SDMS US EPA REGION V -1

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

REF 15h

157441

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 Number:	U-4465
Sample Numbers:	DC-SS-01 through DC-SS-23 and DC-SS-45
Analyses:	Target Analyte List (TAL) Metals and Cyanide
Collection Dates:	November 10 and November 11, 1986

The data for these 24 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.

The aluminum and barium ICP raw data are incomplete. Therefore, the aluminum results for samples DC-SS-15 through DC-SS-23 and sample DC-SS-45, and the barium results for samples DC-SS-01

through DC-SS-12 cannot be verified. These aluminum and barium results are considered estimated and qualified "UJ" if undetected and "J" if positive.

2.2 HOLDING TIMES

All holding time requirements were met.

2.3 CALIBRATIONS

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

2.4 BLANKS

All blank 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 laboratory duplicate sample result is above the acceptable QC limit for precision. All positive lead 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 percent recovery (%R) for arsenic (50 %R) is below the lower control limit of 75 %R. All arsenic results for all samples in this case are considered estimated and qualified "J" if greater than the detection limit or "UJ" if undetected. The percent recovery indicates a low bias.

2.9 FURNACE ATOMIC ABSORPTION QC

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

Analyte	Samples
Selenium	DC-SS-09, DC-SS-12, DC-SS-15, DC-SS-16, DC-SS-20, DC-SS-22, DC-SS-23, and DC-SS-45
Tin	DC-SS-10, DC-SS-13, and DC-SS-14
Thallium	DC-SS-11, DC-SS-12, and DC-SS-20

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

Since the sample results for lead are greater than five times the instrument detection limit for the ICP; therefore, all samples were analyzed by ICP.

The laboratory failed to report the "U" qualifier after the mercury results for samples DC-SS-05 and DC-SS-06. The mercury is undetected in these samples at the detection limit given in the report.

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.

ATTACHMENT A

FORMS I

CASE NUMBER U-4465

SURFACE SOIL INORGANICS

ecology and environment, inc.

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

January 21, 1987

Job # U-4465

Sample # DC-SS-01 through DC-SS-23
DC-SS-45

CASE NARRATIVE

Enclosed are the inorganic analytical results for sediment samples received on November 13, 1986. 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. A strip chart recording of one day's selenium analysis was not made due to equipment problems. Mercury analysis was performed on November 24, 1986. Cyanide analysis was performed on November 18 and November 20, 1986.

A calibration verification standard and blank for mercury were not performed at the required frequency. This problem was not noted until hold times had expired. The data are believed to be valid because spiked samples were run late in the analytical sequence with excellent recovery.

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

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

Gary Hahn

Gary Hahn, Manager
Analytical Services Center

GH/db

Enclosures

Date 1/20/87

COVER PAGE
INORGANIC ANALYSES DATA PACKAGE

Lab Name Ecology AND Environment, Inc. Case No. U-4465

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

Sample Numbers

	Lab ID No.		Lab ID No.
DC-SS01	9748	DC-SS10	9757
DC-SS02	9749	DC-SS11	9758
DC-SS03	9750	DC-SS12	9759
DC-SS04	9751	DC-SS13	9760
DC-SS05	9752	DC-SS14	9761
DC-SS06	9753	DC-SS15	9762
DC-SS07	9754	DC-SS16	9763
DC-SS08	9755	DC-SS17	9764
DC-SS09	9756	DC-SS18	9765

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 1/20/87

COVER PAGE
INORGANIC ANALYSES DATA PACKAGE

Lab Name Ecology and Environment, Inc. Case No. U-4465

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

Sample Numbers

	Lab ID No.			Lab ID No.
DC-SS19	9766			
DC-SS20	9767			
DC-SS21	9768			
DC-SS22	9769			
DC-SS23	9770			
DC-SS45	9771			

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

Original Missing

Page ~~4~~ 3

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

CHAIN-OF-CUSTODY RECORD

Project No	Project Name	Project Manager
IL3140	DEAD CREEK	M. MILLER

Samplers (Signatures)	Field Team Leader
Kevin Phillips	KEVIN PHILLIPS

STATION NUMBER	DATE	TIME	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE TYPE AIR	SAMPLE INFORMATION EXPECTED COMPOUNDS (Concentration)*	STATION LOCATION	NUMBER OF CONTAINERS	1-8oz. HSL ORGANIC	1-8oz. METAL TOXICITY	2-120ml. VOA	REMARKS
DC-SS01	11-10-86	1615		X		UNKNOWN	GRID NO. C-1	4	1	1	2	
DC-SS02	11-6-86	1645		X			G-1	4	1	1	2	
DC-SS03	11-11-86	1015		X			B-2	4	1	1	2	
DC-SS04		1115		X			E-2	4	1	1	2	
DC-SS05		1430		X		MAY CONTAIN HIGHER CONC.	H-2	4	1	1	2	
DC-SS06		1430		X			H-2	4	1	1	2	
DC-SS07		1450		X			I-2	4	1	1	2	
DC-SS08		1500		X			J-2	4	1	1	2	
DC-SS09		1000		X			A-3	4	1	1	2	
DC-SS10		1015		X			B-3	4	1	1	2	
DC-SS11		1030		X			C-3	4	1	1	2	
DC-SS12		1045		X			D-3	4	1	1	2	

Relinquished By (Signature)	Date Time	Received By (Signature)	Relinquished By (Signature)	Date Time	Received By (Signature)	Shipping
Kevin Phillips	11-12-86/1400	[illegible]				FEDERAL EXPRESS
Relinquished By (Signature)	Date Time	Received By (Signature)	Relinquished By (Signature)	Date Time	Received By (Signature)	BL Airb. Number: 2219748300 ~~2219748296~~ CP
Relinquished By (Signature)	Date Time	Received For Laboratory By (Signature)	Relinquished By (Signature)	Date Time	Received For Laboratory By (Signature)	Date: 11-12-86

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

*See CONCENTRATION RANGE on back of form

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

CHAIN-OF-CUSTODY RECORD

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

Samplers (Signatures)	Field Team Leader
Kevin Phillips	KEVIN PHILLIPS

STATION NUMBER	DATE	TIME	SAMPLE TYPE: COMP	GRAB	AIR	SAMPLE INFORMATION / EXPECTED COMPOUNDS (Concentration)*	STATION LOCATION	NUMBER OF CONTAINERS	1-8oz HSL ORGANIC	1-8oz METAL+CYANIDE	2-120ml VOA			REMARKS
DC-SS13	11-11-86	1115		X		UNKNOWN MAY CONTAIN HIGHER CONC.	GRID # E-3	4	1	1	2			
DC-SS14		1130		X		AND/OR OILS	F-3	4	1	1	2			
DC-SS15		1400		X			G-3	4	1	1	2			
DC-SS16		1400		X			G-3	4	1	1	1			SECOND VOA BROKEN DURING PACKAGING
DC-SS17		1430		X			H-3	4	1	1	2			
DC-SS18		1100		X			A-4	4	1	1	2			
DC-SS19		1110		X			B-4	4	1	1	2			
DC-SS20		1120		X			C-4	4	1	1	2			
DC-SS21		1130		X			D-4	4	1	1	2			
DC-SS22		1140		X			E-4	4	1	1	2			
DC-SS23		1150		X			F-4	4	1	1	2			
DC-SS25		1700		X			BLANK	4	1	1	2			

Relinquished By (Signature)	Date/Time	Received By (Signature)	Relinquished By (Signature)	Date/Time	Received By (Signature)	Shipment
Kevin Phillips	11-12-86/1900	[illegible]				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: 2219748300 — Date: 11-12-86

Distribution: Original Accompanies Shipment, Copy to Coordinator Field Files

*See CONCENTRATION RANGE on back of form

Form I

Sample No.
DC-SS01

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9748 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	11400 P	13.	Magnesium	NR
2.	Antimony	15 U P	14.	Manganese	336 P
3.	Arsenic	6.8 R F	15.	Mercury	0.16 CV
4.	Barium	163 P	16.	Nickel	22 P
5.	Beryllium	1.3 U P	17.	Potassium	NR
6.	Cadmium	2.6 P	18.	Selenium	1.2 U F
7.	Calcium	NR	19.	Silver	2.6 U P
8.	Chromium	16 P	20.	Sodium	NR
9.	Cobalt	6.2 P	21.	Thallium	2.5 U F
10.	Copper	327 P	22.	Tin	10 U F
11.	Iron	19000 P	23.	Vanadium	25 P
12.	Lead	103 * P	24.	Zinc	299 P
Cyanide		1.3 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-SS02

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology AND Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9749 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	10900 P	13.	Magnesium	NR
2.	Antimony	15 U P	14.	Manganese	295 P
3.	Arsenic	4.9 R F	15.	Mercury	0.23 CV
4.	Barium	174 P	16.	Nickel	25 P
5.	Beryllium	1.3 U P	17.	Potassium	NR
6.	Cadmium	3.4 P	18.	Selenium	1.2 U F
7.	Calcium	NR	19.	Silver	2.6 U P
8.	Chromium	15 P	20.	Sodium	NR
9.	Cobalt	7.8 P	21.	Thallium	2.5 U F
10.	Copper	344 P	22.	Tin	9.9 U F
11.	Iron	20300 P	23.	Vanadium	26 P
12.	Lead	134 * P	24.	Zinc	406 P
	Cyanide	1.3 U		Percent Solids (%)	77

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

Comments: NR: Analysis not requested.

Lab Manager: Bruce H Rohrbach

Form I

Sample No.
DC-5503

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9750 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	7820 P	13.	Magnesium	NR
2.	Antimony	14 UP	14.	Manganese	300 P
3.	Arsenic	5.7R F	15.	Mercury	0.071UCV
4.	Barium	151 P	16.	Nickel	18 P
5.	Beryllium	1.2 UP	17.	Potassium	NR
6.	Cadmium	1.8 P	18.	Selenium	1.1 UF
7.	Calcium	NR	19.	Silver	2.3 UP
8.	Chromium	12 P	20.	Sodium	NR
9.	Cobalt	6.4 P	21.	Thallium	2.2 UF
10.	Copper	162 P	22.	Tin	8.7 UF
11.	Iron	15700 P	23.	Vanadium	20 P
12.	Lead	68 * P	24.	Zinc	188 P
	Cyanide	1.2 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 Bruce H. Rohrbach

Form I

Sample No.
DC - 5504

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9751 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	9670 P	13.	Magnesium	NR
2.	Antimony	14 UP	14.	Manganese	329 P
3.	Arsenic	5.8 R F	15.	Mercury	0.082UCV
4.	Barium	145 P	16.	Nickel	22 P
5.	Beryllium	1.2 UP	17.	Potassium	NR
6.	Cadmium	1.7 P	18.	Selenium	1.2UF
7.	Calcium	NR	19.	Silver	2.3 UP
8.	Chromium	14 P	20.	Sodium	NR
9.	Cobalt	6.4 P	21.	Thallium	2.5 UF
10.	Copper	245 P	22.	Tin	9.5 UF
11.	Iron	17400 P	23.	Vanadium	23 P
12.	Lead	99 * P	24.	Zinc	281 P
Cyanide		1.2 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: Bruce H. Polstrand

Form I

Sample No.
DC-5505

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9752 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	15300	P	13.	Magnesium	NR	
2.	Antimony	21 U	P	14.	Manganese	339	P
3.	Arsenic	5.8R	F	15.	Mercury	0.11UCV	
4.	Barium	222	P	16.	Nickel	35	P
5.	Beryllium	1.7 U	P	17.	Potassium	NR	
6.	Cadmium	6.3	P	18.	Selenium	1.7UF	
7.	Calcium	NR		19.	Silver	3.5UP	
8.	Chromium	21	P	20.	Sodium	NR	
9.	Cobalt	8.2	P	21.	Thallium	3.4UF	
10.	Copper	392	P	22.	Tin	14UF	
11.	Iron	25900	P	23.	Vanadium	35	P
12.	Lead	232 *	P	24.	Zinc	619	P
Cyanide		1.8	U	Percent Solids (%)		56	

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 Brian H. Petersen

Form I

Sample No.
DC-5506

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9753 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	16500	P	13.	Magnesium	NR	
2.	Antimony	19 U	P	14.	Manganese	390	P
3.	Arsenic	5.7 R	F	15.	Mercury	0.11 U	CV
4.	Barium	224	P	16.	Nickel	33	P
5.	Beryllium	1.6 U	P	17.	Potassium	NR	
6.	Cadmium	4.8	P	18.	Selenium	1.6 U	F
7.	Calcium	NR		19.	Silver	3.2 U	P
8.	Chromium	22	P	20.	Sodium	NR	
9.	Cobalt	9.3	P	21.	Thallium	3.2 U	F
10.	Copper	572	P	22.	Tin	13 U	F
11.	Iron	27600	P	23.	Vanadium	38	P
12.	Lead	230 *	P	24.	Zinc	613	P
Cyanide		1.6	U	Percent Solids (%)		61	

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 Bruce H. Rohrbach

Form I

Sample No.
DC-5507

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9754 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	7610 P	13.	Magnesium	NR
2.	Antimony	17 U P	14.	Manganese	291 P
3.	Arsenic	7.5 R F	15.	Mercury	0.29 CV
4.	Barium	202 P	16.	Nickel	24 P
5.	Beryllium	1.4 U P	17.	Potassium	NR
6.	Cadmium	10 P	18.	Selenium	1.3 U F
7.	Calcium	NR	19.	Silver	2.8 U P
8.	Chromium	19 P	20.	Sodium	NR
9.	Cobalt	6.3 P	21.	Thallium	2.6 U F
10.	Copper	2220 P	22.	Tin	11 U F
11.	Iron	20300 P	23.	Vanadium	22 P
12.	Lead	514 * P	24.	Zinc	975 P
	Cyanide	1.4 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: Bruce H. Rohrbach

Form I

Sample No.
DC-SS08

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9755 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	5950 P	13.	Magnesium	NR
2.	Antimony	13 UP	14.	Manganese	217 P
3.	Arsenic	5.6R F	15.	Mercury	0.068UCV
4.	Barium	138 P	16.	Nickel	16 P
5.	Beryllium	1.1UP	17.	Potassium	NR
6.	Cadmium	3.3 P	18.	Selenium	1.1UF
7.	Calcium	NR	19.	Silver	2.2UP
8.	Chromium	11 P	20.	Sodium	NR
9.	Cobalt	5.6 P	21.	Thallium	2.2UF
10.	Copper	675 P	22.	Tin	8.9UF
11.	Iron	13800 P	23.	Vanadium	16 P
12.	Lead	131 * P	24.	Zinc	354 P
	Cyanide	1.1 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 Bruce H. Rohrbach

Form I

Sample No.
DC-5509

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9756 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	9290 P	13.	Magnesium	NR
2.	Antimony	16 U P	14.	Manganese	322 P
3.	Arsenic	13 R F	15.	Mercury	6.6 CV
4.	Barium	13800 P	16.	Nickel	360 P
5.	Beryllium	1.3 U P	17.	Potassium	NR
6.	Cadmium	10 P	18.	Selenium	1.4 U F
7.	Calcium	NR	19.	Silver	4.2 P
8.	Chromium	119 P	20.	Sodium	NR
9.	Cobalt	15 P	21.	Thallium	2.8 U F
10.	Copper	1200 P	22.	Tin	11 U F
11.	Iron	38600 P	23.	Vanadium	139 P
12.	Lead	655 * P	24.	Zinc	4580 P
	Cyanide	1.4 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 Bruce H. Rohrbach

Form I

Sample No.
DC-SS10

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9757 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	7880 P	13.	Magnesium	NR
2.	Antimony	15 UP	14.	Manganese	171 P
3.	Arsenic	5.4R F	15.	Mercury	1.3 CV
4.	Barium	575 P	16.	Nickel	84 P
5.	Beryllium	1.2 UP	17.	Potassium	NR
6.	Cadmium	4.4 P	18.	Selenium	1.3UF
7.	Calcium	NR	19.	Silver	5.0 P
8.	Chromium	52 P	20.	Sodium	NR
9.	Cobalt	8.5 P	21.	Thallium	2.6UF
10.	Copper	260 P	22.	Tin	10 UF
11.	Iron	✓ 18000 P	23.	Vanadium	31 P
12.	Lead	334 * P	24.	Zinc	5130 P
	Cyanide	1.3 U		Percent Solids (%)	76

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

Comments: NR: Analysis not requested

Lab Manager: [signature]

Form I

Sample No.
DC-SS11

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9758 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	2790 P	13.	Magnesium	NR
2.	Antimony	18 UP	14.	Manganese	96 P
3.	Arsenic	5.6 R F	15.	Mercury	1.7 CV
4.	Barium	20200 P	16.	Nickel	61 P
5.	Beryllium	1.5 UP	17.	Potassium	NR
6.	Cadmium	4.5 P	18.	Selenium	1.4 UF
7.	Calcium	NR	19.	Silver	3.0 UP
8.	Chromium	39 P	20.	Sodium	NR
9.	Cobalt	12 P	21.	Thallium	2.9 UF
10.	Copper	487 P	22.	Tin	11 UF
11.	Iron	29800 P	23.	Vanadium	75 P
12.	Lead	614 * P	24.	Zinc	794 P
	Cyanide	4.8		Percent Solids (%)	64

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-SS12

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology AND Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9759 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	23300	P	13.	Magnesium	NR	
2.	Antimony	18 U	P	14.	Manganese	150	P
3.	Arsenic	26 R	F	15.	Mercury	14	CV
4.	Barium	7340	P	16.	Nickel	382	P
5.	Beryllium	1.5 U	P	17.	Potassium	NR	
6.	Cadmium	8.1	P	18.	Selenium	1.5 U	F
7.	Calcium	NR		19.	Silver	3.0 U	P
8.	Chromium	46	P	20.	Sodium	NR	
9.	Cobalt	13	P	21.	Thallium	3.0 U	F
10.	Copper	1430	P	22.	Tin	12 U	F
11.	Iron	45000	P	23.	Vanadium	129	P
12.	Lead	711 *	P	24.	Zinc	23900	P

Cyanide 3.3 Percent Solids (%) 64

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: Bruce A. Rotsbach

Form I

Sample No.
DC-SS13

Date 1/30/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9760 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	4780	P	13.	Magnesium	NR	
2.	Antimony	17 U	P	14.	Manganese	129	P
3.	Arsenic	12 R	F	15.	Mercury	1.7	CV
4.	Barium	169000	P	16.	Nickel	62	P
5.	Beryllium	1.4 U	P	17.	Potassium	NR	
6.	Cadmium	5.6	P	18.	Selenium	1.4 U	F
7.	Calcium	NR		19.	Silver	2.9 U	P
8.	Chromium	24	P	20.	Sodium	NR	
9.	Cobalt	89	P	21.	Thallium	2.9 U	F
10.	Copper	624	P	22.	Tin	11 U	F
11.	Iron	22200	P	23.	Vanadium	29	P
12.	Lead	310 *	P	24.	Zinc	8110	P

Cyanide 1.6 Percent Solids (%) 68

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: Bruce H. [illegible]

Form I

Sample No.
DC-SS14

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology AND Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9761 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	4710	P	13.	Magnesium	NR	
2.	Antimony	18 U	P	14.	Manganese	191	P
3.	Arsenic	7.9 B	F	15.	Mercury	7.4	CV
4.	Barium	67300	P	16.	Nickel	48	P
5.	Beryllium	1.5 U	P	17.	Potassium	NR	
6.	Cadmium	3.5	P	18.	Selenium	1.4 U	F
7.	Calcium	NR		19.	Silver	3.0 U	P
8.	Chromium	52	P	20.	Sodium	NR	
9.	Cobalt	27	P	21.	Thallium	2.8 U	F
10.	Copper	483	P	22.	Tin	11 U	F
11.	Iron	22400	P	23.	Vanadium	46	P
12.	Lead	2950 *	P	24.	Zinc	1840	P

Cyanide 2.8 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 Bruce H Polstead

Form I

Sample No.
AC-5515

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9762 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	6960 P	13.	Magnesium	NR
2.	Antimony	14 P	14.	Manganese	770 P
3.	Arsenic	36R F	15.	Mercury	3.2 CV
4.	Barium	1160 P	16.	Nickel	122 P
5.	Beryllium	1.1U P	17.	Potassium	NR
6.	Cadmium	46 P	18.	Selenium	1.2U F
7.	Calcium	NR	19.	Silver	6.4 P
8.	Chromium	147 P	20.	Sodium	NR
9.	Cobalt	11 P	21.	Thallium	2.5UF
10.	Copper	2170 P	22.	Tin	34 F
11.	Iron	75800 P	23.	Vanadium	133 P
12.	Lead	1240 * P	24.	Zinc	22800 P

Cyanide 1.6 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: Bruce H. Potstead

~~20~~

Form I

Sample No.
PC-SS16

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9763 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	6170	P	13.	Magnesium	NR	
2.	Antimony	21	P	14.	Manganese	874	P
3.	Arsenic	38R	F	15.	Mercury	5.8	P
4.	Barium	869	P	16.	Nickel	109	P
5.	Beryllium	1.2U	P	17.	Potassium	NR	
6.	Cadmium	45	P	18.	Selenium	1.3U	F
7.	Calcium	NR		19.	Silver	5.4	P
8.	Chromium	98	P	20.	Sodium	NR	
9.	Cobalt	11	P	21.	Thallium	2.6U	F
10.	Copper	1620	P	22.	Tin	34	F
11.	Iron	108000	P	23.	Vanadium	140	P
12.	Lead	1610 *	P	24.	Zinc	15600	P
	Cyanide	1.3	U		Percent Solids (%)	77	

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

Comments: NR: Analysis not requested.

Bruce H Potsdam

Form I

Sample No.
DC-SS17

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9764 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	8890 P	13.	Magnesium	NR
2.	Antimony	17 U P	14.	Manganese	534 P
3.	Arsenic	33R F	15.	Mercury	6.6 CV
4.	Barium	1560 P	16.	Nickel	87 P
5.	Beryllium	1.4 U P	17.	Potassium	NR
6.	Cadmium	17 P	18.	Selenium	1.3UF
7.	Calcium	NR	19.	Silver	6.1 P
8.	Chromium	66 P	20.	Sodium	NR
9.	Cobalt	7.3 P	21.	Thallium	2.7UF
10.	Copper	914 P	22.	Tin	11 UF
11.	Iron	46000 P	23.	Vanadium	211 P
12.	Lead	1470 * P	24.	Zinc	5100 P
	Cyanide	1.4 U		Percent Solids (%)	72

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

Comments: NR: Analysis not requested.

Lab Manager: [signature]

Form I

Sample No.
DC-5518

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9765 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	4860 P	13.	Magnesium	NR
2.	Antimony	15 U P	14.	Manganese	193 P
3.	Arsenic	64 R F	15.	Mercury	0.57 CV
4.	Barium	13900 P	16.	Nickel	95 P
5.	Beryllium	1.2 U P	17.	Potassium	NR
6.	Cadmium	7.2 P	18.	Selenium	1.2 U F
7.	Calcium	NR	19.	Silver	2.4 U P
8.	Chromium	137 P	20.	Sodium	NR
9.	Cobalt	15 P	21.	Thallium	2.4 U F
10.	Copper	246 P	22.	Tin	9.8 U F
11.	Iron	46800 P	23.	Vanadium	25 P
12.	Lead	207* P	24.	Zinc	32100 P
	Cyanide	5.2 U+		Percent Solids (%)	77

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

Comments: NR: Analysis not requested
+ Elevated detection limit due to matrix interference.

Name: Bruce H. Rotstead

Form I

Sample No.
AC-SS19

Date 11/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9766 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	4790	P	13.	Magnesium	NR	
2.	Antimony	17 U	P	14.	Manganese	223	P
3.	Arsenic	57 R	F	15.	Mercury	12	CV
4.	Barium	1810	P	16.	Nickel	84	P
5.	Beryllium	1.4 U	P	17.	Potassium	NR	
6.	Cadmium	10	P	18.	Selenium	1.4 U	F
7.	Calcium	NR		19.	Silver	3.0	P
8.	Chromium	47	P	20.	Sodium	NR	
9.	Cobalt	3.8	P	21.	Thallium	2.7 U	F
10.	Copper	637	P	22.	Tin	21	F
11.	Iron	48600	P	23.	Vanadium	163	P
12.	Lead	263*	P	24.	Zinc	19400	P
Cyanide		3.9		Percent Solids (%)		68	

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.

Barrett Potter

Form I

Sample No.
DC-SS20

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9767 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	9410 P	13.	Magnesium	NR
2.	Antimony	16 U P	14.	Manganese	144 P
3.	Arsenic	40 R F	15.	Mercury	2.3 CV
4.	Barium	4780 P	16.	Nickel	39 P
5.	Beryllium	1.4 U P	17.	Potassium	NR
6.	Cadmium	11 P	18.	Selenium	1.4 U F
7.	Calcium	NR	19.	Silver	3.3 P
8.	Chromium	34 P	20.	Sodium	NR
9.	Cobalt	6.7 P	21.	Thallium	2.8 U F
10.	Copper	639 P	22.	Tin	11 U F
11.	Iron	25800 P	23.	Vanadium	20 P
12.	Lead	1470 * P	24.	Zinc	46700 P
	Cyanide	6.0 U +		Percent Solids (%)	67

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
+ Elevated detection limit due to matrix interferences.

Lab Manager Bruce H. Rohrbach

Form I

Sample No.
PC-5521

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9768 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	6960 P	13.	Magnesium	NR
2.	Antimony	15 U P	14.	Manganese	116 P
3.	Arsenic	14 R F	15.	Mercury	2.8 CV
4.	Barium	10600 P	16.	Nickel	52 P
5.	Beryllium	1.2 U P	17.	Potassium	NR
6.	Cadmium	5.2 P	18.	Selenium	1.2 U F
7.	Calcium	NR	19.	Silver	2.5 U P
8.	Chromium	44 P	20.	Sodium	NR
9.	Cobalt	12 P	21.	Thallium	2.4 U F
10.	Copper	444 P	22.	Tin	9.8 U F
11.	Iron	33600 P	23.	Vanadium	69 P
12.	Lead	482 * P	24.	Zinc	814 P
	Cyanide	4.4		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 Bruce H Rotstrack

Form I

Sample No.
DC-SS22

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9769 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	4990 P	13.	Magnesium	NR
2.	Antimony	15 U P	14.	Manganese	278 P
3.	Arsenic	23 R F	15.	Mercury	2.7 CV
4.	Barium	19300 P	16.	Nickel	33 P
5.	Beryllium	1.3 U P	17.	Potassium	NR
6.	Cadmium	8.7 P	18.	Selenium	1.2 UF
7.	Calcium	NR	19.	Silver	2.5 UP
8.	Chromium	81 P	20.	Sodium	NR
9.	Cobalt	18 P	21.	Thallium	2.5 UF
10.	Copper	684 P	22.	Tin	9.9 UF
11.	Iron	15900 P	23.	Vanadium	41 P
12.	Lead	296* P	24.	Zinc	7100 P
	Cyanide	3.2		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.

Bruce H. Rohstead

Form I

Sample No.
AC-5523

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9770 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	9620 P	13.	Magnesium	NR
2.	Antimony	15 U P	14.	Manganese	10800 P
3.	Arsenic	22 R F	15.	Mercury	11 CV
4.	Barium	4340 P	16.	Nickel	50 P
5.	Beryllium	1.2 U P	17.	Potassium	NR
6.	Cadmium	20 P	18.	Selenium	1.3 U F
7.	Calcium	NR	19.	Silver	33 P
8.	Chromium	48 P	20.	Sodium	NR
9.	Cobalt	59 P	21.	Thallium	2.6 U F
10.	Copper	1950 P	22.	Tin	10 U F
11.	Iron	39900 P	23.	Vanadium	166 P
12.	Lead	11700 * P	24.	Zinc	24200 P
	Cyanide	2.7		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 Bruce H Rohrbach

Form I

Sample No.
AC-5545

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9771 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	9260 P	13.	Magnesium	NR
2.	Antimony	15 U P	14.	Manganese	381 P
3.	Arsenic	7.0 R F	15.	Mercury	<0.074 U CV
4.	Barium	326 P	16.	Nickel	16 P
5.	Beryllium	1.2 U P	17.	Potassium	NR
6.	Cadmium	1.4 P	18.	Selenium	1.3 U F
7.	Calcium	NR	19.	Silver	2.5 U P
8.	Chromium	13 P	20.	Sodium	NR
9.	Cobalt	4.9 P	21.	Thallium	2.5 U F
10.	Copper	31 P	22.	Tin	10 U F
11.	Iron	16200 P	23.	Vanadium	22 P
12.	Lead	68 * P	24.	Zinc	162 P
Cyanide		1.3 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: Barrett Potebnet

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

DATE 11/18/86 UNITS µg/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									
2. Antimony									
3. Arsenic									
4. Barium									
5. Beryllium									
6. Cadmium									
7. Calcium									
8. Chromium									
9. Cobalt									
10. Copper									
11. Iron									
12. Lead									
13. Magnesium									
14. Manganese									
15. Mercury									
16. Nickel									
17. Potassium									
18. Selenium									
19. Silver									
20. Sodium									
21. Thallium									
22. Tin									
23. Vanadium									
24. Zinc									
Other:									
Cyanide				48	45	94			

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

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

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

DATE 11/20/86 UNITS µg/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									
2. Antimony									
3. Arsenic									
4. Barium									
5. Beryllium									
6. Cadmium									
7. Calcium									
8. Chromium									
9. Cobalt									
10. Copper									
11. Iron									
12. Lead									
13. Magnesium									
14. Manganese									
15. Mercury									
16. Nickel									
17. Potassium									
18. Selenium									
19. Silver									
20. Sodium									
21. Thallium									
22. Tin									
23. Vanadium									
24. Zinc									
Other:									
yanide				48	46	96	47	98	

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

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

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc CASE NO. U-4465

SOW NO. 784

DATE 11/24/86 UNITS µg/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									
2. Antimony									
3. Arsenic									
4. Barium									
5. Beryllium									
6. Cadmium									
7. Calcium									
8. Chromium									
9. Cobalt									
10. Copper									
11. Iron									
12. Lead									
13. Magnesium									
14. Manganese									
15. Mercury	2.0	2.0	100						CV
16. Nickel									
17. Potassium									
18. Selenium									
19. Silver									
20. Sodium									
21. Thallium									
22. Tin									
23. Vanadium									
24. Zinc									
Other:									
Cyanide									

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

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

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

DATE 12/11/86 UNITS µg/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum	500	511	102	500	488	98	510	102	P
2. Antimony	500	550	116	500	501	100	535	107	P
3. Arsenic									
4. Barium	500	515	103	500	486	97	513	103	P
5. Beryllium	500	509	102	500	504	101	521	104	P
6. Cadmium	500	506	101	500	505	101	512	102	P
7. Calcium									
8. Chromium	500	507	101	500	498	100	508	102	P
9. Cobalt	500	508	102	500	511	102	521	104	P
10. Copper	500	512	102	500	493	99	519	104	P
11. Iron	500	511	102	500	509	102	522	104	P
12. Lead	500	539	108	500	462	92	495	99	P
13. Magnesium									
14. Manganese	500	507	101	500	513	103	521	104	P
15. Mercury									
16. Nickel	500	510	102	500	526	105	535	107	P
17. Potassium									
18. Selenium									
19. Silver	500	502	100	500	503	101	516	103	P
20. Sodium									
21. Thallium									
22. Tin									
23. Vanadium	500	507	101	500	493	99	507	101	P
24. Zinc	500	506	101	500	484	97	502	100	P
Other:									
Cyanide									

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

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

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc. CASE NO. 4-4465

SOW NO. 784

DATE 12/11/86 UNITS µg/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum				500	509	102			P
2. Antimony				500	545	109			P
3. Arsenic									
4. Barium				500	507	101			P
5. Beryllium				500	505	101			P
6. Cadmium				500	519	104			P
7. Calcium									
8. Chromium				500	511	102			P
9. Cobalt				500	516	103			P
10. Copper				500	505	101			P
11. Iron				500	520	104			P
12. Lead				500	487	97			P
13. Magnesium									
14. Manganese				500	520	104			P
15. Mercury									
16. Nickel				500	522	104			P
17. Potassium									
18. Selenium									
19. Silver				500	504	101			P
20. Sodium									
21. Thallium									
22. Tin									
23. Vanadium				500	503	101			P
24. Zinc				500	500	100			P
Other:									
Cyanide									

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

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

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

Form II

Q. C. Report No. _____

INITIAL AND CONTINUING CALIBRATION VERIFICATION[3]

LAB NAME Ecology and Environment, Inc CASE NO. U-4465

SOW NO. 784

DATE 12/26/86 UNITS µg/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									
2. Antimony									
3. Arsenic	25	24	96	25	23	92	24	96	F
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	25	26	104	25	22	88	27	108	F
19. Silver									
20. Sodium									
21. Thallium									
22. Tin									
23. Vanadium									
24. Zinc									
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-4465

SOW NO. 784

DATE 12/26/86 UNITS µg/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									
2. Antimony									
3. Arsenic				25	23	92			F
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				25	26	104			F
19. Silver									
20. Sodium									
21. Thallium									
22. Tin									
23. Vanadium									
24. Zinc									
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-4465

SOW NO. 784

DATE 1/8/87 UNITS µg/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									
2. Antimony									
3. Arsenic									
4. Barium									
5. Beryllium									
6. Cadmium									
7. Calcium									
8. Chromium									
9. Cobalt									
10. Copper									
11. Iron									
12. Lead									
13. Magnesium									
14. Manganese									
15. Mercury									
16. Nickel									
17. Potassium									
18. Selenium									
19. Silver									
20. Sodium									
21. Thallium	50	50	100	50	51	102	52	104	F
22. Tin	100	96	96	100	103	103	105	105	F
23. Vanadium									
24. Zinc									
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 CASE NO. U-4465

SOW NO. 784

DATE 1/8/87 UNITS µg/L

Compound	Initial Calib.[1]			Continuing Calibration[2]					
Metals:	True Value	Found	%R	True Value	Found	%R	Found	%R	Method[4]
1. Aluminum									
2. Antimony									
3. Arsenic									
4. Barium									
5. Beryllium									
6. Cadmium									
7. Calcium									
8. Chromium									
9. Cobalt									
10. Copper									
11. Iron									
12. Lead									
13. Magnesium									
14. Manganese									
15. Mercury									
16. Nickel									
17. Potassium									
18. Selenium									
19. Silver									
20. Sodium									
21. Thallium				50	52	104			F
22. Tin				100	105	105			F
23. Vanadium									
24. Zinc									
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-4465

DATE 11/18/86 UNITS ug/L

Matrix water for soil

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

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

DATE 11/20/86 UNITS µg/L

Matrix water for soil

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

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

DATE 11/24/86 UNITS µg/L

Matrix water for soil

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

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

DATE 12/11/86 UNITS µg/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		200U	
2. Antimony	60U	60U	60U	60U		60U	
3. Arsenic							
4. Barium	200U	200U	200U	200U		200U	
5. Beryllium	5U	5U	5U	5U		5U	
6. Cadmium	5U	5U	5U	5U		5U	
7. Calcium							
8. Chromium	10U	10U	10U	10U		10U	
9. Cobalt	50U	50U	50U	50U		50U	
10. Copper	25U	25U	25U	25U		25U	
11. Iron	100U	100U	100U	100U		100U	
12. Lead	5U	5U	5U	5U		5U	
13. Magnesium							
14. Manganese	15U	15U	15U	15U		15U	
15. Mercury							
16. Nickel	40U	40U	40U	40U		40U	
17. Potassium							
18. Selenium							
19. Silver	10U	10U	10U	10U		10U	
20. Sodium							
21. Thallium							
22. Tin							
23. Vanadium	50U	50U	50U	50U		50U	
24. Zinc	20 U	20U	20U	20U		20U	
Other:							
Cyanide							

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. H-4465

DATE 12/26/86 UNITS µg/L

Matrix water for soil

Preparation Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4	Preparation Blank 1	2
Metals:							
1. Aluminum							
2. Antimony							
3. Arsenic	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							
22. Tin							
23. Vanadium							
24. Zinc							
Other:							
Cyanide							

Form III

Q. C. Report No. _____

BLANKS

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

DATE 1/8/87 UNITS µg/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	
22. Tin	40U	40U	40U			40U	
23. Vanadium							
24. Zinc							
Other:							
Cyanide							

Form VI

Q. C. Report No. _____

DUPLICATES

LAB NAME Ecology And Environment, Inc.

CASE NO. U-4465

Sample No. DC-SS-45

DATE _____

Lab Sample ID No. 9771

Units mg/kg dry weight

Matrix SOIL

Compound	Control Limit[1]	Sample(S)	Duplicate(D)	RPD[2]
Metals:				
1. Aluminum		9260	10900	16
2. Antimony		15 U	14 U	NC
3. Arsenic		7.0	5.6	22
4. Barium		326	291	11
5. Beryllium		1.2 U	1.2 U	NC
6. Cadmium		1.4	1.3	0.7
7. Calcium				
8. Chromium		13	14	7.4
9. Cobalt		4.9	5.7	15
10. Copper		31	28	10
11. Iron		16200	17700	8.8
12. Lead		68	40	52 *
13. Magnesium				
14. Manganese		381	398	4.4
15. Mercury		0.074 U	0.077 U	NC
16. Nickel		16	18	12
17. Potassium				
18. Selenium		1.3 U	1.2 U	NC
19. Silver		2.5 U	2.4 U	NC
20. Sodium				
21. Thallium		2.5 U	2.5 U	NC
22. Tin		9.9 U	9.9 U	NC
23. Vanadium		22	26	17
24. Zinc		162	155	4.4
Other:				
Cyanide		1.1 U	1.1 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 V

Q. C. Report No. _____

SPIKE SAMPLE RECOVERY

LAB NAME Ecology and Environment, Inc.

CASE NO. U-4465

Sample No. DC-SS-45

Lab Sample ID No. 9771

DATE _____

Units mg/kg dry weight

Matrix SOIL

Compound	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spiked Added (SA)	%R[1]
Metals:					
1. Aluminum	75-125				
2. Antimony	"	95	15 U	123	77
3. Arsenic	"	12	7.0	9.9	50 R
4. Barium	"	793	326	491	95
5. Beryllium	"	12	1.2 U	12	100
6. Cadmium	"	12	1.4	12	88
7. Calcium	"				
8. Chromium	"	58	13	49	92
9. Cobalt	"	118	4.9	123	92
10. Copper	"	86	31	61	90
11. Iron	"				
12. Lead	"	161	68	123	76
13. Magnesium	"				
14. Manganese	"	500	381	123	97
15. Mercury	"	0.43	0.074 U	0.40	108
16. Nickel	"	129	16	123	92
17. Potassium	"				
18. Selenium	"	2.1	1.3 U	2.5	84
19. Silver	"	12	2.5 U	12	100
20. Sodium	"				
21. Thallium	"	13	2.5 U	12	108
22. Tin	"				
23. Vanadium	"	133	22	123	90
24. Zinc	"	270	162	123	88
Other:					
Cyanide	"	8.1	1.3 U	7.8	104

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

Form V

Q. C. Report No. _____

SPIKE SAMPLE RECOVERY

LAB NAME Ecology and Environment, Inc.

CASE NO. U-4465

Sample No. DC-SS-45

DATE _____

Lab Sample ID No. 9771

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	"	80	40 U	80	100
23. Vanadium	"				
24. Zinc	"				
Other:					
Cyanide	"				

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

"R" - out of control

Form VII

Q.C. Report No. _____

INSTRUMENT DETECTION LIMITS AND

LABORATORY CONTROL SAMPLE

LAB NAME Ecology And Environment, Inc. CASE NO. 4-4465

DATE 11/24/86 LCS UNITS ug/L mg/kg

(Circle One)

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

Form VII

Q.C. Report No. _____

INSTRUMENT DETECTION LIMITS AND

LABORATORY CONTROL SAMPLE

LAB NAME Ecology And Environment, Inc. CASE NO. 4-4465

DATE 12/11/86 LCS UNITS (ug/L) mg/kg

(Circle One)

Compound	Required Detection Limits (CRDL)-ug/l	Instrument Detection Limits (IDL)-ug/l		Lab Control Sample		
Metals:		ICP/AA	Furnace	True	Found	%R
1. Aluminum	200	100		970	1060	109
2. Antimony	60	6		990	1110	112
3. Arsenic	10		5			
4. Barium	200	10		970	1070	110
5. Beryllium	5	5		960	952	99
6. Cadmium	5	5		940	920	98
7. Calcium	5000	1000				
8. Chromium	10	10		1030	971	94
9. Cobalt	50	10		1000	994	99
10. Copper	25	10		1030	972	94
11. Iron	100	25		1020	986	97
12. Lead	5	50		1010	986	98
13. Magnesium	5000	1000				
14. Manganese	15	5		1020	976	96
15. Mercury	0.2	0.2				
16. Nickel	40	15		1020	994	97
17. Potassium	5000	1000				
18. Selenium	5		5			
19. Silver	10	10		990	1190	120
20. Sodium	5000	1000				
21. Thallium	10		5			
22. Tin	40		5			
23. Vanadium	50	10		1010	964	95
24. Zinc	20	10		1010	997	99
Other:						
Cyanide	10					

Form VII

Q.C. Report No. _____

INSTRUMENT DETECTION LIMITS AND

LABORATORY CONTROL SAMPLE

LAB NAME Ecology And Environment, Inc. CASE NO. 4-4465

DATE 12/26/86 LCS UNITS (ug/L) mg/kg

(Circle One)

Compound	Required Detection Limits (CRDL)-ug/l	Instrument Detection Limits (IDL)-ug/l		Lab Control Sample		
Metals:		ICP/AA	Furnace	True	Found	%R
1. Aluminum	200	100				
2. Antimony	60	6				
3. Arsenic	10		5	46	45	98
4. Barium	200	10				
5. Beryllium	5	5				
6. Cadmium	5	5				
7. Calcium	5000	1000				
8. Chromium	10	10				
9. Cobalt	50	10				
10. Copper	25	10				
11. Iron	100	25				
12. Lead	5	50				
13. Magnesium	5000	1000				
14. Manganese	15	5				
15. Mercury	0.2	0.2				
16. Nickel	40	15				
17. Potassium	5000	1000				
18. Selenium	5		5	7.9	8.2	104
19. Silver	10	10				
20. Sodium	5000	1000				
21. Thallium	10		5			
22. Tin	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. 4-4465

DATE 1/8/86 LCS UNITS (ug/L) mg/kg

(Circle One)

Compound	Required Detection Limits (CRDL)-ug/l	Instrument Detection Limits (IDL)-ug/l		Lab Control Sample		
Metals:		ICP/AA	Furnace	True	Found	%R
1. Aluminum	200	100				
2. Antimony	60	6				
3. Arsenic	10		5			
4. Barium	200	10				
5. Beryllium	5	5				
6. Cadmium	5	5				
7. Calcium	5000	1000				
8. Chromium	10	10				
9. Cobalt	50	10				
10. Copper	25	10				
11. Iron	100	25				
12. Lead	5	50				
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				
20. Sodium	5000	1000				
21. Thallium	10		5	25	23	92
22. Tin	40		5			
23. Vanadium	50	10				
24. Zinc	20	10				
Other:						
Cyanide	10					

Job #4465 Nead Creek

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

86/12/11
09:32

Result Name: 8612100838

blank	CAL BLK	CAL BLK	4465 9757.0301
standard	4465 9758.0301	500 PPB	9759. 1/10
standard	9749. 1/10	500 PPB	4465 9760.0301
500 PPB	4465 9759.0301	500 PPB	9760. 1/10
standard	9749. 1/10	4465 9759.0301	9760. 1/10
500 PPB	4465 9750.0301	9759. 1/10	9760. 0.1/10
500 PPB	9750. 1/10	4465 9755.0301	4465 9761.0301
500 PPB	4465 9751.0301	9755. 1/10	9761. 1/10
ICAP-19	9751. 1/10	4465 9756.0301	9761. 0.1/10
EPA 28348 1/50	4465 9752.0301	9756. 1/10	4465 9762.0301
ICAP-2	9752. 1/10	4465 9757.0301	9762. 1/10
500 PPM ICS	4465 9753.0301	9757. 1/10	9762. 0.1/10
10000 PPB	9753. 1/10	4465 9758.0301	4465 9763.0301
50 PPM	BLK 8743	9758. 1/10	9763. 1/10

Result Name: 0612100838

4465 9761.0301	4465 9763.0301	4111 9681.0301	500 PPB
9764. 1/10	9768. 1/10	4111 9682.0301	500 PPB
CAL BLK	4465 9769.0301	100 PPM ICS	
500 PPB	9769. 1/10	CAL BLK	
500 PPB	4465 9770.0301	500 PPB	
500 PPB	9770. 1/10	500 PPB	
4465 9765.0301	9770. 0.1/10	500 PPB	
9765. 1/10	4465 9771.0301	500 PPB	
9765. 0.1/10	9771. 1/10	4475 9819.0101	
4465 9766.0301	9771.0301 R	4550 0179.0301	
9766. 1/10	9771.R 1/10	4550 0180.0301	
4465 9767.0301	9771.030. RS	BLK #960	
9767. 1/10	9771.RS 1/10	CAL BLK	
9767. 0.1/10	4432 9566.0401	500 PPB	

Other Client

[illegible]	[illegible]	Intensity	[illegible]	cv	
Standard	[illegible]	Intensity	[illegible]	cv	
500 PPB	[illegible]	Intensity	[illegible]	cv	
Standard	[illegible]	Intensity	[illegible]	cv	
500 PPB	[illegible]	ug/L	[illegible]	cv	
[illegible]	[illegible]	ug/L	[illegible]	cv	
500 PPM ICE	[illegible]	ug/L	[illegible]	cv	
10000 PPB	10360.00	ug/L	[illegible]	cv	
~~[illegible]~~	~~[illegible]~~	~~ug/L~~ BHR	0.05	cv	over range
CAL BLK	-0.87	ug/L	-398.5	cv	
4465 9748.0301	1173.50	ug/L ✓	2.70	cv	
4465 9749.0301	1507.50	ug/L	0.61	cv	
4465 9750.0301	811.40	ug/L	0.22	cv	
4465 9751.0301	1203.00	ug/L	1.27	cv	
4465 9752.0301	1787.00	ug/L ✓	2.47	cv	
4465 9753.0301	1937.50	ug/L ✓	0.93	cv	
BLK #943	-1.80	ug/L	-93.[illegible]	cv	
CAL BLK	-1.62	ug/L	-132.0	cv	
500 PPB	[illegible]	ug/L	0.37	cv	
4465 9754.0301	[illegible]	ug/L	1.07	cv	
4465 9755.0301	1615.50	ug/L	0.81	cv	
4465 9756.0301	~~[illegible]~~	~~ug/L~~ overrange	1.03	cv	BHR
9756. 1/10	1727.50	ug/L	0.28	cv	
4465 9757.0302	~~[illegible]~~	~~ug/L~~ over range	0.99	cv	BHR
9757. 1/10	2085.00	ug/L	4.39	cv	
4465 9758.0301	2647.50	ug/L	1.73	cv	
4465 9759.0302	~~[illegible]~~	~~ug/L~~ over range	0.[illegible]	cv	BHR
9759. 1/10	7987.00	ug/L	1.50	cv	
4465 9760.0302	~~[illegible]~~	~~ug/L~~ over range	0.93	cv	BHR
~~9760. 1/10~~	~~[illegible]~~	~~ug/L~~	0.00	cv	computer missed initial replicate
9760. 1/10	2827.00	ug/L	1.45	cv	
4465 9761.0301	1027.00	ug/L	0.21	cv	
4465 9762.0302	~~[illegible]~~	~~ug/L~~ over range	0.01	cv	BHR
9762. 1/10	~~[illegible]~~	~~ug/L~~ over range	1.10	cv	BHR
9762. 0.1/10	1013.00	ug/L	1.11	cv	
4465 9763.0302	8880.00	ug/L ✓	0.05	cv	
9763. 1/10	6282.00	ug/L ✓	0.[illegible]	cv	
4465 9764.0301	8310.00	ug/L	1.64	cv	
9764. 1/10	1847.50	ug/L	0.[illegible]	cv	
CAL BLK	1.22	ug/L	50.90	cv	
500 PPB	502.10	ug/L	1.06	cv	
4465 9765.0302	8725.00	ug/L	0.08	cv	
9765. 1/10	~~[illegible]~~	~~ug/L~~ overrange	1.9[illegible]	cv	BHR
9765. 0.1/10	1289.00	ug/L	0.10	cv	
4465 9766.0302	~~[illegible]~~	~~ug/L~~ BHR	0.07	cv	over range
9766. 1/10	6860.50	ug/L	0.13	cv	
4465 9767.0302	~~[illegible]~~	~~ug/L~~ BHR	0.0[illegible]	cv	over range
9767. 1/10	~~19410.00~~	~~ug/L~~ BHR	[illegible]	cv	" "
9767. 0.1/10	1697.50	ug/L	0.05	cv	
4465 9768.0301	3307.50	ug/L	0.38	cv	
4465 9769.0302	~~[illegible]~~	~~ug/L~~ BHR	0.0[illegible]	cv	" "
9769. 1/10	2797.50	ug/L	1.[illegible]	cv	
4465 9770.0302	~~[illegible]~~	~~ug/L~~ BHR	0.[illegible]	cv	" "
9770. 1/10	~~[illegible]~~	~~ug/L~~ BHR	5.[illegible]	cv	" "
9770. 0.1/10	[illegible]	ug/L ✓	0.[illegible]	cv	
[illegible]	[illegible]	ug/L	1.[illegible]	cv	

[illegible]	[illegible]	[illegible]	ug/L	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	ug/L	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	ug/L	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	ug/L	[illegible]	[illegible]

[illegible]

[illegible]	[illegible]	[illegible]	intensity	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	intensity	[illegible]	[illegible]
500 [illegible]	[illegible]	[illegible]	intensity	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	intensity	[illegible]	[illegible]
500 [illegible]	[illegible]	[illegible]	ug/L	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	ug/L	[illegible]	[illegible]
500 [illegible] ICS	[illegible]	[illegible]	ug/L	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	ug/L	[illegible]	[illegible]
CAL BLK	[illegible]	[illegible]	ug/L	273.77	[illegible]
4465 9748.0301	10.10	✓	ug/L	[illegible]	[illegible]
4465 9749.0301	13.40	✓	ug/L	9.14	[illegible]
4465 9750.0301	7.58		ug/L	0.10	[illegible]
4465 9751.0301	7.06		ug/L	13.40	[illegible]
4465 9752.0301	16.20		ug/L	37.24	[illegible]
4465 9753.0301	15.27		ug/L	0.89	[illegible]
BLK #943	-1.08		ug/L	-44.34	[illegible]	window edge
CAL BLK	[illegible]		ug/L	359.[illegible]	[illegible]
500 [illegible]	[illegible]		ug/L	0.68	[illegible]
4465 9754.0301	18.06		ug/L	1.72	[illegible]
4465 9755.0301	18.07		ug/L	1.62	[illegible]
4465 9756.0301	18.54		ug/L	1.54	[illegible]
4465 9757.0301	18.01		ug/L	9.05	[illegible]
9757. 1710	0.10		ug/L	842.72	[illegible]
4465 9758.0301	15.12		ug/L	1.10	[illegible]
4465 9759.0301	16.92		ug/L	5.02	[illegible]
4465 9760.0301	19.37		ug/L	2.45	[illegible]
~~[illegible]~~	~~[illegible]~~		~~ug/L~~ BHR	0.00	[illegible]	Detrm. aborted; no spl dilution.
4465 9761.0301	11.55		ug/L	0.40	[illegible]
4465 9762.0301	102.63		ug/L	0.54	[illegible]
4465 9763.0301	102.15		ug/L	2.14	[illegible]
4465 9764.0301	61.97		ug/L	1.00	[illegible]
CAL BLK	0.77		ug/L	-213.6	[illegible]
500 [illegible]	512.00		ug/L	0.91	[illegible]
4465 9765.0301	18.77		ug/L	3.26	[illegible]
4465 9766.0301	39.00		ug/L	3.22	[illegible]
4465 9767.0301	39.21		ug/L	1.32	[illegible]
4465 9768.0301	21.23	✓	ug/L	10.21	[illegible]
4465 9769.0301	34.11		ug/L	0.30	[illegible]
4465 9770.0301	11.82		ug/L	3.06	[illegible]
4465 9771.0301	[illegible]		ug/L	5.[illegible]	[illegible]
9771.0301 R	0.50		ug/L	7.[illegible]	[illegible]
9771.0301 RE	[illegible]		ug/L	[illegible]	[illegible]
500 [illegible] ICS	[illegible]		ug/L	[illegible]	[illegible]
CAL BLK	[illegible]		ug/L	-117.[illegible]	[illegible]
[illegible]	[illegible]		ug/L	[illegible]	[illegible]

[illegible]

[illegible]	[illegible]	[illegible]	intensity	[illegible]	[illegible]	window edge
[illegible]	[illegible]	[illegible]	intensity	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	ug/L	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	ug/L	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	ug/L	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	ug/L	[illegible]	[illegible]

4465 9751.0301	[illegible]	ug/L		[illegible]	
4465 9752.0301	[illegible]	ug/L		[illegible]	
4465 9753.0301	[illegible]	ug/L		[illegible]	
4465 9754.0301	[illegible]	ug/L		[illegible]	
9757.1710	[illegible]	ug/L		[illegible]	
4465 9755.0301	[illegible]	ug/L		[illegible]	
4465 9756.0301	[illegible]	ug/L		[illegible]	
4465 9760.0301	[illegible]	ug/L		[illegible]	
[illegible]	[illegible]	ug/L	BHR	[illegible]	determination aborted no spl dilution
4465 9761.0301	[illegible]	ug/L		[illegible]	
4465 9762.0301	[illegible]	ug/L		[illegible]	
4465 9763.0301	[illegible]	ug/L		[illegible]	
4465 9764.0301	[illegible]	ug/L		[illegible]	
CAL BLK	[illegible]	ug/L		[illegible]	window edge
500 PPB	[illegible]	ug/L		[illegible]	
4465 9765.0301	[illegible]	ug/L		[illegible]	
4465 9766.0301	[illegible]	ug/L		[illegible]	
4465 9767.0301	[illegible]	ug/L		[illegible]	
4465 9768.0301	[illegible]	ug/L		[illegible]	
4465 9769.0301	[illegible]	ug/L		[illegible]	
4465 9770.0301	[illegible]	ug/L		[illegible]	
4465 9771.0301	[illegible]	ug/L		[illegible]	
9771.0301 A	[illegible]	ug/L		[illegible]	
9771.0301 RE	[illegible]	ug/L		[illegible]	
500 BLA ICE	[illegible]	ug/L		[illegible]	
CAL BLK	[illegible]	ug/L		[illegible]	window edge
500 PPB	[illegible]	ug/L		[illegible]	

Co_VHG

blank	[illegible]	intensity		[illegible]	window edge
Co standard	[illegible]	intensity		[illegible]	
500 PPB	[illegible]	intensity		[illegible]	
standard	[illegible]	intensity		[illegible]	
500 PPB	[illegible]	ug/L		[illegible]	
ICAP 11	[illegible]	ug/L		[illegible]	
500 BLA ICE	[illegible]	ug/L		[illegible]	
10000 PPB	[illegible]	ug/L		[illegible]	
CAL BLK	[illegible]	ug/L		[illegible]	
4465 9748.0301	24.13	ug/L		11.96	
4465 9749.0301	30.53	ug/L		12.09	
4465 9750.0301	27.63	ug/L		1.13	
4465 9751.0301	27.56	ug/L		[illegible]	
4465 9752.0301	23.68	ug/L		5.53	
4465 9753.0301	29.51	ug/L		[illegible]	
BLK #943	3.77	ug/L		136.96	
CAL BLK	[illegible]	ug/L		[illegible]	
500 PPB	[illegible]	ug/L		[illegible]	
4465 9754.0301	22.73	ug/L		4.77	
4465 9755.0301	25.53	ug/L		3.03	
4465 9756.0301	27.11	ug/L		[illegible]	
4465 9757.0301	[illegible]	ug/L		18.02	
9757.1710	[illegible]	ug/L		[illegible]	
4465 9758.0301	[illegible]	ug/L		[illegible]	window edge
4465 9759.0301	[illegible]	ug/L		[illegible]	
4465 9760.0301	[illegible]	ug/L		[illegible]	window edge
[illegible]	[illegible]	ug/L	BHR	[illegible]	Determ. aborted; no spl dilution
4465 9761.0301	[illegible]	ug/L		[illegible]	window edge
4465 9762.0301	[illegible]	ug/L		[illegible]	
4465 9763.0301	[illegible]	ug/L		[illegible]	

4465 9[illegible]	[illegible]	ug/L	[illegible]	cv	
CAL BLK	[illegible]	ug/L	[illegible]	cv	
500 PPB	[illegible]	ug/L	[illegible]	cv	
4465 9765.0301	[illegible]	ug/L	11.[illegible]	cv	
4465 9766.0301	13.53	ug/L	39.11	cv	
4465 9767.0301	24.26	ug/L	25.[illegible]	cv	
4465 9768.0301	[illegible]	ug/L	1.[illegible]	cv	
4465 9769.0301	[illegible]	ug/L	32.41	cv	window edge
4465 9770.0301	[illegible]	ug/L	4.[illegible]	cv	
4465 9771.0301	19.56	ug/L	22.[illegible]	cv	
9771.0301 R	[illegible]	ug/L	16.[illegible]	cv	
9771.0301 RS	[illegible]	ug/L	1.[illegible]	cv	
500 PPM ICS	[illegible]	ug/L	0.[illegible]	cv	
CAL BLK	[illegible]	ug/L	[illegible]	cv	window edge
500 PPB	[illegible]	ug/L	0.[illegible]	cv	

Ni_VHG

blank	[illegible]	intensity	1042.[illegible]	cv	window edge
standard	[illegible]	intensity	0.[illegible]	cv	
500 PPB	[illegible]	intensity	0.77	cv	
standard	[illegible]	intensity	0.[illegible]	cv	
500 PPB	[illegible]	ug/L	1.41	cv	
ICAP-19	[illegible]	ug/L	1.[illegible]	cv	
500 PPM ICS	[illegible]	ug/L	2.[illegible]	cv	
10000 PPB	[illegible]	ug/L	1.[illegible]	cv	
50 PPM	[illegible]	ug/L	0.[illegible]	cv	
CAL BLK	[illegible]	ug/L	66.[illegible]	cv	
4465 9748.0301	88.01	ug/L	7.31	cv	
4465 9749.0301	[illegible]	ug/L	2.15	cv	
4465 9750.0301	[illegible]	ug/L	[illegible]	cv	
4465 9751.0301	[illegible]	ug/L	[illegible]	cv	
4465 9752.0301	100.63	ug/L	3.47	cv	
4465 9753.0301	[illegible]	ug/L	2.[illegible]	cv	
BLK #943	3.67	ug/L	58.77	cv	
CAL BLK	[illegible]	ug/L	23.40	cv	
500 PPB	[illegible]	ug/L	0.[illegible]	cv	
4465 9754.0301	[illegible]	ug/L	1.[illegible]	cv	
4465 9755.0301	[illegible]	ug/L	1.[illegible]	cv	
4465 9756.0301	1358.50	ug/L	1.[illegible]	cv	
4456 9757.0301	340.00	ug/L	0.[illegible]	cv	
9757.1/10	[illegible]	ug/L	1.[illegible]	cv	
4465 9758.0301	[illegible]	ug/L	[illegible]	cv	
4465 9759.0301	[illegible]	ug/L	0.[illegible]	cv	
4465 9760.0301	[illegible]	ug/L	1.[illegible]	cv	
4465 9761.0301	155.[illegible]	ug/L	1.[illegible]	cv	
4465 9762.0301	542.20	ug/L	1.62	cv	
4465 9763.0301	438.95	ug/L	0.[illegible]	cv	
4465 9764.0301	[illegible]	ug/L	0.[illegible]	cv	
CAL BLK	[illegible]	ug/L	[illegible]	cv	window edge
500 PPB	[illegible]	ug/L	2.[illegible]	cv	
4465 9765.0301	[illegible]	ug/L	1.[illegible]	cv	
4465 9766.0301	[illegible]	ug/L	0.[illegible]	cv	
4465 9767.0301	[illegible]	ug/L	4.[illegible]	cv	
4465 9768.0301	[illegible]	ug/L	1.71	cv	
4465 9769.0301	[illegible]	ug/L	1.[illegible]	cv	
4465 9770.0301	[illegible]	ug/L	[illegible]	cv	
4465 9771.0301	[illegible]	ug/L	1.[illegible]	cv	
9771.0301 R	[illegible]	ug/L	1.[illegible]	cv	
9771.0301 RS	[illegible]	ug/L	1.[illegible]	cv	

Ni

500 PPM ICS	[illegible]	[illegible]	ug/L		[illegible]	cv
CAL BLK	[illegible]	[illegible]	ug/L		-19[illegible]	cv	window edge
500 PPB	[illegible]	[illegible]	ug/L		[illegible]	cv

[illegible]_VHC

BLANK	[illegible]	[illegible]	intensity		1[illegible]	cv
standard	[illegible]	[illegible]	intensity		[illegible]	cv
500 PPB	[illegible]	[illegible]	intensity		[illegible]	cv
standard	[illegible]	[illegible]	intensity		[illegible]	cv
500 PPB	[illegible]	[illegible]	ug/L		[illegible]	cv
ICAP-18	[illegible]	[illegible]	ug/L		[illegible]	cv
500 PPM ICS	[illegible]	[illegible]	ug/L		[illegible]	cv
10000 PPB	[illegible]	[illegible]	ug/L		[illegible]	cv
50 PPM	[illegible]	[illegible]	ug/L		[illegible]	cv
CAL BLK	[illegible]	[illegible]	ug/L		17.[illegible]	cv
4465 9749.0301	1317.00		ug/L		1.[illegible]	cv
4465 9749.0301	[illegible]		ug/L		[illegible]	cv
4465 9750.0301	1395.00		ug/L		[illegible]	cv
4465 9751.0301	1407.00		ug/L		1.41	cv
4465 9752.0301	1279.45		ug/L		0.70	cv
4465 9753.0301	1132.00		ug/L		1.53	cv
BLK #943	0.28		ug/L		81.71	cv
CAL BLK	0.29		ug/L	<15.0	44.1[illegible]	cv
500 PPB	[illegible]	[illegible]	ug/L		0.[illegible]	cv
4465 9754.0301	1055.00		ug/L ✓		1.50	cv
4465 9755.0301	1082.55		ug/L		0.91	cv
4465 9756.0301	1315.00		ug/L		1.97	cv
4465 9757.0301	1[illegible]5.10		ug/L		[illegible]	cv
9757. 1/10	[illegible]		ug/L		1.10	cv
4465 9758.0301	1121.80		ug/L		0.83	cv
4465 9759.0301	1101.80		ug/L		1.2[illegible]	cv
4465 9760.0301	1151.90		ug/L		0.96	cv
4465 9761.0301	1225.75		ug/L ✓		0.[illegible]	cv
4465 9762.0301	1411.00		ug/L ✓		0.45	cv
4465 9763.0301	1519.50		ug/L		0.78	cv
4465 9764.0301	1952.00		ug/L		0.12	cv
CAL BLK	-0.12		ug/L		-37.85	cv	window edge
500 PPB	[illegible]		ug/L		[illegible]	cv
4465 9765.0301	775.35		ug/L		1.01	cv
4465 9766.0301	787.80		ug/L		0.[illegible]	cv
4465 9767.0301	823.05		ug/L		0.03	cv
4465 9768.0301	870.40		ug/L		0.07	cv
4465 9769.0301	1094.00		ug/L		0.11	cv
4465 9770.0301	41510.00		ug/L	41510.00	0.48	cv ✓
9770. 1/10	1317.50		ug/L		5.3[illegible]	cv
4465 9771.0301	523.50		ug/L		1.2[illegible]	cv
9771.0301 R	1452.00		ug/L		0.03	cv
9771.0301 RS	[illegible]		ug/L		1.10	cv
500 PPM ICS	[illegible]		ug/L		0.31	cv
CAL BLK	[illegible]		ug/L		10[illegible]	cv
500 PPB	517.[illegible]		ug/L		0.17	cv

[illegible]_VHC

blank	[illegible]	[illegible]	intensity		[illegible]	cv
standard	[illegible]	[illegible]	intensity		[illegible]	cv
500 PPB	[illegible]	[illegible]	intensity		[illegible]	cv
standard	[illegible]	[illegible]	intensity		[illegible]	cv
500 PPB	[illegible]	[illegible]	ug/L		[illegible]	cv
ICAP-1[illegible]	[illegible]	[illegible]	ug/L		[illegible]	cv

100 PPM ICS	[illegible]	ug/L	0.[illegible]	cv
10000 PPB	[illegible]	ug/L	1.[illegible]	cv
50 PPM	[illegible]	ug/L	0.[illegible]	cv
CAL BLK	0.[illegible]	ug/L	-32[illegible]	cv
4465 9748.03010[illegible]		ug/L	0.[illegible]	cv
9748. 1/10	7463.00	ug/L	0.19	cv
4465 9749.03011[illegible]		ug/L	0.07	cv
9749. 1/10	[illegible]	ug/L	0.90	cv
4465 9750.03010[illegible]		ug/L	0.20	cv
9750. 1/10	[illegible]	ug/L	0.[illegible]	cv
4465 9751.03010[illegible]		ug/L	0.[illegible]	cv
9751. 1/10	7454.00	ug/L	1.12	cv
4465 9752.03010820.00		ug/L	0.01	cv
9752. 1/10	7469.50	ug/L	1.[illegible]	cv
4465 9753.03011240.00		ug/L	0.11	cv
9753. 1/10	8731.00	ug/L	0.10	cv
BLK #943	0.79	ug/L	352.11	cv
CAL BLK	-2.[illegible]	ug/L	-9[illegible]	cv
500 PPB	[illegible]	ug/L	0.02	cv
4465 9754.03010[illegible]		ug/L	0.10	cv
9754. 1/10	7371.50	ug/L	0.10	cv
4465 9755.03010[illegible]		ug/L	0.49	cv
9755. 1/10	[illegible]	ug/L	1.02	cv
4465 9756.03011[illegible]		ug/L	0.08	cv
9756. 1/10	14570.00	ug/L	[illegible]	cv
4465 9757.03010[illegible]		ug/L	0.[illegible]	cv
9757. 1/10	7317.50	ug/L	1.[illegible]	cv
4465 9758.03011[illegible]		ug/L	0.[illegible]	cv
9758. 1/10	7925.00	ug/L	1.04	cv
4465 9759.03011300.00		ug/L	0.08	cv
9759. 1/10	15030.00	ug/L	1.41	cv
4465 9760.03010[illegible]		ug/L	0.04	cv
~~9760. 1/10~~	~~[illegible]~~	~~ug/L~~ BHR	0.00	cv Detrm. aborted; no spl. dilution.
9760. 1/10	7737.50	ug/L	0.[illegible]	cv
4465 9761.03010[illegible]		ug/L	0.05	cv
9761. 1/10	7320.00	ug/L	1.09	cv
4465 9762.03011055.00		ug/L	0.07	cv
9762. 1/10	33635.00	ug/L	1.21	cv
4465 9763.03010[illegible]		ug/L	0.13	cv
9763. 1/10	43580.00	ug/L	1.17	cv
4465 9764.03011315.00		ug/L	0.04	cv
9764. 1/10	16670.00	ug/L	1.10	cv
CAL BLK	0.07	ug/L	4069.3	cv
500 PPB	[illegible]	ug/L	1.[illegible]	cv
4465 9765.03011290.00		ug/L	0.11	cv
9765. 1/10	18765.00	ug/L	0.11	cv
4465 9766.03011[illegible]		ug/L	0.[illegible]	cv
9766. 1/10	17150.00	ug/L	1.37	cv
4465 9767.03011290.00		ug/L	0.11	cv
9767. 1/10	7383.50	ug/L	1.81	cv
4465 9768.03011[illegible]		ug/L	0.[illegible]	cv
9768. 1/10	13675.00	ug/L	1.[illegible]	cv
4465 9769.03010[illegible]		ug/L	0.[illegible]	cv
9769. 1/10	[illegible]	ug/L	1.[illegible]	cv
4465 9770.03011[illegible]		ug/L	0.[illegible]	cv
9770. 1/10	[illegible]	ug/L	5.[illegible]	cv
4465 9771.03011[illegible]		ug/L	[illegible]	cv
9771. 1/10	[illegible]	ug/L	1.[illegible]	cv
[illegible]		ug/L	[illegible]	

9771.R 1710	[illegible]	ug/L		[illegible]	cv
[illegible]	[illegible]	ug/L		[illegible]	cv
9771.R2 1710	[illegible]	ug/L		0.14	cv
[illegible]	[illegible]	ug/L		[illegible]	cv
100 PPB [illegible]	[illegible]	ug/L		[illegible]	cv
CAL BLK	[illegible]	ug/L		[illegible]	cv
100 PPB	[illegible]	ug/L		[illegible]	cv

_VHC

Blank	[illegible]	intensity		[illegible]	cv
Standard	[illegible]	intensity		[illegible]	cv
500 PPB	[illegible]	intensity		0.31	cv
Standard	[illegible]	intensity		0.37	cv
100 PPB	[illegible]	ug/L		0.[illegible]	cv
ICAB-19	[illegible]	ug/L		[illegible]	cv
500 PPM ICS	[illegible]	ug/L		0.21	cv
10000 PPB	[illegible]	ug/L		1.76	cv
CAL BLK	[illegible]	ug/L		148.[illegible]	cv
4465 9748.0301	[illegible]	ug/L		1.[illegible]	cv
4465 9749.0301	[illegible]	ug/L		1.21	cv
4465 9750.0301	84.25	ug/L		0.97	cv
4465 9751.0301	[illegible]	ug/L		2.37	cv
4465 9752.0301	[illegible]	ug/L		3.02	cv
4465 9753.0301	[illegible]	ug/L		4.09	cv
BLK #743	[illegible]	ug/L	<50.0	-14[illegible]	cv
CAL BLK	[illegible]	ug/L		-22.[illegible]	cv
500 PPB	491.[illegible]	ug/L		0.73	cv
4465 9754.0301	[illegible]	ug/L		0.[illegible]	cv
4465 9755.0301	[illegible]	ug/L		0.44	cv
4465 9756.0301	525.00	ug/L		0.23	cv
4456 9757.0301	124.35	ug/L		2.02	cv
9757.1710	12.50	ug/L		2.41	cv
4465 9758.0301	150.00	ug/L		0.49	cv
4465 9759.0301	429.15	ug/L		1.93	cv
4465 9760.0301	101.50	ug/L		1.01	cv
4465 9761.0301	150.15	ug/L		1.71	cv
4465 9762.0301	268.25	ug/L		1.69	cv
4465 9763.0301	549.80	ug/L		0.62	cv
4465 9764.0301	763.10	ug/L		0.24	cv
CAL BLK	0.8[illegible]	ug/L		20.43	cv
500 PPB	507.25	ug/L		1.19	cv
4465 9765.0301	100.85	ug/L		0.09	cv
4465 9766.0301	574.10	ug/L		1.50	cv
4465 9767.0301	72.00	ug/L		2.67	cv
4465 9768.0301	281.20	ug/L		0.51	cv
4465 9769.0301	161.05	ug/L		0.50	cv
4465 9770.0301	463.20	ug/L		0.83	cv
4465 9771.0301	56.21	ug/L		2.11	cv
9771.0301 R	107.60	ug/L		0.02	cv
9771.0301 RS	542.15	ug/L		0.93	cv
500 PPM ICS	[illegible]	ug/L		1.11	cv
CAL BLK	[illegible]	ug/L		-650.[illegible]	cv
500 PPB	[illegible]	ug/L		0.11	cv

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Blank	[illegible]	intensity		[illegible]	cv
Standard	[illegible]	intensity		0.72	cv
500 PPB	[illegible]	intensity		0.13	cv
Standard	[illegible]	intensity		0.12	cv

window edge

window edge

500 PPB	[illegible]	ug/L		0.[illegible]	cv	
ICAP-19	[illegible]	ug/L		0.[illegible]	cv	
500 PPM ICS	[illegible]	ug/L		0.[illegible]	cv	
10000 PPB	[illegible]	ug/L		1.[illegible]	cv	
CAL BLK	[illegible]	ug/L		477.[illegible]	cv	
4465 9748.0301	2.15	ug/L	<5.00	2.[illegible]	cv	
4465 9749.0301	1.28	ug/L		6.[illegible]	cv	
4465 9750.0301	1.68	ug/L		2.[illegible]	cv	
4465 9751.0301	2.30	ug/L		4.57	cv	
4465 9752.0301	1.09	ug/L		4.94	cv	
4465 9753.0301	1.50	ug/L		7.18	cv	
BLK 9753	-0.01	ug/L		-2178.	cv	window edge
CAL BLK	-0.00	ug/L		-0.43	cv	
500 PPB	504.05	ug/L		0.47	cv	
4465 9754.0301	2.45	ug/L	<5.00	0.55	cv	
4465 9755.0301	1.66	ug/L		0.41	cv	
4465 9756.0301	1.59	ug/L		3.94	cv	
4465 9757.0301	1.25	ug/L		1.75	cv	
9757.1710	-0.45	ug/L		-106.[illegible]	cv	window edge
4465 9758.0301	-0.01	ug/L		-274.5	cv	
4465 9759.0301	0.97	ug/L		3.47	cv	
4465 9760.0301	0.52	ug/L		26.77	cv	
4465 9761.0301	0.36	ug/L		24.46	cv	
4465 9762.0301	2.84	ug/L		0.72	cv	
4465 9763.0301	1.13	ug/L		4.74	cv	
4465 9764.0301	1.54	ug/L		14.11	cv	
CAL BLK	-0.03	ug/L		-99[illegible].2	cv	
500 PPB	521.35	ug/L		0.[illegible]5	cv	
4465 9765.0301	0.10	ug/L	<5.00	28.14	cv	
4465 9766.0301	2.51	ug/L		2.42	cv	
4465 9767.0301	1.33	ug/L		1.53	cv	
4465 9768.0301	1.78	ug/L		1.12	cv	
4465 9769.0301	1.13	ug/L		4.[illegible]	cv	
4465 9770.0301	1.07	ug/L		1.89	cv	
4465 9771.0301	1.81	ug/L		3.46	cv	
9771.0301 R	1.13	ug/L		1.22	cv	
9771.0301 RS	46.05	ug/L		0.89	cv	
500 PPM ICS	937.50	ug/L		0.57	cv	
CAL BLK	-0.26	ug/L		-5.75	cv	
500 PPB	504.75	ug/L		0.09	cv	

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blank	[illegible]	intensity		5.77	cv
standard	10011.00	intensity		0.66	cv
500 PPB	26731.00	intensity		0.16	cv
standard	40230.00	intensity		0.19	cv
500 PPB	511.98	ug/L		0.55	cv
ICAP-19	971.00	ug/L		1.61	cv
500 PPM ICS	945.15	ug/L		0.51	cv
10000 PPB	10375.00	ug/L		1.79	cv
50 PPM	25111.00	ug/L		1.00	cv
CAL BLK	1.11	ug/L		37.[illegible]	cv
4465 9748.0301	1384.00	ug/L		1.[illegible]	cv
4465 9749.0301	1141.00	ug/L		1.31	cv
4465 9750.0301	[illegible]	ug/L		3.[illegible]	cv
4465 9751.0301	[illegible]	ug/L		1.[illegible]	cv
4465 9752.0301	[illegible]	ug/L		[illegible]	
4465 9753.0301	[illegible]	ug/L		1.22	cv
BLK 9753	[illegible]	ug/L		-[illegible]	cv

CAL BLK	[illegible]	ug/L	-75.[illegible]	cv	
500 PPB	[illegible]	ug/L	1.[illegible]	cv	
4465 9754.0301	3038.50	ug/L	1.04	cv	
4465 9755.0301	2073.50	ug/L	1.04	cv	
4465 9756.0301	1538.50	ug/L	0.49	cv	
4456 9757.0301	3070.00	ug/L	1.44	cv	
9757. 1/10	107.50	ug/L	0.80	cv	
4465 9758.0301	1624.00	ug/L	1.17	cv	
4465 9759.0301	1790.00	ug/L	0.82	cv	
4465 9760.0301	2176.00	ug/L	1.03	cv	
4465 9761.0301	1578.00	ug/L	1.20	cv	
4465 9762.0301	9606.00	ug/L	0.1[illegible]	cv	
4465 9763.0301	6538.00	ug/L	6.03	cv	
4465 9764.0301	3309.50	ug/L	0.39	cv	
CAL BLK	-0.35	ug/L	-279.[illegible]	cv	
500 PPB	512.15	ug/L	0.97	cv	
4465 9765.0301	984.50	ug/L	0.34	cv	
4465 9766.0301	4247.50	ug/L	0.27	cv	
4465 9767.0301	2334.50	ug/L	0.22	cv	
4465 9768.0301	1006.00	ug/L	1.72	cv	
4465 9769.0301	2694.00	ug/L	0.33	cv	
4465 9770.0301	7801.50	ug/L	1.49	cv	
4465 9771.0301	123.95	ug/L	0.98	cv	
9771.0301 R	117.45	ug/L	1.90	cv	
9771.0301 RS	351.45	ug/L	0.38	cv	
4441 9681.0301	333.00	ug/L	0.03	cv	
4441 9682.0301	973.00	ug/L	0.43	cv	
500 PPM ICS	929.70	ug/L	0.59	cv	
CAL BLK	-0.71	ug/L	-19.82	cv	
500 PPB	505.30	ug/L	0.00	cv	

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g_VHG

blank	83.15	intensity	94.50	cv	window edge
standard	42770.00	intensity	0.35	cv	
500 PPB	502.15	ug/L	0.30	cv	
EPA 28382 1/50	111.30	ug/L	0.26	cv	
ICAP-7	1189.50	ug/L	0.81	cv	
500 PPM ICS	1014.00	ug/L	0.89	cv	
CAL BLK	2.45	ug/L <10.0	67.40	cv	
4465 9748.0301	4.33	ug/L	49.84	cv	
4465 9749.0301	1.33	ug/L	186.92	cv	
4465 9750.0301	2.65	ug/L	141.03	cv	window edge
4465 9751.0301	1.68	ug/L	177.61	cv	window edge
4465 9752.0301	5.72	ug/L	85.39	cv	
4465 9753.0301	3.93	ug/L	114.25	cv	
BLK #943	2.14	ug/L	167.36	cv	window edge
CAL BLK	-1.50	ug/L	-78.82	cv	
500 PPB	502.55	ug/L	1.29	cv	
4465 9754.0301	31.09	ug/L	27.12	cv	
4465 9755.0301	9.21	ug/L <10.0	33.05	cv	
4465 9756.0301	15.89	ug/L	7.03	cv	
4456 9757.0301	[illegible]	ug/L	5.[illegible]	cv	
9757. 1/10	[illegible]	ug/L	-71.[illegible]	cv	window edge
4465 9758.0301	9.40	ug/L <10.0	22.[illegible]	cv	
4465 9759.0301	5.[illegible]	ug/L	24.[illegible]	cv	
4465 9760.0301	[illegible]	ug/L	10.21	cv	
4465 9761.0301	[illegible]	ug/L	2.25	cv	
4465 9762.0301	[illegible]	ug/L	14.[illegible]	cv	
4465 9763.0301	[illegible]	ug/L	7.[illegible]	cv	

[illegible]	[illegible]	ug/L	[illegible]	[illegible]		
500 PPB	[illegible]	ug/L		[illegible]	cv	
4465 9765.0301	8.19	ug/L	<10.0	13.[illegible]	cv	
4465 9766.0301	[illegible]	ug/L		7.[illegible]	cv	
4465 9767.0301	11.9[illegible]	ug/L		47.[illegible]	cv	
4465 9768.0301	[illegible]	ug/L	<10.0	33.[illegible]	cv	
4465 9769.0301	7.05	ug/L	⊥	52.[illegible]	cv	
4465 9770.0301	[illegible]	ug/L	✓	[illegible]	cv	
4465 9771.0301	1.[illegible]	ug/L	<10.0	331.[illegible]	cv	window edge
9771.0301 R	1.18	ug/L	⊥	400.[illegible]	cv	
9771.0301 RS	18.[illegible]	ug/L		8.[illegible]	cv	
500 PPM ICS	[illegible]	ug/L		0.[illegible]	cv	
CAL BLK	0.[illegible]	ug/L		42.[illegible]	cv	
500 PPB	[illegible]	ug/L		1.[illegible]	cv	

1_VHG

blank	17[illegible].00	intensity	230.90	cv	
standard	25840.00	intensity	0.[illegible]	cv	
500 PPB	13370.00	intensity	0.[illegible]	cv	
standard	[illegible]	intensity	1.12	cv	
500 PPB	511.[illegible]	ug/L	0.[illegible]	cv	
ICAL-7	10[illegible].00	ug/L	0.18	cv	
500 PPM ICS	[illegible].00	ug/L	0.12	cv	
10000 PPB	10070.00	ug/L	0.84	cv	
50 PPM	37730.00	ug/L	0.[illegible]	cv	
CAL BLK	10.[illegible]	ug/L	-2.15	cv	window edge
4465 9748.03016500.00		ug/L	0.07	cv	
9748. 1/10	1[illegible].00	ug/L	0.51	cv	
4465 9749.03016290.00		ug/L	0.26	cv	
9749. 1/10	4279.50	ug/L	0.71	cv	
4465 9750.03012035.00		ug/L	0.17	cv	
9750. 1/10	3384.00	ug/L	1.32	cv	
4465 9751.03016170.00		ug/L	0.12	cv	
9751. 1/10	4135.00	ug/L	2.06	cv	
4465 9752.03016500.00		ug/L	0.04	cv	
9752. 1/10	4420.00	ug/L	1.03	cv	
4465 9753.03017410.00		ug/L	0.[illegible]	cv	
9753. 1/10	5209.50	ug/L	0.96	cv	
BLK #940	3.26	ug/L	219.96	cv	
CAL BLK	-0.49	ug/L	-2593.	cv	no peak
500 PPB	407.50	ug/L	3.[illegible]	cv	
4465 9754.03016290.00		ug/L	0.05	cv	
9754. 1/10	2758.50	ug/L	0.02	cv	
4465 9755.03014125.00		ug/L	0.09	cv	
9755. 1/10	2714.00	ug/L	1.44	cv	
4465 9756.03013605.00		ug/L	0.33	cv	
9756. 1/10	3508.00	ug/L	1.21	cv	
4456 9757.03012[illegible]0.00		ug/L	1.[illegible]	cv	
9757. 1/10	3202.00	ug/L	0.43	cv	
4465 9758.03017782.50		ug/L	0.05	cv	
9758. 1/10	929.40	ug/L	1.83	cv	
4465 9759.03017785.00		ug/L	0.02	cv	
9759. 1/10	7792.00	ug/L	1.47	cv	
4465 9760.03014605.00		ug/L	0.84	cv	
~~9760. 1/10~~	~~[illegible]~~	~~ug/L~~ BHR	0.00	cv	Determination aborted; no spl dilution
9760. 1/10	1665.50	ug/L	1.18	cv	
4465 9761.03012815.00		ug/L	0.[illegible]	cv	
9761. 1/10	1540.50	ug/L	1.[illegible]	cv	

[illegible]	[illegible]	ug/L	0.17	cv	
[illegible]	[illegible]	ug/L	0.[illegible]	cv	

4465	9759.0301	7670.00	ug/L	0.19	cv
9759.	1/10	2150.00	ug/L	1.79	cv
4465	9760.0301	5520.00	ug/L	0.86	cv
~~9760.~~	~~1/10~~	~~[illegible]~~	~~ug/L~~ BHR	0.00	cv
9760.	1/10	17575.00	ug/L	0.04	cv
9760.	0.1/10	5850.00	ug/L	1.70	cv
4465	9761.0301	6320.00	ug/L	0.00	cv
9761.	1/10	17125.00	ug/L	0.11	cv
9761.	0.1/10	2199.00	ug/L	0.00	cv
4465	9762.0301	5129.00	ug/L	0.71	cv
4465	9763.0301	5497.00	ug/L	1.07	cv
4465	9764.0301	5617.00	ug/L	1.45	cv
CAL BLK		0.00	ug/L <200.0	175.05	cv
500 PPB		513.00	ug/L	0.03	cv
4465	9765.0301	7610.00	ug/L	0.10	cv
9765.	1/10	5522.00	ug/L	1.22	cv
4465	9766.0301	5374.00	ug/L	0.02	cv
4465	9767.0301	6815.00	ug/L	0.28	cv
9767.	1/10	1726.00	ug/L	0.79	cv
4465	9768.0301	7671.00	ug/L	0.06	cv
9768.	1/10	4292.00	ug/L	1.33	cv
4465	9769.0301	7515.00	ug/L	0.04	cv
9769.	1/10	7610.50	ug/L	0.15	cv
4465	9770.0301	6480.00	ug/L	0.02	cv
9770.	1/10	1712.00	ug/L	3.96	cv
4465	9771.0301	1301.00	ug/L	0.24	cv
9771.0301 R		1207.00	ug/L	0.79	cv
9771.0301 RS		3230.00	ug/L	0.35	cv
500 PPM ICS		917.50	ug/L	0.18	cv
CAL BLK		-0.01	ug/L <200.0	-199.3	cv
500 PPB		507.00	ug/L	0.29	cv

1_VHG

blank	-19.74	intensity	-22.00	cv	window edge
standard	20315.00	intensity	0.85	cv	
500 PPB	10390.00	intensity	0.30	cv	
standard	20515.00	intensity	0.14	cv	
500 PPB	507.10	ug/L	0.00	cv	
ICAP-1:	971.30	ug/L	1.00	cv	
500 PPM ICS	881.25	ug/L	0.36	cv	
10000 PPB	9973.00	ug/L	0.57	cv	
50 PPM	47580.00	ug/L	0.44	cv	
CAL BLK	1.02	ug/L	100.90	cv	
4465 9748.0301	61.00	ug/L	0.93	cv	
4465 9749.0301	59.40	ug/L	5.20	cv	
4465 9750.0301	50.40	ug/L	1.93	cv	
4465 9751.0301	59.38	ug/L	4.21	cv	
4465 9752.0301	60.10	ug/L	1.75	cv	
4465 9753.0301	[illegible]	ug/L	2.12	cv	
BLK #745	0.00	ug/L < 10.0	1101.2	cv	window edge
CAL BLK	0.00	ug/L < 10.0	242.78	cv	
500 PPB	[illegible]	ug/L	0.31	cv	
4465 9751.0301	[illegible]	ug/L	1.19	cv	
4465 9755.0301	[illegible]	ug/L	3.10	cv	
4465 9756.0301	[illegible]	ug/L	0.20	cv	
4465 9757.0301	[illegible]	ug/L	0.07	cv	
[illegible]	[illegible]	ug/L	2.21	cv	
4465 9758.0301	[illegible]	ug/L	0.91	cv	
4465 9759.0301	[illegible]	ug/L	0.74	cv	

4465	9760.0301	11.25	ug/L	4.21	cv
4465	9761.0301	169.70	ug/L	0.67	cv
4465	9762.0101	194.17	ug/L	0.51	cv
4465	9763.0301	191.21	ug/L	0.33	cv
4465	9764.0301	130.33	ug/L	0.21	cv
CAL BLK		3.11	ug/L	193.17	cv
500 PPB		507.93	ug/L	0.02	cv
4465	9765.0301	151.10	ug/L	0.06	cv
4465	9766.0301	163.25	ug/L	0.87	cv
4465	9767.0301	124.33	ug/L	0.31	cv
4465	9768.0301	177.10	ug/L	0.39	cv
4465	9769.0301	118.10	ug/L	0.18	cv
4465	9770.0301	191.93	ug/L	0.37	cv
4465	9771.0301	50.14	ug/L	3.10	cv
9771.0301 R		58.31	ug/L	2.04	cv
9771.0301 RS		134.40	ug/L	0.03	cv
500 PPM ICS		506.55	ug/L	0.03	cv
CAL BLK		1.11	ug/L	66.30	cv
500 PPB		511.41	ug/L	0.47	cv

window edge

Page No.

Performed: As

Received: 12/21/86

Performed By: J Olka

See pg 12

Lab No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From N	O	ppb Burn 1	ppb Burn 2	ppb Ave	CV	20.0 ppb Spike	% Rec	DF	Samp Wgt	Units	Dry Wt Basis Final Conc
	WS378#14				45.2	44.5	44.8	1.10	67.3	113			µg/L	44.8
	Cal Blk				1.1	0.2	0.6	–	21.0	105			µg/L	<10.0
	25.0 ppb				24.5	23.9	24.2	1.75	49.4	126			µg/L	24.2
165	9748.0302				~~24.5~~ 27.3	~~24.6~~ 26.8	~~24.4~~ 27.1	~~0.57~~ 1.31	49.7	~~127~~ 113		1.03	mg/Kg	6.8
	9749.0302				19.9	19.9	19.9	0	42.1	111		1.05		4.9
	9750.0302				27.0	25.8	26.4	3.21	48.1	109		1.08		5.7
	9751.0302				24.1	24.2	~~17.6~~ 24.2	~~27.6~~ 0.29	45.2	105		1.03		5.8
	9752.0302				16.3	18.0	17.1	7.01	37.9	104		1.06		5.8
	9753.0302				18.2	17.6	17.9	2.37	40.4	113		1.03		5.7
	9754.0302				28.5	28.5	28.5	0.0	50.2	109		1.08		7.5
	9755.0302				24.9	25.7	25.3	2.24	48.0	114		1.03		5.6
	9756.0302				46.7	~~24.1~~ 47.1	~~46.9~~ 46.9	~~0.60~~ 0.60	66.2	97		1.03		13.0
	9757.0302				20.5	21.1	20.8	2.04	40.0	96		1.01		5.4
	Cal Blk				1.2	0.0	0.6	–	21.7	109			µg/L	<10.0
	250.0 ppb				22.3	23.1	22.7	2.49	47.1	/			µg/L	22.7
	9758.0302				~~12.5~~ 19.6	~~12.9~~ 19.7	~~12.6~~ 19.7	~~2.2~~ 0.36	40.3	103		1.09	mg/Kg	5.6
	9759.0302				~~24.1~~ 56.2	~~54.~~ 54.9	~~34.~~ 55.6	0.21	63.0	/		1.06		/
	9760.0302				39A	~~26.~~ 41.2	40.3	3.16	58.3	90		1.03		11.5
	9761.0302				28.3	27.6	28.0	1.77	48.9	105		1.09		7.9
	9762.0302				05 ER	05 ER	05 ER	–	/	/		1.00		/
	9763.0302				05	05	05	–	/	/		1.00		/
	9764.0302				05	05	05	–	/	/		1.04		/
	9765.0302				05	05	05	–	/	/		1.06		/
	9766.0302				05	05	05	–	/	/		1.08		/
	9767.0302				78.2	52.9	64.3	27.3	120.6	/		1.06		/
	Cal Blk				0.8	-0.4	0.2	–	20.8	104			µg/L	<10.0
	25.0 ppb				23.2	24.3	23.8	3.28	50.6	/			µg/L	23.[illegible]
	9768.0302				57.0	54.6	55.8	3.04	78.4	113		1.04	mg/Kg	13.6
	9769.0302				93.5	88.0	90.7	4.29	115.2	/		1.03	mg/Kg	/

To Page No. 3

Witnessed & Understood by: B H Rohbach

Date: 1/12/87

Invented

Recorded by: J Olka

Date: 12/30/86

Page No.

Performed: As
Received: 12/26/96
Performed By: L. Dunn

Lab No.	ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From		µg/L Burn 1	ppb Burn 2	ppb Burn Avg	CV	20.0 ppb Spike	% Rec	DF	Samp Wgt	Units	Final Conc
65	9770.0302					82.0	51.9	65.2	31.3	101.6	/		1.01	mg/kg	/
	9771.0302					27.8	27.7	27.7	0.26	48.2	103		1.00	↓	7.0
	9771.R1					23.1	22.6	22.8	1.55	46.5	119		1.03	↓	5.6
	9771.R1S1					43.6	50.2	49.4	0.29	~~83.7~~ (comp)	/		1.03	↓	(109%
	BLK944					-0.9	0.1	-0.4	–	19.9	100			µg/L	<10.0
	25.0ppb					22.6	23.9	23.3	3.95	46.3	115			µg/L	23.3
	9762.0302					14.3	14.5	14.4	0.96	35.8	107	1→10	1.00	mg/kg	36.0
	9763.0302					14.4	14.7	14.5	1.46	36.4	110	1→10	1.00	mg/kg	38.0
	9764.0302					12.1	12.9	12.5	4.53	35.7	115	1→10	1.04	mg/kg	33.0
	9765.0302					25.1	27.0	26.1	5.16	47.0	105	1→10	1.06	mg/kg	64.0
	9766.0302					21.5	20.7	21.1	2.68	43.9	114	1→10	1.08	mg/kg	57.0
	9768.0302					17.2	17.6	17.4	1.63	36.4	95	2→10	1.06	mg/kg	26.0
	9767.0302					14.0	14.7	14.3	3.45	37.4	115	1→10	1.06	mg/kg	40.0
	9769.0302					9.3	9.2	9.2	0.76	29.3	100	1→10	1.03	mg/kg	23.
	9770.0302					16.8	17.0	16.9	0.84	38.7	109	2→10	1.01	mg/kg	37.

To Page No.

Witnessed & Understood by: Robert Richards 1/12/

Invented:

Date 1/15/97

HGA FORM #1

ELEMENT: Se, As, DATE: 12/26/8[illegible].

S_1 = 10.0, 25.0 PPB., S_2 = 25.0, 50.0 PPB.

S_3 = 50.0, 100 PPB, BOOK NO. [illegible].

JOB #:			
	6,5 01	WS378 # 14, WS378 #3	
	X02	Col Blk	
	X03	25.0 ppb	
	X04	9748.0302	
	X05	9749	
	X06	9750	
	X07	9751	
	X08	9752	
	X09	9753	
	X10	9754	
	X11	9755	
	X12	9756	
	X13	9757	
	X14	Col Blk	
	X15	25.0 ppb	
	X16	9758.0302	
	X17	9759	, S_2
	X18	9760	
	X19	9761	
	X20	9762	
	X21	9763	
	X22	9764	
	X23	9765	
	X24	9766	
	X25	9767	
	X26	Col Blk	
	X27	25.0 ppb	
	X28	9768.0302	
	X29	9769	
	X30	9770	
	X31	9771	
	X32	9771 R	
	X33	9771 R S1	
	X34	Blk 9[illegible]	
	X35	[illegible]	, S_3

ATTACH TAPE HERE

A5
12-26-96

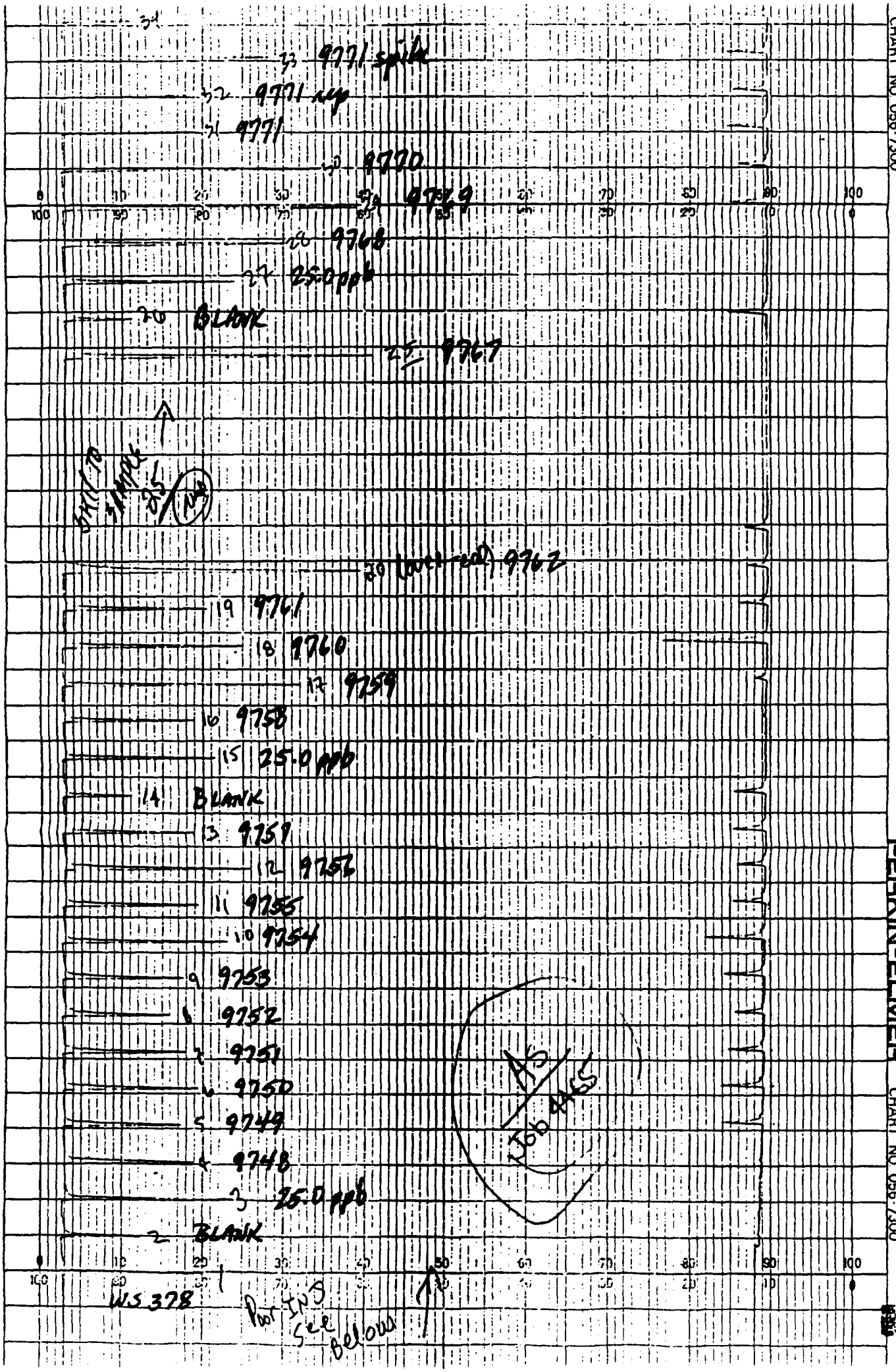
	0.022	
	0.023	
	0.022	AV
	3.14	CV
	0.000	AZ
	0.097	
	0.101	
	0.099	AV
	2.86	CV
	25.0	S1
	46.5	C
	44.9	C
	45.9	AV
	2.93	CV
	50.0	S2
	99.7	C
	75.3	C
	87.0	AV
	19.72	CV
	100.0	S3
	45.2	
	44.5	
501	44.8	AV
	1.10	CV
	1.1	
	0.2	
502	0.6	AV
	97.91	CV
	24.5	
	23.9	
503	24.2	AV
	1.75	CV
	24.3	
	24.6	
504	24.4	AV
	0.87	CV
	19.9	
	19.9	
505	19.9	AV
	0.00	CV
	27.0	
	25.8	
506	26.4	AV
	3.21	CV
	21.1	
	14.2	
507	17.6	AV
	27.64	CV
	16.3	
	18.0	
508	17.1	AV
	7.01	CV
	18.2	
	17.6	
509	17.9	AV
	2.37	CV
	28.5	
	28.5	
510	28.5	AV
	0.00	CV
	24.9	
	25.7	
511	25.3	AV
	2.24	CV
	42.7	
	24.4	
512	33.2	AV
	38.57	CV
	20.5	
	21.1	
513	20.8	AV
	2.64	CV
	1.2	
	0.0	
514	0.6	AV
	00	ER
	22.3	
	23.1	
515	22.7	AV
	2.49	CV
	12.8	
	12.4	
516	12.6	AV
	2.25	CV
	34.1	
	34.2	
517	34.2	AV
	0.21	CV
	23.1	
	22.0	
518	22.6	AV
	3.45	CV
	28.3	
	27.6	
519	28.0	AV
	1.77	CV
	05	ER
	05	ER
520	05	ER
	0.00	CV
	05	ER
	05	ER
521	05	ER
	0.00	CV
	97.4	
	4.3	
522	39.1	AV
	06	ER
	371.9	C
	05	ER
523	05	ER
	05	ER
	05	ER
	05	ER
524	05	ER
	0.00	CV
	78.2	
	52.9	
525	64.3	AV
	27.29	CV
	0.8	
	-0.4	
526	0.2	AV
	06	ER
	23.2	
	24.3	
527	23.8	AV
	3.28	CV
	57.0	
	54.6	
528	55.8	AV
	3.04	CV
	93.5	
	86.0	
529	90.7	AV
	4.29	CV
	82.0	
	51.9	
530	65.2	AV
	31.79	CV
	27.8	
	27.7	
531	27.7	AV
	0.26	CV
	23.1	
	22.6	
532	22.8	AV
	1.55	CV
	48.6	
	50.2	
533	49.4	AV
	2.29	CV
	-0.9	
	0.1	
534	-0.4	AV
	06	ER
	22.6	
	23.9	
535	23.3	AV
	3.95	CV

As 12/26/86

501	41.1	
502	21.0	
503	49.4	
504	49.7	
505	42.1	
506	48.1	
507	45.2	
508	37.9	
509	40.4	
510	50.2	
511	48.0	
512	66.2	
513	40.0	
514	21.7	
515	47.1	
516	40.3	
517	63.0	
518	58.3	
519	48.9	
520	160.8	C
DF = 1/210		
525	120.0	C
526	20.8	
527	50.5	
528	78.4	
529	115.2	C
530	101.6	
531	48.2	
532	46.5	
533	83.4	
534	19.9	
535	46.3	
501	67.3	
	27.3	
	26.8	
504	27.1	AV
	1.31	CV
	24.1	
	24.2	
507	24.2	AV
	0.29	CV

	46.7	
	47.1	
512	46.9	AV
	0.60	CV
	19.6	
	19.7	
516	19.7	AV
	0.36	CV
	56.2	
	54.9	
517	55.6	AV
	1.66	CV
DF = 2/10		
	17.2	
	17.6	
517	17.4	AV
	1.63	CV
517	36.4	
	39.4	
	41.2	
518	40.3	AV
	3.16	CV
DF/1/210		
	14.3	
	14.5	
520	14.4	AV
	0.98	CV
	14.4	
	14.7	
521	14.5	AV
	1.46	CV
	12.1	
	12.9	
522	12.5	AV
	4.53	CV
	25.1	
	27.0	
523	26.1	AV
	5.16	CV
	21.5	
	20.7	
524	21.1	AV
	2.68	CV
520	35.8	
521	36.4	
522	35.7	
523	47.0	
524	43.9	

	[illegible]	
	[illegible]	
	[illegible]	
525	114.8	AV
	0.80	CV
DF = 1/210		
	14.0	
	14.7	
525	14.3	AV
	3.45	CV
525	37.4	
	[illegible]	
	115.0	
529	117.9	AV
	3.54	CV
	30.7	
	9.3	
	9.2	
529	9.2	AV
	0.76	CV
529	29.3	
	56.4	
	59.4	
530	57.9	AV
	2.41	CV
530	117.2	
530	38.7	
	[illegible]	
	16.8	
	17.0	
530	16.9	AV
	0.04	CV



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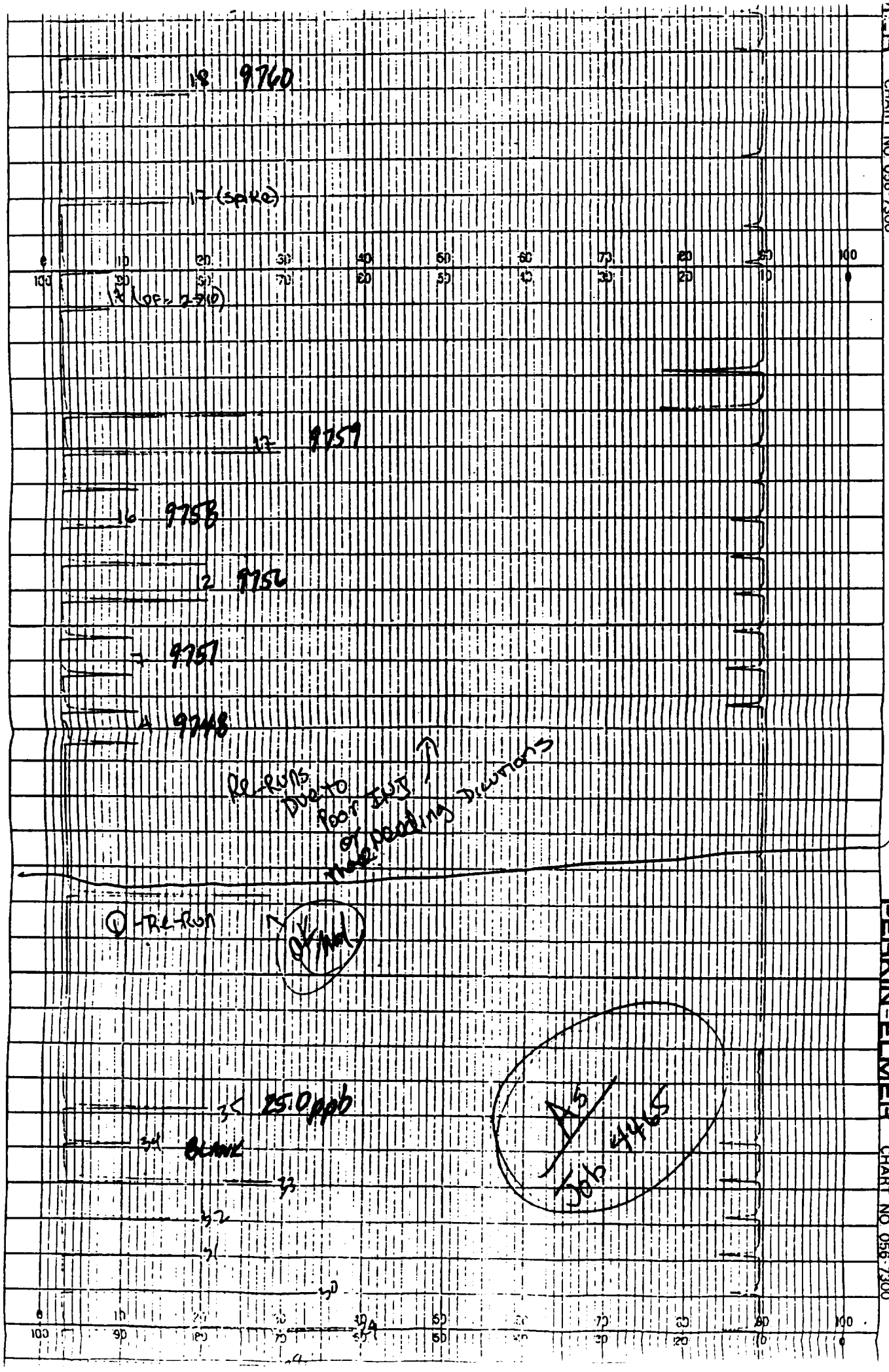
PERKIN-ELMER

CHART NO. 056-7300



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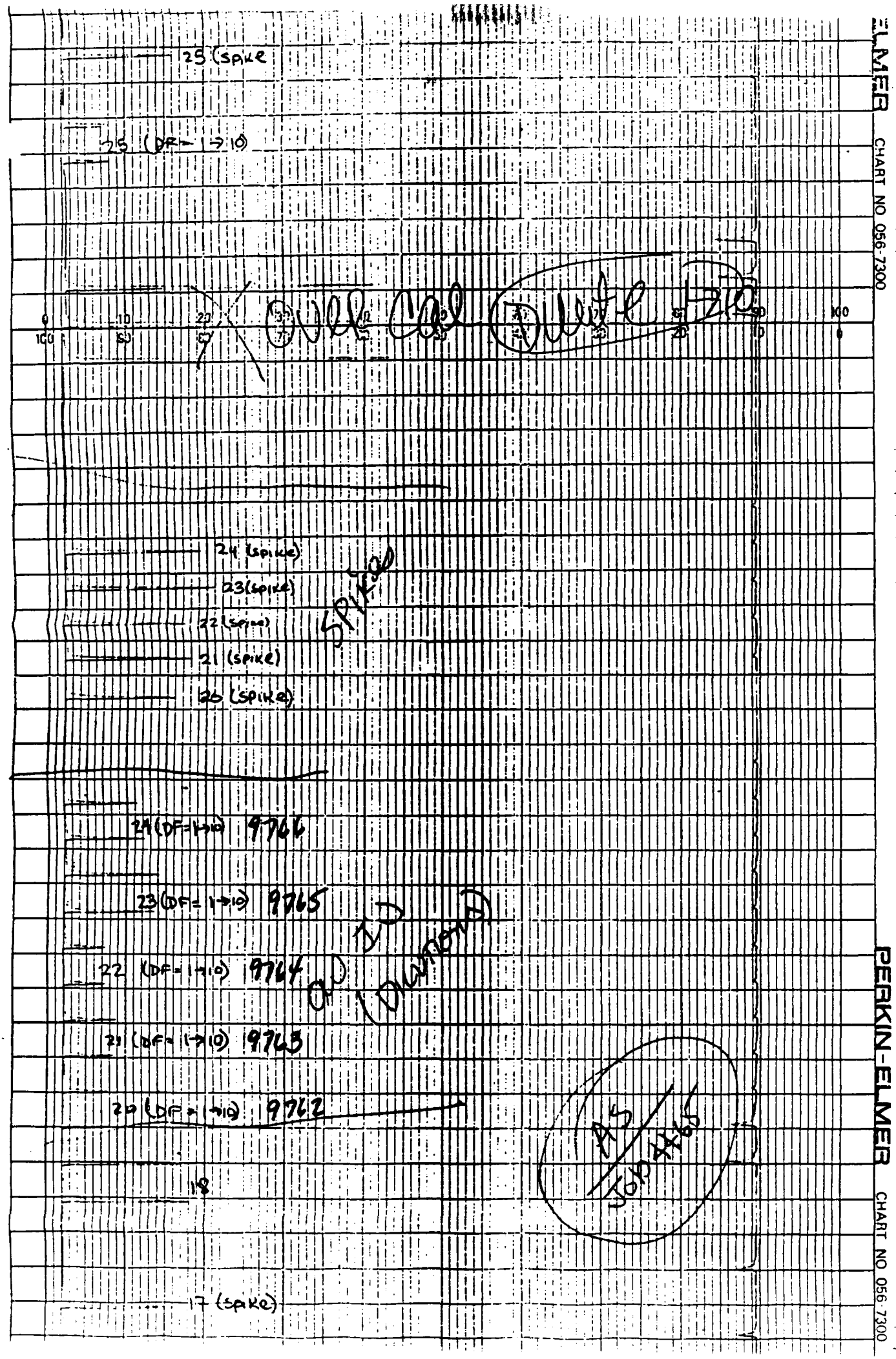
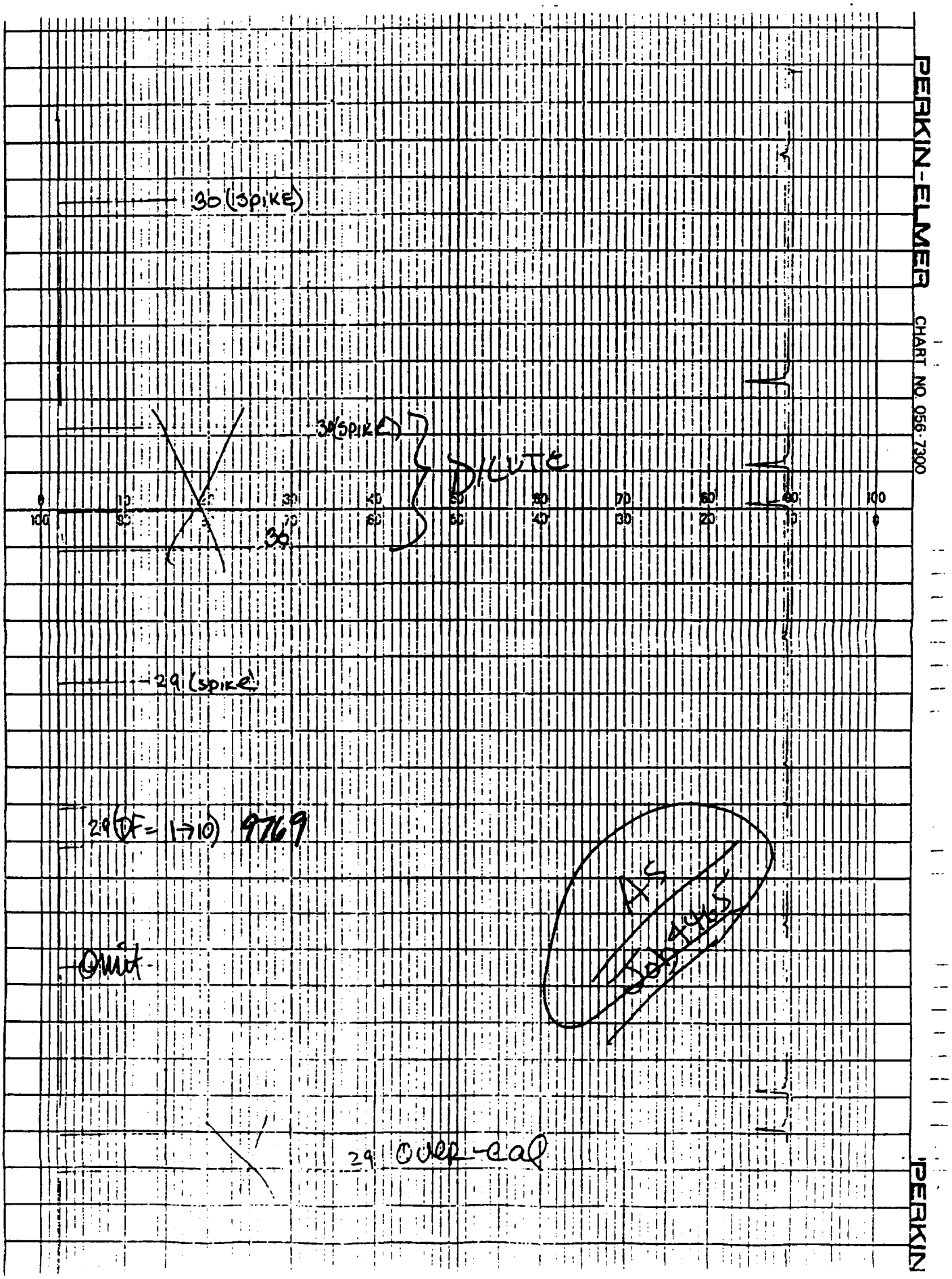
PERKIN-ELMER
CHART NO. 056-7300


25 (spike
25 (DF = 1→10)
Over Cal Dilute 1→10
24 (spike)
23 (spike)
22 (spike)
21 (spike)
20 (spike)
Spikes
24 (DF = 1→10) 9766
23 (DF = 1→10) 9765
22 (DF = 1→10) 9764
21 (DF = 1→10) 9763
20 (DF = 1→10) 9762
18
17 (spike)
AS
Job 4465
ELMER
CHART NO 056-7300
PERKIN-ELMER
CHART NO 056-7300


PERKIN-ELMER
CHART NO. 056-7300
30 (SPIKE)
30 (SPIKE)
DILUTE
30
29 (SPIKE)
29 (DF = 1→10) 9769
Omit
29 over-cal
PERKIN

e No.

ned: Hg

ed: NOVEMBER 24, 1986

By:

(SEE PAGE 1)

CLP-SOILS : 1 REP + 20% QC.

(SEE PAGE 59-60 BOOK 224 IL VOL XXII)

ID No.	Custody Seal Intact Yes	Custody Seal Intact No	Secure Storage Area Received From		READ	CONC.	D.F.	AMOUNT OF SAMPLE	UNITS	FINAL CONC.	
Blank					3						r = .999967
0.2 µg/L					8						y = .040x - .114
0.4					13						
0.8					23						
2.0					52						
4.0					101						
8.0					202						
WS378+14					112	4.40		100 ml.	µg/L	4.40	(Known = 4.40)
9748.03	No		A-3c		12	.37		0.30	mg/Kg	0.123	
9749.03					19	.65		0.36		0.181	
9750.03					4	<.20		0.33		<0.100	
9750.03 Rep					5	<.20		0.39		<0.100	
9750.+1.0 ppb					28	1.01		0.34		~~0.30~~	(101% REC)
9751.03					5	<.20		0.30		<0.100	
9752.03					9	.25		0.39		<0.100	
9753.03					9	.25		0.37		<0.100	
9754.03					20	.69		0.34		0.204	
9755.03					4	<.20		0.34		<0.100	
9756.03					270	10.76		0.37		2.91	← RE-RUN 11/25
9757.03					107	4.20		0.43		0.980	
9758.03					90	3.51		0.32		1.10	
9759.03								0.32			← RE-RUN 11/25
9760.03					104	4.08		0.36		1.13	
9761.03								0.38			← RE-RUN 11/25
9762.03					242	9.64		0.37		2.61	← RE-RUN 11/25
9763.03								0.31	mg/Kg		← RE-RUN 11/25

To Page No. 30

Read & Understood by me | Date 11/25/86 | Invented by | Date 11/24/86

Project No._____

Book No._____ TITLE _____

Page No. 29

Performed: Hg (CONT'D)

Received: NOVEMBER 24, 1986

Performed By: [signature]

b.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From	READ	(µg/L) CONC.	D.F.	AMOUNT of SAMPLE	UNITS	FINAL CONC.	
.5	9764.03	No	A-30	[illegible]	/		0.34	mg/Kg	/	← RE-RUN 11/25
(CONT'D)	9765.03			41	1.54		0.35		0.440	
	9766.03			[illegible]	/		0.37		/	← RE-RUN 11/25
	9767.03			152	6.01		0.39		1.54	
	9768.03			225	8.95		0.30		2.98	← RE-RUN 11/25
	9769.03			185	7.34		0.35		2.10	
	9770.03			[illegible]	/		0.40		/	← RE-RUN 11/25
41.03	~~9771.03~~			4	<.20		0.34		<0.10	
71	~~9771.1~~			3	<.20		0.33		<0.10	
1+1.0 ppb	~~9771.03~~			30	1.09		0.32	mg/Kg		(109% Rec)
12	9684.04	No	A-16	90	3.51	50 → 100	(.31)	mg/Kg	2.26	Avg = 2.25
	9684.04			46	1.74	25 → 100	⊥	mg/Kg	2.24	
	9686.04	No	A-16	148	5.85	50 → 100	(.37)	mg/Kg	3.16	3.18 = Avg.
	9686.04			76	2.45	25 → 100	↓	mg/Kg	3.19	
10	9320.01	No	A-14	39	1.46	Avg = 1.44	100 ml	µg/L	1.46	Avg = 1.44
	9320.Rep			38	1.42				1.42	
	9320+1.0 ppb			65	2.51					(107% Rec)
	9321.01			5	<.20			µg/L	<0.20	
	9322.01			[illegible]	/		0.30	mg/Kg	/	
	9322.Rep			139	5.49	1 → 4	0.33		~~21.96~~ 6.65	Avg = ~~21.28~~ 6.45
	9322+~~1.0 ppb~~			54	2.06	1 → 10	0.33 ~~.30~~	mg/Kg	~~20.60~~ 6.25	

To Page No. 31

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

age No. 30

ormed: Hg (CONT'D)

eived: NOVEMBER 24, 1986

ned By: [signature]

ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From		READ	CONC.	D.F.	AMOUNT of SAMPLE	UNITS	FINAL CONC.	
9680.06		No	A-27	4	<.20		100 ml	µg/L	<0.20	
9680.06				4	<.20		100 ml	µg/L	<0.20	
9681.06		No	A-27	18	.61	Avg = .59	100 ml	µg/L	0.611	Avg = 0.59
9681.06				17	.57		100 ml.	µg/L	0.571	
9682.06		No	A-27	6	<.20		100 ml.	µg/L	<0.20	
9682.06				7	<.20		100 ml	µg/L	<0.20	
9682+10ppb				29	1.05		100 ml	µg/L		(105% REC)
M.D.S.				OVER CAL	/		0.39	mg/Kg	/	
M.D.S.				85	3.31	1 → 4	0.33	mg/Kg	4.01	Avg = 3.97
M.D.S. ~~11.0ppb~~				35	1.30	1 → 10	0.39	mg/Kg.	3.93	

To Page No.

essed & Understood by me, | Date | Invented by | Date 11/24/86

Page No.
Performed: Sc
Received: 12/26/96
Performed By: J. CLICK

See pg 24

Dry Bas

Lab No.	ID No.	Custody Seal Intact Yes	No	Secure Storage Area Received From		ppb Burn 1	ppb Burn 2	ppb Ave	CV	10.0 ppb Spike	% Rec	DF	Samp Wgt	Units	Final Conc
				To	C										
	105378#14					8.22				18.79	106			µg/L	8.2
	Cal BLK					0.22				10.55	106				<5.0
	25.0ppb					25.86				34.28	84				25.8
165	9748.0302					1.94	1.26	1.59		10.43	104		1.034	mg/kg	<1.0
	9749.0302					1.54	0.98	1.26		9.92	99		1.05		<1.2
	9750.0302					0.76	1.02	0.89		9.27	93		1.08		<1.1
	9751.0302					1.32	1.26	1.29		10.27	103		1.03		<1.2
	9752.0302					1.33	0.45	0.84		9.52	95		1.06		<1.7
	9753.0302					1.39	1.32	1.36		9.95	100		1.03		<1.6
	9754.0302					2.67	3.12	2.89	10.9	10.75	108		1.08		<1.3
	9755.0302					1.49	1.70	1.59		10.81	108		1.03		<1.1
	9756.0303					1.31	1.41	1.36		8.28	83		1.03		<1.4
	9757.0302					1.43	0.95	1.19		9.28	93		1.01		<1.3
	Cal BLK					0.25	-0.05	0.10		11.67	117	BHR	~~1.09~~	µg/L	<5.00
	25.0ppb					23.12	16.29	22.2		33.77	116	BHR	~~1.06~~	µg/L	22.2
	9758.0302					1.80	1.70	1.75		11.17	112	BHR	~~1.03~~ 1.03	mg/kg	<1.4
	9759.0302					0.79	1.06	0.92		5.87	59	BHR	~~1.09~~ 1.09		<1.5
	9760.0302					1.22	1.25	1.24		9.72	97	BHR	~~1.00~~ 1.03		<1.4
	9761.0302					0.93	1.35	1.14		9.27	93	BHR	~~1.00~~ 1.04		<1.4
	9762.0302					2.02	1.99	2.01		7.64	76		1.00		<1.2
	9763.0302					2.13	1.73	1.95		7.63	76		1.00		<1.3
	9764.0302					0.36	0.19	0.27		12.45	125		1.04		<1.3
	9765.0302					0.36	0.55	0.45		11.76	118		1.06		<1.2
	9766.0302					2.21	2.50	2.65		10.66	107		1.08		<1.4
	9767.0302					0.11	0.18	0.14		6.08	61		1.06		<1.4
	Cal BLK					0.01	-0.02	0.02		9.88	99		—	µg/L	<5.00
	25.00ppb					26.42	26.93	26.73		20.78			—	µg/L	26.73
	9768.0302					1.32	1.27	1.48		8.90	89		1.04	mg/kg	<1.2
	9769.0302					0.79	1.30	1.04		7.83	78		1.03	mg/kg	<1.2

To Page No. 30

Reviewed by: H. Rahmani 1/12/97
Inventoried by: J. C. Pho
Date: 12/30/96

Original Missing

Pages 79-80

Se
12-26-86

	-0.081	
	0.000	AZ
	0.028	
	10.00	S1
	22.53	C
	25.00	S2
	57.59	C
	50.00	S3
601	10.04 old	
602	0.26	
603	25.86	
601	10.57 old	
601	8.22	
	1.94	
	1.26	
604	1.59	AV
	30.05	CV
	1.54	
	0.98	
605	1.26	AV
	31.43	CV
	0.76	
	1.02	
606	0.89	AV
	20.66	CV
	1.32	
	1.26	
607	1.29	AV
	3.29	CV
	1.33	
	0.45	
608	0.87	AV
	69.92	CV
	1.39	
	1.32	
609	1.36	AV
	3.65	CV
	2.67	
	3.12	
610	2.89	AV
	10.99	CV
	1.49	
	1.70	
611	1.59	AV
	9.31	CV
	1.31	
	1.41	
612	1.36	AV
	5.20	CV
	1.43	
	0.95	
613	1.19	AV
	28.52	CV
	0.25	
	-0.05	

614	0.10	AV
	06	ER
	28.12	
	16.29	
615	22.17	AV
	37.67	CV
	1.80	
	1.70	
616	1.75	AV
	4.04	CV
	0.79	
	1.06	
617	0.92	AV
	20.64	CV
	1.22	
	1.25	
618	1.24	AV
	1.72	CV
	0.98	
	1.35	
619	1.16	AV
	22.46	CV
	2.02	
	1.99	
620	2.01	AV
	1.06	CV
	2.18	
	1.73	
621	1.95	AV
	16.28	CV
	0.36	
	0.19	
622	0.27	AV
	43.71	CV
	0.36	
	0.55	
623	0.45	AV
	29.53	CV
	2.81	
	2.50	
624	2.65	AV
	8.26	CV
	0.11	
	0.18	
625	0.14	AV
	34.14	CV
	0.07	
	-0.02	
626	0.02	AV
	06	ER
	26.48	
	26.98	
627	26.73	AV
	1.32	CV
	1.29	
	1.40	
628	1.35	AV
	5.78	CV
	0.79	
	1.30	

629	1.04	AV
	34.51	CV
	0.05	
	0.34	
630	0.19	AV
	06	ER
	1.38	
	1.21	
631	1.29	AV
	9.28	CV
	1.26	
	0.92	
632	1.09	AV
	22.06	CV
	10.37	
	6.97	
633	8.65	AV
	27.73	CV
	0.06	
	0.34	
634	0.20	AV
	99.00	CV
	26.41	
	25.44	
635	25.92	AV
	2.65	CV
601	18.79	
602	10.55	
603	34.29	
604	10.43	
605	9.92	
606	9.27	
607	10.27	
608	9.52	
609	9.95	
610	10.75	
611	10.81	
612	8.28	
613	9.28	
614	11.67	
615	33.77	
616	11.17	
617	5.67	
618	9.72	
619	9.27	
620	7.64	
621	7.63	
622	12.45	
623	11.76	
624	10.66	
625	6.06	
626	9.88	
627	20.78	
628	8.90	
629	7.83	
630	6.53	
631	7.82	
632	6.56	
633	17.72	
634	10.15	
635	20.74	

Original
Missing
Pages
82 to 83

HGA FORM #1

ELEMENT: Sn, DATE: 1/8/86.

S_1 = 50.0 PPB., S_2 = 100.0 PPB.

S_3 = 200.0 PPB, BOOK NO. , .

JOB #:			
	3_01	100.0 ppb	
	X02	Cal Blank	
	X03	100.0 ppb	
	X04	9748.0302 (4465)	
	X05	9749.	
	X06	9750.	
	X07	9751.	
	X08	9752.	
	X09	9753.	
	X10	9754.	
	X11	9755.	
	X12	9756.	
	X13	9757.	
	X14	Cal Blank	
	X15	100.0 ppb	
	X16	9758.	
	X17	9759.	, S_2
	X18	9760.	
	X19	9761.	
	X20	9762.	
	X21	9763.	
	X22	9764.	
	X23	9765.	
	X24	9766.	
	X25	9767.	
	X26	Cal Blank	
	X27	100.0 ppb	
	X28	9768.	
	X29	9769.	
	X30	9770.	
	X31	9771.	
	X32	9771. Ref	
	X33	9771. R.S.	
	X34	~~Cal~~ Blank 944	
	X35	100.0 ppb	, S_3

ATTACH TAPE HERE

5T

	-2.016	
	0.000	AV
	0.159	
	50.0	SI
	97.5	C
	100.0	S2
	198.1	C
	200.0	S3
301	102.8	
302	-0.0	
303	96.4	
	-0.7	
	-0.2	
304	-0.5	AV
	78.57	CV
	6.9	
	6.4	
305	6.6	AV
	5.32	CV
	8.0	
	7.9	
306	8.0	AV
	0.89	CV
	10.7	
	10.0	
307	10.4	AV
	4.76	CV
	15.1	
	13.9	
308	14.5	AV
	5.65	CV
	5.3	
	5.4	
309	5.4	AV
	1.32	CV
	60.2	
	59.1	
310	59.6	AV
	1.30	CV
	17.1	
	16.8	
311	17.0	AV
	1.25	CV
	20.3	
	19.1	
312	19.7	AV
	4.31	CV
	15.4	
	15.1	
313	15.2	AV
	1.39	CV
	-0.7	
	-0.2	
314	-0.5	AV
	78.57	CV
	103.0	
	103.0	

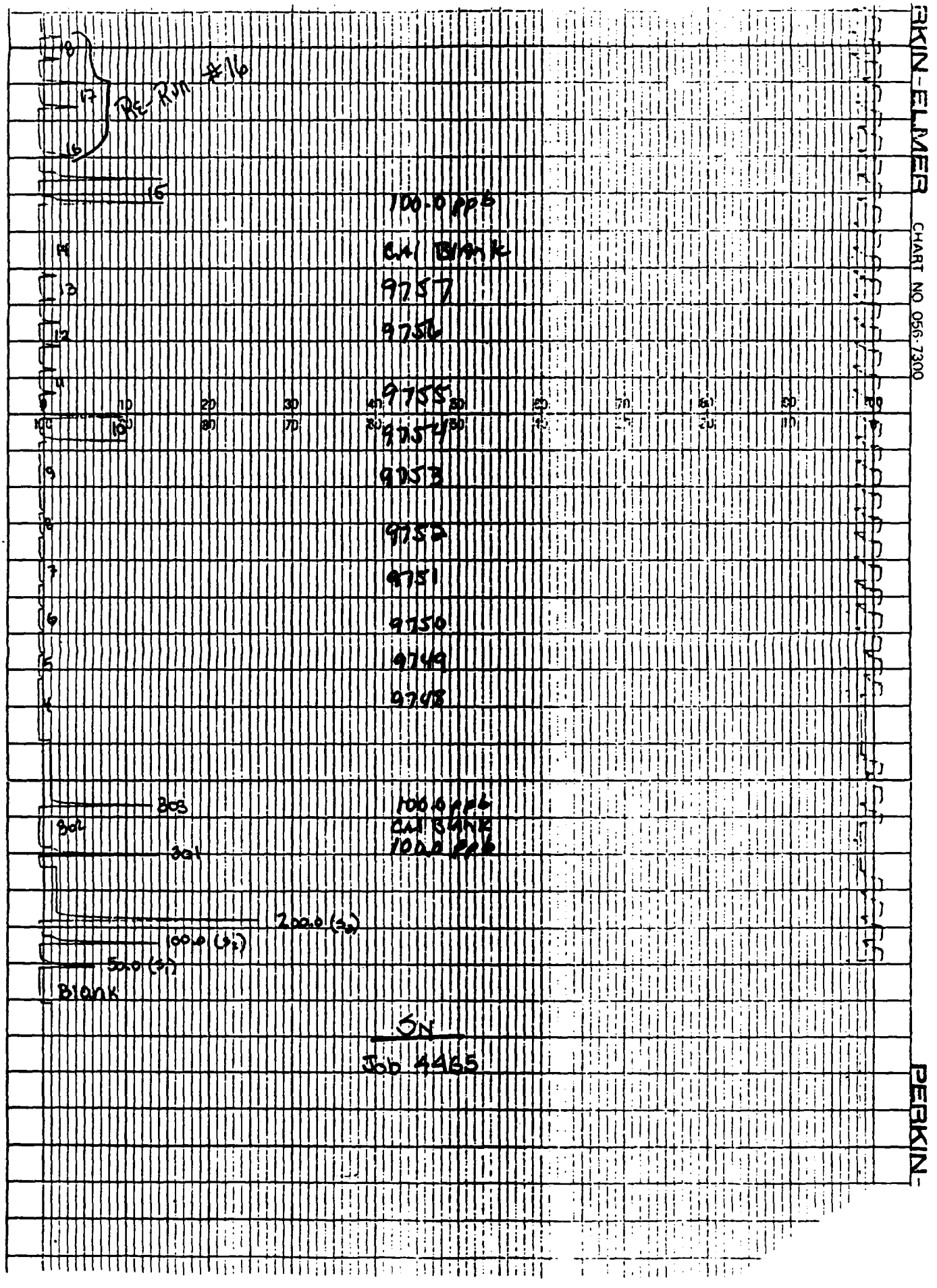
315	103.0	AV
	0.00	CV
	31.4	
	-0.4	
316	15.4	AV
	[illegible]	[illegible]
	35.1	
	37.3	
317	36.4	AV
	1.30	CV
	[illegible]	
	19.0	
318	19.2	AV
	1.11	CV
	[illegible]	
	13.[illegible]	AV
	-2.3	
	-2.0	
316	-2.1	AV
	37.6	
	36.4	
317	37.0	AV
	16.3	
	15.1	
318	16.0	AV
	27.1	
	27.6	
319	27.4	AV
	136.3	
	142.7	
320	139.5	AV
	129.4	
	130.9	
321	130.2	AV
	34.4	
	35.3	
322	34.8	AV
	27.9	
	27.8	
323	27.8	AV
	77.3	
	78.2	
324	77.7	AV
	22.7	
	23.0	
325	22.9	AV
	-1.5	
	-1.9	
326	-1.7	AV
	111.8	
	112.9	
327	112.3	AV
	65.1	
	67.2	

328	66.5	AV
	22.1	
	21.5	
329	21.7	AV
	32.8	
	32.2	
330	32.5	AV
	7.4	
	7.7	
331	7.6	AV
	3.8	
	-2.0	
332	0.9	AV
	4.0	
	5.0	
333	5.0	AV
	36.5	
	35.2	
334	35.9	AV
	104.6	
	104.8	
335	104.7	AV

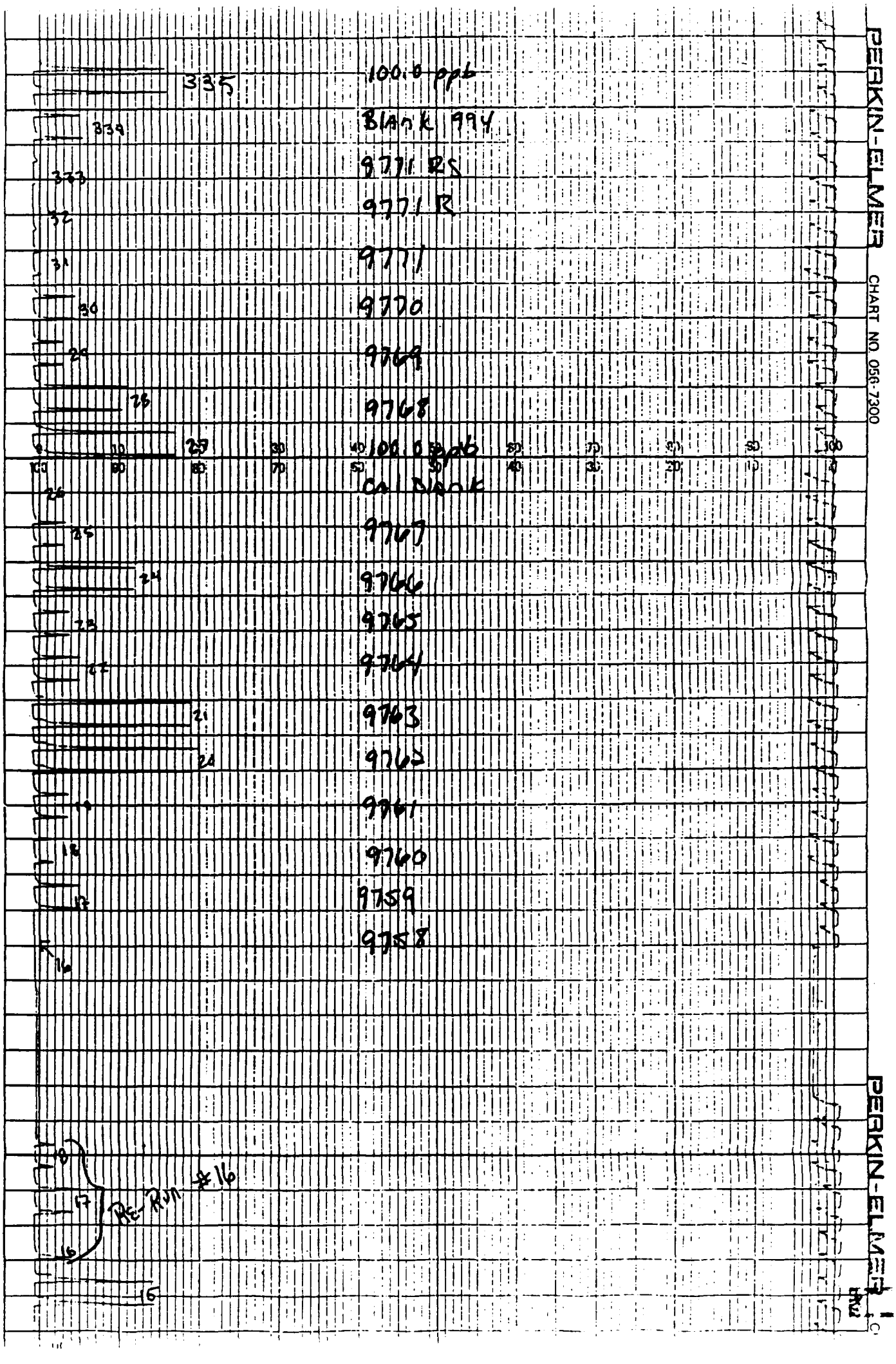
Sn 1/8/87

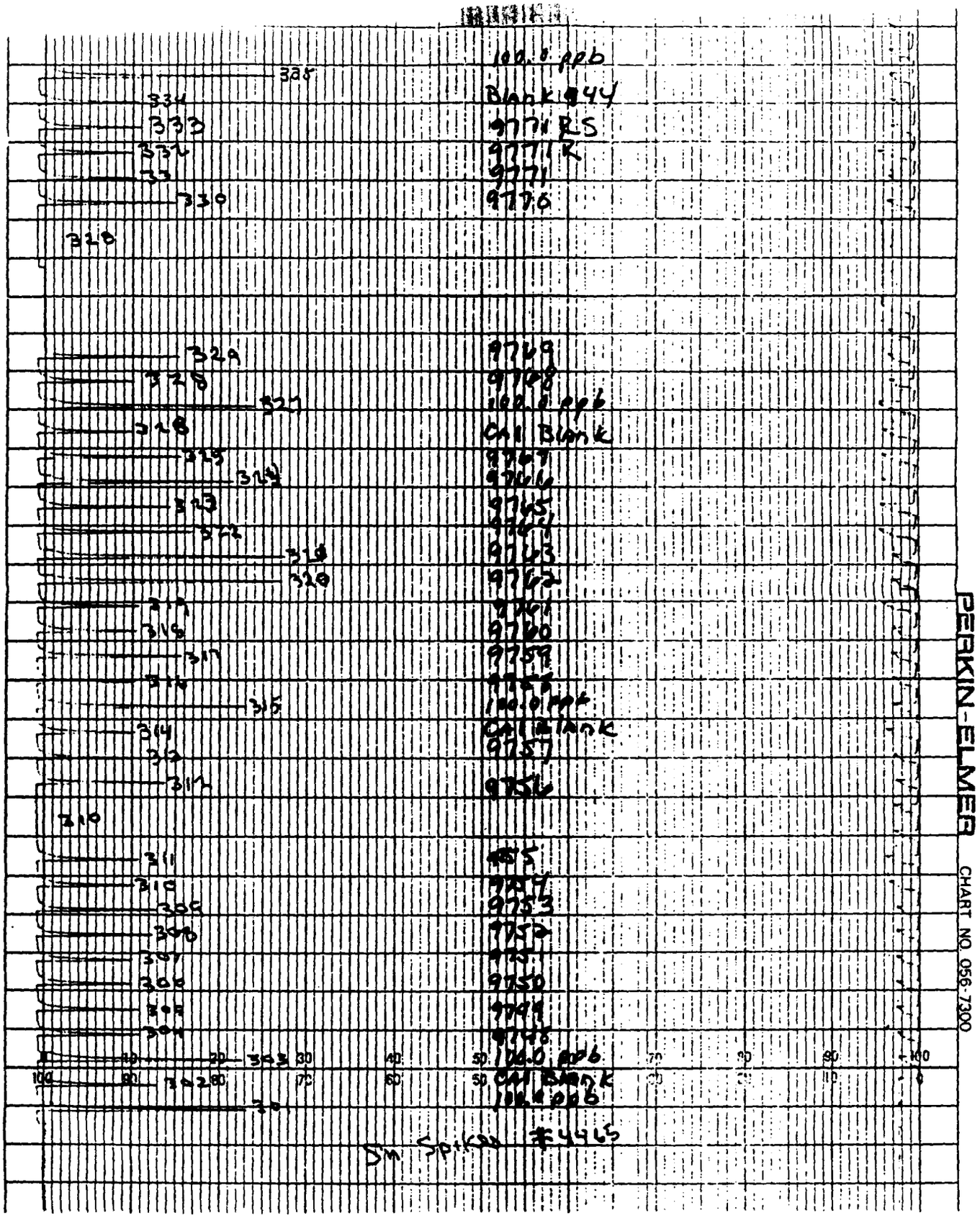
301	187.9	
302	100.3	
303	183.1	
304	84.8	
305	84.6	
306	80.3	
307	80.0	
308	88.5	
309	90.9	
310	79.7	
311	82.7	
	-0.1	
	0.1	
310	0.0	AV
	0.0	ER
312	97.7	
313	81.7	
314	79.6	
315	182.2	
316	78.6	
317	111.7	
318	80.8	
319	80.8	
320	224.0	C
321	221.1	°C
322	115.7	
323	97.9	
324	155.1	
325	99.8	
326	71.7	
327	177.4	
328	76.3	
329	102.4	
	-0.4	
	-0.6	
328	-0.5	AV
	28.28	CV
330	109.4	
331	76.8	
332	75.9	
333	79.8	
334	79.5	
335	199.3	

	100.7	
	109.9	
327	105.3	AV
	6.18	CV



RKIN-ELMER
CHART NO 056-7300
PERKIN-
Re-Run #16
100.0 ppb
Cal Blank
9757
9756
9755
9754
9753
9752
9751
9750
9749
9748
303
302
301
100.0 ppb
Cal Blank
100.0 ppb
200.0 (S3)
100.0 (S2)
50.0 (S1)
Blank
SN
Job 4465


PERKIN-ELMER
CHART NO. 056-7300
335
100.0 ppb
Blank 994
9771 RS
9771 R
9771
9770
9769
9768
100.0 ppb
Cal Blank
9767
9766
9765
9764
9763
9762
9761
9760
9759
9758
Re-Run #16
PERKIN-ELMER


100.0 ppb
Blank #44
9771 RS
9771 R
9771
9770
9769
9768
100.0 ppb
Cal Blank
9767
9766
9765
9764
9763
9762
9761
9760
9759
9758
100.0 ppb
Cal Blank
9757
9756
9755
9754
9753
9752
9750
9749
9748
100.0 ppb
Cal Blank
100.0 ppb
Sm Spiked #4465
PERKIN-ELMER
CHART NO. 056-7300

e No.

rmed: TI

1/8-9/87

ormed By: J.C.M.P.

See pg 7

Dry Wt Basis

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
WP1183#1				23.8	22.9	23.4	2.73	46.9	117			µg/L	23.4
Cal Blk				04	04	04	-	22.2	111			µg/L	<10.0
50.0ppb				50.3	50.3	50.3	0.00	76.3	/			µg/L	50.3
9748.0302				04	04	04		23.2	116		1.03	mg/kg	<2.5 ~~<10.0~~
9749.0302				04	04	04		18.9	95		1.05		<2.5
9750.0302				04	04	04		19.7	99		1.08		<2.5
9751.0302				04	04	04		19.1	96		1.03		<2.2
9752.0302				04	04	04		18.5	93		1.06		<2.5
9753.0302				04	04	04		20.5	103		1.03		<3.4
9754.0302				04	04	04		19.1	96		1.08		<3.2
9755.0302				04	04	04		18.8	94		1.03		<2.6
9756.0302				04	04	04		18.5	93		1.03		<2.2
9757.0302				04	04	04		17.3	87		1.01		<2.8
Cal Blk				04	04	04		18.1	91			µg/L	<10.0
50.0ppb				51.2	50.9	51.0	0.42	76.6	/			µg/L	51.0
9758.0302				0.4	04	04		16.7	84		1.09	mg/kg	<2.9
9759.0302				0.4	04	04		15.7	79		1.06		<3.0
9760.0302				04	04	04		18.9	95		1.03		<2.9
9761.0302				04	04	04		20.1	101		1.09		<2.8
9762.0302				04	04	04		22.2	111		1.00		<2.5
9763.0302				04	04	04		21.8	109		1.08		<2.6
9764.0302				2.5	2.2	2.3	9.03	22.9	115		1.04		<2.7
9765.0302				04	04	04		17.2	86		1.06		<2.4
9766.0302				04	04	04		17.5	88		1.08		<2.7
9767.0302				04	04	04		15.9	80		1.06		<2.8
Cal Blk				04	04	04		17.1	86			µg/L	<10.0
50.0ppb				51.8	53.3	52.5	2.02	74.9	112			µg/L	52.5
9768.0302				04	04	04		19.2	96		1.04	mg/kg	<2.4
9769.0302				04	04	04		19.0	95		1.03	mg/kg	<2.5

To Page No. 35

Underwriters ... Presented by ... Date

[signature] 1/12/87 [signature] 1/9/87

Id: 34 Tl (cont'd)
d: 1/8-9/87
By: J.O.M.P

Dry wt Basis

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
9770.0302				0.2	0.5	0.3		20.5	103		1.01	mg/kg	<2.6
9771.0302				04	04	04		18.0	90		1.00		<2.5
9771.R1				04	04	04		17.9	90		1.03		<2.5
9771.R1S1				56.9	56.1	56.5	1.00	77.0	103		1.03		~~(113%)~~ R.
BIK944				04	04	04		18.0	90			µg/L	<5.00
50.0ppb				51.8	52.2	52.0	0.54	73.5	108			µg/L	52.0

To Page No. _____

Understood by: Rohchalk

Checked by: 1/12/87

Checked by: 9.0 lb

Date: 1/9/87

HGA FORM #1

ELEMENT: Tl, DATE: 1/3/87.

S_1 = 25.00 PPB., S_2 = 50.00 PPB.

S_3 = 99.99 PPB, BOOK NO. [illegible].

	401	WP1133#1			
	X02	Cal Blk			
	X03	50.0ppb		401	46.9
	X04	9743.0302		402	22.2
JOB #:	X05	9749		403	76.3
	X06	9750		404	23.2
	X07	9751		405	18.9
	X08	9752		406	19.7
	X09	9753		407	19.1
	X10	9754		408	18.5
	X11	9755		409	20.5
	X12	9756		410	19.1
	X13	9757		411	18.8
	X14	Cal Blk		412	18.5
	X15	50.0ppb		413	17.3
	X16	9758.0302		414	18.1
	X17	9759	S_2	415	76.6
	X18	9760		416	16.7
	X19	9761		417	15.7
	X20	9762		418	18.9
	X21	9763		419	20.1
	X22	9764		420	22.2
	X23	9765		421	21.8
	X24	9766		422	22.9
	X25	9767		423	17.2
	X26	Cal Blk		424	17.5
	X27	50.0ppb		425	15.9
	X28	9768.0302		426	17.1
	X29	9769		427	74.9
	X30	9770		428	19.2
	X31	9771		429	19.0
	X32	9771 R.		430	20.5
	X33	9771 R.S.		431	18.0
	X34	Blk 944		432	17.9
	X35	50.0ppb	S_3	433	77.0
				434	18.0
				435	73.5
					0.027
					[illegible]
					0.109
					[illegible]
					[illegible]
					[illegible]
				401	23.6
				402	-0.0
				403	49.3
				404	1.0
				405	1.1
				406	0.9
				407	0.7

TT 1/8/87

	-0.018	
	-0.018	
	-0.018	AV
	0.00	CV
	0.103	
	0.103	
	0.102	
	0.103	AV
	0.69	CV
	25.0	51
	46.5	C
	46.4	C
	46.4	AV
	0.15	CV
	50.0	52
	111.9	C
	114.7	C
	113.3	AV
	1.75	CV
	100.0	53
	23.8	
	22.9	
401	23.4	AV
	2.73	CV
	04	ER
	04	ER
402	04	ER
	06	ER
	50.3	
	50.3	
403	50.3	AV
	0.00	CV
	04	ER
	04	ER
404	04	ER
	0.00	CV
	04	ER
	04	ER
405	04	ER
	15.71	CV
	04	ER
	04	ER
406	04	ER
	0.00	CV
	04	ER
	04	ER

407	04	
	0.00	CV
	04	
	04	
408	04	
	0.00	CV
	04	
	04	ER
409	04	ER
	20.20	CV
	04	ER
	04	ER
410	04	ER
	20.20	CV
	04	ER
	04	ER
411	04	ER
	0.00	CV
	04	ER
	04	ER
412	04	ER
	15.71	CV
	04	ER
	04	ER
413	04	ER
	0.00	CV
	04	ER
	04	ER
414	04	ER
	06	ER
	51.2	
	50.9	
415	51.0	AV
	0.42	CV
	04	ER
	04	ER
416	04	ER
	28.28	CV
	04	ER
	04	ER
417	04	ER
	15.71	CV
	04	ER
	04	ER
418	04	ER
	15.71	CV
	04	ER
	04	ER
419	04	ER
	0.00	CV
	04	ER
	04	ER
420	04	ER
	0.00	CV
	04	ER
	04	ER

421	04	ER
	0.00	CV
	2.5	
	2.2	
422	2.3	AV
	9.03	CV
	04	ER
	04	ER
423	04	ER
	0.00	CV
	04	ER
	04	ER
424	04	ER
	0.00	CV
	04	ER
	04	ER
425	04	ER
	0.00	CV
	04	ER
	04	ER
426	04	ER
	06	ER
	51.8	
	53.3	
427	52.5	AV
	2.02	CV
	04	ER
	04	ER
428	04	ER
	0.00	CV
	04	ER
	04	ER
429	04	ER
	0.00	CV
	0.2	
	0.5	
430	0.3	AV
	60.61	CV
	04	ER
	04	ER
431	04	ER
	0.00	CV
	04	ER
	04	ER
432	04	ER
	0.00	CV
	56.9	
	56.1	
433	56.5	AV
	1.00	CV
	04	ER
	04	ER
434	04	ER
	47.14	CV
	51.8	
	52.2	
435	52.0	AV
	0.54	CV

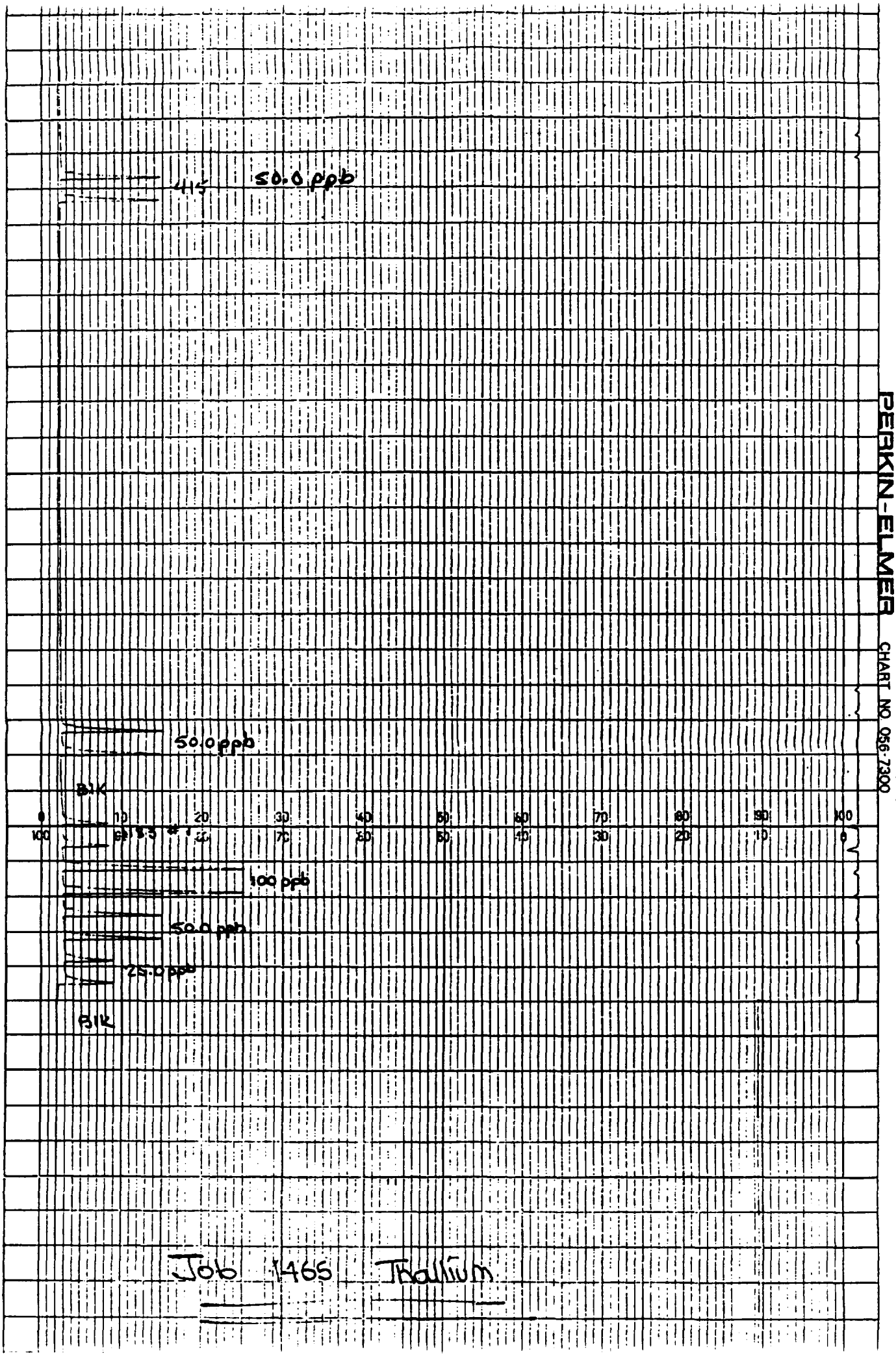

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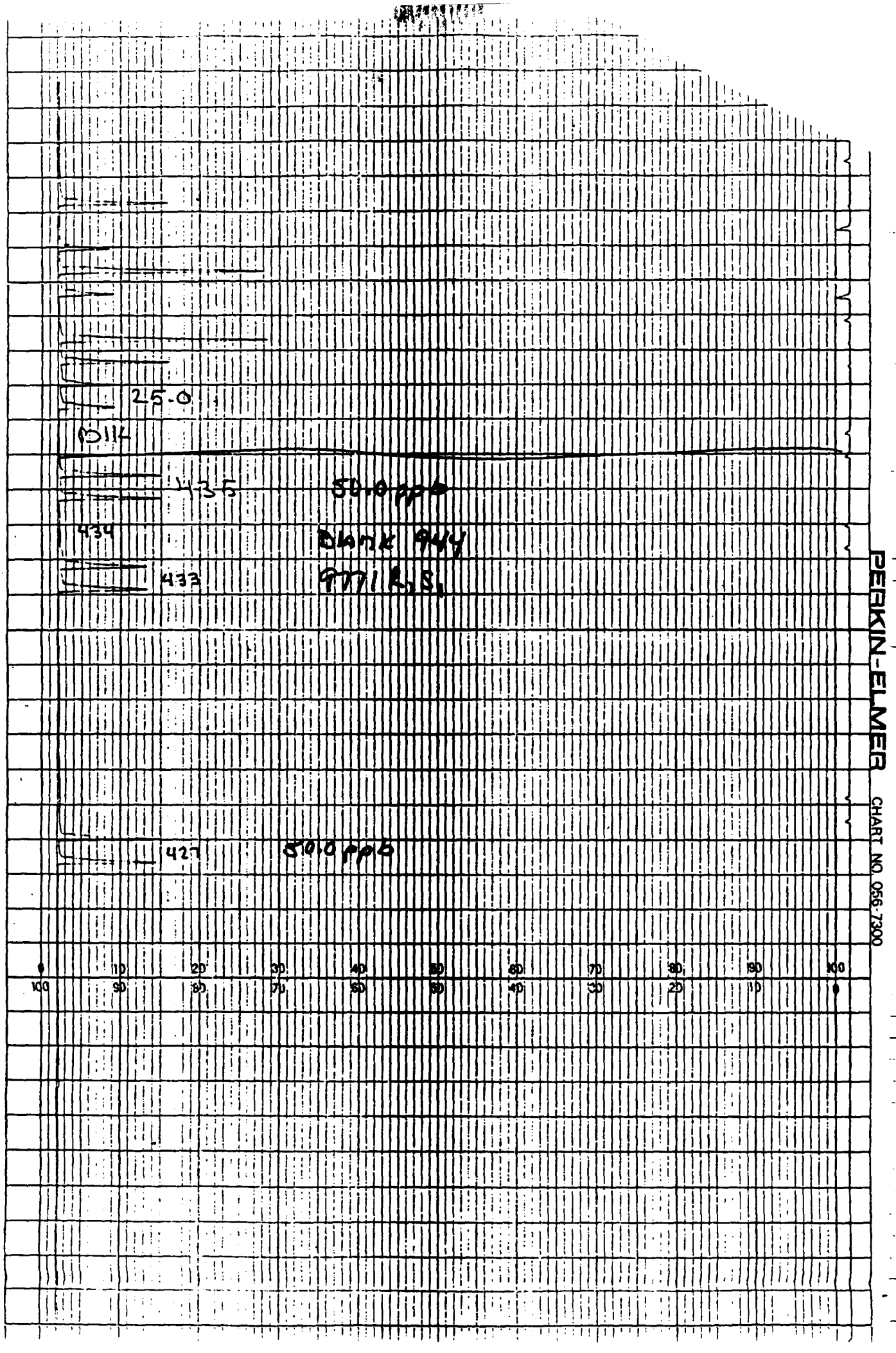
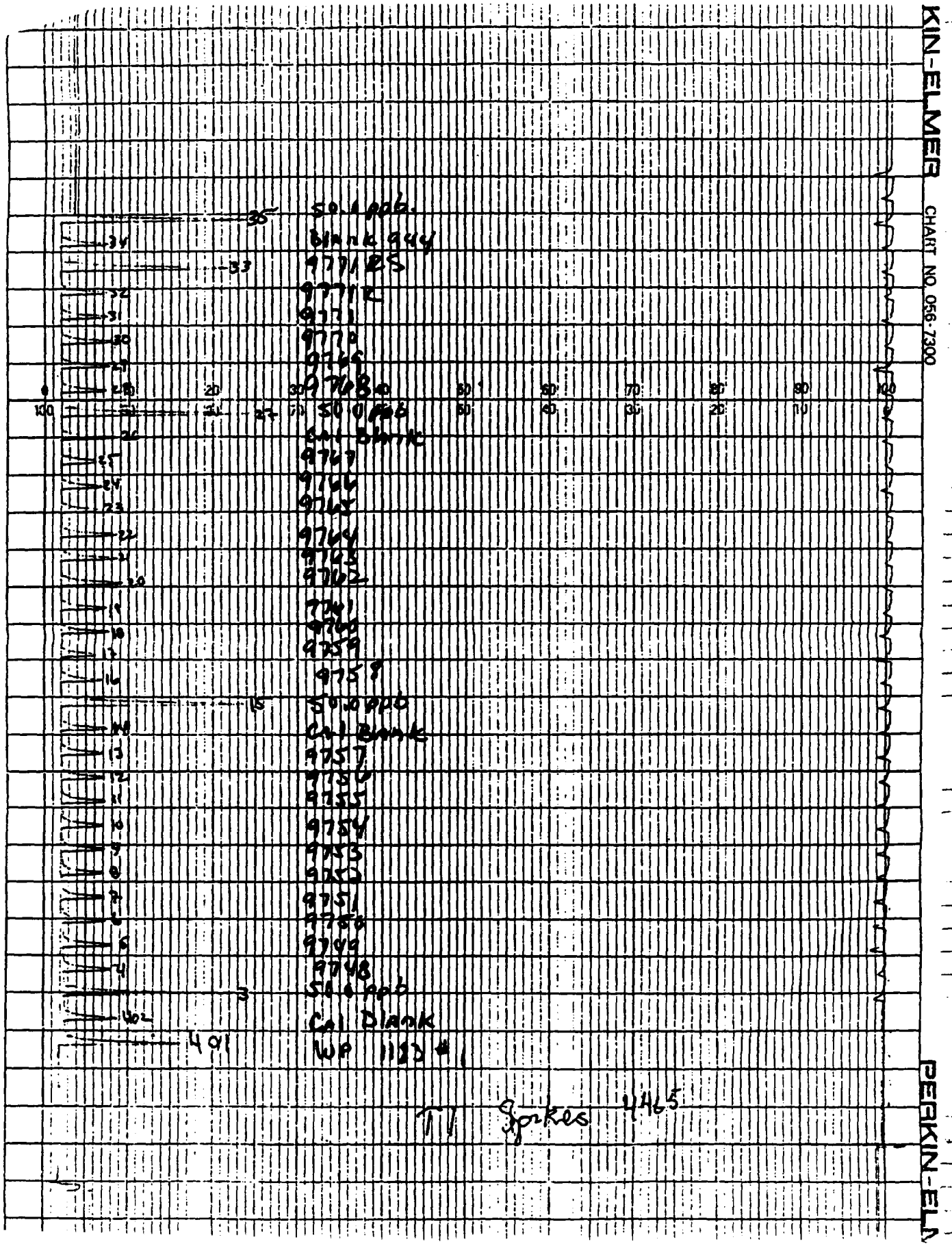
CHART NO. 056-7300
0 10 20 30 40 50 60 70 80 90 100
100 90 80 70 60 50 40 30 20 10 0
BLK
50.0 ppb
BLK
100 ppb
50.0 ppb
25.0 ppb
BLK
≤0.0 ppb
Job 1465 Thallium


25.0
Blk
435
50.0 ppb
434
Blank 944
433
9771 R, S,
427
50.0 ppb
0 10 20 30 40 50 60 70 80 90 100
100 90 80 70 60 50 40 30 20 10 0
PERKIN-ELMER
CHART NO. 056-7300


KIN-ELMER
CHART NO. 056-7300
PERKIN-ELM
50.0 ppb.
Blank 944
9771 RS
9771 R
9771
9770
9769
9768
50.0 ppb
Cal Blank
9767
9766
9765
9764
9763
9762
9761
9760
9759
9758
50.0 ppb
Cal Blank
9757
9756
9755
9754
9753
9752
9751
9750
9749
9748
50.0 ppb
Cal Blank
WP 1183 #1
TT Sprkes 4465

3

96

DEAD CREEK — ALL RESULTS EXPRESSED IN mg/kg on dry wt basis!

IGB # 4465	WET WEIGHT	% SOLIDS	DRY WT per 200 mL	AG	AL	BA	BE	CD	CR	CO	CU	FE	MN	NI	PB	SB	V	ZN		HG
9748.0301	1.01	77.7	0.785	<2.53	11378	163	<1.27	2.57	15.5	6.15	327	19014	336	22.4	103	<15.3	24.9	299		0.159
9749.0301	1.01	77.4	0.782	<2.36	10945	174	<1.28	3.43	15.2	7.82	344	20316	295	24.9	134	<15.3	26.1	406		0.233
9750.0301	1.02	84.8	0.865	<2.31	7824	151	<1.16	1.75	11.7	6.43	162	15684	300	18.0	67.7	<13.9	19.5	188	R	<0.071
9751.0301	1.05	81.4	0.866	<2.34	9633	145	<1.17	1.72	13.9	6.45	245	17436	329	22.5	98.8	<14.0	23.0	281	R	<0.060
9752.0301	1.03	56.0	0.577	<3.47	15321	222	<1.73	6.31	21.1	8.21	392	25991	339	34.9	232	<20.8	34.6	619		<0.082
9753.0301	1.04	60.8	0.632	<3.16	16486	224	<1.58	4.83	21.9	9.34	572	27630	390	33.4	230	<18.9	38.0	613		0.114
9754.0301	1.03	70.4	0.725	<2.76	7610	202	<1.38	10.5	18.5	6.27	2220	20343	291	23.6	514	<16.6	22.0	975		0.111
9755.0301	1.05	86.9	0.912	<2.19	5952	138	<1.10	3.30	10.6	5.61	675	13794	217	16.1	131	<13.2	16.1	354		0.288
9756.0301	1.08	69.9	0.755	4.21	9293	13783	<1.32	10.3	119	15.1	1202	38596	322	360	655	<15.9	139	4580		<0.066
9757.0301	1.07	76.0	0.813	4.97	7677	575	<1.23	4.43	51.6	8.46	263	18001	171	83.6	334	<14.8	30.6	5130		6.60
9758.0301	1.04	64.1	0.667	<3.00	2787	20250	<1.50	4.53	39.1	12.3	487	29790	96.5	60.8	614	<18.0	35.2	794		1.29
9759.0301	1.03	63.6	0.668	<2.99	23329	7335	<1.50	8.06	95.5	13.0	1434	45000	150	38.2	711	<18.0	129	23913		1.71
9760.0301	1.03	67.7	0.697	<2.87	4739	169024	<1.43	5.56	24.2	89.0	624	22202	129	61.6	310	<17.2	29.3	8112		14.3
9761.0301	1.00	65.4	0.654	<3.06	4711	67263	<1.53	3.53	51.9	26.8	483	22385	191	47.5	2949	<18.3	45.9	1843		1.67
9762.0301	1.10	80.6	0.887	6.44	6958	1156	<1.13	4.57	147	11.2	2166	75840	770	122	1245	14.4	133	22841		3.23
9763.0301	1.04	77.4	0.805	5.40	6166	869	<1.24	45.3	98.5	11.2	1624	108273	874	109	1611	21.4	137	15607		5.81
9764.0301	1.01	71.7	0.724	6.14	8892	1565	<1.38	17.1	66.0	7.30	914	46050	534	83.1	1466	<16.6	211	5104		6.56
9765.0301	1.04	77.1	0.802	<2.49	4855	13870	<1.25	7.17	137	14.6	246	46796	193	95.4	207	<15.0	25.1	32145		0.57
9766.0301	1.03	68.5	0.706	2.96	4390	1806	<1.42	10.5	47.2	3.78	637	48584	223	83.9	263	<17.0	16.3	19435		11.7
9767.0301	1.09	66.7	0.727	3.28	9413	4776	<1.38	10.8	34.3	6.67	639	25814	144	38.9	1474	<16.5	19.8	96754		2.31
9768.0301	1.03	78.9	0.813	<2.46	6461	10558	<1.23	5.22	43.8	12.2	444	33641	116	51.6	482	<14.8	69.2	814		2.77
9769.0301	1.00	78.8	0.788	<2.54	4986	19316	<1.27	8.74	80.7	18.0	684	159006	278	32.7	296	<15.2	40.9	7164		2.66
9770.0301	1.03	77.6	0.799	33.3	9620	4337	<1.25	20.5	48.0	59.0	1953	39900	10807	49.5	11743	<15.0	166	24164		11.2
9771.0301	1.01	79.1	0.799	<2.50	9262	326	<1.25	1.40	12.6	4.90	31.0	16209	381	16.3	68.0	<15.0	21.6	162		<0.07
9771.0301 R	1.05	·	0.831	<2.41	10917	291	<1.20	1.34	14.2	5.70	28.3	17688	398	17.5	40.4	<14.4	25.9	155		<0.07
9771.0301 RS	1.03	·	0.815	11.9	9017	743	11.8	12.4	57.5	118	86.2	16029	500	129	161	94.9	133	270		0.43
				(12.3)	—	(491)	(12.1)	(12.2)	(49.2)	(123)	(61.2)	—	(123)	(123)	(123)	(123)	(123)	(123)		(0.39
				(97%)	—	(95%)	(98%)	(90%)	(91%)	(92%)	(90%)	—	(97%)	(92%)	(76%)	(77%)	(91%)	(88%)		109

D-889 (3-67)

SCA-67

Dead Creek (Results expressed in µg/kg dry wt basis)

Job # 4465

	wet weight 200mL	% Solids	Dry Wt 200mL	As	Se	Tl	Sb
9748.0302	1.03	77.7	0.80	6.8	<1.2	<2.5	<10
9749.0302	1.05	77.4	0.81	4.9	<1.2	<2.5	<9.9
9750.0302	1.08	84.8	0.92	5.7	<1.1	<2.2	<8.7
9751.0302	1.03	81.4	0.84	5.8	<1.2	<2.5	<9.5
9752.0302	1.06	56.0	0.59	5.8	<1.7	<3.4	<14
9753.0302	1.03	60.8	0.63	5.7	<1.6	<3.2	<13
9754.0302	1.08	70.4	0.76	7.5	<1.3	<2.6	<11
9755.0302	1.03	86.9	0.90	5.6	<1.1	<2.2	<8.9
9756.0302	1.03	64.9	0.72	13.0	<1.4	<2.8	<11
9757.0302	1.01	76.0	0.77	5.4	<1.3	<2.6	<10
9758.0302	1.09	64.1	0.70	5.6	<1.4	<2.9	<11
9759.0302	1.06	63.6	0.67	26	<1.5	<3.0	<12
9760.0302	1.03	67.7	0.70	11.5	<1.4	<2.9	<11
9761.0302	1.09	65.4	0.71	7.4	<1.4	<2.8	<11
9762.0302	1.00	80.6	0.81	36.	<1.2	<2.5	[illegible]
9763.0302	1.00	77.4	0.77	38.	<1.3	<2.6	34
9764.0302	1.04	71.7	0.75	33	<1.3	<2.7	<11
9765.0302	1.06	77.1	0.82	64	<1.2	<2.4	<9.8
9766.0302	1.08	68.5	0.74	57	<1.4	<2.7	21
9767.0302	1.06	66.7	0.71	40	<1.4	<2.8	<11
9768.0302	1.04	78.9	0.82	13.6	<1.2	<2.4	<9.8
9769.0302	1.03	78.8	0.81	23	<1.2	<2.5	<9.9
9770.0302	1.01	77.6	0.78	22	<1.3	<2.6	<10
9771.0302	1.00	79.1	0.79	7.0	<1.3	<2.5	<10
9771.0302 R	1.03	79.1	0.81	5.6	<1.2	<2.5	<9.9
9771.0302 S	1.03	79.1	0.81	12.2	2.1	12.8	<9.9
Dwd Spiked				(99)	(2.5)	(12.3)	N/A
% Recovery				53%	85%	104%	N/A

m Page No.
Performed: DIGESTIONS
Re d: DECEMBER 1 1986
Performed By:

Lab No.	ID No.	Custody Seal Intact Yes	Custody Seal Intact No	Secure Storage Area Received From	Amount of Sample	Type of Digestion	Final Volume
65	9748.03		No	A-30	1.01 gm	01	200 ml.
	9749.03				1.01	01	200 ml.
	9750.03				1.02	01	200 ml.
	9751.03				1.05	01	200 ml.
	9752.03				1.03	01	200 ml.
	9753.03				1.04	01	200 ml.
	9754.03				1.03	01	200 ml.
	9755.03				1.05	01	200 ml.
	9756.03				1.08	01	200 ml.
	9757.03				1.07	01	200 ml.
	9758.03				1.04	01	200 ml.
	9759.03				1.05	01	200 ml.
	9760.03				1.03	01	200 ml.
	9761.03				1.00	01	200 ml.
	9762.03				1.10	01	200 ml.
	9763.03				1.04	01	200 ml
	9764.03				1.01	01	200 ml.
	9765.03				1.04	01	200 ml.
	9766.03				1.03	01	200 ml.
	9767.03				1.09	01	200 ml.
	9768.03				1.03	01	200 ml.
	9769.03				1.00	01	200 ml.
	9770.03				1.03	01	200 ml.
	9771.03				1.01	01	200 ml.
	9771.03 (R1)				1.05	01	200 ml.
	9771.03 (R2)				1.03	01	200 ml.
	Blank			943	— 0 —	01	200 ml.

Witnessed & Understood by me. Date 12/ / Inventor Date 12/ /

Project No._____

Book No._____ TITLE _____

Page No. 151

Performed: DIGESTIONS (CONT'D)

Date:_____

Performed By:_____

ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From	Amount of Sample	Type of Digestion	Final Volume
9748.03	(As Above)	(As Above)	1.03 gm	02	200 ml.
9749.03			1.05	02	200 ml.
9750.03			1.08	02	200 ml.
9751.03			1.03	02	200 ml.
9752.03			1.06	02	200 ml.
9753.03			1.03	02	200 ml.
9754.03			1.08	02	200 ml.
9756.03			1.03	02	200 ml.
9756.03			1.03	02.	200 ml.
9757.03			1.01	02	200 ml.
9758.03			1.09	02	200 ml.
9759.03			1.06	02	200 ml.
9760.03			1.03	02	200 ml.
9761.03			1.09	02	200 ml.
9762.03			1.00	02	200 ml.
9763.03			1.00	02	200 ml.
9764.03			1.04	02	200 ml.
9765.03			1.06	02	200 ml.
9766.03			1.05	02	200 ml.
9767.03			1.06	02	200 ml.
9768.03			1.04	02	200 ml.
9769.03			1.03	02	200 ml.
9770.03			1.01	02	200 ml.
9771.03			1.00	02	200 ml.
9771.03 Rs			1.03	02	200 ml.
9771.03 RS.			1.03	02	200 ml.
Blank 944			— 0 —	02	200 ml.

To Page No._____

Date 12/ / Inventor Date

Project No._____

TLE _____ Book No._____

11

om . age 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 ✓

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To Page No._____

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

EPA 335.2
Spec 88
Cr⁻ 0.0165N 0.993 mg/mL
11/16/86 25.19
11/21/86 30.61
11/24/86 14.756

STD(1) = 100 mL STOCK / 1000
STD(2) = 100 mL STD(1) / 1000

Cr^-, mg/L = $\frac{A \times 50}{C \times C}$

Cr⁻
11/16/86
A Vogel

				Amt. Initial	Amt. Final	ABS	Mg found	Results (mg/L)
	BLANK			500 mL	50	0.000	-1.0	<0.02 mg/L
	SPIKE			5 mL STD(2)/500	50	0.265	44.66	92.8% rec
153	9702.01	Y	A-12	500 mL	50	0.000	-1.0	<0.02 mg/L
32	9667.04	N	A-4	7.593 g/500	50	0.001	-0.85	<1 mg/kg
142	9683.04	N	A-16	6.620 g/500	50	0.001	-0.85	<1
142	9684.04	N	A-16	6.483 g/500	50	0.000	-1.0	<1
142	9685.04	N	A-16	6.650 g/500	50	0.010	0.70	<1
142	9686.04	N	A-16	6.093 g/500	50	0.015	1.56	<1
142	9687.04	N	A-16	6.182 g/500	50	0.020	2.42	<1
142	9688.04	N	A-16	6.080 g/500	50	0.000	-1.0	<1 mg/kg
142	9688.04	SPIKE REP	A-16	5 mL STD(2) + 6.43 g/500 (7.116 mg/kg)	50	0.257	43.28	89.9% rec (6.496 mg/kg)
	SPIKE			5 mL STD(2)/500	50	0.258	43.45	90.2% rec
452	9702.01	Y	A-12	500	50	0.029	3.975	<0.02 mg/L
465	9748.04	Y	A-30	6.327 g/500	50	0.000	-1.0	<1 mg/kg
465	9749.04	Y	A-30	6.179 g/500	50	0.003	-0.5	
465	9750.04	Y	A-30	6.456 g/500	50	0.001	-0.85	
465	9751.04	Y	A-30	6.141 g/500	50	0.004	-0.33	
465	9752.04	Y	A-30	6.703 g/500	50	0.015	1.56	
465	9753.04	Y	A-30	6.765 g/500	50	0.008	0.36	
465	9754.01	Y	A-30	6.140 g/500	50	0.016	1.73	
465	9755.01	Y	A-30	6.007 g/500	50	0.010	0.70	
465	9755.01	REP	A-30	6.090 g/500	50	0.010	0.70	<1 mg/kg 0.0 RPD

Wastewater initial 12/10/86
JN

To Page No.

Date

Project No._____

TITLE _____ Book No._____

From Page No.__

Method EPA 335.2
Instrument Spec 88
Stock CN 0.0185N 0.965 mg/ml
Prepared 11/5/86 Book, page 251-14
Stand. 11/7/86 Book, page 210.61
Curve Date 11/7/86 Expires 12/7/86
Other:

Test Performed: CN
Date Received: 11-20-86
Work Performed by: D. [illegible]

Job No.	ID No.	Custody Seal Intact Yes No	Secure Storage Area Received From	(B) mls distilled	(C) mls for Color	Abs	(A) ug from Curve	Results
	Blank	—	—	500	50	[illegible]	-1.02	<0.02 mg/L
	DI spike	—	—	5.0 mls Std (2)/500		0.274	46.21	96.0 % rec
4465	9756.03	N	A-30	6.057g/500		0.023	2.94	<1 mg/kg
	9757.03	N	A-30	6.006g/500		0.010	0.70	<1
	9758.03	N	A-30	6.132g/500		0.115	18.80	3.07
	9759.03	N	A-30	6.031g/500		0.080	12.77	2.12
	9760.03	N	A-30	6.032g/500		0.045	6.73	1.12
	9761.03	N	A-30	6.023g/500		0.070	11.0	1.83
	9762.03	N	A-30	6.088g/500		0.053	8.11	1.33
	9763.03	N	A-30	6.146g/500		0.040	5.87	(.959) <1 mg/kg
	9763.03	spike	5.0 mls STD (2) + 6.106g/500	7.886	50	0.341	57.76	107.8 % rec

193

To Page No._____

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

Recorded by

Project No.
Book No.
TITLE

Method: EPA 335.2
Instrument: Spec 68
Stock: CN- (1000) 0.963 mg/ml
Prep: 11/8/86 Book/Page 151,A
Stand. 11/7/86 Book/Page 24,1-1
Curve Date 11/7/86 Expires 12/7/86
Other:

STD ① = 100 ml stock / 1000
STD ② = 100 ml STD ① / 1000

$CN^-, mg/l = \frac{A+50}{B \times C}$

From Page No.
Test Performed: CN-
Date Received: 11/20/86
Work Performed By: D. Nagel

Job No.	ID No.	Custody Seal Intact Yes No	Sample Storage Area Received From	(B) ml distilled	(C) dilution	(A)	mg/l from curve	Results
	BLANK			500	50	0.000	-1.02	<0.02 mg/L
71	SPIKE			5 ml STD② / 500	50	0.277	46.73	97.1 % rec
4465	9766.03	N	A-30	6.042 g / 500	50	0.039	5.70	<1 mg/kg
4465	9765.03	N	A-30	6.002 g / 500	50 / 25/50 / 2/100	0.315* / 0.000 / 0.050* / 0.001	53.28 / -1.02 / 7.60 / -0.15	☆ <4.0 mg/kg
4465	9766.03	N	A-30	6.046 g / 500	50	0.099	16.04	2.65 mg/kg
4465	9767.03	N	A-30	6.289 g / 500	50 / 2/50 / 25/50 / 2/100	0.333* / 0.000 / 0.100* / 0.005	56.38 / -1.02 / 16.2 / -0.16	☆ <4.0 mg/kg
4465	9768.03	N	A-30	6.021 g / 500	50	0.127	20.87	3.47 mg/kg
4465	9769.03	N	A-30	6.188 g / 500	50	0.096	15.53	2.51 mg/kg
4465	9770.03	N	A-30	6.028 g / 500	50	0.080	12.77	2.12 mg/kg
4465	9771.03	N	A-30	6.158 g / 500	50	0.010	0.70	<1 mg/kg
4465	9771.03	SPIKE REAN	A-30	5 ml STD② / 6.179 g / 500	50	0.295	49.83	102% rec

* Samples turned cloudy after addition of chlorine

☆ Reported D.L. due to matrix interference.

To Page No.

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

APPENDIX A

CORRECTED FORMS I

CASE NUMBER U-4465

Form I

Sample No.
DC-SS01

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9748 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	11400 P	13.	Magnesium	NR
2.	Antimony	15 U P	14.	Manganese	336 P
3.	Arsenic	✓ 6.8 R F J	15.	Mercury	0.16 CV
4.	Barium	163 P J	16.	Nickel	22 P
5.	Beryllium	1.3 U P	17.	Potassium	NR
6.	Cadmium	2.6 P	18.	Selenium	1.2 UF
7.	Calcium	NR	19.	Silver	2.6 U P
8.	Chromium	16 P	20.	Sodium	NR
9.	Cobalt	6.2 P	21.	Thallium	2.5 U F
10.	Copper	✓ 327 P	22.	Tin	10 U F
11.	Iron	19000 P	23.	Vanadium	25 P
12.	Lead	103 * P J	24.	Zinc	✓ 299 P
	Cyanide	1.3 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 Bruce H Rohrbach

Form I

Sample No.
DC-SS02

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology AND Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9749 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	10900 P	13.	Magnesium	NR
2.	Antimony	15 U P	14.	Manganese	295 P
3.	Arsenic	4.9 R F J	15.	Mercury	✓ 0.23 CV
4.	Barium	174 P J	16.	Nickel	25 P
5.	Beryllium	1.3 U P	17.	Potassium	NR
6.	Cadmium	✓ 3.4 P	18.	Selenium	1.2 U F
7.	Calcium	NR	19.	Silver	2.6 U P
8.	Chromium	15 P	20.	Sodium	NR
9.	Cobalt	7.8 P	21.	Thallium	2.5 U F
10.	Copper	344 P	22.	Tin	9.9 U F
11.	Iron	20300 P	23.	Vanadium	26 P
12.	Lead	134 * P J	24.	Zinc	406 P
	Cyanide	1.3 U		Percent Solids (%)	77

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

Comments: NR: Analysis not requested.

Lab Manager Bruce H Rohrbach

Form I

Sample No.
DC-5503

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9750 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	7820	P	13.	Magnesium	NR	
2.	Antimony	14	UP	14.	Manganese	306	P
3.	Arsenic	5.7R	F J	15.	Mercury	0.0714	CV
4.	Barium	151	P J	16.	Nickel	18	P
5.	Beryllium	1.2	UP	17.	Potassium	NR	
6.	Cadmium	1.8	P	18.	Selenium	1.1	UF
7.	Calcium	NR		19.	Silver	2.3	UP
8.	Chromium	12	P	20.	Sodium	NR	
9.	Cobalt	6.4	P	21.	Thallium	2.2	UF
10.	Copper	162	P	22.	Tin	8.7	UF
11.	Iron	15700	P	23.	Vanadium	20	P
12.	Lead	68 *	P J	24.	Zinc	188	P

Cyanide 1.2 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 Bruce H. Robertson

Form I

Sample No.
DC - 5504

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9751 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	9670 P	13.	Magnesium	NR
2.	Antimony	14 UP	14.	Manganese	329 P
3.	Arsenic	5.8 R F J	15.	Mercury	0.082UCV
4.	Barium	145 P J	16.	Nickel	22 P
5.	Beryllium	1.2UP	17.	Potassium	NR
6.	Cadmium	1.7 P	18.	Selenium	1.2UF
7.	Calcium	NR	19.	Silver	2.3UP
8.	Chromium	14 P	20.	Sodium	NR
9.	Cobalt	6.4 P	21.	Thallium	2.5UF
10.	Copper	245 P	22.	Tin	9.5UF
11.	Iron	17400 P	23.	Vanadium	23 P
12.	Lead	99 *P J	24.	Zinc	281 P
Cyanide		1.2 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 Bruce H. Polstead

Form I

Sample No.
DC-SS05

Date 11/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9752 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	15300	P	13.	Magnesium	NR	
2.	Antimony	21	UP	14.	Manganese	339	P
3.	Arsenic	5.8R	F J	15.	Mercury	0.11UCV	
4.	Barium	222	P J	16.	Nickel	35	P
5.	Beryllium	1.7	UP	17.	Potassium	NR	
6.	Cadmium	6.3	P	18.	Selenium	1.7UF	
7.	Calcium	NR		19.	Silver	3.5UP	
8.	Chromium	21	P	20.	Sodium	NR	
9.	Cobalt	8.2	P	21.	Thallium	3.4UF	
10.	Copper	392	P	22.	Tin	14UF	
11.	Iron	25900	P	23.	Vanadium	35	P
12.	Lead	232 *	P J	24.	Zinc	619	P
Cyanide		1.8	U	Percent Solids (%)		56	

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 Brian H Petersen

Form I

Sample No.
DC-5506

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9753 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or ug/kg dry weight (Circle One)

1.	Aluminum	16500	P	13.	Magnesium	NR	
2.	Antimony	19	U P	14.	Manganese	390	P
3.	Arsenic	5.7 R	F J	15.	Mercury	0.11 U	CV
4.	Barium	224	P J	16.	Nickel	33	P
5.	Beryllium	1.6	U P	17.	Potassium	NR	
6.	Cadmium	4.8	P	18.	Selenium	1.6 U	F
7.	Calcium	NR		19.	Silver	3.2 U	P
8.	Chromium	22	P	20.	Sodium	NR	
9.	Cobalt	9.3	P	21.	Thallium	3.2 U	F
10.	Copper	572	P	22.	Tin	13 U	F
11.	Iron	27600	P	23.	Vanadium	38	P
12.	Lead	230 *	P J	24.	Zinc ✓	613	P
Cyanide		1.6	U	Percent Solids (%)		61	

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 Bruce H Rohrbach

Form I

Sample No.
DC-5507

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9754 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	7610 P	13.	Magnesium	NR
2.	Antimony	17 U P	14.	Manganese	✓ 291 P
3.	Arsenic	7.5 R F J	15.	Mercury	0.29 CV
4.	Barium	202 P J	16.	Nickel	24 P
5.	Beryllium	1.4 U P	17.	Potassium	NR
6.	Cadmium	10 P	18.	Selenium	1.3 U F
7.	Calcium	NR	19.	Silver	2.8 U P
8.	Chromium	19 P	20.	Sodium	NR
9.	Cobalt	6.3 P	21.	Thallium	2.6 U F
10.	Copper	2220 P	22.	Tin	11 U F
11.	Iron	20300 P	23.	Vanadium	22 P
12.	Lead	514 * P J	24.	Zinc	975 P
	Cyanide	1.4 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: Bruce H. Rohrbach

Form I

Sample No.
DC-SS08

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9755 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	5950 P	13.	Magnesium	NR
2.	Antimony	13 U P	14.	Manganese	217 P
3.	Arsenic	5.6 R F J	15.	Mercury	0.068 UCV
4.	Barium	138 P J	16.	Nickel	16 P
5.	Beryllium	1.1 U P	17.	Potassium	NR
6.	Cadmium	3.3 P	18.	Selenium	1.1 UF
7.	Calcium	NR	19.	Silver	2.2 UP
8.	Chromium	11 P	20.	Sodium	NR
9.	Cobalt	5.6 P	21.	Thallium	2.2 UF
10.	Copper	675 P	22.	Tin	8.9 UF
11.	Iron	13800 P	23.	Vanadium	16 P
12.	Lead	131 * P J	24.	Zinc	354 P
	Cyanide	1.1 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

[illegible] Manager Bruce H. Rohrbach

Form I

Sample No.
DC-5509

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology AND Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9756 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	9290 P	13.	Magnesium	NR
2.	Antimony	16 U P	14.	Manganese	322 P
3.	Arsenic	13 R F J	15.	Mercury	6.6 CV
4.	Barium	13800 P J	16.	Nickel	✓ 360 P
5.	Beryllium	1.3 U P	17.	Potassium	NR
6.	Cadmium	10 P	18.	Selenium	1.4 U F UJ
7.	Calcium	NR	19.	Silver	✓ 4.2 P
8.	Chromium	119 P	20.	Sodium	NR
9.	Cobalt	✓ 15 P	21.	Thallium	2.8 U F
10.	Copper	1200 P	22.	Tin	11 U F
11.	Iron	38600 P	23.	Vanadium	139 P
12.	Lead	655 * P J	24.	Zinc	4580 P
	Cyanide	1.4 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 [signature]

Form I

Sample No.
DC-SS10

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9757 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	7880 P	13.	Magnesium	NR
2.	Antimony	15 UP	14.	Manganese	171 P
3.	Arsenic	5.4R F J	15.	Mercury	1.3 CV
4.	Barium	575 P J	16.	Nickel	84 P
5.	Beryllium	1.2 UP	17.	Potassium	NR
6.	Cadmium	4.4 P	18.	Selenium	1.3UF
7.	Calcium	NR	19.	Silver	5.0 P
8.	Chromium	52 P	20.	Sodium	NR
9.	Cobalt	8.5 P	21.	Thallium	2.6UF
10.	Copper	260 P	22.	Tin	10 UF UJ
11.	Iron	✓ 18000 P	23.	Vanadium	31 P
12.	Lead	334 * P J	24.	Zinc	5130 P
	Cyanide	1.3 U		Percent Solids (%)	76

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

Comments: NR: Analysis not requested

Lab Manager Bruce H. Dohrbach

Form I

Sample No.
DC-SS11

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9758 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	2790 P	13.	Magnesium	NR
2.	Antimony	18 UP	14.	Manganese	96 P
3.	Arsenic	✓ 5.6R F J	15.	Mercury	✓ 1.7 CV
4.	Barium	20200 P J	16.	Nickel	61 P
5.	Beryllium	1.5 UP	17.	Potassium	NR
6.	Cadmium	4.5 P	18.	Selenium	1.4 UF
7.	Calcium	NR	19.	Silver	3.0 UP
8.	Chromium	39 P	20.	Sodium	NR
9.	Cobalt	12 P	21.	Thallium	2.9 UF UJ
10.	Copper	✓ 487 P	22.	Tin	11 UF
11.	Iron	29800 P	23.	Vanadium	75 P
12.	Lead	614 * P J	24.	Zinc	794 P
	Cyanide	✓ 4.8		Percent Solids (%)	64

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: Bruce H. Potstead

Form I

Sample No.
DC-SS12

Date 11/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology AND Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9759 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	23300	P	13.	Magnesium	NR	
2.	Antimony	18 U	P	14.	Manganese	150	P
3.	Arsenic	26 R	F J	15.	Mercury	14	CV
4.	Barium	7340	P J	16.	Nickel	382	P
5.	Beryllium	1.5 U	P	17.	Potassium	NR	
6.	Cadmium	8.1	P	18.	Selenium	1.5 UF	UJ
7.	Calcium	NR		19.	Silver	3.0 U	P
8.	Chromium	46	P	20.	Sodium	NR	
9.	Cobalt	13	P	21.	Thallium	3.0 UF	UJ
10.	Copper	1430	P	22.	Tin	12 U	F
11.	Iron	45000	P	23.	Vanadium ✓	129	P
12.	Lead	711 *	P J	24.	Zinc	23900	P

Cyanide ✓ 3.3 Percent Solids (%) 64

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 Bruce A. Rotsbach

Form I

Sample No.
DC-5513

Date 1/30/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9760 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	4780 P	13.	Magnesium	NR
2.	Antimony	17 UP	14.	Manganese	129 P
3.	Arsenic	12 R F J	15.	Mercury	1.7 CV
4.	Barium	169000 P	16.	Nickel	62 P
5.	Beryllium	1.4 UP	17.	Potassium	NR
6.	Cadmium	5.6 P	18.	Selenium	1.4 UF
7.	Calcium	NR	19.	Silver	2.9 UP
8.	Chromium	24 P	20.	Sodium	NR
9.	Cobalt	89 P	21.	Thallium	2.9 UF
10.	Copper	624 P	22.	Tin	11 UF UJ
11.	Iron	22200 P	23.	Vanadium	29 P
12.	Lead	310 * P J	24.	Zinc	8110 P
	Cyanide	1.6		Percent Solids (%)	68

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-SS14

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9761 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	4710 P	13.	Magnesium	NR
2.	Antimony	18 U P	14.	Manganese	191 P
3.	Arsenic	7.9 B F J	15.	Mercury	7.4 CV
4.	Barium	67300 P	16.	Nickel	48 P
5.	Beryllium	1.5 U P	17.	Potassium	NR
6.	Cadmium	3.5 P	18.	Selenium	1.4 U F
7.	Calcium	NR	19.	Silver	3.0 U P
8.	Chromium	52 P	20.	Sodium	NR
9.	Cobalt	27 P	21.	Thallium	2.8 U F
10.	Copper	483 P	22.	Tin	11 U F UJ
11.	Iron	22400 P	23.	Vanadium	46 P
12.	Lead	2950 * P J	24.	Zinc	1840 P

Cyanide 2.8 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 Bruce H Polstead

Form I

Sample No.
AC-5515

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9762 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	6960 P J	13.	Magnesium	NR
2.	Antimony	14 P	14.	Manganese ✓	770 P
3.	Arsenic	36R F J	15.	Mercury	3.2 CV
4.	Barium	1160 P	16.	Nickel	122 P
5.	Beryllium	1.1U P	17.	Potassium	NR
6.	Cadmium	46 P	18.	Selenium	1.2U F UJ
7.	Calcium	NR	19.	Silver	6.4 P
8.	Chromium	147 P	20.	Sodium	NR
9.	Cobalt	11 P	21.	Thallium	2.5UF
10.	Copper	2170 P	22.	Tin ✓	34 F
11.	Iron	75800 P	23.	Vanadium	133 P
12.	Lead ✓	1240 * P J	24.	Zinc	22800 P

Cyanide 1.6 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: Burt H Pohlstad

~~20~~

Form I

Sample No.
PC-SS16

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9763 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	6170	P J	13.	Magnesium	NR	
2.	Antimony	21	P	14.	Manganese	874	P
3.	Arsenic	38R	F J	15.	Mercury	5.8	P
4.	Barium	869	P	16.	Nickel	109	P
5.	Beryllium	1.2U	P	17.	Potassium	NR	
6.	Cadmium	45	P	18.	Selenium	1.3U	F UJ
7.	Calcium	NR		19.	Silver	5.4	P
8.	Chromium	98	P	20.	Sodium	NR	
9.	Cobalt	11	P	21.	Thallium	2.6U	F
10.	Copper	1620	P	22.	Tin	✓ 34	F
11.	Iron	108000	P	23.	Vanadium	140	P
12.	Lead	1610 *	P J	24.	Zinc	✓ 15600	P
	Cyanide	1.3	U		Percent Solids (%)	77	

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

Comments: NR: Analysis not requested.

Manager Bruce H. Patrick

Form I

Sample No.
DC-SS17

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9764 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	8890	P J	13.	Magnesium	NR	
2.	Antimony	17 U	P	14.	Manganese	534	P
3.	Arsenic	33R	F J	15.	Mercury	6.6	CV
4.	Barium	1560	P	16.	Nickel	87	P
5.	Beryllium	1.4 U	P	17.	Potassium	NR	
6.	Cadmium	17	P	18.	Selenium	1.3 UF	
7.	Calcium	NR		19.	Silver	6.1	P
8.	Chromium	66	P	20.	Sodium	NR	
9.	Cobalt	7.3	P	21.	Thallium	2.7 UF	
10.	Copper	914	P	22.	Tin	11 UF	
11.	Iron	46000	P	23.	Vanadium ✓	211	P
12.	Lead	1470 *	P J	24.	Zinc	5100	P

Cyanide 1.4 U Percent Solids (%) 72

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

Comments: NR: Analysis not requested.

Lab Manager [signature]

Form I

Sample No.
DC-5518

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology AND Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9765 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	4860 P J	13.	Magnesium	NR
2.	Antimony	15 U P	14.	Manganese	193 P
3.	Arsenic	64 R F J	15.	Mercury	0.57 CV
4.	Barium	13900 P	16.	Nickel	95 P
5.	Beryllium	1.2 U P	17.	Potassium	NR
6.	Cadmium	7.2 P	18.	Selenium	1.2 U F
7.	Calcium	NR	19.	Silver	2.4 U P
8.	Chromium	137 P	20.	Sodium	NR
9.	Cobalt	15 P	21.	Thallium	2.4 U F
10.	Copper	246 P	22.	Tin	9.8 U F
11.	Iron	46800 P	23.	Vanadium	25 P
12.	Lead	207* P J	24.	Zinc	32100 P
	Cyanide	5.2 U +		Percent Solids (%)	77

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

Comments: NR: Analysis not requested
+ Elevated detection limit due to matrix interference.

Bruce H. Rotstead

Form I

Sample No.
AC-5519

Date 11/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9766 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	4790	P J	13.	Magnesium	NR	
2.	Antimony	17 U	P	14.	Manganese	223	P
3.	Arsenic	57 R	F J	15.	Mercury	12	CV
4.	Barium	1810	P	16.	Nickel	84	P
5.	Beryllium	1.4 U	P	17.	Potassium	NR	
6.	Cadmium	10	P	18.	Selenium	1.4 U	F ~~U J~~ SDF
7.	Calcium	NR		19.	Silver	3.0	P
8.	Chromium	47	P	20.	Sodium	NR	
9.	Cobalt	3.8	P	21.	Thallium	2.7 U	F
10.	Copper	637	P	22.	Tin	21	F
11.	Iron	48600	P	23.	Vanadium	163	P
12.	Lead	263*	P J	24.	Zinc	19400	P

Cyanide 3.9 Percent Solids (%) 68

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.

Bruce Potter

Form I

Sample No.
DC-5520

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9767 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	9410 P J	13.	Magnesium	NR
2.	Antimony	16 U P	14.	Manganese	144 P
3.	Arsenic	40 R F J	15.	Mercury	2.3 CV
4.	Barium	4780 P	16.	Nickel	39 P
5.	Beryllium	1.4 U P	17.	Potassium	NR
6.	Cadmium	11 P	18.	Selenium	1.4 U F UJ
7.	Calcium	NR	19.	Silver	3.3 P
8.	Chromium ✓	34 P	20.	Sodium	NR
9.	Cobalt	6.7 P	21.	Thallium	2.8 U F UJ
10.	Copper	639 P	22.	Tin	11 U F
11.	Iron	25800 P	23.	Vanadium	20 P
12.	Lead	1470 * P J	24.	Zinc	46700 P
	Cyanide	6.0 U +		Percent Solids (%)	67

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
+ Elevated detection limit due to matrix interferences.

Lab Manager Bruce H Rohrbach

Form I

Sample No.
PC-5521

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9768 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	6960 P J	13.	Magnesium	NR
2.	Antimony	15 U P	14.	Manganese	116 P
3.	Arsenic	14 R F J	15.	Mercury	2.8 CV
4.	Barium	10600 P	16.	Nickel	52 P
5.	Beryllium	1.2 U P	17.	Potassium	NR
6.	Cadmium	✓ 5.2 P	18.	Selenium	1.2 U F
7.	Calcium	NR	19.	Silver	2.5 U P
8.	Chromium	44 P	20.	Sodium	NR
9.	Cobalt	12 P	21.	Thallium	2.4 U F
10.	Copper	444 P	22.	Tin	9.8 U F
11.	Iron	33600 P	23.	Vanadium	69 P
12.	Lead	482 * P J	24.	Zinc	814 P
	Cyanide	4.4		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 Bruce H Rotstrack

Form I

Sample No.
DC-SS22

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9769 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	4990 P J	13.	Magnesium	NR
2.	Antimony	15 U P	14.	Manganese	278 P
3.	Arsenic	23 R F J	15.	Mercury	2.7 CV
4.	Barium	19300 P	16.	Nickel	33 P
5.	Beryllium	1.3 U P	17.	Potassium	NR
6.	Cadmium	8.7 P	18.	Selenium	1.2 UF UJ
7.	Calcium	NR	19.	Silver	2.5 U P
8.	Chromium	81 P	20.	Sodium	NR
9.	Cobalt	18 P	21.	Thallium	2.5 UF
10.	Copper	684 P	22.	Tin	9.9 UF
11.	Iron	15900 P	23.	Vanadium	41 P
12.	Lead	296* P J	24.	Zinc	7100 P
	Cyanide	3.2		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.

Bruce H. Rohrbach

Form I

Sample No.
AC-5523

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology AND Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9770 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	9620 P J	13.	Magnesium	NR
2.	Antimony	15 U P	14.	Manganese	✓ 10800 P
3.	Arsenic	✓ 22 R F J	15.	Mercury	11 CV
4.	Barium	4340 P	16.	Nickel	50 P
5.	Beryllium	1.2 U P	17.	Potassium	NR
6.	Cadmium	20 P	18.	Selenium	1.3 UF UJ
7.	Calcium	NR	19.	Silver	✓ 33 P
8.	Chromium	48 P	20.	Sodium	NR
9.	Cobalt	✓ 59 P	21.	Thallium	2.6 UF
10.	Copper	1950 P	22.	Tin	10 UF
11.	Iron	39900 P	23.	Vanadium	166 P
12.	Lead	✓ 11700 * P J	24.	Zinc	✓ 24200 P

Cyanide 2.7 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 Bruce H Rohrbach

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Form I

Sample No.
PC-5545

Date 1/20/87

INORGANIC ANALYSIS DATA SHEET

LAB NAME Ecology and Environment, Inc. CASE NO. U-4465

SOW NO. 784

LAB SAMPLE ID. NO. 9771 QC REPORT NO. _____

Elements Identified and Measured

Concentration: Low _____ Medium _____

Matrix: Water _____ Soil X Sludge _____ Other _____

ug/L or mg/kg dry weight (Circle One)

~~1.~~	Aluminum	9260 P J	13.	Magnesium	NR
2.	Antimony	15 U P	14.	Manganese	381 P
~~3.~~	Arsenic	7.0 R F J	15.	Mercury	<0.074 U CV
4.	Barium	326 P	16.	Nickel	16 P
5.	Beryllium	1.2 U P	17.	Potassium	NR
6.	Cadmium	1.4 P	~~18.~~	Selenium	1.3 U F UJ
7.	Calcium	NR	19.	Silver	2.5 U P
8.	Chromium	13 P	20.	Sodium	NR
9.	Cobalt	4.9 P	~~21.~~	Thallium	2.5 U F
10.	Copper	31 P	~~22.~~	Tin	10 U F
11.	Iron	16200 P	23.	Vanadium	22 P
12.	Lead	68 * P J	24.	Zinc	162 P
	Cyanide	1.3 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 Barnett Rohrbach