

STATE OF
COLORADO

Eschberger - DNR, Amy <amy.eschberger@state.co.us>

January 2022 Schwartzwalder Surface Water Report

Evan Valencia <evalencia@ensero.com>

Tue, Feb 22, 2022 at 1:03 PM

To: "Arnold, Daniel J." <daniel.arnold@denverwater.org>, "Eschberger - DNR, Amy" <amy.eschberger@state.co.us>, Evelyn Rhodes <erhodes@arvada.org>, "eric.mink@state.co.us" <eric.mink@state.co.us>, "bwyant@arvada.org" <bwyant@arvada.org>

Cc: Jim Harrington <jimharrington@ensero.com>, Elizabeth Busby <ebusby@ensero.com>, Billy Ray <bray@ensero.com>

Ms. Eschberger, Mr. Mink, Mr. Arnold, Mr. Wyant, and Ms. Rhodes,

Please find attached a transmittal letter, report, and electronic deliverable (EDD) for surface water data collected in January 2022 from the Schwartzwalder Mine in Golden, Colorado.

Best,

Evan Valencia, EIT

Environmental Engineer I



12150 E. Briarwood Ave., Suite 135

Centennial, CO 80112

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12150 E. Briarwood Ave. Suite 135, Centennial, CO 80112
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February 22, 2022

Colorado Department of Public Health and Environment
Water Quality Control Division / WQCD-B2-CAS
Compliance Assurance Section
Attention: Eric Mink
4300 Cherry Creek Drive South
Denver, CO 80246-1530

Subject: January 2022 SW-AWD and SW-BPL Surface Monitoring Data for Sampling Stations,
Schwartzwalder Mine, Paragraph 26, WQCD Order Number: IO 100601-1, June 1, 2010,
Schwartzwalder Mine, Golden, Colorado

Dear Mr. Mink:

Pursuant to Paragraph 26 of the above referenced Order, please find enclosed data reports from contract laboratories as received by Ensero Solutions, Inc working on behalf of Colorado Legacy Land. This data originates from the analysis of the surface water sample collected in January 2022 at the Schwartzwalder Mine, monitoring station SW-AWD and SW-BPL. Review of the data indicates that the total and dissolved uranium concentrations at SW-AWD and SW-BPL were below 30 µg/L.

If you have any questions, please don't hesitate to contact me.

Sincerely,

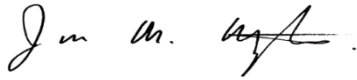
Jim Harrington, Managing Director
COLORADO LEGACY LAND
jim@ColoradoLegacy.Land

Distribution List:

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Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.



Jim Harrington, Managing Director
COLORADO LEGACY LAND



January 2022 Schwartzwalder Monthly Surface Water Report

Contents:

Sample Location	Sample Date	Analysis	Sample ID	Temp (°C)	Field pH (S.U.)	Conductivity (µS/cm)	DO (mg/L)	ORP (mV)
SW-BPL	1/12/2022	Sample Suite 2	L70914-01	2.4	7.99	250.2	12.04	87.0
SW-AWD	1/12/2022	Sample Suite 2	L70914-02	1.3	8.05	232.4	11.56	137.8

February 16, 2022

Report to:

Christie Brizinski
Ensero Solutions
131 E. Lincoln Ave Ste. 200
Fort Collins, CO 80524

Bill to:

Pauline Wong
Ensero Solutions
131 E. Lincoln Ave Ste. 200
Fort Collins, CO 80524

cc: Ensero/Alexco Importer, Evan Valencia

Project ID: 3100-PO205

ACZ Project ID: L70914

Christie Brizinski:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on January 13, 2022. This project has been assigned to ACZ's project number, L70914. Please reference this number in all future inquiries.

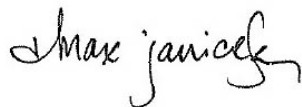
All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L70914. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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 March 18, 2022. 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.



Max Janicek has reviewed and
approved this report.



Ensero Solutions

Project ID: 3100-PO205
Sample ID: SW-BPL

ACZ Sample ID: **L70914-01**

Date Sampled: 01/12/22 10:40

Date Received: 01/13/22

Sample Matrix: Surface Water

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, WAD	SM4500-CN I- distillation								01/14/22 13:20	bls
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								01/18/22 13:55	bls
Total Hot Plate Digestion	M200.2 ICP-MS								01/25/22 9:20	mfm
Total Hot Plate Digestion	M200.2 ICP				*				01/25/22 16:00	mlh/ae h
Total Recoverable Digestion	M200.2 ICP-MS								01/21/22 12:21	kja
Total Recoverable Digestion	M200.2 ICP								01/28/22 19:34	jlw

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Antimony, total recoverable	M200.8 ICP-MS	1	<0.0004	U		mg/L	0.0004	0.002	01/24/22 11:47	mfm
Arsenic, total	M200.8 ICP-MS	1	<0.0002	U		mg/L	0.0002	0.001	01/26/22 19:04	kja
Boron, total	M200.7 ICP	2	<0.06	U		mg/L	0.06	0.2	02/02/22 11:47	aeh
Chromium, total recoverable	M200.7 ICP	1	<0.02	U		mg/L	0.02	0.05	02/01/22 16:44	aeh
Copper, dissolved	M200.7 ICP	1	<0.01	U		mg/L	0.01	0.05	02/02/22 23:19	aeh
Molybdenum, dissolved	M200.7 ICP	1	<0.02	U		mg/L	0.02	0.1	02/02/22 23:19	aeh
Molybdenum, total	M200.7 ICP	2	<0.04	U		mg/L	0.04	0.2	02/02/22 11:47	aeh
Silver, dissolved	M200.8 ICP-MS	1	<0.0001	U		mg/L	0.0001	0.0005	01/28/22 17:37	kja
Thallium, total recoverable	M200.8 ICP-MS	1	<0.0001	U		mg/L	0.0001	0.0005	01/24/22 11:47	mfm
Uranium, dissolved	M200.8 ICP-MS	1	0.0173			mg/L	0.0001	0.0005	01/31/22 18:42	kja
Uranium, total	M200.8 ICP-MS	1	0.0183			mg/L	0.0001	0.0005	01/26/22 19:04	kja
Zinc, dissolved	M200.7 ICP	1	<0.02	U		mg/L	0.02	0.05	02/02/22 23:19	aeh

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, WAD	SM4500-CN I,E- Colorimetric w/ distillation	0.5	<0.003	U		mg/L	0.003	0.01	01/14/22 16:43	mij1
Fluoride	SM4500F-C	1	0.33	B	*	mg/L	0.15	0.35	02/01/22 14:38	eep
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.056	B	*	mg/L	0.02	0.1	01/29/22 2:32	pjb
Phosphate, total	Calculation based on total Phosphorus		<0.03	U		mg/L	0.03	0.2	02/16/22 0:00	calc
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	<0.01	U	*	mg/L	0.01	0.05	01/22/22 1:21	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	244			mg/L	20	40	01/14/22 19:45	jck
Residue, Non-Filterable (TSS) @105C	SM2540D	1	<5	U	*	mg/L	5	20	01/14/22 18:12	eep
Sulfate	D516-02/-07/-11 - TURBIDIMETRIC	1	33.5			mg/L	1	5	01/24/22 16:54	syw

Ensero Solutions

Project ID: 3100-PO205
Sample ID: SW-AWD

ACZ Sample ID: **L70914-02**

Date Sampled: 01/12/22 11:10

Date Received: 01/13/22

Sample Matrix: Surface Water

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, WAD	SM4500-CN I- distillation								01/14/22 13:27	bls
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								01/18/22 14:03	bls
Total Hot Plate Digestion	M200.2 ICP-MS								01/25/22 9:20	mfm
Total Hot Plate Digestion	M200.2 ICP								01/25/22 16:00	mlh/ae h
Total Recoverable Digestion	M200.2 ICP-MS								01/21/22 12:32	kja
Total Recoverable Digestion	M200.2 ICP								01/28/22 19:48	jlw

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Antimony, total recoverable	M200.8 ICP-MS	1	<0.0004	U		mg/L	0.0004	0.002	01/24/22 11:49	mfm
Arsenic, total	M200.8 ICP-MS	1	<0.0002	U		mg/L	0.0002	0.001	01/26/22 19:06	kja
Boron, total	M200.7 ICP	1	0.128			mg/L	0.03	0.1	02/02/22 11:50	aeh
Chromium, total recoverable	M200.7 ICP	1	<0.02	U		mg/L	0.02	0.05	02/01/22 16:47	aeh
Copper, dissolved	M200.7 ICP	1	<0.01	U		mg/L	0.01	0.05	02/02/22 23:22	aeh
Molybdenum, dissolved	M200.7 ICP	1	<0.02	U		mg/L	0.02	0.1	02/02/22 23:22	aeh
Molybdenum, total	M200.7 ICP	1	<0.02	U		mg/L	0.02	0.1	02/02/22 11:50	aeh
Silver, dissolved	M200.8 ICP-MS	1	<0.0001	U		mg/L	0.0001	0.0005	01/28/22 17:43	kja
Thallium, total recoverable	M200.8 ICP-MS	1	<0.0001	U		mg/L	0.0001	0.0005	01/24/22 11:49	mfm
Uranium, dissolved	M200.8 ICP-MS	1	0.00391			mg/L	0.0001	0.0005	01/31/22 18:48	kja
Uranium, total	M200.8 ICP-MS	1	0.00410			mg/L	0.0001	0.0005	01/26/22 19:06	kja
Zinc, dissolved	M200.7 ICP	1	<0.02	U		mg/L	0.02	0.05	02/02/22 23:22	aeh

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, WAD	SM4500-CN I,E- Colorimetric w/ distillation	0.5	<0.003	U		mg/L	0.003	0.01	01/14/22 16:44	mij1
Fluoride	SM4500F-C	1	0.35		*	mg/L	0.15	0.35	02/01/22 14:46	eep
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	<0.02	U	*	mg/L	0.02	0.1	01/29/22 2:33	pjb
Phosphate, total	Calculation based on total Phosphorus		<0.03	U		mg/L	0.03	0.2	02/16/22 0:00	calc
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	<0.01	U	*	mg/L	0.01	0.05	01/22/22 1:22	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	236			mg/L	20	40	01/14/22 19:48	jck
Residue, Non-Filterable (TSS) @105C	SM2540D	1	<5	U	*	mg/L	5	20	01/14/22 18:14	eep
Sulfate	D516-02/-07/-11 - TURBIDIMETRIC	1	29.1			mg/L	1	5	01/24/22 16:54	syw


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>

ENSERO

ACZ Project ID: **L70914**

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.

Antimony, total recoverable

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG535510													
WG535510ICV	ICV	01/24/22 11:32	MS220105-1	.0201		.01832	mg/L	91	90	110			
WG535510ICB	ICB	01/24/22 11:33				.00055	mg/L		-0.0012	0.0012			
WG535412LRB	LRB	01/24/22 11:35				U	mg/L		-0.00088	0.00088			
WG535412LFB	LFB	01/24/22 11:37	MS211216-3	.01		.01128	mg/L	113	85	115			
WG535510CCV	CCV	01/24/22 11:54	MS220105-3	.0125		.01238	mg/L	99	90	110			
WG535510CCB	CCB	01/24/22 11:56				U	mg/L		-0.0012	0.0012			
L70964-01LFM	LFM	01/24/22 11:58	MS211216-3	.01	U	.01229	mg/L	123	70	130			
L70964-01LFMD	LFMD	01/24/22 12:00	MS211216-3	.01	U	.01231	mg/L	123	70	130	0	20	
WG535510CCV	CCV	01/24/22 12:17	MS220105-3	.0125		.01262	mg/L	101	90	110			
WG535510CCB	CCB	01/24/22 12:19				U	mg/L		-0.0012	0.0012			
WG535510CCV	CCV	01/24/22 12:32	MS220105-3	.0125		.01288	mg/L	103	90	110			
WG535510CCB	CCB	01/24/22 12:34				U	mg/L		-0.0012	0.0012			

Arsenic, total

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG535668													
WG535668ICV	ICV	01/26/22 18:55	MS220105-1	.05		.04975	mg/L	100	90	110			
WG535668ICB	ICB	01/26/22 18:57				U	mg/L		-0.0006	0.0006			
WG535552LRB	LRB	01/26/22 18:59				U	mg/L		-0.00044	0.00044			
WG535552LFB	LFB	01/26/22 19:02	MS211216-3	.05005		.0505	mg/L	101	85	115			
L71014-01LFM	LFM	01/26/22 19:10	MS211216-3	.05005	.00136	.04933	mg/L	96	70	130			
L71014-01LFMD	LFMD	01/26/22 19:12	MS211216-3	.05005	.00136	.05095	mg/L	99	70	130	3	20	
WG535668CCV1	CCV	01/26/22 19:21	MS220105-3	.1001		.09636	mg/L	96	90	110			
WG535668CCB1	CCB	01/26/22 19:23				U	mg/L		-0.0006	0.0006			
WG535668CCV2	CCV	01/26/22 19:46	MS220105-3	.1001		.09261	mg/L	93	90	110			E6
WG535668CCB2	CCB	01/26/22 19:48				.00028	mg/L		-0.0006	0.0006			E6
WG535668CCV3	CCV	01/26/22 19:59	MS220105-3	.1001		.09848	mg/L	98	90	110			
WG535668CCB3	CCB	01/26/22 20:01				.00024	mg/L		-0.0006	0.0006			

Boron, total

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG536021													
WG536021ICV	ICV	02/02/22 11:22	II220117-1	2		2.064	mg/L	103	95	105			
WG536021ICB	ICB	02/02/22 11:28				U	mg/L		-0.09	0.09			
WG536021PQV	PQV	02/02/22 11:31	II220103-2	.1001		.103	mg/L	103	70	130			
WG536021SIC	SIC	02/02/22 11:34	II220131-5	.1001		.098	mg/L	98	80	120			
WG535607LRB	LRB	02/02/22 11:41				U	mg/L		-0.066	0.066			
WG535607LFB	LFB	02/02/22 11:44	II220118-3	.5005		.511	mg/L	102	85	115			
L71034-02LFM	LFM	02/02/22 11:59	II220118-3	.5005	U	.542	mg/L	108	70	130			
L71034-02LFMD	LFMD	02/02/22 12:02	II220118-3	.5005	U	.529	mg/L	106	70	130	2	20	
WG536021CCV1	CCV	02/02/22 12:11	II211229-1	1		1.01	mg/L	101	90	110			
WG536021CCB1	CCB	02/02/22 12:14				U	mg/L		-0.09	0.09			
WG536021CCV2	CCV	02/02/22 12:48	II211229-1	1		1.016	mg/L	102	90	110			
WG536021CCB2	CCB	02/02/22 12:51				U	mg/L		-0.09	0.09			
WG536021CCV3	CCV	02/02/22 13:12	II211229-1	1		1.006	mg/L	101	90	110			
WG536021CCB3	CCB	02/02/22 13:16				U	mg/L		-0.09	0.09			

ENSERO

ACZ Project ID: **L70914**

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, total recoverable

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG535954													
WG535954ICV	ICV	02/01/22 15:27	II220110-1	2		1.975	mg/L	99	95	105			
WG535954ICB	ICB	02/01/22 15:33				U	mg/L		-0.06	0.06			
WG535954PQV	PQV	02/01/22 15:36	II220103-2	.05005		.054	mg/L	108	70	130			
WG535954SIC	SIC	02/01/22 15:40	II220119-2	.1001		.088	mg/L	88	80	120			
WG535792LRB	LRB	02/01/22 15:46				U	mg/L		-0.044	0.044			
WG535792LFB	LFB	02/01/22 15:49	II220118-3	.5005		.504	mg/L	101	85	115			
WG535954CCV1	CCV	02/01/22 16:18	II220105-1	1		1.002	mg/L	100	90	110			
WG535954CCB1	CCB	02/01/22 16:21				U	mg/L		-0.06	0.06			
WG535954CCV2	CCV	02/01/22 16:57	II220105-1	1		1.011	mg/L	101	90	110			
WG535954CCB2	CCB	02/01/22 17:00				U	mg/L		-0.06	0.06			
L71118-02LFM	LFM	02/01/22 17:06	II220118-3	.5005	U	.465	mg/L	93	70	130			
L71118-02LFMD	LFMD	02/01/22 17:10	II220118-3	.5005	U	.473	mg/L	95	70	130	2	20	
WG535954CCV3	CCV	02/01/22 17:22	II220105-1	1		1.016	mg/L	102	90	110			
WG535954CCB3	CCB	02/01/22 17:25				U	mg/L		-0.06	0.06			

Copper, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG536055													
WG536055ICV	ICV	02/02/22 22:20	II220110-1	2		2.012	mg/L	101	95	105			
WG536055ICB	ICB	02/02/22 22:26				U	mg/L		-0.03	0.03			
WG536055PQV	PQV	02/02/22 22:29	II220103-2	.05		.053	mg/L	106	70	130			
WG536055SIC	SIC	02/02/22 22:32	II220119-2	.1		.108	mg/L	108	80	120			
WG536055LFB	LFB	02/02/22 22:39	II220118-3	.5		.505	mg/L	101	85	115			
L69772-12AS	AS	02/02/22 23:03	II220118-3	.5	U	.502	mg/L	100	85	115			
L69772-12ASD	ASD	02/02/22 23:06	II220118-3	.5	U	.497	mg/L	99	85	115	1	20	
WG536055CCV1	CCV	02/02/22 23:09	II220105-1	1		.993	mg/L	99	90	110			
WG536055CCB1	CCB	02/02/22 23:12				U	mg/L		-0.03	0.03			
WG536055CCV2	CCV	02/02/22 23:46	II220105-1	1		.996	mg/L	100	90	110			
WG536055CCB2	CCB	02/02/22 23:49				U	mg/L		-0.03	0.03			
WG536055CCV3	CCV	02/03/22 0:08	II220105-1	1		.997	mg/L	100	90	110			
WG536055CCB3	CCB	02/03/22 0:11				U	mg/L		-0.03	0.03			

Cyanide, WAD

SM4500-CN I,E-Colorimetric w/ distillation

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG535060													
WG535060ICV	ICV	01/14/22 16:19	WI220111-5	.3003		.3101	mg/L	103	90	110			
WG535060ICB	ICB	01/14/22 16:19				U	mg/L		-0.003	0.003			
WG535011LRB	LRB	01/14/22 16:20				U	mg/L		-0.003	0.003			
WG535011LFB	LFB	01/14/22 16:21	WI220111-2	.2002		.214	mg/L	107	90	110			
WG535060CCV1	CCV	01/14/22 16:29	WI220111-4	.25		.2493	mg/L	100	90	110			
WG535060CCB1	CCB	01/14/22 16:30				U	mg/L		-0.003	0.003			
L70906-01DUP	DUP	01/14/22 16:35			.0592	.0603	mg/L				2	20	
L70907-01LFM	LFM	01/14/22 16:36	WI220111-2	.2002	.0201	.2212	mg/L	100	90	110			
WG535060CCV2	CCV	01/14/22 16:39	WI220111-4	.25		.2502	mg/L	100	90	110			
WG535060CCB2	CCB	01/14/22 16:40				U	mg/L		-0.003	0.003			
WG535060CCV3	CCV	01/14/22 16:47	WI220111-4	.25		.2501	mg/L	100	90	110			
WG535060CCB3	CCB	01/14/22 16:48				U	mg/L		-0.003	0.003			

ENSERO

ACZ Project ID: **L70914**

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.

Fluoride

SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG535961													
WG535961ICV	ICV	02/01/22 13:30	WC220127-1	2.008		2.2	mg/L	110	90	110			
WG535961ICB	ICB	02/01/22 13:36				U	mg/L		-0.3	0.3			
WG535961PQV	PQV	02/01/22 13:41	WC220104-4	.3514		.4	mg/L	114	70	130			
WG535961LFB1	LFB	02/01/22 13:45	WC220104-2	5.02		5.49	mg/L	109	90	110			
L58827-90AS	AS	02/01/22 13:58	WC220104-2	5.02	U	5.57	mg/L	111	90	110			M1
L58827-90ASD	ASD	02/01/22 14:06	WC220104-2	5.02	U	5.62	mg/L	112	90	110	1	20	M1
WG535961CCV1	CCV	02/01/22 16:04	WC220127-1	2.008		2.19	mg/L	109	90	110			
WG535961CCB1	CCB	02/01/22 16:12				U	mg/L		-0.3	0.3			
WG535961CCV3	CCV	02/01/22 18:54	WC220127-1	2.008		2.03	mg/L	101	90	110			
WG535961CCB3	CCB	02/01/22 19:02				U	mg/L		-0.3	0.3			
WG535961LFB2	LFB	02/01/22 19:42	WC220104-2	5.02		5.52	mg/L	110	90	110			
WG535961CCV4	CCV	02/01/22 20:30	WC220127-1	2.008		2.12	mg/L	106	90	110			
WG535961CCB4	CCB	02/02/22 10:55				U	mg/L		-0.3	0.3			

Molybdenum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG536055													
WG536055ICV	ICV	02/02/22 22:20	II220110-1	2		2.035	mg/L	102	95	105			
WG536055ICB	ICB	02/02/22 22:26				U	mg/L		-0.06	0.06			
WG536055PQV	PQV	02/02/22 22:29	II220103-2	.1002		.101	mg/L	101	70	130			
WG536055SIC	SIC	02/02/22 22:32	II220119-2	.1002		.094	mg/L	94	80	120			
WG536055LFB	LFB	02/02/22 22:39	II220118-3	.501		.521	mg/L	104	85	115			
L69772-12AS	AS	02/02/22 23:03	II220118-3	.501	U	.512	mg/L	102	85	115			
L69772-12ASD	ASD	02/02/22 23:06	II220118-3	.501	U	.501	mg/L	100	85	115	2	20	
WG536055CCV1	CCV	02/02/22 23:09	II220105-1	1		.999	mg/L	100	90	110			
WG536055CCB1	CCB	02/02/22 23:12				U	mg/L		-0.06	0.06			
WG536055CCV2	CCV	02/02/22 23:46	II220105-1	1		1.01	mg/L	101	90	110			
WG536055CCB2	CCB	02/02/22 23:49				U	mg/L		-0.06	0.06			
WG536055CCV3	CCV	02/03/22 0:08	II220105-1	1		1.002	mg/L	100	90	110			
WG536055CCB3	CCB	02/03/22 0:11				U	mg/L		-0.06	0.06			

Molybdenum, total

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG536021													
WG536021ICV	ICV	02/02/22 11:22	II220117-1	2		2.047	mg/L	102	95	105			
WG536021ICB	ICB	02/02/22 11:28				U	mg/L		-0.06	0.06			
WG536021PQV	PQV	02/02/22 11:31	II220103-2	.1002		.098	mg/L	98	70	130			
WG536021SIC	SIC	02/02/22 11:34	II220131-5	.1002		.087	mg/L	87	80	120			
WG535607LRB	LRB	02/02/22 11:41				U	mg/L		-0.044	0.044			
WG535607LFB	LFB	02/02/22 11:44	II220118-3	.501		.497	mg/L	99	85	115			
L71034-02LFM	LFM	02/02/22 11:59	II220118-3	.501	U	.482	mg/L	96	70	130			
L71034-02LFMD	LFMD	02/02/22 12:02	II220118-3	.501	U	.487	mg/L	97	70	130	1	20	
WG536021CCV1	CCV	02/02/22 12:11	II211229-1	1		1	mg/L	100	90	110			
WG536021CCB1	CCB	02/02/22 12:14				U	mg/L		-0.06	0.06			
WG536021CCV2	CCV	02/02/22 12:48	II211229-1	1		1.015	mg/L	102	90	110			
WG536021CCB2	CCB	02/02/22 12:51				U	mg/L		-0.06	0.06			
WG536021CCV3	CCV	02/02/22 13:12	II211229-1	1		.999	mg/L	100	90	110			
WG536021CCB3	CCB	02/02/22 13:16				U	mg/L		-0.06	0.06			

ENSERO

ACZ Project ID: **L70914**

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

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG535858													
WG535858ICV	ICV	01/28/22 23:39	WI211205-1	2.4161		2.328	mg/L	96	90	110			
WG535858ICB	ICB	01/28/22 23:41				U	mg/L		-0.02	0.02			
WG535861													
WG535861CCV1	CCV	01/29/22 2:20	WI220129-1	2		1.946	mg/L	97	90	110			
WG535861CCB1	CCB	01/29/22 2:23				U	mg/L		-0.02	0.02			
WG535861LFB	LFB	01/29/22 2:24	WI211001-5	2		1.982	mg/L	99	90	110			
L64832-46AS	AS	01/29/22 2:27	WI211001-5	2	U	2.056	mg/L	103	90	110			
WG535861CCV2	CCV	01/29/22 2:37	WI220129-1	2		1.961	mg/L	98	90	110			
WG535861CCB2	CCB	01/29/22 2:40				U	mg/L		-0.02	0.02			
WG535861CCV3	CCV	01/29/22 2:54	WI220129-1	2		1.947	mg/L	97	90	110			
WG535861CCB3	CCB	01/29/22 2:57				U	mg/L		-0.02	0.02			
L64835-46DUP	DUP	01/29/22 3:05			U	U	mg/L				0	20	RA
WG535861CCV4	CCV	01/29/22 3:13	WI220129-1	2		1.957	mg/L	98	90	110			
WG535861CCB4	CCB	01/29/22 3:16				U	mg/L		-0.02	0.02			
WG535861CCV5	CCV	01/29/22 3:22	WI220129-1	2		1.954	mg/L	98	90	110			
WG535861CCB5	CCB	01/29/22 3:25				U	mg/L		-0.02	0.02			

Phosphorus, total M365.1 - Auto Ascorbic Acid (digest)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG535473													
WG535473ICV	ICV	01/22/22 0:42	WI220105-4	.6523		.635	mg/L	97	90	110			
WG535473ICB	ICB	01/22/22 0:44				U	mg/L		-0.01	0.01			
WG535475													
WG535475CCV1	CCV	01/22/22 1:16	WI220105-3	.5		.502	mg/L	100	90	110			
WG535475CCB1	CCB	01/22/22 1:18				U	mg/L		-0.01	0.01			
WG535176LRB	LRB	01/22/22 1:19				U	mg/L		-0.01	0.01			
WG535176LFB	LFB	01/22/22 1:20	WI220105-6	.5		.49	mg/L	98	90	110			
L70956-01LFM	LFM	01/22/22 1:24	2.5XPT	1.25	.051	1.263	mg/L	97	90	110			
L70956-02DUP	DUP	01/22/22 1:27			U	U	mg/L				0	20	RA
WG535475CCV2	CCV	01/22/22 1:30	WI220105-3	.5		.501	mg/L	100	90	110			
WG535475CCB2	CCB	01/22/22 1:31				U	mg/L		-0.01	0.01			
WG535475CCV3	CCV	01/22/22 1:37	WI220105-3	.5		.503	mg/L	101	90	110			
WG535475CCB3	CCB	01/22/22 1:38				U	mg/L		-0.01	0.01			

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG535067													
WG535067PBW	PBW	01/14/22 19:25				U	mg/L		-20	20			
WG535067LCSW	LCSW	01/14/22 19:27	PCN65059	1000		998	mg/L	100	80	120			
L70920-02DUP	DUP	01/14/22 19:56			3700	3740	mg/L				1	10	

Residue, Non-Filterable (TSS) @105C SM2540D

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG535065													
WG535065PBW	PBW	01/14/22 17:40				U	mg/L		-5	5			
WG535065LCSW	LCSW	01/14/22 17:42	PCN65059	100		117	mg/L	117	80	120			
L70954-03DUP	DUP	01/14/22 18:29			U	U	mg/L				0	10	RA

ENSERO

ACZ Project ID: **L70914**

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.

Silver, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG535824													
WG535824ICV	ICV	01/28/22 17:13	MS220105-1	.02		.01988	mg/L	99	90	110			
WG535824ICB	ICB	01/28/22 17:16				U	mg/L		-0.00022	0.00022			
WG535824LFB	LFB	01/28/22 17:18	MS220126-3	.01		.00965	mg/L	97	85	115			
L58832-90AS	AS	01/28/22 17:26	MS220126-3	.01	U	.00847	mg/L	85	70	130			
L58832-90ASD	ASD	01/28/22 17:28	MS220126-3	.01	U	.00855	mg/L	86	70	130	1	20	
WG535824CCV1	CCV	01/28/22 17:39	MS220105-3	.025		.02701	mg/L	108	90	110			
WG535824CCB1	CCB	01/28/22 17:41				U	mg/L		-0.0003	0.0003			
WG535824CCV2	CCV	01/28/22 18:04	MS220105-3	.025		.02622	mg/L	105	90	110			
WG535824CCB2	CCB	01/28/22 18:06				U	mg/L		-0.0003	0.0003			
WG535824CCV3	CCV	01/28/22 18:19	MS220105-3	.025		.02728	mg/L	109	90	110			
WG535824CCB3	CCB	01/28/22 18:21				U	mg/L		-0.0003	0.0003			

Sulfate

D516-02/-07/-11 - TURBIDIMETRIC

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG535495													
WG535495ICB	ICB	01/24/22 16:46				U	mg/L		-3	3			
WG535495ICV	ICV	01/24/22 16:46	WI220114-10	20.46		19.5	mg/L	95	90	110			
WG535495CCV1	CCV	01/24/22 16:54	WI220114-11	24.875		25.7	mg/L	103	90	110			
WG535495CCB1	CCB	01/24/22 16:54				U	mg/L		-3	3			
WG535495LFB	LFB	01/24/22 16:54	WI211230-5	9.95		9.8	mg/L	98	90	110			
L70914-01DUP	DUP	01/24/22 16:54			33.5	33.3	mg/L				1	20	
L70914-02AS	AS	01/24/22 16:54	WI211230-5	9.95	29.1	39.4	mg/L	104	90	110			
WG535495CCV2	CCV	01/24/22 16:56	WI220114-11	24.875		25.6	mg/L	103	90	110			
WG535495CCB2	CCB	01/24/22 16:56				U	mg/L		-3	3			
WG535495CCV3	CCV	01/24/22 16:58	WI220114-11	24.875		25.1	mg/L	101	90	110			
WG535495CCB3	CCB	01/24/22 16:58				U	mg/L		-3	3			
WG535495CCV4	CCV	01/24/22 17:15	WI220114-11	24.875		25.6	mg/L	103	90	110			
WG535495CCB4	CCB	01/24/22 17:15				1	mg/L		-3	3			
WG535495CCV5	CCV	01/24/22 17:19	WI220114-11	24.875		25.2	mg/L	101	90	110			
WG535495CCB5	CCB	01/24/22 17:19				U	mg/L		-3	3			
WG535495CCV6	CCV	01/24/22 17:22	WI220114-11	24.875		25.3	mg/L	102	90	110			
WG535495CCB6	CCB	01/24/22 17:22				U	mg/L		-3	3			
WG535495CCV7	CCV	01/24/22 18:39	WI220114-11	24.875		25.3	mg/L	102	90	110			
WG535495CCB7	CCB	01/24/22 18:39				U	mg/L		-3	3			
WG535495CCV8	CCV	01/24/22 18:41	WI220114-11	24.875		25.4	mg/L	102	90	110			
WG535495CCB8	CCB	01/24/22 18:41				U	mg/L		-3	3			
WG535495CCV9	CCV	01/24/22 18:43	WI220114-11	24.875		25.3	mg/L	102	90	110			
WG535495CCB9	CCB	01/24/22 18:43				U	mg/L		-3	3			

ENSERO

ACZ Project ID: **L70914**

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.

Thallium, total recoverable

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG535510													
WG535510ICV	ICV	01/24/22 11:32	MS220105-1	.05		.05409	mg/L	108	90	110			
WG535510ICB	ICB	01/24/22 11:33				U	mg/L		-0.0003	0.0003			
WG535412LRB	LRB	01/24/22 11:35				U	mg/L		-0.00022	0.00022			
WG535412LFB	LFB	01/24/22 11:37	MS211216-3	.05		.04773	mg/L	95	85	115			
WG535510CCV	CCV	01/24/22 11:54	MS220105-3	.1		.09831	mg/L	98	90	110			
WG535510CCB	CCB	01/24/22 11:56				U	mg/L		-0.0003	0.0003			
L70964-01LFM	LFM	01/24/22 11:58	MS211216-3	.05	U	.04889	mg/L	98	70	130			
L70964-01LFMD	LFMD	01/24/22 12:00	MS211216-3	.05	U	.04847	mg/L	97	70	130	1	20	
WG535510CCV	CCV	01/24/22 12:17	MS220105-3	.1		.09753	mg/L	98	90	110			
WG535510CCB	CCB	01/24/22 12:19				U	mg/L		-0.0003	0.0003			
WG535510CCV	CCV	01/24/22 12:32	MS220105-3	.1		.10136	mg/L	101	90	110			
WG535510CCB	CCB	01/24/22 12:34				U	mg/L		-0.0003	0.0003			

Uranium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG535892													
WG535892ICV	ICV	01/31/22 18:31	MS220105-1	.05		.05183	mg/L	104	90	110			
WG535892ICB	ICB	01/31/22 18:33				U	mg/L		-0.00022	0.00022			
WG535892LFB	LFB	01/31/22 18:35	MS220126-3	.05		.04758	mg/L	95	85	115			
L70914-01AS	AS	01/31/22 18:44	MS220126-3	.05	.0173	.06809	mg/L	102	70	130			
L70914-01ASD	ASD	01/31/22 18:46	MS220126-3	.05	.0173	.07014	mg/L	106	70	130	3	20	
WG535892CCV1	CCV	01/31/22 18:57	MS220105-3	.1		.09937	mg/L	99	90	110			
WG535892CCB1	CCB	01/31/22 18:59				U	mg/L		-0.0003	0.0003			
WG535892CCV2	CCV	01/31/22 19:22	MS220105-3	.1		.09884	mg/L	99	90	110			
WG535892CCB2	CCB	01/31/22 19:24				U	mg/L		-0.0003	0.0003			
WG535892CCV3	CCV	01/31/22 19:37	MS220105-3	.1		.10113	mg/L	101	90	110			
WG535892CCB3	CCB	01/31/22 19:39				U	mg/L		-0.0003	0.0003			

Uranium, total

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG535668													
WG535668ICV	ICV	01/26/22 18:55	MS220105-1	.05		.05054	mg/L	101	90	110			
WG535668ICB	ICB	01/26/22 18:57				U	mg/L		-0.0003	0.0003			
WG535552LRB	LRB	01/26/22 18:59				U	mg/L		-0.00022	0.00022			
WG535552LFB	LFB	01/26/22 19:02	MS211216-3	.05		.05116	mg/L	102	85	115			
L71014-01LFM	LFM	01/26/22 19:10	MS211216-3	.05	.00278	.0568	mg/L	108	70	130			
L71014-01LFMD	LFMD	01/26/22 19:12	MS211216-3	.05	.00278	.05887	mg/L	112	70	130	4	20	
WG535668CCV1	CCV	01/26/22 19:21	MS220105-3	.1		.09989	mg/L	100	90	110			
WG535668CCB1	CCB	01/26/22 19:23				U	mg/L		-0.0003	0.0003			
WG535668CCV2	CCV	01/26/22 19:46	MS220105-3	.1		.09666	mg/L	97	90	110			
WG535668CCB2	CCB	01/26/22 19:48				U	mg/L		-0.0003	0.0003			
WG535668CCV3	CCV	01/26/22 19:59	MS220105-3	.1		.09748	mg/L	97	90	110			
WG535668CCB3	CCB	01/26/22 20:01				U	mg/L		-0.0003	0.0003			

ENSERO

ACZ Project ID: **L70914**

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.

Zinc, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG536055													
WG536055ICV	ICV	02/02/22 22:20	II220110-1	2		1.951	mg/L	98	95	105			
WG536055ICB	ICB	02/02/22 22:26				U	mg/L		-0.06	0.06			
WG536055PQV	PQV	02/02/22 22:29	II220103-2	.05015		.049	mg/L	98	70	130			
WG536055SIC	SIC	02/02/22 22:32	II220119-2	.1003		.091	mg/L	91	80	120			
WG536055LFB	LFB	02/02/22 22:39	II220118-3	.50045		.518	mg/L	104	85	115			
L69772-12AS	AS	02/02/22 23:03	II220118-3	.50045	U	.518	mg/L	104	85	115			
L69772-12ASD	ASD	02/02/22 23:06	II220118-3	.50045	U	.511	mg/L	102	85	115	1	20	
WG536055CCV1	CCV	02/02/22 23:09	II220105-1	1		.968	mg/L	97	90	110			
WG536055CCB1	CCB	02/02/22 23:12				U	mg/L		-0.06	0.06			
WG536055CCV2	CCV	02/02/22 23:46	II220105-1	1		.972	mg/L	97	90	110			
WG536055CCB2	CCB	02/02/22 23:49				U	mg/L		-0.06	0.06			
WG536055CCV3	CCV	02/03/22 0:08	II220105-1	1		.966	mg/L	97	90	110			
WG536055CCB3	CCB	02/03/22 0:11				U	mg/L		-0.06	0.06			

Ensero Solutions

ACZ Project ID: **L70914**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L70914-01	WG535961	Fluoride	SM4500F-C	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG535861	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG535475	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	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).
	WG535065	Residue, Non-Filterable (TSS) @105C	SM2540D	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).
			SM2540D	Z3	Sample volume yielded a residue less than 2.5 mg
	WG535607	Total Hot Plate Digestion	M200.2 ICP	DJ	Sample dilution required due to insufficient sample.
L70914-02	WG535961	Fluoride	SM4500F-C	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG535861	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG535475	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	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).
	WG535065	Residue, Non-Filterable (TSS) @105C	SM2540D	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).
			SM2540D	Z3	Sample volume yielded a residue less than 2.5 mg

Ensero Solutions

Project ID: 3100-PO205

Sample ID: SW-BPL

Locator:

ACZ Sample ID: **L70914-01**

Date Sampled: 01/12/22 10:40

Date Received: 01/13/22

Sample Matrix: Surface Water

Combined Radium (total)

Prep Method:

Calculation (RA226 + RA228)

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Combined Radium (total)	02/16/22 14:50		1.2			pCi/L		calc

Gross Alpha & Beta, total

Prep Method:

M900.0

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	01/27/22 0:18		6.7	2.9	8.6	pCi/L	*	ttg
Gross Beta	01/27/22 0:18		4.4	2.9	8	pCi/L		ttg

Radium 226, total

Prep Method:

M903.1

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226, total	02/09/22 0:25		1.2	0.13	0.29	pCi/L	*	fdw

Radium 228, total

Prep Method:

M904.0

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 228, total	02/11/22 18:01		0.88	0.74	1.8	pCi/L		ttg

Ensero Solutions

Project ID: 3100-PO205

Sample ID: SW-AWD

Locator:

ACZ Sample ID: **L70914-02**

Date Sampled: 01/12/22 11:10

Date Received: 01/13/22

Sample Matrix: Surface Water

Combined Radium (total)

Prep Method:

Calculation (RA226 + RA228)

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Combined Radium (total)	02/16/22 14:50		0			pCi/L		calc

Gross Alpha & Beta, total

Prep Method:

M900.0

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	01/27/22 0:20		4.1	2.5	5.6	pCi/L	*	ttg
Gross Beta	01/27/22 0:20		2.2	3.3	10	pCi/L		ttg

Radium 226, total

Prep Method:

M903.1

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226, total	02/09/22 0:28		0.23	0.08	0.29	pCi/L	*	fdw

Radium 228, total

Prep Method:

M904.0

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 228, total	02/11/22 18:01		-0.15	0.77	2	pCi/L		ttg

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://aczk.com/wp-content/uploads/2019/04/Ext-Qual-List.pdf>

ENSERO

ACZ Project ID: **L70914**

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.

Alpha		M900.0										Units: pCi/L				
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec%	Lower	Upper	RPD/RER	Limit	Qual
WG535198																
WG535198PBW	PBW	01/27/22						-.07	0.73	8			16			
WG535198LCSWA	LCSW	01/27/22	PCN64375	100				130	9.7	12	130	67	144			
L70841-01DUP	DUP-RPD	01/27/22			3.5	2.9	8.1	1.2	2.5	7.8				98	20	RG
L70841-01DUP	DUP-RER	01/27/22			3.5	2.9	8.1	1.2	2.5	7.8				0.6	2	
L70867-01MSA	MS	01/27/22	PCN64375	476.19	300	54	80	520	67	55	46	67	144			M2
L70950-01DUP	DUP-RPD	01/27/22			9.5	7.4	19	14	8.4	18				38	20	RG
L70950-01DUP	DUP-RER	01/27/22			9.5	7.4	19	14	8.4	18				0.4	2	

Beta		M900.0										Units: pCi/L				
ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec%	Lower	Upper	RPD/RER	Limit	Qual
WG535198																
WG535198PBW	PBW	01/27/22						-.14	1.8	14			28			
WG535198LCSWB	LCSW	01/27/22	RC210621-11	49.9				60	5.4	7.6	120	82	122			
L70841-01DUP	DUP-RPD	01/27/22			4.9	3.6	11	4.7	3.2	11				4	20	
L70867-02MSB	MS	01/27/22	RC210621-11	49.9	11	4	11	61	6	10	100	82	122			
L70950-01DUP	DUP-RPD	01/27/22			14	7	20	22	6.7	20				44	20	RG
L70950-01DUP	DUP-RER	01/27/22			14	7	20	22	6.7	20				0.83	2	

Radium 226, total		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
WG535732																
WG535732LCSW	LCSW	02/09/22	PCN64374	20				23	0.59	0.55	115	43	148			
WG535732PBW	PBW	02/09/22						.05	0.06	0.43			0.86			
L70776-01DUP	DUP-RPD	02/09/22			75	1.8	2.2	76	1.3	0.74				1	20	
L70914-01DUP	DUP-RPD	02/09/22			1.2	0.13	0.29	.21	0.07	0.21				140	20	RM
L70933-01MS	MS	02/09/22	PCN64374	20	0.1	0.06	0.41	23	0.59	0.49	115	43	148			

ENSERO

ACZ Project ID: **L70914**

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

M904.0

Units: pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec%	Lower	Upper	RPD/RER	Limit	Qual
WG535724																
WG535724LCSW	LCSW	02/11/22	PCN64684	9.61				7.6	1.1	1.9	79	47	123			
WG535724PBW	PBW	02/11/22						.19	0.73	2			4			
L70973-01DUP	DUP-RPD	02/11/22			63	2.3	1.8	55	2.2	1.9				14	20	
L70996-01MS	MS	02/12/22	PCN64684	9.6	2.8	0.95	2.3	14	1.5	2.5	117	47	123			
L70996-04DUP	DUP-RPD	02/12/22			2.9	0.92	2	2.4	0.89	2				19	20	

Ensero Solutions

ACZ Project ID: **L70914**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L70914-01	WG535198	Gross Alpha	M900.0	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M900.0	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.
	WG535732	Radium 226, total	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.
L70914-02	WG535198	Gross Alpha	M900.0	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M900.0	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.
	WG535732	Radium 226, total	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.

Ensero Solutions

ACZ Project ID: **L70914**

No certification qualifiers associated with this analysis

Ensero Solutions
3100-PO205

ACZ Project ID: L70914
Date Received: 01/13/2022 11:11
Received By:
Date Printed: 1/14/2022

Receipt Verification

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

Samples/Containers

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

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?
7060	3.1	<=6.0	15	N/A

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.

Ensero Solutions
3100-PO205

ACZ Project ID: L70914

Date Received: 01/13/2022 11:11

Received By:

Date Printed: 1/14/2022

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).



Laboratories, Inc.

L70914

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

CHAIN of CUSTODY

Report to:

Name: **Christie Brizinski**
Company: **Ensero Solutions**
E-mail: **cbrizinski@ensero.com**

Address: **131 E. Lincoln Ave Ste. 200**
Fort Collins, CO 80524
Telephone: **867-668-6463, ext 229**

Copy of Report to:

Name: **Evan Valencia**
Company: **Ensero Solutions**

E-mail: **evalencia@ensero.com**
Telephone: **818-688-1839**

Invoice to:

Name: **Pauline Wong**
Company: **Ensero Solutions**
E-mail: **ap@ensero.com**

Address: **131 E. Lincoln Ave Ste. 200**
Fort Collins, CO 80524
Telephone: **778-404-1182**

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: **EV, TF** Sampler's Site Information **State CO** Zip code **80401** Time Zone **MTN**

*Sampler's Signature: *[Signature]*

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

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #: **Ensero-2020**

PO#: **3100-PO205**

Reporting state for compliance testing: **CO**

Check box if samples include NRC licensed material? ☐

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	TSS	Sample suite #1	Sample suite #2	COD	LLHG trip blank	Sample suite #3	TDS	
SW-BPL	1-12-2022: 10:40	SW	8	☐	☐	☒	☐	☐	☐	☐	☐
SW-AWD	1-12-2022: 11:10	SW	8	☐	☐	☒	☐	☐	☐	☐	☐
				☐	☐	☐	☐	☐	☐	☐	☐
				☐	☐	☐	☐	☐	☐	☐	☐
				☐	☐	☐	☐	☐	☐	☐	☐
				☐	☐	☐	☐	☐	☐	☐	☐
				☐	☐	☐	☐	☐	☐	☐	☐
				☐	☐	☐	☐	☐	☐	☐	☐
				☐	☐	☐	☐	☐	☐	☐	☐
				☐	☐	☐	☐	☐	☐	☐	☐
				☐	☐	☐	☐	☐	☐	☐	☐
				☐	☐	☐	☐	☐	☐	☐	☐
				☐	☐	☐	☐	☐	☐	☐	☐
				☐	☐	☐	☐	☐	☐	☐	☐
				☐	☐	☐	☐	☐	☐	☐	☐
				☐	☐	☐	☐	☐	☐	☐	☐

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

REMARKS

This COC accounts for 16 containers. Shipped 1/12/2021
Please also send reports to importer@alexco.ehsdata.com

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
<i>E. Valencia</i>	<i>1-12-21: 1400</i>	<i>[Signature]</i>	<i>1/13/22 11:31</i>

FRMAD050.06.14.14

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



L70914-2202161553