0103			5.8	7.1	6.4	14.5	26.6	101		1.00		<2.00
	1164.0103			7.5	7.4	7.4	0.95	27.2	99		1.07		<1.87
	1165.0103			7.7	8.5	8.1	6.98	28.3	101		1.07	mg/kg	<1.87
	Blk 116			0.9	0.8	0.9	-	19.2	96			ug/l	<10.0
4971	1274.0403			4.8	6.3	5.6	19.1	27.7	111		1.01	mg/kg	<1.98
	1275.0403			23.4	22.3	22.9	3.40	45.3	112		1.05		4.36
	1275.K1			23.5	21.5	22.5	6.29	44.7	111		1.07	mg/kg	4.21
	Cal Blk			1.1	0.9	1.0	-	19.0	95			ug/l	<10.0
	50.0ppb			52.7	50.9	51.3	2.46	73.6	109			ug/l	51.8
	1275.K1S1			54.4	55.7	55.1	1.62	77.6	113		1.07	mg/kg	81%K
	1276.0403			288.0	290.7	289.3	0.66	297.2	/		1.03		/
	1277.0403			55.1	54.7	54.9	0.52	75.6	104		1.01		10.9
	1278.0403			6.6	5.6	6.1	11.6	26.2	101		1.00	mg/kg	<2.00
	Blk 127			0.1	1.2	0.6	-	18.2	91			ug/l	<10.0
4952	1219.0103			4.4	5.9	5.2	20.6	24.0	94		1.03	mg/kg	<1.94
	1220.0103			5.7	6.5	6.1	9.23	24.8	94		1.02	mg/kg	<1.96
	Blk 123			0.6	0.7	0.6	10.7	19.2	96			ug/l	<10.0
	Cal Blk			1.0	1.1	1.0	-	18.9	95				<10.0
	50.0ppb			52.2	48.7	50.5	4.91	70.6	101			ug/l	50.5
4971	1276.0403			41.4	41.3	41.4	0.17	64.1	114	1→10	1.03	mg/kg	80.4
4943	1186.0103			7.9	8.4	8.1	4.34	25.1	85		1.02		<1.96
	1186.K1			7.5	6.8	7.1	6.92	22.9	79		1.00		<2.00
	1186.K1S1			35.8	34.0	34.9	3.65	53.1	91		1.03	mg/kg	68%K

To Page No. 21

Witnessed & Understood by me. [signature] Date

Invented by

Recorded by [signature]

Date 3/5/87

Project No._____

TITLE _____ Book No._____

From Page No. 20

Test Performed: As (cont'd)

Date Received: 3/5/87

Work Performed By: [illegible]

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From		ppb Burn 1	ppb Burn 2	ppb Ave.	CV	20.0 ppb Spike	% Rec	DF	Samp Wgt	Units	Final Conc
4943	1187.0103				6.6	6.8	6.7	2.11	21.8	76		1.02	mg/kg	<1.96
	1188.0103				5.7	7.3	6.5	17.4	21.9	77		1.02	mg/kg	<1.96
	Cal Blk				0.3	0.4	0.6	–	21.0	105			ug/l	<10.0
	50.0 ppb				50.1	49.0	49.6	1.57	69.1	98			ug/l	49.6

To Page No.____

Witnessed & Understood by me, | Date | Invented by | Date 3/5/87

Recorded by [illegible]

HGA FORM #1

ELEMENT: As, DATE: 3/5/87.

S_1 = 25.0 PPB., S_2 = 50.0 PPB.

S_3 = 100 PPB, BOOK NO. 287, pp20-21.

JOB #:				
	S01	WS 378 # 3		
	X02	Cal BLK		
	X03	50.0 ppb		
	X04	1154.0103		
	X05	1155		
	X06	1156		
	X07	1163		
	X08	1164		
	X09	1165		
	X10	BLK 116		
	X11	1274.0403		
	X12	1275		
	X13	1275 R1		
	X14	Cal BLK		
	X15	50.0 ppb		
	X16	1275.0403 R1S1		
	X17	1276.0403	S_2	
	X18	1277	527	25.1
	X19	1278	528	22.9
	X20	BLK 127	529	53.1
	X21	1219.0103	530	21.8
	X22	1220.0103	531	21.9
	X23	BLK 123	532	21.0
	X24	Cal BLK	533	69.1
	X25	50.0 ppb		
	X26	1276.0403 (1→10)		
	X27	1186.0103		
	X28	1186. R1		
	X29	1186. R1S1		
	X30	1187.0103		
	X31	1188.0103		
	X32	Cal BLK		
	X33	50.0 ppb		
	X34			
	X35		S_3	

ATTACH TAPE HERE

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ecology and environment

501	40.6	
502	20.1	
503	74.8	
504	25.4	
505	23.6	
506	24.3	
507	26.6	
508	27.2	
509	28.3	
510	19.2	
511	27.7	
512	45.3	
513	44.7	
514	19.0	
515	73.6	
516	77.6	
517	297.2	C
518	75.6	
519	25.2	
520	18.2	
521	24.0	
522	24.8	
523	19.2	
524	18.9	
525	70.6	
As	41.4	
	41.3	
526	41.4	AV
	0.17	CV
526 + Spk	64.1	
As	7.9	
	8.4	
527	8.1	AV
	4.34	CV
	7.5	
	6.8	
528	7.1	AV
	6.92	CV
	35.8	
	34.0	
529	34.9	AV
	3.65	CV
	6.6	
	6.8	
530	6.7	AV
	2.11	CV
	5.7	
	7.3	
531	6.5	AV
	17.41	CV
	0.8	
	0.4	
532	0.6	AV
	47.14	CV
	50.1	
	49.0	
533	49.6	AV
	1.57	CV

	-0.025	
	0.105	AV
	0.115	
	25.0	SV
	45.5	C
	50.0	SV
	106.2	C
	100.0	SV
501	19.5	
502	1.2	
503	50.9	
	5.3	
	4.2	
504	4.8	AV
	16.39	CV
	3.4	
	3.2	
505	3.3	AV
	4.29	CV
	4.0	
	3.4	
506	3.7	AV
	11.47	CV
	5.8	
	7.1	
507	6.4	AV
	14.25	CV
	7.5	
	7.4	
508	7.4	AV
	0.95	CV
	7.7	
	8.5	
509	8.1	AV
	6.98	CV
	0.9	
	0.8	
510	0.9	AV
	8.32	CV
	4.8	
	6.3	
511	5.6	AV
	19.11	CV
	23.4	
	22.3	
512	22.9	AV
	3.40	CV
	23.5	
	21.8	

513	22.5	AV
	6.29	CV
	1.1	
	0.9	
514	1.0	AV
	14.14	CV
	52.7	
	50.9	
515	51.8	AV
	2.46	CV
	54.4	
	55.7	
516	55.1	AV
	1.67	CV
	268.0	C
	290.7	C
517	289.3	AV
	0.66	CV
	55.1	
	54.7	
518	54.9	AV
	0.52	CV
	6.6	
	5.6	
519	6.1	AV
	11.59	CV
	0.1	
	1.2	
520	0.6	AV
	00	ER
	4.4	
	5.9	
521	5.2	AV
	20.60	CV
	5.7	
	6.5	
522	6.1	AV
	9.27	CV
	0.6	
	0.7	
523	0.6	AV
	10.88	CV
	1.0	
	1.1	
524	1.0	AV
	6.73	CV
	52.2	
	48.7	
525	50.5	AV
	4.21	CV

515 50ppb

514 Cal Blk

513 1275 Rep

512 1275

511 1274 0403

510 Blk

509 1165

508 1164

507 1163

506 1156

505 1155

504 1154

50.0ppb

Cal Blk

115378 #3

100ppb

50.0ppb

25.0ppb

Blk

As # 4936, 4951, 4952, 4943

PERKIN-ELMER CHART NO 056-7300

508 1164
507 1163
506 1156
505 1155
504 1154
503 50.0 ppb
502 Cal Blk
501 WS 378 #3

As + Spike

525 50.0 ppb
524 Cal Blk
523 Blk
522 1220
521 1219
520 Blk 127
519 1278
518 1277
517 1276
516 1275 R.S
515 50ppb
514 Cal Blk

PERKIN-ELMER CHART NO. 056-7300

533 50ppb

532 Cal Blk

531 1188

530 1187

529 1184 RS

528 1186 R

527 1186

526+Spk

526 1276.0403 (1→10)

525+Spk 50.0ppb

524 Cal Blk

523 Blk

522 1220

521 1219

520 Blk

519 1278

518 1277

517 1276

516 1275 RS

515 50.0ppb

514 Cal Blk

513 1275 R

512 1275

511 1274

510 Blk

509 1165

508

507

PERKIN-ELMER CHART NO. 056-7300

Project No._____

TITLE _____ Book No._____ 35

From Page No.__

Test Performed: As

Date Received: MARCH 10, 1987

Work Performed By: J.O. [illegible]

(SEE page 4)

S_1 = 25.

S_2 = 50.

S_3 = 100.

C.L.P. FINAL VOLUME = 200 ml.

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From No	C	ppb Burn 1	ppb Burn 2	ppb Avg.	C.V.	20.0 ppb Spike	% Rec.	D.F.	Amt. of Sample (Gms)	Units	Final Conc.	PR DU SPI RE
	WS378#3				20.6				41.3	104			µg/L	20.6	
	Cal Blank				-0.1				21.5	108			µg/L	<5.00	
	50.0 ppb				51.8				74.9	115			µg/L	51.8	
4989	1427.0403				24.3	24.5	24.4	0.58	45.7	107		1.06	mg/Kg	4.60	
	1428.0403				13.2	12.4	12.8	4.42	33.6	104		1.01		2.53	
	1428. R1				13.4	12.8	13.1	3.24	33.3	101		1.01		2.59	
	1429.0403				28.7	28.5	28.6	0.50	50.9	112		1.04		5.50	
	1429. S1				64.8	65.5	65.2	0.76	88.9	119		1.06		12.3	85
	1430.0403				11.1	11.6	11.4	3.12	32.7	107		1.06	mg/Kg	2.15	
	PrepBlank 145				1.6	0.4	1.0	/	20.5	103			µg/L	<10.0	
4998	1458.0703				3.1	1.9	2.5	/	21.9	110				<10.0	
	1458. R3				1.7	2.6	2.2	/	22.8	114				<10.0	
	Cal Blank				-0.0	0.8	0.4	/	22.2	111				<10.0	
	50.0 ppb				52.6	49.2	50.9	4.72	71.8	105				50.9	
	1459.0703				0.5	1.1	0.8	/	21.5	108				<10.0	
	1460.0703				1.7	0.8	1.2	/	20.6	103				<10.0	
	1461.0703				1.2	0.7	0.9	/	22.8	114				<10.0	
	1464.0103				-0.1	1.0	0.5	/	21.1	106				<10.0	
	PrepBlank 149				-0.5	1.2	0.4	/	22.4	112				<10.0	
	Cal Blank				1.6				23.0	115				<10.0	
	50.0 ppb				53.6				73.3	99			µg/L	53.6	

To Page No._____

Witnessed & Understood by me, [signature] Date 3/11/87 Invented by [signature] Date 3/10/87

137

HGA FORM #1

ELEMENT: As, DATE: 3/10/87.

S_1 = 25.0 PPB., S_2 = 50.0 PPB.

S_3 = 100 PPB, BOOK NO. 287, pg 35.

JOB #: 4989

S01	WS 378 # 3
X02	Cal Blk
X03	50.0ppb
X04	1427.0403 (4989)
X05	1428
X06	1428 R_1
X07	1429
X08	1429 S_1
X09	1430
X10	Blk 145
X11	1458.0703 (4998)
X12	1458. R_3
X13	Cal Blk
X14	50.0ppb
X15	1459.0703
X16	1460
X17	1461, S_2
X18	1464.0703
X19	Blk 149
X20	Cal Blk
X21	50.0ppb
X22	
X23	
X24	
X25	
X26	
X27	
X28	
X29	
X30	
X31	
X32	
X33	
X34	
X35	S_3

As Spikes

501	41.3
502	21.5
503	74.9
504	45.7
505	33.6
506	33.3
507	50.0
508	88.9
509	32.7
510	20.5
511	21.0
512	22.8
513	22.2
514	71.8
515	21.5
516	20.6
517	22.8
518	21.1
519	22.4
520	23.0
521	73.3

recycled paper

ecology and environment

AS

	-0.029	
	0.090	AZ
	0.084	
	25.0	S1
	47.2	C
	50.0	S2
	95.9	C
	100.0	S3
501	20.6	
502	-0.1	
503	51.8	
	24.3	
	24.5	
504	24.4	AV
	0.58	CV
	13.2	
	12.4	
505	12.8	AV
	4.42	CV
	13.4	
	12.8	
506	13.1	AV
	3.24	CV
	28.7	
	28.5	
507	28.6	AV
	0.50	CV
	64.8	
	65.5	
508	65.2	AV
	0.76	CV
	11.1	
	11.6	
509	11.4	AV
	3.12	CV
	1.6	
	0.4	

510	1.0	AV
	84.85	CV
	3.1	
	1.9	
511	2.5	AV
	33.94	CV
	1.7	
	2.5	
512	2.2	AV
	29.60	CV
	-0.0	
	0.8	
513	0.4	AV
	06	ER
	52.6	
	49.2	
514	50.9	AV
	4.72	CV
	0.5	
	1.1	
515	0.8	AV
	53.03	CV
	1.7	
	0.9	
516	1.2	AV
	50.91	CV
	1.2	
	0.7	
517	0.9	AV
	37.22	CV
	-0.1	
	1.0	
518	0.5	AV
	06	ER
	-0.5	
	1.2	
519	0.4	AV
	06	ER
520	1.6	
521	53.6	

514 50.0 ppb

513 CAL BLK

512 1458R

511 1458

510 BLK

509 1430

508 1429S1

507 1429

506 1428R1

505 1428

504 1427

503 (50.0 ppb)

502 (BLANK)

501 (EPA 3333)

100.0 (S3)

50.0 (S2)

25.0 (S1)

BLANK

521	50.0 ppb
520	CAL BLK
519	BLK
518	1464
517	1461
516	1460
515	1459
514	50.0 ppb
513	CAL BLK
512	1458R
511	1458
510	BLK
509	1430
508	1429S
507	1429
506	1428R
505	1428
504	1427
503	50.0 ppb
502	CAL BLK
501	WS 378 #3

Spikes

521	50.0 ppb

PERKIN-ELMER CHART NO 050-0000

Project No._____
Book No._____ TITLE _____

From Page No.__

Performed: [illegible]
Date Received: [illegible]
Work Performed By: [illegible]

(see page 1)

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From		ppb Burn 1	ppb Burn 2	ppb Ave	CV	100 ppb Spike	% Rec	DF	Samp Wt (gms)	Units	Final Conc
	WS 378 # 3				15.2				25.7	105			µg/L	15.2
	Cal Blank				-1.4				10.1	101			µg/L	<5.00
	50.0 ppb				52.0				61.5	95			µg/L	52.0
	Per Blank 103				-1.6	-1.5	-1.5	4.56	10.4	104			µg/L	<5.00
4906	1032.0403				-3.3	-3.1	-3.2	4.42	9.2	92		1.04	mg/kg	<0.962
	1033.0403				15.5	15.5	15.5	0.00	25.7	102		1.05		2.95
	1034.0403				01 ER	05 ER	05 ER	/	/	/		1.00		/
	1035.0403				863.2	922.9	892.0	/	/	/		1.02		/
	1035. R1				174.0	172.9	173.5	/	/	/		1.02		/
	1035. R1S1				05 ER	05 ER	05 ER	/	/	/		1.03		/
	1036.0403				31.0	30.5	30.8	1.15	40.3	95		1.05		~~1.90~~ 5.87 µg
	1037.0403				14.0	14.5	14.2	2.48	25.4	112		1.00	mg/kg	2.84
	Cal Blank				-1.0	-1.1	-1.1	6.73	11.1	111			µg/L	<5.00
	50.0 ppb				50.4	50.3	50.4	0.14	64.2	/			µg/L	50.4
4925	1110.0403				14.2	14.4	14.3	0.99	25.8	115		1.05	mg/kg	2.72
	1111.0403				22.8	23.2	23.0	1.23	34.3	113		1.02		4.51
	1112.0403				28.8	29.0	28.9	0.49	39.8	109		1.03		5.61
	1113.0403				05 ER	05 ER	05 ER	/	/	/		1.02		/
	1114.0403				30.4	29.3	29.8	2.61	38.4	86		1.03		5.79
	1115.0403				35.1	35.9	35.5	1.59	46.1	106		1.00		7.19
	1116.0403				267.6	259.7	263.6	/	/	/		1.01		/
	1117.0403				18.6	17.5	18.1	4.31	29.0	109		1.03	mg/kg	3.51
	Cal Blank				-0.7	-0.9	-0.8	/	11.1	111			µg/L	<5.00
	50.0 ppb				49.7	48.5	49.1	1.73	65.5	/			µg/L	49.1

To Page No. 13

Witnessed & Understood by me. [illegible] Date 3/5/87

Invented by

Recorded by: J.W.O. [signature] Date 3/4/87

TITLE _____ Project No. _____ Book No. _____

From Page No. 16

Test Performed: Pb (cont'd)
Date Received: March 4, 1987
Work Performed By: J.W.C. / [illegible]

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From	ppb Burn 1	ppb Burn 2	ppb Avg	C.V.	10.0 ppb Spike	% Rec	D.F.	Amt. of Sample (gms)	Units	Fin Conc
		No	C										
4906 (cont'd)	1034.0403			20.9	21.7	21.3	2.66	32.2	109	0.1→10	1.00	mg/kg	426.
	1035.0403			37.4	36.2	36.8	2.31	48.7	109	1→10	1.02	mg/kg	72.1
	1035. R1			13.6	13.4	13.5	1.05	24.6	111	1→10	1.02	mg/kg	26.4
	1035. R.S.			12.1	11.9	12.0	1.18	22.8	108	0.1→10	1.03	mg/kg	233.
4928 (cont'd)	1113.0403			~~59.3~~ 59.3	~~57.4~~ 57.4	~~58.4~~ 58.4	~~2.30~~ 2.80	68.8	104	1→10	1.02	mg/kg	114.
	1116.0403			~~21.6~~ 21.6	~~21.7~~ 21.7	~~21.6~~ 21.6	~~0.33~~ 0.33	34.4	98	1→10	1.01	mg/kg	42.7
	Cal Blank			0.8				12.6	/			µg/L	<5.0
	50.0 ppb			47.1				59.4	/			µg/L	47.

4

To Page 143

Witnessed & Understood by me, [illegible] Date 3/5/87 Invented by [signature] Date 3/4/..

HGA FORM #1

ELEMENT: Pb, DATE: 3/4/87.

S_1 = 25.0 PPB., S_2 = 50.0 PPB.

S_3 = 100 PPB, BOOK NO. 287, pp 16-17.

	201	WS378 #3	
	X02	Cal Blk	
	X03	50.0ppb	
	X04	~~[illegible]~~ Blk 103	
JOB #:	X05	1032	
	X06	1033	
	X07	over cal 1034	
	X08	over cal. 1035	
	X09	over cal 1035 R,	
	X10	over cal 1035 R, S,	
	X11	1036	
	X12	1037	
	X13	Cal Blk	
	X14	50.0ppb	
	X15	1110.0403A	
	X16	1111	
	X17	1112	, S_2
	X18	over cal 1113	
	X19	1114	
	X20	1115	
	X21	over Cal. 1116	
	X22	1117	
	X23	Cal Blk	
	X24	50.0ppb	
	X25		
	X26		
	X27		
	X28		
	X29		
	X30	~~Cal Blk~~	
	X31	~~50.0ppb~~	
	X32		
	X33		
	X34		
	X35		, S_3

Pb

	0.003	
	0.000	AZ
	0.086	
	25.0	S1
	47.7	C
	50.0	S2
	95.5	C
	100.0	S3
201	15.2	
202	-1.4	
203	52.0	
201	15.0	
	-1.6	
	-1.5	
204	-1.5	AV
	4.56	CV
	-3.3	
	-3.1	
205	-3.2	AV
	4.42	CV
	15.5	
	15.5	
206	15.5	AV
	0.00	CV
	01	ER
	05	ER
207	05	ER
	60.46	CV
	863.2	C
	922.9	C
208	892.0	AV
	4.73	CV
	174.0	C
	172.9	C
209	173.5	AV
	0.45	CV
	05	ER
	05	ER

recycled paper

ecology and environment

HGA FORM #1

ELEMENT: Pb (SPIKES ONLY), DATE: 3/4/87.

S_1 = 25.0 PPB., S_2 = 50.0 PPB.

S_3 = 100.0 PPB, BOOK NO. 287, 16-17

	Z01	ws 378 #3
	X02	Cal Blank
	X03	50.0 ppb
	X04	Prep Blank 103
JOB #:	X05	1032.0403 (4906)
	X06	1033.
	X07	1036.
	X08	1037.
	X09	Cal Blank
	X10	50.0 ppb
	X11	1110.0403A
	X12	1111.
	X13	1112.
	X14	1114.
	X15	1115
	X16	1117.
	X17	Cal Blank, S_2
	X18	50.0 ppb
	X19	
	X20	
	X21	
	X22	
	X23	
	X24	
	X25	
	X26	
	X27	
	X28	
	X29	
	X30	
	X31	
	X32	
	X33	
	X34	
	X35	, S_3

201	25.7
202	10.1
203	61.5
204	10.4
205	9.2
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
206	25.7
[redacted]	[redacted]
[redacted]	[redacted]
207	40.3
~~[illegible]~~	~~[illegible]~~
~~[illegible]~~	~~[illegible]~~
~~[illegible]~~	~~[illegible]~~
Book	Jay
208	25.4
209	11.1
210	64.2
[redacted]	[redacted]
212	34.3
213	39.8
~~[illegible]~~	~~[illegible]~~
~~[illegible]~~	~~[illegible]~~
211	25.8
214	39.4
215	46.1
[redacted]	[redacted]
216	[illegible]
217	11.1
[illegible]	[illegible]

TRITERATION PROBLEMS

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PAGE 2

HGA FORM #1

ELEMENT: Pb (DILUTIONS), DATE: _____.

S_1 = 25.0 PPB., S_2 = 50.0 PPB.

S_3 = 100.0 PPB, BOOK NO. _____.

SAME CALIBRATION

JOB #:

219	1034	(.1→10)
220	1035	(1→10)
221	1035 R1	(1→10)
222	1035 R.S.	(.1→10)
223	1113.	(1→10)
224	1116.	(1→10)
225	Cal Blank	
226	50.0 ppb	

_____, S_2

_____, S_3

Pb DILUTIONS

	~~199.6~~	C
	~~199.0~~	C
219	~~197.9~~	AV
	~~1.39~~	CV
	37.4	
DF=1→10	36.2	
220	36.8	AV
	2.31	CV
	13.6	
DF=1→10	13.4	
221	13.5	AV
	1.05	CV
	~~137.3~~	C
	~~132.6~~	C
222	~~135.1~~	AV
	~~2.36~~	CV
	59.3	
	57.4	
223 DF=1→10	58.4	AV
	2.30	CV
	21.6	
	21.7	
224 DF=1→10	21.6	AV
	0.33	CV
	0.6	
	-0.9	
225	-0.1	AV
	[illegible]	[illegible]
	~~59.3~~	
226	~~[illegible]~~	AV
	~~[illegible]~~	CV
226	47.2	

POOR INJ. RE INJECT

recycled paper

ecology and environment

210	05	ER
	0.00	CV
	31.0	
	30.5	
211	30.8	AV
	1.15	CV
	14.0	
	14.5	
212	14.2	AV
	2.48	CV
	-1.0	
	-1.1	
213	-1.1	AV
	5.73	CV
	50.4	
	50.3	
214	50.4	AV
	0.14	CV
	14.2	
	14.4	
215	14.3	AV
	0.99	CV
	22.8	
	23.2	
216	23.0	AV
	1.23	CV
	29.8	
	29.0	
217	28.9	AV
	0.49	CV
	05	ER
	05	ER
218	05	ER
	0.00	CV
	30.4	
	29.3	
219	29.8	AV
	2.61	CV
	35.1	
	35.9	
220	35.5	AV
	1.59	CV
	267.6	C
	259.7	C
221	263.6	AV
	2.12	CV
	18.6	
	17.5	
222	18.1	AV
	4.31	CV
	-0.7	
	-0.9	
223	-0.8	AV
	17.68	CV
	49.7	
	48.5	
224	49.1	AV
	1.73	CV

DF=0.1710	20.9	
	21.7	
219	21.3	AV
	2.66	CV

DF=0.1710	12.1	
	11.9	
222	12.0	AV
	1.18	CV

225	0.8
226	47.1

Pb SPIKES

219	32.2	
~~220~~	~~[illegible]~~	POOR INJ
~~221~~	~~[illegible]~~	

220	48.7	
221	24.6	
~~222~~	~~[illegible]~~	
~~223~~	~~24.~~	POOR INJ
~~224~~	~~[illegible]~~	
~~225~~	~~14.1~~	

222	22.8
223	68.8
224	34.4
225	12.6
226	59.4

217

1112

216

1111

215

1110

214

50.0 ppb

213

CALBLK

212

1037

211

1036

210

1035 D

209

1035 R

208

1035

207

1034

206

1033

205

1032

204

BLK

Xmit

50.0 ppb

BLK

WS 318 #3

100 ppb

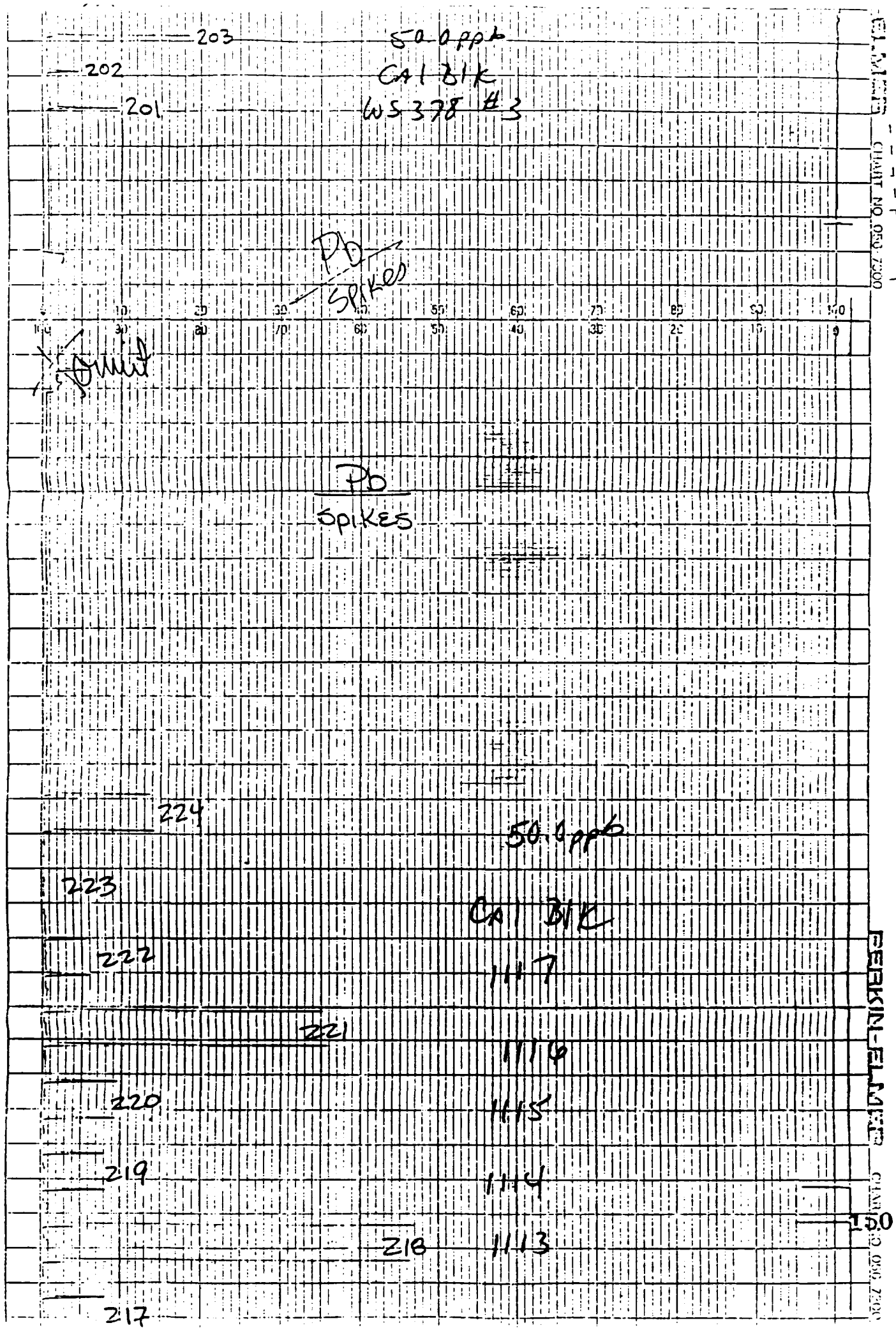
50 ppb

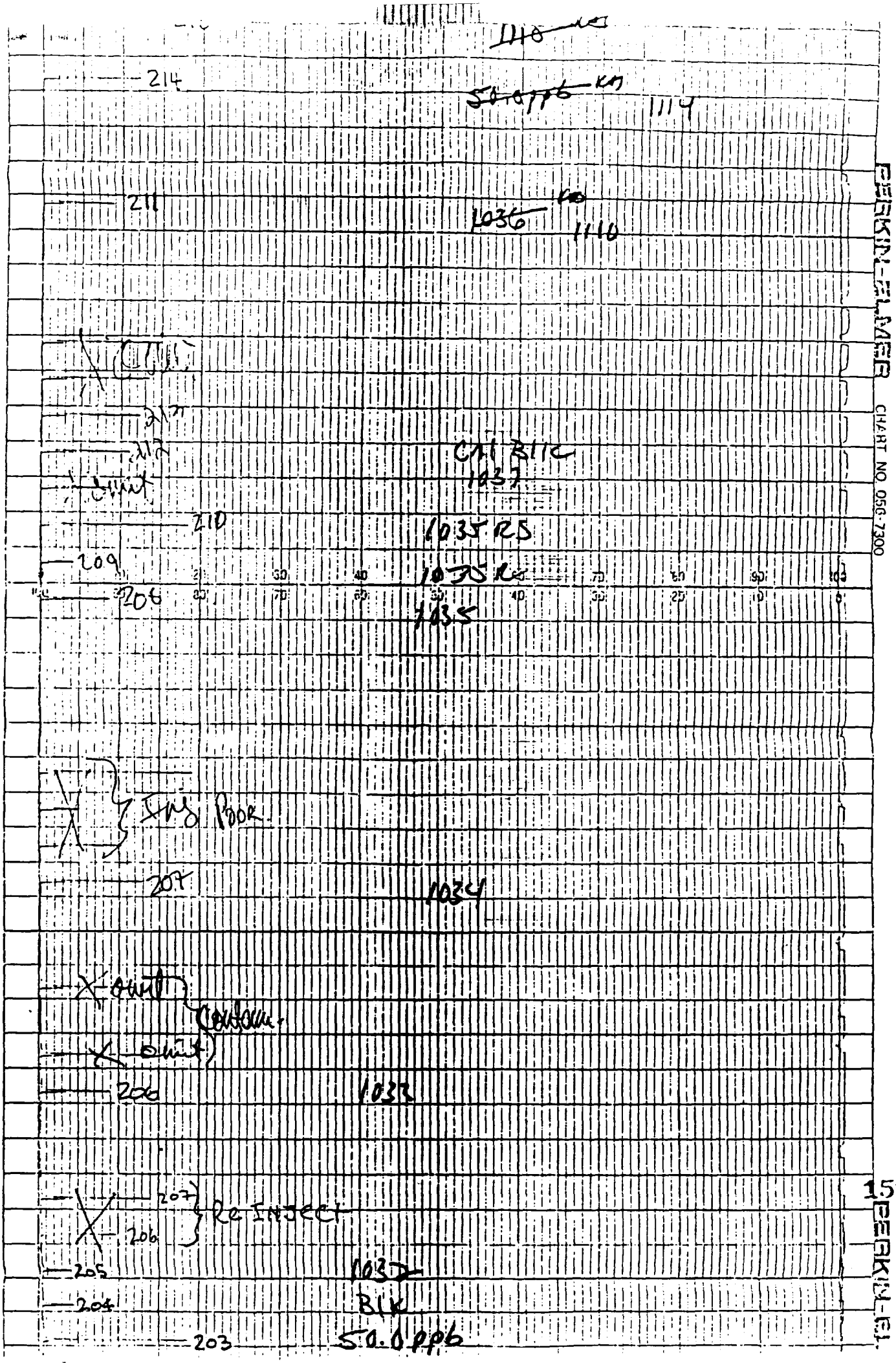
25 ppb

Bl

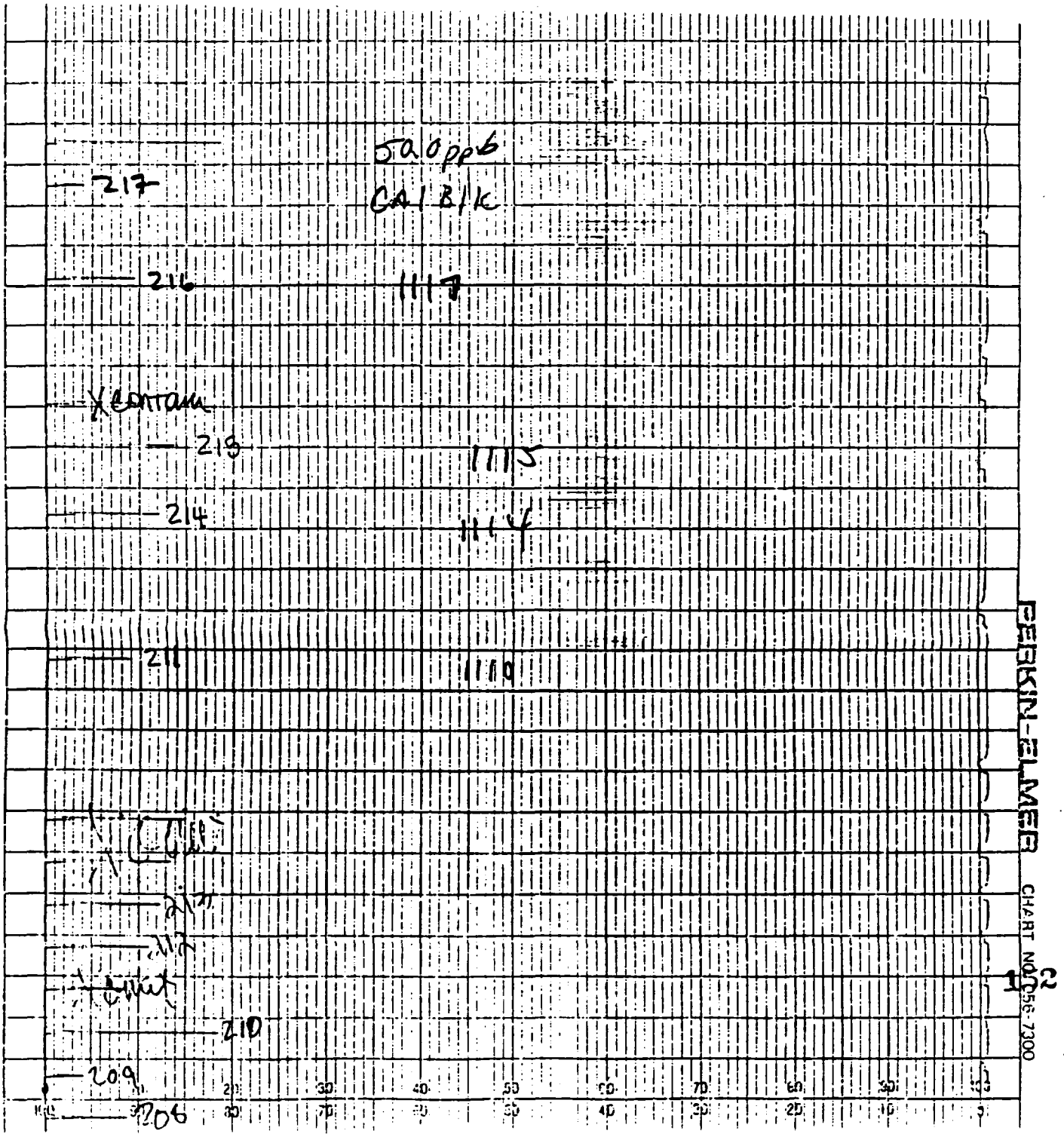
Pb

PERKIN-ELMER CHART NO. 056-7300


203
50.0 ppb
202
Cal Blk
201
WS 378 #3
Pb
Spikes
Pb
Spikes
224
50.0 ppb
223
Cal Blk
222
1117
221
1116
220
1115
219
1114
218
1113
217
CHART NO 050-7300
PERKIN-ELMER



1110 KM
214
50.0 ppb KM
1114
211
1036 KM
1110
CAL BLK
1037
210
1035 RS
209
1035 RS
208
1035
Inj Poor
207
1034
Contam.
206
1033
207
Re INJECT
206
205
1032
204
BLK
203
50.0 ppb
PERKIN-ELMER
CHART NO. 056-7300



50.0ppb
CA/B/K
217
216
1117
Xcontam
215
1115
214
1114
211
1110
212
210
209
208
PERKIN-ELMER
CHART NO. 056-7300

Project No._____

TITLE_____ Book No._____

rom Page No.__

Test Performed: Pb (cont'd)

Date Received: MARCH 9-10, 1987

Work Performed By: [illegible]

Job No.	ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From No	C	ppb BURN 1	ppb BURN 2	ppb Avg	C.V. % Rec.	20.0 ppb D. Spike	% Rec	D.F.	Amt of Sample (gms)	UNITS	FINAL CONC.	PRE DIG SPIK Rec
4991	1579 C400					/	/	CSEK	–							
	1580 C400					/	/	CSEK	–							
	1581 C400					/	/	CSEK	–							
	1582 C400					/	/	CSEK	–							
	Cal BLK					1.0	0.3	0.7	–							
	50.0 ppb					[illegible]	49.1	49.5	1.02							
	4.3 573 FB					16.4			–	31.7	77			µg/L	16.4	
	Cal BLK					0.0			–	31.3	101				<10.0	
	50.0 ppb					31.7			–	70.1	92				31.7	
	BLK 156					1.1	0.9	1.0	–	20.3	100				<10.0	
	BLK 161					2.0	2.0	2.0	–	22.4	99			µg/L	<10.0	
4991	1577 C400					100.6	101.1	100.8	1.00	164.5	91		1.01	µg/L	21.0	
	1578 C400					32.9	33.5	33.2	0.51	91.3	91		1.00	mg/kg	16.6	
	BLK 157					0.3	0.3	0.3		19.3	91			µg/L	<10.0	
4991	1574 C400					31.7	32.0	31.8	0.79	101.1	98				31.8	
	Cal BLK					-0.7	-0.1	-0.4	–	20.3	104				<10.0	
	50.0 ppb					50.9	51.3	50.9	1.11	70.7	99			µg/L	50.9	
4996	1134 C100					373.4	378.2	375.8	–							
	1163 C100					329.6	349.5	[illegible]	–							
4996	1130 C100					/	/	CSEK	–							
	1136 K					624.4	305.5	450.4	–							
	1126 K S1					417.3	510.3	494.2	–							
	BLK 116					8.2	6.1	7.6	–							
	Cal BLK					4.3	4.4	4.6	–							
	50.0 ppb					57.1	55.9	56.3	2.12							

Oxton Clients

CP

To Page No.____

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

HGA FORM #1

ELEMENT: Pb, DATE: 3/10/87.

S_1 = 25.0 PPB., S_2 = 50.0 PPB.

S_3 = 100 PPB, BOOK NO. 287, pp32-33.

JOB #:

Z01	WS 378#3		
X02	Cal BLK		
X03	50.0ppb		
X04	BLK 123		
X05	BLK 127		
X06	1274.0403		
X07	1278.0403		
X08	BLK 137		
X09	1374.0403		
X10	Cal BLK		
X11	50.0ppb		
X12	1154.0103		
X13	1163.0103		
X14	1186.0103		
X15	1186 R,		
X16	1186 R,S,		
X17	BLK 116	, S_2	
X18	Cal BLK		
X19	50.0ppb		
X20			
X21			
X22			
X23			
X24			
X25			
X26			
X27			
X28			
X29			
X30			
X31			
X32			
X33			
X34			
X35		, S_3	

	-0.047	
	0.000	AZ
	0.157	
	25.0	S1
	44.1	C
	50.0	S2
	107.5	C
	100.0	S3
201	16.4	
202	0.2	
203	51.7	
	1.1	
	0.9	
204	1.0	AV
	14.14	CV
	2.6	
	2.6	
205	2.6	AV
	0.00	CV
	105.6	C
	107.1	C
206	106.3	AV
	1.00	CV
	82.9	
	83.5	
207	83.2	AV
	0.51	CV
	0.8	
	0.8	
208	0.8	AV
	0.00	CV
	84.7	
	82.0	
209	83.3	AV
	2.29	CV
	-0.2	
	-0.1	
210	-0.1	AV
	47.14	CV
	50.5	
	51.3	

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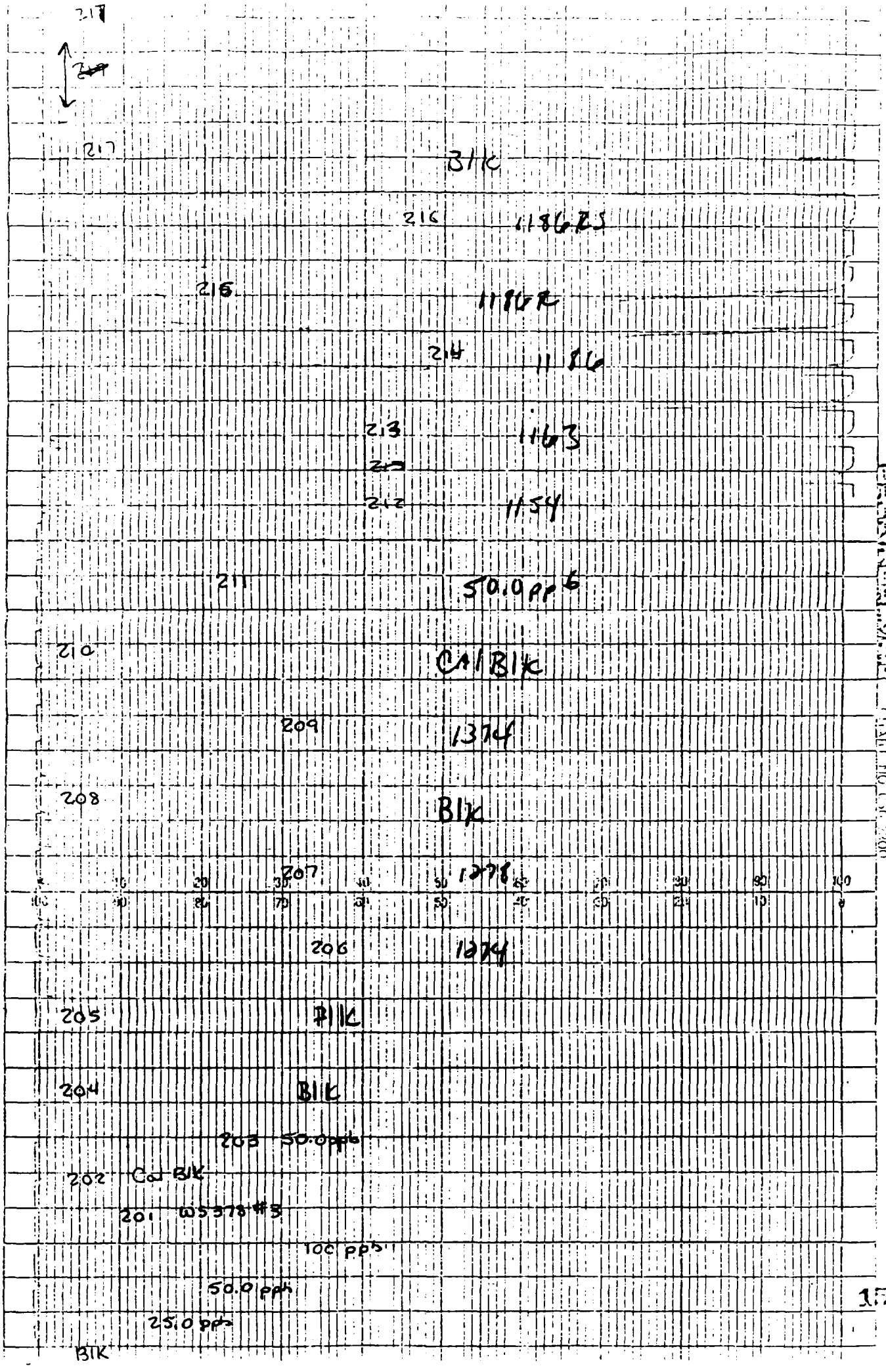
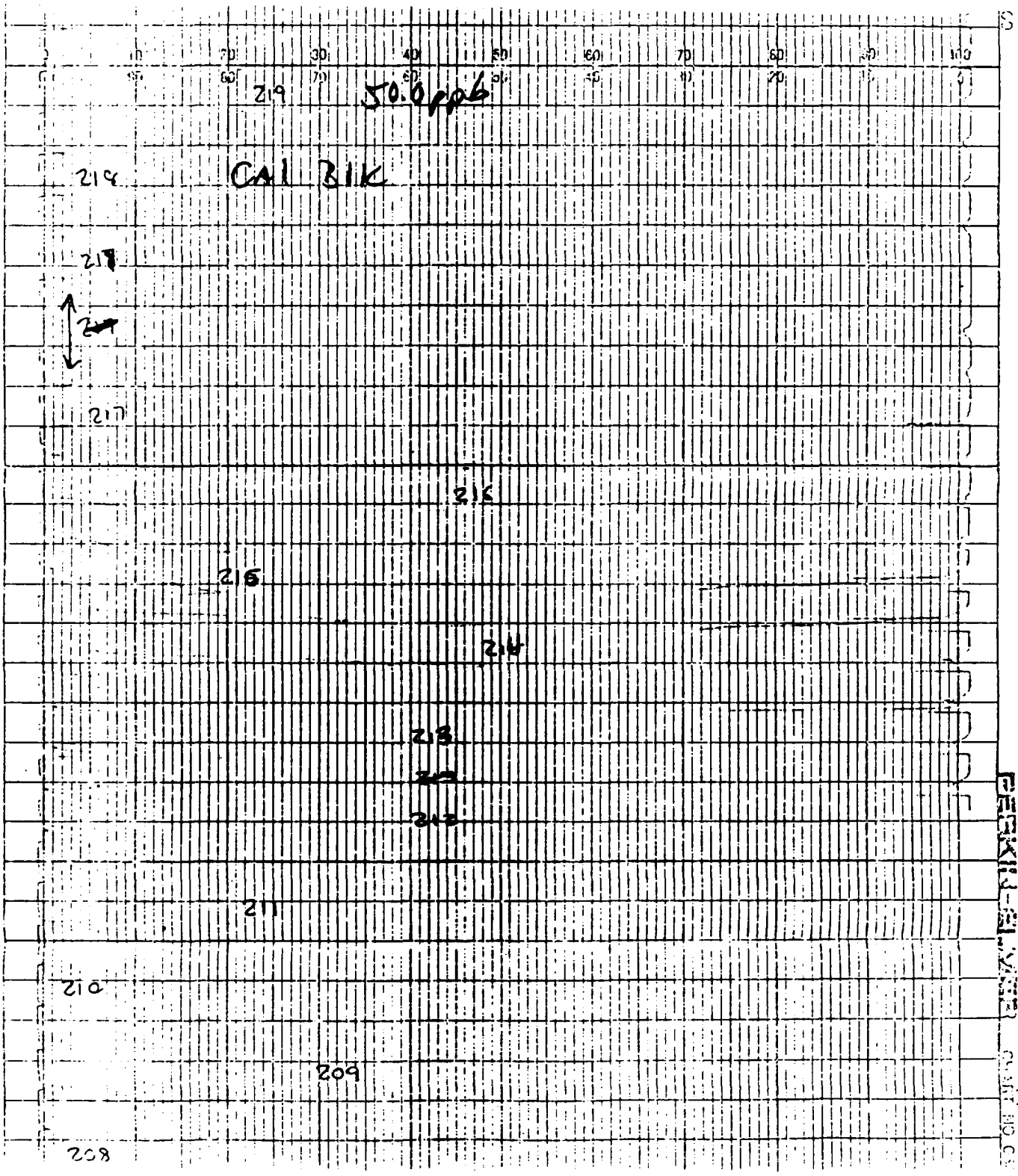
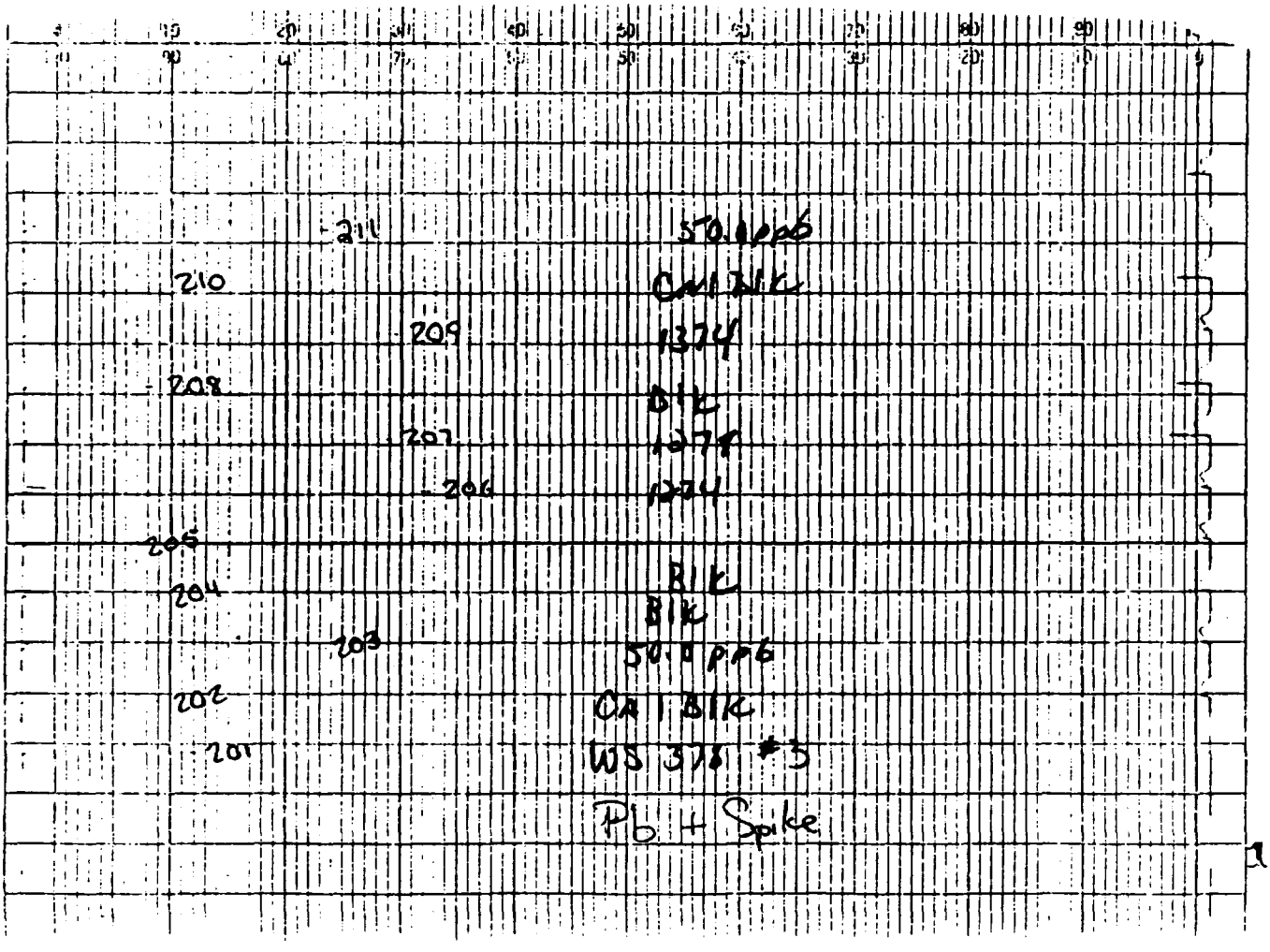
ecology and environment

211	50.9	AV
	1.11	CV
	275.4	C
	274.2	C
212	274.3	AV
	0.57	CV
	329.6	C
	329.9	C
213	329.8	AV
	0.06	CV
	01	ER
	01	ER
214	01	ER
	4.51	CV
	322.4	C
	301.5	C
215	450.4	AV
	49.12	CV
	478.3	C
	510.3	C
216	494.2	AV
	4.59	CV
	~~23.3~~	
	~~13.3~~	
~~217~~	~~16.9~~	AV
	~~51.24~~	CV
	8.4	
	6.9	
217	7.6	AV
	13.86	CV
	4.9	
	4.4	
218	4.6	AV
	6.15	CV
	57.6	
	55.9	
219	56.8	AV
	2.12	CV

201	31.7
202	21.3
203	70.1
204	20.5
205	22.4
206	124.5 C
207	99.3
208	19.3
209	101.0
210	20.8
211	70.7


217
217
Blk
216
1186RS
215
1186R
214
1186
213
1163
212
1154
211
50.0ppb
210
Cal Blk
209
1374
208
Blk
207
1278
206
1274
205
Blk
204
Blk
203 50.0ppb
202 Cal Blk
201 WS378 #3
100 ppb
50.0 ppb
25.0 ppb
Blk


50.0 psb
CAL BIK
219
218
217
216
215
214
213
212
211
210
209
208


211
50.0ppb
210
Cal Blk
209
1374
208
Blk
207
1374
206
1374
205
204
Blk
Blk
203
50.0ppb
202
Cal Blk
201
WS 378 #3
Pb + Spike

HGA FORM #1

ELEMENT: Pb, DATE: 3/9/87.

S_1 = 25.0 PPB., S_2 = 50.0 PPB.

S_3 = 100.0 PPB, BOOK NO. 287, pp 32-33

JOB #:					
	201	WS 378 #3		-0.088	
	X02	Cal Blank		-0.088	
	X03	50.0 ppb		-0.088	AV
	X04	Prep Blank 123		0.00	CV
	X05	1219.0103 (4952)		0.000	AZ
	X06	1220.		0.157	
	X07	Prep Blank 127		0.156	
	X08	1274.0403 (4971)		25.0	S1
	X09	1275.		46.2	C
	X10	1275. R1		50.0	S2
	X11	1275. R1S1		92.7	C
	X12	1276.		100.0	S3
	X13	1277.		5.5	
	X14	Cal Blank			
	X15	50.0 ppb			
	X16	1278.	201	16.4	
	X17	Prep Blank 137, S_2		0.1	
	X18	1371.0403 (4981)		-0.2	
	X19	1372.	202	-0.1	AV
	X20	1373.		06	ER
	X21	1373. R1		49.0	
	X22	1373. R1S1		47.5	
	X23	1374.	203	48.2	AV
	X24	1375.		2.20	CV
	X25	1376.		1.0	
	X26	Cal Blank		1.2	
	X27	50.0 ppb	204	1.1	AV
	X28	1377.		12.86	CV
	X29	1378.		05	ER
	X30	1379.		05	ER
	X31	1380.	205	05	ER
	X32	1381.		0.00	CV
	X33	1382.		05	ER
	X34	Cal Blank		05	ER
	X35	50.0 ppb, S_3	206	05	ER
				0.00	CV
				6.1	
				4.5	
			207	5.3	AV
				21.35	CV
				117.4	C
				116.9	C
			208	117.1	AV
				0.30	CV
				01	ER
				[illegible]	[illegible]

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ecology and

209	874.9	AV
	25.23	CV
	875.8	C
	721.7	C
210	699.0	AV
	4.65	CV
	05	ER
	05	ER
211	05	ER
	0.00	CV
	05	ER
	05	ER
212	05	ER
	0.00	CV
	05	ER
	05	ER
213	05	ER
	0.00	CV
	5.6	
	2.7	
214	4.1	AV
	49.41	CV
	43.9	
	43.1	
215	43.5	AV
	1.30	CV
	77.2	
	76.5	
216	76.8	AV
	0.64	CV
	1.7	
	2.5	
217	2.1	AV
	26.94	CV
	366.0	C
	291.0	C
218	323.8	AV
	16.14	CV
	05	ER
	05	ER
219	05	ER
	0.00	CV
	05	ER
	05	ER
220	05	ER
	0.00	CV
	05	ER
	05	ER
221	05	ER
	0.00	CV
	05	ER
	05	ER
222	05	ER
	0.00	CV
	82.8	
	78.8	
223	80.8	AV
	3.50	CV
	05	ER
	05	ER
224	05	ER
	0.00	CV
	05	ER
	05	ER
225	05	ER
	0.00	CV
	3.5	
	1.5	
226	2.5	AV
	56.57	CV
	51.3	
	44.0	
227	47.6	AV
	10.83	CV
	05	ER
	05	ER
228	05	ER
	0.00	CV
	05	ER
	05	ER
229	05	ER
	0.00	CV
	05	ER
	05	ER
230	05	ER
	0.00	CV
	05	ER
	05	ER
231	05	ER
	0.00	CV
	05	ER
	05	ER
232	05	ER
	0.00	CV
	05	ER
	05	ER
233	05	ER
	0.00	CV
	1.0	
	0.8	
234	0.9	AV
	15.71	CV
	49.8	
	49.1	
235	49.5	AV
	1.00	CV

235 (50.0 ppb)

234 (BLANK)

233 (1382.0403)

232 (1381.0403)

231 (1380.0403)

230 (1379.0403)

229 (1378.0403)

228 (1377.0403)

227 (50.0 ppb)

226 (BLANK)

225 (1376.0403)

224 (1375.0403)

223 (1374.0403)

222 (1373.R.S.)

221 (1373.R.)

220 (1373.0403)

219 (1372.0403)

218 (1371.0403)

217 (Prep Blank 137)

223 (1374.0403)

222 (1373. R.S.)

221 (1373. R.)

220 (1373.0403)

219 (1372.0403)

218 (1371.0403)

217 (Prep Blank 137)

216 (1278.0403)

215 (500 ppb)

214 (BLANK)

213 (1277.0403)

212 (1276.0403)

211 (1275 R.S.)

210 (1275. R.)

209 (1275.0403)

208 (1274.0403)

207 (Prep Blank 127)

206 (1220.0403)

205 (1219.0403)

204 (Prep Blank 123)

203 (50.0 ppb)

209 (1275.0403)

208 (1274.0403)

207 (Prep Blank 127)

206 (1220.0103)

205 (1219.0103)

204 (Prep Blank 123)

203 (50.0 ppb)

202 BLANK

201 (EPA WS 378-13)

Omit

X omit

100.0 (S_3)

(50.0 S_2)

25.0 (S_1)

BLANK

Pb Jobs 4952, 4971, 4981

Project No._____

Book No._____ TITLE _____

From Page No.__ Pb
T Performed:
D... Received: 3/24/87
Work Performed By: J.OLKA

See pg 1

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From N	C	ppb Burn1	ppb Burn2	ppb Ave	CV	10.0ppb Spike	% Rec	DF	Samp. Wgt	Units	Final Conc	
	WS378#3				17.9				23.5	106			µg/l	17.9	
	CalBlk				0.7				12.0	120				<5.00	
	50.0ppb				50.9				60.5	96				50.9	
	BlK 140				2.6	2.9	2.8	7.71	13.0	102			µg/l	<5.00	
4906	1035.0403X1				46.5	46.2	46.3	0.46	57.7	114	1→10	1.02	mg/kg	90.8	90.8
	1035.0403X1R1				16.8	16.0	16.4	3.45	27.1	107	1→10	1.06		30.9	
	1035.X1R1S1				26.1	25.8	25.9	0.82	36.1	102	1→10	1.00	mg/kg	51.8	
	CalBlk				0.4	-0.2	0.0		9.7	97			µg/l	<5.00	
	50.0ppb				52.1	51.1	51.6	1.37	61.6	100			µg/l	51.6	

To Page No.___

Witnessed & Understood by me. | Date | Invented by | Date 3/24/87

Recorded by J. Olka

HGA FORM #1

ELEMENT: Pb , DATE: 3/24/87

S_1 = 25.0 PPB., S_2 = 50.0 PPB.

S_3 = 100 PPB, BOOK NO. 287 , pg. 72

JOB #:

X01	WS 378#3
X02	Cal Blk
X03	50.0ppb
X04	BLK 140
X05	1035.0403 X_1 (1→10)
X06	1035. X_1R_1
X07	1035. $X_1R_1S_1$
X08	Cal BLK
X09	50.0ppb
X10	
X11	
X12	
X13	
X14	
X15	
X16	
X17	, S_2
X18	
X19	
X20	
X21	
X22	
X23	
X24	
X25	
X26	
X27	
X28	
X29	
X30	
X31	
X32	
X33	
X34	
X35	, S_3

	-0.227	
	-0.287	
	[illegible]	[illegible]
	0.085	
	[illegible]	[illegible]
	[illegible]	[illegible]
	[illegible]	[illegible]
	[illegible]	[illegible]
	[illegible]	[illegible]
~~201~~	~~[illegible]~~	
202	0.7	
203	50.9	
204	17.9	
	2.6	
	2.9	
204	2.8	AV
	7.71	CV
	46.5	
	46.2	
205	46.3	AV
	0.46	CV
	16.6	
	16.0	
206	16.4	AV
	3.45	CV
	26.1	
	25.8	
207	25.9	AV
	0.82	CV
	~~[illegible]~~	
	0.4	
208	18.1	AV
	[illegible]	[illegible]
	52.1	
	51.1	
209	51.6	AV
	1.37	CV
207	25.7	
208	-0.2	
201	28.5	
202	12.0	
203	60.5	
204	13.0	
205	57.7	
206	27.1	
207	36.1	
208	9.7	
209	61.5	

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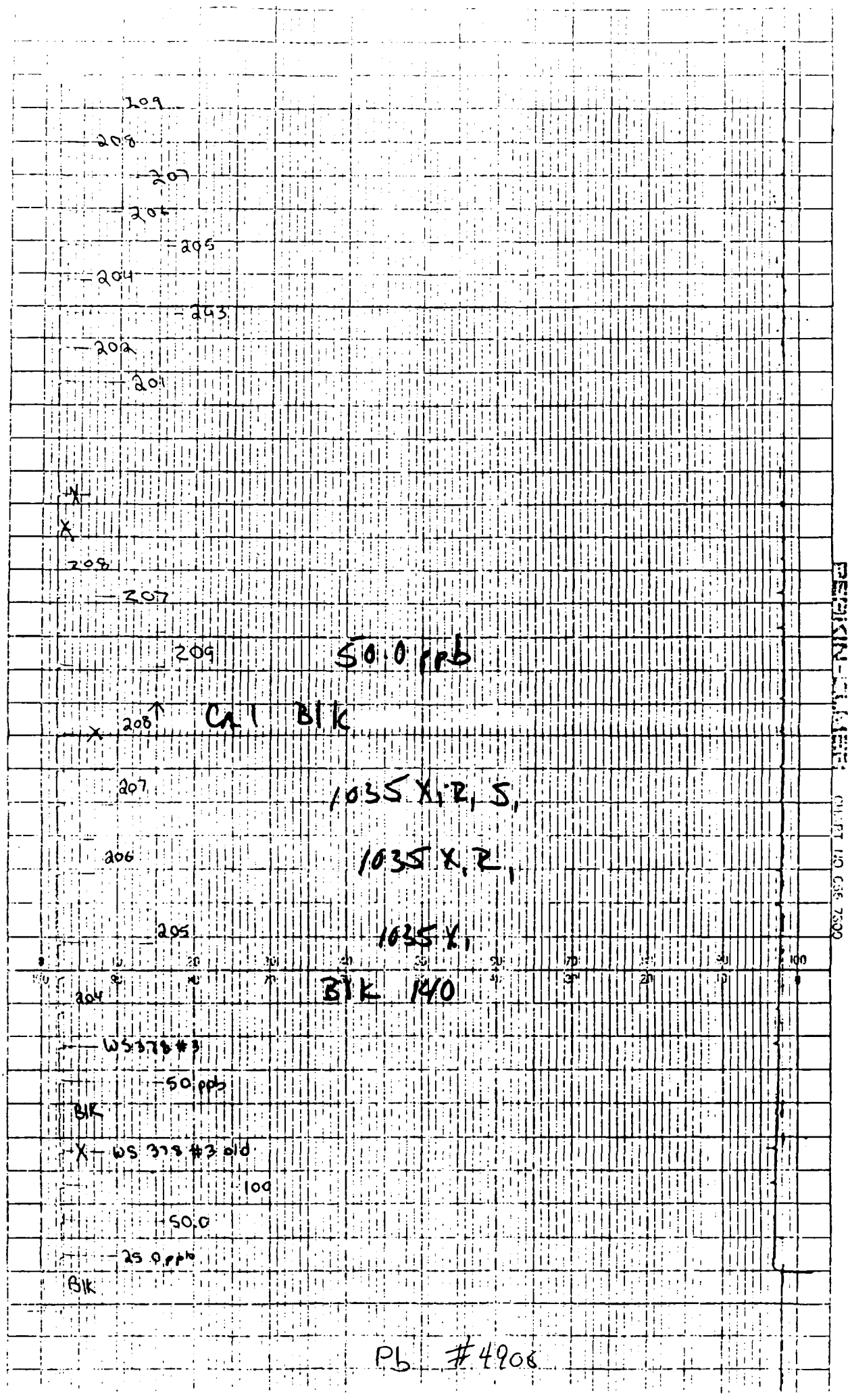
ecology a


209
208
207
206
205
204
203
202
201
X
X
208
207
209
50.0 ppb
Cal Blk
208
X
207
1035 X, R, S,
206
1035 X, R,
205
1035 X,
Blk 140
204
WS378#3
50 ppb
Blk
X WS 378 #3 old
100
50.0
25.0 ppb
Blk

Pb #4906

Project No. _____
Book No. _____ TITLE _____

From Page No. ___

Performed: Pb
Date Received: 4/20-21/87
Work Performed By: J. OLKA

(SEE page3) 200 ml Final Vol. (soils)

Job No.	ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From N	C	ppb Burn 1	ppb Burn 2	ppb Ave	CV	10.0ppb Spike	% Rec	DF	Samp Wgt (Gms)	Units	Final Conc
	WS 378 #3					15.7				25.2	95			µg/L	15.7
	Cal BLK					-0.4				9.5	95				<5.00
	50.0ppb					54.1				61.7	76				54.1
5141	2116.1803					22.0	24.5	23.2	8.18	32.8	96				23.2
	2116.R1					35.1	31.6	33.3	8.02	40.3	87				33.3
	2116.R1S1					46.0	37.3	41.6	15.7	50.4	88				41.6
	BLK 281					1.3	0.6	0.9	-	11.1	111			µg/L	<5.00
5169	2225.1003					30.0	29.6	29.8	1.22	39.3	97				29.8
	2227.1303					44.3	42.5	43.4	3.13	56.5	/				/
	2227.R1					46.0	44.0	45.0	3.25	58.3	/				/
	2227.R1S1					59.8	59.3	59.6	0.66	71.9	/				/
5119	2002.0603					8.8	10.5	9.7	14.2	16.3	/				/
	2006.0603					-0.9	0.1	-0.4		0.5	/				/
	Cal BLK					0.8	0.0	0.2	-	9.9	99			µg/L	<5.00
	50.0ppb					51.4	49.7	50.6	2.72	63.7	131			µg/L	50.6
5129	2037.0603XS2					12.0	13.0	12.5	6.23	21.0	85				12.5
	2038.0603					1.4	1.4	1.4	0	12.7	113				<5.00
	BLK 286					0.2	-0.2	0.0		10.6	106			µg/L	
5162	2210.0603					-0.8	-0.8	-0.8		5.3	53				
	2215.0603					-0.2	0.0	-0.1		4.7	47				
	2219.0603					-0.7	-0.6	-0.6		5.8	58				
5171	2241.0603					-0.2	-1.1	-0.6		5.6	56				
	2242.0603					-0.9	-0.4	-0.6		4.1	41				
	2244.0603					-0.7	-0.9	-0.8		4.6	46				
	2247.0603					0.9	2.0	1.4		11.0	110				
	Cal BLK					-0.7	-0.2	-0.5		9.7	97			µg/L	<5.00
	50.0ppb					50.3	50.3	50.3	0.04	~~0.04~~ 60.3	100			µg/L	50.3
4989	1427.0403					79.4	84.3	81.8	4.98	90.7	89		1.06	mg/kg	15.4
	1428.0403					17.4	18.5	18.0	4.58	29.4	114		1.01	mg/kg	3.56

To Page No. ___

Witnessed & Understood by me, | Date | Invented by | Date 4/21/87 | 157

Recorded by J. Olka

Project No._____

TITLE _____ Book No._____

Page No.__

Test Performed: Pb (cont'd)

Date Received: 4/20-21/87

Work Performed By: J. OLKH

200 ml Final Vol. (soils)

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From N	C	ppb Burn 1	ppb Burn 2	← ppb Burn Ave	CV	10.0 ppb Spike	% Rec	DF	Samp Wgt (GMS)	Units	Final Conc.
4989	1428. R1				20.3	21.7	21.0	5.09	33.5	/		1.01	mg/kg	/
	1429.0403				285.6	285.2	285.4	0.12	591.0	/		1.04	↓	/
	1430.0403 S				303.3	302.9	303.1	0.12	E05	/		1.06	↓	/
	1430.0403				31.2	27.1	29.1	11.1	38.2	91		1.06	mg/kg	5.49
	Blk 211				0.9	1.9	1.4	—	11.0	110			µg/L	<5.00
	Cal Blk				1.0	-0.2	0.4	—	10.1	101			µg/L	<5.00
	50.0 ppb				49.4	48.6	49.0	1.53	58.3	93			µg/L	49.0
5169	2227.1303				7.9	7.7	[illegible]	2.36	18.1	103	2→10		µg/l	39.0
	2227. R1				[illegible]	[illegible]	[illegible]	4.25	18.9	111	2→10			39.0
	2227. R1S1				[illegible]	10.6	10.7	1.07	20.5	98	2→10			53.5
5119	2002.0603				4.7	6.5	5.6	23.4	13.9	83	2→10			/
	2006.0603				1.3	0.9	1.1	—	8.7	87	1→10		µg/l	<50.0
4989	1428.0403				5.3	5.1	5.2	3.57	14.4	92	2→10	1.01	mg/kg	5.15
	1428. R1				5.2	3.8	4.5	22.3	14.3	98	2→10	1.01		<4.95
	1429.0403				26.9	28.0	27.4	2.90	39.3	119	1→10	1.04		/
	1429. S1				34.2	33.5	33.8	1.68	42.1	83	1→10	1.06	mg/kg	/
	Cal Blank				0.5								µg/l	<5.00
	50.0 ppb				53.8								µg/l	53.8

Other Clients

To Page No.__

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

Recorded by J. Olka | 4/21/87

HGA FORM #1

ELEMENT: Pb, DATE: 4/20/87.

S_1 = 100 PPB., S_2 = 50 PPB.

S_3 = 25 PPB, BOOK NO. 294, pp 12-13.

JOB #:

101	WS 378#3	
X02	Cal Blk	
X03	50.0ppb	
X04	2116.1803 (5141)	
X05	2116. R1	
X06	2116. R1 S1	
X07	BLK 281	
X08	2225.1003 (5169)	
X09	13 2227.1303	
X10	14 2227. R1	
X11	15 2227. R1 S1	
X12	16 2002.0603 (5119)	
X13	17 2006.0603	
X14	18 Cal BLK	
X15	19 50.0ppb	
X16	2037.0603 x S_2 (5129)	
X17	2038.0603, S_2	
X18	BLK 286	
X19	2210.0603 (5162)	
X20	2215.0603	
X21	2219.0603	
X22	2241.0603 (5171)	
X23	2242.0603	
X24	2244.0603	
X25	2247.0603	
X26	Cal BLK	
X27	50.0ppb	
X28	1427.0403 (4989)	
X29	32 1428.0403	
X30	1428. R	
X31	1429.0403	
X32	1429. S1	
X33	1430.0403	
X34	BLK. 211	
X35	Cal BLK, S_3	
36	50.0ppb	

other client

ATTACH TAPE HERE

recycled paper

ecology and environment

PB

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.012	0.015	0.008
PEAK AREA (ABS-SECONDS)	-0.110	0.013	-0.123

-0.097

****

0.000 AUTOZERO

****

PB

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	1.104	0.749	0.355
PEAK AREA (ABS-SECONDS)	0.443	0.390	0.053

0.377

E-87: VALUE GREATER THAN ROLLOVER ABSORBANCE

****

100.0 STANDARD 1

****

PB

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.775	0.527	0.250
PEAK AREA (ABS-SECONDS)	0.197	0.223	-0.026

55.8

****

50.0 STANDARD 2

****

PB

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.420	0.299	0.124
PEAK AREA (ABS-SECONDS)	0.045	0.133	-0.088

27.0

****

25.0 STANDARD 3

****

PB 01031

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.265	0.195	0.072
PEAK AREA (ABS-SECONDS)	0.013	0.096	-0.083

15.7

****

PB 01032

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.012	0.014	0.009
PEAK AREA (ABS-SECONDS)	-0.088	0.010	-0.097

-0.4

****

PB 0103

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.758	0.520	0.238
PEAK AREA (ABS-SECONDS)	0.235	0.237	-0.003

54.1

****

PB 0104

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.330	0.231	0.107
P K AREA (ABS-SECONDS)	0.043	0.121	-0.078

READ: 22.0

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.340	0.230	0.110
PEAK AREA (ABS-SECONDS)	0.122	0.131	-0.008

READ: 24.5

MEAN= 23.2 STD.DEV.= COEF.VAR.= 8.18 %

****

PB 0105

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.428	0.292	0.136
PEAK AREA (ABS-SECONDS)	0.200	0.171	0.029

READ: 35.1

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.415	0.274	0.141
PEAK AREA (ABS-SECONDS)	0.184	0.158	0.026

READ: 31.6

MEAN= 33.3 STD.DEV.= COEF.VAR.= 8.02 %

****

PB 0106

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.528	0.367	0.165
PEAK AREA (ABS-SECONDS)	0.237	0.210	0.027

READ: 46.0

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.473	0.334	0.141
PEAK AREA (ABS-SECONDS)	0.175	0.179	-0.003

READ: 37.3

MEAN= 41.6 STD.DEV.= COEF.VAR.= 15.72 %

****

PB 0107

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.036	0.028	0.015
PEAK AREA (ABS-SECONDS)	-0.068	0.023	-0.090

READ: 1.3

	AA	ZAA	BG
I K HEIGHT (ABSORBANCE)	0.037	0.026	0.012
PEAK AREA (ABS-SECONDS)	-0.063	0.018	-0.081

READ: 0.6

MEAN= 0.9 STD.DEV.= COEF.VAR.= 55.32 %

****

PB 0108

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.457	0.306	0.152
PEAK AREA (ABS-SECONDS)	0.165	0.152	0.013

READ: 30.0

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.440	0.293	0.148
PEAK AREA (ABS-SECONDS)	0.176	0.150	0.025

READ: 29.6

MEAN= 29.8 STD.DEV.= COEF.VAR.= 1.22 %

****

PB 0109

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.511	0.343	0.170
PEAK AREA (ABS-SECONDS)	0.252	0.203	0.049

READ: 44.3

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.618	0.410	0.208
PEAK AREA (ABS-SECONDS)	0.241	0.197	0.044

READ: 42.5

MEAN= 43.4 STD.DEV.= COEF.VAR.= 3.13 %

****

PB 0110

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.584	0.386	0.198
PEAK AREA (ABS-SECONDS)	0.256	0.209	0.047

READ: 46.0

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.570	0.383	0.192
PEAK AREA (ABS-SECONDS)	0.259	0.203	0.056

READ: 44.0

MEAN= 45.0 STD.DEV.= COEF.VAR.= 3.25 %

****

PB 0111

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.758	0.508	0.254
PEAK AREA (ABS-SECONDS)	0.347	0.257	0.090

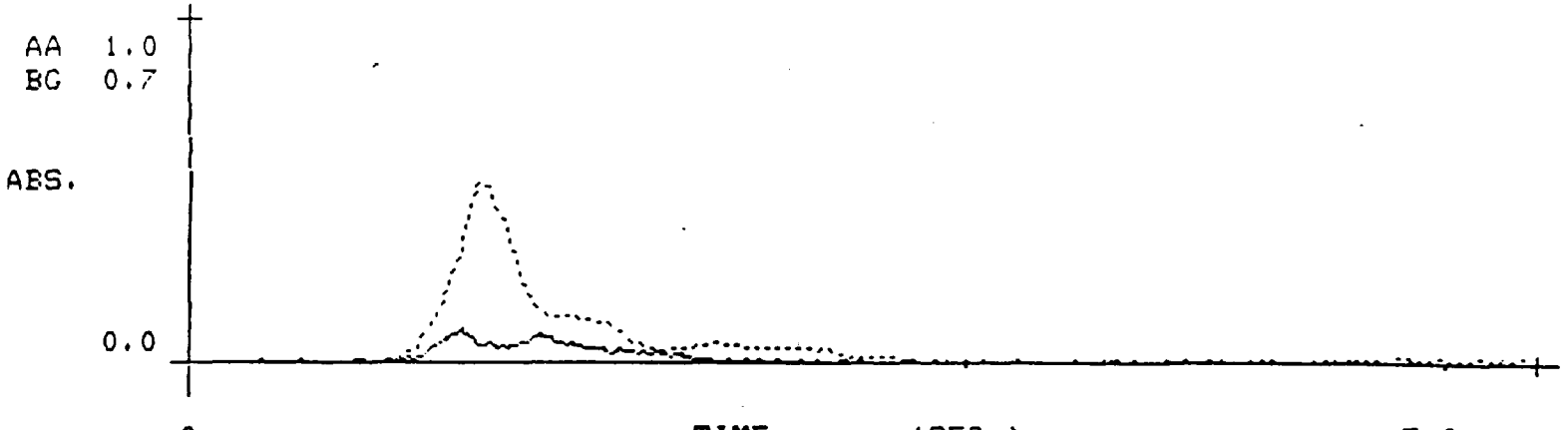
READ: 59.8

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.624	0.418	0.210
PEAK AREA (ABS-SECONDS)	0.325	0.255	0.070

READ: 59.3

****

PB 0112



	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.436	0.106	0.377
PEAK AREA (ABS-SECONDS)	0.239	0.065	0.174

READ: 8.8

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.412	0.096	0.339
PEAK AREA (ABS-SECONDS)	0.234	0.073	0.161

READ: 10.5

MEAN= 9.7 STD.DEV.= COEF.VAR.= 14.15 %

****

PB 0113

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.222	0.013	0.218
PEAK AREA (ABS-SECONDS)	0.371	0.004	0.367

READ: -0.9

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.220	0.014	0.223
PEAK AREA (ABS-SECONDS)	0.332	0.014	0.318

READ: 0.1

MEAN= -0.4 STD.DEV.= COEF.VAR.= 99.99 %

****

PB 0114

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.020	0.015	0.009
PEAK AREA (ABS-SECONDS)	-0.067	0.016	-0.083

READ: 0.3

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.014	0.014	0.007
PEAK AREA (ABS-SECONDS)	-0.080	0.013	-0.094

READ: 0.0

MEAN= 0.2 STD.DEV.= COEF.VAR.= 99.99 %

****

READ: -0.9

MEAN= -1.1 STD.DEV.= COEF.VAR.= 16.13 %

****

PB 115

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.674	0.472	0.204
PEAK AREA (ABS-SECONDS)	0.295	0.246	0.049

READ: 51.4

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.749	0.506	0.243
PEAK AREA (ABS-SECONDS)	0.274	0.240	0.034

READ: 49.7

MEAN= 50.6 STD.DEV.= COEF.VAR.= 2.72 %

****

PB 0116

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.221	0.121	0.106
PEAK AREA (ABS-SECONDS)	0.071	0.074	-0.003

READ: 12.0

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.209	0.113	0.096
PEAK AREA (ABS-SECONDS)	0.070	0.079	-0.010

READ: 13.0

MEAN= 12.5 STD.DEV.= COEF.VAR.= 6.23 %

****

PB 0117

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.041	0.030	0.012
PEAK AREA (ABS-SECONDS)	-0.048	0.016	-0.064

READ: 1.4

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.045	0.032	0.013
PEAK AREA (ABS-SECONDS)	-0.047	0.016	-0.063

READ: 1.4

MEAN= 1.4 STD.DEV.= COEF.VAR.= 2.40 %

****

PB 0118

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.031	0.026	0.012
PEAK AREA (ABS-SECONDS)	-0.055	0.009	-0.064

READ: 0.2

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.032	0.026	0.008
PEAK AREA (ABS-SECONDS)	-0.050	0.007	-0.057

READ: -0.2

****

PB 0119

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.237	0.015	0.238
PEAK AREA (ABS-SECONDS)	0.328	0.003	0.325

READ: -0.8

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.292	0.015	0.283
PEAK AREA (ABS-SECONDS)	0.363	0.003	0.360

READ: -0.8

MEAN= -0.8 STD.DEV.= COEF.VAR.= 0.84 %

****

PB 0120

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.236	0.016	0.241
PEAK AREA (ABS-SECONDS)	0.095	0.007	0.089

READ: -0.2

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.238	0.018	0.246
PEAK AREA (ABS-SECONDS)	0.084	0.008	0.077

READ: 0.0

MEAN= -0.1 STD.DEV.= COEF.VAR.= 99.99 %

****

PB 0121

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.109	0.018	0.110
PEAK AREA (ABS-SECONDS)	0.071	0.004	0.067

READ: -0.7

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.113	0.018	0.110
PEAK AREA (ABS-SECONDS)	0.066	0.004	0.062

READ: -0.6

MEAN= -0.6 STD.DEV.= COEF.VAR.= 7.46 %

****

PB 0122

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.383	0.020	0.392
PEAK AREA (ABS-SECONDS)	0.101	0.007	0.095

READ: -0.2

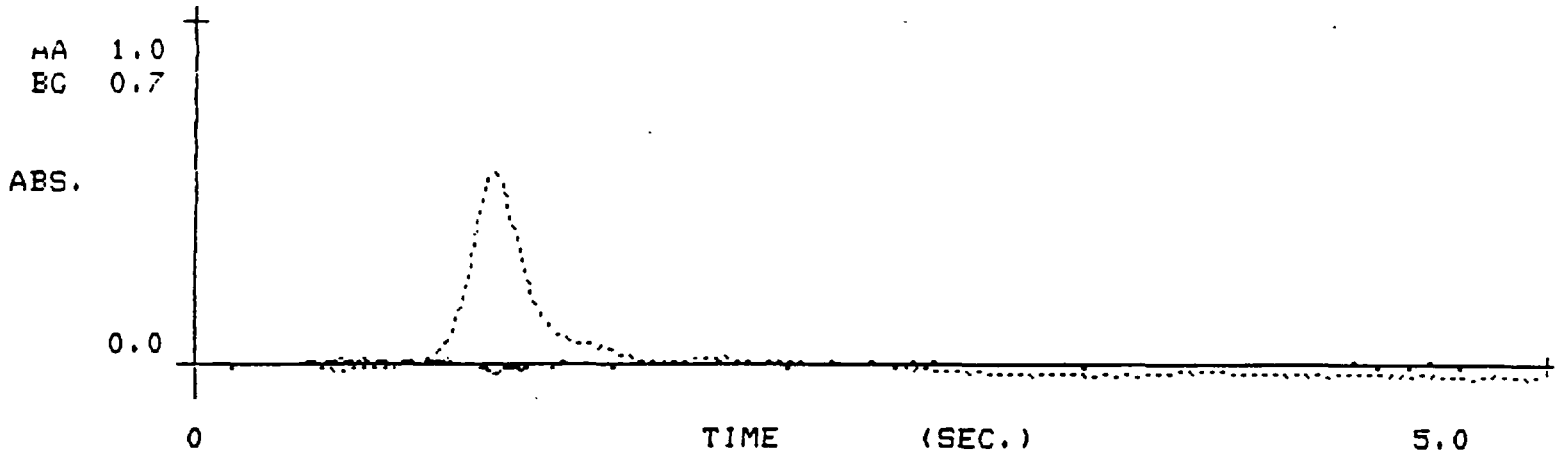
	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.407	0.017	0.417
PEAK AREA (ABS-SECONDS)	0.103	0.001	0.102

READ: -1.1

MEAN= -0.6 STD.DEV.= COEF.VAR.= 94.74 %

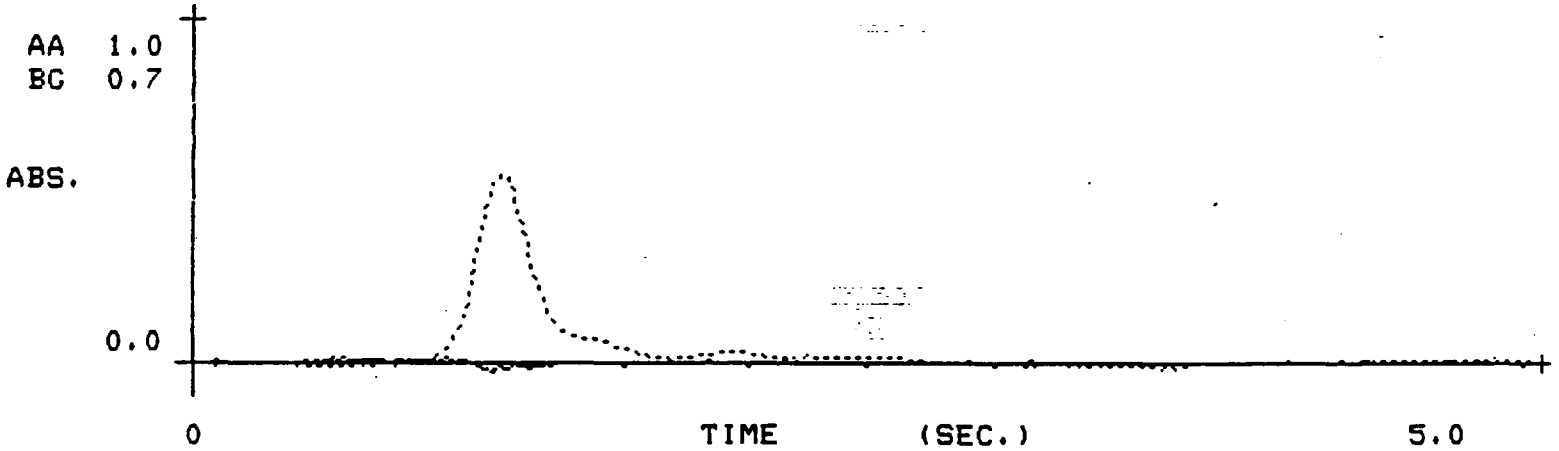
****

PB 0123



	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.371	0.017	0.396
PEAK AREA (ABS-SECONDS)	0.056	0.003	0.054

READ: -0.9



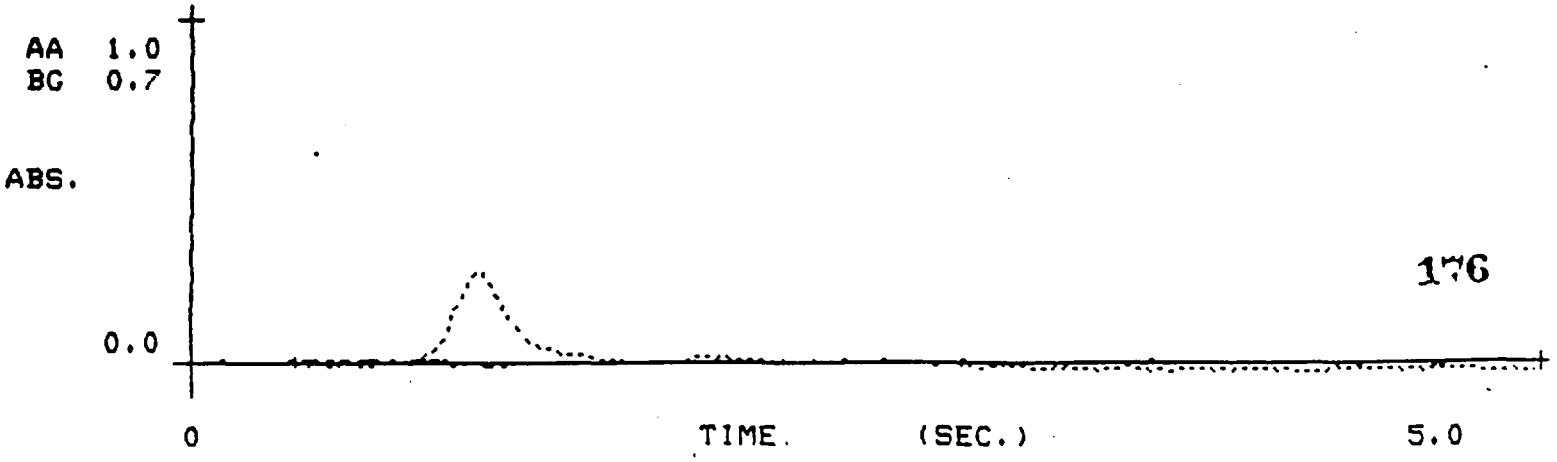
	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.376	0.017	0.393
PEAK AREA (ABS-SECONDS)	0.123	0.006	0.118

READ: -0.4

MEAN= -0.6 STD.DEV.= COEF.VAR.= 55.45 %

****

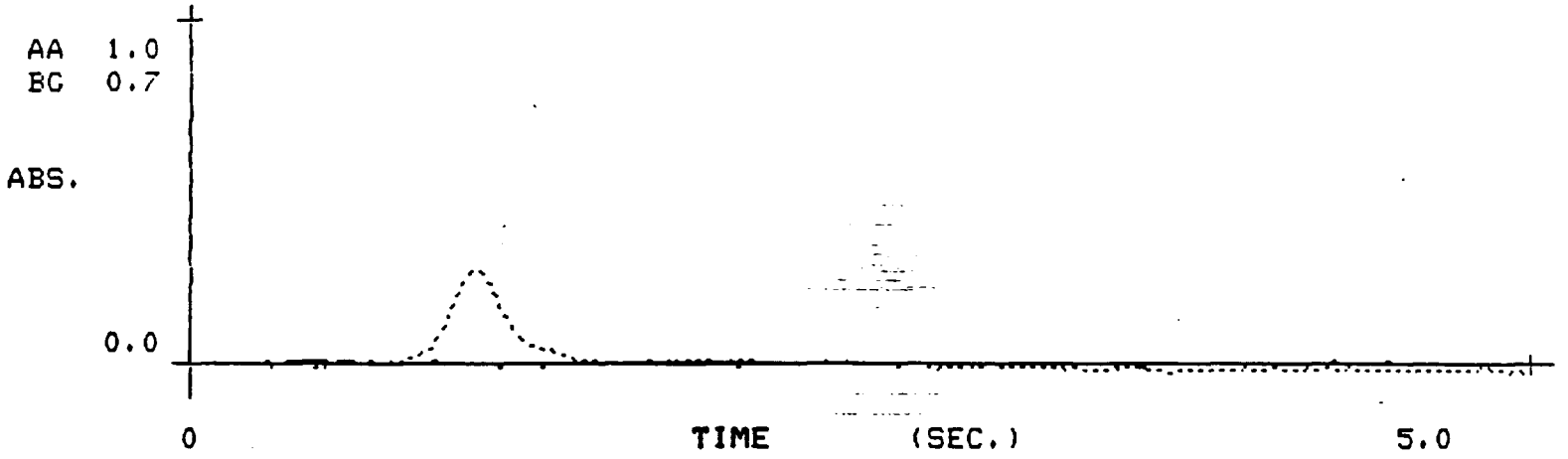
PB 0124



0124 (CONTINUED)

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.188	0.017	0.191
PEAK AREA (ABS-SECONDS)	0.025	0.003	0.022

READ: -0.7



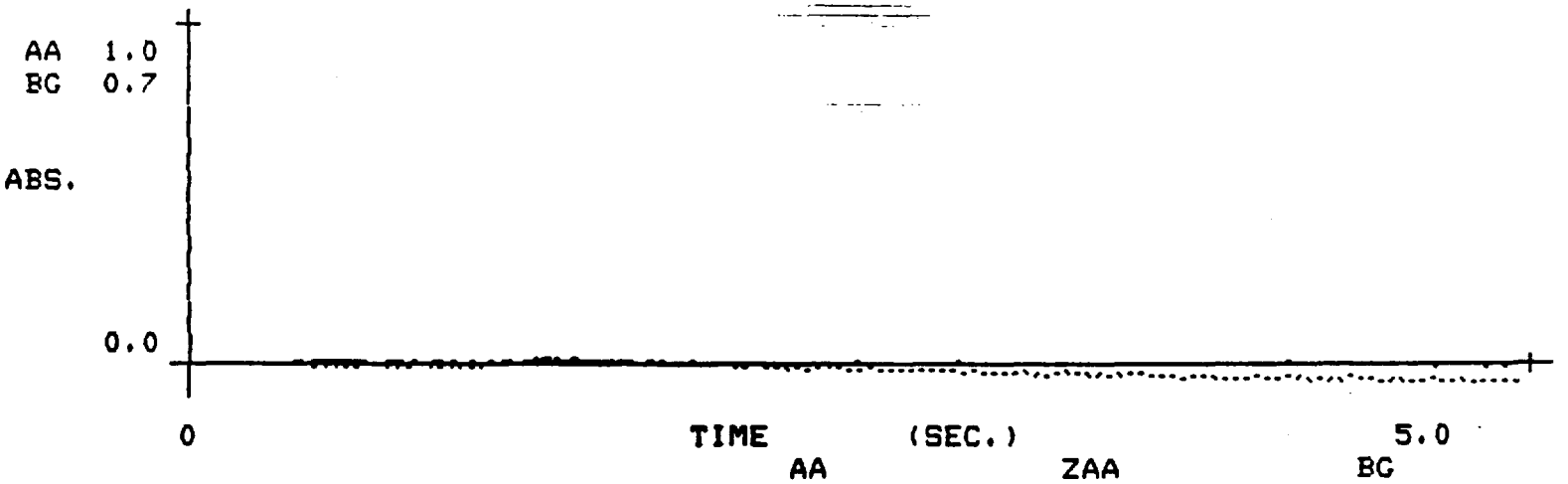
	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.195	0.014	0.195
PEAK AREA (ABS-SECONDS)	0.029	0.003	0.026

READ: -0.9

MEAN= -0.8 STD.DEV.= COEF.VAR.= 11.19 %

****

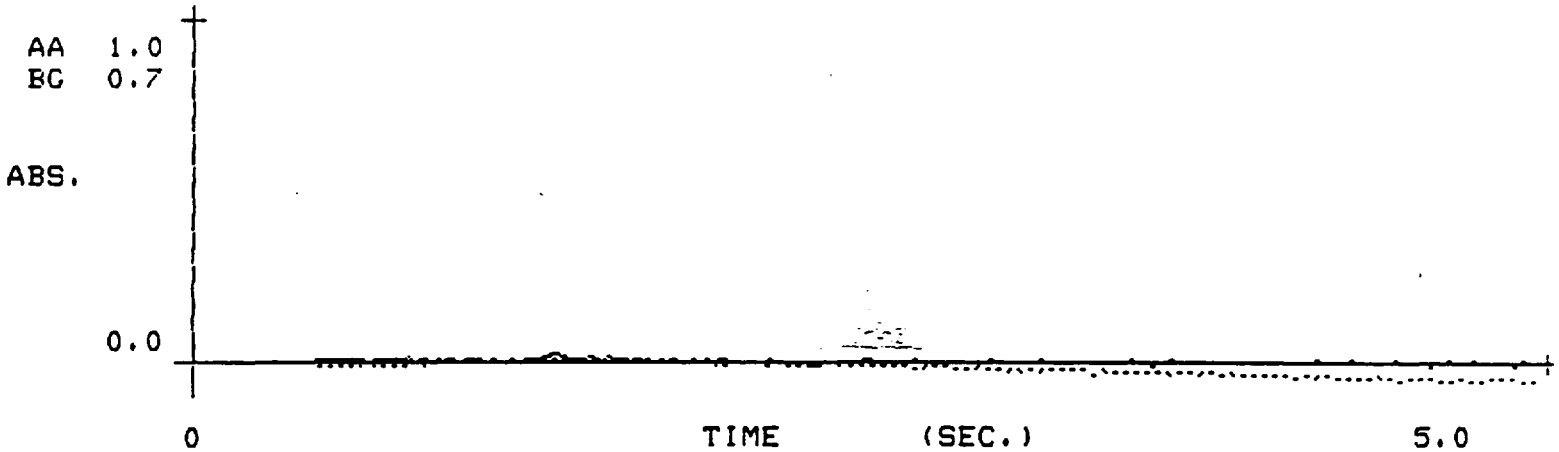
PB 0125



	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.031	0.023	0.012
PEAK AREA (ABS-SECONDS)	-0.058	0.013	-0.071

READ: 0.9

0125 (CONTINUED)



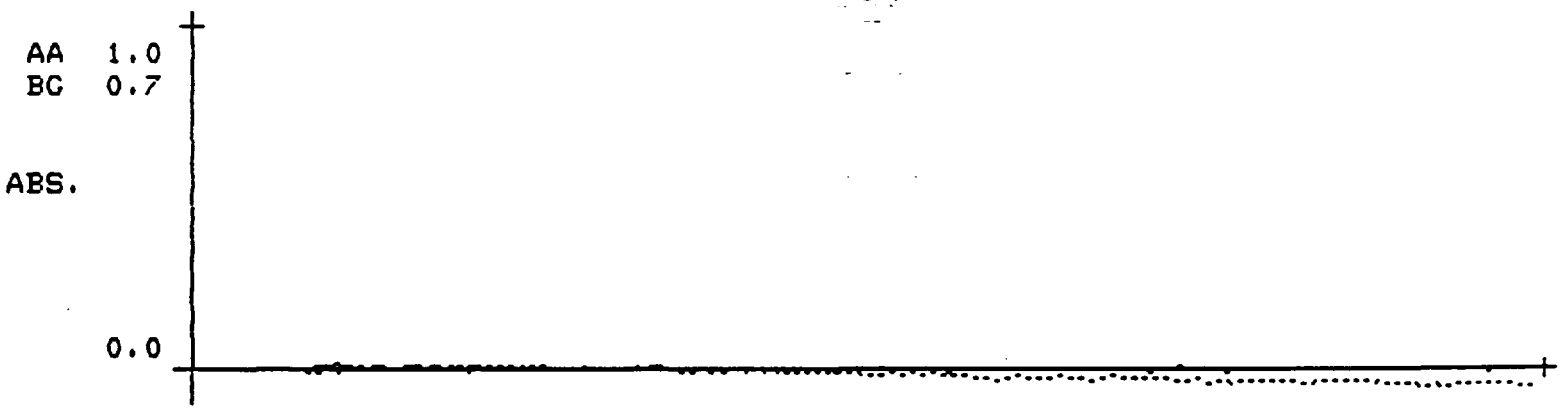
	AA	ZAA	BC
PEAK HEIGHT (ABSORBANCE)	0.035	0.026	0.010
PEAK AREA (ABS-SECONDS)	-0.042	0.020	-0.061

READ: 2.0

MEAN= 1.4 STD.DEV.= COEF.VAR.= 56.33 %

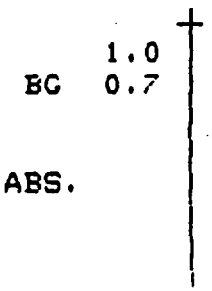
****

PB 0126



	AA	ZAA	BC
PEAK HEIGHT (ABSORBANCE)	0.015	0.018	0.009
PEAK AREA (ABS-SECONDS)	-0.058	0.003	-0.061

READ: -0.7.



0 TIME (SEC.) 5.0

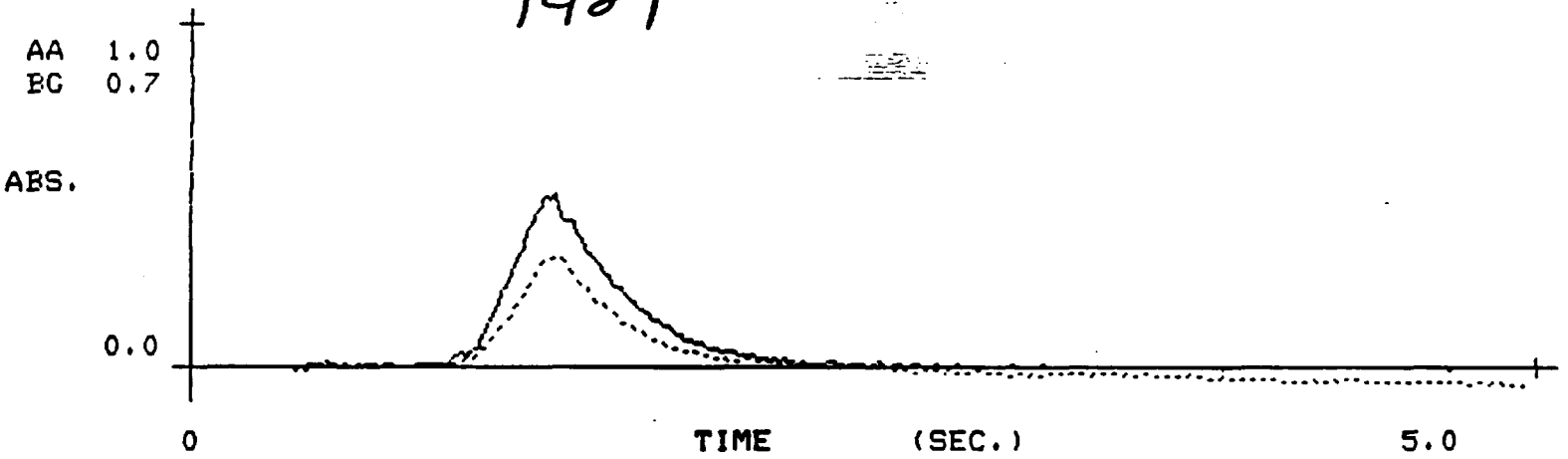
0126 (CONTINUED)

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.013	0.018	0.009
PEAK AREA (ABS-SECONDS)	-0.059	0.007	-0.066

READ: -0.2

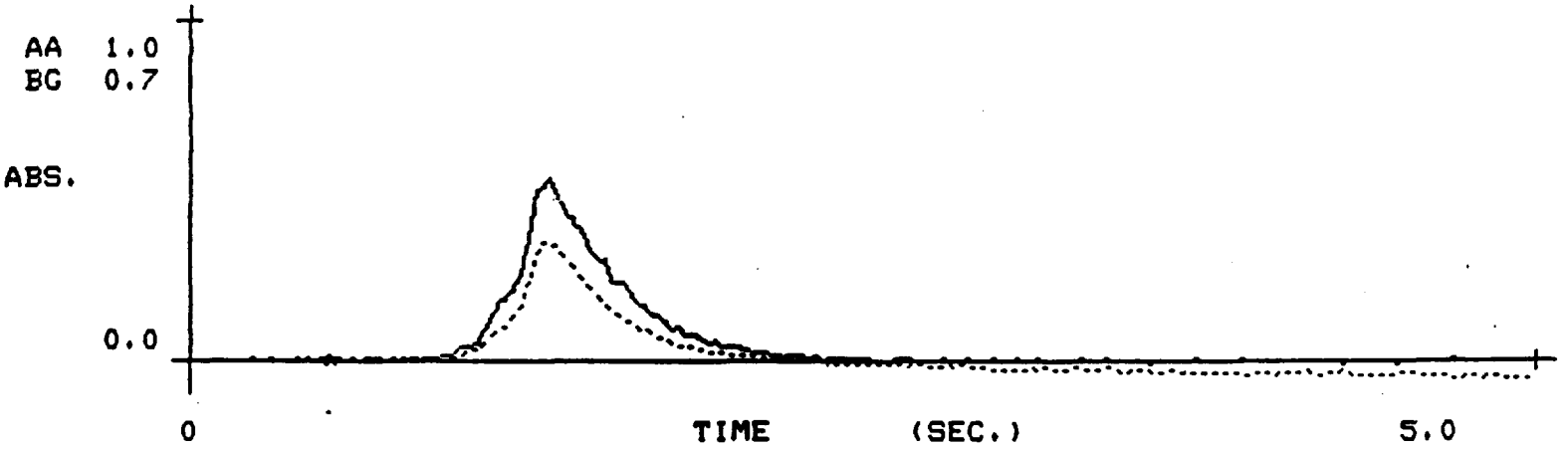
MEAN= -0.5 STD.DEV.= COEF.VAR.= 82.17 %

PB 0127 1427



	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.734	0.505	0.229
PEAK AREA (ABS-SECONDS)	0.288	0.242	0.046

READ: 50.3

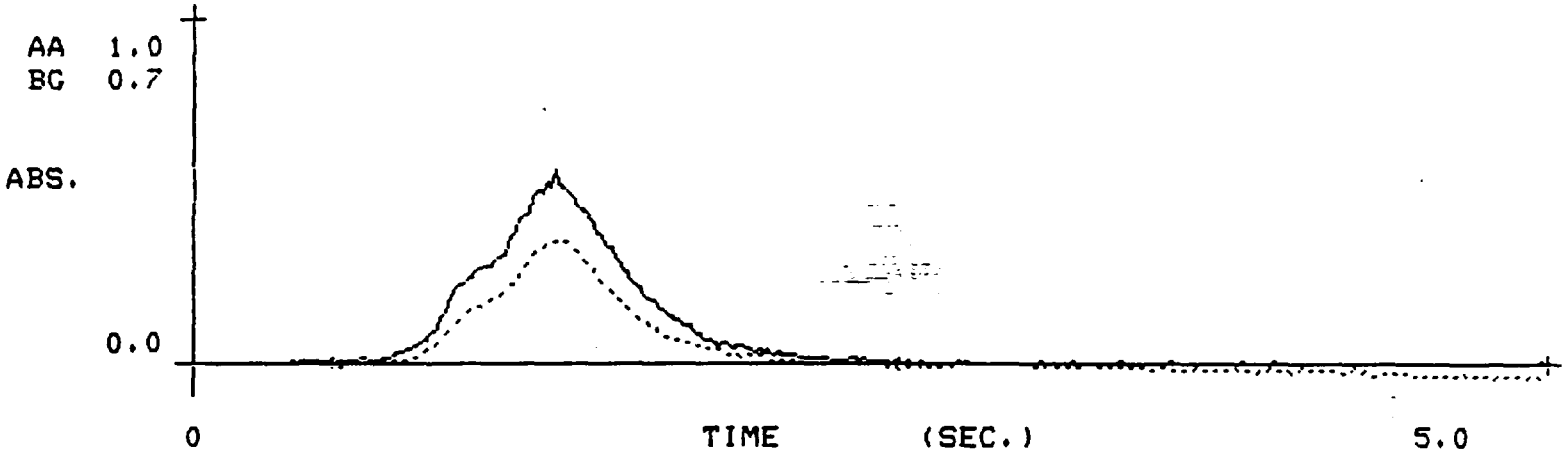


	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.789	0.546	0.249
PEAK AREA (ABS-SECONDS)	0.283	0.242	0.041

READ: 50.3

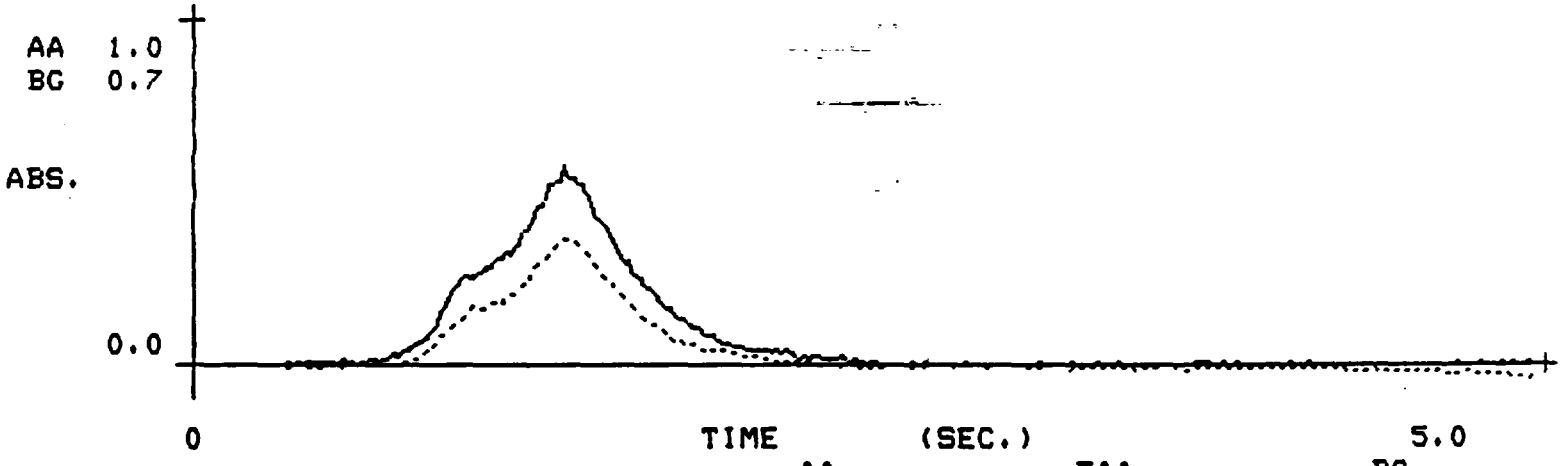
MEAN= 50.3 STD.DEV.= COEF.VAR.= 0.04 %

0128 (CONTINUED)



	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.820	0.569	0.253
PEAK AREA (ABS-SECONDS)	0.455	0.344	0.111

READ: 79.4



	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.833	0.574	0.259
PEAK AREA (ABS-SECONDS)	0.478	0.360	0.118

READ: 84.3

MEAN= 81.8 STD.DEV.= COEF.VAR.= 4.98 %

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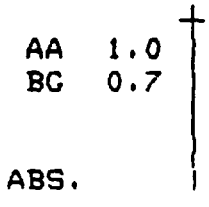
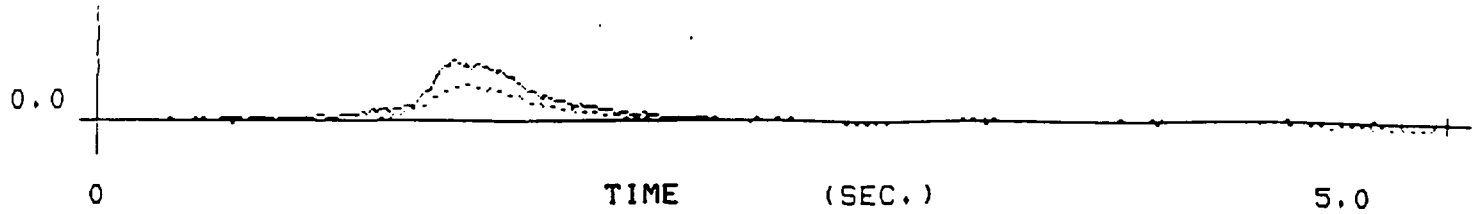
PB 0129

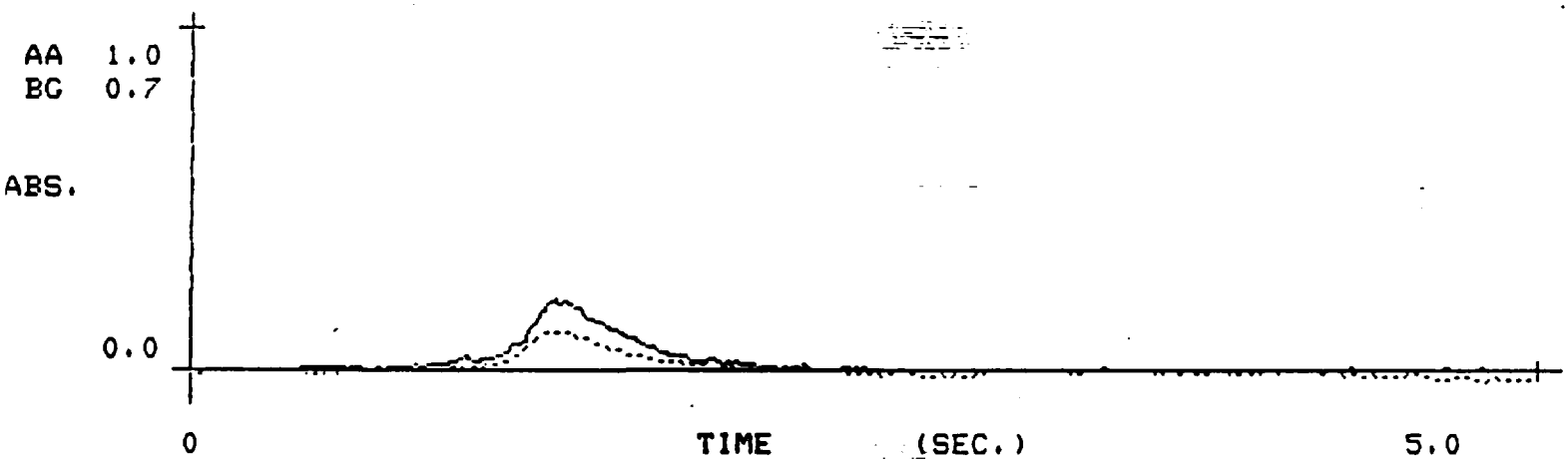




0129 (CONTINUED) 1428

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.262	0.187	0.078
PEAK AREA (ABS-SECONDS)	0.135	0.101	0.034

READ: 17.4



	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.290	0.212	0.080
PEAK AREA (ABS-SECONDS)	0.120	0.106	0.013

READ: 18.5

MEAN= 18.0 STD.DEV.= COEF.VAR.= 4.58 %

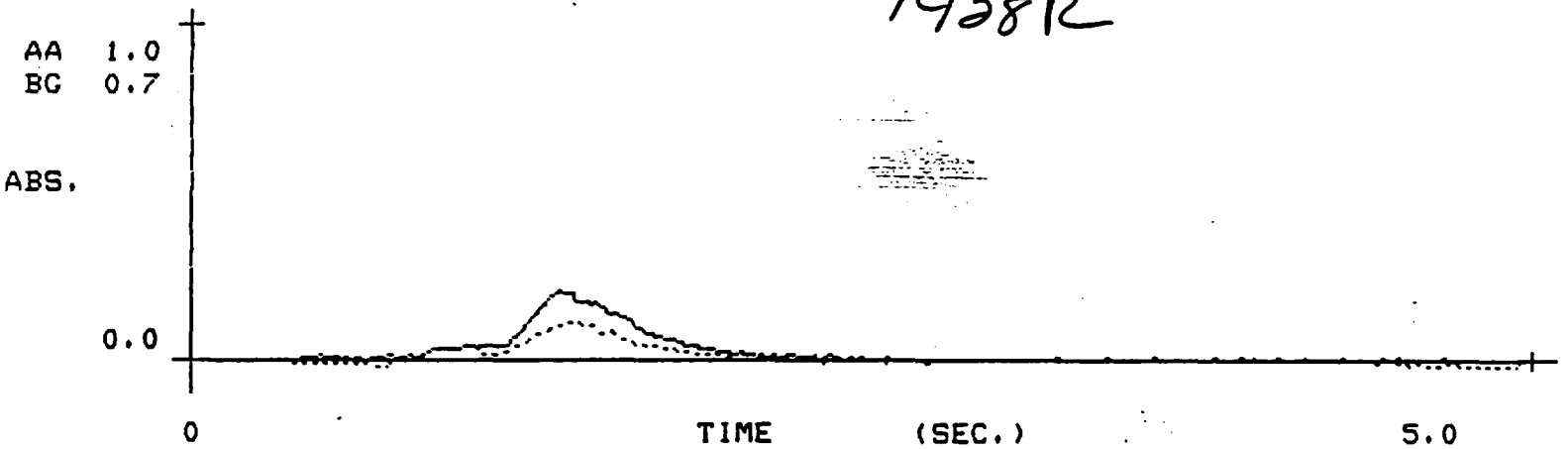
****

PB 0130

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.294	0.201	0.093
PEAK AREA (ABS-SECONDS)	0.147	0.115	0.032

READ: 20.3

0130 (CONTINUED) 7428R



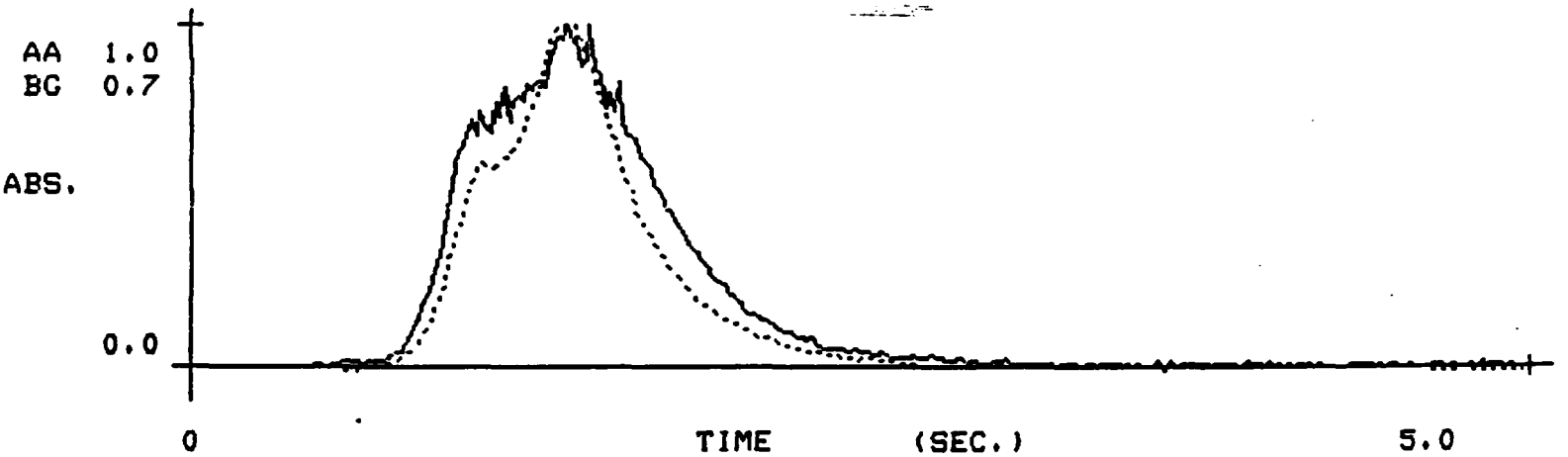
	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.288	0.213	0.080
PEAK AREA (ABS-SECONDS)	0.147	0.122	0.026

READ: 21.7

MEAN= 21.0 STD.DEV.= COEF.VAR.= 5.09 %

****

PB 0131

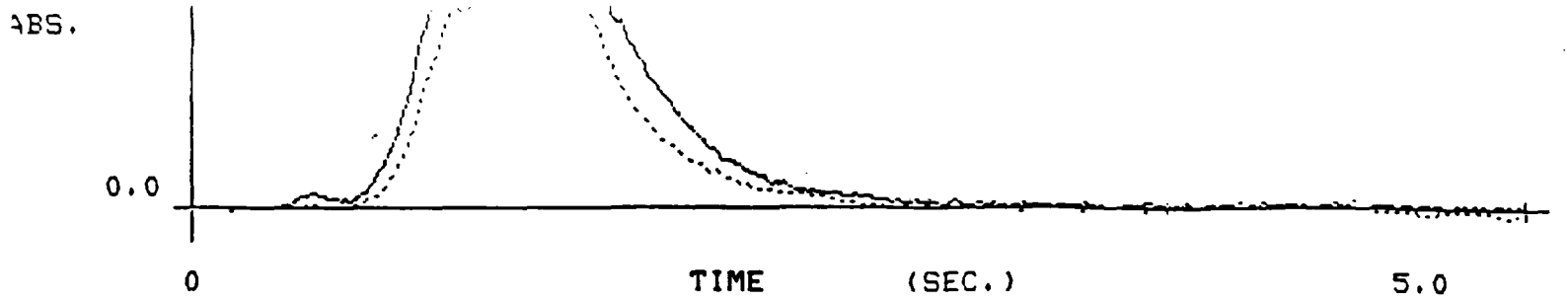


	AA	ZAA	BG
PEA HEIGHT (ABSORBANCE)	1.739	1.045	0.732
PEAK AREA (ABS-SECONDS)	1.276	0.822	0.453

READ: 285.2

E-87: VALUE GREATER THAN ROLLOVER ABSORBANCE

AA 1.0



14 29

0131 (CONTINUED)

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	1.734	1.060	0.674
PEAK AREA (ABS-SECONDS)	1.253	0.823	0.430

READ: 285.6
E-87: VALUE GREATER THAN ROLLOVER ABSORBANCE

MEAN= 285.4 STD.DEV.= COEF.VAR.= 0.12 %

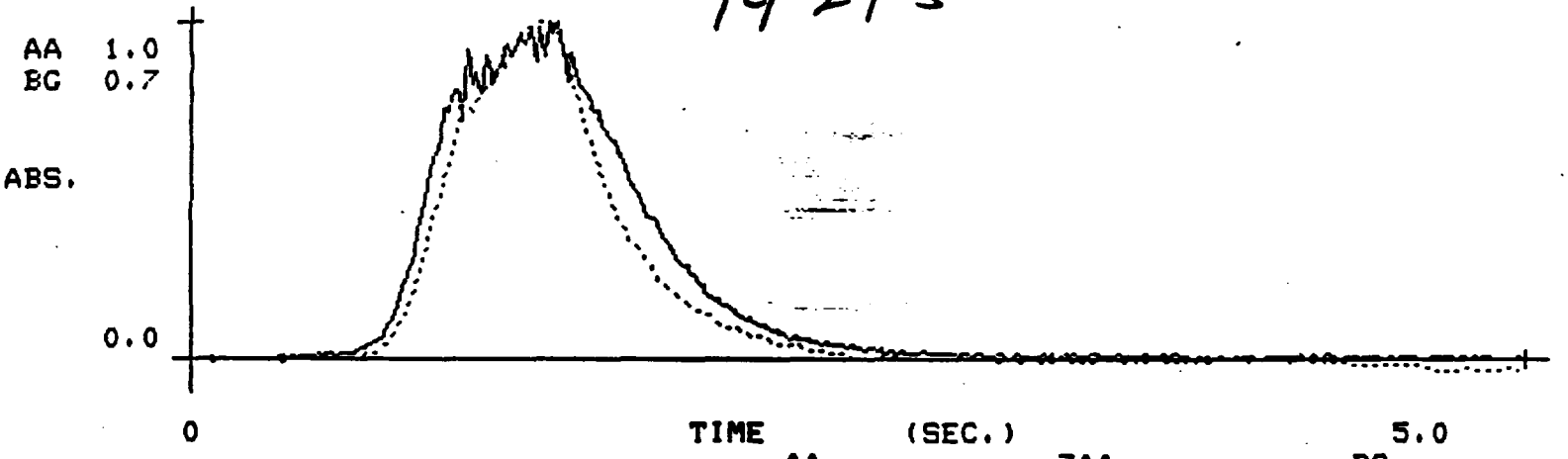
****

285.4
E-50: READING GREATER THAN HIGHEST STANDARD

****

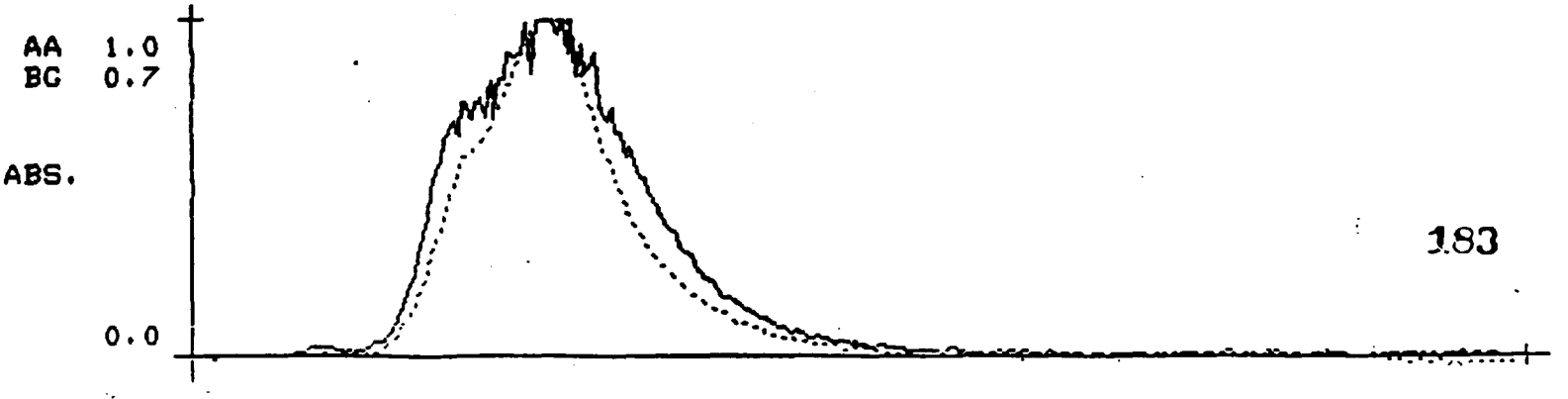
PB 0132

14 29 S



	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	1.747	1.063	0.727
PEAK AREA (ABS-SECONDS)	1.316	0.854	0.463

READ: 303.3
E-87: VALUE GREATER THAN ROLLOVER ABSORBANCE



PEAK HEIGHT (ABSORBANCE)	1.862	1.125	0.763
PEAK AREA (ABS-SECONDS)	1.328	0.853	0.475

READ: 302.9

E-87: VALUE GREATER THAN ROLLOVER ABSORBANCE

MEAN= 303.1 STD.DEV.= COEF.VAR.= 0.12 %

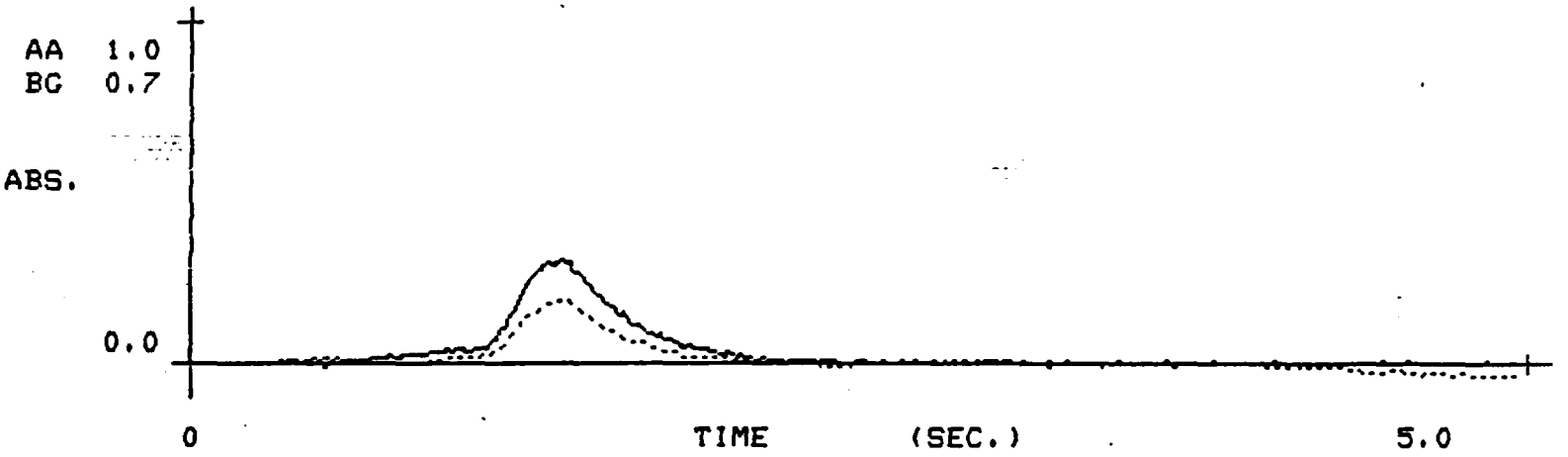
****

303.1

E-50: READING GREATER THAN HIGHEST STANDARD

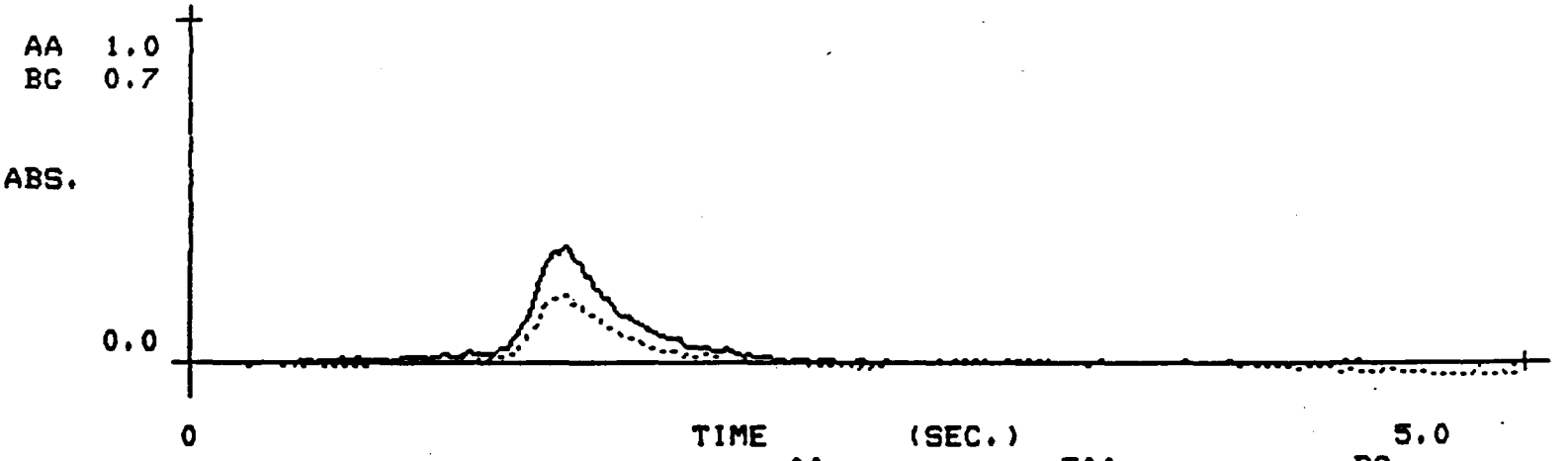
****

PB 0133



	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.436	0.306	0.133
PEAK AREA (ABS-SECONDS)	0.204	0.164	0.040

READ: 31.2



	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.484	0.344	0.140
PEAK AREA (ABS-SECONDS)	0.174	0.146	0.028

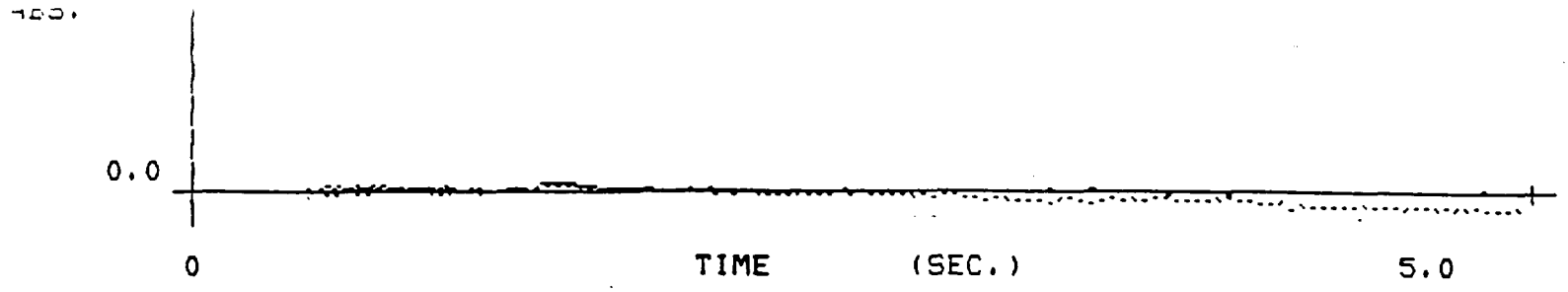
RE : 27.1

MEAN= 29.1 STD.DEV.= COEF.VAR.= 11.08 %

****

PB 0134

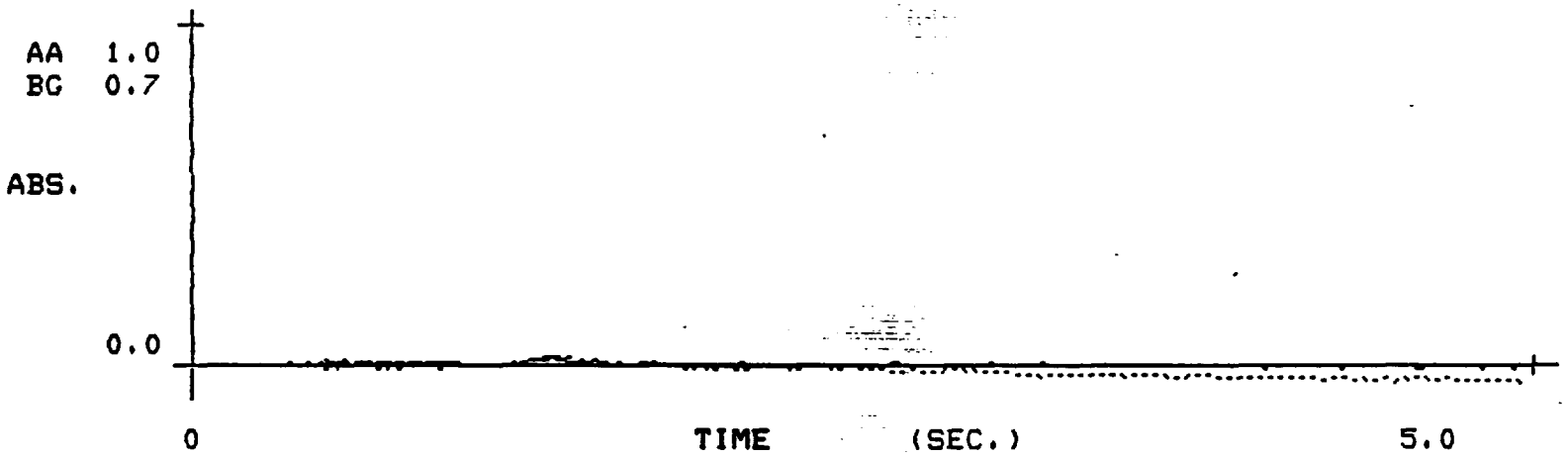
AA 1.0
BG 0.7



0134 (CONTINUED)

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.044	0.028	0.017
PEAK AREA (ABS-SECONDS)	-0.040	0.019	-0.059

READ: 1.9



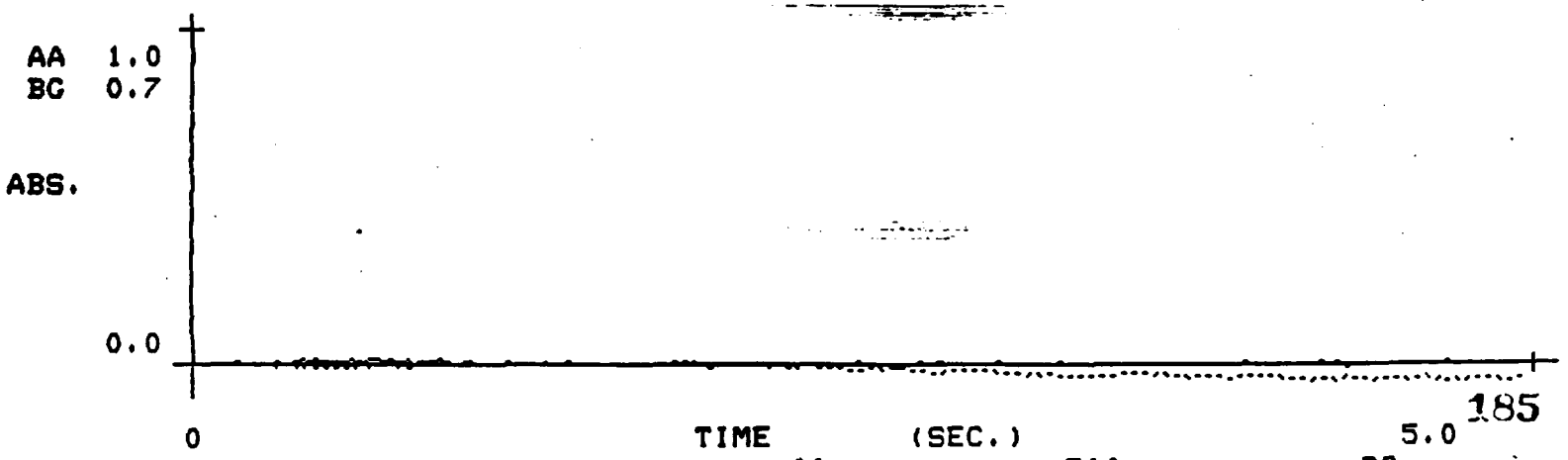
	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.044	0.030	0.017
PEAK AREA (ABS-SECONDS)	-0.045	0.013	-0.058

READ: 0.9

MEAN= 1.4 STD.DEV.= COEF.VAR.= 53.99 %

****

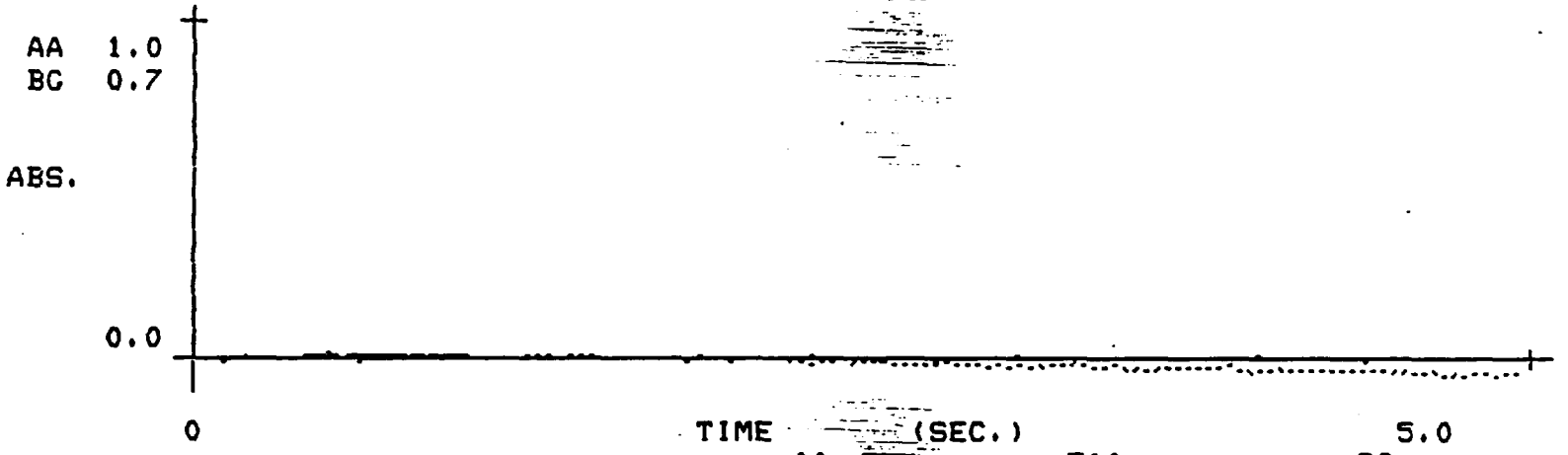
PB 0135



	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.014	0.022	0.007

READ: 1.0

0135 (CONTINUED)



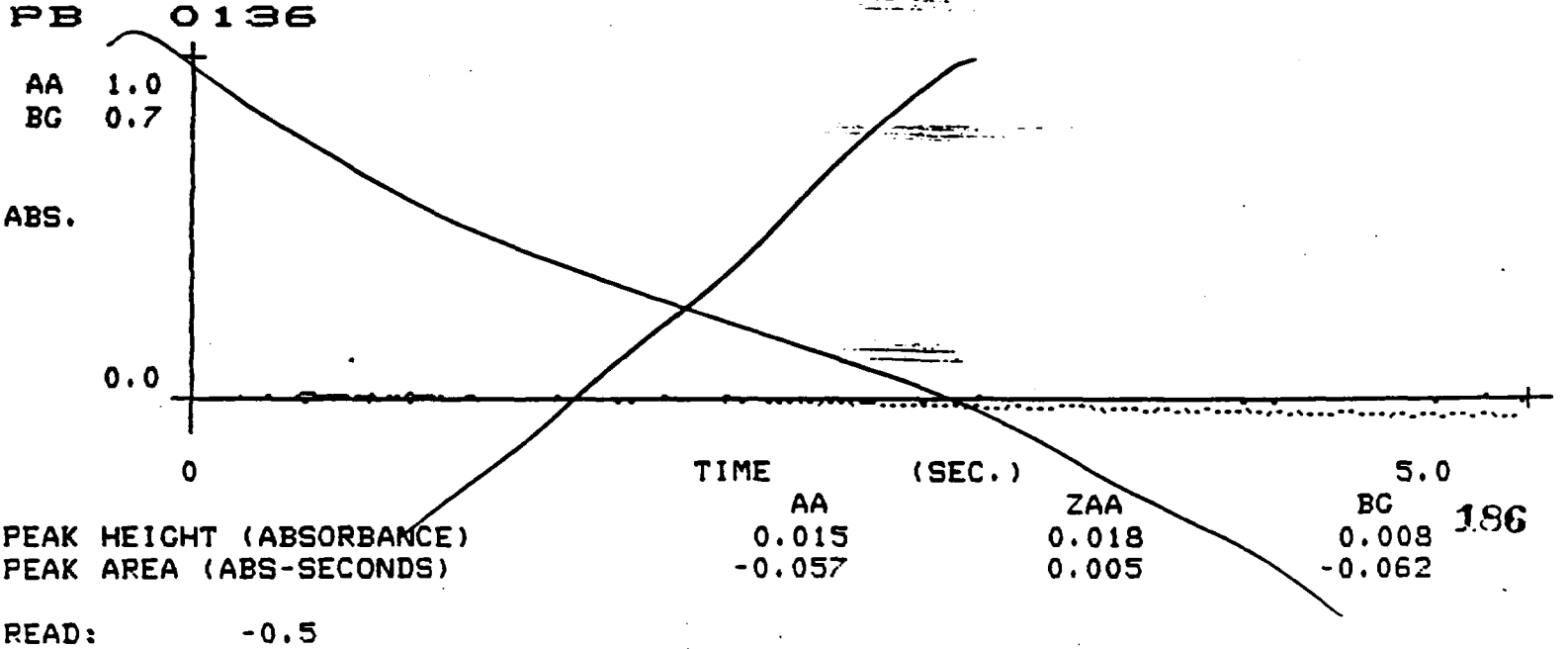
	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.013	0.016	0.008
PEAK AREA (ABS-SECONDS)	-0.048	0.007	-0.055

READ: -0.2

MEAN= 0.4 STD.DEV.= COEF.VAR.= 99.99 %

****

PB 0136



	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.015	0.018	0.008
PEAK AREA (ABS-SECONDS)	-0.057	0.005	-0.062

READ: -0.5

PEAK HEIGHT (ABSORBANCE)	0.796	0.562	0.236
PEAK AREA (ABS-SECONDS)	0.305	0.260	0.045

READ: 50.2

MEAN= 50.5 STD.DEV.= COEF.VAR.= 1.03 %

****

PB 0136

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.749	0.518	0.230
PEAK AREA (ABS-SECONDS)	0.299	0.257	0.042

READ: 49.4

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.768	0.535	0.242
PEAK AREA (ABS-SECONDS)	0.306	0.253	0.052

READ: 48.6

MEAN= 49.0 STD.DEV.= COEF.VAR.= 1.53 %

****

E	0101		29.0	
E	0102		10.4	
E	0103		62.2	
	E-87: VALUE GREATER THAN ROLLOVER ABSORBANCE			
E	0104		32.3	
E	0105		40.3	used
E	0106		50.4	used
E	0107		13.1	
E	0108		39.9	
E	0109		56.5	
E	0110		58.3	
E	0111		71.9	
E	0112		16.3	
E	0113		0.5	
E	0114		12.2	
E	0115		63.7	
	E-87: VALUE GREATER THAN ROLLOVER ABSORBANCE			
E	0116		23.1	
E	0117		14.0	
E	0118		12.0	
E	0119		6.4	
E	0120		5.3	
E	0121		7.6	
E	0122		4.8	
E	0123		4.0	
E	0124		5.4	
E	0125		13.7	
E	0126		12.8	
E	0127		62.1	
	E-87: VALUE GREATER THAN ROLLOVER ABSORBANCE			
E	0128	1427	90.7	
	E-87: VALUE GREATER THAN ROLLOVER ABSORBANCE			
E	0129	1428	29.4	
E	0130	1428R	33.5	
E	0131	1429	591.0	
	E-50: READING GREATER THAN HIGHEST STANDARD			
E	0132	1429S	---.-	
	E-50: READING GREATER THAN HIGHEST STANDARD			
E	0133	1430	42.6	
E	0134		12.8	
E	0135		12.9	
E	0136		61.0	
	E-87: VALUE GREATER THAN ROLLOVER ABSORBANCE			

****

PB 0101

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	0.524	0.377	0.150
EAK AREA (ABS-SECONDS)	0.131	0.148	-0.016

used

.2

****

PB 0102

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	0.208	0.155	0.053
EAK AREA (ABS-SECONDS)	0.014	0.066	-0.051

used

9.5

****

PB 0103

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	0.844	0.583	0.262
EAK AREA (ABS-SECONDS)	0.357	0.304	0.053

used

61.7

****

PB 0104

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	0.460	0.333	0.134
EAK AREA (ABS-SECONDS)	0.180	0.161	0.019

27.8

****

PB 0105

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	0.454	0.322	0.135
EAK AREA (ABS-SECONDS)	0.241	0.200	0.041

36.2

****

PB 0106

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	0.676	0.475	0.210
EAK AREA (ABS-SECONDS)	0.319	0.242	0.077

45.9

****

PB 0107

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	0.229	0.165	0.064
EAK AREA (ABS-SECONDS)	0.028	0.075	-0.047

used

11.1

****

PB 0108

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	0.515	0.351	0.164
EAK AREA (ABS-SECONDS)	0.268	0.214	0.054

used

9.3

****

PB 0109

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	0.628	0.433	0.199
EAK AREA (ABS-SECONDS)	0.264	0.263	0.001

51.1

****

PB 0110

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.624	0.425	0.199
PEAK AREA (ABS-SECONDS)	0.333	0.267	0.065

1.1

****

PB 0111

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.809	0.538	0.276
PEAK AREA (ABS-SECONDS)	0.427	0.319	0.108

66.1

****

PB 0112

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.553	0.139	0.452
PEAK AREA (ABS-SECONDS)	0.324	0.099	0.225

15.6

****

PB 0113

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.234	0.033	0.232
PEAK AREA (ABS-SECONDS)	0.464	0.012	0.452

0.2

****

PB 0114

used

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.217	0.164	0.055
PEAK AREA (ABS-SECONDS)	-0.046	0.068	-0.114

9.9

****

PB 0115

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.934	0.644	0.294
PEAK AREA (ABS-SECONDS)	0.315	0.290	0.025

57.9

E-87: VALUE GREATER THAN ROLLOVER ABSORBANCE

****

PB 0116

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.302	0.179	0.134
PEAK AREA (ABS-SECONDS)	0.098	0.112	-0.014

18.2

****

PB 0117

used

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.238	0.171	0.067
PEAK AREA (ABS-SECONDS)	0.009	0.083	-0.074

2.7

****

PB 0118

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.216	0.150	0.066
PEAK AREA (ABS-SECONDS)	0.017	0.071	-0.054

****

PB 0119

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.278	0.054	0.263
PEAK AREA (ABS-SECONDS)	0.357	0.042	0.314

5.3

****

PB 0120

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.297	0.070	0.266
PEAK AREA (ABS-SECONDS)	0.147	0.039	0.108

4.7

****

PB 0121

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.155	0.058	0.126
PEAK AREA (ABS-SECONDS)	0.108	0.045	0.063

5.8

****

PB 0122

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.459	0.043	0.423
PEAK AREA (ABS-SECONDS)	0.116	0.029	0.087

3.0

****

PB 0123

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.422	0.040	0.398
PEAK AREA (ABS-SECONDS)	0.157	0.033	0.124

3.7

****

PB 0124

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.254	0.050	0.218
PEAK AREA (ABS-SECONDS)	0.053	0.038	0.015

4.6

****

PB 0125

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.223	0.164	0.059
PEA AREA (ABS-SECONDS)	0.012	0.074	-0.061

11.0

****

PB 0126

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.220	0.161	0.060

EAK AREA (ABS-SECONDS)	0.009	0.066	-0.057

9.7

****

PB 0127

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	0.841	0.571	0.270
EAK AREA (ABS-SECONDS)	0.346	0.299	0.047

60.3

****

PB 0128 1427

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	0.852	0.586	0.270
EAK AREA (ABS-SECONDS)	0.501	0.378	0.124

84.4

E-87: VALUE GREATER THAN ROLLOVER ABSORBANCE

****

PB 0129 1428

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	0.438	0.309	0.129
EAK AREA (ABS-SECONDS)	0.185	0.153	0.032

26.3

****

PB 0130 1428R

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	0.385	0.271	0.116
EAK AREA (ABS-SECONDS)	0.189	0.160	0.029

27.6

****

PB 0131 1429

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	2.640	1.615	1.042
EAK AREA (ABS-SECONDS)	1.255	0.761	0.494

880.9

E-50: READING GREATER THAN HIGHEST STANDARD

****

PB 0132 1429S

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	2.301	1.203	1.106
EAK AREA (ABS-SECONDS)	1.242	0.733	0.510

.3

E-50: READING GREATER THAN HIGHEST STANDARD

****

PB 0133 1430

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	0.631	0.430	0.202
EAK AREA (ABS-SECONDS)	0.285	0.209	0.076

38.2

****

PB 0134

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	0.257	0.183	0.075
EAK 'REA (ABS-SECONDS)	0.028	0.074	-0.046

used

11.0

****

PB 0135

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	0.235	0.175	0.064
EAK AREA (ABS-SECONDS)	0.017	0.069	-0.052

used

10.1

****

PB 0136

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	0.949	0.636	0.314
EAK AREA (ABS-SECONDS)	0.350	0.291	0.059

used

58.3

E-87: VALUE GREATER THAN ROLLOVER ABSORBANCE

****

'E 0101

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	0.540	0.387	0.157
EAK AREA (ABS-SECONDS)	0.085	0.154	-0.069

25.4

***

PB 0102

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	0.202	0.147	0.057
EAK AREA (ABS-SECONDS)	0.010	0.059	-0.048

8.3

****

PB 0103

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	0.952	0.650	0.308
EAK AREA (ABS-SECONDS)	0.345	0.290	0.055

58.0

E-87: VALUE GREATER THAN ROLLOVER ABSORBANCE

****

PB 0104

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	0.463	0.332	0.137
EAK AREA (ABS-SECONDS)	0.218	0.184	0.033

used

32.8

****

PB 0105

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	0.458	0.310	0.158
EAK AREA (ABS-SECONDS)	0.269	0.208	0.061

38.0

****

PB 0105

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	0.479	0.330	0.150
EAK AREA (ABS-SECONDS)	0.237	0.204	0.034

37.0

****

PB 0106

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	0.667	0.465	0.216
EAK AREA (ABS-SECONDS)	0.314	0.254	0.061

48.7

****

PB 0107

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	0.266	0.194	0.074
EAK AREA (ABS-SECONDS)	0.035	0.084	-0.050

12.9

****

PB 0108

	AA	ZAA	BG
EAK 'EIGHT (ABSORBANCE)	0.547	0.368	0.179
EAK REA (ABS-SECONDS)	0.294	0.236	0.057

44.5

****

PB 0109

	AA	ZAA	BG
'EAK HEIGHT (ABSORBANCE)	0.731	0.494	0.238
'EAK AREA (ABS-SECONDS)	0.367	0.289	0.078

57.8

****

PB 0110

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	0.750	0.510	0.241
EAK AREA (ABS-SECONDS)	0.376	0.299	0.077

60.4

****

PB 0111

	AA	ZAA	BG
'EAK HEIGHT (ABSORBANCE)	0.926	0.614	0.311
'EAK AREA (ABS-SECONDS)	0.467	0.356	0.111

77.1

E-87: VALUE GREATER THAN ROLLOVER ABSORBANCE

****

PB 0112

	AA	ZAA	BG
'EAK HEIGHT (ABSORBANCE)	0.558	0.140	0.448
'EAK AREA (ABS-SECONDS)	0.314	0.101	0.212

16.1

****

PB 0113

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	0.231	0.046	0.233
EAK AREA (ABS-SECONDS)	0.401	0.003	0.398

-1.4

****

PB 0114

	AA	ZAA	BG
'EAK HEIGHT (ABSORBANCE)	0.261	0.192	0.075
'EAK AREA (ABS-SECONDS)	0.026	0.087	-0.061

13.4

****

PB 0115

	AA	ZAA	BG
'EAK EIGHT (ABSORBANCE)	0.986	0.662	0.324
'EAK AREA (ABS-SECONDS)	0.370	0.312	0.058

64.0

E-87: VALUE GREATER THAN ROLLOVER ABSORBANCE

****

PB 0116

	AA	ZAA	BG

EAK HEIGHT (ABSORBANCE)	0.365	0.228	0.120
EAK AREA (ABS-SECONDS)	0.152	0.127	0.025

Used

21.0

****

PB 0117

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	0.298	0.213	0.086
EAK AREA (ABS-SECONDS)	0.070	0.091	-0.020

14.1

****

PB 0118

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	0.274	0.200	0.074
EAK AREA (ABS-SECONDS)	0.032	0.084	-0.052

12.9

****

PB 0119

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	0.268	0.063	0.260
EAK AREA (ABS-SECONDS)	0.369	0.049	0.321

6.5

****

PB 0120

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	0.294	0.077	0.262
EAK AREA (ABS-SECONDS)	0.179	0.050	0.129

6.7

****

B 0121

	AA	ZAA	BG
AK HEIGHT (ABSORBANCE)	0.156	0.080	0.115
EAK AREA (ABS-SECONDS)	0.127	0.060	0.066

8.6

****

PB 0122

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	0.456	0.055	0.409
EAK AREA (ABS-SECONDS)	0.152	0.043	0.109

Used

5.6

****

PE 0123

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	0.460	0.057	0.436
EAK AREA (ABS-SECONDS)	0.182	0.035	0.147

Used

4.1

****

PB 0124

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.267	0.058	0.233
PEAK AREA (ABS-SECONDS)	0.064	0.041	0.024

5.1

****

PB 0125

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.280	0.203	0.076
PEAK AREA (ABS-SECONDS)	0.043	0.092	-0.049

14.3

****

PB 0126

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.292	0.212	0.081
PEAK AREA (ABS-SECONDS)	0.029	0.084	-0.055

12.9

****

PB 0127

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	1.032	0.697	0.335
PEAK AREA (ABS-SECONDS)	0.355	0.303	0.052

61.5

E-87: VALUE GREATER THAN ROLLOVER ABSORBANCE

****

PB 0128 1428

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.959	0.637	0.333
PEAK AREA (ABS-SECONDS)	0.474	0.363	0.112

79.3

E-87: VALUE GREATER THAN ROLLOVER ABSORBANCE

****

PB 0129 1428

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.520	0.374	0.152
PEAK AREA (ABS-SECONDS)	0.202	0.183	0.019

32.5

****

PB 0130 1428R

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.506	0.359	0.147
PEAK AREA (ABS-SECONDS)	0.220	0.190	0.030

34.1

****

PB 0131 1429

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	2.162	1.203	1.080
PEAK AREA (ABS-SECONDS)	1.217	0.754	0.462

791.2

E-50: READING GREATER THAN HIGHEST STANDARD

****

B 0132 1429S

	AA	ZAA	BG
AK HEIGHT (ABSORBANCE)	2.359	1.397	1.043
AK AREA (ABS-SECONDS)	1.232	0.757	0.475

822.9

E-50: READING GREATER THAN HIGHEST STANDARD

****

B 0133 1430

	AA	ZAA	BG
AK HEIGHT (ABSORBANCE)	0.624	0.434	0.190
AK AREA (ABS-SECONDS)	0.240	0.210	0.029

38.5

****

B 0134 BLK 211

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	0.330	0.241	0.094
EAK AREA (ABS-SECONDS)	0.019	0.098	-0.079

15.5

****

PB 0135 Cal BLK

	AA	ZAA	BG
EAK HEIGHT (ABSORBANCE)	0.276	0.210	0.072
EAK AREA (ABS-SECONDS)	0.000	0.087	-0.087

13.4

****

PB 0136 50.0 ppb

	AA	ZAA	BG
PEAK HEIGHT (ABSORBANCE)	0.955	0.641	0.316
PEAK AREA (ABS-SECONDS)	0.332	0.301	0.031

0.8

E-87: VALUE GREATER THAN ROLLOVER ABSORBANCE

****

⊃E	0109	18.1
⊃E	0110	18.9
⊃E	0111	20.5
[redacted]	[redacted]	[redacted]
⊃E	0112	13.9
⊃B	0113	8.7
⊃E	0129	14.4
⊃B	0130	14.3
⊃B	0131	39.3
⊃B	0132	42.1

Pb
SPIKES

Project No. _____

Book No. _____ TITLE _____

From Page No. __

Test Performed: Pb (cont'd)

Date Received: 4/22/87

Work Performed By: J. OLKA

Job No.	ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From N	C	ppb Burn 1	ppb Burn 2	ppb Ave	CV	10.0 ppb Spike	% Rec.	DF	Samp Wgt	Units	Final Conc
	WS378#3					15.4				28.1	127			µg/l	15.4
	Cal Blk					-0.6				11.2	112				<5.0
	50.0 ppb					49.1				60.4	113				49.
	1428.0403					18.6	18.4	18.5	0.86	27.4	89		1.01	mg/kg	3.6
	1428. R1					21.4	20.5	21.0	3.52	31.6	106		1.01		4.1
	1429.0403					28.7	29.0	28.8	0.92	40.7	114	1→10	1.04		55.
	1429. S1					29.6	32.1	30.8	6.41	41.7	104	1→10	1.06	mg/kg	58
	2002.0603					5.2	6.2	5.7	12.8	14.7	92	2→10		µg/l	28
	Cal Blk					1.1	1.0	1.1	T	10.5	105				<5.0
	50.0 ppb					48.8	46.9	47.9	3.17	58.9	110				47

To Page No.

Witnessed & Understood by me, _____ Date _____

Invented by _____ Date _____

Recorded by J. Olka 4/22/87

HGA FORM #1

ELEMENT: Pb, DATE: 4/22/87.

S_1 = 100 PPB., S_2 = 50 PPB.

S_3 = 75 PPB, BOOK NO. 294, pg 14.

JOB #:

I01	W3378 #3
X02	Cal Blk
X03	50.0ppb
X04	1428.0403
X05	1428. R,
X06	1429.0403 (1→10)
X07	1429. S, (1→10)
X08	2002.0603 (2→10)
X09	Cal Blk
X10	50.0ppb
X11	
X12	
X13	
X14	
X15	
X16	
X17	, S_2
X18	
X19	
X20	
X21	
X22	
X23	
X24	
X25	
X26	
X27	
X28	
X29	
X30	
X31	
X32	
X33	
X34	
X35	, S_3

ATTACH TAPE HERE

recycled paper

ecology and environment

PB 0.003
0.000 AUTOZERO
****
PB 0.382
E-87: VALUE GREATER THAN ROLLOVER ABSORBANCE
100.0 STANDARD 1
****
PB 58.1
50.0 STANDARD 2
****
PB 26.6
25.0 STANDARD 3
****
PB 0101 15.1
PB 0101 14.0
PB 0102 -1.3
PB 0103 49.4

Jobs 5119, 4989

PB 0101 12.8
PB 0102 -1.7
PB -0.006
0.000 AUTOZERO
****
PB 0.391
E-87: VALUE GREATER THAN ROLLOVER ABSORBANCE
100.0 STANDARD 1
****
PB 57.6
50.0 STANDARD 2
****
PB 25.2
25.0 STANDARD 3
****
PB 0101 15.4
PB 0102 -0.6
PB 0103 49.1
18.7

MEAN= 18.4 STD.DEV.= COEF.VAR.= 2.78 %
****
PB 0104 1428
18.6 18.4

MEAN= 18.5 STD.DEV.= COEF.VAR.= 0.86 %
****
PB 0105 1428 R1
21.4 20.5

MEAN= 21.0 STD.DEV.= COEF.VAR.= 3.52 %
****
PB 0106 1429
28.7 29.0

MEAN= 28.8 STD.DEV.= COEF.VAR.= 0.92 %
****

PB 0107
29.6 32.1

```
-----------------------------------------------------------------------------
MEAN=      21.0     STD.DEV.=                COEF.VAR.=  3.52  %
*****************************************************************************
PB    0106
   28.7              29.0
-----------------------------------------------------------------------------
  AN=      28.8     STD.DEV.=                COEF.VAR.=  0.92  %
*****************************************************************************


PB    0107                    1429 S1
   29.6              32.1
-----------------------------------------------------------------------------
MEAN=      30.8     STD.DEV.=                COEF.VAR.=  6.41  %
*****************************************************************************
PB    0108
    5.2               6.2
-----------------------------------------------------------------------------
MEAN=       5.7     STD.DEV.=                COEF.VAR.=  12.78 %
*****************************************************************************
PB    0109                    CAl BlK
    1.1               1.0
-----------------------------------------------------------------------------
MEAN=       1.1     STD.DEV.=                COEF.VAR.=  9.47  %
*****************************************************************************
PB    0110                    50.0 ppb
   48.8              46.9
-----------------------------------------------------------------------------
MEAN=      47.9     STD.DEV.=                COEF.VAR.=  3.17  %
*****************************************************************************
PB    0101                28.1
PB    0102                11.2
PB    0103                60.4
        E-87: VALUE GREATER THAN ROLLOVER ABSORBANCE
PB    0104                27.4
PB    0105                31.6
PB    0106                40.2
PB    0107                41.2
PB    0108                14.9
PB    0109                10.5
PB    0110                58.9
        E-87: VALUE GREATER THAN ROLLOVER ABSORBANCE
```

Project No._____

TITLE_____ Book No._____

Fro ge No.__

Test Performed: llg

Date Received: 2/23/87

Work Performed By: JY.

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From		Read	Conc. ug/L	D.F.	Amount of Sample	Units	Final Conc	r = .99932 y = .003412 - .02872
	Blank				3	<.02			ug/L	<0.20	
	~~10 0.02~~ ug										
	0.04				22	0.046				0.46	
	0.08				33	0.084				0.84	
	0.20				72	0.22				2.17	
	0.40				124	0.39				3.94	
	0.80				242	0.80				7.97	
	WP1183 #1				39	.104				1.04	Known = 1.30
	WP37844				137	.438				4.38	Known = 4.40
	Blank				4	<.02				<0.20	
	CCVS				35	0.091				0.91	
4825	0699.01		NO	M	83	0.25	1→~~50~~ 2	(50mls) 100mL	ug/L	~~0.51~~	5.00 ug/L > 5.1
	0699.01				46	0.13	1→4	100mL		~~0.51~~	5.20
	0699.01+4.0ppb				>8.0	(0.24)	(1→4)	100mL			(9.6) 113%
						Note: Dilution assumed					
	0700.01		NO	M	129	0.41		100mL	ug/L	4.11	86% recovery
	0700.01				129	0.41		100mL		4.11	
	0700.01+4.0ppb				230	0.76		100mL		7.56	
4896	0999.01		NO	A-3	14	0.019		0.35g	mg/kg	<0.10	
	0999.01				24	0.083		0.30		0.18	
	0999.01				10	<.02		0.33		<0.10	
	0999.01+4.0ppb				119	.38		0.30			95% recovery
	Blank				4	<.02				<0.20	
	CCVS				35	0.091		100mL	ug/L	0.91	Mix well + REPEAT
	1176.01		Yes	A29	7	<.02	1→10	0.26	mg/kg	<1.0	NG
	1176.01				>8.0			0.23			NG
	1176.01				~~105~~	~~0.33~~	~~1→2~~	~~0.45~~		~~1.46~~	1.0 ?

Other Clients

To Page No. 100

Witnessed & Understood by me, RON | Date | Invented by | Date 2/23/87

Recorded by Timothy J. Glunzal

Project No. _____

100 Book No. _____ TITLE _____

From Page No. 49

Test Performed: Hg (con't)

Date Received: _____

Work Performed By: _____

Mix THE SAMPLE WELL & REPEAT

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From		Read	Conc	D.F.	Amount of Sample	Units	Final Conc.	
						.0122	1→4				
	1176.01				12	~~1→4~~	~~.26~~	.26g	mg/kg	0.19	✓
~~[illegible]~~	1177.01		Yes	A29	64	0.19		0.20g	mg/kg	0.95	
con't)	1177.01		↓	↓	95	0.36		0.26	↓	1.14	OK
	1177.01				69	0.21		0.23		0.90	
										5	
	1178.01		Yes	A29	7	<.02		0.28	mg/kg	<0.10	?
	1178.01		↓	↓	15	.022		0.25	↓	<0.10	
	1178.01				30	0.074		0.20		.37	
	Blank				2	<.02				<0.20	
	CCVS				33	0.084		100mL	ug/L	0.84	
4906	1032.04		NO	A12	43	0.12	1→10	0.35g ~~0.31g~~	mg/kg	3.37	✓
	1032.04		↓	↓	38	0.10	1→10	0.35	↓	2.88	
	1033.04		NO	A12	27	0.063		0.30	mg/kg	0.21	Mix WELL & REPEAT
	1033.04		↓	↓	14	0.019		0.23	↓	~~0.082~~ 0.083	
	1034.04		NO	A12	3	<0.02		0.23	mg/kg	<0.10	✓
	1034.04		↓	↓	2	<0.02		0.24	↓	<0.10	
	1035.04		NO	A12	6	<0.02		0.26	mg/kg	<0.10	✓
	1035.04		↓	↓	8	<0.02		0.30	↓	<0.10	
	1036.04		NO	A12	1	<0.02		0.28	mg/kg	<0.10	✓
	1036.04		↓	↓	2	<0.02		0.23	↓	<0.10	
	Blank				4	<0.02				<0.20	✓
	CCVS				35	0.091		100mL	ug/L	0.91	

Other Clients

To Page No. 101

Witnessed & Understood by me,	Date	Invented by	Date
[signature]		Recorded by Timothy J. Glunzak	2/23/87

205

Project No._____

TITLE_____ Book No._____ 101

Fr... ...ge No 100

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	
4906	1037.04	NO	All		2	<0.02		0.22g	mg/kg	<0.10	
	1037.04	↓	↓		3	<0.02		0.24g	↓	<0.10	
	1037.04+1.0ppb				29	0.070		0.23	↓		70% recovery
4928	1110.04	NO	All		2	<0.02		0.32	mg/kg	<0.10	✓
	1110.04	↓	↓		2	<0.02		0.27	↓	<0.10	
	1111.04	NO	All		2	<0.02		0.29	mg/kg	<0.10	✓
	1111.04	↓	↓		2	<0.02		0.28	↓	<0.10	
	1112.04	NO	All		~~2~~ 8	<0.02		0.29	mg/kg	<0.10	✓
	1112.04	↓	↓		6	<0.02		0.27	↓	<0.10	
	1112.04+1.0ppb	↓	↓		38	.10		0.32	↓		101% recovery
	~~1113.04~~ 20										
	~~1113~~ 20										
	Blank				3	<0.02				<0.20	
	CCUS				31	0.077		100mL	µg/L	0.77	
	1113.04	NO	All		>8.0			0.27	mg/kg		
	1113.04	↓	↓		46	0.128	1→10	0.26	↓	4.93	
	113.04	NO	All		48	0.135	1→10	0.26	mg/kg	5.19	
	1114.04	NO	All		4	<0.02		0.31	mg/kg	<0.10	
	1114.04	↓	↓		2	<0.02		0.30	↓	<0.10	
	1115.04	NO	All		4	<0.02		0.34	mg/kg	<0.10	
	1115.04	↓	↓		3	<0.02		0.38	↓	<0.10	
	1116.04	NO	All		4	<0.02		0.38	mg/kg	<0.10	
	1116.04	↓	↓		3	<0.02		0.31	↓	<0.10	

MUST RECEIVE TOO LOW 80-120 ~~OTHERS ARE OK~~

To Page No. 102

Witnessed & Understood by me. [signature] | Date | Invented by | Date 2/23/87

Recorded by Timothy J. Glunzak

Project No._____

102 Book No._____ TITLE _____

Fro ıge No. 101

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
4928	1117.04		NO	All		2	<0.02		0.35	mg/kg	<0.10
(con't)	1117.04		↓	↓		2	<0.02		0.39	↓	<0.10
	Blank					2	<0.02				<0.20
	CCVS					35	0.091		100mL	mg/L	0.91

SA
2/23/87

To Page No.__

Witnessed & Understood by me,	Date	Invented by	Date	297
		Recorded by Timothy J. Glumyak	2/23/87	

om Page No. __

Test Performed: Hg
Date Received: 3/6/87
Work Performed By: [illegible]

SEE PAGE 1

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From	READ.	CONC.	DF	Amount of Sample	UNITS	FINAL CONC.	
	BLANK			5						
	0.2			12						r = 0.99973
	0.4			21						y = 0.036x - 0.24
	0.8			29						
	2.0			59						
	4.0			117						
	8.0			226						
	WP 1183 #1			38	1.14			µg/L	1.14	(known = 1.3)
4971	1274.04	NO	A28	5	<0.20		0.40 g	mg/kg	<0.10	
				4	<0.20		0.37 g		<0.10	
	1275.04			5	<0.20		0.39 g		<0.10	
				4	<0.20		0.33 g		<0.10	
	1276.04			62	2.02		0.33 g		0.61	
				66	2.16		0.32 g		0.68	0.05 Hc
	1277.04			34	1.00	1→100	0.39 g		25.64	
				129	4.46	1→20	0.39 g		22.87	
	1278.04			6	<0.20		0.36 g		<0.10	
				5	<0.20		0.38 g		<0.10	
	BLANK			2	<0.20				<0.20	
	CCVS			30	0.85				0.85	
	1278.04 + 1.0 ppb	NO	A28	32	0.92		0.38 g	mg/kg	~~0.24~~	92% REC
4936	1154.01		A20	5	<0.20		0.30		<0.10	
				3	<0.20		0.47 g		<0.10	
	1163.01			2	<0.20		0.37 g		<0.10	
				3	<0.20		0.35 g		<0.10	

To Page No. 101

Witnessed & Understood by me. [illegible] Date 3/10/87 Invented by [illegible] Date 3/6/87 Recorded by [illegible]

Page No. 108

Test Performed: Hg (con't)
Date Received: 3/6/87
Work Performed By: JM

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From		READ.	CONC.	DF	Amount of Sample	Units	Final Conc.	
4992	1132.01		NO	A2	46	1.43		0.30	mg/kg	0.48	
				↓	64	2.09		0.41		0.51	0.50 Ave
4986	1424.01			A14	20	0.49		0.32		0.15	
					23	0.59		0.35		0.17	0.16 Ave
	+4.0 ppb				95	3.22		0.38			67% REC
	BLANK				3	<0.20				<0.20	
	CCVS				34	1.00				1.00	
4992	1437.06		NO	A4	2	<0.20		100ml	mg/L	<0.20	
	1438.06			↓	6	<0.20				<0.20	
4985	1422.01			A8	5	<0.20				<0.20	
	1423.01			↓	6	<0.20				<0.20	
4995	1450.07			A7	2	<0.20				<0.20	
	1451.07				3	<0.20				<0.20	
	1452.07				2	<0.20				<0.20	
	1452.07R				2	<0.20				<0.20	
	+4.0 ppb				121	4.17					104% REC
	BLANK				2	<0.20				<0.20	
	CCVS				33	0.96				0.96	
5000	1469.01		YES	A9	4	<0.20		100ml		<0.20	
4998	1458.07		YES	A9	4	<0.20				<0.20	
	1459.07				3	<0.20				<0.20	
	1460.07				2	<0.20				<0.20	

See Blanks

To Page No. 110

Witnessed & Understood by me, Date 3/16/87
Invented by
Recorded by Date 3/6/87

Project No._____

Book No._____ TITLE _____

From Page No. 109

Test Performed: Hg (CON'T)

Date Received: 3/6/87

Work Performed By: [illegible]

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From		READ.	CONC.	DF	AMOUNT OF SAMPLE	UNITS	FINAL CONC.	
4998	1461.07	YES	A7		2	<0.20		100ml	mg/L	<0.20	
(CON'T)	1464.01				3	<0.20				<0.20	
	1464.01R				3	<0.20				<0.20	
	+4.0 ~~+1.0~~ (BM)				17	4.02					101% REC
4948	1204.01	NO	A4		3	<0.20	1→10	10ml		<2.0	
	BLANK				2	<0.20				<0.20	
	CCVS				34	1.00				1.00	

Other Clients

To Page No.____

Witnessed & Understood by me,	Date	Invented by	Date	
[illegible]	3/10/87	Recorded by [illegible]	3/6/87	210

Page No. ___

Test Performed: Hg
Date Received: 3/11/87
Work Performed By: [illegible]

SEE PAGE 1

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From		READ.	CONC.	DF	AMOUNT OF SAMPLE	UNITS	FINAL CONC.	
	BLANK				3						r = 0.9996
	0.2				8						y = 0.032x - 0.05
	0.4				16						
	0.8				28						
	2.0				51						
	4.0				125						
	8.0				252						
	WP1183 #1				38	1.17			µg/L	1.17	(known = 1.3)
4995	1450.07	NO	A7		4	<0.20		100ml	µg/L	<0.20	
	1451.07				3	<0.20				<0.20	
	1452.07				3	<0.20				<0.20	
	1451.07R				4	<0.20				<0.20	
	+1ppb				31	0.94					94% REC
5004	1484.04	NO	ALL		14	0.40				0.40	
	1485				10	0.27				0.27	
	1486				17	0.49				0.49	
	1487				17	0.49				0.49	
	1488				7	<0.20				<0.20	
	1489				13	0.36				0.36	
	1489.04R				6	<0.20				<0.20	
	+4.0ppb				143	4.54					104.5% REC
	BLANK				3	<0.20				<0.20	
	CCVS				34	1.04				1.04	
[illegible]	1511.01	NO	A28		5	<0.20	1→10	10ml		<2.0	

Charts

To Page No. ___

Witnessed & Understood by me,	Date	Invented by	Date	211
gc	3/12/87	Recorded by P. Mazierski	3/11/87	

Project No._____

12 Book No._____ TITLE _____

om Page No.__

est Performed: Hg (CONT)
Date Received: 3/11/87
Work Performed By: [illegible]

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From		READ.	CONC.	DF	AMOUNT of SAMPLE	UNITS	FINAL CONC.	
5017	1530.04	NO	A14		30	0.91		100ml	mg/L	0.91	
	1531				11	0.30				0.30	
	1532				223	7.11				7.11	
	1533				★						
	1534				8	0.20				0.20	
	1535				3	<0.20				<0.20	
	1536.05				2	<0.20				<0.20	
	1537				2	<0.20				<0.20	
	1538				3	<0.20				<0.20	
	1539				3	<0.20				<0.20	
	1539.04R				4	<0.20				<0.20	
	+4.0ppb				130	4.12					103% REC
	BLANK				2	<0.20				<0.20	
	CCVS				33	1.01				1.01	
4989	1427.04	NO	FRIDGE B		62	1.94	AV 4.79	.37 g	mg/kg	0.52	AV 1.38
					239	7.63		.34 g		2.24	
	1428.04				26	0.78	AV 0.86	.30 g		0.26	AV 0.27
					31	0.94		.35 g		0.27	
	1429.04				234	7.47	AV 5.14	.33 g		2.26	AV 1.50
					89	2.81		.38 g		0.74	
	1430.04				8	0.20	AV <0.20	.34 g		<0.10	AV <0.10
					6	<0.20		.31 g		<0.10	
	+1.0ppb				33	1.01		.30 g			101% REC
	BLANK				3	<0.20			mg/L	<0.20	
	CCVS				33	1.01				1.01	

Other Charts

To Page No.__

Witnessed & Understood by me.	Date	Invented by	Date	
[illegible]	3/12/87	Recorded by P. Mazierski	3/11/87	212

Project No._____

TITLE _____ Book No._____ 113

m Page No.__

Test Performed: Hg (cont)
Date Received: 3/11/87
Work Performed By: [illegible]

Sec.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From		READ.	CONC.	DF	AMOUNT OF SAMPLE	UNITS	FINAL CONC.	
5007	1495.0107		EP TOX	BILL MAY	2	<0.20	1→4	25ml	µg/L	<0.80	r = 0.9994
	+0.8				17						y = 0.04x - 0.0
	+2.0				52						
	+4.0				99						
	BLANK OEL TK				3	<0.20	1→4	25ml	µg/L	<0.80	r = 0.9996
	+0.8				20						y = 0.04x - 0.07
	+2.0				51						
	+4.0				101						

Other Charts

☆ AERATOR TUBE BROKE UPON INSERTION INTO BOD HOLDING 1533.04
SAMPLE MUST BE RE-RUN.

To Page No.____

Witnessed & Understood by me,	Date	Invented by	Date	
JO	3/12/87	Recorded by P. Mazierski	3/11/87	213

Project No._____

Book No._____ TITLE _____

From Page No.__

Test Performed: SE

Date Received: MARCH 2-3, 1987

Work Performed By: [illegible]

(SEE page 6)

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

CLP FINAL VOLUME = 200.0 ml.

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From No	C	ppb BURN 1	ppb BURN 2	ppb AVG.	C.V.	10.0 ppb SPIKE	% REC	D.F.	Amt. of Sample (GMS)	UNITS	FINAL CONC	PRE-DIG. SPIKE REC
	WS378 #14				8.8				18.9	191			µg/L	8.80	
	Cal Blank				0.4				10.9	109			µg/L	<5.00	
	50.0 ppb				50.1				64.5	144			µg/L	50.1	
4906	PREPBLANK 103				-0.1	0.0	-0.0	/	9.2	92			µg/L	<5.00	
	1032.0403				-5.2	-4.9	-5.1	4.20	-2.1	/		1.04	mg/kg	~~<.961~~	JO
	1033.0403				0.1	0.1	0.1	0.00	8.9	89		1.05	↓	<.952	
	1034.0403				-2.0	-2.8	-2.4	/	4.1	41		1.00		<1.00	
	1035.0403				-1.3	-1.4	-1.4	/	6.5	65		1.02		<.980	
	1035. R1				-0.2	-0.4	-0.3	/	8.2	82		1.02		<.980	
	1035. R1S1				5.1	5.6	5.4	6.61	12.2	68		1.03		1.05	54%
	1036.0403				0.1	0.2	0.1	/	7.7	77		1.05	↓	<.952	
	1037.0403				0.2	-0.1	0.0	/	8.8	88		1.00	mg/kg	<1.00	
	Cal Blank				-0.0	0.1	0.0	/	9.8	98			µg/L	<5.00	
	50.0 ppb				51.0	50.6	50.8	0.56	63.2	124			µg/L	50.8	
4928	PrepBlank 107				0.7	0.1	0.4	/	9.8	98			µg/L	<5.00	
	1110.0403				0.7	0.4	0.5	/	8.6	86		1.05	mg/kg	<.952	
	1111.0403				0.8	0.7	0.7	9.43	7.8	78		~~1.00~~ 1.02	↓	<.980	
	1112.0403				-0.6	-0.0	-0.3	/	6.8	68		~~1.00~~ 1.03		<.971	
	1113.0403				0.7	1.0	0.8	/	4.7	47		1.02		<.980	
	1114.0403				0.2	-0.0	0.1	/	8.5	85		1.03		<.971	
	1115.0403				-0.1	-0.0	-0.1	/	7.7	77		1.00		<1.00	
	1116.0403				-1.2	-1.3	-1.2	5.66	5.7	57		1.01	↓	<.990	
	1117.0403				0.2	0.1	0.1	/	8.8	88		1.03	mg/kg	<.971	
	Cal Blank				-0.5				9.6	96			µg/L	<5.00	
	50.0 ppb				49.6				66.2	166			µg/L	49.6	

To Page No. 11

Witnessed & Understood by me. [signature] Date

Invented by

Recorded by G.C. M.P.

Date 3/2-3/87

Project No. _____

Title _____ Book No. _____

om Page No. 8

Test Performed: Se

Date Received: 3/3/87

Work Performed By: J. Cirka

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	Final Conc
	WS 372 #14				8.7				20.3	116			µg/l	8.70
	Cal Blk				0.1				11.2	112				<5.00
	50.0 ppb				53.8				66.6	128			µg/l	53.8
4906	~~Blk~~ 1032			5	-0.6	-0.9	-0.8	-	11.3	113		1.04	mg/kg	<.962
JO	~~1032~~ ~~CHOD~~			7	-1.1	-1.7	-1.6	-	10.9	109			µg/l	<5.00
	Cal Blk -													
	50.0 ppb				51.3	50.7	51.2	1.2	70.8	—			µg/l	51.2

To Page No. ____

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

Recorded by S. Cirka | 3/3/87

HGA FORM #1

ELEMENT: Se, As, DATE: 3/2-3/87.

S_1 = 25.0 PPB., S_2 = 50.0 PPB.

S_3 = 100.0 PPB, BOOK NO. 287, pp 8-9.

		Se	As
	6,5_01	WS378#14	WS378#3
	X02	Cal Blank	
	X03	50.0 ppb	
	X04	PREP Blank 103 (4906)	
JOB #:	X05	1032.0403	
	X06	1033.	
	X07	1034.	
	X08	1035.	
	X09	1035. R_1	
	X10	1035. R_1S_1	
	X11	1036.	
	X12	1037.	
	X13	Cal Blank	
	X14	50.0 ppb	
	X15	PREP Blank 107 (4928)	
	X16	1110.0403 BA	
	X17	1111. , S_2	
	X18	1112.	
	X19	1113.	
	X20	1114.	
	X21	1115.	
	X22	1116.	
	X23	1117.	
	X24	Cal Blank	
	X25	50.0 ppb	
	X26		
	X27		
	X28		
	X29		
	X30		
	X31		
	X32		
	X33		
	X34		
	X35	, S_3	

As + Spike

501	39.1
502	20.2
503	66.8
504	19.6
505	52.3
506	26.8
507	32.3
508	34.4
509	31.0
510	57.8
511	29.0
512	25.9
513	19.1
514	64.9
515	20.4
516	24.0
517	26.5
518	32.2
519	44.3
520	32.1
521	28.3
522	39.9
523	25.5
524	18.6
525	64.9

recycled paper

ecology and environment

	-0.275	
	0.000	AZ
	0.073	
	25.0	S1
	48.1	C
	50.0	S2
	98.7	C
	100.0	S3
601	8.8	
602	0.4	
603	50.1	
	-0.1	
	0.0	
604	-0.0	AV
	06	ER
	-5.2	
	-4.9	
605	-5.1	AV
	4.20	CV
	0.1	
	0.1	
606	0.1	AV
	0.00	CV
	-2.0	
	-2.8	
607	-2.4	AV
	23.57	CV
	-1.3	
	-1.4	
608	-1.4	AV
	5.24	CV
	-0.2	
	-0.4	
609	-0.3	AV
	47.14	CV
	5.1	
	5.6	
610	5.4	AV
	6.61	CV
	0.1	
	0.2	
611	0.1	AV
	47.14	CV
	0.2	
	-0.1	
612	0.0	AV
	06	ER
	-0.0	
	0.1	
613	0.0	AV
	06	ER
	51.0	
	50.6	
614	50.8	AV
	0.56	CV

615	0.4	AV
	06	ER
	0.7	
	0.4	
616	0.5	AV
	38.57	CV
	0.8	
	0.7	
617	0.7	AV
	9.43	CV
	-0.6	
	-0.0	
618	-0.3	AV
	06	ER
	0.7	
	1.0	
619	0.8	AV
	24.96	CV
	0.2	
	-0.0	
620	0.1	AV
	06	ER
	-0.1	
	-0.0	
621	-0.1	AV
	06	ER
	-1.2	
	-1.3	
622	-1.2	AV
	5.66	CV
	0.2	
	0.1	
623	0.1	AV
	47.14	CV
	[illegible]	
	[illegible]	
[illegible]	[illegible]	AV
	2.61	CV
624	-0.5	
625	49.6	

Set + Spike

601	18.9
602	10.9
603	64.5
604	9.2
605	-2.1
606	8.9
607	4.1
608	6.5
609	8.2
610	12.2
611	7.7
612	8.8
613	9.8
614	63.2
615	9.8
616	8.6
617	7.8
618	6.8
619	4.7
620	8.5
621	7.7
622	5.7
623	8.8
624	9.6
625	66.2

616

615 — BLK 107

614 (50.0 ppb)

613 (Cal Blank)

612 1037

611 1036

610 1035 $R_1 S_1$

609 1035 R_1

608 1035

606 1033

605 1032

604 BLK 103

50.0 ppb

BLANK

EPA 378# 14

100.0 (S_2)

50.0 (S_2)

25.0 (S_1)

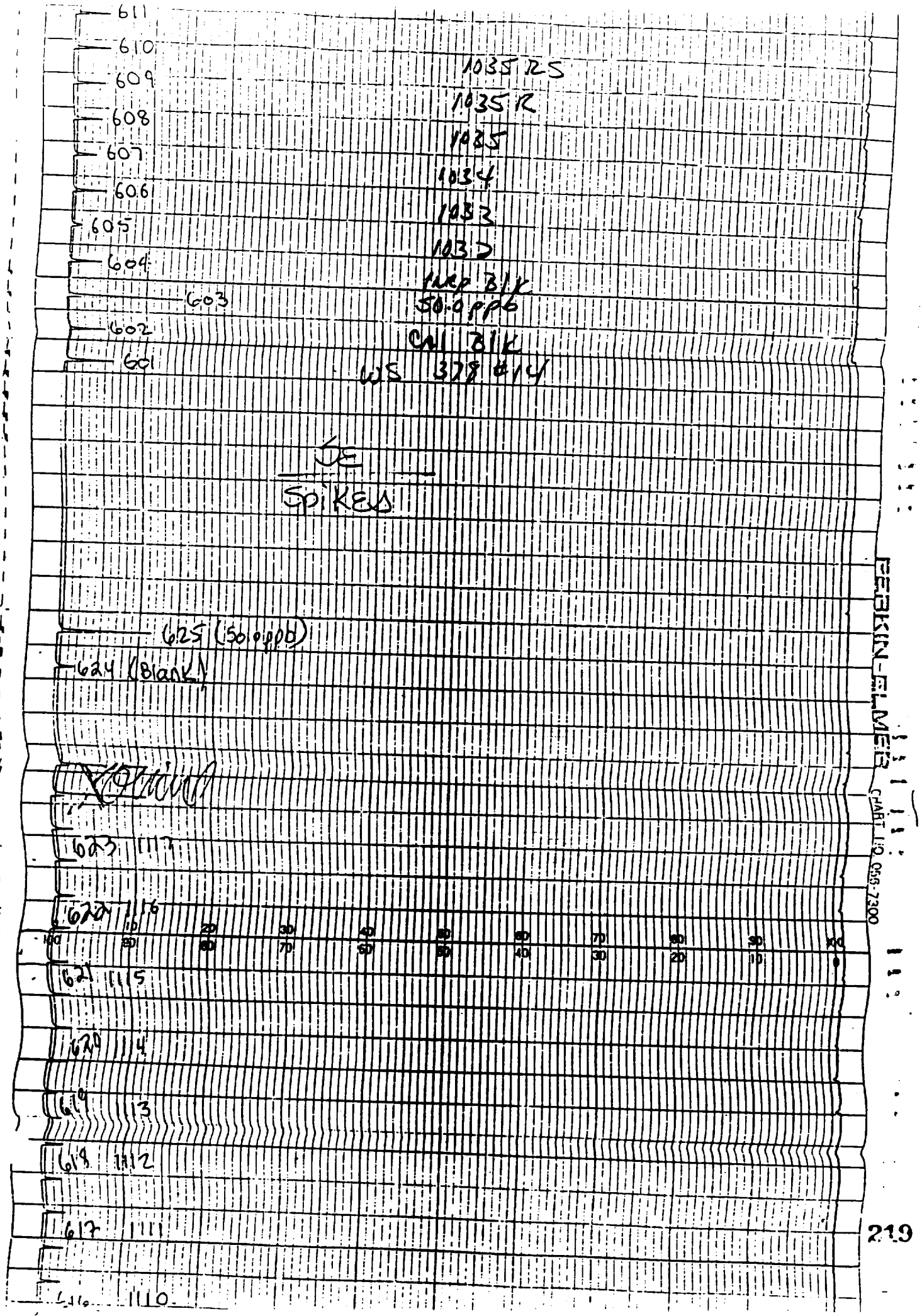
Blank

SE

Jobs: 4906

4928

PERKIN-ELMER CHART NO 050


611
610
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606
605
604
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602
601
1035 RS
1035 R
1035
1034
1033
1032
Inep Blk
50.0 ppb
Cal Blk
WS 378 #14
SE
Spikes
625 (50.0 ppb)
624 (Blank)
623 1117
622 1116
621 1115
620 1114
619 1113
618 1112
617 1111
616 1110
PERKIN-ELMER
CHART NO. 056-7300

50.0 ppb

Cal BLK

WS 308 #3

100 ppb

50.0 ppb

25.0 ppb

BLK

As Jobs 4906, 4928

625

624

623

622

621

620

619

618

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603

602

50.0 ppb
Cal BLK
1117
1116
1115
1114
1113
1112
1111
1110
BLK
50.0 ppb
Cal BLK
1057
1036

PERKIN-ELMER CHART NO. 050-7300

HGA FORM #1

ELEMENT: Se, DATE: 3/3/87.

S_1 = 25.0 PPB., S_2 = 50.0 PPB.

S_3 = 100 PPB, BOOK NO. 237, pg 11.

JOB #:

6_01	WS378#14			
X02	Cal BLK			
X03	50.0ppb			-0.213 C
X04	1032.0403			0.000 AZ
X05	Cal BLK			0.077 C
X06	50.0ppb			25.0 S1
X07				47.4 C
X08				50.0 S2
X09				104.5 C
X10			601	100.0 S3
X11			602	8.7
X12			603	0.1
X13				53.8
X14				-0.6
X15				-0.9
X16			604	-0.8 AV
X17		S_2		28.28 CV
X18				-1.7
X19				-1.5
X20			605	-1.6 AV
X21				8.84 CV
X22				51.8
X23				50.7
X24			606	51.2 AV
X25				1.52 CV
X26				
X27				
X28				
X29				
X30				
X31				
X32				
X33				
X34				
X35		S_3		

601	20.3
602	11.2
603	66.6
604	11.3
605	10.9
606	70.8

recycled paper

ecology and environment

605

604

603

602

601

100 90 80 70 60 50 40 30 20 10 0

606 50.0 ppb

605 Cal Blk

604 1432

50.0 ppb

Cal Blk

W9 378 #14

100

50.0 ppb

25.0 ppb

Blk

Sel

PERKIN-ELMER CHART NO 056-7300

Project No._____
Book No._____ TITLE _____

From Page No.__

Tes. formed: So
Date Received: 3/5/87
Work Performed By: J. Clark

(SEE page 6)

S_1 = 25.0
S_2 = 50.0
S_3 = 100.0

CLP FINAL VOLUME = 200 ml

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From R	C	ppb Burn 1	ppb Burn 2	ppb Burn Ave	CV	10.0 ppb Spike	% Rec	DF	Sump Wgt	Units	Final Conc
	WS378#14				4.7				16.6	89			µg/L	7.70
	Cal Blk				-0.2				7.9	79			µg/L	<5.00
	50.0 ppb				48.7				57.8	91			µg/L	48.7
4936	1154.0103				-2.3	-2.9	-2.6	/	1.7	/		1.03	mg/Kg	[illegible]
	1163.0103				-5.1 ~~-2.9~~	-5.6	-5.3	/	-1.5	/		1.00	↓	/
4943	1186.0103				-10.1 ~~-2.6~~	-10.2	-10.1	/	-9.2	/		1.02	↓	/
	1186.R1				-9.7	-9.2	-9.5	/	-8.7	/		1.00	↓	/
	1186.R1S1				-9.2	-8.4	-8.8	/	-5.9	/		1.03	↓	/
	Blk 116				-0.6	-0.4	-0.5	/	9.2	92			µg/L	<5.00
4952	1219.0103				-8.0	-7.9	-7.9	/	-5.8	/		1.03	mg/Kg	/
	1220.0103				-8.5	-8.7	-8.6	/	-7.1	/		1.02	mg/Kg	/
	Blk 123				0.8	0.0	0.4	/	8.2	82			µg/L	<5.00
4971	1274.0403				0.0	0.5	0.3	/	6.8	68		1.01	mg/Kg	<0.990
	Cal Blk				0.4	0.9	0.6	/	7.1	71			µg/L	<5.00
	50.0 ppb				49.9	47.9	48.9	2.89	51.2	/			µg/L	48.9
	1275.0403				-0.8	-0.4	-0.6	/	7.3	73		1.05	mg/Kg	<0.952
	1275.R1				-0.3	-0.1	-0.2	/	7.7	77		1.07	↓	<0.935
	1275.R1S1				4.8	4.9	4.8	1.46	13.8	90		1.02	↓	<0.980
	1276.0403				-7.5	-6.8	-7.1	/	-4.0	/		1.03	↓	/
	1277.0403				-10.3	-9.9	-10.1	/	-8.3	/		1.01	↓	/
	1278.0403				-0.8	-0.4	-0.6	/	6.9	69		1.00	mg/Kg	<1.00
	Blk 127				1.0	0.3	0.7	/	11.5	115			µg/L	<5.00
	Cal Blk				0.5	0.6	0.5	/	8.3	83			µg/L	<5.00
	50.0 ppb				51.9	54.4	53.1	3.33	61.4	/			µg/L	53.1
4952	1219.0103				~~-6.8~~	~~-7.0~~	-6.9		9.0	90	1 → 10	1.03	mg/Kg	<9.71
	1220.0103				~~-6.8~~	~~-6.8~~	-6.7		9.4	94	1 → 10	1.02	mg/Kg	<9.80

Other Charts

Other Charts

To Page No._____

Witnessed & Understood by me, GO
Date 3/6/87
Invented by
Recorded by G.O. [illegible]
Date 3/5/87

Project No.

TITLE Book No.

Page No.
Test Performed: SE (cont'd)
Date Received: MARCH 5, 1987
Work Performed By:

Job No.	ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From No	C	ppb Burn 1	ppb Burn 2	ppb Avg	C.Y.	10.0 ppb Spike	% Rec	D.F.	Amt. of Sample (Conc)	Units	Final Conc.	FRE DIG. SAC RE
4936	1154.0103					-1.4	-0.6	-1.0	/	9.0	90	1→10	1.03	mg/kg	<9.71	
	1163.0103					-0.3	-0.1	-0.2	/	9.4	94	1→10	1.00	mg/kg	<10.0	
4943	1186.0103					-0.0	0.0	-0.0	/	7.0	70	0.1→10	1.02	mg/kg	<98.0	
	1186.R1					0.3	-0.5	-0.1	/	6.3	63	0.1→10	1.00	mg/kg	<100.0	
	1186.RS1					-1.3	-0.8	-1.0	/	5.9	59	0.1→10	1.03	mg/kg	<97.1	
4971	1276.0403					-5.8	-2.6	-4.2	/	5.0	50	1→10	1.03	mg/kg	<9.71	
	1277.0403					-4.7	-3.8	-4.3	/	5.0	50	1→10	1.01	mg/kg	<9.90	
	Cal Blank					0.0				9.1	91			µg/L	<5.00	
	50.0 ppb					46.0				61.6	/			µg/L	46.0	

Other Clients

To Page No.

Witnessed & Understood by me. Date 3/6/87 Invented by Date 3/5/87

HGA FORM #1

ELEMENT: Se, DATE: 3/5/87.

S_1 = 25.0 PPB., S_2 = 50.0 PPB.

S_3 = 100 PPB, BOOK NO. 287, 22-23.

JOB #:

601	WS 378 #14
X02	Cal Blk
X03	50.0ppb
X04	1154.0103
X05	1163.0103
X06	1186.0103
X07	1186 R1
X08	1186. R1S1
X09	BIK 116
X10	1219.0103
X11	1220.0103
X12	BIK 123
X13	1274.0403
X14	Cal BIK
X15	50.0ppb
X16	1275.0403
X17	1275.R1, S_2
X18	1275.R1S1
X19	1276
X20	1277
X21	1278
X22	BIK 127
X23	Cal BIK
X24	50.0ppb
X25	
X26	
X27	
X28	
X29	
X30	
X31	
X32	
X33	
X34	
X35	, S_3

601	16.6
602	7.9
603	57.8
604	1.7
605	-1.5
606	-9.2
607	-8.7
608	-5.9
609	9.2
610	-5.8
611	-7.1
612	8.2
613	6.8
614	7.1
615	51.2
616	7.3
617	7.7
618	13.8
619	-4.0
620	-8.3
621	6.9
622	11.5
623	8.3
624	61.4

recycled paper

ecology and environment

	-1.4	
	-0.5	
604	-1.0	AV
	66.99	CV
	-0.2	
	-0.1	
605	-0.2	AV
	47.14	CV
	-6.8	
	-7.0	
6[illegible]	-6.9	AV
	2.05	CV
	-6.7	
	-6.8	
6[illegible]	-6.7	AV
	1.05	CV
	-6.9	
	-6.7	
6[illegible]	-6.8	AV
	2.08	CV
	-5.8	
	-2.6	
619	-4.2	AV
	53.87	CV
	-4.7	
	-3.8	
620	-4.3	AV
	14.97	CV
623	0.1	
624	49.9	
6[illegible]0	9.0	
6[illegible]1	9.4	
[illegible]	[illegible]	
[illegible]	[illegible]	
[illegible]	[illegible]	

606	7.0	
607	6.3	
608	5.9	
	-0.0	
	0.0	
606	-0.0	AV
	06	ER
	0.3	
	-0.5	
607	-0.1	AV
	06	ER
	-1.3	
	-0.8	
608	-1.0	AV
	33.67	CV
619	5.0	
[illegible]	[illegible]	
620	5.0	
621	0.0	
622	46.0	
623	9.1	
624	61.6	

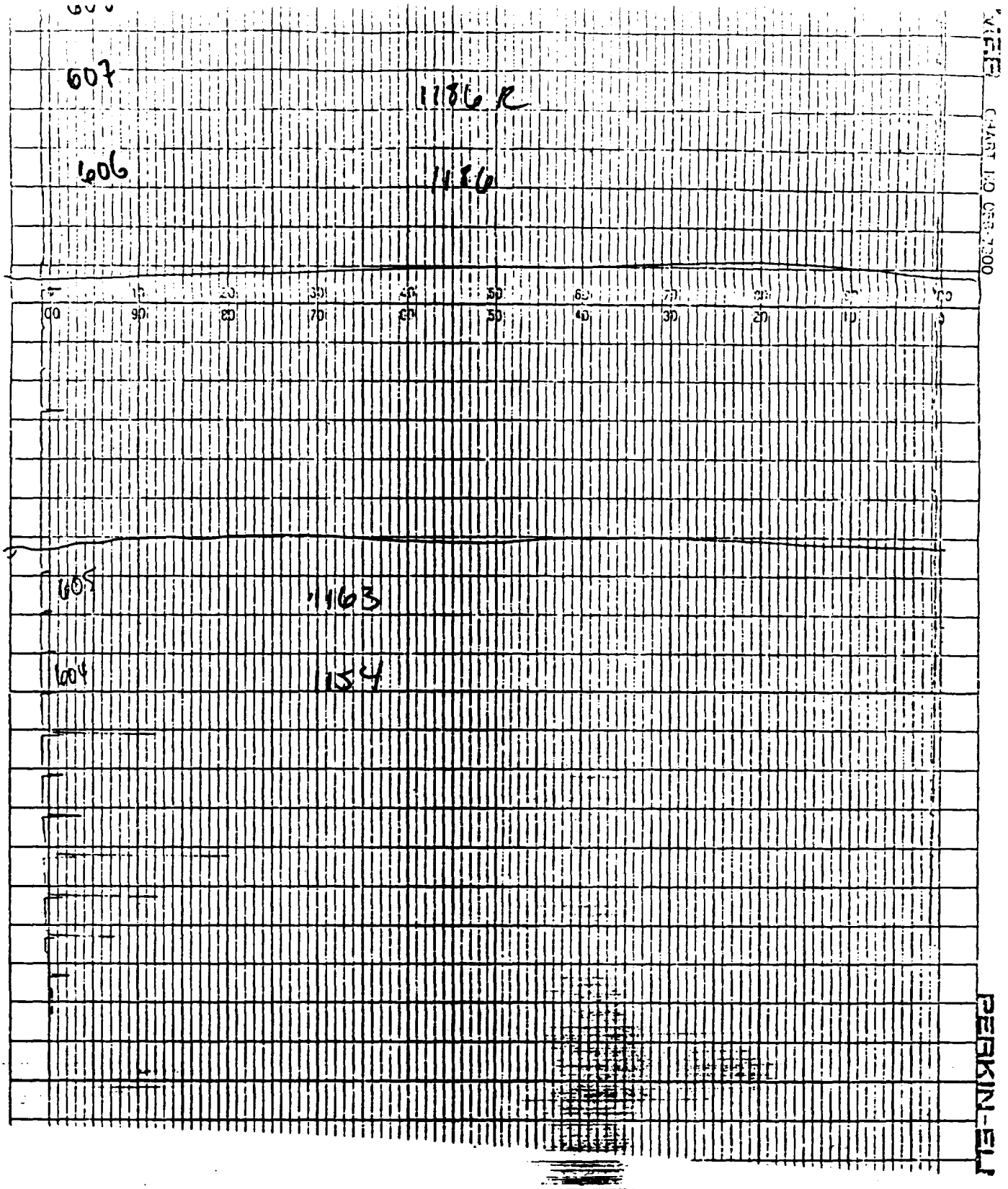
DF=01→10

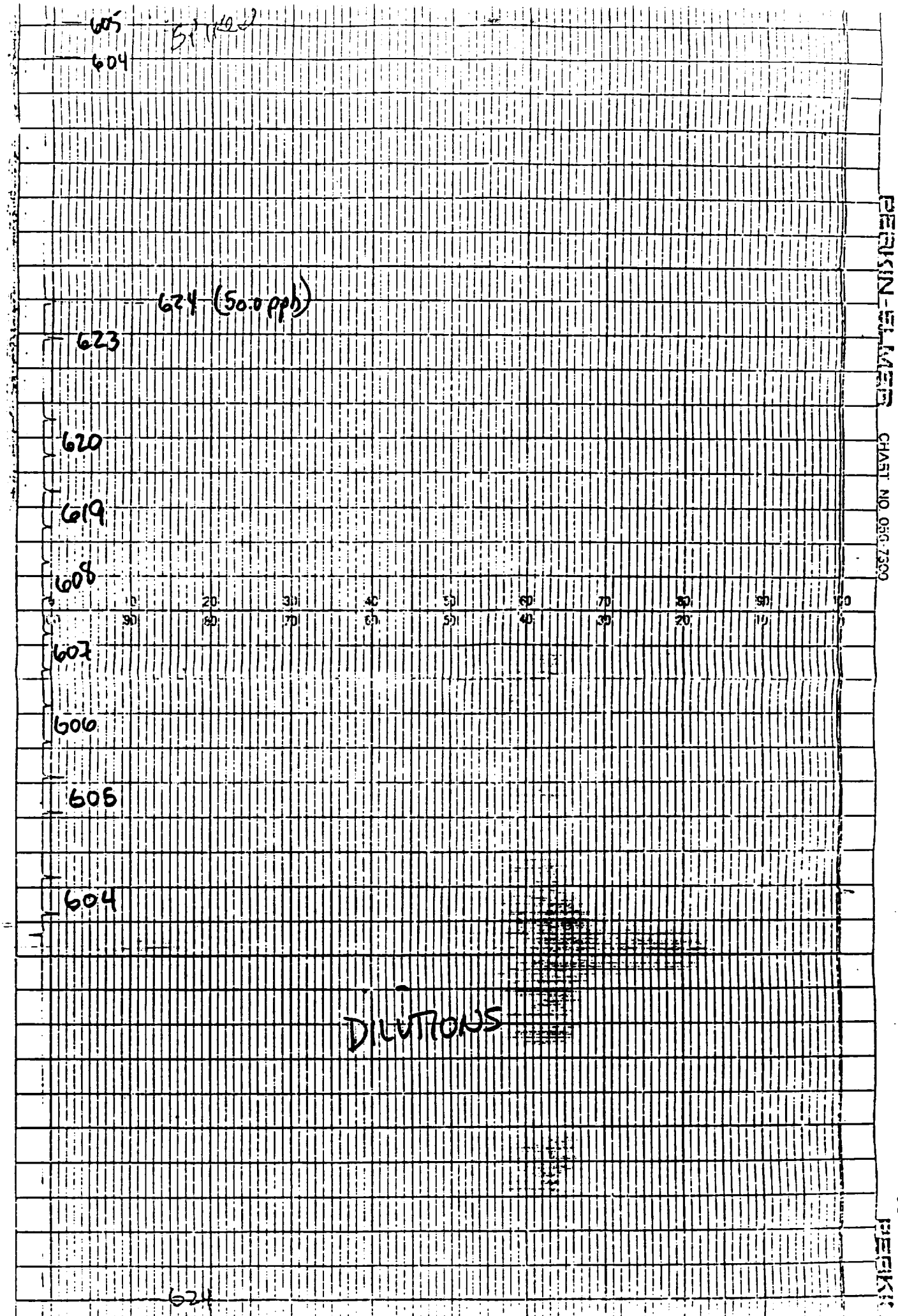
	-0.268	
	[illegible]	AV
	0.069	
	25.0	SI
	47.5	C
	50.0	S2
	99.4	C
	103.0	S3
601	7.7	
602	-0.2	
603	48.7	
	-2.3	
	-2.9	
604	-2.6	AV
	16.32	CV
	-5.1	
	-5.6	
605	-5.3	AV
	6.61	CV
606	-9.7	
607	-9.2	
608	-9.0	
609	0.4	
610	-8.3	
611	-9.5	
612	-1.0	

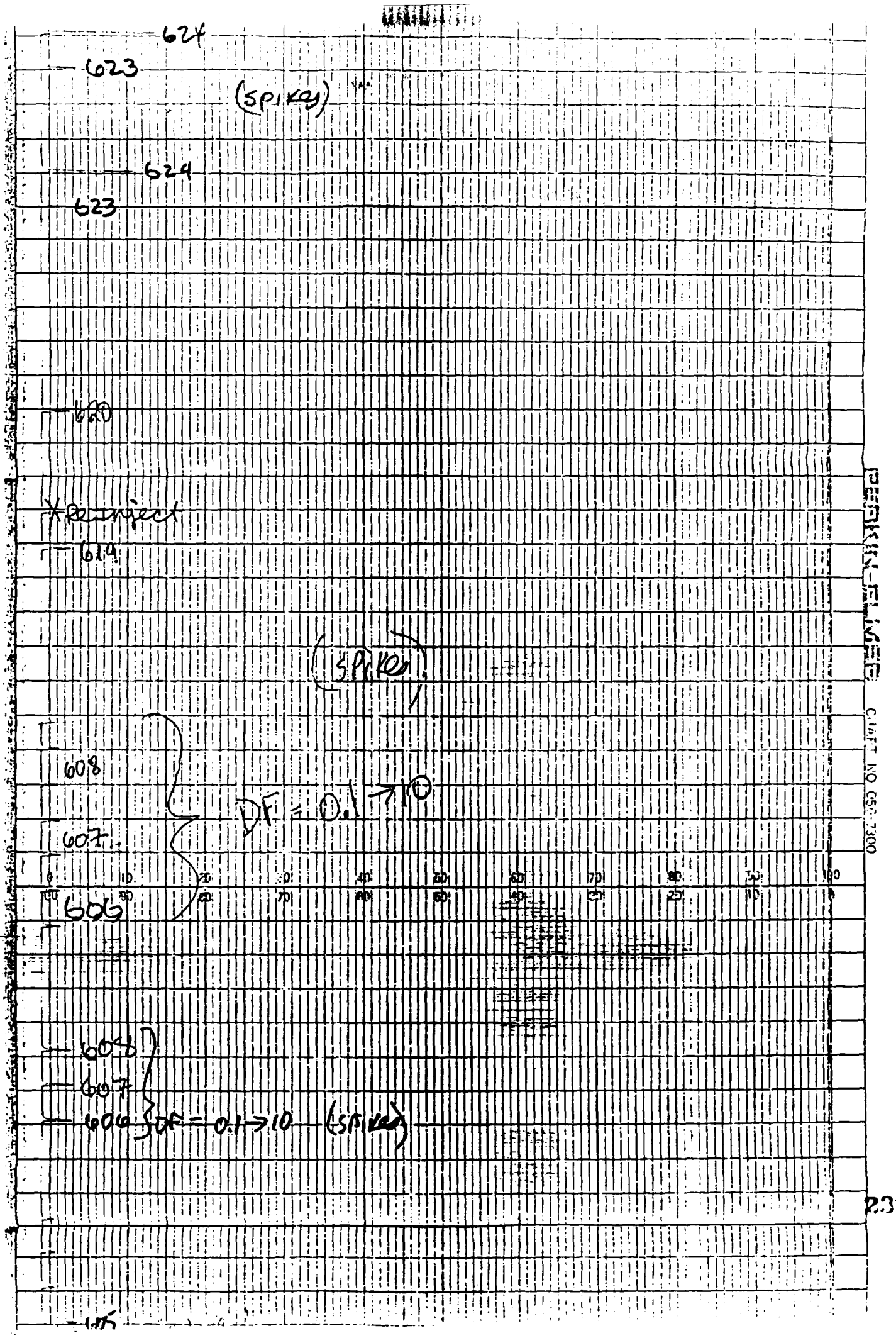
5e

	-10.1	
	-10.2	
606	-10.1	AV
	0.70	CV
	-9.7	
	-9.2	
607	-9.5	AV
	3.74	CV
	-9.2	
	-8.4	
608	-8.8	AV
	6.43	CV
	-0.6	
	-0.4	
609	-0.5	AV
	28.28	CV
	-8.0	
	-7.9	
610	-7.9	AV
	0.89	CV
	-8.5	
	-8.7	
611	-8.6	AV
	1.64	CV
	0.8	
	0.0	
612	0.4	AV
	05	ER
	0.0	
	0.5	
613	0.3	AV
	06	ER
	0.4	
	0.9	
614	0.6	AV
	54.39	CV
	49.9	
	47.9	
615	48.9	AV
	2.89	CV
	-0.8	
	-0.4	
616	-0.6	AV
	47.14	CV
	-0.3	
	-0.1	
617	-0.2	AV
	70.71	CV
	4.8	
	4.9	
618	4.8	AV
	1.46	CV
	-7.5	
	-6.8	
619	-7.1	AV
	6.92	CV
	-10.3	
	-9.9	
620	-10.1	AV
	2.80	CV
	-0.8	
	-0.4	
621	-0.6	AV
	47.14	CV
	1.0	
	0.3	

622	0.7	AV
	75.15	CV
	0.5	
	0.6	
623	0.5	AV
	12.86	CV
	51.9	
	54.4	
624	53.1	AV
	3.33	CV


607
1186 R
606
1186
605
1163
604
1154
PERKIN-ELM


605
604
624 (50.0 ppb)
623
620
619
608
607
606
605
604
DILUTIONS
624
PERKIN-ELMER
CHART NO. 050-7300



PERKIN-ELMER CHART NO 050-7300

Project No._____

TITLE _____ Book No._____

From Page No. 90

Test Performed: Se

Date Received: 3/13/87

Work Performed By: J. OLKA

See pg 6

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	Final Conc	% Rec Pre-1
	WS 378 #14				7.8				19.6	118			ug/l	7.80	
	Cal Blk				0.3				11.0	110				<5.00	
	50.0 ppb				50.2				62.1	119			ug/l	50.2	
4989	1427.0403				1.7	2.4	2.0	–	9.9	99		1.06	mg/kg	<.943	
	1428.0403				-0.5	-0.6	-0.5	–	9.0	90		1.01		<.990	
	1428.R1				-0.2	0.0	-0.1	–	9.7	97		1.01		<.990	
	1429.0403				3.0	2.2	2.6	–	10.7	107		1.04		<.962	
	1429 S1				7.8	7.5	7.7	2.77	14.9	72		1.06		1.45	77%
	1430.0403				0.9	0.7	0.8	–	10.7	107		1.06	mg/kg	<.943	
	Blk 145				0.5	0.3	0.4	–	10.4	104			ug/l	<5.00	
	Cal Blk				-0.6	0.1	-0.3	–	11.3	118				<5.00	
	50.0 ppb				48.5	48.6	48.6	0.15	59.3	115			ug/l	48.6	
4998	1458.0703				21.0	20.2	20.6	2.75	29.7	91	2→10			103	
	1458.Rep				20.0	20.2	20.1	0.70	29.2	91	2→10			101	
	1459.0703				2.3	1.5	1.9	–	10.5	105				<5.00	
	1460.0703				-1.4	-1.5	-1.6	–	6.0	60				<5.00	
	1461.0703				19.6	[illegible]	19.5	0.73	29.9	104	2→10			97.5	
	1464.0703				-1.1	-1.1	-1.1	0.00	9.5	95				<5.00	
	Blk 149				-1.3	-1.2	-1.2	–	10.7	107				<5.00	
	Cal Blk				-0.7	-0.6	-0.7	–	11.3	113				<5.00	
	50.0 ppb				48.7	48.4	48.6	0.73	60.4	118			ug/l	48.6	

Other Clients

To Page No. 92

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

Recorded by C. C. [illegible] | 3/12/87

HGA FORM #1

ELEMENT: Se, DATE: 3/12/87.

S_1 = 25.0 PPB., S_2 = 50.0 PPB.

S_3 = 100 PPB, BOOK NO. 257, pg 41.

JOB #:

6_01	WS 373#14
X02	Cal BLK
X03	50.0ppb
X04	1427.0403
X05	1428.
X06	1428. R1
X07	1429
X08	1429. S1
X09	1430.
X10	BLK 145
X11	Cal BLK
X12	50.0ppb
X13	1458.0703 (2→10)
X14	1458. R1 (2→10)
X15	1459.0703
X16	1460.0703
X17	1461.0703 (2→10), S_2
X18	1464.0103
X19	BLK 149
X20	Cal BLK
X21	50.0ppb
X22	
X23	
X24	
X25	
X26	
X27	
X28	
X29	
X30	
X31	
X32	
X33	
X34	
X35	, S_3

ATTACH TAPE HERE

601	19.6	
602	11.0	
603	52.1	C
604	9.9	
605	9.0	
606	9.7	
607	10.7	
608	14.9	
609	10.7	
610	10.4	
611	11.8	
612	59.8	C
613	29.7	
614	29.2	
615	10.5	
616	6.0	
617	29.9	
618	9.5	
619	10.7	
620	-12.7	
620	11.3	
621	50.4	C

recycled paper

ecology and environment

Se

	-0.325	C
	0.000	AZ
	0.358	C
	25.0	S1
	50.1	C
	50.0	S2
	93.7	C
	12	ER
601	7.8	
602	0.3	
603	50.2	
	1.7	
	2.4	
604	2.0	AV
	24.15	CV
	-0.5	
	-0.6	
605	-0.5	AV
	12.86	CV
	-0.2	
	0.0	
606	-0.1	AV
	06	ER
	3.0	
	2.2	
607	2.6	AV
	21.76	CV
	7.8	
	7.5	
608	7.7	AV
	2.77	CV
	0.9	
	0.7	
609	0.8	AV
	17.68	CV
	0.5	
	0.3	
610	0.4	AV
	35.35	CV
	-0.6	
	0.1	
611	-0.3	AV
	06	ER
	48.5	
	48.6	
612	48.6	AV
	0.15	CV
	21.0	
	20.2	
613	20.6	AV
	2.75	CV
	20.0	
	20.2	
614	20.1	AV
	0.70	CV
	2.3	
	1.5	
615	1.9	AV
	29.77	CV
	-1.4	
	-1.8	
616	-1.6	AV
	17.68	CV
	19.6	
	19.4	
617	19.5	AV
	0.73	CV
	-1.1	
	-1.1	
618	-1.1	AV
	0.00	CV
	-1.3	
	-1.2	
619	-1.2	AV
	5.66	CV
	-0.7	
	-0.6	
620	-0.7	AV
	10.88	CV
	48.9	
	48.4	
621	48.6	AV
	0.73	CV

617 1461

616 1460

615 1459

614 1458R

613 1458

612 50.0ppb

611 CAL BLK

610 BLK

609 1430

608 1429S

607 1429

606 1428R

605 1428

604 1427

50.0ppb

BLK

WS378 #1A

100

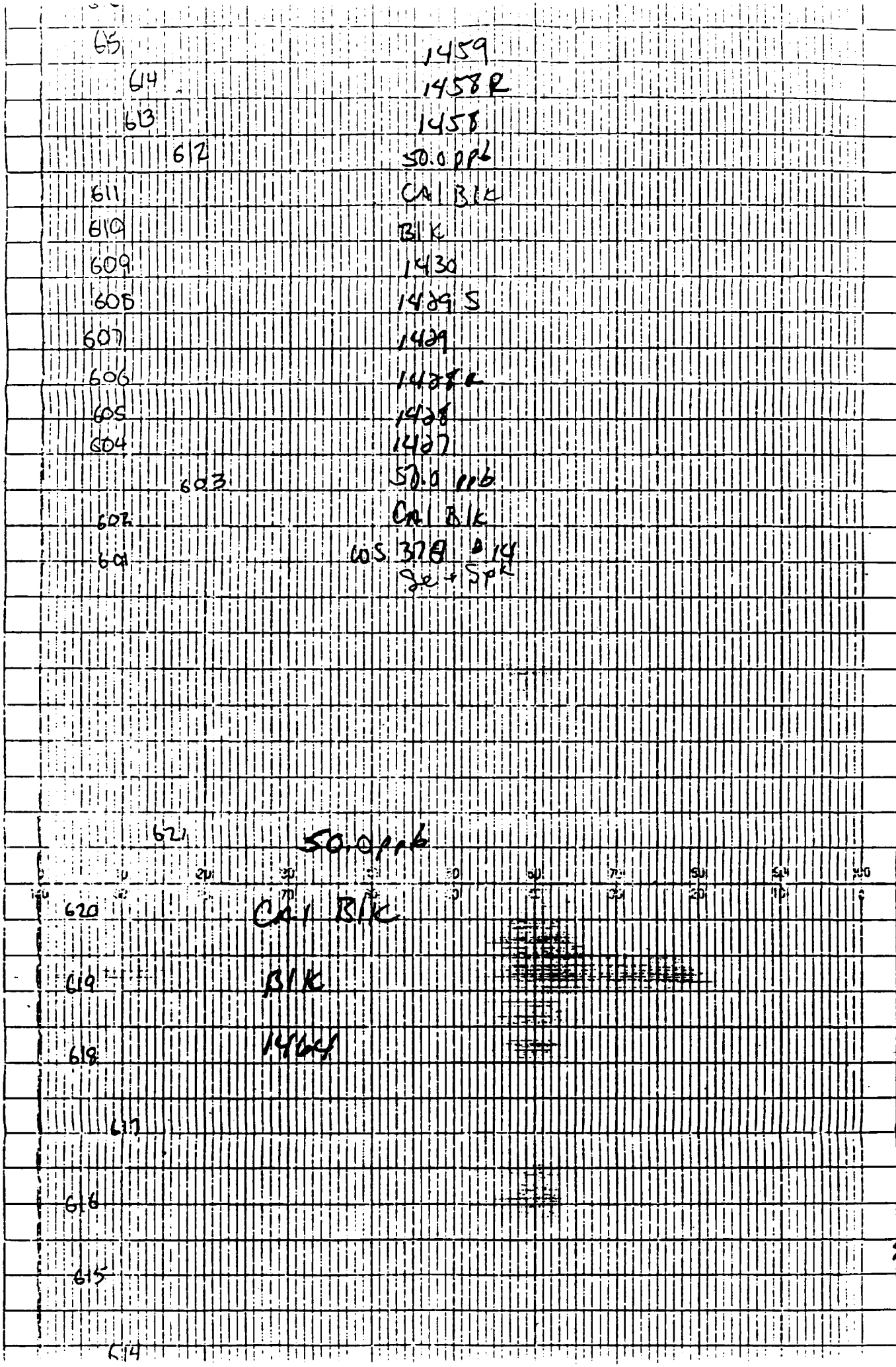
50

25

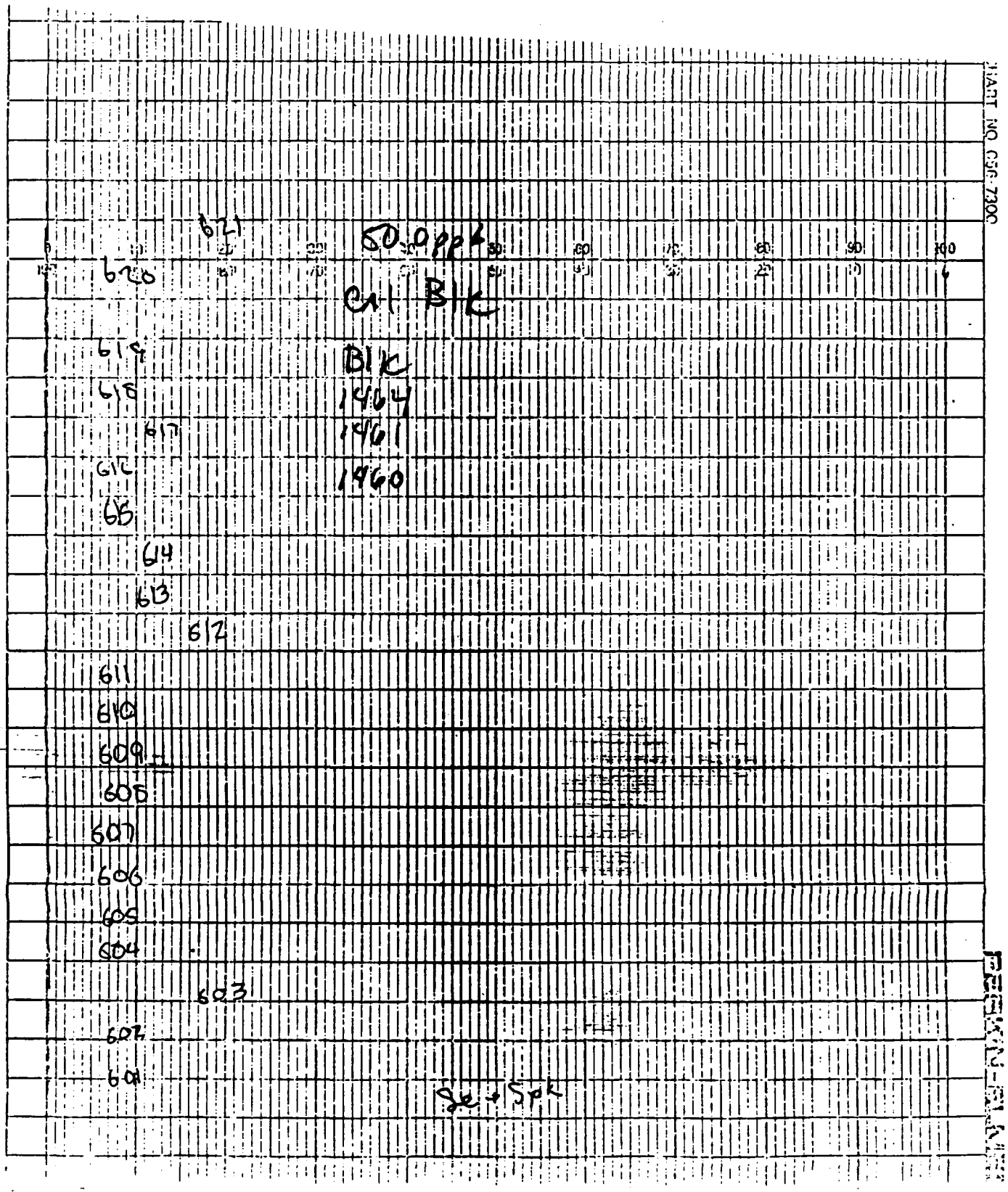
BLK

Se # 4989

PERKIN-ELMER CHART NO. C56-7300



PERKIN-ELMER CHART NO. 050-7300



621
50.0 ppb
620
Cal Blk
619
Blk
618
1464
617
1461
616
1460
615
614
613
612
611
610
609
608
607
606
605
604
603
602
601
Se + Spk

Project No. ____
Book No. ____ TITLE ____

m Pa No. ____
: Performed: Tl
e Received: MARCH 3, 1987
k Performed By: [illegible]

λ = 276.8
ENERGY = 59
TIME = 5.0 SEC.

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

SEE Log book #126 for STD. COND

CLP FINAL VOLUME = 200 ml

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From No	C	ppb BURN 1	ppb BURN 2	ppb Avg	C.V	20.0 ppb SPIKE	% REC	D.F.	Amt of SAMPLE (GMS)	UNITS	FINAL CONC	PRE DIG SPIKE REC
	WP1183(II)#1				24.5	25.2	24.9	1.99	47.2	112			µg/L	24.9	
	Cal Blank				0.1	-0.0	0.0	/	20.2	101			µg/L	<10.0	
	50.0 ppb				52.2	51.0	51.6	1.64	71.9	102			µg/L	51.6	
	PrepBlank 103				-0.2	-0.1	-0.2	/	21.2	106			µg/L	<10.0	
906	1032.0403				1.7	2.0	1.8	/	20.1	101		1.04	mg/kg	<1.92	
	1033.0403				0.1	0.4	0.2	/	19.3	97		1.05		<1.90	
	1034.0403				0.3	-0.2	0.0	/	20.8	104		1.00		<2.00	
	1035.0403				0.4	0.5	0.5	/	20.2	101		1.02		<1.96	
	1035.0403 R1				0.2	0.2	0.2	0.00	19.6	98		1.02		<1.96	8.66
	1035. R1S1				44.5	44.6	44.6	0.16	70.9	/		1.03		~~<1.94~~	89% 4.8
	1036.0403				-0.3	0.0	-0.1	/	19.8	99		1.05		<1.90	
	1037.0403				-0.1	0.0	-0.1	/	21.1	106		1.00	mg/kg	<2.00	
	Cal Blank				0.0	-0.6	-0.3	/	20.5	103			µg/L	<10.0	
	50.0 ppb				48.0				72.6	/			µg/L	48.0	
4928	1110.0403				-0.1	0.4	0.2	/	21.2	106		1.05	mg/kg	<1.90	
	1111.0403				0.3	0.0	0.2	/	19.9	100		1.02		<1.96	
	1112.0403				0.4	0.5	0.4	/	20.0	100		1.03		<1.94	
	1113.0403				0.4	0.7	0.6	/	20.4	102		1.02		<1.96	
	1114.0403				0.5	0.6	0.6	/	21.1	106		1.03		<1.94	
	1115.0403				0.2	0.3	0.2	/	21.0	105		1.00		<2.00	
	1116.0403				0.6	0.7	0.7	/	22.1	111		1.01		<1.98	
	1117.0403				0.1	0.1	0.1	0.00	19.6	98		1.03	mg/kg	<1.94	
	Cal Blank				-0.1	-0.1	-0.1	0.00	21.0	105			µg/L	<10.0	
	50.0 ppb				48.1	48.1	48.1	0.00	74.8	/			µg/L	48.1	
	PrepBlank082				-0.1	-0.2	-0.1	/	22.6	113			µg/L	<10.0	
4872	0900.0403				1.0 ~~0.1~~	1.2	1.1	12.86	23.0	115		1.02	mg/kg	<1.96	
	0900. R2				0.8	0.7	0.8	9.43	19.6	98		1.01		<1.98	
	0900. R2S2				52.5	51.9	52.2	0.81	75.7	118		1.04	mg/kg	10.0	104%

To Page No. 13

Witnessed & Understood by me. [signature] | Date | Invented by | Date 3/4/87 | Recorded by G.O.M.P.

Project No.

TITLE Book No. 13

From Page No. 12

Test Performed: Tl (CONT'D)

Date Received: MARCH 3, 1987

Work Performed By: [illegible]

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From No	C	ppb BURN 1	ppb BURN 2	ppb Avg	C.V.	20.0 ppb SPIKE	% REC	D.F.	Amt of SAMPLE (GMS.)	UNITS	FINAL CONC	PRE DIG SPIKE REC.
4872	0901.0403				-0.0	-0.3	-0.2	/	19.2	96		1.04	mg/kg	<1.92	
	Cal Blank						0.0	/	19.8	99			µg/l	<40.0	
	50.0 ppb				48.4	48.3	48.3	0.15	86.1	/			µg/l	48.3	

Other Charts

To Page No.

Witnessed & Understood by me, | Date | Invented by | Date 3/3-4/87

Recorded by J.O.M.P.

229

HGA FORM #1

ELEMENT: Tl, DATE: 3/3/87.

S_1 = 25.0 PPB., S_2 = 50.0 PPB.

S_3 = 100.0 PPB, BOOK NO. 287, pg 12-13.

ATTACH TAPE HERE

JOB #:		
	401	WP 1183 (II) #1
	X02	Cal Blank
	X03	50.0 ppb
	X04	PREP Blank 0103 (4906)
	X05	1032.0403
	X06	1033.
	X07	1034.
	X08	1035.
	X09	1035. R_1
	X10	1035. R_1S_1
	X11	1036.
	X12	1037.
	X13	Cal Blank
	X14	50.0 ppb
	X15	1110.0403 A (4928)
	X16	1111.
	X17	1112. S_2
	X18	1113.
	X19	1114.
	X20	1115.
	X21	1116.
	X22	1117.
	X23	Cal Blank
	X24	50.0 ppb
	X25	PREP BLANK 082 (4872)
	X26	0900.0403
	X27	0900. R_2
	X28	0900. R_2S_1
	X29	0901.
	X30	Cal Blank
	X31	50.0 ppb
	X32	
	X33	
	X34	
	X35	S_3

401	47.2
402	20.2
403	71.9
404	21.2
405	20.1
406	19.3
407	20.8
408	20.2
409	19.6
410	70.9
411	19.8
412	21.1
413	20.5
414	72.6
415	21.2
416	19.9
417	20.0
418	20.4
419	21.1
420	21.0
421	22.1
422	19.6
423	21.0
424	74.8
425	22.6
426	23.0
427	19.6
428	75.7
429	19.2
430	19.8
431	96.1

recycled paper

ecology and environment

	-0.021	
	-0.020	
	-0.021	AV
	3.45	CV
	0.000	AZ
	0.069	
	0.069	
	0.069	AV
	0.00	CV
	25.0	S1
	46.8	C
	45.1	C
	46.5	AV
	1.07	CV
	50.0	S2
	101.8	C
	99.2	C
	100.5	AV
	1.83	CV
	100.0	S3
	24.5	
	25.2	
401	24.9	AV
	1.99	CV
	0.1	
	-0.0	
402	0.0	AV
	06	ER
	52.2	
	51.0	
403	51.6	AV
	1.64	CV
	-0.2	
	-0.1	
404	-0.2	AV
	47.14	CV
	1.7	
	2.0	
405	1.8	AV
	11.47	CV
	0.1	
	0.4	
406	0.2	AV
	84.85	CV
	0.3	
	-0.2	
407	0.0	AV
	06	ER
	0.4	
	0.5	
408	0.5	AV
	15.71	CV
	0.2	
	0.2	
409	0.2	AV
	0.00	CV
	44.5	
	44.6	
410	44.6	AV
	0.16	CV
	-0.3	
	0.0	
411	-0.1	AV
	06	ER
	-0.1	
	0.0	
412	-0.1	AV
	06	ER
	0.0	
	-0.6	
413	-0.3	AV
	06	ER
	0.8	
	0.8	
414	[illegible]	AV
	0.00	CV
	-0.1	
	-0.0	
415	-0.0	AV
	06	ER
414	46.9	
414	48.0	
	-0.1	
	-0.4	
415	-0.2	AV
	06	ER
	-0.3	
	0.0	
416	0.2	AV
	06	ER
	0.4	
	0.5	
417	0.4	AV
	15.71	CV
	0.4	
	0.7	
418	0.6	AV
	38.57	CV
	0.5	
	0.6	
419	0.6	AV
	12.86	CV
	0.2	
	0.3	
420	0.2	AV
	28.28	CV
	0.6	
	0.7	
421	0.7	AV
	10.88	CV
	0.1	
	0.1	
422	0.1	AV
	0.00	CV
	-0.1	
	-0.1	
423	-0.1	AV
	0.00	CV
	48.1	
	48.1	
424	48.1	AV
	0.00	CV
	-0.1	
	-0.2	
425	-0.1	AV
	47.14	CV
	1.0	
	1.2	
426	1.1	AV
	12.86	CV
	0.8	
	0.7	
427	0.8	AV
	9.43	CV
	52.5	
	51.9	
428	52.2	AV
	0.81	CV
	-0.0	
	-0.3	
429	-0.2	AV
	06	ER
	0.2	
	-0.2	
430	-0.0	AV
	06	ER
	48.4	
	48.3	
431	48.3	AV
	0.15	CV

415 1110

414 50.0 ppb

X Omit

X 414 Omit

410 1035 R, S

403 (50.0 ppb)

402 Cal Blk

401 (EPA 1283(II)#1)

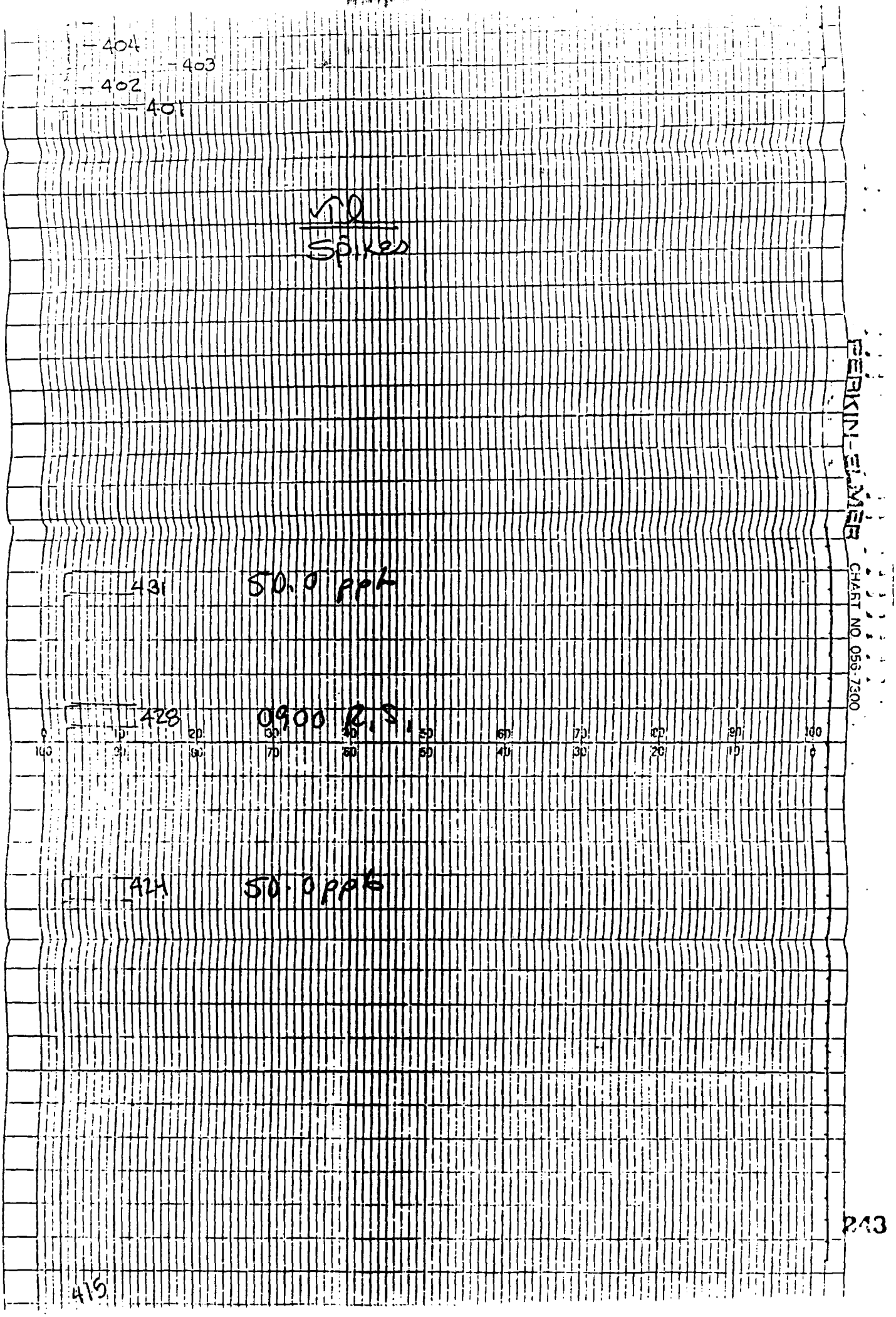
100.0 ppb (S3)

50.0 ppb (S2)

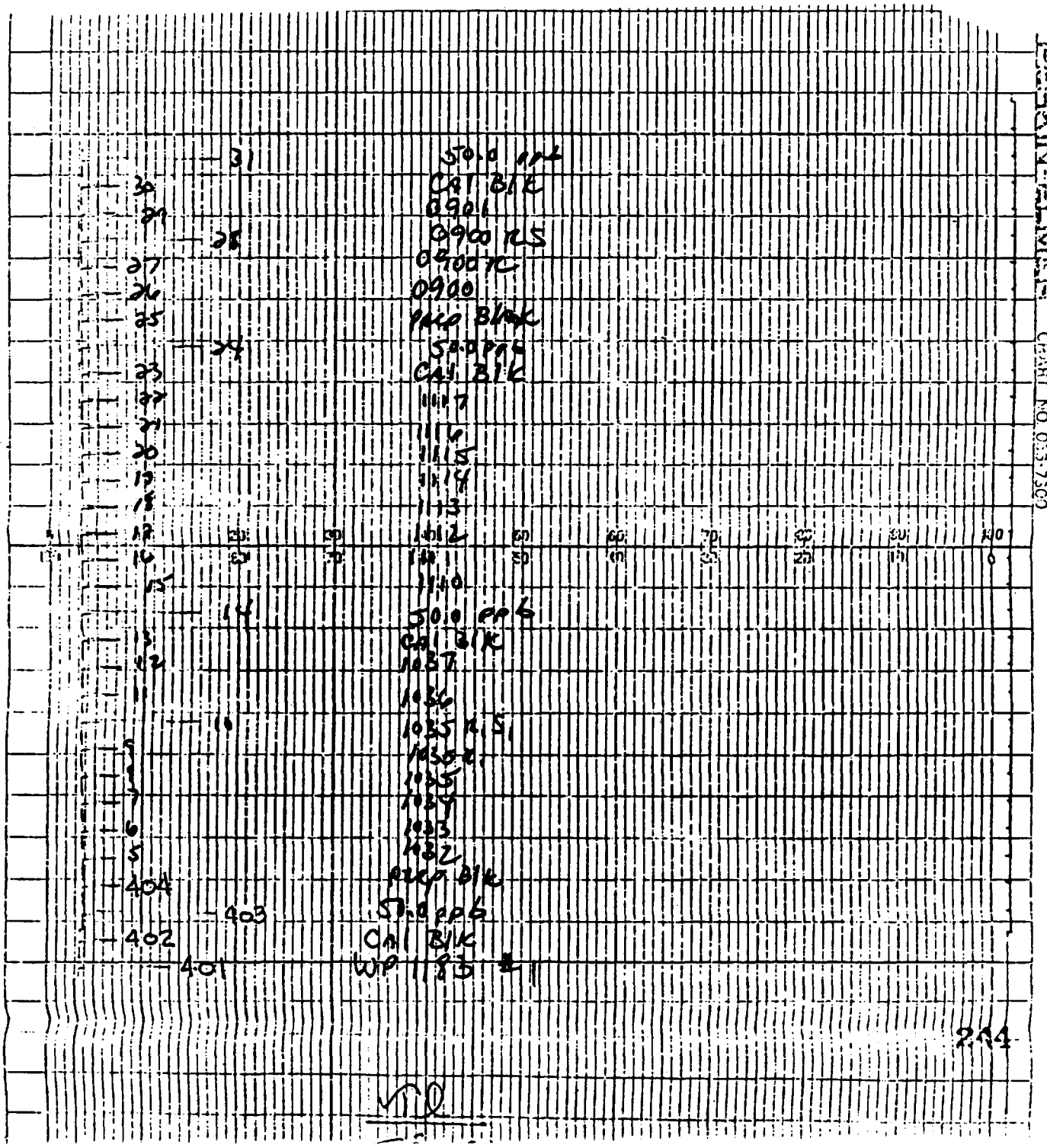
25.0 ppb (S1)

BLANK

PERKIN-ELMER CHART NO. C56-7300



PERKIN-ELMER CHART NO 056-7300


PERKIN-ELMER
CHART NO. 013-7300
31
50.0 ppb
30
Cal Blk
29
0901
28
0900 RS
27
0900 R
26
0900
25
Prep Blank
24
50.0 ppb
23
Cal Blk
22
1117
21
1116
20
1115
19
1114
18
1113
17
1112
16
1110
15
14
50.0 ppb
13
Cal Blk
12
1037
11
1036
10
1035 R1 S1
9
1035 R1
8
1035
7
1034
6
1033
5
1032
404
Prep Blk
403
50.0 ppb
402
Cal Blk
401
WP 1183 #1
244

Project No._____

Book No._____ TITLE _____

From Page No.__

Te: formed: TI

Date Received: 3/5-6/87

Work Performed By: J.C.M.P.

S 22 pg 12

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	Unit	Final Conc
	WP1183#1				23.2	22.7	22.9	1.54	44.4	103			µg/l	22.9
	Cal Blk				-0.1	0.1	0.0	-	20.8	104				<10.0
	50.0 ppb				46.2	46.1	46.1	0.15	64.9	94			µg/l	46.1
4936	1154.0103				0.1	0.2	0.1	-	20.0	100		1.03	mg/kg	~~<2.00~~ 1.04
	1163.0103				-0.2	0.2	0.0	-	~~17.9~~ 21.1 Jo	106		1.00		<2.00
4943	1186.0103				0.2	0.1	0.1	-	17.4	87		1.02		<1.96
	1186.K1				0.2	-0.0	0.1	-	20.2	101		1.00		<2.00
	1186.0103K1				0.1	0.1	0.1	-	19.3	97		1.03	mg/kg	<1.94
	Blk 116				0.1	0.0	0.0	-	18.3	94			µg/l	<10.0
4952	1219.0103				0.2	0.1	0.2	-	16.4	82		1.03	mg/kg	<1.94
	1220.0103				0.0	0.1	0.1	-	17.4	87		1.02		<1.96
	~~Jo~~ Blk 123				0.2	-0.0	0.1	-	16.5	83			µg/l	<10.0
4971	1274.0403				1.1	0.9	1.0	-	18.4	92		1.01	mg/kg	<1.93
	Cal Blk				0.0	0.0	0.0	-	16.8	84			µg/l	<10.0
	50.0 ppb				53.5	53.9	53.7	0.53	62.2	/			µg/l	53.7
	1275.0403				1.1	1.3	1.2	-	17.6	88		1.05	mg/kg	<1.90
	1275.K1				1.0	0.9	1.0		18.0	90		1.07		<1.87
	1275.K1S1				52.3	52.6	52.5	0.40	60.2	/		1.02	10.3	~~<1.96~~ Jo 105.2
	1276.0403				2.9	3.2	3.1	6.96	21.5	108		1.03		<1.94
	1277.0403				2.2	2.5	2.3	9.05	17.5	88		1.01		<1.98
	1278.0403				0.2	0.1	0.2		17.1	86		1.00	mg/kg	<2.00
	Blk 127				-0.1	-0.1	-0.1		20.5	104			µg/l	<10.0
	Cal Blk				0.1	-0.2	-0.0		18.3	92				<10.0
	50.0 ppb				54.0	54.3	54.2		63.2	/			µg/l	54.2

Other Clients

To Page No.____

Witnessed & Understood by me.	Date	Invented by	Date
JC	3/7/87	Recorded by J C [illegible]	3/6/87

HGA FORM #1

ELEMENT: Tl , DATE: 3/5/87 .

S_1 = 25.0 PPB., S_2 = 50.0 PPB.

S_3 = 100 PPB, BOOK NO. 287 , pg 74 .

ATTACH TAPE HERE

JOB #:

X01	WP 1183 #1
X02	Cal BLK
X03	50.0 ppb
X04	1154.0103
X05	1163.0103
X06	1186.0103
X07	1186. R_1
X08	1186. R_1S_1
X09	BLK 116
X10	1219.0103
X11	1220.0103
X12	BLK 123
X13	1274.0403
X14	Cal BLK
X15	50.0 ppb
X16	1275.0403
X17	1275. R_1 , S_2
X18	1275. R_1S_1
X19	1276.0403
X20	1277
X21	1278
X22	BLK 127
X23	Cal BLK
X24	50.0 ppb
X25	
X26	
X27	
X28	
X29	
X30	
X31	
X32	
X33	
X34	
X35	, S_3

401	44.4	
402	~~29.8~~	
403	64.9	C
404	20.0	
~~405~~	~~24.4~~	
406	17.4	
~~407~~	~~24.9~~	
~~408~~	~~24.0~~	
~~409~~	~~23.6~~	
405	21.1	
~~466~~	~~14.4~~	
407	20.2	
408	19.3	
409	18.8	
410	16.4	
411	17.4	
412	16.5	
413	18.4	
414	16.8	
415	62.2	C
416	17.6	
417	18.0	
418	60.2	C
419	21.5	
420	17.5	
421	17.1	
422	20.8	
423	18.3	
424	63.2	C

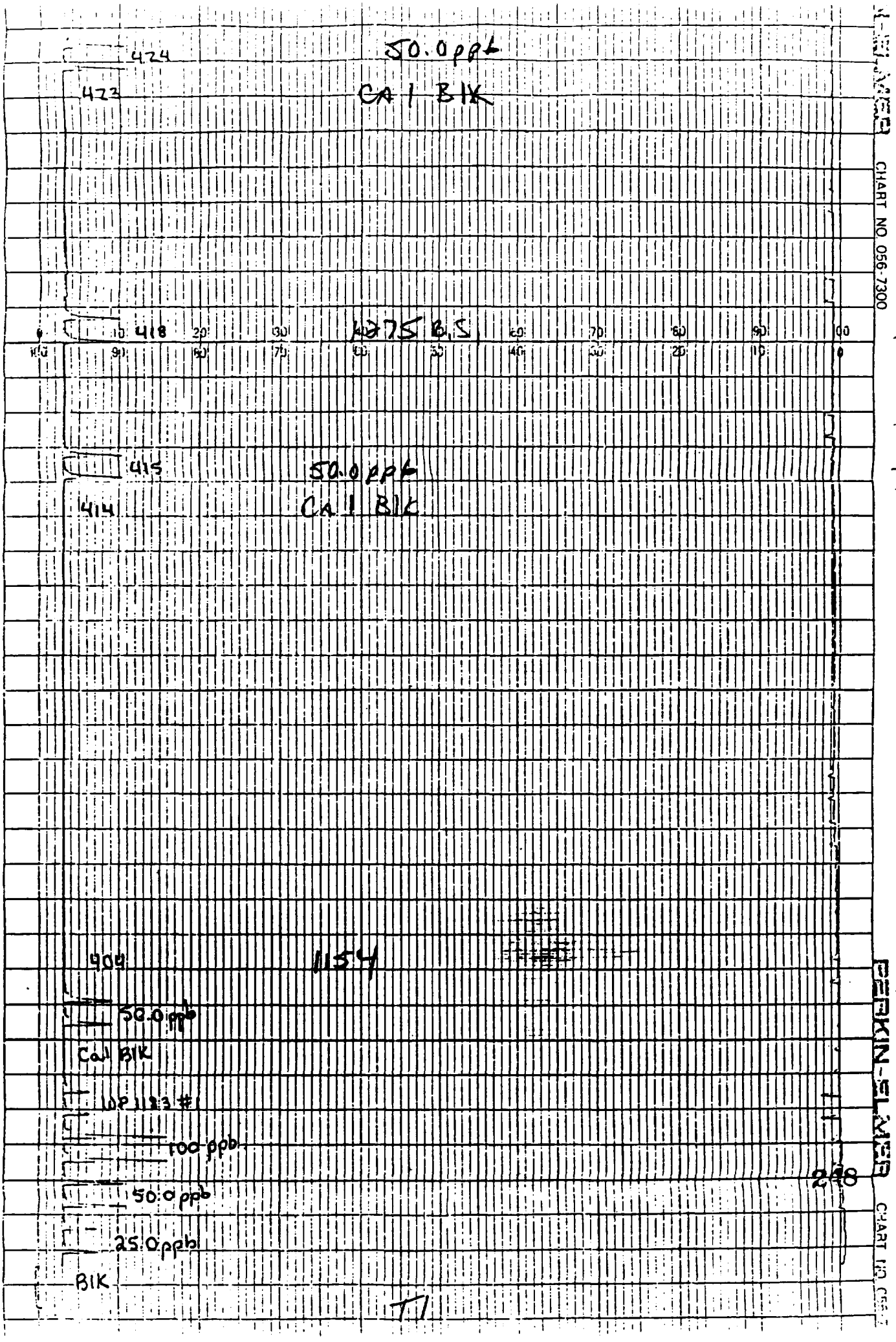
recycled paper

ecology and environment

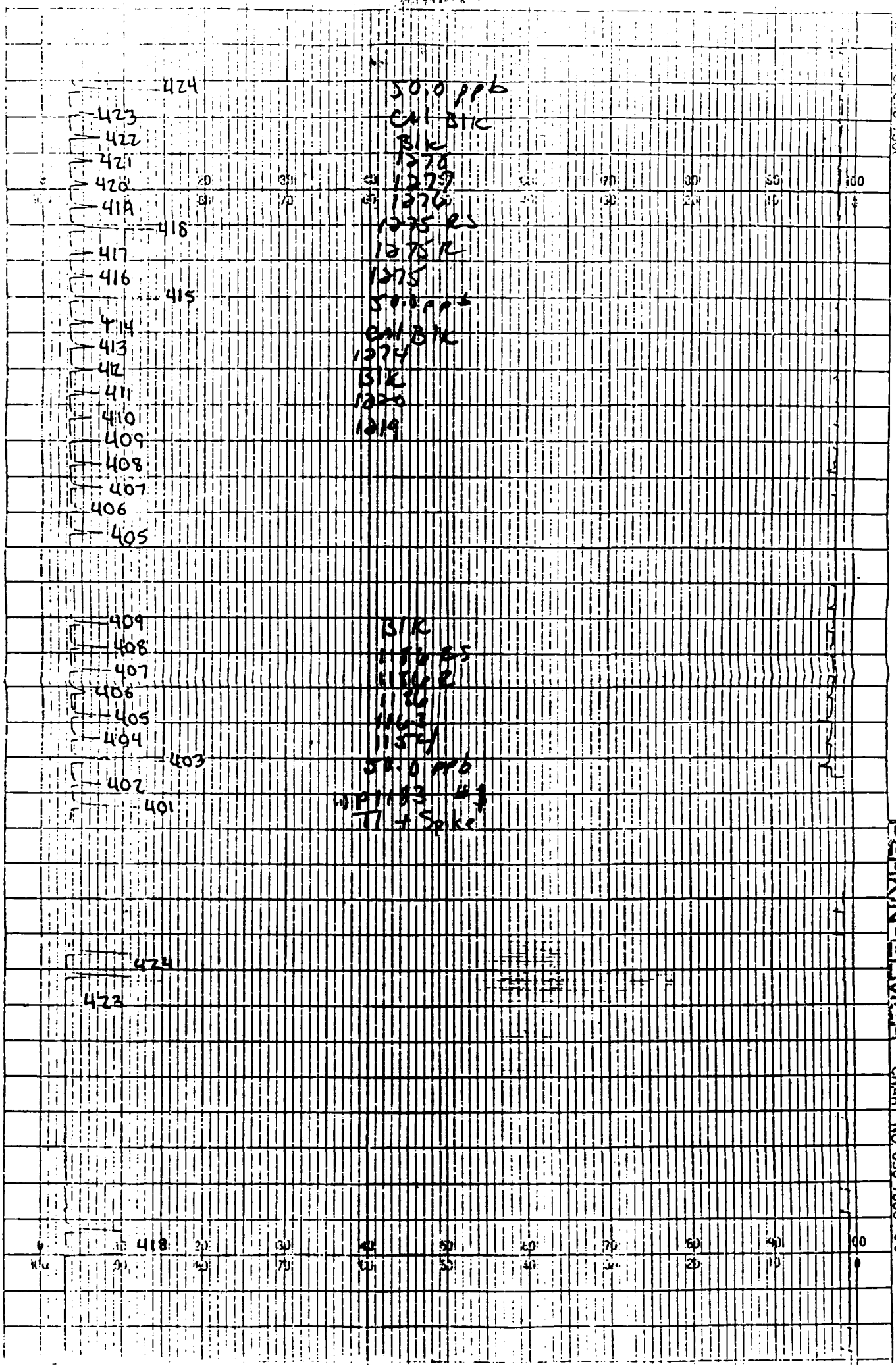
T1

	-0.336	
	-0.336	
	-0.336	AV
	0.00	CV
	0.000	A2
	0.094	
	0.096	
	0.095	AV
	1.49	CV
	25.0	S1
	47.0	C
	47.6	C
	47.4	AV
	1.19	CV
	50.0	S2
	103.1	C
	103.3	C
	103.2	AV
	0.14	CV
	100.0	S3
	23.2	
	22.7	
401	22.9	AV
	1.54	CV
	-0.1	
	0.1	
402	0.0	AV
	06	ER
	46.2	
	46.1	
403	46.1	AV
	0.15	CV
	0.1	
	0.2	
404	0.1	AV
	47.14	CV
	-0.2	
	0.2	
405	0.0	AV
	06	ER
	0.2	
	0.1	
406	0.1	AV
	47.14	CV
	0.2	
	-0.0	
407	0.1	AV
	06	ER
	0.1	
	0.1	
408	0.1	AV
	0.00	CV
	0.1	
	0.0	

409		
	06	ER
	0.2	
	0.1	
410	0.2	AV
	47.14	CV
	0.0	
	0.1	
411	0.1	AV
	06	ER
	0.2	
	-0.0	
412	0.1	AV
	06	ER
	1.1	
	0.9	
413	1.0	AV
	14.14	CV
	0.0	
	0.0	
414	0.0	AV
	06	ER
	53.5	
	53.9	
415	53.7	AV
	0.53	CV
	1.1	
	1.3	
416	1.2	AV
	11.79	CV
	1.0	
	0.9	
417	1.0	AV
	7.44	CV
	52.3	
	52.6	
418	52.5	AV
	0.40	CV
	2.9	
	3.2	
419	3.1	AV
	6.96	CV
	2.2	
	2.5	
420	2.3	AV
	9.03	CV
	0.2	
	0.1	
421	0.2	AV
	47.14	CV
	-0.1	
	-0.1	
422	-0.1	AV
	0.00	CV
	0.1	
	-0.2	
423	-0.0	AV
	06	ER
	54.0	
	54.3	
424	54.2	AV
	0.39	CV



50.0 ppb
CAL BLK
424
423
418
1275 B.S.
415
50.0 ppb
CAL BLK
414
409
1154
50.0 ppb
Cal BLK
WP 1183 #1
100 ppb
50.0 ppb
25.0 ppb
BLK
T1
248
CHART NO. 056-7300
PERKIN-ELMER



PERKIN-ELMER CHART NO. 056-7300

Project No._____

Book No._____ TITLE _____

om r e No.__

Test Performed: T/

Date Received: 3/10/91

Work Performed By: [illegible]

See pg 12

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 ppb Spike	% Rec	DF	Samp Wgt	Units	Final Conc
	WP1125#1					23.1				42.9	99			µg/l	23.1
	Cal Blk					0.4				19.9	100				<10.0
	50 ppb					47.4				64.9	88			µg/l	47.4
4948	1204.01					0.4				16.9	85		50.45	mg/kg	<0.01
4937	1427.0403					1.0	1.0	1.0		21.0	105		1.06		<0.945
	1428.0403					0.6	0.5	0.7		18.7	94		1.01		<0.910
	1428. R1					0.6	0.4	0.5		19.4	97		1.01		<0.990
	1429.0403					1.2	0.9	1.1		19.8	99		1.04		<0.962
	1429. S1					46.2	48.0	47.4		65.7	92		1.06		87.4
	1430.0403					0.7	0.6	0.6		18.7	95		1.06	mg/kg	0.945
	14 Blk 145					0.6	0.4	0.5		16.3	82			µg/l	<10.0
4998	1458.0103					0.3	0.4	0.3		15.7	79				<10.0
	1458. R3					0.7	0.4	0.5		15.7	79				<10.0
	Cal Blk					0.5	0.5	0.5		17.5	88				<10.0
	50 ppb					46.1	45.7	45.9	0.62	60.4	75				45.9
	1459.0103					0.4	0.4	0.4		15.2	76				<10.0
	1460.0103					0.4	0.2	0.3		15.2	76				<10.0
	1461.0103					0.4	0.4	0.4		14.5	73				<10.0
	1464.0103					0.5	0.4	0.4		16.6	83				<10.0
	Blk 149					0.7	0.6	0.6		20.7	104			µg/l	<10.0
5012	1511.01					0.4	0.3	0.3		13.5	68		50.2		<0.01
	Cal Blk					0.5				20.3	102				<10.0
	50 ppb					45.3				69.2	100				45.3
5012	1511.01					0.9	1.0	0.9		18.6	93	1:2	50.2	mg/kg	<0.002

Other Clients

To Page No.____

Witnessed & Understood by me, Date

Invented by Date

Recorded by [illegible]

HGA FORM #1

ELEMENT: Tl, DATE: 3/10/87.

S_1 = 25.0 PPB., S_2 = 50.0 PPB.

S_3 = 100 PPB, BOOK NO. 287, pg 34.

	401	WP 1183 #1
	X02	Cal BLK
	X03	50.0 ppb
	X04	1204.01 (4948)
JOB #:	X05	1427.0403 (4989)
	X06	1428.0403
	X07	1428 R_1
	X08	1429.0403
	X09	1429 S_1
	X10	1430.0403
	X11	BLK 145
	X12	1458.0703 (4998)
	X13	1458. R_3
	X14	Cal BLK
	X15	50.0ppb
	X16	1459.0703
	X17	1460.0703, S_2
	X18	1461.0703
	X19	1464.0103
	X20	BLK 149
	X21	1511.01 (5012)
	X22	Cal BLK
	X23	50.0ppb
	X24	
	X25	
	X26	
	X27	
	X28	
	X29	
	X30	
	X31	
	X32	
	X33	
	X34	
	X35	, S_3

424	0.9
	~~-0.013~~
	~~0.003~~ A2
	~~0.093~~
	~~25.0~~ S1
	~~46.3~~ L
	~~100.0~~ S2
	~~05~~ ER
	~~0.~~ S3
~~501~~	~~0.082~~

401	42.9
402	19.9
403	64.9
404	16.9
405	21.0
406	18.7
407	19.4
408	19.8
409	65.7
410	18.9
411	16.3
412	15.7
413	15.7
414	17.5
415	60.4
416	15.2
417	15.2
418	14.5
419	16.6
420	1.5
421	8.8
422	17.2
423	57.6
404	16.4
420	20.7
421	13.5
422	20.3
423	69.2
424	18.6

recycled paper

ecology and environment

	-0.465	
	0.000	A2
	0.128	
	25.0	S1
	45.7	C
	50.0	S2
	100.1	C
	100.0	S3
401	23.1	
402	0.4	
403	47.4	
404	0.4	
	1.0	
	1.0	
405	1.0	AV
	0.00	CV
	0.6	
	0.8	
406	0.7	AV
	20.20	CV
	0.6	
	0.4	
407	0.5	AV
	28.28	CV
	1.2	
	0.9	
408	1.1	AV
	20.20	CV
	46.8	
	48.0	
409	47.4	AV
	1.79	CV
	0.7	
	0.6	
410	0.6	AV
	10.88	CV
	0.6	
	0.4	
411	0.5	AV
	28.28	CV
	0.3	
	0.4	
412	0.3	AV
	20.20	CV
	0.7	
	0.4	
413	0.5	AV
	38.57	CV
	0.5	
	0.5	
414	0.5	AV
	0.00	CV
	44.7	
	46.1	
	45.7	
415	45.9	AV
	0.62	CV
	0.4	
	0.4	
416	0.4	AV
	0.00	CV
	0.4	
	0.2	
417	0.3	AV
	47.14	CV
	0.4	
	0.3	
418	0.4	AV
	20.20	CV
	0.5	
	0.4	
419	0.4	AV
	15.71	CV
	0.7	
	0.6	
420	0.6	AV
	10.88	CV
	0.4	
421	0.3	
422	0.5	
423	45.3	

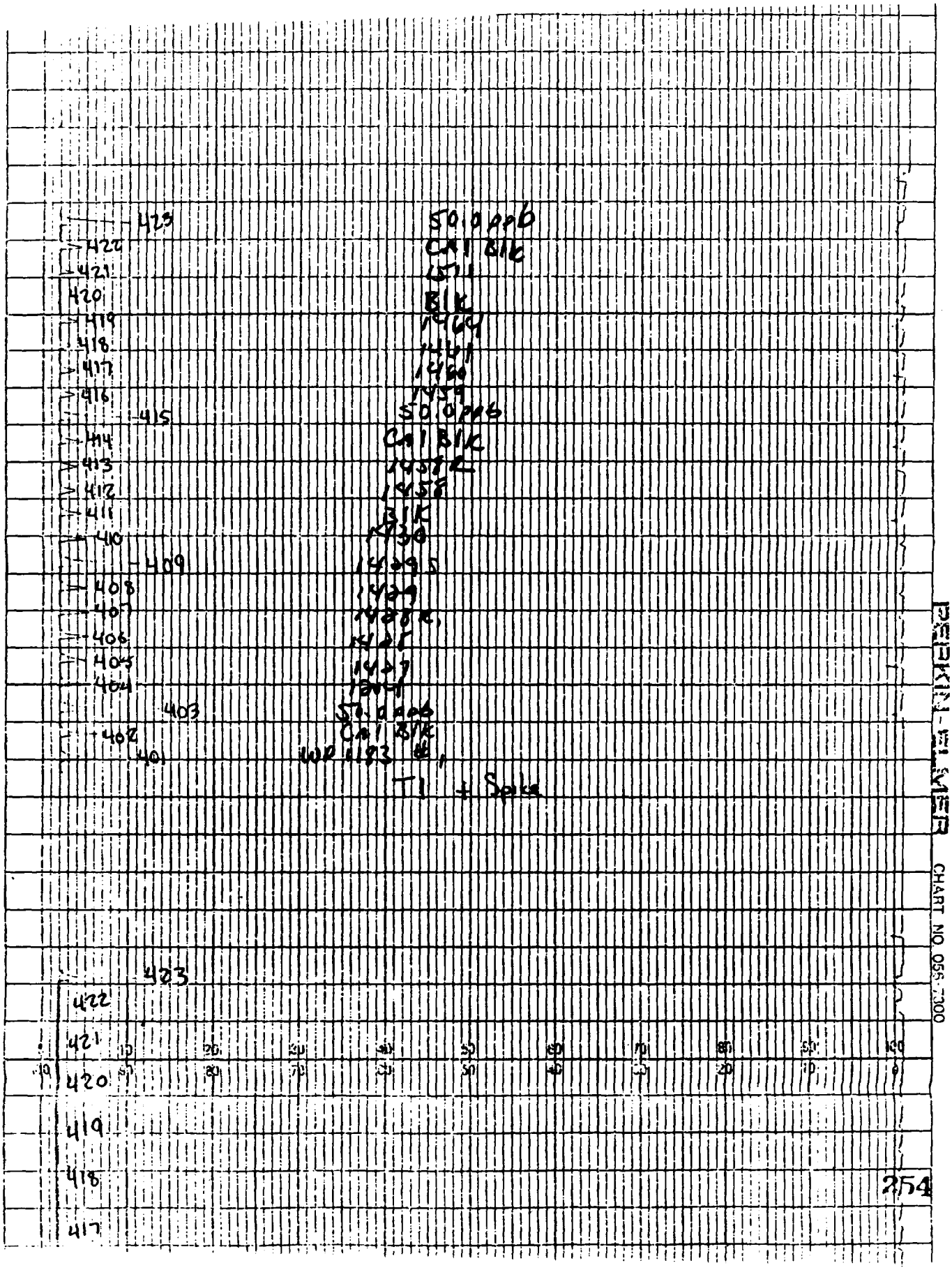
404
403
402
401

T1 + Spike

423 50.0 ppb
422 Cal Blk
421 4511
420 Blk
419 1464
418 1461
417 1460
416 1459
416 50.0 ppb
X X
414 Cal Blk
413 1458R
412 1458
411 Blk
410 1430
409 1429S
408 1429
407 1428R
406 1428
405 1427
404 1204
50 ppb
Blk
WP 1183 #1
100 ppb
50 ppb
25 ppb
Blk

T1 # 4948, 4989, 4998, 5012

PERKIN-ELMER CHART NO 056 7300



PERKIN-ELMER CHART NO. 055-7300

Project No._____

Book No._____ TITLE _____

Page No.__

Performed: Sn

Received: 3/4/87

Performed By: J Olka

λ 286.3 S_1 50.0 ppb

Time: 5 sec S_2 100

Energy: 49 S_3 200

See Book # 126 for Std Cond

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From N	C	ppb Burn 1	ppb Burn 2	ppb Ave	CV	80.0 ppb Spike	% Rec	DF	Sample Wgt	Units	Final Conc
	100.0 ppb				102.3				186.4	105			ug/l	102
	Cal Blk				0.4				78.9	99				<40.0
	100.0 ppb				102.5				184.3	103				<103
	Blk 103				21.9	21.5	21.7	1.30	97.3	95			ug/l	<40.0
06	1032.0403				9.9	7.5	8.7	19.5	80.4	90		1.04	mg/kg	<7.69
	1033.0403				11.9	12.5	12.2	3.45	88.9	96		1.05		<7.62
	1034.0403				6.4	6.7	6.5	3.29	77.0	88		1.00		<8.00
	1035.0403				7.4	7.3	7.4	0.96	80.9	92		1.02		<7.84
	1035 K_1				10.8	10.2	10.5	4.04	81.9	89		1.02		<7.84
	1035 K_1S_1				9.1	8.8	9.0	2.37	79.8	89		1.03		<7.77
	1036.0403				13.3	13.1	13.2	1.07	90.5	97		1.05		<7.62
	1037.0403				15.4	15.3	15.3	0.46	89.6	93		1.00	mg/kg	<8.00
	Cal Blk				0.3	0.1	0.2	-	82.4	103			ug/l	<40.0
	100.0 ppb				97.8	98.7	98.3	0.65	180.8	103			ug/l	98.3
928	1110.0403A				11.6	11.7	11.6	0.61	86.5	94		1.05	mg/kg	<7.62
	1111.0403A				11.3	10.9	11.4	5.61	88.3	96		1.02		<7.84
	1112.0403A				8.9	8.0	8.4	7.53	84.6	95		1.03		<7.77
	1113.0403A				25.0	23.4	24.2	4.68	91.1	84		1.02		<7.84
	1114.0403A				8.9	8.0	8.5	7.53	86.3	97		1.03		<7.77
	1115.0403A				9.0	9.2	9.1	1.55	87.0*	~~95~~ 97		1.00		<8.00
	1116.0403A				6.8	7.0	6.9	2.95	85.0*	~~103~~ 98		1.01		<7.92
	1117.0403A				10.3	11.0	10.7	4.65	89.5 ~~62.5~~*	~~65~~ 99		1.03	mg/kg	<7.77
	Cal Blk				-1.1	-1.1	-1.1	-	62.3	78.7*			ug/l	<40.0
	100.0 ppb				103.2	101.4	102.3	1.24	189.6	109				102.3
	Blk 107				14.3	14.2	14.3	0.56	92.2	97			ug/l	<40.0
872	0900.0403				14.2	13.9	14.1	1.51	82.6	86		1.02	mg/kg	<7.84
	0900 K_1				22.1	21.9	22.0	0.64	89.9	85		1.01		<7.92
	0900 K_1S_1				21.1	20.4	20.8	2.39	84.5	80		1.04		<7.67

Other Clients

To Page No._____

Witnessed & Understood by me, [signature] Date

Invented by

Recorded by J. Olka

Date 3/4/87

Project No._____

TITLE _____ Book No._____ 15

Page No.__

Test Performed: Sn

Date Received: 3/4/87

Work Performed By: J. Clark

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From	ppb Burn1	ppb Burn2	ppb Ave	CV	50.0ppb Spk	% Rec	DF	Samp Wgt	Units	Final Conc
4372	0901.0403			[illegible]	[illegible]	[illegible]	0.35	99.5	99		1.04	mg/kg	<7.69
	Cal Blk			[illegible]	[illegible]	[illegible]	–	79.4	99			µg/l	<40.0
	100.0ppb			102.8	103.5	103.1	0.43	191.5	111			µg/l	103

Other Clients

To Page No.____

Witnessed & Understood by me,	Date	Invented by	Date	256
		Recorded by G. C. Allen	3/4/87	

HGA FORM #1

ELEMENT: Sn, DATE: 3/4/87.

S_1 = 50.0 PPB., S_2 = 100 PPB.

S_3 = 200 PPB, BOOK NO. 287, 14-15.

JOB #:

301	100.0 ppb
X02	Cal Blk
X03	100.0 ppb
X04	Blk 103
X05	1032.0403
X06	1033
X07	1034
X08	1035
X09	1035 R_1
X10	1035 R_1S_1
X11	1036
X12	1037
X13	Cal Blk
X14	100.0 ppb
X15	1110.0403A
X16	1111
X17	1112, S_2
X18	1113
X19	1114
X20	1115
X21	1116
X22	1117
X23	Cal Blk
X24	100.0 ppb
X25	Blk 87
X26	0900.0403
X27	0900 R_1
X28	0900 R_1S_1
X29	0901
X30	Cal Blk
X31	100.0 ppb
X32	
X33	
X34	
X35	, S_3

ATTACH TAPE

301	186.4
302	78.9
303	194.8
304	97.3
305	80.4
306	88.9
307	77.0
308	80.9
309	81.9
310	79.8
311	90.5
312	89.6
313	82.4
314	180.8
315	86.5
316	88.3
317	84.6
318	91.1
319	86.3
320	87.0
321	85.0
322	89.5
323	62.3
324	189.6
325	92.2
326	82.6
327	89.9
328	84.5
329	99.5
330	79.4
331	191.5

recycled paper

	-0.007	
	0.000	AV
	0.143	
	50.0	S1
	92.0	C
	100.0	S2
	187.5	C
	200.0	S3
301	102.3	
302	0.4	
303	102.5	
	21.9	
	21.5	
304	21.7	AV
	1.30	CV
	9.9	
	7.5	
305	8.7	AV
	19.51	CV
	11.9	
	12.5	
306	12.2	AV
	3.48	CV
	6.4	
	6.7	
307	6.5	AV
	3.24	CV
	7.4	
	7.3	
308	7.4	AV
	0.96	CV
	10.8	
	10.2	
309	10.5	AV
	4.04	CV
	9.1	
	8.8	
310	9.0	AV
	2.37	CV
	13.3	
	13.1	
311	13.2	AV
	1.07	CV
	15.4	
	15.3	
312	15.3	AV
	0.46	CV
	0.3	
	0.1	
313	0.2	AV
	70.71	CV
	~~110.8~~	
	~~111.5~~	
~~314~~	~~111.1~~	AV
Repeat	~~0.45~~	CV
	~~110.6~~	
	97.9	
	98.7	

314	98.3	AV
	0.65	CV
	11.6	
	11.7	
315	11.6	AV
	0.61	CV
	11.8	
	10.9	
316	11.4	AV
	5.61	CV
	8.9	
	8.0	
317	8.4	AV
	7.53	CV
	25.0	
	23.4	
318	24.2	AV
	4.68	CV
	8.9	
	8.0	
319	8.5	AV
	7.53	CV
	9.0	
	9.2	
320	9.1	AV
	1.55	CV
	6.8	
	7.0	
321	6.9	AV
	2.05	CV
	10.3	
	11.0	
322	10.7	AV
	4.65	CV
	-1.1	
	-1.1	
323	-1.1	AV
	0.00	CV
	103.2	
	101.4	
324	102.3	AV
	1.24	CV
	14.3	
	14.2	
325	14.3	AV
	0.50	CV
	14.2	
	13.9	
326	14.1	AV
	1.51	CV
	22.1	
	21.9	
327	22.0	AV
	0.64	CV
	21.1	
	20.4	

328	20.8	AV
	2.39	CV
	20.0	
	19.9	
329	20.0	AV
	0.35	CV
	-1.0	
	-1.1	
330	-1.1	AV
	6.73	CV
	102.8	
	103.5	
331	103.1	AV
	0.48	CV

325 Pecp Blk

324 100 ppb

323 Cal Blk

322 1117

321 1116

320 1115

319 1114

318 1113

317 1112

316 1111

315 1110

314 repeated

100 ppb

314 ~~50.0~~ ppb

313 Cal Blk

312 1037

311 1036

310 1035 R.S.

309 1035 R.

308 1035

307 1034

306 1033

305 1032

304 Pecp Blk

100 ppb

Blk

100 ppb

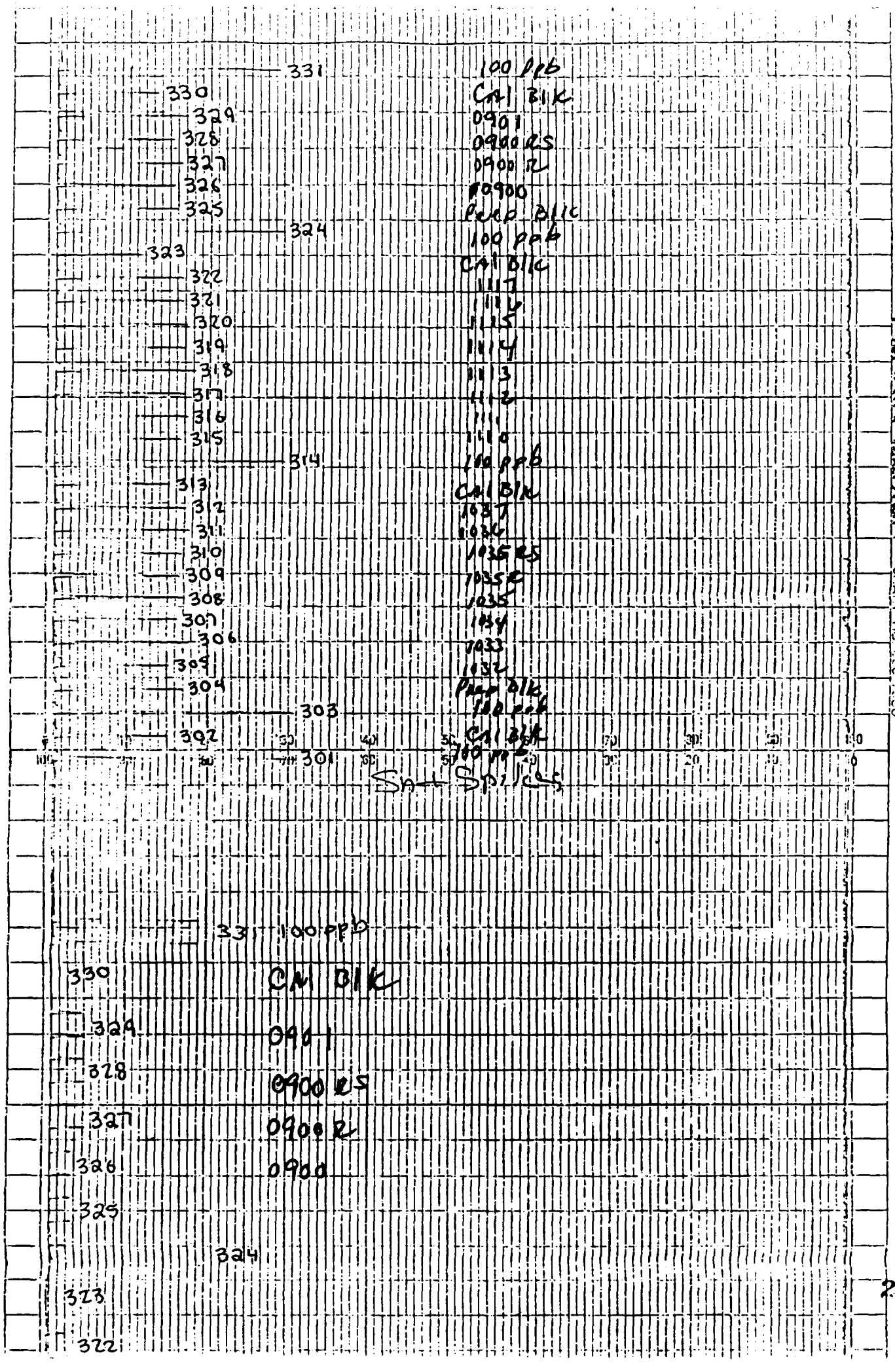
200 ppb

100 ppb

50 ppb

Blk

Sn Jobs 4906, 4928, 4872



PERKIN-ELMER CHART NO 050-7550

TITLE _____ Project No. _____ Book No. _____ 2

From Page No.

Test Performed: [illegible]
Date Received: 3/6/87
Work Performed By: [illegible]

See pg 14

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From N	C	ppb Burn 1	ppb Burn 2	ppb Ave	CV	80.0 ppb Spike	% Rec	DF	Samp Wgt	Units	Final Conc
	100.0 ppb				104.0				171.3	84			µg/l	104
	Cal Blk				1.0				81.9	102				<40.0
	100.0 ppb				100.3				167.0	83			µg/l	101
4971	1274.0401				11.5	9.4	10.4	14.2	87.9	97		1.07	mg/kg	<7.62
	1275.0401				19.7	19.7	19.7	0.00	89.9	88		1.00		<8.00
	1275.K1				16.4	15.3	15.9	4.91	87.2	89		1.03		<7.77
	1275.K1S1				27.7	29.3	28.4	3.73	97.1	86		1.02		<7.84
	1276.0401				267.9	272.1	270.0	1.10	342.7	91		1.04		51.9
	1277.0401				93.3	87.5	90.5	5.08	175.5	110		1.03		17.6
	1278.0401				40.0	38.9	39.4	1.97	[illegible]	82		1.05	mg/kg	<7.62
	Blk 126				4.6	3.6	4.1	17.3	73.2	92			µg/l	<40.0
	Cal Blk				-0.4	-0.4	-0.4	0	72.0	90				<40.0
	100.0 ppb				105.7				160.8	69			µg/l	106
4922	1085.0201				89.8				168.5	98				89.8
Repeat	1085.K1				237.9				301.7	80				237.9
	Blk 112				58.2				142.7	106				58.2
4961	1253.0201				76.1				157.5	102				76.1
	Blk 124				6.6				91.5	106				<40.0
	Cal Blk				0.8				78.5	98				<40.0
	100 ppb				96.9				183.0	108			µg/l	96.9

Other Clients

To Page No. _____

Witnessed & Understood by me, [illegible] Date 3/6/87 Invented by _____ Date 3/6/87

Recorded by [illegible]

HGA FORM #1

ELEMENT: Sn, DATE: 3/6/87.

S_1 = 50.0 PPB., S_2 = 100 PPB.

S_3 = 200 PPB, BOOK NO. 287, pg 25.

JOB #:

301	100.0 ppb
X02	Cal BLK
X03	100.0 ppb
X04	1274.0401
X05	1275
X06	1275 R1
X07	1275 R1 S1
X08	1276
X09	1277
X10	1278
X11	BLK 126
X12	Cal BLK
X13	100 ppb
X14	1085.0201
X15	1085. R1
X16	BLK 112
X17	1253.0201, S_2
X18	BLK 124
X19	Cal BLK
X20	100 ppb
X21	
X22	
X23	
X24	
X25	
X26	
X27	
X28	
X29	
X30	
X31	
X32	
X33	
X34	
X35	, S_3

ATTACH TAPE HERE

301	171.3	
302	81.9	
303	167.0	
304	87.9	
305	89.9	
306	87.2	
307	97.1	
308	273.5	C
309	125.4	
310	105.1	
311	73.2	
312	72.0	
313	160.8	
314	145.2	
315	271.8	C
308	342.7	C
309	178.5	
310	149.5	
314	168.5	
315	301.7	C
316	142.7	
317	157.5	
318	91.5	
319	90.6	
320	90.0	
319	78.5	
320	183.0	

recycled paper

ecology and environment

	0.001	
	0.100	AZ
	0.138	
	59.0	S1
	97.5	C
	100.0	S2
	200.0	C
	200.0	S3
301	104.0	
302	1.0	
303	100.8	
	11.5	
	9.4	
304	10.4	AV
	14.21	CV
	19.7	
	19.7	
305	19.7	AV
	0.00	CV
	16.4	
	15.3	
306	15.9	AV
	4.91	CV
	27.7	
	29.2	
307	28.4	AV
	3.73	CV
	267.9	C
	272.1	C
308	270.0	AV
	1.10	CV
	93.8	
	87.3	
309	90.5	AV
	5.08	CV
	40.0	
	38.9	
310	39.4	AV
	1.97	CV
	4.6	
	3.6	
311	4.1	AV
	17.25	CV
	-0.4	
	-0.4	
312	-0.4	AV
	0.00	CV
313	105.7	
314	89.8	
315	237.9	C
316	58.2	
317	76.1	
318	6.6	
319	0.8	
320	96.9	

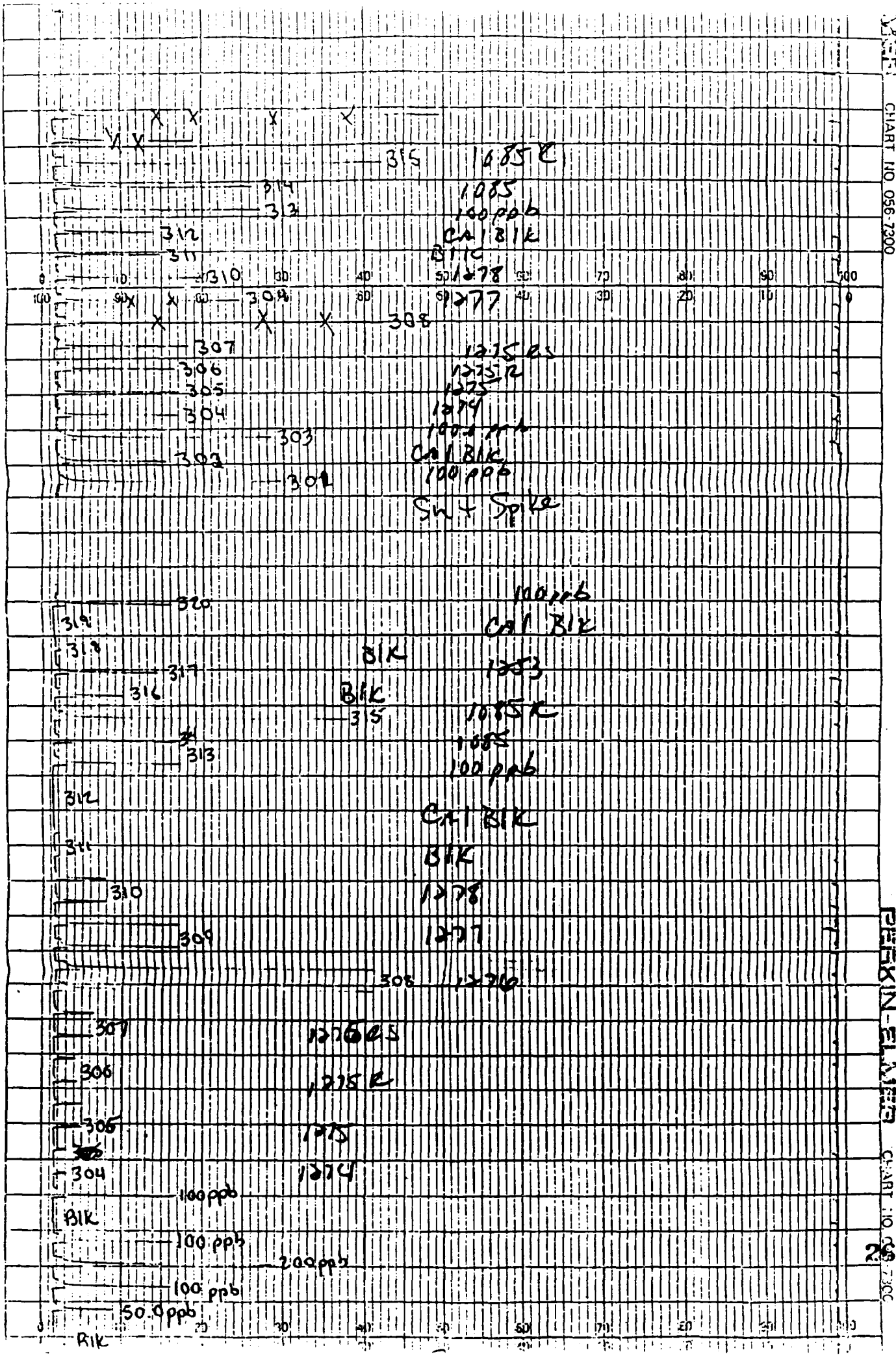
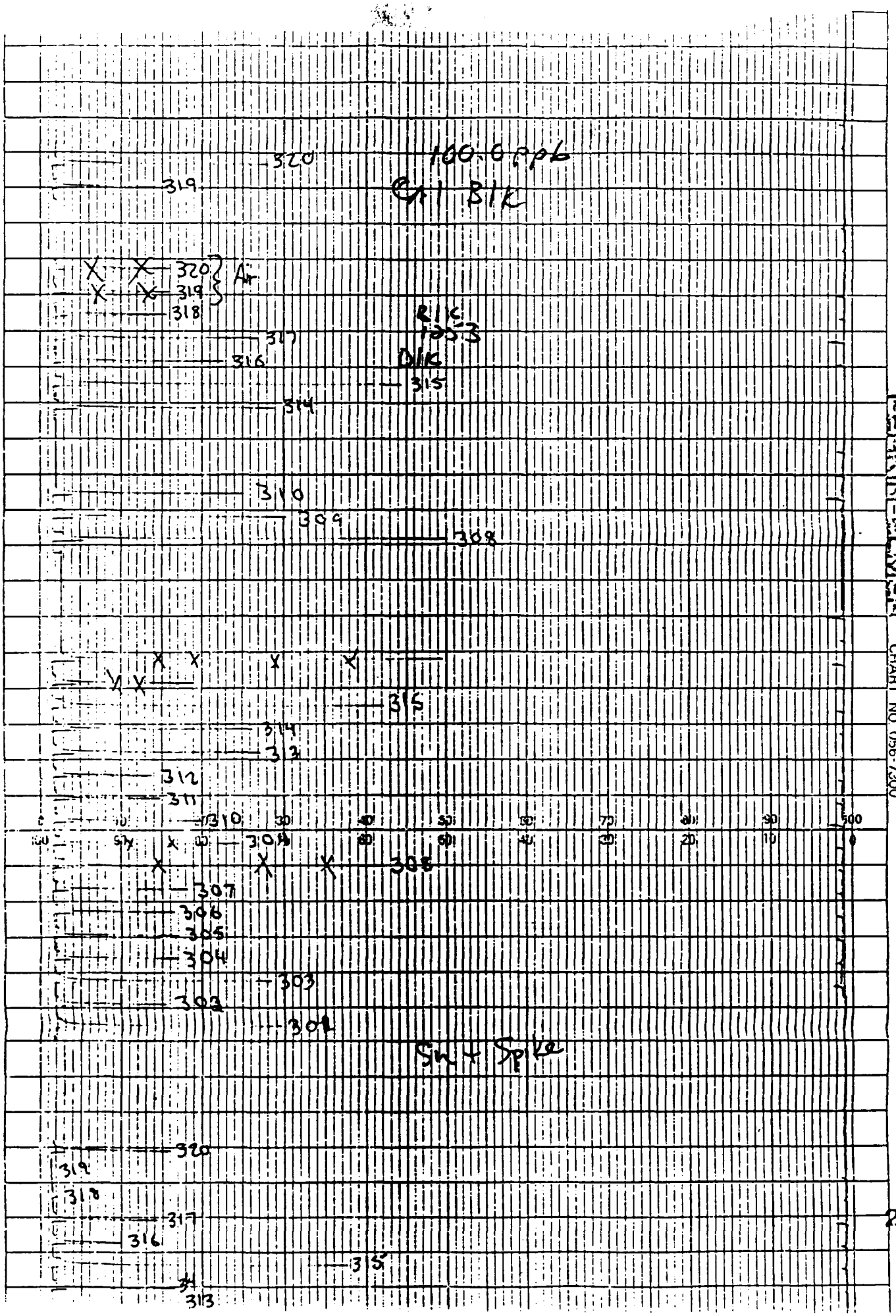


CHART NO. 056-7300
315
1085R
314
1085
313
100 ppb
312
Cal Blk
311
Blk
310
1278
309
1277
308
307
1275es
306
1275R
305
1275
304
1274
303
100 ppb
302
Cal Blk
301
100 ppb
Sm + Spike
320
100 ppb
319
Cal Blk
318
Blk
317
1253
316
Blk
315
1085R
314
1085
313
100 ppb
312
Cal Blk
311
Blk
310
1278
309
1277
308
1276R
307
1276es
306
1275R
305
1275
304
1274
100 ppb
Blk
100 ppb
200 ppb
100 ppb
50.0 ppb
Blk
PERKIN-ELMER
CHART NO. 056-7300


100.0 ppb
Cal Blk
Air
Blk
1253
Blk
Sn + Spike
320
319
318
317
316
315
314
313
312
311
310
309
308
307
306
305
304
303
302
301
PERKIN-ELMER
CHART NO. 056-7300

Project No._____

Book No._____ TITLE _____

-42

m Page No.__

Test Performed: Sn

Date Received: 3/11-12/87

Work Performed By: J.O.M.P.

See pg 14

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From N	C	ppb Burn 1	ppb Burn 2	ppb Ave	CV	80.0 ppb Spike	% Rec	DF	Samp Wgt	Units	Final Conc
	Cal Blk				3.6	2.5	3.1	-	72.1	90			µg/l	<40.0
	100 ppb				106.2	104.0	105.1	1.48	185.2	100			µg/l	105
4989	1427.0403				10.5	9.3	9.9	8.57	80.0	100		1.01	mg/kg	<7.55
	1428.0403				5.8	3.7	4.8	-	78.4	98		1.01		<7.92
	1428.R1				1.6	1.6	1.6	0	78.9	99		1.01		<7.92
	1429.0403				6.5	6.7	6.6	2.14	74.2	93		1.04		<7.69
	1429.S1				6.6	5.9	6.3	7.92	74.7	93		1.06		<7.55
	1430.0403				4.2	3.5	3.9	-	83.2	104		1.06	mg/kg	<7.55
	Blk 145				2.3	2.3	2.3	0	84.9	106			µg/l	<40.0
	Cal Blk				-0.5	0.1	-0.2	-	90.1	113				<40.0
	100 ppb				111.6	107.5	109.5	2.65	184.6	94			µg/l	110

To Page No.

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

Recorded by J. Oliva | 3/12/87

HGA FORM #1

ELEMENT: Sn, DATE: 3/11/87.

S_1 = 50.0 PPB., S_2 = 100.0 PPB.

S_3 = 200.0 PPB, BOOK NO. ,

JOB #:

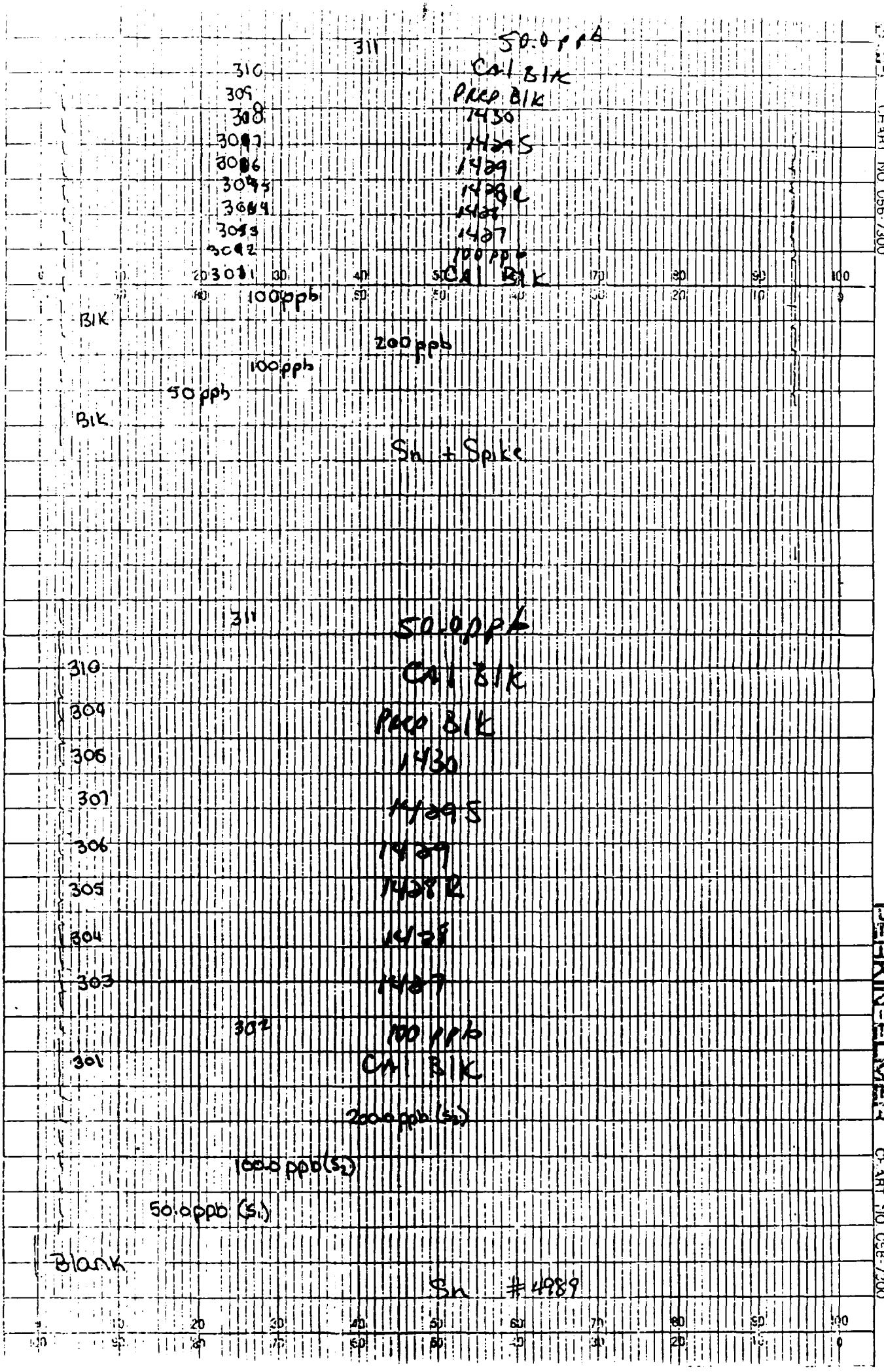
01	Cal Blank		-0.311	
X02	100.0 ppb		-0.310	
X03	1427.0403 (4989)		-0.310	AV
X04	1428.		0.23	CV
X05	1428. R1		0.000	A2
X06	1429.		0.177	
X07	1429. S1		0.176	
X08	1430.		0.176	AV
X09	PREP Blank 145		0.40	CV
X10	Cal Blank		50.0	S1
X11	100.0 ppb		93.7	C
X12			94.8	C
X13			94.2	AV
X14			0.83	CV
X15			100.0	S2
X16			210.5	C
X17	, S_2		211.9	C
X18			211.1	AV
X19			0.44	CV
X20			200.0	S3
X21				
X22			3.6	
X23			2.5	
X24		301	3.1	AV
X25			25.50	CV
X26			106.2	
X27			104.0	
X28		302	105.1	AV
X29			1.48	CV
X30			10.5	
X31			9.3	
X32		303	9.9	AV
X33			8.57	CV
X34			5.8	
X35	, S_3		3.7	
		304	4.8	AV
			31.26	CV
			1.6	
			1.6	

recycled paper

ecology and environment

305	1.6	AV
	0.00	CV
	6.5	
	6.7	
306	6.6	AV
	2.14	CV
	6.6	
	5.9	
307	6.3	AV
	7.92	CV
	4.2	
	3.5	
308	3.9	AV
	12.86	CV
	2.3	
	2.3	
309	2.3	AV
	0.00	CV
	-0.5	
	0.1	
310	-0.2	AV
	06	ER
	111.6	
	107.5	
311	109.5	AV
	2.65	CV
	-0.004	
	-0.006	
	-0.005	AV
	28.28	CV
	0.000	AZ
	0.199	
	50.0	S1
	93.7	C
	100.0	S2
	206.4	C
	200.0	S3
301	1.1	
302	104.5	

301	72.1
302	185.2
303	80.0
304	78.4
305	78.9
306	74.2
307	74.7
308	83.2
309	84.9
310	90.1
311	184.6


311 50.0 ppb
310 Cal Blk
309 Prep Blk
308 1430
307 1429S
306 1429
305 1428R
304 1428
303 1427
302 100 ppb
301 Cal Blk
100 ppb
Blk
200 ppb
100 ppb
50 ppb
Blk
Sn + Spike
311 50.0 ppb
310 Cal Blk
309 Prep Blk
308 1430
307 1429S
306 1429
305 1428R
304 1428
303 1427
302 100 ppb
301 Cal Blk
200.0 ppb (S2)
100.0 ppb (S2)
50.0 ppb (S1)
Blank
Sn #4989
CHART NO 056-7300
PERKIN-ELMER
CHART NO 056-7300

Project No.
Book No. TITLE

From Page No.
Test Performed: DIGESTIONS
Date Received: 2/20/87
Work Performed By: W.M.

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From	Amount of Sample (01 Digestion)	Amount of Sample (03 Digestion)	Final Volume
906	1032.04	YES	A-12	1.01g.	1.04g.	200 ml.
	1033.01			1.02g.	1.05g.	
	1034.01			1.02g.	1.00g.	
	1035.01			1.04g.	1.02g.	
	1035.01R1			1.00g.	1.02g.	
	1035.01S1			1.05g.	1.03g.	
	1036.01			1.03g.	1.05g.	
	1037.01			1.04g.	1.00g.	
1928	1110.04A	YES	A-11	1.04g.	1.05g.	200 ml.
	1111.04A			1.04g.	1.02g.	
	1112.04A			1.02g.	1.03g.	
	1113.04A			1.00g.	1.02g.	
	1114.04A			1.04g.	1.03g.	
	1115.04A			1.04g.	1.00g.	
	1116.04A			1.06g.	1.01g.	
	1117.04A			1.05g.	1.03g.	
	BLANK 102			—	01 DIGESTION	200 ml.
	BLANK 103			—	03 DIGESTION	200 mL

To Page No.

Witnessed & Understood by me	Date	Invented by	Date	
		Recorded by Wilson May	2/20/87	270

Project No. _____
Book No. _____ TITLE _____

om Page No. __

Test Performed: DIGESTIONS
Date Received: 2/23/87
Work Performed By: W.M.

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From	AMOUNT OF SAMPLE (01 DIGESTION)	AMOUNT OF SAMPLE (03 DIGESTION)	FINAL VOLUME
4922	1098.01	YES	A-29	1.04g.	1.03g	200 ml.
	1099.01			1.00g.	1.05g.	
	1100.01			1.09g.	1.01g.	
	1101.01			1.03g.	1.02g.	
	1102.01			1.01g.	1.01g.	
	1103.01			1.04g.	1.06g.	
	1104.01			1.05g.	1.02g	
	1104.01 R1			1.00g.	1.00g.	
	1104.01S1			1.02g.	1.00g.	
	1105.01			1.01g.	1.03g.	
	1106.01			1.02g.	1.01g.	
	1107.01			1.05g.	1.07g.	
	1109.02			100 ml.		100 ml.
4928	1110.04 B	YES	A-11	1.01g.	1.04g.	200 ml.
	1111.04 B			1.06g.	1.00g.	
	1112.04 B			1.00g.	1.00g.	
	~~1113.04~~ B					
	1112.04 R2 B			1.08g.	1.02g.	
	1112.04 S2 B			1.05g.	1.04g.	
	1113.04 B			1.03g.	1.01g.	
	1114.04 B			1.01g.	1.01g.	
	1115.04 B			1.03g.	1.07g.	
	1116.04 B			1.02g.	1.03g.	
	1117.04 B			1.00g.	1.08g.	
	BLANK 106			01 DIGESTION		200 ml.
	BLANK 107			03 DIGESTION		200 ml.
	BLANK 108			01 DIGESTION (water)		100 ml.

Other Clients

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date	
[signature]		Recorded by William May	2/23/87	271

TITLE

Page No.

Test Performed: DIGESTIONS
Date Received: 3/3/87
Work Performed By: W. M.

Job No.	ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From	Amount of Sample (01 Digestion)	Amount of Sample (03 Digestion)	Final Volume
4971	1274.04	YES		A-28	1.05g.	1.01g.	200 ml.
(CLP)	1275.04				1.00g.	1.05g.	
	1275.04R1				1.03g.	1.07g.	
	1275.04S1				1.02g.	1.02g.	
	1276.04				1.04g.	1.03g.	
	1277.04				1.03g.	1.01g.	
	1278.04				1.05g.	1.00g.	
4972	1279.02	YES		A-29	1.07g.	1.07g.	100 ml.
	1280.02				1.03g.	1.07g.	
	1281.02				1.05g.	1.02g.	
	1282.02				1.01g.	1.04g.	
	1283.02				1.02g.	1.06g.	
	1284.02				1.06g.	1.01g.	
	1284.02R2				1.05g.	1.03g.	
	1284.02S2				1.05g.	1.07g.	
	1285.02				1.06g.	1.06g.	
	1286.02				1.03g.	1.03g.	
	1287.02				1.03g.	1.02g.	
	1288.02				1.02g.	1.07g.	
	1289.02				1.04g.	1.07g.	
	1290.02				1.08g.	1.02g.	
	1291.02				1.03g.	1.04g.	
	1292.02				1.08g.	1.06g.	
	1293.02				1.03g.	1.00g.	
	1294.02				1.06g.	1.02g.	
	1295.02				1.04g.	1.05g.	
	1296.02				1.02g.	1.04g.	
	1297.02				1.07g.	1.01g.	

Other Chem

To Page No.

Witnessed & Understood by me,	Date	Invented by	Date	
		Recorded by William May	3/3/87	272

TITLE _____ Project No. _____ Book No. _____

om Page No. __

Test Performed: DIGESTIONS
Date Received: 3/9/87
Work Performed By: W. M.

Job No.	ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From	Amount of Sample 01 Digestion	Amount of Sample 03 Digestion	Final Volume
4989	1427.04	YES		A-34	1.03g.	1.06g.	200m
(CLP)	1428.04				1.01g.	1.01g.	
	1428.04R1				1.05g.	1.01g.	
	1429.04				1.09g.	1.04g.	
	1429.04S1				1.08g.	1.06g.	
	1430.04				1.00g.	1.06g.	
4993	1439.02	YES		A-35	1.06g.	1.01g.	100m
	1440.02				1.03g.	1.00g.	
	1440.02R2				1.00g.	1.08g.	
	1441.02				1.02g.	1.07g.	
	1441.02S2				1.06g.	1.03g.	
	1442.02				1.01g.	1.05g.	
	1443.02				1.02g.	1.05g.	
	1444.02				1.01g.	1.02g.	
	1445.02				1.05g.	1.04g.	
	1446.02				1.06g.	1.01g.	

Other Clients

Job No.	ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From	Amount of Sample	Type of Digestion	Initial pH	Final Volume
4998	1458.07	NO		A-9	100 ml.	01,03	1	100
	1458.07R3							
	1459.07							
	1460.07							
	1461.07							
	1464.01							
5000	1469.01	NO		A-9	100 ml.	01	1	100

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Witnessed & Understood by me,	Date	Invented by	Date
gb	3/10/87	Recorded by William May	3/9/87

Project No._____

TITLE_____ Book No._____ 11

From Page No.__

Method EPA-335.2
Instrument Spec 88
Stock CN⁻ 0.0185N .963mg/ml
Prepared 11/5/86 Book, page 251, 19
Stand. 11/7/86 Book, page 210, 61
Curve Date 11/7/86 Expires 12/7/86
Other:

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

Test Performed: CN⁻ Curve
Date Received: 11-7-86
Work Performed By: D. [illegible]

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

Corr = 0.9995 ✓

To Page No._____

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

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Project No._____

Book No._____ TITLE _____

From Page No.__

Method EPA 335.2

Instrument Spec 88

Stock Cn 0.0184N 0.958 mg/ml

Prepared 2/16/87 Book, page 251,46

Stand. 2/16/87 Book, page 210,79

Curve Date 2/16/87 Expires 3/16/87

Other:

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

STD① = 100ml STOCK/1000

STD② = 100ml STD①/1000

Test Performed: Cn

Date Received: 2-18-87

Work Performed By: A. Thayd

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From	@mls distilled	@mls for color	Abs	Wig from curve	Result
UNDISTILLED		BLANK		—	50	Set @ 0.000		
	BLANK			500ml	50	0.005	-0.31	
D1	SPIKE	47.90		5ml STD②/500	50	0.279	44.996	93.9% rec
4900	1014.06	Y	A-9	500ml	50	0.070	10.44	0.021 mg/L
4902	1018.12	Y	A-27	500ml	50	0.080	12.09	0.024 mg/L
4902	1019.12	Y	A-27	500ml	50	0.010	0.52	<0.02 mg/L
4902	1020.12	Y	A-27	500ml	50	0.017	1.67	<0.02 mg/L
4902	1021.12	Y	A-27	500ml	50	0.000	-1.13	<0.02 mg/L
4906	1032.04	Y	A-12	6.123 g/500	50	0.010	0.52	<1.0 mg/kg
4906	1033.04	Y	A-12	6.134 g/500	50	0.406	66.00	10.8 mg/kg
4906	1034.04	Y	A-12	6.258 g/500	50	0.453	73.77	11.8 mg/kg
4906	1034.04	SPIKE	A-12	5ml STD② 6.094 g/500	50	0.730	119.57	95.6% rec
			QC IN AN	CHART				

Other Charts

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Witnessed & Understood by me.	Date	Invented by	Date	275
		Recorded by		

Project No. _____

TITLE _____ Book No. 258

Page No. ___

Method EPA 335.2
Instrument SPEC 88
Stock Cr 0.0184 N 0.88 mg/ml
Prepared 2/4/87 Book, page 251, 46
Stand. 2/16/87 Book, page 210, 79
Curve Date 2/16/87 Expires 3/16/87
Other: _____

mg/L Cr = A×50 / B×C

STD ① = 100ml STOCK/1000
STD ② = 100ml STD①/1000

Test Performed: Cr
Date Received: 2-19-87
Work Performed By: [illegible]

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From	ⓑ mls distilled	ⓒ mls for color	Abs	ⓐ ug from curve	Results
UNDISTILLED BLANK				—	50	Se/0.000	-1.13	<0.02 <.11
	BLANK	17.90		500ml	50	0.001	-0.97	<0.02
01	SPIKE	↓		5ml STD②/500	50	0.271	43.67	91.2% rec ✓
4906	1035.04	Y	A-12	6.034 g/500	50	0.009	0.35	<1 mg/kg
4906	1036.04	Y	A-12	6.031 g/500	50	0.005	0.31	<1 mg/kg
4906	1037.04	Y	A-12	6.337 g/500	50	0.005	0.31	<1 mg/kg
4910	1058.01	N	A-32	6.224 g/500	50	0.016	1.50	<1 mg/kg ✓
4910	1059.01	N	A-32	6.009 g/500	50	0.062	9.11	1.52 mg/kg ✓
4913	1072.01	Y	A-1	500ml	50 10ml/50 5ml/50	71 1.280 AN ~~[illegible]~~ 0.487	79.39	1.59 mg/L ✓
4913	1072.01	AMENABLE		500ml	50 10ml/50 5ml/50	71 1.200 0.453	73.77	FREE 1.48 mg/L / AMENABLE 0.11 mg. ✓
	1083.01	Y	A-1	500ml	50 25ml/50	01.475 ~~[illegible]~~ 0.854	137.60	0.55 mg/L ✓
	1083.01	REP		500ml	50 25ml/50	1.425 0.850	139.42	0.56 mg/L ✓ 1.8 RPD

Other Christs

QC in christs
AN

To Page No. ___

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

Recorded by

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Project No._____

TITLE_____ Book No._____

F ge No.__

Method [illegible]
Instrument [illegible]
Stock [illegible]
Prepared [illegible] Book, page [illegible]
Stand. [illegible] Book, page [illegible]
Curve Date [illegible] Expires [illegible]
Other: _____

Test Performed: T-CN Amenable CN
Date Received: [illegible]
Work Performed By: [illegible]

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From	pH	Ph	KI	(B) ml distilled	(C) ml for Color	Abs	(A) ug from Curve	Results
	Blank	—	—				500	50	0.007	0.02	<0.02 mg/l
	DI Spike	—	—				5.0 ml STD(B)/500	50	0.276	44.5	92.9% Rec ✓
~~[illegible]~~	~~1045.01~~	~~N~~	~~A 4~~				~~500~~				DA See Pg. 63
~~[illegible]~~	~~1127.0[illegible]~~	~~Y~~	~~A 4~~	~~13~~	~~10~~	~~10~~	~~500~~				DA See Pg 62
	~~1127.01~~	~~[illegible]~~	~~A 4~~	~~13~~	~~10~~	~~10~~	~~500~~				DA See Pg 62
4926	1110.04	N	A 11				7.281g/500	50	0.006	-0.14	<1 mg/kg
	1111.04						5.831g/500	50	0.007	0.02	<1
	1112.04						5.194g/500	50	0.012	0.85	<1
	1113.04						5.313g/500	50	0.031	3.99	<1 ✓
	1114.04						5.864g/500	50	0.016	1.51	<1
	1114.04	spike					5.440g/500 9.805	50	0.309	49.96 9.184	104.3% Rec ✓
	Undistilled	Blank						50	[illegible]		

To Page No._____

Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by	277

DFP

Project No.
TITLE Book No.

From Page No.

Method EPA 335.2
Instrument Spec 88
Stock CN .0194N 958mg/ml
Prepared 2/6/87 Book, page 231,46
Stand. 2/6/87 Book, page 210,79
Curve Date 2/6/87 Expires 3/6/87
Other:

Test Performed: T.CN ; Amenable CN
Date Received: 2-24-87
Work Performed By: D. Bolt

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From	pH	Pb	KSI	@ml distilled	@ml for Color	Abs	@µg from Curve	Results
	Blank	—	—				500	50	0.000	-1.1	<0.02 mg/l
	DI spike	—	—				5.0ml STOCK/500	50	0.285	45.99	96.0% Rec.
Acen.	1083.01	N	A-1	13	N	N	200/500	25	0.304	49.13	~~0.49~~ 0.38 mg/l
Acen 4939 mp	1173.01	Y	A-29	13	N	N	200	10	0.515	84.02	2.10 Repeat
T.CN	1083.01	N	A-1	13	N	N	200/500	25	0.535	87.33	~~0.84~~ 0.87 mg/l
T.CN 4939 mp	1173.01	N	A-29	13	N	N	200/500	25	0.830	136.11	1.36
~~4938~~	~~1115.04~~	~~N~~	~~A-11~~				~~5.4184g/500~~				DA sample bumped out
4938	1116.04	N	A-11				5.1111g/500	50	0.010	0.52	<1 mg/Kg
	1117.04	N	A-11				5.5133g/500	50	0.010	0.52	<1
	1117.04	Dup	A-11				5.7604g/500	50	0.010	0.52	<1 0.0 RPD
	Undistilled Blank							50	set @ 0.000		

QC

To Page No.

Witnessed & Understood by me, Date

Invented by 3/13/87 Date

Recorded by

Project No. _____
Book No. _____ TITLE _____

From Page No. ___

Method EPA 3352
Instrument SPEC 88
Stock Cr 0.0184 N 0.356 g/ml
Prepared 2/16/87 Book, page 2046
Stand. 2/16/87 Book, page 310,79
Curve Date 2/16/87 Expires 3/16/87
Other: _____

Test Performed: Cr-
Date Received: 2/2/87
Work Performed By: A. Thigpel

mg/L Cr = A-150 / Dr C

STD① = 100 ml STOCK / 1000
STD② = 100 ml STD① / 1000

	Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From	Wt/vol distilled	Calib. color	Abs	Dry fr. ash	Result
		BLANK	- UNDISTILLED		-	50	0.000	-1.13	—
1		BLANK			500	50	0.002	-0.81	<0.02 mg/L
2	DI	SPIKE	4720		5ml STD②/500	50	0.265	42.68	89.1 % rec.
3	4928	1115.04	N	A-11	5.172g/500	50	0.005	-0.3	< 1 mg/kg
4	4939	1173.01	N	A-29	100ml/500	~~50~~ 5.0 Dr	DI 0.139	21.85	2.185 mg/g
5	4939	1173.01	AMENABLE		100ml/500	~~50~~ 5.0 Dr	DI 0.138	21.68	2.168 mg/L (.0171)
6	4955	1234.01	N	A-29	5.010g/500	50	0.039	5.31	1.06 mg/kg
7	4955	1235.01	~~N~~ Y	A-29	2.010g/500		0.002	-0.81	<1 mg/kg
8	4956	1236.01	Y	A-2	500	50	0.317	51.28	0.103 mg/L
9	4956	1237.01	Y	A-2	500ml	10	0.062	9.11	0.091 mg/L
10	4977	1313.01	Y	A-26	450 ml/500	10	0.183	29.12	0.324 mg/L
11	4977	1313.01	SPIKE	A-26	5ml STD② 450 ml/500	10	0.191	30.45	0.338 ?
		1313.01	Y	A-26	450/500	50	0.891 ~~0.19~~ Dr	146.2	0.325 mg/L
		1313.01	spike	A-26	5ml STD② 450/500	50	0.922	151.3	0.336 mg/L

Accepted on basis of DI spike recovery.

Other Clients

To Page

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

Recorded by

Project No. —
Book No. _____ TITLE _____

From Page No. ___

Method EPA 335.2
Instrument Spec 88
Stock CN 0.018410 .958 mg/ml
Prepared 2/16/87 Book, page 251, 46
Stand. 3/16/87 Book, page 210, 79
Curve Date 3/16/87 Expires 3/26/87
Other: _____

Test Performed: CN
Date Received: 3-5-87
Work Performed By: [illegible]

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From	pH	@mls distilled	@mls for Color	Abs	mg from Curve	DF	Results
	Blank	—	—		500	50	0.002	-0.8		<0.02
	DI spike	—	—		5mls STD②/500	50	0.250	40.20		83.9% Rec
	1307.01	Y	A-6		5.139g/500	50	0.022	2.50		<1 mg/kg
	1305.01	N			10.0ml/500	50	0.000	-1.14		<.5 mg/l
	1306.01	N			10.0ml/500	50	0.019	2.00		<.5 mg/l
	1274.04	N	A-28		10.190g/500	25/50	0.005	-0.3		<1 mg/kg
	1275.04				10.255g/500	25/50	0.007	0.02		<1
	1276.04				10.010g/500	50	0.048	6.80		<1
	1277.04				10.279g/500	50	0.003	-0.6		<1
	1278.04				10.101g/500	50	0.010	0.52		<1
	1278.04	spike		5mls STD	10.076g/500 4.15 37	50	0.252	40.53 4.0224		84.6% Rec
	Undistilled Blank					50	set@0.000			

Other Clients

To Page No. ___

Witnessed & Understood by me, | Date | Invented by | Date 280
Recorded by

Project No. _____ Book No. _____ TITLE _____

From Page No. ___

Method EPA 335.2
Instrument —
Stock CN 0.01840N .955 mg/ml
Prepared 2/16/87 Book, page 251.46
Stand. 2/16/87 Book, page 210.79
Curve Date 2/16/87 Expires 3/16/87
Other: _____

Test Performed: CN
Date Received: 3-9-87
Work Performed By: D. Goodman

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From	pH	Pb	KI	(B) mls distilled	(C) mls for Color	Abs	(A) mg from Curve	Results
	Blank	—	—				500	50	0.007	0.02	<0.02 mg/l
	DI spike	—	—				50 mls ST(B)/500	50	0.279	45.00	93.9% Rec ✓
Amen	1594.01	N	A-22				500	50	Titrate		DA See pg. 74
Amen	1595.01	N	A-22				500	50			DA See pg. 74
Amen	1596.01	N	A-22				500	50			DA See pg. 74
Amen	1601.01	N	A-22				500	10	0.198	31.60	0.32 (14.12 mg/l)
4988	1426.01	Y	A-3				500	10 20	0.083 0.158	12.89 24.99	0.13 0.12 mg/l
4987	1425.08	Y	A-3				10.045g/500	10	0.181	28.79	14.33 mg/kg
4989	1427.04	N	A-34				10.133g/500	50 ~~0.0040~~	0.040	5.48	<1 mg/kg
4989	1428.04	N	A-34				10.085g/500	50 ~~0.0020N~~	0.020	2.17	<1 mg/kg
4989	1428.04	Dup	A-34				10.043g/500	50 ~~0.014N~~	0.014	2.00	<1 mg/kg 0.0 RPD
	~~1595.01~~						500	5	0.229	36.73	0.73 mg/l
	1595.01	} from p.70					500	1	0.080	12.09	1.21 ✓
	1597.01						500	~~15~~	0.060	8.78	0.18
	1598.01						500	~~0.212~~		33.92	0.68
	1597.01						500	10	0.090	13.44	0.14
redistilled	Blank						✓	50	~~0.000~~		

Other Clients

Other Clients

To Page No. ___

Witnessed & Understood by me. Date

Invented by

Recorded by

Date

Project No.

TITLE Book No.

Page No.

Test Performed: Cn- (Total Amen)
Date Received: 3/10/87
Work Performed By: A. Vogel

Method EPA 335.2
Instrument SPEC 88
Stock Cn- 0.0185N
Prepared 2/16/87 Book, page 254,46
Stand. 2/16/87 Book, page 210,79
Curve Date 2/16/87 Expires 3/16/87
Other:

$mg/L = \frac{A \times 50}{Br\ C}$

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From	KI	pH	(B) mls distilled	(C) mls for color	Abs	(A) µg from curve	Results (mg/L)
Undistilled		Blank				–	50	Set 100cc		
	BLANK			–	–	500	50	0.010	0.52	<0.02 + <0.0
D1	SPIKE			–	–	5ml STD(2)/500	50	0.279	44.996	93.9% REC
										FREE AMENABLE
	1637.01 Amen.	N	A-26	N	12	500	5			TITRATE
	1640.01 Amen.	N	A-26	N	13	500	5	0.800	131.15 AN	2.62 (2.16)
	1641.01 Amen.	N	A-26	N	13	500	5			TITRATE
	1642.01 Amen.	N	A-26	N	12	500	5	0.187	29.78	0.596 (21.2)
										TOTAL
4989	1429.04	N	A-34	–	–	6.427 g/500	50	0.019	2.00	<1 mg/kg
4989	1430.04	N	A-34	–	–	6.464 g/500	50	0.040	5.48	<1 mg/kg
4974	1308.01	N	A-6	–	–	1.694 g/500	50	0.041	5.64	~~3.33~~ mg/kg
5000	1468.01	Y	A-9				20	0.113	17.55	0.92 ~~0.050~~ mg/L
5000	1468.01	SPIKE	A-9	N	14	475ml+5ml STD(2)	20	0.204	32.59	0.172 ~~0.168~~ AN 78.3% REC
							* Turned yellow (NaOH)			

Other Sheets

To Page No.

Witnessed & Understood by me, Date Invented by Date

Recorded by