

May 20, 2013

Report to:
Michael Layne
MTAA LTD
2692 Hwy 50 Suite 221
Grand Junction, CO 81503

Bill to:
Michael Layne
MTAA LTD
2692 Hwy 50 Suite 221
Grand Junction, CO 81503

RECEIVED

MAY 21 2013

GRAND JUNCTION FIELD OFFICE
DIVISION OF
RECLAMATION MINING & SAFETY

Project ID:
ACZ Project ID: L97538

M-2012-028

Michael Layne:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 25, 2012. This project has been assigned to ACZ's project number, L97538. Please reference this number in all future inquiries.

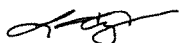
All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L97538. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after June 19, 2013. If the samples are determined to be hazardous, additional charges apply for disposal (typically \$11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.



Tony Antalek has reviewed and
approved this report.



Washington Consulting Group

November 28, 2012

Project ID:

ACZ Project ID: L97538

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 2 soil samples from Washington Consulting Group on October 25, 2012. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L97538. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses except those qualified with an ACZ 'H?' flag were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

1. Client samples were received at a temperature outside of the acceptable range (See Sample Receipt Form).
2. The Sulfur Sulfate determinations were qualified with the ACZ 'R1' flag due to a failing Relative Percent Difference (RPD). Reported values were generated from samples with passing RPDs (Sulfur Total minus HCl Residue).
3. The Total Arsenic analyses were qualified with the ACZ 'N1' flag as the target analyte was detected in a quality control element. However, as the analyte concentration of the client sample was > 10 X the contamination, the data was accepted

Washington Consulting Group

Project ID:

Sample ID: AP 1

ACZ Sample ID: **L97538-01**

Date Sampled: 10/08/12 07:00

Date Received: 10/25/12

Sample Matrix: Soil

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, total (3050)	M6010B ICP	5550		*	mg/Kg	20	80	11/27/12 3:42	aeb
Antimony, total (3050)	M6020 ICP-MS	15	B	*	mg/Kg	4	20	11/26/12 20:16	msh
Arsenic, total (3050)	M6020 ICP-MS	388		*	mg/Kg	2	10	11/26/12 20:16	msh
Barium, total (3050)	M6010B ICP	442		*	mg/Kg	2	8	11/27/12 3:42	aeb
Beryllium, total (3050)	M6010B ICP		U	*	mg/Kg	5	30	11/27/12 3:42	aeb
Cadmium, total (3050)	M6010B ICP	61		*	mg/Kg	3	8	11/27/12 13:25	jjc
Calcium, total (3050)	M6010B ICP	20600		*	mg/Kg	100	500	11/27/12 3:42	aeb
Chromium, total (3050)	M6010B ICP		U	*	mg/Kg	5	30	11/27/12 3:42	aeb
Cobalt, total (3050)	M6010B ICP	6	B	*	mg/Kg	5	30	11/27/12 3:42	aeb
Copper, total (3050)	M6010B ICP	901		*	mg/Kg	5	30	11/27/12 3:42	aeb
Iron, total (3050)	M6010B ICP	145000		*	mg/Kg	10	30	11/27/12 13:25	jjc
Lead, total (3050)	M6020 ICP-MS	4070		*	mg/Kg	1	5	11/26/12 20:16	msh
Magnesium, total (3050)	M6010B ICP	5400			mg/Kg	100	500	11/27/12 3:42	aeb
Manganese, total (3050)	M6010B ICP	4900		*	mg/Kg	3	10	11/27/12 3:42	aeb
Mercury by Direct Combustion AA	M7473	880		*	ng/g	1.62	8.1	11/05/12 16:56	mfm
Nickel, total (3050)	M6010B ICP	13	B	*	mg/Kg	5	30	11/27/12 3:42	aeb
Potassium, total (3050)	M6010B ICP	2400			mg/Kg	200	800	11/27/12 3:42	aeb
Selenium, total (3050)	M6010B ICP	30	B	*	mg/Kg	30	200	11/27/12 3:42	aeb
Silver, total (3050)	M6010B ICP	62			mg/Kg	5	10	11/27/12 3:42	aeb
Sodium, total (3050)	M6010B ICP		U	*	mg/Kg	200	800	11/27/12 3:42	aeb
Thallium, total (3050)	M6020 ICP-MS		U		mg/Kg	1	5	11/26/12 20:16	msh
Vanadium, total (3050)	M6010B ICP	10	B	*	mg/Kg	3	10	11/27/12 3:42	aeb
Zinc, total (3050)	M6010B ICP	9270			mg/Kg	5	30	11/27/12 3:42	aeb

Washington Consulting Group

Project ID:

Sample ID: AP 1

ACZ Sample ID: **L97538-01**

Date Sampled: 10/08/12 07:00

Date Received: 10/25/12

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4	369			t CaCO3/Kt	1	5	11/28/12 13:40	calc
Acid Neutralization Potential (calc)	M600/2-78-054 1.3	32			t CaCO3/Kt	1	5	11/28/12 13:40	calc
Acid-Base Potential (calc on Sulfur total)	M600/2-78-054 1.3	-337			t CaCO3/Kt	1	5	11/28/12 13:40	calc
Neutralization Potential as CaCO3	M600/2-78-054 3.2.3	3.2		*	%	0.1	0.5	11/14/12 14:40	cra
Solids, Percent	CLPSOW390, PART F, D-98	85.5		*	%	0.1	0.5	11/13/12 3:00	nrc
Sulfur Forms	M600/2-78-054 3.2.4-MOD								
Sulfur HCl Residue		9.32		*	%	0.01	0.1	11/14/12 0:00	cra
Sulfur HNO3 Residue		0.20		*	%	0.01	0.1	11/14/12 0:00	cra
Sulfur Organic Residual		0.20		*	%	0.01	0.1	11/14/12 0:00	cra
Sulfur Pyritic Sulfide		9.12		*	%	0.01	0.1	11/14/12 0:00	cra
Sulfur Sulfate		2.50		*	%	0.01	0.1	11/14/12 0:00	cra
Sulfur Total		11.80		*	%	0.01	0.1	11/14/12 0:00	cra
Total Sulfur minus Sulfate		9.32		*	%	0.01	0.1	11/14/12 0:00	cra

Soil Preparation

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972							11/13/12 16:00	cra
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3							11/14/12 9:00	cra
Digestion - Hot Plate	M3050B ICP-MS							11/20/12 11:15	mss2
Digestion - Hot Plate	M3050B ICP							11/20/12 11:15	mss2
Water Extraction	ASA No. 9 10-2.3.2							11/21/12 13:45	nrc

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Nitrate as N, soluble (Water)	Calculation: NO3NO2 minus NO2	0.2	BH		mg/Kg	0.1	0.5	11/28/12 13:40	calc
Nitrate/Nitrite as N, soluble (Water)	M353.2 - Automated Cadmium Reduction	0.2	BH	*	mg/Kg	0.1	0.5	11/27/12 22:54	pjb
Nitrite as N, soluble (Water)	M353.2 - Automated Cadmium Reduction		UH	*	mg/Kg	0.05	0.3	11/27/12 22:54	pjb
Sulfate, soluble (Water)	D516-02 - Turbidimetric	16700		*	mg/Kg	500	3000	11/26/12 20:56	tcd

Washington Consulting Group

Project ID:

Sample ID: AP 2

ACZ Sample ID: **L97538-02**

Date Sampled: 10/08/12 07:00

Date Received: 10/25/12

Sample Matrix: Soil

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, total (3050)	M6010B ICP	6530		*	mg/Kg	20	80	11/27/12 3:45	aeb
Antimony, total (3050)	M6020 ICP-MS	17	B	*	mg/Kg	4	20	11/26/12 20:26	msh
Arsenic, total (3050)	M6020 ICP-MS	417		*	mg/Kg	2	10	11/26/12 20:26	msh
Barium, total (3050)	M6010B ICP	548		*	mg/Kg	2	8	11/27/12 3:45	aeb
Beryllium, total (3050)	M6010B ICP		U	*	mg/Kg	5	30	11/27/12 3:45	aeb
Cadmium, total (3050)	M6010B ICP	62		*	mg/Kg	3	8	11/27/12 13:28	jjc
Calcium, total (3050)	M6010B ICP	19900		*	mg/Kg	100	500	11/27/12 3:45	aeb
Chromium, total (3050)	M6010B ICP		U	*	mg/Kg	5	30	11/27/12 3:45	aeb
Cobalt, total (3050)	M6010B ICP		U	*	mg/Kg	5	30	11/27/12 3:45	aeb
Copper, total (3050)	M6010B ICP	954		*	mg/Kg	5	30	11/27/12 3:45	aeb
Iron, total (3050)	M6010B ICP	145000		*	mg/Kg	10	30	11/27/12 13:28	jjc
Lead, total (3050)	M6020 ICP-MS	4360		*	mg/Kg	1	5	11/26/12 20:26	msh
Magnesium, total (3050)	M6010B ICP	5900			mg/Kg	100	500	11/27/12 3:45	aeb
Manganese, total (3050)	M6010B ICP	4840		*	mg/Kg	3	10	11/27/12 3:45	aeb
Mercury by Direct Combustion AA	M7473	890		*	ng/g	1.55	7.75	11/05/12 17:02	mfm
Nickel, total (3050)	M6010B ICP	13	B	*	mg/Kg	5	30	11/27/12 3:45	aeb
Potassium, total (3050)	M6010B ICP	2600			mg/Kg	200	800	11/27/12 3:45	aeb
Selenium, total (3050)	M6010B ICP		U	*	mg/Kg	30	200	11/27/12 3:45	aeb
Silver, total (3050)	M6010B ICP	71			mg/Kg	5	10	11/27/12 3:45	aeb
Sodium, total (3050)	M6010B ICP		U	*	mg/Kg	200	800	11/27/12 3:45	aeb
Thallium, total (3050)	M6020 ICP-MS		U		mg/Kg	1	5	11/26/12 20:26	msh
Vanadium, total (3050)	M6010B ICP	10		*	mg/Kg	3	10	11/27/12 3:45	aeb
Zinc, total (3050)	M6010B ICP	10400			mg/Kg	5	30	11/27/12 3:45	aeb

Washington Consulting Group

Project ID:

Sample ID: AP 2

ACZ Sample ID: **L97538-02**

Date Sampled: 10/08/12 07:00

Date Received: 10/25/12

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4	363			t CaCO3/Kt	1	5	11/28/12 13:40	calc
Acid Neutralization Potential (calc)	M600/2-78-054 1.3	34			t CaCO3/Kt	1	5	11/28/12 13:40	calc
Acid-Base Potential (calc on Sulfur total)	M600/2-78-054 1.3	-329			t CaCO3/Kt	1	5	11/28/12 13:40	calc
Neutralization Potential as CaCO3	M600/2-78-054 3.2.3	3.4		*	%	0.1	0.5	11/14/12 15:23	cra
Solids, Percent	CLPSOW390, PART F, D-98	87.1		*	%	0.1	0.5	11/13/12 6:00	nrc
Sulfur Forms	M600/2-78-054 3.2.4-MOD								
Sulfur HCl Residue		9.53		*	%	0.01	0.1	11/14/12 0:00	cra
Sulfur HNO3 Residue		0.21		*	%	0.01	0.1	11/14/12 0:00	cra
Sulfur Organic Residual		0.21		*	%	0.01	0.1	11/14/12 0:00	cra
Sulfur Pyritic Sulfide		9.32		*	%	0.01	0.1	11/14/12 0:00	cra
Sulfur Sulfate		2.06		*	%	0.01	0.1	11/14/12 0:00	cra
Sulfur Total		11.60		*	%	0.01	0.1	11/14/12 0:00	cra
Total Sulfur minus Sulfate		9.53		*	%	0.01	0.1	11/14/12 0:00	cra

Soil Preparation

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972							11/13/12 16:03	cra
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3							11/14/12 9:30	cra
Digestion - Hot Plate	M3050B ICP							11/20/12 12:00	mss2
Digestion - Hot Plate	M3050B ICP-MS							11/20/12 12:00	mss2
Water Extraction	ASA No. 9 10-2.3.2							11/21/12 14:30	nrc

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Nitrate as N, soluble (Water)	Calculation: NO3NO2 minus NO2		UH		mg/Kg	0.1	0.5	11/28/12 13:40	calc
Nitrate/Nitrite as N, soluble (Water)	M353.2 - Automated Cadmium Reduction		UH	*	mg/Kg	0.1	0.5	11/27/12 22:56	pjb
Nitrite as N, soluble (Water)	M353.2 - Automated Cadmium Reduction		UH	*	mg/Kg	0.05	0.3	11/27/12 22:56	pjb
Sulfate, soluble (Water)	D516-02 - Turbidimetric	17300		*	mg/Kg	500	3000	11/26/12 20:58	tcd

Report Header Explanations

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit, typically 5 times the MDL.
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
- (3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
- (4) EPA SW-846. Test Methods for Evaluating Solid Waste.
- (5) Standard Methods for the Examination of Water and Wastewater.

Comments

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
- (3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
- (4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
- (5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extquallist.pdf>

Washington Consulting Group

ACZ Project ID: L97538

Aluminum, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG334667													
WG334667ICV	ICV	11/27/12 3:17	II120914-3	2		1.971	mg/L	98.6	90	110			
WG334667ICB	ICB	11/27/12 3:20				U	mg/L		-0.09	0.09			
WG334439PBS	PBS	11/27/12 3:33				U	mg/Kg		-9	9			
WG334439LCSS1	LCSS	11/27/12 3:36	PCN41127	8360		9284	mg/Kg		3380	13300			
WG334439LCSSD1	LCSSD	11/27/12 3:39	PCN41127	8360		9258	mg/Kg		3380	13300	0.3	20	
L97651-01MS	MS	11/27/12 3:51	II121029-3	104	7820	9985	mg/Kg	2081.7	75	125			M3
L97651-01MSD	MSD	11/27/12 3:54	II121029-3	104	7820	14362.4	mg/Kg	6290.8	75	125	35.96	20	M3 RD

Antimony, total (3050)

M6020 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG334659													
WG334659ICV	ICV	11/26/12 19:42	MS121001-5	.02		.02073	mg/L	103.7	90	110			
WG334659ICB	ICB	11/26/12 19:45				U	mg/L		-0.0012	0.0012			
WG334439PBS	PBS	11/26/12 19:59				U	mg/Kg		-0.6	0.6			
WG334439LCSS1	LCSS	11/26/12 20:03	PCN41127	92.9		89.4	mg/Kg		7.62	178			
WG334439LCSSD1	LCSSD	11/26/12 20:06	PCN41127	92.9		89.7	mg/Kg		7.62	178	0.3	20	
L97538-01MS	MS	11/26/12 20:19	MS100XSOI	5.2	15	19.4	mg/Kg	84.6	75	125			MD
L97538-01MSD	MSD	11/26/12 20:23	MS100XSOI	5.2	15	19.9	mg/Kg	94.2	75	125	2.54	20	MD

Arsenic, total (3050)

M6020 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG334659													
WG334659ICV	ICV	11/26/12 19:42	MS121001-5	.05		.05277	mg/L	105.5	90	110			
WG334659ICB	ICB	11/26/12 19:45				U	mg/L		-0.0006	0.0006			
WG334439PBS	PBS	11/26/12 19:59				.21	mg/Kg		-0.3	0.3			
WG334439LCSS1	LCSS	11/26/12 20:03	PCN41127	94.5		102.4	mg/Kg		77.7	111			
WG334439LCSSD1	LCSSD	11/26/12 20:06	PCN41127	94.5		103.1	mg/Kg		77.7	111	0.7	20	
L97538-01MS	MS	11/26/12 20:19	MS100XSOI	26	388	456.9	mg/Kg	265	75	125			M3
L97538-01MSD	MSD	11/26/12 20:23	MS100XSOI	26	388	458.4	mg/Kg	270.8	75	125	0.33	20	M3

Barium, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG334667													
WG334667ICV	ICV	11/27/12 3:17	II120914-3	2		1.902	mg/L	95.1	90	110			
WG334667ICB	ICB	11/27/12 3:20				U	mg/L		-0.009	0.009			
WG334439PBS	PBS	11/27/12 3:33				U	mg/Kg		-0.9	0.9			
WG334439LCSS1	LCSS	11/27/12 3:36	PCN41127	166		171.2	mg/Kg		138	193			
WG334439LCSSD1	LCSSD	11/27/12 3:39	PCN41127	166		168.1	mg/Kg		138	193	1.8	20	
L97651-01MS	MS	11/27/12 3:51	II121029-3	52	82.7	113.98	mg/Kg	60.2	75	125			MA
L97651-01MSD	MSD	11/27/12 3:54	II121029-3	52	82.7	123.66	mg/Kg	78.8	75	125	8.15	20	

Washington Consulting Group

ACZ Project ID: **L97538**

Beryllium, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG334667													
WG334667ICV	ICV	11/27/12 3:17	II120914-3	2		1.898	mg/L	94.9	90	110			
WG334667ICB	ICB	11/27/12 3:20				U	mg/L		-0.03	0.03			
WG334439PBS	PBS	11/27/12 3:33				U	mg/Kg		-3	3			
WG334439LCSS1	LCSS	11/27/12 3:36	PCN41127	52.6		55.8	mg/Kg		44.1	61.1			
WG334439LCSSD1	LCSSD	11/27/12 3:39	PCN41127	52.6		55.4	mg/Kg		44.1	61.1	0.7	20	
L97651-01MS	MS	11/27/12 3:51	II121029-3	52	U	53.9	mg/Kg	103.7	75	125			
L97651-01MSD	MSD	11/27/12 3:54	II121029-3	52	U	53.9	mg/Kg	103.7	75	125	0	20	

Cadmium, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG334718													
WG334718ICV	ICV	11/27/12 13:00	II120914-3	2		1.955	mg/L	97.8	90	110			
WG334718ICB	ICB	11/27/12 13:03				U	mg/L		-0.015	0.015			
WG334439PBS	PBS	11/27/12 13:15				U	mg/Kg		-1.5	1.5			
WG334439LCSS1	LCSS	11/27/12 13:19	PCN41127	59.9		64.94	mg/Kg		50.3	69.4			
WG334439LCSSD1	LCSSD	11/27/12 13:22	PCN41127	59.9		62.94	mg/Kg		50.3	69.4	3.1	20	
L97651-01MS	MS	11/27/12 13:34	II121029-3	52	U	52.86	mg/Kg	101.7	75	125			
L97651-01MSD	MSD	11/27/12 13:37	II121029-3	52	U	53.44	mg/Kg	102.8	75	125	1.09	20	

Calcium, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG334667													
WG334667ICV	ICV	11/27/12 3:17	II120914-3	100		98	mg/L	98	90	110			
WG334667ICB	ICB	11/27/12 3:20				U	mg/L		-0.6	0.6			
WG334439PBS	PBS	11/27/12 3:33				U	mg/Kg		-60	60			
WG334439LCSS1	LCSS	11/27/12 3:36	PCN41127	6160		6640	mg/Kg		5070	7240			
WG334439LCSSD1	LCSSD	11/27/12 3:39	PCN41127	6160		6408	mg/Kg		5070	7240	3.6	20	
L97651-01MS	MS	11/27/12 3:51	II121029-3	7069.45616	7790	14966	mg/Kg	101.5	75	125			
L97651-01MSD	MSD	11/27/12 3:54	II121029-3	7069.45616	7790	12761	mg/Kg	70.3	75	125	15.91	20	MA

Chromium, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG334667													
WG334667ICV	ICV	11/27/12 3:17	II120914-3	2		1.89	mg/L	94.5	90	110			
WG334667ICB	ICB	11/27/12 3:20				U	mg/L		-0.03	0.03			
WG334439PBS	PBS	11/27/12 3:33				U	mg/Kg		-3	3			
WG334439LCSS1	LCSS	11/27/12 3:36	PCN41127	69.3		72.1	mg/Kg		56.4	82.2			
WG334439LCSSD1	LCSSD	11/27/12 3:39	PCN41127	69.3		71.1	mg/Kg		56.4	82.2	1.4	20	
L97651-01MS	MS	11/27/12 3:51	II121029-3	52	3	54.8	mg/Kg	101.5	75	125			
L97651-01MSD	MSD	11/27/12 3:54	II121029-3	52	3	57	mg/Kg	105.8	75	125	3.94	20	

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ACZ Project ID: **L97538**

Cobalt, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG334667													
WG334667ICV	ICV	11/27/12 3:17	II120914-3	2		1.954	mg/L	97.7	90	110			
WG334667ICB	ICB	11/27/12 3:20				U	mg/L		-0.03	0.03			
WG334439PBS	PBS	11/27/12 3:33				U	mg/Kg		-3	3			
WG334439LCSS1	LCSS	11/27/12 3:36	PCN41127	101		106.4	mg/Kg		84.6	117			
WG334439LCSSD1	LCSSD	11/27/12 3:39	PCN41127	101		104.7	mg/Kg		84.6	117	1.6	20	
L97651-01MS	MS	11/27/12 3:51	II121029-3	52	U	51.5	mg/Kg	99	75	125			
L97651-01MSD	MSD	11/27/12 3:54	II121029-3	52	U	51.6	mg/Kg	99.2	75	125	0.19	20	

Copper, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG334667													
WG334667ICV	ICV	11/27/12 3:17	II120914-3	2		1.89	mg/L	94.5	90	110			
WG334667ICB	ICB	11/27/12 3:20				U	mg/L		-0.03	0.03			
WG334439PBS	PBS	11/27/12 3:33				U	mg/Kg		-3	3			
WG334439LCSS1	LCSS	11/27/12 3:36	PCN41127	78		81.3	mg/Kg		65.3	90.6			
WG334439LCSSD1	LCSSD	11/27/12 3:39	PCN41127	78		79.3	mg/Kg		65.3	90.6	2.5	20	
L97651-01MS	MS	11/27/12 3:51	II121029-3	52	1260	1866.8	mg/Kg	1166.9	75	125			M3
L97651-01MSD	MSD	11/27/12 3:54	II121029-3	52	1260	16879.2	mg/Kg	30036.9	75	125	#####	20	M3 RD

Iron, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG334718													
WG334718ICV	ICV	11/27/12 13:00	II120914-3	2		1.984	mg/L	99.2	90	110			
WG334718ICB	ICB	11/27/12 13:03				U	mg/L		-0.06	0.06			
WG334439PBS	PBS	11/27/12 13:15				U	mg/Kg		-6	6			
WG334439LCSS1	LCSS	11/27/12 13:19	PCN41127	12800		12950	mg/Kg		6480	19100			
WG334439LCSSD1	LCSSD	11/27/12 13:22	PCN41127	12800		13060	mg/Kg		6480	19100	0.8	20	
L97651-01MS	MS	11/27/12 13:34	II121029-3	104	482	681.9	mg/Kg	196.1	75	125			M3
L97651-01MSD	MSD	11/27/12 13:37	II121029-3	104	482	784.1	mg/Kg	294.3	75	125	13.94	20	M3

Lead, total (3050)

M6020 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG334659													
WG334659ICV	ICV	11/26/12 19:42	MS121001-5	.05		.05285	mg/L	105.7	90	110			
WG334659ICB	ICB	11/26/12 19:45				U	mg/L		-0.0003	0.0003			
WG334439PBS	PBS	11/26/12 19:59				U	mg/Kg		-0.15	0.15			
WG334439LCSS1	LCSS	11/26/12 20:03	PCN41127	91.7		96.95	mg/Kg		75.6	108			
WG334439LCSSD1	LCSSD	11/26/12 20:06	PCN41127	91.7		97.65	mg/Kg		75.6	108	0.7	20	
L97538-01MS	MS	11/26/12 20:19	MS100XSOI	26	4070	4478.2	mg/Kg	1570	75	125			M3
L97538-01MSD	MSD	11/26/12 20:23	MS100XSOI	26	4070	4358.6	mg/Kg	1110	75	125	2.71	20	M3

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ACZ Project ID: **L97538**

Magnesium, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG334667													
WG334667ICV	ICV	11/27/12 3:17	II120914-3	100		100.7	mg/L	100.7	90	110			
WG334667ICB	ICB	11/27/12 3:20				U	mg/L		-0.6	0.6			
WG334439PBS	PBS	11/27/12 3:33				U	mg/Kg		-60	60			
WG334439LCSS1	LCSS	11/27/12 3:36	PCN41127	3030		3242	mg/Kg		2310	3750			
WG334439LCSSD1	LCSSD	11/27/12 3:39	PCN41127	3030		3203	mg/Kg		2310	3750	1.2	20	
L97651-01MS	MS	11/27/12 3:51	II121029-3	5200.13624	70	5637	mg/Kg	107.1	75	125			
L97651-01MSD	MSD	11/27/12 3:54	II121029-3	5200.13624	70	5688	mg/Kg	108	75	125	0.9	20	

Manganese, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG334667													
WG334667ICV	ICV	11/27/12 3:17	II120914-3	2		1.895	mg/L	94.8	90	110			
WG334667ICB	ICB	11/27/12 3:20				U	mg/L		-0.015	0.015			
WG334439PBS	PBS	11/27/12 3:33				U	mg/Kg		-1.5	1.5			
WG334439LCSS1	LCSS	11/27/12 3:36	PCN41127	283		294.7	mg/Kg		231	334			
WG334439LCSSD1	LCSSD	11/27/12 3:39	PCN41127	283		291	mg/Kg		231	334	1.3	20	
L97651-01MS	MS	11/27/12 3:51	II121029-3	52	4.4	55.4	mg/Kg	98.1	75	125			
L97651-01MSD	MSD	11/27/12 3:54	II121029-3	52	4.4	57.32	mg/Kg	101.8	75	125	3.41	20	

Mercury by Direct Combustion AA

M7473

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG333491													
WG333491ICV1	ICV	11/05/12 9:59	HG121023-3	100		105	ng/g	105	90	110			
WG333491ICV2	ICV	11/05/12 10:08	HG121023-4	100		104	ng/g	104	90	110			
WG333491ICV3	ICV	11/05/12 10:19	HG121023-2	1000		995	ng/g	99.5	90	110			
WG333491ICV4	ICV	11/05/12 10:27	HG121023-2	1000		987	ng/g	98.7	90	110			
WG333491PBS	PBS	11/05/12 16:02				2.1	ng/g		-2	2			B7
WG333491LCSS	LCSS	11/05/12 16:08	PCN38817	91		103	ng/g		80	120			
WG333491LCSSD	LCSSD	11/05/12 16:15	PCN38817	91		103	ng/g		80	120	0	20	
L97462-01MS	MS	11/05/12 16:29	PCN38817				ng/g	109.7	80	120			
L97462-02DUP	DUP	11/05/12 16:42			32.5	29.8	ng/g				8.7	20	

Neutralization Potential as CaCO₃

M600/2-78-054 3.2.3

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG334116													
WG334116PBS	PBS	11/14/12 13:56				U	%		-0.1	0.1			
WG334116LCSS	LCSS	11/14/12 14:18	PCN33453	100		103	%	103	80	120			
L97538-01DUP	DUP	11/14/12 15:01			3.2	3.15	%				1.6	20	

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ACZ Project ID: **L97538**

Nickel, total (3050)				M6010B ICP									
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG334667													
WG334667ICV	ICV	11/27/12 3:17	II120914-3	2.002		2.024	mg/L	101.1	90	110			
WG334667ICB	ICB	11/27/12 3:20				U	mg/L		-0.03	0.03			
WG334439PBS	PBS	11/27/12 3:33				U	mg/Kg		-3	3			
WG334439LCSS1	LCSS	11/27/12 3:36	PCN41127	56.6		64.9	mg/Kg		46.5	66.7			
WG334439LCSSD1	LCSSD	11/27/12 3:39	PCN41127	56.6		62.8	mg/Kg		46.5	66.7	3.3	20	
L97651-01MS	MS	11/27/12 3:51	II121029-3	52	5	65	mg/Kg	115.4	75	125			
L97651-01MSD	MSD	11/27/12 3:54	II121029-3	52	5	59.8	mg/Kg	105.4	75	125	8.33	20	
Nitrate/Nitrite as N, soluble (Water) M353.2 - Automated Cadmium Reduction													
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG334769													
WG334769ICV	ICV	11/27/12 18:53	WI121009-1	2.416		2.384	mg/L	98.7	90	110			
WG334769ICB	ICB	11/27/12 18:54				U	mg/L		-0.06	0.06			
WG334776													
WG334776LFB	LFB	11/27/12 22:52	WI120814-9	2		2.062	mg/Kg	103.1	90	110			
WG334548PBS	PBS	11/27/12 22:53				.15	mg/Kg		-0.3	0.3			
L97538-01AS	AS	11/27/12 22:55	WI120814-9	10	.2	10.61	mg/Kg	104.1	90	110			
L97703-01DUP	DUP	11/27/12 23:03			323	320.3	mg/Kg				0.8	20	
Nitrite as N, soluble (Water) M353.2 - Automated Cadmium Reduction													
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG334769													
WG334769ICV	ICV	11/27/12 18:53	WI121009-1	.609		.628	mg/L	103.1	90	110			
WG334769ICB	ICB	11/27/12 18:54				U	mg/L		-0.03	0.03			
WG334776													
WG334776LFB	LFB	11/27/12 22:52	WI120814-9	1		1.046	mg/Kg	104.6	90	110			
WG334548PBS	PBS	11/27/12 22:53				U	mg/Kg		-0.15	0.15			
L97538-01AS	AS	11/27/12 22:55	WI120814-9	5	U	5.137	mg/Kg	102.7	90	110			
L97703-01DUP	DUP	11/27/12 22:59			2.9	3.04	mg/Kg				4.7	20	RA
Potassium, total (3050)				M6010B ICP									
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG334667													
WG334667ICV	ICV	11/27/12 3:17	II120914-3	20		19.78	mg/L	98.9	90	110			
WG334667ICB	ICB	11/27/12 3:20				U	mg/L		-0.9	0.9			
WG334439PBS	PBS	11/27/12 3:33				U	mg/Kg		-90	90			
WG334439LCSS1	LCSS	11/27/12 3:36	PCN41127	3820		4120	mg/Kg		2810	4830			
WG334439LCSSD1	LCSSD	11/27/12 3:39	PCN41127	3820		4066	mg/Kg		2810	4830	1.3	20	
L97651-01MS	MS	11/27/12 3:51	II121029-3	10390.50272	940	11731	mg/Kg	103.9	75	125			
L97651-01MSD	MSD	11/27/12 3:54	II121029-3	10390.50272	940	11710	mg/Kg	103.7	75	125	0.18	20	

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ACZ Project ID: **L97538**

Selenium, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG334667													
WG334667ICV	ICV	11/27/12 3:17	II120914-3	4		3.921	mg/L	98	90	110			
WG334667ICB	ICB	11/27/12 3:20				U	mg/L		-0.18	0.18			
WG334439PBS	PBS	11/27/12 3:33				U	mg/Kg		-18	18			
WG334439LCSS1	LCSS	11/27/12 3:36	PCN41127	159		174.6	mg/Kg		126	192			
WG334439LCSSD1	LCSSD	11/27/12 3:39	PCN41127	159		173.6	mg/Kg		126	192	0.6	20	
L97651-01MS	MS	11/27/12 3:51	II121029-3	104	10	119.9	mg/Kg	105.7	75	125			
L97651-01MSD	MSD	11/27/12 3:54	II121029-3	104	10	113.4	mg/Kg	99.4	75	125	5.57	20	

Silver, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG334667													
WG334667ICV	ICV	11/27/12 3:17	II120914-3	.998		.957	mg/L	95.9	90	110			
WG334667ICB	ICB	11/27/12 3:20				U	mg/L		-0.03	0.03			
WG334439PBS	PBS	11/27/12 3:33				U	mg/Kg		-3	3			
WG334439LCSS1	LCSS	11/27/12 3:36	PCN41127	33.9		35.9	mg/Kg		22.5	45.4			
WG334439LCSSD1	LCSSD	11/27/12 3:39	PCN41127	33.9		35.7	mg/Kg		22.5	45.4	0.6	20	
L97651-01MS	MS	11/27/12 3:51	II121029-3	52	U	42.7	mg/Kg	82.1	75	125			
L97651-01MSD	MSD	11/27/12 3:54	II121029-3	52	U	43.8	mg/Kg	84.2	75	125	2.54	20	

Sodium, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG334667													
WG334667ICV	ICV	11/27/12 3:17	II120914-3	100		99.68	mg/L	99.7	90	110			
WG334667ICB	ICB	11/27/12 3:20				U	mg/L		-0.9	0.9			
WG334439PBS	PBS	11/27/12 3:33				U	mg/Kg		-90	90			
WG334439LCSS1	LCSS	11/27/12 3:36	PCN41127	652		676	mg/Kg		480	823			
WG334439LCSSD1	LCSSD	11/27/12 3:39	PCN41127	652		668	mg/Kg		480	823	1.2	20	
L97651-01MS	MS	11/27/12 3:51	II121029-3	10404.3264	790	11710	mg/Kg	105	75	125			
L97651-01MSD	MSD	11/27/12 3:54	II121029-3	10404.3264	790	11700	mg/Kg	104.9	75	125	0.09	20	

Solids, Percent

CLPSOW390, PART F, D-98

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG333970													
WG333970PBS	PBS	11/12/12 15:00				U	%		99.9	100.1			
L97538-02DUP	DUP	11/13/12 9:00			87.1	85.67	%				1.7	20	

Sulfate, soluble (Water)

D516-02 - Turbidimetric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG334679													
WG334679ICB	ICB	11/26/12 17:23				U	mg/L		-3	3			
WG334679ICV	ICV	11/26/12 17:24	WI121126-2	20		19.6	mg/L	98	90	110			
WG334679LFB	LFB	11/26/12 20:38	WI121025-3	10		9.3	mg/L	93	90	110			
WG334548PBS	PBS	11/26/12 20:38				U	mg/L		-15	15			
L97703-01DUP	DUP	11/26/12 20:51			U	U	mg/L				0	20	RA
L97538-01AS	AS	11/26/12 20:56	SO4TURB10	50	16700	16720	mg/L	40	90	110			M3

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ACZ Project ID: **L97538**

Sulfur Organic Residual

M600/2-78-054 3.2.4-MOD

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG334076													
L97538-01DUP	DUP	11/14/12 9:00			.2	.2	%				0	20	

Sulfur Pyritic Sulfide

M600/2-78-054 3.2.4-MOD

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG334076													
L97538-01DUP	DUP	11/14/12 9:00			9.12	9.22	%				1.1	20	

Sulfur Sulfate

M600/2-78-054 3.2.4-MOD

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG334076													
L97538-01DUP	DUP	11/14/12 9:00			2.5	1.73	%				36.4	20	R1

Sulfur Total

M600/2-78-054 3.2.4-MOD

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG334076													
WG334076LCSS	LCSS	11/14/12 9:00	PCN41313	4.07		4.53	%	111.3					
WG334076PBS	PBS	11/14/12 9:00				U	%		-0.03	0.03			
L97538-01DUP	DUP	11/14/12 9:00			11.8	11.15	%				5.7	20	

Thallium, total (3050)

M6020 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG334659													
WG334659ICV	ICV	11/26/12 19:42	MS121001-5	.05		.05421	mg/L	108.4	90	110			
WG334659ICB	ICB	11/26/12 19:45				U	mg/L		-0.0003	0.0003			
WG334439PBS	PBS	11/26/12 19:59				U	mg/Kg		-0.15	0.15			
WG334439LCSS1	LCSS	11/26/12 20:03	PCN41127	119		131.95	mg/Kg			96.5	142		
WG334439LCSSD1	LCSSD	11/26/12 20:06	PCN41127	119		134.75	mg/Kg			96.5	142	2.1	20
L97538-01MS	MS	11/26/12 20:19	MS100XSOI	26	U	28	mg/Kg	107.7	75	125			
L97538-01MSD	MSD	11/26/12 20:23	MS100XSOI	26	U	28	mg/Kg	107.7	75	125	0	20	

Total Sulfur Minus Sulfate

M600/2-78-054 3.2.4-MOD

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG334076													
L97538-01DUP	DUP	11/14/12 9:00			9.32	9.42	%				1.1	20	

Vanadium, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG334667													
WG334667ICV	ICV	11/27/12 3:17	II120914-3	2		1.898	mg/L	94.9	90	110			
WG334667ICB	ICB	11/27/12 3:20				U	mg/L		-0.015	0.015			
WG334439PBS	PBS	11/27/12 3:33				U	mg/Kg		-1.5	1.5			
WG334439LCSS1	LCSS	11/27/12 3:36	PCN41127	56.3		57.62	mg/Kg			41	71.6		
WG334439LCSSD1	LCSSD	11/27/12 3:39	PCN41127	56.3		56.86	mg/Kg			41	71.6	1.3	20
L97651-01MS	MS	11/27/12 3:51	II121029-3	52	.9	53.94	mg/Kg	102	75	125			
L97651-01MSD	MSD	11/27/12 3:54	II121029-3	52	.9	54.16	mg/Kg	102.4	75	125	0.41	20	

Washington Consulting Group

ACZ Project ID: **L97538**

Zinc, total (3050)

M6010B ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG334667													
WG334667ICV	ICV	11/27/12 3:17	II120914-3	2		1.888	mg/L	94.4	90	110			
WG334667ICB	ICB	11/27/12 3:20				U	mg/L		-0.03	0.03			
WG334439PBS	PBS	11/27/12 3:33				U	mg/Kg		-3	3			
WG334439LCSS1	LCSS	11/27/12 3:36	PCN41127	137		145.2	mg/Kg		111	163			
WG334439LCSSD1	LCSSD	11/27/12 3:39	PCN41127	137		144.1	mg/Kg		111	163	0.8	20	
L97651-01MS	MS	11/27/12 3:51	II121029-3	52	17	64.3	mg/Kg	91	75	125			
L97651-01MSD	MSD	11/27/12 3:54	II121029-3	52	17	69.4	mg/Kg	100.8	75	125	7.63	20	

Washington Consulting Group

ACZ Project ID: **L97538**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L97538-01	WG334667	Aluminum, total (3050)	M6010B ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6010B ICP	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
	WG334659	Antimony, total (3050)	M6020 ICP-MS	MD	The spike recovery (and spike duplicate RPD, if applicable) was not used for data validation because the concentration of the sample and/or the spike was less than the reporting limit.
		Arsenic, total (3050)	M6020 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG334667	Barium, total (3050)	M6010B ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
		Beryllium, total (3050)	M6010B ICP	DD	Sample required dilution due to matrix color or odor.
	WG334718	Cadmium, total (3050)	M6010B ICP	ZG	The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG334667	Calcium, total (3050)	M6010B ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
		Chromium, total (3050)	M6010B ICP	DD	Sample required dilution due to matrix color or odor.
		Cobalt, total (3050)	M6010B ICP	DD	Sample required dilution due to matrix color or odor.
		Copper, total (3050)	M6010B ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6010B ICP	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
	WG334718	Iron, total (3050)	M6010B ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG334659	Lead, total (3050)	M6020 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG334667	Manganese, total (3050)	M6010B ICP	ZG	The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG333491	Mercury by Direct Combustion AA	M7473	B7	Target analyte detected in prep / method blank at or above acceptance limit. Sample value is > 10X the concentration in the method blank.
				Q6	Sample was received above recommended temperature.
	WG334667	Nickel, total (3050)	M6010B ICP	DD	Sample required dilution due to matrix color or odor.
			M6010B ICP	ZG	The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
				DD	Sample required dilution due to matrix color or odor.
		Selenium, total (3050)	M6010B ICP	DD	Sample required dilution due to matrix color or odor.
		Sodium, total (3050)	M6010B ICP	DD	Sample required dilution due to matrix color or odor.
			M6010B ICP	ZG	The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
		Vanadium, total (3050)	M6010B ICP	DD	Sample required dilution due to matrix color or odor.
			M6010B ICP	ZG	The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG334076	Sulfur Sulfate	M600/2-78-054 3.2.4-MOD	R1	RPD exceeded the method or laboratory acceptance limit. See Case Narrative.

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Washington Consulting Group

ACZ Project ID: **L97538**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
	WG334776	Nitrate/Nitrite as N, soluble (Water)	M353.2 - Automated Cadmium Reduction	H1	Sample prep or analysis performed past holding time. See case narrative.
		Nitrite as N, soluble (Water)	M353.2 - Automated Cadmium Reduction	H1	Sample prep or analysis performed past holding time. See case narrative.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG334679	Sulfate, soluble (Water)	D516-02 - Turbidimetric	HD	Analysis is outside the intended scope of the method, which does not provide hold time information for soil extracts. No hold time is observed for collection to extraction. The referenced method hold time is observed for extraction-to-analysis.
			D516-02 - Turbidimetric	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			D516-02 - Turbidimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Washington Consulting Group

ACZ Project ID: **L97538**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L97538-02	WG334667	Aluminum, total (3050)	M6010B ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6010B ICP	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
	WG334659	Antimony, total (3050)	M6020 ICP-MS	MD	The spike recovery (and spike duplicate RPD, if applicable) was not used for data validation because the concentration of the sample and/or the spike was less than the reporting limit.
		Arsenic, total (3050)	M6020 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG334667	Barium, total (3050)	M6010B ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
		Beryllium, total (3050)	M6010B ICP	DD	Sample required dilution due to matrix color or odor.
	WG334718	Cadmium, total (3050)	M6010B ICP	ZG	The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG334667	Calcium, total (3050)	M6010B ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
		Chromium, total (3050)	M6010B ICP	DD	Sample required dilution due to matrix color or odor.
		Cobalt, total (3050)	M6010B ICP	DD	Sample required dilution due to matrix color or odor.
		Copper, total (3050)	M6010B ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			M6010B ICP	RD	For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample.
	WG334718	Iron, total (3050)	M6010B ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG334659	Lead, total (3050)	M6020 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG334667	Manganese, total (3050)	M6010B ICP	ZG	The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	WG333491	Mercury by Direct Combustion AA	M7473	B7	Target analyte detected in prep / method blank at or above acceptance limit. Sample value is > 10X the concentration in the method blank.
				M7473	Q6
	WG334667	Nickel, total (3050)	M6010B ICP	DD	Sample required dilution due to matrix color or odor.
				M6010B ICP	ZG
		Selenium, total (3050)	M6010B ICP	DD	Sample required dilution due to matrix color or odor.
		Sodium, total (3050)	M6010B ICP	DD	Sample required dilution due to matrix color or odor.
			M6010B ICP	ZG	The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.
	Vanadium, total (3050)	M6010B ICP	ZG	The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.	
	WG334076	Sulfur Sulfate	M600/2-78-054 3.2.4-MOD	R1	RPD exceeded the method or laboratory acceptance limit. See Case Narrative.
WG334776	Nitrate/Nitrite as N, soluble (Water)	M353.2 - Automated Cadmium	H1	Sample prep or analysis performed past holding time. See	

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Washington Consulting Group

ACZ Project ID: **L97538**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
			Reduction		case narrative.
		Nitrite as N, soluble (Water)	M353.2 - Automated Cadmium Reduction	H1	Sample prep or analysis performed past holding time. See case narrative.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
WG334679		Sulfate, soluble (Water)	D516-02 - Turbidimetric	HD	Analysis is outside the intended scope of the method, which does not provide hold time information for soil extracts. No hold time is observed for collection to extraction. The referenced method hold time is observed for extraction-to-analysis.
			D516-02 - Turbidimetric	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			D516-02 - Turbidimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Washington Consulting GroupACZ Project ID: **L97538****Soil Analysis**

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Neutralization Potential as CaCO ₃	M600/2-78-054 3.2.3
Solids, Percent	CLPSOW390, PART F, D-98
Sulfur HCl Residue	M600/2-78-054 3.2.4-MOD
Sulfur HNO ₃ Residue	M600/2-78-054 3.2.4-MOD
Sulfur Organic Residual	M600/2-78-054 3.2.4-MOD
Sulfur Pyritic Sulfide	M600/2-78-054 3.2.4-MOD
Sulfur Sulfate	M600/2-78-054 3.2.4-MOD
Sulfur Total	M600/2-78-054 3.2.4-MOD
Total Sulfur minus Sulfate	M600/2-78-054 3.2.4-MOD

Wet Chemistry

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Nitrate/Nitrite as N, soluble (Water)	M353.2 - Automated Cadmium Reduction
Nitrite as N, soluble (Water)	M353.2 - Automated Cadmium Reduction
Sulfate, soluble (Water)	D516-02 - Turbidimetric

**Sample
Receipt**

Washington Consulting Group

ACZ Project ID: L97538

Date Received: 10/25/2012 09:08

Received By: ksj

Date Printed: 10/26/2012

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?	☐	☐	☒
2) Is the Chain of Custody or other directive shipping papers present?	☒	☐	☐
3) Does this project require special handling procedures such as CLP protocol?	☐	☐	☒
4) Are any samples NRC licensable material?	☐	☐	☒
5) If samples are received past hold time, proceed with requested short hold time analyses?	☒	☐	☐
6) Is the Chain of Custody complete and accurate? The 'sampled by' field on the Chain of Custody was not completed.	☐	☒	☐
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?	☐	☒	☐

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	☒	☐	☐
9) Are all labels on containers and are they intact and legible?	☒	☐	☐
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	☒	☐	☐
11) For preserved bottle types, was the pH checked and within limits?	☐	☐	☒
12) Is there sufficient sample volume to perform all requested work?	☒	☐	☐
13) Is the custody seal intact on all containers?	☐	☐	☒
14) Are samples that require zero headspace acceptable?	☐	☐	☒
15) Are all sample containers appropriate for analytical requirements?	☒	☐	☐
16) Is there an Hg-1631 trip blank present?	☐	☐	☒
17) Is there a VOA trip blank present?	☐	☐	☒
18) Were all samples received within hold time?	☒	☐	☐

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA16460	8.7	14	N/A

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ

Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5483

Name: EDDU DUNCAN
Company: MUSA LTD
E-mail: epduncan57@yahoo.com

Address: 258 5th St
CUTTON Co. 81526
Telephone: 702 875-5760

Name: MICHAEL LAYNE
Company: MTA LTD

E-mail: NTAALTD@ROCKETMAIL.COM
Telephone: 9706284195

Name: WILLIAM ROBERTS
Company: _____
E-mail: _____

Address:

Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?

YES
NO

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO"

As indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

Are samples for SDWA Compliance Monitoring?

Yes

No

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name:	Sampler's site information	State	Zip code	Time Zone
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Quote #: AFACUS DALLARS

Project/PO #:

Reporting state for compliance testing: COLORADO

Check box if samples include NRC licensed material?

of Containers

AP 1	10-8-12 7:00am
AP 2	10-8-12 7:00am

Matrix	SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

Richardson

6/10/5-12 8:50

FRMAD050.02.11.11

White - Return with sample. Yellow - Retain for your records.