Eagle Mountain - Woodfibre Gas Pipeline Project

BCER Waste Discharge Permit Weekly Report

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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.

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

- Weekly upstream and downstream taken by Triton.
- 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.

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
BC Rail	2024-12-28 to 2024-12-29	2024-12-27	N/A Batch (in situ samples taken)	N/A-batch	300-400 GPM	328.88 m3	Yes

*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	2024-12-23	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	2023-12-23	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 15-minute intervals.

Receiving Environment Monitoring Details

- 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.

Summary-Woodfibre

Site Activities

- No exceedances this period.
- Weekly upstream, downstream and end of pipe taken by Triton.

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	2024-12-23	Yes-Appendix C	421m^3
Woodfibre	2024-12-24	Yes-Appendix C*lab sample day	496m^3
Woodfibre	2024-12-25	Yes-Appendix C	423m^3
Woodfibre	2024-12-26	Yes-Appendix C	478m^3
Woodfibre	2024-12-27	Yes-Appendix C	416m^3
Woodfibre	2024-12-28	Yes-Appendix C	468m^3
Woodfibre	2024-12-29	Yes-Appendix C	448m^3

*Max discharge is 1500m^3/day

Exceedances

No exceedances this reporting period.

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	2024-12-27	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	2024-12-27	Yes *	Full set of lab sample results, photo and documentation are provided in Appendix D.

***** Sondes set up to log temperature, specific conductivity, salinity (in PSU), pH, ORP, DO (mg/L), and turbidity (NTU) at 15-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.

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

BCR Site Batch Sample Analysis

FRONTIER-KEMPER MICHELS® joint venture	Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope		
Title	**BC Rail Batch Water Discharge Report**	**Revision:**	**0**
Data	**December 28th, 2024**	**Prepared by:** **Reviewed by:** **Date:**	**SD** **BC1** **January 6th , 2025**

Table of Contents:

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

Executive Summary and Field Notes:

On December 28th, FKM initiated a new batch discharge at the BC Rail site. The discharge began on December 28 at 15:00 PM and concluded on December 29 at 10:30 PM. Total volume of discharge water was 324.88 m3, with an average flow rate ranging between 300 to 400 GPM.

Table 1: Discharge details

Date	Start Time	Flow Rate (GPM)	Volume (m3)
28-Dec-2024	15:00 PM	300-400	201.5
29-Dec-2024	7:30 AM	300-400	127.38

Table 2: In-Situ Sample

Date	Time	pH	Temperature (°C)	DO (mg/L)	NTU	Conductivity (µS/cm)	ORP (mV)	Salinity (ppt)	Visible sheen
12/28/2024	04:04:31 PM	7.19	7.6	4.94	2.18	1117	214.9	0.56	No

FRONTIER-KEMPER MICHELS® joint venture	Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope		
Title	**BC Rail Batch Water Discharge Report**	**Revision:**	**0**
Data	**December 28th, 2024**	**Prepared by:** **Reviewed by:** **Date:**	**SD** **BC1** **January 6th , 2025**

Discharge Sample results:

Table 3: Lab Sample

Client Sample ID			WTP
Date Sampled			27-Dec-2024
Time Sampled			18:00
ALS Sample ID			VA24D4413-001
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water
Field Tests (Matrix: Water)			
Temperature, field	0.10	°C	8.10
pH, field	0.10	pH units	7.10
Physical Tests (Matrix: Water)			
Conductivity	2.0	µS/cm	1090
Alkalinity, bicarbonate (as CaCO3)	2.0	mg/L	371
Alkalinity, carbonate (as CaCO3)	2.0	mg/L	<2.0
Alkalinity, hydroxide (as CaCO3)	2.0	mg/L	<2.0
Alkalinity, phenolphthalein (as CaCO3)	2.0	mg/L	<2.0
Alkalinity, total (as CaCO3)	2.0	mg/L	371
Hardness (as CaCO3), dissolved	0.60	mg/L	<0.60
Hardness (as CaCO3), from total Ca/Mg	0.60	mg/L	<0.60
Oxidation-reduction potential [ORP]	0.10	mV	195
Solids, total dissolved [TDS]	10	mg/L	727
Solids, total suspended [TSS]	3.0	mg/L	<3.0
Turbidity	0.10	NTU	1.47
pH	0.10	pH units	7.13
Anions and Nutrients (Matrix: Water)			
Ammonia, total (as N)	0.0050	mg/L	0.0053
Bromide	0.050	mg/L	0.390
Chloride	0.50	mg/L	80.9
Fluoride	0.020	mg/L	0.143
Nitrate (as N)	0.0050	mg/L	<0.0250
Nitrite (as N)	0.0010	mg/L	<0.0050

Nitrogen, total	0.030	mg/L	1.41
Phosphorus, total	0.0020	mg/L	0.0433
Sulfate (as SO4)	0.30	mg/L	105
Ammonium (as NH4), field	0.0010	mg/L	0.0068
Organic / Inorganic Carbon (Matrix: Water)			
Carbon, dissolved organic [DOC]	0.50	mg/L	14.4
Carbon, total organic [TOC]	0.50	mg/L	15.9
Total Metals (Matrix: Water)			
Aluminum, total	0.0030	mg/L	0.0222
Antimony, total	0.00010	mg/L	0.00255
Arsenic, total	0.00010	mg/L	0.00216
Barium, total	0.00010	mg/L	0.00018
Beryllium, total	0.000100	mg/L	<0.000100
Bismuth, total	0.000050	mg/L	<0.000050
Boron, total	0.010	mg/L	0.030
Cadmium, total	0.0000050	mg/L	<0.0000200
Calcium, total	0.050	mg/L	0.165
Cesium, total	0.000010	mg/L	0.000585
Chromium, total	0.00050	mg/L	0.0135
Cobalt, total	0.00010	mg/L	<0.00010
Copper, total	0.00050	mg/L	0.00100
Iron, total	0.010	mg/L	0.094
Lead, total	0.000050	mg/L	0.000190
Lithium, total	0.0010	mg/L	0.0095
Magnesium, total	0.0050	mg/L	0.0428
Manganese, total	0.00010	mg/L	0.00024
Mercury, total	0.0000050	mg/L	<0.0000050
Molybdenum, total	0.000050	mg/L	0.0846
Nickel, total	0.00050	mg/L	0.00127
Phosphorus, total	0.050	mg/L	<0.050
Potassium, total	0.050	mg/L	10.6
Rubidium, total	0.00020	mg/L	0.0224
Selenium, total	0.000050	mg/L	0.000952
Silicon, total	0.10	mg/L	23.1

Silver, total	0.000010	mg/L	<0.000010
Sodium, total	0.050	mg/L	231
Strontium, total	0.00020	mg/L	0.00173
Sulfur, total	0.50	mg/L	35.3
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	<0.00030
Tungsten, total	0.00010	mg/L	0.00020
Uranium, total	0.000010	mg/L	0.000010
Vanadium, total	0.00050	mg/L	<0.00050
Zinc, total	0.0030	mg/L	0.0031
Zirconium, total	0.00020	mg/L	<0.00020
Dissolved Metals (Matrix: Water)			
Aluminum, dissolved	0.0010	mg/L	0.0208
Antimony, dissolved	0.00010	mg/L	0.00257
Arsenic, dissolved	0.00010	mg/L	0.00236
Barium, dissolved	0.00010	mg/L	<0.00010
Beryllium, dissolved	0.000100	mg/L	<0.000100
Bismuth, dissolved	0.000050	mg/L	<0.000050
Boron, dissolved	0.010	mg/L	0.029
Cadmium, dissolved	0.0000050	mg/L	<0.0000200
Calcium, dissolved	0.050	mg/L	0.164
Cesium, dissolved	0.000010	mg/L	0.000600
Chromium, dissolved	0.00050	mg/L	0.0137
Cobalt, dissolved	0.00010	mg/L	<0.00010
Copper, dissolved	0.00020	mg/L	0.00082
Iron, dissolved	0.010	mg/L	0.089
Lead, dissolved	0.000050	mg/L	0.000136
Lithium, dissolved	0.0010	mg/L	0.0098
Magnesium, dissolved	0.0050	mg/L	0.0401
Manganese, dissolved	0.00010	mg/L	0.00020
Mercury, dissolved	0.0000050	mg/L	<0.0000050
Molybdenum, dissolved	0.000050	mg/L	0.0846

Nickel, dissolved	0.00050	mg/L	0.00125
Phosphorus, dissolved	0.050	mg/L	<0.050
Potassium, dissolved	0.050	mg/L	11.5
Rubidium, dissolved	0.00020	mg/L	0.0235
Selenium, dissolved	0.000050	mg/L	0.00121
Silicon, dissolved	0.050	mg/L	23.6
Silver, dissolved	0.000010	mg/L	<0.000010
Sodium, dissolved	0.050	mg/L	242
Strontium, dissolved	0.00020	mg/L	0.00175
Sulfur, dissolved	0.50	mg/L	35.7
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	<0.00030
Tungsten, dissolved	0.00010	mg/L	0.00020
Uranium, dissolved	0.000010	mg/L	<0.000010
Vanadium, dissolved	0.00050	mg/L	<0.00050
Zinc, dissolved	0.0010	mg/L	0.0037
Zirconium, dissolved	0.00020	mg/L	<0.00020
Dissolved mercury filtration location			Field
Dissolved metals filtration location			Field
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

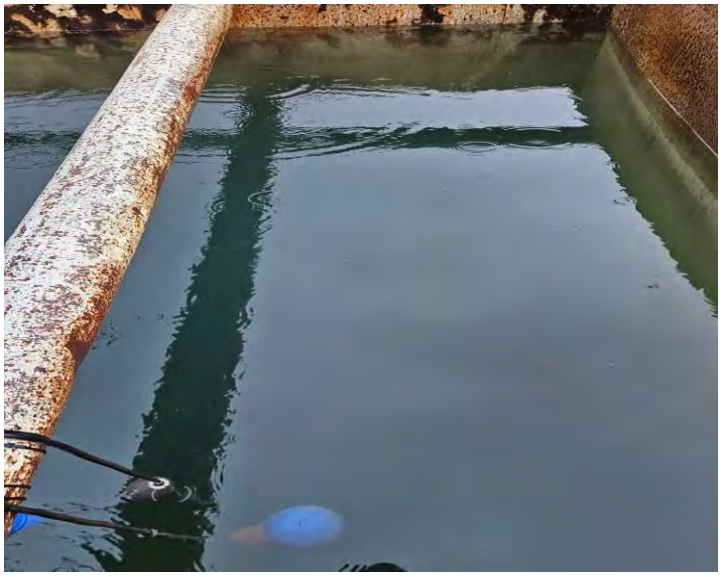
Tetrachloroethane, 1,1,2,2-	0.20	µg/L	<0.20
Trichloroethane, 1,1,2-	0.50	µg/L	<0.50
Trichlorofluoromethane	0.50	µg/L	<0.50
Volatile Organic Compounds [Drycleaning] (Matrix: Water)			
Carbon tetrachloride	0.50	µg/L	<0.50
Chloroethane	0.50	µg/L	<0.50
Dichloroethane, 1,1-	0.50	µg/L	<0.50
Dichloroethane, 1,2-	0.50	µg/L	<0.60
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
VHw (C6-C10)	100	µg/L	<100
LEPHw	250	µg/L	<250
VPHw	100	µg/L	<100
HEPHw	250	µg/L	<250
Hydrocarbons Surrogates (Matrix: Water)			
Bromobenzotrifluoride, 2- (EPH surrogate)	1.0	%	92.9
Dichlorotoluene, 3,4-	1.0	%	65.8
Volatile Organic Compounds Surrogates (Matrix: Water)			
Bromofluorobenzene, 4-	1.0	%	87.1
Difluorobenzene, 1,4-	1.0	%	101
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	<0.050
Polycyclic Aromatic Hydrocarbons Surrogates (Matrix: Water)			
Chrysene-d12	0.1	%	83.1
Naphthalene-d8	0.1	%	84.4
Phenanthrene-d10	0.1	%	82.1
Glycols (Matrix: Water)			
Diethylene glycol	5.0	mg/L	<5.0
Ethylene glycol	5.0	mg/L	8.3
Propylene glycol, 1,2-	5.0	mg/L	9.7
Triethylene glycol	5.0	mg/L	<5.0
Glycols, total (EG+DEG+PG)	10	mg/L	18

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**BC Rail Batch Water Discharge Report**	**Revision:**	**0**
Data	**December 28th, 2024**	**Prepared by:** **Reviewed by:** **Date:**	**SD** **BC1** **January 6th , 2025**

Photo:

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


BCR Site Batch Sample Lab Documentation

CERTIFICATE OF ANALYSIS

Work Order	: **VA24D4413**		
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 British Columbia Canada V7P 0A3	Address	: 8081 Lougheed Highway Burnaby BC Canada V5A 1W9
Telephone	: ----	Telephone	: +1 604 253 4188
Project	: ----	Date Samples Received	: 27-Dec-2024 20:00
PO	: ----	Date Analysis Commenced	: 27-Dec-2024
C-O-C number	: 20-977662	Issue Date	: 06-Jan-2025 08:44
Sampler	: ----		
Site	: BCR		
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.

Signatories	*Position*	*Laboratory Department*
Brooke Miller	Laboratory Analyst	Inorganics, Edmonton, Alberta
Chau Tran	Analyst	Metals, Burnaby, British Columbia
Courtney Cox	Analyst- General	Inorganics, Burnaby, British Columbia
Dinesha Hewabaddege	Analyst- General	Inorganics, Burnaby, British Columbia
Erika Vanegas	Lab Assistant	Metals, Burnaby, British Columbia
Hyunduck Suk	Analyst- General	Inorganics, Burnaby, British Columbia
Hyunduck Suk	Analyst- General	Metals, Burnaby, British Columbia
Monica Ko	Lab Assistant	Inorganics, Burnaby, British Columbia
Paolo Obillo	Account Manager Assistant	Administration, Burnaby, British Columbia
Paul Cushing	Team Leader - Organics	Organics, Burnaby, British Columbia
Tony Nguyen	Analyst	Metals, Burnaby, British Columbia

General Comments

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

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

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

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

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

Unit	*Description*
-	no units
°C	degrees celsius
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units
µg/L	micrograms per litre
µS/cm	microsiemens per centimetre

<: 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 (01/03/2025): This report has been amended and re-released to allow the reporting of additional analytical data.

Sample Comments

Sample	*Client Id*	*Comment*
VA24D4413-001	WTP	***Sample(001): Water sample for VOC analysis contained > 5% headspace. Results may be biased low.***

Qualifiers

Qualifier	Description
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
DLQ	Detection Limit raised due to co-eluting interference. Mass Spectrometry qualifier ion ratio did not meet acceptance criteria.
SUR-ND	Surrogate recovery marginally exceeded ALS DQO. Reported non-detect results for associated samples were deemed to be unaffected.

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WTP	----	----	----	----
					Client sampling date / time	27-Dec-2024 18:00	----	----	----	----
						VA24D4413-001	----	----	----	----
						Result	----	----	----	----
Field Tests										
pH, field	----	EF001/VA	0.10	pH units		7.10	----	----	----	----
Temperature, field	----	EF001/VA	0.10	°C		8.10	----	----	----	----
Physical Tests										
Alkalinity, bicarbonate (as CaCO3)	----	E290/VA	2.0	mg/L		371	----	----	----	----
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		371	----	----	----	----
Conductivity	----	E100/VA	2.0	µS/cm		1090	----	----	----	----
Hardness (as CaCO3), dissolved	----	EC100/VA	0.60	mg/L		<0.60	----	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L		<0.60	----	----	----	----
Oxidation-reduction potential [ORP]	----	E125/VA	0.10	mV		195	----	----	----	----
pH	----	E108/VA	0.10	pH units		7.13	----	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L		727	----	----	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L		<3.0	----	----	----	----
Turbidity	----	E121/VA	0.10	NTU		1.47	----	----	----	----
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L		0.0053	----	----	----	----
Ammonium (as NH4), field	14798-03-9	EC298A/VA	0.0010	mg/L		0.0068	----	----	----	----
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L		0.390	----	----	----	----
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L		80.9	----	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID: WTP	----	----	----	----
					Client sampling date / time: 27-Dec-2024 18:00	----	----	----	----
					VA24D4413-001	----	----	----	----
					Result	----	----	----	----
Anions and Nutrients									
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L	0.143	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L	<0.0250 DLDS	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L	<0.0050 DLDS	----	----	----	----
Nitrogen, total	7727-37-9	E366/VA	0.030	mg/L	1.41	----	----	----	----
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L	0.0433	----	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L	105	----	----	----	----
Organic / Inorganic Carbon									
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L	14.4	----	----	----	----
Carbon, total organic [TOC]	----	E355-L/VA	0.50	mg/L	15.9	----	----	----	----
Total Metals									
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L	0.0222	----	----	----	----
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L	0.00255	----	----	----	----
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L	0.00216	----	----	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L	0.00018	----	----	----	----
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	0.030	----	----	----	----
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L	<0.0000200 DLM	----	----	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L	0.165	----	----	----	----
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L	0.000585	----	----	----	----
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L	0.0135	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WTP	----	----	----	----
					Client sampling date / time	27-Dec-2024 18:00	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24D4413-001	----	----	----	----
						Result	----	----	----	----
Total Metals										
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L		<0.00010	----	----	----	----
Copper, total	7440-50-8	E420/VA	0.00050	mg/L		0.00100	----	----	----	----
Iron, total	7439-89-6	E420/VA	0.010	mg/L		0.094	----	----	----	----
Lead, total	7439-92-1	E420/VA	0.000050	mg/L		0.000190	----	----	----	----
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L		0.0095	----	----	----	----
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L		0.0428	----	----	----	----
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L		0.00024	----	----	----	----
Mercury, total	7439-97-6	E508/VA	0.0000050	mg/L		<0.0000050	----	----	----	----
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L		0.0846	----	----	----	----
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L		0.00127	----	----	----	----
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L		<0.050	----	----	----	----
Potassium, total	7440-09-7	E420/VA	0.050	mg/L		10.6	----	----	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L		0.0224	----	----	----	----
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L		0.000952	----	----	----	----
Silicon, total	7440-21-3	E420/VA	0.10	mg/L		23.1	----	----	----	----
Silver, total	7440-22-4	E420/VA	0.000010	mg/L		<0.000010	----	----	----	----
Sodium, total	7440-23-5	E420/VA	0.050	mg/L		231	----	----	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L		0.00173	----	----	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L		35.3	----	----	----	----
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)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID: WTP	----	----	----	----
					Client sampling date / time: 27-Dec-2024 18:00	----	----	----	----
					VA24D4413-001	----	----	----	----
					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	<0.00030	----	----	----	----
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L	0.00020	----	----	----	----
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L	0.000010	----	----	----	----
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L	<0.00050	----	----	----	----
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L	0.0031	----	----	----	----
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	0.0208	----	----	----	----
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L	0.00257	----	----	----	----
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L	0.00236	----	----	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L	<0.00010	----	----	----	----
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	0.029	----	----	----	----
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L	<0.0000200 DLM	----	----	----	----
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L	0.164	----	----	----	----
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L	0.000600	----	----	----	----
Chromium, dissolved	7440-47-3	E421/VA	0.00050	mg/L	0.0137	----	----	----	----
Cobalt, dissolved	7440-48-4	E421/VA	0.00010	mg/L	<0.00010	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WTP	----	----	----	----
					Client sampling date / time	27-Dec-2024 18:00	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24D4413-001	----	----	----	----
						Result	----	----	----	----
Dissolved Metals										
Copper, dissolved	7440-50-8	E421/VA	0.00020	mg/L		0.00082	----	----	----	----
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L		0.089	----	----	----	----
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L		0.000136	----	----	----	----
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L		0.0098	----	----	----	----
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L		0.0401	----	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L		0.00020	----	----	----	----
Mercury, dissolved	7439-97-6	E509/VA	0.0000050	mg/L		<0.0000050	----	----	----	----
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L		0.0846	----	----	----	----
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L		0.00125	----	----	----	----
Phosphorus, dissolved	7723-14-0	E421/VA	0.050	mg/L		<0.050	----	----	----	----
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L		11.5	----	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L		0.0235	----	----	----	----
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L		0.00121	----	----	----	----
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L		23.6	----	----	----	----
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L		<0.000010	----	----	----	----
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L		242	----	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L		0.00175	----	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L		35.7	----	----	----	----
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)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID: WTP	----	----	----	----
					Client sampling date / time: 27-Dec-2024 18:00	----	----	----	----
					VA24D4413-001	----	----	----	----
					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	<0.00030	----	----	----	----
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L	0.00020	----	----	----	----
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L	<0.000010	----	----	----	----
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L	<0.00050	----	----	----	----
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L	0.0037	----	----	----	----
Zirconium, dissolved	7440-67-7	E421/VA	0.00020	mg/L	<0.00020	----	----	----	----
Dissolved mercury filtration location	----	EP509/VA	-	-	Field	----	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	-	Field	----	----	----	----
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	----	----	----	----
					Client sampling date / time	27-Dec-2024 18:00	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24D4413-001	----	----	----	----
						Result	----	----	----	----
Volatile Organic Compounds										
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	----	----	----	----
Volatile Organic Compounds [Drycleaning]										
Carbon tetrachloride	56-23-5	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Chloroethane	75-00-3	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloroethane, 1,1-	75-34-3	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloroethane, 1,2-	107-06-2	E611C/VA	0.50	µg/L		<0.60 DLQ	----	----	----	----
Dichloroethylene, 1,1-	75-35-4	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloroethylene, cis-1,2-	156-59-2	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloroethylene, trans-1,2-	156-60-5	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloromethane	75-09-2	E611C/VA	1.0	µg/L		<1.0	----	----	----	----
Dichloropropylene, trans-1,3-	10061-02-6	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Tetrachloroethylene	127-18-4	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Trichloroethane, 1,1,1-	71-55-6	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Trichloroethylene	79-01-6	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Vinyl chloride	75-01-4	E611C/VA	0.40	µg/L		<0.40	----	----	----	----
Volatile Organic Compounds [Fuels]										
Benzene	71-43-2	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Ethylbenzene	100-41-4	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C/VA	0.50	µg/L		<0.50	----	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID: WTP	----	----	----	----
					Client sampling date / time: 27-Dec-2024 18:00	----	----	----	----
					VA24D4413-001	----	----	----	----
					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	----	----	----	----
VHw (C6-C10)	----	E581.VH+F1/VA	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	%	92.9	----	----	----	----
Dichlorotoluene, 3,4-	95-75-0	E581.VH+F1/VA	1.0	%	65.8 SUR-ND	----	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID: WTP	----	----	----	----
					Client sampling date / time: 27-Dec-2024 18:00	----	----	----	----
					VA24D4413-001	----	----	----	----
					Result	----	----	----	----
Volatile Organic Compounds Surrogates									
Bromofluorobenzene, 4-	460-00-4	E611C/VA	1.0	%	87.1	----	----	----	----
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	----	----	----	----
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	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WTP	----	----	----	----
					Client sampling date / time	27-Dec-2024 18:00	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24D4413-001	----	----	----	----
						Result	----	----	----	----
Polycyclic Aromatic Hydrocarbons										
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	----	----	----	----
Polycyclic Aromatic Hydrocarbons Surrogates										
Chrysene-d12	1719-03-5	E641A/VA	0.1	%		83.1	----	----	----	----
Naphthalene-d8	1146-65-2	E641A/VA	0.1	%		84.4	----	----	----	----
Phenanthrene-d10	1517-22-2	E641A/VA	0.1	%		82.1	----	----	----	----
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		8.3	----	----	----	----
Propylene glycol, 1,2-	57-55-6	E680E/VA	5.0	mg/L		9.7	----	----	----	----
Triethylene glycol	112-27-6	E680E/VA	5.0	mg/L		<5.0	----	----	----	----
Glycols, total (EG+DEG+PG)	----	E680E/VA	10	mg/L		18	----	----	----	----
Glycols Surrogates										
Propanediol, 1,3-	504-63-2	E680E/VA	1.0	%		99.1	----	----	----	----

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

ALS Canada Ltd.

QUALITY CONTROL REPORT

Work Order	: **VA24D4413**	Page	: 1 of 22
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	: 27-Dec-2024 20:00
PO	: ----	Date Analysis Commenced	: 27-Dec-2024
C-O-C number	: 20-977662	Issue Date	: 06-Jan-2025 08:43
Sampler	: ----		
Site	: BCR		
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.

Signatories	*Position*	*Laboratory Department*
Brooke Miller	Laboratory Analyst	Edmonton Inorganics, Edmonton, Alberta
Chau Tran	Analyst	Vancouver Metals, Burnaby, British Columbia
Courtney Cox	Analyst- General	Vancouver Inorganics, Burnaby, British Columbia
Dinesha Hewabaddege	Analyst- General	Vancouver Inorganics, Burnaby, British Columbia
Erika Vanegas	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
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Monica Ko	Lab Assistant	Vancouver Inorganics, Burnaby, British Columbia
Paolo Obillo	Account Manager Assistant	Vancouver Administration, Burnaby, British Columbia
Paul Cushing	Team Leader - Organics	Vancouver Organics, Burnaby, British Columbia
Tony Nguyen	Analyst	Vancouver Metals, 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: 1824244)											
VA24D4413-001	WTP	Turbidity	----	E121	0.10	NTU	1.47	1.50	2.02%	15%	----
Physical Tests (QC Lot: 1824245)											
VA24D4413-001	WTP	Oxidation-reduction potential [ORP]	----	E125	0.10	mV	195	194	0.359%	10%	----
Physical Tests (QC Lot: 1824258)											
VA24D4413-001	WTP	Solids, total dissolved [TDS]	----	E162	20	mg/L	727	744	2.31%	20%	----
Physical Tests (QC Lot: 1824259)											
VA24D4413-001	WTP	pH	----	E108	0.10	pH units	7.13	7.17	0.559%	4%	----
Physical Tests (QC Lot: 1824261)											
VA24D4413-001	WTP	Conductivity	----	E100	2.0	µS/cm	1090	1100	1.10%	10%	----
Physical Tests (QC Lot: 1824262)											
VA24D4413-001	WTP	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1824246)											
VA24D4413-001	WTP	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0053	0.0051	0.0001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1827968)											
VA24D4412-002	Anonymous	Nitrogen, total	7727-37-9	E366	0.030	mg/L	0.074	0.074	0.0005	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1827969)											
VA24D4411-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0042	0.0046	0.0004	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1828084)											
VA25A0032-001	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.117	0.114	0.002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1828085)											
VA25A0032-001	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	0.78	0.77	0.008	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1828086)											
VA25A0032-001	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: 1828087)											
VA25A0032-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.456	0.456	0.0586%	20%	----
Anions and Nutrients (QC Lot: 1828088)											
VA25A0032-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0220	0.0221	0.177%	20%	----
Anions and Nutrients (QC Lot: 1828089)											
VA25A0032-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	99.8	100	0.247%	20%	----
Organic / Inorganic Carbon (QC Lot: 1827966)											

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*
Organic / Inorganic Carbon (QC Lot: 1827966) - continued											
VA24D4411-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1827967)											
VA24D4413-001	WTP	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	15.9	16.5	3.67%	20%	----
Total Metals (QC Lot: 1824242)											
VA24D4413-001	WTP	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0222	0.0220	0.0002	Diff <2x LOR	----
		Antimony, total	7440-36-0	E420	0.00010	mg/L	0.00255	0.00259	1.50%	20%	----
		Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00216	0.00214	1.08%	20%	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.00018	0.00016	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	0.030	0.030	0.0001	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E420	0.0000200	mg/L	<0.0000200	<0.0000200	0	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	0.165	0.164	0.0010	Diff <2x LOR	----
		Cesium, total	7440-46-2	E420	0.000010	mg/L	0.000585	0.000598	2.23%	20%	----
		Chromium, total	7440-47-3	E420	0.00050	mg/L	0.0135	0.0138	2.78%	20%	----
		Cobalt, total	7440-48-4	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Copper, total	7440-50-8	E420	0.00050	mg/L	0.00100	0.00097	0.00003	Diff <2x LOR	----
		Iron, total	7439-89-6	E420	0.010	mg/L	0.094	0.096	0.002	Diff <2x LOR	----
		Lead, total	7439-92-1	E420	0.000050	mg/L	0.000190	0.000188	0.000002	Diff <2x LOR	----
		Lithium, total	7439-93-2	E420	0.0010	mg/L	0.0095	0.0095	0.00007	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	0.0428	0.0423	0.0006	Diff <2x LOR	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.00024	0.00023	0.00002	Diff <2x LOR	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.0846	0.0872	3.14%	20%	----
		Nickel, total	7440-02-0	E420	0.00050	mg/L	0.00127	0.00127	0.000007	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	10.6	10.9	2.75%	20%	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.0224	0.0224	0.276%	20%	----
		Selenium, total	7782-49-2	E420	0.000050	mg/L	0.000952	0.000920	3.42%	20%	----
		Silicon, total	7440-21-3	E420	0.10	mg/L	23.1	23.0	0.212%	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	231	234	0.948%	20%	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.00173	0.00179	0.00006	Diff <2x LOR	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	35.3	35.2	0.133%	20%	----
		Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	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: 1824242) - continued											
VA24D4413-001	WTP	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	<0.00030	0.00033	0.00003	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E420	0.00010	mg/L	0.00020	0.00022	0.00002	Diff <2x LOR	----
		Uranium, total	7440-61-1	E420	0.000010	mg/L	0.000010	<0.000010	0.0000001	Diff <2x LOR	----
		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	0.0031	0.0033	0.0002	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: 1824818)											
FJ2403906-001	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	0.0000052	<0.0000050	0.0000002	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1824243)											
VA24D4413-001	WTP	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0208	0.0197	5.44%	20%	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00257	0.00260	1.04%	20%	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00236	0.00236	0.143%	20%	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		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	0.029	0.030	0.0006	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000200	mg/L	<0.0000200	<0.0000200	0	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	0.164	0.159	0.005	Diff <2x LOR	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	0.000600	0.000598	0.271%	20%	----
		Chromium, dissolved	7440-47-3	E421	0.00050	mg/L	0.0137	0.0137	0.281%	20%	----
		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	0.00082	0.00082	0.000005	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	0.089	0.088	0.0007	Diff <2x LOR	----
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	0.000136	0.000130	0.000006	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0098	0.0096	0.0001	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	0.0401	0.0425	0.0024	Diff <2x LOR	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00020	0.00018	0.00002	Diff <2x LOR	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.0846	0.0852	0.633%	20%	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00125	0.00125	0.000006	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	11.5	11.1	3.79%	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: 1824243) - continued											
VA24D4413-001	WTP	Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.0235	0.0236	0.590%	20%	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.00121	0.00129	6.50%	20%	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	23.6	23.6	0.203%	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	242	243	0.684%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.00175	0.00175	0.000003	Diff <2x LOR	----
		Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	35.7	35.9	0.418%	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	0.00020	0.00019	0.000007	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		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	0.0037	0.0032	0.0005	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: 1824822)											
FJ2403906-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Aggregate Organics (QC Lot: 1828988)											
VA24D4413-001	WTP	Phenols, total (4AAP)	----	E562	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 1828456)											
VA24D4366-004	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	----

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: 1828456) - continued											
VA24D4366-004	Anonymous	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	----
Hydrocarbons (QC Lot: 1828457)											
VA24D4366-004	Anonymous	VHw (C6-C10)	----	E581.VH+F1	100	µg/L	<100	<100	0.0%	30%	----
Glycols (QC Lot: 1827913)											
VA24D4413-001	WTP	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	8.3	8.9	0.6	Diff <2x LOR	----
		Propylene glycol, 1,2-	57-55-6	E680E	5.0	mg/L	9.7	10.4	0.7	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: 1824244)						
Turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 1824258)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1824260)						
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: 1824261)						
Conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 1824262)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Anions and Nutrients (QCLot: 1824246)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1827968)						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
Anions and Nutrients (QCLot: 1827969)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 1828084)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1828085)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1828086)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1828087)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1828088)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1828089)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Organic / Inorganic Carbon (QCLot: 1827966)						

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Organic / Inorganic Carbon (QCLot: 1827966) - continued						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1827967)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Total Metals (QCLot: 1824242)						
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: 1824242) - 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: 1824818)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1824243)						
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	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1824243) - 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: 1824822)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Aggregate Organics (QCLot: 1828988)						
Phenols, total (4AAP)	----	E562	0.001	mg/L	<0.0010	----
Volatile Organic Compounds (QCLot: 1828456)						
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: 1828456) - 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: 1828338)						
EPH (C10-C19)	----	E601A	250	µg/L	<250	----
EPH (C19-C32)	----	E601A	250	µg/L	<250	----
Hydrocarbons (QCLot: 1828457)						
VHw (C6-C10)	----	E581.VH+F1	100	µg/L	<100	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1828339)						
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	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 1828339) - continued						
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	----
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: 1827913)						
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: 1824244)									
Turbidity	----	E121	0.1	NTU	200 NTU	100.0	85.0	115	----
Physical Tests (QCLot: 1824258)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	106	85.0	115	----
Physical Tests (QCLot: 1824259)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 1824260)									
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	111	75.0	125	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	103	85.0	115	----
Physical Tests (QCLot: 1824261)									
Conductivity	----	E100	1	µS/cm	147 µS/cm	95.8	90.0	110	----
Physical Tests (QCLot: 1824262)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	101	85.0	115	----
Anions and Nutrients (QCLot: 1824246)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	100	85.0	115	----
Anions and Nutrients (QCLot: 1827968)									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1827969)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	95.5	80.0	120	----
Anions and Nutrients (QCLot: 1828084)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	98.7	90.0	110	----
Anions and Nutrients (QCLot: 1828085)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	99.4	90.0	110	----
Anions and Nutrients (QCLot: 1828086)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	103	85.0	115	----
Anions and Nutrients (QCLot: 1828087)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	99.4	90.0	110	----
Anions and Nutrients (QCLot: 1828088)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	97.6	90.0	110	----
Anions and Nutrients (QCLot: 1828089)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	99.2	90.0	110	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report: Spike: Target Concentration	Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High	Qualifier
Organic / Inorganic Carbon (QCLot: 1827966)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	99.6	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1827967)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	101	80.0	120	----
Total Metals (QCLot: 1824242)									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	98.6	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	96.9	80.0	120	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	101	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	99.2	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	94.8	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	96.9	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	97.7	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	95.4	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	95.1	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	97.2	80.0	120	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	97.7	80.0	120	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	95.3	80.0	120	----
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	93.6	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	101	80.0	120	----
Lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	97.8	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	89.4	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	96.8	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	93.8	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	102	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	93.2	80.0	120	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	92.1	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	95.8	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	98.2	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	97.0	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	91.5	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	97.5	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	100	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	90.6	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	103	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	99.9	80.0	120	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Target Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1824242) - continued									
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	93.9	80.0	120	----
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	99.3	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	94.2	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	93.6	80.0	120	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	95.2	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	94.6	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	98.9	80.0	120	----
Total Metals (QCLot: 1824818)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	93.8	80.0	120	----
Dissolved Metals (QCLot: 1824243)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	100	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	98.3	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	100	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	96.2	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	93.9	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	99.0	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	96.2	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	95.8	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	98.3	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	97.1	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	97.2	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	94.5	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	102	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	97.3	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	91.9	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	97.5	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	105	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	93.1	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	88.7	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	96.3	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	98.2	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	95.2	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: 1824243) - continued									
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	106	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	92.8	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	97.9	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	93.4	80.0	120	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	100	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	98.2	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	92.6	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	100	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	96.7	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	99.5	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	95.8	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	96.9	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	99.1	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	102	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	98.2	80.0	120	----
Aggregate Organics (QCLot: 1828988)									
Phenols, total (4AAP)	----	E562	0.001	mg/L	0.02 mg/L	102	85.0	115	----
Volatile Organic Compounds (QCLot: 1828456)									
Benzene	71-43-2	E611C	0.5	µg/L	100 µg/L	93.5	70.0	130	----
Bromodichloromethane	75-27-4	E611C	0.5	µg/L	100 µg/L	90.8	70.0	130	----
Bromoform	75-25-2	E611C	0.5	µg/L	100 µg/L	104	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	100	70.0	130	----
Chloroethane	75-00-3	E611C	0.5	µg/L	100 µg/L	131	60.0	140	----
Chloroform	67-66-3	E611C	0.5	µg/L	100 µg/L	93.8	70.0	130	----
Chloromethane	74-87-3	E611C	5	µg/L	100 µg/L	139	60.0	140	----
Dibromochloromethane	124-48-1	E611C	0.5	µg/L	100 µg/L	97.8	70.0	130	----
Dichlorobenzene, 1,2-	95-50-1	E611C	0.5	µg/L	100 µg/L	102	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	103	70.0	130	----
Dichloroethane, 1,2-	107-06-2	E611C	0.5	µg/L	100 µg/L	92.1	70.0	130	----
Dichloroethylene, 1,1-	75-35-4	E611C	0.5	µg/L	100 µg/L	96.9	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: 1828456) - continued									
Dichloroethylene, cis-1,2-	156-59-2	E611C	0.5	µg/L	100 µg/L	93.3	70.0	130	----
Dichloroethylene, trans-1,2-	156-60-5	E611C	0.5	µg/L	100 µg/L	96.7	70.0	130	----
Dichloromethane	75-09-2	E611C	1	µg/L	100 µg/L	94.0	70.0	130	----
Dichloropropane, 1,2-	78-87-5	E611C	0.5	µg/L	100 µg/L	94.5	70.0	130	----
Dichloropropylene, cis-1,3-	10061-01-5	E611C	0.5	µg/L	100 µg/L	86.8	70.0	130	----
Dichloropropylene, trans-1,3-	10061-02-6	E611C	0.5	µg/L	100 µg/L	94.1	70.0	130	----
Ethylbenzene	100-41-4	E611C	0.5	µg/L	100 µg/L	98.3	70.0	130	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	0.5	µg/L	100 µg/L	108	70.0	130	----
Styrene	100-42-5	E611C	0.5	µg/L	100 µg/L	99.4	70.0	130	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	0.5	µg/L	100 µg/L	106	70.0	130	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	0.2	µg/L	100 µg/L	100	70.0	130	----
Tetrachloroethylene	127-18-4	E611C	0.5	µg/L	100 µg/L	98.4	70.0	130	----
Toluene	108-88-3	E611C	0.4	µg/L	100 µg/L	96.7	70.0	130	----
Trichloroethane, 1,1,1-	71-55-6	E611C	0.5	µg/L	100 µg/L	101	70.0	130	----
Trichloroethane, 1,1,2-	79-00-5	E611C	0.5	µg/L	100 µg/L	94.7	70.0	130	----
Trichloroethylene	79-01-6	E611C	0.5	µg/L	100 µg/L	94.6	70.0	130	----
Trichlorofluoromethane	75-69-4	E611C	0.5	µg/L	100 µg/L	115	60.0	140	----
Vinyl chloride	75-01-4	E611C	0.4	µg/L	100 µg/L	138	60.0	140	----
Xylene, m+p-	179601-23-1	E611C	0.4	µg/L	200 µg/L	98.0	70.0	130	----
Xylene, o-	95-47-6	E611C	0.3	µg/L	100 µg/L	98.6	70.0	130	----
Hydrocarbons (QCLot: 1828338)									
EPH (C10-C19)	----	E601A	250	µg/L	6490 µg/L	103	70.0	130	----
EPH (C19-C32)	----	E601A	250	µg/L	3360 µg/L	104	70.0	130	----
Hydrocarbons (QCLot: 1828457)									
VHw (C6-C10)	----	E581.VH+F1	100	µg/L	6310 µg/L	71.3	70.0	130	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1828339)									
Acenaphthene	83-32-9	E641A	0.01	µg/L	0.5 µg/L	103	60.0	130	----
Acenaphthylene	208-96-8	E641A	0.01	µg/L	0.5 µg/L	101	60.0	130	----
Acridine	260-94-6	E641A	0.01	µg/L	0.5 µg/L	102	60.0	130	----
Anthracene	120-12-7	E641A	0.01	µg/L	0.5 µg/L	97.5	60.0	130	----
Benz(a)anthracene	56-55-3	E641A	0.01	µg/L	0.5 µg/L	86.4	60.0	130	----
Benzo(a)pyrene	50-32-8	E641A	0.005	µg/L	0.5 µg/L	104	60.0	130	----
Benzo(b+j)fluoranthene	n/a	E641A	0.01	µg/L	0.5 µg/L	109	60.0	130	----
Benzo(g,h,i)perylene	191-24-2	E641A	0.01	µg/L	0.5 µg/L	99.4	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: 1828339) - continued									
Benzo(k)fluoranthene	207-08-9	E641A	0.01	µg/L	0.5 µg/L	103	60.0	130	----
Chrysene	218-01-9	E641A	0.01	µg/L	0.5 µg/L	91.0	60.0	130	----
Dibenz(a,h)anthracene	53-70-3	E641A	0.005	µg/L	0.5 µg/L	102	60.0	130	----
Fluoranthene	206-44-0	E641A	0.01	µg/L	0.5 µg/L	105	60.0	130	----
Fluorene	86-73-7	E641A	0.01	µg/L	0.5 µg/L	101	60.0	130	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.01	µg/L	0.5 µg/L	95.0	60.0	130	----
Methylnaphthalene, 1-	90-12-0	E641A	0.01	µg/L	0.5 µg/L	96.0	60.0	130	----
Methylnaphthalene, 2-	91-57-6	E641A	0.01	µg/L	0.5 µg/L	105	60.0	130	----
Naphthalene	91-20-3	E641A	0.05	µg/L	0.5 µg/L	102	50.0	130	----
Phenanthrene	85-01-8	E641A	0.02	µg/L	0.5 µg/L	103	60.0	130	----
Pyrene	129-00-0	E641A	0.01	µg/L	0.5 µg/L	101	60.0	130	----
Quinoline	91-22-5	E641A	0.05	µg/L	0.5 µg/L	109	60.0	130	----
Glycols (QCLot: 1827913)									
Diethylene glycol	111-46-6	E680E	5	mg/L	25 mg/L	102	70.0	130	----
Ethylene glycol	107-21-1	E680E	5	mg/L	25 mg/L	103	70.0	130	----
Propylene glycol, 1,2-	57-55-6	E680E	5	mg/L	25 mg/L	102	70.0	130	----
Triethylene glycol	112-27-6	E680E	5	mg/L	25 mg/L	105	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: 1827968)										
VA24D4413-001	WTP	Nitrogen, total	7727-37-9	E366	2.08 mg/L	2 mg/L	104	70.0	130	----
Anions and Nutrients (QCLot: 1827969)										
VA24D4412-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0486 mg/L	0.05 mg/L	97.3	70.0	130	----
Anions and Nutrients (QCLot: 1828084)										
VA25A0032-002	Anonymous	Fluoride	16984-48-8	E235.F	0.998 mg/L	1 mg/L	99.8	75.0	125	----
Anions and Nutrients (QCLot: 1828085)										
VA25A0032-002	Anonymous	Chloride	16887-00-6	E235.Cl	100 mg/L	100 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1828086)										
VA25A0032-002	Anonymous	Bromide	24959-67-9	E235.Br-L	0.507 mg/L	0.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1828087)										
VA25A0032-002	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	2.48 mg/L	2.5 mg/L	99.1	75.0	125	----
Anions and Nutrients (QCLot: 1828088)										
VA25A0032-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.483 mg/L	0.5 mg/L	96.5	75.0	125	----
Anions and Nutrients (QCLot: 1828089)										
VA25A0032-002	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	97.2 mg/L	100 mg/L	97.2	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1827966)										
VA24D4412-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	5.01 mg/L	5 mg/L	100	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1827967)										
VA24D4539-001	Anonymous	Carbon, total organic [TOC]	----	E355-L	6.37 mg/L	5 mg/L	127	70.0	130	----
Total Metals (QCLot: 1824818)										
VA24D4393-001	Anonymous	Mercury, total	7439-97-6	E508	ND mg/L	----	ND	70.0	130	----
Dissolved Metals (QCLot: 1824822)										
VA24D4396-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000964 mg/L	0 mg/L	96.4	70.0	130	----
Aggregate Organics (QCLot: 1828988)										
VA24D4413-001	WTP	Phenols, total (4AAP)	----	E562	0.0211 mg/L	0.02 mg/L	106	75.0	125	----
Volatile Organic Compounds (QCLot: 1828456)										
VA24D4413-001	WTP	Benzene	71-43-2	E611C	101 µg/L	100 µg/L	101	60.0	140	----
		Bromodichloromethane	75-27-4	E611C	91.5 µg/L	100 µg/L	91.5	60.0	140	----
		Bromoform	75-25-2	E611C	94.7 µg/L	100 µg/L	94.7	60.0	140	----
		Carbon tetrachloride	56-23-5	E611C	106 µg/L	100 µg/L	106	60.0	140	----
		Chlorobenzene	108-90-7	E611C	99.5 µg/L	100 µg/L	99.5	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: 1828456) - continued										
VA24D4413-001	WTP	Chloroethane	75-00-3	E611C	136 µg/L	100 µg/L	136	50.0	150	----
		Chloroform	67-66-3	E611C	97.3 µg/L	100 µg/L	97.3	60.0	140	----
		Chloromethane	74-87-3	E611C	129 µg/L	100 µg/L	129	50.0	150	----
		Dibromochloromethane	124-48-1	E611C	91.6 µg/L	100 µg/L	91.6	60.0	140	----
		Dichlorobenzene, 1,2-	95-50-1	E611C	103 µg/L	100 µg/L	103	60.0	140	----
		Dichlorobenzene, 1,3-	541-73-1	E611C	105 µg/L	100 µg/L	105	60.0	140	----
		Dichlorobenzene, 1,4-	106-46-7	E611C	105 µg/L	100 µg/L	105	60.0	140	----
		Dichloroethane, 1,1-	75-34-3	E611C	112 µg/L	100 µg/L	112	60.0	140	----
		Dichloroethane, 1,2-	107-06-2	E611C	90.1 µg/L	100 µg/L	90.1	60.0	140	----
		Dichloroethylene, 1,1-	75-35-4	E611C	101 µg/L	100 µg/L	101	60.0	140	----
		Dichloroethylene, cis-1,2-	156-59-2	E611C	98.6 µg/L	100 µg/L	98.6	60.0	140	----
		Dichloroethylene, trans-1,2-	156-60-5	E611C	101 µg/L	100 µg/L	101	60.0	140	----
		Dichloromethane	75-09-2	E611C	95.9 µg/L	100 µg/L	95.9	60.0	140	----
		Dichloropropane, 1,2-	78-87-5	E611C	102 µg/L	100 µg/L	102	60.0	140	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611C	91.5 µg/L	100 µg/L	91.5	60.0	140	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611C	95.3 µg/L	100 µg/L	95.3	60.0	140	----
		Ethylbenzene	100-41-4	E611C	106 µg/L	100 µg/L	106	60.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	109 µg/L	100 µg/L	109	60.0	140	----
		Styrene	100-42-5	E611C	99.9 µg/L	100 µg/L	99.9	60.0	140	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	103 µg/L	100 µg/L	103	60.0	140	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	96.5 µg/L	100 µg/L	96.5	60.0	140	----
		Tetrachloroethylene	127-18-4	E611C	102 µg/L	100 µg/L	102	60.0	140	----
		Toluene	108-88-3	E611C	103 µg/L	100 µg/L	103	60.0	140	----
		Trichloroethane, 1,1,1-	71-55-6	E611C	109 µg/L	100 µg/L	109	60.0	140	----
		Trichloroethane, 1,1,2-	79-00-5	E611C	90.2 µg/L	100 µg/L	90.2	60.0	140	----
		Trichloroethylene	79-01-6	E611C	101 µg/L	100 µg/L	101	60.0	140	----
		Trichlorofluoromethane	75-69-4	E611C	75.8 µg/L	100 µg/L	75.8	50.0	150	----
		Vinyl chloride	75-01-4	E611C	131 µg/L	100 µg/L	131	50.0	150	----
		Xylene, m+p-	179601-23-1	E611C	204 µg/L	200 µg/L	102	60.0	140	----
		Xylene, o-	95-47-6	E611C	104 µg/L	100 µg/L	104	60.0	140	----
Hydrocarbons (QCLot: 1828457)										
VA24D4366-005	Anonymous	VHw (C6-C10)	----	E581.VH+F1	4450 µg/L	6310 µg/L	70.5	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: 1824245)									
QC-1824245-001	RM	Oxidation-reduction potential [ORP]	----	E125	220 mV	99.7	95.0	105	----

ALS Canada Ltd.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **VA24D4413**	Page	: 1 of 15
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	: 27-Dec-2024 20:00
PO	: ----	Issue Date	: 06-Jan-2025 08:43
C-O-C number	: 20-977662		
Sampler	: ----		
Site	: BCR		
Quote number	: WTP Discharge		
No. of samples received	: 1		
No. of samples analysed	: 1		

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.
- Test sample Surrogate recovery outliers exist for all regular sample matrices - please see following pages for full details.

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.

Regular Sample Surrogates

Sub-Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Result	Limits	Comment
Samples Submitted							
Hydrocarbons Surrogates	VA24D4413-001	WTP	Dichlorotoluene, 3,4-	95-75-0	65.8 %	70.0-130 %	Recovery less than lower data quality objective

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* Rec	*Holding Times* Actual	*Eval*	*Analysis Date*	*Holding Times* Rec	*Holding Times* Actual	*Eval*
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid) WTP	E562	27-Dec-2024	03-Jan-2025	28 days	7 days	✓	03-Jan-2025	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) WTP	E298	27-Dec-2024	27-Dec-2024	28 days	0 days	✓	28-Dec-2024	28 days	0 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WTP	E235.Br-L	27-Dec-2024	02-Jan-2025	28 days	6 days	✓	02-Jan-2025	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE WTP	E235.Cl	27-Dec-2024	02-Jan-2025	28 days	6 days	✓	02-Jan-2025	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE WTP	E235.F	27-Dec-2024	02-Jan-2025	28 days	6 days	✓	02-Jan-2025	28 days	6 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE WTP	E235.NO3-L	27-Dec-2024	02-Jan-2025	3 days	6 days	× EHT	02-Jan-2025	3 days	6 days	× EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE WTP	E235.NO2-L	27-Dec-2024	02-Jan-2025	3 days	6 days	× EHT	02-Jan-2025	3 days	6 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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Sulfate in Water by IC										
HDPE WTP	E235.SO4	27-Dec-2024	02-Jan-2025	28 days	6 days	✓	02-Jan-2025	28 days	6 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) WTP	E366	27-Dec-2024	02-Jan-2025	28 days	6 days	✓	03-Jan-2025	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) WTP	E372-U	27-Dec-2024	02-Jan-2025	28 days	6 days	✓	03-Jan-2025	28 days	7 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
HDPE dissolved (nitric acid) WTP	E509	27-Dec-2024	29-Dec-2024	0 hrs	40 hrs	× UCP	29-Dec-2024	0 hrs	40 hrs	× UCP
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) WTP	E421	27-Dec-2024	27-Dec-2024	180 days	0 days	✓	28-Dec-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 total (nitric acid) WTP	EF001	27-Dec-2024	----	----	----		30-Dec-2024	----	3 days	
Glycols : Glycols (4 analytes) by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate) WTP	E680E	27-Dec-2024	02-Jan-2025	7 days	6 days	✓	03-Jan-2025	7 days	7 days	✓
Hydrocarbons : BC PHCs - EPH by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate) WTP	E601A	27-Dec-2024	02-Jan-2025	14 days	6 days	✓	03-Jan-2025	40 days	1 days	✓
Hydrocarbons : VH and F1 by Headspace GC-FID										
Glass vial (sodium bisulfate) WTP	E581.VH+F1	27-Dec-2024	02-Jan-2025	14 days	6 days	✓	03-Jan-2025	14 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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
HDPE WTP	E358-L	27-Dec-2024	02-Jan-2025	3 days	6 days	✗ EHT	02-Jan-2025	28 days	0 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) WTP	E355-L	27-Dec-2024	02-Jan-2025	28 days	6 days	✓	02-Jan-2025	28 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE WTP	E290	27-Dec-2024	27-Dec-2024	14 days	0 days	✓	28-Dec-2024	14 days	1 days	✓
Physical Tests : Conductivity in Water										
HDPE WTP	E100	27-Dec-2024	27-Dec-2024	28 days	0 days	✓	28-Dec-2024	28 days	1 days	✓
Physical Tests : ORP by Electrode										
HDPE WTP	E125	27-Dec-2024	----	----	----		27-Dec-2024	0.25 hrs	2 hrs	✗ EHTR-FM
Physical Tests : pH by Meter										
HDPE WTP	E108	27-Dec-2024	27-Dec-2024	0.25 hrs	3 hrs	✗ EHTR-FM	28-Dec-2024	0.25 hrs	15 hrs	✗ EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE WTP	E162	27-Dec-2024	----	----	----		27-Dec-2024	7 days	0 days	✓
Physical Tests : TSS by Gravimetry										
HDPE WTP	E160	27-Dec-2024	----	----	----		27-Dec-2024	7 days	0 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE WTP	E121	27-Dec-2024	----	----	----		27-Dec-2024	3 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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Polycyclic Aromatic Hydrocarbons : PAHs in Water by Hexane LVI GC-MS										
Amber glass/Teflon lined cap (sodium bisulfate) WTP	E641A	27-Dec-2024	02-Jan-2025	14 days	6 days	✓	02-Jan-2025	40 days	0 days	✓
Total Metals : Total Mercury in Water by CVAAS										
HDPE total (nitric acid) WTP	E508	27-Dec-2024	29-Dec-2024	0 hrs	40 hrs	× UCP	29-Dec-2024	0 hrs	40 hrs	× UCP
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) WTP	E420	27-Dec-2024	27-Dec-2024	180 days	0 days	✓	28-Dec-2024	180 days	1 days	✓
Volatile Organic Compounds : VOCs (BC List) by Headspace GC-MS										
Glass vial (sodium bisulfate) WTP	E611C	27-Dec-2024	02-Jan-2025	14 days	6 days	✓	03-Jan-2025	14 days	7 days	✓

Legend & Qualifier Definitions

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

EHT: Exceeded ALS recommended hold time prior to analysis.

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			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1824260	0	1	0.0	5.0	✖
Ammonia by Fluorescence	E298	1824246	1	1	100.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1828086	1	5	20.0	5.0	✓
Chloride in Water by IC	E235.Cl	1828085	1	5	20.0	5.0	✓
Conductivity in Water	E100	1824261	1	1	100.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1824822	1	4	25.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1824243	1	1	100.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1827966	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	1828084	1	5	20.0	5.0	✓
Glycols (4 analytes) by GC-FID	E680E	1827913	1	1	100.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1828087	1	5	20.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1828088	1	5	20.0	5.0	✓
ORP by Electrode	E125	1824245	1	1	100.0	5.0	✓
pH by Meter	E108	1824259	1	1	100.0	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1828988	1	14	7.1	5.0	✓
Sulfate in Water by IC	E235.SO4	1828089	1	5	20.0	5.0	✓
TDS by Gravimetry	E162	1824258	1	1	100.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1824818	1	5	20.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1824242	1	1	100.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1827968	1	6	16.6	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1827967	1	3	33.3	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1827969	1	6	16.6	5.0	✓
TSS by Gravimetry	E160	1824262	1	1	100.0	5.0	✓
Turbidity by Nephelometry	E121	1824244	1	1	100.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1828457	1	3	33.3	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1828456	1	3	33.3	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1824260	1	1	100.0	5.0	✓
Ammonia by Fluorescence	E298	1824246	1	1	100.0	5.0	✓
BC PHCs - EPH by GC-FID	E601A	1828338	1	7	14.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1828086	1	5	20.0	5.0	✓
Chloride in Water by IC	E235.Cl	1828085	1	5	20.0	5.0	✓
Conductivity in Water	E100	1824261	1	1	100.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1824822	1	4	25.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1824243	1	1	100.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1827966	1	13	7.6	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
Fluoride in Water by IC	E235.F	1828084	1	5	20.0	5.0	✓
Glycols (4 analytes) by GC-FID	E680E	1827913	1	1	100.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1828087	1	5	20.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1828088	1	5	20.0	5.0	✓
ORP by Electrode	E125	1824245	1	1	100.0	5.0	✓
PAHs in Water by Hexane LVI GC-MS	E641A	1828339	1	4	25.0	5.0	✓
pH by Meter	E108	1824259	1	1	100.0	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1828988	1	14	7.1	5.0	✓
Sulfate in Water by IC	E235.SO4	1828089	1	5	20.0	5.0	✓
TDS by Gravimetry	E162	1824258	1	1	100.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1824818	1	5	20.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1824242	1	1	100.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1827968	1	6	16.6	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1827967	1	3	33.3	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1827969	1	6	16.6	5.0	✓
TSS by Gravimetry	E160	1824262	1	1	100.0	5.0	✓
Turbidity by Nephelometry	E121	1824244	1	1	100.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1828457	1	3	33.3	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1828456	1	3	33.3	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1824260	1	1	100.0	5.0	✓
Ammonia by Fluorescence	E298	1824246	1	1	100.0	5.0	✓
BC PHCs - EPH by GC-FID	E601A	1828338	1	7	14.2	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1828086	1	5	20.0	5.0	✓
Chloride in Water by IC	E235.Cl	1828085	1	5	20.0	5.0	✓
Conductivity in Water	E100	1824261	1	1	100.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1824822	1	4	25.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1824243	1	1	100.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1827966	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	1828084	1	5	20.0	5.0	✓
Glycols (4 analytes) by GC-FID	E680E	1827913	1	1	100.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1828087	1	5	20.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1828088	1	5	20.0	5.0	✓
PAHs in Water by Hexane LVI GC-MS	E641A	1828339	1	4	25.0	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1828988	1	14	7.1	5.0	✓
Sulfate in Water by IC	E235.SO4	1828089	1	5	20.0	5.0	✓
TDS by Gravimetry	E162	1824258	1	1	100.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1824818	1	5	20.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1824242	1	1	100.0	5.0	✓

Matrix: **Water**

Evaluation: ✗ = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Method Blanks (MB) - Continued							
Total Nitrogen by Colourimetry	E366	1827968	1	6	16.6	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1827967	1	3	33.3	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1827969	1	6	16.6	5.0	✓
TSS by Gravimetry	E160	1824262	1	1	100.0	5.0	✓
Turbidity by Nephelometry	E121	1824244	1	1	100.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1828457	1	3	33.3	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1828456	1	3	33.3	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1824246	0	1	0.0	5.0	✗
Bromide in Water by IC (Low Level)	E235.Br-L	1828086	1	5	20.0	5.0	✓
Chloride in Water by IC	E235.Cl	1828085	1	5	20.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1824822	1	4	25.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1824243	0	1	0.0	5.0	✗
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1827966	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	1828084	1	5	20.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1828087	1	5	20.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1828088	1	5	20.0	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1828988	1	14	7.1	5.0	✓
Sulfate in Water by IC	E235.SO4	1828089	1	5	20.0	5.0	✓
Total Mercury in Water by CVAAS	E508	1824818	1	5	20.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1824242	0	1	0.0	5.0	✗
Total Nitrogen by Colourimetry	E366	1827968	1	6	16.6	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1827967	1	3	33.3	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1827969	1	6	16.6	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1828457	1	3	33.3	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1828456	1	3	33.3	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 redution 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 CO_2. 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 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 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 (K3Fe(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.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
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 CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 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 CaCO3), from total Ca/Mg" is calculated from the sum of total Calcium and Magnesium concentrations, expressed in CaCO3 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".
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, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine	EF001 ALS Environmental - Vancouver	Water	Field Measurement (Client Supplied)	Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3 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 Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
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 ALS Environmental - Vancouver	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 ALS Environmental - Vancouver	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with 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 orgaic solvent.

Chain of Custody (COC) / Analytical Request Form

COC Number: 20 - 977662

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Page of

Report To	Contact and company name below will appear on the final report
Company:	Flem
Contact:	Sara Derakhshi
Phone:	514 291 2993
	Company address below will appear on the final report
Street:	
City/Province:	
Postal Code:	

Reports / Recipients

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)

Merge QC/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

Email 1 or Fax: SaraDerakhshi@MichelsCanada.com

Email 2: BradClarke@MichelsCanada.com

Email 3:

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. Additional fees may apply to rush requests on weekends, statutory holidays and non-routine tests

Date and Time Required for all E&P TATs: 28 dec 2024 am/pm 5pm

For all tests with rush TATs requested, please contact your AM to confirm availability.

AFFIX ALS BARCODE LABEL HERE (ALS use only)

Invoice To	Same as Report To ☐ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	
Contact:	

Invoice Recipients

Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax:

Email 2:

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:	EGP150	AFE/Cost Center:	PO#
Job #:		Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:	BCR	Location:	
ALS Lab Work Order # (ALS use only):		ALS Contact:	Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

NUMBER OF CONTAINERS

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	physical test	Total metals (P)	diss. lead metals (FP)	phenols	34 Cols	DOC	Borgamics	Nutrients	VOC	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	WTP	27-Dec	6:00pm	water	✓	✓	✓									

Environmental Division
Vancouver
Work Order Reference
VA24D4413

Telephone : +1 604 253 4188

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

Run metals ASAP

SAMPLE RECEIPT DETAILS (ALS use only)

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
	9

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (ALS use only)			FINAL SHIPMENT RECEPTION (ALS use only)		
Released by: Sara Derakhshi	Date: 27, Dec	Time:	Received by:	Date:	Time:	Received by: D.S	Date: 27-Dec	Time: 8 bm

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

AUG 2020 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**.

Appendix B: BCR Site Receiving Environment Documentation

BCR Site Receiving Environment Sample Analysis

TRITON	Sample ID LAB ID Date Sampled Time Sampled	Reviewed and signed off by:			Farshad Shafiei Ph.D., R.P.Bio.	SQU US1 (Upstream) VA24D4290-001 23-Dec-2024 11:23	SQU DS1 (Downstream) VA24D4290-002 23-Dec-2024 10:27	Sample or value notes	BCWQ FAL - Short Term	BCWQ FAL - Long Term	BCWQ MAL - Short Term	BCWQ MAL - Long Term
Analyte	**Units**	**FAL-ST [1,2]**	**FAL-LT [1,2]**	**MAL-ST [1]**	**MAL-LT [1,2]**	Water N/A	Water N/A		**Guideline notes**			
In Situ Parameters												
pH (field)	pH units	6.5-9.0	6.5-9.0	7.0-8.7	7.0-8.7	7.1	7.1		If natural pH < 6.5, no statisticaly significant decrease from background. No restriction in increase except in areas with unique flora or fauna. Unrestricted change permitted within range of 6.5 to 9.0. If natural pH > 9.0, no statistically significant increase from background. Refer to BC Water Quality Guidelines for more information.		Unrestricted change within this range (for protection of mollusc embryo development).	
Temperature (field)	°C	Max +/- from BKG 1°C [4]	-	Max +/- from BKG 1°C [4]	-	5.0	5.0		Guideline is species-dependent. Short-term daily temperature guideline is 19°C for streams with unknown fish distribution. Refer to footnote 4 for background temperature range for the Squamish River. Refer to BC Water Quality Guidelines for more information Hourly rate of change not to exceed 1°C. Calculation: US value +/- 1 = guideline range		Guideline for marine waters are based on natural ambient conditions. Max and min. 1°C change from natural condition. Natural temperature cycle characteristic of the site should not be altered in amplitude or frequency by human activities. Max rate of any human-induced temperature change not to exceed 0.5°C hourly. treams with unknown fish distribution.	
Conductivity (field)	µS/cm	-	-	-	-	27	27					
Turbidity (field)	NTU	Varies with background, see note Guideline = 11.9	Varies with background, see note Guideline = 4.54 5-week discrete sampling average = 2.4 (DS)	Varies with background, see note Guideline = 11.9	Varies with background, see note Guideline = 4.54 5-week discrete sampling average = 2.4 (DS)	3.92	3.97		Change from background of 8 NTU at any one time for a duration of 24 h in all waters during clear flows or in clear waters. Calculation: US value + 8 = DS guideline Change from background of 5 NTU at any time when background is 8 - 50 NTU during high flows or in turbid waters. Calculation: US value + 5 = DS guideline Change from background of 10% when background is > 50 NTU at any time during high flows or in turbid waters. Calculation: US value + (US value*0.1) = DS guideline	Change from background of 2 NTU at any one time for 30 days in clear flows. Note that a rolling average of US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using US concentration at the time of sampling.	Change from background of 8 NTU at any one time for a duration of 24 h in all waters during clear flows or in clear waters. Calculation: US value + 8 = DS guideline Change from background of 5 NTU at any time when background is 8 - 50 NTU during high flows or in turbid waters. Calculation: US value + 5 = DS guideline Change from background of 10% when background is > 50 NTU at any time during high flows or in turbid waters. Calculation: US value + (US value*0.1) = DS guideline	Change from background of 2 NTU at any one time for 30 days in clear flows. Note that a rolling average of US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using US concentration at the time of sampling.
Dissolved Oxygen (field)	mg/L	Varies with life stage, see note	Varies with life stage, see note	Varies with life stage, see note	Varies with life stage, see note	12.45	11.97		Buried embryo/alevin minimum 9 mg/L, all other life stages 5 mg/L. Refer to BC Water Quality Guidelines for more information.	Buried embryo/alevin minimum 11 mg/L, all other life stages 8 mg/L. Refer to BC Water Quality Guidelines for more information.	Buried embryo/alevin minimum 9 mg/L, all other life stages 5 mg/L. Refer to BC Water Quality Guidelines for more information.	Buried embryo/alevin minimum 11 mg/L, all other life stages 8 mg/L. Refer to BC Water Quality Guidelines for more information.
General Parameters												
Hardness (as $CaCO_3$) (total)	mg/L	-	-	-	-	12.4	12.1					
Total Dissolved Solids	mg/L	-	-	-	-	39	29					
Total Suspended Solids	mg/L	Varies with background, see note Guideline = 28	Varies with background, see note Guideline = 8.0 5-week discrete sampling average = 3.50 (DS)	Varies with background, see note Guideline = 28	Varies with background, see note Guideline = 8.0 5-week discrete sampling average = 3.5 (DS)	< 3.0	5.1		Change from background of 25 mg/L at any one time for duration of 24 h in all waters during clear flows or in clear waters. Calculation: US value + 25 = DS guideline Change from background of 10 mg/L at any one time when background 25-100 mg/L during high flows or turbid waters. Calculation: US value + 10 = DS guideline Change from background of 10% when background is > 100 mg/L at any time during high flows or turbid waters. Calculation: US value + (US value*0.1) = DS guideline	Change from background of 5 mg/L @ one time for a druation of 30 days in clear flow. Note that a rolling average of US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using US concentration at the time of sampling.	Change from background of 25 mg/L at any one time for duration of 24 h in all waters during clear flows or in clear waters. Calculation: US value + 25 = DS guideline Change from background of 10 mg/L at any one time when background 25-100 mg/L during high flows or turbid waters. Calculation: US value + 10 = DS guideline Change from background of 10% when background is > 100 mg/L at any time during high flows or turbid waters. Calculation: US value + (US value*0.1) = DS guideline	Change from background of 5 mg/L @ one time for a druation of 30 days in clear flow. Note that a rolling average of US values over a 30-day period is required to properly calculate this guideline. Guideline calculated in this spreadsheet using US concentration at the time of sampling.
Dissolved Organic Carbon (DOC)	mg/L	-	-	-	-	3.52	3.56			Long-term (30-day) median within 20% of background median [3]		
Total Alkalinity ($CaCO_3$)	mg/L	-	Categorical	-	-	10.2	10.1			Guideline is for alkalinity (as CaCO3) and categorizes the sensitivity of a water body to acid inputs. Alkalinity < 10 mg/L is considered highly sensitive to acid inputs; 10 - 20 mg/L is considered moderately sensitive to acid inputs; > 20 mg/L is considered low sensitivity.		
Total Sulfide (as S)	mg/L	-	-	-	-	< 0.0015	< 0.0015					
Total Sulfide (un-ionized as H_2S)	mg/L	-	0.002	-	-	< 0.0015	< 0.0015			Working guideline		
Total Sulfide (as H_2S)	mg/L	-	-	-	-	< 0.0016	< 0.0016					
Anions and Nutrients												
Ammonia	mg/L ammonia-N	Varies with pH and temperature. See note. Guideline = 20.2	Varies with pH and temperature. See note. Guideline = 1.97	Varies with pH and temperature. See note. Guideline = 191	Varies with pH, temperature and salinity. See note. Guideline = 41	0.0166	0.01		Guideline for ammonia as N and is pH and temperature dependent. Refer to Table 27D in BC WQG for guideline values.	Guideline for ammonia as N and is pH and temperature dependent. Refer to Table 27C in BC WQG for guideline values.	Guideline for ammonia as N. Guideline is pH, temperature and salinity dependent. Refer to Table 27F in BC WQG for guideline values.	Guideline for ammonia as N. Guideline is pH, temperature and salinity dependent. Refer to Table 27E in BC WQG for guideline values.
Bromide	mg/L	-	-	-	-	< 0.050	< 0.050					
Chloride	mg/L	600	150	+/- 10% from BKG	+/- 10% from BKG	1.09	0.96				Human activities should not cause the chloride of marine and estuarine waters to fluctuate by more than 10% of the natural chloride expected at that time and depth.	Human activities should not cause the chloride of marine and estuarine waters to fluctuate by more than 10% of the natural chloride expected at that time and depth.
Fluoride	mg/L	Varies with hardness Guideline = 0.495	-	1.5	-	< 0.020	< 0.020		Guideline has interim status. Guideline is calculated with the following equation: Guideline = [-51.73 + 92.57 log10 (hardness)] * 0.01			
Nitrate (as N)	mg/L	32.8	3	-	3.7	0.0868	0.0638					
Nitrite (as N)	mg/L	Varies with chloride. See note. Guideline = 0.06	Varies with chloride. See note. Guideline = 0.02	-	-	0.002	0.0016		Varies with chloride. Refer to Table 27B in BC WQG for guideline values.	Varies with chloride. Refer to Table 27B in BC WQG for guideline values.		
Total Nitrogen	mg/L	-	-	-	-	0.192	0.157					
Total Phosphorous	mg/L	-	0.005 to 0.015	-	-	0.0177	0.0162			Guideline is for lakes, refer to BCWQ guideline for nutrients and algae for more information. Guideline does not apply to site.		
Sulfate (as SO_4)	mg/L	-	Varies with hardness. See note. Guideline = 128	-	-	2.72	2.66			Guidelines for hardness ranges below: Hardness 0 - 30: 128 Hardness 31 - 75: 218 Hardness 76 - 180: 309 Hardness 181 - 250: 429		
Total Metals												
Aluminum (Al)-Total	mg/L	-	Varies with pH, DOC, hardness Guideline = 0.079 5-week field average = 0.17 (US), 0.15 (DS)	-	-	0.267	0.281			Guideline varies with pH, hardness and Dissolved Organic Carbon (DOC). Guideline is calculated with the following equation: Guideline = (EXP((0.645 * LN(DOC)) + (2.255 * LN(hardness)) + (1.995 * pH) + (-0.284 * (LN(hardness) * pH))-9.898)/3/1000) If hardness or DOC is below the hardness or DOC range, the minimum hardness or DOC will be applied in the calculation.		
Antimony (Sb)-Total	mg/L	0.25	0.074	-	-	< 0.00010	< 0.00010					
Arsenic (As)-Total	mg/L	-	0.005	-	0.0125	0.00019	0.0002					Interim guideline status
Barium (Ba)-Total	mg/L	-	1	-	-	0.00751	0.00754			Working guideline status		
Beryllium (Be)-Total	mg/L	-	0.00013	-	0.100	< 0.000100	< 0.000100			Working guideline status		Working guideline status
Bismuth (Bi)-Total	mg/L	-	-	-	-	< 0.00005	< 0.00005					
Boron (B)-Total	mg/L	-	1.2	-	1.2	< 0.010	< 0.010					
Cadmium (Cd)-Total	mg/L	-	-	-	0.00012	0.0000109	0.0000229					Working guideline status
Calcium (Ca)-Total	mg/L	-	-	-	-	4.17	4.07					
Cesium (Cs)-Total	mg/L	-	-	-	-	< 0.000010	0.000012					
Chromium (Cr) - Total	mg/L	-	-	-	-	< 0.00050	< 0.00050					
Chromium (Cr(III))-Total	mg/L	-	0.0089	-	0.056	< 0.00050	< 0.00050			Working guideline status		Working guideline status
Chromium (Cr(VI))-Total	mg/L	-	0.0025	-	0.0015	< 0.00050	< 0.00050			Working guideline status		Working guideline status
Cobalt (Co)-Total	mg/L	0.11	0.004	-	-	< 0.00010	< 0.00010					
Copper (Cu)-Total	mg/L	-	-	0.003	0.002 5-week field average = 0.00102 (US), 0.00094 (DS)	0.00134	0.00137					
Iron (Fe)-Total	mg/L	1	-	-	-	0.133	0.152					
Lead (Pb)-Total	mg/L	-	-	0.14	0.002 5-week field average = 0.00006 (US), 0.00006 (DS)	0.000068	0.000075					
Lithium (Li)-Total	mg/L	-	-	-	-	< 0.0010	< 0.0010					
Magnesium (Mg)-Total	mg/L	-	-	-	-	0.474	0.465					
Manganese (Mn)-Total	mg/L	Varies with hardness Guideline = 0.715	Varies with hardness Guideline = 0.768	-	-	0.00589	0.00656		Guideline varies with hardness. The guideline is calculated using the following equation: Guideline = (0.0044 * hardness + 0.605) Guideline applies to samples with hardness 25-259 mg/L. Lowest value for guideline is 0.77 mg/L. If hardness is below the hardness range, the minimum hardness will be applied in the calculation.	Guideline varies with hardness, refer to BC Water Quality Guidelines for more information. The guideline is calculated using the following formula: Guideline = (0.01102 * hardness + 0.54) Guideline applies to samples with hardness 37-450 mg/L. Lowest value for guideline is 0.81 mg/L. If hardness is below the hardness range, the minimum hardness will be applied in the calculation.		
Mercury (Hg)-Total	mg/L	-	Varies with methyl mercury Guideline = N/A	-	-	< 0.0000050	< 0.0000050			When MeHg ≤ 0.5% of total Hg, guideline is equal to 0.02 mg/L Guideline = 0.1/[MeHg/totalHg]. When MeHg ≤ 0.5% of total Hg, guideline is equal to 0.02 mg/L		
Molybdenum (Mo)-Total	mg/L	46	7.6	-	-	0.000382	0.000377					
Nickel (Ni)-Total	mg/L	-	-	-	0.0083	< 0.00050	< 0.00050					Working guideline status
Phosphorus (P)-Total	mg/L	-	0.005 to 0.015	-	-	< 0.050	< 0.050			Guideline only applies to lakes with salmonid species being the dominant fish species. Guideline is for reference only and does not apply to site.		
Potassium (K)-Total	mg/L	-	-	-	-	0.346	0.359					
Rubidium (Rb)-Total	mg/L	-	-	-	-	0.00046	0.00058					
Selenium (Se)-Total	mg/L	-	0.002	-	0.002	0.000053	< 0.000050			Guideline for freshwater aquatic life (water column). Alert concentration is 0.001 mg/L, with separate guidelines for sediment, invertebrate and fish tissue. Refer to BC Water Quality Guidelines for more information on guidelines and sampling guidance.		Guideline for marine aquatic life (water column). Alert concentration is 0.001 mg/L, with separate guideliens for sediment, invertebrate and fish tissue. Refer to BC Water Quality Guidelines for
Silicon (Si)-Total	mg/L	-	-	-	-	3.51	3.55					
Silver (Ag)-Total	mg/L	Varies with hardness, see note Guideline = 0.0001	Varies with hardness, see note Guideline = 0.00005 5-week field average = 0.00001 (US), 0.0000112 (DS)	0.003	0.0015	0.00001	0.000016		Varies with hardness Guideline ranges: Hardness ≤ 100: 0.0001 Hardness > 100: 0.003	Varies with hardness Guideline ranges: Hardness ≤ 100: 0.00005 Hardness > 100: 0.0015		Guideline applies to open coast and estuaries. Guideline is applicable to the EGP site.
Sodium (Na)-Total	mg/L	-	-	-	-	1.45	17.8					
Strontium (Sr)-Total	mg/L	-	-	-	-	0.0236	0.0237					
Sulfur (S)-Total	mg/L	-	-	-	-	0.77	0.92					
Tellurium (Te)-Total	mg/L	-	-	-	-	< 0.00020	< 0.00020					
Thallium (Tl)-Total	mg/L	-	0.00003	-	-	< 0.000010	< 0.000010			30-day average, site-specific objective for the lower Columbia River, BC. Guideline is for reference only and does not apply to tnhe EGP site.		
Thorium (Th)-Total	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Tin (Sn)-Total	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Titanium (Ti)-Total	mg/L	-	-	-	-	0.00407	0.0046					
Tungsten (W)-Total	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Uranium (U)-Total	mg/L	0.0165	0.0075	-	-	0.000036	0.000036			Working guideline status		
Vanadium (V)-Total	mg/L	-	0.06	-	0.005 5-week field average = 0.00120 (US), 0.00110 (DS)	0.00086	0.00086					Working guideline status
Zinc (Zn)-Total	mg/L	-	-	0.055	Guideline = 0.010 5-week field average = 0.00996 (US), 0.7784 (DS)	0.0152	3.88					
Zirconium (Zr)-Total	mg/L	-	-	-	-	< 0.00020	< 0.00020					
Dissolved Metals												
Aluminum (Al)-Dissolved	mg/L	-	-	-	-	0.11	0.112					
Antimony (Sb)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Arsenic (As)-Dissolved	mg/L	-	-	-	-	0.00011	0.00012					
Barium (Ba)-Dissolved	mg/L	-	-	-	-	0.00639	0.00539					
Beryllium (Be)-Dissolved	mg/L	-	-	-	-	< 0.000100	< 0.000100					
Bismuth (Bi)-Dissolved	mg/L	-	-	-	-	< 0.000050	< 0.000050					
Boron (B)-Dissolved	mg/L	-	-	-	-	< 0.010	< 0.010					
Cadmium (Cd)-Dissolved	mg/L	Varies with hardness, see note Guideline = 0.000069	Varies with hardness, see note Guideline = 0.000059	-	-	0.0000107	0.0000148		Guideline is hardness dependent. Guideline is appilcable to water hardness between 7.0 and 455 mg/L. Guideline is calculated with the following formula: Guideline = (EXP(1.03 * (LN(hardness)) - 5.274)/1000) Lowest value for guideline is 0.000018 mg/L. If hardness is below the hardness range, the minimum hardness will be applied in the calculation.	Guideline is hardness dependent. Guideline is applicable to hardness between 3.4 and 285 mg/L. Guideline is calculated with the following formula: Guideline = (EXP(0.736 * (LN(hardness)) - 4.943)/1000) Lowest value for guedeline is 0.00004. If hardness is below the hardness range, the minimum hardness will be applied in the calculation.		
Calcium (Ca)-Dissolved	mg/L	-	Categorical, see note	-	-	3.99	3.83			Guideline categorizes the sensitivity of a water body to acid inputs (i.e. buffering capacity). Standard is 4 mg/L dissolved Ca for the most sensitive waterbodies,5 - 8 mg/L for waterbodies with moderate sensitivity to acid inputs. Waterbodies with dissolved calcium > 8mg/L are considered to have low sensitivity to acid inputs.		
Cesium (Cs)-Dissolved	mg/L	-	-	-	-	< 0.000010	< 0.000010					
Chromium (Cr)-Dissolved	mg/L	-	-	-	-	< 0.00050	< 0.00050					
Cobalt (Co)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Copper (Cu)-Dissolved	mg/L	Guideline varies with other parameters, see note Guideline = 0.0029	Guideline varies with other parameters, see note Guideline = 0.0003 5-week field average = 0.00076 (US), 0.000724 (DS)	-	-	0.00107	0.00098		Guideline varies with other parameters and is calculated using BC BLM software. Simplified model: Temperature, pH, DOC and hardness Detailed model: Temperature, pH, DOC, humic acid content, total calcium, total magnesium, total sodium, total potassium, sulphate, chloride, and alkalinity Guideline calculated using values for parameters above taken at the specific site on each sampling date	Guideline varies with other parameters and is calculated using BC BLM software. Simplified model: Temperature, pH, DOC and hardness Detailed model: Temperature, pH, DOC, humic acid content, total calcium, total magnesium, total sodium, total potassium, sulphate, chloride, and alkalinity Guideline calculated using values for parameters above taken at the specific site on each sampling date		
Iron (Fe)-Dissolved	mg/L	0.35	-	-	-	0.044	0.044					
Lithium (Li)-Dissolved	mg/L	-	-	-	-	< 0.0010	< 0.0010					
Magnesium (Mg)-Dissolved	mg/L	-	-	-	-	0.431	0.409					
Manganese (Mn)-Dissolved	mg/L	-	-	-	-	0.00298	0.0032					
Mercury (Hg)-Dissolved	mg/L	-	-	-	-	< 0.0000050	< 0.0000050					
Molybdenum (Mo)-Dissolved	mg/L	-	-	-	-	0.000373	0.000358					
Nickel (Ni)-Dissolved	mg/L	Guideline varies with other parameters, see note Guideline = 0.0203	Guideline varies with other parameters, see note Guideline = 0.00109 5-week field average = < 0.0005 (US), < 0.0005 (DS)	-	-	< 0.00050	< 0.00050		Guideline varies with other parameters and is calculated using BC BLM software. Simplified model: Temperature, pH, DOC and hardness Detailed model: Temperature, pH, DOC, humic acid content, total calcium, total magnesium, total sodium, total potassium, sulphate, chloride, and alkalinity Guideline calculated using values for parameters above taken at the specific site on each sampling date	Guideline varies with other parameters and is calculated using BC BLM software. Simplified model: Temperature, pH, DOC and hardness Detailed model: Temperature, pH, DOC, humic acid content, total calcium, total magnesium, total sodium, total potassium, sulphate, chloride, and alkalinity Guideline calculated using values for parameters above taken at the specific site on each sampling date		
Phosphorus (P)-Dissolved	mg/L	-	-	-	-	< 0.050	< 0.050					
Potassium (K)-Dissolved	mg/L	-	-	-	-	0.352	0.349					
Rubidium (Rb)-Dissolved	mg/L	-	-	-	-	0.00043	0.00047					
Selenium (Se)-Dissolved	mg/L	-	-	-	-	< 0.000050	< 0.000050					
Silicon (Si)-Dissolved	mg/L	-	-	-	-	3.05	2.86					
Silver (Ag)-Dissolved	mg/L	-	-	-	-	< 0.000010	< 0.000010					
Sodium (Na)-Dissolved	mg/L	-	-	-	-	1.36	17					
Strontium (Sr)-Dissolved	mg/L	-	-	-	-	0.0244	0.0244					
Sulfur (S)-Dissolved	mg/L	-	-	-	-	0.8	0.74					
Tellurium (Te)-Dissolved	mg/L	-	-	-	-	< 0.00020	< 0.00020					
Thallium (Tl)-Dissolved	mg/L	-	-	-	-	< 0.000010	< 0.000010					
Thorium (Th)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Tin (Sn)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Titanium (Ti)-Dissolved	mg/L	-	-	-	-	0.00093	0.00084					
Tungsten (W)-Dissolved	mg/L	-	-	-	-	< 0.00010	< 0.00010					
Uranium (U)-Dissolved	mg/L	-	-	-	-	0.000032	0.000034					
Vanadium (V)-Dissolved	mg/L	-	-	-	-	0.00061	0.00055					
Zinc (Zn)-Dissolved	mg/L	Varies with DOC and hardness Guideline = 0.010	Varies with pH, DOC, hardness Guideline = 0.0043 5-week field average = 0.0068 (US), 0.7134 (DS)	-	-	0.0118	**3.56**	**Dissolved zinc at DS1 location exceeds short-term BCWQG for FAL.** The exceedance is not caused by the Project because they have not been discharging at the BCR site.	Guideline varies with DOC and hardness. Guideline is calculated using the following formula: Guideline = (EXP((0.833 * (LN(hardness))) + (0.24 * (LN(DOC))) + 0.526)/2/1000) If hardness or DOC is below the hardness or DOC range, the minimum hardness or DOC will be applied in the calculation.	Guideline varies with pH, hardness and Dissolved Organic Carbon (DOC). Guideline is calculated using the following formula: Guideline = (EXP((0.974 * (LN(hardness))) - (0.815 * pH) + (0.398 * (LN(DOC))) + 4.625)/2/1000) Guideline only applies to water with pH between 6.5 and 8.13, DOC between 0.3 and 22.9 mg/L, anmd hardness between 23.4 and 399 mg/L. If hardness or DOC is below the hardness or DOC range, the minimum hardness or DOC will be applied in the calculation.		
Zirconium (Zr)-Dissolved	mg/L	-	-	-	-	< 0.00020	< 0.00020					
Applied Guideline:		**British Columbia Approved and Working Water Quality Guidelines (NOV 2023) for Freshwater Aquatic Life (FAL) & Marine Aquatic Life (MAL) Short-Term (ST) & Long-Term (LT)**										
Color Key:		**Exceeds FAL Short term Guideline**	***Exceeds both FAL and MAL Guidelines***	**Exceeds MAL Short term Guideline**								

[1]BC MOECCS. 2023. BC Water Qualtiy Guidelines for the Protection of Aquatic Life, Wildlife & Agriculture. Accessed from: wqg_summary_aquaticlife_wildlife_agri.pdf (gov.bc.ca)
[2]BC MOECCS. 2021. BC Working Water Qualtiy Guidelines for the Protection of Aquatic Life, Widlife & Agriculture. Accessed from: bc_env_working_water_quality_guidelines.pdf (gov.bc.ca)
[3]Note that long-term guidelines apply to averaged data to account for chronic impacts to aquatic life. Ideally, five samples collected at evenly spaced intervals over 30 days is considered to be the minimum number needed to calculate the long-term average of any parameter, though this may vary by parameter and site conditions. Long-term guidelines applied here are for reference only and may not indicate chronic impacts to aquatic life if exceedances occur in the short term.
[4]Background temperature ranges: Dec-Feb: 2.0-4.0C; Mar-Apr: 4.0-6.0C; May-June: 6.0-12.0C; Jul-Sept: 9.0-12.0C; Oct-Nov: 3.0-5.0
Reference: Triton Environmental Consulants Ltd. 2023. Memo - Background water quality values for the BC Rail Discharge to Squamish River
For guidelines dependent on other parameters, when hardness, pH or DOC are below the range stated in the guideline, the lowest value in the range is used to calculate the guideline.

Parameters Used to Calculate Guidelines

Analyte	Units	Method of Measurements	Values: SQU US1 (Upstream)	Values: SQU DS1 (Downstream)
pH (field)	pH units	Field pH taken using handheld meters during sampling used in calculations	7.1	7.10
Temperature (field)	°C	Field temperature taken using handheld meters during sampling used in calculations	5	5.0
Turbidity (field)	NTU	Field turbidity taken using handheld meters during sampling used in calculations	3.92	3.97
Hardness (as CaCO3) (total)	mg/L	Laboratory tested total hardness taken at each respective sample site on the day of sampling used in guideline calculations	12.4	12.1
Dissolved Organic Carbon (DOC)	mg/L	Laboratory tested dissolved organic carbon tested at the lab used in guideline calculations	3.52	3.56
Total Alkalinity ($CaCO_3$)	mg/L	Laboratory tested total alkalinity used in calculations	10.2	10.1
Chloride	mg/L	Laboratory tested chloride taken at each respective sample site on the day of sampling used in guideline calculations	1.09	0.96

BCR Site Receiving Environment Lab Documentation

CERTIFICATE OF ANALYSIS

Work Order	:	**VA24D4290**		
Client	:	**Triton Environmental Consultants Ltd.**	Laboratory	: ALS Environmental - Vancouver
Contact	:		Account Manager	:
Address	:		Address	:
Telephone	:		Telephone	:
Project	:	11964	Date Samples Received	: 23-Dec-2024 13:50
PO	:	11964-Task30-Phase 3C-4C	Date Analysis Commenced	: 24-Dec-2024
C-O-C number	:	----	Issue Date	: 03-Jan-2025 22:14
Sampler	:	----		
Site	:	Water Analysis		
Quote number	:	VA23-TRIT100-012		
No. of samples received	:	3		
No. of samples analysed	:	3		

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.

Signatories	*Position*	*Laboratory Department*
		Metals, Burnaby, British Columbia
		Inorganics, Burnaby, British Columbia
		Metals, Burnaby, British Columbia
		Administration, Burnaby, British Columbia
		Metals, Burnaby, British Columbia
		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).

Unit	*Description*
-	no units
°C	degrees celsius
mg/L	milligrams per litre
pH units	pH units
µS/cm	microsiemens per centimetre

<: 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.

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SQU US 1	SQU DS 1	BCR Trip Blank	----	----
					Client sampling date / time	23-Dec-2024 11:23	23-Dec-2024 10:27	23-Dec-2024 00:00	----	----
						VA24D4290-001	VA24D4290-002	VA24D4290-003	----	----
						Result	Result	Result	----	----
Field Tests										
Conductivity, field	----	EF001/VA	0.01	µS/cm		----	27.000	----	----	----
pH, field	----	EF001/VA	0.01	pH units		----	7.10	----	----	----
Temperature, field	----	EF001/VA	0.01	°C		----	5.00	----	----	----
Conductivity, field	----	EF001/VA	0.10	µS/cm		27.000	----	----	----	----
pH, field	----	EF001/VA	0.10	pH units		7.10	----	----	----	----
Temperature, field	----	EF001/VA	0.10	°C		5.00	----	----	----	----
Physical Tests										
Hardness (as CaCO3), dissolved	----	EC100/VA	0.60	mg/L		11.7	11.2	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L		12.4	12.1	<0.60	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L		39	29	<10	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L		<3.0	5.1	<3.0	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	2.0	mg/L		10.2	10.1	----	----	----
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L		0.0166	0.0100	<0.0050	----	----
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L		<0.050	<0.050	<0.050	----	----
Chloride	16887-00-6	E235.Cl/VA	0.50	mg/L		1.09	0.96	<0.50	----	----
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L		<0.020	<0.020	<0.020	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L		0.0868	0.0638	<0.0050	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L		0.0020	0.0016	<0.0010	----	----
Nitrogen, total	7727-37-9	E366/VA	0.030	mg/L		0.192	0.157	<0.030	----	----
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L		0.0177	0.0162	<0.0020	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SQU US 1	SQU DS 1	BCR Trip Blank	----	----
					Client sampling date / time	23-Dec-2024 11:23	23-Dec-2024 10:27	23-Dec-2024 00:00	----	----
						VA24D4290-001	VA24D4290-002	VA24D4290-003	----	----
						Result	Result	Result	----	----
Anions and Nutrients										
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L		2.72	2.66	<0.30	----	----
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L		3.52	3.56	----	----	----
Total Sulfides										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L		<0.0015	<0.0015	<0.0015	----	----
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		<0.0016	<0.0016	<0.0016	----	----
Total Metals										
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L		0.267	0.281	<0.0030	----	----
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L		0.00019	0.00020	<0.00010	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L		0.00751	0.00754	<0.00010	----	----
Beryllium, total	7440-41-7	E420/VA	0.000100	mg/L		<0.000100	<0.000100	<0.000100	----	----
Bismuth, total	7440-69-9	E420/VA	0.000050	mg/L		<0.000050	<0.000050	<0.000050	----	----
Boron, total	7440-42-8	E420/VA	0.010	mg/L		<0.010	<0.010	<0.010	----	----
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L		0.0000109	0.0000229	<0.0000050	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L		4.17	4.07	<0.050	----	----
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L		<0.000010	0.000012	<0.000010	----	----
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L		<0.00050	<0.00050	<0.00050	----	----
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
Copper, total	7440-50-8	E420/VA	0.00050	mg/L		0.00134	0.00137	<0.00050	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SQU US 1	SQU DS 1	BCR Trip Blank	----	----
					Client sampling date / time	23-Dec-2024 11:23	23-Dec-2024 10:27	23-Dec-2024 00:00	----	----
						VA24D4290-001	VA24D4290-002	VA24D4290-003	----	----
						Result	Result	Result	----	----
Total Metals										
Iron, total	7439-89-6	E420/VA	0.010	mg/L		0.133	0.152	<0.010	----	----
Lead, total	7439-92-1	E420/VA	0.000050	mg/L		0.000068	0.000075	<0.000050	----	----
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L		<0.0010	<0.0010	<0.0010	----	----
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L		0.474	0.465	<0.0050	----	----
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L		0.00589	0.00656	<0.00010	----	----
Mercury, total	7439-97-6	E508/VA	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	----	----
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L		0.000382	0.000377	<0.000050	----	----
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L		<0.00050	<0.00050	<0.00050	----	----
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L		<0.050	<0.050	<0.050	----	----
Potassium, total	7440-09-7	E420/VA	0.050	mg/L		0.346	0.359	<0.050	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L		0.00046	0.00058	<0.00020	----	----
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L		0.000053	<0.000050	<0.000050	----	----
Silicon, total	7440-21-3	E420/VA	0.10	mg/L		3.51	3.55	<0.10	----	----
Silver, total	7440-22-4	E420/VA	0.000010	mg/L		0.000010	0.000016	<0.000010	----	----
Sodium, total	7440-23-5	E420/VA	0.050	mg/L		1.45	17.8	<0.050	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L		0.0236	0.0237	<0.00020	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L		0.77	0.92	<0.50	----	----
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L		<0.00020	<0.00020	<0.00020	----	----
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L		<0.000010	<0.000010	<0.000010	----	----
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
Tin, total	7440-31-5	E420/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SQU US 1	SQU DS 1	BCR Trip Blank	----	----
					Client sampling date / time	23-Dec-2024 11:23	23-Dec-2024 10:27	23-Dec-2024 00:00	----	----
						VA24D4290-001	VA24D4290-002	VA24D4290-003	----	----
						Result	Result	Result	----	----
Total Metals										
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L		0.00407	0.00460	<0.00030	----	----
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L		0.000036	0.000036	<0.000010	----	----
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L		0.00086	0.00086	<0.00050	----	----
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L		0.0152	3.88	<0.0030	----	----
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L		<0.00020	<0.00020	<0.00020	----	----
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L		0.110	0.112	----	----	----
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		0.00011	0.00012	----	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L		0.00639	0.00539	----	----	----
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		0.0000107	0.0000148	----	----	----
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L		3.99	3.83	----	----	----
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		0.00107	0.00098	----	----	----
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L		0.044	0.044	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SQU US 1	SQU DS 1	BCR Trip Blank	----	----
					Client sampling date / time	23-Dec-2024 11:23	23-Dec-2024 10:27	23-Dec-2024 00:00	----	----
						VA24D4290-001	VA24D4290-002	VA24D4290-003	----	----
						Result	Result	Result	----	----
Dissolved Metals										
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		0.431	0.409	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L		0.00298	0.00320	----	----	----
Mercury, dissolved	7439-97-6	E509/VA	0.0000050	mg/L		<0.0000050	<0.0000050	----	----	----
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L		0.000373	0.000358	----	----	----
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		0.352	0.349	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L		0.00043	0.00047	----	----	----
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		3.05	2.86	----	----	----
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		1.36	17.0	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L		0.0244	0.0244	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L		0.80	0.74	----	----	----
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		0.00093	0.00084	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	SQU US 1	SQU DS 1	BCR Trip Blank	----	----
					Client sampling date / time	23-Dec-2024 11:23	23-Dec-2024 10:27	23-Dec-2024 00:00	----	----
						VA24D4290-001	VA24D4290-002	VA24D4290-003	----	----
						Result	Result	Result	----	----
Dissolved Metals										
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		0.000032	0.000034	----	----	----
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L		0.00061	0.00055	----	----	----
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L		0.0118	3.56	----	----	----
Zirconium, dissolved	7440-67-7	E421/VA	0.00020	mg/L		<0.00020	<0.00020	----	----	----
Dissolved mercury filtration location	----	EP509/VA	-	-		Field	Field	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	-		Field	Field	----	----	----
Speciated Metals										
Chromium, hexavalent [Cr VI], total	18540-29-9	E532/VA	0.00050	mg/L		<0.00050	<0.00050	<0.00050	----	----
Chromium, trivalent [Cr III], total	16065-83-1	EC535/VA	0.00050	mg/L		<0.00050	<0.00050	<0.00050	----	----

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

ALS Canada Ltd.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **VA24D4290**	Page	: 1 of 16
Client	: **Triton Environmental Consultants Ltd.**	Laboratory	: ALS Environmental - Vancouver
Contact	:	Account Manager	
Address	:	Address	
Telephone	: ----	Telephone	
Project	: 11964	Date Samples Received	: 23-Dec-2024 13:50
PO	: 11964-Task30-Phase 3C-4C	Issue Date	: 03-Jan-2025 22:13
C-O-C number	: ----		
Sampler	: ----		
Site	: Water Analysis		
Quote number	: VA23-TRIT100-012 _V2		
No. of samples received	: 3		
No. of samples analysed	: 3		

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)

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

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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SQU DS 1	E298	23-Dec-2024	24-Dec-2024	28 days	1 days	✓	24-Dec-2024	28 days	1 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SQU US 1	E298	23-Dec-2024	24-Dec-2024	28 days	1 days	✓	24-Dec-2024	28 days	1 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (lab preserved) BCR Trip Blank	E298	23-Dec-2024	24-Dec-2024	3 days	1 days	✓	24-Dec-2024	28 days	0 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE SQU DS 1	E235.Br-L	23-Dec-2024	24-Dec-2024	28 days	1 days	✓	24-Dec-2024	28 days	1 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE SQU US 1	E235.Br-L	23-Dec-2024	24-Dec-2024	28 days	1 days	✓	24-Dec-2024	28 days	1 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE BCR Trip Blank	E235.Br-L	23-Dec-2024	27-Dec-2024	28 days	4 days	✓	27-Dec-2024	28 days	4 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE SQU DS 1	E235.Cl	23-Dec-2024	24-Dec-2024	28 days	1 days	✓	24-Dec-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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Chloride in Water by IC										
HDPE SQU US 1	E235.Cl	23-Dec-2024	24-Dec-2024	28 days	1 days	✓	24-Dec-2024	28 days	1 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BCR Trip Blank	E235.Cl	23-Dec-2024	27-Dec-2024	28 days	4 days	✓	27-Dec-2024	28 days	4 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE SQU DS 1	E235.F	23-Dec-2024	24-Dec-2024	28 days	1 days	✓	24-Dec-2024	28 days	1 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE SQU US 1	E235.F	23-Dec-2024	24-Dec-2024	28 days	1 days	✓	24-Dec-2024	28 days	1 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BCR Trip Blank	E235.F	23-Dec-2024	27-Dec-2024	28 days	4 days	✓	27-Dec-2024	28 days	4 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SQU DS 1	E235.NO3-L	23-Dec-2024	24-Dec-2024	3 days	1 days	✓	24-Dec-2024	3 days	1 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SQU US 1	E235.NO3-L	23-Dec-2024	24-Dec-2024	3 days	1 days	✓	24-Dec-2024	3 days	1 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BCR Trip Blank	E235.NO3-L	23-Dec-2024	27-Dec-2024	3 days	4 days	× EHT	27-Dec-2024	3 days	4 days	× EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE SQU DS 1	E235.NO2-L	23-Dec-2024	24-Dec-2024	3 days	1 days	✓	24-Dec-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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE SQU US 1	E235.NO2-L	23-Dec-2024	24-Dec-2024	3 days	1 days	✓	24-Dec-2024	3 days	1 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BCR Trip Blank	E235.NO2-L	23-Dec-2024	27-Dec-2024	3 days	4 days	× EHT	27-Dec-2024	3 days	4 days	× EHT
Anions and Nutrients : Sulfate in Water by IC										
HDPE SQU DS 1	E235.SO4	23-Dec-2024	24-Dec-2024	28 days	1 days	✓	24-Dec-2024	28 days	1 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE SQU US 1	E235.SO4	23-Dec-2024	24-Dec-2024	28 days	1 days	✓	24-Dec-2024	28 days	1 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BCR Trip Blank	E235.SO4	23-Dec-2024	27-Dec-2024	28 days	4 days	✓	27-Dec-2024	28 days	4 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) SQU DS 1	E366	23-Dec-2024	24-Dec-2024	28 days	1 days	✓	28-Dec-2024	28 days	5 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) SQU US 1	E366	23-Dec-2024	24-Dec-2024	28 days	1 days	✓	28-Dec-2024	28 days	5 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (lab preserved) BCR Trip Blank	E366	23-Dec-2024	24-Dec-2024	3 days	1 days	✓	28-Dec-2024	28 days	4 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) SQU DS 1	E372-U	23-Dec-2024	24-Dec-2024	28 days	1 days	✓	27-Dec-2024	28 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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
SQU US 1	E372-U	23-Dec-2024	24-Dec-2024	28 days	1 days	✓	27-Dec-2024	28 days	4 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (lab preserved)										
BCR Trip Blank	E372-U	23-Dec-2024	24-Dec-2024	3 days	1 days	✓	27-Dec-2024	28 days	3 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
SQU DS 1	E509	23-Dec-2024	02-Jan-2025	28 days	10 days	✓	02-Jan-2025	28 days	10 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
SQU US 1	E509	23-Dec-2024	02-Jan-2025	28 days	10 days	✓	02-Jan-2025	28 days	10 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
SQU DS 1	E421	23-Dec-2024	30-Dec-2024	180 days	7 days	✓	02-Jan-2025	180 days	10 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
SQU US 1	E421	23-Dec-2024	30-Dec-2024	180 days	7 days	✓	02-Jan-2025	180 days	10 days	✓
Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
Glass vial total (hydrochloric acid)										
SQU DS 1	EF001	23-Dec-2024	----	----	----		27-Dec-2024	----	4 days	
Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
Glass vial total (hydrochloric acid)										
SQU US 1	EF001	23-Dec-2024	----	----	----		27-Dec-2024	----	4 days	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
SQU DS 1	E358-L	23-Dec-2024	24-Dec-2024	28 days	1 days	✓	24-Dec-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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) SQU US 1	E358-L	23-Dec-2024	24-Dec-2024	28 days	1 days	✓	24-Dec-2024	28 days	1 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE SQU DS 1	E290	23-Dec-2024	24-Dec-2024	14 days	1 days	✓	24-Dec-2024	14 days	1 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE SQU US 1	E290	23-Dec-2024	24-Dec-2024	14 days	1 days	✓	24-Dec-2024	14 days	1 days	✓
Physical Tests : TDS by Gravimetry										
HDPE BCR Trip Blank	E162	23-Dec-2024	----	----	----		29-Dec-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE SQU DS 1	E162	23-Dec-2024	----	----	----		29-Dec-2024	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE SQU US 1	E162	23-Dec-2024	----	----	----		29-Dec-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BCR Trip Blank	E160	23-Dec-2024	----	----	----		29-Dec-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE SQU DS 1	E160	23-Dec-2024	----	----	----		29-Dec-2024	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE SQU US 1	E160	23-Dec-2024	----	----	----		29-Dec-2024	7 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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
Opaque HDPE - total (sodium hydroxide)										
BCR Trip Blank	E532	23-Dec-2024	----	----	----		30-Dec-2024	28 days	7 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
Opaque HDPE - total (sodium hydroxide)										
SQU DS 1	E532	23-Dec-2024	----	----	----		30-Dec-2024	28 days	7 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
Opaque HDPE - total (sodium hydroxide)										
SQU US 1	E532	23-Dec-2024	----	----	----		30-Dec-2024	28 days	7 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial - total (lab preserved)										
BCR Trip Blank	E508	23-Dec-2024	03-Jan-2025	28 days	11 days	✓	03-Jan-2025	28 days	11 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid)										
SQU DS 1	E508	23-Dec-2024	03-Jan-2025	28 days	11 days	✓	03-Jan-2025	28 days	11 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid)										
SQU US 1	E508	23-Dec-2024	03-Jan-2025	28 days	11 days	✓	03-Jan-2025	28 days	11 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE - total (lab preserved)										
BCR Trip Blank	E420	23-Dec-2024	30-Dec-2024	180 days	7 days	✓	02-Jan-2025	180 days	10 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
SQU DS 1	E420	23-Dec-2024	30-Dec-2024	180 days	7 days	✓	02-Jan-2025	180 days	10 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
SQU US 1	E420	23-Dec-2024	30-Dec-2024	180 days	7 days	✓	02-Jan-2025	180 days	10 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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
BCR Trip Blank	E395	23-Dec-2024	----	----	----		30-Dec-2024	7 days	7 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
SQU DS 1	E395	23-Dec-2024	----	----	----		30-Dec-2024	7 days	7 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
SQU US 1	E395	23-Dec-2024	----	----	----		30-Dec-2024	7 days	7 days	✓

Legend & Qualifier Definitions

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

Quality Control Parameter Frequency Compliance

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

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1822270	1	19	5.2	5.0	✓
Ammonia by Fluorescence	E298	1822290	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1822275	2	39	5.1	5.0	✓
Chloride in Water by IC	E235.Cl	1822274	2	39	5.1	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1828235	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1825792	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1822291	1	5	20.0	5.0	✓
Fluoride in Water by IC	E235.F	1822273	2	39	5.1	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1822276	2	40	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1822277	2	40	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1822278	2	39	5.1	5.0	✓
TDS by Gravimetry	E162	1824683	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1825983	1	19	5.2	5.0	✓
Total Mercury in Water by CVAAS	E508	1829168	1	7	14.2	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1822321	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1822288	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1822292	1	14	7.1	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1825840	1	11	9.0	5.0	✓
TSS by Gravimetry	E160	1824679	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1822270	1	19	5.2	5.0	✓
Ammonia by Fluorescence	E298	1822290	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1822275	2	39	5.1	5.0	✓
Chloride in Water by IC	E235.Cl	1822274	2	39	5.1	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1828235	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1825792	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1822291	1	5	20.0	5.0	✓
Fluoride in Water by IC	E235.F	1822273	2	39	5.1	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1822276	2	40	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1822277	2	40	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1822278	2	39	5.1	5.0	✓
TDS by Gravimetry	E162	1824683	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1825983	1	19	5.2	5.0	✓
Total Mercury in Water by CVAAS	E508	1829168	1	7	14.2	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1822321	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1822288	1	20	5.0	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1822292	1	14	7.1	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1825840	1	11	9.0	5.0	✓
TSS by Gravimetry	E160	1824679	1	20	5.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1822270	1	19	5.2	5.0	✓
Ammonia by Fluorescence	E298	1822290	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1822275	2	39	5.1	5.0	✓
Chloride in Water by IC	E235.Cl	1822274	2	39	5.1	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1828235	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1825792	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1822291	1	5	20.0	5.0	✓
Fluoride in Water by IC	E235.F	1822273	2	39	5.1	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1822276	2	40	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1822277	2	40	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1822278	2	39	5.1	5.0	✓
TDS by Gravimetry	E162	1824683	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1825983	1	19	5.2	5.0	✓
Total Mercury in Water by CVAAS	E508	1829168	1	7	14.2	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1822321	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1822288	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1822292	1	14	7.1	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1825840	1	11	9.0	5.0	✓
TSS by Gravimetry	E160	1824679	1	20	5.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1822290	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1822275	2	39	5.1	5.0	✓
Chloride in Water by IC	E235.Cl	1822274	2	39	5.1	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1828235	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1825792	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1822291	1	5	20.0	5.0	✓
Fluoride in Water by IC	E235.F	1822273	2	39	5.1	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1822276	2	40	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1822277	2	40	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1822278	2	39	5.1	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1825983	1	19	5.2	5.0	✓
Total Mercury in Water by CVAAS	E508	1829168	1	7	14.2	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1822321	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1822288	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1822292	1	14	7.1	5.0	✓

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
Total Sulfide by Colourimetry (Automated Flow)	E395	1825840	1	11	9.0	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 ± 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.
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 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.
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 methlyene blue colourimetric method. Results expressed "as H2S" if reported represent the maximum possible H2S concentration based on the total sulfide concentration in the sample. The H2S calculation converts Total Sulphide as (S2-) and reports it as Total Sulphide as (H2S)
Total Metals in Water by CRC ICPMS	E420 ALS Environmental - Vancouver	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Mercury in Water by CVAAS	E508 ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
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.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Hexavalent Chromium (Cr VI) by IC	E532 ALS Environmental - Vancouver	Water	APHA 3500-Cr C (Ion Chromatography)	Hexavalent Chromium is measured by Ion chromatography-Post column reaction and UV detection. Results are based on an un-filtered, field-preserved sample.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 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 CaCO3), from total Ca/Mg" is calculated from the sum of total Calcium and Magnesium concentrations, expressed in CaCO3 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 - Vancouver	Water	APHA 3030B/6020A/EPA 7196A (mod)	Chromium (III)-Total is calculated as the difference between the total chromium and the total hexavalent chromium (Cr(VI)) results.The Limit of Reporting for Chromium (III) varies as a function of the test results.
Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine	EF001 ALS Environmental - Vancouver	Water	Field Measurement (Client Supplied)	Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3 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.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
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.

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QUALITY CONTROL REPORT

Work Order	: **VA24D4290**	Page	: 1 of 18
Client	: Triton Environmental Consultants Ltd.	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	
Address		Address	
Telephone	: ----	Telephone	
Project	: 11964	Date Samples Received	: 23-Dec-2024 13:50
PO	: 11964-Task30-Phase 3C-4C	Date Analysis Commenced	: 24-Dec-2024
C-O-C number	: ----	Issue Date	: 03-Jan-2025 22:13
Sampler	: ----		
Site	: Water Analysis		
Quote number	: VA23-TRIT100-012 _V2		
No. of samples received	: 3		
No. of samples analysed	: 3		

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*
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Inorganics, Burnaby, British Columbia
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Administration, Burnaby, British Columbia
		Vancouver Metals, Burnaby, British Columbia
		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: 1822270)											
FJ2403890-001	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	115	115	0.0869%	20%	----
Physical Tests (QC Lot: 1824679)											
FJ2403900-010	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1824683)											
FJ2403900-010	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	2110	2170	2.48%	20%	----
Anions and Nutrients (QC Lot: 1822273)											
FJ2403879-001	Anonymous	Fluoride	16984-48-8	E235.F	0.400	mg/L	<0.400	<0.400	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1822274)											
FJ2403879-001	Anonymous	Chloride	16887-00-6	E235.Cl	10.0	mg/L	42.2	42.0	0.27	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1822275)											
FJ2403879-001	Anonymous	Bromide	24959-67-9	E235.Br-L	1.00	mg/L	<1.00	<1.00	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1822276)											
FJ2403879-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.100	mg/L	31.4	31.3	0.0528%	20%	----
Anions and Nutrients (QC Lot: 1822277)											
FJ2403879-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0200	mg/L	0.0573	0.0600	0.0027	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1822278)											
FJ2403879-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	6.00	mg/L	991	988	0.264%	20%	----
Anions and Nutrients (QC Lot: 1822288)											
FJ2403879-003	Anonymous	Nitrogen, total	7727-37-9	E366	0.150	mg/L	3.81	3.86	1.34%	20%	----
Anions and Nutrients (QC Lot: 1822290)											
FJ2403879-001	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: 1822292)											
VA24D4283-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0318	0.0312	1.87%	20%	----
Anions and Nutrients (QC Lot: 1823707)											
KS2405366-001	Anonymous	Fluoride	16984-48-8	E235.F	1.00	mg/L	<1.00	<1.00	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1823708)											
KS2405366-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	15.0	mg/L	5190	5260	1.34%	20%	----
Anions and Nutrients (QC Lot: 1823709)											
KS2405366-001	Anonymous	Chloride	16887-00-6	E235.Cl	25.0	mg/L	116	117	0.63	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1823710)											

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: 1823710) - continued											
KS2405366-001	Anonymous	Bromide	24959-67-9	E235.Br-L	2.50	mg/L	<2.50	<2.50	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1823711)											
KS2405366-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0500	mg/L	1.72	1.73	0.628%	20%	----
Anions and Nutrients (QC Lot: 1823712)											
KS2405366-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.250	mg/L	14.7	14.8	0.982%	20%	----
Organic / Inorganic Carbon (QC Lot: 1822291)											
VA24D4084-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Total Sulfides (QC Lot: 1825840)											
VA24D4240-001	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.0075	mg/L	<0.0075	<0.0075	0	Diff <2x LOR	----
Total Metals (QC Lot: 1822321)											
VA24D4170-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0060	mg/L	31.4	33.1	5.12%	20%	----
		Antimony, total	7440-36-0	E420	0.00020	mg/L	0.00678	0.00686	1.26%	20%	----
		Arsenic, total	7440-38-2	E420	0.00020	mg/L	0.127	0.132	4.08%	20%	----
		Barium, total	7440-39-3	E420	0.00020	mg/L	0.897	0.942	4.87%	20%	----
		Beryllium, total	7440-41-7	E420	0.000040	mg/L	0.00632	0.00608	3.78%	20%	----
		Bismuth, total	7440-69-9	E420	0.000100	mg/L	0.00585	0.00596	1.87%	20%	----
		Boron, total	7440-42-8	E420	0.020	mg/L	0.122	0.120	0.002	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E420	0.0000100	mg/L	0.000656	0.000683	3.95%	20%	----
		Calcium, total	7440-70-2	E420	0.100	mg/L	60.3	60.0	0.562%	20%	----
		Cesium, total	7440-46-2	E420	0.000020	mg/L	0.00423	0.00448	5.60%	20%	----
		Chromium, total	7440-47-3	E420	0.00100	mg/L	0.0850	0.0865	1.80%	20%	----
		Cobalt, total	7440-48-4	E420	0.00020	mg/L	0.0594	0.0624	5.02%	20%	----
		Copper, total	7440-50-8	E420	0.00100	mg/L	0.123	0.122	0.725%	20%	----
		Iron, total	7439-89-6	E420	0.020	mg/L	82.6	82.9	0.365%	20%	----
		Lead, total	7439-92-1	E420	0.000100	mg/L	0.140	0.141	1.09%	20%	----
		Lithium, total	7439-93-2	E420	0.0020	mg/L	0.0480	0.0477	0.773%	20%	----
		Magnesium, total	7439-95-4	E420	0.100	mg/L	34.8	34.1	2.13%	20%	----
		Manganese, total	7439-96-5	E420	0.00020	mg/L	3.10	3.06	1.04%	20%	----
		Molybdenum, total	7439-98-7	E420	0.000100	mg/L	0.0142	0.0148	3.92%	20%	----
		Nickel, total	7440-02-0	E420	0.00100	mg/L	0.152	0.154	1.40%	20%	----
		Phosphorus, total	7723-14-0	E420	0.100	mg/L	1.33	1.48	10.7%	20%	----
		Potassium, total	7440-09-7	E420	0.100	mg/L	9.57	9.69	1.23%	20%	----
		Rubidium, total	7440-17-7	E420	0.00040	mg/L	0.0461	0.0469	1.58%	20%	----
		Selenium, total	7782-49-2	E420	0.000100	mg/L	0.00102	0.00121	16.5%	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*
Total Metals (QC Lot: 1822321) - continued											
VA24D4170-001	Anonymous	Silicon, total	7440-21-3	E420	0.20	mg/L	54.7	56.6	3.37%	20%	----
		Silver, total	7440-22-4	E420	0.000020	mg/L	0.00714	0.00722	1.07%	20%	----
		Sodium, total	7440-23-5	E420	0.100	mg/L	139	136	1.78%	20%	----
		Strontium, total	7440-24-6	E420	0.00040	mg/L	0.406	0.423	4.19%	20%	----
		Sulfur, total	7704-34-9	E420	1.00	mg/L	39.7	39.4	0.944%	20%	----
		Tellurium, total	13494-80-9	E420	0.00040	mg/L	<0.00040	<0.00040	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E420	0.000020	mg/L	0.000687	0.000704	2.44%	20%	----
		Thorium, total	7440-29-1	E420	0.00020	mg/L	0.0904	0.0945	4.36%	20%	----
		Tin, total	7440-31-5	E420	0.00020	mg/L	0.00049	0.00050	0.000004	Diff <2x LOR	----
		Titanium, total	7440-32-6	E420	0.00060	mg/L	0.0786	0.0825	4.93%	20%	----
		Tungsten, total	7440-33-7	E420	0.00020	mg/L	0.00096	0.00095	0.00001	Diff <2x LOR	----
		Uranium, total	7440-61-1	E420	0.000020	mg/L	0.0367	0.0373	1.60%	20%	----
		Vanadium, total	7440-62-2	E420	0.00100	mg/L	0.0427	0.0428	0.386%	20%	----
		Zinc, total	7440-66-6	E420	0.0060	mg/L	0.195	0.191	1.81%	20%	----
		Zirconium, total	7440-67-7	E420	0.00040	mg/L	<0.00040	<0.00040	0	Diff <2x LOR	----
Total Metals (QC Lot: 1829168)											
VA24D4276-041	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1825792)											
VA24D4170-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0062	0.0063	0.0001	Diff <2x LOR	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.0114	0.0115	1.58%	20%	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00616	0.00622	0.968%	20%	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0103	0.0106	2.89%	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	0.043	0.043	0.0002	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000150	mg/L	<0.0000150	<0.0000150	0	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	6.60	6.53	1.10%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	0.000027	0.000026	0.0000008	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	0.00487	0.00483	0.851%	20%	----
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00095	0.00093	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	0.0162	0.0162	0.227%	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: 1825792) - continued											
VA24D4170-001	Anonymous	Magnesium, dissolved	7439-95-4	E421	0.100	mg/L	2.07	2.06	0.175%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0739	0.0727	1.66%	20%	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.0340	0.0344	1.16%	20%	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00724	0.00710	1.83%	20%	----
		Phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E421	0.100	mg/L	1.11	1.10	1.02%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00115	0.00119	0.00004	Diff <2x LOR	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000410	0.000456	0.000046	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.42	2.48	2.32%	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	134	132	1.16%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.0387	0.0386	0.423%	20%	----
		Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	34.0	34.4	1.24%	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	0.00024	0.00025	0.00001	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00861	0.00873	1.33%	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	0.0013	0.0011	0.0002	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: 1828235)											
VA24D4194-010	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0050 µg/L	<0.0000050	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 1825983)											
VA24D4152-001	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: 1822270)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1824679)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1824683)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 1822273)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1822274)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1822275)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1822276)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1822277)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1822278)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1822288)						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
Anions and Nutrients (QCLot: 1822290)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1822292)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 1823707)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1823708)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1823709)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1823710)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1823711)						

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 1823711) - continued						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1823712)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Organic / Inorganic Carbon (QCLot: 1822291)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1825840)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1822321)						
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	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1822321) - continued						
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	----
Total Metals (QCLot: 1829168)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1825792)						
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	MBRR

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1825792) - continued						
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	----
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: 1828235)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Speciated Metals (QCLot: 1825983)						
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: 1822270)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	105	85.0	115	----
Physical Tests (QCLot: 1824679)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	100	85.0	115	----
Physical Tests (QCLot: 1824683)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	100	85.0	115	----
Anions and Nutrients (QCLot: 1822273)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	99.9	90.0	110	----
Anions and Nutrients (QCLot: 1822274)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 1822275)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	108	85.0	115	----
Anions and Nutrients (QCLot: 1822276)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 1822277)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	99.0	90.0	110	----
Anions and Nutrients (QCLot: 1822278)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	106	90.0	110	----
Anions and Nutrients (QCLot: 1822288)									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1822290)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	94.3	85.0	115	----
Anions and Nutrients (QCLot: 1822292)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	89.6	80.0	120	----
Anions and Nutrients (QCLot: 1823707)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	98.4	90.0	110	----
Anions and Nutrients (QCLot: 1823708)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1823709)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	99.8	90.0	110	----
Anions and Nutrients (QCLot: 1823710)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	110	85.0	115	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1823711)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	97.6	90.0	110	----
Anions and Nutrients (QCLot: 1823712)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	99.9	90.0	110	----
Organic / Inorganic Carbon (QCLot: 1822291)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	98.2	80.0	120	----
Total Sulfides (QCLot: 1825840)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	99.7	80.0	120	----
Total Metals (QCLot: 1822321)									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	102	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	108	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	105	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	106	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	107	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	99.7	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	103	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	98.1	80.0	120	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	103	80.0	120	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	102	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	91.9	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	104	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	104	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	104	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	102	80.0	120	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	104	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	101	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	103	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	96.3	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	114	80.0	120	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Target Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1822321) - continued									
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	95.9	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	103	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	97.6	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	101	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	105	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	103	80.0	120	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	104	80.0	120	----
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	101	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	101	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	107	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	105	80.0	120	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	104	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	104	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	101	80.0	120	----
Total Metals (QCLot: 1829168)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	95.2	80.0	120	----
Dissolved Metals (QCLot: 1825792)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	100	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	103	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	97.4	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	97.4	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	95.8	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	105	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	95.5	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	102	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	102	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	99.7	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	98.8	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	95.4	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	101	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	98.8	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	101	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	102	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1825792) - continued									
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	99.2	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	98.8	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	96.6	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	97.5	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	99.8	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	94.3	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	99.4	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	104	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	88.3	80.0	120	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	97.2	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	99.8	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	96.2	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	100	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	97.4	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	106	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	98.7	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	101	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	97.5	80.0	120	----
Speciated Metals (QCLot: 1825983)									
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	0.25 mg/L	93.5	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: 1822273)										
FJ2403879-002	Anonymous	Fluoride	16984-48-8	E235.F	20.2 mg/L	20 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1822274)										
FJ2403879-002	Anonymous	Chloride	16887-00-6	E235.Cl	2070 mg/L	2000 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1822275)										
FJ2403879-002	Anonymous	Bromide	24959-67-9	E235.Br-L	10.6 mg/L	10 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 1822276)										
FJ2403879-002	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	51.5 mg/L	50 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1822277)										
FJ2403879-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	9.79 mg/L	10 mg/L	97.9	75.0	125	----
Anions and Nutrients (QCLot: 1822278)										
FJ2403879-002	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	2090 mg/L	2000 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 1822288)										
FJ2403879-004	Anonymous	Nitrogen, total	7727-37-9	E366	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 1822290)										
FJ2403879-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0963 mg/L	0.1 mg/L	96.3	75.0	125	----
Anions and Nutrients (QCLot: 1822292)										
VA24D4283-002	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0469 mg/L	0.05 mg/L	93.8	70.0	130	----
Anions and Nutrients (QCLot: 1823707)										
VA24D4290-003	BCR Trip Blank	Fluoride	16984-48-8	E235.F	1.02 mg/L	1 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1823708)										
VA24D4290-003	BCR Trip Blank	Sulfate (as SO4)	14808-79-8	E235.SO4	104 mg/L	100 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 1823709)										
VA24D4290-003	BCR Trip Blank	Chloride	16887-00-6	E235.Cl	102 mg/L	100 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1823710)										
VA24D4290-003	BCR Trip Blank	Bromide	24959-67-9	E235.Br-L	0.560 mg/L	0.5 mg/L	112	75.0	125	----
Anions and Nutrients (QCLot: 1823711)										
VA24D4290-003	BCR Trip Blank	Nitrite (as N)	14797-65-0	E235.NO2-L	0.499 mg/L	0.5 mg/L	99.9	75.0	125	----
Anions and Nutrients (QCLot: 1823712)										
VA24D4290-003	BCR Trip Blank	Nitrate (as N)	14797-55-8	E235.NO3-L	2.56 mg/L	2.5 mg/L	102	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1822291)										

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
Organic / Inorganic Carbon (QCLot: 1822291) - continued										
VA24D4084-002	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	5.10 mg/L	5 mg/L	102	70.0	130	----
Total Sulfides (QCLot: 1825840)										
VA24D4240-002	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.969 mg/L	1 mg/L	96.9	75.0	125	----
Total Metals (QCLot: 1822321)										
VA24D4170-002	Anonymous	Aluminum, total	7429-90-5	E420	0.186 mg/L	0.2 mg/L	92.8	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0203 mg/L	0.02 mg/L	102	70.0	130	----
		Arsenic, total	7440-38-2	E420	ND mg/L	----	ND	70.0	130	----
		Barium, total	7440-39-3	E420	ND mg/L	----	ND	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0394 mg/L	0.04 mg/L	98.5	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.00946 mg/L	0.01 mg/L	94.6	70.0	130	----
		Boron, total	7440-42-8	E420	0.100 mg/L	0.1 mg/L	100.0	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00392 mg/L	0.004 mg/L	98.0	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.00982 mg/L	0.01 mg/L	98.2	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0394 mg/L	0.04 mg/L	98.4	70.0	130	----
		Cobalt, total	7440-48-4	E420	ND mg/L	----	ND	70.0	130	----
		Copper, total	7440-50-8	E420	ND mg/L	----	ND	70.0	130	----
		Iron, total	7439-89-6	E420	ND mg/L	----	ND	70.0	130	----
		Lead, total	7439-92-1	E420	0.0186 mg/L	0.02 mg/L	93.1	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0952 mg/L	0.1 mg/L	95.2	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	0.0213 mg/L	0.02 mg/L	106	70.0	130	----
		Nickel, total	7440-02-0	E420	ND mg/L	----	ND	70.0	130	----
		Phosphorus, total	7723-14-0	E420	10.5 mg/L	10 mg/L	105	70.0	130	----
		Potassium, total	7440-09-7	E420	ND mg/L	----	ND	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0191 mg/L	0.02 mg/L	95.7	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0414 mg/L	0.04 mg/L	104	70.0	130	----
		Silicon, total	7440-21-3	E420	9.94 mg/L	10 mg/L	99.4	70.0	130	----
		Silver, total	7440-22-4	E420	0.00402 mg/L	0.004 mg/L	100	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	0.0423 mg/L	0.04 mg/L	106	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00372 mg/L	0.004 mg/L	92.9	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0205 mg/L	0.02 mg/L	102	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	0.0393 mg/L	0.04 mg/L	98.3	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		Uranium, total	7440-61-1	E420	ND mg/L	----	ND	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.101 mg/L	0.1 mg/L	101	70.0	130	----
		Zinc, total	7440-66-6	E420	0.385 mg/L	0.4 mg/L	96.3	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0410 mg/L	0.04 mg/L	103	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: 1829168)										
VA24D4276-042	Anonymous	Mercury, total	7439-97-6	E508	0.0000974 mg/L	0 mg/L	97.4	70.0	130	----
Dissolved Metals (QCLot: 1825792)										
VA24D4170-002	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.194 mg/L	0.2 mg/L	97.0	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0209 mg/L	0.02 mg/L	104	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	ND mg/L	----	ND	70.0	130	----
		Barium, dissolved	7440-39-3	E421	ND mg/L	----	ND	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0380 mg/L	0.04 mg/L	94.9	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00912 mg/L	0.01 mg/L	91.2	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.095 mg/L	0.1 mg/L	94.9	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00410 mg/L	0.004 mg/L	102	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.0101 mg/L	0.01 mg/L	101	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0393 mg/L	0.04 mg/L	98.2	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	ND mg/L	----	ND	70.0	130	----
		Copper, dissolved	7440-50-8	E421	ND mg/L	----	ND	70.0	130	----
		Iron, dissolved	7439-89-6	E421	ND mg/L	----	ND	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0188 mg/L	0.02 mg/L	93.9	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0914 mg/L	0.1 mg/L	91.4	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	0.0212 mg/L	0.02 mg/L	106	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	ND mg/L	----	ND	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	10.3 mg/L	10 mg/L	103	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	ND mg/L	----	ND	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.0191 mg/L	0.02 mg/L	95.5	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	9.25 mg/L	10 mg/L	92.5	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00394 mg/L	0.004 mg/L	98.6	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	0.0424 mg/L	0.04 mg/L	106	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00368 mg/L	0.004 mg/L	92.1	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0200 mg/L	0.02 mg/L	100.0	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0201 mg/L	0.02 mg/L	101	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0387 mg/L	0.04 mg/L	96.6	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0199 mg/L	0.02 mg/L	99.6	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	ND mg/L	----	ND	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.0995 mg/L	0.1 mg/L	99.5	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.370 mg/L	0.4 mg/L	92.4	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0439 mg/L	0.04 mg/L	110	70.0	130	----
Dissolved Metals (QCLot: 1828235)										
VA24D4194-011	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000941 mg/L	0 mg/L	94.1	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
Speciated Metals (QCLot: 1825983)										
VA24D4152-002	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.261 mg/L	0.25 mg/L	104	70.0	130	----

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 17 -

Page 1 of

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)
Company:	Triton Environmental	Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)	Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply
Contact:		Quality Control (QC) Report with Report ☑ ☐ NO	PRIORITY (Business Days): 4 day [P4-20%] ☐ / 3 day [P3-25%] ☐ / 2 day [P2-50%] ☐
Phone:		☑ Compare Results to Criteria on Report - provide details below if box checked	EMERGENCY: 1 Business day [E1 - 100%] ☐ / Same Day, Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)] ☐
Street:		Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
City/Province:		Email 1 or Fax	For tests that can not be performed according to the service level selected, you will be contacted.
Postal Code:		Email 2	
		Email 3	

Invoice To	Same as Report To ☐ YES ☑ NO	Select Invoice
	Copy of Invoice with Report ☐ YES ☑ NO	Email 1 or Fax
Company:		Email 2
Contact:		

Project Information		Oi
ALS Account # / Quote #:	VA23-TRIT100-012	AFE/Cost Center:
Job #:	11964	Major/Minor Code:
PO / AFE:	11964 - Task 20 - Phase 3C-4C	Requisitioner:
LSD:		Location:
ALS Lab Work Order # (lab use only):		ALS Contact:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Total metals + mercury (F)	Dissolved metals + mercury (F)	Total hexavalent chromium	Total trivalent chromium	TSS	TDS	Nutrients (ammonia, ammonium, total nitrogen, total phosphorus) (P)	Total sulfide (low) (as H2S), Unionized Sulfide (low) (P)	Anions scan (Br, Cl, F, NO2, NO3, SO4)	General parameters (alkalinity)	DOC (F/P)	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
	SQU US 1			Water	R	R	R	R	R	R	R	R	R	R	R		N	9
	pH: 7.1 cond: 27 temp: 5.0	23-Dec-24	11:23															
	SQU DS 1			Water	R	R	R	R	R	R	R	R	R	R	R		N	9
	pH: 7.1 cond: 27 temp: 5.0	23-Dec-24	10:27															

Environmental Division
Vancouver
Work Order Reference
VA24D4290

Telephone : +1 604 253 4188

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Crite	ist below
Are samples taken from a Regulated DW System? ☐ ☑ NO		
Are samples for human consumption/ use? ☐ ☑ NO	Triton Project # 11964	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐	SIF Observations Yes ☐ No ☐
Ice Packs ☒ Ice Cubes ☐	Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐	

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C			
			9			

SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
	Time: 14:00	Received by:	Date:	Time:	Received by: CW	Date: Dec 23	Time: 1350

AND SAMPLING INFORMATION — WHITE - LABORATORY COPY — YELLOW - CLIENT COPY — SEPT 2017 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.**

Chain of Custody (COC) / Analytical Request Form

COC Number: 20 -

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Canada Toll Free: 1 800 668 9878

www.alsglobal.com

Report To	Contact and company name below will appear on the final report
Company:	Triton Environmental
Contact:	
Phone:	
Street:	
City/Province:	
Postal Code:	
Invoice To	
Company:	
Contact:	

Reports / Recipients

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)
Merge QC/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

Email 1 or Fax
Email 2
Email 3
Select Invoice
Email 1 or Fax
Email 2

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.

Additional fees may apply to rush requests on weekends, statutory holidays and for non-routine tests.

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm am/pm

For all tests with rush TATs requested, please contact your AM to confirm availability.

AFFIX ALS BARCODE LABEL HERE (ALS use only)

Project Information

ALS Account # / Quote #:	VA23-TRIT100-012
Job #:	11964
PO / AFE:	11964 - Task 30 - Phase 3C-4C
LSD:	
ALS Lab Work Order # (ALS use only):	

AFE/Cost Center:
Major/Minor Code:
Requisitioner:
Location:
ALS Contact:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Total metals + mercury	Dissolved metals + mercury	Total hexavalent chromium	Total trivalent chromium	TSS	TDS	Nutrients (ammonia, ammonium, total nitrogen, total phosphorus)	Total sulfide (low) (as H2S), Unionized Sulfide (low)	Anions scan (Br, Cl, F, NO2, NO3, SO4)	General parameters (alkalinity)	DOC				SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	~~BCR Duplicate~~			Water	9	R	R	R	R	R	R	R	R	R	R	R						
	pH: cond: temp:																					
	~~BCR Field Blank~~			Water	9	R	R	R	R	R	R	R	R	R	R	R						
	BCR Trip Blank	23-Dec-24		Water	6	R		R	R	R	R	R	R	R		R						

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System?
☐ YES ☑ NO

Are samples for human consumption/ use?
☐ YES ☑ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

ESDAT EDD to ESdat_CA+tritonenv@ESdatLabSync.net, reports also to stephanie.renkers@triton-env.com

SAMPLE RECEIPT DETAILS (ALS use only)

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			
			9			

SHIPMENT RELEASE (client use)

Date: 23-Dec-24 Time: 14:00

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by: Date: Time:

FINAL SHIPMENT RECEPTION (ALS use only)

Received by: CW Date: Dec 23 Time: 1350

ONS AND SAMPLING INFORMATION WHITE - LABORATORY COPY YELLOW - CLIENT COPY

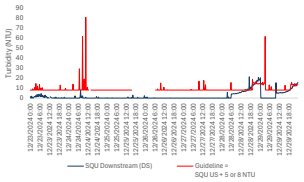
AUG 2020 FRONT

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**.

BCR Plant Site

	SQU Downstream (DS)							SQU Upstream (US)						
Date	Temperature (c)	Specific Conductivity (µS/cm)	Salinity PSU	pH	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Date	Temperature (c)	Specific Conductivity (µS/cm)	Salinity PSU	pH	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Guideline = SQU US + 5 or 8 NTU
12/23/2024 0:00	4.7	27.8	0.0	7.1	11.8	1.5	12/23/2024 0:00	5.8	46.5	0.0	6.7	12.2	0.0	8.0
12/23/2024 0:15	4.7	27.7	0.0	7.0	11.8	0.0	12/23/2024 0:15	5.8	45.9	0.0	6.7	12.2	0.0	8.0
12/23/2024 0:30	4.7	27.8	0.0	7.0	11.8	0.0	12/23/2024 0:30	5.8	45.7	0.0	6.7	12.2	0.0	8.0
12/23/2024 0:45	4.7	27.4	0.0	7.1	11.8	1.9	12/23/2024 0:45	5.8	45.2	0.0	6.7	12.3	0.0	8.0
12/23/2024 1:00	4.7	27.4	0.0	7.1	11.8	0.1	12/23/2024 1:00	5.8	45.2	0.0	6.7	12.3	0.0	8.0
12/23/2024 1:15	4.8	27.4	0.0	7.0	11.8	0.9	12/23/2024 1:15	5.8	45.2	0.0	6.7	12.3	0.0	8.0
12/23/2024 1:30	4.8	27.1	0.0	7.1	11.9	0.2	12/23/2024 1:30	5.8	45.0	0.0	6.7	12.3	1.2	9.2
12/23/2024 1:45	4.8	27.2	0.0	7.0	11.9	0.0	12/23/2024 1:45	5.8	44.3	0.0	6.7	12.3	0.0	8.0
12/23/2024 2:00	4.8	26.6	0.0	7.0	11.9	0.3	12/23/2024 2:00	5.9	44.3	0.0	6.7	12.4	0.0	8.0
12/23/2024 2:15	4.8	26.5	0.0	7.1	11.9	1.1	12/23/2024 2:15	5.9	43.7	0.0	6.7	12.4	0.0	8.0
12/23/2024 2:30	4.8	26.5	0.0	7.1	12.0	1.5	12/23/2024 2:30	5.9	43.8	0.0	6.7	12.5	0.0	8.0
12/23/2024 2:45	4.8	26.3	0.0	7.1	12.0	1.8	12/23/2024 2:45	5.9	43.0	0.0	6.7	12.5	2.6	10.6
12/23/2024 3:00	4.8	25.7	0.0	7.1	12.1	1.1	12/23/2024 3:00	5.9	42.0	0.0	6.7	12.5	0.0	8.0
12/23/2024 3:15	4.8	25.1	0.0	7.0	12.1	2.4	12/23/2024 3:15	5.9	42.1	0.0	6.7	12.6	0.0	8.0
12/23/2024 3:30	4.8	24.9	0.0	7.1	12.1	1.3	12/23/2024 3:30	5.9	41.4	0.0	6.7	12.6	9.5	14.5
12/23/2024 3:45	4.8	24.9	0.0	7.0	12.1	1.9	12/23/2024 3:45	5.9	41.6	0.0	6.7	12.6	0.0	8.0
12/23/2024 4:00	4.8	24.5	0.0	7.1	12.1	1.2	12/23/2024 4:00	5.9	40.4	0.0	6.7	12.6	0.0	8.0
12/23/2024 4:15	4.8	24.3	0.0	7.1	12.2	3.6	12/23/2024 4:15	5.9	40.2	0.0	6.7	12.6	0.0	8.0
12/23/2024 4:30	4.8	24.0	0.0	7.1	12.2	1.6	12/23/2024 4:30	5.9	39.8	0.0	6.7	12.7	3.8	11.8
12/23/2024 4:45	4.8	23.6	0.0	7.1	12.2	2.0	12/23/2024 4:45	5.9	39.3	0.0	6.7	12.7	0.0	8.0
12/23/2024 5:00	4.8	23.6	0.0	7.1	12.2	1.5	12/23/2024 5:00	5.9	38.9	0.0	6.7	12.7	0.0	8.0
12/23/2024 5:15	4.8	23.4	0.0	7.1	12.2	3.3	12/23/2024 5:15	5.9	38.9	0.0	6.7	12.7	0.0	8.0
12/23/2024 5:30	4.8	23.2	0.0	7.0	12.2	3.9	12/23/2024 5:30	5.9	38.3	0.0	6.7	12.7	0.0	8.0
12/23/2024 5:45	4.8	22.6	0.0	7.0	12.2	2.1	12/23/2024 5:45	5.9	37.7	0.0	6.7	12.7	5.4	13.4
12/23/2024 6:00	4.8	22.7	0.0	7.0	12.2	1.9	12/23/2024 6:00	5.9	37.6	0.0	6.7	12.7	0.0	8.0
12/23/2024 6:15	4.8	22.6	0.0	7.0	12.2	2.2	12/23/2024 6:15	5.9	37.6	0.0	6.7	12.7	0.0	8.0
12/23/2024 6:30	4.8	22.3	0.0	7.1	12.2	1.5	12/23/2024 6:30	5.9	37.2	0.0	6.7	12.7	1.9	9.9
12/23/2024 6:45	4.8	22.3	0.0	7.0	12.2	4.6	12/23/2024 6:45	5.9	37.3	0.0	6.7	12.8	0.0	8.0
12/23/2024 7:00	4.8	22.3	0.0	7.0	12.2	1.7	12/23/2024 7:00	5.8	37.1	0.0	6.7	12.7	0.9	8.9
12/23/2024 7:15	4.8	22.1	0.0	7.0	12.2	2.3	12/23/2024 7:15		36.8	0.0	6.7	12.7	0.0	8.0
12/23/2024 7:30	4.8	22.0	0.0	7.0	12.3	2.8	12/23/2024 7:30	5.8	36.9	0.0	6.7	12.8	2.4	10.4
12/23/2024 7:45	4.8	22.1	0.0	7.1	12.2	1.4	12/23/2024 7:45	5.8	36.8	0.0	6.7	12.7	0.0	8.0
12/23/2024 8:00	4.8	22.0	0.0	7.0	12.2	2.3	12/23/2024 8:00	5.8	36.6	0.0	6.7	12.7	0.0	8.0
12/23/2024 8:15	4.8	21.9	0.0	7.0	12.2	0.7	12/23/2024 8:15	5.8	36.4	0.0	6.7	12.8	0.0	8.0
12/23/2024 8:30	4.8	21.9	0.0	7.0	12.3	1.1	12/23/2024 8:30	5.8	36.6	0.0	6.7	12.7	0.0	8.0
12/23/2024 8:45	4.8	21.9	0.0	7.0	12.2	2.3	12/23/2024 8:45	5.8	36.5	0.0	6.7	12.7	0.0	8.0
12/23/2024 9:00	4.8	22.1	0.0	7.1	12.2	0.6	12/23/2024 9:00	5.8	36.5	0.0	6.7	12.8	0.0	8.0
12/23/2024 9:15	4.8	22.1	0.0	7.0	12.2	2.8	12/23/2024 9:15	5.8	37.2	0.0	6.7	12.7	0.0	8.0
12/23/2024 9:30	4.8	22.1	0.0	7.0	12.2	2.0	12/23/2024 9:30	5.8	37.1	0.0	6.7	12.7	0.0	8.0
12/23/2024 9:45	4.8	22.1	0.0	7.0	12.2	1.0	12/23/2024 9:45	5.8	36.4	0.0	6.7	12.7	0.0	8.0
12/23/2024 10:00	4.8	22.1	0.0	7.0	12.2	1.7	12/23/2024 10:00	5.8	36.7	0.0	6.7	12.7	0.0	8.0
12/23/2024 10:15	4.8	22.2	0.0	7.0	12.2	1.3	12/23/2024 10:15	5.8	36.5	0.0	6.7	12.8	0.0	8.0
12/23/2024 10:30	4.8	22.2	0.0	7.0	12.2	0.4	12/23/2024 10:30	5.8	36.8	0.0	6.7	12.8	0.0	8.0
12/23/2024 10:45	4.8	22.2	0.0	7.0	12.2	0.0	12/23/2024 10:45	5.8	36.9	0.0	6.7	12.7	0.0	8.0
12/23/2024 11:00	4.8	22.4	0.0	7.1	12.2	0.7	12/23/2024 11:00	5.9	37.3	0.0	6.7	12.8	0.0	8.0
12/23/2024 11:15	4.8	22.4	0.0	7.0	12.2	0.3	12/23/2024 11:15	5.9	37.1	0.0	6.7	12.7	0.0	8.0
12/23/2024 11:30	4.8	22.5	0.0	7.0	12.2	0.1	12/23/2024 11:30	5.9	37.4	0.0	6.7	12.8	0.0	8.0
12/23/2024 11:45	5.7	0.1	0.0	7.2	11.7	0.0	12/23/2024 11:45	5.9	37.5	0.0	6.7	12.7	0.0	8.0
12/23/2024 12:00							12/23/2024 12:00	5.9	37.9	0.0	6.7	12.7	0.0	8.0
12/23/2024 12:15							12/23/2024 12:15	5.9	37.8	0.0	6.7	12.7	0.0	8.0
12/23/2024 12:30	4.9	23.0	0.0	6.9	12.2	1.5	12/23/2024 12:30	5.9	38.2	0.0	6.8	12.7	0.0	8.0
12/23/2024 12:45	4.9	23.2	0.0	7.0	12.2	0.7	12/23/2024 12:45	6.0	38.6	0.0	6.7	12.7	0.0	8.0
12/23/2024 13:00	4.9	23.2	0.0	7.0	12.2	0.5	12/23/2024 13:00	5.9	38.5	0.0	6.7	12.7	0.0	8.0
12/23/2024 13:15	4.9	23.3	0.0	7.1	12.1	0.5	12/23/2024 13:15	6.0	38.4	0.0	6.7	12.7	0.0	8.0
12/23/2024 13:30	4.9	23.4	0.0	7.1	12.1	0.0	12/23/2024 13:30	6.0	38.5	0.0	6.7	12.7	0.0	8.0
12/23/2024 13:45	4.9	23.3	0.0	7.1	12.1	0.0	12/23/2024 13:45	6.0	39.0	0.0	6.7	12.6	0.0	8.0
12/23/2024 14:00	5.0	23.6	0.0	7.0	12.1	0.0	12/23/2024 14:00	6.0	39.6	0.0	6.7	12.6	0.0	8.0
12/23/2024 14:15	5.0	23.8	0.0	7.1	12.1	0.1	12/23/2024 14:15	6.0	39.9	0.0	6.7	12.5	0.0	8.0
12/23/2024 14:30	5.0	23.8	0.0	7.0	12.1	0.3	12/23/2024 14:30	6.1	40.8	0.0	6.6	12.5	0.0	8.0
12/23/2024 14:45	5.0	24.2	0.0	7.1	12.0	0.0	12/23/2024 14:45	6.1	40.9	0.0	6.6	12.4	0.0	8.0
12/23/2024 15:00	5.0	24.2	0.0	7.1	12.0	0.0	12/23/2024 15:00	6.1	41.8	0.0	6.6	12.4	0.0	8.0
12/23/2024 15:15	5.0	24.3	0.0	7.0	12.0	0.5	12/23/2024 15:15	6.1	41.5	0.0	6.6	12.4	0.0	8.0
12/23/2024 15:30	5.0	24.6	0.0	7.0	12.0	0.0	12/23/2024 15:30	6.1	42.4	0.0	6.6	12.3	0.0	8.0
12/23/2024 15:45	5.0	24.6	0.0	7.0	11.9	0.0	12/23/2024 15:45	6.1	42.1	0.0	6.6	12.3	0.0	8.0
12/23/2024 16:00	5.0	24.6	0.0	7.0	11.9	1.1	12/23/2024 16:00	6.1	41.9	0.0	6.6	12.3	0.0	8.0
12/23/2024 16:15	5.0	24.7	0.0	7.0	11.9	0.0	12/23/2024 16:15	6.1	41.9	0.0	6.6	12.3	0.0	8.0
12/23/2024 16:30	5.0	24.8	0.0	7.0	11.9	0.0	12/23/2024 16:30	6.1	41.7	0.0	6.6	12.3	0.0	8.0
12/23/2024 16:45	5.0	24.9	0.0	7.0	11.9	0.0	12/23/2024 16:45	6.1	42.0	0.0	6.6	12.3	0.0	8.0
12/23/2024 17:00	5.0	24.9	0.0	7.0	11.9	0.0	12/23/2024 17:00	6.1	41.8	0.0	6.6	12.3	0.0	8.0
12/23/2024 17:15	5.0	25.1	0.0	6.9	11.9	0.0	12/23/2024 17:15	6.1	41.5	0.0	6.6	12.3	0.0	8.0
12/23/2024 17:30	5.0	25.0	0.0	7.0	11.9	0.0	12/23/2024 17:30	6.1	41.7	0.0	6.6	12.3	0.0	8.0
12/23/2024 17:45	5.0	25.3	0.0	7.0	11.8	0.4	12/23/2024 17:45	6.1	41.9	0.0	6.6	12.3	0.3	8.3
12/23/2024 18:00	5.0	25.5	0.0	7.0	11.8	0.0	12/23/2024 18:00	6.1	42.1	0.0	6.6	12.3	0.0	8.0
12/23/2024 18:15	5.0	25.6	0.0	7.0	11.8	0.0	12/23/2024 18:15	6.1	42.3	0.0	6.6	12.3	0.0	8.0
12/23/2024 18:30	5.0	25.7	0.0	7.0	11.8	0.0	12/23/2024 18:30	6.1	42.6	0.0	6.6	12.2	0.0	8.0
12/23/2024 18:45	5.0	25.9	0.0	6.9	11.8	0.0	12/23/2024 18:45	6.1	42.5	0.0	6.7	12.2	4.9	12.9
12/23/2024 19:00	5.0	25.9	0.0	7.0	11.8	0.0	12/23/2024 19:00	6.1	42.5	0.0	6.6	12.2	0.0	8.0
12/23/2024 19:15	5.0	26.1	0.0	7.0	11.8	0.0	12/23/2024 19:15	6.1	43.3	0.0	6.6	12.2	0.0	8.0
12/23/2024 19:30	5.0	26.2	0.0	7.0	11.8	0.0	12/23/2024 19:30	6.1	42.6	0.0	6.6	12.2	0.0	8.0
12/23/2024 19:45	5.0	26.2	0.0	7.0	11.8	0.4	12/23/2024 19:45	6.1	43.3	0.0	6.7	12.2	0.0	8.0
12/23/2024 20:00	5.0	26.2	0.0	7.0	11.7	0.0	12/23/2024 20:00	6.1	43.2	0.0	6.6	12.2	0.0	8.0
12/23/2024 20:15	5.0	26.1	0.0	7.0	11.7	0.0	12/23/2024 20:15	6.0	43.0	0.0	6.7	12.2	0.0	8.0
12/23/2024 20:30	5.0	26.3	0.0	7.0	11.7	0.0	12/23/2024 20:30	6.0	42.8	0.0	6.7	12.2	0.0	8.0
12/23/2024 20:45	5.0	26.6	0.0	7.0	11.7	0.0	12/23/2024 20:45	6.0	43.9	0.0	6.7	12.2	0.0	8.0
12/23/2024 21:00	5.0	26.7	0.0	7.0	11.7	0.0	12/23/2024 21:00	6.0	43.8	0.0	6.6	12.2	0.0	8.0
12/23/2024 21:15	5.0	26.6	0.0	7.0	11.7	0.9	12/23/2024 21:15	6.0	43.4	0.0	6.7	12.2	0.0	8.0
12/23/2024 21:30	5.0	26.6	0.0	7.0	11.7	0.0	12/23/2024 21:30	6.0	43.8	0.0	6.7	12.1	0.0	8.0
12/23/2024 21:45	5.0	26.8	0.0	7.0	11.7	0.0	12/23/2024 21:45	6.0	43.9	0.0	6.7	12.1	0.0	8.0
12/23/2024 22:00	5.0	26.9	0.0	7.0	11.7	0.0	12/23/2024 22:00	6.0	44.1	0.0	6.6	12.1	1.6	9.6
12/23/2024 22:15	5.0	27.0	0.0	7.0	11.7	0.0	12/23/2024 22:15	6.0	44.1	0.0	6.7	12.1	0.0	8.0
12/23/2024 22:30	5.0	27.0	0.0	7.0	11.7	0.0	12/23/2024 22:30	6.0	44.3	0.0	6.7	12.1	0.0	8.0
12/23/2024 22:45	4.9	26.9	0.0	7.0	11.7	0.0	12/23/2024 22:45	6.0	44.3	0.0	6.7	12.1	0.0	8.0
12/23/2024 23:00	4.9	27.2	0.0	7.0	11.7	0.0	12/23/2024 23:00	6.0	44.6	0.0	6.7	12.1	0.0	8.0
12/23/2024 23:15	4.9	27.3	0.0	6.9	11.7	0.0	12/23/2024 23:15	6.0	44.9	0.0	6.7	12.1	0.0	8.0
12/23/2024 23:30	4.9	27.4	0.0	7.0	11.6	0.0	12/23/2024 23:30	6.0	44.7	0.0	6.7	12.1	0.0	8.0
12/23/2024 23:45	4.9	27.2	0.0	7.0	11.6	0.0	12/23/2024 23:45	6.0	45.0	0.0	6.7	12.1	0.0	8.0
12/24/2024 0:00	4.9	27.3	0.0	7.0	11.6	0.0	12/24/2024 0:00	6.0	44.8	0.0	6.7	12.1	0.0	8.0
12/24/2024 0:15	4.9	27.5	0.0	7.1	11.6	0.0	12/24/2024 0:15	6.0	45.4	0.0	6.7	12.1	0.0	8.0
12/24/2024 0:30	4.9	27.7	0.0	7.0	11.6	0.0	12/24/2024 0:30	6.0	46.0	0.0	6.6	12.0	0.0	8.0
12/24/2024 0:45	4.9	27.8	0.0	7.0	11.6	0.0	12/24/2024 0:45	6.0	45.5	0.0	6.7	12.1	0.0	8.0
12/24/2024 1:00	4.9	27.6	0.0	7.0	11.6	0.0	12/24/2024 1:00	6.0	45.2	0.0	6.7	12.1	0.0	8.0
12/24/2024 1:15	4.9	27.6	0.0	7.0	11.6	0.0	12/24/2024 1:15	6.0	45.1	0.0	6.7	12.0	0.0	8.0
12/24/2024 1:30	4.9	27.8	0.0	7.0	11.6	0.0	12/24/2024 1:30	6.0	45.4	0.0	6.7	12.0	0.0	8.0
12/24/2024 1:45	4.9	27.9	0.0	7.0	11.6	0.0	12/24/2024 1:45	6.0	46.1	0.0	6.7	12.0	0.0	8.0
12/24/2024 2:00	4.9	27.9	0.0	7.1	11.6	0.0	12/24/2024 2:00	6.0	45.8	0.0	6.7	12.0	0.0	8.0
12/24/2024 2:15	4.9	28.1	0.0	7.0	11.6	0.0	12/24/2024 2:15	6.0	46.2	0.0	6.7	12.0	0.0	8.0
12/24/2024 2:30	4.9	27.9	0.0	7.1	11.6	0.0	12/24/2024 2:30	6.0	45.7	0.0	6.7	12.0	0.0	8.0
12/24/2024 2:45	4.9	27.7	0.0	7.1	11.6	0.0	12/24/2024 2:45	6.0	45.7	0.0	6.7	12.0	5.9	13.9
12/24/2024 3:00	4.9	27.7	0.0	7.0	11.6	0.0	12/24/2024 3:00	6.0	45.3	0.0	6.7	12.0	0.0	8.0
12/24/2024 3:15	4.9	27.8	0.0	7.0	11.6	0.0	12/24/2024 3:15	6.0	45.5	0.0	6.7	12.0	0.0	8.0
12/24/2024 3:30	4.9	28.0	0.0	7.0	11.6	0.0	12/24/2024 3:30	6.0	45.6	0.0	6.7	12.0	0.0	8.0
12/24/2024 3:45	4.9	27.9	0.0	7.0	11.6	0.0	12/24/2024 3:45	6.0	45.7	0.0	6.7	12.0	0.0	8.0
12/24/2024 4:00	4.9	27.8	0.0	7.0	11.6	2.3	12/24/2024 4:00	6.0	45.4	0.0	6.7	12.0	0.0	8.0
12/24/2024 4:15	4.9	28.0	0.0	6.9	11.6	0.0	12/24/2024 4:15	6.0	45.3	0.0	6.7	12.0	0.0	8.0
12/24/2024 4:30	4.9	28.0	0.0	7.1	11.6	0.0	12/24/2024 4:30	6.0	45.6	0.0	6.7	12.0	0.0	8.0
12/24/2024 4:45	4.9	28.1	0.0	7.0	11.6	0.0	12/24/2024 4:45	6.0	45.7	0.0	6.7	12.0	0.0	8.0
12/24/2024 5:00	4.9	28.0	0.0	7.1	11.6	0.0	12/24/2024 5:00	6.0	45.4	0.0	6.7	12.0	0.0	8.0
12/24/2024 5:15	5.0	28.2	0.0	7.0	11.6	0.0	12/24/2024 5:15	6.0	45.4	0.0	6.7	12.1	0.0	8.0
12/24/2024 5:30	4.9	27.8	0.0	7.1	11.6	0.0	12/24/2024 5:30	6.0	44.6	0.0	6.7	12.1	0.0	8.0
12/24/2024 5:45	5.0	27.6	0.0	7.1	11.7	0.0	12/24/2024 5:45	6.0	44.9	0.0	6.7	12.1	0.0	8.0
12/24/2024 6:00	5.0	27.6	0.0	7.1	11.7	0.0	12/24/2024 6:00	6.0	44.8	0.0	6.7	12.1	0.0	8.0
12/24/2024 6:15	5.0	27.7	0.0	7.0	11.7	0.0	12/24/2024 6:15	6.0	44.9	0.0	6.7	12.1	0.0	8.0
12/24/2024 6:30	5.0	27.6	0.0	7.1	11.7	0.0	12/24/2024 6:30	6.0	44.0	0.0	6.7	12.2	0.0	8.0
12/24/2024 6:45	5.0	27.3	0.0	7.1	11.7	0.0	12/24/2024 6:45	6.0	44.0	0.0	6.7	12.2	24.2	29.2
12/24/2024 7:00	5.0	27.1	0.0	7.1	11.7	0.7	12/24/2024 7:00	6.0	43.5	0.0	6.7	12.2	0.0	8.0
12/24/2024 7:15	5.0	26.9	0.0	7.1	11.8	0.8	12/24/2024 7:15	6.1	43.6	0.0	6.7	12.2	0.0	8.0
12/24/2024 7:30	5.0	26.8	0.0	7.1	11.8	8.0	12/24/2024 7:30	6.1	43.1	0.0	6.7	12.3	0.0	8.0
12/24/2024 7:45	5.0	26.6	0.0	7.1	11.8	0.5	12/24/2024 7:45	6.1	43.3	0.0	6.8	12.3	0.0	8.0
12/24/2024 8:00	5.0	26.4	0.0	7.0	11.8	2.0	12/24/2024 8:00	6.1	42.8	0.0	6.8	12.3	0.0	8.0
12/24/2024 8:15	5.0	26.2	0.0	7.1	11.9	0.6	12/24/2024 8:15	6.1	42.6	0.0				8.0
12/24/2024 8:30	5.0	26.1	0.0	7.1	11.9	0.2	12/24/2024 8:30	6.1	42.6	0.0	6.8	12.4	0.0	8.0
12/24/2024 8:45	5.0	25.7	0.0	7.1	11.9	2.2	12/24/2024 8:45	6.1	42.3	0.0	6.7	12.4	56.5	61.5
12/24/2024 9:00	5.0	25.6	0.0	7.1	11.9	0.4	12/24/2024 9:00	6.1	41.7	0.0	6.7	12.4	0.0	8.0
12/24/2024 9:15	5.0	25.5	0.0	7.1	11.9	0.0	12/24/2024 9:15	6.1	41.7	0.0	6.7	12.4	0.0	8.0
12/24/2024 9:30	5.0	25.4	0.0	7.1	11.9	0.0	12/24/2024 9:30	6.1	41.2	0.0	6.7	12.4	0.0	8.0
12/24/2024 9:45	5.0	25.2	0.0	7.1	11.9	0.0	12/24/2024 9:45	6.1	41.4	0.0	6.7	12.4	14.0	19.0
12/24/2024 10:00	5.0	25.1	0.0	7.1	11.9	0.0	12/24/2024 10:00	6.0	40.5	0.0	6.7	12.4	0.0	8.0
12/24/2024 10:15	5.0	25.0	0.0	7.1	11.9	0.0	12/24/2024 10:15	6.0	40.3	0.0	6.8	12.4	0.0	8.0
12/24/2024 10:30	5.0	25.0	0.0	7.1	11.9	0.3	12/24/2024 10:30	6.0	40.4	0.0	6.8	12.4	0.0	8.0
12/24/2024 10:45	5.0	25.2	0.0	7.1	11.9	0.9	12/24/2024 10:45	6.1	41.2	0.0	6.8	12.4	75.5	80.5
12/24/2024 11:00	5.0	24.9	0.0	7.1	11.9	0.0	12/24/2024 11:00	6.1	40.4	0.0	6.8	12.4	0.0	8.0



12/24/2024 11:15	5.0	24.8	0.0	7.1	11.9	0.0	12/24/2024 11:15	6.1	40.8	0.0	6.8	12.4	0.0	8.0
12/24/2024 11:30	5.0	24.8	0.0	7.1	11.9	0.0	12/24/2024 11:30	6.1	40.4	0.0	6.8	12.5	0.0	8.0
12/24/2024 11:45	5.0	24.6	0.0	7.0	11.9	0.0	12/24/2024 11:45	6.1	40.4	0.0	6.8	12.4	2.7	10.7
12/24/2024 12:00	5.0	24.7	0.0	7.1	11.9	0.0	12/24/2024 12:00	6.1			6.8	12.4	0.0	8.0
12/24/2024 12:15	5.0	24.9	0.0	7.1	11.9	0.0	12/24/2024 12:15	6.1	40.7	0.0	6.8	12.4	0.0	8.0
12/24/2024 12:30	5.0	24.8	0.0	7.1	11.9	0.0	12/24/2024 12:30	6.1	40.8	0.0	6.8	12.4	0.0	8.0
12/24/2024 12:45	5.1	25.0	0.0	7.1	11.9	0.0	12/24/2024 12:45							
12/24/2024 13:00	5.1	24.9	0.0	7.1	11.9	0.0	12/24/2024 13:00							
12/24/2024 13:15	5.1	25.0	0.0	7.1	11.9	0.0	12/24/2024 13:15							
12/24/2024 13:30	5.1	25.0	0.0	7.1	11.9	0.0	12/24/2024 13:30	6.2		0.0		12.4		8.0
12/24/2024 13:45	5.1	24.9	0.0	7.1	11.9	0.0	12/24/2024 13:45							
12/24/2024 14:00	5.1	25.2	0.0	7.1	11.9	0.0	12/24/2024 14:00	6.2	41.7	0.0	6.7	12.4	0.0	8.0
12/24/2024 14:15	5.1	25.3	0.0	7.1	11.9	0.0	12/24/2024 14:15	6.2	42.2	0.0	6.6	12.3	0.0	8.0
12/24/2024 14:30	5.1	25.7	0.0	7.0	11.8	0.0	12/24/2024 14:30	6.2	43.4	0.0	6.6	12.3	0.0	8.0
12/24/2024 14:45	5.1	25.6	0.0	7.0	11.8	0.0	12/24/2024 14:45	6.2	44.2	0.0	6.6	12.2	0.0	8.0
12/24/2024 15:00	5.1	25.9	0.0	7.0	11.8	0.0	12/24/2024 15:00	6.2	44.2	0.0	6.6	12.2	0.0	8.0
12/24/2024 15:15	5.1	26.2	0.0	7.1	11.8	0.0	12/24/2024 15:15	6.2	43.6	0.0	6.5	12.1	0.0	8.0
12/24/2024 15:30	5.1	26.3	0.0	7.1	11.8	0.0	12/24/2024 15:30	6.2	45.5	0.0	6.5	12.1	0.0	8.0
12/24/2024 15:45	5.1	26.3	0.0	7.0	11.7	0.0	12/24/2024 15:45	6.2	44.7	0.0	6.6	12.1	0.0	8.0
12/24/2024 16:00	5.1	26.5	0.0	7.0	11.7	0.0	12/24/2024 16:00	6.2	45.5	0.0	6.4	12.1	0.0	8.0
12/24/2024 16:15	5.1	26.7	0.0	7.0	11.7	0.0	12/24/2024 16:15	6.2	44.3	0.0	6.5	12.1	0.0	8.0
12/24/2024 16:30	5.1	26.5	0.0	7.1	11.7	0.0	12/24/2024 16:30	6.2	43.6	0.0	6.6	12.2	0.0	8.0
12/24/2024 16:45	5.1	26.5	0.0	7.0	11.7	0.0	12/24/2024 16:45	6.1	43.6	0.0	6.6	12.2	0.0	8.0
12/24/2024 17:00	5.1	26.6	0.0	7.0	11.7	0.0	12/24/2024 17:00	6.1	43.8	0.0	6.6	12.2	0.0	8.0
12/24/2024 17:15	5.1	26.7	0.0	7.0	11.7	0.4	12/24/2024 17:15	6.1	43.7	0.0	6.6	12.2	0.0	8.0
12/24/2024 17:30	5.1	26.7	0.0	7.0	11.7	1.5	12/24/2024 17:30	6.1	43.9	0.0	6.6	12.1	0.0	8.0
12/24/2024 17:45	5.1	26.9	0.0	7.0	11.7	0.0	12/24/2024 17:45	6.1	43.6	0.0	6.6	12.1	0.0	8.0
12/24/2024 18:00	5.1	27.0	0.0	7.0	11.7	0.0	12/24/2024 18:00	6.1	44.4	0.0	6.6	12.1	0.0	8.0
12/24/2024 18:15	5.1	27.2	0.0	7.0	11.7	0.0	12/24/2024 18:15	6.1	44.1	0.0	6.6	12.1	0.0	8.0
12/24/2024 18:30	5.1	27.1	0.0	7.0	11.7	0.0	12/24/2024 18:30	6.1	44.3	0.0	6.6	12.1	0.0	8.0
12/24/2024 18:45	5.1	27.3	0.0	7.0	11.7	1.1	12/24/2024 18:45	6.1	44.5	0.0	6.7	12.1	0.0	8.0
12/24/2024 19:00	5.1	27.2	0.0	7.0	11.7	0.0	12/24/2024 19:00	6.1	44.6	0.0	6.6	12.1	0.0	8.0
12/24/2024 19:15	5.1	27.6	0.0	7.0	11.7	0.0	12/24/2024 19:15	6.1	44.9	0.0	6.6	12.1	0.0	8.0
12/24/2024 19:30	5.1	27.5	0.0	7.0	11.7	0.0	12/24/2024 19:30	6.1	44.9	0.0	6.6	12.1	0.0	8.0
12/24/2024 19:45	5.1	27.5	0.0	7.0	11.7	0.0	12/24/2024 19:45	6.1	45.3	0.0	6.7	12.1	0.0	8.0
12/24/2024 20:00	5.1	27.7	0.0	7.0	11.6	0.0	12/24/2024 20:00	6.1	45.1	0.0	6.7	12.1	0.0	8.0
12/24/2024 20:15	5.0	27.6	0.0	7.0	11.6	0.0	12/24/2024 20:15	6.1	45.4	0.0	6.7	12.1	0.0	8.0
12/24/2024 20:30	5.0	27.9	0.0	7.0	11.6	0.0	12/24/2024 20:30	6.1	45.7	0.0	6.6	12.1	0.0	8.0
12/24/2024 20:45	5.0	27.9	0.0	6.9	11.6	0.0	12/24/2024 20:45	6.1	45.3	0.0	6.6	12.1	0.0	8.0
12/24/2024 21:00	5.0	28.1	0.0	7.0	11.6	0.0	12/24/2024 21:00	6.1	46.1	0.0	6.6	12.1	0.0	8.0
12/24/2024 21:15	5.0	28.1	0.0	7.0	11.6	0.0	12/24/2024 21:15	6.1	45.9	0.0	6.6	12.1	0.0	8.0
12/24/2024 21:30	5.0	28.1	0.0	6.9	11.6	0.0	12/24/2024 21:30	6.1	45.7	0.0	6.6	12.1	0.0	8.0
12/24/2024 21:45	5.0	28.2	0.0	7.0	11.6	0.0	12/24/2024 21:45	6.0	45.8	0.0	6.7	12.1	0.0	8.0
12/24/2024 22:00	5.0	28.4	0.0	7.0	11.6	0.0	12/24/2024 22:00	6.0	46.2	0.0	6.6	12.1	0.0	8.0
12/24/2024 22:15	5.0	28.6	0.0	7.0	11.6	0.0	12/24/2024 22:15	6.0	46.5	0.0	6.7	12.1	0.0	8.0
12/24/2024 22:30	5.0	28.5	0.0	7.0	11.7	0.0	12/24/2024 22:30	6.0	46.1	0.0	6.6	12.1	0.0	8.0
12/24/2024 22:45	5.0	28.5	0.0	7.0	11.6	0.2	12/24/2024 22:45	6.0	45.9	0.0	6.6	12.1	0.0	8.0
12/24/2024 23:00	5.0	28.4	0.0	7.0	11.7	0.0	12/24/2024 23:00	6.0	47.1	0.0	6.6	12.1	0.0	8.0
12/24/2024 23:15	5.0	28.7	0.0	7.0	11.6	0.0	12/24/2024 23:15	6.0	46.5	0.0	6.6	12.1	0.0	8.0
12/24/2024 23:30	5.0	28.9	0.0	7.0	11.6	0.0	12/24/2024 23:30	6.0	46.7	0.0	6.7	12.1	0.0	8.0
12/24/2024 23:45	4.9	28.7	0.0	7.0	11.6	0.0	12/24/2024 23:45	6.0	46.3	0.0	6.6	12.1	0.0	8.0
12/25/2024 0:00	4.9	28.8	0.0	6.9	11.6	0.0	12/25/2024 0:00	6.0	46.9	0.0	6.7	12.1	0.0	8.0
12/25/2024 0:15	4.9	28.9	0.0	7.0	11.6	0.3	12/25/2024 0:15	6.0	47.2	0.0	6.7	12.1	0.0	8.0
12/25/2024 0:30	4.9	29.0	0.0	7.0	11.7	0.0	12/25/2024 0:30	6.0	47.1	0.0	6.7	12.1	0.0	8.0
12/25/2024 0:45	4.9	29.1	0.0	7.0	11.7	0.0	12/25/2024 0:45	5.9	46.9	0.0	6.6	12.1	0.0	8.0
12/25/2024 1:00	4.9	29.0	0.0	7.0	11.7	0.0	12/25/2024 1:00	5.9	47.0	0.0	6.7	12.1	0.0	8.0
12/25/2024 1:15	4.9	28.9	0.0	7.0	11.7	0.0	12/25/2024 1:15	5.9	46.9	0.0	6.6	12.1	0.0	8.0
12/25/2024 1:30	4.9	29.0	0.0	7.0	11.7	0.0	12/25/2024 1:30	5.9	46.8	0.0	6.6	12.1	0.0	8.0
12/25/2024 1:45	4.9	29.4	0.0	7.0	11.7	0.0	12/25/2024 1:45	5.9	47.5	0.0	6.6	12.1	0.0	8.0
12/25/2024 2:00	4.9	29.3	0.0	7.1	11.7	0.0	12/25/2024 2:00	5.9	47.3	0.0	6.7	12.1	0.0	8.0
12/25/2024 2:15	4.9	29.1	0.0	7.0	11.7	0.0	12/25/2024 2:15	5.9	47.3	0.0	6.6	12.1	0.0	8.0
12/25/2024 2:30	4.8	29.2	0.0	7.1	11.7	0.0	12/25/2024 2:30	5.9	47.4	0.0	6.7	12.1	0.0	8.0
12/25/2024 2:45	4.8	29.2	0.0	7.0	11.7	0.0	12/25/2024 2:45	5.9	46.8	0.0	6.7	12.1	0.0	8.0
12/25/2024 3:00	4.8	29.3	0.0	7.0	11.7	0.0	12/25/2024 3:00	5.9	46.9	0.0	6.7	12.1	0.0	8.0
12/25/2024 3:15	4.8	29.4	0.0	7.1	11.7	0.4	12/25/2024 3:15	5.9	47.7	0.0	6.7	12.1	0.0	8.0
12/25/2024 3:30	4.8	29.6	0.0	7.1	11.7	0.0	12/25/2024 3:30	5.9	47.6	0.0	6.7	12.1	0.0	8.0
12/25/2024 3:45	4.8	29.5	0.0	7.1	11.7	0.0	12/25/2024 3:45	5.8	47.3	0.0	6.7	12.1	0.0	8.0
12/25/2024 4:00	4.8	29.6	0.0	7.1	11.7	0.0	12/25/2024 4:00	5.8	47.6	0.0	6.7	12.1	0.0	8.0
12/25/2024 4:15	4.8	29.4	0.0	7.0	11.7	0.0	12/25/2024 4:15	5.8	47.9	0.0	6.7	12.1	0.0	8.0
12/25/2024 4:30	4.8	29.2	0.0	7.1	11.7	0.0	12/25/2024 4:30	5.8	47.9	0.0	6.7	12.1	0.0	8.0
12/25/2024 4:45	4.8	29.3	0.0	7.1	11.7	0.0	12/25/2024 4:45	5.8	48.0	0.0	6.7	12.1	0.0	8.0
12/25/2024 5:00	4.8	29.4	0.0	7.1	11.7	0.0	12/25/2024 5:00	5.8	47.7	0.0	6.7	12.1	0.0	8.0
12/25/2024 5:15	4.8	29.5	0.0	7.1	11.7	0.0	12/25/2024 5:15	5.8	48.2	0.0	6.7	12.1	0.0	8.0
12/25/2024 5:30	4.8	29.4	0.0	7.1	11.7	0.0	12/25/2024 5:30	5.8	47.6	0.0	6.7	12.1	0.0	8.0
12/25/2024 5:45	4.8	29.5	0.0	7.0	11.7	0.0	12/25/2024 5:45	5.8	48.0	0.0	6.7	12.1	0.0	8.0
12/25/2024 6:00	4.8	29.7	0.0	7.1	11.7	0.0	12/25/2024 6:00	5.8	48.7	0.0	6.7	12.1	0.0	8.0
12/25/2024 6:15	4.7	29.7	0.0	7.1	11.7	0.0	12/25/2024 6:15	5.8	48.4	0.0	6.7	12.1	0.0	8.0
12/25/2024 6:30	4.7	29.7	0.0	7.0	11.7	0.0	12/25/2024 6:30	5.8	48.5	0.0	6.7	12.1	0.0	8.0
12/25/2024 6:45	4.7	29.7	0.0	7.1	11.7	0.0	12/25/2024 6:45	5.8	47.9	0.0	6.7	12.1	0.0	8.0
12/25/2024 7:00	4.7	29.8	0.0	7.1	11.7	0.0	12/25/2024 7:00	5.8	48.8	0.0	6.7	12.1	0.0	8.0
12/25/2024 7:15	4.7	29.8	0.0	7.0	11.7	0.0	12/25/2024 7:15	5.8	48.6	0.0	6.7	12.1	0.0	8.0
12/25/2024 7:30	4.7	29.8	0.0	7.1	11.7	0.0	12/25/2024 7:30	5.8	48.8	0.0	6.7	12.1	0.0	8.0
12/25/2024 7:45	4.7	29.9	0.0	7.1	11.7	0.0	12/25/2024 7:45	5.7	48.5	0.0	6.6	12.1	0.0	8.0
12/25/2024 8:00	4.7	29.9	0.0	7.1	11.7	0.0	12/25/2024 8:00	5.7	48.4	0.0	6.7	12.1	0.0	8.0
12/25/2024 8:15	4.7	30.0	0.0	7.1	11.7	0.0	12/25/2024 8:15	5.7	48.9	0.0	6.7	12.1	0.0	8.0
12/25/2024 8:30	4.7	30.1	0.0	7.1	11.6	0.0	12/25/2024 8:30	5.7	48.7	0.0	6.7	12.1	0.0	8.0
12/25/2024 8:45	4.7	30.1	0.0	7.0	11.6	0.0	12/25/2024 8:45	5.7	48.8	0.0	6.7	12.1	0.0	8.0
12/25/2024 9:00	4.7	30.2	0.0	7.0	11.6	0.0	12/25/2024 9:00	5.7	48.7	0.0	6.7	12.1	0.0	8.0
12/25/2024 9:15	4.7	30.1	0.0	7.1	11.6	0.0	12/25/2024 9:15	5.7	48.7	0.0	6.7	12.1	0.0	8.0
12/25/2024 9:30	4.7	30.3	0.0	7.0	11.6	0.0	12/25/2024 9:30	5.7	48.8	0.0	6.6	12.1	0.0	8.0
12/25/2024 9:45	4.7	30.3	0.0	7.1	11.6	0.0	12/25/2024 9:45	5.7	48.9	0.0	6.7	12.1	0.0	8.0
12/25/2024 10:00	4.7	30.4	0.0	7.0	11.6	0.0	12/25/2024 10:00	5.7	49.4	0.0	6.7	12.1	0.0	8.0
12/25/2024 10:15	4.7	30.5	0.0	7.1	11.6	0.0	12/25/2024 10:15	5.7	49.5	0.0	6.7	12.1	0.0	8.0
12/25/2024 10:30	4.7	30.4	0.0	7.1	11.6	0.0	12/25/2024 10:30	5.7	49.2	0.0	6.7	12.1	0.0	8.0
12/25/2024 10:45	4.7	30.7	0.0	7.1	11.6	0.0	12/25/2024 10:45	5.7	49.8	0.0	6.7	12.1	0.0	8.0
12/25/2024 11:00	4.7	30.7	0.0	7.1	11.6	0.0	12/25/2024 11:00	5.7	49.8	0.0	6.7	12.1	0.0	8.0
12/25/2024 11:15	4.7	30.6	0.0	7.1	11.7	0.0	12/25/2024 11:15	5.7	49.9	0.0	6.7	12.1	0.0	8.0
12/25/2024 11:30	4.7	30.8	0.0	7.1	11.6	0.0	12/25/2024 11:30	5.7	49.6	0.0	6.7	12.1	0.0	8.0
12/25/2024 11:45	4.7	30.5	0.0	7.1	11.7	0.0	12/25/2024 11:45	5.7	49.7	0.0	6.7	12.1	0.0	8.0
12/25/2024 12:00	4.7	30.8	0.0	7.1	11.7	0.0	12/25/2024 12:00	5.7	49.8	0.0	6.7	12.1	0.0	8.0
12/25/2024 12:15	4.7	30.8	0.0	7.1	11.7	0.0	12/25/2024 12:15	5.7	49.7	0.0	6.8	12.2	0.0	8.0
12/25/2024 12:30	4.7	30.7	0.0	7.1	11.7	0.0	12/25/2024 12:30	5.7	49.3	0.0	6.8	12.2	0.0	8.0
12/25/2024 12:45	4.7	30.7	0.0	7.1	11.7	0.0	12/25/2024 12:45	5.7	49.2	0.0	6.8	12.2	0.0	8.0
12/25/2024 13:00	4.7	30.9	0.0	7.2	11.7	0.9	12/25/2024 13:00	5.7	48.9	0.0	6.8	12.2	0.0	8.0
12/25/2024 13:15	4.7	31.0	0.0	7.2	11.7	1.0	12/25/2024 13:15	5.7	49.0	0.0	6.8	12.2	0.0	8.0
12/25/2024 13:30	4.7	31.1	0.0	7.2	11.7	0.0	12/25/2024 13:30	5.7	49.6	0.0	6.8	12.2	0.0	8.0
12/25/2024 13:45	4.7	31.7	0.0	7.2	11.7	0.0	12/25/2024 13:45	5.7	51.1	0.0	6.8	12.1	0.0	8.0
12/25/2024 14:00	4.7	31.9	0.0	7.2	11.7	0.2	12/25/2024 14:00	5.7	50.6	0.0	6.8	12.1	0.0	8.0
12/25/2024 14:15	4.7	31.6	0.0	7.2	11.7	0.0	12/25/2024 14:15	5.7	51.6	0.0	6.8	12.1	0.0	8.0
12/25/2024 14:30	4.7	31.9	0.0	7.2	11.7	0.0	12/25/2024 14:30	5.8	53.4	0.0	6.7	12.0	0.0	8.0
12/25/2024 14:45	4.7	32.5	0.0	7.2	11.6	0.0	12/25/2024 14:45	5.8	53.5	0.0	6.7	12.0	0.0	8.0
12/25/2024 15:00	4.7	32.4	0.0	7.1	11.6	0.0	12/25/2024 15:00	5.8	53.3	0.0	6.7	12.0	0.0	8.0
12/25/2024 15:15	4.7	32.7	0.0	7.1	11.6	0.6	12/25/2024 15:15	5.8	54.1	0.0	6.7	12.0	0.0	8.0
12/25/2024 15:30	4.7	32.5	0.0	7.1	11.6	0.0	12/25/2024 15:30	5.8	53.8	0.0	6.7	11.9	0.0	8.0
12/25/2024 15:45	4.7	32.7	0.0	7.1	11.6	0.0	12/25/2024 15:45							
12/25/2024 16:00	4.7	32.8	0.0	7.2	11.6	0.0	12/25/2024 16:00							
12/25/2024 16:15	4.7	32.6	0.0	7.1	11.6	2.9	12/25/2024 16:15							
12/25/2024 16:30	4.7	32.3	0.0	7.1	11.6	0.0	12/25/2024 16:30							
12/25/2024 16:45	4.7	32.6	0.0	7.1	11.6	0.0	12/25/2024 16:45							
12/25/2024 17:00	4.7	32.6	0.0	7.1	11.6	0.0	12/25/2024 17:00							
12/25/2024 17:15	4.6	32.4	0.0	7.1	11.6	0.0	12/25/2024 17:15							
12/25/2024 17:30	4.6	32.4	0.0	7.1	11.6	0.0	12/25/2024 17:30							
12/25/2024 17:45	4.6	32.5	0.0	7.1	11.6	0.0	12/25/2024 17:45							
12/25/2024 18:00	4.6	32.6	0.0	7.1	11.6	0.1	12/25/2024 18:00							
12/25/2024 18:15	4.6	32.4	0.0	7.1	11.6	0.0	12/25/2024 18:15							
12/25/2024 18:30	4.6	32.5	0.0	7.1	11.6	0.0	12/25/2024 18:30							
12/25/2024 18:45	4.6	32.5	0.0	7.1	11.6	0.0	12/25/2024 18:45							
12/25/2024 19:00	4.6	32.5	0.0	7.1	11.6	0.0	12/25/2024 19:00							
12/25/2024 19:15	4.6	32.2	0.0	7.1	11.6	0.8	12/25/2024 19:15							
12/25/2024 19:30	4.6	32.2	0.0	7.2	11.6	0.0	12/25/2024 19:30							
12/25/2024 19:45	4.5	32.4	0.0	7.2	11.6	0.0	12/25/2024 19:45							
12/25/2024 20:00	4.5	32.6	0.0	7.1	11.6	0.0	12/25/2024 20:00							
12/25/2024 20:15	4.5	32.5	0.0	7.1	11.6	0.0	12/25/2024 20:15							
12/25/2024 20:30	4.5	32.3	0.0	7.2	11.6	0.0	12/25/2024 20:30							
12/25/2024 20:45	4.5	32.2	0.0	7.1	11.6	0.0	12/25/2024 20:45							
12/25/2024 21:00	4.5	32.2	0.0	7.2	11.6	0.0	12/25/2024 21:00							
12/25/2024 21:15	4.5	32.2	0.0	7.1	11.6	0.0	12/25/2024 21:15							
12/25/2024 21:30	4.5	32.6	0.0	7.2	11.6	0.0	12/25/2024 21:30							
12/25/2024 21:45	4.5	32.5	0.0	7.2	11.6	0.0	12/25/2024 21:45							
12/25/2024 22:00	4.5	32.5	0.0	7.1	11.6	0.0	12/25/2024 22:00							
12/25/2024 22:15	4.4	32.1	0.0	7.1	11.6	0.0	12/25/2024 22:15							
12/25/2024 22:30	4.4	32.5	0.0	7.1	11.6	0.0	12/25/2024 22:30							
12/25/2024 22:45	4.4	32.6	0.0	7.1	11.6	0.0	12/25/2024 22:45							
12/25/2024 23:00	4.4	32.4	0.0	7.1	11.6	0.0	12/25/2024 23:00							
12/25/2024 23:15	4.4	32.3	0.0	7.1	11.6	0.0	12/25/2024 23:15							

Note: gap in data at US data logger due to logger malfunction

12/25/2024 23:30	4.4	32.4	0.0	7.1	11.6	2.4	12/25/2024 23:30								
12/25/2024 23:45	4.4	32.5	0.0	7.1	11.6	0.0	12/25/2024 23:45								
12/26/2024 0:00	4.4	32.6	0.0	7.2	11.6	0.0	12/26/2024 0:00								
12/26/2024 0:15	4.4	32.4	0.0	7.1	11.6	0.0	12/26/2024 0:15								
12/26/2024 0:30	4.4	32.4	0.0	7.2	11.6	0.9	12/26/2024 0:30								
12/26/2024 0:45	4.4	32.4	0.0	7.1	11.6	0.0	12/26/2024 0:45								
12/26/2024 1:00	4.4	32.2	0.0	7.1	11.6	0.0	12/26/2024 1:00								
12/26/2024 1:15	4.4	32.2	0.0	7.1	11.6	1.0	12/26/2024 1:15								
12/26/2024 1:30	4.4	32.2	0.0	7.1	11.6	0.0	12/26/2024 1:30								
12/26/2024 1:45	4.3	32.0	0.0	7.1	11.6	0.0	12/26/2024 1:45								
12/26/2024 2:00	4.3	32.1	0.0	7.1	11.6	0.0	12/26/2024 2:00								
12/26/2024 2:15	4.3	32.1	0.0	7.1	11.6	0.0	12/26/2024 2:15								
12/26/2024 2:30	4.3	31.8	0.0	7.1	11.6	0.1	12/26/2024 2:30								
12/26/2024 2:45	4.3	31.6	0.0	7.1	11.6	0.0	12/26/2024 2:45								
12/26/2024 3:00	4.3	31.6	0.0	7.1	11.6	0.0	12/26/2024 3:00								
12/26/2024 3:15	4.3	31.5	0.0	7.2	11.6	0.0	12/26/2024 3:15								
12/26/2024 3:30	4.3	31.2	0.0	7.1	11.6	0.0	12/26/2024 3:30								
12/26/2024 3:45	4.3	31.2	0.0	7.1	11.6	0.0	12/26/2024 3:45								
12/26/2024 4:00	4.3	31.3	0.0	7.1	11.6	0.0	12/26/2024 4:00								
12/26/2024 4:15	4.3	31.7	0.0	7.1	11.6	0.0	12/26/2024 4:15								
12/26/2024 4:30	4.3	31.6	0.0	7.1	11.6	0.2	12/26/2024 4:30								
12/26/2024 4:45	4.3	31.6	0.0	7.2	11.6	0.0	12/26/2024 4:45								
12/26/2024 5:00	4.3	31.4	0.0	7.2	11.6	0.0	12/26/2024 5:00								
12/26/2024 5:15	4.2	31.4	0.0	7.2	11.6	0.0	12/26/2024 5:15								
12/26/2024 5:30	4.2	31.5	0.0	7.2	11.6	0.0	12/26/2024 5:30								
12/26/2024 5:45	4.2	31.7	0.0	7.1	11.6	0.4	12/26/2024 5:45								
12/26/2024 6:00	4.2	31.4	0.0	7.2	11.6	0.0	12/26/2024 6:00								
12/26/2024 6:15	4.2	31.2	0.0	7.2	11.6	0.0	12/26/2024 6:15								
12/26/2024 6:30	4.1	31.1	0.0	7.1	11.6	0.0	12/26/2024 6:30	5.1		0.0					8.0
12/26/2024 6:45	4.1	31.2	0.0	7.1	11.6	0.0	12/26/2024 6:45	5.1	50.5	0.0					8.0
12/26/2024 7:00	4.1	31.0	0.0	7.1	11.6	0.1	12/26/2024 7:00								
12/26/2024 7:15	4.1	31.0	0.0	7.3	11.7	0.0	12/26/2024 7:15	5.0	50.3	0.0	6.7	12.1	0.0	8.0	
12/26/2024 7:30	4.0	30.9	0.0	7.2	11.7	0.0	12/26/2024 7:30	5.0	56.1	0.0	6.6	12.1	0.0	8.0	
12/26/2024 7:45	4.0	30.6	0.0	7.2	11.7	0.0	12/26/2024 7:45	5.0	56.2	0.0	6.6	12.1	1.1	9.1	
12/26/2024 8:00	4.0	30.8	0.0	7.1	11.7	0.0	12/26/2024 8:00	4.9	55.3	0.0	6.6	12.1	0.0	8.0	
12/26/2024 8:15	3.9	30.6	0.0	7.2	11.7	0.0	12/26/2024 8:15	4.9	55.5	0.0	6.7	12.1	0.0	8.0	
12/26/2024 8:30	3.9	30.1	0.0	7.2	11.7	0.0	12/26/2024 8:30	4.9	55.5	0.0	6.7	12.2	0.0	8.0	
12/26/2024 8:45	3.9	29.9	0.0	7.2	11.7	0.0	12/26/2024 8:45	4.9	55.2	0.0	6.7	12.2	0.0	8.0	
12/26/2024 9:00	3.9	30.1	0.0	7.2	11.7	0.0	12/26/2024 9:00	4.9	55.3	0.0	6.7	12.2	0.0	8.0	
12/26/2024 9:15	3.8	29.8	0.0	7.2	11.7	0.0	12/26/2024 9:15	4.8	55.1	0.0	6.7	12.2	0.0	8.0	
12/26/2024 9:30	3.8	29.9	0.0	7.2	11.7	0.0	12/26/2024 9:30	4.8	54.7	0.0	6.7	12.2	0.0	8.0	
12/26/2024 9:45	3.8	29.7	0.0	7.2	11.7	0.0	12/26/2024 9:45	4.8	53.3	0.0	6.7	12.2	7.0	15.0	
12/26/2024 10:00	3.8	29.8	0.0	7.2	11.7	0.0	12/26/2024 10:00	4.8	49.5	0.0	6.7	12.2	0.0	8.0	
12/26/2024 10:15	3.8	29.5	0.0	7.2	11.7	0.0	12/26/2024 10:15	4.8	49.3	0.0	6.7	12.2	0.0	8.0	
12/26/2024 10:30	3.8	29.7	0.0	7.2	11.8	0.0	12/26/2024 10:30	4.8	49.5	0.0	6.7	12.2	0.0	8.0	
12/26/2024 10:45	3.8	29.7	0.0	7.2	11.7	0.0	12/26/2024 10:45	4.8	49.8	0.0	6.7	12.2	0.0	8.0	
12/26/2024 11:00	3.8	29.7	0.0	7.2	11.7	0.0	12/26/2024 11:00	4.8	49.3	0.0	6.7	12.2	0.0	8.0	
12/26/2024 11:15	3.8	29.4	0.0	7.1	11.8	0.0	12/26/2024 11:15	4.8	49.2	0.0	6.7	12.2	0.0	8.0	
12/26/2024 11:30	3.8	29.4	0.0	7.2	11.8	0.0	12/26/2024 11:30	4.8	49.2	0.0	6.7	12.3	0.0	8.0	
12/26/2024 11:45	3.8	29.4	0.0	7.2	11.8	0.0	12/26/2024 11:45	4.8	49.0	0.0	6.7	12.3	2.8	10.8	
12/26/2024 12:00	3.8	29.3	0.0	7.1	11.8	0.0	12/26/2024 12:00	4.8	48.8	0.0	6.7	12.3	0.0	8.0	
12/26/2024 12:15	3.8	29.4	0.0	7.2	11.8	0.0	12/26/2024 12:15	4.8	49.1	0.0	6.7	12.3	0.0	8.0	
12/26/2024 12:30	3.8	29.4	0.0	7.1	11.8	0.0	12/26/2024 12:30	4.7	48.6	0.0	6.7	12.3	0.0	8.0	
12/26/2024 12:45	3.8	29.6	0.0	7.1	11.8	0.0	12/26/2024 12:45	4.8	49.2	0.0	6.7	12.3	0.0	8.0	
12/26/2024 13:00	3.8	29.3	0.0	7.1	11.8	0.0	12/26/2024 13:00	4.8	49.0	0.0	6.7	12.3	0.0	8.0	
12/26/2024 13:15	3.8	29.4	0.0	7.1	11.9	0.0	12/26/2024 13:15	4.8	49.3	0.0	6.7	12.4	0.0	8.0	
12/26/2024 13:30	3.8	29.6	0.0	7.1	11.8	0.0	12/26/2024 13:30	4.8	49.4	0.0	6.7	12.4	0.0	8.0	
12/26/2024 13:45	3.8	29.6	0.0	7.1	11.8	0.0	12/26/2024 13:45	4.8	49.4	0.0	6.8	12.4	0.4	8.4	
12/26/2024 14:00	3.8	29.1	0.0	7.2	11.9	0.0	12/26/2024 14:00	4.8	49.3	0.0	6.7	12.3	0.0	8.0	
12/26/2024 14:15	3.9	29.5	0.0	7.2	11.9	0.0	12/26/2024 14:15	4.8	50.1	0.0	6.7	12.3	0.0	8.0	
12/26/2024 14:30	3.9	29.4	0.0	7.1	11.9	0.0	12/26/2024 14:30	4.9	49.6	0.0	6.7	12.3	0.0	8.0	
12/26/2024 14:45	3.9	29.5	0.0	7.1	11.9	0.0	12/26/2024 14:45	4.9	49.7	0.0	6.7	12.3	0.0	8.0	
12/26/2024 15:00	3.9	29.5	0.0	7.1	11.9	0.0	12/26/2024 15:00	4.9	49.5	0.0	6.7	12.3	0.0	8.0	
12/26/2024 15:15	3.9	29.5	0.0	7.1	11.8	0.0	12/26/2024 15:15	4.9	49.5	0.0	6.7	12.3	0.0	8.0	
12/26/2024 15:30	3.9	29.9	0.0	7.2	11.8	0.0	12/26/2024 15:30	5.0	50.0	0.0	6.7	12.3	0.0	8.0	
12/26/2024 15:45	4.0	29.9	0.0	7.1	11.8	0.0	12/26/2024 15:45	5.0	50.8	0.0	6.7	12.2	0.0	8.0	
12/26/2024 16:00	4.0	29.9	0.0	7.1	11.8	0.0	12/26/2024 16:00	5.0	50.0	0.0	6.6	12.2	0.0	8.0	
12/26/2024 16:15	4.0	29.9	0.0	7.1	11.8	0.0	12/26/2024 16:15	5.0	50.2	0.0	6.6	12.2	0.0	8.0	
12/26/2024 16:30	4.0	30.1	0.0	7.1	11.8	0.0	12/26/2024 16:30	5.1	50.7	0.0	6.6	12.2	0.0	8.0	
12/26/2024 16:45	4.1	30.2	0.0	7.0	11.8	0.0	12/26/2024 16:45	5.1	50.7	0.0	6.7	12.2	0.0	8.0	
12/26/2024 17:00	4.1	31.0	0.0	7.0	11.7	0.0	12/26/2024 17:00	5.1	50.5	0.0	6.6	12.2	0.0	8.0	
12/26/2024 17:15	4.1	29.7	0.0	7.0	11.7	0.0	12/26/2024 17:15	5.1	50.0	0.0	6.6	12.2	0.0	8.0	
12/26/2024 17:30	4.1	29.8	0.0	7.1	11.7	0.0	12/26/2024 17:30	5.1	49.9	0.0	6.6	12.2	0.0	8.0	
12/26/2024 17:45	4.1	29.9	0.0	7.1	11.7	0.0	12/26/2024 17:45	5.1	50.3	0.0	6.7	12.2	0.0	8.0	
12/26/2024 18:00	4.1	29.8	0.0	7.0	11.7	0.0	12/26/2024 18:00	5.1	49.7	0.0	6.6	12.2	0.0	8.0	
12/26/2024 18:15	4.1	29.8	0.0	7.0	11.7	0.0	12/26/2024 18:15	5.1	50.0	0.0	6.6	12.2	0.0	8.0	
12/26/2024 18:30	4.1	29.9	0.0	7.0	11.7	0.0	12/26/2024 18:30	5.1	50.3	0.0	6.6	12.1	0.0	8.0	
12/26/2024 18:45	4.1	30.0	0.0	7.0	11.7	0.0	12/26/2024 18:45	5.1	50.2	0.0	6.6	12.1	0.0	8.0	
12/26/2024 19:00	4.1	29.9	0.0	7.0	11.7	0.0	12/26/2024 19:00	5.1	50.4	0.0	6.6	12.1	0.0	8.0	
12/26/2024 19:15	4.1	30.0	0.0	7.1	11.7	0.0	12/26/2024 19:15	5.1	50.7	0.0	6.6	12.1	0.0	8.0	
12/26/2024 19:30	4.1	30.1	0.0	7.0	11.7	0.0	12/26/2024 19:30	5.1	50.3	0.0	6.6	12.1	0.0	8.0	
12/26/2024 19:45	4.1	30.0	0.0	7.0	11.7	0.0	12/26/2024 19:45	5.1	50.5	0.0	6.7	12.1	0.0	8.0	
12/26/2024 20:00	4.1	30.2	0.0	7.1	11.7	0.0	12/26/2024 20:00	5.1	50.8	0.0	6.6	12.1	0.0	8.0	
12/26/2024 20:15	4.1	30.3	0.0	7.1	11.7	0.0	12/26/2024 20:15	5.1	50.6	0.0	6.6	12.1	0.0	8.0	
12/26/2024 20:30	4.2	30.3	0.0	7.0	11.7	0.0	12/26/2024 20:30	5.2	50.7	0.0	6.6	12.1	0.0	8.0	
12/26/2024 20:45	4.2	30.2	0.0	7.0	11.7	0.0	12/26/2024 20:45	5.2	51.0	0.0	6.7	12.1	0.0	8.0	
12/26/2024 21:00	4.2	30.3	0.0	7.0	11.7	0.0	12/26/2024 21:00	5.2	51.0	0.0	6.6	12.1	0.0	8.0	
12/26/2024 21:15	4.2	30.5	0.0	7.0	11.7	0.0	12/26/2024 21:15	5.2	51.4	0.0	6.6	12.1	0.0	8.0	
12/26/2024 21:30	4.2	30.7	0.0	7.1	11.7	0.0	12/26/2024 21:30	5.2	51.3	0.0	6.6	12.1	0.0	8.0	
12/26/2024 21:45	4.2	30.4	0.0	7.0	11.7	0.0	12/26/2024 21:45	5.2	51.2	0.0	6.7	12.1	0.0	8.0	
12/26/2024 22:00	4.2	30.7	0.0	7.0	11.7	0.0	12/26/2024 22:00	5.2	51.2	0.0	6.6	12.1	0.0	8.0	
12/26/2024 22:15	4.2	30.6	0.0	7.1	11.7	0.0	12/26/2024 22:15	5.2	51.5	0.0	6.6	12.1	0.0	8.0	
12/26/2024 22:30	4.2	30.5	0.0	7.0	11.7	0.0	12/26/2024 22:30	5.2	51.3	0.0	6.6	12.1	0.0	8.0	
12/26/2024 22:45	4.2	30.7	0.0	7.0	11.7	0.0	12/26/2024 22:45	5.2	51.6	0.0	6.7	12.1	0.0	8.0	
12/26/2024 23:00	4.2	30.9	0.0	7.0	11.7	0.0	12/26/2024 23:00	5.2	52.0	0.0	6.6	12.1	0.0	8.0	
12/26/2024 23:15	4.2	30.8	0.0	7.0	11.7	0.0	12/26/2024 23:15	5.2	51.1	0.0	6.6	12.1	0.0	8.0	
12/26/2024 23:30	4.2	30.7	0.0	7.1	11.7	0.0	12/26/2024 23:30	5.2	51.7	0.0	6.6	12.1	0.0	8.0	
12/26/2024 23:45	4.2	30.8	0.0	7.1	11.7	0.0	12/26/2024 23:45	5.2	52.1	0.0	6.7	12.1	0.0	8.0	
12/27/2024 0:00	4.2	30.9	0.0	7.0	11.7	0.0	12/27/2024 0:00	5.2	51.5	0.0	6.6	12.1	0.0	8.0	
12/27/2024 0:15	4.2	30.8	0.0	7.0	11.7	0.0	12/27/2024 0:15	5.2	51.6	0.0	6.6	12.1	0.0	8.0	
12/27/2024 0:30	4.2	30.8	0.0	7.0	11.7	0.0	12/27/2024 0:30	5.2	51.5	0.0	6.6	12.1	0.0	8.0	
12/27/2024 0:45	4.2	31.1	0.0	7.0	11.6	0.0	12/27/2024 0:45	5.2	51.9	0.0	6.7	12.1	0.0	8.0	
12/27/2024 1:00	4.2	31.0	0.0	7.0	11.7	0.0	12/27/2024 1:00	5.2	51.6	0.0	6.7	12.1	0.0	8.0	
12/27/2024 1:15	4.2	30.9	0.0	7.1	11.7	0.0	12/27/2024 1:15	5.2	51.5	0.0	6.6	12.1	0.0	8.0	
12/27/2024 1:30	4.2	30.9	0.0	7.1	11.6	0.0	12/27/2024 1:30	5.2	51.5	0.0	6.7	12.1	0.0	8.0	
12/27/2024 1:45	4.2	31.0	0.0	7.0	11.6	0.0	12/27/2024 1:45	5.2	51.8	0.0	6.7	12.1	0.0	8.0	
12/27/2024 2:00	4.2	31.1	0.0	7.1	11.6	0.0	12/27/2024 2:00	5.2	51.6	0.0	6.7	12.1	0.0	8.0	
12/27/2024 2:15	4.2	30.9	0.0	7.0	11.6	0.0	12/27/2024 2:15	5.2	51.4	0.0	6.7	12.1	0.0	8.0	
12/27/2024 2:30	4.2	30.9	0.0	7.0	11.7	0.0	12/27/2024 2:30	5.2	51.0	0.0	6.7	12.1	0.0	8.0	
12/27/2024 2:45	4.2	30.8	0.0	7.1	11.6	0.0	12/27/2024 2:45	5.2	50.9	0.0	6.7	12.1	0.0	8.0	
12/27/2024 3:00	4.2	30.8	0.0	7.1	11.7	0.0	12/27/2024 3:00	5.2	51.4	0.0	6.7	12.1	0.0	8.0	
12/27/2024 3:15	4.2	30.9	0.0	7.0	11.7	0.0	12/27/2024 3:15	5.2	51.1	0.0	6.7	12.1	0.0	8.0	
12/27/2024 3:30	4.2	30.7	0.0	7.1	11.7	0.0	12/27/2024 3:30	5.2	50.7	0.0	6.7	12.1	0.0	8.0	
12/27/2024 3:45	4.2	31.7	0.0	7.1	11.7	0.0	12/27/2024 3:45	5.2	50.7	0.0	6.7	12.1	0.0	8.0	
12/27/2024 4:00	4.2	30.5	0.0	7.1	11.7	0.0	12/27/2024 4:00	5.2	50.2	0.0	6.7	12.2	0.0	8.0	
12/27/2024 4:15	4.2	30.2	0.0	7.1	11.7	0.0	12/27/2024 4:15	5.2	49.2	0.0	6.7	12.2	0.0	8.0	
12/27/2024 4:30	4.2	29.9	0.0	7.1	11.7	0.0	12/27/2024 4:30	5.1	48.3	0.0	6.8	12.2	0.0	8.0	
12/27/2024 4:45	4.1	29.8	0.0	7.2	11.7	0.0	12/27/2024 4:45	5.1	48.8	0.0	6.8	12.2	0.7	8.7	
12/27/2024 5:00	4.1	30.2	0.0	7.1	11.7	0.0	12/27/2024 5:00	5.1	49.1	0.0	6.8	12.2	0.0	8.0	
12/27/2024 5:15	4.1	30.1	0.0	7.1	11.7	0.0	12/27/2024 5:15	5.1	49.1	0.0	6.8	12.2	0.0	8.0	
12/27/2024 5:30	4.1	30.2	0.0	7.2	11.7	0.0	12/27/2024 5:30	5.1	49.7	0.0	6.8	12.2	0.0	8.0	
12/27/2024 5:45	4.1	30.6	0.0	7.1	11.7	0.0	12/27/2024 5:45	5.1	50.0	0.0	6.8	12.2	0.0	8.0	
12/27/2024 6:00	4.1	30.8	0.0	7.1	11.7	0.0	12/27/2024 6:00	5.1	50.4	0.0	6.8	12.2	0.0	8.0	
12/27/2024 6:15	4.1	30.9	0.0	7.1	11.7	0.0	12/27/2024 6:15	5.1	50.9	0.0	6.8	12.2	0.0	8.0	
12/27/2024 6:30	4.1	31.4	0.0	7.1	11.7	0.0	12/27/2024 6:30	5.1	52.3	0.0	6.8	12.2	0.0	8.0	
12/27/2024 6:45	4.1	31.7	0.0	7.1	11.7	0.0	12/27/2024 6:45	5.1	52.9	0.0	6.7	12.1	0.0	8.0	
12/27/2024 7:00	4.1	31.7	0.0	7.1	11.7	0.0	12/27/2024 7:00	5.1	52.5	0.0	6.7	12.1	0.0	8.0	
12/27/2024 7:15	4.1	31.5	0.0	7.1	11.7	0.0	12/27/2024 7:15	5.1	52.9	0.0	6.7	12.1	0.0	8.0	
12/27/2024 7:30	4.0	31.6	0.0	7.1	11.7	0.0	12/27/2024 7:30	5.1	53.4	0.0	6.7	12.1	0.0	8.0	
12/27/2024 7:45	4.0	31.9	0.0	7.1	11.7	0.0	12/27/2024 7:45	5.1	53.5	0.0	6.7	12.0	0.0	8.0	
12/27/2024 8:00	4.0	31.8	0.0	7.1	11.7	0.0	12/27/2024 8:00	5.1	53.9	0.0	6.6	12.0	0.0	8.0	
12/27/2024 8:15	4.0	31.8	0.0	7.1	11.7	0.0	12/27/2024 8:15	5.1	54.5	0.0	6.6	12.0	0.0	8.0	
12/27/2024 8:30	4.0	32.0	0.0	7.1	11.6	0.0	12/27/2024 8:30	5.1	54.1	0.0	6.6	12.0	0.0	8.0	
12/27/2024 8:45	4.0	32.1	0.0	7.1	11.6	0.0	12/27/2024 8:45	5.1	54.2	0.0	6.7	12.0	0.0	8.0	
12/27/2024 9:00	4.0	32.2	0.0	7.1	11.6	0.0	12/27/2024 9:00	5.1	53.7	0.0	6.6	12.0	0.0	8.0	
12/27/2024 9:15	4.0	32.1	0.0	7.1	11.7	0.0	12/27/2024 9:15	5.1	53.5	0.0	6.7	12.0	0.0	8.0	
12/27/2024 9:30	4.0	32.1	0.0	7.1	11.7	0.0	12/27/2024 9:30	5.0	53.2	0.0	6.7	12.1	0.0	8.0	
12/27/2024 9:45	4.0	32.1	0.0	7.1	11.7	0.0	12/27/2024 9:45	5.0	53.3	0.0	6.7	12.1	11.9	16.9	
12/27/2024 10:00	4.0	32.2	0.0	7.1	11.7	0.0	12/27/2024 10:00	5.0	53.1	0.0	6.7	12.1	0.0	8.0	
12/27/2024 10:15	4.0	32.4	0.0	7.1	11.7	0.0	12/27/2024 10:15	5.0	53.8	0.0	6.7	12.1	0.0	8.0	
12/27/2024 10:30	4.0	32.6	0.0	7.1	11.7	0.0	12/27/2024 10:30	5.0	54.0	0.0	6.7	12.1	0.0	8.0	
12/27/2024 10:45	4.0	32.5	0.0	7.1	11.7	0.0	12/27/2024 10:45	5.0	53.7	0.0	6.7	12.1	0.0	8.0	
12/27/2024 11:00	4.0	32.4	0.0	7.1	11.7	0.0	12/27/2024 11:00	5.0	53.8	0.0	6.7	12.1	0.0	8.0	
12/27/2024 11:15	4.0	32.4	0.0	7.0	11.7	0.0	12/27/2024 11:15	5.0	53.8	0.0	6.7	12.1	0.0	8.0	
12/27/2024 11:30	4.0	32.9	0.0	7.1	11.7	0.0	12/27/2024 11:30	5.1	54.4	0.0	6.7	12.1	0.0	8.0	

12/27/2024 11:45	4.0	33.0	0.0	7.1	11.7	0.0	12/27/2024 11:45	5.1	54.6	0.0	6.7	12.1	0.0	8.0
12/27/2024 12:00	4.1	32.9	0.0	7.1	11.7	0.0	12/27/2024 12:00	5.1	54.1	0.0	6.7	12.1	0.0	8.0
12/27/2024 12:15	4.1	32.9	0.0	7.1	11.7	0.0	12/27/2024 12:15	5.1	53.7	0.0	6.7	12.1	0.0	8.0
12/27/2024 12:30	4.1	32.8	0.0	7.1	11.7	0.0	12/27/2024 12:30	5.1	54.0	0.0	6.7	12.2	0.0	8.0
12/27/2024 12:45	4.1	32.7	0.0	7.0	11.7	0.0	12/27/2024 12:45	5.2	54.0	0.0	6.7	12.2	12.6	17.6
12/27/2024 13:00	4.2	33.0	0.0	7.1	11.7	0.0	12/27/2024 13:00	5.2	54.2	0.0	6.7	12.2	0.0	8.0
12/27/2024 13:15	4.2	32.8	0.0	7.1	11.7	0.0	12/27/2024 13:15	5.2	53.4	0.0	6.7	12.2	0.0	8.0
12/27/2024 13:30	4.2	32.7	0.0	7.2	11.7	0.0	12/27/2024 13:30	5.2	54.1	0.0	6.7	12.2	0.0	8.0
12/27/2024 13:45	4.2	33.2	0.0	7.1	11.7	0.0	12/27/2024 13:45	5.2	54.9	0.0	6.7	12.2	5.3	13.3
12/27/2024 14:00	4.2	33.4	0.0	7.1	11.7	0.0	12/27/2024 14:00	5.2	55.3	0.0	6.7	12.1	0.0	8.0
12/27/2024 14:15	4.2	33.5	0.0	7.1	11.7	0.0	12/27/2024 14:15	5.2	54.6	0.0	6.7	12.2	0.0	8.0
12/27/2024 14:30	4.2	33.2	0.0	7.1	11.7	0.0	12/27/2024 14:30	5.2	54.1	0.0	6.8	12.2	0.0	8.0
12/27/2024 14:45	4.2	33.3	0.0	7.1	11.7	0.0	12/27/2024 14:45	5.2	55.2	0.0	6.7	12.2	0.0	8.0
12/27/2024 15:00	4.2	33.6	0.0	7.1	11.7	0.0	12/27/2024 15:00	5.3	56.5	0.0	6.7	12.1	0.0	8.0
12/27/2024 15:15	4.2	34.0	0.0	7.1	11.7	0.0	12/27/2024 15:15	5.3	56.4	0.0	6.7	12.1	0.0	8.0
12/27/2024 15:30	4.2	34.0	0.0	7.1	11.7	0.0	12/27/2024 15:30	5.3	55.8	0.0	6.7	12.1	0.0	8.0
12/27/2024 15:45	4.2	34.0	0.0	7.1	11.7	0.0	12/27/2024 15:45	5.3	56.3	0.0	6.7	12.1	0.0	8.0
12/27/2024 16:00	4.2	34.1	0.0	7.1	11.7	0.0	12/27/2024 16:00	5.3	57.0	0.0	6.7	12.1	0.0	8.0
12/27/2024 16:15	4.2	34.4	0.0	7.1	11.7	0.0	12/27/2024 16:15	5.3	57.6	0.0	6.7	12.1	0.0	8.0
12/27/2024 16:30	4.2	34.6	0.0	7.1	11.6	0.0	12/27/2024 16:30	5.3	56.9	0.0	6.7	12.1	0.0	8.0
12/27/2024 16:45	4.3	34.6	0.0	7.0	11.6	0.0	12/27/2024 16:45	5.3	57.0	0.0	6.7	12.1	0.0	8.0
12/27/2024 17:00	4.2	34.5	0.0	7.0	11.6	0.0	12/27/2024 17:00	5.3	56.7	0.0	6.6	12.0	0.0	8.0
12/27/2024 17:15	4.3	35.0	0.0	7.1	11.6	0.0	12/27/2024 17:15	5.3	57.5	0.0	6.6	12.0	0.0	8.0
12/27/2024 17:30	4.3	34.9	0.0	7.0	11.6	0.0	12/27/2024 17:30	5.3	57.4	0.0	6.6	12.0	0.0	8.0
12/27/2024 17:45	4.3	34.5	0.0	7.0	11.6	0.0	12/27/2024 17:45	5.3	56.6	0.0	6.6	12.0	0.0	8.0
12/27/2024 18:00	4.3	34.5	0.0	7.0	11.6	0.0	12/27/2024 18:00	5.3	56.6	0.0	6.6	12.0	0.0	8.0
12/27/2024 18:15	4.3	34.6	0.0	7.1	11.6	0.0	12/27/2024 18:15	5.3	56.6	0.0	6.6	12.0	0.0	8.0
12/27/2024 18:30	4.3	34.6	0.0	7.0	11.6	0.0	12/27/2024 18:30	5.3	56.2	0.0	6.6	12.0	0.0	8.0
12/27/2024 18:45	4.3	34.5	0.0	7.0	11.6	0.0	12/27/2024 18:45	5.3	56.4	0.0	6.6	12.0	0.0	8.0
12/27/2024 19:00	4.3	34.7	0.0	7.0	11.6	0.0	12/27/2024 19:00	5.3	56.4	0.0	6.6	12.0	0.0	8.0
12/27/2024 19:15	4.3	34.7	0.0	7.1	11.6	0.0	12/27/2024 19:15	5.3	56.6	0.0	6.6	12.0	0.0	8.0
12/27/2024 19:30	4.3	34.5	0.0	7.0	11.6	0.0	12/27/2024 19:30	5.3	56.6	0.0	6.6	12.0	0.0	8.0
12/27/2024 19:45	4.3	34.6	0.0	7.0	11.6	0.0	12/27/2024 19:45	5.3	56.5	0.0	6.7	12.0	0.0	8.0
12/27/2024 20:00	4.3	34.7	0.0	7.1	11.6	0.0	12/27/2024 20:00	5.4	56.9	0.0	6.6	12.0	0.0	8.0
12/27/2024 20:15	4.3	34.7	0.0	7.0	11.6	0.0	12/27/2024 20:15	5.4	56.8	0.0	6.6	12.0	0.0	8.0
12/27/2024 20:30	4.3	34.8	0.0	7.0	11.6	0.0	12/27/2024 20:30	5.4	57.0	0.0	6.6	12.0	0.0	8.0
12/27/2024 20:45	4.3	34.8	0.0	7.0	11.6	0.0	12/27/2024 20:45	5.4	57.2	0.0	6.7	12.0	0.0	8.0
12/27/2024 21:00	4.3	34.9	0.0	7.1	11.6	0.0	12/27/2024 21:00	5.4	56.7	0.0	6.7	12.0	0.0	8.0
12/27/2024 21:15	4.3	35.1	0.0	7.0	11.6	0.0	12/27/2024 21:15	5.4	57.6	0.0	6.6	12.0	0.0	8.0
12/27/2024 21:30	4.3	35.1	0.0	7.1	11.6	0.0	12/27/2024 21:30	5.4	57.6	0.0	6.6	12.0	0.0	8.0
12/27/2024 21:45	4.4	35.3	0.0	7.0	11.6	0.0	12/27/2024 21:45	5.4	57.6	0.0	6.7	12.0	0.0	8.0
12/27/2024 22:00	4.4	35.3	0.0	7.0	11.6	0.0	12/27/2024 22:00	5.4	57.4	0.0	6.7	12.0	0.0	8.0
12/27/2024 22:15	4.4	35.3	0.0	7.1	11.6	0.0	12/27/2024 22:15	5.4	57.7	0.0	6.7	12.0	0.0	8.0
12/27/2024 22:30	4.4	35.2	0.0	7.0	11.6	0.0	12/27/2024 22:30	5.4	57.8	0.0	6.7	12.0	0.0	8.0
12/27/2024 22:45	4.4	35.4	0.0	7.0	11.6	0.0	12/27/2024 22:45	5.4	58.1	0.0	6.7	12.0	0.0	8.0
12/27/2024 23:00	4.4	35.4	0.0	7.0	11.6	0.0	12/27/2024 23:00	5.4	57.8	0.0	6.7	12.0	0.0	8.0
12/27/2024 23:15	4.4	35.3	0.0	7.1	11.6	0.0	12/27/2024 23:15	5.4	58.2	0.0	6.7	12.0	0.0	8.0
12/27/2024 23:30	4.4	35.4	0.0	7.1	11.6	0.0	12/27/2024 23:30	5.4	57.7	0.0	6.7	12.0	0.0	8.0
12/27/2024 23:45	4.3	35.4	0.0	7.1	11.5	0.0	12/27/2024 23:45	5.4	57.8	0.0	6.7	12.0	0.0	8.0
12/28/2024 0:00	4.3	35.3	0.0	7.0	11.6	0.0	12/28/2024 0:00	5.4	57.9	0.0	6.7	12.0	0.0	8.0
12/28/2024 0:15	4.3	35.5	0.0	7.1	11.6	0.0	12/28/2024 0:15	5.4	58.1	0.0	6.7	12.0	0.0	8.0
12/28/2024 0:30	4.3	35.5	0.0	7.0	11.5	0.0	12/28/2024 0:30	5.4	57.6	0.0	6.7	12.0	0.0	8.0
12/28/2024 0:45	4.3	35.5	0.0	7.1	11.5	0.0	12/28/2024 0:45	5.4	58.2	0.0	6.7	12.0	0.0	8.0
12/28/2024 1:00	4.3	35.5	0.0	7.1	11.5	0.0	12/28/2024 1:00	5.4	57.7	0.0	6.7	12.0	0.0	8.0
12/28/2024 1:15	4.3	35.6	0.0	7.1	11.6	0.0	12/28/2024 1:15	5.4	57.9	0.0	6.7	12.0	0.0	8.0
12/28/2024 1:30	4.3	35.7	0.0	7.1	11.5	0.0	12/28/2024 1:30	5.4	57.8	0.0	6.7	12.0	0.0	8.0
12/28/2024 1:45	4.3	35.6	0.0	7.0	11.6	0.0	12/28/2024 1:45	5.4	58.1	0.0	6.7	12.0	0.0	8.0
12/28/2024 2:00	4.3	35.6	0.0	7.1	11.5	0.0	12/28/2024 2:00	5.4	58.0	0.0	6.7	12.0	0.0	8.0
12/28/2024 2:15	4.3	35.6	0.0	7.0	11.5	0.0	12/28/2024 2:15	5.4	57.9	0.0	6.7	12.0	0.0	8.0
12/28/2024 2:30	4.3	35.5	0.0	7.1	11.5	0.0	12/28/2024 2:30	5.3	57.1	0.0	6.7	12.0	0.0	8.0
12/28/2024 2:45	4.3	35.4	0.0	7.1	11.5	0.0	12/28/2024 2:45	5.3	57.7	0.0	6.7	12.0	0.0	8.0
12/28/2024 3:00	4.3	35.4	0.0	7.1	11.6	0.0	12/28/2024 3:00	5.3	57.2	0.0	6.7	12.0	0.0	8.0
12/28/2024 3:15	4.3	35.2	0.0	7.1	11.6	0.0	12/28/2024 3:15	5.3	56.9	0.0	6.7	12.0	0.0	8.0
12/28/2024 3:30	4.3	36.1	0.0	7.1	11.6	5.7	12/28/2024 3:30	5.3	56.6	0.0	6.7	12.0	0.0	8.0
12/28/2024 3:45	4.3	35.5	0.0	7.2	11.6	0.0	12/28/2024 3:45	5.3	56.6	0.0	6.8	12.0	0.0	8.0
12/28/2024 4:00	4.3	35.3	0.0	7.2	11.6	0.0	12/28/2024 4:00	5.3	55.9	0.0	6.7	12.0	0.0	8.0
12/28/2024 4:15	4.3	35.6	0.0	7.1	11.6	1.0	12/28/2024 4:15	5.3	56.0	0.0	6.8	12.0	0.0	8.0
12/28/2024 4:30	4.3	34.7	0.0	7.2	11.6	0.0	12/28/2024 4:30	5.2	54.8	0.0	6.8	12.1	0.0	8.0
12/28/2024 4:45	4.2	34.4	0.0	7.2	11.6	0.0	12/28/2024 4:45	5.2	54.5	0.0	6.8	12.1	0.0	8.0
12/28/2024 5:00	4.2	34.3	0.0	7.2	11.6	0.0	12/28/2024 5:00	5.2	53.8	0.0	6.8	12.2	0.0	8.0
12/28/2024 5:15	4.2	34.1	0.0	7.2	11.6	0.0	12/28/2024 5:15	5.2	53.7	0.0	6.8	12.2	0.0	8.0
12/28/2024 5:30	4.2	34.9	0.0	7.1	11.6	0.0	12/28/2024 5:30	5.2	53.6	0.0	6.8	12.2	0.0	8.0
12/28/2024 5:45	4.2	34.8	0.0	7.2	11.7	0.0	12/28/2024 5:45	5.2	53.4	0.0	6.9	12.2	10.5	15.5
12/28/2024 6:00	4.2	34.6	0.0	7.1	11.7	4.2	12/28/2024 6:00	5.1	53.2	0.0	6.9	12.2	0.0	8.0
12/28/2024 6:15	4.2	34.8	0.0	7.2	11.7	4.0	12/28/2024 6:15	5.2	54.0	0.0	6.9	12.2	0.0	8.0
12/28/2024 6:30	4.2	35.0	0.0	7.2	11.7	4.1	12/28/2024 6:30	5.2	54.5	0.0	6.8	12.2	0.0	8.0
12/28/2024 6:45	4.2	35.3	0.0	7.2	11.7	4.2	12/28/2024 6:45	5.2	54.7	0.0	6.9	12.2	0.0	8.0
12/28/2024 7:00	4.2	35.2	0.0	7.2	11.7	4.4	12/28/2024 7:00	5.2	54.8	0.0	6.9	12.2	0.0	8.0
12/28/2024 7:15	4.2	35.4	0.0	7.2	11.7	4.4	12/28/2024 7:15	5.2	55.2	0.0	6.8	12.2	0.0	8.0
12/28/2024 7:30	4.2	35.8	0.0	7.2	11.7	4.3	12/28/2024 7:30	5.2	55.9	0.0	6.8	12.2	0.0	8.0
12/28/2024 7:45	4.2	36.4	0.0	7.2	11.7	4.4	12/28/2024 7:45	5.2	57.9	0.0	6.8	12.1	0.0	8.0
12/28/2024 8:00	4.2	37.3	0.0	7.2	11.6	4.2	12/28/2024 8:00	5.2	59.5	0.0	6.8	12.1	0.0	8.0
12/28/2024 8:15	4.2	37.9	0.0	7.1	11.6	4.4	12/28/2024 8:15	5.3	62.2	0.0	6.7	12.0	0.0	8.0
12/28/2024 8:30	4.2	38.8	0.0	7.2	11.6	4.5	12/28/2024 8:30	5.4	64.5	0.0	6.7	11.8	0.0	8.0
12/28/2024 8:45	4.2	39.1	0.0	7.1	11.6	4.5	12/28/2024 8:45	5.4	63.7	0.0	6.6	11.8	0.0	8.0
12/28/2024 9:00	4.2	38.4	0.0	7.2	11.5	4.8	12/28/2024 9:00	5.3	62.9	0.0	6.6	11.8	0.0	8.0
12/28/2024 9:15	4.2	38.2	0.0	7.2	11.6	4.3	12/28/2024 9:15	5.3	62.9	0.0	6.7	11.9	0.0	8.0
12/28/2024 9:30	4.2	38.5	0.0	7.1	11.5	4.7	12/28/2024 9:30	5.3	63.1	0.0	6.6	11.8	0.0	8.0
12/28/2024 9:45	4.2	39.0	0.0	7.1	11.5	4.9	12/28/2024 9:45	5.3	63.2	0.0	6.7	11.8	0.0	8.0
12/28/2024 10:00	4.2	38.8	0.0	7.1	11.5	4.8	12/28/2024 10:00	5.3	61.7	0.0	6.7	11.9	0.0	8.0
12/28/2024 10:15	4.2	38.4	0.0	7.2	11.5	4.9	12/28/2024 10:15	5.3	61.2	0.0	6.7	11.9	0.0	8.0
12/28/2024 10:30	4.2	38.3	0.0	7.1	11.6	4.8	12/28/2024 10:30	5.3	61.3	0.0	6.7	11.9	0.0	8.0
12/28/2024 10:45	4.2	38.4	0.0	7.1	11.5	5.1	12/28/2024 10:45	5.3	60.9	0.0	6.7	11.9	0.0	8.0
12/28/2024 11:00	4.2	38.2	0.0	7.2	11.5	5.4	12/28/2024 11:00	5.3	62.0	0.0	6.7	11.9	0.0	8.0
12/28/2024 11:15	4.2	38.5	0.0	7.1	11.6	5.8	12/28/2024 11:15	5.3	60.8	0.0	6.7	11.9	0.0	8.0
12/28/2024 11:30	4.2	37.8	0.0	7.1	11.6	5.5	12/28/2024 11:30	5.3	59.8	0.0	6.7	11.9	0.0	8.0
12/28/2024 11:45	4.2	37.7	0.0	7.1	11.6	5.3	12/28/2024 11:45	5.3	59.6	0.0	6.7	12.0	0.0	8.0
12/28/2024 12:00	4.2	37.5	0.0	7.1	11.6	5.5	12/28/2024 12:00	5.3	59.2	0.0	6.7	12.0	0.0	8.0
12/28/2024 12:15	4.2	37.4	0.0	7.1	11.6	5.8	12/28/2024 12:15	5.3	59.3	0.0	6.7	12.0	0.0	8.0
12/28/2024 12:30	4.2	37.6	0.0	7.1	11.6	6.2	12/28/2024 12:30	5.3	58.9	0.0	6.7	12.0	0.0	8.0
12/28/2024 12:45	4.2	37.4	0.0	7.1	11.6	6.9	12/28/2024 12:45	5.3	59.7	0.0	6.7	12.0	0.0	8.0
12/28/2024 13:00	4.2	37.2	0.0	7.2	11.6	7.2	12/28/2024 13:00	5.3	58.4	0.0	6.7	12.0	0.0	8.0
12/28/2024 13:15	4.2	36.8	0.0	7.1	11.6	6.8	12/28/2024 13:15	5.3	58.2	0.0	6.7	12.0	0.0	8.0
12/28/2024 13:30	4.2	36.6	0.0	7.1	11.6	6.5	12/28/2024 13:30	5.3	58.6	0.0	6.7	12.1	0.0	8.0
12/28/2024 13:45	4.2	36.7	0.0	7.2	11.7	6.4	12/28/2024 13:45	5.3	58.6	0.0	6.7	12.1	0.0	8.0
12/28/2024 14:00	4.2	36.7	0.0	7.1	11.7	7.0	12/28/2024 14:00	5.3	59.6	0.0	6.7	12.1	0.0	8.0
12/28/2024 14:15	4.2	37.0	0.0	7.1	11.7	6.7	12/28/2024 14:15	5.3	59.1	0.0	6.7	12.1	0.0	8.0
12/28/2024 14:30	4.2	36.9	0.0	7.1	11.7	6.9	12/28/2024 14:30	5.3	59.5	0.0	6.7	12.1	0.0	8.0
12/28/2024 14:45	4.2	36.8	0.0	7.1	11.7	6.8	12/28/2024 14:45	5.2	58.5	0.0	6.7	12.1	0.6	8.6
12/28/2024 15:00	4.2	36.5	0.0	7.2	11.7	7.0	12/28/2024 15:00	5.3	59.3	0.0	6.7	12.1	0.0	8.0
12/28/2024 15:15	4.2	36.9	0.0	7.2	11.7	6.8	12/28/2024 15:15	5.3	59.3	0.0	6.7	12.1	0.0	8.0
12/28/2024 15:30	4.2	36.8	0.0	7.1	11.7	7.9	12/28/2024 15:30	5.3	60.2	0.0	6.7	12.1	0.0	8.0
12/28/2024 15:45	4.2	37.2	0.0	7.1	11.6	8.4	12/28/2024 15:45	5.3	59.0	0.0	6.7	12.0	0.0	8.0
12/28/2024 16:00	4.2	36.7	0.0	7.1	11.7	9.1	12/28/2024 16:00	5.3	59.6	0.0	6.7	12.0	0.0	8.0
12/28/2024 16:15	4.3	37.3	0.0	7.1	11.6	7.7	12/28/2024 16:15	5.3	61.6	0.0	6.7	12.0	0.0	8.0
12/28/2024 16:30	4.3	38.8	0.0	7.1	11.6	7.8	12/28/2024 16:30	5.3	61.3	0.0	6.7	12.0	0.0	8.0
12/28/2024 16:45	4.3	40.5	0.0	7.1	11.6	8.7	12/28/2024 16:45	5.3	61.1	0.0	6.7	12.0	0.0	8.0
12/28/2024 17:00	4.3	39.7	0.0	7.1	11.6	8.8	12/28/2024 17:00	5.4	62.4	0.0	6.6	12.0	0.0	8.0
12/28/2024 17:15	4.3	39.9	0.0	7.1	11.6	21.2	12/28/2024 17:15	5.4	60.2	0.0	6.6	12.0	0.0	8.0
12/28/2024 17:30	4.3	39.0	0.0	7.0	11.6	8.7	12/28/2024 17:30	5.4	61.4	0.0	6.6	11.9	0.0	8.0
12/28/2024 17:45	4.3	38.8	0.0	7.0	11.6	9.2	12/28/2024 17:45	5.4	60.9	0.0	6.6	11.9	0.0	8.0
12/28/2024 18:00	4.3	38.1	0.0	7.0	11.6	10.9	12/28/2024 18:00	5.4	59.7	0.0	6.6	12.0	0.0	8.0
12/28/2024 18:15	4.3	37.7	0.0	7.0	11.6	10.6	12/28/2024 18:15	5.4	59.5	0.0	6.6	12.0	0.0	8.0
12/28/2024 18:30	4.3	37.4	0.0	7.0	11.6	9.1	12/28/2024 18:30	5.4	59.3	0.0	6.6	12.0	0.0	8.0
12/28/2024 18:45	4.3	37.8	0.0	7.0	11.6	10.8	12/28/2024 18:45	5.4	59.1	0.0	6.6	11.9	1.4	9.4
12/28/2024 19:00	4.3	37.0	0.0	7.0	11.6	12.2	12/28/2024 19:00	5.4	58.9	0.0	6.5	11.9	0.0	8.0
12/28/2024 19:15	4.3	37.7	0.0	7.1	11.6	13.6	12/28/2024 19:15	5.4	7.7	0.0	6.4	11.8	13.6	18.6
12/28/2024 19:30	4.3	37.4	0.0	7.1	11.6	12.0	12/28/2024 19:30	5.3	5.2	0.0	6.4	12.4	7.2	15.2
12/28/2024 19:45	4.3	37.4	0.0	7.1	11.6	13.5	12/28/2024 19:45	5.3	5.4	0.0	6.8	12.5	7.3	15.3
12/28/2024 20:00	4.3	36.9	0.0	7.1	11.6	13.8	12/28/2024 20:00	5.2	6.1	0.0	6.7	12.5	7.3	15.3
12/28/2024 20:15	4.3	36.4	0.0	7.2	11.6	14.0	12/28/2024 20:15	5.2	6.2	0.0	6.7	12.5	6.8	14.8
12/28/2024 20:30	4.3	36.1	0.0	7.0	11.6	14.4	12/28/2024 20:30	5.2	6.3	0.0	6.7	12.6	6.5	14.5
12/28/2024 20:45	4.3	36.3	0.0	7.1	11.6	13.8	12/28/2024 20:45	5.2	5.3	0.0	6.9	12.5	6.5	14.5
12/28/2024 21:00	4.3	36.3	0.0	7.1	11.6	16.2	12/28/2024 21:00	5.2	6.2	0.0	6.7	12.5	6.3	14.3
12/28/2024 21:15	4.3	36.8	0.0	7.1	11.6	16.0	12/28/2024 21:15	5.2	6.1	0.0	6.6	12.5	6.4	14.4
12/28/2024 21:30	4.3	36.9	0.0	7.1	11.6	16.1	12/28/2024 21:30	5.2	6.0	0.0	6.6	12.5	6.3	14.3
12/28/2024 21:45	4.3	36.8	0.0	7.0	11.6	16.2	12/28/2024 21:45	5.3	5.8	0.0	6.8	12.5	7.9	15.9
12/28/2024 22:00	4.3	36.9	0.0	7.1	11.6	17.6	12/28/2024 22:00	5.2	6.1	0.0	6.7	12.5	6.5	14.5
12/28/2024 22:15	4.3	36.5	0.0	7.1	11.6	17.7	12/28/2024 22:15	5.3	6.0	0.0	6.7	12.5	6.2	14.2
12/28/2024 22:30	4.3	35.7	0.0	7.1	11.6	16.9	12/28/2024 22:30	5.3	5.9	0.0	6.7	12.5	6.2	14.2
12/28/2024 22:45	4.3	35.7	0.0	7.1	11.6	16.7	12/28/2024 22:45	5.3	3.8	0.0	6.8	12.4	6.2	14.2
12/28/2024 23:00	4.3	35.5	0.0	7.1	11.6	20.7	12/28/2024 23:00	5.3	5.3	0.0	6.6	12.4	6.1	14.1
12/28/2024 23:15	4.3	35.4	0.0	7.1	11.6	18.5	12/28/2024 23:15	5.3	4.8	0.0	6.6	12.3	6.3	14.3
12/28/2024 23:30	4.3	35.6	0.0	7.0	11.6	17.8	12/28/2024 23:30	5.3	4.9	0.0	6.6	12.3	6.3	14.3
12/28/2024 23:45	4.3	35.5	0.0	7.1	11.6	18.0	12/28/2024 23:45	5.3	7.8	0.0	6.8	12.3	6.7	14.7

12/29/2024 0:00	4.3	35.3	0.0	7.1	11.6	19.0	12/29/2024 0:00	5.3	4.5	0.0	6.6	12.3	6.3	14.3
12/29/2024 0:15	4.3	35.3	0.0	7.0	11.6	20.2	12/29/2024 0:15	5.3	4.3	0.0	6.6	12.3	6.0	14.0
12/29/2024 0:30	4.3	33.5	0.0	7.0	11.6	0.0	12/29/2024 0:30	5.3	4.8	0.0	6.6	12.3	6.1	14.1
12/29/2024 0:45	4.3	34.0	0.0	7.1	11.6	0.0	12/29/2024 0:45	5.3	4.7	0.0	6.7	12.3	6.6	14.6
12/29/2024 1:00	4.3	34.3	0.0	7.1	11.6	0.0	12/29/2024 1:00	5.3	3.9	0.0	6.6	12.2	6.0	14.0
12/29/2024 1:15	4.3	34.4	0.0	7.1	11.6	0.0	12/29/2024 1:15	5.3	8.2	0.0	6.7	12.2	5.8	13.8
12/29/2024 1:30	4.3	33.5	0.0	7.1	11.6	0.0	12/29/2024 1:30	5.3	4.1	0.0	6.5	12.2	5.9	13.9
12/29/2024 1:45	4.3	32.9	0.0	7.1	11.7	0.0	12/29/2024 1:45	5.3	4.7	0.0	6.7	12.2	7.8	15.8
12/29/2024 2:00	4.3	33.0	0.0	7.0	11.6	0.0	12/29/2024 2:00	5.3	4.2	0.0	6.6	12.2	5.1	13.1
12/29/2024 2:15	4.2	32.8	0.0	7.1	11.6	0.0	12/29/2024 2:15	5.3	7.7	0.0	6.6	12.1	5.5	13.5
12/29/2024 2:30	4.2	32.8	0.0	7.0	11.7	0.1	12/29/2024 2:30	5.3	4.2	0.0	6.5	12.1	6.1	14.1
12/29/2024 2:45	4.2	32.9	0.0	7.0	11.6	0.0	12/29/2024 2:45	5.3	3.9	0.0	6.6	12.0	9.6	14.6
12/29/2024 3:00	4.2	32.6	0.0	7.1	11.6	0.0	12/29/2024 3:00	5.3	3.5	0.0	6.5	12.0	7.8	15.8
12/29/2024 3:15	4.2	32.7	0.0	7.1	11.7	0.0	12/29/2024 3:15	5.3	54.6	0.0	6.6	12.1	56.4	61.4
12/29/2024 3:30	4.2	32.4	0.0	7.0	11.7	0.0	12/29/2024 3:30	5.3	54.1	0.0	6.6	12.1	0.0	8.0
12/29/2024 3:45	4.2	32.2	0.0	7.0	11.7	0.0	12/29/2024 3:45	5.3	53.9	0.0	6.7	12.1	0.0	8.0
12/29/2024 4:00	4.2	32.3	0.0	7.1	11.7	0.0	12/29/2024 4:00	5.2	52.8	0.0	6.7	12.1	0.0	8.0
12/29/2024 4:15	4.2	32.7	0.0	7.1	11.7	0.0	12/29/2024 4:15	5.2	51.8	0.0	6.7	12.2	0.0	8.0
12/29/2024 4:30	4.2	32.6	0.0	7.1	11.7	0.0	12/29/2024 4:30	5.2	51.3	0.0	6.7	12.2	0.0	8.0
12/29/2024 4:45	4.2	32.6	0.0	7.2	11.7	0.0	12/29/2024 4:45	5.2	51.3	0.0	6.8	12.2	0.0	8.0
12/29/2024 5:00	4.2	33.0	0.0	7.2	11.7	0.0	12/29/2024 5:00	5.2	51.6	0.0	6.7	12.2	0.0	8.0
12/29/2024 5:15	4.2	33.4	0.0	7.2	11.7	0.0	12/29/2024 5:15	5.2	51.3	0.0	6.8	12.2	0.0	8.0
12/29/2024 5:30	4.2	32.8	0.0	7.2	11.7	0.0	12/29/2024 5:30	5.2	51.1	0.0	6.8	12.2	0.0	8.0
12/29/2024 5:45	4.2	31.9	0.0	7.2	11.7	0.0	12/29/2024 5:45	5.1	50.6	0.0	6.8	12.3	5.2	13.2
12/29/2024 6:00	4.1	31.2	0.0	7.2	11.7	0.0	12/29/2024 6:00	5.1	50.7	0.0	6.8	12.3	0.0	8.0
12/29/2024 6:15	4.1	31.1	0.0	7.1	11.7	0.0	12/29/2024 6:15	5.1	50.1	0.0	6.8	12.3	0.0	8.0
12/29/2024 6:30	4.1	30.8	0.0	7.2	11.8	0.0	12/29/2024 6:30	5.1	49.6	0.0	6.8	12.3	0.0	8.0
12/29/2024 6:45	4.1	30.7	0.0	7.2	11.8	0.0	12/29/2024 6:45	5.1	49.3	0.0	6.8	12.3	0.0	8.0
12/29/2024 7:00	4.1	31.7	0.0	7.2	11.8	0.0	12/29/2024 7:00	5.0	49.5	0.0	6.8	12.3	3.3	11.3
12/29/2024 7:15	4.1	32.2	0.0	7.2	11.8	0.0	12/29/2024 7:15	5.1	51.5	0.0	6.8	12.3	0.0	8.0
12/29/2024 7:30	4.1	33.0	0.0	7.2	11.8	0.0	12/29/2024 7:30	5.1	52.3	0.0	6.8	12.3	0.0	8.0
12/29/2024 7:45	4.1	33.4	0.0	7.2	11.8	0.0	12/29/2024 7:45	5.1	52.8	0.0	6.8	12.3	0.0	8.0
12/29/2024 8:00	4.1	33.4	0.0	7.2	11.8	0.0	12/29/2024 8:00	5.1	54.0	0.0	6.8	12.3	0.0	8.0
12/29/2024 8:15	4.1	33.6	0.0	7.2	11.8	0.0	12/29/2024 8:15	5.1	54.5	0.0	6.8	12.2	0.0	8.0
12/29/2024 8:30	4.1	32.8	0.0	7.2	11.8	0.0	12/29/2024 8:30	5.1	54.0	0.0	6.8	12.3	0.0	8.0
12/29/2024 8:45	4.0	32.4	0.0	7.1	11.8	0.0	12/29/2024 8:45	5.1	54.1	0.0	6.8	12.2	0.0	8.0
12/29/2024 9:00	4.0	32.5	0.0	7.2	11.8	0.0	12/29/2024 9:00	5.1	57.2	0.0	6.7	12.1	0.0	8.0
12/29/2024 9:15	4.1	33.4	0.0	7.1	11.7	0.0	12/29/2024 9:15	5.2	58.9	0.0	6.6	12.0	0.0	8.0
12/29/2024 9:30	4.1	33.8	0.0	7.1	11.7	0.0	12/29/2024 9:30	5.2	59.8	0.0	6.6	11.9	0.0	8.0
12/29/2024 9:45	4.1	34.2	0.0	7.1	11.7	0.0	12/29/2024 9:45	5.2	59.9	0.0	6.6	11.9	0.0	8.0
12/29/2024 10:00	4.1	36.5	0.0	7.0	11.6	15.3	12/29/2024 10:00	5.2	58.7	0.0	6.6	11.9	0.0	8.0
12/29/2024 10:15	4.1	37.4	0.0	7.1	11.6	5.0	12/29/2024 10:15	5.2	58.4	0.0	6.6	12.0	0.0	8.0
12/29/2024 10:30	4.1	37.3	0.0	7.1	11.6	5.3	12/29/2024 10:30	5.1	57.3	0.0	6.6	12.0	0.0	8.0
12/29/2024 10:45	4.1	36.4	0.0	7.1	11.7	5.4	12/29/2024 10:45	5.1	56.4	0.0	6.7	12.1	0.0	8.0
12/29/2024 11:00	4.1	35.1	0.0	7.1	11.7	5.0	12/29/2024 11:00	5.1	56.1	0.0	6.7	12.1	0.0	8.0
12/29/2024 11:15	4.1	35.0	0.0	7.1	11.7	4.8	12/29/2024 11:15	5.1	56.0	0.0	6.7	12.1	0.0	8.0
12/29/2024 11:30	4.1	34.8	0.0	7.1	11.7	4.8	12/29/2024 11:30	5.1	56.3	0.0	6.7	12.1	0.0	8.0
12/29/2024 11:45	4.1	35.1	0.0	7.1	11.7	5.1	12/29/2024 11:45	5.2	56.4	0.0	6.7	12.1	0.0	8.0
12/29/2024 12:00	4.1	34.9	0.0	7.1	11.7	5.3	12/29/2024 12:00	5.2	56.1	0.0	6.7	12.1	0.0	8.0
12/29/2024 12:15	4.2	34.9	0.0	7.1	11.7	5.2	12/29/2024 12:15	5.2	55.2	0.0	6.7	12.1	0.0	8.0
12/29/2024 12:30	4.2	34.9	0.0	7.1	11.7	5.4	12/29/2024 12:30	5.2	56.0	0.0	6.7	12.1	0.0	8.0
12/29/2024 12:45	4.2	35.1	0.0	7.1	11.7	5.8	12/29/2024 12:45	5.2	56.2	0.0	6.7	12.1	0.0	8.0
12/29/2024 13:00	4.2	35.0	0.0	7.1	11.7	5.4	12/29/2024 13:00	5.3	55.6	0.0	6.7	12.1	0.0	8.0
12/29/2024 13:15	4.2	34.9	0.0	7.1	11.7	5.3	12/29/2024 13:15	5.3	55.2	0.0	6.7	12.1	0.0	8.0
12/29/2024 13:30	4.2	34.7	0.0	7.1	11.7	5.2	12/29/2024 13:30	5.3	55.7	0.0	6.7	12.2	0.0	8.0
12/29/2024 13:45	4.3	35.0	0.0	7.1	11.7	4.9	12/29/2024 13:45	5.3	56.8	0.0	6.7	12.1	0.0	8.0
12/29/2024 14:00	4.3	35.2	0.0	7.1	11.7	5.2	12/29/2024 14:00	5.3	56.2	0.0	6.7	12.1	0.0	8.0
12/29/2024 14:15	4.3	35.4	0.0	7.1	11.7	5.6	12/29/2024 14:15	5.3	56.4	0.0	6.7	12.1	0.0	8.0
12/29/2024 14:30	4.3	35.5	0.0	7.2	11.7	5.7	12/29/2024 14:30	5.4	56.4	0.0	6.7	12.1	0.0	8.0
12/29/2024 14:45	4.3	35.3	0.0	7.2	11.7	5.5	12/29/2024 14:45	5.4	57.1	0.0	6.7	12.1	0.0	8.0
12/29/2024 15:00	4.3	35.6	0.0	7.1	11.7	5.5	12/29/2024 15:00	5.4	57.2	0.0	6.7	12.1	0.0	8.0
12/29/2024 15:15	4.3	35.6	0.0	7.1	11.7	5.5	12/29/2024 15:15	5.4	57.0	0.0	6.7	12.2	0.0	8.0
12/29/2024 15:30	4.4	35.9	0.0	7.1	11.7	5.6	12/29/2024 15:30	5.4	57.6	0.0	6.7	12.1	0.0	8.0
12/29/2024 15:45	4.4	35.9	0.0	7.1	11.7	5.7	12/29/2024 15:45	5.4	57.5	0.0	6.7	12.1	4.8	12.8
12/29/2024 16:00	4.4	36.3	0.0	7.1	11.7	5.9	12/29/2024 16:00	5.4	58.4	0.0	6.7	12.1	0.0	8.0
12/29/2024 16:15	4.4	36.3	0.0	7.1	11.7	6.6	12/29/2024 16:15	5.4	58.9	0.0	6.7	12.1	0.0	8.0
12/29/2024 16:30	4.4	37.1	0.0	7.1	11.6	6.4	12/29/2024 16:30	5.5	60.4	0.0	6.7	12.1	0.0	8.0
12/29/2024 16:45	4.4	37.4	0.0	7.1	11.6	6.3	12/29/2024 16:45	5.5	59.7	0.0	6.7	12.0	0.0	8.0
12/29/2024 17:00	4.4	37.3	0.0	7.1	11.6	6.8	12/29/2024 17:00	5.5	60.6	0.0	6.7	12.0	0.0	8.0
12/29/2024 17:15	4.4	38.0	0.0	7.1	11.6	6.8	12/29/2024 17:15	5.5	61.4	0.0	6.7	12.0	0.0	8.0
12/29/2024 17:30	4.5	38.1	0.0	7.1	11.6	6.6	12/29/2024 17:30	5.5	62.6	0.0	6.6	12.0	0.0	8.0
12/29/2024 17:45	4.5	38.4	0.0	7.0	11.5	7.3	12/29/2024 17:45	5.5	61.5	0.0	6.6	11.9	0.0	8.0
12/29/2024 18:00	4.5	38.5	0.0	7.0	11.5	7.5	12/29/2024 18:00	5.5	62.5	0.0	6.6	11.9	0.0	8.0
12/29/2024 18:15	4.5	38.5	0.0	7.0	11.5	7.5	12/29/2024 18:15	5.6	62.0	0.0	6.6	11.9	0.0	8.0
12/29/2024 18:30	4.5	38.7	0.0	7.0	11.5	7.6	12/29/2024 18:30	5.6	61.8	0.0	6.6	11.9	0.0	8.0
12/29/2024 18:45	4.5	38.6	0.0	7.0	11.5	8.3	12/29/2024 18:45	5.6	62.5	0.0	6.6	11.9	0.0	8.0
12/29/2024 19:00	4.5	38.7	0.0	7.0	11.5	9.5	12/29/2024 19:00	5.6	62.1	0.0	6.6	11.9	0.0	8.0
12/29/2024 19:15	4.5	38.6	0.0	7.0	11.5	9.0	12/29/2024 19:15	5.7	4.8	0.0	6.4	12.2	5.4	13.4
12/29/2024 19:30	4.5	38.2	0.0	7.0	11.5	9.4	12/29/2024 19:30	5.6	6.1	0.0	6.7	12.4	5.5	13.5
12/29/2024 19:45	4.5	40.1	0.0	7.0	11.5	10.0	12/29/2024 19:45	5.6	5.5	0.0	6.8	12.4	7.5	15.5
12/29/2024 20:00	4.5	37.4	0.0	7.0	11.5	9.7	12/29/2024 20:00	5.6	6.3	0.0	6.8	12.5	5.6	13.6
12/29/2024 20:15	4.5	37.5	0.0	7.0	11.5	10.2	12/29/2024 20:15	5.5	6.4	0.0	6.8	12.5	5.2	13.2
12/29/2024 20:30	4.5	38.0	0.0	7.0	11.5	12.2	12/29/2024 20:30	5.5	6.5	0.0	6.7	12.5	5.4	13.4
12/29/2024 20:45	4.5	37.8	0.0	7.0	11.5	12.2	12/29/2024 20:45	5.5	5.2	0.0	6.8	12.5	6.0	14.0
12/29/2024 21:00	4.5	37.8	0.0	7.1	11.5	12.1	12/29/2024 21:00	5.4	6.6	0.0	6.8	12.5	5.5	13.5
12/29/2024 21:15	4.4	37.8	0.0	7.0	11.6	11.8	12/29/2024 21:15	5.4	6.7	0.0	6.8	12.5	5.4	13.4
12/29/2024 21:30	4.4	38.1	0.0	7.0	11.5	12.7	12/29/2024 21:30	5.3	6.8	0.0	6.7	12.6	5.2	13.2
12/29/2024 21:45	4.4	37.7	0.0	7.1	11.6	12.3	12/29/2024 21:45	5.3	5.6	0.0	7.0	12.6	6.4	14.4
12/29/2024 22:00	4.4	38.0	0.0	7.0	11.6	12.1	12/29/2024 22:00	5.2	7.0	0.0	6.7	12.6	5.2	13.2
12/29/2024 22:15	4.4	38.2	0.0	7.0	11.6	13.3	12/29/2024 22:15	5.2	7.1	0.0	6.7	12.6	4.7	12.7
12/29/2024 22:30	4.4	37.7	0.0	7.0	11.6	14.1	12/29/2024 22:30	5.1	7.1	0.0	6.7	12.6	4.3	12.3
12/29/2024 22:45	4.4	37.9	0.0	7.0	11.6	13.4	12/29/2024 22:45	5.1	6.2	0.0	6.9	12.6	4.2	12.2
12/29/2024 23:00	4.4	38.2	0.0	7.0	11.6	14.1	12/29/2024 23:00	5.1	6.9	0.0	6.8	12.7	5.3	13.3
12/29/2024 23:15	4.4	38.1	0.0	7.0	11.6	14.1	12/29/2024 23:15	5.1	7.1	0.0	6.8	12.7	5.3	13.3
12/29/2024 23:30	4.4	37.6	0.0	7.0	11.6	14.9	12/29/2024 23:30	5.1	7.2	0.0	6.7	12.6	5.0	13.0
12/29/2024 23:45	4.4	38.2	0.0	7.0	11.6	15.7	12/29/2024 23:45	5.1	6.7	0.0	6.9	12.7	5.4	13.4

BCR Site Receiving Environment Field Notes and Logs

FortisBC Eagle Mountain-Woodfibre Gas Pipeline

Water Discharge Authorization Water Quality Monitoring

2024-12-23-Shafiei-04C91

Project Component:	Tunnel	**Site Name:**	Receiving Environment - Downstream of Discharge
Inspection Date:	12/23/2024	**Location:**	BC Rail Site
Triton QP:	Farshad Shafiei	**Latitude/Longitude:**	49.72529 -123.165119
Temperature(c):	Low 5 High 8	**Permit:**	AE 111824
Weather Conditions:	Light Rain	**Ground Conditions:**	Wet

Observations

Time: 10:30:01 **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:**	Yes
Nutrients	Yes	**VOC/VPH**	N/A		
DOC	Yes	**EPH, PAH, LEPH/HEPH**	N/A		
		Trout LC50	N/A		

Logger Maintenance

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

Describe Logger Maintenance

Sonde cleaned

Photos

Photo: 1

Location: BCR DS

Description: DS view

Photo: 2

Location: BCR DS

Description: Across view

Photos

Photo: 3

Location: BCR DS

Description: US view

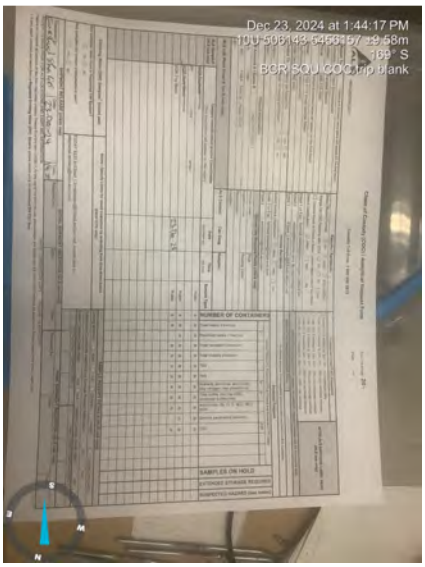


Photo: 4

Location: Lab COC

Description: Lab COC

2024-12-23-Shafiei-04C91

Photos

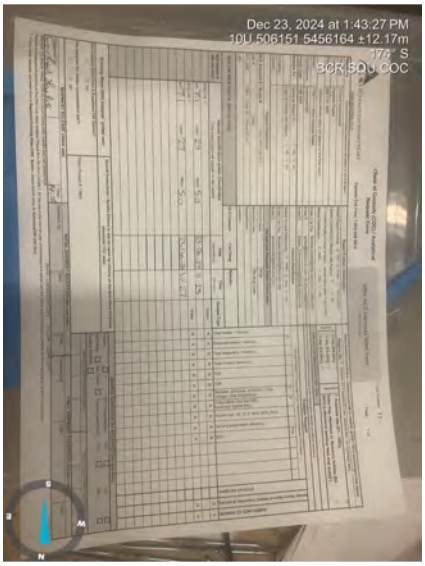


Photo: 5

Location: Lab COC

Description: Lab COC

2024-12-23-Shafiei-04C91

Sign Off

Report Prepared By:	Farshad Shafiei	**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

2024-12-23-Shafiei-8E30F

Project Component:	Tunnel	**Site Name:**	Receiving Environment - Upstream of Discharge
Inspection Date:	12/23/2024	**Location:**	BC Rail Site
Triton QP:	Farshad Shafiei	**Latitude/Longitude:**	49.726866 -123.163912
Temperature(c):	Low 3 High 8	**Permit:**	AE 111824
Weather Conditions:	Light Rain	**Ground Conditions:**	Wet

Observations

Time: 11:23:19 **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:**	Yes
Nutrients	Yes	**VOC/VPH**	N/A		
DOC	Yes	**EPH, PAH, LEPH/HEPH**	N/A		
		Trout LC50	N/A		

Logger Maintenance

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

Describe Logger Maintenance

The logger was stuck again. We were not able to check the logger and perform any maintenance

Photos

Photo: 1

Location: BCR US

Description: DS view

Photo: 2

Location: BCR US

Description: Right bank

Photos

Photo: 3

Location: BCR US

Description: US view

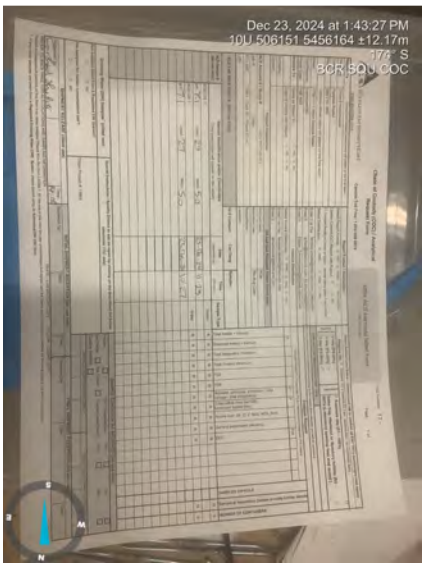


Photo: 7

Location: Lab COC

Description: Lab COC

Photos

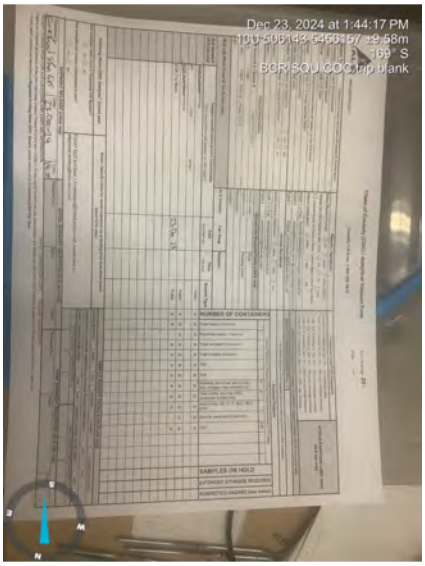


Photo: 8

Location: Lab COC

Description: Lab COC

Sign Off

Report Prepared By:	Farshad Shafiei	**Report Reviewed:**	Yes
Report Reviewer:		**Professional(s) of Record:**	
Name:			
Designation:			
Designation Number:			

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

Woodfibre Site Sample Analysis

TRITON	Sample ID	Reviewed and signed off by: Farshad Shafiei Ph.D., R.P.Bio.	COLLEGE OF APPLIED BIOLOGISTS Farshad Shafiei RPBio 3781 CAB	WLNG EOP	Sample or value notes	BCWQ FAL - Short Term	BCWQ MAL - Short Term
	LAB ID			VA24D4411-001			
	Date Sampled			27-Dec-24			
	Time Sampled			13:23			
Analyte	Units	FAL-ST [1,2]	MAL-ST [1]	Water			
				N/A		Guideline notes	
In Situ Parameters							
pH (field)	pH units	6.5-9.0	7.0-8.7	7.30		If natural pH < 6.5, no statisticaly significant decrease from background. No restriction in increase except in areas with unique flora or fauna. Unrestricted change permitted within range of 6.5 to 9.0. If natural pH > 9.0, no statistically significant increase from background. Refer to BC Water Quality Guidelines for more information.	Unrestricted change within this range (for protection of mollusc embryo development).
Temperature (field)	°C	Multiple guidelines dependent on water use and species, see notes: Short-term daily temperature = 15°C, or Max +/- 1°C from optimum temperature range for most sensitive salmonid species present, or Short-term daily temperature is 19°C, or Max +/- from BKG 1°C	Max +/- from BKG 1°C	9.2		Guideline is species-dependent. Short-term daily temperature is 15°C for streams with Bull Trout &/or Dolly Varden, Max +/- 1°C from the optimum range as shown in Table 43B of the BCWG for aquatic life for each life history phase of the most sensitive salmoind species present, Mean Weekly Max Temperature guideline is18°C, Short-term daily temperature guideline is 19°C for streams with unknown fish distribution, or Max +/- 1°C from background. Refer to footnote 4 for background temperature range for East Creek.	Guideline for marine waters are based on natural ambient conditions. Refer to footnote 4 for background temperature range for East Creek. Calculation: US value +/- 1 = guideline range
Conductivity (field)	µS/cm	-	-	137			
Turbidity (field)	NTU	Varies with background, see note Guideline = 8.5	Varies with background, see note Guideline = 8.5	0.45		Change from background of 8 NTU at any one time for a duration of 24 h in all waters during clear flows or in clear waters. Calculation: US value + 8 = DS guideline Change from background of 5 NTU at any time when background is 8 - 50 NTU during high flows or in turbid waters. Calculation: US value + 5 = DS guideline Change from background of 10% when background is > 50 NTU at any time during high flows or in turbid waters. Calculation: US value + (US value*0.1) = DS guideline	Change from background of 8 NTU at any one time for a duration of 24 h in all waters during clear flows or in clear waters. Calculation: US value + 8 = DS guideline Change from background of 5 NTU at any time when background is 8 - 50 NTU during high flows or in turbid waters. Calculation: US value + 5 = DS guideline Change from background of 10% when background is > 50 NTU at any time during high flows or in turbid waters. Calculation: US value + (US value*0.1) = DS guideline
General Parameters							
Hardness (as $CaCO_3$) (total)	mg/L	-	-	59.1			
Total Dissolved Solids	mg/L	-	-	77			
Total Suspended Solids	mg/L	Varies with background, see note Guideline = 28	Varies with background, see note Guideline = 28	< 3.0		Change from background of 25 mg/L at any one time for duration of 24 h in all waters during clear flows or in clear waters. Calculation: US value + 25 = DS guideline Change from background of 10 mg/L at any one time when background 25-100 mg/L during high flows or turbid waters. Calculation: US value + 10 = DS guideline Change from background of 10% when background is > 100 mg/L at any time during high flows or turbid waters. Calculation: US value + (US value*0.1) = DS guideline	Change from background of 25 mg/L at any one time for duration of 24 h in all waters during clear flows or in clear waters. Calculation: US value + 25 = DS guideline Change from background of 10 mg/L at any one time when background 25-100 mg/L during high flows or turbid waters. Calculation: US value + 10 = DS guideline Change from background of 10% when background is > 100 mg/L at any time during high flows or turbid waters. Calculation: US value + (US value*0.1) = DS guideline
Dissolved Organic Carbon (DOC)	mg/L	-	-	< 0.50			
Total Phenols	mg/L	0.05	-	< 0.0010		Interim guideline	Interim guideline
Total Alkalinity ($CaCO_3$)	mg/L	-	-	60.6			
Total Sulfide (as S)	mg/L	-	-	< 0.0015			
Total Sulfide (un-ionized as H_2S)	mg/L	-	-	< 0.0015			
Total Sulfide (as H_2S)	mg/L	-	-	< 0.0016			
Anions and Nutrients							
Ammonia	mg/L ammonia-N	Varies with pH and temperature. See note. Guideline = 16.2	Varies with pH and temperature. See note. Guideline = 121	0.0083		Guideline for ammonia as N and is pH and temperature dependent. Refer to Table 27D in BC WQG for guideline values.	Guideline for ammonia as N. Guideline is pH, temperature and salinity dependent. Refer to Table 27F in BC WQG for guideline values.
Bromide	mg/L	-	-	< 0.050			
Chloride	mg/L	600	+/- 10% from BKG	0.8			Human activities should not cause the chloride of marine and estuarine waters to fluctuate by more than 10% of the natural chloride expected at that time and depth
Fluoride	mg/L	Varies with hardness Guideline = 1.123	1.5	0.205		Guideline has interim status. Guideline is calculated with the following equation: Guideline = [-51.73 + 92.57 log10 (hardness)] * 0.01	
Nitrate (as N)	mg/L	32.8	-	0.0208			
Nitrite (as N)	mg/L	Varies with chloride. Table 27B, see note. Guideline = 0.06	-	< 0.0010		Varies with chloride. Refer to Table 27B in BC WQG for guideline values.	
Total Nitrogen	mg/L	-	-	0.081			
Total Phosphorous	mg/L	-	-	0.0042			
Sulfate (as SO_4)	mg/L	-	-	4.66			
Total Metals							
Aluminum (Al)-Total	mg/L	-	-	0.0126			
Antimony (Sb)-Total	mg/L	0.25	-	< 0.00010			
Arsenic (As)-Total	mg/L	-	-	0.00244			
Barium (Ba)-Total	mg/L	-	-	0.00292			
Beryllium (Be)-Total	mg/L	-	-	< 0.000100			
Bismuth (Bi)-Total	mg/L	-	-	< 0.000050			
Boron (B)-Total	mg/L	-	-	0.013			
Cadmium (Cd)-Total	mg/L	-	-	< 0.000015			
Calcium (Ca)-Total	mg/L	-	-	22.1			
Cesium (Cs)-Total	mg/L	-	-	0.000012			
Chromium (Cr) - Total	mg/L	-	-	< 0.00050			
Chromium (Cr(III))-Total	mg/L	-	-	< 0.00050			
Chromium (Cr(VI))-Total	mg/L	-	-	< 0.00050			
Cobalt (Co)-Total	mg/L	0.11	-	< 0.00010			
Copper (Cu)-Total	mg/L	-	0.003	0.00054			
Iron (Fe)-Total	mg/L	1	-	0.023			
Lead (Pb)-Total	mg/L		0.14	0.000171			
Lithium (Li)-Total	mg/L	-	-	0.0023			
Magnesium (Mg)-Total	mg/L	-	-	0.948			
Manganese (Mn)-Total	mg/L	Varies with hardness Guideline = 1.191	-	0.00111		Guideline varies with hardness. The guideline is calculated using the following equation: Guideline = (0.0044 * hardness + 0.605) Guideline applies to samples with hardness 25-259 mg/L. Lowest value for guideline is 0.77 mg/L. If hardness is below the hardness range, the minimum hardness will be applied in the calculation.	
Mercury (Hg)-Total	mg/L	-	-	< 0.0000050			
Molybdenum (Mo)-Total	mg/L	46	-	0.0186			
Nickel (Ni)-Total	mg/L	-	-	<0.00050			
Phosphorus (P)-Total	mg/L	-	-	< 0.050			
Potassium (K)-Total	mg/L	-	-	0.789			
Rubidium (Rb)-Total	mg/L	-	-	0.00106			
Selenium (Se)-Total	mg/L	-	-	0.000105			
Silicon (Si)-Total	mg/L	-	-	6.46			
Silver (Ag)-Total	mg/L	Varies with hardness, see note Guideline = 0.0001	0.003	< 0.000010		Varies with hardness Guideline ranges: Hardness ≤ 100: 0.0001 Hardness > 100: 0.003	
Sodium (Na)-Total	mg/L	-	-	3.14			
Strontium (Sr)-Total	mg/L	-	-	0.0411			
Sulfur (S)-Total	mg/L	-	-	1.5			
Tellurium (Te)-Total	mg/L	-	-	< 0.00020			
Thallium (Tl)-Total	mg/L	-	-	< 0.000010			
Thorium (Th)-Total	mg/L	-	-	< 0.00010			
Tin (Sn)-Total	mg/L	-	-	< 0.00010			
Titanium (Ti)-Total	mg/L	-	-	< 0.00030			
Tungsten (W)-Total	mg/L	-	-	0.00053			
Uranium (U)-Total	mg/L	0.0165	-	0.00974			
Vanadium (V)-Total	mg/L	-	-	< 0.00050			
Zinc (Zn)-Total	mg/L	-	0.055	0.0168			
Zirconium (Zr)-Total	mg/L	-	-	< 0.00020			
Dissolved Metals							
Aluminum (Al)-Dissolved	mg/L	-	-	0.0069			
Antimony (Sb)-Dissolved	mg/L	-	-	< 0.00010			
Arsenic (As)-Dissolved	mg/L	-	-	0.00232			
Barium (Ba)-Dissolved	mg/L	-	-	0.00295			
Beryllium (Be)-Dissolved	mg/L	-	-	< 0.000100			
Bismuth (Bi)-Dissolved	mg/L	-	-	< 0.000050			
Boron (B)-Dissolved	mg/L	-	-	0.01			
Cadmium (Cd)-Dissolved	mg/L	Varies with hardness, see note Guideline = 0.000342	-	< 0.000005		Guideline is hardness dependent. Guideline is appilcable to water hardness between 7.0 and 455 mg/L. Guideline is calculated with the following formula: Guideline = (EXP(1.03 * (LN(hardness)) - 5.274)/1000) Lowest value for guideline is 0.000018 mg/L. If hardness is below the hardness range, the minimum hardness will be applied in the calculation.	
Calcium (Ca)-Dissolved	mg/L	-	-	19.2			
Cesium (Cs)-Dissolved	mg/L	-	-	0.000011			
Chromium (Cr)-Dissolved	mg/L	-	-	< 0.00050			
Cobalt (Co)-Dissolved	mg/L	-	-	< 0.00010			
Copper (Cu)-Dissolved	mg/L	Guideline varies with other parameters, see note Guideline = 0.007	-	0.00066		Guideline varies with other parameters and is calculated using BC BLM software. Simplified model: Temperature, pH, DOC and hardness Detailed model: Temperature, pH, DOC, humic acid content, total calcium, total magnesium, total sodium, total potassium, sulphate, chloride, and alkalinity Guideline calculated using values for parameters above taken at the specific site on each sampling date	
Iron (Fe)-Dissolved	mg/L	0.35	-	0.015			
Lead (Pb)-Dissolved	mg/L	-	-	0.00016			
Lithium (Li)-Dissolved	mg/L	-	-	0.0019			
Magnesium (Mg)-Dissolved	mg/L	-	-	0.93			
Manganese (Mn)-Dissolved	mg/L	-	-	0.00071			
Mercury (Hg)-Dissolved	mg/L	-	-	< 0.000005			
Molybdenum (Mo)-Dissolved	mg/L	-	-	0.018			
Nickel (Ni)-Dissolved	mg/L	Guideline varies with pH, temperature, DOC, and hardness Guideline: 0.0286	-	< 0.00050		Guideline varies with other parameters and is calculated using BC BLM software. Simplified model: Temperature, pH, DOC and hardness Detailed model: Temperature, pH, DOC, humic acid content, total calcium, total magnesium, total sodium, total potassium, sulphate, chloride, and alkalinity Guideline calculated using values for parameters above taken at the specific site on each sampling date	
Phosphorus (P)-Dissolved	mg/L	-	-	< 0.050			
Potassium (K)-Dissolved	mg/L	-	-	0.85			
Rubidium (Rb)-Dissolved	mg/L	-	-	0.00118			
Selenium (Se)-Dissolved	mg/L	-	-	0.000057			
Silicon (Si)-Dissolved	mg/L	-	-	6.21			
Silver (Ag)-Dissolved	mg/L	-	-	< 0.000010			
Sodium (Na)-Dissolved	mg/L	-	-	3.26			
Strontium (Sr)-Dissolved	mg/L	-	-	0.0403			
Sulfur (S)-Dissolved	mg/L	-	-	1.43			
Tellurium (Te)-Dissolved	mg/L	-	-	< 0.00020			
Thallium (Tl)-Dissolved	mg/L	-	-	< 0.000010			
Thorium (Th)-Dissolved	mg/L	-	-	< 0.00010			
Tin (Sn)-Dissolved	mg/L	-	-	< 0.00010			
Titanium (Ti)-Dissolved	mg/L	-	-	< 0.00030			
Tungsten (W)-Dissolved	mg/L	-	-	0.00049			
Uranium (U)-Dissolved	mg/L	-	-	0.0101			
Vanadium (V)-Dissolved	mg/L	-	-	< 0.00050			
Zinc (Zn)-Dissolved	mg/L	Varies with DOC and hardness Guideline = 0.021	-	0.018		Guideline varies with DOC and hardness. Guideline is calculated using the following formula: Guideline = (EXP((0.833 * (LN(hardness))) + (0.24 * (LN(DOC))) + 0.526)/2/1000) If hardness or DOC is below the hardness or DOC range, the minimum hardness or DOC will be applied in the calculation.	
Zirconium (Zr)-Dissolved	mg/L	-	-	< 0.00020			
Volatile Organic Compounds							
Chlorobenzene	µg/L	-	-	< 0.50			
Chloromethane	µg/L	-	-	< 5.0			
Dichlorobenzene, 1,2-	µg/L	-	-	< 0.50			
Dichlorobenzene, 1,3-	µg/L	-	-	< 0.50			
Dichlorobenzene, 1,4-	µg/L	-	-	< 0.50			
Dichloropropane, 1,2-	µg/L	-	-	< 0.50			
Dichloropropylene, cis+trans-1,3-	µg/L	-	-	< 0.75			
Dichloropropylene, cis-1,3-	µg/L	-	-	< 0.50			
Tetrachloroethane, 1,1,1,2-	µg/L	-	-	< 0.50			
Tetrachloroethane, 1,1,2,2-	µg/L	-	-	< 0.20			
Trichloroethane, 1,1,2-	µg/L	-	-	< 0.50			
Trichlorofluoromethane	µg/L	-	-	< 0.50			
Carbon tetrachloride	µg/L	-	-	< 0.50			
Chloroethane	µg/L	-	-	< 0.50			
Dichloroethane, 1,1-	µg/L	-	-	< 0.50			
Dichloroethane, 1,2-	µg/L	-	-	< 0.50			
Dichloroethylene, 1,1-	µg/L	-	-	< 0.50			
Dichloroethylene, cis-1,2-	µg/L	-	-	< 0.50			
Dichloroethylene, trans-1,2-	µg/L	-	-	< 0.50			
Dichloromethane	µg/L	-	-	< 1.0			
Dichloropropylene, trans-1,3-	µg/L	-	-	< 0.50			
Tetrachloroethylene	µg/L	-	-	< 0.50			
Trichloroethane, 1,1,1-	µg/L	-	-	< 0.50			
Trichloroethylene	µg/L	-	-	< 0.50			
Vinyl chloride	µg/L	-	-	< 0.40			
Benzene	µg/L	-	-	< 0.50			
Ethylbenzene	µg/L	-	-	< 0.50			
Methyl-tert-butyl ether [MTBE]	µg/L	3400	440	< 0.50			
Styrene	µg/L	-	-	< 0.50			
Toluene	µg/L	-	-	< 0.40			
Xylene, m+p-	µg/L	-	-	< 0.40			
Xylene, o-	µg/L	-	-	< 0.30			
Xylenes, total	µg/L	-	-	< 0.50			
Bromodichloromethane	µg/L	-	-	< 0.50			
Bromoform	µg/L	-	-	< 0.50			
Chloroform	µg/L	-	-	< 0.50			
Dibromochloromethane	µg/L	-	-	< 0.50			
Hydrocarbons							
EPH (C10-C19)	µg/L	-	-	< 250			
EPH (C19-C32)	µg/L	-	-	< 250			
VHw (C6-C10)	µg/L	-	-	< 100			
VPHw	µg/L	-	-	< 100			
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	µg/L	-	-	< 0.010			
Acenaphthylene	µg/L	-	-	< 0.010			
Acridine	µg/L	-	-	< 0.010			
Anthracene	µg/L	0.1	-	< 0.010			
Benz(a)anthracene	µg/L	0.1	-	< 0.010			
Benzo(a)pyrene	µg/L	-	-	< 0.0050			
Benzo(b+j)fluoranthene	µg/L	-	-	< 0.010			
Benzo(b+j+k)fluoranthene	µg/L	-	-	< 0.015			
Benzo(g,h,i)perylene	µg/L	-	-	< 0.010			
Benzo(k)fluoranthene	µg/L	-	-	< 0.010			
Chrysene	µg/L	-	-	< 0.010			
Dibenz(a,h)anthracene	µg/L	-	-	< 0.0050			
Fluoranthene	µg/L	0.2	-	< 0.010		Guideline is for phototoxic effects	
Fluorene	µg/L	-	-	< 0.010			
Indeno(1,2,3-c,d)pyrene	µg/L	-	-	< 0.010			
Methylnaphthalene, 1-	µg/L	-	-	< 0.010			
Methylnaphthalene, 2-	µg/L	-	-	< 0.010			
Naphthalene	µg/L	-	-	< 0.050			
Phenanthrene	µg/L	-	-	< 0.020			
Pyrene	µg/L	0.02	-	< 0.010			
Quinoline	µg/L	-	-	< 0.050		Working guideline status	
Glycols							
Ethylene glycol	mg/L	-	-	< 5.0			
Propylene glycol, 1,2-	mg/L	-	-	< 5.0			
Applied Guideline:		**British Columbia Approved and Working Water Quality Guidelines (NOV 2023) for Freshwater Aquatic Life (FAL) & Marine Aquatic Life (MAL) Short-Term (ST) & Long-Term (LT)**					
Color Key:		**Exceeds FAL Short term Guideline**	**Exceeds MAL Short term Guideline**				

[1] BC MOECCS. 2023. BC Water Qualtiy Guidelines for the Protection of Aquatic Life, Wildlife & Agriculture. Accessed from:
wqg_summary_aquaticlife_wildlife_agri.pdf (gov.bc.ca)

[2] BC MOECCS. 2021. BC Working Water Qualtiy Guidelines for the Protection of Aquatic Life, Widlife & Agriculture. Accessed from:
bc_env_working_water_quality_guidelines.pdf (gov.bc.ca)

[3] Note that long-term (**LT**) guidelines apply to averaged data to account for chronic impacts to aquatic life. Ideally, five samples collected at evenly spaced intervals over 30 days is considered to be the minimum number needed to calculate the long-term average of any parameter, though this may vary by parameter and site conditions. Long-term guidelines applied here are for reference only and may not indicate chronic impacts to aquatic life if exceedances occur in the short-term (**ST**).

[4] Background temperature ranges: Dec-Feb: 0.3-8.0C; Mar-Apr: 3.0-10.2C; May-June: 6.8-15.1C; Jul-present: 12.9-18.2C

Reference: AquaTROLL In-Situ Data Logger - Background water quality readings collected from Dec.-present.

For guidelines dependent on other parameters, when hardness, pH or DOC are below the range stated in the guideline, the lowest value in the range is used to calculate the

Parameters Used to Calculate Guidelines

Analyte	Units	Measurement method	Values WLNG EOP	WLNG EOP 27-Dec-2024
pH (field)	pH units	Field pH taken using handheld meters during sampling used in calculations	7.3	7.3
Temperature (field)	°C	Field temperature taken using handheld meters during sampling used in calculations	9.2	9.2
Turbidity (field)	NTU	Field turbidity taken using handheld meters during sampling used in calculations	0.45	0.45
Hardness (as CaCO3) (total)	mg/L	Laboratory tested total hardness taken at each respective sample site on the day of sampling used in guid	59.1	59.1
Dissolved Organic Carbon (DOC)	mg/L	Laboratory tested dissolved organic carbon tested at the lab used in guideline calculations	0.5	0.5
Total Alkalinity ($CaCO_3$)	mg/L	Laboratory tested total alkalinity used in calculations	60.6	60.6
Chloride	mg/L	Laboratory tested chloride taken at each respective sample site on the day of sampling used in guideline c	0.8	0.8
Total Suspended Solids	mg/L	Laboratory tested total suspended solids tested at the lab used in guideline calculations	< 3.0	< 3.0

Woodfibre Site Sample Lab Documentation

CERTIFICATE OF ANALYSIS

Work Order	:	**VA24D4411**		
Client	:	**Triton Environmental Consultants Ltd.**	Laboratory	: ALS Environmental - Vancouver
Contact	:		Account Manager	:
Address	:		Address	:
Telephone	:	----	Telephone	:
Project	:	11964	Date Samples Received	: 27-Dec-2024 19:15
PO	:	11964 - Task 40 - Phase 3C-4C	Date Analysis Commenced	: 29-Dec-2024
C-O-C number	:	----	Issue Date	: 07-Jan-2025 17:27
Sampler	:	----		
Site	:	Water Analysis		
Quote number	:	VA23-TRIT100-012		
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.

Signatories	*Position*	*Laboratory Department*
		Inorganics, Edmonton, Alberta
		Metals, Burnaby, British Columbia
		Metals, Burnaby, British Columbia
		Organics, Burnaby, British Columbia
		Inorganics, Burnaby, British Columbia
		Inorganics, Burnaby, British Columbia
		Inorganics, Burnaby, British Columbia
		Administration, Burnaby, British Columbia
		Metals, Burnaby, British Columbia
		Metals, Burnaby, British Columbia
		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).

Unit	*Description*
-	no units
°C	degrees celsius
mg/L	milligrams per litre
NTU	nephelometric turbidity units
pH units	pH units
µg/L	micrograms per litre
µS/cm	microsiemens per centimetre

<: 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

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG EOP	----	----	----	----
					Client sampling date / time	27-Dec-2024 13:23	----	----	----	----
						VA24D4411-001	----	----	----	----
						Result	----	----	----	----
Field Tests										
Conductivity, field	----	EF001/VA	0.10	µS/cm		137.00	----	----	----	----
pH, field	----	EF001/VA	0.10	pH units		7.30	----	----	----	----
Temperature, field	----	EF001/VA	0.10	°C		9.20	----	----	----	----
Turbidity, field	----	EF001/VA	0.01	NTU		0.45	----	----	----	----
Physical Tests										
Hardness (as CaCO3), dissolved	----	EC100/VA	0.60	mg/L		51.8	----	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L		59.1	----	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L		77	----	----	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L		<3.0	----	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	2.0	mg/L		60.6	----	----	----	----
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L		0.0083	----	----	----	----
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		0.80	----	----	----	----
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L		0.205	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L		0.0208	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L		<0.0010	----	----	----	----
Nitrogen, total	7727-37-9	E366/VA	0.030	mg/L		0.081	----	----	----	----
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L		0.0042	----	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L		4.66	----	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID: WLNG EOP	----	----	----	----
					Client sampling date / time: 27-Dec-2024 13:23	----	----	----	----
					VA24D4411-001	----	----	----	----
					Result	----	----	----	----
Organic / Inorganic Carbon									
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L	<0.50	----	----	----	----
Total Sulfides									
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L	<0.0015	----	----	----	----
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	<0.0016	----	----	----	----
Total Metals									
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L	0.0126	----	----	----	----
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L	<0.00010	----	----	----	----
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L	0.00244	----	----	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L	0.00292	----	----	----	----
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	0.013	----	----	----	----
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	22.1	----	----	----	----
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L	0.000012	----	----	----	----
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	0.00054	----	----	----	----
Iron, total	7439-89-6	E420/VA	0.010	mg/L	0.023	----	----	----	----
Lead, total	7439-92-1	E420/VA	0.000050	mg/L	0.000171	----	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID: WLNG EOP	----	----	----	----
					Client sampling date / time: 27-Dec-2024 13:23	----	----	----	----
					VA24D4411-001	----	----	----	----
					Result	----	----	----	----
Total Metals									
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L	0.0023	----	----	----	----
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L	0.948	----	----	----	----
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L	0.00111	----	----	----	----
Mercury, total	7439-97-6	E508/VA	0.0000050	mg/L	<0.0000050	----	----	----	----
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L	0.0186	----	----	----	----
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	0.789	----	----	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L	0.00106	----	----	----	----
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L	0.000105	----	----	----	----
Silicon, total	7440-21-3	E420/VA	0.10	mg/L	6.46	----	----	----	----
Silver, total	7440-22-4	E420/VA	0.000010	mg/L	<0.000010	----	----	----	----
Sodium, total	7440-23-5	E420/VA	0.050	mg/L	3.14	----	----	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L	0.0411	----	----	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L	1.50	----	----	----	----
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	----	----	----	----
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	<0.00030	----	----	----	----
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L	0.00053	----	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID: WLNG EOP	----	----	----	----
					Client sampling date / time: 27-Dec-2024 13:23	----	----	----	----
					VA24D4411-001	----	----	----	----
					Result	----	----	----	----
Total Metals									
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L	0.00974	----	----	----	----
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L	<0.00050	----	----	----	----
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L	0.0168	----	----	----	----
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	0.0069	----	----	----	----
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L	<0.00010	----	----	----	----
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L	0.00232	----	----	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L	0.00295	----	----	----	----
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	0.010	----	----	----	----
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L	<0.0000050	----	----	----	----
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L	19.2	----	----	----	----
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L	0.000011	----	----	----	----
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	0.00066	----	----	----	----
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L	0.015	----	----	----	----
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L	0.000160	----	----	----	----
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L	0.0019	----	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG EOP	----	----	----	----
					Client sampling date / time	27-Dec-2024 13:23	----	----	----	----
					VA24D4411-001	----	----	----	----	----
					Result	----	----	----	----	----
Dissolved Metals										
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L	0.930	----	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L	0.00071	----	----	----	----
Mercury, dissolved	7439-97-6	E509/VA	0.0000050	mg/L	<0.0000050	----	----	----	----
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L	0.0180	----	----	----	----
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	0.850	----	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L	0.00118	----	----	----	----
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L	0.000057	----	----	----	----
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L	6.21	----	----	----	----
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L	<0.000010	----	----	----	----
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L	3.26	----	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L	0.0403	----	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L	1.43	----	----	----	----
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	0.00049	----	----	----	----
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L	0.0101	----	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG EOP	----	----	----	----
					Client sampling date / time	27-Dec-2024 13:23	----	----	----	----
						VA24D4411-001	----	----	----	----
						Result	----	----	----	----
Dissolved Metals										
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L		<0.00050	----	----	----	----
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L		0.0180	----	----	----	----
Zirconium, dissolved	7440-67-7	E421/VA	0.00020	mg/L		<0.00020	----	----	----	----
Dissolved mercury filtration location	----	EP509/VA	-	-		Field	----	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	-		Field	----	----	----	----
Speciated Metals										
Chromium, hexavalent [Cr VI], total	18540-29-9	E532/VA	0.00050	mg/L		<0.00050	----	----	----	----
Chromium, trivalent [Cr III], total	16065-83-1	EC535/VA	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	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	WLNG EOP	----	----	----	----
					Client sampling date / time	27-Dec-2024 13:23	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		VA24D4411-001	----	----	----	----
						Result	----	----	----	----
Volatile Organic Compounds										
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	----	----	----	----
Volatile Organic Compounds [Drycleaning]										
Carbon tetrachloride	56-23-5	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Chloroethane	75-00-3	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloroethane, 1,1-	75-34-3	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloroethane, 1,2-	107-06-2	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloroethylene, 1,1-	75-35-4	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloroethylene, cis-1,2-	156-59-2	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloroethylene, trans-1,2-	156-60-5	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Dichloromethane	75-09-2	E611C/VA	1.0	µg/L		<1.0	----	----	----	----
Dichloropropylene, trans-1,3-	10061-02-6	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Tetrachloroethylene	127-18-4	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Trichloroethane, 1,1,1-	71-55-6	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Trichloroethylene	79-01-6	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Vinyl chloride	75-01-4	E611C/VA	0.40	µg/L		<0.40	----	----	----	----
Volatile Organic Compounds [Fuels]										
Benzene	71-43-2	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Ethylbenzene	100-41-4	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C/VA	0.50	µg/L		<0.50	----	----	----	----
Styrene	100-42-5	E611C/VA	0.50	µg/L		<0.50	----	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	WLNG EOP	----	----	----	----
Client sample ID					WLNG EOP	----	----	----	----
Client sampling date / time					27-Dec-2024 13:23	----	----	----	----
					VA24D4411-001	----	----	----	----
					Result	----	----	----	----
Volatile Organic Compounds [Fuels]									
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	----	----	----	----
VHw (C6-C10)	----	E581.VH+F1/VA	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	%	65.8	----	----	----	----
Dichlorotoluene, 3,4-	95-75-0	E581.VH+F1/VA	1.0	%	93.7	----	----	----	----
Volatile Organic Compounds Surrogates									
Bromofluorobenzene, 4-	460-00-4	E611C/VA	1.0	%	85.5	----	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG EOP	----	----	----	----
					Client sampling date / time	27-Dec-2024 13:23	----	----	----	----
					VA24D4411-001	----	----	----	----	----
					Result	----	----	----	----	----
Volatile Organic Compounds Surrogates										
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	----	----	----	----	----
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	----	----	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID: WLNG EOP	----	----	----	----
					Client sampling date / time: 27-Dec-2024 13:23	----	----	----	----
					VA24D4411-001	----	----	----	----
					Result	----	----	----	----
Polycyclic Aromatic Hydrocarbons									
Pyrene	129-00-0	E641A/VA	0.010	µg/L	<0.010	----	----	----	----
Quinoline	91-22-5	E641A/VA	0.050	µg/L	<0.050	----	----	----	----
Polycyclic Aromatic Hydrocarbons Surrogates									
Chrysene-d12	1719-03-5	E641A/VA	0.1	%	71.8	----	----	----	----
Naphthalene-d8	1146-65-2	E641A/VA	0.1	%	83.7	----	----	----	----
Phenanthrene-d10	1517-22-2	E641A/VA	0.1	%	82.0	----	----	----	----
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	%	90.9	----	----	----	----

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

ALS Canada Ltd.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **VA24D4411**	Page	: 1 of 15
Client	: **Triton Environmental Consultants Ltd.**	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	
Address		Address	
Telephone	: ----	Telephone	
Project	: 11964	Date Samples Received	: 27-Dec-2024 19:15
PO	: 11964 - Task 40 - Phase 3C-4C	Issue Date	: 07-Jan-2025 17:26
C-O-C number	: ----		
Sampler	: ----		
Site	: Water Analysis		
Quote number	: VA23-TRIT100-012 _V2		
No. of samples received	: 1		
No. of samples analysed	: 1		

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

Key

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

Workorder Comments

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

Summary of Outliers

Outliers : Quality Control Samples

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

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Matrix Spike (MS) Recoveries								
Total Metals	Anonymous	Anonymous	Thorium, total	7440-29-1	E420	61.8 % MES	70.0-130%	Recovery less than lower data quality objective

Result Qualifiers

Qualifier	Description
MES	*Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).*

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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid) WLNG EOP	E562	27-Dec-2024	02-Jan-2025	28 days	6 days	✓	02-Jan-2025	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) WLNG EOP	E298	27-Dec-2024	02-Jan-2025	28 days	6 days	✓	03-Jan-2025	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WLNG EOP	E235.Br-L	27-Dec-2024	30-Dec-2024	28 days	3 days	✓	30-Dec-2024	28 days	3 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE WLNG EOP	E235.Cl	27-Dec-2024	30-Dec-2024	28 days	3 days	✓	30-Dec-2024	28 days	3 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE WLNG EOP	E235.F	27-Dec-2024	30-Dec-2024	28 days	3 days	✓	30-Dec-2024	28 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE WLNG EOP	E235.NO3-L	27-Dec-2024	30-Dec-2024	3 days	3 days	✓	30-Dec-2024	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE WLNG EOP	E235.NO2-L	27-Dec-2024	30-Dec-2024	3 days	3 days	✓	30-Dec-2024	3 days	3 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Sulfate in Water by IC										
HDPE WLNG EOP	E235.SO4	27-Dec-2024	30-Dec-2024	28 days	3 days	✓	30-Dec-2024	28 days	3 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) WLNG EOP	E366	27-Dec-2024	02-Jan-2025	28 days	6 days	✓	03-Jan-2025	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) WLNG EOP	E372-U	27-Dec-2024	02-Jan-2025	28 days	6 days	✓	03-Jan-2025	28 days	7 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) WLNG EOP	E509	27-Dec-2024	06-Jan-2025	28 days	10 days	✓	06-Jan-2025	28 days	10 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) WLNG EOP	E421	27-Dec-2024	03-Jan-2025	180 days	7 days	✓	04-Jan-2025	180 days	8 days	✓
Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
Glass vial dissolved (hydrochloric acid) WLNG EOP	EF001	27-Dec-2024	----	----	----		30-Dec-2024	----	3 days	
Glycols : Glycols (4 analytes) by GC-FID										
Glass vial WLNG EOP	E680E	27-Dec-2024	30-Dec-2024	7 days	3 days	✓	30-Dec-2024	40 days	0 days	✓
Hydrocarbons : BC PHCs - EPH by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate) WLNG EOP	E601A	27-Dec-2024	07-Jan-2025	14 days	10 days	✓	07-Jan-2025	40 days	0 days	✓
Hydrocarbons : VH and F1 by Headspace GC-FID										
Glass vial (sodium bisulfate) WLNG EOP	E581.VH+F1	27-Dec-2024	03-Jan-2025	14 days	7 days	✓	03-Jan-2025	14 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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) WLNG EOP	E358-L	27-Dec-2024	02-Jan-2025	28 days	6 days	✓	02-Jan-2025	28 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE WLNG EOP	E290	27-Dec-2024	30-Dec-2024	14 days	3 days	✓	30-Dec-2024	14 days	3 days	✓
Physical Tests : TDS by Gravimetry										
HDPE WLNG EOP	E162	27-Dec-2024	----	----	----		29-Dec-2024	7 days	2 days	✓
Physical Tests : TSS by Gravimetry										
HDPE WLNG EOP	E160	27-Dec-2024	----	----	----		29-Dec-2024	7 days	2 days	✓
Polycyclic Aromatic Hydrocarbons : PAHs in Water by Hexane LVI GC-MS										
Amber glass/Teflon lined cap (sodium bisulfate) WLNG EOP	E641A	27-Dec-2024	07-Jan-2025	14 days	10 days	✓	07-Jan-2025	40 days	0 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
Opaque HDPE - total (sodium hydroxide) WLNG EOP	E532	27-Dec-2024	----	----	----		30-Dec-2024	28 days	3 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) WLNG EOP	E508	27-Dec-2024	04-Jan-2025	28 days	8 days	✓	04-Jan-2025	28 days	8 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) WLNG EOP	E420	27-Dec-2024	06-Jan-2025	180 days	10 days	✓	07-Jan-2025	180 days	11 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) WLNG EOP	E395	27-Dec-2024	----	----	----		30-Dec-2024	7 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	
Volatile Organic Compounds : VOCs (BC List) by Headspace GC-MS										
Glass vial (sodium bisulfate)										
WLNG EOP	E611C	27-Dec-2024	03-Jan-2025	14 days	7 days	✓	03-Jan-2025	14 days	7 days	✓

Legend & Qualifier Definitions

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

Quality Control Parameter Frequency Compliance

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

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1825138	1	13	7.6	5.0	✓
Ammonia by Fluorescence	E298	1827974	1	5	20.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1825142	1	13	7.6	5.0	✓
Chloride in Water by IC	E235.Cl	1825141	1	13	7.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1830363	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1826816	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1827966	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	1825140	1	13	7.6	5.0	✓
Glycols (4 analytes) by GC-FID	E680E	1825697	1	10	10.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1825139	1	19	5.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1825143	1	13	7.6	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1827721	1	18	5.5	5.0	✓
Sulfate in Water by IC	E235.SO4	1825144	1	13	7.6	5.0	✓
TDS by Gravimetry	E162	1824684	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1825986	1	17	5.8	5.0	✓
Total Mercury in Water by CVAAS	E508	1829754	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1826693	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1827968	1	6	16.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1827969	1	6	16.6	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1825840	1	11	9.0	5.0	✓
TSS by Gravimetry	E160	1824680	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1829275	1	9	11.1	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1829274	1	18	5.5	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1825138	1	13	7.6	5.0	✓
Ammonia by Fluorescence	E298	1827974	1	5	20.0	5.0	✓
BC PHCs - EPH by GC-FID	E601A	1830814	1	13	7.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1825142	1	13	7.6	5.0	✓
Chloride in Water by IC	E235.Cl	1825141	1	13	7.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1830363	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1826816	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1827966	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	1825140	1	13	7.6	5.0	✓
Glycols (4 analytes) by GC-FID	E680E	1825697	1	10	10.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1825139	1	19	5.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1825143	1	13	7.6	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
PAHs in Water by Hexane LVI GC-MS	E641A	1830813	1	8	12.5	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1827721	1	18	5.5	5.0	✓
Sulfate in Water by IC	E235.SO4	1825144	1	13	7.6	5.0	✓
TDS by Gravimetry	E162	1824684	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1825986	1	17	5.8	5.0	✓
Total Mercury in Water by CVAAS	E508	1829754	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1826693	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1827968	1	6	16.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1827969	1	6	16.6	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1825840	1	11	9.0	5.0	✓
TSS by Gravimetry	E160	1824680	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1829275	1	9	11.1	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1829274	1	18	5.5	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1825138	1	13	7.6	5.0	✓
Ammonia by Fluorescence	E298	1827974	1	5	20.0	5.0	✓
BC PHCs - EPH by GC-FID	E601A	1830814	1	13	7.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1825142	1	13	7.6	5.0	✓
Chloride in Water by IC	E235.Cl	1825141	1	13	7.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1830363	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1826816	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1827966	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	1825140	1	13	7.6	5.0	✓
Glycols (4 analytes) by GC-FID	E680E	1825697	1	10	10.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1825139	1	19	5.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1825143	1	13	7.6	5.0	✓
PAHs in Water by Hexane LVI GC-MS	E641A	1830813	1	8	12.5	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1827721	1	18	5.5	5.0	✓
Sulfate in Water by IC	E235.SO4	1825144	1	13	7.6	5.0	✓
TDS by Gravimetry	E162	1824684	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1825986	1	17	5.8	5.0	✓
Total Mercury in Water by CVAAS	E508	1829754	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1826693	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1827968	1	6	16.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1827969	1	6	16.6	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1825840	1	11	9.0	5.0	✓
TSS by Gravimetry	E160	1824680	1	20	5.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1829275	1	9	11.1	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1829274	1	18	5.5	5.0	✓

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1827974	1	5	20.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1825142	1	13	7.6	5.0	✓
Chloride in Water by IC	E235.Cl	1825141	1	13	7.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1830363	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1826816	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1827966	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	1825140	1	13	7.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1825139	1	19	5.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1825143	1	13	7.6	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	1827721	1	18	5.5	5.0	✓
Sulfate in Water by IC	E235.SO4	1825144	1	13	7.6	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1825986	1	17	5.8	5.0	✓
Total Mercury in Water by CVAAS	E508	1829754	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1826693	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1827968	1	6	16.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1827969	1	6	16.6	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1825840	1	11	9.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	1829275	1	9	11.1	5.0	✓
VOCs (BC List) by Headspace GC-MS	E611C	1829274	1	18	5.5	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 ± 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.
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 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.
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 methlyene blue colourimetric method. Results expressed "as H2S" if reported represent the maximum possible H2S concentration based on the total sulfide concentration in the sample. The H2S calculation converts Total Sulphide as (S2-) and reports it as Total Sulphide as (H2S)
Total Metals in Water by CRC ICPMS	E420 ALS Environmental - Vancouver	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Mercury in Water by CVAAS	E508 ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
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.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Hexavalent Chromium (Cr VI) by IC	E532 ALS Environmental - Vancouver	Water	APHA 3500-Cr C (Ion Chromatography)	Hexavalent Chromium is measured by Ion chromatography-Post column reaction and UV detection. Results are based on an un-filtered, field-preserved sample.
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 ($K_3Fe(CN)_6$) 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 CaCO3), from total Ca/Mg" is calculated from the sum of total Calcium and Magnesium concentrations, expressed in CaCO3 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 - Vancouver	Water	APHA 3030B/6020A/EPA 7196A (mod)	Chromium (III)-Total is calculated as the difference between the total chromium and the total hexavalent chromium (Cr(VI)) results.The Limit of Reporting for Chromium (III) varies as a function of the test results.
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, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine	EF001 ALS Environmental - Vancouver	Water	Field Measurement (Client Supplied)	Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3 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.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
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 orgaic solvent.

ALS Canada Ltd.

QUALITY CONTROL REPORT

Work Order	: **VA24D4411**	Page	: 1 of 23
Client	: Triton Environmental Consultants Ltd.	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	
Address		Address	
Telephone	: ----	Telephone	
Project	: 11964	Date Samples Received	: 27-Dec-2024 19:15
PO	: 11964 - Task 40 - Phase 3C-4C	Date Analysis Commenced	: 29-Dec-2024
C-O-C number	: ----	Issue Date	: 07-Jan-2025 17:26
Sampler	: ----		
Site	: Water Analysis		
Quote number	: VA23-TRIT100-012 _V2		
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
- 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*
		Edmonton Inorganics, Edmonton, Alberta
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Organics, Burnaby, British Columbia
		Vancouver Inorganics, Burnaby, British Columbia
		Vancouver Inorganics, Burnaby, British Columbia
		Vancouver Inorganics, Burnaby, British Columbia
		Vancouver Administration, Burnaby, British Columbia
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Metals, 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: 1824680)											
VA24D4366-003	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	23100 µg/L	22.5	0.6	Diff <2x LOR	----
Physical Tests (QC Lot: 1824684)											
VA24D4366-003	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	854000 µg/L	840	1.65%	20%	----
Physical Tests (QC Lot: 1825138)											
VA24D4412-002	Anonymous	Alkalinity, total (as CaCO3)	----	E290	2.0	mg/L	11.4	11.4	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1825139)											
VA24D4411-001	WLNG EOP	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0208	0.0205	0.0003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1825140)											
VA24D4411-001	WLNG EOP	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.205	0.206	0.521%	20%	----
Anions and Nutrients (QC Lot: 1825141)											
VA24D4411-001	WLNG EOP	Chloride	16887-00-6	E235.Cl	0.50	mg/L	0.80	0.80	0.001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1825142)											
VA24D4411-001	WLNG EOP	Bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1825143)											
VA24D4411-001	WLNG EOP	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: 1825144)											
VA24D4411-001	WLNG EOP	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	4.66	4.67	0.165%	20%	----
Anions and Nutrients (QC Lot: 1827968)											
VA24D4412-002	Anonymous	Nitrogen, total	7727-37-9	E366	0.030	mg/L	0.074	0.074	0.0005	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1827969)											
VA24D4411-001	WLNG EOP	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0042	0.0046	0.0004	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1827974)											
VA24D4411-001	WLNG EOP	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0083	0.0087	0.0004	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1827966)											
VA24D4411-001	WLNG EOP	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Total Sulfides (QC Lot: 1825840)											
VA24D4240-001	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.0075	mg/L	<0.0075	<0.0075	0	Diff <2x LOR	----
Total Metals (QC Lot: 1826693)											
KS2405353-001	Anonymous	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	<0.00010	<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: 1826693) - continued											
KS2405353-001	Anonymous	Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00134	0.00133	0.498%	20%	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.0193	0.0192	0.554%	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	0.0000167	0.0000147	0.0000020	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	45.1	43.9	2.78%	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	0.00050	mg/L	0.00059	0.00056	0.00002	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	0.00050	mg/L	0.0610	0.0612	0.193%	20%	----
		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	0.000435	0.000442	0.000007	Diff <2x LOR	----
		Lithium, total	7439-93-2	E420	0.0010	mg/L	0.0020	0.0021	0.00006	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	21.8	21.1	3.17%	20%	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.00672	0.00673	0.117%	20%	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00164	0.00168	2.03%	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	1.82	1.82	0.383%	20%	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00072	0.00078	0.00007	Diff <2x LOR	----
		Selenium, total	7782-49-2	E420	0.000050	mg/L	0.000204	0.000173	0.000032	Diff <2x LOR	----
		Silicon, total	7440-21-3	E420	0.10	mg/L	8.49	8.77	3.27%	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	8.78	8.84	0.748%	20%	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.293	0.301	2.68%	20%	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	7.24	8.05	10.5%	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	<0.00030	<0.00030	0	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	0.000010	mg/L	0.00167	0.00169	1.55%	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*
Total Metals (QC Lot: 1826693) - continued											
KS2405353-001	Anonymous	Vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00072	0.00072	0.000003	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420	0.0030	mg/L	0.0288	0.0290	0.0002	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: 1829754)											
VA24D4365-006	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1826816)											
KS2405363-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0013	0.0012	0.0002	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	0.00044	0.00046	0.00002	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0526	0.0536	1.88%	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	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	90.4	88.5	2.15%	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	0.00085	0.00088	0.00002	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	0.00070	0.00074	0.00004	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	0.0021	0.0021	0.000002	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	23.8	23.4	1.70%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00904	0.00927	2.53%	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	1.90	1.87	1.83%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00069	0.00060	0.00009	Diff <2x LOR	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.00157	0.00158	0.182%	20%	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	8.48	8.68	2.32%	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	11.8	11.6	1.66%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.330	0.331	0.186%	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: 1826816) - continued											
KS2405363-001	Anonymous	Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	39.4	41.2	4.30%	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	0.0214	0.0218	1.51%	20%	----
		Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	0.00307	0.00306	0.000010	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	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1830363)											
FJ2403897-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 1825986)											
VA24D4392-002	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.00050	mg/L	<0.50 µg/L	<0.00050	0	Diff <2x LOR	----
Aggregate Organics (QC Lot: 1827721)											
VA24D4131-007	Anonymous	Phenols, total (4AAP)	----	E562	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 1829274)											
VA24D4388-001	Anonymous	Benzene	71-43-2	E611C	0.50	µg/L	85.8	82.8	3.65%	30%	----
		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	0.60	µg/L	<0.60	<0.60	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: 1829274) - continued											
VA24D4388-001	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	4.5	µg/L	<4.5	<4.5	0	Diff <2x LOR	----
		Dichloropropane, 1,2-	78-87-5	E611C	0.75	µg/L	<0.75	<0.75	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	5.30	µg/L	<5.30	<5.30	0	Diff <2x LOR	----
		Ethylbenzene	100-41-4	E611C	0.50	µg/L	13.5	13.6	0.759%	30%	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	0.50	µg/L	0.80	0.73	0.07	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	0.30	µg/L	<0.30	<0.30	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	2.86	2.84	0.803%	30%	----
		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	1.30	µg/L	<1.30	<1.30	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	4.76	4.87	2.14%	30%	----
		Xylene, o-	95-47-6	E611C	0.63	µg/L	<0.63	<0.63	0	Diff <2x LOR	----
Hydrocarbons (QC Lot: 1829275)											
VA24D4411-001	WLNG EOP	VHw (C6-C10)	----	E581.VH+F1	100	µg/L	<100	<100	0.0%	30%	----
Glycols (QC Lot: 1825697)											
VA24D4327-001	Anonymous	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	84.5	83.1	1.68%	30%	----
		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: 1824680)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1824684)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1825138)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Anions and Nutrients (QCLot: 1825139)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1825140)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1825141)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1825142)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1825143)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1825144)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1827968)						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
Anions and Nutrients (QCLot: 1827969)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 1827974)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Organic / Inorganic Carbon (QCLot: 1827966)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1825840)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1826693)						
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: 1826693) - 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: 1829754)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1826816)						
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: 1826816) - 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: 1830363)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Speciated Metals (QCLot: 1825986)						
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	<0.00050	----
Aggregate Organics (QCLot: 1827721)						
Phenols, total (4AAP)	----	E562	0.001	mg/L	<0.0010	----
Volatile Organic Compounds (QCLot: 1829274)						
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: 1829274) - 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: 1829275)						
VHw (C6-C10)	----	E581.VH+F1	100	µg/L	<100	----
Hydrocarbons (QCLot: 1830814)						
EPH (C10-C19)	----	E601A	250	µg/L	<250	----
EPH (C19-C32)	----	E601A	250	µg/L	<250	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1830813)						
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**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 1830813) - 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: 1825697)						
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: 1824680)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	96.8	85.0	115	----
Physical Tests (QCLot: 1824684)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	101	85.0	115	----
Physical Tests (QCLot: 1825138)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	104	85.0	115	----
Anions and Nutrients (QCLot: 1825139)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1825140)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1825141)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1825142)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	104	85.0	115	----
Anions and Nutrients (QCLot: 1825143)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1825144)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 1827968)									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1827969)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	95.5	80.0	120	----
Anions and Nutrients (QCLot: 1827974)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	99.7	85.0	115	----
Organic / Inorganic Carbon (QCLot: 1827966)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	99.6	80.0	120	----
Total Sulfides (QCLot: 1825840)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	99.7	80.0	120	----
Total Metals (QCLot: 1826693)									

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: 1826693) - continued									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	106	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	103	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	100	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	108	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	111	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	110	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	104	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	100	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	99.5	80.0	120	----
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	98.0	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	90.4	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	106	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	104	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	102	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	97.9	80.0	120	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	104	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	105	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	102	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	103	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	91.0	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	104	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	97.9	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	83.6	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	106	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	103	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	108	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	104	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	106	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: 1826693) - continued									
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	99.3	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	94.3	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	102	80.0	120	----
Total Metals (QCLot: 1829754)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	93.0	80.0	120	----
Dissolved Metals (QCLot: 1826816)									
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	102	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	97.8	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	98.8	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	93.4	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	97.6	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	86.3	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	89.7	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	90.4	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	96.5	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	97.0	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	94.7	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	93.5	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	96.5	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	95.3	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	95.4	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	101	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	93.8	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	107	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	92.9	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	95.1	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	89.2	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	102	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	106	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	97.1	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	94.5	80.0	120	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1826816) - continued									
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	98.2	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	94.4	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	96.0	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	94.7	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	98.3	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	99.9	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	96.9	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	92.2	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	94.3	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	93.7	80.0	120	----
Speciated Metals (QCLot: 1825986)									
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	0.25 mg/L	98.7	80.0	120	----
Aggregate Organics (QCLot: 1827721)									
Phenols, total (4AAP)	----	E562	0.001	mg/L	0.02 mg/L	106	85.0	115	----
Volatile Organic Compounds (QCLot: 1829274)									
Benzene	71-43-2	E611C	0.5	µg/L	100 µg/L	91.7	70.0	130	----
Bromodichloromethane	75-27-4	E611C	0.5	µg/L	100 µg/L	86.8	70.0	130	----
Bromoform	75-25-2	E611C	0.5	µg/L	100 µg/L	96.2	70.0	130	----
Carbon tetrachloride	56-23-5	E611C	0.5	µg/L	100 µg/L	102	70.0	130	----
Chlorobenzene	108-90-7	E611C	0.5	µg/L	100 µg/L	101	70.0	130	----
Chloroethane	75-00-3	E611C	0.5	µg/L	100 µg/L	119	60.0	140	----
Chloroform	67-66-3	E611C	0.5	µg/L	100 µg/L	93.8	70.0	130	----
Chloromethane	74-87-3	E611C	5	µg/L	100 µg/L	103	60.0	140	----
Dibromochloromethane	124-48-1	E611C	0.5	µg/L	100 µg/L	95.4	70.0	130	----
Dichlorobenzene, 1,2-	95-50-1	E611C	0.5	µg/L	100 µg/L	102	70.0	130	----
Dichlorobenzene, 1,3-	541-73-1	E611C	0.5	µg/L	100 µg/L	106	70.0	130	----
Dichlorobenzene, 1,4-	106-46-7	E611C	0.5	µg/L	100 µg/L	108	70.0	130	----
Dichloroethane, 1,1-	75-34-3	E611C	0.5	µg/L	100 µg/L	94.2	70.0	130	----
Dichloroethane, 1,2-	107-06-2	E611C	0.5	µg/L	100 µg/L	81.1	70.0	130	----
Dichloroethylene, 1,1-	75-35-4	E611C	0.5	µg/L	100 µg/L	96.6	70.0	130	----
Dichloroethylene, cis-1,2-	156-59-2	E611C	0.5	µg/L	100 µg/L	89.2	70.0	130	----
Dichloroethylene, trans-1,2-	156-60-5	E611C	0.5	µg/L	100 µg/L	93.4	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: 1829274) - continued									
Dichloromethane	75-09-2	E611C	1	µg/L	100 µg/L	94.4	70.0	130	----
Dichloropropane, 1,2-	78-87-5	E611C	0.5	µg/L	100 µg/L	88.5	70.0	130	----
Dichloropropylene, cis-1,3-	10061-01-5	E611C	0.5	µg/L	100 µg/L	81.3	70.0	130	----
Dichloropropylene, trans-1,3-	10061-02-6	E611C	0.5	µg/L	100 µg/L	96.3	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	99.0	70.0	130	----
Styrene	100-42-5	E611C	0.5	µg/L	100 µg/L	94.9	70.0	130	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	0.5	µg/L	100 µg/L	100	70.0	130	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	0.2	µg/L	100 µg/L	92.2	70.0	130	----
Tetrachloroethylene	127-18-4	E611C	0.5	µg/L	100 µg/L	106	70.0	130	----
Toluene	108-88-3	E611C	0.4	µg/L	100 µg/L	102	70.0	130	----
Trichloroethane, 1,1,1-	71-55-6	E611C	0.5	µg/L	100 µg/L	105	70.0	130	----
Trichloroethane, 1,1,2-	79-00-5	E611C	0.5	µg/L	100 µg/L	91.8	70.0	130	----
Trichloroethylene	79-01-6	E611C	0.5	µg/L	100 µg/L	95.2	70.0	130	----
Trichlorofluoromethane	75-69-4	E611C	0.5	µg/L	100 µg/L	116	60.0	140	----
Vinyl chloride	75-01-4	E611C	0.4	µg/L	100 µg/L	109	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	97.4	70.0	130	----
Hydrocarbons (QCLot: 1829275)									
VHw (C6-C10)	----	E581.VH+F1	100	µg/L	6310 µg/L	91.2	70.0	130	----
Hydrocarbons (QCLot: 1830814)									
EPH (C10-C19)	----	E601A	250	µg/L	6490 µg/L	84.2	70.0	130	----
EPH (C19-C32)	----	E601A	250	µg/L	3360 µg/L	84.8	70.0	130	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1830813)									
Acenaphthene	83-32-9	E641A	0.01	µg/L	0.5 µg/L	102	60.0	130	----
Acenaphthylene	208-96-8	E641A	0.01	µg/L	0.5 µg/L	102	60.0	130	----
Acridine	260-94-6	E641A	0.01	µg/L	0.5 µg/L	103	60.0	130	----
Anthracene	120-12-7	E641A	0.01	µg/L	0.5 µg/L	101	60.0	130	----
Benz(a)anthracene	56-55-3	E641A	0.01	µg/L	0.5 µg/L	93.1	60.0	130	----
Benzo(a)pyrene	50-32-8	E641A	0.005	µg/L	0.5 µg/L	99.1	60.0	130	----
Benzo(b+j)fluoranthene	n/a	E641A	0.01	µg/L	0.5 µg/L	100	60.0	130	----
Benzo(g,h,i)perylene	191-24-2	E641A	0.01	µg/L	0.5 µg/L	99.2	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	100.0	60.0	130	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report: Spike: Target Concentration	Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 1830813) - continued									
Dibenz(a,h)anthracene	53-70-3	E641A	0.005	µg/L	0.5 µg/L	95.0	60.0	130	----
Fluoranthene	206-44-0	E641A	0.01	µg/L	0.5 µg/L	105	60.0	130	----
Fluorene	86-73-7	E641A	0.01	µg/L	0.5 µg/L	102	60.0	130	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.01	µg/L	0.5 µg/L	97.5	60.0	130	----
Methylnaphthalene, 1-	90-12-0	E641A	0.01	µg/L	0.5 µg/L	93.4	60.0	130	----
Methylnaphthalene, 2-	91-57-6	E641A	0.01	µg/L	0.5 µg/L	99.3	60.0	130	----
Naphthalene	91-20-3	E641A	0.05	µg/L	0.5 µg/L	102	50.0	130	----
Phenanthrene	85-01-8	E641A	0.02	µg/L	0.5 µg/L	108	60.0	130	----
Pyrene	129-00-0	E641A	0.01	µg/L	0.5 µg/L	101	60.0	130	----
Quinoline	91-22-5	E641A	0.05	µg/L	0.5 µg/L	114	60.0	130	----
Glycols (QCLot: 1825697)									
Diethylene glycol	111-46-6	E680E	5	mg/L	25 mg/L	93.6	70.0	130	----
Ethylene glycol	107-21-1	E680E	5	mg/L	25 mg/L	92.9	70.0	130	----
Propylene glycol, 1,2-	57-55-6	E680E	5	mg/L	25 mg/L	90.2	70.0	130	----
Triethylene glycol	112-27-6	E680E	5	mg/L	25 mg/L	93.2	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: 1825139)										
VA24D4412-001	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: 1825140)										
VA24D4412-001	Anonymous	Fluoride	16984-48-8	E235.F	1.00 mg/L	1 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1825141)										
VA24D4412-001	Anonymous	Chloride	16887-00-6	E235.Cl	99.9 mg/L	100 mg/L	99.9	75.0	125	----
Anions and Nutrients (QCLot: 1825142)										
VA24D4412-001	Anonymous	Bromide	24959-67-9	E235.Br-L	0.525 mg/L	0.5 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 1825143)										
VA24D4412-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.500 mg/L	0.5 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1825144)										
VA24D4412-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	100 mg/L	100 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1827968)										
VA24D4413-001	Anonymous	Nitrogen, total	7727-37-9	E366	2.08 mg/L	2 mg/L	104	70.0	130	----
Anions and Nutrients (QCLot: 1827969)										
VA24D4412-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0486 mg/L	0.05 mg/L	97.3	70.0	130	----
Anions and Nutrients (QCLot: 1827974)										
VA24D4412-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0994 mg/L	0.1 mg/L	99.4	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1827966)										
VA24D4412-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	5.01 mg/L	5 mg/L	100	70.0	130	----
Total Sulfides (QCLot: 1825840)										
VA24D4240-002	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.969 mg/L	1 mg/L	96.9	75.0	125	----
Total Metals (QCLot: 1826693)										
KS2405354-001	Anonymous	Aluminum, total	7429-90-5	E420	0.189 mg/L	0.2 mg/L	94.4	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0194 mg/L	0.02 mg/L	97.1	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0203 mg/L	0.02 mg/L	101	70.0	130	----
		Barium, total	7440-39-3	E420	ND mg/L	----	ND	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0391 mg/L	0.04 mg/L	97.8	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.00965 mg/L	0.01 mg/L	96.5	70.0	130	----
		Boron, total	7440-42-8	E420	0.097 mg/L	0.1 mg/L	96.7	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00392 mg/L	0.004 mg/L	98.0	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.00958 mg/L	0.01 mg/L	95.8	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0391 mg/L	0.04 mg/L	97.7	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: 1826693) - continued										
KS2405354-001	Anonymous	Cobalt, total	7440-48-4	E420	0.0187 mg/L	0.02 mg/L	93.4	70.0	130	----
		Copper, total	7440-50-8	E420	0.0182 mg/L	0.02 mg/L	90.9	70.0	130	----
		Iron, total	7439-89-6	E420	1.92 mg/L	2 mg/L	96.0	70.0	130	----
		Lead, total	7439-92-1	E420	0.0188 mg/L	0.02 mg/L	93.9	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0958 mg/L	0.1 mg/L	95.8	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	0.0198 mg/L	0.02 mg/L	99.2	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0370 mg/L	0.04 mg/L	92.6	70.0	130	----
		Phosphorus, total	7723-14-0	E420	10.00 mg/L	10 mg/L	100.0	70.0	130	----
		Potassium, total	7440-09-7	E420	3.81 mg/L	4 mg/L	95.2	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0194 mg/L	0.02 mg/L	97.0	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0402 mg/L	0.04 mg/L	100	70.0	130	----
		Silicon, total	7440-21-3	E420	ND mg/L	----	ND	70.0	130	----
		Silver, total	7440-22-4	E420	0.00371 mg/L	0.004 mg/L	92.8	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	19.0 mg/L	20 mg/L	95.0	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.0405 mg/L	0.04 mg/L	101	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00367 mg/L	0.004 mg/L	91.8	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0124 mg/L	0.02 mg/L	61.8	70.0	130	MES
		Tin, total	7440-31-5	E420	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0377 mg/L	0.04 mg/L	94.2	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0197 mg/L	0.02 mg/L	98.4	70.0	130	----
		Uranium, total	7440-61-1	E420	0.00396 mg/L	0.004 mg/L	99.0	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.0971 mg/L	0.1 mg/L	97.1	70.0	130	----
		Zinc, total	7440-66-6	E420	0.364 mg/L	0.4 mg/L	90.9	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0409 mg/L	0.04 mg/L	102	70.0	130	----
Total Metals (QCLot: 1829754)										
VA24D4365-007	Anonymous	Mercury, total	7439-97-6	E508	0.0000933 mg/L	0 mg/L	93.3	70.0	130	----
Dissolved Metals (QCLot: 1826816)										
KS2405363-003	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.179 mg/L	0.2 mg/L	89.3	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0195 mg/L	0.02 mg/L	97.4	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0199 mg/L	0.02 mg/L	99.4	70.0	130	----
		Barium, dissolved	7440-39-3	E421	0.0182 mg/L	0.02 mg/L	91.0	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0358 mg/L	0.04 mg/L	89.4	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00870 mg/L	0.01 mg/L	87.0	70.0	130	----
		Boron, dissolved	7440-42-8	E421	ND mg/L	----	ND	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00328 mg/L	0.004 mg/L	82.1	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.00944 mg/L	0.01 mg/L	94.4	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0355 mg/L	0.04 mg/L	88.7	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0174 mg/L	0.02 mg/L	86.8	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
Dissolved Metals (QCLot: 1826816) - continued										
KS2405363-003	Anonymous	Copper, dissolved	7440-50-8	E421	0.0162 mg/L	0.02 mg/L	81.1	70.0	130	----
		Iron, dissolved	7439-89-6	E421	1.75 mg/L	2 mg/L	87.4	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0177 mg/L	0.02 mg/L	88.4	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0865 mg/L	0.1 mg/L	86.5	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	0.0332 mg/L	0.04 mg/L	83.0	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	9.72 mg/L	10 mg/L	97.2	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	3.57 mg/L	4 mg/L	89.2	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.0177 mg/L	0.02 mg/L	88.4	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0404 mg/L	0.04 mg/L	101	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	9.20 mg/L	10 mg/L	92.0	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00351 mg/L	0.004 mg/L	87.6	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	0.0409 mg/L	0.04 mg/L	102	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00347 mg/L	0.004 mg/L	86.7	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0176 mg/L	0.02 mg/L	87.8	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0179 mg/L	0.02 mg/L	89.4	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0368 mg/L	0.04 mg/L	92.0	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0193 mg/L	0.02 mg/L	96.7	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	ND mg/L	----	ND	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.0920 mg/L	0.1 mg/L	92.0	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.348 mg/L	0.4 mg/L	86.9	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0373 mg/L	0.04 mg/L	93.4	70.0	130	----
Dissolved Metals (QCLot: 1830363)										
FJ2403897-002	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000715 mg/L	0 mg/L	71.5	70.0	130	----
Speciated Metals (QCLot: 1825986)										
VA24D4411-001	WLNG EOP	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.260 mg/L	0.25 mg/L	104	70.0	130	----
Aggregate Organics (QCLot: 1827721)										
VA24D4131-007	Anonymous	Phenols, total (4AAP)	----	E562	0.0196 mg/L	0.02 mg/L	98.0	75.0	125	----
Volatile Organic Compounds (QCLot: 1829274)										
VA24D4388-002	Anonymous	Benzene	71-43-2	E611C	ND µg/L	----	ND	60.0	140	----
		Bromodichloromethane	75-27-4	E611C	88.6 µg/L	100 µg/L	88.6	60.0	140	----
		Bromoform	75-25-2	E611C	95.0 µg/L	100 µg/L	95.0	60.0	140	----
		Carbon tetrachloride	56-23-5	E611C	102 µg/L	100 µg/L	102	60.0	140	----
		Chlorobenzene	108-90-7	E611C	101 µg/L	100 µg/L	101	60.0	140	----
		Chloroethane	75-00-3	E611C	111 µg/L	100 µg/L	111	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	90.0 µg/L	100 µg/L	90.0	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: 1829274) - continued										
VA24D4388-002	Anonymous	Dibromochloromethane	124-48-1	E611C	100 µg/L	100 µg/L	100	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	103 µg/L	100 µg/L	103	60.0	140	----
		Dichlorobenzene, 1,4-	106-46-7	E611C	104 µg/L	100 µg/L	104	60.0	140	----
		Dichloroethane, 1,1-	75-34-3	E611C	92.6 µg/L	100 µg/L	92.6	60.0	140	----
		Dichloroethane, 1,2-	107-06-2	E611C	82.3 µg/L	100 µg/L	82.3	60.0	140	----
		Dichloroethylene, 1,1-	75-35-4	E611C	90.9 µg/L	100 µg/L	90.9	60.0	140	----
		Dichloroethylene, cis-1,2-	156-59-2	E611C	90.2 µg/L	100 µg/L	90.2	60.0	140	----
		Dichloroethylene, trans-1,2-	156-60-5	E611C	93.3 µg/L	100 µg/L	93.3	60.0	140	----
		Dichloromethane	75-09-2	E611C	96.7 µg/L	100 µg/L	96.7	60.0	140	----
		Dichloropropane, 1,2-	78-87-5	E611C	89.1 µg/L	100 µg/L	89.1	60.0	140	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611C	84.6 µg/L	100 µg/L	84.6	60.0	140	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611C	98.7 µg/L	100 µg/L	98.7	60.0	140	----
		Ethylbenzene	100-41-4	E611C	ND µg/L	----	ND	60.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	97.5 µg/L	100 µg/L	97.5	60.0	140	----
		Styrene	100-42-5	E611C	92.2 µg/L	100 µg/L	92.2	60.0	140	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611C	103 µg/L	100 µg/L	103	60.0	140	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611C	90.1 µg/L	100 µg/L	90.1	60.0	140	----
		Tetrachloroethylene	127-18-4	E611C	108 µg/L	100 µg/L	108	60.0	140	----
		Toluene	108-88-3	E611C	103 µg/L	100 µg/L	103	60.0	140	----
		Trichloroethane, 1,1,1-	71-55-6	E611C	102 µg/L	100 µg/L	102	60.0	140	----
		Trichloroethane, 1,1,2-	79-00-5	E611C	93.8 µg/L	100 µg/L	93.8	60.0	140	----
		Trichloroethylene	79-01-6	E611C	94.9 µg/L	100 µg/L	94.9	60.0	140	----
		Trichlorofluoromethane	75-69-4	E611C	108 µg/L	100 µg/L	108	50.0	150	----
		Vinyl chloride	75-01-4	E611C	96.9 µg/L	100 µg/L	96.9	50.0	150	----
		Xylene, m+p-	179601-23-1	E611C	219 µg/L	200 µg/L	109	60.0	140	----
		Xylene, o-	95-47-6	E611C	95.9 µg/L	100 µg/L	95.9	60.0	140	----
Hydrocarbons (QCLot: 1829275)										
VA24D4482-001	Anonymous	VHw (C6-C10)	----	E581.VH+F1	5290 µg/L	6310 µg/L	83.8	60.0	140	----

Qualifiers

Qualifier	Description
MES	*Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).*

Chain of Custody (COC) / Analytical Request Form

COC Number: 20 -

Page of

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

Environmental Division Vancouver

Work Order Reference

VA24D4411

Telephone : +1 604 253 4188

Report To	Contact and company name below will appear on the final report
Company:	Triton Environmental
Contact:	
Phone:	
Street:	
City/Province:	
Postal Code:	
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	
Contact:	

Reports / Recipients

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)

Merge QC/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

Email 1 or Fax

Email 2

Email 3

Select Invoice D

Email 1 or Fax

Email 2

Oil

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 minimur

☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimu

☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimur

☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimur

☐ Same day [E2] if received by 10am M-S - 200% rush surcharge.

Additional fees may apply to rush requests on weekends.

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm am/pm

For all tests with rush TATs requested, please contact your AM to confirm availability.

Project Information

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

AFE/Cost Center:

Major/Minor Code:

Requisitioner:

Location:

ALS Contact:

ALS Lab Work Order # (ALS use only): VA24D4411

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	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 nitrogen, total phosphorus, phenols)	VOC/VPH	EPH, PAH, LEPH/HEPH	DOC	Glycols	General parameters (alkalinity)			SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
						F					P	P	P	P	F/P							
	WLNG EOP			Water	15	R	R	R	R	R	R	R	R	R	R	R	R					
	pH: 7.3 cond: 137 temp: 9.2 Turb: 0.45	27-Dec-24	13:23																			

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System?

☐ YES ☑ NO

Are samples for human consumption/ use?

☐ YES ☑ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

ESDAT EDD to ESdat_CA+tritonenv@ESdatLabSync.net

SAMPLE RECEIPT DETAILS (ALS use only)

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			
				8			

SHIPMENT RELEASE (client use)

Date: 27-Dec-24 Time: 19:30

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by: Date: Time:

FINAL SHIPMENT RECEPTION (ALS use only)

Received by: Date: 28/12/24 Time: 9:15am

TIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

ALS 2020 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.**

Woodfibre Site WTP Discharge Field Notes and Logs

FortisBC Eagle Mountain-Woodfibre Gas Pipeline

Water Discharge Authorization Water Quality Monitoring

2024-12-27-Shafiei-33116

Project Component:	Tunnel	**Site Name:**	WLNG Treatment Discharge
Inspection Date:	12/27/2024	**Location:**	WLNG
Triton QP:	Farshad Shafiei	**Latitude/Longitude:**	49.669127 -123.249933
Temperature(c):	Low -1 High 4	**Permit:**	PE 110136
Weather Conditions:	Light Rain	**Ground Conditions:**	Wet

Observations

Time: 13:20:00 **Flow Volume (visual):** low

Notes: The water treatment plant did not have much water to discharge.

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

2024-12-27-Shafiei-33116

Photos

Photo: 1

Location: EOP

Description: Sampling location

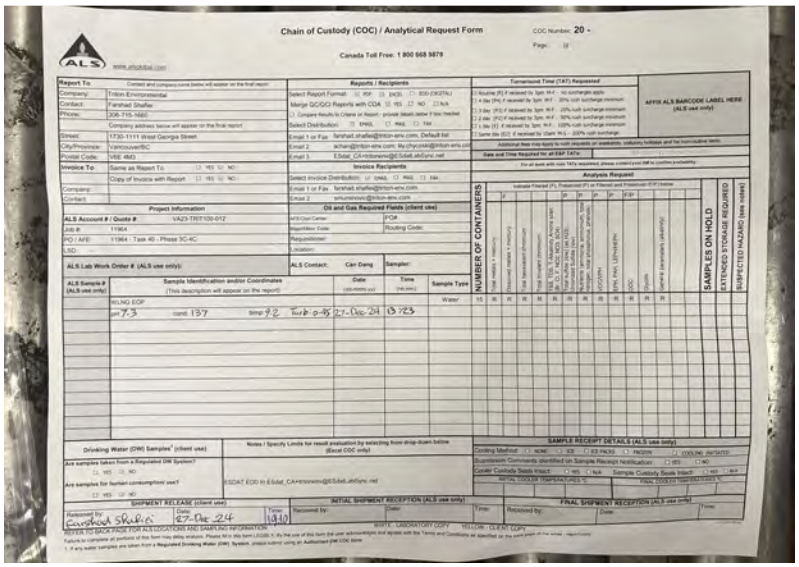


Photo: 2

Location: COC

Description: Lab COC

2024-12-27-Shafiei-33116

Sign Off

Report Prepared By:	Farshad Shafiei	**Report Reviewed:**	Yes
Report Reviewer:		**Professional(s) of Record:**	
Name:			
Designation:			
Designation Number:			

FRONTIER-KEMPER MICHELS® joint venture		Eagle Mountain- Woodfibre Gas Pipeline Project- Tunnel Scope	
Title	**WoodFibre Weekly Water Discharge Report**	**Revision:**	**0**
Data Date Range	**December 23 to December 29, 2024**	**Prepared by:** **Approved by:** **Date:**	**SD** **BC2** **January 7, 2025**

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

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 December 23rd was 39,213 m³.

Daily Volume Summary:

Table 1: Discharge Volumes Daily Summary

Date	Location	Volume (m3)	Comments
December 23	Woodfibre (WF)	421	None
December 24	WF	496	None
December 25	WF	423	None
December 26	WF	478	None
December 27	WF	416	None
December 28	WF	468	None
December 29	WF	448	None
Total		3,234	None

2. Discharge Parameter Summary:

Table 2: Discharge Parameter Summary

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/23/2024	1:15:00	7.5	0.450	0	39,213	10.5	116
12/23/2024	1:30:00	7.5	0.941	0	39,224	10.2	117
12/23/2024	1:45:00	7.6	1.024	0	39,239	10.1	114
12/23/2024	2:00:00	7.6	0.990	0	39,254	10.1	116
12/23/2024	4:00:00	7.4	0.975	0	39,270	10	114
12/23/2024	4:15:00	7.5	0.983	0	39,285	10	116
12/23/2024	4:30:00	7.5	0.987	0	39,299	10.1	116
12/23/2024	4:45:00	7.5	0.956	0	39,314	10.1	115
12/23/2024	6:45:00	7.5	0.979	0	39,330	10.4	119
12/23/2024	7:00:00	7.5	0.949	0	39,345	10.3	118
12/23/2024	8:00:00	7.4	0.941	0	39,354	10.1	113
12/23/2024	8:15:00	7.5	0.941	0	39,368	10	113
12/23/2024	8:30:00	7.5	0.945	0	39,382	10.1	113
12/23/2024	8:45:00	7.5	0.956	0	39,396	10.1	113
12/23/2024	10:45:00	7.5	0.983	0	39,409	10.1	113
12/23/2024	11:00:00	7.5	0.971	0	39,423	10.1	113
12/23/2024	11:15:00	7.5	0.926	0	39,437	10.1	112
12/23/2024	13:30:00	7.4	0.922	0	39,454	11.1	119
12/23/2024	13:45:00	7.5	0.941	0	39,468	10.9	119
12/23/2024	14:00:00	7.5	0.945	0	39,482	10.9	118
12/23/2024	14:15:00	7.5	0.956	0	39,497	10.9	119

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/23/2024	16:30:00	7.5	0.945	0	39,506	10.7	113
12/23/2024	16:45:00	7.5	0.979	0	39,520	10.7	115
12/23/2024	17:00:00	7.5	0.983	0	39,535	10.8	117
12/23/2024	17:15:00	7.5	0.960	0	39,549	10.9	118
12/23/2024	19:30:00	7.4	0.956	0	39,557	11.2	117
12/23/2024	19:45:00	7.5	0.956	0	39,571	10.9	118
12/23/2024	20:00:00	7.5	0.983	0	39,586	10.9	118
12/23/2024	20:15:00	7.5	0.945	0	39,600	11	119
12/23/2024	21:45:00	7.5	0.922	0	39,609	10.9	117
12/23/2024	22:00:00	7.5	0.930	0	39,623	10.5	115
12/23/2024	22:15:00	7.5	0.469	0	39,634	10.7	116
12/24/2024	0:00:00	7.3	0.934	0	39,645	12.2	119
12/24/2024	0:15:00	7.5	0.949	0	39,659	10.8	119
12/24/2024	0:30:00	7.5	0.983	0	39,674	10.7	119
12/24/2024	0:45:00	7.5	0.926	0	39,688	10.6	119
12/24/2024	1:00:00	7.5	0.960	0	39,702	10.6	119
12/24/2024	2:15:00	7.5	0.941	0	39,707	11.2	121
12/24/2024	2:30:00	7.4	0.934	0	39,721	10.5	119
12/24/2024	2:45:00	7.5	0.956	0	39,736	10.5	119
12/24/2024	3:00:00	7.4	0.945	0	39,750	10.4	119
12/24/2024	3:15:00	7.5	0.919	0	39,764	10.4	119
12/24/2024	5:30:00	7.5	0.941	0	39,769	17	121
12/24/2024	5:45:00	7.4	0.941	0	39,783	10.7	121
12/24/2024	6:00:00	7.5	0.953	0	39,797	10.7	119
12/24/2024	6:15:00	7.5	0.949	0	39,811	10.7	119

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/24/2024	8:30:00	7.4	0.930	0	39,820	17.1	118
12/24/2024	8:45:00	7.4	0.953	0	39,835	10.7	117
12/24/2024	9:00:00	7.5	0.964	0	39,849	10.6	114
12/24/2024	9:15:00	7.5	0.941	0	39,863	10.5	114
12/24/2024	9:30:00	7.5	0.953	0	39,877	10.4	113
12/24/2024	12:30:00	7.4	0.960	0	39,895	10.6	118
12/24/2024	12:45:00	7.4	0.968	0	39,909	10.6	118
12/24/2024	13:00:00	7.5	0.987	0	39,923	10.7	118
12/24/2024	13:15:00	7.5	0.949	0	39,937	10.8	118
12/24/2024	13:30:00	7.5	0.945	0	39,952	10.8	119
12/24/2024	15:30:00	7.4	0.934	0	39,956	13.5	120
12/24/2024	15:45:00	7.5	0.922	0	39,970	11	119
12/24/2024	16:00:00	7.5	0.953	0	39,984	11	119
12/24/2024	16:15:00	7.5	0.964	0	39,998	11	119
12/24/2024	16:30:00	7.5	0.922	0	40,009	11	119
12/24/2024	18:45:00	7.4	0.919	0	40,022	11	118
12/24/2024	19:00:00	7.5	0.937	0	40,036	10.9	116
12/24/2024	19:15:00	7.5	0.937	0	40,050	10.8	117
12/24/2024	19:30:00	7.5	0.937	0	40,065	10.9	119
12/24/2024	21:30:00	7.3	0.949	4.2	40,077	13.5	114
12/24/2024	21:45:00	7.4	0.473	0	40,088	10.8	115
12/24/2024	22:00:00	7.4	0.953	0	40,099	10.6	116
12/24/2024	22:15:00	7.5	0.941	0	40,113	10.7	119
12/24/2024	22:30:00	7.5	0.934	0	40,127	10.7	119
12/24/2024	22:45:00	7.5	0.949	0	40,141	10.8	118

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/25/2024	1:15:00	7.4	0.945	0	40,155	10.6	113
12/25/2024	1:30:00	7.4	0.968	0	40,170	10.5	115
12/25/2024	1:45:00	7.5	0.926	0	40,184	10.5	113
12/25/2024	2:00:00	7.5	0.469	0	40,194	10.7	114
12/25/2024	4:15:00	7.4	0.926	0	40,207	10.4	113
12/25/2024	4:30:00	7.4	0.941	0	40,221	10.4	113
12/25/2024	5:45:00	7.4	0.922	0	40,224	13.6	120
12/25/2024	6:00:00	7.4	0.941	0	40,238	10.9	120
12/25/2024	6:15:00	7.5	0.949	0	40,252	10.9	121
12/25/2024	6:30:00	7.5	0.964	0	40,267	10.9	121
12/25/2024	8:45:00	7.4	0.937	0	40,283	10.9	119
12/25/2024	9:00:00	7.4	0.949	0	40,297	10.8	119
12/25/2024	9:15:00	7.5	0.956	0	40,311	10.8	119
12/25/2024	9:30:00	7.5	0.930	0	40,326	10.8	119
12/25/2024	11:45:00	7.4	0.945	0	40,333	11.1	113
12/25/2024	12:00:00	7.4	0.964	0	40,348	10.3	114
12/25/2024	12:15:00	7.4	0.964	0	40,362	10.3	113
12/25/2024	12:30:00	7.4	0.949	0	40,376	10.3	113
12/25/2024	12:45:00	7.4	0.941	0	40,390	10.3	115
12/25/2024	15:15:00	7.3	0.915	0	40,405	10	114
12/25/2024	15:30:00	7.4	0.956	0	40,419	10.2	116
12/25/2024	15:45:00	7.5	0.937	0	40,433	10.3	117
12/25/2024	16:00:00	7.5	0.937	0	40,447	10.4	116
12/25/2024	18:15:00	7.4	0.953	0	40,457	10.4	118
12/25/2024	18:30:00	7.4	0.956	0	40,471	10.3	115

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/25/2024	18:45:00	7.5	0.968	0	40,485	10.3	114
12/25/2024	19:00:00	7.5	0.968	0	40,499	10.2	115
12/25/2024	19:15:00	7.5	0.922	0	40,514	10.1	114
12/25/2024	21:30:00	7.4	0.953	0	40,536	10.4	119
12/25/2024	21:45:00	7.5	0.937	0	40,550	10.4	119
12/25/2024	22:00:00	7.5	0.941	0	40,564	10.3	119
12/25/2024	22:15:00	7.5	0.953	0	40,578	10.3	119
12/26/2024	0:45:00	7.3	0.934	0	40,593	10.5	119
12/26/2024	1:00:00	7.4	0.941	0	40,607	10.3	119
12/26/2024	1:15:00	7.5	0.926	0	40,621	10.3	119
12/26/2024	1:30:00	7.4	0.926	0	40,636	10.3	119
12/26/2024	1:45:00	7.4	0.919	0	40,650	10.3	119
12/26/2024	3:45:00	7.4	0.922	0	40,662	10.3	119
12/26/2024	4:00:00	7.4	0.919	0	40,676	10.2	119
12/26/2024	5:15:00	7.4	0.896	0	40,691	10.1	119
12/26/2024	5:30:00	7.4	0.945	0	40,705	10	119
12/26/2024	5:45:00	7.4	0.926	0	40,719	10	119
12/26/2024	6:00:00	7.4	0.919	0	40,733	10	119
12/26/2024	7:45:00	7.2	0.911	0	40,741	15.6	121
12/26/2024	8:00:00	7.4	0.911	0	40,755	9.8	119
12/26/2024	8:15:00	7.4	0.934	0	40,769	9.7	119
12/26/2024	8:30:00	7.4	0.888	0	40,782	9.7	119
12/26/2024	8:45:00	7.5	0.949	0	40,796	9.6	116
12/26/2024	11:00:00	7.3	0.915	0	40,805	9	112
12/26/2024	11:15:00	7.4	0.922	0	40,819	9.3	113

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/26/2024	11:30:00	7.4	0.915	0	40,833	9.3	114
12/26/2024	11:45:00	7.4	0.919	0	40,846	9.3	115
12/26/2024	12:00:00	7.4	0.911	0	40,860	9.3	116
12/26/2024	14:00:00	7.3	0.930	0	40,881	9.4	115
12/26/2024	14:15:00	7.4	0.465	0	40,894	9.5	113
12/26/2024	14:30:00	7.4	0.900	0	40,903	9.3	113
12/26/2024	14:45:00	7.4	0.915	0	40,917	9.5	116
12/26/2024	17:30:00	7.3	0.941	0	40,937	10	119
12/26/2024	17:45:00	7.4	0.911	0	40,951	10.2	119
12/26/2024	18:00:00	7.4	0.903	0	40,965	10.3	119
12/26/2024	18:15:00	7.4	0.473	0	40,977	10.7	119
12/26/2024	20:15:00	7.4	0.454	0	40,983	10.7	119
12/26/2024	20:30:00	7.4	0.926	0	40,993	10.3	116
12/26/2024	20:45:00	7.4	0.919	0	41,007	10.1	114
12/26/2024	22:15:00	7.4	0.941	0	41,015	10.4	119
12/26/2024	22:30:00	7.4	0.953	0	41,029	10.3	120
12/26/2024	22:45:00	7.4	0.949	0	41,043	10.3	119
12/26/2024	23:00:00	7.5	0.934	0	41,057	10.3	120
12/26/2024	23:15:00	7.4	0.945	0	41,071	10.2	117
12/27/2024	1:30:00	7.3	0.945	0	41,082	10.8	121
12/27/2024	2:15:00	7.4	0.949	0	41,103	10.3	119
12/27/2024	2:30:00	7.5	0.960	0	41,117	10.4	119
12/27/2024	2:45:00	7.4	0.960	0	41,131	10.4	119
12/27/2024	5:00:00	7.3	0.930	0	41,140	15.5	120
12/27/2024	5:15:00	7.4	0.949	0	41,154	10.6	120

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/27/2024	5:30:00	7.4	0.941	0	41,168	10.5	119
12/27/2024	5:45:00	7.4	0.953	0	41,182	10.5	119
12/27/2024	8:00:00	7.3	0.934	0	41,192	11.3	116
12/27/2024	8:15:00	7.4	0.934	0	41,206	10.3	116
12/27/2024	8:30:00	7.4	0.903	0	41,220	10.3	117
12/27/2024	8:45:00	7.4	0.911	0	41,234	10.3	118
12/27/2024	9:00:00	7.5	0.915	0	41,248	10.3	119
12/27/2024	10:45:00	7.4	0.934	0	41,256	10.4	119
12/27/2024	11:00:00	7.4	0.937	0	41,270	10.2	119
12/27/2024	11:15:00	7.4	0.971	0	41,284	10.2	119
12/27/2024	11:30:00	7.4	0.919	0	41,298	10.2	119
12/27/2024	14:00:00	7.4	0.484	0	41,318	10.6	122
12/27/2024	14:15:00	7.4	0.937	0	41,327	10.5	118
12/27/2024	14:30:00	7.4	0.971	0	41,341	10.6	118
12/27/2024	15:00:00	7.4	0.892	0	41,347	12.3	119
12/27/2024	15:15:00	7.5	0.949	0	41,361	10.7	119
12/27/2024	15:30:00	7.5	0.900	0	41,375	10.8	119
12/27/2024	17:45:00	7.4	0.934	0	41,388	10.8	121
12/27/2024	18:00:00	7.4	0.956	0	41,402	10.7	122
12/27/2024	18:15:00	7.4	0.956	0	41,416	10.7	119
12/27/2024	20:45:00	7.4	1.047	0	41,440	10.6	119
12/27/2024	21:00:00	7.4	1.055	0	41,455	10.5	119
12/27/2024	21:15:00	7.5	1.040	0	41,471	10.6	119
12/27/2024	21:30:00	7.5	1.047	0	41,487	10.5	119
12/27/2024	23:30:00	7.4	1.043	0	41,498	10.3	118

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/28/2024	0:30:00	7.4	1.009	0	41,520	10.2	118
12/28/2024	0:45:00	7.4	1.051	0	41,535	10.1	116
12/28/2024	1:00:00	7.5	1.047	0	41,551	10	116
12/28/2024	3:15:00	7.4	1.021	0	41,570	9.8	114
12/28/2024	3:30:00	7.4	1.024	0	41,586	9.9	116
12/28/2024	3:45:00	7.4	1.005	0	41,601	9.9	116
12/28/2024	6:00:00	7.3	1.024	0	41,620	10.2	119
12/28/2024	6:15:00	7.4	1.028	0	41,636	10.2	119
12/28/2024	7:45:00	7.4	1.013	0	41,655	9.9	116
12/28/2024	8:00:00	7.4	1.021	0	41,670	9.9	116
12/28/2024	8:15:00	7.4	1.036	0	41,686	9.9	117
12/28/2024	8:30:00	7.5	0.987	0	41,701	9.9	117
12/28/2024	10:45:00	7.2	0.983	0	41,708	11	111
12/28/2024	11:00:00	7.4	1.021	0	41,723	9.4	111
12/28/2024	11:15:00	7.5	1.021	0	41,738	9.5	111
12/28/2024	11:30:00	7.4	1.017	0	41,754	9.4	111
12/28/2024	13:15:00	7.3	1.005	0	41,767	11.2	111
12/28/2024	13:30:00	7.3	0.960	0	41,776	9.2	111
12/28/2024	13:45:00	7.4	1.013	0	41,791	9.1	111
12/28/2024	14:00:00	7.4	0.998	0	41,806	9.1	111
12/28/2024	14:15:00	7.4	1.002	0	41,821	9.1	111
12/28/2024	16:15:00	7.3	1.005	0	41,842	9.2	115
12/28/2024	16:30:00	7.4	1.009	0	41,857	9.3	117
12/28/2024	16:45:00	7.4	0.956	0	41,872	9.4	115
12/28/2024	17:00:00	7.4	1.013	0	41,887	9.3	113

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/28/2024	18:45:00	7.3	0.964	0	41,891	10.1	116
12/28/2024	19:00:00	7.4	0.987	0	41,906	9.4	113
12/28/2024	19:15:00	7.4	0.979	0	41,921	9.3	111
12/28/2024	19:30:00	7.4	0.968	0	41,936	9.4	114
12/28/2024	21:45:00	7.3	0.994	0	41,943	10.1	119
12/28/2024	22:00:00	7.4	0.994	0	41,958	10.1	119
12/28/2024	22:15:00	7.4	1.002	0	41,973	10.1	119
12/28/2024	22:30:00	7.4	1.005	0	41,988	10.1	118
12/29/2024	0:45:00	7.4	1.009	0	41,999	9.9	116
12/29/2024	1:00:00	7.4	1.051	0	42,014	10	116
12/29/2024	1:15:00	7.4	0.964	0	42,029	9.9	115
12/29/2024	1:30:00	7.4	0.930	0	42,044	9.9	116
12/29/2024	3:45:00	7.4	0.960	0	42,068	10.1	119
12/29/2024	4:00:00	7.4	0.983	0	42,082	10	119
12/29/2024	4:15:00	7.4	0.934	0	42,097	9.9	119
12/29/2024	4:30:00	7.4	0.945	0	42,111	9.9	119
12/29/2024	7:00:00	7.3	0.968	0	42,127	10	120
12/29/2024	7:15:00	7.4	1.002	0	42,142	10.1	119
12/29/2024	7:30:00	7.4	0.990	0	42,156	10.1	118
12/29/2024	7:45:00	7.4	0.983	0	42,171	10.1	119
12/29/2024	9:30:00	7.2	0.983	0	42,175	11.9	119
12/29/2024	9:45:00	7.4	0.983	0	42,189	10	118
12/29/2024	10:00:00	7.4	0.941	0	42,204	9.9	118
12/29/2024	10:15:00	7.4	0.945	0	42,218	9.9	118
12/29/2024	12:45:00	7.4	0.987	0	42,239	10.3	119

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/29/2024	13:00:00	7.4	0.987	0	42,253	10.3	119
12/29/2024	13:15:00	7.4	0.994	0	42,268	10.3	119
12/29/2024	15:45:00	7.4	0.971	0	42,291	10.4	118
12/29/2024	16:00:00	7.4	0.503	0	42,302	10.8	118
12/29/2024	16:15:00	7.4	0.998	0	42,314	10.4	117
12/29/2024	16:30:00	7.4	0.983	0	42,329	10.4	118
12/29/2024	18:45:00	7.3	0.941	0	42,339	10.2	118
12/29/2024	19:00:00	7.4	0.949	0	42,353	10.3	117
12/29/2024	19:15:00	7.4	0.979	0	42,368	10.4	118
12/29/2024	19:30:00	7.4	0.979	0	42,383	10.4	116
12/29/2024	22:00:00	7.4	0.983	0	42,388	10.5	116
12/29/2024	22:15:00	7.4	0.990	0	42,403	10.2	118
12/29/2024	22:30:00	7.4	0.968	0	42,417	10.3	117
12/29/2024	22:45:00	7.4	0.964	0	42,432	10.3	119
12/29/2024	23:00:00	7.4	0.983	0	42,447	10.3	118

Table 3. In-Situ Parameters

Date	Time	Temperature °C	DO mg/L	Conductivity SPC-uS/cm	SAL-ppt	pH	ORP (mV)	NTU
12/23/2024	08:54:05AM	9.8	11.85	118.7	0.06	8.06	108.7	4.37
12/24/2024	06:26:19PM	10.6	9.55	129.0	0.06	8.02	124.0	0.95
12/25/2024	02:52:20PM	10.2	11.64	124.9	0.06	8.20	129.6	1.17
12/26/2024	04:23:23AM	10.71	10.71	116.2	0.06	8.49	117.8	1.10
12/27/2024	02:20:20PM	11.1	11.96	136.4	0.06	8.45	115.8	1.13
12/28/2024	03:31:06PM	8.9	12.11	109.0	0.05	8.10	127.5	0.76
12/29/2024	04:29:12AM	8.9	11.99	118.9	0.06	8.02	123.0	1.19

3. Calibration Log:

Table 4. Calibration Log

Date	Unit	pH	Conductivity/Temp.	Salinity	NTU
12/23/2024	YSI	✓	✓	✓	✓
12/23/2024	WTP	✓	N/A	N/A	✓

APPENDIX A: WTP Log

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/23/2024	0:00:00	7.4	0.000	0	39,204	Closed	12.8	119
12/23/2024	0:15:00	7.3	0.000	0	39,204	Closed	13.7	119
12/23/2024	0:30:00	7.3	0.000	0	39,204	Closed	14.5	119
12/23/2024	0:45:00	7.3	0.000	0	39,204	Closed	15.3	121
12/23/2024	1:00:00	7.3	0.000	0	39,204	Closed	15.8	118
12/23/2024	1:15:00	7.5	0.450	0	39,213	Open	10.5	116
12/23/2024	1:30:00	7.5	0.941	0	39,224	Open	10.2	117
12/23/2024	1:45:00	7.6	1.024	0	39,239	Open	10.1	114
12/23/2024	2:00:00	7.6	0.990	0	39,254	Open	10.1	116
12/23/2024	2:15:00	7.5	0.000	0	39,257	Closed	10.6	117
12/23/2024	2:30:00	7.6	0.000	0	39,264	Closed	10.1	116
12/23/2024	2:45:00	7.4	0.000	0	39,264	Closed	10.6	114
12/23/2024	3:00:00	7.4	0.000	0	39,264	Closed	11.2	116
12/23/2024	3:15:00	7.3	0.000	0	39,264	Closed	11.9	116
12/23/2024	3:30:00	7.3	0.000	0	39,264	Closed	12.3	114
12/23/2024	3:45:00	7.3	0.000	0	39,264	Closed	12.6	113
12/23/2024	4:00:00	7.4	0.975	0	39,270	Open	10	114
12/23/2024	4:15:00	7.5	0.983	0	39,285	Open	10	116
12/23/2024	4:30:00	7.5	0.987	0	39,299	Open	10.1	116
12/23/2024	4:45:00	7.5	0.956	0	39,314	Open	10.1	115
12/23/2024	5:00:00	7.5	0.000	0	39,325	Closed	10.3	116
12/23/2024	5:15:00	7.4	0.000	0	39,325	Closed	10.9	116

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/23/2024	5:30:00	7.3	0.000	0	39,325	Closed	11.5	116
12/23/2024	5:45:00	7.3	0.000	0	39,325	Closed	12.3	116
12/23/2024	6:00:00	7.3	0.000	0	39,325	Closed	13	116
12/23/2024	6:15:00	7.3	0.000	0	39,325	Closed	13.8	119
12/23/2024	6:30:00	7.3	0.000	0	39,325	Closed	14.5	119
12/23/2024	6:45:00	7.5	0.979	0	39,330	Open	10.4	119
12/23/2024	7:00:00	7.5	0.949	0	39,345	Open	10.3	118
12/23/2024	7:15:00	7.5	0.000	0	39,349	Closed	10.8	119
12/23/2024	7:30:00	7.4	0.000	0	39,349	Closed	11.7	116
12/23/2024	7:45:00	7.3	0.000	0	39,349	Closed	12.1	114
12/23/2024	8:00:00	7.4	0.941	0	39,354	Open	10.1	113
12/23/2024	8:15:00	7.5	0.941	0	39,368	Open	10	113
12/23/2024	8:30:00	7.5	0.945	0	39,382	Open	10.1	113
12/23/2024	8:45:00	7.5	0.956	0	39,396	Open	10.1	113
12/23/2024	9:00:00	7.4	0.000	0	39,400	Closed	10.3	111
12/23/2024	9:15:00	7.4	0.000	0	39,400	Closed	10.7	113
12/23/2024	9:30:00	7.3	0.000	0	39,400	Closed	11.1	113
12/23/2024	9:45:00	7.3	0.000	0	39,400	Closed	11.4	113
12/23/2024	10:00:00	7.3	0.000	0	39,400	Closed	11.7	113
12/23/2024	10:15:00	7.3	0.000	0	39,400	Closed	12.1	114
12/23/2024	10:30:00	7.3	0.000	0	39,400	Closed	12.4	113
12/23/2024	10:45:00	7.5	0.983	0	39,409	Open	10.1	113
12/23/2024	11:00:00	7.5	0.971	0	39,423	Open	10.1	113
12/23/2024	11:15:00	7.5	0.926	0	39,437	Open	10.1	112
12/23/2024	11:30:00	7.5	0.000	0	39,451	Closed	10.2	111

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/23/2024	11:45:00	7.4	0.000	0	39,451	Closed	10.5	112
12/23/2024	12:00:00	7.4	0.000	0	39,451	Closed	11.1	116
12/23/2024	12:15:00	7.3	0.000	0	39,451	Closed	11.8	117
12/23/2024	12:30:00	7.3	0.000	0	39,451	Closed	12.6	118
12/23/2024	12:45:00	7.3	0.000	0	39,451	Closed	13.4	119
12/23/2024	13:00:00	7.3	0.000	0	39,451	Closed	14.1	119
12/23/2024	13:15:00	7.3	0.000	0	39,451	Closed	14.8	119
12/23/2024	13:30:00	7.4	0.922	0	39,454	Open	11.1	119
12/23/2024	13:45:00	7.5	0.941	0	39,468	Open	10.9	119
12/23/2024	14:00:00	7.5	0.945	0	39,482	Open	10.9	118
12/23/2024	14:15:00	7.5	0.956	0	39,497	Open	10.9	119
12/23/2024	14:30:00	7.5	0.000	0	39,502	Closed	11.4	119
12/23/2024	14:45:00	7.4	0.000	0	39,502	Closed	12.3	119
12/23/2024	15:00:00	7.3	0.000	0	39,502	Closed	12.9	116
12/23/2024	15:15:00	7.3	0.000	0	39,502	Closed	13.2	114
12/23/2024	15:30:00	7.3	0.000	0	39,502	Closed	13.5	113
12/23/2024	15:45:00	7.3	0.000	0	39,502	Closed	13.7	113
12/23/2024	16:00:00	7.2	0.000	0	39,502	Closed	13.9	114
12/23/2024	16:15:00	7.2	0.000	0	39,502	Closed	14	113
12/23/2024	16:30:00	7.5	0.945	0	39,506	Open	10.7	113
12/23/2024	16:45:00	7.5	0.979	0	39,520	Open	10.7	115
12/23/2024	17:00:00	7.5	0.983	0	39,535	Open	10.8	117
12/23/2024	17:15:00	7.5	0.960	0	39,549	Open	10.9	118
12/23/2024	17:30:00	7.5	0.000	0	39,553	Closed	11.4	118
12/23/2024	17:45:00	7.4	0.000	0	39,553	Closed	12.3	119

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/23/2024	18:00:00	7.3	0.000	0	39,553	Closed	12.9	116
12/23/2024	18:15:00	7.3	0.000	0	39,553	Closed	13.3	116
12/23/2024	18:30:00	7.3	0.000	0	39,553	Closed	13.8	118
12/23/2024	18:45:00	7.3	0.000	0	39,553	Closed	14.5	119
12/23/2024	19:00:00	7.3	0.000	0	39,553	Closed	14.9	117
12/23/2024	19:15:00	7.2	0.000	0	39,553	Closed	15.1	116
12/23/2024	19:30:00	7.4	0.956	0	39,557	Open	11.2	117
12/23/2024	19:45:00	7.5	0.956	0	39,571	Open	10.9	118
12/23/2024	20:00:00	7.5	0.983	0	39,586	Open	10.9	118
12/23/2024	20:15:00	7.5	0.945	0	39,600	Open	11	119
12/23/2024	20:30:00	7.5	0.000	0	39,605	Closed	11.4	119
12/23/2024	20:45:00	7.4	0.000	0	39,605	Closed	12.3	119
12/23/2024	21:00:00	7.3	0.000	0	39,605	Closed	12.9	116
12/23/2024	21:15:00	7.3	0.000	0	39,605	Open	13.3	116
12/23/2024	21:30:00	7.3	0.000	0	39,605	Closed	13.8	116
12/23/2024	21:45:00	7.5	0.922	0	39,609	Open	10.9	117
12/23/2024	22:00:00	7.5	0.930	0	39,623	Open	10.5	115
12/23/2024	22:15:00	7.5	0.469	0	39,634	Open	10.7	116
12/23/2024	22:30:00	7.5	0.000	0	39,644	Closed	10.6	114
12/23/2024	22:45:00	7.4	0.000	0	39,644	Closed	11.3	117
12/23/2024	23:00:00	7.4	0.000	0	39,644	Closed	12.1	118
12/23/2024	23:15:00	7.3	0.000	0	39,644	Closed	13	118
12/23/2024	23:30:00	7.3	0.000	0	39,644	Closed	13.8	119
12/23/2024	23:45:00	7.3	0.000	0	39,644	Closed	14.5	119
12/24/2024	0:00:00	7.3	0.934	0	39,645	Open	12.2	119

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/24/2024	0:15:00	7.5	0.949	0	39,659	Open	10.8	119
12/24/2024	0:30:00	7.5	0.983	0	39,674	Open	10.7	119
12/24/2024	0:45:00	7.5	0.926	0	39,688	Open	10.6	119
12/24/2024	1:00:00	7.5	0.960	0	39,702	Open	10.6	119
12/24/2024	1:15:00	7.5	0.000	0	39,705	Closed	11.2	119
12/24/2024	1:30:00	7.4	0.000	0	39,705	Closed	12.3	119
12/24/2024	1:45:00	7.3	0.000	0	39,705	Closed	13.4	119
12/24/2024	2:00:00	7.3	0.000	0	39,705	Closed	14.3	119
12/24/2024	2:15:00	7.5	0.941	0	39,707	Open	11.2	121
12/24/2024	2:30:00	7.4	0.934	0	39,721	Open	10.5	119
12/24/2024	2:45:00	7.5	0.956	0	39,736	Open	10.5	119
12/24/2024	3:00:00	7.4	0.945	0	39,750	Open	10.4	119
12/24/2024	3:15:00	7.5	0.919	0	39,764	Open	10.4	119
12/24/2024	3:30:00	7.5	0.000	0	39,768	Closed	11	119
12/24/2024	3:45:00	7.4	0.000	0	39,768	Closed	12.1	119
12/24/2024	4:00:00	7.3	0.000	0	39,768	Closed	13	119
12/24/2024	4:15:00	7.3	0.000	0	39,768	Closed	14	119
12/24/2024	4:30:00	7.3	0.000	0	39,768	Closed	14.8	121
12/24/2024	4:45:00	7.2	0.000	0	39,768	Closed	15.6	121
12/24/2024	5:00:00	7.2	0.000	0	39,768	Closed	16.3	121
12/24/2024	5:15:00	7.2	0.000	0	39,768	Closed	16.9	121
12/24/2024	5:30:00	7.5	0.941	0	39,769	Open	17	121
12/24/2024	5:45:00	7.4	0.941	0	39,783	Open	10.7	121
12/24/2024	6:00:00	7.5	0.953	0	39,797	Open	10.7	119
12/24/2024	6:15:00	7.5	0.949	0	39,811	Open	10.7	119

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/24/2024	6:30:00	7.5	0.000	0	39,820	Closed	11	119
12/24/2024	6:45:00	7.4	0.000	0	39,820	Closed	12	119
12/24/2024	7:00:00	7.3	0.000	0	39,820	Closed	13	119
12/24/2024	7:15:00	7.3	0.000	0	39,820	Closed	14	121
12/24/2024	7:30:00	7.3	0.000	0	39,820	Closed	14.9	121
12/24/2024	7:45:00	7.2	0.000	0	39,820	Closed	15.7	121
12/24/2024	8:00:00	7.2	0.000	0	39,820	Closed	16.4	121
12/24/2024	8:15:00	7.2	0.000	0	39,820	Closed	17	121
12/24/2024	8:30:00	7.4	0.930	0	39,820	Open	17.1	118
12/24/2024	8:45:00	7.4	0.953	0	39,835	Open	10.7	117
12/24/2024	9:00:00	7.5	0.964	0	39,849	Open	10.6	114
12/24/2024	9:15:00	7.5	0.941	0	39,863	Open	10.5	114
12/24/2024	9:30:00	7.5	0.953	0	39,877	Open	10.4	113
12/24/2024	9:45:00	7.5	0.000	0	39,886	Closed	10.6	113
12/24/2024	10:00:00	7.4	0.000	0	39,886	Closed	14	113
12/24/2024	10:15:00	7.3	0.000	0	39,886	Closed	13.8	113
12/24/2024	10:30:00	7.3	0.000	0	39,886	Closed	13.8	113
12/24/2024	10:45:00	7.3	0.000	0	39,886	Closed	14	114
12/24/2024	11:00:00	7.3	0.000	0	39,886	Closed	14.3	117
12/24/2024	11:15:00	7.2	0.000	0	39,886	Closed	14.5	116
12/24/2024	11:30:00	7.2	0.000	0	39,886	Closed	15.3	114
12/24/2024	11:45:00	7.2	0.000	0	39,886	Closed	15.3	114
12/24/2024	12:00:00	7.2	0.000	0	39,886	Closed	15.3	114
12/24/2024	12:15:00	7.2	0.000	0	39,886	Closed	15.5	116
12/24/2024	12:30:00	7.4	0.960	0	39,895	Open	10.6	118

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/24/2024	12:45:00	7.4	0.968	0	39,909	Open	10.6	118
12/24/2024	13:00:00	7.5	0.987	0	39,923	Open	10.7	118
12/24/2024	13:15:00	7.5	0.949	0	39,937	Open	10.8	118
12/24/2024	13:30:00	7.5	0.945	0	39,952	Open	10.8	119
12/24/2024	13:45:00	7.4	0.000	0	39,954	Closed	11.2	115
12/24/2024	14:00:00	7.4	0.000	0	39,954	Closed	11.7	114
12/24/2024	14:15:00	7.3	0.000	0	39,954	Closed	12.3	116
12/24/2024	14:30:00	7.3	0.000	0	39,954	Closed	13.2	118
12/24/2024	14:45:00	7.3	0.000	0	39,954	Closed	13.9	119
12/24/2024	15:00:00	7.2	0.000	0	39,954	Closed	14.7	119
12/24/2024	15:15:00	7.2	0.000	0	39,954	Closed	16.4	243
12/24/2024	15:30:00	7.4	0.934	0	39,956	Open	13.5	120
12/24/2024	15:45:00	7.5	0.922	0	39,970	Open	11	119
12/24/2024	16:00:00	7.5	0.953	0	39,984	Open	11	119
12/24/2024	16:15:00	7.5	0.964	0	39,998	Open	11	119
12/24/2024	16:30:00	7.5	0.922	0	40,009	Open	11	119
12/24/2024	16:45:00	7.5	0.000	0	40,015	Closed	11.3	119
12/24/2024	17:00:00	7.4	0.000	0	40,015	Closed	12.3	119
12/24/2024	17:15:00	7.3	0.000	0	40,015	Closed	13.2	119
12/24/2024	17:30:00	7.3	0.000	0	40,015	Closed	14.1	119
12/24/2024	17:45:00	7.2	0.000	0	40,015	Closed	14.9	121
12/24/2024	18:00:00	7.2	0.000	0	40,015	Closed	15.7	121
12/24/2024	18:15:00	7.2	0.000	0	40,015	Closed	16.3	121
12/24/2024	18:30:00	7.2	0.000	0	40,015	Closed	16.8	119
12/24/2024	18:45:00	7.4	0.919	0	40,022	Open	11	118

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/24/2024	19:00:00	7.5	0.937	0	40,036	Open	10.9	116
12/24/2024	19:15:00	7.5	0.937	0	40,050	Open	10.8	117
12/24/2024	19:30:00	7.5	0.937	0	40,065	Open	10.9	119
12/24/2024	19:45:00	7.5	0.000	0	40,076	Closed	11.1	119
12/24/2024	20:00:00	7.4	0.000	0	40,076	Closed	12	119
12/24/2024	20:15:00	7.3	0.000	0	40,076	Closed	13	119
12/24/2024	20:30:00	7.3	0.000	0	40,076	Closed	13.9	119
12/24/2024	20:45:00	7.2	0.000	0	40,076	Closed	14.6	118
12/24/2024	21:00:00	7.2	0.000	0	40,076	Closed	14.8	116
12/24/2024	21:15:00	7.2	0.000	0	40,076	Closed	14.9	114
12/24/2024	21:30:00	7.3	0.949	4.2	40,077	Open	13.5	114
12/24/2024	21:45:00	7.4	0.473	0	40,088	Open	10.8	115
12/24/2024	22:00:00	7.4	0.953	0	40,099	Open	10.6	116
12/24/2024	22:15:00	7.5	0.941	0	40,113	Open	10.7	119
12/24/2024	22:30:00	7.5	0.934	0	40,127	Open	10.7	119
12/24/2024	22:45:00	7.5	0.949	0	40,141	Open	10.8	118
12/24/2024	23:00:00	7.4	0.000	0	40,143	Closed	11.4	118
12/24/2024	23:15:00	7.3	0.000	0	40,143	Closed	12.2	118
12/24/2024	23:30:00	7.3	0.000	0	40,143	Open	13	118
12/24/2024	23:45:00	7.2	0.000	0	40,143	Open	13.7	119
12/25/2024	0:00:00	7.2	0.000	0	40,143	Closed	14.4	116
12/25/2024	0:15:00	7.2	0.000	0	40,143	Closed	14.6	114
12/25/2024	0:30:00	7.2	0.000	0	40,143	Closed	14.8	116
12/25/2024	0:45:00	7.2	0.000	0	40,143	Closed	15	114
12/25/2024	1:00:00	7.2	0.000	0	40,143	Closed	15	113

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/25/2024	1:15:00	7.4	0.945	0	40,155	Open	10.6	113
12/25/2024	1:30:00	7.4	0.968	0	40,170	Open	10.5	115
12/25/2024	1:45:00	7.5	0.926	0	40,184	Open	10.5	113
12/25/2024	2:00:00	7.5	0.469	0	40,194	Open	10.7	114
12/25/2024	2:15:00	7.4	0.000	0	40,195	Closed	10.9	113
12/25/2024	2:30:00	7.3	0.000	0	40,195	Closed	11.2	111
12/25/2024	2:45:00	7.3	0.000	0	40,195	Closed	11.5	113
12/25/2024	3:00:00	7.3	0.000	0	40,195	Closed	11.8	113
12/25/2024	3:15:00	7.2	0.000	0	40,195	Closed	12.1	113
12/25/2024	3:30:00	7.2	0.000	0	40,195	Closed	12.5	114
12/25/2024	3:45:00	7.2	0.000	0	40,195	Closed	12.8	114
12/25/2024	4:00:00	7.2	0.000	0	40,195	Closed	13.1	114
12/25/2024	4:15:00	7.4	0.926	0	40,207	Open	10.4	113
12/25/2024	4:30:00	7.4	0.941	0	40,221	Open	10.4	113
12/25/2024	4:45:00	7.4	0.000	0	40,223	Closed	10.9	116
12/25/2024	5:00:00	7.3	0.000	0	40,223	Closed	11.8	118
12/25/2024	5:15:00	7.3	0.000	0	40,223	Closed	12.6	118
12/25/2024	5:30:00	7.3	0.000	0	40,223	Closed	13.5	119
12/25/2024	5:45:00	7.4	0.922	0	40,224	Open	13.6	120
12/25/2024	6:00:00	7.4	0.941	0	40,238	Open	10.9	120
12/25/2024	6:15:00	7.5	0.949	0	40,252	Open	10.9	121
12/25/2024	6:30:00	7.5	0.964	0	40,267	Open	10.9	121
12/25/2024	6:45:00	7.4	0.000	0	40,273	Closed	11.3	121
12/25/2024	7:00:00	7.4	0.000	0	40,273	Closed	12.4	119
12/25/2024	7:15:00	7.3	0.000	0	40,273	Closed	13.5	121

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/25/2024	7:30:00	7.3	0.000	0	40,273	Closed	14.5	121
12/25/2024	7:45:00	7.3	0.000	0	40,273	Closed	15.3	121
12/25/2024	8:00:00	7.2	0.000	0	40,273	Closed	16.1	121
12/25/2024	8:15:00	7.2	0.000	0	40,273	Closed	16.8	121
12/25/2024	8:30:00	7.2	0.000	0	40,273	Closed	17.3	243
12/25/2024	8:45:00	7.4	0.937	0	40,283	Open	10.9	119
12/25/2024	9:00:00	7.4	0.949	0	40,297	Open	10.8	119
12/25/2024	9:15:00	7.5	0.956	0	40,311	Open	10.8	119
12/25/2024	9:30:00	7.5	0.930	0	40,326	Open	10.8	119
12/25/2024	9:45:00	7.4	0.000	0	40,331	Closed	11	116
12/25/2024	10:00:00	7.4	0.000	0	40,331	Closed	11.8	118
12/25/2024	10:15:00	7.3	0.000	0	40,331	Closed	12.6	119
12/25/2024	10:30:00	7.3	0.000	0	40,331	Closed	13.5	119
12/25/2024	10:45:00	7.3	0.000	0	40,331	Closed	14	116
12/25/2024	11:00:00	7.2	0.000	0	40,331	Closed	14.1	114
12/25/2024	11:15:00	7.2	0.000	0	40,331	Closed	14.2	113
12/25/2024	11:30:00	7.2	0.000	0	40,331	Closed	14.3	113
12/25/2024	11:45:00	7.4	0.945	0	40,333	Open	11.1	113
12/25/2024	12:00:00	7.4	0.964	0	40,348	Open	10.3	114
12/25/2024	12:15:00	7.4	0.964	0	40,362	Open	10.3	113
12/25/2024	12:30:00	7.4	0.949	0	40,376	Open	10.3	113
12/25/2024	12:45:00	7.4	0.941	0	40,390	Open	10.3	115
12/25/2024	13:00:00	7.4	0.000	0	40,399	Closed	10.6	117
12/25/2024	13:15:00	7.4	0.000	0	40,399	Closed	11.8	115
12/25/2024	13:30:00	7.3	0.000	0	40,399	Closed	12.1	113

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/25/2024	13:45:00	7.3	0.000	0	40,399	Closed	12.5	114
12/25/2024	14:00:00	7.2	0.000	0	40,399	Closed	12.7	113
12/25/2024	14:15:00	7.2	0.000	0	40,399	Closed	12.9	113
12/25/2024	14:30:00	7.2	0.000	0	40,399	Closed	13	113
12/25/2024	14:45:00	7.2	0.000	0	40,399	Closed	13.1	111
12/25/2024	15:00:00	7.2	0.000	0	40,399	Closed	13.1	111
12/25/2024	15:15:00	7.3	0.915	0	40,405	Open	10	114
12/25/2024	15:30:00	7.4	0.956	0	40,419	Open	10.2	116
12/25/2024	15:45:00	7.5	0.937	0	40,433	Open	10.3	117
12/25/2024	16:00:00	7.5	0.937	0	40,447	Open	10.4	116
12/25/2024	16:15:00	7.4	0.000	0	40,450	Closed	10.9	117
12/25/2024	16:30:00	7.3	0.000	0	40,450	Closed	11.8	118
12/25/2024	16:45:00	7.3	0.000	0	40,450	Closed	12.7	118
12/25/2024	17:00:00	7.3	0.000	0	40,450	Closed	13.4	118
12/25/2024	17:15:00	7.2	0.000	0	40,450	Closed	14	118
12/25/2024	17:30:00	7.2	0.000	0	40,450	Closed	14.6	118
12/25/2024	17:45:00	7.2	0.000	0	40,450	Closed	15	118
12/25/2024	18:00:00	7.2	0.000	0	40,450	Closed	15.5	118
12/25/2024	18:15:00	7.4	0.953	0	40,457	Open	10.4	118
12/25/2024	18:30:00	7.4	0.956	0	40,471	Open	10.3	115
12/25/2024	18:45:00	7.5	0.968	0	40,485	Open	10.3	114
12/25/2024	19:00:00	7.5	0.968	0	40,499	Open	10.2	115
12/25/2024	19:15:00	7.5	0.922	0	40,514	Open	10.1	114
12/25/2024	19:30:00	7.5	0.000	0	40,522	Closed	10.3	116
12/25/2024	19:45:00	7.4	0.000	0	40,522	Closed	11	116

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/25/2024	20:00:00	7.3	0.000	0	40,522	Closed	11.9	118
12/25/2024	20:15:00	7.3	0.000	0	40,522	Closed	12.7	119
12/25/2024	20:30:00	7.3	0.000	0	40,522	Closed	13.6	119
12/25/2024	20:45:00	7.2	0.000	0	40,522	Closed	14.4	119
12/25/2024	21:00:00	7.2	0.000	0	40,522	Closed	15	119
12/25/2024	21:15:00	7.2	0.000	0	40,522	Closed	15.7	120
12/25/2024	21:30:00	7.4	0.953	0	40,536	Open	10.4	119
12/25/2024	21:45:00	7.5	0.937	0	40,550	Open	10.4	119
12/25/2024	22:00:00	7.5	0.941	0	40,564	Open	10.3	119
12/25/2024	22:15:00	7.5	0.953	0	40,578	Open	10.3	119
12/25/2024	22:30:00	7.4	0.000	0	40,582	Closed	10.8	119
12/25/2024	22:45:00	7.3	0.000	0	40,582	Closed	11.9	119
12/25/2024	23:00:00	7.3	0.000	0	40,582	Closed	12.9	119
12/25/2024	23:15:00	7.3	0.000	0	40,582	Closed	13.8	119
12/25/2024	23:30:00	7.2	0.000	0	40,582	Closed	14.7	119
12/25/2024	23:45:00	7.2	0.000	0	40,582	Closed	15.5	121
12/26/2024	0:00:00	7.2	0.000	0	40,582	Closed	16.2	121
12/26/2024	0:15:00	7.4	0.000	0	40,591	Closed	10.4	119
12/26/2024	0:30:00	7.3	0.000	0	40,591	Closed	11.4	119
12/26/2024	0:45:00	7.3	0.934	0	40,593	Open	10.5	119
12/26/2024	1:00:00	7.4	0.941	0	40,607	Open	10.3	119
12/26/2024	1:15:00	7.5	0.926	0	40,621	Open	10.3	119
12/26/2024	1:30:00	7.4	0.926	0	40,636	Open	10.3	119
12/26/2024	1:45:00	7.4	0.919	0	40,650	Open	10.3	119
12/26/2024	2:00:00	7.4	0.000	0	40,650	Closed	11.1	119

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/26/2024	2:15:00	7.3	0.000	0	40,650	Closed	12.2	119
12/26/2024	2:30:00	7.3	0.000	0	40,650	Closed	13.2	119
12/26/2024	2:45:00	7.2	0.000	0	40,650	Closed	14	119
12/26/2024	3:00:00	7.2	0.000	0	40,650	Closed	14.9	119
12/26/2024	3:15:00	7.2	0.000	0	40,650	Closed	15.6	119
12/26/2024	3:30:00	7.2	0.000	0	40,650	Closed	16.2	121
12/26/2024	3:45:00	7.4	0.922	0	40,662	Open	10.3	119
12/26/2024	4:00:00	7.4	0.919	0	40,676	Open	10.2	119
12/26/2024	4:15:00	7.4	0.000	0	40,682	Closed	10.5	119
12/26/2024	4:30:00	7.3	0.000	0	40,682	Closed	11.5	119
12/26/2024	4:45:00	7.3	0.000	0	40,682	Closed	12.6	119
12/26/2024	5:00:00	7.2	0.000	0	40,682	Closed	13.6	119
12/26/2024	5:15:00	7.4	0.896	0	40,691	Open	10.1	119
12/26/2024	5:30:00	7.4	0.945	0	40,705	Open	10	119
12/26/2024	5:45:00	7.4	0.926	0	40,719	Open	10	119
12/26/2024	6:00:00	7.4	0.919	0	40,733	Open	10	119
12/26/2024	6:15:00	7.4	0.000	0	40,740	Closed	10.4	119
12/26/2024	6:30:00	7.4	0.000	0	40,740	Closed	11.5	119
12/26/2024	6:45:00	7.3	0.000	0	40,740	Closed	12.6	119
12/26/2024	7:00:00	7.3	0.000	0	40,740	Closed	13.6	119
12/26/2024	7:15:00	7.2	0.000	0	40,740	Closed	14.5	119
12/26/2024	7:30:00	7.2	0.000	0	40,740	Closed	15.3	119
12/26/2024	7:45:00	7.2	0.911	0	40,741	Open	15.6	121
12/26/2024	8:00:00	7.4	0.911	0	40,755	Open	9.8	119
12/26/2024	8:15:00	7.4	0.934	0	40,769	Open	9.7	119

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/26/2024	8:30:00	7.4	0.888	0	40,782	Open	9.7	119
12/26/2024	8:45:00	7.5	0.949	0	40,796	Open	9.6	116
12/26/2024	9:00:00	7.4	0.000	0	40,797	Closed	10	114
12/26/2024	9:15:00	7.3	0.000	0	40,797	Closed	10.5	113
12/26/2024	9:30:00	7.3	0.000	0	40,797	Closed	10.8	111
12/26/2024	9:45:00	7.2	0.000	0	40,797	Closed	11	111
12/26/2024	10:00:00	7.2	0.000	0	40,797	Closed	11.2	111
12/26/2024	10:15:00	7.2	0.000	0	40,797	Closed	11.4	111
12/26/2024	10:30:00	7.2	0.000	0	40,797	Closed	11.6	111
12/26/2024	10:45:00	7.2	0.000	0	40,797	Closed	11.7	111
12/26/2024	11:00:00	7.3	0.915	0	40,805	Open	9	112
12/26/2024	11:15:00	7.4	0.922	0	40,819	Open	9.3	113
12/26/2024	11:30:00	7.4	0.915	0	40,833	Open	9.3	114
12/26/2024	11:45:00	7.4	0.919	0	40,846	Open	9.3	115
12/26/2024	12:00:00	7.4	0.911	0	40,860	Open	9.3	116
12/26/2024	12:15:00	7.5	0.000	0	40,872	Closed	9.4	116
12/26/2024	12:30:00	7.4	0.000	0	40,872	Closed	10.2	116
12/26/2024	12:45:00	7.3	0.000	0	40,872	Closed	11	118
12/26/2024	13:00:00	7.3	0.000	0	40,872	Closed	11.8	116
12/26/2024	13:15:00	7.2	0.000	0	40,872	Closed	12.5	118
12/26/2024	13:30:00	7.2	0.000	0	40,872	Closed	13.2	118
12/26/2024	13:45:00	7.2	0.000	0	40,872	Closed	13.9	118
12/26/2024	14:00:00	7.3	0.930	0	40,881	Open	9.4	115
12/26/2024	14:15:00	7.4	0.465	0	40,894	Open	9.5	113
12/26/2024	14:30:00	7.4	0.900	0	40,903	Open	9.3	113

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/26/2024	14:45:00	7.4	0.915	0	40,917	Open	9.5	116
12/26/2024	15:00:00	7.4	0.000	0	40,928	Closed	9.7	117
12/26/2024	15:15:00	7.4	0.000	0	40,928	Closed	10.5	116
12/26/2024	15:30:00	7.3	0.000	0	40,928	Closed	11.1	115
12/26/2024	15:45:00	7.2	0.000	0	40,928	Closed	11.5	114
12/26/2024	16:00:00	7.2	0.000	0	40,928	Closed	11.9	114
12/26/2024	16:15:00	7.2	0.000	0	40,928	Closed	12.5	117
12/26/2024	16:30:00	7.2	0.000	0	40,928	Closed	12.9	115
12/26/2024	16:45:00	7.2	0.000	0	40,928	Closed	13.5	118
12/26/2024	17:00:00	7.2	0.000	0	40,928	Closed	14.2	118
12/26/2024	17:15:00	7.2	0.000	0	40,928	Closed	14.8	119
12/26/2024	17:30:00	7.3	0.941	0	40,937	Open	10	119
12/26/2024	17:45:00	7.4	0.911	0	40,951	Open	10.2	119
12/26/2024	18:00:00	7.4	0.903	0	40,965	Open	10.3	119
12/26/2024	18:15:00	7.4	0.473	0	40,977	Open	10.7	119
12/26/2024	18:30:00	7.4	0.000	0	40,978	Closed	11.1	116
12/26/2024	18:45:00	7.3	0.000	0	40,978	Closed	11.6	116
12/26/2024	19:00:00	7.2	0.000	0	40,978	Closed	12.1	115
12/26/2024	19:15:00	7.2	0.000	0	40,978	Closed	12.5	116
12/26/2024	19:30:00	7.2	0.000	0	40,978	Closed	12.9	116
12/26/2024	19:45:00	7.2	0.000	0	40,978	Closed	13.5	118
12/26/2024	20:00:00	7.2	0.000	0	40,978	Closed	14.2	119
12/26/2024	20:15:00	7.4	0.454	0	40,983	Open	10.7	119
12/26/2024	20:30:00	7.4	0.926	0	40,993	Open	10.3	116
12/26/2024	20:45:00	7.4	0.919	0	41,007	Open	10.1	114

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/26/2024	21:00:00	7.4	0.000	0	41,010	Open	10.5	116
12/26/2024	21:15:00	7.3	0.000	0	41,010	Closed	11.1	116
12/26/2024	21:30:00	7.3	0.000	0	41,010	Closed	11.9	117
12/26/2024	21:45:00	7.2	0.000	0	41,010	Closed	12.7	118
12/26/2024	22:00:00	7.2	0.000	0	41,010	Closed	13.5	119
12/26/2024	22:15:00	7.4	0.941	0	41,015	Open	10.4	119
12/26/2024	22:30:00	7.4	0.953	0	41,029	Open	10.3	120
12/26/2024	22:45:00	7.4	0.949	0	41,043	Open	10.3	119
12/26/2024	23:00:00	7.5	0.934	0	41,057	Open	10.3	120
12/26/2024	23:15:00	7.4	0.945	0	41,071	Open	10.2	117
12/26/2024	23:30:00	7.4	0.000	0	41,078	Closed	10.3	114
12/26/2024	23:45:00	7.3	0.000	0	41,078	Closed	10.9	116
12/27/2024	0:00:00	7.3	0.000	0	41,078	Closed	11.6	116
12/27/2024	0:15:00	7.3	0.000	0	41,078	Closed	12.5	118
12/27/2024	0:30:00	7.2	0.000	0	41,078	Closed	13.3	119
12/27/2024	0:45:00	7.2	0.000	0	41,078	Closed	14.1	120
12/27/2024	1:00:00	7.2	0.000	0	41,078	Closed	14.9	119
12/27/2024	1:15:00	7.2	0.000	0	41,078	Closed	15.6	121
12/27/2024	1:30:00	7.3	0.945	0	41,082	Open	10.8	121
12/27/2024	1:45:00	7.4	0.000	0	41,089	Closed	10.7	119
12/27/2024	2:00:00	7.3	0.000	0	41,089	Closed	11.7	119
12/27/2024	2:15:00	7.4	0.949	0	41,103	Open	10.3	119
12/27/2024	2:30:00	7.5	0.960	0	41,117	Open	10.4	119
12/27/2024	2:45:00	7.4	0.960	0	41,131	Open	10.4	119
12/27/2024	3:00:00	7.5	0.000	0	41,139	Closed	10.7	119

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/27/2024	3:15:00	7.4	0.000	0	41,139	Closed	11.7	119
12/27/2024	3:30:00	7.3	0.000	0	41,139	Closed	12.7	119
12/27/2024	3:45:00	7.3	0.000	0	41,139	Closed	13.6	119
12/27/2024	4:00:00	7.2	0.000	0	41,139	Closed	14.5	119
12/27/2024	4:15:00	7.2	0.000	0	41,139	Closed	15.3	119
12/27/2024	4:30:00	7.2	0.000	0	41,139	Closed	16	121
12/27/2024	4:45:00	7.2	0.000	0	41,139	Closed	16.6	121
12/27/2024	5:00:00	7.3	0.930	0	41,140	Open	15.5	120
12/27/2024	5:15:00	7.4	0.949	0	41,154	Open	10.6	120
12/27/2024	5:30:00	7.4	0.941	0	41,168	Open	10.5	119
12/27/2024	5:45:00	7.4	0.953	0	41,182	Open	10.5	119
12/27/2024	6:00:00	7.4	0.000	0	41,190	Closed	10.9	119
12/27/2024	6:15:00	7.3	0.000	0	41,190	Closed	11.9	119
12/27/2024	6:30:00	7.3	0.000	0	41,190	Closed	13	119
12/27/2024	6:45:00	7.2	0.000	0	41,190	Closed	14	119
12/27/2024	7:00:00	7.2	0.000	0	41,190	Closed	14.9	121
12/27/2024	7:15:00	7.2	0.000	0	41,190	Closed	15.7	121
12/27/2024	7:30:00	7.2	0.000	0	41,190	Closed	16.1	118
12/27/2024	7:45:00	7.2	0.000	0	41,190	Closed	16.3	138
12/27/2024	8:00:00	7.3	0.934	0	41,192	Open	11.3	116
12/27/2024	8:15:00	7.4	0.934	0	41,206	Open	10.3	116
12/27/2024	8:30:00	7.4	0.903	0	41,220	Open	10.3	117
12/27/2024	8:45:00	7.4	0.911	0	41,234	Open	10.3	118
12/27/2024	9:00:00	7.5	0.915	0	41,248	Open	10.3	119
12/27/2024	9:15:00	7.4	0.000	0	41,249	Closed	11	118

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/27/2024	9:30:00	7.3	0.000	0	41,249	Closed	11.9	119
12/27/2024	9:45:00	7.3	0.000	0	41,249	Closed	12.8	119
12/27/2024	10:00:00	7.2	0.000	0	41,249	Closed	13.7	119
12/27/2024	10:15:00	7.2	0.000	0	41,249	Closed	14.4	119
12/27/2024	10:30:00	7.2	0.000	0	41,249	Closed	15.1	121
12/27/2024	10:45:00	7.4	0.934	0	41,256	Open	10.4	119
12/27/2024	11:00:00	7.4	0.937	0	41,270	Open	10.2	119
12/27/2024	11:15:00	7.4	0.971	0	41,284	Open	10.2	119
12/27/2024	11:30:00	7.4	0.919	0	41,298	Open	10.2	119
12/27/2024	11:45:00	7.5	0.000	0	41,307	Closed	10.5	119
12/27/2024	12:00:00	7.3	0.000	0	41,307	Closed	11.5	119
12/27/2024	12:15:00	7.3	0.000	0	41,307	Closed	12.5	119
12/27/2024	12:30:00	7.2	0.000	0	41,307	Closed	13.5	119
12/27/2024	12:45:00	7.2	0.000	0	41,307	Closed	14.3	119
12/27/2024	13:00:00	7.2	0.000	0	41,307	Closed	15.1	122
12/27/2024	13:15:00	7.2	0.000	0	41,307	Closed	15.8	121
12/27/2024	13:30:00	7.2	0.000	0	41,307	Closed	16.5	121
12/27/2024	13:45:00	7.1	0.000	0	41,307	Closed	17	121
12/27/2024	14:00:00	7.4	0.484	0	41,318	Open	10.6	122
12/27/2024	14:15:00	7.4	0.937	0	41,327	Open	10.5	118
12/27/2024	14:30:00	7.4	0.971	0	41,341	Open	10.6	118
12/27/2024	14:45:00	7.4	0.000	0	41,347	Closed	11	119
12/27/2024	15:00:00	7.4	0.892	0	41,347	Open	12.3	119
12/27/2024	15:15:00	7.5	0.949	0	41,361	Open	10.7	119
12/27/2024	15:30:00	7.5	0.900	0	41,375	Open	10.8	119

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/27/2024	15:45:00	7.4	0.000	0	41,375	Closed	11.4	118
12/27/2024	16:00:00	7.3	0.000	0	41,375	Closed	12.2	119
12/27/2024	16:15:00	7.3	0.000	0	41,375	Closed	13.2	119
12/27/2024	16:30:00	7.2	0.000	0	41,375	Closed	14.1	119
12/27/2024	16:45:00	7.2	0.000	0	41,375	Closed	14.9	121
12/27/2024	17:00:00	7.2	0.000	0	41,375	Closed	15.6	121
12/27/2024	17:15:00	7.2	0.000	0	41,375	Closed	16.3	121
12/27/2024	17:30:00	7.2	0.000	0	41,375	Closed	16.8	121
12/27/2024	17:45:00	7.4	0.934	0	41,388	Open	10.8	121
12/27/2024	18:00:00	7.4	0.956	0	41,402	Open	10.7	122
12/27/2024	18:15:00	7.4	0.956	0	41,416	Open	10.7	119
12/27/2024	18:30:00	7.4	0.000	0	41,426	Closed	10.9	119
12/27/2024	18:45:00	7.3	0.000	0	41,426	Closed	11.8	119
12/27/2024	19:00:00	7.3	0.000	0	41,426	Closed	12.8	119
12/27/2024	19:15:00	7.2	0.000	0	41,426	Closed	13.3	116
12/27/2024	19:30:00	7.2	0.000	0	41,426	Closed	13.6	116
12/27/2024	19:45:00	7.2	0.000	0	41,426	Closed	14.2	118
12/27/2024	20:00:00	7.2	0.000	0	41,426	Closed	14.9	119
12/27/2024	20:15:00	7.2	0.000	0	41,426	Closed	15.5	119
12/27/2024	20:30:00	7.2	0.000	0	41,426	Closed	16.2	119
12/27/2024	20:45:00	7.4	1.047	0	41,440	Open	10.6	119
12/27/2024	21:00:00	7.4	1.055	0	41,455	Open	10.5	119
12/27/2024	21:15:00	7.5	1.040	0	41,471	Open	10.6	119
12/27/2024	21:30:00	7.5	1.047	0	41,487	Open	10.5	119
12/27/2024	21:45:00	7.4	0.000	0	41,489	Closed	11.2	119

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/27/2024	22:00:00	7.3	0.000	0	41,489	Closed	12.3	119
12/27/2024	22:15:00	7.3	0.000	0	41,489	Closed	16.1	245
12/27/2024	22:30:00	7.2	0.000	0	41,489	Closed	16.4	242
12/27/2024	22:45:00	7.2	0.000	0	41,489	Closed	16.6	241
12/27/2024	23:00:00	7.2	0.000	0	41,489	Closed	16.8	241
12/27/2024	23:15:00	7.2	0.000	0	41,489	Closed	16.9	241
12/27/2024	23:30:00	7.4	1.043	0	41,498	Open	10.3	118
12/27/2024	23:45:00	7.4	0.000	0	41,506	Closed	10.5	117
12/28/2024	0:00:00	7.3	0.000	0	41,506	Closed	11.3	118
12/28/2024	0:15:00	7.3	0.000	0	41,506	Closed	12.3	119
12/28/2024	0:30:00	7.4	1.009	0	41,520	Open	10.2	118
12/28/2024	0:45:00	7.4	1.051	0	41,535	Open	10.1	116
12/28/2024	1:00:00	7.5	1.047	0	41,551	Open	10	116
12/28/2024	1:15:00	7.5	0.000	0	41,561	Closed	10.2	116
12/28/2024	1:30:00	7.4	0.000	0	41,561	Closed	10.7	115
12/28/2024	1:45:00	7.3	0.000	0	41,561	Closed	11.3	114
12/28/2024	2:00:00	7.2	0.000	0	41,561	Closed	11.7	114
12/28/2024	2:15:00	7.2	0.000	0	41,561	Closed	12.2	114
12/28/2024	2:30:00	7.2	0.000	0	41,561	Closed	12.6	114
12/28/2024	2:45:00	7.2	0.000	0	41,561	Closed	12.9	115
12/28/2024	3:00:00	7.2	0.000	0	41,561	Closed	13.2	115
12/28/2024	3:15:00	7.4	1.021	0	41,570	Open	9.8	114
12/28/2024	3:30:00	7.4	1.024	0	41,586	Open	9.9	116
12/28/2024	3:45:00	7.4	1.005	0	41,601	Open	9.9	116
12/28/2024	4:00:00	7.5	0.000	0	41,615	Closed	10.1	117

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/28/2024	4:15:00	7.4	0.000	0	41,615	Closed	10.9	118
12/28/2024	4:30:00	7.3	0.000	0	41,615	Closed	11.8	118
12/28/2024	4:45:00	7.3	0.000	0	41,615	Closed	12.7	119
12/28/2024	5:00:00	7.2	0.000	0	41,615	Closed	13.5	119
12/28/2024	5:15:00	7.2	0.000	0	41,615	Closed	14.3	119
12/28/2024	5:30:00	7.2	0.000	0	41,615	Closed	15	119
12/28/2024	5:45:00	7.2	0.000	0	41,615	Closed	15.5	119
12/28/2024	6:00:00	7.3	1.024	0	41,620	Open	10.2	119
12/28/2024	6:15:00	7.4	1.028	0	41,636	Open	10.2	119
12/28/2024	6:30:00	7.4	0.000	0	41,646	Closed	10.4	119
12/28/2024	6:45:00	7.3	0.000	0	41,646	Closed	11.3	119
12/28/2024	7:00:00	7.3	0.000	0	41,646	Closed	12	115
12/28/2024	7:15:00	7.2	0.000	0	41,646	Closed	12.5	116
12/28/2024	7:30:00	7.2	0.000	0	41,646	Closed	13	116
12/28/2024	7:45:00	7.4	1.013	0	41,655	Open	9.9	116
12/28/2024	8:00:00	7.4	1.021	0	41,670	Open	9.9	116
12/28/2024	8:15:00	7.4	1.036	0	41,686	Open	9.9	117
12/28/2024	8:30:00	7.5	0.987	0	41,701	Open	9.9	117
12/28/2024	8:45:00	7.4	0.000	0	41,707	Closed	10.2	114
12/28/2024	9:00:00	7.3	0.000	0	41,707	Closed	10.6	114
12/28/2024	9:15:00	7.3	0.000	0	41,707	Closed	10.8	112
12/28/2024	9:30:00	7.2	0.000	0	41,707	Closed	11.1	114
12/28/2024	9:45:00	7.2	0.000	0	41,707	Closed	11.6	113
12/28/2024	10:00:00	7.2	0.000	0	41,707	Closed	11.7	111
12/28/2024	10:15:00	7.2	0.000	0	41,707	Closed	11.9	111

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/28/2024	10:30:00	7.2	0.000	0	41,707	Closed	12	111
12/28/2024	10:45:00	7.2	0.983	0	41,708	Open	11	111
12/28/2024	11:00:00	7.4	1.021	0	41,723	Open	9.4	111
12/28/2024	11:15:00	7.5	1.021	0	41,738	Open	9.5	111
12/28/2024	11:30:00	7.4	1.017	0	41,754	Open	9.4	111
12/28/2024	11:45:00	7.5	0.000	0	41,767	Closed	9.4	112
12/28/2024	12:00:00	7.4	0.000	0	41,767	Closed	9.7	111
12/28/2024	12:15:00	7.3	0.000	0	41,767	Closed	10	112
12/28/2024	12:30:00	7.2	0.000	0	41,767	Closed	10.2	111
12/28/2024	12:45:00	7.2	0.000	0	41,767	Closed	10.4	111
12/28/2024	13:00:00	7.2	0.000	0	41,767	Closed	10.6	111
12/28/2024	13:15:00	7.3	1.005	0	41,767	Open	11.2	111
12/28/2024	13:30:00	7.3	0.960	0	41,776	Open	9.2	111
12/28/2024	13:45:00	7.4	1.013	0	41,791	Open	9.1	111
12/28/2024	14:00:00	7.4	0.998	0	41,806	Open	9.1	111
12/28/2024	14:15:00	7.4	1.002	0	41,821	Open	9.1	111
12/28/2024	14:30:00	7.4	0.000	0	41,829	Closed	9.3	111
12/28/2024	14:45:00	7.3	0.000	0	41,829	Closed	9.6	111
12/28/2024	15:00:00	7.3	0.000	0	41,829	Closed	9.8	110
12/28/2024	15:15:00	7.2	0.000	0	41,829	Closed	10	110
12/28/2024	15:30:00	7.2	0.000	0	41,829	Closed	10.2	110
12/28/2024	15:45:00	7.2	0.000	0	41,829	Closed	10.4	111
12/28/2024	16:00:00	7.2	0.000	0	41,829	Closed	11.4	113
12/28/2024	16:15:00	7.3	1.005	0	41,842	Open	9.2	115
12/28/2024	16:30:00	7.4	1.009	0	41,857	Open	9.3	117

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/28/2024	16:45:00	7.4	0.956	0	41,872	Open	9.4	115
12/28/2024	17:00:00	7.4	1.013	0	41,887	Open	9.3	113
12/28/2024	17:15:00	7.4	0.000	0	41,889	Closed	9.6	111
12/28/2024	17:30:00	7.3	0.000	0	41,889	Closed	9.8	111
12/28/2024	17:45:00	7.2	0.000	0	41,889	Closed	10.3	114
12/28/2024	18:00:00	7.2	0.000	0	41,889	Closed	11.1	116
12/28/2024	18:15:00	7.2	0.000	0	41,889	Closed	11.9	116
12/28/2024	18:30:00	7.2	0.000	0	41,889	Closed	12.7	118
12/28/2024	18:45:00	7.3	0.964	0	41,891	Open	10.1	116
12/28/2024	19:00:00	7.4	0.987	0	41,906	Open	9.4	113
12/28/2024	19:15:00	7.4	0.979	0	41,921	Open	9.3	111
12/28/2024	19:30:00	7.4	0.968	0	41,936	Open	9.4	114
12/28/2024	19:45:00	7.4	0.000	0	41,939	Closed	10	116
12/28/2024	20:00:00	7.3	0.000	0	41,939	Closed	10.9	117
12/28/2024	20:15:00	7.2	0.000	0	41,939	Closed	11.9	118
12/28/2024	20:30:00	7.2	0.000	0	41,939	Closed	12.6	116
12/28/2024	20:45:00	7.2	0.000	0	41,939	Closed	13.1	116
12/28/2024	21:00:00	7.2	0.000	0	41,939	Closed	13.8	118
12/28/2024	21:15:00	7.1	0.000	0	41,939	Closed	14.5	119
12/28/2024	21:30:00	7.1	0.000	0	41,939	Closed	15.2	119
12/28/2024	21:45:00	7.3	0.994	0	41,943	Open	10.1	119
12/28/2024	22:00:00	7.4	0.994	0	41,958	Open	10.1	119
12/28/2024	22:15:00	7.4	1.002	0	41,973	Open	10.1	119
12/28/2024	22:30:00	7.4	1.005	0	41,988	Open	10.1	118
12/28/2024	22:45:00	7.4	0.000	0	41,990	Closed	10.9	119

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/28/2024	23:00:00	7.3	0.000	0	41,990	Closed	12	119
12/28/2024	23:15:00	7.2	0.000	0	41,990	Closed	12.7	118
12/28/2024	23:30:00	7.2	0.000	0	41,990	Closed	13.3	117
12/28/2024	23:45:00	7.2	0.000	0	41,990	Closed	13.8	117
12/29/2024	0:00:00	7.2	0.000	0	41,990	Closed	14.2	116
12/29/2024	0:15:00	7.1	0.000	0	41,990	Closed	14.6	117
12/29/2024	0:30:00	7.1	0.000	0	41,990	Closed	14.8	116
12/29/2024	0:45:00	7.4	1.009	0	41,999	Open	9.9	116
12/29/2024	1:00:00	7.4	1.051	0	42,014	Open	10	116
12/29/2024	1:15:00	7.4	0.964	0	42,029	Open	9.9	115
12/29/2024	1:30:00	7.4	0.930	0	42,044	Open	9.9	116
12/29/2024	1:45:00	7.4	0.000	0	42,056	Closed	10.1	116
12/29/2024	2:00:00	7.3	0.000	0	42,056	Closed	10.6	115
12/29/2024	2:15:00	7.3	0.000	0	42,056	Closed	11.2	115
12/29/2024	2:30:00	7.2	0.000	0	42,056	Closed	11.8	116
12/29/2024	2:45:00	7.2	0.000	0	42,056	Closed	12.5	118
12/29/2024	3:00:00	7.2	0.000	0	42,056	Closed	13.4	119
12/29/2024	3:15:00	7.2	0.000	0	42,056	Closed	14.1	119
12/29/2024	3:30:00	7.2	0.000	0	42,056	Closed	14.9	119
12/29/2024	3:45:00	7.4	0.960	0	42,068	Open	10.1	119
12/29/2024	4:00:00	7.4	0.983	0	42,082	Open	10	119
12/29/2024	4:15:00	7.4	0.934	0	42,097	Open	9.9	119
12/29/2024	4:30:00	7.4	0.945	0	42,111	Open	9.9	119
12/29/2024	4:45:00	7.4	0.000	0	42,122	Closed	10.1	118
12/29/2024	5:00:00	7.3	0.000	0	42,122	Closed	11	119

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/29/2024	5:15:00	7.3	0.000	0	42,122	Closed	12.2	119
12/29/2024	5:30:00	7.2	0.000	0	42,122	Closed	13.2	119
12/29/2024	5:45:00	7.2	0.000	0	42,122	Closed	14.1	119
12/29/2024	6:00:00	7.2	0.000	0	42,122	Closed	14.9	120
12/29/2024	6:15:00	7.1	0.000	0	42,122	Closed	15.7	120
12/29/2024	6:30:00	7.1	0.000	0	42,122	Closed	16.3	121
12/29/2024	6:45:00	7.1	0.000	0	42,122	Closed	16.9	121
12/29/2024	7:00:00	7.3	0.968	0	42,127	Open	10	120
12/29/2024	7:15:00	7.4	1.002	0	42,142	Open	10.1	119
12/29/2024	7:30:00	7.4	0.990	0	42,156	Open	10.1	118
12/29/2024	7:45:00	7.4	0.983	0	42,171	Open	10.1	119
12/29/2024	8:00:00	7.4	0.000	0	42,173	Closed	10.7	118
12/29/2024	8:15:00	7.3	0.000	0	42,173	Closed	11.6	117
12/29/2024	8:30:00	7.2	0.000	0	42,173	Closed	12.4	118
12/29/2024	8:45:00	7.2	0.000	0	42,173	Closed	13.1	117
12/29/2024	9:00:00	7.2	0.000	0	42,173	Closed	13.6	117
12/29/2024	9:15:00	7.2	0.000	0	42,173	Closed	14.2	118
12/29/2024	9:30:00	7.2	0.983	0	42,175	Open	11.9	119
12/29/2024	9:45:00	7.4	0.983	0	42,189	Open	10	118
12/29/2024	10:00:00	7.4	0.941	0	42,204	Open	9.9	118
12/29/2024	10:15:00	7.4	0.945	0	42,218	Open	9.9	118
12/29/2024	10:30:00	7.4	0.000	0	42,227	Closed	10.3	119
12/29/2024	10:45:00	7.3	0.000	0	42,227	Closed	11.2	119
12/29/2024	11:00:00	7.3	0.000	0	42,227	Closed	12.2	118
12/29/2024	11:15:00	7.2	0.000	0	42,227	Closed	13.1	119

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/29/2024	11:30:00	7.2	0.000	0	42,227	Closed	14	119
12/29/2024	11:45:00	7.2	0.000	0	42,227	Closed	14.8	119
12/29/2024	12:00:00	7.1	0.000	0	42,227	Closed	15.5	119
12/29/2024	12:15:00	7.1	0.000	0	42,227	Closed	15.9	120
12/29/2024	12:30:00	7.1	0.000	0	42,227	Closed	16.4	119
12/29/2024	12:45:00	7.4	0.987	0	42,239	Open	10.3	119
12/29/2024	13:00:00	7.4	0.987	0	42,253	Open	10.3	119
12/29/2024	13:15:00	7.4	0.994	0	42,268	Open	10.3	119
12/29/2024	13:30:00	7.4	0.000	0	42,277	Closed	10.4	115
12/29/2024	13:45:00	7.3	0.000	0	42,277	Closed	10.8	114
12/29/2024	14:00:00	7.3	0.000	0	42,277	Closed	11.5	116
12/29/2024	14:15:00	7.2	0.000	0	42,277	Closed	12.4	118
12/29/2024	14:30:00	7.2	0.000	0	42,277	Closed	13.1	116
12/29/2024	14:45:00	7.2	0.000	0	42,277	Closed	13.3	114
12/29/2024	15:00:00	7.2	0.000	0	42,277	Closed	13.6	116
12/29/2024	15:15:00	7.1	0.000	0	42,277	Closed	14.2	117
12/29/2024	15:30:00	7.1	0.000	0	42,277	Closed	14.7	118
12/29/2024	15:45:00	7.4	0.971	0	42,291	Open	10.4	118
12/29/2024	16:00:00	7.4	0.503	0	42,302	Open	10.8	118
12/29/2024	16:15:00	7.4	0.998	0	42,314	Open	10.4	117
12/29/2024	16:30:00	7.4	0.983	0	42,329	Open	10.4	118
12/29/2024	16:45:00	7.4	0.000	0	42,332	Closed	11	119
12/29/2024	17:00:00	7.3	0.000	0	42,332	Closed	12	119
12/29/2024	17:15:00	7.2	0.000	0	42,332	Closed	13	118
12/29/2024	17:30:00	7.2	0.000	0	42,332	Closed	13.4	115

Date	Time	Discharge pH	Flow Rate (m3)	Discharge NTU	Flow Total (m3)	Discharge Valve Status	Discharge Temperature (°C)	Discharge Conductivity (uS/cm)
12/29/2024	17:45:00	7.2	0.000	0	42,332	Closed	13.7	117
12/29/2024	18:00:00	7.2	0.000	0	42,332	Closed	14	116
12/29/2024	18:15:00	7.1	0.000	0	42,332	Closed	14.2	115
12/29/2024	18:30:00	7.1	0.000	0	42,332	Closed	14.6	116
12/29/2024	18:45:00	7.3	0.941	0	42,339	Open	10.2	118
12/29/2024	19:00:00	7.4	0.949	0	42,353	Open	10.3	117
12/29/2024	19:15:00	7.4	0.979	0	42,368	Open	10.4	118
12/29/2024	19:30:00	7.4	0.979	0	42,383	Open	10.4	116
12/29/2024	19:45:00	7.4	0.000	0	42,384	Closed	11	118
12/29/2024	20:00:00	7.3	0.000	0	42,384	Closed	12	119
12/29/2024	20:15:00	7.2	0.000	0	42,384	Closed	12.9	119
12/29/2024	20:30:00	7.2	0.000	0	42,384	Closed	13.8	119
12/29/2024	20:45:00	7.2	0.000	0	42,384	Closed	14.6	119
12/29/2024	21:00:00	7.2	0.000	0	42,384	Open	15.2	119
12/29/2024	21:15:00	7.1	0.000	0	42,384	Closed	15.6	118
12/29/2024	21:30:00	7.1	0.000	0	42,384	Closed	15.7	241
12/29/2024	21:45:00	7.1	0.000	0	42,384	Closed	15.6	241
12/29/2024	22:00:00	7.4	0.983	0	42,388	Open	10.5	116
12/29/2024	22:15:00	7.4	0.990	0	42,403	Open	10.2	118
12/29/2024	22:30:00	7.4	0.968	0	42,417	Open	10.3	117
12/29/2024	22:45:00	7.4	0.964	0	42,432	Open	10.3	119
12/29/2024	23:00:00	7.4	0.983	0	42,447	Open	10.3	118
12/29/2024	23:15:00	7.4	0.000	0	42,454	Closed	10.7	119
12/29/2024	23:30:00	7.3	0.000	0	42,454	Closed	11.6	118
12/29/2024	23:45:00	7.3	0.000	0	42,454	Closed	12.1	114

Appendix D: Woodfibre Site Receiving Environment Documentation

Woodfibre Site Receiving Environment Sample Analysis

	Sample ID	Reviewed and signed off by: Farshad Shafiei Ph.D., R.P.Bio.		EAS US1 (Upstream)	EAS DS 1 (Downstream)	Sample or value notes	BCWQ FAL - Short Term	BCWQ MAL - Short Term
	LAB ID			VA24D4412-001	VA24D4412-002			
	Date Sampled			27-Dec-2024	27-Dec-2024			
	Time Sampled			14:44	13:52			
Analyte	**Units**	**FAL-ST [1,2]**	**MAL-ST [1]**	Water	Water			
				N/A	N/A		**Guideline notes**	
In Situ Parameters								
pH (field)	pH units	6.5-9.0	7.0-8.7	6.5	6.5		If natural pH < 6.5, no statisticaly significant decrease from background. No restriction in increase except in areas with unique flora or fauna. Unrestricted change permitted within range of 6.5 to 9.0. If natural pH > 9.0, no statistically significant increase from background. Refer to BC Water Quality Guidelines for more information.	Unrestricted change within this range (for protection of mollusc embryo development).
Temperature (field)	°C	Short-term daily temperature guideline is 19°C for streams with unknown fish distribution Max +/- from BKG 1°C [4]	Short-term daily temperature guideline is 19°C for streams with unknown fish distribution Max +/- from BKG 1°C [4]	6.5	7		Guideline is species-dependent. Short-term daily temperature guideline is 19°C for streams with unknown fish distribution. Refer to footnote 4 for background temperature range for East Creek. Refer to BC Water Quality Guidelines for more information Hourly rate of change not to exceed 1°C. Calculation: US value +/- 1 = guideline range	Guideline for marine waters are based on natural ambient conditions. Max and min. 1°C change from natural condition. Natural temperature cycle characteristic of the site should not be altered in amplitude or frequency by human activities. Max rate of any human-induced temperature change not to exceed 0.5°C hourly. treams with unknown fish distribution. Refer to footnote 4 for background temperature range for East Creek. Calculation: US value +/- 1 = guideline range
Conductivity (field)	µS/cm	-	-	25	33			
Turbidity (field)	NTU	Varies with background, see note Guideline = 9.2	Varies with background, see note Guideline = 9.2	1.19	0.34		Change from background of 8 NTU at any one time for a duration of 24 h in all waters during clear flows or in clear waters. Calculation: US value + 8 = DS guideline Change from background of 5 NTU at any time when background is 8 - 50 NTU during high flows or in turbid waters. Calculation: US value + 5 = DS guideline Change from background of 10% when background is > 50 NTU at any time during high flows or in turbid waters. Calculation: US value + (US value*0.1) = DS guideline	Change from background of 8 NTU at any one time for a duration of 24 h in all waters during clear flows or in clear waters. Calculation: US value + 8 = DS guideline Change from background of 5 NTU at any time when background is 8 - 50 NTU during high flows or in turbid waters. Calculation: US value + 5 = DS guideline Change from background of 10% when background is > 50 NTU at any time during high flows or in turbid waters. Calculation: US value + (US value*0.1) = DS guideline
Dissolved Oxygen (field)	mg/L	Varies with life stage, see note	Varies with life stage, see note	10.98	14.91		Buried embryo/alevin minimum 9 mg/L, all other life stages 5 mg/L. Refer to BC Water Quality Guidelines for more information.	Buried embryo/alevin minimum 9 mg/L, all other life stages 5 mg/L. Refer to BC Water Quality Guidelines for more information.
General Parameters								
Hardness (as $CaCO_3$) (total)	mg/L	-	-	5.74	5.58			
Total Dissolved Solids	mg/L	-	-	15	36			
Total Suspended Solids	mg/L	Varies with background, see note Guideline = 28	Varies with background, see note Guideline = 28	< 3.0	< 3.0		Change from background of 25 mg/L at any one time for duration of 24 h in all waters during clear flows or in clear waters. Calculation: US value + 25 = DS guideline Change from background of 10 mg/L at any one time when background 25-100 mg/L during high flows or turbid waters. Calculation: US value + 10 = DS guideline Change from background of 10% when background is > 100 mg/L at any time during high flows or turbid waters. Calculation: US value + (US value*0.1) = DS guideline	Change from background of 25 mg/L at any one time for duration of 24 h in all waters during clear flows or in clear waters. Calculation: US value + 25 = DS guideline Change from background of 10 mg/L at any one time when background 25-100 mg/L during high flows or turbid waters. Calculation: US value + 10 = DS guideline Change from background of 10% when background is > 100 mg/L at any time during high flows or turbid waters. Calculation: US value + (US value*0.1) = DS guideline
Dissolved Organic Carbon (DOC)	mg/L	-	-	2.2	2.17			
Total Alkalinity ($CaCO_3$)	mg/L	-	-	4.3	11.4			
Total Sulfide (as S)	mg/L	-	-	< 0.0015	< 0.0015			
Total Sulfide (un-ionized as H_2S)	mg/L	-	-	< 0.0015	< 0.0015			
Total Sulfide (as H_2S)	mg/L	-	-	< 0.0016	< 0.0016			
Anions and Nutrients								
Ammonia	mg/L ammonia-N	Varies with pH and temperature. See note. Guideline = 26.5	Varies with pH and temperature. See note. Guideline = 191	< 0.0050	< 0.0050		Guideline for ammonia as N and is pH and temperature dependent. Refer to Table 27D in BC WQG for guideline values.	Guideline for ammonia as N. Guideline is pH, temperature and salinity dependent. Refer to Table 27F in BC WQG for guideline values.
Bromide	mg/L	-	-	< 0.050	< 0.050			
Chloride	mg/L	600	> 110% of background	0.74	0.78			Human activities should not cause the chloride of marine and estuarine waters to fluctuate by more than 10% of the natural chloride expected at that time and depth.
Fluoride	mg/L	Varies with hardness Guideline = 0.185	1.5	< 0.020	0.041		Guideline has interim status. Guideline is calculated with the following equation: Guideline = [-51.73 + 92.57 log10 (hardness)] * 0.01	
Nitrate (as N)	mg/L	32.8	-	0.0344	0.0254			
Nitrite (as N)	mg/L	Varies with chloride. Table 27B, see note. Guideline = 0.06	-	< 0.0010	< 0.0010		Varies with chloride. Refer to Table 27B in BC WQG for guideline values.	
Total Nitrogen	mg/L	-	-	0.118	0.074			
Total Phosphorous	mg/L	-	-	0.0231	0.017			
Sulfate (as SO_4)	mg/L	-	-	2.13	2.43			
Total Metals								
Aluminum (Al)-Total	mg/L	-	-	0.103	0.0979			
Antimony (Sb)-Total	mg/L	0.25	-	< 0.00010	< 0.00010			
Arsenic (As)-Total	mg/L	-	-	0.00014	0.00014			
Barium (Ba)-Total	mg/L	-	-	0.00236	0.00256			
Beryllium (Be)-Total	mg/L	-	-	< 0.000100	< 0.000100			
Bismuth (Bi)-Total	mg/L	-	-	< 0.000050	< 0.000050			
Boron (B)-Total	mg/L	-	-	< 0.010	< 0.010			
Cadmium (Cd)-Total	mg/L	-	-	0.0000074	0.0000083			
Calcium (Ca)-Total	mg/L	-	-	1.9	1.89			
Cesium (Cs)-Total	mg/L	-	-	< 0.000010	< 0.000010			
Chromium (Cr) - Total	mg/L	-	-	< 0.00050	< 0.00050			
Chromium (Cr(III))-Total	mg/L	-	-	< 0.00050	< 0.00050			
Chromium (Cr(VI))-Total	mg/L	-	-	< 0.00050	< 0.00050			
Cobalt (Co)-Total	mg/L	0.11	-	< 0.00010	< 0.00010			
Copper (Cu)-Total	mg/L	-	0.003	0.00083	0.00065			
Iron (Fe)-Total	mg/L	1	-	0.035	0.025			
Lead (Pb)-Total	mg/L	-	0.14	0.000051	< 0.000050		Guideline varies with hardness, refer to BC Water Quality Guidelines for more information. Guideline is 0.003 where hardness ≤8mg/L. Guideline uses equation EXP[1.273*on(hardness)-1.460] where hardness is 8-360 mg/L. Lowest value for guideline is 0.003 mg/L.	
Lithium (Li)-Total	mg/L	-	-	< 0.0010	< 0.0010			
Magnesium (Mg)-Total	mg/L	-	-	0.242	0.209			
Manganese (Mn)-Total	mg/L	Varies with hardness Guideline = 0.82	-	0.00184	0.00137		Guideline varies with hardness. The guideline is calculated using the following equation: Guideline = (0.0044 * hardness + 0.605) Guideline applies to samples with hardness 25-259 mg/L. Lowest value for guideline is 0.77 mg/L. If hardness is below the hardness range, the minimum hardness will be applied in the calculation.	
Mercury (Hg)-Total	mg/L	-	-	< 0.0000050	< 0.0000050			
Molybdenum (Mo)-Total	mg/L	46	-	0.000341	0.000446			
Nickel (Ni)-Total	mg/L	-	-	< 0.00050	< 0.00050			
Phosphorus (P)-Total	mg/L	-	-	< 0.05	< 0.05			
Potassium (K)-Total	mg/L	-	-	0.205	0.16			
Rubidium (Rb)-Total	mg/L	-	-	0.00024	0.00028			
Selenium (Se)-Total	mg/L	-	-	< 0.000050	< 0.000050			
Silicon (Si)-Total	mg/L	-	-	3.46	3.38			
Silver (Ag)-Total	mg/L	Varies with hardness, see note Guideline = 0.0001	0.003	< 0.000010	< 0.000010		Varies with hardness Guideline ranges: Hardness ≤ 100: 0.0001 Hardness > 100: 0.003	
Sodium (Na)-Total	mg/L	-	-	1.1	1			
Strontium (Sr)-Total	mg/L	-	-	0.00893	0.00832			
Sulfur (S)-Total	mg/L	-	-	0.51	0.55			
Tellurium (Te)-Total	mg/L	-	-	< 0.00020	< 0.00020			
Thallium (Tl)-Total	mg/L	-	-	< 0.000010	< 0.000010			
Thorium (Th)-Total	mg/L	-	-	< 0.00010	< 0.00010			
Tin (Sn)-Total	mg/L	-	-	< 0.00010	< 0.00010			
Titanium (Ti)-Total	mg/L	-	-	0.00109	0.00081			
Tungsten (W)-Total	mg/L	-	-	< 0.00010	0.00012			
Uranium (U)-Total	mg/L	0.0165	-	0.000178	0.000187			
Vanadium (V)-Total	mg/L	-	-	< 0.00050	< 0.00050			
Zinc (Zn)-Total	mg/L	-	0.055	< 0.0030	< 0.0030			
Zirconium (Zr)-Total	mg/L	-	-	< 0.00020	< 0.00020			
Dissolved Metals								
Aluminum (Al)-Dissolved	mg/L	-	-	0.0797	0.0818			
Antimony (Sb)-Dissolved	mg/L	-	-	< 0.00010	< 0.00010			
Arsenic (As)-Dissolved	mg/L	-	-	0.00014	< 0.00010			
Barium (Ba)-Dissolved	mg/L	-	-	0.00238	0.00253			
Beryllium (Be)-Dissolved	mg/L	-	-	< 0.000100	< 0.000100			
Bismuth (Bi)-Dissolved	mg/L	-	-	< 0.000050	< 0.000050			
Boron (B)-Dissolved	mg/L	-	-	< 0.010	< 0.010			
Cadmium (Cd)-Dissolved	mg/L	Varies with hardness, see note Guideline = 0.000038	-	0.0000051	< 0.0000050		Guideline is hardness dependent. Guideline is appilcable to water hardness between 7.0 and 455 mg/L. Guideline is calculated with the following formula: Guideline = (EXP(1.03 * (LN(hardness)) - 5.274)/1000) Lowest value for guideline is 0.000018 mg/L. If hardness is below the hardness range, the minimum hardness will be applied in the calculation.	
Calcium (Ca)-Dissolved	mg/L	-	-	1.73	1.73			
Cesium (Cs)-Dissolved	mg/L	-	-	< 0.000010	< 0.000010			
Chromium (Cr)-Dissolved	mg/L	-	-	< 0.00050	< 0.00050			
Chromium (Cr(III))-Dissolved	mg/L	-	-	-	-			
Chromium (Cr(VI))-Dissolved	mg/L	-	-	-	-			
Cobalt (Co)-Dissolved	mg/L	-	-	< 0.00010	< 0.00010			
Copper (Cu)-Dissolved	mg/L	Guideline varies with other parameters, see note Guideline = 0.0005	-	0.00076	0.00062		Guideline varies with other parameters and is calculated using BC BLM software. Simplified model: Temperature, pH, DOC and hardness Detailed model: Temperature, pH, DOC, humic acid content, total calcium, total magnesium, total sodium, total potassium, sulphate, chloride, and alkalinity Guideline calculated using values for parameters above taken at the specific site on each sampling date	
Iron (Fe)-Dissolved	mg/L	0.35	-	0.016	0.014			
Lead (Pb)-Dissolved	mg/L	-	-	< 0.000050	< 0.000050			
Lithium (Li)-Dissolved	mg/L	-	-	< 0.0010	< 0.0010			
Magnesium (Mg)-Dissolved	mg/L	-	-	0.224	0.204			
Manganese (Mn)-Dissolved	mg/L	-	-	0.00082	0.00074			
Mercury (Hg)-Dissolved	mg/L	-	-	< 0.0000050	< 0.0000050			
Molybdenum (Mo)-Dissolved	mg/L	-	-	0.000328	0.000399			
Nickel (Ni)-Dissolved	mg/L	Guideline varies with pH, temperature, DOC, and hardness Guideline: 0.0156	-	< 0.0005	< 0.0005		Guideline varies with other parameters and is calculated using BC BLM software. Simplified model: Temperature, pH, DOC and hardness Detailed model: Temperature, pH, DOC, humic acid content, total calcium, total magnesium, total sodium, total potassium, sulphate, chloride, and alkalinity Guideline calculated using values for parameters above taken at the specific site on each sampling date	
Phosphorus (P)-Dissolved	mg/L	-	-	< 0.050	< 0.050			
Potassium (K)-Dissolved	mg/L	-	-	0.175	0.142			
Rubidium (Rb)-Dissolved	mg/L	-	-	0.00026	0.00023			
Selenium (Se)-Dissolved	mg/L	-	-	< 0.00005	< 0.00005			
Silicon (Si)-Dissolved	mg/L	-	-	3.25	3.32			
Silver (Ag)-Dissolved	mg/L	-	-	< 0.000010	< 0.000010			
Sodium (Na)-Dissolved	mg/L	-	-	1.1	1.01			
Strontium (Sr)-Dissolved	mg/L	-	-	0.0088	0.00806			
Sulfur (S)-Dissolved	mg/L	-	-	0.6	0.54			
Tellurium (Te)-Dissolved	mg/L	-	-	< 0.00020	< 0.00020			
Thallium (Tl)-Dissolved	mg/L	-	-	< 0.000010	< 0.000010			
Thorium (Th)-Dissolved	mg/L	-	-	< 0.00010	< 0.00010			
Tin (Sn)-Dissolved	mg/L	-	-	< 0.00010	< 0.00010			
Titanium (Ti)-Dissolved	mg/L	-	-	< 0.00030	0.0003			
Tungsten (W)-Dissolved	mg/L	-	-	< 0.00010	< 0.00010			
Uranium (U)-Dissolved	mg/L	-	-	0.000159	0.000169			
Vanadium (V)-Dissolved	mg/L	-	-	< 0.00050	< 0.00050			
Zinc (Zn)-Dissolved	mg/L	Varies with DOC and hardness Guideline = 0.009	-	0.0017	0.0032		Guideline varies with DOC and hardness. Guideline is calculated using the following formula: Guideline = (EXP((0.833 * (LN(hardness))) + (0.24 * (LN(DOC))) + 0.526)/2/1000) If hardness or DOC is below the hardness or DOC range, the minimum hardness or DOC will be applied in the calculation.	
Zirconium (Zr)-Dissolved	mg/L	-	-	< 0.00020	< 0.00020			
Applied Guideline:		**British Columbia Approved and Working Water Quality Guidelines (NOV 2023) for Freshwater Aquatic Life (FAL) & Marine Aquatic Life (MAL) Short-Term (ST) & Long-Term (LT)**						
Color Key:		**Exceeds FAL Short term Guideline**	**Exceeds MAL Short term Guideline**					

[1]BC MOECCS. 2023. BC Water Qualtiy Guidelines for the Protection of Aquatic Life, Wildlife & Agriculture. Accessed from:
wqg_summary_aquaticlife_wildlife_agri.pdf (gov.bc.ca)

[2]BC MOECCS. 2021. BC Working Water Qualtiy Guidelines for the Protection of Aquatic Life, Widlife & Agriculture. Accessed from:
bc_env_working_water_quality_guidelines.pdf (gov.bc.ca)

[3]Note that long-term guidelines apply to averaged data to account for chronic impacts to aquatic life. Ideally, five samples collected at evenly spaced intervals over 30 days is considered to be the minimum number needed to calculate the long-term average of any parameter, though this may vary by parameter and site conditions. Long-term guidelines applied here are for reference only and may not indicate chronic impacts to aquatic life if exceedances occur in the short term.

[4]Background temperature ranges: Dec-Feb: 0.3-8.0C; Mar-Apr: 3.0-10.2C; May-June: 6.8-15.1C; Jul-present: 12.9-18.2C
Reference: AquaTROLL In-Situ Data Logger - Background water quality readings collected from Dec.-present.
For guidelines dependent on other parameters, when hardness, pH or DOC are below the range stated in the guideline, the lowest value in the range is used to calculate the guideline.

Parameters Used to Calculate Guidelines

Analyte	Units	Measurement method	Values: EAS US1 (Upstream)	Values: EAS DS 1 (Downstream)
pH (field)	pH units	Field pH taken using handheld meters during sampling used in calculations	6.5	6.5
Temperature (field)	°C	Field temperature taken using handheld meters during sampling used in calculations	6.5	7.0
Turbidity (field)	NTU	Field turbidity taken using handheld meters during sampling used in calculations	1.19	0.34
Hardness (as CaCO3) (total)	mg/L	Laboratory tested total hardness taken at each respective sample site on the day of sampling used in guideline calculations	5.74	5.58
Dissolved Organic Carbon (DOC)	mg/L	Laboratory tested dissolved organic carbon tested at the lab used in guideline calculations	2.2	2.17
Total Alkalinity ($CaCO_3$)	mg/L	Laboratory tested total alkalinity used in calculations	4.3	11.4
Chloride	mg/L	Laboratory tested chloride taken at each respective sample site on the day of sampling used in guideline calculations	0.74	0.78

Woodfibre Site Receiving Environment Lab Documentation

CERTIFICATE OF ANALYSIS

Work Order	: **VA24D4412**			
Client	: **Triton Environmental Consultants Ltd.**	Laboratory	:	ALS Environmental - Vancouver
Contact		Account Manager	:	
Address		Address	:	
Telephone		Telephone	:	
Project	: 11964	Date Samples Received	:	27-Dec-2024 19:15
PO	: 11964 - Task 20 - Phase 3C-4C	Date Analysis Commenced	:	29-Dec-2024
C-O-C number	: ----	Issue Date	:	07-Jan-2025 17:28
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.

Signatories	*Position*	*Laboratory Department*
		Metals, Burnaby, British Columbia
		Metals, Burnaby, British Columbia
		Inorganics, Burnaby, British Columbia
		Inorganics, Burnaby, British Columbia
		Inorganics, Burnaby, British Columbia
		Administration, Burnaby, British Columbia
		Metals, Burnaby, British Columbia
		Metals, Burnaby, British Columbia
		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).

Unit	*Description*
-	no units
°C	degrees celsius
mg/L	milligrams per litre
NTU	nephelometric turbidity units
pH units	pH units
µS/cm	microsiemens per centimetre

<: 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

Qualifier	Description
HTDC	Hold time exceeded for dilution or re-analysis. Reported results are consistent with initial results (tested within hold time), and are valid and defensible.

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG US 1	WLNG DS 1	----	----	----
					Client sampling date / time	27-Dec-2024 14:44	27-Dec-2024 13:52	----	----	----
						VA24D4412-001	VA24D4412-002	----	----	----
						Result	Result	----	----	----
Field Tests										
Conductivity, field	----	EF001/VA	0.10	µS/cm		25.000	33.000	----	----	----
pH, field	----	EF001/VA	0.10	pH units		6.50	6.50	----	----	----
Temperature, field	----	EF001/VA	0.10	°C		6.50	7.00	----	----	----
Turbidity, field	----	EF001/VA	0.01	NTU		1.19	0.34	----	----	----
Physical Tests										
Hardness (as CaCO3), dissolved	----	EC100/VA	0.60	mg/L		5.24	5.16	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L		5.74	5.58	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L		15	36	----	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L		<3.0	<3.0	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	2.0	mg/L		4.3	11.4	----	----	----
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		0.74	0.78	----	----	----
Fluoride	16984-48-8	E235.F/VA	0.020	mg/L		<0.020	0.041	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/VA	0.0050	mg/L		0.0344 HTDC	0.0254	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/VA	0.0010	mg/L		<0.0010 HTDC	<0.0010	----	----	----
Nitrogen, total	7727-37-9	E366/VA	0.030	mg/L		0.118	0.074	----	----	----
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L		0.0231	0.0170	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/VA	0.30	mg/L		2.13	2.43	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG US 1	WLNG DS 1	----	----	----
					Client sampling date / time	27-Dec-2024 14:44	27-Dec-2024 13:52	----	----	----
						VA24D4412-001	VA24D4412-002	----	----	----
						Result	Result	----	----	----
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L		2.20	2.17	----	----	----
Total Sulfides										
Sulfide, total (as S)	18496-25-8	E395/VA	0.0015	mg/L		<0.0015	<0.0015	----	----	----
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		<0.0016	<0.0016	----	----	----
Total Metals										
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L		0.103	0.0979	----	----	----
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		0.00014	0.00014	----	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L		0.00236	0.00256	----	----	----
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		0.0000074	0.0000083	----	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L		1.90	1.89	----	----	----
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		0.00083	0.00065	----	----	----
Iron, total	7439-89-6	E420/VA	0.010	mg/L		0.035	0.025	----	----	----
Lead, total	7439-92-1	E420/VA	0.000050	mg/L		<0.000050	<0.000050	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG US 1	WLNG DS 1	----	----	----
					Client sampling date / time	27-Dec-2024 14:44	27-Dec-2024 13:52	----	----	----
						VA24D4412-001	VA24D4412-002	----	----	----
						Result	Result	----	----	----
Total Metals										
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		0.242	0.209	----	----	----
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L		0.00184	0.00137	----	----	----
Mercury, total	7439-97-6	E508/VA	0.0000050	mg/L		<0.0000050	<0.0000050	----	----	----
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L		0.000341	0.000446	----	----	----
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		0.205	0.160	----	----	----
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L		0.00024	0.00028	----	----	----
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		3.46	3.38	----	----	----
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		1.10	1.00	----	----	----
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L		0.00893	0.00832	----	----	----
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L		0.51	0.55	----	----	----
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		0.00109	0.00081	----	----	----
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L		<0.00010	<0.00010	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG US 1	WLNG DS 1	----	----	----
					Client sampling date / time	27-Dec-2024 14:44	27-Dec-2024 13:52	----	----	----
						VA24D4412-001	VA24D4412-002	----	----	----
						Result	Result	----	----	----
Total Metals										
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L		0.000178	0.000187	----	----	----
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L		<0.00050	<0.00050	----	----	----
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		0.0797	0.0818	----	----	----
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		0.00014	<0.00010	----	----	----
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L		0.00238	0.00253	----	----	----
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		0.0000051	<0.0000050	----	----	----
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L		1.73	1.73	----	----	----
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		0.00076	0.00062	----	----	----
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L		0.016	0.014	----	----	----
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	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WLNG US 1	WLNG DS 1	----	----	----
					Client sampling date / time	27-Dec-2024 14:44	27-Dec-2024 13:52	----	----	----
						VA24D4412-001	VA24D4412-002	----	----	----
						Result	Result	----	----	----
Dissolved Metals										
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L		0.224	0.204	----	----	----
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L		0.00082	0.00074	----	----	----
Mercury, dissolved	7439-97-6	E509/VA	0.0000050	mg/L		<0.0000050	<0.0000050	----	----	----
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L		0.000328	0.000399	----	----	----
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		0.175	0.142	----	----	----
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L		0.00026	0.00023	----	----	----
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		3.25	3.32	----	----	----
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		1.10	1.01	----	----	----
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L		0.00880	0.00806	----	----	----
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L		0.60	0.54	----	----	----
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		<0.00030	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		0.000159	0.000169	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)			Client sample ID		WLNG US 1	WLNG DS 1	----	----	----
			Client sampling date / time		27-Dec-2024 14:44	27-Dec-2024 13:52	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA24D4412-001	VA24D4412-002	----	----	----
					Result	Result	----	----	----
Dissolved Metals									
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	0.0017	0.0032	----	----	----
Zirconium, dissolved	7440-67-7	E421/VA	0.00020	mg/L	<0.00020	<0.00020	----	----	----
Dissolved mercury filtration location	----	EP509/VA	-	-	Field	Field	----	----	----
Dissolved metals filtration location	----	EP421/VA	-	-	Field	Field	----	----	----
Speciated Metals									
Chromium, hexavalent [Cr VI], total	18540-29-9	E532/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----
Chromium, trivalent [Cr III], total	16065-83-1	EC535/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----

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

ALS Canada Ltd.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **VA24D4412**	Page	: 1 of 15
Client	: **Triton Environmental Consultants Ltd.**	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	
Address		Address	
Telephone	: ----	Telephone	
Project	: 11964	Date Samples Received	: 27-Dec-2024 19:15
PO	: 11964 - Task 20 - Phase 3C-4C	Issue Date	: 07-Jan-2025 17:28
C-O-C number	: ----		
Sampler	: ----		
Site	: Water Analysis		
Quote number	: VA23-TRIT100-012 _V2		
No. of samples received	: 2		
No. of samples analysed	: 2		

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

Key

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

Workorder Comments

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

Summary of Outliers

Outliers : Quality Control Samples

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

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Matrix Spike (MS) Recoveries								
Total Metals	Anonymous	Anonymous	Thorium, total	7440-29-1	E420	61.8 % MES	70.0-130%	Recovery less than lower data quality objective

Result Qualifiers

Qualifier	Description
MES	*Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).*

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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) WLNG DS 1	E298	27-Dec-2024	02-Jan-2025	28 days	6 days	✓	03-Jan-2025	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) WLNG US 1	E298	27-Dec-2024	02-Jan-2025	28 days	6 days	✓	03-Jan-2025	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WLNG DS 1	E235.Br-L	27-Dec-2024	30-Dec-2024	28 days	3 days	✓	30-Dec-2024	28 days	3 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE WLNG US 1	E235.Br-L	27-Dec-2024	30-Dec-2024	28 days	3 days	✓	30-Dec-2024	28 days	3 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE WLNG DS 1	E235.Cl	27-Dec-2024	30-Dec-2024	28 days	3 days	✓	30-Dec-2024	28 days	3 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE WLNG US 1	E235.Cl	27-Dec-2024	30-Dec-2024	28 days	3 days	✓	30-Dec-2024	28 days	3 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE WLNG DS 1	E235.F	27-Dec-2024	30-Dec-2024	28 days	3 days	✓	30-Dec-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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Fluoride in Water by IC										
HDPE WLNG US 1	E235.F	27-Dec-2024	30-Dec-2024	28 days	3 days	✓	30-Dec-2024	28 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE WLNG DS 1	E235.NO3-L	27-Dec-2024	30-Dec-2024	3 days	3 days	✓	30-Dec-2024	3 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE WLNG US 1	E235.NO3-L	27-Dec-2024	30-Dec-2024	3 days	3 days	✓	30-Dec-2024	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE WLNG DS 1	E235.NO2-L	27-Dec-2024	30-Dec-2024	3 days	3 days	✓	30-Dec-2024	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE WLNG US 1	E235.NO2-L	27-Dec-2024	30-Dec-2024	3 days	3 days	✓	30-Dec-2024	3 days	3 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE WLNG DS 1	E235.SO4	27-Dec-2024	30-Dec-2024	28 days	3 days	✓	30-Dec-2024	28 days	3 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE WLNG US 1	E235.SO4	27-Dec-2024	30-Dec-2024	28 days	3 days	✓	30-Dec-2024	28 days	3 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) WLNG DS 1	E366	27-Dec-2024	02-Jan-2025	28 days	6 days	✓	03-Jan-2025	28 days	7 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) WLNG US 1	E366	27-Dec-2024	02-Jan-2025	28 days	6 days	✓	03-Jan-2025	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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
WLNG DS 1	E372-U	27-Dec-2024	02-Jan-2025	28 days	6 days	✓	03-Jan-2025	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
WLNG US 1	E372-U	27-Dec-2024	02-Jan-2025	28 days	6 days	✓	03-Jan-2025	28 days	7 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
WLNG DS 1	E509	27-Dec-2024	06-Jan-2025	28 days	10 days	✓	06-Jan-2025	28 days	10 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
WLNG US 1	E509	27-Dec-2024	06-Jan-2025	28 days	10 days	✓	06-Jan-2025	28 days	10 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
WLNG DS 1	E421	27-Dec-2024	03-Jan-2025	180 days	7 days	✓	04-Jan-2025	180 days	8 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
WLNG US 1	E421	27-Dec-2024	03-Jan-2025	180 days	7 days	✓	04-Jan-2025	180 days	8 days	✓
Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
Glass vial total (hydrochloric acid)										
WLNG DS 1	EF001	27-Dec-2024	----	----	----		30-Dec-2024	----	3 days	
Field Tests : Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
Glass vial total (hydrochloric acid)										
WLNG US 1	EF001	27-Dec-2024	----	----	----		30-Dec-2024	----	3 days	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
WLNG DS 1	E358-L	27-Dec-2024	02-Jan-2025	28 days	6 days	✓	02-Jan-2025	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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
WLNG US 1	E358-L	27-Dec-2024	02-Jan-2025	28 days	6 days	✓	02-Jan-2025	28 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
WLNG DS 1	E290	27-Dec-2024	30-Dec-2024	14 days	3 days	✓	30-Dec-2024	14 days	3 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
WLNG US 1	E290	27-Dec-2024	30-Dec-2024	14 days	3 days	✓	30-Dec-2024	14 days	3 days	✓
Physical Tests : TDS by Gravimetry										
HDPE										
WLNG DS 1	E162	27-Dec-2024	----	----	----		29-Dec-2024	7 days	2 days	✓
Physical Tests : TDS by Gravimetry										
HDPE										
WLNG US 1	E162	27-Dec-2024	----	----	----		29-Dec-2024	7 days	2 days	✓
Physical Tests : TSS by Gravimetry										
HDPE										
WLNG DS 1	E160	27-Dec-2024	----	----	----		29-Dec-2024	7 days	2 days	✓
Physical Tests : TSS by Gravimetry										
HDPE										
WLNG US 1	E160	27-Dec-2024	----	----	----		29-Dec-2024	7 days	2 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
Opaque HDPE - total (sodium hydroxide)										
WLNG DS 1	E532	27-Dec-2024	----	----	----		30-Dec-2024	28 days	3 days	✓
Speciated Metals : Total Hexavalent Chromium (Cr VI) by IC										
Opaque HDPE - total (sodium hydroxide)										
WLNG US 1	E532	27-Dec-2024	----	----	----		30-Dec-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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid)										
WLNG DS 1	E508	27-Dec-2024	04-Jan-2025	28 days	8 days	✓	04-Jan-2025	28 days	8 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid)										
WLNG US 1	E508	27-Dec-2024	04-Jan-2025	28 days	8 days	✓	04-Jan-2025	28 days	8 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
WLNG DS 1	E420	27-Dec-2024	06-Jan-2025	180 days	10 days	✓	07-Jan-2025	180 days	11 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
WLNG US 1	E420	27-Dec-2024	06-Jan-2025	180 days	10 days	✓	07-Jan-2025	180 days	11 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
WLNG DS 1	E395	27-Dec-2024	----	----	----		30-Dec-2024	7 days	3 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide)										
WLNG US 1	E395	27-Dec-2024	----	----	----		30-Dec-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			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1825138	1	13	7.6	5.0	✓
Ammonia by Fluorescence	E298	1827974	1	5	20.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1825142	1	13	7.6	5.0	✓
Chloride in Water by IC	E235.Cl	1825141	1	13	7.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1830363	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1826816	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1827966	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	1825140	1	13	7.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1825139	1	19	5.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1825143	1	13	7.6	5.0	✓
Sulfate in Water by IC	E235.SO4	1825144	1	13	7.6	5.0	✓
TDS by Gravimetry	E162	1824684	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1825986	1	17	5.8	5.0	✓
Total Mercury in Water by CVAAS	E508	1829754	2	40	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1826693	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1827968	1	6	16.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1827969	1	6	16.6	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1825840	1	11	9.0	5.0	✓
TSS by Gravimetry	E160	1824680	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1825138	1	13	7.6	5.0	✓
Ammonia by Fluorescence	E298	1827974	1	5	20.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1825142	1	13	7.6	5.0	✓
Chloride in Water by IC	E235.Cl	1825141	1	13	7.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1830363	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1826816	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1827966	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	1825140	1	13	7.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1825139	1	19	5.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1825143	1	13	7.6	5.0	✓
Sulfate in Water by IC	E235.SO4	1825144	1	13	7.6	5.0	✓
TDS by Gravimetry	E162	1824684	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1825986	1	17	5.8	5.0	✓
Total Mercury in Water by CVAAS	E508	1829754	2	40	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1826693	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1827968	1	6	16.6	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1827969	1	6	16.6	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1825840	1	11	9.0	5.0	✓
TSS by Gravimetry	E160	1824680	1	20	5.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1825138	1	13	7.6	5.0	✓
Ammonia by Fluorescence	E298	1827974	1	5	20.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1825142	1	13	7.6	5.0	✓
Chloride in Water by IC	E235.Cl	1825141	1	13	7.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1830363	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1826816	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1827966	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	1825140	1	13	7.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1825139	1	19	5.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1825143	1	13	7.6	5.0	✓
Sulfate in Water by IC	E235.SO4	1825144	1	13	7.6	5.0	✓
TDS by Gravimetry	E162	1824684	1	20	5.0	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1825986	1	17	5.8	5.0	✓
Total Mercury in Water by CVAAS	E508	1829754	2	40	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1826693	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1827968	1	6	16.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1827969	1	6	16.6	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	1825840	1	11	9.0	5.0	✓
TSS by Gravimetry	E160	1824680	1	20	5.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1827974	1	5	20.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1825142	1	13	7.6	5.0	✓
Chloride in Water by IC	E235.Cl	1825141	1	13	7.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	1830363	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1826816	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1827966	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	1825140	1	13	7.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1825139	1	19	5.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1825143	1	13	7.6	5.0	✓
Sulfate in Water by IC	E235.SO4	1825144	1	13	7.6	5.0	✓
Total Hexavalent Chromium (Cr VI) by IC	E532	1825986	1	17	5.8	5.0	✓
Total Mercury in Water by CVAAS	E508	1829754	2	40	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1826693	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1827968	1	6	16.6	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1827969	1	6	16.6	5.0	✓

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
Total Sulfide by Colourimetry (Automated Flow)	E395	1825840	1	11	9.0	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 ± 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.
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 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.
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 methlyene blue colourimetric method. Results expressed "as H2S" if reported represent the maximum possible H2S concentration based on the total sulfide concentration in the sample. The H2S calculation converts Total Sulphide as (S2-) and reports it as Total Sulphide as (H2S)
Total Metals in Water by CRC ICPMS	E420 ALS Environmental - Vancouver	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Vancouver	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Mercury in Water by CVAAS	E508 ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
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.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Hexavalent Chromium (Cr VI) by IC	E532 ALS Environmental - Vancouver	Water	APHA 3500-Cr C (Ion Chromatography)	Hexavalent Chromium is measured by Ion chromatography-Post column reaction and UV detection. Results are based on an un-filtered, field-preserved sample.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Vancouver	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 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 CaCO3), from total Ca/Mg" is calculated from the sum of total Calcium and Magnesium concentrations, expressed in CaCO3 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 - Vancouver	Water	APHA 3030B/6020A/EPA 7196A (mod)	Chromium (III)-Total is calculated as the difference between the total chromium and the total hexavalent chromium (Cr(VI)) results.The Limit of Reporting for Chromium (III) varies as a function of the test results.
Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine	EF001 ALS Environmental - Vancouver	Water	Field Measurement (Client Supplied)	Field pH,EC,Salinity, TDS, Cl2,ClO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3 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.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
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.

ALS Canada Ltd.

QUALITY CONTROL REPORT

Work Order	: **VA24D4412**	Page	: 1 of 17
Client	: Triton Environmental Consultants Ltd.	Laboratory	: ALS Environmental - Vancouver
Contact		Account Manager	
Address		Address	
Telephone	: ----	Telephone	
Project	: 11964	Date Samples Received	: 27-Dec-2024 19:15
PO	: 11964 - Task 20 - Phase 3C-4C	Date Analysis Commenced	: 29-Dec-2024
C-O-C number	: ----	Issue Date	: 07-Jan-2025 17:28
Sampler	: ----		
Site	: Water Analysis		
Quote number	: VA23-TRIT100-012 _V2		
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 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*
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Inorganics, Burnaby, British Columbia
		Vancouver Inorganics, Burnaby, British Columbia
		Vancouver Inorganics, Burnaby, British Columbia
		Vancouver Inorganics, Burnaby, British Columbia
		Vancouver Administration, Burnaby, British Columbia
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Metals, Burnaby, British Columbia
		Vancouver Metals, 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: 1824680)											
VA24D4366-003	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	23100 µg/L	22.5	0.6	Diff <2x LOR	----
Physical Tests (QC Lot: 1824684)											
VA24D4366-003	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	854000 µg/L	840	1.65%	20%	----
Physical Tests (QC Lot: 1825138)											
VA24D4412-002	WLNG DS 1	Alkalinity, total (as CaCO3)	----	E290	2.0	mg/L	11.4	11.4	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1825139)											
VA24D4411-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0208	0.0205	0.0003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1825140)											
VA24D4411-001	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.205	0.206	0.521%	20%	----
Anions and Nutrients (QC Lot: 1825141)											
VA24D4411-001	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	0.80	0.80	0.001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1825142)											
VA24D4411-001	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: 1825143)											
VA24D4411-001	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: 1825144)											
VA24D4411-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	4.66	4.67	0.165%	20%	----
Anions and Nutrients (QC Lot: 1827968)											
VA24D4412-002	WLNG DS 1	Nitrogen, total	7727-37-9	E366	0.030	mg/L	0.074	0.074	0.0005	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1827969)											
VA24D4411-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0042	0.0046	0.0004	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1827974)											
VA24D4411-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0083	0.0087	0.0004	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1827966)											
VA24D4411-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Total Sulfides (QC Lot: 1825840)											
VA24D4240-001	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.0075	mg/L	<0.0075	<0.0075	0	Diff <2x LOR	----
Total Metals (QC Lot: 1826693)											
KS2405353-001	Anonymous	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	<0.00010	<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: 1826693) - continued											
KS2405353-001	Anonymous	Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00134	0.00133	0.498%	20%	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.0193	0.0192	0.554%	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	0.0000167	0.0000147	0.0000020	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	45.1	43.9	2.78%	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	0.00050	mg/L	0.00059	0.00056	0.00002	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	0.00050	mg/L	0.0610	0.0612	0.193%	20%	----
		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	0.000435	0.000442	0.000007	Diff <2x LOR	----
		Lithium, total	7439-93-2	E420	0.0010	mg/L	0.0020	0.0021	0.00006	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	21.8	21.1	3.17%	20%	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.00672	0.00673	0.117%	20%	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00164	0.00168	2.03%	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	1.82	1.82	0.383%	20%	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00072	0.00078	0.00007	Diff <2x LOR	----
		Selenium, total	7782-49-2	E420	0.000050	mg/L	0.000204	0.000173	0.000032	Diff <2x LOR	----
		Silicon, total	7440-21-3	E420	0.10	mg/L	8.49	8.77	3.27%	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	8.78	8.84	0.748%	20%	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.293	0.301	2.68%	20%	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	7.24	8.05	10.5%	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	<0.00030	<0.00030	0	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	0.000010	mg/L	0.00167	0.00169	1.55%	20%	----

Sub-Matrix: **Water**

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Laboratory Duplicate (DUP) Report						
					LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 1826693) - continued											
KS2405353-001	Anonymous	Vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00072	0.00072	0.000003	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420	0.0030	mg/L	0.0288	0.0290	0.0002	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: 1829754)											
VA24D4365-006	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Total Metals (QC Lot: 1829755)											
VA24D4412-002	WLNG DS 1	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1826816)											
KS2405363-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0013	0.0012	0.0002	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	0.00044	0.00046	0.00002	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0526	0.0536	1.88%	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	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	90.4	88.5	2.15%	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	0.00085	0.00088	0.00002	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	0.00070	0.00074	0.00004	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	0.0021	0.0021	0.000002	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	23.8	23.4	1.70%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00904	0.00927	2.53%	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	1.90	1.87	1.83%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00069	0.00060	0.00009	Diff <2x LOR	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.00157	0.00158	0.182%	20%	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	8.48	8.68	2.32%	20%	----
		Silver, dissolved	7440-22-4	E421	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*
Dissolved Metals (QC Lot: 1826816) - continued											
KS2405363-001	Anonymous	Sodium, dissolved	7440-23-5	E421	0.050	mg/L	11.8	11.6	1.66%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.330	0.331	0.186%	20%	----
		Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	39.4	41.2	4.30%	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	0.0214	0.0218	1.51%	20%	----
		Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	0.00307	0.00306	0.000010	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	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1830363)											
FJ2403897-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 1825986)											
VA24D4392-002	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.00050	mg/L	<0.50 µg/L	<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: 1824680)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1824684)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1825138)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Anions and Nutrients (QCLot: 1825139)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1825140)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1825141)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1825142)						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 1825143)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1825144)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1827968)						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
Anions and Nutrients (QCLot: 1827969)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 1827974)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Organic / Inorganic Carbon (QCLot: 1827966)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Sulfides (QCLot: 1825840)						
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
Total Metals (QCLot: 1826693)						
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: 1826693) - 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: 1829754)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Total Metals (QCLot: 1829755)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 1826816)						
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	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1826816) - continued						
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: 1830363)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Speciated Metals (QCLot: 1825986)						
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: 1824680)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	96.8	85.0	115	----
Physical Tests (QCLot: 1824684)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	101	85.0	115	----
Physical Tests (QCLot: 1825138)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	104	85.0	115	----
Anions and Nutrients (QCLot: 1825139)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1825140)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1825141)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1825142)									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	104	85.0	115	----
Anions and Nutrients (QCLot: 1825143)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1825144)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 1827968)									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1827969)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	95.5	80.0	120	----
Anions and Nutrients (QCLot: 1827974)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	99.7	85.0	115	----
Organic / Inorganic Carbon (QCLot: 1827966)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	99.6	80.0	120	----
Total Sulfides (QCLot: 1825840)									
Sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	99.7	80.0	120	----
Total Metals (QCLot: 1826693)									

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: 1826693) - continued									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	106	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	103	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	100	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	108	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	111	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	110	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	104	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	100	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	99.5	80.0	120	----
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	98.0	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	90.4	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	106	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	104	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	102	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	97.9	80.0	120	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	104	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	105	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	102	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	103	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	91.0	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	104	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	97.9	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	83.6	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	106	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	103	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	108	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	104	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	106	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	106	80.0	120	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Target Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1826693) - continued									
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	99.3	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	94.3	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	102	80.0	120	----
Total Metals (QCLot: 1829754)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	93.0	80.0	120	----
Total Metals (QCLot: 1829755)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	94.2	80.0	120	----
Dissolved Metals (QCLot: 1826816)									
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	102	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	97.8	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	98.8	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	93.4	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	97.6	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	86.3	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	89.7	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	90.4	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	96.5	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	97.0	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	94.7	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	93.5	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	96.5	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	95.3	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	95.4	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	101	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	93.8	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	107	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	92.9	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	95.1	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	89.2	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	102	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	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
Dissolved Metals (QCLot: 1826816) - continued									
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	97.1	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	94.5	80.0	120	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	98.2	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	94.4	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	96.0	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	94.7	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	98.3	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	99.9	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	96.9	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	92.2	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	94.3	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	93.7	80.0	120	----
Speciated Metals (QCLot: 1825986)									
Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.0005	mg/L	0.25 mg/L	98.7	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: 1825139)										
VA24D4412-001	WLNG US 1	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: 1825140)										
VA24D4412-001	WLNG US 1	Fluoride	16984-48-8	E235.F	1.00 mg/L	1 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1825141)										
VA24D4412-001	WLNG US 1	Chloride	16887-00-6	E235.Cl	99.9 mg/L	100 mg/L	99.9	75.0	125	----
Anions and Nutrients (QCLot: 1825142)										
VA24D4412-001	WLNG US 1	Bromide	24959-67-9	E235.Br-L	0.525 mg/L	0.5 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 1825143)										
VA24D4412-001	WLNG US 1	Nitrite (as N)	14797-65-0	E235.NO2-L	0.500 mg/L	0.5 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1825144)										
VA24D4412-001	WLNG US 1	Sulfate (as SO4)	14808-79-8	E235.SO4	100 mg/L	100 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1827968)										
VA24D4413-001	Anonymous	Nitrogen, total	7727-37-9	E366	2.08 mg/L	2 mg/L	104	70.0	130	----
Anions and Nutrients (QCLot: 1827969)										
VA24D4412-001	WLNG US 1	Phosphorus, total	7723-14-0	E372-U	0.0486 mg/L	0.05 mg/L	97.3	70.0	130	----
Anions and Nutrients (QCLot: 1827974)										
VA24D4412-001	WLNG US 1	Ammonia, total (as N)	7664-41-7	E298	0.0994 mg/L	0.1 mg/L	99.4	75.0	125	----
Organic / Inorganic Carbon (QCLot: 1827966)										
VA24D4412-001	WLNG US 1	Carbon, dissolved organic [DOC]	----	E358-L	5.01 mg/L	5 mg/L	100	70.0	130	----
Total Sulfides (QCLot: 1825840)										
VA24D4240-002	Anonymous	Sulfide, total (as S)	18496-25-8	E395	0.969 mg/L	1 mg/L	96.9	75.0	125	----
Total Metals (QCLot: 1826693)										
KS2405354-001	Anonymous	Aluminum, total	7429-90-5	E420	0.189 mg/L	0.2 mg/L	94.4	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0194 mg/L	0.02 mg/L	97.1	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0203 mg/L	0.02 mg/L	101	70.0	130	----
		Barium, total	7440-39-3	E420	ND mg/L	----	ND	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0391 mg/L	0.04 mg/L	97.8	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.00965 mg/L	0.01 mg/L	96.5	70.0	130	----
		Boron, total	7440-42-8	E420	0.097 mg/L	0.1 mg/L	96.7	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00392 mg/L	0.004 mg/L	98.0	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	----	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.00958 mg/L	0.01 mg/L	95.8	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0391 mg/L	0.04 mg/L	97.7	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: 1826693) - continued										
KS2405354-001	Anonymous	Cobalt, total	7440-48-4	E420	0.0187 mg/L	0.02 mg/L	93.4	70.0	130	----
		Copper, total	7440-50-8	E420	0.0182 mg/L	0.02 mg/L	90.9	70.0	130	----
		Iron, total	7439-89-6	E420	1.92 mg/L	2 mg/L	96.0	70.0	130	----
		Lead, total	7439-92-1	E420	0.0188 mg/L	0.02 mg/L	93.9	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0958 mg/L	0.1 mg/L	95.8	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	0.0198 mg/L	0.02 mg/L	99.2	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0370 mg/L	0.04 mg/L	92.6	70.0	130	----
		Phosphorus, total	7723-14-0	E420	10.00 mg/L	10 mg/L	100.0	70.0	130	----
		Potassium, total	7440-09-7	E420	3.81 mg/L	4 mg/L	95.2	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0194 mg/L	0.02 mg/L	97.0	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0402 mg/L	0.04 mg/L	100	70.0	130	----
		Silicon, total	7440-21-3	E420	ND mg/L	----	ND	70.0	130	----
		Silver, total	7440-22-4	E420	0.00371 mg/L	0.004 mg/L	92.8	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	19.0 mg/L	20 mg/L	95.0	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.0405 mg/L	0.04 mg/L	101	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00367 mg/L	0.004 mg/L	91.8	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0124 mg/L	0.02 mg/L	61.8	70.0	130	MES
		Tin, total	7440-31-5	E420	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0377 mg/L	0.04 mg/L	94.2	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0197 mg/L	0.02 mg/L	98.4	70.0	130	----
		Uranium, total	7440-61-1	E420	0.00396 mg/L	0.004 mg/L	99.0	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.0971 mg/L	0.1 mg/L	97.1	70.0	130	----
		Zinc, total	7440-66-6	E420	0.364 mg/L	0.4 mg/L	90.9	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0409 mg/L	0.04 mg/L	102	70.0	130	----
Total Metals (QCLot: 1829754)										
VA24D4365-007	Anonymous	Mercury, total	7439-97-6	E508	0.0000933 mg/L	0 mg/L	93.3	70.0	130	----
Total Metals (QCLot: 1829755)										
VA24D4414-001	Anonymous	Mercury, total	7439-97-6	E508	0.0000946 mg/L	0 mg/L	94.6	70.0	130	----
Dissolved Metals (QCLot: 1826816)										
KS2405363-003	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.179 mg/L	0.2 mg/L	89.3	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0195 mg/L	0.02 mg/L	97.4	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0199 mg/L	0.02 mg/L	99.4	70.0	130	----
		Barium, dissolved	7440-39-3	E421	0.0182 mg/L	0.02 mg/L	91.0	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0358 mg/L	0.04 mg/L	89.4	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00870 mg/L	0.01 mg/L	87.0	70.0	130	----
		Boron, dissolved	7440-42-8	E421	ND mg/L	----	ND	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00328 mg/L	0.004 mg/L	82.1	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.00944 mg/L	0.01 mg/L	94.4	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: 1826816) - continued										
KS2405363-003	Anonymous	Chromium, dissolved	7440-47-3	E421	0.0355 mg/L	0.04 mg/L	88.7	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0174 mg/L	0.02 mg/L	86.8	70.0	130	----
		Copper, dissolved	7440-50-8	E421	0.0162 mg/L	0.02 mg/L	81.1	70.0	130	----
		Iron, dissolved	7439-89-6	E421	1.75 mg/L	2 mg/L	87.4	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0177 mg/L	0.02 mg/L	88.4	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0865 mg/L	0.1 mg/L	86.5	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	0.0332 mg/L	0.04 mg/L	83.0	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	9.72 mg/L	10 mg/L	97.2	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	3.57 mg/L	4 mg/L	89.2	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.0177 mg/L	0.02 mg/L	88.4	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0404 mg/L	0.04 mg/L	101	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	9.20 mg/L	10 mg/L	92.0	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00351 mg/L	0.004 mg/L	87.6	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	0.0409 mg/L	0.04 mg/L	102	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00347 mg/L	0.004 mg/L	86.7	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0176 mg/L	0.02 mg/L	87.8	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0179 mg/L	0.02 mg/L	89.4	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0368 mg/L	0.04 mg/L	92.0	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0193 mg/L	0.02 mg/L	96.7	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	ND mg/L	----	ND	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.0920 mg/L	0.1 mg/L	92.0	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.348 mg/L	0.4 mg/L	86.9	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0373 mg/L	0.04 mg/L	93.4	70.0	130	----
Dissolved Metals (QCLot: 1830363)										
FJ2403897-002	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000715 mg/L	0 mg/L	71.5	70.0	130	----
Speciated Metals (QCLot: 1825986)										
VA24D4411-001	Anonymous	Chromium, hexavalent [Cr VI], total	18540-29-9	E532	0.260 mg/L	0.25 mg/L	104	70.0	130	----

Qualifiers

Qualifier	Description
MES	*Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).*

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 17 -

Page 1 of

Report To	Contact and company name below will appear on the final report
Company:	Triton Environmental
Contact:	
Phone:	
Street:	
City/Province:	
Postal Code:	

Report Format / Distribution	
Select Report Format:	☑ EXCEL ☐ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	
Email 2	
Email 3	

Invoice To		
	Same as Report To	☐ YES ☑ NO
	Copy of Invoice with Report	☐ YES ☑ NO
Company:		
Contact:		

Project Information	
ALS Account # / Quote #:	VA23-TRIT100-012
Job #:	11964
PO / AFE:	11964 - Task 20 - Phase 3C-4C
LSD:	
ALS Lab Work Order # (lab use only):	D4412

Select Invoice D	
Email 1 or Fax	
Email 2	
Oil	
AFE/Cost Center:	
Major/Minor Code:	
Requisitioner:	
Location:	
ALS Contact:	

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
4 day [P4-20%]	☐	1 Business day [E1 - 100%]	☐
3 day [P3-25%]	☐	Same Day, Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)]	☐
2 day [P2-50%]	☐		

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Total metals + mercury	Dissolved metals + mercury	Total hexavalent chromium	Total trivalent chromium	TSS	TDS	Nutrients (ammonia, ammonium, total nitrogen, total phosphorus)	Total sulfide (low) (as H2S), Unionized Sulfide (low)	Anions scan (Br, Cl, F, NO2, NO3, SO4)	General parameters (alkalinity)	DOC				SAMPLES ON HOLD	Sample is hazardous (please provide further details	NUMBER OF CONTAINERS
					F						P	P			F/P						
	WLNG US 1			Water	R	R	R	R	R	R	R	R	R	R	R					N	9
	pH: 6.5 cond: 25 temp: 6.5 Turb: 1.19	27-Dec-24	14:44																		
	WLNG DS 1			Water	R	R	R	R	R	R	R	R	R	R	R					N	9
	pH: 6.5 cond: 33 temp: 7.0 Turb: 0.34	27-Dec-24	13:52																		

Environmental Division
Vancouver
Work Order Reference
VA24D4412

Telephone : +1 604 253 4188

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐	SIF Observations	Yes ☐	No	☐
Ice Packs	☑	Ice Cubes ☐	Custody seal intact	Yes ☐	No ☐
Cooling Initiated	☐				

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				8			

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add (electro
Are samples taken from a Regulated DW System? ☐ ☑ NO	
Are samples for human consumption/ use? ☐ ☑ NO	Triton project # 11964

SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
27-Dec-24	19:10					Dec 27	7:15 pm

IONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

SEP 2017 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.**

Woodfibre Site Receiving Environment Field Notes and Logs

FortisBC Eagle Mountain-Woodfibre Gas Pipeline

Water Discharge Authorization Water Quality Monitoring

2024-12-27-Shafiei-37B63

Project Component:	Tunnel	**Site Name:**	Receiving Environment - Downstream of Discharge
Inspection Date:	12/27/2024	**Location:**	WLNG
Triton QP:	Farshad Shafiei	**Latitude/Longitude:**	49.667879 -123.249588
Temperature(c):	Low -1 High 4	**Permit:**	PE 110136
Weather Conditions:	Light Rain	**Ground Conditions:**	Wet

Observations

Time: 13:59:00 **Flow Volume (visual):** high

Notes: Sonde had drifted. The PVC Protective case was gone. The zip ties were most likely broken due to heavy rain and resulting high flow. Couldn't find the pvc pipe. Replacement needed. The sonde was disconnected from the VuLink telemetry to troubleshoot and find out whether VuLink is causing the erratic readings at DS. We will retrieve data on Dec 30 manually and see if the erratic readings are still persisting. Until then, DS data is not available from the HydroVu website.

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**	N/A		
DOC	Yes	**EPH, PAH, LEPH/HEPH**	N/A		
		Trout LC50	N/A		

Logger Maintenance

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

Describe Logger Maintenance

Sonde was cleaned, disconnected from Vulink, new batteries inserted

Photos

Photo: 1

Location: EAS DS

Description: Facing US

Photo: 2

Location: EAS DS

Description: Facing DS

Photos

Photo: 3

Location: EAS DS

Description: Across view

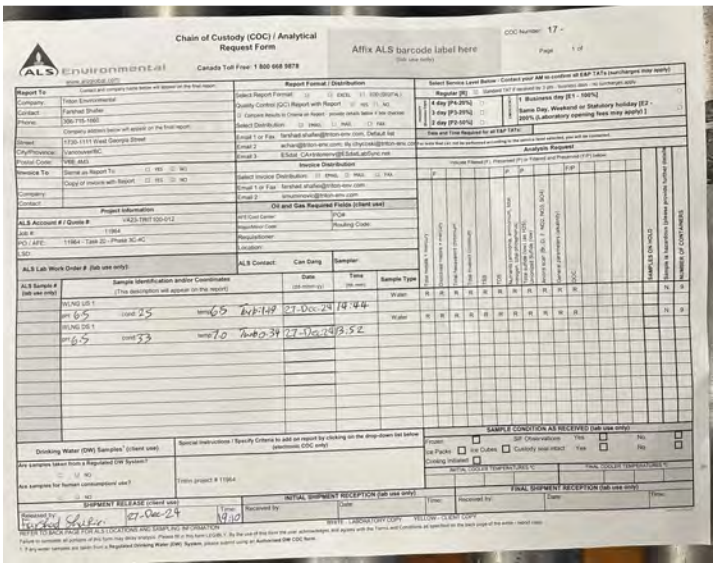


Photo: 4

Location: EAS COC

Description: Lab COC

2024-12-27-Shafiei-37B63

Sign Off

Report Prepared By:	Farshad Shafiei	**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

2024-12-27-Shafiei-92396

Project Component:	Tunnel	**Site Name:**	Receiving Environment - Upstream of Discharge
Inspection Date:	12/27/2024	**Location:**	WLNG
Triton QP:	Farshad Shafiei	**Latitude/Longitude:**	49.669455 -123.25087
Temperature(c):	Low -1 High 4	**Permit:**	PE 110136
Weather Conditions:	Light Rain	**Ground Conditions:**	Wet

Observations

Time: 14:43:59 **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**	N/A		
DOC	Yes	**EPH, PAH, LEPH/HEPH**	N/A		
		Trout LC50	N/A		

Logger Maintenance

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

Describe Logger Maintenance

Sonde was cleaned

2024-12-27-Shafiei-92396

Photos

Photo: 1

Location: EAS US

Description: Facing DS

Photo: 2

Location: EAS US

Description: Facing US

Photos

Photo: 3

Location: EAS US

Description: Facing left bank

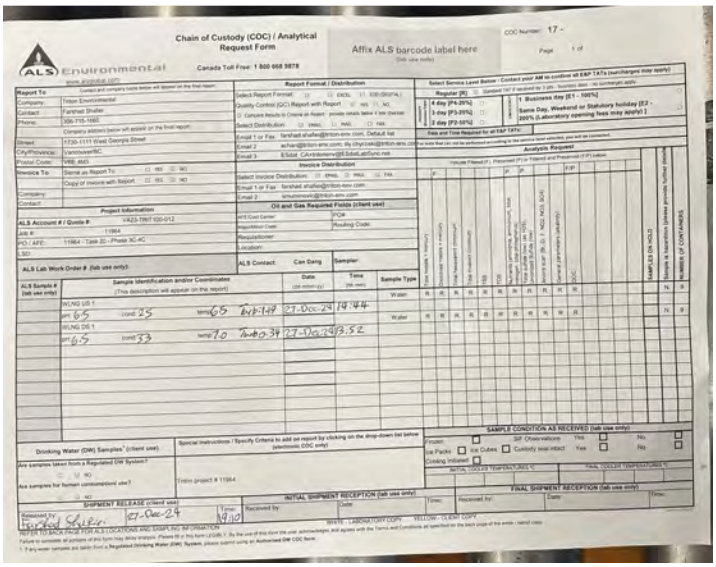


Photo: 4

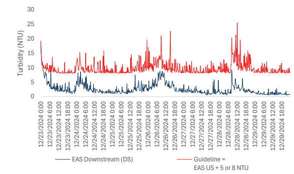
Location: COC

Description: Lab COC

Sign Off

Report Prepared By:	Farshad Shafiei	**Report Reviewed:**	Yes
Report Reviewer:		**Professional(s) of Record:**	
Name:			
Designation:			
Designation Number:			

Woodfibre Plant site East Creek (WC 309-R2)	EAS Downstream (DS)							EAS Upstream (US)						
Date	Temperature (c)	Specific Conductivity (µS/cm)	Salinity PSU	pH	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Date	Temperature (c)	Specific Conductivity (µS/cm)	Salinity PSU	pH	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Guideline = EAS US + 5 or 8 NTU
12/23/2024 0:00	7.0	24.4	0.0	6.8	15.0	18.6	12/23/2024 0:00	6.9	21.6	0.0	7.1	11.0	14.3	19.3
12/23/2024 0:15	7.0	23.7	0.0	6.8	15.0	16.3	12/23/2024 0:15	6.9	20.8	0.0	7.2	11.0	9.5	14.5
12/23/2024 0:30	7.0	23.0	0.0	6.9	15.0	12.3	12/23/2024 0:30	6.9	19.9	0.0	7.1	11.0	6.0	14.0
12/23/2024 0:45	7.0	22.1	0.0	6.8	15.0	12.2	12/23/2024 0:45	6.9	19.2	0.0	7.1	11.0	2.8	10.8
12/23/2024 1:00	7.0	21.4	0.0	6.8	15.0	11.6	12/23/2024 1:00	7.0	18.8	0.0	7.1	11.0	4.0	12.0
12/23/2024 1:15	7.1	24.4	0.0	6.9	14.9	10.9	12/23/2024 1:15	7.0	18.2	0.0	7.0	11.0	3.5	11.5
12/23/2024 1:30	7.1	24.9	0.0	6.9	14.9	9.1	12/23/2024 1:30	7.0	17.7	0.0	7.0	11.0	1.9	9.9
12/23/2024 1:45	7.2	24.9	0.0	6.9	14.9	9.1	12/23/2024 1:45	7.0	17.6	0.0	7.0	11.0	1.8	9.8
12/23/2024 2:00	7.2	25.0	0.0	6.9	14.9	8.1	12/23/2024 2:00	7.0	17.9	0.0	7.0	11.0	2.9	10.9
12/23/2024 2:15	7.1	20.5	0.0	6.7	15.0	7.2	12/23/2024 2:15	7.0	16.3	0.0	7.0	11.0	2.0	10.0
12/23/2024 2:30	7.2	24.9	0.0	6.9	14.9	6.4	12/23/2024 2:30	7.1	17.8	0.0	7.0	11.0	1.8	9.8
12/23/2024 2:45	7.1	20.4	0.0	6.8	15.0	6.7	12/23/2024 2:45	7.1	17.8	0.0	7.0	11.0	2.0	10.0
12/23/2024 3:00	7.2	20.3	0.0	6.7	15.0	8.6	12/23/2024 3:00		17.7	0.0	7.0	11.0	1.6	9.6
12/23/2024 3:15	7.2	20.1	0.0	6.7	14.9	8.3	12/23/2024 3:15	7.2	17.6	0.0	7.0	11.0	2.9	10.9
12/23/2024 3:30	7.3	19.9	0.0	6.7	14.9	7.3	12/23/2024 3:30	7.2	17.2	0.0	7.1	11.0	1.7	9.7
12/23/2024 3:45	7.3	19.7	0.0	6.7	14.9	7.8	12/23/2024 3:45	7.2	16.9	0.0	6.9	11.0	1.6	9.6
12/23/2024 4:00	7.4	24.4	0.0	7.0	14.9	5.4	12/23/2024 4:00	7.2	16.5	0.0	7.0	11.0	0.9	8.9
12/23/2024 4:15	7.4	24.2	0.0	6.9	14.9	4.0	12/23/2024 4:15	7.2	16.2	0.0	7.0	11.0	3.5	11.5
12/23/2024 4:30	7.4	24.2	0.0	7.0	14.9	5.0	12/23/2024 4:30	7.2	16.0	0.0	7.0	11.0	1.5	9.5
12/23/2024 4:45	7.4	24.3	0.0	7.0	14.9	4.9	12/23/2024 4:45	7.2	15.9	0.0	7.0	11.0	2.0	10.0
12/23/2024 5:00	7.4	20.0	0.0	6.9	14.9	5.4	12/23/2024 5:00	7.3	15.7	0.0	7.0	11.0	1.5	9.5
12/23/2024 5:15	7.4	18.6	0.0	6.7	14.9	4.4	12/23/2024 5:15	7.3	15.6	0.0	7.0	11.0	0.7	8.7
12/23/2024 5:30	7.4	18.5	0.0	6.7	14.9	5.3	12/23/2024 5:30	7.3	15.5	0.0	7.0	11.0	0.4	8.4
12/23/2024 5:45	7.4	18.5	0.0	6.7	14.9	3.6	12/23/2024 5:45	7.3	15.5	0.0	6.9	11.0	2.4	10.4
12/23/2024 6:00	7.4	18.4	0.0	6.7	14.9	4.2	12/23/2024 6:00	7.3	15.3	0.0	7.0	11.0	2.9	10.9
12/23/2024 6:15	7.4	18.3	0.0	6.7	14.9	3.7	12/23/2024 6:15	7.3	15.1	0.0	7.0	11.0	0.6	8.6
12/23/2024 6:30	7.4	18.3	0.0	6.7	14.9	2.8	12/23/2024 6:30	7.3	15.1	0.0	7.0	11.0	2.8	10.8
12/23/2024 6:45	7.5	24.7	0.0	6.9	14.9	9.8	12/23/2024 6:45	7.3	15.0	0.0	7.0	11.0	0.8	8.8
12/23/2024 7:00	7.5	24.5	0.0	7.0	14.9	3.8	12/23/2024 7:00	7.3	14.9	0.0	6.9	11.0	1.8	9.8
12/23/2024 7:15	7.4	18.1	0.0	6.7	14.9	2.6	12/23/2024 7:15	7.3	14.8	0.0	6.9	11.0	2.6	10.6
12/23/2024 7:30	7.4	18.0	0.0	6.7	14.9	3.4	12/23/2024 7:30	7.3	14.8	0.0	6.9	11.0	0.5	8.5
12/23/2024 7:45	7.4	18.0	0.0	6.7	14.9	2.7	12/23/2024 7:45	7.3	14.7	0.0	7.0	11.0	5.5	13.5
12/23/2024 8:00	7.5	24.7	0.0	6.9	14.9	2.6	12/23/2024 8:00	7.3	14.6	0.0	7.0	11.0	2.6	10.6
12/23/2024 8:15	7.5	25.1	0.0	7.0	14.9	3.2	12/23/2024 8:15	7.3	14.6	0.0	6.8	11.0	2.7	10.7
12/23/2024 8:30	7.5	25.4	0.0	7.0	14.9	3.6	12/23/2024 8:30	7.3	14.6	0.0	6.7	11.0	0.7	8.7
12/23/2024 8:45	7.5	25.6	0.0	7.0	14.9	2.7	12/23/2024 8:45	7.3	14.4	0.0	7.0	11.0	1.7	9.7
12/23/2024 9:00	7.4	17.9	0.0	6.7	14.9	4.5	12/23/2024 9:00	7.3	14.4	0.0	6.9	11.0	0.4	8.4
12/23/2024 9:15	7.4	17.8	0.0	6.7	14.9	2.5	12/23/2024 9:15	7.3	14.4	0.0	6.9	11.0	2.2	10.2
12/23/2024 9:30	7.4	17.8	0.0	6.6	14.9	3.2	12/23/2024 9:30	7.3	14.4	0.0	7.0	11.0	1.1	9.1
12/23/2024 9:45	7.4	17.7	0.0	6.7	14.9	1.9	12/23/2024 9:45	7.3	14.3	0.0	7.0	11.0	1.0	9.0
12/23/2024 10:00	7.4	17.7	0.0	6.7	14.9	2.4	12/23/2024 10:00	7.3	14.3	0.0	6.9	10.9	0.7	8.7
12/23/2024 10:15	7.4	17.7	0.0	6.7	14.9	3.7	12/23/2024 10:15	7.3	14.2	0.0	6.9	11.0	1.2	9.2
12/23/2024 10:30	7.5	17.7	0.0	6.8	14.9	2.2	12/23/2024 10:30	7.4	14.1	0.0	7.0	11.0	0.2	8.2
12/23/2024 10:45	7.6	26.3	0.0	7.1	14.8	2.4	12/23/2024 10:45	7.4	14.1	0.0	7.0	11.0	0.3	8.3
12/23/2024 11:00	7.7	26.6	0.0	7.0	14.8	4.6	12/23/2024 11:00	7.4	14.1	0.0	7.0	11.0	0.1	8.1
12/23/2024 11:15	7.7	26.7	0.0	7.1	14.8	1.8	12/23/2024 11:15	7.4	14.1	0.0	7.0	10.9	0.2	8.2
12/23/2024 11:30	7.7	27.0	0.0	7.0	14.8	3.8	12/23/2024 11:30	7.4	14.0	0.0	6.9	10.9	0.2	8.2
12/23/2024 11:45	7.5	17.6	0.0	6.7	14.9	2.9	12/23/2024 11:45	7.4	14.0	0.0	7.0	11.0	2.0	10.0
12/23/2024 12:00	7.5	17.6	0.0	6.7	14.9	2.1	12/23/2024 12:00	7.4	13.9	0.0	7.0	11.0	0.6	8.6
12/23/2024 12:15	7.5	17.6	0.0	6.7	14.9	2.0	12/23/2024 12:15	7.4	13.9	0.0	6.9	10.9	0.3	8.3
12/23/2024 12:30	7.5	17.6	0.0	6.7	14.9	1.7	12/23/2024 12:30	7.4	13.9	0.0	7.0	10.9	0.1	8.1
12/23/2024 12:45	7.5	17.6	0.0	6.7	14.9	2.1	12/23/2024 12:45	7.4	13.9	0.0	7.0	10.9	0.2	8.2
12/23/2024 13:00	7.5	17.5	0.0	6.7	14.9	3.8	12/23/2024 13:00	7.4	13.8	0.0	7.0	10.9	0.5	8.5
12/23/2024 13:15	7.6	17.6	0.0	6.7	14.9	1.8	12/23/2024 13:15	7.5	13.8	0.0	7.0	10.9	0.1	8.1
12/23/2024 13:30	7.7	26.7	0.0	6.9	14.8	2.3	12/23/2024 13:30	7.5	13.8	0.0	7.0	10.9	0.1	8.1
12/23/2024 13:45	7.8	28.1	0.0	7.1	14.8	3.1	12/23/2024 13:45	7.5	13.8	0.0	7.0	10.9	0.2	8.2
12/23/2024 14:00	7.8	28.4	0.0	7.1	14.8	1.8	12/23/2024 14:00	7.5	13.8	0.0	7.0	10.9	0.2	8.2
12/23/2024 14:15	7.8	28.5	0.0	7.1	14.8	3.0	12/23/2024 14:15	7.5	13.8	0.0	6.8	10.9	0.2	8.2
12/23/2024 14:30	7.6	17.7	0.0	6.8	14.8	4.1	12/23/2024 14:30	7.5	13.7	0.0	6.9	10.9	0.1	8.1
12/23/2024 14:45	7.6	17.6	0.0	6.7	14.8	1.9	12/23/2024 14:45	7.5	13.7	0.0	7.0	10.9	0.9	8.9
12/23/2024 15:00	7.6	17.5	0.0	6.7	14.8	1.7	12/23/2024 15:00	7.5	13.7	0.0	6.9	10.9	0.1	8.1
12/23/2024 15:15	7.6	17.6	0.0	6.8	14.8	1.6	12/23/2024 15:15	7.5	13.7	0.0	6.9	10.9	0.1	8.1
12/23/2024 15:30	7.6	17.6	0.0	6.8	14.8	2.2	12/23/2024 15:30	7.5	13.7	0.0	7.0	10.9	0.2	8.2
12/23/2024 15:45	7.6	17.6	0.0	6.7	14.8	2.2	12/23/2024 15:45	7.5	13.6	0.0	6.9	10.9	0.1	8.1
12/23/2024 16:00	7.6	17.6	0.0	6.7	14.8	1.8	12/23/2024 16:00	7.5	13.7	0.0	7.0	10.9	3.8	11.8
12/23/2024 16:15	7.6	17.6	0.0	6.8	14.8	2.5	12/23/2024 16:15	7.5	13.7	0.0	7.0	10.9	0.1	8.1
12/23/2024 16:30	7.8	29.1	0.0	7.0	14.7	4.8	12/23/2024 16:30	7.5	13.6	0.0	7.0	10.9	0.4	8.4
12/23/2024 16:45	7.8	29.6	0.0	7.2	14.7	2.1	12/23/2024 16:45	7.5	13.6	0.0	7.0	10.9	0.4	8.4
12/23/2024 17:00	7.8	30.0	0.0	7.2	14.7	2.3	12/23/2024 17:00	7.5	13.6	0.0	7.0	10.9	0.5	8.5
12/23/2024 17:15	7.8	30.2	0.0	7.2	14.7	1.2	12/23/2024 17:15	7.5	13.6	0.0	6.9	10.9	0.1	8.1
12/23/2024 17:30	7.5	17.9	0.0	6.8	14.8	2.1	12/23/2024 17:30	7.4	13.6	0.0	7.0	10.9	0.1	8.1
12/23/2024 17:45	7.5	17.7	0.0	6.8	14.8	1.9	12/23/2024 17:45	7.4	13.7	0.0	6.9	10.9	0.1	8.1
12/23/2024 18:00	7.5	17.7	0.0	6.8	14.8	3.4	12/23/2024 18:00	7.4	13.6	0.0	7.0	10.9	0.2	8.2
12/23/2024 18:15	7.5	17.7	0.0	6.8	14.8	1.5	12/23/2024 18:15	7.4	13.6	0.0	7.0	10.9	0.9	8.9
12/23/2024 18:30	7.5	17.7	0.0	6.7	14.8	1.7	12/23/2024 18:30	7.4	13.6	0.0	6.9	10.9	0.1	8.1
12/23/2024 18:45	7.4	17.7	0.0	6.8	14.8	1.9	12/23/2024 18:45	7.4	13.6	0.0	7.0	10.9	0.1	8.1
12/23/2024 19:00	7.4	17.7	0.0	6.8	14.8	5.0	12/23/2024 19:00	7.3	13.6	0.0	6.9	10.9	1.5	9.5
12/23/2024 19:15	7.4	17.7	0.0	6.8	14.8	1.3	12/23/2024 19:15	7.3	13.6	0.0	7.0	10.9	0.1	8.1
12/23/2024 19:30	7.6	26.4	0.0	7.0	14.7	2.9	12/23/2024 19:30	7.3	13.6	0.0	7.0	10.9	0.1	8.1
12/23/2024 19:45	7.7	31.0	0.0	7.2	14.7	1.3	12/23/2024 19:45	7.3	13.5	0.0	7.0	10.9	0.5	8.5
12/23/2024 20:00	7.7	31.3	0.0	7.2	14.7	1.3	12/23/2024 20:00	7.3	13.5	0.0	7.0	10.9	0.7	8.7
12/23/2024 20:15	7.7	31.4	0.0	7.2	14.6	1.4	12/23/2024 20:15	7.3	13.5	0.0	7.0	10.9	0.3	8.3
12/23/2024 20:30	7.4	17.9	0.0	6.9	14.8	1.9	12/23/2024 20:30	7.3	13.5	0.0	7.0	10.9	0.3	8.3
12/23/2024 20:45	7.4	17.7	0.0	6.8	14.8	1.2	12/23/2024 20:45	7.3	13.5	0.0	7.0	10.8	1.1	9.1
12/23/2024 21:00	7.4	17.7	0.0	6.8	14.8	1.1	12/23/2024 21:00	7.3	13.5	0.0	7.0	10.9	0.1	8.1
12/23/2024 21:15	7.4	17.7	0.0	6.8	14.8	1.3	12/23/2024 21:15	7.3	13.5	0.0	7.0	10.8	0.1	8.1
12/23/2024 21:30	7.4	17.7	0.0	6.8	14.8	1.3	12/23/2024 21:30	7.3	13.5	0.0	7.0	10.9	0.2	8.2
12/23/2024 21:45	7.6	30.7	0.0	7.1	14.7	1.9	12/23/2024 21:45	7.3	13.5	0.0	7.0	10.9	0.3	8.3
12/23/2024 22:00	7.6	31.2	0.0	7.2	14.6	1.9	12/23/2024 22:00		13.5	0.0	7.0	10.8	0.2	8.2
12/23/2024 22:15	7.5	27.4	0.0	7.1	14.7	2.2	12/23/2024 22:15	7.3	13.7	0.0	7.0	10.8	0.1	8.1
12/23/2024 22:30	7.5	22.7	0.0	7.2	14.7	2.0	12/23/2024 22:30	7.2	13.7	0.0	7.0	10.8	0.5	8.5
12/23/2024 22:45	7.3	18.0	0.0	6.8	14.7	1.1	12/23/2024 22:45	7.2	13.7	0.0	7.0	10.8	0.1	8.1
12/23/2024 23:00	7.3	18.0	0.0	6.8	14.7	3.8	12/23/2024 23:00	7.2	13.9	0.0	7.0	10.8	2.6	10.6
12/23/2024 23:15	7.3	18.1	0.0	6.8	14.7	1.8	12/23/2024 23:15	7.2	14.4	0.0	7.0	10.8	0.3	8.3
12/23/2024 23:30	7.3	18.5	0.0	6.8	14.7	1.9	12/23/2024 23:30	7.2	16.4	0.0	6.9	10.8	1.1	9.1
12/23/2024 23:45	7.3	20.5	0.0	6.8	14.7	3.6	12/23/2024 23:45	7.2	18.8	0.0	7.1	10.9	2.6	10.6
12/24/2024 0:00	7.3	22.1	0.0	6.9	14.7	5.4	12/24/2024 0:00	7.2	19.1	0.0	7.2	10.8	3.9	11.9
12/24/2024 0:15	7.5	33.7	0.0	7.2	14.7	5.2	12/24/2024 0:15	7.2	19.9	0.0	7.1	10.9	3.9	11.9
12/24/2024 0:30	7.5	34.2	0.0	7.2	14.6	4.1	12/24/2024 0:30	7.2	21.6	0.0	7.2	10.8	5.3	13.3
12/24/2024 0:45	7.5	35.2	0.0	7.2	14.6	5.4	12/24/2024 0:45	7.2	24.1	0.0	7.2	10.8	4.5	12.5
12/24/2024 1:00	7.5	36.9	0.0	7.2	14.6	8.2	12/24/2024 1:00	7.2	25.9	0.0	7.3	10.8	2.7	10.7
12/24/2024 1:15	7.2	28.2	0.0	7.0	14.7	5.3	12/24/2024 1:15	7.2	25.8	0.0	7.2	10.9	1.6	9.6
12/24/2024 1:30	7.2	27.7	0.0	7.0	14.7	3.4	12/24/2024 1:30	7.2	25.1	0.0	7.2	10.8	1.0	9.0
12/24/2024 1:45	7.2	27.1	0.0	6.9	14.7	3.5	12/24/2024 1:45	7.1	26.0	0.0	7.2	10.8	2.6	10.6
12/24/2024 2:00	7.2	28.6	0.0	6.9	14.7	5.2	12/24/2024 2:00	7.1	28.3	0.0	7.3	10.8	2.8	10.8
12/24/2024 2:15	7.2	33.5	0.0	7.0	14.8	6.9	12/24/2024 2:15	7.1	27.2	0.0	7.3	10.8	7.3	15.3
12/24/2024 2:30	7.4	36.3	0.0	7.2	14.7	4.3	12/24/2024 2:30	7.1	27.6	0.0	7.2	10.9	4.3	12.3
12/24/2024 2:45	7.4	36.7	0.0	7.2	14.7	8.6	12/24/2024 2:45	7.1	27.1	0.0	7.3	10.9	3.4	11.4
12/24/2024 3:00	7.4	36.5	0.0	7.2	14.7	5.5	12/24/2024 3:00	7.2	26.6	0.0	7.3	10.9	3.1	11.1
12/24/2024 3:15	7.5	35.5	0.0	7.2	14.7	4.7	12/24/2024 3:15	7.3	25.0	0.0	7.3	10.8	1.5	9.5
12/24/2024 3:30	7.4	26.9	0.0	7.0	14.7	4.6	12/24/2024 3:30	7.3	23.9	0.0	7.3	10.8	1.8	9.8
12/24/2024 3:45	7.4	25.8	0.0	7.0	14.7	4.3	12/24/2024 3:45	7.4	22.4	0.0	7.2	10.8	1.3	9.3
12/24/2024 4:00	7.5	24.5	0.0	6.9	14.7	6.3	12/24/2024 4:00	7.4	20.9	0.0	7.2	10.8	2.4	10.4
12/24/2024 4:15	7.5	23.3	0.0	6.9	14.7	4.3	12/24/2024 4:15	7.4	19.7	0.0	7.1	10.8	1.0	9.0
12/24/2024 4:30	7.5	22.4	0.0	6.9	14.7	4.1	12/24/2024 4:30	7.4	18.8	0.0	6.9	10.8	0.9	8.9
12/24/2024 4:45	7.5	21.6	0.0	6.9	14.7	4.7	12/24/2024 4:45	7.4	17.8	0.0	7.1	10.8	2.1	10.1
12/24/2024 5:00	7.5	21.0	0.0	6.8	14.7	2.6	12/24/2024 5:00	7.4	17.2	0.0	7.1	10.8	0.4	8.4
12/24/2024 5:15	7.5	20.5	0.0	6.8	14.7	3.6	12/24/2024 5:15	7.4	16.7	0.0	7.0	10.8	0.4	8.4
12/24/2024 5:30	7.5	20.1	0.0	6.8	14.7	5.0	12/24/2024 5:30	7.4	16.3	0.0	7.1	10.8	0.7	8.7
12/24/2024 5:45	7.7	28.6	0.0	7.1	14.6	3.0	12/24/2024 5:45	7.4	16.1	0.0	7.0	10.8	0.2	8.2
12/24/2024 6:00	7.7	28.9	0.0	7.1	14.6	4.2	12/24/2024 6:00	7.4	15.4	0.0	7.1	10.8	1.7	9.7
12/24/2024 6:15	7.7	28.9	0.0	7.1	14.6	6.6	12/24/2024 6:15	7.4	15.5	0.0	7.0	10.8	10.0	15.0
12/24/2024 6:30	7.5	19.6	0.0	6.9	14.7	2.6	12/24/2024 6:30	7.4	15.1	0.0	7.0	10.8	2.1	10.1
12/24/2024 6:45	7.5	19.1	0.0	6.8	14.7	7.1	12/24/2024 6:45	7.4	15.3	0.0	7.0	10.8	0.8	8.8
12/24/2024 7:00	7.5	18.9	0.0	6.8	14.7	2.9	12/24/2024 7:00	7.4	14.7	0.0	7.1	10.8	1.8	9.8
12/24/2024 7:15	7.5	18.8	0.0	6.8	14.7	2.0	12/24/2024 7:15	7.4	15.1	0.0	7.0	10.8	1.3	9.3
12/24/2024 7:30	7.5	18.8	0.0	6.7	14.7	4.4	12/24/2024 7:30	7.4	14.6	0.0	6.9	10.8	2.5	10.5
12/24/2024 7:45	7.5	18.7	0.0	6.8	14.7	3.3	12/24/2024 7:45	7.4	14.8	0.0	7.0	10.8	0.5	8.5
12/24/2024 8:00	7.5	18.7	0.0	6.8	14.7	2.4	12/24/2024 8:00	7.4	14.7	0.0	7.0	10.8	0.7	8.7
12/24/2024 8:15	7.5	18.6	0.0	6.8	14.7	1.8	12/24/2024 8:15	7.4	14.7	0.0	6.8	10.8	2.6	10.6
12/24/2024 8:30	7.5	18.5	0.0	6.8	14.7	2.6	12/24/2024 8:30	7.4	14.4	0.0	7.0	10.8	0.5	8.5
12/24/2024 8:45	7.7	29.4	0.0	7.2	14.7	2.3	12/24/2024 8:45	7.4	15.5	0.0	7.0	10.8	0.6	8.6
12/24/2024 9:00	7.7	30.2	0.0	7.2	14.7	3.8	12/24/2024 9:00	7.4	15.2	0.0	7.0	10.8	0.2	8.2
12/24/2024 9:15	7.7	30.3	0.0	7.2	14.7	2.6	12/24/2024 9:15	7.4	16.0	0.0	7.0	10.8	1.0	9.0
12/24/2024 9:30	7.7	30.9	0.0	7.2	14.7	5.1	12/24/2024 9:30	7.4	16.6	0.0	7.0	10.8	1.2	9.2
12/24/2024 9:45	7.5	21.3	0.0	6.9	14.7	2.3	12/24/2024 9:45	7.4	17.5	0.0	7.1	10.8	0.9	8.9
12/24/2024 10:00	7.5	20.7	0.0	6.9	14.7	2.4	12/24/2024 10:00	7.4	16.6	0.0	7.1	10.8	2.9	10.9
12/24/2024 10:15	7.5	20.5	0.0	6.8	14.7	2.0	12/24/2024 10:15	7.4	16.9	0.0	7.1	10.8	0.9	8.9
12/24/2024 10:30	7.5	20.5	0.0	6.8	14.7	2.0	12/24/2024 10:30	7.4	16.7	0.0	7.0	10.8	0.9	8.9
12/24/2024 10:45	7.5	20.4	0.0	6.8	14.7	1.6	12/24/2024 10:45	7.4	16.6	0.0	7.1	10.8	0.5	8.5
12/24/2024 11:00	7.5	20.2	0.0	6.8	14.7	2.0	12/24/2024 11:00	7.4	16.2	0.0	7.1	10.9	0.5	8.5
12/24/2024 11:15	7.5	20.1	0.0	6.8	14.8	1.6	12/24/2024 11:15	7.4	16.2	0.0	7.1	10.8	1.4	9.4
12/24/2024 11:30	7.5	19.9	0.0	6.8	14.7	4.4	12/24/2024 11:30	7.4	15.8	0.0	7.1	10.8	2.9	10.9
12/24/2024 11:45	7.5	19.9	0.0	6.8	14.8	1.3	12/24/2024 11:45	7.4	16.5	0.0	7.0	10.8	3.9	11.9
12/24/2024 12:00	7.5	20.2	0.0	6.8	14.7	2.7	12/24/2024 12:00	7.4	16.5	0.0	7.1	10.9	8.7	13.7
12/24/2024 12:15	7.5	20.1	0.0	6.8	14.7	2.9	12/24/2024 12:15	7.4	16.6	0.0	7.1	10.9	0.2	8.2
12/24/2024 12:30	7.7	31.6	0.0	7.2	14.7	2.8	12/24/2024 12:30	7.4	16.1	0.0	7.1	10.9	0.9	8.9
12/24/2024 12:45	7.7	31.6	0.0	7.2	14.7	1.7	12/24/2024 12:45	7.5	16.1	0.0	7.1	10.8	0.2	8.2



12/24/2024 13:00	7.8	31.8	0.0	7.2	14.7	1.3	12/24/2024 13:00	7.5	15.6	0.0	7.1	10.8	0.3	8.3
12/24/2024 13:15	7.8	31.8	0.0	7.2	14.6	2.5	12/24/2024 13:15	7.5	15.8	0.0	7.1	10.8	0.1	8.1
12/24/2024 13:30	7.8	31.8	0.0	7.2	14.7	2.5	12/24/2024 13:30	7.5	15.4	0.0	7.1	10.8	0.5	8.5
12/24/2024 13:45	7.6	19.6	0.0	6.8	14.7	2.5	12/24/2024 13:45	7.5	15.4	0.0	6.9	10.8	0.3	8.3
12/24/2024 14:00	7.5	19.4	0.0	6.8	14.8	2.2	12/24/2024 14:00	7.5	15.0	0.0	7.0	10.8	0.4	8.4
12/24/2024 14:15	7.5	19.3	0.0	6.8	14.7	1.9	12/24/2024 14:15	7.5	15.2	0.0	6.9	10.8	4.0	12.0
12/24/2024 14:30	7.5	19.1	0.0	6.8	14.7	1.8	12/24/2024 14:30	7.5	14.8	0.0	7.0	10.9	3.5	11.5
12/24/2024 14:45	7.5	19.0	0.0	6.8	14.7	1.4	12/24/2024 14:45	7.5	15.0	0.0	6.9	10.8	3.6	11.6
12/24/2024 15:00	7.5	19.0	0.0	6.8	14.7	1.4	12/24/2024 15:00	7.5	14.6	0.0	6.9	10.8	0.9	8.9
12/24/2024 15:15	7.5	18.9	0.0	6.8	14.7	1.5	12/24/2024 15:15	7.5	14.7	0.0	7.0	10.9	0.2	8.2
12/24/2024 15:30	7.5	18.8	0.0	6.8	14.8	1.7	12/24/2024 15:30	7.5	14.4	0.0	7.0	10.8	0.4	8.4
12/24/2024 15:45	7.8	31.6	0.0	7.2	14.7	2.6	12/24/2024 15:45	7.4	14.6	0.0	7.0	10.8	0.5	8.5
12/24/2024 16:00	7.8	31.7	0.0	7.2	14.7	1.6	12/24/2024 16:00	7.4	14.3	0.0	7.0	10.9	4.4	12.4
12/24/2024 16:15	7.8	31.7	0.0	7.2	14.7	2.1	12/24/2024 16:15	7.4	14.5	0.0	7.0	10.9	1.2	9.2
12/24/2024 16:30	7.7	29.2	0.0	7.1	14.7	2.0	12/24/2024 16:30	7.4	14.2	0.0	7.0	10.9	0.1	8.1
12/24/2024 16:45	7.5	18.8	0.0	6.9	14.8	1.8	12/24/2024 16:45	7.4	14.3	0.0	6.9	10.9	0.9	8.9
12/24/2024 17:00	7.5	18.6	0.0	6.8	14.8	1.2	12/24/2024 17:00	7.4	14.2	0.0	7.0	10.9	0.2	8.2
12/24/2024 17:15	7.4	18.6	0.0	6.8	14.8	2.0	12/24/2024 17:15	7.4	14.2	0.0	6.9	10.9	0.2	8.2
12/24/2024 17:30	7.4	18.5	0.0	6.8	14.8	2.0	12/24/2024 17:30	7.4	14.1	0.0	7.0	10.9	0.4	8.4
12/24/2024 17:45	7.4	18.4	0.0	6.7	14.8	1.1	12/24/2024 17:45	7.4	14.1	0.0	6.9	10.9	3.0	11.0
12/24/2024 18:00	7.4	18.4	0.0	6.8	14.8	1.7	12/24/2024 18:00	7.3	14.0	0.0	7.0	10.9	6.0	14.0
12/24/2024 18:15	7.4	18.3	0.0	6.8	14.8	1.8	12/24/2024 18:15	7.3	14.0	0.0	7.0	10.9	0.3	8.3
12/24/2024 18:30	7.4	18.3	0.0	6.8	14.8	1.7	12/24/2024 18:30	7.3	13.8	0.0	6.9	10.9	7.8	15.8
12/24/2024 18:45	7.7	31.7	0.0	7.2	14.7	1.5	12/24/2024 18:45	7.3	13.9	0.0	7.0	10.9	0.1	8.1
12/24/2024 19:00	7.7	31.9	0.0	7.2	14.7	1.4	12/24/2024 19:00	7.3	13.8	0.0	6.9	10.9	2.6	10.6
12/24/2024 19:15	7.7	32.0	0.0	7.2	14.7	1.2	12/24/2024 19:15	7.3	13.9	0.0	7.0	10.9	0.9	8.9
12/24/2024 19:30	7.7	32.0	0.0	7.3	14.7	1.5	12/24/2024 19:30	7.3	13.7	0.0	6.9	10.9	0.1	8.1
12/24/2024 19:45	7.5	24.0	0.0	7.2	14.7	1.8	12/24/2024 19:45	7.3	13.8	0.0	7.0	10.9	1.1	9.1
12/24/2024 20:00	7.4	18.2	0.0	6.9	14.8	1.2	12/24/2024 20:00	7.3	13.6	0.0	7.0	10.9	1.3	9.3
12/24/2024 20:15	7.4	18.2	0.0	6.8	14.8	2.0	12/24/2024 20:15	7.3	13.8	0.0	6.9	10.9	0.1	8.1
12/24/2024 20:30	7.4	18.1	0.0	6.8	14.8	1.7	12/24/2024 20:30	7.3	13.6	0.0	7.0	10.9	2.8	10.8
12/24/2024 20:45	7.3	18.1	0.0	6.9	14.9	1.2	12/24/2024 20:45	7.3	13.7	0.0	6.9	10.9	0.5	8.5
12/24/2024 21:00	7.3	18.0	0.0	6.8	14.9	1.6	12/24/2024 21:00	7.3	13.3	0.0	6.9	10.9	1.6	9.6
12/24/2024 21:15	7.3	18.1	0.0	6.8	14.8	1.5	12/24/2024 21:15	7.3	13.8	0.0	6.9	10.9	0.8	8.8
12/24/2024 21:30	7.3	18.1	0.0	6.8	14.9	2.4	12/24/2024 21:30	7.3	13.6	0.0	7.0	10.9	0.1	8.1
12/24/2024 21:45	7.5	27.9	0.0	7.2	14.8	1.3	12/24/2024 21:45	7.3	13.9	0.0	7.0	10.9	1.1	9.1
12/24/2024 22:00	7.6	32.0	0.0	7.2	14.8	1.6	12/24/2024 22:00	7.3	13.6	0.0	6.9	10.9	0.7	8.7
12/24/2024 22:15	7.6	32.0	0.0	7.2	14.8	2.4	12/24/2024 22:15	7.3	13.8	0.0	6.9	10.9	0.1	8.1
12/24/2024 22:30	7.6	32.2	0.0	7.3	14.8	1.2	12/24/2024 22:30	7.3	13.4	0.0	7.0	10.9	0.7	8.7
12/24/2024 22:45	7.6	32.2	0.0	7.2	14.8	1.4	12/24/2024 22:45	7.3	13.7	0.0	6.9	10.9	0.9	8.9
12/24/2024 23:00	7.3	18.2	0.0	6.8	14.9	2.0	12/24/2024 23:00		13.3	0.0	6.9	10.9	0.2	8.2
12/24/2024 23:15	7.3	18.1	0.0	6.8	14.9	1.1	12/24/2024 23:15	7.3	13.5	0.0	6.9	10.9	1.7	9.7
12/24/2024 23:30	7.3	18.0	0.0	6.8	14.9	1.3	12/24/2024 23:30	7.2	13.4	0.0	7.0	11.0	0.1	8.1
12/24/2024 23:45	7.3	18.0	0.0	6.8	14.9	1.2	12/24/2024 23:45	7.2	13.5	0.0	7.0	10.9	0.6	8.6
12/25/2024 0:00	7.3	17.9	0.0	6.8	14.9	2.0	12/25/2024 0:00	7.2	13.1	0.0	6.9	10.9	1.8	9.8
12/25/2024 0:15	7.3	17.9	0.0	6.8	14.9	1.0	12/25/2024 0:15	7.2	13.4	0.0	7.0	11.0	0.1	8.1
12/25/2024 0:30	7.3	17.8	0.0	6.8	14.9	1.1	12/25/2024 0:30	7.2	13.1	0.0	7.0	11.0	1.3	9.3
12/25/2024 0:45	7.3	17.8	0.0	6.8	14.9	1.1	12/25/2024 0:45	7.2	13.4	0.0	6.9	11.0	0.4	8.4
12/25/2024 1:00	7.3	17.8	0.0	6.8	14.9	1.7	12/25/2024 1:00	7.2	13.2	0.0	6.9	10.9	0.4	8.4
12/25/2024 1:15	7.6	32.8	0.0	7.3	14.8	1.7	12/25/2024 1:15	7.2	13.3	0.0	6.9	11.0	0.1	8.1
12/25/2024 1:30	7.6	33.0	0.0	7.3	14.8	1.2	12/25/2024 1:30	7.2	13.1	0.0	7.0	11.0	0.5	8.5
12/25/2024 1:45	7.6	33.3	0.0	7.3	14.8	1.5	12/25/2024 1:45	7.2	13.4	0.0	7.0	11.0	0.6	8.6
12/25/2024 2:00	7.5	28.9	0.0	7.2	14.8	1.1	12/25/2024 2:00	7.2	13.4	0.0	7.0	10.9	4.0	12.0
12/25/2024 2:15	7.2	18.2	0.0	6.8	14.9	1.5	12/25/2024 2:15	7.2	13.6	0.0	7.0	11.0	1.0	9.0
12/25/2024 2:30	7.2	18.1	0.0	6.8	14.9	2.5	12/25/2024 2:30	7.2	13.4	0.0	7.0	11.0	0.1	8.1
12/25/2024 2:45	7.2	18.2	0.0	6.8	14.9	1.8	12/25/2024 2:45	7.2	13.8	0.0	7.0	11.0	2.9	10.9
12/25/2024 3:00	7.2	18.2	0.0	6.8	14.9	3.4	12/25/2024 3:00	7.2	13.4	0.0	7.0	11.0	0.4	8.4
12/25/2024 3:15	7.2	18.2	0.0	6.8	14.9	1.1	12/25/2024 3:15	7.2	13.7	0.0	7.0	11.0	0.1	8.1
12/25/2024 3:30	7.2	18.1	0.0	6.8	14.9	1.8	12/25/2024 3:30	7.2	13.6	0.0	6.9	11.0	0.2	8.2
12/25/2024 3:45	7.2	18.1	0.0	6.8	14.9	1.7	12/25/2024 3:45	7.2	13.7	0.0	7.0	11.0	0.2	8.2
12/25/2024 4:00	7.2	18.2	0.0	6.8	14.9	1.5	12/25/2024 4:00	7.2	13.7	0.0	7.0	11.0	0.1	8.1
12/25/2024 4:15	7.5	33.7	0.0	7.3	14.8	2.6	12/25/2024 4:15	7.2	13.8	0.0	7.0	11.0	0.1	8.1
12/25/2024 4:30	7.5	34.4	0.0	7.3	14.8	1.6	12/25/2024 4:30	7.1	13.4	0.0	7.0	11.0	0.2	8.2
12/25/2024 4:45	7.2	18.4	0.0	6.8	14.9	1.7	12/25/2024 4:45	7.1	13.6	0.0	7.0	10.9	0.1	8.1
12/25/2024 5:00	7.2	18.2	0.0	6.8	14.9	1.9	12/25/2024 5:00	7.1	13.3	0.0	7.0	11.0	0.7	8.7
12/25/2024 5:15	7.2	18.1	0.0	6.8	14.9	1.5	12/25/2024 5:15	7.1	13.6	0.0	7.0	11.0	0.1	8.1
12/25/2024 5:30	7.1	18.0	0.0	6.8	14.9	1.2	12/25/2024 5:30	7.1	13.2	0.0	6.9	11.0	0.1	8.1
12/25/2024 5:45	7.1	18.1	0.0	6.8	14.9	0.9	12/25/2024 5:45	7.1	13.5	0.0	6.9	11.0	1.3	9.3
12/25/2024 6:00	7.5	34.5	0.0	7.3	14.8	1.0	12/25/2024 6:00	7.1	13.3	0.0	7.0	11.0	0.3	8.3
12/25/2024 6:15	7.5	34.8	0.0	7.3	14.8	1.2	12/25/2024 6:15	7.1	13.5	0.0	6.9	11.0	0.1	8.1
12/25/2024 6:30	7.5	34.9	0.0	7.3	14.8	1.5	12/25/2024 6:30	7.1	13.3	0.0	7.0	11.0	2.2	10.2
12/25/2024 6:45	7.2	18.6	0.0	6.9	14.9	3.3	12/25/2024 6:45	7.1	13.4	0.0	6.9	11.0	0.2	8.2
12/25/2024 7:00	7.1	18.1	0.0	6.8	14.9	1.6	12/25/2024 7:00	7.1	13.2	0.0	6.9	11.0	3.2	11.2
12/25/2024 7:15	7.1	18.0	0.0	6.8	14.9	2.1	12/25/2024 7:15	7.1	13.4	0.0	6.9	11.0	0.2	8.2
12/25/2024 7:30	7.1	17.9	0.0	6.8	14.9	1.5	12/25/2024 7:30	7.1	13.2	0.0	6.9	11.0	0.2	8.2
12/25/2024 7:45	7.1	17.9	0.0	6.8	14.9	1.4	12/25/2024 7:45	7.1	13.3	0.0	6.9	11.0	0.7	8.7
12/25/2024 8:00	7.1	17.9	0.0	6.8	14.9	1.5	12/25/2024 8:00	7.1	13.2	0.0	6.9	11.0	0.3	8.3
12/25/2024 8:15	7.1	17.8	0.0	6.8	14.9	1.2	12/25/2024 8:15	7.1	13.3	0.0	7.0	11.0	0.2	8.2
12/25/2024 8:30	7.1	17.9	0.0	6.8	14.9	1.3	12/25/2024 8:30	7.1	13.0	0.0	7.0	10.9	0.4	8.4
12/25/2024 8:45	7.4	34.9	0.0	7.3	14.8	1.3	12/25/2024 8:45	7.1	13.4	0.0	7.0	11.0	0.1	8.1
12/25/2024 9:00	7.5	35.1	0.0	7.3	14.8	1.7	12/25/2024 9:00	7.1	13.2	0.0	6.9	10.9	0.4	8.4
12/25/2024 9:15	7.5	35.3	0.0	7.3	14.8	1.1	12/25/2024 9:15	7.1	13.4	0.0	7.0	10.9	0.1	8.1
12/25/2024 9:30	7.5	35.4	0.0	7.3	14.8	1.2	12/25/2024 9:30	7.1	13.6	0.0	7.0	11.0	0.7	8.7
12/25/2024 9:45	7.1	18.9	0.0	6.9	14.9	1.0	12/25/2024 9:45	7.0	14.3	0.0	7.0	11.0	0.2	8.2
12/25/2024 10:00	7.1	18.9	0.0	6.8	14.9	4.5	12/25/2024 10:00	7.0	14.3	0.0	7.0	10.9	0.4	8.4
12/25/2024 10:15	7.0	19.2	0.0	6.8	14.9	1.0	12/25/2024 10:15	7.0	15.2	0.0	7.0	11.0	2.1	10.1
12/25/2024 10:30	7.0	19.5	0.0	6.8	14.9	2.1	12/25/2024 10:30	7.0	15.2	0.0	7.1	11.0	0.3	8.3
12/25/2024 10:45	7.0	19.7	0.0	6.8	14.9	1.2	12/25/2024 10:45	7.0	16.2	0.0	7.0	11.0	1.9	9.9
12/25/2024 11:00	7.0	20.4	0.0	6.9	14.9	2.8	12/25/2024 11:00	7.0	16.3	0.0	7.0	11.0	0.8	8.8
12/25/2024 11:15	7.0	20.8	0.0	6.9	14.9	1.5	12/25/2024 11:15	7.0	16.8	0.0	7.0	11.0	0.2	8.2
12/25/2024 11:30	7.0	20.9	0.0	6.9	14.9	2.1	12/25/2024 11:30	6.9	16.4	0.0	7.1	11.0	0.2	8.2
12/25/2024 11:45	7.0	20.7	0.0	6.9	14.9	1.4	12/25/2024 11:45	6.9	16.3	0.0	7.1	11.0	0.5	8.5
12/25/2024 12:00	7.4	37.4	0.0	7.3	14.8	1.3	12/25/2024 12:00	6.9	16.3	0.0	7.0	11.0	0.5	8.5
12/25/2024 12:15	7.4	37.5	0.0	7.4	14.8	1.7	12/25/2024 12:15	7.0	16.4	0.0	7.1	11.0	0.2	8.2
12/25/2024 12:30	7.4	37.6	0.0	7.4	14.7	1.5	12/25/2024 12:30	7.0	16.8	0.0	7.0	10.9	5.4	13.4
12/25/2024 12:45	7.4	37.6	0.0	7.3	14.8	2.1	12/25/2024 12:45	7.0	17.0	0.0	7.1	10.9	0.8	8.8
12/25/2024 13:00	7.0	22.8	0.0	7.1	14.9	1.6	12/25/2024 13:00	6.9	16.5	0.0	7.1	10.9	6.5	14.5
12/25/2024 13:15	7.0	21.3	0.0	6.9	14.9	2.4	12/25/2024 13:15	6.9	17.6	0.0	7.1	10.9	0.1	8.1
12/25/2024 13:30	7.0	21.8	0.0	6.9	14.9	1.5	12/25/2024 13:30	6.9	18.1	0.0	7.1	11.0	0.8	8.8
12/25/2024 13:45	6.9	22.5	0.0	6.9	14.9	1.3	12/25/2024 13:45	6.9	19.7	0.0	7.2	11.0	0.9	8.9
12/25/2024 14:00	6.9	23.7	0.0	6.9	14.9	1.5	12/25/2024 14:00	6.9	21.0	0.0	7.2	11.0	2.3	10.3
12/25/2024 14:15	6.9	24.7	0.0	6.9	14.9	1.8	12/25/2024 14:15	6.8	21.2	0.0	7.1	11.0	1.3	9.3
12/25/2024 14:30	6.9	25.1	0.0	6.9	14.9	2.2	12/25/2024 14:30	6.8	21.9	0.0	7.2	11.0	0.9	8.9
12/25/2024 14:45	6.8	26.0	0.0	7.0	14.9	3.2	12/25/2024 14:45	6.8	23.7	0.0	7.2	11.0	1.1	9.1
12/25/2024 15:00	6.8	27.3	0.0	7.0	14.9	3.3	12/25/2024 15:00	6.8	24.4	0.0	7.3	11.0	1.6	9.6
12/25/2024 15:15	7.1	40.9	0.0	7.3	14.8	2.5	12/25/2024 15:15	6.7	24.6	0.0	7.2	11.0	0.6	8.6
12/25/2024 15:30	7.1	41.2	0.0	7.3	14.8	7.5	12/25/2024 15:30	6.8	25.3	0.0	7.2	11.0	2.3	10.3
12/25/2024 15:45	7.1	41.9	0.0	7.3	14.8	2.2	12/25/2024 15:45	6.7	25.7	0.0	7.2	11.0	2.6	10.6
12/25/2024 16:00	7.1	41.9	0.0	7.3	14.8	3.1	12/25/2024 16:00	6.7	25.0	0.0	7.3	11.0	1.9	9.9
12/25/2024 16:15	6.7	28.6	0.0	7.0	15.0	1.9	12/25/2024 16:15	6.7	24.9	0.0	7.3	11.0	0.8	8.8
12/25/2024 16:30	6.7	28.3	0.0	7.0	15.0	2.0	12/25/2024 16:30	6.7	24.5	0.0	7.3	11.0	0.8	8.8
12/25/2024 16:45	6.7	28.1	0.0	7.0	15.0	2.9	12/25/2024 16:45	6.7	25.6	0.0	7.2	11.0	2.7	10.7
12/25/2024 17:00	6.7	29.0	0.0	7.0	14.9	3.4	12/25/2024 17:00	6.6	26.2	0.0	7.3	11.0	4.3	12.3
12/25/2024 17:15	6.6	29.6	0.0	7.0	15.0	3.2	12/25/2024 17:15	6.6	26.2	0.0	7.3	11.0	3.8	11.8
12/25/2024 17:30	6.6	29.2	0.0	7.0	15.0	3.2	12/25/2024 17:30	6.6	25.1	0.0	7.3	11.0	2.8	10.8
12/25/2024 17:45	6.6	28.6	0.0	7.0	15.0	5.6	12/25/2024 17:45	6.6	24.4	0.0	7.2	11.0	0.9	8.9
12/25/2024 18:00	6.6	27.7	0.0	7.0	14.9	4.4	12/25/2024 18:00	6.6	23.4	0.0	7.3	11.0	1.0	9.0
12/25/2024 18:15	6.9	38.8	0.0	7.3	14.9	2.5	12/25/2024 18:15	6.6	22.8	0.0	7.1	11.0	6.3	14.3
12/25/2024 18:30	7.0	38.3	0.0	7.3	14.9	2.1	12/25/2024 18:30	6.6	21.7	0.0	7.3	11.0	0.8	8.8
12/25/2024 18:45	7.0	37.7	0.0	7.3	14.8	2.2	12/25/2024 18:45	6.6	21.5	0.0	7.2	11.0	0.4	8.4
12/25/2024 19:00	7.0	37.2	0.0	7.3	14.8	2.1	12/25/2024 19:00	6.6	21.5	0.0	7.2	11.0	1.6	9.6
12/25/2024 19:15	7.0	37.0	0.0	7.3	14.8	2.6	12/25/2024 19:15	6.7	21.3	0.0	7.2	11.0	6.0	14.0
12/25/2024 19:30	6.7	26.5	0.0	7.1	14.9	4.0	12/25/2024 19:30	6.7	20.6	0.0	7.2	11.0	3.7	11.7
12/25/2024 19:45	6.7	24.6	0.0	6.9	14.9	5.4	12/25/2024 19:45	6.7	20.6	0.0	7.2	11.0	0.4	8.4
12/25/2024 20:00	6.7	24.2	0.0	6.9	14.9	1.6	12/25/2024 20:00	6.7	20.0	0.0	7.2	11.0	2.2	10.2
12/25/2024 20:15	6.7	23.8	0.0	6.9	15.0	2.5	12/25/2024 20:15	6.7	19.9	0.0	7.2	11.0	0.8	8.8
12/25/2024 20:30	6.7	23.8	0.0	6.9	14.9	2.5	12/25/2024 20:30	6.7	19.6	0.0	7.2	11.0	0.4	8.4
12/25/2024 20:45	6.7	23.5	0.0	6.9	14.9	4.4	12/25/2024 20:45	6.7	19.7	0.0	7.1	11.0	1.2	9.2
12/25/2024 21:00	6.7	23.4	0.0	6.9	14.9	1.9	12/25/2024 21:00	6.7	19.2	0.0	7.1	11.0	3.1	11.1
12/25/2024 21:15	6.7	23.3	0.0	6.9	14.9	3.1	12/25/2024 21:15	6.7	19.7	0.0	7.2	11.0	1.3	9.3
12/25/2024 21:30	6.9	34.2	0.0	7.2	14.8	1.8	12/25/2024 21:30	6.7	20.2	0.0	7.2	10.9	0.6	8.6
12/25/2024 21:45	6.9	34.9	0.0	7.2	14.8	4.1	12/25/2024 21:45	6.7	20.4	0.0	7.2	10.9	1.6	9.6
12/25/2024 22:00	6.9	34.8	0.0	7.2	14.8	3.1	12/25/2024 22:00	6.7	20.4	0.0	7.2	10.9	4.0	12.0
12/25/2024 22:15	6.9	34.8	0.0	7.2	14.8	3.0	12/25/2024 22:15	6.7	20.9	0.0	7.2	10.9	1.9	9.9
12/25/2024 22:30	6.6	24.5	0.0	6.9	14.9	4.2	12/25/2024 22:30	6.7	20.6	0.0	7.2	10.9	10.7	15.7
12/25/2024 22:45	6.6	24.3	0.0	6.9	14.9	3.7	12/25/2024 22:45	6.7	20.6	0.0	7.2	10.9	0.9	8.9
12/25/2024 23:00	6.6	24.0	0.0	6.9	14.9	4.1	12/25/2024 23:00	6.7	20.2	0.0	7.2	10.9	1.3	9.3
12/25/2024 23:15	6.6	23.8	0.0	6.9	14.9	3.0	12/25/2024 23:15	6.7	20.2	0.0	7.1	10.9	3.2	11.2
12/25/2024 23:30	6.6	23.7	0.0	6.9	14.9	2.0	12/25/2024 23:30	6.6	20.0	0.0	7.2	10.9	14.5	19.5
12/25/2024 23:45	6.6	23.7	0.0	6.9	14.9	3.0	12/25/2024 23:45	6.6	20.2	0.0	7.1	10.9	1.8	9.8
12/26/2024 0:00	6.6	23.6	0.0	6.9	14.9	2.0	12/26/2024 0:00	6.6	19.8	0.0	7.1	10.9	2.5	10.5
12/26/2024 0:15	6.8	33.8	0.0	7.2	14.8	2.7	12/26/2024 0:15	6.6	19.8	0.0	7.2	10.9	1.6	9.6
12/26/2024 0:30	6.6	23.3	0.0	6.9	14.9	1.9	12/26/2024 0:30	6.6	19.5	0.0	7.1	10.9	12.0	17.0
12/26/2024 0:45	6.7	29.4	0.0	6.9	14.9	5.4	12/26/2024 0:45	6.6	19.8	0.0	7.2	10.9	1.0	9.0
12/26/2024 1:00	6.8	33.4	0.0	7.2	14.7	3.1	12/26/2024 1:00	6.6	20.1	0.0	7.2	10.9	7.6	15.6
12/26/2024 1:15	6.8	34.0	0.0	7.2	14.8	2.5	12/26/2024 1:15	6.6	20.9	0.0	7.2	10.9	2.0	10.0
12/26/2024 1:30	6.8	34.1	0.0	7.2	14.8	3.2	12/26/2024 1:30	6.6	21.3	0.0	7.2	10.9	1.9	9.9
12/26/2024 1:45	6.8	34.3	0.0	7.2	14.8	3.1	12/26/2024 1:45	6.6	21.9	0.0	7.2	10.9	3.5	11.5
12/26/2024 2:00	6.6	25.0	0.0	6.9	14.9	2.9	12/26/2024 2:00	6.6	21.4	0.0	7.2	10.9	2.4	10.4
12/26/2024 2:15	6.5	24.7	0.0	6.9	14.8	3.6	12/26/2024 2:15	6.6	21.2	0.0	7.2	10.9	3.5	11.5
12/26/2024 2:30	6.5	24.4	0.0	6.9	14.8	2.4	12/26/2024 2:30	6.6	21.1	0.0	7.2	10.9	2.5	10.5
12/26/2024 2:45	6.5	24.3	0.0	6.9	14.9	2.8	12/26/2024 2:45	6.6	21.4	0.0	7.1	10.9	1.5	9.5
12/26/2024 3:00	6.5	24.2	0.0	6.9	14.9	4.3	12/26/2024 3:00	6.6	20.9	0.0	7.2	10.9	3.2	11.2

12/26/2024 3:15	6.5	24.2	0.0	6.9	14.8	6.1	12/26/2024 3:15	6.6	21.2	0.0	7.2	10.9	1.1	9.1
12/26/2024 3:30	6.5	24.1	0.0	6.9	14.8	3.3	12/26/2024 3:30	6.6	20.6	0.0	7.2	10.9	2.6	10.6
12/26/2024 3:45	6.7	32.1	0.0	7.1	14.8	4.6	12/26/2024 3:45	6.5	21.0	0.0	7.2	10.9	0.7	8.7
12/26/2024 4:00	6.7	32.2	0.0	7.2	14.8	3.6	12/26/2024 4:00	6.5	20.6	0.0	7.2	10.9	5.6	13.6
12/26/2024 4:15	6.5	23.9	0.0	6.9	14.8	5.6	12/26/2024 4:15	6.5	20.8	0.0	7.1	10.9	5.2	13.2
12/26/2024 4:30	6.5	23.8	0.0	6.9	14.8	3.1	12/26/2024 4:30	6.5	20.8	0.0	7.2	10.9	2.6	10.6
12/26/2024 4:45	6.5	23.8	0.0	6.9	14.9	3.8	12/26/2024 4:45	6.5	21.1	0.0	7.2	11.0	3.2	11.2
12/26/2024 5:00	6.5	24.1	0.0	6.9	14.9	5.6	12/26/2024 5:00		21.2	0.0	7.2	10.9	3.0	11.0
12/26/2024 5:15	6.6	31.5	0.0	7.1	14.8	6.5	12/26/2024 5:15	6.5	21.1	0.0	7.2	10.9	4.6	12.6
12/26/2024 5:30	6.6	31.1	0.0	7.1	14.8	4.0	12/26/2024 5:30	6.5	20.5	0.0	7.2	10.9	5.7	13.7
12/26/2024 5:45	6.6	30.8	0.0	7.1	14.8	3.7	12/26/2024 5:45	6.5	20.3	0.0	7.2	11.0	2.0	10.0
12/26/2024 6:00	6.6	30.4	0.0	7.1	14.8	4.3	12/26/2024 6:00	6.5	19.7	0.0	7.2	11.0	2.5	10.5
12/26/2024 6:15	6.5	22.9	0.0	6.9	14.9	3.4	12/26/2024 6:15	6.5	19.7	0.0	7.1	11.0	4.1	12.1
12/26/2024 6:30	6.5	22.5	0.0	6.9	14.9	4.8	12/26/2024 6:30	6.5	18.9	0.0	7.2	11.0	4.1	12.1
12/26/2024 6:45	6.4	22.1	0.0	6.9	14.9	5.5	12/26/2024 6:45	6.5	19.2	0.0	7.2	11.0	5.0	13.0
12/26/2024 7:00	6.4	22.3	0.0	6.8	14.9	8.3	12/26/2024 7:00	6.4	19.7	0.0	7.2	11.0	2.0	10.0
12/26/2024 7:15	6.4	22.9	0.0	6.9	14.9	7.6	12/26/2024 7:15	6.4	20.5	0.0	7.1	11.0	4.2	12.2
12/26/2024 7:30	6.4	23.2	0.0	6.8	14.9	5.6	12/26/2024 7:30	6.4	20.5	0.0	7.1	11.0	5.7	13.7
12/26/2024 7:45	6.4	23.3	0.0	6.9	14.9	7.7	12/26/2024 7:45	6.4	20.7	0.0	7.2	11.0	4.7	12.7
12/26/2024 8:00	6.5	28.9	0.0	7.1	14.9	8.3	12/26/2024 8:00	6.4	20.5	0.0	7.2	11.0	6.2	14.2
12/26/2024 8:15	6.5	28.6	0.0	7.1	14.9	8.9	12/26/2024 8:15	6.4	20.5	0.0	7.2	11.0	6.2	14.2
12/26/2024 8:30	6.5	28.3	0.0	7.1	14.9	6.2	12/26/2024 8:30	6.4	20.1	0.0	7.1	11.0	8.1	13.1
12/26/2024 8:45	6.5	27.8	0.0	7.0	14.9	5.8	12/26/2024 8:45	6.4	19.9	0.0	7.1	11.0	4.8	12.8
12/26/2024 9:00	6.3	22.2	0.0	6.8	14.9	7.2	12/26/2024 9:00	6.4	19.4	0.0	7.2	11.0	16.0	21.0
12/26/2024 9:15	6.3	22.0	0.0	6.9	15.0	8.1	12/26/2024 9:15	6.3	19.3	0.0	7.1	11.0	7.5	15.5
12/26/2024 9:30	6.3	21.8	0.0	6.9	15.0	7.0	12/26/2024 9:30	6.3	18.6	0.0	7.1	11.0	6.1	14.1
12/26/2024 9:45	6.3	21.5	0.0	6.8	15.0	8.8	12/26/2024 9:45	6.3	18.8	0.0	7.1	11.0	1.6	9.6
12/26/2024 10:00	6.3	21.3	0.0	6.8	15.0	8.5	12/26/2024 10:00	6.3	18.5	0.0	7.1	11.0	4.6	12.6
12/26/2024 10:15	6.3	21.2	0.0	6.8	15.0	7.3	12/26/2024 10:15	6.3	18.6	0.0	7.1	11.0	4.3	12.3
12/26/2024 10:30	6.3	20.9	0.0	6.8	15.0	6.6	12/26/2024 10:30	6.4	17.9	0.0	6.9	11.0	3.9	11.9
12/26/2024 10:45	6.3	20.6	0.0	6.8	15.0	7.6	12/26/2024 10:45	6.4	17.8	0.0	7.1	11.0	1.9	9.9
12/26/2024 11:00	6.4	25.0	0.0	6.9	15.0	8.2	12/26/2024 11:00	6.4	17.5	0.0	7.1	11.0	3.1	11.1
12/26/2024 11:15	6.5	25.1	0.0	7.0	15.0	6.6	12/26/2024 11:15	6.4	17.2	0.0	7.0	11.0	1.3	9.3
12/26/2024 11:30	6.5	24.8	0.0	7.0	15.0	5.4	12/26/2024 11:30	6.4	16.9	0.0	7.0	11.0	3.1	11.1
12/26/2024 11:45	6.5	24.6	0.0	7.0	15.0	3.9	12/26/2024 11:45	6.4	16.8	0.0	7.0	11.0	3.1	11.1
12/26/2024 12:00	6.5	24.4	0.0	7.0	15.0	4.7	12/26/2024 12:00	6.4	16.4	0.0	7.0	11.0	1.2	9.2
12/26/2024 12:15	6.5	24.1	0.0	7.0	14.9	4.6	12/26/2024 12:15	6.5	16.3	0.0	6.9	11.0	1.2	9.2
12/26/2024 12:30	6.5	19.1	0.0	6.7	15.0	5.5	12/26/2024 12:30	6.5	15.9	0.0	7.0	11.0	4.4	12.4
12/26/2024 12:45	6.5	18.8	0.0	6.8	15.0	4.9	12/26/2024 12:45	6.5	15.8	0.0	7.0	11.0	1.3	9.3
12/26/2024 13:00	6.5	18.6	0.0	6.7	15.0	4.8	12/26/2024 13:00	6.6	15.5	0.0	7.0	11.0	3.7	11.7
12/26/2024 13:15	6.6	18.4	0.0	6.7	15.0	3.5	12/26/2024 13:15	6.6	15.4	0.0	7.0	11.0	0.5	8.5
12/26/2024 13:30	6.6	18.3	0.0	6.7	14.9	3.5	12/26/2024 13:30	6.7	15.1	0.0	7.0	11.0	1.7	9.7
12/26/2024 13:45	6.6	18.2	0.0	6.7	14.9	4.4	12/26/2024 13:45	6.7	14.9	0.0	6.9	11.0	1.3	9.3
12/26/2024 14:00	6.8	23.7	0.0	6.9	14.9	3.4	12/26/2024 14:00	6.7	14.8	0.0	7.0	11.0	1.2	9.2
12/26/2024 14:15	6.8	22.1	0.0	7.0	14.9	5.3	12/26/2024 14:15	6.7	14.7	0.0	7.0	11.0	4.9	12.9
12/26/2024 14:30	6.9	23.8	0.0	7.0	14.9	2.9	12/26/2024 14:30	6.8	14.6	0.0	7.0	11.0	2.8	10.8
12/26/2024 14:45	6.9	24.0	0.0	7.0	14.9	3.7	12/26/2024 14:45	6.8	14.6	0.0	6.9	11.0	1.3	9.3
12/26/2024 15:00	6.9	19.9	0.0	7.0	14.9	3.8	12/26/2024 15:00	6.8	14.4	0.0	7.0	11.0	11.4	16.4
12/26/2024 15:15	6.8	17.7	0.0	6.7	14.9	3.3	12/26/2024 15:15	6.8	14.4	0.0	7.0	11.0	17.6	22.6
12/26/2024 15:30	6.8	17.7	0.0	6.7	14.9	3.0	12/26/2024 15:30	6.8	14.3	0.0	7.0	11.0	0.6	8.6
12/26/2024 15:45	6.8	17.6	0.0	6.7	14.9	2.9	12/26/2024 15:45	6.8	14.4	0.0	6.9	11.0	2.1	10.1
12/26/2024 16:00	6.8	17.6	0.0	6.7	14.9	3.9	12/26/2024 16:00	6.8	13.9	0.0	7.0	11.0	1.4	9.4
12/26/2024 16:15	6.9	17.5	0.0	6.7	14.9	4.4	12/26/2024 16:15	6.9	14.3	0.0	6.9	11.0	0.2	8.2
12/26/2024 16:30	6.9	17.5	0.0	6.8	14.9	5.4	12/26/2024 16:30	6.9	14.0	0.0	7.0	11.0	3.5	11.5
12/26/2024 16:45	6.9	17.5	0.0	6.7	14.9	5.3	12/26/2024 16:45	6.9	14.2	0.0	6.9	10.9	1.1	9.1
12/26/2024 17:00	6.9	17.6	0.0	6.7	14.9	3.5	12/26/2024 17:00	6.9	14.2	0.0	7.0	10.9	1.5	9.5
12/26/2024 17:15	6.9	17.6	0.0	6.7	14.9	3.7	12/26/2024 17:15	6.9	14.3	0.0	6.8	10.9	1.1	9.1
12/26/2024 17:30	7.0	25.3	0.0	7.0	14.9	4.3	12/26/2024 17:30	6.9	14.1	0.0	7.0	10.9	1.0	9.0
12/26/2024 17:45	7.1	25.9	0.0	7.0	14.8	3.0	12/26/2024 17:45	6.9	14.3	0.0	7.0	10.9	1.2	9.2
12/26/2024 18:00	7.1	26.2	0.0	7.1	14.8	2.5	12/26/2024 18:00	6.9	13.9	0.0	7.0	10.9	4.9	12.9
12/26/2024 18:15	7.0	24.3	0.0	7.0	14.9	2.1	12/26/2024 18:15	6.9	14.1	0.0	6.9	10.9	0.4	8.4
12/26/2024 18:30	6.9	17.6	0.0	6.8	14.9	1.8	12/26/2024 18:30	6.9	14.0	0.0	7.0	10.9	2.5	10.5
12/26/2024 18:45	6.9	17.6	0.0	6.7	14.9	2.7	12/26/2024 18:45	6.9	14.2	0.0	7.0	10.9	4.8	12.8
12/26/2024 19:00	6.9	17.6	0.0	6.7	14.9	3.2	12/26/2024 19:00	6.8	13.9	0.0	7.0	10.9	3.0	11.0
12/26/2024 19:15	6.9	17.6	0.0	6.7	14.9	2.7	12/26/2024 19:15	6.8	14.1	0.0	7.0	10.9	0.5	8.5
12/26/2024 19:30	6.9	17.6	0.0	6.7	14.9	1.7	12/26/2024 19:30	6.9	13.8	0.0	6.9	10.9	0.9	8.9
12/26/2024 19:45	6.9	17.5	0.0	6.7	14.9		12/26/2024 19:45	6.9	14.0	0.0	7.0	10.9	1.0	9.0
12/26/2024 20:00	6.9	17.5	0.0	6.7	14.9	1.7	12/26/2024 20:00	6.8	13.8	0.0	6.9	11.0	3.6	11.6
12/26/2024 20:15	7.0	24.8	0.0	7.1	14.8	1.7	12/26/2024 20:15	6.8	13.9	0.0	6.9	10.9	1.2	9.2
12/26/2024 20:30	7.1	27.4	0.0	7.1	14.8	1.9	12/26/2024 20:30	6.8	13.7	0.0	7.0	11.0	1.1	9.1
12/26/2024 20:45	7.1	27.8	0.0	7.1	14.8	1.9	12/26/2024 20:45	6.8	14.4	0.0	7.0	11.0	0.3	8.3
12/26/2024 21:00	6.8	18.0	0.0	6.7	14.9	2.7	12/26/2024 21:00	6.8	14.3	0.0	7.0	11.0	0.8	8.8
12/26/2024 21:15	6.8	18.0	0.0	6.8	14.9	2.3	12/26/2024 21:15	6.8	14.8	0.0	7.0	11.0	0.6	8.6
12/26/2024 21:30	6.8	18.3	0.0	6.7	14.9	1.9	12/26/2024 21:30	6.8	14.8	0.0	7.0	11.0	3.3	11.3
12/26/2024 21:45	6.8	18.3	0.0	6.7	14.9	3.0	12/26/2024 21:45	6.8	14.8	0.0	7.0	10.9	1.1	9.1
12/26/2024 22:00	6.8	18.2	0.0	6.8	14.9	2.0	12/26/2024 22:00	6.8	14.2	0.0	7.0	10.9	0.9	8.9
12/26/2024 22:15	7.0	28.5	0.0	7.1	14.8	2.1	12/26/2024 22:15	6.7	14.7	0.0	6.9	11.0	0.2	8.2
12/26/2024 22:30	7.0	29.0	0.0	7.2	14.8	1.7	12/26/2024 22:30	6.7	14.1	0.0	6.9	11.0	0.5	8.5
12/26/2024 22:45	7.0	29.1	0.0	7.1	14.9	2.8	12/26/2024 22:45	6.7	14.6	0.0	7.0	11.0	0.1	8.1
12/26/2024 23:00	7.0	29.2	0.0	7.2	14.9	1.4	12/26/2024 23:00	6.7	14.4	0.0	7.0	11.0	1.1	9.1
12/26/2024 23:15	7.0	29.1	0.0	7.2	14.9	1.8	12/26/2024 23:15	6.7	14.4	0.0	7.0	11.0	0.3	8.3
12/26/2024 23:30	6.8	18.2	0.0	6.8	14.9	2.7	12/26/2024 23:30	6.7	14.1	0.0	7.0	11.0	2.4	10.4
12/26/2024 23:45	6.7	18.0	0.0	6.7	14.9	1.4	12/26/2024 23:45	6.7	15.4	0.0	7.0	11.0	0.2	8.2
12/27/2024 0:00	6.7	19.0	0.0	6.8	15.0	2.3	12/27/2024 0:00	6.7	15.4	0.0	7.0	11.0	0.4	8.4
12/27/2024 0:15	6.7	19.2	0.0	6.8	15.0	4.2	12/27/2024 0:15	6.7	15.6	0.0	6.9	11.0	0.2	8.2
12/27/2024 0:30	6.7	19.0	0.0	6.7	15.0	1.8	12/27/2024 0:30	6.7	15.2	0.0	7.0	11.0	1.0	9.0
12/27/2024 0:45	6.7	18.8	0.0	6.8	14.9	1.6	12/27/2024 0:45	6.7	15.3	0.0	7.0	11.0	2.7	10.7
12/27/2024 1:00	6.7	18.7	0.0	6.7	14.9	1.8	12/27/2024 1:00	6.7	15.0	0.0	7.0	11.0	2.6	10.6
12/27/2024 1:15	6.7	18.7	0.0	6.8	14.9	2.4	12/27/2024 1:15	6.7	15.2	0.0	7.0	11.0	0.2	8.2
12/27/2024 1:30	6.8	27.5	0.0	6.9	14.9	2.2	12/27/2024 1:30	6.7	14.8	0.0	7.0	11.0	0.2	8.2
12/27/2024 1:45	6.7	18.9	0.0	6.8	14.9	1.4	12/27/2024 1:45	6.6	15.1	0.0	7.0	11.0	1.5	9.5
12/27/2024 2:00	6.7	18.6	0.0	6.8	14.9	1.5	12/27/2024 2:00	6.6	14.8	0.0	6.9	11.0	4.0	12.0
12/27/2024 2:15	6.9	30.4	0.0	7.2	14.9	1.8	12/27/2024 2:15	6.6	14.8	0.0	7.0	11.0	0.6	8.6
12/27/2024 2:30	7.0	30.8	0.0	7.2	14.8	2.7	12/27/2024 2:30	6.6	14.6	0.0	7.0	11.0	2.4	10.4
12/27/2024 2:45	7.0	30.9	0.0	7.2	14.8	2.2	12/27/2024 2:45	6.6	14.6	0.0	7.0	11.0	0.9	8.9
12/27/2024 3:00	6.7	19.3	0.0	6.9	14.9	1.5	12/27/2024 3:00	6.6	14.4	0.0	7.0	11.0	0.9	8.9
12/27/2024 3:15	6.7	18.4	0.0	6.8	14.9	1.9	12/27/2024 3:15	6.6	14.5	0.0	7.0	10.9	0.3	8.3
12/27/2024 3:30	6.7	18.4	0.0	6.8	14.9	3.7	12/27/2024 3:30	6.6	14.1	0.0	6.9	11.0	0.7	8.7
12/27/2024 3:45	6.7	18.2	0.0	6.7	14.9	2.4	12/27/2024 3:45	6.6	14.5	0.0	6.8	11.0	1.2	9.2
12/27/2024 4:00	6.7	18.2	0.0	6.8	14.9	1.7	12/27/2024 4:00	6.6	13.9	0.0	7.0	11.0	3.0	11.0
12/27/2024 4:15	6.7	18.2	0.0	6.8	14.9	2.1	12/27/2024 4:15	6.6	14.3	0.0	6.8	11.0	0.2	8.2
12/27/2024 4:30	6.6	18.1	0.0	6.8	14.9	1.7	12/27/2024 4:30	6.6	14.0	0.0	7.0	11.0	2.7	10.7
12/27/2024 4:45	6.6	18.1	0.0	6.8	14.9	1.7	12/27/2024 4:45	6.6	14.2	0.0	6.9	11.0	0.3	8.3
12/27/2024 5:00	6.6	18.1	0.0	6.8	14.9	2.3	12/27/2024 5:00	6.6	13.9	0.0	7.0	11.0	0.2	8.2
12/27/2024 5:15	6.9	31.5	0.0	7.2	14.8	2.6	12/27/2024 5:15	6.6	14.1	0.0	7.0	11.0	0.1	8.1
12/27/2024 5:30	6.9	31.8	0.0	7.2	14.8	1.3	12/27/2024 5:30	6.6	13.9	0.0	6.9	11.0	4.2	12.2
12/27/2024 5:45	6.9	32.0	0.0	7.2	14.8	1.9	12/27/2024 5:45	6.6	14.0	0.0	7.0	11.0	0.5	8.5
12/27/2024 6:00	6.6	18.4	0.0	6.9	15.0	1.3	12/27/2024 6:00	6.6	13.7	0.0	6.9	11.0	0.2	8.2
12/27/2024 6:15	6.6	18.1	0.0	6.8	15.0	1.8	12/27/2024 6:15	6.6	13.8	0.0	6.9	11.0	0.1	8.1
12/27/2024 6:30	6.6	18.0	0.0	6.8	15.0	2.1	12/27/2024 6:30	6.6	13.5	0.0	7.0	11.0	0.6	8.6
12/27/2024 6:45	6.6	18.0	0.0	6.8	15.0	1.3	12/27/2024 6:45	6.6	13.8	0.0	6.9	11.0	0.7	8.7
12/27/2024 7:00	6.6	17.9	0.0	6.8	15.0	1.4	12/27/2024 7:00	6.6	13.4	0.0	6.9	11.0	2.0	10.0
12/27/2024 7:15	6.6	17.9	0.0	6.8	15.0	1.4	12/27/2024 7:15	6.6	13.7	0.0	6.9	11.0	1.9	9.9
12/27/2024 7:30	6.6	17.9	0.0	6.8	15.0	3.1	12/27/2024 7:30	6.6	13.6	0.0	6.9	11.0	0.1	8.1
12/27/2024 7:45	6.6	17.8	0.0	6.8	15.0	1.7	12/27/2024 7:45	6.5	13.6	0.0	6.9	11.0	0.2	8.2
12/27/2024 8:00	6.5	18.0	0.0	6.8	15.0	1.4	12/27/2024 8:00	6.5	13.3	0.0	6.9	11.0	0.8	8.8
12/27/2024 8:15	6.9	32.3	0.0	7.2	14.9	1.5	12/27/2024 8:15	6.5	13.6	0.0	7.0	11.0	0.2	8.2
12/27/2024 8:30	6.9	32.7	0.0	7.2	14.9	3.7	12/27/2024 8:30	6.5	13.3	0.0	6.9	11.0	0.1	8.1
12/27/2024 8:45	6.9	32.7	0.0	7.3	14.9	2.1	12/27/2024 8:45	6.5	13.5	0.0	6.9	11.0	2.2	10.2
12/27/2024 9:00	6.9	32.8	0.0	7.2	14.9	2.4	12/27/2024 9:00	6.5	13.4	0.0	6.9	11.0	1.6	9.6
12/27/2024 9:15	6.5	17.9	0.0	6.8	15.0	2.1	12/27/2024 9:15	6.5	13.5	0.0	7.0	11.0	0.8	8.8
12/27/2024 9:30	6.5	17.8	0.0	6.8	15.0	1.4	12/27/2024 9:30	6.5	13.3	0.0	6.8	11.0	0.5	8.5
12/27/2024 9:45	6.5	17.7	0.0	6.8	15.0	1.5	12/27/2024 9:45	6.5	13.4	0.0	7.0	11.0	0.2	8.2
12/27/2024 10:00	6.5	17.7	0.0	6.8	15.0	1.9	12/27/2024 10:00	6.5	13.3	0.0	7.0	11.0	0.8	8.8
12/27/2024 10:15	6.5	17.7	0.0	6.8	15.0	1.9	12/27/2024 10:15	6.5	13.4	0.0	6.9	11.0	0.3	8.3
12/27/2024 10:30	6.5	17.7	0.0	6.8	15.0	1.8	12/27/2024 10:30	6.5	13.1	0.0	7.0	11.0	0.2	8.2
12/27/2024 10:45	6.8	33.0	0.0	7.2	14.9	1.4	12/27/2024 10:45	6.5	13.3	0.0	6.9	11.0	0.3	8.3
12/27/2024 11:00	6.8	32.3	0.0	7.2	14.9	2.0	12/27/2024 11:00	6.5	13.2	0.0	6.9	11.0	0.2	8.2
12/27/2024 11:15	6.8	32.3	0.0	7.2	14.9	2.0	12/27/2024 11:15	6.5	13.3	0.0	7.0	11.0	0.2	8.2
12/27/2024 11:30	6.9	32.3	0.0	7.3	14.9	1.2	12/27/2024 11:30	6.5	13.0	0.0	6.9	11.0	2.6	10.6
12/27/2024 11:45	6.6	18.8	0.0	7.0	15.0	2.3	12/27/2024 11:45	6.5	13.2	0.0	7.0	11.0	0.4	8.4
12/27/2024 12:00	6.6	17.7	0.0	6.8	15.0	1.2	12/27/2024 12:00	6.6	13.0	0.0	6.9	11.0	0.1	8.1
12/27/2024 12:15	6.6	17.6	0.0	6.8	15.0	1.1	12/27/2024 12:15	6.6	13.2	0.0	7.0	11.0	0.4	8.4
12/27/2024 12:30	6.7	17.6	0.0	6.8	15.0	1.6	12/27/2024 12:30	6.6	12.9	0.0	6.9	11.0	0.4	8.4
12/27/2024 12:45	6.7	17.5	0.0	6.8	15.0	1.1	12/27/2024 12:45	6.7	13.1	0.0	6.9	11.0	0.1	8.1
12/27/2024 13:00	6.8	17.5	0.0	6.8	14.9	1.4	12/27/2024 13:00	6.7	13.0	0.0	7.0	11.0	0.8	8.8
12/27/2024 13:15	6.8	17.5	0.0	6.8	14.9	1.3	12/27/2024 13:15	6.7	13.0	0.0	6.9	11.0	0.2	8.2
12/27/2024 13:30	6.8	17.5	0.0	6.8	14.9	1.3	12/27/2024 13:30	6.8	12.9	0.0	6.9	11.0	1.8	9.8
12/27/2024 13:45	6.8	17.4	0.0	6.8	14.9	1.2	12/27/2024 13:45	6.8	12.9	0.0	7.0	11.0	0.4	8.4
12/27/2024 14:00	7.2	32.9	0.0	7.3	14.8	1.3	12/27/2024 14:00	6.8	12.9	0.0	7.0	11.0	0.1	8.1
12/27/2024 14:15	7.1	30.8	0.0	7.2	14.8	2.1	12/27/2024 14:15	6.8	12.9	0.0	6.9	11.0	0.5	8.5
12/27/2024 14:30	7.2	33.5	0.0	7.3	14.8	1.2	12/27/2024 14:30	6.8	12.8	0.0	6.9	10.9	0.5	8.5
12/27/2024 14:45	6.8	17.8	0.0	6.9	14.9	1.4	12/27/2024 14:45	6.8	12.9	0.0	7.0	10.9	0.4	8.4
12/27/2024 15:00	6.8	17.4	0.0	6.8	14.9	1.1	12/27/2024 15:00	6.8	12.8	0.0	6.8	10.9	2.4	10.4
12/27/2024 15:15		0.0	0.0	6.5	14.8	0.7	12/27/2024 15:15	6.8	12.9	0.0	6.9	10.9	1.9	9.9
12/27/2024 15:30		17.8	0.0	6.9	14.9	0.8	12/27/2024 15:30	6.8	12.7	0.0	7.0	10.9	0.2	8.2
12/27/2024 15:45		17.6	0.0	6.8	14.9	0.5	12/27/2024 15:45	6.8	12.9	0.0	6.9	10.9	0.2	8.2
12/27/2024 16:00		17.5	0.0	6.8	14.9	2.3	12/27/2024 16:00	6.8	12.8	0.0	6.8	10.9	0.3	8.3
12/27/2024 16:15		17.5	0.0	6.8	14.9	0.7	12/27/2024 16:15	6.8	12.9	0.0	6.9	11.0	3.0	11.0
12/27/2024 16:30		17.5	0.0	6.8	14.9	0.7	12/27/2024 16:30	6.8	12.7	0.0	6.8	11.0	0.3	8.3
12/27/2024 16:45		17.5	0.0	6.8	14.9	2.3	12/27/2024 16:45	6.8	12.9	0.0	7.0	11.0	0.1	8.1
12/27/2024 17:00		17.5	0.0	6.8	14.9	1.1	12/27/2024 17:00	6.8	12.7	0.0	7.0	11.0	1.8	9.8
12/27/2024 17:15		17.5	0.0	6.8	14.9	1.0	12/27/2024 17:15	6.8	12.9	0.0	6.9	10.9	0.0	8.0

12/27/2024 17:30	34.6	0.0	7.2	14.8	1.2	12/27/2024 17:30	6.7	12.9	0.0	6.9	11.0	0.4	8.4
12/27/2024 17:45	34.5	0.0	7.3	14.8	0.8	12/27/2024 17:45	6.7	13.0	0.0	7.0	10.9	1.6	9.6
12/27/2024 18:00	34.7	0.0	7.3	14.8	0.7	12/27/2024 18:00	6.7	12.9	0.0	6.9	11.0	0.2	8.2
12/27/2024 18:15	34.8	0.0	7.3	14.8	1.0	12/27/2024 18:15	6.7	13.1	0.0	6.9	11.0	1.2	9.2
12/27/2024 18:30	18.1	0.0	6.8	14.9	0.8	12/27/2024 18:30	6.7	13.4	0.0	6.9	11.0	0.2	8.2
12/27/2024 18:45	18.7	0.0	6.8	14.9	1.1	12/27/2024 18:45	6.7	14.5	0.0	6.9	11.0	4.3	12.3
12/27/2024 19:00	19.7	0.0	6.8	14.9	1.1	12/27/2024 19:00		15.6	0.0	7.1	11.0	0.6	8.6
12/27/2024 19:15	20.6	0.0	6.8	15.0	1.0	12/27/2024 19:15	6.7	16.8	0.0	7.1	11.0	0.4	8.4
12/27/2024 19:30	20.8	0.0	6.9	15.0	1.2	12/27/2024 19:30	6.7	16.8	0.0	7.1	11.0	1.3	9.3
12/27/2024 19:45	21.2	0.0	6.9	14.9	1.2	12/27/2024 19:45	6.6	17.5	0.0	7.0	11.0	2.0	10.0
12/27/2024 20:00	21.8	0.0	6.9	15.0	5.2	12/27/2024 20:00	6.6	18.0	0.0	7.1	11.0	3.5	11.5
12/27/2024 20:15	22.2	0.0	6.9	15.0	1.6	12/27/2024 20:15	6.6	18.7	0.0	7.1	11.0	0.5	8.5
12/27/2024 20:30	37.6	0.0	7.3	14.8	1.1	12/27/2024 20:30	6.6	18.7	0.0	7.1	11.0	2.5	10.5
12/27/2024 20:45	38.8	0.0	7.3	14.8	5.8	12/27/2024 20:45	6.6	19.3	0.0	7.1	11.0	0.7	8.7
12/27/2024 21:00	39.7	0.0	7.3	14.8	1.0	12/27/2024 21:00	6.6	19.2	0.0	7.2	11.0	1.5	9.5
12/27/2024 21:15	39.7	0.0	7.3	14.8	1.1	12/27/2024 21:15	6.6	19.9	0.0	7.1	11.0	0.4	8.4
12/27/2024 21:30	23.9	0.0	7.0	15.0	2.5	12/27/2024 21:30	6.6	19.3	0.0	7.1	11.0	0.7	8.7
12/27/2024 21:45	23.5	0.0	6.9	14.9	0.9	12/27/2024 21:45	6.6	19.9	0.0	7.1	11.0	0.5	8.5
12/27/2024 22:00	23.7	0.0	6.9	15.0	1.1	12/27/2024 22:00	6.6	19.7	0.0	7.1	11.0	1.3	9.3
12/27/2024 22:15	24.0	0.0	6.9	15.0	1.3	12/27/2024 22:15	6.5	20.5	0.0	7.2	11.0	0.5	8.5
12/27/2024 22:30	24.5	0.0	6.9	15.0	1.7	12/27/2024 22:30	6.5	20.6	0.0	7.1	11.0	0.2	8.2
12/27/2024 22:45	24.9	0.0	6.9	15.0	1.9	12/27/2024 22:45	6.5	21.9	0.0	7.1	11.0	0.7	8.7
12/27/2024 23:00	25.6	0.0	6.9	15.0	1.4	12/27/2024 23:00	6.5	22.0	0.0	7.2	11.0	1.0	9.0
12/27/2024 23:15	39.6	0.0	7.2	14.9	1.9	12/27/2024 23:15	6.4	23.5	0.0	7.2	11.0	0.7	8.7
12/27/2024 23:30	39.3	0.0	7.3	14.9	5.7	12/27/2024 23:30	6.4	23.7	0.0	7.2	11.0	2.4	10.4
12/27/2024 23:45	27.7	0.0	7.0	15.0	1.7	12/27/2024 23:45	6.4	24.9	0.0	7.2	11.0	1.4	9.4
12/28/2024 0:00	28.3	0.0	7.0	15.0	2.4	12/28/2024 0:00	6.4	25.4	0.0	7.3	11.1	1.5	9.5
12/28/2024 0:15	40.1	0.0	7.3	14.9	1.7	12/28/2024 0:15	6.4	25.2	0.0	7.2	11.0	2.3	10.3
12/28/2024 0:30	40.0	0.0	7.3	14.9	1.4	12/28/2024 0:30	6.4	23.8	0.0	7.3	11.0	1.9	9.9
12/28/2024 0:45	39.3	0.0	7.3	14.9	0.8	12/28/2024 0:45	6.4	23.3	0.0	7.2	11.0	0.5	8.5
12/28/2024 1:00	38.6	0.0	7.3	14.9	1.0	12/28/2024 1:00	6.4	21.8	0.0	7.2	11.0	3.9	11.9
12/28/2024 1:15	24.9	0.0	7.0	15.0	1.4	12/28/2024 1:15	6.4	21.5	0.0	7.2	11.0	0.6	8.6
12/28/2024 1:30	24.6	0.0	6.9	15.0	1.7	12/28/2024 1:30	6.4	21.0	0.0	7.1	11.0	0.8	8.8
12/28/2024 1:45	24.2	0.0	6.9	15.0	1.8	12/28/2024 1:45	6.4	20.5	0.0	7.1	11.0	0.3	8.3
12/28/2024 2:00	24.1	0.0	6.9	15.0	1.3	12/28/2024 2:00	6.4	20.0	0.0	7.2	11.0	3.3	11.3
12/28/2024 2:15	23.9	0.0	6.9	15.0	1.0	12/28/2024 2:15	6.4	20.3	0.0	7.2	11.0	0.4	8.4
12/28/2024 2:30	23.6	0.0	6.9	15.0	1.5	12/28/2024 2:30	6.4	19.8	0.0	7.2	11.0	1.3	9.3
12/28/2024 2:45	23.2	0.0	6.9	15.0	1.1	12/28/2024 2:45	6.4	19.4	0.0	7.2	11.0	1.4	9.4
12/28/2024 3:00	35.4	0.0	7.1	14.9	0.7	12/28/2024 3:00	6.4	18.9	0.0	7.1	11.0	0.8	8.8
12/28/2024 3:15	35.7	0.0	7.2	14.9	1.2	12/28/2024 3:15	6.4	18.6	0.0	7.1	11.0	4.7	12.7
12/28/2024 3:30	35.7	0.0	7.3	14.9	0.9	12/28/2024 3:30	6.4	18.3	0.0	7.1	11.0	0.4	8.4
12/28/2024 3:45	35.7	0.0	7.3	14.9	1.1	12/28/2024 3:45	6.4	18.4	0.0	7.1	11.0	3.3	11.3
12/28/2024 4:00	22.3	0.0	6.9	15.0	1.0	12/28/2024 4:00	6.4	17.9	0.0	7.1	11.0	0.6	8.6
12/28/2024 4:15	21.9	0.0	6.9	15.0	2.4	12/28/2024 4:15	6.4	18.0	0.0	7.1	11.0	0.2	8.2
12/28/2024 4:30	21.7	0.0	6.9	15.1	0.9	12/28/2024 4:30	6.4	17.6	0.0	7.1	11.0	3.2	11.2
12/28/2024 4:45	21.6	0.0	6.9	15.0	1.3	12/28/2024 4:45	6.3	17.6	0.0	7.1	11.0	0.1	8.1
12/28/2024 5:00	21.4	0.0	6.8	15.1	0.8	12/28/2024 5:00		17.3	0.0	7.1	11.0	3.7	11.7
12/28/2024 5:15	21.2	0.0	6.9	15.1	0.5	12/28/2024 5:15	6.3	17.3	0.0	7.0	11.0	1.0	9.0
12/28/2024 5:30	21.0	0.0	6.8	15.0	1.1	12/28/2024 5:30	6.3	16.9	0.0	7.0	11.0	0.6	8.6
12/28/2024 5:45	21.0	0.0	6.8	15.0	1.2	12/28/2024 5:45	6.3	17.2	0.0	7.1	11.1	2.5	10.5
12/28/2024 6:00	35.5	0.0	7.3	14.9	2.6	12/28/2024 6:00	6.3	18.1	0.0	7.1	11.0	0.5	8.5
12/28/2024 6:15	36.3	0.0	7.3	14.9	1.6	12/28/2024 6:15	6.3	19.4	0.0	7.1	11.1	0.3	8.3
12/28/2024 6:30	22.5	0.0	6.9	15.1	1.3	12/28/2024 6:30	6.3	18.5	0.0	7.1	11.1	1.8	9.8
12/28/2024 6:45	22.8	0.0	6.9	15.1	1.1	12/28/2024 6:45	6.3	19.2	0.0	7.1	11.1	0.3	8.3
12/28/2024 7:00	22.9	0.0	6.8	15.1	1.5	12/28/2024 7:00	6.3	19.1	0.0	7.1	11.1	0.2	8.2
12/28/2024 7:15	22.9	0.0	6.9	15.1	1.5	12/28/2024 7:15	6.3	19.3	0.0	7.1	11.1	0.3	8.3
12/28/2024 7:30	35.1	0.0	7.1	15.0	1.1	12/28/2024 7:30	6.3	18.9	0.0	7.1	11.0	0.2	8.2
12/28/2024 7:45	35.7	0.0	7.2	14.9	2.5	12/28/2024 7:45	6.3	18.9	0.0	7.1	11.0	0.4	8.4
12/28/2024 8:00	35.8	0.0	7.2	14.9	1.1	12/28/2024 8:00	6.3	19.9	0.0	7.1	11.1	3.1	11.1
12/28/2024 8:15	35.9	0.0	7.2	15.0	2.7	12/28/2024 8:15	6.3	21.3	0.0	7.1	11.0	2.9	10.9
12/28/2024 8:30	29.2	0.0	7.1	15.1	9.3	12/28/2024 8:30	6.2	23.9	0.0	7.2	11.1	15.3	20.3
12/28/2024 8:45	27.9	0.0	7.0	15.1	7.7	12/28/2024 8:45	6.2	25.4	0.0	7.3	11.1	7.9	15.9
12/28/2024 9:00	27.6	0.0	7.0	15.1	4.6	12/28/2024 9:00	6.2	24.7	0.0	7.3	11.1	6.6	14.6
12/28/2024 9:15	27.3	0.0	6.9	15.1	4.0	12/28/2024 9:15	6.2	24.6	0.0	7.3	11.1	7.1	15.1
12/28/2024 9:30	27.1	0.0	7.0	15.1	3.8	12/28/2024 9:30	6.2	24.2	0.0	7.3	11.1	6.5	14.5
12/28/2024 9:45	26.5	0.0	6.9	15.1	3.6	12/28/2024 9:45	6.2	24.1	0.0	7.2	11.1	4.4	12.4
12/28/2024 10:00	25.6	0.0	6.9	15.1	3.4	12/28/2024 10:00	6.2	22.6	0.0	7.2	11.1	3.6	11.6
12/28/2024 10:15	24.6	0.0	6.9	15.1	2.4	12/28/2024 10:15	6.2	21.9	0.0	7.1	11.1	6.2	14.2
12/28/2024 10:30	23.5	0.0	6.8	15.1	3.5	12/28/2024 10:30	6.2	20.6	0.0	7.2	11.1	7.8	15.8
12/28/2024 10:45	32.5	0.0	7.1	15.1	4.2	12/28/2024 10:45	6.2	21.5	0.0	7.2	11.2	4.0	12.0
12/28/2024 11:00	32.8	0.0	7.1	15.1	6.2	12/28/2024 11:00	6.1	21.8	0.0	7.2	11.2	11.9	16.9
12/28/2024 11:15	32.1	0.0	7.1	15.1	4.6	12/28/2024 11:15	6.2	21.2	0.0	7.2	11.2	16.3	21.3
12/28/2024 11:30	31.3	0.0	7.1	15.1	4.3	12/28/2024 11:30	6.2	20.4	0.0	7.2	11.2	5.7	13.7
12/28/2024 11:45	22.7	0.0	6.8	15.2	2.7	12/28/2024 11:45	6.2	19.8	0.0	7.1	11.2	11.7	16.7
12/28/2024 12:00	22.0	0.0	6.8	15.2	3.0	12/28/2024 12:00	6.3	18.9	0.0	7.2	11.2	2.5	10.5
12/28/2024 12:15	21.7	0.0	6.8	15.2	2.9	12/28/2024 12:15	6.3	18.7	0.0	7.1	11.1	20.5	25.5
12/28/2024 12:30	21.5	0.0	6.8	15.2	3.2	12/28/2024 12:30	6.3	18.5	0.0	7.2	11.2	2.8	10.8
12/28/2024 12:45	21.6	0.0	6.8	15.1	2.8	12/28/2024 12:45	6.3	18.7	0.0	7.1	11.2	3.1	11.1
12/28/2024 13:00	21.6	0.0	6.8	15.2	4.1	12/28/2024 13:00	6.3	18.4	0.0	7.1	11.2	1.3	9.3
12/28/2024 13:15	26.2	0.0	7.0	15.1	3.1	12/28/2024 13:15	6.3	18.3	0.0	7.1	11.1	6.2	14.2
12/28/2024 13:30	28.0	0.0	7.0	15.1	3.1	12/28/2024 13:30	6.3	17.9	0.0	7.1	11.1	9.6	14.6
12/28/2024 13:45	28.1	0.0	7.0	15.1	2.7	12/28/2024 13:45	6.3	18.4	0.0	7.1	11.2	4.1	12.1
12/28/2024 14:00	27.9	0.0	7.0	15.1	2.0	12/28/2024 14:00		18.0	0.0	7.1	11.2	1.9	9.9
12/28/2024 14:15	25.2	0.0	7.0	15.1	2.3	12/28/2024 14:15	6.3	17.9	0.0	7.1	11.2	14.6	19.6
12/28/2024 14:30	20.9	0.0	6.8	15.2	2.2	12/28/2024 14:30	6.3	17.8	0.0	7.2	11.1	6.1	14.1
12/28/2024 14:45	20.8	0.0	6.8	15.1	2.7	12/28/2024 14:45	6.3	18.0	0.0	7.1	11.1	0.9	8.9
12/28/2024 15:00	20.8	0.0	6.8	15.2	2.8	12/28/2024 15:00	6.3	17.9	0.0	7.2	11.2	3.7	11.7
12/28/2024 15:15	20.5	0.0	6.8	15.2	2.9	12/28/2024 15:15	6.4	17.7	0.0	7.0	11.2	1.7	9.7
12/28/2024 15:30	20.8	0.0	6.8	15.2	3.6	12/28/2024 15:30	6.4	17.8	0.0	7.1	11.1	2.7	10.7
12/28/2024 15:45	20.7	0.0	6.8	15.2	6.2	12/28/2024 15:45	6.4	18.0	0.0	7.1	11.2	1.3	9.3
12/28/2024 16:00	26.7	0.0	7.0	15.1	3.4	12/28/2024 16:00	6.4	17.4	0.0	7.1	11.2	1.0	9.0
12/28/2024 16:15	26.5	0.0	7.0	15.1	2.2	12/28/2024 16:15	6.4	17.4	0.0	7.1	11.1	2.1	10.1
12/28/2024 16:30	26.7	0.0	7.0	15.1	1.9	12/28/2024 16:30	6.4	17.1	0.0	7.1	11.2	3.0	11.0
12/28/2024 16:45	26.7	0.0	7.1	15.1	2.8	12/28/2024 16:45	6.4	17.1	0.0	7.1	11.2	6.1	14.1
12/28/2024 17:00	19.7	0.0	6.8	15.2	2.7	12/28/2024 17:00	6.4	16.7	0.0	7.0	11.2	2.4	10.4
12/28/2024 17:15	19.5	0.0	6.8	15.2	1.5	12/28/2024 17:15	6.4	16.5	0.0	7.0	11.1	9.7	14.7
12/28/2024 17:30	19.2	0.0	6.8	15.1	2.3	12/28/2024 17:30	6.4	15.9	0.0	7.1	11.2	1.7	9.7
12/28/2024 17:45	19.1	0.0	6.7	15.2	1.8	12/28/2024 17:45	6.4	16.1	0.0	7.1	11.2	3.6	11.6
12/28/2024 18:00	19.0	0.0	6.8	15.2	1.4	12/28/2024 18:00	6.4	15.6	0.0	7.1	11.2	1.9	9.9
12/28/2024 18:15	18.8	0.0	6.7	15.2	2.2	12/28/2024 18:15	6.4	15.8	0.0	7.0	11.1	0.7	8.7
12/28/2024 18:30	19.0	0.0	6.8	15.2	2.4	12/28/2024 18:30	6.4	15.7	0.0	7.1	11.2	5.7	13.7
12/28/2024 18:45	26.3	0.0	7.1	15.1	1.6	12/28/2024 18:45	6.4	16.2	0.0	7.0	11.2	2.8	10.8
12/28/2024 19:00	26.8	0.0	7.1	15.1	2.0	12/28/2024 19:00	6.4	16.5	0.0	7.1	11.2	1.0	9.0
12/28/2024 19:15	27.1	0.0	7.1	15.1	1.8	12/28/2024 19:15	6.4	17.1	0.0	7.0	11.2	7.9	15.9
12/28/2024 19:30	20.4	0.0	6.9	15.2	2.5	12/28/2024 19:30	6.4	17.5	0.0	7.0	11.2	3.1	11.1
12/28/2024 19:45	20.7	0.0	6.8	15.2	2.5	12/28/2024 19:45	6.4	18.1	0.0	7.1	11.2	2.1	10.1
12/28/2024 20:00	20.6	0.0	6.8	15.2	1.9	12/28/2024 20:00	6.4	18.0	0.0	7.1	11.2	6.9	14.9
12/28/2024 20:15	20.6	0.0	6.8	15.1	2.6	12/28/2024 20:15	6.5	18.1	0.0	7.1	11.1	6.7	14.7
12/28/2024 20:30	20.5	0.0	6.8	15.1	1.7	12/28/2024 20:30	6.5	17.7	0.0	7.1	11.2	1.0	9.0
12/28/2024 20:45	20.2	0.0	6.8	15.1	1.8	12/28/2024 20:45	6.5	17.6	0.0	7.1	11.1	9.5	14.5
12/28/2024 21:00	20.0	0.0	6.8	15.1	2.1	12/28/2024 21:00	6.5	17.2	0.0	7.1	11.1	3.3	11.3
12/28/2024 21:15	19.7	0.0	6.8	15.1	1.3	12/28/2024 21:15	6.5	17.0	0.0	7.1	11.1	8.3	13.3
12/28/2024 21:30	19.5	0.0	6.8	15.1	1.4	12/28/2024 21:30	6.5	16.4	0.0	7.1	11.1	2.8	10.8
12/28/2024 21:45	27.8	0.0	7.1	15.1	1.8	12/28/2024 21:45	6.5	16.6	0.0	7.0	11.1	0.7	8.7
12/28/2024 22:00	28.2	0.0	7.1	15.0	1.3	12/28/2024 22:00	6.5	16.6	0.0	7.1	11.1	1.1	9.1
12/28/2024 22:15	28.5	0.0	7.1	15.0	1.2	12/28/2024 22:15	6.5	17.0	0.0	7.0	11.1	1.5	9.5
12/28/2024 22:30	19.8	0.0	6.8	15.1	2.0	12/28/2024 22:30	6.5	16.8	0.0	7.0	11.1	0.8	8.8
12/28/2024 22:45	19.6	0.0	6.8	15.1	1.6	12/28/2024 22:45	6.5	16.7	0.0	7.1	11.1	1.0	9.0
12/28/2024 23:00	19.4	0.0	6.8	15.1	2.0	12/28/2024 23:00	6.6	16.3	0.0	7.0	11.1	1.6	9.6
12/28/2024 23:15	19.3	0.0	6.8	15.1	1.6	12/28/2024 23:15	6.6	16.5	0.0	7.0	11.1	1.7	9.7
12/28/2024 23:30	19.1	0.0	6.8	15.1	1.4	12/28/2024 23:30	6.5	15.6	0.0	7.0	11.1	1.9	9.9
12/28/2024 23:45	18.9	0.0	6.8	15.1	1.5	12/28/2024 23:45	6.6	15.9	0.0	7.0	11.1	0.3	8.3
12/29/2024 0:00	18.8	0.0	6.8	15.1	1.5	12/29/2024 0:00	6.6	15.2	0.0	7.0	11.1	0.5	8.5
12/29/2024 0:15	18.6	0.0	6.8	15.1	1.4	12/29/2024 0:15	6.6	15.6	0.0	7.0	11.1	0.3	8.3
12/29/2024 0:30	28.0	0.0	7.0	15.0	1.3	12/29/2024 0:30	6.6	15.0	0.0	6.9	11.0	0.8	8.8
12/29/2024 0:45	28.4	0.0	7.1	15.0	1.1	12/29/2024 0:45	6.5	15.2	0.0	6.9	11.1	0.9	8.9
12/29/2024 1:00	28.5	0.0	7.1	15.0	1.0	12/29/2024 1:00	6.5	14.8	0.0	7.0	11.1	1.2	9.2
12/29/2024 1:15	28.3	0.0	7.1	15.0	1.2	12/29/2024 1:15	6.5	14.9	0.0	7.0	11.1	0.2	8.2
12/29/2024 1:30	28.2	0.0	7.1	15.0	1.4	12/29/2024 1:30	6.5	14.7	0.0	6.9	11.1	0.8	8.8
12/29/2024 1:45	18.2	0.0	6.8	15.1	0.8	12/29/2024 1:45	6.5	14.7	0.0	7.0	11.1	1.4	9.4
12/29/2024 2:00	18.2	0.0	6.8	15.1	1.1	12/29/2024 2:00	6.5	14.5	0.0	7.0	11.1	0.2	8.2
12/29/2024 2:15	18.1	0.0	6.8	15.1	1.3	12/29/2024 2:15	6.5	14.6	0.0	7.0	11.1	0.4	8.4
12/29/2024 2:30	18.0	0.0	6.8	15.1	2.0	12/29/2024 2:30	6.5	14.3	0.0	6.9	11.1	1.8	9.8
12/29/2024 2:45	17.9	0.0	6.8	15.1	1.0	12/29/2024 2:45	6.5	14.4	0.0	6.9	11.1	1.0	9.0
12/29/2024 3:00	17.9	0.0	6.8	15.1	0.7	12/29/2024 3:00	6.5	14.3	0.0	6.9	11.1	0.6	8.6
12/29/2024 3:15	17.9	0.0	6.8	15.1	0.7	12/29/2024 3:15	6.5	14.2	0.0	7.0	11.1	0.5	8.5
12/29/2024 3:30	28.5	0.0	7.1	15.0	0.7	12/29/2024 3:30	6.5	13.8	0.0	7.0	11.1	0.7	8.7
12/29/2024 3:45	28.5	0.0	7.1	15.0	1.1	12/29/2024 3:45	6.4	14.2	0.0	6.9	11.1	0.1	8.1
12/29/2024 4:00	28.6	0.0	7.1	15.0	1.3	12/29/2024 4:00	6.5	14.0	0.0	6.9	11.1	0.2	8.2
12/29/2024 4:15	28.5	0.0	7.1	15.0	0.9	12/29/2024 4:15	6.5	14.0	0.0	6.9	11.1	2.6	10.6
12/29/2024 4:30	28.5	0.0	7.1	15.0	1.1	12/29/2024 4:30	6.5	13.9	0.0	6.9	11.1	0.9	8.9
12/29/2024 4:45	17.9	0.0	6.8	15.1	1.2	12/29/2024 4:45	6.5	14.1	0.0	7.0	11.1	0.3	8.3
12/29/2024 5:00	17.8	0.0	6.8	15.1	0.8	12/29/2024 5:00	6.4	13.6	0.0	6.9	11.1	3.6	11.6
12/29/2024 5:15	17.8	0.0	6.8	15.1	0.8	12/29/2024 5:15	6.4	14.0	0.0	6.9	11.1	0.2	8.2
12/29/2024 5:30	17.7	0.0	6.8	15.1	1.0	12/29/2024 5:30	6.4	13.8	0.0	7.0	11.1	0.8	8.8
12/29/2024 5:45	17.7	0.0	6.8	15.1	0.8	12/29/2024 5:45	6.4	13.9	0.0	7.0	11.1	2.2	10.2
12/29/2024 6:00	17.7	0.0	6.7	15.1	0.8	12/29/2024 6:00	6.4	13.4	0.0	6.9	11.1	0.5	8.5
12/29/2024 6:15	17.7	0.0	6.8	15.1	1.8	12/29/2024 6:15	6.4	13.8	0.0	6.8	11.1	0.7	8.7
12/29/2024 6:30	17.7	0.0	6.8	15.1	0.7	12/29/2024 6:30	6.4	13.6	0.0	6.9	11.1	3.4	11.4
12/29/2024 6:45	17.7	0.0	6.8	15.1	0.8	12/29/2024 6:45	6.4	13.7	0.0	7.0	11.1	0.1	8.1
12/29/2024 7:00	29.6	0.0	7.2	15.0	0.7	12/29/2024 7:00	6.4	13.4	0.0	6.9	11.1	0.9	8.9
12/29/2024 7:15	30.2	0.0	7.2	15.0	0.8	12/29/2024 7:15	6.4	13.7	0.0	6.9	11.1	1.1	9.1
12/29/2024 7:30	30.4	0.0	7.2	15.0	0.9	12/29/2024 7:30	6.4	13.4	0.0	6.9	11.1	2.3	10.3

12/29/2024 7:45	18.0	0.0	6.8	15.1	0.9	12/29/2024 7:45	6.4	13.7	0.0	6.9	11.1	0.4	8.4
12/29/2024 8:00	17.7	0.0	6.8	15.1	0.7	12/29/2024 8:00	6.4	13.5	0.0	6.8	11.1	4.0	12.0
12/29/2024 8:15	17.7	0.0	6.8	15.1	0.6	12/29/2024 8:15	6.4	13.6	0.0	6.9	11.1	0.6	8.6
12/29/2024 8:30	17.6	0.0	6.8	15.1	0.7	12/29/2024 8:30	6.4	13.5	0.0	6.9	11.1	1.8	9.8
12/29/2024 8:45	17.6	0.0	6.8	15.1	1.3	12/29/2024 8:45	6.4	13.6	0.0	6.8	11.1	0.5	8.5
12/29/2024 9:00	17.6	0.0	6.8	15.1	0.5	12/29/2024 9:00	6.4	13.4	0.0	6.9	11.1	0.3	8.3
12/29/2024 9:15	17.6	0.0	6.8	15.1	2.7	12/29/2024 9:15	6.4	13.5	0.0	6.9	11.1	0.2	8.2
12/29/2024 9:30	31.0	0.0	7.2	15.0	0.7	12/29/2024 9:30	6.4	13.4	0.0	6.9	11.1	0.1	8.1
12/29/2024 9:45	31.3	0.0	7.2	15.0	0.7	12/29/2024 9:45	6.4	13.5	0.0	6.9	11.1	0.1	8.1
12/29/2024 10:00	31.4	0.0	7.2	15.0	0.6	12/29/2024 10:00	6.4	13.4	0.0	6.8	11.1	0.2	8.2
12/29/2024 10:15	31.6	0.0	7.2	15.0	0.7	12/29/2024 10:15	6.4	13.3	0.0	7.0	11.1	0.1	8.1
12/29/2024 10:30	17.6	0.0	6.8	15.1	1.5	12/29/2024 10:30	6.4	13.3	0.0	6.9	11.1	0.3	8.3
12/29/2024 10:45	17.6	0.0	6.7	15.1	0.8	12/29/2024 10:45	6.4	13.4	0.0	6.9	11.1	0.3	8.3
12/29/2024 11:00	17.5	0.0	6.8	15.1	0.7	12/29/2024 11:00	6.5	13.1	0.0	6.9	11.1	1.6	9.6
12/29/2024 11:15	17.5	0.0	6.8	15.1	1.6	12/29/2024 11:15	6.5	13.3	0.0	6.9	11.1	0.9	8.9
12/29/2024 11:30	17.5	0.0	6.8	15.1	1.6	12/29/2024 11:30	6.5	13.1	0.0	6.9	11.1	0.2	8.2
12/29/2024 11:45	17.4	0.0	6.8	15.1	0.7	12/29/2024 11:45	6.5	13.3	0.0	7.0	11.1	0.1	8.1
12/29/2024 12:00	17.4	0.0	6.8	15.1	1.8	12/29/2024 12:00	6.5	13.0	0.0	6.9	11.1	1.8	9.8
12/29/2024 12:15	17.4	0.0	6.8	15.1	0.9	12/29/2024 12:15	6.5	13.2	0.0	6.9	11.1	0.1	8.1
12/29/2024 12:30	31.9	0.0	7.2	14.9	0.7	12/29/2024 12:30	6.5	13.1	0.0	7.0	11.1	0.2	8.2
12/29/2024 12:45	32.7	0.0	7.3	14.9	0.9	12/29/2024 12:45	6.6	13.2	0.0	7.0	11.1	0.3	8.3
12/29/2024 13:00	33.0	0.0	7.3	14.9	1.4	12/29/2024 13:00	6.6	12.9	0.0	7.0	11.0	0.7	8.7
12/29/2024 13:15	33.1	0.0	7.3	14.9	0.5	12/29/2024 13:15	6.6	13.2	0.0	6.9	11.1	1.4	9.4
12/29/2024 13:30	17.7	0.0	6.8	15.0	1.2	12/29/2024 13:30	6.6	13.0	0.0	6.9	11.1	0.3	8.3
12/29/2024 13:45	17.6	0.0	6.8	15.0	0.8	12/29/2024 13:45	6.6	13.3	0.0	6.9	11.0	0.2	8.2
12/29/2024 14:00	17.6	0.0	6.8	15.0	2.4	12/29/2024 14:00	6.6	13.2	0.0	7.0	11.0	1.4	9.4
12/29/2024 14:15	17.6	0.0	6.8	15.0	0.6	12/29/2024 14:15	6.6	13.3	0.0	6.9	11.0	0.2	8.2
12/29/2024 14:30	17.6	0.0	6.8	15.0	0.8	12/29/2024 14:30	6.6	13.0	0.0	6.9	11.0	0.4	8.4
12/29/2024 14:45	17.6	0.0	6.8	15.0	2.9	12/29/2024 14:45	6.6	13.4	0.0	6.9	11.0	0.6	8.6
12/29/2024 15:00	17.7	0.0	6.8	15.0	0.6	12/29/2024 15:00	6.6	13.2	0.0	7.0	11.0	0.2	8.2
12/29/2024 15:15	18.0	0.0	6.8	15.1	0.8	12/29/2024 15:15	6.6	13.9	0.0	7.0	11.0	0.0	8.0
12/29/2024 15:30	34.0	0.0	7.2	14.9	0.8	12/29/2024 15:30	6.6	14.1	0.0	6.9	11.1	0.6	8.6
12/29/2024 15:45	33.9	0.0	7.3	14.9	1.6	12/29/2024 15:45	6.6	15.2	0.0	6.9	11.0	1.4	9.4
12/29/2024 16:00	35.0	0.0	7.2	14.9	0.8	12/29/2024 16:00	6.6	15.4	0.0	7.0	11.1	0.3	8.3
12/29/2024 16:15	35.3	0.0	7.3	14.9	0.7	12/29/2024 16:15	6.6	15.7	0.0	7.0	11.1	0.6	8.6
12/29/2024 16:30	20.1	0.0	7.0	15.1	1.2	12/29/2024 16:30	6.6	15.8	0.0	7.0	11.1	1.7	9.7
12/29/2024 16:45	20.1	0.0	6.9	15.1	1.4	12/29/2024 16:45	6.6	16.4	0.0	7.0	11.1	1.1	9.1
12/29/2024 17:00	20.6	0.0	6.9	15.1	0.9	12/29/2024 17:00	6.6	16.9	0.0	7.0	11.1	2.8	10.8
12/29/2024 17:15	20.9	0.0	6.9	15.1	1.4	12/29/2024 17:15	6.6	17.6	0.0	7.1	11.1	0.6	8.6
12/29/2024 17:30	21.2	0.0	6.8	15.1	1.0	12/29/2024 17:30	6.6	17.4	0.0	7.1	11.1	0.4	8.4
12/29/2024 17:45	21.5	0.0	6.9	15.1	0.9	12/29/2024 17:45	6.6	18.2	0.0	7.1	11.1	0.2	8.2
12/29/2024 18:00	21.8	0.0	6.9	15.1	0.8	12/29/2024 18:00	6.5	18.1	0.0	7.1	11.1	3.5	11.5
12/29/2024 18:15	21.9	0.0	6.9	15.1	0.9	12/29/2024 18:15	6.5	18.6	0.0	7.1	11.1	0.1	8.1
12/29/2024 18:30	23.1	0.0	6.9	15.2	0.9	12/29/2024 18:30	6.5	18.0	0.0	7.1	11.1	1.2	9.2
12/29/2024 18:45	37.1	0.0	7.3	15.0	0.8	12/29/2024 18:45	6.4	18.4	0.0	7.1	11.1	0.5	8.5
12/29/2024 19:00	37.3	0.0	7.3	15.0	0.8	12/29/2024 19:00	6.4	18.1	0.0	7.1	11.1	1.2	9.2
12/29/2024 19:15	37.3	0.0	7.3	15.0	0.8	12/29/2024 19:15	6.4	17.8	0.0	7.1	11.1	1.1	9.1
12/29/2024 19:30	21.6	0.0	6.9	15.2	0.8	12/29/2024 19:30	6.4	17.5	0.0	7.1	11.1	1.0	9.0
12/29/2024 19:45	21.1	0.0	6.9	15.2	0.7	12/29/2024 19:45	6.4	17.3	0.0	7.1	11.2	0.2	8.2
12/29/2024 20:00	20.9	0.0	6.9	15.2	0.8	12/29/2024 20:00	6.4	16.6	0.0	7.1	11.1	0.1	8.1
12/29/2024 20:15	20.7	0.0	6.8	15.2	1.2	12/29/2024 20:15	6.4	16.7	0.0	7.1	11.1	1.2	9.2
12/29/2024 20:30	20.4	0.0	6.9	15.2	0.7	12/29/2024 20:30	6.4	16.2	0.0	7.1	11.1	0.3	8.3
12/29/2024 20:45	20.3	0.0	6.9	15.2	1.2	12/29/2024 20:45	6.4	16.2	0.0	7.0	11.1	0.1	8.1
12/29/2024 21:00	20.1	0.0	6.8	15.2	1.8	12/29/2024 21:00	6.4	15.8	0.0	7.0	11.1	0.2	8.2
12/29/2024 21:15	19.9	0.0	6.9	15.2	0.5	12/29/2024 21:15	6.4	16.0	0.0	7.0	11.2	0.4	8.4
12/29/2024 21:30	19.7	0.0	6.8	15.2	0.8	12/29/2024 21:30	6.4	15.6	0.0	7.0	11.2	1.3	9.3
12/29/2024 21:45	19.7	0.0	6.9	15.2	0.9	12/29/2024 21:45	6.4	15.4	0.0	7.0	11.2	0.3	8.3
12/29/2024 22:00	36.0	0.0	7.3	15.1	0.6	12/29/2024 22:00	6.4	15.3	0.0	7.1	11.2	0.1	8.1
12/29/2024 22:15	36.1	0.0	7.3	15.1	0.7	12/29/2024 22:15	6.4	15.2	0.0	6.9	11.2	0.6	8.6
12/29/2024 22:30	36.1	0.0	7.3	15.1	0.6	12/29/2024 22:30	6.4	14.8	0.0	7.0	11.2	1.7	9.7
12/29/2024 22:45	36.2	0.0	7.3	15.1	0.8	12/29/2024 22:45	6.4	15.2	0.0	7.0	11.2	0.5	8.5
12/29/2024 23:00	25.5	0.0	7.3	15.2	0.9	12/29/2024 23:00	6.4	14.8	0.0	7.0	11.2	0.1	8.1
12/29/2024 23:15	19.4	0.0	6.9	15.3	0.8	12/29/2024 23:15	6.4	14.9	0.0	7.0	11.2	2.0	10.0
12/29/2024 23:30	19.2	0.0	6.8	15.3	0.7	12/29/2024 23:30	6.3	14.7	0.0	6.9	11.2	0.4	8.4
12/29/2024 23:45	19.1	0.0	6.8	15.3	0.7	12/29/2024 23:45	6.4	14.8	0.0	7.1	11.2	0.3	8.3