

September 29, 2020

Report to:

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

Bill to:

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

cc: Clark Short, Angela Persico, Michaela Gorospe

Project ID: 4508122295

ACZ Project ID: L60869

Kent Applegate:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on August 14, 2020. This project has been assigned to ACZ's project number, L60869. 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 L60869. 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 29, 2020. 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.



Scott Habermehl has reviewed  
and approved this report.



Rio Algom Mining Company

September 29, 2020

Project ID: 4508122295

ACZ Project ID: L60869

**Sample Receipt**

ACZ Laboratories, Inc. (ACZ) received 3 groundwater samples from Rio Algom Mining Company on August 14, 2020. 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 L60869. 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 were performed within EPA recommended holding times.

**Sample Analysis**

These samples were analyzed for inorganic, radiochemistry 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. L60869-02 was sent to CANT for the PB210-D-EICHRON product. The sample's matrix produced excessive precipitate during the iron hydroxide scavenge that interfered with our ability to get adequate carrier recovery. The failure to achieve any kind of carrier recovery renders the data useless. Sample was run twice on a 5x dilution and produced the same result.
2. (N1) Sample activity determined using EPA 903.0, this method covers the measurement of all soluble alpha-emitting isotopes of radium in water samples. These isotopes are radium-223, radium-224 and radium-226. EPA 903.1 was not used to determine sample activity.

### Rio Algom Mining Company

Project ID: 4508122295

Sample ID: 36-08 TRA

ACZ Sample ID: **L60869-02**

Date Sampled: 08/10/20 14:49

Date Received: 08/14/20

Sample Matrix: Groundwater

#### Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U	*	mg/L	0.05	0.3	08/18/20 18:48	kja
Arsenic, dissolved	M200.8 ICP-MS	20		U		mg/L	0.004	0.02	08/21/20 9:53	enb
Barium, dissolved	M200.7 ICP	1	0.019	B		mg/L	0.007	0.04	08/18/20 18:48	kja
Beryllium, dissolved	M200.8 ICP-MS	20		U		mg/L	0.002	0.005	08/21/20 9:53	enb
Boron, dissolved	M200.7 ICP	10	0.4	B		mg/L	0.2	1	08/19/20 12:50	kja
Cadmium, dissolved	M200.8 ICP-MS	20		U		mg/L	0.001	0.005	08/21/20 9:53	enb
Calcium, dissolved	M200.7 ICP	1	514		*	mg/L	0.1	0.5	08/18/20 18:48	kja
Chromium, dissolved	M200.8 ICP-MS	20		U		mg/L	0.01	0.04	08/21/20 9:53	enb
Cobalt, dissolved	M200.7 ICP	1	0.07			mg/L	0.01	0.05	08/18/20 18:48	kja
Copper, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	08/18/20 18:48	kja
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.06	0.2	08/18/20 18:48	kja
Lead, dissolved	M200.8 ICP-MS	20		U		mg/L	0.002	0.01	08/21/20 9:53	enb
Magnesium, dissolved	M200.7 ICP	10	5120			mg/L	2	10	08/19/20 12:50	kja
Manganese, dissolved	M200.7 ICP	1	9.31			mg/L	0.01	0.05	08/18/20 18:48	kja
Mercury, total	M245.1 CVAA	1		U		mg/L	0.0002	0.001	08/21/20 15:27	slm
Molybdenum, dissolved	M200.8 ICP-MS	20		U		mg/L	0.004	0.01	08/21/20 9:53	enb
Nickel, dissolved	M200.8 ICP-MS	20	0.038			mg/L	0.008	0.02	08/21/20 9:53	enb
Potassium, dissolved	M200.7 ICP	10	21			mg/L	2	10	08/19/20 12:50	kja
Selenium, dissolved	SM 3114 B, AA-Hydride	10	0.119			mg/L	0.02	0.05	08/20/20 15:03	kja
Selenium, dissolved	M200.8 ICP-MS	20	0.049			mg/L	0.002	0.005	08/21/20 9:53	enb
Silver, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.03	08/18/20 18:48	kja
Sodium, dissolved	M200.7 ICP	1	495		*	mg/L	0.2	1	08/18/20 18:48	kja
Thallium, dissolved	M200.8 ICP-MS	20		U		mg/L	0.002	0.01	08/21/20 9:53	enb
Uranium, dissolved	M200.8 ICP-MS	20	0.007	B		mg/L	0.002	0.01	08/21/20 9:53	enb
Zinc, dissolved	M200.7 ICP	1	0.13			mg/L	0.02	0.05	08/18/20 18:48	kja

### Rio Algom Mining Company

Project ID: 4508122295

Sample ID: 36-08 TRA

ACZ Sample ID: **L60869-02**

Date Sampled: 08/10/20 14:49

Date Received: 08/14/20

Sample Matrix: Groundwater

#### Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	638		*	mg/L	2	20	08/16/20 0:00	eep
Carbonate as CaCO3		1		U	*	mg/L	2	20	08/16/20 0:00	eep
Hydroxide as CaCO3		1		U	*	mg/L	2	20	08/16/20 0:00	eep
Total Alkalinity		1	638		*	mg/L	2	20	08/16/20 0:00	eep
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-2.3			%			09/28/20 0:00	calc
Sum of Anions			491			meq/L			09/28/20 0:00	calc
Sum of Cations			469			meq/L			09/28/20 0:00	calc
Chloride	M300.0 - Ion Chromatography	200	946		*	mg/L	80	400	08/19/20 5:06	krh
Cyanide, Total	D7511-09	1		U	*	mg/L	0.003	0.01	08/18/20 14:28	rbt
Fluoride	M300.0 - Ion Chromatography	200		U	*	mg/L	10	50	08/19/20 5:06	krh
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	100	91		*	mg/L	2	10	08/26/20 2:49	pjb
pH (lab)	SM4500H+ B									
pH		1	7.5	H	*	units	0.1	0.1	08/16/20 0:00	eep
pH measured at		1	20.1		*	C	0.1	0.1	08/16/20 0:00	eep
Residue, Filterable (TDS) @180C	SM2540C	25	29100		*	mg/L	500	1000	08/17/20 11:27	che
Sulfate	M300.0 - Ion Chromatography	500	21500		*	mg/L	200	1000	08/20/20 15:29	krh
TDS (calculated)	Calculation		29000			mg/L			09/28/20 0:00	calc
TDS (ratio - measured/calculated)	Calculation		1.00						09/28/20 0:00	calc

### Rio Algom Mining Company

Project ID: 4508122295

Sample ID: 32-04 TRA

ACZ Sample ID: **L60869-03**

Date Sampled: 08/11/20 14:37

Date Received: 08/14/20

Sample Matrix: Groundwater

#### Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U	*	mg/L	0.05	0.3	08/18/20 18:52	kja
Arsenic, dissolved	M200.8 ICP-MS	1	0.0012			mg/L	0.0002	0.001	08/21/20 9:56	enb
Barium, dissolved	M200.7 ICP	1	0.016	B		mg/L	0.007	0.04	08/18/20 18:52	kja
Beryllium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00008	0.0003	08/21/20 9:56	enb
Boron, dissolved	M200.7 ICP	1	0.33			mg/L	0.02	0.1	08/19/20 12:53	kja
Cadmium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.00005	0.0003	08/21/20 9:56	enb
Calcium, dissolved	M200.7 ICP	1	154		*	mg/L	0.1	0.5	08/18/20 18:52	kja
Chromium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0005	0.002	08/21/20 9:56	enb
Cobalt, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	08/18/20 18:52	kja
Copper, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	08/18/20 18:52	kja
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.06	0.2	08/18/20 18:52	kja
Lead, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/21/20 9:56	enb
Magnesium, dissolved	M200.7 ICP	1	55.4		*	mg/L	0.2	1	08/18/20 18:52	kja
Manganese, dissolved	M200.7 ICP	1	0.01	B		mg/L	0.01	0.05	08/18/20 18:52	kja
Mercury, total	M245.1 CVAA	1		U		mg/L	0.0002	0.001	08/21/20 15:30	slm
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0225			mg/L	0.0002	0.0005	08/21/20 9:56	enb
Nickel, dissolved	M200.8 ICP-MS	1	0.0015			mg/L	0.0004	0.001	08/21/20 9:56	enb
Potassium, dissolved	M200.7 ICP	1	8.0			mg/L	0.2	1	08/19/20 12:53	kja
Selenium, dissolved	SM 3114 B, AA-Hydride	1		U		mg/L	0.002	0.005	08/20/20 15:05	kja
Selenium, dissolved	M200.8 ICP-MS	1	0.0004			mg/L	0.0001	0.0003	08/21/20 9:56	enb
Silver, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.03	08/18/20 18:52	kja
Sodium, dissolved	M200.7 ICP	1	259		*	mg/L	0.2	1	08/18/20 18:52	kja
Thallium, dissolved	M200.8 ICP-MS	1		U		mg/L	0.0001	0.0005	08/21/20 9:56	enb
Uranium, dissolved	M200.8 ICP-MS	1	0.0076			mg/L	0.0001	0.0005	08/21/20 9:56	enb
Zinc, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	08/18/20 18:52	kja

### Rio Algom Mining Company

Project ID: 4508122295

Sample ID: 32-04 TRA

ACZ Sample ID: **L60869-03**

Date Sampled: 08/11/20 14:37

Date Received: 08/14/20

Sample Matrix: Groundwater

#### Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	128		*	mg/L	2	20	08/16/20 0:00	eep
Carbonate as CaCO3		1		U	*	mg/L	2	20	08/16/20 0:00	eep
Hydroxide as CaCO3		1		U	*	mg/L	2	20	08/16/20 0:00	eep
Total Alkalinity		1	128		*	mg/L	2	20	08/16/20 0:00	eep
Cation-Anion Balance	Calculation									
Cation-Anion Balance			0.0			%			09/28/20 0:00	calc
Sum of Anions			24			meq/L			09/28/20 0:00	calc
Sum of Cations			24			meq/L			09/28/20 0:00	calc
Chloride	M300.0 - Ion Chromatography	10	31.1		*	mg/L	4	20	08/20/20 16:23	krh
Cyanide, Total	D7511-09	1		U	*	mg/L	0.003	0.01	08/18/20 14:34	rbt
Fluoride	M300.0 - Ion Chromatography	10		U	*	mg/L	0.5	2.5	08/20/20 16:23	krh
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.38		*	mg/L	0.02	0.1	08/26/20 2:51	pjb
pH (lab)	SM4500H+ B									
pH		1	8.1	H	*	units	0.1	0.1	08/16/20 0:00	eep
pH measured at		1	19.8		*	C	0.1	0.1	08/16/20 0:00	eep
Residue, Filterable (TDS) @180C	SM2540C	1	1530		*	mg/L	20	40	08/17/20 11:28	che
Sulfate	M300.0 - Ion Chromatography	10	968		*	mg/L	4	20	08/20/20 16:23	krh
TDS (calculated)	Calculation		1550			mg/L			09/28/20 0:00	calc
TDS (ratio - measured/calculated)	Calculation		0.99						09/28/20 0:00	calc

**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 unless omitted or equal to the PQL (see comment #5). 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. Synonymous with the EPA term "minimum level".
<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:

<https://acz.com/wp-content/uploads/2019/04/Ext-Qual-List.pdf>

Rio Algom Mining Company

ACZ Project ID: **L60869**

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
<b>WG503419</b>													
WG503419PBW1	PBW	08/15/20 14:23				7.9	mg/L		-20	20			
WG503419LCSW3	LCSW	08/15/20 14:43	WC200810-7	820.0001		856	mg/L	104	90	110			
WG503419LCSW6	LCSW	08/15/20 17:54	WC200810-7	820.0001		863	mg/L	105	90	110			
WG503419PBW2	PBW	08/15/20 18:04				2	mg/L		-20	20			
WG503419LCSW9	LCSW	08/16/20 0:24	WC200810-7	820.0001		866	mg/L	106	90	110			
WG503419PBW3	PBW	08/16/20 0:34				2.3	mg/L		-20	20			
WG503419LCSW12	LCSW	08/16/20 4:34	WC200810-7	820.0001		876	mg/L	107	90	110			
WG503419PBW4	PBW	08/16/20 4:43				2.3	mg/L		-20	20			
L60869-02DUP	DUP	08/16/20 6:18			638	648	mg/L				2	20	
WG503419LCSW15	LCSW	08/16/20 7:38	WC200810-7	820.0001		860	mg/L	105	90	110			

**Aluminum, dissolved** M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG503549</b>													
WG503549ICV	ICV	08/18/20 17:52	II200810-1	2		1.996	mg/L	100	95	105			
WG503549ICB	ICB	08/18/20 17:58				U	mg/L		-0.15	0.15			
WG503549LFB	LFB	08/18/20 18:10	II200805-3	1.0012		1.015	mg/L	101	85	115			
L60868-04AS	AS	08/18/20 18:36	II200805-3	1.0012	U	1.164	mg/L	116	85	115			MA
L60868-04ASD	ASD	08/18/20 18:39	II200805-3	1.0012	U	1.126	mg/L	112	85	115	3	20	

**Arsenic, dissolved** M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG503761</b>													
WG503761ICV	ICV	08/21/20 9:31	MS200812-2	.05		.04947	mg/L	99	90	110			
WG503761ICB	ICB	08/21/20 9:34				U	mg/L		-0.00044	0.00044			
WG503761LFB	LFB	08/21/20 9:37	MS200803-2	.05005		.05081	mg/L	102	85	115			
L60856-01AS	AS	08/21/20 9:44	MS200803-2	.05005	.0002	.05235	mg/L	104	70	130			
L60856-01ASD	ASD	08/21/20 9:47	MS200803-2	.05005	.0002	.05315	mg/L	106	70	130	2	20	

**Barium, dissolved** M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG503549</b>													
WG503549ICV	ICV	08/18/20 17:52	II200810-1	2		1.9898	mg/L	99	95	105			
WG503549ICB	ICB	08/18/20 17:58				U	mg/L		-0.021	0.021			
WG503549LFB	LFB	08/18/20 18:10	II200805-3	.5005		.4837	mg/L	97	85	115			
L60868-04AS	AS	08/18/20 18:36	II200805-3	.5005	.014	.5544	mg/L	108	85	115			
L60868-04ASD	ASD	08/18/20 18:39	II200805-3	.5005	.014	.5443	mg/L	106	85	115	2	20	

**Beryllium, dissolved** M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG503761</b>													
WG503761ICV	ICV	08/21/20 9:31	MS200812-2	.05		.04641	mg/L	93	90	110			
WG503761ICB	ICB	08/21/20 9:34				U	mg/L		-0.000176	0.000176			
WG503761LFB	LFB	08/21/20 9:37	MS200803-2	.05005		.0489	mg/L	98	85	115			
L60856-01AS	AS	08/21/20 9:44	MS200803-2	.05005	.00018	.04307	mg/L	86	70	130			
L60856-01ASD	ASD	08/21/20 9:47	MS200803-2	.05005	.00018	.0443	mg/L	88	70	130	3	20	



Rio Algom Mining Company

ACZ Project ID: **L60869**

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.

**Boron, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG503608</b>													
WG503608ICV	ICV	08/19/20 12:10	II200810-1	2		2.043	mg/L	102	95	105			
WG503608ICB	ICB	08/19/20 12:16				U	mg/L		-0.06	0.06			
WG503608LFB	LFB	08/19/20 12:28	II200805-3	.5005		.484	mg/L	97	85	115			
L60810-02AS	AS	08/19/20 12:38	II200805-3	.5005	.03	.525	mg/L	99	85	115			
L60810-02ASD	ASD	08/19/20 12:41	II200805-3	.5005	.03	.527	mg/L	99	85	115	0	20	

**Cadmium, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG503761</b>													
WG503761ICV	ICV	08/21/20 9:31	MS200812-2	.05		.04858	mg/L	97	90	110			
WG503761ICB	ICB	08/21/20 9:34				U	mg/L		-0.00011	0.00011			
WG503761LFB	LFB	08/21/20 9:37	MS200803-2	.05005		.05071	mg/L	101	85	115			
L60856-01AS	AS	08/21/20 9:44	MS200803-2	.05005	U	.04689	mg/L	94	70	130			
L60856-01ASD	ASD	08/21/20 9:47	MS200803-2	.05005	U	.04803	mg/L	96	70	130	2	20	

**Calcium, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG503549</b>													
WG503549ICV	ICV	08/18/20 17:52	II200810-1	100		98.62	mg/L	99	95	105			
WG503549ICB	ICB	08/18/20 17:58				U	mg/L		-0.3	0.3			
WG503549LFB	LFB	08/18/20 18:10	II200805-3	67.9908		67.17	mg/L	99	85	115			
L60868-04AS	AS	08/18/20 18:36	II200805-3	67.9908	538	586.7	mg/L	72	85	115			M3
L60868-04ASD	ASD	08/18/20 18:39	II200805-3	67.9908	538	587.8	mg/L	73	85	115	0	20	M3

**Chloride**

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG500819</b>													
WG500819ICV	ICV	07/07/20 12:20	WI200707-2	20.02		19.9	mg/L	99	90	110			
WG500819ICB	ICB	07/07/20 12:38				U	mg/L		-0.4	0.4			
<b>WG503537</b>													
WG503537LFB1	LFB	08/18/20 16:33	WI200701-1	30		31.8	mg/L	106	90	110			
WG503537LFB2	LFB	08/19/20 1:13	WI200701-1	30		31.8	mg/L	106	90	110			
L60734-01DUP	DUP	08/19/20 1:48			2.84	2.8	mg/L				1	20	RA
L60837-01AS	AS	08/20/20 15:11	WI200701-1	60000	103000	169000	mg/L	110	90	110			

**Chromium, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG503761</b>													
WG503761ICV	ICV	08/21/20 9:31	MS200812-2	.05		.05063	mg/L	101	90	110			
WG503761ICB	ICB	08/21/20 9:34				U	mg/L		-0.0011	0.0011			
WG503761LFB	LFB	08/21/20 9:37	MS200803-2	.05		.05034	mg/L	101	85	115			
L60856-01AS	AS	08/21/20 9:44	MS200803-2	.05	U	.04711	mg/L	94	70	130			
L60856-01ASD	ASD	08/21/20 9:47	MS200803-2	.05	U	.04833	mg/L	97	70	130	3	20	

**Rio Algom Mining Company**

ACZ Project ID: **L60869**

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.

**Cobalt, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG503549</b>													
WG503549ICV	ICV	08/18/20 17:52	II200810-1	2.004		1.948	mg/L	97	95	105			
WG503549ICB	ICB	08/18/20 17:58				U	mg/L		-0.03	0.03			
WG503549LFB	LFB	08/18/20 18:10	II200805-3	.5		.483	mg/L	97	85	115			
L60868-04AS	AS	08/18/20 18:36	II200805-3	.5	U	.513	mg/L	103	85	115			
L60868-04ASD	ASD	08/18/20 18:39	II200805-3	.5	U	.505	mg/L	101	85	115	2	20	

**Copper, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG503549</b>													
WG503549ICV	ICV	08/18/20 17:52	II200810-1	2		1.965	mg/L	98	95	105			
WG503549ICB	ICB	08/18/20 17:58				U	mg/L		-0.03	0.03			
WG503549LFB	LFB	08/18/20 18:10	II200805-3	.501		.493	mg/L	98	85	115			
L60868-04AS	AS	08/18/20 18:36	II200805-3	.501	U	.556	mg/L	111	85	115			
L60868-04ASD	ASD	08/18/20 18:39	II200805-3	.501	U	.549	mg/L	110	85	115	1	20	

**Cyanide, Total**

D7511-09

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG503522</b>													
WG503522ICV	ICV	08/18/20 14:16	WI200804-5	.3003		.2872	mg/L	96	90	110			
WG503522ICB	ICB	08/18/20 14:18				U	mg/L		-0.003	0.003			
WG503522LFB	LFB	08/18/20 14:24	WI200804-6	.1		.0944	mg/L	94	84	116			
L60869-02AS	AS	08/18/20 14:30	WI200804-6	.1	U	.0941	mg/L	94	84	116			
L60869-02ASD	ASD	08/18/20 14:32	WI200804-6	.1	U	.0948	mg/L	95	84	116	1	20	

**Fluoride**

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG500819</b>													
WG500819ICV	ICV	07/07/20 12:20	WI200707-2	4		4.06	mg/L	102	90	110			
WG500819ICB	ICB	07/07/20 12:38				U	mg/L		-0.05	0.05			
<b>WG503537</b>													
WG503537LFB1	LFB	08/18/20 16:33	WI200701-1	1.5		1.61	mg/L	107	90	110			
WG503537LFB2	LFB	08/19/20 1:13	WI200701-1	1.5		1.6	mg/L	107	90	110			
L60734-01DUP	DUP	08/19/20 1:48				.93	mg/L				1	20	
L60837-01AS	AS	08/19/20 3:00	WI200701-1	300	19.7	260	mg/L	80	90	110			M2

**Iron, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG503549</b>													
WG503549ICV	ICV	08/18/20 17:52	II200810-1	2		1.97	mg/L	99	95	105			
WG503549ICB	ICB	08/18/20 17:58				U	mg/L		-0.18	0.18			
WG503549LFB	LFB	08/18/20 18:10	II200805-3	1.0018		1.01	mg/L	101	85	115			
L60868-04AS	AS	08/18/20 18:36	II200805-3	1.0018	19.8	19.55	mg/L	15	85	115			M3
L60868-04ASD	ASD	08/18/20 18:39	II200805-3	1.0018	19.8	19.31	mg/L	-9	85	115	1	20	M3

Rio Algom Mining Company

ACZ Project ID: **L60869**

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.

**Lead, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG503761</b>													
WG503761ICV	ICV	08/21/20 9:31	MS200812-2	.05		.0518	mg/L	104	90	110			
WG503761ICB	ICB	08/21/20 9:34				U	mg/L		-0.00022	0.00022			
WG503761LFB	LFB	08/21/20 9:37	MS200803-2	.05005		.05221	mg/L	104	85	115			
L60856-01AS	AS	08/21/20 9:44	MS200803-2	.05005	U	.05331	mg/L	107	70	130			
L60856-01ASD	ASD	08/21/20 9:47	MS200803-2	.05005	U	.0545	mg/L	109	70	130	2	20	

**Magnesium, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG503549</b>													
WG503549ICV	ICV	08/18/20 17:52	II200810-1	100		97.16	mg/L	97	95	105			
WG503549ICB	ICB	08/18/20 17:58				U	mg/L		-0.6	0.6			
WG503549LFB	LFB	08/18/20 18:10	II200805-3	49.9996		47.76	mg/L	96	85	115			
L60868-04AS	AS	08/18/20 18:36	II200805-3	49.9996	350	391.8	mg/L	84	85	115			M3
L60868-04ASD	ASD	08/18/20 18:39	II200805-3	49.9996	350	388.3	mg/L	77	85	115	1	20	M3
<b>WG503608</b>													
WG503608ICV	ICV	08/19/20 12:10	II200810-1	100		97.22	mg/L	97	95	105			
WG503608ICB	ICB	08/19/20 12:16				U	mg/L		-0.6	0.6			
WG503608LFB	LFB	08/19/20 12:28	II200805-3	49.9996		46.35	mg/L	93	85	115			
L60810-02AS	AS	08/19/20 12:38	II200805-3	49.9996	24.4	70.17	mg/L	92	85	115			
L60810-02ASD	ASD	08/19/20 12:41	II200805-3	49.9996	24.4	70.58	mg/L	92	85	115	1	20	

**Manganese, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG503549</b>													
WG503549ICV	ICV	08/18/20 17:52	II200810-1	2		1.952	mg/L	98	95	105			
WG503549ICB	ICB	08/18/20 17:58				U	mg/L		-0.03	0.03			
WG503549LFB	LFB	08/18/20 18:10	II200805-3	.5015		.499	mg/L	100	85	115			
L60868-04AS	AS	08/18/20 18:36	II200805-3	.5015	.82	1.324	mg/L	100	85	115			
L60868-04ASD	ASD	08/18/20 18:39	II200805-3	.5015	.82	1.308	mg/L	97	85	115	1	20	

**Mercury, total**

M245.1 CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG503788</b>													
WG503788ICV	ICV	08/21/20 15:21	HG200810-2	.005		.00485	mg/L	97	95	105			
WG503788ICB	ICB	08/21/20 15:22				U	mg/L		-0.0002	0.0002			
WG503788LRB	LRB	08/21/20 15:24				U	mg/L		-0.00044	0.00044			
WG503788LFB	LFB	08/21/20 15:25	HG200817-3	.002002		.00211	mg/L	105	85	115			
L60869-02LFM	LFM	08/21/20 15:28	HG200817-3	.002002	U	.00187	mg/L	93	85	115			
L60869-02LFMD	LFMD	08/21/20 15:29	HG200817-3	.002002	U	.00186	mg/L	93	85	115	1	20	

Rio Algom Mining Company

ACZ Project ID: **L60869**

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.

**Molybdenum, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG503761</b>													
WG503761ICV	ICV	08/21/20 9:31	MS200812-2	.0199		.02077	mg/L	104	90	110			
WG503761ICB	ICB	08/21/20 9:34				U	mg/L		-0.00044	0.00044			
WG503761LFB	LFB	08/21/20 9:37	MS200803-2	.0501		.05262	mg/L	105	85	115			
L60856-01AS	AS	08/21/20 9:44	MS200803-2	.0501	.0393	.093	mg/L	107	70	130			
L60856-01ASD	ASD	08/21/20 9:47	MS200803-2	.0501	.0393	.09474	mg/L	111	70	130	2	20	

**Nickel, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG503761</b>													
WG503761ICV	ICV	08/21/20 9:31	MS200812-2	.05		.05034	mg/L	101	90	110			
WG503761ICB	ICB	08/21/20 9:34				U	mg/L		-0.00088	0.00088			
WG503761LFB	LFB	08/21/20 9:37	MS200803-2	.05		.0504	mg/L	101	85	115			
L60856-01AS	AS	08/21/20 9:44	MS200803-2	.05	.0077	.05178	mg/L	88	70	130			
L60856-01ASD	ASD	08/21/20 9:47	MS200803-2	.05	.0077	.05285	mg/L	90	70	130	2	20	

**Nitrate/Nitrite as N**

M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG504008</b>													
WG504008ICV	ICV	08/26/20 0:15	WI200815-1	2.416		2.389	mg/L	99	90	110			
WG504008ICB	ICB	08/26/20 0:17				U	mg/L		-0.02	0.02			
<b>WG504012</b>													
WG504012LFB1	LFB	08/26/20 1:56	WI200331-15	2		1.957	mg/L	98	90	110			
WG504012LFB2	LFB	08/26/20 2:36	WI200331-15	2		1.918	mg/L	96	90	110			
L60869-02AS	AS	08/26/20 2:50	WI200331-15	200	91	278.8	mg/L	94	90	110			
L60869-03DUP	DUP	08/26/20 2:52			.38	.337	mg/L				12	20	

**pH (lab)**

SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG503419</b>													
WG503419LCSW1	LCSW	08/15/20 14:27	PCN60577	6		6	units	100	5.9	6.1			
WG503419LCSW4	LCSW	08/15/20 17:38	PCN60577	6		6.1	units	102	5.9	6.1			
WG503419LCSW7	LCSW	08/16/20 0:07	PCN60577	6		6	units	100	5.9	6.1			
WG503419LCSW10	LCSW	08/16/20 4:18	PCN60577	6		6.1	units	102	5.9	6.1			
L60869-02DUP	DUP	08/16/20 6:18			7.5	7.6	units				1	20	
WG503419LCSW13	LCSW	08/16/20 7:23	PCN60577	6		6	units	100	5.9	6.1			

**Potassium, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG503608</b>													
WG503608ICV	ICV	08/19/20 12:10	II200810-1	20		19.97	mg/L	100	95	105			
WG503608ICB	ICB	08/19/20 12:16				U	mg/L		-0.6	0.6			
WG503608LFB	LFB	08/19/20 12:28	II200805-3	99.96847		95.46	mg/L	95	85	115			
L60810-02AS	AS	08/19/20 12:38	II200805-3	99.96847	2.9	100.3	mg/L	97	85	115			
L60810-02ASD	ASD	08/19/20 12:41	II200805-3	99.96847	2.9	100.9	mg/L	98	85	115	1	20	

**Rio Algom Mining Company**

ACZ Project ID: **L60869**

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.

**Residue, Filterable (TDS) @180C** SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG503445</b>													
WG503445PBW	PBW	08/17/20 11:00				U	mg/L		-20	20			
WG503445LCSW	LCSW	08/17/20 11:01	PCN61596	1000		998	mg/L	100	80	120			
L60869-03DUP	DUP	08/17/20 11:29			1530	1530	mg/L				0	10	

**Selenium, dissolved** M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG503761</b>													
WG503761ICV	ICV	08/21/20 9:31	MS200812-2	.05		.04981	mg/L	100	90	110			
WG503761ICB	ICB	08/21/20 9:34				U	mg/L		-0.00022	0.00022			
WG503761LFB	LFB	08/21/20 9:37	MS200803-2	.05		.0496	mg/L	99	85	115			
L60856-01AS	AS	08/21/20 9:44	MS200803-2	.05	.0007	.05435	mg/L	107	70	130			
L60856-01ASD	ASD	08/21/20 9:47	MS200803-2	.05	.0007	.05571	mg/L	110	70	130	2	20	

**Selenium, dissolved** SM 3114 B, AA-Hydride

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG503696</b>													
WG503696ICV	ICV	08/20/20 14:04	SE200702-2	.025		.0259	mg/L	104	90	110			
WG503696ICB	ICB	08/20/20 14:06				U	mg/L		-0.006	0.006			
<b>WG503695</b>													
WG503695LRB	LRB	08/20/20 14:34				U	mg/L		-0.006	0.006			
WG503695LFB	LFB	08/20/20 14:36	SE200820-2	.0225		.0211	mg/L	94	85	115			
L60855-03LFM	LFM	08/20/20 14:46	SE200820-2	.0225	U	.0213	mg/L	95	85	115			
L60855-03LFMD	LFMD	08/20/20 14:48	SE200820-2	.0225	U	.0218	mg/L	97	85	115	2	20	

**Silver, dissolved** M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG503549</b>													
WG503549ICV	ICV	08/18/20 17:52	II200810-1	1		1.001	mg/L	100	95	105			
WG503549ICB	ICB	08/18/20 17:58				U	mg/L		-0.03	0.03			
WG503549LFB	LFB	08/18/20 18:10	II200805-3	.5		.47	mg/L	94	85	115			
L60868-04AS	AS	08/18/20 18:36	II200805-3	.5	U	.49	mg/L	98	85	115			
L60868-04ASD	ASD	08/18/20 18:39	II200805-3	.5	U	.484	mg/L	97	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
<b>WG503549</b>													
WG503549ICV	ICV	08/18/20 17:52	II200810-1	100		99.64	mg/L	100	95	105			
WG503549ICB	ICB	08/18/20 17:58				U	mg/L		-0.6	0.6			
WG503549LFB	LFB	08/18/20 18:10	II200805-3	100.0157		97.33	mg/L	97	85	115			
L60868-04AS	AS	08/18/20 18:36	II200805-3	100.0157	437	516.9	mg/L	80	85	115			M3
L60868-04ASD	ASD	08/18/20 18:39	II200805-3	100.0157	437	519	mg/L	82	85	115	0	20	M3

Rio Algom Mining Company

ACZ Project ID: **L60869**

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**

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG500819</b>													
WG500819ICV	ICV	07/07/20 12:20	WI200707-2	50		49.2	mg/L	98	90	110			
WG500819ICB	ICB	07/07/20 12:38				U	mg/L		-0.4	0.4			
<b>WG503537</b>													
WG503537LFB1	LFB	08/18/20 16:33	WI200701-1	30		32.4	mg/L	108	90	110			
WG503537LFB2	LFB	08/19/20 1:13	WI200701-1	30		32.6	mg/L	109	90	110			
L60734-01DUP	DUP	08/19/20 1:48			44.6	44.5	mg/L				0	20	
L60837-01AS	AS	08/19/20 3:00	WI200701-1	6000	296	6830	mg/L	109	90	110			

**Thallium, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG503761</b>													
WG503761ICV	ICV	08/21/20 9:31	MS200812-2	.05		.05035	mg/L	101	90	110			
WG503761ICB	ICB	08/21/20 9:34				U	mg/L		-0.00022	0.00022			
WG503761LFB	LFB	08/21/20 9:37	MS200803-2	.0501		.05074	mg/L	101	85	115			
L60856-01AS	AS	08/21/20 9:44	MS200803-2	.0501	U	.05315	mg/L	106	70	130			
L60856-01ASD	ASD	08/21/20 9:47	MS200803-2	.0501	U	.05414	mg/L	108	70	130	2	20	

**Uranium, dissolved**

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG503761</b>													
WG503761ICV	ICV	08/21/20 9:31	MS200812-2	.05		.05028	mg/L	101	90	110			
WG503761ICB	ICB	08/21/20 9:34				U	mg/L		-0.00022	0.00022			
WG503761LFB	LFB	08/21/20 9:37	MS200803-2	.05		.05018	mg/L	100	85	115			
L60856-01AS	AS	08/21/20 9:44	MS200803-2	.05	.0001	.05471	mg/L	109	70	130			
L60856-01ASD	ASD	08/21/20 9:47	MS200803-2	.05	.0001	.05606	mg/L	112	70	130	2	20	

**Zinc, dissolved**

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
<b>WG503549</b>													
WG503549ICV	ICV	08/18/20 17:52	II200810-1	2		1.919	mg/L	96	95	105			
WG503549ICB	ICB	08/18/20 17:58				U	mg/L		-0.06	0.06			
WG503549LFB	LFB	08/18/20 18:10	II200805-3	.50075		.499	mg/L	100	85	115			
L60868-04AS	AS	08/18/20 18:36	II200805-3	.50075	U	.521	mg/L	104	85	115			
L60868-04ASD	ASD	08/18/20 18:39	II200805-3	.50075	U	.51	mg/L	102	85	115	2	20	

Rio Algom Mining Company

ACZ Project ID: **L60869**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L60869-02	WG503549	Aluminum, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG503419	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG503549	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.
	WG503419	Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG503537	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	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).
	WG503522	Cyanide, Total	D7511-09	Q3	Sample received with improper or inadequate chemical preservation.
			D7511-09	Q6	Sample was received above recommended temperature.
	WG503537	Fluoride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG503419	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG503549	Iron, 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.
			M200.7 ICP	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
	WG504012	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
	WG503419	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG503445	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
	WG503549	Sodium, 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.
	WG503537	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG503419	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

Rio Algom Mining Company

ACZ Project ID: **L60869**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L60869-03	WG503549	Aluminum, dissolved	M200.7 ICP	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG503419	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG503549	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.
	WG503419	Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG503537	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	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).
	WG503522	Cyanide, Total	D7511-09	Q6	Sample was received above recommended temperature.
	WG503537	Fluoride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG503419	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG503549	Iron, 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.
			M200.7 ICP	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
		Magnesium, 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.
	WG504012	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
	WG503419	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG503445	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
	WG503549	Sodium, 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.
	WG503537	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG503419	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.



### Rio Algom Mining Company

Project ID: 4508122295

Sample ID: 36-07 KDA

Locator:

ACZ Sample ID: **L60869-01**

Date Sampled: 08/03/20 13:25

Date Received: 08/14/20

Sample Matrix: Groundwater

Gross Alpha, dissolved  
M9310

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha, dissolved	08/27/20 0:23		-4.6	12	60	pCi/L	*	fdw

Lead 210, dissolved  
EICHROM, OTW01

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Lead 210, dissolved	09/16/20 16:39		-11	5.1	16	pCi/L	*	isn

Radium 226 + Alpha Emitting Radium Isotopes, total  
M903.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226 + Alpha	08/20/20 0:00		6.4	0.68	0.57	pCi/L	*	fdw

Radium 228, total  
M9320

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 228, total	09/03/20 14:55		4.6	7.7	19	pCi/L	*	isn

Thorium 230, dissolved  
ESM 4506

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Thorium 230, dissolved	09/03/20 13:27		0.134	0.34	0.63	pCi/L	*	djc

### Rio Algom Mining Company

Project ID: 4508122295

Sample ID: 36-08 TRA

Locator:

ACZ Sample ID: **L60869-02**

Date Sampled: 08/10/20 14:49

Date Received: 08/14/20

Sample Matrix: Groundwater

Gross Alpha - Corrected  
Calculation

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha - Corrected	09/28/20 16:09		-110			pCi/L		calc

Gross Alpha, dissolved  
M9310

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha, dissolved	08/27/20 0:25		-110	69	990	pCi/L	*	fdw

Lead 210, dissolved

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Lead 210, dissolved			see case narrative					n/a

Radium 226, dissolved  
M903.1

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226, dissolved	09/01/20 0:27		2.3	0.28	0.12	pCi/L	*	amk

Radium 228, dissolved  
M9320

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 228, dissolved	08/31/20 19:13		6.5	1.3	2.5	pCi/L	*	fdw

Thorium 230, dissolved  
ESM 4506

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Thorium 230, dissolved	09/03/20 13:27		0.727	1.1	1.8	pCi/L	*	djc

**Rio Algom Mining Company**

Project ID: 4508122295  
 Sample ID: 32-04 TRA  
 Locator:

ACZ Sample ID: **L60869-03**  
 Date Sampled: 08/11/20 14:37  
 Date Received: 08/14/20  
 Sample Matrix: Groundwater

Gross Alpha - Corrected  
 Calculation

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha - Corrected	09/28/20 16:09		6.9			pCi/L		calc

Gross Alpha, dissolved  
 M9310

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha, dissolved	08/27/20 0:27		12	5.7	34	pCi/L	*	fdw

Lead 210, dissolved  
 EICHROM, OTW01

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Lead 210, dissolved	09/10/20 8:41		-14	9.5	20	pCi/L	*	isn

Radium 226, dissolved  
 M903.1

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226, dissolved	09/01/20 0:28		0.49	0.14	0.14	pCi/L	*	amk

Radium 228, dissolved  
 M9320

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 228, dissolved	08/31/20 19:13		0.37	1.5	3.5	pCi/L	*	fdw

Thorium 230, dissolved  
 ESM 4506

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Thorium 230, dissolved	09/03/20 13:27		0.249	0.25	0.39	pCi/L	*	djc

**Report Header Explanations**

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

**QC Sample Types**

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

<https://acz.com/wp-content/uploads/2019/04/Ext-Qual-List.pdf>

Rio Algom Mining Company

ACZ Project ID: **L60869**

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
<b>WG503775</b>																
WG503775PBW	PBW	08/27/20						-82	0.92	11			22			
WG503775LCSWA	LCSW	08/27/20	PCN60283	100				110	9.1	12	110	67	144			
L60706-01MSA	MS	08/27/20	PCN60283	100	-0.79	0.48	4.5	100	8.5	3.9	101	67	144			
L60706-01DUP	DUP-RER	08/27/20			-0.79	0.48	4.5	-1.5	0.41	7.4				1.12	2	
L60706-01DUP	DUP-RPD	08/27/20			-0.79	0.48	4.5	-1.5	0.41	7.4				62	20	RG
L60870-05DUP	DUP-RER	08/27/20			26	17	38	52	22	47				0.94	2	
L60870-05DUP	DUP-RPD	08/27/20			26	17	38	52	22	47				67	20	RG

**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
<b>WG504097</b>																
WG504097LCSW	LCSW	09/10/20	PCN59634	96.72				95	3.6	2.9	98	55	121			
WG504097PBW	PBW	09/10/20						1	1.4	2.8			5.6			
L60890-01DUP	DUP-RER	09/10/20			-0.42	1.5	3.1	-2.9	1.4	3.1				1.21	2	
L60890-02MS	MS	09/10/20	PCN59634	96.72	9.2	2	3.2	86	4.1	3.8	79	55	121			
L60890-01DUP	DUP-RPD	09/10/20			-0.42	1.5	3.1	-2.9	1.4	3.1				149	20	RG
<b>WG504733</b>																
WG504733LCSW	LCSW	09/16/20	PCN59634	96.66				91	2.9	3.3	94	55	121			
L60869-01DUP	DUP-RER	09/16/20			-11	5.1	16	-1.8	12	34				0.71	2	
WG504733PBW	PBW	09/16/20						-3.2	1.3	4			8			
L60869-01MS	MS	09/16/20	PCN59634	644.43	-11	5.1	16	610	22	31	96	55	121			
L60869-01DUP	DUP-RPD	09/16/20			-11	5.1	16	-1.8	12	34				144	20	RG

Rio Algom Mining Company

ACZ Project ID: **L60869**

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 + Alpha Emitting Radium M903.0**

Units: pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec%	Lower	Upper	RPD/RER	Limit	Qual
<b>WG503542</b>																
L60870-01DUP	DUP-RPD	08/20/20			87	3	0.86	106	4	1.2				19.7	20	
WG503542LCSW	LCSW	08/20/20	PCN61539	20				16	1.3	0.77	80	66	132			
WG503542PBW	PBW	08/20/20						.24	0.21	0.73			1.46			
L60869-01MS	MS	08/20/20	PCN61539	20	6.4	0.68	0.57	23	1.3	0.57	83	66	132			

**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
<b>WG503900</b>																
WG503900PBW	PBW	09/01/20						.13	0.12	0.25			0.5			
WG503900LCSW	LCSW	09/01/20	PCN61539	20				19	0.54	0.11	95	43	148			
L60693-01DUP	DUP-RPD	09/01/20			1.8	0.21	0.17	1.8	0.27	0.29				0	20	
L60710-01MS	MS	09/01/20	PCN61539	20	0.69	0.15	0.1	20	0.63	0.11	97	43	148			
L60730-01DUP	DUP-RPD	09/01/20			2.6	0.23	0.13	4.2	0.34	0.15				47	20	RM

**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
<b>WG503967</b>																
WG503967LCSW	LCSW	08/31/20	PCN61541	9.74				10	1.7	1.3	103	47	123			
WG503967PBW	PBW	08/31/20						-.44	0.53	0.58			1.16			
L60707-01DUP	DUP-RPD	08/31/20			-0.14	1.1	2.7	1	1.1	2.6				265	20	RG
L60707-01DUP	DUP-RER	08/31/20			-0.14	1.1	2.7	1	1.1	2.6				0.73	2	
L60746-03MS	MS	08/31/20	PCN61541	6.49	1.2	0.81	0.79	9.2	1.5	1.2	123	47	123			
L60870-05DUP	DUP-RPD	08/31/20			1.5	1.3	3	.68	1.4	3.2				75	20	RG
L60870-05DUP	DUP-RER	08/31/20			1.5	1.3	3	.68	1.4	3.2				0.43	2	

Rio Algom Mining Company

ACZ Project ID: **L60869**

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 228, total**

M9320

Units: pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec%	Lower	Upper	RPD/RER	Limit	Qual
<b>WG504280</b>																
WG504280LCSW	LCSW	09/03/20	PCN61541	9.73				10	1.1	0.75	103	47	123			
WG504280PBW	PBW	09/03/20						.36	0.38	0.38			0.76			
L60743-01MS	MS	09/03/20	PCN61541	9.73	0.63	0.87	1.9	12	1.2	1.9	117	47	123			
L60731-02DUP	DUP-RPD	09/03/20			3.5	0.94	2	3.3	0.88	1.8				6	20	
L60799-01DUP	DUP-RPD	09/03/20			1.2	0.72	1.7	1.2	0.74	2				0	20	

**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
<b>WG504355</b>																
L60870-02DUP	DUP-RER	09/03/20			0.132	0.2	0.34	.0916	0.21	0.39				0.14	2	
L60870-02DUP	DUP-RPD	09/03/20			0.132	0.2	0.34	.0916	0.21	0.39				36	20	RG
L60870-03MS	MS	09/03/20	PCN58726	200	0.15	0.33	0.59	256	35	0.65	128	91	126			M1
WG504355PBW	PBW	09/03/20						.22	0.24	0.37			0.74			
WG504355LCSW	LCSW	09/03/20	PCN58726	200				195	26	0.26	98	91	126			

Rio Algom Mining Company

ACZ Project ID: **L60869**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L60869-01	WG503775	Gross Alpha, dissolved	M9310	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
	WG504733	Lead 210, dissolved	EICHROM, OTW01	DJ	Sample dilution required due to insufficient sample.
			EICHROM, OTW01	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
	WG503542	Radium 226 + Alpha Emitting Radium Isotopes, total	M903.0	N1	See Case Narrative.
	WG504280	Radium 228, total	M9320	DJ	Sample dilution required due to insufficient sample.
WG504355	Thorium 230, dissolved	ESM 4506	ESM 4506	DJ	Sample dilution required due to insufficient sample.
			ESM 4506	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			ESM 4506	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
L60869-02	WG503775	Gross Alpha, dissolved	M9310	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
	WG503900	Radium 226, dissolved	M903.1	D1	Sample required dilution due to matrix.
			M903.1	RM	For a water matrix, the duplicate precision assessment (RPD or RER) exceeded the control limit. High sediment, turbidity, or presence of an immiscible liquid attributed to non-homogeneity of the sample.
	WG503967	Radium 228, dissolved	M9320	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
	WG504355	Thorium 230, dissolved	ESM 4506	ESM 4506	D1
ESM 4506				M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
ESM 4506				RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
L60869-03	WG503775	Gross Alpha, dissolved	M9310	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
	WG504097	Lead 210, dissolved	EICHROM, OTW01	DJ	Sample dilution required due to insufficient sample.
			EICHROM, OTW01	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
	WG503900	Radium 226, dissolved	M903.1	RM	For a water matrix, the duplicate precision assessment (RPD or RER) exceeded the control limit. High sediment, turbidity, or presence of an immiscible liquid attributed to non-homogeneity of the sample.
	WG503967	Radium 228, dissolved	M9320	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
WG504355	Thorium 230, dissolved	ESM 4506	ESM 4506	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			ESM 4506	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.



**Rio Algom Mining Company**

ACZ Project ID: **L60869**

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

Rio Algom Mining Company  
 4508122295

ACZ Project ID: L60869  
 Date Received: 08/14/2020 10:25  
 Received By:  
 Date Printed: 8/17/2020

**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? <sup>1</sup>	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

**Chain of Custody Related Remarks**

**Client Contact Remarks**

**Shipping Containers**

Cooler Id	Temp (°C)	Temp Criteria (°C)	Rad (µR/Hr)	Custody Seal Intact?
5343	19.5	NA	15	Yes
5143	9.6	<=6.0	15	Yes
6030	11.8	<=6.0	15	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s) but was thawed by receipt at ACZ.

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

Rio Algom Mining Company  
4508122295

ACZ Project ID: L60869  
Date Received: 08/14/2020 10:25  
Received By:  
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<sup>1</sup> 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), Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).



Laboratories, Inc. **L 60869**

CHAIN of CUSTODY

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

Report to:

Name: Kent Applegate  
Company: Rio Algom Mining LLC  
E-mail: Kent.KC.Applegate@bhpbilliton.com

Address: PO Box 218  
Grants, NM 87020  
Telephone: 1-505-287-8851

Copy of Report to:

Name: See Remarks  
Company: INTERA, INC.

E-mail: See Remarks  
Telephone: 505-246-1600 x1207

Invoice to:

Name: Kent Applegate  
Company: Rio Algom Mining LLC  
E-mail: Kent.KC.Applegate@bhpbilliton.com

Address: PO Box 218  
Grants, NM 87020  
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: Andrew Applegate Sampler's Site Information State NM Zip code 87020 Time Zone MST

\*Sampler's Signature: [Signature] \*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

ANALYSES REQUESTED

Quote #:	PO#:	Reporting state for compliance testing:	Check box if samples include NRC licensed material?	SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	ANALYSES REQUESTED										
	<u>H502696259</u>	<u>NM</u>	<input type="checkbox"/>	<u>36-07 KOD</u>	<u>8/13/20 1325</u>	<u>GW</u>	<u>1</u>	<u>APC-NEW</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				<u>36-08 TAA</u>	<u>8/11/20 1440</u>	<u>GW</u>	<u>7</u>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				<u>32-04 TAA</u>	<u>8/11/20 1437</u>	<u>GW</u>	<u>7</u>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
									<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
									<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
									<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
									<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
									<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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

REMARKS

RAML COC#: 2099. Note different COC's may have different PO's. Shipment of 4 Coolers.

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

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
<u>[Signature]</u>	<u>8/12/20 1700</u>	<u>[Signature]</u>	<u>8/12/20 16:26</u>

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

36-07 KOD is just the nitric cube, the rest of the kit was shipped on 8/11/20.

60869 Chain of Custody