

Submittal via Webportal

phone: (509) 775-3157

fax: (509) 775-3447

January 24, 2024

Mr. Pat Hallinan
Department of Ecology
Eastern Regional Office
4601 North Monroe Street, Suite 202
Spokane, WA 99205-1295

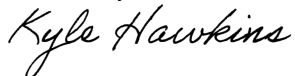
Re: NPDES Permit No. WA0991005
4th Quarter Surface Water and Groundwater Monitoring Results for Key Pits

Dear Pat,

Pursuant to Department of Ecology NPDES Permit No. WA0991005, please find attached the 4th quarter of 2023 Surface Water and Groundwater Monitoring Results for Key Pits. Analytical reports and graphs are included with this report for all groundwater and surface water sites.

Please contact me at 509-775-8544 if you have any questions or require additional information.

Sincerely,
Echo Bay Minerals Company



Kyle Hawkins
Senior Environmental Engineer

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 gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering 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.

Water Quality Monitoring Data

Site Number	Sample Date	Sample Time	Reason for No Sample	Alkalinity, Total (mg/l as CaCO3)	Arsenic, Total Recoverable (ug/L as As)	Barium, Total Recoverable (ug/L)	Cadmium, Total Recoverable (ug/L)	Calcium, Total Recoverable (ug/L)	Carbon, Total Organic (mg/l as C)	Chloride, Total (mg/l as Cl)
Key-In	10/11/2023	09:20							2.43	
Key-In	10/30/2023	15:30		158	1.76			473000	2.13	
Key-In	11/15/2023	10:50							2.11	
Key-In	11/30/2023	11:05		161	0.68			481000	1.85	
Key-In	12/07/2023	12:19							1.9	
Key-In	12/18/2023	13:30		164	0.58			421000	1.83	
Key-Out	10/11/2023	09:30							4.82	
Key-Out	10/30/2023	15:20	No Discharge							
Key-Out	11/15/2023	10:40	No Discharge							
Key-Out	11/30/2023	11:00	No Discharge							
Key-Out	12/07/2023	12:15	No Discharge							
Key-Out	12/18/2023	13:20	No Discharge							
KPI-04	12/18/2023	12:00	Unsafe Access							
KW1-A	12/18/2023	13:25		232	25.9	77.7	0.219	323000		1.03
KW1-B	12/18/2023	13:00								
KW1-C	12/18/2023	13:08								
KW2-A	12/18/2023	13:50		206	0.37	16.1	0.735	283000		1.18
KWP	11/30/2023	10:40		88.4	2.36	23.5	-0.126	139000		0.61
KWP	12/18/2023	12:30	Frozen							
SW-12	11/30/2023	10:11		320	7.79	107	0.376	260000		1.12
SW-16	11/30/2023	11:05		313	9.75	42.4	-0.126	326000		0.98

Water Quality Monitoring Data

Site Number	Sample Date	Sample Time	Reason for No Sample	Copper Total Recoverable (ug/L)	Depth to Water (ft)	Flow (gpm)	Ground Water Elevation (ft amsl)	Hardness, Total (mg/l as CaCO3)	Iron, Total Recoverable (ug/L as Fe)	Lead Total as ug/L
Key-In	10/11/2023	09:20								
Key-In	10/30/2023	15:30						1.54	180	
Key-In	11/15/2023	10:50								
Key-In	11/30/2023	11:05						1.6	94	
Key-In	12/07/2023	12:19								
Key-In	12/18/2023	13:30						1.37	-56	
Key-Out	10/11/2023	09:30								
Key-Out	10/30/2023	15:20	No Discharge							
Key-Out	11/15/2023	10:40	No Discharge							
Key-Out	11/30/2023	11:00	No Discharge							
Key-Out	12/07/2023	12:15	No Discharge							
Key-Out	12/18/2023	13:20	No Discharge							
KPI-04	12/18/2023	12:00	Unsafe Access							
KW1-A	12/18/2023	13:25		15.1	6.82		4464.4		5080	7.29
KW1-B	12/18/2023	13:00			6.68		4466.87			
KW1-C	12/18/2023	13:08			4.26		4470.47			
KW2-A	12/18/2023	13:50		6.91	0		4471.31		104	0.33
KWP	11/30/2023	10:40		1.51					177	-0.28
KWP	12/18/2023	12:30	Frozen							
SW-12	11/30/2023	10:11		22		5		0.786	4210	2.56
SW-16	11/30/2023	11:05		1.11		2.5		1	221	-0.28

Water Quality Monitoring Data

Site Number	Sample Date	Sample Time	Reason for No Sample	Magnesium, Total Recoverable (ug/L)	Manganese, Total Recoverable (ug/L as Mn)	Mercury Total as ug/L	Nickel, Total Recoverable (ug/L as Ni)	Nitrite plus Nitrate (mg/l as N)	Nitrogen, Ammonia, Total (mg/l as N)	Oxygen, Dissolved (mg/L) Field
Key-In	10/11/2023	09:20						2.67		9.89
Key-In	10/30/2023	15:30		88000	3.87			2.36	-0.03	10.63
Key-In	11/15/2023	10:50						2.49		8.7
Key-In	11/30/2023	11:05		96700	5.84			2.48	-0.03	7.82
Key-In	12/07/2023	12:19						2.57		7.65
Key-In	12/18/2023	13:30		78600	2.64			2.74	-0.03	7.24
Key-Out	10/11/2023	09:30						-0.05		4.56
Key-Out	10/30/2023	15:20	No Discharge							
Key-Out	11/15/2023	10:40	No Discharge							
Key-Out	11/30/2023	11:00	No Discharge							
Key-Out	12/07/2023	12:15	No Discharge							
Key-Out	12/18/2023	13:20	No Discharge							
KPI-04	12/18/2023	12:00	Unsafe Access							
KW1-A	12/18/2023	13:25		34900	155		3.24	2.77	-0.03	
KW1-B	12/18/2023	13:00								
KW1-C	12/18/2023	13:08								
KW2-A	12/18/2023	13:50		32200	2.73		1.38	3.69	-0.03	
KWP	11/30/2023	10:40		32500	111		-0.24	-0.05	0.048	
KWP	12/18/2023	12:30	Frozen							
SW-12	11/30/2023	10:11		33100	1100		5.75	0.157	0.048	
SW-16	11/30/2023	11:05		45500	194		-0.24	0.131	-0.03	

Water Quality Monitoring Data

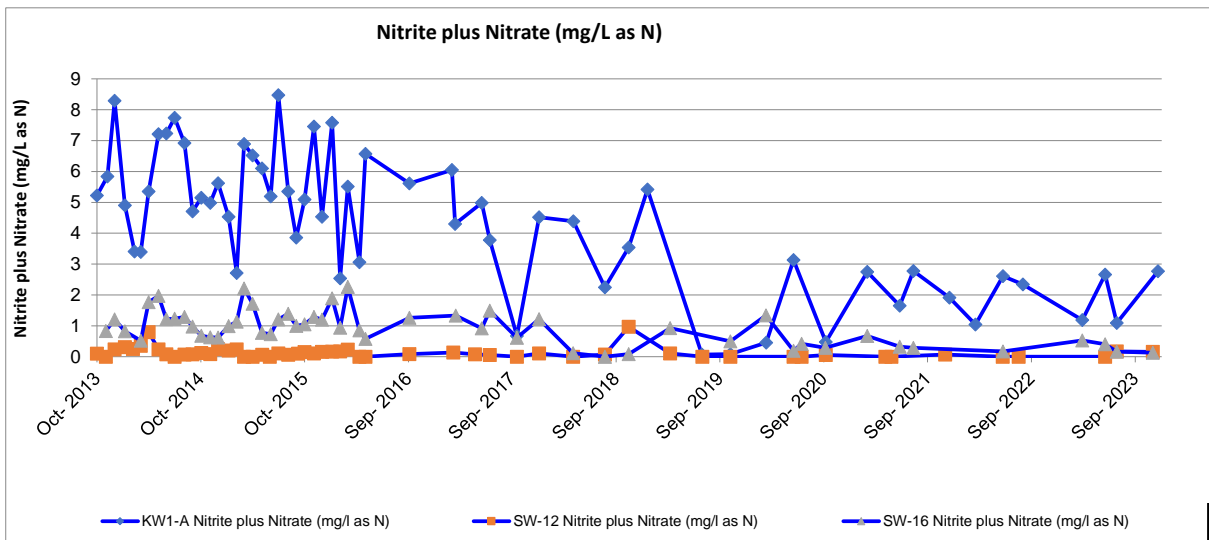
Site Number	Sample Date	Sample Time	Reason for No Sample	pH, field	Phosphate, Ortho (mg/l as PO4)	Phosphorus, Total (mg/L)	Potassium, Total Recoverable (ug/L as K)	Reactive Phosphorus(mg/L as P)	Selenium, Total Recoverable (ug/L as Se)	Specific Conductance, field (umhos/cm)
Key-In	10/11/2023	09:20		7.44						1940
Key-In	10/30/2023	15:30		7.92		-0.01		-0.01		2202
Key-In	11/15/2023	10:50		7.28						2132
Key-In	11/30/2023	11:05		6.91		-0.01		-0.01		2043
Key-In	12/07/2023	12:19		7.29						1992
Key-In	12/18/2023	13:30		7.23		-0.01		-0.01		1803
Key-Out	10/11/2023	09:30		7.36						1189
Key-Out	10/30/2023	15:20	No Discharge							
Key-Out	11/15/2023	10:40	No Discharge							
Key-Out	11/30/2023	11:00	No Discharge							
Key-Out	12/07/2023	12:15	No Discharge							
Key-Out	12/18/2023	13:20	No Discharge							
KPI-04	12/18/2023	12:00	Unsafe Access							
KW1-A	12/18/2023	13:25		7.63	0.0197		1520		2.51	1308
KW1-B	12/18/2023	13:00								
KW1-C	12/18/2023	13:08								
KW2-A	12/18/2023	13:50		7.65	-0.01		990		2.53	1244
KWP	11/30/2023	10:40		7.78			1500		0.55	816
KWP	12/18/2023	12:30	Frozen							
SW-12	11/30/2023	10:11		7.95	0.0127		3250		1.43	1151
SW-16	11/30/2023	11:05		7.83	0.0309		2630		0.5	1434

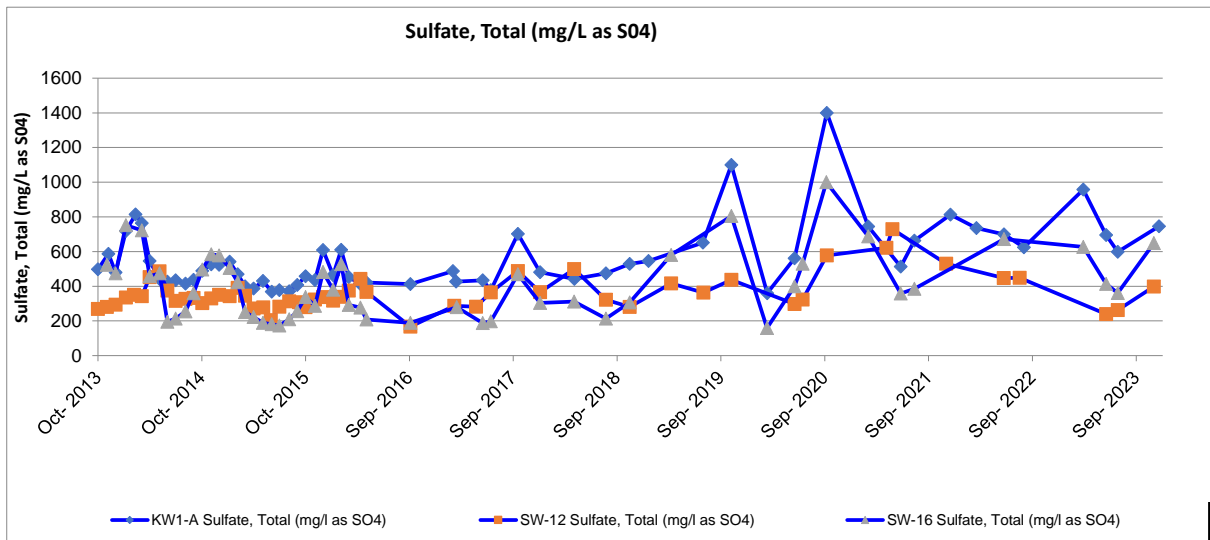
Water Quality Monitoring Data

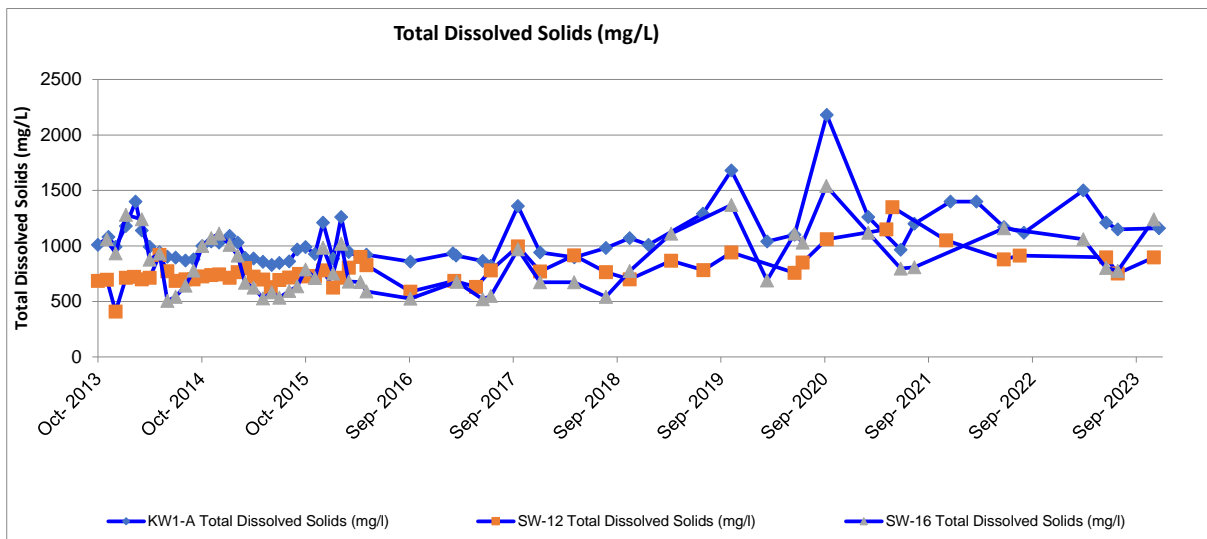
Site Number	Sample Date	Sample Time	Reason for No Sample	Sulfate, Total (mg/l as SO4)	Sulfide, Dissolved	Sulfide, Dissolved (ug/L)	Temperature (Deg. C)	Temperature (Deg. F)	Total Dissolved Solids (mg/l)	Total Suspended Solids (mg/L)
Key-In	10/11/2023	09:20		1370			8.4	47.1	1890	
Key-In	10/30/2023	15:30		1350	-0.05		7.4	45.3	1880	
Key-In	11/15/2023	10:50		1390			14.8	58.6	2060	
Key-In	11/30/2023	11:05		1380	-0.05		8.8	47.8	2090	
Key-In	12/07/2023	12:19		1360			7.3	45.1	2070	
Key-In	12/18/2023	13:30		1290	-0.05		6.9	44.4	1410	
Key-Out	10/11/2023	09:30		950			11.5	52.7	1800	
Key-Out	10/30/2023	15:20	No Discharge							
Key-Out	11/15/2023	10:40	No Discharge							
Key-Out	11/30/2023	11:00	No Discharge							
Key-Out	12/07/2023	12:15	No Discharge							
Key-Out	12/18/2023	13:20	No Discharge							
KPI-04	12/18/2023	12:00	Unsafe Access							
KW1-A	12/18/2023	13:25		746			7	44.6	1160	
KW1-B	12/18/2023	13:00								
KW1-C	12/18/2023	13:08								
KW2-A	12/18/2023	13:50		654			6.9	44.4	1180	
KWP	11/30/2023	10:40		396			1.8	35.2	726	
KWP	12/18/2023	12:30	Frozen							
SW-12	11/30/2023	10:11		398			0.7	33.3	897	141
SW-16	11/30/2023	11:05		649			0.4	32.7	1240	8

Water Quality Monitoring Data

Site Number	Sample Date	Sample Time	Reason for No Sample	Zinc Total Recoverable ug/L	Aluminum, Total Recoverable (ug/L)
Key-In	10/11/2023	09:20			
Key-In	10/30/2023	15:30			
Key-In	11/15/2023	10:50			
Key-In	11/30/2023	11:05			
Key-In	12/07/2023	12:19			
Key-In	12/18/2023	13:30			
Key-Out	10/11/2023	09:30			
Key-Out	10/30/2023	15:20	No Discharge		
Key-Out	11/15/2023	10:40	No Discharge		
Key-Out	11/30/2023	11:00	No Discharge		
Key-Out	12/07/2023	12:15	No Discharge		
Key-Out	12/18/2023	13:20	No Discharge		
KPI-04	12/18/2023	12:00	Unsafe Access		
KW1-A	12/18/2023	13:25		37.9	
KW1-B	12/18/2023	13:00			
KW1-C	12/18/2023	13:08			
KW2-A	12/18/2023	13:50		29.3	
KWP	11/30/2023	10:40		9.3	
KWP	12/18/2023	12:30	Frozen		
SW-12	11/30/2023	10:11		17.5	
SW-16	11/30/2023	11:05		-4	









One Government Gulch - PO Box 929

Kellogg, ID 83837-0929

(208) 784-1258

www.svl.net

Echo Bay / Reclamation

363 Fish Hatchery Road
Republic, WA 99166

Work Order: **X3J0241**
Reported: 30-Oct-23 09:00

Client Sample ID: **Key-IN**

Sampled: 11-Oct-23 09:20

Received: 12-Oct-23

Sampled By: JVN

SVL Sample ID: **X3J0241-01 (Ground Water)**

Sample Report Page 1 of 1

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
--------	---------	--------	-------	----	-----	----------	-------	---------	----------	-------

Classical Chemistry Parameters

EPA 353.2	Nitrate+Nitrite as N	2.67	mg/L	0.250	0.200	5	X342129	JRR	10/25/23 16:59	D
SM 2540 C	Total Diss. Solids	1890	mg/L	40			X342058	TJL	10/18/23 14:30	D2
SM 5310B	Total Organic Carbon	2.43	mg/L	1.00	0.38		X342038	KAG	10/17/23 18:54	

Anions by Ion Chromatography

EPA 300.0	Sulfate as SO ₄	1370	mg/L	15.0	9.00	50	X341216	KAG	10/13/23 12:34	D2
-----------	----------------------------	------	------	------	------	----	---------	-----	----------------	----

This data has been reviewed for accuracy and has been authorized for release.

Tawnya M. Hall
Project Manager Assistant

SVL holds the following certifications:

AZ:0538, ID:ID00019, NV:ID000192007A, UT(TNI):ID000192015-1, WA:C573



One Government Gulch - PO Box 929

Kellogg, ID 83837-0929

(208) 784-1258

www.svl.net**Echo Bay / Reclamation**363 Fish Hatchery Road
Republic, WA 99166Work Order: **X3K0010**
Reported: 16-Nov-23 14:19Client Sample ID: **Key-IN**

Sampled: 30-Oct-23 15:30

Received: 01-Nov-23

Sampled By: JVN

SVL Sample ID: **X3K0010-01 (Ground Water)**

Sample Report Page 1 of 1

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Metals (Total Recoverable--reportable as Total per 40 CFR 136)										
EPA 200.7	Calcium	473000	µg/L	1000	690	10	X346039	SMU	11/15/23 13:33	D2
EPA 200.7	Iron	180	µg/L	100	56		X346039	SMU	11/15/23 13:08	
EPA 200.7	Magnesium	88000	µg/L	500	90		X346039	SMU	11/15/23 13:08	
EPA 200.8	Arsenic	1.76	µg/L	1.00	0.21		X346031	DWJ	11/14/23 11:31	
EPA 200.8	Manganese	3.87	µg/L	0.40	0.33		X346031	DWJ	11/14/23 11:31	
SM 2340 B	Hardness (as CaCO ₃)	1540	mg/L	4.56	2.09		N/A		11/15/23 13:33	

Classical Chemistry Parameters

EPA 350.1	Ammonia as N	< 0.030	mg/L	0.030	0.013		X345122	JRR	11/10/23 14:22	
EPA 353.2	Nitrate+Nitrite as N	2.36	mg/L	0.050	0.040		X345157	JRR	11/09/23 14:42	
SM 2320 B	Total Alkalinity	158	mg/L as CaCO ₃	1.0			X344242	MWD	11/07/23 10:52	
SM 2540 C	Total Diss. Solids	1880	mg/L	40			X344236	TJL	11/06/23 14:15	D2
SM 4500-P-E	Phosphorus	< 0.0100	mg/L	0.0100	0.0034		X344177	NMS	11/02/23 15:00	
SM 4500-P-E	Phosphorus-Reactive	< 0.0100	mg/L	0.0100	0.0035		X344162	NMS	11/01/23 14:39	
SM 5310B	Total Organic Carbon	2.13	mg/L	1.00	0.38		X344259	KAG	11/11/23 04:47	

Filtered Classical Chemistry Parameters

SM 4500 S D	Sulfide	< 0.050	mg/L	0.050	0.020		X344168	NMS	11/01/23 15:43	
-------------	---------	---------	------	-------	-------	--	---------	-----	----------------	--

Anions by Ion Chromatography

EPA 300.0	Sulfate as SO ₄	1350	mg/L	15.0	9.00	50	X344175	RS	11/02/23 17:48	D2
-----------	----------------------------	------	------	------	------	----	---------	----	----------------	----

This data has been reviewed for accuracy and has been authorized for release.

Kathryn Salter
Project Manager



One Government Gulch - PO Box 929

Kellogg, ID 83837-0929

(208) 784-1258

www.svl.net

Echo Bay / Reclamation

363 Fish Hatchery Road
Republic, WA 99166

Work Order: **X3K0313**
Reported: 06-Dec-23 10:00

Client Sample ID: **Key-IN**

Sampled: 15-Nov-23 10:50

Received: 17-Nov-23

Sampled By: JVN

SVL Sample ID: **X3K0313-01 (Ground Water)**

Sample Report Page 1 of 1

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
--------	---------	--------	-------	----	-----	----------	-------	---------	----------	-------

Classical Chemistry Parameters

EPA 353.2	Nitrate+Nitrite as N	2.49	mg/L	0.050	0.040		X347066	DD	11/22/23 14:43	
SM 2540 C	Total Diss. Solids	2060	mg/L	40			X347012	TJL	11/21/23 14:30	D2
SM 5310B	Total Organic Carbon	2.11	mg/L	1.00	0.38		X347049	KAG	11/29/23 17:07	

Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	1390	mg/L	15.0	9.00	50	X347059	KAG	11/23/23 00:39	D2
-----------	----------------	------	------	------	------	----	---------	-----	----------------	----

This data has been reviewed for accuracy and has been authorized for release.

Kathryn Salter

Kathryn Salter
Project Manager



One Government Gulch - PO Box 929

Kellogg, ID 83837-0929

(208) 784-1258

www.svl.net**Echo Bay / Reclamation**363 Fish Hatchery Road
Republic, WA 99166Work Order: **X3L0022**
Reported: 14-Dec-23 14:23Client Sample ID: **Key-IN**SVL Sample ID: **X3L0022-02 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 30-Nov-23 11:05
Received: 01-Dec-23
Sampled By: JVN

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Metals (Total Recoverable--reportable as Total per 40 CFR 136)										
EPA 200.7	Calcium	481000	µg/L	1000	690	10	X349169	NMS	12/08/23 13:20	D2
EPA 200.7	Iron	94	µg/L	100	56		X349169	NMS	12/08/23 12:40	J
EPA 200.7	Magnesium	96700	µg/L	500	90		X349169	NMS	12/08/23 12:40	
EPA 200.8	Arsenic	0.68	µg/L	2.00	0.42	2	X349196	DWJ	12/14/23 10:47	D1,J
EPA 200.8	Manganese	5.84	µg/L	0.80	0.66	2	X349196	DWJ	12/14/23 10:47	D1
SM 2340 B	Hardness (as CaCO3)	1600	mg/L	4.56	2.09		N/A		12/08/23 13:20	
Classical Chemistry Parameters										
EPA 350.1	Ammonia as N	< 0.030	mg/L	0.030	0.013		X349111	DD	12/08/23 10:26	
EPA 353.2	Nitrate+Nitrite as N	2.48	mg/L	0.050	0.040		X349071	DD	12/06/23 14:58	
SM 2320 B	Total Alkalinity	161	mg/L as CaCO3	1.0			X349126	MWD	12/06/23 14:49	
SM 2540 C	Total Diss. Solids	2090	mg/L	40			X349050	TJL	12/06/23 15:00	D2
SM 4500-P-E	Phosphorus	< 0.0100	mg/L	0.0100	0.0034		X349059	DD	12/05/23 15:56	
SM 4500-P-E	Phosphorus-Reactive	< 0.0100	mg/L	0.0100	0.0035		X349095	DD	12/05/23 18:08	H1
SM 5310B	Total Organic Carbon	1.85	mg/L	1.00	0.38		X349057	KAG	12/11/23 14:45	
Filtered Classical Chemistry Parameters										
SM 4500 S D	Sulfide	< 0.050	mg/L	0.050	0.020		X349068	DD	12/06/23 14:34	M1
Anions by Ion Chromatography										
EPA 300.0	Sulfate as SO4	1380	mg/L	15.0	9.00	50	X349054	RS	12/05/23 22:26	D2

This data has been reviewed for accuracy and has been authorized for release.

Kathryn Salter
Project Manager



One Government Gulch - PO Box 929

Kellogg, ID 83837-0929

(208) 784-1258

www.svl.net

Echo Bay / Reclamation

363 Fish Hatchery Road
Republic, WA 99166

Work Order: **X3L0167**

Reported: 19-Dec-23 15:19

Client Sample ID: **Key-IN**

Sampled: 07-Dec-23 12:19

Received: 12-Dec-23

Sampled By: JVN

SVL Sample ID: **X3L0167-01 (Ground Water)**

Sample Report Page 1 of 1

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
--------	---------	--------	-------	----	-----	----------	-------	---------	----------	-------

Classical Chemistry Parameters

EPA 353.2	Nitrate+Nitrite as N	2.57	mg/L	0.050	0.040		X350119	DD	12/14/23 11:29	
SM 2540 C	Total Diss. Solids	2070	mg/L	40			X350092	TJL	12/14/23 14:45	D2
SM 5310B	Total Organic Carbon	1.90	mg/L	1.00	0.38		X350116	KAG	12/18/23 18:01	

Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	1360	mg/L	15.0	9.00	50	X350137	RS	12/13/23 16:31	D2
-----------	----------------	------	------	------	------	----	---------	----	----------------	----

This data has been reviewed for accuracy and has been authorized for release.

Kathryn Salter
Project Manager

SVL holds the following certifications:

AZ:0538, ID:ID00019, NV:ID000192007A, UT(TNI):ID000192015-1, WA:C573



One Government Gulch - PO Box 929

Kellogg, ID 83837-0929

(208) 784-1258

www.svl.net**Echo Bay / Reclamation**363 Fish Hatchery Road
Republic, WA 99166Work Order: **X3L0312**
Reported: 15-Jan-24 11:20Client Sample ID: **Key-IN**

Sampled: 18-Dec-23 15:30

Received: 20-Dec-23

Sampled By: JVN

SVL Sample ID: **X3L0312-01 (Ground Water)**

Sample Report Page 1 of 1

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Metals (Total Recoverable--reportable as Total per 40 CFR 136)										
EPA 200.7	Calcium	421000	µg/L	1000	690	10	X351156	JRR	12/27/23 12:46	D2
EPA 200.7	Iron	< 56	µg/L	100	56		X351156	JRR	12/27/23 12:09	U
EPA 200.7	Magnesium	78600	µg/L	500	90		X351156	JRR	12/27/23 12:09	
EPA 200.8	Arsenic	0.58	µg/L	1.00	0.21		X351153	SMU	01/12/24 17:26	J
EPA 200.8	Manganese	2.64	µg/L	0.40	0.33		X351153	SMU	01/12/24 17:26	
SM 2340 B	Hardness (as CaCO3)	1370	mg/L	4.56	2.09		N/A		12/27/23 12:46	

Classical Chemistry Parameters

EPA 350.1	Ammonia as N	< 0.030	mg/L	0.030	0.013		X352045	DD	12/28/23 13:13	
EPA 353.2	Nitrate+Nitrite as N	2.74	mg/L	0.250	0.200	5	X352069	DD	12/28/23 11:22	D
SM 2320 B	Total Alkalinity	164	mg/L as CaCO3	1.0			X351155	MWD	12/21/23 12:40	
SM 2540 C	Total Diss. Solids	1410	mg/L	40			X351143	TJL	12/22/23 13:05	D2
SM 4500-P-E	Phosphorus	< 0.0100	mg/L	0.0100	0.0034		X351096	DD	12/26/23 12:53	
SM 4500-P-E	Phosphorus-Reactive	< 0.0100	mg/L	0.0100	0.0035		X351131	DD	12/21/23 11:07	H1
SM 5310B	Total Organic Carbon	1.83	mg/L	1.00	0.38		X351186	KAG	01/02/24 18:42	

Filtered Classical Chemistry Parameters

SM 4500 S D	Sulfide	< 0.050	mg/L	0.050	0.020		X351210	DD	12/22/23 21:13	M1
-------------	---------	---------	------	-------	-------	--	---------	----	----------------	----

Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	1290	mg/L	15.0	9.00	50	X351172	RS	12/29/23 12:39	D2
-----------	----------------	------	------	------	------	----	---------	----	----------------	----

This data has been reviewed for accuracy and has been authorized for release.

Kathryn Salter
Project Manager



One Government Gulch - PO Box 929

Kellogg, ID 83837-0929

(208) 784-1258

www.svl.net

Echo Bay / Reclamation

363 Fish Hatchery Road
Republic, WA 99166

Work Order: **X3J0241**
Reported: 30-Oct-23 09:00

Client Sample ID: **Key-Out**

Sampled: 11-Oct-23 09:30

Received: 12-Oct-23

Sampled By: JVN

SVL Sample ID: **X3J0241-02 (Ground Water)**

Sample Report Page 1 of 1

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
--------	---------	--------	-------	----	-----	----------	-------	---------	----------	-------

Classical Chemistry Parameters

EPA 353.2	Nitrate+Nitrite as N	< 0.050	mg/L	0.050	0.040		X342129	JRR	10/25/23 17:02	M1
SM 2540 C	Total Diss. Solids	1800	mg/L	40			X342058	TJL	10/18/23 14:30	D2
SM 5310B	Total Organic Carbon	4.82	mg/L	1.00	0.38		X342038	KAG	10/20/23 09:02	

Anions by Ion Chromatography

EPA 300.0	Sulfate as SO4	950	mg/L	15.0	9.00	50	X341216	KAG	10/13/23 13:07	D2
-----------	-----------------------	-----	------	------	------	----	---------	-----	----------------	----

This data has been reviewed for accuracy and has been authorized for release.

Tawnya M. Hall
Project Manager Assistant



One Government Gulch - PO Box 929

Kellogg, ID 83837-0929

(208) 784-1258

www.svl.net**Echo Bay / Reclamation**363 Fish Hatchery Road
Republic, WA 99166Work Order: **X3L0312**
Reported: 15-Jan-24 11:20Client Sample ID: **KW-1A**

Sampled: 18-Dec-23 15:35

Received: 20-Dec-23

Sampled By: JVN

SVL Sample ID: **X3L0312-02 (Ground Water)**

Sample Report Page 1 of 1

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Metals (Total Recoverable--reportable as Total per 40 CFR 136)										
EPA 200.7	Calcium	323000	µg/L	100	69		X351156	JRR	12/27/23 12:13	
EPA 200.7	Iron	5080	µg/L	100	56		X351156	JRR	12/27/23 12:13	
EPA 200.7	Magnesium	34900	µg/L	500	90		X351156	JRR	12/27/23 12:13	
EPA 200.7	Potassium	1520	µg/L	500	180		X351156	JRR	12/27/23 12:13	
EPA 200.8	Arsenic	25.9	µg/L	1.00	0.21		X351153	SMU	01/12/24 17:28	
EPA 200.8	Barium	77.7	µg/L	0.40	0.14		X351153	SMU	01/12/24 17:28	
EPA 200.8	Cadmium	0.219	µg/L	0.100	0.063		X351153	SMU	01/12/24 17:28	
EPA 200.8	Copper	15.1	µg/L	0.40	0.36		X351153	SMU	01/12/24 17:28	
EPA 200.8	Lead	7.29	µg/L	0.20	0.14		X351153	SMU	01/12/24 17:28	
EPA 200.8	Manganese	155	µg/L	0.40	0.33		X351153	SMU	01/12/24 17:28	
EPA 200.8	Nickel	3.24	µg/L	0.60	0.12		X351153	SMU	01/12/24 19:42	
EPA 200.8	Selenium	2.51	µg/L	1.00	0.24		X351153	SMU	01/12/24 17:28	
EPA 200.8	Zinc	37.9	µg/L	4.0	2.0		X351153	SMU	01/12/24 17:28	

Classical Chemistry Parameters

EPA 350.1	Ammonia as N	< 0.030	mg/L	0.030	0.013		X352045	DD	12/28/23 13:16	
EPA 353.2	Nitrate+Nitrite as N	2.77	mg/L	0.050	0.040		X352069	DD	12/28/23 11:25	
SM 2320 B	Total Alkalinity	232	mg/L as CaCO3	1.0			X351155	MWD	12/21/23 12:46	
SM 2540 C	Total Diss. Solids	1160	mg/L	10			X351143	TJL	12/22/23 13:05	
SM 4500-P-E	Orthophosphate as P	0.0197	mg/L	0.0100	0.0035		X351132	DD	12/21/23 11:02	H1

Anions by Ion Chromatography

EPA 300.0	Chloride	1.03	mg/L	0.20	0.02		X351172	RS	12/27/23 00:17	
EPA 300.0	Sulfate as SO4	746	mg/L	15.0	9.00	50	X351172	RS	12/29/23 12:58	D2

This data has been reviewed for accuracy and has been authorized for release.


Kathryn Salter
Project Manager

SVL holds the following certifications:

AZ:0538, ID:ID00019, NV:ID000192007A, UT(TNI):ID000192015-1, WA:C573



One Government Gulch - PO Box 929

Kellogg, ID 83837-0929

(208) 784-1258

www.svl.net**Echo Bay / Reclamation**363 Fish Hatchery Road
Republic, WA 99166Work Order: **X3L0312**

Reported: 15-Jan-24 11:20

Client Sample ID: **KW-2A**SVL Sample ID: **X3L0312-03 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 18-Dec-23 15:50

Received: 20-Dec-23

Sampled By: JVN

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Metals (Total Recoverable--reportable as Total per 40 CFR 136)										
EPA 200.7	Calcium	283000	µg/L	100	69		X351156	JRR	12/27/23 12:17	
EPA 200.7	Iron	104	µg/L	100	56		X351156	JRR	12/27/23 12:17	
EPA 200.7	Magnesium	32200	µg/L	500	90		X351156	JRR	12/27/23 12:17	
EPA 200.7	Potassium	990	µg/L	500	180		X351156	JRR	12/27/23 12:17	
EPA 200.8	Arsenic	0.37	µg/L	1.00	0.21		X351153	SMU	01/12/24 17:31	J
EPA 200.8	Barium	16.1	µg/L	0.40	0.14		X351153	SMU	01/12/24 17:31	
EPA 200.8	Cadmium	0.735	µg/L	0.100	0.063		X351153	SMU	01/12/24 17:31	
EPA 200.8	Copper	6.91	µg/L	0.40	0.36		X351153	SMU	01/12/24 17:31	
EPA 200.8	Lead	0.33	µg/L	0.20	0.14		X351153	SMU	01/12/24 17:31	
EPA 200.8	Manganese	2.73	µg/L	0.40	0.33		X351153	SMU	01/12/24 17:31	
EPA 200.8	Nickel	1.38	µg/L	0.60	0.12		X351153	SMU	01/12/24 19:43	
EPA 200.8	Selenium	2.53	µg/L	1.00	0.24		X351153	SMU	01/12/24 17:31	
EPA 200.8	Zinc	29.3	µg/L	4.0	2.0		X351153	SMU	01/12/24 17:31	

Classical Chemistry Parameters

EPA 350.1	Ammonia as N	< 0.030	mg/L	0.030	0.013		X352045	DD	12/28/23 13:19	
EPA 353.2	Nitrate+Nitrite as N	3.69	mg/L	0.250	0.200	5	X352069	DD	12/28/23 11:28	D2
SM 2320 B	Total Alkalinity	206	mg/L as CaCO3	1.0			X351155	MWD	12/21/23 12:51	
SM 2540 C	Total Diss. Solids	1180	mg/L	10			X351143	TJL	12/22/23 13:05	
SM 4500-P-E	Orthophosphate as P	< 0.0100	mg/L	0.0100	0.0035		X351132	DD	12/21/23 11:03	H1

Anions by Ion Chromatography

EPA 300.0	Chloride	1.18	mg/L	0.20	0.02		X351172	RS	12/27/23 01:30	
EPA 300.0	Sulfate as SO4	654	mg/L	15.0	9.00	50	X351172	RS	12/29/23 13:16	D2

This data has been reviewed for accuracy and has been authorized for release.

Kathryn Salter
Project Manager

SVL holds the following certifications:

AZ:0538, ID:ID00019, NV:ID000192007A, UT(TNI):ID000192015-1, WA:C573



One Government Gulch - PO Box 929

Kellogg, ID 83837-0929

(208) 784-1258

www.svl.net

Echo Bay / Reclamation

363 Fish Hatchery Road
Republic, WA 99166

Work Order: **X3L0022**
Reported: 14-Dec-23 14:23

Client Sample ID: **KWP**

Sampled: 30-Nov-23 10:40

Received: 01-Dec-23

Sampled By: JVN

SVL Sample ID: **X3L0022-01 (Surface Water)**

Sample Report Page 1 of 1

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Metals (Total Recoverable--reportable as Total per 40 CFR 136)										
EPA 200.7	Calcium	139000	µg/L	100	69		X349169	NMS	12/08/23 12:37	
EPA 200.7	Iron	177	µg/L	100	56		X349169	NMS	12/08/23 12:37	
EPA 200.7	Magnesium	32500	µg/L	500	90		X349169	NMS	12/08/23 12:37	
EPA 200.7	Potassium	1500	µg/L	500	180		X349169	NMS	12/08/23 12:37	
EPA 200.8	Arsenic	2.36	µg/L	2.00	0.42	2	X349196	DWJ	12/14/23 10:42	D1
EPA 200.8	Barium	23.5	µg/L	0.80	0.28	2	X349196	DWJ	12/14/23 10:42	D1
EPA 200.8	Cadmium	< 0.126	µg/L	0.200	0.126	2	X349196	DWJ	12/14/23 10:42	U,D1
EPA 200.8	Copper	1.51	µg/L	0.80	0.72	2	X349196	DWJ	12/14/23 10:42	D1
EPA 200.8	Lead	< 0.28	µg/L	0.40	0.28	2	X349196	DWJ	12/14/23 10:42	U,D1
EPA 200.8	Manganese	111	µg/L	0.80	0.66	2	X349196	DWJ	12/14/23 10:42	D1
EPA 200.8	Nickel	< 0.24	µg/L	1.20	0.24	2	X349196	DWJ	12/14/23 10:42	U,D1
EPA 200.8	Selenium	0.55	µg/L	2.00	0.48	2	X349196	DWJ	12/14/23 10:42	D1,J
EPA 200.8	Zinc	9.3	µg/L	8.0	4.0	2	X349196	DWJ	12/14/23 10:42	D1
Classical Chemistry Parameters										
EPA 350.1	Ammonia as N	0.048	mg/L	0.030	0.013		X349111	DD	12/08/23 10:23	
EPA 353.2	Nitrate+Nitrite as N	< 0.050	mg/L	0.050	0.040		X349071	DD	12/06/23 14:55	
SM 2320 B	Total Alkalinity	88.4	mg/L as CaCO3	1.0			X349126	MWD	12/06/23 14:43	
SM 2540 C	Total Diss. Solids	726	mg/L	10			X349050	TJL	12/06/23 15:00	
Anions by Ion Chromatography										
EPA 300.0	Chloride	0.61	mg/L	0.20	0.02		X349054	RS	12/05/23 21:31	
EPA 300.0	Sulfate as SO4	396	mg/L	3.00	1.80	10	X349054	RS	12/05/23 21:49	D2

This data has been reviewed for accuracy and has been authorized for release.

 Kathryn Salter
Project Manager

SVL holds the following certifications:

AZ:0538, ID:ID00019, NV:ID000192007A, UT(TNI):ID000192015-1, WA:C573



One Government Gulch - PO Box 929

Kellogg, ID 83837-0929

(208) 784-1258

www.svl.net**Echo Bay / Reclamation**363 Fish Hatchery Road
Republic, WA 99166Work Order: **X3L0022**
Reported: 14-Dec-23 14:23Client Sample ID: **SW-12**

Sampled: 30-Nov-23 10:11

Received: 01-Dec-23

Sampled By: JVN

SVL Sample ID: **X3L0022-03 (Surface Water)**

Sample Report Page 1 of 1

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Metals (Total Recoverable--reportable as Total per 40 CFR 136)										
EPA 200.7	Calcium	260000	µg/L	1000	690	10	X349169	NMS	12/08/23 12:52	D1
EPA 200.7	Iron	4210	µg/L	1000	560	10	X349169	NMS	12/08/23 12:52	D1
EPA 200.7	Magnesium	33100	µg/L	5000	900	10	X349169	NMS	12/08/23 12:52	D1
EPA 200.7	Potassium	3250	µg/L	5000	1800	10	X349169	NMS	12/08/23 12:52	D1,J
EPA 200.8	Arsenic	7.79	µg/L	4.00	0.84	4	X349196	DWJ	12/14/23 10:50	D1
EPA 200.8	Barium	107	µg/L	1.60	0.56	4	X349196	DWJ	12/14/23 10:50	D1
EPA 200.8	Cadmium	0.376	µg/L	0.400	0.252	4	X349196	DWJ	12/14/23 10:50	D1,J
EPA 200.8	Copper	22.0	µg/L	1.60	1.44	4	X349196	DWJ	12/14/23 10:50	D1
EPA 200.8	Lead	2.56	µg/L	0.80	0.56	4	X349196	DWJ	12/14/23 10:50	D1
EPA 200.8	Manganese	1100	µg/L	1.60	1.32	4	X349196	DWJ	12/14/23 10:50	D1
EPA 200.8	Nickel	5.75	µg/L	2.40	0.48	4	X349196	DWJ	12/14/23 10:50	D1
EPA 200.8	Selenium	1.43	µg/L	4.00	0.96	4	X349196	DWJ	12/14/23 10:50	D1,J
EPA 200.8	Zinc	17.5	µg/L	16.0	8.0	4	X349196	DWJ	12/14/23 10:50	D1
SM 2340 B	Hardness (as CaCO3)	786	mg/L	23.1	5.43		N/A		12/08/23 12:52	

Classical Chemistry Parameters

EPA 350.1	Ammonia as N	0.048	mg/L	0.030	0.013		X349111	DD	12/08/23 10:28	
EPA 353.2	Nitrate+Nitrite as N	0.157	mg/L	0.050	0.040		X349071	DD	12/06/23 15:01	
SM 2320 B	Total Alkalinity	320	mg/L as CaCO3	1.0			X349126	MWD	12/06/23 14:54	
SM 2540 C	Total Diss. Solids	897	mg/L	10			X349050	TJL	12/06/23 15:00	
SM 2540 D	Total Susp. Solids	141	mg/L	5.0			X349051	TJL	12/06/23 15:25	
SM 4500-P-E	Orthophosphate as P	0.0127	mg/L	0.0100	0.0035		X349093	DD	12/05/23 17:58	H1

Anions by Ion Chromatography

EPA 300.0	Chloride	1.12	mg/L	0.20	0.02		X349054	RS	12/05/23 22:44	
EPA 300.0	Sulfate as SO4	398	mg/L	7.50	4.50	25	X349054	RS	12/05/23 23:03	D2

This data has been reviewed for accuracy and has been authorized for release.

 Kathryn Salter
Project Manager

SVL holds the following certifications:

AZ:0538, ID:ID00019, NV:ID000192007A, UT(TNI):ID000192015-1, WA:C573



One Government Gulch - PO Box 929

Kellogg, ID 83837-0929

(208) 784-1258

www.svl.net**Echo Bay / Reclamation**363 Fish Hatchery Road
Republic, WA 99166Work Order: **X3L0022**
Reported: 14-Dec-23 14:23Client Sample ID: **SW-16**

Sampled: 30-Nov-23 11:00

Received: 01-Dec-23

Sampled By: JVN

SVL Sample ID: **X3L0022-04 (Surface Water)**

Sample Report Page 1 of 1

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Metals (Total Recoverable--reportable as Total per 40 CFR 136)										
EPA 200.7	Calcium	326000	µg/L	100	69		X349169	NMS	12/08/23 12:56	
EPA 200.7	Iron	221	µg/L	100	56		X349169	NMS	12/08/23 12:56	
EPA 200.7	Magnesium	45500	µg/L	500	90		X349169	NMS	12/08/23 12:56	
EPA 200.7	Potassium	2630	µg/L	500	180		X349169	NMS	12/08/23 12:56	
EPA 200.8	Arsenic	9.75	µg/L	2.00	0.42	2	X349196	DWJ	12/14/23 10:52	D1
EPA 200.8	Barium	42.4	µg/L	0.80	0.28	2	X349196	DWJ	12/14/23 10:52	D1
EPA 200.8	Cadmium	< 0.126	µg/L	0.200	0.126	2	X349196	DWJ	12/14/23 10:52	U,D1
EPA 200.8	Copper	1.11	µg/L	0.80	0.72	2	X349196	DWJ	12/14/23 10:52	D1
EPA 200.8	Lead	< 0.28	µg/L	0.40	0.28	2	X349196	DWJ	12/14/23 10:52	U,D1
EPA 200.8	Manganese	194	µg/L	0.80	0.66	2	X349196	DWJ	12/14/23 10:52	D1
EPA 200.8	Nickel	< 0.24	µg/L	1.20	0.24	2	X349196	DWJ	12/14/23 10:52	U,D1
EPA 200.8	Selenium	0.50	µg/L	2.00	0.48	2	X349196	DWJ	12/14/23 10:52	D1,J
EPA 200.8	Zinc	< 4.0	µg/L	8.0	4.0	2	X349196	DWJ	12/14/23 10:52	U,D1
SM 2340 B	Hardness (as CaCO3)	1000	mg/L	2.31	0.543		N/A		12/08/23 12:56	

Classical Chemistry Parameters

EPA 350.1	Ammonia as N	< 0.030	mg/L	0.030	0.013		X349111	DD	12/08/23 10:31	
EPA 353.2	Nitrate+Nitrite as N	0.131	mg/L	0.050	0.040		X349071	DD	12/06/23 15:04	
SM 2320 B	Total Alkalinity	313	mg/L as CaCO3	1.0			X349126	MWD	12/06/23 15:00	
SM 2540 C	Total Diss. Solids	1240	mg/L	10			X349050	TJL	12/06/23 15:00	
SM 2540 D	Total Susp. Solids	8.0	mg/L	5.0			X349051	TJL	12/06/23 15:25	R2B
SM 4500-P-E	Orthophosphate as P	0.0309	mg/L	0.0100	0.0035		X349093	DD	12/05/23 17:59	H1

Anions by Ion Chromatography

EPA 300.0	Chloride	0.98	mg/L	0.20	0.02		X349054	RS	12/05/23 23:21	
EPA 300.0	Sulfate as SO4	649	mg/L	15.0	9.00	50	X349054	RS	12/05/23 23:40	D2

This data has been reviewed for accuracy and has been authorized for release.

 Kathryn Salter
Project Manager

SVL holds the following certifications:

AZ:0538, ID:ID00019, NV:ID000192007A, UT(TNI):ID000192015-1, WA:C573