

October 09, 2023

Report to:
Kara Haas
South32
749 Harshaw Rd
Patagonia, AZ 85624
cc: Matt Owens

Bill to:
Accounts Payable
South32 Hermosa Inc.
2210 E Fort Lowell Road
Tucson, AZ 85719

Project ID: 4542440391
ACZ Project ID: L82880

Kara Haas:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on September 05, 2023. This project has been assigned to ACZ's project number, L82880. 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 L82880. 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 28, 2025. 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.

Mark McNeal

Mark McNeal has reviewed
and approved this report.



South32

Project ID: 4542440391
 Sample ID: POC-2_09012023

ACZ Sample ID: **L82880-01**
 Date Sampled: 09/01/23 00:00
 Date Received: 09/05/23
 Sample Matrix: Groundwater

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Antimony, dissolved	M200.8 ICP-MS	2	<0.0008	U		mg/L	0.0008	0.004	09/19/23 17:55	kja
Arsenic, dissolved	M200.8 ICP-MS	2	0.00417			mg/L	0.0004	0.002	09/19/23 17:55	kja
Barium, dissolved	M200.7 ICP	2	0.0222	B		mg/L	0.018	0.07	09/22/23 14:12	wtc
Beryllium, dissolved	M200.8 ICP-MS	2	0.000424	B		mg/L	0.00016	0.0005	09/19/23 17:55	kja
Cadmium, dissolved	M200.8 ICP-MS	2	0.00476			mg/L	0.0001	0.0005	09/19/23 17:55	kja
Chromium, dissolved	M200.8 ICP-MS	2	<0.001	U		mg/L	0.001	0.004	09/19/23 17:55	kja
Copper, dissolved	M200.8 ICP-MS	2	<0.0016	U		mg/L	0.0016	0.004	09/19/23 17:55	kja
Iron, dissolved	M200.7 ICP	2	0.847			mg/L	0.12	0.3	09/22/23 14:12	wtc
Lead, dissolved	M200.8 ICP-MS	2	0.00227			mg/L	0.0002	0.001	09/19/23 17:55	kja
Manganese, dissolved	M200.7 ICP	2	19.1			mg/L	0.02	0.1	09/22/23 14:12	wtc
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	09/19/23 9:40	mlh
Nickel, dissolved	M200.7 ICP	2	0.0412	B		mg/L	0.016	0.08	09/22/23 14:12	wtc
Selenium, dissolved	M200.8 ICP-MS	2	<0.0002	U		mg/L	0.0002	0.0005	09/19/23 17:55	kja
Thallium, dissolved	M200.8 ICP-MS	2	<0.0002	U		mg/L	0.0002	0.001	09/19/23 17:55	kja
Zinc, dissolved	M200.7 ICP	2	3.59			mg/L	0.04	0.1	09/22/23 14:12	wtc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	167		*	mg/L	2	20	09/08/23 0:00	emk
Carbonate as CaCO3		1	<2	U	*	mg/L	2	20	09/08/23 0:00	emk
Hydroxide as CaCO3		1	<2	U	*	mg/L	2	20	09/08/23 0:00	emk
Total Alkalinity		1	167		*	mg/L	2	20	09/08/23 0:00	emk
Conductivity @25C	SM2510B	1	2750		*	umhos/cm	1	10	09/26/23 14:08	emk
Cyanide, Free	D6888-09/OIA-1677-09	1	<0.003	U	*	mg/L	0.003	0.01	09/06/23 15:37	gkk
Fluoride	SM4500F-C	1	0.89		*	mg/L	0.15	0.35	09/25/23 15:16	svm
Nitrate as N	Calculation: NO3NO2 minus NO2		<0.02	UH		mg/L	0.02	0.1	10/09/23 0:00	calc
Nitrate/Nitrite as N	M353.2 - Automated Cadmium Reduction	1	<0.02	UH	*	mg/L	0.02	0.1	09/06/23 23:28	pjb
Nitrite as N	M353.2 - Automated Cadmium Reduction	1	<0.01	UH	*	mg/L	0.01	0.05	09/06/23 23:28	pjb
pH (lab)	SM4500H+ B									
pH		1	7.3	H	*	units	0.1	0.1	09/08/23 0:00	emk
pH measured at		1	23.1		*	C	0.1	0.1	09/08/23 0:00	emk
Residue, Filterable (TDS) @180C	SM2540C	2	2700		*	mg/L	40	80	09/07/23 15:48	svm
Sulfate	D516-02/-07/-11 - TURBIDIMETRIC	50	1840		*	mg/L	50	250	09/20/23 16:33	aps

Arizona license number: **AZ0102**

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>

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ACZ Project ID: **L82880**

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

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG573872													
WG573872PBW1	PBW	09/08/23 20:43				U	mg/L		-20	20			
WG573872LCSW2	LCSW	09/08/23 20:49	WC230826-1	820.0001		812	mg/L	99	90	110			
L82887-01DUP	DUP	09/08/23 22:31			U	U	mg/L				0	20	RA
WG573872LCSW4	LCSW	09/08/23 22:35	WC230826-1	820.0001		809.7	mg/L	99	90	110			
WG573872PBW2	PBW	09/08/23 22:41				3.8	mg/L		-20	20			
WG573872LCSW6	LCSW	09/09/23 0:05	WC230826-1	820.0001		815.6	mg/L	99	90	110			
WG573872PBW3	PBW	09/09/23 0:11				3.4	mg/L		-20	20			
WG573872LCSW8	LCSW	09/09/23 1:35	WC230826-1	820.0001		825.1	mg/L	101	90	110			
WG573872PBW4	PBW	09/09/23 1:41				3.5	mg/L		-20	20			
WG573872LCSW10	LCSW	09/09/23 3:16	WC230826-1	820.0001		822.6	mg/L	100	90	110			
WG573872PBW5	PBW	09/09/23 3:21				4	mg/L		-20	20			
WG573872LCSW12	LCSW	09/09/23 5:05	WC230826-1	820.0001		830.3	mg/L	101	90	110			

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG574608													
WG574608ICV	ICV	09/19/23 17:39	MS230908-1	.02002		.01968	mg/L	98	90	110			
WG574608ICB	ICB	09/19/23 17:41				U	mg/L		-0.00088	0.00088			
WG574608LFB	LFB	09/19/23 17:43	MS230912-3	.01		.01042	mg/L	104	85	115			
L82894-01AS	AS	09/19/23 18:02	MS230912-3	.01	.00067	.01139	mg/L	107	70	130			
L82894-01ASD	ASD	09/19/23 18:04	MS230912-3	.01	.00067	.01132	mg/L	107	70	130	1	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG574608													
WG574608ICV	ICV	09/19/23 17:39	MS230908-1	.05		.05166	mg/L	103	90	110			
WG574608ICB	ICB	09/19/23 17:41				U	mg/L		-0.00044	0.00044			
WG574608LFB	LFB	09/19/23 17:43	MS230912-3	.0501		.04823	mg/L	96	85	115			
L82894-01AS	AS	09/19/23 18:02	MS230912-3	.0501	.00132	.05527	mg/L	108	70	130			
L82894-01ASD	ASD	09/19/23 18:04	MS230912-3	.0501	.00132	.05586	mg/L	109	70	130	1	20	

Barium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG574802													
WG574802ICV	ICV	09/22/23 13:51	II230905-2	2		1.9355	mg/L	97	95	105			
WG574802ICB	ICB	09/22/23 13:57				U	mg/L		-0.027	0.027			
WG574802LFB	LFB	09/22/23 14:09	II230907-5	.501		.5059	mg/L	101	85	115			
L82895-01AS	AS	09/22/23 14:19	II230907-5	.501	.0142	.5206	mg/L	101	85	115			
L82895-01ASD	ASD	09/22/23 14:22	II230907-5	.501	.0142	.5253	mg/L	102	85	115	1	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG574608													
WG574608ICV	ICV	09/19/23 17:39	MS230908-1	.05		.050624	mg/L	101	90	110			
WG574608ICB	ICB	09/19/23 17:41				.000141	mg/L		-0.000176	0.000176			
WG574608LFB	LFB	09/19/23 17:43	MS230912-3	.05005		.049098	mg/L	98	85	115			
L82894-01AS	AS	09/19/23 18:02	MS230912-3	.05005	U	.053119	mg/L	106	70	130			
L82894-01ASD	ASD	09/19/23 18:04	MS230912-3	.05005	U	.054477	mg/L	109	70	130	3	20	

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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.

Cadmium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG574608													
WG574608ICV	ICV	09/19/23 17:39	MS230908-1	.05		.052561	mg/L	105	90	110			
WG574608ICB	ICB	09/19/23 17:41				U	mg/L		-0.00011	0.00011			
WG574608LFB	LFB	09/19/23 17:43	MS230912-3	.05005		.049815	mg/L	100	85	115			
L82894-01AS	AS	09/19/23 18:02	MS230912-3	.05005	U	.052434	mg/L	105	70	130			
L82894-01ASD	ASD	09/19/23 18:04	MS230912-3	.05005	U	.053864	mg/L	108	70	130	3	20	

Chromium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG574608													
WG574608ICV	ICV	09/19/23 17:39	MS230908-1	.05		.052	mg/L	104	90	110			
WG574608ICB	ICB	09/19/23 17:41				U	mg/L		-0.0011	0.0011			
WG574608LFB	LFB	09/19/23 17:43	MS230912-3	.0501		.04835	mg/L	97	85	115			
L82894-01AS	AS	09/19/23 18:02	MS230912-3	.0501	.0015	.05285	mg/L	102	70	130			
L82894-01ASD	ASD	09/19/23 18:04	MS230912-3	.0501	.0015	.05308	mg/L	103	70	130	0	20	

Conductivity @25C

SM2510B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG575131													
WG575131PBW	PBW	09/26/23 13:54				U	umhos/cm		-10	10			
WG575131LCSW1	LCSW	09/26/23 13:55	PCN624694	1409		1403	umhos/cm	100	90	110			
L82893-03DUP	DUP	09/26/23 14:13			398	395	umhos/cm				1	20	
WG575131LCSW2	LCSW	09/26/23 14:32	PCN624694	1409		1419	umhos/cm	101	90	110			
WG575131LCSW3	LCSW	09/26/23 15:10	PCN624694	1409		1384	umhos/cm	98	90	110			
WG575131LCSW4	LCSW	09/26/23 15:47	PCN624694	1409		1371	umhos/cm	97	90	110			
WG575131LCSW5	LCSW	09/26/23 16:24	PCN624694	1409		1355	umhos/cm	96	90	110			
WG575131LCSW6	LCSW	09/26/23 17:01	PCN624694	1409		1379	umhos/cm	98	90	110			
WG575131LCSW7	LCSW	09/26/23 17:03	PCN624694	1409		1351	umhos/cm	96	90	110			
WG575131LCSW8	LCSW	09/26/23 17:37	PCN624694	1409		1330	umhos/cm	94	90	110			

Copper, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG574608													
WG574608ICV	ICV	09/19/23 17:39	MS230908-1	.05		.05358	mg/L	107	90	110			
WG574608ICB	ICB	09/19/23 17:41				U	mg/L		-0.00176	0.00176			
WG574608LFB	LFB	09/19/23 17:43	MS230912-3	.05005		.04866	mg/L	97	85	115			
L82894-01AS	AS	09/19/23 18:02	MS230912-3	.05005	U	.05181	mg/L	104	70	130			
L82894-01ASD	ASD	09/19/23 18:04	MS230912-3	.05005	U	.05236	mg/L	105	70	130	1	20	

Cyanide, Free

D6888-09/OIA-1677-09

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG573667													
WG573667ICV	ICV	09/06/23 14:53	WI230906-8	.3003		.2741	mg/L	91	90	110			
WG573667ICB	ICB	09/06/23 14:55				U	mg/L		-0.003	0.003			
WG573667LFB	LFB	09/06/23 14:59	WI230906-11	.1001		.0936	mg/L	94	90	110			
L80295-10AS	AS	09/06/23 15:27	WI230906-11	.1001	U	.0887	mg/L	89	90	110			MA
L80295-10ASD	ASD	09/06/23 15:29	WI230906-11	.1001	U	.0915	mg/L	91	90	110	3	20	MA

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Fluoride

SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG574986													
WG574986ICV	ICV	09/25/23 11:36	WC230915-1	2.002		2.07	mg/L	103	90	110			
WG574986ICB	ICB	09/25/23 11:44				U	mg/L		-0.3	0.3			
WG574986LFB1	LFB	09/25/23 11:53	WC230825-1	5.005		5.19	mg/L	104	90	110			
WG574986LFB2	LFB	09/25/23 14:35	WC230825-1	5.005		5	mg/L	100	90	110			
L82896-01AS	AS	09/25/23 15:34	WC230825-1	5.005	.83	5.71	mg/L	98	90	110			
L82896-01ASD	ASD	09/25/23 15:38	WC230825-1	5.005	.83	5.71	mg/L	98	90	110	0	20	

Iron, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG574802													
WG574802ICV	ICV	09/22/23 13:51	II230905-2	2		1.938	mg/L	97	95	105			
WG574802ICB	ICB	09/22/23 13:57				U	mg/L		-0.18	0.18			
WG574802LFB	LFB	09/22/23 14:09	II230907-5	1.004		1.07	mg/L	107	85	115			
L82895-01AS	AS	09/22/23 14:19	II230907-5	1.004	U	1.089	mg/L	108	85	115			
L82895-01ASD	ASD	09/22/23 14:22	II230907-5	1.004	U	1.112	mg/L	111	85	115	2	20	

Lead, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG574608													
WG574608ICV	ICV	09/19/23 17:39	MS230908-1	.05		.05161	mg/L	103	90	110			
WG574608ICB	ICB	09/19/23 17:41				U	mg/L		-0.00022	0.00022			
WG574608LFB	LFB	09/19/23 17:43	MS230912-3	.05005		.04973	mg/L	99	85	115			
L82894-01AS	AS	09/19/23 18:02	MS230912-3	.05005	U	.05257	mg/L	105	70	130			
L82894-01ASD	ASD	09/19/23 18:04	MS230912-3	.05005	U	.05366	mg/L	107	70	130	2	20	

Manganese, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG574802													
WG574802ICV	ICV	09/22/23 13:51	II230905-2	2		1.938	mg/L	97	95	105			
WG574802ICB	ICB	09/22/23 13:57				U	mg/L		-0.03	0.03			
WG574802LFB	LFB	09/22/23 14:09	II230907-5	.4995		.531	mg/L	106	85	115			
L82895-01AS	AS	09/22/23 14:19	II230907-5	.4995	.017	.542	mg/L	105	85	115			
L82895-01ASD	ASD	09/22/23 14:22	II230907-5	.4995	.017	.55	mg/L	107	85	115	1	20	

Mercury, dissolved

M245.1 CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG574478													
WG574478ICV	ICV	09/19/23 8:42	HG230911-14	.005		.00518	mg/L	104	95	105			
WG574478ICB	ICB	09/19/23 8:43				U	mg/L		-0.0002	0.0002			
WG574479													
WG574479LRB	LRB	09/19/23 9:26				U	mg/L		-0.00044	0.00044			
WG574479LFB	LFB	09/19/23 9:27	HG230911-17	.002002		.00197	mg/L	98	85	115			
L82850-01LFM	LFM	09/19/23 9:29	HG230911-17	.002002	U	.00176	mg/L	88	85	115			
L82850-01LFMD	LFMD	09/19/23 9:30	HG230911-17	.002002	U	.00178	mg/L	89	85	115	1	20	

AZMINING

ACZ Project ID: **L82880**

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.

Nickel, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG574802													
WG574802ICV	ICV	09/22/23 13:51	II230905-2	2.002		1.9845	mg/L	99	95	105			
WG574802ICB	ICB	09/22/23 13:57				U	mg/L		-0.024	0.024			
WG574802LFB	LFB	09/22/23 14:09	II230907-5	.5		.5154	mg/L	103	85	115			
L82895-01AS	AS	09/22/23 14:19	II230907-5	.5	U	.5287	mg/L	106	85	115			
L82895-01ASD	ASD	09/22/23 14:22	II230907-5	.5	U	.5383	mg/L	108	85	115	2	20	

Nitrate/Nitrite as N

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG573720													
WG573720ICV	ICV	09/06/23 23:17	WI230701-1	2.416		2.409	mg/L	100	90	110			
WG573720ICB	ICB	09/06/23 23:18				U	mg/L		-0.02	0.02			
WG573720LFB	LFB	09/06/23 23:22	WI230829-3	2		2.093	mg/L	105	90	110			
L82879-01AS	AS	09/06/23 23:24	WI230829-3	2	U	2.039	mg/L	102	90	110			
L82879-02DUP	DUP	09/06/23 23:27			U	U	mg/L				0	20	RA

Nitrite as N

M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG573720													
WG573720ICV	ICV	09/06/23 23:17	WI230701-1	.608		.623	mg/L	102	90	110			
WG573720ICB	ICB	09/06/23 23:18				U	mg/L		-0.01	0.01			
WG573720LFB	LFB	09/06/23 23:22	WI230829-3	1		1.048	mg/L	105	90	110			
L82879-01AS	AS	09/06/23 23:24	WI230829-3	1	U	1.058	mg/L	106	90	110			
L82879-02DUP	DUP	09/06/23 23:27			U	U	mg/L				0	20	RA

pH (lab)

SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG573872													
WG573872LCSW1	LCSW	09/08/23 20:47	PCN624449	6		5.96	units	99	5.9	6.1			
L82887-01DUP	DUP	09/08/23 22:31			3.2	3.2	units				0	20	
WG573872LCSW3	LCSW	09/08/23 22:33	PCN624449	6		6.02	units	100	5.9	6.1			
WG573872LCSW5	LCSW	09/09/23 0:03	PCN624449	6		6.03	units	101	5.9	6.1			
WG573872LCSW7	LCSW	09/09/23 1:33	PCN624449	6		5.99	units	100	5.9	6.1			
WG573872LCSW9	LCSW	09/09/23 3:14	PCN624449	6		6	units	100	5.9	6.1			
WG573872LCSW11	LCSW	09/09/23 5:03	PCN624449	6		6	units	100	5.9	6.1			

Residue, Filterable (TDS) @180C

SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG573807													
WG573807PBW	PBW	09/07/23 14:55				U	mg/L		-20	20			
WG573807LCSW	LCSW	09/07/23 14:57	PCN625104	1000		982	mg/L	98	80	120			
L82887-01DUP	DUP	09/07/23 16:00			10600	10540	mg/L				1	10	

AZMINING

ACZ Project ID: **L82880**

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.

Selenium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG574608													
WG574608ICV	ICV	09/19/23 17:39	MS230908-1	.05		.05149	mg/L	103	90	110			
WG574608ICB	ICB	09/19/23 17:41				U	mg/L		-0.00022	0.00022			
WG574608LFB	LFB	09/19/23 17:43	MS230912-3	.05005		.04849	mg/L	97	85	115			
L82894-01AS	AS	09/19/23 18:02	MS230912-3	.05005	.00149	.05618	mg/L	109	70	130			
L82894-01ASD	ASD	09/19/23 18:04	MS230912-3	.05005	.00149	.0572	mg/L	111	70	130	2	20	

Sulfate

D516-02/-07/-11 - TURBIDIMETRIC

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG574740													
WG574740ICB	ICB	09/20/23 10:44				U	mg/L		-3	3			
WG574740ICV	ICV	09/20/23 10:44	WI230911-4	20		20.6	mg/L	103	90	110			
WG574740LFB	LFB	09/20/23 15:57	WI230119-9	10		9.7	mg/L	97	90	110			
L82894-01AS	AS	09/20/23 16:30	WI230119-9	10	11.7	21.7	mg/L	100	90	110			
L82893-03DUP	DUP	09/20/23 16:33			116	115.1	mg/L				1	20	

Thallium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG574608													
WG574608ICV	ICV	09/19/23 17:39	MS230908-1	.05		.05305	mg/L	106	90	110			
WG574608ICB	ICB	09/19/23 17:41				U	mg/L		-0.00022	0.00022			
WG574608LFB	LFB	09/19/23 17:43	MS230912-3	.0501		.04956	mg/L	99	85	115			
L82894-01AS	AS	09/19/23 18:02	MS230912-3	.0501	U	.05304	mg/L	106	70	130			
L82894-01ASD	ASD	09/19/23 18:04	MS230912-3	.0501	U	.0536	mg/L	107	70	130	1	20	

Zinc, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG574802													
WG574802ICV	ICV	09/22/23 13:51	II230905-2	2		1.914	mg/L	96	95	105			
WG574802ICB	ICB	09/22/23 13:57				U	mg/L		-0.06	0.06			
WG574802LFB	LFB	09/22/23 14:09	II230907-5	.50045		.51	mg/L	102	85	115			
L82895-01AS	AS	09/22/23 14:19	II230907-5	.50045	.02	.581	mg/L	112	85	115			
L82895-01ASD	ASD	09/22/23 14:22	II230907-5	.50045	.02	.57	mg/L	110	85	115	2	20	

South32

ACZ Project ID: **L82880**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L82880-01	WG573872	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG575131	Conductivity @25C	SM2510B	Q6	Sample was received above recommended temperature.
	WG573667	Cyanide, Free	D6888-09/OIA-1677-09	Q6	Sample was received above recommended temperature.
	WG574986	Fluoride	SM4500F-C	Q6	Sample was received above recommended temperature.
	WG573872	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG573720	Nitrate/Nitrite as N	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
				Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
				H3	Sample was received and analyzed past holding time.
		Nitrite as N	M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
				RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
				Q6	Sample was received above recommended temperature.
	WG573872	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG573807	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
	WG574740	Sulfate	D516-02/-07/-11 - TURBIDIMETRIC	Q6	Sample was received above recommended temperature.
	WG573872	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.
			SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

South32

Project ID: 4542440391
 Sample ID: POC-2_09012023
 Locator:

ACZ Sample ID: **L82880-01**
 Date Sampled: 09/01/23 0:00
 Date Received: 09/05/23
 Sample Matrix: Groundwater

Combined Radium (total)
 Calculation (RA226 + RA228)

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Combined Radium (total)	10/09/23 11:42		0			pCi/L		calc

Gross Alpha Total, corrected
 Calculation

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha Total, corrected	10/09/23 11:43		-5.8			pCi/L		calc

Gross Alpha, total
 M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha, total	10/06/23 0:04		-5.8	3.5	31	pCi/L	*	trt

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

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 226 + Alpha	09/25/23 0:07		-0.19	0.14	0.88	pCi/L		ksl

Radium 228, total
 M904.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Radium 228, total	09/17/23 19:40		1.1	0.76	1.9	pCi/L	*	amk

Uranium, Isotopic Total
 Eichrom ACW03

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Uranium 234, total	09/24/23 14:10		1.44	1.7	2.8	pCi/L	*	amk
Uranium 235, total	09/24/23 14:10		-1.45	1	2.8	pCi/L	*	amk
Uranium 238, total	09/24/23 14:10		0.581	1.1	2	pCi/L	*	amk

Arizona license number: **AZ0102**

Report Header Explanations

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

QC Sample Types

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

QC Sample Type Explanations

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

ACZ Qualifiers (Qual)

H	Analysis exceeded method hold time.
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Method Prefix Reference

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

Comments

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

For a complete list of ACZ's Extended Qualifiers, please click:

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

AZMINING

ACZ Project ID: **L82880**

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

Gross Alpha, total

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
WG575706																
WG575706PBW	PBW	10/06/23						.03	0.82	12			24			
WG575706LCSW A	LCSW	10/06/23	PCN625402	100				100	8.8	12	100	67	144			
L83360-01DUP	DUP-RER	10/06/23			0.93	1.4	10	1.6	1.7	5.1				0.3	2	
L83360-01DUP	DUP-RPD	10/06/23			0.93	1.4	10	1.6	1.7	5.1				53	20	RG
L83360-02MS A	MS	10/06/23	PCN625402	100	-0.82	0.53	5.1	100	8.7	4.8	101	67	144			
L83567-07DUP	DUP-RER	10/06/23			0.44	2.1	9.4	1	1.3	4.6				0.23	2	
L83567-07DUP	DUP-RPD	10/06/23			0.44	2.1	9.4	1	1.3	4.6				78	20	RG

Radium 226 + Alpha Emitting Radium M903.0

Units: pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec%	Lower	Upper	RPD/RER	Limit	Qual
WG574871																
WG574871PBW	PBW	09/25/23						-14	0.12	0.23			0.46			
WG574871LCSW	LCSW	09/25/23	PCN624896	20				19	1.4	0.2	95	66	132			
L83252-01DUP	DUP-RPD	09/25/23			-0.18	0.12	0.93	-2	0.13	0.95				11	20	
L83252-08DUP	DUP-RPD	09/25/23			-0.02	0.1	0.64	-19	0.16	1				162	20	RG
L83252-04MS	MS	09/25/23	PCN624896	20	0.29	0.24	0.88	19	1.4	0.84	94	66	132			
L83252-08DUP	DUP-RER	09/25/23			-0.02	0.1	0.64	-19	0.16	1				0.9	2	

AZMINING

ACZ Project ID: **L82880**

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
WG574407																
WG574407LCSW	LCSW	09/17/23	PCN623727	8.91				8.2	1	0.7	92	47	123			
WG574407PBW	PBW	09/17/23						.17	0.47	0.49			0.98			
L82723-01DUP	DUP-RER	09/17/23			2.7	2.7	6.8	4.7	2.5	6.2				0.54	2	
L82723-01DUP	DUP-RPD	09/17/23			2.7	2.7	6.8	4.7	2.5	6.2				54	20	RG
L83137-02DUP	DUP-RPD	09/17/23			2.3	1.1	2.7	2.3	1.2	2.9				0	20	
L83083-02MS	MS	09/17/23	PCN623727	8.91	3.2	1.2	2.8	17	1.8	3	155	47	123			M1
L83137-02DUP	DUP-RER	09/17/23			2.3	1.1	2.7	2.3	1.2	2.9				0	2	

U-232

Eichrom ACW03

Units: %

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec%	Lower	Upper	RPD/RER	Limit	Qual
WG574435																
WG574435LCSW	LCSW	09/23/23	PCN625391					65	130	30						
L82605-02DUP	DUP-RER	09/24/23			83	130	30	81	130	30					20	
L82605-02DUP	DUP-RPD	09/24/23			83	130	30							2	20	
L82605-02DUP	DUP-RPD	09/24/23			83	130	30	81	130	30					20	
L82880-01MS	MS	09/24/23	PCN625391		70	130	30	76	130	30						
L82880-01DUP	DUP-RPD	09/24/23			70	130	30	79	130	30					20	
L82880-01DUP	DUP-RER	09/24/23			70	130	30	79	130	30					20	
L82880-01DUP	DUP-RPD	09/24/23			70	130	30							12	20	
WG574435PBW	PBW	09/24/23						85	130	30			60			

AZMINING

ACZ Project ID: **L82880**

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.

U-234 Eichrom ACW03 **Units: pCi/L**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec%	Lower	Upper	RPD/RER	Limit	Qual
WG574435																
WG574435LCSW	LCSW	09/23/23	PCN625391	98.2				93.4	13	3.3	95	77	122			
L82605-02DUP	DUP-RER	09/24/23			5.01	1.9	2.1	6.41	2.2	2.5				0.48	2	
L82605-02DUP	DUP-RPD	09/24/23			5.01	1.9	2.1	6.41	2.2	2.5				25	20	RG
L82880-01MS	MS	09/24/23	PCN625391	98.2	1.44	1.7	2.8	95.8	12	2.7	96	77	122			
L82880-01DUP	DUP-RER	09/24/23			1.44	1.7	2.8	3.14	1.6	1.9				0.73	2	
L82880-01DUP	DUP-RPD	09/24/23			1.44	1.7	2.8	3.14	1.6	1.9				74	20	RG
WG574435PBW	PBW	09/24/23						1.43	1.5	2.5			5			

U-235 Eichrom ACW03 **Units: pCi/L**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec%	Lower	Upper	RPD/RER	Limit	Qual
WG574435																
WG574435LCSW	LCSW	09/23/23	PCN625391	4.48				3.55	2.3	3.2	79	42	136			
L82605-02DUP	DUP-RER	09/24/23			-0.461	0.82	2	.602	1.1	2				0.77	2	
L82605-02DUP	DUP-RPD	09/24/23			-0.461	0.82	2	.602	1.1	2				1508	20	RG
L82880-01MS	MS	09/24/23	PCN625391	4.48	-1.45	1	2.8	2.4	1.8	2.6	86	42	136			
L82880-01DUP	DUP-RER	09/24/23			-1.45	1	2.8	1.01	1	1.6				1.74	2	
L82880-01DUP	DUP-RPD	09/24/23			-1.45	1	2.8	1.01	1	1.6				1118	20	RG
WG574435PBW	PBW	09/24/23						-.792	1.1	2.5			5			

AZMINING

ACZ Project ID: **L82880**

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.

U-238

Eichrom ACW03

Units: pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec%	Lower	Upper	RPD/RER	Limit	Qual
WG574435																
WG574435LCSW	LCSW	09/23/23	PCN625391	97.3				98.1	13	1.6	101	87	124			
L82605-02DUP	DUP-RER	09/24/23			4.77	1.6	1.2	8.51	2.2	1.6				1.37	2	
L82605-02DUP	DUP-RPD	09/24/23			4.77	1.6	1.2	8.51	2.2	1.6				56	20	RG
L82880-01MS	MS	09/24/23	PCN625391	97.3	0.581	1.1	2	98.8	13	1.8	101	87	124			
L82880-01DUP	DUP-RPD	09/24/23			0.581	1.1	2	1.63	1.2	1.8				95	20	RG
L82880-01DUP	DUP-RER	09/24/23			0.581	1.1	2	1.63	1.2	1.8				0.64	2	
WG574435PBW	PBW	09/24/23						2.74	1.2	1.3			2.6			B4 B7

South32

ACZ Project ID: **L82880**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L82880-01	WG575706	Gross Alpha, total	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.
	WG574407	Radium 228, total	M904.0	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			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.
	WG574435	Uranium 234, total	Eichrom ACW03	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.
		Uranium 235, total	Eichrom ACW03	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.
		Uranium 238, total	Eichrom ACW03	B4	Target analyte detected in blank at or above the acceptance criteria.
			Eichrom ACW03	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.

South32

ACZ Project ID: **L82880**

Radiochemistry

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.

Uranium 234, total	Eichrom ACW03
Uranium 235, total	Eichrom ACW03
Uranium 238, total	Eichrom ACW03

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

Uranium 234, total	Eichrom ACW03
Uranium 235, total	Eichrom ACW03
Uranium 238, total	Eichrom ACW03

Wet Chemistry

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.

Cyanide, Free	D6888-09/OIA-1677-09
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South32
 4542440391

ACZ Project ID: L82880
 Date Received: 09/05/2023 11:48
 Received By:
 Date Printed: 9/6/2023

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	

Some parameters were received past 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?
NA41151	19.2	<=6.0	15	Yes

Was ice present in the shipment container(s)?

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

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

South32
4542440391

ACZ Project ID: L82880
Date Received: 09/05/2023 11:48
Received By:
Date Printed: 9/6/2023

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



Laboratories, Inc.

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

L82880

CHAIN of CUSTODY

Report to:

Name: Kara Haas
 Company: South32
 E-mail: kara.haas@south32.net

Address: 749 Harshaw Road
 Patagonia, AZ 85648
 Telephone: 505-947-1738

Copy of Report to:

Name: Matt Owens
 Company: South32

E-mail: Matt.Owens1@south32.net
 Telephone: 520-947-1738

Invoice to:

Name: Kara Haas
 Company: South32
 E-mail: kara.haas@south32.net

Address: 749 Harshaw Road
 Patagonia, AZ 85648
 Telephone: 505-947-1738

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: Jaime Lopez Sampler's Site Information State AZ Zip code 85624 Time Zone AZ

*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 #: _____
 PO#: 4542440391
 Reporting state for compliance testing: _____
 Check box if samples include NRC licensed material?

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	ANALYSES REQUESTED																	
				POC-2																	
POC-2_09012023	9/1/2023	GW	7	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>JL 9-1-2023</i>				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>JL 9-1-2023</i>				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>JL 9-1-2023</i>				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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

REMARKS

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
<i>Jaime Lopez</i>	<i>9-1-23</i>	<i>[Signature]</i>	<i>9/1/23 15:18</i>



L82880 Chain of Custody