SDMS DocID 2087975

Lockheed Martin Environmental Services
US EPA Environmental Science Center
701 Mapes Road Ft. Meade, MD 20755-5350
Telephone 410-305-3037 Facsimile 410-305-3597

LOCKHEED MARTIN

DATE: August 22, 2000

SUBJECT: Notification of Samples Exceeding The Ten (10) Day Chemical Health Advisory Limits

FROM: (b) (4) [redacted]
Senior Data Reviewer

TO: Michael Towle (3HS31)
Regional Project Manager

RE: Inorganic Data Validation for Case: 28339
SDGs: MC01A0
Site: 12th Street Landfill

Samples listed below had analytes that exceeded Ten Day Chemical Health Advisory Limits as noted.

Analyte	Limit (ug/L)	Sample Number	Station Location	Conc.(u/L)
lead	20	MC01A4	B-SW-03	20.6

Analyte	Limit (mg/Kg)	Sample Number	Station Location	Conc.(mg/Kg)
lead	500	MC01B4	T1TP04	4020
		MC01B5	TP-08	1200
		MC01B6	TP-09	991

Lockheed Martin Environmental Services
US EPA Environmental Science Center
701 Mapes Road Ft. Meade, MD 20755-5350
Telephone 410-305-3037

3H531

LOCKHEED MARTIN

Date: 8/22/00

To: Michael Towle (3HS31) X-3272 – called at 9:45 A.M. 8/22/00

From: (b) (4) [redacted]

Subject: 10 Day Chemical Health Advisory

Total Number of Pages Including Cover Sheet: 2

Remarks: See Attached

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
ENVIRONMENTAL SCIENCE CENTER
701 MAPES ROAD
FORT MEADE, MD 20755-5350

DATE : August 31, 2000

SUBJECT: Region III Data QA Review

FROM : Fredrick Foreman
Region III ESAT RPO (3ES20)

TO : Michael Towle
Regional Program Manager (3HS31)

Attached is the inorganic data validation report for the 12th Street Landfill site (Case#: 28339, SDG#: MC01A0) completed by the Region III Environmental Services Assistance Team (ESAT) contractor under the direction of Region III ESD.

If you have any questions regarding this review, please call me at (410) 305-2629.

Attachment

cc: (b) (4) [redacted] (Tetra Tech, EMI)

WA File: 0300402 TDF# 0829

OFFICE OF ANAYTICAL SERVICES AND QUALITY ASSURANCE

Lockheed Martin Environmental Services
US EPA Environmental Science Center
701 Mapes Road Ft. Meade, MD 20755-5350
Telephone 410-305-3037 Facsimile 410-305-3597

LOCKHEED MARTIN

DATE: August 25, 2000

SUBJECT: Inorganic Data Validation (Level IM1)
Site: 12th Street Landfill
Case: 28339 SDG: MC01A0

FROM: (b) (4) [redacted] for (b) (4) [redacted]
Senior Data Reviewer — Senior Oversight Chemist

TO: Fredrick Foreman
ESAT Regional Project Officer

OVERVIEW

Case 28339, Sample Delivery Group (SDG) MC01A0, from the 12th Street Landfill site consisted of seven (7) aqueous and five (5) soil samples analyzed for total metals in addition to seven (7) filtrate samples analyzed for dissolved metals. All samples were analyzed by Datachem Laboratories (DATAC). The sample set included one (1) field blank and one (1) filtrate field blank. Samples were analyzed in accordance with Contract Laboratory Program (CLP) Statement of Work (SOW) ILM04.1 through Routine Analytical Services (RAS) program.

Samples listed below had analytes that exceeded Ten Day Chemical Health Advisory Limits as noted. The Regional Project Manager (RPM) was notified by facsimile.

Analyte	Limit (ug/L)	Sample Number	Station Location	Conc.(u/L)
lead	20	MC01A4	B-SW-03	20.6

Analyte	Limit (mg/Kg)	Sample Number	Station Location	Conc.(mg/Kg)
lead	500	MC01B4	T1TP04	4020
		MC01B5	TP-08	1200
		MC01B6	TP-09	991

SUMMARY

All samples were successfully analyzed for all Target Analyte List (TAL) parameters with the exception of cobalt (Co) and selenium (Se) in the soil matrix. Areas of concern with respect to data usability are listed below.

Validation of data was performed according to Innovative Approaches for Validation of Inorganic Data, Level IM1, which includes review of all Forms but excludes review of raw data.

Positive results detected in the aqueous field blank were utilized to assess blank contamination in the aqueous and soil matracies. Positive results detected in the filtrate field blank were utilized to assess blank contamination only in the filtrate matrix.

Data in this case have been impacted by outliers present in laboratory and field blanks, sample holding time, matrix spike, laboratory duplicate, ICP Serial Dilution and Contract Required Detection Limit (CRDL) standard analyses. Details of these outliers are discussed under "Major and Minor Problems" and qualified analytical results for all samples are reported on Data Summary Forms (DSFs).

MAJOR PROBLEM

Matrix spike recoveries of cobalt (Co) and selenium (Se) were extremely low (<30%) in the soil matrix. Reported results for these analytes may be biased extremely low and have been qualified "L" on the DSFs unless superseded by "J". Quantitation limits for these analytes in this matrix have been rejected and qualified "R" on the DSFs.

MINOR PROBLEMS

Continuing Calibration (CCB), Preparation (PB) and/or Field (FB) Blanks had reported results greater than Instrument Detection Limits (IDLs) for analytes listed below. Reported results in affected samples which are less than or equal to five times (≤5X) blank concentrations may be biased high and have been qualified "B" on DSFs.

Matrix	Blank	Affected Analytes
Total	CCB	beryllium (Be), lead (Pb)
	PB	barium (Ba)
	FB	Pb, thallium (Tl), zinc (Zn)
Filtrate	CCB	Be, sodium (Na), Tl
	PB	Ba, silver (Ag)
	FB	copper (Cu), iron (Fe)
Soil	FB	Be, Na, Tl

Recoveries of CRDL standards were low for Ag in the soil matrix as well as for nickel (Ni) in the total metals and filtrate matracies. Low recoveries may indicate negative bias effects for results detected near detection limits. Quantitation limits for these analytes in affected samples may be biased low and have been qualified "UL"on the DSFs.

Continuing calibration and/or preparation blanks had negative values greater than absolute values of IDLs for analytes in the matracies listed below. Reported results which are less than two times (<2X) the absolute value of the blank and quantitation limits for these analytes may be biased low and have been qualified "L" and "UL", respectively, on DSFs unless superseded by "R".

Matrix	Analytes
Total	Co, Mn
Filtrate	Co, vanadium (V)
Soil	antimony (Sb), Co

Recoveries of CRDL standards were high regarding analytes listed below. High recoveries may indicate positive biases relative to results detected near detection limits due to an unstable baseline. Reported results for these analytes in affected samples which are less than 2XCRDL may be biased high and have been qualified "K" on DSFs unless superseded by "J" or "B".

Matrix	Analytes
Total	arsenic (As), Cu, Pb, Tl
Filtrate	As, Be, Cr, Cu, Ag, Tl, Zn
Soil	As

Recoveries of CRDL standards were mixed for Ni in the soil matrix and for cadmium (Cd) in the total and filtrate matracies, producing opposing bias effects for results detected near detection limits. Reported results less than 2XCRDL, as well as quantitation limits for these analytes in affected samples, are estimated and have been qualified "J" and "UJ", respectively, on DSFs.

Matrix spike recoveries of Cr and Mn were extremely low (<30%) in the soil matrix. Reported results for these analytes may be biased extremely low and have been qualified "L" on the DSFs unless superseded by "J".

Matrix spike recoveries were low (<75%) for Ag and Tl in the soil matrix. Reported results and quantitation limits for these analytes in this matrix may be biased low and have been qualified "L" and "UL", respectively, on DSFs unless superseded by "B".

The matrix spike recovery was high for mercury (Hg) in the soil matrix. Reported results for this analyte may be biased high and have been qualified "K" on the DSF.

Relative Percent Differences (RPDs) for the laboratory duplicate analysis in the soil matrix were outside control limits (35% RPD, ±2CRDL) for Cr and Cu. Reported results for these analytes are estimated and have been qualified "J" on the DSFs.

The Percent Difference (%D) for the ICP serial dilution analysis for the total and filtrate matracies was outside control limits for Mn . Reported results regarding this analyte are estimated and have been qualified "J" on the DSFs.

Matric spike recovery was extremely low while CRDL recoveries were high for Se in the soil matrix, producing opposing bias effects for results detected near detection limits. Reported results for this analyte in this matrix which are less than 2XCRDL are estimated and have been qualified "J" on the DSFs.

Sample MC01B4, sampled June 30, 2000, was analyzed for mercury August 3, 2000. The technical holding time of twenty-eight (28) days for mercury (Hg) was exceeded for sample MC01B4 by six (6) days. The quantitation limit for this analyte in this sample may be biased low and has been qualified "UL" on the DSF.

NOTES

The samples were prepared for ICP analysis utilizing microwave digestion. This digestion procedure introduces a dilution factor of 1.11 for analytes analyzed by ICP; hence, CRDLs for ICP analytes are elevated by this factor in these samples.

The laboratory performed only QC analyses relative to ICP Serial Dilution for the soil and total metals matracies. The outlier found in the total metals ICP serial analysis was applied to the filtrate matrix when evaluating the data. Form Is in both the total metals and filtrate matracies were annotated by the laboratory with outliers relative to this outlier.

The laboratory duplicate results for Ba and Co in the soil matrix were outside the contractual control limit of 20% RPD. However, the results for these analytes were within the control limit of 35% RPD utilized for data validation of soil samples in Region 3. No data were qualified based on these laboratory duplicate imprecisions.

Several samples, listed below, were reanalyzed at dilutions because detected concentrations of analytes listed exceeded linear calibration range in initial analyses. Positive results for these analyte were reported from dilutions by the reviewer and annotated with a "+" or "++" on the DSFs.

Sample Number	Analyte	Dilution Factor
MC01B4	Pb	2.0
MC01B5	Se	2.0
	Fe	5.0
MC01B6	Fe	5.0

A sampling date of 7/7/2000 was listed on the Chain of Custody (COC) Record for sample MC01B6. However, the sample tag for this sample lists a sampling date of 6/30/2000 for this sample. The sampling date of 6/30/2000 listed on the sample tag was corrected to read 7/7/2000 by Memo-to-File.

Data for Case 28339, SDG MC01A0, were reviewed in accordance with EPA Region 3 Innovative Approaches (Level IM1) for Validation of Inorganic Data, June 1995.

ATTACHMENTS

APPENDIX A GLOSSARY OF DATA QUALIFIER CODES (INORGANIC)
APPENDIX B DATA SUMMARY FORMS
APPENDIX C RESULTS REPORTED BY LABORATORY (FORM Is)
APPENDIX D SUPPORT DOCUMENTATION

DCN: 28339IM1.wpd

APPENDIX A

Glossary of Qualifier Codes

GLOSSARY OF DATA QUALIFIER CODES (INORGANIC)

CODES RELATED TO IDENTIFICATION
(confidence concerning presence or absence of analytes):

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unusable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

CODES RELATED TO QUANTITATION
(can be used for both positive results and sample quantitation limits):

J = Analyte Present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

[ ] = Analyte present. As values approach the IDL the quantitation may not be accurate.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

OTHER CODES

Q = No analytical result.

APPENDIX B

Data Summary Forms

DATA SUMMARY FORM: INORGANIC

Case #: 28339
Site :
Lab. :

SDG : MC01A0
12TH STREET LANDFILL
DATAC

Number of Soil Samples : 5
Number of Water Samples : 14

Sample Number :		MC01B4		MC01B5		MC01B6		MC01B7		MC01B9	
Sampling Location :		T1TP04		TP-08		TP-09		TP-WP-07		TPG07	
Field QC:											
Matrix :		Soil		Soil		Soil		Soil		Soil	
Units :		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Date Sampled :		06/30/2000		07/07/2000		07/07/2000		07/07/2000		07/07/2000	
Time Sampled :		12:00		12:05		12:00		12:15		12:20	
%Solids :		67.7		73.9		79.3		47.7		61.2	
Dilution Factor :		1.11/2.22		1.11/2.22/5.55		1.11/5.55		1.11		1.11	
ANALYTE	CRDL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	40	57300		2200		3530		90300		20500	
ANTIMONY	12			60.9		33.3			UL		UL
ARSENIC	2	11.6		328		394		10.0		[2.3]	K
BARIUM	40	917		327		186		205		75.1	
BERYLLIUM	1	[0.57]	B	[0.20]	B	[0.26]	B	[0.63]	B	[0.14]	B
CADMIUM	1	42.3		14.1		10.6		4.4		36.8	
CALCIUM	1000	48700		3280		9450		71400		68100	
CHROMIUM	2	217	J	152	J	95.5	J	49.3	J	619	J
COBALT	10	[10.7]	L	406	L	378	L	[11.3]	L		R
COPPER	5	362	J	1510	J	1050	J	262	J	26.7	J
IRON	20	29600		321000++		236000++		22100		2880	
*LEAD	0.6	4020+		1200		991		72.2		21.7	
MAGNESIUM	1000	4700		[1080]		1480		11400		8350	
MANGANESE	3	274	L	229	L	267	L	223	L	217	L
MERCURY	0.1		UL	0.37	K	0.27	K				
NICKEL	8	45.6		28.5		24.8		54.6		[12.3]	J
POTASSIUM	1000	[990]				[313]		[411]		[652]	
SELENIUM	1	[0.83]	J	[2.4]+	J	1.8	J		R		R
SILVER	2		UL	10.4	L	5.8	L		UL		UL
SODIUM	1000	[1040]		[120]	B	[166]		[607]		[279]	
THALLIUM	2		UL	9.6	L	9.3	L	[1.9]	B	[0.91]	B
VANADIUM	10	76.4		[13.1]		12.8		71.4		35.8	
ZINC	4	15500		5320		3400		6360		4560	

CRDL = Contract Required Detection Limit
+ = Results reported from 2X dilution.
++ = Results reported from 5X dilution.

*Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIONS
Revised 09/99

DATA SUMMARY FORM: INORGANIC

Case #: 28339 SDG : MC01A0
Site : 12TH STREET LANDFILL
Lab. : DATAC

Sample Number :		MC01A0		MC01A1		MC01A2		MC01A3		MC01A4	
Sampling Location :		BR-SW-01		P1		B-SW-01		B-SW-02		B-SW-03	
Field QC:											
Matrix :		Water		Water		Water		Water		Water	
Units :		ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :		07/26/2000		07/26/2000		07/26/2000		07/26/2000		07/26/2000	
Time Sampled :		09:00		09:05		08:43		08:48		08:51	
Dilution Factor :		1.11		1.11		1.11		1.11		1.11	
ANALYTE	CRDL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	200	342		467		532		399		372	
ANTIMONY	60										
*ARSENIC	10			[5.4]	K						
BARIUM	200	[48.8]		[41.3]		[51.8]		[46.6]		[48.0]	
BERYLLIUM	5					[1.6]	B	[2.5]	B	[2.7]	B
*CADMIUM	5		UJ		UJ	[4.5]	J		UJ		UJ
CALCIUM	5000	23000		114000		23200		23000		23100	
*CHROMIUM	10			[5.4]						[4.7]	
COBALT	50		UL		UL		UL		UL		UL
COPPER	25	[9.4]	K	[18.8]	K	[11.0]	K	[7.8]	K	[9.4]	K
IRON	100	463		656		654		524		499	
*LEAD	3	[2.4]	B	13.6		8.0	B	9.8	B	20.6	
MAGNESIUM	5000	9390		16300		9700		9280		9380	
MANGANESE	15	66.7	J	49.7	J	72.3	J	71.0	J	72.3	J
MERCURY	0.2										
*NICKEL	40		UL		UL		UL		UL		UL
POTASSIUM	5000	[3390]		6340		[3770]		[3110]		[3140]	
SELENIUM	5										
SILVER	10										
SODIUM	5000	23400		22000		24300		21300		22100	
THALLIUM	10			[3.3]	B			[3.3]	B	[3.2]	B
VANADIUM	50			[4.3]							
ZINC	20			33.3	B	27.9	B	[11.7]	B	[16.1]	B

CRDL = Contract Required Detection Limit *Action Level Exists SEE NARRATIVE FOR CODE DEFINITIONS

Revised 09/99

DATA SUMMARY FORM: INORGANIC

Case #: 28339 SDG : MC01A0
Site : 12TH STREET LANDFILL
Lab. : DATAC

Sample Number :		MC01A5		MC01A6		MC01A7		MC01A8		MC01A9	
Sampling Location :		B-SW-04		BR-SW-01		P1		B-SW-01		B-SW-02	
Field QC:				Filtrate of MC01A0		Filtrate of MC01A1		Filtrate of MC01A2		Filtrate of MC01A3	
Matrix :		Water		Water		Water		Water		Water	
Units :		ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :		07/26/2000		07/26/2000		07/26/2000		07/26/2000		07/26/2000	
Time Sampled :		08:55		09:00		09:05		08:43		08:48	
Dilution Factor :		1.11		1.11		1.11		1.11		1.11	
ANALYTE	CRDL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	200	348									
ANTIMONY	60										
*ARSENIC	10					[3.9]	K				
BARIUM	200	[51.4]		[45.5]		[39.7]		[45.3]		[42.4]	
BERYLLIUM	5	[2.5]	B	[2.6]	B	[2.7]	B	[2.7]	B	[2.5]	B
*CADMIUM	5		UJ		UJ		UJ		UJ		
CALCIUM	5000	22900		23000		117000		24000		23000	
*CHROMIUM	10										
COBALT	50		UL		UL		UL		UL		
COPPER	25			[9.4]	B	[11.0]	B	[7.8]	B	[9.4]	B
IRON	100	469		[22.9]	B	[24.1]	B	[26.7]	B	[22.9]	B
*LEAD	3	11.2								[2.3]	
MAGNESIUM	5000	9370		9390		16500		9550		9210	
MANGANESE	15	68.0	J	20.4	J	42.5	J	25.9	J	33.6	J
MERCURY	0.2										
*NICKEL	40		UL		UL		UL		UL		
POTASSIUM	5000	[3290]		[2830]		7150		[3230]		[2390]	
SELENIUM	5										
SILVER	10									[6.1]	B
SODIUM	5000	24700		24000		22600		24900		21300	
THALLIUM	10	[3.5]	B	[4.7]	B	[2.7]	B	[3.4]	B	[3.1]	B
VANADIUM	50	[4.3]								[4.4]	L
ZINC	20	27.9	B			[9.8]		[18.4]			

CRDL = Contract Required Detection Limit *Action Level Exists SEE NARRATIVE FOR CODE DEFINITIONS

Revised 09/99

DATA SUMMARY FORM: INORGANIC

Case #: 28339 SDG : MC01A0
Site : 12TH STREET LANDFILL
Lab. : DATAC

Sample Number :		MC01B0		MC01B1		MC01B2		MC01B3			
Sampling Location :		B-SW-03		B-SW-04		FB-01		FB-01			
Field QC:		Filtrate of MC01A4		Filtrate of MC01A5		Field Blank		Filtrate of MC01B2 Field Blank			
Matrix :		Water		Water		Water		Water			
Units :		ug/L		ug/L		ug/L		ug/L			
Date Sampled :		07/26/2000		07/26/2000		07/26/2000		07/26/2000			
Time Sampled :		08:51		08:55		09:30		09:30			
Dilution Factor :		1.11		1.11		1.11		1.11			
ANALYTE	CRDL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	200										
ANTIMONY	60										
*ARSENIC	10										
BARIUM	200	[43.3]		[45.0]		[0.59]	B	[0.47]	B		
BERYLLIUM	5	[2.6]	B	[2.6]	B	[2.5]	B	[2.3]	B		
*CADMIUM	5						UJ				
CALCIUM	5000	23200		22500		[44.6]		[65.8]			
*CHROMIUM	10							[10.1]	K		
COBALT	50						UL				
COPPER	25			[7.8]	B			[11.0]	K		
IRON	100	[41.9]	B	[25.4]	B			[27.9]			
*LEAD	3					[2.1]	B				
MAGNESIUM	5000	9270		9150							
MANGANESE	15	31.4	J	20.8	J		UL				
MERCURY	0.2										
*NICKEL	40						UL				
POTASSIUM	5000	[3320]		[3430]							
SELENIUM	5										
SILVER	10										
SODIUM	5000	22000		24400		[110]		[150]	B		
THALLIUM	10	[5.2]	B	[4.1]	B	[4.5]	K				
VANADIUM	50		UL		UL				UL		
ZINC	20	[11.9]	K	[14.1]	K	[19.5]					

CRDL = Contract Required Detection Limit *Action Level Exists SEE NARRATIVE FOR CODE DEFINITIONS

Revised 09/99

APPENDIX C

Form Is

ENVIROFORMS/INORGANIC CLP

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

MC01B4

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

Matrix (soil/water): SOIL Lab Sample ID: 00C01420

Level (low/med): LOW Date Received: 07/27/00

% Solids: 67.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	57300			P
7440-36-0	Antimony	15.4	U		P
7440-38-2	Arsenic	11.6			P
7440-39-3	Barium	917		*	P
7440-41-7	Beryllium	0.57	B		P
7440-43-9	Cadmium	42.3			P
7440-70-2	Calcium	48700			P
7440-47-3	Chromium	217		N*	P
7440-48-4	Cobalt	10.7	B	N*	P
7440-50-8	Copper	362		*	P
7439-89-6	Iron	29600			P
7439-92-1	Lead	4020			P
7439-95-4	Magnesium	4700			P
7439-96-5	Manganese	274		N	P
7439-97-6	Mercury	0.07	U	N	CV
7440-02-0	Nickel	45.6			P
7440-09-7	Potassium	990	B		P
7782-49-2	Selenium	0.83	B	N	P
7440-22-4	Silver	1.4	U	N	P
7440-23-5	Sodium	1040	B		P
7440-28-0	Thallium	0.71	U	N	P
7440-62-2	Vanadium	76.4			P
7440-66-6	Zinc	15500			P
	Cyanide				NR

Color Before: GREEN Clarity Before: Texture: COARSE

Color After: BROWN Clarity After: CLOUDY Artifacts:

Comments:

ENVIROFORMS/INORGANIC CLP

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

MC01B5

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

Matrix (soil/water): SOIL Lab Sample ID: 00C01421

Level (low/med): LOW Date Received: 07/27/00

% Solids: 73.9

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2200			P
7440-36-0	Antimony	60.9			P
7440-38-2	Arsenic	328			P
7440-39-3	Barium	327		*	P
7440-41-7	Beryllium	0.20	B		P
7440-43-9	Cadmium	14.1			P
7440-70-2	Calcium	3280			P
7440-47-3	Chromium	152		N*	P
7440-48-4	Cobalt	406		N*	P
7440-50-8	Copper	1510		*	P
7439-89-6	Iron	321000			P
7439-92-1	Lead	1200			P
7439-95-4	Magnesium	1080	B		P
7439-96-5	Manganese	229		N	P
7439-97-6	Mercury	0.37		N	CV
7440-02-0	Nickel	28.5			P
7440-09-7	Potassium	203	U		P
7782-49-2	Selenium	2.4	B	N	P
7440-22-4	Silver	10.4		N	P
7440-23-5	Sodium	120	B		P
7440-28-0	Thallium	9.6		N	P
7440-62-2	Vanadium	13.1	B		P
7440-66-6	Zinc	5320			P
	Cyanide				NR

Color Before: BLACK Clarity Before: Texture: MEDIUM

Color After: BROWN Clarity After: CLOUDY Artifacts:

Comments:

ENVIROFORMS/INORGANIC CLP

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

MC01B6

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

Matrix (soil/water): SOIL Lab Sample ID: 00C01422

Level (low/med): LOW Date Received: 07/27/00

% Solids: 79.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3530			P
7440-36-0	Antimony	33.3			P
7440-38-2	Arsenic	394			P
7440-39-3	Barium	186		*	P
7440-41-7	Beryllium	0.26	B		P
7440-43-9	Cadmium	10.6			P
7440-70-2	Calcium	9450			P
7440-47-3	Chromium	95.5		N*	P
7440-48-4	Cobalt	378		N*	P
7440-50-8	Copper	1050		*	P
7439-89-6	Iron	236000			P
7439-92-1	Lead	991			P
7439-95-4	Magnesium	1480			P
7439-96-5	Manganese	267		N	P
7439-97-6	Mercury	0.27		N	CV
7440-02-0	Nickel	24.8			P
7440-09-7	Potassium	313	B		P
7782-49-2	Selenium	1.8		N	P
7440-22-4	Silver	5.8		N	P
7440-23-5	Sodium	166	B		P
7440-28-0	Thallium	9.3		N	P
7440-62-2	Vanadium	12.8			P
7440-66-6	Zinc	3400			P
	Cyanide				NR

Color Before: BLACK Clarity Before: Texture: MEDIUM

Color After: BROWN Clarity After: CLOUDY Artifacts:

Comments:

FORM I - IN

ENVIROFORMS/INORGANIC CLP

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

MC01B7

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

Matrix (soil/water): SOIL Lab Sample ID: 00C01423

Level (low/med): LOW Date Received: 07/27/00

% Solids: 47.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	90300			P
7440-36-0	Antimony	21.8	U		P
7440-38-2	Arsenic	10.0			P
7440-39-3	Barium	205		*	P
7440-41-7	Beryllium	0.63	B		P
7440-43-9	Cadmium	4.4			P
7440-70-2	Calcium	71400			P
7440-47-3	Chromium	49.3		N*	P
7440-48-4	Cobalt	11.3	B	N*	P
7440-50-8	Copper	262		*	P
7439-89-6	Iron	22100			P
7439-92-1	Lead	72.2			P
7439-95-4	Magnesium	11400			P
7439-96-5	Manganese	223		N	P
7439-97-6	Mercury	0.10	U	N	CV
7440-02-0	Nickel	54.6			P
7440-09-7	Potassium	411	B		P
7782-49-2	Selenium	1.2	U	N	P
7440-22-4	Silver	2.1	U	N	P
7440-23-5	Sodium	607	B		P
7440-28-0	Thallium	1.9	B	N	P
7440-62-2	Vanadium	71.4			P
7440-66-6	Zinc	6360			P
	Cyanide				NR

Color Before: WHITE Clarity Before: Texture: MEDIUM

Color After: BROWN Clarity After: CLOUDY Artifacts:

Comments:

FORM I - IN

AR100622

ENVIROFORMS/INORGANIC CLP

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

MC01B9

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

Matrix (soil/water): SOIL Lab Sample ID: 00C01424

Level (low/med): LOW Date Received: 07/27/00

% Solids: 61.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	20500			P
7440-36-0	Antimony	17.0	U		P
7440-38-2	Arsenic	2.3	B		P
7440-39-3	Barium	75.1		*	P
7440-41-7	Beryllium	0.14	B		P
7440-43-9	Cadmium	36.8			P
7440-70-2	Calcium	68100			P
7440-47-3	Chromium	619		N*	P
7440-48-4	Cobalt	3.8	U	N*	P
7440-50-8	Copper	26.7		*	P
7439-89-6	Iron	2880			P
7439-92-1	Lead	21.7			P
7439-95-4	Magnesium	8350			P
7439-96-5	Manganese	217		N	P
7439-97-6	Mercury	0.08	U	N	CV
7440-02-0	Nickel	12.3	B		P
7440-09-7	Potassium	652	B		P
7782-49-2	Selenium	0.92	U	N	P
7440-22-4	Silver	1.6	U	N	P
7440-23-5	Sodium	279	B		P
7440-28-0	Thallium	0.91	B	N	P
7440-62-2	Vanadium	35.8			P
7440-66-6	Zinc	4560			P
	Cyanide				NR

Color Before: GREEN Clarity Before: Texture: COARSE

Color After: BROWN Clarity After: CLOUDY Artifacts:

Comments:

FORM I - IN

ENVIROFORMS/INORGANIC CLP

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INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

MC01A0

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

Matrix (soil/water): WATER Lab Sample ID: 00C01406

Level (low/med): LOW Date Received: 07/27/00

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	342			PM
7440-36-0	Antimony	57.9	U		PM
7440-38-2	Arsenic	3.0	U		PM
7440-39-3	Barium	48.8	B		PM
7440-41-7	Beryllium	0.44	U		PM
7440-43-9	Cadmium	4.2	U		PM
7440-70-2	Calcium	23000			PM
7440-47-3	Chromium	4.7	U		PM
7440-48-4	Cobalt	12.8	U		PM
7440-50-8	Copper	9.4	B		PM
7439-89-6	Iron	463			PM
7439-92-1	Lead	2.4	B		PM
7439-95-4	Magnesium	9390			PM
7439-96-5	Manganese	66.7		E	PM
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	33.1	U		PM
7440-09-7	Potassium	3390	B		PM
7782-49-2	Selenium	3.1	U		PM
7440-22-4	Silver	5.4	U		PM
7440-23-5	Sodium	23400			PM
7440-28-0	Thallium	2.7	U		PM
7440-62-2	Vanadium	3.9	U		PM
7440-66-6	Zinc	8.4	U		PM
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
E - ICP SERIAL DILUTION IS OUTSIDE OF CONTROL LIMITS.

ENVIROFORMS/INORGANIC CLP

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

MC01A1

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

Matrix (soil/water): WATER Lab Sample ID: 00C01407

Level (low/med): LOW Date Received: 07/27/00

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	467			PM
7440-36-0	Antimony	57.9	U		PM
7440-38-2	Arsenic	5.4	B		PM
7440-39-3	Barium	41.3	B		PM
7440-41-7	Beryllium	0.44	U		PM
7440-43-9	Cadmium	4.2	U		PM
7440-70-2	Calcium	114000			PM
7440-47-3	Chromium	5.4	B		PM
7440-48-4	Cobalt	12.8	U		PM
7440-50-8	Copper	18.8	B		PM
7439-89-6	Iron	656			PM
7439-92-1	Lead	13.6			PM
7439-95-4	Magnesium	16300			PM
7439-96-5	Manganese	49.7		E	PM
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	33.1	U		PM
7440-09-7	Potassium	6340			PM
7782-49-2	Selenium	3.1	U		PM
7440-22-4	Silver	5.4	U		PM
7440-23-5	Sodium	22000			PM
7440-28-0	Thallium	3.3	B		PM
7440-62-2	Vanadium	4.3	B		PM
7440-66-6	Zinc	33.3			PM
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
E - ICP SERIAL DILUTION IS OUTSIDE OF CONTROL LIMITS.

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ENVIROFORMS/INORGANIC CLP

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INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

MC01A2

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

Matrix (soil/water): WATER Lab Sample ID: 00C01408

Level (low/med): LOW Date Received: 07/27/00

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	532			PM
7440-36-0	Antimony	57.9	U		PM
7440-38-2	Arsenic	3.0	U		PM
7440-39-3	Barium	51.8	B		PM
7440-41-7	Beryllium	1.6	B		PM
7440-43-9	Cadmium	4.5	B		PM
7440-70-2	Calcium	23200			PM
7440-47-3	Chromium	4.7	U		PM
7440-48-4	Cobalt	12.8	U		PM
7440-50-8	Copper	11.0	B		PM
7439-89-6	Iron	654			PM
7439-92-1	Lead	8.0			PM
7439-95-4	Magnesium	9700			PM
7439-96-5	Manganese	72.3		E	PM
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	33.1	U		PM
7440-09-7	Potassium	3770	B		PM
7782-49-2	Selenium	3.1	U		PM
7440-22-4	Silver	5.4	U		PM
7440-23-5	Sodium	24300			PM
7440-28-0	Thallium	2.7	U		PM
7440-62-2	Vanadium	3.9	U		PM
7440-66-6	Zinc	27.9			PM
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
E - ICP SERIAL DILUTION IS OUTSIDE OF CONTROL LIMITS.

ENVIROFORMS/INORGANIC CLP

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INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

MC01A3

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

Matrix (soil/water): WATER Lab Sample ID: 00C01409

Level (low/med): LOW Date Received: 07/27/00

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	399			PM
7440-36-0	Antimony	57.9	U		PM
7440-38-2	Arsenic	3.0	U		PM
7440-39-3	Barium	46.6	B		PM
7440-41-7	Beryllium	2.5	B		PM
7440-43-9	Cadmium	4.2	U		PM
7440-70-2	Calcium	23000			PM
7440-47-3	Chromium	4.7	U		PM
7440-48-4	Cobalt	12.8	U		PM
7440-50-8	Copper	7.8	B		PM
7439-89-6	Iron	524			PM
7439-92-1	Lead	9.8			PM
7439-95-4	Magnesium	9280			PM
7439-96-5	Manganese	71.0		E	PM
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	33.1	U		PM
7440-09-7	Potassium	3110	B		PM
7782-49-2	Selenium	3.1	U		PM
7440-22-4	Silver	5.4	U		PM
7440-23-5	Sodium	21300			PM
7440-28-0	Thallium	3.3	B		PM
7440-62-2	Vanadium	3.9	U		PM
7440-66-6	Zinc	11.7	B		PM
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
E - ICP SERIAL DILUTION IS OUTSIDE OF CONTROL LIMITS.

ENVIROFORMS/INORGANIC CLP

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

MC01A4

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

Matrix (soil/water): WATER Lab Sample ID: 00C01410

Level (low/med): LOW Date Received: 07/27/00

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	372			PM
7440-36-0	Antimony	57.9	U		PM
7440-38-2	Arsenic	3.0	U		PM
7440-39-3	Barium	48.0	B		PM
7440-41-7	Beryllium	2.7	B		PM
7440-43-9	Cadmium	4.2	U		PM
7440-70-2	Calcium	23100			PM
7440-47-3	Chromium	4.7	B		PM
7440-48-4	Cobalt	12.8	U		PM
7440-50-8	Copper	9.4	B		PM
7439-89-6	Iron	499			PM
7439-92-1	Lead	20.6			PM
7439-95-4	Magnesium	9380			PM
7439-96-5	Manganese	72.3		E	PM
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	33.1	U		PM
7440-09-7	Potassium	3140	B		PM
7782-49-2	Selenium	3.1	U		PM
7440-22-4	Silver	5.4	U		PM
7440-23-5	Sodium	22100			PM
7440-28-0	Thallium	3.2	B		PM
7440-62-2	Vanadium	3.9	U		PM
7440-66-6	Zinc	16.1	B		PM
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
E - ICP SERIAL DILUTION IS OUTSIDE OF CONTROL LIMITS.

ENVIROFORMS/INORGANIC CLP

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INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

MC01A5

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

Matrix (soil/water): WATER Lab Sample ID: 00C01411

Level (low/med): LOW Date Received: 07/27/00

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	348			PM
7440-36-0	Antimony	57.9	U		PM
7440-38-2	Arsenic	3.0	U		PM
7440-39-3	Barium	51.4	B		PM
7440-41-7	Beryllium	2.5	B		PM
7440-43-9	Cadmium	4.2	U		PM
7440-70-2	Calcium	22900			PM
7440-47-3	Chromium	4.7	U		PM
7440-48-4	Cobalt	12.8	U		PM
7440-50-8	Copper	6.6	U		PM
7439-89-6	Iron	469			PM
7439-92-1	Lead	11.2			PM
7439-95-4	Magnesium	9370			PM
7439-96-5	Manganese	68.0		E	PM
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	33.1	U		PM
7440-09-7	Potassium	3290	B		PM
7782-49-2	Selenium	3.1	U		PM
7440-22-4	Silver	5.4	U		PM
7440-23-5	Sodium	24700			PM
7440-28-0	Thallium	3.5	B		PM
7440-62-2	Vanadium	4.3	B		PM
7440-66-6	Zinc	27.9			PM
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
E - ICP SERIAL DILUTION IS OUTSIDE OF CONTROL LIMITS.

ENVIROFORMS/INORGANIC CLP

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INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

MC01A6

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

Matrix (soil/water): WATER Lab Sample ID: 00C01412

Level (low/med): LOW Date Received: 07/27/00

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	68.6	U		PM
7440-36-0	Antimony	57.9	U		PM
7440-38-2	Arsenic	3.0	U		PM
7440-39-3	Barium	45.5	B		PM
7440-41-7	Beryllium	2.6	B		PM
7440-43-9	Cadmium	4.2	U		PM
7440-70-2	Calcium	23000			PM
7440-47-3	Chromium	4.7	U		PM
7440-48-4	Cobalt	12.8	U		PM
7440-50-8	Copper	9.4	B		PM
7439-89-6	Iron	22.9	B		PM
7439-92-1	Lead	1.6	U		PM
7439-95-4	Magnesium	9390			PM
7439-96-5	Manganese	20.4		E	PM
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	33.1	U		PM
7440-09-7	Potassium	2830	B		PM
7782-49-2	Selenium	3.1	U		PM
7440-22-4	Silver	5.4	U		PM
7440-23-5	Sodium	24000			PM
7440-28-0	Thallium	4.7	B		PM
7440-62-2	Vanadium	3.9	U		PM
7440-66-6	Zinc	8.4	U		PM
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
E - ICP SERIAL DILUTION IS OUTSIDE OF CONTROL LIMITS.

ENVIROFORMS/INORGANIC CLP

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

MC01A7

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

Matrix (soil/water): WATER Lab Sample ID: 00C01413

Level (low/med): LOW Date Received: 07/27/00

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	68.6	U		PM
7440-36-0	Antimony	57.9	U		PM
7440-38-2	Arsenic	3.9	B		PM
7440-39-3	Barium	39.7	B		PM
7440-41-7	Beryllium	2.7	B		PM
7440-43-9	Cadmium	4.2	U		PM
7440-70-2	Calcium	117000			PM
7440-47-3	Chromium	4.7	U		PM
7440-48-4	Cobalt	12.8	U		PM
7440-50-8	Copper	11.0	B		PM
7439-89-6	Iron	24.1	B		PM
7439-92-1	Lead	1.6	U		PM
7439-95-4	Magnesium	16500			PM
7439-96-5	Manganese	42.5		E	PM
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	33.1	U		PM
7440-09-7	Potassium	7150			PM
7782-49-2	Selenium	3.1	U		PM
7440-22-4	Silver	5.4	U		PM
7440-23-5	Sodium	22600			PM
7440-28-0	Thallium	2.7	B		PM
7440-62-2	Vanadium	3.9	U		PM
7440-66-6	Zinc	9.8	B		PM
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
E - ICP SERIAL DILUTION IS OUTSIDE OF CONTROL LIMITS.

FORM I - IN

ENVIROFORMS/INORGANIC CLP

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

MC01A8

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

Matrix (soil/water): WATER Lab Sample ID: 00C01414

Level (low/med): LOW Date Received: 07/27/00

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	68.6	U		PM
7440-36-0	Antimony	57.9	U		PM
7440-38-2	Arsenic	3.0	U		PM
7440-39-3	Barium	45.3	B		PM
7440-41-7	Beryllium	2.7	B		PM
7440-43-9	Cadmium	4.2	U		PM
7440-70-2	Calcium	24000			PM
7440-47-3	Chromium	4.7	U		PM
7440-48-4	Cobalt	12.8	U		PM
7440-50-8	Copper	7.8	B		PM
7439-89-6	Iron	26.7	B		PM
7439-92-1	Lead	1.6	U		PM
7439-95-4	Magnesium	9550			PM
7439-96-5	Manganese	25.9		E	PM
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	33.1	U		PM
7440-09-7	Potassium	3230	B		PM
7782-49-2	Selenium	3.1	U		PM
7440-22-4	Silver	5.4	U		PM
7440-23-5	Sodium	24900			PM
7440-28-0	Thallium	3.4	B		PM
7440-62-2	Vanadium	3.9	U		PM
7440-66-6	Zinc	18.4	B		PM
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
E - ICP SERIAL DILUTION IS OUTSIDE OF CONTROL LIMITS.

ENVIROFORMS/INORGANIC CLP

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

MC01A9

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

Matrix (soil/water): WATER Lab Sample ID: 00C01415

Level (low/med): LOW Date Received: 07/27/00

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	68.6	U		PM
7440-36-0	Antimony	57.9	U		PM
7440-38-2	Arsenic	3.0	U		PM
7440-39-3	Barium	42.4	B		PM
7440-41-7	Beryllium	2.5	B		PM
7440-43-9	Cadmium	4.2	U		PM
7440-70-2	Calcium	23000			PM
7440-47-3	Chromium	4.7	U		PM
7440-48-4	Cobalt	12.8	U		PM
7440-50-8	Copper	9.4	B		PM
7439-89-6	Iron	22.9	B		PM
7439-92-1	Lead	2.3	B		PM
7439-95-4	Magnesium	9210			PM
7439-96-5	Manganese	33.6		E	PM
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	33.1	U		PM
7440-09-7	Potassium	2390	B		PM
7782-49-2	Selenium	3.1	U		PM
7440-22-4	Silver	6.1	B		PM
7440-23-5	Sodium	21300			PM
7440-28-0	Thallium	3.1	B		PM
7440-62-2	Vanadium	4.4	B		PM
7440-66-6	Zinc	8.4	U		PM
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
E - ICP SERIAL DILUTION IS OUTSIDE OF CONTROL LIMITS.

ENVIROFORMS/INORGANIC CLP

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

MC01B0

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

Matrix (soil/water): WATER Lab Sample ID: 00C01416

Level (low/med): LOW Date Received: 07/27/00

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	68.6	U		PM
7440-36-0	Antimony	57.9	U		PM
7440-38-2	Arsenic	3.0	U		PM
7440-39-3	Barium	43.3	B		PM
7440-41-7	Beryllium	2.6	B		PM
7440-43-9	Cadmium	4.2	U		PM
7440-70-2	Calcium	23200			PM
7440-47-3	Chromium	4.7	U		PM
7440-48-4	Cobalt	12.8	U		PM
7440-50-8	Copper	6.6	U		PM
7439-89-6	Iron	41.9	B		PM
7439-92-1	Lead	1.6	U		PM
7439-95-4	Magnesium	9270			PM
7439-96-5	Manganese	31.4		E	PM
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	33.1	U		PM
7440-09-7	Potassium	3320	B		PM
7782-49-2	Selenium	3.1	U		PM
7440-22-4	Silver	5.4	U		PM
7440-23-5	Sodium	22000			PM
7440-28-0	Thallium	5.2	B		PM
7440-62-2	Vanadium	3.9	U		PM
7440-66-6	Zinc	11.9	B		PM
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
E - ICP SERIAL DILUTION IS OUTSIDE OF CONTROL LIMITS.

ENVIROFORMS/INORGANIC CLP

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

MC01B1

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

Matrix (soil/water): WATER Lab Sample ID: 00C01417

Level (low/med): LOW Date Received: 07/27/00

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	68.6	U		PM
7440-36-0	Antimony	57.9	U		PM
7440-38-2	Arsenic	3.0	U		PM
7440-39-3	Barium	45.0	B		PM
7440-41-7	Beryllium	2.6	B		PM
7440-43-9	Cadmium	4.2	U		PM
7440-70-2	Calcium	22500			PM
7440-47-3	Chromium	4.7	U		PM
7440-48-4	Cobalt	12.8	U		PM
7440-50-8	Copper	7.8	B		PM
7439-89-6	Iron	25.4	B		PM
7439-92-1	Lead	1.6	U		PM
7439-95-4	Magnesium	9150			PM
7439-96-5	Manganese	20.8		E	PM
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	33.1	U		PM
7440-09-7	Potassium	3430	B		PM
7782-49-2	Selenium	3.1	U		PM
7440-22-4	Silver	5.4	U		PM
7440-23-5	Sodium	24400			PM
7440-28-0	Thallium	4.1	B		PM
7440-62-2	Vanadium	3.9	U		PM
7440-66-6	Zinc	14.1	B		PM
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
E - ICP SERIAL DILUTION IS OUTSIDE OF CONTROL LIMITS.

ENVIROFORMS/INORGANIC CLP

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

MC01B2

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

Matrix (soil/water): WATER Lab Sample ID: 00C01418

Level (low/med): LOW Date Received: 07/27/00

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	68.6	U		PM
7440-36-0	Antimony	57.9	U		PM
7440-38-2	Arsenic	3.0	U		PM
7440-39-3	Barium	0.59	B		PM
7440-41-7	Beryllium	2.5	B		PM
7440-43-9	Cadmium	4.2	U		PM
7440-70-2	Calcium	44.6	B		PM
7440-47-3	Chromium	4.7	U		PM
7440-48-4	Cobalt	12.8	U		PM
7440-50-8	Copper	6.6	U		PM
7439-89-6	Iron	6.3	U		PM
7439-92-1	Lead	2.1	B		PM
7439-95-4	Magnesium	40.9	U		PM
7439-96-5	Manganese	1.2	U	E	PM
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	33.1	U		PM
7440-09-7	Potassium	832	U		PM
7782-49-2	Selenium	3.1	U		PM
7440-22-4	Silver	5.4	U		PM
7440-23-5	Sodium	110	B		PM
7440-28-0	Thallium	4.5	B		PM
7440-62-2	Vanadium	3.9	U		PM
7440-66-6	Zinc	19.5	B		PM
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
E - ICP SERIAL DILUTION IS OUTSIDE OF CONTROL LIMITS.

ENVIROFORMS/INORGANIC CLP

1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

MC01B3

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

Matrix (soil/water): WATER Lab Sample ID: 00C01419

Level (low/med): LOW Date Received: 07/27/00

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	68.6	U		PM
7440-36-0	Antimony	57.9	U		PM
7440-38-2	Arsenic	3.0	U		PM
7440-39-3	Barium	0.47	B		PM
7440-41-7	Beryllium	2.3	B		PM
7440-43-9	Cadmium	4.2	U		PM
7440-70-2	Calcium	65.8	B		PM
7440-47-3	Chromium	10.1	B		PM
7440-48-4	Cobalt	12.8	U		PM
7440-50-8	Copper	11.0	B		PM
7439-89-6	Iron	27.9	B		PM
7439-92-1	Lead	1.6	U		PM
7439-95-4	Magnesium	40.9	U		PM
7439-96-5	Manganese	1.2	U	E	PM
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	33.1	U		PM
7440-09-7	Potassium	832	U		PM
7782-49-2	Selenium	3.1	U		PM
7440-22-4	Silver	5.4	U		PM
7440-23-5	Sodium	150	B		PM
7440-28-0	Thallium	2.7	U		PM
7440-62-2	Vanadium	3.9	U		PM
7440-66-6	Zinc	8.4	U		PM
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
E - ICP SERIAL DILUTION IS OUTSIDE OF CONTROL LIMITS.

APPENDIX D

Support Documentation

EPA United States Environmental Protection Agency
Contract Laboratory Program

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

Case No. 28339

1. Project Code	2. Account Code	3. Region No.	Sampling Co.	5. Date Shipped	Carrier
		3	TetraTech	7/26/00	FedEx

Regional Information

Sampler (Name): (b) (4) [redacted]

Airbill Number: 813521282591

Non-Superfund Program

Sampler Signature: [signature]

6. Ship To: Data Chem Laboratories, Inc.
960 West LeVoy Drive
Salt Lake City, UT 84123
ATTN: Richard Wade

Site Name: 12th Street

City, State: Wilmington DE

Site Spill ID:

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

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

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

CLP Sample Numbers (from labels)	A Matrix (from Box 7) Other:	B Conc.: Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 8) Other:	E — RAS Analysis: Diss. Metals	Total Metals	Cyanide	Low Only: NO_2/NO_3	Low Only: Fluoride	High Only: pH	High Only: Conduct.	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform Eval — = Not a QC Sample)
MC01B0	1	Low	Grab	2	X							3-3009861	B-SW-03	7/26/00 0851	— —	BH	— —
MC01B1	1	Low	Grab	2	X							3-3009863	B-SW-04	7/26/00 0855	— —	BH	— —
MC01B2	1	Low	Grab	2		X						3-3009857	FB-01	7/26/00 0930	— —	BH	B
MC01B3	1	Low	Grab	2	X							3-3009856	FB-01	7/26/00 0930	— —	BH	B
MC01B4	5	Med	Grab	N		X						3-3009865	T1TP04	6/30/00 1200	— —	[illegible]	
MC01B5	5	Low	Grab	N		X						3-3009868	TP-08	7/7/00 1205	— —	[illegible]	
MC01B6	5	Low	Grab	N		X						3-3009866	TP-09	7/7/00 1200	— —	[illegible]	
MC01B7	5	Med	Grab	N		X						3-3009869	TP-WP-07	7/7/00 1215	— —	[illegible]	
MC01B9	5	Med	Grab	N		X						3-3009867	TPG07	7/7/00 1220	— —	[illegible]	

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
	2 of 2	MC01B5		

Chain of Custody Record

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
(b) (4) [redacted]	7/26/00 1230				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	

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

EPA Form 9110-1 (8/99)

See Reverse for Additional Standard Instructions
*See Reverse for Purpose Code Definitions

A21-012-13 REV

EPA United States Environmental Protection Agency
Contract Laboratory Program

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

Case No. 28339

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		3	TetraTech	07/26/00	FedEx

Regional Information

Sampler (Name) (b) (4) [redacted]

Airbill Number 813521282591

Non-Superfund Program

Sampler Signature

5. Ship To 960 West LeVay Drive Salt Lake City, UT 84123
ATTN: Richard Wade

Site Name 12th St Landfill

City, State Wilmington DE

Site Spill ID

3. Purpose*

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

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

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

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) Other:	E – RAS Analysis: Diss. Metals	Total Metals	Cyanide	Low only: NO_2/NO_3	Fluoride	High only: pH	Conduct.	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank S = Spike D = Duplicate R = Rinsate PE = Perform. Eval. — = Not a QC Sample)
MC01A0	1	Low	Grab	2		X						3-3009853	BR-SW-01	7/26/00 0900	— —	BH	—
MC01A1	1	Low	Grab	2		X						3-3009854	P1	7/26/00 0905	— —	BH	— —
MC01A2	1	Low	Grab	2		X						3-3009858	B-SW-01	7/26/00 0843	— —	BH	— —
MC01A3	1	Low	Grab	2		X						3-3009860	B-SW-02	7/26/00 0848	— —	BH	— —
MC01A4	1	Low	Grab	2		X						3-3009862	B-SW-03	7/26/00 0851	— —	BH	— —
MC01A5	1	Low	Grab	2		X						3-3009864	B-SW-04	7/26/00 0855	— —	BH	— —
MC01A6	1	Low	Grab	2	X							3-3009852	BR-SW-01	7/26/00 0900	— —	BH	— —
MC01A7	1	Low	Grab	2	X							3-3009855	P1	7/26/00 0905	— —	BH	— —
MC01A8	1	Low	Grab	2	X							3-3009857	B-SW-01	7/26/00 0843	— —	BH	— —
MC01A9	1	Low	Grab	2	X							3-3009859	B-SW-02	7/26/00 0848	— —	BH	— —

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
O	1 of 2	MC01A0/MC01A6		

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
(b) (4) [redacted]	7/26/00 1230				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

A21-012-13 REV

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

EPA Form 9110-1 (2/98)

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

VALIDATOR'S COPY

Tetra Tech EM Inc.

107 Chelsea Parkway ◆ Boothwyn, PA 19061 ◆ (610) 485-6410 ◆ FAX (610) 485-8587

August 22, 2000

MEMO TO FILE
CASE 28339
12th Street Landfill

RSCC
U.S. EPA Region III OAS/QA
Environmental Science Center
701 Mapes Road
Ft. Meade, MD 20755

Dear Ms. Jeffery:

This memo is written to correct the sampling date for sample tag number 3-3009866 to 07/07/00.

Please note this changes.

Sincerely,

Marian Murphy

(b) (4) [redacted]

For Sampler Robert Helverson

Attachment:

cc: EPA Michael Towle(3HS31)
START 3 TDD Files

contains recycled fiber and is recyclable

Project Code	Station No.	Month/Day/Year	Time	Designate: Comp.	Designate: Grab
	T1TP04	6/30/03	1200		X

Samplers (Signatures): [illegible]

Station Location: T1TP04

Preservative: Yes ☐ No ☒

ANALYSES	
BOD Anions Solids (TSS) (TDS) (SS)	
COD, TOC, Nutrients	
Phenolics	
Mercury	
Metals	X
Cyanide	
Oil and Grease	
Organics GC/MS	
Priority Pollutants	
Volatile Organics	
Pesticides	
Mutagenicity	
Bacteriology	

Remarks:
Case # 28339
Sample # MC0184

Tag No. 3-3009865

Lab Sample No.

AR100642

Project Code	Station No.	Month/Day/Year	Time	Designate: Comp.	Designate: Grab
	TP-09	6/30/00	1200		X

Samplers (Signatures): [illegible]

Station Location: TP-09

Preservative: Yes ☐ No ☒

ANALYSES	
BOD Anions Solids (TSS) (TDS) (SS)	
COD, TOC, Nutrients	
Phenolics	
Mercury	
Metals	X
Cyanide	
Oil and Grease	
Organics GC/MS	
Priority Pollutants	
Volatile Organics	
Pesticides	
Mutagenicity	
Bacteriology	

Remarks:
Case #28339
Sample #MC01B6

Tag No. 3-3002866

Lab Sample No.

AR100643

U.S. EPA Region III Sample Scheduling Request Form

RAS CASE No: CT593 28339	DAS No:	NSF No:
Date: 17 July 2000	Data Validation Level: IM1 per (b) (4) [redacted] EPA/QA	EPA Lab Reply:
Site Name: 12th Street Landfill		Cost:
Address: 12th Street at Brandywwine River	City: Wilmington	State: DE
Latitude:	Longitude:	Anal +Val Data TAT:28 days
Program: Superfund	CERCLIS No:	Activity: Removal
Account No: 00T03N50102DD330QB00	Operable Unit:	Spill ID:
Preparer: Marian Murphy	RPM/PO:Michael Towle	Site Leader: Brian Croft
Phone: 610-485-6410	Phone: 215-814-3272	Phone: 610-485-6410
FAX: 610-485-8587	FAX: 215-814-3254	FAX: 610-485-8587
E-mail: murphy.m@ttemi.com	E-mail: towle.michael@epa.gov	E-mail: croftb@ttemi.com
EPA CO: Deborah Eble	Contract Type: START 3 Eastern Area / Prime: Tetra Tech EM Inc.	Sub:
Lab Assignment Date:	Analytical TAT: 14 days	Ship Date From: 07/17/00
Organic Lab:		Ship Date To: 07/24/00
Inorganic Lab: DATAC		Carrier:

SAMPLES	METHOD	PARAMETER	MATRIX
5	CLP SOW ILM04.1	TAL METALS	SOIL
6	CLP SOW ILM04.1	TAL METALS	SW
6	CLP SOW ILM04.1	DISSOLVED METALS	SW

NOTE: Data validation levels M3 & IM2 require justification. QC field samples must be included as part of total number of samples.

1. Special Instructions: OSC needs results faxed to him at the above number when they are received at RSCC.
2. Objectives / Project Plan ID / Permit ID: Verify if further cleanup is necessary.
3. Program / Project / Permit Reporting Limits As per method.
4. DQO (QC Requirements) As per method.

TITLE DataChem Laboratories Physical Description Log BOOK NO 3810

From Page No X

CASE/DCL ID: ~~28859~~ 28339 / G007006

PHYSICAL DESCRIPTION

DCL SAMPLE #	MATRIX	METHOD **	PREP DATE	AMOUNT SAMPLE USED	FINAL VOLUME	PH	AMOUNT OF 1 UG/ML HG SOL. USED	COMMENTS	INIT
S0	ASTM Type II H_2O	CV	8/01/00	100 ml	130.5ml	<2	0 µl	None	NK
S.2							20 µl		
S.5							50 µl		
S1.0							100 µl		
S5.0							500 µl		
S10.0							1000 µl		
ICB							NA		
CCB							NK		
ICV/LCSW							800 µl		
CCV							500 µl		
PBW	NK						NA		
MC01A0	Water								
MC01A0(D)							NK		
MC01A0(S)							100 µl		
MC01A1							NA		
MC01A2									
MC01A3									
MC01A4									
MC01A5									
MC01B2									
MC01A6									
MC01A6(D)							NK		
MC01A6(S)							100 µl		
MC01A7							NA		
MC01A8									
MC01A9									
MC01B0									
MC01B1									
MC01B3	NK	NK	NK	NK	NK	NK	NK	NK	NK

NK 8/01/00

To Page No. X

Witnessed & Understood by me	Date	Invented by	Date
(b) (4) [redacted]	8/1/00	NA	8/1/00
		Record (b) (4) [redacted]	

[redacted]

ENVIROFORMS/INORGANIC CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

SOW No.: ILM04.1

Sample No.	Lab Sample ID.
MC01A0	00C01406
MC01A0D	00C01406
MC01A0S	00C01406
MC01A1	00C01407
MC01A2	00C01408
MC01A3	00C01409
MC01A4	00C01410
MC01A5	00C01411
MC01A6	00C01412
MC01A6D	00C01412
MC01A6S	00C01412
MC01A7	00C01413
MC01A8	00C01414
MC01A9	00C01415
MC01B0	00C01416
MC01B1	00C01417
MC01B2	00C01418
MC01B3	00C01419
MC01B4	00C01420
MC01B5	00C01421

Were ICP interelement corrections applied? Yes/No YES

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

Comments:

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

Signature: (b) (4) [redacted] Name: (b) (4) [redacted]

Date: 07 August 2000 Title: Chemist

ENVIROFORMS/INORGANIC CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

SOW No.: ILM04.1

Sample No.	Lab Sample ID.
MC01B5D	00C01421
MC01B5S	00C01421
MC01B6	00C01422
MC01B7	00C01423
MC01B9	00C01424

Were ICP interelement corrections applied? Yes/No YES

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

Comments:

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

Signature: (b) (4) [redacted] Name: (b) (4) [redacted]

Date: 07 August 2000 Title: Chemist

DATA CHEM LABORATORIES INC.
CASE NARRATIVE
A SORENSON COMPANY

Case #: 28339
SDG#: MC01A0
DCL Set ID#: 00C-0164
Aug 8, 2000

General Information

The samples in this SDG were analyzed by methodologies contained in ILM04.1 under contract 68-W0-0087. All concentration, analytical, and method qualifiers are defined in the SOW.

Holding Times

All samples were prepared and analyzed within method-required holding times.

Initial and Continuing Calibration

All initaial and continuing calibration verification and blank analyses were performed within the designated frequency and recoveries of the verifications and concentrations of the blanks met method acceptance criteria.

Preparation Blanks

The absolute value of all analyte concentrations in the preparation blank were lower than the Contract Required Detection Limit.

ICP Interference Check Sample Analysis

Results for the interference check samples met method acceptance criteria.

Matrix Spike Analysis

All matrix spike recoveries were within the limits of 75-125% with the exception of the soil for Cr, Co, Mn, Hg, Se, Ag, and Tl. A post digestion spike was performed for each affected analyte except Hg. Since all LCS recoveries met method criteria, these poor spike recoveries may be attributed to matrix interference.

Matrix Duplicate Analysis

All matrix duplicate results met method criteria with the exception of the soil for Ba, Cr, Co, and Cu.

Laboratory Control Sample Analysis

Results for the analysis of the water LCS were within the limits of 80-120%. Results for the analysis of the solid LCS met method acceptance criteria.

ICP Serial Dilution

All ICP Serial Dilution results met method acceptance criteria with the exception of Mn for sample MC01A0L. The reported values for these analytes on Form 1 are therefore estimated because of the presence of interferences.

Miscellaneous Comments

Cooler temperature indicator bottles were present upon receipt. Cooler C00-1145 had a temperature of five degrees Celcius.

(b) (4) [redacted]

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3
BLANKS

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

Preparation Blank Matrix (soil/water): WATER

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

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	61.7	U	61.7	U	61.7	U	61.7	U	68.556	U	PM
Antimony	52.1	U	52.1	U	52.1	U	52.1	U	57.889	U	PM
Arsenic	2.7	U	2.7	U	2.7	U	2.7	U	3.000	U	PM
Barium	0.8	B	0.8	B	0.4	U	0.4	U	1.648	B	PM
Beryllium	0.4	U	0.4	U	0.4	U	2.6	B	0.444	U	PM
Cadmium	3.8	U	3.8	U	3.8	U	3.8	U	4.222	U	PM
Calcium	9.6	U	9.6	U	9.6	U	9.6	U	-16.423	B	PM
Chromium	4.2	U	4.2	U	4.2	U	4.2	U	4.667	U	PM
Cobalt	11.5	U	11.5	U	11.5	U	-12.2	B	12.778	U	PM
Copper	7.1	B	5.9	U	5.9	U	5.9	U	6.556	U	PM
Iron	-5.7	B	5.7	U	5.7	U	5.7	U	6.333	U	PM
Lead	1.4	U	1.4	U	1.4	U	1.4	B	1.556	U	PM
Magnesium	36.8	U	36.8	U	36.8	U	36.8	U	40.889	U	PM
Manganese	1.1	U	1.1	U	1.1	U	-1.1	B	1.222	U	PM
Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.100	U	CV
Nickel	29.8	U	29.8	U	29.8	U	29.8	U	33.111	U	PM
Potassium	749.0	U	749.0	U	749.0	U	749.0	U	832.222	U	PM
Selenium	2.8	U	2.8	U	2.8	U	2.8	U	3.111	U	PM
Silver	4.9	U	4.9	U	4.9	U	4.9	U	6.017	B	PM
Sodium	60.0	U	60.0	U	60.0	U	60.0	U	66.667	U	PM
Thallium	2.4	U	2.4	U	2.4	U	2.4	U	2.667	U	PM
Vanadium	3.5	U	3.5	U	3.5	U	3.5	U	3.889	U	PM
Zinc	7.6	U	7.6	U	7.6	U	7.6	U	8.444	U	PM
Cyanide											NR

ENVIROFORMS/INORGANIC CLP

3
BLANKS

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

Preparation Blank Matrix (soil/water): WATER

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

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum			61.7	U	61.7	U					PM
Antimony			52.1	U	52.1	U					PM
Arsenic			2.7	U	2.7	U					PM
Barium			0.6	B	0.4	U					PM
Beryllium			2.9	B	1.6	B					PM
Cadmium			3.8	U	3.8	U					PM
Calcium			9.6	U	9.6	U					PM
Chromium			4.2	U	4.2	U					PM
Cobalt			11.5	U	11.5	U					PM
Copper			5.9	U	5.9	U					PM
Iron			5.7	U	5.7	U					PM
Lead			1.4	U	1.4	U					PM
Magnesium			36.8	U	36.8	U					PM
Manganese			1.1	B	1.1	U					PM
Mercury											NR
Nickel			29.8	U	29.8	U					PM
Potassium			749.0	U	749.0	U					PM
Selenium			2.8	U	2.8	U					PM
Silver			4.9	U	4.9	U					PM
Sodium			72.1	B	60.0	U					PM
Thallium			3.6	B	5.3	B					PM
Vanadium			3.5	U	-4.0	B					PM
Zinc			7.6	U	7.6	U					PM
Cyanide											NR

FORM III - IN

AR100650

3
BLANKS

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

Preparation Blank Matrix (soil/water): SOIL

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

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1 6	C	2 7	C	3 8	C	Prepa-ration Blank	C	M
Aluminum	61.7	U	61.7	U	61.7	U	61.7	U	12.340	U	P
Antimony	52.1	U	52.1	U	52.1	U	52.1	U	10.420	U	P
Arsenic	2.7	U	2.7	U	2.7	U	2.7	U	0.540	U	P
Barium	0.4	U	0.8	B	0.5	B	0.4	U	0.090	B	P
Beryllium	0.4	U	0.4	U	0.4	U	0.4	U	0.080	U	P
Cadmium	3.8	U	3.8	U	3.8	U	3.8	U	0.760	U	P
Calcium	9.6	U	9.6	U	9.6	U	9.6	U	30.146	B	P
Chromium	4.2	U	4.2	U	4.2	U	4.2	U	0.840	U	P
Cobalt	11.5	U	11.5	U	11.5	U	11.5	U	2.300	U	P
Copper	-6.4	B	5.9	U	5.9	U	5.9	U	1.180	U	P
Iron	5.7	U	5.7	U	5.7	U	7.9	B	7.439	B	P
Lead	1.4	U	1.4	U	1.4	U	1.4	U	0.280	U	P
Magnesium	36.8	U	36.8	U	36.8	U	36.8	U	7.360	U	P
Manganese	1.1	U	1.1	B	1.5	B	1.1	U	0.220	U	P
Mercury	0.1	U	0.1	U	0.1	U			0.050	U	CV
Nickel	29.8	U	29.8	U	29.8	U	29.8	U	5.960	U	P
Potassium	749.0	U	749.0	U	749.0	U	749.0	U	149.800	U	P
Selenium	2.8	U	2.8	U	2.8	U	2.8	U	0.560	U	P
Silver	4.9	U	4.9	U	4.9	U	4.9	U	0.980	U	P
Sodium	60.0	U	60.0	U	60.0	U	60.0	U	16.799	B	P
Thallium	2.4	U	2.4	U	2.4	U	2.4	U	0.480	U	P
Vanadium	3.5	U	3.5	U	3.5	U	3.5	U	0.700	U	P
Zinc	7.6	U	7.6	U	7.6	U	7.6	U	1.772	B	P
Cyanide											NR

3
BLANKS

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

Preparation Blank Matrix (soil/water): SOIL

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

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum			61.7	U							P
Antimony			-55.0	B							P
Arsenic			2.7	U	2.7	U					P
Barium			0.5	B							P
Beryllium			0.4	U							P
Cadmium			3.8	U							P
Calcium			9.6	U							P
Chromium			4.2	U							P
Cobalt			-11.7	B							P
Copper			5.9	U							P
Iron			5.7	U							P
Lead			1.4	U	1.4	U					P
Magnesium			36.8	U							P
Manganese			1.1	U							P
Mercury											NR
Nickel			29.8	U							P
Potassium			749.0	U							P
Selenium			2.8	U	2.8	U					P
Silver			4.9	U							P
Sodium			60.0	U							P
Thallium			2.4	U	2.4	U					P
Vanadium			3.5	U							P
Zinc			7.6	U							P
Cyanide											NR

ENVIROFORMS/INORGANIC CLP

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

AA CRDL Standard Source: EM SCIENCE

ICP CRDL Standard Source: EM SCIENCE

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
					Initial		Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum				400.0	384.76	96.2	426.51	106.6
Antimony				120.0	140.16	116.8	121.82	101.5
Arsenic				20.0	22.73	113.6	21.07	105.4
Barium				400.0	404.00	101.0	423.28	105.8
Beryllium				10.0	10.04	100.4	10.42	104.2
Cadmium				10.0	8.83	88.3	11.24	112.4
Calcium					-8.72		0.24	
Chromium				20.0	20.27	101.4	20.27	101.4
Cobalt				100.0	95.80	95.8	99.43	99.4
Copper				50.0	57.91	115.8	55.09	110.2
Iron				200.0	203.41	101.7	212.55	106.3
Lead				6.0	6.76	112.7	6.12	102.0
Magnesium					-2.76		10.41	
Manganese				30.0	29.48	98.3	32.15	107.2
Mercury	0.2	0.22	110.0					
Nickel				80.0	70.63	88.3	75.34	94.2
Potassium					-25.95		-74.61	
Selenium				10.0	10.52	105.2	11.40	114.0
Silver				20.0	25.55	127.8	25.59	128.0
Sodium					38.11		49.52	
Thallium				20.0	22.91	114.6	24.41	122.0
Vanadium				100.0	101.20	101.2	103.57	103.6
Zinc				40.0	42.17	105.4	40.21	100.5

ENVIROFORMS/INORGANIC CLP

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

AA CRDL Standard Source: EM SCIENCE

ICP CRDL Standard Source: EM SCIENCE

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP 3				
	True	Found	%R	True	Initial Found	%R	Final Found	%R
Aluminum							437.23	109.3
Antimony							121.66	101.4
Arsenic							22.05	110.2
Barium							412.26	103.1
Beryllium							12.20	122.0
Cadmium							12.04	120.4
Calcium							-3.27	
Chromium							23.07	115.4
Cobalt							94.57	94.6
Copper							57.90	115.8
Iron							210.27	105.1
Lead							5.93	98.8
Magnesium							4.56	
Manganese							30.62	102.1
Mercury								
Nickel							75.34	94.2
Potassium							87.58	
Selenium							11.44	114.4
Silver							23.34	116.7
Sodium							40.56	
Thallium							26.77	133.8
Vanadium							98.83	98.8
Zinc							44.08	110.2

FORM II (PART 2) - IN

ENVIROFORMS/INORGANIC CLP

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

AA CRDL Standard Source: EM SCIENCE

ICP CRDL Standard Source: EM SCIENCE

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
					Initial		Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum				400.0	388.63	97.2	425.73	106.4
Antimony				120.0	141.77	118.1	117.43	97.9
Arsenic				20.0	22.02	110.1	22.45	112.2
Barium				400.0	406.43	101.6	406.32	101.6
Beryllium				10.0	9.90	99.0	9.81	98.1
Cadmium				10.0	9.69	96.9	8.03	80.3
Calcium					0.81		-1.57	
Chromium				20.0	22.20	111.0	22.19	111.0
Cobalt				100.0	98.89	98.9	92.59	92.6
Copper				50.0	54.88	109.8	53.46	106.9
Iron				200.0	207.06	103.5	258.60	129.3
Lead				6.0	6.24	104.0	6.30	105.0
Magnesium					5.15		15.85	
Manganese				30.0	29.79	99.3	31.36	104.5
Mercury	0.2	0.21	105.0					
Nickel				80.0	69.33	86.7	91.23	114.0
Potassium					-94.15		116.75	
Selenium				10.0	11.61	116.1	11.18	111.8
Silver				20.0	16.76	83.8	20.16	100.8
Sodium					23.44		-17.26	
Thallium				20.0	21.28	106.4	20.88	104.4
Vanadium				100.0	95.21	95.2	100.07	100.1
Zinc				40.0	39.45	98.6	42.30	105.8

FORM II (PART 2) - IN

ENVIROFORMS/INORGANIC CLP

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

AA CRDL Standard Source: EM SCIENCE

ICP CRDL Standard Source: EM SCIENCE

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	True	Initial Found	%R	Final Found	%R
Aluminum								
Antimony								
Arsenic							20.06	100.3
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead							5.94	99.0
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium							10.14	101.4
Silver								
Sodium								
Thallium							19.23	96.2
Vanadium								
Zinc								

FORM II (PART 2) - IN

ENVIROFORMS/INORGANIC CLP

5A
SPIKE SAMPLE RECOVERY

SAMPLE NO.

MC01B5S

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

Matrix (soil/water): SOIL Level (low/med): LOW
% Solids for Sample: 73.9

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

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	177.1126		60.9079		135.32	85.9		P
Arsenic		332.3601		327.6424		10.83	43.6		P
Barium	75-125	793.8412		326.7517		541.27	86.3		P
Beryllium	75-125	13.2658		0.2035	B	13.53	96.5		P
Cadmium	75-125	25.8654		14.0637		13.53	87.2		P
Calcium									NR
Chromium	75-125	97.5385		152.3698		54.13	-101.3	N	P
Cobalt	75-125	421.3507		405.6582		135.32	11.6	N	P
Copper		1310.4581		1514.6592		67.66	-301.8		P
Iron									NR
Lead		1071.0419		1203.9327		5.41	-2456.4		P
Magnesium									NR
Manganese	75-125	266.2372		228.8086		135.32	27.7	N	P
Mercury	75-125	1.2312		0.3708		0.68	126.5	N	CV
Nickel	75-125	144.4519		28.5488		135.32	85.7		P
Potassium									NR
Selenium	75-125	1.7647		2.3995	B	2.71	-23.4	N	P
Silver	75-125	20.0930		10.4124		13.53	71.5	N	P
Sodium									NR
Thallium	75-125	19.4320		9.5943		13.53	72.7	N	P
Vanadium	75-125	136.9115		13.1115	B	135.32	91.5		P
Zinc		4358.3458		5322.7655		135.32	-712.7		P
Cyanide									NR

Comments:

FORM V (PART 1) - IN

ENVIROFORMS/INORGANIC CLP

5B
POST DIGEST SPIKE SAMPLE RECOVERY

SAMPLE NO.

MC01B5A

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

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

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)		Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony									NR
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium		1424.65		563.01		1100.0	78.3		P
Cobalt		4162.93		1498.91		3000.0	88.8		P
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese		2411.80		845.45		1700.0	92.1		P
Mercury									NR
Nickel									NR
Potassium									NR
Selenium		12.82		4.43	B	10.0	83.9		P
Silver		95.43		38.47		75.0	75.9		P
Sodium									NR
Thallium		125.99		35.45		70.0	129.3		P
Vanadium									NR
Zinc									NR
Cyanide									NR

Comments:

FORM V (PART 2) - IN

AR100658

ENVIROFORMS/INORGANIC CLP

6
DUPLICATES

SAMPLE NO.

MC01B5D

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

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

% Solids for Sample: 73.9 % Solids for Duplicate: 72.9

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

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		2202.2388		1870.6237		16.3		P
Antimony	16.2	60.9079		63.8109		4.7		P
Arsenic		327.6424		372.2391		12.7		P
Barium	54.1	326.7517		266.0915		20.5	*	P
Beryllium		0.2035	B	0.1389	B	37.7		P
Cadmium		14.0637		16.9507		18.6		P
Calcium	1353.2	3276.8723		3397.6842		3.6		P
Chromium		152.3698		36.5221		122.7	*	P
Cobalt		405.6582		327.3271		21.4	*	P
Copper		1514.6592		2976.1936		65.1	*	P
Iron		321216.0600		271910.0800		16.6		P
Lead		1203.9327		1123.9181		6.9		P
Magnesium		1084.9119	B	887.0383	B	20.1		P
Manganese		228.8086		231.6608		1.2		P
Mercury	0.1	0.3708		0.3712		0.1		CV
Nickel	10.8	28.5488		23.9580		17.5		P
Potassium		202.7064	U	202.7064	U			P
Selenium		2.3995	B	0.7578	U	200.0		P
Silver	2.7	10.4124		9.9863		4.2		P
Sodium		120.0725	B	103.5203	B	14.8		P
Thallium	2.7	9.5943		9.8342		2.5		P
Vanadium		13.1115	B	10.0146	B	26.8		P
Zinc		5322.7655		5828.2651		9.1		P
Cyanide								NR

FORM VI - IN

AR100659

ENVIROFORMS/INORGANIC CLP

9

ICP SERIAL DILUTIONS

SAMPLE NO.

MC01A0L

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

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

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	308.02		308.50	U	100.0		PM
Antimony	52.10	U	260.50	U			PM
Arsenic	2.70	U	13.50	U			PM
Barium	43.96	B	47.14	B	7.2		PM
Beryllium	0.40	U	2.00	U			PM
Cadmium	3.80	U	19.00	U			PM
Calcium	20662.15		21529.81	B	4.2		PM
Chromium	4.20	U	21.00	U			PM
Cobalt	11.50	U	57.50	U			PM
Copper	8.46	B	29.50	U	100.0		PM
Iron	417.10		422.82	B	1.4		PM
Lead	2.17	B	7.00	U	100.0		PM
Magnesium	8450.52		8845.27	B	4.7		PM
Manganese	60.06		68.85	B	14.6	E	PM
Mercury							
Nickel	29.80	U	149.00	U			PM
Potassium	3052.42	B	3745.00	U	100.0		PM
Selenium	2.80	U	14.00	U			PM
Silver	4.90	U	27.03	B			PM
Sodium	21075.52		22157.73	B	5.1		PM
Thallium	2.40	U	14.04	B			PM
Vanadium	3.50	U	17.50	U			PM
Zinc	7.60	U	38.00	U			PM

FORM IX - IN

ENVIROFORMS/INORGANIC CLP

14

Analysis Run Log

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087
Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0
Instrument ID Number: ICP-E Method: PM
Start Date: 08/03/00 End Date: 08/03/00

Sample No.	D/F	Time	%R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1719		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
S	1.00	1727			X		X	X	X		X	X	X				X		X			X			X	X	
S50000	1.00	1728		X						X				X		X				X			X				
ICV	1.00	1731		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
ICB	1.00	1733		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CCV1	1.00	1735		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CCB1	1.00	1737		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CRII	1.00	1739		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
ICSAI3	1.00	1742		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
ICSABI3	1.00	1745		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CCV2	1.00	1747		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CCB2	1.00	1749		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
PBW	1.00	1751		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
LCSW	1.00	1754		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MC01A0	1.00	1757		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MC01A0S	1.00	1759		X	X		X	X	X		X	X	X	X			X		X			X			X	X	
MC01A0D	1.00	1801		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MC01A0L	5.00	1803		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MC01A1	1.00	1806		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MC01A2	1.00	1809		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MC01A3	1.00	1812		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MC01A4	1.00	1815		X			X	X	X	X	X	X		X		X	X		X	X		X	X		X	X	
CCV3	1.00	1817		X			X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CCB3	1.00	1819		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MC01A5	1.00	1821		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MC01B2	1.00	1823		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MC01A6	1.00	1825		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MC01A6S	1.00	1827		X	X		X	X	X		X	X	X	X			X		X			X			X	X	
MC01A6D	1.00	1830		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MC01A7	1.00	1834		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MC01A8	1.00	1836		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CRIF	1.00	1839		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	

FORM XIV - IN

ENVIROFORMS/INORGANIC CLP

14

Analysis Run Log

Lab Name: DATACHEM LABORATORIES
Lab Code: DATAC Case No.: 28339
Instrument ID Number: ICP-E
Start Date: 08/03/00

Contract: 68-W0-0087
SAS No.: SDG No.: MC01A0
Method: PM
End Date: 08/03/00

Sample No.	D/F	Time	%R	AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
				Analytes																							
ICSAF5	1.00	1841		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
ICSABF5	1.00	1843		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CCV4	1.00	1845		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CCB4	1.00	1847		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MC01A9	1.00	1849		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MC01B0	1.00	1851		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MC01B1	1.00	1853		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MC01B3	1.00	1856		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CRIF2 3	1.00	1858		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
ICSAF6	1.00	1900		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
ICSABF6	1.00	1903		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CCV5	1.00	1905		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CCB5	1.00	1907		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	

FORM XIV - IN

ENVIROFORMS/INORGANIC CLP

14

Analysis Run Log

Lab Name: DATACHEM LABORATORIES
Lab Code: DATAC Case No.: 28339
Instrument ID Number: ICP-E
Start Date: 08/04/00

Contract: 68-W0-0087
SAS No.: SDG No.: MC01A0
Method: P
End Date: 08/04/00

Sample No.	D/F	Time	%R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1713		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
S	1.00	1715			X		X	X	X		X	X	X				X		X			X			X	X	
S50000	1.00	1717		X						X				X		X				X			X				
ICV2	1.00	1719		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
ICB2	1.00	1721		X	X		X	X	X		X	X	X	X		X	X		X	X		X	X		X	X	
CCV6	1.00	1723		X	X		X	X	X		X	X	X	X		X	X		X	X		X	X		X	X	
CCB6	1.00	1725		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CRII2	1.00	1727		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
ICSAI4	1.00	1729		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
ICSABI4	1.00	1732		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CCV7	1.00	1734		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CCB7	1.00	1736		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
PBS	1.00	1738		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
LCSS	1.00	1741		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MC01B4	1.00	1743		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MC01B5	1.00	1745		X	X		X	X	X	X	X	X	X			X	X		X	X		X	X		X	X	
MC01B5S	1.00	1747			X		X	X	X		X	X	X				X		X			X			X	X	
MC01B5D	1.00	1749		X	X		X	X	X	X	X	X	X			X	X		X	X		X	X		X	X	
MC01B5L	5.00	1753		X	X		X	X	X	X	X	X	X			X	X		X	X		X	X		X	X	
MC01B5	5.00	1756												X													
MC01B5L	25.00	1758												X													
MC01B5S	5.00	1800												X													
CCV8	1.00	1802		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
CCB8	1.00	1804		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MC01B5D	5.00	1806												X													
MC01B6	1.00	1808		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MC01B6	5.00	1810												X													
MC01B7	1.00	1812		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MC01B9	1.00	1815		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
MC01B5A	1.00	1829									X	X					X					X					
CRIF3	1.00	1832		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	
ICSAF7	1.00	1834		X	X		X	X	X	X	X	X	X	X		X	X		X	X		X	X		X	X	

FORM XIV - IN

ENVIROFORMS/INORGANIC CLP

14

Analysis Run Log

Lab Name: DATACHEM LABORATORIES
Lab Code: DATAC Case No.: 28339
Instrument ID Number: ICP-E
Start Date: 08/04/00

Contract: 68-W0-0087
SAS No.: SDG No.: MC01A0
Method: P
End Date: 08/04/00

Sample No.	D/F	Time	%R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ICSABF7	1.00	1836		X	X	_	X	X	X	X	X	X	X	X	_	X	X	_	X	X	_	X	X	_	X	X	_
CCV9	1.00	1838		X	X	_	X	X	X	X	X	X	X	X	_	X	X	_	X	X	_	X	X	_	X	X	_
CCB9	1.00	1840		X	X	_	X	X	X	X	X	X	X	X	_	X	X	_	X	X	_	X	X	_	X	X	_

FORM XIV - IN

AR100664

14

Analysis Run Log

Lab Name: DATACHEM LABORATORIES
Lab Code: DATAC Case No.: 28339
Instrument ID Number: ICP-T
Start Date: 08/02/00

Contract: 68-W0-0087
SAS No.: SDG No.: MC01A0
Method: PM
End Date: 08/02/00

Sample No.	D/F	Time	%R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1641		—	—	X	—	—	—	—	—	—	—	—	X	—	—	—	—	—	X	—	—	X	—	—	—
S1000	1.00	1644		—	—	X	—	—	—	—	—	—	—	—	X	—	—	—	—	—	X	—	—	X	—	—	—
S	1.00	1648		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
S10000	1.00	1651		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ICV	1.00	1706		—	—	X	—	—	—	—	—	—	—	—	X	—	—	—	—	—	X	—	—	X	—	—	—
ICB	1.00	1710		—	—	X	—	—	—	—	—	—	—	—	X	—	—	—	—	—	X	—	—	X	—	—	—
CCV1	1.00	1713		—	—	X	—	—	—	—	—	—	—	—	X	—	—	—	—	—	X	—	—	X	—	—	—
CCB1	1.00	1717		—	—	X	—	—	—	—	—	—	—	—	X	—	—	—	—	—	X	—	—	X	—	—	—
CRII	1.00	1720		—	—	X	—	—	—	—	—	—	—	—	X	—	—	—	—	—	X	—	—	X	—	—	—
ICSAI	1.00	1724		—	—	X	—	—	—	—	—	—	—	—	X	—	—	—	—	—	X	—	—	X	—	—	—
ICSABI	1.00	1727		—	—	X	—	—	—	—	—	—	—	—	X	—	—	—	—	—	X	—	—	X	—	—	—
CCV2	1.00	1731		—	—	X	—	—	—	—	—	—	—	—	X	—	—	—	—	—	X	—	—	X	—	—	—
CCB2	1.00	1734		—	—	X	—	—	—	—	—	—	—	—	X	—	—	—	—	—	X	—	—	X	—	—	—
PBW	1.00	1738		—	—	X	—	—	—	—	—	—	—	—	X	—	—	—	—	—	X	—	—	X	—	—	—
LCSW	1.00	1742		—	—	X	—	—	—	—	—	—	—	—	X	—	—	—	—	—	X	—	—	X	—	—	—
MC01A0	1.00	1745		—	—	X	—	—	—	—	—	—	—	—	X	—	—	—	—	—	X	—	—	X	—	—	—
MC01A0S	1.00	1749		—	—	X	—	—	—	—	—	—	—	—	X	—	—	—	—	—	X	—	—	X	—	—	—
MC01A0D	1.00	1752		—	—	X	—	—	—	—	—	—	—	—	X	—	—	—	—	—	X	—	—	X	—	—	—
MC01A1	1.00	1756		—	—	X	—	—	—	—	—	—	—	—	X	—	—	—	—	—	X	—	—	X	—	—	—
MC01A2	1.00	1759		—	—	X	—	—	—	—	—	—	—	—	X	—	—	—	—	—	X	—	—	X	—	—	—
MC01A3	1.00	1803		—	—	X	—	—	—	—	—	—	—	—	X	—	—	—	—	—	X	—	—	X	—	—	—
MC01A4	1.00	1806		—	—	X	—	—	—	—	—	—	—	—	X	—	—	—	—	—	X	—	—	X	—	—	—
MC01A5	1.00	1810		—	—	X	—	—	—	—	—	—	—	—	X	—	—	—	—	—	X	—	—	X	—	—	—
CCV3	1.00	1813		—	—	X	—	—	—	—	—	—	—	—	X	—	—	—	—	—	X	—	—	X	—	—	—
CCB3	1.00	1817		—	—	X	—	—	—	—	—	—	—	—	X	—	—	—	—	—	X	—	—	X	—	—	—
MC01B2	1.00	1821		—	—	X	—	—	—	—	—	—	—	—	X	—	—	—	—	—	X	—	—	X	—	—	—
MC01A6	1.00	1824		—	—	X	—	—	—	—	—	—	—	—	X	—	—	—	—	—	X	—	—	X	—	—	—
MC01A6S	1.00	1828		—	—	X	—	—	—	—	—	—	—	—	X	—	—	—	—	—	X	—	—	X	—	—	—
MC01A6D	1.00	1831		—	—	X	—	—	—	—	—	—	—	—	X	—	—	—	—	—	X	—	—	X	—	—	—
MC01A7	1.00	1835		—	—	X	—	—	—	—	—	—	—	—	X	—	—	—	—	—	X	—	—	X	—	—	—
MC01A8	1.00	1838		—	—	X	—	—	—	—	—	—	—	—	X	—	—	—	—	—	X	—	—	X	—	—	—
MC01A9	1.00	1842		—	—	X	—	—	—	—	—	—	—	—	X	—	—	—	—	—	X	—	—	X	—	—	—

FORM XIV - IN

ENVIROFORMS/INORGANIC CLP

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Analysis Run Log

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087
Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0
Instrument ID Number: ICP-T Method: PM
Start Date: 08/02/00 End Date: 08/02/00

Sample No.	D/F	Time	%R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
CRIF 2	1.00	1845		-	-	X	-	-	-	-	-	-	-	-	X	-	-	-	-	-	X	-	-	X	-	-	-
ICSAF	1.00	1849		-	-	X	-	-	-	-	-	-	-	-	X	-	-	-	-	-	X	-	-	X	-	-	-
ICSABF	1.00	1853		-	-	X	-	-	-	-	-	-	-	-	X	-	-	-	-	-	X	-	-	X	-	-	-
CCV4	1.00	1856		-	-	X	-	-	-	-	-	-	-	-	X	-	-	-	-	-	X	-	-	X	-	-	-
CCB4	1.00	1900		-	-	X	-	-	-	-	-	-	-	-	X	-	-	-	-	-	X	-	-	X	-	-	-
MC01B0	1.00	1903		-	-	X	-	-	-	-	-	-	-	-	X	-	-	-	-	-	X	-	-	X	-	-	-
MC01B1	1.00	1907		-	-	X	-	-	-	-	-	-	-	-	X	-	-	-	-	-	X	-	-	X	-	-	-
MC01B3	1.00	1910		-	-	X	-	-	-	-	-	-	-	-	X	-	-	-	-	-	X	-	-	X	-	-	-
MC01A0L	5.00	1914		-	-	X	-	-	-	-	-	-	-	-	X	-	-	-	-	-	X	-	-	X	-	-	-
CRIF2 3	1.00	1917		-	-	X	-	-	-	-	-	-	-	-	X	-	-	-	-	-	X	-	-	X	-	-	-
ICSAF2	1.00	1921		-	-	X	-	-	-	-	-	-	-	-	X	-	-	-	-	-	X	-	-	X	-	-	-
ICSABF2	1.00	1924		-	-	X	-	-	-	-	-	-	-	-	X	-	-	-	-	-	X	-	-	X	-	-	-
CCV5	1.00	1928		-	-	X	-	-	-	-	-	-	-	-	X	-	-	-	-	-	X	-	-	X	-	-	-
CCB5	1.00	1932		-	-	X	-	-	-	-	-	-	-	-	X	-	-	-	-	-	X	-	-	X	-	-	-

FORM XIV - IN

AR100666

ENVIROFORMS/INORGANIC CLP

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Analysis Run Log

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087
Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0
Instrument ID Number: ICP-T Method: P
Start Date: 08/02/00 End Date: 08/02/00

Sample No.	D/F	Time	%R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1049				X									X						X			X			
S1000	1.00	1052				X									X						X			X			
S	1.00	1056																									
S10000	1.00	1059																									
ICV2	1.00	1102				X									X						X			X			
ICB2	1.00	1105				X									X						X			X			
CCV6	1.00	1109				X									X						X			X			
CCB6	1.00	1112				X									X						X			X			
CRII2	1.00	1116				X									X						X			X			
ICSAI2	1.00	1120				X									X						X			X			
ICSABI2	1.00	1123				X									X						X			X			
CCV7	1.00	1127				X									X						X			X			
CCB7	1.00	1130				X									X						X			X			
PBS	1.00	1134				X									X						X			X			
LCSS	1.00	1137				X									X						X			X			
MC01B4	1.00	1141				X															X			X			
MC01B5	1.00	1144				X									X									X			
MC01B5S	1.00	1148				X									X						X			X			
MC01B5D	1.00	1151				X									X						X			X			
MC01B6	1.00	1155				X									X						X			X			
MC01B7	1.00	1159				X									X						X			X			
MC71B9	1.00	1202				X									X						X			X			
MC01B5L	5.00	1206				X									X									X			
CCV8	1.00	1209				X									X						X			X			
CCB8	1.00	1213				X									X						X			X			
CRIF3	1.00	1216				X									X						X			X			
ICSAF3	1.00	1220				X									X						X			X			
ICSABF3	1.00	1223				X									X						X			X			
CCV9	1.00	1227				X									X						X			X			
CCB9	1.00	1230				X									X						X			X			
MC01B5	2.00	1247																			X						
MC01B4	2.00	1252													X												

FORM XIV - IN

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Analysis Run Log

Lab Name: DATACHEM LABORATORIES
Lab Code: DATAC Case No.: 28339
Instrument ID Number: ICP-T
Start Date: 08/02/00

Contract: 68-W0-0087
SAS No.: SDG No.: MC01A0
Method: P
End Date: 08/02/00

Sample No.	D/F	Time	%R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
MC01B5L	10.00	1305																			X						
MC01B5A	2.00	1312																			X						
MC01B5A	1.00	1321																						X			
CRIF4 3	1.00	1326				X									X						X			X			
ICSAF4	1.00	1329				X									X						X			X			
ICSABF4	1.00	1333				X									X						X			X			
CCV10	1.00	1337				X									X						X			X			
CCB10	1.00	1340				X									X						X			X			

FORM XIV - IN

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Analysis Run Log

Lab Name: DATACHEM LABORATORIES
Contract: 68-W0-0087
Lab Code: DATAC
Case No.: 28339
SAS No.:
SDG No.: MC01A0
Instrument ID Number: AAS-CVG
Method: CV
Start Date: 08/03/00
End Date: 08/03/00

Sample No.	D/F	Time	%R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	0933		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
S0.2	1.00	0934		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
S0.5	1.00	0936		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
S1.0	1.00	0937		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
S5.0	1.00	0939		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
S10.0	1.00	0940		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
ICV	1.00	0942		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
ICB	1.00	0943		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
CCV1	1.00	0945		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
CCB1	1.00	0946		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
CRA	1.00	0948		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
PBW	1.00	0949		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
MC01A0	1.00	0951		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
MC01A0D	1.00	0952		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
MC01A0S	1.00	0953		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
MC01A1	1.00	0955		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
MC01A2	1.00	0956		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
MC01A3	1.00	0958		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
MC01A4	1.00	0959		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
MC01A5	1.00	1001		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
CCV2	1.00	1002		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
CCB2	1.00	1004		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
MC01B2	1.00	1005		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
MC01A6	1.00	1007		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
MC01A6D	1.00	1008		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
MC01A6S	1.00	1010		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
MC01A7	1.00	1011		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
MC01A8	1.00	1013		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
MC01A9	1.00	1014		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
MC01B0	1.00	1016		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
MC01B1	1.00	1017		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
MC01B3	1.00	1018		-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-

FORM XIV - IN

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Analysis Run Log

Lab Name: DATACHEM LABORATORIES
Contract: 68-W0-0087
Lab Code: DATAC
Case No.: 28339
SAS No.:
SDG No.: MC01A0
Instrument ID Number: AAS-CVG
Method: CV
Start Date: 08/03/00
End Date: 08/03/00

Sample No.	D/F	Time	%R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
CCV3	1.00	1020																X									
CCB3	1.00	1021																X									

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Analysis Run Log

Lab Name: DATACHEM LABORATORIES
Lab Code: DATAC Case No.: 28339
Instrument ID Number: AAS-CVG
Start Date: 08/03/00

Contract: 68-W0-0087
SAS No.: SDG No.: MC01A0
Method: CV
End Date: 08/03/00

Sample No.	D/F	Time	%R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1037																X									
S0.2	1.00	1039																X									
S0.5	1.00	1040																X									
S1.0	1.00	1042																X									
S5.0	1.00	1043																X									
S10.0	1.00	1045																X									
ICV2	1.00	1046																X									
ICB2	1.00	1048																X									
CCV4	1.00	1049																X									
CCB4	1.00	1051																X									
CRA2	1.00	1052																X									
PBS	1.00	1054																X									
LCSS	5.00	1055																X									
MC01B4	1.00	1056																X									
MC01B5	1.00	1058																X									
MC01B5D	1.00	1059																X									
MC01B5S	1.00	1101																X									
MC01B6	1.00	1102																X									
MC01B7	1.00	1104																X									
MC01B9	1.00	1105																X									
CCV5	1.00	1107																X									
CCB5	1.00	1108																X									

FORM XIV - IN

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Preparation Log

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

Method: PM

Sample No.	Preparation Date	Weight (gram)	Volume (ml)
LCSW	08/01/00		50
MC01A0	08/01/00		50
MC01A0D	08/01/00		50
MC01A0S	08/01/00		50
MC01A1	08/01/00		50
MC01A2	08/01/00		50
MC01A3	08/01/00		50
MC01A4	08/01/00		50
MC01A5	08/01/00		50
MC01A6	08/01/00		50
MC01A6D	08/01/00		50
MC01A6S	08/01/00		50
MC01A7	08/01/00		50
MC01A8	08/01/00		50
MC01A9	08/01/00		50
MC01B0	08/01/00		50
MC01B1	08/01/00		50
MC01B2	08/01/00		50
MC01B3	08/01/00		50
PBW	08/01/00		50

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Preparation Log

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

Method: P

Sample No.	Preparation Date	Weight (gram)	Volume (ml)
LCSS	07/31/00	1.00	200
MC01B4	07/31/00	1.00	200
MC01B5	07/31/00	1.00	200
MC01B5D	07/31/00	1.00	200
MC01B5S	07/31/00	1.00	200
MC01B6	07/31/00	1.00	200
MC01B7	07/31/00	1.00	200
MC01B9	07/31/00	1.00	200
PBS	07/31/00	1.00	200

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Preparation Log

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

Method: CV

Sample No.	Preparation Date	Weight (gram)	Volume (ml)
ICV	08/01/00		100
MC01A0	08/01/00		100
MC01A0D	08/01/00		100
MC01A0S	08/01/00		100
MC01A1	08/01/00		100
MC01A2	08/01/00		100
MC01A3	08/01/00		100
MC01A4	08/01/00		100
MC01A5	08/01/00		100
MC01A6	08/01/00		100
MC01A6D	08/01/00		100
MC01A6S	08/01/00		100
MC01A7	08/01/00		100
MC01A8	08/01/00		100
MC01A9	08/01/00		100
MC01B0	08/01/00		100
MC01B1	08/01/00		100
MC01B2	08/01/00		100
MC01B3	08/01/00		100
PBW	08/01/00		100

FORM XIII - IN

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Preparation Log

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

Method: CV

Sample No.	Preparation Date	Weight (gram)	Volume (ml)
LCSS	08/01/00	0.20	100
MC01B4	08/01/00	0.20	100
MC01B5	08/01/00	0.20	100
MC01B5D	08/01/00	0.20	100
MC01B5S	08/01/00	0.20	100
MC01B6	08/01/00	0.20	100
MC01B7	08/01/00	0.20	100
MC01B9	08/01/00	0.20	100
PBS	08/01/00	0.20	100

FORM XIII - IN

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

ICP ID Number: ICP-E Date: 07/15/00

Flame AA ID Number:

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.22		200.0	61.7	PM
Antimony	206.84		60.0	52.1	PM
Arsenic			10.0		
Barium	493.41		200.0	0.4	PM
Beryllium	313.04		5.0	0.4	PM
Cadmium	228.80		5.0	3.8	PM
Calcium	315.86		5000.0	9.6	PM
Chromium	267.72		10.0	4.2	PM
Cobalt	228.62		50.0	11.5	PM
Copper	324.75		25.0	5.9	PM
Iron	259.94		100.0	5.7	PM
Lead			3.0		
Magnesium	279.08		5000.0	36.8	PM
Manganese	257.61		15.0	1.1	PM
Mercury			0.2		
Nickel	231.60		40.0	29.8	PM
Potassium	766.49		5000.0	749.0	PM
Selenium			5.0		
Silver	328.07		10.0	4.9	PM
Sodium	589.00		5000.0	60.0	PM
Thallium			10.0		
Vanadium	292.40		50.0	3.5	PM
Zinc	213.86		20.0	7.6	PM
Cyanide			10.0		

Comments:

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

ICP ID Number: ICP-T Date: 07/15/00

Flame AA ID Number:

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.22		200.0		
Antimony			60.0		
Arsenic	189.04		10.0	2.7	PM
Barium			200.0		
Beryllium			5.0		
Cadmium	226.50		5.0	0.3	PM
Calcium	317.93		5000.0		
Chromium			10.0		
Cobalt			50.0		
Copper			25.0		
Iron	271.44		100.0		
Lead	220.35		3.0	1.4	PM
Magnesium	279.08		5000.0		
Manganese	257.61		15.0		
Mercury			0.2		
Nickel			40.0		
Potassium			5000.0		
Selenium	196.02		5.0	2.8	PM
Silver			10.0		
Sodium			5000.0		
Thallium	190.80		10.0	2.4	PM
Vanadium	292.40		50.0		
Zinc			20.0		
Cyanide			10.0		

Comments:

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: DATACHEM LABORATORIES Contract: 68-W0-0087

Lab Code: DATAC Case No.: 28339 SAS No.: SDG No.: MC01A0

ICP ID Number: Date: 07/15/00

Flame AA ID Number: AAS-CVG

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200.0		
Antimony			60.0		
Arsenic			10.0		
Barium			200.0		
Beryllium			5.0		
Cadmium			5.0		
Calcium			5000.0		
Chromium			10.0		
Cobalt			50.0		
Copper			25.0		
Iron			100.0		
Lead			3.0		
Magnesium			5000.0		
Manganese			15.0		
Mercury	253.70		0.2	0.1	CV
Nickel			40.0		
Potassium			5000.0		
Selenium			5.0		
Silver			10.0		
Sodium			5000.0		
Thallium			10.0		
Vanadium			50.0		
Zinc			20.0		
Cyanide			10.0		

Comments: