STATE OF COLORADO

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

June 2021 Schwartzwalder Surface Water Report

Evan Valencia <evalencia@ensero.com> Mon, Aug 23, 2021 at 11:14 AM
To: "daniel.arnold@denverwater.org" <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 June 2021 from the Schwartzwalder Mine in Golden, Colorado.

Best,

Evan Valencia, EIT

Environmental Engineer I

ENSERO solutions

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Centennial, CO 80112

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COLORADO LEGACY LAND

12150 E. Briarwood Ave. Suite 135, Centennial, CO 80112
T. (303) 862-3928

August 23, 2021

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: June 2021 SW-AWD and SW-BPL Surface Monitoring Data for Sampling Stations, Schwartzwalder Mine, Paragraph 26, WQCD Order Number: IO 100601-1, June1, 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 surface water samples collected in June 2021 at the Schwartzwalder Mine, monitoring stations 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.

These results are being reported later than typical due to extended turnaround times from the subcontract laboratory ACZ. In June and July, ACZ experienced difficulties with tracer recovery for Radium-228 analysis. As a result, samples were re-analyzed which extended the sample turnaround time and subsequent reporting.

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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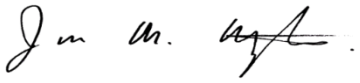
Certification

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

June 2021 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	6/15/2021	Sample Suite 2	L66559-01	13.6	6.76	219.8	11.30	172.1
SW-AWD	6/15/2021	Sample Suite 2	L66559-02	14.8	8.81	228.1	11.14	106.3

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

Analytical Report

August 18, 2021

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

cc: Ensero/Alexco Importer, Evan Valencia

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

Project ID: 3100-PO205
ACZ Project ID: L66559

Christie Brizinski:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 17, 2021. This project has been assigned to ACZ's project number, L66559. 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 L66559. 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 September 17, 2021. 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: ***L66559-01***
Date Sampled: *06/15/21 09:30*
Date Received: *06/17/21*
Sample Matrix: *Surface Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, WAD	SM4500-CN I- distillation		-						06/22/21 15:15	syw
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								06/29/21 11:58	emh
Total Hot Plate Digestion	M200.2 ICP-MS				*				07/01/21 8:10	mfm
Total Hot Plate Digestion	M200.2 ICP				*				06/30/21 17:54	jlw
Total Recoverable Digestion	M200.2 ICP-MS								06/30/21 8:40	mfm
Total Recoverable Digestion	M200.2 ICP								06/29/21 15:26	kja

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	07/01/21 13:07	mfm
Arsenic, total	M200.8 ICP-MS	10	<0.002	U		mg/L	0.002	0.01	07/02/21 17:43	mfm
Boron, total	M200.7 ICP	2	<0.06	U		mg/L	0.06	0.2	07/04/21 15:53	kja
Chromium, total recoverable	M200.7 ICP	1	<0.02	U		mg/L	0.02	0.05	06/30/21 21:55	kja
Copper, dissolved	M200.7 ICP	1	<0.01	U		mg/L	0.01	0.05	06/24/21 19:30	kja
Molybdenum, dissolved	M200.7 ICP	1	<0.02	U		mg/L	0.02	0.1	06/24/21 19:30	kja
Molybdenum, total	M200.7 ICP	2	<0.04	U		mg/L	0.04	0.2	07/04/21 15:53	kja
Silver, dissolved	M200.8 ICP-MS	1	<0.0001	U		mg/L	0.0001	0.0005	07/08/21 16:10	mfm
Thallium, total recoverable	M200.8 ICP-MS	1	<0.0001	U		mg/L	0.0001	0.0005	07/01/21 13:07	mfm
Uranium, dissolved	M200.8 ICP-MS	1	0.00998			mg/L	0.0001	0.0005	07/08/21 16:10	mfm
Uranium, total	M200.8 ICP-MS	10	0.00954			mg/L	0.001	0.005	07/02/21 17:43	mfm
Zinc, dissolved	M200.7 ICP	1	<0.02	U		mg/L	0.02	0.05	06/24/21 19:30	kja

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	06/23/21 14:48	md
Fluoride	SM4500F-C	1	0.30	B	*	mg/L	0.15	0.35	07/01/21 12:31	eep
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.082	B	*	mg/L	0.02	0.1	07/03/21 3:00	pjb
Phosphate, total	Calculation based on total Phosphorus		<0.03	U		mg/L	0.03	0.2	08/18/21 0:00	calc
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	<0.01	U	*	mg/L	0.01	0.05	06/30/21 0:36	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	210		*	mg/L	20	40	06/21/21 14:39	jck
Residue, Non-Filterable (TSS) @105C	SM2540D	1	5.0	BH	*	mg/L	5	20	06/23/21 14:17	eep
Sulfate	D516-02/-07/-11 - TURBIDIMETRIC	1	14.4		*	mg/L	1	5	07/09/21 11:28	wtc

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

ACZ Sample ID: ***L66559-02***
Date Sampled: *06/15/21 11:10*
Date Received: *06/17/21*
Sample Matrix: *Surface Water*

Inorganic Prep

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, WAD	SM4500-CN I- distillation		-						06/22/21 15:25	syw
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion								06/29/21 12:07	emh
Total Hot Plate Digestion	M200.2 ICP-MS				*				07/01/21 8:10	mfm
Total Hot Plate Digestion	M200.2 ICP				*				06/30/21 18:07	jlw
Total Recoverable Digestion	M200.2 ICP-MS								06/30/21 8:40	mfm
Total Recoverable Digestion	M200.2 ICP								06/29/21 15:59	kja

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	07/01/21 13:09	mfm
Arsenic, total	M200.8 ICP-MS	10	<0.002	U		mg/L	0.002	0.01	07/02/21 17:45	mfm
Boron, total	M200.7 ICP	2	<0.06	U		mg/L	0.06	0.2	07/04/21 15:56	kja
Chromium, total recoverable	M200.7 ICP	1	<0.02	U		mg/L	0.02	0.05	06/30/21 22:04	kja
Copper, dissolved	M200.7 ICP	1	<0.01	U		mg/L	0.01	0.05	06/24/21 19:40	kja
Molybdenum, dissolved	M200.7 ICP	1	<0.02	U		mg/L	0.02	0.1	06/24/21 19:40	kja
Molybdenum, total	M200.7 ICP	2	<0.04	U		mg/L	0.04	0.2	07/04/21 15:56	kja
Silver, dissolved	M200.8 ICP-MS	1	<0.0001	U		mg/L	0.0001	0.0005	07/08/21 16:11	mfm
Thallium, total recoverable	M200.8 ICP-MS	1	<0.0001	U		mg/L	0.0001	0.0005	07/01/21 13:09	mfm
Uranium, dissolved	M200.8 ICP-MS	1	0.00091			mg/L	0.0001	0.0005	07/08/21 16:11	mfm
Uranium, total	M200.8 ICP-MS	10	<0.001	U		mg/L	0.001	0.005	07/02/21 17:45	mfm
Zinc, dissolved	M200.7 ICP	1	<0.02	U		mg/L	0.02	0.05	06/24/21 19:40	kja

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	06/23/21 14:49	md
Fluoride	SM4500F-C	1	0.32	B	*	mg/L	0.15	0.35	07/01/21 12:34	eep
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	1	0.041	B	*	mg/L	0.02	0.1	07/03/21 3:01	pjb
Phosphate, total	Calculation based on total Phosphorus		<0.03	U		mg/L	0.03	0.2	08/18/21 0:00	calc
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	1	<0.01	U	*	mg/L	0.01	0.05	06/30/21 0:37	pjb
Residue, Filterable (TDS) @180C	SM2540C	1	226		*	mg/L	20	40	06/21/21 14:42	jck
Residue, Non-Filterable (TSS) @105C	SM2540D	1	<5	UH	*	mg/L	5	20	06/23/21 14:19	eep
Sulfate	D516-02/-07/-11 - TURBIDIMETRIC	1	12.1		*	mg/L	1	5	07/09/21 11:30	wtc

Report Header Explanations

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

QC Sample Types

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

QC Sample Type Explanations

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

ACZ Qualifiers (Qual)

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

Method References

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

Comments

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

For a complete list of ACZ's Extended Qualifiers, please click:
https://acz.com/wp-content/uploads/2019/04/Ext-Qual-List.pdf

Ensero Solutions

ACZ Project ID: ***L66559***

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
WG522351													
WG522351ICV	ICV	07/01/21 12:51	MS210630-2	.0201		.02033	mg/L	101	90	110			
WG522351ICB	ICB	07/01/21 12:53				U	mg/L		-0.0012	0.0012			
WG522203LRB	LRB	07/01/21 12:54				U	mg/L		-0.00088	0.00088			
WG522203LFB	LFB	07/01/21 12:56	MS210610-2	.01		.01041	mg/L	104	85	115			
WG522351CCV1	CCV	07/01/21 13:12	MS210521-8	.0125		.01217	mg/L	97	90	110			
WG522351CCB1	CCB	07/01/21 13:14				U	mg/L		-0.0012	0.0012			
L66648-01LFM	LFM	07/01/21 13:16	MS210610-2	.01	.00068	.01045	mg/L	98	70	130			
L66648-01LFMD	LFMD	07/01/21 13:18	MS210610-2	.01	.00068	.01081	mg/L	101	70	130	3	20	
WG522351CCV2	CCV	07/01/21 13:34	MS210521-8	.0125		.01207	mg/L	97	90	110			
WG522351CCB2	CCB	07/01/21 13:36				U	mg/L		-0.0012	0.0012			
WG522351CCV3	CCV	07/01/21 13:49	MS210521-8	.0125		.01233	mg/L	99	90	110			
WG522351CCB3	CCB	07/01/21 13:50				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
WG522473													
WG522473ICV	ICV	07/02/21 17:25	MS210630-2	.05		.05147	mg/L	103	90	110			
WG522473ICB	ICB	07/02/21 17:27				U	mg/L		-0.0006	0.0006			
WG522305LRB	LRB	07/02/21 17:28				U	mg/L		-0.00044	0.00044			
WG522305LFB	LFB	07/02/21 17:30	MS210610-2	.05005		.04886	mg/L	98	85	115			
L66558-02LFM	LFM	07/02/21 17:37	MS210610-2	.05005	U	.04803	mg/L	96	70	130			
L66558-02LFMD	LFMD	07/02/21 17:39	MS210610-2	.05005	U	.04963	mg/L	99	70	130	3	20	
WG522473CCV1	CCV	07/02/21 17:46	MS210521-8	.1001		.09626	mg/L	96	90	110			
WG522473CCB1	CCB	07/02/21 17:48				U	mg/L		-0.0006	0.0006			
WG522473CCV2	CCV	07/02/21 18:08	MS210521-8	.1001		.09602	mg/L	96	90	110			
WG522473CCB2	CCB	07/02/21 18:10				U	mg/L		-0.0006	0.0006			
WG522473CCV3	CCV	07/02/21 18:22	MS210521-8	.1001		.10212	mg/L	102	90	110			
WG522473CCB3	CCB	07/02/21 18:24				U	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
WG522346													
WG522346ICV	ICV	07/04/21 15:10	II210620-2	2		2.003	mg/L	100	95	105			
WG522346ICB	ICB	07/04/21 15:16				U	mg/L		-0.09	0.09			
WG522346PQV	PQV	07/04/21 15:19	II210603-2	.1001		.106	mg/L	106	70	130			
WG522346SIC	SIC	07/04/21 15:22	II210518-2	.1001		.1	mg/L	100	80	120			
WG522274LRB	LRB	07/04/21 15:29				U	mg/L		-0.066	0.066			
WG522274LFB	LFB	07/04/21 15:32	II210622-2	.5005		.52	mg/L	104	85	115			
L66558-03LFM	LFM	07/04/21 15:47	II210622-2	.5005	U	.528	mg/L	105	70	130			
L66558-03LFMD	LFMD	07/04/21 15:50	II210622-2	.5005	U	.533	mg/L	106	70	130	1	20	
WG522346CCV1	CCV	07/04/21 15:59	II210629-1	1		1.032	mg/L	103	90	110			
WG522346CCB1	CCB	07/04/21 16:02				U	mg/L		-0.09	0.09			
WG522346CCV2	CCV	07/04/21 16:36	II210629-1	1		.984	mg/L	98	90	110			
WG522346CCB2	CCB	07/04/21 16:39				U	mg/L		-0.09	0.09			
WG522346CCV3	CCV	07/04/21 17:01	II210629-1	1		.98	mg/L	98	90	110			
WG522346CCB3	CCB	07/04/21 17:04				U	mg/L		-0.09	0.09			

Ensero Solutions

ACZ Project ID: ***L66559***

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
WG522280													
WG522280ICV	ICV	06/30/21 20:22	II210628-1	2		1.947	mg/L	97	95	105			
WG522280ICB	ICB	06/30/21 20:28				U	mg/L		-0.06	0.06			
WG522280PQV	PQV	06/30/21 20:31	II210603-2	.0502		.052	mg/L	104	70	130			
WG522280SIC	SIC	06/30/21 20:34	II210602-1	.1004		.11	mg/L	110	80	120			
WG522124LRB	LRB	06/30/21 20:40				U	mg/L		-0.044	0.044			
WG522124LFB	LFB	06/30/21 20:43	II210622-2	.502		.464	mg/L	92	85	115			
WG522280CCV1	CCV	06/30/21 21:11	II210628-2	1		.962	mg/L	96	90	110			
WG522280CCB1	CCB	06/30/21 21:14				U	mg/L		-0.06	0.06			
WG522280CCV2	CCV	06/30/21 21:48	II210628-2	1		.962	mg/L	96	90	110			
WG522280CCB2	CCB	06/30/21 21:51				U	mg/L		-0.06	0.06			
L66559-01LFM	LFM	06/30/21 21:58	II210622-2	.502	U	.46	mg/L	92	70	130			
L66559-01LFMD	LFMD	06/30/21 22:01	II210622-2	.502	U	.462	mg/L	92	70	130	0	20	
L66559-02LFM	LFM	06/30/21 22:07	II210622-2	.502	U	.465	mg/L	93	70	130			
L66559-02LFMD	LFMD	06/30/21 22:10	II210622-2	.502	U	.459	mg/L	91	70	130	1	20	
WG522280CCV3	CCV	06/30/21 22:13	II210628-2	1		.955	mg/L	96	90	110			
WG522280CCB3	CCB	06/30/21 22:16				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
WG521828													
WG521828ICV	ICV	06/24/21 18:42	II210608-1	2		1.947	mg/L	97	95	105			
WG521828ICB	ICB	06/24/21 18:48				U	mg/L		-0.03	0.03			
WG521828PQV	PQV	06/24/21 18:51	II210603-2	.0502		.047	mg/L	94	70	130			
WG521828SIC	SIC	06/24/21 18:54	II210602-1	.1004		.097	mg/L	97	80	120			
WG521828LFB	LFB	06/24/21 19:01	II210622-2	.502		.491	mg/L	98	85	115			
WG521828CCV1	CCV	06/24/21 19:34	II210609-1	1		.93	mg/L	93	90	110			
WG521828CCB1	CCB	06/24/21 19:37				U	mg/L		-0.03	0.03			
L66559-02AS	AS	06/24/21 19:43	II210622-2	.502	U	.477	mg/L	95	85	115			
L66559-02ASD	ASD	06/24/21 19:47	II210622-2	.502	U	.48	mg/L	96	85	115	1	20	
WG521828CCV2	CCV	06/24/21 19:50	II210609-1	1		.956	mg/L	96	90	110			
WG521828CCB2	CCB	06/24/21 19:53				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
WG521742													
WG521742ICV	ICV	06/23/21 14:35	WI210616-7	.3		.2988	mg/L	100	90	110			
WG521742ICB	ICB	06/23/21 14:36				U	mg/L		-0.003	0.003			
WG521627LRB	LRB	06/23/21 14:37				U	mg/L		-0.003	0.003			
WG521627LFB	LFB	06/23/21 14:38	WI210616-6	.2		.1964	mg/L	98	90	110			
L66516-01DUP	DUP	06/23/21 14:40			U	U	mg/L				0	20	RA
L66524-01LFM	LFM	06/23/21 14:41	WI210616-6	.2	U	.1548	mg/L	77	90	110			M2
WG521742CCV1	CCV	06/23/21 14:45	WI210616-8	.25		.2498	mg/L	100	90	110			
WG521742CCB1	CCB	06/23/21 14:46				U	mg/L		-0.003	0.003			
WG521742CCV2	CCV	06/23/21 14:56	WI210616-8	.25		.2431	mg/L	97	90	110			
WG521742CCB2	CCB	06/23/21 14:56				U	mg/L		-0.003	0.003			
WG521742CCV3	CCV	06/23/21 15:04	WI210616-8	.25		.2478	mg/L	99	90	110			
WG521742CCB3	CCB	06/23/21 15:05				U	mg/L		-0.003	0.003			

Ensero Solutions

ACZ Project ID: ***L66559***

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
WG522332													
WG522332ICV	ICV	07/01/21 11:38	WC210609-3	2.002		1.98	mg/L	99	90	110			
WG522332ICB	ICB	07/01/21 11:43				U	mg/L		-0.3	0.3			
WG522332PQV	PQV	07/01/21 11:46	WC210528-8	.35105		.38	mg/L	108	70	130			
WG522332LFB1	LFB	07/01/21 11:51	WC201221-2	5.015		4.93	mg/L	98	90	110			
WG522332CCV1	CCV	07/01/21 12:43	WC210609-3	2.002		2.15	mg/L	107	90	110			
WG522332CCB1	CCB	07/01/21 12:49				U	mg/L		-0.3	0.3			
L66658-03AS	AS	07/01/21 13:01	WC201221-2	5.015	7.73	11.99	mg/L	85	90	110			M2
L66658-03ASD	ASD	07/01/21 13:09	WC201221-2	5.015	7.73	12.05	mg/L	86	90	110	0	20	M2
WG522332CCV2	CCV	07/01/21 13:40	WC210609-3	2.002		2.07	mg/L	103	90	110			
WG522332CCB2	CCB	07/01/21 13:47				U	mg/L		-0.3	0.3			
WG522332LFB2	LFB	07/01/21 14:17	WC201221-2	5.015		5.02	mg/L	100	90	110			
WG522332CCV3	CCV	07/01/21 14:48	WC210609-3	2.002		2.06	mg/L	103	90	110			
WG522332CCB3	CCB	07/01/21 14:55				U	mg/L		-0.3	0.3			
WG522332CCV4	CCV	07/01/21 15:55	WC210609-3	2.002		2.06	mg/L	103	90	110			
WG522332CCB4	CCB	07/01/21 16:02				U	mg/L		-0.3	0.3			
WG522332CCV5	CCV	07/01/21 16:57	WC210609-3	2.002		2.01	mg/L	100	90	110			
WG522332CCB5	CCB	07/01/21 17:05				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
WG521828													
WG521828ICV	ICV	06/24/21 18:42	II210608-1	2		2.027	mg/L	101	95	105			
WG521828ICB	ICB	06/24/21 18:48				U	mg/L		-0.06	0.06			
WG521828PQV	PQV	06/24/21 18:51	II210603-2	.1002		.102	mg/L	102	70	130			
WG521828SIC	SIC	06/24/21 18:54	II210602-1	.1002		.089	mg/L	89	80	120			
WG521828LFB	LFB	06/24/21 19:01	II210622-2	.501		.501	mg/L	100	85	115			
WG521828CCV1	CCV	06/24/21 19:34	II210609-1	1		.97	mg/L	97	90	110			
WG521828CCB1	CCB	06/24/21 19:37				U	mg/L		-0.06	0.06			
L66559-02AS	AS	06/24/21 19:43	II210622-2	.501	U	.495	mg/L	99	85	115			
L66559-02ASD	ASD	06/24/21 19:47	II210622-2	.501	U	.484	mg/L	97	85	115	2	20	
WG521828CCV2	CCV	06/24/21 19:50	II210609-1	1		.998	mg/L	100	90	110			
WG521828CCB2	CCB	06/24/21 19:53				U	mg/L		-0.06	0.06			

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ACZ Project ID: ***L66559***

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

Molybdenum, total M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522346													
WG522346ICV	ICV	07/04/21 15:10	II210620-2	2		1.997	mg/L	100	95	105			
WG522346ICB	ICB	07/04/21 15:16				U	mg/L		-0.06	0.06			
WG522346PQV	PQV	07/04/21 15:19	II210603-2	.1002		.101	mg/L	101	70	130			
WG522346SIC	SIC	07/04/21 15:22	II210518-2	.1002		.09	mg/L	90	80	120			
WG522274LRB	LRB	07/04/21 15:29				U	mg/L		-0.044	0.044			
WG522274LFB	LFB	07/04/21 15:32	II210622-2	.501		.515	mg/L	103	85	115			
L66558-03LFM	LFM	07/04/21 15:47	II210622-2	.501	U	.51	mg/L	102	70	130			
L66558-03LFMD	LFMD	07/04/21 15:50	II210622-2	.501	U	.516	mg/L	103	70	130	1	20	
WG522346CCV1	CCV	07/04/21 15:59	II210629-1	1		1.04	mg/L	104	90	110			
WG522346CCB1	CCB	07/04/21 16:02				U	mg/L		-0.06	0.06			
WG522346CCV2	CCV	07/04/21 16:36	II210629-1	1		.996	mg/L	100	90	110			
WG522346CCB2	CCB	07/04/21 16:39				U	mg/L		-0.06	0.06			
WG522346CCV3	CCV	07/04/21 17:01	II210629-1	1		.995	mg/L	100	90	110			
WG522346CCB3	CCB	07/04/21 17:04				U	mg/L		-0.06	0.06			

Nitrate/Nitrite as N M353.2 - H2SO4 preserved

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522496													
WG522496ICV	ICV	07/02/21 23:47	WI210603-7	2.416		2.395	mg/L	99	90	110			
WG522496ICB	ICB	07/02/21 23:48				U	mg/L		-0.02	0.02			
WG522501													
WG522501CCV1	CCV	07/03/21 2:48	WI210701-1	2		1.989	mg/L	99	90	110			
WG522501CCB1	CCB	07/03/21 2:51				U	mg/L		-0.02	0.02			
WG522501LFB	LFB	07/03/21 2:52	WI210331-13	2		1.972	mg/L	99	90	110			
L66558-01AS	AS	07/03/21 2:54	WI210331-13	2	.047	2.138	mg/L	105	90	110			
L66558-02DUP	DUP	07/03/21 2:57			.062	.067	mg/L				8	20	RA
WG522501CCV2	CCV	07/03/21 3:05	WI210701-1	2		1.996	mg/L	100	90	110			
WG522501CCB2	CCB	07/03/21 3:07				U	mg/L		-0.02	0.02			
WG522501CCV3	CCV	07/03/21 3:21	WI210701-1	2		1.991	mg/L	100	90	110			
WG522501CCB3	CCB	07/03/21 3:24				U	mg/L		-0.02	0.02			
WG522501CCV4	CCV	07/03/21 3:34	WI210701-1	2		1.976	mg/L	99	90	110			
WG522501CCB4	CCB	07/03/21 3:37				U	mg/L		-0.02	0.02			

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ACZ Project ID: ***L66559***

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.

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522196													
WG522196ICV	ICV	06/29/21 21:46	WI210603-3	.65228		.687	mg/L	105	90	110			
WG522196ICB	ICB	06/29/21 21:48				U	mg/L		-0.01	0.01			
WG522201													
WG522201CCV1	CCV	06/30/21 0:25	WI210603-4	.5		.523	mg/L	105	90	110			
WG522201CCB1	CCB	06/30/21 0:26				U	mg/L		-0.01	0.01			
WG522118LRB	LRB	06/30/21 0:28				U	mg/L		-0.01	0.01			
WG522118LFB	LFB	06/30/21 0:29	WI210617-5	.5		.519	mg/L	104	90	110			
L66558-01LFM	LFM	06/30/21 0:31	WI210617-5	.5	U	.523	mg/L	105	90	110			
L66558-02DUP	DUP	06/30/21 0:33			U	U	mg/L				0	20	RA
WG522201CCV2	CCV	06/30/21 0:39	WI210603-4	.5		.523	mg/L	105	90	110			
WG522201CCB2	CCB	06/30/21 0:40				U	mg/L		-0.01	0.01			
WG522201CCV3	CCV	06/30/21 0:53	WI210603-4	.5		.517	mg/L	103	90	110			
WG522201CCB3	CCB	06/30/21 0:54				U	mg/L		-0.01	0.01			
WG522201CCV4	CCV	06/30/21 1:05	WI210603-4	.5		.525	mg/L	105	90	110			
WG522201CCB4	CCB	06/30/21 1:06				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
WG521521													
WG521521PBW	PBW	06/21/21 13:55				U	mg/L		-20	20			
WG521521LCSW	LCSW	06/21/21 13:57	PCN63551	1000		998	mg/L	100	80	120			
L66562-04DUP	DUP	06/21/21 14:55			108	104	mg/L				4	10	RA

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG521721													
WG521721PBW	PBW	06/23/21 14:00				U	mg/L		-5	5			
WG521721LCSW	LCSW	06/23/21 14:01	PCN63833	100		100	mg/L	100	80	120			
L66562-01DUP	DUP	06/23/21 14:23			U	U	mg/L				0	10	RA

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522768													
WG522768ICV	ICV	07/08/21 15:53	MS210630-2	.02		.01802	mg/L	90	90	110			
WG522768ICB	ICB	07/08/21 15:55				U	mg/L		-0.00022	0.00022			
WG522768LFB	LFB	07/08/21 15:57	MS210702-2	.01002		.00934	mg/L	93	85	115			
L66558-03AS	AS	07/08/21 16:06	MS210702-2	.01002	U	.00791	mg/L	79	70	130			
L66558-03ASD	ASD	07/08/21 16:08	MS210702-2	.01002	U	.00838	mg/L	84	70	130	6	20	
WG522768CCV1	CCV	07/08/21 16:15	MS210521-8	.02505		.02493	mg/L	100	90	110			
WG522768CCB1	CCB	07/08/21 16:17				U	mg/L		-0.0003	0.0003			
WG522768CCV2	CCV	07/08/21 16:36	MS210521-8	.02505		.02596	mg/L	104	90	110			
WG522768CCB2	CCB	07/08/21 16:38				U	mg/L		-0.0003	0.0003			
WG522768CCB3	CCB	07/08/21 16:51				.00018	mg/L		-0.0003	0.0003			

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ACZ Project ID: ***L66559***

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

Sulfate D516-02/-07/-11 - TURBIDIMETRIC

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522738													
WG522738ICB	ICB	07/09/21 10:44				U	mg/L		-3	3			
WG522738ICV	ICV	07/09/21 10:44	WI210629-1	20.46		20	mg/L	98	90	110			
WG522738CCV1	CCV	07/09/21 11:27	WI210629-2	25		25.5	mg/L	102	90	110			
WG522738CCB1	CCB	07/09/21 11:27				U	mg/L		-3	3			
WG522738LFB	LFB	07/09/21 11:27	WI210105-3	10		10	mg/L	100	90	110			
WG522738CCV2	CCV	07/09/21 11:30	WI210629-2	25		24.7	mg/L	99	90	110			
WG522738CCB2	CCB	07/09/21 11:30				U	mg/L		-3	3			
WG522738CCV3	CCV	07/09/21 11:31	WI210629-2	25		24.6	mg/L	98	90	110			
WG522738CCB3	CCB	07/09/21 11:31				U	mg/L		-3	3			
WG522738CCV4	CCV	07/09/21 11:33	WI210629-2	25		24.8	mg/L	99	90	110			
WG522738CCB4	CCB	07/09/21 11:33				U	mg/L		-3	3			
WG522738CCV5	CCV	07/09/21 11:37	WI210629-2	25		24.8	mg/L	99	90	110			
WG522738CCB5	CCB	07/09/21 11:37				U	mg/L		-3	3			
WG522738CCV6	CCV	07/09/21 12:08	WI210629-2	25		25.4	mg/L	102	90	110			
WG522738CCB6	CCB	07/09/21 12:08				U	mg/L		-3	3			
L66536-09DUP	DUP	07/09/21 12:08			2840	2826.9	mg/L				0	20	
L66536-10AS	AS	07/09/21 12:08	SO4TURB20X	50	2950	2851.8	mg/L	-196	90	110			M3
WG522738CCV7	CCV	07/09/21 12:10	WI210629-2	25		25.2	mg/L	101	90	110			
WG522738CCB7	CCB	07/09/21 12:10				U	mg/L		-3	3			
WG522738CCV8	CCV	07/09/21 12:12	WI210629-2	25		24.7	mg/L	99	90	110			
WG522738CCB8	CCB	07/09/21 12:12				U	mg/L		-3	3			

Thallium, total recoverable M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522351													
WG522351ICV	ICV	07/01/21 12:51	MS210630-2	.05		.0517	mg/L	103	90	110			
WG522351ICB	ICB	07/01/21 12:53				U	mg/L		-0.0003	0.0003			
WG522203LRB	LRB	07/01/21 12:54				U	mg/L		-0.00022	0.00022			
WG522203LFB	LFB	07/01/21 12:56	MS210610-2	.05		.04652	mg/L	93	85	115			
WG522351CCV1	CCV	07/01/21 13:12	MS210521-8	.1		.09722	mg/L	97	90	110			
WG522351CCB1	CCB	07/01/21 13:14				U	mg/L		-0.0003	0.0003			
L66648-01LFM	LFM	07/01/21 13:16	MS210610-2	.05	U	.04665	mg/L	93	70	130			
L66648-01LFMD	LFMD	07/01/21 13:18	MS210610-2	.05	U	.04804	mg/L	96	70	130	3	20	
WG522351CCV2	CCV	07/01/21 13:34	MS210521-8	.1		.10025	mg/L	100	90	110			
WG522351CCB2	CCB	07/01/21 13:36				U	mg/L		-0.0003	0.0003			
WG522351CCV3	CCV	07/01/21 13:49	MS210521-8	.1		.1019	mg/L	102	90	110			
WG522351CCB3	CCB	07/01/21 13:50				U	mg/L		-0.0003	0.0003			

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ACZ Project ID: ***L66559***

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.

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522768													
WG522768ICV	ICV	07/08/21 15:53	MS210630-2	.05		.04961	mg/L	99	90	110			
WG522768ICB	ICB	07/08/21 15:55				U	mg/L		-0.00022	0.00022			
WG522768LFB	LFB	07/08/21 15:57	MS210702-2	.05		.05077	mg/L	102	85	115			
L66558-03AS	AS	07/08/21 16:06	MS210702-2	.05	.0009	.05095	mg/L	100	70	130			
L66558-03ASD	ASD	07/08/21 16:08	MS210702-2	.05	.0009	.05367	mg/L	106	70	130	5	20	
WG522768CCV1	CCV	07/08/21 16:15	MS210521-8	.1		.10027	mg/L	100	90	110			
WG522768CCB1	CCB	07/08/21 16:17				U	mg/L		-0.0003	0.0003			
WG522768CCV2	CCV	07/08/21 16:36	MS210521-8	.1		.10371	mg/L	104	90	110			
WG522768CCB2	CCB	07/08/21 16:38				U	mg/L		-0.0003	0.0003			
WG522768CCV3	CCV	07/08/21 16:49	MS210521-8	.1		.09568	mg/L	96	90	110			
WG522768CCB3	CCB	07/08/21 16:51				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
WG522473													
WG522473ICV	ICV	07/02/21 17:25	MS210630-2	.05		.05032	mg/L	101	90	110			
WG522473ICB	ICB	07/02/21 17:27				U	mg/L		-0.0003	0.0003			
WG522305LRB	LRB	07/02/21 17:28				U	mg/L		-0.00022	0.00022			
WG522305LFB	LFB	07/02/21 17:30	MS210610-2	.05		.04622	mg/L	92	85	115			
L66558-02LFM	LFM	07/02/21 17:37	MS210610-2	.05	.00251	.05282	mg/L	101	70	130			
L66558-02LFMD	LFMD	07/02/21 17:39	MS210610-2	.05	.00251	.05295	mg/L	101	70	130	0	20	
WG522473CCV1	CCV	07/02/21 17:46	MS210521-8	.1		.09485	mg/L	95	90	110			
WG522473CCB1	CCB	07/02/21 17:48				U	mg/L		-0.0003	0.0003			
WG522473CCV2	CCV	07/02/21 18:08	MS210521-8	.1		.09416	mg/L	94	90	110			
WG522473CCB2	CCB	07/02/21 18:10				U	mg/L		-0.0003	0.0003			
WG522473CCV3	CCV	07/02/21 18:22	MS210521-8	.1		.0958	mg/L	96	90	110			
WG522473CCB3	CCB	07/02/21 18:24				U	mg/L		-0.0003	0.0003			

Zinc, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG521828													
WG521828ICV	ICV	06/24/21 18:42	II210608-1	2		1.983	mg/L	99	95	105			
WG521828ICB	ICB	06/24/21 18:48				U	mg/L		-0.06	0.06			
WG521828PQV	PQV	06/24/21 18:51	II210603-2	.05015		.05	mg/L	100	70	130			
WG521828SIC	SIC	06/24/21 18:54	II210602-1	.1003		.096	mg/L	96	80	120			
WG521828LFB	LFB	06/24/21 19:01	II210622-2	.50075		.5	mg/L	100	85	115			
WG521828CCV1	CCV	06/24/21 19:34	II210609-1	1		.949	mg/L	95	90	110			
WG521828CCB1	CCB	06/24/21 19:37				U	mg/L		-0.06	0.06			
L66559-02AS	AS	06/24/21 19:43	II210622-2	.50075	U	.49	mg/L	98	85	115			
L66559-02ASD	ASD	06/24/21 19:47	II210622-2	.50075	U	.479	mg/L	96	85	115	2	20	
WG521828CCV2	CCV	06/24/21 19:50	II210609-1	1		.977	mg/L	98	90	110			
WG521828CCB2	CCB	06/24/21 19:53				U	mg/L		-0.06	0.06			

Ensero Solutions ACZ Project ID: ***L66559***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66559-01	WG521742	Cyanide, WAD	SM4500-CN I,E-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I,E-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I,E-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).
	WG522332	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500F-C	Q6	Sample was received above recommended temperature.
	WG522501	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
			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).
	WG522201	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			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).
	WG521521	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
			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).
	WG521721	Residue, Non-Filterable (TSS) @105C	SM2540D	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			SM2540D	Q6	Sample was received above recommended temperature.
			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
	WG522738	Sulfate	D516-02/-07/-11 - TURBIDIMETRIC	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			D516-02/-07/-11 - TURBIDIMETRIC	Q6	Sample was received above recommended temperature.
	WG522274	Total Hot Plate Digestion	M200.2 ICP	DJ	Sample dilution required due to insufficient sample.
	WG522305		M200.2 ICP-MS	DJ	Sample dilution required due to insufficient sample.

Ensero Solutions ACZ Project ID: ***L66559***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66559-02	WG521742	Cyanide, WAD	SM4500-CN I,E-Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500-CN I,E-Colorimetric w/ distillation	Q6	Sample was received above recommended temperature.
			SM4500-CN I,E-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).
	WG522332	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			SM4500F-C	Q6	Sample was received above recommended temperature.
	WG522501	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	Q6	Sample was received above recommended temperature.
			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).
	WG522201	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	Q6	Sample was received above recommended temperature.
			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).
	WG521521	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
			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).
	WG521721	Residue, Non-Filterable (TSS) @105C	SM2540D	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			SM2540D	Q6	Sample was received above recommended temperature.
			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
	WG522738	Sulfate	D516-02/-07/-11 - TURBIDIMETRIC	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
			D516-02/-07/-11 - TURBIDIMETRIC	Q6	Sample was received above recommended temperature.
	WG522274	Total Hot Plate Digestion	M200.2 ICP	DJ	Sample dilution required due to insufficient sample.
	WG522305		M200.2 ICP-MS	DJ	Sample dilution required due to insufficient sample.

Ensero Solutions
Project ID: 3100-PO205
Sample ID: SW-BPL
Locator:

ACZ Sample ID: ***L66559-01***
Date Sampled: *06/15/21 9:30*
Date Received: *06/17/21*
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)	07/21/21 10:48		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	07/03/21 0:04		6.4	2.7	6.4	pCi/L		ess
Gross Beta	07/03/21 0:04		3.7	2.7	5.2	pCi/L	*	ess

Radium 226, total Prep Method:
M903.1

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226, total	07/14/21 0:21		0.19	0.09	0.27	pCi/L	*	djc

Radium 228, total Prep Method:
M904.0

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 228, total	08/16/21 17:00		0.44	0.89	2.2	pCi/L	*	cer

Ensero Solutions
Project ID: 3100-PO205
Sample ID: SW-AWD
Locator:

ACZ Sample ID: ***L66559-02***
Date Sampled: *06/15/21 11:10*
Date Received: *06/17/21*
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)	07/21/21 10:48		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	07/03/21 0:08		3.6	2.2	5.3	pCi/L		ess
Gross Beta	07/03/21 0:08		5.6	2.9	9.2	pCi/L	*	ess

Radium 226, total Prep Method:
M903.1

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226, total	07/14/21 0:24		0.13	0.12	0.31	pCi/L	*	djc

Radium 228, total Prep Method:
M904.0

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 228, total	08/16/21 17:00		0.71	0.97	2.3	pCi/L	*	cer

Report Header Explanations

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

QC Sample Types

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

QC Sample Type Explanations

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

ACZ Qualifiers (Qual)

H	Analysis exceeded method hold time.

Method Prefix Reference

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

Comments

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

For a complete list of ACZ's Extended Qualifiers, please click:
https://acz.com/wp-content/uploads/2019/04/Ext-Qual-List.pdf

Ensero Solutions

ACZ Project ID: ***L66559***

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
WG522051																
WG522051PBW	PBW	07/03/21						-.39	0.17	0.75			1.5			
WG522051LCSWA	LCSW	07/03/21	PCN62436	100				110	9	1.3	110	67	144			
L66559-01MSA	MS	07/03/21	PCN62436	100	6.4	2.7	6.4	120	11	5.5	114	67	144			
L66559-01DUP	DUP-RPD	07/03/21			6.4	2.7	6.4	7.3	2.9	10				13	20	
L66709-02DUP	DUP-RPD	07/03/21			11	3.5	5.3	11	3.4	6.3				0	20	

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
WG522051																
WG522051PBW	PBW	07/03/21						-1.4	1.6	1.8			3.6			
WG522051LCSWB	LCSW	07/03/21	RC210621-11	49.9				55	4.9	2.5	110	82	122			
L66559-01DUP	DUP-RPD	07/03/21			3.7	2.7	5.2	4.6	2.8	11				22	20	RG
L66559-01DUP	DUP-RER	07/03/21			3.7	2.7	5.2	4.6	2.8	11				0.23	2	
L66709-02MSB	MS	07/03/21	RC210621-11	49.9	6.5	2.9	9.2	59	5.2	6.7	105	82	122			
L66709-02DUP	DUP-RPD	07/03/21			6.5	2.9	9.2	6	3.1	8.2				8	20	

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
WG522609																
WG522609PBW	PBW	07/14/21						.08	0.09	0.07			0.14			
WG522609LCSW	LCSW	07/14/21	PCN62879	20				14	0.52	0.13	70	43	148			
L66559-01DUP1	DUP-RPD	07/14/21			0.19	0.09	0.27	.16	0.18	0.39				17	20	
L66559-02DUP2	DUP-RER	07/14/21			0.13	0.12	0.31	.35	0.23	0.38				0.85	2	
L66559-02DUP2	DUP-RPD	07/14/21			0.13	0.12	0.31	.35	0.23	0.38				92	20	RG
L66590-03MS	MS	07/14/21	PCN62879	40	0.29	0.14	0.24	40	1.2	0.36	99	43	148			

Ensero Solutions

ACZ Project ID: ***L66559***

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
WG524988																
L67260-03DUP	DUP-RER	08/16/21			0.2	0.72	1.8	.95	0.7	1.7				0.75	2	
WG524988LCSW	LCSW	08/16/21	PCN63356	9.55				8.2	1	1.8	86	47	123			
WG524988PBW	PBW	08/16/21						.04	0.7	1.8			3.6			
L67260-03DUP	DUP-RPD	08/16/21			0.2	0.72	1.8	.95	0.7	1.7				130	20	RG
L67442-02MS	MS	08/17/21	PCN63356	19.09	0.66	0.93	2.1	17	2.5	4.3	86	47	123			
L67442-03DUP	DUP-RPD	08/17/21			-0.28	0.94	2.1	.51	1.3	3.3				687	20	RG
L67442-03DUP	DUP-RER	08/17/21			-0.28	0.94	2.1	.51	1.3	3.3				0.49	2	

RadChem Extended Qualifier Report

Ensero Solutions

ACZ Project ID: ***L66559***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66559-01	WG522051	Gross Beta	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.
	WG522609	Radium 226, total	M903.1	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.
	WG524988	Radium 228, total	M904.0	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.
L66559-02	WG522051	Gross Beta	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.
	WG522609	Radium 226, total	M903.1	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.
	WG524988	Radium 228, total	M904.0	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.

Certification Qualifiers

Ensero Solutions

ACZ Project ID: ***L66559***

No certification qualifiers associated with this analysis

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

Sample Receipt

Ensero Solutions
3100-PO205

ACZ Project ID: L66559
Date Received: 06/17/2021 11:12
Received By:
Date Printed: 6/18/2021

Receipt Verification

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

Samples/Containers

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

NA indicates Not Applicable

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp(°C)	Temp Criteria(°C)	Rad(µR/Hr)	Custody Seal Intact?
6674	8.5	<=6.0	15	N/A

Was ice present in the shipment container(s)?

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

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

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

Sample Receipt

Ensero Solutions
3100-PO205

ACZ Project ID: L66559
Date Received: 06/17/2021 11:12
Received By:
Date Printed: 6/18/2021

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

ACZ Laboratories, Inc. L66559

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

CHAIN of CUSTODY

Report to:

Name: Christie Brizinski	Address: 131 E. Lincoln Ave Ste. 200
Company: Ensero Solutions	Fort Collins, CO 80524
E-mail: cbrizinski@ensero.com	Telephone: 867-668-6463, ext 229

Copy of Report to:

Name: Evan Valencia	E-mail: evalencia@ensero.com
Company: Ensero Solutions	Telephone: 818-688-1839

Invoice to:

Name: Pauline Wong	Address: 131 E. Lincoln Ave Ste. 200
Company: Ensero Solutions	Fort Collins, CO 80524
E-mail: ap@ensero.com	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 **Sampler's Site Information** State CO Zip code 80401 Time Zone MTN

***Sampler's Signature:** EVValencia

*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	6-15-2021: 9:30	SW	8	☐	☐	☒	☐	☐	☐	☐	☐
SW-AWD	6-15-2021: 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

One cooler with 16 containers. Shipped 6/16/2021
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
EValencia	6/16/21: 1500	[illegible]	6/17/21 11:10

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

L66559 Chain of Custod