




Reporting Week	Feb 20 <sup>th</sup> to Feb 25 <sup>th</sup>
Report #	12
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# **Eagle Mountain - Woodfibre Gas Pipeline Project**

## **BCER Waste Discharge Approval Report—BC Rail Site Sampling and Monitoring**

**Report Period: February 20<sup>th</sup> to February 25<sup>th</sup>, 2024**


 <b>Eagle Mountain - Woodfibre Gas Pipeline Project BC Rail Waste Discharge Approval AE-111824 Report</b>	Reporting Week	Feb 20 <sup>th</sup> to Feb 25 <sup>th</sup>
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Appendix A: Point of Discharge from Water Treatment System Documentation

Appendix B: Receiving Environment Documentation

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## Preamble

This is a report for the British Columbia Energy Regulator (BCER) Waste Discharge Approval (BCER number AE 111824) for the FortisBC Eagle Mountain – Woodfibre Gas Pipeline (EGP) Project for the BC Rail Site. This report covers the period of February 20<sup>th</sup> to February 25<sup>th</sup>, 2024 and includes the results of water quality monitoring and sampling of the receiving environment (upstream and downstream) in the Squamish River. During this timeframe no discharge into the receiving environment in the Squamish River occurred from the BC Rail site water treatment plant.

FortisBC has retained Triton Environmental Consultants Ltd. as the Qualified Professional to implement and oversee the monitoring and sampling program in the receiving environment. The data represented below, including laboratory reported exceedances, represent background conditions of the receiving environment, and are not related to EGP Project activities. The data collected and reported on represents background water quality conditions at the two receiving environment sampling sites as shown on the approved Waste Discharge Approval AE-111824.


### Water Treatment Plant Update

Since the issuance of the Waste Discharge Approval (AE 111824) on September 29, 2023, FortisBC’s tunnel contractor Frontier-Kemper Michels Joint Venture (FKM) has commenced setting up the water treatment plant (WTP) including the installing the plumbing, pumps & equipment, and treatment chemicals. The commissioning process of the WTP began on October 22, 2023 and is continuing to date. Water will be sampled to confirm that the batch from the WTP meets the British Columbia Approved and Working Water Quality Guidelines for Freshwater & Marine Aquatic Life requirements prior to discharge as outlined in the Waste Discharge Approval.

## Introduction

The results provided in this document are submitted to BC Energy Regulator (BCER) by FortisBC as per the requirements listed in the Waste Discharge Approval AE-111824 Section 4.2:

The Approval Holder shall summarize the results of the discharge and receiving environment compliance sampling and monitoring program in a report that shall be submitted weekly over the term of this approval. The sampling and monitoring results shall be suitably tabulated and include comparison to the respective British Columbia Approved and Working Water Quality Guidelines for Freshwater & Marine Aquatic Life, as published by the Ministry of Environment & Climate Change Strategy. Any exceedance of regulatory guidelines shall be clearly highlighted, and any missed sampling events/missing date shall be identified with an explanation provided. Reporting frequency may be reduced upon a history of compliance and by written confirmation from the BCER. These reports shall be submitted to Waste.Management@bc-er.ca. A copy of the reports shall be provided to each First Nation consulted with regarding this subject approval,

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and also made publicly available on the FortisBC Eagle Mountain-Woodfibre Gas Pipeline Project | Talking Energy webpage.

FortisBC requests that the BCER confirm the receipt of this submittal and confirm that the submission meets the requirements of reporting. Future reports will use this format unless otherwise directed by BCER.

### Sampling Methodology

The monitoring and sampling has been carried out in accordance with the procedures described in the most recent edition of the “British Columbia Field Sampling Manual” using field equipment and lab samples to meet daily and real time requirements for the Waste Discharge Approval.

At the receiving environment, real time daily field readings of pH, temperature, NTU, electrical conductivity, DO, ORP and salinity are being taken using an AquaTROLL 600 datalogger upstream and downstream in the river. Visible sheen will be monitored with visual inspections during times of discharge or sampling. Real time and daily readings are being monitored at the same time with one piece of equipment, allowing all the daily readings real time.


At the point of discharge from the WTP, the parameters are being monitored using field equipment (YSI ProDSS) and sondes/real time meters make and models to be confirmed by the contractor. Table 1 and Table 2 below show how each parameter is being monitored.

**Table 1. Monitoring Process at Point of Discharge from Water Treatment System at the BC Rail Site**

Permit Frequency	Parameters	Details
Daily	Visible Sheen	In field inspection
Daily (or per batch)	DO	Monitoring using YSI ProDSS
	ORP	Monitoring using YSI ProDSS
	Salinity	Monitoring using YSI ProDSS
Real Time (or per batch)	pH	Monitoring using YSI ProDSS
	Temperature	Monitoring using YSI ProDSS
	NTU	Monitoring using YSI ProDSS
	Electrical Conductivity	Monitoring using YSI ProDSS
Weekly (or per batch) Lab Samples	List prescribed in permit	Lab samples

**Table 2. Receiving Environment (upstream and downstream) Monitoring Process**

Permit Frequency	Parameters	Details
Daily	Visible Sheen	In field inspection
Daily	DO	Monitoring using Sonde- AquaTROLL 600 datalogger
	ORP	Monitoring using Sonde- AquaTROLL 600 datalogger
	Salinity	Monitoring using Sonde- AquaTROLL 600 datalogger
Real Time	pH	Monitoring using Sonde- AquaTROLL 600 datalogger
	Temperature	Monitoring using Sonde- AquaTROLL 600 datalogger
	NTU	Monitoring using Sonde- AquaTROLL 600 datalogger

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Permit Frequency	Parameters	Details
	Electrical Conductivity	Monitoring using Sonde- AquaTROLL 600 datalogger
Weekly Lab Samples	List prescribed in permit	Lab samples

Receiving Environment equipment details: Sondes: Aqua-TROLL 600 made by In-Situ Inc. Sondes set up to log temperature, specific conductivity, salinity (in PSU), pH, ORP, DO (mg/L), and turbidity (NTU) at 10 minute intervals.

Point of Discharge from the WTP equipment details: YSI ProDSS with pH, conductivity, DO, ORP and turbidity probe that measure pH, temperature, NTU, electrical conductivity, ORP, DO and salinity

## Summary

### Activities

- No discharges to the receiving environment have occurred from the WTP within this reporting period. The WTP is currently being commissioned.

### Point of Discharge from Water Treatment System (BC Rail Site) Summary

N/A - No discharge occurred during the reporting period.

### Exceedance details

N/A - No discharge occurred during the reporting period.

### Receiving Environment Summary


The receiving environment is being monitored as a permit requirement, currently, there are no discharges from the WTP to the receiving environment, so all recorded exceedances in the laboratory report are not project related and existing background quality.

**Table 3: Upstream Monitoring Information**

Date of Lab Sample	Real Time Monitored	Field Samples Taken	Results
2024-02-20	Yes *	Yes *	Full set of lab sample results, photo and documentation are provided in Appendix B.

**Table 4: Downstream Monitoring Information**


Date of Lab Sample	Real Time Monitored	Field Samples Taken	Results
2023-02-20	Yes *	Yes *	Full set of lab sample results, photo and documentation are provided in Appendix B.

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\* Sondes set up to log temperature, specific conductivity, salinity (in PSU), pH, ORP, DO (mg/L), and turbidity (NTU) at 10 minute intervals.

### Receiving Environment Monitoring Details

- Daily visible sheen checks have not been conducted in the receiving environment as there have not been any discharges from the WTP.
- All receiving environment lab results are in Appendix B.
- Recorded exceedances in the laboratory and field samples collected from the receiving environment (upstream and downstream) are indicative of the existing background water quality in the Squamish River, and are not related to the EGP Project activities.


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## Appendix A Point of Discharge from Water Treatment Plant Documentation


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No discharge from the water treatment plant, nothing to report





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## Appendix B Receiving Environment Documentation

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## Receiving Environment Sample Analysis

Sample ID	Revised and signed off by:		BCR US 1 (Aquatic)		BCR DS 1 (Downstream)		Sample or value notes	BCWG FAL - Short Term	BCWG FAL - Long Term	BCWG MAL - Short Term	BCWG MAL - Long Term
			WQAR416-002	WQAR416-002	WQAR416-001	WQAR416-001					
			30-Feb-2024	30-Feb-2024	12-06	12-06					
LAB ID	Time Sampled	Date Sampled	Water	Water	Water	Water					
Analysis	Units	BCAWQSG-FAL-LT-1*	BCAWQSG-FAL-ST-1*	BCR US 1 (Aquatic)	BCR DS 1 (Downstream)	BCWG FAL - Short Term	BCWG FAL - Long Term	BCWG MAL - Short Term	BCWG MAL - Long Term	Guideline notes	
<b>In Situ Parameters</b>											
pH (field)	pH units	6.5-9.0	6.5-9.0	7.38	7.40					Unrestricted change within this range (for protection of native embryo development)	
Temperature (field)	°C	-	19, hourly rate of change <1°C	4.8	4.8					Guideline is species-dependent. Short-term daily temperature guideline is 19°C for streams with uniform fish distribution. Refer to BC Water Quality Guidelines for more information on incubation and spawning temperature guidelines, and for those with different fish distributions. Hourly rate of change not to exceed 1°C.	
Conductivity (field)	µS/cm	-	-	84	88					Change from background of 8 NTU at any one time for a duration of 24 h in all waters during clear flows or in clear waters.	
Turbidity (field)	NTU	Varies with background, see note. Lowest value for guideline is 3 NTU	Varies with background, see note. Lowest value for guideline is 9 NTU	0.00	0.00					Change from background of 5 NTU at any one time when background is < 30 NTU during high flows or in turbid waters. Change from background of 10% when background is > 50 NTU at any time during high flows or in turbid waters.	
Dissolved Oxygen (field)	mg/L	Varies with life stage, see note	Varies with life stage, see note	12.63	12.96					Buried embryolevel minimum 11 mg/L, all other life stages 5 mg/L. Refer to BC Water Quality Guidelines for more information.	
<b>General Parameters</b>											
Hardness (as CaCO3 (total))	mg/L	-	-	24.2	20.2					Buried embryolevel minimum 11 mg/L, all other life stages 5 mg/L. Refer to BC Water Quality Guidelines for more information.	
Total Dissolved Solids	mg/L	-	-	24	23					Buried embryolevel minimum 11 mg/L, all other life stages 5 mg/L. Refer to BC Water Quality Guidelines for more information.	
Total Suspended Solids	mg/L	Varies with background, see note. Lowest value for guideline is 6mg/L	Varies with background, see note. Lowest value for guideline is 20mg/L	< 3.0	< 3.0					Change from background of 25 mg/L at any one time when background > 25-100 mg/L during high flows or turbid waters. Change from background of 10% when background is > 100 mg/L at any time during high flows or turbid waters.	
Total Organic Carbon (TOC)	mg/L	-	-	1.29	0.94					Long-term (30-day) median within 20% of background median	
Dissolved Organic Carbon (DOC)	mg/L	-	-	0.82	1.15					Long-term (30-day) median within 20% of background median	
Total Alkalinity (CaCO3)	mg/L	Categorical	-	22.8	19.6					The upstream and downstream locations have moderate sensitivity to acid inputs (i.e. moderate buffering capacity)	
Total Sulfate (as S)	mg/L	-	-	<0.0015	<0.0015						
Total Sulfate (as H2S)	mg/L	-	-	<0.0016	<0.0016						
<b>Nitrogen and Nutrients</b>											
Ammonia	mg/L ammonia-N	pH and temperature dependent	pH and temperature dependent	0.223	0.0787					Guideline for ammonia as N, pH and temperature dependent. Refer to BC Water Quality Guidelines for more information.	
Bromide	mg/L	-	-	<0.020	<0.020					Guideline for ammonia as N, pH and temperature dependent. Refer to BC Water Quality Guidelines for more information. Guideline not applicable to freshwater EGP samples.	
Chloride	mg/L	150	600	4.02	3.33					Human activities should not cause the chloride of marine and estuarine waters to fluctuate by more than 10% of the natural chloride expected at that time and depth.	
Fluoride	mg/L	-	Varies with hardness	0.026	0.024					Guideline has limited status.	
Nitrate (as N)	mg/L	3	32.8	0.0007	0.0036						
Nitrite (as N)	mg/L	Varies with chloride	0.06	0.0012	<0.0019						
Total Nitrogen	mg/L	-	-	0.176	0.154					Guideline is for lakes, refer to BCWG guideline for reference and algae for more information. Guideline does not apply to site.	
Total Phosphorus	mg/L	0.005 to 0.015	-	0.0026	0.0018						
Sulfate (as SO4)	mg/L	Varies with hardness	-	7.10	6.84						
<b>Total Metals</b>											
Aluminum (Al)-Total	mg/L	Varies with pH, DOC, hardness	-	0.0065	0.0054					Upstream location exceeds BCWG long-term guideline for FAL. LT guideline not applicable at this time (no continuous discharge)	
Antimony (Sb)-Total	mg/L	0.074	0.28	<0.0010	<0.0010					Guideline varies with pH, hardness and Dissolved Organic Carbon (DOC). Refer to BC Water Quality Guidelines for more information.	
Arsenic (As)-Total	mg/L	0.005	-	0.0010	0.0010					Guideline varies with pH, hardness and Dissolved Organic Carbon (DOC). Refer to BC Water Quality Guidelines for more information.	
Barium (Ba)-Total	mg/L	1	-	0.0102	0.0101					Working guideline status	
Beryllium (Be)-Total	mg/L	0.0013	-	<0.00005	<0.00005					Working guideline status	
Bismuth (Bi)-Total	mg/L	-	-	<0.00005	<0.00005					Working guideline status	
Boron (B)-Total	mg/L	1.2	-	0.000088	0.000088					Working guideline status	
Calcium (Ca)-Total	mg/L	-	-	0.00005	0.00004						
Chromium (Cr)-Total	mg/L	-	-	0.00005	0.00004						
Chromium (Cr)-VI Total	mg/L	-	-	<0.0005	<0.0005						
Chromium (Cr)-III Total	mg/L	0.0089	-	<0.0005	<0.0005					Working guideline status	
Cobalt (Co)-Total	mg/L	0.001	-	<0.0005	<0.0005					Working guideline status	
Copper (Cu)-Total	mg/L	0.004	0.11	0.00001	0.00001					Guideline is for lakes, refer to BCWG guideline for reference and algae for more information. Guideline does not apply to site.	
Copper (Cu)-Dissolved	mg/L	-	-	0.00001	0.00001						
Iron (Fe)-Total	mg/L	-	-	0.186	0.186					Guideline varies with hardness, refer to BC Water Quality Guidelines for more information. Guideline is 0.003 where hardness < 20mg/L. Guideline uses equation: $0.000001 \times \text{Hardness} + 0.0001$ . Lowest value for guideline is 0.003 mg/L.	
Lead (Pb)-Total	mg/L	Varies with hardness	Varies with hardness	<0.00050	<0.00050					Guideline varies with hardness, refer to BC Water Quality Guidelines for more information. Guideline uses equation: $0.000001 \times \text{Hardness} + 0.0001$ . Lowest value for guideline is 0.003 mg/L.	
Lithium (Li)-Total	mg/L	-	-	0.0011	0.0012						
Magnesium (Mg)-Total	mg/L	-	-	0.989	0.892						
Manganese (Mn)-Total	mg/L	Varies with hardness	Varies with hardness	0.0124	0.0124					Guideline varies with hardness, refer to BC Water Quality Guidelines for more information. Guideline uses equation: $0.01102 \times \text{Hardness} + 0.04$ and applies to samples with hardness 25-200 mg/L. Lowest value for guideline is 0.77 mg/L.	
Mercury (Hg)-Total	mg/L	Varies with methyl mercury	-	<0.000050	<0.000050					Guideline is for lakes, refer to BCWG guideline for reference and algae for more information. Guideline does not apply to site.	
Molybdenum (Mo)-Total	mg/L	7.6	48	0.000708	0.000665					Guideline is for lakes, refer to BCWG guideline for reference and algae for more information. Guideline does not apply to site.	
Nickel (Ni)-Total	mg/L	Varies with hardness	-	<0.00050	<0.00050					Working guideline status. Guideline varies with hardness. Guideline is 0.025 mg/L at water hardness < 20mg/L, at hardness 60-180 use equation: $0.000001 \times \text{Hardness} + 0.0001$ . Guideline at hardness > 180 mg/L is 0.15 mg/L. Refer to BC Water Quality Guidelines for more information.	
Phosphorus (P)-Total	mg/L	0.005 to 0.015	-	0.001	<0.0005					Guideline only applies to lakes with common species being the dominant fish species. Guideline is for reference only and does not apply to site.	
Potassium (K)-Total	mg/L	-	-	0.0038	0.0016						
Rubidium (Rb)-Total	mg/L	-	-	0.00123	0.00116						
Selenium (Se)-Total	mg/L	0.002	-	<0.000050	<0.000050					Guideline for freshwater aquatic life (water column). Alert concentration is 0.001 mg/L, with separate guidelines for sediment, invertebrate and fish tissue. Refer to BC Water Quality Guidelines for more information on guidelines and sampling guidance.	
Silicon (Si)-Total	mg/L	-	-	6.44	5.88					Alert concentration is 0.001 mg/L, with separate guidelines for sediment, invertebrate and fish tissue. Refer to BC Water Quality Guidelines for more information on guidelines and sampling guidance.	
Silver (Ag)-Total	mg/L	Varies with hardness	Varies with hardness	<0.00010	<0.00010					Guideline applies to open coast and estuarine. Guideline is applicable to the EGP site.	
Sodium (Na)-Total	mg/L	-	-	3.67	3.33						
Strontium (Sr)-Total	mg/L	-	-	0.0050	0.0048						
Sulfur (S)-Total	mg/L	-	-	2.96	1.98						
Tellurium (Te)-Total	mg/L	-	-	<0.00005	<0.00005						
Thallium (Tl)-Total	mg/L	0.0008	-	<0.00010	<0.00010					30-day average, site-specific objective for the lower Columbia River. BC Guideline for reference only and does not apply to lake EGP site.	
Thoron (Th)-Total	mg/L	-	-	<0.00010	<0.00010						
Tin (Sn)-Total	mg/L	-	-	0.00010	0.00010						
Titanium (Ti)-Total	mg/L	-	-	0.00050	0.00048						
Vanadium (V)-Total	mg/L	-	-	<0.00010	<0.00010						
Zinc (Zn)-Total	mg/L	0.085	-	0.00020	0.00020					Working guideline status	
Zinc (Zn)-Dissolved	mg/L	-	-	0.00188	0.00183					Working guideline status	
Zinc (Zn)-Dissolved	mg/L	-	-	<0.00010	<0.00010						
Zinc (Zn)-Dissolved	mg/L	-	-	<0.00020	<0.00020						
<b>Trace Metals</b>											
Aluminum (Al)-Dissolved	mg/L	-	-	0.186	0.182						
Arsenic (As)-Dissolved	mg/L	-	-	0.00015	0.00015						
Bismuth (Bi)-Dissolved	mg/L	-	-	0.00010	0.00010						
Boron (B)-Dissolved	mg/L	-	-	<0.00010	<0.00010						
Bromine (Br)-Dissolved	mg/L	-	-	<0.00020	<0.00020						
Cadmium (Cd)-Dissolved	mg/L	Varies with hardness	Varies with hardness	0.000081	0.000093					Guideline is hardness dependent, refer to BC Water Quality Guidelines for more information. Guideline is applicable to water hardness between 7.5 and 450 mg/L. Guideline uses equation: $0.000001 \times \text{Hardness} + 0.00001$ . Lowest value for guideline is 0.00001 mg/L.	
Calcium (Ca)-Dissolved	mg/L	Categorical	-	7.87	7.71					Guideline categorizes the sensitivity of a water body to acid inputs (i.e. buffering capacity). Standard is 4 mg/L dissolved Ca for the most sensitive waterbodies. 5 - 8 mg/L for waterbodies with moderate sensitivity to acid inputs. Waterbodies with dissolved calcium > 8mg/L are considered to have low sensitivity to acid inputs.	
Chromium (Cr)-Dissolved	mg/L	-	-	0.00004	0.00005						
Chromium (Cr)-VI-Dissolved	mg/L	-	-	<0.0005	<0.0005						
Chromium (Cr)-III-Dissolved	mg/L	-	-	<0.0005	<0.0005						
Cobalt (Co)-Dissolved	mg/L	-	-	<0.00010	<0.00010						
Copper (Cu)-Dissolved	mg/L	Varies with pH, DOC, hardness	Varies with pH, DOC, hardness	0.0002	0.0002					Upstream and downstream locations exceed the long term BCWG for FAL. LT guideline not applicable.	
Iron (Fe)-Dissolved	mg/L	-	0.35	0.006	0.006						
Lead (Pb)-Dissolved	mg/L	-	-	<0.000020	<0.000020						
Lithium (Li)-Dissolved	mg/L	-	-	0.0011	0.0012						
Magnesium (Mg)-Dissolved	mg/L	-	-	0.928	0.879						
Mercury (Hg)-Dissolved	mg/L	-	-	<0.000050	<0.000050						
Molybdenum (Mo)-Dissolved	mg/L	-	-	0.0000708	0.0000665						
Nickel (Ni)-Dissolved	mg/L	-	-	<0.00050	<0.00050						
Phosphorus (P)-Dissolved	mg/L	-	-	0.0001	0.0001						
Potassium (K)-Dissolved	mg/L	-	-	0.0038	0.0016						
Rubidium (Rb)-Dissolved	mg/L	-	-	0.00123	0.00116						
Selenium (Se)-Dissolved	mg/L	-	-	<0.000050	<0.000050						
Silicon (Si)-Dissolved	mg/L	-	-	6.44	5.88						
Silver (Ag)-Dissolved	mg/L	-	-	<0.00010	<0.00010						
Sodium (Na)-Dissolved	mg/L	-	-	3.67	3.33						
Strontium (Sr)-Dissolved	mg/L	-	-	0.0050	0.0048						
Sulfur (S)-Dissolved	mg/L	-	-	2.93	1.78						
Tellurium (Te)-Dissolved	mg/L	-	-	<0.00005	<0.00005						
Thallium (Tl)-Dissolved	mg/L	-	-	<0.00010	<0.00010						
Thoron (Th)-Dissolved	mg/L	-	-	<0.00010	<0.00010						
Tin (Sn)-Dissolved	mg/L	-	-	0.00010	0.00010						
Titanium (Ti)-Dissolved	mg/L	-	-	0.00050	0.00048						
Vanadium (V)-Dissolved	mg/L	-	-	<0.00010	<0.00010						
Zinc (Zn)-Dissolved	mg/L	-	-	0.00188	0.00183						
Zinc (Zn)-Dissolved	mg/L	-	-	<0.00010	<0.00010						
Zinc (Zn)-Dissolved	mg/L	-	-	<0.00020	<0.00020						
<b>Applied Guidelines:</b>											
BCR US 1 (Aquatic)	mg/L	WQAR416-002	WQAR416-002	WQAR416-001	WQAR416-001						
BCR DS 1 (Downstream)	mg/L	WQAR416-001	WQAR416-001	WQAR416-002	WQAR416-002						
BCWG FAL - Short Term	mg/L	WQAR416-002	WQAR416-002	WQAR416-001	WQAR416-001						
BCWG FAL - Long Term	mg/L	WQAR416-001	WQAR416-001	WQAR416-002	WQAR416-002						
BCWG MAL - Short Term	mg/L	WQAR416-002	WQAR416-002	WQAR416-001	WQAR416-001						
BCWG MAL - Long Term	mg/L	WQAR416-001	WQAR416-001	WQAR416-002	WQAR416-002						
Color Key	mg/L	Exceeds BCWG Long Term Guideline	Exceeds BCWG Long Term Guideline	Exceeds BCWG Long Term Guideline	Exceeds BCWG Long Term Guideline						
Color Key	mg/L	Exceeds BCWG Long Term Guideline	Exceeds BCWG Long Term Guideline	Exceeds BCWG Long Term Guideline	Exceeds BCWG Long Term Guideline						

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## Receiving Environment Lab Documentation



**CERTIFICATE OF ANALYSIS (GUIDELINE EVALUATION)**

**Work Order** : **VA24A3416**  
**Client** : **Triton Environmental Consultants Ltd.**  
**Contact** : [Redacted]  
**Address** : [Redacted]  
**Telephone** : [Redacted]  
**Project** : 11964  
**PO** : 11964-Task20-Phase3C-4C  
**C-O-C number** : 17-  
**Sampler** : ---  
**Site** : Water Analysis  
**Quote number** : VA23-TRIT100-012  
**No. of samples received** : 5  
**No. of samples analysed** : 5

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**Laboratory** : ALS Environmental - Vancouver  
**Account Manager** : [Redacted]  
**Address** : [Redacted]  
**Telephone** : [Redacted]  
**Date Samples Received** : 20-Feb-2024 14:30  
**Date Analysis Commenced** : 22-Feb-2024  
**Issue Date** : 28-Feb-2024 17:16

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Guideline Comparison

**Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).**

*Signatories*

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Angelo Salandanan	Lab Assistant	Metals, Burnaby, British Columbia
Juanita Martis	Account Manager Assistant	Administration, Burnaby, British Columbia
Kate Dimitrova	Supervisor - Inorganic	Inorganics, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Inorganics, Burnaby, British Columbia
Owen Cheng		Metals, Burnaby, British Columbia
Sam Silveira	Analyst	Metals, Burnaby, British Columbia



## No Breaches Found

### General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guidelines are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Key : LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	no units
°C	degrees celsius
mg/L	milligrams per litre
pH units	pH units

>: greater than.

<: less than.

Red shading is applied where the result or the LOR is greater than the Guideline Upper Limit (or lower than the Guideline Lower Limit, if applicable).

For drinking water samples, Red shading is applied where the result for E.coli, fecal or total coliforms is greater than or equal to the Guideline Upper Limit.

### Qualifiers

<i>Qualifier</i>	<i>Description</i>
RRV	Reported result verified by repeat analysis.



## Analytical Results Evaluation

				Client sample ID	SQU DS1	SQU US1	Duplicate	Field Blank	Trip Blank	----	----
Matrix: Water				Sampling date/time	20-Feb-2024 12:08	20-Feb-2024 11:26	20-Feb-2024 11:35	20-Feb-2024 11:10	20-Feb-2024 00:00	----	----
				Sub-Matrix	Water	Water	Water	Water	Water	----	----
Analyte	CAS Number	Method/Lab	Unit	VA24A3416-001	VA24A3416-002	VA24A3416-003	VA24A3416-004	VA24A3416-005	-----	-----	
<b>Field Tests</b>											
pH, field	----	EF001/VA	pH units	7.40	7.38	----	----	----	----	----	----
Temperature, field	----	EF001/VA	°C	4.80	4.80	----	----	----	----	----	----
<b>Physical Tests</b>											
Hardness (as CaCO3), dissolved	----	EC100/VA	mg/L	22.9	23.5	23.7	<0.60	----	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	mg/L	23.2	24.2	23.9	<0.60	<0.60	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	mg/L	63	54	48	<10	<10	----	----	----
Solids, total suspended [TSS]	----	E160/VA	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	mg/L	19.6	22.8	22.9	<2.0	<2.0	----	----	----
<b>Anions and Nutrients</b>											
Ammonia, total (as N)	7664-41-7	E298/VA	mg/L	0.0767	0.223	0.220	<0.0050	<0.0050	----	----	----
Bromide	24959-67-9	E235.Br-L/VA	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	----	----	----
Chloride	16887-00-6	E235.Cl/VA	mg/L	3.33	4.02	3.52	<0.50	<0.50	----	----	----
Fluoride	16984-48-8	E235.F/VA	mg/L	0.024	0.026	0.027	<0.020	<0.020	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	mg/L	0.0535	0.0507	0.0551	<0.0050	<0.0050	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	mg/L	<0.0010	0.0012	0.0014	<0.0010	<0.0010	----	----	----
Nitrogen, total	7727-37-9	E366/VA	mg/L	0.154	0.316	0.308	<0.030	<0.030	----	----	----
Phosphorus, total	7723-14-0	E372-U/VA	mg/L	0.0158	0.0256	0.0254	<0.0020	<0.0020	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	mg/L	6.84	7.10	7.11	<0.30	<0.30	----	----	----
<b>Organic / Inorganic Carbon</b>											
Carbon, dissolved organic [DOC]	----	E358-L/VA	mg/L	1.15	0.82	0.90	<0.50	----	----	----	----
Carbon, total organic [TOC]	----	E355-L/VA	mg/L	0.94	1.29	0.94	<0.50	<0.50	----	----	----
<b>Total Sulfides</b>											
Sulfide, total (as S)	18496-25-8	E395/VA	mg/L	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	----	----	----
Sulfide, total (as H2S)	7783-06-4	E395/VA	mg/L	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	----	----	----
<b>Total Metals</b>											
Aluminum, total	7429-90-5	E420/VA	mg/L	0.0564	0.0965	0.0899	<0.0030	<0.0030	----	----	----
Antimony, total	7440-36-0	E420/VA	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	----	----	----



## Analytical Results Evaluation

				Client sample ID	SQU DS1	SQU US1	Duplicate	Field Blank	Trip Blank	----	----
Matrix: Water											
				Sampling date/time	20-Feb-2024 12:08	20-Feb-2024 11:26	20-Feb-2024 11:35	20-Feb-2024 11:10	20-Feb-2024 00:00	----	----
				Sub-Matrix	Water	Water	Water	Water	Water	----	----
Analyte	CAS Number	Method/Lab	Unit	VA24A3416-001	VA24A3416-002	VA24A3416-003	VA24A3416-004	VA24A3416-005	-----	-----	
<b>Total Metals</b>											
<b>Arsenic, total</b>	7440-38-2	E420/VA	mg/L	0.00017	0.00019	0.00018	<0.00010	<0.00010	----	----	
<b>Barium, total</b>	7440-39-3	E420/VA	mg/L	0.0101	0.0102	0.00994	<0.00010	<0.00010	----	----	
<b>Beryllium, total</b>	7440-41-7	E420/VA	mg/L	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	----	----	
<b>Bismuth, total</b>	7440-69-9	E420/VA	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	----	----	
<b>Boron, total</b>	7440-42-8	E420/VA	mg/L	0.010	0.011	0.011	<0.010	<0.010	----	----	
<b>Cadmium, total</b>	7440-43-9	E420/VA	mg/L	0.0000098	0.0000088	0.0000107	<0.0000050	<0.0000050	----	----	
<b>Calcium, total</b>	7440-70-2	E420/VA	mg/L	7.81	8.08	8.00	<0.050	<0.050	----	----	
<b>Cesium, total</b>	7440-46-2	E420/VA	mg/L	0.000024	0.000026	0.000030	<0.000010	<0.000010	----	----	
<b>Chromium, total</b>	7440-47-3	E420/VA	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	----	----	
<b>Cobalt, total</b>	7440-48-4	E420/VA	mg/L	0.00011	0.00010	0.00010	<0.00010	<0.00010	----	----	
<b>Copper, total</b>	7440-50-8	E420/VA	mg/L	0.00076	0.00081	0.00086	<0.00050	<0.00050	----	----	
<b>Iron, total</b>	7439-89-6	E420/VA	mg/L	0.168	0.188	0.188	<0.010	<0.010	----	----	
<b>Lead, total</b>	7439-92-1	E420/VA	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	----	----	
<b>Lithium, total</b>	7439-93-2	E420/VA	mg/L	0.0012	0.0011	0.0011	<0.0010	<0.0010	----	----	
<b>Magnesium, total</b>	7439-95-4	E420/VA	mg/L	0.892	0.989	0.958	<0.0050	<0.0050	----	----	
<b>Manganese, total</b>	7439-96-5	E420/VA	mg/L	0.0124	0.0124	0.0121	<0.00010	<0.00010	----	----	
<b>Mercury, total</b>	7439-97-6	E508/VA	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	----	----	
<b>Molybdenum, total</b>	7439-98-7	E420/VA	mg/L	0.000665	0.000709	0.000778	<0.000050	<0.000050	----	----	
<b>Nickel, total</b>	7440-02-0	E420/VA	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	----	----	
<b>Phosphorus, total</b>	7723-14-0	E420/VA	mg/L	<0.050	0.051	<0.050	<0.050	<0.050	----	----	
<b>Potassium, total</b>	7440-09-7	E420/VA	mg/L	0.776	0.836	0.814	<0.050	<0.050	----	----	
<b>Rubidium, total</b>	7440-17-7	E420/VA	mg/L	0.00116	0.00123	0.00119	<0.00020	<0.00020	----	----	
<b>Selenium, total</b>	7782-49-2	E420/VA	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	----	----	
<b>Silicon, total</b>	7440-21-3	E420/VA	mg/L	5.88	6.44	6.23	<0.10	<0.10	----	----	
<b>Silver, total</b>	7440-22-4	E420/VA	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	----	----	
<b>Sodium, total</b>	7440-23-5	E420/VA	mg/L	3.30	3.67	3.57	<0.050	<0.050	----	----	
<b>Strontium, total</b>	7440-24-6	E420/VA	mg/L	0.0488	0.0502	0.0490	<0.00020	<0.00020	----	----	
<b>Sulfur, total</b>	7704-34-9	E420/VA	mg/L	1.96	2.05	1.99	<0.50	<0.50	----	----	
<b>Tellurium, total</b>	13494-80-9	E420/VA	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	----	----	





## Analytical Results Evaluation

Matrix: Water				Client sample ID	SQU DS1	SQU US1	Duplicate	Field Blank	Trip Blank	----	----
				Sampling date/time	20-Feb-2024 12:08	20-Feb-2024 11:26	20-Feb-2024 11:35	20-Feb-2024 11:10	20-Feb-2024 00:00	----	----
				Sub-Matrix	Water	Water	Water	Water	Water	----	----
Analyte	CAS Number	Method/Lab	Unit	VA24A3416-001	VA24A3416-002	VA24A3416-003	VA24A3416-004	VA24A3416-005	-----	-----	
<b>Total Metals</b>											
Thallium, total	7440-28-0	E420/VA	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	----	----
Thorium, total	7440-29-1	E420/VA	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	----	----
Tin, total	7440-31-5	E420/VA	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	----	----
Titanium, total	7440-32-6	E420/VA	mg/L	0.00194	0.00262	0.00249	<0.00030	<0.00030	<0.00030	----	----
Tungsten, total	7440-33-7	E420/VA	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	----	----
Uranium, total	7440-61-1	E420/VA	mg/L	0.000029	0.000032	0.000034	<0.000010	<0.000010	<0.000010	----	----
Vanadium, total	7440-62-2	E420/VA	mg/L	0.00163	0.00188	0.00191	<0.00050	<0.00050	<0.00050	----	----
Zinc, total	7440-66-6	E420/VA	mg/L	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	----	----
Zirconium, total	7440-67-7	E420/VA	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	----	----
<b>Dissolved Metals</b>											
Aluminum, dissolved	7429-90-5	E421/VA	mg/L	0.0182	0.0185	0.0177	<0.0010	----	----	----	----
Antimony, dissolved	7440-36-0	E421/VA	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	----	----	----	----
Arsenic, dissolved	7440-38-2	E421/VA	mg/L	0.00015	0.00015	0.00015	<0.00010	----	----	----	----
Barium, dissolved	7440-39-3	E421/VA	mg/L	0.00944	0.00916	0.00917	<0.00010	----	----	----	----
Beryllium, dissolved	7440-41-7	E421/VA	mg/L	<0.000100	<0.000100	<0.000100	<0.000100	----	----	----	----
Bismuth, dissolved	7440-69-9	E421/VA	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	----	----	----	----
Boron, dissolved	7440-42-8	E421/VA	mg/L	<0.010	0.010	0.010	<0.010	----	----	----	----
Cadmium, dissolved	7440-43-9	E421/VA	mg/L	0.0000093	0.0000081	0.0000078	<0.0000050	----	----	----	----
Calcium, dissolved	7440-70-2	E421/VA	mg/L	7.71	7.87	7.97	<0.050	----	----	----	----
Cesium, dissolved	7440-46-2	E421/VA	mg/L	0.000025	0.000024	0.000023	<0.000010	----	----	----	----
Chromium, dissolved	7440-47-3	E421/VA	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	----	----	----	----
Cobalt, dissolved	7440-48-4	E421/VA	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	----	----	----	----
Copper, dissolved	7440-50-8	E421/VA	mg/L	0.00052	0.00052	0.00053	<0.00020	----	----	----	----
Iron, dissolved	7439-89-6	E421/VA	mg/L	0.096	0.090	0.092	<0.010	----	----	----	----
Lead, dissolved	7439-92-1	E421/VA	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	----	----	----	----
Lithium, dissolved	7439-93-2	E421/VA	mg/L	0.0012	0.0011	0.0011	<0.0010	----	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	mg/L	0.879	0.928	0.933	<0.0050	----	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	mg/L	0.0115	0.0103	0.0104	<0.00010	----	----	----	----



## Analytical Results Evaluation

Matrix: Water				Client sample ID	SQU DS1	SQU US1	Duplicate	Field Blank	Trip Blank	----	----
				Sampling date/time	20-Feb-2024 12:08	20-Feb-2024 11:26	20-Feb-2024 11:35	20-Feb-2024 11:10	20-Feb-2024 00:00	----	----
				Sub-Matrix	Water	Water	Water	Water	Water	----	----
Analyte	CAS Number	Method/Lab	Unit	VA24A3416-001	VA24A3416-002	VA24A3416-003	VA24A3416-004	VA24A3416-005	-----	-----	
<b>Dissolved Metals</b>											
Mercury, dissolved	7439-97-6	E509/VA	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	----	----	----	
Molybdenum, dissolved	7439-98-7	E421/VA	mg/L	0.000621	0.000684	0.000684	<0.000050	----	----	----	
Nickel, dissolved	7440-02-0	E421/VA	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	----	----	----	
Phosphorus, dissolved	7723-14-0	E421/VA	mg/L	<0.050	<0.050	<0.050	<0.050	----	----	----	
Potassium, dissolved	7440-09-7	E421/VA	mg/L	0.767	0.788	0.809	<0.050	----	----	----	
Rubidium, dissolved	7440-17-7	E421/VA	mg/L	0.00113	0.00113	0.00120	<0.00020	----	----	----	
Selenium, dissolved	7782-49-2	E421/VA	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	----	----	----	
Silicon, dissolved	7440-21-3	E421/VA	mg/L	5.80	6.19	6.16	<0.050	----	----	----	
Silver, dissolved	7440-22-4	E421/VA	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	----	----	----	
Sodium, dissolved	7440-23-5	E421/VA	mg/L	3.22	3.40	3.46	<0.050	----	----	----	
Strontium, dissolved	7440-24-6	E421/VA	mg/L	0.0488	0.0482	0.0489	<0.00020	----	----	----	
Sulfur, dissolved	7704-34-9	E421/VA	mg/L	1.76	2.03	1.91	<0.50	----	----	----	
Tellurium, dissolved	13494-80-9	E421/VA	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	----	----	----	
Thallium, dissolved	7440-28-0	E421/VA	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	----	----	----	
Thorium, dissolved	7440-29-1	E421/VA	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	----	----	----	
Tin, dissolved	7440-31-5	E421/VA	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	----	----	----	
Titanium, dissolved	7440-32-6	E421/VA	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	----	----	----	
Tungsten, dissolved	7440-33-7	E421/VA	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	----	----	----	
Uranium, dissolved	7440-61-1	E421/VA	mg/L	0.000030	0.000031	0.000027	<0.000010	----	----	----	
Vanadium, dissolved	7440-62-2	E421/VA	mg/L	0.00141	0.00167	0.00166	<0.00050	----	----	----	
Zinc, dissolved	7440-66-6	E421/VA	mg/L	<0.0010	<0.0010	0.0010	0.0011 <sup>RRV</sup>	----	----	----	
Zirconium, dissolved	7440-67-7	E421/VA	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	----	----	----	
Dissolved mercury filtration location	----	EP509/VA	-	Field	Field	Field	Field	----	----	----	
Dissolved metals filtration location	----	EP421/VA	-	Field	Field	Field	Field	----	----	----	
<b>Speciated Metals</b>											
Chromium, hexavalent [Cr VI], dissolved	18540-29-9	E532A/VA	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	----	----	----	
Chromium, hexavalent [Cr VI], total	18540-29-9	E532/VA	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	----	----	
Chromium, trivalent [Cr III], dissolved	16065-83-1	EC535A/VA	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	----	----	----	



## Analytical Results Evaluation

Matrix: Water				Client sample ID	SQU DS1	SQU US1	Duplicate	Field Blank	Trip Blank	----	----
				Sampling date/time	20-Feb-2024 12:08	20-Feb-2024 11:26	20-Feb-2024 11:35	20-Feb-2024 11:10	20-Feb-2024 00:00	----	----
				Sub-Matrix	Water	Water	Water	Water	Water	----	----
Analyte	CAS Number	Method/Lab	Unit	VA24A3416-001	VA24A3416-002	VA24A3416-003	VA24A3416-004	VA24A3416-005	-----	-----	
<b>Speciated Metals</b>											
Chromium, trivalent [Cr III], total	16065-83-1	EC535/VA	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	----	----

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

Key:



**CERTIFICATE OF ANALYSIS**

**Work Order** : **VA24A3416**  
**Client** : **Triton Environmental Consultants Ltd.**  
**Contact** : [Redacted]  
**Address** : [Redacted]  
**Telephone** : [Redacted]  
**Project** : 11964  
**PO** : 11964-Task20-Phase3C-4C  
**C-O-C number** : 17-  
**Sampler** : ----  
**Site** : Water Analysis  
**Quote number** : VA23-TRIT100-012  
**No. of samples received** : 5  
**No. of samples analysed** : 5

**Page** : 1 of 6  
**Laboratory** : ALS Environmental - Vancouver  
**Account Manager** : [Redacted]  
**Address** : [Redacted]  
**Telephone** : [Redacted]  
**Date Samples Received** : 20-Feb-2024 14:30  
**Date Analysis Commenced** : 22-Feb-2024  
**Issue Date** : 28-Feb-2024 17:15

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

**Signatories**

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Angelo Salandanan	Lab Assistant	Metals, Burnaby, British Columbia
Juanita Martis	Account Manager Assistant	Administration, Burnaby, British Columbia
Kate Dimitrova	Supervisor - Inorganic	Inorganics, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Inorganics, Burnaby, British Columbia
Owen Cheng		Metals, Burnaby, British Columbia
Sam Silveira	Analyst	Metals, Burnaby, British Columbia



## General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances  
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	no units
°C	degrees celsius
mg/L	milligrams per litre
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

## Qualifiers

<i>Qualifier</i>	<i>Description</i>
RRV	Reported result verified by repeat analysis.



## Analytical Results

Sub-Matrix: Water					Client sample ID				
(Matrix: Water)					SQU DS1	SQU US1	Duplicate	Field Blank	Trip Blank
Client sampling date / time					20-Feb-2024 12:08	20-Feb-2024 11:26	20-Feb-2024 11:35	20-Feb-2024 11:10	20-Feb-2024 00:00
Analyte	CAS Number	Method/Lab	LOR	Unit	VA24A3416-001	VA24A3416-002	VA24A3416-003	VA24A3416-004	VA24A3416-005
					Result	Result	Result	Result	Result
<b>Field Tests</b>									
pH, field	----	EF001/VA	0.10	pH units	7.40	7.38	----	----	----
Temperature, field	----	EF001/VA	0.10	°C	4.80	4.80	----	----	----
<b>Physical Tests</b>									
Hardness (as CaCO3), dissolved	----	EC100/VA	0.60	mg/L	22.9	23.5	23.7	<0.60	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L	23.2	24.2	23.9	<0.60	<0.60
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	63	54	48	<10	<10
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0
Alkalinity, total (as CaCO3)	----	E290/VA	2.0	mg/L	19.6	22.8	22.9	<2.0	<2.0
<b>Anions and Nutrients</b>									
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	0.0767	0.223	0.220	<0.0050	<0.0050
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	3.33	4.02	3.52	<0.50	<0.50
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.024	0.026	0.027	<0.020	<0.020
Nitrate (as N)	14797-55-8	E235.NO3-L/V A	0.0050	mg/L	0.0535	0.0507	0.0551	<0.0050	<0.0050
Nitrite (as N)	14797-65-0	E235.NO2-L/V A	0.0010	mg/L	<0.0010	0.0012	0.0014	<0.0010	<0.0010
Nitrogen, total	7727-37-9	E366/VA	0.030	mg/L	0.154	0.316	0.308	<0.030	<0.030
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L	0.0158	0.0256	0.0254	<0.0020	<0.0020
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	6.84	7.10	7.11	<0.30	<0.30
<b>Organic / Inorganic Carbon</b>									
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L	1.15	0.82	0.90	<0.50	----
Carbon, total organic [TOC]	----	E355-L/VA	0.50	mg/L	0.94	1.29	0.94	<0.50	<0.50
<b>Total Sulfides</b>									
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
<b>Total Metals</b>									
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L	0.0564	0.0965	0.0899	<0.0030	<0.0030
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L	0.00017	0.00019	0.00018	<0.00010	<0.00010



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	SQU DS1	SQU US1	Duplicate	Field Blank	Trip Blank
Client sampling date / time					20-Feb-2024 12:08	20-Feb-2024 11:26	20-Feb-2024 11:35	20-Feb-2024 11:10	20-Feb-2024 00:00	
Analyte	CAS Number	Method/Lab	LOR	Unit	VA24A3416-001	VA24A3416-002	VA24A3416-003	VA24A3416-004	VA24A3416-005	
					Result	Result	Result	Result	Result	
<b>Total Metals</b>										
Barium, total	7440-39-3	E420/VA	0.00010	mg/L	0.0101	0.0102	0.00994	<0.00010	<0.00010	
Beryllium, total	7440-41-7	E420/VA	0.000100	mg/L	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	
Bismuth, total	7440-69-9	E420/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Boron, total	7440-42-8	E420/VA	0.010	mg/L	0.010	0.011	0.011	<0.010	<0.010	
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L	0.0000098	0.0000088	0.0000107	<0.0000050	<0.0000050	
Calcium, total	7440-70-2	E420/VA	0.050	mg/L	7.81	8.08	8.00	<0.050	<0.050	
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L	0.000024	0.000026	0.000030	<0.000010	<0.000010	
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L	0.00011	0.00010	0.00010	<0.00010	<0.00010	
Copper, total	7440-50-8	E420/VA	0.00050	mg/L	0.00076	0.00081	0.00086	<0.00050	<0.00050	
Iron, total	7439-89-6	E420/VA	0.010	mg/L	0.168	0.188	0.188	<0.010	<0.010	
Lead, total	7439-92-1	E420/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L	0.0012	0.0011	0.0011	<0.0010	<0.0010	
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L	0.892	0.989	0.958	<0.0050	<0.0050	
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L	0.0124	0.0124	0.0121	<0.00010	<0.00010	
Mercury, total	7439-97-6	E508/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L	0.000665	0.000709	0.000778	<0.000050	<0.000050	
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L	<0.050	0.051	<0.050	<0.050	<0.050	
Potassium, total	7440-09-7	E420/VA	0.050	mg/L	0.776	0.836	0.814	<0.050	<0.050	
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L	0.00116	0.00123	0.00119	<0.00020	<0.00020	
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Silicon, total	7440-21-3	E420/VA	0.10	mg/L	5.88	6.44	6.23	<0.10	<0.10	
Silver, total	7440-22-4	E420/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Sodium, total	7440-23-5	E420/VA	0.050	mg/L	3.30	3.67	3.57	<0.050	<0.050	
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L	0.0488	0.0502	0.0490	<0.00020	<0.00020	
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L	1.96	2.05	1.99	<0.50	<0.50	
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	SQU DS1	SQU US1	Duplicate	Field Blank	Trip Blank
Client sampling date / time					20-Feb-2024 12:08	20-Feb-2024 11:26	20-Feb-2024 11:35	20-Feb-2024 11:10	20-Feb-2024 00:00	
Analyte	CAS Number	Method/Lab	LOR	Unit	VA24A3416-001	VA24A3416-002	VA24A3416-003	VA24A3416-004	VA24A3416-005	
					Result	Result	Result	Result	Result	
<b>Total Metals</b>										
Tin, total	7440-31-5	E420/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L	0.00194	0.00262	0.00249	<0.00030	<0.00030	
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L	0.000029	0.000032	0.000034	<0.000010	<0.000010	
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L	0.00163	0.00188	0.00191	<0.00050	<0.00050	
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	
<b>Dissolved Metals</b>										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L	0.0182	0.0185	0.0177	<0.0010	----	
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	----	
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L	0.00015	0.00015	0.00015	<0.00010	----	
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L	0.00944	0.00916	0.00917	<0.00010	----	
Beryllium, dissolved	7440-41-7	E421/VA	0.000100	mg/L	<0.000100	<0.000100	<0.000100	<0.000100	----	
Bismuth, dissolved	7440-69-9	E421/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	----	
Boron, dissolved	7440-42-8	E421/VA	0.010	mg/L	<0.010	0.010	0.010	<0.010	----	
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L	0.0000093	0.0000081	0.0000078	<0.0000050	----	
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L	7.71	7.87	7.97	<0.050	----	
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L	0.000025	0.000024	0.000023	<0.000010	----	
Chromium, dissolved	7440-47-3	E421/VA	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	----	
Cobalt, dissolved	7440-48-4	E421/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	----	
Copper, dissolved	7440-50-8	E421/VA	0.00020	mg/L	0.00052	0.00052	0.00053	<0.00020	----	
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L	0.096	0.090	0.092	<0.010	----	
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	----	
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L	0.0012	0.0011	0.0011	<0.0010	----	
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L	0.879	0.928	0.933	<0.0050	----	
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L	0.0115	0.0103	0.0104	<0.00010	----	
Mercury, dissolved	7439-97-6	E509/VA	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	----	
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L	0.000621	0.000684	0.000684	<0.000050	----	
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	----	
Phosphorus, dissolved	7723-14-0	E421/VA	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	----	





## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	SQU DS1	SQU US1	Duplicate	Field Blank	Trip Blank
Client sampling date / time					20-Feb-2024 12:08	20-Feb-2024 11:26	20-Feb-2024 11:35	20-Feb-2024 11:10	20-Feb-2024 00:00	
Analyte	CAS Number	Method/Lab	LOR	Unit	VA24A3416-001	VA24A3416-002	VA24A3416-003	VA24A3416-004	VA24A3416-005	
					Result	Result	Result	Result	Result	
<b>Dissolved Metals</b>										
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L	0.767	0.788	0.809	<0.050	----	
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L	0.00113	0.00113	0.00120	<0.00020	----	
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	----	
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L	5.80	6.19	6.16	<0.050	----	
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	----	
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L	3.22	3.40	3.46	<0.050	----	
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L	0.0488	0.0482	0.0489	<0.00020	----	
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L	1.76	2.03	1.91	<0.50	----	
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	----	
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	----	
Thorium, dissolved	7440-29-1	E421/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	----	
Tin, dissolved	7440-31-5	E421/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	----	
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	----	
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	----	
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L	0.000030	0.000031	0.000027	<0.000010	----	
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L	0.00141	0.00167	0.00166	<0.00050	----	
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L	<0.0010	<0.0010	0.0010	0.0011 <sup>RV</sup>	----	
Zirconium, dissolved	7440-67-7	E421/VA	0.00020	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	----	
Dissolved mercury filtration location	----	EP509/VA	-	-	Field	Field	Field	Field	----	
Dissolved metals filtration location	----	EP421/VA	-	-	Field	Field	Field	Field	----	
<b>Speciated Metals</b>										
Chromium, hexavalent [Cr VI], dissolved	18540-29-9	E532A/VA	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	----	
Chromium, hexavalent [Cr VI], total	18540-29-9	E532/VA	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Chromium, trivalent [Cr III], dissolved	16065-83-1	EC535A/VA	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	----	
Chromium, trivalent [Cr III], total	16065-83-1	EC535/VA	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.



## QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: VA24A3416	Page	: 1 of 22
Client	: Triton Environmental Consultants Ltd.	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	
Address		Address	
Telephone		Telephone	
Project	: 11964	Date Samples Received	: 20-Feb-2024 14:30
PO	: 11964-Task20-Phase3C-4C	Issue Date	: 28-Feb-2024 17:17
C-O-C number	: 17-		
Sampler	: ---		
Site	: Water Analysis		
Quote number	: VA23-TRIT100-012		
No. of samples received	: 5		
No. of samples analysed	: 5		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

### Key

- Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO: Data Quality Objective.
- LOR: Limit of Reporting (detection limit).
- RPD: Relative Percent Difference.

### Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

### Summary of Outliers

#### Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- Matrix Spike outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

#### Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

### ***Outliers : Analysis Holding Time Compliance (Breaches)***

- No Analysis Holding Time Outliers exist.

### ***Outliers : Frequency of Quality Control Samples***

- No Quality Control Sample Frequency Outliers occur.



**Outliers : Quality Control Samples**

*Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes*

Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
<b>Matrix Spike (MS) Recoveries</b>								
Dissolved Metals	Anonymous	Anonymous	Silver, dissolved	7440-22-4	E421	58.1 % <sup>MS-Ag</sup>	70.0-130%	Recovery less than lower data quality objective

**Result Qualifiers**

Qualifier	Description
MS-Ag	MS-Ag: Matrix Spike recovery for silver was marginally below DQO (40 to <60%) due to its instability in the sample matrix. Silver was not detected. Reported result (< LOR) is reliable



## Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>Anions and Nutrients : Ammonia by Fluorescence</b>											
<b>Amber glass total (sulfuric acid)</b> Duplicate	E298	20-Feb-2024	23-Feb-2024	28 days	3 days	✔	27-Feb-2024	28 days	7 days	✔	
<b>Anions and Nutrients : Ammonia by Fluorescence</b>											
<b>Amber glass total (sulfuric acid)</b> Field Blank	E298	20-Feb-2024	23-Feb-2024	28 days	3 days	✔	27-Feb-2024	28 days	7 days	✔	
<b>Anions and Nutrients : Ammonia by Fluorescence</b>											
<b>Amber glass total (sulfuric acid)</b> SQU DS1	E298	20-Feb-2024	23-Feb-2024	28 days	3 days	✔	27-Feb-2024	28 days	7 days	✔	
<b>Anions and Nutrients : Ammonia by Fluorescence</b>											
<b>Amber glass total (sulfuric acid)</b> SQU US1	E298	20-Feb-2024	23-Feb-2024	28 days	3 days	✔	27-Feb-2024	28 days	7 days	✔	
<b>Anions and Nutrients : Ammonia by Fluorescence</b>											
<b>Amber glass total (lab preserved)</b> Trip Blank	E298	20-Feb-2024	23-Feb-2024	3 days	3 days	✔	27-Feb-2024	28 days	3 days	✔	
<b>Anions and Nutrients : Bromide in Water by IC (Low Level)</b>											
<b>HDPE</b> Duplicate	E235.Br-L	20-Feb-2024	23-Feb-2024	28 days	3 days	✔	23-Feb-2024	28 days	3 days	✔	
<b>Anions and Nutrients : Bromide in Water by IC (Low Level)</b>											
<b>HDPE</b> Field Blank	E235.Br-L	20-Feb-2024	23-Feb-2024	28 days	3 days	✔	23-Feb-2024	28 days	3 days	✔	



Matrix: **Water** Evaluation: \* = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>Anions and Nutrients : Bromide in Water by IC (Low Level)</b>											
HDPE SQU DS1	E235.Br-L	20-Feb-2024	23-Feb-2024	28 days	3 days	✓	23-Feb-2024	28 days	3 days	✓	
<b>Anions and Nutrients : Bromide in Water by IC (Low Level)</b>											
HDPE SQU US1	E235.Br-L	20-Feb-2024	23-Feb-2024	28 days	3 days	✓	23-Feb-2024	28 days	3 days	✓	
<b>Anions and Nutrients : Bromide in Water by IC (Low Level)</b>											
HDPE Trip Blank	E235.Br-L	20-Feb-2024	23-Feb-2024	28 days	3 days	✓	23-Feb-2024	28 days	3 days	✓	
<b>Anions and Nutrients : Chloride in Water by IC</b>											
HDPE Duplicate	E235.Cl	20-Feb-2024	23-Feb-2024	28 days	3 days	✓	23-Feb-2024	28 days	3 days	✓	
<b>Anions and Nutrients : Chloride in Water by IC</b>											
HDPE Field Blank	E235.Cl	20-Feb-2024	23-Feb-2024	28 days	3 days	✓	23-Feb-2024	28 days	3 days	✓	
<b>Anions and Nutrients : Chloride in Water by IC</b>											
HDPE SQU DS1	E235.Cl	20-Feb-2024	23-Feb-2024	28 days	3 days	✓	23-Feb-2024	28 days	3 days	✓	
<b>Anions and Nutrients : Chloride in Water by IC</b>											
HDPE SQU US1	E235.Cl	20-Feb-2024	23-Feb-2024	28 days	3 days	✓	23-Feb-2024	28 days	3 days	✓	
<b>Anions and Nutrients : Chloride in Water by IC</b>											
HDPE Trip Blank	E235.Cl	20-Feb-2024	23-Feb-2024	28 days	3 days	✓	23-Feb-2024	28 days	3 days	✓	
<b>Anions and Nutrients : Fluoride in Water by IC</b>											
HDPE Duplicate	E235.F	20-Feb-2024	23-Feb-2024	28 days	3 days	✓	23-Feb-2024	28 days	3 days	✓	



Matrix: **Water** Evaluation: \* = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>Anions and Nutrients : Fluoride in Water by IC</b>											
HDPE Field Blank	E235.F	20-Feb-2024	23-Feb-2024	28 days	3 days	✓	23-Feb-2024	28 days	3 days	✓	
<b>Anions and Nutrients : Fluoride in Water by IC</b>											
HDPE SQU DS1	E235.F	20-Feb-2024	23-Feb-2024	28 days	3 days	✓	23-Feb-2024	28 days	3 days	✓	
<b>Anions and Nutrients : Fluoride in Water by IC</b>											
HDPE SQU US1	E235.F	20-Feb-2024	23-Feb-2024	28 days	3 days	✓	23-Feb-2024	28 days	3 days	✓	
<b>Anions and Nutrients : Fluoride in Water by IC</b>											
HDPE Trip Blank	E235.F	20-Feb-2024	23-Feb-2024	28 days	3 days	✓	23-Feb-2024	28 days	3 days	✓	
<b>Anions and Nutrients : Nitrate in Water by IC (Low Level)</b>											
HDPE Duplicate	E235.NO3-L	20-Feb-2024	23-Feb-2024	3 days	3 days	✓	23-Feb-2024	3 days	3 days	✓	
<b>Anions and Nutrients : Nitrate in Water by IC (Low Level)</b>											
HDPE Field Blank	E235.NO3-L	20-Feb-2024	23-Feb-2024	3 days	3 days	✓	23-Feb-2024	3 days	3 days	✓	
<b>Anions and Nutrients : Nitrate in Water by IC (Low Level)</b>											
HDPE SQU DS1	E235.NO3-L	20-Feb-2024	23-Feb-2024	3 days	3 days	✓	23-Feb-2024	3 days	3 days	✓	
<b>Anions and Nutrients : Nitrate in Water by IC (Low Level)</b>											
HDPE SQU US1	E235.NO3-L	20-Feb-2024	23-Feb-2024	3 days	3 days	✓	23-Feb-2024	3 days	3 days	✓	
<b>Anions and Nutrients : Nitrate in Water by IC (Low Level)</b>											
HDPE Trip Blank	E235.NO3-L	20-Feb-2024	23-Feb-2024	3 days	3 days	✓	23-Feb-2024	3 days	3 days	✓	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>Anions and Nutrients : Nitrite in Water by IC (Low Level)</b>											
HDPE Duplicate	E235.NO2-L	20-Feb-2024	23-Feb-2024	3 days	3 days	✔	23-Feb-2024	3 days	3 days	✔	
<b>Anions and Nutrients : Nitrite in Water by IC (Low Level)</b>											
HDPE Field Blank	E235.NO2-L	20-Feb-2024	23-Feb-2024	3 days	3 days	✔	23-Feb-2024	3 days	3 days	✔	
<b>Anions and Nutrients : Nitrite in Water by IC (Low Level)</b>											
HDPE SQU DS1	E235.NO2-L	20-Feb-2024	23-Feb-2024	3 days	3 days	✔	23-Feb-2024	3 days	3 days	✔	
<b>Anions and Nutrients : Nitrite in Water by IC (Low Level)</b>											
HDPE SQU US1	E235.NO2-L	20-Feb-2024	23-Feb-2024	3 days	3 days	✔	23-Feb-2024	3 days	3 days	✔	
<b>Anions and Nutrients : Nitrite in Water by IC (Low Level)</b>											
HDPE Trip Blank	E235.NO2-L	20-Feb-2024	23-Feb-2024	3 days	3 days	✔	23-Feb-2024	3 days	3 days	✔	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE Duplicate	E235.SO4	20-Feb-2024	23-Feb-2024	28 days	3 days	✔	23-Feb-2024	28 days	3 days	✔	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE Field Blank	E235.SO4	20-Feb-2024	23-Feb-2024	28 days	3 days	✔	23-Feb-2024	28 days	3 days	✔	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE SQU DS1	E235.SO4	20-Feb-2024	23-Feb-2024	28 days	3 days	✔	23-Feb-2024	28 days	3 days	✔	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE SQU US1	E235.SO4	20-Feb-2024	23-Feb-2024	28 days	3 days	✔	23-Feb-2024	28 days	3 days	✔	





Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
<b>HDPE</b> Trip Blank	E235.SO4	20-Feb-2024	23-Feb-2024	28 days	3 days	✔	23-Feb-2024	28 days	3 days	✔	
<b>Anions and Nutrients : Total Nitrogen by Colourimetry</b>											
<b>Amber glass total (sulfuric acid)</b> Duplicate	E366	20-Feb-2024	23-Feb-2024	28 days	3 days	✔	26-Feb-2024	28 days	6 days	✔	
<b>Anions and Nutrients : Total Nitrogen by Colourimetry</b>											
<b>Amber glass total (sulfuric acid)</b> Field Blank	E366	20-Feb-2024	23-Feb-2024	28 days	3 days	✔	26-Feb-2024	28 days	6 days	✔	
<b>Anions and Nutrients : Total Nitrogen by Colourimetry</b>											
<b>Amber glass total (sulfuric acid)</b> SQU DS1	E366	20-Feb-2024	23-Feb-2024	28 days	3 days	✔	26-Feb-2024	28 days	6 days	✔	
<b>Anions and Nutrients : Total Nitrogen by Colourimetry</b>											
<b>Amber glass total (sulfuric acid)</b> SQU US1	E366	20-Feb-2024	23-Feb-2024	28 days	3 days	✔	26-Feb-2024	28 days	6 days	✔	
<b>Anions and Nutrients : Total Nitrogen by Colourimetry</b>											
<b>Amber glass total (lab preserved)</b> Trip Blank	E366	20-Feb-2024	23-Feb-2024	3 days	3 days	✔	26-Feb-2024	28 days	3 days	✔	
<b>Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)</b>											
<b>Amber glass total (sulfuric acid)</b> Duplicate	E372-U	20-Feb-2024	23-Feb-2024	28 days	3 days	✔	27-Feb-2024	28 days	7 days	✔	
<b>Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)</b>											
<b>Amber glass total (sulfuric acid)</b> Field Blank	E372-U	20-Feb-2024	23-Feb-2024	28 days	3 days	✔	27-Feb-2024	28 days	7 days	✔	
<b>Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)</b>											
<b>Amber glass total (sulfuric acid)</b> SQU DS1	E372-U	20-Feb-2024	23-Feb-2024	28 days	3 days	✔	27-Feb-2024	28 days	7 days	✔	



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Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
<b>Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)</b>										
<b>Amber glass total (sulfuric acid)</b> SQU US1	E372-U	20-Feb-2024	23-Feb-2024	28 days	3 days	✓	27-Feb-2024	28 days	7 days	✓
<b>Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)</b>										
<b>Amber glass total (lab preserved)</b> Trip Blank	E372-U	20-Feb-2024	23-Feb-2024	3 days	3 days	✓	27-Feb-2024	28 days	3 days	✓
<b>Dissolved Metals : Dissolved Mercury in Water by CVAAS</b>										
<b>Glass vial - dissolved (lab preserved)</b> Duplicate	E509	20-Feb-2024	26-Feb-2024	28 days	6 days	✓	26-Feb-2024	28 days	6 days	✓
<b>Dissolved Metals : Dissolved Mercury in Water by CVAAS</b>										
<b>Glass vial - dissolved (lab preserved)</b> Field Blank	E509	20-Feb-2024	26-Feb-2024	28 days	6 days	✓	26-Feb-2024	28 days	6 days	✓
<b>Dissolved Metals : Dissolved Mercury in Water by CVAAS</b>										
<b>Glass vial - dissolved (lab preserved)</b> SQU DS1	E509	20-Feb-2024	26-Feb-2024	28 days	6 days	✓	26-Feb-2024	28 days	6 days	✓
<b>Dissolved Metals : Dissolved Mercury in Water by CVAAS</b>										
<b>Glass vial - dissolved (lab preserved)</b> SQU US1	E509	20-Feb-2024	26-Feb-2024	28 days	6 days	✓	26-Feb-2024	28 days	6 days	✓
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>										
<b>HDPE - dissolved (lab preserved)</b> Duplicate	E421	20-Feb-2024	23-Feb-2024	180 days	3 days	✓	24-Feb-2024	180 days	4 days	✓
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>										
<b>HDPE - dissolved (lab preserved)</b> Field Blank	E421	20-Feb-2024	23-Feb-2024	180 days	3 days	✓	24-Feb-2024	180 days	4 days	✓
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>										
<b>HDPE - dissolved (lab preserved)</b> SQU DS1	E421	20-Feb-2024	23-Feb-2024	180 days	3 days	✓	24-Feb-2024	180 days	4 days	✓



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Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
<b>HDPE - dissolved (lab preserved)</b> SQU US1	E421	20-Feb-2024	23-Feb-2024	180 days	3 days	✔	24-Feb-2024	180 days	4 days	✔	
<b>Field Tests : Field pH,EC,Salinity,Cl2,CIO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine</b>											
<b>Glass vial - total (lab preserved)</b> SQU DS1	EF001	20-Feb-2024	----	----	----		22-Feb-2024	----	2 days		
<b>Field Tests : Field pH,EC,Salinity,Cl2,CIO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine</b>											
<b>Glass vial - total (lab preserved)</b> SQU US1	EF001	20-Feb-2024	----	----	----		22-Feb-2024	----	2 days		
<b>Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)</b>											
<b>Amber glass dissolved (sulfuric acid)</b> Duplicate	E358-L	20-Feb-2024	23-Feb-2024	28 days	3 days	✔	23-Feb-2024	28 days	3 days	✔	
<b>Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)</b>											
<b>Amber glass dissolved (sulfuric acid)</b> Field Blank	E358-L	20-Feb-2024	23-Feb-2024	28 days	3 days	✔	23-Feb-2024	28 days	3 days	✔	
<b>Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)</b>											
<b>Amber glass dissolved (sulfuric acid)</b> SQU DS1	E358-L	20-Feb-2024	23-Feb-2024	28 days	3 days	✔	23-Feb-2024	28 days	3 days	✔	
<b>Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)</b>											
<b>Amber glass dissolved (sulfuric acid)</b> SQU US1	E358-L	20-Feb-2024	23-Feb-2024	28 days	3 days	✔	23-Feb-2024	28 days	3 days	✔	
<b>Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)</b>											
<b>Amber glass total (sulfuric acid)</b> Duplicate	E355-L	20-Feb-2024	23-Feb-2024	28 days	3 days	✔	23-Feb-2024	28 days	3 days	✔	
<b>Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)</b>											
<b>Amber glass total (sulfuric acid)</b> Field Blank	E355-L	20-Feb-2024	23-Feb-2024	28 days	3 days	✔	23-Feb-2024	28 days	3 days	✔	



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Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
<b>Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)</b>										
Amber glass total (sulfuric acid) SQU DS1	E355-L	20-Feb-2024	23-Feb-2024	28 days	3 days	✔	23-Feb-2024	28 days	3 days	✔
<b>Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)</b>										
Amber glass total (sulfuric acid) SQU US1	E355-L	20-Feb-2024	23-Feb-2024	28 days	3 days	✔	23-Feb-2024	28 days	3 days	✔
<b>Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)</b>										
Amber glass total (lab preserved) Trip Blank	E355-L	20-Feb-2024	23-Feb-2024	3 days	3 days	✔	23-Feb-2024	28 days	0 days	✔
<b>Physical Tests : Alkalinity Species by Titration</b>										
HDPE Duplicate	E290	20-Feb-2024	23-Feb-2024	14 days	3 days	✔	26-Feb-2024	14 days	6 days	✔
<b>Physical Tests : Alkalinity Species by Titration</b>										
HDPE Field Blank	E290	20-Feb-2024	23-Feb-2024	14 days	3 days	✔	26-Feb-2024	14 days	6 days	✔
<b>Physical Tests : Alkalinity Species by Titration</b>										
HDPE SQU DS1	E290	20-Feb-2024	23-Feb-2024	14 days	3 days	✔	26-Feb-2024	14 days	6 days	✔
<b>Physical Tests : Alkalinity Species by Titration</b>										
HDPE SQU US1	E290	20-Feb-2024	23-Feb-2024	14 days	3 days	✔	26-Feb-2024	14 days	6 days	✔
<b>Physical Tests : Alkalinity Species by Titration</b>										
HDPE Trip Blank	E290	20-Feb-2024	23-Feb-2024	14 days	3 days	✔	26-Feb-2024	14 days	6 days	✔
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE Duplicate	E162	20-Feb-2024	----	----	----		26-Feb-2024	7 days	6 days	✔



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Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE Field Blank	E162	20-Feb-2024	----	----	----		26-Feb-2024	7 days	6 days	✔
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE SQU DS1	E162	20-Feb-2024	----	----	----		26-Feb-2024	7 days	6 days	✔
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE SQU US1	E162	20-Feb-2024	----	----	----		26-Feb-2024	7 days	6 days	✔
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE Trip Blank	E162	20-Feb-2024	----	----	----		26-Feb-2024	7 days	6 days	✔
<b>Physical Tests : TSS by Gravimetry</b>										
HDPE Duplicate	E160	20-Feb-2024	----	----	----		26-Feb-2024	7 days	6 days	✔
<b>Physical Tests : TSS by Gravimetry</b>										
HDPE Field Blank	E160	20-Feb-2024	----	----	----		26-Feb-2024	7 days	6 days	✔
<b>Physical Tests : TSS by Gravimetry</b>										
HDPE SQU DS1	E160	20-Feb-2024	----	----	----		26-Feb-2024	7 days	6 days	✔
<b>Physical Tests : TSS by Gravimetry</b>										
HDPE SQU US1	E160	20-Feb-2024	----	----	----		26-Feb-2024	7 days	6 days	✔
<b>Physical Tests : TSS by Gravimetry</b>										
HDPE Trip Blank	E160	20-Feb-2024	----	----	----		26-Feb-2024	7 days	6 days	✔



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Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
<b>Speciated Metals : Dissolved Hexavalent Chromium (Cr VI) by IC</b>										
UV-inhibited HDPE - dissolved (sodium hydroxide) SQU DS1	E532A	20-Feb-2024	----	----	----		23-Feb-2024	28 days	2 days	✔
<b>Speciated Metals : Dissolved Hexavalent Chromium (Cr VI) by IC</b>										
UV-inhibited HDPE - dissolved (sodium hydroxide) Duplicate	E532A	20-Feb-2024	----	----	----		23-Feb-2024	28 days	3 days	✔
<b>Speciated Metals : Dissolved Hexavalent Chromium (Cr VI) by IC</b>										
UV-inhibited HDPE - dissolved (sodium hydroxide) Field Blank	E532A	20-Feb-2024	----	----	----		23-Feb-2024	28 days	3 days	✔
<b>Speciated Metals : Dissolved Hexavalent Chromium (Cr VI) by IC</b>										
UV-inhibited HDPE - dissolved (sodium hydroxide) SQU US1	E532A	20-Feb-2024	----	----	----		23-Feb-2024	28 days	3 days	✔
<b>Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC</b>										
UV-inhibited HDPE - total (sodium hydroxide) Duplicate	E532	20-Feb-2024	----	----	----		26-Feb-2024	28 days	6 days	✔
<b>Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC</b>										
UV-inhibited HDPE - total (sodium hydroxide) Field Blank	E532	20-Feb-2024	----	----	----		26-Feb-2024	28 days	6 days	✔
<b>Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC</b>										
UV-inhibited HDPE - total (sodium hydroxide) SQU DS1	E532	20-Feb-2024	----	----	----		26-Feb-2024	28 days	6 days	✔
<b>Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC</b>										
UV-inhibited HDPE - total (sodium hydroxide) SQU US1	E532	20-Feb-2024	----	----	----		26-Feb-2024	28 days	6 days	✔
<b>Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC</b>										
UV-inhibited HDPE - total (sodium hydroxide) Trip Blank	E532	20-Feb-2024	----	----	----		26-Feb-2024	28 days	6 days	✔



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>Total Metals : Total Mercury in Water by CVAAS</b>											
<b>Glass vial - total (lab preserved)</b> Duplicate	E508	20-Feb-2024	26-Feb-2024	28 days	6 days	✔	26-Feb-2024	28 days	6 days	✔	
<b>Total Metals : Total Mercury in Water by CVAAS</b>											
<b>Glass vial - total (lab preserved)</b> Field Blank	E508	20-Feb-2024	26-Feb-2024	28 days	6 days	✔	26-Feb-2024	28 days	6 days	✔	
<b>Total Metals : Total Mercury in Water by CVAAS</b>											
<b>Glass vial - total (lab preserved)</b> SQU DS1	E508	20-Feb-2024	26-Feb-2024	28 days	6 days	✔	26-Feb-2024	28 days	6 days	✔	
<b>Total Metals : Total Mercury in Water by CVAAS</b>											
<b>Glass vial - total (lab preserved)</b> SQU US1	E508	20-Feb-2024	26-Feb-2024	28 days	6 days	✔	26-Feb-2024	28 days	6 days	✔	
<b>Total Metals : Total Mercury in Water by CVAAS</b>											
<b>Glass vial - total (lab preserved)</b> Trip Blank	E508	20-Feb-2024	26-Feb-2024	28 days	6 days	✔	26-Feb-2024	28 days	6 days	✔	
<b>Total Metals : Total Metals in Water by CRC ICPMS</b>											
<b>HDPE - total (lab preserved)</b> Trip Blank	E420	20-Feb-2024	23-Feb-2024	180 days	2 days	✔	24-Feb-2024	180 days	4 days	✔	
<b>Total Metals : Total Metals in Water by CRC ICPMS</b>											
<b>HDPE - total (lab preserved)</b> Duplicate	E420	20-Feb-2024	23-Feb-2024	180 days	3 days	✔	24-Feb-2024	180 days	4 days	✔	
<b>Total Metals : Total Metals in Water by CRC ICPMS</b>											
<b>HDPE - total (lab preserved)</b> Field Blank	E420	20-Feb-2024	23-Feb-2024	180 days	3 days	✔	24-Feb-2024	180 days	4 days	✔	
<b>Total Metals : Total Metals in Water by CRC ICPMS</b>											
<b>HDPE - total (lab preserved)</b> SQU DS1	E420	20-Feb-2024	23-Feb-2024	180 days	3 days	✔	24-Feb-2024	180 days	4 days	✔	



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>Total Metals : Total Metals in Water by CRC ICPMS</b>											
HDPE - total (lab preserved) SQU US1	E420	20-Feb-2024	23-Feb-2024	180 days	3 days	✔	24-Feb-2024	180 days	4 days	✔	
<b>Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)</b>											
HDPE total (zinc acetate+sodium hydroxide) Duplicate	E395	20-Feb-2024	----	----	----		27-Feb-2024	7 days	7 days	✔	
<b>Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)</b>											
HDPE total (zinc acetate+sodium hydroxide) Field Blank	E395	20-Feb-2024	----	----	----		27-Feb-2024	7 days	7 days	✔	
<b>Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)</b>											
HDPE total (zinc acetate+sodium hydroxide) SQU DS1	E395	20-Feb-2024	----	----	----		27-Feb-2024	7 days	7 days	✔	
<b>Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)</b>											
HDPE total (zinc acetate+sodium hydroxide) SQU US1	E395	20-Feb-2024	----	----	----		27-Feb-2024	7 days	7 days	✔	
<b>Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)</b>											
HDPE total (zinc acetate+sodium hydroxide) Trip Blank	E395	20-Feb-2024	----	----	----		27-Feb-2024	7 days	7 days	✔	

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).





## Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<b>Analytical Methods</b>							
<b>Laboratory Duplicates (DUP)</b>							
Alkalinity Species by Titration	E290	1341782	1	5	20.0	5.0	✔
Ammonia by Fluorescence	E298	1342371	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1341779	1	5	20.0	5.0	✔
Chloride in Water by IC	E235.Cl	1341774	1	20	5.0	5.0	✔
Dissolved Hexavalent Chromium (Cr VI) by IC	E532A	1341716	1	18	5.5	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	1345443	1	17	5.8	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	1340732	1	16	6.2	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1342366	1	17	5.8	5.0	✔
Fluoride in Water by IC	E235.F	1341778	1	5	20.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1341776	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1341775	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1341777	1	17	5.8	5.0	✔
TDS by Gravimetry	E162	1345055	1	7	14.2	5.0	✔
Total Hexavalent Chromium (Cr VI) by IC	E532	1345514	1	18	5.5	5.0	✔
Total Mercury in Water by CVAAS	E508	1344987	1	20	5.0	5.0	✔
Total Metals in Water by CRC ICPMS	E420	1340747	1	15	6.6	5.0	✔
Total Nitrogen by Colourimetry	E366	1342368	1	20	5.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1342367	1	12	8.3	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1342369	1	16	6.2	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1346895	1	9	11.1	5.0	✔
TSS by Gravimetry	E160	1345049	1	7	14.2	5.0	✔
<b>Laboratory Control Samples (LCS)</b>							
Alkalinity Species by Titration	E290	1341782	1	5	20.0	5.0	✔
Ammonia by Fluorescence	E298	1342371	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1341779	1	5	20.0	5.0	✔
Chloride in Water by IC	E235.Cl	1341774	1	20	5.0	5.0	✔
Dissolved Hexavalent Chromium (Cr VI) by IC	E532A	1341716	1	18	5.5	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	1345443	1	17	5.8	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	1340732	1	16	6.2	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1342366	1	17	5.8	5.0	✔
Fluoride in Water by IC	E235.F	1341778	1	5	20.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1341776	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1341775	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1341777	1	17	5.8	5.0	✔
TDS by Gravimetry	E162	1345055	1	7	14.2	5.0	✔
Total Hexavalent Chromium (Cr VI) by IC	E532	1345514	1	18	5.5	5.0	✔



Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<b>Analytical Methods</b>							
<b>Laboratory Control Samples (LCS) - Continued</b>							
Total Mercury in Water by CVAAS	E508	1344987	1	20	5.0	5.0	✔
Total Metals in Water by CRC ICPMS	E420	1340747	1	15	6.6	5.0	✔
Total Nitrogen by Colourimetry	E366	1342368	1	20	5.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1342367	1	12	8.3	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1342369	1	16	6.2	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1346895	1	9	11.1	5.0	✔
TSS by Gravimetry	E160	1345049	1	7	14.2	5.0	✔
<b>Method Blanks (MB)</b>							
Alkalinity Species by Titration	E290	1341782	1	5	20.0	5.0	✔
Ammonia by Fluorescence	E298	1342371	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1341779	1	5	20.0	5.0	✔
Chloride in Water by IC	E235.Cl	1341774	1	20	5.0	5.0	✔
Dissolved Hexavalent Chromium (Cr VI) by IC	E532A	1341716	1	18	5.5	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	1345443	1	17	5.8	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	1340732	1	16	6.2	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1342366	1	17	5.8	5.0	✔
Fluoride in Water by IC	E235.F	1341778	1	5	20.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1341776	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1341775	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1341777	1	17	5.8	5.0	✔
TDS by Gravimetry	E162	1345055	1	7	14.2	5.0	✔
Total Hexavalent Chromium (Cr VI) by IC	E532	1345514	1	18	5.5	5.0	✔
Total Mercury in Water by CVAAS	E508	1344987	1	20	5.0	5.0	✔
Total Metals in Water by CRC ICPMS	E420	1340747	1	15	6.6	5.0	✔
Total Nitrogen by Colourimetry	E366	1342368	1	20	5.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1342367	1	12	8.3	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1342369	1	16	6.2	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1346895	1	9	11.1	5.0	✔
TSS by Gravimetry	E160	1345049	1	7	14.2	5.0	✔
<b>Matrix Spikes (MS)</b>							
Ammonia by Fluorescence	E298	1342371	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1341779	1	5	20.0	5.0	✔
Chloride in Water by IC	E235.Cl	1341774	1	20	5.0	5.0	✔
Dissolved Hexavalent Chromium (Cr VI) by IC	E532A	1341716	1	18	5.5	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	1345443	1	17	5.8	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	1340732	1	16	6.2	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1342366	1	17	5.8	5.0	✔
Fluoride in Water by IC	E235.F	1341778	1	5	20.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1341776	1	20	5.0	5.0	✔



Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<i>Analytical Methods</i>							
<b>Matrix Spikes (MS) - Continued</b>							
Nitrite in Water by IC (Low Level)	E235.NO2-L	1341775	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1341777	1	17	5.8	5.0	✔
Total Hexavalent Chromium (Cr VI) by IC	E532	1345514	1	18	5.5	5.0	✔
Total Mercury in Water by CVAAS	E508	1344987	1	20	5.0	5.0	✔
Total Metals in Water by CRC ICPMS	E420	1340747	1	15	6.6	5.0	✔
Total Nitrogen by Colourimetry	E366	1342368	1	20	5.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1342367	1	12	8.3	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1342369	1	16	6.2	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1346895	1	9	11.1	5.0	✔



## Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
TSS by Gravimetry	E160 ALS Environmental - Vancouver	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at $104 \pm 1^\circ\text{C}$ , with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Vancouver	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at $180 \pm 2^\circ\text{C}$ for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 ALS Environmental - Vancouver	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Vancouver	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Ammonia by Fluorescence	E298 ALS Environmental - Vancouver	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO2. NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO2. NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Nitrogen by Colourimetry	E366 ALS Environmental - Vancouver	Water	Chinchilla Scientific Nitrate Method, 2011	Following digestion, total nitrogen is determined colourimetrically using a discrete analyzer utilizing the vanadium chloride reduction method. This method of analysis is approved under US EPA 40 CFR Part 136 (May 2021).
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U ALS Environmental - Vancouver	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Total Sulfide by Colourimetry (Automated Flow)	E395 ALS Environmental - Vancouver	Water	APHA 4500 -S E-Auto-Colorimetry	Sulfide is determined using the gas dialysis automated methylene blue colourimetric method. Results expressed "as H2S" if reported represent the maximum possible H2S concentration based on the total sulfide concentration in the sample. The H2S calculation converts Total Sulphide as (S2-) and reports it as Total Sulphide as (H2S)
Total Metals in Water by CRC ICPMS	E420 ALS Environmental - Vancouver	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.  Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS.  Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Mercury in Water by CVAAS	E508 ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Mercury in Water by CVAAS	E509 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Total Hexavalent Chromium (Cr VI) by IC	E532 ALS Environmental - Vancouver	Water	APHA 3500-Cr C (Ion Chromatography)	Hexavalent Chromium is measured by Ion chromatography-Post column reaction and UV detection.  Results are based on an un-filtered, field-preserved sample.
Dissolved Hexavalent Chromium (Cr VI) by IC	E532A ALS Environmental - Vancouver	Water	APHA 3500-Cr C (Ion Chromatography)	Hexavalent Chromium is measured by Ion chromatography-Post column reaction and UV detection.  sample pretreatment involved field or lab filtration following by sample preservation.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO <sub>3</sub> ), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO <sub>3</sub> equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Hardness (Calculated) from Total Ca/Mg	EC100A ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO <sub>3</sub> ), from total Ca/Mg" is calculated from the sum of total Calcium and Magnesium concentrations, expressed in CaCO <sub>3</sub> equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations. Hardness from total Ca/Mg is normally comparable to Dissolved Hardness in non-turbid waters.
Total Trivalent Chromium (Cr III) by Calculation	EC535 ALS Environmental - Vancouver	Water	APHA 3030B/6020A/EPA 7196A (mod)	Chromium (III)-Total is calculated as the difference between the total chromium and the total hexavalent chromium (Cr(VI)) results. The Limit of Reporting for Chromium (III) varies as a function of the test results.
Dissolved Trivalent Chromium (Cr III) by Calculation	EC535A ALS Environmental - Vancouver	Water	APHA 3030B/6020A/EPA 7196A (mod)	Dissolved Chromium (III) is calculated as the difference between Dissolved Chromium and Dissolved Hexavalent Chromium (Cr VI) results. The Limit of Reporting for Chromium (III) varies as a function of the test results.
Field pH,EC,Salinity,Cl <sub>2</sub> ,ClO <sub>2</sub> ,ORP,DO, Turbidity,T,T-P,o-PO <sub>4</sub> ,NH <sub>3</sub> ,Chloramine	EF001 ALS Environmental - Vancouver	Water	Field Measurement (Client Supplied)	Field pH,EC,Salinity,Cl <sub>2</sub> ,ClO <sub>2</sub> ,ORP,DO, Turbidity,T,T-P,o-PO <sub>4</sub> ,NH <sub>3</sub> or Chloramine measurements provided by client and recorded on ALS report may affect the validity of results.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Vancouver	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Vancouver	Water		Preparation for Total Organic Carbon by Combustion



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Preparation for Dissolved Organic Carbon for Combustion	EP358 ALS Environmental - Vancouver	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Nitrogen in water	EP366 ALS Environmental - Vancouver	Water	APHA 4500-P J (mod)	Samples for total nitrogen analysis are digested using a heated persulfate digestion. Nitrogen compounds are converted to nitrate in this digestion.
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Vancouver	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO <sub>3</sub> .
Dissolved Mercury Water Filtration	EP509 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

## QUALITY CONTROL REPORT

<p><b>Work Order</b> : <b>VA24A3416</b></p> <p><b>Client</b> : Triton Environmental Consultants Ltd.</p> <p><b>Contact</b> : [REDACTED]</p> <p><b>Address</b> : [REDACTED]</p> <p><b>Telephone</b> : [REDACTED]</p> <p><b>Project</b> : 11964</p> <p><b>PO</b> : 11964-Task20-Phase3C-4C</p> <p><b>C-O-C number</b> : 17-</p> <p><b>Sampler</b> : ---- 604 631 2213</p> <p><b>Site</b> : Water Analysis</p> <p><b>Quote number</b> : VA23-TRIT100-012</p> <p><b>No. of samples received</b> : 5</p> <p><b>No. of samples analysed</b> : 5</p>	<p><b>Page</b> : 1 of 18</p> <p><b>Laboratory</b> : ALS Environmental - Vancouver</p> <p><b>Account Manager</b> : [REDACTED]</p> <p><b>Address</b> : [REDACTED]</p> <p><b>Telephone</b> : [REDACTED]</p> <p><b>Date Samples Received</b> : 20-Feb-2024 14:30</p> <p><b>Date Analysis Commenced</b> : 22-Feb-2024</p> <p><b>Issue Date</b> : 28-Feb-2024 17:16</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Angelo Salandanan	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
Juanita Martis	Account Manager Assistant	Vancouver Administration, Burnaby, British Columbia
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## General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

### Key :

- Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO = Data Quality Objective.
- LOR = Limit of Reporting (detection limit).
- RPD = Relative Percent Difference
- # = Indicates a QC result that did not meet the ALS DQO.

## Workorder Comments

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Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

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### Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
<b>Physical Tests (QC Lot: 1341782)</b>											
VA24A3416-003	Duplicate	Alkalinity, total (as CaCO3)	----	E290	2.0	mg/L	22.9	22.5	1.78%	20%	----
<b>Physical Tests (QC Lot: 1345049)</b>											
VA24A3416-001	SQU DS1	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
<b>Physical Tests (QC Lot: 1345055)</b>											
VA24A3416-001	SQU DS1	Solids, total dissolved [TDS]	----	E162	13	mg/L	63	54	9	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1341774)</b>											
VA24A3416-001	SQU DS1	Chloride	16887-00-6	E235.Cl	0.50	mg/L	3.33	3.32	0.02	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1341775)</b>											
VA24A3416-001	SQU DS1	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1341776)</b>											
VA24A3416-001	SQU DS1	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0535	0.0536	0.244%	20%	----
<b>Anions and Nutrients (QC Lot: 1341777)</b>											
VA24A3416-001	SQU DS1	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	6.84	6.79	0.737%	20%	----
<b>Anions and Nutrients (QC Lot: 1341778)</b>											
VA24A3416-001	SQU DS1	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.024	0.024	0.0002	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1341779)</b>											
VA24A3416-001	SQU DS1	Bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1342369)</b>											
VA24A3292-003	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0212	0.0212	0.425%	20%	----
<b>Anions and Nutrients (QC Lot: 1342371)</b>											
FJ2400430-005	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0201	0.0211	0.0010	Diff <2x LOR	----
<b>Organic / Inorganic Carbon (QC Lot: 1342366)</b>											
FJ2400430-005	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	2.24	2.00	0.24	Diff <2x LOR	----
<b>Organic / Inorganic Carbon (QC Lot: 1342367)</b>											
FJ2400430-005	Anonymous	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	1.85	2.02	0.17	Diff <2x LOR	----
<b>Total Sulfides (QC Lot: 1346895)</b>											
VA24A3416-001	SQU DS1	Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	<0.0015	0	Diff <2x LOR	----
<b>Total Metals (QC Lot: 1340747)</b>											
VA24A3392-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0060	mg/L	3.96	3.92	1.26%	20%	----
		Antimony, total	7440-36-0	E420	0.00020	mg/L	0.00090	0.00092	0.00003	Diff <2x LOR	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
<b>Total Metals (QC Lot: 1340747) - continued</b>											
VA24A3392-001	Anonymous	Arsenic, total	7440-38-2	E420	0.00020	mg/L	0.00881	0.00852	3.40%	20%	----
		Barium, total	7440-39-3	E420	0.00020	mg/L	0.133	0.132	0.880%	20%	----
		Beryllium, total	7440-41-7	E420	0.000040	mg/L	0.000079	0.000074	0.000005	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E420	0.020	mg/L	0.082	0.083	0.0005	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E420	0.0000100	mg/L	0.000141	0.000135	4.24%	20%	----
		Calcium, total	7440-70-2	E420	0.100	mg/L	164	164	0.170%	20%	----
		Cesium, total	7440-46-2	E420	0.000020	mg/L	0.000114	0.000117	0.000003	Diff <2x LOR	----
		Chromium, total	7440-47-3	E420	0.00100	mg/L	0.00918	0.00873	0.00045	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E420	0.00020	mg/L	0.00561	0.00547	2.57%	20%	----
		Copper, total	7440-50-8	E420	0.00100	mg/L	0.0416	0.0410	1.68%	20%	----
		Iron, total	7439-89-6	E420	0.020	mg/L	4.60	4.55	1.19%	20%	----
		Lead, total	7439-92-1	E420	0.000100	mg/L	0.00256	0.00258	0.601%	20%	----
		Lithium, total	7439-93-2	E420	0.0020	mg/L	0.0023	0.0023	0.00003	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.0100	mg/L	49.0	48.1	1.81%	20%	----
		Manganese, total	7439-96-5	E420	0.00020	mg/L	1.64	1.59	3.62%	20%	----
		Molybdenum, total	7439-98-7	E420	0.000100	mg/L	0.00834	0.00860	3.11%	20%	----
		Nickel, total	7440-02-0	E420	0.00100	mg/L	0.0177	0.0172	2.89%	20%	----
		Phosphorus, total	7723-14-0	E420	0.100	mg/L	2.49	2.46	1.04%	20%	----
		Potassium, total	7440-09-7	E420	0.100	mg/L	265	257	3.18%	20%	----
		Rubidium, total	7440-17-7	E420	0.00040	mg/L	0.0688	0.0674	2.06%	20%	----
		Selenium, total	7782-49-2	E420	0.000100	mg/L	0.000764	0.000782	0.000018	Diff <2x LOR	----
		Silicon, total	7440-21-3	E420	0.20	mg/L	9.72	9.62	1.04%	20%	----
		Silver, total	7440-22-4	E420	0.000020	mg/L	0.000038	0.000039	0.000001	Diff <2x LOR	----
		Sodium, total	7440-23-5	E420	0.100	mg/L	103	100	2.58%	20%	----
		Strontium, total	7440-24-6	E420	0.00040	mg/L	0.673	0.680	0.978%	20%	----
		Sulfur, total	7704-34-9	E420	1.00	mg/L	162	161	0.798%	20%	----
		Tellurium, total	13494-80-9	E420	0.00040	mg/L	<0.00040	<0.00040	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E420	0.000020	mg/L	0.000022	0.000023	0.0000004	Diff <2x LOR	----
		Thorium, total	7440-29-1	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Tin, total	7440-31-5	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E420	0.00060	mg/L	0.150	0.147	2.14%	20%	----
		Tungsten, total	7440-33-7	E420	0.00020	mg/L	<0.00020	0.00022	0.00002	Diff <2x LOR	----
		Uranium, total	7440-61-1	E420	0.000020	mg/L	0.00289	0.00290	0.0607%	20%	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
<b>Total Metals (QC Lot: 1340747) - continued</b>											
VA24A3392-001	Anonymous	Vanadium, total	7440-62-2	E420	0.00100	mg/L	0.0151	0.0146	3.17%	20%	----
		Zinc, total	7440-66-6	E420	0.0060	mg/L	0.0618	0.0600	2.98%	20%	----
		Zirconium, total	7440-67-7	E420	0.00040	mg/L	0.00088	0.00088	0.000004	Diff <2x LOR	----
<b>Total Metals (QC Lot: 1344987)</b>											
KS2400562-001	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
<b>Dissolved Metals (QC Lot: 1340732)</b>											
VA24A3395-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0020	mg/L	0.0315	0.0328	3.84%	20%	----
		Antimony, dissolved	7440-36-0	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00020	mg/L	0.00837	0.00857	2.30%	20%	----
		Barium, dissolved	7440-39-3	E421	0.00020	mg/L	0.326	0.332	1.70%	20%	----
		Beryllium, dissolved	7440-41-7	E421	0.000040	mg/L	<0.000040	<0.000040	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E421	0.020	mg/L	0.045	0.046	0.0008	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000100	mg/L	<0.0000100	<0.0000100	0	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.100	mg/L	179	185	3.11%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E421	0.00100	mg/L	0.00196	0.00210	0.00014	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421	0.00020	mg/L	0.00385	0.00388	0.860%	20%	----
		Copper, dissolved	7440-50-8	E421	0.00040	mg/L	0.00082	0.00102	0.00020	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.020	mg/L	14.1	14.3	1.65%	20%	----
		Lead, dissolved	7439-92-1	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0100	mg/L	67.2	68.9	2.42%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00020	mg/L	7.62	7.80	2.28%	20%	----
		Molybdenum, dissolved	7439-98-7	E421	0.000100	mg/L	0.000513	0.000583	0.000070	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E421	0.00100	mg/L	0.00688	0.00682	0.00006	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E421	0.100	mg/L	0.447	0.456	0.010	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E421	0.100	mg/L	132	136	3.18%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00040	mg/L	0.0150	0.0156	3.96%	20%	----
		Selenium, dissolved	7782-49-2	E421	0.000100	mg/L	0.000367	0.000403	0.000036	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.100	mg/L	6.15	6.38	3.78%	20%	----
		Silver, dissolved	7440-22-4	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
Sodium, dissolved	7440-23-5	E421	0.100	mg/L	86.2	87.8	1.88%	20%	----		
Strontium, dissolved	7440-24-6	E421	0.00040	mg/L	1.33	1.34	1.14%	20%	----		



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
<b>Dissolved Metals (QC Lot: 1340732) - continued</b>											
VA24A3395-001	Anonymous	Sulfur, dissolved	7704-34-9	E421	1.00	mg/L	131	136	3.56%	20%	----
		Tellurium, dissolved	13494-80-9	E421	0.00040	mg/L	<0.00040	<0.00040	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.00060	mg/L	0.00720	0.00722	0.284%	20%	----
		Tungsten, dissolved	7440-33-7	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000020	mg/L	0.000449	0.000466	3.66%	20%	----
		Vanadium, dissolved	7440-62-2	E421	0.00100	mg/L	0.00872	0.00898	0.00026	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E421	0.00040	mg/L	0.00167	0.00166	0.00002	Diff <2x LOR	----
<b>Dissolved Metals (QC Lot: 1345443)</b>											
VA24A3391-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0050 µg/L	<0.0000050	0	Diff <2x LOR	----
<b>Speciated Metals (QC Lot: 1341716)</b>											
VA24A3249-001	Anonymous	Chromium, hexavalent [Cr VI], dissolved	18540-29-9	E532A	0.00050	mg/L	<0.50 µg/L	<0.00050	0	Diff <2x LOR	----
<b>Speciated Metals (QC Lot: 1345514)</b>											
VA24A3340-001	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----



## Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Physical Tests (QCLot: 1341782)</b>						
Alkalinity, total (as CaCO3)	---	E290	1	mg/L	<1.0	---
<b>Physical Tests (QCLot: 1345049)</b>						
Solids, total suspended [TSS]	---	E160	3	mg/L	<3.0	---
<b>Physical Tests (QCLot: 1345055)</b>						
Solids, total dissolved [TDS]	---	E162	10	mg/L	<10	---
<b>Anions and Nutrients (QCLot: 1341774)</b>						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	---
<b>Anions and Nutrients (QCLot: 1341775)</b>						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	---
<b>Anions and Nutrients (QCLot: 1341776)</b>						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	---
<b>Anions and Nutrients (QCLot: 1341777)</b>						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	---
<b>Anions and Nutrients (QCLot: 1341778)</b>						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	---
<b>Anions and Nutrients (QCLot: 1341779)</b>						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	---
<b>Anions and Nutrients (QCLot: 1342368)</b>						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	---
<b>Anions and Nutrients (QCLot: 1342369)</b>						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	---
<b>Anions and Nutrients (QCLot: 1342371)</b>						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	---
<b>Organic / Inorganic Carbon (QCLot: 1342366)</b>						
Carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	<0.50	---
<b>Organic / Inorganic Carbon (QCLot: 1342367)</b>						
Carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
<b>Total Sulfides (QCLot: 1346895)</b>						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	---
<b>Total Metals (QCLot: 1340747)</b>						
Aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
Antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Total Metals (QCLot: 1340747) - continued</b>						
Arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
Barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
Boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
Calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
Copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
Iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
Lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
Lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	<0.050	----
Potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
Silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
Silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
Sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	----
Tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Total Metals (QCLot: 1340747) - continued</b>						
Zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	---
<b>Total Metals (QCLot: 1344987)</b>						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	---
<b>Dissolved Metals (QCLot: 1340732)</b>						
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	---
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	---
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	---
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	---
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	---
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	---
Boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	---
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	---
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	---
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	---
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	---
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	---
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	---
Iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	---
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	---
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	---
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	---
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	---
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	---
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	---
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	---
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	---
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	---
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	---
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	---
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	---
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	---
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	---





Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Dissolved Metals (QCLot: 1340732) - continued</b>						
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
<b>Dissolved Metals (QCLot: 1345443)</b>						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
<b>Speciated Metals (QCLot: 1341716)</b>						
Chromium, hexavalent [Cr VI], dissolved	18540-29-9	E532A	0.0005	mg/L	<0.00050	----
<b>Speciated Metals (QCLot: 1345514)</b>						
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	<0.00050	----



## Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
<b>Physical Tests (QCLot: 1341782)</b>									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	109	85.0	115	----
<b>Physical Tests (QCLot: 1345049)</b>									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	95.2	85.0	115	----
<b>Physical Tests (QCLot: 1345055)</b>									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	101	85.0	115	----
<b>Anions and Nutrients (QCLot: 1341774)</b>									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	101	90.0	110	----
<b>Anions and Nutrients (QCLot: 1341775)</b>									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	99.3	90.0	110	----
<b>Anions and Nutrients (QCLot: 1341776)</b>									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	101	90.0	110	----
<b>Anions and Nutrients (QCLot: 1341777)</b>									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----
<b>Anions and Nutrients (QCLot: 1341778)</b>									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	98.6	90.0	110	----
<b>Anions and Nutrients (QCLot: 1341779)</b>									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	102	85.0	115	----
<b>Anions and Nutrients (QCLot: 1342368)</b>									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	95.9	75.0	125	----
<b>Anions and Nutrients (QCLot: 1342369)</b>									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	102	80.0	120	----
<b>Anions and Nutrients (QCLot: 1342371)</b>									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	94.6	85.0	115	----
<b>Organic / Inorganic Carbon (QCLot: 1342366)</b>									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	102	80.0	120	----
<b>Organic / Inorganic Carbon (QCLot: 1342367)</b>									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	108	80.0	120	----
<b>Total Sulfides (QCLot: 1346895)</b>									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	93.1	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
<b>Total Metals (QCLot: 1340747)</b>									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	104	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	106	80.0	120	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	107	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	106	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	100	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	104	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	102	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	103	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	101	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	109	80.0	120	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	104	80.0	120	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	101	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	105	80.0	120	----
Lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	105	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	103	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	103	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	104	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	109	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	105	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	102	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	104	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	104	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	99.8	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	104	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	102	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	86.0	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	104	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	101	80.0	120	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	105	80.0	120	----
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	107	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	103	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	106	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
<b>Total Metals (QCLot: 1340747) - continued</b>									
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	108	80.0	120	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	104	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	97.6	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	106	80.0	120	----
<b>Total Metals (QCLot: 1344987)</b>									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	107	80.0	120	----
<b>Dissolved Metals (QCLot: 1340732)</b>									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	107	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	102	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	106	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	105	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	102	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	104	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	96.9	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	103	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	103	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	108	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	104	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	99.9	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	105	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	104	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	102	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	107	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	105	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	102	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	106	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	108	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	103	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	102	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	104	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	99.4	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	106	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	102	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
<b>Dissolved Metals (QCLot: 1340732) - continued</b>									
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	90.7	80.0	120	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	105	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	100	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	104	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	105	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	105	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	104	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	108	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	106	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	101	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	103	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	99.4	80.0	120	----
<b>Speciated Metals (QCLot: 1341716)</b>									
Chromium, hexavalent [Cr VI], dissolved	18540-29-9	E532A	0.0005	mg/L	0.25 mg/L	106	80.0	120	----
<b>Speciated Metals (QCLot: 1345514)</b>									
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	0.25 mg/L	102	80.0	120	----



## Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
<b>Anions and Nutrients (QCLot: 1341774)</b>										
VA24A3416-002	SQU US1	Chloride	16887-00-6	E235.Cl	103 mg/L	100 mg/L	103	75.0	125	----
<b>Anions and Nutrients (QCLot: 1341775)</b>										
VA24A3416-002	SQU US1	Nitrite (as N)	14797-65-0	E235.NO2-L	0.505 mg/L	0.5 mg/L	101	75.0	125	----
<b>Anions and Nutrients (QCLot: 1341776)</b>										
VA24A3416-002	SQU US1	Nitrate (as N)	14797-55-8	E235.NO3-L	2.60 mg/L	2.5 mg/L	104	75.0	125	----
<b>Anions and Nutrients (QCLot: 1341777)</b>										
VA24A3416-002	SQU US1	Sulfate (as SO4)	14808-79-8	E235.SO4	104 mg/L	100 mg/L	104	75.0	125	----
<b>Anions and Nutrients (QCLot: 1341778)</b>										
VA24A3416-002	SQU US1	Fluoride	16984-48-8	E235.F	1.02 mg/L	1 mg/L	102	75.0	125	----
<b>Anions and Nutrients (QCLot: 1341779)</b>										
VA24A3416-002	SQU US1	Bromide	24959-67-9	E235.Br-L	0.529 mg/L	0.5 mg/L	106	75.0	125	----
<b>Anions and Nutrients (QCLot: 1342368)</b>										
VA24A3292-002	Anonymous	Nitrogen, total	7727-37-9	E366	0.398 mg/L	0.4 mg/L	99.4	70.0	130	----
<b>Anions and Nutrients (QCLot: 1342369)</b>										
VA24A3292-004	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0526 mg/L	0.05 mg/L	105	70.0	130	----
<b>Anions and Nutrients (QCLot: 1342371)</b>										
FJ2400430-006	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0890 mg/L	0.1 mg/L	89.0	75.0	125	----
<b>Organic / Inorganic Carbon (QCLot: 1342366)</b>										
FJ2400430-006	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	5.25 mg/L	5 mg/L	105	70.0	130	----
<b>Organic / Inorganic Carbon (QCLot: 1342367)</b>										
FJ2400430-006	Anonymous	Carbon, total organic [TOC]	----	E355-L	5.38 mg/L	5 mg/L	108	70.0	130	----
<b>Total Sulfides (QCLot: 1346895)</b>										
VA24A3416-002	SQU US1	Sulfide, total (as S)	18496-25-8	E395	0.205 mg/L	0.2 mg/L	102	75.0	125	----
<b>Total Metals (QCLot: 1340747)</b>										
VA24A3397-001	Anonymous	Aluminum, total	7429-90-5	E420	ND mg/L	0.2 mg/L	ND	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0193 mg/L	0.02 mg/L	96.3	70.0	130	----
		Barium, total	7440-39-3	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
<b>Total Metals (QCLot: 1340747) - continued</b>										
VA24A3397-001	Anonymous	Beryllium, total	7440-41-7	E420	0.0378 mg/L	0.04 mg/L	94.6	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.00961 mg/L	0.01 mg/L	96.1	70.0	130	----
		Boron, total	7440-42-8	E420	0.087 mg/L	0.1 mg/L	86.6	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00391 mg/L	0.004 mg/L	97.8	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	4 mg/L	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.0103 mg/L	0.01 mg/L	103	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0392 mg/L	0.04 mg/L	98.0	70.0	130	----
		Cobalt, total	7440-48-4	E420	0.0190 mg/L	0.02 mg/L	95.1	70.0	130	----
		Copper, total	7440-50-8	E420	0.0176 mg/L	0.02 mg/L	88.2	70.0	130	----
		Iron, total	7439-89-6	E420	1.83 mg/L	2 mg/L	91.4	70.0	130	----
		Lead, total	7439-92-1	E420	0.0188 mg/L	0.02 mg/L	93.9	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0934 mg/L	0.1 mg/L	93.4	70.0	130	----
		Magnesium, total	7439-95-4	E420	ND mg/L	1 mg/L	ND	70.0	130	----
		Manganese, total	7439-96-5	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0203 mg/L	0.02 mg/L	102	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0376 mg/L	0.04 mg/L	93.9	70.0	130	----
		Phosphorus, total	7723-14-0	E420	10.2 mg/L	10 mg/L	102	70.0	130	----
		Potassium, total	7440-09-7	E420	ND mg/L	4 mg/L	ND	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0182 mg/L	0.02 mg/L	90.8	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0387 mg/L	0.04 mg/L	96.8	70.0	130	----
		Silicon, total	7440-21-3	E420	9.09 mg/L	10 mg/L	90.9	70.0	130	----
		Silver, total	7440-22-4	E420	0.00389 mg/L	0.004 mg/L	97.2	70.0	130	----
		Sodium, total	7440-23-5	E420	ND mg/L	2 mg/L	ND	70.0	130	----
		Strontium, total	7440-24-6	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Sulfur, total	7704-34-9	E420	ND mg/L	20 mg/L	ND	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.0391 mg/L	0.04 mg/L	97.8	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00369 mg/L	0.004 mg/L	92.3	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0195 mg/L	0.02 mg/L	97.6	70.0	130	----
		Tin, total	7440-31-5	E420	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0364 mg/L	0.04 mg/L	91.1	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0199 mg/L	0.02 mg/L	99.6	70.0	130	----
		Uranium, total	7440-61-1	E420	0.00386 mg/L	0.004 mg/L	96.6	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.0989 mg/L	0.1 mg/L	98.9	70.0	130	----
		Zinc, total	7440-66-6	E420	0.361 mg/L	0.4 mg/L	90.4	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0409 mg/L	0.04 mg/L	102	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
<b>Total Metals (QCLot: 1344987)</b>										
KS2400564-001	Anonymous	Mercury, total	7439-97-6	E508	0.000110 mg/L	0.0001 mg/L	110	70.0	130	----
<b>Dissolved Metals (QCLot: 1340732)</b>										
VA24A3395-002	Anonymous	Aluminum, dissolved	7429-90-5	E421	1.02 mg/L	1 mg/L	102	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.106 mg/L	0.1 mg/L	106	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.102 mg/L	0.1 mg/L	102	70.0	130	----
		Barium, dissolved	7440-39-3	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.194 mg/L	0.2 mg/L	96.9	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.0500 mg/L	0.05 mg/L	100	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.452 mg/L	0.5 mg/L	90.3	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.0200 mg/L	0.02 mg/L	99.9	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.0535 mg/L	0.05 mg/L	107	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.203 mg/L	0.2 mg/L	101	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.100 mg/L	0.1 mg/L	100	70.0	130	----
		Copper, dissolved	7440-50-8	E421	0.0951 mg/L	0.1 mg/L	95.1	70.0	130	----
		Iron, dissolved	7439-89-6	E421	ND mg/L	2 mg/L	ND	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0986 mg/L	0.1 mg/L	98.6	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.481 mg/L	0.5 mg/L	96.3	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.106 mg/L	0.1 mg/L	106	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.200 mg/L	0.2 mg/L	99.8	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	52.8 mg/L	50 mg/L	106	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.103 mg/L	0.1 mg/L	103	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	48.8 mg/L	50 mg/L	97.6	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.0116 mg/L	0.02 mg/L	58.1	70.0	130	MS-Ag
		Sodium, dissolved	7440-23-5	E421	ND mg/L	2 mg/L	ND	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	ND mg/L	20 mg/L	ND	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.210 mg/L	0.2 mg/L	105	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.0200 mg/L	0.02 mg/L	99.9	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.106 mg/L	0.1 mg/L	106	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.104 mg/L	0.1 mg/L	104	70.0	130	----





Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
<b>Dissolved Metals (QCLot: 1340732) - continued</b>										
VA24A3395-002	Anonymous	Titanium, dissolved	7440-32-6	E421	0.201 mg/L	0.2 mg/L	101	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.105 mg/L	0.1 mg/L	105	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.0209 mg/L	0.02 mg/L	104	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.514 mg/L	0.5 mg/L	103	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	1.97 mg/L	2 mg/L	98.7	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.211 mg/L	0.2 mg/L	106	70.0	130	----
<b>Dissolved Metals (QCLot: 1345443)</b>										
VA24A3391-002	Anonymous	Mercury, dissolved	7439-97-6	E509	0.000103 mg/L	0.0001 mg/L	103	70.0	130	----
<b>Speciated Metals (QCLot: 1341716)</b>										
VA24A3249-002	Anonymous	Chromium, hexavalent [Cr VI], dissolved	18540-29-9	E532A	0.274 mg/L	0.25 mg/L	109	70.0	130	----
<b>Speciated Metals (QCLot: 1345514)</b>										
VA24A3351-021	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.257 mg/L	0.25 mg/L	103	70.0	130	----

## Qualifiers

Qualifier

Description

MS-Ag *MS-Ag: Matrix Spike recovery for silver was marginally below DQO (40 to <60%) due to its instability in the sample matrix. Silver was not detected. Reported result (< LOR) is reliable*



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number: 17 -

Page 1 of

www.alsglobal.com

<b>Report To</b> Contact and company name below will appear on the final report		<b>Report Format / Distribution</b>		<b>Select Service Level Below - Contact your AM to confirm all E&amp;P TATs (surcharges may apply)</b>				
Company:	Triton Environmental	Select Report Format:	<input checked="" type="checkbox"/> PDF <input type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)	Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply				
Contact:		Quality Control (QC) Report with Report	<input type="checkbox"/> <input type="checkbox"/> NO	PRIORITY (Business Days)	4 day [P4-20%]	<input type="checkbox"/>	EMERGENCY 1 Business day [E1 - 100%]	
Phone:		Compare Results to Criteria on Report - provide details below if box			3 day [P3-25%]	<input type="checkbox"/>		Same Day, Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)]
Street:		Select Distribution:	<input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX		2 day [P2-50%]	<input type="checkbox"/>		
City/Province:	Vancouver/BC	mail 1 o		Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm				
Postal Code:	V6E 4M3	mail 2		For tests that can not be performed according to the service level selected, you will be contacted.				
Invoice To	Same as Report To <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	mail 3		<b>Analysis Request</b>				
Copy of Invoice with Report	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Email 3		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below				
Company:		Email 1 or Fax						
Contact:		Email 2						

<b>Project Information</b>		<b>Oil and Gas required tests (client use)</b>	
ALS Account # / Quote #:	VA23-TRIT100-012	AFE/Cost Center:	PO#
Job #:	11964	Major/Minor Code:	Routing Code:
PO / AFE:	11964 - Task 20 - Phase 3C-4C	Requisitioner:	
LSD:		Location:	


ALS Lab Work Order # (lab use only)	ALS Contact:	Can Dang	Sampler:	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below													SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Total metals + mercury	Dissolved metals + mercury	Total hexavalent chromium	Total trivalent chromium	TSS	TDS	Nutrients (ammonia, ammonium, total nitrogen, total phosphorus, TOC)	Total sulfide (as H <sub>2</sub> S), Unionized Sulfide	Anions scan (Br, Cl, F, NO <sub>2</sub> , NO <sub>3</sub> , SO <sub>4</sub> )	General parameters (alkalinity)	DOC	Dissolved hexavalent and trivalent chromium			
				SQU DS 1	R	R	R	R	R	R	R	R	R	R	R	R	R	N	12
				PH: 7.40 cond: 160 µS/cm temp: 4.8°C	R	R	R	R	R	R	R	R	R	R	R	R	R	N	12
				SQU US 1	R	R	R	R	R	R	R	R	R	R	R	R	R	N	12
				PH: 7.38 cond: 84 µS/cm temp: 4.8°C	R	R	R	R	R	R	R	R	R	R	R	R	R	N	12
				Duplicate	R	R	R	R	R	R	R	R	R	R	R	R	R	N	12
				Field Blank	R	R	R	R	R	R	R	R	R	R	R	R	R	N	12
				Trip Blank	R	R			R	R	R	R	R	R			N	9	

<b>Drinking Water (DW) Samples (client use)</b>		<b>Special Instructions / Specify Criteria to be met (elect)</b>		<b>SAMPLE CONDITION AS RECEIVED (lab use only)</b>			
Are samples taken from a Regulated DW System?	<input checked="" type="checkbox"/>	Triton Project # 11964	Received by: <i>PK</i>	Frozen	<input type="checkbox"/>	SIF Observations	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Are samples for human consumption/ use?	<input checked="" type="checkbox"/>			Ice Packs	<input checked="" type="checkbox"/> Ice Cubes <input type="checkbox"/>	Custody seal intact	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Are samples for human consumption/ use?	<input checked="" type="checkbox"/>			Cooling initiated	<input checked="" type="checkbox"/>	INITIAL COOLER TEMPERATURES °C	
BASE (client use)		Time: 20-Feb-24 14:30	Received by: <i>PK</i>	Date: 2/20/24		Time: 2:30pm	

Environmental Division  
Vancouver  
Work Order Reference  
**VA24A3416**

Telephone: +1 604 253 4186

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

 <b>Eagle Mountain - Woodfibre Gas Pipeline Project BC Rail Waste Discharge Approval AE-111824 Report</b>	Reporting Week	Feb 20 <sup>th</sup> to Feb 25 <sup>th</sup> , 2024
	Report #	12
	Appendix	B

## Receiving Environment Field Notes and Logs

<b>Project Component:</b>	Tunnel	<b>Site Name:</b>	Receiving Environment - Downstream of Discharge
<b>Inspection Date:</b>	02/20/2024	<b>Location:</b>	BC Rail Site
<b>Triton QP:</b>	Sam Blanchard	<b>Latitude/Longitude:</b>	49.725282 -123.165175
<b>Temperature(c):</b> Low 3 High 8		<b>Permit:</b>	AE 111824
<b>Weather Conditions:</b>	Light Rain	<b>Ground Conditions:</b>	Damp

**Observations**

**Time:** 12:08:55      **Flow Volume (visual):** low

**Notes:**

**Odour Detected?:** No      **Notes:**

**Unusual Colour?:** No      **Notes:**

**Unusual Observations?:** No      **Notes:**

**Sheen on Water?:** No      **Notes:**

**Samples Collected - Parameters**

<b>Total Metals + Mercury</b>	Yes	<b>General Parameters (Alkalinity)</b>	Yes	<b>Other Sample:</b> Chromium.
<b>Dissolved Metals + Mercury</b>	Yes	<b>Total Sulfide, Unionized Sulfide</b>	Yes	
<b>TSS</b>	Yes	<b>Anions</b>	Yes	<b>QA Samples:</b> Yes Chromium.
<b>TDS</b>	Yes	<b>VOC/VPH</b>	N/A	
<b>Nutrients</b>	Yes	<b>EPH, PAH, LEPH/HEPH</b>	N/A	
<b>DOC</b>	Yes	<b>Trout LC50</b>	N/A	

**Logger Maintenance**

<b>Logger Maintenance Performed?</b>	Yes	<b>Photo of COC with Lab Signature?</b>	Yes
--------------------------------------	-----	---	-----

**Describe Logger Maintenance**

Buoy added to logger.

Photos

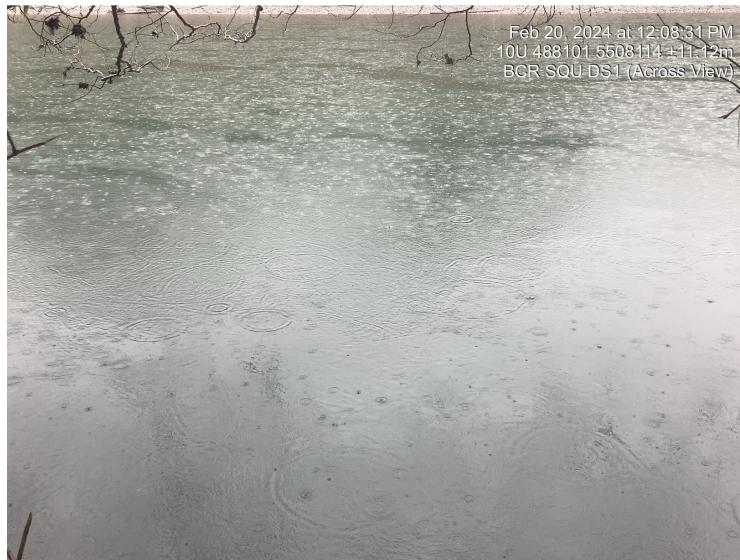


**Photo:** 1  
**Location:** SQU DS1  
**Description:** US View



**Photo:** 2  
**Location:** SQU DS1  
**Description:** DS View

**Photos**



**Photo:** 3  
**Location:** SQU DS1  
**Description:** Across View

**Sign Off****Report Prepared By:** Sam Blanchard**Report Reviewed:** Yes**Report Reviewer:** Miranda Lewis**Professional(s) of Record:** N/A**Name:****Designation:****Designation Number:**

<b>Project Component:</b>	Tunnel	<b>Site Name:</b>	Receiving Environment - Upstream of Discharge
<b>Inspection Date:</b>	02/20/2024	<b>Location:</b>	BC Rail Site
<b>Triton QP:</b>	Sam Blanchard	<b>Latitude/Longitude:</b>	49.726866 -123.163912
<b>Temperature(c):</b>	Low 3 High 8	<b>Permit:</b>	AE 111824
<b>Weather Conditions:</b>	Light Rain	<b>Ground Conditions:</b>	Damp

**Observations**

**Time:** 11:26:36      **Flow Volume (visual):** low

**Notes:**

**Odour Detected?:** No      **Notes:**

**Unusual Colour?:** No      **Notes:**

**Unusual Observations?:** No      **Notes:**

**Sheen on Water?:** No      **Notes:**

**Samples Collected - Parameters**

<b>Total Metals + Mercury</b>	Yes	<b>General Parameters (Alkalinity)</b>	Yes	<b>Other Sample:</b> Chromium.
<b>Dissolved Metals + Mercury</b>	Yes	<b>Total Sulfide, Unionized Sulfide</b>	Yes	
<b>TSS</b>	Yes	<b>Anions</b>	Yes	<b>QA Samples:</b> Yes Chromium.
<b>TDS</b>	Yes	<b>VOC/VPH</b>	N/A	
<b>Nutrients</b>	Yes	<b>EPH, PAH, LEPH/HEPH</b>	N/A	
<b>DOC</b>	Yes	<b>Trout LC50</b>	N/A	

**Logger Maintenance**

<b>Logger Maintenance Performed?</b>	Yes	<b>Photo of COC with Lab Signature?</b>	Yes
--------------------------------------	-----	---	-----

**Describe Logger Maintenance**

Buoy added to logger.



Photos



**Photo:** 1  
**Location:** SQU US1  
**Description:** US View



**Photo:** 2  
**Location:** SQU US1  
**Description:** DS View

**Photos**



**Photo:** 3  
**Location:** SQU US1  
**Description:** Across View

**Sign Off****Report Prepared By:** Sam Blanchard**Report Reviewed:** Yes**Report Reviewer:** Miranda Lewis**Professional(s) of Record:** N/A**Name:****Designation:****Designation Number:**