UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
ENVIRONMENTAL SCIENCE CENTER
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ORIGINAL (Red)

SDMS DocID 2055946

DATE : June 6, 2000

SUBJECT: Region III Data QA Review

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

TO : William Wentworth
Regional Program Manager (3HS34)

Attached is the inorganic data validation report for the New Jersey Fireworks site (Case#: 27981, SDG#: MCTT34, MCTT35, MCTT42) 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: Alan Fong (MDE)

WA File: 0300402 TDF# 0522

OFFICE OF ANAYTICAL SERVICES AND QUALITY ASSURANCE

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LOCKHEED MARTIN

ORIGINAL

DATE: May 30, 2000

SUBJECT: Inorganic Data Validation (IM2 Level)
Case: 27981, SDGs: MCTT34, MCTT35, MCTT42
Site: New Jersey Fireworks

FROM: [redacted] Inorganic Data Reviewer [redacted] Senior Oversight Chemist

TO: Fredrick Foreman
ESAT Regional Project Officer

OVERVIEW

Case 27981, Sample Delivery Groups (SDGs) MCTT34, MCTT35 and MCTT42, from the New Jersey Fireworks site consisted of eleven (11) aqueous and fourteen (14) soil samples analyzed for total metals and cyanide (CN^-) as well as eight (8) filtrate samples analyzed for dissolved metals. All samples were analyzed by American Analytical and Testing Services (AATS). The sample set included one (1) field blank, one (1) filtrate field blank, one (1) aqueous field duplicate pair, one (1) filtrate field duplicate pair and one (1) soil field duplicate pair. Samples were analyzed in accordance with Contract Laboratory Program (CLP) Statement of Work (SOW) ILM04.1 through Routine Analytical Services (RAS) program.

Sample MCWW04 (SDG MCTT42), Station Location GW-5, had analytes listed below that exceeded Ten Day Chemical Health Advisory Limits as noted. The Regional Project Manager (RPM) was notified by facsimile.

Analyte	Limit (ug/L)	Concentration (ug/L)
arsenic	50.0	267
chromium	1400.0	1450
lead	20.0	122

SUMMARY

All samples were successfully analyzed for all Target Analyte List (TAL) parameters. Areas of concern with respect to data usability are listed below.

Positive results detected in the field blank were utilized to qualify data in aqueous and soil samples. Positive results detected in the filtrate field blank were utilized to qualify data solely in the filtrate samples.

Data in this case have been impacted by outliers present in laboratory and field blanks, continuing calibration verification, ICP serial dilution, laboratory duplicate and Contract Required Detection Limit (CRDL) standard analyses. Details of these outliers are discussed under "Minor Problems"; specific samples affected are outlined in "Table 1A" and qualified analytical results for all samples are summarized on Data Summary Forms (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.

SDG	Blank	Affected Analytes
MCTT34	CCB	arsenic (As)
	PB	cyanide (CN^-)
	FB	mercury (Hg), potassium (K)

SDG	Blank	Affected Analytes
MCTT35	CCB	calcium (Ca), copper (Cu), zinc (Zn)
	PB	sodium (Na)
	FB	iron (Fe), Hg
MCTT42	CCB	Ca, magnesium (Mg), K, silver (Ag)
	PB	Na, Zn
	FB	Hg, K

Preparation and/or continuing calibration blanks had negative results with absolute values greater than the IDLs for arsenic (As) in SDG MCTT35, as well as for aluminum (Al) in SDGs MCTT35 and MCTT42 and for Cu in SDG MCTT42. Reported results less than two times (<2X) the absolute value of the blanks and quantitation limits for these analytes in affected samples in these SDGs may be biased low and have been qualified "L" and "UL", respectively, on the DSFs.

CRDL standard recoveries were low (<90%) for selenium (Se) in SDG MCTT34, for lead (Pb) in SDG MCTT35 and for cobalt (Co), Pb, Ag and thallium (Tl) in SDG MCTT42. Low recovery may indicate negative biases for results detected near detection limits due to an unstable baseline. Reported results less than two times CRDL (<2XCRDL) and quantitation limits for these analytes in these SDGs may be biased low and have been qualified "L" and "UL", respectively, on the DSFs unless superseded by "B".

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Recoveries of CRDL standards were high (>110%) regarding arsenic (As) in SDG MCTT34 and Zn in SDG MCTT42. High recoveries may indicate positive biases for results detected near detection limits due to an unstable baseline. Reported results less than two times CRDL (<2XCRDL) for these analytes in affected samples in these SDGs may be biased high and have been qualified "K" on DSFs unless superseded by "B".

Recoveries of CRDL standards were mixed for Se in SDGs MCTT35 and MCTT42, producing opposing bias effects for results detected near detection limits. Quantitation limits for this analyte in affected samples in these SDGs are estimated and have been qualified "UJ"on the DSFs.

The Percent Difference (%D) for the ICP serial dilution analysis was outside control limits (>10%) regarding Na in SDG MCTT42. Reported results relative to this analyte in this SDG are estimated and have been qualified "J" on the DSFs unless superseded by "B".

The Relative Percent Difference (RPD) for the laboratory duplicate analysis was outside soil control limits (35% RPD, ±2CRDL) for Pb SDG MCTT34. Reported results for this analyte in this SDG are estimated and have been qualified "J" on the DSFs.

Continuing Calibration Verification (CCV) standard recoveries were high (>110%) for Na in SDG MCTT34 and for barium (Ba) in SDG MCTT42. Reported results for these analytes in affected samples in these SDGs may be biased high and have been qualified "K" on the DSFs.

The reported result for iron (Fe) in sample MCWW04 (SDG MCTT42) was outside the established linear range of the instrument. This sample was not analyzed at a dilution for this analyte. The positive result for this analyte in this sample is estimated and has been qualified "J" on the DSF.

NOTES

The laboratory utilized an incorrect number of significant figures on the Form Is when reporting positive results for vanadium (V) in sample MCWW11 (SDG MCTT34) and for cobalt (Co) in sample MCTT39 (SDG MCTT35). The Form Is were corrected by the reviewer during validation of the data package.

An incorrect sample collection time was reported on the Chain of Custody (COC) record for sample MCTT35. The sample collection time was corrected by memo-to-file.

Data for Case 27981, SDGs MCTT34, MCTT35 and MCTT42, were reviewed in accordance with National Functional Guidelines for Evaluating Inorganic Analyses with Modification for use within Region III.

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ATTACHMENTS

INFORMATION REGARDING REPORT CONTENT

Table 1A is a summary of qualifiers applied to the laboratory- generated results during data validation.

TABLE 1A	SUMMARY OF QUALIFIERS ON DATA SUMMARY FORMS AFTER DATA VALIDATION
TABLE 1B	CODES USED IN COMMENTS COLUMN OF TABLE 1A
APPENDIX A	GLOSSARY OF DATA QUALIFIER CODES
APPENDIX B	DATA SUMMARY FORMS
APPENDIX C	RESULTS REPORTED BY LABORATORY
APPENDIX D	SUPPORT DOCUMENTATION

DCN:27981IM2.wpd

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TABLE 1A
SUMMARY OF QUALIFIERS ON DATA SUMMARY FORM AFTER DATA VALIDATION

CASE: 27981
SDG#: MCTT34

ANALYTE	SAMPLES AFFECTED	POSITIVE VALUES	NON-DETECTED VALUES	BIAS	COMMENTS*
As	MCWW10, MCWW11, MCWW15, MCWW16, MCWW18	B		High	CCB(2.5 ug/L)
	MCWW17	K		High	CRH(111.8%)
Pb	All Samples	J			DUP(55.2%)
Hg	All Samples Except MCWW10, MCWW16, MCWW21	B		High	FB (0.15 ug/L)
K	All Samples	B		High	FB (411 ug/L)
Se	All Samples Except MCWW21	L	UL	Low	CRL(88.3%, 87.5%)
Na	All Samples	K		High	CVH(110.2%, 110.1%)
CN^-	All Samples Except MCWW17, MCWW21	B		High	PB (0.07 mg/Kg)

* See explanation of Comments on Table 1B.

TABLE 1A
SUMMARY OF QUALIFIERS ON DATA SUMMARY FORM AFTER DATA VALIDATION

CASE: 27981
SDG#: MCTT35

ANALYTE	SAMPLES AFFECTED	POSITIVE VALUES	NON-DETECTED VALUES	BIAS	COMMENTS*
Al	MCTT35		UL	Low	CBN(-14.6 ug/L)
	MCTT43		UL	Low	CBN(-13.4 ug/L)
As	MCTT35, MCTT36, MCTT37, MCTT38, MCTT39		UL	Low	CBN(-3.1 ug/L)
Ca	MCTT43	B		High	CCB(31.0 ug/L)
Cu	MCTT37, MCTT38, MCTT39, MCTT40, MCTT41	B		High	CCB(1.6 ug/L)
Fe	MCTT35	B		High	FB (34.9 ug/L)
Pb	All Samples	L	UL	Low	CRL(79.7%)
Hg	MCTT35, MCTT38, MCTT39, MCTT40, MCTT41	B		High	FB (0.10 ug/L)
Se	All Samples		UJ	Mixed	CRM(85.3%, 111.6%)
Na	MCTT43	B		High	PB (98.70 ug/L)
Zn	MCTT36, MCTT43	B		High	CCB(2.4 ug/L)

* See explanation of Comments on Table 1B.

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TABLE 1A
SUMMARY OF QUALIFIERS ON DATA SUMMARY FORM AFTER DATA VALIDATION

CASE: 27981
SDG#: MCTT42

ANALYTE	SAMPLES AFFECTED	POSITIVE VALUES	NON-DETECTED VALUES	BIAS	COMMENTS*
Al	MCTT42, MCWW00, MCWW02, MCWW03	L	UL	Low	PBN(-21.75 ug/L)
Ba	MCWW09	K		High	CVH(110.4%)
Ca	MCWW00, MCWW01, MCWW02, MCWW03	B		High	CCB(541.2 ug/L)
	MCTT42	B		High	CCB(537.2 ug/L)
Co	MCTT42, MCWW09		UL	Low	CRL(89.5%)
Cu	MCTT42		UL	Low	CBN(-2.2 ug/L)
Fe	MCWW04	J			LRA
Pb	MCTT42, MCWW01, MCWW03, MCWW05, MCWW06, MCWW07, MCWW08, MCWW09	L	UL	Low	CRL(84.5%)
Mg	MCTT42	B		High	CCB(66.7 ug/L)
Hg	MCWW00, MCWW01, MCWW04, MCWW05, MCWW07, MCWW08, MCWW09	B		High	FB (0.15 ug/L)
K	MCWW00, MCWW01, MCWW02, MCWW03, MCWW05, MCWW06, MCWW07	B		High	FB (411 ug/L)

* See explanation of Comments on Table 1B.

TABLE 1A
SUMMARY OF QUALIFIERS ON DATA SUMMARY FORM AFTER DATA VALIDATION

CASE: 27981
SDG#: MCTT42

ANALYTE	SAMPLES AFFECTED	POSITIVE VALUES	NON-DETECTED VALUES	BIAS	COMMENTS*
K	MCTT42	B		High	CCB(558.9 ug/L)
Se	All Samples Except MCTT42, MCWW04, MCWW09		UJ	Mixed	CRM(128.5%, 72.4%)
	MCTT42, MCWW09		UJ	Mixed	CRM(72.4%, 111.2%)
Ag	MCWW09	B		High	CCB(8.9 ug/L) CRL(85.5%)
	MCTT42		UL	Low	CRL(85.5%)
Na	All Samples Except MCTT42	J			ISD(14.1%)
	MCTT42	B		High	PB (110.79 ug/L) ISD(14.1%)
Tl	All Samples		UL	Low	CRL(88.6%)
Zn	MCTT42, MCWW01, MCWW08, MCWW09	B		High	PB (3.63 ug/L) CRH(116.6%, 121.6%)
	MCWW00, MCWW03, MCWW05, MCWW06, MCWW07	K		High	CRH(116.6%, 121.6%)

* See explanation of Comments on Table 1B.

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TABLE 1B
CODES USED IN COMMENTS COLUMN

CCB = Continuing calibration blanks had results > IDLs (results are in parenthesis). Reported results which are less than five times (<5X) blank concentrations may be biased high.

CRH = CRDL standard recoveries were high (>110%) [% recoveries are in parenthesis]. Reported results which are <2XCRDL may be biased high.

DUP = The Relative Percent Difference (RPD) for the laboratory duplicate analysis was outside control limits (>20%) [RPD is in parenthesis]. Reported results are estimated.

FB = The field blanks had results > IDLs (results are in parenthesis). Reported results which are less than five times (<5X) the blank concentration may be biased high.

CRL = CRDL standard recoveries were low (<90%) [% recoveries are in parenthesis]. Reported results which are <2XCRDL and quantitation limits may be biased low.

CVH = Continuing Calibration Verification (CCV) standard recovery was high [% recovery is in parenthesis]. Reported results may be biased high.

PB = Preparation blanks had results > IDLs (results are in parenthesis). Reported results which are less than five times (<5X) the blank concentration may be biased high.

CBN = Continuing calibration blanks had negative results with absolute values greater than IDLs (results are in parenthesis). Reported results less than two times (2X) absolute value of the blank and quantitation limits may be biased low.

CRM = The CRDL standard recoveries were mixed (<90%,>110%) [% recoveries are in parenthesis]. Quantitation limits are estimated.

PBN = Preparation blanks had negative results with absolute values greater than IDLs (results are in parenthesis). Reported results less than two times (2X) absolute value of the blank and quantitation limits may be biased low.

LRA = The reported result exceeded the established linear range of the instrument. Reported results are estimated.

ISD = The Percent difference (%D) for the ICP serial dilution analysis exceeded the control limit (10%) [% recovery is in parenthesis]. Reported results are estimated.

APPENDIX A

Glossary of Qualifier Codes

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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.

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APPENDIX B

Data Summary Forms

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DATA SUMMARY FORM: INORGANIC

Case #: 27981 SDG : MCTT34 Number of Soil Samples : 14
Site : NEW JERSEY FIREWORKS Number of Water Samples : 0
Lab. : AATS

Sample Number :		MCTT34		MCWW10		MCWW11		MCWW12		MCWW13	
Sampling Location :		S-10		SED-1		SED-2		SED-3		SED-4	
Field QC		Field Dup. of MCWW18									
Matrix :		Soil		Soil		Soil		Soil		Soil	
Units :		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Date Sampled :		04/21/2000		04/20/2000		04/20/2000		04/20/2000		04/20/2000	
Time Sampled :		09:00		12:00		10:00		09:45		11:05	
%Solids :		72.0		79.2		75.9		48.0		79.5	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
ANALYTE	CRDL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	40	9790		517		1470		7970		3600	
ANTIMONY	12							[1.2]		[1.7]	
ARSENIC	2	4.3		[0.97]	B	[1.6]	B	6.8		3.5	
BARIUM	40	3350		[3.8]		[29.9]		81.2		294	
BERYLLIUM	1	[0.59]				[0.51]		[1.5]		[0.35]	
CADMIUM	1										
CALCIUM	1000	[221]		[145]		[529]		[742]		[325]	
CHROMIUM	2	23.5		6.1		9.6		37.7		22.1	
COBALT	10	[2.0]				[3.6]		22.7		[2.8]	
COPPER	5	[3.4]		[2.0]		16.0		23.5		8.8	
IRON	20	10400		2260		4430		21800		15300	
*LEAD	0.6	8.9	J	2.9	J	13.9	J	34.3	J	10.5	J
MAGNESIUM	1000	[554]		2000		[267]		[1190]		[325]	
MANGANESE	3	102		14.1		39.1		94.5		205	
MERCURY	0.1	[0.10]	B			[0.07]	B	0.18	B	[0.06]	B
NICKEL	8	[6.0]		20.5		[5.1]		26.9		[3.7]	
POTASSIUM	1000	[409]	B	[68.9]	B	[80.5]	B	[373]	B	[166]	B
SELENIUM	1		UL		UL		UL		UL		UL
SILVER	2										
SODIUM	1000	[420]	K	[358]	K	[406]	K	[588]	K	[349]	K
THALLIUM	2	[1.9]		[0.85]		[0.83]		[3.3]		[2.2]	
VANADIUM	10	42.6		[6.3]		[10.0]		37.7		29.9	
ZINC	4	17.9		8.1		26.7		120		22.7	
CYANIDE	0.5	[0.17]	B	[0.09]	B	[0.14]	B	[0.48]	B	[0.11]	B

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

Revised 09/99

DATA SUMMARY FORM: INORGANIC

Case #: 27981
Site :
Lab. :

SDG : MCTT34
NEW JERSEY FIREWORKS
AATS

Sample Number :		MCWW15		MCWW16		MCWW17		MCWW18		MCWW19	
Sampling Location :		S-1		S-2		S-3		S-4		S-5	
Field QC								Field Dup. of MCTT34			
Matrix :		Soil		Soil		Soil		Soil		Soil	
Units :		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Date Sampled :		04/20/2000		04/21/2000		04/21/2000		04/21/2000		04/20/2000	
Time Sampled :		12:45		08:45		08:30		09:00		10:05	
%Solids :		78.7		92.9		92.6		84.0		70.6	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
ANALYTE	CRDL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	40	2400		1730		1860		6310		117000	
ANTIMONY	12									71.6	
ARSENIC	2	2.5	B	2.3	B	4.0	K	[1.8]	B	5.3	
BARIUM	40	[36.0]		[10.4]		[10.3]		2130		5900	
BERYLLIUM	1							[0.25]			
CADMIUM	1										
CALCIUM	1000	[659]		[76.5]		[138]		[151]		[206]	
CHROMIUM	2	9.4		10.7		25.5		20.2		12.4	
COBALT	10					[4.3]		[7.3]			
COPPER	5	16.6		5.3		12.2		5.9		50.9	
IRON	20	5380		4460		15500		12900		14700	
*LEAD	0.6	63.1	J	2.7	J	1.7	J	6.1	J	28.3	J
MAGNESIUM	1000	[362]		[103]		[78.0]		[327]		[159]	
MANGANESE	3	293		19.4		48.0		272		52.9	
MERCURY	0.1	[0.09]	B			[0.05]	B	[0.12]	B	[0.08]	B
NICKEL	8	[4.7]		[0.97]		[1.8]		[2.7]		18.2	
POTASSIUM	1000	[168]	B	[58.7]	B	[72.0]	B	[324]	B	[177]	B
SELENIUM	1		UL		UL		UL		UL		UL
SILVER	2										
SODIUM	1000	[458]	K	[258]	K	[316]	K	[326]	K	[403]	K
THALLIUM	2	[0.84]		[1.1]		2.7		[1.8]		[2.1]	
VANADIUM	10	12.1		[6.7]		12.9		20.8		18.3	
ZINC	4	33.9		4.4		11.2		10.4		47.1	
CYANIDE	0.5	[0.34]	B	[0.06]	B			[0.08]	B	[0.24]	B

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

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DATA SUMMARY FORM: INORGANIC

Case #: 27981 SDG : MCTT34
Site : NEW JERSEY FIREWORKS
Lab. : AATS

Sample Number :		MCWW20		MCWW21		MCWW22		MCWW23			
Sampling Location :		S-6		S-7		S-8		S-9			
Field QC											
Matrix :		Soil		Soil		Soil		Soil			
Units :		mg/Kg		mg/Kg		mg/Kg		mg/Kg			
Date Sampled :		04/21/2000		04/21/2000		04/21/2000		04/21/2000			
Time Sampled :		09:25		09:50		09:40		09:45			
%Solids :		84.5		79.4		70.8		89.3			
Dilution Factor :		1.0		1.0		1.0		1.0			
ANALYTE	CRDL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	40	7930		5800		5670		6780			
ANTIMONY	12			[1.5]		[4.3]		[4.6]			
ARSENIC	2	3.1		4.8		13.1		4.9			
BARIUM	40	[24.4]		49.7		1240		2080			
BERYLLIUM	1	[0.29]		1.5		[0.37]					
CADMIUM	1										
CALCIUM	1000	[76.3]		[213]		1460		[384]			
CHROMIUM	2	29.8		44.5		21.5		139			
COBALT	10	[2.2]		[5.3]		[2.9]		[2.2]			
COPPER	5	11.9		26.9		23.9		58.3			
IRON	20	13700		61500		23000		65500			
*LEAD	0.6	5.1	J	5.5	J	117	J	14.4	J		
MAGNESIUM	1000	[952]		1350		[497]		[183]			
MANGANESE	3	41.2		34.4		84.6		300			
MERCURY	0.1	0.15	B			0.14	B	[0.05]	B		
NICKEL	8	[5.1]		12.6		15.2		60.9			
POTASSIUM	1000	[358]	B	[294]	B	[232]	B	[297]	B		
SELENIUM	1		UL	2.5		1.6	L	2.1	L		
SILVER	2			[0.56]				[0.34]			
SODIUM	1000	[314]	K	[566]	K	[473]	K	[341]	K		
THALLIUM	2	[2.2]		8.2		3.2		9.2			
VANADIUM	10	40.8		47.5		56.3		18.0			
ZINC	4	15.6		32.2		102		38.8			
CYANIDE	0.5	[0.11]	B			[0.19]	B	[0.36]	B		

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

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ORIGINAL (Red)

DATA SUMMARY FORM: INORGANIC

Case #: 27981
Site :
Lab. :

SDG : MCTT35
NEW JERSEY FIREWORKS
AATS

Number of Soil Samples : 0
Number of Water Samples : 8

Sample Number :		MCTT35		MCTT36		MCTT37		MCTT38		MCTT39	
Sampling Location :		GW-4DM		GW-5DM		SW-1DM		SW-2DM		SW-3DM	
Field QC		Filtrate of MCWW03		Filtrate of MCWW04		Filtrate of MCWW05		Filtrate of MCWW06		Filtrate of MCWW07	
Matrix :		Water		Water		Water		Water		Water	
Units :		ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :		04/20/2000		04/21/2000		04/20/2000		04/20/2000		04/20/2000	
Time Sampled :		10:45		10:15		12:00		10:00		09:45	
%Solids :		0.0		0.0		0.0		0.0		0.0	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
ANALYTE	CRDL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	200		UL	[76.8]		[193]		[189]		[100]	
ANTIMONY	60										
*ARSENIC	10		UL		UL		UL		UL		UL
BARIUM	200	[12.5]		[25.5]		[34.1]		[46.3]		[53.1]	
BERYLLIUM	5										
*CADMIUM	5										
CALCIUM	5000	[1030]		[2480]		6100		[4940]		[3790]	
*CHROMIUM	10										
COBALT	50	[16.4]		[27.3]		[3.5]		[8.9]		[10.0]	
COPPER	25	[23.3]				[2.3]	B	[1.6]	B	[1.6]	B
IRON	100	[33.7]	B	1200		615		724		8960	
*LEAD	3		UL		UL		UL		UL		UL
MAGNESIUM	5000	[517]		[3430]		[2030]		[1930]		[1640]	
MANGANESE	15	[11.4]		410		53.7		129		254	
MERCURY	0.2	[0.10]	B					0.46	B	[0.14]	B
*NICKEL	40	[25.8]		[7.7]		[6.0]		[7.5]		[4.8]	
POTASSIUM	5000	[467]		[298]		[1500]		[1440]		[1090]	
SELENIUM	5		UJ		UJ		UJ		UJ		UJ
SILVER	10										
SODIUM	5000	[3700]		38900		11900		12600		7470	
THALLIUM	10										
VANADIUM	50										
ZINC	20	26.7		[6.3]	B	[18.3]		28.0		26.2	

CRDL = Contract Required Detection Limit

*Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIONS

Revised 09/99

Case #: 27981 SDG : MCTT35
Site : NEW JERSEY FIREWORKS
Lab. : AATS

Sample Number :		MCTT40		MCTT41		MCTT43					
Sampling Location :		SW-4DM		SW-5DM		FB-1DM					
Field QC		Filtrate of MCWW08 Field Dup. of MCTT41		Filtrate of MCWW09 Field Dup. of MCTT40		Filtrate of MCTT42 Field Blank					
Matrix :		Water		Water		Water					
Units :		ug/L		ug/L		ug/L					
Date Sampled :		04/20/2000		04/20/2000		04/20/2000					
Time Sampled :		11:05		13:00		10:00					
%Solids :		0.0		0.0		0.0					
Dilution Factor :		1.0		1.0		1.0					
ANALYTE	CRDL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	200	213		[187]			UL				
ANTIMONY	60	[3.8]		[4.2]							
*ARSENIC	10										
BARIUM	200	1560		1640							
BERYLLIUM	5										
*CADMIUM	5										
CALCIUM	5000	14600		14900		[35.0]	B				
*CHROMIUM	10										
COBALT	50	[3.0]		[3.0]							
COPPER	25	[4.1]	B	[5.3]	B						
IRON	100	1880		1870		[34.9]					
*LEAD	3		UL	[2.0]	L		UL				
MAGNESIUM	5000	[4070]		[4240]							
MANGANESE	15	144		122							
MERCURY	0.2	[0.11]	B	[0.11]	B	[0.10]					
*NICKEL	40	[5.5]		[6.1]							
POTASSIUM	5000	12700		13400		[52.7]					
SELENIUM	5		UJ		UJ		UJ				
SILVER	10										
SODIUM	5000	21300		22000		[114]	B				
THALLIUM	10										
VANADIUM	50										
ZINC	20	[18.4]		[16.7]		[2.3]	B				

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

Revised 09/99

ORIGINAL (Red)

DATA SUMMARY FORM: INORGANIC

Case #: 27981 SDG : MCTT42 Number of Soil Samples : 0
Site : NEW JERSEY FIREWORKS Number of Water Samples : 11
Lab. : AATS

Sample Number :		MCTT42		MCWW00		MCWW01		MCWW02		MCWW03	
Sampling Location :		FB-1		GW-1		GW-2		GW-3		GW-4	
Field QC		Field QC									
Matrix :		Water		Water		Water		Water		Water	
Units :		ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :		04/20/2000		04/20/2000		04/20/2000		04/20/2000		04/20/2000	
Time Sampled :		10:00		12:30		10:30		11:15		10:45	
%Solids :		0.0		0.0		0.0		0.0		0.0	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
ANALYTE	CRDL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	200		UL		UL	[65.0]		[30.5]	L	[39.0]	L
ANTIMONY	60										
*ARSENIC	10										
BARIUM	200			[20.7]		[10.3]		[14.4]		[13.1]	
BERYLLIUM	5							[1.1]			
*CADMIUM	5										
CALCIUM	5000	[48.1]	B	[1930]	B	[943]	B	[1160]	B	[1000]	B
*CHROMIUM	10			[5.3]				[2.3]			
COBALT	50		UL	[6.9]		[5.7]		[10.7]		[15.8]	
COPPER	25		UL	258		149		41.7		26.3	
IRON	100					[39.4]		179		[53.1]	
*LEAD	3		UL	7.5		4.6	L	11.2		[2.0]	L
MAGNESIUM	5000	[45.6]	B	[964]		[625]		[553]		[518]	
MANGANESE	15			17.5		[8.4]		[12.9]		[11.5]	
MERCURY	0.2	[0.15]		[0.12]	B	[0.12]	B				
*NICKEL	40			[13.3]		[10.7]		[23.4]		[26.1]	
POTASSIUM	5000	[411]	B	[477]	B	[359]	B	[491]	B	[495]	B
SELENIUM	5		UJ		UJ		UJ		UJ		UJ
SILVER	10		UL								
SODIUM	5000	[51.4]	B	6860	J	[4360]	J	[3600]	J	[3790]	J
THALLIUM	10		UL		UL		UL		UL		UL
VANADIUM	50										
ZINC	20	[1.8]	B	29.3	K	[13.6]	B	57.8		24.8	K
*CYANIDE	10					[1.1]		[1.7]			

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

Revised 09/99

ORIGINAL (Red)

DATA SUMMARY FORM: INORGANIC

Case #: 27981
Site :
Lab. :

SDG : MCTT42
NEW JERSEY FIREWORKS
AATS

Sample Number :		MCWW04		MCWW05		MCWW06		MCWW07		MCWW08	
Sampling Location :		GW-5		SW-1		SW-2		SW-3		SW-4	
Field QC										Field Dup. of MCWW09	
Matrix :		Water		Water		Water		Water		Water	
Units :		ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :		04/21/2000		04/20/2000		04/20/2000		04/20/2000		04/20/2000	
Time Sampled :		10:15		12:00		10:00		09:45		11:05	
%Solids :		0.0		0.0		0.0		0.0		0.0	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
ANALYTE	CRDL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	200	94200		675		471		231		280	
ANTIMONY	60	[5.7]									
*ARSENIC	10	267						[3.4]			
BARIUM	200	714		[34.7]		[49.8]		[57.4]		1590	
BERYLLIUM	5	27.5									
*CADMIUM	5										
CALCIUM	5000	6930		5560		5050		[3700]		14500	
*CHROMIUM	10	1450		[4.4]							
COBALT	50	194		[3.9]		[9.1]		[9.4]		[2.1]	
COPPER	25	424		[2.1]		[2.2]				[4.5]	
IRON	100	575000	J	1440		1220		10700		2210	
*LEAD	3	122			UL		UL	[2.3]	L	[2.7]	L
MAGNESIUM	5000	13300		[2360]		[2110]		[1620]		[4230]	
MANGANESE	15	1620		51.5		132		276		148	
MERCURY	0.2	0.57	B	[0.17]	B			[0.12]	B	[0.14]	B
*NICKEL	40	97.7		[6.5]		[7.9]		[5.0]		[5.3]	
POTASSIUM	5000	7800		[1620]	B	[1530]	B	[1150]	B	12300	
SELENIUM	5	10.5			UJ		UJ		UJ		UJ
SILVER	10										
SODIUM	5000	39400	J	11400	J	13400	J	7620	J	21100	J
THALLIUM	10		UL		UL		UL		UL		UL
VANADIUM	50	1480		[2.7]							
ZINC	20	456		25.0	K	28.2	K	27.1	K	[17.8]	B
*CYANIDE	10	[1.6]		[1.3]		[1.0]		[1.0]		[2.2]	

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

Revised 09/99

DATA SUMMARY FORM: INORGANIC

Case #: 27981 SDG : MCTT42
Site : NEW JERSEY FIREWORKS
Lab. : AATS

Sample Number :		MCWW09									
Sampling Location :		SW-5									
Field QC		Field Dup. of MCWW08									
Matrix :		Water									
Units :		ug/L									
Date Sampled :		04/20/2000									
Time Sampled :		13:00									
%Solids :		0.0									
Dilution Factor :		1.0									
ANALYTE	CRDL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	200	302									
ANTIMONY	60										
*ARSENIC	10										
BARIUM	200	1660	K								
BERYLLIUM	5										
*CADMIUM	5										
CALCIUM	5000	14600									
*CHROMIUM	10										
COBALT	50		UL								
COPPER	25	[4.9]									
IRON	100	2390									
*LEAD	3	[2.1]	L								
MAGNESIUM	5000	[4000]									
MANGANESE	15	152									
MERCURY	0.2	[0.10]	B								
*NICKEL	40	[5.5]									
POTASSIUM	5000	14000									
SELENIUM	5		UJ								
SILVER	10	[5.0]	B								
SODIUM	5000	21500	J								
THALLIUM	10		UL								
VANADIUM	50										
ZINC	20	[17.1]	B								
*CYANIDE	10	[1.7]									

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

Revised 09/99

ORIGINAL
(Red)

APPENDIX C

Form Is

SDG MCTT34

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

ORIGINAL

MCTT34

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT34

Matrix (soil/water): SOIL_ Lab Sample ID: 42769.01

Level (low/med): LOW__ Date Received: 04/22/00

% Solids: _72.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9790			P
7440-36-0	Antimony	0.83	U		P
7440-38-2	Arsenic	4.3			P
7440-39-3	Barium	3350			P
7440-41-7	Beryllium	0.59	B		P
7440-43-9	Cadmium	0.28	U		P
7440-70-2	Calcium	221	B		P
7440-47-3	Chromium	23.5			P
7440-48-4	Cobalt	2.0	B		P
7440-50-8	Copper	3.4	B		P
7439-89-6	Iron	10400			P
7439-92-1	Lead	8.9		*	P
7439-95-4	Magnesium	554	B		P
7439-96-5	Manganese	102			P
7439-97-6	Mercury	0.10	B		CV
7440-02-0	Nickel	6.0	B		P
7440-09-7	Potassium	409	B		P
7782-49-2	Selenium	0.83	U		P
7440-22-4	Silver	0.28	U		P
7440-23-5	Sodium	420	B		P
7440-28-0	Thallium	1.9	B		P
7440-62-2	Vanadium	42.6			P
7440-66-6	Zinc	17.9			P
	Cyanide	0.17	B		CA

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: CLEAR_ Artifacts: _____

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MCWW10

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT34

Matrix (soil/water): SOIL_ Lab Sample ID: 42769.21

Level (low/med): LOW__ Date Received: 04/22/00

% Solids: _79.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	517			P
7440-36-0	Antimony	0.76	U		P
7440-38-2	Arsenic	0.97	B		P
7440-39-3	Barium	3.8	B		P
7440-41-7	Beryllium	0.25	U		P
7440-43-9	Cadmium	0.25	U		P
7440-70-2	Calcium	145	B		P
7440-47-3	Chromium	6.1			P
7440-48-4	Cobalt	1.5	U		P
7440-50-8	Copper	2.0	B		P
7439-89-6	Iron	2260			P
7439-92-1	Lead	2.9		*	P
7439-95-4	Magnesium	2000			P
7439-96-5	Manganese	14.1			P
7439-97-6	Mercury	0.05	U		CV
7440-02-0	Nickel	20.5			P
7440-09-7	Potassium	68.9	B		P
7782-49-2	Selenium	0.76	U		P
7440-22-4	Silver	0.25	U		P
7440-23-5	Sodium	358	B		P
7440-28-0	Thallium	0.85	B		P
7440-62-2	Vanadium	6.3	B		P
7440-66-6	Zinc	8.1			P
	Cyanide	0.09	B		CA

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: CLEAR_ Artifacts: _____

Comments:

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1
INORGANIC ANALYSES DATA SHEET

ORIGINAL (R) 5

EPA SAMPLE NO.

MCWW11

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT34

Matrix (soil/water): SOIL_ Lab Sample ID: 42769.22

Level (low/med): LOW__ Date Received: 04/22/00

% Solids: _75.9

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1470			P
7440-36-0	Antimony	0.78	U		P
7440-38-2	Arsenic	1.6	B		P
7440-39-3	Barium	29.9	B		P
7440-41-7	Beryllium	0.51	B		P
7440-43-9	Cadmium	0.26	U		P
7440-70-2	Calcium	529	B		P
7440-47-3	Chromium	9.6			P
7440-48-4	Cobalt	3.6	B		P
7440-50-8	Copper	16.0			P
7439-89-6	Iron	4430			P
7439-92-1	Lead	13.9		*	P
7439-95-4	Magnesium	267	B		P
7439-96-5	Manganese	39.1			P
7439-97-6	Mercury	0.07	B		CV
7440-02-0	Nickel	5.1	B		P
7440-09-7	Potassium	80.5	B		P
7782-49-2	Selenium	0.78	U		P
7440-22-4	Silver	0.26	U		P
7440-23-5	Sodium	406	B		P
7440-28-0	Thallium	0.83	B		P
7440-62-2	Vanadium	10.0 ~~10~~	B		P
7440-66-6	Zinc	26.7			P
	Cyanide	0.14	B		CA

DW (12/4/00)

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: CLEAR_ Artifacts: _____

Comments:

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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MCWW12

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT34

Matrix (soil/water): SOIL_ Lab Sample ID: 42769.23

Level (low/med): LOW__ Date Received: 04/22/00

% Solids: _48.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7970			P
7440-36-0	Antimony	1.2	B		P
7440-38-2	Arsenic	6.8			P
7440-39-3	Barium	81.2			P
7440-41-7	Beryllium	1.5	B		P
7440-43-9	Cadmium	0.40	U		P
7440-70-2	Calcium	742	B		P
7440-47-3	Chromium	37.7			P
7440-48-4	Cobalt	22.7			P
7440-50-8	Copper	23.5			P
7439-89-6	Iron	21800			P
7439-92-1	Lead	34.3		*	P
7439-95-4	Magnesium	1190	B		P
7439-96-5	Manganese	94.5			P
7439-97-6	Mercury	0.18			CV
7440-02-0	Nickel	26.9			P
7440-09-7	Potassium	373	B		P
7782-49-2	Selenium	1.2	U		P
7440-22-4	Silver	0.40	U		P
7440-23-5	Sodium	588	B		P
7440-28-0	Thallium	3.3	B		P
7440-62-2	Vanadium	37.7			P
7440-66-6	Zinc	120			P
	Cyanide	0.48	B		CA

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: CLEAR_ Artifacts: _____

Comments:

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.:

MCWW13

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT34

Matrix (soil/water): SOIL_ Lab Sample ID: 42769.24

Level (low/med): LOW__ Date Received: 04/22/00

% Solids: _79.5

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	3600			P
7440-36-0	Antimony_	1.7	B		P
7440-38-2	Arsenic__	3.5			P
7440-39-3	Barium___	294			P
7440-41-7	Beryllium	0.35	B		P
7440-43-9	Cadmium__	0.24	U		P
7440-70-2	Calcium__	325	B		P
7440-47-3	Chromium_	22.1			P
7440-48-4	Cobalt___	2.8	B		P
7440-50-8	Copper___	8.8			P
7439-89-6	Iron_____	15300			P
7439-92-1	Lead_____	10.5		*	P
7439-95-4	Magnesium	325	B		P
7439-96-5	Manganese	205			P
7439-97-6	Mercury__	0.06	B		CV
7440-02-0	Nickel___	3.7	B		P
7440-09-7	Potassium	166	B		P
7782-49-2	Selenium_	0.73	U		P
7440-22-4	Silver___	0.24	U		P
7440-23-5	Sodium___	349	B		P
7440-28-0	Thallium_	2.2	B		P
7440-62-2	Vanadium_	29.9			P
7440-66-6	Zinc_____	22.7			P
	Cyanide__	0.11	B		CA

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: CLEAR_ Artifacts: _____

Comments:

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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MCWW15

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT34

Matrix (soil/water): SOIL_ Lab Sample ID: 42769.25

Level (low/med): LOW__ Date Received: 04/22/00

% Solids: _78.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	2400			P
7440-36-0	Antimony_	0.73	U		P
7440-38-2	Arsenic__	2.5			P
7440-39-3	Barium___	36.0	B		P
7440-41-7	Beryllium	0.24	U		P
7440-43-9	Cadmium__	0.24	U		P
7440-70-2	Calcium__	659	B		P
7440-47-3	Chromium_	9.4			P
7440-48-4	Cobalt___	1.5	U		P
7440-50-8	Copper___	16.6			P
7439-89-6	Iron____	5380			P
7439-92-1	Lead____	63.1		*	P
7439-95-4	Magnesium	362	B		P
7439-96-5	Manganese	293			P
7439-97-6	Mercury__	0.09	B		CV
7440-02-0	Nickel___	4.7	B		P
7440-09-7	Potassium	168	B		P
7782-49-2	Selenium_	0.73	U		P
7440-22-4	Silver___	0.24	U		P
7440-23-5	Sodium___	458	B		P
7440-28-0	Thallium_	0.84	B		P
7440-62-2	Vanadium_	12.1			P
7440-66-6	Zinc____	33.9			P
	Cyanide__	0.34	B		CA

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: CLEAR_ Artifacts: _____

Comments:

U.S. EPA - CLP

ORIGINAL (Red)

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MCWW16

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT34

Matrix (soil/water): SOIL_ Lab Sample ID: 42769.26

Level (low/med): LOW__ Date Received: 04/22/00

% Solids: _92.9

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	1730			P
7440-36-0	Antimony_	0.62	U		P
7440-38-2	Arsenic__	2.3			P
7440-39-3	Barium___	10.4	B		P
7440-41-7	Beryllium	0.21	U		P
7440-43-9	Cadmium__	0.21	U		P
7440-70-2	Calcium__	76.5	B		P
7440-47-3	Chromium_	10.7			P
7440-48-4	Cobalt___	1.2	U		P
7440-50-8	Copper___	5.3			P
7439-89-6	Iron_____	4460			P
7439-92-1	Lead_____	2.7		*	P
7439-95-4	Magnesium	103	B		P
7439-96-5	Manganese	19.4			P
7439-97-6	Mercury__	0.05	U		CV
7440-02-0	Nickel___	0.97	B		P
7440-09-7	Potassium	58.7	B		P
7782-49-2	Selenium_	0.62	U		P
7440-22-4	Silver___	0.21	U		P
7440-23-5	Sodium___	258	B		P
7440-28-0	Thallium_	1.1	B		P
7440-62-2	Vanadium_	6.7	B		P
7440-66-6	Zinc_____	4.4			P
	Cyanide__	0.06	B		CA

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: CLEAR_ Artifacts: _____

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MCWW17

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT34

Matrix (soil/water): SOIL_ Lab Sample ID: 42769.27

Level (low/med): LOW__ Date Received: 04/22/00

% Solids: _92.6

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1860			P
7440-36-0	Antimony	0.64	U		P
7440-38-2	Arsenic	4.0			P
7440-39-3	Barium	10.3	B		P
7440-41-7	Beryllium	0.21	U		P
7440-43-9	Cadmium	0.21	U		P
7440-70-2	Calcium	138	B		P
7440-47-3	Chromium	25.5			P
7440-48-4	Cobalt	4.3	B		P
7440-50-8	Copper	12.2			P
7439-89-6	Iron	15500			P
7439-92-1	Lead	1.7		*	P
7439-95-4	Magnesium	78.0	B		P
7439-96-5	Manganese	48.0			P
7439-97-6	Mercury	0.05	B		CV
7440-02-0	Nickel	1.8	B		P
7440-09-7	Potassium	72.0	B		P
7782-49-2	Selenium	0.64	U		P
7440-22-4	Silver	0.21	U		P
7440-23-5	Sodium	316	B		P
7440-28-0	Thallium	2.7			P
7440-62-2	Vanadium	12.9			P
7440-66-6	Zinc	11.2			P
	Cyanide	0.05	U		CA

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: CLEAR_ Artifacts: _____

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MCWW18

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT34

Matrix (soil/water): SOIL_ Lab Sample ID: 42769.28

Level (low/med): LOW__ Date Received: 04/22/00

% Solids: _84.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	6310			P
7440-36-0	Antimony_	0.70	U		P
7440-38-2	Arsenic__	1.8	B		P
7440-39-3	Barium___	2130			P
7440-41-7	Beryllium	0.25	B		P
7440-43-9	Cadmium__	0.23	U		P
7440-70-2	Calcium__	151	B		P
7440-47-3	Chromium_	20.2			P
7440-48-4	Cobalt___	7.3	B		P
7440-50-8	Copper___	5.9			P
7439-89-6	Iron____	12900			P
7439-92-1	Lead____	6.1		*	P
7439-95-4	Magnesium	327	B		P
7439-96-5	Manganese	272			P
7439-97-6	Mercury__	0.12	B		CV
7440-02-0	Nickel___	2.7	B		P
7440-09-7	Potassium	324	B		P
7782-49-2	Selenium_	0.70	U		P
7440-22-4	Silver___	0.23	U		P
7440-23-5	Sodium___	326	B		P
7440-28-0	Thallium_	1.8	B		P
7440-62-2	Vanadium_	20.8			P
7440-66-6	Zinc____	10.4			P
	Cyanide__	0.08	B		CA

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: CLEAR_ Artifacts: _____

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MCWW19

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT34

Matrix (soil/water): SOIL_ Lab Sample ID: 42769.29

Level (low/med): LOW__ Date Received: 04/22/00

% Solids: _70.6

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	117000	_		P_
7440-36-0	Antimony_	71.6	_		P_
7440-38-2	Arsenic__	5.3	_		P_
7440-39-3	Barium__	5900	_		P_
7440-41-7	Beryllium	0.28	U		P_
7440-43-9	Cadmium__	0.28	U		P_
7440-70-2	Calcium__	206	B		P_
7440-47-3	Chromium_	12.4	_		P_
7440-48-4	Cobalt__	1.7	U		P_
7440-50-8	Copper__	50.9	_		P_
7439-89-6	Iron____	14700	_		P_
7439-92-1	Lead____	28.3	_	*	P_
7439-95-4	Magnesium	159	B		P_
7439-96-5	Manganese	52.9	_		P_
7439-97-6	Mercury__	0.08	B		CV
7440-02-0	Nickel__	18.2	_		P_
7440-09-7	Potassium	177	B		P_
7782-49-2	Selenium_	0.84	U		P_
7440-22-4	Silver__	0.28	U		P_
7440-23-5	Sodium__	403	B		P_
7440-28-0	Thallium_	2.1	B		P_
7440-62-2	Vanadium_	18.3	_		P_
7440-66-6	Zinc____	47.1	_		P_
	Cyanide__	0.24	B		CA

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: CLEAR_ Artifacts: _____

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MCWW20

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT34

Matrix (soil/water): SOIL_ Lab Sample ID: 42769.30

Level (low/med): LOW__ Date Received: 04/22/00

% Solids: _84.5

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	7930			P
7440-36-0	Antimony_	0.70	U		P
7440-38-2	Arsenic__	3.1			P
7440-39-3	Barium___	24.4	B		P
7440-41-7	Beryllium	0.29	B		P
7440-43-9	Cadmium__	0.23	U		P
7440-70-2	Calcium__	76.3	B		P
7440-47-3	Chromium_	29.8			P
7440-48-4	Cobalt___	2.2	B		P
7440-50-8	Copper___	11.9			P
7439-89-6	Iron____	13700			P
7439-92-1	Lead____	5.1		*	P
7439-95-4	Magnesium	952	B		P
7439-96-5	Manganese	41.2			P
7439-97-6	Mercury__	0.15			CV
7440-02-0	Nickel___	5.1	B		P
7440-09-7	Potassium	358	B		P
7782-49-2	Selenium_	0.70	U		P
7440-22-4	Silver___	0.23	U		P
7440-23-5	Sodium___	314	B		P
7440-28-0	Thallium_	2.2	B		P
7440-62-2	Vanadium_	40.8			P
7440-66-6	Zinc____	15.6			P
	Cyanide__	0.11	B		CA

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: CLEAR_ Artifacts: _____

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MCWW21

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT34

Matrix (soil/water): SOIL_ Lab Sample ID: 42769.31

Level (low/med): LOW__ Date Received: 04/22/00

% Solids: _79.4

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	5800	_		P_
7440-36-0	Antimony_	1.5	B		P_
7440-38-2	Arsenic__	4.8	_		P_
7440-39-3	Barium___	49.7	_		P_
7440-41-7	Beryllium	1.5	_		P_
7440-43-9	Cadmium__	0.24	U		P_
7440-70-2	Calcium__	213	B		P_
7440-47-3	Chromium_	44.5	_		P_
7440-48-4	Cobalt___	5.3	B		P_
7440-50-8	Copper___	26.9	_		P_
7439-89-6	Iron____	61500	_		P_
7439-92-1	Lead____	5.5	_	*	P_
7439-95-4	Magnesium	1350	_		P_
7439-96-5	Manganese	34.4	_		P_
7439-97-6	Mercury__	0.06	U		CV
7440-02-0	Nickel___	12.6	_		P_
7440-09-7	Potassium	294	B		P_
7782-49-2	Selenium_	2.5	_		P_
7440-22-4	Silver___	0.56	B		P_
7440-23-5	Sodium___	566	B		P_
7440-28-0	Thallium_	8.2	_		P_
7440-62-2	Vanadium_	47.5	_		P_
7440-66-6	Zinc____	32.2	_		P_
	Cyanide__	0.06	U		CA

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: CLEAR_ Artifacts: _____

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

ORIGINAL Rev 15

EPA SAMPLE NO.

MCWW22

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT34

Matrix (soil/water): SOIL_ Lab Sample ID: 42769.32

Level (low/med): LOW__ Date Received: 04/22/00

% Solids: _70.8

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	5670			P
7440-36-0	Antimony_	4.3	B		P
7440-38-2	Arsenic__	13.1			P
7440-39-3	Barium___	1240			P
7440-41-7	Beryllium	0.37	B		P
7440-43-9	Cadmium__	0.27	U		P
7440-70-2	Calcium__	1460			P
7440-47-3	Chromium_	21.5			P
7440-48-4	Cobalt___	2.9	B		P
7440-50-8	Copper___	23.9			P
7439-89-6	Iron____	23000			P
7439-92-1	Lead____	117		*	P
7439-95-4	Magnesium	497	B		P
7439-96-5	Manganese	84.6			P
7439-97-6	Mercury__	0.14			CV
7440-02-0	Nickel___	15.2			P
7440-09-7	Potassium	232	B		P
7782-49-2	Selenium_	1.6			P
7440-22-4	Silver___	0.27	U		P
7440-23-5	Sodium___	473	B		P
7440-28-0	Thallium_	3.2			P
7440-62-2	Vanadium_	56.3			P
7440-66-6	Zinc____	102			P
	Cyanide__	0.19	B		CA

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: CLEAR_ Artifacts: _____

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MCWW23

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT34

Matrix (soil/water): SOIL_ Lab Sample ID: 42769.33

Level (low/med): LOW__ Date Received: 04/22/00

% Solids: _89.3

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	6780			P
7440-36-0	Antimony_	4.6	B		P
7440-38-2	Arsenic__	4.9			P
7440-39-3	Barium___	2080			P
7440-41-7	Beryllium	0.22	U		P
7440-43-9	Cadmium__	0.22	U		P
7440-70-2	Calcium__	384	B		P
7440-47-3	Chromium_	139			P
7440-48-4	Cobalt___	2.2	B		P
7440-50-8	Copper___	58.3			P
7439-89-6	Iron____	65500			P
7439-92-1	Lead____	14.4		*	P
7439-95-4	Magnesium	183	B		P
7439-96-5	Manganese	300			P
7439-97-6	Mercury__	0.05	B		CV
7440-02-0	Nickel___	60.9			P
7440-09-7	Potassium	297	B		P
7782-49-2	Selenium_	2.1			P
7440-22-4	Silver___	0.34	B		P
7440-23-5	Sodium___	341	B		P
7440-28-0	Thallium_	9.2			P
7440-62-2	Vanadium_	18.0			P
7440-66-6	Zinc____	38.8			P
	Cyanide__	0.36	B		CA

Color Before: BROWN____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW___ Clarity After: CLEAR_ Artifacts: _____

Comments:

SDG MCTT35

ORIGINAL (Red)

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MCTT35

Lab Name: AMERICAN_ANALYTICAL_____ Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT35

Matrix (soil/water): WATER Lab Sample ID: 42769.02

Level (low/med): LOW__ Date Received: 04/22/00

% 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_	13.0	U		P_
7440-36-0	Antimony_	3.0	U		P_
7440-38-2	Arsenic__	3.0	U		P_
7440-39-3	Barium___	12.5	B		P_
7440-41-7	Beryllium	1.0	U		P_
7440-43-9	Cadmium__	1.0	U		P_
7440-70-2	Calcium__	1030	B		P_
7440-47-3	Chromium_	2.0	U		P_
7440-48-4	Cobalt___	16.4	B		P_
7440-50-8	Copper___	23.3	B		P_
7439-89-6	Iron_____	33.7	B		P_
7439-92-1	Lead_____	2.0	U		P_
7439-95-4	Magnesium	517	B		P_
7439-96-5	Manganese	11.4	B		P_
7439-97-6	Mercury__	0.10	B		CV
7440-02-0	Nickel___	25.8	B		P_
7440-09-7	Potassium	467	B		P_
7782-49-2	Selenium_	4.0	U		P_
7440-22-4	Silver___	3.0	U		P_
7440-23-5	Sodium___	3700	B		P_
7440-28-0	Thallium_	6.0	U		P_
7440-62-2	Vanadium_	2.0	U		P_
7440-66-6	Zinc_____	26.7	_		P_

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

ORIGINAL PROOF

MCTT36

Lab Name: AMERICAN_ANALYTICAL_____ Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT35

Matrix (soil/water): WATER Lab Sample ID: 42769.03

Level (low/med): LOW__ Date Received: 04/22/00

% 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_	76.8	B		P
7440-36-0	Antimony_	3.0	U		P
7440-38-2	Arsenic__	3.0	U		P
7440-39-3	Barium___	25.5	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium__	1.0	U		P
7440-70-2	Calcium__	2480	B		P
7440-47-3	Chromium_	2.0	U		P
7440-48-4	Cobalt___	27.3	B		P
7440-50-8	Copper___	1.0	U		P
7439-89-6	Iron_____	1200			P
7439-92-1	Lead_____	2.0	U		P
7439-95-4	Magnesium	3430	B		P
7439-96-5	Manganese	410			P
7439-97-6	Mercury__	0.10	U		CV
7440-02-0	Nickel___	7.7	B		P
7440-09-7	Potassium	298	B		P
7782-49-2	Selenium_	4.0	U		P
7440-22-4	Silver___	3.0	U		P
7440-23-5	Sodium___	38900			P
7440-28-0	Thallium_	6.0	U		P
7440-62-2	Vanadium_	2.0	U		P
7440-66-6	Zinc_____	6.3	B		P

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MCTT37

Lab Name: AMERICAN_ANALYTICAL_____ Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT35

Matrix (soil/water): WATER Lab Sample ID: 42769.04

Level (low/med): LOW__ Date Received: 04/22/00

% 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_	193	B		P
7440-36-0	Antimony_	3.0	U		P
7440-38-2	Arsenic__	3.0	U		P
7440-39-3	Barium___	34.1	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium__	1.0	U		P
7440-70-2	Calcium__	6100			P
7440-47-3	Chromium_	2.0	U		P
7440-48-4	Cobalt___	3.5	B		P
7440-50-8	Copper___	2.3	B		P
7439-89-6	Iron_____	615			P
7439-92-1	Lead_____	2.0	U		P
7439-95-4	Magnesium	2030	B		P
7439-96-5	Manganese	53.7			P
7439-97-6	Mercury__	0.10	U		CV
7440-02-0	Nickel___	6.0	B		P
7440-09-7	Potassium	1500	B		P
7782-49-2	Selenium_	4.0	U		P
7440-22-4	Silver___	3.0	U		P
7440-23-5	Sodium___	11900			P
7440-28-0	Thallium_	6.0	U		P
7440-62-2	Vanadium_	2.0	U		P
7440-66-6	Zinc_____	18.3	B		P

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

ORIGINAL FROM

MCTT38

Lab Name: AMERICAN_ANALYTICAL_____ Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT35

Matrix (soil/water): WATER Lab Sample ID: 42769.05

Level (low/med): LOW__ Date Received: 04/22/00

% 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_	189	B		P
7440-36-0	Antimony_	3.0	U		P
7440-38-2	Arsenic__	3.0	U		P
7440-39-3	Barium___	46.3	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium__	1.0	U		P
7440-70-2	Calcium__	4940	B		P
7440-47-3	Chromium_	2.0	U		P
7440-48-4	Cobalt___	8.9	B		P
7440-50-8	Copper___	1.6	B		P
7439-89-6	Iron_____	724			P
7439-92-1	Lead_____	2.0	U		P
7439-95-4	Magnesium	1930	B		P
7439-96-5	Manganese	129			P
7439-97-6	Mercury__	0.46			CV
7440-02-0	Nickel___	7.5	B		P
7440-09-7	Potassium	1440	B		P
7782-49-2	Selenium_	4.0	U		P
7440-22-4	Silver___	3.0	U		P
7440-23-5	Sodium___	12600			P
7440-28-0	Thallium_	6.0	U		P
7440-62-2	Vanadium_	2.0	U		P
7440-66-6	Zinc_____	28.0			P

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

ORIGINAL (Red)

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MCTT39

Lab Name: AMERICAN_ANALYTICAL_____ Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT35

Matrix (soil/water): WATER Lab Sample ID: 42769.06

Level (low/med): LOW__ Date Received: 04/22/00

% 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_	100	B		P
7440-36-0	Antimony_	3.0	U		P
7440-38-2	Arsenic__	3.0	U		P
7440-39-3	Barium___	53.1	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium__	1.0	U		P
7440-70-2	Calcium__	3790	B		P
7440-47-3	Chromium_	2.0	U		P
7440-48-4	Cobalt___	10.0 ~~10~~	B		P
7440-50-8	Copper___	1.6	B		P
7439-89-6	Iron_____	8960			P
7439-92-1	Lead_____	2.0	U		P
7439-95-4	Magnesium	1640	B		P
7439-96-5	Manganese	254			P
7439-97-6	Mercury__	0.14	B		CV
7440-02-0	Nickel___	4.8	B		P
7440-09-7	Potassium	1090	B		P
7782-49-2	Selenium_	4.0	U		P
7440-22-4	Silver___	3.0	U		P
7440-23-5	Sodium___	7470			P
7440-28-0	Thallium_	6.0	U		P
7440-62-2	Vanadium_	2.0	U		P
7440-66-6	Zinc_____	26.2			P

DU 5/24/00

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

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1
INORGANIC ANALYSES DATA SHEET

ORIGINAL

EPA SAMPLE NO.

MCTT40

Lab Name: AMERICAN_ANALYTICAL_____ Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT35

Matrix (soil/water): WATER Lab Sample ID: 42769.07

Level (low/med): LOW__ Date Received: 04/22/00

% 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_	213			P
7440-36-0	Antimony_	3.8	B		P
7440-38-2	Arsenic__	3.0	U		P
7440-39-3	Barium___	1560			P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium__	1.0	U		P
7440-70-2	Calcium__	14600			P
7440-47-3	Chromium_	2.0	U		P
7440-48-4	Cobalt___	3.0	B		P
7440-50-8	Copper___	4.1	B		P
7439-89-6	Iron_____	1880			P
7439-92-1	Lead_____	2.0	U		P
7439-95-4	Magnesium	4070	B		P
7439-96-5	Manganese	144			P
7439-97-6	Mercury__	0.11	B		CV
7440-02-0	Nickel___	5.5	B		P
7440-09-7	Potassium	12700			P
7782-49-2	Selenium_	4.0	U		P
7440-22-4	Silver___	3.0	U		P
7440-23-5	Sodium___	21300			P
7440-28-0	Thallium_	6.0	U		P
7440-62-2	Vanadium_	2.0	U		P
7440-66-6	Zinc_____	18.4	B		P

Color Before: YELLOW___ Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MCTT41

Lab Name: AMERICAN_ANALYTICAL_____ Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT35

Matrix (soil/water): WATER Lab Sample ID: 42769.08

Level (low/med): LOW__ Date Received: 04/22/00

% 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_	187	B		P
7440-36-0	Antimony_	4.2	B		P
7440-38-2	Arsenic__	3.0	U		P
7440-39-3	Barium___	1640			P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium__	1.0	U		P
7440-70-2	Calcium__	14900			P
7440-47-3	Chromium_	2.0	U		P
7440-48-4	Cobalt___	3.0	B		P
7440-50-8	Copper___	5.3	B		P
7439-89-6	Iron_____	1870			P
7439-92-1	Lead_____	2.0	B		P
7439-95-4	Magnesium	4240	B		P
7439-96-5	Manganese	122			P
7439-97-6	Mercury__	0.11	B		CV
7440-02-0	Nickel___	6.1	B		P
7440-09-7	Potassium	13400			P
7782-49-2	Selenium_	4.0	U		P
7440-22-4	Silver___	3.0	U		P
7440-23-5	Sodium___	22000			P
7440-28-0	Thallium_	6.0	U		P
7440-62-2	Vanadium_	2.0	U		P
7440-66-6	Zinc_____	16.7	B		P

Color Before: YELLOW___ Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

U.S. EPA - CLP

010

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

ORIGINAL (Red)

MCTT43

Lab Name: AMERICAN_ANALYTICAL_____ Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT35

Matrix (soil/water): WATER Lab Sample ID: 42769.10

Level (low/med): LOW__ Date Received: 04/22/00

% 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_	13.0	U		P
7440-36-0	Antimony_	3.0	U		P
7440-38-2	Arsenic__	3.0	U		P
7440-39-3	Barium___	1.0	U		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium__	1.0	U		P
7440-70-2	Calcium__	35.0	B		P
7440-47-3	Chromium_	2.0	U		P
7440-48-4	Cobalt___	2.0	U		P
7440-50-8	Copper___	1.0	U		P
7439-89-6	Iron_____	34.9	B		P
7439-92-1	Lead_____	2.0	U		P
7439-95-4	Magnesium	198	U		P
7439-96-5	Manganese	1.0	U		P
7439-97-6	Mercury__	0.10	B		CV
7440-02-0	Nickel___	2.0	U		P
7440-09-7	Potassium	52.7	B		P
7782-49-2	Selenium_	4.0	U		P
7440-22-4	Silver___	3.0	U		P
7440-23-5	Sodium___	114	B		P
7440-28-0	Thallium_	6.0	U		P
7440-62-2	Vanadium_	2.0	U		P
7440-66-6	Zinc_____	2.3	B		P

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

ORIGINAL (Red)

SDG MCTT42

ORIGINAL (Red)

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MCTT42

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT42

Matrix (soil/water): WATER Lab Sample ID: 42769.09

Level (low/med): LOW__ Date Received: 04/22/00

% 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_	16.0	U		P
7440-36-0	Antimony_	3.0	U		P
7440-38-2	Arsenic__	3.0	U		P
7440-39-3	Barium___	1.0	U		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium__	1.0	U		P
7440-70-2	Calcium__	48.1	B		P
7440-47-3	Chromium_	2.0	U		P
7440-48-4	Cobalt___	6.0	U		P
7440-50-8	Copper___	1.0	U		P
7439-89-6	Iron_____	25.0	U		P
7439-92-1	Lead_____	2.0	U		P
7439-95-4	Magnesium	45.6	B		P
7439-96-5	Manganese	1.0	U		P
7439-97-6	Mercury__	0.15	B		CV
7440-02-0	Nickel___	2.0	U		P
7440-09-7	Potassium	411	B		P
7782-49-2	Selenium_	4.0	U		P
7440-22-4	Silver___	3.0	U		P
7440-23-5	Sodium___	51.4	B	E	P
7440-28-0	Thallium_	6.0	U		P
7440-62-2	Vanadium_	5.0	U		P
7440-66-6	Zinc_____	1.8	B		P
	Cyanide__	1.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:
FEILD_QC

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MCWW00

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT42

Matrix (soil/water): WATER Lab Sample ID: 42769.11

Level (low/med): LOW__ Date Received: 04/22/00

% 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_	13.0	U		P
7440-36-0	Antimony_	3.0	U		P
7440-38-2	Arsenic__	3.0	U		P
7440-39-3	Barium___	20.7	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium__	1.0	U		P
7440-70-2	Calcium__	1930	B		P
7440-47-3	Chromium_	5.3	B		P
7440-48-4	Cobalt___	6.9	B		P
7440-50-8	Copper___	258			P
7439-89-6	Iron_____	25.0	U		P
7439-92-1	Lead_____	7.5			P
7439-95-4	Magnesium	964	B		P
7439-96-5	Manganese	17.5			P
7439-97-6	Mercury__	0.12	B		CV
7440-02-0	Nickel___	13.3	B		P
7440-09-7	Potassium	477	B		P
7782-49-2	Selenium_	4.0	U		P
7440-22-4	Silver___	3.0	U		P
7440-23-5	Sodium___	6860		E	P
7440-28-0	Thallium_	6.0	U		P
7440-62-2	Vanadium_	2.0	U		P
7440-66-6	Zinc_____	29.3			P
	Cyanide__	1.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MCWW01

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT42

Matrix (soil/water): WATER Lab Sample ID: 42769.12

Level (low/med): LOW__ Date Received: 04/22/00

% 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_	65.0	B		P
7440-36-0	Antimony_	3.0	U		P
7440-38-2	Arsenic__	3.0	U		P
7440-39-3	Barium___	10.3	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium__	1.0	U		P
7440-70-2	Calcium__	943	B		P
7440-47-3	Chromium_	2.0	U		P
7440-48-4	Cobalt___	5.7	B		P
7440-50-8	Copper___	149			P
7439-89-6	Iron_____	39.4	B		P
7439-92-1	Lead_____	4.6			P
7439-95-4	Magnesium	625	B		P
7439-96-5	Manganese	8.4	B		P
7439-97-6	Mercury__	0.12	B		CV
7440-02-0	Nickel___	10.7	B		P
7440-09-7	Potassium	359	B		P
7782-49-2	Selenium_	4.0	U		P
7440-22-4	Silver___	3.0	U		P
7440-23-5	Sodium___	4360	B	E	P
7440-28-0	Thallium_	6.0	U		P
7440-62-2	Vanadium_	2.0	U		P
7440-66-6	Zinc_____	13.6	B		P
	Cyanide__	1.1	B		CA

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MCWW02

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT42

Matrix (soil/water): WATER Lab Sample ID: 42769.13

Level (low/med): LOW__ Date Received: 04/22/00

% 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_	30.5	B		P
7440-36-0	Antimony_	3.0	U		P
7440-38-2	Arsenic__	3.0	U		P
7440-39-3	Barium___	14.4	B		P
7440-41-7	Beryllium	1.1	B		P
7440-43-9	Cadmium__	1.0	U		P
7440-70-2	Calcium__	1160	B		P
7440-47-3	Chromium_	2.3	B		P
7440-48-4	Cobalt___	10.7	B		P
7440-50-8	Copper___	41.7			P
7439-89-6	Iron____	179			P
7439-92-1	Lead____	11.2			P
7439-95-4	Magnesium	553	B		P
7439-96-5	Manganese	12.9	B		P
7439-97-6	Mercury__	0.10	U		CV
7440-02-0	Nickel___	23.4	B		P
7440-09-7	Potassium	491	B		P
7782-49-2	Selenium_	4.0	U		P
7440-22-4	Silver___	3.0	U		P
7440-23-5	Sodium___	3600	B	E	P
7440-28-0	Thallium_	6.0	U		P
7440-62-2	Vanadium_	2.0	U		P
7440-66-6	Zinc____	57.8			P
	Cyanide__	1.7	B		CA

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

ORIGINAL (Red)

MCWW03

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT42

Matrix (soil/water): WATER Lab Sample ID: 42769.14

Level (low/med): LOW__ Date Received: 04/22/00

% 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_	39.0	B		P_
7440-36-0	Antimony_	3.0	U		P_
7440-38-2	Arsenic__	3.0	U		P_
7440-39-3	Barium___	13.1	B		P_
7440-41-7	Beryllium	1.0	U		P_
7440-43-9	Cadmium__	1.0	U		P_
7440-70-2	Calcium__	1000	B		P_
7440-47-3	Chromium_	2.0	U		P_
7440-48-4	Cobalt___	15.8	B		P_
7440-50-8	Copper___	26.3			P_
7439-89-6	Iron____	53.1	B		P_
7439-92-1	Lead____	2.0	B		P_
7439-95-4	Magnesium	518	B		P_
7439-96-5	Manganese	11.5	B		P_
7439-97-6	Mercury__	0.10	U		CV
7440-02-0	Nickel___	26.1	B		P_
7440-09-7	Potassium	495	B		P_
7782-49-2	Selenium_	4.0	U		P_
7440-22-4	Silver___	3.0	U		P_
7440-23-5	Sodium___	3790	B	E	P_
7440-28-0	Thallium_	6.0	U		P_
7440-62-2	Vanadium_	2.0	U		P_
7440-66-6	Zinc____	24.8			P_
	Cyanide__	1.0	U		CA

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MCWW04

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT42

Matrix (soil/water): WATER Lab Sample ID: 42769.15

Level (low/med): LOW__ Date Received: 04/22/00

% 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_	94200			P
7440-36-0	Antimony_	5.7	B		P
7440-38-2	Arsenic__	267			P
7440-39-3	Barium___	714			P
7440-41-7	Beryllium	27.5			P
7440-43-9	Cadmium__	1.0	U		P
7440-70-2	Calcium__	6930			P
7440-47-3	Chromium_	1450			P
7440-48-4	Cobalt___	194			P
7440-50-8	Copper___	424			P
7439-89-6	Iron____	575000			P
7439-92-1	Lead____	122			P
7439-95-4	Magnesium	13300			P
7439-96-5	Manganese	1620			P
7439-97-6	Mercury__	0.57			CV
7440-02-0	Nickel___	97.7			P
7440-09-7	Potassium	7800			P
7782-49-2	Selenium_	10.5			P
7440-22-4	Silver___	3.0	U		P
7440-23-5	Sodium___	39400		E	P
7440-28-0	Thallium_	6.0	U		P
7440-62-2	Vanadium_	1480			P
7440-66-6	Zinc____	456			P
	Cyanide__	1.6	B		CA

Color Before: ORANGE___ Clarity Before: CLOUDY Texture: _____

Color After: YELLOW___ Clarity After: CLEAR_ Artifacts: _____

Comments:

ORIGINAL (Red)

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MCWW05

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT42

Matrix (soil/water): WATER Lab Sample ID: 42769.16

Level (low/med): LOW__ Date Received: 04/22/00

% 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_	675			P
7440-36-0	Antimony_	3.0	U		P
7440-38-2	Arsenic__	3.0	U		P
7440-39-3	Barium___	34.7	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium__	1.0	U		P
7440-70-2	Calcium__	5560			P
7440-47-3	Chromium_	4.4	B		P
7440-48-4	Cobalt___	3.9	B		P
7440-50-8	Copper___	2.1	B		P
7439-89-6	Iron_____	1440			P
7439-92-1	Lead_____	2.0	U		P
7439-95-4	Magnesium	2360	B		P
7439-96-5	Manganese	51.5			P
7439-97-6	Mercury__	0.17	B		CV
7440-02-0	Nickel___	6.5	B		P
7440-09-7	Potassium	1620	B		P
7782-49-2	Selenium_	4.0	U		P
7440-22-4	Silver___	3.0	U		P
7440-23-5	Sodium___	11400		E	P
7440-28-0	Thallium_	6.0	U		P
7440-62-2	Vanadium_	2.7	B		P
7440-66-6	Zinc_____	25.0			P
_____	Cyanide__	1.3	B		CA

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

ORIGINAL (Red)

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MCWW06

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT42

Matrix (soil/water): WATER Lab Sample ID: 42769.17

Level (low/med): LOW__ Date Received: 04/22/00

% 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_	471			P
7440-36-0	Antimony_	3.0	U		P
7440-38-2	Arsenic__	3.0	U		P
7440-39-3	Barium___	49.8	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium__	1.0	U		P
7440-70-2	Calcium__	5050			P
7440-47-3	Chromium_	2.0	U		P
7440-48-4	Cobalt___	9.1	B		P
7440-50-8	Copper___	2.2	B		P
7439-89-6	Iron____	1220			P
7439-92-1	Lead____	2.0	U		P
7439-95-4	Magnesium	2110	B		P
7439-96-5	Manganese	132			P
7439-97-6	Mercury__	0.10	U		CV
7440-02-0	Nickel___	7.9	B		P
7440-09-7	Potassium	1530	B		P
7782-49-2	Selenium_	4.0	U		P
7440-22-4	Silver___	3.0	U		P
7440-23-5	Sodium___	13400		E	P
7440-28-0	Thallium_	6.0	U		P
7440-62-2	Vanadium_	2.0	U		P
7440-66-6	Zinc____	28.2			P
	Cyanide__	1.0	B		CA

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

ORIGINAL (RO)

EPA SAMPLE NO.: MCWW07

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT42

Matrix (soil/water): WATER Lab Sample ID: 42769.18

Level (low/med): LOW__ Date Received: 04/22/00

% 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_	231			P
7440-36-0	Antimony_	3.0	U		P
7440-38-2	Arsenic__	3.4	B		P
7440-39-3	Barium___	57.4	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium__	1.0	U		P
7440-70-2	Calcium__	3700	B		P
7440-47-3	Chromium_	2.0	U		P
7440-48-4	Cobalt___	9.4	B		P
7440-50-8	Copper___	1.0	U		P
7439-89-6	Iron____	10700			P
7439-92-1	Lead____	2.3	B		P
7439-95-4	Magnesium	1620	B		P
7439-96-5	Manganese	276			P
7439-97-6	Mercury__	0.12	B		CV
7440-02-0	Nickel___	5.0	B		P
7440-09-7	Potassium	1150	B		P
7782-49-2	Selenium_	4.0	U		P
7440-22-4	Silver___	3.0	U		P
7440-23-5	Sodium___	7620		E	P
7440-28-0	Thallium_	6.0	U		P
7440-62-2	Vanadium_	2.0	U		P
7440-66-6	Zinc____	27.1			P
	Cyanide__	1.0	B		CA

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MCWW08

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT42

Matrix (soil/water): WATER Lab Sample ID: 42769.19

Level (low/med): LOW__ Date Received: 04/22/00

% 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_	280			P
7440-36-0	Antimony_	3.0	U		P
7440-38-2	Arsenic__	3.0	U		P
7440-39-3	Barium___	1590			P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium__	1.0	U		P
7440-70-2	Calcium__	14500			P
7440-47-3	Chromium_	2.0	U		P
7440-48-4	Cobalt___	2.1	B		P
7440-50-8	Copper___	4.5	B		P
7439-89-6	Iron____	2210			P
7439-92-1	Lead____	2.7	B		P
7439-95-4	Magnesium	4230	B		P
7439-96-5	Manganese	148			P
7439-97-6	Mercury__	0.14	B		CV
7440-02-0	Nickel___	5.3	B		P
7440-09-7	Potassium	12300			P
7782-49-2	Selenium_	4.0	U		P
7440-22-4	Silver___	3.0	U		P
7440-23-5	Sodium___	21100		E	P
7440-28-0	Thallium_	6.0	U		P
7440-62-2	Vanadium_	2.0	U		P
7440-66-6	Zinc____	17.8	B		P
	Cyanide__	2.2	B		CA

Color Before: YELLOW___ Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

ORIGINAL (Red)

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MCWW09

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT42

Matrix (soil/water): WATER Lab Sample ID: 42769.20

Level (low/med): LOW__ Date Received: 04/22/00

% 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_	302			P
7440-36-0	Antimony_	3.0	U		P
7440-38-2	Arsenic__	3.0	U		P
7440-39-3	Barium___	1660			P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium__	1.0	U		P
7440-70-2	Calcium__	14600			P
7440-47-3	Chromium_	2.0	U		P
7440-48-4	Cobalt___	6.0	U		P
7440-50-8	Copper___	4.9	B		P
7439-89-6	Iron____	2390			P
7439-92-1	Lead____	2.1	B		P
7439-95-4	Magnesium	4000	B		P
7439-96-5	Manganese	152			P
7439-97-6	Mercury__	0.10	B		CV
7440-02-0	Nickel___	5.5	B		P
7440-09-7	Potassium	14000			P
7782-49-2	Selenium_	4.0	U		P
7440-22-4	Silver___	5.0	B		P
7440-23-5	Sodium___	21500		E	P
7440-28-0	Thallium_	6.0	U		P
7440-62-2	Vanadium_	5.0	U		P
7440-66-6	Zinc____	17.1	B		P
	Cyanide__	1.7	B		CA

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

ORIGINAL (Red)

APPENDIX D

Support Documentation

EPA United States Environmental Protection Agency
Contract Laboratory Program

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

SAS No. (if applicable):

Case No.: 27981

ORIGINAL

1. Project Code: NF	Account Code: 2T5A03N922	2. Region No.: III	Sampling Co.: MDE	4. Date Shipped: 4/21/2000	Carrier: FedEx
Regional Information: —		[redacted]		Airbill Number: 819742449269	
Non-Superfund Program: —		3. Purpose*		5. Ship To: American Analytical & Technical Services, 1700 W. Albany, Ste. C, Broken Arrow, OK 74012, (918) 251-6545, ATTN: Debra Inman	
Site Name: New Jersey Fireworks		Lead: SF, PRP, ✓ ST, FED	Early Action: CLEM, PA, REM, RI, ✓ SI, ESI	Long-Term Action: FS, RD, RA, O&M, NPLD	
City, State: Elkton, MD	Site Spill ID: E19				

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)
MCWW 20	5	L	G	6		X	X					3-3031331	S-6	4/21/00 9:25	CSL 65	PR	—
MCWW 21	5	L	G	6		X	X					3-3031332	S-7	4/21/00 9:50	CSL 66	PR	—
MCWW 22	5	L	G	6		X	X					3-3031333	S-8	4/21/00 9:40	CSL 67	PR	—
MCWW 23	5	L	G	6		X	X					3-3031335	S-9	4/21/00 9:45	CSL 68	PR	—
MCTT 34	5	L	G	6		X	X					3-3031334	S-10	4/21/00 9:00	CSL 69	PR	D of MCWW 18
MCTT 35	2	L	G	2,6	X							3-3031336	GW-4DM	4/20/00 ~~11:05~~ 10:45		PR	—
MCTT 36	2	L	G	2,6	X							3-3031337	GW-5DM	4/21/00 10:15		PR	—
MCTT 37	1	L	G	2,6	X							3-3031338	SW-1DM	4/20/00 12:00	—	PR	—
MCTT 38	1	L	G	2,6	X							3-3031339	SW-2DM	4/20/00 10:00	—	PR	—
MCTT 39	1	L	G	2,6	X							3-3031340 to 3-3031341	SW-3DM	4/20/00 0945	—	PR	S

Rec'd 4/4/00 RDB MCTT 35 (DV 5/24/00)

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
Y	3 of 4	Do QC on MCTT 39	PR AP RM	

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	4/21/00 1700				
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	

A21-012-5 REV. 3/93

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

EPA Form 9110-1

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

356597

EPA United States Environmental Protection Agency
Contract Laboratory Program

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

SAS No. (if applicable):

Case No.: 27981

1. Project Code	NF
Account Code	2T5A03N922
2. Region No.	III
Sampling Co.	MDE
4. Date Shipped	4/21/2000
Carrier	FedEx
Regional Information	—
Sampler (Name)	[redacted]
Airbill Number	8197424 49269
Non-Superfund Program	—
5. Ship To	American Analytical & Technical Services, 1700 W. Albany, Ste. C, Broken Arrow, OK 74012, (918) 251-0545, ATTN: Debra Inman
Site Name	New Jersey Fireworks
City, State	Elkton, MD
Site Spill ID	E19

3. Purpose*: Lead — SF, PRP, ST (X), FED; Early Action — CLEM, PA, REM, RI, SI, ESI; Long-Term Action — FS, RD, RA, O&M, NPLD

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)	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7)	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)
MCWW16	5	L	G	6		X	X					3-3031321	SED-1	4/20/00 12:00	CSL 55	PR	—
MCWW11	5	L	G	6		X	X					3-3031322	SED-2	4/20/00 10:00	CSL 56	PR	—
MCWW12	5	L	G	6		X	X					3-3031323	SED-3	4/20/00 9:45	CSL 57	PR	—
MCWW13	5	L	G	6		X	X					3-3031324	SED-4	4/20/00 11:05	CSL 58	PR	—
~~MCWW14~~	~~5~~	~~L~~	~~G~~	~~6~~		~~X~~	~~X~~					~~3-3031325~~	~~SED-5~~		~~CSL 59~~		Do not analyze
MCWW15	5	L	G	6		X	X					3-3031326	S-1	4/20/00 12:45	CSL 60	PR	—
MCWW16	5	L	G	6		X	X					3-3031327	S-2	4/21/00 8:45	CSL 61	PR	—
MCWW17	5	L	G	6		X	X					3-3031328	S-3	4/21/00 8:30	CSL 62	PR	S
MCWW18	5	L	G	6		X	X					3-3031329	S-4	4/21/00 9:00	CSL 63	PR	—
MCWW19	5	L	G	6		X	X					3-3031330	S-5	4/20/00 10:05	CSL 64	PR	

AY 4/24/00

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
Y	2 of 4	Do QC on MCWW17	[signature]	

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	4/21/00 1500				
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 - SMO Copy; Yellow - Lab Copy for Return to SMO

EPA Form 9110-1

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

(OSWER) TRIGGER

356596

EPA-21-012-5 REV. 3/93

EPA United States Environmental Protection Agency
Contract Laboratory Program

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

SAS No. (if applicable):

Case No.: 27981

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
NF	2T5A03N922	III	MDE	4/21/2000	FedEx

Regional Information: —

Non-Superfund Program: —

Sampler (Name): [redacted]

Airbill Number: 819742449269

Site Name: New Jersey Fireworks

City, State: Elkton, MD

Site Spill ID: E19

3. Purpose*

Lead: [ ] SF [ ] PRP [X] ST [ ] FED

Early Action: [ ] CLEM [ ] PA [ ] REM [ ] RI [X] SI [ ] ESI

Long-Term Action: [ ] FS [ ] RD [ ] RA [ ] O&M [ ] NPLD

5. Ship To: American Analytical & Technical Services, 1700 W. Albany, Ste. C, Broken Arrow, OK 74012, (918) 251-0545
ATTN: Debra Inman

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)
												3-2223078 to 3-2223079					
MCWW00	2	L	G	2,3,6	X	X	X					3-3031301 to 3-3031302	GW-1	4/20/00 12:30	CSL45	PR	S
MCWW01	2	L	G	2,3,6	X	X	X					3-3031303 to 3-3031304	GW-2	4/20/00 10:30	CSL46	PR	—
MCWW02	2	L	G	2,3,6	X	X	X					3-3031305 to 3-3031306	GW-3	4/20/00 11:15	CSL47	PR	—
MCWW03	2	L	G	2,3,6	X	X	X					3-3031307 to 3-3031308	GW-4	4/20/00 10:45	CSL48	PR	—
MCWW04	2	L	G	2,3,6	X	X	X					3-3031309 to 3-3031310	GW-5	4/21/00 10:15	CSL49	PR	—
MCWW05	1	L	G	2,3,6	X	X	X					3-3031311 to 3-3031312	SW-1	4/20/00 12:00	CSL50	PR	—
MCWW06	1	L	G	2,3,6	X	X	X					3-3031313 to 3-3031314	SW-2	4/20/00 10:00	CSL51	PR	—
MCWW07	1	L	G	2,3,6	X	X	X					3-3031315 to 3-3031316	SW-3	4/20/00 09:45	CSL52	PR	—
MCWW08	1	L	G	2,3,6	X	X	X					3-3031317 to 3-3031318	SW-4	4/20/00 11:05	CSL53	PR	—
MCWW09	1	L	G	2,3,6	X	X	X					3-3031319 to 3-3031320	SW-5	4/20/00 13:00	CSL54	PR	D of MCWW08

Shipment for Case Complete? (Y/N): Y

Page 1 of 4

Sample(s) to be Used for Laboratory QC: Do QC on CSL45 MCTT42

Additional Sampler Signatures: [signature]

Chain of Custody Seal Number(s):

rec'd 5/10/00 [illegible]

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	4/21/00 1500				
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	

A21-012-5 REV. 3/93

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*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

356595

EPA United States Environmental Protection Agency
Contract Laboratory Program

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

SAS No. (if applicable):

Case No.: 27981

1. Project Code: NF	Account Code: 2T5A03N922	2. Region No.: III	Sampling Co.: MDE	4. Date Shipped: 4/21/2000	Carrier: FedEx
Regional Information: —		Samplers (Name): [redacted]		Airbill Number: 819742449269	
Non-Superfund Program:				5. Ship To: American Analytical & Technical Services, 1700 W. Albany, Ste. C, Broken Arrow, OK 74012, (918) 251-0545, ATTN: Debra Inman	
Site Name: New Jersey Fireworks		3. Purpose* Lead: SF, PRP, ST, FED; Early Action: CLEM, PA, REM, RI, SI, ESI; Long-Term Action: FS, RD, RA, O&M, NPLD			
City, State: Elkton, MD	Site Spill ID: E19				

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)	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 7)	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)
MCTT40	1	L	G	2,6	X							3-3031342	SW-4DM	4/20/00 11:05	—	PR	—
MCTT41	1	L	G	2,6	X							3-3031343	SW-5DM	4/20/00 13:00	—	PR	D of MCTT40
MCTT42	4	L	G	2,3,6		X	X					3-3031344 to 3-3031345	FB-1	4/20/00 10:00	CSL70	MG	B
MCTT43	4	L	G	2,6	X							3-3031346	FB-1DM	4/20/00 10:00	—	MG	B
rec'd 5/4/00 ORD																	
MCTT35																	

Shipment for Case Complete? (Y/N): Y

Page 4 of 4

Sample(s) to be Used for Laboratory QC:

Additional Sampler Signatures:

Chain of Custody Seal Number(s):

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
	4/21/00 1700				
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 - SMO Copy; Yellow - Lab Copy for Return to SMO

EPA Form 9110-1

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

9/21-012-5 REV. 3/93

356598

Validator

Maryland Department of the Environment
2500 Broening Highway
Baltimore, MD 21224
May 19, 2000

Mr. John Kwedar
U.S. Environmental Protection Agency
Region III
Environmental Science Center
701 Mapes Road
Fort Meade, MD 20755

Re: Paperwork Error on Region III Case #27981
Federal Express Shipment on April 21, 2000, Airbill #819742449269

Dear Mr. Kwedar:

On April 21, 2000, the Inorganic Traffic Report and Chain of Custody Record (Form 356597) had the incorrect time recorded for CLP Sample Number MCTT35. The corrected time should read 1045.

Sincerely,

Alan W. Fong

Alan W. Fong
Project Manager

cc Karla Mihalak
William Wentworth

ORIGINAL (Red)

SDG MCTT34

AMERICAN ANALYTICAL & TECHNICAL SERVICES, INC.

1700 West Albany / Broken Arrow, Oklahoma 74012 / Office (918) 251-2858 / Fax (918) 251-2599

ORIGINAL (Red)

SDG NARRATIVE

CONTRACT: 68W00086 **DATE:** May 8, 2000
CASE: 27981 **SOW NO.:** ILM04.1
SDG:MCTT34 **EPISODE NO.:** 42769

INORGANIC METAL FRACTION:

14 soil samples plus one prep blank, one lab control, one matrix spike and one matrix spike duplicate were submitted for ICP and Hg analysis. No major problems occurred during the digestion or analysis of these samples. The cooler temperatures at time of receipt were at 1.2,2.3 and 1.9degrees Celsius. The sample's analyses were completed according to the following:

SWL SOP #	Method SOP is based
SWL-IN-200	ILM03.0/04.0 (digestion for ICP analysis)
SWL-IN-202	ILM03.0/04.0 (analysis of Hg by cold vapor)

Initial and Continuing Calibration Checks: No problems.

Initial and Continuing Calibration Blanks: The following elements showed low level concentrations below the Contract Required Detection Limit in the Calibration Blanks: As and Mg
No action required.

Linearity near the CRDL: No problems

Preparation Blanks: The following elements showed low level concentrations below the Contract Required Detection Limit in the Preparation Blank: Al, Ca, Pb, Mg, Na and Cn
No action required.

Lab Control Spikes: No problems.

Matrix Spike: No problems

Duplicate: The following element was outside the control limits of 0-20% RPD: Pb
All associated samples were flagged with an "*" on Form I's. No action required.

Serial Dilution: No problems

Sincerely,

[redacted]

Operations Manager

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981 SAS No.: _____ SDG No.:MCTT34

SOW No.: ILM04.01 5/8/00

EPA Sample No.	Lab Sample ID
MCTT34	42769.01
MCWW10	42769.21
MCWW11	42769.22
MCWW12	42769.23
MCWW13	42769.24
MCWW15	42769.25
MCWW16	42769.26
MCWW17	42769.27
MCWW17D	42769.27D
MCWW17S	42769.27S
MCWW18	42769.28
MCWW19	42769.29
MCWW20	42769.30
MCWW21	42769.31
MCWW22	42769.32
MCWW23	42769.33

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 diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: [redacted] Name: [redacted]

Date: May 8, 2000 Title: Operations Manager

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3
BLANKS

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT34

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	9.0	U	9.0	U	9.0	U	9.0	U	2.51	B	P
Antimony	3.0	U	3.0	U	3.0	U	3.0	U	0.60	U	P
Arsenic	2.0	U	2.0	U	2.5	B	2.0	U	0.40	U	P
Barium	1.0	U	1.0	U	1.0	U	1.0	U	0.20	U	P
Beryllium	1.0	U	1.0	U	1.0	U	1.0	U	0.20	U	P
Cadmium	1.0	U	1.0	U	1.0	U	1.0	U	0.20	U	P
Calcium	7.0	U	7.0	U	7.0	U	7.0	U	6.04	B	P
Chromium	1.0	U	1.0	U	1.0	U	1.0	U	0.20	U	P
Cobalt	6.0	U	6.0	U	6.0	U	6.0	U	1.20	U	P
Copper	1.0	U	1.0	U	1.0	U	1.0	U	0.20	U	P
Iron	7.0	U	7.0	U	7.0	U	7.0	U	1.40	U	P
Lead	1.0	U	1.0	U	1.0	U	1.0	U	0.25	B	P
Magnesium	6.0	U	9.2	B	6.0	U	6.0	U	2.52	B	P
Manganese	1.0	U	1.0	U	1.0	U	1.0	U	0.20	U	P
Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.05	U	CV
Nickel	1.0	U	1.0	U	1.0	U	1.0	U	0.20	U	P
Potassium	27.0	U	27.0	U	27.0	U	27.0	U	5.40	U	P
Selenium	3.0	U	3.0	U	3.0	U	3.0	U	0.60	U	P
Silver	1.0	U	1.0	U	1.0	U	1.0	U	0.20	U	P
Sodium	6.0	U	6.0	U	6.0	U	6.0	U	1.39	B	P
Thallium	2.0	U	2.0	U	2.0	U	2.0	U	0.40	U	P
Vanadium	1.0	U	1.0	U	1.0	U	1.0	U	0.20	U	P
Zinc	3.0	U	3.0	U	3.0	U	3.0	U	0.60	U	P
Cyanide	1.0	U	1.0	U	1.0	U	1.0	U	0.07	B	CA

3
BLANKS

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT34

Preparation Blank Matrix (soil/water): _____

Preparation Blank Concentration Units (ug/L or 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			9.0	U	9.0	U					P
Antimony			3.0	U	3.0	U					P
Arsenic			2.0	U	2.0	U					P
Barium			1.0	U	1.0	U					P
Beryllium			1.0	U	1.0	U					P
Cadmium			1.0	U	1.0	U					P
Calcium			7.0	U	7.0	U					P
Chromium			1.0	U	1.0	U					P
Cobalt			6.0	U							P
Copper			1.0	U	1.0	U					P
Iron			7.0	U	7.0	U					P
Lead			1.0	U	1.0	U					P
Magnesium			8.0	B	9.2	B					P
Manganese			1.0	U	1.0	U					P
Mercury			0.1	U	0.1	U	0.1	U			CV
Nickel			1.0	U	1.0	U					P
Potassium			27.0	U	27.0	U					P
Selenium			3.0	U	3.0	U					P
Silver			1.0	U	1.0	U					P
Sodium			6.0	U	6.0	U					P
Thallium			2.0	U	2.0	U					P
Vanadium			1.0	U	1.0	U					P
Zinc			3.0	U	3.0	U					P
Cyanide			1.0	U							CA

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2B
CRDL STANDARD FOR AA AND ICP

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT34

AA CRDL Standard Source: PLASMACHEM__

ICP CRDL Standard Source: IN.VEN._____

Concentration Units: ug/L

Analyte	CRDL Standard for AA True	Found	%R	CRDL Standard for ICP True	Initial Found	%R	Final Found	%R
Aluminum								
Antimony				120.0	122.98	102.5	124.14	103.4
Arsenic				20.0	21.89	109.4	21.66	108.3
Barium								
Beryllium				10.0	10.08	100.8	10.04	100.4
Cadmium				10.0	10.25	102.5	10.38	103.8
Calcium								
Chromium				20.0	20.35	101.7	20.82	104.1
Cobalt								
Copper				50.0	51.89	103.8	52.82	105.6
Iron								
Lead				6.0	6.35	105.8	6.77	112.8
Magnesium								
Manganese				30.0	30.68	102.3	30.80	102.7
Mercury	0.2	0.21	105.0					
Nickel				80.0	81.15	101.4	78.99	98
Potassium				10000.0	10338.29	103.4	10067.86	100
Selenium				10.0	8.83	88.3	9.40	94.0
Silver				20.0	20.65	103.2	21.04	105.2
Sodium				10000.0	10275.17	102.8	10434.43	104.3
Thallium				20.0	21.13	105.6	21.80	109.0
Vanadium				100.0	102.69	102.7	103.06	103.1
Zinc								

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2B
CRDL STANDARD FOR AA AND ICP

21 ORIGINAL (Red)

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT34

AA CRDL Standard Source: PLASMACHEM__

ICP CRDL Standard Source: IN.VEN._____

Concentration Units: ug/L

Analyte	CRDL Standard for AA True	Found	%R	CRDL Standard for ICP True	Initial Found	%R	Final Found	%R 3
Aluminum								
Antimony				120.0			124.96	104.1
Arsenic				20.0			22.36	111.8
Barium								
Beryllium				10.0			10.26	102.6
Cadmium				10.0			10.19	101.9
Calcium								
Chromium				20.0			21.11	105.5
Cobalt								
Copper				50.0			54.05	108.1
Iron								
Lead				6.0			6.74	112.3
Magnesium								
Manganese				30.0			31.24	104.1
Mercury								
Nickel				80.0			78.39	98.0
Potassium				10000.0			10043.66	100.4
Selenium				10.0			8.75	87.5
Silver				20.0			20.90	104.5
Sodium				10000.0			10606.84	106.1
Thallium				20.0			21.88	109.4
Vanadium				100.0			104.67	104.7
Zinc								

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2B
CRDL STANDARD FOR AA AND ICP

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT34

AA CRDL Standard Source: _____

ICP CRDL Standard Source: IN.VEN._____

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
					Initial		Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium								
Silver								
Sodium								
Thallium								
Vanadium								
Zinc				40.0	39.43	98.6	40.62	101.5

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2B
CRDL STANDARD FOR AA AND ICP

ORIGINAL 23

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT34

AA CRDL Standard Source: _____

ICP CRDL Standard Source: IN.VEN._____

Concentration Units: ug/L

Analyte	CRDL Standard for AA True	Found	%R	CRDL Standard for ICP True	Initial Found	%R	Final Found	%R
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium								
Silver								
Sodium								
Thallium								
Vanadium								
Zinc				40.0			41.49	103.7

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2B
CRDL STANDARD FOR AA AND ICP

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT34

AA CRDL Standard Source: _____

ICP CRDL Standard Source: IN.VEN._____

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
					Initial		Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt				100.0	96.16	96.2	96.15	96.1
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium								
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								

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2B
CRDL STANDARD FOR AA AND ICP

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT34

AA CRDL Standard Source: _____

ICP CRDL Standard Source: IN.VEN._____

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
					Initial		Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt				100.0			94.22	94.2
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium								
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								

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6
DUPLICATES

EPA SAMPLE NO.

MCWW17D

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT34

Matrix (soil/water): SOIL_ Level (low/med): _LOW__

% Solids for Sample: _92.6 % Solids for Duplicate: _100.0

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

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		1857.1907		1584.2847		15.9		P
Antimony		0.6352	U	0.6352	U			P
Arsenic	2.1175	4.0431		3.1898		23.6		P
Barium		10.3049	B	9.4878	B	8.3		P
Beryllium		0.2117	U	0.2117	U			P
Cadmium		0.2117	U	0.2117	U			P
Calcium		138.1940	B	152.7407	B	10.0		P
Chromium		25.4932		21.2243		18.3		P
Cobalt		4.2890	B	3.3592	B	24.3		P
Copper	5.2937	12.2314		10.3966		16.2		P
Iron		15514.3089		13323.4540		15.2		P
Lead	0.6352	1.6876		2.9751		55.2	*	P
Magnesium		77.9664	B	75.0517	B	3.8		P
Manganese		47.9596		46.1199		3.9		P
Mercury		0.0530	B	0.0586	B	10.0		CV
Nickel		1.8409	B	1.7793	B	3.4		P
Potassium		72.0019	B	69.0171	B	4.2		P
Selenium		0.6352	U	0.6352	U			P
Silver		0.2117	U	0.2117	U			P
Sodium		316.1462	B	295.0246	B	6.9		P
Thallium	2.1175	2.7125		2.2884		17.0		P
Vanadium	10.5874	12.9458		10.9662		16.6		P
Zinc	4.2350	11.1877		11.4422		2.2		P
Cyanide		0.0524	U	0.0753	B	200.0		CA

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT34

Initial Calibration Source: EPA-LV_____

Continuing Calibration Source: IN.VEN._____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	782.4	826.40	105.6	5000.0	5249.38	105.0	5273.00	105.5	P
Antimony	970.0	1044.77	107.7	500.0	518.88	103.8	520.34	104.1	P
Arsenic	50.9	52.35	102.8	500.0	510.35	102.1	516.91	103.4	P
Barium	803.6	827.79	103.0	500.0	511.32	102.3	518.17	103.6	P
Beryllium	190.4	193.44	101.6	500.0	502.12	100.4	506.72	101.3	P
Cadmium	303.7	299.88	98.7	500.0	503.62	100.7	504.64	100.9	P
Calcium	20284.0	20222.41	99.7	5000.0	5270.29	105.4	5304.39	106.1	P
Chromium	188.4	195.98	104.0	500.0	503.46	100.7	508.73	101.7	P
Cobalt	208.0	211.97	101.9	2000.0	2013.84	100.7	2009.69	100.5	P
Copper	198.8	206.38	103.8	500.0	508.08	101.6	514.51	102.9	P
Iron	794.0	840.99	105.9	5000.0	5323.69	106.5	5410.35	108.2	P
Lead	2074.0	2107.95	101.6	500.0	502.57	100.5	503.94	100.8	P
Magnesium	9835.2	10053.91	102.2	5000.0	5271.85	105.4	5334.94	106.7	P
Manganese	196.4	199.61	101.6	500.0	508.40	101.7	512.49	102.5	P
Mercury	4.1	3.88	94.6	5.0	5.01	100.2	4.72	94.4	CV
Nickel	198.8	199.56	100.4	500.0	499.67	99.9	493.98	98.8	P
Potassium	19841.0	19941.37	100.5	5000.0	5301.74	106.0	5321.45	106.4	P
Selenium	50.7	48.76	96.2	500.0	501.98	100.4	503.73	100.7	P
Silver	297.9	305.32	102.5	500.0	519.44	103.9	524.90	105.0	P
Sodium	19514.0	18934.47	97.0	5000.0	5402.86	108.1	5511.49	110.2	P
Thallium	98.9	104.82	106.0	500.0	516.79	103.4	524.24	104.8	P
Vanadium	196.8	200.40	101.8	500.0	502.48	100.5	507.17	101.4	P
Zinc	1204.8	1184.04	98.3	500.0	504.70	100.9	518.79	103.8	P
Cyanide	90.0	87.81	97.6	100.0	102.47	102.5	103.68	103.7	CA

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT34

Initial Calibration Source: EPA-LV_____

Continuing Calibration Source: IN.VEN._____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	CCV4 Found	CCV4 %R(1)	M
Aluminum_				5000.0	5264.67	105.3	5280.74	105.6	P
Antimony_				500.0	521.19	104.2	522.34	104.5	P
Arsenic__				500.0	511.24	102.2	515.15	103.0	P
Barium___				500.0	513.95	102.8	516.72	103.3	P
Beryllium				500.0	507.54	101.5	512.35	102.5	P
Cadmium__				500.0	498.94	99.8	500.02	100.0	P
Calcium__				5000.0	5299.76	106.0	5315.60	106.3	P
Chromium_				500.0	507.60	101.5	510.73	102.1	P
Cobalt___				2000.0	2030.44	101.5	1920.85	96.0	P
Copper___				500.0	511.84	102.4	518.23	103.6	P
Iron____				5000.0	5411.47	108.2	5457.02	109.1	P
Lead____				500.0	501.39	100.3	504.03	100.8	P
Magnesium				5000.0	5330.35	106.6	5378.53	107.6	P
Manganese				500.0	510.96	102.2	515.55	103.1	P
Mercury__				5.0	4.75	95.0	4.65	93.0	CV
Nickel___				500.0	482.18	96.4	480.58	96.1	P
Potassium				5000.0	5173.14	103.5	5117.88	102.4	P
Selenium_				500.0	500.93	100.2	502.14	100.4	P
Silver___				500.0	522.44	104.5	524.97	105.0	P
Sodium___				5000.0	5464.32	109.3	5503.76	110.1	P
Thallium_				500.0	522.81	104.6	527.70	105.5	P
Vanadium_				500.0	504.30	100.9	507.80	101.6	P
Zinc____				500.0	526.28	105.3	517.80	103.6	P
Cyanide__				100.0	104.71	104.7	102.27	102.3	CA

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

19

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT34

Initial Calibration Source: EPA-LV_____

Continuing Calibration Source: IN.VEN._____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum				5000.0	5282.42	105.6			P
Antimony				500.0	520.86	104.2			P
Arsenic				500.0	511.24	102.2			P
Barium				500.0	511.66	102.3			P
Beryllium				500.0	511.04	102.2			P
Cadmium				500.0	495.68	99.1			P
Calcium				5000.0	5314.38	106.3			P
Chromium				500.0	508.22	101.6			P
Cobalt									NR
Copper				500.0	514.26	102.9			P
Iron				5000.0	5445.29	108.9			P
Lead				500.0	500.64	100.1			P
Magnesium				5000.0	5369.35	107.4			P
Manganese				500.0	513.28	102.7			P
Mercury				5.0	4.56	91.2	4.42	88.4	CV
Nickel				500.0	475.11	95.0			P
Potassium				5000.0	5019.96	100.4			P
Selenium				500.0	501.02	100.2			P
Silver				500.0	520.81	104.2			P
Sodium				5000.0	5443.98	108.9			P
Thallium				500.0	524.81	105.0			P
Vanadium				500.0	504.75	100.9			P
Zinc				500.0	530.73	106.1			P
Cyanide									NR

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

ORIGINAL (Red)

U.S. EPA - CLP

14
ANALYSIS RUN LOG

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.:MCTT34

Instrument ID Number: TJA ET2_____ Method: P_

Start Date: 04/29/00 End Date: 04/30/00

EPA 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	1955		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		
S	1.00	2001		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		
ICV	1.00	2006		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		
ICB	1.00	2012		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		
CRI 1	1.00	2018			X	X		X	X		X		X		X		X		X	X	X	X	X	X	X		
ICSA 1	1.00	2023		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		
ICSAB	1.00	2038		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		
CCV 1	1.00	2044		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		
CCB 1	1.00	2049		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		
PBS	1.00	2055		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		
LCSS	1.00	2100		X	X	X	X	X	X		X		X	X	X	X	X		X	X	X	X	X	X	X		
LCSS	5.00	2106								X																	
MCTT34	1.00	2111		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		
MCWW10	1.00	2117		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		
MCWW11	1.00	2122		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		
MCWW12	1.00	2128		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		
MCWW13	1.00	2133		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		
MCWW15	1.00	2139		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		
ZZZZZZ	1.00	2148																									
CCV 2	1.00	2154		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		
CCB 2	1.00	2200		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		
MCWW16	1.00	2205		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		
MCWW18	1.00	2211		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		
MCWW19	1.00	2216		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		
MCWW20	1.00	2222		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		
MCWW21	1.00	2227		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		
MCWW22	1.00	2233		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		
ZZZZZZ	1.00	2242																									
CRI 2	1.00	2248			X	X		X	X		X		X		X		X		X	X	X	X	X	X	X		
ICSA	1.00	2253		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		
ICSAB	1.00	2259		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		
CCV 3	1.00	2304		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		

U.S. EPA - CLP

14
ANALYSIS RUN LOG

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.:MCTT34

Instrument ID Number: TJA ET2_____ Method: P_

Start Date: 04/29/00 End Date: 04/30/00

EPA 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
CCB 3	1.00	2310		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		
MCWW23	1.00	2315		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		
[illegible]WW17	1.00	2321		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		
[illegible]WW17D	1.00	2327		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		
MCWW17S	1.00	2332			X	X	X	X	X		X		X		X		X		X		X	X		X	X		
MCWW17L	5.00	2338		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		
ZZZZZZ	1.00	2347																									
CCV 4	1.00	2353		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		
CCB 4	1.00	2358		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		
CRI 4 3	1.00	0004			X	X		X	X		X		X		X		X		X	X	X	X	X	X	X		
ICSA	1.00	0009		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		
ICSAB	1.00	0015		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		
CCV 5	1.00	0020		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		
CCB 5	1.00	0026		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		

U.S. EPA - CLP

14
ANALYSIS RUN LOG

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.:MCTT34

Instrument ID Number: TJA 61E_____ Method: P_

Start Date: 05/02/00 End Date: 05/02/00

EPA 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	0824										X															
S	1.00	0828										X															
S	1.00	0832																									
ICV	1.00	0837										X															
ICB	1.00	0840										X															
CRI	1.00	0844										X															
ICSA	1.00	0904										X															
ICSAB	1.00	0907										X															
CCV1	1.00	0911										X															
CCB	1.00	0915										X															
PBS	1.00	0919										X															
LCSS	1.00	0922										X															
MCTT34	1.00	0926										X															
MCWW10	1.00	0930										X															
MCWW11	1.00	0933										X															
MCWW12	1.00	0937										X															
MCWW13	1.00	0941										X															
MCWW15	1.00	0944										X															
MCWW16	1.00	0948										X															
ZZZZZZ	1.00	0952																									
CCV2	1.00	0955										X															
CCB	1.00	0959										X															
MCWW17	1.00	1003										X															
MCWW17L	5.00	1006										X															
MCWW17S	1.00	1010										X															
MCWW17D	1.00	1014										X															
MCWW18	1.00	1017										X															
MCWW19	1.00	1021										X															
ZZZZZZ	1.00	1027																									
CRI	1.00	1031										X															
ICSA	1.00	1034										X															
ICSAB	1.00	1038										X															

U.S. EPA - CLP

14

ANALYSIS RUN LOG

ORIGINAL (Red) 60

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.:MCTT34

Instrument ID Number: TJA 61E_____ Method: P_

Start Date: 05/02/00 End Date: 05/02/00

EPA 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	1042										X															
CCB	1.00	1045										X															
MCWW20	1.00	1049										X															
MCWW21	1.00	1053										X															
MCWW22	1.00	1057										X															
MCWW23	1.00	1101										X															
ZZZZZZ	1.00	1108																									
CRI	1.00	1112										X															
ICSA	1.00	1117										X															
ICSAB	1.00	1120										X															
CCV4	1.00	1124										X															
CCB	1.00	1128										X															

FORM XIV - IN ILM04.1

14

ANALYSIS RUN LOG

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.:MCTT34

Instrument ID Number: TJA ET2_____ Method: P_

Start Date: 05/01/00 End Date: 05/02/00

EPA 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	1959																								X	
S	1.00	2004																								X	
ICV	1.00	2010																									
ICB	1.00	2016																									
CRI	1.00	2021																								X	
ICSA	1.00	2043																								X	
ICSAB	1.00	2048																								X	
CCV	1.00	2054																								X	
CCB	1.00	2059																								X	
ZZZZZZ	1.00	2105																									
ZZZZZZ	1.00	2110																									
ZZZZZZ	1.00	2118																									
PBS	1.00	2123																								X	
LCSS	1.00	2129																								X	
ZZZZZZ	5.00	2134																									
MCTT34	1.00	2140																								X	
MCWW10	1.00	2145																								X	
MCWW11	1.00	2151																								X	
ZZZZZZ	1.00	2203																									
CCV	1.00	2209																									
CCB	1.00	2214																									
MCWW12	1.00	2220																								X	
MCWW13	1.00	2225																								X	
MCWW15	1.00	2231																								X	
MCWW16	1.00	2236																								X	
MCWW18	1.00	2242																								X	
MCWW19	1.00	2247																								X	
ZZZZZZ	1.00	2259																									
CRI	1.00	2305																								X	
ICSA	1.00	2310																								X	
ICSAB	1.00	2316																								X	
CCV	1.00	2321																								X	

U.S. EPA - CLP

14

ANALYSIS RUN LOG

ORIGINAL (Red) 58

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.:MCTT34

Instrument ID Number: TJA ET2_____ Method: P_

Start Date: 05/01/00 End Date: 05/02/00

EPA 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
CCB	1.00	2327																								X	
MCWW20	1.00	2332																								X	
[illegible]W21	1.00	2338																								X	
[illegible]W22	1.00	2343																								X	
MCWW23	1.00	2349																								X	
MCWW17	1.00	2354																								X	
MCWW17D	1.00	0000																								X	
MCWW17S	1.00	0006																								X	
MCWW17L	5.00	0011																								X	
ZZZZZZ	1.00	0023																									
CCV	1.00	0029																								X	
CCB	1.00	0034																								X	
CRI	1.00	0040																								X	
ICSA	1.00	0045																								X	
ICSAB	1.00	0051																								X	
CCV	1.00	0056																								X	
CCB	1.00	0102																								X	

U.S. EPA - CLP

14
ANALYSIS RUN LOG

61

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.:MCTT34

Instrument ID Number: LEEMAN B_____ Method: CV

Start Date: 04/26/00 End Date: 04/26/00

EPA 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	0950		–	–	–	–	–	–	–	–	–	–	–	–	–	–	X	–	–	–	–	–	–	–	–	–
S0.2	1.00	0952		–	–	–	–	–	–	–	–	–	–	–	–	–	–	X	–	–	–	–	–	–	–	–	–
S0.5	1.00	0955		–	–	–	–	–	–	–	–	–	–	–	–	–	–	X	–	–	–	–	–	–	–	–	–
S1	1.00	0958		–	–	–	–	–	–	–	–	–	–	–	–	–	–	X	–	–	–	–	–	–	–	–	–
S5	1.00	1001		–	–	–	–	–	–	–	–	–	–	–	–	–	–	X	–	–	–	–	–	–	–	–	–
S10	1.00	1003		–	–	–	–	–	–	–	–	–	–	–	–	–	–	X	–	–	–	–	–	–	–	–	–
ICV	1.00	1006		–	–	–	–	–	–	–	–	–	–	–	–	–	–	X	–	–	–	–	–	–	–	–	–
ICB	1.00	1009		–	–	–	–	–	–	–	–	–	–	–	–	–	–	X	–	–	–	–	–	–	–	–	–
CRA	1.00	1012		–	–	–	–	–	–	–	–	–	–	–	–	–	–	X	–	–	–	–	–	–	–	–	–
CCV	1.00	1014		–	–	–	–	–	–	–	–	–	–	–	–	–	–	X	–	–	–	–	–	–	–	–	–
CCB	1.00	1017		–	–	–	–	–	–	–	–	–	–	–	–	–	–	X	–	–	–	–	–	–	–	–	–
ZZZZZZ	1.00	1049		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ZZZZZZ	1.00	1052		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ZZZZZZ	1.00	1054		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ZZZZZZ	1.00	1057		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ZZZZZZ	1.00	1059		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ZZZZZZ	1.00	1102		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ZZZZZZ	1.00	1105		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ZZZZZZ	1.00	1107		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ZZZZZZ	1.00	1110		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ZZZZZZ	1.00	1113		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
CCV	1.00	1115		–	–	–	–	–	–	–	–	–	–	–	–	–	–	X	–	–	–	–	–	–	–	–	–
CCB	1.00	1118		–	–	–	–	–	–	–	–	–	–	–	–	–	–	X	–	–	–	–	–	–	–	–	–
ZZZZZZ	1.00	1121		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ZZZZZZ	1.00	1123		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ZZZZZZ	1.00	1126		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ZZZZZZ	1.00	1129		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ZZZZZZ	1.00	1131		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ZZZZZZ	1.00	1134		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ZZZZZZ	1.00	1137		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ZZZZZZ	1.00	1139		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ZZZZZZ	1.00	1142		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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14
ANALYSIS RUN LOG

ORIGINAL (Red)

62

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.:MCTT34

Instrument ID Number: LEEMAN B_____ Method: CV

Start Date: 04/26/00 End Date: 04/26/00

EPA 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
ZZZZZZ	1.00	1145																									
CCV	1.00	1147																X									
[illegible]	1.00	1150																X									
[illegible]ZZZ	1.00	1153																									
ZZZZZZ	1.00	1155																									
ZZZZZZ	1.00	1158																									
ZZZZZZ	1.00	1201																									
ZZZZZZ	1.00	1203																									
ZZZZZZ	1.00	1206																									
PBS	1.00	1209																X									
LCSS	10.00	1211																X									
MCTT34	1.00	1214																X									
MCWW10	1.00	1217																X									
CCV	1.00	1219																X									
CCB	1.00	1222																X									
MCWW11	1.00	1225																X									
MCWW12	1.00	1227																X									
MCWW13	1.00	1230																X									
MCWW15	1.00	1233																X									
[illegible]W16	1.00	1235																X									
[illegible]WW17	1.00	1238																X									
MCWW17D	1.00	1241																X									
MCWW17S	1.00	1244																X									
MCWW18	1.00	1246																X									
MCWW19	1.00	1249																X									
CCV	1.00	1252																X									
CCB	1.00	1254																X									
MCWW20	1.00	1257																X									
MCWW21	1.00	1300																X									
MCWW22	1.00	1302																X									
MCWW23	1.00	1305																X									
ZZZZZZ	1.00	1308																									

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14

ANALYSIS RUN LOG

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.:MCTT34

Instrument ID Number: LEEMAN B_____ Method: CV

Start Date: 04/26/00 End Date: 04/26/00

EPA 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
ZZZZZZ__	1.00	1311		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ZZZZZZ__	1.00	1313		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ZZZZZZ__	1.00	1316		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ZZZZZZ__	1.00	1319		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ZZZZZZ__	1.00	1322		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
CCV_____	1.00	1324		–	–	–	–	–	–	–	–	–	–	–	–	–	–	X	–	–	–	–	–	–	–	–	–
CCB_____	1.00	1327		–	–	–	–	–	–	–	–	–	–	–	–	–	–	X	–	–	–	–	–	–	–	–	–

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14
ANALYSIS RUN LOG

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.:MCTT34

Instrument ID Number: LACHAT_____ Method: CA

Start Date: 04/28/00 End Date: 04/28/00

EPA 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
S200	1.00	0931																									X
S150	1.00	0932																									X
[illegible]0	1.00	0933																									X
[illegible]	1.00	0934																									X
S10	1.00	0935																									X
S5	1.00	0936																									X
S0	1.00	0937																									X
ICV	1.00	1015																									X
ICB	1.00	1016																									X
CCV	1.00	1016																									X
CCB	1.00	1017																									X
PBS	1.00	1019																									X
LCSS	1.00	1020																									X
ZZZZZZ	1.00	1021																									
MCTT34	1.00	1021																									X
MCWW10	1.00	1022																									X
MCWW11	1.00	1023																									X
CCV	1.00	1024																									X
CCB	1.00	1024																									X
[illegible]W12	1.00	1026																									X
[illegible]W13	1.00	1027																									X
MCWW15	1.00	1028																									X
MCWW16	1.00	1029																									X
MCWW17	1.00	1029																									X
MCWW17D	1.00	1030																									X
MCWW17S	1.00	1031																									X
MCWW18	1.00	1032																									X
CCV	1.00	1032																									X
CCB	1.00	1033																									X
MCWW19	1.00	1035																									X
MCWW20	1.00	1036																									X
MCWW21	1.00	1037																									X

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14
ANALYSIS RUN LOG

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.:MCTT34

Instrument ID Number: LACHAT_____ Method: CA

Start Date: 04/28/00 End Date: 04/28/00

EPA 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
MCWW22	1.00	1037		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	X
MCWW23	1.00	1038		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	X
CCV	1.00	1039		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
CCB	1.00	1040		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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13
PREPARATION LOG

52 ORIGINAL (Red)

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.:_27981_ SAS No.: _____ SDG No.:MCTT34

Method: P_

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSS	04/25/00	1.00	200
MCTT34	04/25/00	1.00	200
MCWW10	04/25/00	1.00	200
MCWW11	04/25/00	1.02	200
MCWW12	04/25/00	1.05	200
MCWW13	04/25/00	1.04	200
MCWW15	04/25/00	1.05	200
MCWW16	04/25/00	1.05	200
MCWW17	04/25/00	1.02	200
MCWW17D	04/25/00	1.02	200
MCWW17S	04/25/00	1.02	200
MCWW18	04/25/00	1.02	200
MCWW19	04/25/00	1.01	200
MCWW20	04/25/00	1.01	200
MCWW21	04/25/00	1.03	200
MCWW22	04/25/00	1.03	200
MCWW23	04/25/00	1.00	200
PBS	04/25/00	1.00	200

13
PREPARATION LOG

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.:_27981_ SAS No.: _____ SDG No.:MCTT34

Method: CV

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSS	04/26/00	0.23	100
MCTT34	04/26/00	0.21	100
MCWW10	04/26/00	0.25	100
MCWW11	04/26/00	0.22	100
MCWW12	04/26/00	0.25	100
MCWW13	04/26/00	0.23	100
MCWW15	04/26/00	0.23	100
MCWW16	04/26/00	0.23	100
MCWW17	04/26/00	0.21	100
MCWW17D	04/26/00	0.21	100
MCWW17S	04/26/00	0.21	100
MCWW18	04/26/00	0.20	100
MCWW19	04/26/00	0.21	100
MCWW20	04/26/00	0.22	100
MCWW21	04/26/00	0.21	100
MCWW22	04/26/00	0.20	100
MCWW23	04/26/00	0.24	100
PBS	04/26/00	0.20	100

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13
PREPARATION LOG

ORIGINAL Rec 54

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.:_27981_ SAS No.: _____ SDG No.:MCTT34

Method: CA

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSS	04/26/00	1.00	50
MCTT34	04/26/00	1.05	50
MCWW10	04/26/00	1.00	50
MCWW11	04/26/00	1.01	50
MCWW12	04/26/00	1.00	50
MCWW13	04/26/00	1.01	50
MCWW15	04/26/00	1.00	50
MCWW16	04/26/00	1.02	50
MCWW17	04/26/00	1.03	50
MCWW17D	04/26/00	1.03	50
MCWW17S	04/26/00	1.03	50
MCWW18	04/26/00	1.02	50
MCWW19	04/26/00	1.02	50
MCWW20	04/26/00	1.02	50
MCWW21	04/26/00	1.02	50
MCWW22	04/26/00	1.03	50
MCWW23	04/26/00	1.01	50
PBS	04/26/00	1.00	50

10
Instrument Detection Limits (Quarterly)

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__
Lab Code: AATS__ Case No.: 27981 SAS No.: _____ SDG No.: MCTT34
ICP ID Number: TJA_ET2_____ Date: 04/07/00
Flame AA ID Number : _____
Furnace AA ID Number : _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.20		200	9.0	P
Antimony	206.83		60	3.0	P
Arsenic	189.04		10	2.0	P
Barium	493.41		200	1.0	P
Beryllium	313.04		5	1.0	P
Cadmium	226.50		5	1.0	P
Calcium	317.93		5000	7.0	P
Chromium	267.72		10	1.0	P
Cobalt			50		NR
Copper	324.75		25	1.0	P
Iron	271.44		100	7.0	P
Lead	220.35		3	1.0	P
Magnesium	279.08		5000	6.0	P
Manganese	257.61		15	1.0	P
Mercury			0.2		NR
Nickel	231.60		40	1.0	P
Potassium	766.49		5000	27.0	P
Selenium	196.03		5	3.0	P
Silver	328.07		10	1.0	P
Sodium	588.99		5000	6.0	P
Thallium	190.87		10	2.0	P
Vanadium	292.40		50	1.0	P
Zinc	213.86		20	3.0	P
Cyanide			10		NR

Comments:

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10

Instrument Detection Limits (Quarterly)

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__
Lab Code: AATS__ Case No.: 27981 SAS No.: _____ SDG No.: MCTT34
ICP ID Number: TJA_61E_____ Date: 04/12/00
Flame AA ID Number : _____
Furnace AA ID Number : _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic			10		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt	228.62		50	6.0	P
Copper			25		NR
Iron			100		NR
Lead			3		NR
Magnesium			5000		NR
Manganese			15		NR
Mercury			0.2		NR
Nickel			40		NR
Potassium			5000		NR
Selenium			5		NR
Silver			10		NR
Sodium			5000		NR
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR
Cyanide			10		NR

Comments:

10
Instrument Detection Limits (Quarterly)

Lab Name: AMERICAN_ANALYTICAL_AND_T
Lab Code: AATS__ Case No.: 27981
ICP ID Number:
Flame AA ID Number : LEEMAN_B____
Furnace AA ID Number :

Contract: 68W00086__
SAS No.: SDG No.: MCTT34
Date: 03/28/00

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic			10		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			3		NR
Magnesium			5000		NR
Manganese			15		NR
Mercury	254.00		0.2	0.1	CV
Nickel			40		NR
Potassium			5000		NR
Selenium			5		NR
Silver			10		NR
Sodium			5000		NR
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR
Cyanide			10		NR

Comments:

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ORIGINAL (Red) 42

10
Instrument Detection Limits (Quarterly)

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__
Lab Code: AATS__ Case No.: 27981 SAS No.: _____ SDG No.: MCTT34
ICP ID Number: _____ Date: 03/20/00
Flame AA ID Number : LACHAT_____
Furnace AA ID Number : _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic			10		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			3		NR
Magnesium			5000		NR
Manganese			15		NR
Mercury			0.2		NR
Nickel			40		NR
Potassium			5000		NR
Selenium			5		NR
Silver			10		NR
Sodium			5000		NR
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR
Cyanide	578.00		10	1.0	CA

Comments:

SDG MCTT35

SOUTHWEST LABORATORY OF OKLAHOMA, INC.
AMERICAN ANALYTICAL & TECHNICAL SERVICES, INC.
1700 West Albany / Broken Arrow, Oklahoma 74012 / Office (918) 251-2858 / Fax (918) 251-2599

SDG NARRATIVE

CONTRACT: 68W00086
CASE: 27981
SDG: MCTT35

DATE: May 3, 2000
SOW NO.: ILM04.1
EPISODE NO.: 42769

INORGANIC METAL FRACTION:

Eight water samples plus one LCS, duplicate and matrix spike were submitted for ICP and Hg analysis. No major problems occurred during the digestion or analysis of these samples. The cooler temperatures at receipt were 1.2, 2.3 and 1.9 degrees Celsius. The sample's analysis was completed according to the following:

SWL SOP #	Method SOP is based
SWL-IN-200	ILM04.0/04.1 (ICP analysis)
SWL-IN-202	ILM04.0/04.1 (analysis of Hg by cold vapor)

Initial and Continuing Calibration Checks: No problems.

Initial and Continuing Calibration Blanks: The following elements showed low level concentrations below the Contract Required Detection Limit in the Calibration Blanks: Al, As, Ca, Cu, Na, Zn / No action required.

Linearity near the CRDL (CRA & CRI): No problems.

Preparation Blanks: The following elements showed low level concentrations below the Contract Required Detection Limit in the Preparation Blank: Ca, Na, Zn / No action required.

Lab Control Spikes: No problems.

Matrix Spike: No problems.

Duplicate: No problems.

Serial Dilution (ICP): No problems.

Sincerely,

[redacted]

Inorganic Program Manager

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: AMERICAN_ANALYTICAL_____ Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981 SAS No.: _____ SDG No.:MCTT35

SOW No.: ILM04.01 LR 5/31/00

EPA Sample No.	Lab Sample ID
MCTT35	42769.02
MCTT36	42769.03
MCTT37	42769.04
MCTT38	42769.05
MCTT39	42769.06
MCTT39D	42769.06D
MCTT39S	42769.06S
MCTT40	42769.07
MCTT41	42769.08
MCTT43	42769.10

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 diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: Deborah J. Inman

Date: May 3, 2000 Title: Inorganic Program Manager

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3
BLANKS

Lab Name: AMERICAN_ANALYTICAL_____ Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT35

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	-17.4	B	-14.6	B	13.0	U	-13.4	B	13.00	U	P
Antimony	3.0	U	3.0	U	3.0	U	3.0	U	3.00	U	P
Arsenic	3.0	U	-3.1	B	3.0	U	3.0	U	3.00	U	P
Barium	1.0	U	1.0	U	1.0	U	1.0	U	1.00	U	P
Beryllium	1.0	U	1.0	U	1.0	U	1.0	U	1.00	U	P
Cadmium	1.0	U	1.0	U	1.0	U	1.0	U	1.00	U	P
Calcium	14.7	B	28.2	B	28.2	B	31.0	B	23.69	B	P
Chromium	2.0	U	2.0	U	2.0	U	2.0	U	2.00	U	P
Cobalt	2.0	U	2.0	U	2.0	U	2.0	U	2.00	U	P
Copper	1.0	U	1.6	B	1.4	B	1.6	B	1.00	U	P
Iron	25.0	U	25.0	U	25.0	U	25.0	U	25.00	U	P
Lead	2.0	U	2.0	U	2.0	U	2.0	U	2.00	U	P
Magnesium	198.0	U	198.0	U	198.0	U	198.0	U	198.00	U	P
Manganese	1.0	U	1.0	U	1.0	U	1.0	U	1.00	U	P
Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.10	U	CV
Nickel	2.0	U	2.0	U	2.0	U	2.0	U	2.00	U	P
Potassium	38.0	U	38.0	U	38.0	U	38.0	U	38.00	U	P
Selenium	4.0	U	4.0	U	4.0	U	4.0	U	4.00	U	P
Silver	3.0	U	3.0	U	3.0	U	3.0	U	3.00	U	P
Sodium	16.3	B	13.0	U	16.0	B	14.4	B	98.70	B	P
Thallium	6.0	U	6.0	U	6.0	U	6.0	U	6.00	U	P
Vanadium	2.0	U	2.0	U	2.0	U	2.0	U	2.00	U	P
Zinc	1.4	B	2.4	B	2.2	B	2.4	B	1.69	B	P

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3
BLANKS

Lab Name: AMERICAN_ANALYTICAL_____ Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT35

Preparation Blank Matrix (soil/water): _____

Preparation Blank Concentration Units (ug/L or 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											NR
Antimony											NR
Arsenic											NR
Barium											NR
Beryllium											NR
Cadmium											NR
Calcium											NR
Chromium											NR
Cobalt											NR
Copper											NR
Iron											NR
Lead											NR
Magnesium											NR
Manganese											N
Mercury			0.1	U							C
Nickel											NR
Potassium	27.0	U	27.0	U	27.0	U	27.0	U			P
Selenium											NR
Silver											NR
Sodium	6.0	U	-6.1	B	6.0	U	6.0	U			P
Thallium											NR
Vanadium											NR
Zinc											NR

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2B
CRDL STANDARD FOR AA AND ICP

Lab Name: AMERICAN_ANALYTICAL_____ Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT35

AA CRDL Standard Source: PLASMACHEM__

ICP CRDL Standard Source: IN.VEN._____

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
					Initial		Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum								
Antimony				120.0	116.64	97.2	117.49	97.9
Arsenic				20.0	20.55	102.7	19.28	96.4
Barium								
Beryllium				10.0	10.24	102.4	10.28	102.8
Cadmium				10.0	9.75	97.5	9.60	96.0
Calcium								
Chromium				20.0	19.68	98.4	19.26	96.3
Cobalt				100.0	96.04	96.0	96.17	96.2
Copper				50.0	48.17	96.3	47.58	95.2
Iron								
Lead				6.0	6.04	100.7	4.78	79.7
Magnesium								
Manganese				30.0	28.85	96.2	28.61	95.4
Mercury	0.2	0.21	105.0					
Nickel				80.0	77.41	96.8	77.91	97.4
Potassium								
Selenium				10.0	8.53	85.3	11.16	111.6
Silver				20.0	20.55	102.7	19.50	97.5
Sodium								
Thallium				20.0	19.55	97.7	22.07	110.3
Vanadium				100.0	98.51	98.5	97.23	97.2
Zinc				40.0	41.49	103.7	41.68	104.2

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14
ANALYSIS RUN LOG

Lab Name: AMERICAN_ANALYTICAL_____ Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.:MCTT35

Instrument ID Number: TJA ET1_____ Method: P_

Start Date: 04/26/00 End Date: 04/27/00

EPA 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	
S0	1.00	2158		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
S	1.00	2203		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ICV	1.00	2208		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ICB	1.00	2213		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CRI	1.00	2218			X	X		X	X		X	X	X		X		X		X		X	X		X	X		
ICSA	1.00	2223		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ICSAB	1.00	2228		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCV	1.00	2234		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCB 1	1.00	2239		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
PBW	1.00	2244		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
LCSW	1.00	2249		X	X		X	X		X	X	X	X	X		X	X		X						X	X	
LCSW	1.00	2254				X			X						X						X	X		X			
MCTT35	1.00	2259		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MCTT36	1.00	2304		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MCTT37	1.00	2309		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MCTT38	1.00	2314		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MCTT39	1.00	2319		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MCTT39L	6.00	2324		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ZZZZZZ	1.00	2330																									
CCV	1.00	2335		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCB 2	1.00	2340		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MCTT39S	1.00	2345		X	X	X	X	X	X		X	X	X	X	X		X		X		X	X		X	X		
MCTT39D	1.00	2350		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MCTT40	1.00	2355		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MCTT41	1.00	0000		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
MCTT43	1.00	0005		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ZZZZZZ	1.00	0012																									
CRI	1.00	0017			X	X		X	X		X	X	X		X		X		X		X	X		X	X	X	
ICSA	1.00	0022		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ICSAB	1.00	0027		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCV	1.00	0032		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCB 3	1.00	0037		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	

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14
ANALYSIS RUN LOG

Lab Name: AMERICAN_ANALYTICAL_____ Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.:MCTT35

Instrument ID Number: TJA ET2_____ Method: P_

Start Date: 05/01/00 End Date: 05/01/00

EPA 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	
S0	1.00	1959																		X			X				
S	1.00	2004																		X			X				
[illegible]V	1.00	2010																		X			X				
[illegible]	1.00	2016																		X			X				
[illegible]I	1.00	2021																									
ICSA	1.00	2043																		X			X				
ICSAB	1.00	2048																		X			X				
CCV	1.00	2054																		X			X				
CCB	1.00	2059																		X			X				
ZZZZZZ	1.00	2105																									
LCSW	2.00	2110																		X			X				
ZZZZZZ	1.00	2118																									
ZZZZZZ	1.00	2123																									
ZZZZZZ	1.00	2129																									
ZZZZZZ	1.00	2134																									
ZZZZZZ	1.00	2140																									
ZZZZZZ	1.00	2145																									
ZZZZZZ	1.00	2151																									
ZZZZZZ	1.00	2203																									
[illegible]V	1.00	2209																		X			X				
[illegible]B	1.00	2214																		X			X				
ZZZZZZ	1.00	2220																									
ZZZZZZ	1.00	2225																									
ZZZZZZ	1.00	2231																									
ZZZZZZ	1.00	2236																									
ZZZZZZ	1.00	2242																									
ZZZZZZ	1.00	2247																									
ZZZZZZ	1.00	2259																									
CRI	1.00	2305																									
ICSA	1.00	2310																		X			X				
ICSAB	1.00	2316																		X			X				
CCV	1.00	2321																		X			X				

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14
ANALYSIS RUN LOG

Lab Name: AMERICAN_ANALYTICAL_____ Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.:MCTT35

Instrument ID Number: TJA ET2_____ Method: P_

Start Date: 05/01/00 End Date: 05/01/00

EPA 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	
CCB	1.00	2327																		X			X				

FORM XIV - IN ILM04.1

ORIGINAL (Red)

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14
ANALYSIS RUN LOG

Lab Name: AMERICAN_ANALYTICAL_____ Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.:MCTT35

Instrument ID Number: LEEMAN B_____ Method: CV

Start Date: 04/26/00 End Date: 04/26/00

EPA 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	
S0	1.00	0950																X									
S0.2	1.00	0952																X									
S0.5	1.00	0955																X									
[illegible]	1.00	0958																X									
[illegible]	1.00	1001																X									
S10	1.00	1003																X									
ICV	1.00	1006																X									
ICB	1.00	1009																X									
CRA	1.00	1012																X									
CCV	1.00	1014																X									
CCB	1.00	1017																X									
ZZZZZZ	1.00	1049																									
ZZZZZZ	1.00	1052																									
ZZZZZZ	1.00	1054																									
ZZZZZZ	1.00	1057																									
ZZZZZZ	1.00	1059																									
ZZZZZZ	1.00	1102																									
ZZZZZZ	1.00	1105																									
ZZZZZZ	1.00	1107																									
ZZZZZZ	1.00	1110																									
ZZZZZZ	1.00	1113																									
CCV	1.00	1115																X									
CCB	1.00	1118																X									
ZZZZZZ	1.00	1121																									
ZZZZZZ	1.00	1123																									
ZZZZZZ	1.00	1126																									
ZZZZZZ	1.00	1129																									
ZZZZZZ	1.00	1131																									
PBW	1.00	1134																X									
MCTT35	1.00	1137																X									
MCTT36	1.00	1139																X									
MCTT37	1.00	1142																X									

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14
ANALYSIS RUN LOG

Lab Name: AMERICAN_ANALYTICAL_____ Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.:MCTT35

Instrument ID Number: LEEMAN B_____ Method: CV

Start Date: 04/26/00 End Date: 04/26/00

EPA 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	
MCTT38	1.00	1145																X									
CCV	1.00	1147																X									
CCB	1.00	1150																X									
MCTT39	1.00	1153																X									
MCTT39D	1.00	1155																X									
MCTT39S	1.00	1158																X									
MCTT40	1.00	1201																X									
MCTT41	1.00	1203																X									
MCTT43	1.00	1206																X									
ZZZZZZ	1.00	1209																									
ZZZZZZ	1.00	1211																									
ZZZZZZ	1.00	1214																									
ZZZZZZ	1.00	1217																									
CCV	1.00	1219																X									
CCB	1.00	1222																X									

ORIGINAL (Red)

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13
PREPARATION LOG

Lab Name: AMERICAN_ANALYTICAL_____ Contract: 68W00086__

Lab Code: AATS__ Case No.:_27981_ SAS No.: _____ SDG No.:MCTT35

Method: P_

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSW	04/24/00		100
LCSW	04/24/00		100
MCTT35	04/24/00		100
MCTT36	04/24/00		100
MCTT37	04/24/00		100
MCTT38	04/24/00		100
MCTT39	04/24/00		100
MCTT39D	04/24/00		100
MCTT39S	04/24/00		100
MCTT40	04/24/00		100
MCTT41	04/24/00		100
MCTT43	04/24/00		100
PBW	04/24/00		100

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13
PREPARATION LOG

Lab Name: AMERICAN_ANALYTICAL_____ Contract: 68W00086__

Lab Code: AATS__ Case No.:_27981_ SAS No.: _____ SDG No.:MCTT35

Method: CV

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
MCTT35	04/26/00		100
MCTT36	04/26/00		100
MCTT37	04/26/00		100
MCTT38	04/26/00		100
MCTT39	04/26/00		100
MCTT39D	04/26/00		100
MCTT39S	04/26/00		100
MCTT40	04/26/00		100
MCTT41	04/26/00		100
MCTT43	04/26/00		100
PBW	04/26/00		100

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10

Instrument Detection Limits (Quarterly)

Lab Name: AMERICAN_ANALYTICAL_____ Contract: 68W00086__
Lab Code: AATS__ Case No.: 27981 SAS No.: _____ SDG No.: MCTT35
ICP ID Number: TJA_ET1_____ Date: 04/17/00
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	13.0	P
Antimony	206.84		60	3.0	P
Arsenic	189.04		10	3.0	P
Barium	493.41		200	1.0	P
Beryllium	313.04		5	1.0	P
Cadmium	226.50		5	1.0	P
Calcium	317.93		5000	4.0	P
Chromium	267.72		10	2.0	P
Cobalt	228.62		50	2.0	P
Copper	324.75		25	1.0	P
Iron	271.44		100	25.0	P
Lead	220.35		3	2.0	P
Magnesium	279.08		5000	198.0	P
Manganese	257.61		15	1.0	P
Mercury			0.2		NR
Nickel	231.60		40	2.0	P
Potassium	776.49		5000	38.0	P
Selenium	196.03		5	4.0	P
Silver	328.07		10	3.0	P
Sodium	588.99		5000	13.0	P
Thallium	190.86		10	6.0	P
Vanadium	292.40		50	2.0	P
Zinc	213.86		20	1.0	P

Comments:

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10
Instrument Detection Limits (Quarterly)

Lab Name: AMERICAN_ANALYTICAL_____ Contract: 68W00086__
Lab Code: AATS__ Case No.: 27981 SAS No.: _____ SDG No.: MCTT35
ICP ID Number: TJA_ET2_____ Date: 04/07/00
Flame AA ID Number : _____
Furnace AA ID Number : _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic			10		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			3		NR
Magnesium			5000		NR
Manganese			15		NR
Mercury			0.2		NR
Nickel			40		NR
Potassium	766.49		5000	27.0	P
Selenium			5		NR
Silver			10		NR
Sodium	588.99		5000	6.0	P
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR

Comments:

U.S. EPA - CLP

10
Instrument Detection Limits (Quarterly)

Lab Name: AMERICAN_ANALYTICAL_____ Contract: 68W00086__
Lab Code: AATS__ Case No.: 27981 SAS No.: _____ SDG No.: MCTT35
ICP ID Number: _____ Date: 03/28/00
Flame AA ID Number : LEEMAN_B____
Furnace AA ID Number : _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic			10		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			3		NR
Magnesium			5000		NR
Manganese			15		NR
Mercury	254.00		0.2	0.1	CV
Nickel			40		NR
Potassium			5000		NR
Selenium			5		NR
Silver			10		NR
Sodium			5000		NR
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR

Comments:

SDG MCTT42

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

001

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981 SAS No.: _____ SDG No.:MCTT42

SOW No.: ILM04.0 1 AH 5/8/00

EPA Sample No.	Lab Sample ID
MCTT42	42769.09
MCWW00	42769.11
MCWW00D	42769.11D
MCWW00S	42769.11S
MCWW01	42769.12
MCWW02	42769.13
MCWW03	42769.14
MCWW04	42769.15
MCWW05	42769.16
MCWW06	42769.17
MCWW07	42769.18
MCWW08	42769.19
MCWW09	42769.20

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 diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: [redacted] Name: [redacted]

Date: May08, 2000 Title: Operations Manager

AMERICAN ANALYTICAL & TECHNICAL SERVICES, INC
1700 West Albany / Broken Arrow, Oklahoma 74012 / Office (918) 251-2858 / Fax (918) 251-2599

SDG NARRATIVE

CONTRACT: 68W00086 **DATE: May 08. 2000**
CASE: 27981 **SOW NO.: ILM04.1**
EPISODE NO.: 42769 **SDG: MCTT42**

INORGANIC METAL FRACTION:

Eleven water samples were submitted for ICP, CN and Hg analysis. No major problems occurred during the digestion or analysis of these samples. The cooler temperatures at time of receipt were at 2.3° Celsius. The sample's analyses were completed according to the following:

SWL SOP #	Method SOP is based
SWL-IN-200	ILM03.0/04.0 (ICP digestion & analysis)
SWL-IN-202	ILM03.0/04.0 (analysis of Hg by cold vapor)
SWL-IN-303	ILM03.0/04.0 (Cyanide)

Initial and Continuing Calibration Checks: No problems

Initial and Continuing Calibration Blanks: The following elements showed low level concentrations below the Contract Required Detection Limit in the Calibration Blank: Al, Be, Ca, Cu, Mg, K, Ag, Zn, and Na. \\No action required.

Linearity near the CRDL (CRA & CRI): No problems.

Preparation Blank: The following elements showed low level concentrations below the Contract Required Detection Limit in the Preparation Blank: Al, Ca, Na, and Zn.
\\No action required.

Lab Control Spikes: No problems.

Matrix Spike: No problems

Duplicate: No problems. (5/27/00)

Serial Dilution (ICP): The ~~soil~~ serial dilution was outside the control limits of 10% for the following element: Na.
All associated samples were flagged with an "E" on Form I's. No action required.

Sincerely,

[redacted]

Operations Manager

U.S. EPA - CLP

3
BLANKS

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT42

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	-14.2	B	-18.9	B	-19.9	B	-16.3	B	-21.75	B	P
Antimony	3.0	U	3.0	U	3.0	U	3.0	U	3.00	U	P
Arsenic	3.0	U	3.0	U	3.0	U	3.0	U	3.00	U	P
Barium	1.0	U	1.0	U	1.0	U	1.0	U	1.00	U	P
Beryllium	1.0	U	1.0	U	1.0	U	1.0	U	1.00	U	P
Cadmium	1.0	U	1.0	U	1.0	U	1.0	U	1.00	U	P
Calcium	14.9	B	540.0	B	541.2	B	537.2	B	17.16	B	P
Chromium	2.0	U	2.0	U	2.0	U	2.0	U	2.00	U	P
Cobalt	2.0	U	2.0	U	2.0	U	2.0	U	2.00	U	P
Copper	1.0	U	1.0	U	1.0	U	1.0	U	1.00	U	P
Iron	25.0	U	25.0	U	25.0	U	25.0	U	25.00	U	P
Lead	2.0	U	2.0	U	2.0	U	2.0	U	2.00	U	P
Magnesium	198.0	U	198.0	U	198.0	U	198.0	U	198.00	U	P
Manganese	1.0	U	1.0	U	1.0	U	1.0	U	1.00	U	P
Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.10	U	CV
Nickel	2.0	U	2.0	U	2.0	U	2.0	U	2.00	U	P
Potassium	38.0	U	38.0	U	38.0	U	38.0	U	38.00	U	P
Selenium	4.0	U	4.0	U	4.0	U	4.0	U	4.00	U	P
Silver	3.0	U	3.0	U	3.0	U	3.0	U	3.00	U	P
Sodium	13.0	U	13.0	U	13.0	U	13.0	U	110.79	B	P
Thallium	6.0	U	6.0	U	6.0	U	6.0	U	6.00	U	P
Vanadium	2.0	U	2.0	U	2.0	U	2.0	U	2.00	U	P
Zinc	1.4	B	1.0	U	1.0	U	1.0	U	3.63	B	P
Cyanide	1.0	U	1.0	U	1.0	U	1.0	U	1.00	U	CA

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3
BLANKS

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT42

Preparation Blank Matrix (soil/water): _____

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

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1 4/1	C	2 2	C	3	C	Prepa-ration Blank	C	M
Aluminum	16.0	U	16.0	U	30.0	B					P
Antimony			3.0	U							P
Arsenic			3.0	U							P
Barium			1.0	U							P
Beryllium	1.0	U	1.0	U	2.3	B					P
Cadmium			1.0	U							P
Calcium			363.8	B							P
Chromium			2.0	U							P
Cobalt	6.0	U	6.0	U	6.0	U					P
Copper			-2.2	B							P
Iron			25.0	U							P
Lead			2.0	U							P
Magnesium	18.0	U	20.8	B	66.7	B					P
Manganese			1.0	U							P
Mercury											M
Nickel			2.0	U							P
Potassium	408.0	U	408.0	U	558.9	B					P
Selenium			4.0	U							P
Silver	3.0	U	4.5	B	8.9	B					P
Sodium			13.0	U							P
Thallium			6.0	U							P
Vanadium	5.0	U	5.0	U	5.0	U					P
Zinc			1.0	U							P
Cyanide			1.0	U							CA

ORIGINAL (Red)

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3
BLANKS

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT42

Preparation Blank Matrix (soil/water): _____

Preparation Blank Concentration Units (ug/L or 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											NR
Antimony											NR
Arsenic											NR
Barium											NR
Beryllium											NR
Cadmium											NR
Calcium											NR
Chromium											NR
Cobalt											NR
Copper											NR
Iron											NR
Lead											NR
Magnesium											NR
Manganese											NR
Mercury											NR
Nickel											NR
Potassium											NR
Selenium											NR
Silver											NR
Sodium	60.0	U	65.3	B	106.7	B					P
Thallium											NR
Vanadium											NR
Zinc											NR
Cyanide											NR

U.S. EPA - CLP

ORIGINAL (Red)

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT42

AA CRDL Standard Source: PLASMACHEM__

ICP CRDL Standard Source: IN.VEN._____

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
					Initial		Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum								
Antimony				120.0	115.74	96.4	119.44	99.5
Arsenic				20.0	19.52	97.6	19.54	97.7
Barium								
Beryllium				10.0	10.28	102.8	10.53	105.3
Cadmium				10.0	9.76	97.6	9.94	99.4
Calcium								
Chromium				20.0	19.17	95.8	19.48	97.4
Cobalt				100.0	94.96	95.0	98.73	98.7
Copper				50.0	47.57	95.1	48.31	96.6
Iron								
Lead				6.0	5.91	98.5	5.07	84.5
Magnesium								
Manganese				30.0	28.58	95.3	29.55	98.5
Mercury	0.2	0.21	105.0					
Nickel				80.0	76.43	95.5	79.28	99.
Potassium								
Selenium				10.0	12.85	128.5	7.24	72.4
Silver				20.0	19.51	97.5	19.40	97.0
Sodium								
Thallium				20.0	19.47	97.3	17.72	88.6
Vanadium				100.0	97.14	97.1	99.13	99.1
Zinc				40.0	42.13	105.3	46.63	116.6

U.S. EPA - CLP

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT42

AA CRDL Standard Source: PLASMACHEM__

ICP CRDL Standard Source: IN.VEN._____

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				120.0			123.78	103.1
Arsenic				20.0			20.95	104.7
Barium								
Beryllium				10.0			0.00	0.0
Cadmium				10.0			10.43	104.3
Calcium								
Chromium				20.0			20.39	101.9
Cobalt				100.0			0.00	0.0
Copper				50.0			50.84	101.7
Iron								
Lead				6.0			6.59	109.8
Magnesium								
Manganese				30.0			30.68	102.3
Mercury								
Nickel				80.0			81.85	102.3
Potassium								
Selenium				10.0			11.12	111.2
Silver				20.0			0.00	0.0
Sodium								
Thallium				20.0			19.79	98.9
Vanadium				100.0			0.00	0.0
Zinc				40.0			48.66	121.6

3

U.S. EPA - CLP

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT42

AA CRDL Standard Source: _____

ICP CRDL Standard Source: IN.VEN._____

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								
Barium								
Beryllium				10.0	9.05	90.5	9.43	94.3
Cadmium								
Calcium								
Chromium								
Cobalt				100.0	91.76	91.8	89.55	89.5
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium								
Silver				20.0	18.15	90.7	17.11	85.5
Sodium								
Thallium								
Vanadium				100.0	93.61	93.6	92.91	92.9
Zinc								

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9
ICP SERIAL DILUTION

EPA SAMPLE NO.

MCWW00L

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT42

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	13.00	U	65.00	U			P
Antimony	3.00	U	15.00	U			P
Arsenic	3.00	U	15.00	U			P
Barium	20.71	B	21.77	B	5.1		P
Beryllium	1.00	U	5.00	U			P
Cadmium	1.00	U	5.00	U			P
Calcium	1934.21	B	2108.12	B	9.0		P
Chromium	5.28	B	10.00	U	100.0		P
Cobalt	6.92	B	10.00	U	100.0		P
Copper	258.48		265.87		2.9		P
Iron	25.00	U	125.00	U			P
Lead	7.49		10.00	U	100.0		P
Magnesium	963.66	B	990.00	U	100.0		P
Manganese	17.49		17.54	B	0.3		P
Mercury							NR
Nickel	13.33	B	11.50	B	13.7		P
Potassium	477.14	B	627.54	B	31.5		P
Selenium	4.00	U	20.00	U			P
Silver	3.00	U	15.00	U			P
Sodium	6856.58		7824.83	B	14.1	E	P
Thallium	6.00	U	30.00	U			P
Vanadium	2.00	U	10.00	U			P
Zinc	29.30		73.26	B	150.0		P

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT42

Initial Calibration Source: EPA-LV_____

Continuing Calibration Source: IN.VEN._____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1) CCV	Continuing Calibration Found	Continuing Calibration %R(1) CCV2	
Aluminum	782.4	796.08	101.7	5000.0	5057.58	101.2	5052.66	101.1	P
Antimony	970.0	1043.52	107.6	500.0	508.91	101.8	506.58	101.3	P
Arsenic	50.9	50.57	99.4	500.0	511.80	102.4	510.53	102.1	P
Barium	803.6	821.14	102.2	500.0	507.79	101.6	506.18	101.2	P
Beryllium	190.4	196.66	103.3	500.0	505.26	101.1	502.17	100.4	P
Cadmium	303.7	300.05	98.8	500.0	508.11	101.6	508.81	101.8	P
Calcium	20284.0	20115.56	99.2	5000.0	5073.80	101.5	5066.93	101.3	P
Chromium	188.4	196.98	104.6	500.0	508.86	101.8	509.53	101.9	P
Cobalt	208.0	217.60	104.6	500.0	510.17	102.0	507.25	101.4	P
Copper	198.8	198.48	99.8	500.0	512.21	102.4	513.58	102.7	P
Iron	794.0	793.06	99.9	5000.0	5056.71	101.1	5045.93	100.9	P
Lead	2074.0	2112.83	101.9	500.0	511.02	102.2	510.59	102.1	P
Magnesium	9835.2	10189.83	103.6	5000.0	4947.12	98.9	5054.54	101.1	P
Manganese	196.4	198.89	101.3	500.0	506.06	101.2	505.05	101.0	P
Mercury	4.1	3.88	94.6	5.0	5.01	100.2	4.72	94.4	CV
Nickel	198.8	199.06	100.1	500.0	511.26	102.3	512.33	102.5	P
Potassium	19841.0	20212.51	101.9	5000.0	5145.36	102.9	5175.01	103.5	P
Selenium	50.2	48.12	95.9	500.0	511.90	102.4	509.92	102.0	P
Silver	297.9	307.62	103.3	500.0	509.63	101.9	505.72	101.1	P
Sodium	19514.0	19987.92	102.4	5000.0	5155.56	103.1	5190.68	103.8	P
Thallium	98.9	102.12	103.3	500.0	508.09	101.6	507.87	101.6	P
Vanadium	196.8	203.40	103.4	500.0	508.86	101.8	505.80	101.2	P
Zinc	1204.8	1206.21	100.1	500.0	509.53	101.9	509.99	102.0	P
Cyanide	90.0	102.57	114.0	100.0	109.53	109.5	104.09	104.1	CA

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

ORIGINAL

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT42

Initial Calibration Source: EPA-LV_____

Continuing Calibration Source: IN.VEN._____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	%R(1) CCV3	Continuing Calibration Found	%R(1) CCV4	M
Aluminum				5000.0	5001.74	100.0			P
Antimony				500.0	502.88	100.6	483.41	96.7	P
Arsenic				500.0	507.89	101.6	509.61	101.9	P
Barium				500.0	501.94	100.4	551.91	110.4	P
Beryllium				500.0	496.85	99.4			P
Cadmium				500.0	506.62	101.3	508.05	101.6	P
Calcium				5000.0	5045.19	100.9	5084.67	101.7	P
Chromium				500.0	505.51	101.1	507.64	101.5	P
Cobalt				500.0	503.87	100.8			P
Copper				500.0	511.80	102.4	513.39	102.7	P
Iron				5000.0	5003.83	100.1	5460.70	109.2	P
Lead				500.0	506.92	101.4	475.47	95.1	P
Magnesium				5000.0	5018.41	100.4			P
Manganese				500.0	500.39	100.1	550.06	110.0	P
Mercury				5.0	4.75	95.0			CV
Nickel				500.0	508.76	101.8	509.41	101.9	P
Potassium				5000.0	5159.31	103.2			P
Selenium				500.0	505.23	101.0	476.48	95.3	P
Silver				500.0	499.12	99.8			P
Sodium				5000.0	5172.10	103.4	5225.10	104.5	P
Thallium				500.0	503.63	100.7	507.08	101.4	P
Vanadium				500.0	502.46	100.5			P
Zinc				500.0	506.18	101.2	522.07	104.4	P
Cyanide				100.0	101.62	101.6	102.68	102.7	CA

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT42

Initial Calibration Source: EPA-LV_____

Continuing Calibration Source: IN.VEN._____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	
Aluminum	782.4	800.67	102.3	20000.0	19230.23	96.2	18515.71	92.6	P
Antimony									NR
Arsenic									NR
Barium									NR
Beryllium	190.4	188.25	98.9	2000.0	1857.37	92.9	1844.69	92.2	P
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt	208.0	208.26	100.1	2000.0	1881.27	94.1	1859.59	93.0	P
Copper									NR
Iron									NR
Lead									NR
Magnesium	9835.2	10001.39	101.7	20000.0	19238.90	96.2	18490.94	92.5	P
Manganese									NR
Mercury									NR
Nickel									N
Potassium	19841.0	20609.10	103.9	20000.0	19911.62	99.6	19424.34	97.1	P
Selenium									NR
Silver	297.9	286.09	96.0	2000.0	1891.27	94.6	1851.44	92.6	P
Sodium	19514.0	20121.76	103.1	20000.0	19209.09	96.0	18378.68	91.9	P
Thallium									NR
Vanadium	196.8	192.15	97.6	2000.0	1902.12	95.1	1886.49	94.3	P
Zinc									NR
Cyanide									NR

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

12
ICP LINEAR RANGES (QUARTERLY)

043

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.: MCTT42

ICP ID Number: TJA ET1_____ Date: 04/26/00

Analyte	Integ. Time (sec.)	Concentration (ug/L)	M
Aluminum	13.00	600000.0	P
Antimony	13.00	10000.0	P
Arsenic	13.00	10000.0	P
Barium	13.00	30000.0	P
Beryllium	13.00	60000.0	P
Cadmium	13.00	10000.0	P
Calcium	13.00	550000.0	P
Chromium	13.00	60000.0	P
Cobalt	13.00	10000.0	P
Copper	13.00	60000.0	P
Iron	13.00	400000.0	P
Lead	13.00	60000.0	P
Magnesium	13.00	600000.0	P
Manganese	13.00	20000.0	P
Mercury			NR
Nickel	13.00	50000.0	P
Potassium	13.00	40000.0	P
Selenium	13.00	10000.0	P
Silver	13.00	30000.0	P
Sodium	13.00	40000.0	P
Thallium	13.00	10000.0	P
Vanadium	13.00	60000.0	P
Zinc	13.00	7500.0	P

Comments:

Method: EPA Sample Name: 42769.15 Operator:
Run Time: 04/27/00 09:00:15
Comment: MCWW04
Mode: CONC Corr. Factor: 1

103

Elem	As	Tl	Se	Pb	Sb	Al	Ba
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	266.88	4.2372	10.524	122.17	5.6720	94219.	714.33
SDev	2.56	2.7579	4.882	.86	1.7674	533.	3.35
%RSD	.95880	65.089	46.390	.70555	31.161	.56598	.46925
#1	269.46	4.6242	7.4806	122.90	7.4485	94360.	714.49
#2	264.34	1.3062	7.9366	122.39	3.9137	93629.	710.90
#3	266.86	6.7811	16.156	121.22	5.6540	94667.	717.59
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	60000.	10000.	60000.	60000.	550000.	20000.
Low	-10.000	-10.000	-5.0000	-3.0000	-60.000	-200.00	-200.00

Elem	Be	Cd	Ca	Cr	Co	Cu	Fe
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	27.490	-3.0478	6934.8	1450.7	193.52	424.13	574990.
SDev	.168	.2088	15.6	4.8	2.37	1.53	2872.
%RSD	.61293	6.8519	.22456	.33159	1.2226	.36079	.49955
#1	27.548	-3.2393	6941.1	1451.0	192.88	423.92	575890.
#2	27.300	-2.8251	6917.0	1445.8	191.53	422.71	571780.
#3	27.622	-3.0789	6946.2	1455.4	196.13	425.75	577310.
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.	10000.	550000.	60000.	60000.	60000.	600000.
Low	-5.0000	-5.0000	-5000.0	-10.000	-10.000	-25.000	-100.00

Elem	Mg	Mn	Ni	K	Ag	Na	330232
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	13315.	1617.7	97.744	7802.1	L-11.072	39371.	36204.
SDev	164.	7.1	.241	39.9	1.851	130.	65.
%RSD	1.2295	.43995	.24706	.51104	16.714	.32955	.18077
#1	13458.	1618.9	97.789	7788.3	L-13.195	39329.	36189.
#2	13136.	1610.0	97.960	7771.0	-9.7948	39267.	36148.
#3	13351.	1624.1	97.484	7847.0	L-10.228	39516.	36276.
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass	NOCHECK
High	600000.	20000.	60000.	50000.	30000.	50000.	
Low	-5000.0	-15.000	-40.000	-5000.0	-10.000	-5000.0	

Elem	V	Zn	220Pb1	220Pb2	196Se1	196Se2	206Sb1
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	1480.3	456.07	122.71	121.89	-.52564	16.028	12.470
SDev	5.0	.94	3.66	1.31	7.32626	3.661	2.899
%RSD	.34064	.20708	2.9813	1.0773	1393.8	22.845	23.250
#1	1481.0	456.13	122.80	122.94	-4.9680	13.683	14.614
#2	1475.0	455.10	126.32	120.41	-4.5392	14.153	9.1714
#3	1485.0	456.99	119.00	122.31	7.9304	20.247	13.625
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK

ORIGINAL (Red)

U.S. EPA - CLP

14
ANALYSIS RUN LOG

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.:MCTT42

Instrument ID Number: TJA ET1_____ Method: P_

Start Date: 04/27/00 End Date: 04/27/00

EPA 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	0630		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
S	1.00	0636		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
[illegible]	1.00	0643		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
[illegible]	1.00	0650		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
CRI 1	1.00	0656			X	X		X	X		X	X	X		X		X	_	X		X	X		X	X	X	_
ICSA	1.00	0703		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
ICSAB	1.00	0710		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
CCV	1.00	0716		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
CCB 1	1.00	0723		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
PBW	1.00	0730		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
LCSW	1.00	0737		X	X		X	X		X	X	X	X	X		X	X	_	X						X	X	_
LCSW	1.00	0743				X			X						X			_		_	X	X	_	X			_
MCWW00	1.00	0750		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
MCWW00S	1.00	0757		X	X	X	X	X	X		X	X	X	X	X		X	_	X		X	X		X	X	X	_
MCWW00D	1.00	0803		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
MCWW00L	5.00	0810		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
MCWW01	1.00	0817		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
MCWW02	1.00	0823		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
ZZZZZZ	1.00	0833																									_
[illegible]	1.00	0840		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
[illegible] 2	1.00	0846		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
MCWW03	1.00	0853		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
MCWW04	1.00	0900		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
MCWW05	1.00	0906		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
MCWW06	1.00	0913		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
MCWW07	1.00	0920		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
MCWW08	1.00	0927		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
ZZZZZZ	1.00	0936																									_
CRI 2	1.00	0943			X	X		X	X		X	X	X		X		X	_	X		X	X		X	X	X	_
ICSA	1.00	0950		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
ICSAB	1.00	0956		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
CCV 3	1.00	1003		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_

ORIGINAL (Red)

U.S. EPA - CLP

14
ANALYSIS RUN LOG

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.:MCTT42

Instrument ID Number: TJA ET1_____ Method: P_

Start Date: 04/27/00 End Date: 04/27/00

EPA 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
CCB 3	1.00	1010		X	X	X	X	X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	X	X	_
MCWW09	1.00	1016		_	X	X	X	_	X	X	X	_	X	X	X	_	X	_	X	_	X	_	X	X	_	X	_
MCTT42	1.00	1023		_	X	X	X	_	X	X	X	_	X	X	X	_	X	_	X	_	X	_	X	X	_	X	_
ZZZZZZ	1.00	1033		_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
CRI 3	1.00	1039		_	X	X	_	_	X	_	X	_	X	_	X	_	X	_	X	_	X	_	_	X	_	X	_
ICSA	1.00	1046		_	X	X	X	_	X	X	X	_	X	X	X	_	X	_	X	_	X	_	X	X	_	X	_
ICSAB	1.00	1053		_	X	X	X	_	X	X	X	_	X	X	X	_	X	_	X	_	X	_	X	X	_	X	_
CCV	1.00	1059		_	X	X	X	_	X	X	X	_	X	X	X	_	X	_	X	_	X	_	X	X	_	X	_
CCB 4	1.00	1106		_	X	X	X	_	X	X	X	_	X	X	X	_	X	_	X	_	X	_	X	X	_	X	_

U.S. EPA - CLP

14
ANALYSIS RUN LOG

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.:MCTT42

Instrument ID Number: TJA 61E_____ Method: P_

Start Date: 05/02/00 End Date: 05/02/00

EPA 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	1410		X				X				X				X				X		X	X		X		
S	1.00	1415						X				X										X			X		
[illegible]	1.00	1420		X												X				X			X				
[illegible]	1.00	1427		X				X				X				X				X		X	X		X		
ICB	1.00	1431		X				X				X				X				X		X	X		X		
CRI	1.00	1436						X				X										X			X		
ICSA	1.00	1441		X				X				X				X				X		X	X		X		
ICSAB	1.00	1446		X				X				X				X				X		X	X		X		
CCV	1.00	1450		X				X				X				X				X		X	X		X		
CCB 1	1.00	1455		X				X				X				X				X		X	X		X		
LCSW	2.00	1501																		X			X				
MCWW09	1.00	1506		X				X				X				X				X		X			X		
MCTT42	1.00	1510		X				X				X				X				X		X			X		
ZZZZZZ	1.00	1520																									
CRI	1.00	1524						X				X										X			X		
ICSA	1.00	1529		X				X				X				X				X		X	X		X		
ICSAB	1.00	1534		X				X				X				X				X		X	X		X		
CCV	1.00	1539		X				X				X				X				X		X	X		X		
CCB 2	1.00	1544		X				X				X				X				X		X	X		X		

ORIGINAL (Red)

U.S. EPA - CLP

14
ANALYSIS RUN LOG

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.:MCTT42

Instrument ID Number: LEEMAN B_____ Method: CV

Start Date: 04/26/00 End Date: 04/26/00

EPA 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	0950																X									
S0.2	1.00	0952																X									
S0.5	1.00	0955																X									
S1	1.00	0958																X									
S5	1.00	1001																X									
S10	1.00	1003																X									
ICV	1.00	1006																X									
ICB	1.00	1009																X									
CRA	1.00	1012																X									
CCV	1.00	1014																X									
CCB	1.00	1017																X									
ZZZZZZ	1.00	1049																									
PBW	1.00	1052																X									
MCTT42	1.00	1054																X									
MCWW00	1.00	1057																X									
MCWW00D	1.00	1059																X									
MCWW00S	1.00	1102																X									
MCWW01	1.00	1105																X									
MCWW02	1.00	1107																X									
MCWW03	1.00	1110																X									
MCWW04	1.00	1113																X									
CCV	1.00	1115																X									
CCB	1.00	1118																X									
MCWW05	1.00	1121																X									
MCWW06	1.00	1123																X									
MCWW07	1.00	1126																X									
MCWW08	1.00	1129																X									
MCWW09	1.00	1131																X									
ZZZZZZ	1.00	1134																									
ZZZZZZ	1.00	1137																									
ZZZZZZ	1.00	1139																									
ZZZZZZ	1.00	1142																									

U.S. EPA - CLP

14

ANALYSIS RUN LOG

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.:MCTT42

Instrument ID Number: LEEMAN B_____ Method: CV

Start Date: 04/26/00 End Date: 04/26/00

EPA 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
ZZZZZZ	1.00	1145																									
CCV	1.00	1147																X									
[illegible]	1.00	1150																X									

FORM XIV - IN ILM04.1

ORIGINAL (RED)

U.S. EPA - CLP

14

ANALYSIS RUN LOG

'052

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.: 27981_ SAS No.: _____ SDG No.:MCTT42

Instrument ID Number: LACHAT_____ Method: CA

Start Date: 04/28/00 End Date: 04/28/00

EPA 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
S200	1.00	1045		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	X
S150	1.00	1046		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	X
S100	1.00	1047		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	X
S50	1.00	1048		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	X
S10	1.00	1049		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	X
S5	1.00	1050		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	X
S0	1.00	1051		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	X
ICV	1.00	1054		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	X
ICB	1.00	1054		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	X
CCV	1.00	1055		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	X
CCB	1.00	1056		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	X
PBW	1.00	1058		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	X
ZZZZZZ	1.00	1059		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
MCTT42	1.00	1100		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	X
MCWW00	1.00	1100		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	X
MCWW00D	1.00	1101		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	X
MCWW00S	1.00	1102		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	X
CCV	1.00	1102		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	X
CCB	1.00	1103		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	X
MCWW01	1.00	1105		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	X
MCWW02	1.00	1106		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	X
MCWW03	1.00	1107		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	X
MCWW04	1.00	1107		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	X
MCWW05	1.00	1108		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	X
MCWW06	1.00	1109		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	X
MCWW07	1.00	1110		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	X
MCWW08	1.00	1110		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	X
CCV	1.00	1111		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	X
CCB	1.00	1112		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	X
MCWW09	1.00	1114		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	X
CCV	1.00	1115		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	X
CCB	1.00	1115		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	X

U.S. EPA - CLP

044B ORIGINAL (Red)

13
PREPARATION LOG

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.:_27981_ SAS No.: _____ SDG No.:MCTT42

Method: P_

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSW	04/24/00		100
LCSW	04/24/00		100
MCTT42	04/24/00		100
MCWW00	04/24/00		100
MCWW00D	04/24/00		100
MCWW00S	04/24/00		100
MCWW01	04/24/00		100
MCWW02	04/24/00		100
MCWW03	04/24/00		100
MCWW04	04/24/00		100
MCWW05	04/24/00		100
MCWW06	04/24/00		100
MCWW07	04/24/00		100
MCWW08	04/24/00		100
MCWW09	04/24/00		100
PBW	04/24/00		100

13
PREPARATION LOG

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.:_27981_ SAS No.: _____ SDG No.:MCTT42

Method: CV

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
MCTT42	04/26/00		100
MCWW00	04/26/00		100
MCWW00D	04/26/00		100
MCWW00S	04/26/00		100
MCWW01	04/26/00		100
MCWW02	04/26/00		100
MCWW03	04/26/00		100
MCWW04	04/26/00		100
MCWW05	04/26/00		100
MCWW06	04/26/00		100
MCWW07	04/26/00		100
MCWW08	04/26/00		100
MCWW09	04/26/00		100
PBW	04/26/00		100

U.S. EPA - CLP

13
PREPARATION LOG

046 ORIGINAL (Red)

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__

Lab Code: AATS__ Case No.:_27981_ SAS No.: _____ SDG No.:MCTT42

Method: CA

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
MCTT42	04/26/00		50
MCWW00	04/26/00		50
MCWW00D	04/26/00		50
MCWW00S	04/26/00		50
MCWW01	04/26/00		50
MCWW02	04/26/00		50
MCWW03	04/26/00		50
MCWW04	04/26/00		50
MCWW05	04/26/00		50
MCWW06	04/26/00		50
MCWW07	04/26/00		50
MCWW08	04/26/00		50
MCWW09	04/26/00		50
PBW	04/26/00		50

ORIGINAL (Red)

U.S. EPA - CLP

10
Instrument Detection Limits (Quarterly)

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__
Lab Code: AATS__ Case No.: 27981 SAS No.: _____ SDG No.: MCTT42
ICP ID Number: TJA_ET1_____ Date: 04/17/00
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	13.0	P
Antimony	206.84		60	3.0	P
Arsenic	189.04		10	3.0	P
Barium	493.41		200	1.0	P
Beryllium	313.04		5	1.0	P
Cadmium	226.50		5	1.0	P
Calcium	317.93		5000	4.0	P
Chromium	267.72		10	2.0	P
Cobalt	228.62		50	2.0	P
Copper	324.75		25	1.0	P
Iron	271.44		100	25.0	P
Lead	220.35		3	2.0	P
Magnesium	279.08		5000	198.0	P
Manganese	257.61		15	1.0	P
Mercury			0.2		NR
Nickel	231.60		40	2.0	P
Potassium	776.49		5000	38.0	P
Selenium	196.03		5	4.0	P
Silver	328.07		10	3.0	P
Sodium	588.99		5000	13.0	P
Thallium	190.86		10	6.0	P
Vanadium	292.40		50	2.0	P
Zinc	213.86		20	1.0	P
Cyanide			10		NR

Comments:

U.S. EPA - CLP

10
Instrument Detection Limits (Quarterly)

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__
Lab Code: AATS__ Case No.: 27981 SAS No.: _____ SDG No.: MCTT42
ICP ID Number: TJA_61E_____ Date: 04/12/00
Flame AA ID Number : _____
Furnace AA ID Number : _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.21		200	16.0	P
Antimony			60		NR
Arsenic			10		NR
Barium			200		NR
Beryllium	313.04		5	1.0	P
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt	228.62		50	6.0	P
Copper			25		NR
Iron			100		NR
Lead			3		NR
Magnesium	279.08		5000	18.0	P
Manganese			15		NR
Mercury			0.2		NR
Nickel			40		NR
Potassium	766.49		5000	408.0	P
Selenium			5		NR
Silver	328.07		10	3.0	P
Sodium	588.99		5000	60.0	P
Thallium			10		NR
Vanadium	292.40		50	5.0	P
Zinc			20		NR
Cyanide			10		NR

Comments:

ORIGINAL (Red)

U.S. EPA - CLP

10
Instrument Detection Limits (Quarterly)

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__
Lab Code: AATS__ Case No.: 27981 SAS No.: _____ SDG No.: MCTT42
ICP ID Number: _____ Date: 03/28/00
Flame AA ID Number : LEEMAN_B____
Furnace AA ID Number : _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic			10		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			3		NR
Magnesium			5000		NR
Manganese			15		NR
Mercury	254.00		0.2	0.1	CV
Nickel			40		NR
Potassium			5000		NR
Selenium			5		NR
Silver			10		NR
Sodium			5000		NR
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR
Cyanide			10		NR

Comments:

ORIGINAL (Red)

10
Instrument Detection Limits (Quarterly)

Lab Name: AMERICAN_ANALYTICAL_AND_T Contract: 68W00086__
Lab Code: AATS__ Case No.: 27981 SAS No.: _____ SDG No.: MCTT42
ICP ID Number: _____ Date: 03/20/00
Flame AA ID Number : LACHAT_____
Furnace AA ID Number : _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			60		NR
Arsenic			10		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			5000		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			3		NR
Magnesium			5000		NR
Manganese			15		NR
Mercury			0.2		NR
Nickel			40		NR
Potassium			5000		NR
Selenium			5		NR
Silver			10		NR
Sodium			5000		NR
Thallium			10		NR
Vanadium			50		NR
Zinc			20		NR
Cyanide	578.00		10	1.0	CA

Comments: