

January 26, 2023

Report to:

Jake Wilkinson
CRG Mining, LLC
510 S Wisconsin St
Gunnison, CO 80231

Bill to:

Jake Wilkinson
CRG Mining, LLC
510 S Wisconsin St
Gunnison, CO 80231

Project ID:

ACZ Project ID: L78031

Jake Wilkinson:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on January 05, 2023. This project has been assigned to ACZ's project number, L78031. 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 L78031. 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 February 25, 2023. 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.

Madeleine Murray
Madeleine Murray has reviewed
and approved this report.



CRG Mining, LLC

January 26, 2023

Project ID:

ACZ Project ID: L78031

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 4 miscellaneous samples from CRG Mining, LLC on January 5, 2023. 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 L78031. 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 except for parameters flagged with "H" flags (H3, HE), received either after the hold time expired or too close to the hold time.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The following required further detail not provided by the Extended Qualifier Report:

1. The below is from WG558108, Qualifier: N1, Applies to: L78031-01 through -04/TOTAL DISSOLVED SOLIDS - Oven temperature on 1/11/23 was not recorded. It is believed that the samples were in the oven for the required minimum 1 hour. All quality controls passing. No further action taken.

CRG Mining, LLC

Project ID:

Sample ID: RM3

ACZ Sample ID: **L78031-01**

Date Sampled: 01/03/23 11:45

Date Received: 01/05/23

Sample Matrix: Surface Water

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								01/06/23 9:00	dfb/mrd
Lab Filtration (0.45um) & Acidification	M200.7/200.8/3005A								01/16/23 9:30	mlh

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	<0.05	U		mg/L	0.05	0.25	01/21/23 17:03	wtc
Antimony, dissolved	M200.8 ICP-MS	1	<0.0004	U		mg/L	0.0004	0.002	01/17/23 20:27	kja
Arsenic, dissolved	M200.8 ICP-MS	1	0.00095	B		mg/L	0.0002	0.001	01/20/23 12:34	kja
Barium, dissolved	M200.7 ICP	1	0.0091	B		mg/L	0.009	0.035	01/21/23 17:03	wtc
Beryllium, dissolved	M200.8 ICP-MS	1	<0.00008	U		mg/L	0.00008	0.00025	01/17/23 20:27	kja
Cadmium, dissolved	M200.8 ICP-MS	1	0.000195	B		mg/L	0.00005	0.00025	01/17/23 20:27	kja
Calcium, dissolved	M200.7 ICP	1	16.9			mg/L	0.1	0.5	01/21/23 17:03	wtc
Chromium, dissolved	M200.8 ICP-MS	1	<0.0005	U		mg/L	0.0005	0.002	01/17/23 20:27	kja
Cobalt, dissolved	M200.7 ICP	1	<0.02	U		mg/L	0.02	0.05	01/21/23 17:03	wtc
Copper, dissolved	M200.7 ICP	1	<0.01	U		mg/L	0.01	0.05	01/23/23 17:55	aeh
Iron, dissolved	M200.7 ICP	1	<0.06	U		mg/L	0.06	0.15	01/21/23 17:03	wtc
Lead, dissolved	M200.8 ICP-MS	1	0.00014	B		mg/L	0.0001	0.0005	01/17/23 20:27	kja
Magnesium, dissolved	M200.7 ICP	1	5.29			mg/L	0.2	1	01/23/23 17:55	aeh
Manganese, dissolved	M200.7 ICP	1	0.213			mg/L	0.01	0.05	01/21/23 17:03	wtc
Mercury, total	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	01/09/23 14:52	mlh
Nickel, dissolved	M200.7 ICP	1	<0.008	U		mg/L	0.008	0.04	01/21/23 17:03	wtc
Potassium, dissolved	M200.7 ICP	1	0.78	B		mg/L	0.2	1	01/21/23 17:03	wtc
Sodium, dissolved	M200.7 ICP	1	2.20			mg/L	0.2	1	01/21/23 17:03	wtc
Vanadium, dissolved	M200.7 ICP	1	<0.01	U		mg/L	0.01	0.025	01/21/23 17:03	wtc
Zinc, dissolved	M200.7 ICP	1	0.292			mg/L	0.02	0.05	01/21/23 17:03	wtc

CRG Mining, LLC
Project ID:
Sample ID: RM3

ACZ Sample ID: **L78031-01**
Date Sampled: 01/03/23 11:45
Date Received: 01/05/23
Sample Matrix: Surface Water

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	62.2			mg/L	2	20	01/12/23 0:00	jck
Carbonate as CaCO ₃		1	<2	U		mg/L	2	20	01/12/23 0:00	jck
Hydroxide as CaCO ₃		1	<2	U		mg/L	2	20	01/12/23 0:00	jck
Total Alkalinity		1	62.2		*	mg/L	2	20	01/12/23 0:00	jck
Cation-Anion Balance	Calculation									
Cation-Anion Balance			0.0			%			01/26/23 0:00	calc
Sum of Anions			1.4			meq/L			01/26/23 0:00	calc
Sum of Cations			1.4			meq/L			01/26/23 0:00	calc
Chloride	SM4500Cl-E	1	<1	U	*	mg/L	1	2	01/16/23 12:54	mrdr
Conductivity @25C	SM2510B	1	134			umhos/cm	1	10	01/12/23 22:27	jck
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5	<0.003	U	*	mg/L	0.003	0.01	01/06/23 15:00	bls
Hardness as CaCO ₃ (dissolved)	SM2340B - Calculation		64.0			mg/L	0.2	5	01/26/23 0:00	calc
Lab Filtration (0.45um filter)	SOPWC050	1							01/11/23 7:39	mlh
Nitrate as N	Calculation: NO ₃ NO ₂ minus NO ₂		0.214	H		mg/L	0.02	0.1	01/26/23 0:00	calc
Nitrate/Nitrite as N	M353.2 - Automated Cadmium Reduction	1	0.214	H	*	mg/L	0.02	0.1	01/06/23 0:50	pjb
Nitrite as N	M353.2 - Automated Cadmium Reduction	1	<0.01	UH	*	mg/L	0.01	0.05	01/06/23 0:50	pjb
pH (lab)	SM4500H+ B									
pH		1	6.9	H		units	0.1	0.1	01/12/23 0:00	jck
pH measured at		1	21.7			C	0.1	0.1	01/12/23 0:00	jck
Residue, Filterable (TDS) @180C	SM2540C	1	82		*	mg/L	20	40	01/10/23 11:19	svm
Sulfate	D516-02/-07/-11 - TURBIDIMETRIC	1	7.9		*	mg/L	1	5	01/19/23 21:55	gkk

CRG Mining, LLC

Project ID:

Sample ID: CM1

ACZ Sample ID: **L78031-02**

Date Sampled: 01/03/23 12:20

Date Received: 01/05/23

Sample Matrix: Surface Water

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								01/06/23 9:10	dfb/mrd
Lab Filtration (0.45um) & Acidification	M200.7/200.8/3005A								01/16/23 9:30	mlh

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	<0.05	U		mg/L	0.05	0.25	01/21/23 17:06	wtc
Antimony, dissolved	M200.8 ICP-MS	1	<0.0004	U		mg/L	0.0004	0.002	01/17/23 20:36	kja
Arsenic, dissolved	M200.8 ICP-MS	1	0.00116			mg/L	0.0002	0.001	01/20/23 12:40	kja
Barium, dissolved	M200.7 ICP	1	0.0097	B		mg/L	0.009	0.035	01/21/23 17:06	wtc
Beryllium, dissolved	M200.8 ICP-MS	1	<0.00008	U		mg/L	0.00008	0.00025	01/17/23 20:36	kja
Cadmium, dissolved	M200.8 ICP-MS	1	0.000164	B		mg/L	0.00005	0.00025	01/17/23 20:36	kja
Calcium, dissolved	M200.7 ICP	1	16.7			mg/L	0.1	0.5	01/21/23 17:06	wtc
Chromium, dissolved	M200.8 ICP-MS	1	<0.0005	U		mg/L	0.0005	0.002	01/17/23 20:36	kja
Cobalt, dissolved	M200.7 ICP	1	<0.02	U		mg/L	0.02	0.05	01/21/23 17:06	wtc
Copper, dissolved	M200.7 ICP	1	<0.01	U		mg/L	0.01	0.05	01/23/23 17:58	aeH
Iron, dissolved	M200.7 ICP	1	<0.06	U		mg/L	0.06	0.15	01/21/23 17:06	wtc
Lead, dissolved	M200.8 ICP-MS	1	0.00027	B		mg/L	0.0001	0.0005	01/17/23 20:36	kja
Magnesium, dissolved	M200.7 ICP	1	5.25			mg/L	0.2	1	01/23/23 17:58	aeH
Manganese, dissolved	M200.7 ICP	1	0.038	B		mg/L	0.01	0.05	01/21/23 17:06	wtc
Mercury, total	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	01/09/23 15:10	mlh
Nickel, dissolved	M200.7 ICP	1	<0.008	U		mg/L	0.008	0.04	01/21/23 17:06	wtc
Potassium, dissolved	M200.7 ICP	1	0.84	B		mg/L	0.2	1	01/21/23 17:06	wtc
Sodium, dissolved	M200.7 ICP	1	2.16			mg/L	0.2	1	01/21/23 17:06	wtc
Vanadium, dissolved	M200.7 ICP	1	<0.01	U		mg/L	0.01	0.025	01/21/23 17:06	wtc
Zinc, dissolved	M200.7 ICP	1	0.143			mg/L	0.02	0.05	01/21/23 17:06	wtc

CRG Mining, LLC
Project ID:
Sample ID: CM1

ACZ Sample ID: **L78031-02**
Date Sampled: 01/03/23 12:20
Date Received: 01/05/23
Sample Matrix: Surface Water

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	77.1			mg/L	2	20	01/12/23 0:00	jck
Carbonate as CaCO ₃		1	<2	U		mg/L	2	20	01/12/23 0:00	jck
Hydroxide as CaCO ₃		1	<2	U		mg/L	2	20	01/12/23 0:00	jck
Total Alkalinity		1	77.1		*	mg/L	2	20	01/12/23 0:00	jck
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-9.7			%			01/26/23 0:00	calc
Sum of Anions			1.7			meq/L			01/26/23 0:00	calc
Sum of Cations			1.4			meq/L			01/26/23 0:00	calc
Chloride	SM4500Cl-E	1	<1	U	*	mg/L	1	2	01/16/23 12:54	mrdr
Conductivity @25C	SM2510B	1	135			umhos/cm	1	10	01/12/23 22:37	jck
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5	<0.003	U	*	mg/L	0.003	0.01	01/06/23 15:01	bls
Hardness as CaCO ₃ (dissolved)	SM2340B - Calculation		63			mg/L	0.2	5	01/26/23 0:00	calc
Lab Filtration (0.45um filter)	SOPWC050	1							01/11/23 7:43	mlh
Nitrate as N	Calculation: NO ₃ NO ₂ minus NO ₂		0.208	H		mg/L	0.02	0.1	01/26/23 0:00	calc
Nitrate/Nitrite as N	M353.2 - Automated Cadmium Reduction	1	0.208	H	*	mg/L	0.02	0.1	01/06/23 0:52	pjb
Nitrite as N	M353.2 - Automated Cadmium Reduction	1	<0.01	UH	*	mg/L	0.01	0.05	01/06/23 0:52	pjb
pH (lab)	SM4500H+ B									
pH		1	7.0	H		units	0.1	0.1	01/12/23 0:00	jck
pH measured at		1	21.7			C	0.1	0.1	01/12/23 0:00	jck
Residue, Filterable (TDS) @180C	SM2540C	1	74		*	mg/L	20	40	01/10/23 11:22	svm
Sulfate	D516-02/-07/-11 - TURBIDIMETRIC	1	8.5		*	mg/L	1	5	01/19/23 21:55	gkk

CRG Mining, LLC

Project ID:

Sample ID: CM2

ACZ Sample ID: **L78031-03**

Date Sampled: 01/03/23 12:40

Date Received: 01/05/23

Sample Matrix: Surface Water

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								01/06/23 9:21	dfb/mrd
Lab Filtration (0.45um) & Acidification	M200.7/200.8/3005A								01/16/23 9:30	mlh

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	<0.05	U		mg/L	0.05	0.25	01/21/23 17:09	wtc
Antimony, dissolved	M200.8 ICP-MS	1	<0.0004	U		mg/L	0.0004	0.002	01/17/23 20:38	kja
Arsenic, dissolved	M200.8 ICP-MS	1	0.00228			mg/L	0.0002	0.001	01/20/23 12:41	kja
Barium, dissolved	M200.7 ICP	1	<0.009	U		mg/L	0.009	0.035	01/21/23 17:09	wtc
Beryllium, dissolved	M200.8 ICP-MS	1	<0.00008	U		mg/L	0.00008	0.00025	01/17/23 20:38	kja
Cadmium, dissolved	M200.8 ICP-MS	1	0.000072	B		mg/L	0.00005	0.00025	01/17/23 20:38	kja
Calcium, dissolved	M200.7 ICP	1	17.0			mg/L	0.1	0.5	01/21/23 17:09	wtc
Chromium, dissolved	M200.8 ICP-MS	1	<0.0005	U		mg/L	0.0005	0.002	01/17/23 20:38	kja
Cobalt, dissolved	M200.7 ICP	1	<0.02	U		mg/L	0.02	0.05	01/21/23 17:09	wtc
Copper, dissolved	M200.7 ICP	1	<0.01	U		mg/L	0.01	0.05	01/23/23 18:07	aeH
Iron, dissolved	M200.7 ICP	1	<0.06	U		mg/L	0.06	0.15	01/21/23 17:09	wtc
Lead, dissolved	M200.8 ICP-MS	1	0.00014	B		mg/L	0.0001	0.0005	01/17/23 20:38	kja
Magnesium, dissolved	M200.7 ICP	1	3.21			mg/L	0.2	1	01/23/23 18:07	aeH
Manganese, dissolved	M200.7 ICP	1	0.010	B		mg/L	0.01	0.05	01/21/23 17:09	wtc
Mercury, total	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	01/09/23 15:11	mlh
Nickel, dissolved	M200.7 ICP	1	<0.008	U		mg/L	0.008	0.04	01/21/23 17:09	wtc
Potassium, dissolved	M200.7 ICP	1	0.73	B		mg/L	0.2	1	01/21/23 17:09	wtc
Sodium, dissolved	M200.7 ICP	1	5.90			mg/L	0.2	1	01/21/23 17:09	wtc
Vanadium, dissolved	M200.7 ICP	1	<0.01	U		mg/L	0.01	0.025	01/21/23 17:09	wtc
Zinc, dissolved	M200.7 ICP	1	<0.02	U		mg/L	0.02	0.05	01/21/23 17:09	wtc

CRG Mining, LLC
Project ID:
Sample ID: CM2

ACZ Sample ID: **L78031-03**
Date Sampled: 01/03/23 12:40
Date Received: 01/05/23
Sample Matrix: Surface Water

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	54.2			mg/L	2	20	01/12/23 0:00	jck
Carbonate as CaCO ₃		1	<2	U		mg/L	2	20	01/12/23 0:00	jck
Hydroxide as CaCO ₃		1	<2	U		mg/L	2	20	01/12/23 0:00	jck
Total Alkalinity		1	54.2		*	mg/L	2	20	01/12/23 0:00	jck
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-6.7			%			01/26/23 0:00	calc
Sum of Anions			1.6			meq/L			01/26/23 0:00	calc
Sum of Cations			1.4			meq/L			01/26/23 0:00	calc
Chloride	SM4500Cl-E	1	<1	U	*	mg/L	1	2	01/16/23 12:55	mrdr
Conductivity @25C	SM2510B	1	140			umhos/cm	1	10	01/12/23 22:45	jck
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5	<0.003	U	*	mg/L	0.003	0.01	01/06/23 15:02	bls
Hardness as CaCO ₃ (dissolved)	SM2340B - Calculation		56			mg/L	0.2	5	01/26/23 0:00	calc
Lab Filtration (0.45um filter)	SOPWC050	1							01/11/23 7:47	mlh
Nitrate as N	Calculation: NO ₃ NO ₂ minus NO ₂		<0.02	UH		mg/L	0.02	0.1	01/26/23 0:00	calc
Nitrate/Nitrite as N	M353.2 - Automated Cadmium Reduction	1	<0.02	UH	*	mg/L	0.02	0.1	01/06/23 23:46	pjb
Nitrite as N	M353.2 - Automated Cadmium Reduction	1	<0.01	UH	*	mg/L	0.01	0.05	01/06/23 23:46	pjb
pH (lab)	SM4500H+ B									
pH		1	6.9	H		units	0.1	0.1	01/12/23 0:00	jck
pH measured at		1	21.8			C	0.1	0.1	01/12/23 0:00	jck
Residue, Filterable (TDS) @180C	SM2540C	1	76		*	mg/L	20	40	01/10/23 11:24	svm
Sulfate	D516-02/-07/-11 - TURBIDIMETRIC	1	25.0		*	mg/L	1	5	01/19/23 21:55	gkk

CRG Mining, LLC

Project ID:

Sample ID: CM3

ACZ Sample ID: **L78031-04**

Date Sampled: 01/03/23 12:50

Date Received: 01/05/23

Sample Matrix: Surface Water

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation								01/06/23 9:32	dfb/mrd
Lab Filtration (0.45um) & Acidification	M200.7/200.8/3005A								01/16/23 9:30	mlh

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	<0.05	U		mg/L	0.05	0.25	01/21/23 17:19	wtc
Antimony, dissolved	M200.8 ICP-MS	1	<0.0004	U		mg/L	0.0004	0.002	01/17/23 20:40	kja
Arsenic, dissolved	M200.8 ICP-MS	1	0.00125			mg/L	0.0002	0.001	01/20/23 12:43	kja
Barium, dissolved	M200.7 ICP	1	<0.009	U		mg/L	0.009	0.035	01/21/23 17:19	wtc
Beryllium, dissolved	M200.8 ICP-MS	1	<0.00008	U	*	mg/L	0.00008	0.00025	01/17/23 20:40	kja
Cadmium, dissolved	M200.8 ICP-MS	1	0.000142	B		mg/L	0.00005	0.00025	01/17/23 20:40	kja
Calcium, dissolved	M200.7 ICP	1	16.0			mg/L	0.1	0.5	01/21/23 17:19	wtc
Chromium, dissolved	M200.8 ICP-MS	1	<0.0005	U		mg/L	0.0005	0.002	01/17/23 20:40	kja
Cobalt, dissolved	M200.7 ICP	1	<0.02	U		mg/L	0.02	0.05	01/21/23 17:19	wtc
Copper, dissolved	M200.7 ICP	1	<0.01	U		mg/L	0.01	0.05	01/23/23 18:10	aeh
Iron, dissolved	M200.7 ICP	1	<0.06	U		mg/L	0.06	0.15	01/21/23 17:19	wtc
Lead, dissolved	M200.8 ICP-MS	1	0.00031	B		mg/L	0.0001	0.0005	01/17/23 20:40	kja
Magnesium, dissolved	M200.7 ICP	1	5.07			mg/L	0.2	1	01/23/23 18:10	aeh
Manganese, dissolved	M200.7 ICP	1	<0.01	U		mg/L	0.01	0.05	01/21/23 17:19	wtc
Mercury, total	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	01/09/23 15:14	mlh
Nickel, dissolved	M200.7 ICP	1	<0.008	U		mg/L	0.008	0.04	01/21/23 17:19	wtc
Potassium, dissolved	M200.7 ICP	1	0.81	B		mg/L	0.2	1	01/21/23 17:19	wtc
Sodium, dissolved	M200.7 ICP	1	2.32			mg/L	0.2	1	01/21/23 17:19	wtc
Vanadium, dissolved	M200.7 ICP	1	<0.01	U		mg/L	0.01	0.025	01/21/23 17:19	wtc
Zinc, dissolved	M200.7 ICP	1	0.035	B		mg/L	0.02	0.05	01/21/23 17:19	wtc

CRG Mining, LLC
Project ID:
Sample ID: CM3

ACZ Sample ID: **L78031-04**
Date Sampled: 01/03/23 12:50
Date Received: 01/05/23
Sample Matrix: Surface Water

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	63.9			mg/L	2	20	01/12/23 0:00	jck
Carbonate as CaCO ₃		1	<2	U		mg/L	2	20	01/12/23 0:00	jck
Hydroxide as CaCO ₃		1	<2	U		mg/L	2	20	01/12/23 0:00	jck
Total Alkalinity		1	63.9			mg/L	2	20	01/12/23 0:00	jck
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-10.3			%			01/26/23 0:00	calc
Sum of Anions			1.6			meq/L			01/26/23 0:00	calc
Sum of Cations			1.3			meq/L			01/26/23 0:00	calc
Chloride	SM4500Cl-E	1	<1	U	*	mg/L	1	2	01/16/23 12:55	mrdr
Conductivity @25C	SM2510B	1	137			umhos/cm	1	10	01/12/23 22:53	jck
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.5	<0.003	U	*	mg/L	0.003	0.01	01/06/23 15:03	bls
Hardness as CaCO ₃ (dissolved)	SM2340B - Calculation		61			mg/L	0.2	5	01/26/23 0:00	calc
Lab Filtration (0.45um filter)	SOPWC050	1							01/11/23 7:50	mlh
Nitrate as N	Calculation: NO ₃ NO ₂ minus NO ₂		0.181	H		mg/L	0.02	0.1	01/26/23 0:00	calc
Nitrate/Nitrite as N	M353.2 - Automated Cadmium Reduction	1	0.181	H	*	mg/L	0.02	0.1	01/06/23 23:49	pjb
Nitrite as N	M353.2 - Automated Cadmium Reduction	1	<0.01	UH	*	mg/L	0.01	0.05	01/06/23 23:49	pjb
pH (lab)	SM4500H+ B									
pH		1	7.0	H		units	0.1	0.1	01/12/23 0:00	jck
pH measured at		1	22.0			C	0.1	0.1	01/12/23 0:00	jck
Residue, Filterable (TDS) @180C	SM2540C	1	66		*	mg/L	20	40	01/10/23 11:27	svm
Sulfate	D516-02/-07/-11 - TURBIDIMETRIC	1	17.0		*	mg/L	1	5	01/19/23 21:55	gkk



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>

CRG

ACZ Project ID: **L78031**

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
WG558377													
WG558377PBW1	PBW	01/12/23 17:52				4.3	mg/L		-20	20			
WG558377LCSW3	LCSW	01/12/23 18:14	WC230103-1	820.0001		811.4	mg/L	99	90	110			
WG558377LCSW6	LCSW	01/12/23 21:07	WC230103-1	820.0001		813.8	mg/L	99	90	110			
WG558377PBW2	PBW	01/12/23 21:15				8	mg/L		-20	20			
L78029-01DUP	DUP	01/12/23 22:02			4.4	3.5	mg/L				23	20	RA
L78031-04DUP	DUP	01/12/23 23:02			63.9	62.5	mg/L				2	20	
WG558377LCSW9	LCSW	01/13/23 0:51	WC230103-1	820.0001		822.5	mg/L	100	90	110			
WG558377PBW3	PBW	01/13/23 0:59				7.6	mg/L		-20	20			
WG558377LCSW12	LCSW	01/13/23 4:37	WC230103-1	820.0001		828	mg/L	101	90	110			
WG558377PBW4	PBW	01/13/23 4:45				7.8	mg/L		-20	20			
WG558377LCSW15	LCSW	01/13/23 8:33	WC230103-1	820.0001		819.9	mg/L	100	90	110			
WG558377PBW5	PBW	01/13/23 8:42				8.2	mg/L		-20	20			
WG558377LCSW18	LCSW	01/13/23 10:48	WC230103-1	820.0001		834	mg/L	102	90	110			

Aluminum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG558967													
WG558967ICV	ICV	01/21/23 15:48	II230120-1	2		2.012	mg/L	101	95	105			
WG558967ICB	ICB	01/21/23 15:54				U	mg/L		-0.15	0.15			
WG558967LFB	LFB	01/21/23 16:06	II230120-4	1.0008		1.05	mg/L	105	85	115			
L78031-04AS	AS	01/21/23 17:22	II230120-4	1.0008	U	1.038	mg/L	104	85	115			
L78031-04ASD	ASD	01/21/23 17:25	II230120-4	1.0008	U	1.015	mg/L	101	85	115	2	20	

Antimony, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG558658													
WG558658ICV	ICV	01/17/23 20:08	MS221228-3	.0201		.01879	mg/L	93	90	110			
WG558658ICB	ICB	01/17/23 20:10				.00057	mg/L		-0.00088	0.00088			
WG558658LFB	LFB	01/17/23 20:12	MS230110-5	.01		.00983	mg/L	98	85	115			
L78031-01AS	AS	01/17/23 20:29	MS230110-5	.01	U	.00858	mg/L	86	70	130			
L78031-01ASD	ASD	01/17/23 20:35	MS230110-5	.01	U	.00863	mg/L	86	70	130	1	20	
L78033-03AS	AS	01/17/23 21:01	MS230110-5	.01	U	.00968	mg/L	97	70	130			
L78033-03ASD	ASD	01/17/23 21:03	MS230110-5	.01	U	.0101	mg/L	101	70	130	4	20	

Arsenic, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG558916													
WG558916ICV	ICV	01/20/23 12:12	MS221228-3	.05		.05064	mg/L	101	90	110			
WG558916ICB	ICB	01/20/23 12:14				U	mg/L		-0.00044	0.00044			
WG558916LFB	LFB	01/20/23 12:16	MS230110-5	.0501		.0538	mg/L	107	85	115			
L78031-01AS	AS	01/20/23 12:36	MS230110-5	.0501	.00095	.0536	mg/L	105	70	130			
L78031-01ASD	ASD	01/20/23 12:38	MS230110-5	.0501	.00095	.05304	mg/L	104	70	130	1	20	
L78060-02AS	AS	01/20/23 13:05	MS230110-5	.0501	.00052	.05378	mg/L	106	70	130			
L78060-02ASD	ASD	01/20/23 13:07	MS230110-5	.0501	.00052	.05407	mg/L	107	70	130	1	20	

CRG

ACZ Project ID: **L78031**

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.

Barium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG558967													
WG558967ICV	ICV	01/21/23 15:48	II230120-1	2		1.9915	mg/L	100	95	105			
WG558967ICB	ICB	01/21/23 15:54				U	mg/L		-0.027	0.027			
WG558967LFB	LFB	01/21/23 16:06	II230120-4	.502		.5206	mg/L	104	85	115			
L78031-04AS	AS	01/21/23 17:22	II230120-4	.502	U	.5163	mg/L	103	85	115			
L78031-04ASD	ASD	01/21/23 17:25	II230120-4	.502	U	.5151	mg/L	103	85	115	0	20	

Beryllium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG558658													
WG558658ICV	ICV	01/17/23 20:08	MS221228-3	.05		.051122	mg/L	102	90	110			
WG558658ICB	ICB	01/17/23 20:10				U	mg/L		-0.000176	0.000176			
WG558658LFB	LFB	01/17/23 20:12	MS230110-5	.05005		.05297	mg/L	106	85	115			
L78031-01AS	AS	01/17/23 20:29	MS230110-5	.05005	U	.05642	mg/L	113	70	130			
L78031-01ASD	ASD	01/17/23 20:35	MS230110-5	.05005	U	.056729	mg/L	113	70	130	1	20	
L78033-03AS	AS	01/17/23 21:01	MS230110-5	.05005		.015003	mg/L	30	70	130			M2
L78033-03ASD	ASD	01/17/23 21:03	MS230110-5	.05005		.015534	mg/L	31	70	130	3	20	M2

Cadmium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG558658													
WG558658ICV	ICV	01/17/23 20:08	MS221228-3	.05		.049573	mg/L	99	90	110			
WG558658ICB	ICB	01/17/23 20:10				U	mg/L		-0.00011	0.00011			
WG558658LFB	LFB	01/17/23 20:12	MS230110-5	.05005		.052159	mg/L	104	85	115			
L78031-01AS	AS	01/17/23 20:29	MS230110-5	.05005	.000195	.05233	mg/L	104	70	130			
L78031-01ASD	ASD	01/17/23 20:35	MS230110-5	.05005	.000195	.053073	mg/L	106	70	130	1	20	
L78033-03AS	AS	01/17/23 21:01	MS230110-5	.05005	U	.050651	mg/L	101	70	130			
L78033-03ASD	ASD	01/17/23 21:03	MS230110-5	.05005	U	.051135	mg/L	102	70	130	1	20	

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG558967													
WG558967ICV	ICV	01/21/23 15:48	II230120-1	100		96.73	mg/L	97	95	105			
WG558967ICB	ICB	01/21/23 15:54				U	mg/L		-0.3	0.3			
WG558967LFB	LFB	01/21/23 16:06	II230120-4	67.99353		68.58	mg/L	101	85	115			
L78031-04AS	AS	01/21/23 17:22	II230120-4	67.99353	16	82.98	mg/L	99	85	115			
L78031-04ASD	ASD	01/21/23 17:25	II230120-4	67.99353	16	82.04	mg/L	97	85	115	1	20	

Chloride

SM4500Cl-E

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG558540													
WG558540ICV	ICV	01/16/23 12:50	WI220502-12	54.945		54.48	mg/L	99	90	110			
WG558540ICB	ICB	01/16/23 12:51				U	mg/L		-3	3			
WG558540LFB1	LFB	01/16/23 12:51	WI221025-9	30.03		30.14	mg/L	100	90	110			
L78030-01AS	AS	01/16/23 12:52	WI221025-9	30.03	7.66	36.55	mg/L	96	90	110			
L78030-02DUP	DUP	01/16/23 12:53			7.33	7.23	mg/L				1	20	RA
WG558540LFB2	LFB	01/16/23 13:06	WI221025-9	30.03		30.77	mg/L	102	90	110			

CRG

ACZ Project ID: **L78031**

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.

Chromium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG558658													
WG558658ICV	ICV	01/17/23 20:08	MS221228-3	.05		.05058	mg/L	101	90	110			
WG558658ICB	ICB	01/17/23 20:10				U	mg/L		-0.0011	0.0011			
WG558658LFB	LFB	01/17/23 20:12	MS230110-5	.0501		.0522	mg/L	104	85	115			
L78031-01AS	AS	01/17/23 20:29	MS230110-5	.0501	U	.05038	mg/L	101	70	130			
L78031-01ASD	ASD	01/17/23 20:35	MS230110-5	.0501	U	.05082	mg/L	101	70	130	1	20	
L78033-03AS	AS	01/17/23 21:01	MS230110-5	.0501	U	.0484	mg/L	97	70	130			
L78033-03ASD	ASD	01/17/23 21:03	MS230110-5	.0501	U	.04926	mg/L	98	70	130	2	20	

Cobalt, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG558967													
WG558967ICV	ICV	01/21/23 15:48	II230120-1	2.006		1.969	mg/L	98	95	105			
WG558967ICB	ICB	01/21/23 15:54				U	mg/L		-0.06	0.06			
WG558967LFB	LFB	01/21/23 16:06	II230120-4	.5005		.519	mg/L	104	85	115			
L78031-04AS	AS	01/21/23 17:22	II230120-4	.5005	U	.483	mg/L	97	85	115			
L78031-04ASD	ASD	01/21/23 17:25	II230120-4	.5005	U	.487	mg/L	97	85	115	1	20	

Conductivity @25C

SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG558377													
WG558377LCSW2	LCSW	01/12/23 17:59	PCN623869	1410		1401	umhos/cm	99	90	110			
WG558377LCSW5	LCSW	01/12/23 20:52	PCN623869	1410		1396	umhos/cm	99	90	110			
L78029-01DUP	DUP	01/12/23 22:02			2350	2360	umhos/cm				0	20	
L78031-04DUP	DUP	01/12/23 23:02			137	138	umhos/cm				1	20	
WG558377LCSW8	LCSW	01/13/23 0:36	PCN623869	1410		1394	umhos/cm	99	90	110			
WG558377LCSW11	LCSW	01/13/23 4:21	PCN623869	1410		1389	umhos/cm	99	90	110			
WG558377LCSW14	LCSW	01/13/23 8:19	PCN623869	1410		1385	umhos/cm	98	90	110			
WG558377LCSW17	LCSW	01/13/23 10:32	PCN623869	1410		1376	umhos/cm	98	90	110			

Copper, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG559037													
WG559037ICV	ICV	01/23/23 17:13	II230120-1	2		2.019	mg/L	101	95	105			
WG559037ICB	ICB	01/23/23 17:18				U	mg/L		-0.03	0.03			
WG559037LFB	LFB	01/23/23 17:31	II230120-4	.5005		.512	mg/L	102	85	115			
L78030-01AS	AS	01/23/23 17:46	II230120-4	.5005	U	.512	mg/L	102	85	115			
L78030-01ASD	ASD	01/23/23 17:49	II230120-4	.5005	U	.507	mg/L	101	85	115	1	20	

Cyanide, total

M335.4 - Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG557967													
WG557967ICV	ICV	01/06/23 14:57	WI221229-3	.3003		.2806	mg/L	93	90	110			
WG557967ICB	ICB	01/06/23 14:58				U	mg/L		-0.003	0.003			
WG557904LRB	LRB	01/06/23 14:59				U	mg/L		-0.003	0.003			
WG557904LFB	LFB	01/06/23 14:59	WI230104-1	.2		.1981	mg/L	99	90	110			
L78032-05DUP	DUP	01/06/23 15:10			U	U	mg/L				0	20	RA
L78038-01LFM	LFM	01/06/23 15:12	WI230104-1	.2	U	.2127	mg/L	106	90	110			

CRG

ACZ Project ID: **L78031**

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.

Iron, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG558967													
WG558967ICV	ICV	01/21/23 15:48	II230120-1	2		1.902	mg/L	95	95	105			
WG558967ICB	ICB	01/21/23 15:54				U	mg/L		-0.18	0.18			
WG558967LFB	LFB	01/21/23 16:06	II230120-4	1.004		1.087	mg/L	108	85	115			
L78031-04AS	AS	01/21/23 17:22	II230120-4	1.004	U	.955	mg/L	95	85	115			
L78031-04ASD	ASD	01/21/23 17:25	II230120-4	1.004	U	.966	mg/L	96	85	115	1	20	

Lead, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG558658													
WG558658ICV	ICV	01/17/23 20:08	MS221228-3	.05		.04984	mg/L	100	90	110			
WG558658ICB	ICB	01/17/23 20:10				U	mg/L		-0.00022	0.00022			
WG558658LFB	LFB	01/17/23 20:12	MS230110-5	.0501		.05093	mg/L	102	85	115			
L78031-01AS	AS	01/17/23 20:29	MS230110-5	.0501	.00014	.05009	mg/L	100	70	130			
L78031-01ASD	ASD	01/17/23 20:35	MS230110-5	.0501	.00014	.0505	mg/L	101	70	130	1	20	
L78033-03AS	AS	01/17/23 21:01	MS230110-5	.0501	.00015	.05408	mg/L	108	70	130			
L78033-03ASD	ASD	01/17/23 21:03	MS230110-5	.0501	.00015	.05489	mg/L	109	70	130	1	20	

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG559037													
WG559037ICV	ICV	01/23/23 17:13	II230120-1	100		97.77	mg/L	98	95	105			
WG559037ICB	ICB	01/23/23 17:18				U	mg/L		-0.6	0.6			
WG559037LFB	LFB	01/23/23 17:31	II230120-4	49.99676		47.61	mg/L	95	85	115			
L78030-01AS	AS	01/23/23 17:46	II230120-4	49.99676	5.2	51.89	mg/L	93	85	115			
L78030-01ASD	ASD	01/23/23 17:49	II230120-4	49.99676	5.2	51.01	mg/L	92	85	115	2	20	

Manganese, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG558967													
WG558967ICV	ICV	01/21/23 15:48	II230120-1	2		1.969	mg/L	98	95	105			
WG558967ICB	ICB	01/21/23 15:54				U	mg/L		-0.03	0.03			
WG558967LFB	LFB	01/21/23 16:06	II230120-4	.499		.531	mg/L	106	85	115			
L78031-04AS	AS	01/21/23 17:22	II230120-4	.499	U	.501	mg/L	100	85	115			
L78031-04ASD	ASD	01/21/23 17:25	II230120-4	.499	U	.5	mg/L	100	85	115	0	20	

CRG

ACZ Project ID: **L78031**

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.

Mercury, total

M245.1 CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG558009													
WG558009ICV	ICV	01/09/23 12:16	HG230103-3	.005005		.0051	mg/L	102	95	105			
WG558009ICB	ICB	01/09/23 12:17				U	mg/L		-0.0002	0.0002			
WG558030													
WG558030LRB	LRB	01/09/23 14:25				U	mg/L		-0.00044	0.00044			
WG558030LFB	LFB	01/09/23 14:26	HG230103-6	.002002		.00189	mg/L	94	85	115			
L78023-03LFM	LFM	01/09/23 14:41	HG230103-6	.002002	U	.00195	mg/L	97	85	115			
L78023-03LFMD	LFMD	01/09/23 14:42	HG230103-6	.002002	U	.00191	mg/L	95	85	115	2	20	
WG558031													
WG558031LRB	LRB	01/09/23 15:08				U	mg/L		-0.00044	0.00044			
WG558031LFB	LFB	01/09/23 15:09	HG230103-6	.002002		.00189	mg/L	94	85	115			
L78031-03LFM	LFM	01/09/23 15:12	HG230103-6	.002002	U	.00197	mg/L	98	85	115			
L78031-03LFMD	LFMD	01/09/23 15:13	HG230103-6	.002002	U	.00185	mg/L	92	85	115	6	20	

Nickel, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG558967													
WG558967ICV	ICV	01/21/23 15:48	II230120-1	2.002		1.9448	mg/L	97	95	105			
WG558967ICB	ICB	01/21/23 15:54				U	mg/L		-0.024	0.024			
WG558967LFB	LFB	01/21/23 16:06	II230120-4	.502		.5239	mg/L	104	85	115			
L78031-04AS	AS	01/21/23 17:22	II230120-4	.502	U	.4939	mg/L	98	85	115			
L78031-04ASD	ASD	01/21/23 17:25	II230120-4	.502	U	.491	mg/L	98	85	115	1	20	

Nitrate/Nitrite as N

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG557896													
WG557896ICV	ICV	01/05/23 23:25	WI221206-7	2.416		2.322	mg/L	96	90	110			
WG557896ICB	ICB	01/05/23 23:26				U	mg/L		-0.02	0.02			
WG557898													
WG557898LFB	LFB	01/06/23 0:43	WI220826-7	2		2.067	mg/L	103	90	110			
L77974-01AS	AS	01/06/23 0:45	WI220826-7	2	1.47	3.545	mg/L	104	90	110			
L77974-02DUP	DUP	01/06/23 0:48			1.62	1.604	mg/L				1	20	
WG557981													
WG557981ICV	ICV	01/06/23 23:38	WI221206-7	2.416		2.36	mg/L	98	90	110			
WG557981ICB	ICB	01/06/23 23:39				U	mg/L		-0.02	0.02			
WG557981LFB	LFB	01/06/23 23:43	WI220826-7	2		1.983	mg/L	99	90	110			
L78031-03AS	AS	01/06/23 23:48	WI220826-7	2	U	2.064	mg/L	103	90	110			
L78031-04DUP	DUP	01/06/23 23:50			.181	.183	mg/L				1	20	RA

CRG

ACZ Project ID: **L78031**

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.

Nitrite as N

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG557896													
WG557896ICV	ICV	01/05/23 23:25	WI221206-7	.608		.603	mg/L	99	90	110			
WG557896ICB	ICB	01/05/23 23:26				U	mg/L		-0.01	0.01			
WG557898													
WG557898LFB	LFB	01/06/23 0:43	WI220826-7	1		1.017	mg/L	102	90	110			
L77974-01AS	AS	01/06/23 0:45	WI220826-7	1	U	1.07	mg/L	107	90	110			
L77974-02DUP	DUP	01/06/23 0:48			U	U	mg/L				0	20	RA
WG557981													
WG557981ICV	ICV	01/06/23 23:38	WI221206-7	.608		.607	mg/L	100	90	110			
WG557981ICB	ICB	01/06/23 23:39				U	mg/L		-0.01	0.01			
WG557981LFB	LFB	01/06/23 23:43	WI220826-7	1		.973	mg/L	97	90	110			
L78031-03AS	AS	01/06/23 23:48	WI220826-7	1	U	1.017	mg/L	102	90	110			
L78031-04DUP	DUP	01/06/23 23:50			U	U	mg/L				0	20	RA

pH (lab)

SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG558377													
WG558377LCSW1	LCSW	01/12/23 17:57	PCN65296	6		6	units	100	5.9	6.1			
WG558377LCSW4	LCSW	01/12/23 20:50	PCN65296	6		6	units	100	5.9	6.1			
L78029-01DUP	DUP	01/12/23 22:02			6	5.9	units				2	20	
L78031-04DUP	DUP	01/12/23 23:02			7	7	units				0	20	
WG558377LCSW7	LCSW	01/13/23 0:34	PCN65296	6		6	units	100	5.9	6.1			
WG558377LCSW10	LCSW	01/13/23 4:19	PCN65296	6		6	units	100	5.9	6.1			
WG558377LCSW13	LCSW	01/13/23 8:17	PCN65296	6		6	units	100	5.9	6.1			
WG558377LCSW16	LCSW	01/13/23 10:31	PCN65296	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
WG558967													
WG558967ICV	ICV	01/21/23 15:48	II230120-1	20		19.39	mg/L	97	95	105			
WG558967ICB	ICB	01/21/23 15:54				.25	mg/L		-0.6	0.6			
WG558967LFB	LFB	01/21/23 16:06	II230120-4	99.95798		99.28	mg/L	99	85	115			
L78031-04AS	AS	01/21/23 17:22	II230120-4	99.95798	.81	100.6	mg/L	100	85	115			
L78031-04ASD	ASD	01/21/23 17:25	II230120-4	99.95798	.81	99.45	mg/L	99	85	115	1	20	

Residue, Filterable (TDS) @180C

SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG558108													
WG558108PBW	PBW	01/10/23 10:30				U	mg/L		-20	20			
WG558108LCSW	LCSW	01/10/23 10:32	PCN623965	1000		970	mg/L	97	80	120			
L78031-04DUP	DUP	01/10/23 11:30			66	68	mg/L				3	10	RA

CRG

ACZ Project ID: **L78031**

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.

Sodium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG558967													
WG558967ICV	ICV	01/21/23 15:48	II230120-1	100		96.59	mg/L	97	95	105			
WG558967ICB	ICB	01/21/23 15:54				U	mg/L		-0.6	0.6			
WG558967LFB	LFB	01/21/23 16:06	II230120-4	100.0023		98.67	mg/L	99	85	115			
L78031-04AS	AS	01/21/23 17:22	II230120-4	100.0023	2.32	101.9	mg/L	100	85	115			
L78031-04ASD	ASD	01/21/23 17:25	II230120-4	100.0023	2.32	100.6	mg/L	98	85	115	1	20	

Sulfate

D516-02/-07/-11 - TURBIDIMETRIC

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG558792													
WG558792ICB	ICB	01/19/23 20:30				U	mg/L		-3	3			
WG558792ICV	ICV	01/19/23 20:30	WI230104-2	19.54		19.1	mg/L	98	90	110			
WG558792LFB	LFB	01/19/23 21:54	WI220830-3	10		10.2	mg/L	102	90	110			
L78031-01DUP	DUP	01/19/23 21:55			7.9	7.9	mg/L				0	20	RA
L78031-02AS	AS	01/19/23 21:55	WI220830-3	10	8.5	19.6	mg/L	111	90	110			M1

Vanadium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG558967													
WG558967ICV	ICV	01/21/23 15:48	II230120-1	2		2.062	mg/L	103	95	105			
WG558967ICB	ICB	01/21/23 15:54				U	mg/L		-0.015	0.015			
WG558967LFB	LFB	01/21/23 16:06	II230120-4	.5005		.5325	mg/L	106	85	115			
L78031-04AS	AS	01/21/23 17:22	II230120-4	.5005	U	.531	mg/L	106	85	115			
L78031-04ASD	ASD	01/21/23 17:25	II230120-4	.5005	U	.514	mg/L	103	85	115	3	20	

Zinc, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG558967													
WG558967ICV	ICV	01/21/23 15:48	II230120-1	2		1.939	mg/L	97	95	105			
WG558967ICB	ICB	01/21/23 15:54				U	mg/L		-0.06	0.06			
WG558967LFB	LFB	01/21/23 16:06	II230120-4	.50045		.516	mg/L	103	85	115			
L78031-04AS	AS	01/21/23 17:22	II230120-4	.50045	.035	.535	mg/L	100	85	115			
L78031-04ASD	ASD	01/21/23 17:25	II230120-4	.50045	.035	.534	mg/L	100	85	115	0	20	

CRG Mining, LLC

ACZ Project ID: **L78031**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L78031-01	WG558540	Chloride	SM4500Cl-E	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).
	WG557967	Cyanide, total	M335.4 - Colorimetric w/ distillation	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).
	WG557898	Nitrate/Nitrite as N	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
			M353.2 - Automated Cadmium Reduction	ZU	Analysis date/time preceeds filter date/time. A portion of sample was filtered and analyzed prior to the creation of a Filter workgroup.
		Nitrite as N	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
			M353.2 - Automated Cadmium Reduction	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).
			M353.2 - Automated Cadmium Reduction	ZU	Analysis date/time preceeds filter date/time. A portion of sample was filtered and analyzed prior to the creation of a Filter workgroup.
	WG558108	Residue, Filterable (TDS) @180C	SM2540C	N1	See Case Narrative.
			SM2540C	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).
	WG558792	Sulfate	D516-02/-07/-11 - TURBIDIMETRIC	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			D516-02/-07/-11 - TURBIDIMETRIC	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).
WG558377	Total Alkalinity		SM2320B - Titration	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).

CRG Mining, LLC

ACZ Project ID: **L78031**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L78031-02	WG558540	Chloride	SM4500Cl-E	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).
	WG557967	Cyanide, total	M335.4 - Colorimetric w/ distillation	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).
	WG557898	Nitrate/Nitrite as N	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	ZU	Analysis date/time preceeds filter date/time. A portion of sample was filtered and analyzed prior to the creation of a Filter workgroup.
		Nitrite as N	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	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).
			M353.2 - Automated Cadmium Reduction	ZU	Analysis date/time preceeds filter date/time. A portion of sample was filtered and analyzed prior to the creation of a Filter workgroup.
	WG558108	Residue, Filterable (TDS) @180C	SM2540C	N1	See Case Narrative.
			SM2540C	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).
	WG558792	Sulfate	D516-02/-07/-11 - TURBIDIMETRIC	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			D516-02/-07/-11 - TURBIDIMETRIC	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).
WG558377	Total Alkalinity	SM2320B - Titration	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).	

CRG Mining, LLC

ACZ Project ID: **L78031**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L78031-03	WG558540	Chloride	SM4500Cl-E	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).
	WG557967	Cyanide, total	M335.4 - Colorimetric w/ distillation	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).
	WG557981	Nitrate/Nitrite as N	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	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).
			M353.2 - Automated Cadmium Reduction	ZU	Analysis date/time precedes filter date/time. A portion of sample was filtered and analyzed prior to the creation of a Filter workgroup.
		Nitrite as N	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	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).
			M353.2 - Automated Cadmium Reduction	ZU	Analysis date/time precedes filter date/time. A portion of sample was filtered and analyzed prior to the creation of a Filter workgroup.
	WG558108	Residue, Filterable (TDS) @180C	SM2540C	N1	See Case Narrative.
			SM2540C	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).
	WG558792	Sulfate	D516-02/-07/-11 - TURBIDIMETRIC	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			D516-02/-07/-11 - TURBIDIMETRIC	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).
	WG558377	Total Alkalinity	SM2320B - Titration	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).

CRG Mining, LLC

ACZ Project ID: **L78031**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L78031-04	WG558658	Beryllium, dissolved	M200.8 ICP-MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG558540	Chloride	SM4500Cl-E	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).
	WG557967	Cyanide, total	M335.4 - Colorimetric w/ distillation	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).
	WG557981	Nitrate/Nitrite as N	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	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).
			M353.2 - Automated Cadmium Reduction	ZU	Analysis date/time precedes filter date/time. A portion of sample was filtered and analyzed prior to the creation of a Filter workgroup.
		Nitrite as N	M353.2 - Automated Cadmium Reduction	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			M353.2 - Automated Cadmium Reduction	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).
			M353.2 - Automated Cadmium Reduction	ZU	Analysis date/time precedes filter date/time. A portion of sample was filtered and analyzed prior to the creation of a Filter workgroup.
	WG558108	Residue, Filterable (TDS) @180C	SM2540C	N1	See Case Narrative.
			SM2540C	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).
	WG558792	Sulfate	D516-02/-07/-11 - TURBIDIMETRIC	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			D516-02/-07/-11 - TURBIDIMETRIC	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).

CRG Mining, LLC

ACZ Project ID: **L78031**

No certification qualifiers associated with this analysis

CRG Mining, LLC

ACZ Project ID: L78031

Date Received: 01/05/2023 11:46

Received By:

Date Printed: 1/6/2023

Receipt Verification

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

Samples/Containers

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

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?
-----	-----	-----	-----	-----
6256	3.3	<=6.0	15	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.

CRG Mining, LLC

ACZ Project ID: L78031

Date Received: 01/05/2023 11:46

Received By:

Date Printed: 1/6/2023

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).

