ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

September 24, 2018

Report to:
Kent Applegate
Rio Algom Mining Company
P.O. Box 218
Grants, NM 87020

cc: Michaella Gorospe, Clark Short

Bill to:
Accounts Payable
Rio Algom Mining Company
P.O. Box 218
Grants, NM 87020

Project ID: 4506946843
ACZ Project ID: L46201

Kent Applegate:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on August 11, 2018. This project has been assigned to ACZ's project number, L46201. 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 L46201. 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 October 24, 2018. 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.

S. Habermehl

Scott Habermehl has reviewed
and approved this report.

Rio Algom Mining Company
Project ID: 4506946843
Sample ID: 33-01 TRA

ACZ Sample ID: ***L46201-01***
Date Sampled: *08/09/18 15:25*
Date Received: *08/11/18*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	2	160		*	mg/L	0.2	1	08/27/18 11:48	dcm
Iron, dissolved	M200.7 ICP	2		U		mg/L	0.04	0.1	08/27/18 11:48	dcm
Magnesium, dissolved	M200.7 ICP	2	51.7			mg/L	0.4	2	08/27/18 11:48	dcm
Molybdenum, dissolved	M200.8 ICP-MS	2	0.003	B		mg/L	0.001	0.005	08/28/18 19:19	bsu
Nickel, dissolved	M200.8 ICP-MS	2	0.001	B		mg/L	0.001	0.006	08/28/18 19:19	bsu
Potassium, dissolved	M200.7 ICP	2	5.2			mg/L	0.4	2	08/27/18 11:48	dcm
Selenium, dissolved	SM 3114 B, AA-Hydride	1		U		mg/L	0.001	0.005	08/16/18 14:00	che
Sodium, dissolved	M200.7 ICP	2	535			mg/L	0.4	2	08/27/18 11:48	dcm
Uranium, dissolved	M200.8 ICP-MS	2	0.0006	B		mg/L	0.0002	0.001	08/28/18 19:19	bsu

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	81.3			mg/L	2	20	08/17/18 0:00	emk
Carbonate as CaCO3		1		U		mg/L	2	20	08/17/18 0:00	emk
Hydroxide as CaCO3		1		U		mg/L	2	20	08/17/18 0:00	emk
Total Alkalinity		1	81.3			mg/L	2	20	08/17/18 0:00	emk
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-10.0			%			09/24/18 0:00	calc
Sum of Anions			44.0			meq/L			09/24/18 0:00	calc
Sum of Cations			36			meq/L			09/24/18 0:00	calc
Chloride	SM4500Cl-E	1	34.5		*	mg/L	0.5	2	08/23/18 12:21	wtc
Conductivity @25C	SM2510B	1	2690			umhos/cm	1	10	08/17/18 23:12	emk
Cyanide, Total	D7511-09	1		U		mg/L	0.003	0.01	08/13/18 12:19	rbt
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U	*	mg/L	0.02	0.1	08/22/18 23:52	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	2690			mg/L	10	20	08/13/18 11:35	oah
Sulfate	D516-02/-07 - Turbidimetric	50	1970		*	mg/L	50	250	08/29/18 14:16	mss2
TDS (calculated)	Calculation		2810			mg/L			09/24/18 0:00	calc
TDS (ratio - measured/calculated)	Calculation		0.96						09/24/18 0:00	calc

Rio Algom Mining Company
Project ID: 4506946843
Sample ID: 31-67 TRB

ACZ Sample ID: ***L46201-02***
Date Sampled: *08/10/18 10:24*
Date Received: *08/11/18*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	5	664		*	mg/L	0.5	3	08/27/18 11:52	dcm
Iron, dissolved	M200.7 ICP	5	2.2			mg/L	0.1	0.3	08/27/18 11:52	dcm
Magnesium, dissolved	M200.7 ICP	5	620			mg/L	1	5	08/27/18 11:52	dcm
Molybdenum, dissolved	M200.8 ICP-MS	5		U		mg/L	0.003	0.01	08/28/18 19:25	bsu
Nickel, dissolved	M200.8 ICP-MS	5	0.007	B		mg/L	0.003	0.02	08/28/18 19:25	bsu
Potassium, dissolved	M200.7 ICP	5	14			mg/L	1	5	08/27/18 11:52	dcm
Selenium, dissolved	SM 3114 B, AA-Hydride	1		U		mg/L	0.001	0.005	08/16/18 14:02	che
Sodium, dissolved	M200.7 ICP	5	582			mg/L	1	5	08/27/18 11:52	dcm
Uranium, dissolved	M200.8 ICP-MS	5	0.0122			mg/L	0.0005	0.003	08/28/18 19:25	bsu

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	813			mg/L	2	20	08/17/18 0:00	emk
Carbonate as CaCO3		1		U		mg/L	2	20	08/17/18 0:00	emk
Hydroxide as CaCO3		1		U		mg/L	2	20	08/17/18 0:00	emk
Total Alkalinity		1	813			mg/L	2	20	08/17/18 0:00	emk
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-3.5			%			09/24/18 0:00	calc
Sum of Anions			118			meq/L			09/24/18 0:00	calc
Sum of Cations			110			meq/L			09/24/18 0:00	calc
Chloride	SM4500Cl-E	40	1220		*	mg/L	20	80	08/23/18 13:28	wtc
Conductivity @25C	SM2510B	1	5580			umhos/cm	1	10	08/17/18 23:27	emk
Cyanide, Total	D7511-09	1		U	*	mg/L	0.003	0.01	08/13/18 12:21	rbt
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1		U	*	mg/L	0.02	0.1	08/22/18 23:54	pjb
Residue, Filterable (TDS) @180C	SM2540C	2	7330			mg/L	20	40	08/13/18 11:38	oah
Sulfate	D516-02/-07 - Turbidimetric	120	3210		*	mg/L	120	600	08/29/18 14:18	mss2
TDS (calculated)	Calculation		6810			mg/L			09/24/18 0:00	calc
TDS (ratio - measured/calculated)	Calculation		1.08						09/24/18 0:00	calc

Rio Algom Mining Company
Project ID: 4506946843
Sample ID: 31-65 ALL

ACZ Sample ID: ***L46201-03***
Date Sampled: *08/10/18 12:13*
Date Received: *08/11/18*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Calcium, dissolved	M200.7 ICP	10	577		*	mg/L	1	5	08/27/18 11:55	dcm
Iron, dissolved	M200.7 ICP	10	148			mg/L	0.2	0.5	08/27/18 11:55	dcm
Magnesium, dissolved	M200.7 ICP	10	1460			mg/L	2	10	08/27/18 11:55	dcm
Molybdenum, dissolved	M200.8 ICP-MS	10		U		mg/L	0.005	0.03	08/28/18 19:26	bsu
Nickel, dissolved	M200.8 ICP-MS	10	0.123			mg/L	0.006	0.03	08/28/18 19:26	bsu
Potassium, dissolved	M200.7 ICP	10	44			mg/L	2	10	08/27/18 11:55	dcm
Selenium, dissolved	SM 3114 B, AA-Hydride	1	0.0041	B		mg/L	0.001	0.005	08/16/18 14:08	che
Sodium, dissolved	M200.7 ICP	10	1710			mg/L	2	10	08/27/18 11:55	dcm
Uranium, dissolved	M200.8 ICP-MS	10	0.077			mg/L	0.001	0.005	08/28/18 19:26	bsu

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	1520			mg/L	2	20	08/18/18 0:00	emk
Carbonate as CaCO3		1		U		mg/L	2	20	08/18/18 0:00	emk
Hydroxide as CaCO3		1		U		mg/L	2	20	08/18/18 0:00	emk
Total Alkalinity		1	1520		*	mg/L	2	20	08/18/18 0:00	emk
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-1.3			%			09/24/18 0:00	calc
Sum of Anions			239			meq/L			09/24/18 0:00	calc
Sum of Cations			233			meq/L			09/24/18 0:00	calc
Chloride	SM4500Cl-E	40	1980		*	mg/L	20	80	08/23/18 13:08	wtc
Conductivity @25C	SM2510B	1	11600			umhos/cm	1	10	08/21/18 0:25	enb
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.24		*	mg/L	0.02	0.1	08/23/18 0:24	pjb
Residue, Filterable (TDS) @180C	SM2540C	5	15500			mg/L	50	100	08/13/18 11:41	oah
Sulfate	D516-02/-07 - Turbidimetric	1000	7300		*	mg/L	1000	5000	08/29/18 14:11	mss2
TDS (calculated)	Calculation		14100			mg/L			09/24/18 0:00	calc
TDS (ratio - measured/calculated)	Calculation		1.10						09/24/18 0:00	calc

Report Header Explanations

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

QC Sample Types

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

Rio Algom Mining Company

ACZ Project ID: ***L46201***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG454327													
WG454327PBW1	PBW	08/17/18 16:24				2.1	mg/L		-20	20			
WG454327LCSW3	LCSW	08/17/18 16:41	WC180807-3	820.0001		797	mg/L	97	90	110			
WG454327LCSW6	LCSW	08/17/18 20:35	WC180807-3	820.0001		802	mg/L	98	90	110			
WG454327PBW2	PBW	08/17/18 20:40				U	mg/L		-20	20			
L46201-02DUP	DUP	08/17/18 23:41			813	873	mg/L				7	20	
WG454327LCSW9	LCSW	08/17/18 23:58	WC180807-3	820.0001		787	mg/L	96	90	110			
WG454327PBW3	PBW	08/18/18 0:03				U	mg/L		-20	20			
L46203-05DUP	DUP	08/18/18 1:33			385	394	mg/L				2	20	
WG454327LCSW12	LCSW	08/18/18 3:18	WC180807-3	820.0001		819	mg/L	100	90	110			
WG454327PBW4	PBW	08/18/18 3:23				U	mg/L		-20	20			
WG454327LCSW15	LCSW	08/18/18 6:51	WC180807-3	820.0001		793	mg/L	97	90	110			

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG454778													
WG454778ICV	ICV	08/27/18 10:28	II180727-1	100		98.4	mg/L	98	95	105			
WG454778ICB	ICB	08/27/18 10:34				U	mg/L		-0.3	0.3			
WG454778LFB	LFB	08/27/18 10:47	II180809-4	68.16145		66.99	mg/L	98	85	115			
L46228-01AS	AS	08/27/18 12:08	II180809-4	68.16145	217	271.5	mg/L	80	85	115			M3
L46228-01ASD	ASD	08/27/18 12:11	II180809-4	68.16145	217	272.2	mg/L	81	85	115	0	20	M3

Chloride SM4500Cl-E

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG454610													
WG454610ICB	ICB	08/23/18 12:08				U	mg/L		-1.5	1.5			
WG454610ICV	ICV	08/23/18 12:08	WI180530-1	54.89		58.84	mg/L	107	90	110			
L46197-01DUP	DUP	08/23/18 12:21			26.5	26.04	mg/L				2	20	
L46197-02AS	AS	08/23/18 12:21	WI171229-5	30.03	14.9	48.9	mg/L	113	90	110			M1
WG454610LFB1	LFB	08/23/18 13:06	WI171229-5	30.03		31.25	mg/L	104	90	110			
WG454610LFB2	LFB	08/23/18 13:06	WI171229-5	30.03		31.2	mg/L	104	90	110			

Conductivity @25C SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG454327													
WG454327LCSW2	LCSW	08/17/18 16:29	PCN55810	1410		1440	umhos/cm	102	90	110			
WG454327LCSW5	LCSW	08/17/18 20:23	PCN55810	1410		1360	umhos/cm	96	90	110			
L46201-02DUP	DUP	08/17/18 23:41			5580	5600	umhos/cm				0	20	
WG454327LCSW8	LCSW	08/17/18 23:46	PCN55810	1410		1350	umhos/cm	96	90	110			
WG454440													
WG454440LCSW2	LCSW	08/20/18 17:15	PCN55810	1410		1550	umhos/cm	110	90	110			
WG454440LCSW5	LCSW	08/20/18 19:50	PCN55810	1410		1530	umhos/cm	109	90	110			
WG454440LCSW8	LCSW	08/20/18 22:13	PCN55810	1410		1510	umhos/cm	107	90	110			
L46202-03DUP	DUP	08/21/18 0:46			11900	11700	umhos/cm				2	20	
WG454440LCSW11	LCSW	08/21/18 0:51	PCN55810	1410		1280	umhos/cm	91	90	110			

Rio Algom Mining Company

ACZ Project ID: ***L46201***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Cyanide, Total D7511-09

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453859													
WG453859ICV	ICV	08/13/18 11:43	WI180809-7	.3		.296	mg/L	99	90	110			
WG453859ICB	ICB	08/13/18 11:45				U	mg/L		-0.003	0.003			
WG453859LFB	LFB	08/13/18 11:51	WI180809-4	.1		.099	mg/L	99	84	116			
L46194-01AS	AS	08/13/18 11:55	WI180809-4	.1	U	.097	mg/L	97	84	116			
L46194-01ASD	ASD	08/13/18 11:57	WI180809-4	.1	U	.1058	mg/L	106	84	116	9	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG454778													
WG454778ICV	ICV	08/27/18 10:28	II180727-1	2		1.895	mg/L	95	95	105			
WG454778ICB	ICB	08/27/18 10:34				U	mg/L		-0.06	0.06			
WG454778LFB	LFB	08/27/18 10:47	II180809-4	1.0018		1.02	mg/L	102	85	115			
L46228-01AS	AS	08/27/18 12:08	II180809-4	1.0018	U	.997	mg/L	100	85	115			
L46228-01ASD	ASD	08/27/18 12:11	II180809-4	1.0018	U	.994	mg/L	99	85	115	0	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG454778													
WG454778ICV	ICV	08/27/18 10:28	II180727-1	100		99.43	mg/L	99	95	105			
WG454778ICB	ICB	08/27/18 10:34				U	mg/L		-0.6	0.6			
WG454778LFB	LFB	08/27/18 10:47	II180809-4	50.2933		46.39	mg/L	92	85	115			
L46228-01AS	AS	08/27/18 12:08	II180809-4	50.2933	27.9	72.31	mg/L	88	85	115			
L46228-01ASD	ASD	08/27/18 12:11	II180809-4	50.2933	27.9	72.41	mg/L	89	85	115	0	20	

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG455056													
WG455056ICV	ICV	08/28/18 18:50	MS180730-1	.02006		.01964	mg/L	98	90	110			
WG455056ICB	ICB	08/28/18 18:52				U	mg/L		-0.0011	0.0011			
WG455056LFB	LFB	08/28/18 18:54	MS180806-8	.05015		.05095	mg/L	102	85	115			
L46201-01AS	AS	08/28/18 19:21	MS180806-8	.1003	.003	.0973	mg/L	94	70	130			
L46201-01ASD	ASD	08/28/18 19:23	MS180806-8	.1003	.003	.1005	mg/L	97	70	130	3	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG455056													
WG455056ICV	ICV	08/28/18 18:50	MS180730-1	.05		.04872	mg/L	97	90	110			
WG455056ICB	ICB	08/28/18 18:52				U	mg/L		-0.00132	0.00132			
WG455056LFB	LFB	08/28/18 18:54	MS180806-8	.0501		.0509	mg/L	102	85	115			
L46201-01AS	AS	08/28/18 19:21	MS180806-8	.1002	.001	.087	mg/L	86	70	130			
L46201-01ASD	ASD	08/28/18 19:23	MS180806-8	.1002	.001	.0894	mg/L	88	70	130	3	20	

Rio Algom Mining Company

ACZ Project ID: ***L46201***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG454699													
WG454699ICV	ICV	08/22/18 22:05	WI180602-1	2.416		2.426	mg/L	100	90	110			
WG454699ICB	ICB	08/22/18 22:07				U	mg/L		-0.02	0.02			
WG454703													
WG454703LFB	LFB	08/22/18 23:42	WI180703-7	2		2.064	mg/L	103	90	110			
L46045-01AS	AS	08/22/18 23:45	WI180703-7	2	U	2.164	mg/L	108	90	110			
L46045-02DUP	DUP	08/22/18 23:47			U	U	mg/L				0	20	RA

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG454778													
WG454778ICV	ICV	08/27/18 10:28	II180727-1	20		19.69	mg/L	98	95	105			
WG454778ICB	ICB	08/27/18 10:34				U	mg/L		-0.6	0.6			
WG454778LFB	LFB	08/27/18 10:47	II180809-4	101.3833		97.45	mg/L	96	85	115			
L46228-01AS	AS	08/27/18 12:08	II180809-4	101.3833	4	101.4	mg/L	96	85	115			
L46228-01ASD	ASD	08/27/18 12:11	II180809-4	101.3833	4	101.6	mg/L	96	85	115	0	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG453860													
WG453860PBW	PBW	08/13/18 11:10				10	mg/L		-20	20			
WG453860LCSW	LCSW	08/13/18 11:13	PCN56037	260		258	mg/L	99	80	120			
L46202-01DUP	DUP	08/13/18 11:47			10600	10500	mg/L				1	10	

Selenium, dissolved SM 3114 B, AA-Hydride

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG454156													
WG454156ICV	ICV	08/16/18 13:15	SE180801-2	.025025		.0263	mg/L	105	90	110			
WG454156ICB	ICB	08/16/18 13:17				U	mg/L		-0.003	0.003			
WG454156LRB	LRB	08/16/18 13:19				U	mg/L		-0.003	0.003			
WG454156LFB	LFB	08/16/18 13:21	SE180709-4	.02224		.0234	mg/L	105	85	115			
L46194-10LFM	LFM	08/16/18 13:53	SE180709-4	.02224	.007	.029	mg/L	99	85	115			
L46194-10LFMD	LFMD	08/16/18 13:56	SE180709-4	.02224	.007	.0288	mg/L	98	85	115	1	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG454778													
WG454778ICV	ICV	08/27/18 10:28	II180727-1	100		98.59	mg/L	99	95	105			
WG454778ICB	ICB	08/27/18 10:34				U	mg/L		-0.6	0.6			
WG454778LFB	LFB	08/27/18 10:47	II180809-4	100.8796		96.6	mg/L	96	85	115			
L46228-01AS	AS	08/27/18 12:08	II180809-4	100.8796	51.2	143.7	mg/L	92	85	115			
L46228-01ASD	ASD	08/27/18 12:11	II180809-4	100.8796	51.2	144.2	mg/L	92	85	115	0	20	

Rio Algom Mining Company

ACZ Project ID: ***L46201***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Sulfate D516-02/-07 - Turbidimetric

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG455064													
WG455064ICB	ICB	08/29/18 10:05				1.2	mg/L		-3	3			
WG455064ICV	ICV	08/29/18 10:05	WI180827-2	20		20.8	mg/L	104	90	110			
WG455064LFB	LFB	08/29/18 13:33	WI180726-1	10		10.7	mg/L	107	90	110			
L46201-01DUP	DUP	08/29/18 14:16			1970	1860	mg/L				6	20	
L46201-02AS	AS	08/29/18 14:18	SO4TURB	10.0000008	3210	2500	mg/L	-7100	90	110			M3

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG455056													
WG455056ICV	ICV	08/28/18 18:50	MS180730-1	.05		.04984	mg/L	100	90	110			
WG455056ICB	ICB	08/28/18 18:52				U	mg/L		-0.00022	0.00022			
WG455056LFB	LFB	08/28/18 18:54	MS180806-8	.05		.05288	mg/L	106	85	115			
L46201-01AS	AS	08/28/18 19:21	MS180806-8	.1	.0006	.10422	mg/L	104	70	130			
L46201-01ASD	ASD	08/28/18 19:23	MS180806-8	.1	.0006	.10751	mg/L	107	70	130	3	20	

Rio Algom Mining Company ACZ Project ID: ***L46201***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L46201-01	WG454778	Calcium, dissolved	M200.7 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.
	WG454610	Chloride	SM4500Cl-E	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG454703	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG455064	Sulfate	D516-02/-07 - 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.
L46201-02	WG454778	Calcium, dissolved	M200.7 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.
	WG454610	Chloride	SM4500Cl-E	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG453859	Cyanide, Total	D7511-09	Q3	Sample received with improper or inadequate chemical preservation.
	WG454703	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG455064	Sulfate	D516-02/-07 - 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.
L46201-03	WG454778	Calcium, dissolved	M200.7 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.
	WG454610	Chloride	SM4500Cl-E	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG454703	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG455064	Sulfate	D516-02/-07 - 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.
	WG454327	Total Alkalinity	SM2320B - Titration	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.

Rio Algom Mining Company
Project ID: 4506946843
Sample ID: 33-01 TRA
Locator:

ACZ Sample ID: ***L46201-01***
Date Sampled: *08/09/18 15:25*
Date Received: *08/11/18*
Sample Matrix: *Groundwater*

Gross Alpha - Corrected
Calculation
Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha - Corrected	09/21/18 15:24		6.4			pCi/L		calc

Gross Alpha, dissolved
M9310
Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha, dissolved	08/20/18 0:00		6.8	7.6	22	pCi/L	*	amk

Lead 210, dissolved
EICHROM, OTW01
Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Lead 210, dissolved	09/17/18 15:21		2	1.3	2.4	pCi/L	*	jlg

Radium 226, dissolved
M903.1
Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226, dissolved	08/23/18 0:24		0.63	0.12	0.05	pCi/L		tjr

Radium 228, dissolved
M9320
Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 228, dissolved	08/31/18 13:17		1.9	0.96	0.92	pCi/L		jlg

Thorium 230, dissolved
ESM 4506
Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Thorium 230, dissolved	08/23/18 0:20		-0.18	0.25	0.71	pCi/L	*	jlg/djc

Rio Algom Mining Company
Project ID: 4506946843
Sample ID: 31-67 TRB
Locator:

ACZ Sample ID: ***L46201-02***
Date Sampled: *08/10/18 10:24*
Date Received: *08/11/18*
Sample Matrix: *Groundwater*

Gross Alpha - Corrected
Calculation

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha - Corrected	09/21/18 15:24		35			pCi/L		calc

Gross Alpha, dissolved
M9310

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha, dissolved	08/20/18 0:00		43	33	110	pCi/L	*	amk

Lead 210, dissolved
EICHROM, OTW01

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Lead 210, dissolved	09/17/18 15:21		1.9	1.6	3	pCi/L	*	jlg

Radium 226, dissolved
M903.1

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226, dissolved	08/23/18 0:25		3.2	0.23	0.05	pCi/L		tjr

Radium 228, dissolved
M9320

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 228, dissolved	08/31/18 13:17		13	1.3	0.88	pCi/L		jlg

Thorium 230, dissolved
ESM 4506

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Thorium 230, dissolved	08/23/18 0:21		-0.2	0.23	0.9	pCi/L	*	jlg/djc

Rio Algom Mining Company
Project ID: 4506946843
Sample ID: 31-65 ALL
Locator:

ACZ Sample ID: ***L46201-03***
Date Sampled: *08/10/18 12:13*
Date Received: *08/11/18*
Sample Matrix: *Groundwater*

Gross Alpha, dissolved — Prep Method:
M9310

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha, dissolved	08/20/18 0:00		33	60	220	pCi/L	*	amk

Lead 210, dissolved — Prep Method:
EICHROM, OTW01

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Lead 210, dissolved	09/21/18 11:42		8.3	3.3	6.7	pCi/L	*	jlg

Radium 226, dissolved — Prep Method:
M903.1

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226, dissolved	08/23/18 0:27		0.27	0.15	0.14	pCi/L	*	tjr

Radium 228, dissolved — Prep Method:
M9320

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 228, dissolved	09/05/18 18:28		0.68	0.83	0.83	pCi/L	*	jlg

Thorium 230, dissolved — Prep Method:
ESM 4506

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Thorium 230, dissolved	08/23/18 0:23		-0.02	0.32	0.66	pCi/L	*	jlg/djc

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Error(+/-)	Calculated sample specific uncertainty
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
LCL	Lower Control Limit, in % (except for LCSS, mg/Kg)
LLD	Calculated sample specific Lower Limit of Detection
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
RER	Relative Error Ratio, calculation used for Dup. QC taking into account the error factor.
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
UCL	Upper Control Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

DUP	Sample Duplicate	*MS/MSD*	Matrix Spike/Matrix Spike Duplicate
LCSS	Laboratory Control Sample - Soil	*PBS*	Prep Blank - Soil
LCSW	Laboratory Control Sample - Water	*PBW*	Prep Blank - Water

QC Sample Type Explanations

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

ACZ Qualifiers (Qual)

H	Analysis exceeded method hold time.

Method Prefix Reference

M	EPA methodology, including those under SDWA, CWA, and RCRA
SM	Standard Methods for the Examination of Water and Wastewater.
D	ASTM
RP	DOE
ESM	DOE/ESM

Comments

(1)	Solid matrices are reported on a dry weight basis.
(2)	Preparation method: "Method" indicates preparation defined in analytical method.
(3)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

Rio Algom Mining Company

ACZ Project ID: ***L46201***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Gross Alpha, dissolved M9310 **Units:** pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec%	Lower	Upper	RPD/RER	Limit	Qual
WG454470																
L46080-01MSA	MS	08/20/18	PCN55778	75.19	0.73	1.6	2	42	6.7	2	55	67	144			M2
L46173-01DUP	DUP-RER	08/20/18			38	6.7	7.6	49	7.7	13				1.08	2	
WG453910LCSWA	LCSW	08/20/18	PCN55778	100				88	7.8	1.3	88	67	144			
WG453910PBW	PBW	08/20/18						.24	0.66	0.85			1.7			
L46080-01DUP	DUP-RER	08/20/18			0.73	1.6	2	-.57	1.1	2				0.67	2	

Lead 210, dissolved EICHROM, OTW01 **Units:** pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec%	Lower	Upper	RPD/RER	Limit	Qual
WG456032																
WG455293LCSW	LCSW	09/17/18	PCN54282	96.72				87	3.2	2.3	90	55	121			
WG455293PBW	PBW	09/17/18						1.8	1.3	2.4			4.8			
L46201-01DUP	DUP-RER	09/17/18			2	1.3	2.4	1.1	1.3	2.5				0.49	2	
L46194-03DUP	DUP-RER	09/17/18			2.5	1.4	2.7	3	1.4	2.6				0.25	2	
L46301-01MS	MS	09/17/18	PCN54282	96.72	2.5	1.5	2.8	96	4.1	3.1	97	55	121			
WG456907																
L46710-01DUP	DUP-RER	09/21/18			140	10	13	140	10	14				0	2	
L46710-01MS	MS	09/21/18	PCN54282	483.45	140	10	13	560	18	15	87	55	121			
WG456443LCSW	LCSW	09/21/18	PCN54282	96.69				99	3.4	2.8	102	55	121			
WG456443PBW	PBW	09/21/18						2.9	1.4	2.8			5.6			

Rio Algom Mining Company

ACZ Project ID: ***L46201***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Radium 226, dissolved M903.1 **Units:** pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec%	Lower	Upper	RPD/RER	Limit	Qual
WG454785																
WG453900PBW	PBW	08/23/18						.18	0.07	0.17			0.34			
WG453900LCSW	LCSW	08/23/18	PCN54813	20				19	0.53	0.21	95	43	148			
L46071-02DUP	DUP-RER	08/23/18			2.2	0.19	0.07	3	0.31	0.2				2.2	2	N1
L46201-02DUP	DUP-RER	08/23/18			3.2	0.23	0.05	3.5	0.41	0.16				0.64	2	
L46071-02MS	MS	08/23/18	PCN54813	66.67	2.2	0.19	0.07	74	2	0.18	108	43	148			

Radium 228, dissolved M9320 **Units:** pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec%	Lower	Upper	RPD/RER	Limit	Qual
WG455502																
WG454757LCSW	LCSW	08/31/18	PCN57186	9.96				10	1.2	0.78	100	47	123			
WG454757PBW	PBW	08/31/18						.51	0.38	0.37			0.74			
L45903-01DUP	DUP-RER	08/31/18			0.87	0.83	0.83	.46	0.87	0.89				0.34	2	
L45903-03MS	MS	08/31/18	PCN57186	9.96	0.76	0.79	0.8	12	1.3	0.92	113	47	123			
L45902-02DUP	DUP-RER	08/31/18			0.41	0.76	0.78	.98	0.82	0.82				0.51	2	
WG455769																
WG455209LCSW	LCSW	09/05/18	PCN57186	9.95				9.6	1.2	0.83	97	47	123			
WG455209PBW	PBW	09/05/18						-.08	0.41	0.43			0.86			
L46194-11MS	MS	09/05/18	PCN57186	24.86	1.2	0.85	0.83	29	3.1	2.1	112	47	123			
L46194-08DUP	DUP-RER	09/05/18			-0.14	0.8	0.84	.91	1.7	1.7				0.56	2	
L46488-01DUP	DUP-RER	09/05/18			0.24	0.91	0.95	.8	0.84	0.84				0.45	2	

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Radiochemistry QC Summary

Rio Algom Mining Company

ACZ Project ID: ***L46201***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Thorium 230, dissolved ESM 4506 **Units:** pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec%	Lower	Upper	RPD/RER	Limit	Qual
WG455123																
WG454386PBW	PBW	08/23/18						-.12	0.18	0.66			1.32			
WG454386LCSW	LCSW	08/23/18	PCN56774	200				210	4.7	0.64	105	91	126			
L46194-02DUP	DUP-RER	08/23/18			0.07	0.31	0.63	-.05	0.37	0.68				0.25	2	
L46196-01DUP	DUP-RER	08/23/18			0.29	0.24	0.72	-.13	0.31	0.7				1.07	2	
L46194-06MS	MS	08/23/18	PCN56774	200	-0.08	0.25	1.1	220	5.2	0.84	110	91	126			

Rio Algom Mining Company ACZ Project ID: ***L46201***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L46201-01	WG454470	Gross Alpha, dissolved	M9310	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
L46201-02	WG454470	Gross Alpha, dissolved	M9310	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
L46201-03	WG454470	Gross Alpha, dissolved	M9310	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M9310	QB	Method-specified preservation criteria cannot be met due to sample matrix.
	WG456907	Lead 210, dissolved	EICHROM, OTW01	D1	Sample required dilution due to matrix.
	WG454785	Radium 226, dissolved	M903.1	DJ	Sample dilution required due to insufficient sample.
			M903.1	QB	Method-specified preservation criteria cannot be met due to sample matrix.
	WG455769	Radium 228, dissolved	M9320	QB	Method-specified preservation criteria cannot be met due to sample matrix.

Radiochemistry

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

Lead 210, dissolved	EICHROM, OTW01
Thorium 230, dissolved	ESM 4506

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

Rio Algom Mining Company
4506946843

ACZ Project ID: L46201
Date Received: 08/11/2018 11:26
Received By:
Date Printed: 8/13/2018

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody form or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?		X	
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody form complete and accurate?	X		
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits? [1]		X	
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

NA indicates Not Applicable

[1] L46201-03 Container B2022588 (GREEN CUBE): Added 10 mls nitric acid to the sub-sample. The pH is 7.

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp(°C)	Temp Criteria(°C)	Rad(µR/Hr)	Custody Seal Intact?
4275	21.6	NA	15	Yes
3920	4.8	<=6.0	14	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

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) 334-5493

Sample Receipt

Rio Algom Mining Company
4506946843

ACZ Project ID: L46201
Date Received: 08/11/2018 11:26
Received By:
Date Printed: 8/13/2018

[1] The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na2S2O3 preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

ACZ Laboratories, Inc. 46201 CHAIN of CUSTODY

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Report to:

Name: Kent Applegate	Address: PO Box 218
Company: Rio Algom Mining LLC	Grants, NM 87020
E-mail: Kent.KC.Applegate@bhpbilliton.com	Telephone: 1-505-287-8851

Copy of Report to:

Name: Michaella Gorospe/Clark Short	E-mail: See remarks
Company: INTERA, INC.	Telephone: 505-246-1600 x1207

Invoice to:

Name: Kent Applegate	Address: PO Box 218
Company: Rio Algom Mining LLC	Grants, NM 87020
E-mail: Kent.KC.Applegate@BHPBilliton.com	Telephone: 1-505-287-8851

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" is 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: Sara Taube Sampler's Site Information State NM Zip code 87020 Time Zone MST

*Sampler's Signature: Sara Taube *I attest to the authenticity and validity of this sample. I understand that intentionally mislabeling the time/date/location or tampering with the sample in anyway, is considered fraud and punishable by State Law.

PROJECT INFORMATION

Quote #: 58761

PO#: 4502496253

Reporting state for compliance testing:

Check box if samples include NRC licensed material? ☐

ANALYSES REQUESTED (attach list or use quote number)

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	SAP-GW	NRL-TRA	NRL-TRB	NRC-ALL				
33-01 TRA	8/9/18 1525	GW	6	☐	X	☐	☐	☐	☐	☐	☐
31-67 TRB	8/10/18 1024	GW	6	☐	☐	X	☐	☐	☐	☐	☐
31-65 ALL	8/10/18 1213	GW	5	☐	☐	☐	X	☐	☐	☐	☐
				☐	☐	☐	☐	☐	☐	☐	☐
				☐	☐	☐	☐	☐	☐	☐	☐
				☐	☐	☐	☐	☐	☐	☐	☐
				☐	☐	☐	☐	☐	☐	☐	☐
				☐	☐	☐	☐	☐	☐	☐	☐
				☐	☐	☐	☐	☐	☐	☐	☐
				☐	☐	☐	☐	☐	☐	☐	☐

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

REMARKS

RAML COC#: 1805. Note different COC's may have different PO's. Shipment of 2 Coolers.

Please CC report to: cshort@intera.com, apersico@intera.com, Michaella.Gorospe@bhpbilliton.com

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Sara Taube	8/10/18 1400	BCR	8/11/18 1130

FRMAD050.06.14.14 White - Return with sample. Yellow - Retain for your records.

L46201 Chain of Custod