



**Eagle Mountain - Woodfibre Gas Pipeline Project
Waste Discharge Permit PE-110163 Report**

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BCER Waste Discharge Permit Weekly Report



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Appendix A: BC Rail Point of Discharge from Water Treatment System Documentation

Appendix B: BC Rail Receiving Environment Documentation

Appendix C: Woodfibre Point of Discharge from Water Treatment System Documentation

Appendix D: Woodfibre Receiving Environment Documentation

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Preamble

This weekly report for the British Columbia Energy Regulator (BCER) Waste Discharge Permit (BCER number PE-110163) for the FortisBC Eagle Mountain – Woodfibre Gas Pipeline (EGP) Project includes the results of water quality monitoring and sampling of the receiving environments (upstream and downstream) and points of discharge.

FortisBC has retained Triton Environmental Consultants Ltd. as the Qualified Professional to implement and oversee the monitoring and sampling program in the receiving environments. The data represented below, including laboratory reported exceedances, represent background conditions from the receiving environment sampling as shown on the Waste Discharge Permit.

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 Permit PE-110163 Section 4.2:

The Permittee 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 permit. 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 data 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 the subject permit, and also made publicly available on the FortisBC Eagle Mountain-Woodfibre Gas Pipeline Project | Talking Energy webpage.

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 Permit.

At the receiving environments, real time and daily readings are being monitored at the same time with one piece of equipment, allowing all the daily readings real time. Visible sheen will be monitored with visual inspections during times of discharge or sampling.

At the point of discharge from the WTP, the parameters are being monitored using field equipment and sondes/real time meters. Table 1 and Table 2 below show how each parameter is being monitored.


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Table 1. Monitor Details for the Point of Discharge from the Water Treatment System-BC Rail and Woodfibre

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 GF Dryloc pH Series NPT
	Temperature	Monitoring using LevelPro PT100 Temperature and Signet 2350 Temp sensor
	NTU	Monitoring using Observator NEP9504GPI
	Electrical Conductivity	Monitoring using ProCon C450
Weekly (or per batch) Lab Samples	List prescribed in permit	Lab samples

Table 2. Monitor Details for the Receiving Environment (upstream and downstream)-BC Rail and Woodfibre

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

*Note that Woodfibre receiving environment downstream sonde is not in place due to dry conditions

Summary-BC Rail Site

Site Activities

- One batch discharged during this reporting period on October 30th, 2024.
- Water produced by the water treatment plant is being recirculated for tunneling and to create grout for tunneling.

Point of Discharge from Water Treatment System Monitoring

Table 3 below includes information on water quality and lab sampling during discharges. Appendix A includes a full set of lab results with real time/field samples from discharges.



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Table 3: Discharge from Water Treatment System Information

Location	Date of Discharge	Date of Lab Sample (for the discharge)	Real Time Monitored	Field Samples Taken	Discharge Rate (batch)	Discharge Volume (batch)	Results
BCR	2024-10-30	2024-10-25	N/A-Batch	Yes for batch	200-300 GPM	56.12 m ³	Lab results attached

*Max discharge is 515 m3/day

Exceedances

No exceedances this reporting period.

Receiving Environment Monitoring

The receiving environment is being monitored as outlined in the permit.

Table 4: Upstream Monitoring Information

Location	Date of Lab Sample	Real Time Monitored	Results
Squamish River Upstream	2024-10-28	Yes *	Full set of lab sample results, photo and documentation are provided in Appendix B.

Table 5: Downstream Monitoring Information

	Date of Lab Sample	Real Time Monitored	Results
Squamish River Downstream	2023-10-28	Yes *	Full set of lab sample results, photo and documentation are provided in Appendix B.

* 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

- Visual sheen checks conducted for days of discharge.
- All receiving environment lab results are in Appendix B.
- Any 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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Summary-Woodfibre

Site Activities

- The lab results from October 29th had a short term exceedance in dissolved Zinc, the results from the week before and after showed no dissolved Zinc exceedance.
- No tunneling activities, water treatment plant is treating water from tunnel water ingress.

Point of Discharge from Water Treatment System Monitoring

Table 3 below includes information on the discharge water. Appendix C includes real time/field samples from the discharge.

Table 3: Discharges from Water Treatment System

Location	Date of Discharge	Real Time Monitored and Daily Monitoring	Discharge Volume
Woodfibre	2024-10-28	Yes-Appendix C	391m ³
Woodfibre	2024-10-29	Yes-Appendix C*lab sample day	350m ³
Woodfibre	2024-10-30	Yes-Appendix C	326 m ³
Woodfibre	2024-10-31	Yes-Appendix C	319m ³
Woodfibre	2024-11-01	Yes-Appendix C	304m ³
Woodfibre	2024-11-02	Yes-Appendix C	317m ³
Woodfibre	2024-11-03	Yes-Appendix C	301m ³

*Max discharge is 1500m³/day

Exceedances

See above.

Receiving Environment Monitoring


The receiving environment is being monitored as outlined in the permit with additional oversight by the QP.

Table 4: Upstream Monitoring Information

Location	Date of Lab Sample	Real Time Monitored	Results
Woodfibre Upstream	2024-10-29	Yes *	Full set of lab sample results, photo and documentation are provided in Appendix D.

Table 5: Downstream Monitoring Information

	Date of Lab Sample	Real Time Monitored	Results
Woodfibre Downstream	2024-10-29	Yes *	Full set of lab sample results, photo and documentation are provided in Appendix D.

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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

- Visual sheen checks are conducted during discharges.
- Recorded exceedances in the laboratory and field samples collected from the receiving environment (upstream and downstream) may be indicative of the existing background water quality in the East Creek and are not related to the EGP Project activities.



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Appendix A: BCR Site Point of Discharge from Water Treatment Plant Documentation



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BCR Site Batch Sample Analysis


		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	BC Rail Batch Water Discharge Report	Revision:	0
Data	October 30th	Prepared by: Date:	SD October 31st

Table of Contents:

1. Executive Summary and Notes
2. Discharge Lab's results
3. Photos

Executive Summary and Field Notes:

On October 30th, FKM initiated a new batch discharge at the BC Rail site. The discharge began at 01:38 PM and concluded at 03:08. Total volume of discharge water was 56.12 m³, with an average flow rate ranging between 200 to 350 GPM.

Table 1: Discharge details

Date	Time	Flow Rate (GPM)	Volume (m ³)	Duration
30-Oct-2024	13:38	200-300	56.12	1 Hour and 30 Minutes

Table 3: In-Situ Sample

Date	Time	pH	Temperature (°C)	DO (mg/L)	NTU	Conductivity (µS/cm)	ORP (mV)	Salinity (ppt)	Visible sheen
10/18/2024	01:36:12 PM	7.36	11.0	8.70	2.22	329.3	198.0	0.16	No



Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope

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Discharge Sample results:

Table 3: Lab Sample

Client Sample ID			WTP 2
Date Sampled			25-Oct-2024
Time Sampled			09:00
ALS Sample ID			VA24C8769-001
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water
Field Tests (Matrix: Water)			
Temperature, field	0.10	°C	13.0
pH, field	0.10	pH units	7.30
Physical Tests (Matrix: Water)			
Conductivity	2.0	µS/cm	483
Alkalinity, bicarbonate (as CaCO ₃)	2.0	mg/L	61.9
Alkalinity, carbonate (as CaCO ₃)	2.0	mg/L	<2.0
Alkalinity, hydroxide (as CaCO ₃)	2.0	mg/L	<2.0
Alkalinity, phenolphthalein (as CaCO ₃)	2.0	mg/L	<2.0
Alkalinity, total (as CaCO ₃)	2.0	mg/L	61.9
Hardness (as CaCO ₃), dissolved	0.60	mg/L	0.95
Hardness (as CaCO ₃), from total Ca/Mg	0.60	mg/L	0.97
Oxidation-reduction potential [ORP]	0.10	mV	245
Solids, total dissolved [TDS]	10	mg/L	340
Solids, total suspended [TSS]	3.0	mg/L	<3.0
Turbidity	0.10	NTU	0.56
pH	0.10	pH units	7.30
Anions and Nutrients (Matrix: Water)			
Ammonia, total (as N)	0.0050	mg/L	0.0875
Bromide	0.050	mg/L	<0.050
Chloride	0.50	mg/L	21.8
Fluoride	0.020	mg/L	0.242
Nitrate (as N)	0.0050	mg/L	0.522
Nitrite (as N)	0.0010	mg/L	0.0222



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Nitrogen, total	0.030	mg/L	1.80
Phosphorus, total	0.0020	mg/L	0.0240
Sulfate (as SO ₄)	0.30	mg/L	129
Ammonium (as NH ₄), field	0.0010	mg/L	0.112
Organic / Inorganic Carbon (Matrix: Water)			
Carbon, dissolved organic [DOC]	0.50	mg/L	7.57
Carbon, total organic [TOC]	0.50	mg/L	7.51
Total Metals (Matrix: Water)			
Aluminum, total	0.0030	mg/L	<0.0030
Antimony, total	0.00010	mg/L	0.00140
Arsenic, total	0.00010	mg/L	0.00216
Barium, total	0.00010	mg/L	0.00031
Beryllium, total	0.000100	mg/L	<0.000100
Bismuth, total	0.000050	mg/L	<0.000050
Boron, total	0.010	mg/L	0.033
Cadmium, total	0.0000050	mg/L	<0.0000650
Calcium, total	0.050	mg/L	0.254
Cesium, total	0.000010	mg/L	0.00473
Chromium, total	0.00050	mg/L	0.0391
Cobalt, total	0.00010	mg/L	0.00013
Copper, total	0.00050	mg/L	0.00182
Iron, total	0.010	mg/L	<0.010
Lead, total	0.000050	mg/L	0.000053
Lithium, total	0.0010	mg/L	0.0213
Magnesium, total	0.0050	mg/L	0.0813
Manganese, total	0.00010	mg/L	0.00021
Mercury, total	0.0000050	mg/L	<0.0000050
Molybdenum, total	0.000050	mg/L	0.386
Nickel, total	0.00050	mg/L	<0.00050
Phosphorus, total	0.050	mg/L	<0.050
Potassium, total	0.050	mg/L	31.0
Rubidium, total	0.00020	mg/L	0.106
Selenium, total	0.000050	mg/L	0.00268
Silicon, total	0.10	mg/L	9.72
Silver, total	0.000010	mg/L	<0.000010



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Sodium, total	0.050	mg/L	86.8
Strontium, total	0.00020	mg/L	0.00450
Sulfur, total	0.50	mg/L	47.0
Tellurium, total	0.00020	mg/L	<0.00020
Thallium, total	0.000010	mg/L	<0.000010
Thorium, total	0.00010	mg/L	<0.00010
Tin, total	0.00010	mg/L	<0.00010
Titanium, total	0.00030	mg/L	<0.00060
Tungsten, total	0.00010	mg/L	0.00096
Uranium, total	0.000010	mg/L	<0.000010
Vanadium, total	0.00050	mg/L	0.00102
Zinc, total	0.0030	mg/L	<0.0030
Zirconium, total	0.00020	mg/L	<0.00020
Dissolved Metals (Matrix: Water)			
Aluminum, dissolved	0.0010	mg/L	<0.0010
Antimony, dissolved	0.00010	mg/L	0.00127
Arsenic, dissolved	0.00010	mg/L	0.00195
Barium, dissolved	0.00010	mg/L	0.00028
Beryllium, dissolved	0.000100	mg/L	<0.000100
Bismuth, dissolved	0.000050	mg/L	<0.000050
Boron, dissolved	0.010	mg/L	0.033
Cadmium, dissolved	0.0000050	mg/L	<0.0000500
Calcium, dissolved	0.050	mg/L	0.248
Cesium, dissolved	0.000010	mg/L	0.00435
Chromium, dissolved	0.00050	mg/L	0.0353
Cobalt, dissolved	0.00010	mg/L	0.00011
Copper, dissolved	0.00020	mg/L	0.00164
Iron, dissolved	0.010	mg/L	<0.010
Lead, dissolved	0.000050	mg/L	<0.000050
Lithium, dissolved	0.0010	mg/L	0.0231
Magnesium, dissolved	0.0050	mg/L	0.0794
Manganese, dissolved	0.00010	mg/L	0.00019
Mercury, dissolved	0.0000050	mg/L	<0.0000050
Molybdenum, dissolved	0.000050	mg/L	0.351
Nickel, dissolved	0.00050	mg/L	<0.00050
Phosphorus, dissolved	0.050	mg/L	<0.050



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Potassium, dissolved	0.050	mg/L	33.7
Rubidium, dissolved	0.00020	mg/L	0.100
Selenium, dissolved	0.000050	mg/L	0.00259
Silicon, dissolved	0.050	mg/L	9.46
Silver, dissolved	0.000010	mg/L	<0.000010
Sodium, dissolved	0.050	mg/L	81.7
Strontium, dissolved	0.00020	mg/L	0.00423
Sulfur, dissolved	0.50	mg/L	44.6
Tellurium, dissolved	0.00020	mg/L	<0.00020
Thallium, dissolved	0.000010	mg/L	<0.000010
Thorium, dissolved	0.00010	mg/L	<0.00010
Tin, dissolved	0.00010	mg/L	<0.00010
Titanium, dissolved	0.00030	mg/L	<0.00060
Tungsten, dissolved	0.00010	mg/L	0.00094
Uranium, dissolved	0.000010	mg/L	<0.000010
Vanadium, dissolved	0.00050	mg/L	0.00094
Zinc, dissolved	0.0010	mg/L	0.0020
Zirconium, dissolved	0.00020	mg/L	<0.00020
Dissolved mercury filtration location			Laboratory
Dissolved metals filtration location			Laboratory
Aggregate Organics (Matrix: Water)			
Phenols, total (4AAP)	0.0010	mg/L	<0.0010
Volatile Organic Compounds (Matrix: Water)			
Chlorobenzene	0.50	µg/L	<0.50
Chloromethane	5.0	µg/L	<5.0
Dichlorobenzene, 1,2-	0.50	µg/L	<0.50
Dichlorobenzene, 1,3-	0.50	µg/L	<0.50
Dichlorobenzene, 1,4-	0.50	µg/L	<0.50
Dichloropropane, 1,2-	0.50	µg/L	<0.50
Dichloropropylene, cis+trans-1,3-	0.75	µg/L	<0.75
Dichloropropylene, cis-1,3-	0.50	µg/L	<0.50
Tetrachloroethane, 1,1,1,2-	0.50	µg/L	<0.50
Tetrachloroethane, 1,1,2,2-	0.20	µg/L	<0.20
Trichloroethane, 1,1,2-	0.50	µg/L	<0.50
Trichlorofluoromethane	0.50	µg/L	<0.50



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Volatile Organic Compounds [Drycleaning] (Matrix: Water)			
Carbon tetrachloride	0.50	µg/L	<0.50
Chloroethane	0.50	µg/L	<0.50
Dichloroethane, 1,1-	0.50	µg/L	<0.50
Dichloroethane, 1,2-	0.50	µg/L	<0.50
Dichloroethylene, 1,1-	0.50	µg/L	<0.50
Dichloroethylene, cis-1,2-	0.50	µg/L	<0.50
Dichloroethylene, trans-1,2-	0.50	µg/L	<0.50
Dichloromethane	1.0	µg/L	<1.0
Dichloropropylene, trans-1,3-	0.50	µg/L	<0.50
Tetrachloroethylene	0.50	µg/L	<0.50
Trichloroethane, 1,1,1-	0.50	µg/L	<0.50
Trichloroethylene	0.50	µg/L	<0.50
Vinyl chloride	0.40	µg/L	<0.40
Volatile Organic Compounds [Fuels] (Matrix: Water)			
Benzene	0.50	µg/L	<0.50
Ethylbenzene	0.50	µg/L	<0.50
Methyl-tert-butyl ether [MTBE]	0.50	µg/L	<0.50
Styrene	0.50	µg/L	<0.50
Toluene	0.40	µg/L	<0.40
Xylene, m+p-	0.40	µg/L	<0.40
Xylene, o-	0.30	µg/L	<0.30
Xylenes, total	0.50	µg/L	<0.50
Volatile Organic Compounds [THMs] (Matrix: Water)			
Bromodichloromethane	0.50	µg/L	<0.50
Bromoform	0.50	µg/L	<0.50
Chloroform	0.50	µg/L	<0.50
Dibromochloromethane	0.50	µg/L	<0.50
Hydrocarbons (Matrix: Water)			
EPH (C10-C19)	250	µg/L	<250
EPH (C19-C32)	250	µg/L	<250
LEPHw	250	µg/L	<250

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HEPHw	250	µg/L	<250
Hydrocarbons Surrogates (Matrix: Water)			
Bromobenzotrifluoride, 2- (EPH surrogate)	1.0	%	94.9
Volatile Organic Compounds Surrogates (Matrix: Water)			
Bromofluorobenzene, 4-	1.0	%	105
Difluorobenzene, 1,4-	1.0	%	105
Polycyclic Aromatic Hydrocarbons (Matrix: Water)			
Acenaphthene	0.010	µg/L	<0.010
Acenaphthylene	0.010	µg/L	<0.010
Acridine	0.010	µg/L	<0.010
Anthracene	0.010	µg/L	<0.010
Benz(a)anthracene	0.010	µg/L	<0.010
Benzo(a)pyrene	0.0050	µg/L	<0.0050
Benzo(b+j)fluoranthene	0.010	µg/L	<0.010
Benzo(b+j+k)fluoranthene	0.015	µg/L	<0.015
Benzo(g,h,i)perylene	0.010	µg/L	<0.010
Benzo(k)fluoranthene	0.010	µg/L	<0.010
Chrysene	0.010	µg/L	<0.010
Dibenz(a,h)anthracene	0.0050	µg/L	<0.0050
Fluoranthene	0.010	µg/L	<0.010
Fluorene	0.010	µg/L	<0.010
Indeno(1,2,3-c,d)pyrene	0.010	µg/L	<0.010
Methylnaphthalene, 1-	0.010	µg/L	<0.010
Methylnaphthalene, 2-	0.010	µg/L	<0.010
Naphthalene	0.050	µg/L	<0.050
Phenanthrene	0.020	µg/L	<0.020
Pyrene	0.010	µg/L	<0.010
Quinoline	0.050	µg/L	<0.160
Polycyclic Aromatic Hydrocarbons Surrogates (Matrix: Water)			
Chrysene-d12	0.1	%	107
Naphthalene-d8	0.1	%	103
Phenanthrene-d10	0.1	%	102

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Glycols (Matrix: Water)			
Diethylene glycol	5.0	mg/L	<5.0
Ethylene glycol	5.0	mg/L	<5.0
Propylene glycol, 1,2-	5.0	mg/L	<5.0
Triethylene glycol	5.0	mg/L	<5.0
Glycols, total (EG+DEG+PG)	10	mg/L	<10

Photo:





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**BCR Site Batch Sample Lab Documentation
No Discharges**



www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

COC Number: 20 - 969587

Canada Toll Free: 1 800 668 9878

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Report To Contact and company name below will appear on the final report		Reports / Recipients			Turnaround Time (TAT) Requested			AFFIX ALS BARCODE LABEL HERE (ALS use only)
Company: FKM		Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)			<input type="checkbox"/> Routine [R] if received by 3pm M-F - no surcharges apply <input type="checkbox"/> 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum <input type="checkbox"/> 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum <input type="checkbox"/> 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum <input checked="" type="checkbox"/> 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum <input checked="" type="checkbox"/> Same day [E2] if received by 10am M-S - 200% rush surcharge. Additional fees may apply to rush requests on weekends, statutory holidays and non-routine tests			
Contact: Sara Derakhshi		Merge QC/QCI Reports with COA <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A						
Phone: 514 891 2993		<input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked						
Company address below will appear on the final report		Select Distribution: <input type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm am/pm			
Street:		Email 1 or Fax: Sara.Derakhshi@MichelsCanada.ca			For all tests with rush TATs requested, please contact your AM to confirm availability.			
City/Province:		Email 2: Brad.clarke@MichelsCanada.com			Analysis Request			
Postal Code:		Email 3:						
Invoice To		Invoice Recipients			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below			
Same as Report To <input type="checkbox"/> YES <input type="checkbox"/> NO		Select Invoice Distribution: <input type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX						
Copy of invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO		Email 1 or Fax:			NUMBER OF CONTAINERS			
		Email 2:						
Company:		Email 2:			physical test			
Contact:		Oil and Gas Required Fields (client use)						
Project Information		AFE/Cost Center:			Total metals			
ALS Account # / Quote #: EGP 150		PO#:						
Job #:		Major/Minor Code:			dissolved metals			
PO / AFE:		Routing Code:						
LSD: BC Rail		Requisitioner:			phenols			
ALS Lab Work Order # (ALS use only):		Location:						
ALS Contact:		Sampler:			glycols			
ALS Sample # (ALS use only):		Date (dd-mmm-yy):						
Sample Identification and/or Coordinates (This description will appear on the report):		Time (hh:mm):			Anions nutrients			
Sample Type:		Sample Type:						
WTP 2		25 Oct 24			Hydrocarbon			
					VOC			
					ORGANICS			
					PAH, VPH, EPA			
					SAMPLES ON HOLD			
					EXTENDED STORAGE REQUIRED			
					SUSPECTED HAZARD (see notes)			
Drinking Water (DW) Samples¹ (client use)		by selecting from drop-down below (only)			SAMPLE RECEIPT DETAILS (ALS use only)			
Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input type="checkbox"/> NO		Cooling Method: <input checked="" type="checkbox"/> NONE <input type="checkbox"/> ICE <input type="checkbox"/> ICE PACKS <input type="checkbox"/> FROZEN <input type="checkbox"/> COOLING INITIATED						
Are samples for human consumption/ use? <input type="checkbox"/> YES <input type="checkbox"/> NO		Submission Comments identified on Sample Receipt Notification: <input type="checkbox"/> YES <input type="checkbox"/> NO			Cooler Custody Seals Intact: <input type="checkbox"/> YES <input type="checkbox"/> N/A Sample Custody Seals Intact: <input type="checkbox"/> YES <input type="checkbox"/> N/A			
		INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C			
					16			
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (ALS use only)			FINAL SHIPMENT RECEPTION (ALS use only)			
Released by: Sara Derakhshi		Received by:			Received by: CW			
Date: 25 Oct 2024		Date:			Date: Oct 28			
Time:		Time:			Time: 1145			



REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

AUG 2023 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

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

CERTIFICATE OF ANALYSIS

Work Order	: VA24C8769	Laboratory	: ALS Environmental - Vancouver
Amendment	: 1	Account Manager	: Thomas Chang
Client	: Frontier-Kemper Michels Joint Venture	Address	: 8081 Lougheed Highway Burnaby BC Canada V5A 1W9
Contact	: Sara Derakhshi	Telephone	: +1 604 253 4188
Address	: 404-850 Harbourside Drive North Vancouver British Columbia Canada V7P 0A3	Date Samples Received	: 25-Oct-2024 11:45
Telephone	: ----	Date Analysis Commenced	: 25-Oct-2024
Project	: ----	Issue Date	: 30-Oct-2024 16:53
PO	: BC Rail		
C-O-C number	: 20-969587		
Sampler	: ----		
Site	: ----		
Quote number	: WTP Discharge		
No. of samples received	: 1		
No. of samples analysed	: 1		

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
- Surrogate Control Limits

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>
Angela Ren	Team Leader - Metals	Metals, Burnaby, British Columbia
Brooke Miller	Laboratory Analyst	Inorganics, Edmonton, Alberta
Dan Gebert	Laboratory Analyst	Metals, Burnaby, British Columbia
Janice Leung	Supervisor - Organics Instrumentation	Organics, Burnaby, British Columbia
Kate Dimitrova	Supervisor - Inorganic	Inorganics, Burnaby, British Columbia
Monica Ko	Lab Assistant	Inorganics, Burnaby, British Columbia
Paul Cushing	Team Leader - Organics	Organics, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Organics, Burnaby, British Columbia
Thomas Chang	Account Manager	Administration, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Inorganics, Burnaby, British Columbia
Wingyee Cheng	Analyst- General	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>
mg/L	milligrams per litre
µg/L	micrograms per litre
°C	degrees celsius
pH units	pH units
µS/cm	microsiemens per centimetre
NTU	nephelometric turbidity units
mV	millivolts
-	no 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.

Workorder Comments

Amendment (30/10/2024): This report has been amended and re-released to allow the reporting of additional analytical data.

Sample Comments

<i>Sample</i>	<i>Client Id</i>	<i>Comment</i>
VA24C8769-001	WTP 2	Water sample(s) for total mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low.



VA24C8769-001

WTP 2

Sample(s) VA24C8769-1: Water sample for VOC analysis contained > 5% headspace. Results may be biased low.

Qualifiers

<u>Qualifier</u>	<u>Description</u>
DLCI	Detection Limit Raised: Chromatographic interference due to co-elution.
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	WTP 2	----	----	----	----
					Client sampling date / time	25-Oct-2024 09:00	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C8769-001	----	----	----	----	----
						Result	----	----	----	----
Field Tests										
pH, field	----	EF001/VA	0.10	pH units	7.30	----	----	----	----	----
Temperature, field	----	EF001/VA	0.10	°C	13.0	----	----	----	----	----
Physical Tests										
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	2.0	mg/L	61.9	----	----	----	----	----
Alkalinity, carbonate (as CaCO3)	----	E290/VA	2.0	mg/L	<2.0	----	----	----	----	----
Alkalinity, hydroxide (as CaCO3)	----	E290/VA	2.0	mg/L	<2.0	----	----	----	----	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290/VA	2.0	mg/L	<2.0	----	----	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	2.0	mg/L	61.9	----	----	----	----	----
Conductivity	----	E100/VA	2.0	µS/cm	483	----	----	----	----	----
Hardness (as CaCO3), dissolved	----	EC100/VA	0.60	mg/L	0.95	----	----	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L	0.97	----	----	----	----	----
Oxidation-reduction potential [ORP]	----	E125/VA	0.10	mV	245	----	----	----	----	----
pH	----	E108/VA	0.10	pH units	7.30	----	----	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	340	----	----	----	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	----	----	----	----	----
Turbidity	----	E121/VA	0.10	NTU	0.56	----	----	----	----	----
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	0.0875	----	----	----	----	----
Ammonium (as NH4), field	14798-03-9	EC298A/VA	0.0010	mg/L	0.112	----	----	----	----	----
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	<0.050	----	----	----	----	----
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	21.8	----	----	----	----	----



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	WTP 2	----	----	----	----
					Client sampling date / time	25-Oct-2024 09:00	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C8769-001	----	----	----	----	----
						Result	----	----	----	----
Anions and Nutrients										
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.242	----	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L	0.522	----	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L	0.0222	----	----	----	----	----
Nitrogen, total	7727-37-9	E366/VA	0.030	mg/L	1.80	----	----	----	----	----
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L	0.0240	----	----	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	129	----	----	----	----	----
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L	7.57	----	----	----	----	----
Carbon, total organic [TOC]	----	E355-L/VA	0.50	mg/L	7.51	----	----	----	----	----
Total Metals										
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L	<0.0030	----	----	----	----	----
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L	0.00140	----	----	----	----	----
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L	0.00216	----	----	----	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L	0.00031	----	----	----	----	----
Beryllium, total	7440-41-7	E420/VA	0.000100	mg/L	<0.000100	----	----	----	----	----
Bismuth, total	7440-69-9	E420/VA	0.000050	mg/L	<0.000050	----	----	----	----	----
Boron, total	7440-42-8	E420/VA	0.010	mg/L	0.033	----	----	----	----	----
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L	<0.0000650 ^{DLM}	----	----	----	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L	0.254	----	----	----	----	----
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L	0.00473	----	----	----	----	----
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L	0.0391	----	----	----	----	----



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	WTP 2	----	----	----	----
					Client sampling date / time	25-Oct-2024 09:00	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C8769-001	----	----	----	----	----
						Result	----	----	----	----
Total Metals										
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L	0.00013	----	----	----	----	----
Copper, total	7440-50-8	E420/VA	0.00050	mg/L	0.00182	----	----	----	----	----
Iron, total	7439-89-6	E420/VA	0.010	mg/L	<0.010	----	----	----	----	----
Lead, total	7439-92-1	E420/VA	0.000050	mg/L	0.000053	----	----	----	----	----
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L	0.0213	----	----	----	----	----
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L	0.0813	----	----	----	----	----
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L	0.00021	----	----	----	----	----
Mercury, total	7439-97-6	E508/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L	0.386	----	----	----	----	----
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L	<0.00050	----	----	----	----	----
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L	<0.050	----	----	----	----	----
Potassium, total	7440-09-7	E420/VA	0.050	mg/L	31.0	----	----	----	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L	0.106	----	----	----	----	----
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L	0.00268	----	----	----	----	----
Silicon, total	7440-21-3	E420/VA	0.10	mg/L	9.72	----	----	----	----	----
Silver, total	7440-22-4	E420/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Sodium, total	7440-23-5	E420/VA	0.050	mg/L	86.8	----	----	----	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L	0.00450	----	----	----	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L	47.0	----	----	----	----	----
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L	<0.00020	----	----	----	----	----
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L	<0.000010	----	----	----	----	----



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	WTP 2	----	----	----	----
					Client sampling date / time	25-Oct-2024 09:00	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C8769-001	----	----	----	----	
						Result	----	----	----	----
Total Metals										
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L	<0.00010	----	----	----	----	
Tin, total	7440-31-5	E420/VA	0.00010	mg/L	<0.00010	----	----	----	----	
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L	<0.00060 ^{DLM}	----	----	----	----	
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L	0.00096	----	----	----	----	
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L	<0.000010	----	----	----	----	
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L	0.00102	----	----	----	----	
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L	<0.0030	----	----	----	----	
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L	<0.00020	----	----	----	----	
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L	<0.0010	----	----	----	----	
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L	0.00127	----	----	----	----	
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L	0.00195	----	----	----	----	
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L	0.00028	----	----	----	----	
Beryllium, dissolved	7440-41-7	E421/VA	0.000100	mg/L	<0.000100	----	----	----	----	
Bismuth, dissolved	7440-69-9	E421/VA	0.000050	mg/L	<0.000050	----	----	----	----	
Boron, dissolved	7440-42-8	E421/VA	0.010	mg/L	0.033	----	----	----	----	
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L	<0.0000500 ^{DLM}	----	----	----	----	
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L	0.248	----	----	----	----	
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L	0.00435	----	----	----	----	
Chromium, dissolved	7440-47-3	E421/VA	0.00050	mg/L	0.0353	----	----	----	----	
Cobalt, dissolved	7440-48-4	E421/VA	0.00010	mg/L	0.00011	----	----	----	----	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	WTP 2	----	----	----	----
					Client sampling date / time	25-Oct-2024 09:00	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C8769-001	----	----	----	----	----
						Result	----	----	----	----
Dissolved Metals										
Copper, dissolved	7440-50-8	E421/VA	0.00020	mg/L	0.00164	----	----	----	----	----
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L	<0.010	----	----	----	----	----
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L	<0.000050	----	----	----	----	----
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L	0.0231	----	----	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L	0.0794	----	----	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L	0.00019	----	----	----	----	----
Mercury, dissolved	7439-97-6	E509/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L	0.351	----	----	----	----	----
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L	<0.00050	----	----	----	----	----
Phosphorus, dissolved	7723-14-0	E421/VA	0.050	mg/L	<0.050	----	----	----	----	----
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L	33.7	----	----	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L	0.100	----	----	----	----	----
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L	0.00259	----	----	----	----	----
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L	9.46	----	----	----	----	----
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L	81.7	----	----	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L	0.00423	----	----	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L	44.6	----	----	----	----	----
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L	<0.00020	----	----	----	----	----
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Thorium, dissolved	7440-29-1	E421/VA	0.00010	mg/L	<0.00010	----	----	----	----	----



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	WTP 2	----	----	----	----
					Client sampling date / time	25-Oct-2024 09:00	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C8769-001	----	----	----	----	----
						Result	----	----	----	----
Dissolved Metals										
Tin, dissolved	7440-31-5	E421/VA	0.00010	mg/L	<0.00010	----	----	----	----	----
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L	<0.00060 ^{DLM}	----	----	----	----	----
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L	0.00094	----	----	----	----	----
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L	0.00094	----	----	----	----	----
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L	0.0020	----	----	----	----	----
Zirconium, dissolved	7440-67-7	E421/VA	0.00020	mg/L	<0.00020	----	----	----	----	----
Dissolved mercury filtration location	----	EP509/VA	-	-	Laboratory	----	----	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	-	Laboratory	----	----	----	----	----
Aggregate Organics										
Phenols, total (4AAP)	----	E562/EO	0.0010	mg/L	<0.0010	----	----	----	----	----
Volatile Organic Compounds										
Chlorobenzene	108-90-7	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	----
Chloromethane	74-87-3	E611C/VA	5.0	µg/L	<5.0	----	----	----	----	----
Dichlorobenzene, 1,2-	95-50-1	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	----
Dichlorobenzene, 1,3-	541-73-1	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	----
Dichlorobenzene, 1,4-	106-46-7	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	----
Dichloropropane, 1,2-	78-87-5	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	----
Dichloropropylene, cis-1,3-	10061-01-5	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	----
Dichloropropylene, cis+trans-1,3-	542-75-6	E611C/VA	0.75	µg/L	<0.75	----	----	----	----	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	----



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	WTP 2	----	----	----	----
					Client sampling date / time	25-Oct-2024 09:00	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C8769-001	----	----	----	----	----
						Result	----	----	----	----
Volatile Organic Compounds										
Tetrachloroethane, 1,1,2,2-	79-34-5	E611CVA	0.20	µg/L	<0.20	----	----	----	----	----
Trichloroethane, 1,1,2-	79-00-5	E611CVA	0.50	µg/L	<0.50	----	----	----	----	----
Trichlorofluoromethane	75-69-4	E611CVA	0.50	µg/L	<0.50	----	----	----	----	----
Volatile Organic Compounds [Drycleaning]										
Carbon tetrachloride	56-23-5	E611CVA	0.50	µg/L	<0.50	----	----	----	----	----
Chloroethane	75-00-3	E611CVA	0.50	µg/L	<0.50	----	----	----	----	----
Dichloroethane, 1,1-	75-34-3	E611CVA	0.50	µg/L	<0.50	----	----	----	----	----
Dichloroethane, 1,2-	107-06-2	E611CVA	0.50	µg/L	<0.50	----	----	----	----	----
Dichloroethylene, 1,1-	75-35-4	E611CVA	0.50	µg/L	<0.50	----	----	----	----	----
Dichloroethylene, cis-1,2-	156-59-2	E611CVA	0.50	µg/L	<0.50	----	----	----	----	----
Dichloroethylene, trans-1,2-	156-60-5	E611CVA	0.50	µg/L	<0.50	----	----	----	----	----
Dichloromethane	75-09-2	E611CVA	1.0	µg/L	<1.0	----	----	----	----	----
Dichloropropylene, trans-1,3-	10061-02-6	E611CVA	0.50	µg/L	<0.50	----	----	----	----	----
Tetrachloroethylene	127-18-4	E611CVA	0.50	µg/L	<0.50	----	----	----	----	----
Trichloroethane, 1,1,1-	71-55-6	E611CVA	0.50	µg/L	<0.50	----	----	----	----	----
Trichloroethylene	79-01-6	E611CVA	0.50	µg/L	<0.50	----	----	----	----	----
Vinyl chloride	75-01-4	E611CVA	0.40	µg/L	<0.40	----	----	----	----	----
Volatile Organic Compounds [Fuels]										
Benzene	71-43-2	E611CVA	0.50	µg/L	<0.50	----	----	----	----	----
Ethylbenzene	100-41-4	E611CVA	0.50	µg/L	<0.50	----	----	----	----	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611CVA	0.50	µg/L	<0.50	----	----	----	----	----



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	WTP 2	----	----	----	----
					Client sampling date / time	25-Oct-2024 09:00	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C8769-001	----	----	----	----	----
						Result	----	----	----	----
Volatile Organic Compounds [Fuels]										
Styrene	100-42-5	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	----
Toluene	108-88-3	E611C/VA	0.40	µg/L	<0.40	----	----	----	----	----
Xylene, m+p-	179601-23-1	E611C/VA	0.40	µg/L	<0.40	----	----	----	----	----
Xylene, o-	95-47-6	E611C/VA	0.30	µg/L	<0.30	----	----	----	----	----
Xylenes, total	1330-20-7	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	----
Volatile Organic Compounds [THMs]										
Bromodichloromethane	75-27-4	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	----
Bromoform	75-25-2	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	----
Chloroform	67-66-3	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	----
Dibromochloromethane	124-48-1	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	----
Hydrocarbons										
EPH (C10-C19)	----	E601A/VA	250	µg/L	<250	----	----	----	----	----
EPH (C19-C32)	----	E601A/VA	250	µg/L	<250	----	----	----	----	----
HEPHw	----	EC600A/VA	250	µg/L	<250	----	----	----	----	----
LEPHw	----	EC600A/VA	250	µg/L	<250	----	----	----	----	----
Hydrocarbons Surrogates										
Bromobenzotrifluoride, 2- (EPH surrogate)	392-83-6	E601A/VA	1.0	%	94.9	----	----	----	----	----
Volatile Organic Compounds Surrogates										
Bromofluorobenzene, 4-	460-00-4	E611C/VA	1.0	%	105	----	----	----	----	----
Difluorobenzene, 1,4-	540-36-3	E611C/VA	1.0	%	105	----	----	----	----	----



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	WTP 2	----	----	----	----
					Client sampling date / time	25-Oct-2024 09:00	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C8769-001	----	----	----	----	----
						Result	----	----	----	----
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	83-32-9	E641A/VA	0.010	µg/L	<0.010	----	----	----	----	----
Acenaphthylene	208-96-8	E641A/VA	0.010	µg/L	<0.010	----	----	----	----	----
Acridine	260-94-6	E641A/VA	0.010	µg/L	<0.010	----	----	----	----	----
Anthracene	120-12-7	E641A/VA	0.010	µg/L	<0.010	----	----	----	----	----
Benz(a)anthracene	56-55-3	E641A/VA	0.010	µg/L	<0.010	----	----	----	----	----
Benzo(a)pyrene	50-32-8	E641A/VA	0.0050	µg/L	<0.0050	----	----	----	----	----
Benzo(b+j)fluoranthene	n/a	E641A/VA	0.010	µg/L	<0.010	----	----	----	----	----
Benzo(b+j+k)fluoranthene	n/a	E641A/VA	0.015	µg/L	<0.015	----	----	----	----	----
Benzo(g,h,i)perylene	191-24-2	E641A/VA	0.010	µg/L	<0.010	----	----	----	----	----
Benzo(k)fluoranthene	207-08-9	E641A/VA	0.010	µg/L	<0.010	----	----	----	----	----
Chrysene	218-01-9	E641A/VA	0.010	µg/L	<0.010	----	----	----	----	----
Dibenz(a,h)anthracene	53-70-3	E641A/VA	0.0050	µg/L	<0.0050	----	----	----	----	----
Fluoranthene	206-44-0	E641A/VA	0.010	µg/L	<0.010	----	----	----	----	----
Fluorene	86-73-7	E641A/VA	0.010	µg/L	<0.010	----	----	----	----	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A/VA	0.010	µg/L	<0.010	----	----	----	----	----
Methylnaphthalene, 1-	90-12-0	E641A/VA	0.010	µg/L	<0.010	----	----	----	----	----
Methylnaphthalene, 2-	91-57-6	E641A/VA	0.010	µg/L	<0.010	----	----	----	----	----
Naphthalene	91-20-3	E641A/VA	0.050	µg/L	<0.050	----	----	----	----	----
Phenanthrene	85-01-8	E641A/VA	0.020	µg/L	<0.020	----	----	----	----	----
Pyrene	129-00-0	E641A/VA	0.010	µg/L	<0.010	----	----	----	----	----
Quinoline	91-22-5	E641A/VA	0.050	µg/L	<0.160 ^{DLCI}	----	----	----	----	----



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	WTP 2	----	----	----	----
					Client sampling date / time	25-Oct-2024 09:00	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C8769-001	----	----	----	----	----
						Result	----	----	----	----
Polycyclic Aromatic Hydrocarbons Surrogates										
Chrysene-d12	1719-03-5	E641A/VA	0.1	%	107	----	----	----	----	----
Naphthalene-d8	1146-65-2	E641A/VA	0.1	%	103	----	----	----	----	----
Phenanthrene-d10	1517-22-2	E641A/VA	0.1	%	102	----	----	----	----	----
Glycols										
Diethylene glycol	111-46-6	E680E/VA	5.0	mg/L	<5.0	----	----	----	----	----
Ethylene glycol	107-21-1	E680E/VA	5.0	mg/L	<5.0	----	----	----	----	----
Propylene glycol, 1,2-	57-55-6	E680E/VA	5.0	mg/L	<5.0	----	----	----	----	----
Triethylene glycol	112-27-6	E680E/VA	5.0	mg/L	<5.0	----	----	----	----	----
Glycols, total (EG+DEG+PG)	----	E680E/VA	10	mg/L	<10	----	----	----	----	----
Glycols Surrogates										
Propanediol, 1,3-	504-63-2	E680E/VA	1.0	%	95.1	----	----	----	----	----

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 REPORT

Work Order	: VA24C8769	Page	: 1 of 23
Amendment	: 1		
Client	: Frontier-Kemper Michels Joint Venture	Laboratory	: ALS Environmental - Vancouver
Contact	: Sara Derakhshi	Account Manager	: Thomas Chang
Address	: 404-850 Harbourside Drive North Vancouver BC Canada V7P 0A3	Address	: 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9
Telephone	: ----	Telephone	: +1 604 253 4188
Project	: ----	Date Samples Received	: 25-Oct-2024 11:45
PO	: BC Rail	Date Analysis Commenced	: 25-Oct-2024
C-O-C number	: 20-969587	Issue Date	: 30-Oct-2024 16:53
Sampler	: ----		
Site	: ----		
Quote number	: WTP Discharge		
No. of samples received	: 1		
No. of samples analysed	: 1		

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
- Reference Material (RM) 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>
Angela Ren	Team Leader - Metals	Vancouver Metals, Burnaby, British Columbia
Brooke Miller	Laboratory Analyst	Edmonton Inorganics, Edmonton, Alberta
Dan Gebert	Laboratory Analyst	Vancouver Metals, Burnaby, British Columbia
Janice Leung	Supervisor - Organics Instrumentation	Vancouver Organics, Burnaby, British Columbia
Kate Dimitrova	Supervisor - Inorganic	Vancouver Inorganics, Burnaby, British Columbia
Monica Ko	Lab Assistant	Vancouver Inorganics, Burnaby, British Columbia
Paul Cushing	Team Leader - Organics	Vancouver Organics, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Vancouver Organics, Burnaby, British Columbia
Thomas Chang	Account Manager	Vancouver Administration, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Vancouver Inorganics, Burnaby, British Columbia
Wingyee Cheng	Analyst- General	Vancouver Metals, Burnaby, British Columbia

Page : 2 of 23
Work Order : VA24C8769 Amendment 1
Client : Frontier-Kemper Michels Joint Venture
Project : ----



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

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



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
Physical Tests (QC Lot: 1733100)											
VA24C8072-002	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1733117)											
VA24C8072-002	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	326	320	1.85%	20%	----
Physical Tests (QC Lot: 1733194)											
FJ2403242-001	Anonymous	Oxidation-reduction potential [ORP]	----	E125	0.10	mV	223	225	1.16%	10%	----
Physical Tests (QC Lot: 1734176)											
VA24C8719-001	Anonymous	pH	----	E108	0.10	pH units	6.46	6.46	0.00%	4%	----
Physical Tests (QC Lot: 1734177)											
VA24C8719-001	Anonymous	Alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	2.4	2.3	4.26%	200%	----
		Alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0.00%	200%	----
		Alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	2.4	2.3	0.1	Diff <2x LOR	----
Physical Tests (QC Lot: 1734178)											
VA24C8719-001	Anonymous	Conductivity	----	E100	2.0	µS/cm	9.6	9.6	0.02	Diff <2x LOR	----
Physical Tests (QC Lot: 1734228)											
KS2404478-001	Anonymous	Turbidity	----	E121	0.10	NTU	210	205	2.41%	15%	----
Anions and Nutrients (QC Lot: 1732089)											
VA24C8756-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1736362)											
VA24C4463-001	Anonymous	Nitrogen, total	7727-37-9	E366	0.030	mg/L	<0.030	<0.030	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1736365)											
VA24C8769-001	WTP 2	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0240	0.0249	3.89%	20%	----
Anions and Nutrients (QC Lot: 1736378)											
VA24C8769-001	WTP 2	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.242	0.244	0.984%	20%	----
Anions and Nutrients (QC Lot: 1736379)											
VA24C8769-001	WTP 2	Chloride	16887-00-6	E235.Cl	0.50	mg/L	21.8	21.8	0.379%	20%	----
Anions and Nutrients (QC Lot: 1736380)											
VA24C8769-001	WTP 2	Bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	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
Anions and Nutrients (QC Lot: 1736381)											
VA24C8769-001	WTP 2	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.522	0.526	0.691%	20%	----
Anions and Nutrients (QC Lot: 1736382)											
VA24C8769-001	WTP 2	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0222	0.0222	0.0225%	20%	----
Anions and Nutrients (QC Lot: 1736383)											
VA24C8769-001	WTP 2	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	129	130	0.729%	20%	----
Organic / Inorganic Carbon (QC Lot: 1736427)											
KS2404488-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	1.36	1.26	0.10	Diff <2x LOR	----
Total Metals (QC Lot: 1732309)											
VA24C8769-001	WTP 2	Aluminum, total	7429-90-5	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
		Antimony, total	7440-36-0	E420	0.00010	mg/L	0.00140	0.00141	0.756%	20%	----
		Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00216	0.00221	2.23%	20%	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.00031	0.00028	0.00002	Diff <2x LOR	----
		Beryllium, total	7440-41-7	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E420	0.010	mg/L	0.033	0.032	0.002	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E420	0.0000650	mg/L	<0.0000650	<0.0000650	0	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	0.254	0.245	0.010	Diff <2x LOR	----
		Cesium, total	7440-46-2	E420	0.000010	mg/L	0.00473	0.00474	0.219%	20%	----
		Chromium, total	7440-47-3	E420	0.00050	mg/L	0.0391	0.0402	2.85%	20%	----
		Cobalt, total	7440-48-4	E420	0.00010	mg/L	0.00013	0.00012	0.000002	Diff <2x LOR	----
		Copper, total	7440-50-8	E420	0.00050	mg/L	0.00182	0.00187	0.00005	Diff <2x LOR	----
		Iron, total	7439-89-6	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Lead, total	7439-92-1	E420	0.000050	mg/L	0.000053	<0.000050	0.000003	Diff <2x LOR	----
		Lithium, total	7439-93-2	E420	0.0010	mg/L	0.0213	0.0201	5.78%	20%	----
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	0.0813	0.0830	2.03%	20%	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.00021	0.00020	0.000004	Diff <2x LOR	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.386	0.398	3.27%	20%	----
		Nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, total	7440-09-7	E420	0.050	mg/L	31.0	32.9	5.80%	20%	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.106	0.110	3.01%	20%	----
		Selenium, total	7782-49-2	E420	0.000050	mg/L	0.00268	0.00264	1.52%	20%	----
		Silicon, total	7440-21-3	E420	0.10	mg/L	9.72	9.60	1.20%	20%	----
		Silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	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
Total Metals (QC Lot: 1732309) - continued											
VA24C8769-001	WTP 2	Sodium, total	7440-23-5	E420	0.050	mg/L	86.8	87.9	1.20%	20%	---
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.00450	0.00466	3.53%	20%	---
		Sulfur, total	7704-34-9	E420	0.50	mg/L	47.0	47.0	0.0289%	20%	---
		Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	---
		Thallium, total	7440-28-0	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Titanium, total	7440-32-6	E420	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	---
		Tungsten, total	7440-33-7	E420	0.00010	mg/L	0.00096	0.00096	0.000005	Diff <2x LOR	---
		Uranium, total	7440-61-1	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00102	0.00104	0.00003	Diff <2x LOR	---
		Zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	---
		Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	---
Total Metals (QC Lot: 1734379)											
VA24C8769-001	WTP 2	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	---
Dissolved Metals (QC Lot: 1732352)											
VA24C8761-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0022	0.0028	0.0005	Diff <2x LOR	---
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00106	0.00105	1.12%	20%	---
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0253	0.0256	1.40%	20%	---
		Beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	---
		Bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	---
		Boron, dissolved	7440-42-8	E421	0.010	mg/L	0.013	0.013	0.0002	Diff <2x LOR	---
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	<0.0000050	0.0000057	0.0000007	Diff <2x LOR	---
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	52.6	53.0	0.639%	20%	---
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	---
		Chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	---
		Cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00052	0.00053	0.00001	Diff <2x LOR	---
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	0.040	0.039	0.0006	Diff <2x LOR	---
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	---
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0032	0.0031	0.00006	Diff <2x LOR	---
		Magnesium, dissolved	7439-95-4	E421	0.100	mg/L	18.6	18.6	0.181%	20%	---
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0209	0.0209	0.00306%	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
Dissolved Metals (QC Lot: 1732352) - continued											
VA24C8761-001	Anonymous	Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00222	0.00219	1.32%	20%	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E421	2.00	mg/L	3.64	3.67	0.034	Diff <2x LOR	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00173	0.00176	0.00002	Diff <2x LOR	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000737	0.000700	5.18%	20%	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	10.4	10.0	3.16%	20%	----
		Silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E421	2.00	mg/L	13.2	13.4	0.134	Diff <2x LOR	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.482	0.486	0.914%	20%	----
		Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	18.5	17.2	7.54%	20%	----
		Tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00151	0.00150	0.836%	20%	----
Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	0.00171	0.00173	0.00002	Diff <2x LOR	----		
Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----		
Zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----		
Dissolved Metals (QC Lot: 1734609)											
VA24C8732-002	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Aggregate Organics (QC Lot: 1737958)											
VA24C8663-001	Anonymous	Phenols, total (4AAP)	----	E562	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 1736500)											
VA24C8769-001	WTP 2	Benzene	71-43-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Bromodichloromethane	75-27-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Bromoform	75-25-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Carbon tetrachloride	56-23-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chlorobenzene	108-90-7	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloroethane	75-00-3	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloroform	67-66-3	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloromethane	74-87-3	E611C	5.0	µg/L	<5.0	<5.0	0	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
Volatile Organic Compounds (QC Lot: 1736500) - continued											
VA24C8769-001	WTP 2	Dibromochloromethane	124-48-1	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	---
		Dichlorobenzene, 1,2-	95-50-1	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	---
		Dichlorobenzene, 1,3-	541-73-1	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	---
		Dichlorobenzene, 1,4-	106-46-7	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	---
		Dichloroethane, 1,1-	75-34-3	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	---
		Dichloroethane, 1,2-	107-06-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	---
		Dichloroethylene, 1,1-	75-35-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	---
		Dichloroethylene, cis-1,2-	156-59-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	---
		Dichloroethylene, trans-1,2-	156-60-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	---
		Dichloromethane	75-09-2	E611C	1.0	µg/L	<1.0	<1.0	0	Diff <2x LOR	---
		Dichloropropane, 1,2-	78-87-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	---
		Dichloropropylene, cis-1,3-	10061-01-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	---
		Dichloropropylene, trans-1,3-	10061-02-6	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	---
		Ethylbenzene	100-41-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	---
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	---
		Styrene	100-42-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	---
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	---
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	0.20	µg/L	<0.20	<0.20	0	Diff <2x LOR	---
		Tetrachloroethylene	127-18-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	---
		Toluene	108-88-3	E611C	0.40	µg/L	<0.40	<0.40	0	Diff <2x LOR	---
		Trichloroethane, 1,1,1-	71-55-6	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	---
		Trichloroethane, 1,1,2-	79-00-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	---
		Trichloroethylene	79-01-6	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	---
Trichlorofluoromethane	75-69-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	---		
Vinyl chloride	75-01-4	E611C	0.40	µg/L	<0.40	<0.40	0	Diff <2x LOR	---		
Xylene, m+p-	179601-23-1	E611C	0.40	µg/L	<0.40	<0.40	0	Diff <2x LOR	---		
Xylene, o-	95-47-6	E611C	0.30	µg/L	<0.30	<0.30	0	Diff <2x LOR	---		
Glycols (QC Lot: 1737056)											
VA24C8769-001	WTP 2	Diethylene glycol	111-46-6	E680E	5.0	mg/L	<5.0	<5.0	0	Diff <2x LOR	---
		Ethylene glycol	107-21-1	E680E	5.0	mg/L	<5.0	<5.0	0	Diff <2x LOR	---
		Propylene glycol, 1,2-	57-55-6	E680E	5.0	mg/L	<5.0	<5.0	0	Diff <2x LOR	---
		Triethylene glycol	112-27-6	E680E	5.0	mg/L	<5.0	<5.0	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
Physical Tests (QCLot: 1733100)						
Solids, total suspended [TSS]	---	E160	3	mg/L	<3.0	---
Physical Tests (QCLot: 1733117)						
Solids, total dissolved [TDS]	---	E162	10	mg/L	<10	---
Physical Tests (QCLot: 1734177)						
Alkalinity, bicarbonate (as CaCO3)	---	E290	1	mg/L	<1.0	---
Alkalinity, carbonate (as CaCO3)	---	E290	1	mg/L	<1.0	---
Alkalinity, hydroxide (as CaCO3)	---	E290	1	mg/L	<1.0	---
Alkalinity, phenolphthalein (as CaCO3)	---	E290	1	mg/L	<1.0	---
Alkalinity, total (as CaCO3)	---	E290	1	mg/L	<1.0	---
Physical Tests (QCLot: 1734178)						
Conductivity	---	E100	1	µS/cm	<1.0	---
Physical Tests (QCLot: 1734228)						
Turbidity	---	E121	0.1	NTU	<0.10	---
Anions and Nutrients (QCLot: 1732089)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 1736362)						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	---
Anions and Nutrients (QCLot: 1736365)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	---
Anions and Nutrients (QCLot: 1736378)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	---
Anions and Nutrients (QCLot: 1736379)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	---
Anions and Nutrients (QCLot: 1736380)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	---
Anions and Nutrients (QCLot: 1736381)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	---
Anions and Nutrients (QCLot: 1736382)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	---
Anions and Nutrients (QCLot: 1736383)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Organic / Inorganic Carbon (QCLot: 1736361)						
Carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
Organic / Inorganic Carbon (QCLot: 1736427)						
Carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	<0.50	---
Total Metals (QCLot: 1732309)						
Aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	---
Antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	---
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	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1732309) - continued						
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	---
Zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
Zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	---
Total Metals (QCLot: 1734379)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	---
Dissolved Metals (QCLot: 1732352)						
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	# 0.051	B
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	---
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1732352) - continued						
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	---
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	---
Dissolved Metals (QCLot: 1734609)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	---
Aggregate Organics (QCLot: 1737958)						
Phenols, total (4AAP)	---	E562	0.001	mg/L	<0.0010	---
Volatile Organic Compounds (QCLot: 1736500)						
Benzene	71-43-2	E611C	0.5	µg/L	<0.50	---
Bromodichloromethane	75-27-4	E611C	0.5	µg/L	<0.50	---
Bromoform	75-25-2	E611C	0.5	µg/L	<0.50	---
Carbon tetrachloride	56-23-5	E611C	0.5	µg/L	<0.50	---
Chlorobenzene	108-90-7	E611C	0.5	µg/L	<0.50	---
Chloroethane	75-00-3	E611C	0.5	µg/L	<0.50	---
Chloroform	67-66-3	E611C	0.5	µg/L	<0.50	---
Chloromethane	74-87-3	E611C	5	µg/L	<5.0	---
Dibromochloromethane	124-48-1	E611C	0.5	µg/L	<0.50	---
Dichlorobenzene, 1,2-	95-50-1	E611C	0.5	µg/L	<0.50	---
Dichlorobenzene, 1,3-	541-73-1	E611C	0.5	µg/L	<0.50	---
Dichlorobenzene, 1,4-	106-46-7	E611C	0.5	µg/L	<0.50	---
Dichloroethane, 1,1-	75-34-3	E611C	0.5	µg/L	<0.50	---
Dichloroethane, 1,2-	107-06-2	E611C	0.5	µg/L	<0.50	---
Dichloroethylene, 1,1-	75-35-4	E611C	0.5	µg/L	<0.50	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 1736500) - continued						
Dichloroethylene, cis-1,2-	156-59-2	E611C	0.5	µg/L	<0.50	---
Dichloroethylene, trans-1,2-	156-60-5	E611C	0.5	µg/L	<0.50	---
Dichloromethane	75-09-2	E611C	1	µg/L	<1.0	---
Dichloropropane, 1,2-	78-87-5	E611C	0.5	µg/L	<0.50	---
Dichloropropylene, cis-1,3-	10061-01-5	E611C	0.5	µg/L	<0.50	---
Dichloropropylene, trans-1,3-	10061-02-6	E611C	0.5	µg/L	<0.50	---
Ethylbenzene	100-41-4	E611C	0.5	µg/L	<0.50	---
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	0.5	µg/L	<0.50	---
Styrene	100-42-5	E611C	0.5	µg/L	<0.50	---
Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	0.5	µg/L	<0.50	---
Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	0.2	µg/L	<0.20	---
Tetrachloroethylene	127-18-4	E611C	0.5	µg/L	<0.50	---
Toluene	108-88-3	E611C	0.4	µg/L	<0.40	---
Trichloroethane, 1,1,1-	71-55-6	E611C	0.5	µg/L	<0.50	---
Trichloroethane, 1,1,2-	79-00-5	E611C	0.5	µg/L	<0.50	---
Trichloroethylene	79-01-6	E611C	0.5	µg/L	<0.50	---
Trichlorofluoromethane	75-69-4	E611C	0.5	µg/L	<0.50	---
Vinyl chloride	75-01-4	E611C	0.4	µg/L	<0.40	---
Xylene, m+p-	179601-23-1	E611C	0.4	µg/L	<0.40	---
Xylene, o-	95-47-6	E611C	0.3	µg/L	<0.30	---
Hydrocarbons (QCLot: 1736706)						
EPH (C10-C19)	---	E601A	250	µg/L	<250	---
EPH (C19-C32)	---	E601A	250	µg/L	<250	---
Polycyclic Aromatic Hydrocarbons (QCLot: 1736704)						
Acenaphthene	83-32-9	E641A	0.01	µg/L	<0.010	---
Acenaphthylene	208-96-8	E641A	0.01	µg/L	<0.010	---
Acridine	260-94-6	E641A	0.01	µg/L	<0.010	---
Anthracene	120-12-7	E641A	0.01	µg/L	<0.010	---
Benzo(a)anthracene	56-55-3	E641A	0.01	µg/L	<0.010	---
Benzo(a)pyrene	50-32-8	E641A	0.005	µg/L	<0.0050	---
Benzo(b+j)fluoranthene	n/a	E641A	0.01	µg/L	<0.010	---
Benzo(g,h,i)perylene	191-24-2	E641A	0.01	µg/L	<0.010	---
Benzo(k)fluoranthene	207-08-9	E641A	0.01	µg/L	<0.010	---
Chrysene	218-01-9	E641A	0.01	µg/L	<0.010	---
Dibenz(a,h)anthracene	53-70-3	E641A	0.005	µg/L	<0.0050	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 1736704) - continued						
Fluoranthene	206-44-0	E641A	0.01	µg/L	<0.010	----
Fluorene	86-73-7	E641A	0.01	µg/L	<0.010	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.01	µg/L	<0.010	----
Methylnaphthalene, 1-	90-12-0	E641A	0.01	µg/L	<0.010	----
Methylnaphthalene, 2-	91-57-6	E641A	0.01	µg/L	<0.010	----
Naphthalene	91-20-3	E641A	0.05	µg/L	<0.050	----
Phenanthrene	85-01-8	E641A	0.02	µg/L	<0.020	----
Pyrene	129-00-0	E641A	0.01	µg/L	<0.010	----
Quinoline	91-22-5	E641A	0.05	µg/L	<0.050	----
Glycols (QCLot: 1737056)						
Diethylene glycol	111-46-6	E680E	5	mg/L	<5.0	----
Ethylene glycol	107-21-1	E680E	5	mg/L	<5.0	----
Propylene glycol, 1,2-	57-55-6	E680E	5	mg/L	<5.0	----
Triethylene glycol	112-27-6	E680E	5	mg/L	<5.0	----

Qualifiers

Qualifier	Description
B	Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.



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				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1733100)									
Solids, total suspended [TSS]	---	E160	3	mg/L	150 mg/L	94.0	85.0	115	---
Physical Tests (QCLot: 1733117)									
Solids, total dissolved [TDS]	---	E162	10	mg/L	1000 mg/L	100	85.0	115	---
Physical Tests (QCLot: 1734176)									
pH	---	E108	---	pH units	7 pH units	100	98.0	102	---
Physical Tests (QCLot: 1734177)									
Alkalinity, phenolphthalein (as CaCO3)	---	E290	1	mg/L	229 mg/L	105	75.0	125	---
Alkalinity, total (as CaCO3)	---	E290	1	mg/L	500 mg/L	102	85.0	115	---
Physical Tests (QCLot: 1734178)									
Conductivity	---	E100	1	µS/cm	147 µS/cm	97.1	90.0	110	---
Physical Tests (QCLot: 1734228)									
Turbidity	---	E121	0.1	NTU	200 NTU	98.0	85.0	115	---
Anions and Nutrients (QCLot: 1732089)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	95.0	85.0	115	---
Anions and Nutrients (QCLot: 1736362)									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	98.5	75.0	125	---
Anions and Nutrients (QCLot: 1736365)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	92.3	80.0	120	---
Anions and Nutrients (QCLot: 1736378)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	94.2	90.0	110	---
Anions and Nutrients (QCLot: 1736379)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	100	90.0	110	---
Anions and Nutrients (QCLot: 1736380)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	102	85.0	115	---
Anions and Nutrients (QCLot: 1736381)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	100	90.0	110	---
Anions and Nutrients (QCLot: 1736382)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	97.8	90.0	110	---
Anions and Nutrients (QCLot: 1736383)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	---



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Organic / Inorganic Carbon (QCLot: 1736361)									
Carbon, total organic [TOC]	---	E355-L	0.5	mg/L	8.57 mg/L	98.6	80.0	120	---
Organic / Inorganic Carbon (QCLot: 1736427)									
Carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	8.57 mg/L	102	80.0	120	---
Total Metals (QCLot: 1732309)									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	95.8	80.0	120	---
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	102	80.0	120	---
Arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	104	80.0	120	---
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	105	80.0	120	---
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	97.3	80.0	120	---
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	95.6	80.0	120	---
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	89.7	80.0	120	---
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	95.2	80.0	120	---
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	98.8	80.0	120	---
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	99.6	80.0	120	---
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	98.8	80.0	120	---
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	96.9	80.0	120	---
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	98.8	80.0	120	---
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	97.0	80.0	120	---
Lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	99.9	80.0	120	---
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	92.5	80.0	120	---
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	98.5	80.0	120	---
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	95.8	80.0	120	---
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	100	80.0	120	---
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	94.5	80.0	120	---
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	89.7	80.0	120	---
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	97.6	80.0	120	---
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	104	80.0	120	---
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	95.7	80.0	120	---
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	106	80.0	120	---
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	97.8	80.0	120	---
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	101	80.0	120	---
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	99.8	80.0	120	---
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	87.2	80.0	120	---
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	97.6	80.0	120	---
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	100	80.0	120	---



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1732309) - continued									
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	96.1	80.0	120	---
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	97.6	80.0	120	---
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	95.0	80.0	120	---
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	98.3	80.0	120	---
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	98.0	80.0	120	---
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	102	80.0	120	---
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	97.9	80.0	120	---
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	102	80.0	120	---
Total Metals (QCLot: 1734379)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	94.4	80.0	120	---
Dissolved Metals (QCLot: 1732352)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	108	80.0	120	---
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	95.2	80.0	120	---
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	104	80.0	120	---
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	104	80.0	120	---
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	104	80.0	120	---
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	95.4	80.0	120	---
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	106	80.0	120	---
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	101	80.0	120	---
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	100	80.0	120	---
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	94.8	80.0	120	---
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	101	80.0	120	---
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	102	80.0	120	---
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	101	80.0	120	---
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	95.3	80.0	120	---
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	97.0	80.0	120	---
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	103	80.0	120	---
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	104	80.0	120	---
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	99.6	80.0	120	---
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	95.0	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	108	80.0	120	---
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	106	80.0	120	---
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	101	80.0	120	---
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	98.0	80.0	120	---



Sub-Matrix: **Water**

Laboratory Control Sample (LCS) Report

Analyte	CAS Number	Method	LOR	Unit	Recovery Limits (%)				Qualifier
					Target Concentration	LCS	Low	High	
Dissolved Metals (QCLot: 1732352) - continued									
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	108	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	90.4	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	98.3	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	95.4	80.0	120	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	93.4	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	98.5	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	98.9	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	96.7	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	102	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	97.8	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	97.5	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	104	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	103	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	93.4	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	98.7	80.0	120	----
Aggregate Organics (QCLot: 1737958)									
Phenols, total (4AAP)	----	E562	0.001	mg/L	0.02 mg/L	98.9	85.0	115	----
Volatile Organic Compounds (QCLot: 1736500)									
Benzene	71-43-2	E611C	0.5	µg/L	100 µg/L	97.6	70.0	130	----
Bromodichloromethane	75-27-4	E611C	0.5	µg/L	100 µg/L	97.7	70.0	130	----
Bromoform	75-25-2	E611C	0.5	µg/L	100 µg/L	97.9	70.0	130	----
Carbon tetrachloride	56-23-5	E611C	0.5	µg/L	100 µg/L	101	70.0	130	----
Chlorobenzene	108-90-7	E611C	0.5	µg/L	100 µg/L	102	70.0	130	----
Chloroethane	75-00-3	E611C	0.5	µg/L	100 µg/L	126	60.0	140	----
Chloroform	67-66-3	E611C	0.5	µg/L	100 µg/L	99.0	70.0	130	----
Chloromethane	74-87-3	E611C	5	µg/L	100 µg/L	108	60.0	140	----
Dibromochloromethane	124-48-1	E611C	0.5	µg/L	100 µg/L	98.8	70.0	130	----
Dichlorobenzene, 1,2-	95-50-1	E611C	0.5	µg/L	100 µg/L	101	70.0	130	----
Dichlorobenzene, 1,3-	541-73-1	E611C	0.5	µg/L	100 µg/L	105	70.0	130	----
Dichlorobenzene, 1,4-	106-46-7	E611C	0.5	µg/L	100 µg/L	107	70.0	130	----
Dichloroethane, 1,1-	75-34-3	E611C	0.5	µg/L	100 µg/L	102	70.0	130	----
Dichloroethane, 1,2-	107-06-2	E611C	0.5	µg/L	100 µg/L	100	70.0	130	----
Dichloroethylene, 1,1-	75-35-4	E611C	0.5	µg/L	100 µg/L	99.1	70.0	130	----



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1736500) - continued									
Dichloroethylene, cis-1,2-	156-59-2	E611C	0.5	µg/L	100 µg/L	99.6	70.0	130	---
Dichloroethylene, trans-1,2-	156-60-5	E611C	0.5	µg/L	100 µg/L	104	70.0	130	---
Dichloromethane	75-09-2	E611C	1	µg/L	100 µg/L	100	70.0	130	---
Dichloropropane, 1,2-	78-87-5	E611C	0.5	µg/L	100 µg/L	101	70.0	130	---
Dichloropropylene, cis-1,3-	10061-01-5	E611C	0.5	µg/L	100 µg/L	99.3	70.0	130	---
Dichloropropylene, trans-1,3-	10061-02-6	E611C	0.5	µg/L	100 µg/L	99.1	70.0	130	---
Ethylbenzene	100-41-4	E611C	0.5	µg/L	100 µg/L	102	70.0	130	---
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	0.5	µg/L	100 µg/L	103	70.0	130	---
Styrene	100-42-5	E611C	0.5	µg/L	100 µg/L	99.5	70.0	130	---
Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	0.5	µg/L	100 µg/L	105	70.0	130	---
Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	0.2	µg/L	100 µg/L	97.0	70.0	130	---
Tetrachloroethylene	127-18-4	E611C	0.5	µg/L	100 µg/L	104	70.0	130	---
Toluene	108-88-3	E611C	0.4	µg/L	100 µg/L	99.3	70.0	130	---
Trichloroethane, 1,1,1-	71-55-6	E611C	0.5	µg/L	100 µg/L	99.7	70.0	130	---
Trichloroethane, 1,1,2-	79-00-5	E611C	0.5	µg/L	100 µg/L	99.0	70.0	130	---
Trichloroethylene	79-01-6	E611C	0.5	µg/L	100 µg/L	104	70.0	130	---
Trichlorofluoromethane	75-69-4	E611C	0.5	µg/L	100 µg/L	86.0	60.0	140	---
Vinyl chloride	75-01-4	E611C	0.4	µg/L	100 µg/L	107	60.0	140	---
Xylene, m+p-	179601-23-1	E611C	0.4	µg/L	200 µg/L	108	70.0	130	---
Xylene, o-	95-47-6	E611C	0.3	µg/L	100 µg/L	104	70.0	130	---
Hydrocarbons (QCLot: 1736706)									
EPH (C10-C19)	---	E601A	250	µg/L	6490 µg/L	111	70.0	130	---
EPH (C19-C32)	---	E601A	250	µg/L	3360 µg/L	100.0	70.0	130	---
Polycyclic Aromatic Hydrocarbons (QCLot: 1736704)									
Acenaphthene	83-32-9	E641A	0.01	µg/L	0.5 µg/L	108	60.0	130	---
Acenaphthylene	208-96-8	E641A	0.01	µg/L	0.5 µg/L	116	60.0	130	---
Acridine	260-94-6	E641A	0.01	µg/L	0.5 µg/L	99.3	60.0	130	---
Anthracene	120-12-7	E641A	0.01	µg/L	0.5 µg/L	119	60.0	130	---
Benz(a)anthracene	56-55-3	E641A	0.01	µg/L	0.5 µg/L	112	60.0	130	---
Benzo(a)pyrene	50-32-8	E641A	0.005	µg/L	0.5 µg/L	106	60.0	130	---
Benzo(b+j)fluoranthene	n/a	E641A	0.01	µg/L	0.5 µg/L	97.8	60.0	130	---
Benzo(g,h,i)perylene	191-24-2	E641A	0.01	µg/L	0.5 µg/L	112	60.0	130	---
Benzo(k)fluoranthene	207-08-9	E641A	0.01	µg/L	0.5 µg/L	112	60.0	130	---
Chrysene	218-01-9	E641A	0.01	µg/L	0.5 µg/L	117	60.0	130	---



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 1736704) - continued									
Dibenz(a,h)anthracene	53-70-3	E641A	0.005	µg/L	0.5 µg/L	115	60.0	130	----
Fluoranthene	206-44-0	E641A	0.01	µg/L	0.5 µg/L	111	60.0	130	----
Fluorene	86-73-7	E641A	0.01	µg/L	0.5 µg/L	110	60.0	130	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.01	µg/L	0.5 µg/L	108	60.0	130	----
Methylnaphthalene, 1-	90-12-0	E641A	0.01	µg/L	0.5 µg/L	109	60.0	130	----
Methylnaphthalene, 2-	91-57-6	E641A	0.01	µg/L	0.5 µg/L	118	60.0	130	----
Naphthalene	91-20-3	E641A	0.05	µg/L	0.5 µg/L	114	50.0	130	----
Phenanthrene	85-01-8	E641A	0.02	µg/L	0.5 µg/L	116	60.0	130	----
Pyrene	129-00-0	E641A	0.01	µg/L	0.5 µg/L	111	60.0	130	----
Quinoline	91-22-5	E641A	0.05	µg/L	0.5 µg/L	116	60.0	130	----
Glycols (QCLot: 1737056)									
Diethylene glycol	111-46-6	E680E	5	mg/L	25 mg/L	94.7	70.0	130	----
Ethylene glycol	107-21-1	E680E	5	mg/L	25 mg/L	95.6	70.0	130	----
Propylene glycol, 1,2-	57-55-6	E680E	5	mg/L	25 mg/L	93.5	70.0	130	----
Triethylene glycol	112-27-6	E680E	5	mg/L	25 mg/L	91.8	70.0	130	----



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
Anions and Nutrients (QCLot: 1732089)										
VA24C8756-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0955 mg/L	0.1 mg/L	95.5	75.0	125	----
Anions and Nutrients (QCLot: 1736362)										
VA24C8769-001	WTP 2	Nitrogen, total	7727-37-9	E366	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1736378)										
VA24C8970-001	Anonymous	Fluoride	16984-48-8	E235.F	95.9 mg/L	100 mg/L	95.9	75.0	125	----
Anions and Nutrients (QCLot: 1736379)										
VA24C8970-001	Anonymous	Chloride	16887-00-6	E235.Cl	9900 mg/L	10000 mg/L	99.0	75.0	125	----
Anions and Nutrients (QCLot: 1736380)										
VA24C8970-001	Anonymous	Bromide	24959-67-9	E235.Br-L	49.6 mg/L	50 mg/L	99.2	75.0	125	----
Anions and Nutrients (QCLot: 1736381)										
VA24C8970-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	ND mg/L	----	ND	75.0	125	----
Anions and Nutrients (QCLot: 1736382)										
VA24C8970-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	48.4 mg/L	50 mg/L	96.9	75.0	125	----
Anions and Nutrients (QCLot: 1736383)										
VA24C8970-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	9520 mg/L	10000 mg/L	95.2	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1736361)										
VA24C8970-003	Anonymous	Carbon, total organic [TOC]	----	E355-L	----	----		70.0	130	----
Organic / Inorganic Carbon (QCLot: 1736427)										
VA24C8763-006	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	4.92 mg/L	5 mg/L	98.3	70.0	130	----
Total Metals (QCLot: 1732309)										
VA24C8776-001	Anonymous	Aluminum, total	7429-90-5	E420	0.187 mg/L	0.2 mg/L	93.5	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0187 mg/L	0.02 mg/L	93.4	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0194 mg/L	0.02 mg/L	97.0	70.0	130	----
		Barium, total	7440-39-3	E420	0.0198 mg/L	0.02 mg/L	99.1	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0357 mg/L	0.04 mg/L	89.2	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.00870 mg/L	0.01 mg/L	87.0	70.0	130	----
		Boron, total	7440-42-8	E420	0.086 mg/L	0.1 mg/L	86.4	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00376 mg/L	0.004 mg/L	94.0	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.00936 mg/L	0.01 mg/L	93.6	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0380 mg/L	0.04 mg/L	94.9	70.0	130	----
		Cobalt, total	7440-48-4	E420	0.0184 mg/L	0.02 mg/L	92.1	70.0	130	----
		Copper, total	7440-50-8	E420	ND 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
Total Metals (QCLot: 1732309) - continued										
VA24C8776-001	Anonymous	Iron, total	7439-89-6	E420	1.88 mg/L	2 mg/L	93.8	70.0	130	---
		Lead, total	7439-92-1	E420	0.0181 mg/L	0.02 mg/L	90.6	70.0	130	---
		Lithium, total	7439-93-2	E420	0.0845 mg/L	0.1 mg/L	84.5	70.0	130	---
		Magnesium, total	7439-95-4	E420	ND mg/L	---	ND	70.0	130	---
		Manganese, total	7439-96-5	E420	0.0182 mg/L	0.02 mg/L	90.8	70.0	130	---
		Molybdenum, total	7439-98-7	E420	0.0189 mg/L	0.02 mg/L	94.3	70.0	130	---
		Nickel, total	7440-02-0	E420	ND mg/L	---	ND	70.0	130	---
		Phosphorus, total	7723-14-0	E420	8.78 mg/L	10 mg/L	87.8	70.0	130	---
		Potassium, total	7440-09-7	E420	3.66 mg/L	4 mg/L	91.6	70.0	130	---
		Rubidium, total	7440-17-7	E420	0.0188 mg/L	0.02 mg/L	94.3	70.0	130	---
		Selenium, total	7782-49-2	E420	0.0366 mg/L	0.04 mg/L	91.5	70.0	130	---
		Silicon, total	7440-21-3	E420	9.26 mg/L	10 mg/L	92.6	70.0	130	---
		Silver, total	7440-22-4	E420	0.00388 mg/L	0.004 mg/L	96.9	70.0	130	---
		Sodium, total	7440-23-5	E420	ND mg/L	---	ND	70.0	130	---
		Strontium, total	7440-24-6	E420	0.0180 mg/L	0.02 mg/L	90.2	70.0	130	---
		Sulfur, total	7704-34-9	E420	19.2 mg/L	20 mg/L	95.9	70.0	130	---
		Tellurium, total	13494-80-9	E420	0.0396 mg/L	0.04 mg/L	98.9	70.0	130	---
		Thallium, total	7440-28-0	E420	0.00358 mg/L	0.004 mg/L	89.4	70.0	130	---
		Thorium, total	7440-29-1	E420	0.0185 mg/L	0.02 mg/L	92.5	70.0	130	---
		Tin, total	7440-31-5	E420	0.0185 mg/L	0.02 mg/L	92.7	70.0	130	---
		Titanium, total	7440-32-6	E420	0.0366 mg/L	0.04 mg/L	91.4	70.0	130	---
		Tungsten, total	7440-33-7	E420	0.0178 mg/L	0.02 mg/L	88.8	70.0	130	---
		Uranium, total	7440-61-1	E420	0.00357 mg/L	0.004 mg/L	89.2	70.0	130	---
		Vanadium, total	7440-62-2	E420	0.0952 mg/L	0.1 mg/L	95.2	70.0	130	---
		Zinc, total	7440-66-6	E420	0.372 mg/L	0.4 mg/L	93.1	70.0	130	---
		Zirconium, total	7440-67-7	E420	0.0396 mg/L	0.04 mg/L	99.0	70.0	130	---
Dissolved Metals (QCLot: 1732352)										
VA24C8766-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.200 mg/L	0.2 mg/L	99.8	70.0	130	---
		Antimony, dissolved	7440-36-0	E421	0.0185 mg/L	0.02 mg/L	92.5	70.0	130	---
		Arsenic, dissolved	7440-38-2	E421	0.0202 mg/L	0.02 mg/L	101	70.0	130	---
		Barium, dissolved	7440-39-3	E421	0.0201 mg/L	0.02 mg/L	100	70.0	130	---
		Beryllium, dissolved	7440-41-7	E421	0.0411 mg/L	0.04 mg/L	103	70.0	130	---
		Bismuth, dissolved	7440-69-9	E421	0.0103 mg/L	0.01 mg/L	103	70.0	130	---
		Boron, dissolved	7440-42-8	E421	0.094 mg/L	0.1 mg/L	94.3	70.0	130	---
		Cadmium, dissolved	7440-43-9	E421	0.00410 mg/L	0.004 mg/L	103	70.0	130	---
		Calcium, dissolved	7440-70-2	E421	3.90 mg/L	4 mg/L	97.6	70.0	130	---
		Cesium, dissolved	7440-46-2	E421	0.00966 mg/L	0.01 mg/L	96.6	70.0	130	---
		Chromium, dissolved	7440-47-3	E421	0.0395 mg/L	0.04 mg/L	98.7	70.0	130	---
		Cobalt, dissolved	7440-48-4	E421	0.0202 mg/L	0.02 mg/L	101	70.0	130	---
		Copper, dissolved	7440-50-8	E421	0.0201 mg/L	0.02 mg/L	100	70.0	130	---
		Iron, dissolved	7439-89-6	E421	2.03 mg/L	2 mg/L	102	70.0	130	---
		Lead, dissolved	7439-92-1	E421	0.0199 mg/L	0.02 mg/L	99.7	70.0	130	---
		Lithium, dissolved	7439-93-2	E421	0.0983 mg/L	0.1 mg/L	98.3	70.0	130	---
		Magnesium, dissolved	7439-95-4	E421	0.990 mg/L	1 mg/L	99.0	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
Dissolved Metals (QCLot: 1732352) - continued										
VA24C8766-001	Anonymous	Manganese, dissolved	7439-96-5	E421	0.0205 mg/L	0.02 mg/L	102	70.0	130	---
		Molybdenum, dissolved	7439-98-7	E421	0.0188 mg/L	0.02 mg/L	94.2	70.0	130	---
		Nickel, dissolved	7440-02-0	E421	0.0404 mg/L	0.04 mg/L	101	70.0	130	---
		Phosphorus, dissolved	7723-14-0	E421	9.49 mg/L	10 mg/L	94.9	70.0	130	---
		Potassium, dissolved	7440-09-7	E421	4.04 mg/L	4 mg/L	101	70.0	130	---
		Rubidium, dissolved	7440-17-7	E421	0.0197 mg/L	0.02 mg/L	98.4	70.0	130	---
		Selenium, dissolved	7782-49-2	E421	0.0390 mg/L	0.04 mg/L	97.4	70.0	130	---
		Silicon, dissolved	7440-21-3	E421	9.92 mg/L	10 mg/L	99.2	70.0	130	---
		Silver, dissolved	7440-22-4	E421	0.00400 mg/L	0.004 mg/L	100	70.0	130	---
		Sodium, dissolved	7440-23-5	E421	1.99 mg/L	2 mg/L	99.6	70.0	130	---
		Strontium, dissolved	7440-24-6	E421	0.0194 mg/L	0.02 mg/L	96.8	70.0	130	---
		Sulfur, dissolved	7704-34-9	E421	20.0 mg/L	20 mg/L	100	70.0	130	---
		Tellurium, dissolved	13494-80-9	E421	0.0397 mg/L	0.04 mg/L	99.2	70.0	130	---
		Thallium, dissolved	7440-28-0	E421	0.00389 mg/L	0.004 mg/L	97.4	70.0	130	---
		Thorium, dissolved	7440-29-1	E421	0.0210 mg/L	0.02 mg/L	105	70.0	130	---
		Tin, dissolved	7440-31-5	E421	0.0190 mg/L	0.02 mg/L	95.1	70.0	130	---
		Titanium, dissolved	7440-32-6	E421	0.0395 mg/L	0.04 mg/L	98.8	70.0	130	---
		Tungsten, dissolved	7440-33-7	E421	0.0198 mg/L	0.02 mg/L	99.3	70.0	130	---
		Uranium, dissolved	7440-61-1	E421	0.00403 mg/L	0.004 mg/L	101	70.0	130	---
		Vanadium, dissolved	7440-62-2	E421	0.0993 mg/L	0.1 mg/L	99.3	70.0	130	---
Zinc, dissolved	7440-66-6	E421	0.415 mg/L	0.4 mg/L	104	70.0	130	---		
Zirconium, dissolved	7440-67-7	E421	0.0382 mg/L	0.04 mg/L	95.5	70.0	130	---		
Dissolved Metals (QCLot: 1734609)										
VA24C8769-001	WTP 2	Mercury, dissolved	7439-97-6	E509	0.0000950 mg/L	0 mg/L	95.0	70.0	130	---
Aggregate Organics (QCLot: 1737958)										
VA24C8663-002	Anonymous	Phenols, total (4AAP)	---	E562	0.0195 mg/L	0.02 mg/L	97.4	75.0	125	---
Volatile Organic Compounds (QCLot: 1736500)										
VA24C8769-001	WTP 2	Benzene	71-43-2	E611C	92.9 µg/L	100 µg/L	92.9	60.0	140	---
		Bromodichloromethane	75-27-4	E611C	98.2 µg/L	100 µg/L	98.2	60.0	140	---
		Bromoform	75-25-2	E611C	100 µg/L	100 µg/L	100	60.0	140	---
		Carbon tetrachloride	56-23-5	E611C	90.1 µg/L	100 µg/L	90.1	60.0	140	---
		Chlorobenzene	108-90-7	E611C	96.8 µg/L	100 µg/L	96.8	60.0	140	---
		Chloroethane	75-00-3	E611C	110 µg/L	100 µg/L	110	50.0	150	---
		Chloroform	67-66-3	E611C	95.8 µg/L	100 µg/L	95.8	60.0	140	---
		Chloromethane	74-87-3	E611C	87.6 µg/L	100 µg/L	87.6	50.0	150	---
		Dibromochloromethane	124-48-1	E611C	100 µg/L	100 µg/L	100	60.0	140	---
		Dichlorobenzene, 1,2-	95-50-1	E611C	95.4 µg/L	100 µg/L	95.4	60.0	140	---
		Dichlorobenzene, 1,3-	541-73-1	E611C	94.0 µg/L	100 µg/L	94.0	60.0	140	---
		Dichlorobenzene, 1,4-	106-46-7	E611C	96.8 µg/L	100 µg/L	96.8	60.0	140	---
		Dichloroethane, 1,1-	75-34-3	E611C	96.4 µg/L	100 µg/L	96.4	60.0	140	---
		Dichloroethane, 1,2-	107-06-2	E611C	104 µg/L	100 µg/L	104	60.0	140	---
		Dichloroethylene, 1,1-	75-35-4	E611C	87.2 µg/L	100 µg/L	87.2	60.0	140	---
		Dichloroethylene, cis-1,2-	156-59-2	E611C	95.8 µg/L	100 µg/L	95.8	60.0	140	---



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
Volatile Organic Compounds (QCLot: 1736500) - continued										
VA24C8769-001	WTP 2	Dichloroethylene, trans-1,2-	156-60-5	E611C	93.1 µg/L	100 µg/L	93.1	60.0	140	----
		Dichloromethane	75-09-2	E611C	97.6 µg/L	100 µg/L	97.6	60.0	140	----
		Dichloropropane, 1,2-	78-87-5	E611C	101 µg/L	100 µg/L	101	60.0	140	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611C	97.4 µg/L	100 µg/L	97.4	60.0	140	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611C	95.4 µg/L	100 µg/L	95.4	60.0	140	----
		Ethylbenzene	100-41-4	E611C	92.5 µg/L	100 µg/L	92.5	60.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	99.4 µg/L	100 µg/L	99.4	60.0	140	----
		Styrene	100-42-5	E611C	94.5 µg/L	100 µg/L	94.5	60.0	140	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	102 µg/L	100 µg/L	102	60.0	140	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	102 µg/L	100 µg/L	102	60.0	140	----
		Tetrachloroethylene	127-18-4	E611C	88.2 µg/L	100 µg/L	88.2	60.0	140	----
		Toluene	108-88-3	E611C	90.4 µg/L	100 µg/L	90.4	60.0	140	----
		Trichloroethane, 1,1,1-	71-55-6	E611C	90.8 µg/L	100 µg/L	90.8	60.0	140	----
		Trichloroethane, 1,1,2-	79-00-5	E611C	103 µg/L	100 µg/L	103	60.0	140	----
		Trichloroethylene	79-01-6	E611C	93.9 µg/L	100 µg/L	93.9	60.0	140	----
		Trichlorofluoromethane	75-69-4	E611C	72.3 µg/L	100 µg/L	72.3	50.0	150	----
		Vinyl chloride	75-01-4	E611C	86.3 µg/L	100 µg/L	86.3	50.0	150	----
		Xylene, m+p-	179601-23-1	E611C	193 µg/L	200 µg/L	96.6	60.0	140	----
		Xylene, o-	95-47-6	E611C	96.1 µg/L	100 µg/L	96.1	60.0	140	----

Reference Material (RM) Report

A Reference Material (RM) is a homogenous material with known and well-established analyte concentrations. RMs are processed in an identical manner to test samples, and are used to monitor and control the accuracy and precision of a test method for a typical sample matrix. RM results are expressed as percent recovery of the target analyte concentration. RM targets may be certified target concentrations provided by the RM supplier, or may be ALS long-term mean values (for empirical test methods).

Sub-Matrix:

					Reference Material (RM) Report					
					RM Target	Recovery (%)	Recovery Limits (%)			
Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Concentration	RM	Low	High	Qualifier	
Physical Tests (QCLot: 1733194)										
QC-1733194-001	RM	Oxidation-reduction potential [ORP]	----	E125	220 mV	101	95.0	105	----	

QUALITY CONTROL INTERPRETIVE REPORT

<p>Work Order : VA24C8769</p> <p>Amendment : 1</p> <p>Client : Frontier-Kemper Michels Joint Venture</p> <p>Contact : Sara Derakhshi</p> <p>Address : 404-850 Harbourside Drive North Vancouver BC Canada V7P 0A3</p> <p>Telephone : ----</p> <p>Project : ----</p> <p>PO : BC Rail</p> <p>C-O-C number : 20-969587</p> <p>Sampler : ----</p> <p>Site : ----</p> <p>Quote number : WTP Discharge</p> <p>No. of samples received : 1</p> <p>No. of samples analysed : 1</p>	<p>Page : 1 of 15</p> <p>Laboratory : ALS Environmental - Vancouver</p> <p>Account Manager : Thomas Chang</p> <p>Address : 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9</p> <p>Telephone : +1 604 253 4188</p> <p>Date Samples Received : 25-Oct-2024 11:45</p> <p>Issue Date : 30-Oct-2024 16:53</p>
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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 Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- Method Blank value 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)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers occur - please see following pages for full details.



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
Method Blank (MB) Values								
Dissolved Metals	QC-1732352-001	----	Potassium, dissolved	7440-09-7	E421	0.051 ^B mg/L	0.05 mg/L	Blank result exceeds permitted value

Result Qualifiers

Qualifier	Description
B	Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered 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		
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry											
Amber glass total (sulfuric acid) WTP 2	E562	25-Oct-2024	29-Oct-2024	28 days	4 days	✓	29-Oct-2024	28 days	4 days	✓	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) WTP 2	E298	25-Oct-2024	25-Oct-2024	28 days	0 days	✓	25-Oct-2024	28 days	0 days	✓	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE WTP 2	E235.Br-L	25-Oct-2024	28-Oct-2024	28 days	3 days	✓	28-Oct-2024	28 days	4 days	✓	
Anions and Nutrients : Chloride in Water by IC											
HDPE WTP 2	E235.Cl	25-Oct-2024	28-Oct-2024	28 days	3 days	✓	28-Oct-2024	28 days	4 days	✓	
Anions and Nutrients : Fluoride in Water by IC											
HDPE WTP 2	E235.F	25-Oct-2024	28-Oct-2024	28 days	3 days	✓	28-Oct-2024	28 days	4 days	✓	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE WTP 2	E235.NO3-L	25-Oct-2024	28-Oct-2024	3 days	3 days	✓	28-Oct-2024	3 days	4 days	*	EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE WTP 2	E235.NO2-L	25-Oct-2024	28-Oct-2024	3 days	3 days	✓	28-Oct-2024	3 days	4 days	*	EHT



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		
Anions and Nutrients : Sulfate in Water by IC											
HDPE WTP 2	E235.SO4	25-Oct-2024	28-Oct-2024	28 days	3 days	✓	28-Oct-2024	28 days	4 days	✓	
Anions and Nutrients : Total Nitrogen by Colourimetry											
Amber glass total (sulfuric acid) WTP 2	E366	25-Oct-2024	28-Oct-2024	28 days	3 days	✓	29-Oct-2024	28 days	4 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) WTP 2	E372-U	25-Oct-2024	28-Oct-2024	28 days	3 days	✓	29-Oct-2024	28 days	4 days	✓	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
HDPE - dissolved (lab preserved) WTP 2	E509	25-Oct-2024	27-Oct-2024	0 hrs	53 hrs	* UCP	27-Oct-2024	0 hrs	53 hrs	* UCP	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE - dissolved (lab preserved) WTP 2	E421	25-Oct-2024	25-Oct-2024	180 days	1 days	✓	26-Oct-2024	180 days	1 days	✓	
Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine											
HDPE - dissolved (lab preserved) WTP 2	EF001	25-Oct-2024	----	----	----		28-Oct-2024	----	3 days		
Glycols : Glycols (4 analytes) by GC-FID											
Glass vial (sodium bisulfate) WTP 2	E680E	25-Oct-2024	29-Oct-2024	14 days	4 days	✓	29-Oct-2024	40 days	0 days	✓	
Hydrocarbons : BC PHCs - EPH by GC-FID											
Amber glass/Teflon lined cap (sodium bisulfate) WTP 2	E601A	25-Oct-2024	29-Oct-2024	14 days	4 days	✓	29-Oct-2024	40 days	0 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
HDPE WTP 2	E358-L	25-Oct-2024	28-Oct-2024	3 days	3 days	✓	28-Oct-2024	28 days	0 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	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) WTP 2	E355-L	25-Oct-2024	28-Oct-2024	28 days	3 days	✓	28-Oct-2024	28 days	3 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE WTP 2	E290	25-Oct-2024	27-Oct-2024	14 days	2 days	✓	27-Oct-2024	14 days	2 days	✓
Physical Tests : Conductivity in Water										
HDPE WTP 2	E100	25-Oct-2024	27-Oct-2024	28 days	2 days	✓	27-Oct-2024	28 days	2 days	✓
Physical Tests : ORP by Electrode										
HDPE WTP 2	E125	25-Oct-2024	----	----	----		26-Oct-2024	0.25 hrs	23 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE WTP 2	E108	25-Oct-2024	27-Oct-2024	0.25 hrs	49 hrs	* EHTR-FM	27-Oct-2024	0.25 hrs	49 hrs	* EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE WTP 2	E162	25-Oct-2024	----	----	----		26-Oct-2024	7 days	1 days	✓
Physical Tests : TSS by Gravimetry										
HDPE WTP 2	E160	25-Oct-2024	----	----	----		26-Oct-2024	7 days	1 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE WTP 2	E121	25-Oct-2024	----	----	----		27-Oct-2024	3 days	2 days	✓
Polycyclic Aromatic Hydrocarbons : PAHs in Water by Hexane LVI GC-MS										
Amber glass/Teflon lined cap (sodium bisulfate) WTP 2	E641A	25-Oct-2024	29-Oct-2024	14 days	4 days	✓	29-Oct-2024	40 days	0 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	
Total Metals : Total Mercury in Water by CVAAS										
HDPE - total (lab preserved) WTP 2	E508	25-Oct-2024	27-Oct-2024	0 hrs	49 hrs	* UCP	27-Oct-2024	0 hrs	49 hrs	* UCP
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved) WTP 2	E420	25-Oct-2024	26-Oct-2024	180 days	1 days	✓	27-Oct-2024	180 days	2 days	✓
Volatile Organic Compounds : VOCs (BC List) by Headspace GC-MS										
Glass vial (sodium bisulfate) WTP 2	E611C	25-Oct-2024	28-Oct-2024	14 days	3 days	✓	28-Oct-2024	14 days	4 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

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

UCP: Unsuitable Container and/or Preservative used (invalidates standard hold time). Maximum hold time of zero applied. Test results may be biased low / unreliable, and may not meet regulatory requirements.



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
Analytical Methods							
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1734177	1	11	9.0	5.0	✓
Ammonia by Fluorescence	E298	1732089	1	8	12.5	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1736380	1	3	33.3	5.0	✓
Chloride in Water by IC	E235.Cl	1736379	1	3	33.3	5.0	✓
Conductivity in Water	E100	1734178	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1734609	1	2	50.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1732352	1	7	14.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1736427	1	3	33.3	5.0	✓
Fluoride in Water by IC	E235.F	1736378	1	3	33.3	5.0	✓
Glycols (4 analytes) by GC-FID	E680E	1737056	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1736381	1	5	20.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1736382	1	5	20.0	5.0	✓
ORP by Electrode	E125	1733194	1	11	9.0	5.0	✓
pH by Meter	E108	1734176	1	17	5.8	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1737958	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1736383	1	3	33.3	5.0	✓
TDS by Gravimetry	E162	1733117	1	18	5.5	5.0	✓
Total Mercury in Water by CVAAS	E508	1734379	1	1	100.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1732309	1	3	33.3	5.0	✓
Total Nitrogen by Colourimetry	E366	1736362	1	2	50.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1736361	1	7	14.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1736365	1	1	100.0	5.0	✓
TSS by Gravimetry	E160	1733100	1	18	5.5	5.0	✓
Turbidity by Nephelometry	E121	1734228	1	20	5.0	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1736500	1	5	20.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1734177	1	11	9.0	5.0	✓
Ammonia by Fluorescence	E298	1732089	1	8	12.5	5.0	✓
BC PHCs - EPH by GC-FID	E601A	1736706	1	8	12.5	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1736380	1	3	33.3	5.0	✓
Chloride in Water by IC	E235.Cl	1736379	1	3	33.3	5.0	✓
Conductivity in Water	E100	1734178	1	16	6.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1734609	1	2	50.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1732352	1	7	14.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1736427	1	3	33.3	5.0	✓
Fluoride in Water by IC	E235.F	1736378	1	3	33.3	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
Analytical Methods							
Laboratory Control Samples (LCS) - Continued							
Glycols (4 analytes) by GC-FID	E680E	1737056	1	20	5.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1736381	1	5	20.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1736382	1	5	20.0	5.0	✔
ORP by Electrode	E125	1733194	1	11	9.0	5.0	✔
PAHs in Water by Hexane LVI GC-MS	E641A	1736704	1	7	14.2	5.0	✔
pH by Meter	E108	1734176	1	17	5.8	5.0	✔
Phenols (4AAP) in Water by Colorimetry	E562	1737958	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1736383	1	3	33.3	5.0	✔
TDS by Gravimetry	E162	1733117	1	18	5.5	5.0	✔
Total Mercury in Water by CVAAS	E508	1734379	1	1	100.0	5.0	✔
Total Metals in Water by CRC ICPMS	E420	1732309	1	3	33.3	5.0	✔
Total Nitrogen by Colourimetry	E366	1736362	1	2	50.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1736361	1	7	14.2	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1736365	1	1	100.0	5.0	✔
TSS by Gravimetry	E160	1733100	1	18	5.5	5.0	✔
Turbidity by Nephelometry	E121	1734228	1	20	5.0	5.0	✔
VOCs (BC List) by Headspace GC-MS	E611C	1736500	1	5	20.0	5.0	✔
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1734177	1	11	9.0	5.0	✔
Ammonia by Fluorescence	E298	1732089	1	8	12.5	5.0	✔
BC PHCs - EPH by GC-FID	E601A	1736706	1	8	12.5	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1736380	1	3	33.3	5.0	✔
Chloride in Water by IC	E235.Cl	1736379	1	3	33.3	5.0	✔
Conductivity in Water	E100	1734178	1	16	6.2	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	1734609	1	2	50.0	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	1732352	1	7	14.2	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1736427	1	3	33.3	5.0	✔
Fluoride in Water by IC	E235.F	1736378	1	3	33.3	5.0	✔
Glycols (4 analytes) by GC-FID	E680E	1737056	1	20	5.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1736381	1	5	20.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1736382	1	5	20.0	5.0	✔
PAHs in Water by Hexane LVI GC-MS	E641A	1736704	1	7	14.2	5.0	✔
Phenols (4AAP) in Water by Colorimetry	E562	1737958	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1736383	1	3	33.3	5.0	✔
TDS by Gravimetry	E162	1733117	1	18	5.5	5.0	✔
Total Mercury in Water by CVAAS	E508	1734379	1	1	100.0	5.0	✔
Total Metals in Water by CRC ICPMS	E420	1732309	1	3	33.3	5.0	✔
Total Nitrogen by Colourimetry	E366	1736362	1	2	50.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1736361	1	7	14.2	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>							
Method Blanks (MB) - Continued							
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1736365	1	1	100.0	5.0	✔
TSS by Gravimetry	E160	1733100	1	18	5.5	5.0	✔
Turbidity by Nephelometry	E121	1734228	1	20	5.0	5.0	✔
VOCs (BC List) by Headspace GC-MS	E611C	1736500	1	5	20.0	5.0	✔
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1732089	1	8	12.5	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1736380	1	3	33.3	5.0	✔
Chloride in Water by IC	E235.Cl	1736379	1	3	33.3	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	1734609	1	2	50.0	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	1732352	1	7	14.2	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1736427	1	3	33.3	5.0	✔
Fluoride in Water by IC	E235.F	1736378	1	3	33.3	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1736381	1	5	20.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1736382	1	5	20.0	5.0	✔
Phenols (4AAP) in Water by Colorimetry	E562	1737958	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1736383	1	3	33.3	5.0	✔
Total Mercury in Water by CVAAS	E508	1734379	0	1	0.0	5.0	✘
Total Metals in Water by CRC ICPMS	E420	1732309	1	3	33.3	5.0	✔
Total Nitrogen by Colourimetry	E366	1736362	1	2	50.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1736361	1	7	14.2	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1736365	0	1	0.0	5.0	✘
VOCs (BC List) by Headspace GC-MS	E611C	1736500	1	5	20.0	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
Conductivity in Water	E100 ALS Environmental - Vancouver	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Vancouver	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Vancouver	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 ALS Environmental - Vancouver	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
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 ± 1°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 ± 2°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.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
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.
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 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.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
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
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.
Phenols (4AAP) in Water by Colorimetry	E562 ALS Environmental - Edmonton	Water	EPA 9066	This automated method is based on the distillation of phenol and subsequent reaction of the distillate with alkaline ferricyanide (K ₃ Fe(CN) ₆) and 4-amino-antipyrine (4-AAP) to form a red complex which is measured colorimetrically.
BC PHCs - EPH by GC-FID	E601A ALS Environmental - Vancouver	Water	BC MOE Lab Manual	Sample extracts are analyzed by GC-FID for BC hydrocarbon fractions.
VOCs (BC List) by Headspace GC-MS	E611C ALS Environmental - Vancouver	Water	EPA 8260D (mod)	Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law. Total Xylenes is the sum of m,p-Xylene & o-Xylene. Total BTEX is the sum of Benzene, Toluene, Ethylbenzene, & Total Xylenes. Total BTEX+Styrene is the sum of Total BTEX & Styrene. Total Trihalomethanes [THMs] is the sum of Bromodichloromethane, Bromoform, Chloroform, & Dibromochloromethane.
PAHs in Water by Hexane LVI GC-MS	E641A ALS Environmental - Vancouver	Water	EPA 8270E (mod)	Polycyclic Aromatic Hydrocarbons (PAHs) are analyzed by large volume injection (LVI) GC-MS.
Glycols (4 analytes) by GC-FID	E680E ALS Environmental - Vancouver	Water	EPA 8015D (mod)	Derivatized glycols are analyzed by GC-FID.




Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ 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 ₃), from total Ca/Mg" is calculated from the sum of total Calcium and Magnesium concentrations, expressed in CaCO ₃ 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.
Un-ionized and Ionized Ammonia (Calculation) (Field Temperature and pH)	EC298A ALS Environmental - Vancouver	Water	CCME CWQG Ammonia	Un-ionized ammonia is calculated from test results for total ammonia, field temperature and pH, and is expressed in units of mg/L "as N".
LEPH and HEPH: EPH-PAH	EC600A ALS Environmental - Vancouver	Water	BC MOE Lab Manual (LEPH and HEPH)	Light Extractable Petroleum Hydrocarbons (LEPH) and Heavy Extractable Petroleum Hydrocarbons (HEPH) are calculated as follows: LEPH = Extractable Petroleum Hydrocarbons (EPH10-19) minus Acenaphthene, Acridine, Anthracene, Fluorene, Naphthalene and Phenanthrene; HEPH = Extractable Petroleum Hydrocarbons (EPH19-32) minus Benz(a)anthracene, Benzo(a)pyrene, Fluoranthene, and Pyrene.
Field pH,EC,Salinity, TDS, Cl ₂ ,ClO ₂ ,ORP,DO, Turbidity,T,T-P,o-PO ₄ ,NH ₃ ,Chloramine	EF001 ALS Environmental - Vancouver	Water	Field Measurement (Client Supplied)	Field pH,EC,Salinity, TDS, Cl ₂ ,ClO ₂ ,ORP,DO, Turbidity,T,T-P,o-PO ₄ ,NH ₃ 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
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	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.




<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
	ALS Environmental - Vancouver			
Dissolved Metals Water Filtration	EP421 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.
VOCs Preparation for Headspace Analysis	EP581 ALS Environmental - Vancouver	Water	EPA 5021A (mod)	Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler. An aliquot of the headspace is then injected into a GC-MS-FID.
PHCs and PAHs Hexane Extraction	EP601 ALS Environmental - Vancouver	Water	EPA 3511 (mod)	Petroleum Hydrocarbons (PHCs) and Polycyclic Aromatic Hydrocarbons (PAHs) are extracted using a hexane liquid-liquid extraction.
Glycols Extraction and Derivatization (BC Only)	EP680E ALS Environmental - Vancouver	Water	EPA 8015D (mod)	Aqueous sample is derivatized and extracted with organic solvent.

 Eagle Mountain - Woodfibre Gas Pipeline Project Waste Discharge Permit PE-110163 Report	Reporting Week	Oct. 28 th to Nov. 3 rd , 2024
	Report #	32
	Appendix B	B-1

Appendix B: BCR Site Receiving Environment Documentation

 Eagle Mountain - Woodfibre Gas Pipeline Project Waste Discharge Permit PE-110163 Report	Reporting Week	Oct. 28 th to Nov. 3 rd , 2024
	Report #	32
	Appendix B	B-2

BCR Site Receiving Environment Sample Analysis

 Eagle Mountain - Woodfibre Gas Pipeline Project Waste Discharge Permit PE-110163 Report	Reporting Week	Oct. 28 th to Nov. 3 rd , 2024
	Report #	32
	Appendix B	B-3

BCR Site Receiving Environment Lab Documentation

CERTIFICATE OF ANALYSIS

Work Order	: VA24C9077		
Client	:		Laboratory
Contact	:		Account Manager
Address	:		Address
Telephone	:		Telephone
Project	: 11964		Date Samples Received
PO	: 11964 - TASK 20 - Phase 3C - 4C		Date Analysis Commenced
C-O-C number	: ----		Issue Date
Sampler	: ----		
Site	: Water Analysis		
Quote number	: VA23-TRIT100-012		
No. of samples received	: 2		
No. of samples analysed	: 2		

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:

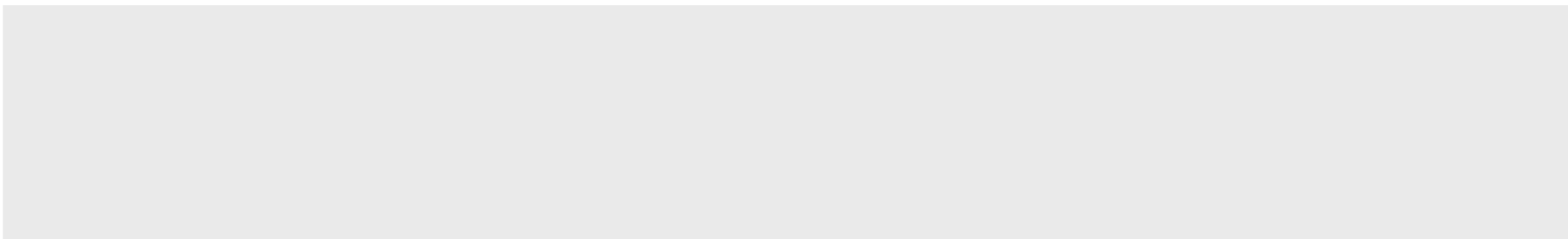
- General Comments
- Analytical Results

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>
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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>
mg/L	milligrams per litre
µS/cm	microsiemens per centimetre
pH units	pH units
°C	degrees celsius
-	no 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.

Work Order : VA24C9077
Client : Triton Environmental Consultants Ltd.
Project : 11964





Analytical Results

Sub-Matrix: Water (Matrix: Water)					SQU US1	SQU DS1	----	----	----
Client sample ID					28-Oct-2024 10:22	28-Oct-2024 10:47	----	----	----
Client sampling date / time					28-Oct-2024 10:22	28-Oct-2024 10:47	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C9077-001	VA24C9077-002	----	----	----
					Result	Result	----	----	----
Field Tests									
Conductivity, field	----	EF001/VA	0.10	µS/cm	43.000	35.000	----	----	----
pH, field	----	EF001/VA	0.10	pH units	6.94	7.10	----	----	----
Temperature, field	----	EF001/VA	0.10	°C	9.70	8.20	----	----	----
Physical Tests									
Hardness (as CaCO ₃), dissolved	----	EC100/VA	0.60	mg/L	12.2	11.6	----	----	----
Hardness (as CaCO ₃), from total Ca/Mg	----	EC100A/VA	0.60	mg/L	13.9	13.7	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	36	33	----	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	14.8	21.8	----	----	----
Alkalinity, total (as CaCO ₃)	----	E290/VA	2.0	mg/L	10.6	10.5	----	----	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	0.109	0.0840	----	----	----
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	<0.050	<0.050	----	----	----
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	1.02	1.00	----	----	----
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	<0.020	<0.020	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L	0.0469	0.0471	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L	<0.0010	<0.0010	----	----	----
Nitrogen, total	7727-37-9	E366/VA	0.030	mg/L	0.239	0.220	----	----	----
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L	0.0397	0.0696	----	----	----
Sulfate (as SO ₄)	14808-79-8	E235.SO4/VA	0.30	mg/L	3.02	2.97	----	----	----
Organic / Inorganic Carbon									
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L	3.83	4.03	----	----	----



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	SQU US1	SQU DS1	----	----	----
					Client sampling date / time	28-Oct-2024 10:22	28-Oct-2024 10:47	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C9077-001	VA24C9077-002	----	----	----	
					Result	Result	----	----	----	
Total Sulfides										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	0.0026	0.0021	----	----	----	
Sulfide, un-ionized (as H2S), from total	7783-06-4	EC395/VA	0.0015	mg/L	0.0018	<0.0015	----	----	----	
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L	0.0028	0.0022	----	----	----	
Total Metals										
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L	0.810	0.816	----	----	----	
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L	0.00020	0.00020	----	----	----	
Barium, total	7440-39-3	E420/VA	0.00010	mg/L	0.0114	0.0116	----	----	----	
Beryllium, total	7440-41-7	E420/VA	0.000100	mg/L	<0.000100	<0.000100	----	----	----	
Bismuth, total	7440-69-9	E420/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Boron, total	7440-42-8	E420/VA	0.010	mg/L	<0.010	<0.010	----	----	----	
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L	0.0000154	0.0000124	----	----	----	
Calcium, total	7440-70-2	E420/VA	0.050	mg/L	4.58	4.47	----	----	----	
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L	0.000022	0.000026	----	----	----	
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L	0.00021	0.00024	----	----	----	
Copper, total	7440-50-8	E420/VA	0.00050	mg/L	0.00244	0.00308	----	----	----	
Iron, total	7439-89-6	E420/VA	0.010	mg/L	0.440	0.471	----	----	----	
Lead, total	7439-92-1	E420/VA	0.000050	mg/L	0.000177	0.000246	----	----	----	
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L	<0.0010	<0.0010	----	----	----	
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L	0.604	0.611	----	----	----	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	SQU US1	SQU DS1	----	----	----
					Client sampling date / time	28-Oct-2024 10:22	28-Oct-2024 10:47	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C9077-001	VA24C9077-002	----	----	----	
					Result	Result	----	----	----	
Total Metals										
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L	0.0137	0.0148	----	----	----	
Mercury, total	7439-97-6	E508/EO	0.0000050	mg/L	<0.0000050	<0.0000050	----	----	----	
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L	0.000411	0.000449	----	----	----	
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L	<0.050	0.052	----	----	----	
Potassium, total	7440-09-7	E420/VA	0.050	mg/L	0.480	0.510	----	----	----	
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L	0.00077	0.00084	----	----	----	
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Silicon, total	7440-21-3	E420/VA	0.10	mg/L	4.40	4.29	----	----	----	
Silver, total	7440-22-4	E420/VA	0.000010	mg/L	0.000246	<0.000010	----	----	----	
Sodium, total	7440-23-5	E420/VA	0.050	mg/L	1.52	1.48	----	----	----	
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L	0.0321	0.0312	----	----	----	
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L	0.86	0.78	----	----	----	
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L	<0.00020	<0.00020	----	----	----	
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Tin, total	7440-31-5	E420/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L	0.0149	0.0175	----	----	----	
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L	0.000048	0.000048	----	----	----	
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L	0.00147	0.00153	----	----	----	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	SQU US1	SQU DS1	----	----	----
					Client sampling date / time	28-Oct-2024 10:22	28-Oct-2024 10:47	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C9077-001	VA24C9077-002	----	----	----	
					Result	Result	----	----	----	
Total Metals										
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L	0.0043	0.0075	----	----	----	
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L	0.00028	0.00021	----	----	----	
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L	0.119	0.113	----	----	----	
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L	0.00010	<0.00010	----	----	----	
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L	0.00566	0.00578	----	----	----	
Beryllium, dissolved	7440-41-7	E421/VA	0.000100	mg/L	<0.000100	<0.000100	----	----	----	
Bismuth, dissolved	7440-69-9	E421/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Boron, dissolved	7440-42-8	E421/VA	0.010	mg/L	<0.010	<0.010	----	----	----	
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L	0.0000100	0.0000087	----	----	----	
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L	4.16	3.95	----	----	----	
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
Chromium, dissolved	7440-47-3	E421/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
Cobalt, dissolved	7440-48-4	E421/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Copper, dissolved	7440-50-8	E421/VA	0.00020	mg/L	0.00114	0.00112	----	----	----	
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L	0.085	0.063	----	----	----	
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L	<0.0010	<0.0010	----	----	----	
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L	0.452	0.431	----	----	----	
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L	0.00450	0.00392	----	----	----	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	SQU US1	SQU DS1	----	----	----
					Client sampling date / time	28-Oct-2024 10:22	28-Oct-2024 10:47	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C9077-001	VA24C9077-002	----	----	----	
					Result	Result	----	----	----	
Dissolved Metals										
Mercury, dissolved	7439-97-6	E509/EO	0.0000050	mg/L	<0.0000050	<0.0000050	----	----	----	
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L	0.000400	0.000366	----	----	----	
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
Phosphorus, dissolved	7723-14-0	E421/VA	0.050	mg/L	<0.050	<0.050	----	----	----	
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L	0.403	0.402	----	----	----	
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L	0.00059	0.00048	----	----	----	
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L	3.43	3.34	----	----	----	
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L	1.48	1.38	----	----	----	
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L	0.0248	0.0238	----	----	----	
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L	0.79	0.64	----	----	----	
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L	<0.00020	<0.00020	----	----	----	
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
Thorium, dissolved	7440-29-1	E421/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Tin, dissolved	7440-31-5	E421/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L	0.00144	0.00141	----	----	----	
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L	0.000033	0.000035	----	----	----	
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L	0.00079	0.00075	----	----	----	
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L	0.0013	0.0014	----	----	----	



Analytical Results

Sub-Matrix: Water
(Matrix: Water)

					Client sample ID		SQU US1	SQU DS1	----	----	----
					Client sampling date / time		28-Oct-2024 10:22	28-Oct-2024 10:47	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C9077-001	VA24C9077-002	----	----	----	----	----
					Result	Result	----	----	----	----	----
Dissolved Metals											
Zirconium, dissolved	7440-67-7	E421/VA	0.00020	mg/L	<0.00020	<0.00020	----	----	----	----	----
Dissolved mercury filtration location	----	EP509/EO	-	-	Field	Field	----	----	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	-	Field	Field	----	----	----	----	----
Speciated Metals											
Chromium, hexavalent [Cr VI], total	18540-29-9	E532/WT	0.00050	mg/L	<0.00050	<0.00050	----	----	----	----	----
Chromium, trivalent [Cr III], total	16065-83-1	EC535/WT	0.00050	mg/L	<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 : **VA24C9077**

Page : 1 of 14

Client
 Contact
 Address

 Telephone
 Project
 PO
 C-O-C number : ----
 Sampler : ----
 Site : Water Analysis
 Quote number : VA23-TRIT100-012_V2
 No. of samples received : 2
 No. of samples analysed : 2

Laboratory
 Account Manager
 Address

 Telephone
 Date Samples Received : 29-Oct-2024 11:27
 Issue Date : 05-Nov-2024 14:01

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
- No Matrix Spike outliers occur.
- 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.



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		
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) SQU DS1	E298	28-Oct-2024	02-Nov-2024	28 days	5 days	✔	04-Nov-2024	28 days	7 days	✔	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) SQU US1	E298	28-Oct-2024	02-Nov-2024	28 days	5 days	✔	04-Nov-2024	28 days	7 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE SQU DS1	E235.Br-L	28-Oct-2024	30-Oct-2024	28 days	2 days	✔	30-Oct-2024	28 days	2 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE SQU US1	E235.Br-L	28-Oct-2024	30-Oct-2024	28 days	2 days	✔	30-Oct-2024	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC											
HDPE SQU DS1	E235.Cl	28-Oct-2024	30-Oct-2024	28 days	2 days	✔	30-Oct-2024	28 days	2 days	✔	
Anions and Nutrients : Chloride in Water by IC											
HDPE SQU US1	E235.Cl	28-Oct-2024	30-Oct-2024	28 days	2 days	✔	30-Oct-2024	28 days	2 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE SQU DS1	E235.F	28-Oct-2024	30-Oct-2024	28 days	2 days	✔	30-Oct-2024	28 days	2 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		
Anions and Nutrients : Fluoride in Water by IC											
HDPE SQU US1	E235.F	28-Oct-2024	30-Oct-2024	28 days	2 days	✔	30-Oct-2024	28 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE SQU DS1	E235.NO3-L	28-Oct-2024	30-Oct-2024	3 days	2 days	✔	30-Oct-2024	3 days	2 days	✔	
Anions and Nutrients : Nitrate in Water by IC (Low Level)											
HDPE SQU US1	E235.NO3-L	28-Oct-2024	30-Oct-2024	3 days	2 days	✔	30-Oct-2024	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE SQU DS1	E235.NO2-L	28-Oct-2024	30-Oct-2024	3 days	2 days	✔	30-Oct-2024	3 days	2 days	✔	
Anions and Nutrients : Nitrite in Water by IC (Low Level)											
HDPE SQU US1	E235.NO2-L	28-Oct-2024	30-Oct-2024	3 days	2 days	✔	30-Oct-2024	3 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE SQU DS1	E235.SO4	28-Oct-2024	30-Oct-2024	28 days	2 days	✔	30-Oct-2024	28 days	2 days	✔	
Anions and Nutrients : Sulfate in Water by IC											
HDPE SQU US1	E235.SO4	28-Oct-2024	30-Oct-2024	28 days	2 days	✔	30-Oct-2024	28 days	2 days	✔	
Anions and Nutrients : Total Nitrogen by Colourimetry											
Amber glass total (sulfuric acid) SQU DS1	E366	28-Oct-2024	02-Nov-2024	28 days	5 days	✔	04-Nov-2024	28 days	7 days	✔	
Anions and Nutrients : Total Nitrogen by Colourimetry											
Amber glass total (sulfuric acid) SQU US1	E366	28-Oct-2024	02-Nov-2024	28 days	5 days	✔	04-Nov-2024	28 days	7 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		
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) SQU DS1	E372-U	28-Oct-2024	02-Nov-2024	28 days	5 days	✔	03-Nov-2024	28 days	6 days	✔	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) SQU US1	E372-U	28-Oct-2024	02-Nov-2024	28 days	5 days	✔	03-Nov-2024	28 days	6 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) SQU DS1	E509	28-Oct-2024	01-Nov-2024	28 days	4 days	✔	01-Nov-2024	28 days	4 days	✔	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) SQU US1	E509	28-Oct-2024	01-Nov-2024	28 days	4 days	✔	01-Nov-2024	28 days	4 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) SQU DS1	E421	28-Oct-2024	31-Oct-2024	180 days	3 days	✔	01-Nov-2024	180 days	4 days	✔	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) SQU US1	E421	28-Oct-2024	31-Oct-2024	180 days	3 days	✔	01-Nov-2024	180 days	4 days	✔	
Field Tests : Field pH,EC,Salinity, TDS, Cl2,CIO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine											
HDPE dissolved (nitric acid) SQU DS1	EF001	28-Oct-2024	----	----	----		31-Oct-2024	----	3 days		
Field Tests : Field pH,EC,Salinity, TDS, Cl2,CIO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine											
HDPE dissolved (nitric acid) SQU US1	EF001	28-Oct-2024	----	----	----		31-Oct-2024	----	3 days		
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) SQU DS1	E358-L	28-Oct-2024	02-Nov-2024	28 days	5 days	✔	02-Nov-2024	28 days	5 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		
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) SQU US1	E358-L	28-Oct-2024	02-Nov-2024	28 days	5 days	✓	02-Nov-2024	28 days	5 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE SQU DS1	E290	28-Oct-2024	30-Oct-2024	14 days	2 days	✓	30-Oct-2024	14 days	2 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE SQU US1	E290	28-Oct-2024	30-Oct-2024	14 days	2 days	✓	30-Oct-2024	14 days	2 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE SQU DS1	E162	28-Oct-2024	----	----	----		31-Oct-2024	7 days	4 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE SQU US1	E162	28-Oct-2024	----	----	----		31-Oct-2024	7 days	4 days	✓	
Physical Tests : TSS by Gravimetry											
HDPE SQU DS1	E160	28-Oct-2024	----	----	----		31-Oct-2024	7 days	4 days	✓	
Physical Tests : TSS by Gravimetry											
HDPE SQU US1	E160	28-Oct-2024	----	----	----		31-Oct-2024	7 days	4 days	✓	
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC											
UV-inhibited HDPE - total (sodium hydroxide) SQU DS1	E532	28-Oct-2024	----	----	----		31-Oct-2024	28 days	3 days	✓	
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC											
UV-inhibited HDPE - total (sodium hydroxide) SQU US1	E532	28-Oct-2024	----	----	----		31-Oct-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		
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) SQU DS1	E508	28-Oct-2024	01-Nov-2024	28 days	4 days	✔	01-Nov-2024	28 days	4 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) SQU US1	E508	28-Oct-2024	01-Nov-2024	28 days	4 days	✔	01-Nov-2024	28 days	4 days	✔	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) SQU DS1	E420	28-Oct-2024	30-Oct-2024	180 days	2 days	✔	01-Nov-2024	180 days	4 days	✔	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) SQU US1	E420	28-Oct-2024	30-Oct-2024	180 days	2 days	✔	01-Nov-2024	180 days	4 days	✔	
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)											
HDPE total (zinc acetate+sodium hydroxide) SQU DS1	E395	28-Oct-2024	----	----	----		31-Oct-2024	7 days	3 days	✔	
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)											
HDPE total (zinc acetate+sodium hydroxide) SQU US1	E395	28-Oct-2024	----	----	----		31-Oct-2024	7 days	3 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 (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1740409	1	16	6.2	5.0	✔
Ammonia by Fluorescence	E298	1746507	1	19	5.2	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1740403	1	17	5.8	5.0	✔
Chloride in Water by IC	E235.Cl	1740402	1	17	5.8	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	1742949	1	20	5.0	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	1740314	1	18	5.5	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1746510	1	16	6.2	5.0	✔
Fluoride in Water by IC	E235.F	1740401	1	19	5.2	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1740404	1	18	5.5	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1740405	1	19	5.2	5.0	✔
Sulfate in Water by IC	E235.SO4	1740406	1	17	5.8	5.0	✔
TDS by Gravimetry	E162	1744218	1	20	5.0	5.0	✔
Total Hexavalent Chromium (Cr VI) by IC	E532	1742968	1	20	5.0	5.0	✔
Total Mercury in Water by CVAAS	E508	1741327	1	19	5.2	5.0	✔
Total Metals in Water by CRC ICPMS	E420	1738572	1	20	5.0	5.0	✔
Total Nitrogen by Colourimetry	E366	1746512	1	13	7.6	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1746508	1	17	5.8	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1742851	1	10	10.0	5.0	✔
TSS by Gravimetry	E160	1744224	1	20	5.0	5.0	✔
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1740409	1	16	6.2	5.0	✔
Ammonia by Fluorescence	E298	1746507	1	19	5.2	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1740403	1	17	5.8	5.0	✔
Chloride in Water by IC	E235.Cl	1740402	1	17	5.8	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	1742949	1	20	5.0	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	1740314	1	18	5.5	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1746510	1	16	6.2	5.0	✔
Fluoride in Water by IC	E235.F	1740401	1	19	5.2	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1740404	1	18	5.5	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1740405	1	19	5.2	5.0	✔
Sulfate in Water by IC	E235.SO4	1740406	1	17	5.8	5.0	✔
TDS by Gravimetry	E162	1744218	1	20	5.0	5.0	✔
Total Hexavalent Chromium (Cr VI) by IC	E532	1742968	1	20	5.0	5.0	✔
Total Mercury in Water by CVAAS	E508	1741327	1	19	5.2	5.0	✔
Total Metals in Water by CRC ICPMS	E420	1738572	1	20	5.0	5.0	✔
Total Nitrogen by Colourimetry	E366	1746512	1	13	7.6	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
Analytical Methods							
Laboratory Control Samples (LCS) - Continued							
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1746508	1	17	5.8	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1742851	1	10	10.0	5.0	✔
TSS by Gravimetry	E160	1744224	1	20	5.0	5.0	✔
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1740409	1	16	6.2	5.0	✔
Ammonia by Fluorescence	E298	1746507	1	19	5.2	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1740403	1	17	5.8	5.0	✔
Chloride in Water by IC	E235.Cl	1740402	1	17	5.8	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	1742949	1	20	5.0	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	1740314	1	18	5.5	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1746510	1	16	6.2	5.0	✔
Fluoride in Water by IC	E235.F	1740401	1	19	5.2	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1740404	1	18	5.5	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1740405	1	19	5.2	5.0	✔
Sulfate in Water by IC	E235.SO4	1740406	1	17	5.8	5.0	✔
TDS by Gravimetry	E162	1744218	1	20	5.0	5.0	✔
Total Hexavalent Chromium (Cr VI) by IC	E532	1742968	1	20	5.0	5.0	✔
Total Mercury in Water by CVAAS	E508	1741327	1	19	5.2	5.0	✔
Total Metals in Water by CRC ICPMS	E420	1738572	1	20	5.0	5.0	✔
Total Nitrogen by Colourimetry	E366	1746512	1	13	7.6	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1746508	1	17	5.8	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1742851	1	10	10.0	5.0	✔
TSS by Gravimetry	E160	1744224	1	20	5.0	5.0	✔
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1746507	1	19	5.2	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1740403	1	17	5.8	5.0	✔
Chloride in Water by IC	E235.Cl	1740402	1	17	5.8	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	1742949	1	20	5.0	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	1740314	1	18	5.5	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1746510	1	16	6.2	5.0	✔
Fluoride in Water by IC	E235.F	1740401	1	19	5.2	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1740404	1	18	5.5	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1740405	1	19	5.2	5.0	✔
Sulfate in Water by IC	E235.SO4	1740406	1	17	5.8	5.0	✔
Total Hexavalent Chromium (Cr VI) by IC	E532	1742968	1	20	5.0	5.0	✔
Total Mercury in Water by CVAAS	E508	1741327	1	19	5.2	5.0	✔
Total Metals in Water by CRC ICPMS	E420	1738572	1	20	5.0	5.0	✔
Total Nitrogen by Colourimetry	E366	1746512	1	13	7.6	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1746508	1	17	5.8	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>							
<i>Matrix Spikes (MS) - Continued</i>							
Total Sulfide by Colourimetry (Automated Flow)	E395	1742851	1	10	10.0	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)
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 CO ₂ . 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 H ₂ S" if reported represent the maximum possible H ₂ S concentration based on the total sulfide concentration in the sample. The H ₂ S calculation converts Total Sulphide as (S ₂ ⁻) and reports it as Total Sulphide as (H ₂ S)
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 - Edmonton	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 ALS Environmental - Edmonton	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.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Hexavalent Chromium (Cr VI) by IC	E532 ALS Environmental - Waterloo	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 Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ 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 ₃), from total Ca/Mg" is calculated from the sum of total Calcium and Magnesium concentrations, expressed in CaCO ₃ 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.
Un-ionized Total Hydrogen Sulfide (calculated)	EC395 ALS Environmental - Vancouver	Water	APHA 4500 -S H	Un-ionized sulfide is calculated using results from total sulfide analysis, pH, temperature, and ionic strength of the sample. Calculation of un-ionized sulfide using total sulfide concentrations may be biased high due to particulate forms of sulfide measured during total sulfide testing.
Total Trivalent Chromium (Cr III) by Calculation	EC535 ALS Environmental - Waterloo	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.
Field pH,EC,Salinity, TDS, Cl ₂ ,ClO ₂ ,ORP,DO, Turbidity,T,T-P,o-PO ₄ ,NH ₃ ,Chloramine	EF001 ALS Environmental - Vancouver	Water	Field Measurement (Client Supplied)	Field pH,EC,Salinity, TDS, Cl ₂ ,ClO ₂ ,ORP,DO, Turbidity,T,T-P,o-PO ₄ ,NH ₃ 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 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.



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Dissolved Metals Water Filtration	EP421 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 ALS Environmental - Edmonton	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

QUALITY CONTROL REPORT

Work Order : **VA24C9077**
Client : [Redacted]
Contact : [Redacted]
Address : [Redacted]
Telephone : ----
Project : 11964
PO : 11964 - TASK 20 - Phase 3C - 4C
C-O-C number : ----
Sampler : ----
Site : Water Analysis
Quote number : VA23-TRIT100-012_V2
No. of samples received : 2
No. of samples analysed : 2

Page : 1 of 17
Laboratory : [Redacted]
Account Manager : [Redacted]
Address : [Redacted]
Telephone : [Redacted]
Date Samples Received : 29-Oct-2024 11:27
Date Analysis Commenced : 30-Oct-2024
Issue Date : 05-Nov-2024 14:01

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.

Signatories	Position	Laboratory Department
[Redacted Signatory Information]		

Page : 2 of 17
Work Order : VA24C9077
Client : Triton Environmental Consultants Ltd.
Project : 11964



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

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



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
Physical Tests (QC Lot: 1740409)											
FJ2403304-003	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	98.0	97.7	0.306%	20%	----
Physical Tests (QC Lot: 1744218)											
VA24C9077-001	SQU US1	Solids, total dissolved [TDS]	----	E162	10	mg/L	36	25	11	Diff <2x LOR	----
Physical Tests (QC Lot: 1744224)											
VA24C9077-001	SQU US1	Solids, total suspended [TSS]	----	E160	3.0	mg/L	14.8	12.0	2.8	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1740401)											
FJ2403304-001	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.230	0.226	1.58%	20%	----
Anions and Nutrients (QC Lot: 1740402)											
FJ2403304-001	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	65.9	66.2	0.461%	20%	----
Anions and Nutrients (QC Lot: 1740403)											
FJ2403304-001	Anonymous	Bromide	24959-67-9	E235.Br-L	0.050	mg/L	1.11	1.12	0.732%	20%	----
Anions and Nutrients (QC Lot: 1740404)											
FJ2403304-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.240	0.240	0.339%	20%	----
Anions and Nutrients (QC Lot: 1740405)											
FJ2403304-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0164	0.0169	2.82%	20%	----
Anions and Nutrients (QC Lot: 1740406)											
FJ2403304-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	87.3	87.6	0.368%	20%	----
Anions and Nutrients (QC Lot: 1746507)											
VA24C8876-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1746508)											
VA24C8876-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0032	0.0030	0.0002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1746512)											
VA24C8954-001	Anonymous	Nitrogen, total	7727-37-9	E366	0.030	mg/L	0.473	0.469	0.825%	20%	----
Organic / Inorganic Carbon (QC Lot: 1746510)											
VA24C8876-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	1.82	1.86	0.04	Diff <2x LOR	----
Total Sulfides (QC Lot: 1742851)											
VA24C9075-001	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.0037	0.0036	0.00009	Diff <2x LOR	----
Total Metals (QC Lot: 1738572)											
VA24C8994-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0314	0.0320	2.00%	20%	----
		Antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	<0.00010	0	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
Total Metals (QC Lot: 1738572) - continued											
VA24C8994-001	Anonymous	Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00015	0.00016	0.00001	Diff <2x LOR	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.00320	0.00325	1.62%	20%	----
		Beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0000433	0.0000423	0.0000010	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	8.40	8.53	1.59%	20%	----
		Cesium, total	7440-46-2	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Chromium, total	7440-47-3	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Copper, total	7440-50-8	E420	0.000050	mg/L	0.0551	0.0558	1.14%	20%	----
		Iron, total	7439-89-6	E420	0.010	mg/L	0.019	0.019	0.0004	Diff <2x LOR	----
		Lead, total	7439-92-1	E420	0.000050	mg/L	0.00120	0.00119	0.946%	20%	----
		Lithium, total	7439-93-2	E420	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	0.230	0.231	0.159%	20%	----
		Manganese, total	7439-96-5	E420	0.000010	mg/L	0.00826	0.00814	1.48%	20%	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000461	0.000387	0.000074	Diff <2x LOR	----
		Nickel, total	7440-02-0	E420	0.000050	mg/L	0.00065	0.00067	0.00002	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, total	7440-09-7	E420	0.050	mg/L	0.194	0.199	0.005	Diff <2x LOR	----
		Rubidium, total	7440-17-7	E420	0.000020	mg/L	0.00037	0.00032	0.00005	Diff <2x LOR	----
		Selenium, total	7782-49-2	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Silicon, total	7440-21-3	E420	0.10	mg/L	1.82	1.82	0.0315%	20%	----
		Silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, total	7440-23-5	E420	0.050	mg/L	2.19	2.20	0.301%	20%	----
		Strontium, total	7440-24-6	E420	0.000020	mg/L	0.0139	0.0140	0.713%	20%	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Tellurium, total	13494-80-9	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, total	7440-29-1	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Tin, total	7440-31-5	E420	0.000010	mg/L	0.00013	0.00013	0.0000006	Diff <2x LOR	----
		Titanium, total	7440-32-6	E420	0.000030	mg/L	<0.000030	<0.000030	0	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E420	0.000010	mg/L	0.000022	0.000023	0.0000006	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
Total Metals (QC Lot: 1738572) - continued											
VA24C8994-001	Anonymous	Vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420	0.0030	mg/L	0.235	0.238	1.15%	20%	----
		Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 1741327)											
FC2402957-003	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	0.0000058	<0.0000050	0.0000008	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1740314)											
VA24C8827-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0115	0.0123	6.66%	20%	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00015	0.00015	0.000004	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00495	0.00486	1.74%	20%	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.00335	0.00341	1.71%	20%	----
		Beryllium, dissolved	7440-41-7	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E421	0.010	mg/L	1.37	1.34	2.66%	20%	----
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	1.29	1.29	0.365%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	0.000055	0.000056	0.0000009	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00030	0.00028	0.00002	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0087	0.0087	0.00003	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	0.0545	0.0536	1.64%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00072	0.00073	0.000007	Diff <2x LOR	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000505	0.000483	0.000022	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.346	0.364	0.017	Diff <2x LOR	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00040	0.00047	0.00006	Diff <2x LOR	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	11.4	11.3	1.03%	20%	----
		Silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	56.4	59.2	4.86%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.0155	0.0155	0.315%	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
Dissolved Metals (QC Lot: 1740314) - continued											
VA24C8827-001	Anonymous	Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	1.68	1.69	0.02	Diff <2x LOR	----
		Tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	0.00233	0.00226	3.21%	20%	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000017	0.000016	0.000001	Diff <2x LOR	----
		Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	0.00081	0.00080	0.00001	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	0.0010	0.000007	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1742949)											
EO2409827-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 1742968)											
KS2404490-001	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.00050	mg/L	0.00577	0.00580	0.565%	20%	----



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
Physical Tests (QCLot: 1740409)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1744218)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1744224)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Anions and Nutrients (QCLot: 1740401)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1740402)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1740403)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1740404)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1740405)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1740406)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1746507)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1746508)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 1746512)						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
Organic / Inorganic Carbon (QCLot: 1746510)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1742851)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1738572)						
Aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
Barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1738572) - continued						
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	MBRR
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	----
Zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1741327)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1740314)						
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	----
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	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1740314) - continued						
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	----
Dissolved Metals (QCLot: 1742949)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Speciated Metals (QCLot: 1742968)						
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	<0.00050	----

Qualifiers

Qualifier	Description
MBRR	Initial MB for this submission had positive results for flagged analyte (data not shown). Low level samples were repeated with new QC (2nd MB results shown). High level results (>5x initial MB level) and non-detect results were reported and are defensible



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				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1740409)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	105	85.0	115	----
Physical Tests (QCLot: 1744218)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	101	85.0	115	----
Physical Tests (QCLot: 1744224)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	94.0	85.0	115	----
Anions and Nutrients (QCLot: 1740401)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 1740402)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 1740403)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	106	85.0	115	----
Anions and Nutrients (QCLot: 1740404)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 1740405)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 1740406)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1746507)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	103	85.0	115	----
Anions and Nutrients (QCLot: 1746508)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	94.4	80.0	120	----
Anions and Nutrients (QCLot: 1746512)									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	100	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1746510)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	94.5	80.0	120	----
Total Sulfides (QCLot: 1742851)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	105	80.0	120	----
Total Metals (QCLot: 1738572)									



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1738572) - continued									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	97.3	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	102	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	105	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	96.6	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	107	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	101	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	102	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	98.3	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	93.1	80.0	120	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	101	80.0	120	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	99.3	80.0	120	----
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	98.8	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	93.9	80.0	120	----
Lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	104	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	91.0	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	100	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	97.0	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	100	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	97.8	80.0	120	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	98.0	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	98.7	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	98.0	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	98.5	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	102	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	96.1	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	107	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	101	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	90.7	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	100	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	100	80.0	120	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	100	80.0	120	----
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	106	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	96.2	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	103	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	105	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1738572) - continued									
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	99.6	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	104	80.0	120	----
Total Metals (QCLot: 1741327)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	105	80.0	120	----
Dissolved Metals (QCLot: 1740314)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	98.0	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	97.2	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	102	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	97.6	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	92.6	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	94.8	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	86.1	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	99.6	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	90.2	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	92.8	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	101	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	98.1	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	98.3	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	96.6	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	97.5	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	90.7	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	98.2	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	97.3	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	95.2	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	96.6	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	105	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	100	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	99.2	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	100	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	108	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	86.6	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	104	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	92.8	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	87.8	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1740314) - continued									
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	99.6	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	98.5	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	93.0	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	96.2	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	103	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	102	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	95.4	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	102	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	103	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	94.1	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	106	80.0	120	----
Speciated Metals (QCLot: 1742968)									
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	0.025 mg/L	96.1	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
Anions and Nutrients (QCLot: 1740401)										
FJ2403304-002	Anonymous	Fluoride	16984-48-8	E235.F	1.00 mg/L	1 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1740402)										
FJ2403304-002	Anonymous	Chloride	16887-00-6	E235.Cl	98.0 mg/L	100 mg/L	98.0	75.0	125	----
Anions and Nutrients (QCLot: 1740403)										
FJ2403304-002	Anonymous	Bromide	24959-67-9	E235.Br-L	ND mg/L	----	ND	75.0	125	----
Anions and Nutrients (QCLot: 1740404)										
FJ2403304-002	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	2.55 mg/L	2.5 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1740405)										
FJ2403304-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.513 mg/L	0.5 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1740406)										
FJ2403304-002	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	----	ND	75.0	125	----
Anions and Nutrients (QCLot: 1746507)										
VA24C8876-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.102 mg/L	0.1 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1746508)										
VA24C8876-002	Anonymous	Phosphorus, total	7723-14-0	E372-U	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1746512)										
VA24C8954-002	Anonymous	Nitrogen, total	7727-37-9	E366	ND mg/L	----	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1746510)										
VA24C8876-002	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	4.73 mg/L	5 mg/L	94.7	70.0	130	----
Total Sulfides (QCLot: 1742851)										
VA24C9075-002	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.232 mg/L	0.2 mg/L	116	75.0	125	----
Total Metals (QCLot: 1738572)										
VA24C8994-002	Anonymous	Aluminum, total	7429-90-5	E420	0.181 mg/L	0.2 mg/L	90.5	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0191 mg/L	0.02 mg/L	95.4	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0193 mg/L	0.02 mg/L	96.5	70.0	130	----
		Barium, total	7440-39-3	E420	0.0184 mg/L	0.02 mg/L	92.2	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0377 mg/L	0.04 mg/L	94.3	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.0102 mg/L	0.01 mg/L	102	70.0	130	----
		Boron, total	7440-42-8	E420	0.099 mg/L	0.1 mg/L	98.9	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00402 mg/L	0.004 mg/L	100	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.00962 mg/L	0.01 mg/L	96.2	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0386 mg/L	0.04 mg/L	96.6	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
Total Metals (QCLot: 1738572) - continued										
VA24C8994-002	Anonymous	Cobalt, total	7440-48-4	E420	0.0191 mg/L	0.02 mg/L	95.5	70.0	130	----
		Copper, total	7440-50-8	E420	ND mg/L	----	ND	70.0	130	----
		Iron, total	7439-89-6	E420	1.82 mg/L	2 mg/L	91.2	70.0	130	----
		Lead, total	7439-92-1	E420	0.0187 mg/L	0.02 mg/L	93.4	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0872 mg/L	0.1 mg/L	87.2	70.0	130	----
		Magnesium, total	7439-95-4	E420	0.933 mg/L	1 mg/L	93.3	70.0	130	----
		Manganese, total	7439-96-5	E420	0.0187 mg/L	0.02 mg/L	93.7	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0190 mg/L	0.02 mg/L	95.2	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0378 mg/L	0.04 mg/L	94.6	70.0	130	----
		Phosphorus, total	7723-14-0	E420	9.02 mg/L	10 mg/L	90.2	70.0	130	----
		Potassium, total	7440-09-7	E420	3.72 mg/L	4 mg/L	93.0	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0181 mg/L	0.02 mg/L	90.5	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0389 mg/L	0.04 mg/L	97.4	70.0	130	----
		Silicon, total	7440-21-3	E420	9.46 mg/L	10 mg/L	94.6	70.0	130	----
		Silver, total	7440-22-4	E420	0.00392 mg/L	0.004 mg/L	98.1	70.0	130	----
		Sodium, total	7440-23-5	E420	ND mg/L	----	ND	70.0	130	----
		Strontium, total	7440-24-6	E420	0.0183 mg/L	0.02 mg/L	91.6	70.0	130	----
		Sulfur, total	7704-34-9	E420	19.6 mg/L	20 mg/L	98.2	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.0394 mg/L	0.04 mg/L	98.4	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00365 mg/L	0.004 mg/L	91.3	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0193 mg/L	0.02 mg/L	96.4	70.0	130	----
		Tin, total	7440-31-5	E420	0.0198 mg/L	0.02 mg/L	99.3	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0368 mg/L	0.04 mg/L	92.0	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		Uranium, total	7440-61-1	E420	0.00384 mg/L	0.004 mg/L	96.0	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.0937 mg/L	0.1 mg/L	93.7	70.0	130	----
		Zinc, total	7440-66-6	E420	0.375 mg/L	0.4 mg/L	93.8	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0419 mg/L	0.04 mg/L	105	70.0	130	----
Total Metals (QCLot: 1741327)										
FC2402957-004	Anonymous	Mercury, total	7439-97-6	E508	0.000106 mg/L	0 mg/L	106	70.0	130	----
Dissolved Metals (QCLot: 1740314)										
VA24C8827-002	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.192 mg/L	0.2 mg/L	95.8	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0200 mg/L	0.02 mg/L	99.8	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0203 mg/L	0.02 mg/L	102	70.0	130	----
		Barium, dissolved	7440-39-3	E421	ND mg/L	----	ND	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0356 mg/L	0.04 mg/L	88.9	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00908 mg/L	0.01 mg/L	90.8	70.0	130	----
		Boron, dissolved	7440-42-8	E421	ND mg/L	----	ND	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00387 mg/L	0.004 mg/L	96.7	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.00941 mg/L	0.01 mg/L	94.1	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0385 mg/L	0.04 mg/L	96.3	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0187 mg/L	0.02 mg/L	93.5	70.0	130	----

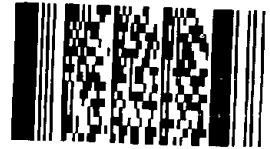


Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1740314) - continued										
VA24C8827-002	Anonymous	Copper, dissolved	7440-50-8	E421	0.0184 mg/L	0.02 mg/L	92.2	70.0	130	----
		Iron, dissolved	7439-89-6	E421	1.91 mg/L	2 mg/L	95.6	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0182 mg/L	0.02 mg/L	91.2	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0849 mg/L	0.1 mg/L	84.9	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	----	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	0.0198 mg/L	0.02 mg/L	98.8	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.0196 mg/L	0.02 mg/L	98.3	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0362 mg/L	0.04 mg/L	90.6	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	9.79 mg/L	10 mg/L	97.9	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	3.68 mg/L	4 mg/L	91.9	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.0197 mg/L	0.02 mg/L	98.4	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0394 mg/L	0.04 mg/L	98.5	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	ND mg/L	----	ND	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00360 mg/L	0.004 mg/L	89.9	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	ND mg/L	----	ND	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	----	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	19.4 mg/L	20 mg/L	97.0	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.0393 mg/L	0.04 mg/L	98.2	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00368 mg/L	0.004 mg/L	92.0	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0194 mg/L	0.02 mg/L	97.2	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0193 mg/L	0.02 mg/L	96.5	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0383 mg/L	0.04 mg/L	95.7	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0198 mg/L	0.02 mg/L	99.0	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00372 mg/L	0.004 mg/L	93.1	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.0990 mg/L	0.1 mg/L	99.0	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.388 mg/L	0.4 mg/L	96.9	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0391 mg/L	0.04 mg/L	97.8	70.0	130	----
Dissolved Metals (QCLot: 1742949)										
EO2409827-002	Anonymous	Mercury, dissolved	7439-97-6	E509	0.000118 mg/L	0 mg/L	118	70.0	130	----
Speciated Metals (QCLot: 1742968)										
KS2404490-001	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0400 mg/L	0.04 mg/L	100	70.0	130	----

Report To <small>Contact and company name below will appear on the final report</small>		Report Format / Distribution			Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)																											
Company:					Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply EMERGENCY 4 day [P4-20%] <input type="checkbox"/> 1 Business day [E1 - 100%] <input type="checkbox"/> 3 day [P3-25%] <input type="checkbox"/> Same Day, Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)] <input type="checkbox"/> 2 day [P2-50%] <input type="checkbox"/>																											
Contact:					Date and Time Required for all E&P TATs: 5 - Nov - 24																											
Phone:					For tests that can not be performed according to the service level selected, you will be contacted.																											
Street:					Analysis Request																											
City/Province:					<small>Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below</small>																											
Postal Code:																																
Invoice To					<small>SAMPLES ON HOLD</small>																											
Company:					<small>Sample is hazardous (please provide further details)</small>																											
Contact:					<small>NUMBER OF CONTAINERS</small>																											
Project Information				Oil and Gas Required Fields (client use)																												
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): C9077				ALS Contact:				Sampler:																								
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			<small>Total metals + mercury</small>	<small>Dissolved metals + mercury</small>	<small>Total hexavalent chromium</small>	<small>Total trivalent chromium</small>	<small>TSS</small>	<small>TDS</small>	<small>Nutrients (ammonia, ammonium, total nitrogen, total phosphorus)</small>	<small>Total sulfide (low) (as H2S)</small>	<small>Un-ionized Sulfide (low)</small>	<small>Anions scan (Br, Cl, F, NO2, NO3, SO4)</small>	<small>General parameters (alkalinity)</small>	<small>DOC</small>									
	SQU US 1				28-Oct-24		10:22		Water			R	R	R	R	R	R	R	R	R	R	R	R									
	pH: 6.94 cond: 43 µS/cm temp: 9.7 °C																															
	SQU DS 1				28-Oct-24		16:47		Water			R	R	R	R	R	R	R	R	R	R	R	R									
	pH: 7.10 cond: 35 µS/cm temp: 8.2 °C																															
Drinking Water (DW) Samples (client use)				Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)							SAMPLE CONDITION AS RECEIVED (lab use only)																					
Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO				Triton Project # 11964							Frozen: <input type="checkbox"/> SIF Observations: Yes <input type="checkbox"/> No <input type="checkbox"/> Ice Packs: <input checked="" type="checkbox"/> Ice Cubes: <input type="checkbox"/> Custody seal intact: Yes <input type="checkbox"/> No <input type="checkbox"/> Cooling Initiated: <input type="checkbox"/>																					
Are samples for human consumption/ use? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO											INITIAL COOLER TEMPERATURES °C: _____ FINAL COOLER TEMPERATURES °C: 7 °C																					
SHIPMENT RELEASE (client use)				INITIAL SHIPMENT RECEPTION (lab use only)							FINAL SHIPMENT RECEPTION (lab use only)																					
Released by: _____				Received by: _____			Date: _____				Time: _____			Received by: [Signature]			Date: Oct 28th				Time: 12:50											


Environmental Division
Vancouver
Work Order Reference
VA24C9077



Telephone: +1 604 263 4188

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

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

 Eagle Mountain - Woodfibre Gas Pipeline Project Waste Discharge Permit PE-110163 Report	Reporting Week	Oct. 28 th to Nov. 3 rd , 2024
	Report #	32
	Appendix B	B-4

BCR Site Receiving Environment Field Notes and Logs



FortisBC Eagle Mountain-Woodfibre Gas Pipeline

Water Discharge Authorization Water Quality Monitoring

2024-10-28-Chycoski-1137E

Project Component:	Tunnel	Site Name:	Receiving Environment - Downstream of Discharge
Inspection Date:	10/28/2024	Location:	BC Rail Site
Triton QP:	Lily Chycoski	Latitude/Longitude:	49.725205 -123.165012
Temperature(c): Low 5 High 10		Permit:	AE 111824
Weather Conditions:	Overcast	Ground Conditions:	Wet

Observations

Time: 10:47:00 **Flow Volume (visual):** high

Notes:

Odour Detected?: No **Notes:**

Unusual Colour?: No **Notes:**

Unusual Observations?: No **Notes:**

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

Samples Collected - Parameters

Total Metals + Mercury	Yes	General Parameters (Alkalinity)	Yes	Other Sample:
Dissolved Metals + Mercury	Yes	Total Sulfide, Unionized Sulfide	Yes	
TSS	Yes	Anions	Yes	
TDS	Yes	Total Trivalent Chromium	No	QA Samples: No
Nutrients	Yes	VOC/VPH	No	
DOC	Yes	EPH, PAH, LEPH/HEPH	No	
		Trout LC50	No	

Logger Maintenance

Logger Maintenance Performed?	Yes	Photo of COC with Lab Signature?	Yes
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Describe Logger Maintenance

Cleaned sonde of river debris

Photos



Photo: 1
Location: SQU DS 1
Description: US view



Photo: 2
Location: SQU DS 1
Description: Across view

Photos



Photo: 3
Location: SQU DS 1
Description: DS view

ALS Environmental 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 1

Report To: *Chycoski*

Company: *Environ Environmental*

Contact: *Patrick Strafe*

Phone: *520 735 7607*

Street: *1730-1111 West Georgia Street*

City/Town/Village: *Vancouver BC*

Postal Code: *V6E 4A3*

Invoice To: *Same as Report To*

Company: *Environ*

ALS Account # / Quota #: *VA23-TRT100-012*

Job #: *11864*

ALS Lab Work Order # (lab use only): *C9077*

ALS Sample # (lab use only): *10*

Sample Identification and/or Coordinates (This description will appear on the report): *cond: 48.2 μS/cm temp: 9.7 °C*

ALS Contact: *Chycoski*

Date (dd-mm-yy): *28-10-24*

Time (hh:mm): *10:22*

Sample Type: *Water*

Drinking Water (DW) Samples? (client use): No Yes

Special Instructions / Specify Criteria to add on report by ticking on the drop-down list below (lab use only):

Are samples taken from a regulated DW system? No Yes

Are samples for human consumption use? No Yes

Project: *71878*

Shipping Release (client use): No Yes

Final Shipment Reception (lab use only): *7 °C*

Received by: *Chycoski* Date: *28 OCT 24* Time: *12:46*

Received by: *[Signature]* Date: *28 OCT 24* Time: *12:46*

Environmental Division
Vancouver
Work Order Reference
VA24C9077

Barcode: *VA24C9077*

Photo: 4
Location: SQU DS 1
Description: Lab COC



2024-10-28-Chycoski-1137E

Sign Off

Report Prepared By: Lily Chycoski

Report Reviewed: Yes

Report Reviewer:

Professional(s) of Record:

Name:

Designation:

Designation Number:



FortisBC Eagle Mountain-Woodfibre Gas Pipeline

Water Discharge Authorization Water Quality Monitoring

2024-10-28-Chycoski-2FB1C

Project Component:	Tunnel	Site Name:	Receiving Environment - Upstream of Discharge	
Inspection Date:	10/28/2024	Location:	BC Rail Site	
Triton QP:	Lily Chycoski	Latitude/Longitude:	49.726866	-123.163912
Temperature(c):	Low 5	High 10	Permit:	AE 111824
Weather Conditions:	Overcast		Ground Conditions:	Wet

Observations

Time: 10:22:25 **Flow Volume (visual):** high
Notes: Sonde was stuck in the river, so we were unable to clean it.
Odour Detected?: No **Notes:**
Unusual Colour?: No **Notes:**
Unusual Observations?: No **Notes:**
Sheen on Water?: No **Notes:**

Samples Collected - Parameters

Total Metals + Mercury	Yes	General Parameters (Alkalinity)	Yes	Other Sample:
Dissolved Metals + Mercury	Yes	Total Sulfide, Unionized Sulfide	Yes	
TSS	Yes	Anions	Yes	
TDS	Yes	Total Trivalent Chromium	No	QA Samples: No
Nutrients	Yes	VOC/VPH	No	
DOC	Yes	EPH, PAH, LEPH/HEPH	No	
		Trout LC50	No	

Logger Maintenance

Logger Maintenance Performed? No **Photo of COC with Lab Signature?** Yes
Describe Logger Maintenance

Photos



Photo: 1
Location: SQU US 1
Description: US view



Photo: 2
Location: SQU US 1
Description: Across view

Photos



Photo: 3
Location: SQU US 1
Description: DS view

Chain of Custody (COC) / Analytical Request Form		Affix ALS barcode label here (ALS use only)		COC Number: 17 -																																									
ALS Environmental Canada Toll Free: 1 800 668 9878 www.alsglobal.com				Page: 1 of 1																																									
Report To: Company: Telson Environmental Contact: Farhad Shahal Phone: 604 755 5992 Company address below will appear on the final report Street: 1750 1111 West Georgia Street City/Province: Vancouver/BC Postal Code: V6E 4B3		Report Format / Distribution: Select Report Format: <input type="checkbox"/> PDF <input type="checkbox"/> DOCX <input type="checkbox"/> EXCEL <input type="checkbox"/> CSV Quality Control (QC) Report with Report: <input type="checkbox"/> Yes <input type="checkbox"/> No Check Results on Chain of Custody: <input type="checkbox"/> Print <input type="checkbox"/> No Print Select Distributor: <input type="checkbox"/> Print <input type="checkbox"/> No Print Email 1 of Fax: farhad.shahal@telson-env.com, Default Int Email 2: ashah@telson-env.com, My Chycoski@telson-env.com Email 3: EShah_Can@telson-env.com		Select Service Level Below - Contact your AM to confirm all EMP T&Ts (charges may apply): Regular: <input checked="" type="checkbox"/> 24 Hours (if requested by user - Service Level - no surcharge apply) 4 day (P4-24H): <input type="checkbox"/> 1 day (P1-24H): <input type="checkbox"/> 2 day (P2-24H): <input type="checkbox"/> Business day (B1 - 100%): <input type="checkbox"/> Same Day, Weekend or Statutory Holiday (S2 - 100% (Laboratory covering fees may apply)): 2 day (P2-24H): <input type="checkbox"/> See AM T&T for EMP T&T: <input checked="" type="checkbox"/> NO T&T																																									
Invoice To: Same as Report To: <input type="checkbox"/> Yes <input type="checkbox"/> No Copy of Invoice with Report: <input type="checkbox"/> Yes <input type="checkbox"/> No		Invoice Distribution: Select Invoice Distribution: <input type="checkbox"/> Print <input type="checkbox"/> No Print Email 1 of Fax: farhad.shahal@telson-env.com Email 2: shunmur@telson-env.com		Analysis Request: Indicate if desired (P = Preserved P/P or Printed and Preserved (P/P) below: P: <input type="checkbox"/> No <input type="checkbox"/> Yes Print: <input type="checkbox"/> No <input type="checkbox"/> Yes Scan: <input type="checkbox"/> No <input type="checkbox"/> Yes Barcode: <input type="checkbox"/> No <input type="checkbox"/> Yes Signature: <input type="checkbox"/> No <input type="checkbox"/> Yes Stamps: <input type="checkbox"/> No <input type="checkbox"/> Yes Number of Containers: <input type="checkbox"/> No <input type="checkbox"/> Yes																																									
Project Information: ALS Account # / Quote #: VA23-TR1-00-013 Job #: 11964 POI A/E/C: 11964 - Task 20 - Phase 3C-4C L/SO: ALS Lab Work Order # (ALS use only): 09077		ALS Contact: Name: <input type="checkbox"/> Print <input type="checkbox"/> No Print Email: <input type="checkbox"/> Print <input type="checkbox"/> No Print Fax: <input type="checkbox"/> Print <input type="checkbox"/> No Print		Sample Identification and/or Coordinates: (This description will appear on the report) <table border="1"> <thead> <tr> <th>ALS Sample # (ALS use only)</th> <th>Sample Description</th> <th>Date (YYYY-MM-DD)</th> <th>Time (HH:MM)</th> <th>Sample Type</th> <th>Preserved (P)</th> <th>Printed (P)</th> <th>Scanned (S)</th> <th>Signature (Sig)</th> <th>Stamps (Stamps)</th> </tr> </thead> <tbody> <tr> <td>2021051</td> <td>Water</td> <td>28-10-24</td> <td>10:22</td> <td>Water</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>6.94</td> <td>Cond: 43 µs/cm Temp: 9.7 °C</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>7.10</td> <td>Cond: 55 µs/cm Temp: 9.2 °C</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		ALS Sample # (ALS use only)	Sample Description	Date (YYYY-MM-DD)	Time (HH:MM)	Sample Type	Preserved (P)	Printed (P)	Scanned (S)	Signature (Sig)	Stamps (Stamps)	2021051	Water	28-10-24	10:22	Water	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.94	Cond: 43 µs/cm Temp: 9.7 °C									7.10	Cond: 55 µs/cm Temp: 9.2 °C								
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Photo: 4
Location: SQU US 1
Description: Lab COC



2024-10-28-Chycoski-2FB1C

Sign Off

Report Prepared By: Lily Chycoski

Report Reviewed: Yes

Report Reviewer:


Professional(s) of Record:

Name:


Designation:

Designation Number:

11/03/2024 6:15	6.55	40.35	0.02	7.35	10.84	0.82	11/03/2024 6:15	7.6	61.0	0.0	6.9	11.3	10.7
11/03/2024 6:30	6.55	40.14	0.02	7.33	10.86	0.53	11/03/2024 6:30	7.6	60.5	0.0	6.9	11.3	10.5
11/03/2024 6:45	6.54	40.11	0.02	7.39	10.86	0.00	11/03/2024 6:45	7.6	61.4	0.0	6.9	11.2	10.3
11/03/2024 7:00	6.54	40.43	0.02	7.39	10.85	0.00	11/03/2024 7:00	7.6	61.4	0.0	6.9	11.2	10.6
11/03/2024 7:15	6.53	40.64	0.02	7.39	10.85	0.00	11/03/2024 7:15	7.6	61.5	0.0	6.9	11.2	10.2
11/03/2024 7:30	6.51	40.46	0.02	7.37	10.88	0.00	11/03/2024 7:30	7.5	60.8	0.0	6.9	11.3	10.1
11/03/2024 7:45	6.51	40.30	0.02	7.39	10.87	0.27	11/03/2024 7:45	7.5	60.5	0.0	6.9	11.3	10.6
11/03/2024 8:00	6.49	40.16	0.02	7.40	10.88	0.00	11/03/2024 8:00	7.5	61.0	0.0	6.9	11.3	10.4
11/03/2024 8:15	6.46	40.35	0.02	7.40	10.91	0.00	11/03/2024 8:15	7.5	61.4	0.0	6.9	11.3	9.8
11/03/2024 8:30	6.42	41.90	0.02	7.41	10.91	0.00	11/03/2024 8:30	7.4	61.0	0.0	6.9	11.4	10.8
11/03/2024 8:45	6.37	40.75	0.02	7.32	10.95	31.52	11/03/2024 8:45	7.4	61.1	0.0	6.9	11.4	12.3
11/03/2024 9:00	6.35	40.52	0.02	7.42	10.94	0.00	11/03/2024 9:00	7.4	63.0	0.0	6.9	11.4	10.8
11/03/2024 9:15	6.34	41.52	0.02	7.41	10.94	0.00	11/03/2024 9:15	7.4	63.8	0.0	6.9	11.4	10.1
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11/03/2024 10:00	6.33	42.11	0.02	7.40	10.91	0.00	11/03/2024 10:00	7.4	66.2	0.0	6.9	11.3	9.8
11/03/2024 10:15	6.36	43.02	0.02	7.39	10.87	0.00	11/03/2024 10:15	7.4	66.0	0.0	6.9	11.3	10.5
11/03/2024 10:30	6.39	43.00	0.02	7.39	10.85	0.34	11/03/2024 10:30	7.4	64.9	0.0	6.9	11.3	11.0
11/03/2024 10:45	6.40	42.23	0.02	7.36	10.86	0.82	11/03/2024 10:45	7.4	63.5	0.0	6.9	11.3	10.2
11/03/2024 11:00	6.41	42.67	0.02	7.33	10.87	0.00	11/03/2024 11:00	7.5	65.1	0.0	6.9	11.3	10.6
11/03/2024 11:15	6.45	43.23	0.02	7.36	10.82	0.00	11/03/2024 11:15	7.5	66.8	0.0	6.9	11.2	10.3
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11/03/2024 14:30	6.9	42.7	0.0	7.3	10.7	5.9	11/03/2024 14:30	8.0	66.3	0.0	7.0	11.2	11.2
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11/03/2024 16:15	6.9	42.2	0.0	7.3	10.6	1.7	11/03/2024 16:15	8.0	66.3	0.0	6.8	11.1	13.3
11/03/2024 16:30	6.9	42.7	0.0	7.3	10.5	3.2	11/03/2024 16:30	8.0	65.6	0.0	6.8	11.2	13.7
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11/03/2024 18:00	6.9	43.1	0.0	7.4	10.8	0.0	11/03/2024 18:00	7.9	66.2	0.0	6.9	11.2	14.3
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11/03/2024 19:00	6.8	42.7	0.0	7.4	10.8	0.0	11/03/2024 19:00	7.8	65.3	0.0	6.9	11.2	13.0
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11/03/2024 19:45	6.8	42.9	0.0	7.3	10.7	0.3	11/03/2024 19:45	7.8	65.3	0.0	6.9	11.2	13.4
11/03/2024 20:00	6.8	42.7	0.0	7.3	10.8	0.3	11/03/2024 20:00	7.8	65.0	0.0	6.9	11.2	13.8
11/03/2024 20:15	6.8	42.9	0.0	7.3	10.7	1.3	11/03/2024 20:15	7.8	65.1	0.0	6.8	11.2	12.8
11/03/2024 20:30	6.8	42.2	0.0	7.3	10.8	0.2	11/03/2024 20:30	7.8	64.6	0.0	6.8	11.2	13.6
11/03/2024 20:45	6.8	41.6	0.0	7.3	10.7	1.1	11/03/2024 20:45	7.8	62.8	0.0	6.8	11.2	12.6
11/03/2024 21:00	6.8	41.7	0.0	7.3	10.7	2.2	11/03/2024 21:00	7.8	62.5	0.0	6.8	11.2	16.5
11/03/2024 21:15	6.8	40.9	0.0	7.3	10.7	2.9	11/03/2024 21:15	7.8	62.4	0.0	6.8	11.2	13.6
11/03/2024 21:30	6.8	41.0	0.0	7.3	10.7	0.1	11/03/2024 21:30	7.8	62.2	0.0	6.8	11.3	13.3
11/03/2024 21:45	6.8	41.6	0.0	7.3	10.7	1.5	11/03/2024 21:45	7.8	62.0	0.0	6.8	11.3	13.5
11/03/2024 22:00	6.8	40.5	0.0	7.3	10.8	0.8	11/03/2024 22:00	7.8	61.7	0.0	6.8	11.3	13.9
11/03/2024 22:15	6.8	40.0	0.0	7.3	10.8	0.9	11/03/2024 22:15	7.8	61.7	0.0	6.8	11.3	14.1
11/03/2024 22:30	6.8	39.9	0.0	7.3	10.8	0.7	11/03/2024 22:30	7.8	61.5	0.0	6.8	11.3	16.8
11/03/2024 22:45	6.8	39.5	0.0	7.3	10.8	5.2	11/03/2024 22:45	7.8	60.9	0.0	6.8	11.3	14.2
11/03/2024 23:00	6.8	39.6	0.0	7.3	10.8	0.7	11/03/2024 23:00	7.8	60.8	0.0	6.9	11.3	14.2
11/03/2024 23:15	6.8	39.6	0.0	7.3	10.8	1.3	11/03/2024 23:15	7.8	60.7	0.0	6.9	11.3	15.6
11/03/2024 23:30	6.8	39.5	0.0	7.3	10.8	0.2	11/03/2024 23:30	7.8	61.0	0.0	6.9	11.3	14.3
11/03/2024 23:45	6.8	39.7	0.0	7.3	10.8	1.7	11/03/2024 23:45	7.8	61.4	0.0	6.9	11.3	14.7

 Eagle Mountain - Woodfibre Gas Pipeline Project Waste Discharge Permit PE-110163 Report	Reporting Week	Oct. 28 th to Nov. 3 rd , 2024
	Report #	32
	Appendix C	C-1

Appendix C: Woodfibre Site Point of Discharge from Water Treatment Plant Documentation

 Eagle Mountain - Woodfibre Gas Pipeline Project Waste Discharge Permit PE-110163 Report	Reporting Week	Oct. 28 th to Nov. 3 rd , 2024
	Report #	32
	Appendix C	C-2

Woodfibre Site Sample Analysis



**Eagle Mountain - Woodfibre Gas Pipeline Project
Waste Discharge Permit PE-110163 Report**

Reporting Week	Oct. 28 th to Nov. 3 rd , 2024
Report #	32
Appendix C	C-3

Woodfibre Site Sample Lab Documentation

CERTIFICATE OF ANALYSIS

Work Order : **VA24C9209**
Client : **Triton Environmental Consultants Ltd.**
Contact :
Address :
Telephone :
Project : 11964
PO : 11964 - Task 40 - Phase 3C-4C
C-O-C number : ----
Sampler : ----
Site : Water Analysis
Quote number : VA23-TRIT100-012
No. of samples received : 1
No. of samples analysed : 1

Laboratory : ALS Environmental - Vancouver
Account Manager :
Address :
Telephone :
Date Samples Received : 29-Oct-2024 17:15
Date Analysis Commenced : 30-Oct-2024
Issue Date : 06-Nov-2024 13:56

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
- Surrogate Control Limits

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>
	Laboratory Analyst	Inorganics, Edmonton, Alberta
	Laboratory Analyst	Metals, Edmonton, Alberta
	Lab Assistant	Metals, Burnaby, British Columbia
	Supervisor - Organics Instrumentation	Organics, Burnaby, British Columbia
	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
	Supervisor - Water Chemistry	Organics, Burnaby, British Columbia
	Senior Analyst	Metals, Waterloo, Ontario
	Senior Analyst	Inorganics, Waterloo, Ontario
	Account Manager Assistant	Administration, Burnaby, British Columbia
	Supervisor - Water Quality Instrumentation	Inorganics, 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>
mg/L	milligrams per litre
µg/L	micrograms per litre
µS/cm	microsiemens per centimetre
pH units	pH units
°C	degrees celsius
-	no 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>
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).





Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WLNG EOP	---	---	---	---
Client sampling date / time					29-Oct-2024 10:11	---	---	---	---	---
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C9209-001	---	---	---	---	---
					Result	---	---	---	---	---
Field Tests										
Conductivity, field	---	EF001/VA	0.10	µS/cm	148.00	---	---	---	---	---
pH, field	---	EF001/VA	0.10	pH units	7.61	---	---	---	---	---
Temperature, field	---	EF001/VA	0.10	°C	10.7	---	---	---	---	---
Physical Tests										
Hardness (as CaCO3), dissolved	---	EC100/VA	0.60	mg/L	57.1	---	---	---	---	---
Hardness (as CaCO3), from total Ca/Mg	---	EC100A/VA	0.60	mg/L	55.3	---	---	---	---	---
Solids, total dissolved [TDS]	---	E162/VA	10	mg/L	81	---	---	---	---	---
Solids, total suspended [TSS]	---	E160/VA	3.0	mg/L	5.5	---	---	---	---	---
Alkalinity, total (as CaCO3)	---	E290/VA	2.0	mg/L	60.7	---	---	---	---	---
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	0.0072	---	---	---	---	---
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	<0.050	---	---	---	---	---
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	1.03	---	---	---	---	---
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.197	---	---	---	---	---
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L	0.0200	---	---	---	---	---
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L	0.0015	---	---	---	---	---
Nitrogen, total	7727-37-9	E366/VA	0.030	mg/L	0.111	---	---	---	---	---
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L	0.0090	---	---	---	---	---
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	4.71	---	---	---	---	---
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	---	E358-L/VA	0.50	mg/L	<0.50	---	---	---	---	---



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	WLNG EOP	----	----	----	----
					Client sampling date / time	29-Oct-2024 10:11	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C9209-001	----	----	----	----	
						Result	----	----	----	----
Total Sulfides										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	0.0016	----	----	----	----	
Sulfide, un-ionized (as H2S), from total	7783-06-4	EC395/VA	0.0015	mg/L	<0.0015	----	----	----	----	
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L	0.0017	----	----	----	----	
Total Metals										
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L	0.137	----	----	----	----	
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L	0.00012	----	----	----	----	
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L	0.00222	----	----	----	----	
Barium, total	7440-39-3	E420/VA	0.00010	mg/L	0.00741	----	----	----	----	
Beryllium, total	7440-41-7	E420/VA	0.000100	mg/L	<0.000100	----	----	----	----	
Bismuth, total	7440-69-9	E420/VA	0.000050	mg/L	<0.000050	----	----	----	----	
Boron, total	7440-42-8	E420/VA	0.010	mg/L	0.015	----	----	----	----	
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L	<0.0000150 ^{DLM}	----	----	----	----	
Calcium, total	7440-70-2	E420/VA	0.050	mg/L	20.5	----	----	----	----	
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L	0.000040	----	----	----	----	
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L	<0.00050	----	----	----	----	
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L	<0.00010	----	----	----	----	
Copper, total	7440-50-8	E420/VA	0.00050	mg/L	0.00136	----	----	----	----	
Iron, total	7439-89-6	E420/VA	0.010	mg/L	0.142	----	----	----	----	
Lead, total	7439-92-1	E420/VA	0.000050	mg/L	0.00144	----	----	----	----	
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L	0.0025	----	----	----	----	
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L	1.00	----	----	----	----	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	WLNG EOP	----	----	----	----
					Client sampling date / time	29-Oct-2024 10:11	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C9209-001	----	----	----	----	----
						Result	----	----	----	----
Total Metals										
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L	0.00792	----	----	----	----	----
Mercury, total	7439-97-6	E508/EO	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L	0.0179	----	----	----	----	----
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L	<0.00050	----	----	----	----	----
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L	<0.050	----	----	----	----	----
Potassium, total	7440-09-7	E420/VA	0.050	mg/L	1.14	----	----	----	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L	0.00213	----	----	----	----	----
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L	0.000066	----	----	----	----	----
Silicon, total	7440-21-3	E420/VA	0.10	mg/L	6.48	----	----	----	----	----
Silver, total	7440-22-4	E420/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Sodium, total	7440-23-5	E420/VA	0.050	mg/L	3.39	----	----	----	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L	0.0424	----	----	----	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L	1.35	----	----	----	----	----
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L	<0.00020	----	----	----	----	----
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L	0.000011	----	----	----	----	----
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L	<0.00010	----	----	----	----	----
Tin, total	7440-31-5	E420/VA	0.00010	mg/L	<0.00010	----	----	----	----	----
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L	0.00542	----	----	----	----	----
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L	0.00030	----	----	----	----	----
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L	0.00908	----	----	----	----	----
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L	0.00057	----	----	----	----	----



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	WLNQ EOP	----	----	----	----
					Client sampling date / time	29-Oct-2024 10:11	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C9209-001	----	----	----	----	----
						Result	----	----	----	----
Total Metals										
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L	0.0238	----	----	----	----	----
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L	<0.00020	----	----	----	----	----
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L	0.0137	----	----	----	----	----
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L	0.00010	----	----	----	----	----
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L	0.00219	----	----	----	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L	0.00547	----	----	----	----	----
Beryllium, dissolved	7440-41-7	E421/VA	0.000100	mg/L	<0.000100	----	----	----	----	----
Bismuth, dissolved	7440-69-9	E421/VA	0.000050	mg/L	<0.000050	----	----	----	----	----
Boron, dissolved	7440-42-8	E421/VA	0.010	mg/L	0.015	----	----	----	----	----
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L	<0.0000100 ^{DLM}	----	----	----	----	----
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L	21.2	----	----	----	----	----
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L	0.000020	----	----	----	----	----
Chromium, dissolved	7440-47-3	E421/VA	0.00050	mg/L	<0.00050	----	----	----	----	----
Cobalt, dissolved	7440-48-4	E421/VA	0.00010	mg/L	<0.00010	----	----	----	----	----
Copper, dissolved	7440-50-8	E421/VA	0.00020	mg/L	0.00122	----	----	----	----	----
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L	<0.010	----	----	----	----	----
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L	0.000494	----	----	----	----	----
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L	0.0026	----	----	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L	1.02	----	----	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L	0.00539	----	----	----	----	----



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	WLNG EOP	----	----	----	----
					Client sampling date / time	29-Oct-2024 10:11	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C9209-001	----	----	----	----	----
						Result	----	----	----	----
Dissolved Metals										
Mercury, dissolved	7439-97-6	E509/EO	0.000050	mg/L	<0.000050	----	----	----	----	----
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L	0.0174	----	----	----	----	----
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L	<0.00050	----	----	----	----	----
Phosphorus, dissolved	7723-14-0	E421/VA	0.050	mg/L	<0.050	----	----	----	----	----
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L	1.08	----	----	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L	0.00178	----	----	----	----	----
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L	0.000072	----	----	----	----	----
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L	6.50	----	----	----	----	----
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L	3.64	----	----	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L	0.0425	----	----	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L	1.45	----	----	----	----	----
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L	<0.00020	----	----	----	----	----
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Thorium, dissolved	7440-29-1	E421/VA	0.00010	mg/L	<0.00010	----	----	----	----	----
Tin, dissolved	7440-31-5	E421/VA	0.00010	mg/L	<0.00010	----	----	----	----	----
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L	<0.00030	----	----	----	----	----
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L	0.00024	----	----	----	----	----
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L	0.00838	----	----	----	----	----
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L	<0.00050	----	----	----	----	----
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L	0.0211	----	----	----	----	----



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	WLNQ EOP	----	----	----	----
					Client sampling date / time	29-Oct-2024 10:11	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C9209-001	----	----	----	----	----
						Result	----	----	----	----
Dissolved Metals										
Zirconium, dissolved	7440-67-7	E421/VA	0.00020	mg/L	<0.00020	----	----	----	----	----
Dissolved mercury filtration location	----	EP509/EO	-	-	Field	----	----	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	-	Field	----	----	----	----	----
Speciated Metals										
Chromium, hexavalent [Cr VI], total	18540-29-9	E532/WT	0.00050	mg/L	<0.00050	----	----	----	----	----
Chromium, trivalent [Cr III], total	16065-83-1	EC535/WT	0.00050	mg/L	<0.00050	----	----	----	----	----
Aggregate Organics										
Phenols, total (4AAP)	----	E562/EO	0.0010	mg/L	<0.0010	----	----	----	----	----
Volatile Organic Compounds										
Chlorobenzene	108-90-7	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	----
Chloromethane	74-87-3	E611C/VA	5.0	µg/L	<5.0	----	----	----	----	----
Dichlorobenzene, 1,2-	95-50-1	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	----
Dichlorobenzene, 1,3-	541-73-1	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	----
Dichlorobenzene, 1,4-	106-46-7	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	----
Dichloropropane, 1,2-	78-87-5	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	----
Dichloropropylene, cis-1,3-	10061-01-5	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	----
Dichloropropylene, cis+trans-1,3-	542-75-6	E611C/VA	0.75	µg/L	<0.75	----	----	----	----	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611C/VA	0.20	µg/L	<0.20	----	----	----	----	----
Trichloroethane, 1,1,2-	79-00-5	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	----
Trichlorofluoromethane	75-69-4	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	----



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	WLNG EOP	----	----	----	----
					Client sampling date / time	29-Oct-2024 10:11	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C9209-001	----	----	----	----	
						Result	----	----	----	----
Volatile Organic Compounds [Drycleaning]										
Carbon tetrachloride	56-23-5	E611CVA	0.50	µg/L	<0.50	----	----	----	----	
Chloroethane	75-00-3	E611CVA	0.50	µg/L	<0.50	----	----	----	----	
Dichloroethane, 1,1-	75-34-3	E611CVA	0.50	µg/L	<0.50	----	----	----	----	
Dichloroethane, 1,2-	107-06-2	E611CVA	0.50	µg/L	<0.50	----	----	----	----	
Dichloroethylene, 1,1-	75-35-4	E611CVA	0.50	µg/L	<0.50	----	----	----	----	
Dichloroethylene, cis-1,2-	156-59-2	E611CVA	0.50	µg/L	<0.50	----	----	----	----	
Dichloroethylene, trans-1,2-	156-60-5	E611CVA	0.50	µg/L	<0.50	----	----	----	----	
Dichloromethane	75-09-2	E611CVA	1.0	µg/L	<1.0	----	----	----	----	
Dichloropropylene, trans-1,3-	10061-02-6	E611CVA	0.50	µg/L	<0.50	----	----	----	----	
Tetrachloroethylene	127-18-4	E611CVA	0.50	µg/L	<0.50	----	----	----	----	
Trichloroethane, 1,1,1-	71-55-6	E611CVA	0.50	µg/L	<0.50	----	----	----	----	
Trichloroethylene	79-01-6	E611CVA	0.50	µg/L	<0.50	----	----	----	----	
Vinyl chloride	75-01-4	E611CVA	0.40	µg/L	<0.40	----	----	----	----	
Volatile Organic Compounds [Fuels]										
Benzene	71-43-2	E611CVA	0.50	µg/L	<0.50	----	----	----	----	
Ethylbenzene	100-41-4	E611CVA	0.50	µg/L	<0.50	----	----	----	----	
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611CVA	0.50	µg/L	<0.50	----	----	----	----	
Styrene	100-42-5	E611CVA	0.50	µg/L	<0.50	----	----	----	----	
Toluene	108-88-3	E611CVA	0.40	µg/L	<0.40	----	----	----	----	
Xylene, m+p-	179601-23-1	E611CVA	0.40	µg/L	<0.40	----	----	----	----	
Xylene, o-	95-47-6	E611CVA	0.30	µg/L	<0.30	----	----	----	----	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	WLNG EOP	----	----	----	----
					Client sampling date / time	29-Oct-2024 10:11	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C9209-001	----	----	----	----	
						Result	----	----	----	----
Volatile Organic Compounds [Fuels]										
Xylenes, total	1330-20-7	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	
Volatile Organic Compounds [THMs]										
Bromodichloromethane	75-27-4	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	
Bromoform	75-25-2	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	
Chloroform	67-66-3	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	
Dibromochloromethane	124-48-1	E611C/VA	0.50	µg/L	<0.50	----	----	----	----	
Hydrocarbons										
EPH (C10-C19)	----	E601A/VA	250	µg/L	<250	----	----	----	----	
EPH (C19-C32)	----	E601A/VA	250	µg/L	<250	----	----	----	----	
VHw (C6-C10)	----	E581.VH+F1/V A	100	µg/L	<100	----	----	----	----	
HEPHw	----	EC600A/VA	250	µg/L	<250	----	----	----	----	
LEPHw	----	EC600A/VA	250	µg/L	<250	----	----	----	----	
VPHw	----	EC580A/VA	100	µg/L	<100	----	----	----	----	
Hydrocarbons Surrogates										
Bromobenzotrifluoride, 2- (EPH surrogate)	392-83-6	E601A/VA	1.0	%	91.8	----	----	----	----	
Dichlorotoluene, 3,4-	95-75-0	E581.VH+F1/V A	1.0	%	120	----	----	----	----	
Volatile Organic Compounds Surrogates										
Bromofluorobenzene, 4-	460-00-4	E611C/VA	1.0	%	85.2	----	----	----	----	
Difluorobenzene, 1,4-	540-36-3	E611C/VA	1.0	%	101	----	----	----	----	
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	83-32-9	E641A/VA	0.010	µg/L	<0.010	----	----	----	----	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	WLNG EOP	----	----	----	----
					Client sampling date / time	29-Oct-2024 10:11	----	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C9209-001	----	----	----	----	
						Result	----	----	----	----
Polycyclic Aromatic Hydrocarbons										
Acenaphthylene	208-96-8	E641A/VA	0.010	µg/L	<0.010	----	----	----	----	
Acridine	260-94-6	E641A/VA	0.010	µg/L	<0.010	----	----	----	----	
Anthracene	120-12-7	E641A/VA	0.010	µg/L	<0.010	----	----	----	----	
Benz(a)anthracene	56-55-3	E641A/VA	0.010	µg/L	<0.010	----	----	----	----	
Benzo(a)pyrene	50-32-8	E641A/VA	0.0050	µg/L	<0.0050	----	----	----	----	
Benzo(b+j)fluoranthene	n/a	E641A/VA	0.010	µg/L	<0.010	----	----	----	----	
Benzo(b+j+k)fluoranthene	n/a	E641A/VA	0.015	µg/L	<0.015	----	----	----	----	
Benzo(g,h,i)perylene	191-24-2	E641A/VA	0.010	µg/L	<0.010	----	----	----	----	
Benzo(k)fluoranthene	207-08-9	E641A/VA	0.010	µg/L	<0.010	----	----	----	----	
Chrysene	218-01-9	E641A/VA	0.010	µg/L	<0.010	----	----	----	----	
Dibenz(a,h)anthracene	53-70-3	E641A/VA	0.0050	µg/L	<0.0050	----	----	----	----	
Fluoranthene	206-44-0	E641A/VA	0.010	µg/L	<0.010	----	----	----	----	
Fluorene	86-73-7	E641A/VA	0.010	µg/L	<0.010	----	----	----	----	
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A/VA	0.010	µg/L	<0.010	----	----	----	----	
Methylnaphthalene, 1-	90-12-0	E641A/VA	0.010	µg/L	<0.010	----	----	----	----	
Methylnaphthalene, 2-	91-57-6	E641A/VA	0.010	µg/L	<0.010	----	----	----	----	
Naphthalene	91-20-3	E641A/VA	0.050	µg/L	<0.050	----	----	----	----	
Phenanthrene	85-01-8	E641A/VA	0.020	µg/L	<0.020	----	----	----	----	
Pyrene	129-00-0	E641A/VA	0.010	µg/L	<0.010	----	----	----	----	
Quinoline	91-22-5	E641A/VA	0.050	µg/L	<0.050	----	----	----	----	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	WLNQ EOP	---	---	---	---
					Client sampling date / time	29-Oct-2024 10:11	---	---	---	---
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C9209-001	---	---	---	---	---
						Result	---	---	---	---
Polycyclic Aromatic Hydrocarbons Surrogates										
Chrysene-d12	1719-03-5	E641A/VA	0.1	%	91.4	---	---	---	---	---
Naphthalene-d8	1146-65-2	E641A/VA	0.1	%	95.5	---	---	---	---	---
Phenanthrene-d10	1517-22-2	E641A/VA	0.1	%	94.1	---	---	---	---	---
Glycols										
Diethylene glycol	111-46-6	E680E/VA	5.0	mg/L	<5.0	---	---	---	---	---
Ethylene glycol	107-21-1	E680E/VA	5.0	mg/L	<5.0	---	---	---	---	---
Propylene glycol, 1,2-	57-55-6	E680E/VA	5.0	mg/L	<5.0	---	---	---	---	---
Triethylene glycol	112-27-6	E680E/VA	5.0	mg/L	<5.0	---	---	---	---	---
Glycols, total (EG+DEG+PG)	---	E680E/VA	10	mg/L	<10	---	---	---	---	---
Glycols Surrogates										
Propanediol, 1,3-	504-63-2	E680E/VA	1.0	%	104	---	---	---	---	---

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

<p>Work Order : VA24C9209</p> <p>Client : Triton Environmental Consultants Ltd.</p> <p>Contact : [Redacted]</p> <p>Address : [Redacted]</p> <p>Telephone : [Redacted]</p> <p>Project : 11964</p> <p>PO : 11964 - Task 40 - Phase 3C-4C</p> <p>C-O-C number : ----</p> <p>Sampler : ----</p> <p>Site : Water Analysis</p> <p>Quote number : VA23-TRIT100-012_V2</p> <p>No. of samples received : 1</p> <p>No. of samples analysed : 1</p>	<p>Page : 1 of 14</p> <p>Laboratory : ALS Environmental - Vancouver</p> <p>Account Manager : [Redacted]</p> <p>Address : [Redacted]</p> <p>Telephone : [Redacted]</p> <p>Date Samples Received : 29-Oct-2024 17:15</p> <p>Issue Date : 06-Nov-2024 13:56</p>
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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
- No Matrix Spike outliers occur.
- 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.



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	
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid) WLNG EOP	E562	29-Oct-2024	01-Nov-2024	28 days	3 days	✔	01-Nov-2024	28 days	3 days	✔
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) WLNG EOP	E298	29-Oct-2024	04-Nov-2024	28 days	6 days	✔	05-Nov-2024	28 days	7 days	✔
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WLNG EOP	E235.Br-L	29-Oct-2024	30-Oct-2024	28 days	1 days	✔	30-Oct-2024	28 days	1 days	✔
Anions and Nutrients : Chloride in Water by IC										
HDPE WLNG EOP	E235.Cl	29-Oct-2024	30-Oct-2024	28 days	1 days	✔	30-Oct-2024	28 days	1 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE WLNG EOP	E235.F	29-Oct-2024	30-Oct-2024	28 days	1 days	✔	30-Oct-2024	28 days	1 days	✔
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE WLNG EOP	E235.NO3-L	29-Oct-2024	30-Oct-2024	3 days	1 days	✔	30-Oct-2024	3 days	1 days	✔
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE WLNG EOP	E235.NO2-L	29-Oct-2024	30-Oct-2024	3 days	1 days	✔	30-Oct-2024	3 days	1 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	
Anions and Nutrients : Sulfate in Water by IC										
HDPE WLNG EOP	E235.SO4	29-Oct-2024	30-Oct-2024	28 days	1 days	✓	30-Oct-2024	28 days	1 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) WLNG EOP	E366	29-Oct-2024	04-Nov-2024	28 days	6 days	✓	04-Nov-2024	28 days	6 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) WLNG EOP	E372-U	29-Oct-2024	04-Nov-2024	28 days	6 days	✓	04-Nov-2024	28 days	7 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) WLNG EOP	E509	29-Oct-2024	02-Nov-2024	28 days	4 days	✓	02-Nov-2024	28 days	4 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) WLNG EOP	E421	29-Oct-2024	31-Oct-2024	180 days	2 days	✓	01-Nov-2024	180 days	3 days	✓
Field Tests : Field pH,EC,Salinity, TDS, Cl2,CIO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
HDPE WLNG EOP	EF001	29-Oct-2024	----	----	----		01-Nov-2024	----	3 days	
Glycols : Glycols (4 analytes) by GC-FID										
Glass vial WLNG EOP	E680E	29-Oct-2024	01-Nov-2024	7 days	3 days	✓	01-Nov-2024	40 days	0 days	✓
Hydrocarbons : BC PHCs - EPH by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate) WLNG EOP	E601A	29-Oct-2024	06-Nov-2024	14 days	8 days	✓	06-Nov-2024	40 days	0 days	✓
Hydrocarbons : VH and F1 by Headspace GC-FID										
Glass vial (sodium bisulfate) WLNG EOP	E581.VH+F1	29-Oct-2024	02-Nov-2024	14 days	4 days	✓	02-Nov-2024	14 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		
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) WLNG EOP	E358-L	29-Oct-2024	04-Nov-2024	28 days	6 days	✔	04-Nov-2024	28 days	6 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE WLNG EOP	E290	29-Oct-2024	30-Oct-2024	14 days	1 days	✔	30-Oct-2024	14 days	1 days	✔	
Physical Tests : TDS by Gravimetry											
HDPE WLNG EOP	E162	29-Oct-2024	----	----	----		05-Nov-2024	7 days	7 days	✔	
Physical Tests : TSS by Gravimetry											
HDPE WLNG EOP	E160	29-Oct-2024	----	----	----		05-Nov-2024	7 days	7 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs in Water by Hexane LVI GC-MS											
Amber glass/Teflon lined cap (sodium bisulfate) WLNG EOP	E641A	29-Oct-2024	06-Nov-2024	14 days	8 days	✔	06-Nov-2024	40 days	0 days	✔	
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC											
UV-inhibited HDPE - total (sodium hydroxide) WLNG EOP	E532	29-Oct-2024	----	----	----		01-Nov-2024	28 days	3 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) WLNG EOP	E508	29-Oct-2024	02-Nov-2024	28 days	4 days	✔	02-Nov-2024	28 days	4 days	✔	
Total Metals : Total Metals in Water by CRC ICPMS											
HDPE total (nitric acid) WLNG EOP	E420	29-Oct-2024	01-Nov-2024	180 days	3 days	✔	02-Nov-2024	180 days	4 days	✔	
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)											
HDPE total (zinc acetate+sodium hydroxide) WLNG EOP	E395	29-Oct-2024	----	----	----		31-Oct-2024	7 days	2 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	
Volatile Organic Compounds : VOCs (BC List) by Headspace GC-MS										
Glass vial (sodium bisulfate) WLNG EOP	E611C	29-Oct-2024	02-Nov-2024	14 days	4 days	✔	02-Nov-2024	14 days	4 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
Analytical Methods							
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1740606	1	6	16.6	5.0	✔
Ammonia by Fluorescence	E298	1748278	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1740602	1	6	16.6	5.0	✔
Chloride in Water by IC	E235.Cl	1740601	1	6	16.6	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	1745911	1	14	7.1	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	1741391	1	20	5.0	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1748279	1	17	5.8	5.0	✔
Fluoride in Water by IC	E235.F	1740600	1	11	9.0	5.0	✔
Glycols (4 analytes) by GC-FID	E680E	1744562	1	6	16.6	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1740599	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1740603	1	6	16.6	5.0	✔
Phenols (4AAP) in Water by Colorimetry	E562	1745292	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1740604	1	6	16.6	5.0	✔
TDS by Gravimetry	E162	1749748	1	20	5.0	5.0	✔
Total Hexavalent Chromium (Cr VI) by IC	E532	1744916	1	20	5.0	5.0	✔
Total Mercury in Water by CVAAS	E508	1745746	1	20	5.0	5.0	✔
Total Metals in Water by CRC ICPMS	E420	1741372	1	20	5.0	5.0	✔
Total Nitrogen by Colourimetry	E366	1748280	1	9	11.1	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1748282	1	11	9.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1742851	1	10	10.0	5.0	✔
TSS by Gravimetry	E160	1749752	1	20	5.0	5.0	✔
VH and F1 by Headspace GC-FID	E581.VH+F1	1746582	1	5	20.0	5.0	✔
VOCs (BC List) by Headspace GC-MS	E611C	1746581	1	20	5.0	5.0	✔
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1740606	1	6	16.6	5.0	✔
Ammonia by Fluorescence	E298	1748278	1	20	5.0	5.0	✔
BC PHCs - EPH by GC-FID	E601A	1752009	1	17	5.8	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1740602	1	6	16.6	5.0	✔
Chloride in Water by IC	E235.Cl	1740601	1	6	16.6	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	1745911	1	14	7.1	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	1741391	1	20	5.0	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1748279	1	17	5.8	5.0	✔
Fluoride in Water by IC	E235.F	1740600	1	11	9.0	5.0	✔
Glycols (4 analytes) by GC-FID	E680E	1744562	1	6	16.6	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1740599	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1740603	1	6	16.6	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
Analytical Methods							
Laboratory Control Samples (LCS) - Continued							
PAHs in Water by Hexane LVI GC-MS	E641A	1752010	1	15	6.6	5.0	✔
Phenols (4AAP) in Water by Colorimetry	E562	1745292	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1740604	1	6	16.6	5.0	✔
TDS by Gravimetry	E162	1749748	1	20	5.0	5.0	✔
Total Hexavalent Chromium (Cr VI) by IC	E532	1744916	1	20	5.0	5.0	✔
Total Mercury in Water by CVAAS	E508	1745746	1	20	5.0	5.0	✔
Total Metals in Water by CRC ICPMS	E420	1741372	1	20	5.0	5.0	✔
Total Nitrogen by Colourimetry	E366	1748280	1	9	11.1	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1748282	1	11	9.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1742851	1	10	10.0	5.0	✔
TSS by Gravimetry	E160	1749752	1	20	5.0	5.0	✔
VH and F1 by Headspace GC-FID	E581.VH+F1	1746582	1	5	20.0	5.0	✔
VOCs (BC List) by Headspace GC-MS	E611C	1746581	1	20	5.0	5.0	✔
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1740606	1	6	16.6	5.0	✔
Ammonia by Fluorescence	E298	1748278	1	20	5.0	5.0	✔
BC PHCs - EPH by GC-FID	E601A	1752009	1	17	5.8	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1740602	1	6	16.6	5.0	✔
Chloride in Water by IC	E235.Cl	1740601	1	6	16.6	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	1745911	1	14	7.1	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	1741391	1	20	5.0	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1748279	1	17	5.8	5.0	✔
Fluoride in Water by IC	E235.F	1740600	1	11	9.0	5.0	✔
Glycols (4 analytes) by GC-FID	E680E	1744562	1	6	16.6	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1740599	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1740603	1	6	16.6	5.0	✔
PAHs in Water by Hexane LVI GC-MS	E641A	1752010	1	15	6.6	5.0	✔
Phenols (4AAP) in Water by Colorimetry	E562	1745292	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1740604	1	6	16.6	5.0	✔
TDS by Gravimetry	E162	1749748	1	20	5.0	5.0	✔
Total Hexavalent Chromium (Cr VI) by IC	E532	1744916	1	20	5.0	5.0	✔
Total Mercury in Water by CVAAS	E508	1745746	1	20	5.0	5.0	✔
Total Metals in Water by CRC ICPMS	E420	1741372	1	20	5.0	5.0	✔
Total Nitrogen by Colourimetry	E366	1748280	1	9	11.1	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1748282	1	11	9.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1742851	1	10	10.0	5.0	✔
TSS by Gravimetry	E160	1749752	1	20	5.0	5.0	✔
VH and F1 by Headspace GC-FID	E581.VH+F1	1746582	1	5	20.0	5.0	✔
VOCs (BC List) by Headspace GC-MS	E611C	1746581	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>							
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1748278	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1740602	1	6	16.6	5.0	✔
Chloride in Water by IC	E235.Cl	1740601	1	6	16.6	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	1745911	1	14	7.1	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	1741391	1	20	5.0	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1748279	1	17	5.8	5.0	✔
Fluoride in Water by IC	E235.F	1740600	1	11	9.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1740599	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1740603	1	6	16.6	5.0	✔
Phenols (4AAP) in Water by Colorimetry	E562	1745292	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1740604	1	6	16.6	5.0	✔
Total Hexavalent Chromium (Cr VI) by IC	E532	1744916	1	20	5.0	5.0	✔
Total Mercury in Water by CVAAS	E508	1745746	1	20	5.0	5.0	✔
Total Metals in Water by CRC ICPMS	E420	1741372	1	20	5.0	5.0	✔
Total Nitrogen by Colourimetry	E366	1748280	1	9	11.1	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1748282	1	11	9.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1742851	1	10	10.0	5.0	✔
VH and F1 by Headspace GC-FID	E581.VH+F1	1746582	1	5	20.0	5.0	✔
VOCs (BC List) by Headspace GC-MS	E611C	1746581	1	20	5.0	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)
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 CO ₂ . 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 H ₂ S" if reported represent the maximum possible H ₂ S concentration based on the total sulfide concentration in the sample. The H ₂ S calculation converts Total Sulphide as (S ₂ ⁻) and reports it as Total Sulphide as (H ₂ S)
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 - Edmonton	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 ALS Environmental - Edmonton	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.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Hexavalent Chromium (Cr VI) by IC	E532 ALS Environmental - Waterloo	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.
Phenols (4AAP) in Water by Colorimetry	E562 ALS Environmental - Edmonton	Water	EPA 9066	This automated method is based on the distillation of phenol and subsequent reaction of the distillate with alkaline ferricyanide (K ₃ Fe(CN) ₆) and 4-amino-antipyrine (4-AAP) to form a red complex which is measured colorimetrically.
VH and F1 by Headspace GC-FID	E581.VH+F1 ALS Environmental - Vancouver	Water	BC MOE Lab Manual / CCME PHC in Soil - Tier 1 (mod)	Volatile Hydrocarbons (VH and F1) is analyzed by static headspace GC-FID. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law. Analytical methods for CCME Petroleum Hydrocarbons (PHCs) are validated to comply fully with the Reference Method for the Canada-Wide Standard for PHC. Unless qualified, all required quality control criteria of the CCME PHC method have been met, including response factor and linearity requirements.
BC PHCs - EPH by GC-FID	E601A ALS Environmental - Vancouver	Water	BC MOE Lab Manual	Sample extracts are analyzed by GC-FID for BC hydrocarbon fractions.
VOCs (BC List) by Headspace GC-MS	E611C ALS Environmental - Vancouver	Water	EPA 8260D (mod)	Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law. Total Xylenes is the sum of m,p-Xylene & o-Xylene. Total BTEX is the sum of Benzene, Toluene, Ethylbenzene, & Total Xylenes. Total BTEX+Styrene is the sum of Total BTEX & Styrene. Total Trihalomethanes [THMs] is the sum of Bromodichloromethane, Bromoform, Chloroform, & Dibromochloromethane.
PAHs in Water by Hexane LVI GC-MS	E641A ALS Environmental - Vancouver	Water	EPA 8270E (mod)	Polycyclic Aromatic Hydrocarbons (PAHs) are analyzed by large volume injection (LVI) GC-MS.
Glycols (4 analytes) by GC-FID	E680E ALS Environmental - Vancouver	Water	EPA 8015D (mod)	Derivatized glycols are analyzed by GC-FID.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ 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.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Hardness (Calculated) from Total Ca/Mg	EC100A ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO ₃), from total Ca/Mg" is calculated from the sum of total Calcium and Magnesium concentrations, expressed in CaCO ₃ 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.
Un-ionized Total Hydrogen Sulfide (calculated)	EC395 ALS Environmental - Vancouver	Water	APHA 4500 -S H	Un-ionized sulfide is calculated using results from total sulfide analysis, pH, temperature, and ionic strength of the sample. Calculation of un-ionized sulfide using total sulfide concentrations may be biased high due to particulate forms of sulfide measured during total sulfide testing.
Total Trivalent Chromium (Cr III) by Calculation	EC535 ALS Environmental - Waterloo	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.
VPH: VH-BTEX-Styrene	EC580A ALS Environmental - Vancouver	Water	BC MOE Lab Manual (VPH in Water and Solids) (mod)	Volatile Petroleum Hydrocarbons (VPH) is calculated as follows: VPHw = Volatile Hydrocarbons (VH C6-C10) minus benzene, toluene, ethylbenzene, xylenes (BTEX) and styrene.
LEPH and HEPH: EPH-PAH	EC600A ALS Environmental - Vancouver	Water	BC MOE Lab Manual (LEPH and HEPH)	Light Extractable Petroleum Hydrocarbons (LEPH) and Heavy Extractable Petroleum Hydrocarbons (HEPH) are calculated as follows: LEPH = Extractable Petroleum Hydrocarbons (EPH10-19) minus Acenaphthene, Acridine, Anthracene, Fluorene, Naphthalene and Phenanthrene; HEPH = Extractable Petroleum Hydrocarbons (EPH19-32) minus Benz(a)anthracene, Benzo(a)pyrene, Fluoranthene, and Pyrene.
Field pH,EC,Salinity, TDS, Cl ₂ ,ClO ₂ ,ORP,DO, Turbidity,T,T-P,o-PO ₄ ,NH ₃ ,Chloramine	EF001 ALS Environmental - Vancouver	Water	Field Measurement (Client Supplied)	Field pH,EC,Salinity, TDS, Cl ₂ ,ClO ₂ ,ORP,DO, Turbidity,T,T-P,o-PO ₄ ,NH ₃ 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 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.



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Dissolved Metals Water Filtration	EP421 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .
Dissolved Mercury Water Filtration	EP509 ALS Environmental - Edmonton	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.
VOCs Preparation for Headspace Analysis	EP581 ALS Environmental - Vancouver	Water	EPA 5021A (mod)	Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler. An aliquot of the headspace is then injected into a GC-MS-FID.
PHCs and PAHs Hexane Extraction	EP601 ALS Environmental - Vancouver	Water	EPA 3511 (mod)	Petroleum Hydrocarbons (PHCs) and Polycyclic Aromatic Hydrocarbons (PAHs) are extracted using a hexane liquid-liquid extraction.
Glycols Extraction and Derivatization (BC Only)	EP680E ALS Environmental - Vancouver	Water	EPA 8015D (mod)	Aqueous sample is derivatized and extracted with organic solvent.

QUALITY CONTROL REPORT

<p>Work Order : VA24C9209</p> <p>Client : Triton Environmental Consultants Ltd.</p> <p>Contact : [Redacted]</p> <p>Address : [Redacted]</p> <p>Telephone : [Redacted]</p> <p>Project : 11964</p> <p>PO : 11964 - Task 40 - Phase 3C-4C</p> <p>C-O-C number : ----</p> <p>Sampler : ----</p> <p>Site : Water Analysis</p> <p>Quote number : VA23-TRIT100-012_V2</p> <p>No. of samples received : 1</p> <p>No. of samples analysed : 1</p>	<p>Page : 1 of 23</p> <p>Laboratory : ALS Environmental - Vancouver</p> <p>Account Manager : [Redacted]</p> <p>Address : [Redacted]</p> <p>Telephone : [Redacted]</p> <p>Date Samples Received : 29-Oct-2024 17:15</p> <p>Date Analysis Commenced : 30-Oct-2024</p> <p>Issue Date : 06-Nov-2024 13:56</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>
[Redacted]	Laboratory Analyst	Edmonton Inorganics, Edmonton, Alberta
	Laboratory Analyst	Edmonton Metals, Edmonton, Alberta
	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
	Supervisor - Organics Instrumentation	Vancouver Organics, Burnaby, British Columbia
	Supervisor - Metals ICP Instrumentation	Vancouver Metals, Burnaby, British Columbia
	Supervisor - Water Chemistry	Vancouver Organics, Burnaby, British Columbia
	Senior Analyst	Waterloo Inorganics, Waterloo, Ontario
	Senior Analyst	Waterloo Metals, Waterloo, Ontario
	Account Manager Assistant	Vancouver Administration, Burnaby, British Columbia
	Supervisor - Water Quality Instrumentation	Vancouver Inorganics, Burnaby, British Columbia



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

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



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
Physical Tests (QC Lot: 1740606)											
VA24C9146-003	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	67.9	67.9	0.00%	20%	----
Physical Tests (QC Lot: 1749748)											
FJ2403356-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	334	338	1.49%	20%	----
Physical Tests (QC Lot: 1749752)											
VA24C9198-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1740599)											
VA24C9146-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	4.13	4.14	0.109%	20%	----
Anions and Nutrients (QC Lot: 1740600)											
VA24C9146-001	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.048	0.048	0.0006	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1740601)											
VA24C9146-001	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	10.4	10.4	0.108%	20%	----
Anions and Nutrients (QC Lot: 1740602)											
VA24C9146-001	Anonymous	Bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1740603)											
VA24C9146-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1740604)											
VA24C9146-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	5.39	5.42	0.521%	20%	----
Anions and Nutrients (QC Lot: 1748278)											
VA24C8853-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.240	0.240	0.121%	20%	----
Anions and Nutrients (QC Lot: 1748280)											
VA24C8853-003	Anonymous	Nitrogen, total	7727-37-9	E366	0.030	mg/L	<0.030	<0.030	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1748282)											
VA24C8853-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0509	0.0502	1.44%	20%	----
Organic / Inorganic Carbon (QC Lot: 1748279)											
VA24C8853-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	2.32	2.42	0.10	Diff <2x LOR	----
Total Sulfides (QC Lot: 1742851)											
VA24C9075-001	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.0037	0.0036	0.00009	Diff <2x LOR	----
Total Metals (QC Lot: 1741372)											
VA24C9223-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.216	0.230	6.15%	20%	----
		Antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	<0.00010	0	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
Total Metals (QC Lot: 1741372) - continued											
VA24C9223-001	Anonymous	Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00017	0.00017	0.000001	Diff <2x LOR	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.00618	0.00627	1.51%	20%	----
		Beryllium, total	7440-41-7	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E420	0.010	mg/L	0.010	0.010	0.0001	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E420	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	8.07	8.13	0.642%	20%	----
		Cesium, total	7440-46-2	E420	0.000010	mg/L	0.000012	0.000011	0.0000009	Diff <2x LOR	----
		Chromium, total	7440-47-3	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E420	0.00010	mg/L	0.00014	0.00015	0.00001	Diff <2x LOR	----
		Copper, total	7440-50-8	E420	0.00050	mg/L	0.00088	0.00091	0.00003	Diff <2x LOR	----
		Iron, total	7439-89-6	E420	0.010	mg/L	0.251	0.259	2.96%	20%	----
		Lead, total	7439-92-1	E420	0.000050	mg/L	0.000051	0.000057	0.000006	Diff <2x LOR	----
		Lithium, total	7439-93-2	E420	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	0.781	0.789	1.09%	20%	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.0106	0.0113	5.90%	20%	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000066	0.000065	0.000002	Diff <2x LOR	----
		Nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, total	7440-09-7	E420	0.050	mg/L	0.194	0.191	0.003	Diff <2x LOR	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00032	0.00032	0.000009	Diff <2x LOR	----
		Selenium, total	7782-49-2	E420	0.000050	mg/L	<0.000050	0.000062	0.000012	Diff <2x LOR	----
		Silicon, total	7440-21-3	E420	0.10	mg/L	2.12	2.19	3.24%	20%	----
		Silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, total	7440-23-5	E420	0.050	mg/L	1.42	1.42	0.653%	20%	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.0216	0.0211	2.18%	20%	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E420	0.00030	mg/L	0.0103	0.0115	11.1%	20%	----
		Tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E420	0.000010	mg/L	<0.000010	<0.000010	0	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
Total Metals (QC Lot: 1741372) - continued											
VA24C9223-001	Anonymous	Vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00094	0.00098	0.00004	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420	0.0030	mg/L	0.0060	<0.0030	0.0030	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 1745746)											
VA24C9151-004	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	0.0000851	0.0000851	0.00%	20%	----
Dissolved Metals (QC Lot: 1741391)											
VA24C9133-021	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.500	mg/L	2150	2110	1.79%	20%	----
		Antimony, dissolved	7440-36-0	E421	0.0500	mg/L	3.87	3.83	0.950%	20%	----
		Arsenic, dissolved	7440-38-2	E421	0.0500	mg/L	824	839	1.80%	20%	----
		Barium, dissolved	7440-39-3	E421	0.0500	mg/L	0.144	0.146	0.00201	Diff <2x LOR	----
		Beryllium, dissolved	7440-41-7	E421	0.0100	mg/L	0.0508	0.0515	0.000646	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E421	0.0250	mg/L	<0.0250	<0.0250	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E421	5.00	mg/L	<5.00	<5.00	0	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.00250	mg/L	7.22	7.34	1.66%	20%	----
		Calcium, dissolved	7440-70-2	E421	25.0	mg/L	456	448	1.63%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.00500	mg/L	<0.00500	<0.00500	0	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E421	0.250	mg/L	0.485	0.486	0.00038	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421	0.0500	mg/L	2.77	2.75	0.692%	20%	----
		Copper, dissolved	7440-50-8	E421	0.100	mg/L	113	111	1.94%	20%	----
		Iron, dissolved	7439-89-6	E421	5.00	mg/L	10600	10600	0.164%	20%	----
		Lead, dissolved	7439-92-1	E421	0.0250	mg/L	0.214	0.212	0.00212	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.500	mg/L	2.15	2.06	0.0876	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	2.50	mg/L	1710	1700	0.988%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.0500	mg/L	234	216	7.62%	20%	----
		Molybdenum, dissolved	7439-98-7	E421	0.0250	mg/L	0.0302	0.0256	0.00467	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E421	0.250	mg/L	1.72	1.72	0.00037	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E421	25.0	mg/L	80.9	79.0	1.98	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E421	25.0	mg/L	<25.0	<25.0	0	Diff <2x LOR	----
		Rubidium, dissolved	7440-17-7	E421	0.100	mg/L	<0.100	<0.100	0	Diff <2x LOR	----
		Selenium, dissolved	7782-49-2	E421	0.0250	mg/L	0.116	0.112	0.00366	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	25.0	mg/L	57.6	50.2	7.36	Diff <2x LOR	----
		Silver, dissolved	7440-22-4	E421	0.00500	mg/L	<0.00500	<0.00500	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E421	25.0	mg/L	125	124	1.03	Diff <2x LOR	----
		Strontium, dissolved	7440-24-6	E421	0.100	mg/L	0.148	0.148	0.00041	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
Dissolved Metals (QC Lot: 1741391) - continued											
VA24C9133-021	Anonymous	Sulfur, dissolved	7704-34-9	E421	250	mg/L	14900	14900	0.118%	20%	----
		Tellurium, dissolved	13494-80-9	E421	0.100	mg/L	<0.100	<0.100	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.00500	mg/L	<0.00500	<0.00500	0	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.0500	mg/L	0.599	0.608	1.50%	20%	----
		Tin, dissolved	7440-31-5	E421	0.0500	mg/L	0.106	0.101	0.00576	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.150	mg/L	1.08	0.995	0.0840	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.0500	mg/L	<0.0500	0.0500	0.00005	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.00500	mg/L	0.452	0.460	1.60%	20%	----
		Vanadium, dissolved	7440-62-2	E421	0.250	mg/L	0.391	0.398	0.00716	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.500	mg/L	2680	2700	0.534%	20%	----
		Zirconium, dissolved	7440-67-7	E421	0.100	mg/L	1.12	1.14	1.34%	20%	----
Dissolved Metals (QC Lot: 1745911)											
VA24C9170-012	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	0.0000136	0.0000146	0.0000010	Diff <2x LOR	----
Speciated Metals (QC Lot: 1744916)											
VA24C8964-001	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
Aggregate Organics (QC Lot: 1745292)											
TY2412490-001	Anonymous	Phenols, total (4AAP)	----	E562	0.0010	mg/L	0.0073	0.0072	0.0001	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 1746581)											
VA24C8977-006	Anonymous	Benzene	71-43-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Bromodichloromethane	75-27-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Bromoform	75-25-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Carbon tetrachloride	56-23-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chlorobenzene	108-90-7	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloroethane	75-00-3	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloroform	67-66-3	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloromethane	74-87-3	E611C	5.0	µg/L	<5.0	<5.0	0	Diff <2x LOR	----
		Dibromochloromethane	124-48-1	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,2-	95-50-1	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,3-	541-73-1	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,4-	106-46-7	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethane, 1,1-	75-34-3	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethane, 1,2-	107-06-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, 1,1-	75-35-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, cis-1,2-	156-59-2	E611C	0.50	µg/L	<0.50	<0.50	0	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
Volatile Organic Compounds (QC Lot: 1746581) - continued											
VA24C8977-006	Anonymous	Dichloroethylene, trans-1,2-	156-60-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloromethane	75-09-2	E611C	1.0	µg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Dichloropropane, 1,2-	78-87-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Ethylbenzene	100-41-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Styrene	100-42-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	0.20	µg/L	<0.20	<0.20	0	Diff <2x LOR	----
		Tetrachloroethylene	127-18-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Toluene	108-88-3	E611C	0.40	µg/L	<0.40	<0.40	0	Diff <2x LOR	----
		Trichloroethane, 1,1,1-	71-55-6	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Trichloroethane, 1,1,2-	79-00-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Trichloroethylene	79-01-6	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Trichlorofluoromethane	75-69-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Vinyl chloride	75-01-4	E611C	0.40	µg/L	<0.40	<0.40	0	Diff <2x LOR	----
		Xylene, m+p-	179601-23-1	E611C	0.40	µg/L	<0.40	<0.40	0	Diff <2x LOR	----
		Xylene, o-	95-47-6	E611C	0.30	µg/L	<0.30	<0.30	0	Diff <2x LOR	----
Hydrocarbons (QC Lot: 1746582)											
VA24C9209-001	WLNG EOP	VHw (C6-C10)	----	E581.VH+F1	100	µg/L	<100	<100	0.0%	30%	----
Glycols (QC Lot: 1744562)											
VA24C9209-001	WLNG EOP	Diethylene glycol	111-46-6	E680E	5.0	mg/L	<5.0	<5.0	0	Diff <2x LOR	----
		Ethylene glycol	107-21-1	E680E	5.0	mg/L	<5.0	<5.0	0	Diff <2x LOR	----
		Propylene glycol, 1,2-	57-55-6	E680E	5.0	mg/L	<5.0	<5.0	0	Diff <2x LOR	----
		Triethylene glycol	112-27-6	E680E	5.0	mg/L	<5.0	<5.0	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
Physical Tests (QCLot: 1740606)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1749748)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1749752)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Anions and Nutrients (QCLot: 1740599)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1740600)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1740601)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1740602)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1740603)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1740604)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1748278)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1748280)						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
Anions and Nutrients (QCLot: 1748282)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Organic / Inorganic Carbon (QCLot: 1748279)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1742851)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1741372)						
Aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
Barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1741372) - continued						
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	----
Zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1745746)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1741391)						
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	----
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	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1741391) - continued						
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	----
Dissolved Metals (QCLot: 1745911)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Speciated Metals (QCLot: 1744916)						
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	<0.00050	----
Aggregate Organics (QCLot: 1745292)						
Phenols, total (4AAP)	----	E562	0.001	mg/L	<0.0010	----
Volatile Organic Compounds (QCLot: 1746581)						
Benzene	71-43-2	E611C	0.5	µg/L	<0.50	----
Bromodichloromethane	75-27-4	E611C	0.5	µg/L	<0.50	----
Bromoform	75-25-2	E611C	0.5	µg/L	<0.50	----
Carbon tetrachloride	56-23-5	E611C	0.5	µg/L	<0.50	----
Chlorobenzene	108-90-7	E611C	0.5	µg/L	<0.50	----
Chloroethane	75-00-3	E611C	0.5	µg/L	<0.50	----
Chloroform	67-66-3	E611C	0.5	µg/L	<0.50	----
Chloromethane	74-87-3	E611C	5	µg/L	<5.0	----
Dibromochloromethane	124-48-1	E611C	0.5	µg/L	<0.50	----
Dichlorobenzene, 1,2-	95-50-1	E611C	0.5	µg/L	<0.50	----
Dichlorobenzene, 1,3-	541-73-1	E611C	0.5	µg/L	<0.50	----
Dichlorobenzene, 1,4-	106-46-7	E611C	0.5	µg/L	<0.50	----
Dichloroethane, 1,1-	75-34-3	E611C	0.5	µg/L	<0.50	----
Dichloroethane, 1,2-	107-06-2	E611C	0.5	µg/L	<0.50	----
Dichloroethylene, 1,1-	75-35-4	E611C	0.5	µg/L	<0.50	----
Dichloroethylene, cis-1,2-	156-59-2	E611C	0.5	µg/L	<0.50	----
Dichloroethylene, trans-1,2-	156-60-5	E611C	0.5	µg/L	<0.50	----
Dichloromethane	75-09-2	E611C	1	µg/L	<1.0	----
Dichloropropane, 1,2-	78-87-5	E611C	0.5	µg/L	<0.50	----
Dichloropropylene, cis-1,3-	10061-01-5	E611C	0.5	µg/L	<0.50	----
Dichloropropylene, trans-1,3-	10061-02-6	E611C	0.5	µg/L	<0.50	----
Ethylbenzene	100-41-4	E611C	0.5	µg/L	<0.50	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 1746581) - continued						
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	0.5	µg/L	<0.50	---
Styrene	100-42-5	E611C	0.5	µg/L	<0.50	---
Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	0.5	µg/L	<0.50	---
Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	0.2	µg/L	<0.20	---
Tetrachloroethylene	127-18-4	E611C	0.5	µg/L	<0.50	---
Toluene	108-88-3	E611C	0.4	µg/L	<0.40	---
Trichloroethane, 1,1,1-	71-55-6	E611C	0.5	µg/L	<0.50	---
Trichloroethane, 1,1,2-	79-00-5	E611C	0.5	µg/L	<0.50	---
Trichloroethylene	79-01-6	E611C	0.5	µg/L	<0.50	---
Trichlorofluoromethane	75-69-4	E611C	0.5	µg/L	<0.50	---
Vinyl chloride	75-01-4	E611C	0.4	µg/L	<0.40	---
Xylene, m+p-	179601-23-1	E611C	0.4	µg/L	<0.40	---
Xylene, o-	95-47-6	E611C	0.3	µg/L	<0.30	---
Hydrocarbons (QCLot: 1746582)						
VHw (C6-C10)	---	E581.VH+F1	100	µg/L	<100	---
Hydrocarbons (QCLot: 1752009)						
EPH (C10-C19)	---	E601A	250	µg/L	<250	---
EPH (C19-C32)	---	E601A	250	µg/L	<250	---
Polycyclic Aromatic Hydrocarbons (QCLot: 1752010)						
Acenaphthene	83-32-9	E641A	0.01	µg/L	<0.010	---
Acenaphthylene	208-96-8	E641A	0.01	µg/L	<0.010	---
Acridine	260-94-6	E641A	0.01	µg/L	<0.010	---
Anthracene	120-12-7	E641A	0.01	µg/L	<0.010	---
Benz(a)anthracene	56-55-3	E641A	0.01	µg/L	<0.010	---
Benzo(a)pyrene	50-32-8	E641A	0.005	µg/L	<0.0050	---
Benzo(b+j)fluoranthene	n/a	E641A	0.01	µg/L	<0.010	---
Benzo(g,h,i)perylene	191-24-2	E641A	0.01	µg/L	<0.010	---
Benzo(k)fluoranthene	207-08-9	E641A	0.01	µg/L	<0.010	---
Chrysene	218-01-9	E641A	0.01	µg/L	<0.010	---
Dibenz(a,h)anthracene	53-70-3	E641A	0.005	µg/L	<0.0050	---
Fluoranthene	206-44-0	E641A	0.01	µg/L	<0.010	---
Fluorene	86-73-7	E641A	0.01	µg/L	<0.010	---
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.01	µg/L	<0.010	---
Methylnaphthalene, 1-	90-12-0	E641A	0.01	µg/L	<0.010	---
Methylnaphthalene, 2-	91-57-6	E641A	0.01	µg/L	<0.010	---



Sub-Matrix: **Water**

<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Result</i>	<i>Qualifier</i>
Polycyclic Aromatic Hydrocarbons (QCLot: 1752010) - continued						
Naphthalene	91-20-3	E641A	0.05	µg/L	<0.050	----
Phenanthrene	85-01-8	E641A	0.02	µg/L	<0.020	----
Pyrene	129-00-0	E641A	0.01	µg/L	<0.010	----
Quinoline	91-22-5	E641A	0.05	µg/L	<0.050	----
Glycols (QCLot: 1744562)						
Diethylene glycol	111-46-6	E680E	5	mg/L	<5.0	----
Ethylene glycol	107-21-1	E680E	5	mg/L	<5.0	----
Propylene glycol, 1,2-	57-55-6	E680E	5	mg/L	<5.0	----
Triethylene glycol	112-27-6	E680E	5	mg/L	<5.0	----



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				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1740606)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	104	85.0	115	----
Physical Tests (QCLot: 1749748)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	104	85.0	115	----
Physical Tests (QCLot: 1749752)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	94.5	85.0	115	----
Anions and Nutrients (QCLot: 1740599)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	99.9	90.0	110	----
Anions and Nutrients (QCLot: 1740600)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	97.7	90.0	110	----
Anions and Nutrients (QCLot: 1740601)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 1740602)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 1740603)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	99.3	90.0	110	----
Anions and Nutrients (QCLot: 1740604)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1748278)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	103	85.0	115	----
Anions and Nutrients (QCLot: 1748280)									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1748282)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	93.5	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1748279)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	100	80.0	120	----
Total Sulfides (QCLot: 1742851)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	105	80.0	120	----
Total Metals (QCLot: 1741372)									



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1741372) - continued									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	98.2	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	107	80.0	120	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	104	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	95.8	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	96.1	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	99.3	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	107	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	100	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	102	80.0	120	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	102	80.0	120	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	98.4	80.0	120	----
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	103	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	104	80.0	120	----
Lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	103	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	97.6	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	98.1	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	98.8	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	105	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	98.6	80.0	120	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	107	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	106	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	99.9	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	100	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	102	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	103	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	92.2	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	109	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	99.3	80.0	120	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	93.5	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	99.6	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	102	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	104	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1741372) - continued									
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	102	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	104	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	102	80.0	120	----
Total Metals (QCLot: 1745746)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	102	80.0	120	----
Dissolved Metals (QCLot: 1741391)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	98.1	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	102	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	99.0	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	98.3	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	100	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	94.6	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	99.8	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	97.0	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	97.5	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	97.6	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	96.0	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	93.2	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	97.9	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	99.8	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	98.2	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	96.9	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	102	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	96.3	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	97.2	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	99.4	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	99.7	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	101	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	108	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	96.2	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	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	90.8	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1741391) - continued									
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	98.5	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	94.8	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	96.1	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	99.7	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	98.3	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	97.6	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	97.7	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	98.4	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	95.6	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	104	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	95.2	80.0	120	----
Speciated Metals (QCLot: 1744916)									
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	0.025 mg/L	99.2	80.0	120	----
Aggregate Organics (QCLot: 1745292)									
Phenols, total (4AAP)	----	E562	0.001	mg/L	0.02 mg/L	92.6	85.0	115	----
Volatile Organic Compounds (QCLot: 1746581)									
Benzene	71-43-2	E611C	0.5	µg/L	100 µg/L	82.5	70.0	130	----
Bromodichloromethane	75-27-4	E611C	0.5	µg/L	100 µg/L	86.0	70.0	130	----
Bromoform	75-25-2	E611C	0.5	µg/L	100 µg/L	88.9	70.0	130	----
Carbon tetrachloride	56-23-5	E611C	0.5	µg/L	100 µg/L	90.8	70.0	130	----
Chlorobenzene	108-90-7	E611C	0.5	µg/L	100 µg/L	95.3	70.0	130	----
Chloroethane	75-00-3	E611C	0.5	µg/L	100 µg/L	94.6	60.0	140	----
Chloroform	67-66-3	E611C	0.5	µg/L	100 µg/L	89.3	70.0	130	----
Chloromethane	74-87-3	E611C	5	µg/L	100 µg/L	96.3	60.0	140	----
Dibromochloromethane	124-48-1	E611C	0.5	µg/L	100 µg/L	88.0	70.0	130	----
Dichlorobenzene, 1,2-	95-50-1	E611C	0.5	µg/L	100 µg/L	96.3	70.0	130	----
Dichlorobenzene, 1,3-	541-73-1	E611C	0.5	µg/L	100 µg/L	109	70.0	130	----
Dichlorobenzene, 1,4-	106-46-7	E611C	0.5	µg/L	100 µg/L	112	70.0	130	----
Dichloroethane, 1,1-	75-34-3	E611C	0.5	µg/L	100 µg/L	89.8	70.0	130	----
Dichloroethane, 1,2-	107-06-2	E611C	0.5	µg/L	100 µg/L	86.6	70.0	130	----
Dichloroethylene, 1,1-	75-35-4	E611C	0.5	µg/L	100 µg/L	90.1	70.0	130	----
Dichloroethylene, cis-1,2-	156-59-2	E611C	0.5	µg/L	100 µg/L	83.3	70.0	130	----
Dichloroethylene, trans-1,2-	156-60-5	E611C	0.5	µg/L	100 µg/L	98.1	70.0	130	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1746581) - continued									
Dichloromethane	75-09-2	E611C	1	µg/L	100 µg/L	91.1	70.0	130	----
Dichloropropane, 1,2-	78-87-5	E611C	0.5	µg/L	100 µg/L	88.4	70.0	130	----
Dichloropropylene, cis-1,3-	10061-01-5	E611C	0.5	µg/L	100 µg/L	91.6	70.0	130	----
Dichloropropylene, trans-1,3-	10061-02-6	E611C	0.5	µg/L	100 µg/L	102	70.0	130	----
Ethylbenzene	100-41-4	E611C	0.5	µg/L	100 µg/L	87.5	70.0	130	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	0.5	µg/L	100 µg/L	101	70.0	130	----
Styrene	100-42-5	E611C	0.5	µg/L	100 µg/L	89.4	70.0	130	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	0.5	µg/L	100 µg/L	93.3	70.0	130	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	0.2	µg/L	100 µg/L	88.7	70.0	130	----
Tetrachloroethylene	127-18-4	E611C	0.5	µg/L	100 µg/L	101	70.0	130	----
Toluene	108-88-3	E611C	0.4	µg/L	100 µg/L	86.0	70.0	130	----
Trichloroethane, 1,1,1-	71-55-6	E611C	0.5	µg/L	100 µg/L	88.7	70.0	130	----
Trichloroethane, 1,1,2-	79-00-5	E611C	0.5	µg/L	100 µg/L	86.9	70.0	130	----
Trichloroethylene	79-01-6	E611C	0.5	µg/L	100 µg/L	91.8	70.0	130	----
Trichlorofluoromethane	75-69-4	E611C	0.5	µg/L	100 µg/L	93.3	60.0	140	----
Vinyl chloride	75-01-4	E611C	0.4	µg/L	100 µg/L	94.0	60.0	140	----
Xylene, m+p-	179601-23-1	E611C	0.4	µg/L	200 µg/L	100	70.0	130	----
Xylene, o-	95-47-6	E611C	0.3	µg/L	100 µg/L	85.7	70.0	130	----
Hydrocarbons (QCLot: 1746582)									
VHw (C6-C10)	---	E581.VH+F1	100	µg/L	6310 µg/L	96.2	70.0	130	----
Hydrocarbons (QCLot: 1752009)									
EPH (C10-C19)	---	E601A	250	µg/L	6490 µg/L	99.3	70.0	130	----
EPH (C19-C32)	---	E601A	250	µg/L	3360 µg/L	86.5	70.0	130	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1752010)									
Acenaphthene	83-32-9	E641A	0.01	µg/L	0.5 µg/L	112	60.0	130	----
Acenaphthylene	208-96-8	E641A	0.01	µg/L	0.5 µg/L	121	60.0	130	----
Acridine	260-94-6	E641A	0.01	µg/L	0.5 µg/L	110	60.0	130	----
Anthracene	120-12-7	E641A	0.01	µg/L	0.5 µg/L	123	60.0	130	----
Benz(a)anthracene	56-55-3	E641A	0.01	µg/L	0.5 µg/L	106	60.0	130	----
Benzo(a)pyrene	50-32-8	E641A	0.005	µg/L	0.5 µg/L	94.7	60.0	130	----
Benzo(b+j)fluoranthene	n/a	E641A	0.01	µg/L	0.5 µg/L	96.0	60.0	130	----
Benzo(g,h,i)perylene	191-24-2	E641A	0.01	µg/L	0.5 µg/L	110	60.0	130	----
Benzo(k)fluoranthene	207-08-9	E641A	0.01	µg/L	0.5 µg/L	104	60.0	130	----
Chrysene	218-01-9	E641A	0.01	µg/L	0.5 µg/L	119	60.0	130	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 1752010) - continued									
Dibenz(a,h)anthracene	53-70-3	E641A	0.005	µg/L	0.5 µg/L	112	60.0	130	----
Fluoranthene	206-44-0	E641A	0.01	µg/L	0.5 µg/L	115	60.0	130	----
Fluorene	86-73-7	E641A	0.01	µg/L	0.5 µg/L	116	60.0	130	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.01	µg/L	0.5 µg/L	104	60.0	130	----
Methylnaphthalene, 1-	90-12-0	E641A	0.01	µg/L	0.5 µg/L	113	60.0	130	----
Methylnaphthalene, 2-	91-57-6	E641A	0.01	µg/L	0.5 µg/L	122	60.0	130	----
Naphthalene	91-20-3	E641A	0.05	µg/L	0.5 µg/L	117	50.0	130	----
Phenanthrene	85-01-8	E641A	0.02	µg/L	0.5 µg/L	122	60.0	130	----
Pyrene	129-00-0	E641A	0.01	µg/L	0.5 µg/L	114	60.0	130	----
Quinoline	91-22-5	E641A	0.05	µg/L	0.5 µg/L	118	60.0	130	----
Glycols (QCLot: 1744562)									
Diethylene glycol	111-46-6	E680E	5	mg/L	25 mg/L	96.0	70.0	130	----
Ethylene glycol	107-21-1	E680E	5	mg/L	25 mg/L	98.0	70.0	130	----
Propylene glycol, 1,2-	57-55-6	E680E	5	mg/L	25 mg/L	94.3	70.0	130	----
Triethylene glycol	112-27-6	E680E	5	mg/L	25 mg/L	94.6	70.0	130	----



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
Anions and Nutrients (QCLot: 1740599)										
VA24C9146-002	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	2.49 mg/L	2.5 mg/L	99.6	75.0	125	----
Anions and Nutrients (QCLot: 1740600)										
VA24C9146-002	Anonymous	Fluoride	16984-48-8	E235.F	0.981 mg/L	1 mg/L	98.1	75.0	125	----
Anions and Nutrients (QCLot: 1740601)										
VA24C9146-002	Anonymous	Chloride	16887-00-6	E235.Cl	100 mg/L	100 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1740602)										
VA24C9146-002	Anonymous	Bromide	24959-67-9	E235.Br-L	0.503 mg/L	0.5 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1740603)										
VA24C9146-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.489 mg/L	0.5 mg/L	97.9	75.0	125	----
Anions and Nutrients (QCLot: 1740604)										
VA24C9146-002	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	100 mg/L	100 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1748278)										
VA24C8853-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.101 mg/L	0.1 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1748280)										
VA24C9069-006	Anonymous	Nitrogen, total	7727-37-9	E366	0.399 mg/L	0.4 mg/L	99.9	70.0	130	----
Anions and Nutrients (QCLot: 1748282)										
VA24C8853-002	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0484 mg/L	0.05 mg/L	96.8	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1748279)										
VA24C8853-002	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	5.01 mg/L	5 mg/L	100	70.0	130	----
Total Sulfides (QCLot: 1742851)										
VA24C9075-002	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.232 mg/L	0.2 mg/L	116	75.0	125	----
Total Metals (QCLot: 1741372)										
VA24C9231-001	Anonymous	Aluminum, total	7429-90-5	E420	ND mg/L	----	ND	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0196 mg/L	0.02 mg/L	97.8	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0192 mg/L	0.02 mg/L	96.2	70.0	130	----
		Barium, total	7440-39-3	E420	0.0189 mg/L	0.02 mg/L	94.4	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0369 mg/L	0.04 mg/L	92.2	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.0101 mg/L	0.01 mg/L	101	70.0	130	----
		Boron, total	7440-42-8	E420	0.098 mg/L	0.1 mg/L	98.0	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00401 mg/L	0.004 mg/L	100	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.00966 mg/L	0.01 mg/L	96.6	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0388 mg/L	0.04 mg/L	97.0	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
Total Metals (QCLot: 1741372) - continued										
VA24C9231-001	Anonymous	Cobalt, total	7440-48-4	E420	0.0191 mg/L	0.02 mg/L	95.6	70.0	130	----
		Copper, total	7440-50-8	E420	0.0187 mg/L	0.02 mg/L	93.4	70.0	130	----
		Iron, total	7439-89-6	E420	1.84 mg/L	2 mg/L	92.3	70.0	130	----
		Lead, total	7439-92-1	E420	0.0197 mg/L	0.02 mg/L	98.4	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0916 mg/L	0.1 mg/L	91.6	70.0	130	----
		Magnesium, total	7439-95-4	E420	0.883 mg/L	1 mg/L	88.3	70.0	130	----
		Manganese, total	7439-96-5	E420	0.0183 mg/L	0.02 mg/L	91.4	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0201 mg/L	0.02 mg/L	100	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0374 mg/L	0.04 mg/L	93.6	70.0	130	----
		Phosphorus, total	7723-14-0	E420	9.71 mg/L	10 mg/L	97.1	70.0	130	----
		Potassium, total	7440-09-7	E420	3.96 mg/L	4 mg/L	99.0	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0187 mg/L	0.02 mg/L	93.6	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0390 mg/L	0.04 mg/L	97.4	70.0	130	----
		Silicon, total	7440-21-3	E420	9.66 mg/L	10 mg/L	96.6	70.0	130	----
		Silver, total	7440-22-4	E420	0.00400 mg/L	0.004 mg/L	99.9	70.0	130	----
		Sodium, total	7440-23-5	E420	1.94 mg/L	2 mg/L	97.3	70.0	130	----
		Strontium, total	7440-24-6	E420	ND mg/L	----	ND	70.0	130	----
		Sulfur, total	7704-34-9	E420	19.6 mg/L	20 mg/L	98.0	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.0407 mg/L	0.04 mg/L	102	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00380 mg/L	0.004 mg/L	95.1	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0197 mg/L	0.02 mg/L	98.4	70.0	130	----
		Tin, total	7440-31-5	E420	0.0201 mg/L	0.02 mg/L	100	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0383 mg/L	0.04 mg/L	95.8	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0194 mg/L	0.02 mg/L	96.8	70.0	130	----
		Uranium, total	7440-61-1	E420	0.00401 mg/L	0.004 mg/L	100	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.0950 mg/L	0.1 mg/L	95.0	70.0	130	----
		Zinc, total	7440-66-6	E420	0.384 mg/L	0.4 mg/L	96.0	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0403 mg/L	0.04 mg/L	101	70.0	130	----
Total Metals (QCLot: 1745746)										
VA24C9151-005	Anonymous	Mercury, total	7439-97-6	E508	0.000104 mg/L	0 mg/L	104	70.0	130	----
Dissolved Metals (QCLot: 1741391)										
VA24C9134-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.196 mg/L	0.2 mg/L	97.9	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0212 mg/L	0.02 mg/L	106	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		Barium, dissolved	7440-39-3	E421	0.0197 mg/L	0.02 mg/L	98.3	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0423 mg/L	0.04 mg/L	106	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00995 mg/L	0.01 mg/L	99.5	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.099 mg/L	0.1 mg/L	99.4	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00393 mg/L	0.004 mg/L	98.3	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.0103 mg/L	0.01 mg/L	103	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0395 mg/L	0.04 mg/L	98.8	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0200 mg/L	0.02 mg/L	100	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
Dissolved Metals (QCLot: 1741391) - continued										
VA24C9134-001	Anonymous	Copper, dissolved	7440-50-8	E421	0.0198 mg/L	0.02 mg/L	99.3	70.0	130	----
		Iron, dissolved	7439-89-6	E421	1.99 mg/L	2 mg/L	99.6	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0197 mg/L	0.02 mg/L	98.4	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.103 mg/L	0.1 mg/L	103	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	----	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	0.0194 mg/L	0.02 mg/L	97.0	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.0209 mg/L	0.02 mg/L	105	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0397 mg/L	0.04 mg/L	99.2	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	10.1 mg/L	10 mg/L	101	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	4.28 mg/L	4 mg/L	107	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.0189 mg/L	0.02 mg/L	94.5	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0417 mg/L	0.04 mg/L	104	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	10.3 mg/L	10 mg/L	103	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00414 mg/L	0.004 mg/L	103	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	2.17 mg/L	2 mg/L	108	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	----	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	19.7 mg/L	20 mg/L	98.4	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.0424 mg/L	0.04 mg/L	106	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00374 mg/L	0.004 mg/L	93.6	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0196 mg/L	0.02 mg/L	98.2	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0200 mg/L	0.02 mg/L	99.9	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0404 mg/L	0.04 mg/L	101	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00393 mg/L	0.004 mg/L	98.3	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.0986 mg/L	0.1 mg/L	98.6	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.401 mg/L	0.4 mg/L	100	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0429 mg/L	0.04 mg/L	107	70.0	130	----
Dissolved Metals (QCLot: 1745911)										
VA24C9174-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.000101 mg/L	0 mg/L	101	70.0	130	----
Speciated Metals (QCLot: 1744916)										
VA24C8964-001	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0402 mg/L	0.04 mg/L	100	70.0	130	----
Aggregate Organics (QCLot: 1745292)										
VA24C9170-005	Anonymous	Phenols, total (4AAP)	----	E562	0.0192 mg/L	0.02 mg/L	95.8	75.0	125	----
Volatile Organic Compounds (QCLot: 1746581)										
VA24C8977-009	Anonymous	Benzene	71-43-2	E611C	85.6 µg/L	100 µg/L	85.6	60.0	140	----
		Bromodichloromethane	75-27-4	E611C	89.8 µg/L	100 µg/L	89.8	60.0	140	----
		Bromoform	75-25-2	E611C	95.6 µg/L	100 µg/L	95.6	60.0	140	----
		Carbon tetrachloride	56-23-5	E611C	94.1 µg/L	100 µg/L	94.1	60.0	140	----
		Chlorobenzene	108-90-7	E611C	101 µg/L	100 µg/L	101	60.0	140	----
		Chloroethane	75-00-3	E611C	96.1 µg/L	100 µg/L	96.1	50.0	150	----
		Chloroform	67-66-3	E611C	94.1 µg/L	100 µg/L	94.1	60.0	140	----
		Chloromethane	74-87-3	E611C	93.2 µg/L	100 µg/L	93.2	50.0	150	----



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
Volatile Organic Compounds (QCLot: 1746581) - continued										
VA24C8977-009	Anonymous	Dibromochloromethane	124-48-1	E611C	93.5 µg/L	100 µg/L	93.5	60.0	140	----
		Dichlorobenzene, 1,2-	95-50-1	E611C	100 µg/L	100 µg/L	100	60.0	140	----
		Dichlorobenzene, 1,3-	541-73-1	E611C	116 µg/L	100 µg/L	116	60.0	140	----
		Dichlorobenzene, 1,4-	106-46-7	E611C	118 µg/L	100 µg/L	118	60.0	140	----
		Dichloroethane, 1,1-	75-34-3	E611C	94.0 µg/L	100 µg/L	94.0	60.0	140	----
		Dichloroethane, 1,2-	107-06-2	E611C	91.2 µg/L	100 µg/L	91.2	60.0	140	----
		Dichloroethylene, 1,1-	75-35-4	E611C	91.9 µg/L	100 µg/L	91.9	60.0	140	----
		Dichloroethylene, cis-1,2-	156-59-2	E611C	86.7 µg/L	100 µg/L	86.7	60.0	140	----
		Dichloroethylene, trans-1,2-	156-60-5	E611C	104 µg/L	100 µg/L	104	60.0	140	----
		Dichloromethane	75-09-2	E611C	96.1 µg/L	100 µg/L	96.1	60.0	140	----
		Dichloropropane, 1,2-	78-87-5	E611C	93.0 µg/L	100 µg/L	93.0	60.0	140	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611C	96.1 µg/L	100 µg/L	96.1	60.0	140	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611C	109 µg/L	100 µg/L	109	60.0	140	----
		Ethylbenzene	100-41-4	E611C	88.4 µg/L	100 µg/L	88.4	60.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	105 µg/L	100 µg/L	105	60.0	140	----
		Styrene	100-42-5	E611C	90.1 µg/L	100 µg/L	90.1	60.0	140	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	99.4 µg/L	100 µg/L	99.4	60.0	140	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	94.4 µg/L	100 µg/L	94.4	60.0	140	----
		Tetrachloroethylene	127-18-4	E611C	107 µg/L	100 µg/L	107	60.0	140	----
		Toluene	108-88-3	E611C	89.1 µg/L	100 µg/L	89.1	60.0	140	----
		Trichloroethane, 1,1,1-	71-55-6	E611C	92.0 µg/L	100 µg/L	92.0	60.0	140	----
		Trichloroethane, 1,1,2-	79-00-5	E611C	93.1 µg/L	100 µg/L	93.1	60.0	140	----
		Trichloroethylene	79-01-6	E611C	94.2 µg/L	100 µg/L	94.2	60.0	140	----
		Trichlorofluoromethane	75-69-4	E611C	94.6 µg/L	100 µg/L	94.6	50.0	150	----
		Vinyl chloride	75-01-4	E611C	91.1 µg/L	100 µg/L	91.1	50.0	150	----
		Xylene, m+p-	179601-23-1	E611C	212 µg/L	200 µg/L	106	60.0	140	----
		Xylene, o-	95-47-6	E611C	87.2 µg/L	100 µg/L	87.2	60.0	140	----
Hydrocarbons (QCLot: 1746582)										
VA24C9386-005	Anonymous	VHw (C6-C10)	----	E581.VH+F1	5610 µg/L	6310 µg/L	89.0	60.0	140	----



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Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

COC Number: 20 - Page of

Contact and company name below will appear on the final report

Report To
 Triton Environmental
 Company:
 Contact:
 Phone:
 Street:
 City/Province:
 Postal Code:
 Invoice To
 Company:
 Contact:

Project Information

ALS Account # / Quote #: VA23-TRIT100-012
 Job #: 11964
 PO / AFE: 11964 - Task 40 - Phase 3C-4C
 LSD:

ALS Lab Work Order # (ALS use only):

ALS Sample # (ALS use only):
 Sample Identification and/or Coordinates (This description will appear on the report)
 WLANG EOP
 pH: 7.61 cond: 148 µs/cm temp: 10.7 °C

Reports / Recipients

Select Report Format: PDF EXCEL EDD (DIGITAL)
 Merge COC/QCI Reports with COA YES NO N/A
 Compare Results to Criteria on Report - provide details below if box checked
 Select Distribution: EMAIL MAIL FAX

Turnaround Time (TAT) Requested

Routine [R] if received by 3pm M-F - no surcharges apply
 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum
 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum
 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum
 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum
 Same day [E2] if received by 10am M-S - 200% rush surcharge

AFFIX ALS BARCODE LABEL HERE (ALS use only)

Date and Time Required for all EDP TATs:

06 Nov 2012 2:30 PM

For all tests with rush TATs requested, please contact your A/M to confirm availability.

Analysis Request

NUMBER OF CONTAINERS	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (FP) below						
	F	P	P	P	P	FP	FP
15	R	R	R	R	R	R	R
Total metals + mercury							
Dissolved metals + mercury							
Total hexavalent chromium							
Total trivalent chromium							
TSS, TDS, T-Alkalinity, Anions scan (Br, Cl, F, NO2, NO3, SO4)							
Total sulfide (low) (as H2S), Unionized Sulfide (low)							
Nutrients (ammonia, ammonium, total)							
VOC/VPH							
EPH, PAH, LEPH/HEPH							
DOC							
Glycols							
General parameters (alkalinity)							
SAMPLES ON HOLD							
EXTENDED STORAGE REQUIRED							
SUSPECTED HAZARD (see notes)							

Notes / Specify Limits for result evaluation. (Excel COC only)
 Drinking Water (DW) Samples (client use)
 Are samples taken from a Regulated DW System?
 YES NO
 Are samples for human consumption/use?
 YES NO

Environmental Division
 Vancouver
 Work Order Reference
VA24C9209
 Telephone: +1 604 233 4188

SHIPMENT RELEASE (client use)
 Date: 29-Oct-24 17:00
 Received by: [Signature]

INITIAL SHIPMENT RECEPTION (ALS use only)
 Date: [Signature]

COOLING METHOD: NONE ICE ICE PACKS FROZEN COOLING INITIATED
 Submission Comments identified on Sample Receipt Notification: YES NO
 Cooler Custody Seals Intact: YES N/A Sample Custody Seals Intact: YES N/A
 INITIAL COOLER TEMPERATURES °C: [] FINAL COOLER TEMPERATURES °C: []

WHITE - LABORATORY COPY YELLOW - CLIENT COPY
 FINAL SHIPMENT RECEPTION (ALS use only)
 Date: 06 Nov 2012
 Time: 2:30 PM
 Received by: [Signature]

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

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



**Eagle Mountain - Woodfibre Gas Pipeline Project
Waste Discharge Permit PE-110163 Report**

Reporting Week	Oct. 28 th to Nov. 3 rd , 2024
Report #	32
Appendix C	C-4

Woodfibre Site WTP Discharge Field Notes and Logs



FortisBC Eagle Mountain-Woodfibre Gas Pipeline

Water Discharge Authorization Water Quality Monitoring

2024-10-29-Chycoski-4A939

Project Component:	Tunnel	Site Name:	WLNG Treatment Discharge
Inspection Date:	10/29/2024	Location:	WLNG
Triton QP:	Lily Chycoski	Latitude/Longitude:	49.669368 -123.249828
Temperature(c):	Low 7 High 11	Permit:	PE 110136
Weather Conditions:	Light Rain	Ground Conditions:	Wet

Observations

Time: 10:11:00 **Flow Volume (visual):** N/A

Notes: Sampled from the spigot in the pipe.

Odour Detected?: No **Notes:**

Unusual Colour?: No **Notes:**

Unusual Observations?: No **Notes:**

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

Samples Collected - Parameters

Total Metals + Mercury	Yes	General Parameters (Alkalinity)	Yes	Other Sample:
Dissolved Metals + Mercury	Yes	Total Sulfide, Unionized Sulfide	Yes	
TSS	Yes	Anions	Yes	
TDS	Yes	Total Trivalent Chromium	Yes	QA Samples: No
Nutrients	Yes	VOC/VPH	Yes	
DOC	Yes	EPH, PAH, LEPH/HEPH	Yes	
		Trout LC50	No	

Logger Maintenance

Logger Maintenance Performed?	No	Photo of COC with Lab Signature?	Yes
Describe Logger Maintenance			

Photos



Photo: 1
Location: WLNG EOP
Description: Spigot in discharge hose.



Photo: 2
Location: WLNG EOP
Description: Water flowing from spigot

Photos

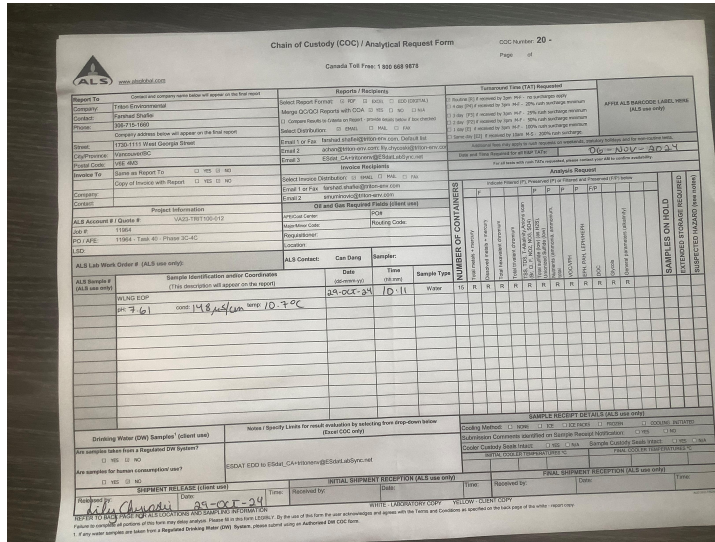


Photo: 3
 Location: WLNQ EOP
 Description: Lab COC



2024-10-29-Chycoski-4A939

Sign Off

Report Prepared By: Lily Chycoski

Report Reviewed: Yes

Report Reviewer:

Professional(s) of Record:

Name:

Designation:

Designation Number:


		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th

Table of Contents:

1. Executive Summary and Notes
2. Discharge Parameter Summary
3. WTP Calibration Log

Appendices:

- Appendix A- WTP Data Log
- Appendix B- YSI Data Log
- Appendix C- Photos

1. Executive Summary and Field Notes:

The discharged water consistently remained within regulatory guidelines. The key parameters, including temperature, pH, NTU, salinity, conductivity, and oxidation-reduction potential (ORP), were monitored throughout the discharge process and remained within the prescribed limits. No visible sheen observed on top of the WTP tanks and discharged water. All relevant parameters were measured using YSI instruments and WTP probes. The total discharge volume up to October 28th was 17,783 m³.



Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope

Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th

Daily Volume Summary:

Table 1: Discharge Volumes Daily Summary

Date	Location	Volume (m3)	Comments
October 28	WoodFibre (WF)	391	None
October 29	WF	350	None
October 30	WF	326	None
October 31	WF	319	None
November 1	WF	304	None
November 2	WF	317	None
November 3	WF	301	None
Total		2,308	None

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2. Discharge Parameter Summary:

Table 2: Discharge Parameter Summary

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/28/2024	0:00:00	7.3	0.215	0.9	17,783	18.4	258
10/28/2024	0:15:00	7.3	0.208	1	17,786	18.3	258
10/28/2024	0:30:00	7.3	0.208	1.4	17,790	18.1	258
10/28/2024	0:45:00	7.3	0.204	1.3	17,793	18	255
10/28/2024	1:00:00	7.3	0.000	5.3	17,796	18.3	256
10/28/2024	1:15:00	7.3	0.401	0.6	17,802	11.7	114
10/28/2024	1:30:00	7.4	0.393	2.9	17,808	11.5	113
10/28/2024	1:45:00	7.4	0.397	5.6	17,814	11.4	113
10/28/2024	2:00:00	7.4	0.404	7.8	17,820	11.4	113
10/28/2024	2:15:00	7.4	0.404	10.1	17,826	11.4	113
10/28/2024	4:15:00	7.5	0.227	7.4	17,836	11.7	113
10/28/2024	4:30:00	7.5	0.231	7.5	17,839	12.1	114
10/28/2024	4:45:00	7.4	0.231	7.6	17,842	12.7	114
10/28/2024	5:00:00	7.4	0.227	7.2	17,846	13.2	114
10/28/2024	5:15:00	7.4	0.223	7.4	17,866	14.1	114
10/28/2024	5:30:00	7.4	0.151	7.3	17,869	14.5	114
10/28/2024	5:45:00	7.4	0.212	7	17,872	14.9	114
10/28/2024	6:00:00	7.4	0.204	7	17,876	15.3	115
10/28/2024	6:15:00	7.4	1.315	7.1	17,886	15.7	116
10/28/2024	6:30:00	7.4	1.315	7	17,906	16.1	248

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Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/28/2024	6:45:00	7.4	1.278	6.9	17,925	16.4	250
10/28/2024	8:00:00	7.3	0.242	6.6	17,939	17.5	252
10/28/2024	8:15:00	7.4	1.040	6.2	17,943	17.6	250
10/28/2024	8:30:00	7.3	1.047	6.3	17,959	17.5	248
10/28/2024	8:45:00	7.3	0.491	6.6	17,973	17.3	247
10/28/2024	10:00:00	7.3	0.000	6.7	17,976	16.1	247
10/28/2024	10:15:00	7.3	0.457	7.1	17,980	13.6	111
10/28/2024	10:30:00	7.3	0.473	6.7	17,987	13.8	111
10/28/2024	10:45:00	7.3	0.469	7	17,990	13.8	112
10/28/2024	11:00:00	7.3	0.438	6.5	17,996	14	112
10/28/2024	11:15:00	7.3	0.438	6.6	18,002	14.1	111
10/28/2024	11:30:00	7.3	0.416	6.8	18,009	14.2	111
10/28/2024	11:45:00	7.3	0.423	6.5	18,015	14.3	111
10/28/2024	12:00:00	7.3	0.427	6.5	18,022	14.4	112
10/28/2024	12:15:00	7.3	0.420	6.6	18,028	14.5	112
10/28/2024	12:30:00	7.3	0.386	6.7	18,034	14.5	112
10/28/2024	12:45:00	7.3	0.359	6.9	18,039	14.6	112
10/28/2024	13:00:00	7.3	0.336	6.5	18,045	14.7	112
10/28/2024	14:30:00	7.2	0.348	6	18,050	15.5	114
10/28/2024	14:45:00	7.2	0.329	5.8	18,055	15.7	114
10/28/2024	15:00:00	7.2	0.318	5.9	18,059	15.9	114
10/28/2024	15:15:00	7.2	0.302	5.8	18,064	16	114
10/28/2024	15:30:00	7.5	0.503	5.2	18,069	17	247
10/28/2024	15:45:00	7.5	0.469	5.2	18,072	17.2	250
10/28/2024	16:00:00	7.4	0.457	5.3	18,079	17.3	248



Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope

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Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/28/2024	16:15:00	7.4	0.000	5	18,081	17.7	248
10/28/2024	16:30:00	7.4	0.272	5.2	18,081	17.6	248
10/28/2024	16:45:00	7.4	0.000	4.9	18,083	17.5	250
10/28/2024	17:15:00	7.4	0.000	4.9	18,083	17.3	250
10/28/2024	17:30:00	7.4	0.499	4.8	18,086	17.3	251
10/28/2024	17:45:00	7.4	0.593	4.9	18,094	17.3	251
10/28/2024	18:00:00	7.4	0.484	4.6	18,102	17.5	252
10/28/2024	18:15:00	7.4	0.503	4.5	18,109	17.5	252
10/28/2024	18:30:00	7.4	0.495	4.7	18,117	17.4	248
10/28/2024	19:15:00	7.4	0.000	4.6	18,118	17.1	251
10/28/2024	19:30:00	7.4	0.480	4.3	18,121	17.1	250
10/28/2024	19:45:00	7.5	0.491	4	18,129	17.6	250
10/28/2024	20:00:00	7.5	0.503	3.8	18,136	17.7	249
10/28/2024	20:15:00	7.5	0.000	3.8	18,139	17.8	250
10/28/2024	21:15:00	7.4	0.491	4	18,146	18	250
10/28/2024	21:30:00	7.4	0.488	3.9	18,153	17.9	250
10/28/2024	21:45:00	7.3	0.499	4.1	18,161	17.9	250
10/28/2024	22:00:00	7.3	0.000	3.8	18,162	17.7	247
10/28/2024	22:30:00	7.3	0.000	4	18,162	17.3	246
10/28/2024	22:45:00	7.3	0.431	4	18,163	17.1	248
10/28/2024	23:00:00	7.4	0.344	3.9	18,170	16.9	250
10/28/2024	23:45:00	7.9	0.000	2	18,174	12.5	113
10/29/2024	0:00:00	7.9	0.454	1.5	18,176	12.7	114
10/29/2024	0:15:00	7.9	0.507	1.6	18,183	13	114
10/29/2024	0:30:00	7.8	0.491	1	18,191	13.4	114

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Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/29/2024	1:30:00	7.8	0.000	0.2	18,193	13.9	248
10/29/2024	1:45:00	7.8	0.484	0	18,198	14	114
10/29/2024	2:00:00	7.9	0.473	0.9	18,205	15.9	250
10/29/2024	2:15:00	7.8	0.495	0.5	18,212	15.9	250
10/29/2024	2:30:00	7.8	0.469	0.6	18,219	15.9	248
10/29/2024	3:45:00	7.7	0.064	0.2	18,220	16.9	247
10/29/2024	4:00:00	7.7	0.522	0.3	18,228	16.8	250
10/29/2024	4:15:00	7.7	0.503	0.6	18,235	16.8	249
10/29/2024	4:30:00	7.7	0.529	0.5	18,242	16.8	248
10/29/2024	5:00:00	7.9	0.495	26.8	18,247	12.4	113
10/29/2024	5:15:00	7.9	0.469	16	18,255	11.6	113
10/29/2024	5:30:00	7.9	0.473	13.9	18,262	11.6	114
10/29/2024	5:45:00	7.9	0.491	12.2	18,269	11.6	113
10/29/2024	6:00:00	7.9	0.476	10.8	18,276	11.6	113
10/29/2024	6:15:00	7.9	0.476	10.8	18,283	11.6	114
10/29/2024	6:30:00	7.9	0.000	9.9	18,286	12	114
10/29/2024	7:45:00	7.9	0.465	8.8	18,293	11.7	114
10/29/2024	8:00:00	8	0.484	10	18,300	11.6	114
10/29/2024	8:45:00	7.9	0.465	7.8	18,306	12.6	112
10/29/2024	9:00:00	8	0.465	7.4	18,313	11.4	112
10/29/2024	9:15:00	8	0.495	6.3	18,320	11.4	111
10/29/2024	9:30:00	8	0.582	47.4	18,326	11.6	111
10/29/2024	9:45:00	8	0.000	10.3	18,328	11.6	111
10/29/2024	10:00:00	8	0.000	4.5	18,328	11.8	111
10/29/2024	10:15:00	8	0.507	6.2	18,332	11.4	112

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Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/29/2024	10:30:00	8	0.000	2.8	18,337	11.5	111
10/29/2024	10:45:00	8	0.000	2.1	18,337	11.7	112
10/29/2024	11:00:00	7.9	0.000	1.9	18,337	12	111
10/29/2024	11:15:00	8	0.499	4.6	18,344	11.4	111
10/29/2024	11:30:00	8	0.495	3	18,351	11.4	111
10/29/2024	11:45:00	8	0.000	0.9	18,357	11.5	113
10/29/2024	12:00:00	8	0.000	0.5	18,357	11.9	113
10/29/2024	12:30:00	8	0.476	1.1	18,358	13.3	114
10/29/2024	12:45:00	8	0.499	0.4	18,366	12	114
10/29/2024	13:00:00	8	0.000	0	18,369	12.1	115
10/29/2024	13:15:00	8	0.000	0.6	18,369	12.5	114
10/29/2024	13:30:00	8	0.499	0.1	18,373	12.1	114
10/29/2024	13:45:00	8	0.488	0.2	18,381	11.9	114
10/29/2024	14:00:00	8	0.514	0.4	18,388	11.9	114
10/29/2024	14:15:00	8	0.000	0	18,393	12.2	116
10/29/2024	14:30:00	8	0.000	0	18,393	12.6	115
10/29/2024	14:45:00	8	0.000	0	18,393	13.1	115
10/29/2024	15:00:00	8	0.000	0	18,393	13.5	116
10/29/2024	15:15:00	8	0.488	0	18,397	12.7	116
10/29/2024	15:30:00	8	0.491	5.9	18,404	12.1	114
10/29/2024	15:45:00	8	0.499	0.7	18,411	12.1	114
10/29/2024	16:00:00	8	0.491	17.9	18,417	12.3	116
10/29/2024	16:15:00	8	0.000	4.2	18,422	12.6	114
10/29/2024	17:15:00	7.9	0.469	2.4	18,424	14.2	255
10/29/2024	17:30:00	8	0.484	3.4	18,432	14.9	253

Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/29/2024	17:45:00	8	0.473	2.6	18,439	15.2	253
10/29/2024	18:00:00	8	0.491	1.5	18,446	15.5	255
10/29/2024	19:00:00	8	0.000	0	18,450	15.9	253
10/29/2024	19:15:00	7.9	0.484	0	18,455	15.8	254
10/29/2024	19:30:00	7.9	0.499	0	18,462	15.8	255
10/29/2024	19:45:00	7.9	0.476	0.4	18,470	16.1	255
10/29/2024	20:45:00	7.8	0.000	0	18,475	16	253
10/29/2024	21:00:00	7.8	0.461	0	18,477	16	253
10/29/2024	21:15:00	7.8	0.491	0	18,484	16.1	253
10/29/2024	21:30:00	7.8	0.461	0	18,492	16.3	253
10/29/2024	22:15:00	7.8	0.000	0	18,497	16.7	253
10/29/2024	22:45:00	7.8	0.000	0	18,499	16.4	253
10/29/2024	23:00:00	8	0.491	0.9	18,502	11.7	114
10/29/2024	23:15:00	8	0.473	0	18,510	11.3	113
10/29/2024	23:30:00	8	0.446	0	18,517	11.2	114
10/29/2024	23:45:00	8	0.480	0	18,524	11.2	114
10/30/2024	0:45:00	8	0.000	0	18,525	12.2	113
10/30/2024	1:00:00	8	0.476	0	18,530	11.3	114
10/30/2024	1:15:00	8	0.457	0.6	18,537	11.3	114
10/30/2024	1:30:00	8	0.420	0	18,544	11.4	114
10/30/2024	1:45:00	8	0.000	0	18,546	11.8	114
10/30/2024	2:45:00	8	0.454	0	18,552	11.7	116
10/30/2024	3:00:00	8	0.461	0	18,559	11.5	114
10/30/2024	3:15:00	8	0.393	4.3	18,566	11.5	114
10/30/2024	3:30:00	8	0.000	0	18,567	12	115

Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/30/2024	4:00:00	8	0.450	0	18,571	11.6	114
10/30/2024	4:15:00	8	0.461	0	18,578	11.5	116
10/30/2024	4:30:00	8	0.427	0	18,585	11.5	265
10/30/2024	4:45:00	8	0.465	0	18,591	11.4	263
10/30/2024	5:00:00	8	0.457	0	18,598	11.5	268
10/30/2024	5:15:00	8	0.000	0	18,603	11.6	267
10/30/2024	5:30:00	8	0.000	0	18,603	12.3	266
10/30/2024	6:15:00	8	0.340	0	18,607	12	265
10/30/2024	6:30:00	8	0.435	0	18,612	11.7	117
10/30/2024	6:45:00	8	0.431	0	18,619	11.7	116
10/30/2024	7:00:00	8	0.450	0	18,625	11.6	115
10/30/2024	8:00:00	8	0.427	0	18,627	14.4	259
10/30/2024	8:15:00	8	0.382	0	18,633	12	114
10/30/2024	8:30:00	8	0.408	0	18,639	11.5	114
10/30/2024	8:45:00	8	0.412	0	18,645	11.4	114
10/30/2024	9:00:00	8	0.431	0	18,651	11.3	114
10/30/2024	9:15:00	8	0.000	0	18,656	11.4	114
10/30/2024	10:30:00	7.9	0.393	0	18,656	12.8	255
10/30/2024	10:45:00	8	0.404	0	18,663	11.1	114
10/30/2024	11:00:00	8	0.435	0	18,669	11.1	114
10/30/2024	11:15:00	8	0.431	0	18,675	11.1	114
10/30/2024	11:30:00	8	0.000	0	18,680	11.3	114
10/30/2024	12:30:00	8	0.469	0	18,684	11.6	114
10/30/2024	12:45:00	8	0.457	0	18,691	11.5	116
10/30/2024	13:00:00	8	0.461	3.9	18,698	11.5	116

Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/30/2024	13:15:00	8	0.000	0	18,702	11.6	114
10/30/2024	14:15:00	8	0.442	0.2	18,707	11.3	114
10/30/2024	14:30:00	8	0.438	0.1	18,714	11.3	114
10/30/2024	14:45:00	8.1	0.438	0	18,720	11.4	114
10/30/2024	15:00:00	8	0.000	0	18,726	11.6	116
10/30/2024	16:00:00	8	0.457	0	18,728	12	115
10/30/2024	16:15:00	8	0.476	0	18,735	11.3	114
10/30/2024	16:30:00	8	0.473	1.1	18,742	11.2	113
10/30/2024	16:45:00	8	0.469	0	18,749	11.2	113
10/30/2024	17:00:00	8	0.000	0	18,751	11.5	113
10/30/2024	17:45:00	8	0.484	0	18,755	11.2	113
10/30/2024	18:00:00	8	0.469	0.2	18,762	11.2	114
10/30/2024	18:15:00	8	0.488	1.2	18,769	11.1	113
10/30/2024	18:30:00	8	0.480	2.1	18,776	11.1	113
10/30/2024	18:45:00	8	0.000	2.8	18,783	11.1	113
10/30/2024	19:00:00	8	0.000	2.5	18,783	11.4	113
10/30/2024	19:15:00	7.9	0.000	2.6	18,783	11.6	264
10/30/2024	19:30:00	7.9	0.480	3.1	18,784	12	262
10/30/2024	19:45:00	8	0.473	4.2	18,791	11.3	115
10/30/2024	20:00:00	8	0.469	4.2	18,799	11.3	114
10/30/2024	20:15:00	8	0.476	3.4	18,806	11.2	114
10/30/2024	21:15:00	8	0.469	2.6	18,808	12.1	262
10/30/2024	21:30:00	8	0.473	1.8	18,815	11.1	114
10/30/2024	21:45:00	8	0.476	1.4	18,822	11.1	114
10/30/2024	22:00:00	8	0.000	0.9	18,828	11.1	113

Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/30/2024	23:00:00	8	0.000	20	18,830	10.9	113
10/30/2024	23:15:00	8	0.454	0.3	18,836	10.9	114
10/30/2024	23:30:00	8.1	0.469	0.2	18,843	10.9	114
10/30/2024	23:45:00	8.1	0.457	0.1	18,850	10.9	11
10/31/2024	1:15:00	8	0.382	0	18,854	12.4	113
10/31/2024	1:30:00	7.9	0.408	0	18,860	12.7	256
10/31/2024	1:45:00	7.9	0.397	0	18,866	13	254
10/31/2024	2:00:00	7.8	0.370	0.2	18,872	13.4	255
10/31/2024	2:15:00	7.6	0.000	0	18,876	11.4	113
10/31/2024	3:15:00	7.7	0.529	0.3	18,880	11.2	113
10/31/2024	3:30:00	7.7	0.556	0	18,889	11	113
10/31/2024	3:45:00	7.7	0.537	2	18,897	11.1	114
10/31/2024	4:00:00	7.6	0.000	0	18,899	11.4	114
10/31/2024	5:00:00	7.7	0.522	1.5	18,906	11.3	114
10/31/2024	5:15:00	7.7	0.552	0	18,914	11.2	116
10/31/2024	5:30:00	7.7	0.556	1.2	18,921	11.2	114
10/31/2024	5:45:00	7.6	0.556	2.3	18,927	11.4	116
10/31/2024	6:00:00	7.6	0.541	2.3	18,935	11.2	114
10/31/2024	6:15:00	7.6	0.000	1.6	18,943	11.2	114
10/31/2024	7:15:00	7.7	0.537	0.9	18,946	11.1	113
10/31/2024	7:30:00	7.7	0.552	0.6	18,954	10.9	113
10/31/2024	7:45:00	7.7	0.537	0.4	18,962	10.8	113
10/31/2024	8:00:00	7.6	0.000	0.3	18,966	11	113
10/31/2024	9:00:00	7.7	0.495	0	18,971	10.8	113
10/31/2024	9:15:00	7.7	0.514	0.1	18,979	10.8	113



Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope

Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/31/2024	9:30:00	7.7	0.522	0	18,987	10.8	113
10/31/2024	9:45:00	7.7	0.000	0	18,988	11	112
10/31/2024	10:45:00	7.7	0.544	0	18,996	10.9	113
10/31/2024	11:00:00	7.7	0.533	0	19,004	11	113
10/31/2024	11:15:00	7.7	0.000	0	19,009	11.1	113
10/31/2024	12:15:00	7.7	0.544	2.8	19,013	11.6	113
10/31/2024	12:30:00	7.7	0.359	0	19,021	11.7	114
10/31/2024	12:45:00	7.7	0.352	0	19,026	12	114
10/31/2024	13:00:00	7.7	0.370	0	19,032	12.7	114
10/31/2024	14:00:00	7.6	0.363	0	19,037	16.2	251
10/31/2024	14:15:00	7.6	0.000	0	19,040	16.6	115
10/31/2024	14:30:00	7.5	0.438	0	19,046	16.7	115
10/31/2024	14:45:00	7.5	0.420	0	19,052	17.1	117
10/31/2024	15:00:00	7.5	0.408	0	19,058	17.3	116
10/31/2024	15:15:00	7.5	0.397	0	19,064	17.7	116
10/31/2024	16:15:00	7.4	0.412	0	19,067	17.6	252
10/31/2024	16:30:00	7.3	0.431	0	19,073	17.5	252
10/31/2024	16:45:00	7.2	0.438	0	19,080	17.4	253
10/31/2024	17:00:00	7.2	0.416	0	19,086	17.4	253
10/31/2024	18:15:00	7.2	0.408	0	19,094	16.9	251
10/31/2024	18:30:00	7.1	0.435	0	19,100	16.8	252
10/31/2024	18:45:00	7.1	0.427	0	19,106	16.8	251
10/31/2024	19:00:00	7.1	0.000	0	19,112	16.7	251
10/31/2024	19:15:00	7.1	0.000	0	19,112	16.6	251
10/31/2024	19:30:00	7.1	0.000	0	19,112	16.5	253

Title	WoodFibre Weekly Water Discharge Report	Revision:	0
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Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/31/2024	19:45:00	7.1	0.000	0	19,112	16.4	253
10/31/2024	20:00:00	7.1	0.423	0	19,113	16.3	253
10/31/2024	20:15:00	7.1	0.420	0	19,119	16.2	253
10/31/2024	20:30:00	7.1	0.423	0	19,125	16.2	253
10/31/2024	20:45:00	7.1	0.401	0	19,132	16.2	253
10/31/2024	22:00:00	7.1	0.416	0	19,140	16	255
10/31/2024	22:15:00	7.1	0.423	0	19,147	16.4	252
10/31/2024	22:30:00	7.1	0.427	0	19,153	16.7	250
10/31/2024	22:45:00	7.1	0.420	0	19,159	17	250
10/31/2024	23:30:00	7.1	0.438	0	19,163	17.7	251
10/31/2024	23:45:00	7.1	0.423	0	19,169	17.7	253
11/1/2024	0:00:00	7.1	0.435	0	19,176	17.7	252
11/1/2024	0:15:00	7.1	0.423	0	19,182	17.9	252
11/1/2024	0:30:00	7.1	0.427	0	19,189	18.2	250
11/1/2024	0:45:00	7.1	0.416	0	19,195	18.3	252
11/1/2024	1:00:00	7.1	0.427	0	19,201	18.6	251
11/1/2024	1:15:00	7.1	0.000	0	19,201	18.7	252
11/1/2024	2:15:00	7.1	0.427	0	19,207	18.9	254
11/1/2024	2:30:00	7.1	0.420	0	19,214	19	253
11/1/2024	3:45:00	7.1	0.442	0	19,222	19.1	252
11/1/2024	4:00:00	7.1	0.427	0	19,228	19	253
11/1/2024	4:15:00	7.1	0.423	0	19,235	19.3	255
11/1/2024	4:30:00	7.1	0.431	0	19,241	19.3	255
11/1/2024	5:45:00	7	0.423	0	19,250	19.4	255
11/1/2024	6:00:00	7	0.412	0	19,256	19.4	255

Title	WoodFibre Weekly Water Discharge Report	Revision:	0
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Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/1/2024	6:15:00	7	0.412	0	19,262	19.5	256
11/1/2024	6:30:00	7	0.000	0	19,267	19.5	254
11/1/2024	7:30:00	7.1	0.412	0	19,270	19.3	255
11/1/2024	7:45:00	7.1	0.404	0	19,276	19.2	255
11/1/2024	8:00:00	7.1	0.412	0	19,282	19.2	255
11/1/2024	8:15:00	7.1	0.404	0	19,289	19.2	255
11/1/2024	9:15:00	7.1	0.416	0	19,294	18.1	257
11/1/2024	9:30:00	7.1	0.408	0	19,300	17.8	257
11/1/2024	9:45:00	7.1	0.404	0	19,306	17.7	255
11/1/2024	10:00:00	7.1	0.393	0	19,312	17.6	255
11/1/2024	10:15:00	7.1	0.382	0	19,318	17.9	257
11/1/2024	10:30:00	7.1	0.378	0	19,324	17.8	255
11/1/2024	11:30:00	7.1	0.404	0	19,326	16.5	256
11/1/2024	11:45:00	7.1	0.382	0	19,332	16.5	258
11/1/2024	12:00:00	7.2	0.363	0	19,338	11.3	114
11/1/2024	12:15:00	7.2	0.355	0	19,343	11.1	113
11/1/2024	12:30:00	7.2	0.000	0	19,347	11.2	113
11/1/2024	12:45:00	7.2	0.000	0	19,347	11.4	113
11/1/2024	13:00:00	7.2	0.000	0	19,347	11.6	113
11/1/2024	13:15:00	7.2	0.000	0	19,347	11.9	113
11/1/2024	13:30:00	7.2	0.359	0	19,351	11.7	113
11/1/2024	13:45:00	7.2	0.363	0	19,357	11.1	113
11/1/2024	14:00:00	7.2	0.000	0	19,359	11.2	113
11/1/2024	14:15:00	7.2	0.000	0	19,359	11.3	113
11/1/2024	14:30:00	7.2	0.367	0	19,364	11.9	113

Title	WoodFibre Weekly Water Discharge Report	Revision:	0
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Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/1/2024	14:45:00	7.2	0.359	0	19,369	12.5	113
11/1/2024	15:00:00	7.2	0.000	0	19,370	12.7	113
11/1/2024	15:15:00	7.2	0.000	0	19,370	12.8	113
11/1/2024	15:30:00	7.2	0.382	0	19,372	13	114
11/1/2024	15:45:00	7.2	0.378	0	19,378	13.3	114
11/1/2024	16:00:00	7.2	0.359	0	19,383	13.8	114
11/1/2024	16:15:00	7.2	0.367	0	19,389	14.1	113
11/1/2024	16:30:00	7.2	0.359	0	19,394	14.5	114
11/1/2024	16:45:00	7.2	0.000	0	19,396	14.7	114
11/1/2024	17:00:00	7.2	0.000	0	19,396	14.6	114
11/1/2024	17:15:00	7.2	0.000	0	19,396	14.6	114
11/1/2024	17:30:00	7.2	0.367	0	19,397	14.6	114
11/1/2024	17:45:00	7.2	0.382	0	19,403	11.7	114
11/1/2024	18:00:00	7.2	0.367	0	19,408	11.5	113
11/1/2024	18:15:00	7.2	0.378	0	19,414	11.4	113
11/1/2024	18:30:00	7.3	0.378	0	19,419	11.4	114
11/1/2024	18:45:00	7.3	0.000	0	19,420	11.6	113
11/1/2024	19:00:00	7.3	0.000	0	19,420	11.8	113
11/1/2024	19:15:00	7.2	0.000	0	19,420	12	113
11/1/2024	19:30:00	7.2	0.386	0	19,421	12.1	113
11/1/2024	19:45:00	7.2	0.370	0	19,426	12.4	113
11/1/2024	20:00:00	7.2	0.370	0	19,432	12.7	114
11/1/2024	20:15:00	7.3	0.370	0	19,437	14	114
11/1/2024	20:30:00	7.3	0.359	0	19,443	13.6	113
11/1/2024	20:45:00	7.3	0.000	0	19,444	13.6	113

Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/1/2024	21:00:00	7.3	0.000	0	19,444	13.7	113
11/1/2024	21:15:00	7.2	0.000	0	19,444	13.7	113
11/1/2024	21:30:00	7.2	0.374	0	19,446	13.7	113
11/1/2024	21:45:00	7.2	0.386	0	19,449	14.1	114
11/1/2024	22:00:00	7.3	0.000	0	19,452	13.3	113
11/1/2024	22:15:00	7.3	0.000	0	19,452	13.4	113
11/1/2024	22:30:00	7.3	0.533	0	19,453	13.7	111
11/1/2024	22:45:00	7.3	0.000	0	19,458	12.9	113
11/1/2024	23:00:00	7.2	0.000	0	19,458	13.1	112
11/1/2024	23:15:00	7.2	0.461	0	19,465	13.3	114
11/1/2024	23:30:00	7.2	0.450	0	19,472	13.6	113
11/1/2024	23:45:00	7.2	0.442	0	19,479	14.1	114
11/2/2024	0:00:00	7.2	0.446	0	19,485	14.5	114
11/2/2024	0:15:00	7.2	0.442	0	19,492	14.9	114
11/2/2024	0:30:00	7.2	0.000	0	19,493	15.2	114
11/2/2024	0:45:00	7.2	0.000	0	19,493	15.4	117
11/2/2024	1:00:00	7.2	0.446	0	19,494	15.6	115
11/2/2024	1:15:00	7.2	0.438	0	19,500	15.9	116
11/2/2024	1:30:00	7.2	0.427	0	19,507	16.1	248
11/2/2024	1:45:00	7.2	0.450	0	19,513	16.4	247
11/2/2024	2:00:00	7.2	0.416	0	19,520	16.7	246
11/2/2024	2:15:00	7.2	0.249	0	19,526	16.7	246
11/2/2024	2:30:00	7.2	0.000	0	19,526	16.6	247
11/2/2024	2:45:00	7.2	0.000	0	19,526	16.7	248
11/2/2024	3:00:00	7.2	0.000	0	19,526	16.8	250

Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/2/2024	3:15:00	7.2	0.435	0	19,528	16.9	248
11/2/2024	3:30:00	7.2	0.420	0	19,535	17.1	248
11/2/2024	3:45:00	7.2	0.420	0	19,541	17.3	247
11/2/2024	4:00:00	7.1	0.000	0	19,546	17.4	247
11/2/2024	4:15:00	7.1	0.000	0	19,546	17.6	247
11/2/2024	4:30:00	7.1	0.000	0	19,546	17.7	247
11/2/2024	4:45:00	7.1	0.000	0	19,546	17.7	248
11/2/2024	5:00:00	7.1	0.000	0	19,546	17.8	245
11/2/2024	5:15:00	7.1	0.423	0	19,552	17.8	245
11/2/2024	5:30:00	7.1	0.420	0	19,558	17.8	247
11/2/2024	5:45:00	7.1	0.412	0	19,564	17.9	248
11/2/2024	6:00:00	7.1	0.000	0	19,569	17.9	248
11/2/2024	6:15:00	7.1	0.000	0	19,569	18.1	248
11/2/2024	6:30:00	7.1	0.000	0	19,569	18.1	248
11/2/2024	6:45:00	7.1	0.000	0	19,569	18.1	248
11/2/2024	7:00:00	7.1	0.423	0	19,572	18.2	250
11/2/2024	7:15:00	7.1	0.412	0	19,578	18.3	250
11/2/2024	7:30:00	7.3	0.412	0.2	19,585	12.7	116
11/2/2024	7:45:00	7.3	0.416	0.9	19,591	11.3	113
11/2/2024	8:00:00	7.3	0.000	0.8	19,592	11.5	113
11/2/2024	8:15:00	7.3	0.000	0.8	19,592	11.8	113
11/2/2024	8:30:00	7.3	0.000	0.8	19,592	12.2	114
11/2/2024	8:45:00	7.3	0.408	1	19,596	13.3	111
11/2/2024	9:00:00	7.3	0.412	0.7	19,602	13.5	113
11/2/2024	9:15:00	7.3	0.404	0	19,608	11	113

Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/2/2024	9:30:00	7.3	0.412	0.1	19,614	10.9	112
11/2/2024	9:45:00	7.3	0.404	0	19,620	10.9	113
11/2/2024	10:00:00	7.3	0.397	0	19,626	10.9	114
11/2/2024	10:15:00	7.3	0.401	0	19,632	11	113
11/2/2024	10:30:00	7.3	0.000	0	19,633	11.3	113
11/2/2024	10:45:00	7.3	0.000	0	19,633	11.6	113
11/2/2024	11:00:00	7.3	0.000	0	19,633	11.9	114
11/2/2024	11:15:00	7.3	0.408	0	19,635	11.8	113
11/2/2024	11:30:00	7.3	0.420	0	19,641	11.9	114
11/2/2024	11:45:00	7.3	0.397	0	19,647	12	114
11/2/2024	12:00:00	7.3	0.378	0	19,653	12.2	114
11/2/2024	12:15:00	7.3	0.000	0	19,656	12.7	114
11/2/2024	12:30:00	7.3	0.000	0	19,656	12.9	111
11/2/2024	12:45:00	7.3	0.000	0	19,656	13.1	113
11/2/2024	13:00:00	7.3	0.000	0	19,656	13.3	114
11/2/2024	13:15:00	7.2	0.393	0	19,662	13.7	114
11/2/2024	13:30:00	7.3	0.412	0	19,668	11.5	114
11/2/2024	13:45:00	7.3	0.408	0	19,674	11.5	114
11/2/2024	14:00:00	7.3	0.000	0	19,680	11.6	114
11/2/2024	14:15:00	7.3	0.000	0	19,680	11.9	114
11/2/2024	14:30:00	7.3	0.000	0	19,680	12.1	113
11/2/2024	14:45:00	7.3	0.000	0	19,680	12.4	112
11/2/2024	15:00:00	7.3	0.420	0	19,682	11.4	112
11/2/2024	15:15:00	7.3	0.401	0	19,689	11.4	113
11/2/2024	15:30:00	7.3	0.416	0	19,695	11.5	113

Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/2/2024	15:45:00	7.3	0.389	0	19,701	11.5	114
11/2/2024	16:45:00	7.3	0.401	0.4	19,703	12.2	114
11/2/2024	17:00:00	7.3	0.408	0	19,709	11.2	113
11/2/2024	17:15:00	7.3	0.393	0	19,716	11.3	113
11/2/2024	17:30:00	7.3	0.404	0	19,722	11.3	114
11/2/2024	18:15:00	7.3	0.000	0	19,727	11.9	111
11/2/2024	18:30:00	7.3	0.000	0	19,727	12.1	113
11/2/2024	18:45:00	7.3	0.386	0	19,732	11.1	113
11/2/2024	19:00:00	7.3	0.393	0	19,738	11.1	113
11/2/2024	19:15:00	7.3	0.386	0	19,744	11.2	113
11/2/2024	19:30:00	7.3	0.401	0	19,750	11.2	113
11/2/2024	19:45:00	7.3	0.000	0	19,751	11.4	113
11/2/2024	20:00:00	7.3	0.000	0	19,751	11.6	113
11/2/2024	20:15:00	7.3	0.000	0	19,751	11.9	113
11/2/2024	20:30:00	7.3	0.389	0	19,753	12.5	111
11/2/2024	20:45:00	7.3	0.397	0	19,759	12.5	111
11/2/2024	21:00:00	7.3	0.393	0	19,765	13.1	113
11/2/2024	21:15:00	7.3	0.389	0	19,771	13.4	113
11/2/2024	21:30:00	7.3	0.000	0	19,774	13.7	113
11/2/2024	21:45:00	7.3	0.000	0	19,774	14.1	113
11/2/2024	22:00:00	7.3	0.000	0	19,774	14.4	114
11/2/2024	22:15:00	7.3	0.397	0	19,775	14.6	113
11/2/2024	22:30:00	7.3	0.389	0	19,781	14.8	113
11/2/2024	22:45:00	7.3	0.386	0	19,787	15	114
11/2/2024	23:00:00	7.3	0.374	0	19,793	15.3	114

Title	WoodFibre Weekly Water Discharge Report	Revision:	0
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Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/2/2024	23:15:00	7.3	0.000	0	19,796	15.6	114
11/2/2024	23:30:00	7.2	0.000	0	19,796	15.9	248
11/2/2024	23:45:00	7.2	0.000	0	19,796	16.2	250
11/3/2024	0:00:00	7.2	0.000	0	19,796	16.4	248
11/3/2024	0:15:00	7.2	0.386	0	19,800	16.6	248
11/3/2024	0:30:00	7.2	0.382	0	19,806	16.8	250
11/3/2024	0:45:00	7.2	0.374	0	19,811	16.9	250
11/3/2024	1:00:00	7.2	0.370	0	19,817	17.1	248
11/3/2024	1:15:00	7.2	0.000	0	19,818	17.2	248
11/3/2024	1:30:00	7.2	0.000	0	19,818	17.3	247
11/3/2024	1:45:00	7.2	0.000	0	19,818	17.3	248
11/3/2024	2:00:00	7.2	0.401	0	19,820	17.2	250
11/3/2024	2:15:00	7.2	0.363	0	19,825	17.1	250
11/3/2024	2:30:00	7.2	0.374	0	19,831	17.1	250
11/3/2024	2:45:00	7.2	0.374	0	19,837	17.1	250
11/3/2024	3:00:00	7.2	0.363	0	19,842	17.1	250
11/3/2024	3:15:00	7.2	0.382	0	19,848	17.2	250
11/3/2024	3:30:00	7.2	0.370	0	19,853	17.4	250
11/3/2024	3:45:00	7.2	0.000	0	19,857	17.5	252
11/3/2024	4:00:00	7.2	0.000	0	19,857	17.7	251
11/3/2024	4:15:00	7.2	0.000	0	19,857	17.7	250
11/3/2024	4:30:00	7.2	0.000	0	19,857	17.8	252
11/3/2024	4:45:00	7.2	0.374	0	19,861	18	252
11/3/2024	5:00:00	7.2	0.382	0	19,866	18.1	250
11/3/2024	5:15:00	7.2	0.000	0	19,870	18	248

Title	WoodFibre Weekly Water Discharge Report	Revision:	0
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Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/3/2024	5:30:00	7.2	0.363	0	19,875	17.9	248
11/3/2024	5:45:00	7.2	0.000	0	19,875	17.9	248
11/3/2024	6:00:00	7.1	0.000	0	19,875	17.9	248
11/3/2024	6:15:00	7.1	0.000	0	19,875	18	250
11/3/2024	6:30:00	7.1	0.374	0	19,877	18	252
11/3/2024	6:45:00	7.1	0.389	0	19,883	18	250
11/3/2024	7:00:00	7.1	0.382	0	19,888	18.1	252
11/3/2024	7:15:00	7.1	0.370	0	19,894	18.2	252
11/3/2024	7:30:00	7.1	0.352	0	19,899	18.2	252
11/3/2024	7:45:00	7.1	0.000	0	19,899	18.2	250
11/3/2024	8:00:00	7.1	0.000	0	19,899	18.3	252
11/3/2024	8:15:00	7.1	0.000	0	19,899	18.3	251
11/3/2024	8:30:00	7.1	0.386	0	19,901	18.2	250
11/3/2024	8:45:00	7.1	0.367	0	19,906	18.1	250
11/3/2024	9:00:00	7.3	0.359	0.1	19,912	13.7	113
11/3/2024	9:15:00	7.4	0.367	0.6	19,917	11.4	113
11/3/2024	9:30:00	7.4	0.359	0.6	19,923	11.3	113
11/3/2024	9:45:00	7.4	0.000	0.7	19,923	11.6	114
11/3/2024	10:00:00	7.4	0.000	0.5	19,923	12	113
11/3/2024	10:15:00	7.3	0.000	0.4	19,923	12.3	113
11/3/2024	10:30:00	7.4	0.386	0.4	19,924	13.5	113
11/3/2024	10:45:00	7.4	0.374	0.6	19,930	13.7	113
11/3/2024	11:00:00	7.4	0.370	0.5	19,935	13.9	113
11/3/2024	11:15:00	7.4	0.378	0.4	19,941	14.2	114
11/3/2024	11:30:00	7.3	0.000	0.4	19,946	14.4	113

Title	WoodFibre Weekly Water Discharge Report	Revision:	0
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Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/3/2024	11:45:00	7.3	0.000	0.3	19,946	14.7	114
11/3/2024	12:00:00	7.3	0.000	0.2	19,946	15	114
11/3/2024	12:15:00	7.3	0.382	0.2	19,950	15.3	114
11/3/2024	12:30:00	7.3	0.374	0.3	19,956	15.3	113
11/3/2024	12:45:00	7.3	0.382	0.1	19,962	15.5	114
11/3/2024	13:00:00	7.4	0.340	0	19,967	11.7	113
11/3/2024	13:15:00	7.4	0.000	0	19,968	11.9	113
11/3/2024	13:30:00	7.4	0.000	0	19,968	12.3	113
11/3/2024	13:45:00	7.3	0.000	0	19,968	12.7	113
11/3/2024	14:00:00	7.4	0.359	0.1	19,970	11.4	113
11/3/2024	14:15:00	7.4	0.370	0	19,975	11.4	113
11/3/2024	14:30:00	7.4	0.367	0	19,981	11.5	114
11/3/2024	14:45:00	7.4	0.382	0	19,986	11.6	114
11/3/2024	15:00:00	7.4	0.000	0	19,992	11.6	113
11/3/2024	15:15:00	7.4	0.000	0	19,992	11.9	114
11/3/2024	15:30:00	7.4	0.000	0	19,992	12.4	114
11/3/2024	15:45:00	7.4	0.000	0	19,992	12.9	114
11/3/2024	16:00:00	7.4	0.370	0	19,994	13.9	114
11/3/2024	16:15:00	7.4	0.378	0	19,999	14	113
11/3/2024	16:30:00	7.4	0.393	0	20,005	14.3	114
11/3/2024	16:45:00	7.4	0.374	0	20,011	11.7	113
11/3/2024	17:00:00	7.4	0.370	0	20,016	11.7	114
11/3/2024	17:15:00	7.4	0.000	0	20,016	12	114
11/3/2024	17:30:00	7.4	0.000	0	20,016	12.4	114
11/3/2024	17:45:00	7.4	0.000	0	20,016	12.7	114

Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th

Date	Time	Discharge pH	Flow Rate (m3/m)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/3/2024	18:00:00	7.4	0.367	0	20,018	13.7	114
11/3/2024	18:15:00	7.4	0.370	0	20,023	13.9	114
11/3/2024	18:30:00	7.4	0.000	0	20,028	14.2	114
11/3/2024	18:45:00	7.4	0.000	0	20,028	14.4	114
11/3/2024	19:00:00	7.4	0.000	0	20,028	14.6	114
11/3/2024	19:15:00	7.4	0.386	0	20,031	14.7	114
11/3/2024	19:30:00	7.3	0.367	0	20,036	14.9	114
11/3/2024	19:45:00	7.3	0.363	0	20,042	14.9	113
11/3/2024	20:00:00	7.3	0.378	0	20,047	15	251
11/3/2024	20:15:00	7.3	0.352	0	20,052	15.2	250
11/3/2024	20:30:00	7.3	0.352	0	20,058	15.3	250
11/3/2024	20:45:00	7.3	0.000	0	20,058	15.3	250
11/3/2024	21:00:00	7.3	0.000	0	20,058	15.3	250
11/3/2024	21:15:00	7.3	0.000	0	20,058	15.4	250
11/3/2024	21:30:00	7.3	0.359	0	20,060	15.5	250
11/3/2024	21:45:00	7.3	0.355	0	20,065	15.8	248
11/3/2024	22:00:00	7.4	0.461	3.4	20,069	11.6	114
11/3/2024	22:15:00	7.4	0.465	5.3	20,076	11.3	114
11/3/2024	22:30:00	7.4	0.000	0	20,076	11.7	113
11/3/2024	22:45:00	7.4	0.000	0	20,076	11.9	112
11/3/2024	23:00:00	7.4	0.446	0	20,077	12.6	113
11/3/2024	23:15:00	7.4	0.438	0	20,084	11.2	114
11/3/2024	23:30:00	7.4	0.431	0	20,090	11.2	114
11/3/2024	23:45:00	7.4	0.431	0	20,097	11.2	114



Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope

Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th

Table 3. In-Situ Parameters

Date	Time	Temperature °C	DO mg/L	Conductivity SPC-uS/cm	SAL-ppt	pH	ORP (mV)	NTU
10/28/2024	10:12:08AM	11.0	11.60	115.4	0.05	7.58	100.9	2.78
10/29/2024	00:08:15AM	11.1	12.43	126.6	0.06	7.76	58.3	2.49
10/30/2024	02:41:08AM	10.9	12.16	129.4	0.06	8.04	100.9	1.90
10/31/2024	03:43:50AM	11.0	11.75	127.5	0.06	7.98	108.4	1.90
11/01/2024	02:09:29AM	11.8	11.0	118.0	0.06	7.57	127.1	0.89
11/02/2024	03:20:19PM	11.6	10.64	122.8	0.06	7.55	119.9	1.42
11/03/2024	02:21:00PM	11.3	11.00	122.3	0.06	7.68	121.6	1.33

3. Calibration Log:

Table 4. Calibration Log


Date	Unit	pH	Conductivity/Temp.	Salinity	NTU
10/29/2024	YSI	✓	✓	✓	✓
10/28/2024	WTP	✓	N/A	N/A	✓




Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope

Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th


APPENDIX A: WTP

		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th


Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/28/2024	0:00:00	7.3	0.215	0.9	17,783	Closed	Open	18.4	258
10/28/2024	0:15:00	7.3	0.208	1	17,786	Closed	Open	18.3	258
10/28/2024	0:30:00	7.3	0.208	1.4	17,790	Closed	Open	18.1	258
10/28/2024	0:45:00	7.3	0.204	1.3	17,793	Closed	Open	18	255
10/28/2024	1:00:00	7.3	0.000	5.3	17,796	Closed	Open	18.3	256
10/28/2024	1:15:00	7.3	0.401	0.6	17,802	Closed	Open	11.7	114
10/28/2024	1:30:00	7.4	0.393	2.9	17,808	Closed	Open	11.5	113
10/28/2024	1:45:00	7.4	0.397	5.6	17,814	Closed	Open	11.4	113
10/28/2024	2:00:00	7.4	0.404	7.8	17,820	Closed	Open	11.4	113
10/28/2024	2:15:00	7.4	0.404	10.1	17,826	Closed	Open	11.4	113
10/28/2024	2:30:00	7.4	0.355	10.3	17,832	Closed	Open	11.5	113
10/28/2024	2:45:00	7.4	0.000	9.5	17,835	Closed	Open	11.7	113
10/28/2024	3:00:00	7.4	0.000	9.6	17,835	Closed	Open	12	112
10/28/2024	3:15:00	7.4	0.000	10	17,835	Closed	Open	12.2	113

		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th


Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/28/2024	3:30:00	7.4	0.000	9.3	17,835	Closed	Open	12.5	113
10/28/2024	3:45:00	7.4	0.000	9.3	17,835	Closed	Open	12.9	114
10/28/2024	4:00:00	7.4	0.000	9	17,835	Closed	Open	13.3	114
10/28/2024	4:15:00	7.5	0.227	7.4	17,836	Closed	Open	11.7	113
10/28/2024	4:30:00	7.5	0.231	7.5	17,839	Closed	Open	12.1	114
10/28/2024	4:45:00	7.4	0.231	7.6	17,842	Closed	Open	12.7	114
10/28/2024	5:00:00	7.4	0.227	7.2	17,846	Closed	Open	13.2	114
10/28/2024	5:15:00	7.4	0.223	7.4	17,866	Closed	Open	14.1	114
10/28/2024	5:30:00	7.4	0.151	7.3	17,869	Closed	Open	14.5	114
10/28/2024	5:45:00	7.4	0.212	7	17,872	Closed	Open	14.9	114
10/28/2024	6:00:00	7.4	0.204	7	17,876	Closed	Open	15.3	115
10/28/2024	6:15:00	7.4	1.315	7.1	17,886	Closed	Open	15.7	116
10/28/2024	6:30:00	7.4	1.315	7	17,906	Closed	Open	16.1	248
10/28/2024	6:45:00	7.4	1.278	6.9	17,925	Closed	Open	16.4	250
10/28/2024	7:00:00	7.4	0.000	6.8	17,936	Closed	Open	16.8	249

 FRONTIER-KEMPER MICHELS ® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th


Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/28/2024	7:15:00	7.4	0.000	6.7	17,936	Closed	Open	17.1	248
10/28/2024	7:30:00	7.3	0.000	6.4	17,936	Closed	Open	17.3	248
10/28/2024	7:45:00	7.3	0.000	6.6	17,936	Closed	Open	17.4	252
10/28/2024	8:00:00	7.3	0.242	6.6	17,939	Closed	Open	17.5	252
10/28/2024	8:15:00	7.4	1.040	6.2	17,943	Closed	Open	17.6	250
10/28/2024	8:30:00	7.3	1.047	6.3	17,959	Closed	Open	17.5	248
10/28/2024	8:45:00	7.3	0.491	6.6	17,973	Closed	Open	17.3	247
10/28/2024	9:00:00	7.4	0.000	6.6	17,976	Closed	Open	17.1	249
10/28/2024	9:15:00	7.3	0.000	6.7	17,976	Closed	Open	16.9	247
10/28/2024	9:30:00	7.3	0.000	6.6	17,976	Closed	Open	16.6	247
10/28/2024	9:45:00	7.3	0.000	6.7	17,976	Closed	Open	16.3	247
10/28/2024	10:00:00	7.3	0.000	6.7	17,976	Closed	Open	16.1	247
10/28/2024	10:15:00	7.3	0.457	7.1	17,980	Closed	Open	13.6	111
10/28/2024	10:30:00	7.3	0.473	6.7	17,987	Closed	Open	13.8	111
10/28/2024	10:45:00	7.3	0.469	7	17,990	Closed	Open	13.8	112

		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th


Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/28/2024	11:00:00	7.3	0.438	6.5	17,996	Closed	Open	14	112
10/28/2024	11:15:00	7.3	0.438	6.6	18,002	Closed	Open	14.1	111
10/28/2024	11:30:00	7.3	0.416	6.8	18,009	Closed	Open	14.2	111
10/28/2024	11:45:00	7.3	0.423	6.5	18,015	Closed	Open	14.3	111
10/28/2024	12:00:00	7.3	0.427	6.5	18,022	Closed	Open	14.4	112
10/28/2024	12:15:00	7.3	0.420	6.6	18,028	Closed	Open	14.5	112
10/28/2024	12:30:00	7.3	0.386	6.7	18,034	Closed	Open	14.5	112
10/28/2024	12:45:00	7.3	0.359	6.9	18,039	Closed	Open	14.6	112
10/28/2024	13:00:00	7.3	0.336	6.5	18,045	Closed	Open	14.7	112
10/28/2024	13:15:00	7.3	0.000	6.5	18,046	Closed	Open	14.8	113
10/28/2024	13:30:00	7.3	0.000	6.3	18,046	Closed	Open	14.8	112
10/28/2024	13:45:00	7.3	0.000	6.4	18,046	Closed	Open	15	113
10/28/2024	14:00:00	7.3	0.000	5.9	18,046	Closed	Open	15.2	114
10/28/2024	14:15:00	7.3	0.000	6.2	18,046	Closed	Open	15.4	113
10/28/2024	14:30:00	7.2	0.348	6	18,050	Closed	Open	15.5	114

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Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/28/2024	14:45:00	7.2	0.329	5.8	18,055	Closed	Open	15.7	114
10/28/2024	15:00:00	7.2	0.318	5.9	18,059	Closed	Open	15.9	114
10/28/2024	15:15:00	7.2	0.302	5.8	18,064	Closed	Open	16	114
10/28/2024	15:30:00	7.5	0.503	5.2	18,069	Closed	Open	17	247
10/28/2024	15:45:00	7.5	0.469	5.2	18,072	Closed	Open	17.2	250
10/28/2024	16:00:00	7.4	0.457	5.3	18,079	Closed	Open	17.3	248
10/28/2024	16:15:00	7.4	0.000	5	18,081	Closed	Open	17.7	248
10/28/2024	16:30:00	7.4	0.272	5.2	18,081	Closed	Open	17.6	248
10/28/2024	16:45:00	7.4	0.000	4.9	18,083	Closed	Open	17.5	250
10/28/2024	17:00:00	7.4	0.000	4.9	18,083	Closed	Open	17.3	248
10/28/2024	17:15:00	7.4	0.000	4.9	18,083	Closed	Open	17.3	250
10/28/2024	17:30:00	7.4	0.499	4.8	18,086	Closed	Open	17.3	251
10/28/2024	17:45:00	7.4	0.593	4.9	18,094	Closed	Open	17.3	251
10/28/2024	18:00:00	7.4	0.484	4.6	18,102	Closed	Open	17.5	252
10/28/2024	18:15:00	7.4	0.503	4.5	18,109	Closed	Open	17.5	252

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Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/28/2024	18:30:00	7.4	0.495	4.7	18,117	Closed	Open	17.4	248
10/28/2024	18:45:00	7.4	0.000	4.7	18,118	Closed	Open	17.3	252
10/28/2024	19:00:00	7.4	0.000	4.6	18,118	Closed	Open	17.2	252
10/28/2024	19:15:00	7.4	0.000	4.6	18,118	Closed	Open	17.1	251
10/28/2024	19:30:00	7.4	0.480	4.3	18,121	Closed	Open	17.1	250
10/28/2024	19:45:00	7.5	0.491	4	18,129	Closed	Open	17.6	250
10/28/2024	20:00:00	7.5	0.503	3.8	18,136	Closed	Open	17.7	249
10/28/2024	20:15:00	7.5	0.000	3.8	18,139	Closed	Open	17.8	250
10/28/2024	20:30:00	7.5	0.000	4	18,139	Closed	Open	18	249
10/28/2024	20:45:00	7.4	0.000	3.8	18,139	Closed	Open	18	248
10/28/2024	21:00:00	7.4	0.000	3.7	18,139	Closed	Open	18.1	250
10/28/2024	21:15:00	7.4	0.491	4	18,146	Closed	Open	18	250
10/28/2024	21:30:00	7.4	0.488	3.9	18,153	Closed	Open	17.9	250
10/28/2024	21:45:00	7.3	0.499	4.1	18,161	Closed	Open	17.9	250
10/28/2024	22:00:00	7.3	0.000	3.8	18,162	Closed	Open	17.7	247

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Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/28/2024	22:15:00	7.3	0.000	3.8	18,162	Closed	Open	17.6	248
10/28/2024	22:30:00	7.3	0.000	4	18,162	Closed	Open	17.3	246
10/28/2024	22:45:00	7.3	0.431	4	18,163	Closed	Open	17.1	248
10/28/2024	23:00:00	7.4	0.344	3.9	18,170	Closed	Open	16.9	250
10/28/2024	23:15:00	7.9	0.000	4.1	18,174	Closed	Open	12.1	115
10/28/2024	23:30:00	7.9	0.000	1.5	18,174	Closed	Open	12.2	114
10/28/2024	23:45:00	7.9	0.000	2	18,174	Closed	Open	12.5	113
10/29/2024	0:00:00	7.9	0.454	1.5	18,176	Closed	Open	12.7	114
10/29/2024	0:15:00	7.9	0.507	1.6	18,183	Closed	Open	13	114
10/29/2024	0:30:00	7.8	0.491	1	18,191	Closed	Open	13.4	114
10/29/2024	0:45:00	7.8	0.000	1.3	18,193	Closed	Open	13.7	114
10/29/2024	1:00:00	7.8	0.000	0.7	18,193	Closed	Open	13.8	114
10/29/2024	1:15:00	7.8	0.000	0.5	18,193	Closed	Open	13.9	113
10/29/2024	1:30:00	7.8	0.000	0.2	18,193	Closed	Open	13.9	248
10/29/2024	1:45:00	7.8	0.484	0	18,198	Closed	Open	14	114

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Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/29/2024	2:00:00	7.9	0.473	0.9	18,205	Closed	Open	15.9	250
10/29/2024	2:15:00	7.8	0.495	0.5	18,212	Closed	Open	15.9	250
10/29/2024	2:30:00	7.8	0.469	0.6	18,219	Closed	Open	15.9	248
10/29/2024	2:45:00	7.8	0.000	0.4	18,220	Closed	Open	16.2	250
10/29/2024	3:00:00	7.8	0.000	0.2	18,220	Closed	Open	16.4	249
10/29/2024	3:15:00	7.8	0.000	0.4	18,220	Closed	Open	16.6	252
10/29/2024	3:30:00	7.7	0.000	0	18,220	Closed	Open	16.8	250
10/29/2024	3:45:00	7.7	0.064	0.2	18,220	Closed	Open	16.9	247
10/29/2024	4:00:00	7.7	0.522	0.3	18,228	Closed	Open	16.8	250
10/29/2024	4:15:00	7.7	0.503	0.6	18,235	Closed	Open	16.8	249
10/29/2024	4:30:00	7.7	0.529	0.5	18,242	Closed	Open	16.8	248
10/29/2024	4:45:00	7.9	0.000	29.8	18,246	Closed	Open	12.5	113
10/29/2024	5:00:00	7.9	0.495	26.8	18,247	Closed	Open	12.4	113
10/29/2024	5:15:00	7.9	0.469	16	18,255	Closed	Open	11.6	113
10/29/2024	5:30:00	7.9	0.473	13.9	18,262	Closed	Open	11.6	114

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Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/29/2024	5:45:00	7.9	0.491	12.2	18,269	Closed	Open	11.6	113
10/29/2024	6:00:00	7.9	0.476	10.8	18,276	Closed	Open	11.6	113
10/29/2024	6:15:00	7.9	0.476	10.8	18,283	Closed	Open	11.6	114
10/29/2024	6:30:00	7.9	0.000	9.9	18,286	Closed	Open	12	114
10/29/2024	6:45:00	7.9	0.000	6	18,286	Closed	Open	12.5	114
10/29/2024	7:00:00	7.9	0.000	7.9	18,286	Closed	Open	13.1	114
10/29/2024	7:15:00	7.9	0.000	5	18,286	Closed	Open	13.6	114
10/29/2024	7:30:00	7.9	0.238	5	18,286	Closed	Open	14.1	114
10/29/2024	7:45:00	7.9	0.465	8.8	18,293	Closed	Open	11.7	114
10/29/2024	8:00:00	8	0.484	10	18,300	Closed	Open	11.6	114
10/29/2024	8:15:00	7.9	0.000	5.9	18,305	Closed	Open	11.7	113
10/29/2024	8:30:00	7.9	0.000	6.2	18,305	Closed	Open	11.9	111
10/29/2024	8:45:00	7.9	0.465	7.8	18,306	Closed	Open	12.6	112
10/29/2024	9:00:00	8	0.465	7.4	18,313	Closed	Open	11.4	112
10/29/2024	9:15:00	8	0.495	6.3	18,320	Closed	Open	11.4	111

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Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/29/2024	9:30:00	8	0.582	47.4	18,326	Closed	Open	11.6	111
10/29/2024	9:45:00	8	0.000	10.3	18,328	Closed	Open	11.6	111
10/29/2024	10:00:00	8	0.000	4.5	18,328	Closed	Open	11.8	111
10/29/2024	10:15:00	8	0.507	6.2	18,332	Closed	Open	11.4	112
10/29/2024	10:30:00	8	0.000	2.8	18,337	Closed	Open	11.5	111
10/29/2024	10:45:00	8	0.000	2.1	18,337	Closed	Open	11.7	112
10/29/2024	11:00:00	7.9	0.000	1.9	18,337	Closed	Open	12	111
10/29/2024	11:15:00	8	0.499	4.6	18,344	Closed	Open	11.4	111
10/29/2024	11:30:00	8	0.495	3	18,351	Closed	Open	11.4	111
10/29/2024	11:45:00	8	0.000	0.9	18,357	Closed	Open	11.5	113
10/29/2024	12:00:00	8	0.000	0.5	18,357	Closed	Open	11.9	113
10/29/2024	12:15:00	8	0.000	0.7	18,357	Closed	Open	12.3	113
10/29/2024	12:30:00	8	0.476	1.1	18,358	Closed	Open	13.3	114
10/29/2024	12:45:00	8	0.499	0.4	18,366	Closed	Open	12	114
10/29/2024	13:00:00	8	0.000	0	18,369	Closed	Open	12.1	115

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Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/29/2024	13:15:00	8	0.000	0.6	18,369	Closed	Open	12.5	114
10/29/2024	13:30:00	8	0.499	0.1	18,373	Closed	Open	12.1	114
10/29/2024	13:45:00	8	0.488	0.2	18,381	Closed	Open	11.9	114
10/29/2024	14:00:00	8	0.514	0.4	18,388	Closed	Open	11.9	114
10/29/2024	14:15:00	8	0.000	0	18,393	Closed	Open	12.2	116
10/29/2024	14:30:00	8	0.000	0	18,393	Closed	Open	12.6	115
10/29/2024	14:45:00	8	0.000	0	18,393	Closed	Open	13.1	115
10/29/2024	15:00:00	8	0.000	0	18,393	Closed	Open	13.5	116
10/29/2024	15:15:00	8	0.488	0	18,397	Closed	Open	12.7	116
10/29/2024	15:30:00	8	0.491	5.9	18,404	Closed	Open	12.1	114
10/29/2024	15:45:00	8	0.499	0.7	18,411	Closed	Open	12.1	114
10/29/2024	16:00:00	8	0.491	17.9	18,417	Closed	Open	12.3	116
10/29/2024	16:15:00	8	0.000	4.2	18,422	Closed	Open	12.6	114
10/29/2024	16:30:00	8	0.000	3.7	18,422	Closed	Open	13	114
10/29/2024	16:45:00	8	0.000	3.5	18,422	Closed	Open	13.3	114

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Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th


Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/29/2024	17:00:00	8	0.000	0.7	18,422	Closed	Open	13.6	114
10/29/2024	17:15:00	7.9	0.469	2.4	18,424	Closed	Open	14.2	255
10/29/2024	17:30:00	8	0.484	3.4	18,432	Closed	Open	14.9	253
10/29/2024	17:45:00	8	0.473	2.6	18,439	Closed	Open	15.2	253
10/29/2024	18:00:00	8	0.491	1.5	18,446	Closed	Open	15.5	255
10/29/2024	18:15:00	8	0.000	0.5	18,450	Closed	Open	15.7	253
10/29/2024	18:30:00	8	0.000	0.9	18,450	Closed	Open	15.7	255
10/29/2024	18:45:00	8	0.000	0.7	18,450	Closed	Open	16	253
10/29/2024	19:00:00	8	0.000	0	18,450	Closed	Open	15.9	253
10/29/2024	19:15:00	7.9	0.484	0	18,455	Closed	Open	15.8	254
10/29/2024	19:30:00	7.9	0.499	0	18,462	Closed	Open	15.8	255
10/29/2024	19:45:00	7.9	0.476	0.4	18,470	Closed	Open	16.1	255
10/29/2024	20:00:00	7.9	0.000	0	18,475	Closed	Open	16.3	253
10/29/2024	20:15:00	7.9	0.000	0	18,475	Closed	Open	16.3	253
10/29/2024	20:30:00	7.9	0.000	0.1	18,475	Closed	Open	16.2	253

		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th


Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/29/2024	20:45:00	7.8	0.000	0	18,475	Closed	Open	16	253
10/29/2024	21:00:00	7.8	0.461	0	18,477	Closed	Open	16	253
10/29/2024	21:15:00	7.8	0.491	0	18,484	Closed	Open	16.1	253
10/29/2024	21:30:00	7.8	0.461	0	18,492	Closed	Open	16.3	253
10/29/2024	21:45:00	7.8	0.000	0	18,497	Closed	Open	16.4	252
10/29/2024	22:00:00	7.8	0.000	0	18,497	Closed	Open	16.7	254
10/29/2024	22:15:00	7.8	0.000	0	18,497	Closed	Open	16.7	253
10/29/2024	22:30:00	7.8	0.000	0	18,499	Closed	Open	16.6	253
10/29/2024	22:45:00	7.8	0.000	0	18,499	Closed	Open	16.4	253
10/29/2024	23:00:00	8	0.491	0.9	18,502	Closed	Open	11.7	114
10/29/2024	23:15:00	8	0.473	0	18,510	Closed	Open	11.3	113
10/29/2024	23:30:00	8	0.446	0	18,517	Closed	Open	11.2	114
10/29/2024	23:45:00	8	0.480	0	18,524	Closed	Open	11.2	114
10/30/2024	0:00:00	8	0.000	0	18,525	Closed	Open	11.4	113
10/30/2024	0:15:00	8	0.000	0	18,525	Closed	Open	11.6	113

		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th


Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/30/2024	0:30:00	8	0.000	0	18,525	Closed	Open	11.8	113
10/30/2024	0:45:00	8	0.000	0	18,525	Closed	Open	12.2	113
10/30/2024	1:00:00	8	0.476	0	18,530	Closed	Open	11.3	114
10/30/2024	1:15:00	8	0.457	0.6	18,537	Closed	Open	11.3	114
10/30/2024	1:30:00	8	0.420	0	18,544	Closed	Open	11.4	114
10/30/2024	1:45:00	8	0.000	0	18,546	Closed	Open	11.8	114
10/30/2024	2:00:00	8	0.000	0	18,546	Closed	Open	12.3	114
10/30/2024	2:15:00	8	0.000	0	18,546	Closed	Open	12.7	114
10/30/2024	2:30:00	8	0.163	0	18,546	Closed	Open	13.2	114
10/30/2024	2:45:00	8	0.454	0	18,552	Closed	Open	11.7	116
10/30/2024	3:00:00	8	0.461	0	18,559	Closed	Open	11.5	114
10/30/2024	3:15:00	8	0.393	4.3	18,566	Closed	Open	11.5	114
10/30/2024	3:30:00	8	0.000	0	18,567	Closed	Open	12	115
10/30/2024	3:45:00	8	0.000	0	18,567	Closed	Open	12.5	114
10/30/2024	4:00:00	8	0.450	0	18,571	Closed	Open	11.6	114

		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th


Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/30/2024	4:15:00	8	0.461	0	18,578	Closed	Open	11.5	116
10/30/2024	4:30:00	8	0.427	0	18,585	Closed	Open	11.5	265
10/30/2024	4:45:00	8	0.465	0	18,591	Closed	Open	11.4	263
10/30/2024	5:00:00	8	0.457	0	18,598	Closed	Open	11.5	268
10/30/2024	5:15:00	8	0.000	0	18,603	Closed	Open	11.6	267
10/30/2024	5:30:00	8	0.000	0	18,603	Closed	Open	12.3	266
10/30/2024	5:45:00	8	0.000	0	18,603	Closed	Open	13	268
10/30/2024	6:00:00	8	0.000	0	18,603	Closed	Open	13.6	265
10/30/2024	6:15:00	8	0.340	0	18,607	Closed	Open	12	265
10/30/2024	6:30:00	8	0.435	0	18,612	Closed	Open	11.7	117
10/30/2024	6:45:00	8	0.431	0	18,619	Closed	Open	11.7	116
10/30/2024	7:00:00	8	0.450	0	18,625	Closed	Open	11.6	115
10/30/2024	7:15:00	8	0.000	0	18,625	Closed	Open	12.3	116
10/30/2024	7:30:00	8	0.000	0	18,625	Closed	Open	13	259
10/30/2024	7:45:00	8	0.000	0	18,625	Closed	Open	13.6	260

		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th


Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/30/2024	8:00:00	8	0.427	0	18,627	Closed	Open	14.4	259
10/30/2024	8:15:00	8	0.382	0	18,633	Closed	Open	12	114
10/30/2024	8:30:00	8	0.408	0	18,639	Closed	Open	11.5	114
10/30/2024	8:45:00	8	0.412	0	18,645	Closed	Open	11.4	114
10/30/2024	9:00:00	8	0.431	0	18,651	Closed	Open	11.3	114
10/30/2024	9:15:00	8	0.000	0	18,656	Closed	Open	11.4	114
10/30/2024	9:30:00	8	0.000	0	18,656	Closed	Open	11.6	114
10/30/2024	9:45:00	8	0.000	0	18,656	Closed	Open	11.8	114
10/30/2024	10:00:00	8	0.000	0	18,656	Closed	Open	12	114
10/30/2024	10:15:00	8	0.000	0	18,656	Closed	Open	12.1	256
10/30/2024	10:30:00	7.9	0.393	0	18,656	Closed	Open	12.8	255
10/30/2024	10:45:00	8	0.404	0	18,663	Closed	Open	11.1	114
10/30/2024	11:00:00	8	0.435	0	18,669	Closed	Open	11.1	114
10/30/2024	11:15:00	8	0.431	0	18,675	Closed	Open	11.1	114
10/30/2024	11:30:00	8	0.000	0	18,680	Closed	Open	11.3	114

		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th


Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/30/2024	11:45:00	8	0.000	0	18,680	Closed	Open	11.8	114
10/30/2024	12:00:00	8	0.000	0	18,680	Closed	Open	12.5	116
10/30/2024	12:15:00	8	0.000	0	18,680	Closed	Open	13	116
10/30/2024	12:30:00	8	0.469	0	18,684	Closed	Open	11.6	114
10/30/2024	12:45:00	8	0.457	0	18,691	Closed	Open	11.5	116
10/30/2024	13:00:00	8	0.461	3.9	18,698	Closed	Open	11.5	116
10/30/2024	13:15:00	8	0.000	0	18,702	Closed	Open	11.6	114
10/30/2024	13:30:00	8	0.000	0	18,702	Closed	Open	11.8	113
10/30/2024	13:45:00	8	0.000	0	18,702	Closed	Open	12.1	114
10/30/2024	14:00:00	8	0.000	0	18,702	Closed	Open	12.3	114
10/30/2024	14:15:00	8	0.442	0.2	18,707	Closed	Open	11.3	114
10/30/2024	14:30:00	8	0.438	0.1	18,714	Closed	Open	11.3	114
10/30/2024	14:45:00	8.1	0.438	0	18,720	Closed	Open	11.4	114
10/30/2024	15:00:00	8	0.000	0	18,726	Closed	Open	11.6	116
10/30/2024	15:15:00	8	0.000	0	18,726	Closed	Open	12.2	114

		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/30/2024	15:30:00	8	0.000	0	18,726	Closed	Open	12.9	114
10/30/2024	15:45:00	8	0.000	0.4	18,726	Closed	Open	13.4	114
10/30/2024	16:00:00	8	0.457	0	18,728	Closed	Open	12	115
10/30/2024	16:15:00	8	0.476	0	18,735	Closed	Open	11.3	114
10/30/2024	16:30:00	8	0.473	1.1	18,742	Closed	Open	11.2	113
10/30/2024	16:45:00	8	0.469	0	18,749	Closed	Open	11.2	113
10/30/2024	17:00:00	8	0.000	0	18,751	Closed	Open	11.5	113
10/30/2024	17:15:00	8	0.000	0	18,751	Closed	Open	11.8	113
10/30/2024	17:30:00	8	0.000	0	18,751	Closed	Open	12.1	113
10/30/2024	17:45:00	8	0.484	0	18,755	Closed	Open	11.2	113
10/30/2024	18:00:00	8	0.469	0.2	18,762	Closed	Open	11.2	114
10/30/2024	18:15:00	8	0.488	1.2	18,769	Closed	Open	11.1	113
10/30/2024	18:30:00	8	0.480	2.1	18,776	Closed	Open	11.1	113
10/30/2024	18:45:00	8	0.000	2.8	18,783	Closed	Open	11.1	113
10/30/2024	19:00:00	8	0.000	2.5	18,783	Closed	Open	11.4	113

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Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th


Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/30/2024	19:15:00	7.9	0.000	2.6	18,783	Closed	Open	11.6	264
10/30/2024	19:30:00	7.9	0.480	3.1	18,784	Closed	Open	12	262
10/30/2024	19:45:00	8	0.473	4.2	18,791	Closed	Open	11.3	115
10/30/2024	20:00:00	8	0.469	4.2	18,799	Closed	Open	11.3	114
10/30/2024	20:15:00	8	0.476	3.4	18,806	Closed	Open	11.2	114
10/30/2024	20:30:00	8	0.000	2.9	18,806	Closed	Open	11.5	113
10/30/2024	20:45:00	7.9	0.000	3.1	18,806	Closed	Open	11.8	262
10/30/2024	21:00:00	7.9	0.000	3.2	18,806	Closed	Open	12	261
10/30/2024	21:15:00	8	0.469	2.6	18,808	Closed	Open	12.1	262
10/30/2024	21:30:00	8	0.473	1.8	18,815	Closed	Open	11.1	114
10/30/2024	21:45:00	8	0.476	1.4	18,822	Closed	Open	11.1	114
10/30/2024	22:00:00	8	0.000	0.9	18,828	Closed	Open	11.1	113
10/30/2024	22:15:00	8	0.000	0.9	18,828	Closed	Open	11.4	113
10/30/2024	22:30:00	8	0.000	1.3	18,828	Closed	Open	11.7	114
10/30/2024	22:45:00	7.9	0.000	0.9	18,828	Closed	Open	12.2	114

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Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/30/2024	23:00:00	8	0.000	20	18,830	Closed	Open	10.9	113
10/30/2024	23:15:00	8	0.454	0.3	18,836	Closed	Open	10.9	114
10/30/2024	23:30:00	8.1	0.469	0.2	18,843	Closed	Open	10.9	114
10/30/2024	23:45:00	8.1	0.457	0.1	18,850	Closed	Open	10.9	11
10/31/2024	0:00:00	8	0.000	0.3	18,850	Closed	Open	11.2	113
10/31/2024	0:15:00	8.1	0.000	0.2	18,850	Closed	Open	10.9	113
10/31/2024	0:30:00	8	0.000	0	18,853	Closed	Open	11.4	114
10/31/2024	0:45:00	8	0.000	0	18,853	Closed	Open	12	114
10/31/2024	1:00:00	8	0.000	0	18,853	Closed	Open	12.3	113
10/31/2024	1:15:00	8	0.382	0	18,854	Closed	Open	12.4	113
10/31/2024	1:30:00	7.9	0.408	0	18,860	Closed	Open	12.7	256
10/31/2024	1:45:00	7.9	0.397	0	18,866	Closed	Open	13	254
10/31/2024	2:00:00	7.8	0.370	0.2	18,872	Closed	Open	13.4	255
10/31/2024	2:15:00	7.6	0.000	0	18,876	Closed	Open	11.4	113
10/31/2024	2:30:00	7.6	0.000	0	18,876	Closed	Open	11.9	113

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Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/31/2024	2:45:00	7.6	0.000	0	18,876	Closed	Open	12.6	114
10/31/2024	3:00:00	7.5	0.000	0	18,876	Closed	Open	13.2	115
10/31/2024	3:15:00	7.7	0.529	0.3	18,880	Closed	Open	11.2	113
10/31/2024	3:30:00	7.7	0.556	0	18,889	Closed	Open	11	113
10/31/2024	3:45:00	7.7	0.537	2	18,897	Closed	Open	11.1	114
10/31/2024	4:00:00	7.6	0.000	0	18,899	Closed	Open	11.4	114
10/31/2024	4:15:00	7.6	0.000	0	18,899	Closed	Open	12.1	114
10/31/2024	4:30:00	7.6	0.000	0	18,899	Closed	Open	12.8	115
10/31/2024	4:45:00	7.6	0.000	0	18,899	Closed	Open	13.4	114
10/31/2024	5:00:00	7.7	0.522	1.5	18,906	Closed	Open	11.3	114
10/31/2024	5:15:00	7.7	0.552	0	18,914	Closed	Open	11.2	116
10/31/2024	5:30:00	7.7	0.556	1.2	18,921	Closed	Open	11.2	114
10/31/2024	5:45:00	7.6	0.556	2.3	18,927	Closed	Open	11.4	116
10/31/2024	6:00:00	7.6	0.541	2.3	18,935	Closed	Open	11.2	114
10/31/2024	6:15:00	7.6	0.000	1.6	18,943	Closed	Open	11.2	114

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Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/31/2024	6:30:00	7.6	0.000	1.6	18,943	Closed	Open	11.7	114
10/31/2024	6:45:00	7.6	0.000	1.5	18,943	Closed	Open	12.3	113
10/31/2024	7:00:00	7.6	0.000	1.6	18,943	Closed	Open	12.6	114
10/31/2024	7:15:00	7.7	0.537	0.9	18,946	Closed	Open	11.1	113
10/31/2024	7:30:00	7.7	0.552	0.6	18,954	Closed	Open	10.9	113
10/31/2024	7:45:00	7.7	0.537	0.4	18,962	Closed	Open	10.8	113
10/31/2024	8:00:00	7.6	0.000	0.3	18,966	Closed	Open	11	113
10/31/2024	8:15:00	7.6	0.000	0.3	18,966	Closed	Open	11.3	113
10/31/2024	8:30:00	7.6	0.000	0	18,966	Closed	Open	11.8	114
10/31/2024	8:45:00	7.6	0.000	0.2	18,966	Closed	Open	12.1	114
10/31/2024	9:00:00	7.7	0.495	0	18,971	Closed	Open	10.8	113
10/31/2024	9:15:00	7.7	0.514	0.1	18,979	Closed	Open	10.8	113
10/31/2024	9:30:00	7.7	0.522	0	18,987	Closed	Open	10.8	113
10/31/2024	9:45:00	7.7	0.000	0	18,988	Closed	Open	11	112
10/31/2024	10:00:00	7.7	0.000	0	18,988	Closed	Open	11.3	112

		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th


Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/31/2024	10:15:00	7.6	0.000	0	18,988	Closed	Open	11.6	114
10/31/2024	10:30:00	7.6	0.000	0	18,988	Closed	Open	11.9	113
10/31/2024	10:45:00	7.7	0.544	0	18,996	Closed	Open	10.9	113
10/31/2024	11:00:00	7.7	0.533	0	19,004	Closed	Open	11	113
10/31/2024	11:15:00	7.7	0.000	0	19,009	Closed	Open	11.1	113
10/31/2024	11:30:00	7.7	0.000	0	19,009	Closed	Open	11.4	113
10/31/2024	11:45:00	7.7	0.000	0	19,009	Closed	Open	11.8	113
10/31/2024	12:00:00	7.7	0.000	0	19,009	Closed	Open	12.4	114
10/31/2024	12:15:00	7.7	0.544	2.8	19,013	Closed	Open	11.6	113
10/31/2024	12:30:00	7.7	0.359	0	19,021	Closed	Open	11.7	114
10/31/2024	12:45:00	7.7	0.352	0	19,026	Closed	Open	12	114
10/31/2024	13:00:00	7.7	0.370	0	19,032	Closed	Open	12.7	114
10/31/2024	13:15:00	7.6	0.000	0	19,033	Closed	Open	15.7	114
10/31/2024	13:30:00	7.6	0.000	0	19,033	Closed	Open	15.7	114
10/31/2024	13:45:00	7.6	0.000	0	19,033	Closed	Open	15.7	114

		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th


Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/31/2024	14:00:00	7.6	0.363	0	19,037	Closed	Open	16.2	251
10/31/2024	14:15:00	7.6	0.000	0	19,040	Closed	Open	16.6	115
10/31/2024	14:30:00	7.5	0.438	0	19,046	Closed	Open	16.7	115
10/31/2024	14:45:00	7.5	0.420	0	19,052	Closed	Open	17.1	117
10/31/2024	15:00:00	7.5	0.408	0	19,058	Closed	Open	17.3	116
10/31/2024	15:15:00	7.5	0.397	0	19,064	Closed	Open	17.7	116
10/31/2024	15:30:00	7.5	0.000	0	19,065	Closed	Open	18.1	116
10/31/2024	15:45:00	7.4	0.000	0	19,065	Closed	Open	18.1	116
10/31/2024	16:00:00	7.4	0.000	0	19,065	Closed	Open	17.8	116
10/31/2024	16:15:00	7.4	0.412	0	19,067	Closed	Open	17.6	252
10/31/2024	16:30:00	7.3	0.431	0	19,073	Closed	Open	17.5	252
10/31/2024	16:45:00	7.2	0.438	0	19,080	Closed	Open	17.4	253
10/31/2024	17:00:00	7.2	0.416	0	19,086	Closed	Open	17.4	253
10/31/2024	17:15:00	7.2	0.000	0	19,088	Closed	Open	17.3	253
10/31/2024	17:30:00	7.2	0.000	0	19,088	Closed	Open	17.2	252

		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th


Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/31/2024	17:45:00	7.2	0.000	0	19,088	Closed	Open	17.1	252
10/31/2024	18:00:00	7.2	0.000	0	19,088	Closed	Open	16.9	251
10/31/2024	18:15:00	7.2	0.408	0	19,094	Closed	Open	16.9	251
10/31/2024	18:30:00	7.1	0.435	0	19,100	Closed	Open	16.8	252
10/31/2024	18:45:00	7.1	0.427	0	19,106	Closed	Open	16.8	251
10/31/2024	19:00:00	7.1	0.000	0	19,112	Closed	Open	16.7	251
10/31/2024	19:15:00	7.1	0.000	0	19,112	Closed	Open	16.6	251
10/31/2024	19:30:00	7.1	0.000	0	19,112	Closed	Open	16.5	253
10/31/2024	19:45:00	7.1	0.000	0	19,112	Closed	Open	16.4	253
10/31/2024	20:00:00	7.1	0.423	0	19,113	Closed	Open	16.3	253
10/31/2024	20:15:00	7.1	0.420	0	19,119	Closed	Open	16.2	253
10/31/2024	20:30:00	7.1	0.423	0	19,125	Closed	Open	16.2	253
10/31/2024	20:45:00	7.1	0.401	0	19,132	Closed	Open	16.2	253
10/31/2024	21:00:00	7.1	0.000	0	19,136	Closed	Open	16.2	253
10/31/2024	21:15:00	7.1	0.000	0	19,136	Closed	Open	16.1	253

		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
10/31/2024	21:30:00	7.1	0.000	0	19,136	Closed	Open	16	253
10/31/2024	21:45:00	7.1	0.000	0	19,136	Closed	Open	16	253
10/31/2024	22:00:00	7.1	0.416	0	19,140	Closed	Open	16	255
10/31/2024	22:15:00	7.1	0.423	0	19,147	Closed	Open	16.4	252
10/31/2024	22:30:00	7.1	0.427	0	19,153	Closed	Open	16.7	250
10/31/2024	22:45:00	7.1	0.420	0	19,159	Closed	Open	17	250
10/31/2024	23:00:00	7.1	0.000	0	19,160	Closed	Open	17.3	252
10/31/2024	23:15:00	7.1	0.000	0	19,160	Closed	Open	17.5	250
10/31/2024	23:30:00	7.1	0.438	0	19,163	Closed	Open	17.7	251
10/31/2024	23:45:00	7.1	0.423	0	19,169	Closed	Open	17.7	253
11/1/2024	0:00:00	7.1	0.435	0	19,176	Closed	Open	17.7	252
11/1/2024	0:15:00	7.1	0.423	0	19,182	Closed	Open	17.9	252
11/1/2024	0:30:00	7.1	0.427	0	19,189	Closed	Open	18.2	250
11/1/2024	0:45:00	7.1	0.416	0	19,195	Closed	Open	18.3	252
11/1/2024	1:00:00	7.1	0.427	0	19,201	Closed	Open	18.6	251

		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	WoodFibre Weekly Water Discharge Report	Revision:	0
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Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/1/2024	1:15:00	7.1	0.000	0	19,201	Closed	Open	18.7	252
11/1/2024	1:30:00	7.1	0.000	0	19,201	Closed	Open	18.8	252
11/1/2024	1:45:00	7.1	0.000	0	19,201	Closed	Open	18.9	252
11/1/2024	2:00:00	7.1	0.000	0	19,202	Closed	Open	18.9	252
11/1/2024	2:15:00	7.1	0.427	0	19,207	Closed	Open	18.9	254
11/1/2024	2:30:00	7.1	0.420	0	19,214	Closed	Open	19	253
11/1/2024	2:45:00	7.1	0.000	0	19,219	Closed	Open	19.1	253
11/1/2024	3:00:00	7.1	0.000	0	19,219	Closed	Open	19.2	252
11/1/2024	3:15:00	7.1	0.000	0	19,219	Closed	Open	19.2	252
11/1/2024	3:30:00	7.1	0.000	0	19,219	Closed	Open	19.2	254
11/1/2024	3:45:00	7.1	0.442	0	19,222	Closed	Open	19.1	252
11/1/2024	4:00:00	7.1	0.427	0	19,228	Closed	Open	19	253
11/1/2024	4:15:00	7.1	0.423	0	19,235	Closed	Open	19.3	255
11/1/2024	4:30:00	7.1	0.431	0	19,241	Closed	Open	19.3	255
11/1/2024	4:45:00	7.1	0.000	0	19,244	Closed	Open	19.4	256

		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	WoodFibre Weekly Water Discharge Report	Revision:	0
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Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/1/2024	5:00:00	7.1	0.000	0	19,244	Closed	Open	19.4	254
11/1/2024	5:15:00	7.1	0.000	0	19,244	Closed	Open	19.4	255
11/1/2024	5:30:00	7	0.000	0	19,244	Closed	Open	19.4	255
11/1/2024	5:45:00	7	0.423	0	19,250	Closed	Open	19.4	255
11/1/2024	6:00:00	7	0.412	0	19,256	Closed	Open	19.4	255
11/1/2024	6:15:00	7	0.412	0	19,262	Closed	Open	19.5	256
11/1/2024	6:30:00	7	0.000	0	19,267	Closed	Open	19.5	254
11/1/2024	6:45:00	7	0.000	0	19,267	Closed	Open	19.6	255
11/1/2024	7:00:00	7	0.000	0	19,267	Closed	Open	19.6	255
11/1/2024	7:15:00	7	0.000	0	19,267	Closed	Open	19.5	255
11/1/2024	7:30:00	7.1	0.412	0	19,270	Closed	Open	19.3	255
11/1/2024	7:45:00	7.1	0.404	0	19,276	Closed	Open	19.2	255
11/1/2024	8:00:00	7.1	0.412	0	19,282	Closed	Open	19.2	255
11/1/2024	8:15:00	7.1	0.404	0	19,289	Closed	Open	19.2	255
11/1/2024	8:30:00	7.1	0.000	0	19,291	Closed	Open	18.9	256

		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/1/2024	8:45:00	7.1	0.000	0	19,291	Closed	Open	18.6	255
11/1/2024	9:00:00	7.1	0.000	0	19,291	Closed	Open	18.3	255
11/1/2024	9:15:00	7.1	0.416	0	19,294	Closed	Open	18.1	257
11/1/2024	9:30:00	7.1	0.408	0	19,300	Closed	Open	17.8	257
11/1/2024	9:45:00	7.1	0.404	0	19,306	Closed	Open	17.7	255
11/1/2024	10:00:00	7.1	0.393	0	19,312	Closed	Open	17.6	255
11/1/2024	10:15:00	7.1	0.382	0	19,318	Closed	Open	17.9	257
11/1/2024	10:30:00	7.1	0.378	0	19,324	Closed	Open	17.8	255
11/1/2024	10:45:00	7.1	0.000	0	19,325	Closed	Open	17.4	256
11/1/2024	11:00:00	7.1	0.000	0	19,325	Closed	Open	17.1	256
11/1/2024	11:15:00	7.1	0.000	0	19,325	Closed	Open	16.7	256
11/1/2024	11:30:00	7.1	0.404	0	19,326	Closed	Open	16.5	256
11/1/2024	11:45:00	7.1	0.382	0	19,332	Closed	Open	16.5	258
11/1/2024	12:00:00	7.2	0.363	0	19,338	Closed	Open	11.3	114
11/1/2024	12:15:00	7.2	0.355	0	19,343	Closed	Open	11.1	113

		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/1/2024	12:30:00	7.2	0.000	0	19,347	Closed	Open	11.2	113
11/1/2024	12:45:00	7.2	0.000	0	19,347	Closed	Open	11.4	113
11/1/2024	13:00:00	7.2	0.000	0	19,347	Closed	Open	11.6	113
11/1/2024	13:15:00	7.2	0.000	0	19,347	Closed	Open	11.9	113
11/1/2024	13:30:00	7.2	0.359	0	19,351	Closed	Open	11.7	113
11/1/2024	13:45:00	7.2	0.363	0	19,357	Closed	Open	11.1	113
11/1/2024	14:00:00	7.2	0.000	0	19,359	Closed	Open	11.2	113
11/1/2024	14:15:00	7.2	0.000	0	19,359	Closed	Open	11.3	113
11/1/2024	14:30:00	7.2	0.367	0	19,364	Closed	Open	11.9	113
11/1/2024	14:45:00	7.2	0.359	0	19,369	Closed	Open	12.5	113
11/1/2024	15:00:00	7.2	0.000	0	19,370	Closed	Open	12.7	113
11/1/2024	15:15:00	7.2	0.000	0	19,370	Closed	Open	12.8	113
11/1/2024	15:30:00	7.2	0.382	0	19,372	Closed	Open	13	114
11/1/2024	15:45:00	7.2	0.378	0	19,378	Closed	Open	13.3	114
11/1/2024	16:00:00	7.2	0.359	0	19,383	Closed	Open	13.8	114

		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/1/2024	16:15:00	7.2	0.367	0	19,389	Closed	Open	14.1	113
11/1/2024	16:30:00	7.2	0.359	0	19,394	Closed	Open	14.5	114
11/1/2024	16:45:00	7.2	0.000	0	19,396	Closed	Open	14.7	114
11/1/2024	17:00:00	7.2	0.000	0	19,396	Closed	Open	14.6	114
11/1/2024	17:15:00	7.2	0.000	0	19,396	Closed	Open	14.6	114
11/1/2024	17:30:00	7.2	0.367	0	19,397	Closed	Open	14.6	114
11/1/2024	17:45:00	7.2	0.382	0	19,403	Closed	Open	11.7	114
11/1/2024	18:00:00	7.2	0.367	0	19,408	Closed	Open	11.5	113
11/1/2024	18:15:00	7.2	0.378	0	19,414	Closed	Open	11.4	113
11/1/2024	18:30:00	7.3	0.378	0	19,419	Closed	Open	11.4	114
11/1/2024	18:45:00	7.3	0.000	0	19,420	Closed	Open	11.6	113
11/1/2024	19:00:00	7.3	0.000	0	19,420	Closed	Open	11.8	113
11/1/2024	19:15:00	7.2	0.000	0	19,420	Closed	Open	12	113
11/1/2024	19:30:00	7.2	0.386	0	19,421	Closed	Open	12.1	113
11/1/2024	19:45:00	7.2	0.370	0	19,426	Closed	Open	12.4	113

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Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/1/2024	20:00:00	7.2	0.370	0	19,432	Closed	Open	12.7	114
11/1/2024	20:15:00	7.3	0.370	0	19,437	Closed	Open	14	114
11/1/2024	20:30:00	7.3	0.359	0	19,443	Closed	Open	13.6	113
11/1/2024	20:45:00	7.3	0.000	0	19,444	Closed	Open	13.6	113
11/1/2024	21:00:00	7.3	0.000	0	19,444	Closed	Open	13.7	113
11/1/2024	21:15:00	7.2	0.000	0	19,444	Closed	Open	13.7	113
11/1/2024	21:30:00	7.2	0.374	0	19,446	Closed	Open	13.7	113
11/1/2024	21:45:00	7.2	0.386	0	19,449	Closed	Open	14.1	114
11/1/2024	22:00:00	7.3	0.000	0	19,452	Closed	Open	13.3	113
11/1/2024	22:15:00	7.3	0.000	0	19,452	Closed	Open	13.4	113
11/1/2024	22:30:00	7.3	0.533	0	19,453	Closed	Open	13.7	111
11/1/2024	22:45:00	7.3	0.000	0	19,458	Closed	Open	12.9	113
11/1/2024	23:00:00	7.2	0.000	0	19,458	Closed	Open	13.1	112
11/1/2024	23:15:00	7.2	0.461	0	19,465	Closed	Open	13.3	114
11/1/2024	23:30:00	7.2	0.450	0	19,472	Closed	Open	13.6	113

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Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/1/2024	23:45:00	7.2	0.442	0	19,479	Closed	Open	14.1	114
11/2/2024	0:00:00	7.2	0.446	0	19,485	Closed	Open	14.5	114
11/2/2024	0:15:00	7.2	0.442	0	19,492	Closed	Open	14.9	114
11/2/2024	0:30:00	7.2	0.000	0	19,493	Closed	Open	15.2	114
11/2/2024	0:45:00	7.2	0.000	0	19,493	Closed	Open	15.4	117
11/2/2024	1:00:00	7.2	0.446	0	19,494	Closed	Open	15.6	115
11/2/2024	1:15:00	7.2	0.438	0	19,500	Closed	Open	15.9	116
11/2/2024	1:30:00	7.2	0.427	0	19,507	Closed	Open	16.1	248
11/2/2024	1:45:00	7.2	0.450	0	19,513	Closed	Open	16.4	247
11/2/2024	2:00:00	7.2	0.416	0	19,520	Closed	Open	16.7	246
11/2/2024	2:15:00	7.2	0.249	0	19,526	Closed	Open	16.7	246
11/2/2024	2:30:00	7.2	0.000	0	19,526	Closed	Open	16.6	247
11/2/2024	2:45:00	7.2	0.000	0	19,526	Closed	Open	16.7	248
11/2/2024	3:00:00	7.2	0.000	0	19,526	Closed	Open	16.8	250
11/2/2024	3:15:00	7.2	0.435	0	19,528	Closed	Open	16.9	248

		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
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Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/2/2024	3:30:00	7.2	0.420	0	19,535	Closed	Open	17.1	248
11/2/2024	3:45:00	7.2	0.420	0	19,541	Closed	Open	17.3	247
11/2/2024	4:00:00	7.1	0.000	0	19,546	Closed	Open	17.4	247
11/2/2024	4:15:00	7.1	0.000	0	19,546	Closed	Open	17.6	247
11/2/2024	4:30:00	7.1	0.000	0	19,546	Closed	Open	17.7	247
11/2/2024	4:45:00	7.1	0.000	0	19,546	Closed	Open	17.7	248
11/2/2024	5:00:00	7.1	0.000	0	19,546	Closed	Open	17.8	245
11/2/2024	5:15:00	7.1	0.423	0	19,552	Closed	Open	17.8	245
11/2/2024	5:30:00	7.1	0.420	0	19,558	Closed	Open	17.8	247
11/2/2024	5:45:00	7.1	0.412	0	19,564	Closed	Open	17.9	248
11/2/2024	6:00:00	7.1	0.000	0	19,569	Closed	Open	17.9	248
11/2/2024	6:15:00	7.1	0.000	0	19,569	Closed	Open	18.1	248
11/2/2024	6:30:00	7.1	0.000	0	19,569	Closed	Open	18.1	248
11/2/2024	6:45:00	7.1	0.000	0	19,569	Closed	Open	18.1	248
11/2/2024	7:00:00	7.1	0.423	0	19,572	Closed	Open	18.2	250

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Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/2/2024	7:15:00	7.1	0.412	0	19,578	Closed	Open	18.3	250
11/2/2024	7:30:00	7.3	0.412	0.2	19,585	Closed	Open	12.7	116
11/2/2024	7:45:00	7.3	0.416	0.9	19,591	Closed	Open	11.3	113
11/2/2024	8:00:00	7.3	0.000	0.8	19,592	Closed	Open	11.5	113
11/2/2024	8:15:00	7.3	0.000	0.8	19,592	Closed	Open	11.8	113
11/2/2024	8:30:00	7.3	0.000	0.8	19,592	Closed	Open	12.2	114
11/2/2024	8:45:00	7.3	0.408	1	19,596	Closed	Open	13.3	111
11/2/2024	9:00:00	7.3	0.412	0.7	19,602	Closed	Open	13.5	113
11/2/2024	9:15:00	7.3	0.404	0	19,608	Closed	Open	11	113
11/2/2024	9:30:00	7.3	0.412	0.1	19,614	Closed	Open	10.9	112
11/2/2024	9:45:00	7.3	0.404	0	19,620	Closed	Open	10.9	113
11/2/2024	10:00:00	7.3	0.397	0	19,626	Closed	Open	10.9	114
11/2/2024	10:15:00	7.3	0.401	0	19,632	Closed	Open	11	113
11/2/2024	10:30:00	7.3	0.000	0	19,633	Closed	Open	11.3	113
11/2/2024	10:45:00	7.3	0.000	0	19,633	Closed	Open	11.6	113

		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th


Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/2/2024	11:00:00	7.3	0.000	0	19,633	Closed	Open	11.9	114
11/2/2024	11:15:00	7.3	0.408	0	19,635	Closed	Open	11.8	113
11/2/2024	11:30:00	7.3	0.420	0	19,641	Closed	Open	11.9	114
11/2/2024	11:45:00	7.3	0.397	0	19,647	Closed	Open	12	114
11/2/2024	12:00:00	7.3	0.378	0	19,653	Closed	Open	12.2	114
11/2/2024	12:15:00	7.3	0.000	0	19,656	Closed	Open	12.7	114
11/2/2024	12:30:00	7.3	0.000	0	19,656	Closed	Open	12.9	111
11/2/2024	12:45:00	7.3	0.000	0	19,656	Closed	Open	13.1	113
11/2/2024	13:00:00	7.3	0.000	0	19,656	Closed	Open	13.3	114
11/2/2024	13:15:00	7.2	0.393	0	19,662	Closed	Open	13.7	114
11/2/2024	13:30:00	7.3	0.412	0	19,668	Closed	Open	11.5	114
11/2/2024	13:45:00	7.3	0.408	0	19,674	Closed	Open	11.5	114
11/2/2024	14:00:00	7.3	0.000	0	19,680	Closed	Open	11.6	114
11/2/2024	14:15:00	7.3	0.000	0	19,680	Closed	Open	11.9	114
11/2/2024	14:30:00	7.3	0.000	0	19,680	Closed	Open	12.1	113

		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th


Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/2/2024	14:45:00	7.3	0.000	0	19,680	Closed	Open	12.4	112
11/2/2024	15:00:00	7.3	0.420	0	19,682	Closed	Open	11.4	112
11/2/2024	15:15:00	7.3	0.401	0	19,689	Closed	Open	11.4	113
11/2/2024	15:30:00	7.3	0.416	0	19,695	Closed	Open	11.5	113
11/2/2024	15:45:00	7.3	0.389	0	19,701	Closed	Open	11.5	114
11/2/2024	16:00:00	7.3	0.000	0	19,703	Open	Closed	11.7	113
11/2/2024	16:15:00	7.3	0.000	0	19,703	Open	Closed	11.9	111
11/2/2024	16:30:00	7.3	0.000	0	19,703	Open	Closed	12.2	113
11/2/2024	16:45:00	7.3	0.401	0.4	19,703	Closed	Open	12.2	114
11/2/2024	17:00:00	7.3	0.408	0	19,709	Closed	Open	11.2	113
11/2/2024	17:15:00	7.3	0.393	0	19,716	Closed	Open	11.3	113
11/2/2024	17:30:00	7.3	0.404	0	19,722	Closed	Open	11.3	114
11/2/2024	17:45:00	7.3	0.000	0	19,727	Open	Closed	11.4	114
11/2/2024	18:00:00	7.3	0.000	0	19,727	Open	Closed	11.7	114
11/2/2024	18:15:00	7.3	0.000	0	19,727	Closed	Open	11.9	111

		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th


Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/2/2024	18:30:00	7.3	0.000	0	19,727	Closed	Open	12.1	113
11/2/2024	18:45:00	7.3	0.386	0	19,732	Closed	Open	11.1	113
11/2/2024	19:00:00	7.3	0.393	0	19,738	Closed	Open	11.1	113
11/2/2024	19:15:00	7.3	0.386	0	19,744	Closed	Open	11.2	113
11/2/2024	19:30:00	7.3	0.401	0	19,750	Closed	Open	11.2	113
11/2/2024	19:45:00	7.3	0.000	0	19,751	Closed	Open	11.4	113
11/2/2024	20:00:00	7.3	0.000	0	19,751	Closed	Open	11.6	113
11/2/2024	20:15:00	7.3	0.000	0	19,751	Closed	Open	11.9	113
11/2/2024	20:30:00	7.3	0.389	0	19,753	Closed	Open	12.5	111
11/2/2024	20:45:00	7.3	0.397	0	19,759	Closed	Open	12.5	111
11/2/2024	21:00:00	7.3	0.393	0	19,765	Closed	Open	13.1	113
11/2/2024	21:15:00	7.3	0.389	0	19,771	Closed	Open	13.4	113
11/2/2024	21:30:00	7.3	0.000	0	19,774	Closed	Open	13.7	113
11/2/2024	21:45:00	7.3	0.000	0	19,774	Closed	Open	14.1	113
11/2/2024	22:00:00	7.3	0.000	0	19,774	Closed	Open	14.4	114

		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th


Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/2/2024	22:15:00	7.3	0.397	0	19,775	Closed	Open	14.6	113
11/2/2024	22:30:00	7.3	0.389	0	19,781	Closed	Open	14.8	113
11/2/2024	22:45:00	7.3	0.386	0	19,787	Closed	Open	15	114
11/2/2024	23:00:00	7.3	0.374	0	19,793	Closed	Open	15.3	114
11/2/2024	23:15:00	7.3	0.000	0	19,796	Closed	Open	15.6	114
11/2/2024	23:30:00	7.2	0.000	0	19,796	Closed	Open	15.9	248
11/2/2024	23:45:00	7.2	0.000	0	19,796	Closed	Open	16.2	250
11/3/2024	0:00:00	7.2	0.000	0	19,796	Closed	Open	16.4	248
11/3/2024	0:15:00	7.2	0.386	0	19,800	Closed	Open	16.6	248
11/3/2024	0:30:00	7.2	0.382	0	19,806	Closed	Open	16.8	250
11/3/2024	0:45:00	7.2	0.374	0	19,811	Closed	Open	16.9	250
11/3/2024	1:00:00	7.2	0.370	0	19,817	Closed	Open	17.1	248
11/3/2024	1:15:00	7.2	0.000	0	19,818	Closed	Open	17.2	248
11/3/2024	1:30:00	7.2	0.000	0	19,818	Closed	Open	17.3	247
11/3/2024	1:45:00	7.2	0.000	0	19,818	Closed	Open	17.3	248

		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th


Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/3/2024	2:00:00	7.2	0.401	0	19,820	Closed	Open	17.2	250
11/3/2024	2:15:00	7.2	0.363	0	19,825	Closed	Open	17.1	250
11/3/2024	2:30:00	7.2	0.374	0	19,831	Closed	Open	17.1	250
11/3/2024	2:45:00	7.2	0.374	0	19,837	Closed	Open	17.1	250
11/3/2024	3:00:00	7.2	0.363	0	19,842	Closed	Open	17.1	250
11/3/2024	3:15:00	7.2	0.382	0	19,848	Closed	Open	17.2	250
11/3/2024	3:30:00	7.2	0.370	0	19,853	Closed	Open	17.4	250
11/3/2024	3:45:00	7.2	0.000	0	19,857	Closed	Open	17.5	252
11/3/2024	4:00:00	7.2	0.000	0	19,857	Closed	Open	17.7	251
11/3/2024	4:15:00	7.2	0.000	0	19,857	Closed	Open	17.7	250
11/3/2024	4:30:00	7.2	0.000	0	19,857	Closed	Open	17.8	252
11/3/2024	4:45:00	7.2	0.374	0	19,861	Closed	Open	18	252
11/3/2024	5:00:00	7.2	0.382	0	19,866	Closed	Open	18.1	250
11/3/2024	5:15:00	7.2	0.000	0	19,870	Closed	Open	18	248
11/3/2024	5:30:00	7.2	0.363	0	19,875	Closed	Open	17.9	248

		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th


Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/3/2024	5:45:00	7.2	0.000	0	19,875	Closed	Open	17.9	248
11/3/2024	6:00:00	7.1	0.000	0	19,875	Closed	Open	17.9	248
11/3/2024	6:15:00	7.1	0.000	0	19,875	Closed	Open	18	250
11/3/2024	6:30:00	7.1	0.374	0	19,877	Closed	Open	18	252
11/3/2024	6:45:00	7.1	0.389	0	19,883	Closed	Open	18	250
11/3/2024	7:00:00	7.1	0.382	0	19,888	Closed	Open	18.1	252
11/3/2024	7:15:00	7.1	0.370	0	19,894	Closed	Open	18.2	252
11/3/2024	7:30:00	7.1	0.352	0	19,899	Closed	Open	18.2	252
11/3/2024	7:45:00	7.1	0.000	0	19,899	Closed	Open	18.2	250
11/3/2024	8:00:00	7.1	0.000	0	19,899	Closed	Open	18.3	252
11/3/2024	8:15:00	7.1	0.000	0	19,899	Closed	Open	18.3	251
11/3/2024	8:30:00	7.1	0.386	0	19,901	Closed	Open	18.2	250
11/3/2024	8:45:00	7.1	0.367	0	19,906	Closed	Open	18.1	250
11/3/2024	9:00:00	7.3	0.359	0.1	19,912	Closed	Open	13.7	113
11/3/2024	9:15:00	7.4	0.367	0.6	19,917	Closed	Open	11.4	113

		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th


Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/3/2024	9:30:00	7.4	0.359	0.6	19,923	Closed	Open	11.3	113
11/3/2024	9:45:00	7.4	0.000	0.7	19,923	Closed	Open	11.6	114
11/3/2024	10:00:00	7.4	0.000	0.5	19,923	Closed	Open	12	113
11/3/2024	10:15:00	7.3	0.000	0.4	19,923	Closed	Open	12.3	113
11/3/2024	10:30:00	7.4	0.386	0.4	19,924	Closed	Open	13.5	113
11/3/2024	10:45:00	7.4	0.374	0.6	19,930	Closed	Open	13.7	113
11/3/2024	11:00:00	7.4	0.370	0.5	19,935	Closed	Open	13.9	113
11/3/2024	11:15:00	7.4	0.378	0.4	19,941	Closed	Open	14.2	114
11/3/2024	11:30:00	7.3	0.000	0.4	19,946	Closed	Open	14.4	113
11/3/2024	11:45:00	7.3	0.000	0.3	19,946	Closed	Open	14.7	114
11/3/2024	12:00:00	7.3	0.000	0.2	19,946	Closed	Open	15	114
11/3/2024	12:15:00	7.3	0.382	0.2	19,950	Closed	Open	15.3	114
11/3/2024	12:30:00	7.3	0.374	0.3	19,956	Closed	Open	15.3	113
11/3/2024	12:45:00	7.3	0.382	0.1	19,962	Closed	Open	15.5	114
11/3/2024	13:00:00	7.4	0.340	0	19,967	Closed	Open	11.7	113

		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th

Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/3/2024	13:15:00	7.4	0.000	0	19,968	Closed	Open	11.9	113
11/3/2024	13:30:00	7.4	0.000	0	19,968	Closed	Open	12.3	113
11/3/2024	13:45:00	7.3	0.000	0	19,968	Closed	Open	12.7	113
11/3/2024	14:00:00	7.4	0.359	0.1	19,970	Closed	Open	11.4	113
11/3/2024	14:15:00	7.4	0.370	0	19,975	Closed	Open	11.4	113
11/3/2024	14:30:00	7.4	0.367	0	19,981	Closed	Open	11.5	114
11/3/2024	14:45:00	7.4	0.382	0	19,986	Closed	Open	11.6	114
11/3/2024	15:00:00	7.4	0.000	0	19,992	Closed	Open	11.6	113
11/3/2024	15:15:00	7.4	0.000	0	19,992	Closed	Open	11.9	114
11/3/2024	15:30:00	7.4	0.000	0	19,992	Closed	Open	12.4	114
11/3/2024	15:45:00	7.4	0.000	0	19,992	Closed	Open	12.9	114
11/3/2024	16:00:00	7.4	0.370	0	19,994	Closed	Open	13.9	114
11/3/2024	16:15:00	7.4	0.378	0	19,999	Closed	Open	14	113
11/3/2024	16:30:00	7.4	0.393	0	20,005	Closed	Open	14.3	114
11/3/2024	16:45:00	7.4	0.374	0	20,011	Closed	Open	11.7	113

		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th

Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/3/2024	17:00:00	7.4	0.370	0	20,016	Closed	Open	11.7	114
11/3/2024	17:15:00	7.4	0.000	0	20,016	Closed	Open	12	114
11/3/2024	17:30:00	7.4	0.000	0	20,016	Closed	Open	12.4	114
11/3/2024	17:45:00	7.4	0.000	0	20,016	Closed	Open	12.7	114
11/3/2024	18:00:00	7.4	0.367	0	20,018	Closed	Open	13.7	114
11/3/2024	18:15:00	7.4	0.370	0	20,023	Closed	Open	13.9	114
11/3/2024	18:30:00	7.4	0.000	0	20,028	Closed	Open	14.2	114
11/3/2024	18:45:00	7.4	0.000	0	20,028	Closed	Open	14.4	114
11/3/2024	19:00:00	7.4	0.000	0	20,028	Closed	Open	14.6	114
11/3/2024	19:15:00	7.4	0.386	0	20,031	Closed	Open	14.7	114
11/3/2024	19:30:00	7.3	0.367	0	20,036	Closed	Open	14.9	114
11/3/2024	19:45:00	7.3	0.363	0	20,042	Closed	Open	14.9	113
11/3/2024	20:00:00	7.3	0.378	0	20,047	Closed	Open	15	251
11/3/2024	20:15:00	7.3	0.352	0	20,052	Closed	Open	15.2	250
11/3/2024	20:30:00	7.3	0.352	0	20,058	Closed	Open	15.3	250

		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by: Approved by: Date:	SD BC2 November 5th

Date	Time	Discharge pH	Flow Rate(m3)	Discharge NTU	Flow Total(m3)	Recirc Valve Status	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
11/3/2024	20:45:00	7.3	0.000	0	20,058	Closed	Open	15.3	250
11/3/2024	21:00:00	7.3	0.000	0	20,058	Closed	Open	15.3	250
11/3/2024	21:15:00	7.3	0.000	0	20,058	Closed	Open	15.4	250
11/3/2024	21:30:00	7.3	0.359	0	20,060	Closed	Open	15.5	250
11/3/2024	21:45:00	7.3	0.355	0	20,065	Closed	Open	15.8	248
11/3/2024	22:00:00	7.4	0.461	3.4	20,069	Closed	Open	11.6	114
11/3/2024	22:15:00	7.4	0.465	5.3	20,076	Closed	Open	11.3	114
11/3/2024	22:30:00	7.4	0.000	0	20,076	Closed	Open	11.7	113
11/3/2024	22:45:00	7.4	0.000	0	20,076	Closed	Open	11.9	112
11/3/2024	23:00:00	7.4	0.446	0	20,077	Closed	Open	12.6	113
11/3/2024	23:15:00	7.4	0.438	0	20,084	Closed	Open	11.2	114
11/3/2024	23:30:00	7.4	0.431	0	20,090	Closed	Open	11.2	114
11/3/2024	23:45:00	7.4	0.431	0	20,097	Closed	Open	11.2	114

Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by:	SD
		Approved by:	BC2
		Date:	November 5th

Photos:

Photo 1: No visible sheen observed in the WTP water, October 28th

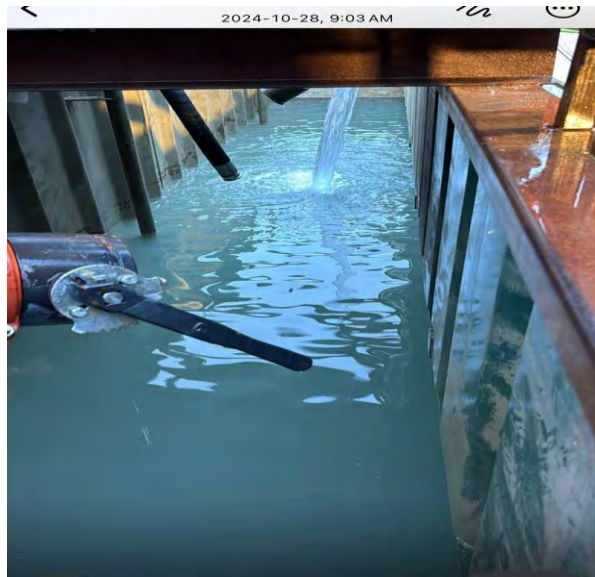
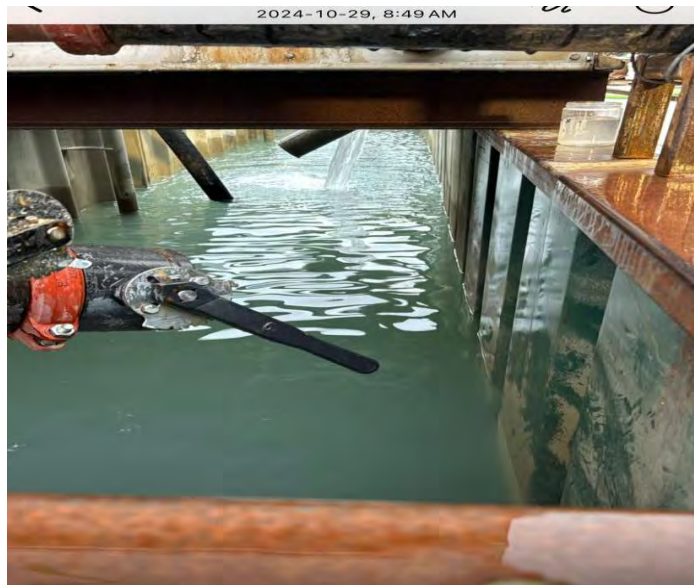


Photo 4: No visible sheen observed in the WTP water, October 29th



Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by:	SD
		Approved by:	BC2
		Date:	November 5th

Photo 1: No visible sheen observed in the WTP water, October 30th



Photo 4: No visible sheen observed in the WTP water, October 31st



Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by:	SD
		Approved by:	BC2
		Date:	November 5th

Photo 1: No visible sheen observed in the WTP water, November 1st

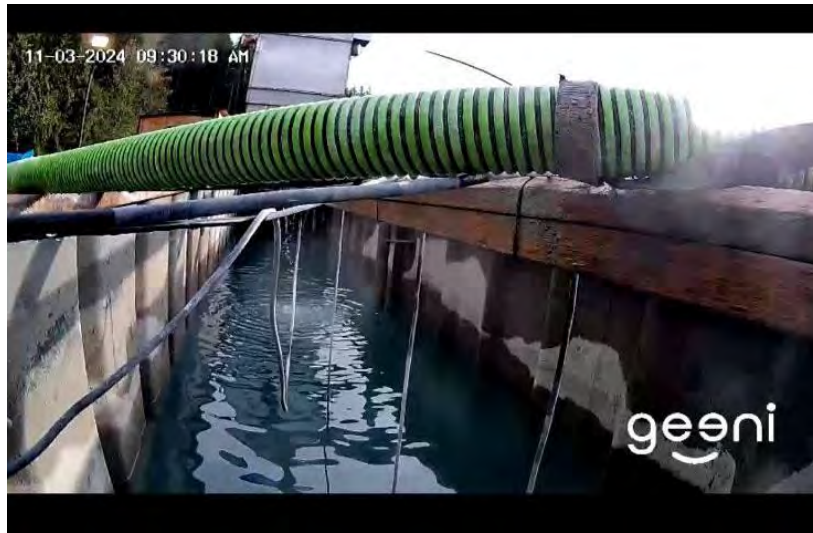



Photo 3: No visible sheen observed in the WTP water, November 2nd




Title	WoodFibre Weekly Water Discharge Report	Revision:	0
Data Date Range	October 28th to November 3rd, 2024	Prepared by:	SD
		Approved by:	BC2
		Date:	November 5th

Photo 1: No visible sheen observed in the WTP water, November 3rd



 Eagle Mountain - Woodfibre Gas Pipeline Project Waste Discharge Permit PE-110163 Report	Reporting Week	Oct. 28 th to Nov. 3 rd , 2024
	Report #	32
	Appendix D	D-1

Appendix D: Woodfibre Site Receiving Environment Documentation

 Eagle Mountain - Woodfibre Gas Pipeline Project Waste Discharge Permit PE-110163 Report	Reporting Week	Oct. 28 th to Nov. 3 rd , 2024
	Report #	32
	Appendix D	D-2

Woodfibre Site Receiving Environment Sample Analysis



**Eagle Mountain - Woodfibre Gas Pipeline Project
Waste Discharge Permit PE-110163 Report**

Reporting Week	Oct. 28 th to Nov. 3 rd , 2024
Report #	32
Appendix D	D-3

Woodfibre Site Receiving Environment Lab Documentation



CERTIFICATE OF ANALYSIS

Work Order	: VA24C9198		
Client	: [Redacted]	Laboratory	: ALS Environmental - Vancouver
Contact	: [Redacted]	Account Manager	: [Redacted]
Address	: [Redacted]	Address	: [Redacted]
Telephone	: [Redacted]	Telephone	: [Redacted]
Project	: 11964	Date Samples Received	: 29-Oct-2024 17:15
PO	: 11964 - Task 20 - Phase 3C-4C	Date Analysis Commenced	: 30-Oct-2024
C-O-C number	: ----	Issue Date	: 06-Nov-2024 13:42
Sampler	: ----		
Site	: Water Analysis		
Quote number	: VA23-TRIT100-012		
No. of samples received	: 2		
No. of samples analysed	: 2		

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:

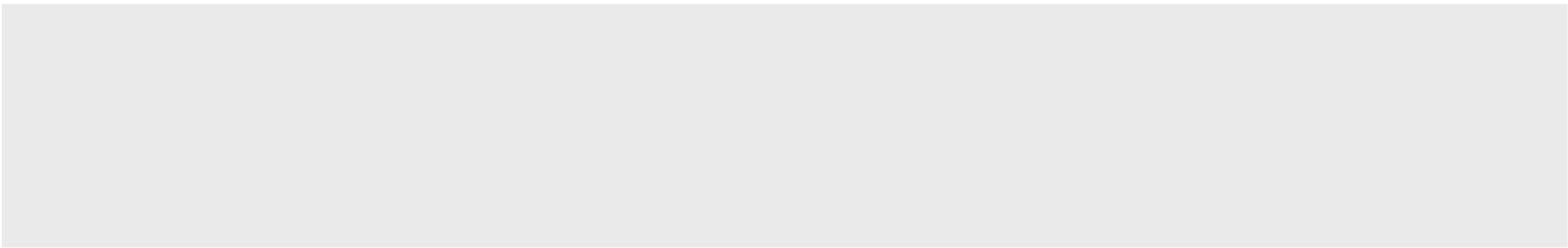
- General Comments
- Analytical Results

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>
--------------------	-----------------	------------------------------





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>
mg/L	milligrams per litre
µS/cm	microsiemens per centimetre
°C	degrees celsius
pH units	pH units
-	no 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.

Work Order : VA24C9198
Client : Triton Environmental Consultants Ltd.
Project : 11964





Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WLNG US 1	WLNG DS 1	----	----	----
Client sampling date / time					29-Oct-2024 10:35	29-Oct-2024 09:49	----	----	----	
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C9198-001	VA24C9198-002	----	----	----	
					Result	Result	----	----	----	
Field Tests										
Conductivity, field	----	EF001/VA	0.10	µS/cm	29.000	29.000	----	----	----	
pH, field	----	EF001/VA	0.10	pH units	7.27	6.90	----	----	----	
Temperature, field	----	EF001/VA	0.10	°C	9.30	9.70	----	----	----	
Physical Tests										
Hardness (as CaCO3), dissolved	----	EC100/VA	0.60	mg/L	8.17	7.74	----	----	----	
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L	8.02	8.02	----	----	----	
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	29	26	----	----	----	
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	3.5	----	----	----	
Alkalinity, total (as CaCO3)	----	E290/VA	2.0	mg/L	6.2	6.3	----	----	----	
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	<0.0050	<0.0050	----	----	----	
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	<0.050	<0.050	----	----	----	
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L	0.91	0.87	----	----	----	
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.020	0.023	----	----	----	
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L	0.0502	0.0311	----	----	----	
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L	<0.0010	<0.0010	----	----	----	
Nitrogen, total	7727-37-9	E366/VA	0.030	mg/L	0.127	0.110	----	----	----	
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L	0.0305	0.0201	----	----	----	
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	3.18	2.66	----	----	----	
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L	2.84	2.86	----	----	----	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	WLNG US 1	WLNG DS 1	----	----	----
					Client sampling date / time	29-Oct-2024 10:35	29-Oct-2024 09:49	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C9198-001	VA24C9198-002	----	----	----	
					Result	Result	----	----	----	
Total Sulfides										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	0.0017	0.0017	----	----	----	
Sulfide, un-ionized (as H2S), from total	7783-06-4	EC395/VA	0.0015	mg/L	<0.0015	<0.0015	----	----	----	
Sulfide, total (as H2S)	7783-06-4	E395/VA	0.0016	mg/L	0.0018	0.0018	----	----	----	
Total Metals										
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L	0.102	0.180	----	----	----	
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L	0.00019	0.00018	----	----	----	
Barium, total	7440-39-3	E420/VA	0.00010	mg/L	0.00325	0.00396	----	----	----	
Beryllium, total	7440-41-7	E420/VA	0.000100	mg/L	<0.000100	<0.000100	----	----	----	
Bismuth, total	7440-69-9	E420/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Boron, total	7440-42-8	E420/VA	0.010	mg/L	<0.010	<0.010	----	----	----	
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L	0.0000071	0.0000083	----	----	----	
Calcium, total	7440-70-2	E420/VA	0.050	mg/L	2.59	2.67	----	----	----	
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Copper, total	7440-50-8	E420/VA	0.00050	mg/L	0.00101	0.00098	----	----	----	
Iron, total	7439-89-6	E420/VA	0.010	mg/L	0.043	0.093	----	----	----	
Lead, total	7439-92-1	E420/VA	0.000050	mg/L	<0.000050	0.000100	----	----	----	
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L	<0.0010	<0.0010	----	----	----	
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L	0.377	0.330	----	----	----	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	WLNG US 1	WLNG DS 1	----	----	----
					Client sampling date / time	29-Oct-2024 10:35	29-Oct-2024 09:49	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C9198-001	VA24C9198-002	----	----	----	
					Result	Result	----	----	----	
Total Metals										
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L	0.00198	0.00401	----	----	----	
Mercury, total	7439-97-6	E508/EO	0.0000050	mg/L	<0.0000050	<0.0000050	----	----	----	
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L	0.000389	0.000676	----	----	----	
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L	<0.050	<0.050	----	----	----	
Potassium, total	7440-09-7	E420/VA	0.050	mg/L	0.264	0.221	----	----	----	
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L	0.00027	0.00030	----	----	----	
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Silicon, total	7440-21-3	E420/VA	0.10	mg/L	3.94	3.95	----	----	----	
Silver, total	7440-22-4	E420/VA	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
Sodium, total	7440-23-5	E420/VA	0.050	mg/L	1.54	1.42	----	----	----	
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L	0.0123	0.0114	----	----	----	
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L	0.67	0.59	----	----	----	
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L	<0.00020	<0.00020	----	----	----	
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Tin, total	7440-31-5	E420/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L	0.00104	0.00316	----	----	----	
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L	0.000162	0.000287	----	----	----	
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	WLNG US 1	WLNG DS 1	----	----	----
					Client sampling date / time	29-Oct-2024 10:35	29-Oct-2024 09:49	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C9198-001	VA24C9198-002	----	----	----	
					Result	Result	----	----	----	
Total Metals										
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L	<0.0030	<0.0030	----	----	----	
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L	<0.00020	<0.00020	----	----	----	
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L	0.0772	0.0839	----	----	----	
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L	0.00020	0.00016	----	----	----	
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L	0.00316	0.00319	----	----	----	
Beryllium, dissolved	7440-41-7	E421/VA	0.000100	mg/L	<0.000100	<0.000100	----	----	----	
Bismuth, dissolved	7440-69-9	E421/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Boron, dissolved	7440-42-8	E421/VA	0.010	mg/L	<0.010	<0.010	----	----	----	
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L	0.0000082	0.0000055	----	----	----	
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L	2.62	2.60	----	----	----	
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
Chromium, dissolved	7440-47-3	E421/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
Cobalt, dissolved	7440-48-4	E421/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Copper, dissolved	7440-50-8	E421/VA	0.00020	mg/L	0.00092	0.00073	----	----	----	
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L	0.019	0.018	----	----	----	
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L	<0.0010	<0.0010	----	----	----	
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L	0.396	0.303	----	----	----	
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L	0.00118	0.00112	----	----	----	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	WLNG US 1	WLNG DS 1	----	----	----
					Client sampling date / time	29-Oct-2024 10:35	29-Oct-2024 09:49	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C9198-001	VA24C9198-002	----	----	----	
					Result	Result	----	----	----	
Dissolved Metals										
Mercury, dissolved	7439-97-6	E509/EO	0.0000050	mg/L	<0.0000050	<0.0000050	----	----	----	
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L	0.000386	0.000670	----	----	----	
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
Phosphorus, dissolved	7723-14-0	E421/VA	0.050	mg/L	<0.050	<0.050	----	----	----	
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L	0.298	0.214	----	----	----	
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L	0.00034	0.00030	----	----	----	
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L	3.63	3.63	----	----	----	
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L	1.57	1.40	----	----	----	
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L	0.0130	0.0114	----	----	----	
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L	0.94	0.61	----	----	----	
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L	<0.00020	<0.00020	----	----	----	
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
Thorium, dissolved	7440-29-1	E421/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Tin, dissolved	7440-31-5	E421/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L	0.00032	<0.00030	----	----	----	
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L	0.000144	0.000222	----	----	----	
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L	0.0010	0.0019	----	----	----	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID		WLNG US 1	WLNG DS 1	----	----	----
					Client sampling date / time		29-Oct-2024 10:35	29-Oct-2024 09:49	----	----	----
Analyte	CAS Number	Method/Lab/Accreditation	LOR	Unit	VA24C9198-001	VA24C9198-002	----	----	----	----	----
					Result	Result	----	----	----	----	----
Dissolved Metals											
Zirconium, dissolved	7440-67-7	E421/VA	0.00020	mg/L	<0.00020	<0.00020	----	----	----	----	----
Dissolved mercury filtration location	----	EP509/EO	-	-	Field	Field	----	----	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	-	Field	Field	----	----	----	----	----
Speciated Metals											
Chromium, hexavalent [Cr VI], total	18540-29-9	E532/WT	0.00050	mg/L	<0.00050	<0.00050	----	----	----	----	----
Chromium, trivalent [Cr III], total	16065-83-1	EC535/WT	0.00050	mg/L	<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

<p>Work Order : VA24C9198</p> <p>Client : [REDACTED]</p> <p>Contact : [REDACTED]</p> <p>Address : [REDACTED]</p> <p>Telephone : [REDACTED]</p> <p>Project : 11964</p> <p>PO : 11964 - Task 20 - Phase 3C-4C</p> <p>C-O-C number : ----</p> <p>Sampler : ----</p> <p>Site : Water Analysis</p> <p>Quote number : VA23-TRIT100-012_V2</p> <p>No. of samples received : 2</p> <p>No. of samples analysed : 2</p>	<p>Page : 1 of 14</p> <p>Laboratory : ALS Environmental - Vancouver</p> <p>Account Manager : [REDACTED]</p> <p>Address : [REDACTED]</p> <p>Telephone : [REDACTED]</p> <p>Date Samples Received : 29-Oct-2024 17:15</p> <p>Issue Date : 06-Nov-2024 13:42</p>
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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
- No Matrix Spike outliers occur.
- 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.



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		
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) WLNG DS 1	E298	29-Oct-2024	03-Nov-2024	28 days	5 days	✔	05-Nov-2024	28 days	7 days	✔	
Anions and Nutrients : Ammonia by Fluorescence											
Amber glass total (sulfuric acid) WLNG US 1	E298	29-Oct-2024	03-Nov-2024	28 days	5 days	✔	05-Nov-2024	28 days	7 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE WLNG DS 1	E235.Br-L	29-Oct-2024	30-Oct-2024	28 days	1 days	✔	30-Oct-2024	28 days	1 days	✔	
Anions and Nutrients : Bromide in Water by IC (Low Level)											
HDPE WLNG US 1	E235.Br-L	29-Oct-2024	30-Oct-2024	28 days	1 days	✔	30-Oct-2024	28 days	1 days	✔	
Anions and Nutrients : Chloride in Water by IC											
HDPE WLNG DS 1	E235.Cl	29-Oct-2024	30-Oct-2024	28 days	1 days	✔	30-Oct-2024	28 days	1 days	✔	
Anions and Nutrients : Chloride in Water by IC											
HDPE WLNG US 1	E235.Cl	29-Oct-2024	30-Oct-2024	28 days	1 days	✔	30-Oct-2024	28 days	1 days	✔	
Anions and Nutrients : Fluoride in Water by IC											
HDPE WLNG DS 1	E235.F	29-Oct-2024	30-Oct-2024	28 days	1 days	✔	30-Oct-2024	28 days	1 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	
Anions and Nutrients : Fluoride in Water by IC										
HDPE WLNG US 1	E235.F	29-Oct-2024	30-Oct-2024	28 days	1 days	✔	30-Oct-2024	28 days	1 days	✔
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE WLNG DS 1	E235.NO3-L	29-Oct-2024	30-Oct-2024	3 days	1 days	✔	30-Oct-2024	3 days	1 days	✔
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE WLNG US 1	E235.NO3-L	29-Oct-2024	30-Oct-2024	3 days	1 days	✔	30-Oct-2024	3 days	1 days	✔
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE WLNG DS 1	E235.NO2-L	29-Oct-2024	30-Oct-2024	3 days	1 days	✔	30-Oct-2024	3 days	1 days	✔
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE WLNG US 1	E235.NO2-L	29-Oct-2024	30-Oct-2024	3 days	1 days	✔	30-Oct-2024	3 days	1 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE WLNG DS 1	E235.SO4	29-Oct-2024	30-Oct-2024	28 days	1 days	✔	30-Oct-2024	28 days	1 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE WLNG US 1	E235.SO4	29-Oct-2024	30-Oct-2024	28 days	1 days	✔	30-Oct-2024	28 days	1 days	✔
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) WLNG DS 1	E366	29-Oct-2024	03-Nov-2024	28 days	5 days	✔	04-Nov-2024	28 days	6 days	✔
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) WLNG US 1	E366	29-Oct-2024	03-Nov-2024	28 days	5 days	✔	04-Nov-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		
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) WLNQ DS 1	E372-U	29-Oct-2024	03-Nov-2024	28 days	5 days	✓	04-Nov-2024	28 days	7 days	✓	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)											
Amber glass total (sulfuric acid) WLNQ US 1	E372-U	29-Oct-2024	03-Nov-2024	28 days	5 days	✓	04-Nov-2024	28 days	7 days	✓	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) WLNQ DS 1	E509	29-Oct-2024	02-Nov-2024	28 days	4 days	✓	02-Nov-2024	28 days	4 days	✓	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Glass vial dissolved (hydrochloric acid) WLNQ US 1	E509	29-Oct-2024	02-Nov-2024	28 days	4 days	✓	02-Nov-2024	28 days	4 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) WLNQ DS 1	E421	29-Oct-2024	31-Oct-2024	180 days	2 days	✓	01-Nov-2024	180 days	3 days	✓	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
HDPE dissolved (nitric acid) WLNQ US 1	E421	29-Oct-2024	31-Oct-2024	180 days	2 days	✓	01-Nov-2024	180 days	3 days	✓	
Field Tests : Field pH,EC,Salinity, TDS, Cl2,CIO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine											
HDPE WLNQ DS 1	EF001	29-Oct-2024	----	----	----		01-Nov-2024	----	3 days		
Field Tests : Field pH,EC,Salinity, TDS, Cl2,CIO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine											
HDPE WLNQ US 1	EF001	29-Oct-2024	----	----	----		01-Nov-2024	----	3 days		
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) WLNQ DS 1	E358-L	29-Oct-2024	03-Nov-2024	28 days	5 days	✓	03-Nov-2024	28 days	5 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		
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (sulfuric acid) WLNG US 1	E358-L	29-Oct-2024	03-Nov-2024	28 days	5 days	✔	03-Nov-2024	28 days	5 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE WLNG DS 1	E290	29-Oct-2024	30-Oct-2024	14 days	1 days	✔	30-Oct-2024	14 days	1 days	✔	
Physical Tests : Alkalinity Species by Titration											
HDPE WLNG US 1	E290	29-Oct-2024	30-Oct-2024	14 days	1 days	✔	30-Oct-2024	14 days	1 days	✔	
Physical Tests : TDS by Gravimetry											
HDPE WLNG DS 1	E162	29-Oct-2024	----	----	----		05-Nov-2024	7 days	7 days	✔	
Physical Tests : TDS by Gravimetry											
HDPE WLNG US 1	E162	29-Oct-2024	----	----	----		05-Nov-2024	7 days	7 days	✔	
Physical Tests : TSS by Gravimetry											
HDPE WLNG DS 1	E160	29-Oct-2024	----	----	----		05-Nov-2024	7 days	7 days	✔	
Physical Tests : TSS by Gravimetry											
HDPE WLNG US 1	E160	29-Oct-2024	----	----	----		05-Nov-2024	7 days	7 days	✔	
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC											
UV-inhibited HDPE - total (sodium hydroxide) WLNG DS 1	E532	29-Oct-2024	----	----	----		01-Nov-2024	28 days	3 days	✔	
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC											
UV-inhibited HDPE - total (sodium hydroxide) WLNG US 1	E532	29-Oct-2024	----	----	----		01-Nov-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	
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) WLNG DS 1	E508	29-Oct-2024	02-Nov-2024	28 days	4 days	✔	02-Nov-2024	28 days	4 days	✔
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) WLNG US 1	E508	29-Oct-2024	02-Nov-2024	28 days	4 days	✔	02-Nov-2024	28 days	4 days	✔
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) WLNG DS 1	E420	29-Oct-2024	01-Nov-2024	180 days	3 days	✔	02-Nov-2024	180 days	4 days	✔
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) WLNG US 1	E420	29-Oct-2024	01-Nov-2024	180 days	3 days	✔	02-Nov-2024	180 days	4 days	✔
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) WLNG DS 1	E395	29-Oct-2024	----	----	----		31-Oct-2024	7 days	2 days	✔
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) WLNG US 1	E395	29-Oct-2024	----	----	----		31-Oct-2024	7 days	2 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 (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1740606	1	6	16.6	5.0	✔
Ammonia by Fluorescence	E298	1747695	1	18	5.5	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1740602	1	6	16.6	5.0	✔
Chloride in Water by IC	E235.Cl	1740601	1	6	16.6	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	1745911	1	14	7.1	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	1740315	1	18	5.5	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1747697	1	18	5.5	5.0	✔
Fluoride in Water by IC	E235.F	1740600	1	11	9.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1740599	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1740603	1	6	16.6	5.0	✔
Sulfate in Water by IC	E235.SO4	1740604	1	6	16.6	5.0	✔
TDS by Gravimetry	E162	1749748	1	20	5.0	5.0	✔
Total Hexavalent Chromium (Cr VI) by IC	E532	1744916	1	20	5.0	5.0	✔
Total Mercury in Water by CVAAS	E508	1745746	1	20	5.0	5.0	✔
Total Metals in Water by CRC ICPMS	E420	1740383	1	19	5.2	5.0	✔
Total Nitrogen by Colourimetry	E366	1747693	1	18	5.5	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1747694	1	18	5.5	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1742851	1	10	10.0	5.0	✔
TSS by Gravimetry	E160	1749752	1	20	5.0	5.0	✔
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1740606	1	6	16.6	5.0	✔
Ammonia by Fluorescence	E298	1747695	1	18	5.5	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1740602	1	6	16.6	5.0	✔
Chloride in Water by IC	E235.Cl	1740601	1	6	16.6	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	1745911	1	14	7.1	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	1740315	1	18	5.5	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1747697	1	18	5.5	5.0	✔
Fluoride in Water by IC	E235.F	1740600	1	11	9.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1740599	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1740603	1	6	16.6	5.0	✔
Sulfate in Water by IC	E235.SO4	1740604	1	6	16.6	5.0	✔
TDS by Gravimetry	E162	1749748	1	20	5.0	5.0	✔
Total Hexavalent Chromium (Cr VI) by IC	E532	1744916	1	20	5.0	5.0	✔
Total Mercury in Water by CVAAS	E508	1745746	1	20	5.0	5.0	✔
Total Metals in Water by CRC ICPMS	E420	1740383	1	19	5.2	5.0	✔
Total Nitrogen by Colourimetry	E366	1747693	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
Analytical Methods							
Laboratory Control Samples (LCS) - Continued							
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1747694	1	18	5.5	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1742851	1	10	10.0	5.0	✔
TSS by Gravimetry	E160	1749752	1	20	5.0	5.0	✔
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1740606	1	6	16.6	5.0	✔
Ammonia by Fluorescence	E298	1747695	1	18	5.5	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1740602	1	6	16.6	5.0	✔
Chloride in Water by IC	E235.Cl	1740601	1	6	16.6	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	1745911	1	14	7.1	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	1740315	1	18	5.5	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1747697	1	18	5.5	5.0	✔
Fluoride in Water by IC	E235.F	1740600	1	11	9.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1740599	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1740603	1	6	16.6	5.0	✔
Sulfate in Water by IC	E235.SO4	1740604	1	6	16.6	5.0	✔
TDS by Gravimetry	E162	1749748	1	20	5.0	5.0	✔
Total Hexavalent Chromium (Cr VI) by IC	E532	1744916	1	20	5.0	5.0	✔
Total Mercury in Water by CVAAS	E508	1745746	1	20	5.0	5.0	✔
Total Metals in Water by CRC ICPMS	E420	1740383	1	19	5.2	5.0	✔
Total Nitrogen by Colourimetry	E366	1747693	1	18	5.5	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1747694	1	18	5.5	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	1742851	1	10	10.0	5.0	✔
TSS by Gravimetry	E160	1749752	1	20	5.0	5.0	✔
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1747695	1	18	5.5	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1740602	1	6	16.6	5.0	✔
Chloride in Water by IC	E235.Cl	1740601	1	6	16.6	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	1745911	1	14	7.1	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	1740315	1	18	5.5	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1747697	1	18	5.5	5.0	✔
Fluoride in Water by IC	E235.F	1740600	1	11	9.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1740599	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1740603	1	6	16.6	5.0	✔
Sulfate in Water by IC	E235.SO4	1740604	1	6	16.6	5.0	✔
Total Hexavalent Chromium (Cr VI) by IC	E532	1744916	1	20	5.0	5.0	✔
Total Mercury in Water by CVAAS	E508	1745746	1	20	5.0	5.0	✔
Total Metals in Water by CRC ICPMS	E420	1740383	1	19	5.2	5.0	✔
Total Nitrogen by Colourimetry	E366	1747693	1	18	5.5	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1747694	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
<i>Analytical Methods</i>							
Matrix Spikes (MS) - Continued							
Total Sulfide by Colourimetry (Automated Flow)	E395	1742851	1	10	10.0	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)
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 CO ₂ . 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 H ₂ S" if reported represent the maximum possible H ₂ S concentration based on the total sulfide concentration in the sample. The H ₂ S calculation converts Total Sulphide as (S ₂ ⁻) and reports it as Total Sulphide as (H ₂ S)
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 - Edmonton	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 ALS Environmental - Edmonton	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.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Hexavalent Chromium (Cr VI) by IC	E532 ALS Environmental - Waterloo	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 Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ 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 ₃), from total Ca/Mg" is calculated from the sum of total Calcium and Magnesium concentrations, expressed in CaCO ₃ 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.
Un-ionized Total Hydrogen Sulfide (calculated)	EC395 ALS Environmental - Vancouver	Water	APHA 4500 -S H	Un-ionized sulfide is calculated using results from total sulfide analysis, pH, temperature, and ionic strength of the sample. Calculation of un-ionized sulfide using total sulfide concentrations may be biased high due to particulate forms of sulfide measured during total sulfide testing.
Total Trivalent Chromium (Cr III) by Calculation	EC535 ALS Environmental - Waterloo	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.
Field pH,EC,Salinity, TDS, Cl ₂ ,ClO ₂ ,ORP,DO, Turbidity,T,T-P,o-PO ₄ ,NH ₃ ,Chloramine	EF001 ALS Environmental - Vancouver	Water	Field Measurement (Client Supplied)	Field pH,EC,Salinity, TDS, Cl ₂ ,ClO ₂ ,ORP,DO, Turbidity,T,T-P,o-PO ₄ ,NH ₃ 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 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.



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Dissolved Metals Water Filtration	EP421 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 ALS Environmental - Edmonton	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

QUALITY CONTROL REPORT

Work Order : **VA24C9198**
Client : [Redacted]
Contact : [Redacted]
Address : [Redacted]
Telephone : ----
Project : 11964
PO : 11964 - Task 20 - Phase 3C-4C
C-O-C number : ----
Sampler : ----
Site : Water Analysis
Quote number : VA23-TRIT100-012_V2
No. of samples received : 2
No. of samples analysed : 2

Page : 1 of 17
Laboratory : ALS Environmental - Vancouver
Account Manager : [Redacted]
Address : [Redacted]
Telephone : [Redacted]
Date Samples Received : 29-Oct-2024 17:15
Date Analysis Commenced : 30-Oct-2024
Issue Date : 06-Nov-2024 13:42

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.

Signatories	Position	Laboratory Department
[Redacted Signatory Information]		



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

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



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
Physical Tests (QC Lot: 1740606)											
VA24C9146-003	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	67.9	67.9	0.00%	20%	----
Physical Tests (QC Lot: 1749748)											
FJ2403356-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	334	338	1.49%	20%	----
Physical Tests (QC Lot: 1749752)											
VA24C9198-001	WLNG US 1	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1740599)											
VA24C9146-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	4.13	4.14	0.109%	20%	----
Anions and Nutrients (QC Lot: 1740600)											
VA24C9146-001	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.048	0.048	0.0006	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1740601)											
VA24C9146-001	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	10.4	10.4	0.108%	20%	----
Anions and Nutrients (QC Lot: 1740602)											
VA24C9146-001	Anonymous	Bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1740603)											
VA24C9146-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1740604)											
VA24C9146-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	5.39	5.42	0.521%	20%	----
Anions and Nutrients (QC Lot: 1747693)											
VA24C9056-001	Anonymous	Nitrogen, total	7727-37-9	E366	0.150	mg/L	3.55	3.55	0.00518%	20%	----
Anions and Nutrients (QC Lot: 1747694)											
VA24C9056-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0045	0.0045	0.00008	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1747695)											
VA24C9056-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0061	0.0061	0.00002	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1747697)											
VA24C9056-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	2.46	2.56	0.09	Diff <2x LOR	----
Total Sulfides (QC Lot: 1742851)											
VA24C9075-001	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.0037	0.0036	0.00009	Diff <2x LOR	----
Total Metals (QC Lot: 1740383)											
KS2404503-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0100	mg/L	0.0132	0.0123	0.0008	Diff <2x LOR	----
		Antimony, total	7440-36-0	E420	0.00050	mg/L	<0.00050	<0.00050	0	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
Total Metals (QC Lot: 1740383) - continued											
KS2404503-001	Anonymous	Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00648	0.00623	4.00%	20%	---
		Barium, total	7440-39-3	E420	0.0200	mg/L	0.0229	0.0219	0.00095	Diff <2x LOR	---
		Beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	---
		Bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	---
		Boron, total	7440-42-8	E420	0.100	mg/L	<0.100	<0.100	0	Diff <2x LOR	---
		Cadmium, total	7440-43-9	E420	0.000200	mg/L	<0.000200	<0.000200	0	Diff <2x LOR	---
		Calcium, total	7440-70-2	E420	0.100	mg/L	70.0	68.8	1.73%	20%	---
		Cesium, total	7440-46-2	E420	0.000010	mg/L	0.000028	0.000029	0.000001	Diff <2x LOR	---
		Chromium, total	7440-47-3	E420	0.00200	mg/L	<0.00200	<0.00200	0	Diff <2x LOR	---
		Cobalt, total	7440-48-4	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Copper, total	7440-50-8	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	---
		Iron, total	7439-89-6	E420	0.030	mg/L	0.128	0.124	0.004	Diff <2x LOR	---
		Lead, total	7439-92-1	E420	0.000500	mg/L	<0.000500	<0.000500	0	Diff <2x LOR	---
		Lithium, total	7439-93-2	E420	0.0010	mg/L	0.0010	<0.0010	0.00002	Diff <2x LOR	---
		Magnesium, total	7439-95-4	E420	0.100	mg/L	15.3	14.2	7.38%	20%	---
		Manganese, total	7439-96-5	E420	0.00200	mg/L	0.0536	0.0515	3.94%	20%	---
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00448	0.00440	1.77%	20%	---
		Nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	---
		Phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	---
		Potassium, total	7440-09-7	E420	0.100	mg/L	1.45	1.37	5.72%	20%	---
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00081	0.00072	0.00009	Diff <2x LOR	---
		Selenium, total	7782-49-2	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	---
		Silicon, total	7440-21-3	E420	0.10	mg/L	10.2	9.84	3.91%	20%	---
		Silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	---
		Sodium, total	7440-23-5	E420	2.00	mg/L	9.82	9.04	0.782	Diff <2x LOR	---
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.419	0.414	1.09%	20%	---
		Sulfur, total	7704-34-9	E420	0.50	mg/L	12.1	11.7	3.80%	20%	---
		Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	---
		Thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	---
		Thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Titanium, total	7440-32-6	E420	0.00030	mg/L	0.00050	0.00045	0.00005	Diff <2x LOR	---
		Tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	---
		Uranium, total	7440-61-1	E420	0.000100	mg/L	0.000810	0.000791	0.000019	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
Total Metals (QC Lot: 1740383) - continued											
KS2404503-001	Anonymous	Vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00077	0.00074	0.00004	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420	0.0500	mg/L	<0.0500	<0.0500	0	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 1745746)											
VA24C9151-004	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	0.0000851	0.0000851	0.00%	20%	----
Dissolved Metals (QC Lot: 1740315)											
KS2404528-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00014	0.00018	0.00004	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0427	0.0438	2.68%	20%	----
		Beryllium, dissolved	7440-41-7	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	<0.010	0	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	0.050	mg/L	46.5	44.8	3.82%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.113	0.115	2.18%	20%	----
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	10.4	10.2	1.97%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00083	0.00084	0.000006	Diff <2x LOR	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.0182	0.0180	0.881%	20%	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.33	2.40	3.01%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----		
Silicon, dissolved	7440-21-3	E421	0.050	mg/L	5.45	5.42	0.646%	20%	----		
Silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----		
Sodium, dissolved	7440-23-5	E421	0.050	mg/L	29.5	30.0	1.73%	20%	----		
Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.608	0.599	1.50%	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
Dissolved Metals (QC Lot: 1740315) - continued											
KS2404528-001	Anonymous	Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	17.0	17.2	1.03%	20%	----
		Tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00728	0.00737	1.21%	20%	----
		Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0018	0.0022	0.0004	Diff <2x LOR	----
Zirconium, dissolved	7440-67-7	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----		
Dissolved Metals (QC Lot: 1745911)											
VA24C9170-012	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	0.0000136	0.0000146	0.0000010	Diff <2x LOR	----
Speciated Metals (QC Lot: 1744916)											
VA24C8964-001	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
Physical Tests (QCLot: 1740606)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1749748)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1749752)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Anions and Nutrients (QCLot: 1740599)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1740600)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1740601)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1740602)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1740603)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1740604)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1747693)						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
Anions and Nutrients (QCLot: 1747694)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 1747695)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Organic / Inorganic Carbon (QCLot: 1747697)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1742851)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1740383)						
Aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
Barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1740383) - continued						
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	----
Zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1745746)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1740315)						
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	----
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	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1740315) - continued						
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	----
Dissolved Metals (QCLot: 1745911)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Speciated Metals (QCLot: 1744916)						
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				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1740606)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	104	85.0	115	----
Physical Tests (QCLot: 1749748)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	104	85.0	115	----
Physical Tests (QCLot: 1749752)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	94.5	85.0	115	----
Anions and Nutrients (QCLot: 1740599)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	99.9	90.0	110	----
Anions and Nutrients (QCLot: 1740600)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	97.7	90.0	110	----
Anions and Nutrients (QCLot: 1740601)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 1740602)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 1740603)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	99.3	90.0	110	----
Anions and Nutrients (QCLot: 1740604)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1747693)									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	98.8	75.0	125	----
Anions and Nutrients (QCLot: 1747694)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	94.2	80.0	120	----
Anions and Nutrients (QCLot: 1747695)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	100	85.0	115	----
Organic / Inorganic Carbon (QCLot: 1747697)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	97.6	80.0	120	----
Total Sulfides (QCLot: 1742851)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	105	80.0	120	----
Total Metals (QCLot: 1740383)									



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1740383) - continued									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	100	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	105	80.0	120	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	103	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	105	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	95.6	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	105	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	101	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	101	80.0	120	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	100	80.0	120	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	99.2	80.0	120	----
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	97.6	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	104	80.0	120	----
Lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	104	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	98.2	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	97.9	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	99.8	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	105	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	96.8	80.0	120	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	103	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	104	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	101	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	101	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	108	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	99.4	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	100	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	90.2	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	108	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	104	80.0	120	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	102	80.0	120	----
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	106	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	98.2	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	101	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	106	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1740383) - continued									
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	100	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	101	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	103	80.0	120	----
Total Metals (QCLot: 1745746)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	102	80.0	120	----
Dissolved Metals (QCLot: 1740315)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	99.4	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	103	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	102	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	96.3	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	95.9	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	100	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	96.1	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	98.1	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	101	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	101	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	96.1	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	94.9	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	99.2	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	93.7	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	95.5	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	96.5	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	97.6	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	104	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	94.0	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	99.8	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	98.0	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	92.8	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	101	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	95.6	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	103	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	102	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	93.5	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1740315) - continued									
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	93.1	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	95.2	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	96.0	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	102	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	100	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	96.8	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	97.4	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	98.9	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	103	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	99.5	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	95.2	80.0	120	----
Speciated Metals (QCLot: 1744916)									
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	0.025 mg/L	99.2	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
Anions and Nutrients (QCLot: 1740599)										
VA24C9146-002	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	2.49 mg/L	2.5 mg/L	99.6	75.0	125	----
Anions and Nutrients (QCLot: 1740600)										
VA24C9146-002	Anonymous	Fluoride	16984-48-8	E235.F	0.981 mg/L	1 mg/L	98.1	75.0	125	----
Anions and Nutrients (QCLot: 1740601)										
VA24C9146-002	Anonymous	Chloride	16887-00-6	E235.Cl	100 mg/L	100 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1740602)										
VA24C9146-002	Anonymous	Bromide	24959-67-9	E235.Br-L	0.503 mg/L	0.5 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1740603)										
VA24C9146-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.489 mg/L	0.5 mg/L	97.9	75.0	125	----
Anions and Nutrients (QCLot: 1740604)										
VA24C9146-002	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	100 mg/L	100 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1747693)										
VA24C9056-002	Anonymous	Nitrogen, total	7727-37-9	E366	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1747694)										
VA24C9056-002	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0482 mg/L	0.05 mg/L	96.4	70.0	130	----
Anions and Nutrients (QCLot: 1747695)										
VA24C9056-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.100 mg/L	0.1 mg/L	100	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1747697)										
VA24C9056-002	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	----	ND	70.0	130	----
Total Sulfides (QCLot: 1742851)										
VA24C9075-002	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.232 mg/L	0.2 mg/L	116	75.0	125	----
Total Metals (QCLot: 1740383)										
KS2404509-001	Anonymous	Aluminum, total	7429-90-5	E420	0.186 mg/L	0.2 mg/L	93.2	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0197 mg/L	0.02 mg/L	98.4	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0196 mg/L	0.02 mg/L	98.0	70.0	130	----
		Barium, total	7440-39-3	E420	0.0195 mg/L	0.02 mg/L	97.6	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0362 mg/L	0.04 mg/L	90.5	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.00928 mg/L	0.01 mg/L	92.8	70.0	130	----
		Boron, total	7440-42-8	E420	0.098 mg/L	0.1 mg/L	97.9	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00395 mg/L	0.004 mg/L	98.7	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.00975 mg/L	0.01 mg/L	97.5	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0383 mg/L	0.04 mg/L	95.8	70.0	130	----



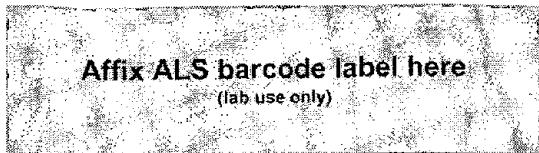
Sub-Matrix: **Water**

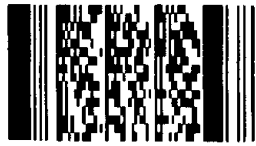
					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 1740383) - continued										
KS2404509-001	Anonymous	Cobalt, total	7440-48-4	E420	0.0182 mg/L	0.02 mg/L	91.2	70.0	130	----
		Copper, total	7440-50-8	E420	0.0171 mg/L	0.02 mg/L	85.7	70.0	130	----
		Iron, total	7439-89-6	E420	ND mg/L	----	ND	70.0	130	----
		Lead, total	7439-92-1	E420	0.0183 mg/L	0.02 mg/L	91.7	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0901 mg/L	0.1 mg/L	90.1	70.0	130	----
		Magnesium, total	7439-95-4	E420	ND mg/L	----	ND	70.0	130	----
		Manganese, total	7439-96-5	E420	ND mg/L	----	ND	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0203 mg/L	0.02 mg/L	101	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0350 mg/L	0.04 mg/L	87.5	70.0	130	----
		Phosphorus, total	7723-14-0	E420	9.97 mg/L	10 mg/L	99.7	70.0	130	----
		Potassium, total	7440-09-7	E420	3.83 mg/L	4 mg/L	95.9	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0192 mg/L	0.02 mg/L	95.9	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0389 mg/L	0.04 mg/L	97.2	70.0	130	----
		Silicon, total	7440-21-3	E420	9.28 mg/L	10 mg/L	92.8	70.0	130	----
		Silver, total	7440-22-4	E420	0.00391 mg/L	0.004 mg/L	97.7	70.0	130	----
		Sodium, total	7440-23-5	E420	ND mg/L	----	ND	70.0	130	----
		Strontium, total	7440-24-6	E420	ND mg/L	----	ND	70.0	130	----
		Sulfur, total	7704-34-9	E420	ND mg/L	----	ND	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.0401 mg/L	0.04 mg/L	100	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00362 mg/L	0.004 mg/L	90.4	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0193 mg/L	0.02 mg/L	96.4	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	0.0384 mg/L	0.04 mg/L	95.9	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0189 mg/L	0.02 mg/L	94.4	70.0	130	----
		Uranium, total	7440-61-1	E420	0.00369 mg/L	0.004 mg/L	92.3	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.0968 mg/L	0.1 mg/L	96.8	70.0	130	----
		Zinc, total	7440-66-6	E420	0.358 mg/L	0.4 mg/L	89.5	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0410 mg/L	0.04 mg/L	102	70.0	130	----
Total Metals (QCLot: 1745746)										
VA24C9151-005	Anonymous	Mercury, total	7439-97-6	E508	0.000104 mg/L	0 mg/L	104	70.0	130	----
Dissolved Metals (QCLot: 1740315)										
KS2404528-002	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.196 mg/L	0.2 mg/L	98.1	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0217 mg/L	0.02 mg/L	108	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0214 mg/L	0.02 mg/L	107	70.0	130	----
		Barium, dissolved	7440-39-3	E421	ND mg/L	----	ND	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0401 mg/L	0.04 mg/L	100	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00941 mg/L	0.01 mg/L	94.1	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.104 mg/L	0.1 mg/L	104	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00376 mg/L	0.004 mg/L	93.9	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.0107 mg/L	0.01 mg/L	107	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0386 mg/L	0.04 mg/L	96.6	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0185 mg/L	0.02 mg/L	92.5	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
Dissolved Metals (QCLot: 1740315) - continued										
KS2404528-002	Anonymous	Copper, dissolved	7440-50-8	E421	0.0179 mg/L	0.02 mg/L	89.7	70.0	130	----
		Iron, dissolved	7439-89-6	E421	1.81 mg/L	2 mg/L	90.5	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0192 mg/L	0.02 mg/L	96.1	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0975 mg/L	0.1 mg/L	97.5	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	----	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	ND mg/L	----	ND	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	ND mg/L	----	ND	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0356 mg/L	0.04 mg/L	89.0	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	10.1 mg/L	10 mg/L	101	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	3.73 mg/L	4 mg/L	93.3	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.0194 mg/L	0.02 mg/L	97.1	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0413 mg/L	0.04 mg/L	103	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	9.04 mg/L	10 mg/L	90.4	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00407 mg/L	0.004 mg/L	102	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	ND mg/L	----	ND	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	----	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	ND mg/L	----	ND	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.0436 mg/L	0.04 mg/L	109	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00385 mg/L	0.004 mg/L	96.2	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0205 mg/L	0.02 mg/L	102	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0198 mg/L	0.02 mg/L	99.2	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0402 mg/L	0.04 mg/L	100	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
Uranium, dissolved	7440-61-1	E421	ND mg/L	----	ND	70.0	130	----		
Vanadium, dissolved	7440-62-2	E421	0.0971 mg/L	0.1 mg/L	97.1	70.0	130	----		
Zinc, dissolved	7440-66-6	E421	0.416 mg/L	0.4 mg/L	104	70.0	130	----		
Zirconium, dissolved	7440-67-7	E421	0.0436 mg/L	0.04 mg/L	109	70.0	130	----		
Dissolved Metals (QCLot: 1745911)										
VA24C9174-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.000101 mg/L	0 mg/L	101	70.0	130	----
Speciated Metals (QCLot: 1744916)										
VA24C8964-001	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0402 mg/L	0.04 mg/L	100	70.0	130	----



Report To Contact and company name below will appear on the final report		Report Format / Distribution			Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)																																																																																																																																																																																																																																																									
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<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> <p>Environmental Division Vancouver Work Order Reference VA24C9198</p>  <p>Telephone: +1 604 253 4188</p> </div>																																																																																																																																																																																																																																																														
Drinking Water (DW) Samples¹ (client use)					Special Instructions / Specify Criteria to add (electro)																																																																																																																																																																																																																																																									
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WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.
 1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

 Eagle Mountain - Woodfibre Gas Pipeline Project Waste Discharge Permit PE-110163 Report	Reporting Week	Oct. 28 th to Nov. 3 rd , 2024
	Report #	32
	Appendix D	D-4

Woodfibre Site Receiving Environment Field Notes and Logs



FortisBC Eagle Mountain-Woodfibre Gas Pipeline

Water Discharge Authorization Water Quality Monitoring

2024-10-29-Chycoski-7CA17

Project Component:	Tunnel	Site Name:	Receiving Environment - Downstream of Discharge
Inspection Date:	10/29/2024	Location:	WLNG
Triton QP:	Lily Chycoski	Latitude/Longitude:	49.668966 -123.248159
Temperature(c): Low 7 High 11		Permit:	PE 110136
Weather Conditions:	Light Rain	Ground Conditions:	Wet

Observations

Time: 09:49:00 **Flow Volume (visual):** high

Notes:

Odour Detected?: No **Notes:**

Unusual Colour?: No **Notes:**

Unusual Observations?: No **Notes:**

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

Samples Collected - Parameters

Total Metals + Mercury	Yes	General Parameters (Alkalinity)	Yes	Other Sample:
Dissolved Metals + Mercury	Yes	Total Sulfide, Unionized Sulfide	Yes	
TSS	Yes	Anions	Yes	
TDS	Yes	Total Trivalent Chromium	Yes	QA Samples: No
Nutrients	Yes	VOC/VPH	No	
DOC	Yes	EPH, PAH, LEPH/HEPH	No	
		Trout LC50	No	

Logger Maintenance

Logger Maintenance Performed?	Yes	Photo of COC with Lab Signature?	Yes
--------------------------------------	-----	---	-----

Describe Logger Maintenance

We shifted the sonde slightly downstream to accommodate high flows that pushed it from previous location.

Photos



Photo: 1
Location: EAS DS 1
Description: US view



Photo: 2
Location: EAS DS 1
Description: Across view

Photos



Photo: 3
Location: EAS DS 1
Description: DS view



Photo: 4
Location: EAS DS 1
Description: New sonde location

Photos

Chain of Custody (COC) / Analytical Request Form

COC Number: 17 - Page 1 of 1

Canada Toll Free: 1 800 668 9078

Report To: Contact and company name below will appear on the final report

Company: [Blank] **Report Format / Distribution:** Select Report Format: HTML PDF DOCX XLSX

Contact: [Blank] **Quality Control (QC) Report with Report:** Yes No

Phone: (250) 775-1000 **Company address below will appear on the final report:** Complete in addition to report Street Address Only Report

Street: 1750-1111 West George Street **Sample 1:** [Blank] **Sample 2:** [Blank] **Sample 3:** [Blank]

City/Town/Village: Vancouver **Sample 1:** [Blank] **Sample 2:** [Blank] **Sample 3:** [Blank]

Region Code: VPE-AM3 **Sample 1:** [Blank] **Sample 2:** [Blank] **Sample 3:** [Blank]

Sample To: Yes No **Sample 1:** [Blank] **Sample 2:** [Blank] **Sample 3:** [Blank]

Copy of Invoice with Report: Yes No **Sample 1:** [Blank] **Sample 2:** [Blank] **Sample 3:** [Blank]

Company: [Blank] **Sample 1:** [Blank] **Sample 2:** [Blank] **Sample 3:** [Blank]

Project Information: **Project Name:** [Blank] **Client Name:** [Blank] **Job #:** [Blank] **Job #:** 11904 **Regulator Code:** [Blank] **Routing Code:** [Blank]

Job Name: 11904 - Tap 20 - Phase 3C-1C **Regulator:** [Blank] **Location:** [Blank]

ALS Lab Work Order # (lab use only): [Blank] **ALS Contract:** [Blank] **Call Date:** [Blank] **Sampler:** [Blank]

ALS Sample # (lab use only)	Sample Identification number Coordinates (This description will appear on the report)	Date (lab use only)	Time (lab use only)	Sample Type	Flow Meter	Flow Meter Accuracy	Flow Meter Calibration	Flow Meter Certificate #	Flow Meter Expiry Date	Flow Meter Test Date	Flow Meter Test Result	Flow Meter Test Location	Flow Meter Test Operator	Flow Meter Test Date	Flow Meter Test Result	Flow Meter Test Location	Flow Meter Test Operator	Flow Meter Test Date	Flow Meter Test Result	Flow Meter Test Location	Flow Meter Test Operator	Flow Meter Test Date	Flow Meter Test Result	
W140 US 1		29-Oct-24	10:25	Water	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
pt 9.27	cond 29 us/cm temp 9.3°C	29-Oct-24	9:49	Water	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
W140 US 1		29-Oct-24	9:49	Water	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
pt 6.70	cond 29 us/cm temp 9.7°C																							

Drinking Water (DW) Samples (client use): Yes No **Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (previous COC only):** [Blank]

Are samples from a Registered DW System? Yes No **Are samples for human consumption use?** Yes No **Initial Project # 11904**

SHIPMENT RELEASE (client use only): Released by: [Signature] Date: 29-Oct-24 **INITIAL SHIPMENT RECEPTION (lab use only):** Received by: [Blank] Date: [Blank]

FINAL SHIPMENT RECEPTION (client use only): Received by: [Blank] Date: [Blank]

PLEASE PRINT FOR ALL LOCATIONS AND SAMPLES AND OPERATIONS: **WHITE - LABORATORY COPY** **YELLOW - CLIENT COPY**

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

Photo: 5
Location: Lab COC
Description: Lab COC



2024-10-29-Chycoski-7CA17

Sign Off

Report Prepared By: Lily Chycoski

Report Reviewed: Yes

Report Reviewer:

Professional(s) of Record:

Name:

Designation:

Designation Number:



FortisBC Eagle Mountain-Woodfibre Gas Pipeline

Water Discharge Authorization Water Quality Monitoring

2024-10-29-Chycoski-55A76

Project Component:	Tunnel	Site Name:	Receiving Environment - Upstream of Discharge
Inspection Date:	10/29/2024	Location:	WLNG
Triton QP:	Lily Chycoski	Latitude/Longitude:	49.669455 -123.25087
Temperature(c): Low 7 High 11		Permit:	PE 110136
Weather Conditions:	Light Rain	Ground Conditions:	Wet

Observations

Time: 10:35:00 **Flow Volume (visual):** high

Notes:

Odour Detected?: No **Notes:**

Unusual Colour?: No **Notes:**

Unusual Observations?: No **Notes:**

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

Samples Collected - Parameters

Total Metals + Mercury	Yes	General Parameters (Alkalinity)	Yes	Other Sample:
Dissolved Metals + Mercury	Yes	Total Sulfide, Unionized Sulfide	Yes	
TSS	Yes	Anions	Yes	
TDS	Yes	Total Trivalent Chromium	Yes	QA Samples: No
Nutrients	Yes	VOC/VPH	No	
DOC	Yes	EPH, PAH, LEPH/HEPH	No	
		Trout LC50	No	

Logger Maintenance

Logger Maintenance Performed?	Yes	Photo of COC with Lab Signature?	Yes
--------------------------------------	-----	---	-----

Describe Logger Maintenance

Removed the remainder of the old telemetry gear from the site.

Photos



Photo: 1
Location: EAS US 1
Description: US view



Photo: 2
Location: EAS US 1
Description: Across view

Photos



Photo: 3
Location: EAS US 1
Description: DS view

Chain of Custody (COC) / Analytical Request Form

ALS Environmental Canada Toll Free: 1 800 668 8078

Affix ALS barcode label here (ink use only)

COC Number: 17 - Page: 1 of 1

Project To: **Water Environmental**
Company: **Water Environmental**
Contract: **200715-1000**
Phone: **250-715-1000**
City/Province: **Victoria BC**

Report Format / Distribution: Quick Report (1 day) Data 800 (2 days) Quality Control COC Report (48 hours) 1st day 2nd day 3rd day 4th day 5th day 6th day 7th day 8th day 9th day 10th day

Sample Information:
ALS Account # / Quote # **V423-7707-700-012**
Job # **11964**
PO / AFE **11964 - Task 20 - Phase 3C-42**
SIC **800**

ALS Barcode # (ink use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type	ALS Lab	ALS Lab	ALS Lab	ALS Lab	ALS Lab	ALS Lab	ALS Lab	ALS Lab	ALS Lab	ALS Lab	ALS Lab	ALS Lab	ALS Lab	ALS Lab	ALS Lab	ALS Lab
7-27	cont: 29 µg/L can temp: 9.3 °C	29-10-24	10:35	Water	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
6-70	cont: 29 µg/L can temp: 9.7 °C	29-10-24	9:49	Water	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R

Drinking Water (DW) Samples (ink use only): No Yes

Any samples taken from a Registered DW System? No Yes

Are samples for human consumption use? No Yes

Project # **11964**

Initial Shipment Reception (ink use only):
Received by: **Chycoski** Date: **29-10-24** Time: **10:35**

Final Shipment Reception (ink use only):
Received by: _____ Date: _____ Time: _____

Printed at: **29-10-24 10:35**

White - Laboratory Copy Yellow - Client Copy

Photo: 4
Location: EAS US 1
Description: Lab COC



2024-10-29-Chycoski-55A76

Sign Off

Report Prepared By: Lily Chycoski

Report Reviewed: Yes

Report Reviewer:

Professional(s) of Record:

Name:

Designation:

Designation Number:

11/03/2024 6:00	8.60	29.99	0.01	6.91	10.72	3.95	11/03/2024 6:00	8.6	23.8	7.1	10.5	0.1
11/03/2024 6:15	8.59	29.93	0.01	6.96	10.73	3.85	11/03/2024 6:15	8.6	23.7	7.1	10.6	0.2
11/03/2024 6:30	8.64	36.34	0.02	7.03	10.74	3.98	11/03/2024 6:30	8.6	23.8	7.1	10.6	0.1
11/03/2024 6:45	8.86	50.00	0.02	7.33	10.67	5.33	11/03/2024 6:45	8.6	23.5	7.1	10.6	0.1
11/03/2024 7:00	8.90	49.83	0.02	7.27	10.66	4.13	11/03/2024 7:00	8.6	24.1	7.1	10.6	0.1
11/03/2024 7:15	8.92	49.93	0.02	7.35	10.65	4.03	11/03/2024 7:15	8.6	23.7	7.1	10.6	0.1
11/03/2024 7:30	8.92	49.99	0.02	7.28	10.66	4.19	11/03/2024 7:30	8.6	23.5	7.1	10.6	0.1
11/03/2024 7:45	8.64	31.20	0.01	7.08	10.70	3.99	11/03/2024 7:45	8.6	23.1	7.1	10.6	0.1
11/03/2024 8:00	8.59	29.98	0.01	6.90	10.73	3.87	11/03/2024 8:00	8.6	23.0	7.1	10.6	0.1
11/03/2024 8:15	8.57	29.49	0.01	6.97	10.73	3.89	11/03/2024 8:15	8.6	22.7	7.1	10.6	0.2
11/03/2024 8:30	8.62	34.54	0.01	6.86	10.74	3.99	11/03/2024 8:30	8.6	22.6	7.1	10.6	0.2
11/03/2024 8:45	8.88	49.07	0.02	7.33	10.69	4.11	11/03/2024 8:45	8.6	22.1	7.1	10.6	0.1
11/03/2024 9:00	8.93	49.47	0.02	7.41	10.67	4.13	11/03/2024 9:00	8.6	22.2	7.1	10.6	0.3
11/03/2024 9:15	8.94	49.68	0.02	7.36	10.67	4.02	11/03/2024 9:15	8.6	22.1	7.1	10.6	0.1
11/03/2024 9:30	8.97	49.74	0.02	7.30	10.67	4.02	11/03/2024 9:30	8.6	22.1	7.1	10.6	0.1
11/03/2024 9:45	8.73	30.26	0.01	7.09	10.68	3.95	11/03/2024 9:45	8.7	21.8	7.1	10.6	0.3
11/03/2024 10:00	8.70	28.91	0.01	6.93	10.71	3.85	11/03/2024 10:00	8.7	22.1	7.1	10.6	0.1
11/03/2024 10:15	8.71	28.53	0.01	6.97	10.72	3.86	11/03/2024 10:15	8.7	22.0	7.1	10.6	0.1
11/03/2024 10:30	8.73	28.74	0.01	6.87	10.71	3.88	11/03/2024 10:30	8.8	22.5	7.1	10.6	0.1
11/03/2024 10:45	9.08	49.56	0.02	7.35	10.65	4.04	11/03/2024 10:45	8.8	29.1	7.2	10.6	0.2
11/03/2024 11:00	9.16	51.61	0.02	7.29	10.63	4.00	11/03/2024 11:00	8.9	29.3	7.2	10.6	0.3
11/03/2024 11:15	9.21	54.90	0.02	7.39	10.61	4.12	11/03/2024 11:15	8.9	27.5	7.2	10.5	0.5
11/03/2024 11:30	9.22	54.80	0.02	7.33	10.62	4.36	11/03/2024 11:30	8.9	27.0	7.2	10.5	0.5
11/03/2024 11:45	8.9	34.8	0.0	7.1	10.6	4.5	11/03/2024 11:45	8.9	26.0	7.2	10.6	0.3
11/03/2024 12:00	8.9	33.0	0.0	6.9	10.7	4.7	11/03/2024 12:00	8.9	25.2	7.2	10.6	0.3
11/03/2024 12:15	9.2	52.3	0.0	7.3	10.6	4.4	11/03/2024 12:15	8.9	24.2	7.2	10.5	0.2
11/03/2024 12:30	9.3	52.8	0.0	7.3	10.6	4.3	11/03/2024 12:30	8.9	24.0	7.1	10.5	0.2
11/03/2024 12:45	9.3	52.6	0.0	7.4	10.6	4.1	11/03/2024 12:45	9.0	23.4	7.1	10.5	0.1
11/03/2024 13:00	9.3	52.1	0.0	7.3	10.6	4.0	11/03/2024 13:00	9.0	23.4	7.1	10.6	0.2
11/03/2024 13:15	9.1	32.0	0.0	7.2	10.6	4.1	11/03/2024 13:15	9.0	22.7	7.1	10.5	0.2
11/03/2024 13:30	9.0	30.3	0.0	6.9	10.6	3.9	11/03/2024 13:30	9.0	22.6	7.1	10.5	0.1
11/03/2024 13:45	9.0	29.6	0.0	7.0	10.7	4.0	11/03/2024 13:45	9.0	21.7	7.1	10.5	0.3
11/03/2024 14:00	9.2	44.1	0.0	7.1	10.6	4.1	11/03/2024 14:00	9.0	22.5	7.1	10.5	0.1
11/03/2024 14:15	9.4	50.9	0.0	7.4	10.6	4.0	11/03/2024 14:15	9.1	22.7	7.1	10.5	0.2
11/03/2024 14:30	9.4	51.8	0.0	7.3	10.6	3.9	11/03/2024 14:30	9.1	23.0	7.1	10.5	0.1
11/03/2024 14:45	9.5	52.2	0.0	7.4	10.6	3.9	11/03/2024 14:45	9.1	22.3	7.2	10.5	0.2
11/03/2024 15:00	9.5	52.2	0.0	7.3	10.6	4.0	11/03/2024 15:00	9.1	23.2	7.1	10.5	0.1
11/03/2024 15:15	9.2	31.2	0.0	7.1	10.6	3.9	11/03/2024 15:15	9.1	22.7	7.1	10.5	0.2
11/03/2024 15:30	9.1	30.0	0.0	7.1	10.6	3.8	11/03/2024 15:30	9.1	23.1	7.1	10.5	0.2
11/03/2024 15:45	9.1	29.7	0.0	7.0	10.6	4.2	11/03/2024 15:45	9.1	23.0	7.1	10.5	0.2
11/03/2024 16:00	9.2	36.8	0.0	6.9	10.6	3.9	11/03/2024 16:00	9.1	23.5	7.1	10.5	0.1
11/03/2024 16:15	9.4	52.5	0.0	7.4	10.6	5.0	11/03/2024 16:15	9.1	22.8	7.1	10.5	0.2
11/03/2024 16:30	9.4	52.9	0.0	7.3	10.6	3.8	11/03/2024 16:30	9.1	23.0	7.1	10.5	0.2
11/03/2024 16:45	9.4	52.9	0.0	7.4	10.6	3.9	11/03/2024 16:45	9.1	22.6	7.1	10.5	0.3
11/03/2024 17:00	9.4	52.8	0.0	7.4	10.6	3.8	11/03/2024 17:00	9.1	22.6	7.1	10.5	0.3
11/03/2024 17:15	9.1	32.0	0.0	7.2	10.6	4.0	11/03/2024 17:15	9.1	22.1	7.1	10.5	0.2
11/03/2024 17:30	9.0	29.7	0.0	6.9	10.6	3.9	11/03/2024 17:30	9.0	22.4	7.1	10.5	0.2
11/03/2024 17:45	9.0	29.3	0.0	7.0	10.6	3.9	11/03/2024 17:45	9.0	21.8	7.1	10.5	0.2
11/03/2024 18:00	9.0	33.7	0.0	6.9	10.7	4.3	11/03/2024 18:00	9.0	22.0	7.1	10.5	0.1
11/03/2024 18:15	9.3	51.9	0.0	7.4	10.6	3.9	11/03/2024 18:15	9.0	21.6	7.1	10.5	0.2
11/03/2024 18:30	9.3	52.1	0.0	7.3	10.6	3.9	11/03/2024 18:30	9.0	21.6	7.1	10.5	0.1
11/03/2024 18:45	9.0	30.2	0.0	7.1	10.6	3.9	11/03/2024 18:45	9.0	21.4	7.1	10.5	0.1
11/03/2024 19:00	9.0	28.7	0.0	7.1	10.6	3.9	11/03/2024 19:00	9.0	21.4	7.1	10.5	0.1
11/03/2024 19:15	9.1	47.5	0.0	7.1	10.7	3.9	11/03/2024 19:15	9.0	21.2	7.1	10.5	0.2
11/03/2024 19:30	9.2	51.7	0.0	7.4	10.6	3.9	11/03/2024 19:30	8.9	21.2	7.1	10.5	0.1
11/03/2024 19:45	9.3	52.0	0.0	7.5	10.6	3.8	11/03/2024 19:45	8.9	21.0	7.1	10.5	0.2
11/03/2024 20:00	9.3	52.0	0.0	7.3	10.6	4.1	11/03/2024 20:00	8.9	21.0	7.1	10.5	0.1
11/03/2024 20:15	9.2	52.1	0.0	7.4	10.6	3.8	11/03/2024 20:15	8.9	21.0	7.1	10.5	0.1
11/03/2024 20:30	9.2	52.1	0.0	7.3	10.6	3.9	11/03/2024 20:30	8.9	20.8	7.1	10.5	0.1
11/03/2024 20:45	9.0	30.8	0.0	7.2	10.6	4.0	11/03/2024 20:45	8.9	20.7	7.1	10.5	0.3
11/03/2024 21:00	8.9	28.5	0.0	6.9	10.7	3.9	11/03/2024 21:00	8.9	20.7	7.1	10.5	0.1
11/03/2024 21:15	8.9	27.9	0.0	7.0	10.7	4.0	11/03/2024 21:15	8.9	20.8	7.1	10.5	0.1
11/03/2024 21:30	8.9	28.3	0.0	6.9	10.7	3.9	11/03/2024 21:30	8.9	20.7	7.1	10.5	0.1
11/03/2024 21:45	9.2	51.6	0.0	7.4	10.6	3.9	11/03/2024 21:45	8.9	20.7	7.1	10.5	0.1
11/03/2024 22:00	9.1	45.9	0.0	7.2	10.6	6.3	11/03/2024 22:00	8.9	20.8	7.1	10.5	0.1
11/03/2024 22:15	9.2	54.8	0.0	7.4	10.6	4.0	11/03/2024 22:15	8.9	20.3	7.1	10.5	0.1
11/03/2024 22:30	9.0	33.1	0.0	7.2	10.6	3.8	11/03/2024 22:30	8.9	20.7	7.1	10.5	0.1
11/03/2024 22:45	8.9	28.4	0.0	7.0	10.7	3.9	11/03/2024 22:45	8.9	20.2	7.1	10.5	0.1
11/03/2024 23:00	8.9	28.1	0.0	7.1	10.7	4.0	11/03/2024 23:00	8.9	20.7	7.1	10.5	0.2
11/03/2024 23:15	9.2	53.6	0.0	7.4	10.6	3.9	11/03/2024 23:15	8.9	20.5	7.1	10.5	0.2
11/03/2024 23:30	9.2	54.4	0.0	7.4	10.6	3.9	11/03/2024 23:30	8.8	20.7	7.1	10.5	0.1
11/03/2024 23:45	9.2	54.5	0.0	7.5	10.6	4.0	11/03/2024 23:45	8.8	20.5	7.1	10.5	0.1